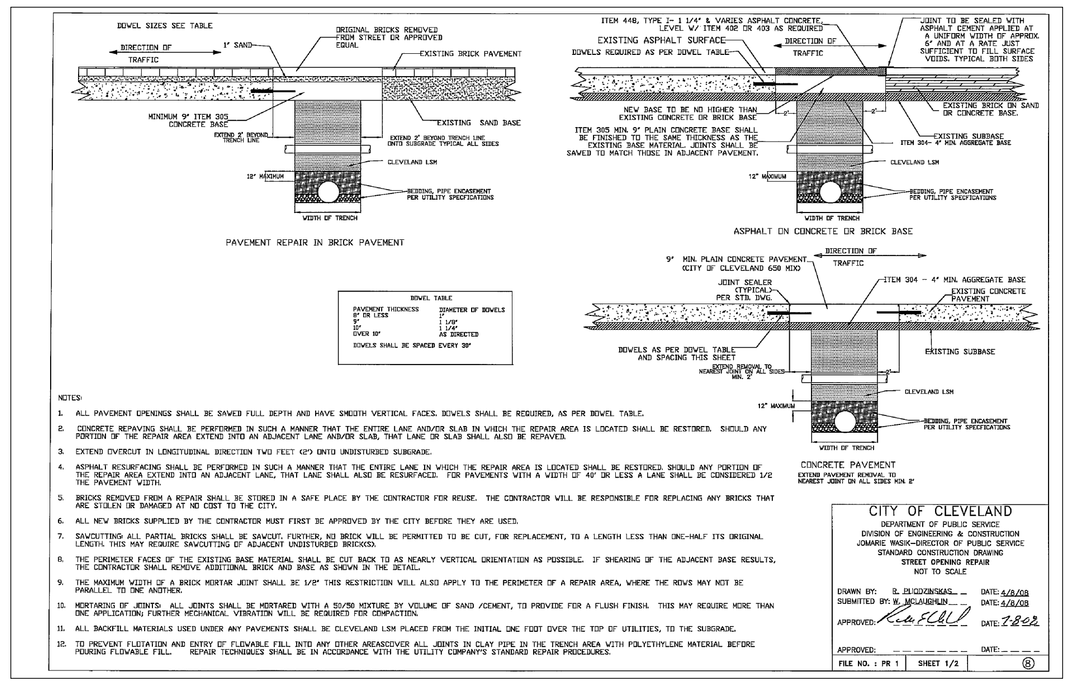
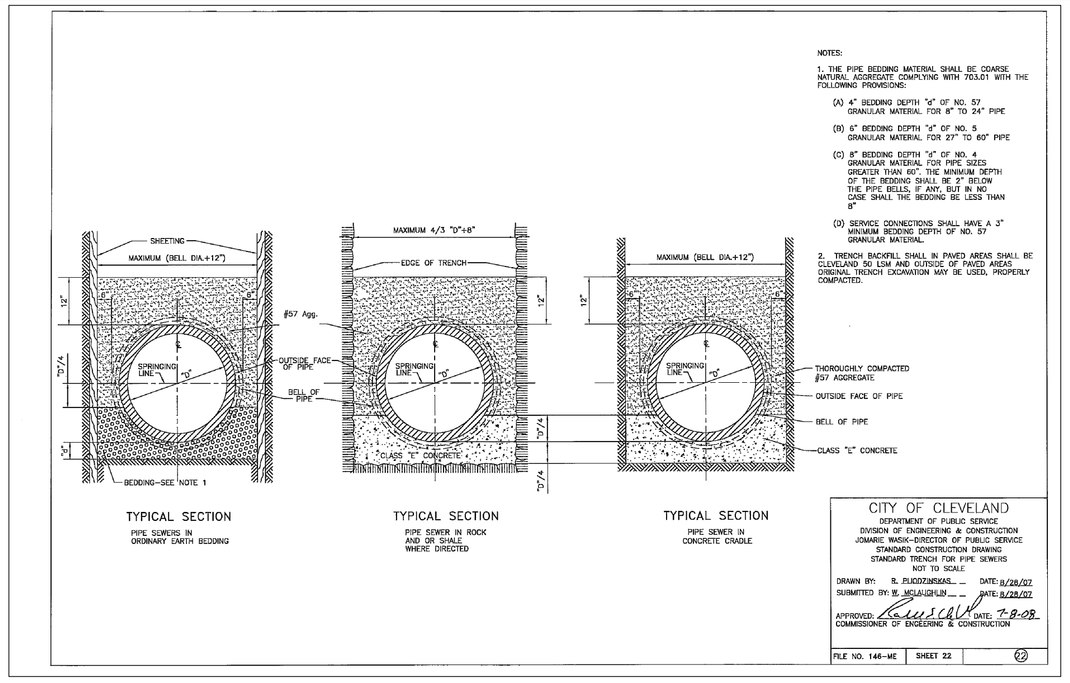
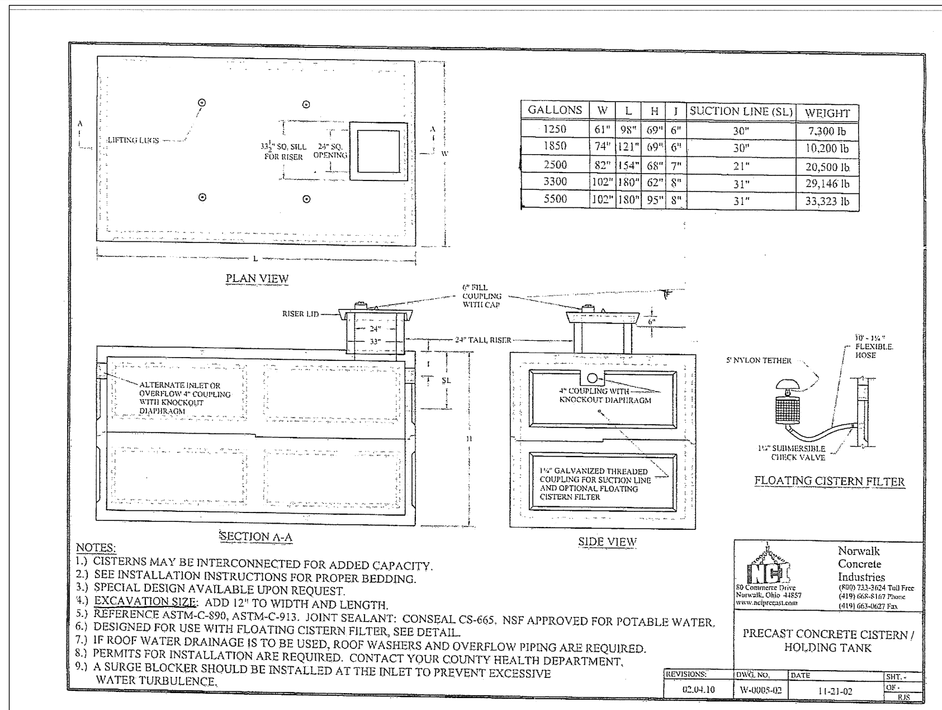






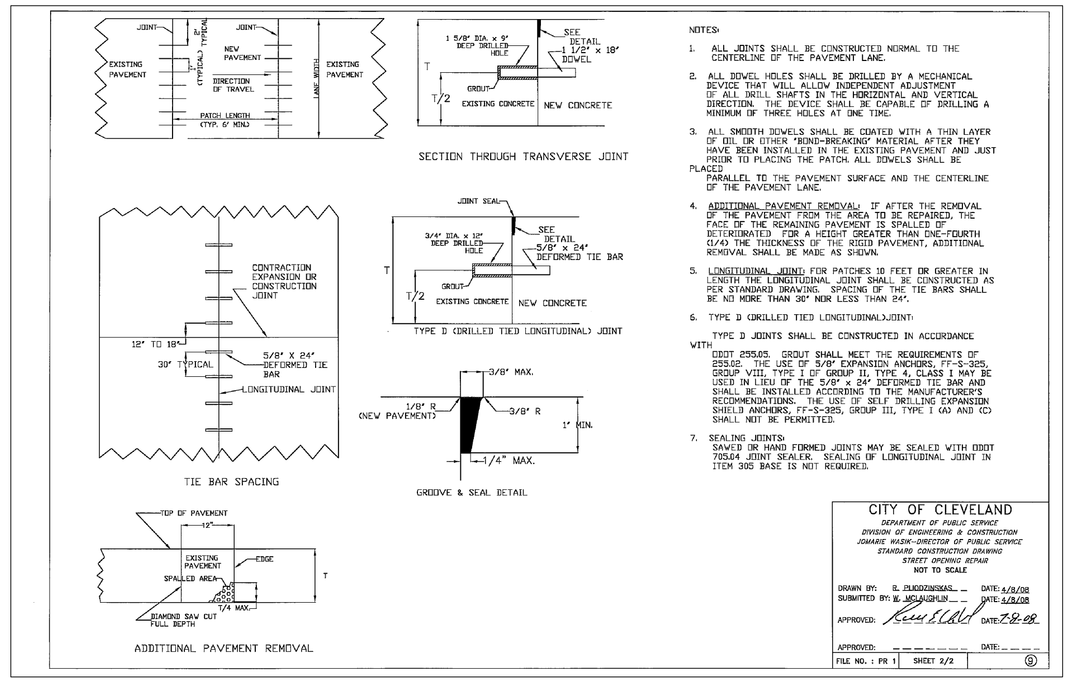
GALLONS	W	L	H	J	SUCTION LINE (SL)	WEIGHT
1250	61"	98"	69"	6"	36"	7,300 lb
1850	74"	121"	69"	6"	30"	10,200 lb
2500	82"	154"	68"	7"	21"	20,500 lb
3300	102"	180"	62"	8"	31"	29,146 lb
5500	102"	180"	95"	8"	31"	33,323 lb

NOTES:
1.) CISTERNS MAY BE INTERCONNECTED FOR ADDED CAPACITY.
2.) SEE INSTALLATION INSTRUCTIONS FOR PROPER BEDDING.
3.) SPECIAL DESIGN AVAILABLE UPON REQUEST.
4.) EXCAVATION SIZE: ADD 12" TO WIDTH AND LENGTH.
5.) REFERENCE ASTM-C-890, ASTM-C-913. JOINT SEALANT: CONSEAL CS-665. NSF APPROVED FOR POTABLE WATER.
6.) DESIGNED FOR USE WITH FLOATING CISTERN FILTER, SEE DETAIL.
7.) IF ROOF WATER DRAINAGE IS TO BE USED, ROOF WASHERS AND OVERFLOW PIPING ARE REQUIRED.
8.) PERMITS FOR INSTALLATION ARE REQUIRED. CONTACT YOUR COUNTY HEALTH DEPARTMENT.
9.) A SURGE BLOCKER SHOULD BE INSTALLED AT THE INLET TO PREVENT EXCESSIVE WATER TURBULENCE.

Norwalk Concrete Industries
PO Commercial Drive
Norwalk, Ohio 44857
www.norwalkcon.com
(419) 733-3424 Toll Free
(419) 668-8159 Phone
(419) 663-6427 Fax

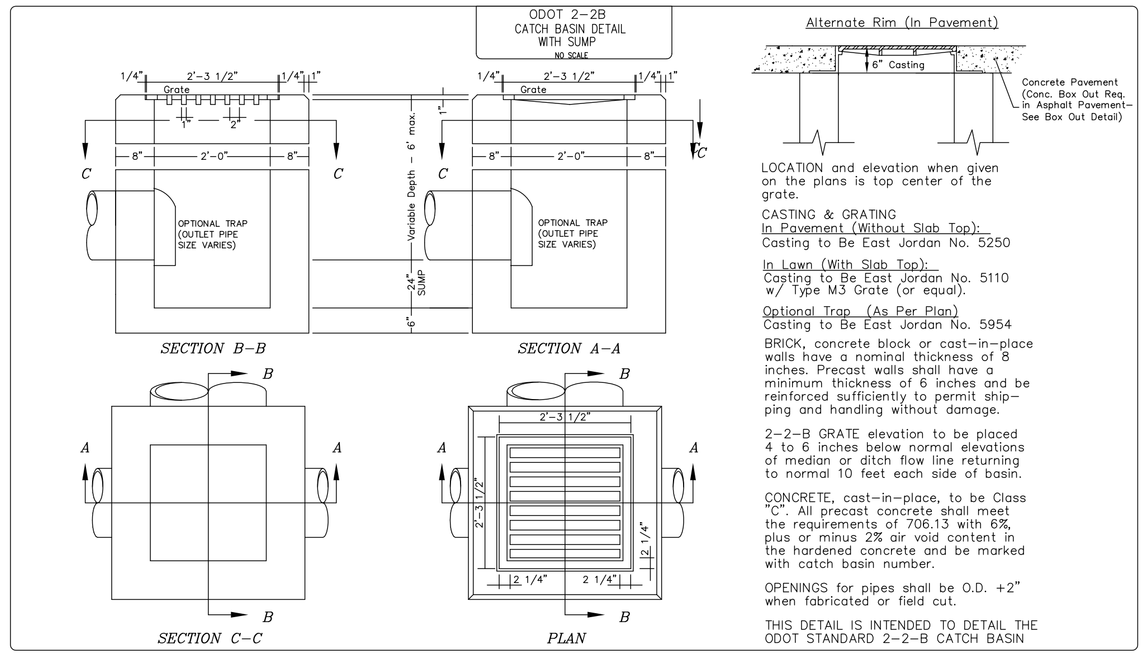
PRECAST CONCRETE CISTERN / HOLDING TANK

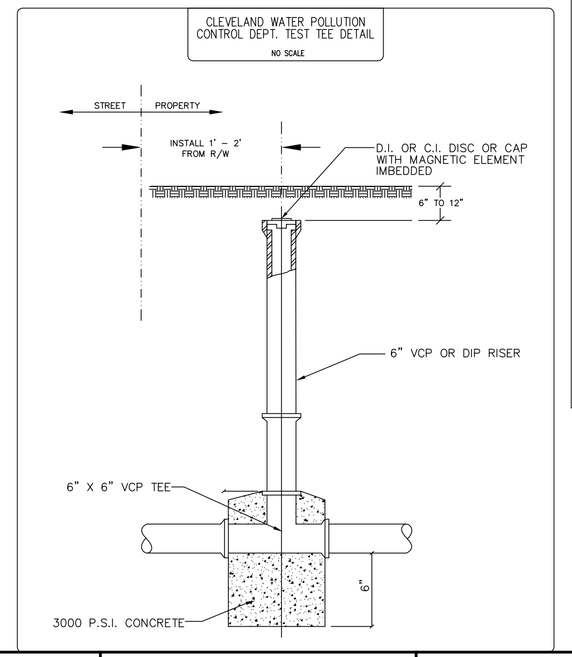
REVISIONS	CONT. NO.	DATE	DFT. -
02.04.10	W-02057-02	11-21-02	VP
			R.H.



NOTES:
1. ALL JOINTS SHALL BE CONSTRUCTED NORMAL TO THE CENTERLINE OF THE PAVEMENT LANE.
2. ALL BOVEL HOLES SHALL BE DRILLED BY A MECHANICAL DEVICE THAT WILL ALLOW INDEPENDENT ADJUSTMENT OF THE DRILL BIT IN THE HORIZONTAL AND VERTICAL DIRECTION. THE DEVICE SHALL BE CAPABLE OF DRILLING A MINIMUM OF THREE HOLES AT ONE TIME.
3. ALL SMOOTH DOWELS SHALL BE COATED WITH A THIN LAYER OF OIL OR OTHER "BOND-BREAKING" MATERIAL AFTER THEY HAVE BEEN INSTALLED IN THE EXISTING PAVEMENT AND JUST PRIOR TO PLACING THE PATCH. ALL BOWELS SHALL BE PLACED PARALLEL TO THE PAVEMENT SURFACE AND THE CENTERLINE OF THE PAVEMENT LANE.
4. ADDITIONAL PAVEMENT REMOVAL: IF AFTER THE REMOVAL OF THE PAVEMENT FROM THE AREA TO BE REPAIRED, THE FACE OF THE REMAINING PAVEMENT IS SPALLED OR DETERIORATED FOR A HEIGHT GREATER THAN ONE-FOURTH (1/4) THE THICKNESS OF THE NIGID PAVEMENT, ADDITIONAL REMOVAL SHALL BE MADE AS SHOWN.
5. LONGITUDINAL JOINS: FOR PATCHES 18 FEET OR GREATER IN LENGTH THE LONGITUDINAL JOINT SHALL BE CONSTRUCTED AS PER STANDARD DRAWING. SPACING OF THE TIE BARS SHALL BE NO MORE THAN 36" NOR LESS THAN 24".
6. TYPE D DRILLED TIED LONGITUDINAL JOINT:
TYPE D JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH
CDOT 255.05. GROUT SHALL MEET THE REQUIREMENTS OF 705.10. THE USE OF 5/8" EXPANSION ANCHERS, FF-S-325, GROUP VIII, TYPE I OF GROUP II, TYPE 4, CLASS 1 MAY BE USED IN LIEU OF THE 5/8" x 24" DEFORMED TIE BAR AND SHALL BE INSTALLED ACCERDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE USE OF SELF DRILLING EXPANSION SHIELD ANCHERS, FF-S-325, GROUP III, TYPE I GO AND CO SHALL NOT BE PERMITTED.
7. SEALING JOINTS:
SAWED OR HAND FORMED JOINTS MAY BE SEALED WITH CDOT 705.04 JOINT SEALER. SEALING OF LONGITUDINAL JOINT IN ITEM 305 BASE IS NOT REQUIRED.

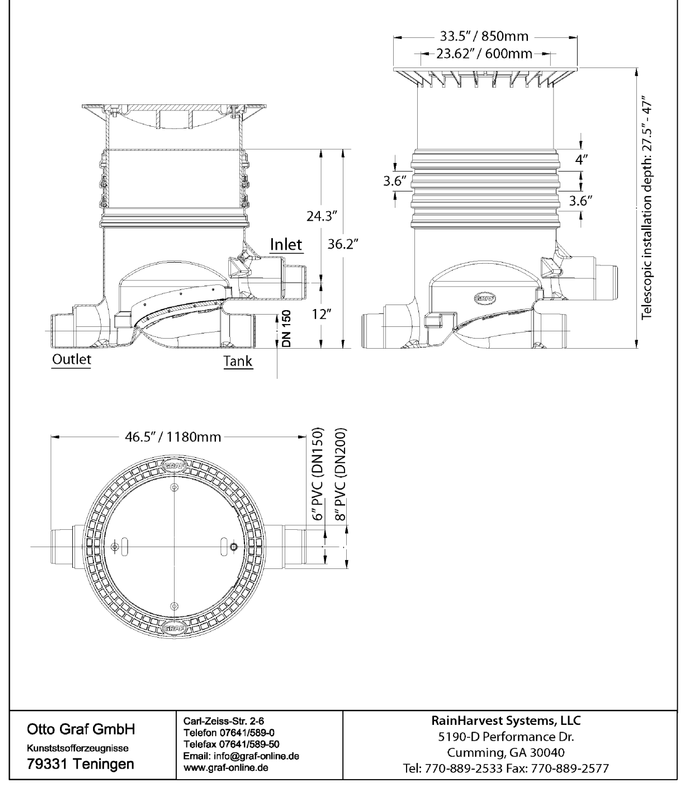
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE MASIK-DIRECTOR OF PUBLIC SERVICE
STANDARD CONSTRUCTION DRAWING
STREET OPENING REPAIR
NOT TO SCALE
DRAWN BY: S. ZS/CONTRACTS — DATE: 4/9/08
SUBMITTED BY: [signature] DATE: 4/9/08
APPROVED: [signature] DATE: 7-8-08
APPROVED: _____ DATE: _____
FILE NO. : PR 1 SHEET 2/2





GRAF	Industrial Optimax® Filter	Product Number 340035 / 340036

US Adaptation by RainHarvest Systems



Otto Graf GmbH Kunststofferzeugnisse 79331 Teningen	Carl-Zeiss-Str. 2-6 Telefon 07641/589-0 Telefax 07641/589-50 Email: info@graf-online.de www.graf-online.de	RainHarvest Systems, LLC 5190-D Performance Dr. Cumming, GA 30040 Tel: 770-889-2533 Fax: 770-889-2577

REV. No.		DATE

STATE OF OHIO
DUSTIN R KEENEY E-65515 REGISTERED
PROFESSIONAL ENGINEER

DATE: 04/11/13
SCALE: HOR. NA
VERT. NA
FOLDER: DWG\Site Plan
FILENAME: Site Plan.dwg
TAB: Detail
DRAWN: J.P.B.

MITCHELL'S ICE CREAM
W.25TH STREET
CITY OF CLEVELAND-CUYAHOGA COUNTY-OHIO

polaris Engineering & Surveying

POLARIS ENGINEERING & SURVEYING, INC.
34600 CHARDON ROAD - SUITE D
WILLOUGHBY HILLS, OHIO 44094
(440) 944-4433 (440) 944-3722 (Fax)
www.polaris-es.com

DETAIL SHEET

CONTRACT No. 12-038

SHEET	OF
3	3

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

West 25th Street 82'
(Formerly Known As Pearl Street)

San. MH.
Rim 683.59
Inv. 665.09

Storm MH.
Rim 684.23
Inv. 674.93

Ex. 135' 12" Storm Sewer @ 1.78%

Ex. 285' No. 6 Brick Sewer

Drill Hole Found

N59°10'00"E 156.75'

Ex.Bldg.
Fin.Flr.
684.93

Sublot 203
PPN: 003-23-037

Ex.Bldg.
Fin.Flr.
684.49

5.2'

Ex.Conc.Pvm't.

Exist.11' Brickwall
TO BE REMOVED

43.3'

EXCEPTION 11
PARTY WALL AGREEMENT

5.4'

Shed

82.5'

Ex.Conc. Pad
TO BE REMOVED

Power Pole

N31°10'00"W
66.00'

RIALTO CORPORATION
DOC. #199910040628
P.P.N. 003-23-036
S/L 240
0.2375 ACRES

#1868 WEST 25TH STREET
EXISTING 2 STORY BLDG.
HEIGHT = 32 ' MAX.
7817 SQ. FT.

Fin.Flr.
683.85

Fin.Flr.
684.27

30.7'

60.5'

Existing Concrete Parking
TO BE REMOVED

Fence Gate
TO BE REMOVED

Traffic Ctrl.Box

Lamp Pole

Water Meter

Ex.Brick Walk

Ex.Conc.Walk

Elec.MH.
Rim683.08

Existing Overhang

Water Valve

Water Valves

Gas Vlv.

Elec.Box

Curb Inlet
Rim682.61

0.4'

125.6'

N59°10'00"E 156.75'

0.0

41.00'

Elec.MH.
Rim682.85

Elec.MH.
Rim683.01

Ex.Conc.Walk
TO BE REMOVED

Ex.Brick Pvm't. w/Stn.Curbs
TO BE REMOVED & REPLACED

0.3'

Catch Basin
Rim 682.04
Inv. 676.64

Storm MH.
Rim 682.43
Inv. 677.33

Power Pole

Gould Court 16.50'

Sublot 213
PPN: 003-23-035

San. MH.
Rim 682.82
Inv. 663.42

2 WORKING DAYS
BEFORE YOU DIG
CALL 8-1-1
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECT

BOUNDARY AND TOPOGRAPHIC SURVEY NOTE:
BOUNDARY AND TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS MAP IS FROM A SURVEY BY JOHN R. ALBAN (#7651), OF ALBAN SURVEYING CO., DATED SEPTEMBER, 2011. POLARIS ENGINEERING AND SURVEYING, INC. ASSUMES NO RESPONSIBILITY FOR THE BOUNDARY AND TOPOGRAPHIC SURVEY. SEE SURVEY BY ALBAN SURVEYING CO. FOR ADDITIONAL SURVEY INFORMATION.

REV. No.		DATE

STATE OF OHIO
DUSTIN R KEENEY E-65515 REGISTERED
PROFESSIONAL ENGINEER

DATE: 04/11/13
SCALE: HOR. 1"=10'
VERT. NA
FOLDER: DWG\Site Plan
FILENAME: Site Plan.dwg
TAB: Ex. Conditions
DRAWN: J.P.B.

MITCHELL'S ICE CREAM
W.25TH STREET

CITY OF CLEVELAND-CUYAHOGA COUNTY-OHIO

polaris Engineering & Surveying

POLARIS ENGINEERING & SURVEYING, INC.
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WILLOUGHBY HILLS, OHIO 44094
(440) 944-4433 (440) 944-3722 (Fax)
www.polaris-es.com

EXISTING CONDITIONS & DEMOLITION PLAN

CONTRACT No. 12-038

SHEET 1 OF 3

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

West 25th Street 82'
(Formerly Known As Pearl Street)

San. MH.
Rim 683.59
Inv. 665.09

Ex. 285 No. 9 Brick Sewer

Traffic Ctrl.Box
Lamp Pole
Water Meter
Drill Hole Found
Ex.Bldg.
Fin.Flr.
684.93
41.00'
Elec.MH.
Rim683.08
Ex.Brick Walk
Ex.Conc Walk
Lamp Pole
Traffic Ctrl.Box
Gas Vlv.
Existing Overhang
Water Valve
Water Valves
Fin.Flr.
683.85
Elec.Box
Lamp Pole
Curb Inlet
Rim682.61
0.4'
GV
Gas Vlv.
Elec.MH.
Rim682.85
Elec.MH.
Rim683.01

66.00'
N37°00'00"W
65.9'
0.0'

INTERNAL DOWNSPOUT
6" INV. 679.6±

DOWNSPOUT

125.6'
N59°10'00"E 156.75'
135'-6" PVC STM. CONN. @1.0% MIN.

Ex.Conc.Walk
TO BE REMOVED

Ex.Brick Pvm't.
w/Stn.Curbs
TO BE REMOVED
& REPLACED AS REQUIRED (**SEE NOTE**)

Gould Court 16.50'

Sublot 213
PPN: 003-23-035

**NOTE:
-EXISTING BRICK PAVEMENT ON GOULD COURT SHALL BE REMOVED & REPLACED IN KIND.
-PREMIUM BACK FILL TO BE USED IN ALL PAVEMENT AREAS.

San. MH.
Rim 682.82
Inv. 663.42

43.3'
EXCEPTION 11
PARTY WALL AGREEMENT

Shed
5.4'
N59°10'00"E 156.75'
6" PVC D.S. CONN.
82.5'

DOWNSPOUT
6" INV. 681.0±

RIALTO CORPORATION
DOC. #199910040628
P.P.N. 003-23-036
S/L 240
0.2375 ACRES

#1868 WEST 25TH STREET
EXISTING 2 STORY BLDG.
HEIGHT = 32 ' MAX.
7817 SQ. FT.

Sublot 203
PPN: 003-23-037

Ex.Bldg.
Fin.Flr.
684.49
5.2'
Ex.Conc.Pvm't.
F.G. 684.0
DOWNSPOUT
6" INV. 680.0±
MATCH EX. BLDG. F.G. 684.0±
6"-45° BENDS (TYP.)
F.G. 683.10
PROP. RETAINING WALL
TOP 684.2±
DOCK 681.0±
F.G. 683.00
PROP. ODOT 2-2-B
CATCH BASIN
(4' OFF BLDG)
(WITH TRAP AND 2' SUMP)
RIM 680.80
6" PVC INV. 677.80
Fin.Flr.
684.27
2' SUMP 675.80
DOCK 681.02
N37°00'00"W
66.00'
Power Pole
±8.8%
LOADING AREA
60.5'
TOP 684.0±
DOCK 681.0±
6"-45° BENDS (TYP.)
F.G. 682.92
PROP. RETAINING WALL
*OUTDOOR DINING AREA
F.G. 682.50
NOTE:
DOWNSPOUTS TO CONNECT TO SCULPTURE (SEE PLANS BY OTHERS)
MATCH EX. BLDG. F.G. 682.5±
PROP. VCP TEST TEE
F.G. 682.33
Catch Basin
Rim 682.04
Inv. 676.64
Storm MH.
Rim 682.43
Inv. 677.33
CORE NEW
6" INV. 676.9±
ACCESS
Power Pole

PROP. WATER LINE FOR RE-USE (SEE PLUMBING FOR CONTINUATION)
6"-45° BENDS (TYP.)
6" INV. 678.25±
6" INV. 678.15±
PRE-TANK FILTRATION UNIT (GRAF OPTIMAX INDUSTRIAL FILTER)

*NOTE:
SEE PLUMBING PLANS FOR DETAILS ON PRESSURE TANKS, PUMPS, POST-TANK FILTRATION SYSTEM, UV STERILIZATION UNIT, AND ANY OTHER PLUMBING ASPECTS OF THE RAINWATER HARVESTING SYSTEM.

(2)102"x180" 5,500 GALLON CISTERNS
(INTERCONNECT FOR 11,000 GALLON TOTAL CAPACITY)
TOP-679.0±
BTM-668.0±

Storm MH.
Rim 684.23
Inv. 674.93

EX. 135' 12" Storm Sewer @ 1.78%

NOTE:
THE CONTRACTOR MUST OBTAIN A SEWER PERMIT FROM THE CITY OF CLEVELAND, DIVISION OF WATER POLLUTION CONTROL, PRIOR TO PERFORMING THE SEWER WORK.

6" INV. @ CROSSING 678.75± (DOWNSPOUT PIPE)
PROP. 38'-6" PVC STM SEW @ 1.0% MIN.
160'-6" PVC STM. @1.0% MIN.
PAVEMENT REPLACEMENT AREA SEE DETAIL
PROP. 24'-6" VCP STM SEW @ 1.0% MIN.

West 24th. Place 16.50'

*NOTE:
SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION ON RETAINING WALLS, OUTDOOR DINING AREA, BLDG. IMPROVEMENTS, ETC.

2 WORKING DAYS
BEFORE YOU DIG
CALL 8-1-1
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECT

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REV. No.		DATE
1	REVISE STORM CONN.	11/12/13
2	REVISED PER CLEVELAND WPC COMMENTS	12/18/13

STATE OF OHIO
DUSTIN R. KEENEY E-65515 REGISTERED
PROFESSIONAL ENGINEER

DATE: 04/11/13
SCALE: HOR. 1"=10'
VERT. NA
FOLDER: DWG\Site Plan
FILENAME: Site Plan.dwg
TAB: Site Plan
DRAWN: J.P.B.

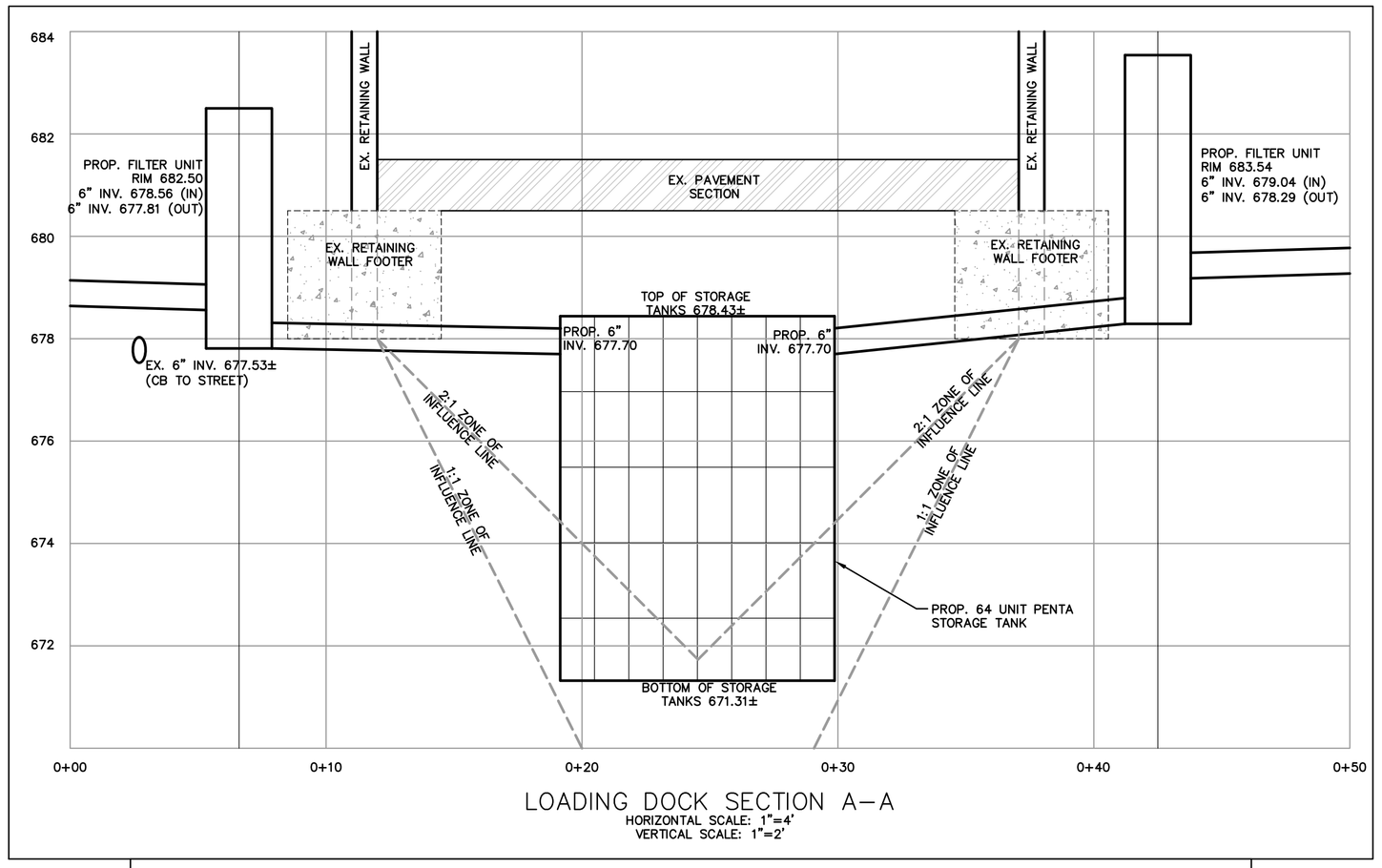
MITCHELL'S ICE CREAM
W.25TH STREET
CITY OF CLEVELAND-CUYAHOGA COUNTY-OHIO

POLARIS ENGINEERING & SURVEYING, INC.
34600 CHARDON ROAD - SUITE D
WILLOUGHBY HILLS, OHIO 44094
(440) 944-4433 (440) 944-3722 (Fax)
www.polaris-es.com

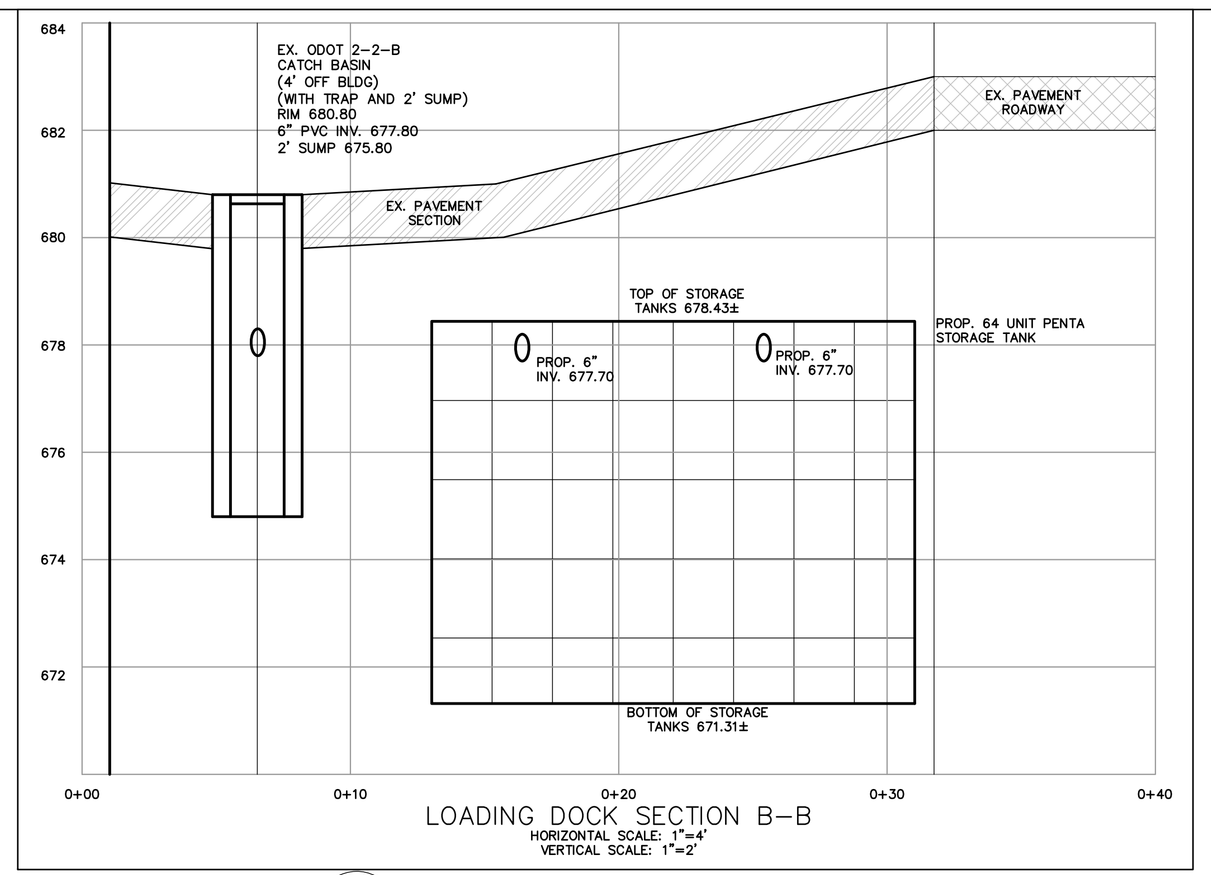
DOCK AREA SITE PLAN & RAINWATER HARVESTING

CONTRACT No. 12038

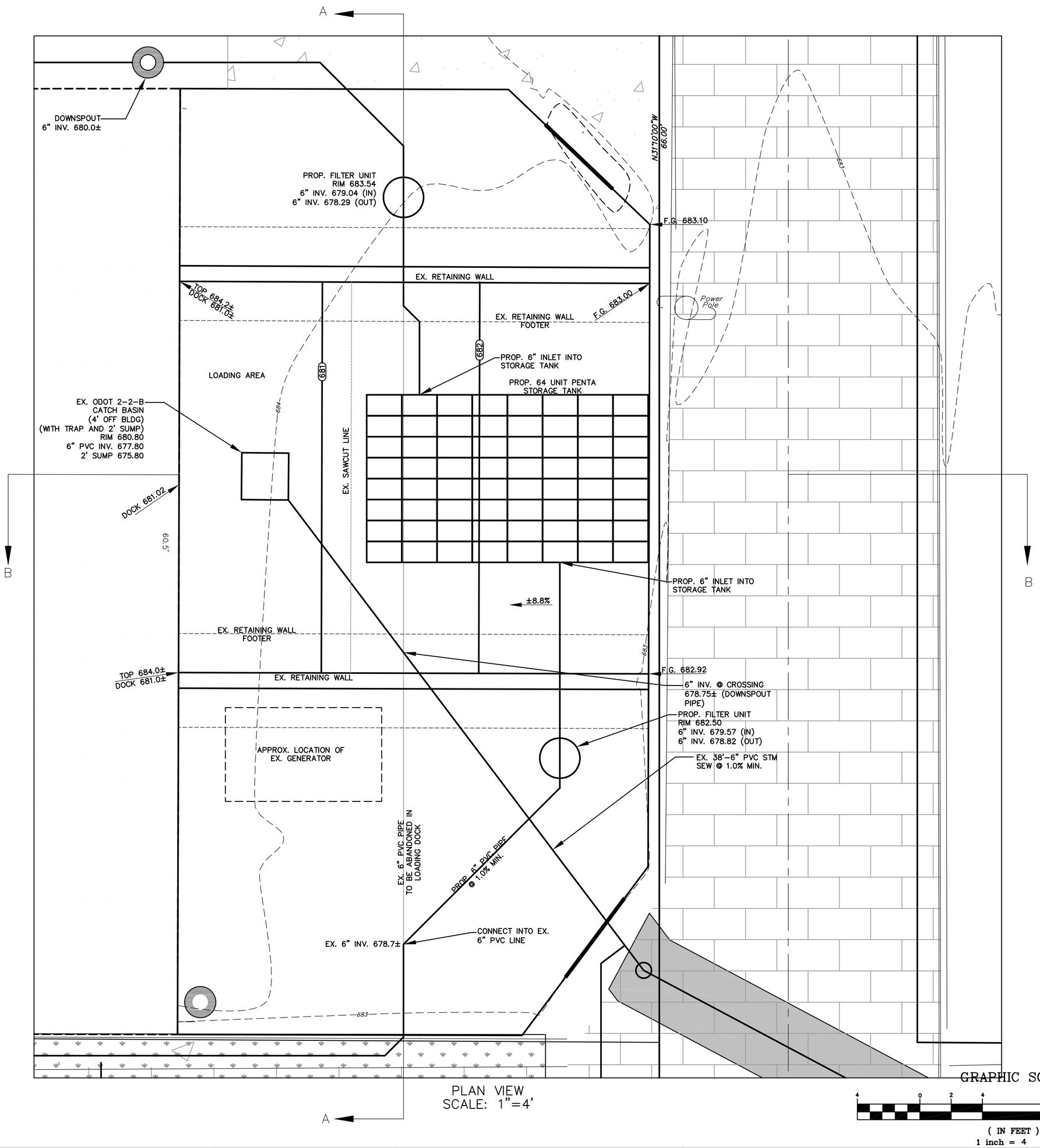
SHEET 2 OF 3



LOADING DOCK SECTION A–A
HORIZONTAL SCALE: 1"=4'
VERTICAL SCALE: 1"=2'



LOADING DOCK SECTION B–B
HORIZONTAL SCALE: 1"=4'
VERTICAL SCALE: 1"=2'



PLAN VIEW
SCALE: 1"=4'

GRAPHIC SCALE
4 0 2 4 8 16
(IN FEET)
1 inch = 4 ft.

2 WORKING DAYS
BEFORE YOU DIG
CALL 8-1-1
OHIO UTILITIES PROTECTION SERVICE
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REV. No.		DATE

STATE OF OHIO · DUSTIN R KEENEY · E-65515 · REGISTERED · PROFESSIONAL ENGINEER

DATE: 10/22/14
SCALE: HOR. 1"=4'
VERT. 1"=2'
FOLDER: DWG\Site Plan
FILENAME: Site Plan.dwg
TAB: Site Plan
DRAWN: JCK

MITCHELL'S ICE CREAM
W.25TH STREET
CITY OF CLEVELAND–CUYAHOGA COUNTY–OHIO

polaris Engineering & Surveying

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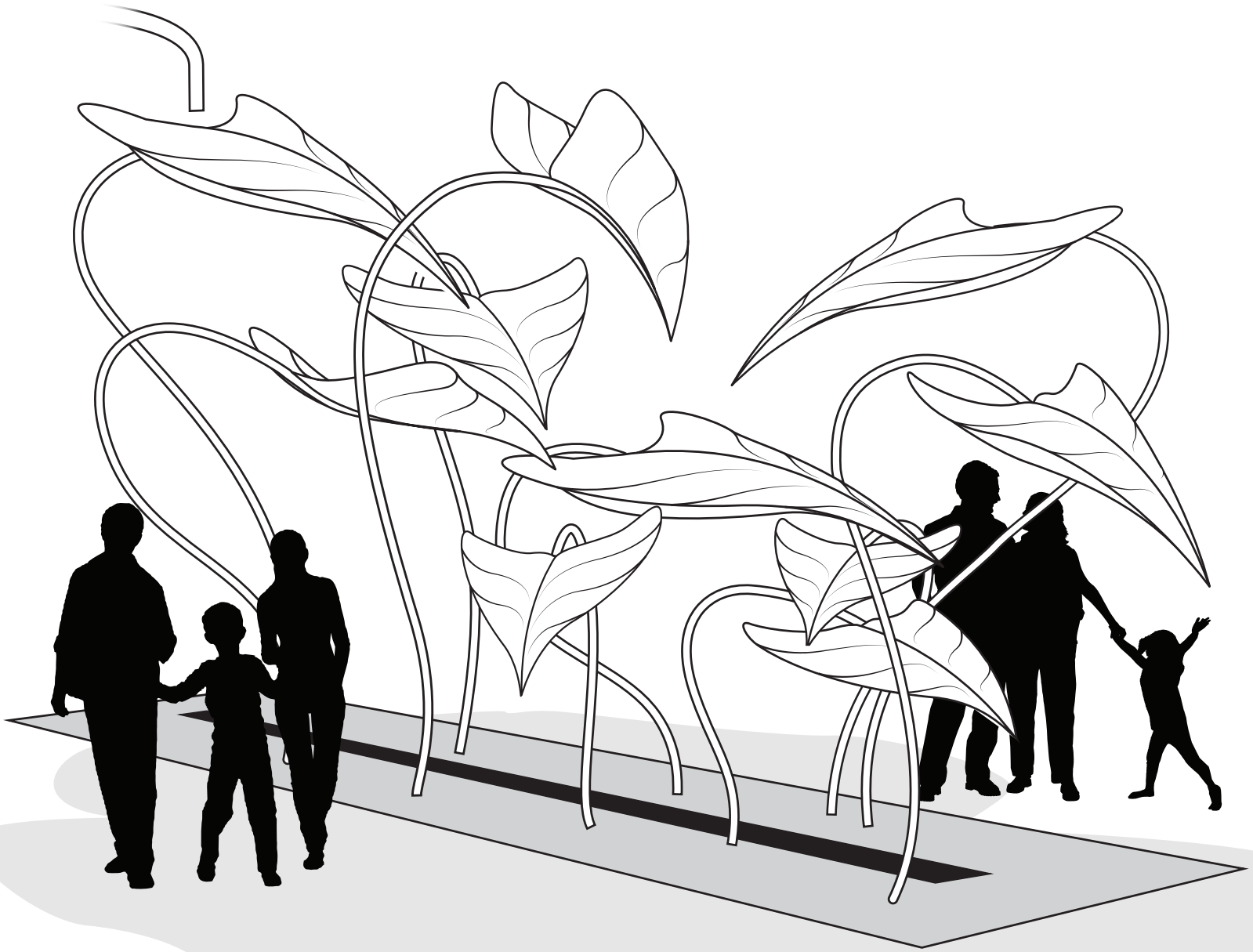
34600 CHARDON ROAD – SUITE D
WILLOUGHBY HILLS, OHIO 44094
(440) 944-4433 (440) 944-3722 (Fax)
www.polaris-es.com

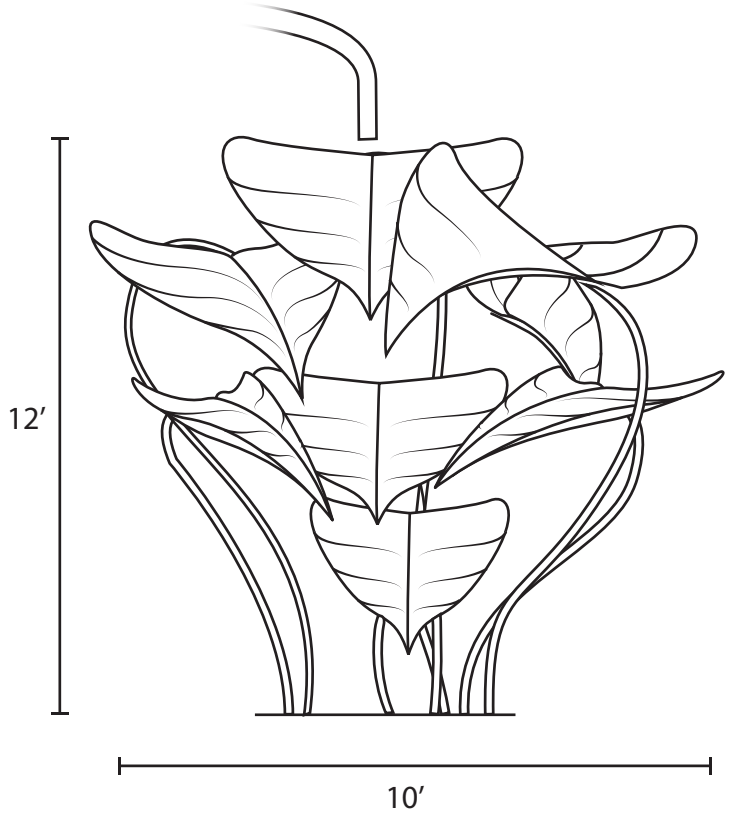
DOCK AREA SITE PLAN & RAINWATER HARVESTING

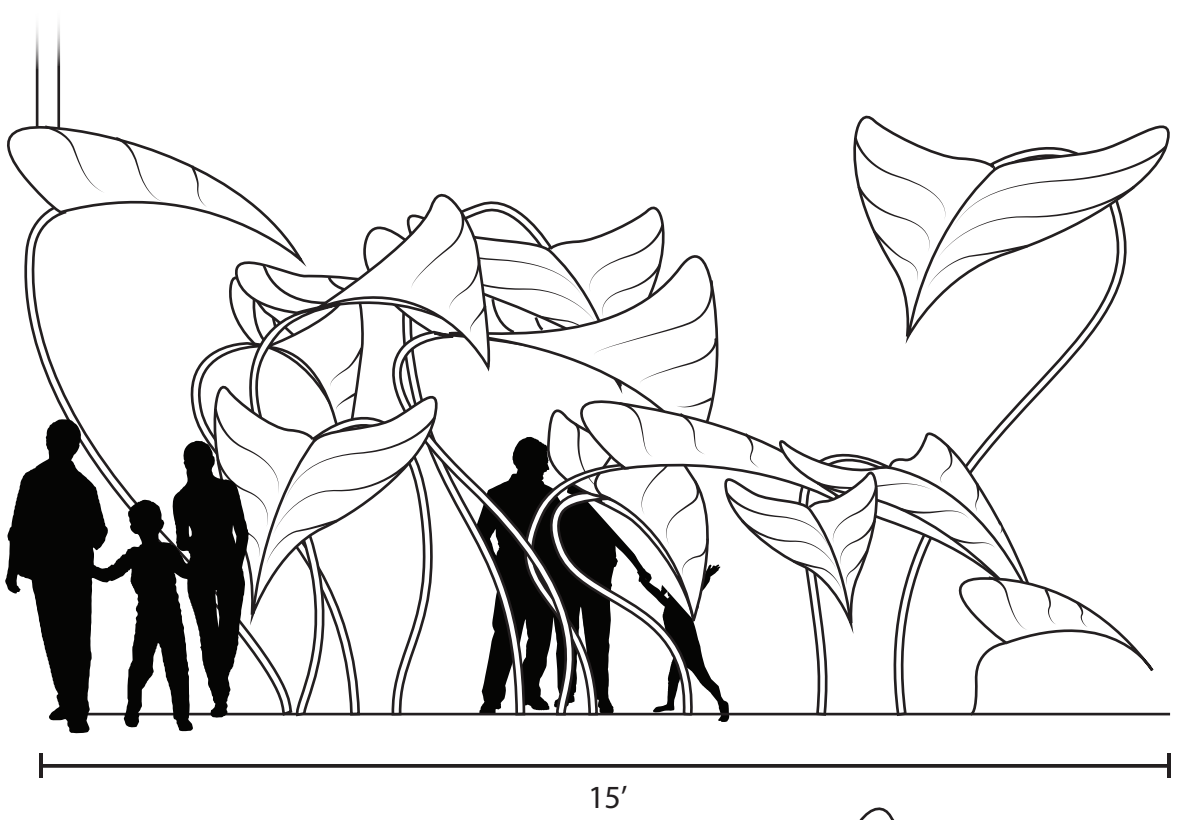
CONTRACT No. 12038

SHEET	OF
1	1

MITCHELL'S ICE CREAM DESIGN CONCEPT TWO




12′
10′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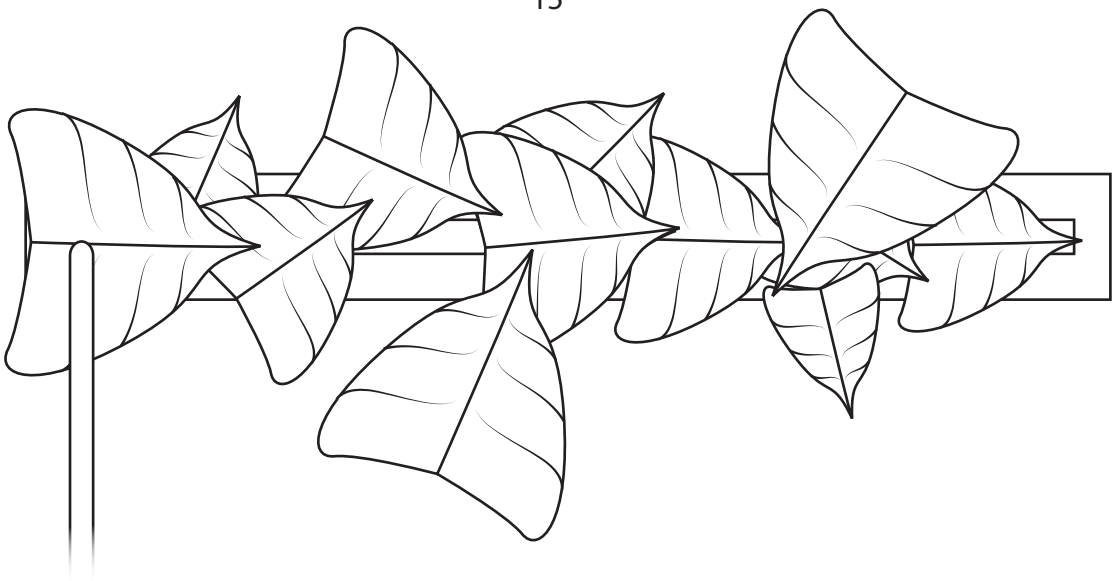

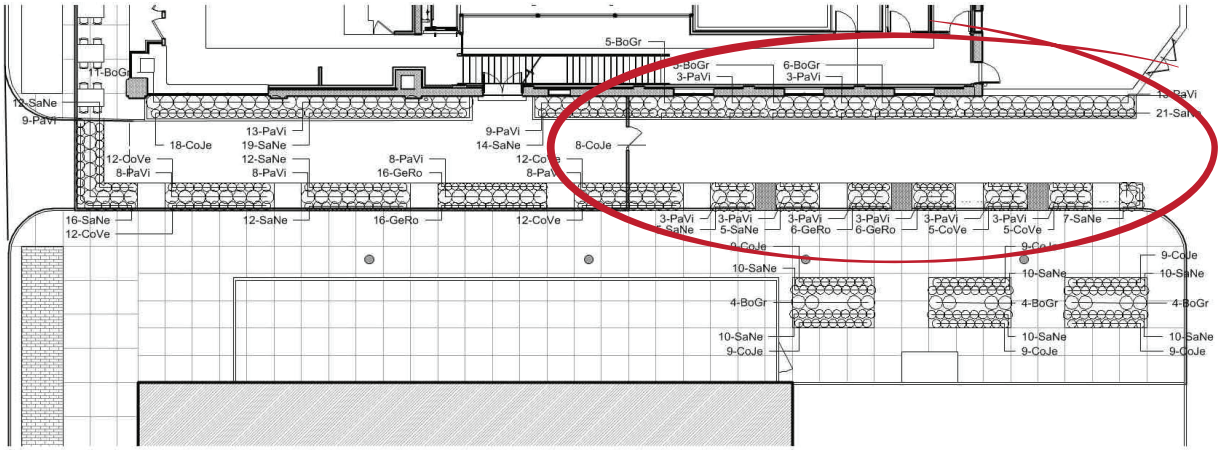
5-BoGr
3-BoGr
3-PaVi
6-BoGr
3-PaVi
11-BoGr
12-SaNe
9-PaVi
13-PaVi
21-SaNe
18-CoJe
13-PaVi
19-SaNe
12-SaNe
8-PaVi
9-PaVi
14-SaNe
8-CoJe
12-CoVe
8-PaVi
8-PaVi
16-GeRo
16-SaNe
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7-SaNe
9-CoJe
10-SaNe
4-BoGr
10-SaNe
9-CoJe
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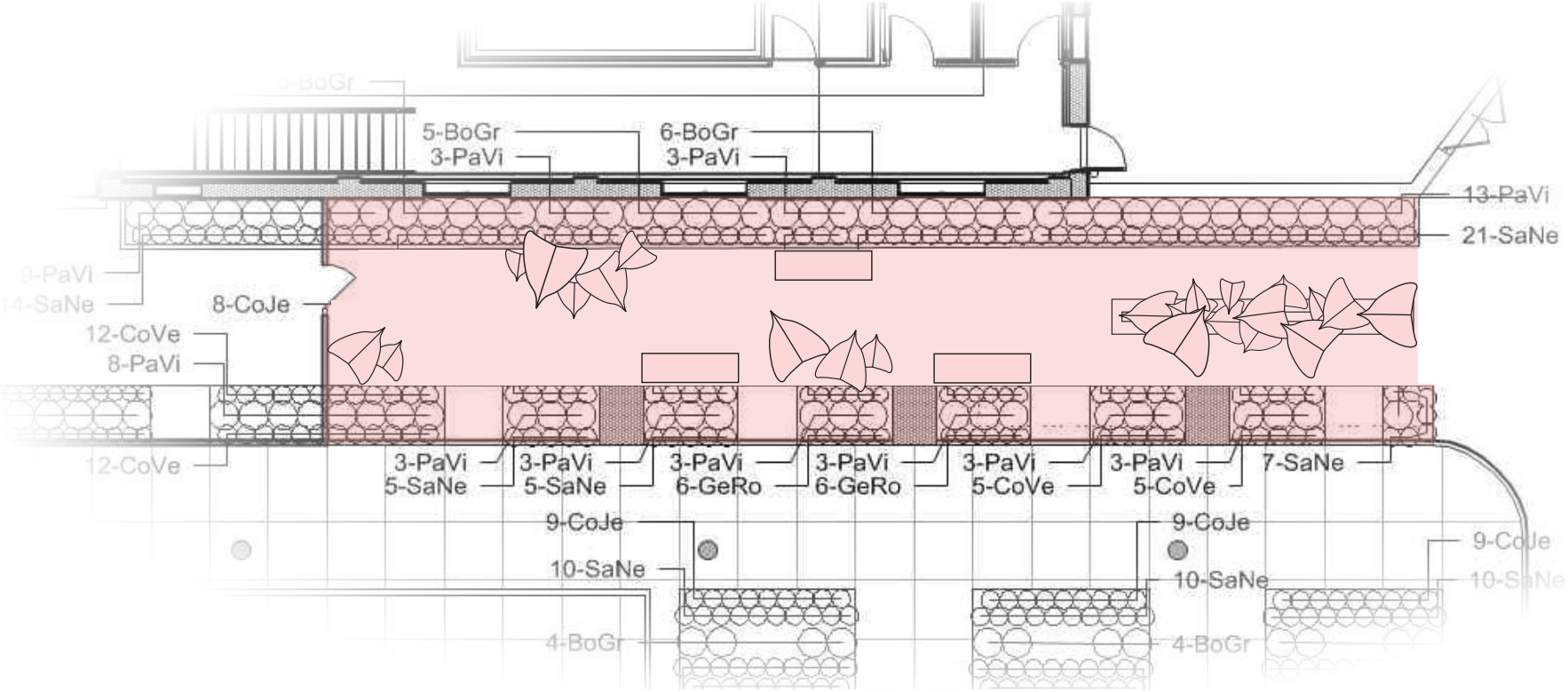
9-CoJe


5-BoGr
6-BoGr
3-PaVi
3-PaVi
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21-SaNe
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8-CoJe
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8-PaVi
12-CoVe
3-PaVi
5-SaNe
3-PaVi
5-SaNe
3-PaVi
6-GeRo
3-PaVi
6-GeRo
3-PaVi
5-CoVe
3-PaVi
5-CoVe
7-SaNe
9-CoJe
9-CoJe
9-CoJe
10-SaNe
10-SaNe
10-SaNe
4-BoGr
4-BoGr

NORTHEAST OHIO REGIONAL SEWER DISTRICT
SCALE STORMWATER DEMONSTRATION PROJECTS

Application

Application Date: 4-23-13

Community: OHIO CITY, CLEVELAND

Project Manager: MIKE MITCHELL, MITCHELL'S ICE CREAM

Mailing Address: 2256 NORTH ST. JAMES PKWY

CLEVELAND, OH 44106

Phone Number: 440-570-1654

Email: Mike@Mitchellshomemade.com

Name of Project: MITCHELL'S ICE CREAM KITCHEN, SHOP, AND OFFICES

Location of Proposed Project (address): 1867 WEST 25 ST.

CLEVELAND, OH 44113

Approximate Square Footage of Stormwater Control Measure: 12,792

Project Start Date: FEB 2013 Project End Date: SEPT 2013

Estimated Total Project Cost: $2,950,000

Amount Requested: $144,900

1-3) Introduction, Project Summary, and Visibility and Public Outreach

The stormwater control measures proposed are for Mitchell's Ice Cream's new ice cream shop, kitchen, and offices, located two blocks North of the West Side Market in Ohio City.

With this project, Mitchell's is undertaking the historic preservation of the Rialto Theater building, constructed 100 years ago as a venue for live theater performances. Most recently, the building was the home of the MODA nightclub. Mitchell's is currently under construction and on track to open in late summer of 2013.

As the new home of Mitchell's, visitors in the building as well as passersby outside will have in view all of the ice cream-making activities in the Mitchell's kitchen, under the 35-foot ceiling of the original theater space. The portion of the building fronting West 25th Street will house the shop, with ample seating both on the first floor and on the second floor overlooking the kitchen.

Gould Court, the city street adjacent to the building and perpendicularly connecting West 25th street and West 24th Place, is currently in process to be vacated and transferred to Mitchell's. Legislation to vacate has been introduced to City Council with the full support of Councilman Cimperman, Ohio City Incorporated, and the Mayor's office. The City Planning Commission approved the vacation on April 5 of this year. Vacation and transfer to Mitchell's is expected to be complete by the time this proposed construction would need to occur, around June 2013.

We are proposing installing a cistern under Gould Court, to which all of the stormwater from our roof would be piped and held, and from which our building's non-potable water needs would be drawn, including toilets and urinal, dishwasher drainwater tempering, and landscape irrigation. The cistern that has been engineered for our building is capable of capturing all of the rainwater from our building's roof for re-use.

With the assistance of LAND Studio, a prominent sculptural inlet to the Cistern would be designed and installed on Gould Court in order to spark pedestrians' interest in the stormwater harvesting system, and to demonstrate that rainwater harvesting can be done beautifully.

Additionally, we are proposing that all of the ground behind our building (with the exception of a small area to be sloped for use as a truck dock) be surfaced with new permeable pavers and new stormwater-oriented landscaping, and that the surface of Gould Court be adapted and maintained with the permeable brick pavers there now, in conjunction with new stormwater-oriented landscaping.

Perhaps just as exciting as the almost-complete elimination of stormwater sewage and runoff from our property is the public stage on which this would occur. Mitchell's sits in the middle of Cleveland's most bustling neighborhood, in which people of all socioeconomic backgrounds and lifestyles live, work, and recreate. Gould Court is being designed as both a Mitchell's patio space and as a pedestrian walkway and public space. Pete and Mike Mitchell intend to frequently host groups of students (from kindergartners to post-grads) at the building to discuss the ice cream being hand-made there with local and considered ingredients (among a collection of like-minded neighboring food businesses),

and issues needing our attention as a progressive community. Stormwater management would be a highlight of those discussions, along with efficient use of resources generally and social issues.

It is also our intended goal to catalyze architects, engineers, and other business owners to employ in future projects stormwater management methods like those they'll see at Mitchell's.

4) Ability to Provide Long Term Maintenance

The building is owned by P and M Ohio City LLC, which is owned by Pete and Mike Mitchell, who also own the building's operator, Mitchell Brothers Ice Cream, Inc. Upon vacation, Gould Court will be owned by Pete and Mike Mitchell, through one of these entities or a new entity.

The filtering systems in the rainwater harvesting system will need regular cleaning and maintenance. The pump in the cistern will need occasional maintenance. The roof from which the rainwater will be harvested will need to be maintained in good condition. The gutters and downspouts will need to be kept clean and in good condition. The permeable pavers will need to be kept clean and free of matter that would reduce their permeability. The landscaping will need to be maintained. Mitchell's will provide all of this maintenance, through its own personnel and/ or by hiring outside servicers.

5) Budget Summary

Engineering	$3,000
Rainwater harvesting system equipment	$48,300
Rainwater harvesting system installation (excavator, plumber, electrician, permits)	$70,000
Stormwater-oriented landscaping	$13,000
Permeable pavers	$10,600
TOTAL	$144,900

Mitchell's would cover the costs related to:
Acquiring Gould Court from the City of Cleveland;
General architecture, design, and engineering related to Gould Court and the contiguous exterior parts of the building;
General construction conditions, construction insurance and utilities;
Transforming Gould Court from a city street into a pedestrian-only space;
Installing public amenities such as bike racks, benches, and lighting;
Marketing of the project.

Mitchell's will seek a grant from LAND Studio to cover the costs related to the above-ground sculptural inlet to the cistern on Gould Court.

Implementation Schedule
Installation of the proposed stormwater control measures would be immediately integrated into the presently ongoing construction.

★ ★ ★

OHIO CITY

INCORPORATED

est 1836

Linda Mayer
Northeast Ohio Regional Sewer District
3900 Euclid Avenue
Cleveland, OH 44115

April 17, 2013

Dear Ms. Mayer:

I am writing to convey our organizations complete support for awarding of a grant by the Northeast Ohio Regional Sewer District to facilitate the proposed storm water control project at the new Mitchell's Ice Cream Headquarters in Ohio City.

Our organization has long felt it important to activate Gould Court in Ohio City as a primary pedestrian connection in the Neighborhood. Mitchell's Ice Cream plans for Gould Court will help bring that vision to life. As the main pedestrian connection from the Market District to the primary source of parking, we feel this also provides a high visibility area for such a prominent demonstration project. With over 150 businesses in the District and over 1 million visitors annually to the West Side Market we feel this can be the premier location to showcase the importance and raise awareness of storm water control and sustainability.

Mitchells Ice Cream is also a company that prides itself on sustainability and would be a great spokesperson for such a project. Thank you for your consideration and if there is any additional information I can provide, please don't hesitate to ask.

Sincerely,

Thomas S. McNair, LEED AP
Director of Economic Development + Planning
Ohio City Incorporated

TEL 216.781.3222 FAX 216.781.3252 WEB ohiocity.org
2525 Market Avenue, Suite A
Cleveland, Ohio
44113

City of Cleveland
Office of the Council
Joe Cimperman

Councilman, Ward 3
Committees: Health & Human Services, Chair • Community & Economic Development • Legislation • Public Parks, Property & Recreation

April 9, 2013

Linda Mayer
Northeast Ohio Regional Sewer District
3900 Euclid Avenue
Cleveland, OH 44115

Dear Ms. Mayer:

Please allow this letter to serve as my enthusiastic support for the awarding of a grant by the NEORSD to facilitate the proposed stormwater control measures at the site of the new Mitchell's Ice Cream in Ohio City. These proposed measures include permeable pavers and stormwater-oriented landscaping in the rear of Mitchell's and on Gould Court; and a system to capture stormwater from the roof and store it in a cistern beneath Gould Court, from where it will be drawn to supply the building's non-potable water uses.

The high visibility of these proposed stormwater control measures in this prominent public location would ensure that the funds awarded with such a grant from NEORSD would be highly impactful on public consciousness of stormwater control problems and the solutions that would be demonstrated in public view. Additionally, Mitchell's would be a strong spokes-company on these issues to the local community of businesses, individuals, and architects and engineers.

I expect the Mitchell's kitchen and shop to be a place that will be interesting to people of all socioeconomic backgrounds, from tourists to busses of schoolchildren, and to be a progressive, family-friendly place for our community to enjoy for many years to come. Thank you for considering their grant request.

If you have any questions, please do not hesitate to contact me at 216-664-2691. Thank you.

Sincerely,

Joe Cimperman

Councilman Joe Cimperman, Ward 3

City Hall • Room 220 • 601 Lakeside Avenue • Cleveland, OH 44114 • (216) 664-2691 • Fax (216) 664- 3837
Council3@clevelandcitycouncil.org

CONTECH ENGINEERED SOLUTIONS

URBANGREEN™ Stormwater Solutions from CONTECH

200 Enterprise Drive
Scarborough, ME 04074
Phone: (207) 885-9830
Toll Free: (877) 907-8676
www.ContechES.com

April 23, 2013

UrbanGreen Rainwater Harvesting Engineering Estimate

Project: Mitchell's Ice Cream, Cleveland, OH

As requested, the following is a CONTECH Rainwater Harvesting System ENGINEER'S COST ESTIMATE for the above referenced project. This ESTIMATE is intended for preliminary estimating purposes only and should not be interpreted as a final QUOTATION.

Information provided:

- Re-use Application = Non-potable supply to Toilet Flushing
- Pump and control skid located indoors
- Municipal Makeup water required to RWH: to cistern

Assumptions:

- Roof runoff only to cistern.
- Peak instantaneous demand flowrate: 20 gpm
- RWH Pump quantity = 1 (simplex)
- Municipal Make-up: Float switch activated 3-way valve to supply direct to non-potable end use (RPZ valve may be required, not provided by Contech)

Description of Supplied Materials:

Pretreatment Unit:

- In-ground CDS2015-4

Cistern

- 10,000 gal in ground SRPE cistern tank (96" diameter x 28 LF)
- Inlet and outlet (overflow) stubs with Fernco Strongback shear ring style flexible couplers
- Calming inlet
- 36" diameter access riser to grade

UrbanGreen Rainwater Harvesting Mechanical System

- Submerged pump with floating intake filter located in cistern to provide 20 gpm at 40 psi peak instantaneous non-potable supply. Shut off float in cistern at low water level.
- Pre-integrated fiberglass enclosure with local disconnect and internal components plumbed and wired at the plant. Enclosure dimensions: 3 ft wide x 2 ft deep x 2 ft tall.
- 100 micron filtration with manual flush and ¾" port (to drain)
- MAS Pump Motor controller
- Liquid filled pressure gauges
- Power requirement: 240V/1 phase
- Qty 2 x 5 micron cartridge filters (shipped loose to be wall mounted by contractor, manual cartridge replacement)
- UV disinfection rated for max flow rate (shipped loose to be wall mounted by contractor, 110 V service required)
- 3-way make-up water valve with float switch (120V service required) to refill bottom of cistern

Systems for intermittent use (like toilet flushing) should employ a bladder style pressure tank between the RWH system and the end use.

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Scarborough, ME 04074
Phone: (207) 885-9830
Toll Free: (877) 907-8676
www.ContechES.com

Cost Estimate:

The estimated pricing for the system is $44,880 (includes freight to jobsite).

If onsite start up and owner training is required, this can be arranged for $1,500 per day.

The contractor is responsible for the following: excavation, unloading and installation of structures and pipe connections, installing electrical and plumbing conduit between structures and installing RWH Mechanical System components.

Please contact me if you have any questions or concerns.

Sincerely,

David Adams, PE
Sr. Design Engineer

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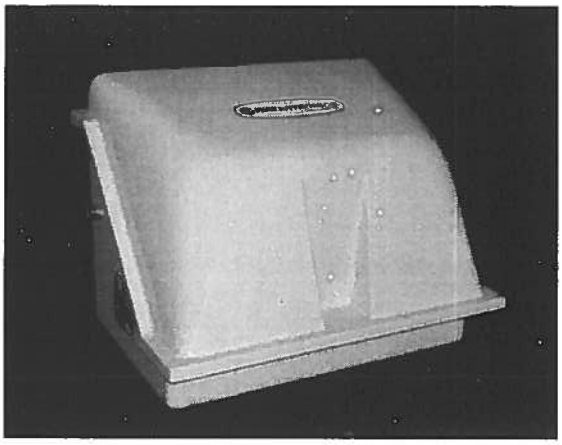
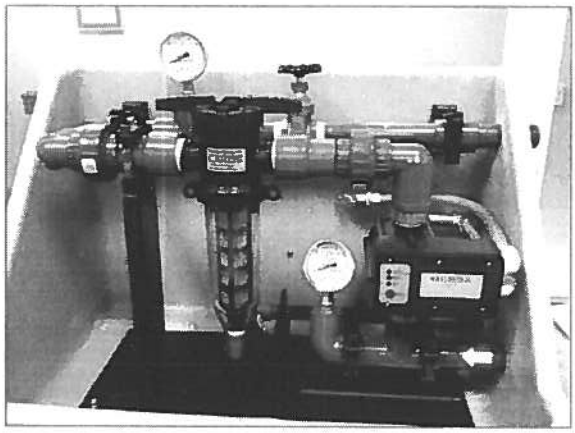
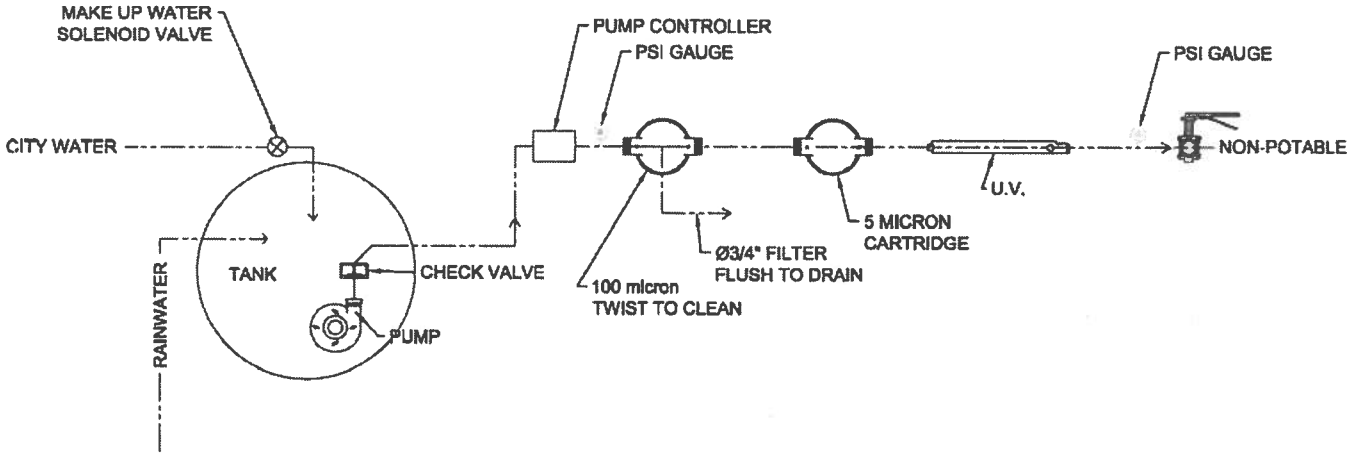
200 Enterprise Drive
Scarborough, ME 04074
Phone: (207) 885-9830
Toll Free: (877) 907-8676
www.ContechES.com

Photos of RWH Mechanical System enclosure:





Line diagram of RWH Mechanical System:



WORK AUTHORIZATION

POLARIS ENGINEERING & SURVEYING INC.
34600 Chardon Road
Suite D
Willoughby Hills, OH 44094
(440) 944-4433
(440) 944-3722 *fax*
info@polaris-es.com
www.polaris-es.com

Professional Engineers & Surveyors

W.A. NO. 12-0217

Date: Feb 17, 2012

NAME Mitchell's IceCream

ADDRESS 26161 Detroit Road

CITY Cleveland STATE Ohio ZIP 44145

PHONE 216-471-8028

FAX 216-371-1740

LOCATION AND DESCRIPTION OF WORK AND BASIS OF CHARGE

ATTN: Mike Mitchell

RE: Mitchell's Icecream - Rainwater Harvesting Site Plan

Work to Include:
Preparation of a Site Plan for Rainwater Harvesting cistern and storm piping. Site plan shall show location of cistern, storm connections, inverts, etc. along with details and notes as required. Work shall include coordination with Owner and Rainwater Harvesting manufacturer for details, etc.

Fee: $1850.00

Meetings as requested by owner/architect to be billed at rates listed below:

Reproduction costs at $2.50/sheet for additional drawings (D Size)

ANY ADDITIONAL WORK TO BE BILLED AT 2011/2012 POLARIS-ES, INC. HOURLY RATES:

FIELD CREW RATES ARE FROM PORTAL TO PORTAL

SURVEY CREW: $145.00/HR. ENGINEER III-SURVEYOR III: $105.00/HR. ENGINEER II-SURVEYOR II: $95.00/HR CONSTRUCTION INSPECTION: $45.00/HR.

TERMS

NO WORK TO PROCEED UNTIL SIGNED WORK AUTHORIZATION IS RETURNED BY THE OWNER

Invoices are due and payable within 15 days after presentation. Cancellation of this contract presupposes payment for work already completed. Balances 30 days past due shall bear finance charges at the rate of 1.5% per month and are subject to collection at the owners expense.

ACCEPTANCE

Upon the authorized signature of both parties to this contract they agree to the above prices, specifications and conditions as satisfactory. Payments will be made as outlined above and work can proceed.

OWNER

SIGNED: _____

NAME _____

EMAIL _____

DATE _____

POLARIS ENGINEERING & SURVEYING, INC.

SIGNED: _____

NAME Dustin R. Keeney P.E. C.P.E.S.C

EMAIL DustyK@Polaris-es.com

DATE 04-17-13

NOTE: SUBJECT TO TERMS AND CONDITIONS ON ATTACHED PAGE.
INSTRUCTIONS: OWNER SIGN AND RETURN ORIGINAL COPY.

H&M

LANDSCAPING

A LANDSCAPE DESIGN / BUILD FIRM

April 23, 2013

Mitchell's Homemade Ice Cream
2256 North St James Pkwy
Cleveland, Oh 44106

Landscape Development Costs For Mitchell's Central Production Facility

1)	Saw cut and remove all hard surfaces where proposed landscape plantings are to occur and all excavations prior to planting bed preparation.		$3,285.00
2)	Bed preparation to install premium topsoil and compost to create beds as designed.		$2,040.00
3)	Installation of all plant material as designed on conceptual plan, and includes finial mulching and site detail.		$5,750.00
		Total	**$11,075.00 ***

P.O. Box 69, Newbury, OH 44065
(440) 564-1157 / (440) 729-4252
www.hmlandscaping.com

CLARK

March 28, 2013 (Confirming)

Mr. Mike Mitchell
Mitchell Brother's Ice Cream, Inc.
1867-1873 W. 25th Street
Cleveland, Ohio 44113 p. 216-471-8028, f. 216-371-1740

Re: "Mitchell's Central Production Facility Renovation"
Proposal for Rainwater Retention System

Dear Mike:

This quote is for the proposed Rainwater Harvesting system to be installed at your building at the above listed address. This proposal is a based on the drawings generated by Polaris Engineering dated 4-11-13 as well as information provided in pricing from Contech dated 3-28-13.

- Cistern and Related Equipment: This material is to be provided by Mitchell's and will be installed by our subcontractors. Please note that due to the cistern's proposed proximity to the building, the cistern will need to be ordered in 3 pieces, to be joined in the field by Contech once the excavation is complete.

- Permeable Pavers: Remove existing concrete and fill; new sand and gravel fill to 2' below grade; install new Unilock EcoOptiloc permeable pavers in the two "flat" areas adjacent to the new truck dock ramp.
  - Total Cost: $8,800

- Excavation and Site Drainage: Excavate and place the cistern in three sections; install new storm drain lines from downspout leaders to cistern; backfill and tamping; re-laying of the existing brick pavers; shoring; installation of new piping from cistern to exterior edge of the building.
  - Total Cost: $43,600

- Interior Plumbing: Provide new interior piping from cistern to the pump "sled"; tie in "sled" and 3-way valve; install new backflow preventer; run separate rainwater supply lines to 5 toilets, 1 urinal and the dishwasher location (piping is to be run in purple PEX piping); intercept the existing interior cast iron roof drain leader and re-route at the basement ceiling to through the exterior wall to connect to the new storm drain system.
  - Total Cost: $14,000

- Electrical: Provide new below grade power connections to the sled and cisterns, including circuit breakers, conduit, wire and terminations:
  - Total Cost: $4,000

- R. W. Clark Fee: 10% of total cost of work:
  - Total Cost: $7,400

Total Proposed Cost: $77,800.00

Exclusions - This price does not include the following:

- Permits – We have no good way of estimating what the permit fees for this work will be. They will be billed at cost at the time of the work.

- Prevailing Wages.
- Obstructions below grade – we have made no accommodations for existing utilities or other obstacles below grade.
- Environmental Abatement or Remediation.
- Traffic Control.

R. W. CLARK COMPANY INC.
5122 ST. CLAIR AVE CLEVELAND, OH 44103 | P 216.432.3155 | F 216. 432.3318 | WWW.RWCLARK.COM ANDREW@RWCLARK.COM

Boyd
EXCAVATING

DATE 4-18-13

ATTENTION ANDY CLARK

COMPANY RW CLARK

FROM JOHN BOEHNEN

COMPANY BOYD EXCAVATING

PAGES INCLUDING THIS COVER PAGE 1

SUBJECT CISTERN - MITCHELLS

REMOVE + REPLACE SIDEWALK AT W.25 + GOULD
WORK PERFORMED IN TWO PHASES — 6,000 ⁰⁰
REMOVE EXIST SANDSTONE S.W. SOUTH SIDE OF BUILD.
REMOVE BRICK ROAD FOR CISTERN, STORE ON SITE
INSTALL NEW 8' DIA CISTERN + CDS UNDER ROAD
INSTALL RE-USE WATER LINE TO BUILDING
INSTALL NEW 4"+6" STORM SEWER AROUND BUILDING
TO CISTERN + CISTERN TO LOADING DOCK C.B
RELAY BRICK AFTER CISTERN COMPLETE — 43,600 ⁰⁰

NOT INCLUDED: ELECTICAL SERVICE, PERMITS, OBSTACLES
UNDER GROUND, PREVAILING WAGE
CISTERN + RELATED EQUIPMENT BY OTHERS

WE WILL NEED ROOM ON SITE FOR ALL EQUIPMENT,
TRENCH BOXES, MATERIALS + PREMIUM FILL
CISTERN TO BE MANUFACTURED IN 3 SECTIONS

216- 431-3318

Buster Simpson

* INSPIRATION

WATER TABLE / WATER GLASS

2001 • Ellington Condominiums, Seattle, WA
Stainless steel, glass, granite, water, and equisetaceae. Glass: 8' x 4' dia. Table: 3' x 4' x 4'.





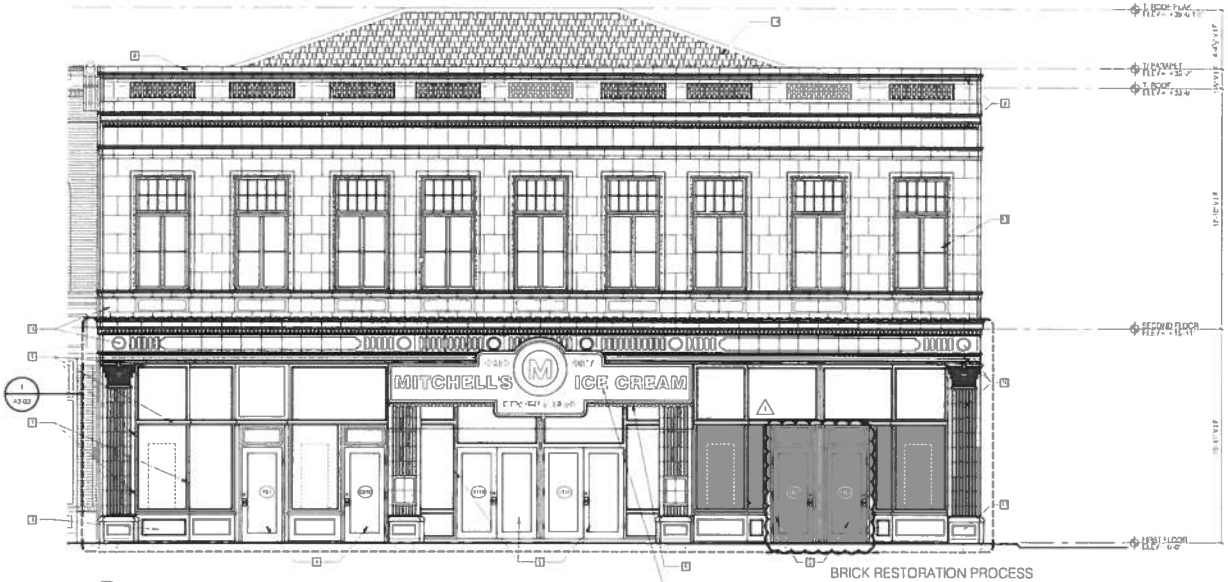





Water Table / Water Glass sited in the Ellington Condominium plaza exemplifies how art can work on a number of meaningful levels. As sculpture, *Water Table / Water Glass* provide a domestic tableau. As metaphor, *Water Table / Water Glass* are two elements, which create utilitarian fountains; the glass becomes a vessel, a cistern, and a detention tank; the table expresses the philosophical approach for the plaza's landscape irrigation water table system as well as a usable table when dry. Both sculptures join to nurture the wetlands landscape. Two ten-story towers' roof watershed provides rainwater for the two sculptures at plaza level: *Water Glass* from the south tower and *Water Table* from the north tower. The rainwater enters large baroque scuppers at the roofline and is directed through watertight stainless steel downspouts on the exterior of the two buildings.

Seven tensioning rings around *Water Glass* exterior serve the same structural purpose as those found on large wooden water tanks. The downspouts to *Water Glass* transfer their offering into a 5-inch diameter flexible "hospital" straw that empties into the 8-foot high tapered vessel. The vessel is cantilevered, gesturing an offering of its contents to the landscape. The shape of the glass is reminiscent of a pint beer glass or tall latte cup. The structure is made of stainless steel with twelve two-ply laminated glass panels; each panel is one and one half inches thick.

The wetland contained by the seating wall around *Water Glass* is planted with the rush-like survivor of the carboniferous age, Equisetaceae, commonly known as "horsetail" or "scouring rush" because of its effectiveness at



1 PROPOSED WEST EXTERIOR ELEVATION
SCALE: 1/8" = 1'-0"

KEY NOTES

1. RETAINED EXISTING ELEMENTS OF ORIGINAL WOOD AND GLASS STOREFRONT. PERFORM REPAIR AS REQUIRED. PAINT PER DESIGNED APPROVED COLOR SCHEME
2. REPLACED WOOD STOREFRONT ASSEMBLY EXACTLY MATCHING THE PROFILE OF THE ORIGINAL
3. RETAINED EXISTING WOOD BULKHEAD, RECESS PANELS, SILLS, AND BASE OF ORIGINAL STOREFRONT RESTORED AND PAINTED
4. RETAINED EXISTING WOOD BULKHEAD, RECESS PANELS, SILLS, AND BASE OF ORIGINAL STOREFRONT RESTORED AND PAINTED
5. NEW WOOD STOREFRONT AND ENTRY DOORS TO MATCH TO EXACTLY MATCH THE PROFILE OF EXISTING ORIGINAL, EXISTING STEPPED PLASTER CLERESTORY ABOVE FOR RESTORED AND PAINTED
6. EXISTING MARQUEE CANOPY AND STRUCTURE TO REMAIN. EXISTING GREENSIDE CLADDING, TRUSS CUP COFFERS AND MARQUEE LIGHTING TO BE RETAINED AND REPAIRED BY OWNER - NIC
7. NEW GRAPHIC SIGNAGE FOR MITCHELLS ICE CREAM TO BE ADDED TO THREE FACES OF MARQUEE. FINAL DESIGN TBD BY OWNER NIC
8. EXISTING COPING STONES TO BE TUCK POINTED AS REQUIRED
9. EXISTING DECORATIVE CORNICE, DENTILS & BRACKETS TO REMAIN. CLEAN & REPAIR AS NECESSARY
10. ALL EXISTING TERRACOTTA CLADDING TILE AND ELEMENTS TO BE CLEANED, REPAIRED, AND TUCK POINTED AS NECESSARY
11. EXISTING DAMAGED OR MISSING TERRACOTTA CLADDING ELEMENTS TO BE REPLACED WITH NEW TO MATCH EXISTING
12. EAST PARAPET - REPAIR EXISTING COPING TILES AS REQUIRED
13. RETAINED WOOD WINDOW FRAMES, SILLS, AND TRANSOM LITES DATING FROM THE PERIOD OF SIGNIFICANCE TO BE REPAIRED AND PAINTED. NEW PAINTED WOOD SASH PANELS WITH CLEAR INSULATED GLASS TO BE INSTALLED
14. NEW 3 TAB ASPHALT SHINGLES OVER #15 FELT UNDERLAYMENT OVER ICE AND WATER PROTECTION ON EXISTING ROOF STRUCTURE
15. NEW PAINTED ALUMINUM GUTTER AND DOWNSPOUT TIED TO EXISTING STORM WATER SYSTEM
16. EXISTING BRICK TO REMAIN. REPAIR TUCK POINT & CLEAN
17. NEW HOLLOW METAL DOOR AND FRAME WITH SEE DOOR SCHEDULE
18. INFILL 1950S ERA CUT OPENING WITH CORBELED BRICK FROM NEW OPENINGS
19. NEW PAINTED ALUMINUM WINDOW FRAMED WITH CLEAR, LOW E INSULATED GLASS
20. EXISTING MASONRY TO REMAIN, WHERE NEW PIPE PENETRATIONS OCCUR REMOVE ALL DETERIORATED MASONRY AND REPLACE WITH NEW. NOTE: CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID SUBMITTAL
21. EXISTING STORM DRAIN PIPE TO REMAIN (AND SURFACE) AS NON FOR PAINT. PAINT TO MATCH EXTERIOR COLOR SCHEME
22. EXISTING SANDSTONE COPING TO REMAIN. REPLACE, PATCH AND REPAIR ALL DETERIORATED/DAMAGED AREAS
23. INFILL 1950S ERA CUT OPENING WITH BRICK TO MATCH
24. NEW CONCRETE STEPS (CONTRACTOR TO PROVIDE UP INCH OF RISE EACH IN PLACE STAIRS. VERIFY FINISH SELECTIONS IN FIELD

BRICK RESTORATION PROCESS

1. PENDING APPROVAL OF REVIEW ALL BRICK REPLACEMENT, REPAIR AND TUCK POINTING TO OCCUR (2) TO PROVIDE SAMPLES OF BRICK FOR REVIEW.
2. FOLLOWING REPAIR EXISTING MASONRY TO BE CLEANED WITH A LIGHT CHEMICAL CLEANER AND POWER WASHED AT MAX 200 PSI

BRICK CLEANING AND RESTORATION TO FOLLOW GUIDELINES INDICATED IN NATIONAL PARK SERVICE SECRETARY OF INTERIOR STANDARDS

2 PROPOSED SOUTH EXTERIOR ELEVATION
SCALE: 1/8" = 1'-0"

Seal

STATE OF OHIO
SCOTT M. DIMIT
13987
REGISTERED ARCHITECT

General Notes:

ISSUES	DATE:	BY
ISSUED FOR BID	09-21-12	SMD
PERMIT REVIEW	10-15-12	SMD
PERMIT REVIEW	12-05-12	SMD
PERMIT REVIEW	01-03-13	SMD
OWNER REVISIONS	01-08-13	SMD

dimitarchitects
architecture and urban planning
14414 Detroit Ave., #306
Lakewood, Ohio 44107
216-221-9821

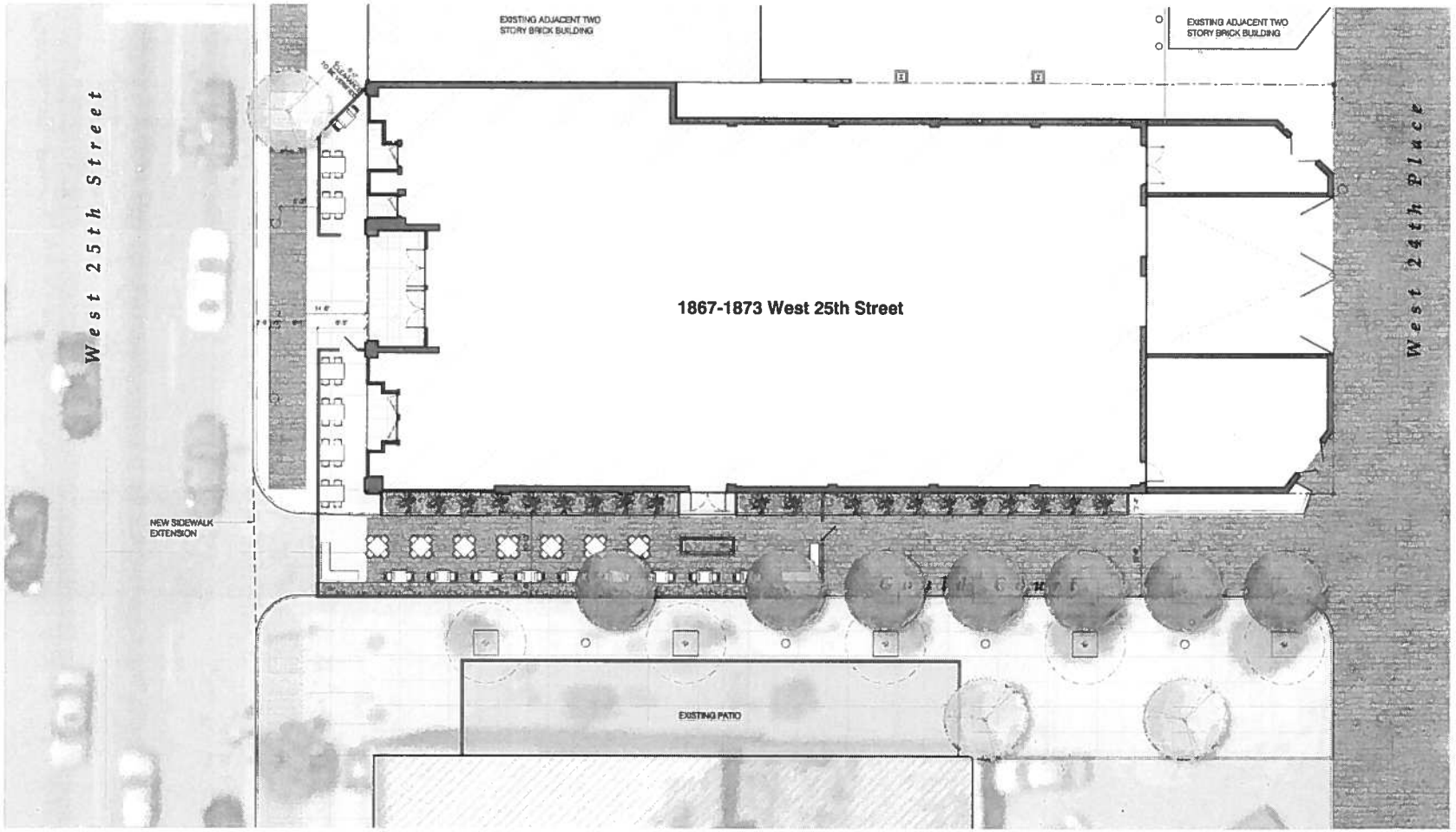
RIALTO THEATER BUILDING RENOVATION

Mitchell's Ice Cream
Central Production
Facility
1867-73 West 25th Street
Cleveland, Ohio

Drawing Title

PROPOSED SOUTH AND WEST EXTERIOR ELEVATIONS

SSC	12-05-2012
SMD	
SMD	A2-01
11-079	



Mitchell's Ice Cream Central Production Facility

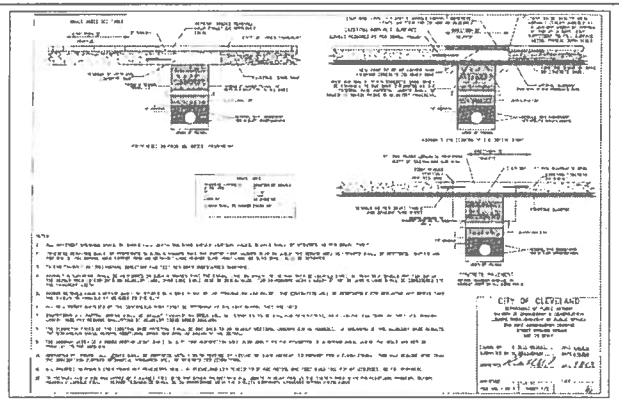
Rialto Theater Building - West 25th Street

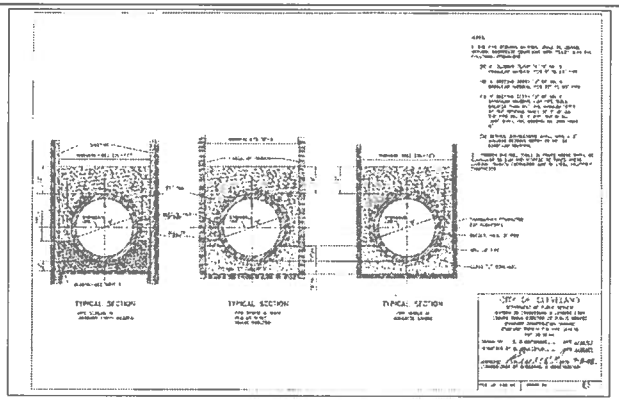
Patio Study 6

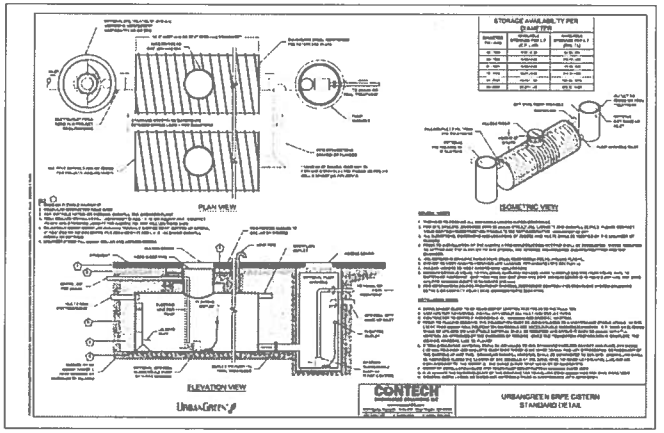
dimitarchitects, llc

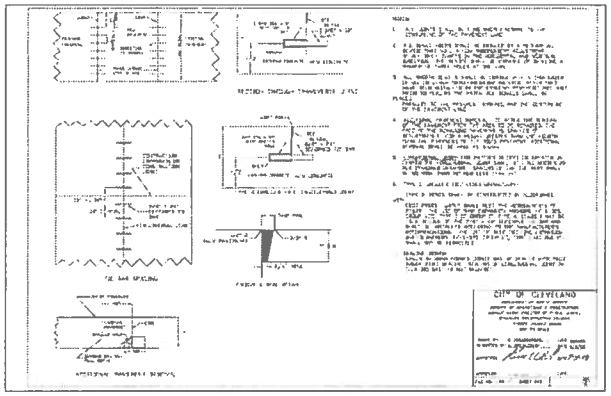
January 24th, 2013

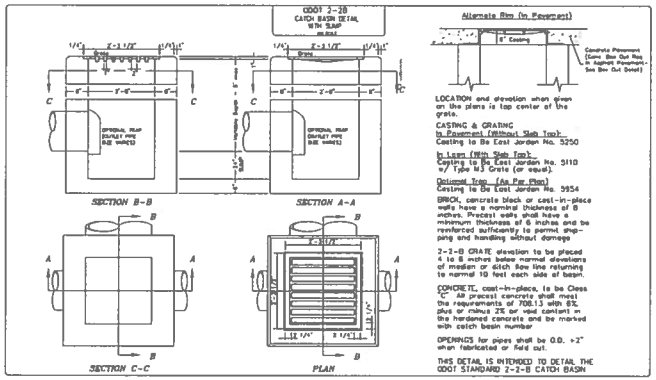

ONE WAY
DO NOT
ENTER

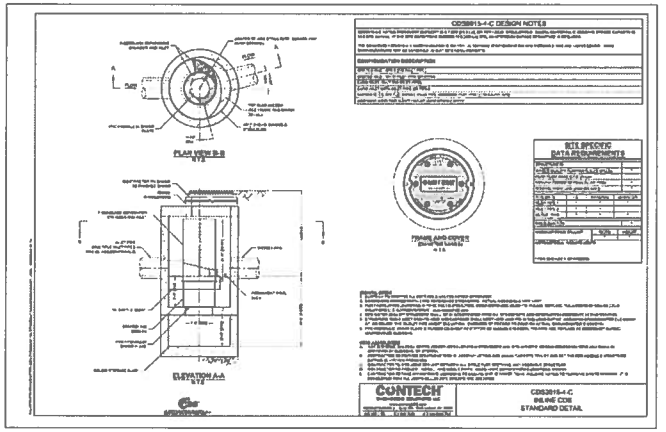


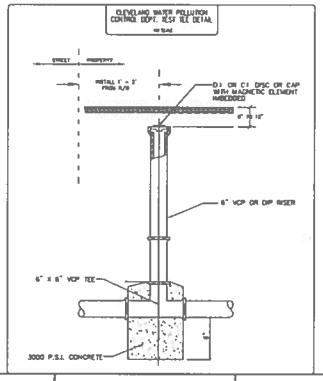












REV. No.		DATE

STATE OF OHIO — DUSTIN R. HERVEY — E-85618 — REGISTERED PROFESSIONAL ENGINEER

DATE: 04/11/13
SCALE: HOR. NA
VERT. NA
FOLDER: DWG\Site Plan
FILENAME: Site Plan.dwg
TAB: Detail
DRAWN: J.P.B.

MITCHELL'S ICE CREAM
W.25TH STREET

CITY OF CLEVELAND–CUYAHOGA COUNTY–OHIO

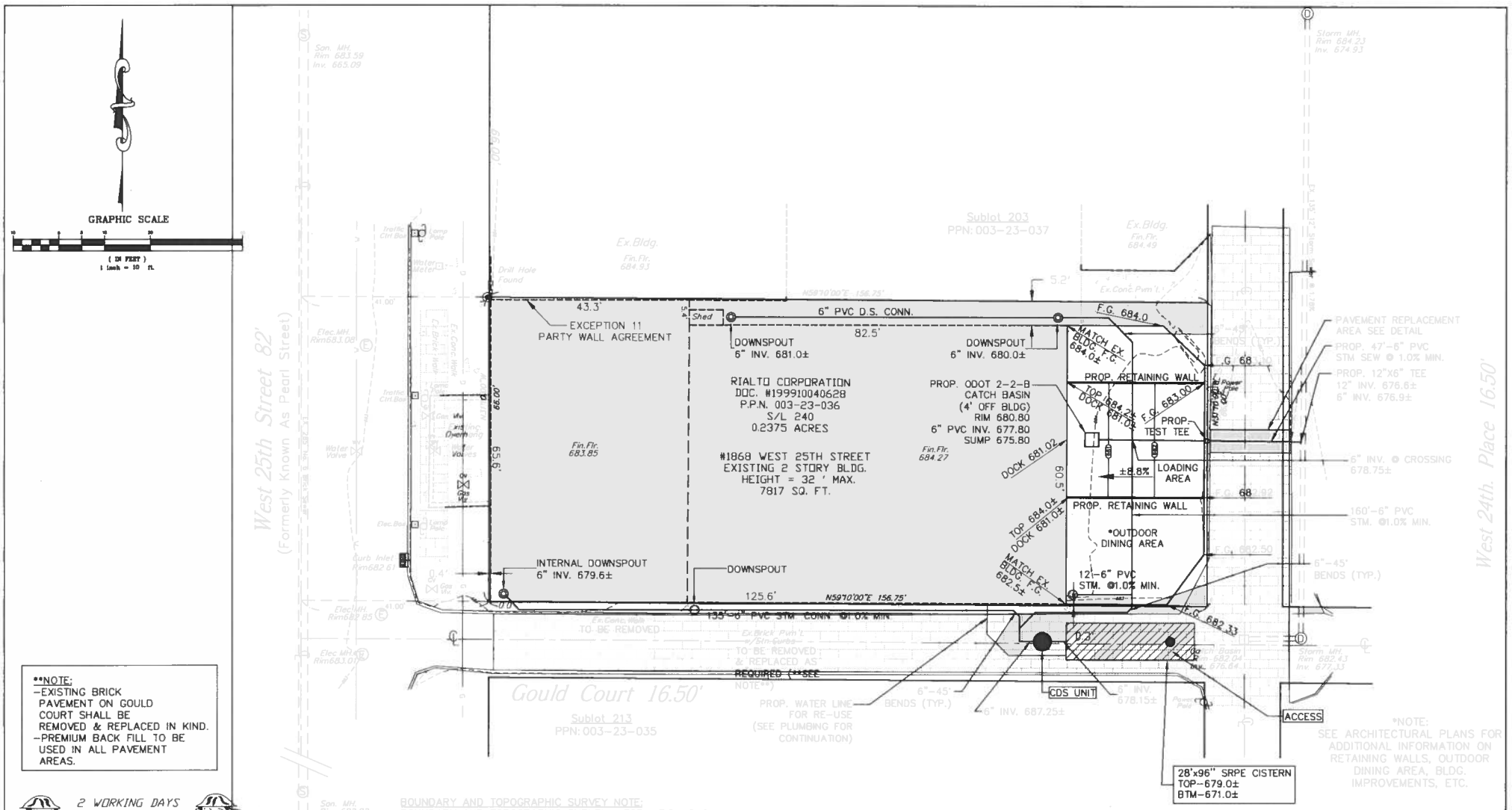
polaris Engineering & Surveying

POLARIS ENGINEERING & SURVEYING, INC.
34600 CHARDON ROAD – SUITE D
WILLOUGHBY HILLS, OHIO 44094
(440) 944-4433 (440) 944-3722 (Fax)
www.polaris-es.com

DETAIL SHEET

CONTRACT No. 12-038

SHEET 3 OF 3



**NOTE:
-EXISTING BRICK PAVEMENT ON GOULD COURT SHALL BE REMOVED & REPLACED IN KIND.
-PREMIUM BACK FILL TO BE USED IN ALL PAVEMENT AREAS.

2 WORKING DAYS
BEFORE YOU DIG
CALL 8-1-1
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECT

BOUNDARY AND TOPOGRAPHIC SURVEY NOTE:
BOUNDARY AND TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THIS MAP IS FROM A SURVEY BY JOHN R. ALBAN (#7651), OF ALBAN SURVEYING CO., DATED SEPTEMBER, 2011. POLARIS ENGINEERING AND SURVEYING, INC. ASSUMES NO RESPONSIBILITY FOR THE BOUNDARY AND TOPOGRAPHIC SURVEY. SEE SURVEY BY ALBAN SURVEYING CO. FOR ADDITIONAL SURVEY INFORMATION.

*NOTE:
SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION ON RETAINING WALLS, OUTDOOR DINING AREA, BLDG. IMPROVEMENTS, ETC.

REV. No.		DATE

STATE OF OHIO
DUSTIN R. HERMEY
E-83615
PROFESSIONAL ENGINEER

DATE: 04/11/13
SCALE: HOR. 1"=10'
VERT. NA
FOLDER: DWG\Site Plan
FILENAME: Site Plan.dwg
TAB: Site Plan
DRAWN: J.P.B.

MITCHELL'S ICE CREAM
W.25TH STREET
CITY OF CLEVELAND-CUYAHOGA COUNTY-OHIO

polaris Engineering & Surveying
POLARIS ENGINEERING & SURVEYING, INC.
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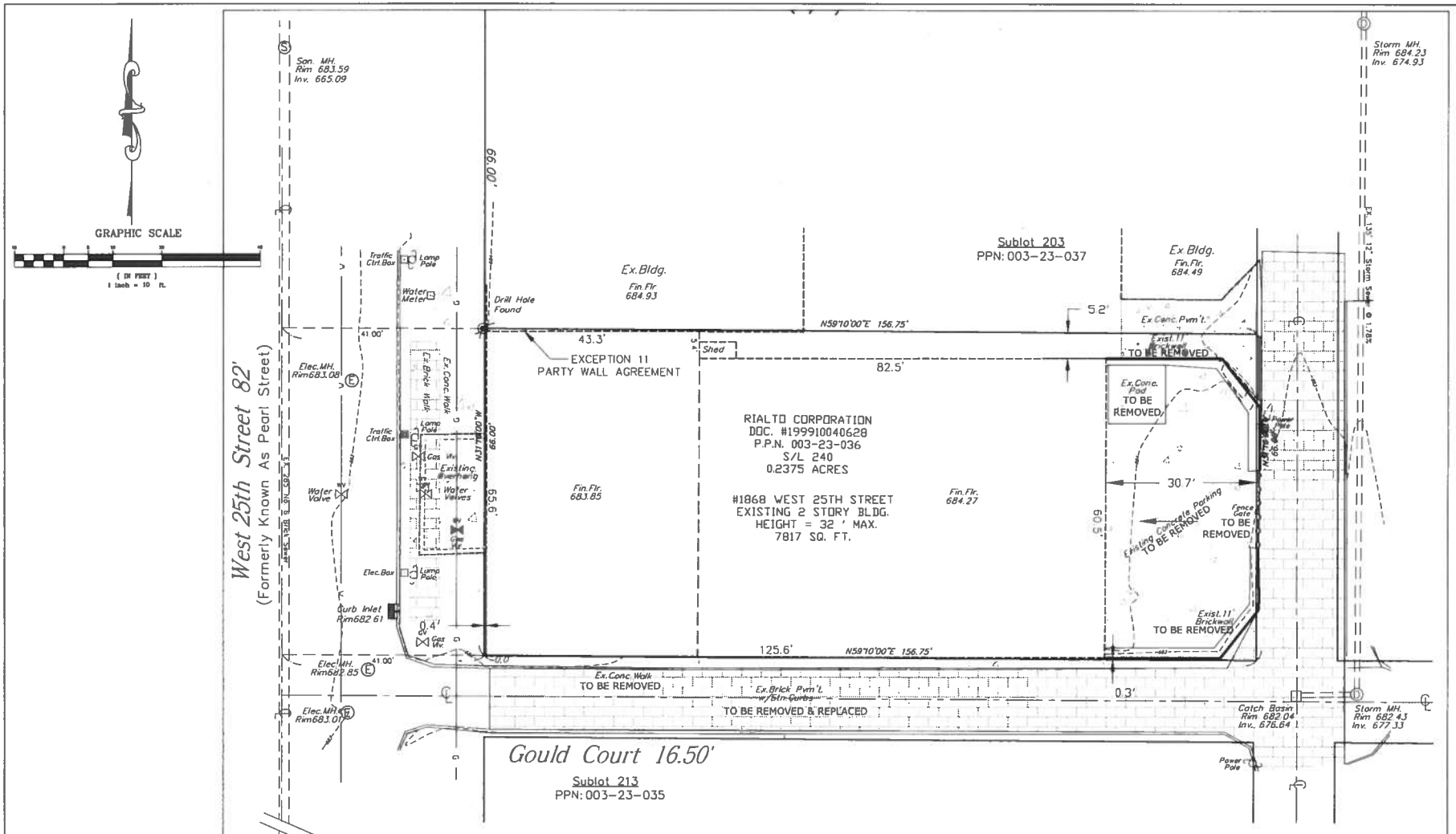
www.polaris-es.com

DOCK AREA SITE PLAN & RAINWATER HARVESTING

CONTRACT No. 12038

SHEET 2 OF 3



2 WORKING DAYS
BEFORE YOU DIG
CALL 8-1-1
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REV. No.		DATE

STATE OF OHIO
DUSTIN R. HEENEY
E-85615
REGISTERED
PROFESSIONAL ENGINEER

DATE: 04/11/13
SCALE: HOR. 1"=10'
VERT. NA
FOLDER: DWG\Site Plan
FILENAME: Site Plan.dwg
TAB: Ex. Conditions
DRAWN: JPB

MITCHELL'S ICE CREAM
W.25TH STREET
CITY OF CLEVELAND-CUYAHOGA COUNTY-OHIO

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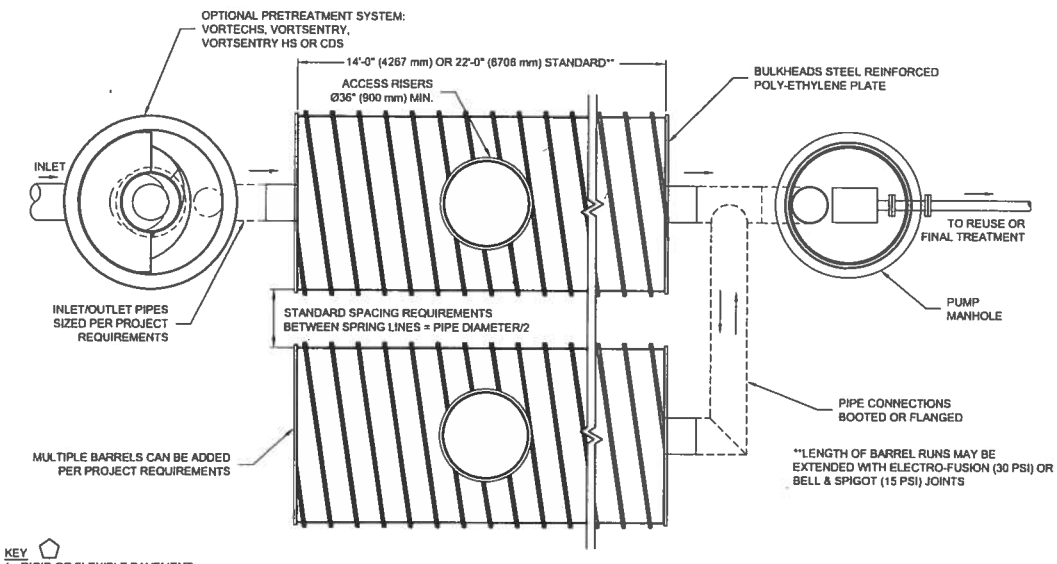
EXISTING CONDITIONS & DEMOLITION PLAN

CONTRACT N
12-036

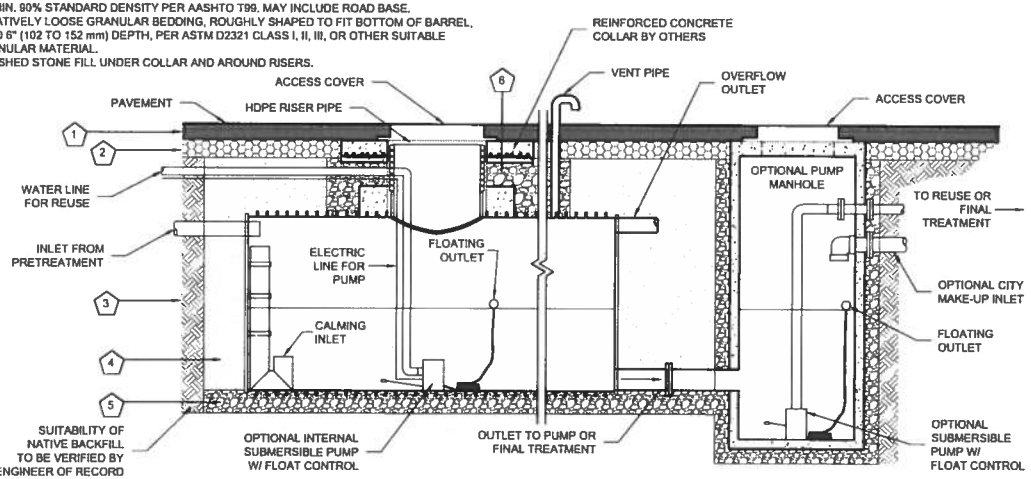
SHEET 1



PLAN VIEW

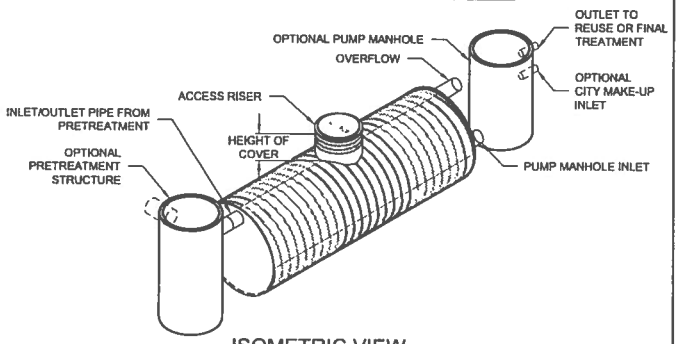
KEY

1. RIGID OR FLEXIBLE PAVEMENT.
2. GRANULAR COMPACTED ROAD BASE.
3. ANY SUITABLE NATIVE OR GENERAL BACKFILL, SEE ENGINEER PLANS.
4. WELL GRADED GRANULAR FILL. ASTM D2321 CLASS I, II, III, OR EQUIVALENT. COMPACT TO MIN. 90% STANDARD DENSITY PER AASHTO T99, MAY INCLUDE ROAD BASE.
5. RELATIVELY LOOSE GRANULAR BEDDING, ROUGHLY SHAPED TO FIT BOTTOM OF BARREL, 4" TO 6" (102 TO 152 mm) DEPTH, PER ASTM D2321 CLASS I, II, III, OR OTHER SUITABLE GRANULAR MATERIAL.
6. CRUSHED STONE FILL UNDER COLLAR AND AROUND RISERS.



ELEVATION VIEW

STORAGE AVAILABILITY PER DIAMETER		
DIAMETER (IN / mm)	AVAILABLE STORAGE PER L.F. (C.F. / m3)	AVAILABLE STORAGE PER L.F. (GAL. / L)
48 / 1200	12.57 / 0.35	94.00 / 356
54 / 1350	15.90 / 0.45	118.97 / 450
60 / 1500	19.63 / 0.55	146.86 / 556
72 / 1800	28.27 / 0.80	211.51 / 800
84 / 2100	38.48 / 1.09	287.88 / 1090
96 / 2400	50.27 / 1.42	376.01 / 1423



ISOMETRIC VIEW

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE, CAPACITY AND BACKFILL DETAILS, PLEASE CONTACT YOUR CONTECH CONSTRUCTION PRODUCTS INC REPRESENTATIVE. www.contech-cpi.com
3. ALL ELEVATIONS, DIMENSIONS AND LOCATIONS OF RISERS AND INLETS SHALL BE VERIFIED BY THE ENGINEER OF RECORD.
4. PRIOR TO INSTALLATION OF THE SYSTEM A PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED. THOSE REQUIRED TO ATTEND ARE THE SUPPLIER OF THE SYSTEM, THE GENERAL CONTRACTOR, SUB-CONTRACTORS AND THE ENGINEER.
5. THE CISTERN IS MANUFACTURED FROM STEEL REINFORCED POLYETHYLENE PLASTIC.
6. SYSTEM TO MEET AASHTO HS20/HS25 LIVE LOADING, PER AASHTO LRFD SECTION 12.
7. ACCESS COVERS TO MEET AASHTO M306 LOAD RATING.
8. MINIMUM COVER IS EQUAL TO PIPE DIAMETER/5 AND NO LESS THAN 12-INCHES (305 mm) FROM TOP OF PIPE TO BOTTOM OF PAVEMENT. Ø72" (1800 mm) AND Ø84" (2100 mm) PIPE MINIMUM COVER IS 18-INCHES (457 mm), Ø96" (2400 mm) PIPE MINIMUM COVER IS 24-INCHES (610 mm).
9. FOR INFORMATION ON PRE-TREATMENT SYSTEMS, REFERENCE CONTECH PRE-TREATMENT SYSTEM STANDARD DETAILS OR CONTACT YOUR LOCAL CONTECH REPRESENTATIVE.

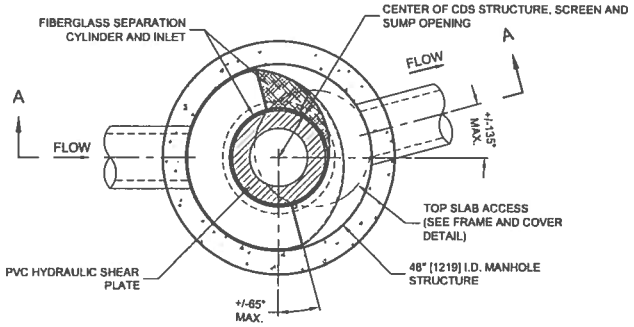
INSTALLATION NOTES

A. INSTALLATION GUIDE TO BE REVIEWED BY CONTRACTOR PRIOR TO INSTALLATION.
B. CONTRACTOR TO PROVIDE, INSTALL AND GROUT ALL INLET AND OUTLET PIPES.
C. CONTRACTOR TO PROVIDE AND INSTALL ALL BEDDING AND BACKFILL MATERIAL.
D. PRIOR TO PLACING BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, A TENSAR BX GEOGRID SHALL BE UTILIZED OR UNSUITABLE MATERIAL SHALL BE REMOVED AND BROUGHT BACK TO GRADE WITH FILL MATERIAL AS APPROVED BY THE ENGINEER OF RECORD. ONCE THE FOUNDATION PREPARATION IS COMPLETE, THE BEDDING MATERIAL CAN BE PLACED.
E. STONE EMBEDMENT MATERIAL SHALL BE INSTALLED TO 95% STANDARD PROCTOR DENSITY AND PLACED IN 6-INCH (152 mm) TO 8-INCH (203 mm) LIFTS SUCH THAT THERE IS NO MORE THAN A TWO LIFT DIFFERENTIAL BETWEEN ANY OF THE BARRELS AT ANY TIME. GRANULAR BACKFILL MATERIAL SHALL BE COMPACTED TO 90% SPD. BACKFILLING SHALL BE ADVANCED ALONG THE LENGTH OF THE BARRELS AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING AND DISPLACEMENT OF THE BARRELS. THE MINIMUM PIPE SPACING MUST BE MAINTAINED.
F. REFER TO INSTALLATION GUIDE FOR TEMPORARY CONSTRUCTION LOADING GUIDELINES.
G. IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.
H. GENERAL INSTALLATION METHODS AND MATERIALS TO BE IN ACCORDANCE WITH ASTM D2321.

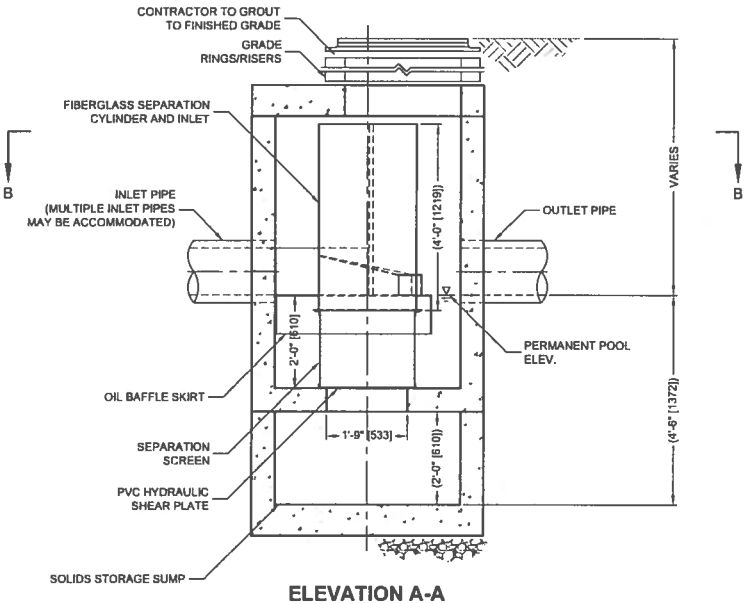
URBANGREEN

CONTECH
ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

URBANGREEN SRPE CISTERN STANDARD DETAIL



PLAN VIEW B-B
N.T.S.



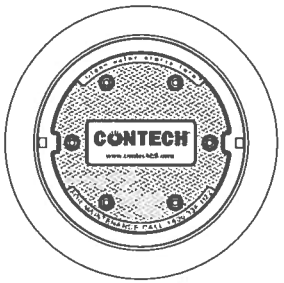
ELEVATION A-A
N.T.S.

CDS2015-4-C DESIGN NOTES

CDS2015-4-C RATED TREATMENT CAPACITY IS 0.7 CFS [19.8 L/s], OR PER LOCAL REGULATIONS. MAXIMUM HYDRAULIC INTERNAL BYPASS CAPACITY IS 10.0 CFS [283 L/s]. IF THE SITE CONDITIONS EXCEED 10.0 [283 L/s] CFS, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-845-7000 513-845-7993 FAX

CDS2015-4-C
INLINE CDS
STANDARD DETAIL

URBANGREEN™
Stormwater Solutions from CONTECH

Rainwater Harvesting Runoff Calculator

Project Name : Mitchell's Icecream

Model # : 391

Project Information			
Option #	1	**Model #**	391
Project Name	Mitchell's Icecream		
Country	United States	**State**	Ohio
City	Cleveland	**Zipcode**	44103
Land Use	Commercial		
Civil Engineer Firm			
Architecture Firm			
Merlin #	476963-010		

Contact Information		
First Name		
Last Name		
Phone #		
Email		

URBANGREEN™
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Rainwater Harvesting Runoff Calculator

Project Name : Mitchell's Icecream

Model # : 391

Supply Information

Site Area for Rainwater & Stormwater Sources			
	Rooftop - Traditional	Rooftop - Green Roof	Hardscape
Area (sq.ft)	8,200		
Runoff C	0.95	0.50	0.90
Effective Runoff Area	7,790		

Building Information		
# of Floors		
Total Building Sq Footage		sq.ft
Peak Condensation Rate	0.0007	gal/hr/sq.ft
Peak Condensation Volume		gal/month

Secondary Sources of Re-use Water

Calculation of AC with	% of Peak

Air Condition Condensation Supply

Month	(% of Peak)	(gal/month)
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		
Annual Total		

Gray Water Supply

Month	(gal/month)
January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	
Annual Total	

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Demand Information

Toilet Re-use Demand	
	Office/Com
Weekday (flushes/day)	375
Weekend (flushes/day)	375
Volume (gal/flush)	1.60
Annual Total	219,000

Laundry Re-use Demand	
Loads/Day	
Gallons/Load	
Cold Fraction	
Daily Total	
Annual Total	

Wash Water Re-use Demand		
Daily Average		gal
Annual Total		gal

Irrigation Re-use Demand		
Input Units	Inches per week	
Irrigation Area		sq.ft

Irrigation		
Month	Inches per week	Gallons per week
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		
Annual Total		

Cooling Makeup Re-use Demand		
Input Units	Gallons per month	
Volume in Peak Month	4.60	gal/sq.ft
Total Cooled Area		sq.ft
Peak Monthly Demand		gal

Cooling Makeup		
Month	(% of Peak)	(gal/month)
January		9,600
February		9,600
March		9,600
April		9,600
May		9,600
June		9,600
July		9,600
August		9,600
September		9,600
October		9,600
November		9,600
December		9,600
Annual Total		115,200

URBANGREEN™
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Rainwater Harvesting Runoff Calculator

Project Name : Mitchell's Icecream

Model # : 391

Analysis Information

Rainfall Data	
Station Name	Chardon
Years Modeled	1981-2001
Missing Data	
Avg Annual Rainfall	46

Design Storm	
First Flush Bypass (in)	0.00
Design Storm (in)	2.00

Cistern Size	
Cistern Size (gallons)	10,000

Utility Rates		
Water Rate	$0.0030	$/gal
Sewer Rate	$0.0060	$/gal

Supply Source		
	Include ?	Annual Volume (gal)
Rooftop	Yes	223,365
Hardscape	No	
AC Condensate	No	
Gray Water	No	
	Total	223,365

Demand Source		
	Include ?	Annual Volume (gal)
Irrigation	No	
Toilet Flush	Yes	219,000
Cooling Makeup	Yes	115,200
Wash Water	No	
Laundry	No	
	Total	334,200

	Rainfall		Stormwater		Supply		Demand	Captured
	Total	Targeted	Targeted	Peak	Targeted SW	Total		
Typical Rainfall Year	46	46	222,625	4,296	222,625	225,285	334,201	210,299
Max Rainfall Year	60	60	290,909	1,214	290,909	292,123	334,201	253,923
21 Year Total	976	964	4,675,135	55,842	4,675,135	4,730,976	7,018,221	4,416,284

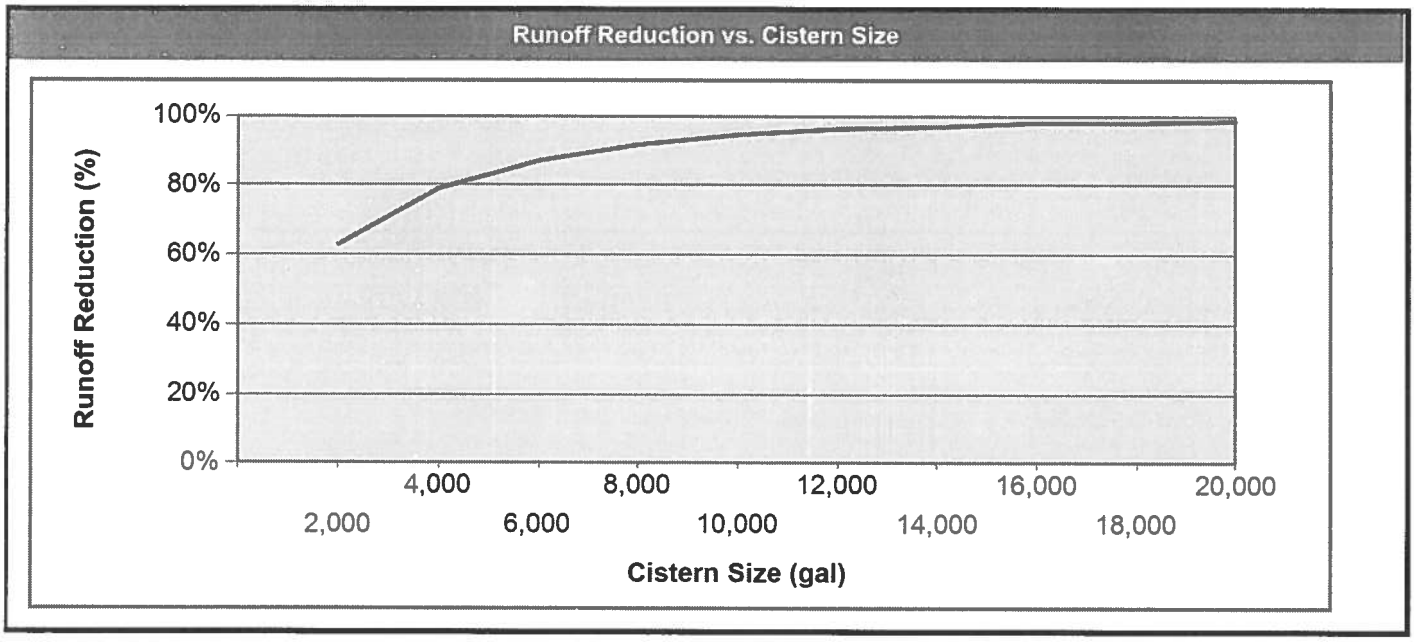
	Runoff Retained (Targeted Rainfall)		Water Savings		Total Retained (Targeted, Peak, Secondary)		Savings
Typical Rainfall Year	210,203	95%	210,299	63%	210,299	94%	$1,893
Max Rainfall Year	253,634	87%	253,923	76%	253,923	87%	$2,286
21 Year Total	4,414,264	94%	4,416,286	63%	4,416,284	93%	$39,749

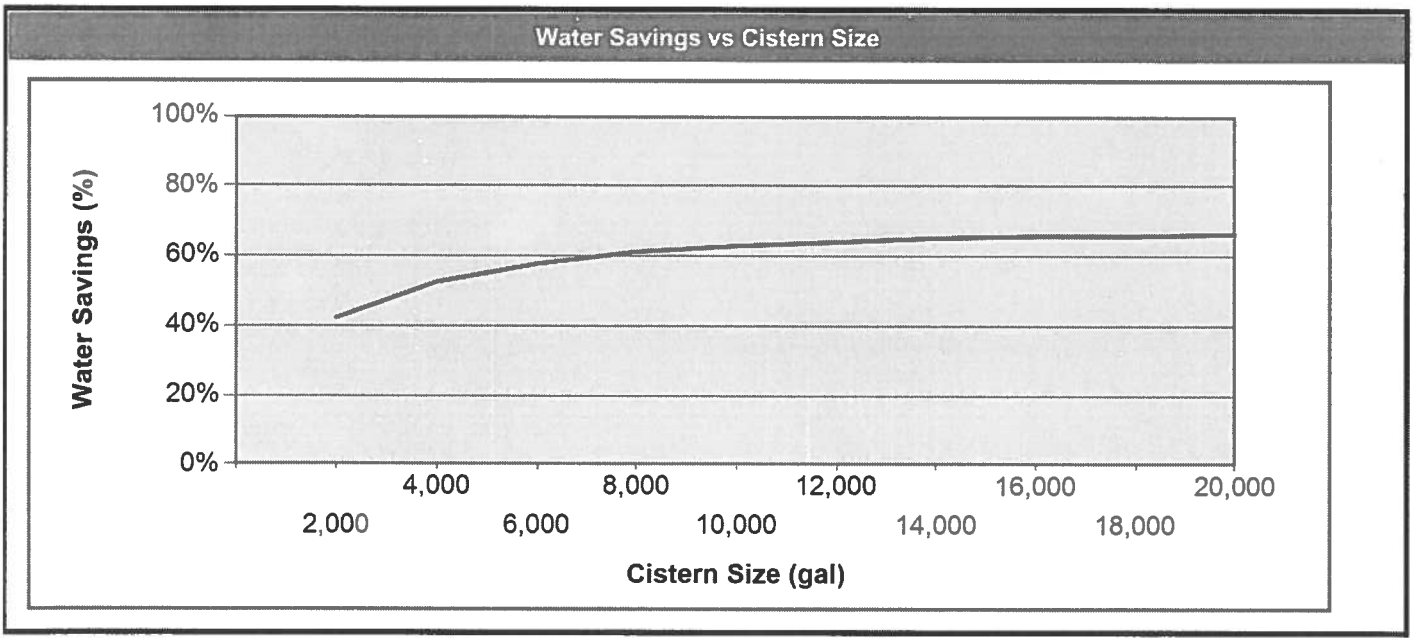
URBANGREEN™
Stormwater Solutions from CONTECH

Rainwater Harvesting Runoff Calculator

Project Name : Mitchell's Icecream

Model # : 391





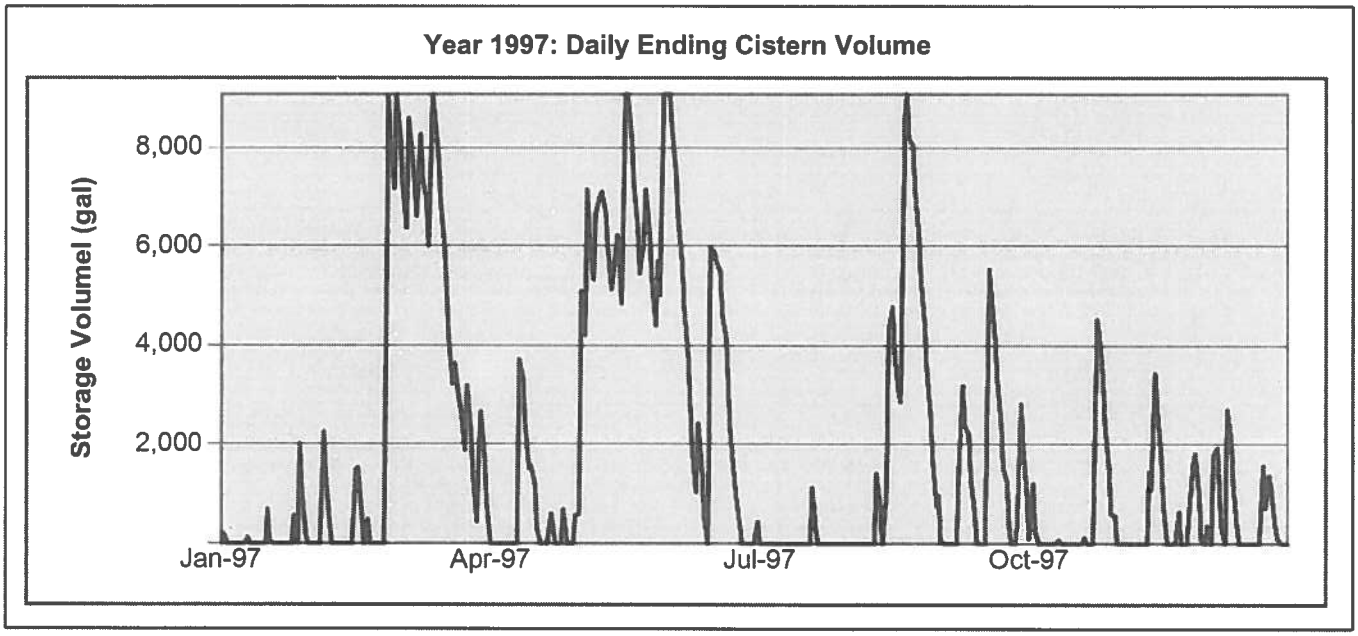
URBANGREEN™
Stormwater Solutions from CONTECH

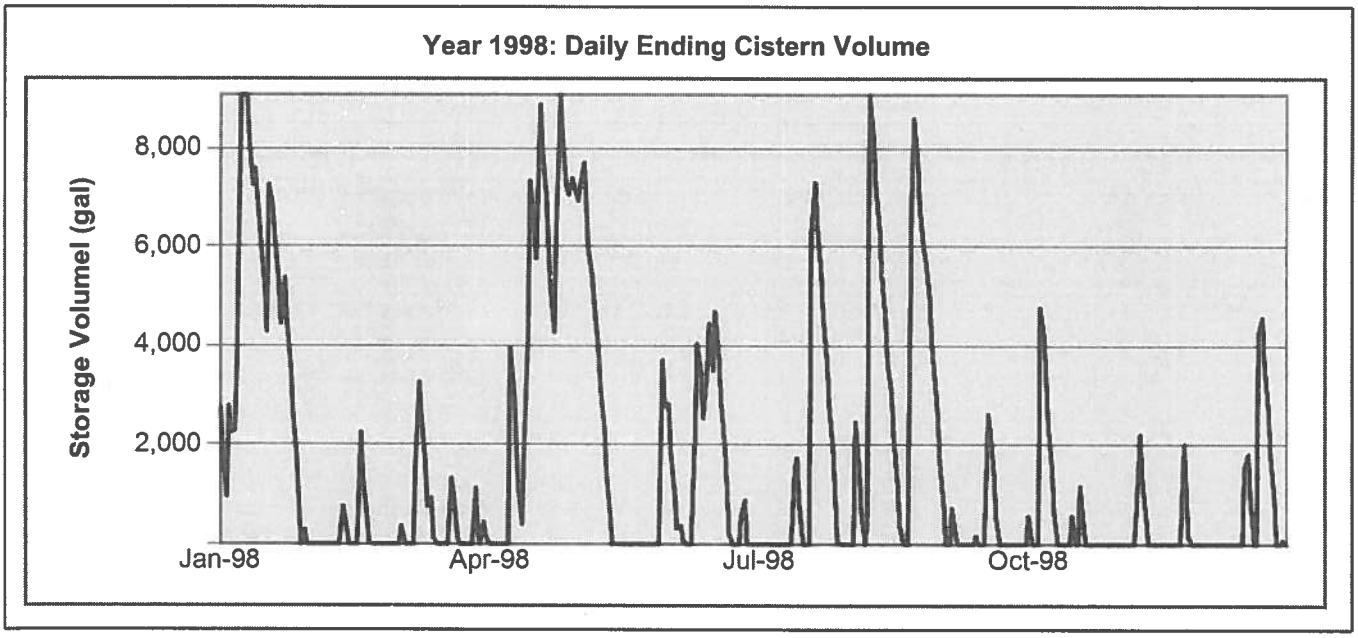
Rainwater Harvesting Runoff Calculator

Project Name : Mitchell's Icecream

Model # : 391

Daily Ending Cistern Volume Graph





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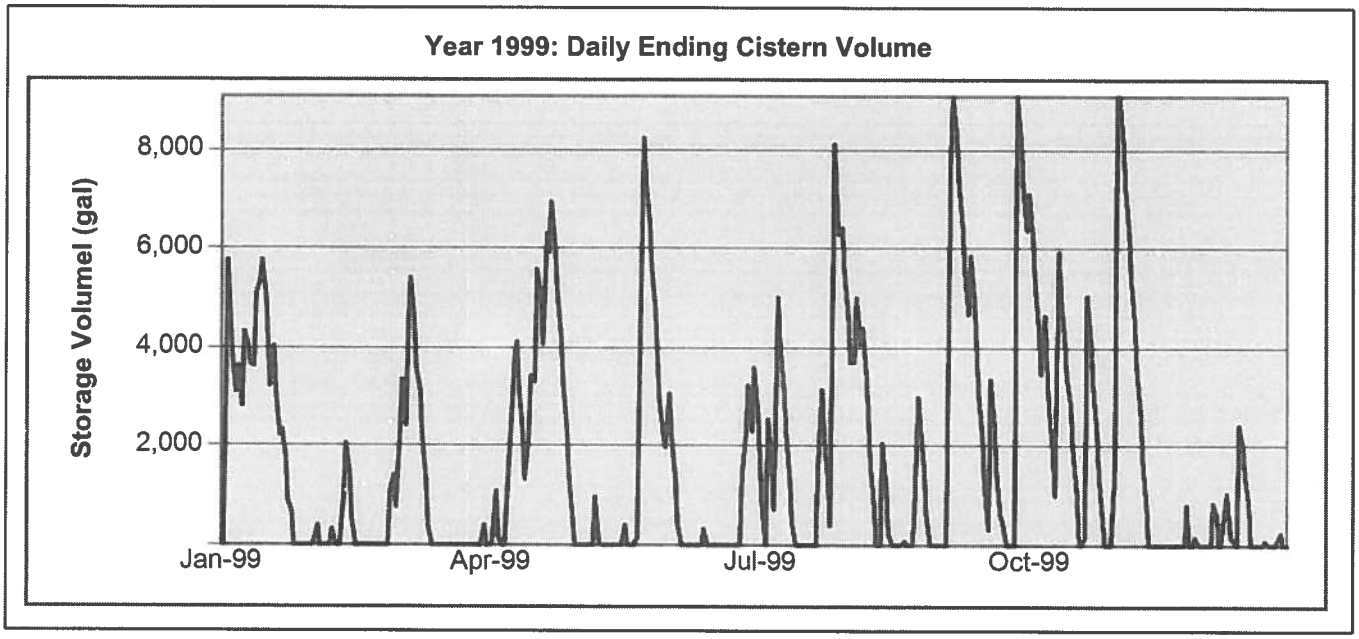

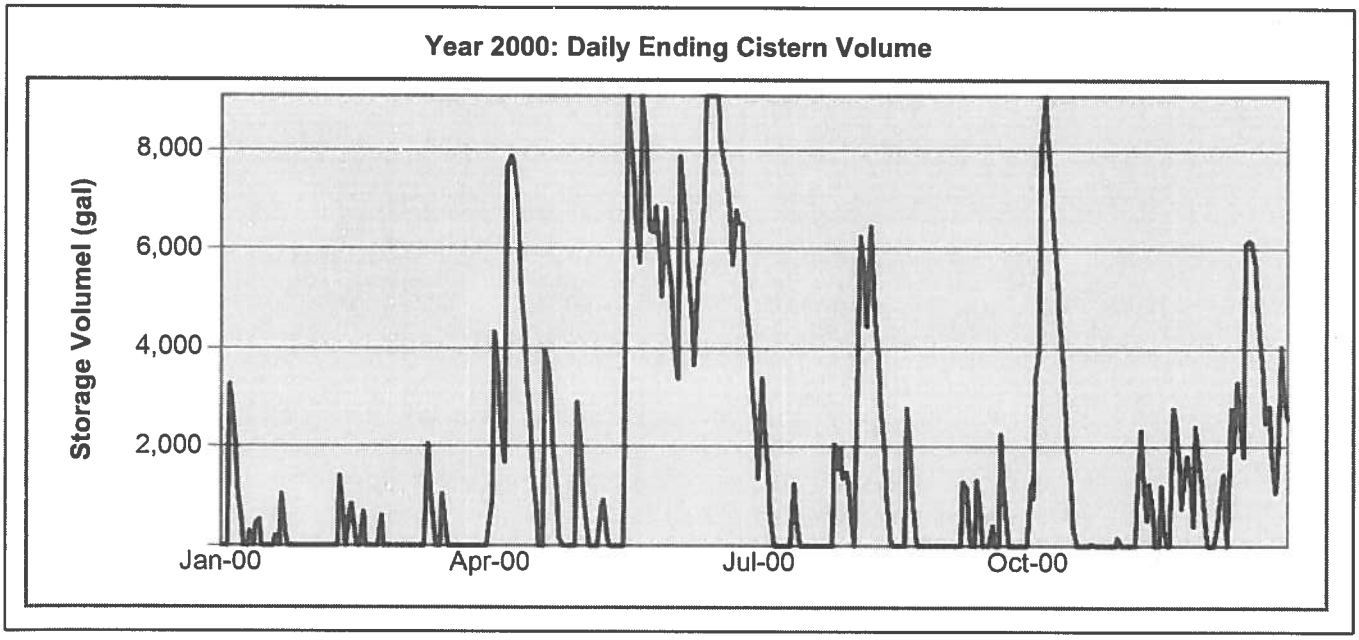

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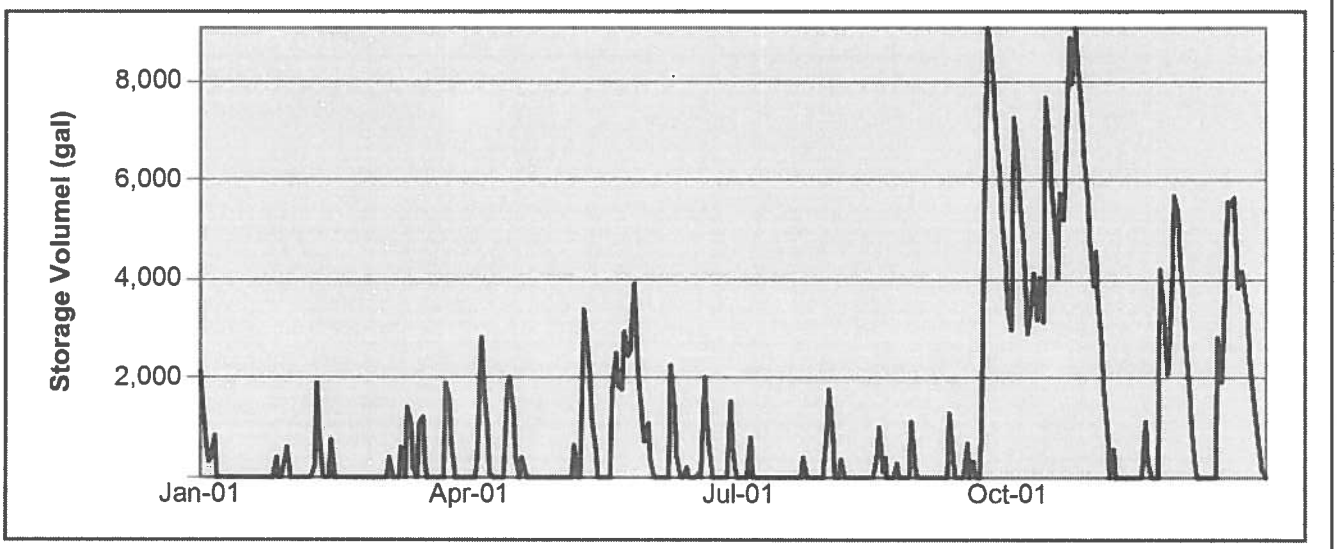
Project Name : Mitchell's Icecream

Model # : 391



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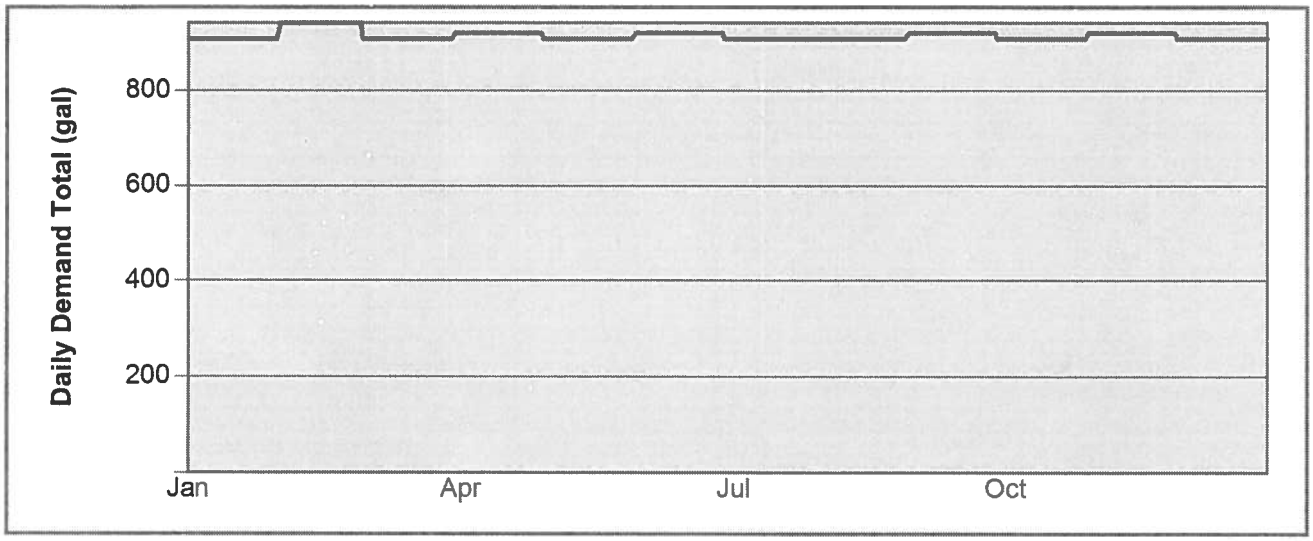
Rainwater Harvesting Runoff Calculator

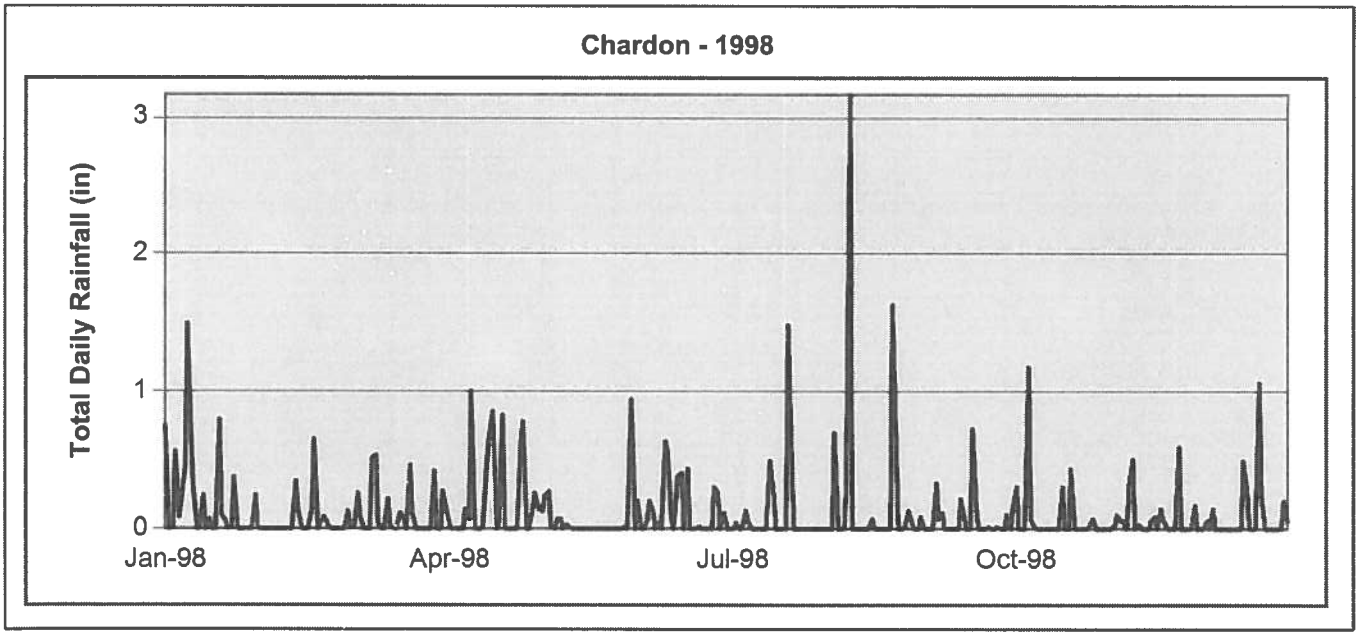
Project Name : Mitchell's Icecream

Model # : 391

Total Daily Demand



Annual Rainfall History



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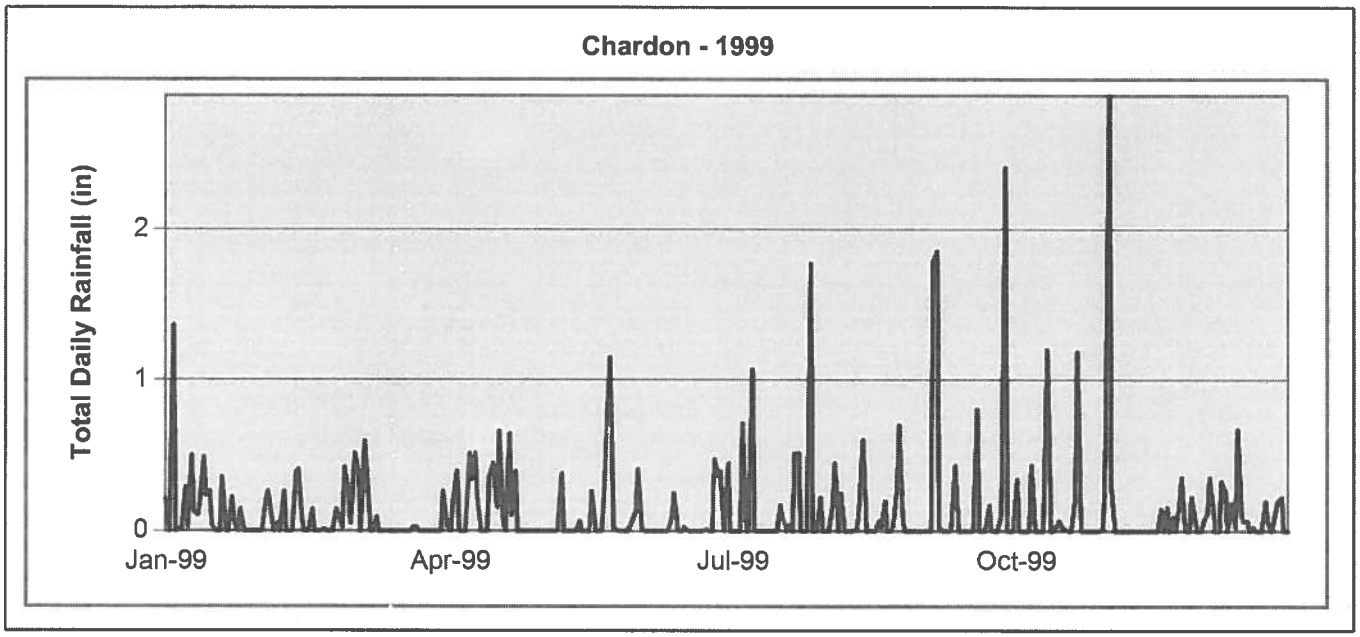

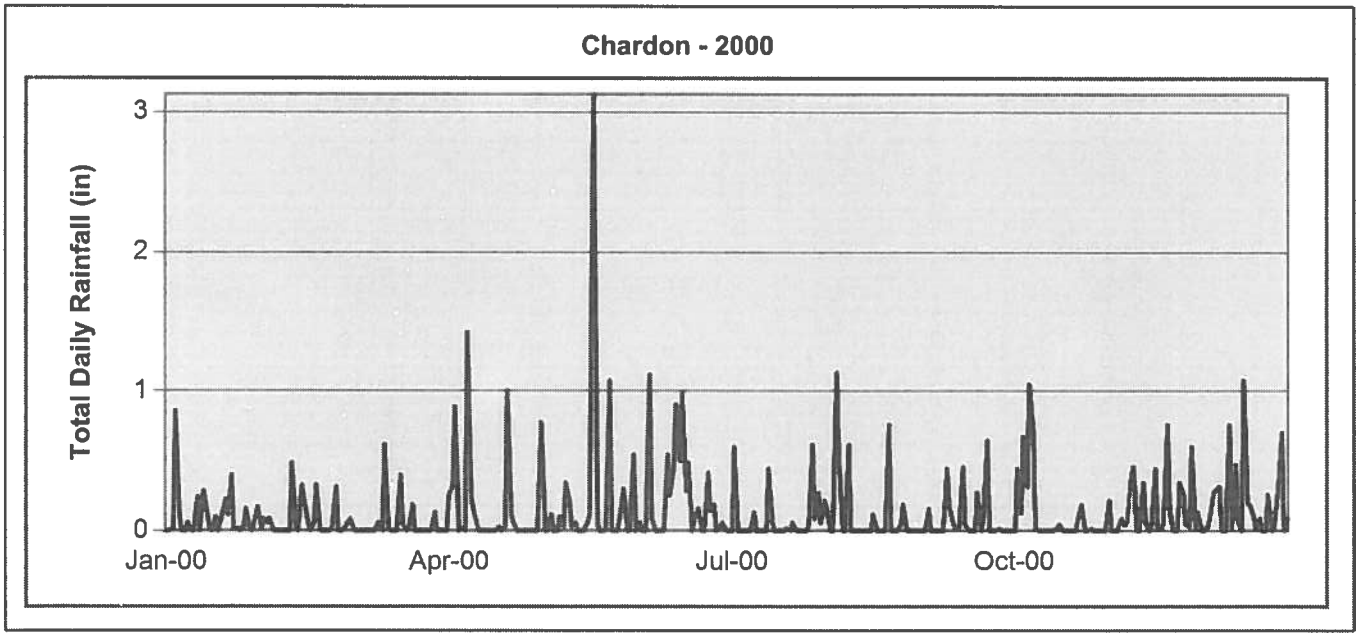

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Rainwater Harvesting Runoff Calculator

Project Name : Mitchell's Icecream

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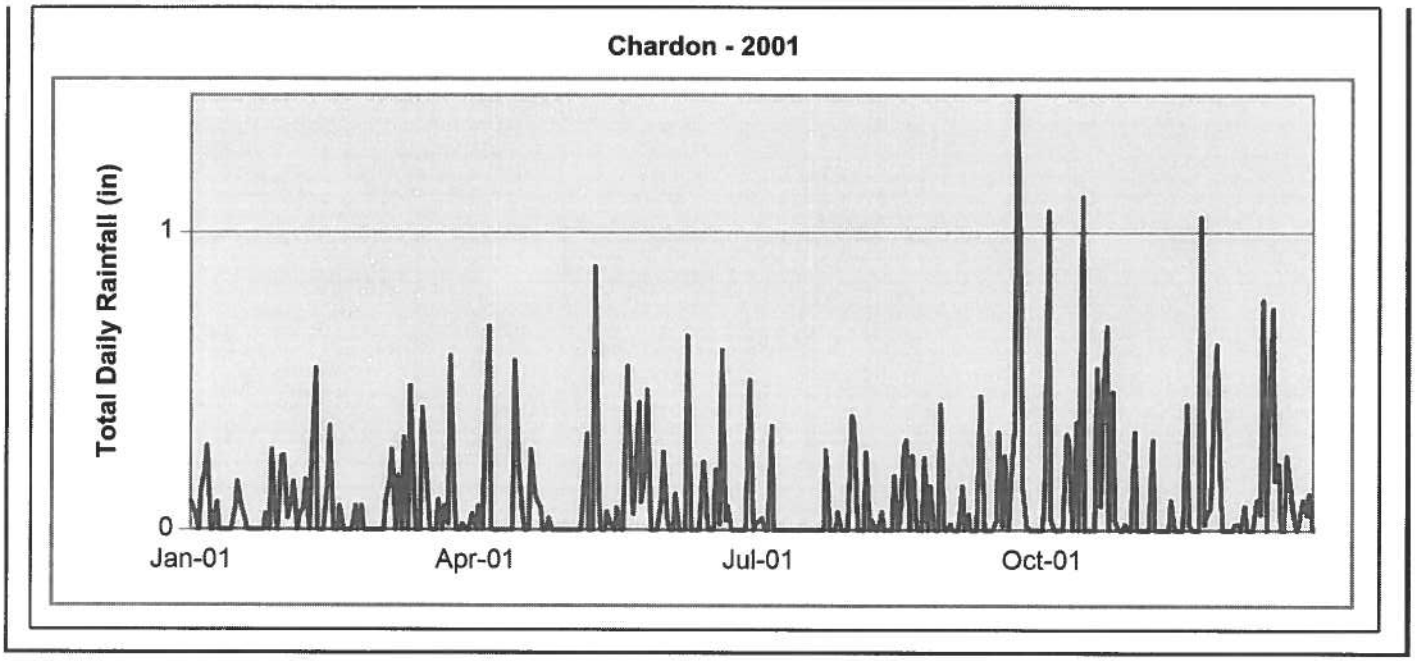

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Detail Result

	Rainfall				Supply							
	Total	FF	Target	Peak	Stormwater			Secondary Supply		Total		
Year			0.00 to 2.00 in.		FF BP	Targeted	Peak	AC	Gray Water	Targeted	Total	Targeted / Total
1981	47		47			226,424				226,424	226,424	100%
1982	43		43			206,419	1,651			206,419	208,070	99%
1983	41		41			198,941				198,941	198,941	100%
1984	49		49			236,962				236,962	236,962	100%
1985	50		49	1		239,923	4,322			239,923	244,245	98%
1986	51		49	2		238,176	8,061			238,176	246,236	97%
1987	45		44	1		213,751	2,671			213,751	216,422	99%
1988	45		45			218,267				218,267	218,267	100%
1989	50		48	1		234,000	6,944			234,000	240,943	97%
1990	58		57	1		274,739	6,313			274,739	281,052	98%
1991	37		37			177,381				177,381	177,381	100%
1992	50		49	1		238,127	2,525			238,127	240,652	99%
1993	44		44			214,479				214,479	214,479	100%
1994	39		39	1		187,238	3,059			187,238	190,298	98%
1995	46		46			224,434				224,434	224,434	100%
1996	60		60			290,909	1,214			290,909	292,123	100%
1997	47		47			227,930	1,602			227,930	229,532	99%
1998	42		40	1		196,270	5,681			196,270	201,951	97%
1999	48		47	1		226,522	6,312			226,522	232,834	97%
2000	47		46	1		224,725	5,487			224,725	230,212	98%
2001	37		37			179,518				179,518	179,518	100%
Total	976		964	11		4,675,135	55,842			4,675,135	4,730 976	99%

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	Demand						Captured			Overflow		
Year	Toilet	Laundry	Wash	Irrigate	Cooling	Total	Targeted	Peak	Total	Targeted	Peak	Total
1981	219,000				115,201	334,201	219,430		219,430	6,995		6,995
1982	219,000				115,201	334,201	197,789	288	198,078	8,629	1,362	9,992
1983	219,000				115,201	334,201	194,298		194,298	4,643		4,643
1984	219,000				115,201	334,201	229,973		229,973	6,989		6,989
1985	219,000				115,201	334,201	230,246		230,246	9,678	4,322	13,999
1986	219,000				115,201	334,201	206,395		206,395	31,780	8,061	39,841
1987	219,000				115,201	334,201	187,157	288	187,446	26,594	2,382	28,976
1988	219,000				115,201	334,201	214,436		214,436	3,830		3,830
1989	219,000				115,201	334,201	221,584	288	221,872	12,416	6,655	19,071
1990	219,000				115,201	334,201	241,474		241,474	33,265	6,313	39,578
1991	219,000				115,201	334,201	176,858		176,858	523		523
1992	219,000				115,201	334,201	221,109		221,109	17,018	2,525	19,543
1993	219,000				115,201	334,201	206,760		206,760	7,720		7,720
1994	219,000				115,201	334,201	184,740		184,740	2,498	3,059	5,558
1995	219,000				115,201	334,201	211,185		211,185	13,249		13,249
1996	219,000				115,201	334,201	253,634	288	253,923	37,275	925	38,200
1997	219,000				115,201	334,201	214,931	288	215,220	12,998	1,314	14,312
1998	219,000				115,201	334,201	192,155		192,155	4,115	5,681	9,796
1999	219,000				115,201	334,201	218,010	288	218,299	8,511	6,024	14,535
2000	219,000				115,201	334,201	213,517	288	213,806	11,208	5,199	16,406
2001	219,000				115,201	334,201	178,581		178,581	937		937
Total	4,599,000				2,419,221	7,018,221	4,414,262	2,016	4,416,284	260,871	53,822	314,693

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	City Makeup		Water Savings		Runoff Reduction						Secondary Reduction		Total Retained	
	Total	Makeup %	Total	Savings %	Target		Peak		Total		From Secondary Supply			
Year					Volume	%	Volume	%	Volume	%	Volume	%	Volume	%
1981	114,771	34%	219,430	66%	219,429	97%		---	219,429	97%	1	---	219,430	97%
1982	136,733	41%	197,468	59%	197,790	96%	289	18%	198,079	95%	-1	---	198,078	95%
1983	141,707	42%	192,494	58%	194,298	98%		---	194,298	98%		---	194,298	98%
1984	107,220	32%	226,981	68%	229,973	97%		---	229,973	97%		---	229,973	97%
1985	98,763	30%	235,438	70%	230,245	96%			230,245	94%	1	---	230,246	94%
1986	127,592	38%	206,609	62%	206,396	87%			206,396	84%	-1	---	206,395	84%
1987	146,755	44%	187,446	56%	187,157	88%	289	11%	187,446	87%		---	187,446	87%
1988	121,661	36%	212,540	64%	214,437	98%		---	214,437	98%	-1	---	214,436	98%
1989	111,853	33%	222,348	67%	221,584	95%	289	4%	221,873	92%	-1	---	221,872	92%
1990	100,396	30%	233,805	70%	241,474	88%			241,474	86%		---	241,474	86%
1991	148,252	44%	185,949	56%	176,858	100%		---	176,858	100%		---	176,858	100%
1992	120,110	36%	214,091	64%	221,109	93%			221,109	92%		---	221,109	92%
1993	125,518	38%	208,683	62%	206,759	96%		---	206,759	96%	1	---	206,760	96%
1994	144,366	43%	189,835	57%	184,740	99%			184,740	97%		---	184,740	97%
1995	123,016	37%	211,185	63%	211,185	94%		---	211,185	94%		---	211,185	94%
1996	80,278	24%	253,923	76%	253,634	87%	289	24%	253,923	87%		---	253,923	87%
1997	118,981	36%	215,220	64%	214,932	94%	288	18%	215,220	94%		---	215,220	94%
1998	142,046	43%	192,155	57%	192,155	98%			192,155	95%		---	192,155	95%
1999	115,902	35%	218,299	65%	218,011	96%	288	5%	218,299	94%		---	218,299	94%
2000	122,984	37%	211,217	63%	213,517	95%	288	5%	213,805	93%	1	---	213,806	93%
2001	153,031	46%	181,170	54%	178,581	99%		---	178,581	99%		---	178,581	99%
Total	2,601,935	37%	4,416,286	63%	4,414,264	94%	2,020	4%	4,416,284	93%		---	4,416,284	93%

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Water Savings				
Year	Gallons	Water	Sewer	Total
1981	219,430	$658	$1,317	$1,975
1982	197,468	$592	$1,185	$1,777
1983	192,494	$577	$1,155	$1,732
1984	226,981	$681	$1,362	$2,043
1985	235,438	$706	$1,413	$2,119
1986	206,609	$620	$1,240	$1,860
1987	187,446	$562	$1,125	$1,687
1988	212,540	$638	$1,275	$1,913
1989	222,348	$667	$1,334	$2,001
1990	233,805	$701	$1,403	$2,104
1991	185,949	$558	$1,116	$1,674
1992	214,091	$642	$1,285	$1,927
1993	208,683	$626	$1,252	$1,878
1994	189,835	$570	$1,139	$1,709
1995	211,185	$634	$1,267	$1,901
1996	253,923	$762	$1,524	$2,286
1997	215,220	$646	$1,291	$1,937
1998	192,155	$576	$1,153	$1,729
1999	218,299	$655	$1,310	$1,965
2000	211,217	$634	$1,267	$1,901
2001	181,170	$544	$1,087	$1,631
Total Savings	4,416,286	$13,249	$26,500	$39,749

Cistern Dimensions	
Diameter	Total Linear Feet
4	106
6	47
8	27
10	17