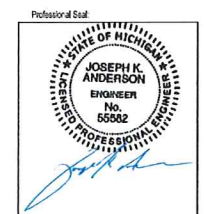


Executive:	M.P.
Manager:	J.K.A.
Designer:	J.K.A.
Quality Control:	
Section:	35
	T-03-N R-11-E



UTILITY NOTES

WATER SERVICE:
WATER SERVICE TO BE PROVIDED BY 12" WATERMAIN DIRECTLY EAST OF PROPOSED BUILDINGS. ALL CONSTRUCTION OF WATER SERVICE WILL CONFORM TO CITY, COUNTY, AND STATE REGULATIONS.

SANITARY SERVICE:
SANITARY SERVICE TO BE PROVIDED BY EXISTING 6" SANITARY LEAD CONNECTION IN NW CORNER OF PROPOSED SITE. ALL CONSTRUCTION OF SANITARY SERVICE WILL CONFORM TO CITY, COUNTY, AND STATE REGULATIONS.

STORMWATER RUNOFF:
ALL STORMWATER RUNOFF WILL BE CONVEYED TO EXISTING 15" AND 18" DIAMETER STORM SEWERS RUNNING ALONG THE EAST SIDE OF THE PROPOSED SITE. THIS EXISTING SYSTEM IS CAPABLE OF CONVEYING THE PROPOSED SITE'S STORM RUNOFF TO THE EXISTING DETENTION BASIN BEHIND THE LOWES BUILDING. THE STORM SEWER SYSTEM WILL MEET ALL CITY REGULATIONS.

STORM WATER RUNOFF CALCULATIONS

RUNOFF COEFFICIENT CALCULATIONS

EXISTING CONDITIONS:
GREENSPACE: 0.94 AC. @ 0.45 'C' FACTOR
PAVEMENT: 1.03 AC. @ 0.95 'C' FACTOR
TOTALS: 1.97 AC. @ 0.71 'C' FACTOR

PROPOSED DEVELOPMENT:
GREENSPACE: 0.58 AC. @ 0.45 'C' FACTOR
PAVEMENT/ROOF: 1.39 AC. @ 0.95 'C' FACTOR
TOTALS: 1.97 AC. @ 0.80 'C' FACTOR

RUNOFF QUANTITY COMPARISON

EXISTING CONDITIONS:
10-YR STORM EVENT: 6.1 cfs

PROPOSED DEVELOPMENT:
10-YR STORM EVENT: 6.9 cfs

SANITARY SEWER BASIS OF DESIGN:

PRIMARY USE
Restaurants - 5.6 units per Restaurant
Quick service franchise type, without dishes, dealing mostly in hamburgers with or without eating in building (includes but not necessarily limited to McDonald's, Burger King, Arby's and Wendy's)

3 Franchise Type Restaurants (3 x 5.6 = 16.80 REU's)

Retail Store - 0.16 units per Employee
1 Retail Stores (9 Employees Max.) (9 x .16 = 1.44 REU's)
Total 18.24 Residential Equivalent Units

TOTAL POPULATION: 18.24 REU x 3.5 PEOPLE/REU = 64 PEOPLE
AVERAGE DAILY FLOW: 64 PERSONS x 100 GAL/PERSON/DAY = 6,400 GAL/DAY
DESIGN PEAK FLOW = (4.00 PF x 6,400 GPD) = 25,600 GPD = 0.04 CFS
CAPACITY OF A 6" SANITARY SEWER PIPE @ 1.00% = 0.73 CFS

LEGEND

- PROP. HYDRANT ASSEMBLY W/ SHUT OFF
- PROP. WATER MAIN
- PROP. STORM SEWER CATCH BASIN
- PROP. STORM SEWER MANHOLE
- PROP. STORM SEWER END SECTION
- PROP. 8"-10" RIP-RAP
- PROP. STORM SEWER
- PROP. SANITARY SEWER CLEANOUT
- PROP. SANITARY SEWER MANHOLE
- PROP. SANITARY SEWER
- PROP. UNDERGROUND ELECTRICAL SERVICE
- PROP. UNDERGROUND GAS SERVICE
- PROP. UNDERGROUND TELEPHONE SERVICE
- PROP. C.G.M.
- PROP. UTILITY CROSSING
- PROP. COUNTER MAJOR
- PROP. SPOT ELEVATION
- PROP. STANDARD DUTY ASPHALT
- PROP. CONCRETE
- PROP. SWALE
- PROP. CURB AND GUTTER
- PROP. REVERSE CURB AND GUTTER



SCALE: 1" = 20'
0 10 20 40 60

NOT FOR CONSTRUCTION

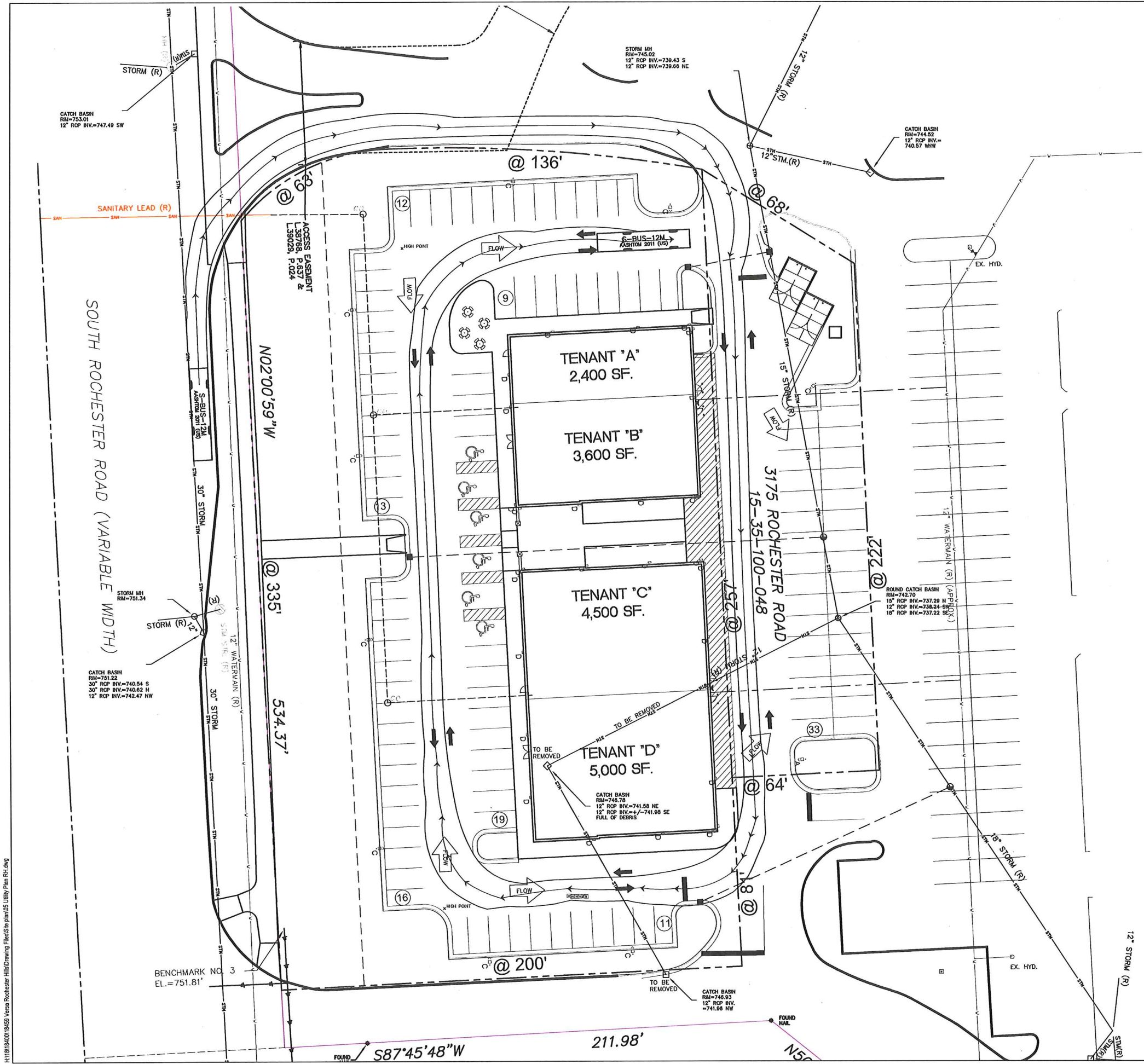
CITY FILE # 13-010 SECTION 35

Developed For:
VERSA DEVELOPMENT
25900 W. 11 MILE ROAD
SUITE 250
SOUTHFIELD, MI 48034
(248) 416-1985

UTILITY PLAN

ROCHESTER SQUARE
ROCHESTER HILLS
OAKLAND COUNTY
MICHIGAN

Date: 06-25-2013
Scale: 1"=20'
Sheet: 5
Project: 18459.00



H:\118104001\18459 Versa Rochester Hills\Drawing Files\Site plan\05 Utility Plan R1.dwg
 11/18/2013 10:45 AM Versa Rochester Hills\Drawing Files\Site plan\05 Utility Plan R1.dwg



FEATURES & SPECIFICATIONS

CONSTRUCTION: High quality die-cast aluminum housing with a powder coated finish. The housing is designed for long life and is resistant to corrosion. The housing is also resistant to impact and is suitable for use in hazardous areas. The housing is also resistant to vandalism and is suitable for use in public areas. The housing is also resistant to theft and is suitable for use in high security areas. The housing is also resistant to fire and is suitable for use in fire-prone areas. The housing is also resistant to weather and is suitable for use in all climates. The housing is also resistant to UV radiation and is suitable for use in sunny areas. The housing is also resistant to salt crystallization and is suitable for use in coastal areas. The housing is also resistant to acid rain and is suitable for use in industrial areas. The housing is also resistant to oil and grease and is suitable for use in food processing areas. The housing is also resistant to dust and is suitable for use in dusty areas. The housing is also resistant to insects and is suitable for use in outdoor areas. The housing is also resistant to rodents and is suitable for use in rural areas. The housing is also resistant to birds and is suitable for use in open areas. The housing is also resistant to graffiti and is suitable for use in urban areas. The housing is also resistant to graffiti and is suitable for use in urban areas. The housing is also resistant to graffiti and is suitable for use in urban areas.



CONTOUR

KAD

NEAR BALANCE 72-40W
HIGH FREQUENCY ELECTRONIC BALLAST
28700 LF
28700 LF

Code	Quantity	Manufacturer	Model	Notes
KAD	29	Lithonia Lighting	KAD 320M SR3 (PULSE START)	Area Luminaire, 320W MH, High Performance SR3 Reflector, Full Cutoff Meets the Nighttime Friendly Criteria

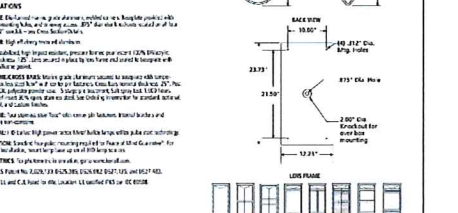
Code	Quantity	Manufacturer	Model	Notes
KAD	29	Lithonia Lighting	KAD 320M SR3 (PULSE START)	Area Luminaire, 320W MH, High Performance SR3 Reflector, Full Cutoff Meets the Nighttime Friendly Criteria

Code	Quantity	Manufacturer	Model	Notes
KAD	29	Lithonia Lighting	KAD 320M SR3 (PULSE START)	Area Luminaire, 320W MH, High Performance SR3 Reflector, Full Cutoff Meets the Nighttime Friendly Criteria

MILLENNIUM FREESCALE™

FS110 SERIES - MID

PRODUCT FEATURES:
• Surface mount - mid height 8" tall
• 1/2" depth
• 1/2" depth
• 1/2" depth



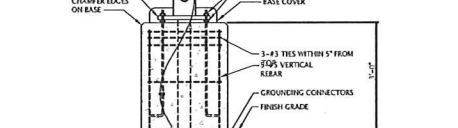
INSTALLATION INFORMATION

Code	Quantity	Manufacturer	Model	Notes
FS110	1	Reynolds and Reynolds	FS110	Mid height luminaire

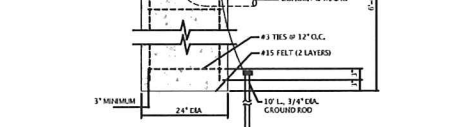
POLE BASE DETAIL



POLE BASE DETAIL



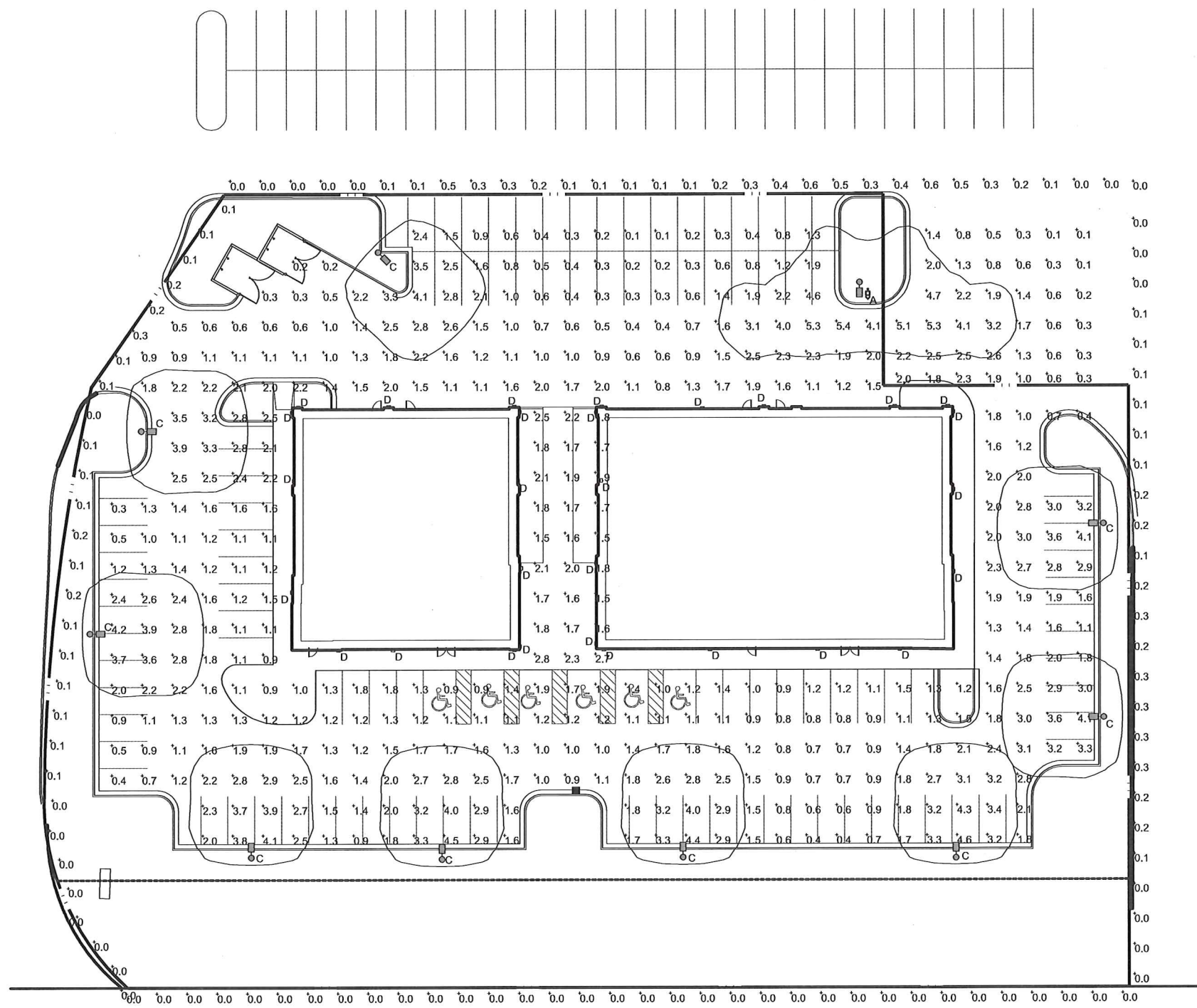
POLE BASE DETAIL



2 POLE BASE DETAIL Not to Scale

Symbol	Label	Quantity	Manufacturer	Model	Description	Lamp	Number Lamps	Fixture	Lumens Per Luminaire	Light Loss Factor	Mainten
A		1	Lithonia Lighting	KAD 320M SR3 (PULSE START)	Area Luminaire, 320W MH, High Performance SR3 Reflector, Full Cutoff Meets the Nighttime Friendly Criteria	ONE 320-WATT CLEAR ED-28 METAL HALIDE, HORIZONTAL POSITION	1	KAD 320M SR 3 (PULSE START) lum	28700	0.65	368
B		0	Lithonia Lighting	KAD 320M SR3 (PULSE START)	Area Luminaire, 320W MH, High Performance SR3 Reflector, Full Cutoff Meets the Nighttime Friendly Criteria	ONE 320-WATT CLEAR ED-28 METAL HALIDE, HORIZONTAL POSITION	1	KAD 320M SR 3 (PULSE START) lum	28700	0.65	368
C		9	Lithonia Lighting	KAD 320M SR3 (PULSE START)	Area Luminaire, 320W MH, High Performance SR3 Reflector, Full Cutoff Meets the Nighttime Friendly Criteria	ONE 320-WATT CLEAR ED-28 METAL HALIDE, HORIZONTAL POSITION	1	KAD 320M SR 3 (PULSE START) lum	28700	0.65	368
D		29			PROJECT: 1212T-1TRIPLE42		1	FS1212T-4-2P-1 lum	3200	0.75	49

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
PARCEL LINE	+	0.1 fc	0.6 fc	0.0 fc	NA	NA	0.21
PAVED AREA	+	1.7 fc	5.4 fc	0.1 fc	54.0:1	17.0:1	0.31



ROCHESTER ROAD

1 PROPOSED PHOTOMETRIC PLAN Scale: 1" = 20'-0"

NORR

CONSULTANT:

GWE
Giffels-Webster
Engineers, Inc.
ENGINEERS - LAND SURVEYORS
PLANNERS - LANDSCAPE ARCHITECTS
4871 DUND STREET
ROCHESTER HILLS, MI 48065
PHONE (248) 852-3100
FAX (248) 852-6352

SEAL:

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL THE SEAL AND SIGNATURE OF THE RESPONSIBLE REGISTRANT APPEARS ON THE DRAWING, AND PROPER PERMIT FORMS AND RELATED FEES ARE TRANSMITTED BY THE OWNER, OWNER'S AGENT OR CONTRACTOR TO THE AUTHORITY HAVING JURISDICTION.

DATE	ISSUED FOR	REV
05/21/2013	OWNER REVIEW	
06/20/2013	SITE PLAN APPROVAL	

Project Manager	Drawn
A. RICCIUTI	B. COLBURN

Project Leader	Checked
B. COLBURN	A. RICCIUTI

Date	Dept Mgr Approval
06/20/2013	A. RICCIUTI

Client
VERSAs DEVELOPMENT
25900 W. 11 Mile Road
Southfield, MI - Suite 250 48034
Office: (248) 996-1412
Contact: Steve Robinson

Project
ROCHESTER HILLS DEVELOPMENT
Rochester Road & W. Auburn Road
Rochester Hills, Michigan

Drawing Title
PROPOSED PHOTOMETRIC PLAN
DO NOT SCALE DRAWING
Project No. JCDT.12.0314
Drawing No. SP-03