SITE PLAN REVIEW SET

"RESIDENTIAL DEVELOPMENT"

LOCATION

12 & 18 TAYLOR STREET STAMFORD, CONNECTICUT

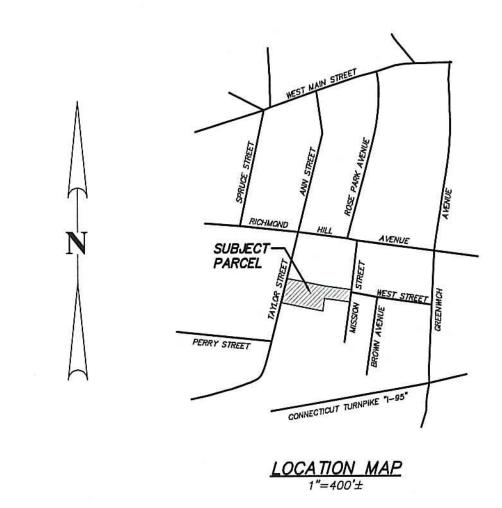
PREPARED FOR

G&T TAYLOR STREET LLC

0.5619 ACRES OR 24,478 S.F.

REFER TO MAPS No. 179 AND 12365 S.L.R.

"P_ME" ZONE



SHEET INDEX

<u>SHEET</u>	<u>TITLE</u>	REVISION	DATE
_	TOPOGRAPHIC SURVEY	1	9-21-23
1 OF 1	EXISTING CONDITIONS PLAN	1	9-21-23
1 OF 5	DEVELOPMENT PLAN	5	11-16-23
2 OF 5	UTILITY PLAN	5	11-16-23
3 OF 5	SEDIMENTATION & EROSION CONTROL PLAN	5	11-16-23
4 OF 5	NOTES & DETAILS	5	11-16-23
5 OF 5	DETAILS	5	11-16-23
	PLAN SET PREPARED BY:		5 11-16-23 RESPOND TO

D'ANDREA SURVEYING & ENGINEERING, P.C. DATE

MATTHEW M. KIVIJARV CT. PE No. 36982

ONLY COPIES OF THIS SET, BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.

D'ANDREA SURVEYING & ENGINEERING, P.C.

• LAND PLANNERS

• ENGINEERS

P.O. BOX 549

• SURVEYORS

6 NEIL LANE
RIVERSIDE, CT 06878

TEL. 637–1779

PARCEL ID

004-1371

RESIDENTIAL DEVELOPMENT TO ENG COMMENTS RESPOND TO ENG COMMENTS G&T TAYLOR STREET LLC RESPOND TO ENG COMMENTS RESPOND TO ENG COMMENTS 1 7-24-2 MINOR REVISIONS 12 & 18 TAYLOR STREET **LOCATION** 0 5-2-23 INITIAL SUBMISSION STAMFORD, CONNECTICUT REV. DATE DESCRIPTION

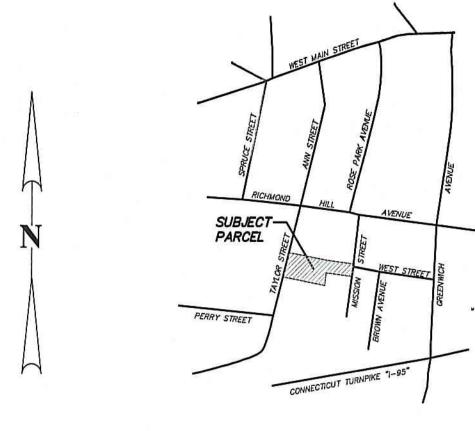
001-9860

CS_05_REV5.DWG (MMK)



GENERAL NOTES:

- Refer to a map entitled "Existing Conditions Plan, Owner: Taylor Mission LLC, Site: 18 Taylor Street, Stamford, Connecticut, prepared by Edward J. Frattaroli, Inc. and revised to October 16, 2008.
- The limits of wetlands are taken from a map entitled "Existing Conditions Plan, Owner: Taylor Mission LLC, Site: 18 Taylor Street, Stamford, Connecticut, prepared by Edward J. Frattaroli, Inc. and revised to October 16, 2008.
- Contours and elevations depicted hereon are referenced to the North American Vertical Datum of 1988 (NAVD88).
- 4. In accordance with Connecticut Public Act 87-71 and Connecticut General Statutes (CGS) Sections 16-345 through 16-359, the contractor shall verify the depth and location of all utilities prior to commencing construction, and shall contact "Call Berry You Dig, Inc." at 1.800.922.4455, 48 hours prior to commencing construction.
- 5. The locations of subsurface structures and utilities as depicted hereon indicate only that the structures exist, and no responsibility is assumed by the engineer or surveyor for the accuracy of the locations shown.
- The contractor shall dig test pits to verify the depth and location of existing utilities, sewers, and storm drains prior to installation. Any potential conflicts shall be brought to the attention of the project engineer.



LOCATION MAP



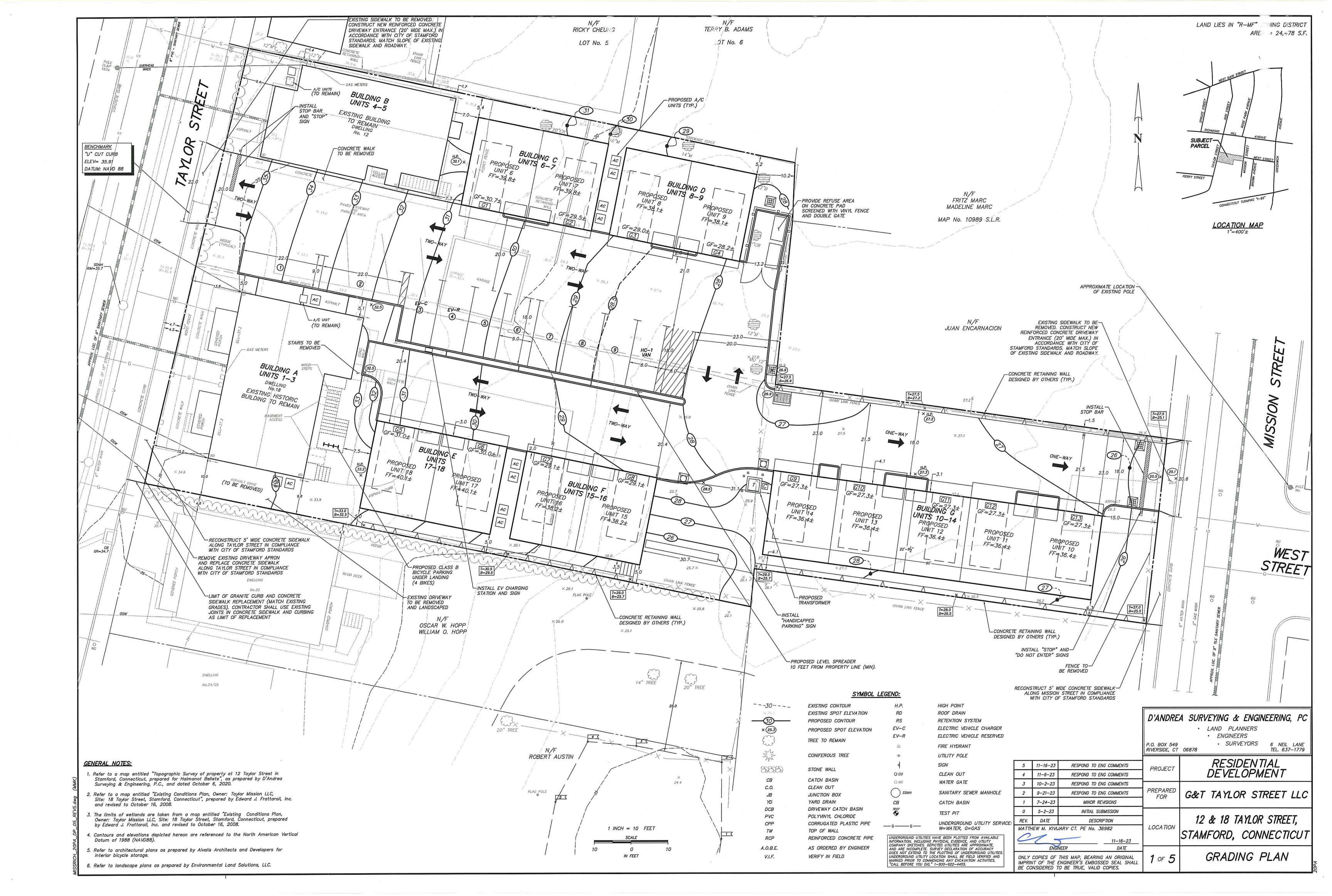
1 INCH = 20 FEET

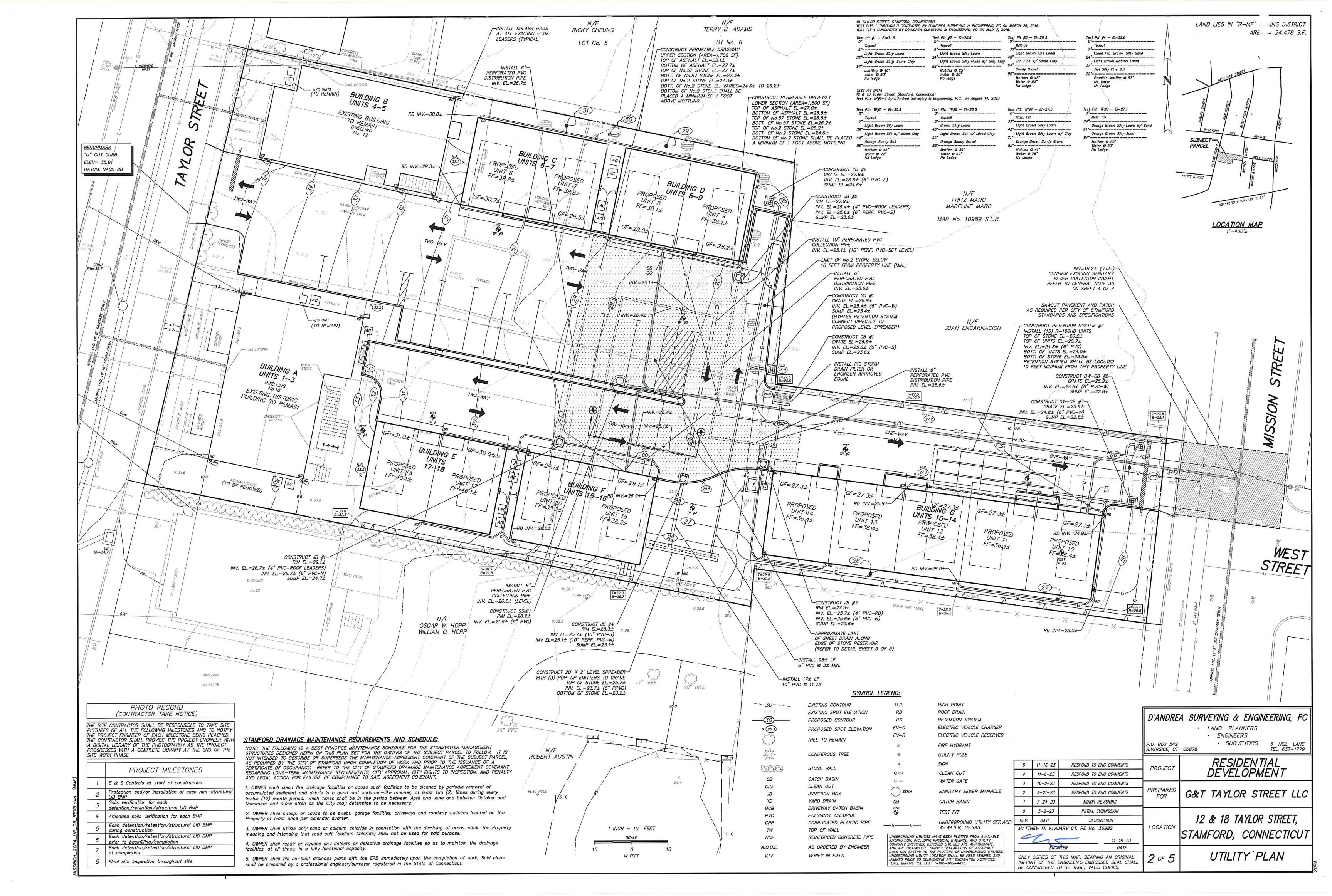
8			P.O. BOX 549	
			PROJECT	RESIDENTIAL DEVELOPMENT
1	9-20-23	RESPOND TO ENG COMMENTS	PREPARED FOR	G&T TAYLOR STREET LLC
O REV.	5–2–23 DATE	INITIAL SUBMISSION DESCRIPTION		18 TAYLOR STREET,
LEONA		DREA CT. PE No. 14869 9-20-23	LOCATION	STAMFORD, CONNECTICUT
ONLY	ENGII COPIES OF	THIS MAP, BEARING AN ORIGINAL	1 OF 1	EXISTING

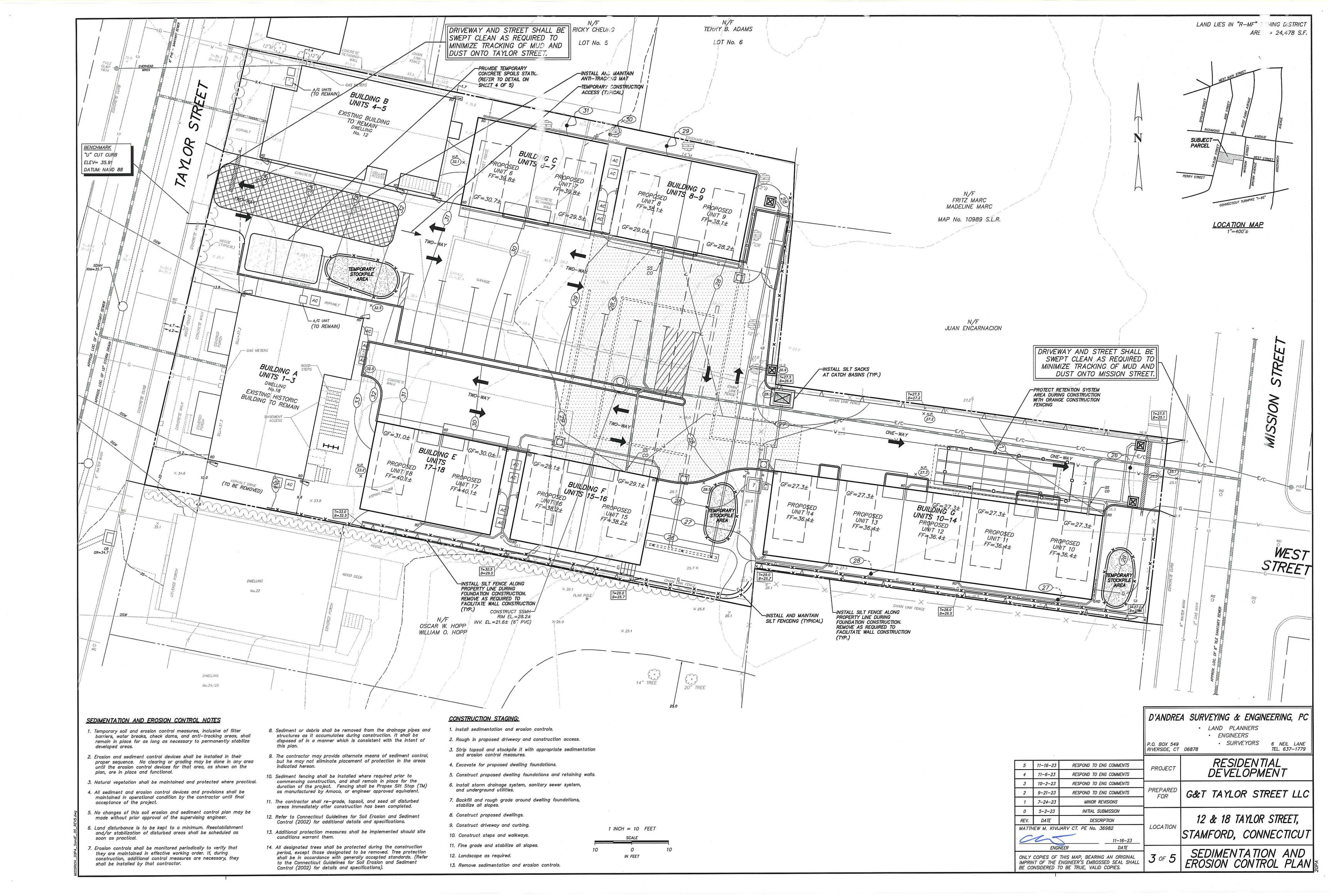
1 OF 1

CONDITIONS PLAN

ONLY COPIES OF THIS MAP, BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.







GENERAL NOTES:

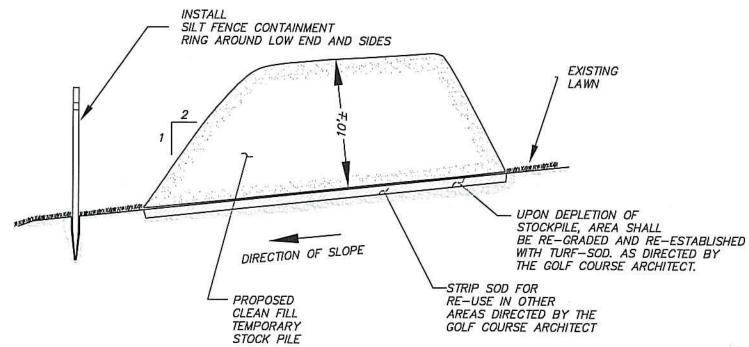
- 1. Refer to a map entitled "Existing Conditions" of property at 18 Taylor Street in Stamford, Connecticut, as prepared by D'Andrea Surveying & Engineering, P.C. and dated
- 2. The limits of wetlands are taken from a map entitled "Existing Conditions Plan, Owner: Taylor Mission LLC, Site: 18 Taylor Street, Stamford, Connecticut, prepared by Edward J. Frattaroli, Inc. and revised to October 16, 2008.
- 3. Contours and elevations depicted hereon are referenced to the North American Vertical Datum of 1988 (NAVD 88).
- 4. In accordance with Connecticut Public Act 87-71 and Connecticut General Statutes (CGS) Sections 16-345 through 16-359, the contractor shall verify the depth and location of all utilities prior to commencing construction, and shall contact "Call Before You Dig, Inc." at 1.800.922.4455, 48 hours prior to commencing construction.
- 5. The locations of subsurface structures and utilities as depicted hereon indicate only that the structures exist, and no responsibility is assumed by the engineer or surveyor for the accuracy of the locations shown.
- 6. A Street Opening Permit is required for all work within the City of Stamford Right-of-Way.
- 7. The contractor shall be responsible for securing all required permits from the City of Stamford for completion of the project.
- 8. The locations and elevations of the proposed storm drainage system depicted hereon may be modified with the approval of the project engineer to meet field conditions.
- 9. All construction shall comply with applicable sections of the State of Connecticut, Local, and International Building codes, and those criteria shall take precedent over these plans.
- 10. Certification will be required by a Professional Engineer licensed in the State of Connecticut that work has been completed in compliance with the approved drawings. A Final Location Plan, prepared by a licensed Land Surveyor in the State of Connecticut, will be required for submission.
- 11. All work within the City of Stamford Right-of-Way shall be constructed to City of Stamford requirements, the State of Connecticut Basic Building Code, and the Connecticut Guidelines for Soil Erosion and Sedimentation Control.
- 12. THE ENGINEERING BUREAU OF THE CITY OF STAMFORD SHALL BE NOTIFIED THREE DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AFFECTING THE CITY RIGHT-OF-WAY.
- 13. The project engineer shall be notified a minimum of three working days prior to the commencement of construction.
- 14. Appropriate measure shall be taken to control any sedimentation and erosion which may result during construction. Sedimentation and erosion controls shall be maintened and repaired as necessary throughout construction until the site is stabilized.
- 15. All material excavated during construction must be disposed of legally off site.
- 16. Significantly sized trees shall be preserved to the greatest extent feasible.
- 17. Pavement replacement shall be bituminous concrete, placed in accordance with the City of Stamford standards and/or Connecticut State Highway specifications.
- 18. Shoulders and disturbed areas shall receive four inches of topsoll; fine graded and seeded as soon as practical to prevent erosion.
- 19. Existing inverts on sanitary sewer lateral and utility services shall be field verified where appropriate, before commencing construction. The contractor shall excavate test pits wherever design conflicts may occur. The contractor shall notify the project engineer of the test pit schedule. Design conflicts if any, shall be brought to the immediate attention of the project engineer. Plate or backfill and patch test pits as directed by the project engineer.
- 20. Trees within the City of Stamford Right-of-Way, designated to be removed, shall be posted in accordance with the Tree Ordinance.
- 21. All retaining walls greater than three (3) feet are required to be designed and inspected during construction by a Professional Engineer licensed in the State of Connecticut. Certification of the retaining wall shall be required prior to the issuance of a Certificate of Occupancy and/or bond release.
- 22. Certification will be required by a professional engineer licensed in the State of Connecticut that work has been completed in compliance with the approved
- 23. A Final Location Plan will be required by a professional land surveyor licensed in the State of Connecticut.
- 24. Granite block or other decorative stone or brick, depressed curb, driveway apron, and curbing within the City of Stamford Right-of-Way shall require a waiver from the City of Stamford Engineering Bureau.
- 25. All PVC pipe shall conform to ASTM D-3034 "standard specification for type PSM-Poly Vinyl Chloride (PVC) sewer pipe and fitting", or engineer approved equivalent (SDR-35).
- 26. Bedding and backfill material shall conform to ASTM D2321 specification "standard recommended practice for underground installations of flexible thermoplastic sewer pipe (PVC)".
- 27. The contractor shall provide all the equipment, tools, labor and materials necessary to satisfactorily clean and remove all visible obstructions, dirt, sand, sludge, roots, gravel, stones, etc., from the designated drains
- 28. Processed aggregate shall be in accordance with the City of Stamford standards and/or Connecticut State Highway specifications.
- 29. A 6" layer of crushed stone shall be placed under any exterior decks and/or open stairways.
- 30. Contractor shall coordinate with Project Engineer and Stamford WPCA to confirm invert of existing sewer collector prior to installation of private sewer line and adjust pipe slope as required. Confirm with Project Engineer and WPCA.
- 31. Refer to architectural plans as prepared by Aivalis Architects & Developers.

CITY OF STAMFORD NOTES:

- 1) A Street Opening Permit is required for all work within the City of Stamford
- All work within the City of Stamford Right-of-Way shall be constructed to City of Stamford requirements, the State of Connecticut Basic Building Code, and the Connecticut Guidelines for Soil Erosion and Sedimentation Control.
- 3) The City of Stamford Engineering Bureau shall be notified three days prior to the commencement of any construction within the City of Stamford Right-of-Way.
- 4) Trees within the City of Stamford Right-of-Way, designated to be removed, shall be posted in accordance with the Tree Ordinance.
- 5) Prior to any excavation the Contractor and/or Applicant/Owner, in accordance with Public Act 77-350, shall be required to contact "Call Before You Dig" at 1-800-922-4455 for mark out of underground utilities.
- 6) All retaining walls three (3) feet or higher measured from finished grade at the bottom of the wall to finished grade at the top of the wall and retaining walls supporting a surcharge or impounding Class I, II or III—A liquids are required to have a Building Permit. Retaining walls shall be designed and inspected during construction by a Professional Engineer licensed in the State of Conneticut. Prior to the issuance of a Certificate of Occupancy, retaining walls shall be certified by a Professional Engineer licensed in the State of Connecticut.
- 7) Certification will be required by a professional engineer licensed in the State of Connecticut that work has been completed in compliance with the approved
- 8) A Final Survey Map depicting "As-built" site conditions shall be prepared by a professional land surveyor licensed in the State of Connecticut and submitted to the Engineering Bureau.
- Connection to a city-owned storm sewer shall require the Waiver Covering Storm
- 10) Granite block or other decorative stone or brick, depressed curb, driveway apron, and curbing within the City of Stamford Right-of-Way shall require the Waiver Covering Granite Block Depressed Curb and Driveway Aprons to be filed with the City of Stamford Engineering Bureau.
- Sedimentation and erosion controls shall be maintained and repaired as necessary throughout construction until the site is stabilized.
- 12) To obtain a Certificate of Occupancy, submital must include all items outlined in the Checklist for Certificate of Occupancy (Appendix D of the City of Stamford Drainage Manual).

WATER POLLUTION CONTROL AUTHORITY NOTES:

- a. Proposed sanitary tie-in connection must be an approved saddle connection to the public sewer line if a direct connection to the sewer collector in the street is required. A chimney connection may be required to ensure the private lateral slope does not exceed 2%, and it must meet either the City standard specification and/or the approved modular style chimney design requirements. Both saddle and/or chimney connections must be encased in concrete.
- b. Applicant and/or Contractor needs to schedule the tie-in activity with Stamford WPCAs Collection Systems Supervisor at least 3-days in advance for scheduling WPCA personnel to witness and photograph the sewer tie-in connection. Anytime between 7:30 a.m. and 2 p.m. (Mon. thru Fri.).
- c. The contractor is not to break into the public sewer line without WPCA being present.
- d. The sewer tie-in distance information from at least 2-permanent stations, i.e., telephone pole and number, distance from nearest manhole cover, corner of building with address number, etc., and depth of tie-in, along with a sketched drawing depicting these monuments and distances must be submitted for final approval.
- e. A connection charge may be assessed by the SWPCA in accordance with Section 200-41. Please be aware that the connection charge based on the new development and prior use of the site can be substantial. The connection charge becomes due at the time the CO is issued.
- f. Upon receipt of WPCAs approval, the owner/permit applicant must coordinate and schedule the reconnection activity of the new lateral to the existing stub lateral with the City Plumbing inspector.
- g. Before connecting to the stub lateral, the owner/permit applicant must videotope this stub lateral to the public sanitary sewer line to ensure there are no obstructions and the lateral is in good operational condition. A copy of this video must be provided to WPCA for review and approval.



-PAVED ROADWAY

DRIVEWAY ENTRANCE

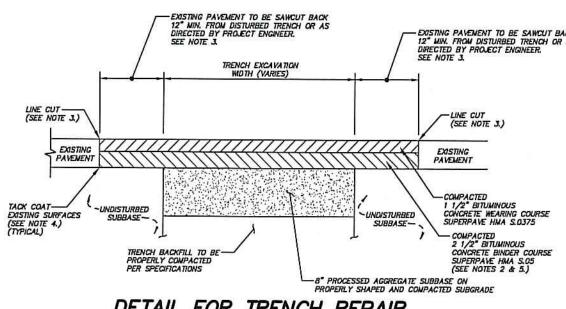
TEMPORARY STOCKPILE DETAIL

NOTE: STOCKPILES SHALL NOT BE PLACED OVER ANY INFILTRATION SYSTEM.

MAINTAIN EXISTING

CONSTRUCTION ENTRANCE

ANTI-TRACKING PAD DETAIL



1-1/2" FINISH COURSE-

2-1/2" BINDER COURSE-

—1 1/2" BITUMINOUS CONCRETE WEARING COURSE (CLASS-2)

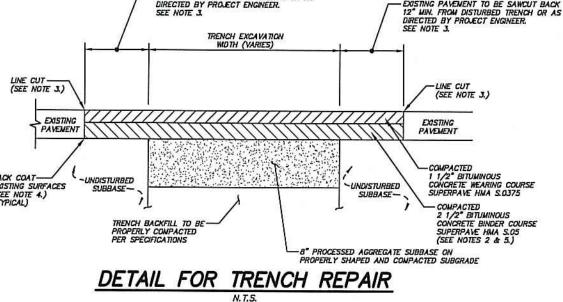
10" PROCESSED

ASPHALT DRIVEWAY PATCH DETAIL

AGOREGATE BASE

-2 1/2" BITUMINOUS CONCRETE BINDER COURSE (CLASS-1)

- 3. CUTBACKS SHALL BE MADE IMMEDIATELY PRIOR TO TRENCH REPAIR AND NOT WHEN
 TRENCH IS EXCAVATED. CUTBACKS SHALL BE STRAIGHT AND EVEN TO ELIMINATE IRREGULAR
- 4. TACK COAT SHALL BE APPLIED TO THE FULL DEPTH OF EXISTING PAVEMENT ALONG THE PERIMETER EDGES OF THE TRENCH AND ALL CONTACT SURFACES SUCH AS CURBING AND STRUCTURES (MANHOLES AND CATCH BASINS). TACK COAT SHALL BE APPLIED BETWEEN LIFTS/COURSES THAT HAVE BEEN IN PLACE LONGER THAN FIVE (5) DAYS.
- 5. HMA S.O5 BINDER COURSE SHALL NOT BE PLACED IN LIFTS GREATER THAN 2 1/2" COMPACTED THICKNESS.



LIP CURBING TO BE MACHINE—FORMED BITUMINOUS CONCRETE

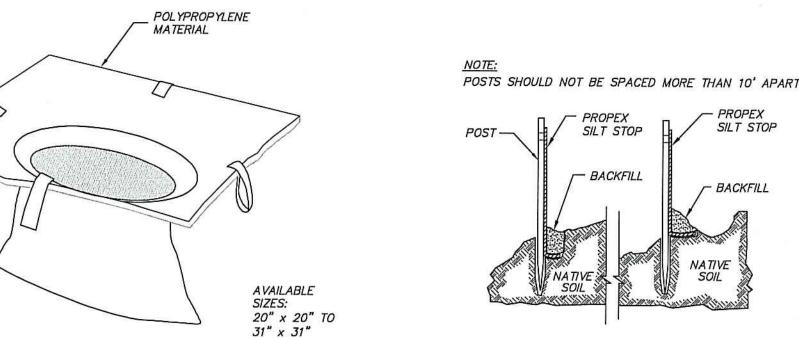
4" BITUMINOUS CONCRETE

ROADWAY ASPHALT CURB DETAIL

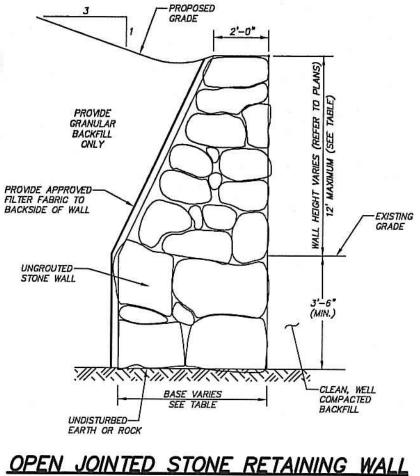
-10" PROCESSED AGGREGATE BASE

1. ALL WORK TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONNECTICUT DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION, LATEST EDITION, OR AS DIRECTED BY PROJECT ENGINEER.

- SHOULD THE TOTAL THICKNESS OF EXISTING PAVEMENT EXCEED THICKNESS OF PROPOSED BINDER PLUS WEARING COURSE, THE THICKNESS OF BINDER COURSE SHALL BE INCREASED SUCH THAT THE TOTAL THICKNESS OF REPAIR BITUMINOUS PAVEMENT MATCHES EXISTING.



INSTALLATION DETAIL SEDIMENT CONTROL FABRIC



STONE RETAINING WALL NOTES

WALL TABLE

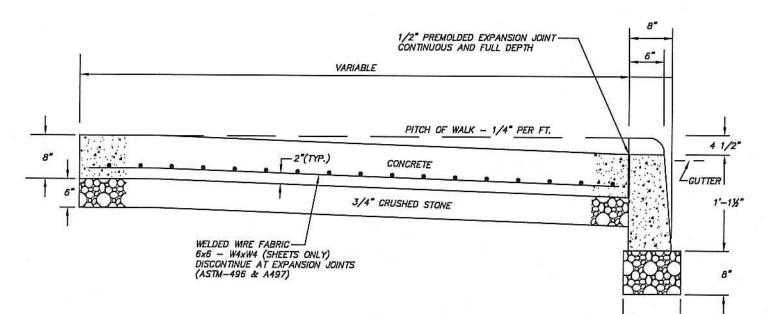
ALL WORK SHALL COMPLY WITH THE STATE AND LOCAL BUILDING CODES AND SPECIFICATIONS. WALL IS DESIGNED AS UNGROUTED.

VERIFY ALL DIMENSIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO ROCCO V. D'ANDREA, INC. THE CONTRACTOR SHALL VERIFY ALL DRAWINGS FOR COORDINATION BETWEEN TRADES. CONTRACTOR SHALL CHECK ALL DIMENSIONS AND ACCEPT FULL RESPONSIBILITY FOR DIMENSIONAL

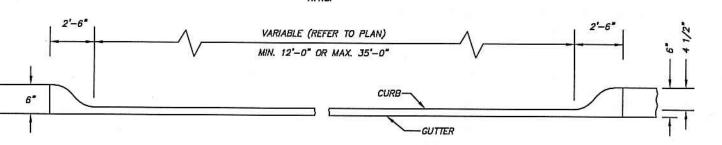
STONE WALLS SHALL BEAR ON UNDISTURBED SOIL OR ROCK HAVING A MINIMUM SAFE BEARING CAPACITY OF 2 TONS PER SQUARE FOOT, THIS VALUE SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER FOR THE SPECIFIC APPLICATION AND LOCATION.

TRUCKS, BULLDOZERS OR OTHER HEAVY EQUIPMENT SHALL BE OPERATED WITH CAUTION AND IN SUCH A MANNER AS TO CAUSE NO DAMAGE TO RETAINING WALL SYSTEMS.

BACKFILL WITH APPROVED GRANULAR MATERIAL: BACKFILLING FRONT OF WALL SHALL BE DONE IN LAYERS, NOT TO EXCEED 10 INCHES. COMPACTION SHALL BE 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT. EXCAVATION MUST BE FREE OF WATER WHILE STONE WORK IS IN PROGRESS. ALL STONE SHALL HAVE A COMPRESSIVE STRENGTH OF AT LEAST 2,000 PSI. STONE SIZES SHALL BE GRADED FROM 25% TO 100% OF THE WALL WIDTH, SMALLER STONES MAY BE USED TO LOCK THE WALL AS REQUIRED, BUT THE AMOUNT SHALL NOT EXCEED 20% OF THE TOTAL VOLUME OF THE WALL AND THESE STONES SHALL BE EVENLY DISTRIBUTED.



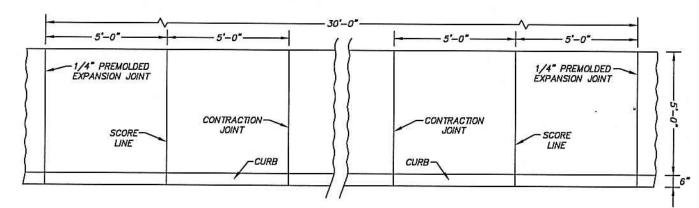
STANDARD DRIVEWAY & HEAVY DUTY DRIVEWAY



TYPICAL CONSTRUCTION OF CURB AT DRIVEWAY

1. ALL REINFORCING SHALL BE SUPPORTED ON CHAIRS OR OTHER POSITIVE TYPE SUPPORTS APPROXIMATELY ONE PER 25 SQ. FT. 2. CONCRETE SHALL BE CLASS "C" CEMENT TYPE II, 3000 PSI 3. AIR ENTRAINMENT SHALL BE BETWEEN 6 - 7%

REINFORCED CONCRETE DRIVEWAY ENTRANCE



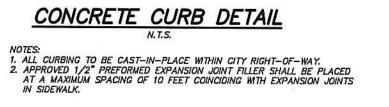
CONCRETE FOR THE SIDEWALK SHALL BE PLACED TO A UNIFORM DEPTH OF FIVE (5) INCHES UPON A SIX (6) INCH 3/4" CRUSHED STONE BASE. THE SURFACE EDGES OF EACH PANEL SHALL BE ROUNDED TO A RADIUS OF 3/32 INCH.

CONCRETE SHALL BE CLASS "C" CEMENT TYPE II (3,000 PSI MIN.) AIR ENTRAINMENT SHALL BE BETWEEN 6-7%. A 1/2" THICK APPROVED PREMOLDED BITUMINOUS EXPANSION JOINT SHALL BE PLACED TRANSVERSELY EVERY 20 FT. MAX. AND BETWEEN NEW CONCRETE CURBING AND SIDEWALKS. A 1/2" THICK APPROVED PREMOLDED BITUMINOUS EXPANSION JOINT SHALL BE UTILIZED BETWEEN ALL RIGID STRUCTURES (INCLUDING WALLS) AND NEW SIDEWALK WORK.

A MARKED OR SCORED CONTROL JOINT SHALL BE MADE AT FIVE FOOT INTERVALS BETWEEN BITUMINOUS JOINTS. CONTROL JOINTS SHALL BE 1 1/4" DEEP. ADDITIONAL CONTROL JOINTS SHALL BE PLACED AS REQUIRED TO ELIMINATE ANY CONDITION WHICH WILL CAUSE STRESS VERTICES. (EXAMPLE AT CORNERS OF STRUCTURES)

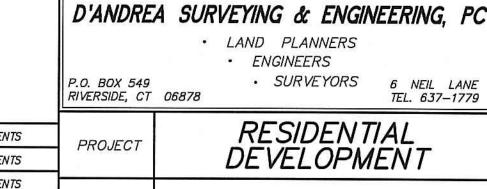
ANY CHANGES REQUIRED BY LOCAL FIELD CONDITIONS SHALL BE MADE ONLY BY ORDER OF THE PROJECT ENGINEER OR THE CITY ENGINEER. PLAN OF A SECTION OF CONCRETE SIDEWALK

IN CITY RIGHT-OF-WAY

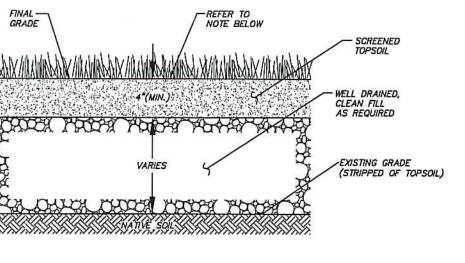


/-3/4" RADIUS

-3/4" CRUSHED STONE



5 4	11-16-23 11-6-23	RESPOND TO ENG COMMENTS RESPOND TO ENG COMMENTS	PROJECT	RESIDENTIAL DEVELOPMENT
3	10-2-23	RESPOND TO ENG COMMENTS		
2	9-21-23	RESPOND TO ENG COMMENTS	PREPARED FOR	G&T TAYLOR STREET LL
1	7-24-23	MINOR REVISIONS] / 0//	Con miles on content
0	5-2-23	INITIAL SUBMISSION		
REV.	DATE	DESCRIPTION		12 & 18 TAYLOR STREET,
MATTH	45	MARV CT. PE No. 36982	LOCATION	STAMFORD, CONNECTICL
IMPRIN	NT OF THE E	THIS MAP, BEARING AN ORIGINAL ENGINEER'S EMBOSSED SEAL SHALL O BE TRUE, VALID COPIES.	4 of 5	NOTES AND DETAILS



LAWN RESTORATION DETAIL

INSTALL SUB-BASE OF FREE DRAINING BACKFILI

ON UNSTABLE SOILS

OR ROAD STABILIZATION — GEOTEXTILE AS NECESSARY

REMOVE TOPSOIL AND

ORGANICS PRIOR TO PLACEMENT OF CRUSHED STONE TO 6" DEPTH (MIN.)

1. Land disturbance shall be kept to a minimum. All disturbed areas shall be planted in where permanent plantings are called for as soon as practicable. Seed and mulch disturbed areas with grass seed where permanent plantings are not called for, as soon as practicable. Prepare seedbed (4" thick minimum) with topsoil. Seed, rake, roll, water and mulch areas according to mixes below. Water as often as necessary (up to 3 times per day) to establish cover. Mulch seeded areas at 1 to 2 tons/acre with salt hay. Maintain mulch and watering until grass is 3" high with 85% cover. Reseed or overseed if necessary.

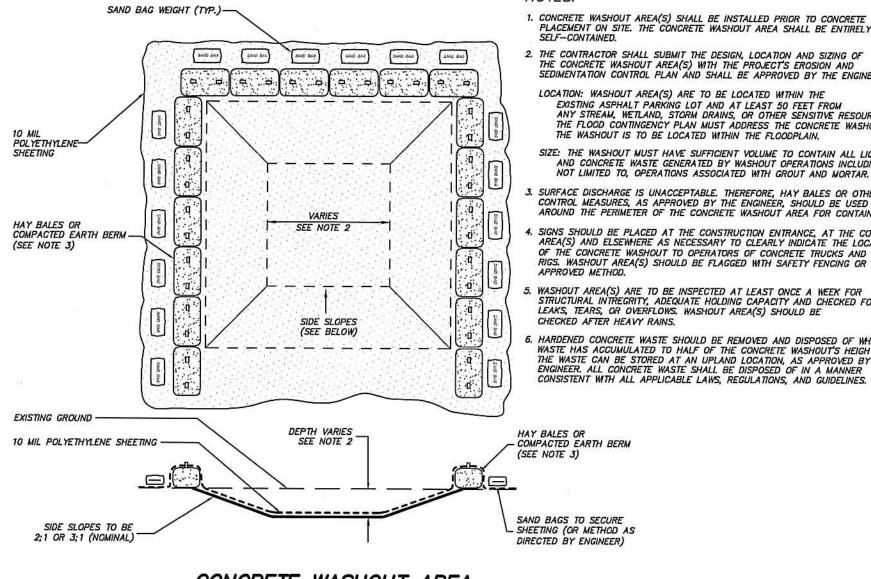
Temporary Seed Mix: Perennial ryegrass 40 lbs/ac.

(AS REQUIRED)

GRADATION SHALL BE DOT No. 3 OR — ASTM C-33 No. 3

Perennial ryegrass 5 lbs/ac. (1 lb/1000 sf.)

Optimum Seeding Dates: April 15 through June 15 August 15 through October 1 45 lbs/ac. (1 lb/1000 sf.)



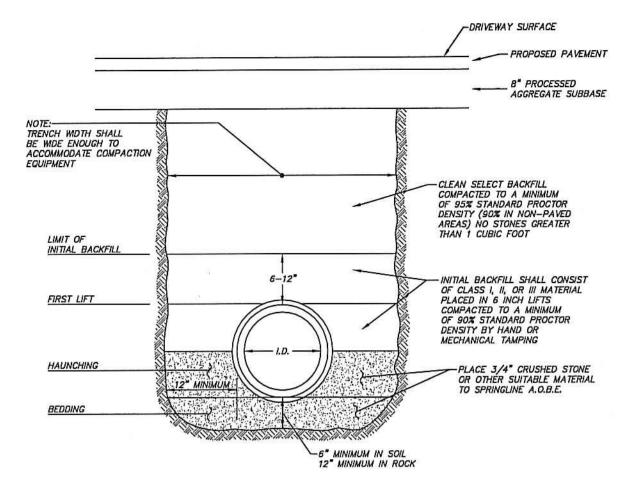
Permanent Lawns: Kentucky Bluegrass 20 lbs/ac. Creeping red fescue 20 lbs/ac. 2. THE CONTRACTOR SHALL SUBMIT THE DESIGN, LOCATION AND SIZING OF THE CONCRETE WASHOUT AREA(S) WITH THE PROJECT'S EROSION AND SEDIMENTATION CONTROL PLAN AND SHALL BE APPROVED BY THE ENGINEER. LOCATION: WASHOUT AREA(S) ARE TO BE LOCATED WITHIN THE EXISTING ASPHALT PARKING LOT AND AT LEAST 50 FEET FROM ANY STREAM, WETLAND, STORM DRAINS, OR OTHER SENSITIVE RESOURCE. THE FLOOD CONTINGENCY PLAN MUST ADDRESS THE CONCRETE WASHOUT IF THE WASHOUT IS TO BE LOCATED WITHIN THE FLOODPLAIN. SIZE: THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS INCLUDING, BUT NOT LIMITED TO, OPERATIONS ASSOCIATED WITH GROUT AND MORTAR. 3. SURFACE DISCHARGE IS UNACCEPTABLE. THEREFORE, HAY BALES OR OTHER CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHOULD BE USED AROUND THE PERIMETER OF THE CONCRETE WASHOUT AREA FOR CONTAINMENT. SIGNS SHOULD BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CONCRETE AREA(S) AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS. WASHOUT AREA(S) SHOULD BE FLAGGED WITH SAFETY FENCING OR OTHER 5. WASHOUT AREA(S) ARE TO BE INSPECTED AT LEAST ONCE A WEEK FOR STRUCTURAL INTREGRITY, ADEQUATE HOLDING CAPACITY AND CHECKED FOR LEAKS, TEARS, OR OVERFLOWS. WASHOUT AREA(S) SHOULD BE CHECKED AFTER HEAVY RAINS. S. HARDENED CONCRETE WASTE SHOULD BE REMOVED AND DISPOSED OF WHEN THE WASTE HAS ACCUMULATED TO HALF OF THE CONCRETE WASHOUT'S HEIGHT.

THE WASTE CAN BE STORED AT AN UPLAND LOCATION, AS APPROVED BY THE ENGINEER. ALL CONCRETE WASTE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH ALL APPLICABLE LAWS, REGULATIONS, AND GUIDELINES.

PIG™- STORM DRAIN FILTER DETAIL

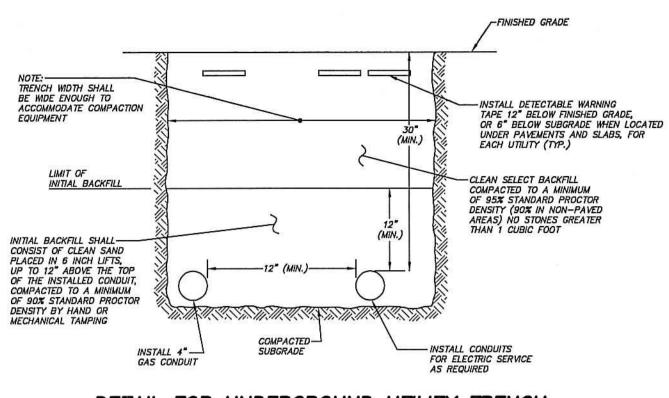
CONCRETE WASHOUT AREA

Sewer Connection to be filed with the City of Stamford Engineering Bureau.



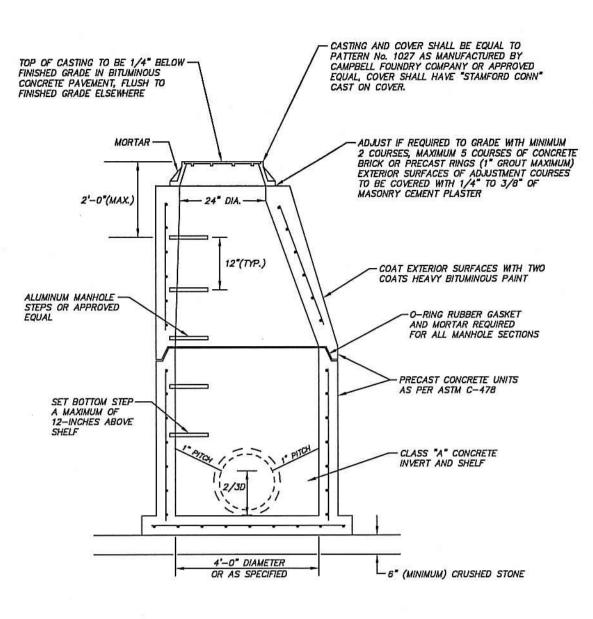
DETAIL FOR PVC SANITARY SEWER AND STORM DRAIN INSTALLATION

- 1. REFER TO ASTM D2321 (STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY—FLOW APPLICATIONS) FOR TRENCHING SPECIFICATIONS.
- 2. THIS SECTION IS DESIGNED TO RESIST UPLIFT FLOOD FORCES ASSOCIATED WITH THE MINIMUM ELEVATION STANDARD AS SPECIFIED IN THE ZONING REGULATIONS.

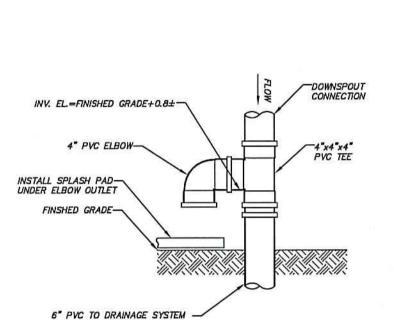


DETAIL FOR UNDERGROUND UTILITY TRENCH

1. COORDINATE NUMBER AND SIZE OF CONDUIT WITH EACH RESPECTIVE UTILITY COMPANY PRIOR TO INSTALLATION.



SANITARY SEWER MANHOLE DETAIL



DOWNSPOUT OVERFLOW DETAIL

SPECIFICATIONS:

WIDTH=11.5" LENGTH=24.0"

HEIGHT=2.0"

RESIDENTIAL SPLASH PAD DETAIL

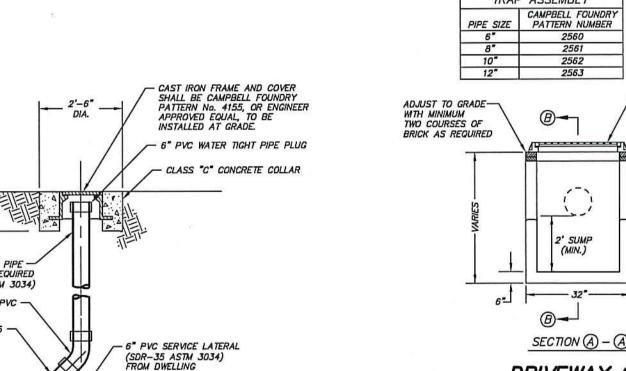


TABLE FOR CATCH BASIN TRAP ASSEMBLY

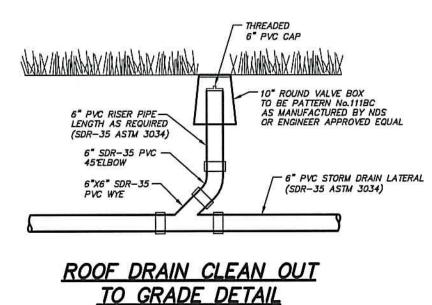
2' SUMP (MIN.)

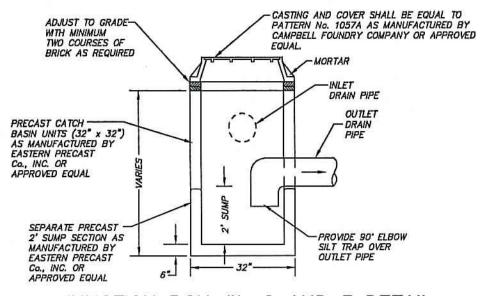
SECTION (A) - (A)

B→



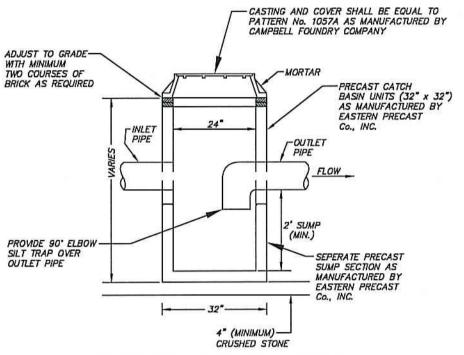
CLEAN OUT IN DRIVEWAY





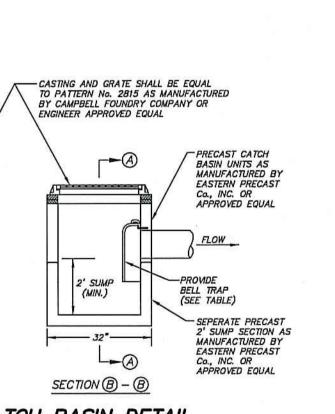
JUNCTION BOX #1. 2 AND 3 DETAIL

JUNCTION BOX SHALL HAVE A MINIMUM SUMP OF 2 FEET AS MEASURED FROM THE LOWEST PIPE INVERT ELEVATION TO THE INTERIOR BOTTOM OF THE STRUCTURE. CONTRACTOR SHALL PURCHASE AND INSTALL A SEPARATE SUMP SECTION. NO OUTLET OR INLET PIPES SHALL PENETRATE THE BOTTOM SUMP SECTION. REFER TO DEVELOPMENT PLAN FOR SIZES, LOCATIONS, AND INVERT ELEVATION OF ALL PIPES.



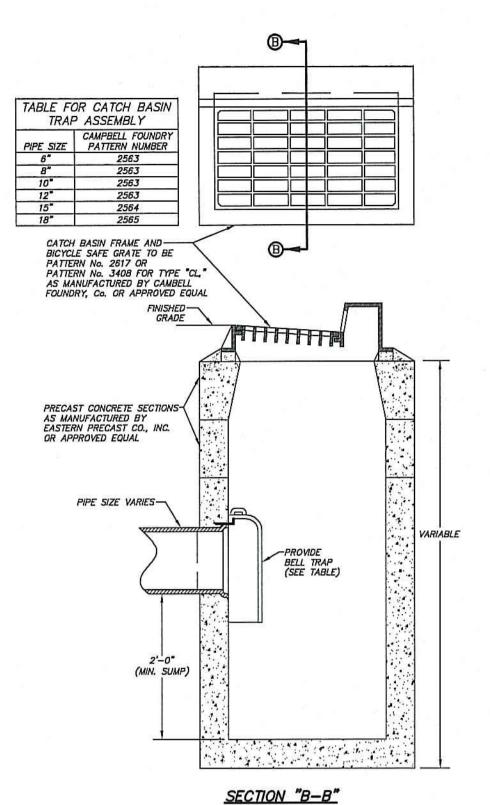
JUNCTION BOX #4 DETAIL

JUNCTION BOX SHALL HAVE A MINIMUM SUMP OF 2 FEET AS MEASURED FROM THE LOWEST PIPE INVERT ELEVATION TO THE INTERIOR BOTTOM OF THE STRUCTURE. CONTRACTOR SHALL PURCHASE AND INSTALL A SEPARATE SUMP SECTION. NO OUTLET OR INLET PIPES SHALL PENETRATE THE BOTTOM SUMP SECTION. REFER TO DEVELOPMENT PLAN FOR SIZES, LOCATIONS, AND INVERT ELEVATION OF ALL PIPES.



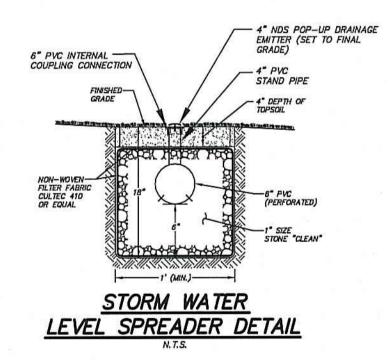
DRIVEWAY CATCH BASIN DETAIL TYPE "CL"

SUMP NOTE: CATCH BASIN SHALL HAVE A MINIMUM SUMP OF 2 FEET AS MEASURED FROM THE LOWEST PIPE INVERT ELEVATION TO THE INTERIOR BOTTOM OF THE STRUCTURE. CONTRACTOR SHALL PURCHASE AND INSTALL A SEPARATE SUMP SECTION. NO OUTLET OR INLET PIPES SHALL PENETRATE THE BOTTOM SUMP SECTION.



SINGLE CATCH BASIN DETAIL (TYPE "C")

CATCH BASIN SHALL HAVE A MINIMUM SUMP OF 2 FEET AS MEASURED FROM THE LOWEST PIPE INVERT ELEVATION TO THE INTERIOR BOTTOM OF THE STRUCTURE. CONTRACTOR SHALL PURCHASE AND INSTALL A SEPARATE SUMP SECTION. NO OUTLET OR INLET PIPES SHALL PENETRATE THE BOTTOM SUMP SECTION. REFER TO DEVELOPMENT PLAN FOR SIZES, LOCATIONS, AND INVERT ELEVATIONS OF ALL PIPES.



D'ANDREA SURVEYING & ENGINEERING, PC LAND PLANNERS ENGINEERS

SURVEYORS

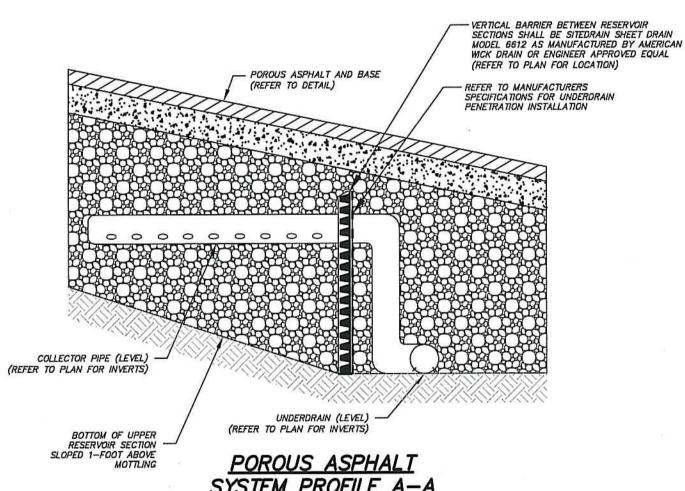
6 NEIL LANE

TEL. 637-1779

5	11-16-23	RESPOND TO ENG COMMENTS	PROJECT	RESIDENTIAL DEVELOPMENT
3	11-6-23 10-2-23	RESPOND TO ENG COMMENTS RESPOND TO ENG COMMENTS		DEVELOPMENT
2	9-21-23	RESPOND TO ENG COMMENTS	PREPARED FOR	G&T TAYLOR STREET LLC
1	7-24-23	MINOR REVISIONS	7 0/1	
0	5-2-23	INITIAL SUBMISSION		40 4 40 744 00 070557
REV.	DATE	DESCRIPTION		12 & 18 TAYLOR STREET,
MATTH	HEW M. KIVI	JARV CT. PE No. 36982 11-16-23	LOCATION	STAMFORD, CONNECTICU
IMPRIN	COPIES OF	THIS MAP, BEARING AN ORIGINAL ENGINEER'S EMBOSSED SEAL SHALL TO BE TRUE, VALID COPIES.	5 of 5	DETAILS

P.O. BOX 549

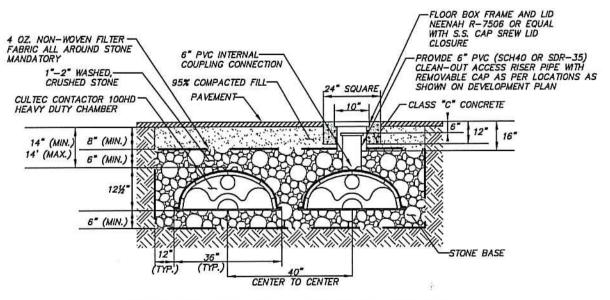
RIVERSIDE, CT 06878



SYSTEM PROFILE A-A

1. THE UNDERLYING SOIL SHALL BE SCARIFIED OR TILLED TO IMPROVE INFILTRATION BEFORE APPLYING THE RESERVOIR COURSE. 2. INSTALL IMPERVIOUS LINER ALONG THE BOTTOM AND SIDES OF THE RESERVOIR COURSE WITHIN 10 FEET OF A BUILDING FOUNDATION. 3. IMPERVIOUS LINER SHALL BE ULTRAVIOLET-RESISTANT POLY-LINER, 30-MILS THICK

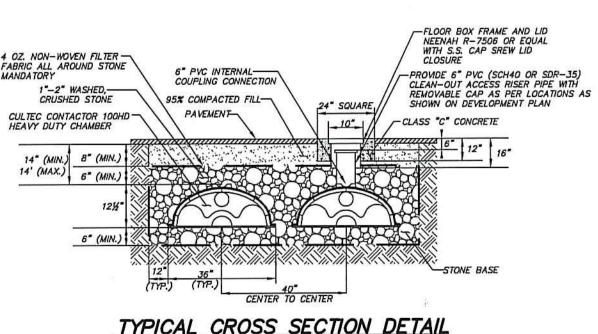
4. DO NOT CONNECT PERFORATED DISTRIBUTION PIPES TO THE UNDERDRAIN.



TYPICAL CROSS SECTION DETAIL CULTEC CHAMBER SYSTEM CONTACTOR 100HD PAVED (H-20) LOADING

NOTES: 1. STORMWATER CHAMBERS SHALL BE MANUFACTURED BY CULTEC, INC. (800) 428-5832 OR ENGINEER APPROVED EQUAL.

2. ALL CHAMBERS SHALL BE INSTALLED ACCORDING TO MANUFACTURER SPECIFICATIONS. 3. THE SOILS BENEATH THE INFILTRATION SYSTEM SHALL BE SCARIFIED OR TILLED TO IMPROVE INFILTRATION.



MATERIAL: ASTM No. 57 RESERVOIR COURSE THICKNESS: REFER TO SHEET 2 OF 5 MATERIAL: ASTM No. 2 DISTRIBUTOR/COLLECTOR PERFORATED PVC (REFER TO PLAN FOR INVERTS AND ELEVATIONS) POROUS ASPHALT AND STONE RESERVOIR DETAIL 1. 2" STONE MEETS ASTM No. 2 STANDARDS. 3/4" STONE MEETS ASTM No. 57 STANDARDS. 2. THE UNDERLYING SOIL SHALL BE SCARIFIED OR TILLED TO IMPROVE INFILTRATION BEFORE APPLYING THE RESERVOIR COURSE.

3. WHERE THE SYSTEM IS LOCATED WITHIN 10 FEET OF A RETAINING WALL OR FOUNDATION, INSTALL UV-RESISTANT IMPERMEABLE 30 MIL POLYLINER ON BOTTOM AND SIDES OF THE STONE RESERVOIR AS ORDERED BY THE PROJECT ENGINEER.

4. NON-WOVEN GEOTEXTILE FILTER FABRIC IS RECOMMENDED ALONG THE SIDES. FILTER FABRIC SHALL NOT BE USED ALONG THE BOTTOM OR BETWEEN LAYERS.

POROUS ASPHALT

THICKNESS: 4"

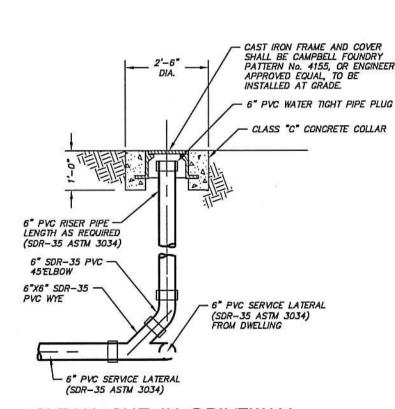
→ OPEN-GRADED BASE

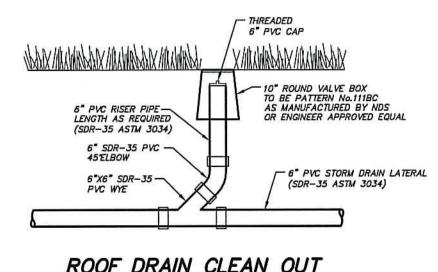
THICKNESS: 5"

5. EACH STONE LAYER SHALL BE COMPACTED BEFORE APPLYING THE LAYER ABOVE.

NOTES:

6. ADD ADDITIONAL RESERVOIR COURSE AS NECESSARY TO PARALLEL THE FINAL GRADE. 7. THE POROUS ASPHALT SHALL BE PROTECTED FROM SEDIMENTS DURING CONSTRUCTION TO PREVENT







18 TAYLOR STREET STAMFORD CT BUILDING A



EXISTING HOUSE TO BE REPAINTE AND REPAIRED. SEE PROPOSED ELEVATIONS AND RENDERINGS FO DETAILS.

EXISTING FENCE TO BE REPLACED WITH WHITE PVC FENCE MATCHING EXISTING STYLE AND SIZE

EXISTING STREET FACADE

JIA HUA ARCHITECT

NUMBER DATE REVISED BY DESCRIPTIO

BUILDING A
RESTORATION &
RENOVATION

Project Overview

AWINGS PROVIDED BY:

DATE:

9/22/2023

SCALE:

SHEET:



DATE:

9/22/2023

SCALE:

SHEET:

SHEET:



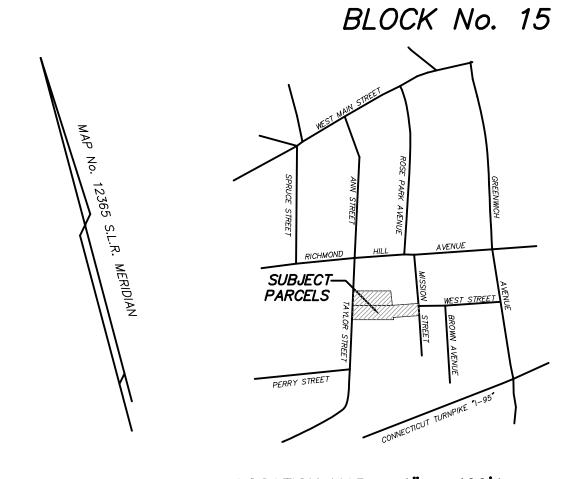
SCALE:

SHEET:

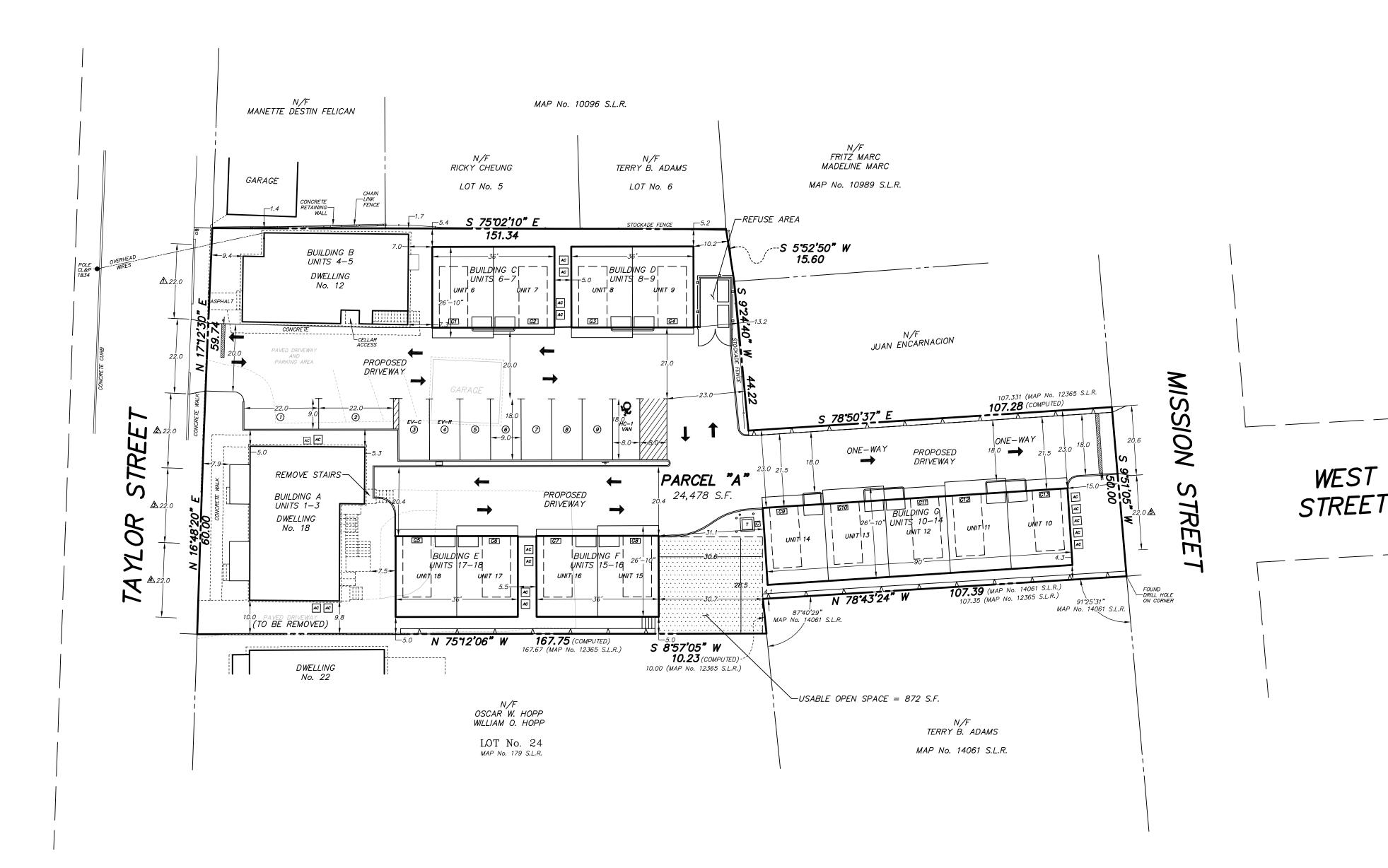


	PARKING SUMMARY — REQUIRE	<i>ס</i>		
RESIDENTIAL PARKING:				
REQUIRED (HISTORIC):	1/UNIT	18 X 1.0	=	18.0
		TOTAL REQUIRED	=	18

PARKING SUMMARY -	PR	OVIDED)
GARAGE	=	13	SPACES
UNCOVERED PARKING	=	7	SPACES
HANDICAPPED	=	1	SPACE
EV CHARGER PARKING	=	0.5	SPACE
EV RESERVED PARKING	=	1	SPACE
TOTAL PROVIDED	=	22.5	SPACES
AVAILABLE ON-STREET PARKING	=	5	SPACES



LOCATION MAP $-1" = 400'\pm$



LEGEND:

① UNCOVERED PARKING

© GARAGE PARKING

⚠ AVAILABLE ON—STREET PARKING

EXISTING BUILDING COVERAGE $LOT\ AREA = 24,478\ S.F.$ $DWELLING\ No.\ 12 = 1,238\ S.F.$ $GARAGE\ No.\ 12 = 362\ S.F.$ $DWELLING\ No.\ 18 = 1,322\ S.F.$ $TOTAL = 2,922\ S.F.$

TOTAL = 2,922 S.f.PERCENT COVERAGE = 11.9%

PERCENT COVERAGE = 35.6%

PROPOSED BUILDING COVERAGE

DWELLING No. 18 = 1,322 S.F.

LOT AREA = 24,478 S.F. DWELLING No. 12 = 1,238 S.F.

Building C = 1,896 S.F.

Building D = 2,361 S.F.

Building E = 1,896 S.F.

TOTAL = 8,713 S.F.

DEPICTING CONSOLIDATION OF PROPERTY AT 12 & 18
TAYLOR STREET IN STAMFORD, CONNECTICUT" DATED
MAY 4, 2023, PREPARED BY D'ANDREA SURVEYING &
ENGINEERING, P.C.

THIS MAP IS A ZONING LOCATION SURVEY. BOUNDARY
INFORMATION IS BASED ON A RESURVEY CONDUCTED

IN ACCORDANCE WITH HORIZONTAL ACCURACY CLASS

CONNECTICUT STATE AGENCIES, SECTIONS 20-300b-1

"A-2" AS DEFINED IN THE REGULATIONS OF

REFER TO A MAP ENTITLED "ZONING LOCATION SURVEY

THROUGH 20-300b-20.

MONUMENTATION HAS NOT BEEN SET AS A RESULT OF THIS SURVEY.

ONLY COPIES OF THIS MAP, BEARING AN ORIGINAL IMPRINT OF THE SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.

AREA = 24,478 S.F. (TOTAL)

REFER TO MAPS No. 179 AND 12365 S.L.R.

LAND LIES IN "R-MF" ZONING DISTRICT

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

D'ANDREA SURVEYING & ENGINEERING, PC

______, SURVEYOR

ROBERT L. LIDDEL JR., CT LS No. 15775

RIVERSIDE, CONNECTICUT JULY 24, 2023 OCTOBER 27, 2023

1 INCH = 20 FEET

SCALE

20 0 20

IN FEET

ZONING LOCATION SURVEY

DEPICTING

12 & 18 TAYLOR STREET

STAMFORD, CONNECTICUT

PREPARED FOR

G&T TAYLOR STREET LLC

18 TAYLOR STREET STAMFORD CT BUILDING C,D,E & F

NEW CONSTRUCTION

JIA HUA ARCHITECT

NUMBER DATE REVISED BY DESCRIPTION

TAYLOR STREET
SUILDING C,D,E &
NEW
CONSTRUCTION

Project Overview

DRAWINGS PROVIDED BY:

DATE:

10/30/2023

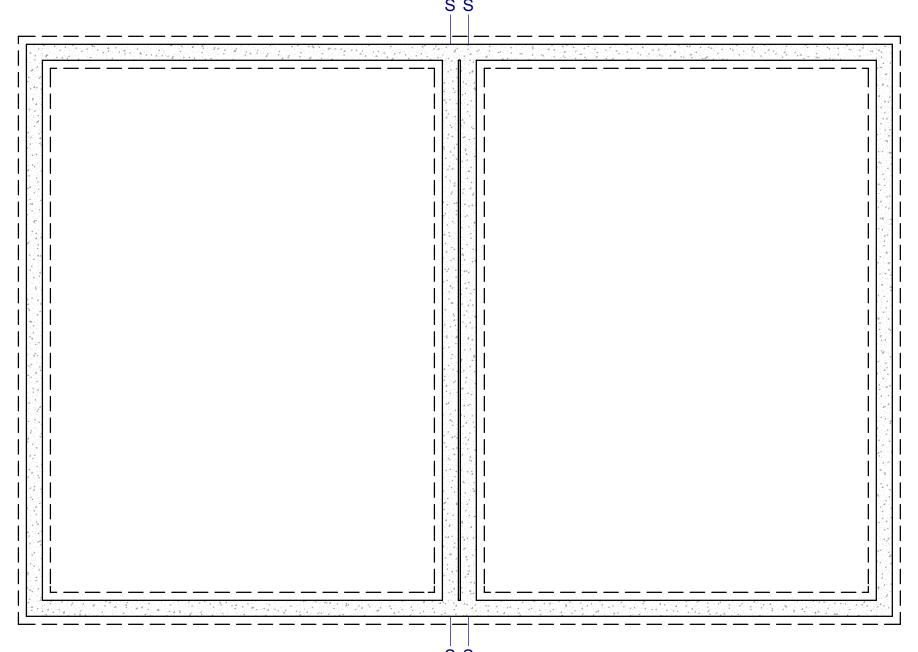
SCALE:

SHEET:

SCALE:

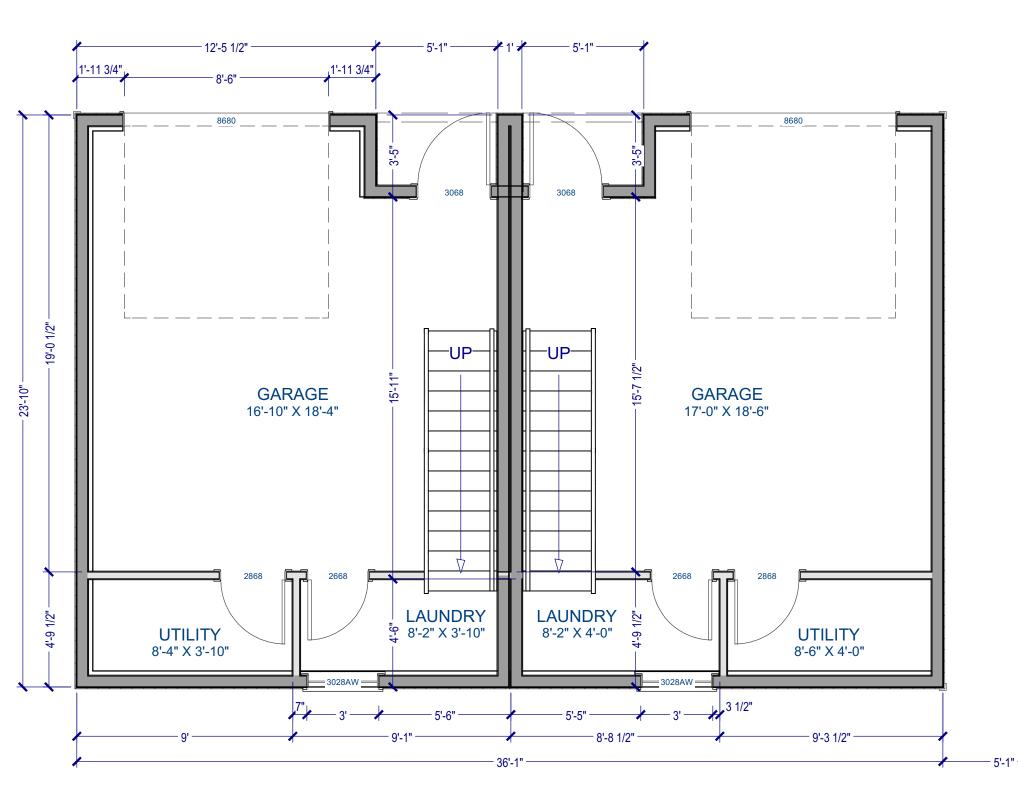
1/4"=1'-0"

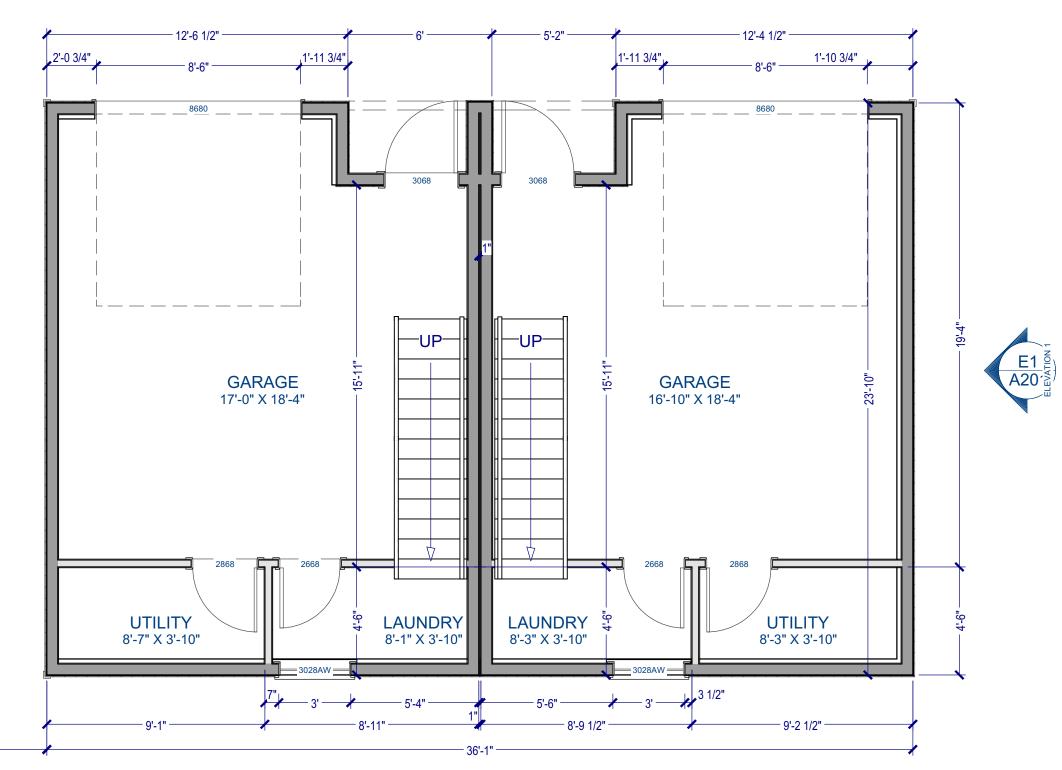
SHEET:



FOUNDATION PLAN



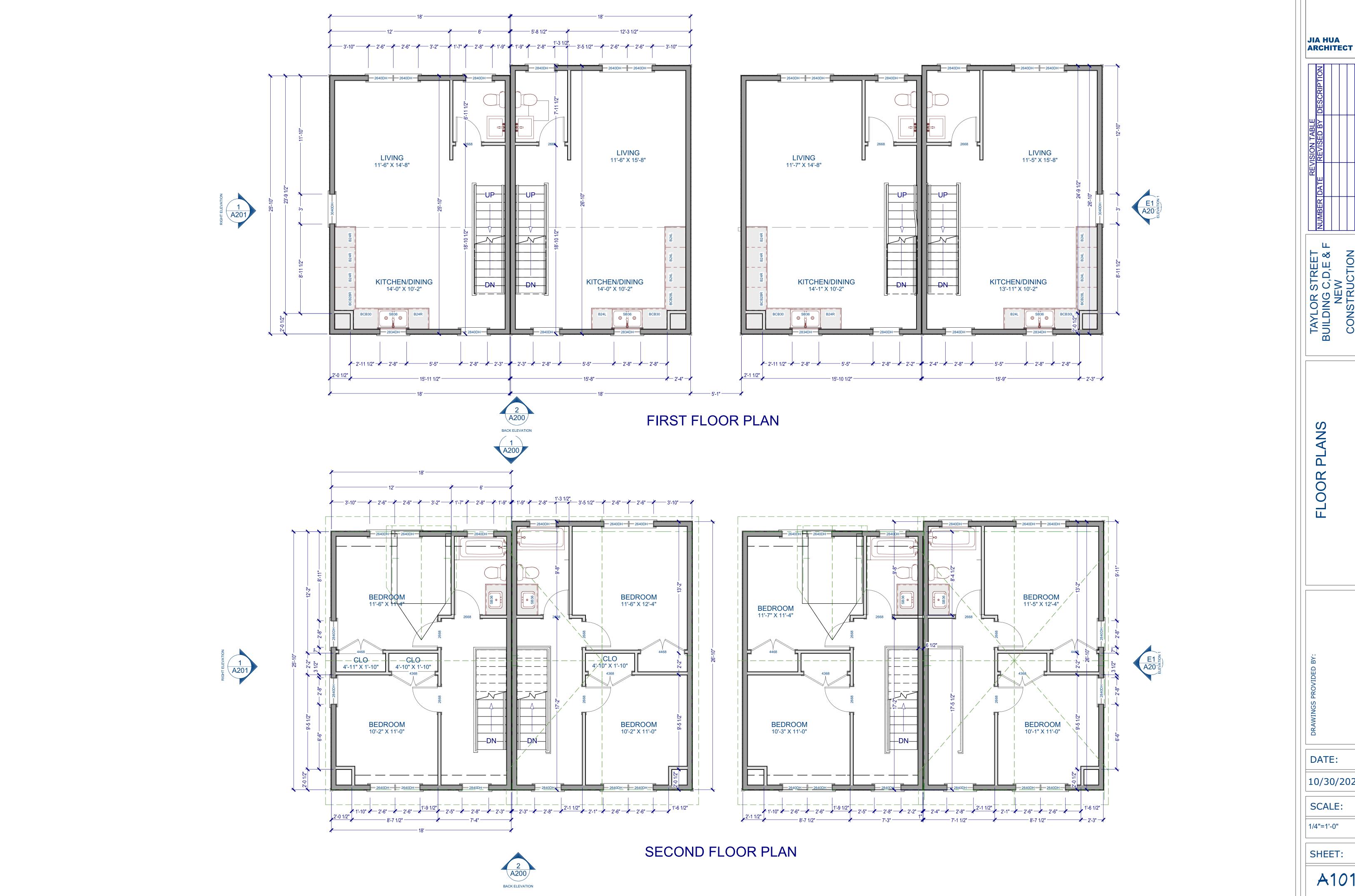








GARAGE FLOOR PLAN



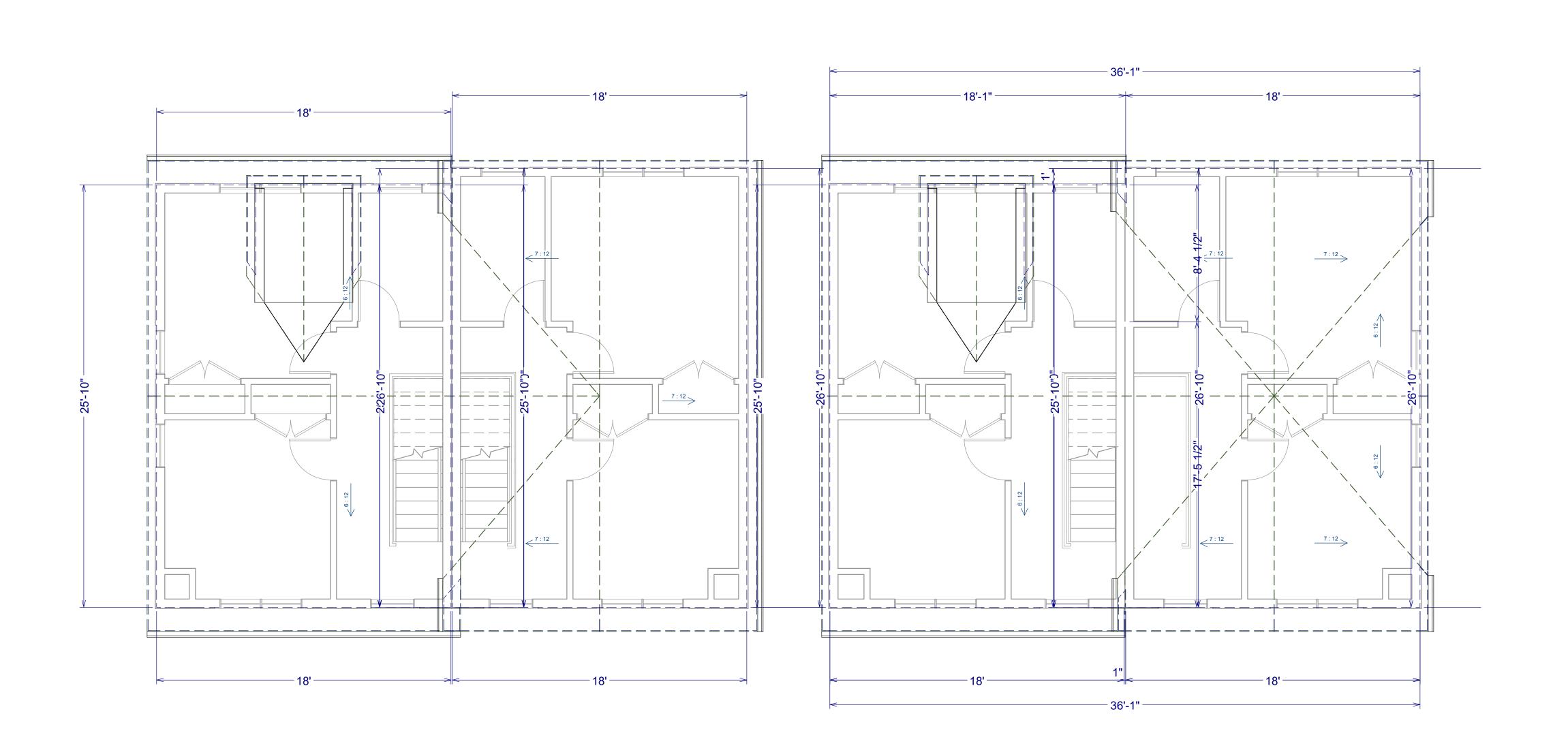
JIA HUA

10/30/2023

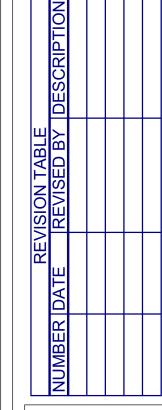
10/30/2023

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

SHEET:



ATTIC PLAN



BUILDING C,D,E & F
NEW
CONSTRUCTION

ELEVATIONS

DATE:

10/30/2023

SCALE:

1/4"=1'-0"

SHEET:





SER DATE REVISED BY DESCRIPTION

SUILDING C,D,E & F
NEW
CONSTRUCTION

RENDERING

DRAWINGS PROVIDED BY:

DATE:

10/30/2023

SCALE:

1/4"=1'-0"

SHEET:



ER DATE REVISED BY DESCRIPTION

JILDING C,D,E & F NEW CONSTRUCTION

RENDERING

RAWINGS PROVIDED BY:

DATE:

10/30/2023

SCALE:

1/4"=1'-0"

SHEET:

DRAINAGE SUMMARY REPORT

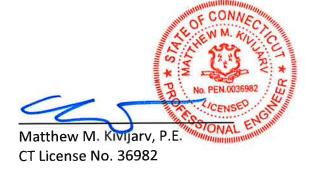
For

12 & 18 Taylor Street Stamford, Connecticut

Prepared For

G&T Taylor Street LLC

May 2, 2023 Revised: November 16, 2023



20PA_DSR_04

Table of Contents

1. Stormwater Management Standards	3
1.1. Runoff and Pollution Reduction	3
1.2. Peak Flow Control	3
1.3. Construction Erosion and Sediment Control	3
1.4. Operations and Maintenance	3
1.5. Stormwater Management Report	3
2. HydroCAD Summary Table	4
Exhibits	
Watershed Map – Existing Conditions	Exhibit A
Watershed Map – Proposed Conditions	Exhibit B
USDA Soil Delineation Map	Exhibit C
Site Vicinity Map	Exhibit D
Appendices	
Drainage System Design Calculations	Appendix A
HydroCAD Analysis – Existing Conditions	Appendix B
HydroCAD Analysis – Proposed Conditions	Appendix C
Pipe Conveyance and Inlet Capacity Calculations	Appendix D
Directly Connected Impervious Area Tracking Worksheet	Appendix E
Soil Results Forms	Appendix F

1. Stormwater Management Standards

1.1. Runoff and Pollution Reduction

Standard 1: Runoff and Pollutant Reduction is not applicable to this project as determined by the Runoff and Pollutant Reduction Requirements Flowchart. Refer to Appendix "E" for Directly Connected Impervious Area Tracking Worksheet

1.2. Peak Flow Control

The proposed development will decrease peak runoff flow rates to less than pre-construction conditions to all points of concern. Refer to Appendices "B" and "C" for Existing and Proposed HydroCAD results, and to the HydroCAD Summary Table at the end of this introduction. The decrease in peak runoff flow rates meets the standard of reduction for all storms up to the 50-year storm.

Refer to Appendix "D" for Pipe Conveyance Calculations and refer to Appendix "A" for 72-Hour Drawdown Calculations.

1.3. Construction Erosion and Sediment Control

During the construction phase of the project, treatment of storm water runoff will be provided by temporary sedimentation and other erosion control measures as outlined within the Final Site Plan Review Set. This includes the installation of silt fencing, an anti-tracking pad, and hay bales around catch basins. Periodic on-site inspections will be performed to ensure that these measures are maintained in effective working order. Once construction is complete and all disturbed areas are properly graded, seeded and stabilized, the proposed sedimentation and erosion control measures will be removed.

1.4. Operations and Maintenance

Refer to Appendix "G" of the City of Stamford Stormwater Drainage Manual for a Standard City of Stamford Drainage Maintenance Agreement.

1.5. Stormwater Management Report

The applicant is proposing to conduct site improvements on the subject property. Currently, the parcel supports two multi-family dwellings, two asphalt driveways, and various hardscapes. Vegetative cover at the property is primarily lawn with other ornamental plantings. The proposed improvements will include the construction of three multi-family buildings totaling 13 units. Improvements also include the installation of a storm drainage system, site grading, and associated landscaping.

For a depiction of existing and proposed conditions, refer to a plan set prepared by D'Andrea Surveying and Engineering, P.C., entitled "Residential Development depicting property at 12 & 18 Taylor Street, Stamford, Connecticut, prepared for G&T Taylor Street LLC".

The subject parcel is 24,478 square feet in size and is located approximately 140 feet south of the intersection of Taylor Street and Richmond Hill Avenue. The proposed redevelopment of the parcel will increase the impervious coverage by approximately 8,705 square feet. Refer to Appendix "A" for a depiction of the proposed stormwater BMPs and drainage calculations.

Based on the above information, the proposed improvements are designed in accordance with the City of Stamford Stormwater Drainage Manual and will not adversely impact adjacent or downstream properties or City-owned drainage facilities.

HydroCAD Summary G&T Taylor Street LLC Tyalor Street, Stamford, CT Project ID: 20PA

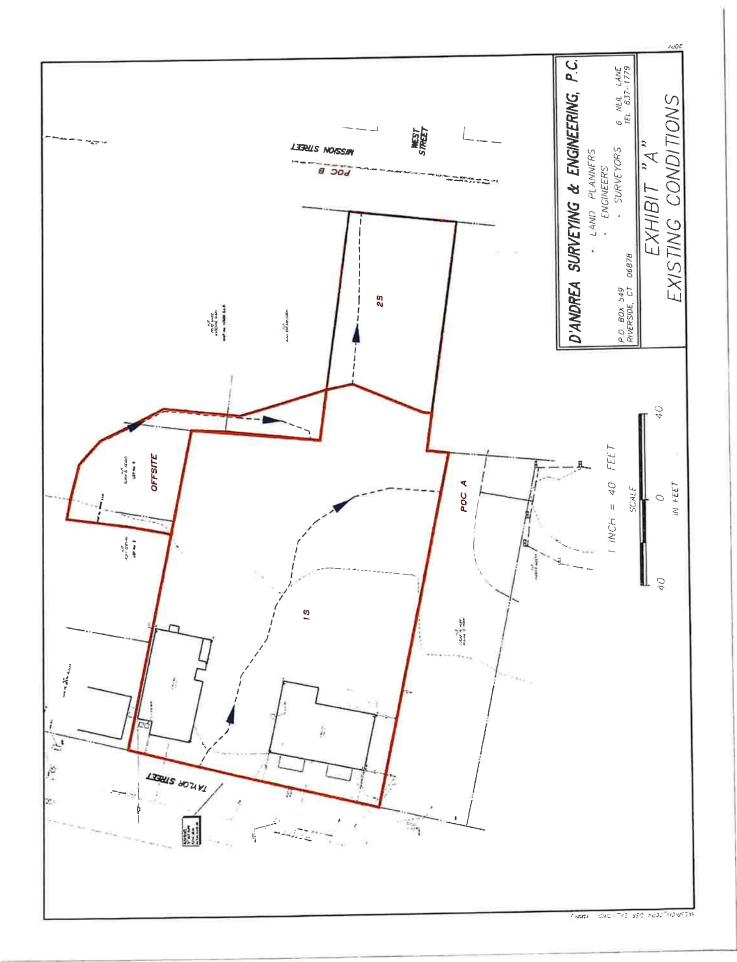
ľ						1	į	-			 -	-		10 1/	7.0		ľ	15 1/22	34.5		i i	A W 6	7400			100 mm	Cton	
		I Year	Year Storm			7 Year Storm	Storm			S Year	Storm			IU Year Storm	Storm		1	25 rear Storm	Storm		n	on rear Storin	Storm			Ing year	STOT III	
POC	qex	(150)	ФФ	φΔ%	d _{ex}	q.	ЬΦ	р∆%	-des	ф	ρQ	рΔ%	qex	Ф	δά	ρΔ%	qe,	Ъ	δq	ρΔ%	qux	q.	ρĄ	φΔ%	q _{ex}	ф.	ρΔ	%Aq
	(ft ³ /s)	db (111 /S)	(ft³/s)	(ft ³ /s)	(ft ³ /s)	(ft ³ /s)	(tt3/s)	(ft³/s)	(ft ¹ /s)	(ft³/s)	(ft ³ /s)	(ft ³ /s)	(th ³ /s)	(th ³ /s)	(ft³/s)	(ft ³ /s)	(ft ³ /s)	(tl ₃ /s)	(ft ³ /s)	(ft³/s)	(ft³/s) ((ft³/s)	(ft ³ /s)					
4	16.0	0.54	-0.37	-41%	1.23	1.07	1.23 1.07 -0.16	-13%	1.78	1.78	0.00	%0	2.17	2.11	-0.06	-3%	2.55	2.40	-0.15	%9-	2.94	2.66	-0.28	-10%	3.38	2.96	-0.42	-12%
_	0.12	0.03	60 0-	-0.09 -75% 0.17 0.04	0.17	0.04	-0.13 -76% 0.27	%94-		0.07	-0.20	-74%	0.33	0,18	-0.15	-45%	0.40	0.34	90'0-	-15%	0.47	0.46	-0.01	-2%	0.55	0.53	-0.02	-4%

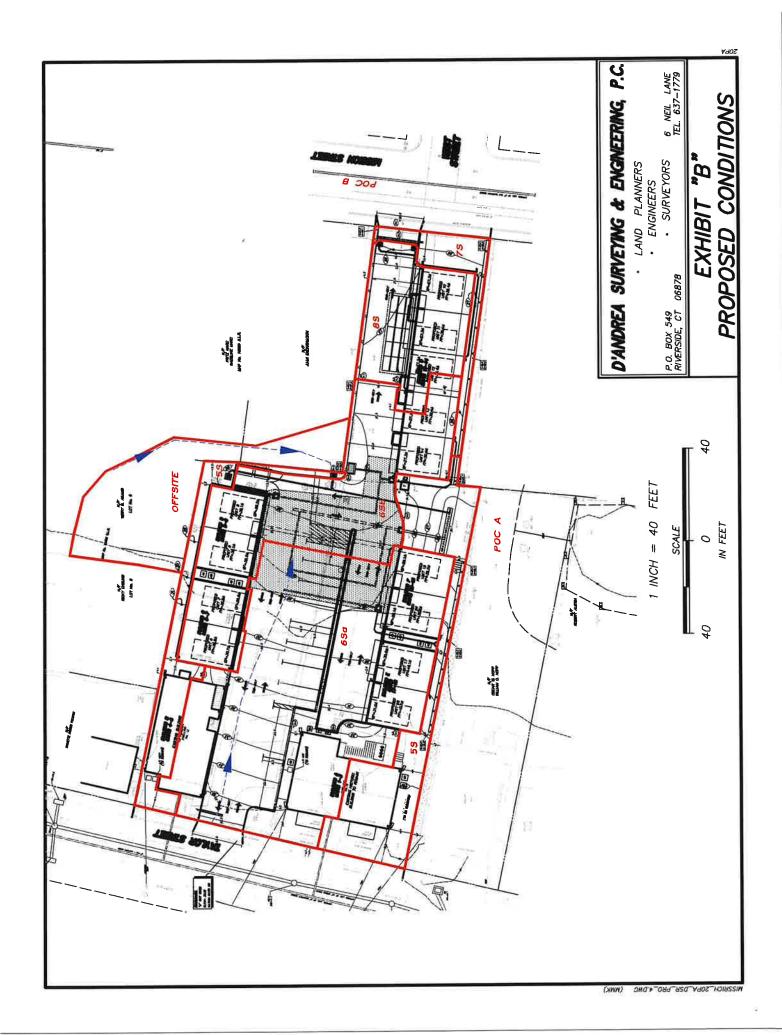
Table 1. Comparison of Exising and Proposed Peak Flow Rates for all Points of Concern.

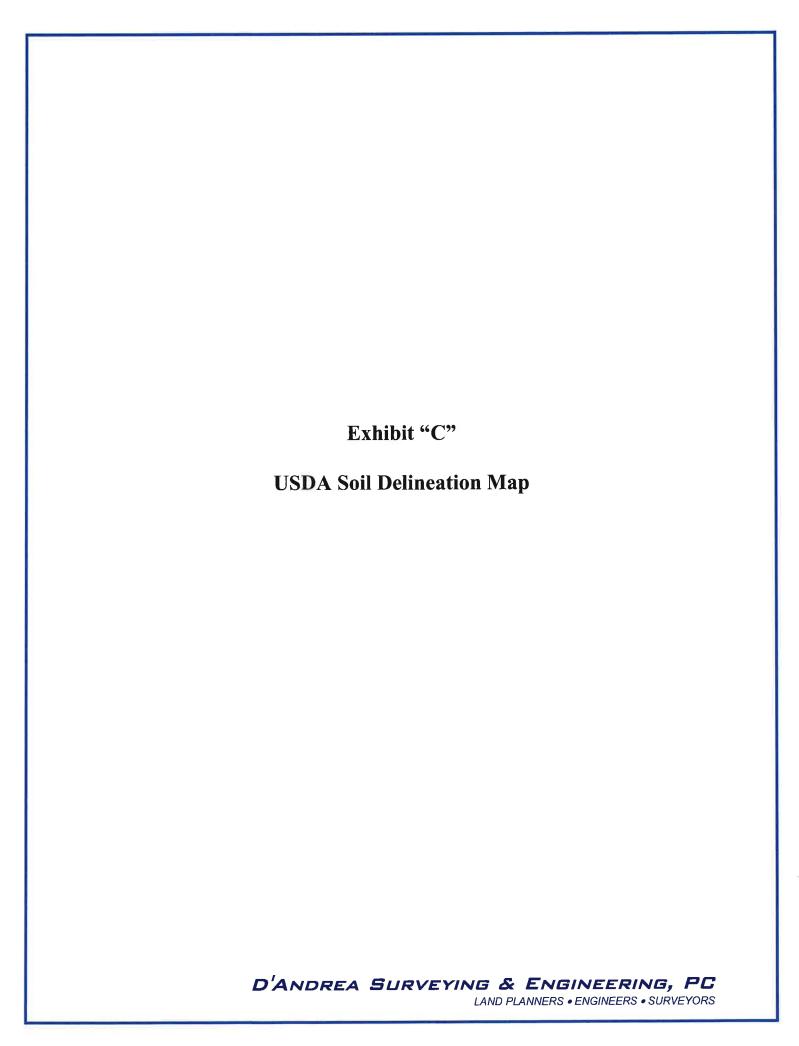
	%Av (cf)	4%	-30%	
100 Year Storm	Δv (cf)	418	-563	
00 Year	v _p (cf)	11,243		
1	vex (cf)	10,825 11,243	1,873	
	%Δv (cf)	4%	-32%	
Storm	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	331	-515 -32% 1,873 1,310	
50 Year Storm	v _p (cf)	9.674	1,081	
	vex (cf)	3% 9,343 9,674	1,596	
	%Δv (cf)	3%	-35%	
Storm.	Δv (cf)	249	-478 -35% 1,596 1,081	
25 Year Storm	v _p (cf)	8,307	880	
	vex (cf)	2% 8.058	1,358	
	%dv (cf)	2%	-39%	
10 Year Storm	Δv (cf)	162	-444 -39% 1,358 880	
10 Year	v _p (cf)	1% 6.786 6.948 162	681	
	vex (cf)	6,786	1,125	
	%Av (cf)		-415 -46% 1,125 681	
5 Year Storm	Δv (cf)	65	-415	
5 Year	v _p (cf)	5,599	482	2
	vex (cf)	1 -2% 5.534 5.599	897	Concern
	%Δv (cf)	-2%	%99-	Points of
2 Year Storm	Δv (cf)	76-	-385 -66% 897	s for all i
2 Year	v _p (cf)	3,701	202	T Volume
	v _{cx} (cf)	3.795	587	d Runof
	%Δv (cf)	-8% 3.795 3.701	587 202	Propose
Year Storm	v_{cx} (cf) v_{p} (cf) Δv (cf) v_{cx} (cf) v_{rx} (cf) v_{r	-211	-326	able 2: Comparison of Exising and Proposed Runoff Volumes for all Points of Concern.
1 Year	v _p (cf)	2,798 2,587	88	on of Ex
	vcx (cf)	2.798	414	Comparis
	POC	4	В	ıble 2: C

Exhibits "A & B"

Existing and Proposed Watershed Maps









This product is generated from the USDA-NRCS certified data as of the version date(s) listed below. distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more Maps from the Web Soil Survey are based on the Web Mercator contrasting soils that could have been shown at a more detailed Date(s) aerial images were photographed: Oct 21, 2022—Oct The orthophoto or other base map on which the soil lines were misunderstanding of the detail of mapping and accuracy of soil Enlargement of maps beyond the scale of mapping can cause compiled and digitized probably differs from the background projection, which preserves direction and shape but distorts Soil map units are labeled (as space allows) for map scales Natural Resources Conservation Service imagery displayed on these maps. As a result, some minor line placement. The maps do not show the small areas of The soil surveys that comprise your AOI were mapped at Please rely on the bar scale on each map sheet for map accurate calculations of distance or area are required. Coordinate System: Web Mercator (EPSG:3857) MAP INFORMATION Warning: Soil Map may not be valid at this scale. shifting of map unit boundaries may be evident. Soil Survey Area: State of Connecticut Survey Area Data: Version 22, Sep 12, 2022 Web Soil Survey URL: 1:50,000 or larger. Source of Map: measurements Not rated or not available Streams and Canals Interstate Highways Aerial Photography Major Roads Local Roads US Routes Rails 2 Water Features **Transportation** Background **MAP LEGEND** 貓 8 ŧ Not rated or not available Not rated or not available Area of Interest (AOI) Soil Rating Polygons Area of Interest (AOI) Soil Rating Points Soil Rating Lines B/D 0/2 B/D 9/0 S ٩ Ą œ ပ Ω O ⋖ m В ۵ ⋖ ⋖ N.

USDA

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
307	Urban land	D	0.6	100.0%
Totals for Area of Inter	rest		0.6	100.0%

Description

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

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

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

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

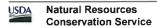
Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

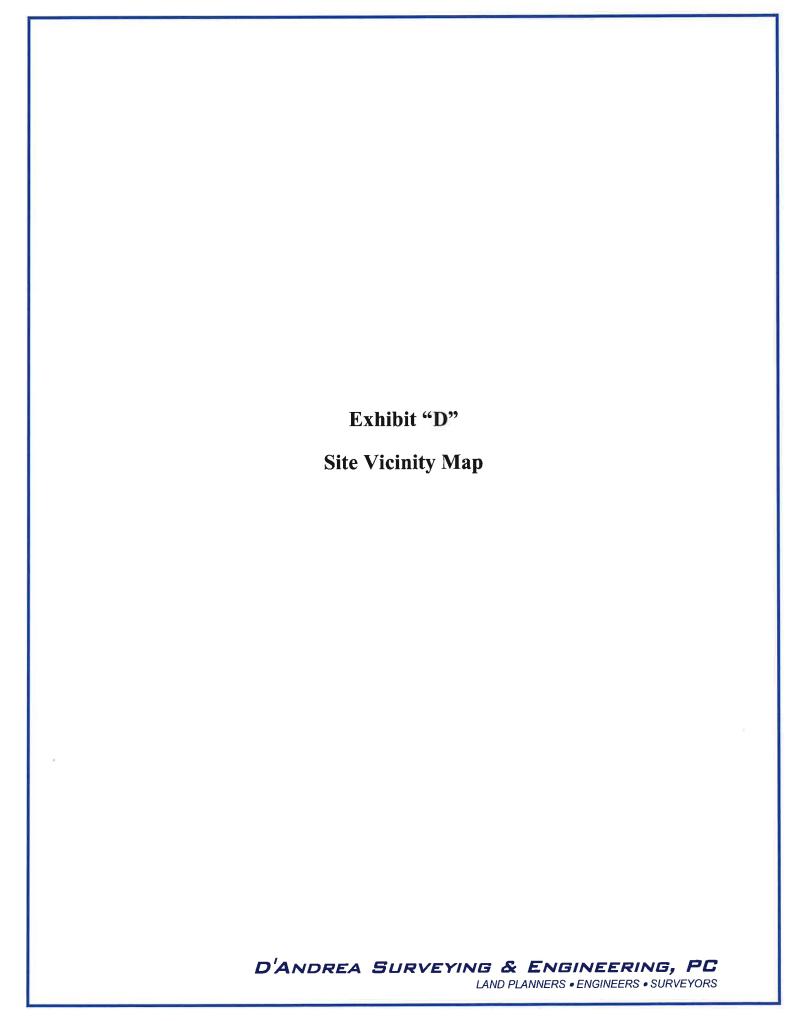
Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over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

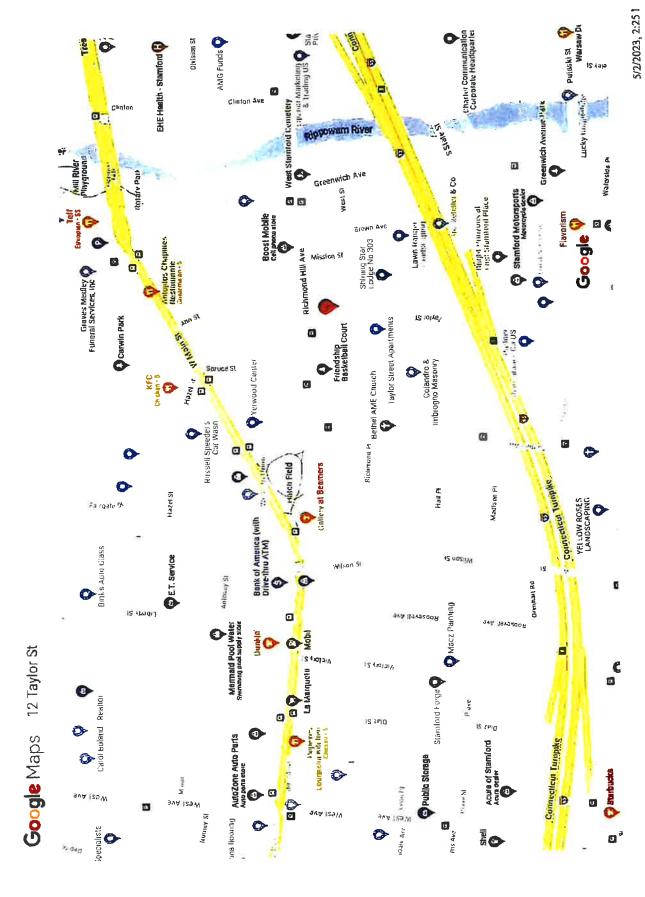
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition Component Percent Cutoff: None Specified Tie-break Rule: Higher







1 of 2

Appendix "A"

Drainage System

Design Calculations

BMP Drawdown Calculations:

Infiltration structures must be able to drain fully within 72 hours.

Permeable Pavement (Upper Section) Retention System #1:

t_{drawdown} =

DV/kA

Where:

670 ft³ DV = Design Volume

0.52 inches/hr Silty Loam k = Infiltration Rate

1675 ft² A = Bottom Area =

t_{drawdown} =

9.2 hours

Drawdown Requirement Satisfied

Permeable Pavement (Lower Section) Retention System #2:

t_{drawdown} =

DV/kA

Where:

594 ft³ DV = Design Volume

0.52 inches/hr Silty Loam = k = Infiltration Rate

1350 ft² A = Bottom Area

t_{drawdown} =

10.2 hours

Drawdown Requirement Satisfied

Retention System #3: **Cultec Drywells**

t_{drawdown} =

DV/kA

Where:

585 ft³ DV = Design Volume

0.52 inches/hr Silty Loam k = Infiltration Rate

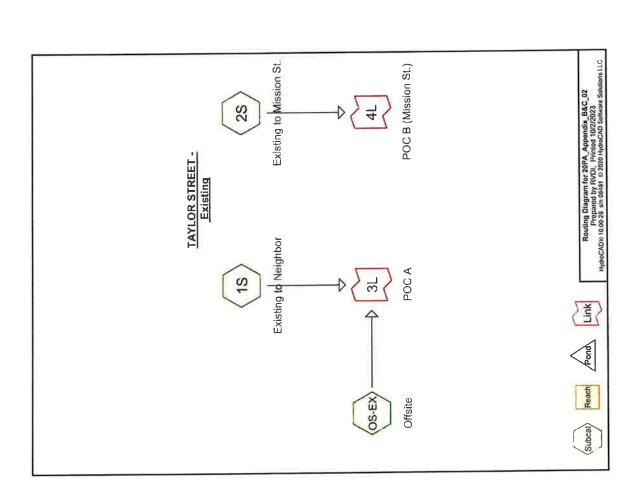
403 ft² = A = Bottom Area

t_{drawdown} =

33.5 hours

Drawdown Requirement Satisfied





Printed 10/2/2023 Page 2

Area Listing (selected nodes)

18,877 80.0 >75% Grass cover, Good, HSG D (1S, 2S, OS-EX 4,514 98.0 Paved parking, HSG D (1S, 2S) 3,256 98.0 Roofs, HSG D (1S) 935 98.0 Unconnected pavement, HSG D (1S)		Description (subcatchment-numbers) >75% Grass cover, Good, HSG D (1S, 2S, OS-EX) Paved parking, HSG D (1S, 2S) Roofs, HSG D (1S) Unconnected pavement, HSG D (1S)	80.0 98.0 98.0	Area (sq-ft) 18,877 4,514 3,256 935
27 582 85.7 TOTAL ARFA	80.0 98.0 98.0	TOTAL ARFA	85.7	27 5B2
		(subcatchment-numbers)		(tj-bs)
		Description	C	Area
S	S			

Prepared by RVDI

Type III 24-hr 25-Year Rainfall=5.70"

Printed 10/2/2023

Printed 10/2/2023

HydroCAD® 10,00-26 s/n 08481 @ 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Existing to Neighbor

7,149 cf, Depth= 4.28" 2.33 cfs @ 12.07 hrs, Volume=

Runoff

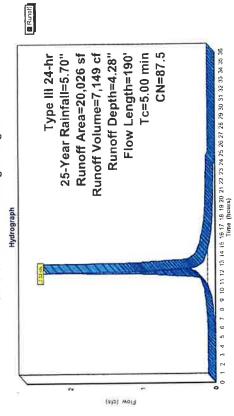
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

CN Description	98.0 Paved parking, HSG D	98.0 Roofs, HSG D	98.0 Unconnected pavement, HSG D	80.0 >75% Grass cover, Good, HSG D	87,5 Weighted Average	58.34% Pervious Area	41,66% Impervious Area	11,21% Unconnected	cn) (ft/ft) (ft/sec) (cfs)	0.0871 2.34	Smooth surfaces n= 0.011 P2= 3.30"	0.1367 0,29	Grass: Short n= 0,150 P2= 3.30"	0.0322 2.69 Shallow Concentrated Flow, Lawn	Grassed Waterway Kv= 15.0 lps
Ó	98 (98.0	98"	80.0	87.								30 0.1		0.0 06	
Area (sf)	4,152	3,256	935	11,683	20,026	11,683	8,343	935	Tc Length	(min) (feet)	0.50 70		1,71 30		0.56	
	ļ			ļ						į	l					

Subcatchment 1S: Existing to Neighbor

190 Total, Increased to minimum Tc = 5.00 min

2.77



20PA_Appendix_B&C_02 Prepared by RVDI

Type III 24-hr 25-Year Rainfall=5.70"

HydroCAD® 10.00-26 s/n 08481 @ 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 2S: Existing to Mission St.

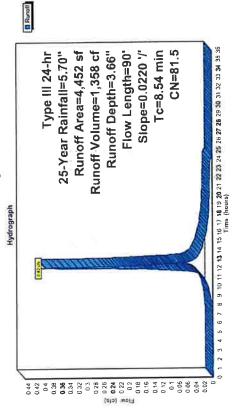
0.40 cfs @ 12.12 hrs, Volume= Runoff

1,358 cf, Depth= 3.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN. Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

CN Description		ISG D	er, Good, HSG D	ef	Area	s Area	Velocity Capacity Description	(cfs)	Sheet Flow, Sheet Flow	Grass: Short n= 0,150 P2= 3.30"
	iption	d parking, F	Grass cov	hted Averag	% Pervious	6 Imperviou	ocity Cap	(sec)	0.18	
	CN	98.0	80.0	81.5			Slope	(ft/ft)	0.0220	
Slope (frff) 0.0220	a (sf)	362	1,090	4,452	4,090	362	Lenath	feet	6	
sf) 62 62 90 90 62 62 ength (feet)	Are		,		•		Tc	(min)	8,54	
362 362 4,090 4,452 4,090 362 Length (feet) 90		l							1	

Subcatchment 2S: Existing to Mission St.



Type III 24-hr 25-Year Rainfall=5.70"

Printed 10/2/2023

20PA_Appendix_B&C_02
Prepared by RVDI
HydroCAD® 10.00-26 sin 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment OS-EX: Offsite

0.26 cfs @ 12.13 hrs, Volume= 11

Runoff

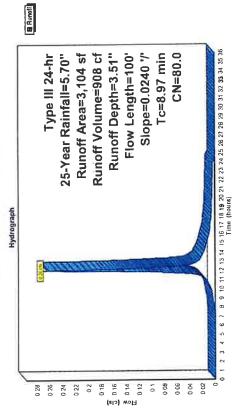
908 cf, Depth= 3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

198.0 Paved parking, HSG D 3,104 80.0 >75% Grass cover, Good, HSG D 98.0 Roofs, HSG D 98.0 Roofs, HSG D 3,104 80.0 Weighted Average 3,104 100.00% Pervious Area						
1 1	Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	100.00% Pervious Area
	O	0'86	80.0	98.0	80.0	
4	Area (sf)	0	3,104	0	3,104	3,104

Sheet Flow, Lawn Grass: Short n= 0.150 P2= 3.30" Capacily Description (cfs) Velocity (ff/sec) Slope (fi/ft) 0.0240 Length (feet) 100 (min) 8.97

Subcatchment OS-EX: Offsite



Type III 24-hr 25-Year Rainfall=5.70" Printed 10/2/2023

Page 6

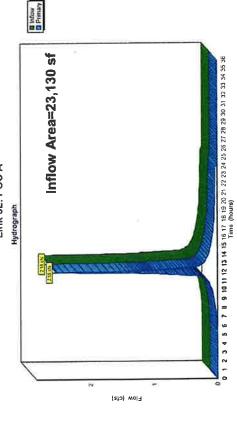
20PA Appendix B&C_02
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Link 3L: POC A

2.35 cfs @ 12.07 hrs, Volume= 8,058 cf 8,058 cf 25.Year event 2.55 cfs @ 12.07 hrs, Volume= 8,058 cf Atten= 0%, Lag= 0.0 min Inflow Area = $\mathbf{B} = \mathbf{H}$ Primary Inflow

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 3L: POC A



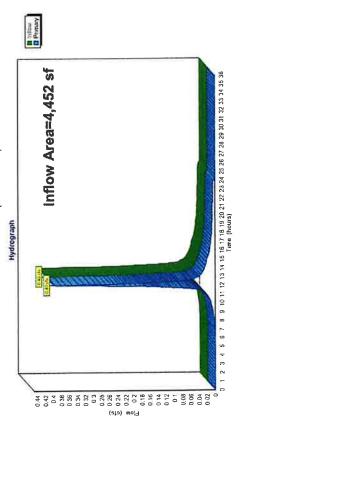
Page 7

Type III 24-hr 25-Year Rainfall=5,70" Printed 10/2/2023

Summary for Link 4L: POC B (Mission St.)

4.452 sf, 8.13% Impervious, Inflow Depth = 3.66" for 25-Year event 0.40 cfs @ 12.12 hrs, Volume= 1,358 cf 12.12 hrs, Volume= 1,358 cf, Atten= 0%, Lag= 0.0 min Inflow Area = Inflow = Primary =

Link 4L: POC B (Mission St.)



Type III 24-hr 1-Year Rainfall=2,70"

Printed 10/2/2023

Printed 10/2/2023 Type III 24-hr 1-Year Rainfall=2,70"

Page 9

Summary for Subcatchment 1S: Existing to Neighbor

2,531 cf, Depth= 1,52" 0.85 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0,00-36,00 hrs, dt= 0.01 hrs

Type III 24-hr 1-Year Rainfall=2.70"

Description	Paved parking, HSG D	Roofs, HSG D	Unconnected pavement, HSG D	>75% Grass cover. Good, HSG D	Weighted Average	58.34% Pervious Area	41.66% Impervious Area	11,21% Unconnected	Slope Velocity Capacity Description	(fi/sec) (cfs)	2.34 Sheet Flow, Driveway	Smooth surfaces n= 0.011 P2= 3.30"	0,29 Sheet Flow, Lawn	Grass: Short n= 0.150 P2= 3.30"	2.69 Shallow Concentrated Flow, Lawn	Grassed Waterway Kv= 15.0 fps	
CN	98.0 P	98.0 R	0'86	< 0.08	87.5 V	5	4	_	Slope	(FL/FL)	0.0871		0.1367		90 0.0322		
Area (sf)	4,152	3,256	935	11,683	20,026	11,683	8,343	935	Tc Length	(feet)	70		30		06		
Are	7			-	20	-			Tc	(min)	0 20		1.71		0.56		

Summary for Subcatchment 2S: Existing to Mission St.

Total, Increased to minimum Tc = 5.00 min

190 90

1.71 0.56 2.77 414 cf, Depth≈ 1.12" 0.12 cfs @ 12.13 hrs, Volume= Runoff Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Type III 24-hr 1-Year Rainfall=2,70"

		HSG D				scription		Sheet Flow, Sheet Flow	Grass: Short n= 0,150 P2= 3.30"
JU.	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Weighted Average	91.87% Pervious Area	3.13% Impervious Area	Velocity Capacity Description	(cfs)		Gra
Description		>75% Gra	Weighted	91.87% F	8.13% Im	 Velocity 	(ft/sec)	0 0.18	
2	98.0	80.0	81.5			Slope	(H/H)		
Area (St)	362	4.090	4,452	4,090	362	Length	(feet)	90	
Are						Tc	(min)	8.54	

20PA_Appendix_B&C_02

Type
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Sottware Solutions LLC

Summary for Subcatchment OS-EX: Offsite

266 cf, Depth= 1.03" 0.08 cfs @ 12.13 hrs, Volume= П

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 1-Year Rainfall=2,70"

										P2= 3.30"
									Lawn	n = 0.150
		>75% Grass cover, Good, HSG D			ā		Description	nin) (feet) (ft/ft) (ft/sec) (cfs)	Sheet Flow, Lawn	Grass: Short n= 0.150 P2= 3.30"
	Paved parking, HSG D	s cover, Go	0.0	verage	100,00% Pervious Area		Capacity	(cts)		
Description	aved park	75% Gras	Roofs, HSG D	Weighted Average	100,00% P		Velocity	(H/Sec)	0.19	
S		80.0	98.0	80.0		ō	Slope	(ft/ft)	100 0.0240	
Area (sf)	0	3,104	0	3,104	3,104		Length	(feet)	100	
Are						ŀ	ם	(min)	8.97	

Summary for Link 3L: POC A

23,130 sf, 36,07% Impervious, Inflow Depth = 1.45" for 1-Year event 0.91 cfs @ 12.08 hrs, Volume= 2,798 cf, Atten= 0%, Lag= 0.0 min 0.91 cfs @ 12.08 hrs, Volume= 2,798 cf, Atten= 0%, Lag= 0.0 min Inflow Area = П ${\bf R}$ Primary Inflow

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 4L: POC B (Mission St.)

414 cf, Atten= 0%, Lag= 0.0 min 4,452 sf, 8,13% Impervious, Inflow Depth = 1,12" for 1-Year event 0.12 cfs @ 12.13 hrs, Volume = 414 cf, Atten = 0%, Lag= 0.0 m Inflow Area = H = HInflow Primary

20PA Appendix B&C 02

HydroCAD® 10 00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC Prepared by RVDI

Page 10 Type III 24-hr 2-Year Rainfall=3.30"

Printed 10/2/2023 Type III 24-hr 2-Year Rainfall=3.30"

20PA_Appendix_B&C_02 Printed 10/2/2023

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 @ 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Existing to Neighbor

3,413 cf, Depth= 2.05" 1.14 cfs @ 12.07 hrs, Volume=

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Type III 24-hr 2-Year Rainfall=3,30°

Description	Paved parking, HSG D	Roofs, HSG D	Unconnected pavement, HSG D	>75% Grass cover, Good, HSG D	Weighted Average 58.34% Pervious Area 41.66% Impervious Area 11.21% Unconnected
CN	98.0	98.0	086	80.0	87.5
Area (St)	4,152	3,256	935	11,683	20,026 11,683 8,343 935

Sheet Flow, Driveway Smooth surfaces n= 0.011 P2= 3.30" Sheet Flow, Lawn Shallow Concentrated Flow, Lawn Grass: Short n= 0.150 P2= 3.30" 0.29 0 1367 0.0871 30 20 Tc (min) 0.50 1.71

Description

Capacity (cfs)

Velocity

Slope (ff/ft)

Length

Grassed Waterway Kv= 15 0 fps Total, Increased to minimum Tc = 5.00 min 190 2.77

2.69

0.0322

90

0.56

Summary for Subcatchment 2S: Existing to Mission St.

587 cf, Depth= 1.58" 0 17 cfs @ 12.12 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Type III 24-hr 2-Year Rainfall=3.30"

Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Weighted Average	91.87% Pervious Area	8.13% Impervious Area
S	0.86	80.0	81.5		
Area (sf)	362	4,090	4,452	4,090	362

Sheet Flow, Sheet Flow Grass: Short n= 0,150 P2= 3.30" Capacity Description (ofs) Velocity (H/sec) 0.18 Slope (H/H) 0.0220 90 Length J (min) 8.54

Summary for Subcatchment OS-EX: Offsite

0.11 cfs @ 12.13 hrs, Volume=

Ħ

Runoff

383 cf, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-Year Rainfall=3.30"

									_
									P2= 3.30
								awn.	n=0.150
	0	>75% Grass cover, Good, HSG D			CI CI	Velocity Capacity Description		Sheet Flow, Lawn	Grass: Short n= 0.150 P2= 3.30"
24	Paved parking, HSG D	s cover, G	3.0	Average	100.00% Pervious Area	Capacity	(cts)		
Description	Paved park	>75% Gras	Roofs, HSG D	Weighted Average	100.00% P			0.19	
O			- 4	80.0		Slope	(ft/ft)	0.0240	
Area (sf)	0	3,104	0	3,104	3,104	ength	(feet)	100	
Are						Tc	(min)	8.97	

Summary for Link 3L: POC A

23,130 sf, 36.07% Impervious, Inflow Depth = 1.97" for 2-Year event 1.23 cfs @ 12.08 hrs, Volume= 3,795 cf, Atten= 0%, Lag= 0.0 min 1.23 cfs @ 12.08 hrs, Volume= Inflow Area = 11 - 11 inflow Primary

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 4L: POC B (Mission St.)

587 cf, Atten= 0%, Lag= 0.0 min 4,452 sf. 8,13% Impervious, Inflow Depth = 1.58" for 2-Year event 0.17 cfs @ 12.12 hrs, Volume= 587 cf, Atten= 0%, Lag= 0.0 m Inflow Area = H - HInflow Primary

Type III 24-hr 5-Year Rainfall=4 30"

Prepared by RVDI HydroCAD® 10,00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Printed 10/2/2023

Printed 10/2/2023 Type III 24-hr 5-Year Rainfall=4.30"

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC Page 12

Summary for Subcatchment 1S: Existing to Neighbor

4,941 cf, Depth= 2.96" 1.63 cfs @ 12.07 hrs, Volurne= П Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0,00-36,00 hrs, dt= 0.01 hrs

Type III 24-hr 5-Year Rainfall=4.30"

			GD	SG D					sription		Sheet Flow, Driveway	Smooth surfaces $n=0.011$ P2= 3.30"	Sheet Flow, Lawn	Grass: Short n= 0.150 P2= 3.30"	Shallow Concentrated Flow, Lawn
noi	Paved parking, HSG D	1SG D	Unconnected pavement, HSG D	>75% Grass cover, Good, HSG D	Weighted Average	58,34% Pervious Area	41.66% Impervious Area	1,21% Unconnected	Slope Velocity Capacity Description	c) (cfs)	2.34 Shee	Smoc	0.29 Shee	Grass	2,69 Shall
1 Description		Roofs, HSG D				58.34%	41.66%	11.21%	ope Veloci	(fl/ft) (ft/sec)			0.1367 0.2		
S	98,0	98.0	0'86	80.0	87.5				ith Si	(leet) (I	70 00		30 0.1		90 0.0322
Area (sf)	4,152	3,256	935	11.683	20,026	11,683	8,343	935	Tc Length	(min) (fe	0.50		1.71		0.56

Grassed Waterway Kv= 15.0 fps Total, Increased to minimum Tc = 5.00 min 190 2.77

Summary for Subcatchment 2S: Existing to Mission St.

897 cf, Depth= 2.42" 0.27 cfs @ 12.12 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 5-Year Rainfall=4_30"

Paved parking, HSG D >75% Grass cover, Good, HSG D Weighted Average 91.87% Pervious Area 8.13% Impervious Area Description 98.0 81.5 Area (sf) 362 4,090 4,452 4,090 362

Sheet Flow, Sheet Flow Capacity Description (cfs) Velocity (t/sec) 0.18 Slope (FL/ft) 0.0220 Length (feet) 90 2 (min) 8.54

Grass: Short n= 0.150 P2= 3.30"

20PA_Appendix_B&C_02

Summary for Subcatchment OS-EX: Offsite

593 cf, Depth= 2.29' 0.17 cfs @ 12.13 hrs, Volume= 14

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dl= 0.01 hrs Type III 24-hr 5-Year Rainfall=4.30"

Grass: Short n= 0.150 P2= 3.30" Sheet Flow, Lawn Paved parking, HSG D >75% Grass cover, Good, HSG D Roofs, HSG D Description Weighted Average 100.00% Pervious Area Capacity (cfs) Description Velocity 0.19 (H/sec) Slope (ff/ft) 0.0240 98.0 80.0 98.0 80.0 Tc Length (min) (feet) 100 3,104 3,104 Area (sf) 8.97

Summary for Link 3L: POC A

23,130 sf, 36,07% Impervious, Inflow Depth = 2.87" for 5-Year event 1.78 cfs @ 12.08 hrs, Volume= 5,534 cf 12.08 hrs, Volume= 5,534 cf, Atten= 0%, Lag= 0.0 min Inflow Area = н Inflow Primary

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 4L: POC B (Mission St.)

'897 cf 897 cf, Atten= 0%, Lag= 0.0 min 4,452 sf, 8.13% Impervious, Inflow Depth = 2.42" for 5-Year event 0.27 cfs @ 12.12 hrs, Volume= 897 cf, Atten= 0%, Lag= 0.0 π Inflow Area = 11 11 Primary Inflow

Prepared by RVDI HydroCAD® 10.09.26: s/n 08/81: © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 10-Year Rainfall=5.00" Printed 10/2/2023 Page 14

Printed 10/2/2023

20PA_Appendix_B&C_02

Prepared by RVDI

HydroCAD® 10.00-26 sin 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Existing to Neighbor

6,038 cf, Depth= 3,62 1,98 cfs @ 12.07 hrs, Volurne= ij Runoff

Runoff by SCS TR-20 method, UH-SCS, Weighted-CN. Time Span= 0.00-36 00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Rainfall=5.00"

										iveway
l l	Paved parking, HSG D	G D	Unconnected pavement, HSG D	>75% Grass cover. Good, HSG D	Average	58.34% Pervious Area	41.66% Impervious Area	11,21% Unconnected	Velocity Capacity Description (ff/sec) (cfs)	
Description	Paved par	Roofs, HSG D	Unconnec	>75% Gra	Weighted Average	58.34% P	41.66% 1	11.21% U	oe Velocity	
C	98.0	98.0	98.0	80.0	87.5				Slope (fl/fl)	70 0.0871
Area (sf)	4,152	3,256	935	11,683	20,026	11,683	8,343	935	To Length	-
A									T _r	0.50

Grassed Waterway Kv= 15.0 fps Total, Increased to minimum Tc = 5.00 min 190 2.77

Sheet Flow, Driveway
Smoth surfaces n= 0.011 P2= 3.30"
Sheet Flow, Lawn
Grass: Short n= 0.160 P2= 3.30"
Shallow Concentrated Flow, Lawn

0.29 2.69

0 1367 0.0871

> 30 06

> 1.71 0.56

0.0322

Summary for Subcatchment 2S: Existing to Mission St.

1,125 cf, Depth= 3.03" 0.33 cfs @ 12.12 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Type III 24-hr 10-Year Rainfall=5.00"

CN Description

Area (sf)

			Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2≍ 3.30"
Paved parking, HSG D >75% Grass cover. Good, HSG D	a	Velocity Capacity Description (ft/sec) (cfs)	Sheet Flow, Sheet Flow Grass; Short n= 0.150
ng, HSG D s cover. Go	Weighted Average 31.87% Pervious Area 3.13% Impervious Area	Capacity (cfs)	
aved parki 75% Grass	Weighted Average 91.87% Pervious A 8.13% Impervious	Velocity (ft/sec)	1
98.0 F	81.5 V	Slope (ft/ft)	0.0220
362 4.090	4,452 4,090 362	C Length Slope (ft/ft)	06
		Tc (min)	8.54

Type III 24-hr 10-Year Rainfall=5.00"

Summary for Subcatchment OS-EX: Offsite

748 cf, Depth= 2.89" 0.22 cfs @ 12.13 hrs, Volume= 11

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Rainfall=5.00"

									P2= 3.30"
								Lawn	n = 0.150
		>75% Grass cover, Good, HSG D			ğ	Velocity Capacity Description		Sheet Flow, Lawn	Grass: Short n= 0.150 P2= 3.30"
	Paved parking, HSG D	s cover, Gr	3 D	Average	100.00% Pervious Area	Capacity	(cfs)		
Description	Paved park	>75% Gras	Roofs, HSG D	Weighted Average	100.00% P			0,19	
S			0.86	80.0				0.0240	
Area (sf)	0	3,104	U	3,104	3,104	Tc Length	(feet)	100	
Are						J	(mim)	8.97	

Summary for Link 3L: POC A

6,786 cf 6,786 cf, Atten= 0%, Lag= 0.0 min for 10-Year event 23,130 st, 36.07% Impervious, Inflow Depth = 3.52" 2.17 cfs @ 12.08 hrs, Volume= 6,786 cf 2.17 cfs @ 12.08 hrs, Volume= 6,786 cf, Atter Inflow Area = Primary Inflow

Primary outflow = inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 4L: POC B (Mission St.)

1,125 cf 1,125 cf, Atten= 0%, Lag= 0.0 min 4,452 sf, 8,13% Impervious, Inflow Depth = 3.03" for 10-Year event 0,33 cfs @ 12.12 hrs, Volume= 1,125 cf Atten= 0%, Lag= 0.0 mir Inflow Area = Primary = Inflow

02	
B&C	
sendix	
A Apr	
20P	

Prepared by RVDI HydroCAD® 10 00-25 s/n 08481 © 2020 HydroCAD Sottware Solutions LLC

Type III 24-hr 25-Year Rainfall=5.70" Printed 10/2/2023

Page 16

Type III 24-hr 25-Year Rainfall=5.70" Printed 10/2/2023 Page 17

Summary for Subcatchment 1S: Existing to Neighbor

7,149 cf, Depth= 4.28' 2.33 cfs @ 12.07 hrs, Volume= H Runoff

Runoif by SCS TR-20 method, UH=SCS, Weighted-CN. Time Span= 0.00-36,00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

	Paved parking, HSG D	0.0	Jinconnected pavement, HSG D	>75% Grass cover, Good, HSG D	verage	58.34% Pervious Area	41,66% Impervious Area	11,21% Unconnected	Velocity Capacity Description	(cfs)	Sheet Flow, Driveway
Description	aved park	Roofs, HSG D	Inconnect	-75% Gras	Weighted Average	8.34% Pe	11.66% Im	1.21% Ur	Velocity	(fil/sec)	2 34
CN	98.0 F	98.0 F	98.0	80.0	87.5 \	u j	7		Slope	(H/H)	70 0,0871
Area (sf)	4,152	3,256	935	11,683	20,026	11,683	8,343	932	To Length	(feet)	70
Are	7	.,		+	50	-	~		F	(min)	0.50
	ľ										1

Smooth surfaces n=0.011 P2=3.30"
Sheat Flow, Lawn
Grass: Short n=0.150 P2=3.30"
Shallow Concentrated Flow, Lawn
Grassed Waterway Kv=15.0 fps Total, Increased to minimum Tc = 5,00 min 190 2.77

0.29 2,69

0,0322 0.1367 30 06

0.56 1.71

Summary for Subcatchment 2S: Existing to Mission St

1,358 cf, Depth= 3.66" 0.40 cfs @ 12 12 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

CN Description	Paved parking, HSG D >75% Grass cover. Good. HSG D	Weighted Average 91.87% Pervious Area 8.13% Impervious Area	Slope Velocity Capacity Description (fl/fl) (fl/sec) (cls)	0.18 Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 3.30"
Descr	Paver >75%	Weig. 91.87 8.13%	/s Vel	
O	98.0	81.5		0.0220
Area (sf)	362 4.090	4,452 4,090 362	Length (feet)	06
Are			Tc (min)	8 54
		11		0)

20PA_Appendix_B&C_02
Prepared by RVDI
HydroCAD® 10,00-26, sin 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment OS-EX: Offsite

908 cf, Depth= 3.51" 0.26 cfs @ 12.13 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

									3,30"
		ood, HSG D			60	Description		Sheet Flow, Lawn	Grass: Short n= 0.150 P2= 3.30"
CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	100.00% Pervious Area	Velocity Capacity Description	(tr/sec) (cfs)	0.19	
S	98.0	80.0	98.0	80.0		Slop	(H/H)	0.024	
Area (st)	0	3,104	0	3,104	3,104	Tc Length	(min) (feet)	8,97 100 0.0240	
	4			1				1	

Summary for Link 3L: POC A

8,058 cf 8,058 cf, Atten= 0%, Lag= 0.0 min for 25-Year event 23,130 sf, 36,07% Impervious, Inflow Depth = 4.18" 2.55 cfs @ 12.07 hrs, Volume= 8,058 cf 2.55 cfs @ 12.07 hrs, Volume= 8,058 cf, Atten Primary = Inflow Area = Inflow ==

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 4L: POC B (Mission St.)

1,358 cf 1,358 cf, Atten= 0%, Lag= 0.0 min 4,452 sf, 8.13% Impervious, Inflow Depth = 3.66" for 25-Year event 0.40 cfs @ 12.12 hrs, Volume= 1,358 cf, Atten= 0%, Lag= 0.0 mir rmow = Primary = Inflow Area =

2
0
38C
۳,
.≚
D
en
ä
3
ď
능
N

Prepared by RVDI HydroCAD® 10.00-26 sm 08481 © 2020 HydroCAD Sottware Solutions LLC

Type III 24-hr 50-Year Rainfall=6.40"

Printed 10/2/2023

Type III 24-hr 50-Year Rainfall=6.40" Printed 10/2/2023

Page 18

20PA_Appendix_B&C_02
Prepared by RVDI
HydroCAD® 10.00-26_sin 08481 @ 2020 HydroCAD Sollware Solutions LLC

Page 19

Summary for Subcatchment 1S: Existing to Neighbor

8,271 cf, Depth= 4,96" 2,67 cfs @ 12,07 hrs, Volume=

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Rainfall=6.40"

									u	
	ng, HSG D		Unconnected pavement, HSG D	>75% Grass cover. Good, HSG D	verage	vious Area	41.66% Impervious Area	connected	Slope Velocity Capacity Description	(cts)
Description	Paved parking, HSG D	Roofs, HSG D	Unconnecte	>75% Grass	Weighted Average	58,34% Pervious Area	41.66% Imp	11.21% Unconnected	Velocity	(tt/sec)
S	0.86	0.86	98.0	0.08	87.5					(ft/ft)
Area (sf)	4,152	3,256	935	11,683	20,026	11,683	8,343	935	Tc Length	(min) (feet)

Grassed Waterway Kv= 15.0 fps Total, Increased to minimum Tc = 5.00 min 190 2.77

0.29 269

30 90

0.0871 0.1367

0.50 1.71 0.56

0.0322

Sheet Flow, Driveway Smooth surfaces n= 0 011 P2= 3.30" Sheet Flow, Lawn Grass: Short n= 0.150 P2= 3.30" Shallow Concentrated Flow, Lawn

Summary for Subcatchment 2S: Existing to Mission St.

1,596 cf, Depth= 4.30" 0.47 cfs @ 12.12 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Type III 24-hr 50-Year Rainfall=6.40"

					я	Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 3.30"
		>75% Grass cover, Good, HSG D		Ø	Velocity Capacity Description	Sheet Flow, Sheet Flow Grass: Short n= 0.150
	Paved parking, HSG D	s cover, G	Weighted Average 91 87% Pervious Area	8.13% Impervious Area	Capacity	
Description	Paved park	>75% Gras	Weighted Average 91 87% Pervious A	8.13% Imp	Velocity	1
CN	98.0	80.0	81.5		Slope	0
Area (st)	362	1.090	4,452	362	Length	06
Are		•			Tc	8.54

Summary for Subcatchment OS-EX: Offsite

0.31 cfs @ 12.13 hrs, Volume=

Runoff

1,072 cf, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Rainfall=6.40"

									P2= 3.30"
								Lawn	n= 0.150
		>75% Grass cover, Good, HSG D			ē	Velocity Capacity Description		Sheet Flow, Lawn	Grass: Short n= 0.150 P2= 3.30"
	Paved parking, HSG D	s cover, Go	3 D	Average	100.00% Pervious Area	Capacity	(cfs)		
Description	Paved park	>75% Gras	Roofs, HSG D	Weighted Average	100.00% P	Velocity	(tt/sec)		
CN	98.0			80.0		Slope	(#/#)	0.0240	
Area (sf)	0	3,104	o	3,104	3,104	Tc Length	(feet)		
Are						Tc	(min)	8.97	

Summary for Link 3L: POC A

23,130 sf, 36,07% Impervious, Inflow Depth = 4.85" for 50-Year event 2.94 cfs @ 12.07 hrs, Volume= 9,343 cf 2.94 cfs @ 12.07 hrs, Volume= 9,343 cf, Atten= 0%, Lag= 0.0 min Inflow Area = Inflow = = Primary

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 4L: POC B (Mission St.)

1,596 cf 1,596 cf, Atten= 0%, Lag= 0.0 min 4,452 sf., 8.13% Impervious, Inflow Depth = 4,30" for 50-Year event 0.47 cfs @ 12.12 hrs, Volume= 1,596 cf Atten= 0%, Lag= 0.0 mir Inflow Area = Primary = Inflow

Prepared by RVDI HydroCAD® 10.90-26 sin 08481 © 2020 HydroCAD Software Solutions LLC

[ype III 24-hr 100-Year Rainfall=7.20" Printed 10/2/2023

Page 20

Type III 24-hr 100-Year Rainfall=7.20" Printed 10/2/2023

Summary for Subcatchment 1S: Existing to Neighbor

9,563 cf, Depth= 5,73" 3 06 cfs @ 12.07 hrs, Volume=

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0 00-36 00 hrs, dt= 0.01 hrs Type III 24-hr 100 Year Raintall=7 20"

	HSG D		Unconnected pavement, HSG D	75% Grass cover, Good, HSG D	age	us Area	ious Area	nected	Slope Velocity Capacity Description	(cfs)
Description	Paved parking, HSG D	Roofs, HSG D	Unconnected p.	>75% Grass co	Weighted Average	58,34% Pervious Area	41.66% Impervious Area	11 21% Unconnected	Velocity Ca	(th/sec)
ON	98.0	98.0	0,86	80.0	87.5					
Area (sf)	4,152	3,256	935	11,683	20,026	11,683	8,343	935	Tc Length	min) (feet)
4									—	(mir

Sheet Flow, Driveway
Smooth surfaces n= 0.011 P2= 3.30"
Sheet Flow, Law
Grass: Short n= 0,150 P2= 3.30"
Shallow Concentrated Flow, Lawn 0.29 2.69 0.1367 0.0322 30 90 0.56 1.71

0.0871

0.50

(feet) 20 Grassed Waterway Kv= 15.0 fps Total, Increased to minimum Tc = 5.00 min 190 277

Summary for Subcatchment 2S: Existing to Mission St.

1,873 cf, Depth= 5.05" 0.55 cfs @ 12.12 hrs, Volume= Runoff Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0,00-36.00 hrs, dt= 0,01 hrs Type III 24-hr 100-Year Rainfall=7,20"

U	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Average	91 87% Pervious Area	3,13% Impervious Area	Capacity Description	(feet) (tVft) (tVsec) (cfs)	Sheet Flow, Sheet Flow
Description	Paved parki	>75% Grass	Weighted Average	91 87% Per	8,13% Impe	Velocity	(it/sec)	0.18
CN	98.0	80.0				Slope	(ft/ft)	0.0220
Area (sf)	362	4.090	4,452	4,090	362	Lenath	(feet)	06
Are						F	(min)	8.54
	C)							

Grass: Short n= 0.150 P2= 3.30"

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 @ 2020 HydroCAD Software Solutions LLC 20PA_Appendix_B&C_02

Page 21

Summary for Subcatchment OS-EX: Offsite

1,262 cf, Depth= 4.88" 0.36 cfs @ 12.13 hrs, Volume=

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dl= 0.01 hrs Type III 24-hr 100-Year Rainfall=7.20"

									P2= 3.30"
		ood, HSG D			B	Description		Sheet Flow, Lawn	Grass: Short n= 0.150 P2= 3.30"
Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	100,00% Pervious Area	Velocity Capacity	nin) (feet) (ft/ft) (ft/sec) (cfs)	0.19	
CN	98.0	80.0	08.0			Slope	(ft/ft	0,0240	
Area (sf)	0	3,104	0	3,104	3,104	c Length	(feet)	100 100	
7			79			_	(min)	8.97	

Summary for Link 3L: POC A

Lag= 0.0 min for 100-Year event 23,130 sf, 36,07% Impervious, Inflow Depth = 5.62" for 10,3.38 cfs @ 12.07 hrs, Volume= 10,825 cf 3,38 cfs @ 12.07 hrs, Volume= 10,825 cf, Atten= 0%, Inflow Area = Inflow Primary

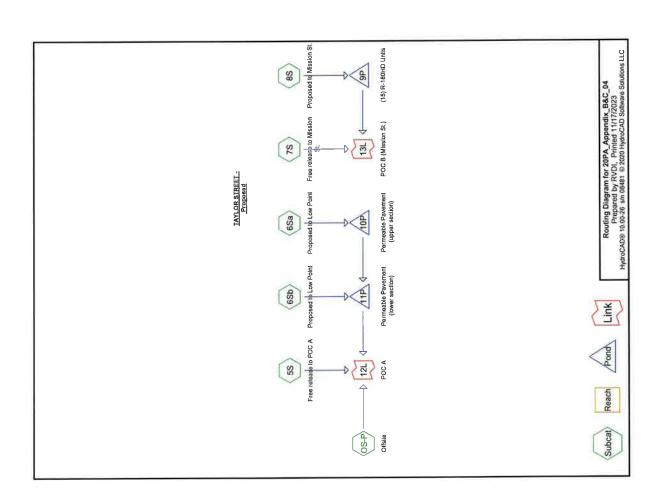
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 4L: POC B (Mission St.)

4,452 sf, 8.13% Impervious, Inflow Depth = 5.05" for 100-Year event 0.55 cfs @ 12.12 hrs, Volume= 1,873 cf 0.55 cfs @ 12.12 hrs, Volume= 1,873 cf, Atten= 0%, Lag= 0.0 min Inflow Area = Primary Inflow

Appendix "C"

HydroCAD Analysis – Proposed Conditions



Printed 11/17/2023 Page 2

Area Listing (selected nodes)

80.0 98.0 0.89 0.89	CN			Area (sq-ft) 9,018 9,334 8,985
------------------------------	----	--	--	--------------------------------

Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023

Page 3

Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023

Page 4

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 5S: Free release to POC A

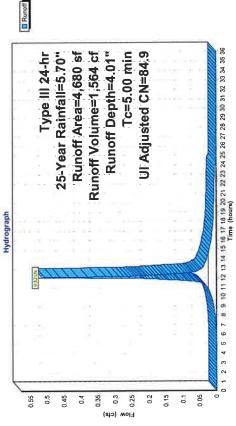
0.52 cfs @ 12.07 hrs, Volume= П

Runoff

1,564 cf, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

Subcatchment 5S: Free release to POC A



Summary for Subcatchment 6Sa: Proposed to Low Point

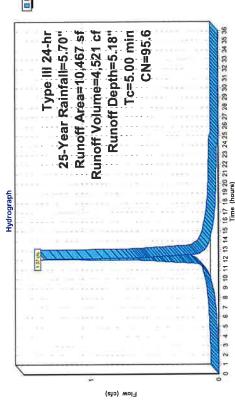
1.37 cfs @ 12.07 hrs, Volume=

4,521 cf, Depth= 5.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

											×
		>75% Grass cover, Good, HSG D		nt, HSG D			ea		Description	(ft/ft) (ft/sec) (cfs)	Direct Entry,
	Paved parking, HSG D	s cover, Go	3.0	Unconnected pavement, HSG D	Verage	13.26% Pervious Area	86.74% Impervious Area	onnected	Capacity	(cfs)	
CN Description	Paved park	>75% Gras	Roofs, HSG D	Unconnect	Weighted Average	13.26% Pe	36.74% Im	1.59% Unconnected	Velocity	(ft/sec)	
S	98.0			98.0	92'6				Slope	(ft/ft)	
Area (sf)	5,420	1,388	3,515	144	10,467	1,388	6'0'6	144	Tc Lenath	(feet)	
Are				Į.	-				P D	(min)	5.00

Subcatchment 6Sa: Proposed to Low Point



Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023

Page 5

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 6Sb: Proposed to Low Point

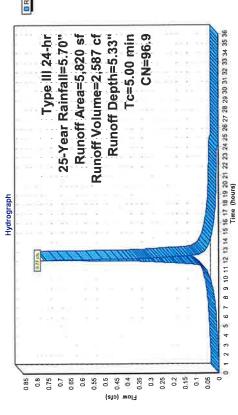
0.77 cfs @ 12.07 hrs, Volume= Runoff

2,587 cf, Depth= 5.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Unconnected pavement, HSG D	Weighted Average	6.05% Pervious Ārea	93.95% Impervious Area	Slope Velocity Capacity Description	(ft/sec) (cfs)	Direct Entry.
S			98.0	0.86	6.96			Slope	(ft/ft)	
Area (sf)		352		0	5,820	352	5,468	Tc Length	min) (feet)	5.00

Subcatchment 6Sb: Proposed to Low Point



Page 6 Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 7S: Free release to Mission St.

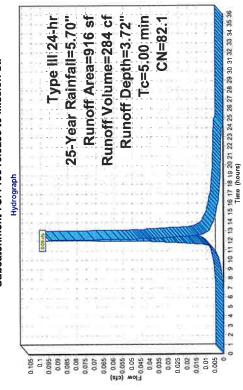
0.09 cfs @ 12.07 hrs, Volume= Runoff

284 cf, Depth= 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

98.0 Paved parking, HSG D 80.0 >75% Grass cover, Good, HSG D 98.0 Roofs, HSG D	916 82.1 Weighted Average 808 88.21% Pervious Area 108 11.79% Impervious Area	Tc Length Slope Velocity Capacity Description (min) (feet) (ff/t) (ff/sec) (cfs)	Direct Entry,
~~		ength Slope Velocity	(0000)

Subcatchment 7S: Free release to Mission St.



Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023

Page 7

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26_sin 08481 @ 2020 HydroCAD Software Solutions LLC

Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023

Page 8

Summary for Subcatchment 8S: Proposed to Mission St.

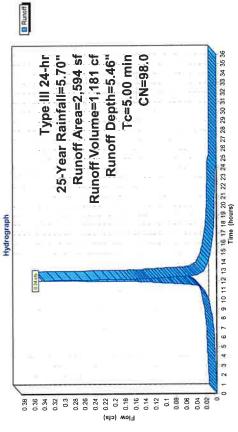
0.34 cfs @ 12.07 hrs, Volume= Runoff

1,181 cf, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

sf) CN Description	98.0		98.0	190.00% Impervious Area	ength Slope Velocity Capacity Description	(ft/ft	Direct Entry,
Area (sf)	1,184	1,410	2,594	2,59	Tc Length	(min) (fe	5.00
- 8		100	1			- 1	

Subcatchment 8S: Proposed to Mission St.



20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 ® 2020 HydroCAD Software Solutions LLC

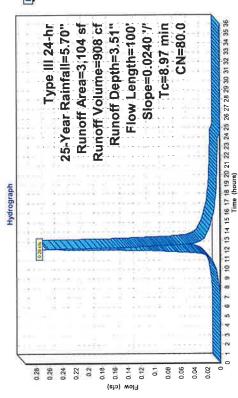
Summary for Subcatchment OS-P: Offsite

908 cf, Depth= 3.51" 0.26 cfs @ 12.13 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

									P2= 3.30"
								Lawn	n= 0.150
	0	ood, HSG D	Roofs, HSG D		ğ	Tc Length Slope Velocity Capacity Description		Sheet Flow, Lawn	Grass: Short n= 0.150 P2= 3.30"
	ing, HSG [s cover, Go	D C	verage	ervious Are	Capacity	(cts)		
Area (sf) CN Description	Paved park	>75% Gras	Roofs, HSC	Weighted Average	100.00% P	Velocity	(tt/sec)	0.19	
CN	98.0	80.0	98.0	80.0		Slope	(ft/ft)	100 0.0240	
(st)	0	3,104	0	3,104	3,104	Length	(feet)	100	
Are						J.	(min)	8.97	

Subcatchment OS-P: Offsite



Type III 24-hr 25-Year Rainfall=5.70'

Printed 11/17/2023

Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023 Page 10

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Pond 9P: (15) R-180HD Units

2.594 sf,100.00% Impervious, Inflow Depth = 5.46" for 25-Year event 4 cfs @ 12.07 hrs, Volume= 596 cf, Atten= 23%, Lag= 3.7 min 6 cfs @ 12.13 hrs, Volume= 596 cf 0.34 cfs @ 1 0.26 cfs @ 1 0.26 cfs @ 1 Inflow Area = II Outflow Primary Inflow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 25.98' @ 12.13 hrs Surf.Area= 398 sf Storage= 597 cf

Plug-Flow detention time= 259.9 min calculated for 596 cf (50% of inflow) Center-of-Mass det. time= 130.2 min (875.2 - 745.0)

11.50'W x 34.65'L x 2.71'H Field A	1,0/9 cf Overall - 33/ cf Embedded = 742 cf x 40.0% Volds	Currec N=100 A 10 History $= 100000000000000000000000000000000000$	Effective Size= 33.6 vv x zu.u n = 23.44 si x 0.35 L = z 1.6 ci	Overall Size= 36.0 W x 20.5 H x 7.33 L With 1.00 Overlap	Row Length Adjustment= +1.00' x 3.44 sf x 3 rows	634 of Total Available Storage
297 cf	30 7 CC	22/ 52				634 of
23.50'	100	74.00				
#1A	407	#7#				
	23.50' 297 cf	23.50'	23.50' 297 cf 24.00' 337 cf	23.50' 297 cf 24.00' 337 cf	23.50' 297 cf 24.00' 337 cf	23.50' 297 cf 24.00' 337 cf

Storage Group A created with Chamber Wizard

	C = 0.600			Cc = 0.900	Sf	
Invert Outlet Devices	25.90' 24.0" x 24.0" Horiz. 2 - 2'x2' catch basins X 2.00 C= 0.600	Limited to weir flow at low heads	24.80' 6.0" Round 6" Culvert L= 20.0' Ke= 0.500	Inlet / Outlet Invert= 24.80' / 24.80' S= 0.0000 '/' Cc= 0.900	n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf	
Invert	25.90		24.80			
Device Routing	#1 Primary		#2 Device 1			
Device	#		#5			

20PA_Appendix_B&C_04

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Pond 9P: (15) R-180HD Units - Chamber Wizard Field A

Chamber Model = Cultec R-180 (Cultec Recharger® 180HD) Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7,33'L with 1.00' Overlap

Row Length Adjustment= +1.00' x 3.44 sf x 3 rows

36.0" Wide + 3.0" Spacing = 39.0" C-C Row Spacing

5 Chambers/Row \times 6.33' Long +1.00' Row Adjustment = 32.65' Row Length +12.0" End Stone \times 2 = 34.65' Base Length

3 Rows x 36.0" Wide + 3.0" Spacing x 2 + 12.0" Side Stone x 2 = 11.50' Base Width 6.0" Base + 20.5" Chamber Height + 6.0" Cover = 2.71' Field Height

15 Chambers x 21.8 cf +1.00' Row Adjustment x 3.44 sf x 3 Rows = 336.9 cf Chamber Storage

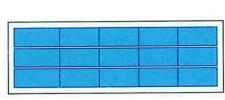
1,079.2 of Field - 336.9 of Chambers = 742.3 of Stone x 40.0% Voids = 296.9 of Stone Storage

Chamber Storage + Stone Storage = 633.8 cf = 0.015 af

Overall System Size = 34.65' x 11.50' x 2.71' Overall Storage Efficiency = 58.7%

15 Chambers

40.0 cy Field 27.5 cy Stone

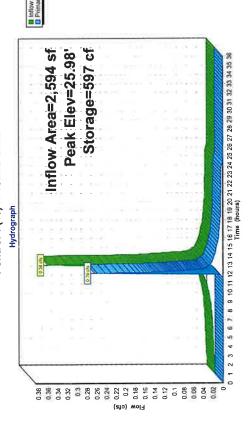




Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023

Page 11

Pond 9P: (15) R-180HD Units



Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023

Page 12

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Pond 10P: Permeable Pavement (upper section)

The bottom elevation of the No.2 stone varies (average of 26.2 and 24.6) in order to remain 1' above

mottling.

4,521 cf 3,849 cf, Atten= 23%, Lag= 3.7 min 3,849 cf for 25-Year event Inflow Depth = 5.18" 10,467 sf, 86.74% Impervious, 1.37 cfs @ 12.07 hrs, Volume= 1.05 cfs @ 12.13 hrs, Volume= 1.05 cfs @ 12.13 hrs, Volume= Inflow Area = Primary Outflow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26,99' @ 12.13 hrs Surf.Area= 1,675 sf Storage= 1,066 cf

Plug-Flow detention time= 125.7 min calculated for 3,849 cf (85% of inflow) Center-of-Mass det. time= 61.8 min (822.5 - 760.7)

Invert Avail. Storage Storage Description	1,273 cf No.2 Stone (Prismatic) Listed below (Recalc)	3,183 cf Overall x 40.0% Voids 134 cf No.57 Stone (Prismatic) Listed below (Recalc)	670 cf Overall x 20.0% Voids	Permeable Surface (Prismatic) Listed below (Recalc)	670 cf Overall x 10.0% Voids
Avail.Storage	1,273 cf	134 cf		67 cf	
Invert	25.40	27.30		27.70	
Volume	#1	#2		¥	

1,474 cf Total Available Storage

Cum.Store (cubic-feet)	3,183	Cum.Store (cubic-feet)	029	Cum.Store (cubic-feet)	0 670
Inc.Store (cubic-feet)	3,183	Inc.Store (cubic-feet)	029	Inc.Store (cubic-feet)	0.029
Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675
Elevation (feet)	25.40 27.30	Elevation (feet)	27.30 27.70	Elevation (feet)	27.70 28.10

	30 L= 50.0' Ke= 0.500	0' S= 0.0260 " Cc= 0.900	Flow Area= 0.20 sf
Invert Outlet Devices	26.40' 6.0" Round 6" Underdrain X 2.00 L= 50.0' Ke= 0.500	Inlet / Outlet Invert= 26.40' / 25.10' S= 0.0260 '/' Cc= 0.900	n= 0.011 PVC, smooth interior. Flow Area= 0.20 sf
Invert	26.40		
Device Routing	#1 Primary		
Device	#1		

Primary OutFlow Max=1.05 cfs @ 12.13 hrs HW=26.99' TW=26.52' (Dynamic Tailwater) —1=6" Underdrain (Outlet Controls 1.05 cfs @ 2.86 fps)

Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023

Page 13

Page 14 Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Pond 10P: Permeable Pavement (upper section)

	w Area=10,467 sf Peak Elev=26.99	Storage=1,000 cr 6.0" Round Culvert x 2.00	n=0.011 L=50.0'	S=0.0260 '/'	30 31 32 35 34 35 36
udi	Inflow Area=10,467 sf Peak Elev=26.99	Storag			7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36
Hydrograph	1.2 ct	\$ <u>4</u>			8 9 10 11 12 13 14 15 16 17 18 19 21 Time (hours)
	^ =	(out)	Flow		1 2 3 4 5 6 7

Summary for Pond 11P: Permeable Pavement (lower section)

Inflow Depth = 4.74" for 25-Year event	6,435 cf	5,835 cf, Atten= 4%, Lag= 2.0 min	5,835 cf
16,287 sf, 89.32% Impervious, Inflow Depth = 4.74" f	1.76 cfs @ 12.09 hrs, Volume=	1.68 cfs @ 12.12 hrs, Volume=	1.68 cfs @ 12.12 hrs, Volume=
Inflow Area =	= luflow =	Ontflow =	Primary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.52 @ 12.12 hrs Surf.Area= 2,700 sf Storage= 951 cf

Plug-Flow detention time= 86.7 min calculated for 5,833 cf (91% of inflow) Center-of-Mass det, time= 39.3 min (833.8 - 794.5)

Invert Avail Storage Storage Description	864 cf No.2 Stone (Prismatic) Listed below (Recalc) 2.160 cf Overall x 40.0% Voids	108 cf No.57 Stone (Prismatic) Listed below (Recalc) 540 cf Overall x 20.0% Voids	Permeable Surface (Prismatic) Listed below (Recalc) 540 cf Overall x 10.0% Voids
Avail Storage	864 cf	108 cf	54 cf
	24.60'	26.20'	26.60'
Volume	#	#5	#3

1,026 cf Total Available Storage

Cum.Store	2,160	Cum.Store	0	Cum.Store	0
(cubic-feet)		(cubic-feet)	540	(cubic-feet)	540
Inc.Store	0	Inc.Store	540	Inc.Store	0
(cubic-feet)	2,160	(cubic-feet)		(cubic-feet)	540
Surf.Area	1,350	Surf.Area	1,350	Surf.Area	1,350
(sq-ft)	1,350	(sq-ft)		(sq-ft)	1,350
Elevation	24.60	Elevation	26.20	Elevation	26.60
(feet)	26.20	(feet)	26.60	(feet)	27.00

Invert Outlet Devices	20.0' long x 2.0' breadth Broad-Crested Rectangular Weir	Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00	2,50 3.00 3.50	Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88	2.85 3.07 3.20 3.32	10.0" Round 10" Culvert L= 17.0' Ke= 0.500	Inlet / Outlet Invert= 25.70' / 23.70' S= 0.1176 '/' Cc= 0.900	n= 0.044 PVC smooth interior. Flow Area= 0.55 sf
Invert	25.70'					25.70		
Device Routing	#1 Primary					#2 Device 1		

Primary OutFlow Max=1.68 cfs @ 12.12 hrs HW=26.52 TW=0.00' (Dynamic Tailwater)

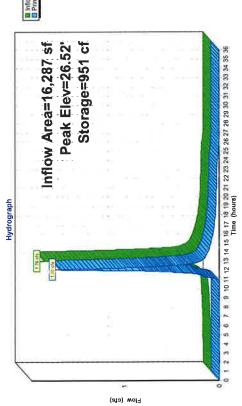
—1=Broad-Crested Rectangular Weir (Passes 1.68 cfs of 38.84 cfs potential flow)

—2=10" Culvert (Inlet Controls 1.68 cfs @ 3.09 fps)

Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023 Is LLC Page 15

Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023 Is LLC Page 16

Pond 11P: Permeable Pavement (lower section)



20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 @ 2020 HydroCAD Software Solutions LLC

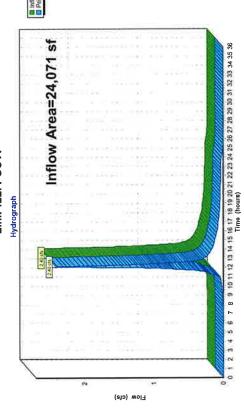
Summary for Link 12L: POC A

24,071 sf, 65,89% Impervious, Inflow Depth = 4.14" for 25-Year event 2.40 cfs @ 12.10 hrs, Volume= 8,307 cf, Atten= 0%, Lag= 0.0 min

Inflow Area = Inflow = Primary =

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 12L: POC A



Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023 Is LLC Page 17

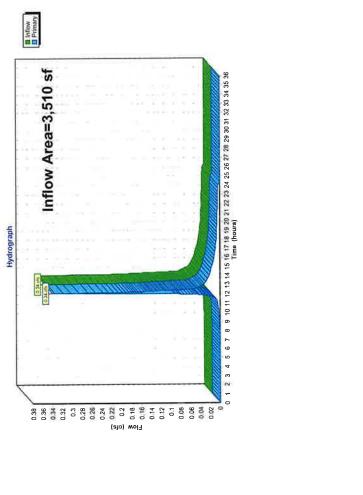
20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Link 13L: POC B (Mission St.)

3.510 sf, 76.98% Impervious, Inflow Depth = 3.01" for 25-Year event 0.34 cfs @ 12.13 hrs, Volume= 880 cf Atten= 0%, Lag= 0.0 min Inflow Area = Inflow = Primary =

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 13L: POC B (Mission St.)



Type III 24-hr 1-Year Rainfall=2.70"

Printed 11/17/2023

Page 18

Summary for Subcatchment 5S: Free release to POC A

520 cf, Depth= 1.33" 0.17 cfs @ 12,08 hrs, Volume= Runoff Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 1-Year Rainfall=2.70"

Adj Description	Paved parking, HSG D		Roofs, HSG D	Unconnected pavement, HSG D	84.9	71.92% Pervious Area	28.08% Impervious Area	7.61% Unconnected	ne Velocity Canacity Description	(fult) (fusec) (cfs)	Direct Entry,
S	98.0	80.0			85.1						
Area (sf)	0	3,366	1,214	100	4,680	3,366	1,314	100	To Length	(min) (feet)	5.00

Summary for Subcatchment 6Sa: Proposed to Low Point

1,934 cf, Depth= 2.22" 0.61 cfs @ 12.07 hrs, Volume= Runoff Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 1-Year Rainfall=2.70"

CN Description	Paved parking, HSG D	5% Grass cover, Good, HSG D	Roofs, HSG D	Unconnected pavement, HSG D	Weighted Average	13.26% Pervious Area	86.74% Impervious Area	.59% Unconnected	Slope Velocity Capacity Description	(ft/sec) (cfs)	Direct Entry,	
Desc	Pave	>75%	Roof	Uncc	Weig	13.26	86.7	1.59	e Ve			
S	98.0	80.0	98.0	98.0	92.6				Slop	(ft/ft)	8	
Area (st)	5,420	1,388	3,515	144	10,467	1,388	9,079	144	Tc Length	(feet)		
Ā									Tc	(min)	5.00	
	Ŷ.			11	,						50	

Summary for Subcatchment 6Sb: Proposed to Low Point

1,140 cf, Depth= 2,35" 0.35 cfs @ 12.07 hrs, Volume= П Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 1-Year Rainfall=2.70"

Type III 24-hr 1-Year Rainfall=2.70" Printed 11/17/2023 LLC Page 19

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10:00-26 sin 08481 © 2020 HydroCAD Software Solutions LLC

	0	ood, HSG D	Roofs, HSG D	nt, HSG D			ea	Slope Velocity Capacity Description		Direct Entry
	ing, HSG D	s cover, Go	٥	ed pavemer	verage	ious Area	ervious Ar	Capacity	(cfs)	
CN Description	Paved parking, HSG D	*75% Gras	Roofs, HSG	Unconnected pavement, HSG D	Weighted Average	6.05% Pervious Area	93.95% Impervious Area	Velocity	(tt/sec)	
CN			98.0 F	- 4	96.9	•	0,	Slope	(ft/ft)	
Area (sf)		352	2,846	0		352	5,468	Tc Length	(feet)	
Are								<u>2</u>	(min)	00 3

Summary for Subcatchment 7S: Free release to Mission St.

88 cf, Depth= 1.15" 0.03 cfs @ 12.08 hrs, Volume= Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 1-Year Rainfall=2.70"

Area (sf) CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	88.21% Pervious Area	11.79% Impervious Area	Tc Length Slope Velocity Capacity Description	(ft/sec) (cfs)	Direct Entry,	
C	98.0	80.0	98.0	82.1			Slope	(ft/ft		
rea (sf)	108	808	0	916	808	108	; Length	(feet)		
A							7	(min)	5.00	

Summary for Subcatchment 8S: Proposed to Mission St.

534 cf, Depth= 2.47" 0.16 cfs @ 12.07 hrs, Volume= Runoff Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 1-Year Rainfall=2.70"

	Paved parking, HSG D	ss cover, Good, HSG D	Roofs, HSG D	Average	100 00% Impervious Area
CN Description	Paved parki	>75% Grass	Roofs, HSG	Weighted Average	100.00% lrr
CN	98.0	80.0	98.0	98.0	
Area (sf)	1,184	0	1,410	2,594	2.594
	1			l	

Type III 24-hr 1-Year Rainfall=2.70" Printed 11/17/2023 Page 20

Type III 24-hr 1-Year Rainfall=2.70"

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC_

Description Capacity (cfs) Velocity (ft/sec) Slope (ft/ft) Tc Length (min) (feet)

Summary for Subcatchment OS-P: Offsite Direct Entry,

5.00

266 cf, Depth= 1.03" 0.08 cfs @ 12.13 hrs, Volume=

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 1-Year Rainfall=2.70"

Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	100.00% Pervious Area	
S		80.0		80.0		
Area (sf)	0	3,104	0	3,104	3,104	

Sheet Flow, Lawn Grass: Short n= 0.150 P2= 3.30" Velocity Capacity Description (cfs) (ft/sec) Slope (ft/ft) 0.0240 Length (feet) 100 Tc (min)

Summary for Pond 9P: (15) R-180HD Units

low Dep	534 cf	0 cf, Atten= 100%, Lag= 0.0 min	0 cf
2,594 sf,100.00% Impervious,	0.16 cfs @ 12.07 hrs, Volume=	0.00 cfs @ 0.00 hrs, Volume=	0.00 cfs @ 0.00 hrs, Volume=
Inflow Area =	= molful	Ontflow =	Primary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 25.59' @ 24.29 hrs Surf.Area= 398 sf Storage= 534 cf

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

folume Invert Avail. Storage Storage Description	297 cf 11.50'W x 34.65'L x 2.71'H Field A	1,079 cf Overall - 337 cf Embedded = 742 cf x 40.0% Voids	337 cf Cultec R-180 x 15 Inside #1	Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf	Overall Size= 36.0"W x 20.5"H x 7.33"L with 1.00' Overlap	Row Length Adjustment= +1.00' x 3.44 sf x 3 rows	634 cf Total Available Storage
Avail.Storage	297 cf		337 cf				634 cf
Invert	23.50'		24.00				
Volume	#1A		#2A				

Storage Group A created with Chamber Wizard

	C = 0.600	
Invert Outlet Devices	25.90' 24.0" x 24.0" Horiz. 2 - 2'x2' catch basins X 2.00 C= 0.600	Limited to weir flow at low heads
Invert	25.90'	
Device Routing	Primary	
Device	#1	

Device 1

42

Printed 11/17/2023 Page 21

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 sin 08481 © 2020 HydroCAD Software Solutions LLC

6.0" Round 6" Culvert L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 24.80' / 24.80' S= 0.0000' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf 24.80

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=23.50′ TW=0.00′ (Dynamic Tailwater)

—1=2 - 2x2′ catch basins (Controls 0.00 cfs)

—2=6″ Culvert (Controls 0.00 cfs)

Summary for Pond 10P: Permeable Pavement (upper section)

Inflow D		1,262 cf, Atten= 38%, Lag= 5.5 min	1,262 cf
10,467 sf, 86.74% Impervious,	0.61 cfs @ 12.07 hrs, Volume=	0.38 cfs @ 12.16 hrs, Volume=	0.38 cfs @ 12.16 hrs, Volume=
Inflow Area =	= luflow =	Outflow =	Primary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.67' @ 12.16 hrs Surf.Area= 1,675 sf Storage= 849 cf

Plug-Flow detention time= 195.0 min calculated for 1,261 cf (65% of inflow) Center-of-Mass det. time= 97.7 min (878.8 - 781.2)

Invert Avail. Storage Storage Description	1,273 cf No.2 Stone (Prismatic) Listed below (Recalc)	3,183 cf Overall x 40.0% Voids	134 cf No.57 Stone (Prismatic) Listed below (Recalc)	670 cf Overall x 20.0% Voids	Permeable Surface (Prismatic) Listed below (Recalc)	670 cf Overall x 10.0% Voids
Avail.Storage	1,273 cf		134 cf		67 cf	
Invert	25.40'		27.30		27.70	
Volume	#1		#2		#3	

1,474 cf Total Available Storage

Cum.Store (cubic-feet)	3,183	Cum.Store (cubic-feet)	029	Cum.Store (cubic-feet)	0 670
Inc.Store (cubic-feet)	3,183	Inc.Store (cubic-feet)	0 029	Inc.Store (cubic-feet)	0 670
Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675
Elevation (feet)	25.40 27.30	Elevation (feet)	27.30 27.70	Elevation (feet)	27.70 28.10

Invert Outlet Devices	26.40' 6.0" Round 6" Underdrain X 2.00 L= 50.0' Ke= 0.500	Inlet / Outlet Invert= 26.40' / 25.10' S= 0.0260 '/' Cc= 0.900	n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf
Invert	26.40'		
Device Routing	#1 Primary	•	
Device	#		

8,	
Š	
အရ က	
×	2
Appendix	
ĕ	5
ğ	
	Ì
20PA	December
Š	å
4	_

Prepared by RVUI HydroCAD® 10.00-26 s/n 08481 ® 2020 HydroCAD Software Solutions LLC

Page 22 Printed 11/17/2023 Type III 24-hr 1-Year Rainfall=2.70"

Printed 11/17/2023 Page 23 Type III 24-hr 1-Year Rainfall=2.70'

Primary OutFlow Max=0.38 cfs @ 12.16 hrs HW=26.67' TW=25.89' (Dynamic Tailwater) —1=6" Underdrain (Inlet Controls 0.38 cfs @ 1.76 fps)

Summary for Pond 11P: Permeable Pavement (lower section)

1,801 cf, Atten= 34%, Lag= 10.4 min 1,801 cf for 1-Year event 16,287 sf, 89.32% Impervious, Inflow Depth = 1.77" 63 cfs @ 12.12 hrs, Volume= 2,402 cf 41 cfs @ 12.30 hrs, Volume= 1,801 cf, Atter 41 cfs @ 12.30 hrs, Volume= 1,801 cf 0.63 cfs @ 0.41 cfs @ 0.41 cfs @ Inflow Area = В Primary Outflow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.04' @ 12.30 hrs Surf.Area= 1,350 sf Storage= 777 cf

Plug-Flow detention time= 173.6 min calculated for 1,801 cf (75% of inflow) Center-of-Mass det. time= 79.1 min (906.5 - 827.4)

540 of Overall x 20.0% Voids

Permeable Surface (Prismatic) Listed below (Recalc) 540 of Overall x 10.0% Voids 2,160 of Overall x 40.0% Voids
No.57 Stone (Prismatic) Listed below (Recalc) No.2 Stone (Prismatic) Listed below (Recalc) Storage Description 864 cf 108 cf 54 cf Avail.Storage Invert 24.60 26.20 26.60' Volume #1 # #

Total Available Storage 1,026 cf

Cum.Store	2,160	Cum.Store	0	Cum.Store	0
(cubic-feet)		(cubic-feet)	540	(cubic-feet)	540
Inc.Store	0	Inc.Store	0	Inc.Store	0
(cubic-feet)	2,160	(cubic-feet)	540	(cubic-feet)	540
Surf.Area (sq-ft)	1,350	Surf.Area (sq-ft)	1,350	Surf.Area (sq-ft)	1,350
Elevation	24.60	Elevation	26.20	Elevation	26.60
(feet)	26.20	(feet)	26.60	(feet)	27.00

20.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00	Coof. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 Coof. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 3.07 3.20 3.32 4.05 Culvert L= 17.0° Ke= 0.500 Inlet / Outlet Invert= 25.70° / 23.70° S= 0.1176 "/ Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.55 sf
25.70'	25.70'
#1 Primary	#2 Device 1
	25.70'

20PA_Appendix_B&C_04

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Primary OutFlow Max=0.41 cfs @ 12.30 hrs HW=26.04" TW=0.00" (Dynamic Tailwater)

—1=Broad-Crested Rectangular Weir (Passes 0.41 cfs of 10.25 cfs potential flow)

—2=10" Culvert (Inlet Controls 0.41 cfs @ 1.98 fps)

Summary for Link 12L: POC A

2,587 cf 2,587 cf, Atten= 0%, Lag= 0.0 min 24,071 sf., 65.89% Impervious, Inflow Depth > 1.29" for 1-Year event 0.54 cfs @ 12.28 hrs, Volume= 2,587 cf Atten= 0%, Lag= 0.0 m 0.54 cfs @ 12.28 hrs, Volume= Inflow Area = $\Pi = \Pi$ Primary Inflow

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 13L: POC B (Mission St.)

88 cf 88 cf, Atten= 0%, Lag= 0.0 min 3,510 sf, 76.98% Impervious, Inflow Depth = 0.30" for 1-Year event 0.03 cfs @ 12.08 hrs, Volume= 88 cf Atten= 0%, Lag= 0.0 m 0.03 cfs @ 12.08 hrs, Volume= Inflow Area = 11 11 Primary Inflow

Type III 24-hr 2-Year Rainfall=3.30"

Page 24 Printed 11/17/2023

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 5S: Free release to POC A

716 cf, Depth= 1.84" 0.24 cfs @ 12.07 hrs, Volume= П Runoff Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-Year Rainfall=3.30"

CN Adj Description	0 Paved parking, HSG D		0 Roofs, HSG D	0 Unconnected pavement, HSG D	84.9	71.92% Pervious Area	28,08% Impervious Area	7.61% Unconnected	Velocity Cap	(#/tt) (ft/sec) (cfs)	Direct Entry,
Area (sf) C	86 0	3,366 80.0	1,214 98		4,680 85.1	3,366	1,314	100	Length	(min) (feet)	5.00

Summary for Subcatchment 6Sa: Proposed to Low Point

2,447 cf, Depth= 2.81" 0.77 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-Year Rainfall=3.30"

	0	ood, HSG D	Roofs, HSG D	nt, HSG D		_	ea		Contration	Describing	nin) (feet) (ft/ft) (ft/sec) (cfs)	Direct Entry,
	ing, HSG [s cover, G	3 D	ed paveme	verage	rvious Area	pervious Ar	onnected	Coppositive	Capacity	(cts)	
CN Description	Paved parking, HSG D	>75% Gras	Roofs, HSC	Unconnected pavement, HSG D	Weighted Average	13.26% Pervious Area	86.74% Impervious Area	1.59% Unconnected	Mologia	Velocity	(tt/sec)	
CN	98.0	80.0	98.0	98.0	95.6		~		0	acon	(ft/ft)	
Area (sf)		1,388	3,515	144	10,467	1,388	9,079	144	4000	Lei Gill	(feet)	
Are					-				F	د	(min)	5.00

Summary for Subcatchment 6Sb: Proposed to Low Point

1,428 cf, Depth= 2.94" 0.44 cfs @ 12.07 hrs, Volume= п Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-Year Rainfall=3.30"

Type III 24-hr 2-Year Rainfall=3.30"

Printed 11/17/2023 Page 25 20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

93.95% Impervious Area e Velocity Capacity Description t) (ft/sec) (cfs)	Direct Entry,
Slop	
5,468 Length (feet)	5.00
	th Slope

Summary for Subcatchment 7S: Free release to Mission St.

124 cf, Depth= 1.63" 0.04 cfs @ 12.08 hrs, Volume=

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-Year Rainfall=3.30"

CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	88.21% Pervious Area	11.79% Impervious Area	To Length Slope Velocity Capacity Description	() (luset.) (cis) Direct Entry,
CN	98.0	80.0	98.0	82.1			Slop	(10)
Area (sf)	108	808	0	916	808	108	Length	(ieer)
Ar							L (i	2:00

Summary for Subcatchment 8S: Proposed to Mission St.

663 cf, Depth= 3.07" 0.20 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-Year Rainfall=3.30"

Page 26 Type III 24-hr 2-Year Rainfall=3.30" Printed 11/17/2023

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Direct Entry, (cts) Velocity (ft/sec) Slope (ft/ft) Length (feet)

(min)

Description

Capacity

Summary for Subcatchment OS-P: Offsite

383 cf, Depth= 1.48" 0.11 cfs @ 12.13 hrs, Volume= 11

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 2-Year Rainfall=3.30"

								Lawn	Grass: Short n= 0.150 P2= 3.30"
		ood, HSG D	Roofs, HSG D		c <u>o</u>	Description	nin) (feet) (ft/ft) (ft/sec) (cfs)	Sheet Flow, Lawn	Grass: Shor
	Paved parking, HSG D	s cover, Go	0.0	Weighted Average	ervious Are	Capacity	(cts)		
CN Description	Paved park	>75% Ġras	Roofs, HSC	Weighted A	100.00% P	Velocity	(tt/sec)	0.19	
CN	98.0	80.0	98.0	80.0		Slope	(ft/ft)	100 0.0240	
Area (sf)	0	3,104	0	3,104	3,104	Length	(feet)	100	
Are						ΤC	(min)	8.97	

Summary for Pond 9P: (15) R-180HD Units

2,594 sf,100.00% Impervious, Inflow Depth = 3.07" for 2-Year event	663 cf	78 cf, Atten= 98%, Lag= 254.1 min	78 cf
2,594 sf,100.00% Impervious,	0.20 cfs @ 12.07 hrs, Volume=	0.00 cfs @ 16.31 hrs, Volume=	0,00 cfs @ 16.31 hrs, Volume=
Inflow Area =	= luflow =	Outflow =	Primary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 25.90' @ 16.31 hrs Surf.Area= 398 sf Storage= 585 cf

Plug-Flow detention time= 739.7 min calculated for 78 cf (12% of inflow) Center-of-Mass det. time= 416.0 min (1,170.9 - 754.8)

Invert Avail. Storage Storage Description	297 cf 11.50'W x 34.65'L x 2.71'H Field A 1 079 cf Overall - 337 cf Embedded = 742 cf x 40.0% Voids	337 cf Cultec R-180 x 15 Inside #1 Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap Row Length Adjustment= +1.00' x 3.44 sf x 3 rows	
Avail.Storage	297 cf	337 cf	
Invert	23.50	24.00'	
Volume	#1A	#2A	

634 cf Total Available Storage

Storage Group A created with Chamber Wizard

	C = 0.600	
Invert Outlet Devices	25.90' 24.0" x 24.0" Horiz. 2 - 2'x2' catch basins X 2.00 C= 0.600	Limited to weir flow at low heads
Invert	25.90	
Routing	Primary	
Device	#1	

20PA_Appendix_B&C_04

Device 1

4

Type III 24-hr 2-Year Rainfall=3.30" Printed 11/17/2023 LLC Page 27

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

6.0" Round 6" Culvert L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 24.80' / 24.80' S= 0.0000'' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf 24.80

Primary OutFlow Max=0.00 cfs @ 16.31 hrs HW=25.90' TW=0.00' (Dynamic Tallwater) L_1=2.2'x2' catch basins (Weir Controls 0.00 cfs @ 0.15 fps) L_2=6" Culvert (Passes 0.00 cfs of 0.04 cfs potential flow)

Summary for Pond 10P: Permeable Pavement (upper section)

Inflow [1,775 cf, Atten= 20%, Lag= 3.3 min	1,775 cf
10,467 sf, 86.74% Impervious,	0.77 cfs @ 12.07 hrs, Volume=	0.62 cfs @ 12.13 hrs, Volume=	0.62 cfs @ 12.13 hrs, Volume=
Inflow Area =	= mollul	Outflow =	Primary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.76' @ 12.13 hrs Surf.Area= 1,675 sf Storage= 911 cf

Plug-Flow detention time= 171.0 min calculated for 1,775 cf (73% of inflow) Center-of-Mass det. time= 82.5 min (857.6 - 775.1)

Invert Avail.Storage Storage Description	1,273 cf No.2 Stone (Prismatic) Listed below (Recalc)	3,183 cf Overall x 40.0% Voids	134 cf No.57 Stone (Prismatic) Listed below (Recalc)	670 cf Overall x 20.0% Voids	Permeable Surface (Prismatic) Listed below (Recalc)	670 cf Overall x 10.0% Voids
Avail.Storage	1,273 cf		134 cf		67 cf	
Invert	25.40		27.30		27.70	
Volume	#1		#2		#3	

1,474 cf Total Available Storage

Cum.Store (cubic-feet)	3,183	Cum.Store (cubic-feet)	0 029	Cum.Store (cubic-feet)	0.00
Inc.Store (cubic-feet)	3,183	Inc.Store (cubic-feet)	0 670	Inc.Store (cubic-feet)	029
Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675
Elevation (feet)	25.40 27.30	Elevation (feet)	27.30 27.70	Elevation (feet)	27.70 28.10

Invert Outlet Devices	26.40' 6.0" Round 6" Underdrain X 2.00 L= 50.0' Ke= 0.500	Inlet / Outlet Invert= 26.40' / 25.10' S= 0.0260 '/' Cc= 0.900	n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf
Invert	26.40		
Device Routing	Primary		
Devic	#		

8	
B&C_04	
	-
ppendix	
be	1
₹	7
20PA_Appe	1
Ñ	۵

Type III 24-hr 2-Year Rainfall=3.30"

Printed 11/17/2023 Page 29

Primary OutFlow Max=0.62 cfs @ 12.13 hrs HW=26.76 TW=26.16' (Dynamic Tailwater) —1=6" Underdrain (Inlet Controls 0.62 cfs @ 2.04 fps)

Summary for Pond 11P: Permeable Pavement (lower section)

3,203 cf 2,603 cf, Atten= 19%, Lag= 4.4 min 2,603 cf for 2-Year event 16,287 sf., 89,32% Impervious, Inflow Depth = 2.36" 1,00 cfs @ 12.10 hrs, Volume= 3,203 cf 0.81 cfs @ 12.17 hrs, Volume= 2,603 cf, Atten 0.81 cfs @ 12.17 hrs, Volume= 2,603 cf Inflow Area = 11 Outflow Primary Inflow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.20' @ 12.17 hrs Surf.Area= 1,350 sf Storage= 862 cf

Plug-Flow detention time= 138.5 min calculated for 2,603 cf (81% of inflow) Center-of-Mass det. time= 60.6 min (877.0 - 816.4)

Invert Avail.Storage Storage Description	864 cf No.2 Stone (Prismatic) Listed below (Recalc)	2,160 cf Overall x 40.0% Voids	108 cf No.57 Stone (Prismatic) Listed below (Recalc)	540 cf Overall x 20.0% Voids	54 of Permeable Surface (Prismatic) Listed below (Recalc)	540 cf Overall x 10.0% Voids
Avail.Storage	864 cf		108 cf		54 cf	
Invert	24.60		26.20		26.60'	
Volume	#		#2		#3	

1,026 cf Total Available Storage

Cum.Store (cubic-feet)	2,160	Cum.Store (cubic-feet)	0 540	Cum.Store (cubic-feet)	0 540
Inc.Store (cubic-feet)	2,160	Inc.Store (cubic-feet)	0 540	Inc.Store (cubic-feet)	0 540
Surf.Area (sq-ft)	1,350	Surf.Area (sq-ft)	1,350	Surf.Area (sq-ft)	1,350 1,350
Elevation (feet)	24.60 26.20	Elevation (feet)	26.20 26.60	Elevation (feet)	26.60 27.00

Invert Outlet Devices	25.70' 20.0' long x 2.0' breadth Broad-Crested Rectangular Weir	Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00	2.50 3.00 3.50	Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88	2.85 3.07 3.20 3.32		Inlet / Outlet Invert= 25.70' / 23.70' S= 0.1176 '/ Cc= 0.900	n= 0.011 PVC, smooth interior, Flow Area= 0.55 sf
Invert	25.70'					25.70'		
Device Routing	#1 Primary					#2 Device 1		
Device	#					#5		

Printed 11/17/2023 Page 28

Type III 24-hr 2-Year Rainfall=3.30"

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Primary OutFlow Max=0.81 cts @ 12.17 hrs HW=26.20' TW=0.00' (Dynamic Tailwater) —1=Broad-Crested Rectangular Weir (Passes 0.81 cfs of 18.25 cfs potential flow) —2=10" Culvert (Inlet Controls 0.81 cfs @ 2.40 fps)

Summary for Link 12L: POC A

3,701 cf 3,701 cf, Atten= 0%, Lag= 0.0 min Inflow = Primary = Inflow Area =

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 13L: POC B (Mission St.)

202 cf, Atten= 0%, Lag= 0.0 min 3,510 sf, 76.98% Impervious, Inflow Depth = 0.69" for 2-Year event 0.04 cfs @ 12.08 hrs, Volume= 202 cf, Atten= 0%. Laα= 0.0 m Inflow Area = $\Pi = \Pi$ Inflow Primary

Type III 24-hr 5-Year Rainfall=4.30" Printed 11/17/2023

Page 30

Rainfall=4.30" ad 11/17/2023

Page 31

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26_s/n 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 5S: Free release to POC A

1,060 cf, Depth= 2.72" 0.35 cfs @ 12.07 hrs, Volume=

n

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 5-Year Rainfall=4.30"

Adj Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Unconnected pavement, HSG D	84.9 Weighted Average, UI Adjusted	71.92% Pervious Area	28.08% Impervious Area	7.61% Unconnected	e Velocity Capacity Description	t) (ft/sec) (cfs)	Direct Entry.
CN	98.0	80.0	98.0	98.0	85.1				Slop	(ft/ft)	
Area (sf)	0	3,366	1,214	100	4,680	3,366	1,314	100	Tc Length	(min) (feet)	5.00
	Į.			- 3	Į.					- 1	U

Summary for Subcatchment 6Sa: Proposed to Low Point

3,309 cf, Depth= 3.79" 1.02 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 5-Year Rainfall=4.30"

		J, HSG D		HSG D					escription	Direct Entry,
CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Unconnected pavement, HSG D	Weighted Average	13.26% Pervious Area	86.74% Impervious Area	1.59% Unconnected	Slope Velocity Capacity Description (#/#) (#/sec) (cfs)	id District
S	98.0	80.0	98.0	98.0	92.6					
Area (sf)	5,420	1,388	3,515	144	10,467	1,388	9'0'6	144	Tc Length	

Summary for Subcatchment 6Sb: Proposed to Low Point

0.58 cfs @ 12.07 hrs, Volume= Runoff

1,910 cf, Depth= 3.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 5-Year Rainfall=4.30"

٦٧,	Direct Entry,					2.00	
_	Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs)	Capacity (cfs)	Velocity (ff/sec.)		Tc Length in) (feet)	Tc (min)	
	vrea	93.95% Impervious Area	93.95% Irr		5,468		
	_	6.05% Pervious Area	6.05% Per		352		
		Average	Weighted Average	6.96	5,820		
	Unconnected pavement, HSG D	ted pavem	Unconnec	98.0	0		
		GБ	Roofs, HSG D		2,846		
	>75% Grass cover, Good, HSG D	ss cover, (>75% Gra	80.0	352		
	۵	Paved parking, HSG D	Paved par	98.0	2,622	0	
		u	CN Description	CN	Area (sf)	Are	
slutions LLC	HydroCAD® 10.00-26 s/n 08481 @ 2020 HydroCAD Software Solutions LLC	0 HydroCA	481 @ 202	80 u/s 98	X® 10.00-2	HydroCAL	
Printed				_	by RVC	Prepared by RVDI	
Type III 24-hr 5-Year Ra			04	B&C	ppendi	20PA Appendix B&C 04	

Summary for Subcatchment 7S: Free release to Mission St.

0.06 cfs @ 12.07 hrs, Volume=

Runoff

189 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 5-Year Rainfall=4.30"

CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	88.21% Pervious Area	11.79% Impervious Area	Tc Length Slope Velocity Capacity Description) (ft/sec) (cfs)	Direct Entry,	
CN	98.0	80.0	98.0	82.1			Slope	(ft/ft		
Area (sf)	108	808	0	916	808	108	Length	(feet)		
Are							J.	(min)	5.00	

Summary for Subcatchment 8S: Proposed to Mission St.

0.26 cfs @ 12.07 hrs, Volume=

879 cf, Depth= 4.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 5-Year Rainfall=4.30"

	2,594 98.0 Weighted Average	2.594 100.00% Impervious Area
Area (sf) 1,184 0 1,410	2,594	2.594

Type III 24-hr 5-Year Rainfall=4.30" Printed 11/17/2023

Page 32

4

Page 33

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 ® 2020 HydroCAD Software Solutions LLC

Direct Entry, Description Capacity (cfs) Velocity (ft/sec) Slope (ft/ft) Length (feet) Tc (min) 5.00

Summary for Subcatchment OS-P: Offsite

593 cf, Depth= 2.29" 0.17 cfs @ 12.13 hrs, Volume= П Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 5-Year Rainfall=4.30"

ion	arking, HSG D	80.0 >75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	o Pervious Area	Tc Length Slope Velocity Capacity Description	c) (cfs)	19 Sheet Flow, Lawn	Grass: Short n= 0.150 P2= 3.30"
Description	Paved pa	>75% Gr	Roofs, H	Weighted	100.00%	Velocit	(ft/sec	0.19	
S	98.0	80.0	0.86	80.0		Slope	(ft/ft)	100 0.0240	
Area (sf) CN Description	0	3,104		3,104	3,104	Length	(min) (feet)	100	
Are						ပ	(min)	8.97	
				ŀ				Ų.	

Summary for Pond 9P: (15) R-180HD Units

Inflow Depth = 4.06" for 5-Year event	879 cf	294 cf, Atten= 80%, Lag= 25.4 min	294 cf
2,594 sf,100.00% Impervious,	0.26 cfs @ 12.07 hrs, Volume=	0.05 cfs @ 12.49 hrs, Volume=	0.05 cfs @ 12.49 hrs, Volume=
Inflow Area =	= nellow	Ontflow =	Primary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 25.91' @ 12.49 hrs Surf.Area= 398 sf Storage= 586 cf

Plug-Flow detention time= 376.6 min calculated for 294 cf (33% of inflow) Center-of-Mass det, time= 199.8 min (949.5 - 749.7)

Volume Invert Avail, Storage Storage Description	297 cf 11.50'W x 34.65'L x 2.71'H Field A	1,079 cf Overall - 337 cf Embedded = 742 cf x 40.0% Voids	337 cf Cultec R-180 x 15 Inside #1	Effective Size= 33.6"W x 20.0"H => 3,44 sf x 6.33'L = 21.8 cf	Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap	Row Length Adjustment= +1.00' x 3.44 sf x 3 rows	634 of Total Available Storage
Avail.Storage	297 cf		337 cf				Po NEA
Invert	23.50'		24.00				
Volume	#1A		#2A				

Storage Group A created with Chamber Wizard

	C= 0.600
Outlet Devices	25.90' 24.0" x 24.0" Horiz. 2 - 2'x2' catch basins X 2.00 C= 0.600 Limited to weir flow at low heads
Invert	25.90
Routing	Primary
Device	#

Type III 24-hr 5-Year Rainfall=4.30" Printed 11/17/2023

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10:00-26 s/n 08481 @ 2020 HydroCAD Software Solutions LLC

6.0" Round 6" Culvert L= 20.0' Ke= 0.500 Inlet / Outlet invert= 24.80' / 24.80' S= 0.0000' / Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf 24.80 Device 1

Primary OutFlow Max=0.05 cfs @ 12.49 hrs HW=25.91' TW=0.00' (Dynamic Tailwater)

—1=2 - 2x2' catch basins (Weir Controls 0.05 cfs @ 0.32 fps)

—2=6" Culvert (Passes 0.05 cfs of 0.09 cfs potential flow)

Summary for Pond 10P: Permeable Pavement (upper section)

flow [2,637 cf, Atten= 19%, Lag= 3.1 min	
10,467 sf, 86.74% Impervious, In	1.02 cfs @ 12.07 hrs, Volume=	0.82 cfs @ 12.12 hrs, Volume=	0.82 cfs @ 12.12 hrs, Volume=
Inflow Area =	= lutlow =	Outflow =	Primary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.85' @ 12.12 hrs Surf.Area= 1,675 sf Storage= 974 cf

Plug-Flow detention time= 146.7 min calculated for 2,636 cf (80% of inflow) Center-of-Mass det. time= 70.8 min (838.5 - 767.7)

Volume Invert Avail. Storage Storage Description	1,273 cf No.2 Stone (Prismatic) Listed below (Recalc)	3,183 cf Overall x 40.0% Voids	134 cf No.57 Stone (Prismatic) Listed below (Recalc)	670 cf Overall x 20.0% Voids	67 cf Permeable Surface (Prismatic) Listed below (Recalc)	670 cf Overall x 10.0% Voids
Avail.Storage	1,273 cf		134 cf		67 cf	
Invert	25.40'		27.30		27.70	
Volume	#1		¥		#3	

1,474 cf Total Available Storage

Cum.Store (cubic-feet)	3,183	Cum.Store (cubic-feet)	029	Cum.Store (cubic-feet)	029
Inc.Store (cubic-feet)	3,183	Inc.Store (cubic-feet)	029	Inc.Store (cubic-feet)	0 0 0 0 0 0
Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675
Elevation (feet)	25.40 27.30	Elevation (feet)	27.30 27.70	Elevation (feet)	27.70 28.10

Invert Outlet Devices	26.40' 6.0" Round 6" Underdrain X 2.00 L= 50.0' Ke= 0.500	Inlet / Outlet Invert= 26.40' / 25.10' S= 0.0260 '/' Cc= 0.900	n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf
Invert	26.40'		
Routing	Primary	•	
Device Routing	#		

_	
8	
_1	
ي	
20	
Appendix_B&C_04	
×¹	7
=	5
andix E	ć
φ	:
ဌ	4
7	3
A Append	3
⋖	3
ZOPA	handand by
z.	ř

Type III 24-hr 5-Year Rainfall=4.30" Printed 11/17/2023 Page 34

Type III 24-hr 5-Year Rainfall=4.30" Printed 11/17/2023

Page 35

Primary OutFlow Max=0.82 cfs @ 12.12 hrs HW=26.85' TW=26.37' (Dynamic Tailwater)

Summary for Pond 11P: Permeable Pavement (lower section)

3,946 of Atten= 4%, Lag= 1.8 min 3,946 of 16,287 sf, 89.32% Impervious, Inflow Depth = 3,35" for 5-Year event 1.35 cfs @ 12.09 hrs. Volume= 4,547 cf 1.30 cfs @ 12.12 hrs. Volume= 3,946 cf, Atten= 4%, Lag= 1.8 m 1.30 cfs @ 12.12 hrs. Volume= 3,946 cf Inflow Area = П 11 Outflow Primary Inflow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.37' @ 12.12 hrs Surf.Area= 2,700 sf Storage= 909 cf

Plug-Flow detention time= 108.4 min calculated for 3,946 cf (87% of inflow) Center-of-Mass det. time= 47.3 min (852.3 - 805.0)

Invert Avail. Storage Storage Description	864 cf No.2 Stone (Prismatic) Listed below (Recalc)	2,160 cf Overall x 40.0% Voids	108 cf No.57 Stone (Prismatic) Listed below (Recalc)	540 cf Overall x 20.0% Voids	Permeable Surface (Prismatic) Listed below (Recalc)	540 cf Overall x 10.0% Voids
Avail. Storage	864 cf		108 cf		54 cf	
invert	24.60		26.20		26.60	
Volume	#1		#2		#3	

1,026 cf Total Available Storage

Cum.Store (cubic-feet)	2,160	Cum.Store (cubic-feet)	0 540	Cum.Store (cubic-feet)	0 540
Inc.Store (cubic-feet)	2,160	Inc.Store (cubic-feet)	0 540	inc.Store (cubic-feet)	0 540
Surf.Area (sq-ft)	1,350	Surf.Area (sq-ft)	1,350 1,350	Surf.Area (sq-ft)	1,350
Elevation (feet)	24.60 26.20	Elevation (feet)	26.20 26.60	Elevation (feet)	26.60 27.00

Invert Outlet Devices	25.70' 20.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00	2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32	10.0" Round 10" Culvert L= 17.0' Ke= 0.500 Inlet / Outlet Invert= 25.70' / 23.70' S= 0.1176' /' Cc= 0.900	n= 0.011 PVC, smooth interior, Flow Area= 0.55 sf
Invert	25.70'		25.70	
Device Routing	#1 Primary		#2 Device 1	
Device	#		#5	

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 @ 2020 HydroCAD Software Solutions LLC

Primary OutFlow Max=1.30 cfs @ 12.12 hrs HW=26.37 TW=0.00' (Dynamic Tailwater)

—1=Broad-Crested Rectangular Weir (Passes 1.30 cfs of 28.34 cfs potential flow)

—2=10" Culvert (Inlet Controls 1.30 cfs @ 2.78 fps)

Summary for Link 12L: POC A

5,599 cf 5,599 cf, Atten= 0%, Lag= 0.0 min 24,071 sf, 65,89% Impervious, Inflow Depth = 2.79" for 5-Year event 1.78 cfs @ 12.11 hrs, Volume= 5,599 cf, Atten= 0%, Lag= 0.0 m 5,599 cf, Atten= 0%, Lag= 0.0 m Inflow Area = Primary Inflow

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 13L: POC B (Mission St.)

482 cf 482 cf, Atten= 0%, Lag= 0.0 min 3,510 sf, 76.98% Impervious, Inflow Depth = 1.65" for 5-Year event 0.07 cfs @ 12.49 hrs, Volume= 482 cf, Atten= 0%, Lag= 0.0 m Inflow Area = Primary Inflow

Printed 11/17/2023 Type III 24-hr 10-Year Rainfall=5.00"

Page 36

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 10-Year Rainfall=5.00" Printed 11/17/2023 s.L.C. Page 37

Summary for Subcatchment 5S: Free release to POC A

1,310 cf, Depth= 3.36" 0.43 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Rainfall=5.00"

Description Adi S Area (sf)

Paved parking, HSG D >75% Grass cover, Good, HSG D Roofs, HSG D Unconnected pavement, HSG D Weighted Average, Ul Adjusted 71.92% Pervious Area 28.08% Impervious Area 7.61% Unconnected 84.9 98.0 80.0 98.0 98.0 85.1 4,680 3,366 1,314 100 3,366 1,214 100

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

Summary for Subcatchment 6Sa: Proposed to Low Point

1.19 cfs @ 12.07 hrs, Volume= Runoff

3,914 cf, Depth= 4.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Rainfall=5.00"

Direct Entry, Capacity Description (cfs) Paved parking, HSG D >75% Grass cover, Good, HSG D Unconnected pavement, HSG D Weighted Average 13.26% Pervious Area 86,74% Impervious Area .59% Unconnected Roofs, HSG D Description Velocity (ft/sec) Slope (ft/ft) 98.0 80.0 98.0 98.0 Tc Length nin) (feet) Area (sf) 5,420 1,388 3,515 144 10,467 1,388 9,079 144 (min)

Summary for Subcatchment 6Sb: Proposed to Low Point

2,248 cf, Depth= 4.64" 0.67 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Rainfall=5.00"

		d, HSG D		HSG D				Description	Direct Entry.
ription	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Unconnected pavement, HSG D	Weighted Average	6.05% Pervious Area	93.95% Impervious Area	To Length Slope Velocity Capacity Description	(ana)
Area (sf) CN Description	Pave				1	6.05	93.96	bbe Vel	4
S	98.0	80.0	98.0	98.0	6.96			Si E	
(st) ea.	2,622	352	2,846	0	5,820	352	5,468	Lengt	
A								Tc (min)	5.00

Summary for Subcatchment 7S: Free release to Mission St.

236 cf, Depth= 3.09" 0.08 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Rainfall=5.00"

Area (sf) CN 108 98.0 808 80.0 0 98.0 916 82.1 808 108 TC Length Slope (min) (feet) (fl/fi	CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	88.21% Pervious Area	11.79% Impervious Area	Slope Velocity Capacity Description (fl/ft) (fl/sec) (cfs)	Direct Entry,
2a (sf) 108 808 0 916 808 108 Length (feet)	O	98.0	80.0	98.0	82.1			Slop (ff/ff)	
	rea (sf)	108	808	0	916	808	108	c Length	

Summary for Subcatchment 8S: Proposed to Mission St.

1,030 cf, Depth= 4.76" 0.30 cfs @ 12.07 hrs, Volume= u

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Rainfall=5.00"

Paved parking, HSG D >75% Grass cover, Good, HSG D Roofs, HSG D Description 98.0 80.0 98.0 S 1,184 0 1,410 Area (sf)

Weighted Average 100:00% Impervious Area

98.0

2,594

Printed 11/17/2023 Type III 24-hr 10-Year Rainfall=5.00'

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 sin 08481 © 2020 HydroCAD Software Solutions LLC

Slope (ft/ft) Length (feet)

(min) 5.00

Direct Entry Description Capacity Velocity (ft/sec)

Summary for Subcatchment OS-P: Offsite

748 cf, Depth= 2.89" 0.22 cfs @ 12.13 hrs, Volume= II

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Rainfall=5.00"

CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	100.00% Pervious Area	
S	98.0	80.0	98.0	80.0		
Area (sf)	0	3,104	0	3,104	3,104	
- }						

Sheet Flow, Lawn Grass: Short n= 0.150 P2= 3.30" Capacity Description (cts) Velocity 0.19 (tt/sec) Slope (ft/ft) 0.0240 100 Length (feet) (min)

Summary for Pond 9P: (15) R-180HD Units

2,594 sf,100.00% Impervious, Inflow Depth = 4.76" for 10-Year event 10 cfs @ 12.07 hrs, Volume= 445 cf, Atten= 54%, Lag= 8.4 min 4 cfs @ 12.21 hrs, Volume= 445 cf 0.30 cfs @ 12.07 hrs, Volume= 0.14 cfs @ 12.21 hrs, Volume= 0.14 cfs @ 12.21 hrs, Volume= Inflow Area = Outflow Primary Inflow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 25.92' @ 12.21 hrs Surf.Area= 398 sf Storage= 588 cf

Plug-Flow detention time= 299.9 min calculated for 445 cf (43% of inflow) Center-of-Mass det. time= 153.6 min (900.7 - 747.1)

Storage Description	#1A 23.50' 297 cf 11.50'W x 34.65'L x 2.71'H Field A	1,079 cf Overall - 337 cf Embedded = 742 cf x 40.0% Voids	337 cf Cultec R-180 x 15 Inside #1	Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf	Overall Size= 36.0"W x 20.5"H x 7.33"L with 1.00' Overlap	Row Length Adjustment= +1.00' x 3.44 sf x 3 rows	634 cf Total Available Storage	•
Avail.Storage	297 cf		337 cf				634 cf	
Invert	23.50'		24.00					
Volume	#1A		#2A					

Storage Group A created with Chamber Wizard

	C= 0.600	
Invert Outlet Devices	25.90' 24.0" x 24.0" Horiz. 2 - 2'x2' catch basins X 2.00 C= 0.600	Limited to weir flow at low heads
Invert	25.90'	
Routing	Primary	•
Device F	#1	

20PA_Appendix_B&C_04

Page 39 Type III 24-hr 10-Year Rainfall=5.00" Printed 11/17/2023

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 ® 2020 HydroCAD Software Solutions LLC

6.0" Round 6" Culvert L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 24.80' / 24.80' S= 0.0000' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf 24.80

Device 1

42

Primary OutFlow Max=0.14 cts @ 12.21 hrs HW=25.92* TW=0.00* (Dynamic Tailwater) —1=2 - 2'x2' catch basins (Passes 0.14 cfs of 0.17 cfs potential flow) —2=6" Culvert (Inlet Controls 0.14 cfs @ 0.71 fps)

Summary for Pond 10P: Permeable Pavement (upper section)

1 = 4.49" for 10-Year event	14 cf	3,242 cf, Atten= 21%, Lag= 3.3 min	42 cf
Inflow [
10,467 sf, 86.74% Impervious, Ir	07 hrs, Volume=	3.95 cfs @ 12.12 hrs, Volume=	12 hrs, Volume=
10,467 sf, 86	1.19 cfs @ 12,	0.95 cfs @ 12.	0.95 cfs @ 12.12 hrs, Volume=
Inflow Area =	Inflow =	II /	Primary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.92' @ 12.13 hrs Surf.Area= 1,675 sf Storage= 1,018 cf

Plug-Flow detention time= 135.3 min calculated for 3,242 of (83% of inflow) Center-of-Mass det. time= 65.8 min (829.7 - 763.9)

Invert Avail.Storage Storage Description	1,273 cf No.2 Stone (Prismatic) Listed below (Recalc)	3,183 cf Overall x 40.0% Voids	134 cf No.57 Stone (Prismatic) Listed below (Recalc)	670 cf Overall x 20.0% Voids	67 cf Permeable Surface (Prismatic) Listed below (Recalc)	670 cf Overall x 10.0% Voids
Avail.Storage	1,273 cf		134 cf		67 cf	
Invert	25.40		27.30		27.70	
Volume	#		#2		#3	7

1,474 cf Total Available Storage

Cum.Store (cubic-feet)	3,183	Cum.Store (cubic-feet)	0 0 0	Cum.Store (cubic-feet)	049
Inc.Store (cubic-feet)	3,183	inc.Store (cubic-feet)	0 029	Inc.Store (cubic-feet)	049
Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675
Elevation (feet)	25.40 27.30	Elevation (feet)	27.30 27.70	Elevation (feet)	27.70 28.10

Invert Outlet Devices	26.40' 6.0" Round 6" Underdrain X 2.00 L= 50.0' Ke= 0.500	Inlet / Outlet Invert= 26.40' / 25.10' S= 0.0260 '/' Cc= 0.900	n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf
Invert	26.40		
Routing	Primary		
Device Routing	Ŧ		

4	
<u>,</u>	
ပ္အ	
88°C	_
<u>×</u>	0/10
Ë	Ó
Appendix	i
A Appendix	Decree of his
ا≽ٍ	3
20PA	-
N	C

Type III 24-hr 10-Year Rainfall=5.00" Printed 11/17/2023 Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 ® 2020 HydroCAD Software Solutions LLC

Page 40

Type III 24-hr 10-Year Rainfall=5.00" Printed 11/17/2023 Page 41

Primary OutFlow Max=0.95 cfs @ 12.12 hrs HW=26.92' TW=26.44' (Dynamic Tailwater)

Summary for Pond 11P: Permeable Pavement (lower section)

5,490 cf 4,890 cf, Atten= 3%, Lag= 1.7 min 4,890 cf 16,287 sf, 89,32% Impervious, Inflow Depth = 4.05" for 10-Year event 1,56 cfs @ 12.09 hrs, Volume= 5,490 cf 1.212 hrs, Volume= 4,890 cf, Atten= 3%, Lag= 1.7 mit 1,51 cfs @ 12.12 hrs, Volume= 4,890 cf Inflow Area = H Primary Outflow Inflow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.44' @ 12.12 hrs Surf.Area= 2,700 sf Storage= 929 cf

Plug-Flow detention time= 96.0 min calculated for 4,890 of (89% of inflow) Center-of-Mass det. time= 42.6 min (841.9 - 799.3)

Invert Avail. Storage Storage Description	864 cf No.2 Stone (Prismatic) Listed below (Recalc)	2,160 of Overall x 40.0% Voids	108 cf No.57 Stone (Prismatic) Listed below (Recalc)	540 cf Overall x 20.0% Voids	54 cf Permeable Surface (Prismatic) Listed below (Recalc)	540 cf Overall x 10.0% Voids
Avail.Storage	864 cf		108 cf		54 cf	
Invert	24.60		26.20"		26.60	
Volume	#1		#2		#3	

1,026 cf Total Available Storage

Cum.Store (cubic-feet)	2,160	Cum.Store (cubic-feet)	0 540	Cum.Store (cubic-feet)	0 540
Inc.Store (cubic-feet)	0 2,160	Inc.Store (cubic-feet)	0 540	Inc.Store (cubic-feet)	0 540
Surf.Area (sq-ft)	1,350 1,350	Surf.Area (sq-ft)	1,350	Surf.Area (sq-ft)	1,350
Elevation (feet)	24.60 26.20	Elevation (feet)	26.20 26.60	Elevation (feet)	26.60 27.00

Invert Outlet Devices	25.70' 20.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00	2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32	10.0" Round 10" Culvert L= 17.0' Ke= 0.500 Inlet / Outlet Invert= 25.70' / 23.70' S= 0.1176 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.55 sf
Out	20.0 Hea	2.50 Coe 2.85	10.0 Inlet
Invert	25.70'		25.70'
Device Routing	#1 Primary		#2 Device 1
Device	#		#5

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Primary OutFlow Max=1.51 cfs @ 12.12 hrs HW=26.44' TW=0.00' (Dynamic Tailwater) —1=Broad-Crested Rectangular Weir (Passes 1.51 cfs of 33.30 cfs potential flow) —2=10" Culvert (Inlet Controls 1.51 cfs @ 2.93 fps)

Summary for Link 12L: POC A

6,948 cf 6,948 cf, Atten= 0%, Lag= 0.0 min for 10-Year event 24,071 sf, 65.89% Impervious, Inflow Depth = 3.46" 2.11 cfs @ 12.11 hrs, Volume= 6,948 cf, Atten: 2.11 cfs @ 12.11 hrs, Volume= 6,948 cf, Atten: Inflow Area = Primary Inflow

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 13L: POC B (Mission St.)

681 cf 681 cf, Atten= 0%, Lag= 0.0 min 3,510 sf, 76,98% Impervious, Inflow Depth = 2.33" for 10-Year event 0.18 cfs @ 12.21 hrs, Volume= 681 cf, Atten= 0%, Lag= 0.0 mir Inflow Area = Primary Inflow

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023

Page 42

Summary for Subcatchment 5S: Free release to POC A

1,564 cf, Depth= 4.01" 0.52 cfs @ 12.07 hrs, Volume= Runoff Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

CN - Adj Description 98.0 Paved parking, HSG D 80.0 >75% Grass cover, Good, HSG D 98.0 Roofs, HSG D 98.0 Unconnected pavement, HSG D 98.1 84.9 Weighted Average, Ul Adjusted 71.92% Pervious Area 28.08% Impervious Area 7.61% Unconnected 7.61% Unconnected 7.61% Unconnected 7.61% Unconnected 7.61% (flysec) (cfs)	Direct Entry,
ea (sf) 0 3,366 1,214 1,214 4,680 3,366 1,314 100 Length	2.00

Summary for Subcatchment 6Sa: Proposed to Low Point

4,521 cf, Depth= 5.18" 1.37 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Unconnected pavement, HSG D	Weighted Average	13.26% Pervious Area	86.74% Impervious Area	1.59% Unconnected	Slope Velocity Capacity Description	(ft/sec) (cfs)	Direct Entry,
CN		80.0	98.0	98.0	92.6				Slope	(ft/ft)	
Area (sf)		1,388	3,515	144	10,467	1,388	9,079		Tc Length	(min) (feet)	5.00

Summary for Subcatchment 6Sb: Proposed to Low Point

0.77 cfs @ 12.07 hrs, Volume=

2,587 cf, Depth= 5.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 ® 2020 HydroCAD Software Solutions LLC

Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023

Area (sf) CN Description 2,622 98.0 Paved parki 352 80.0 >75% Grass 2,846 98.0 Nords, HSG 0 98.0 Unconnecte 5,820 96.9 Weighted A 352 6.05% Perv 5,468 93.95% Imp Tc Length Slope Velocity (min) (feet) (ff/ft) (ft/sec) 5.00	Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Unconnected pavement, HSG D	Weighted Average	6.05% Pervious Area	93.95% Impervious Area	To Length Slope Velocity Capacity Description in) (feet) (ff/ft) (ff/sec) (cfs)	Direct Entry,
Area (sf) 2,622 352 2,846 0 5,820 352 5,468 Tc Length (min) (feet) 5.00	S	98.0	80.0	98.0	98.0				Slope	
	Area (sf)	2,622	352	2,846	0	5,820	352	5,468	Tc Length	5.00

Summary for Subcatchment 7S: Free release to Mission St.

0.09 cfs @ 12.07 hrs, Volume=

284 cf, Depth= 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	88.21% Pervious Area	11.79% Impervious Area	Slope Velocity Capacity Description (#I/f) (fl/sec) (cfs)	Direct Entry,
S	98.0	80.0	98.0	82.1			Slope	
Area (sf)	108	808	0	916	808	108	Tc Length	1
Ā							Tc (min)	5.00

Summary for Subcatchment 8S: Proposed to Mission St.

1,181 cf, Depth= 5.46" 0,34 cfs @ 12.07 hrs, Volume= Runoff Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	100.00% Impervious Area
98.0	80.0	98.0	98.0	
1,184	0	1,410	2,594	2.594
	98.0		98.0 80.0 98.0	

Type III 24-hr 25-Year Rainfall≂5.70" Printed 11/17/2023

Page 44

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023 Page 45

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Direct Entry, Description Capacity (cfs) Velocity (ft/sec) Slope (ft/ft) Tc Length (min) (feet) 5.00

Summary for Subcatchment OS-P: Offsite

0.26 cfs @ 12.13 hrs, Volume= В

908 cf, Depth= 3.51" Runoff Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Rainfall=5.70"

									.3.30"
								Lawn	Grass: Short n= 0.150 P2= 3.30"
	0	>75% Grass cover, Good, HSG D			œ,	Tc Length Slope Velocity Capacity Description		Sheet Flow, Lawn	Grass: Short
	ing, HSG [s cover, G	0.5	verage	ervious Are	Capacity	(cts)		
Area (sf) CN Description	Paved parking, HSG D	•75% Gras	Roofs, HSG D	Weighted Average	100.00% Pervious Area	Velocity	(t/sec)	0.19	
CN	98.0		98.0	80.0	•	Slope	(ft/ft)	100 0.0240	
a (st)	0	3,104	0	3,104	3,104	Length	(feet)		
Are						L C	(min)	8.97	
				ļ			J.	Ų.	

Summary for Pond 9P: (15) R-180HD Units

Inflow Depth = 5.46" for 25-Year event		596 cf, Atten= 23%, Lag= 3.7 min	596 cf
2,594 sf,100.00% Impervious,	0.34 cfs @ 12.07 hrs, Volume=	0.26 cfs @ 12.13 hrs, Volume=	0.26 cfs @ 12.13 hrs, Volume=
Inflow Area =	= luflow =	Outflow =	Primary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 25.98' @ 12.13 hrs Surf.Area= 398 sf Storage= 597 cf

Plug-Flow detention time= 259.9 min calculated for 596 cf (50% of inflow) Center-of-Mass det. time= 130.2 min (875.2 - 745.0)

Invert Avail. Storage Storage Description	297 cf 11.50'W x 34.65'L x 2.71'H Field A	1,079 cf Overall - 337 cf Embedded = 742 cf x 40.0% Voids	337 cf Cultec R-180 x 15 Inside #1	Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf	Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap	Row Length Adjustment= +1.00' x 3.44 sf x 3 rows	634 cf Total Available Storage
Avail.Storage	297 cf		337 cf				634 cf
Invert	23.50		24.00				
Volume	#1A		#2A				

Storage Group A created with Chamber Wizard

	C= 0.600
Outlet Devices	25.90' 24.0" x 24.0" Horiz. 2 - 2'x2' catch basins X 2.00 C= 0.600 Limited to weir flow at low heads
Invert	25.90'
Routing	Primary
Device	#

4

6.0" Round 6" Culvert L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 24.80' / 24.80' S= 0.0000' / Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf 24.80 Device 1

Primary OutFlow Max=0.26 cfs @ 12.13 hrs HW=25.98' TW=0.00' (Dynamic Tailwater) —1=2 - 2x2' catch basins (Passes 0.26 cfs of 1.14 cfs potential flow) —2=6" Culvert (Inlet Controls 0.26 cfs @ 1.34 fps)

Summary for Pond 10P: Permeable Pavement (upper section)

Inflow D		3,849 cf, Atten= 23%, Lag= 3.7 min	3,849 cf
10,467 sf, 86.74% Impervious, 1	1.37 cfs @ 12.07 hrs, Volume=	1.05 cfs @ 12.13 hrs, Volume=	1.05 cfs @ 12.13 hrs, Volume=
Inflow Area =	= luflow =	Outflow =	Primary ==

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.99' @ 12.13 hrs Surf.Area= 1,675 sf Storage= 1,066 cf

Plug-Flow detention time= 125.7 min calculated for 3,849 cf (85% of inflow) Center-of-Mass det. time= 61.8 min (822.5 - 760.7)

Invert Avail. Storage Storage Description	1,273 cf No.2 Stone (Prismatic) Listed below (Recalc)	3.183 cf Overall x40.0% Voids 134 cf No.57 Stone (Prisand Politicated below (Recalc)	67 of Permaable Surface (Prismatic) Listed below (Recalc) 670 of Overall x 10.0% Voids
Avail.Storage	1,273 cf	134 cf	67 cf
Invert	25.40'	27.30'	27.70'
Volume	Ŧ	#2	#3

Available Storage
Total /
1,474 cf

Cum.Store (cubic-feet)	0 3,183	Cum.Store (cubic-feet)	029	Cum.Store (cubic-feet)	049
Inc.Store (cubic-feet)	3,183	Inc.Store (cubic-feet)	029	Inc.Store (cubic-feet)	0 670
Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675
Elevation (feet)	25.40 27.30	Elevation (feet)	27.30 27.70	Elevation (feet)	27.70

Invert Outlet Devices	26.40' 6.0" Round 6" Underdrain X 2.00 L= 50.0' Ke= 0.500	Inlet / Outlet Invert= 26.40' / 25.10' S= 0.0260 '/' Cc= 0.900	n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf
Invert	26.40'		
Device Routing	#1 Primary	,	
Device	#		

4	
0	
ပ္က	
_B&C_04	
' <u>×</u>	2
indix.	
Appen	מיל ל
₹	÷
	9
20PA	Dronord
2	۵

Prepared by KVDI HydroCAD® 10.00-26 s/n 08481 ® 2020 HydroCAD Software Solutions LLC

Printed 11/17/2023 Type III 24-hr 25-Year Rainfall=5.70'

Type III 24-hr 25-Year Rainfall=5.70" Printed 11/17/2023 Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 @ 2020 HydroCAD Software Solutions LLC

Page 46

Primary OutFlow Max=1.05 cfs @ 12.13 hrs HW=26.99' TW=26.52' (Dynamic Tailwater)

Summary for Pond 11P: Permeable Pavement (lower section)

6,435 cf 5,835 cf, Atten= 4%, Lag= 2.0 min 5,835 cf 16,287 sf, 89.32% Impervious, Inflow Depth = 4.74" for 25-Year event 1.76 cfs @ 12.09 hrs, Volume= 1.68 cfs @ 12.12 hrs, Volume= 1.68 cfs @ 12.12 hrs, Volume= Inflow Area = 11 Outflow Primary

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.52' @ 12.12 hrs Surf.Area= 2,700 sf Storage= 951 cf

Plug-Flow detention time= 86.7 min calculated for 5,833 cf (91% of inflow) Center-of-Mass det. time= 39.3 min (833.8 - 794.5)

No.2 Stone (Prismatic) Listed below (Recalc)
2,160 of Overall x 40.0% Voids
No.57 Stone (Prismatic) Listed below (Recalc)
540 of Overall x 20.0% Voids
Permeable Surface (Prismatic) Listed below (Recalc)
540 of Overall x 10.0% Voids Storage Description Avail.Storage 864 cf 108 cf 54 cf Invert 24.60 26.20 26.60 Volume # # #3

540 Cum.Store 2,160 Total Available Storage Cum.Store Cum.Store (cubic-feet) (cubic-feet) cubic-feet Inc.Store (cubic-feet) 2,160 Inc.Store 540 Inc.Store (cubic-feet) (cubic-feet 1,026 cf Surf.Area (sq-ft) 1,350 1,350 Surf.Area (sq-ft) 1,350 1,350 Surf.Area (sq-ft) 1,350 1,350 Elevation (feet) 24.60 26.20 (feet) 26.60 27.00 26.20 26.60 (feet) Elevation Elevation

Invert Outlet Devices	25,70° 20.0° long x 2.0° breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00	2.50 3.00 3.50 Coef (Fnolish) 2.54 2.61 2.61 2.66 2.70 2.77 2.89 2.88	2.85 3.07 3.20 3.32	10.0" Round 10" Culvert L= 17.0' Ke= 0.500	Inlet / Outlet Invert= 25.70' / 23.70' S= 0.1176 "/ Cc= 0.900	n= 0.011 PVC, smooth interior, Flow Area= 0.55 sf
nvert	:5.70'			25.70'		
Device Routing				#2 Device 1 2		
Device	#			¥		

540

20PA_Appendix_B&C_04

Page 47

Primary OutFlow Max=1.68 cfs @ 12.12 hrs HW=26.52' TW=0.00' (Dynamic Tailwater) —1=Broad-Crested Rectangular Weir (Passes 1.68 cfs of 38.84 cfs potential flow) —2=10" Culvert (Inlet Controls 1.68 cfs @ 3.09 fps)

Summary for Link 12L: POC A

8,307 cf, Atten= 0%, Lag= 0.0 min 24,071 sf, 65.89% Impervious, Inflow Depth = 4.14" for 25-Year event 2.40 cfs @ 12.10 hrs, Volume= 8,307 cf, Atten= 0%, Lag= 0.0 mit Inflow Area = П Primary Inflow

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 13L: POC B (Mission St.)

880 cf, Atten= 0%, Lag= 0.0 min Inflow Depth = 3.01" for 25-Year event 880 cf 3,510 sf, 76.98% Impervious, 0.34 cfs @ 12.13 hrs, Volume= 0.34 cfs @ 12.13 hrs, Volume= Inflow Area = Primary Inflow

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Type III 24-hr 50-Year Rainfall=6.40" Printed 11/17/2023 Page 48

Type III 24-hr 50-Year Rainfall=6.40" Printed 11/17/2023 s LLC

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 sin 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 5S: Free release to POC A

1,821 cf, Depth= 4.67" 0.60 cfs @ 12.07 hrs, Volume= н Runoff Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Rainfall=6.40"

Summary for Subcatchment 6Sa: Proposed to Low Point

5,128 cf, Depth= 5.88" 1.54 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Rainfall=6.40"

Description	Paved parking, HSG D		Roofs, HSG D	Unconnected pavement, HSG D	Weighted Average	13.26% Pervious Area	86.74% Impervious Area	1.59% Unconnected
CS	98.0	80.0	98.0	98.0	92.6			
Area (st)	5,420	1,388	3,515	144	10,467	1,388	6/0'6	144
	9)			8				

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

Summary for Subcatchment 6Sb: Proposed to Low Point

2,925 cf, Depth= 6.03" 0.86 cfs @ 12.07 hrs, Volume= 11 Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Rainfall=6.40"

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 @ 2020 HydroCAD Software Solutions LLC

CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Unconnected pavement, HSG D	Weighted Average	6.05% Pervious Area	93.95% Impervious Area	Slope Velocity Capacity Description	Direct Entry,
S	98.0	80.0	98.0	98.0	6.96			Slop	
Area (sf)	2,622	352	2,846	0	5,820	352	5,468	To Length	
								Tc (min)	5.00

Summary for Subcatchment 7S: Free release to Mission St.

333 cf, Depth= 4.37" 0.11 cfs @ 12.07 hrs, Volume= Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Rainfall=6.40"

CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	88.21% Pervious Area	11.79% Impervious Area	Velocity Capacity Description	(fulf) (fusec) (cfs)	Direct Entry,	
CN	98.0	80.0	0.86	82.1			S.	£		
Area (sf)	108	808	0	916	808	108	To Length	(feet)		
Ar	y						Ë	(min)	5.00	

Summary for Subcatchment 8S: Proposed to Mission St.

1,332 cf, Depth= 6.16" 0.39 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Rainfall=6.40"

Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	100.00% Impervious Area
CN	98.0		- 11	98.0	
Area (sf)	1,184	0	1,410		2,594

Type III 24-hr 50-Year Rainfall=6.40" Printed 11/17/2023

Page 50

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 sin 08481 © 2020 HydroCAD Software Solutions LLC

Description

Direct Entry, Capacity (cfs) Velocity (ft/sec) Slope (ft/ft) Length (feet)

Tc (min) 5.00

Summary for Subcatchment OS-P: Offsite

1,072 cf, Depth= 4.14" 0.31 cfs @ 12.13 hrs, Volume= fi Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Rainfall=6.40"

CN Description	.0 Paved parking, HSG D	.0 >75% Grass cover, Good, HSG D	.0 Roofs, HSG D	.0 Weighted Average	100.00% Pervious Area	Slope Velocity Capacity Description	in) (feet) (ft/ft) (ft/sec) (cfs)	0.19	Grass: Short n= 0.150 P2= 3.30"
S	98.0	80.0	98.0	80.0		S	Œ	100 0.0240	
Area (sf)	0	3,104	0	3,104	3,104	Tc Length	(min) (feet)	8.97 100	

Summary for Pond 9P: (15) R-180HD Units

Inflow Depth = 6.16" for 50-Year event	1,332 cf	747 cf, Atten= 9%, Lag= 2.1 min	747 cf
2,594 sf,100.00% Impervious,	0.39 cfs @ 12.07 hrs, Volume=	0.35 cfs @ 12.10 hrs, Volume=	0.35 cfs @ 12.10 hrs, Volume=
Inflow Area =	= lutlow =	Outflow =	Primary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.04' @ 12.10 hrs Surf.Area= 398 sf Storage= 607 cf

Plug-Flow detention time= 235.3 min calculated for 747 cf (56% of inflow) Center-of-Mass det, time= 116.2 min (859.5 - 743.3)

Invert Avail. Storage Storage Description	297 cf 11.50 W x 34.65 L x 2.71 H Field A	1,079 cf Overall - 337 cf Embedded = 742 cf x 40.0% Voids	337 cf Cultec R-180 x 15 Inside #1	Effective Size= 33.6 "W × 20.0 "H => 3.44 sf × 6.33 "L = 21.8 cf	Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap	Row Length Adjustment= +1.00' x 3.44 sf x 3 rows	634 cf Total Available Storage
Avail.Storage	297 cf		337 cf				634 cf
Invert	23.50'		24.00				
Volume	#1A		#2A				

Storage Group A created with Chamber Wizard

	C= 0.600
Outlet Devices	25.90' 24.0" x 24.0" Horiz. 2 - 2'x2' catch basins X 2.00 C= 0.600 Limited to weir flow at low heads
Invert	25.90'
Routing	Primary
Device	#1

20PA_Appendix_B&C_04

Device 1

#

Type III 24-hr 50-Year Rainfall=6.40" Printed 11/17/2023 Page 51

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

6.0" Round 6" Culvert L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 24.80' / 24.80' S= 0.0000 /' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf 24.80

Primary OutFlow Max=0.35 cts @ 12.10 hrs HW=28.04* TW=0.00* (Dynamic Tailwater)

—1=2 - 2x2 catch basins (Passes 0.35 cfs of 2.68 cfs potential flow)

—2=6" Culvert (Inlet Controls 0.35 cfs @ 1.79 fps)

Summary for Pond 10P: Permeable Pavement (upper section)

Inflow Depth = 5.88" for 50-Year event	5,128 cf	4,456 cf, Atten= 26%, Lag= 7.2 min	4,456 cf
10,467 sf, 86.74% Impervious, Inflow Depth = 5.88" for 5	1.54 cfs @ 12.07 hrs, Volume=	1.14 cfs @ 12.19 hrs, Volume=	1.14 cfs @ 12.19 hrs, Volume=
Inflow Area =	= mllow =	Outflow =	Primary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 27.09 @ 12.14 hrs Surf.Area= 1,675 sf Storage= 1,132 cf

Plug-Flow detention time= 117.4 min calculated for 4,455 cf (87% of inflow) Center-of-Mass det. time= 58.4 min (816.5 - 758.1)

Volume Invert Avail. Storage Storage Description	1,273 cf No.2 Stone (Prismatic) Listed below (Recalc)	3,183 of Overall x 40.0% Voids	134 cf No.57 Stone (Prismatic) Listed below (Recalc)	670 cf Overall x 20.0% Voids	67 cf Permeable Surface (Prismatic) Listed below (Recalc)	670 cf Overall x 10.0% Voids
Avail.Storage	1,273 cf		134 cf		67 cf	
Invert	25.40'		27.30		27.70	
Volume	#1		#2		£	

1,474 cf Total Available Storage

Cum.Store (cubic-feet)	3,183	Cum.Store (cubic-feet)	0 020	Cum.Store (cubic-feet)	0 670
Inc.Store (cubic-feet)	3,183	Inc.Store (cubic-feet)	0.00	Inc.Store (cubic-feet)	0 029
Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675
Elevation (feet)	25.40 27.30	Elevation (feet)	27.30 27.70	Elevation (feet)	27.70 28.10

Invert Outlet Devices	26.40' 6.0" Round 6" Underdrain X 2.00 L= 50.0' Ke= 0.500	Inlet / Outlet Invert= 26.40' / 25.10' S= 0.0260 '/' Cc= 0.900	n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf
Invert	26.40'		
Device Routing	Primary		
Device	¥		

Type III 24-hr 50-Year Rainfall=6.40" Printed 11/17/2023

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Pond 11P: Permeable Pavement (lower section)

Primary OutFlow Max=1.15 cfs @ 12.19 hrs HW=27.04' TW=26.51' (Dynamic Tailwater) —1=6" Underdrain (Outlet Controls 1.15 cfs @ 2.95 fps)

7,381 cf 6,781 cf, Atten= 6%, Lag= 1.9 min 6,781 cf Inflow Area = II П Outflow Primary Inflow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.59 (@ 12.11 hrs Surf.Area= 2.700 sf Storage= 970 cf

Plug-Flow detention time= 79.7 min calculated for 6,781 cf (92% of inflow) Center-of-Mass det. time= 36.7 min (827.1 - 790.4)

Avail.Storage Storage Description 864 of No.2 Stone (Prismatic). Listed below (Recalc) 2,160 of Overall x.40,0% Voids 108 of No.57 Stone (Prismatic). Listed below (Recalc) 540 of Overall x.20,0% Voids 54 of Permeable Surface (Prismatic). Listed below (Recalc) 550 of Overall x.10,0% Voids 1,006 of Overall Storage (Prismatic).	Avail.Storage 864 of 108 of 54 of	24.60' 26.20' 26.60'	Volume #1 #2 #3
otal Available Storage	1.026 CT		
Later Association Officers	3- 000 F		
40 cf Overall x 10.0% Voids			
ermeable Surface (Prismatic) Listed below (Recalc)	54 cf	26.60	#3
40 cf Overall x 20.0% Voids			
o.57 Stone (Prismatic) Listed below (Recalc)	108 cf	26.20'	#2
,160 cf Overall × 40.0% Voids			
o.2 Stone (Prismatic) Listed below (Recalc)	864 cf	24.60	#1
torage Description	Avail.Storage		Volume

Cum.Store (cubic-feet)	2,160	Cum.Store (cubic-feet)	0 540	Cum.Store (cubic-feet)	0 540
Inc.Store (cubic-feet)	2,160	Inc.Store (cubic-feet)	0 540	Inc.Store (cubic-feet)	0 540
Surf.Area (sq-ft)	1,350	Surf.Area (sq-ft)	1,350 1,350	Surf.Area (sq-ft)	1,350
Elevation (feet)	24.60 26.20	Elevation (feet)	26.20 26.60	Elevation (feet)	26.60

Invert Outlet Devices	25.70' 20.0' long x 2.0' breadth Broad-Crested Rectangular Weir	Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00	2.50 3.00 3.50	Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88	2.85 3.07 3.20 3.32	10.0" Round 10" Culvert L= 17.0' Ke= 0.500	Inlet / Outlet Invert= 25.70' / 23.70' S= 0.1176 '/' Cc= 0.900	n= 0.044 DV/C emonth interior Flow Area= 0.55 of
Invert	25.70					25.70		
Device Routing	#1 Primary	•				#2 Device 1		
Device	坓					¥		

20PA_Appendix_B&C_04

Page 53 Type III 24-hr 50-Year Rainfall=6.40" Printed 11/17/2023

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Primary OutFlow Max=1.81 cfs @ 12.11 hrs HW=26.59' TW=0.00' (Dynamic Tailwater)

—1=Broad-Crested Rectangular Weir (Passes 1.81 cfs of 44.39 cfs potential flow)

—2=10" Culvert (Inlet Controls 1.81 cfs @ 3.32 fps)

Summary for Link 12L: POC A

9,674 cf 9,674 cf, Atten= 0%, Lag= 0.0 min 24,071 sf, 65.89% Impervious, Inflow Depth = 4.82" for 50-Year event 2.66 cfs @ 12.10 hrs, Volume= 9,674 cf, Atten= 0%, Lag= 0.0 mir Inflow Area = Primary = Inflow

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 13L: POC B (Mission St.)

1,081 cf 1,081 cf, Atten= 0%, Lag= 0.0 min 3,510 sf, 76.98% impervious, Inflow Depth = 3.69" for 50-Year event 0.46 cfs @ 12.10 hrs, Volume= 1,081 cf, Atten= 0%, Lag= 0.0 mit 0.46 cfs @ 12.10 hrs, Volume= 1,081 cf, Atten= 0%, Lag= 0.0 mit Inflow Area = Primary Inflow

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Type III 24-hr 100-Year Rainfall=7.20" Printed 11/17/2023

20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 ® 2020 HydroCAD Software Solutions LLC

Page 54 20PA_Appendix_B&C_04
Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 5S: Free release to POC A

2,119 cf, Depth= 5.43" 0.69 cfs @ 12.07 hrs, Volume= П Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Rainfall=7.20"

		>75% Grass cover, Good, HSG D		t, HSG D	Adjusted		ESC.		ion		
	J, HSG D	cover, Go	_	pavemen	erage, UI	ous Area	vious Are	nected	Descript		1
Adj Description	Paved parking, HSG D	5% Grass of	Roofs, HSG D	Inconnected pavement, HSG D	Weighted Average, UI Adjusted	71.92% Pervious Area	28.08% Impervious Area	7.61% Unconnected	Slope Velocity Capacity Description	(cts)	
ji De	Pa	^	쬬	2	_	7	78	7.(elocity	t/sec)	
Ă					84.9				>	٦	
CN	98.0	80.0	98.0	98.0	85.1					(ft/ft	
Area (sf)	0	3,366	1,214	100	4,680	3,366	1,314	100	Tc Length	(feet)	
Are		- ,							C	(min)	
										- 4	ı

Summary for Subcatchment 6Sa: Proposed to Low Point

Direct Entry,

5,823 cf, Depth= 6,68" 1.74 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Rainfall=7.20"

Area (sf) CN Description 5,420 98.0 Paved parking, HSG D 1,388 80.0 >75% Grass cover, Good, HSG D 3,515 98.0 Roofs, HSG D 144 98.0 Unconnected pavement, HSG D 10,467 95.6 Weighted Average 1,388 13.26% Pervious Area 1,389 86.0 Weighted Average 1,389 173 86.0 Weighted Average 1,389 173 86.0 Weighted Average 1,59% Unconnected 1.59% Unconnected 1.59% Unconnected 1.59% Unconnected 1.69% Uncon												
ea (sf) 1,388 9 3,515 9 3,515 9 1,386 9 1,44 9 1,44 9 1,44 (feet)		HSG D	ver, Good, HSG D		avement, HSG D	age	us Area	ious Area	scted	pacity Description	(cfs)	Direct Entry,
ea (sf) 1,388 9 3,515 9 3,515 9 1,386 9 1,44 9 1,44 9 1,44 (feet)	Description	Paved parking,	>75% Grass co	Roofs, HSG D	Unconnected p	Weighted Avera	13.26% Perviou	86.74% Imperv	1.59% Unconne	Velocity Ca	(ft/sec)	
ea (sf) 5,420 1,388 3,515 144 10,467 1,388 9,079 144 Length (feet)	S	98.0										
	Area (sf)	ı		3,515	144	10,467	1,388	9,079	144	To Length	(min) (feet)	5.00

Summary for Subcatchment 6Sb: Proposed to Low Point

0.97 cfs @ 12.07 hrs, Volume= Runoff

3,312 cf, Depth= 6.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Rainfall=7.20"

Type III 24-hr 100-Year Rainfall=7.20" Printed 11/17/2023 ns LLC

CN Description		98.0 Roofs, HSG D	98.0 Unconnected pavement, HSG D	96.9 Weighted Average	6.05% Pervious Area	93.95% Impervious Area	Slope Velocity Capacity Description (##) (#Isec) (cfs)	Direct Entry,
Area (sf)	2,622	2,846	0		352	5,468	Tc Length	
	Ų.			l				1

Summary for Subcatchment 7S: Free release to Mission St.

390 cf, Depth= 5.12" 0.13 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Rainfall=7.20"

Area (sf) CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	88.21% Pervious Area	11.79% Impervious Area	Slope Velocity Capacity Description	(ft/sec) (cfs)	Direct Entry,
S	98.0	80.0	98.0	82.1			Slope	(ft/ft)	
ea (st)	108	808	0	916	808		Tc Length	(feet)	
Are							J _C	(min)	5.00

Summary for Subcatchment 8S: Proposed to Mission St.

1,505 cf, Depth= 6.96" 0.44 cfs @ 12.07 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Rainfall=7.20"

0.0			
>75% Grass cover, Good, HSC	Roofs, HSG D	Weighted Average	100.00% Impervious Area
80.0	98.0	98.0	
0	1,410	2,594	2.594
	0 80.0 >75% Grass cover, Good, HSG D	98.0	

20PA_Appendix_B&C_04

Type III 24-hr 100-Year Rainfall=7.20" Printed 11/17/2023 Page 56

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 ® 2020 HydroCAD Software Solutions LLC

Description Capacity

Direct Entry, (cfs) Velocity (ft/sec) Slope (ft/ft) Tc Length (min) (feet) 5.00

Summary for Subcatchment OS-P: Offsite

1,262 cf, Depth= 4.88" 0.36 cfs @ 12.13 hrs, Volume= И

Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Rainfall=7.20"

CN Description	Paved parking, HSG D	>75% Grass cover, Good, HSG D	Roofs, HSG D	Weighted Average	100.00% Pervious Area
S	98.0	80.0	98.0	80.0	
Area (sf)	0	3,104	0	3,104	3,104
				ı	

Sheet Flow, Lawn Grass: Short n= 0.150 P2= 3.30" Description Capacity Velocity Slope (ft/ft) 0.0240 Length (feet) 100 2 (min)

Summary for Pond 9P: (15) R-180HD Units

2,594 sf,100.00% Impervious, Inflow Depth = 6.96" for 100-Year event 1,505 cf Inflow Area = Inflow

920 cf, Atten= 7%, Lag= 1.8 min 920 cf 0.44 cfs @ 12.07 hrs, Volume=0.41 cfs @ 12.10 hrs, Volume=0.41 cfs @ 12.10 hrs, Volume= Primary Outflow

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.08' @ 12.10 hrs Surf.Area= 398 sf Storage= 614 cf

Plug-Flow detention time= 216.6 min calculated for 920 cf (61% of inflow) Center-of-Mass det. time= 106.0 min (847.6 - 741.6)

Invert Avail Storage Description	297 cf 11.50'W x 34.65'L x 2.71'H Field A	1,079 cf Overall - 337 cf Embedded = 742 cf x 40.0% Voids	337 cf Cultec R-180 x 15 Inside #1	Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf	Overall Size= 36.0"W x 20.5"H x 7.33"L with 1.00' Overlap	Row Length Adjustment= +1.00' x 3.44 sf x 3 rows	634 cf Total Available Storage
Avail.Storage	297 cf		337 cf				634 cf
Invert	23.50		24.00				
Volume	#1A		#2A				

Storage Group A created with Chamber Wizard

	C = 0.600	
Outlet Devices	25.90' 24.0" x 24.0" Horiz. 2 - 2'x2' catch basins X 2.00 C= 0.600	Limited to weir flow at low heads
invert	25.90'	
Routing	Primary	
Device	#1	

20PA Appendix B&C 04

Printed 11/17/2023 Type III 24-hr 100-Year Rainfall=7.20" Page 57

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 @ 2020 HydroCAD Software Solutions LLC

6.0" Round 6" Culvert L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 24.80' / 24.80' S= 0.0000' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf 24.80 Device 1

#

Primary OutFlow Max=0.41 cts @ 12.10 hrs HW=26.08° TW=0.00° (Dynamic Tailwater) —1=2 - 2x2' catch basins (Passes 0.41 cfs of 4.11 cfs potential flow) —2=6" Culvert (Inlet Controls 0.41 cfs @ 2.06 fps)

Summary for Pond 10P: Permeable Pavement (upper section)

5,823 cf 5,151 cf, Atten= 32%, Lag= 6.4 min 5,151 cf for 100-Year event 10,467 sf, 86.74% Impervious, Inflow Depth = 6.68" 1.74 cfs @ 12.07 hrs, Volume= 5,823 cf 1.18 cfs @ 12.18 hrs, Volume= 5,151 cf, Atten 1.18 cfs @ 12.18 hrs, Volume= 5,151 cf Inflow Area = 11 11 Outflow Primary

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 27.22' @ 12.15 hrs Surf.Area= 1,675 sf Storage= 1,223 cf

Plug-Flow detention time= 109.9 min calculated for 5,151 cf (88% of inflow) Center-of-Mass det. time= 55.2 min (810.8 - 755.5)

Invert Avail.Storage Storage Description	1,273 cf No.2 Stone (Prismatic) Listed below (Recalc)	3,183 cf Overall x 40.0% Voids	134 cf No.57 Stone (Prismatic) Listed below (Recalc)	670 cf Overall x 20.0% Voids	67 cf Permeable Surface (Prismatic) Listed below (Recalc)	670 cf Overall x 10.0% Voids
Avail.Storage	1,273 cf		134 cf		67 cf	
Invert	25.40'		27.30'		27.70	
Volume	#1		#2		#3	

1,474 cf Total Available Storage

Cum.Store (cubic-feet)	3,183	Cum.Store (cubic-feet)	029	Cum.Store (cubic-feet)	029
Inc.Store (cubic-feet)	3,183	Inc.Store (cubic-feet)	0.0	Inc.Store (cubic-feet)	029
Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675 1,675	Surf.Area (sq-ft)	1,675
Elevation (feet)	25.40 27.30	Elevation (feet)	27.30 27.70	Elevation (feet)	28.10

Invert Outlet Devices	26.40' 6.0" Round 6" Underdrain X 2.00 L= 50.0' Ke= 0.500	Inlet / Outlet Invert= 26.40' / 25.10' S= 0.0260 '/' Cc= 0.900	n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf
Invert	26.40'		
Device Routing	Primary	•	
Device	ŧ		

20PA_Appendix_B&C_04	
ဝဲ ပ	
ပ္က	
~	
- 1	
Š S	
20PA_Appendix	
<u>ا</u> ر	
ع ال	
9	
<u>~</u> •	ı
5 8	

Type III 24-hr 100-Year Rainfall=7.20" Printed 11/17/2023

Page 58

Prepared by KVUI HydroCAD® 10.00-26 s/n 08481 ® 2020 HydroCAD Software Solutions LLC

Primary OutFlow Max=1.19 cfs @ 12.18 hrs HW=27.21' TW=26.59' (Dynamic Tailwater)

Summary for Pond 11P: Permeable Pavement (lower section)

16,287 sf, 89.32% Impervious, Inflow Depth = 6.24" for 100-Year event 2.06 cfs @ 12.07 hrs, Volume= 7,863 cf, Atten= 5%, Lag= 2.2 min 1.95 cfs @ 12.10 hrs, Volume= 7,863 cf Inflow Area = П Н Inflow Outflow Primary

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs Peak Elev= 26.67' @ 12.10 hrs Surf.Area= 4,050 sf Storage= 982 cf

Plug-Flow detention time= 73.0 min calculated for 7,863 of (93% of inflow) Center-of-Mass det. time= $34.3\,\mathrm{min}$ (820.7 - 786.4)

Invert Avail. Storage Storage Description	864 of No.2 Stone (Prismatic) Listed below (Recalc)	2,160 cf Overall x 40.0% Voids 108 cf No.57 Stone (Prismatic) Listed below (Recalc)	540 of Overall x 20.0% Voids Permeable Surface (Prismatic) Listed below (Recalc)	540 cf Overall x 10.0% Voids
Avail.Storage	864 cf	108 cf	54 cf	
Invert	24.60	26.20'	26.60'	
Volume	#1	#5	#3	

1,026 cf Total Available Storage

Cum.Store (cubic-feet)	2,160	Cum.Store (cubic-feet)	0 540	Cum Store (cubic-feet)	540
Inc.Store	0	Inc.Store	0	Inc.Store	0
(cubic-feet)	2,160	(cubic-feet)	540	(cubic-feet)	540
Surf.Area	1,350	Surf.Area	1,350	Surf.Area	1,350
(sq-ft)	1,350	(sq-ft)	1,350	(sq-ft)	
Elevation	24.60	Elevation	26.20	Elevation	26.60
(feet)	26.20	(feet)	26.60	(feet)	27.00

Invert Outlet Devices	25.70' 20.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00	2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.54 3.07 3.32	10.0" Round 10" Culvert L= 17.0' Ke= 0.500 Inlet / Outlet Invert= 25.70 / 23.70' S= 0.1176', Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.55 sf
Invert	25.70'		25.70'
Device Routing	#1 Primary		Device 1
Device	#		#5

20PA_Appendix_B&C_04

Printed 11/17/2023 Page 59 Type III 24-hr 100-Year Rainfall=7.20"

Prepared by RVDI HydroCAD® 10.00-26 s/n 08481 @ 2020 HydroCAD Software Solutions LLC

Primary OutFlow Max=1.95 cfs @ 12.10 hrs HW=26.67 TW=0.00' (Dynamic Tailwater)

—1=Broad-Crested Rectangular Weir (Passes 1.95 cfs of 50.63 cfs potential flow)

—2=10" Culvert (Inlet Controls 1.95 cfs @ 3.58 fps)

Summary for Link 12L: POC A

24,071 sf, 65,89% Impervious, Inflow Depth = 5.61" for 100-Year event 2.96 cfs @ 12.09 hrs, Volume= 11,243 cf, Atten= 0%, Lag= 0.0 min Inflow Area = H H Primary Inflow

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Summary for Link 13L: POC B (Mission St.)

3,510 sf, 76.98% Impervious, Inflow Depth = 4.48" for 100-Year event 0.53 cfs @ 12.09 hrs, Volume= 1,310 cf, Atten= 0%, Lag= 0.0 min Inflow Area = Primary Inflow

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Page 1

HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Stage-Area-Storage for Pond 9P: (15) R-180HD Units

Elevation	Storage	Elevation	Storage	Elevation	Storage	
(feet)	(cubic-feet)	(feet)	(cubic-feet)	(feet)	(cubic-feet)	
23.50	O O	24.54	250	25.58	531	
23.52	3	24.56	256	25.60	535	
23.54	6	24.58	262	25.62	539	
23.56	10	24.60	268	25.64	543	
23.58	13	24.62	275	25.66	546	
23.60	16	24.64	281	25.68	550	
23.62	19	24.66	287	25.70	553	
23.64	22	24.68	293	25.72	556	
23.66	26	24.70	299	25.74	559	
23.68	29	24.72	305	25.76	562	
23.70	32	24.74	311	25.78	566	
23.72	35	24.76	317	25.80	569	
23.74	38	24.78	323	25.82	572	
23.76	41	24.80	329	25.84	575	
23.78	45	24.82	335	25.86	578	
23.80	48	24.84	341	25.88	581	_
23.82	51	24.86	347	25.90		OUTLET
23.84	54	24.88	353	25.92	588	
23.86	57	24.90	358	25.94	591	
23.88	61	24.92	364	25.96	594	
23.90	64	24.94	370	25.98	597	
23.92	67	24.96	376	26.00	601	
23.94	70	24.98	382	26.02	604	
23.96	73	25.00	387	26.04	607	
23.98	77	25.02	393	26.06	610	
24.00	80	25.04	398	26.08	613	
24.02	86	25.06	404	26.10	617	
24.04	93	25.08	410	26.12	620	
24.06	99	25.10	415	26.14	623 626	
24.08	105	25.12	421	26.16 26.18	629	
24.10	112	25.14	426	26.20	632	
24.12	118	25.16	431 437	20.20	032	
24.14	125	25.18 25.20	442			
24.16	131 137	25.20 25.22	447			
24.18 24.20	144	25.22 25.24	453			
24.20 24.22	150	25.26	458			
24.24	156	25.28	463			
24.26	162	25.30	468			
24.28	169	25.32	473			
24.30	175	25.34	478			
24.32	181	25.36	483			
24.34	188	25.38	488			
24.36	194	25.40	493			
24.38	200	25.42	497			
24.40	207	25.44	502			
24.42	213	25.46	506			
24.44	219	25.48	511			
24.46	225	25.50	515			
24.48	231	25.52	519			
24.50	238	25.54	523			
24.52	244	25.56	527			
		l,		I		

Prepared by RVDI
HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Page 2

Stage-Area-Storage for Pond 10P: Permeable Pavement (upper section)

	102				
Elevation	Storage	Elevation	Storage	Elevation	Storage
(feet)	(cubic-feet)	(feet)	(cubic-feet)	(feet)	(cubic-feet)
25.40	0	26.44	697	27.48	1,333
25.42	13	26.46	710	27.50	1,340
25.44	27	26.48	724	27.52	1,347
25.46	40	26.50	737	27.54	1,353
25.48	54	26.52	750	27.56	1,360
25.50	67	26.54	764	27.58	1,367
25.52	80	26.56	777	27.60	1,374
25.54	94	26.58	791	27.62	1,380
25.56	107	26.60	804	27.64	1,387
25.58	121	26.62	817	27.66	1,394
25.60	134	26.64	831	27.68	1,400
25.62	147	26.66	844	27.70	1,407
25.64	161	26.68	858	27.72	1,410
25.66	174	26.70	871	27.74	1,414
25.68	188	26.72	884	27.76	1,417
25.70	201	26.74	898	27.78	1,420
25.72	214	26.76	911	27.80	1,424
25.74	228	26.78	925	27.82	1,427
25.76	241	26.80	938	27.84	1,430
25.78	255	26.82	951	27.86	1,434
25.80	268	26.84	965	27.88	1,437
25.82	281	26.86	978	27.90	1,441
25.84	295	26.88	992	27.92	1,444
25.86	308	26.90	1,005	27.94	1,447
25.88	322	26.92	1,018	27.96	1,451
25.90	335	26.94	1,032	27.98	1,454
25.92	348	26.96	1,045	28.00	1,457
25.94	362	26.98	1,059	28.02	1,461
25.96	375	27.00	1,072	28.04	1,464
25.98	389	27.02	1,085	28.06	1,467
26.00	402	27.04	1,099	28.08	1,471
26.02	415	27.06	1,112	28.10	1,474
26.04	429	27.08	1,126		,
26.06	442	27.10	1,139		
26.08	456	27.12	1,152		
26.10	469	27.14	1,166		
26.12	482	27.16	1,179		
26.14	496	27.18	1,193		
26.16	509	27.20	1,206		
26.18	523	27.22	1,219		
26.20	536	27.24	1,233		
26.22	549	27.26	1,246		
26.24	563	27.28	1,260		
26.26	576	27.30	1,273		
26.28	590	27.32	1,280		
26.30	603	27.34	1,286		
26.32	616	27.36	1,293		
26.34	630	27.38	1,300		
26.36	643	27.40	1,307		
26.38	657	27.42	1,313		
26.40	670	27.44	1,320		
26.42	683	27.46	1,327		
		l	.,	I	



HydroCAD® 10.00-26 s/n 08481 © 2020 HydroCAD Software Solutions LLC

Page 3

Stage-Area-Storage for Pond 11P: Permeable Pavement (lower section)

Elevation Storage (feet) (cubic-feet) (cubic-feet) (cubic-feet) (cubic-feet) (cubic-feet) (feet) (fe		•	_			
(feet) (cubic-feet) (cubic-feet) (cubic-feet) (24.60	Elevation	Storage	Elevation	Storage	Elevation	Storage
24.62	(feet)	(cubic-feet)	(feet)	(cubic-feet)		
24.64 22 25.68 583 26.72 988 24.66 32 25.70 594 24.68 43 25.72 605 25.76 626 26.76 994 24.70 54 25.74 616 26.78 996 24.72 65 25.78 637 26.82 1,002 24.74 897 25.82 659 26.86 1,007 24.80 108 25.84 670 26.88 1,010 24.82 119 25.86 680 26.90 1,012 24.84 130 25.88 691 26.92 1,015 24.86 140 25.90 702 26.94 1,018 24.88 151 25.92 713 26.96 1,021 24.90 162 25.94 724 26.98 1,023 24.92 173 25.96 734 24.94 184 25.98 745 24.98 205 26.00 756 25.00 216 26.00 810 25.00 216 26.00 80 25.00 25.00 25.00 26.00 864 25.10 810 270 26.14 832 25.12 281 26.16 842 25.14 292 25.14 292 26.18 853 25.10 270 26.14 832 25.10 270 26.14 832 25.10 270 26.14 832 25.10 270 26.14 832 25.10 270 26.14 832 25.10 270 26.14 832 25.10 270 26.14 832 25.10 270 26.14 832 25.10 270 26.14 832 25.10 80 25.00 864 25.10 810 270 26.14 832 25.10 80 25.00 864 25.10 810 270 26.14 832 25.10 80 25.00 864 25.10 810 270 26.14 832 25.10 80 25.00 864 25.10 810 270 26.14 832 25.10 80 25.00 864 25.10 810 25.10 80 25.	24.60					
24.66	24.62					
24.68						
24.70	24.66		Annual Control of the Party of			
24.72 65 25.76 626 26.80 999 24.74 76 25.78 637 26.82 1,002 24.76 86 25.80 648 26.84 1,004 24.78 97 25.82 659 26.86 1,007 24.80 108 25.84 670 26.88 1,010 24.82 119 25.86 680 26.90 1,012 24.84 130 25.88 691 26.92 1,015 24.86 140 25.90 702 26.94 1,018 24.88 151 25.92 713 26.96 1,021 24.90 162 25.94 724 26.98 1,023 24.94 184 25.98 745 24.96 194 26.00 756 24.98 205 26.02 767 25.00 216 26.04 778 25.02 227 26.06 788 25.04 238 26.08 799 25.06 248 26.10 810 25.08 259 26.12 821 25.10 270 26.14 832 25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.20 324 366 26.20 864 25.31 313 26.22 869 25.22 335 26.26 880 25.24 346 26.28 886 25.25 33 378 26.34 902 25.34 400 26.38 991 25.36 410 26.40 918 25.36 410 26.40 918 25.37 26.34 902 25.34 400 26.38 991 25.36 410 26.40 918 25.36 410 26.40 918 25.37 26.34 902 25.38 367 26.32 896 25.26 356 26.30 891 25.36 410 26.40 918 25.36 410 26.40 918 25.37 26.34 902 25.34 400 26.38 913 25.36 410 26.44 929 25.44 454 26.48 940 25.44 454 26.48 940 25.44 454 26.48 940 25.46 464 26.50 945 25.50 486 26.54 956 25.50 486 26.54 956 25.50 486 26.54 956 25.55 4508 26.59 26.62 975 25.50 560 540 26.64 977	24.68					
24.74 76 25.78 637 26.82 1,002 24.76 86 25.80 648 26.84 1,004 24.78 97 25.82 659 26.86 1,007 24.80 108 25.84 670 26.88 1,010 24.82 119 25.86 680 26.90 1,012 24.84 130 25.88 691 26.92 1,015 24.86 140 25.90 702 26.94 1,015 24.86 140 25.90 702 26.94 1,015 24.88 151 25.96 734 26.96 1,021 24.90 162 25.94 724 26.98 1,023 24.92 173 25.96 734 27.00 1,026 24.98 205 26.02 767 24.98 27.00 1,026 25.00 216 26.04 778 25.02 27.00 1,026	24.70					
24.76 86 25.80 648 26.84 1,004 24.78 97 25.82 659 26.86 1,004 24.80 108 25.84 670 26.88 1,010 24.82 119 25.86 680 26.90 1,012 24.84 130 25.88 691 26.92 1,015 24.86 140 25.90 702 26.94 1,018 24.88 151 25.92 713 26.96 1,021 24.90 162 25.94 724 26.98 1,023 24.92 173 25.96 734 27.00 1,026 24.94 184 25.98 745 27.00 1,026 24.98 205 26.02 767 25.00 767 25.00 276 25.00 276 25.00 276 25.00 28 25.02 227 26.04 778 25.02 25.12 26.14 832 25.12						
24.78 97 25.82 659 26.86 1,007 24.80 108 25.84 670 26.88 1,010 24.82 119 25.86 680 26.90 1,012 24.84 130 25.88 691 26.92 1,015 24.88 140 25.90 702 26.94 1,018 24.88 151 25.92 713 26.96 1,021 24.90 162 25.94 724 26.98 1,023 24.92 173 25.96 734 27.00 1,026 24.94 184 25.98 745 24.96 194 26.00 756 24.98 205 26.02 767 25.00 216 26.04 778 25.02 227 26.06 788 25.06 248 26.10 810 25.08 249 26.12 821 25.14 822 26.18 853 25.14 <						
24.80 108 25.84 670 26.88 1,010 24.82 119 25.86 680 26.90 1,012 24.84 130 25.88 691 26.92 1,015 24.86 140 25.90 702 26.94 1,018 24.88 151 25.92 713 26.96 1,023 24.90 162 25.94 724 26.98 1,023 24.92 173 25.96 734 27.00 1,026 24.94 184 25.98 745 24.96 1,023 24.96 194 26.00 756 24.98 205 26.02 767 25.00 216 26.04 778 25.02 227 26.06 788 25.04 238 26.08 799 25.06 248 26.10 810 25.08 259 26.12 821 25.11 25.11 26.14 832 25.16					1	
24.82 119 25.86 680 26.92 1,015 24.86 140 25.90 702 26.94 1,018 24.88 151 25.92 713 26.96 1,021 24.90 162 25.94 724 26.98 1,023 24.92 173 25.96 734 27.00 1,026 24.94 184 25.98 745 24.96 1,024 24.96 194 26.00 756 24.98 205 26.02 767 25.00 216 26.04 778 78 78 78 25.04 238 26.08 799 78						
24.84 130 25.88 691 26.92 1,015 24.86 140 25.90 702 26.94 1,018 24.88 151 25.92 713 26.96 1,021 24.90 162 25.94 724 26.98 1,023 24.94 184 25.98 745 27.00 1,026 24.94 184 25.98 745 27.00 1,026 24.96 194 26.00 756 24.98 20.5 26.02 767 25.00 216 26.04 778 25.00 216 26.04 778 25.02 227 26.06 788 788 25.04 238 26.08 799 25.08 25.06 248 26.10 810 810 25.08 25.01 25.12 821 25.12 821 25.14 28.2 25.14 832 25.14 25.18 36.3 25.14 29.2 26.18 853 25.18 313 26.22 869 25.22 35.2 25.20 364 25.2						
24.86 140 25.90 702 26.94 1,018 24.88 151 25.92 713 26.96 1,021 24.90 162 25.94 724 26.98 1,023 24.92 173 25.96 734 27.00 1,026 24.94 184 25.98 745 27.00 1,026 24.96 194 26.00 756 24.98 205 26.02 767 25.00 216 26.04 778 25.02 27 26.06 788 25.00 216 26.04 778 25.02 227 26.06 788 25.06 248 26.10 810 25.06 25.06 248 26.10 810 25.06 25.06 26.12 821 25.11 26.14 832 25.12 25.12 281 26.16 842 25.14 29.2 26.18 853 25.14 29.2 26.18 853 25.2 25.22 335 2						
24.88 151 25.92 713 26.96 1,021 24.90 162 25.94 724 26.98 1,023 24.94 184 25.98 745 24.94 184 25.98 745 24.96 194 26.00 756 24.98 205 26.02 767 25.00 216 26.04 778 25.02 227 26.06 788 25.04 238 26.08 799 25.06 248 26.10 810 25.08 259 26.12 821 25.10 270 26.14 832 25.12 25.12 25.11 25.12 281 25.16 842 25.14 292 26.18 853 25.25.12 28.1 26.16 842 25.18 313 26.22 869 864 25.18 313 26.22 869 864 25.22 335 26.26 880 865 886 25.22 335 26.28 886						
24.90 162 25.94 724 26.98 1,023 24.92 173 25.96 734 27.00 1,026 24.94 184 25.98 745 27.00 1,026 24.96 194 26.00 756 24.98 205 26.02 767 25.00 216 26.04 778 788 799 25.06 788 799 25.04 238 26.08 799 25.06 248 26.10 810 810 850 25.10 26.12 821 25.11 25.11 25.14 832 25.12 821 26.18 853 25.14 292 26.18 853 25.16 302 26.20 864 25.14 292 26.18 853 25.16 302 26.20 864 25.22 335 26.26 880 25.22 335 26.26 880 25.24 346 26.28 886 25.26 356 26.30 891 25.32 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
24.92 173 25.96 734 27.00 1,026 24.94 184 25.98 745 24.98 205 26.00 767 25.00 216 26.04 778 25.02 227 26.06 788 25.04 238 26.08 799 25.06 248 26.10 810 25.08 259 26.12 821 25.10 270 26.14 832 25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.25 356 26.30 891 25.32 389 26.36 907 25.34 400 26.38 913 25.35 41 26.42 923 25.34 40 26.42 923						
24.94 184 25.98 745 24.96 194 26.00 756 25.00 216 26.02 767 25.02 227 26.06 788 25.04 238 26.08 799 25.06 248 26.10 810 25.08 259 26.12 821 25.10 270 26.14 832 25.14 292 26.16 842 25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.26 356 26.30 891 25.30 378 26.34 902 25.34 400 26.38 91 25.35 36 40 918 25.36 410 26.40 918 25.36 410						
24.96 194 26.00 756 24.98 205 26.02 767 25.00 216 26.04 778 25.02 227 26.06 788 25.04 238 26.08 799 25.06 248 26.10 810 25.08 259 26.12 821 25.10 270 26.14 832 25.12 281 26.16 842 25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.24 346 26.28 886 25.25 366 26.30 891 25.32 389 26.36 907 25.34 400 26.38 913 25.34 400 26.38 913 25.36 410					27.00	1,026
24.98 205 26.02 767 25.00 216 26.04 778 25.02 227 26.06 788 25.04 238 26.08 799 25.06 248 26.10 810 25.08 259 26.12 821 25.10 270 26.14 832 25.12 281 26.16 842 25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.34 400						
25.00 216 26.04 778 25.02 227 26.06 788 25.04 238 26.08 799 25.06 248 26.10 810 25.08 259 26.12 821 25.10 270 26.14 832 25.12 281 26.16 842 25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.24 346 26.28 886 25.26 356 26.30 891 25.28 367 26.32 896 25.32 389 26.34 902 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.42 443						
25.02 227 26.06 788 25.04 238 26.08 799 25.06 248 26.10 810 25.08 259 26.12 821 25.10 270 26.14 832 25.12 281 26.16 842 25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.25 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.42 443 26.49 929 25.42 443 26.49 934 25.44 454						
25.04 238 26.08 799 25.06 248 26.10 810 25.08 259 26.12 821 25.10 270 26.14 832 25.12 281 26.16 842 25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.26 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464						
25.06 248 26.10 810 25.08 259 26.12 821 25.10 270 26.14 832 25.12 281 26.16 842 25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.25 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464						
25.08 259 26.12 821 25.10 270 26.14 832 25.12 281 26.16 842 25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.25 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475						
25.10 270 26.14 832 25.12 281 26.16 842 25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.26 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.35 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475						
25.12 281 26.16 842 25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.26 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.54 508						
25.14 292 26.18 853 25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.26 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.50 486 26.52 950 25.51 508 26.58 967 25.54 508 26.58 967 25.55 518						
25.16 302 26.20 864 25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.26 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518						
25.18 313 26.22 869 25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.26 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529						
25.20 324 26.24 875 25.22 335 26.26 880 25.24 346 26.28 886 25.26 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.45 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540						
25.22 335 26.26 880 25.24 346 26.28 886 25.26 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977						
25.24 346 26.28 886 25.26 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977						
25.26 356 26.30 891 25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.55 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977						
25.28 367 26.32 896 25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977						
25.30 378 26.34 902 25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977						
25.32 389 26.36 907 25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977						
25.34 400 26.38 913 25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977						
25.36 410 26.40 918 25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977						
25.38 421 26.42 923 25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977						
25.40 432 26.44 929 25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977						
25.42 443 26.46 934 25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977						
25.44 454 26.48 940 25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977						
25.46 464 26.50 945 25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977				940		
25.48 475 26.52 950 25.50 486 26.54 956 25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977			26.50	945		
25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977	25.48		26.52	950		
25.52 497 26.56 961 25.54 508 26.58 967 25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977			26.54			
25.56 518 26.60 972 25.58 529 26.62 975 25.60 540 26.64 977			26.56		1	
25.58 529 26.62 975 25.60 540 26.64 977	25.54					
25.60 540 26.64 977	25.56				1	
					1	
25.62 551 26.66 980						
I I	25.62	551	26.66	980	1	
			Ų.		Ţ	

Appendix "D"

Pipe Conveyance And Inlet Capacity Calculations

Date: 11/16/2023

Project ID: 20PA_Appendix_D_Conveyance_&_Outlet_Protection_04.xlsx

The following is a summary of the computations performed to design the proposed storm drainage system drain sizes. The proposed watershed flows were taken from the results of the HyrdoCAD storm drainage analysis performed on the site. Refer to Appendix "C" for HydroCAD model input data, computations, and results. Refer to Exhibit "B" for a depiction of the proposed on-site watershed areas. HydroCAD runoff computations are based on the 25-year design storm frequency event. Culvert conveyance computations are based on the Manning's Equation.

Watershed Analysis Results

Drainage Area	Area (S.F.)	Impervious Area (S.F.)	CN	25-Year Peak Flow Rate (cfs)
5S	4,680	1,314	85.1	0.52
6Sa	10,467	9,079	95.6	1.37
6Sb	5,820	5,468	96.9	0.77
7S	916	108	82.1	0.09
8S	2,594	2,594	98.0	0.34
OS-P	3,104	0	80.0	0.26
9P	Ē	(€	(E)	0.26
10P	_	i.e.	·	1.05
11P	-	3 y :		1.68

Culvert Capacity Summary Table

Maximum pipe capacities were calculated using the Manning equation for full flow conditions. The proposed pipe information, 25-year peak design flows, and corresponding maximum capacities are summarized in the following table. Refer to the Development Plan for pipe and structure locations. All pipes have been sized to convey the flow rates for at least the 25-year design storm frequency event.

Pipe #	Diameter (inches)	Rougness (n)	Slope (%)	Contributing Watershed	25-Year Peak Design Flow (cfs)	Max Capacity (cfs)
1	6	0.011	3.0%	50% 5S + OS	0.52	1.15
2	10	0.011	11.7%	9P	1.68	8.88

Inlet Capacity Analysis

Gutter flow calculations for proposed catch basins are presented below. The calculations below follow the procedures outlined in Chapter 11.9 of the Connecticut DOT Drainage Manual. Refer to Appendix "C" for the 25-year Watershed Flow Rates and Contributing Drainage Areas watershed information.

Perimeter	5.8 ft.	4 ft.	4 ft.	4 ft.
Length (ft.)	4 ft.	2 ft.	2 ft.	2 ft.
Width (ft.)	1.8 ft.	2 ft.	2 ft.	2 ft.
О СВ Туре	CB - 1 Type "C" - 3 open sides	2 2'x2'	CB-3 2'x2'	YD-1 2' x 2'
Inlet ID	CB - 1	CB - 2	CB - 3	YD-1

Inlet ID	Inlet Type	Contributing Drainage Area	., ≽ ≖	Upstream Bypass Flow (ft³/s)	Total Design Flow	Roadway Slope (ft/ft)	Roadway Cross Slope	Depth of Gutter Flow	Spread (ft)	Width of Traveled Way (ft)	% Spread in Traveled Way	Flow into CB (ft ³ /s)	Flow Bypassing CB
CB-1	Sag	959 %05	(π /s)	0	(n /s)	N/A	0.032	0.08	2.46	20.00	12.3%	0.39	0.00
CB-2	CB-2 On Grade	20% 88	0.17	0	0.17	080.0	0.022	0.05	2.20	9.00	24.4%	0.17	0.00
CB-3	On Grade	20% 88	0.17	0	0.17	080.0	0.022	0.05	2.20	9.00	24.4%	0.17	0.00
YD-1	Sag	20% 5S + OS	0.52	0	0.52	N/A	090:0	0.12	2.06	6.00	34.3%	0.52	00.00
YD-2	Sag	50% 55 + 05	0.52	0	0.52	N/A	090:0	0.12	2.06	6.00	34.3%	0.52	0.00
O		l		i,									

Table: Gutter Flow Calculations, 25-Year Storm Event.

Outlet Protection Sizing Calculations

The following is a summary of the computations performed to design the proposed storm drainage system outlet protection measures. The proposed watershed flows were taken from the results of the HydroCAD storm drainage analysis performed on the site. HydroCAD runoff computations for the sizing of the proposed level spreader are based on the 25-year design storm frequency event. Refer to Appendix "C" for a summary of watershed runoff flow rates. Refer to the Storm Drainage and Utility Layout Plan for proposed level spreader outlet protection locations.

Watershed Analysis Results

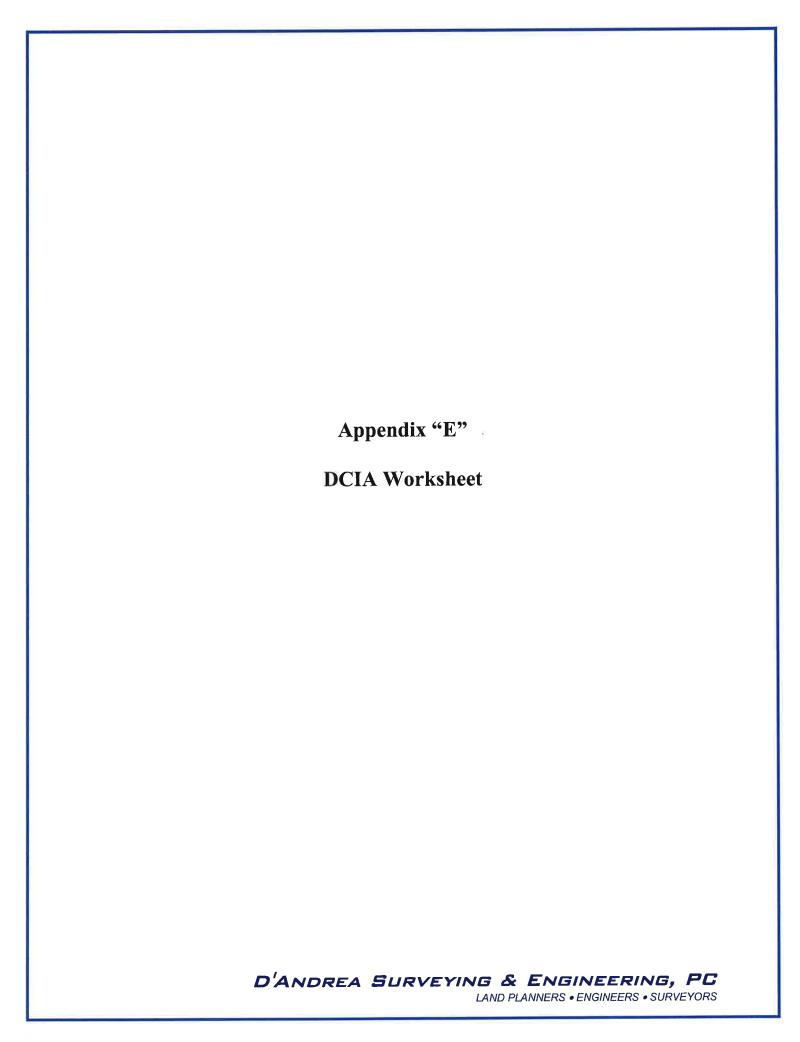
Outlet Protection Structure	Drainage Area	Flow Rate (cfs)
Level Spreader #1	11P + OS-P	1.94

Level Spreader Sizing Computations

Assume: 1" (0.083') of flow out of level spreader during storm event. Maximum velocity = 1.50 ft./sec. for fine sand or silt, non-colloidal.

Level Spreader #1

Peak Flow Rate (100-year storm)	2.31 c.f.s.
Length required	18.6 ft.
Level Spreader Length	20.0 ft.
Actual Velocity Out	1.39 ft./sec.





Note to user: complete all cells of this color only

	Part 1: General Information	
Project Name	Residential Development	
Project Address	12, 16 & 18 Taylor Street	
Project Applicant	G&T Taylor Street LLC	
Date of Submittal	11/16/2023	
Tax Account Number	001-9860	

Part 2: Project Details		21
1. What type of development is this? (choose from dropdown)	Redevelopment	
2. What is the total area of the project site?	24,478	ft ²
3. What is the total area of land disturbance for this project?	21,640	ft ²
4. Does project site drain to High Quality Waters, a Direct Waterfront, or within 500 ft. of	No	
Tidal Wetlands? (Yes/No)		c. 2
5. What is the <u>current</u> DCIA for the site?	0	ft ²
6. Will the proposed development increase <i>DCIA</i> (without consideration of proposed stormwater management)? (Yes/No)	No	
7. What is the <u>proposed-development</u> total impervious area for the site?	18,563	ft ²

Part 3: Water Quality Target Total		
Does Standard 1 apply based on information above?	No, Skip to Part 4	
Water Quality Volume (WQV)	N/A	ft ³
Standard 1 requirement	N/A	
Required treatment/retention volume	N/A	ft ³
Provided treatment/retention volume for proposed development	N/A	ft ³

Part 4: Proposed DCIA Tracking		
Pre-development total impervious area	8,705	ft ²
Current DCIA	0	ft ²
Proposed-development total impervious area	18,563	ft ²
Proposed-development DCIA (after stormwater management)	0	ft ²
Net change in DCIA from pre-development to proposed-development	0	ft ²

Part 5: Post-Development (As-Built Certified) DCIA Trackin	g
Post-development (per as-built) total impervious area	ft ²
Post-development (per as-built) DCIA (after stormwater management)	ft ²
Net change in DCIA from pre-development to post-development	ft ²

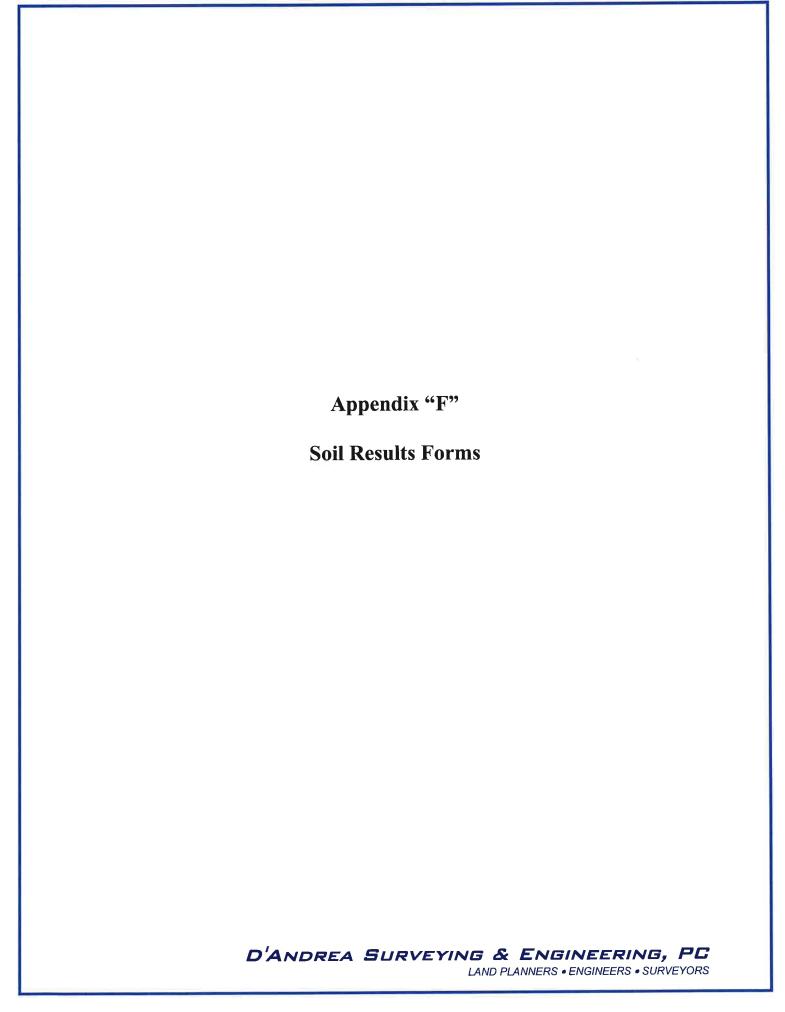
Certification Statement

I hereby certify that the information contained in this worksheet is true and correct.

Engineer's Signature



Date 11-16-23 Engineer's Seal



D'Andrea Surveying & Engineering, P.C.

Engineering Finits Name D'Andrea Surveying & Engineering, P.C.	Engineer's Name: Leonard C. D'Andrea		Saturated Hydraulie Conductivity Test Location #;			Ground Elevation	Foo Elevation of Proposed Infiltration System:	Bottom Elevation of Proposed Infiltration System;	Elevation of Test":	Test Method (cheek one of the following acceptable methods**):	Borehole nultration test (AHDES, 2008)	Guelph penneanter - ASTM D3126-90 Method	Talling head permeaniter - ASTM DSL20 to Method	Double my permeanneter of utilitiometer ASTM D5385 63 D595-02, D5120-90 Breakers	Africozegictet of Anioozegat (censial) pennealighet – Amoozegal 1792	Attach field data torms for the respective inti-tration test method,	Cinculated Saturated Hydraulis Conductivity Rate	
			9	Depth Range in	HIGHES	0		t)		36		76						
Residential Development	12, 16 & 18 Taylor Street		oring #: 1 Ground Elevation:		Soil Textific (Pen et.) Sand, Still and Clay)		Popul		Leglit Brown Sitty Loann		Light Brown Sifty Clay							
Total taget	hegrel Veller	ï	Test Pit ar Soil Boring 8:		PICVALIDA	33.3		0.10		5.85		F. [-						

*: A percolation test, performed in accordance with the guidelines of the Connecticut State Health Code or otherwise, is not an acceptable test for saturated hydrautic conductivity. Percolation tests overestimate the salmated hydraufic conductivity rate.

Depth in Inches

Mortling (Seasonally High Grundwater) Groundwaler

Pletas on

All field infiltration tests must be conducted in the actual location and soil layer where stormwater basedora is proposed

TEST CERTIFICATION

. All test pits or join boungs shall be excavated to an elevation four feet herewelle prove adhorton elevation of the infiltration system.

TOTAL STATE OF THE AND COMBRETE	HIS KETOKI IS TRUE AIME CORRECT.	\		Signisture of Test Conductor
600000000000000000000000000000000000000	PIEREDY CERTHY THAT THE IMPORMATION CONTAINED IN		Marthew M. Kiwing	Name of Test Conductor

Name of Test Conductor

5-2-218 Date

Development
Kesidential
Project family

12, 16 & 18 Taylor Street Projectovedness

est Pit or Soil Boring #:	ning #: 2 Ground Elevation:	levation: 25.6
		Depth Range in
Elecation	Soil Texture (Percent Sand, Silt and Clay)	I Clay) Inches
25 d		0
	Ton (4)	
15.1		9
	Light Brown Silly Loam	
13.6		24
	Light Brown Sift with Grey Clay	
K 35		82

	11.	Morthing (Seasonally High Groundwater)	32
	28.1	c.roundwater	H
1.3		aolia I	イン

* All test pats or soir borrage is all be exeavated to an elevation four is st below the proposed bettoer elegation of the infiltration system.

D'Andrea Surveying & Engineering, P.C.

Leonard C. D'Andrea

Engineer's Name

Епдтеетир Етта's Name

Chound Elevation: Top Elevation of Proposed Infiltration System: Botton: Elevation of Preposed Infiltration System: Hevation of Test*: Test Method (cheek one of the following acceptable methods**): Borehole infiltration test (MHDES, 2008) Guelph permeanneter ASTM D5126-90 Method Falling head permeanneter or infiltraneter - ASTM D5385-03, D5093-02, D5126-90 Methods Amoogenieter or Amougegar (constant head) permeanneter - Amoozegar 1992 Attach data forms for the respective mithialion test method	Calculated Saturated Hydraulic Conductivity Rate:
---	---

- ••A percolation text, performed in accordance with the guidelines of the Connecticut State Health Code or otherwise, is not an acceptable text for saturated hydraulic conductivity. Percolation texts overestimate the saturated hydraulic conductivity rate.
- * At) field infiltration tests must be conducted in the actual location and soil layer where stormwater infiltration is proposed

TEST CERTIFICATION

AND CORREC	1
Ŝ	
Q.Z.	
ī.	
TRUE	
2	١
REPORT	
SHE	
4	
TEVENTAL THE INFORMATION CONTAINED IN THIS R	
TIL	
плаз кален г	

5-1-2025

Matthew M. Kivijary

Same of Test Conductor

Engineering Film's Name D'Andrea Surveying & Engineering, P.C.	Engineer's Name, Leonard C. D'Andrea	Saturated Hydraulic Conductivity Test Location #;		Ground Elevation,	Top Elevation of Proposed Infiltration System	Bottom Elevation of Proposed Infiltration System	Elevation of Testa	Test Method (check one of the following acceptable methods**)	Borehole infiltration test (NHDES, 2008)	Guelph penneameter ASTM D5126-90 Method	Falling head permeameter ASTM D5126-90 Method	Double ring permeameter or militrometer (ASTM D3385-03, D3093-02, D3	Amoozemeter or Amoozegai (constant head) permeanieter - Antouzegar 199	Attach field data forms for the respective infiltration test method,	Calculated Saturated Hydraulic Caraba tivity Rate:	
		26.3	O≂pth Range in Inches	0		30		48		0.4		92				
Residential Development	12, 16 & 18 Taylor Street	oring 5: 3 Ground Elevation:	Soil Textine (Percent Sand, Sift and Clay)		Malings	75	Light Brown Fine Loans		Fan Fire Sand with Clay	0	Sandy Gravel	6				
Project Parine	Project Applies 12, 16 & 18	Lest Pit or Soil Boring 6:	Ecwanen	7 50		3317				0.12		981				

Ν'n	րեմբո	N/A
52	Groundwater	0 6
87	Matthus (Seasonally Bigh Groundwater)	\$ Hg.
Depth in Inches		Elevation

All reaptive or on bong eshall be excavated to an erevation four feet Verse, the property bottom electricity of the nifth attory system.

**A percolation test, performed in accordance with the guidelines of the Connecticut State Health Code or uliltrometer - ASTM D3385-03, D5093-02, D5126-90 Methods (constant head) permeameter - Amonzegar 1992 infiltration test method. Willy Raw

All field infiltration tests must be conducted in the actual location and soil layer where stormwater unfiltration is proposed

otherwise, is not an acceptable lest for saturated hydraulic conductivity. Percolation tests overestimate the

saturated hydraulic conductivity rate

1EST CERTIFICATION MARKET INTERPORT IS TRUE AND CORRECT.

Signature of Test Conductor	Muthew M Kivijary
	M. M. Sandara M

Name of Test Conductor

5-2-2025

Page 4

Soil Evaluation

ng & Engineering, P.C.
D'Andrea Surveyi
Engineering Firm's Name
Residential Development
Project Name

Project Auditera 12, 16 & 18 Taylor Street

32.8 Depth Range in Inches Ground Elevation: Soil Texture (Percent Sand, Silt and Clay). lean fall: Brown Silty Sand igh: Brown Natural Loam Tan Silty Fine Sod Test Pit or Soil Boring #: Elevation

2	Morting (Seasonally High Groundwater)	15
V-1	Groundwater	くえ
100) sapa	イア

TAIL tell pur or and borings shall be excavated to an elevation four feet below the proposed bottom elevation of the infiltration system

Saturated Hydraulic Conductivity Test Lucation #: Leonard C. D'Andrea Engineer's Name Ground Elevation

Double ring permeanater or infiltrometer - ASTM D3385-03, D5093-02, D5126-90 Methods
Amonzenicter of Amoozegar (constant head) petimearneter – Amoozegar 1992
Attach field data forms for the respective militration test method
Calculated Saturated Hydraulic Conductivity Rate:

Falling head permeamour - ASTM D5126-90 Method

Guelph permeameter - ASTM D5) 26-90 Method Borehole infiltration test (NHDES, 2008)

Test Method (check one of the following acceptable methods+*):

Bottom Elevation of Proposed Infiltration System Top Elevation of Proposed Infiltration System:

Elevation of Test*

- *A percolation test, perionised in accordance with the guidelines of the Connecticut State Health Code or otherwise, is not an acceptable test for saturated hydraulic conductivity. Percolation tests overestimate the saturated hydraulic conductivity rate
- * All field infiltration tests must be conducted in the actual location and soil layer where storrewater infilliation is proposed.

7
$\overline{}$
_
Ξ
٠.
ч
ί:
\equiv
=
Ξ
,-
~
7-3
_
٤.
_
_
:,
у,
-

7
-
13
l e
iã.
9
TIS TRUE AND CORRECT
₽
IZ.
<
633
5
12
=
ch:
1
24
4
0
~
325
=
-
7

11.4
17
LYIN
1
1.7
-
~
12
0
1
15
1
17
1=
HEIN
1三
155
1_
12
112
1=
III.
=
1
12
-
-
[-
I≃
154
1=
1=
1_

	ilor
M. Kiynary	of Test Conductor
Mathew A	Name of 1

- 1
يز
121
uducto
ŭ
3
5
3
3
:=

5-2-2-23

Engineering Firm's Name: D'Andrea Surveying & Engineering, P.C.	Engineer's Name: Leonard C. D'Andrea	Saturated Hydraulic Conductivity Test Location #:			
		30.9	Depth Range in	Inches	
velopment	r Street	Ground Elevation:		Soil Texture (Percent Sand, Silt and Clay) Inches	
Residential Development	12 & 18 Taylo	oring #: 5		Soil Texture (Po	
Project Name	-	Test Pit or Soil Boring #: 5		Elevation	

Test Pit or Soil Boring #:	ring #: 5 Ground Elevation:	30.9
		Depth Range in
Elevation	Soil Texture (Percent Sand, Silt and Clay)	Inches
90.9		0
	Topsoil	
30.3		7
	Light Brown Silty Loam	
27.7		39
	Light Brown Silt w/ Mixed Clay	
256		64
	Orange Sandy Soil	
23.7		86

Second Consistence 15 Co		
LANDINIE (SCAS)	Mottling (Scasonally High Groundwater)	46
6 tc	Groundwater	72
4/Z	Ledae	V/A

* All test pits or soil borings shall be excavated to an elevation four feet below the proposed bottom elevation of the infiltration system,

Double ring permeameter or infiltrometer - ASTM D3385-03, D5093-02, D5126-90 Methods Amoozemeter or Amoozegar (constant head) permeameter – Amoozegar 1992 Falling head permeanneter - ASTM D5126-90 Method Method (check one of the following acceptable methods**): ach field data forms for the respective infiltration test method Cuclph permeameter - ASTM D5126-90 Method Borehole infiltration test (NHDES, 2008) lculated Saturated Hydraulic Conductivity Rate: om Elevation of Proposed Infiltration System: Elevation of Proposed Infiltration System ation of Test+: and Elevation:

- **A percolation test, performed in accordance with the guidelines of the Connecticut State Health Code or otherwise, is not an acceptable test for saturated hydraulic conductivity. Percolation tests overestimate the saturated hydraulic conductivity rate.
- * All field infiltration tests must be conducted in the actual location and soil layer where stormwater infiltration is proposed.

TEST CERTIFICATION

THEREBY CERTIFY THAT THE INFORMATION CONTAINED IN THIS REPORT IS TRUE AND CORRECT.		
3Y CERTIFY THAT THE	S TRUE AND CORR	
3Y CERTIFY THAT THE	⊢ Z	
12	3V CERTIFY THAT THE	

7	Signature of Jest Conductor	
Monthew M. Kryinry	Name of Text Conductor	

9-20-2013 Date

Project Name	Residential Development		Engineering Firm's Nai
Project Addies	12 & 18 Taylor Street		Engineer's Name:
Test Pit or Soil Boring #:	ring #: 6 Ground Elevation:	26.8	Saturated Hydraulic
		Depth Range in	
Elevation	Soil Texture (Percent Sand, Silt and Clay)	Inches	
26.8		(i)	Ground Elevation
	Topsed		Top Elevation of Propo
F 97		5	Bottom Elevation of Pr
	Brown Silty Loam		Elevation of Test*:
23.5		40	Test Method (check or
	Light Brown Silt w/ Mixed Clay		Borehole
21.3		99	Guelph pe
	Orange Sandy Gravel		Falling her
19.7		85	Double rir
			Ainoozem
			Attach field data form

N/A	ခရာခ']	W.
9	Groundwater	21.8
31	Mottling (Seasonally High Groundwater)	93.6
Depth in Inches		Flevation

* All test pit; or soil borings shall be excavated to an elevation four feet below the proposed bottom elevation of the infiltration system.

ng pemeameter or infiltrometer - ASTM D3385-03, D5093-02, D5126-90 Methods neter or Amoozegar (constant head) permeameter - Amoozegar 1992 D'Andrea Surveying & Engineering, P.C. aid permeameter - ASTM D5126-90 Method ne of the following acceptable methods**): infiltration test (NHDES, 2008) is for the respective infiltration test method. ermeameter - ASTM D5126-90 Method Conductivity Test Location #: Leonard C. D'Andrea Calculated Saturated Hydraulic Conductivity Rate: oposed Infiltration System: sed Infiltration System:

**A percolation test, performed in accordance with the guidelines of the Connecticut State Health Code or otherwise, is not an acceptable test for saturated hydraulic conductivity. Percolation tests overestimate the saturated hydraulic conductivity rate,

* All field infiltration tests must be conducted in the actual location and soil layer where stormwater infiltration is proposed

TEST CERTIFICATION

じ
I≌.
IŻ
0
0
13
111
5
\simeq
17
153
l:
15
Ĕ
122
15
I=
IE.
Z
5
三
Z.
₹
5
ľδ
Ŭ
TION CC
12
15.
15
12
0
15
=
144
产
THER
<
ΙΞ
1=
18
U
>
8
22
tu

) LIV	4 Conductor
Kivil	000
atthew M	Tool Too

19	0
	st Conductor
V	of Tc
~	Æ
1	Signal



Project Name. Residential Development Engineering Finn's Name: Devalopment & Engineering, P.C. Project Address: 12 & 18 Taylor Street Engineer's Name: Leonard C. D'Andrea Engineer's Name: Leonard C. D'Andrea Saturated Hydraulic Conductivity Test Location #: Depth Range in	-
---	---

est Pit or Soil Boring #:	rring #: 7 Ground Elevation;	27.5
		Depth Range in
Elevation	Soil Texture (Percent Sand, Silt and Clay)	Inches
575		0
	Mise, Fill	
24.1		37
	Light Brown Silly Loam	
23.9		43
	Light Brown Silty Loam w/ Clay	
21.6		71
	Orange Brown Sandy Gravel	
20.4		85

Elevation		Depth in menes
1.1.2	Mottling (Seasonally High Groundwater)	41
C. C.	Groundwater	97
N/A	ndpc	N/A

* All test pits or soil borings shall be excavated to an elevation four feet below the proposed bottom elevation of the infiltration system

Double ring permeameter or infiltrometer - ASTM D3385-03, D5093-02, D5126-90 Methods Amoozemeter or Amoozegar (constant head) permeameter Amoozegar 1992 Falling head permeameter - ASTM D5126-90 Method est Method (check one of the following acceptable methods**): mach field data forms for the respective infiltration test method. Guelph permeanneter - ASTM D5126-90 Method Borehole infiltration test (NHDES, 2008) Calculated Saturated Hydraulic Conductivity Rate: ottom Elevation of Proposed Infiltration System: op Elevation of Proposed Infiltration System cvation of Test*; ound Elevation;

- **A percolation test, performed in accordance with the guidelines of the Connecticut State Health Code or otherwise, is not an acceptable test for saturated hydraulic conductivity. Percolation tests overestimate the saturated hydraulic conductivity rate.
- . All field infiltration tests must be conducted in the actual location and soil layer where stormwater infiltration is proposed.

TEST CERTIFICATION

ABBIT III	NAME OF		
CIOCOCO CINE SIL			
ALLEGO OF SE	KOE		
OI HOCKE			
THE CALL			
00 000	2		
	7		
		100000	
STA CALLED LAS COMMENT OF THE OWNER WHEN THE PARTY OF THE	JK M A	The second secon	
	122		
	21 ピコニーマコニンローウ		
	· Notice	111111	
	TO NOTICE	A 100	
١	100	2	

	S Conductor
1	Signature of Ic

Name of Test Conductor Matthew M. Kivijary

9-20-2013

D'Andrea Surveying & Engineering, P.C.

Soil Evaluation

Engineering Firm's Name:
Residential Development
Project Name:

اء	
Developmen	dor Street
Residential Development	12 & 18 Taylor Street
Project Name:	Project Addres

Test Pit or Soil Boring #:	uring #: 8	Ground Elevation:	27.1
			Depth Range in
Elevation	Soil Texture (Perc	Soil Texture (Percent Sand, Silt and Clay)	luches
1 62			0
	Misc Fill		
1.52			24
	Orange Brown Silty Loam w/ Sand	Loam w/ Sand	
22.0			19
	Orange Brown Silty Sand	Sand	
1.02			84

Elevation		Depth in Inches
22.5	Mottling (Seasonally High Groundwater)	55
20.8	Groundwater	76
N/A	Ledge	N/A

* All test pits or soil borings shall be excavated to an elevation four feet below the proposed bottom elevation of the infiltration system,

- Double ring permeanneter or infiltrometer ASTM D3385-03, D5093-02, D5126-90 Methods Amoozemeter or Amoozegar (constant head) permeameter - Amoozegar 1992 Falling head permeameter - ASTM D5126-90 Method Test Method (check one of the following acceptable methods**): Guelph penneameter - ASTM D5126-90 Method Saturated Hydraulic Conductivity Test Location #: Borehole infiltration test (NHDES, 2008) Leonard C. D'Andrea Bottom Elevation of Proposed Infiltration System: Fop Elevation of Proposed Infiltration System: Elevation of Test*: Ground Elevation: Engineer's Name:
- **A percolation test, performed in accordance with the guidelines of the Connecticut State Health Code or otherwise, is not an acceptable test for saturated hydraulic conductivity. Percolation tests overestimate the saturated hydraulic conductivity rate

Attach field data forms for the respective infiltration test method.

Calculated Saturated Hydraulic Conductivity Rate;

* All field infiltration tests must be conducted in the actual location and soil layer where stormwater infiltration is proposed.

TEST CERTIFICATION

THEREBY CERTIFY THAT THE INFORMATION CONTAINED IN THIS REPORT IS TRUE AND CORRECT.

Name of Test Conductor Matthew M. Kivnary

9-10-2013

18 TAYLOR STREET STAMFORD CT BUILDING G

NEW CONSTRUCTION

JIA HUA

NUMBER DATE REVISED BY DESCRIPTION

TAYLOR STREET
BUILDING G
NEW
CONSTRUCTION

Project Overview

DRAWINGS PROVIDED BY:

DATE:

11/15/2023

SCALE:

SHEET:



TAYLOR STREET
BUILDING G
NEW
CONSTRUCTION

FLOOR PLANS

RAWINGS PROVIDED BY:

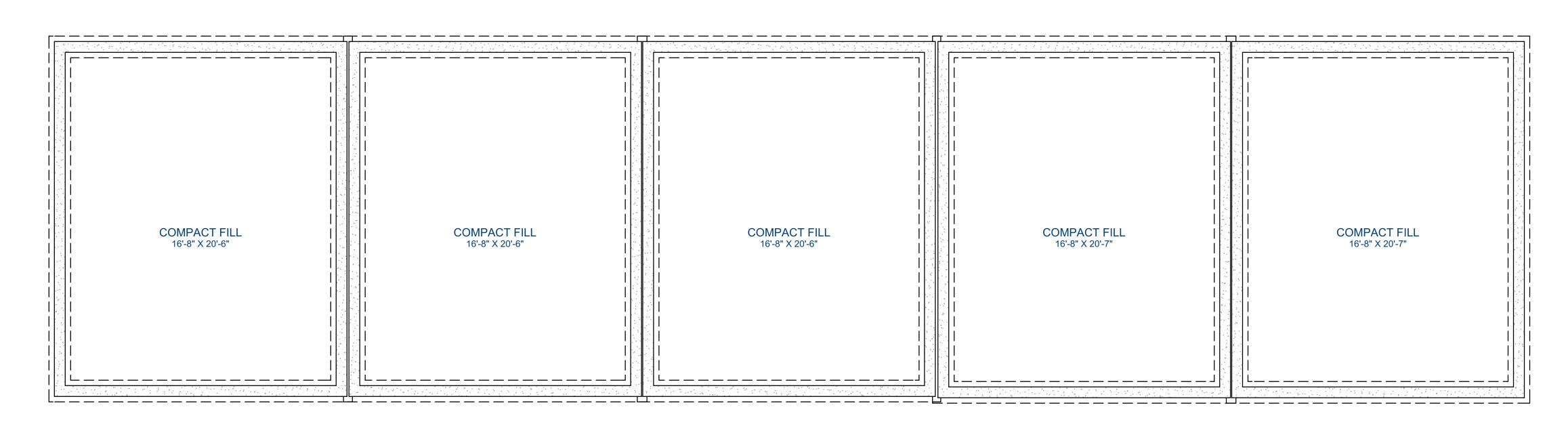
DATE:

11/15/2023

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

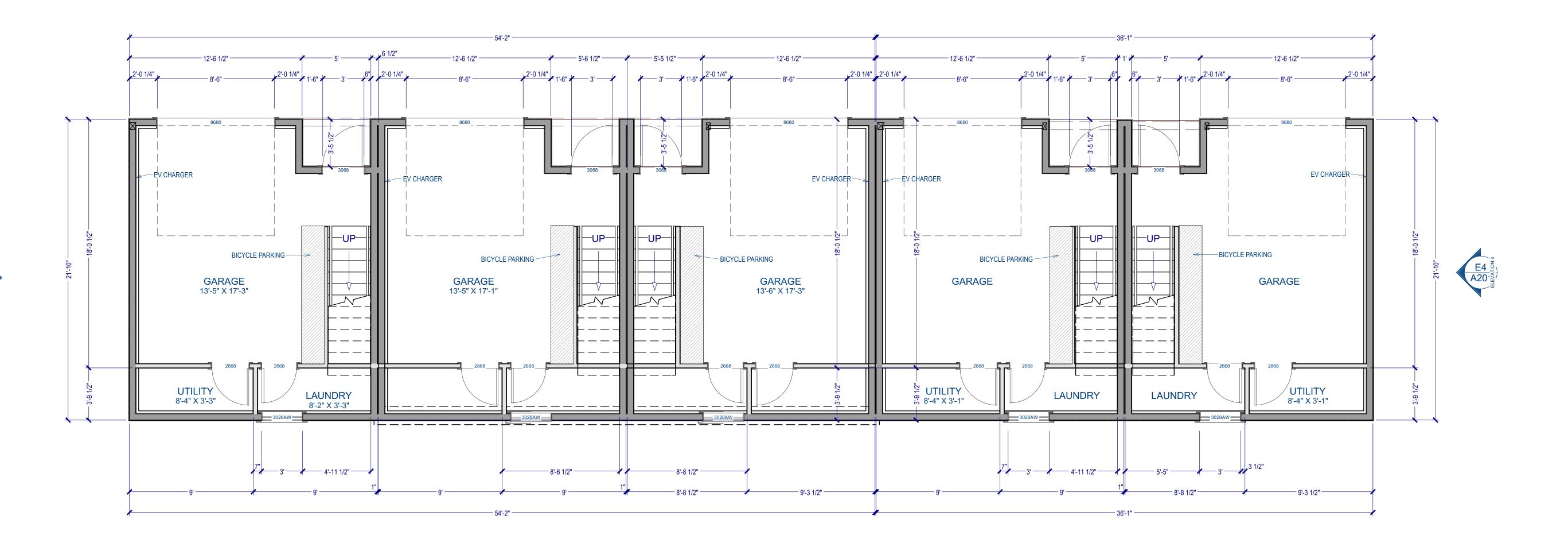
SHEET:

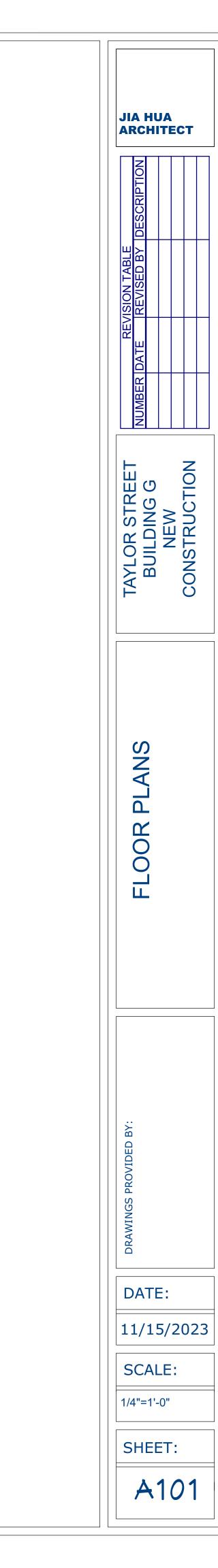
A100

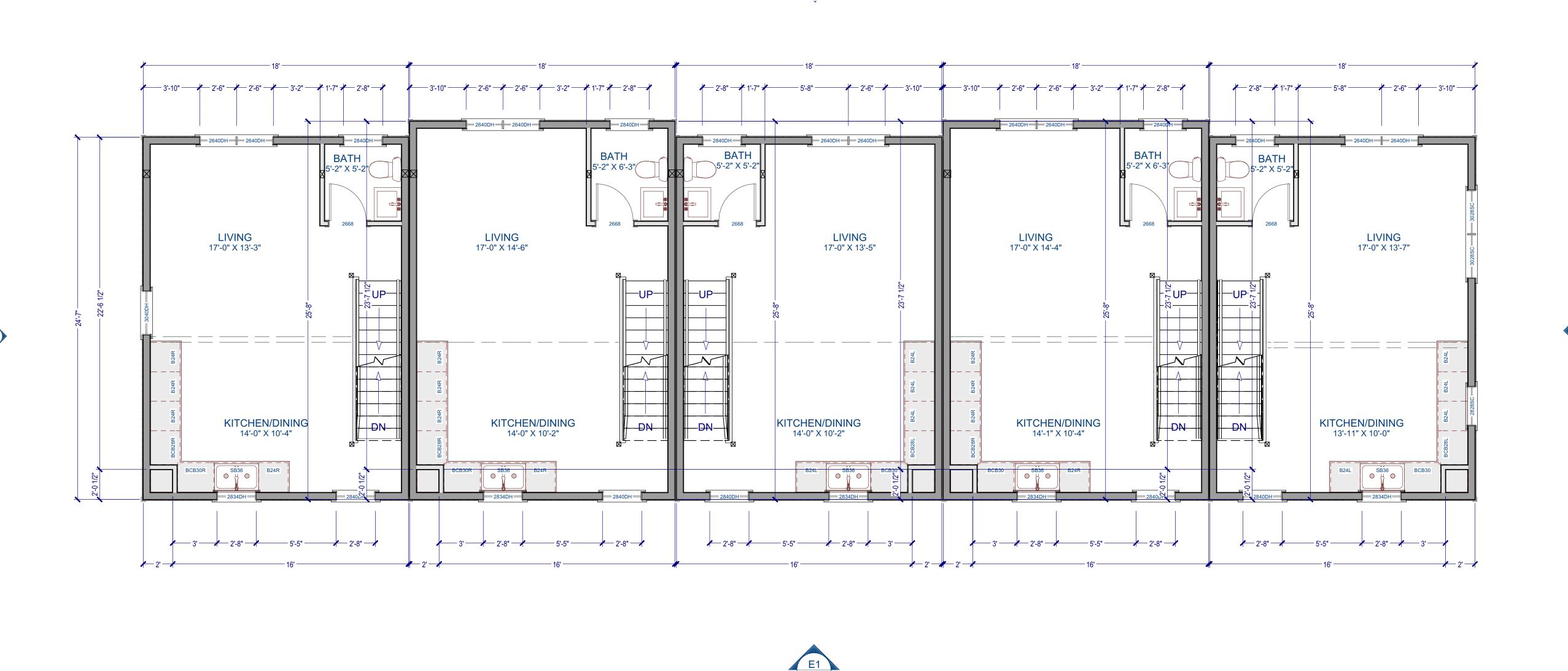


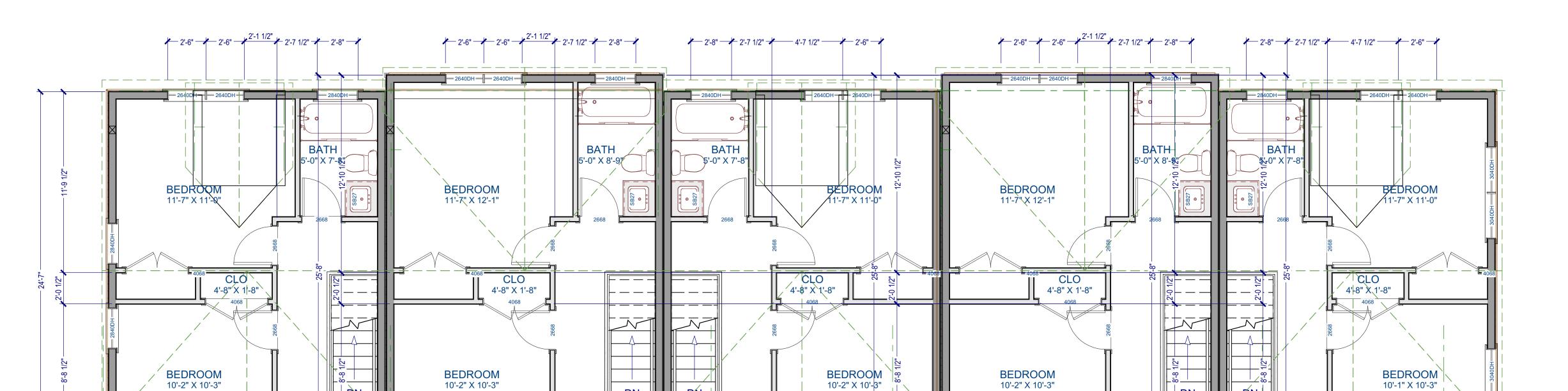
FOUNDATION PLAN











2'-8" 2'-5" 1'-9 1/2" 2'-6" 4'-4"

8'-7 1/2"

2'-6" 2'-6" 2'-6" 2'-5" 2'-8"

8'-7 1/2"

2'-6" 2'-6" 2'-6" 2'-6" 2'-8"

8'-7 1/2"

FIRST FLOOR PLAN

1'-10" 2'-6" 2'-6" 2'-6" 2'-5" 2'-5"

8'-7 1/2"

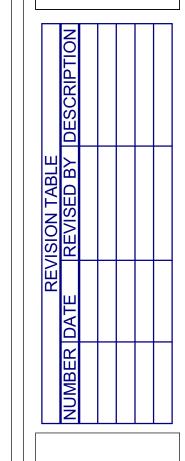
SECOND FLOOR PLAN

2'-8" 2'-5" 3'-1" 5'-6 1/2"

8'-7 1/2"



JIA HUA ARCHITECT



BUILDING G
NEW
CONSTRUCTION

FLOOR PLANS

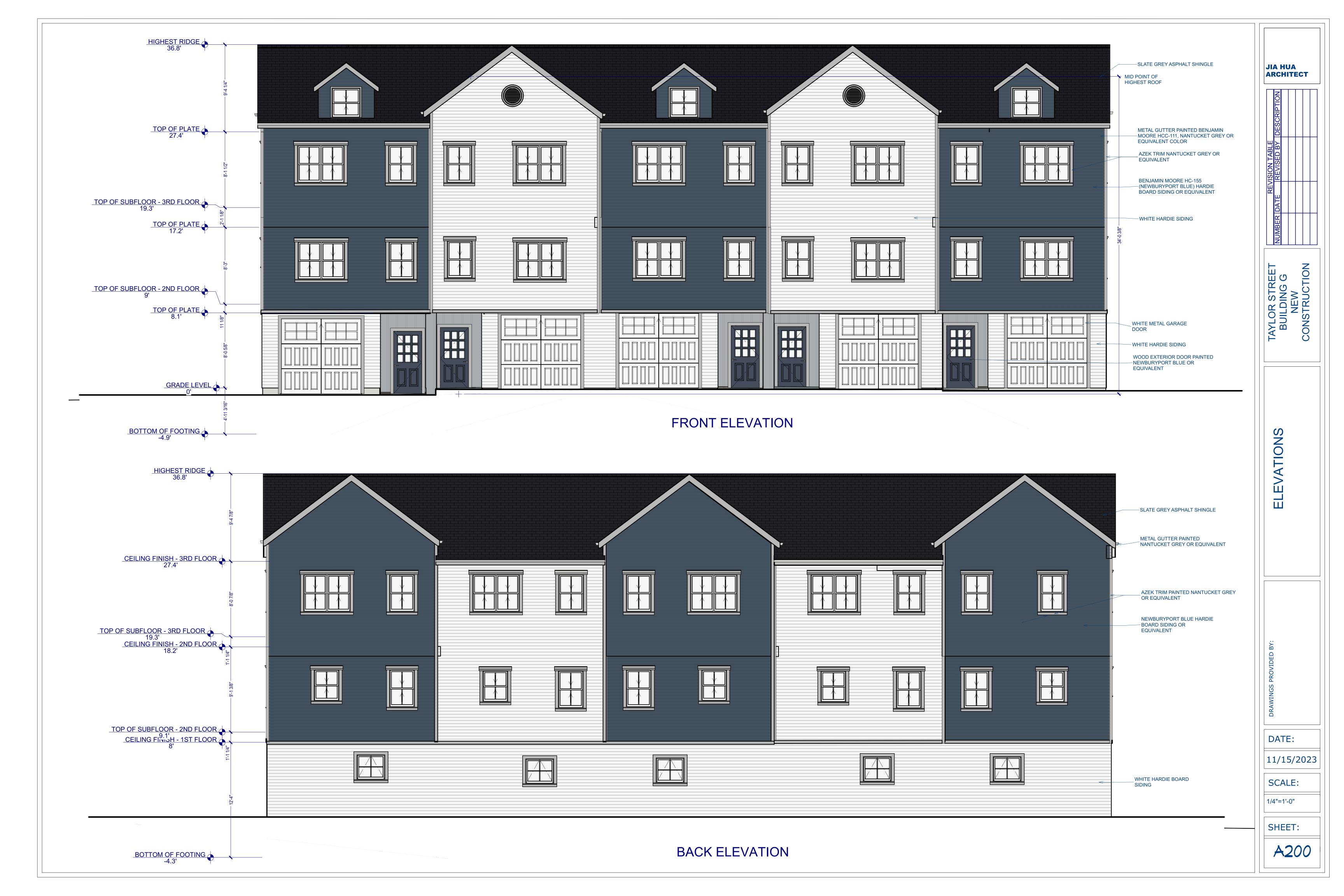
RAWINGS PROVIDED BY:

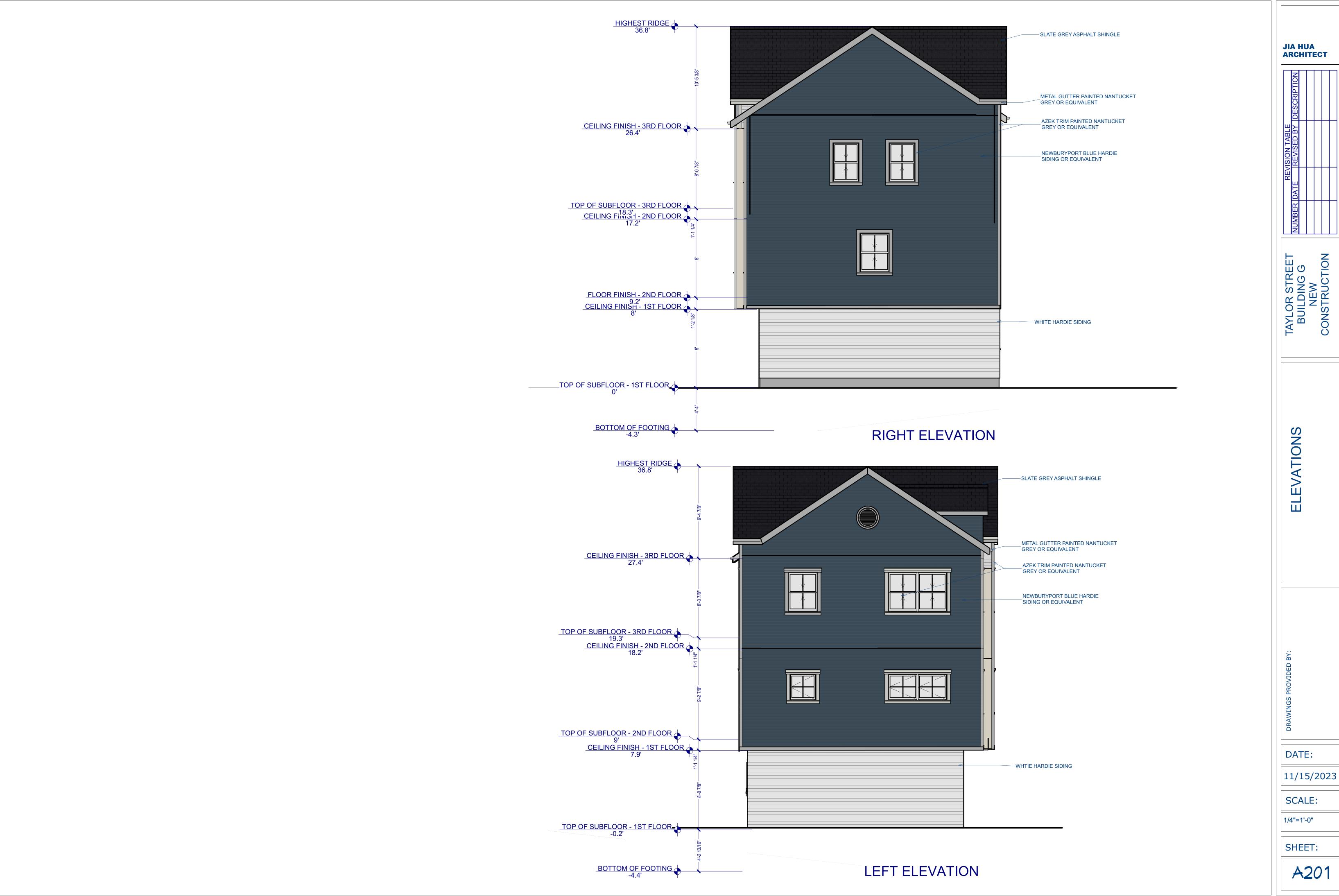
DATE:

11/15/2023

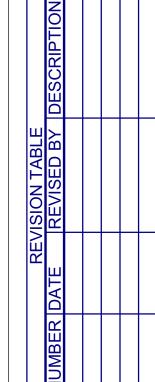
SCALE: 1/4"=1'-0"

SHEET:





JIA HUA





JIA HUA ARCHITECT

MBER DATE REVISED BY DESCRIPTION

BUILDING G
NEW
CONSTRUCTION

RENDERING

ORAWINGS PROVIDED BY:

DATE:

11/15/2023

SCALE:

1/4"=1'-0"

SHEET:



JIA HUA ARCHITECT

BER DATE REVISED BY DESCRIPTIO

TAYLOR STREET
BUILDING G
NEW
CONSTRUCTION

RENDERING

RAWINGS PROVIDED BY:

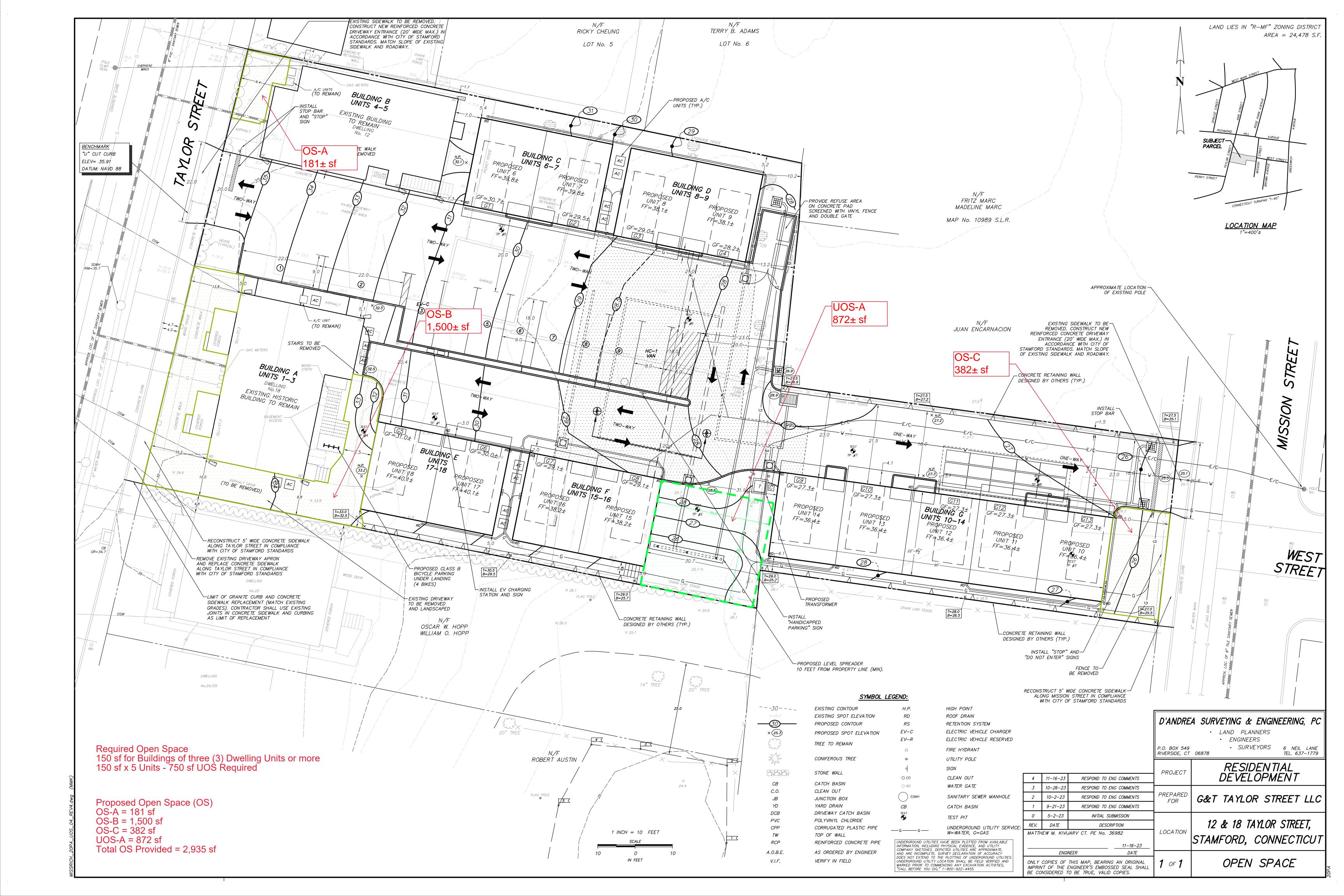
DATE:

11/15/2023

SCALE:

1/4"=1'-0"

SHEET:



APPLICATION NARRATIVE - 12 & 18 Taylor Street

Introduction & Background

G&T Taylor Street LLC (the "Applicant") owns the properties located at 12 and 18 Taylor Street, Stamford in the R-MF Multiple Family Residence District (the "Properties"). The Applicant purchased the Properties in 2021. 18 Taylor Street is improved with a historic three-family house constructed in 1890 in the late-American "Stick Style" that retains many of its original distinctive historical features. Accordingly, 18 Taylor has twice previously been recognized by the Zoning Board as having historical significance worthy of preservation: first in 1991 and again in 2008, when the Zoning Board granted historic preservation Special Exceptions under Section 7.3 of the Zoning Regulations for different projects at the site proposed by two separate prior owners.²

Neither of the two prior projects was ultimately constructed, however, due to the previous owners' changing plans for the site. Accordingly, 18 Taylor has not yet been the subject of a historic preservation easement, and no redevelopment of the Properties has taken place that includes preservation of 18 Taylor. The current Applicant would now like to finally finish what prior owners admirably started – a redevelopment of the Properties to infill them with much-needed housing (including affordable housing) while improving and beautifying both Properties, historically preserving 18 Taylor, and providing a historic preservation easement to safeguard it in perpetuity. To do so, the Applicant seeks a Special

¹ Adjoining 12 Taylor Street is improved with a recently-renovated two-family house.

² Enclosed in the current application materials are 1991 and 2008 letters from the well-known historic preservation architect Renee Kahn supporting the applications and setting forth her reasons, as well as a 1991 letter in support from the Stamford Historical Society.

JURIS NO. 068550

(203) 327-2300

STAMFORD, CONNECTICUT 06901

500 SUMMER STREET

Permit under Section 7.3, inclusion of 18 Taylor on the Cultural Resources Inventory, and CAM approval.

Inclusion on Cultural Resources Inventory

The first step toward seeking a Section 7.3 Special Permit is inclusion of 18 Taylor on the City's Cultural Resources Inventory ("CRI") pursuant to Section 7.3.B.2(c). That section provides that a Structure shall be listed on the CRI in accordance with the following requirements, among others: (1) that the application has been reviewed by Land Use Bureau staff based on review criteria for historic or architectural significance established by the Land Use Bureau in consultation with HPAC; and (2) that HPAC has recommended that the structure to be added to the CRI is historically or architecturally significant.

Here, 18 Taylor more than meets the criteria for inclusion in the CRI. The CRI application lists several alternative grounds for inclusion, two of which particularly apply here: (1) 18 Taylor embodies the distinctive characteristics of a type, period, or method of construction; and (2) it is associated with events that have made a significant contribution to the broad patterns of Stamford's history.

First, as can be seen in the accompanying photos and as set forth in the supporting letter from Qualified Historic Preservation Expert Travis Brock Kennedy, 18 Taylor embodies the distinctive characteristics of the late-American "Stick Style" or Queen Anne style, featuring the massing, proportions, and restrained ornamentation typical of houses from this period. Its features are remarkably well preserved, and include timber clapboard (Fig. 1), two-over-two sash windows and other original windows above the front doors and at basement level (Fig. 1, Fig. 2, and Fig. 3), hand-turned veranda posts (Fig. 4), beadboard (Fig. 5), and other decorative features, such as the hand-made trelliswork under the

JURIS NO. 068550 (203) 327-2300 STAMFORD, CONNECTICUT 06901

500 SUMMER STREET

building's porches (Fig. 6). All such materials, features, finishes, construction techniques, and examples of craftsmanship characterize the building as an exemplar of domestic architecture from the "Stick Style"/Queen Anne movement. Listing 18 Taylor on the CRI will facilitate these distinctive historic features being preserved and not lost.

Second, 16-18 Taylor is associated with events that have made a significant contribution to the broad patterns of Stamford's history. As Ms. Kahn recognized in connection with the prior applications and Mr. Kennedy re-emphasizes here, the 1890 house at 18 Taylor is a prime example of the type of workforce housing associated with this formative period in Stamford's history, when immigrant communities swelled the ranks of the city's industrial workers. As Ms. Kahn puts it, "18 Taylor Street was one of a row of modest but attractive dwelling units built" in the late 19th century "to house the large numbers of immigrant Irish moving into Stamford at that time." She further notes that "Taylor Street was named for Michael Taylor who originally owned most of the land in the area. A hundred years ago, the street was little more than an unmarked dirt path, but by 1889 almost twenty families, mostly working-class Irish, had homes on the street.... Owning a home on Taylor Street was undoubtedly the first move up the social ladder in America." Preserving this part of Stamford's history will allow it to be studied by scholars and appreciated by the public. Listing 18 Taylor on the CRI will enable that preservation.

Special Permit Under Section 7.3

Under Section 7.3 of the Zoning Regulations (Historic Preservation), the Zoning Board "may modify by Special Permit use, bulk, height, Light and Air, setback, coverage, density and parking standards based on the standards listed in this Section." The criteria for obtaining a Special Permit under Section 7.3 are:

JURIS NO. 068550

(203) 327-2300

STAMFORD, CONNECTICUT 06901

∞

- a. Proposed use and site plan are compatible with and implement the objectives and policies of Stamford's *Master Plan*;
- b. Proposed use and site plan are superior to a plan conforming to the standard dimensional requirements and use standards of the underlying zoning district and will not impair the future development of the surrounding area;
- c. Proposed use and site and architectural plans serve to rehabilitate, restore, *Critically Reconstruct*, or preserve *Historic Structures* or *Sites*, and meet the *HPAC* guidelines for Historic Preservation (once they are recommended by *HPAC* and adopted by the Zoning Board), or the appropriate Standards and Guidelines of the Secretary of the Interior, as amended from time to time and published on the National Park Service website, as applied by *HPAC* and the Zoning Board; and
- d. The loss of said *Historic Structure* or *Historic Site* would be detrimental to the neighborhood character, *Local Historic District* or the cultural and historical heritage and identity of the City of Stamford.

Here, the project more than meets these criteria.

First, under (d), as shown above, the loss of the historic building at 18 Taylor would be detrimental to the neighborhood and to Stamford as a whole, because a prime example of a valuable style of architecture and a piece of Stamford's industrial heritage would be irretrievably lost.

Second, under (c), the proposed use and site and architectural plans serve to rehabilitate, restore, and preserve the historic structure at 18 Taylor. As discussed in Mr. Kennedy's report, 18 Taylor will be preserved and restored in accordance with industry standards for preservation, including the Secretary of the Interior's guidelines. The distinctive Stick Style/Queen-Anne features of the house will be preserved intact, and where repairs are needed due to deterioration, they will be made with materials that, while durable, are historically sensitive and designed to maintain the building's visual aesthetic.

Third, under (b), the proposed use and site plan are superior to a plan conforming to the standard dimensional requirements and use standards of the underlying zoning district. The Applicant seeks to do a modest infill development on a through-lot between Taylor and Mission Streets, in the R-MF district where multifamily housing is currently allowed as of

right and there are abundant multifamily developments nearby. The Applicant would be allowed 16 units on the subject parcel as of right, and only seeks to build an additional 2 units under a Section 7.3 historic density bonus.³ The Applicant currently rents out two of the existing units (at 12 Taylor) under the Section 8 Housing Choice Voucher Program voluntarily, and seeks to create two additional below-market-rate units at 18 Taylor in connection with the Project. The Applicant intends to deed-restrict these two units as affordable for the life of the building, thus preserving valuable workforce housing in perpetuity. Because all this affordable housing is being provided on site, the Project additionally qualifies for a density bonus of at least 2 units by Special Permit under Section 7.4 and 9.N.6(h) of the Zoning Regulations. As explained by Mr. Kennedy, the Applicant has strived to design the proposed infill units in an architectural style that is complementary to the existing historic house. The new units will help to screen the high-rise skyline that currently predominates in the site's viewscape, and thus will help restore more of the residential neighborhood feel to this area.

Due to the characteristics of the properties and the preservation of the lawful nonconforming buildings (including historic 18 Taylor), the Applicant seeks modest relief under Section 7.3 from the underlying zoning district's requirements for:

- Density: 18 units instead of 16 units maximum;
- Building coverage: 35.6% (8,714 sft.) instead of 35% (8,567 sft.) maximum;
- Sideyard setbacks: 5.5 ft. both sides instead of 11.18 ft. both sides lawfully nonconforming (18 ft. both sides minimum currently required);
 - The lawfully nonconforming 1.4 ft. on the north side and 4.1 ft. on the south side (instead of 8 ft. currently required);⁴

³ The Applicant could have sought a density bonus of up to 3 units under Section 7.3. The Applicant also could have sought an even higher density bonus under Sections 9.N.6(h) and 7.4, for providing all required below-market-rate units on site. By limiting the units on site to 18, the Applicant hopes to strike the right balance between appropriate density, space for parking and landscaping, affordable housing, and historic preservation.

⁴ The current sideyard setback of 12 Taylor Street is 1.4 feet, which is pre-existing lawfully nonconforming.

 Parking and electric vehicle parking: 22.5 spaces, including 1 EV charger and 1 reserved space, instead of 30.75 spaces minimum, including 3 EV chargers and 3 reserved spaces.⁵

All of these requests for zoning relief are well within the parameters allowed to the Board for historic development bonuses under Section 7.3. In all other respects the proposed project conforms to the R-MF zone requirements for what the Applicant could do as of right.

The proposed project will not in any way impair the future development of the surrounding area. To the contrary, it will improve and beautify the area through new and attractive buildings, preservation of the historic 18 Taylor Street, an enhanced streetscape with new landscaping, a modern drainage system, visual screening of the nearby high-rise commercial buildings from the residential neighborhood, and sustainability features such as bike racks and electric vehicle charging stations.

Fourth, under (a), the project is entirely consistent with the Master Plan, and in fact embodies many of the planning techniques that the Master Plan specifically encourages. The Master Plan clearly supports historic preservation of Stamford's residential neighborhoods:

- "As redevelopment occurs at an increasingly rapid pace, it is now more important than ever for Stamford to maintain the character of historic districts and structures and ensure that new development is in keeping with the City's historic character." (159)
- "Because redevelopment in all areas of Stamford is occurring at an increasingly rapid rate, the protection of the City's valuable architectural resources is critical.
 The City must embark upon a concerted effort to preserve the historic architectural and landscape heritage that remains. This can be achieved by the implementation of policies that preserve the character and viability of historic resources to ensure that

⁵ The Applicant respectfully requests that the Zoning Board reduce the required parking to 19 spaces (higher than the one space per unit that may be permitted under a Section 7.3 bonus, which would be 18 spaces). In that case, Section 12.L of the Regulations would only require one EV charger and one EV reserved space, which are provided. A total of 22.5 parking spaces are provided on site – 13 garage, 9 uncovered, and 1 EV charger (which counts as .5 spaces). Notably, under the new version of Section 12.L of the Regulations enacted after this application was filed, an EV reserved space counts as a full parking space rather than a half space.

JURIS NO. 068550

ROSEN,

- new development respects the established traditions of scale, massing, setbacks and pedestrian-friendly streetscapes and plazas." (159-60)
- "Several zoning incentives that promote the historic preservation of properties exist. Section 7.3... for example, provides a development density bonus for projects that will result in the appropriate restoration and preservation of buildings of historic significance in the community." (163)

Moreover, the Master Plan encourages the preservation of existing housing and the organic addition of new housing within existing neighborhoods, rather than demolition of current housing and replacement by new large-scale development. (See, e.g., 7 (goals include "neighborhood preservation, revitalization, and growth"; "Balance new development with preservation of existing residential communities"; "Preserve existing housing and create affordable housing"; "Preserve historic buildings and districts"). Therefore, the Applicant's proposed infill development (in a property within Master Plan Category #4, Residential – Medium Density Multifamily) is clearly supported by the Master Plan as well:

- "As Stamford continues to attract new market-rate multifamily housing, it will be important for the City to maintain its existing housing policies and balance new residential development with preservation of existing neighborhoods." (133)
- Policy Recommendation 6A.1: "Balance new development with preservation of existing residential communities.... As new development occurs, the City should encourage preservation of existing residential streets and the rehabilitation of structures." (Id.)

CAM Approval

Lastly, as the project lies just within the Coastal Area Management (CAM) boundary that extends roughly 1000 feet from the Coastal Jurisdiction Line, the Applicant also seeks CAM site plan approval. As set forth in the accompanying CAM application, the project is nowhere near the coast, and the only coastal resource nearby is freshwater wetlands⁶; the

⁶ No portion of the project is located in inland wetlands or the upland review area.

(203) 327-2300

∞

only coastal policy implicated is "general development." There will be no adverse effects on coastal resources from this residential project. To the contrary, the accompanying Drainage Report demonstrates that the Applicant will be greatly improving stormwater runoff and drainage from the site, which will benefit coastal resources.

Conclusion

For all of the above reasons, the Applicant respectfully asks that you include the historic three-family house at 18 Taylor Street on the Cultural Resources Inventory, grant the requested Special Permit under Section 7.3 of the Zoning Regulations, and grant CAM site plan approval.

> THE APPLICANT, **G&T TAYLOR STREET LLC**

By: /s/ Leonard M. Braman Leonard M. Braman, Esq. Wofsey, Rosen, Kweskin & Kuriansky, LLP 600 Summer Street Stamford, CT 06901-1490 T: 203-327-2300/F: 203-967-9273

Juris No.: 068550

Zoning Data Chart 11/21/2023

Project Name - G&T Taylor Street LLC - 12 & 18 Taylor Street

Application number - 223-36 Address - 12 & 18 Taylor Street

Zoning District(s) - If multiple Zoning Districts, provide requirement and compliance for each portion of site under the different district - R-MF

Zoning Section		Current Required/ Permitted (R-MF)	Proposed Permitted (R- MF w/ historic bonus)	Existing Conditions	Proposed	Notes (Indicate compliance or Zoning Section for Special Permit if applicable)
	Lot Size					
				24,478 sf.	24,478 sf.	
9-N-6		Min. 5,000 sf.	N/A	combined	combined	Compliant
	Gross Floor Area	N/A	N/A			
	Zoning Floor Area	N1 / A	21/2			
	Residential	N/A	N/A			
	Commercial					
	Community Facility					
	Industrial Total	N/A	N/A			
	F.A.R.	14/7	14/7			
	Residential	N/A	N/A			
	Commercial	.4	,			
	Community Facility					
	Industrial					
	Total	N/A	N/A			
	Number of units	16 (or more under Sec. 7.4				
		since all BMR units provided				Compliant if 7.3
		onsite)	18	5	18	historic bonus
	Below Market Rate Units (#, %, and				2 two-bedroom	
	AMI level)				apts. @	
		10% of total # of dwelling			<\$1,928/mo.	
7.4		units @ 50% AMI	1.8	N/A	(<50% of AMI)	Compliant
	Number of seats/ beds / employees					
	if applicable	N/A	N/A		1050 % %	
	Density (Units/Acre)	4500 - 61 - 14 - 14 - 14 - 14	4250 - 61 - 14 - 14 - 14 - 14		1359 sft. of Lot	C1'1'57.2
		1500 sft. of Lot Area per	1359 sft. of Lot Area per	Commission	Area per Dwelling	historic bonus
	Church Furnitaria	Dwelling Unit	Dwelling Unit	Compliant	Unit 169.74 ft.	nistoric bonus
	Street Frontage	Min. 100 ft.	N/A	169.74 ft. combined	combined	Compliant
	Building Coverage (Area and %)	WIIII. 100 It.	IN/A	combined	Combined	Compliant if 7.3
	Building Coverage (Area and %)	35%	37%	11.6% (2,838 sf.)	35.6% (8,714 sf.)	historic bonus
	Lot coverage (Area and %)	33/6	37/6	11.0% (2,838 31.)	33.0% (8,714 31.)	Thistoric borius
	Lot coverage (Area and %)					
		N/A	N/A			
	Building Height (Feet)				34.1 ft. (Bldg G);	
		40 ft.	N/A	30.3 ft.	33.5 ft. (C, D, E, F)	Compliant
	Number of floors (Stories)	4 Stories	N/A	2 Stories	3 Stories	Compliant
	Active ground floor (sq.ft. and %) if		·			
	applicable	N/A	N/A			

	Yards					
	Front yard (Streetline)					Pre-existing lawful
	Tront yara (Streetine)	Min. 15 ft.	9.4 ft.	9.4 ft.	9.4 ft.	non-conforming
	Rear yard	Min. 30 ft.	No rear yard; through lot	N/A	N/A	non comonning
	Side yard		Tto rear yara, amouginot	14/71	14/71	
	Side yara					Pre-existing lawful
		Min. one side 8 ft., both		1.4 ft. one side,	1.4 ft. one side,	non-conforming;
		sides 18 ft. (since all BMR	1.4 ft. one side, 5.5 ft. both	11.18 ft. both	4.1 ft other side,	Compliant if 7.3
		units provided onsite)	sides	sides	5.5 ft. both sides	historic bonus
Definitions	Light & Air	20 ft.	20 ft.	20 ft.	20 ft.	Compliant
	Parking					
	Residential parking	30.75 spaces (2 per 3BR unit,				
		1.75 per 2BR unit, 1 per BMR				Compliant if 7.3
12.D		2BR unit)	19 spaces	N/A	22.5 spaces	historic bonus
	Commercial parking					
	Community Facility parking					
	Industrial parking					
	Public open space parking					
	Bike parking					
	# of levels of parking garage (if					
	applicable)					
	Square footage of parking area					
	Parking setback					
	Usable Open Space (Area and %)	Pursuant to Sec. 9.N.6(i),				
	, , ,	between 0 and 150 sf. per				
		unit for each new Building of				
		3 units or more, i.e. the 5				
		new units in Building G (0 -				
2			N/A	~8,700 sf.	872 sf.	Compliant
3	A ation (16 as a supera)	750 sf.)	IN/A	8,700 SI.	8/2 51.	Compliant
	Active (If separate)					
	Passive (If separate)					
	Sidewalk & Street Trees				2	
					2 med. & 3 sm.	
					trees on Taylor St	
		1			(119.74 ft.	
		1 med. street tree required			frontage); 1 med.	
42 K T		per 30 ft. of frontage; 1 sm.			& 1 sm. tree on	
12.K; Tree		tree required per 20 ft. of	N1 / A	_	Mission St (50 ft.	Camaliant
Manual		frontage	N/A	0	frontage)	Compliant
	Existing	0				
	Proposed	7				
	Total	7	4.//			Constitution (CT 2
40.1	EV Charging & Reserved Spaces		1 (because only 19 parking	_	_	Compliant if 7.3
12.L		3	spaces required)	0	1	historic bonus
	Fence height				0 11 :	
7.G		Max. 6 ft. front & side yards	Max. 6 ft. front & side yards	Compliant	Compliant	Compliant

Parking Management Plan – 12-18 Taylor Street

OVERVIEW

This plan outlines the proposed operation and management of the parking spaces that will support the development to be located at 12-18 Taylor Street, Stamford, Connecticut. The development is located in the R-MF Multi-Family Residence Design District. 12 Taylor Street currently contains a two-family house and 18 Taylor Street currently contains a historic three-family house originally built in 1890. The owner, G&T Taylor Street LLC ("G&T" or the "Owner") seeks to maintain, restore, and beautify the historic structure at 18 Taylor and infill the combined project site with 13 new units of housing and landscaped common areas. The site will include 18 residential units in total with associated amenities. The unit mix will consist of 15 two-bedroom units and 3 three-bedroom units.

Parking for these uses, as specified further in the site plan prepared by RVDI, will be accommodated by 22 parking spaces and 1 electric vehicle parking space (22.5 parking spaces). This includes one van-accessible space, meeting the requirements of the Americans with Disabilities Act of 1990. Each of the 13 newly constructed units will be provided a one-car garage.

EXISTING DEMAND DATA

The site is anticipated to generate a demand of 19 parking spaces based on the 18 dwelling units. The parking demand was calculated for a general urban/suburban site within a half-mile of rail transit, due to the site's proximity to the Stamford Transportation Center. All parking demand generated by the proposed residential units are anticipated to be accommodated by the proposed 22.5 off-street parking spaces.

The site has also been awarded a Walk Score of 83 "Very Walkable", a Transit Score of 74 "Excellent Transit", and a Bike Score of 69, according to walkscore.com.

PARKING OPERATIONS

The rent structure of the residential units is proposed to be "bundled" with regard to parking. Each of the units will automatically include one "free" assigned parking space (which for each of the 13 newly constructed units will be in its garage, and for each of the 5 existing units will be a designated off-street surface space). On-site visitor parking will also be provided, as well as on-street public parking adjacent to both the east and west sides of the site, on Taylor Street and Mission Street respectively.

TRAFFIC FLOW

The site will have a two-way entrance and exit on Taylor Street between the currently existing 12 and 18 Taylor Street buildings. The site will also contain a one-way exit on to Mission Street. This exit on Mission Street will permit entrance by firetrucks and other emergency vehicles only.

The curb cut for the Taylor Street entrance and exit will be 20 feet wide, and the curb cut for the Mission Street exit will also be 20 feet wide, per instructions from the Stamford Fire Marshal. Large trucks and deliveries will access the site from the entrance on Taylor Street and exit the site from the Mission Street exit. The Applicant submitted a Fire Truck Turning Radius template prepared by its engineers at RVDI, which demonstrated to the Fire Marshal's satisfaction that a fire truck will be able to navigate the site.

DEMAND MANAGEMENT STRATEGIES

Public Parking

In addition to the on-site parking provided, the site also has access to public street parking on both the west side of the site on Taylor Street, and the east side of the site on Mission Street. The currently existing southernmost driveway and curb cut at 18 Taylor Street is also proposed to be removed, resulting in the addition of one on-street parking space.

Public Transportation

The proposed development is located within a half-mile of the Stamford Transportation Center, which provides access to both Amtrak and Metro North Railroad services, as well as Greyhound and Peter Pan buses.

Connecticut Transit also has multiple stops in the area surrounding the site, include the 321 (West Avenue) bus line, which has a stop on Richmond Hill Avenue and Taylor Street, and the 324 (Fairfield Avenue) line.

Additionally, Uber, Lyft, and others provide corporate and personal ride sharing programs that are utilized by area residents.

Bicycle Parking

To encourage ridership as an alternate means of travel and as an amenity to the building residents, a bicycle rack accommodating 4 bikes will be provided on the site behind "Building A" (18 Taylor). Tenants in the newly constructed 13 units will also have the option to store their bikes in the garages.

Zoning Data Chart 11/21/2023

Project Name - G&T Taylor Street LLC - 12 & 18 Taylor Street

Application number - 223-36 Address - 12 & 18 Taylor Street

Zoning District(s) - If multiple Zoning Districts, provide requirement and compliance for each portion of site under the different district - R-MF

Zoning Section		Current Required/ Permitted (R-MF)	Proposed Permitted (R- MF w/ historic bonus)	Existing Conditions	Proposed Conditions	Notes (Indicate compliance or Zoning Section for Special Permit if applicable)
	Lot Size					
				_	_	
		6		24,478 sf.	24,478 sf.	
9-N-6	Constitution Access	Min. 5,000 sf.	N/A	combined	combined	Compliant
	Gross Floor Area	N/A	N/A			
	Zoning Floor Area Residential	N/A	N/A			
	Commercial	IN/A	IN/A			
	Community Facility					
	Industrial					
	Total	N/A	N/A			
	F.A.R.	7	,			
	Residential	N/A	N/A			
	Commercial					
	Community Facility					
	Industrial					
	Total	N/A	N/A			
	Number of units	16 (or more under Sec. 7.4				
		since all BMR units provided				Compliant if 7.3
		onsite)	18	5	18	historic bonus
	Below Market Rate Units (#, %, and				2 two-bedroom	
	AMI level)				apts. @	
		10% of total # of dwelling			<\$1,928/mo.	0 !! !
7.4	North and and the day to and account	units @ 50% AMI	1.8	N/A	(<50% of AMI)	Compliant
	Number of seats/ beds / employees	N1 / A	N1 / A			
	if applicable	N/A	N/A		1359 sft. of Lot	
	Density (Units/Acre)	1500 sft. of Lot Area per	1359 sft. of Lot Area per		Area per Dwelling	Compliant if 7.3
		Dwelling Unit	Dwelling Unit	Compliant	Unit	historic bonus
	Street Frontage	Dwening Offic	DWCIIIII OIIIL	169.74 ft.	169.74 ft.	motoric borius
		Min. 100 ft.	N/A	combined	combined	Compliant
	Building Coverage (Area and %)					Compliant if 7.3
	, ,	35%	37%	11.6% (2,838 sf.)	35.6% (8,714 sf.)	historic bonus
	Lot coverage (Area and %)			, .	, ,	
	,					
		N/A	N/A			
	Building Height (Feet)					
					34.1 ft. (Bldg G);	
		40 ft.	N/A	30.3 ft.	33.5 ft. (C, D, E, F)	
	Number of floors (Stories)	4 Stories	N/A	2 Stories	3 Stories	Compliant
	Active ground floor (sq.ft. and %) if					
	applicable	N/A	N/A			

	Yards					
	Front yard (Streetline)					Pre-existing lawful
		Min. 15 ft.	9.4 ft.	9.4 ft.	9.4 ft.	non-conforming
	Rear yard	Min. 30 ft.	No rear yard; through lot	N/A	N/A	
	Side yard					Pre-existing lawful
		Min. one side 8 ft., both		1.4 ft. one side,	1.4 ft. one side,	non-conforming;
		sides 18 ft. (since all BMR	1.4 ft. one side, 5.5 ft. both	11.18 ft. both	4.1 ft other side,	Compliant if 7.3
		units provided onsite)	sides	sides	5.5 ft. both sides	historic bonus
efinitions	Light & Air	20 ft.	20 ft.	20 ft.	20 ft.	Compliant
211111110113	Parking	2010.	2010.	2011.	2011.	Compilant
	Residential parking	30.75 spaces (2 per 3BR unit,				
	Residential parking	1.75 per 2BR unit, 1 per BMR				Compliant if 7.3
2.D		2BR unit)	19 spaces	N/A	22.5 spaces	historic bonus
	Commercial parking		•		'	
	Community Facility parking					
	Industrial parking					
	Public open space parking					
	Bike parking					
	# of levels of parking garage (if					
	applicable)					
	Square footage of parking area					
	Parking setback					
	Usable Open Space (Area and %)	Pursuant to Sec. 9.N.6(i),				
	Osable Open Space (Area and %)	between 0 and 150 sf. per				
		unit for each new Building of				
		J				
		3 units or more, i.e. the 5				
		new units in Building G (0 -		6	(
		750 sf.)	N/A	~8,700 sf.	872 sf.	Compliant
	Active (If separate)					
	Passive (If separate)					
	Sidewalk & Street Trees				2 med. & 3 sm.	
					trees on Taylor St	
					(119.74 ft.	
		1 med. street tree required			frontage); 1 med.	
		per 30 ft. of frontage; 1 sm.			& 1 sm. tree on	
2.K; Tree		tree required per 20 ft. of			Mission St (50 ft.	
anual		frontage	N/A	0	frontage)	Compliant
	Existing	0				
	Proposed	7				
	Total	7				
	EV Charging & Reserved Spaces		1 (because only 19 parking			Compliant if 7.3
2.L	_l	3	spaces required)	0	1	historic bonus
	_					
]					
	Fence height					
.G		Max. 6 ft. front & side yards	Max. 6 ft. front & side yards	Compliant	Compliant	Compliant