ALTUS
ENGINEERING, INC.

Civil
Site Planning
Environmental
Engineering

133 Court Street
Portsmouth, NH
03801-4413

November 8, 2019

Juliet T. H. Walker, AICP, Planning Director
City of Portsmouth Municipal Complex
Planning Department
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: **Application for Site Plan Approval**
Assessor's Map 137, Lot 1
98 Summer Street/125 Austin Street
Altus Project #P4957

Dear Juliet:

On November 5, 2019 the Portsmouth Technical Advisory Committee voted to recommend approval to the Planning Board for the Site Improvements at 98 Summer Street. The application package was revised to address the comments and concerns of both the Committee and members of the public.

The revisions include:

- Adding Note 25 to the Site Plan indicating that the new parking lot lights will be dimmed during off hours and or set on motion detectors to reduce the light in the neighborhood;
- Two "no parking here to corner" signs have been added to the plans, at the intersection of Winter and Austin Streets;
- Additional landscaping has been added as a screen to the east of the new driveway entrance;
- The "Green Statement" has been revised;
- A left turn arrow has been added to the parking lot exit;
- The "left turn only" sign has been changed to a "no right turn" sign;

Enclosed please find two copies of the following for the Planning Board's consideration:

- Site Plans (1 full sized, 1 reduced);

- Revised Green Statement;
- Drainage computations;

Altus looks forward to presenting this project at the November 21st Planning Board hearing. Please call me directly should you have any questions or need any additional information.

Sincerely,

ALTUS ENGINEERING, INC.

Eric D. Weinrieb, PE
President

wde/4957 PB cvr ltr

Enclosure

Ecopy: Peter Loughlin, Esq.
Father Gary Belliveau
Robbi Wood, Woodburn and Company

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133 Court Street
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03801-4413

"Green" Statement"
Assessor's Map 137 Lot 1
98 Summer Street/125 Austin Street
Altus Project P4957
Revised November 8, 2019

Pursuant to Section 2.4.3.1(a) of the Site Plan Review Regulations, Altus Engineering, Inc. (Altus) respectfully submits the following list of the project's "green" components for the redevelopment of the property located at 125 Austin Street:

- The existing site stormwater and sanitary sewer are interconnected and tied into a combined sewer in the street. The new stormwater management system will allow for separation of stormwater from the sanitary sewer when the City separates the systems in the public right-of-way.
- The stormwater currently enters the closed system without attenuation or treatment. The site is designed to provide first flush treatment and modest attenuation.
- The robust landscape plan will provide an attractive landscape and reduce the heat island effect from the adjacent paved surfaces.
- The proposed site lighting will be building mounted and will be dark sky friendly.

Wde/4957-App-City-Site-GreenStatment rev 1

City of Portsmouth, New Hampshire

Site Plan Application Checklist

This site plan application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan review regulations for full details.

Applicant Responsibilities (Section 2.5.2): Applicable fees are due upon application submittal along with required attachments. The application shall be complete as submitted and provide adequate information for evaluation of the proposed site development. Waiver requests must be submitted in writing with appropriate justification.

Name of Owner/Applicant: Roman Catholic Bishop of Manchester c/o Father Gary Belliveau Date Submitted: 10/21/19

Phone Number: 603-436-4555 E-mail: frgary@gmail.com

Site Address: 98 Summer Street (125 Austin Street) Map: 137 Lot: 01

Zoning District: GRC Lot area: 56,078 sq. ft.

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
☒	Fully executed and signed Application form. **(2.5.2.3)**	Application package	N/A
☒	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF). **(2.5.2.8)**	Application package	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☒	Statement that lists and describes "green" building components and systems. **(2.5.3.1A)**	In application package	
☒	Gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. **(2.5.3.1B)**	NA - no new buildings proposed	N/A
☒	Tax map and lot number, and current zoning of all parcels under Site Plan Review. **(2.5.3.1C)**	Title block, site plan	N/A
☒	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. **(2.5.3.1D)**	Cover sheet, application package, above and LOA	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
X	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. **(2.5.3.1E)**	Existing conditions plans, EX-1 & EX-2 Middle right	N/A
X	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1F)**	Cover sheet, plan title block	N/A
X	List of reference plans. **(2.5.3.1G)**	Sheet Ex-2, top right	N/A
X	List of names and contact information of all public or private utilities servicing the site. **(2.5.3.1H)**	Sheet C-1, demolition notes 16 thru 20.	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
X	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director. Submittals shall be a minimum of 11 inches by 17 inches as specified by Planning Dept. staff. **(2.5.4.1A)**	Required on all plan sheets	N/A
X	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. **(2.5.4.1B)**	Required on all plan sheets	N/A
X	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. **(2.5.4.1C)**	Sheet Ex-1, note 5 top right	N/A
X	Plans shall be drawn to scale. **(2.5.4.1D)**	Required on all plan sheets	N/A
X	Plans shall be prepared and stamped by a NH licensed civil engineer. **(2.5.4.1D)**	Only plans prepared by civil engineer	N/A
X	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. **(2.5.4.1E)**	NA - no wetlands on lot	N/A
X	Title (name of development project), north point, scale, legend. **(2.5.4.2A)**	Title block all sheets, scale and north arrow all sheets excluding details legend - existing conditions survey	N/A
X	Date plans first submitted, date and explanation of revisions. **(2.5.4.2B)**	Cover sheet, title block	N/A
X	Individual plan sheet title that clearly describes the information that is displayed. **(2.5.4.2C)**	Required on all plan sheets	N/A
X	Source and date of data displayed on the plan. **(2.5.4.2D)**	Existing conditions plan, sheets EX-1 & EX-2	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
X	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." **(2.5.4.2E)**	Note 13, Site Plan, C-2	N/A
X	Plan sheets submitted for recording shall include the following notes: a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds." b. "All improvements shown on this Site Plan shall be constructed and maintained in accordance with the Plan by the property owner and all future property owners. No changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director." **(2.13.3)**	Note 15, Site Plan, C-2 Note 24, Site Plan, C-2	N/A
X	Plan sheets showing landscaping and screening shall also include the following additional notes: a. "The property owner and all future property owners shall be responsible for the maintenance, repair and replacement of all required screening and landscape materials." b. "All required plant materials shall be tended and maintained in a healthy growing condition, replaced when necessary, and kept free of refuse and debris. All required fences and walls shall be maintained in good repair." c. "The property owner shall be responsible to remove and replace dead or diseased plant materials immediately with the same type, size and quantity of plant materials as originally installed, unless alternative plantings are requested, justified and approved by the Planning Board or Planning Director." **(2.13.4)**	Landscape Plans	N/A

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
	1. Existing Conditions: (2.5.4.3A)		
X	a. Surveyed plan of site showing existing natural and built features;	Existing conditions survey, EX-1	
X	b. Zoning boundaries;	None, all in GRC district	
X	c. Dimensional Regulations;	Site plan, C-2, bottom right	
X	d. Wetland delineation, wetland function and value assessment;	None applicable	
X	e. SFHA, 100-year flood elevation line and BFE data.		
	2. Buildings and Structures: (2.5.4.3B) NOT APPLICABLE		
☐	a. Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation;		
☐	b. Elevations: Height, massing, placement, materials, lighting, façade treatments;		
☐	c. Total Floor Area;		
☐	d. Number of Usable Floors;		
☐	e. Gross floor area by floor and use.		
	3. Access and Circulation: (2.5.4.3C)		
X	a. Location/width of access ways within site;	Site Plan, C-2	
X	b. Location of curbing, right of ways, edge of pavement and sidewalks;	Site Plan, C-2	
X	c. Location, type, size and design of traffic signing (pavement markings);	Site Plan, C-2	
X	d. Names/layout of existing abutting streets;	Site Plan, C-2	
X	e. Driveway curb cuts for abutting prop. and public roads;	Site Plan, C-2	
X	f. If subdivision; Names of all roads, right of way lines and easements noted;	NA	
X	g. AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).	NA - parking lot	
	4. Parking and Loading: (2.5.4.3D)		
X	a. Location of off street parking/loading areas, landscaped areas/buffers;	Site plan, C-2 no loading areas	
X	b. Parking Calculations (# required and the # provided).	Site Plan, C-2 note 1	
	5. Water Infrastructure: (2.5.4.3E)		
X	a. Size, type and location of water mains, shut-offs, hydrants & Engineering data;	No new water services	
X	b. Location of wells and monitoring wells (include protective radii).	no wells, monitoring well to be removed	
	6. Sewer Infrastructure: (2.5.4.3F)		
X	a. Size, type and location of sanitary sewage facilities & Engineering data.	No new sanitary services	
	7. Utilities: (2.5.4.3G)		
X	a. The size, type and location of all above & below ground utilities;	Site Plan, C-2	
X	b. Size type and location of generator pads, transformers and other fixtures.	none proposed	

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	**8. Solid Waste Facilities: (2.5.4.3H)**		
☒	a. The size, type and location of solid waste facilities.	None proposed	
	9. Storm water Management: (2.5.4.3I)		
☒	a. The location, elevation and layout of all storm-water drainage.	Grading plan, C-3	
	10. Outdoor Lighting: (2.5.4.3J)		
☒	a. Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and; b. photometric plan.	Site lighting plan by Visible Lighting	
☒	**11.** Indicate where dark sky friendly lighting measures have been implemented. **(10.1)**	Site plan, C-2, note 17	
	12. Landscaping: (2.5.4.3K)		
☒	a. Identify all undisturbed area, existing vegetation and that which is to be retained;	Demolition plan, C-1 & landscape plan	
☒	**b.** Location of any irrigation system and water source.	See landscape plan	
	13. Contours and Elevation: (2.5.4.3L)		
☒	a. Existing/Proposed contours (2 foot minimum) and finished grade elevations.	Grading Plan, C-3	
	14. Open Space: (2.5.4.3M)		
☒	a. Type, extent and location of all existing/proposed open space.	Site plan, C-2 & Landscape plan	
☒	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	EX-1 - non e apparent	
☒	**16. Location of snow storage areas and/or off-site snow removal. (2.5.4.3O)**	Site Plan, C-2, Note 10	
☐	**17. Character/Civic District (All following information shall be included): (2.5.4.3Q)**	NOT APPLICABLE	
	a. Applicable Building Height (10.5A21.20 & 10.5A43.30);		
	b. Applicable Special Requirements (10.5A21.30);		
	c. Proposed building form/type (10.5A43);		
	d. Proposed community space (10.5A46).		

Other Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
x	Traffic Impact Study or Trip Generation Report, as required. (*Four (4) hardcopies of the full study/report and Six (6) summaries to be submitted with the Site Plan Application*) **(3.2.1-2)**	NA	
X	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	Green statement - application package	
X	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. **(7.3.1)**	NA - not in wellhead protection or aquifer protection areas	
X	Indicate where measures to minimize impervious surfaces have been implemented. **(7.4.3)**	Green statement	
X	Calculation of the maximum effective impervious surface as a percentage of the site. **(7.4.3.2)**	Drainage computations	
X	Stormwater Management and Erosion Control Plan. (*Four (4) hardcopies of the full plan/report and Six (6) summaries to be submitted with the Site Plan Application*) **(7.4.4.1)**	Drainage compuations	

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
X	All local approvals, permits, easements and licenses required, including but not limited to: a. Waivers; b. Driveway permits; c. Special exceptions; d. Variances granted; e. Easements; f. Licenses. **(2.5.3.2A)**	Zoning relief stated on cover sheet & site plan	
X	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: a. Calculations relating to stormwater runoff; b. Information on composition and quantity of water demand and wastewater generated; c. Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls; d. Estimates of traffic generation and counts pre- and post-construction; e. Estimates of noise generation; f. A Stormwater Management and Erosion Control Plan; g. Endangered species and archaeological / historical studies; h. Wetland and water body (coastal and inland) delineations; i. Environmental impact studies. **(2.5.3.2B)**	a. drainage computations in application package b. no new water demands proposed. c. NA d. No new traffic expected. Reduction in street parking proposed. e. NA f. Drainage computations g. No endangered species. historical review of building to be razed has been completed. h. NA i. NA	

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
X	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. **(2.5.3.2D)**	No new services requested. Relocation of existing electrical service is proposed, Sheet C-2	
X	A list of any required state and federal permit applications required for the project and the status of same. **(2.5.3.2E)**	None required	

Applicant's Signature: Eric Weinrieb, PE **Date:** 10/21/19

Site Redevelopment Plans

APPROVED BY THE PORTSMOUTH PLANNING BOARD	
CHAIRMAN	DATE

Assessor's Parcel 137-1
125 AUSTIN STREET
Portsmouth, New Hampshire

Owner:

ROMAN CATHOLIC BISHOP
OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

Applicant:

CORPUS CHRISTI PARISH
125 AUSTIN STREET
PORTSMOUTH, NH 03801

Civil Engineer:

ALTUS
ENGINEERING, INC.
133 COURT STREET PORTSMOUTH, NH 03801
(603) 433-2335 www.ALTUS-ENG.com

Surveyor:

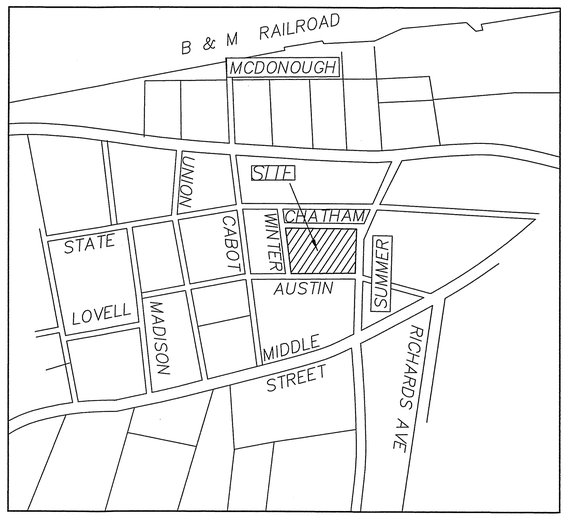
James Verra and
Associates, Inc.
LAND SURVEYORS
101 SHATTUCK WAY – SUITE 8
NEWINGTON, N.H. 03801– 7876
603-436-3557

Landscape Architect:

WOODBURN
&COMPANY
Landscape Architecture, LLC
103 Kent Place
Newmarket, NH 03857
Tel 603.659.5949
Fax: 603.659.5939

Issued:

OCTOBER 21, 2019	*TAC Submission*
NOVEMBER 4, 2019	*TAC Submission*
NOVEMBER 13, 2019	*PB Submission*



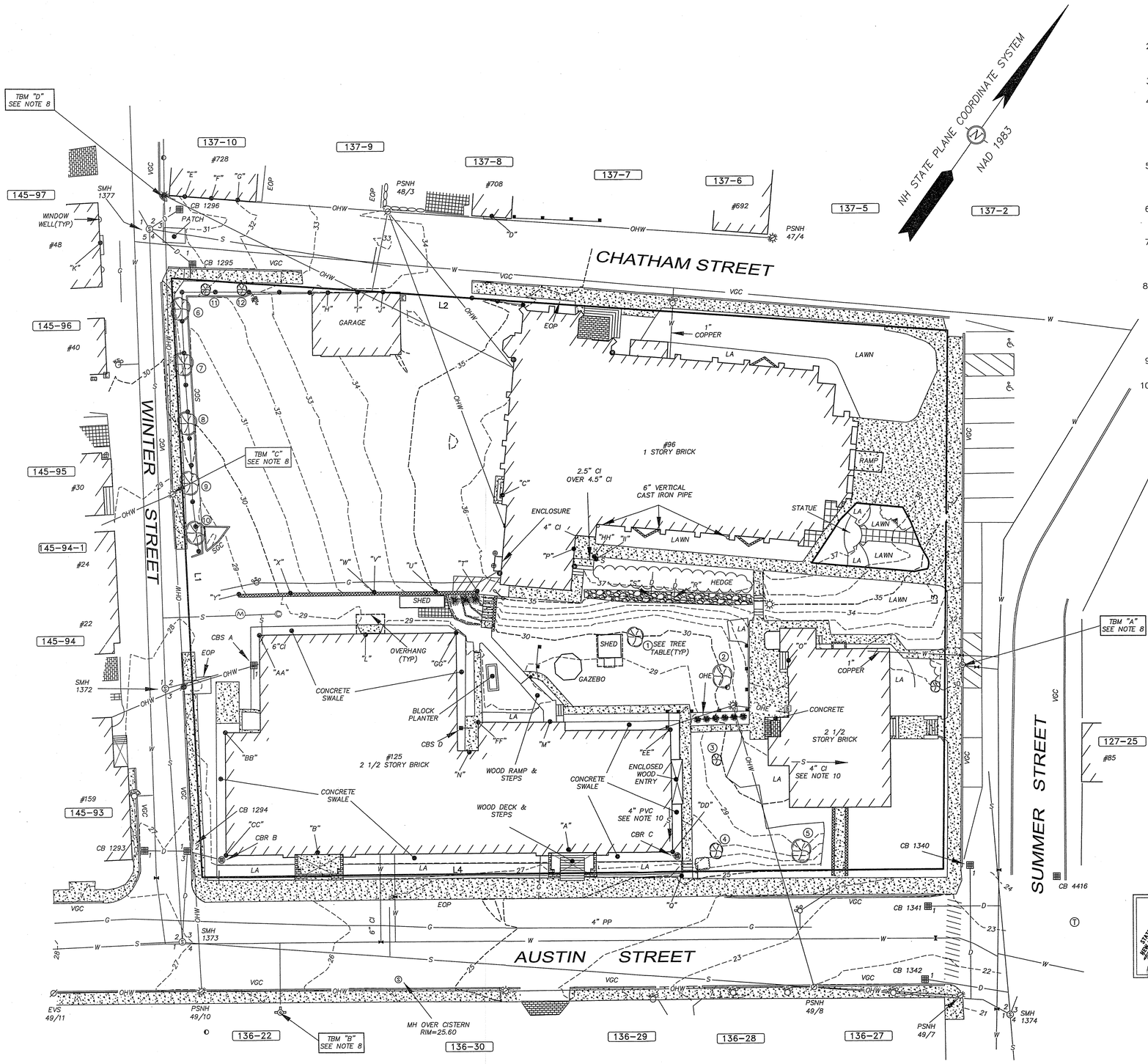
Locus Map
Scale: Not to Scale

Permit Summary

Zoning Relief – The following Variance was Granted on September 24, 2019:
from Section 10.1113.20 to allow a parking lot between a principal building and a street.

Sheet Index Title	*Sheet No.:*	*Rev.*	*Date*
Limited Existing Conditions Plan (by James Verra & Associates)	EX–1	0	10/07/19
Limited Existing Conditions Plan (by James Verra & Associates)	EX–2	0	10/07/19
Demolition Plan	C–1	3	11/07/19
Site Plan	C–2	3	11/08/19
Grading Plan	C–3	2	10/21/19
Parking Area – Planting Plan (by Woodburn & Co.)	L–1	4	11/13/19
Parking Area – Grading & Section Details (by Woodburn & Co.)	L–2	4	11/13/19
Parking Area Details (by Woodburn & Co.)	L–3	4	11/13/19
Site Lighting Plan (by Visible Light)	1 of 1	–	11/01/19
Erosion Control Details	D–1	0	10/21/19
Detail Sheet	D–2	0	10/21/19
Detail Sheet	D–3	0	10/21/19
Detail Sheet	D–4	0	10/21/19

P4957



NOTES:

1. OWNER OF RECORD.....ROMAN CATHOLIC BISHOP OF MANCHESTER
   ADDRESS.....153 ASH STREET, MANCHESTER, NH 03104
   DEED REFERENCE.....455/230, 494/466, 502/49, 554/298, 722/246, 1145/78, 1697/81
   TAX SHEET / LOT.....137-01
   PARCEL AREA.....56,078 S.F, 1.29 ACRES
2. ZONED:.....*GENERAL RESIDENCE C*
   MINIMUM LOT AREA..*3,500 S.F.*
   FRONTAGE.....*70'*
   FRONT YARD SETBACK....*5'*
   SIDE YARD SETBACK.....*10'*
   REAR YARD SETBACK.....*20'*
3. THE RELATIVE ERROR OF CLOSURE WAS LESS THAN 1 FOOT IN 15,000 FEET.
4. *THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON THE FIELD LOCATION OF ALL VISIBLE STRUCTURES (IE CATCH BASINS, MANHOLES, WATER GATES ETC.) AND INFORMATION COMPILED FROM PLANS PROVIDED BY UTILITY COMPANIES AND GOVERNMENTAL AGENCIES. ALL CONTRACTORS SHOULD NOTIFY, IN WRITING, SAID AGENCIES PRIOR TO ANY EXCAVATION WORK AND CALL DIG-SAFE @ 1-888-DIG-SAFE.*
5. *HORIZONTAL DATUM: NAD 1983 ESTABLISHED BY SURVEY GRADE GPS OBSERVATION AND NGS "OPUS" SOLUTION. REFERENCE FRAME: NAD83 (2011)(EPOCH: 2010.0000). US SURVEY FOOT. VERTICAL DATUM: NAVD 1988. PRIMARY BENCHMARK: CITY OF PORTSMOUTH "ROBE"*
6. *CONTRACTOR TO VERIFY SITE BENCHMARKS BY LEVELING BETWEEN 2 BENCHMARKS PRIOR TO THE ESTABLISHMENT OF ANY GRADES OR ELEVATIONS. DISCREPANCIES ARE TO BE REPORTED TO JAMES VERRA AND ASSOCIATES, INC..*
7. *THE PARCEL SHOWN HEREON LIES WITHIN ZONE X (AREAS OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS IDENTIFIED ON FLOOD INSURANCE RATE MAP, ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0295E, EFFECTIVE DATE MAY 17, 2005 BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.*
8. *DESCRIPTIONS OF THE SITE BENCHMARKS:*
   TBM"A": MARKED X TOP FLANGE BOLT ON HYDRANT ELEVATION=32.78
   TBM"B": MARKED X TOP FLANGE BOLT ON HYDRANT ELEVATION=29.24
   TBM"C": SURVEY NAIL SET IN UTILITY POLE #PSNH 48/3 1.0' ABOVE GRADE ELEV.=30.39
   TBM"D": SURVEY NAIL SET IN UTILITY POLE #PSNH 47/4 1.0' ABOVE GRADE ELEV=31.79
9. *THE LOCATION OF WATER, SEWER AND DRAIN LINES OUTSIDE THE BUILDINGS COULD NOT BE DETERMINED.*
10. *LOCATION & DIRECTION OF SEWER AS IT PENETRATES CONCRETE FLOOR. FINAL EXIT LOCATION COULD NOT BE DETERMINED.*

LEGEND:

- IRON ROD (AS NOTED)
- SURVEY NAIL (AS NOTED)
- CHAIN LINK FENCE
- *WOOD FENCE*
- CEMENT CONCRETE PAD
- BRICK PAVERS/WALLS
- RIP RAP
- CONCRETE RETAINING WALL
- CONCRETE PAVERS
- UTILITY POLE
- UTILITY POLE W/TRANSFORMER
- GUY
- —OHW— OVERHEAD WIRES
- —OHE— OVERHEAD ELECTRIC
- —OHC— OVERHEAD COMMUNIUCATION WIRES
- *RCRD* ROCKINGHAM COUNTY REGISTRY OF DEEDS
- 137-01 TAX SHEET / LOT NO.
- *EOP* EDGE OF PAVEMENT
- *LA* LANDSCAPED AREA
- CATCH BASIN
- CATCH BASIN
- MONITORING WELL
- SEWER CLEANOUT
- TELEPHONE MANHOLE
- SEWER MANHOLE
- SEWER CLEAN OUT
- — W — WATER LINE
- — S — SEWER LINE
- —D— DRAIN LINE
- — G — GAS LINE
- WATER GATE VALVE
- WATER SHUT OFF VALVE
- HYDRANT
- SGC...SLOPED FACED GRANITE CURB
- VGC...VERTICAL FACED GRANITE CURB
- RWW...WOOD RETAINING WALL
- RWG...GRANITE RETAINING WALL
- PSNH...PUBLIC SERVICE CO. OF NH
- EVS...EVERSOURCE
- PP/PL...PLASTIC GAS LINE
- GAS METER
- LIGHT POLE
- HANDICAP SPACE
- DECIDUOUS TREE
- CONIFEROUS SHRUB
- DIRECTED LIGHT

STATE OF NEW HAMPSHIRE — NO. 625 JAMES VERRA — LICENSED LAND SURVEYOR — SIGNATURE

20 0 20 40 60 80 FEET
10 0 10 20 METERS

P4957

ENGINEER:
ALTUS ENGINEERING, INC.
133 COURT STREET PORTSMOUTH, NH 03801
(603) 433-2335 www.ALTUS-ENG.com

SURVEYOR:
& James Verra Associates, Inc.
LAND SURVEYORS
101 SHATTUCK WAY - SUITE 8
NEWINGTON, N.H. 03801- 7876
603-436-3557
JOB NO: 23799

ISSUED FOR: APPLICATION

ISSUE DATE: 10-7-2019

REVISIONS

NO.	DESCRIPTION	BY	DATE

DRAWN BY: GTD
APPROVED BY: JV
DRAWING FILE: 23799.DWG

SCALE:
22" x 34" - 1" = 20'
11" x 17" - 1" = 40'

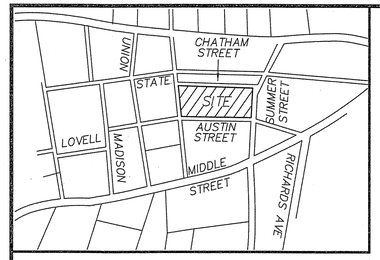
APPLICANT:
CORPUS CHRISTI PARISH
125 AUSTIN STREET
PORTSMOUTH, NH 03801

OWNER:
ROMAN CATHOLIC BISHOP
OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

PROJECT:
FORMER ST. PATRICKS SCHOOL
TAX MAP 137, LOT 01
125 AUSTIN STREET
PORTSMOUTH, NH

TITLE:
LIMITED EXISTING CONDITIONS PLAN AUSTIN, WINTER & CHATHAM STREETS PORTSMOUTH, NH

SHEET NUMBER:
EX-1



LOCUS
(N.T.S.)

BUILDING ELEVATION TABLE

LOCATION	DESCRIPTION	ELEVATION
"A"	WOOD THRESHOLD	31.55
"B"	ALUM. THRESHOLD	29.25
"C"	CONCRETE FLOOR	38.58
"D"	WOOD FLOOR	34.95
"E"	CONCRETE FLOOR	31.14
"F"	CONCRETE FLOOR	31.62
"G"	ASPHALT FLOOR	32.13
"H"	CONCRETE FLOOR	34.65
"I"	CONCRETE FLOOR	34.64
"J"	CONCRETE FLOOR	34.62
"K"	WOOD THRESHOLD	31.70
"L"	ALUM. THRESHOLD	29.25
"M"	WOOD THRESHOLD	32.19
"N"	WOOD THRESHOLD	32.33
"O"	BRICK THRESHOLD	34.81
"P"	ALUM. THRESHOLD	39.16

MISC. ELEVATION TABLE

LOCATION	DESCRIPTION	ELEVATION
"Q"	TOP CONC. WALL	25.90
"R"	INV 4" PVC	35.98
"S"	INV 3.5" ACP	35.80
"T"	TOP CONC. WALL	37.05
"U"	TOP CONC. WALL	36.99
"V"	TOP CONC. WALL	34.71
"W"	TOP CONC. WALL	33.91
"X"	TOP CONC. WALL	31.34
"Y"	TOP CONC. WALL	29.49
"AA"	BLDG. CORNER	30.06
"BB"	BLDG. CORNER	28.51
"CC"	BLDG. CORNER	28.71
"DD"	BLDG. CORNER	28.61
"EE"	BLDG. CORNER	28.82
"FF"	BLDG. CORNER	28.78
"GG"	BLDG. CORNER	28.77
"HH"	TOP CNR. CONCRETE	38.55
"II"	GROUND ELEV.	38.0

RIM AND INVERT DATA

CB #1293 RIM = 26.79
INV 6"PVC=25.24±
SUMP=24.59
CB #1294 RIM = 26.69
(1) Inv (6"PVC)=23.99
(2) Inv (6"PVC)=24.37
(3) Inv (6"PVC)=23.74
SUMP=22.39
CB #1295 RIM = 30.76
(1) INV (6"PVC)=27.66
SUMP=25.76
CB #1296 RIM = 30.82
(1) INV (6"PVC)=27.54
SUMP=25.76
CB #1340 RIM = 23.90
(1) Inv (6"VCP)=20.00
SUMP=19.90
CB #1341 RIM = 22.51
(1) Inv (10"VCP)=18.86
SUMP=18.00
CB #1342 RIM = 21.56
(1) Inv (4.5"VCP)=19.04
SUMP=18.56

SMH #1372 RIM = 27.82
(1) INV (8"VCP)=21.4±
(2) INV (6"VCP)=21.6±
(3) INV (8"VCP)=21.42
SMH #1373 RIM = 27.05
(1) INV (8"VCP)=20.06
(2) INV (8"VCP)=2023
(3) INV (6"VCP)=20.9
(4) INV (8"VCP)=20.6
SMH #1374 RIM = 21.04
(1) INV (8"VCP)=16.04±
(2) INV (8"VCP)=16.04±
(3) INV (6"ACP)=16.04±
(4) INV (8"VCP)=16.04±
SMH #1377 RIM = 30.64
(1) INV (8"VCP)=25.22
(2) INV (6"VCP)=26.75
(3) INV (8"VCP)=25.92
(4) INV (6"VCP)=26.71
(5) INV (8"VCP)=25.89

SMALL CATCH BASIN DATA TABLE

CBS #A RIM = 28.31
(1) INV (6"VCP)=26.0±
CBR #B RIM = 28.12
INV (INACCESSIBLE)
CBR #C RIM = 28.03
INV (INACCESSIBLE)
CBS #D RIM = 28.30
(1) INV (6"VCP)=26.90

TREE IDENTIFICATION TABLE

TREE	TYPE	SIZE	SPREAD
(1)	TWIN OAK	12"	50'
(2)	MAPLE	24"	44'
(3)	MAPLE	6"	24'
(4)	MAPLE	16"	30'
(5)	MAPLE	24"	34'
(6)	MAPLE	7"	12'
(7)	MAPLE	8"	12'
(8)	MAPLE	11"	16'
(9)	MAPLE	8"	12'
(10)	MAPLE	8"	10'
(11)	MAPLE	8"	16'
(12)	MAPLE	11"	9'

BOUNDARY LINE TABLE

LINE	BEARING	DISTANCE
L1	N 37°58'51" W	216.45
L2	N 58°46'24" E	280.28
L3	S 34°36'19" E	194.39
L4	S 54°17'07" W	267.10

REFERENCE PLANS:

1. *PLAN OF LAND NO. 119 SUMMER STREET, PORTSMOUTH, N.H. BY JOHN W. DURGIN DATED OCT. 1948, FILE NO. 2274, PLAN NO. 1–372*
2. *STANDARD BOUNDARY SURVEY, PLAT OF LOT, KNOWN AS TAX MAP U–37 LOT 2 OWNED BY PATTERSON CHATHAM STREET REVOCABLE TRUST, DATED JULY 1996 RCRD PLAN #D–24875.*
3. *APPENDIX C–SITE PLAN, 728 STATE STREET CONDOMINIUMS, PORTSMOUTH, NH DATED JANUARY 1984 RCRD PLAN #D–24875.*
4. *CONDOMINIUM SITE PLAN, MAP 145–LOT 93, AUSTIN STREET CONDOMINIUM FOR LYNN M. MCCARTHY & DYLAN M. KIMMEL, DATED APRIL 2002 RCRD PLAN #D–29891.*
5. *PLAN OF FIFTEEN HOUSE LOTS, PORTSMOUTH, BELONGING TO THE HEIRS OF MATTHEW S. MARSH, 1848, PORTSMOUTH RECORDS, BK 7. PG 354*

ABUTTER'S LIST

127–23
ADVENT CHRISTIAN CHURCH
634 STATE STREET
PORTSMOUTH, NH 03801

127–24
SUSAN J. CERRO
53 WENTWORTH STREET
PORTSMOUTH, NH 03801
5580/449

127–25
NANCY R. BECK REVO. TRUST
NANCY R. BECK, TRUSTEE
43 AUSTIN STREET
PORTSMOUTH, NH 03801
4556/648

136–22
SOCIETY PRESERVATION, NE ANTIQUITIES OF MA.
141 CAMBRIDGE STREET
BOSTON, MA 02114
2395/1115

136–27
DONALD M. &
MARY SAARI
72 SUMMER STREET
PORTSMOUTH, NH 03801
2373/1805

136–28
ROBERT GOWELL C. WALLIS
110 AUSTIN STREET
PORTSMOUTH, NH 03801
2397/114

136–29
TRISHA BALLESTERO
45 EVANS ROAD
MADBURY, NH 03823
5550/1043

136–30
NANDREA J. MORRIS
122 AUSTIN STREET
PORTSMOUTH, NH 03801
3071/1301

137–2
MARK D. GRAY
140 SUMMER STREET
PORTSMOUTH, NH 03801
3515/636

137–5
JOHN F. LEITH
83 WOODBURY AVENUE
PORTSMOUTH, NH 03801
2947/2701

137–6
VICTORIA WILLINGHAM
& ROBERT BOWSER
692 STATE STREET
PORTSMOUTH, NH 03801
3269/2978

137–7
ALISON K. &
JAMES FORBES
698 STATE STREET
PORTSMOUTH, NH 03801
3308/1370

137–8
THOMAS J. & LONGI M. SCHLADENHAUFFEN
708 STATE STREET
PORTSMOUTH, NH 03801
3098/698

137–9
CONDOMINIUM AT GOODWIN PARK
8 STATE STREET
PORTSMOUTH, NH 03801
5306/1197

137–10
MARK GRIFFEN
728 STATE STREET
CONDOMINIUM
PORTSMOUTH, NH 03801

136–30
NANDREA J. MORRIS
122 AUSTIN STREET
PORTSMOUTH, NH 03801
3071/1301

145–93
AUSTIN STREET
CONDOMINIUM
159–161 AUSTIN STREET
PORTSMOUTH, NH 03801

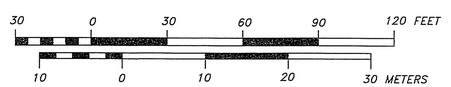
145–94
WILLIAM & LUCINDA CLARKE REVO. TRUST
WILLIAM & LUCINDA CLARKE, TRUSTEES
22 WINTER STREET
PORTSMOUTH, NH 03801
5152/1981

145–94–1
DONNA MELILLO REVOC. TRUST
DONNA MELILLO, TRUSTEE
24 WINTER STREET
PORTSMOUTH, NH 03801
4723/1275

145–95
WILLIAM J. &
REBECCA M. HARTGLASS
30 WINTER STREET
PORTSMOUTH, NH 03801
5235/1781

145–96
COLLEEN M. COOK
40 WINTER STREET
PORTSMOUTH, NH 03801
5738/898

145–97
PAUL D. STRAND
& DEANNA HAND
48 WINTER STREET
PORTSMOUTH, NH 03801
2819/1696



P4957

ENGINEER:

ALTUS ENGINEERING, INC.

133 COURT STREET PORTSMOUTH, NH 03801
(603) 433–2335 www.ALTUS–ENG.com

SURVEYOR:

& James Verra Associates, Inc.

LAND SURVEYORS

101 SHATTUCK WAY – SUITE 8
NEWINGTON, N.H. 03801– 7876
603–436–3557
JOB NO: 23799

ISSUED FOR:

APPLICATION

ISSUE DATE:

10–7–2019

REVISIONS

NO.	DESCRIPTION	BY	DATE

DRAWN BY: GTD
APPROVED BY: JV
DRAWING FILE: 23799.DWG

SCALE:

22" x 34" – 1" = 30'
11" x 17" – 1" = 60'

APPLICANT:

CORPUS CHRISTI PARISH
125 AUSTIN STREET
PORTSMOUTH, NH 03801

OWNER:

ROMAN CATHOLIC BISHOP
OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

PROJECT:

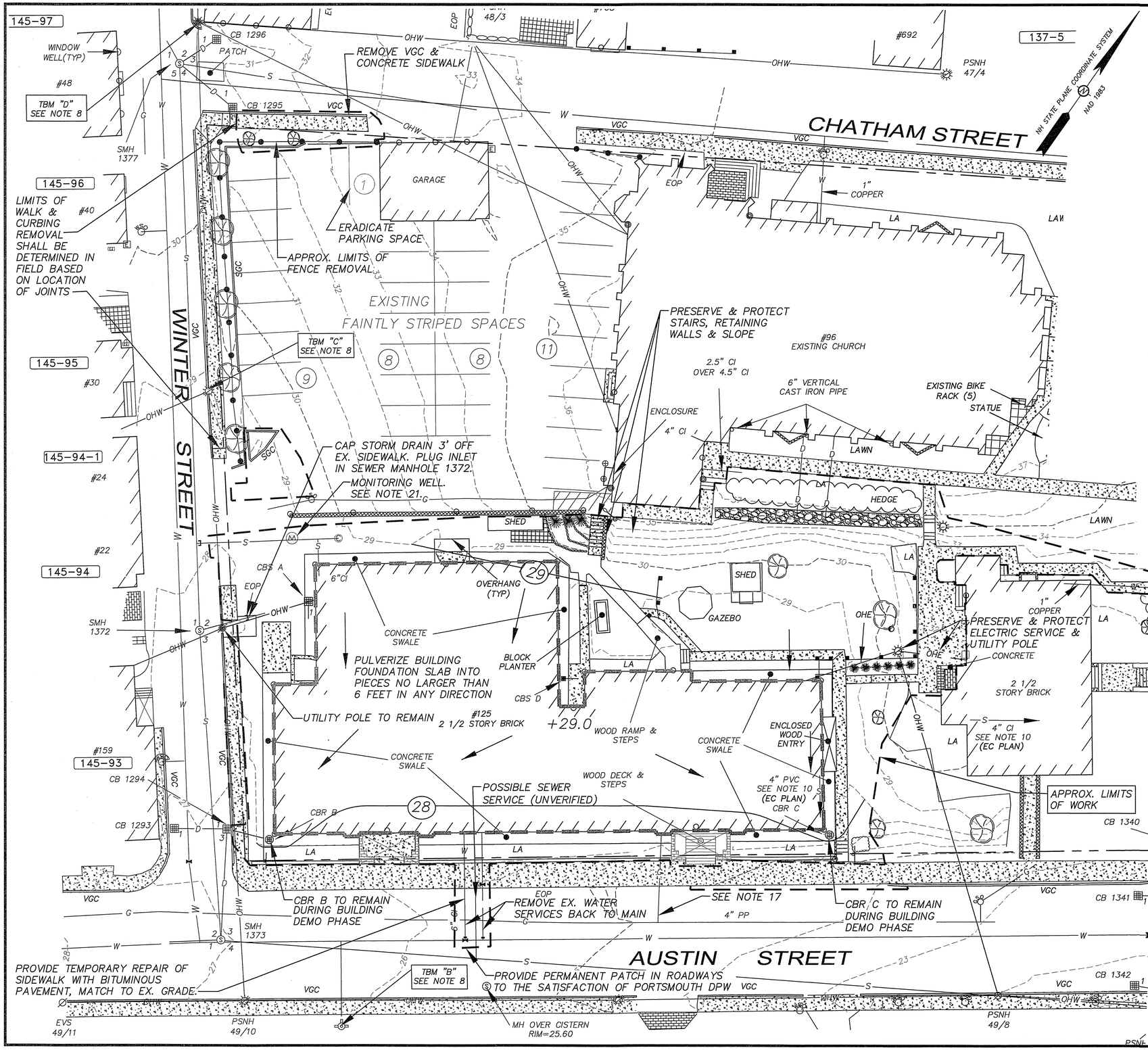
FORMER ST. PATRICKS SCHOOL
TAX MAP 137, LOT 01
125 AUSTIN STREET
PORTSMOUTH, NH

TITLE:

LIMITED EXISTING CONDITIONS PLAN
AUSTIN, WINTER & CHATHAM STREETS
PORTSMOUTH, NH

SHEET NUMBER:

EX-2



DEMOLITION NOTES

1. CONTRACTOR SHALL PREPARE A CONSTRUCTION MANAGEMENT PLAN FOR APPROVAL BY THE CITY OF PORTSMOUTH.
2. ENCROACHMENT INTO THE RIGHT-OF-WAY MAY BE REQUIRED TO COMPLETE THE WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ANY AND ALL PERMITS.
3. CONTRACTOR SHALL SAFELY SECURE THE SITE WITH SECURITY FENCING. FENCING SHALL BE LOCKED DURING NON-WORK HOURS.
4. CITY DEMOLITION PERMIT REQUIRED PRIOR TO ANY DEMOLITION ACTIVITIES. CONTRACTOR IS NOTIFIED THAT THIS PERMIT PROCESS MAY REQUIRE A 30-DAY LEAD TIME.
5. CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES SCHEDULED TO REMAIN.
6. THIS DEMOLITION PLAN IS INTENDED TO PROVIDE MINIMUM GUIDELINES FOR THE DEMOLITION OF EXISTING SITE FEATURES. UNLESS OTHERWISE NOTED TO REMAIN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL PAVEMENT, CONCRETE, CURBING, SIGNS, POLES, UTILITIES, FENCES, VEGETATION, BUILDINGS, AND OTHER EXISTING FEATURES WITHIN THE WORK LIMITS AS NECESSARY TO FULLY CONSTRUCT THE PROJECT.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TIMELY NOTIFICATION OF ALL PARTIES, CORPORATIONS, COMPANIES, INDIVIDUALS AND STATE AND LOCAL AUTHORITIES OWNING AND/OR HAVING JURISDICTION OVER ANY UTILITIES RUNNING TO, THROUGH OR ACROSS AREAS TO BE DISTURBED BY DEMOLITION AND/OR CONSTRUCTION ACTIVITIES WHETHER OR NOT SAID UTILITIES ARE SUBJECT TO DEMOLITION, RELOCATION, MODIFICATION AND/OR CONSTRUCTION.
8. ALL UTILITY DISCONNECTIONS/DEMOLITIONS/RELOCATIONS TO BE COORDINATED BETWEEN THE CONTRACTOR, ALL APPROPRIATE UTILITY COMPANIES AND THE PORTSMOUTH DEPARTMENT OF PUBLIC WORKS. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELATED EXCAVATION, TRENCHING, BACKFILLING & PAVEMENT REPAIR. THE EXACT LOCATIONS OF EXISTING UTILITIES ARE UNKNOWN. THE CONTRACTOR IS RESPONSIBLE FOR TERMINATING ANY & ALL UTILITY SERVICES ASSOCIATED WITH THE FORMER SCHOOL. ALL DISCONNECTIONS SHALL BE INSPECTED BY THE GOVERNING UTILITY COMPANY.
9. ALL STRUCTURES, CURBING, CONCRETE, PAVEMENT AND SUBBASE MATERIALS SHALL BE REMOVED FROM DEMOLITION AREA. THE SHALL BE STABILIZED BY PLACING 12-INCHES OF CRUSHED GRAVEL ACROSS THE WORK LIMITS AND GRADED SMOOTHLY AS GENERALLY DEPICTED ON THE PLAN. FUTURE PHASE DESIGN WILL REQUIRE REGRADING.
10. WHERE SPECIFIED TO REMAIN, MANHOLE RIMS, CATCH BASIN GRATES, VALVE COVERS, HANDHOLES, MONITORING WELLS, ETC. SHALL BE ADJUSTED TO FINISH GRADE.
11. NO BURNING SHALL BE PERMITTED PER LOCAL REGULATIONS.
12. HAZARDOUS MATERIALS ENCOUNTERED DURING DEMOLITION AND CONSTRUCTION ACTIVITIES SHALL BE ABATED IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL REGULATIONS.
13. TEMPORARY EROSION CONTROL BARRIERS TO BE IN PLACE PRIOR TO START OF DEMOLITION ACTIVITIES, INCLUDING, BUT NOT LIMITED TO; SILT FENCING, STABILIZED CONSTRUCTION SITE EXITS, AND STORM DRAIN INLET PROTECTION. STABILIZED CONSTRUCTION EXIT LOCATION TO BE DETERMINED BY CONTRACTOR.
14. ALL DEMOLISHED MATERIALS OR MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS SPECIFIED. GRANITE FOUNDATION IF ACCEPTABLE TO OWNER SHALL BE NEARLY STOCKPILED IN A LOCATION ON-SITE ACCEPTABLE TO THE OWNER.
15. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BE LEGALLY DISPOSED IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS AND CODES.
16. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL DISCONNECTIONS/INSTALLATIONS WITH EVERSOURCE. CONTACT NICK KOSKO @ 603-332-4227, EXT. 555334.
17. CONTRACTOR SHALL COORDINATE ALL NATURAL GAS DISCONNECTIONS/INSTALLATIONS WITH UNITIL CORPORATION. CONTACT DAVID BEAULIEU @ 603-294-5144.
18. CONTRACTOR SHALL COORDINATE ALL CABLE DISCONNECTIONS/INSTALLATIONS WITH COMCAST. CONTACT MIKE COLLINS @ 603-679-5695 EXT 1037.
19. CONTRACTOR SHALL COORDINATE ALL TELE-COMMUNICATION DISCONNECTIONS AND INSTALLATION WITH CONSOLIDATED COMMUNICATIONS. CONTACT JOE CONSIDINE @ 603-427-5525.
20. CONTRACTOR SHALL COORDINATE ALL WATER & SEWER SERVICES W/THE CITY OF PORTSMOUTH, DEPARTMENT OF PUBLIC WORKS. CONTACT JIM TOW @ 603-812-9174.
21. EXISTING MONITORING WELL MAY BE REMOVED PER NHDES LETTER DATED JUNE 20, 1995.
22. CONTRACTOR SHALL PRESERVE AND PROTECT ALL INFRASTRUCTURE ASSOCIATED WITH THE EXISTING CHURCH AND RECTORY THAT IS INTENDED TO REMAIN OPERATIONAL.
23. CONTRACTOR SHALL INSTALL BANK RUN GRAVEL TO REGRADE THE SITE AS SHOWN ON PLAN.
24. CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL & MIGRATION OF SEDIMENT ON SITE AT ALL TIMES.
25. INTERIM GRADING, PITCH SITE TO DRAIN TO CBR B & CBR C.
26. CONTRACTOR TO VERIFY SITE BENCHMARKS BY LEVELING BETWEEN 2 BENCHMARKS PRIOR TO THE ESTABLISHMENT OF ANY GRADES OR ELEVATIONS. DISCREPANCIES ARE TO BE REPORTED TO JAMES VERRA AND ASSOCIATES, INC..
27. DESCRIPTIONS OF THE SITE BENCHMARKS:
    TBM"A": MARKED X TOP FLANGE BOLT ON HYDRANT ELEVATION=32.78
    TBM"B": MARKED X TOP FLANGE BOLT ON HYDRANT ELEVATION=29.24
    TBM"C": SURVEY NAIL SET IN UTILITY POLE #PSNH 48/3 1.0' ABOVE GRADE ELEV.=30.39
    TBM"D": SURVEY NAIL SET IN UTILITY POLE #PSNH 47/4 1.0' ABOVE GRADE ELEV =31.79

ENGINEER:

ALTUS ENGINEERING, INC.

133 COURT STREET PORTSMOUTH, NH 03801
(603) 433-2335 www.ALTUS-ENG.com

STATE OF NEW HAMPSHIRE
ERIC D. WEINRIEB
No. 7884
LICENSED PROFESSIONAL ENGINEER
11/7/19

ISSUED FOR:
PLANNING BOARD

ISSUE DATE:
NOVEMBER 7, 2019

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EDW	9/16/19
1	TAC WORK SESSION	EDW	10/08/19
2	TAC SUBMISSION	EDW	10/21/19
3	ADD BENCHMARKS	DMM	11/07/19

DRAWN BY: RLH
APPROVED BY: EDW
DRAWING FILE: 4957-CO-5.DWG

SCALE:
22" x 34" - 1" = 15'
11" x 17" - 1" = 30'

APPLICANT:
CORPUS CHRISTI PARISH
125 AUSTIN STREET
PORTSMOUTH, NH 03801

OWNER:
ROMAN CATHOLIC BISHOP
OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

PROJECT:
FORMER ST. PATRICKS SCHOOL
TAX MAP 137, LOT 01
125 AUSTIN STREET
PORTSMOUTH, NH

TITLE:

DEMOLITION PLAN

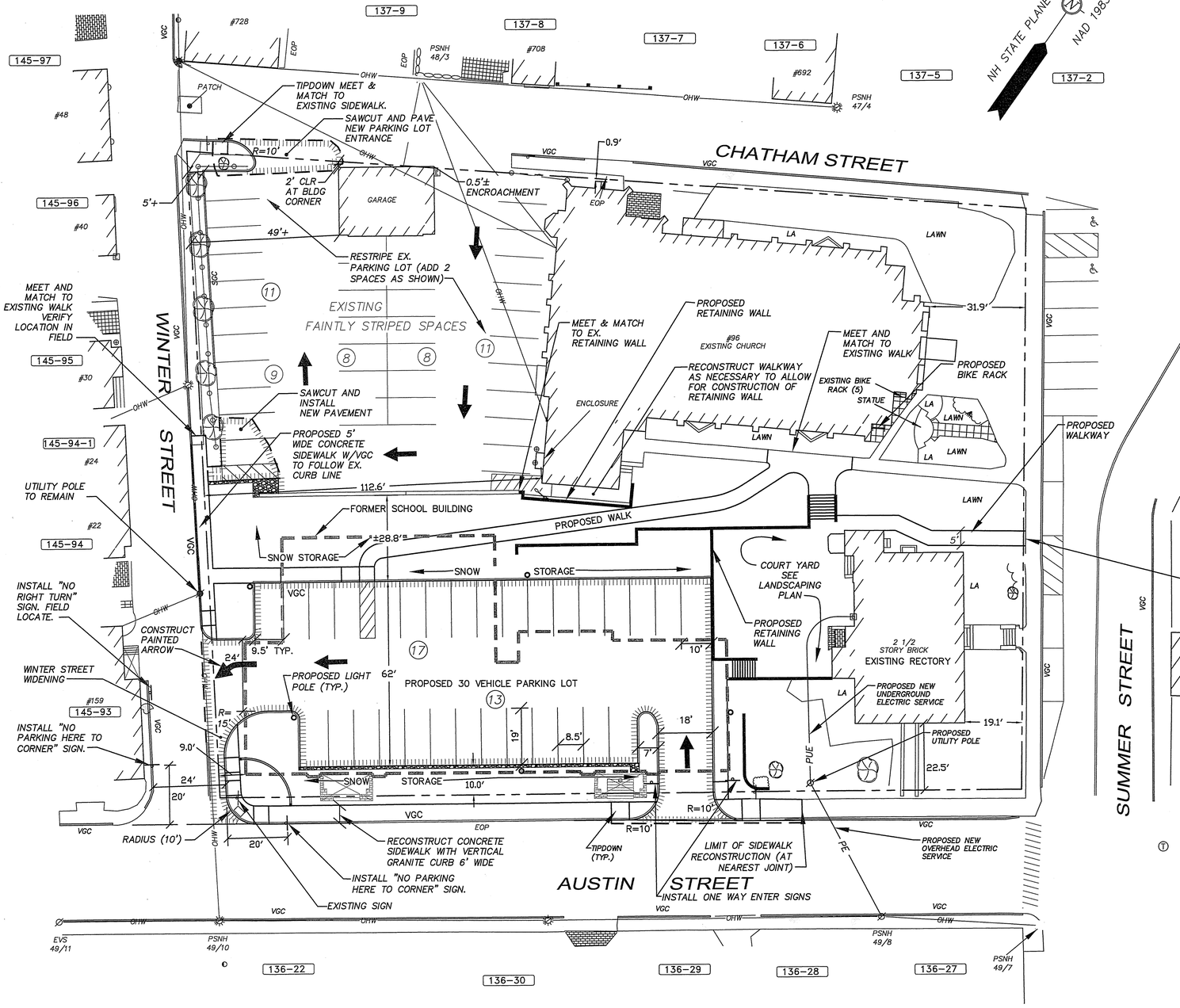
SHEET NUMBER:
C-1

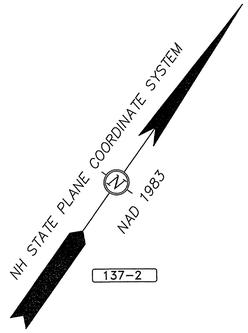
P4957

SEE EXISTING CONDITIONS PLANS FOR LEGEND.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN DATE





SITE NOTES

1. PARKING REQUIREMENTS 0.4 SPACES PER SEAT. MAXIMUM SEATING CAPACITY 600 SEATS. 240 SPACES REQUIRED.
   36 SPACES ON SITE EXISTING
   66 SPACES ON SITE PROPOSED
2. ONE BIKE RACK PER 10 VEHICLE SPACES REQUIRED. 66 SPACES, 7 BIKE RACKS REQUIRED. 10 PROVIDED.
3. ON SEPTEMBER 24, 2019, THE PORTSMOUTH ZONING BOARD OF ADJUSTMENT GRANTED A VARIANCE FROM SECTION 10.1113.20 TO ALLOW A PARKING LOT BETWEEN A PRINCIPAL BUILDING AND A STREET.
4. ALL BONDS AND FEES SHALL BE PAID/POSTED PRIOR TO INITIATING CONSTRUCTION.
5. ALL CONDITIONS OF THIS APPROVAL SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
6. ALL CONSTRUCTION SHALL MEET THE MINIMUM CONSTRUCTION STANDARDS OF THE CITY OF PORTSMOUTH & NHDOT'S STANDARD SPECIFICATIONS FOR ROAD & BRIDGE, LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL GOVERN.
7. CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAWCUT LINE WITH RS–1 IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
8. THE CONTRACTOR SHALL VERIFY ALL BENCHMARKS AND TOPOGRAPHY IN THE FIELD PRIOR TO CONSTRUCTION.
9. THE CONTRACTOR SHALL VERIFY ALL BUILDING AND RETAINING DIMENSIONS WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PRIOR TO CONSTRUCTION. ALL DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER FOR RESOLUTION.
10. AREA OF DISTURBANCE UNDER 43,560 SF, COVERAGE UNDER EPA NPDES PHASE II CONSTRUCTION GENERAL PERMIT NOT REQUIRED. SITEWORK ACTIVITIES UNDER 100,000 SF. NHDES ALTERATION OF TERRAIN PERMIT NOT REQUIRED.
11. SNOW SHALL BE STORED AT THE EDGE OF PAVEMENT, IN UPLAND AREAS SHOWN THEREON. NO SNOW STORAGE SHALL BE PROVIDED IN THE LANDSCAPED ISLAND BETWEEN THE DRIVEWAY ENTRANCE AND EXIT THAT WOULD RESTRICT SITE VEHICULAR AND PEDESTRIAN SIGHT DISTANCE. IF ADEQUATE ON–SITE SNOW STORAGE IS NOT AVAILABLE, THE SNOW SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED.
12. PAVEMENT MARKINGS SHALL BE CONSTRUCTED USING WHITE, YELLOW, OR BLUE TRAFFIC PAINT (WHERE SPECIFIED) MEETING THE REQUIREMENTS OF AASHTO M248, TYPE F OR EQUAL. PAINTED ISLANDS AND LOADING ZONES SHALL BE 4"–WIDE DIAGONAL WHITE LINES 3'–0" O.C. BORDERED BY 4"–WIDE WHITE LINES. PARKING STALLS SHALL BE SEPARATED BY 4"–WIDE WHITE LINES. SEE DETAILS FOR HANDICAP SYMBOLS. SIGNS AND SIGN DETAILS. PAVEMENT MARKINGS SHALL BE INSTALLED AT LEAST 14–DAYS AFTER INSTALLATION OF WEARING COURSE PAVEMENT. CONTRACTOR SHALL APPLY TWO (2) COATS OF ALL PAVEMENT MARKINGS.
13. PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC DEVICES," "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" AND THE AMERICANS WITH DISABILITIES ACT (ADA), LATEST EDITIONS.
14. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
15. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
16. THE SITE PLAN PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
17. SITEWORK CONTRACTOR SHALL PREPARE A LICENSED LAND SURVEYOR (LLS) STAMPED AS–BUILT SITE PLAN & PROVIDE A DIGITAL (CAD FORMAT) COPY FOR THE CITY'S G.I.S. DATA BASE.
18. THE PROPOSED LIGHTING SHALL BE DARK SKY FRIENDLY.
19. DO NOT BEGIN CONSTRUCTION UNTIL ALL STATE, LOCAL AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED. THE LANDOWNER AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH LOCAL, STATE AND FEDERAL WETLAND PERMITTING REQUIREMENTS INCLUDING PROTECTION OF NATURAL RESOURCES AND THEIR BUFFERS.
20. CONTRACTOR SHALL CALL DIG SAFE AT 1 (800) DIG–SAFE AT LEAST SEVENTY–TWO (72) HOURS PRIOR TO COMMENCING CONSTRUCTION.
21. CONTRACTOR SHALL NOTIFY CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
22. CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY SEDIMENT AND EROSION CONTROL ITEMS TO PREVENT SEDIMENT FROM CONSTRUCTION ACTIVITIES FROM LEAVING THE SITE. CONTROLS SHALL BE INSPECTED ON A REGULAR BASIS AND AFTER ALL RAIN EVENTS OF 0.25 INCHES OR GREATER. ANY DEFICIENCIES IN THE CONTROLS SHALL BE ADDRESSED IMMEDIATELY AND BROUGHT TO THE ATTENTION OF THE OWNER. ALL STORM DRAINS WITHIN OR ADJACENT TO THE WORK AREA, WITH THE POTENTIAL TO RECEIVE RUNOFF FROM EXPOSED CONSTRUCTION AREAS, SHALL RECEIVE STORM DRAIN INLET PROTECTION.
23. CONTRACTOR SHALL PREVENT TRACKING OF DIRT ONTO ANY PUBLIC OR PRIVATE ROADWAYS. IF TRACKING OF DIRT FROM CONSTRUCTION VEHICLES IS PRESENT ON THE OPEN STREETS, CONTRACTOR WILL BE REQUIRED TO SWEEP THE ROADWAY AT NO ADDITIONAL EXPENSE TO THE OWNER.
24. SEE DETAIL SHEET FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
25. THE OWNER WILL IMPLEMENT MEASURES TO REDUCE THE LIGHTING DURING OFF HOURS BY USING TIMERS AND/OR MOTION DETECTORS TO DIM THE PARKING LOT LIGHTING WITH PHOTOCELLS FOR CONTROLLING OPERATION DURING DAYLIGHT HOURS.

ZONING SUMMARY

ZONING DISTRICT	GENERAL RESIDENCE C		
MINIMUM LOT AREA	3,500 SF		
LOT AREA PROVIDED	56,078 SF		
MINIMUM FRONTAGE	70 FEET		
FRONTAGE PROVIDED	194.39 FEET	SUMMER STREET	
	267.10 FEET	AUSTIN STREET	
	216.45 FEET	WINTER STREET	
	280.28 FEET	CHATHAM STREET	

MINIMUM YARD DIMENSIONS

	REQUIRED	EXISTING	PROPOSED
FRONT (SUMMER)	5 FEET	19.1 FEET	19.1 FEET
FRONT (AUSTIN)	5 FEET	6.3 FEET	22.5 FEET
FRONT (CHATHAM)	5 FEET	0.9 FEET	0.9 FEET
FRONT (WINTER)	5 FEET	112.6 FEET	112.6 FEET
BUILDING COVERAGE	35% MAX	38.7%±	21.3%±
MINIMUM OPEN SPACE (NOTE: EXCLUDES WALKS & PATIOS)	20%	41%±	44%±

PARKING SETBACK REQUIREMENT

	REQUIRED	EXISTING	PROPOSED
SUMMER STREET	19.1 FEET	N/A	N/A
AUSTIN STREET	22.5 FEET	N/A	10 FEET – VARIANCE GRANTED
CHATHAM STREET	0.9 FEET	0 FEET	0 FEET
WINTER STREET	112.6 FEET	6.0 FEET±	6.0 FEET ± – EXISTING

20 0 20 40 60 80 FEET
10 0 10 20 METERS

P4957

ENGINEER:
ALTUS ENGINEERING, INC.
133 COURT STREET PORTSMOUTH, NH 03801
(603) 433–2335 www.ALTUS–ENG.com

STATE OF NEW HAMPSHIRE ERIC D. WEINRIEB No. 7634 LICENSED PROFESSIONAL ENGINEER
11/8/19

ISSUED FOR: PLANNING BOARD

ISSUE DATE: NOVEMBER 8, 2019

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EDW	09/03/19
1	TAC WORK SESSION	EDW	10/08/19
2	WORK SESSION COMMENTS	EDW	10/21/19
3	PER TAC COMMENTS	EDW	11/08/19

DRAWN BY: RLH
APPROVED BY: EDW
DRAWING FILE: 4957–CO–5.DWG

SCALE:
22" x 34" – 1" = 20'
11" x 17" – 1" = 40'

APPLICANT:
CORPUS CHRISTI PARISH
125 AUSTIN STREET
PORTSMOUTH, NH 03801

OWNER:
ROMAN CATHOLIC BISHOP
OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

PROJECT:
FORMER ST. PATRICKS SCHOOL
TAX MAP 137, LOT 01
125 AUSTIN STREET
PORTSMOUTH, NH

TITLE:
SITE PLAN

SHEET NUMBER:
C-2

LEGEND

PD	PROPOSED STORM DRAIN
CB3	PROPOSED CATCH BASIN
YD3	PROPOSED YARD DRAIN
DMH P2	PROPOSED DRAIN MANHOLE
32	EXISTING CONTOUR
28	FINISHED GRADE
31.2 X	EXISTING SPOT GRADE ELEVATION
31.75 +	PROPOSED SPOT GRADE ELEVATION

DRAINAGE STRUCTURES

FOR EXISTING STRUCTURES, SEE SEE EXISTING CONDITIONS PLANS EX-1 AND EX-2

OUTLET STRUCTURE OS 1
RIM = 27.5
6" U.D. INV. IN = 24.75
12" INV. OUT = 24.25

DRAIN MANHOLE DMH P1
RIM = 26.6
INV. IN = 23.75 (YD 1)
INV. IN = 22.15 (YD 2)
INV. OUT = 22.05

OUTLET STRUCTURE OS 2
RIM = 25.25
6" U.D. INV. IN = 22.50
12" INV. OUT = 22.25

DMH P2 (6' DIA.)
RIM = 25.8
INV. IN = 21.1 (3 REQ'D)
INV. OUT = 21.0

CB P3
RIM = 24.8
INV. OUT = 21.3

YD 3
RIM = 36.50
INV. IN = (VIF)
INV. OUT = 29.5 VIF

YD 4
RIM = 31.50 (FINAL LOCATION & ELEVATION TO BE DETERMINED IN FIELD) – STRUCTURE SIZE SHALL BE DEPENDENT ON NUMBER OF INVERTS
INV. IN = 28.0
INV. OUT = 23.2

R1 = 12" HDPE, S=0.005

R2 = 12" HDPE, S=0.005

R3 = 12" HDPE, S=0.015

R4 = 12" HDPE, S=0.13

R5 = 12" HDPE, S=0.03

R6 = 12" HDPE, S=0.06

R7 = 15" HDPE, S=0.005

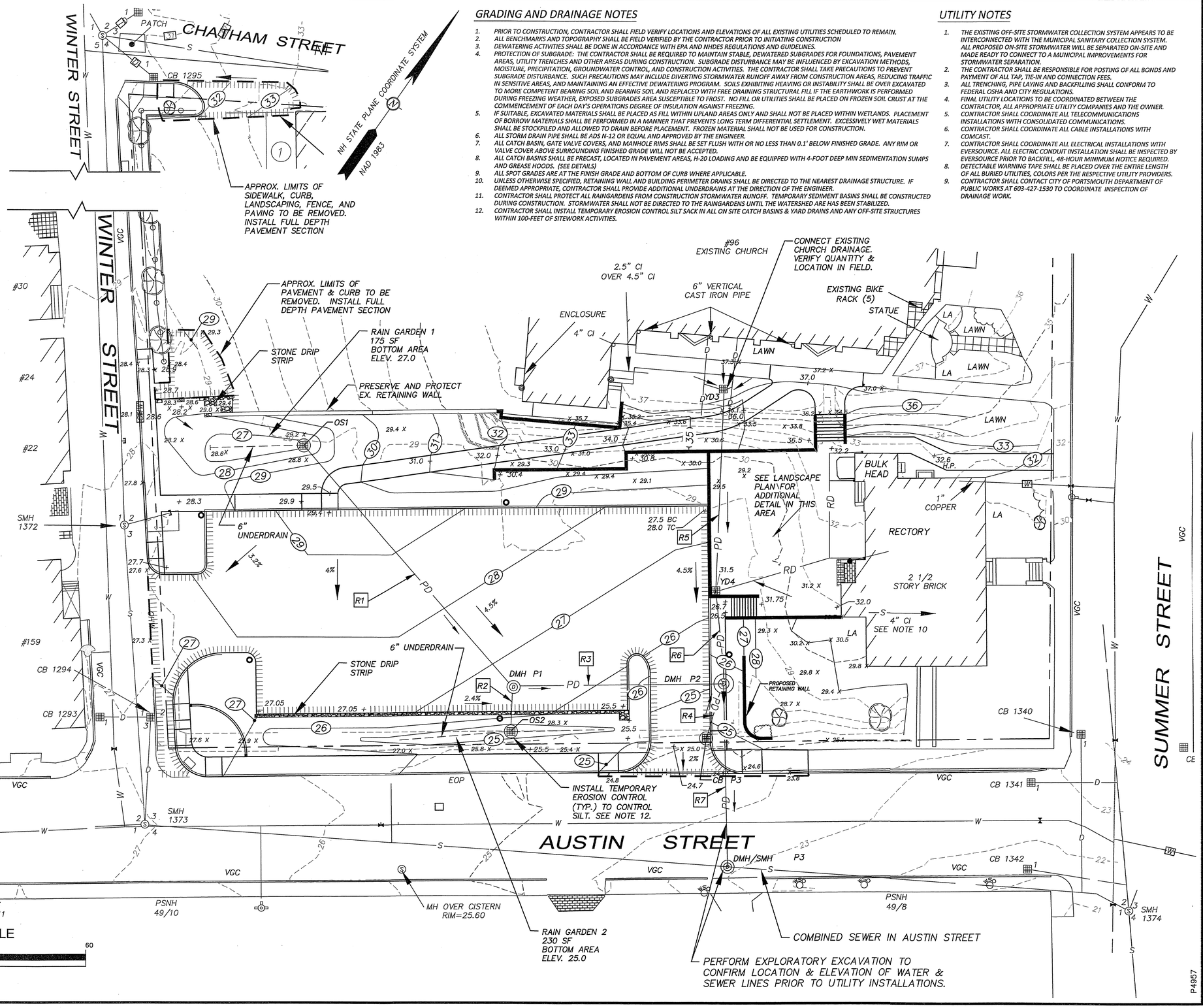
DMH/SMH P3 (DOG HOUSE)
RIM = 23.2 (MATCH TO EXISTING GRADE)
MATCH TO EX. FLOWLINE
INV. IN = 20.5 (VIF)

GRADING AND DRAINAGE NOTES

1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES SCHEDULED TO REMAIN.
2. ALL BENCHMARKS AND TOPOGRAPHY SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO INITIATING CONSTRUCTION
3. DEWATERING ACTIVITIES SHALL BE DONE IN ACCORDANCE WITH EPA AND NHDES REGULATIONS AND GUIDELINES.
4. PROTECTION OF SUBGRADE: THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN STABLE, DEWATERED SUBGRADES FOR FOUNDATIONS, PAVEMENT AREAS, UTILITY TRENCHES AND OTHER AREAS DURING CONSTRUCTION. SUBGRADE DISTURBANCE MAY BE INFLUENCED BY EXCAVATION METHODS, MOISTURE, PRECIPITATION, GROUNDWATER CONTROL, AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT SUBGRADE DISTURBANCE. SUCH PRECAUTIONS MAY INCLUDE DIVERTING STORMWATER RUNOFF AWAY FROM CONSTRUCTION AREAS, REDUCING TRAFFIC IN SENSITIVE AREAS, AND MAINTAINING AN EFFECTIVE DEWATERING PROGRAM. SOILS EXHIBITING HEAVING OR INSTABILITY SHALL BE OVER EXCAVATED TO MORE COMPETENT BEARING SOIL AND BEARING SOIL AND REPLACED WITH FREE DRAINING STRUCTURAL FILL IF THE EARTHWORK IS PERFORMED DURING FREEZING WEATHER, EXPOSED SUBGRADES AREA SUSCEPTIBLE TO FROST. NO FILL OR UTILITIES SHALL BE PLACED ON FROZEN SOIL CRUST AT THE COMMENCEMENT OF EACH DAY'S OPERATIONS DEGREE OF INSULATION AGAINST FREEZING.
5. IF SUITABLE, EXCAVATED MATERIALS SHALL BE PLACED AS FILL WITHIN UPLAND AREAS ONLY AND SHALL NOT BE PLACED WITHIN WETLANDS. PLACEMENT OF BORROW MATERIALS SHALL BE PERFORMED IN A MANNER THAT PREVENTS LONG TERM DIFFERENTIAL SETTLEMENT. EXCESSIVELY WET MATERIALS SHALL BE STOCKPILED AND ALLOWED TO DRAIN BEFORE PLACEMENT. FROZEN MATERIAL SHALL NOT BE USED FOR CONSTRUCTION.
6. ALL STORM DRAIN PIPE SHALL BE ADS N-12 OR EQUAL AND APPROVED BY THE ENGINEER.
7. ALL CATCH BASIN, GATE VALVE COVERS, AND MANHOLE RIMS SHALL BE SET FLUSH WITH OR NO LESS THAN 0.1' BELOW FINISHED GRADE. ANY RIM OR VALVE COVER ABOVE SURROUNDING FINISHED GRADE WILL NOT BE ACCEPTED.
8. ALL CATCH BASINS SHALL BE PRECAST, LOCATED IN PAVEMENT AREAS, H-20 LOADING AND BE EQUIPPED WITH 4-FOOT DEEP MIN SEDIMENTATION SUMPS AND GREASE HOODS. (SEE DETAILS)
9. ALL SPOT GRADES ARE AT THE FINISH GRADE AND BOTTOM OF CURB WHERE APPLICABLE.
10. UNLESS OTHERWISE SPECIFIED, RETAINING WALL AND BUILDING PERIMETER DRAINS SHALL BE DIRECTED TO THE NEAREST DRAINAGE STRUCTURE. IF DEEMED APPROPRIATE, CONTRACTOR SHALL PROVIDE ADDITIONAL UNDERDRAINS AT THE DIRECTION OF THE ENGINEER.
11. CONTRACTOR SHALL PROTECT ALL RAINGARDENS FROM CONSTRUCTION STORMWATER RUNOFF. TEMPORARY SEDIMENT BASINS SHALL BE CONSTRUCTED DURING CONSTRUCTION. STORMWATER SHALL NOT BE DIRECTED TO THE RAINGARDENS UNTIL THE WATERSHED ARE HAS BEEN STABILIZED.
12. CONTRACTOR SHALL INSTALL TEMPORARY EROSION CONTROL SILT SACK IN ALL ON SITE CATCH BASINS & YARD DRAINS AND ANY OFF-SITE STRUCTURES WITHIN 100-FEET OF SITEWORK ACTIVITIES.

UTILITY NOTES

1. THE EXISTING OFF-SITE STORMWATER COLLECTION SYSTEM APPEARS TO BE INTERCONNECTED WITH THE MUNICIPAL SANITARY COLLECTION SYSTEM. ALL PROPOSED ON-SITE STORMWATER WILL BE SEPARATED ON-SITE AND MADE READY TO CONNECT TO A MUNICIPAL IMPROVEMENTS FOR STORMWATER SEPARATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR POSTING OF ALL BONDS AND PAYMENT OF ALL TAP, TIE-IN AND CONNECTION FEES.
3. ALL TRENCHING, PIPE LAYING AND BACKFILLING SHALL CONFORM TO FEDERAL OSHA AND CITY REGULATIONS.
4. FINAL UTILITY LOCATIONS TO BE COORDINATED BETWEEN THE CONTRACTOR, ALL APPROPRIATE UTILITY COMPANIES AND THE OWNER.
5. CONTRACTOR SHALL COORDINATE ALL TELECOMMUNICATIONS INSTALLATIONS WITH CONSOLIDATED COMMUNICATIONS.
6. CONTRACTOR SHALL COORDINATE ALL CABLE INSTALLATIONS WITH COMCAST.
7. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL INSTALLATIONS WITH EVERSOURCE. ALL ELECTRIC CONDUIT INSTALLATION SHALL BE INSPECTED BY EVERSOURCE PRIOR TO BACKFILL, 48-HOUR MINIMUM NOTICE REQUIRED.
8. DETECTABLE WARNING TAPE SHALL BE PLACED OVER THE ENTIRE LENGTH OF ALL BURIED UTILITIES, COLORS PER THE RESPECTIVE UTILITY PROVIDERS.
9. CONTRACTOR SHALL CONTACT CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS AT 603-427-1530 TO COORDINATE INSPECTION OF DRAINAGE WORK.



GRAPHIC SCALE

15 0 7.5 15 30 60

(IN FEET)

1" = 15' – 22" X 34"

ENGINEER:

ALTUS ENGINEERING, INC.

133 COURT STREET PORTSMOUTH, NH 03801
(603) 433-2335 www.ALTUS-ENG.com

STATE OF NEW HAMPSHIRE – ERIC D. WEINRIEB No. 7634 – LICENSED PROFESSIONAL ENGINEER
10/21/19

ISSUED FOR: TAC

ISSUE DATE: OCTOBER 21, 2019

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EDW	09/24/19
1	TAC WORK SESSION	EDW	10/08/19
2	TAC SUBMISSION	EDW	10/21/19

DRAWN BY: RLH
APPROVED BY: EDW
DRAWING FILE: 4957-SITE.DWG

SCALE:
22" x 34" – 1" = 15'
11" x 17" – 1" = 30'

APPLICANT:
CORPUS CHRISTI PARISH
125 AUSTIN STREET
PORTSMOUTH, NH 03801

OWNER:
ROMAN CATHOLIC BISHOP OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

PROJECT:
FORMER ST. PATRICKS SCHOOL
TAX MAP 137, LOT 01
125 AUSTIN STREET
PORTSMOUTH, NH

TITLE:
GRADING, DRAINAGE & EROSION CONTROL PLAN

SHEET NUMBER:
C-3

P4957

GENERAL LANDSCAPE NOTES

SEE L-2 FOR PLANTING DETAILS

1. Design is based on drawings by Altus Engineering, Inc. dated 2019-09-26 and may require adjustment due to actual field conditions.
2. The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
3. Erosion Control shall be in place prior to construction.
4. Erosion Control to consist of Hay Bales and Erosion Control Fabric shall be staked in place between the work and Water bodies, Wetlands and/or drainage ways prior to any construction.
5. The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
6. It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar has been provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
7. Trees to Remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line at a minimum and shall include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, branches, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portalets within the tree protection area.
8. Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
9. The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 1-888-344-7233.
10. The Contractor shall procure any required permits prior to construction.
11. Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall provide Landscape Architect with test results and recommendations from the testing facility along with soil amendment plans as necessary for the proposed plantings to thrive. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
12. Contractor shall notify landscape architect or owner's representative immediately if at any point during demolition or construction a site condition is discovered which may negatively impact the completed project. This includes, but is not limited to, unforeseen drainage problems, unknown subsurface conditions, and discrepancies between the plan and the site. If a contractor is aware of a potential issue, and does not bring it to the attention of the landscape architect or owner's representative immediately, they may be responsible for the labor and materials associated with correcting the problem.
13. The Contractor shall furnish and plant all plants shown on the drawings and listed thereon. All plants shall be nursery-grown under climatic conditions similar to those in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the American Standard of Nursery Stock, American Standards Institute, Inc. 230 Southern Building, Washington, D.C. 20005.
14. A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.
15. All plants shall be legibly tagged with proper botanical name.
16. The Contractor shall guarantee all plants for not less than one year from time of acceptance.
17. Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect the right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
18. No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
19. All landscaping shall be provided with either of the following
    a. An underground sprinkling system
    b. An outside hose attachment within 150 feet
20. If an automatic irrigation system is installed, all irrigation valve boxes shall be located within planting bed areas.
21. The contractor is responsible for all plant material from the time their work commences until final acceptance. This includes but is not limited to maintaining all plants in good condition, the security of the plant material once delivered to the site, and watering of plants. Plants shall be appropriately watered prior to, during and after planting. It is the contractor's responsibility to provide water from off site, should it not be available on site.
22. Contractor shall provide an alternate price for irrigating all newly landscaped areas and resetting of any existing irrigation that will be disturbed during planting. Contractor shall provide irrigation design for review by Landscape Architect or Owner's Representative when awarded the project.
23. All disturbed areas will be dressed with 6" of loam and planted as noted on the plans or seeded except plant beds. Plant beds shall be prepared to a depth of 12" with 75% loam and 25% compost.
24. Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and ½" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer. Color of mulch shall be black.
25. In no case shall mulch touch the stem of a plant nor shall mulch ever be more than 3" thick total (including previously applied mulch) over the root ball of any plant.
26. Drip strip shall extend to 6" min beyond roof overhang or as noted on plans and shall be edged with 3/16" thick metal edger.
27. Secondary lateral branches of deciduous trees overhanging vehicular and pedestrian travel ways shall be pruned up to a height of 6' to allow clear and safe passage of vehicles and pedestrians under tree canopy.
28. Snow shall be stored a minimum of 5' from shrubs and trunks of trees.
29. Landscape Architect is not responsible for the means and methods of the contractor.

PLANT LIST

TREES

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Am	*Amelanchier x grandiflora 'Autumn Brilliance'*	Autumn Brilliance Serviceberry	3	2.5-3" cal	
Carp	*Carpinus caroliniana*	American Hornbeam	3	2-2.5" cal	
Mag	*Magnolia liliiflora 'Betty'*	Betty Lily Magnolia	2	6-7' B&B	
NS	*Nyssa Sylvatica*	Black Tupelo	3	2-2.5" cal	
St	*Stewartia pseudocamellia*	Japanese Stewaria	2	12-14' B&B	
UP	*Ulmus americana 'Princeton'*	Princeton American Elm	5	2-2.5" cal	

SHRUBS

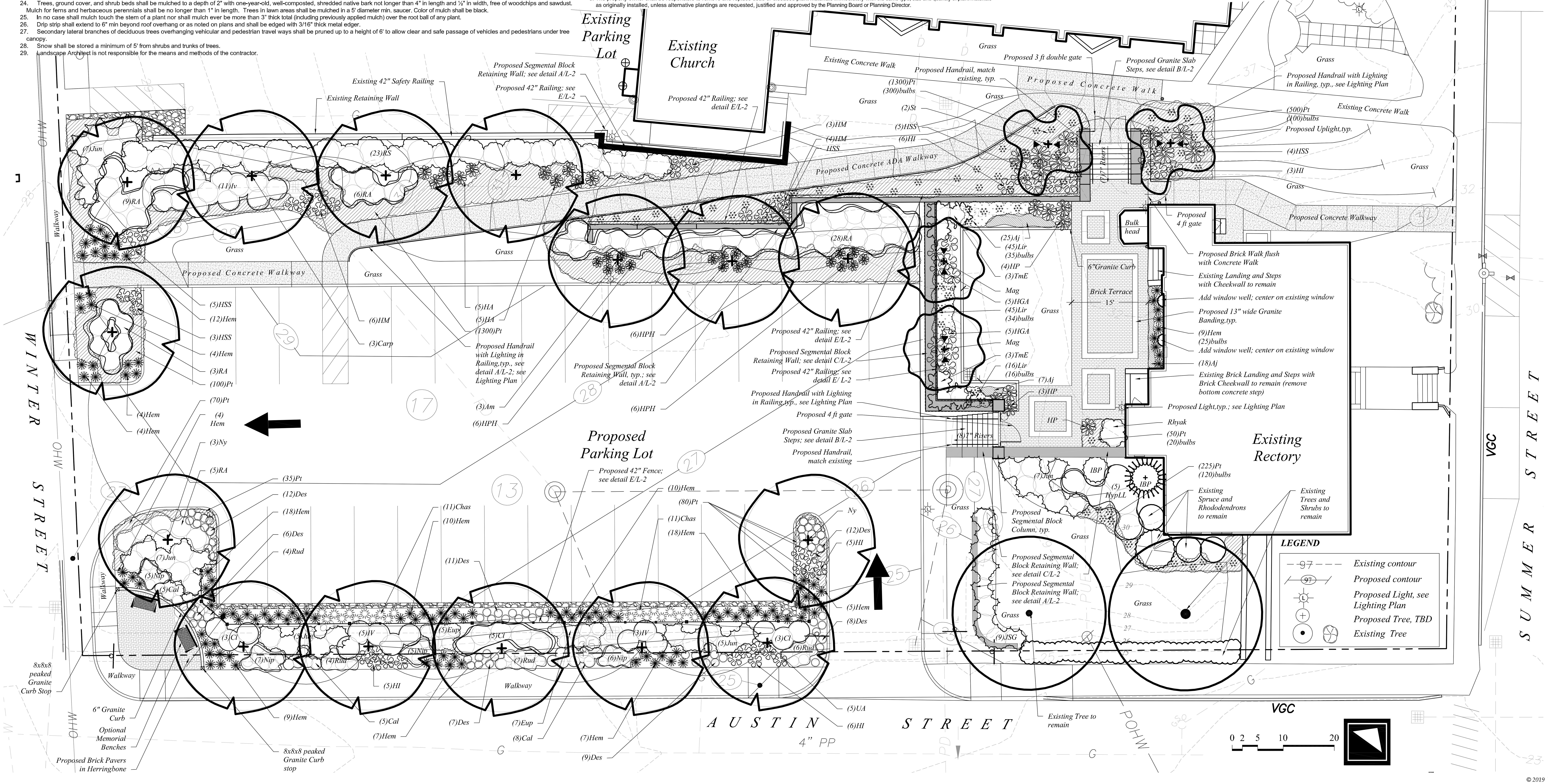
Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Cl	*Clethra alnifolia 'Compacta'*	Compact Summersweet	11	5 gal	
HypLL	*Hydrangea paniculata 'Little Lamb'*	Little Lamb Panicle Hydrangea	5	3 gal	
IBP	*Ilex meserve 'Blue Princess'*	Blue Princess Holly (female)	1	4-5' B&B	
IBPm	*Ilex meserve 'Blue Prince'*	Blue Prince Holly (male)	1	3-3.5' B&B	
IV	*Ilex verticillata 'Red Sprite'*	Red Sprite Winterberry	7	5 gal	
IV	*Ilex verticillata 'Southern Gentleman'*	Male Winterberry	1	5 gal	
JSG	*Juniperus chinensis 'Seagreen'*	Seagreen Juniper	9	2.5' B&B	
Jun	*Juniperus virginiana 'Grey Owl'*	Grey Owl Juniper	31	3 gal	
RA	*Rhus aromatica 'Grow-Low'*	Grow Low Sumac	34	5 gal	
RS	*Rhododendron 'Scintillation'*	Scintillation Rhododendron	23	2.5-3' BB	
Rhyak	*Rhododendron yakushimanum 'Ken Janeck'*	Ken Janek Yak Rhododendron	1	18-24" BB	
TmE	*Taxus media 'Ever-Low'*	Ever-Low Yew	6	2-2.5' BB	

PERENNIALS, GROUNDCOVERS, VINES and ANNUALS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Aj	*Ajuga reptans 'Burgundy Glow'*	Burgundy Glow Ajuga	32	1 gal	12"o.c.
bulbs	Daffodil Mix:				
	Narcissus 'Faith'	Faith Daffodil	250	topsize	
	Narcissus 'Lemon Drops'	Lemon Drops Daffodil	200	topsize	
	Narcissus 'Stainless'	Stainless Daffodil	200	topsize	
Cal	*Calamagrostis x 'Overdam'*	Overdam Feather Reed Grass	18	1 gal	
Chas	*Chasmanthium latifolium*	Northern Sea Oats	22	1 gal	
Des	*Deschampsia cespitosa 'Goldtau'*	Golden Dew Tufted Hair Grass	54	1 gal	
Eup	*Eupatorium rugosum 'Chocolate'*	Chocolate White Snakeroot	12	1 gal	
HA	*Hosta 'Aquamarine'*	Aquamarine Hosta	10	1 gal	
Hem	Daylily Mix:				
	Hemerocallis 'Bertie Ferris'	Bertie Ferris Daylily	20	1 gal	early mid,orange
	Hemerocallis 'Big Time Happy'	Big Time Happy Daylily	32	1 gal	mid, cream
	Hemerocallis 'Country Melody'	Country Melody Daylily	20	1 gal	mid, pink w or
	Hemerocallis 'Lullaby Baby'	Lullaby Baby Daylily	20	1 gal	late, shell pink
	Hemerocallis 'Pale Rider'	Pale Rider Daylily	20	1 gal	mid,white
HGA	*Hosta 'Guardian Angel'*	Guardian Angel Hosta	10	1 gal	
HI	*Hosta 'Invincible'*	Invincible Hosta	25	1 gal	
HM	*Hosta 'Minuteman'*	Minuteman Hosta	13	1 gal	
HP	*Hosta 'Patriot'*	Patriot Hosta	8	1 gal	
HPH	*Hosta 'Praying Hands'*	Praying Hands Hosta	18	1 gal	
HSS	*Hosta 'Sum and Substance'*	Sum and Substance Hosta	10	1 gal	
Lir	*Liriope spicata*	Lily Turf	125	1 gal	12"o.c.
Nip	*Nipponanthemum nipponicum*	Montauk Daisy	23	1 gal	
Pt	*Pachysandra terminalis*	Japanese Spurge	3660	100/flat	plant 8" o.c.
Rud	*Rudbeckia fulgida 'Goldsturm'*	Black-Eyed Susan	21	1 gal	

CITY OF PORTSMOUTH NH SPECIAL NOTES

1. This Site Plan shall be recorded in the Rockingham County Registry of Deeds.
2. All improvements shown on this Site Plan shall be constructed and maintained in accordance with the Plan by the property owner and all future property owners. No changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director.
3. The property owner and all future property owners shall be responsible for the maintenance, repair and replacement of all required screening and landscape materials.
4. All required plant materials shall be tended and maintained in a healthy growing condition, replaced when necessary, and kept free of refuse and debris. All required fences and walls shall be maintained in good repair.
5. The property owner shall be responsible to remove and replace dead or diseased plant materials immediately with the same type, size and quantity of plant materials as originally installed, unless alternative plantings are requested, justified and approved by the Planning Board or Planning Director.



woodburn & company
LANDSCAPE ARCHITECTURE
103 Kent Place Newmarket, New Hampshire Phone: 603.659.5949

Former St. Patricks School

Corpus Christi Parish

Parking Area - Planting Plan

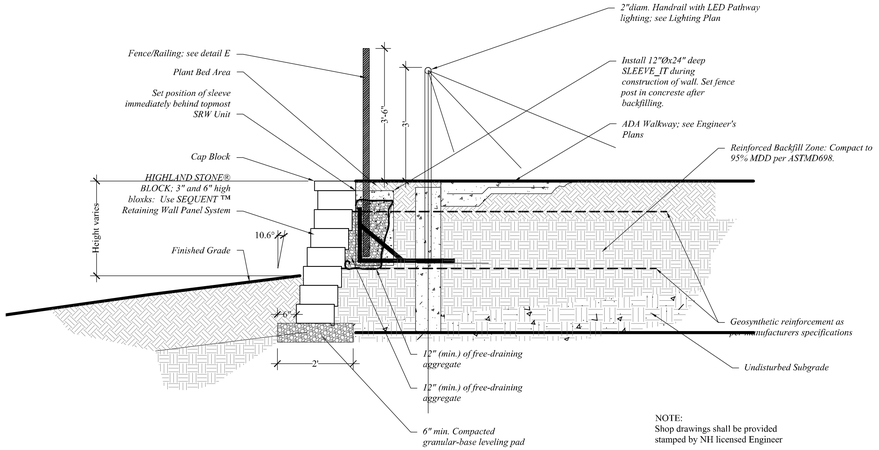
125 Austin Street, Portsmouth New Hampshire

Drawn By:	WSA
Checked By:	RW
Scale:	1"=10'-0"
Date:	October 17, 2019

Revisions:
1. PB Submission 10/8/2019
2. TAC Submission 10/21/2019
3. 11/1/2019 Issued for TAC
4. 11/13/2019 issued for PB

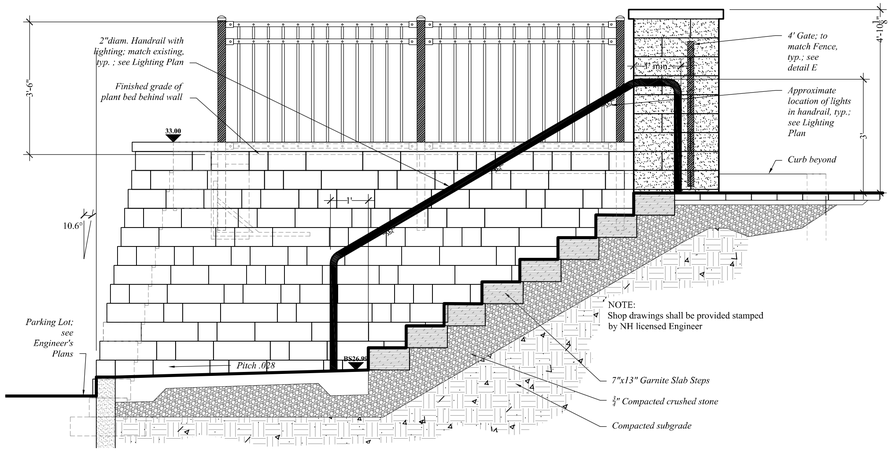
L-1

Sheet 1 of 3



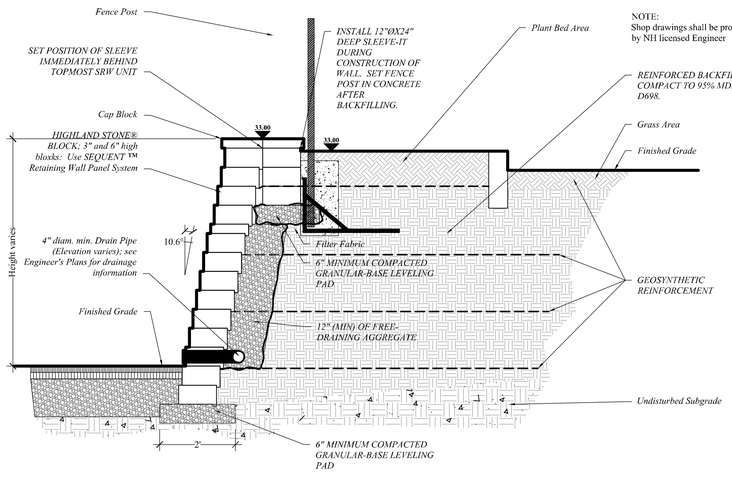
A Retaining Wall Section

Scale: $\frac{1}{4}$"-1'-0"



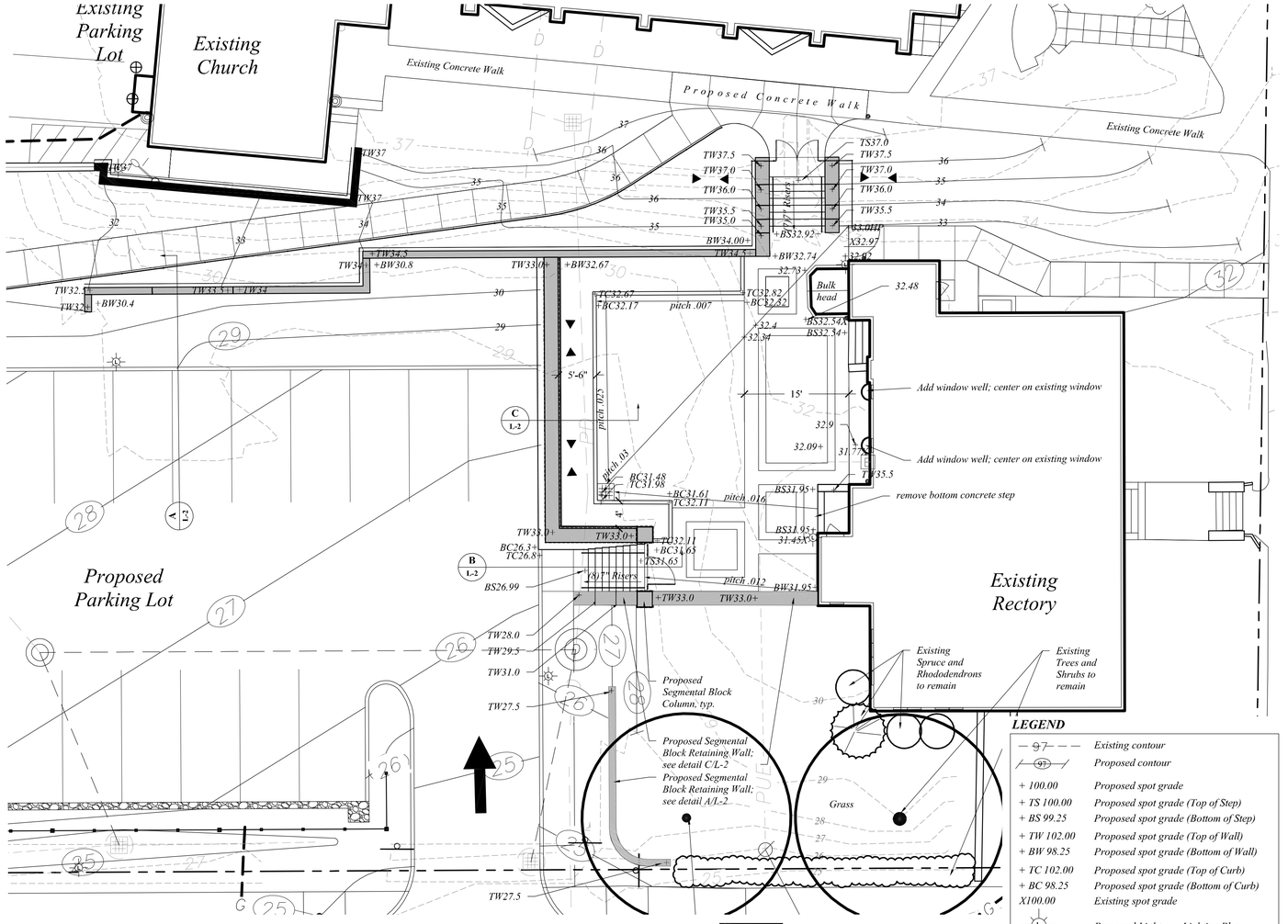
B Terrace Steps Section Elevation

Scale: $\frac{1}{4}$"-1'-0"



C Terrace Area Section

Scale: $\frac{1}{2}$"-1'-0"



D Terrace Area Grading Plan Detail

Scale: 1"=10'-0"

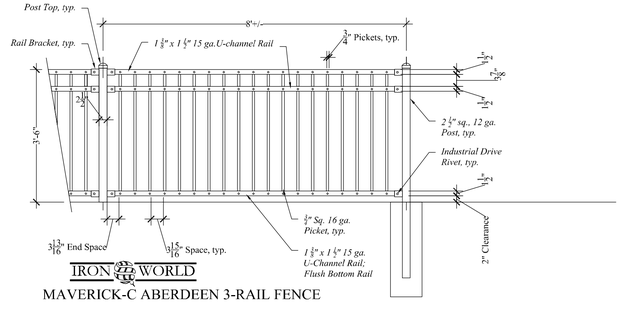
0 2 5 10 20

LEGEND

97	Existing contour
(97)	Proposed contour
+ 100.00	Proposed spot grade
+ TS 100.00	Proposed spot grade (Top of Step)
+ BS 99.25	Proposed spot grade (Bottom of Step)
+ TW 102.00	Proposed spot grade (Top of Wall)
+ BW 98.25	Proposed spot grade (Bottom of Wall)
+ TC 102.00	Proposed spot grade (Top of Curb)
+ BC 98.25	Proposed spot grade (Bottom of Curb)
X100.00	Existing spot grade
	Proposed Light, see Lighting Plan
	Proposed Tree, TBD
	Existing Tree

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. SPECIFICATIONS SHOWN CAN BE CHANGED ONLY BY THE MANUFACTURER..
4. FOOTING WIDTH TO BE (4) X POST WIDTH.
5. FENCE SECTIONS USING 3/4" PICKETS WILL TOTAL 19 PICKETS PER SECTION. FENCE SECTIONS USING 1" PICKETS WILL TOTAL 18 PICKETS PER SECTION.
6. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 2812-073.

IRON WORLD
9390 DAVIS AVE.
HOWARD COUNTY, MD, 20723
PHONE: (301) 776-7448
TOLL FREE: 1-866-310-2747
FAX: (301) 776-7449
www.ironworldfencing.com



E Fence / Railing Detail

Scale: $\frac{1}{2}$"-1'-0"

woodburn & company
LANDSCAPE ARCHITECTURE
103 Kent Place Newmarket, New Hampshire Phone: 603.659.5949

Former St. Patricks School

Corpus Christ Parish

Parking Area - Grading & Section Details

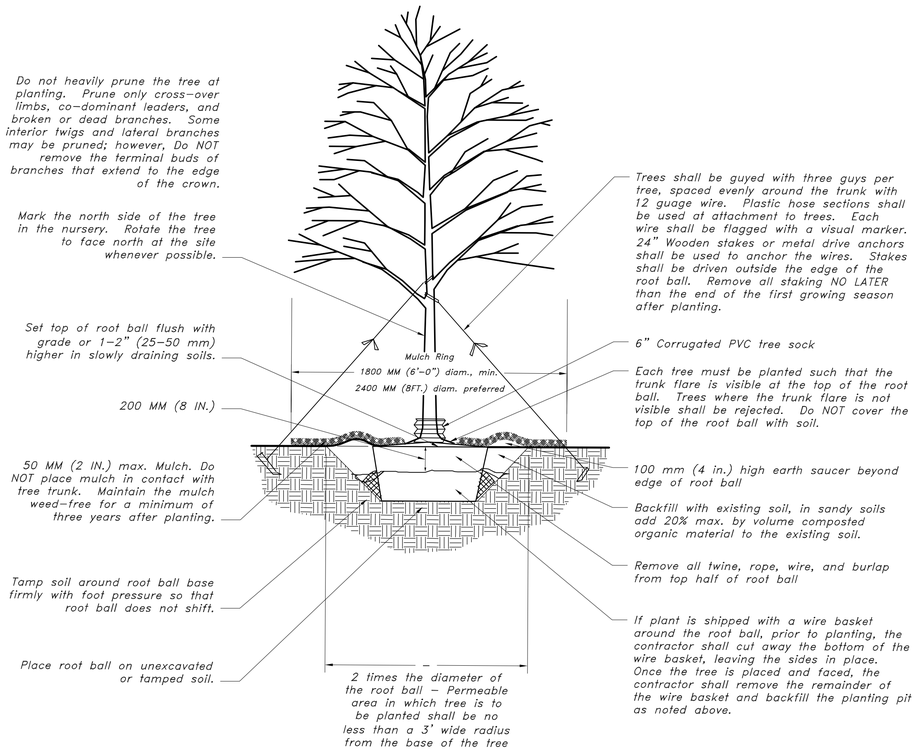
125 Austin Street, Portsmouth New Hampshire

Drawn By: WSA
Checked By: RW
Scale: as noted
Date: October 17, 2019

Revisions:
1. PB Submission 10/8/2019
2. TAC Submission 10/21/2019
3. 11/1/2019 Issued for TAC
4. 11/13/2019 issued for PB

L-2

Sheet 2 of 3



F ***Tree Planting Detail***
Scale: NTS

woodburn & company
LANDSCAPE ARCHITECTURE
103 Kent Place Newmarket, New Hampshire Phone: 603.659.5949

Former St. Patricks School
Corpus Christi Parish
Parking Area - Details
125 Austin Street, Portsmouth New Hampshire

Drawn By:	WSA
Checked By:	RW
Scale:	as noted
Date:	October 17, 2019

Revisions:
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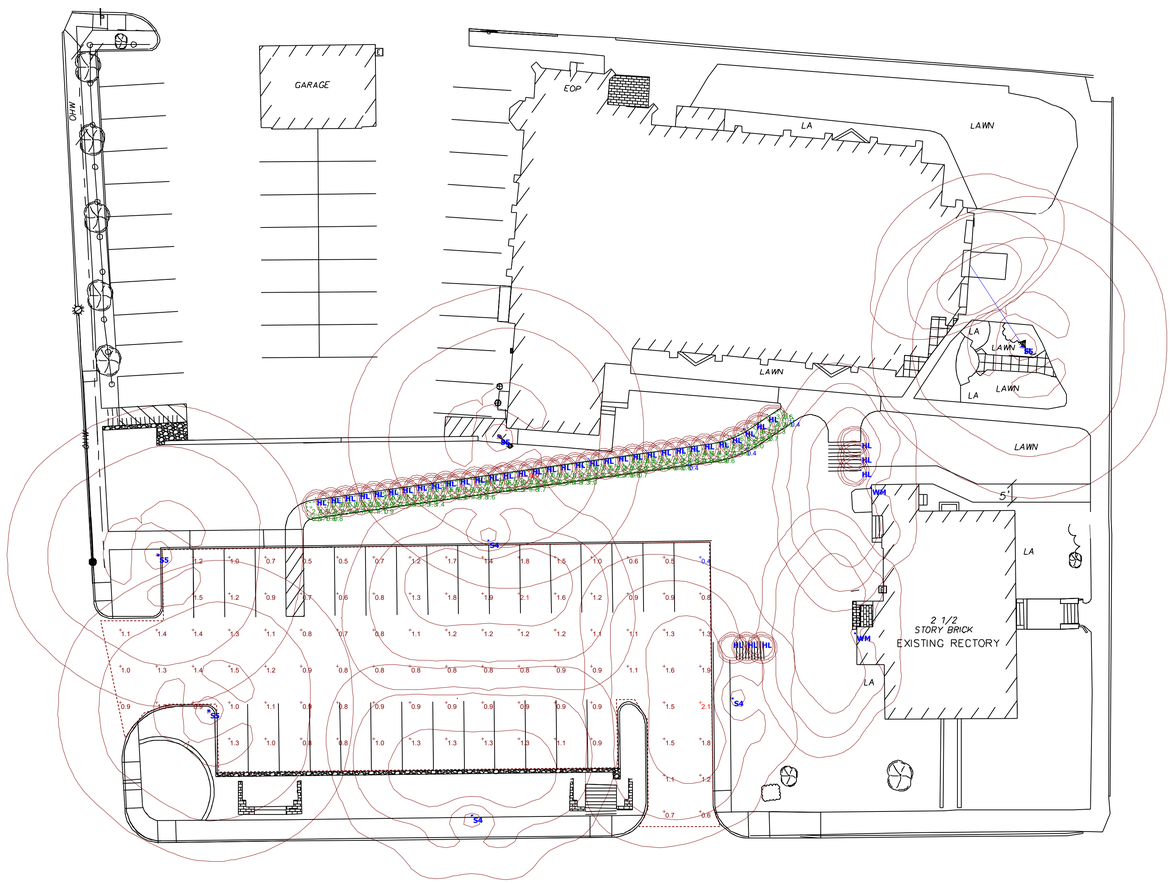
3. 11/1/2019 Issued for TAC
4. 11/13/2019 issued for PB

L-3

Sheet 3 of 3



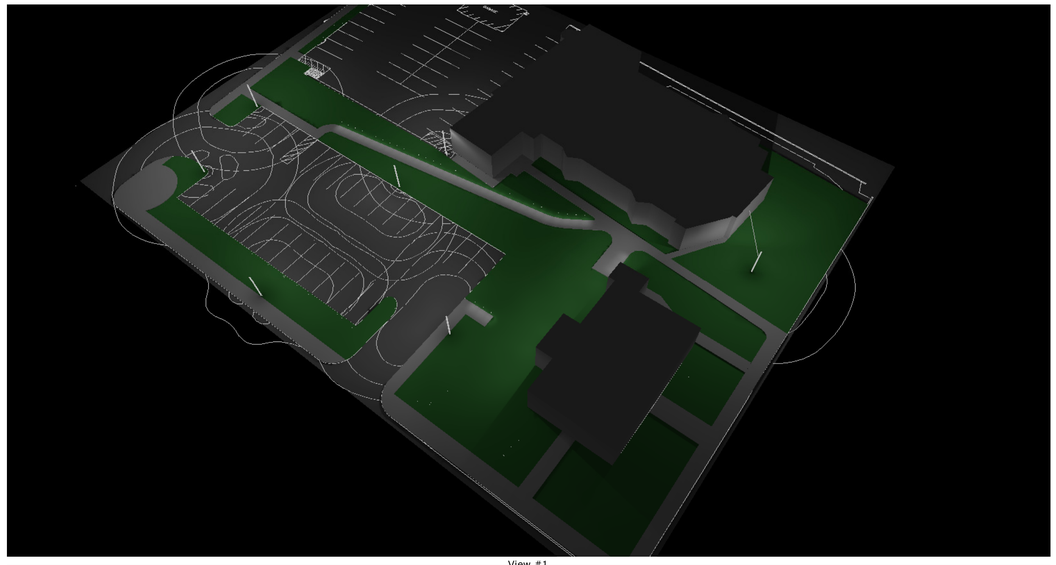
Plan View
Scale - 1" = 20ft

Statistics

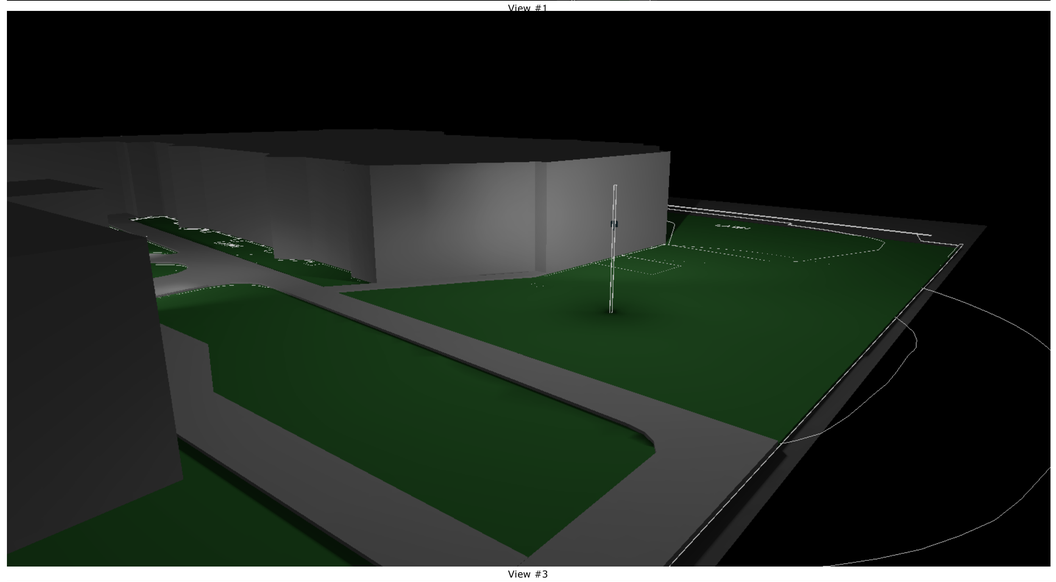
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
ADA Walkway	+	3.7 fc	9.0 fc	0.4 fc	22.5:1	9.3:1
New Parking Area	+	1.1 fc	2.1 fc	0.4 fc	5.3:1	2.8:1

Schedule

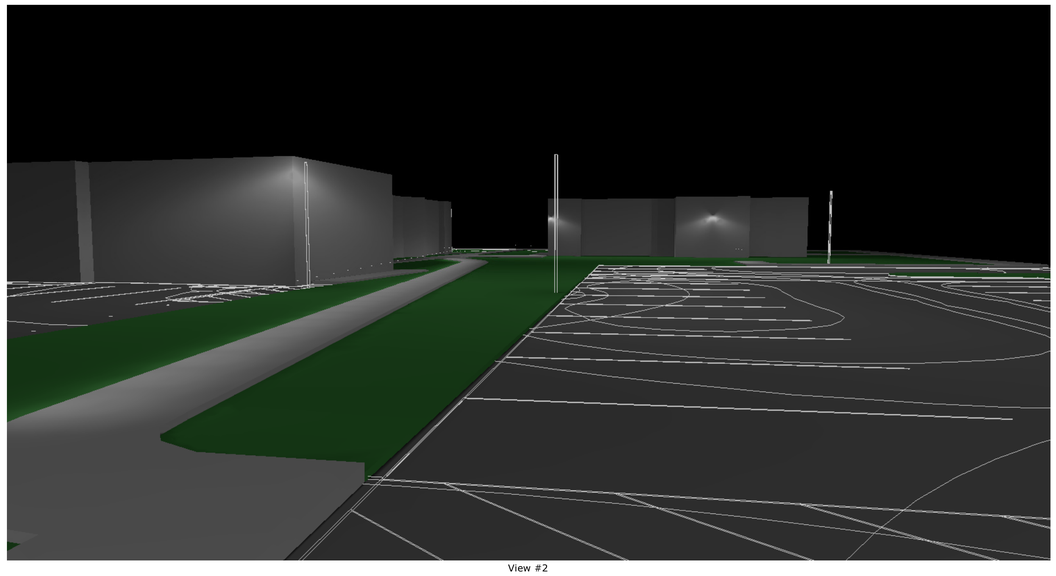
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	S4	3	Sternberg Lighting	F330-XRLED-12L27T4-MDL14-FA w/ 6700 series pole - 14' tall	Florence - Decorative finial fixture with Italian styling, Medium size, Type 4	12 LEDs	1	F330-XRLED-12L45T4-MDL14-FA.IES	5271	0.8	59.5
	S5	4	Sternberg Lighting	F330-XRLED-12L27T5-MDL14-FA w/ 6700 series pole - 14' tall	Florence - Decorative finial fixture with Italian styling. Medium size. Type 5	12 LEDs	1	F330-XRLED-12L45T5-MDL14-FA.IES	5728	0.8	59.9
	HL	39	KLIKSYSTEMS	LPOD40 mounted in handrail along pathway	LPOD40-Dir-PCLens-AsymRefW-LPOD-500mA--4000K-0.025m-451774-A	LPOD-500mA--4000K	1	LPOD40-Dir-PCLens-AsymRefW-LPOD-500mA--4000K-0.025m-451774-A.ies	162	0.9	2
	WM	2	Sternberg Lighting	F230-XRLED-9L27T3-MDL14-FA wall mounted at 10' above grade	Florence Series - Decorative finial fixture with Italian stylin, Type 3	9 LEDs	1	F230-XRLED-9L45T3-MDL14-FA.IES	2941	0.8	45.7
	FL	1	Lithonia Lighting	DSXF1 LED P2 30K HMF FV pole mounted at 10' above grade	DSXF1 LED P2 30K HMF	LED	1	DSXF1_LED_P2_30K_HMF.ies	Absolute	0.9	42



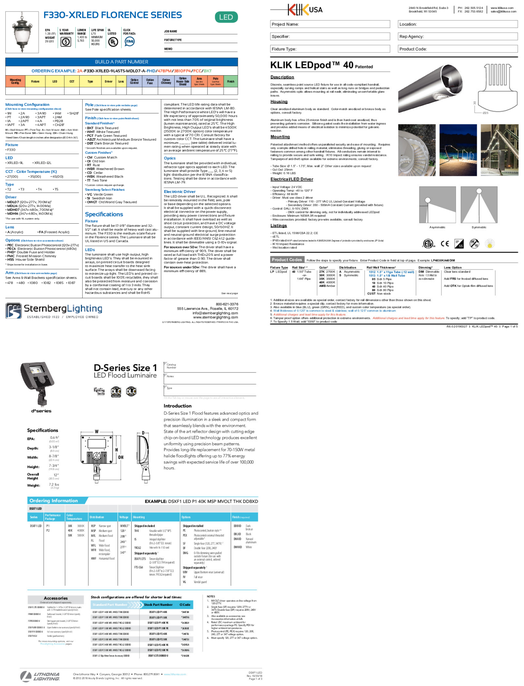
View #1



View #3



View #2



VISIBLELIGHT

Corpus Christi Parish
Portsmouth, NH

Designer
Scott E Drouin, LC
Date
11/1/2019
Scale
Not to Scale
Drawing No.

Summary

SEDIMENT AND EROSION CONTROL NOTES

PROJECT NAME AND LOCATION

Owner:

ROMAN CATHOLIC BISHOP OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

DESCRIPTION

The project consists of landscape improvements at the Immaculate Conception Church with additional & reconfigured parking areas and access, site grading, storm drainage improvements, underground utilities installation, landscaping and associated site improvements.

DISTURBED AREA

The total area to be disturbed on the parcel and for the improvements is approximately 25,000 SF± (0.57 acres±). The combined disturbed area does not exceed 43,560 SF (1 acre), thus a SWPPP will not be required for compliance with the USEPA–NPDES Construction General Permit.

SEQUENCE OF MAJOR ACTIVITIES

1. Hold a pre–construction meeting with City & stake holders.
2. Install temporary erosion control measures, including silt fences and stabilized construction exit/entrance.
3. Protect specified trees (see plans).
4. Complete abatement of existing building to be razed. Demolish existing building and bring site to subgrade.
5. Clear and Grub vegetated areas per plan; Strip and stockpile loam. Stockpiles shall be temporarily stabilized with silt soxx until material is removed and final grading is complete. Remove debris.
5. Construct swales, rain gardens and utility infrastructure. Rough grade lot to prepare for site development. Stabilize swales prior to directing flow to them.
6. Construct retaining walls and pedestrian walkways.
7. Construct bituminous concrete pavement & driveway access.
8. Loam and seed disturbed areas, landscaping & hardscaping improvements.
9. When all construction activity is complete and site is stabilized, remove all temporary sediment control measures.

NAME OF RECEIVING WATER

The majority of the site drainage travels overland to the municipal closed storm drainage system which is combined with the sanitary collecton system. All of the runoff from the site discharges to the Portsmouth Wastewater Treatment Plant.

TEMPORARY EROSION & SEDIMENT CONTROL AND STABILIZATION PRACTICES

All work shall be in accordance with state and local permits. Work shall conform to the practices described in the "New Hampshire Stormwater Manual, Volumes 1 – 3", issued December 2008, as amended. As indicated in the sequence of Major Activities, the silt fences shall be installed prior to commencing any clearing or grading of the site. Structural controls shall be installed concurrently with the applicable activity. Once construction activity ceases permanently in an area, silt fences and any earth/dikes will be removed once permanent measures are established.

During construction, runoff will be diverted around the site with stabilized channels where possible. Sheet runoff from the site shall be filtered through hay bale barriers, stone check dams, and silt fences. All storm drain inlets shall be provided with hay bale filters or stone check dams. Stone rip rap shall be provided at the outlets of drain pipes and culverts where shown on the drawings.

Stabilize all ditches, swales, stormwater ponds, level spreaders and their contributing areas prior to directing flow to them.

Temporary and permanent vegetation and mulching is an integral component of the erosion and sedimentation control plan. All areas shall be inspected and maintained until vegetative cover is established. These control measures are essential to erosion prevention and also reduce costly rework of graded and shaped areas.

Temporary vegetation shall be maintained in these areas until permanent seeding is applied. Additionally, erosion and sediment control measures shall be maintained until permanent vegetation is established.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

A. GENERAL

These are general inspection and maintenance practices that shall be used to implement the plan:

1. The smallest practical portion of the site shall be denuded at one time, but in no case shall it exceed 5 acres at one time.
2. All control measures shall be inspected at least once each week and following any storm event of 0.5 inches or greater.
3. All measures shall be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours.
4. Built–up sediment shall be removed from silt fence or other barriers when it has reached one–third the height of the fence or bale, or when "bulges" occur.
5. All diversion dikes shall be inspected and any breaches promptly repaired.
6. Temporary seeding and planting shall be inspected for bare spots, washouts, and unhealthy growth.
7. The owner's authorized engineer shall inspect the site on a periodic basis to review compliance with the Plans.
8. All roadways and parking lots shall be stabilized within 72 hours of achieving finished grade.
9. All cut and fill slopes shall be seeded/loamed within 72 hours of achieving finished grade.
10. An area shall be considered stable if one of the following has occurred:
    a. Base coarse gravels have been installed in areas to be paved;
    b. A minimum of 85% vegetated growth as been established;
    c. A minimum of 3 inches of non–erosive material such as stone of riprap has been installed;

    – or –

    d. Erosion control blankets have been properly installed.
11. The length of time of exposure of area disturbed during construction shall not exceed 45 days.

B. MULCHING

Mulch shall be used on highly erodible soils, on critically eroding areas, on areas where conservation of moisture will facilitate plant establishment, and where shown on the plans.

1. Timing – In order for mulch to be effective, it must be in place prior to major storm events. There are two (2) types of standards which shall be used to assure this:
    a. Apply mulch prior to any storm event. This is applicable when working within 100 feet of wetlands. It will be necessary to closely monitor weather predictions, usually by contacting the National Weather Service in Concord, to have adequate warning of significant storms.
    b. Required Mulching within a specified time period. The time period can range from 21 to 28 days of inactivity on a area, the length of time varying with site conditions. Professional judgment shall be used to evaluate the interaction of site conditions (soil erodibility, season of year, extent of disturbance, proximity to sensitive resources, etc.) and the potential impact of erosion on adjacent areas to choose an appropriate time restriction.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES (CON'T)

2. Guidelines for Winter Mulch Application –

Type	Rate per 1,000 s.f.	Use and Comments
Hay or Straw	70 to 90 lbs.	Must be dry and free from mold. May be used with plantings.
Wood Chips or Bark Mulch	460 to 920 lbs.	Used mostly with trees and shrub plantings.
Jute and Fibrous Matting (Erosion Blanket	As per manufacturer Specifications	Used in slope areas, water courses and other Control areas.
Crushed Stone 1/4" to 1–1/2" dia.	Spread more than 1/2" thick	Effective in controlling wind and water erosion.
Erosion Control Mix	2" thick (min)	* The organic matter content is between 80 and 100% dry weight basis. * Particle size by weight is 100% passing a 6"screen and a minimum of 70 %, maximum of 85% passing a 0.75" screen. * The organic portion needs to be fibrous and elongated. * Large portions of silts, clays or fine sands are not acceptable in the mix. * Soluble salts content is less than 4.0 mmhos/cm. * The pH should fall between 5.0 and 8.0.

3. Maintenance – All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied.

C. TEMPORARY GRASS COVER

1. Seedbed Preparation –
Apply fertilizer at the rate of 600 pounds per acre of 10–10–10. Apply limestone (equivalent to 50 percent calcium plus magnesium oxide) at a rate of three (3) tons per acre.

2. Seeding –
a. Utilize annual rye grass at a rate of 40 lbs/acre.
b. Where the soil has been compacted by construction operations, loosen soil to a depth of two (2) inches before applying fertilizer, lime and seed.
c. Apply seed uniformly by hand, cyclone seeder, or hydroseeder (slurry including seed and fertilizer). Hydroseedings, which include mulch, may be left on soil surface. Seeding rates must be increased 10% when hydroseeding.

3. Maintenance –
Temporary seedings shall be periodically inspected. At a minimum, 95% of the soil surface should be covered by vegetation. If any evidence of erosion or sedimentation is apparent, repairs shall be made and other temporary measures used in the interim (mulch, filter barriers, check dams, etc.).

D. FILTERS

1. Tubular Sediment Barrier
a. See detail.
b. Install per manufacturer's requirements.

2. Silt Fence (if used)
a. Synthetic filter fabric shall be a pervious sheet of propylene, nylon, polyester or ethylene yarn and shall be certified by the manufacturer or supplier as conforming to the following requirements:

Physical Property	Test	Requirements
Filtering Efficiency	VTM–51	75% minimum
Tensile Strength at 20% Maximum Elongation*	VTM–52	Extra Strength 50 lb/lin in (min) Standard Strength 30 lb/lin in (min)
Flow Rate	VTM–51	0.3 gal/sf/min (min)

* Requirements reduced by 50 percent after six (6) months of installation.

Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizer to provide a minimum of six (6) months of expected usable construction life at a temperature range of 0 degrees F to 120° F.

b. Posts shall be spaced a maximum of ten (10) feet apart at the barrier location or as recommended by the manufacturer and driven securely into the ground (minimum of 16 inches).

c. A trench shall be excavated approximately six (6) inches wide and eight (8) inches deep along the line of posts and upslope from the barrier.

d. When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least one (1) inch long, tie wires or hog rings. The wire shall extend no more than 36 inches above the original ground surfaces.

e. The "standard strength" filter fabric shall be stapled or wired to the fence, and eight (8) inches of the fabric shall be extended into the trench. The fabric shall not extend more than 36 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.

f. When extra strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired directly to the posts with all other provisions of item (g) applying.

g. The trench shall be backfilled and the soil compacted over the filter fabric.

h. Silt fences shall be removed when they have served their useful purpose but not before the upslope areas has been permanently stabilized.

3. Sequence of Installation –
Sediment barriers shall be installed prior to any soil disturbance of the contributing upslope drainage area.

4. Maintenance –
a. Silt fence barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. They shall be repaired if there are any signs of erosion or sedimentation below them. Any required repairs shall be made immediately. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water, the sediment barriers shall be replaced with a temporary stone check dam.

b. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric shall be replaced promptly.

c. Sediment deposits must be removed when deposits reach approximately one–third (1/3) the height of the barrier.

d. Any sediment deposits remaining in place after the silt fence or other barrier is no longer required shall be removed. The area shall be prepared and seeded.

e. Additional stone may have to be added to the construction entrance, rock barrier and riprap lined swales, etc., periodically to maintain proper function of the erosion control structure.

E. PERMANENT SEEDING –

1. Bedding – stones larger than 1½", trash, roots, and other debris that will interfere with seeding and future maintenance of the area should be removed. Where feasible, the soil should be tilled to a depth of 5" to prepare a seedbed and mix fertilizer into the soil.

2. No Pesticides or herbicides shall be used within the Wetlands Buffer area, per Portsmouth Zoning Ordinance 10.1018.24.

3. Fertilizer – Fertilizer shall be low phosphate and slow release nitrogen fertilizer. Fertilizer and lime should be applied evenly over the area prior to or at the time of seeding and incorporated into the soil. Kinds and amounts of lime and fertilizer should be based on an evaluation of soil tests. When a soil test is not available, the following minimum amounts should be applied:

    Agricultural Limestone @ 100 lbs. per 1,000 s.f.
    10–20–20 fertilizer @ 12 lbs. per 1,000 s.f.

4. Seed Mixture (See Landscape Drawings for additional information):

4.1. Lawn seed mix shall be a fresh, clean new seed crop. The Contractor shall furnish a dealer's guaranteed statement of the composition of the mixture and the percentage of purity and germination of each variety.
4.2. Seed mixture shall consist of
    a. 1/3 Kentucky blue,
    b. 1/3 perennial rye, and
    c. 1/3 fine fescue.
4.1. Turf type tall fescue is unacceptable.

5. Sodding – sodding is done where it is desirable to rapidly establish cover on a disturbed area. Sodding an area may be substituted for permanent seeding procedures anywhere on site. Bed preparation, fertilizing, and placement of sod shall be performed according to the S.C.S. Handbook. Sodding is recommended for steep sloped areas, areas immediately adjacent to sensitive water courses, easily erodible soils (fine sand/silt), etc.

WINTER CONSTRUCTION NOTES

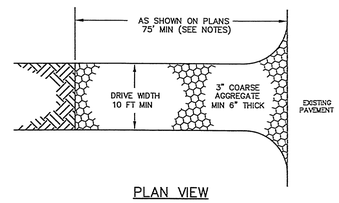
1. All proposed vegetated areas which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and elsewhere seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt events;

2. All ditches or swales which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions; and

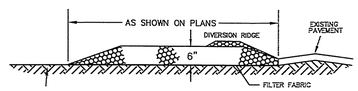
3. After November 15th, incomplete road or parking surfaces where work has stopped for the winter season shall be protected with a minimum of 3 inches of crushed gravel per NHDOT Item 304.3.

Long Term Inspection & Maintenance Schedule

	Spring	Fall or Yearly	After Major Storm	Every 2–5 Years
Vegetated Areas				
Inspect all slopes and embankments	x		x	
Replant bare areas or areas with sparse growth	x		x	
Armor areas with rill erosion with an appropriate lining or divert the erosive flows to on-site areas able to withstand concentrated flows.	x		x	
Stormwater Channels				
Inspect ditches, swales and other open stormwater channels	x	x	x	
Remove any obstructions and accumulated sediments or debris	x	x		
Control vegetated growth and woody vegetation		x		
Repair any erosion of the ditch lining		x		
Mow vegetated ditches		x		
Remove woody vegetation growing through riprap		x		
Repair any slumping side slopes		x		
Replace riprap where underlying filter fabric or underdrain gravel is exposed or where stones have been dislodged		x		
Culverts				
Remove accumulated sediments and debris at inlet, outlet and within the conduit	x	x	x	
Repair any erosion damage at the culvert's inlet and outlet	x	x	x	
Remove woody vegetation growing through riprap		x		
Roadways and Parking Surfaces				
Remove accumulated winter sand along roadways	x			
Sweep pavement to remove sediment	x			
Grade road shoulders and remove excess sand either manually or by a front-end loader	x			
Grade gravel roads and gravel shoulders and paths	x			
Clean out sediment contained in water bars or open-top culverts	x			
Ensure that stormwater is not impeded by accumulations of material or false ditches in the roadway shoulder	x			
Runoff Infiltration Facilities				
Remove dead vegetation and any accumulated sediment (normally at the entrance to the garden) to allow for new growth	x			
Weed; add additional hardwood mulch to suppress weeds	x	x		
Mow turf three (3) times a growing season				
Aerate area with deep tines, if water ponds on the surface for more than 24 hours during the first year or for a length of 72 hours		x		
Vegetative Swale				
Mow grass swales monthly				
Inspect swale following significant rainfall event	x	x	x	
Control vegetated growth and woody vegetation	x	x		
Repair any erosion of the ditch	x	x		
Remove debris and liter as necessary				



PLAN VIEW



PROFILE

CONSTRUCTION SPECIFICATIONS

1. REFERENCE NEW HAMPSHIRE STORMWATER MANUAL VOLUME 3 (LATEST EDITION), SECTION 4.2 "TEMPORARY CONSTRUCTION EXIT" REQUIREMENTS AND BMP DETAIL.
2. STONE SIZE – 3" COARSE AGGREGATE
3. THICKNESS – SIX (6) INCHES (MINIMUM).
4. LENGTH – 75 FOOT MINIMUM, OR 50 FOOT ALLOWED WHEN DIVERSION RIDGE IS PROVIDED.
5. WIDTH – 1/2 OF DRIVEWAY (10 FOOT MINIMUM).
6. FILTER FABRIC – MIRAFI 600X OR APPROVED EQUAL.
7. SURFACE WATER CONTROL – ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
8. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
9. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

STABILIZED CONSTRUCTION EXIT NOT TO SCALE

NOTE:
ALL FACILITIES SHOULD BE INSPECTED ON AN ANNUAL BASIS AT A MINIMUM. IN ADDITION, ALL FACILITIES SHOULD BE INSPECTED AFTER A SIGNIFICANT PRECIPITATION EVENT TO ENSURE THE FACILITY IS DRAINING APPROPRIATELY AND TO IDENTIFY ANY DAMAGE THAT OCCURRED AS A RESULT OF THE INCREASED RUNOFF. FOR THE PURPOSE OF THIS STORMWATER MANAGEMENT PROGRAM, A SIGNIFICANT RAINFALL EVENT IS CONSIDERED AN EVENT OF THREE (3) INCHES IN A 24–HOUR PERIOD OR 0.5 INCHES IN A ONE–HOUR PERIOD. IT IS ANTICIPATED THAT A SHORT, INTENSE EVENT IS LIKELY TO HAVE A HIGHER POTENTIAL OF EROSION FOR THIS SITE THAN A LONGER, HIGH VOLUME EVENT.

P4957

ENGINEER:
ALTUS ENGINEERING, INC.
133 COURT STREET PORTSMOUTH, NH 03801
(603) 433–2335 www.ALTUS–ENG.com

STATE OF NEW HAMPSHIRE – ERIC D. WEINRIEB No. 7634 LICENSED PROFESSIONAL ENGINEER – 10.21.19

ISSUED FOR: TAC

ISSUE DATE: OCTOBER 21, 2019

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EDW	10/21/19

DRAWN BY: RLH
APPROVED BY: EDW
DRAWING FILE: 4957–CO–5.DWG

SCALE:
22" x 34" – NOT TO SCALE
11" x 17" – NOT TO SCALE

APPLICANT:
CORPUS CHRISTI PARISH
125 AUSTIN STREET
PORTSMOUTH, NH 03801

OWNER:
ROMAN CATHOLIC BISHOP
OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

PROJECT:
FORMER ST. PATRICKS SCHOOL
TAX MAP 137, LOT 01
125 AUSTIN STREET
PORTSMOUTH, NH

TITLE:
EROSION CONTROL DETAILS

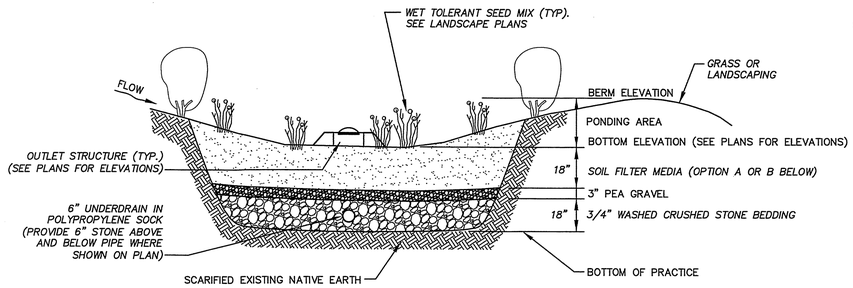
SHEET NUMBER:
D-1

NOTES

1. CONTRACTOR SHALL EXCAVATE THE POND AREA TO SUBGRADE AND DESIGN ENGINEER SHALL PERFORM SUBSURFACE EVALUATION PRIOR TO THE PLACEMENT OF ANY SELECT MATERIAL OR OTHER BACKFILL.
2. SOIL FILTER MEDIA SHALL BE PER THE DESIGN FILTER MIXTURE. IF AN ALTERNATIVE MIXTURE IS PROPOSED, IT SHALL BE APPROVED BY THE DESIGN ENGINEER.
3. DO NOT PLACE THE POND INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
4. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE POND AREA DURING ANY STAGE OF CONSTRUCTION.
5. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
6. SEASONAL HIGH WATER TABLE IS UNKNOWN. UNDERDRAIN PROVIDED TO DRAIN POTENTIAL WATER TABLE IN BASE. IF SHWT IS DETERMINED TO BE 2' LOWER THAN THE BOTTOM OF FILTER MEDIA ELEVATION DURING CONSTRUCTION, THE UNDERDRAIN CAN BE REMOVED.

MAINTENANCE REQUIREMENTS

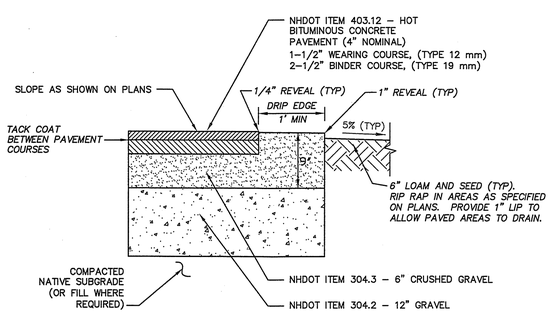
- PONDS SHOULD BE INSPECTED A MINIMUM OF TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 2.5 INCHES IN A 24-HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS WARRANTED BY SUCH INSPECTION.
- AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF POND DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION OR INFILTRATION FUNCTION (AS APPLICABLE), INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.
- VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING, PRUNING, REMOVAL, AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.



FILTER MEDIA MIXTURES			
Component Material	Percent of Mixture by Volume	Gradation of material	
		Sieve No.	Percent by Weight Passing Standard Sieve
Filter Media			
ASTM C-33 concrete sand	50		
Loamy sand topsoil, with fines as indicated	30	200	15 to 25
Moderately fine shredded bark or wood fiber mulch, with fines	20	200	< 5

RAIN GARDEN DETAIL

NOT TO SCALE

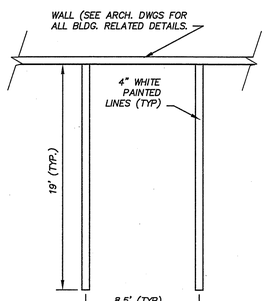


NOTES:

1. ALL LOAM, CLAY, MUCK, ORGANIC AND/OR YIELDING MATERIAL SHALL BE REMOVED TO A DEPTH OF NO LESS THAN 22" BELOW FINISH GRADE. INSTALL COMPACTED SAND OR GRAVEL BORROW TO SUBGRADE, AS NECESSARY.
2. SUBGRADE SHALL BE FREE OF VOIDS THAT ALLOW MOVEMENT/SETTLEMENT OF MATERIALS.
3. SUBGRADE SHALL BE PROOF ROLLED WITH A FULLY LOADED DUMP TRUCK PRIOR TO PLACEMENT OF GRAVEL. PROOF ROLLING TO BE VIEWED AND APPROVED BY ENGINEER.

PAVEMENT CROSS SECTION

NOT TO SCALE



PARKING STALL LAYOUT

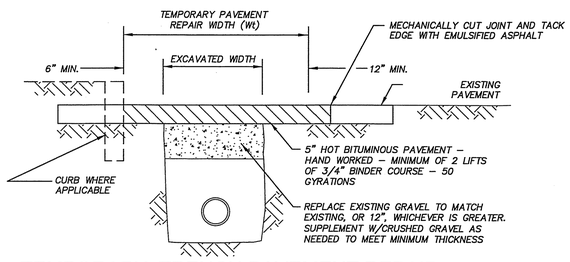
NOT TO SCALE

MINIMUM TRENCH PAVEMENT WIDTHS

PIPE I.D.	Wt (INCHES)	Wp (INCHES)
1-21 INCHES	Wt (INCHES)	Wp (INCHES)
24-30 INCHES	Wt (INCHES)	Wp (INCHES)
> 30 INCHES	Wt (INCHES)	Wp (INCHES)

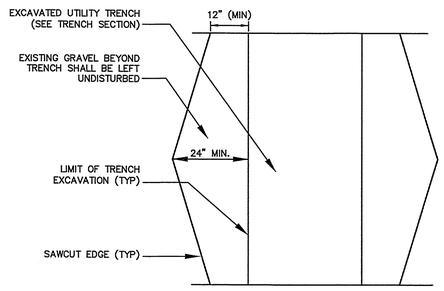
NOTE:

THE DIMENSIONS SHOWN SHALL BE CONSIDERED MAXIMUM PAVEMENT PAYMENT WIDTHS FOR 0-10' DEEP CONSTRUCTION. Wt AND Wp SHALL BE INCREASED BY 4'-0" FOR TRENCHES 10' TO 15' IN DEPTH AND BY 8'-0" FOR TRENCHES 15' TO 20' IN DEPTH.

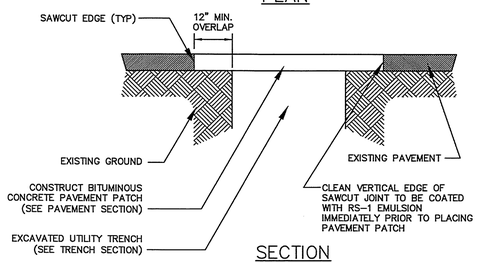


TEMPORARY TRENCH PAVEMENT REPAIR

NOT TO SCALE



PLAN



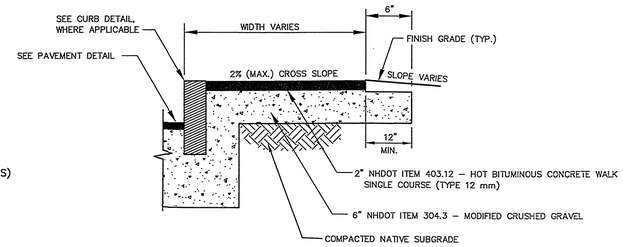
SECTION

NOTES

1. MACHINE CUT EXISTING PAVEMENT.
2. ALL TEMPORARY, DAMAGED OR DEFECTIVE PAVEMENT SHALL BE REMOVED PRIOR TO PLACEMENT OF PERMANENT TRENCH REPAIRS.
3. DIAMOND PATCHES, SHALL BE REQUIRED FOR ALL TRENCHES CROSSING ROADWAY. DIAMOND PATCHES SHALL MEET NHDOT REQUIREMENTS.

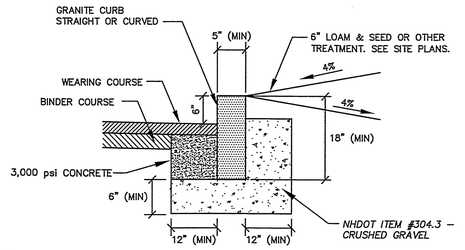
TYPICAL TRENCH PATCH

NOT TO SCALE



BITUMINOUS CONCRETE SIDEWALK

NOT TO SCALE



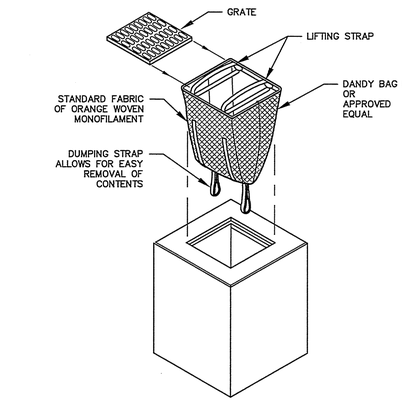
NOTES

1. SEE PLANS FOR CURB LOCATION.
2. SEE PLANS FOR PAVEMENT CROSS SECTION.
3. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
4. MINIMUM LENGTH OF CURB STONES = 4'.
5. MAXIMUM LENGTH OF CURB STONES = 10'.
6. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES – SEE CHART.
7. CURB ENDS TO ROUNDED AND BATTERED FACES TO BE CUT WHEN CALL FOR ON THE PLANS.
8. CURB SHALL BE INSTALLED PRIOR TO PLACEMENT OF TOP PAVEMENT COURSE.
9. JOINTS BETWEEN CURB STONES SHALL BE MORTARED.

RADIUS	MAX. LENGTH
21'	3'
22'-28'	4'
29'-35'	5'
36'-42'	6'
43'-49'	7'
50'-56'	8'
57'-60'	9'
OVER 60'	10'

VERTICAL GRANITE CURB

NOT TO SCALE



INSTALLATION AND MAINTENANCE:

INSTALLATION: REMOVE THE GRATE FROM CATCH BASIN. IF USING OPTIONAL OIL ABSORBENTS: PLACE ABSORBENT PILLOW IN UNIT. STAND GRATE ON END. MOVE THE TOP LIFTING STRAPS OUT OF THE WAY AND PLACE THE GRATE INTO CATCH BASIN INSERT SO THE GRATE IS BELOW THE TOP STRAPS AND ABOVE THE LOWER STRAPS. HOLDING THE LIFTING DEVICES, INSERT THE GRATE INTO THE INLET.

MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF THE UNIT AFTER EACH STORM EVENT. AFTER EACH STORM EVENT AND AT REGULAR INTERVALS, LOOK INTO THE CATCH BASIN INSERT. IF THE CONTAINMENT AREA IS MORE THAN 1/3 FULL OF SEDIMENT, THE UNIT MUST BE EMPTIED. TO EMPTY THE UNIT, LIFT THE UNIT OUT OF THE INLET USING THE LIFTING STRAPS AND REMOVE THE GRATE. IF USING OPTIONAL ABSORBENTS; REPLACE ABSORBENT WHEN NEAR SATURATION.

UNACCEPTABLE INLET PROTECTION METHOD:

A SIMPLE SHEET OF GEOTEXTILE UNDER THE GRATE IS NOT ACCEPTABLE.

STORM DRAIN INLET PROTECTION

NOT TO SCALE

P4957

ENGINEER:

ALTUS ENGINEERING, INC.

133 COURT STREET PORTSMOUTH, NH 03801
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STATE OF NEW HAMPSHIRE – ERIC D. WEINRIEB No. 7634 LICENSED PROFESSIONAL ENGINEER –

10/21/19

ISSUED FOR: TAC

ISSUE DATE: OCTOBER 21, 2019

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EDW	10/21/19

DRAWN BY: RLH
APPROVED BY: EDW
DRAWING FILE: 4957-CO-4.DWG

SCALE:
22" x 34" – NOT TO SCALE
11" x 17" – NOT TO SCALE

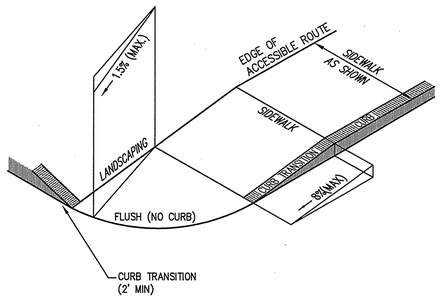
APPLICANT:
CORPUS CHRISTI PARISH
125 AUSTIN STREET
PORTSMOUTH, NH 03801

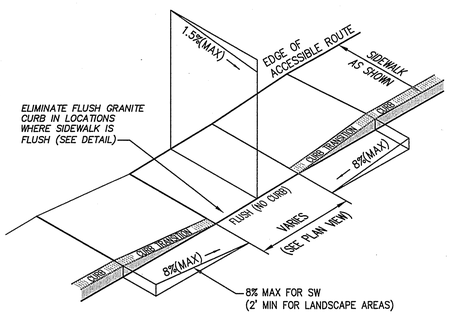
OWNER:
ROMAN CATHOLIC BISHOP
OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

PROJECT:
FORMER ST. PATRICKS SCHOOL
TAX MAP 137, LOT 01
125 AUSTIN STREET
PORTSMOUTH, NH

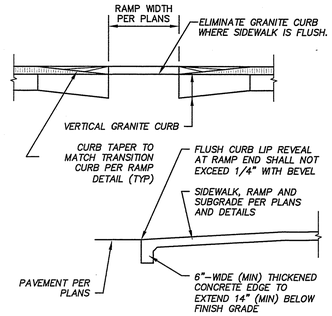
TITLE:
DETAIL SHEET

SHEET NUMBER:
D-2





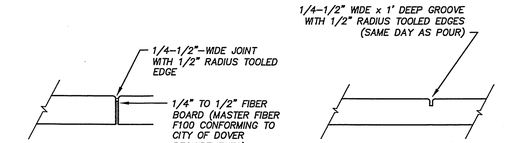
CURB RAMPS NOT TO SCALE



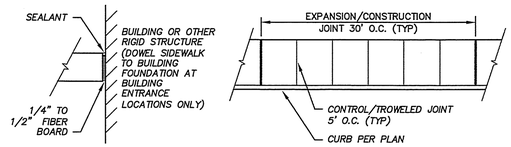
FLUSH CURB AT RAMP DETAIL NOT TO SCALE

ADDITIONAL NOTES APPLICABLE TO ALL CURB RAMPS:

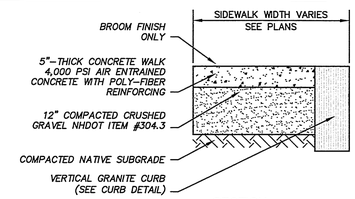
1. ALL CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AMERICANS WITH DISABILITIES ACT (ADA) AND ALL APPLICABLE CODES.
2. THE MAXIMUM ALLOWABLE CROSS SLOPE OF AN ACCESSIBLE ROUTE (SIDEWALK) AND CURB SHALL BE 2%.
3. THE MAXIMUM ALLOWABLE RUNNING SLOPE OF AN ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
4. THE MAXIMUM ALLOWABLE RUNNING SLOPE OF AN ACCESSIBLE ROUTE (SIDEWALK) CURB RAMP SHALL BE 8.3% FOR A MAXIMUM ELEVATION CHANGE OF 6".
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. BASE OF RAMP SHALL BE GRADED TO PREVENT THE PONDING OF WATER.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. FLUSH CURB SECTIONS SHALL HAVE A MAXIMUM LIP REVEAL OF 1/4" WITH A BEVEL AT THE EDGE OF PAVEMENT.
9. EDGES OF SIDEWALK FOOTINGS ALONG FLUSH CURBS SHALL BE HAUNCHED SO AS TO EXTEND TO A MINIMUM DEPTH OF 1' BELOW FINISH GRADE.
10. NO RAMP SHALL BE LESS THAN 4' IN WIDTH.
11. CURB RAMPS SHALL HAVE A FLAT 2% MAX LANDING AT THE TOP AND BOTTOM OF THE RAMPS WHEN THERE IS A CHANGE IN DIRECTION.



EXPANSION/CONSTRUCTION JOINT CONTROL/TROWELED JOINT

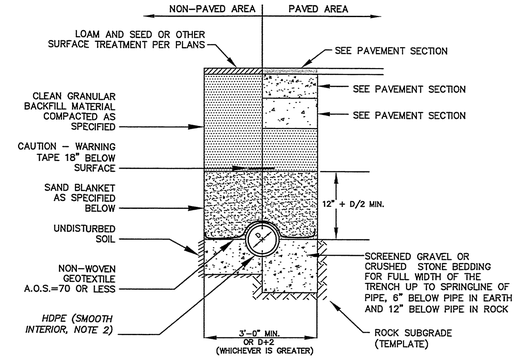


ISOLATION JOINT PLAN



SECTION

CONCRETE SIDEWALK DETAIL NOT TO SCALE



NOTES:
1. BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.
2. ALL PIPE SHALL BE HDPE WITH SMOOTH INTERIOR AND CORRUGATED EXTERIOR, ADS TYPE N-12 OR APPROVED EQUAL.

SAND BLANKET/BARRIER

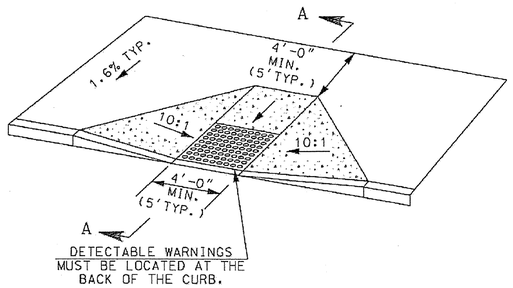
SIEVE SIZE	% FINER BY WEIGHT
1/2"	90 - 100
200	0 - 15

SCREENED GRAVEL OR CRUSHED STONE BEDDING*

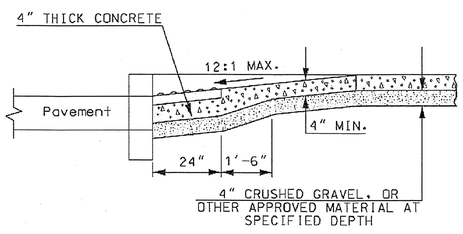
SIEVE SIZE	% PASSING BY WEIGHT
1"	100
3/4"	90 - 100
3/8"	20 - 55
# 4	0 - 10
# 8	0 - 5

* EQUIVALENT TO STANDARD STONE SIZE #67 - SECTION 703 OF NHDOT STANDARD SPECIFICATIONS

STORM DRAIN TRENCH NOT TO SCALE



PERPENDICULAR CURB RAMP DETAIL

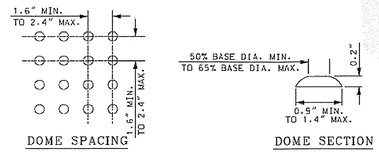


SECTION A-A

NOTES:

1. REFERENCE NHDOT STD PLAN - CRBRMP FOR NOTES AND DETAILS NOT SHOWN.
2. CURB RAMPS IN LANDSCAPE AREA DO NOT REQUIRE FLARES ON SIDES OF RAMP.

CURB RAMPS WITH DETECTABLE WARNINGS

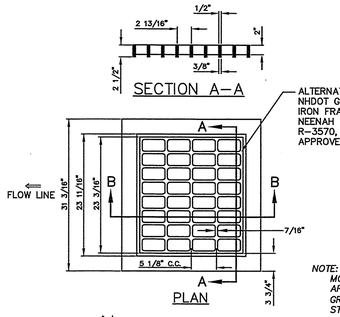


GENERAL NOTES

1. THE MAXIMUM RUNNING SLOPE OF ANY SIDEWALK CURB RAMP IS 12:1. THE MAXIMUM CROSS SLOPE IS 2%. THE SLOPE OF THE LANDING SHALL NOT EXCEED 2% IN ANY DIRECTION.
   RAMP RUNNING SLOPE EXCEPTION: A GREATER THAN 8.33% RAMP RUNNING GRADE IS ALLOWED WHERE THE THE ROADWAY AND THE SIDEWALK(S) ARE PARALLEL AND VERY CLOSE TOGETHER. WITH THE SAME GRADE. AND USING A GRADE OF 8.33% WOULD RESULT IN A RAMP LENGTH LONGER THAN 15'. IN THOSE CIRCUMSTANCES USE A MAXIMUM RAMP LENGTH OF 15' AND THE ALLOWABLE RUNNING SLOPE OF THE RAMP(S) IS GREATER THAN 8.33%.
2. TRANSITIONS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. ROADWAY SHOULDER SLOPES ADJOINING SIDEWALK CURB RAMPS SHALL BE A MAXIMUM OF 5% (FULL WIDTH) FOR A DISTANCE OF 2 FT. FROM THE ROADWAY CURBLINE.
3. INTERCEPT DRAINAGE ALONG THE CURB IN ADVANCE OF SIDEWALK CURB RAMPS OR LANDINGS. CATCH BASINS, MANHOLES, ETC. SHALL NOT BE LOCATED IN, OR AT THE BASE OF, SIDEWALK CURB RAMPS OR LANDINGS.
4. THE BOTTOM OF THE SIDEWALK CURB RAMP OR LANDING, EXCLUSIVE OF THE FLARED SIDES, SHALL BE WHOLLY CONTAINED WITHIN THE CROSSWALK MARKINGS.
5. THE SURFACE OF A PERPENDICULAR SIDEWALK CURB RAMP OR THE LANDING OF A PARALLEL SIDEWALK CURB RAMP SHALL CONTRAST VISUALLY WITH THE ADJOINING SIDEWALK SURFACE, EITHER ASPHALT/LIGHT-COLORED CONCRETE OR LIGHT-COLORED CONCRETE/DARK-STAINED CONCRETE. THE CONCRETE SURFACE SHALL BE SLIP RESISTANT.
6. DETECTABLE WARNING PANELS SHALL BE THE FULL WIDTH OF THE LANDING, BLENDED TRANSITION, OR CURB RAMP THEY ARE A PART OF AND SHALL BE A MINIMUM OF 2 FEET IN DEPTH. THE ROWS OF TRUNCATED DOMES SHALL BE ALIGNED PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP, BLENDED TRANSITION, OR LANDING AND THE STREET.

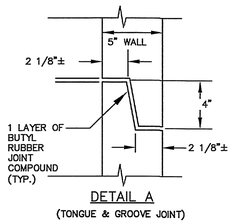
PERPENDICULAR CURB RAMPS:

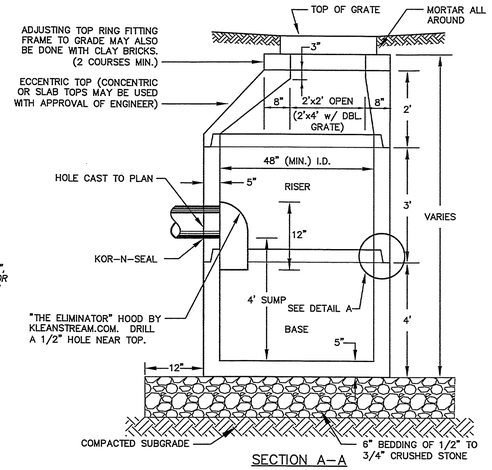
WHERE BOTH ENDS OF THE BOTTOM GRADE ARE LESS THAN 5'-0" FROM THE BACK OF THE CURB. LOCATE THE DETECTABLE WARNING PANELS ON THE RAMP SURFACE AT THE BOTTOM OF THE RAMP. WHERE EITHER END OF THE BOTTOM GRADE IS GREATER THAN 5'-0" FROM THE BACK OF THE CURB. LOCATE THE DETECTABLE WARNINGS AT THE BOTTOM OF THE LANDING.



NOTES

1. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ.IN. PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE OR GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
4. RISERS OF 1', 2', 3' & 4' CAN BE USED TO REACH DESIRED DEPTH.
5. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
6. USE H20 LOADING SLAB TOP SECTION IN LIEU OF ECCENTRIC TOP WHERE PIPE INVERT IS WITHIN 4' OF FINISH GRADE.
7. FRAME AND GRATE DIMENSIONS ARE TYPICAL BUT MAY VARY BASED ON PRODUCT SELECTED OR EQUIVALENT APPROVED BY THE ENGINEER.





SECTION A-A

PLAN-ECCENTRIC CONE

DEEP SUMP CATCH BASIN NOT TO SCALE

P4957

ENGINEER:
ALTUS ENGINEERING, INC.
133 COURT STREET PORTSMOUTH, NH 03801
(603) 433-2335 www.ALTUS-ENG.com

STATE OF NEW HAMPSHIRE - ERIC D. WEINRIEB No. 7634 LICENSED PROFESSIONAL ENGINEER
10/21/19

ISSUED FOR: TAC

ISSUE DATE: OCTOBER 21, 2019

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	DISCUSSION	EDW	10/21/19

DRAWN BY: RLH
APPROVED BY: EDW
DRAWING FILE: 4957-CO-4.DWG

SCALE:
22" x 34" - NOT TO SCALE
11" x 17" - NOT TO SCALE

APPLICANT:
CORPUS CHRISTI PARISH
125 AUSTIN STREET
PORTSMOUTH, NH 03801

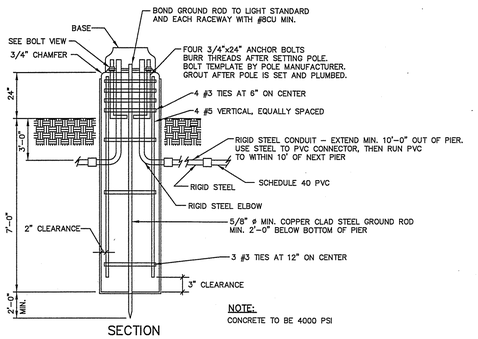
OWNER:
ROMAN CATHOLIC BISHOP OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

PROJECT:
FORMER ST. PATRICKS SCHOOL
TAX MAP 137, LOT 01
125 AUSTIN STREET
PORTSMOUTH, NH

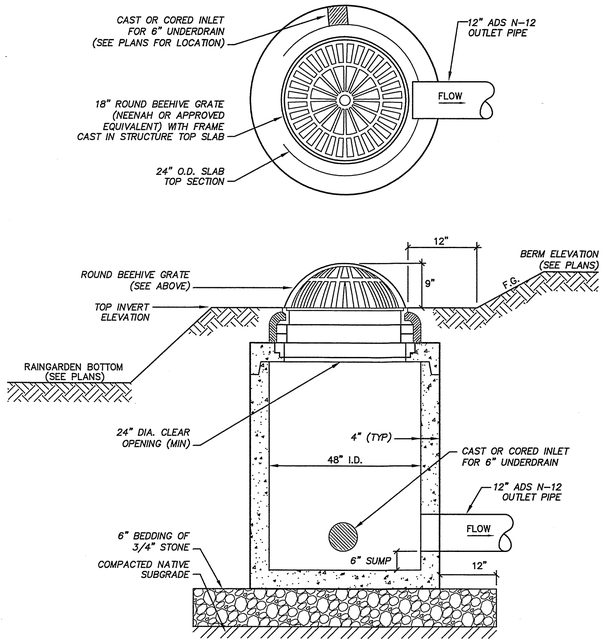
TITLE:

DETAIL SHEET

SHEET NUMBER:
D-3



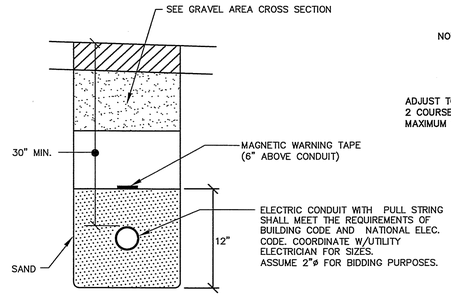
LIGHT POLE BASE DETAIL NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. OUTLET STRUCTURE SHALL BE CONSTRUCTED ONSITE OR PRECAST TO EQUAL DIMENSIONS.
2. ALL JOINTS AND PIPE OPENINGS SHALL BE SEALED WATERTIGHT WITH MORTAR.
3. STRUCTURE IS TO BE BUILT TO WITHSTAND H20 LOADING.
4. SOIL UNDERLYING THE STRUCTURE'S GRAVEL BASE PAD AND THE PAD ITSELF ARE TO BE COMPACTED TO 95% MODIFIED PROCTOR.
5. ALL CONCRETE SHALL BE 4,000 PSI MINIMUM.

OUTLET STRUCTURE DETAIL NOT TO SCALE

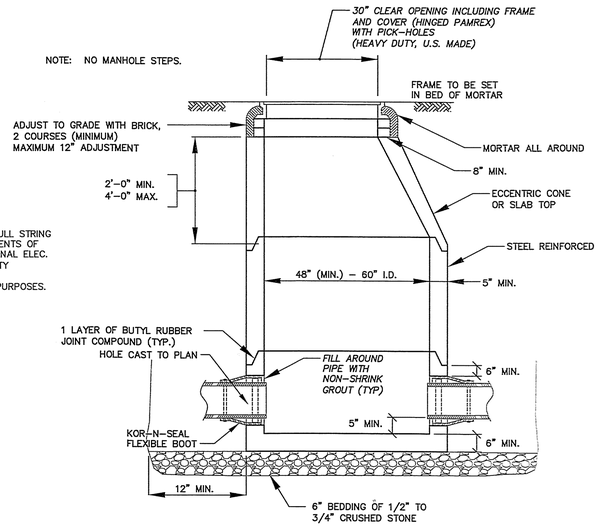


BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.

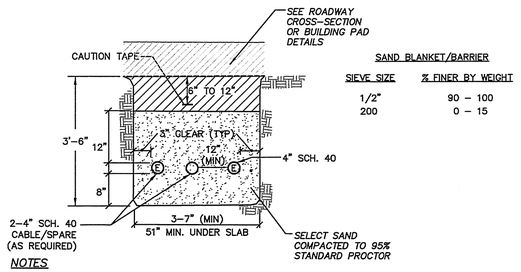
SAND BLANKET/BARRIER

SIEVE SIZE	% FINER BY WEIGHT
1/2"	90 – 100

ELECTRICAL TRENCH SECTION NOT TO SCALE



DRAIN MANHOLE DETAIL NOT TO SCALE



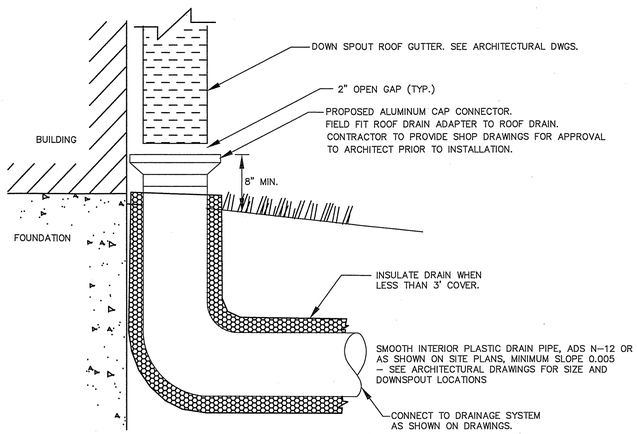
SAND BLANKET/BARRIER

SIEVE SIZE	% FINER BY WEIGHT
1/2"	90 – 100
200	0 – 15

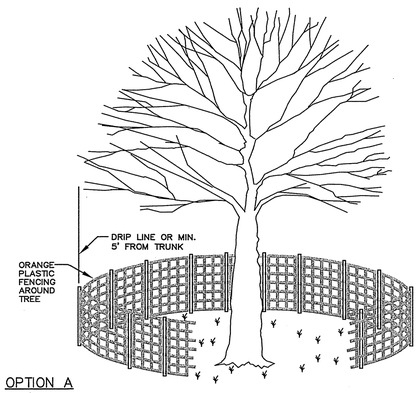
NOTES

1. *ALL CONDUIT IS TO BE SCHEDULE 40 PVC, ELECTRICAL GRADE, GRAY IN COLOR AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. A 10-FOOT HORIZONTAL SECTION OF RIGID GALVANIZED STEEL CONDUIT WILL BE REQUIRED AT EACH SWEEP, UNLESS IN THE OPINION OF THE SERVICE PROVIDER DESIGNER, THE SWEEP-PVC JOINT IS NOT SUBJECT TO FAILURE DURING PULLING OF THE CABLE. ALL JOINTS ARE TO BE WATERTIGHT.*
2. *ALL 90 DEGREE SWEEPS WILL BE MADE WITH RIGID GALVANIZED STEEL WITH A MINIMUM RADIUS OF 36 INCHES FOR PRIMARY CABLES AND 24 INCHES FOR SECONDARY CABLES.*
3. *BACKFILL MAY BE MADE WITH EXCAVATED MATERIAL OR COMPARABLE, UNLESS MATERIAL IS DEEMED UNSUITABLE BY SERVICE PROVIDER. BACKFILL SHALL BE FREE OF FROZEN LUMPS, ROCKS, DEBRIS, AND RUBBISH. ORGANIC MATERIAL SHALL NOT BE USED AS BACKFILL. BACKFILL SHALL BE IN 6-INCH LAYERS AND THOROUGHLY COMPACTED.*
4. *A SUITABLE PULLING STRING, CAPABLE OF 300 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE SERVICE PROVIDER IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT. A MINIMUM OF TWENTY-FOUR (24") INCHES OF ROPE SLACK SHALL REMAIN AT THE END OF EACH DUCT. PULL ROPE SHALL BE INSTALLED IN ALL CONDUIT FOR FUTURE PULLS. PULL ROPE SHALL BE NYLON ROPE HAVING A MINIMUM TENSILE STRENGTH OF THREE HUNDRED (300#) LBS.*
5. *SERVICE PROVIDER SHALL BE GIVEN THE OPPORTUNITY TO INSPECT ALL CONDUIT PRIOR TO BACKFILL. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS SHOULD SERVICE PROVIDER BE UNABLE TO INSTALL ITS CABLE IN A SUITABLE MANNER.*
6. *TYPICAL CONDUIT SIZES ARE 3-INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4-INCH FOR THREE PHASE SECONDARY, AND 5-INCH FOR THREE PHASE PRIMARY. HOWEVER, SERVICE PROVIDERS MAY REQUIRE DIFFERENT NUMBERS, TYPES AND SIZES OF CONDUIT THAN THOSE SHOWN HERE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL CONDUIT SIZES, TYPES AND NUMBERS WITH EACH SERVICE PROVIDER PRIOR TO ORDERING THEM.*
7. *ROUTING OF CONDUIT, LOCATION OF MANHOLES, TRANSFORMERS, CABINETS, HANDHOLES, ETC., SHALL BE DETERMINED BY SERVICE PROVIDER DESIGN PERSONNEL. THE CONTRACTOR SHALL COORDINATE WITH ALL SERVICE PROVIDERS PRIOR TO THE INSTALLATION OF ANY CONDUIT.*
8. *ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND WHERE APPLICABLE, THE NATIONAL ELECTRIC CODE. WHERE REQUIRED BY UTILITY PROVIDER, CONDUIT SHALL BE SUPPORTED IN PLACE USING PIPE STANCHIONS PLACED EVERY FIVE (5') FEET ALONG THE CONDUIT RUN.*
9. *UNDER A BUILDING SLAB THE CONDUIT SHALL BE ENCASED IN 8" OF CONCRETE ON ALL SIDES.*
10. *ALL CONDUIT TERMINATIONS SHALL BE CAPPED TO PREVENT DEBRIS FROM ENTERING CONDUIT.*

ELECTRIC / COMMUNICATION TRENCH NOT TO SCALE

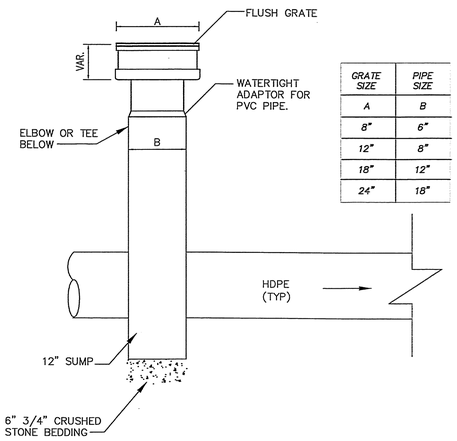


ROOF DRAIN NOT TO SCALE



OPTION A

TREE PROTECTION DETAILS NOT TO SCALE



GRATE SIZE	PIPE SIZE
A	B
8"	6"
12"	8"
18"	12"
24"	18"

YARD DRAIN NOTES:

1. *INLINE DRAIN TO BE PVC DIAMETER AS SPECIFIED AND AS MANUFACTURED BY ADS 1-800-821-6710 OR APPROVED EQUAL.*
2. *THE CONTRACTOR SHALL INSTALL THE INLINE DRAIN AS PER THE MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON THE DRAWINGS.*

YARD DRAIN AND GRATE NOT TO SCALE

P4957

ENGINEER:
ALTUS ENGINEERING, INC.
133 COURT STREET PORTSMOUTH, NH 03801
(603) 433-2335 www.ALTUS-ENG.com

ERIC D. WEINRIEB No. 7634 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
10/21/19

ISSUED FOR: TAC

ISSUE DATE: OCTOBER 21, 2019

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	DISCUSSION	EDW	10/21/19

DRAWN BY: RLH
APPROVED BY: EDW
DRAWING FILE: 4957-CO-4.DWG

SCALE:
22" x 34" – NOT TO SCALE
11" x 17" – NOT TO SCALE

APPLICANT:
CORPUS CHRISTI PARISH
125 AUSTIN STREET
PORTSMOUTH, NH 03801

OWNER:
ROMAN CATHOLIC BISHOP OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

PROJECT:
FORMER ST. PATRICKS SCHOOL
TAX MAP 137, LOT 01
125 AUSTIN STREET
PORTSMOUTH, NH

TITLE:
DETAIL SHEET

SHEET NUMBER:
D-4

Former St. Patrick School

Corpus Christi Parish
Assessor's Map 139, Lot 201

DRAINAGE REPORT

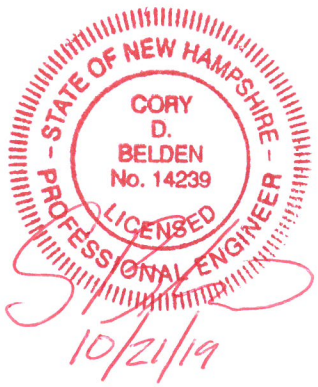
October 2019

Prepared for:

Corpus Christi Parish &
The Roman Catholic Bishop of Manchester
125 Austin Street
Portsmouth, NH 03801

Prepared By:

ALTUS ENGINEERING, INC.
133 Court Street
Portsmouth, NH 03801
Phone: (603) 433-2335



Corpus Christi Parish
Assessor's Map 139, Lot 201

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Former St. Patrick School
Corpus Christi Parish
Assessor's Map 139, Lot 201
Altus Project P4957

PROJECT DESCRIPTION

The existing St. Patrick School is located at 125 Austin Street. It is shown on City of Portsmouth Tax Map 137 as Lot 1. The lot consists of 1.29 acres (56,192 s.f.) and is bounded by Austin Street on the south, Summer Street on the east, Chatham Street on the north and Winter Street on the west. On this same lot is the Immaculate Conception Church on Summer Street at the corner of Chatham Street, the Rectory for the Church on Summer Street at the corner of Austin Street, and a 3 car garage on Chatham Street.

St. Patrick School was constructed in 1904. It is a 2-1/2 story masonry building with gross area of 37,272 s.f. Several years ago, the Parish and School Officials were notified that because of the many Code deficiencies existing in the school building, the time period in which the City could allow the building to remain open had to be limited unless and until extensive changes were made to bring it more into compliance with present day Building and Life Safety Codes. Facing closure of the school, the Hope for Tomorrow Foundation was established and a new St. Patrick Academy was constructed at 315 Banfield Road. The new St. Patrick Academy opened in April of 2018 and the school at 125 Austin Street has been closed since that time.

The proposal is to demolish the former St. Patrick School building and create an approximately 30 car parking lot which would include extensive landscaping along Austin and Winter Streets to improve the streetscape of both of those streets and provide screening for the proposed parking. The proposal includes all appropriate lighting and surface water management.

Pre-Development (Existing Conditions)

The pre-development area was divided into seven watersheds for the project site. The existing drainage system, as shown on the existing condition plans prepared by James Verra and Associates, were modeled with the existing site conditions. The point of analysis is the downstream connection point of the drainage system at the intersection of Austin Street and Summer Street. The analysis of the site utilizes a 15% increase to the rainfall intensities for seacoast communities, as is recommended by NHDES. See attached "Pre-Development Drainage Plan" for reference.

Post-Development (Proposed Site Design)

The Proposed development will demolish the former St. Patrick School building and construct a new 30 stall parking lot to serve the church and ancillary facilities. The proposed improvements will provide two raingardens for first flush treatment and some retention for the smaller storm events. The proposed stormwater system is depicted on the Grading and Drainage Plan in the project plans and the attached Post-Development Drainage Plan. For the post development analysis, the site was divided into eight watershed areas to depict the post-development conditions. The same point of analysis that was used in the Pre-Development model was used for comparison of the Pre and Post development conditions.

The following table compares pre- and post-development peak rates at the Points of Analysis identified on the plans for the 1", 1-Yr, 2-Yr, and 10-Yr storm events:

Stormwater Modeling Summary
Peak Q (cfs) for Type III 24-Hour Storm Events

*Rainfall Intensities reflect 15% Increase per AOT	1-Inch Storm (1.00 inch)	1-Yr Storm (3.05 inch)	2-Yr Storm (3.68 inch)	10-Yr Storm (5.58 inch)
POA #1				
Pre	0.60	3.06	3.95	9.87
Post	0.43	2.46	3.35	7.86
TOTAL Change	**-0.17**	**-0.60**	**-0.60**	**-2.01**

As the above table demonstrates, the proposed peak rates of runoff will not be increased from the existing conditions for any of the analyzed storm events. Because the existing drainage system is a combined sewer/storm drain and is only an 8" main line, the 25 and 50 year storm events are not capable of running effectively in the model without errors. Therefore, the results from these storm events are not included.

CONCLUSION

The proposed site re-development will not have an adverse effect on abutting properties and infrastructure as a result of stormwater runoff. The proposed improvements will provide retention and first flush treatment to a site that has none. Post-construction peak rates of runoff from the site will be lower than the existing conditions for all analyzed storm events. The construction of a stormwater drainage system consisting two raingardens will provide the treatment to stormwater runoff to improve the offsite runoff. Appropriate steps will be taken to properly mitigate erosion and sedimentation through the use of temporary and permanent Best Management Practices for sediment and erosion control.

CALCULATION METHODS

The project lies with the ***Coastal and Great Bay Regional Communities*** as identified in Section 6 – One-Stop AoT Screening Layers Results. As a result, the rainfall precipitation results obtained from the Northeast Regional Climate Center for the project site have been increased by 15% for the hydrologic analysis. The drainage study was completed using the USDA SCS TR-20 Method within the HydroCAD Stormwater Modeling System. Reservoir routing was performed with the Dynamic Storage Indication method which automates the calculation of Tailwater conditions. A Type III 24-hour rainfall distribution was utilized in analyzing the data for the 1", 1-Yr, 2-Yr, and 10-Yr 24-hour storm events using rainfall data provided by Northeast Regional Climate Center – Extreme Precipitation Tables. The existing 8" combined sewer and storm drain systems is greatly undersized for the 25 and 50 year storm events so the results were not included.

Disclaimer

Altus Engineering, Inc. notes that stormwater modeling is limited in its capacity to precisely predict peak rates of runoff and flood elevations. Results should not be considered to represent actual storm events due to the number of variables and assumptions involved in the modeling effort. Surface roughness coefficients (n), entrance loss coefficients (ke), velocity factors (kv) and times of concentration (Tc) are based on subjective field observations and engineering judgment using available data. For design purposes, curve numbers (Cn) describe the average conditions. However, curve numbers will vary from storm to storm depending on the antecedent runoff conditions (ARC) including saturation and frozen ground. Also, higher water elevations than predicted by modeling could occur if drainage channels, closed drain systems or culverts are not maintained and/or become blocked by debris before and/or during a storm event as this will impact flow capacity of the structures. Structures should be re-evaluated if future changes occur within relevant drainage areas in order to assess any required design modifications.


Former St. patrick School
Corpus Christi Parish
Legend
Feature 1
Hodgdon Wilson & Griffin
St Patrick's School
Summer St
Google Earth
© 2018 Google
200 ft
N

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.771 degrees West
Latitude	43.085 degrees North
Elevation	0 feet
Date/Time	Wed, 28 Aug 2019 16:06:47 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.02	2.65	2.91	**1yr**	2.35	2.80	3.21	3.93	4.53	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.51	1.93	2.48	3.20	3.56	**2yr**	2.83	3.42	3.92	4.67	5.31	**2yr**
5yr	0.37	0.58	0.73	0.97	1.24	1.60	**5yr**	1.07	1.46	1.88	2.42	3.13	4.05	4.56	**5yr**	3.59	4.39	5.02	5.91	6.68	**5yr**
10yr	0.41	0.65	0.82	1.11	1.45	1.88	**10yr**	1.25	1.72	2.22	2.88	3.74	4.85	5.51	**10yr**	4.29	5.30	6.06	7.08	7.95	**10yr**
25yr	0.48	0.76	0.96	1.33	1.77	2.33	**25yr**	1.52	2.13	2.76	3.61	4.72	6.15	7.07	**25yr**	5.44	6.80	7.76	8.98	10.01	**25yr**
50yr	0.53	0.85	1.09	1.53	2.06	2.74	**50yr**	1.78	2.52	3.27	4.30	5.64	7.36	8.55	**50yr**	6.51	8.22	9.37	10.76	11.93	**50yr**
100yr	0.59	0.96	1.24	1.76	2.40	3.24	**100yr**	2.07	2.96	3.88	5.13	6.74	8.82	10.34	**100yr**	7.80	9.94	11.32	12.90	14.22	**100yr**
200yr	0.67	1.09	1.42	2.03	2.80	3.81	**200yr**	2.42	3.50	4.59	6.09	8.04	10.56	12.50	**200yr**	9.35	12.02	13.67	15.46	16.95	**200yr**
500yr	0.79	1.30	1.70	2.46	3.45	4.73	**500yr**	2.98	4.35	5.72	7.66	10.16	13.42	16.08	**500yr**	11.88	15.46	17.55	19.66	21.40	**500yr**

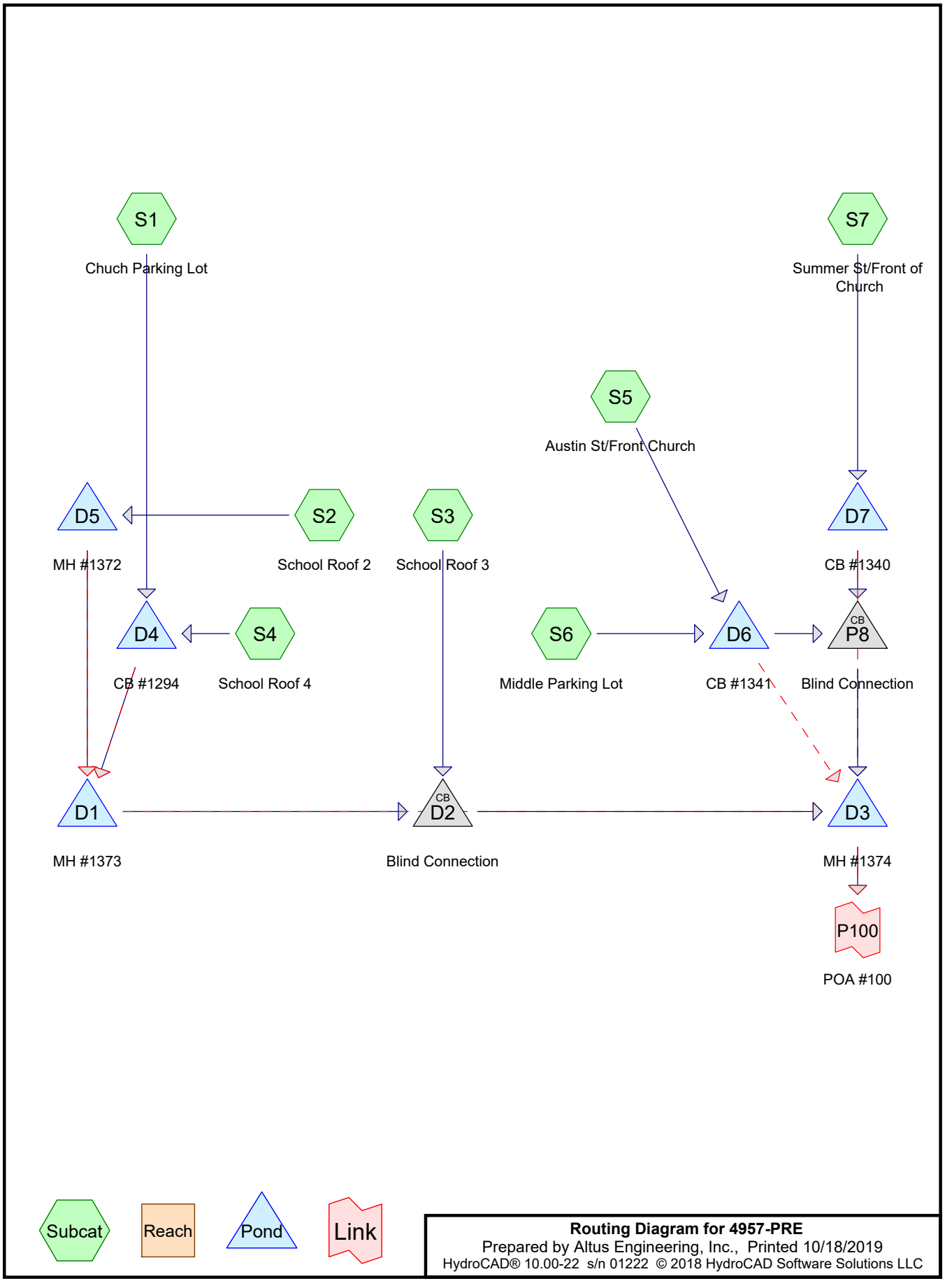
Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.88	1yr	0.63	0.86	0.92	1.32	1.67	2.22	2.48	1yr	1.96	2.38	2.85	3.16	3.86	1yr
2yr	0.31	0.49	0.60	0.81	1.00	1.19	2yr	0.86	1.16	1.36	1.82	2.34	3.05	3.44	2yr	2.70	3.31	3.81	4.53	5.06	2yr
5yr	0.35	0.54	0.67	0.92	1.17	1.40	5yr	1.01	1.37	1.61	2.12	2.74	3.77	4.17	5yr	3.34	4.01	4.70	5.51	6.21	5yr
10yr	0.38	0.59	0.73	1.02	1.32	1.60	10yr	1.14	1.56	1.81	2.39	3.06	4.35	4.84	10yr	3.85	4.65	5.41	6.38	7.16	10yr
25yr	0.44	0.67	0.83	1.18	1.56	1.90	25yr	1.34	1.86	2.10	2.76	3.55	4.67	5.86	25yr	4.13	5.63	6.60	7.74	8.63	25yr
50yr	0.48	0.73	0.91	1.31	1.76	2.16	50yr	1.52	2.12	2.34	3.09	3.94	5.27	6.76	50yr	4.66	6.50	7.66	8.97	9.96	50yr
100yr	0.53	0.81	1.01	1.46	2.00	2.47	100yr	1.73	2.41	2.62	3.43	4.37	5.91	7.80	100yr	5.23	7.50	8.89	10.42	11.48	100yr
200yr	0.59	0.89	1.12	1.63	2.27	2.81	200yr	1.96	2.75	2.93	3.80	4.82	6.61	8.99	200yr	5.85	8.64	10.30	12.10	13.27	200yr
500yr	0.68	1.01	1.31	1.90	2.70	3.36	500yr	2.33	3.29	3.40	4.35	5.49	7.67	10.85	500yr	6.79	10.43	12.53	14.79	16.05	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	1yr	0.77	1.06	1.25	1.74	2.21	2.98	3.15	1yr	2.64	3.03	3.57	4.37	5.03	1yr
2yr	0.34	0.52	0.64	0.86	1.06	1.27	2yr	0.92	1.24	1.48	1.96	2.52	3.42	3.69	2yr	3.03	3.55	4.08	4.82	5.62	2yr
5yr	0.40	0.62	0.76	1.05	1.33	1.62	5yr	1.15	1.58	1.88	2.53	3.25	4.33	4.95	5yr	3.83	4.76	5.36	6.35	7.13	5yr
10yr	0.47	0.72	0.89	1.24	1.60	1.97	10yr	1.38	1.93	2.28	3.10	3.95	5.32	6.19	10yr	4.71	5.95	6.80	7.81	8.73	10yr
25yr	0.57	0.87	1.08	1.55	2.04	2.56	25yr	1.76	2.50	2.95	4.06	5.14	7.79	8.32	25yr	6.89	8.00	9.13	10.31	11.38	25yr
50yr	0.67	1.02	1.26	1.82	2.45	3.11	50yr	2.11	3.04	3.59	4.99	6.30	9.76	10.44	50yr	8.64	10.04	11.41	12.69	13.93	50yr
100yr	0.78	1.18	1.48	2.14	2.94	3.79	100yr	2.54	3.70	4.36	6.14	7.73	12.22	13.08	100yr	10.82	12.58	14.28	15.65	17.05	100yr
200yr	0.92	1.38	1.75	2.53	3.53	4.62	200yr	3.04	4.51	5.32	7.55	9.48	15.34	16.42	200yr	13.58	15.79	17.88	19.29	20.88	200yr
500yr	1.14	1.69	2.17	3.16	4.49	5.99	500yr	3.88	5.85	6.90	9.97	12.47	20.76	22.18	500yr	18.37	21.33	24.10	25.44	27.30	500yr

Powered by ACIS
Northeast Regional Climate Center



Routing Diagram for 4957-PRE
Prepared by Altus Engineering, Inc., Printed 10/18/2019
HydroCAD® 10.00-22 s/n 01222 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.292	61	>75% Grass cover, Good, HSG B (S1, S3, S5, S6, S7)
0.277	98	Paved parking, HSG B (S1)
0.377	98	Paved roads w/curbs & sewers, HSG B (S1, S6, S7)
0.385	98	Roofs, HSG B (S1, S2, S3, S4, S5, S6, S7)
0.089	98	Unconnected pavement, HSG B (S2, S3, S4, S5, S6, S7)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.420	HSG B	S1, S2, S3, S4, S5, S6, S7
0.000	HSG C	
0.000	HSG D	
0.000	Other	

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.292	0.000	0.000	0.000	0.292	>75% Grass cover, Good	S1, S3, S5, S6, S7
0.000	0.277	0.000	0.000	0.000	0.277	Paved parking	S1
0.000	0.377	0.000	0.000	0.000	0.377	Paved roads w/curbs & sewers	S1, S6, S7
0.000	0.385	0.000	0.000	0.000	0.385	Roofs	S1, S2, S3, S4, S5, S6, S7
0.000	0.089	0.000	0.000	0.000	0.089	Unconnected pavement	S2, S3, S4, S5, S6, S7

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	D1	20.60	17.90	176.0	0.0153	0.015	8.0	0.0	0.0
2	D2	17.90	16.04	122.0	0.0152	0.015	8.0	0.0	0.0
3	D3	16.04	15.90	10.0	0.0140	0.015	8.0	0.0	0.0
4	D4	23.74	20.90	30.0	0.0947	0.012	6.0	0.0	0.0
5	D5	21.42	20.60	89.0	0.0092	0.015	8.0	0.0	0.0
6	D6	18.86	18.00	25.0	0.0344	0.015	10.0	0.0	0.0
7	D7	20.00	18.00	20.0	0.1000	0.015	10.0	0.0	0.0
8	P8	18.00	16.04	40.0	0.0490	0.015	8.0	0.0	0.0

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment S1: Chuch Parking Lot Runoff Area=16,770 sf 95.77% Impervious Runoff Depth>3.22"
Tc=6.0 min CN=96 Runoff=1.34 cfs 0.103 af

Subcatchment S2: School Roof 2 Runoff Area=2,035 sf 100.00% Impervious Runoff Depth>3.45"
Tc=0.0 min CN=98 Runoff=0.20 cfs 0.013 af

Subcatchment S3: School Roof 3 Runoff Area=5,745 sf 93.12% Impervious Runoff Depth>3.12"
Tc=0.0 min CN=95 Runoff=0.55 cfs 0.034 af

Subcatchment S4: School Roof 4 Runoff Area=1,515 sf 100.00% Impervious Runoff Depth>3.45"
Tc=0.0 min CN=98 Runoff=0.15 cfs 0.010 af

Subcatchment S5: Austin St/Front Church Runoff Area=13,470 sf 43.50% Impervious Runoff Depth>1.56"
Tc=6.0 min CN=77 Runoff=0.56 cfs 0.040 af

Subcatchment S6: Middle Parking Lot Runoff Area=6,895 sf 88.69% Impervious Runoff Depth>3.01"
Tc=6.0 min CN=94 Runoff=0.53 cfs 0.040 af

Subcatchment S7: Summer St/Front of Runoff Area=15,435 sf 79.01% Impervious Runoff Depth>2.61"
Tc=6.0 min CN=90 Runoff=1.07 cfs 0.077 af

Pond D1: MH #1373 Peak Elev=23.80' Storage=40 cf Inflow=1.45 cfs 0.127 af
Primary=1.43 cfs 0.127 af Secondary=0.00 cfs 0.000 af Outflow=1.43 cfs 0.127 af

Pond D2: Blind Connection Peak Elev=20.33' Inflow=1.67 cfs 0.161 af
8.0" Round Culvert n=0.015 L=122.0' S=0.0152 '/' Outflow=1.67 cfs 0.161 af

Pond D3: MH #1374 Peak Elev=16.74' Storage=9 cf Inflow=4.19 cfs 0.318 af
Primary=0.92 cfs 0.059 af Secondary=3.03 cfs 0.259 af Outflow=3.95 cfs 0.318 af

Pond D4: CB #1294 Peak Elev=26.36' Storage=33 cf Inflow=1.42 cfs 0.113 af
Primary=1.40 cfs 0.113 af Secondary=0.00 cfs 0.000 af Outflow=1.40 cfs 0.113 af

Pond D5: MH #1372 Peak Elev=23.81' Storage=30 cf Inflow=0.20 cfs 0.013 af
Primary=0.21 cfs 0.013 af Secondary=0.00 cfs 0.000 af Outflow=0.21 cfs 0.013 af

Pond D6: CB #1341 Peak Elev=20.15' Storage=16 cf Inflow=1.09 cfs 0.080 af
Primary=1.74 cfs 0.080 af Secondary=0.00 cfs 0.000 af Outflow=1.74 cfs 0.080 af

Pond D7: CB #1340 Peak Elev=20.83' Storage=10 cf Inflow=1.07 cfs 0.077 af
Primary=1.28 cfs 0.077 af Secondary=0.00 cfs 0.000 af Outflow=1.28 cfs 0.077 af

Pond P8: Blind Connection Peak Elev=20.82' Inflow=2.65 cfs 0.157 af
8.0" Round Culvert n=0.015 L=40.0' S=0.0490 '/' Outflow=2.65 cfs 0.157 af

Link P100: POA #100 Inflow=3.95 cfs 0.318 af
Primary=3.95 cfs 0.318 af

Summary for Subcatchment S1: Chuch Parking Lot

Runoff = 1.34 cfs @ 12.08 hrs, Volume= 0.103 af, Depth> 3.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
900	98	Roofs, HSG B
710	61	>75% Grass cover, Good, HSG B
12,070	98	Paved parking, HSG B
3,090	98	Paved roads w/curbs & sewers, HSG B
16,770	96	Weighted Average
710		4.23% Pervious Area
16,060		95.77% Impervious Area

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

Summary for Subcatchment S2: School Roof 2

Runoff = 0.20 cfs @ 12.00 hrs, Volume= 0.013 af, Depth> 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
1,820	98	Roofs, HSG B
215	98	Unconnected pavement, HSG B
2,035	98	Weighted Average
2,035		100.00% Impervious Area
215		10.57% Unconnected

Summary for Subcatchment S3: School Roof 3

Runoff = 0.55 cfs @ 12.00 hrs, Volume= 0.034 af, Depth> 3.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
4,595	98	Roofs, HSG B
755	98	Unconnected pavement, HSG B
395	61	>75% Grass cover, Good, HSG B
5,745	95	Weighted Average
395		6.88% Pervious Area
5,350		93.12% Impervious Area
755		14.11% Unconnected

Summary for Subcatchment S4: School Roof 4

Runoff = 0.15 cfs @ 12.00 hrs, Volume= 0.010 af, Depth> 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
1,195	98	Roofs, HSG B
320	98	Unconnected pavement, HSG B
1,515	98	Weighted Average
1,515		100.00% Impervious Area
320		21.12% Unconnected

Summary for Subcatchment S5: Austin St/Front Church

Runoff = 0.56 cfs @ 12.09 hrs, Volume= 0.040 af, Depth> 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
4,195	98	Roofs, HSG B
7,610	61	>75% Grass cover, Good, HSG B
1,665	98	Unconnected pavement, HSG B
13,470	77	Weighted Average
7,610		56.50% Pervious Area
5,860		43.50% Impervious Area
1,665		28.41% Unconnected

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

Summary for Subcatchment S6: Middle Parking Lot

Runoff = 0.53 cfs @ 12.08 hrs, Volume= 0.040 af, Depth> 3.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
2,020	98	Roofs, HSG B
780	61	>75% Grass cover, Good, HSG B
275	98	Unconnected pavement, HSG B
3,820	98	Paved roads w/curbs & sewers, HSG B
6,895	94	Weighted Average
780		11.31% Pervious Area
6,115		88.69% Impervious Area
275		4.50% Unconnected

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

Summary for Subcatchment S7: Summer St/Front of Church

Runoff = 1.07 cfs @ 12.09 hrs, Volume= 0.077 af, Depth> 2.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
3,240	61	>75% Grass cover, Good, HSG B
2,060	98	Roofs, HSG B
630	98	Unconnected pavement, HSG B
9,505	98	Paved roads w/curbs & sewers, HSG B
15,435	90	Weighted Average
3,240		20.99% Pervious Area
12,195		79.01% Impervious Area
630		5.17% Unconnected

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

Summary for Pond D1: MH #1373

Inflow Area = 0.466 ac, 96.51% Impervious, Inflow Depth > 3.26" for 2-Year event
Inflow = 1.45 cfs @ 12.08 hrs, Volume= 0.127 af
Outflow = 1.43 cfs @ 12.11 hrs, Volume= 0.127 af, Atten= 1%, Lag= 1.8 min
Primary = 1.43 cfs @ 12.11 hrs, Volume= 0.127 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 23.80' @ 12.11 hrs Surf.Area= 13 sf Storage= 40 cf

Plug-Flow detention time= 0.4 min calculated for 0.127 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (766.4 - 766.1)

Volume	Invert	Avail.Storage	Storage Description
#1	20.60'	81 cf	**4.00'D x 6.45'H Vertical Cone/Cylinder**
#2	27.05'	46 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		127 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.05	5	0	0
27.50	200	46	46

Device	Routing	Invert	Outlet Devices
#1	Primary	20.60'	**8.0" Round Culvert** L= 176.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.60' / 17.90' S= 0.0153 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf
#2	Secondary	27.05'	**2.0' 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

Primary OutFlow Max=1.41 cfs @ 12.11 hrs HW=23.80' TW=20.24' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.41 cfs @ 4.03 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=20.60' TW=16.04' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond D2: Blind Connection

Inflow Area = 0.598 ac, 95.76% Impervious, Inflow Depth > 3.23" for 2-Year event
Inflow = 1.67 cfs @ 12.07 hrs, Volume= 0.161 af
Outflow = 1.67 cfs @ 12.07 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.0 min
Primary = 1.67 cfs @ 12.07 hrs, Volume= 0.161 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.33' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.90'	**8.0" Round Culvert** L= 122.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.90' / 16.04' S= 0.0152 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf

Primary OutFlow Max=1.66 cfs @ 12.07 hrs HW=20.32' TW=16.71' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.66 cfs @ 4.76 fps)

Summary for Pond D3: MH #1374

Inflow Area = 1.420 ac, 79.41% Impervious, Inflow Depth > 2.69" for 2-Year event
Inflow = 4.19 cfs @ 12.15 hrs, Volume= 0.318 af
Outflow = 3.95 cfs @ 12.15 hrs, Volume= 0.318 af, Atten= 6%, Lag= 0.0 min
Primary = 0.92 cfs @ 12.15 hrs, Volume= 0.059 af
Secondary = 3.03 cfs @ 12.15 hrs, Volume= 0.259 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 16.74' @ 12.15 hrs Surf.Area= 13 sf Storage= 9 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (787.3 - 787.2)

Volume	Invert	Avail.Storage	Storage Description
#1	16.04'	63 cf	**4.00'D x 5.00'H Vertical Cone/Cylinder**
#2	21.04'	47 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		110 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.04	5	0	0
21.50	200	47	47

Device	Routing	Invert	Outlet Devices
#1	Primary	16.04'	**8.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 16.04' / 15.90' S= 0.0140 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf
#2	Secondary	16.04'	**2.0' 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

Primary OutFlow Max=0.90 cfs @ 12.15 hrs HW=16.72' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.90 cfs @ 3.12 fps)

Secondary OutFlow Max=2.94 cfs @ 12.15 hrs HW=16.72' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 2.94 cfs @ 2.15 fps)

Summary for Pond D4: CB #1294

Inflow Area = 0.420 ac, 96.12% Impervious, Inflow Depth > 3.24" for 2-Year event
Inflow = 1.42 cfs @ 12.08 hrs, Volume= 0.113 af
Outflow = 1.40 cfs @ 12.08 hrs, Volume= 0.113 af, Atten= 1%, Lag= 0.0 min
Primary = 1.40 cfs @ 12.08 hrs, Volume= 0.113 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 26.36' @ 12.11 hrs Surf.Area= 13 sf Storage= 33 cf

Plug-Flow detention time= 0.4 min calculated for 0.113 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (768.0 - 767.7)

Volume	Invert	Avail.Storage	Storage Description
#1	23.74'	37 cf	**4.00'D x 2.95'H Vertical Cone/Cylinder**
#2	26.69'	83 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		120 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.69	5	0	0
27.50	200	83	83

Device	Routing	Invert	Outlet Devices
#1	Primary	23.74'	**6.0" Round Culvert** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.74' / 20.90' S= 0.0947 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	26.69'	**2.0' 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

Primary OutFlow Max=1.35 cfs @ 12.08 hrs HW=26.18' TW=23.60' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 1.35 cfs @ 6.87 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=23.74' TW=20.60' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond D5: MH #1372

Inflow Area = 0.047 ac,100.00% Impervious, Inflow Depth > 3.45" for 2-Year event
Inflow = 0.20 cfs @ 12.00 hrs, Volume= 0.013 af
Outflow = 0.21 cfs @ 12.20 hrs, Volume= 0.013 af, Atten= 0%, Lag= 11.8 min
Primary = 0.21 cfs @ 12.20 hrs, Volume= 0.013 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 23.81' @ 12.12 hrs Surf.Area= 13 sf Storage= 30 cf

Plug-Flow detention time= 1.7 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 1.3 min (749.3 - 748.0)

Volume	Invert	Avail.Storage	Storage Description
#1	21.42'	80 cf	**4.00'D x 6.40'H Vertical Cone/Cylinder**
#2	27.80'	72 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		152 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.80	5	0	0
28.50	200	72	72

Device	Routing	Invert	Outlet Devices
#1	Primary	21.42'	**8.0" Round Culvert** L= 89.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.42' / 20.60' S= 0.0092 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf
#2	Secondary	27.82'	**2.0' 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

Primary OutFlow Max=0.69 cfs @ 12.20 hrs HW=22.26' TW=21.82' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.69 cfs @ 2.04 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=21.42' TW=20.60' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond D6: CB #1341

Inflow Area = 0.468 ac, 58.80% Impervious, Inflow Depth > 2.05" for 2-Year event
Inflow = 1.09 cfs @ 12.09 hrs, Volume= 0.080 af
Outflow = 1.74 cfs @ 12.15 hrs, Volume= 0.080 af, Atten= 0%, Lag= 3.7 min
Primary = 1.74 cfs @ 12.15 hrs, Volume= 0.080 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.15' @ 12.14 hrs Surf.Area= 13 sf Storage= 16 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (813.5 - 813.2)

Volume	Invert	Avail.Storage	Storage Description
#1	18.86'	46 cf	**4.00'D x 3.65'H Vertical Cone/Cylinder**
#2	22.51'	50 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		96 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.51	5	0	0
23.00	200	50	50

Device	Routing	Invert	Outlet Devices
#1	Primary	18.86'	**10.0" Round Culvert** L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.86' / 18.00' S= 0.0344 '/' Cc= 0.900 n= 0.015, Flow Area= 0.55 sf
#2	Secondary	22.51'	**2.0' 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

Primary OutFlow Max=0.00 cfs @ 12.15 hrs HW=19.74' TW=20.61' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=18.86' TW=16.04' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond D7: CB #1340

Inflow Area = 0.354 ac, 79.01% Impervious, Inflow Depth > 2.61" for 2-Year event
Inflow = 1.07 cfs @ 12.09 hrs, Volume= 0.077 af
Outflow = 1.28 cfs @ 12.19 hrs, Volume= 0.077 af, Atten= 0%, Lag= 6.2 min
Primary = 1.28 cfs @ 12.19 hrs, Volume= 0.077 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.83' @ 12.18 hrs Surf.Area= 13 sf Storage= 10 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (801.2 - 801.0)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	49 cf	**4.00'D x 3.90'H Vertical Cone/Cylinder**
#2	23.90'	62 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		111 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.90	5	0	0
24.50	200	62	62

Device	Routing	Invert	Outlet Devices
#1	Primary	20.00'	**10.0" Round Culvert** L= 20.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.00' / 18.00' S= 0.1000 '/' Cc= 0.900 n= 0.015, Flow Area= 0.55 sf
#2	Secondary	23.90'	**2.0' 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

Primary OutFlow Max=0.00 cfs @ 12.19 hrs HW=20.67' TW=20.71' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=20.00' TW=16.04' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond P8: Blind Connection

Inflow Area = 0.822 ac, 67.51% Impervious, Inflow Depth > 2.29" for 2-Year event
Inflow = 2.65 cfs @ 12.17 hrs, Volume= 0.157 af
Outflow = 2.65 cfs @ 12.17 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.0 min
Primary = 2.65 cfs @ 12.17 hrs, Volume= 0.157 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 20.82' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.00'	**8.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.00' / 16.04' S= 0.0490 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf

Primary OutFlow Max=2.60 cfs @ 12.17 hrs HW=20.72' TW=16.69' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.60 cfs @ 7.44 fps)

Summary for Link P100: POA #100

Inflow Area = 1.420 ac, 79.41% Impervious, Inflow Depth > 2.69" for 2-Year event
Inflow = 3.95 cfs @ 12.15 hrs, Volume= 0.318 af
Primary = 3.95 cfs @ 12.15 hrs, Volume= 0.318 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment S1: Chuch Parking Lot Runoff Area=16,770 sf 95.77% Impervious Runoff Depth>5.11"
Tc=6.0 min CN=96 Runoff=2.08 cfs 0.164 af

Subcatchment S2: School Roof 2 Runoff Area=2,035 sf 100.00% Impervious Runoff Depth>5.34"
Tc=0.0 min CN=98 Runoff=0.31 cfs 0.021 af

Subcatchment S3: School Roof 3 Runoff Area=5,745 sf 93.12% Impervious Runoff Depth>4.99"
Tc=0.0 min CN=95 Runoff=0.86 cfs 0.055 af

Subcatchment S4: School Roof 4 Runoff Area=1,515 sf 100.00% Impervious Runoff Depth>5.34"
Tc=0.0 min CN=98 Runoff=0.23 cfs 0.015 af

Subcatchment S5: Austin St/Front Church Runoff Area=13,470 sf 43.50% Impervious Runoff Depth>3.11"
Tc=6.0 min CN=77 Runoff=1.13 cfs 0.080 af

Subcatchment S6: Middle Parking Lot Runoff Area=6,895 sf 88.69% Impervious Runoff Depth>4.88"
Tc=6.0 min CN=94 Runoff=0.84 cfs 0.064 af

Subcatchment S7: Summer St/Front of Runoff Area=15,435 sf 79.01% Impervious Runoff Depth>4.43"
Tc=6.0 min CN=90 Runoff=1.77 cfs 0.131 af

Pond D1: MH #1373 Peak Elev=27.31' Storage=97 cf Inflow=2.35 cfs 0.200 af
Primary=1.88 cfs 0.195 af Secondary=0.66 cfs 0.005 af Outflow=2.49 cfs 0.200 af

Pond D2: Blind Connection Peak Elev=23.71' Inflow=2.26 cfs 0.250 af
8.0" Round Culvert n=0.015 L=122.0' S=0.0152 '/' Outflow=2.26 cfs 0.250 af

Pond D3: MH #1374 Peak Elev=17.35' Storage=16 cf Inflow=10.64 cfs 0.530 af
Primary=1.66 cfs 0.103 af Secondary=8.21 cfs 0.427 af Outflow=9.87 cfs 0.530 af

Pond D4: CB #1294 Peak Elev=27.42' Storage=104 cf Inflow=2.19 cfs 0.179 af
Primary=1.31 cfs 0.154 af Secondary=1.89 cfs 0.025 af Outflow=2.20 cfs 0.179 af

Pond D5: MH #1372 Peak Elev=27.32' Storage=74 cf Inflow=0.31 cfs 0.021 af
Primary=0.56 cfs 0.021 af Secondary=0.00 cfs 0.000 af Outflow=0.56 cfs 0.021 af

Pond D6: CB #1341 Peak Elev=22.70' Storage=54 cf Inflow=1.97 cfs 0.145 af
Primary=4.24 cfs 0.144 af Secondary=0.38 cfs 0.000 af Outflow=4.24 cfs 0.144 af

Pond D7: CB #1340 Peak Elev=23.34' Storage=42 cf Inflow=1.77 cfs 0.131 af
Primary=3.88 cfs 0.131 af Secondary=0.00 cfs 0.000 af Outflow=3.88 cfs 0.131 af

Pond P8: Blind Connection Peak Elev=53.40' Inflow=8.12 cfs 0.275 af
8.0" Round Culvert n=0.015 L=40.0' S=0.0490 '/' Outflow=8.12 cfs 0.275 af

Link P100: POA #100 Inflow=9.87 cfs 0.530 af
Primary=9.87 cfs 0.530 af

Summary for Subcatchment S1: Chuch Parking Lot

Runoff = 2.08 cfs @ 12.08 hrs, Volume= 0.164 af, Depth> 5.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
900	98	Roofs, HSG B
710	61	>75% Grass cover, Good, HSG B
12,070	98	Paved parking, HSG B
3,090	98	Paved roads w/curbs & sewers, HSG B
16,770	96	Weighted Average
710		4.23% Pervious Area
16,060		95.77% Impervious Area

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

Summary for Subcatchment S2: School Roof 2

Runoff = 0.31 cfs @ 12.00 hrs, Volume= 0.021 af, Depth> 5.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
1,820	98	Roofs, HSG B
215	98	Unconnected pavement, HSG B
2,035	98	Weighted Average
2,035		100.00% Impervious Area
215		10.57% Unconnected

Summary for Subcatchment S3: School Roof 3

Runoff = 0.86 cfs @ 12.00 hrs, Volume= 0.055 af, Depth> 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
4,595	98	Roofs, HSG B
755	98	Unconnected pavement, HSG B
395	61	>75% Grass cover, Good, HSG B
5,745	95	Weighted Average
395		6.88% Pervious Area
5,350		93.12% Impervious Area
755		14.11% Unconnected

Summary for Subcatchment S4: School Roof 4

Runoff = 0.23 cfs @ 12.00 hrs, Volume= 0.015 af, Depth> 5.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
1,195	98	Roofs, HSG B
320	98	Unconnected pavement, HSG B
1,515	98	Weighted Average
1,515		100.00% Impervious Area
320		21.12% Unconnected

Summary for Subcatchment S5: Austin St/Front Church

Runoff = 1.13 cfs @ 12.09 hrs, Volume= 0.080 af, Depth> 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
4,195	98	Roofs, HSG B
7,610	61	>75% Grass cover, Good, HSG B
1,665	98	Unconnected pavement, HSG B
13,470	77	Weighted Average
7,610		56.50% Pervious Area
5,860		43.50% Impervious Area
1,665		28.41% Unconnected

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

Summary for Subcatchment S6: Middle Parking Lot

Runoff = 0.84 cfs @ 12.08 hrs, Volume= 0.064 af, Depth> 4.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
2,020	98	Roofs, HSG B
780	61	>75% Grass cover, Good, HSG B
275	98	Unconnected pavement, HSG B
3,820	98	Paved roads w/curbs & sewers, HSG B
6,895	94	Weighted Average
780		11.31% Pervious Area
6,115		88.69% Impervious Area
275		4.50% Unconnected

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

Summary for Subcatchment S7: Summer St/Front of Church

Runoff = 1.77 cfs @ 12.08 hrs, Volume= 0.131 af, Depth> 4.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
3,240	61	>75% Grass cover, Good, HSG B
2,060	98	Roofs, HSG B
630	98	Unconnected pavement, HSG B
9,505	98	Paved roads w/curbs & sewers, HSG B
15,435	90	Weighted Average
3,240		20.99% Pervious Area
12,195		79.01% Impervious Area
630		5.17% Unconnected

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

Summary for Pond D1: MH #1373

Inflow Area = 0.466 ac, 96.51% Impervious, Inflow Depth > 5.15" for 10-Year event
Inflow = 2.35 cfs @ 12.09 hrs, Volume= 0.200 af
Outflow = 2.49 cfs @ 12.10 hrs, Volume= 0.200 af, Atten= 0%, Lag= 0.6 min
Primary = 1.88 cfs @ 12.12 hrs, Volume= 0.195 af
Secondary = 0.66 cfs @ 12.09 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 27.31' @ 12.09 hrs Surf.Area= 128 sf Storage= 97 cf

Plug-Flow detention time= 0.4 min calculated for 0.200 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (756.8 - 756.5)

Volume	Invert	Avail.Storage	Storage Description
#1	20.60'	81 cf	**4.00'D x 6.45'H Vertical Cone/Cylinder**
#2	27.05'	46 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		127 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.05	5	0	0
27.50	200	46	46

Device	Routing	Invert	Outlet Devices
#1	Primary	20.60'	**8.0" Round Culvert** L= 176.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.60' / 17.90' S= 0.0153 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf
#2	Secondary	27.05'	**2.0' 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

Primary OutFlow Max=1.44 cfs @ 12.12 hrs HW=27.28' TW=23.54' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.44 cfs @ 4.13 fps)

Secondary OutFlow Max=0.65 cfs @ 12.09 hrs HW=27.30' TW=17.10' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.65 cfs @ 1.28 fps)

Summary for Pond D2: Blind Connection

Inflow Area = 0.598 ac, 95.76% Impervious, Inflow Depth > 5.02" for 10-Year event
Inflow = 2.26 cfs @ 12.04 hrs, Volume= 0.250 af
Outflow = 2.26 cfs @ 12.04 hrs, Volume= 0.250 af, Atten= 0%, Lag= 0.0 min
Primary = 2.26 cfs @ 12.04 hrs, Volume= 0.250 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 23.71' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.90'	**8.0" Round Culvert** L= 122.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.90' / 16.04' S= 0.0152 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf

Primary OutFlow Max=2.25 cfs @ 12.04 hrs HW=23.47' TW=16.86' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.25 cfs @ 6.44 fps)

Summary for Pond D3: MH #1374

Inflow Area = 1.420 ac, 79.41% Impervious, Inflow Depth > 4.48" for 10-Year event
Inflow = 10.64 cfs @ 12.07 hrs, Volume= 0.530 af
Outflow = 9.87 cfs @ 12.07 hrs, Volume= 0.530 af, Atten= 7%, Lag= 0.0 min
Primary = 1.66 cfs @ 12.07 hrs, Volume= 0.103 af
Secondary = 8.21 cfs @ 12.07 hrs, Volume= 0.427 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 17.35' @ 12.07 hrs Surf.Area= 13 sf Storage= 16 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (776.4 - 776.3)

Volume	Invert	Avail.Storage	Storage Description
#1	16.04'	63 cf	**4.00'D x 5.00'H Vertical Cone/Cylinder**
#2	21.04'	47 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		110 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.04	5	0	0
21.50	200	47	47

Device	Routing	Invert	Outlet Devices
#1	Primary	16.04'	**8.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 16.04' / 15.90' S= 0.0140 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf
#2	Secondary	16.04'	**2.0' 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

Primary OutFlow Max=1.64 cfs @ 12.07 hrs HW=17.32' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.64 cfs @ 4.68 fps)

Secondary OutFlow Max=8.06 cfs @ 12.07 hrs HW=17.34' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 8.06 cfs @ 3.11 fps)

Summary for Pond D4: CB #1294

Inflow Area = 0.420 ac, 96.12% Impervious, Inflow Depth > 5.12" for 10-Year event
Inflow = 2.19 cfs @ 12.08 hrs, Volume= 0.179 af
Outflow = 2.20 cfs @ 12.09 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.7 min
Primary = 1.31 cfs @ 11.99 hrs, Volume= 0.154 af
Secondary = 1.89 cfs @ 12.09 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 27.42' @ 12.11 hrs Surf.Area= 192 sf Storage= 104 cf

Plug-Flow detention time= 0.5 min calculated for 0.179 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (758.1 - 757.7)

Volume	Invert	Avail.Storage	Storage Description
#1	23.74'	37 cf	**4.00'D x 2.95'H Vertical Cone/Cylinder**
#2	26.69'	83 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		120 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.69	5	0	0
27.50	200	83	83

Device	Routing	Invert	Outlet Devices
#1	Primary	23.74'	**6.0" Round Culvert** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.74' / 20.90' S= 0.0947 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	26.69'	**2.0' 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

Primary OutFlow Max=1.14 cfs @ 11.99 hrs HW=26.11' TW=24.28' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 1.14 cfs @ 5.79 fps)

Secondary OutFlow Max=1.73 cfs @ 12.09 hrs HW=27.41' TW=27.30' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 1.73 cfs @ 1.20 fps)

Summary for Pond D5: MH #1372

Inflow Area = 0.047 ac,100.00% Impervious, Inflow Depth > 5.34" for 10-Year event
Inflow = 0.31 cfs @ 12.00 hrs, Volume= 0.021 af
Outflow = 0.56 cfs @ 12.25 hrs, Volume= 0.021 af, Atten= 0%, Lag= 15.0 min
Primary = 0.56 cfs @ 12.25 hrs, Volume= 0.021 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 27.32' @ 12.10 hrs Surf.Area= 13 sf Storage= 74 cf

Plug-Flow detention time= 2.3 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 2.1 min (742.7 - 740.7)

Volume	Invert	Avail.Storage	Storage Description
#1	21.42'	80 cf	**4.00'D x 6.40'H Vertical Cone/Cylinder**
#2	27.80'	72 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		152 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.80	5	0	0
28.50	200	72	72

Device	Routing	Invert	Outlet Devices
#1	Primary	21.42'	**8.0" Round Culvert** L= 89.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.42' / 20.60' S= 0.0092 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf
#2	Secondary	27.82'	**2.0' 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

Primary OutFlow Max=0.75 cfs @ 12.25 hrs HW=25.42' TW=24.85' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.75 cfs @ 2.15 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=21.42' TW=20.60' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond D6: CB #1341

Inflow Area = 0.468 ac, 58.80% Impervious, Inflow Depth > 3.71" for 10-Year event
Inflow = 1.97 cfs @ 12.09 hrs, Volume= 0.145 af
Outflow = 4.24 cfs @ 12.07 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.0 min
Primary = 4.24 cfs @ 12.07 hrs, Volume= 0.144 af
Secondary = 0.38 cfs @ 12.06 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 22.70' @ 12.06 hrs Surf.Area= 94 sf Storage= 54 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.2 min (800.2 - 799.9)

Volume	Invert	Avail.Storage	Storage Description
#1	18.86'	46 cf	**4.00'D x 3.65'H Vertical Cone/Cylinder**
#2	22.51'	50 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		96 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.51	5	0	0
23.00	200	50	50

Device	Routing	Invert	Outlet Devices
#1	Primary	18.86'	**10.0" Round Culvert** L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.86' / 18.00' S= 0.0344 '/' Cc= 0.900 n= 0.015, Flow Area= 0.55 sf
#2	Secondary	22.51'	**2.0' 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

Primary OutFlow Max=0.00 cfs @ 12.07 hrs HW=21.88' TW=53.40' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=0.38 cfs @ 12.06 hrs HW=22.69' TW=16.65' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.38 cfs @ 1.07 fps)

Summary for Pond D7: CB #1340

Inflow Area = 0.354 ac, 79.01% Impervious, Inflow Depth > 4.43" for 10-Year event
Inflow = 1.77 cfs @ 12.08 hrs, Volume= 0.131 af
Outflow = 3.88 cfs @ 12.07 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min
Primary = 3.88 cfs @ 12.07 hrs, Volume= 0.131 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 23.34' @ 12.06 hrs Surf.Area= 13 sf Storage= 42 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.2 min (786.7 - 786.5)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	49 cf	**4.00'D x 3.90'H Vertical Cone/Cylinder**
#2	23.90'	62 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		111 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.90	5	0	0
24.50	200	62	62

Device	Routing	Invert	Outlet Devices
#1	Primary	20.00'	**10.0" Round Culvert** L= 20.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.00' / 18.00' S= 0.1000 '/' Cc= 0.900 n= 0.015, Flow Area= 0.55 sf
#2	Secondary	23.90'	**2.0' 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

Primary OutFlow Max=0.00 cfs @ 12.07 hrs HW=22.60' TW=53.40' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=20.00' TW=16.04' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond P8: Blind Connection

Inflow Area = 0.822 ac, 67.51% Impervious, Inflow Depth > 4.02" for 10-Year event
Inflow = 8.12 cfs @ 12.07 hrs, Volume= 0.275 af
Outflow = 8.12 cfs @ 12.07 hrs, Volume= 0.275 af, Atten= 0%, Lag= 0.0 min
Primary = 8.12 cfs @ 12.07 hrs, Volume= 0.275 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 53.40' @ 12.07 hrs

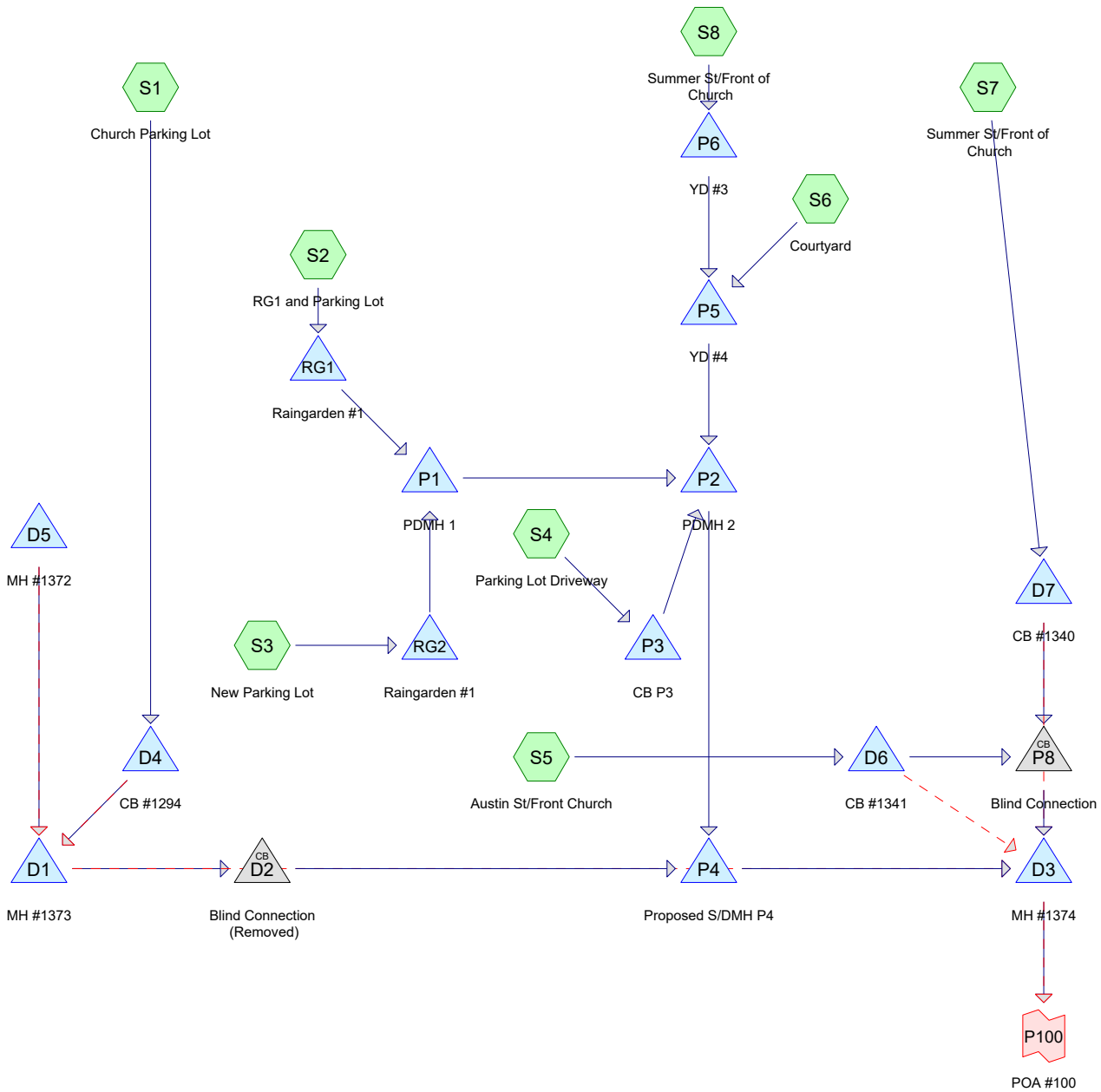
Device	Routing	Invert	Outlet Devices
#1	Primary	18.00'	**8.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.00' / 16.04' S= 0.0490 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf

Primary OutFlow Max=8.05 cfs @ 12.07 hrs HW=53.40' TW=17.35' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 8.05 cfs @ 23.05 fps)

Summary for Link P100: POA #100

Inflow Area = 1.420 ac, 79.41% Impervious, Inflow Depth > 4.48" for 10-Year event
Inflow = 9.87 cfs @ 12.07 hrs, Volume= 0.530 af
Primary = 9.87 cfs @ 12.07 hrs, Volume= 0.530 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for 4957-POST
Prepared by Altus Engineering, Inc., Printed 10/18/2019
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.049	69	50-75% Grass cover, Fair, HSG B (S6)
0.337	61	>75% Grass cover, Good, HSG B (S1, S2, S3, S4, S5, S7, S8)
0.456	98	Paved parking, HSG B (S1, S2, S3, S4)
0.370	98	Paved roads w/curbs & sewers, HSG B (S1, S5, S7)
0.145	98	Roofs, HSG B (S1, S2, S5, S6, S7, S8)
0.062	98	Unconnected pavement, HSG B (S1, S2, S3, S5, S6, S7, S8)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.420	HSG B	S1, S2, S3, S4, S5, S6, S7, S8
0.000	HSG C	
0.000	HSG D	
0.000	Other	

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.049	0.000	0.000	0.000	0.049	50-75% Grass cover, Fair	S6
0.000	0.337	0.000	0.000	0.000	0.337	>75% Grass cover, Good	S1, S2, S3, S4, S5, S7, S8
0.000	0.456	0.000	0.000	0.000	0.456	Paved parking	S1, S2, S3, S4
0.000	0.370	0.000	0.000	0.000	0.370	Paved roads w/curbs & sewers	S1, S5, S7
0.000	0.145	0.000	0.000	0.000	0.145	Roofs	S1, S2, S5, S6, S7, S8
0.000	0.062	0.000	0.000	0.000	0.062	Unconnected pavement	S1, S2, S3, S5, S6, S7, S8

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	D1	20.60	17.90	176.0	0.0153	0.015	8.0	0.0	0.0
2	D2	17.90	17.00	60.0	0.0150	0.015	8.0	0.0	0.0
3	D3	16.04	15.90	10.0	0.0140	0.015	8.0	0.0	0.0
4	D4	23.74	20.90	30.0	0.0947	0.012	6.0	0.0	0.0
5	D5	21.42	20.60	89.0	0.0092	0.015	8.0	0.0	0.0
6	D6	18.86	18.00	25.0	0.0344	0.015	10.0	0.0	0.0
7	D7	20.00	18.00	20.0	0.1000	0.015	10.0	0.0	0.0
8	P1	22.05	21.10	62.0	0.0153	0.012	12.0	0.0	0.0
9	P2	21.00	17.00	52.0	0.0769	0.012	15.0	0.0	0.0
10	P3	18.86	18.00	25.0	0.0344	0.015	10.0	0.0	0.0
11	P4	16.95	16.04	60.0	0.0152	0.015	8.0	0.0	0.0
12	P5	23.20	21.10	25.0	0.0840	0.012	12.0	0.0	0.0
13	P6	29.50	28.00	60.0	0.0250	0.012	12.0	0.0	0.0
14	P8	18.00	16.04	40.0	0.0490	0.015	8.0	0.0	0.0
15	RG1	24.25	23.75	95.0	0.0053	0.012	12.0	0.0	0.0
16	RG2	22.25	22.15	10.0	0.0100	0.012	12.0	0.0	0.0

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment S1: Church Parking Lot Runoff Area=14,450 sf 96.37% Impervious Runoff Depth>3.33"
Tc=6.0 min CN=97 Runoff=1.17 cfs 0.092 af

Subcatchment S2: RG1 and Parking Lot Runoff Area=6,080 sf 47.37% Impervious Runoff Depth>1.71"
Tc=0.0 min CN=79 Runoff=0.34 cfs 0.020 af

Subcatchment S3: New Parking Lot Runoff Area=8,125 sf 75.20% Impervious Runoff Depth>2.52"
Tc=0.0 min CN=89 Runoff=0.67 cfs 0.039 af

Subcatchment S4: Parking Lot Driveway Runoff Area=2,820 sf 74.11% Impervious Runoff Depth>2.43"
Tc=0.0 min CN=88 Runoff=0.22 cfs 0.013 af

Subcatchment S5: Austin St/Front Church Runoff Area=8,560 sf 58.53% Impervious Runoff Depth>2.01"
Tc=6.0 min CN=83 Runoff=0.46 cfs 0.033 af

Subcatchment S6: Courtyard Runoff Area=2,990 sf 27.93% Impervious Runoff Depth>1.50"
Tc=6.0 min UI Adjusted CN=76 Runoff=0.12 cfs 0.009 af

Subcatchment S7: Summer St/Front of Runoff Area=14,895 sf 73.35% Impervious Runoff Depth>2.43"
Tc=6.0 min CN=88 Runoff=0.97 cfs 0.069 af

Subcatchment S8: Summer St/Front of Runoff Area=3,945 sf 82.64% Impervious Runoff Depth>2.81"
Tc=6.0 min CN=92 Runoff=0.29 cfs 0.021 af

Pond D1: MH #1373 Peak Elev=22.55' Storage=24 cf Inflow=1.17 cfs 0.092 af
Primary=1.11 cfs 0.092 af Secondary=0.00 cfs 0.000 af Outflow=1.11 cfs 0.092 af

Pond D2: Blind Connection (Removed) Peak Elev=20.38' Inflow=1.11 cfs 0.092 af
8.0" Round Culvert n=0.015 L=60.0' S=0.0150 '/' Outflow=1.11 cfs 0.092 af

Pond D3: MH #1374 Peak Elev=16.66' Storage=8 cf Inflow=3.35 cfs 0.284 af
Primary=0.79 cfs 0.051 af Secondary=2.56 cfs 0.232 af Outflow=3.35 cfs 0.284 af

Pond D4: CB #1294 Peak Elev=25.52' Storage=22 cf Inflow=1.17 cfs 0.092 af
Primary=1.17 cfs 0.092 af Secondary=0.00 cfs 0.000 af Outflow=1.17 cfs 0.092 af

Pond D5: MH #1372 Peak Elev=0.00' Storage=0 cf
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af

Pond D6: CB #1341 Peak Elev=19.30' Storage=6 cf Inflow=0.46 cfs 0.033 af
Primary=0.46 cfs 0.033 af Secondary=0.00 cfs 0.000 af Outflow=0.46 cfs 0.033 af

Pond D7: CB #1340 Peak Elev=20.55' Storage=7 cf Inflow=0.97 cfs 0.069 af
Primary=0.97 cfs 0.069 af Secondary=0.00 cfs 0.000 af Outflow=0.97 cfs 0.069 af

Pond P1: PDMH 1 Peak Elev=22.35' Storage=4 cf Inflow=0.37 cfs 0.047 af
12.0" Round Culvert n=0.012 L=62.0' S=0.0153 '/' Outflow=0.37 cfs 0.047 af

Pond P2: PDMH 2 Peak Elev=21.45' Storage=13 cf Inflow=0.89 cfs 0.090 af
15.0" Round Culvert n=0.012 L=52.0' S=0.0769 '/' Outflow=0.89 cfs 0.090 af

Pond P3: CB P3 Peak Elev=21.45' Storage=33 cf Inflow=0.22 cfs 0.013 af
10.0" Round Culvert n=0.015 L=25.0' S=0.0344 '/' Outflow=0.22 cfs 0.012 af

Pond P4: Proposed S/DMH P4 Peak Elev=19.47' Storage=32 cf Inflow=1.97 cfs 0.182 af
8.0" Round Culvert n=0.015 L=60.0' S=0.0152 '/' Outflow=1.93 cfs 0.182 af

Pond P5: YD #4 Peak Elev=23.52' Storage=0 cf Inflow=0.41 cfs 0.030 af
12.0" Round Culvert n=0.012 L=25.0' S=0.0840 '/' Outflow=0.41 cfs 0.030 af

Pond P6: YD #3 Peak Elev=29.76' Storage=0 cf Inflow=0.29 cfs 0.021 af
12.0" Round Culvert n=0.012 L=60.0' S=0.0250 '/' Outflow=0.29 cfs 0.021 af

Pond P8: Blind Connection Peak Elev=19.06' Inflow=1.43 cfs 0.102 af
8.0" Round Culvert n=0.015 L=40.0' S=0.0490 '/' Outflow=1.43 cfs 0.102 af

Pond RG1: Raingarden #1 Peak Elev=27.36' Storage=425 cf Inflow=0.34 cfs 0.020 af
Outflow=0.02 cfs 0.015 af

Pond RG2: Raingarden #1 Peak Elev=25.35' Storage=556 cf Inflow=0.67 cfs 0.039 af
Outflow=0.36 cfs 0.032 af

Link P100: POA #100 Inflow=3.35 cfs 0.284 af
Primary=3.35 cfs 0.284 af

Summary for Subcatchment S1: Church Parking Lot

Runoff = 1.17 cfs @ 12.08 hrs, Volume= 0.092 af, Depth> 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
900	98	Roofs, HSG B
525	61	>75% Grass cover, Good, HSG B
9,945	98	Paved parking, HSG B
2,880	98	Paved roads w/curbs & sewers, HSG B
200	98	Unconnected pavement, HSG B
14,450	97	Weighted Average
525		3.63% Pervious Area
13,925		96.37% Impervious Area
200		1.44% Unconnected

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

Summary for Subcatchment S2: RG1 and Parking Lot

Runoff = 0.34 cfs @ 12.00 hrs, Volume= 0.020 af, Depth> 1.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
270	98	Roofs, HSG B
820	98	Unconnected pavement, HSG B
1,790	98	Paved parking, HSG B
3,200	61	>75% Grass cover, Good, HSG B
6,080	79	Weighted Average
3,200		52.63% Pervious Area
2,880		47.37% Impervious Area
820		28.47% Unconnected

Summary for Subcatchment S3: New Parking Lot

Runoff = 0.67 cfs @ 12.00 hrs, Volume= 0.039 af, Depth> 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
50	98	Unconnected pavement, HSG B
6,060	98	Paved parking, HSG B
2,015	61	>75% Grass cover, Good, HSG B
8,125	89	Weighted Average
2,015		24.80% Pervious Area
6,110		75.20% Impervious Area
50		0.82% Unconnected

Summary for Subcatchment S4: Parking Lot Driveway

Runoff = 0.22 cfs @ 12.00 hrs, Volume= 0.013 af, Depth> 2.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
2,090	98	Paved parking, HSG B
730	61	>75% Grass cover, Good, HSG B
2,820	88	Weighted Average
730		25.89% Pervious Area
2,090		74.11% Impervious Area

Summary for Subcatchment S5: Austin St/Front Church

Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.033 af, Depth> 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
765	98	Roofs, HSG B
3,550	61	>75% Grass cover, Good, HSG B
505	98	Unconnected pavement, HSG B
3,740	98	Paved roads w/curbs & sewers, HSG B
8,560	83	Weighted Average
3,550		41.47% Pervious Area
5,010		58.53% Impervious Area
505		10.08% Unconnected

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

Summary for Subcatchment S6: Courtyard

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.009 af, Depth> 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Adj	Description
635	98		Roofs, HSG B
2,155	69		50-75% Grass cover, Fair, HSG B
200	98		Unconnected pavement, HSG B
2,990	77	76	Weighted Average, UI Adjusted
2,155			72.07% Pervious Area
835			27.93% Impervious Area
200			23.95% Unconnected

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

Summary for Subcatchment S7: Summer St/Front of Church

Runoff = 0.97 cfs @ 12.09 hrs, Volume= 0.069 af, Depth> 2.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
3,970	61	>75% Grass cover, Good, HSG B
750	98	Roofs, HSG B
670	98	Unconnected pavement, HSG B
9,505	98	Paved roads w/curbs & sewers, HSG B
14,895	88	Weighted Average
3,970		26.65% Pervious Area
10,925		73.35% Impervious Area
670		6.13% Unconnected

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

Summary for Subcatchment S8: Summer St/Front of Church

Runoff = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af, Depth> 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.68"

Area (sf)	CN	Description
685	61	>75% Grass cover, Good, HSG B
3,010	98	Roofs, HSG B
250	98	Unconnected pavement, HSG B
3,945	92	Weighted Average
685		17.36% Pervious Area
3,260		82.64% Impervious Area
250		7.67% Unconnected

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

Summary for Pond D1: MH #1373

Inflow Area = 0.332 ac, 96.37% Impervious, Inflow Depth > 3.33" for 2-Year event
Inflow = 1.17 cfs @ 12.09 hrs, Volume= 0.092 af
Outflow = 1.11 cfs @ 12.11 hrs, Volume= 0.092 af, Atten= 5%, Lag= 1.2 min
Primary = 1.11 cfs @ 12.11 hrs, Volume= 0.092 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 22.55' @ 12.12 hrs Surf.Area= 13 sf Storage= 24 cf

Plug-Flow detention time= 0.4 min calculated for 0.092 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (762.7 - 762.4)

Volume	Invert	Avail.Storage	Storage Description
#1	20.60'	81 cf	**4.00'D x 6.45'H Vertical Cone/Cylinder**
#2	27.05'	46 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		127 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.05	5	0	0
27.50	200	46	46

Device	Routing	Invert	Outlet Devices
#1	Primary	20.60'	**8.0" Round Culvert** L= 176.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.60' / 17.90' S= 0.0153 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf
#2	Secondary	27.05'	**2.0' 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

Primary OutFlow Max=1.09 cfs @ 12.11 hrs HW=22.51' TW=20.37' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.09 cfs @ 3.12 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=20.60' TW=16.04' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond D2: Blind Connection (Removed)

Inflow Area = 0.332 ac, 96.37% Impervious, Inflow Depth > 3.33" for 2-Year event
Inflow = 1.11 cfs @ 12.11 hrs, Volume= 0.092 af
Outflow = 1.11 cfs @ 12.11 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min
Primary = 1.11 cfs @ 12.11 hrs, Volume= 0.092 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.38' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.90'	**8.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.90' / 17.00' S= 0.0150 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf

Primary OutFlow Max=1.11 cfs @ 12.11 hrs HW=20.37' TW=19.46' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.11 cfs @ 3.17 fps)

Summary for Pond D3: MH #1374

Inflow Area = 1.420 ac, 72.80% Impervious, Inflow Depth > 2.40" for 2-Year event
Inflow = 3.35 cfs @ 12.10 hrs, Volume= 0.284 af
Outflow = 3.35 cfs @ 12.10 hrs, Volume= 0.284 af, Atten= 0%, Lag= 0.1 min
Primary = 0.79 cfs @ 12.10 hrs, Volume= 0.051 af
Secondary = 2.56 cfs @ 12.10 hrs, Volume= 0.232 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 16.66' @ 12.10 hrs Surf.Area= 13 sf Storage= 8 cf

Plug-Flow detention time= 0.1 min calculated for 0.284 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (817.6 - 817.5)

Volume	Invert	Avail.Storage	Storage Description
#1	16.04'	63 cf	**4.00'D x 5.00'H Vertical Cone/Cylinder**
#2	21.04'	47 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		110 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.04	5	0	0
21.50	200	47	47

Device	Routing	Invert	Outlet Devices
#1	Primary	16.04'	**8.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 16.04' / 15.90' S= 0.0140 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf
#2	Secondary	16.04'	**2.0' 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

Primary OutFlow Max=0.79 cfs @ 12.10 hrs HW=16.66' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.79 cfs @ 3.03 fps)

Secondary OutFlow Max=2.55 cfs @ 12.10 hrs HW=16.66' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 2.55 cfs @ 2.06 fps)

Summary for Pond D4: CB #1294

Inflow Area = 0.332 ac, 96.37% Impervious, Inflow Depth > 3.33" for 2-Year event
Inflow = 1.17 cfs @ 12.08 hrs, Volume= 0.092 af
Outflow = 1.17 cfs @ 12.09 hrs, Volume= 0.092 af, Atten= 1%, Lag= 0.5 min
Primary = 1.17 cfs @ 12.09 hrs, Volume= 0.092 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 25.52' @ 12.09 hrs Surf.Area= 13 sf Storage= 22 cf

Plug-Flow detention time= 0.5 min calculated for 0.092 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (762.4 - 762.0)

Volume	Invert	Avail.Storage	Storage Description
#1	23.74'	37 cf	**4.00'D x 2.95'H Vertical Cone/Cylinder**
#2	26.69'	83 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		120 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.69	5	0	0
27.50	200	83	83

Device	Routing	Invert	Outlet Devices
#1	Primary	23.74'	**6.0" Round Culvert** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.74' / 20.90' S= 0.0947 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	26.69'	**2.0' 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

Primary OutFlow Max=1.17 cfs @ 12.09 hrs HW=25.51' TW=22.12' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.17 cfs @ 5.94 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=23.74' TW=20.60' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond D5: MH #1372

Volume	Invert	Avail.Storage	Storage Description
#1	21.42'	80 cf	**4.00'D x 6.40'H Vertical Cone/Cylinder**
#2	27.80'	72 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		152 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.80	5	0	0
28.50	200	72	72

Device	Routing	Invert	Outlet Devices
#1	Primary	21.42'	**8.0" Round Culvert** L= 89.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.42' / 20.60' S= 0.0092 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf
#2	Secondary	27.82'	**2.0' 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

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' TW=20.60' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' TW=20.60' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond D6: CB #1341

Inflow Area = 0.197 ac, 58.53% Impervious, Inflow Depth > 2.01" for 2-Year event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.033 af
Outflow = 0.46 cfs @ 12.09 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.2 min
Primary = 0.46 cfs @ 12.09 hrs, Volume= 0.033 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 19.30' @ 12.10 hrs Surf.Area= 13 sf Storage= 6 cf

Plug-Flow detention time= 0.5 min calculated for 0.033 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (826.1 - 825.8)

Volume	Invert	Avail.Storage	Storage Description
#1	18.86'	46 cf	**4.00'D x 3.65'H Vertical Cone/Cylinder**
#2	22.51'	50 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		96 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.51	5	0	0
23.00	200	50	50

Device	Routing	Invert	Outlet Devices
#1	Primary	18.86'	**10.0" Round Culvert** L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.86' / 18.00' S= 0.0344 '/' Cc= 0.900 n= 0.015, Flow Area= 0.55 sf
#2	Secondary	22.51'	**2.0' 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

Primary OutFlow Max=0.46 cfs @ 12.09 hrs HW=19.30' TW=19.05' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.46 cfs @ 2.26 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=18.86' TW=16.04' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond D7: CB #1340

Inflow Area = 0.342 ac, 73.35% Impervious, Inflow Depth > 2.43" for 2-Year event
Inflow = 0.97 cfs @ 12.09 hrs, Volume= 0.069 af
Outflow = 0.97 cfs @ 12.09 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.1 min
Primary = 0.97 cfs @ 12.09 hrs, Volume= 0.069 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.55' @ 12.09 hrs Surf.Area= 13 sf Storage= 7 cf

Plug-Flow detention time= 0.4 min calculated for 0.069 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (809.0 - 808.8)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	49 cf	**4.00'D x 3.90'H Vertical Cone/Cylinder**
#2	23.90'	62 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		111 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.90	5	0	0
24.50	200	62	62

Device	Routing	Invert	Outlet Devices
#1	Primary	20.00'	**10.0" Round Culvert** L= 20.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.00' / 18.00' S= 0.1000 '/' Cc= 0.900 n= 0.015, Flow Area= 0.55 sf

#2	Secondary	23.90'	**2.0' 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

Primary OutFlow Max=0.97 cfs @ 12.09 hrs HW=20.55' TW=19.05' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.97 cfs @ 2.53 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=20.00' TW=16.04' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond P1: PDMH 1

Inflow Area = 0.326 ac, 63.29% Impervious, Inflow Depth > 1.75" for 2-Year event
Inflow = 0.37 cfs @ 12.08 hrs, Volume= 0.047 af
Outflow = 0.37 cfs @ 12.08 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.1 min
Primary = 0.37 cfs @ 12.08 hrs, Volume= 0.047 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 22.35' @ 12.08 hrs Surf.Area= 13 sf Storage= 4 cf

Plug-Flow detention time= 0.5 min calculated for 0.047 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (934.6 - 934.3)

Volume	Invert	Avail.Storage	Storage Description
#1	22.05'	57 cf	**4.00'D x 4.55'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	22.05'	**12.0" Round Culvert** L= 62.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.05' / 21.10' S= 0.0153 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.37 cfs @ 12.08 hrs HW=22.35' TW=21.44' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.37 cfs @ 1.86 fps)

Summary for Pond P2: PDMH 2

Inflow Area = 0.550 ac, 63.33% Impervious, Inflow Depth > 1.96" for 2-Year event
Inflow = 0.89 cfs @ 12.08 hrs, Volume= 0.090 af
Outflow = 0.89 cfs @ 12.08 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.2 min
Primary = 0.89 cfs @ 12.08 hrs, Volume= 0.090 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 21.45' @ 12.08 hrs Surf.Area= 28 sf Storage= 13 cf

Plug-Flow detention time= 0.8 min calculated for 0.090 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (876.8 - 876.4)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	136 cf	**6.00'D x 4.80'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	21.00'	**15.0" Round Culvert** L= 52.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.00' / 17.00' S= 0.0769 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.89 cfs @ 12.08 hrs HW=21.44' TW=19.41' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.89 cfs @ 2.27 fps)

Summary for Pond P3: CB P3

Inflow Area = 0.065 ac, 74.11% Impervious, Inflow Depth > 2.43" for 2-Year event
Inflow = 0.22 cfs @ 12.00 hrs, Volume= 0.013 af
Outflow = 0.22 cfs @ 12.00 hrs, Volume= 0.012 af, Atten= 2%, Lag= 0.0 min
Primary = 0.22 cfs @ 12.00 hrs, Volume= 0.012 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 21.45' @ 12.09 hrs Surf.Area= 13 sf Storage= 33 cf

Plug-Flow detention time= 41.9 min calculated for 0.012 af (95% of inflow)
Center-of-Mass det. time= 14.4 min (818.2 - 803.9)

Volume	Invert	Avail.Storage	Storage Description
#1	18.86'	46 cf	**4.00'D x 3.65'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	18.86'	**10.0" Round Culvert** L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.86' / 18.00' S= 0.0344 '/' Cc= 0.900 n= 0.015, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.00 hrs HW=21.32' TW=21.32' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond P4: Proposed S/DMH P4

Inflow Area = 0.882 ac, 75.76% Impervious, Inflow Depth > 2.47" for 2-Year event
Inflow = 1.97 cfs @ 12.07 hrs, Volume= 0.182 af
Outflow = 1.93 cfs @ 12.11 hrs, Volume= 0.182 af, Atten= 2%, Lag= 2.2 min
Primary = 1.93 cfs @ 12.11 hrs, Volume= 0.182 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 19.47' @ 12.11 hrs Surf.Area= 13 sf Storage= 32 cf

Plug-Flow detention time= 0.3 min calculated for 0.182 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (819.2 - 819.0)

Volume	Invert	Avail.Storage	Storage Description
#1	16.95'	89 cf	**4.00'D x 7.10'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	16.95'	**8.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 16.95' / 16.04' S= 0.0152 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf

Primary OutFlow Max=1.93 cfs @ 12.11 hrs HW=19.47' TW=16.66' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.93 cfs @ 5.53 fps)

Summary for Pond P5: YD #4

Inflow Area = 0.159 ac, 59.05% Impervious, Inflow Depth > 2.24" for 2-Year event
Inflow = 0.41 cfs @ 12.09 hrs, Volume= 0.030 af
Outflow = 0.41 cfs @ 12.09 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min
Primary = 0.41 cfs @ 12.09 hrs, Volume= 0.030 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 23.52' @ 12.09 hrs Surf.Area= 1 sf Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 0.030 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (808.0 - 808.0)

Volume	Invert	Avail.Storage	Storage Description
#1	23.20'	7 cf	**1.00'D x 8.30'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	23.20'	**12.0" Round Culvert** L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.20' / 21.10' S= 0.0840 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.41 cfs @ 12.09 hrs HW=23.52' TW=21.44' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.41 cfs @ 1.91 fps)

Summary for Pond P6: YD #3

Inflow Area = 0.091 ac, 82.64% Impervious, Inflow Depth > 2.81" for 2-Year event
Inflow = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af
Outflow = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
Primary = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 29.76' @ 12.09 hrs Surf.Area= 1 sf Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (792.2 - 792.2)

Volume	Invert	Avail.Storage	Storage Description
#1	29.50'	5 cf	**1.00'D x 7.00'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	29.50'	**12.0" Round Culvert** L= 60.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 29.50' / 28.00' S= 0.0250 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.29 cfs @ 12.09 hrs HW=29.76' TW=23.52' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.29 cfs @ 1.75 fps)

Summary for Pond P8: Blind Connection

Inflow Area = 0.538 ac, 67.94% Impervious, Inflow Depth > 2.28" for 2-Year event
Inflow = 1.43 cfs @ 12.09 hrs, Volume= 0.102 af
Outflow = 1.43 cfs @ 12.09 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min
Primary = 1.43 cfs @ 12.09 hrs, Volume= 0.102 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 19.06' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.00'	**8.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.00' / 16.04' S= 0.0490 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf

Primary OutFlow Max=1.43 cfs @ 12.09 hrs HW=19.06' TW=16.66' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.43 cfs @ 4.09 fps)

Summary for Pond RG1: Raingarden #1

Inflow Area = 0.140 ac, 47.37% Impervious, Inflow Depth > 1.71" for 2-Year event
Inflow = 0.34 cfs @ 12.00 hrs, Volume= 0.020 af
Outflow = 0.02 cfs @ 13.97 hrs, Volume= 0.015 af, Atten= 94%, Lag= 117.9 min
Primary = 0.02 cfs @ 13.97 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 27.36' @ 13.97 hrs Surf.Area= 316 sf Storage= 425 cf

Plug-Flow detention time= 267.9 min calculated for 0.015 af (76% of inflow)
Center-of-Mass det. time= 179.5 min (1,012.7 - 833.2)

Volume	Invert	Avail.Storage	Storage Description
#1	24.25'	881 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.25	175	0.0	0	0
25.25	175	40.0	70	70
25.50	175	10.0	4	74
27.00	175	100.0	263	337
28.00	570	100.0	373	709
28.25	800	100.0	171	881

Device	Routing	Invert	Outlet Devices
#1	Primary	24.25'	**12.0" Round Culvert** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.25' / 23.75' S= 0.0053 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	27.50'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	24.25'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 18.00'

Primary OutFlow Max=0.02 cfs @ 13.97 hrs HW=27.36' TW=22.16' (Dynamic Tailwater)
↑└─**1=Culvert** (Passes 0.02 cfs of 5.06 cfs potential flow)
  ↑└─**2=Orifice/Grate** (Controls 0.00 cfs)
  └─**3=Exfiltration** (Controls 0.02 cfs)

Summary for Pond RG2: Raingarden #1

Inflow Area = 0.187 ac, 75.20% Impervious, Inflow Depth > 2.52" for 2-Year event
Inflow = 0.67 cfs @ 12.00 hrs, Volume= 0.039 af
Outflow = 0.36 cfs @ 12.08 hrs, Volume= 0.032 af, Atten= 46%, Lag= 4.9 min
Primary = 0.36 cfs @ 12.08 hrs, Volume= 0.032 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 25.35' @ 12.08 hrs Surf.Area= 472 sf Storage= 556 cf

Plug-Flow detention time= 168.1 min calculated for 0.032 af (83% of inflow)
Center-of-Mass det. time= 97.8 min (897.9 - 800.1)

Volume	Invert	Avail.Storage	Storage Description
#1	22.25'	1,011 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.25	225	0.0	0	0
23.25	225	40.0	90	90
23.50	225	10.0	6	96
25.00	225	100.0	338	433
26.00	930	100.0	578	1,011

Device	Routing	Invert	Outlet Devices
#1	Primary	22.25'	**12.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.25' / 22.15' S= 0.0100 '/' Cc= 0.900

			n= 0.012, Flow Area= 0.79 sf
#2	Device 1	25.25'	**12.0" Horiz. Orifice/Grate** C= 0.600
			Limited to weir flow at low heads
#3	Device 1	22.25'	**2.000 in/hr Exfiltration over Surface area**
			Conductivity to Groundwater Elevation = 16.00'

Primary OutFlow Max=0.36 cfs @ 12.08 hrs HW=25.35' TW=22.35' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.36 cfs of 6.10 cfs potential flow)
  ├─**2=Orifice/Grate** (Weir Controls 0.33 cfs @ 1.04 fps)
  └─**3=Exfiltration** (Controls 0.03 cfs)

Summary for Link P100: POA #100

Inflow Area = 1.420 ac, 72.80% Impervious, Inflow Depth > 2.40" for 2-Year event
Inflow = 3.35 cfs @ 12.10 hrs, Volume= 0.284 af
Primary = 3.35 cfs @ 12.10 hrs, Volume= 0.284 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment S1: Church Parking Lot Runoff Area=14,450 sf 96.37% Impervious Runoff Depth>5.22"
Tc=6.0 min CN=97 Runoff=1.80 cfs 0.144 af

Subcatchment S2: RG1 and Parking Lot Runoff Area=6,080 sf 47.37% Impervious Runoff Depth>3.31"
Tc=0.0 min CN=79 Runoff=0.66 cfs 0.038 af

Subcatchment S3: New Parking Lot Runoff Area=8,125 sf 75.20% Impervious Runoff Depth>4.33"
Tc=0.0 min CN=89 Runoff=1.12 cfs 0.067 af

Subcatchment S4: Parking Lot Driveway Runoff Area=2,820 sf 74.11% Impervious Runoff Depth>4.22"
Tc=0.0 min CN=88 Runoff=0.38 cfs 0.023 af

Subcatchment S5: Austin St/Front Church Runoff Area=8,560 sf 58.53% Impervious Runoff Depth>3.70"
Tc=6.0 min CN=83 Runoff=0.85 cfs 0.061 af

Subcatchment S6: Courtyard Runoff Area=2,990 sf 27.93% Impervious Runoff Depth>3.02"
Tc=6.0 min UI Adjusted CN=76 Runoff=0.24 cfs 0.017 af

Subcatchment S7: Summer St/Front of Runoff Area=14,895 sf 73.35% Impervious Runoff Depth>4.22"
Tc=6.0 min CN=88 Runoff=1.64 cfs 0.120 af

Subcatchment S8: Summer St/Front of Runoff Area=3,945 sf 82.64% Impervious Runoff Depth>4.65"
Tc=6.0 min CN=92 Runoff=0.47 cfs 0.035 af

Pond D1: MH #1373 Peak Elev=27.25' Storage=91 cf Inflow=1.95 cfs 0.144 af
Primary=1.31 cfs 0.142 af Secondary=0.47 cfs 0.003 af Outflow=1.69 cfs 0.144 af

Pond D2: Blind Connection (Removed) Peak Elev=24.77' Inflow=1.31 cfs 0.142 af
8.0" Round Culvert n=0.015 L=60.0' S=0.0150 '/' Outflow=1.31 cfs 0.142 af

Pond D3: MH #1374 Peak Elev=17.16' Storage=14 cf Inflow=8.46 cfs 0.489 af
Primary=1.45 cfs 0.094 af Secondary=6.41 cfs 0.395 af Outflow=7.86 cfs 0.489 af

Pond D4: CB #1294 Peak Elev=27.33' Storage=89 cf Inflow=1.80 cfs 0.144 af
Primary=1.33 cfs 0.128 af Secondary=1.61 cfs 0.016 af Outflow=1.95 cfs 0.144 af

Pond D5: MH #1372 Peak Elev=0.00' Storage=0 cf
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af

Pond D6: CB #1341 Peak Elev=20.71' Storage=23 cf Inflow=0.85 cfs 0.061 af
Primary=2.01 cfs 0.061 af Secondary=0.00 cfs 0.000 af Outflow=2.01 cfs 0.061 af

Pond D7: CB #1340 Peak Elev=22.41' Storage=30 cf Inflow=1.64 cfs 0.120 af
Primary=3.07 cfs 0.120 af Secondary=0.00 cfs 0.000 af Outflow=3.07 cfs 0.120 af

Pond P1: PDMH 1 Peak Elev=23.79' Storage=22 cf Inflow=1.23 cfs 0.090 af
12.0" Round Culvert n=0.012 L=62.0' S=0.0153 '/' Outflow=1.20 cfs 0.090 af

Pond P2: PDMH 2 Peak Elev=23.74' Storage=77 cf Inflow=2.14 cfs 0.164 af
15.0" Round Culvert n=0.012 L=52.0' S=0.0769 '/' Outflow=2.05 cfs 0.164 af

Pond P3: CB P3 Peak Elev=23.75' Storage=46 cf Inflow=0.38 cfs 0.023 af
10.0" Round Culvert n=0.015 L=25.0' S=0.0344 '/' Outflow=0.38 cfs 0.022 af

Pond P4: Proposed S/DMH P4 Peak Elev=23.67' Storage=84 cf Inflow=3.34 cfs 0.306 af
8.0" Round Culvert n=0.015 L=60.0' S=0.0152 '/' Outflow=3.02 cfs 0.306 af

Pond P5: YD #4 Peak Elev=23.84' Storage=1 cf Inflow=0.71 cfs 0.052 af
12.0" Round Culvert n=0.012 L=25.0' S=0.0840 '/' Outflow=0.71 cfs 0.052 af

Pond P6: YD #3 Peak Elev=29.84' Storage=0 cf Inflow=0.47 cfs 0.035 af
12.0" Round Culvert n=0.012 L=60.0' S=0.0250 '/' Outflow=0.47 cfs 0.035 af

Pond P8: Blind Connection Peak Elev=31.08' Inflow=5.07 cfs 0.181 af
8.0" Round Culvert n=0.015 L=40.0' S=0.0490 '/' Outflow=5.07 cfs 0.181 af

Pond RG1: Raingarden #1 Peak Elev=27.61' Storage=516 cf Inflow=0.66 cfs 0.038 af
Outflow=0.39 cfs 0.032 af

Pond RG2: Raingarden #1 Peak Elev=25.46' Storage=612 cf Inflow=1.12 cfs 0.067 af
Outflow=1.02 cfs 0.058 af

Link P100: POA #100 Inflow=7.86 cfs 0.489 af
Primary=7.86 cfs 0.489 af

Summary for Subcatchment S1: Church Parking Lot

Runoff = 1.80 cfs @ 12.08 hrs, Volume= 0.144 af, Depth> 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
900	98	Roofs, HSG B
525	61	>75% Grass cover, Good, HSG B
9,945	98	Paved parking, HSG B
2,880	98	Paved roads w/curbs & sewers, HSG B
200	98	Unconnected pavement, HSG B
14,450	97	Weighted Average
525		3.63% Pervious Area
13,925		96.37% Impervious Area
200		1.44% Unconnected

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

Summary for Subcatchment S2: RG1 and Parking Lot

Runoff = 0.66 cfs @ 12.00 hrs, Volume= 0.038 af, Depth> 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
270	98	Roofs, HSG B
820	98	Unconnected pavement, HSG B
1,790	98	Paved parking, HSG B
3,200	61	>75% Grass cover, Good, HSG B
6,080	79	Weighted Average
3,200		52.63% Pervious Area
2,880		47.37% Impervious Area
820		28.47% Unconnected

Summary for Subcatchment S3: New Parking Lot

Runoff = 1.12 cfs @ 12.00 hrs, Volume= 0.067 af, Depth> 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
50	98	Unconnected pavement, HSG B
6,060	98	Paved parking, HSG B
2,015	61	>75% Grass cover, Good, HSG B
8,125	89	Weighted Average
2,015		24.80% Pervious Area
6,110		75.20% Impervious Area
50		0.82% Unconnected

Summary for Subcatchment S4: Parking Lot Driveway

Runoff = 0.38 cfs @ 12.00 hrs, Volume= 0.023 af, Depth> 4.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
2,090	98	Paved parking, HSG B
730	61	>75% Grass cover, Good, HSG B
2,820	88	Weighted Average
730		25.89% Pervious Area
2,090		74.11% Impervious Area

Summary for Subcatchment S5: Austin St/Front Church

Runoff = 0.85 cfs @ 12.09 hrs, Volume= 0.061 af, Depth> 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
765	98	Roofs, HSG B
3,550	61	>75% Grass cover, Good, HSG B
505	98	Unconnected pavement, HSG B
3,740	98	Paved roads w/curbs & sewers, HSG B
8,560	83	Weighted Average
3,550		41.47% Pervious Area
5,010		58.53% Impervious Area
505		10.08% Unconnected

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

Summary for Subcatchment S6: Courtyard

Runoff = 0.24 cfs @ 12.09 hrs, Volume= 0.017 af, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Adj	Description
635	98		Roofs, HSG B
2,155	69		50-75% Grass cover, Fair, HSG B
200	98		Unconnected pavement, HSG B
2,990	77	76	Weighted Average, UI Adjusted
2,155			72.07% Pervious Area
835			27.93% Impervious Area
200			23.95% Unconnected

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

Summary for Subcatchment S7: Summer St/Front of Church

Runoff = 1.64 cfs @ 12.09 hrs, Volume= 0.120 af, Depth> 4.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
3,970	61	>75% Grass cover, Good, HSG B
750	98	Roofs, HSG B
670	98	Unconnected pavement, HSG B
9,505	98	Paved roads w/curbs & sewers, HSG B
14,895	88	Weighted Average
3,970		26.65% Pervious Area
10,925		73.35% Impervious Area
670		6.13% Unconnected

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

Summary for Subcatchment S8: Summer St/Front of Church

Runoff = 0.47 cfs @ 12.08 hrs, Volume= 0.035 af, Depth> 4.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.58"

Area (sf)	CN	Description
685	61	>75% Grass cover, Good, HSG B
3,010	98	Roofs, HSG B
250	98	Unconnected pavement, HSG B
3,945	92	Weighted Average
685		17.36% Pervious Area
3,260		82.64% Impervious Area
250		7.67% Unconnected

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

Summary for Pond D1: MH #1373

Inflow Area = 0.332 ac, 96.37% Impervious, Inflow Depth > 5.22" for 10-Year event
Inflow = 1.95 cfs @ 12.09 hrs, Volume= 0.144 af
Outflow = 1.69 cfs @ 12.10 hrs, Volume= 0.144 af, Atten= 13%, Lag= 0.5 min
Primary = 1.31 cfs @ 12.17 hrs, Volume= 0.142 af
Secondary = 0.47 cfs @ 12.10 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 27.25' @ 12.10 hrs Surf.Area= 106 sf Storage= 91 cf

Plug-Flow detention time= 0.5 min calculated for 0.144 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (753.8 - 753.4)

Volume	Invert	Avail.Storage	Storage Description
#1	20.60'	81 cf	**4.00'D x 6.45'H Vertical Cone/Cylinder**
#2	27.05'	46 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		127 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.05	5	0	0
27.50	200	46	46

Device	Routing	Invert	Outlet Devices
#1	Primary	20.60'	**8.0" Round Culvert** L= 176.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.60' / 17.90' S= 0.0153 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf
#2	Secondary	27.05'	**2.0' 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

Primary OutFlow Max=1.28 cfs @ 12.17 hrs HW=27.11' TW=24.16' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.28 cfs @ 3.67 fps)

Secondary OutFlow Max=0.47 cfs @ 12.10 hrs HW=27.25' TW=16.94' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.47 cfs @ 1.15 fps)

Summary for Pond D2: Blind Connection (Removed)

Inflow Area = 0.332 ac, 96.37% Impervious, Inflow Depth > 5.13" for 10-Year event
Inflow = 1.31 cfs @ 12.17 hrs, Volume= 0.142 af
Outflow = 1.31 cfs @ 12.17 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min
Primary = 1.31 cfs @ 12.17 hrs, Volume= 0.142 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 24.77' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.90'	**8.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.90' / 17.00' S= 0.0150 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf

Primary OutFlow Max=1.44 cfs @ 12.17 hrs HW=24.16' TW=22.63' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.44 cfs @ 4.12 fps)

Summary for Pond D3: MH #1374

Inflow Area = 1.420 ac, 72.80% Impervious, Inflow Depth > 4.13" for 10-Year event
Inflow = 8.46 cfs @ 12.13 hrs, Volume= 0.489 af
Outflow = 7.86 cfs @ 12.13 hrs, Volume= 0.489 af, Atten= 7%, Lag= 0.0 min
Primary = 1.45 cfs @ 12.13 hrs, Volume= 0.094 af
Secondary = 6.41 cfs @ 12.13 hrs, Volume= 0.395 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 17.16' @ 12.13 hrs Surf.Area= 13 sf Storage= 14 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (796.1 - 796.1)

Volume	Invert	Avail.Storage	Storage Description
#1	16.04'	63 cf	**4.00'D x 5.00'H Vertical Cone/Cylinder**
#2	21.04'	47 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		110 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.04	5	0	0
21.50	200	47	47

Device	Routing	Invert	Outlet Devices
#1	Primary	16.04'	**8.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 16.04' / 15.90' S= 0.0140 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf
#2	Secondary	16.04'	**2.0' 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

Primary OutFlow Max=1.45 cfs @ 12.13 hrs HW=17.16' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.45 cfs @ 4.16 fps)

Secondary OutFlow Max=6.39 cfs @ 12.13 hrs HW=17.16' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 6.39 cfs @ 2.84 fps)

Summary for Pond D4: CB #1294

Inflow Area = 0.332 ac, 96.37% Impervious, Inflow Depth > 5.22" for 10-Year event
Inflow = 1.80 cfs @ 12.08 hrs, Volume= 0.144 af
Outflow = 1.95 cfs @ 12.09 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.5 min
Primary = 1.33 cfs @ 12.03 hrs, Volume= 0.128 af
Secondary = 1.61 cfs @ 12.09 hrs, Volume= 0.016 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 27.33' @ 12.12 hrs Surf.Area= 171 sf Storage= 89 cf

Plug-Flow detention time= 0.5 min calculated for 0.144 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (753.4 - 753.0)

Volume	Invert	Avail.Storage	Storage Description
#1	23.74'	37 cf	**4.00'D x 2.95'H Vertical Cone/Cylinder**
#2	26.69'	83 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		120 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.69	5	0	0
27.50	200	83	83

Device	Routing	Invert	Outlet Devices
#1	Primary	23.74'	**6.0" Round Culvert** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.74' / 20.90' S= 0.0947 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	26.69'	**2.0' 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

Primary OutFlow Max=1.10 cfs @ 12.03 hrs HW=26.09' TW=24.37' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 1.10 cfs @ 5.61 fps)

Secondary OutFlow Max=1.11 cfs @ 12.09 hrs HW=27.27' TW=27.21' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 1.11 cfs @ 0.96 fps)

Summary for Pond D5: MH #1372

Volume	Invert	Avail.Storage	Storage Description
#1	21.42'	80 cf	**4.00'D x 6.40'H Vertical Cone/Cylinder**
#2	27.80'	72 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		152 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.80	5	0	0
28.50	200	72	72

Device	Routing	Invert	Outlet Devices
#1	Primary	21.42'	**8.0" Round Culvert** L= 89.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.42' / 20.60' S= 0.0092 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf
#2	Secondary	27.82'	**2.0' 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

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' TW=20.60' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' TW=20.60' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond D6: CB #1341

Inflow Area = 0.197 ac, 58.53% Impervious, Inflow Depth > 3.70" for 10-Year event
Inflow = 0.85 cfs @ 12.09 hrs, Volume= 0.061 af
Outflow = 2.01 cfs @ 12.13 hrs, Volume= 0.061 af, Atten= 0%, Lag= 2.6 min
Primary = 2.01 cfs @ 12.13 hrs, Volume= 0.061 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.71' @ 12.10 hrs Surf.Area= 13 sf Storage= 23 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (808.7 - 808.4)

Volume	Invert	Avail.Storage	Storage Description
#1	18.86'	46 cf	**4.00'D x 3.65'H Vertical Cone/Cylinder**
#2	22.51'	50 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		96 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.51	5	0	0
23.00	200	50	50

Device	Routing	Invert	Outlet Devices
#1	Primary	18.86'	**10.0" Round Culvert** L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.86' / 18.00' S= 0.0344 '/' Cc= 0.900 n= 0.015, Flow Area= 0.55 sf
#2	Secondary	22.51'	**2.0' 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

Primary OutFlow Max=0.00 cfs @ 12.13 hrs HW=19.86' TW=31.08' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=18.86' TW=16.04' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond D7: CB #1340

Inflow Area = 0.342 ac, 73.35% Impervious, Inflow Depth > 4.22" for 10-Year event
Inflow = 1.64 cfs @ 12.09 hrs, Volume= 0.120 af
Outflow = 3.07 cfs @ 12.13 hrs, Volume= 0.120 af, Atten= 0%, Lag= 2.7 min
Primary = 3.07 cfs @ 12.13 hrs, Volume= 0.120 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 22.41' @ 12.12 hrs Surf.Area= 13 sf Storage= 30 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.2 min (793.6 - 793.4)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	49 cf	**4.00'D x 3.90'H Vertical Cone/Cylinder**
#2	23.90'	62 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		111 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.90	5	0	0
24.50	200	62	62

Device	Routing	Invert	Outlet Devices
#1	Primary	20.00'	**10.0" Round Culvert** L= 20.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.00' / 18.00' S= 0.1000 '/' Cc= 0.900 n= 0.015, Flow Area= 0.55 sf

#2	Secondary	23.90'	**2.0' 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

Primary OutFlow Max=0.00 cfs @ 12.13 hrs HW=21.79' TW=30.77' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=20.00' TW=16.04' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond P1: PDMH 1

Inflow Area = 0.326 ac, 63.29% Impervious, Inflow Depth > 3.31" for 10-Year event
Inflow = 1.23 cfs @ 12.06 hrs, Volume= 0.090 af
Outflow = 1.20 cfs @ 12.05 hrs, Volume= 0.090 af, Atten= 2%, Lag= 0.0 min
Primary = 1.20 cfs @ 12.05 hrs, Volume= 0.090 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 23.79' @ 12.11 hrs Surf.Area= 13 sf Storage= 22 cf

Plug-Flow detention time= 0.4 min calculated for 0.090 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (857.4 - 857.1)

Volume	Invert	Avail.Storage	Storage Description
#1	22.05'	57 cf	**4.00'D x 4.55'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	22.05'	**12.0" Round Culvert** L= 62.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.05' / 21.10' S= 0.0153 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.62 cfs @ 12.05 hrs HW=22.72' TW=22.59' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.62 cfs @ 1.59 fps)

Summary for Pond P2: PDMH 2

Inflow Area = 0.550 ac, 63.33% Impervious, Inflow Depth > 3.59" for 10-Year event
Inflow = 2.14 cfs @ 12.07 hrs, Volume= 0.164 af
Outflow = 2.05 cfs @ 12.20 hrs, Volume= 0.164 af, Atten= 4%, Lag= 7.9 min
Primary = 2.05 cfs @ 12.20 hrs, Volume= 0.164 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 23.74' @ 12.10 hrs Surf.Area= 28 sf Storage= 77 cf

Plug-Flow detention time= 0.6 min calculated for 0.164 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (829.9 - 829.5)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	136 cf	**6.00'D x 4.80'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	21.00'	**15.0" Round Culvert** L= 52.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.00' / 17.00' S= 0.0769 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.81 cfs @ 12.20 hrs HW=22.45' TW=22.22' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.81 cfs @ 2.29 fps)

Summary for Pond P3: CB P3

Inflow Area = 0.065 ac, 74.11% Impervious, Inflow Depth > 4.22" for 10-Year event
Inflow = 0.38 cfs @ 12.00 hrs, Volume= 0.023 af
Outflow = 0.38 cfs @ 12.24 hrs, Volume= 0.022 af, Atten= 0%, Lag= 14.3 min
Primary = 0.38 cfs @ 12.24 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 23.75' @ 12.11 hrs Surf.Area= 13 sf Storage= 46 cf

Plug-Flow detention time= 28.1 min calculated for 0.022 af (97% of inflow)
Center-of-Mass det. time= 10.3 min (798.8 - 788.4)

Volume	Invert	Avail.Storage	Storage Description
#1	18.86'	46 cf	**4.00'D x 3.65'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	18.86'	**10.0" Round Culvert** L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.86' / 18.00' S= 0.0344 '/' Cc= 0.900 n= 0.015, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 12.24 hrs HW=21.86' TW=21.88' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond P4: Proposed S/DMH P4

Inflow Area = 0.882 ac, 75.76% Impervious, Inflow Depth > 4.16" for 10-Year event
Inflow = 3.34 cfs @ 12.20 hrs, Volume= 0.306 af
Outflow = 3.02 cfs @ 12.09 hrs, Volume= 0.306 af, Atten= 10%, Lag= 0.0 min
Primary = 3.02 cfs @ 12.09 hrs, Volume= 0.306 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 23.67' @ 12.09 hrs Surf.Area= 13 sf Storage= 84 cf

Plug-Flow detention time= 0.3 min calculated for 0.306 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (795.1 - 794.9)

Volume	Invert	Avail.Storage	Storage Description
#1	16.95'	89 cf	**4.00'D x 7.10'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	16.95'	**8.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 16.95' / 16.04' S= 0.0152 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf

Primary OutFlow Max=3.01 cfs @ 12.09 hrs HW=23.66' TW=16.96' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.01 cfs @ 8.62 fps)

Summary for Pond P5: YD #4

Inflow Area = 0.159 ac, 59.05% Impervious, Inflow Depth > 3.95" for 10-Year event
Inflow = 0.71 cfs @ 12.09 hrs, Volume= 0.052 af
Outflow = 0.71 cfs @ 12.08 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 12.08 hrs, Volume= 0.052 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 23.84' @ 12.11 hrs Surf.Area= 1 sf Storage= 1 cf

Plug-Flow detention time= 0.0 min calculated for 0.052 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (794.5 - 794.5)

Volume	Invert	Avail.Storage	Storage Description
#1	23.20'	7 cf	**1.00'D x 8.30'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	23.20'	**12.0" Round Culvert** L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.20' / 21.10' S= 0.0840 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.42 cfs @ 12.08 hrs HW=23.68' TW=23.58' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.42 cfs @ 1.64 fps)

Summary for Pond P6: YD #3

Inflow Area = 0.091 ac, 82.64% Impervious, Inflow Depth > 4.65" for 10-Year event
Inflow = 0.47 cfs @ 12.08 hrs, Volume= 0.035 af
Outflow = 0.47 cfs @ 12.08 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.47 cfs @ 12.08 hrs, Volume= 0.035 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 29.84' @ 12.08 hrs Surf.Area= 1 sf Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 0.035 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (778.8 - 778.7)

Volume	Invert	Avail.Storage	Storage Description
#1	29.50'	5 cf	**1.00'D x 7.00'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	29.50'	**12.0" Round Culvert** L= 60.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 29.50' / 28.00' S= 0.0250 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.47 cfs @ 12.08 hrs HW=29.84' TW=23.69' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.47 cfs @ 1.98 fps)

Summary for Pond P8: Blind Connection

Inflow Area = 0.538 ac, 67.94% Impervious, Inflow Depth > 4.03" for 10-Year event
Inflow = 5.07 cfs @ 12.13 hrs, Volume= 0.181 af
Outflow = 5.07 cfs @ 12.13 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min
Primary = 5.07 cfs @ 12.13 hrs, Volume= 0.181 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 31.08' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.00'	**8.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.00' / 16.04' S= 0.0490 '/' Cc= 0.900 n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 0.35 sf

Primary OutFlow Max=4.97 cfs @ 12.13 hrs HW=30.90' TW=17.16' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.97 cfs @ 14.23 fps)

Summary for Pond RG1: Raingarden #1

Inflow Area = 0.140 ac, 47.37% Impervious, Inflow Depth > 3.31" for 10-Year event
Inflow = 0.66 cfs @ 12.00 hrs, Volume= 0.038 af
Outflow = 0.39 cfs @ 12.08 hrs, Volume= 0.032 af, Atten= 42%, Lag= 4.4 min
Primary = 0.39 cfs @ 12.08 hrs, Volume= 0.032 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 27.61' @ 12.08 hrs Surf.Area= 415 sf Storage= 516 cf

Plug-Flow detention time= 158.7 min calculated for 0.032 af (82% of inflow)
Center-of-Mass det. time= 86.3 min (900.5 - 814.2)

Volume	Invert	Avail.Storage	Storage Description
#1	24.25'	881 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.25	175	0.0	0	0
25.25	175	40.0	70	70
25.50	175	10.0	4	74
27.00	175	100.0	263	337
28.00	570	100.0	373	709
28.25	800	100.0	171	881

Device	Routing	Invert	Outlet Devices
#1	Primary	24.25'	**12.0" Round Culvert** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.25' / 23.75' S= 0.0053 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	27.50'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	24.25'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 18.00'

Primary OutFlow Max=0.38 cfs @ 12.08 hrs HW=27.61' TW=23.19' (Dynamic Tailwater)
↑**1=Culvert** (Passes 0.38 cfs of 5.30 cfs potential flow)
↑**2=Orifice/Grate** (Weir Controls 0.36 cfs @ 1.07 fps)
3=Exfiltration (Controls 0.02 cfs)

Summary for Pond RG2: Raingarden #1

Inflow Area = 0.187 ac, 75.20% Impervious, Inflow Depth > 4.33" for 10-Year event
Inflow = 1.12 cfs @ 12.00 hrs, Volume= 0.067 af
Outflow = 1.02 cfs @ 12.02 hrs, Volume= 0.058 af, Atten= 8%, Lag= 1.0 min
Primary = 1.02 cfs @ 12.02 hrs, Volume= 0.058 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 25.46' @ 12.02 hrs Surf.Area= 550 sf Storage= 612 cf

Plug-Flow detention time= 107.5 min calculated for 0.058 af (87% of inflow)
Center-of-Mass det. time= 48.7 min (833.7 - 785.0)

Volume	Invert	Avail.Storage	Storage Description
#1	22.25'	1,011 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.25	225	0.0	0	0
23.25	225	40.0	90	90
23.50	225	10.0	6	96
25.00	225	100.0	338	433
26.00	930	100.0	578	1,011

Device	Routing	Invert	Outlet Devices
#1	Primary	22.25'	**12.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.25' / 22.15' S= 0.0100 '/' Cc= 0.900

			n= 0.012, Flow Area= 0.79 sf
#2	Device 1	25.25'	**12.0" Horiz. Orifice/Grate** C= 0.600
			Limited to weir flow at low heads
#3	Device 1	22.25'	**2.000 in/hr Exfiltration over Surface area**
			Conductivity to Groundwater Elevation = 16.00'

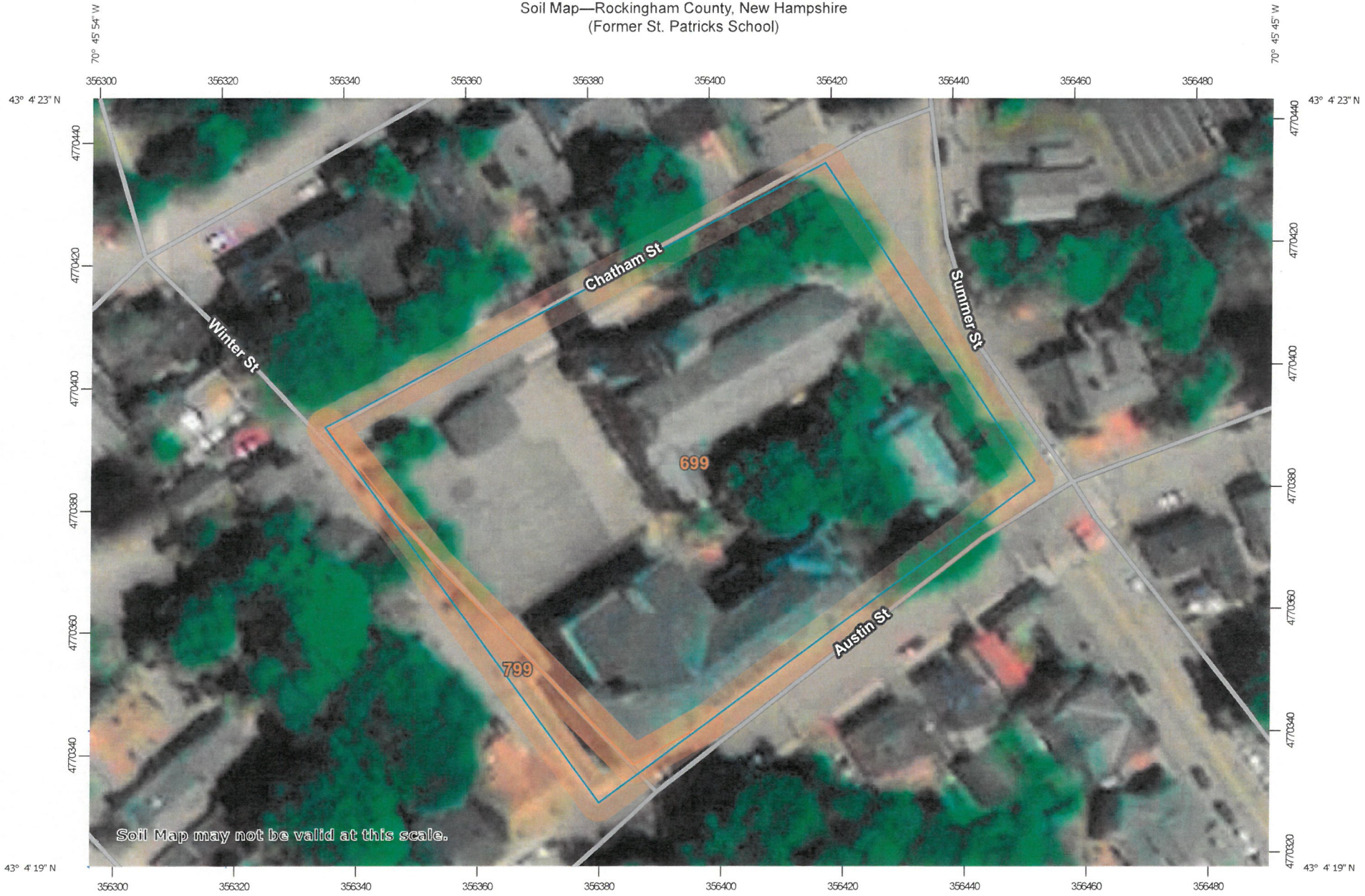
Primary OutFlow Max=1.02 cfs @ 12.02 hrs HW=25.46' TW=22.58' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.02 cfs of 6.23 cfs potential flow)
  ├─**2=Orifice/Grate** (Weir Controls 0.99 cfs @ 1.50 fps)
  └─**3=Exfiltration** (Controls 0.03 cfs)

Summary for Link P100: POA #100

Inflow Area = 1.420 ac, 72.80% Impervious, Inflow Depth > 4.13" for 10-Year event
Inflow = 7.86 cfs @ 12.13 hrs, Volume= 0.489 af
Primary = 7.86 cfs @ 12.13 hrs, Volume= 0.489 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Soil Map—Rockingham County, New Hampshire
(Former St. Patricks School)



Map Scale: 1:886 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 10 20 40 60

Feet
0 40 80 160 240

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 21, Sep 16, 2019

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

Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
699	Urban land	1.5	95.7%
799	Urban land-Canton complex, 3 to 15 percent slopes	0.1	4.3%
Totals for Area of Interest		**1.6**	**100.0%**

Soil Series	legend number	Ksat low - B in/hr	Ksat high - B in/hr	Ksat low - C in/hr	Ksat high - C in/hr	Hyd. Grp.	Group	Land Form	Temp.	Soil Textures	Spodosol ?	Other
Occum	1	0.6	2.0	6.00	20.0	B	2	Flood Plain (Bottom Land)	mesic	loamy	no	loamy over loamy sand
Suncook	2	6.0	20.0	6.00	20.0	A	1	Flood Plain (Bottomland)	mesic	sandy	no	occasionally flooded
Lim	3	0.6	2.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	mesic	loamy	no	
Pootatuck	4	0.6	6.0	6.00	20.0	B	3	Flood Plain (Bottom Land)	mesic	loamy	no	single grain in C
Rippowam	5	0.6	6.0	6.00	20.0	C	5	Flood Plain (Bottom Land)	mesic	loamy	no	
Saco	6	0.6	2.0	6.00	20.0	D	6	Flood Plain (Bottom Land)	mesic	silty	no	strata
Hadley	8	0.6	2.0	0.60	6.0	B	2	Flood Plain (Bottom Land)	mesic	silty	no	strata of fine sand
Winooski	9	0.6	6.0	0.60	6.0	B		Flood Plain (Bottom Land)	mesic	silty over loamy	no	
Merrimac	10	2.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	mesic	gravelly sand	no	loamy cap
Gloucester	11	6.0	20.0	6.00	20.0	A	1	Sandy Till	mesic	sandy-skeletal	no	loamy cap
Hinckley	12	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	mesic	sandy-skeletal	no	
Sheepscot	14	6.0	20.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly coarse sand
Searsport	15	6.0	20.0	6.00	20.0	D	6	Outwash and Stream Terraces	frigid	sandy	no	organic over sand
Saugatuck	16	0.06	0.2	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	yes	ortstein
Colton, gravelly	21	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	gravelly surface
Colton	22	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	
Masardis	23	6.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	frigid	sandy-skeletal	yes	slate, loamy cap
Agawam	24	6.0	20.0	20.00	100.0	B	2	Outwash and Stream Terraces	mesic	loamy over sandy	no	loamy over sand/gravel
Windsor	26	6.0	20.0	6.00	20.0	A	1	Outwash and Stream Terraces	mesic	sandy	no	
Groveton	27	0.6	2.0	0.60	6.0	B	2	Outwash and Stream Terraces	frigid	loamy	yes	loamy over sandy
Madawaska	28	0.6	2.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	loamy over sandy	yes	sandy or sandy-skeletal
Woodbridge	29	0.6	2.0	0.00	0.6	C	3	Firm, platy, loamy till	mesic	loamy	no	sandy loam in Cd
Unadilla	30	0.6	2.0	2.00	20.0	B	2	Terraces and glacial lake plains	mesic	silty	no	silty over gravelly
Hartland	31	0.6	2.0	0.20	2.0	B	2	Terraces and glacial lake plains	mesic	silty	no	very fine sandy loam
Boxford	32	0.1	0.2	0.00	0.2	C	3	Silt and Clay Deposits	mesic	fine	no	silty clay loam
Scitico	33	0.0	0.2	0.00	0.2	C	5	Silt and Clay Deposits	mesic	fine	no	
Wareham	34	6.0	20.0	6.00	20.0	C	5	Outwash and Stream Terraces	mesic	sandy	no	
Champlain	35	6.0	20.0	20.00	100.0	A	1	Outwash and Stream Terraces	frigid	gravelly sand	no	
Adams	36	6.0	20.0	20.00	99.0	A	1	Outwash and Stream Terraces	frigid	sandy	yes	
Melrose	37	2.0	6.0	0.00	0.2	C	3	Sandy/loamy over silt/clay	frigid	loamy over clayey	no	silty clay loam in C
Eldridge	38	6.0	20.0	0.06	0.6	C	3	Sandy/loamy over silt/clay	mesic	sandy over loamy	no	
Millis	39					C	3	Firm, platy, sandy till	frigid	loamy	yes	loamy sand in Cd
Canton	42	2.0	6.0	6.00	20.0	B	2	Loose till, sandy textures	mesic	loamy over sandy	no	loamy over loamy sand
Montauk	44	0.6	6.0	0.06	0.6	C	3	Firm, platy, sandy till	mesic	loamy	no	loamy sand in Cd
Henniker	46	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	no	loamy sand in Cd
Madawaska, aquentic	48	0.6	2.0	6.00	20.0	B	3	Outwash and Stream Terraces	frigid	loamy over sandy	yes	sandy or sandy-skeletal
Whitman	49	0.0	0.2	0.00	0.2	D	6	Firm, platy, loamy till	mesic	loamy	no	mucky loam
Hermon	55	2.0	20.0	6.00	20.0	A	1	Sandy Till	frigid	sandy-skeletal	yes	loamy cap
Becket	56	0.6	2.0	0.06	0.6	C	3	Firm, platy, sandy till	frigid	loamy	yes	gravelly sandy loam in Cd
Waumbeck	58	2.0	20.0	6.00	20.0	B	3	Loose till, sandy textures	frigid	sandy-skeletal	yes	very cobbly loamy sand
Charlton	62	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	mesic	loamy	no	fine sandy loam
Paxton	66	0.6	2.0	0.00	0.2	C	3	Firm, platy, loamy till	mesic	loamy	no	
Sutton	68	0.6	6.0	0.60	6.0	B	3	Loose till, loamy textures	mesic	loamy	no	
Berkshire	72	0.6	6.0	0.60	6.0	B	2	Loose till, loamy textures	frigid	loamy	yes	fine sandy loam
Marlow	76	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	fine sandy loam in Cd
Peru	78	0.6	2.0	0.06	0.6	C	3	Firm, platy, loamy till	frigid	loamy	yes	
Thorndike	84	0.6	2.0	0.60	2.0	C/D	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	less than 20 in. deep
Hollis	86	0.6	6.0	0.60	6.0	C/D	4	Loose till, bedrock	mesic	loamy	no	less than 20 in. deep
Winnecook	88	0.6	2.0	0.60	2.0	C	4	Friable till, silty, schist & phyllite	frigid	loamy-skeletal	yes	20 to 40 in. deep
Chatfield	89	0.6	6.0	0.60	6.0	B	4	Loose till, bedrock	mesic	loamy	no	20 to 40 in. deep
Hogback	91	2.0	6.0	2.00	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	less than 20 in. deep
Lyman	92	2.0	6.0	2.00	6.0	A/D	4	Loose till, bedrock	frigid	loamy	yes	less than 20 in. deep
Woodstock	93	2.0	6.0	2.00	6.0	C/D	4	Loose till, bedrock	frigid	loamy	no	less than 20 in. deep
Rawsonville	98	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep
Tunbridge	99	0.6	6.0	0.60	6.0	C	4	Loose till, bedrock	frigid	loamy	yes	20 to 40 in. deep

STORMWATER INSPECTION AND MAINTENANCE MANUAL

Former St. Patrick School

Corpus Christi Parish
98 Summer Street
Portsmouth, NH 03801
Assessor's Map 139, Lot 201

Proper inspection, maintenance, and repair are key elements in maintaining a successful stormwater management program on a developed property. Routine inspections ensure permit compliance and reduce the potential for deterioration of infrastructure or reduced water quality. The following responsible parties shall be in charge of managing the stormwater facilities:

RESPONSIBLE PARTIES:

Owner: _____
Name *Company* *Phone*

Inspection:_____
Name *Company* *Phone*

Maintenance:_____
Name *Company* *Phone*

NOTE: Inspection and maintenance responsibilities transfer to future property owners.

Included in this Inspection and Maintenance Manual are the following components:

- Drainage Features and Site BMP Functions and Maintenance Descriptions
- Inspection and Maintenance Checklist
- Stormwater System Operations and Maintenance Report Form
- Site Grading and Drainage Plan

RAINGARDENS

Function – Raingardens and infiltration ponds provide treatment to runoff prior to directing it to stormwater systems by filtering sediment and suspended solids, trapping them in the bottom of the garden and in the filter media itself. Additional treatment is provided by the native water-tolerant vegetation which removes nutrients and other pollutants through bio-uptake. Stormwater detention and infiltration can also be provided as the filtering process slows runoff, decreases the peak rate of discharge and promotes groundwater recharge.

Detention ponds temporarily store runoff and allow for its controlled release during and after a storm event, decreasing peak rates of runoff and minimizing flooding.

Raingardens, infiltration ponds, and detention ponds shall be managed (Per AGR 3800 and RSA 430:53) to: prevent and control the spread of invasive plant, insect, and fungal species; minimize the adverse environmental and economic effects invasive species cause to agriculture, forests, wetlands, wildlife, and other natural resources of the state; and protect the public from potential health problems attributed to certain invasive species.

Maintenance

- Inspect annually and after significant rainfall event.
- If a raingarden does not completely drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore its filtration and/or infiltration function(s), including but not limited to removal of accumulated sediments and/or replacement or reconstruction of the filter media.
- Replace any riprap dislodged from spillways, inlets and outlets.
- Remove any obstructions, litter and accumulated sediment or debris as warranted but no less than once a year.
- Mowing of any grassed area in or adjacent to a raingarden shall be performed on a monthly basis (when areas are not inundated) to keep the vegetation in vigorous condition. The cut grass shall be removed to prevent the decaying organic litter from clogging the filter media or choking other vegetation.
- Select vegetation should be maintained in healthy condition. This may include pruning, removal and replacement of dead or diseased vegetation.
- Remove any invasive species, Per AGR 3800 and RSA 430:53.

CULVERTS AND DRAINAGE PIPES

Function – Culverts and drainage pipes convey stormwater away from buildings, walkways, and parking areas and to surface waters or closed drainage systems.

Maintenance

- Culverts and drainage pipes shall be inspected semi-annually, or more often as needed, for accumulation of debris and structural integrity. Leaves and other debris shall be removed from the inlet and outlet to insure the functionality of drainage structures. Debris shall be disposed of on site where it will not concentrate back at the drainage structures or at a solid waste disposal facility.

- Riprap Areas - Culvert outlets and inlets shall be inspected during annual maintenance and operations for erosion and scour. If scour or creek erosion is identified, the outlet owner shall take appropriate means to prevent further erosion. Increased lengths of riprap may require a NHDES Wetlands Permit modification.

CATCH BASINS

Function – Catch basins collect stormwater, primarily from paved surfaces and roofs. Stormwater from paved areas often contains sediment and contaminants. Catch basin sumps serve to trap sediment, trace metals, nutrients and debris. Hooded catch basins trap hydrocarbons and floating debris.

Maintenance

- Remove leaves and debris from structure grates on an as-needed basis.

- Sumps shall be inspected and cleaned (as needed) on an annual basis to protect water quality and infiltration capacity. Catch basin debris shall be disposed of at a solid waste disposal facility.

DRIP EDGES

Function – Drip edges are to provide erosion control of surface where impervious surfaces meet non-impervious surfaces, such as building or roadway edges.

Maintenance

- Drip edges should be inspected annually for erosion, rutting, and migration of stone. Any areas experiencing erosion shall be properly maintained by replacing or adding additional stone to the area of concern.

LANDSCAPED AREAS - FERTILIZER MANAGEMENT

Function – Fertilizer management involves controlling the rate, timing and method of fertilizer application so that the nutrients are taken up by the plants thereby reducing the chance of polluting the surface and ground waters. Fertilizer management can be effective in reducing the amounts of phosphorus and nitrogen in runoff from landscaped areas, particularly lawns.

Maintenance

- Have the soil tested by your landscaper or local Soil Conservation Service for nutrient requirements and follow the recommendations.
- Do not apply fertilizer to frozen ground.
- Clean up any fertilizer spills.
- Do not allow fertilizer to be broadcast into water bodies.
- When fertilizing a lawn, water thoroughly, but do not create a situation where water runs off the surface of the lawn.

LANDSCAPED AREAS - LITTER CONTROL

Function – Landscaped areas tend to filter debris and contaminates that may block drainage systems and pollute the surface and ground waters.

Maintenance

- Litter Control and lawn maintenance involves removing litter such as trash, leaves, lawn clippings, pet wastes, oil and chemicals from streets, parking lots, and lawns before materials are transported into surface waters.
- Litter control shall be implemented as part of the grounds maintenance program.

GENERAL CLEAN UP

Upon completion of the project, the contractor shall remove all temporary stormwater structures (i.e., temporary stone check dams, silt fence, temporary diversion swales, catch basin inlet basket, etc.). Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform to the existing grade, prepared, and seeded. Remove any sediment in catch basins and clean drain pipes that may have accumulated during construction.

Once in operation, all paved areas of the site should be swept at least once annually, preferably at the end of winter prior to significant spring rains.

APPENDIX

A. INSPECTION & MAINTENANCE CHECKLIST

B. STORM WATER SYSTEM OPERATION AND MAINTENCE REPORT

C. GRADING AND DRAINAGE PLAN

The Grading and Drainage Plan shall be referenced for storm water system practices and structures required for inspection and annual reporting.

Inspection & Maintenance Checklist

BMP / System	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance/ Cleanout Threshold
Porous Pavers:			
Vacuum Sweeping	Annually	N/A	No ponding of water on porous pavement surface
De-icing Agents	N/A	N/A	**Minimize Sand Use on Porous Pavers**
Closed Drainage System:			
Drainage Pipes	1 time per 2 years	Check for sediment accumulation & clogging.	Less than 2" sediment depth
Catch Basins	Annually	Check for sediment accumulation (Less than 24" sediment), blocked hood, and floating debris.	Clean Sumps. Remove all floating debris.
Drain Manhole	Annually	Check for sediment, debris, and obstructions.	Remove all Obstructions.

BMP / System	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
BMPs:			
Raingardens or Infiltration Pond	Annually	• Check infiltration rates and filter media. • Check for trash & debris. • Check for sediment buildup. • Check for vegetation stability. • Check for excess woody vegetation growth. • Check for invasive species.	Remove trash & debris, sediment, woody vegetation, and invasive species. Side slopes and berm are to be mowed. Replant vegetation if required.
Vegetated Swale	Annually	Check for sediment buildup, vegetation loss and invasive species, debris, and damage.	Remove sediment, debris and invasive species, repair damage, and mow grass monthly to a depth of 4 inches.
Riprap Outlet Protection	Annually	Check for sediment buildup and structure damage.	Remove excess sediment and repair damage.
Litter & Trash Removal	Routinely	N/A	Parcel will be free of litter/trash.

STORM WATER SYSTEM OPERATION AND MAINTENANCE REPORT

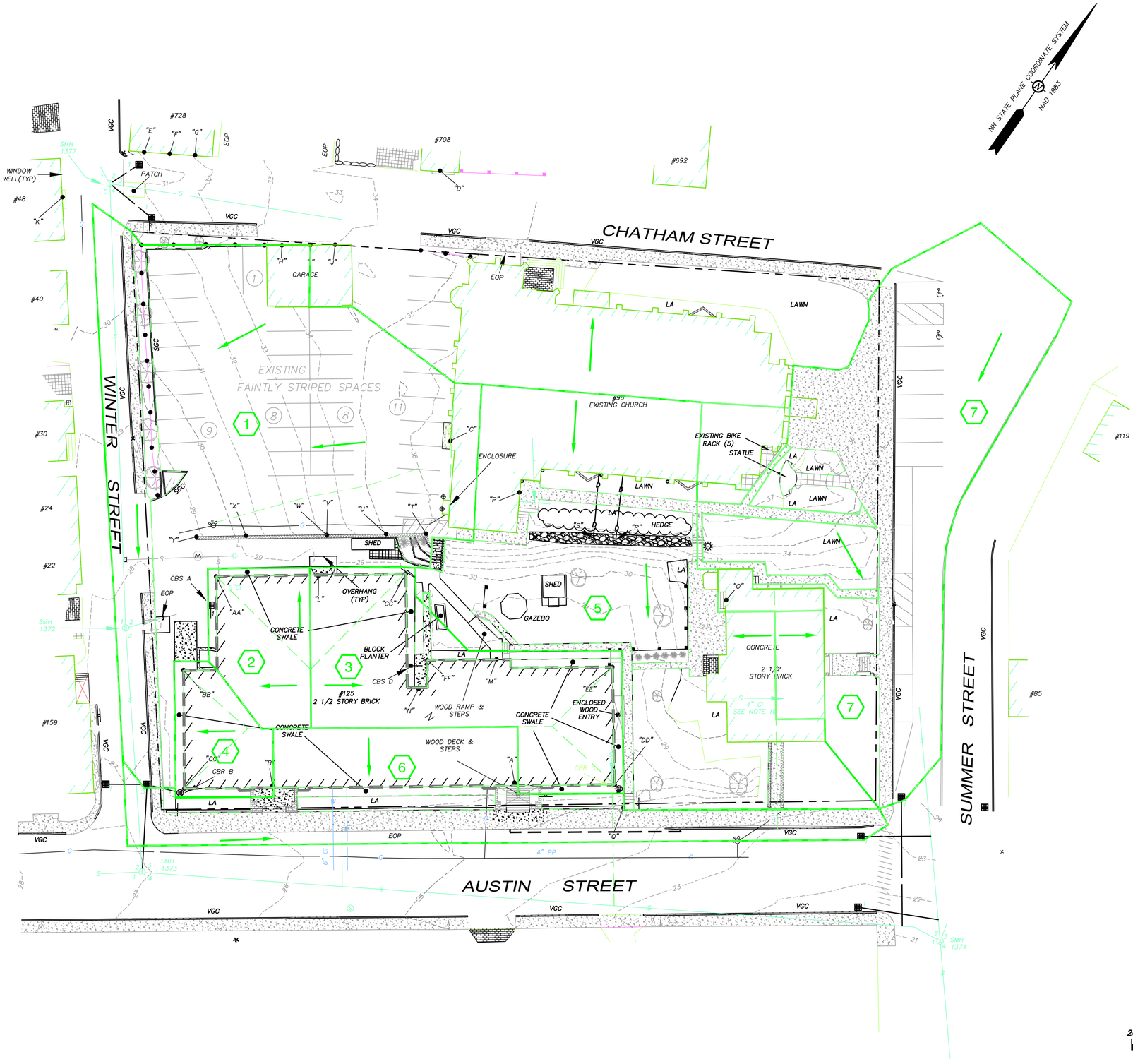
General Information		
Project Name		
Owner		
Inspector's Name(s)		
Inspector's Contact Information		
Date of Inspection	**Start Time:**	**End Time:**
Type of Inspection: ☐ Annual Report ☐ Post-storm event ☐ Due to a discharge of significant amounts of sediment		
Notes:		

General Site Questions and Discharges of Significant Amounts of Sediment			
Subject		**Status**	**Notes**
A discharge of significant amounts of sediment may be indicated by (but is not limited to) observations of the following. Note whether any are observed during this inspection:			*Notes/ Action taken:*
1	Do the current site conditions reflect the attached site plan?	❑Yes ❑No	
2	Is the site permanently stabilized, temporary erosion and sediment controls are removed, and stormwater discharges from construction activity are eliminated?	❑Yes ❑No	
3	Is there evidence of the discharge of significant amounts of sediment to surface waters, or conveyance systems leading to surface waters?	❑Yes ❑No	
4	Is there evidence of concentrated flows of stormwater such as rills or channels that cause erosion when such flows are not filtered, settled or otherwise treated to remove sediment?	❑Yes ❑No	
5	Is there evidence of deposits of sediment from the site on any adjacent property or stormwater system.	❑Yes ❑No	
6	Is there evidence of discharges from the site to streams running through or along the site where visual observations indicate significant amounts of sediment present in them.	❑Yes ❑No	
7	Is there evidence of invasive species within the stormwater treatment areas?	❑Yes ❑No	

Permit Coverage and Plans				
#	BMP/Facility	Inspected	Corrective Action Needed and Notes	Date Corrected
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		☐Yes ☐No		
		☐Yes ☐No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		
		❑Yes ❑No		

SITE DE-ICING LOG

Permit Coverage and Plans			
The owner or owner's representative shall keep a log of de-icing activities to track the amount of de-icing materials applied to the site.			
Date	**De-Icing Material Used**	**Amount Used**	**Notes:**



LEGEND

- PROPERTY LINE
- WETLAND/SOILS BOUNDARY
- 60 EXISTING CONTOUR
- GC EXISTING PAVEMENT/CURB
- EXISTING TREELINE
- WATERSHED BOUNDARY
- SURFACE FLOW DIRECTION
- 1 1 1 SUBCATCHMENT/POND/REACH
- POA POINT OF ANALYSIS

GRAPHIC SCALE

20 0 20 40 60 80 FEET

10 0 10 20 METERS

P4957

ENGINEER:

ALTUS ENGINEERING, INC.

133 COURT STREET PORTSMOUTH, NH 03801
(603) 433-2335 www.ALTUS-ENG.com

ISSUED FOR:
DRAINAGE REPORT

ISSUE DATE:
OCTOBER 18, 2019

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMITTAL	CDB	10/18/19

DRAWN BY: RLH
APPROVED BY: EDW
DRAWING FILE: 4957-CO-5.DWG

SCALE:
22" x 34" - 1" = 15'
11" x 17" - 1" = 30'

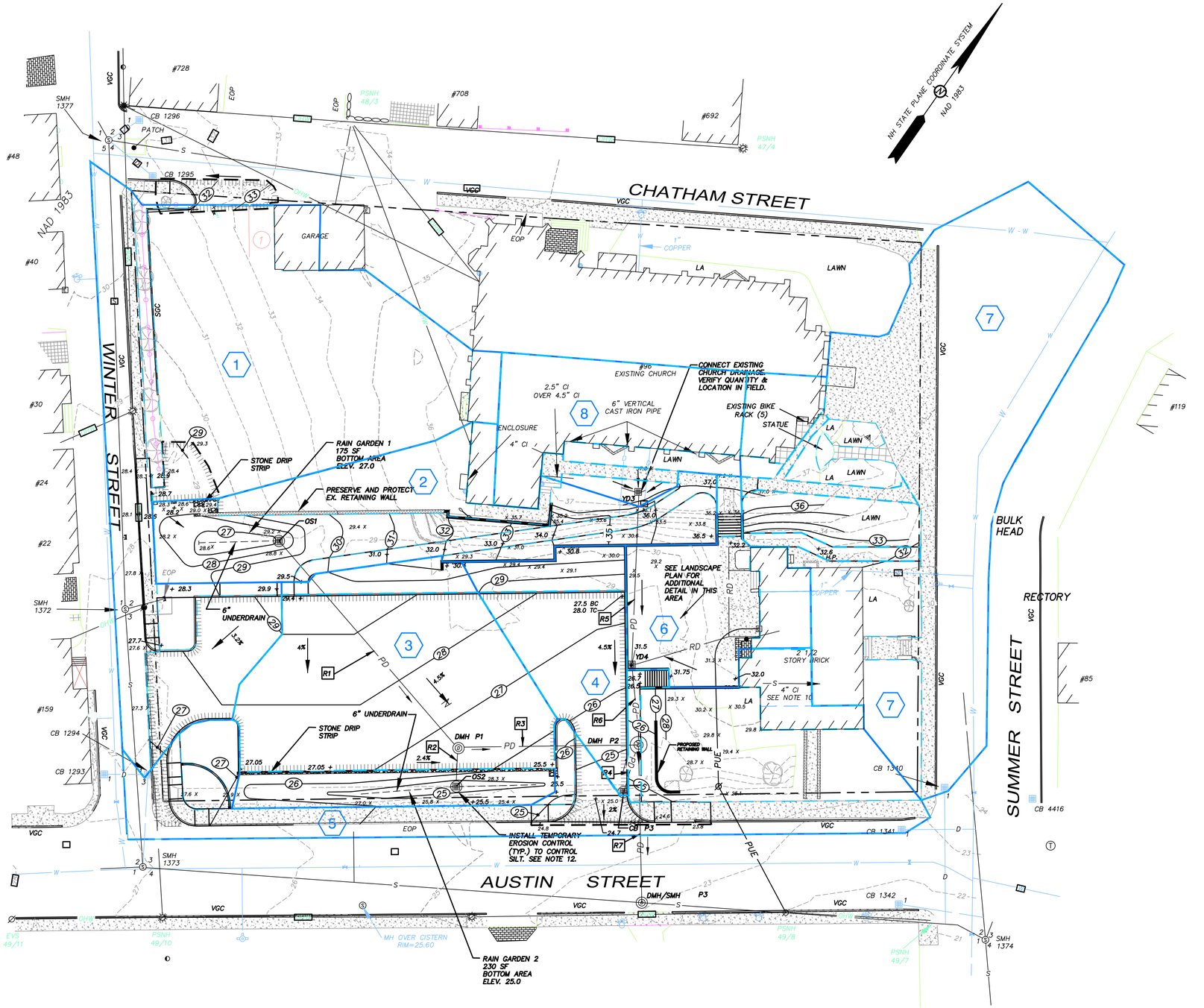
APPLICANT:
CORPUS CHRISTI PARISH
125 AUSTIN STREET
PORTSMOUTH, NH 03801

OWNER:
ROMAN CATHOLIC BISHOP
OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

PROJECT:
FORMER ST. PATRICKS SCHOOL
TAX MAP 137, LOT 01
125 AUSTIN STREET
PORTSMOUTH, NH

TITLE:
PRE DEVELOPMENT DRAINAGE PLAN

SHEET NUMBER:
PRE



LEGEND

- PROPERTY LINE
- WETLAND/SOILS BOUNDARY
- 60 EXISTING CONTOUR
- EXISTING PAVEMENT/CURB
- EXISTING TREELINE
- WATERSHED BOUNDARY
- Tc PATH
- SURFACE FLOW DIRECTION
- 1 / 1 / 1 SUBCATCHMENT/POND/REACH
- POA POINT OF ANALYSIS

GRAPHIC SCALE

20 0 20 40 60 80 FEET

10 0 10 20 METERS

P4957

ENGINEER:

ALTUS ENGINEERING, INC.

133 COURT STREET PORTSMOUTH, NH 03801
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ISSUED FOR:
DRAINAGE REPORT

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REVISIONS

NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMITTAL	CDB	10/18/19

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SCALE:
22" x 34" - 1" = 15'
11" x 17" - 1" = 30'

APPLICANT:
CORPUS CHRISTI PARISH
125 AUSTIN STREET
PORTSMOUTH, NH 03801

OWNER:
ROMAN CATHOLIC BISHOP
OF MANCHESTER
153 ASH STREET
MANCHESTER, NH 03104

PROJECT:
FORMER ST. PATRICKS SCHOOL
TAX MAP 137, LOT 01
125 AUSTIN STREET
PORTSMOUTH, NH

TITLE:
POST DEVELOPMENT DRAINAGE PLAN

SHEET NUMBER:
POST