

# City of Rochester Hills, Oakland County, Michigan SITE PLAN DOCUMENTS

PART OF THE NE 1/4  
OF SECTION 21,  
TOWN 3 NORTH, RANGE 11 EAST

## Architect

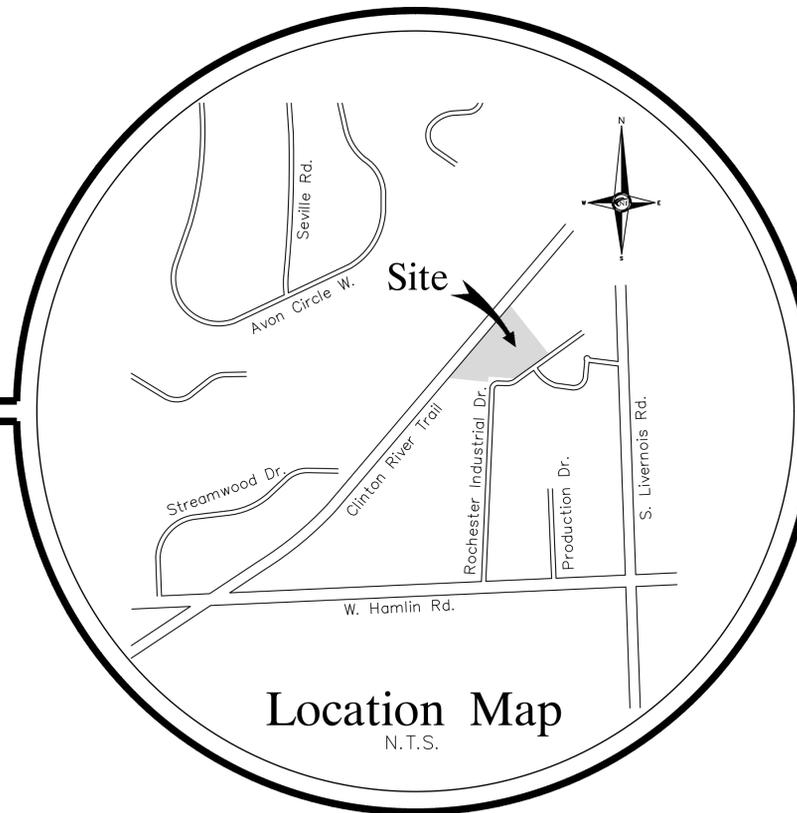
GAV ASSOCIATES  
24001 Orchard Lake Rd  
Suite 180A  
Farmington, MI 48336

Contact: Al Valentine  
Ph: (248) 985-9101

## Civil Engineer

NOWAK & FRAUS ENGINEERS  
46777 Woodward Ave.  
Pontiac, MI 48342-5032  
Tel. (248) 332-7931  
Fax. (248) 332-8257

CONTACT: Patrick Williams, P.E.  
Ph: (248) 332-7931  
Fax: (248) 332-8257



Location Map  
N.T.S.

Project Name

# Auburn Pharmaceutical

## LEGAL DESCRIPTION

A PART OF THE NORTHEAST 1/4 OF SECTION 21, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 21; THENCE NORTH 02 DEGREES 27 MINUTES 24 SECONDS WEST, 358.71 FEET ALONG THE EAST LINE OF SECTION 21 (LIVERNOS ROAD), TO THE POINT OF BEGINNING; THENCE NORTH 84 DEGREES 53 MINUTES 32 SECONDS WEST, 353.90 FEET; THENCE ALONG A CURVE TO THE RIGHT 73.30 FEET, SAID CURVE HAVING A RADIUS OF 70.00 FEET, CENTRAL ANGLE OF 60 DEGREES 00 MINUTES 00 SECONDS AND A LONG CHORD BEARING OF NORTH 54 DEGREES 53 MINUTES 32 SECONDS WEST, 70.00 FEET; THENCE ALONG A CURVE TO THE LEFT 183.26 FEET, SAID CURVE HAVING A RADIUS OF 70.00 FEET, CENTRAL ANGLE OF 150 DEGREES 00 MINUTES 00 SECONDS AND A LONG CHORD BEARING OF SOUTH 80 DEGREES 06 MINUTES 30 SECONDS WEST, 135.23 FEET; THENCE NORTH 84 DEGREES 53 MINUTES 32 SECONDS WEST, 109.96 FEET; THENCE ALONG A NON-TANGENT CURVE TO THE LEFT 109.96 FEET, SAID CURVE HAVING A RADIUS OF 70.00 FEET, CENTRAL ANGLE OF 90 DEGREES 00 MINUTES 00 SECONDS AND A LONG CHORD BEARING NORTH 80 DEGREES 25 MINUTES 11 SECONDS WEST, 98.99 FEET; THENCE SOUTH 54 DEGREES 34 MINUTES 50 SECONDS WEST, 28.48 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 54 DEGREES 34 MINUTES 50 SECONDS WEST, 514.25 FEET; THENCE NORTH 84 DEGREES 53 MINUTES 32 SECONDS WEST, 206.16 FEET; THENCE SOUTH 01 DEGREES 49 MINUTES 58 SECONDS WEST, 70.11 FEET TO A POINT OF THE NORTH LINE OF "ROCHESTER INDUSTRIAL PARK SUB" AS RECORDED IN LIBER 178, PAGE 11 OF PLATS, OAKLAND COUNTY RECORDS; THENCE NORTH 84 DEGREES 53 MINUTES 32 SECONDS WEST, 420.50 FEET, IN PART ALONG THE NORTH LINE OF SAID SUBDIVISION; THENCE NORTH 39 DEGREES 54 MINUTES 26 SECONDS EAST, 1067.23 FEET; THENCE SOUTH 35 DEGREES 28 MINUTES 25 SECONDS EAST, TO THE POINT OF BEGINNING.

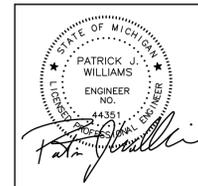
CONTAINING 9.616 ACRES.

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REVISIONS:	
01-24-20	ISSUED FOR SITE PLAN REVIEW
02-04-20	REVISED PER CLIENT
03-02-20	REVISED PER CITY
04-01-20	REVISED PER CITY

N & F JOB #L354

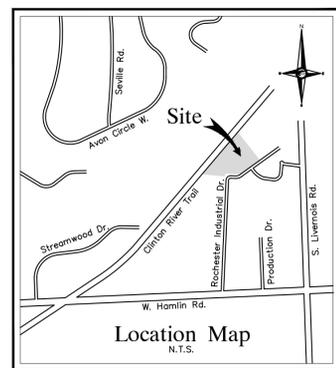
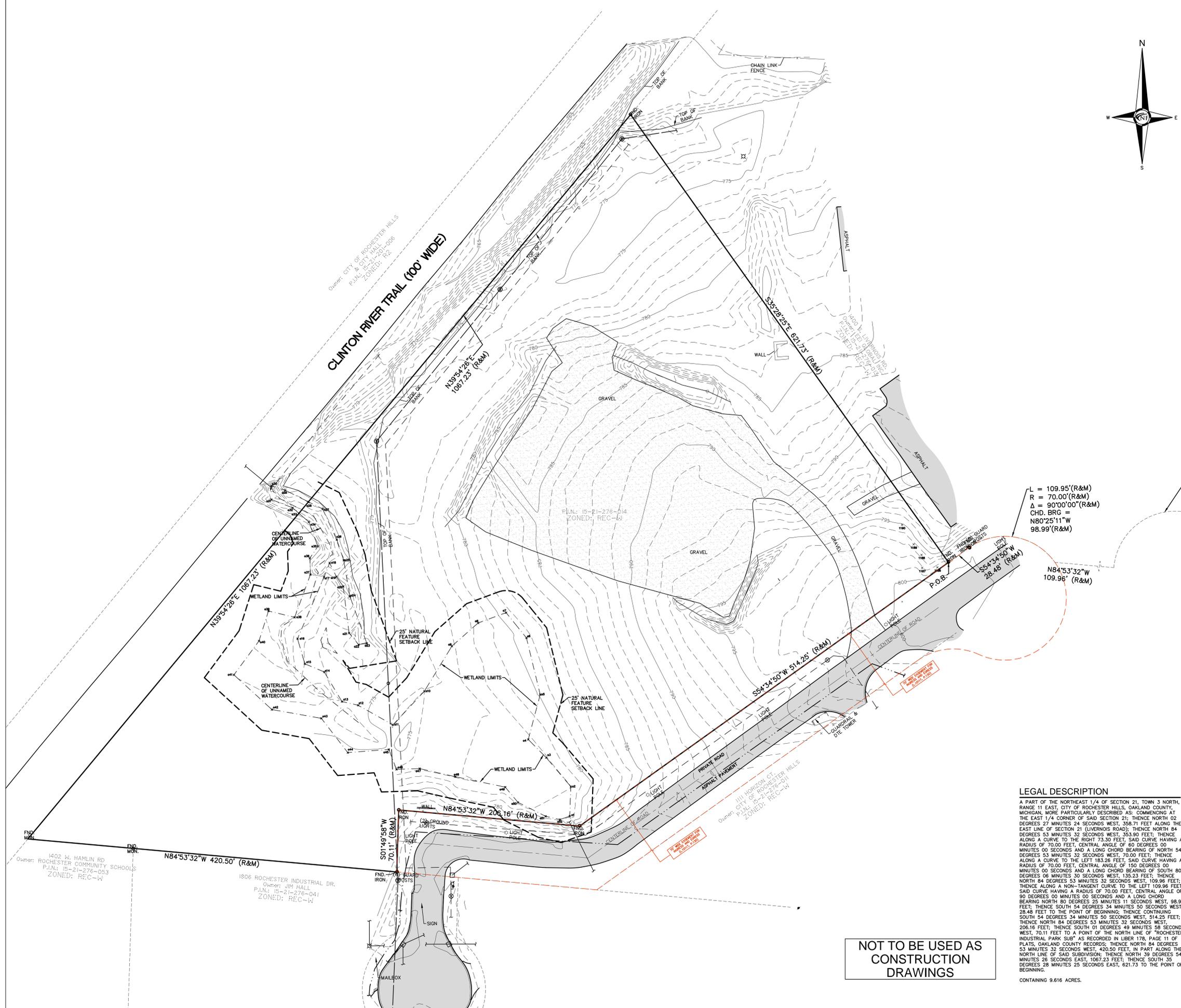


City File # 20-033  
Section 21



CIVIL ENGINEERS  
LAND SURVEYORS  
LAND PLANNERS

NOWAK & FRAUS ENGINEERS  
46777 WOODWARD AVE.  
PONTIAC, MI 48342-5032  
TEL. (248) 332-7931  
FAX. (248) 332-8257  
WWW.NOWAKFRAUS.COM



**LEGEND**

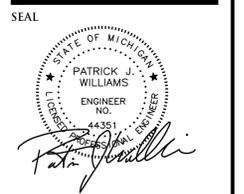
MANHOLE	EXISTING SANITARY SEWER
HYDRANT	EXISTING SAN. CLEAN OUT
MANHOLE	EXISTING WATER MAIN
UTILITY POLE	EXISTING STORM SEWER
GUY WIRE	EX. R.Y. CATCH BASIN
GUY WIRE	EXISTING BURIED CABLES
GUY WIRE	OVERHEAD LINES
GUY WIRE	LIGHT POLE
GUY WIRE	SIGN
GUY WIRE	EXISTING GAS MAIN

**50 NF ENGINEERS**  
1969 - 2019

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PROJECT  
Auburn Pharmaceutical  
Rochester Industrial Drive

CLIENT  
General Development  
Two Towne Square  
Suite 850  
Southfield, MI 48076

Contact: Bruce Brickman  
Ph: (248) 357-3777

PROJECT LOCATION  
Part of the Northeast 1/4  
of Section 21  
T. 3 North, R. 11 East  
City of Rochester Hills,  
Oakland County, Michigan

SHEET  
Overall Boundary /  
Topographic Survey



DATE	ISSUED/REVISED
02-04-20	REVISED PER CLIENT
03-02-20	REVISED PER CITY
04-01-20	REVISED PER CITY

**WETLAND NOTE**  
WETLAND DELINEATION WAS COMPLETED JUNE 21, 2017 BY THERESA PARSONS.

**FLOOD HAZARD NOTE**  
THE PROPERTY DESCRIBED ON THIS SURVEY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. THE PROPERTY LIES WITHIN ZONE X OF THE FLOOD INSURANCE RATE MAP IDENTIFIED AS MAP NO. 26125C0391F BEARING AN EFFECTIVE DATE OF 09/29/2006.

**MISS DIG / UTILITY DISCLAIMER NOTE**  
A MISS DIG TICKET NUMBER B093400740, PURSUANT TO MICHIGAN PUBLIC ACT 174 WAS ENTERED FOR THE SURVEYED PROPERTY. DUE TO THE EXTENDED REPORTING PERIOD FOR UNDERGROUND FACILITY OWNERS TO PROVIDE THEIR RECORDS, THE SURVEY MAY NOT REFLECT ALL THE UTILITIES AT THE TIME THE SURVEY WAS ISSUED ON DECEMBER 17, 2019. THE SURVEY ONLY REFLECTS THOSE UTILITIES WHICH COULD BE OBSERVED BY THE SURVEYOR IN THE FIELD OR AS DEPICTED BY THE UTILITY COMPANY RECORDS FURNISHED PRIOR TO THE DATE THIS SURVEY WAS ISSUED. THE CLIENT AND/OR THEIR AUTHORIZED AGENT SHALL VERIFY WITH THE FACILITY OWNERS AND/OR THEIR AUTHORIZED AGENTS, THE COMPLETENESS AND EXACTNESS OF THE UTILITIES LOCATION.

**TOPOGRAPHIC SURVEY NOTES**  
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DRAWN BY:  
A. Eizember

DESIGNED BY:

APPROVED BY:  
P. Williams

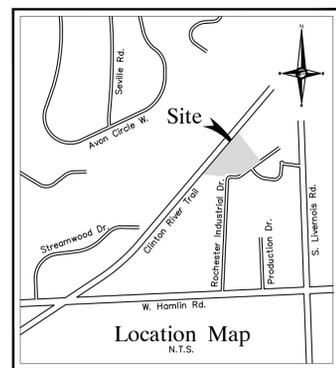
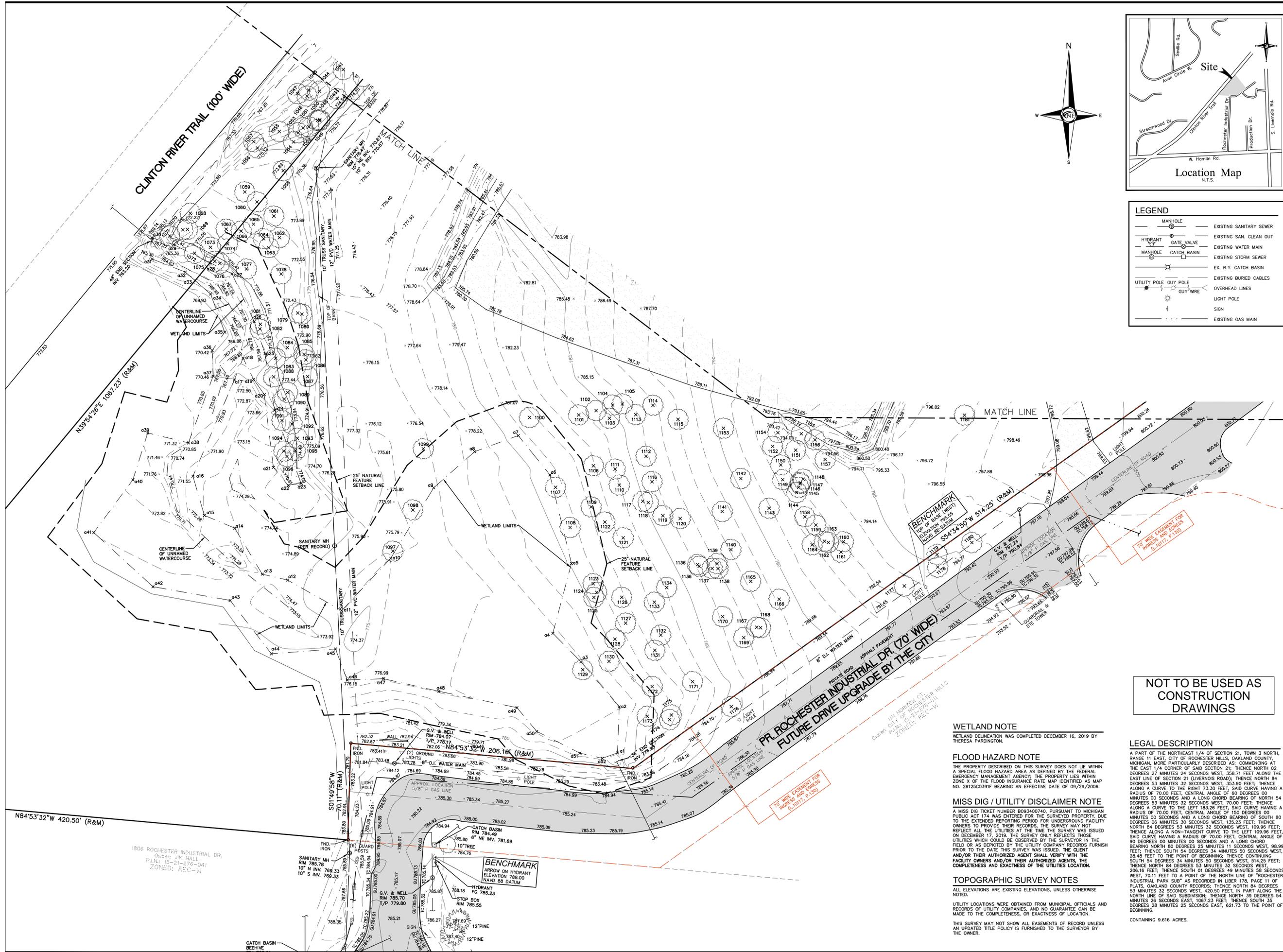
DATE:  
January 24, 2020

SCALE: 1" = 50'  
0 25 0 25 50 75

City File #20-003  
Section 21  
NFE JOB NO. SHEET NO.  
**L354 SP-1**

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A PART OF THE NORTHEAST 1/4 OF SECTION 21, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 21; THENCE NORTH 02 DEGREES 27 MINUTES 24 SECONDS WEST, 358.71 FEET ALONG THE EAST LINE OF SECTION 21 (LIVERNOSS ROAD); THENCE NORTH 84 DEGREES 53 MINUTES 32 SECONDS WEST, 358.90 FEET; THENCE ALONG A CURVE TO THE RIGHT 73.30 FEET, SAID CURVE HAVING A RADIUS OF 70.00 FEET, CENTRAL ANGLE OF 90 DEGREES 00 MINUTES 00 SECONDS AND A LONG CHORD BEARING OF NORTH 54 DEGREES 53 MINUTES 32 SECONDS WEST, 70.00 FEET; THENCE NORTH 84 DEGREES 53 MINUTES 32 SECONDS WEST, 109.96 FEET; THENCE ALONG A NON-TANGENT CURVE TO THE LEFT 109.96 FEET, SAID CURVE HAVING A RADIUS OF 70.00 FEET, CENTRAL ANGLE OF 90 DEGREES 00 MINUTES 00 SECONDS AND A LONG CHORD BEARING OF NORTH 80 DEGREES 00 MINUTES 30 SECONDS WEST, 135.23 FEET; THENCE NORTH 84 DEGREES 53 MINUTES 32 SECONDS WEST, 514.23 FEET; THENCE SOUTH 54 DEGREES 34 MINUTES 50 SECONDS WEST, 28.48 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 54 DEGREES 34 MINUTES 50 SECONDS WEST, 514.23 FEET; THENCE NORTH 84 DEGREES 53 MINUTES 32 SECONDS WEST, 206.16 FEET; THENCE SOUTH 01 DEGREE 49 MINUTES 58 SECONDS WEST, 70.11 FEET TO A POINT OF THE NORTH LINE OF "ROCHESTER INDUSTRIAL PARK SUB" AS RECORDED IN LIBER 178, PAGE 11 OF PLATS, OAKLAND COUNTY RECORDS; THENCE NORTH 84 DEGREES 53 MINUTES 32 SECONDS WEST, 420.50 FEET, IN PART ALONG THE NORTH LINE OF SAID SUBDIVISION; THENCE NORTH 39 DEGREES 54 MINUTES 28 SECONDS EAST, 1067.23 FEET; THENCE SOUTH 35 DEGREES 28 MINUTES 25 SECONDS EAST, 621.73 TO THE POINT OF BEGINNING.  
CONTAINING 9.616 ACRES.

**NOT TO BE USED AS CONSTRUCTION DRAWINGS**



**LEGEND**

	MANHOLE		EXISTING SANITARY SEWER
	HYDRANT		EXISTING SAN. CLEAN OUT
	MANHOLE CATCH BASIN		EXISTING WATER MAIN
	UTILITY POLE		EXISTING STORM SEWER
	GUY WIRE		EX. R.Y. CATCH BASIN
	LIGHT POLE		EXISTING BURIED CABLES
	SIGN		OVERHEAD LINES
	EXISTING GAS MAIN		

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SEAL

PATRICK WILLIAMS  
ENGINEER  
NO. 44351

PROJECT  
Auburn Pharmaceutical  
Rochester Industrial Drive

CLIENT  
General Development  
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Suite 850  
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Contact: Bruce Brickman  
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Boundary / Topographic /  
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THERESA PARDINGTON.

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DATE ISSUED/REVISED  
02-04-20 REVISED PER CLIENT  
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DRAWN BY:  
A. Eizember

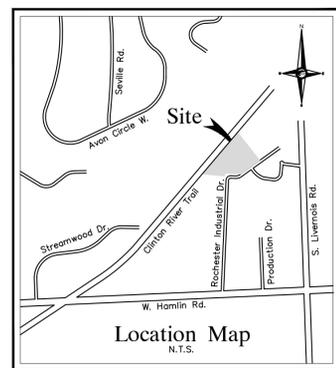
DESIGNED BY:

APPROVED BY:  
P. Williams

DATE:  
January 24, 2020

SCALE: 1" = 30'  
30 15 0 15 30 45

City File #20-003  
Section 21  
NFE JOB NO. L354 SHEET NO. SP-2



**LEGEND**

MANHOLE	EXISTING SANITARY SEWER
HYDRANT	EXISTING SAN. CLEAN OUT
MANHOLE GATE VALVE	EXISTING WATER MAIN
MANHOLE CATCH BASIN	EXISTING STORM SEWER
UTILITY POLE GUY POLE	EX. R.Y. CATCH BASIN
GUY WIRE	EXISTING BURIED CABLES
LIGHT POLE	OVERHEAD LINES
SIGN	LIGHT POLE
EXISTING GAS MAIN	SIGN

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**WETLAND NOTE**

WETLAND DELINEATION WAS COMPLETED DECEMBER 16, 2019 BY THERESA PARDINGTON.

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DATE ISSUED/REVISED  
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 03-02-20 REVISED PER CITY  
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DRAWN BY:  
A. Eizember

DESIGNED BY:

APPROVED BY:  
P. Williams

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January 24, 2020

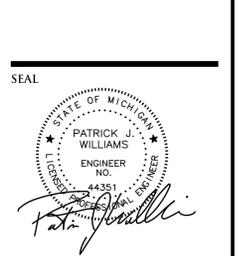
SCALE: 1" = 30'

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1969 - 2019

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T. 3 North, R. 11 East  
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SHEET  
Boundary / Topographic /  
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DATE	ISSUED/REVISED
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City File #20-003  
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NFE JOB NO. SHEET NO.  
**L354 SP-3**



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SCALE



PROJECT

Auburn Pharmaceutical Rochester Industrial Drive

CLIENT

General Development Two Towne Square Suite 850 Southfield, MI 48076

Contact: Bruce Brickman Ph: (248) 357-3777

PROJECT LOCATION

Part of the Northeast 1/4 of Section 21 T. 3 North, R. 11 East City of Rochester Hills, Oakland County, Michigan

SHEET

List of Surveyed Trees



Know what's below Call before you dig.

DATE ISSUED/REVISED

02-04-20 REVISED PER CLIENT 03-02-20 REVISED PER CITY 04-01-20 REVISED PER CITY

DRAWN BY:

A. Eizember

DESIGNED BY:

APPROVED BY:

P. Williams

DATE:

January 24, 2020

SCALE: N.T.S.

NOT TO BE USED AS CONSTRUCTION DRAWINGS

City File #20-003 Section 21

NFE JOB NO. L354 SHEET NO. SP-4

Tree Inventory List

Job Number: L354 Job Location: 1111 Horizon Court, Rochester Hills Date: Thursday, December 12, 2019 Performed By: Alexander Kriebel Forestry Registration No.

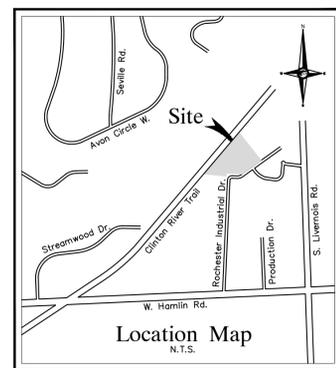
Condition Description Notes:

\*Good\* - no observed structural defects \*Fair\* - minor structural defects, marginal form, some insect activity noted \*Poor\* - major structural defects, poor form, insect infested

\*Structural defects may include decayed wood, cracks, root problems, weak branch unions, cankers, poor tree architecture, dead/rotted branches due to various causes.

Table with columns: Tree #, Remove/Save, Replace (Y/N), Specimen (Y/N), Botanical Name, Common Name, Dia., Other Dia., Condition, Comments. Contains 1089 rows of tree data.

Table with columns: Tree #, Remove/Save, Replace (Y/N), Specimen (Y/N), Botanical Name, Common Name, Dia., Other Dia., Condition, Comments. Contains 1089 rows of tree data.



**PAVING LEGEND**

[Pattern]	PROPOSED CONCRETE PAVEMENT
[Pattern]	PROPOSED ASPHALT PAVEMENT

**LEGEND**

[Symbol]	MANHOLE	[Symbol]	EXISTING SANITARY SEWER
[Symbol]	HYDRANT	[Symbol]	SAN. CLEAN OUT
[Symbol]	MANHOLE CATCH BASIN	[Symbol]	EXISTING WATERMAIN
[Symbol]	UTILITY POLE	[Symbol]	EXISTING STORM SEWER
[Symbol]	GUY WIRE	[Symbol]	EX. R. Y. CATCH BASIN
[Symbol]	GUY POLE	[Symbol]	EXISTING BURIED CABLES
[Symbol]	OVERHEAD LINES	[Symbol]	SIGN
[Symbol]	EXISTING GAS MAIN	[Symbol]	PR. SANITARY SEWER
[Symbol]	PR. SANITARY SEWER	[Symbol]	PR. WATER MAIN
[Symbol]	PR. WATER MAIN	[Symbol]	PR. STORM SEWER
[Symbol]	PR. STORM SEWER	[Symbol]	PR. R. Y. CATCH BASIN
[Symbol]	PROPOSED LIGHT POLE		

**SIGN NOTE**  
 PROPOSED SIGNAGE IS CURRENTLY UNKNOWN AND WILL BE APPLIED FOR UNDER A SEPARATE PERMIT.

**SITE DATA**

ZONED: REC-W (REGIONAL EMPLOYMENT CENTER WORKPLACE)

SITE AREA: 418,886 S.F. OR 9.62 ACRES

MAX. BUILDING HEIGHT ALLOWED: 42 FEET

SETBACKS	REQUIRED	PROVIDED
FRONT (SOUTH):	10'	108.0'
SIDE (WEST):	25'	176.7'
SIDE (EAST):	25'	174.0'
REAR (NORTH):	30'	87.9'

PROPOSED BUILDING AREA:  
 OFFICE: 31,450 S.F.  
 WAREHOUSE: 33,550 S.F.

PARKING REQUIRED:  
 OFFICE: 1 SPACE PER 350 S.F. FLOOR AREA  
 31,368 S.F. / 350 S.F. = 90 SPACES

WAREHOUSE: 1 SPACE PER 1,700 S.F. FLOOR AREA  
 33,632 S.F. / 1,700 S.F. = 20 SPACES

TOTAL PARKING REQUIRED: 110 SPACES

PARKING PROVIDED: 110 SPACES  
 INCLUDING 5 BARRIER-FREE SPACES (1 VAN ACCESSIBLE)

**BUILDING NOTES**  
 USE CLASSIFICATION: B / S-1, MIXED-USE NON-SEPARATED (S-1 IS MOST RESTRICTIVE AND WILL BE USED FOR BUILDING ANALYSIS)  
 CONSTRUCTION TYPE: IIB  
 FIRE SUPPRESSION: FULLY SUPPRESSED

**FIRE DEPARTMENT NOTES**  
 CONSTRUCTION SITE SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC CHAPTER 14

OPEN BURNING IS NOT PERMITTED, INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING MATERIALS. OPEN BURNING FOR WARMING OF SAND AND/OR WATER FOR THE PREPARATION OF MORTAR SHALL BE WITHIN CITY OF ROCHESTER HILLS BURN PERMIT GUIDELINES. CONTACT ROCHESTER HILLS FIRE DEPARTMENT FOR PERMIT INFORMATION.

A "KNOX" KEY SYSTEM MAY BE REQUIRED IN A LOCATION APPROVED BY THE FIRE CODE OFFICIAL. ORDERING INFORMATION IS AVAILABLE FROM THE FIRE DEPARTMENT.

FIRE LANES SHALL BE DESIGNATED BY THE FIRE CODE OFFICIAL AND SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF THE FIRE LANE, WITH FIRE SIGNS, SPACED NOT MORE THAN 100 FEET APART. FIRE LANE SIGNS SHALL READ "NO STOPPING, STANDING, PARKING, FIRE LANE" AND SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

**NOT TO BE USED AS CONSTRUCTION DRAWINGS**

**50 NF ENGINEERS**  
 1969 - 2019

**NOWAK & FRAUS ENGINEERS**  
 CIVIL ENGINEERS  
 LAND SURVEYORS  
 LAND PLANNERS

NOWAK & FRAUS ENGINEERS  
 46777 WOODWARD AVE.  
 PONTIAC, MI 48342-5032  
 TEL. (248) 332-7931  
 FAX. (248) 332-8257  
 WWW.NOWAKFRAUS.COM

SEAL

STATE OF MICHIGAN  
 PATRICK J. WILLIAMS  
 ENGINEER  
 NO. 44351  
 LICENSED PROFESSIONAL ENGINEER

**PROJECT**  
 Auburn Pharmaceutical  
 Rochester Industrial Drive

**CLIENT**  
 General Development  
 Two Towne Square  
 Suite 850  
 Southfield, MI 48076

Contact: Bruce Brickman  
 Ph: (248) 357-3777

**PROJECT LOCATION**  
 Part of the Northeast 1/4 of Section 21  
 T. 3 North, R. 11 East  
 City of Rochester Hills,  
 Oakland County, Michigan

**SHEET**  
 Dimensional Site Plan

**811**  
 Know what's below  
 Call before you dig.

DATE	ISSUED/REVISED
02-04-20	REVISED PER CLIENT
03-02-20	REVISED PER CITY
04-01-20	REVISED PER CITY

**DRAWN BY:**  
 A. Eizember

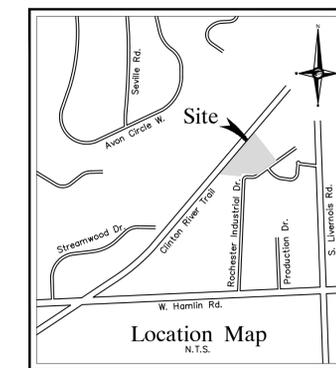
**DESIGNED BY:**  
 P. Williams

**APPROVED BY:**  
 P. Williams

**DATE:**  
 January 24, 2020

**SCALE:** 1" = 30'  
 30 15 0 15 30 45

City File #20-003  
 Section 21  
 NFE JOB NO. **L354** SHEET NO. **SP-5**



**NOWAK & FRAUS ENGINEERS**

CIVIL ENGINEERS  
LAND SURVEYORS  
LAND PLANNERS

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PONTIAC, MI 48342-5032  
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SEAL



PROJECT  
Auburn Pharmaceutical  
Rochester Industrial Drive

CLIENT  
General Development  
Two Towne Square  
Suite 850  
Southfield, MI 48076

Contact: Bruce Brickman  
Ph: (248) 357-3777

PROJECT LOCATION  
Part of the Northeast 1/4  
of Section 21  
T. 3 North, R. 11 East  
City of Rochester Hills,  
Oakland County, Michigan

SHEET  
Overall Site Plan



Know what's below  
Call before you dig.

DATE	ISSUED/REVISED
02-04-20	REVISED PER CLIENT
03-02-20	REVISED PER CITY
04-01-20	REVISED PER CITY

DATE	ISSUED/REVISED

DRAWN BY:  
**A. Eizember**

DESIGNED BY:  
**P. Williams**

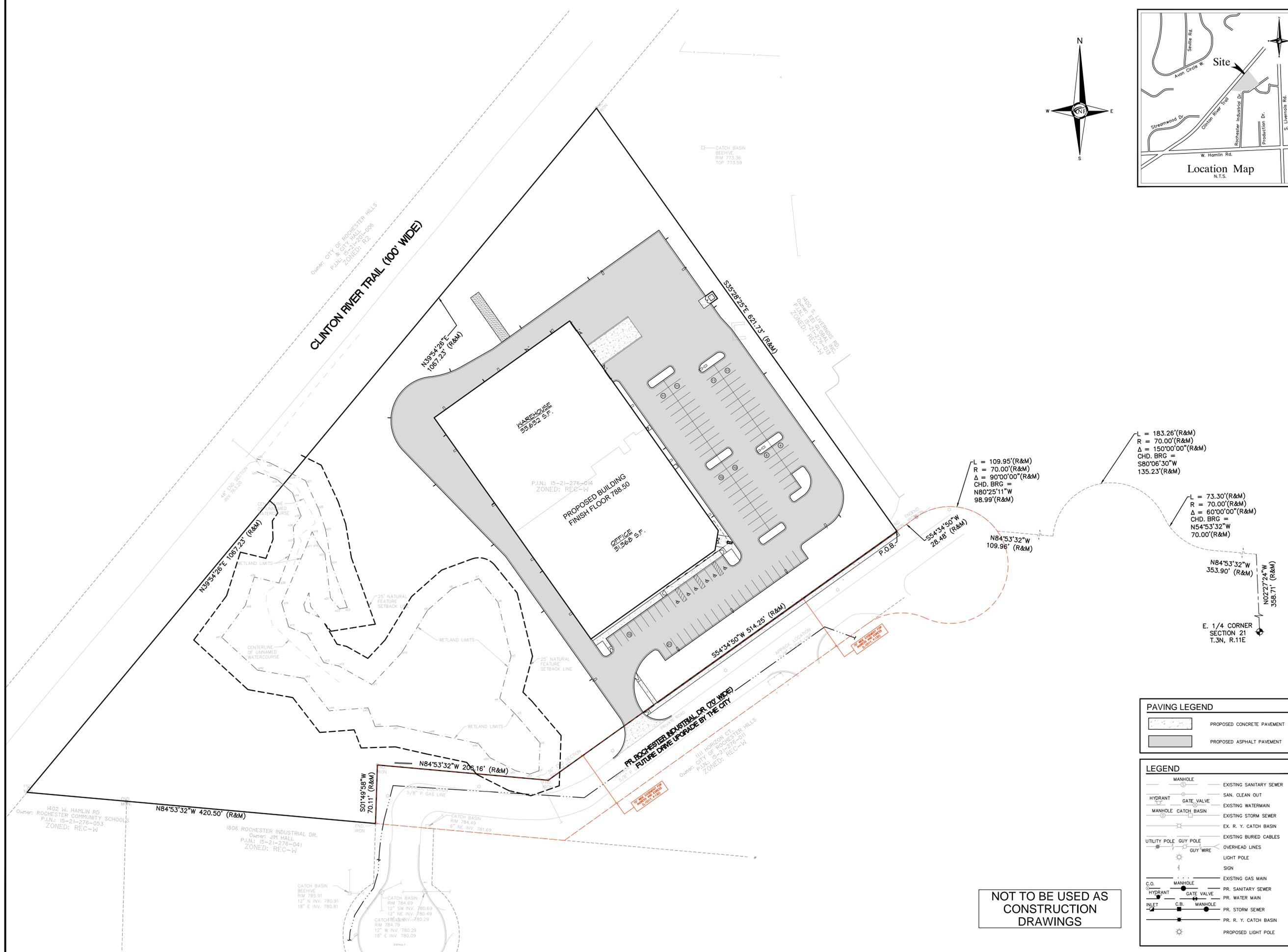
APPROVED BY:  
**P. Williams**

DATE:  
**January 24, 2020**

SCALE: 1" = 50'  
50 25 0 25 50 75

City File #20-003  
Section 21

NFE JOB NO. **L354** SHEET NO. **SP-5a**



**NOT TO BE USED AS  
CONSTRUCTION  
DRAWINGS**

**PAVING LEGEND**

	PROPOSED CONCRETE PAVEMENT
	PROPOSED ASPHALT PAVEMENT

**LEGEND**

	MANHOLE		EXISTING SANITARY SEWER
	HYDRANT		SAN. CLEAN OUT
	MANHOLE CATCH BASIN		EXISTING WATERMAIN
	UTILITY POLE		EXISTING STORM SEWER
	GUY POLE		EX. R. Y. CATCH BASIN
	GUY WIRE		EXISTING BURIED CABLES
	OVERHEAD LINES		LIGHT POLE
	SIGN		EXISTING GAS MAIN
	C.O. MANHOLE		PR. SANITARY SEWER
	GATE VALVE		PR. WATER MAIN
	INLET		PR. STORM SEWER
	C.B. MANHOLE		PR. R. Y. CATCH BASIN
	PROPOSED LIGHT POLE		



SEAL



PROJECT  
Auburn Pharmaceutical  
Rochester Industrial Drive

CLIENT  
General Development  
Two Towne Square  
Suite 850  
Southfield, MI 48076

Contact: Bruce Brickman  
Ph: (248) 357-3777

PROJECT LOCATION  
Part of the Northeast 1/4  
of Section 21  
T. 3 North, R. 11 East  
City of Rochester Hills,  
Oakland County, Michigan

SHEET  
Site Details



Know what's below  
Call before you dig.

DATE ISSUED/REVISED  
02-04-20 REVISED PER CLIENT  
03-02-20 REVISED PER CITY  
04-01-20 REVISED PER CITY

DRAWN BY:  
A. Eizember  
DESIGNED BY:  
P. Williams  
APPROVED BY:  
P. Williams

DATE:  
January 24, 2020

SCALE: 1" = 30'



City File #20-003  
Section 21

NFE JOB NO. SHEET NO.  
**L354 SP-6a**

**GENERAL PAVING NOTES**

PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS SECTION AS INDICATED ON THE PLANS AND AS FOLLOWS:

CONCRETE: PORTLAND CEMENT TYPE IA (AIR-ENTRAINED) WITH A MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES.

ASPHALT: BASE COURSE - MDOT BITUMINOUS MIXTURE NO. 1100L, 20AA; SURFACE COURSE - MDOT BITUMINOUS MIXTURE NO. 1100T, 20AA; ASPHALT CEMENT PENETRATION GRADE 85-100, BOND COAT - MDOT SS-1H EMULSION AT 0.10 GALLON PER SQUARE YARD; MAXIMUM 2 INCH LIFT.

PAVEMENT BASE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. EXISTING SUB-BASE SHALL BE PROOF-ROLLED IN THE PRESENCE OF THE ENGINEER TO DETERMINE STABILITY.

ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC., SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.

ALL CONCRETE PAVEMENT JOINTS SHALL BE FILLED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALING COMPOUND IMMEDIATELY AFTER SAWCUT OPERATION. FEDERAL SPECIFICATION SS-5164.

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.

ALL TOP OF CURB ELEVATIONS, AS SHOWN ON THE PLANS, ARE CALCULATED FOR A 6" CONCRETE CURB UNLESS OTHERWISE NOTED.

ALL SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1993, SHALL BE INSTALLED AS INDICATED ON THE PLANS.

CONSTRUCTION OF A NEW OR RECONSTRUCTED DRIVE APPROACH CONNECTING TO AN EXISTING STATE OR COUNTY ROADWAY SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE AGENCY HAVING JURISDICTION OVER SAID ROADWAY.

FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LIKEWISE ARRANGE FOR ALL INSPECTION.

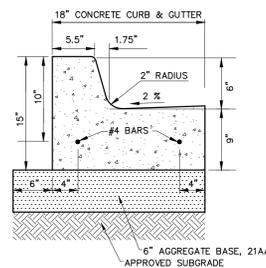
EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS.

EXPANSION JOINTS SHOULD BE INSTALLED AT THE END OF ALL INTERSECTION RADII.

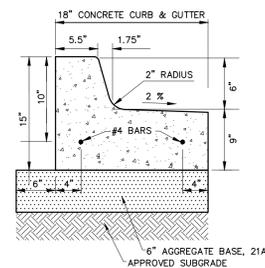
SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1973, SHALL BE INSTALLED AS SHOWN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.

ALL PAVEMENT AREAS SHALL BE PROOF-ROLLED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF BASE MATERIALS AND PAVING MATERIALS.

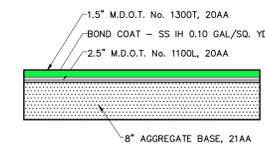
FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 98% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.



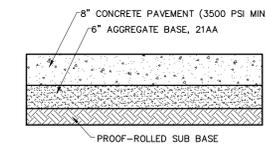
CONCRETE CURB DETAIL 'A'  
N.T.S.



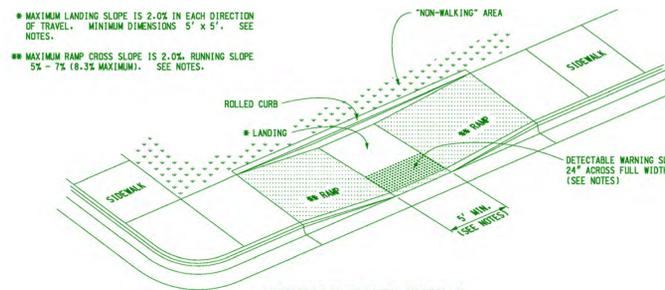
CONCRETE CURB DETAIL 'B'  
N.T.S.



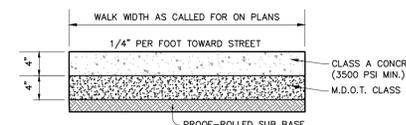
ASPHALT PAVEMENT SECTION  
(DRIVE AND PARKING)  
N.T.S.



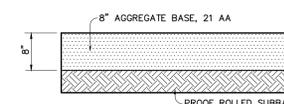
CONCRETE PAVEMENT SECTION  
N.T.S.



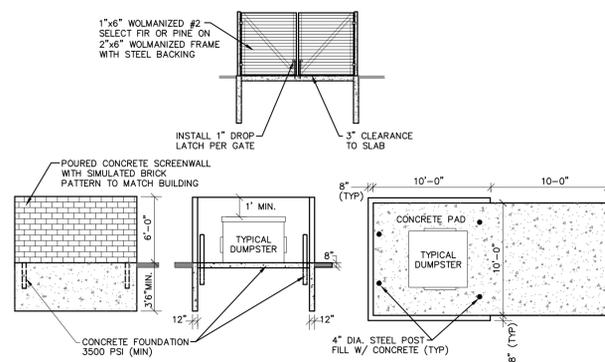
SIDEWALK RAMP TYPE P  
(PARALLEL RAMP)  
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR



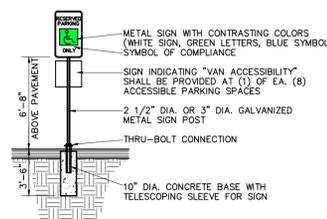
CONCRETE SIDEWALK SECTION  
N.T.S.



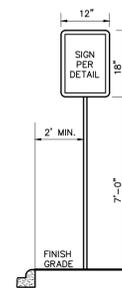
GRAVEL PAVING SECTION  
N.T.S.



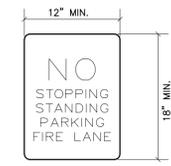
DUMPSTER ENCLOSURE DETAIL  
N.T.S.



BARRIER FREE PARKING SIGN DETAIL  
N.T.S.  
Provide (1) for each accessible parking space



NO PARKING SIGN DETAIL  
N.T.S.

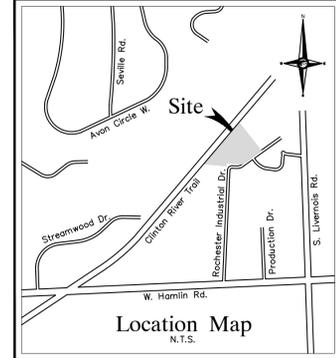
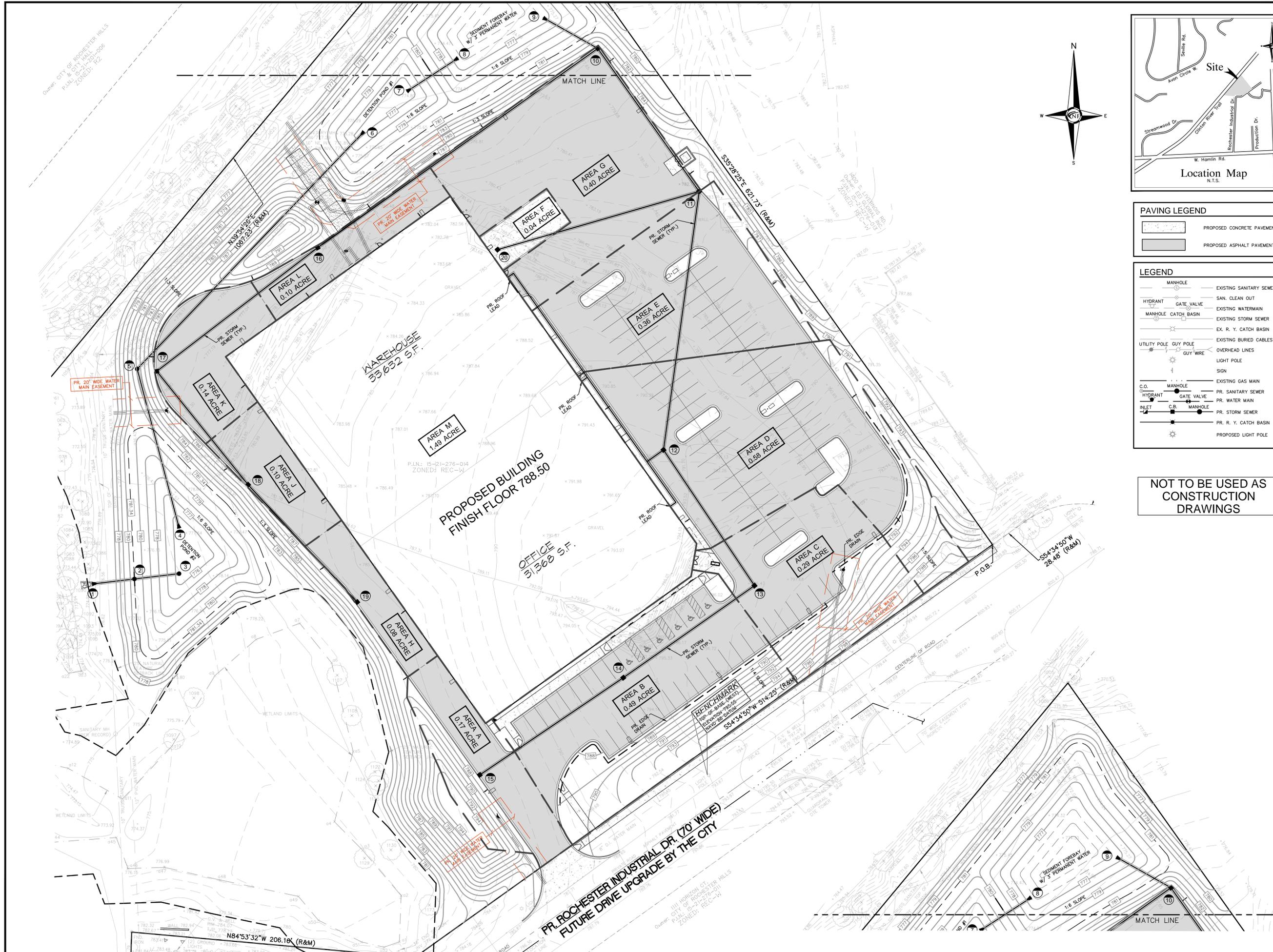


FIRE LANE SIGN DETAIL  
N.T.S.

**SPECIFICATIONS**

METAL PANELS 0.081 INCH THICK NO. 8061-16 ALUMINUM  
SIGN SHEET REFLECTORIZED FWHA 6.306  
POST GALVANIZED SQUARE TUBING WITH CONTINUOUS 7/16 ROUND HOLES ON 1 CENTERS. ALL 4 SIDES ENTIRE LENGTH - UNISTRUT OR APPROVED EQUAL - 1-3/4 SQUARE  
SIGN SPACING 100 FEET (MAX.)

NOT TO BE USED AS  
CONSTRUCTION  
DRAWINGS



**PAVING LEGEND**

	PROPOSED CONCRETE PAVEMENT
	PROPOSED ASPHALT PAVEMENT

**LEGEND**

	MANHOLE		EXISTING SANITARY SEWER
	HYDRANT		GATE VALVE
	MANHOLE CATCH BASIN		EXISTING WATERMAIN
	UTILITY POLE		EXISTING STORM SEWER
	GUY POLE		EX. R. Y. CATCH BASIN
	GUY WIRE		EXISTING BURIED CABLES
	OVERHEAD LINES		LIGHT POLE
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	C.O. MANHOLE		PR. SANITARY SEWER
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	INLET		PR. STORM SEWER
	C.B. MANHOLE		PR. R. Y. CATCH BASIN
	PROPOSED LIGHT POLE		

**NOT TO BE USED AS CONSTRUCTION DRAWINGS**

**50**  
NF  
ENGINEERS  
1969 - 2019

**NOWAK & FRAUS ENGINEERS**  
CIVIL ENGINEERS  
LAND SURVEYORS  
LAND PLANNERS

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PONTIAC, MI 48342-5032  
TEL. (248) 332-7931  
FAX. (248) 332-8257  
WWW.NOWAKFRAUS.COM

SEAL

STATE OF MICHIGAN  
PATRICK J. WILLIAMS  
ENGINEER  
NO. 44351  
SOUTHFIELD, MI

**PROJECT**  
Auburn Pharmaceutical  
Rochester Industrial Drive

**CLIENT**  
General Development  
Two Towne Square  
Suite 850  
Southfield, MI 48076

Contact: Bruce Brickman  
Ph: (248) 357-3777

**PROJECT LOCATION**  
Part of the Northeast 1/4  
of Section 21  
T. 3 North, R. 11 East  
City of Rochester Hills,  
Oakland County, Michigan

**SHEET**  
Stormwater Management  
Plan

**811**  
Know what's below  
Call before you dig.

DATE	ISSUED/REVISED
02-04-20	REVISED PER CLIENT
03-02-20	REVISED PER CITY
04-01-20	REVISED PER CITY

**DRAWN BY:**  
A. Eizember

**DESIGNED BY:**  
P. Williams

**APPROVED BY:**  
P. Williams

**DATE:**  
January 24, 2020

**SCALE:** 1" = 30'

City File #20-003  
Section 21  
NFE JOB NO. **L354** SHEET NO. **SP-7**



**NOWAK & FRAUS ENGINEERS**

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LAND SURVEYORS  
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SEAL



PROJECT  
Auburn Pharmaceutical  
Rochester Industrial Drive

CLIENT  
General Development  
Two Towne Square  
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PROJECT LOCATION  
Part of the Northeast 1/4  
of Section 21  
T. 3 North, R. 11 East  
City of Rochester Hills,  
Oakland County, Michigan

SHEET  
Storm Details and  
Calculations



DATE ISSUED/REVISED  
02-04-20 REVISED PER CLIENT  
03-02-20 REVISED PER CITY  
04-01-20 REVISED PER CITY

DRAWN BY:  
A. Eizember  
DESIGNED BY:  
P. Williams

APPROVED BY:  
P. Williams

DATE:  
January 24, 2020

SCALE: N.T.S.

City File #20-003  
Section 21

NFE JOB NO. SHEET NO.  
**L354 SP-7a**

Weighted Run-off Coefficient Calculation "C"			
Contributing Area :	246,351.50 S.F.	or	5.655 Acres
1. Pavement /Building	161,936.22 S.F.	or	3.718 Acres 66%
2. Lawn	84,415.28 S.F.	or	1.938 Acres 34%
Sum of Individual Areas:	246,351.50 S.F.	or	5.655 Acres 100%
Area No. 1 - Coefficient:	0.95		
Area No. 2 - Coefficient:	0.35		
"C" (Average) =	Area 1 * C1 + Area 2 * C2 Area 1 + Area 2		
"C" (Average) =	<b>0.74</b>		

Forebay (1) Year Storm Event - With Outlet (Orifice)			
Hole capacity must be such that a period of at least 48 Hours w ill be required to outlet a one year storm event volume.			
Contributing Area:	5.66 Acres		
Runoff Coefficient, C :	0.74 Imperviousness		
Volume Required, Vr :	18,094 Cubic Feet		

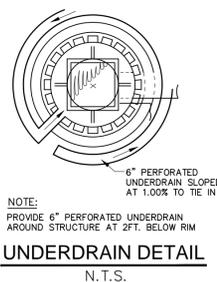
DETENTION CALCULATIONS - 25 YEAR STORM EVENT			
CONTRIBUTING ACREAGE:	5.66 ACRES		
Qa ALLOWABLE OUTFLOW:	0.20 CFS/ACRE		
C RUNOFF COEFFICIENT:	0.74 IMPERVIOUSNESS		
Qo MAXIMUM ALLOWABLE OUTFLOW:	0.270 CFS/(ACRE*IMPER.)		
Ts STORAGE TIME (100 YEAR):	147.717 MINUTES		
Vs STORAGE VOLUME:	9,435.84 CF/(ACRE*IMPER.)		
Vt TOTAL VOLUME (25 YR. EVENT):	39,521.09 CUBIC FEET		
VOLUME REQUIRED (25 YR. EVENT)	39,521 CUBIC FEET		
<b>TOTAL VOLUME REQUIRED:</b>	<b>39,521 CUBIC FEET</b>		

"C" by Areas			
Area A:	Pavement:	4754.85 S.F.	0.109 Acres
	Grass:	2824.31 S.F.	0.065 Acres
	Total:	7579.16 S.F.	0.17 Acres
			C= 0.64
Area B:	Pavement:	12952.61 S.F.	0.297 Acres
	Grass:	8297.01 S.F.	0.190 Acres
	Total:	21249.62 S.F.	0.49 Acres
			C= 0.63
Area C:	Pavement:	7077.34 S.F.	0.162 Acres
	Grass:	5399.76 S.F.	0.124 Acres
	Total:	12477.1 S.F.	0.29 Acres
			C= 0.60
Area D:	Pavement:	19109.45 S.F.	0.439 Acres
	Grass:	5952.82 S.F.	0.137 Acres
	Total:	25062.27 S.F.	0.58 Acres
			C= 0.73
Area E:	Pavement:	13679.2 S.F.	0.314 Acres
	Grass:	1973.41 S.F.	0.045 Acres
	Total:	15652.61 S.F.	0.36 Acres
			C= 0.81
Area F:	Pavement:	1800 S.F.	0.041 Acres
	Grass:	0 S.F.	0.000 Acres
	Total:	1800 S.F.	0.04 Acres
			C= 0.90
Area G:	Pavement:	17453.84 S.F.	0.401 Acres
	Grass:	64.63 S.F.	0.001 Acres
	Total:	17518.47 S.F.	0.40 Acres
			C= 0.90
Area H:	Pavement:	3303.81 S.F.	0.076 Acres
	Grass:	0 S.F.	0.000 Acres
	Total:	3303.81 S.F.	0.08 Acres
			C= 0.90
Area J:	Pavement:	4205.92 S.F.	0.097 Acres
	Grass:	0 S.F.	0.000 Acres
	Total:	4205.92 S.F.	0.10 Acres
			C= 0.90
Area K:	Pavement:	6195.21 S.F.	0.142 Acres
	Grass:	0 S.F.	0.000 Acres
	Total:	6195.21 S.F.	0.14 Acres
			C= 0.90
Area L:	Pavement:	4280.15 S.F.	0.098 Acres
	Grass:	0 S.F.	0.000 Acres
	Total:	4280.15 S.F.	0.10 Acres
			C= 0.90
Area M:	Pavement:	64855.46 S.F.	1.489 Acres
	Grass:	0 S.F.	0.000 Acres
	Total:	64855.46 S.F.	1.49 Acres
			C= 0.90

Detention Volume Provided - North			
Storage Elevation = 780.00			
Bottom Elevation = 777.00			
Contour	Surface Area sf.	Incr. Vol. cf.	Cumu. Vol. cf.
780.00	4,235		
		3,481	3,481
779.00	2,727		
		2,112	5,593
778.00	1,497		
		1,028	6,621
777.00	559		
<b>VOLUME PROVIDED (Cubic Feet):</b>		<b>6,621</b>	

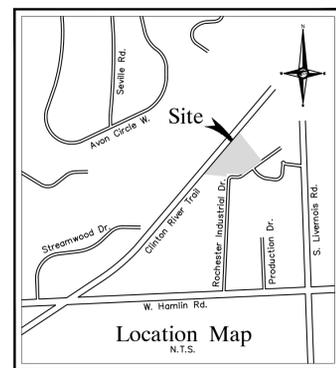
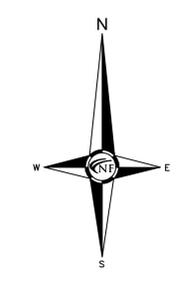
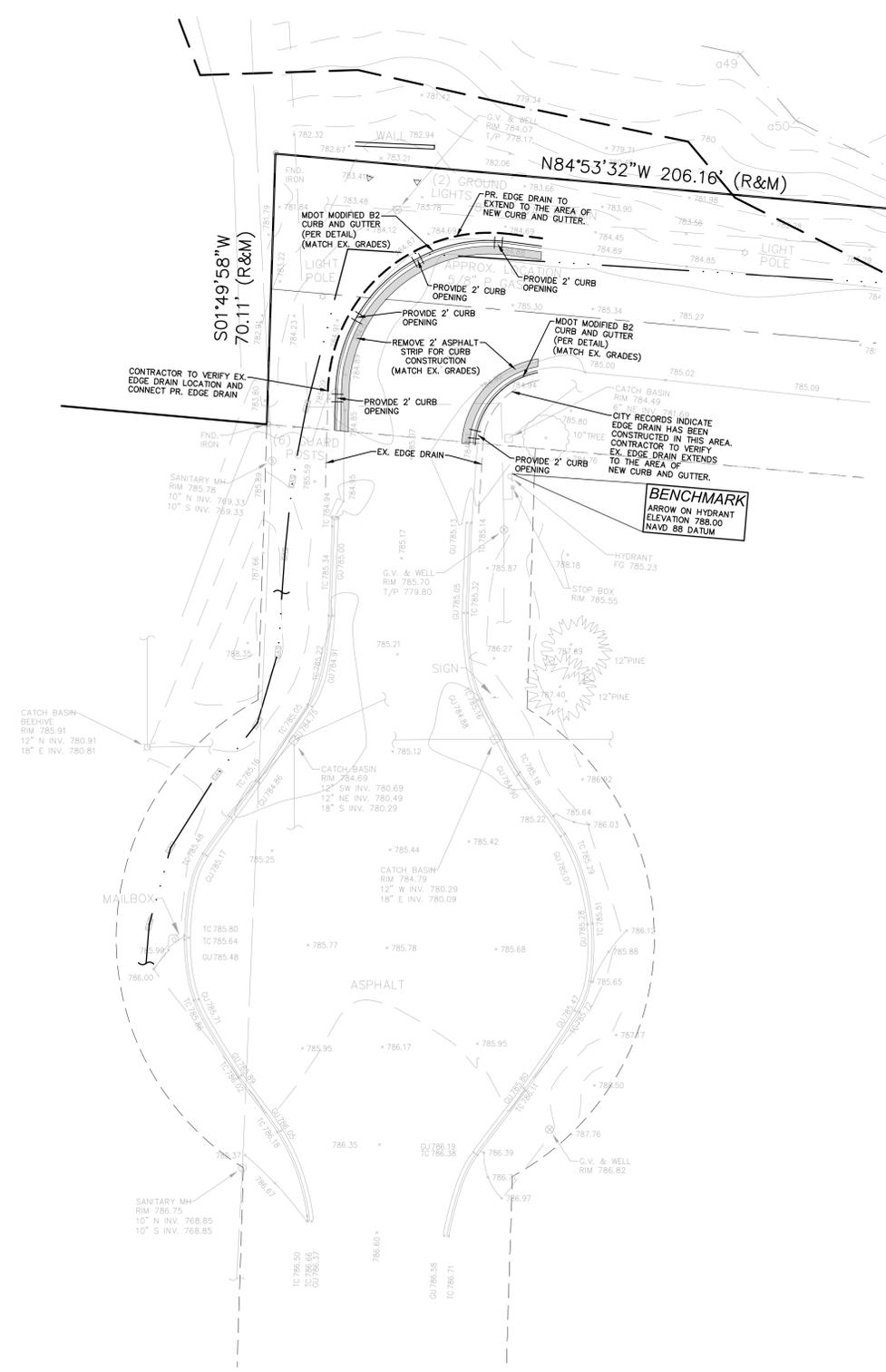
Forebay Volume Provided			
Storage Elevation = 780.00			
Bottom Elevation = 777.00			
Contour	Surface Area sf.	Incr. Vol. cf.	Cumu. Vol. cf.
780.00	9,216		
		8,093	8,093
779.00	6,970		
		6,001	14,094
778.00	5,032		
		4,214	18,308
777.00	3,396		
<b>VOLUME PROVIDED (Cubic Feet):</b>		<b>18,308</b>	

Detention Volume Provided -South			
Storage Elevation = 780.00			
Bottom Elevation = 776.00			
Contour	Surface Area sf.	Incr. Vol. cf.	Cumu. Vol. cf.
780.00	7,604		
		6,436	6,436
779.00	5,267		
		4,322	10,757
778.00	3,376		
		2,638	13,395
777.00	1,900		
		1,378	14,773
776.00	855		
<b>VOLUME PROVIDED (Cubic Feet):</b>		<b>14,773</b>	
<b>TOTAL VOL PROVIDED (C.F.)</b>		<b>39,702</b>	



City of Rochester Hills, Oakland County, Michigan															Project No: L354									
Storm Sewer Calculations															Project Name: Auburn Pharm									
															Location: Rochester Industrial Dr.									
															Dated: January 14, 2020									
															Revised: 02/27/20									
Drainage Area	From Struc. No.	To Struc. No.	Drainage Area (Acres)	Runoff Coefficient (C)	Equivalent Area (C * A)	Total Area (Sum C * A)	Time of Concentration (Minutes)	Rainfall Intensity (Inches/Hr.)	Actual Discharge (CFS)	Pipe Size (Inches)	Pipe Slope (% Slope)	Pipe Length (Feet)	Flow Velocity (Ft / Sec)	Time of Flow (Minutes)	Full Pipe Capacity (CFS)	H. G. Elev. Upper End (Feet)	H. G. Elev. Lower End (Feet)	H. G. Slope (% Slope)	Theoretical Velocity (Ft / Sec)	Ground Elevation (Upper) (Feet)	Change in Elevation (Feet)	Invert Elev. Upper End (Feet)	Invert Elev. Lower End (Feet)	Upper Rim to HGL (Feet)
A	15	14	0.170	0.64	0.109	0.109	15.00	4.375	0.476	12	0.32	126	3.033	0.69	2.382	783.02	783.00	0.018	0.61	786.80	0.40	782.60	782.20	3.78
B	14	13	0.490	0.63	0.309	0.418	15.69	4.301	1.795	12	0.32	116	3.033	0.64	2.382	782.92	782.63	0.254	2.29	786.20	0.37	782.20	781.83	3.28
C	13	12	0.290	0.60	0.174	0.592	16.33	4.234	2.505	12	0.48	118	3.714	0.53	2.917	782.64	782.06	0.494	3.19	787.20	0.57	781.83	781.26	4.56
M	ROOF	12	1.490	0.90	1.341	1.341	15.00	4.375	5.867	18	0.34	15	4.096	0.06	7.239	784.15	784.10	0.312	3.32	788.50	0.05	782.95	782.90	4.35
D	12	11	0.580	0.73	0.423	2.356	16.86	4.181	9.849	24	0.20	188	3.806	0.82	11.956	782.84	782.48	0.190	3.14	786.90	0.38	781.26	780.88	4.06
F	20	11	0.040	0.90	0.036	0.036	15.00	4.375	0.158	12	0.32	152	3.033	0.84	2.382	780.82	780.81	0.002	0.20	784.50	0.49	780.50	780.01	3.68
E	11	10	0.360	0.81	0.292	2.684	17.68	4.100	11.002	24	0.24	127	4.169	0.51	13.098	779.90	779.60	0.237	3.50	786.00	0.30	778.30	778.00	6.10
H	19	18	0.080	0.90	0.072	0.072	15.00	4.375	0.315	12	0.32	116	3.033	0.64	2.382	782.64	782.63	0.008	0.40	787.00	0.37	782.20	781.83	4.36
J	18	17	0.100	0.90	0.090	0.162	15.64	4.306	0.698	12	0.32	105	3.033	0.58	2.382	782.33	782.29	0.038	0.89	786.50	0.34	781.83	781.49	4.17
K	17	16	0.140	0.90	0.126	0.288	16.21	4.246	1.223	12	0.32	147	3.033	0.81	2.382	782.00	781.82	0.118	1.56	785.50	0.47	781.49	781.02	3.50
L	16	10	0.100	0.90	0.090	0.378	17.02	4.164	1.574	12	0.32	249	3.033	1.37	2.382	779.79	779.30	0.195	2.00	787.00	0.80	779.30	778.50	7.21
G	10	SED	0.400	0.90	0.360	3.422	18.39	4.033	13.799	24	0.38	36	5.246	0.11	16.481	779.59	779.46	0.372	4.39	783.50	0.14	778.00	777.86	3.91

NOT TO BE USED AS  
CONSTRUCTION  
DRAWINGS

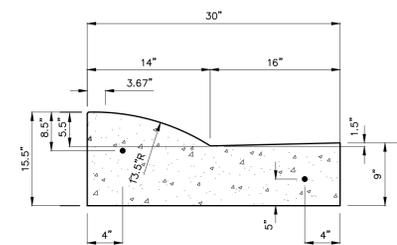


**PAVING LEGEND**

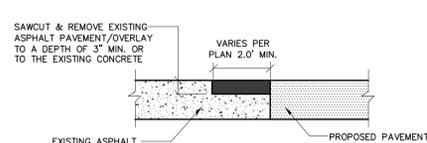
	PROPOSED CONCRETE PAVEMENT
	PROPOSED ASPHALT PAVEMENT

**LEGEND**

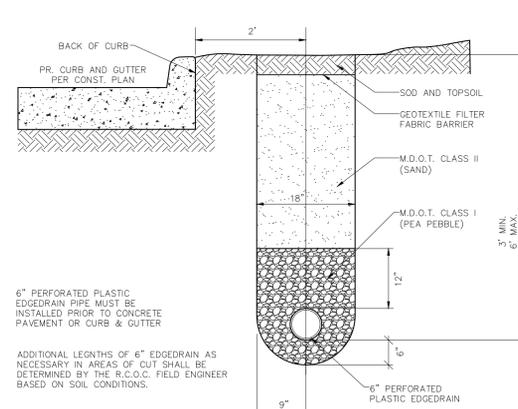
	MANHOLE		EXISTING SANITARY SEWER
	HYDRANT		GATE VALVE
	MANHOLE CATCH BASIN		EXISTING WATERMAIN
	UTILITY POLE		EXISTING STORM SEWER
	GUY POLE		EX. R. Y. CATCH BASIN
	GUY WIRE		EXISTING BURIED CABLES
	SIGN		OVERHEAD LINES
	EXISTING GAS MAIN		LIGHT POLE
	C.O. MANHOLE		SIGN
	HYDRANT		EXISTING GAS MAIN
	INLET		PR. SANITARY SEWER
	C.B. MANHOLE		PR. WATER MAIN
	MANHOLE		PR. STORM SEWER
	MANHOLE		PR. R. Y. CATCH BASIN
	MANHOLE		PROPOSED LIGHT POLE
	MANHOLE		PR. TOP OF CURB ELEVATION
	MANHOLE		PR. GUTTER ELEVATION
	MANHOLE		PR. TOP OF WALK ELEVATION
	MANHOLE		PR. TOP OF P.W.M. ELEVATION
	MANHOLE		FINISH GRADE ELEVATION



**B-2 MODIFIED CURB AND GUTTER**  
N.T.S.



**BUTT JOINT DETAIL**  
N.T.S.



**UNDERDRAIN DETAIL**  
N.T.S.

**ESTIMATED QUANTITIES**

DESCRIPTION	QUANTITY	UNITS
MDOT MODIFIED B2 CURB & GUTTER	110	L.F.
ASPHALT BUTT JOINT	110	L.F.

**STORM SEWER**

DESCRIPTION	QUANTITY	UNITS
6" EDGE DRAIN	70	L.F.

**GENERAL PAVING NOTES**

PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS SECTION AS INDICATED ON THE PLANS AND AS FOLLOWS:

**CONCRETE:** PORTLAND CEMENT TYPE IA (AIR-ENTRAINED) WITH A MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES.

**ASPHALT:** BASE COURSE - MDOT BITUMINOUS MIXTURE NO. 1100L, 20AA; SURFACE COURSE - MDOT BITUMINOUS MIXTURE NO. 1100T, 20AA; ASPHALT CEMENT PENETRATION GRADE 85-100, BOND COAT - MDOT SS-HH EMULSION AT 0.10 GALLON PER SQUARE YARD; MAXIMUM 2 INCH LIFT.

PAVEMENT BASE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. EXISTING SUB-BASE SHALL BE PROOF-ROLLED IN THE PRESENCE OF THE ENGINEER TO DETERMINE STABILITY.

ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC., SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.

ALL CONCRETE PAVEMENT JOINTS SHALL BE FILLED WITH HOT Poured RUBBERIZED ASPHALT JOINT SEALING COMPOUND IMMEDIATELY AFTER SAWCUT OPERATION. FEDERAL SPECIFICATION SS-5164.

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.

ALL TOP OF CURB ELEVATIONS, AS SHOWN ON THE PLANS, ARE CALCULATED FOR A 6" CONCRETE CURB UNLESS OTHERWISE NOTED.

ALL SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1993, SHALL BE INSTALLED AS INDICATED ON THE PLANS.

CONSTRUCTION OF A NEW OR RECONSTRUCTED DRIVE APPROACH CONNECTING TO AN EXISTING STATE OR COUNTY ROADWAY SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE AGENCY HAVING JURISDICTION OVER SAID ROADWAY.

FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LIKEWISE ARRANGE FOR ALL INSPECTION.

EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS.

EXPANSION JOINTS SHOULD BE INSTALLED AT THE END OF ALL INTERSECTION RADII.

SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1973, SHALL BE INSTALLED AS SHOWN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.

ALL PAVEMENT AREAS SHALL BE PROOF-ROLLED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF BASE MATERIALS AND PAVING MATERIALS.

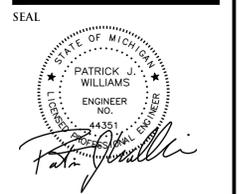
FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 98% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.

**50 NF ENGINEERS**  
1969 - 2019

**NOWAK & FRAUS ENGINEERS**

CIVIL ENGINEERS  
LAND SURVEYORS  
LAND PLANNERS

NOWAK & FRAUS ENGINEERS  
46777 WOODWARD AVE.  
PONTIAC, MI 48342-5032  
TEL. (248) 332-7931  
FAX. (248) 332-8257  
WWW.NOWAKFRAUS.COM



**PROJECT**  
Auburn Pharmaceutical  
Rochester Industrial Drive

**CLIENT**  
General Development  
Two Towne Square  
Suite 850  
Southfield, MI 48076

Contact: Bruce Brickman  
Ph: (248) 357-3777

**PROJECT LOCATION**  
Part of the Northeast 1/4  
of Section 21  
T. 3 North, R. 11 East  
City of Rochester Hills,  
Oakland County, Michigan

**SHEET**  
Road Paving Plan



**DATE** ISSUED/REVISED

00-00-00	REVISION PER

**DRAWN BY:**  
A. Eizember

**DESIGNED BY:**  
P. Williams

**APPROVED BY:**  
P. Williams

**DATE:**  
February 12, 2020

**SCALE:** 1" = 20'







**D-Series Size 0 LED Area Luminaire**

**Specifications**

EPA: 0.95 ft (0.95 ft)

Length: 26" (660 mm)

Width: 13" (330 mm)

Height: 3" (76 mm)

Height: 7" (178 mm)

Weight: 16 lbs (7.3 kg)

**Introduction**

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 400W metal halide with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information EXAMPLE: DSXO LED P6 40K T3M MVOLT SPA NLTARZ PIRHN DBDXB

Series	LEDs	Color temperature	Distribution	Voltage	Mounting
DSXO LED	Forward optics P1 P4 P7 P2 P5 P3 P6 Retrofitted optics P10 P12 P11 P13	30K 3000 K 40K 4000 K 50K 5000 K	T15 Type I short T25 Type II short T3M Type III medium T5W Type IV wide T7S Type II short T3M Type III medium T4M Type IV medium T7TM Forward throw medium T5VS Type V very short	MVOLT <sup>1</sup> 120" 208" 240" 277" 347" 480"	Shipped included SRA Square pole mounting RPA Round pole mounting WBA Wall bracket SPUMBA Square pole universal mounting adapter <sup>2</sup> RPMBA Round pole universal mounting adapter <sup>2</sup> Shipped separately KMAH DSDXDU <sup>3</sup> Mast arm mounting/bracket adapter (specify finish)

Control options	Shipped installed	Other options	Finish options
NLTARZ Night All generation 2 enabled <sup>4</sup>	PIR High/low motion/ambient sensor 8-15' mounting height, ambient sensor enabled at 36" <sup>5,6</sup>	HS House-side shield <sup>7</sup>	DBDKD Dark bronze
PIRHN Network, high/low motion/ambient sensor <sup>4</sup>	PIRHN High/low motion/ambient sensor 10-37' mounting height, ambient sensor enabled at 36" <sup>5,6</sup>	SF Single size (120, 277, 347V) <sup>8</sup>	DBLDC Black
PIRNL NEMA twist-lock receptacle only (control ordered separately) <sup>9</sup>	PIRNL High/low motion/ambient sensor 8-15' mounting height, ambient sensor enabled at 36" <sup>5,6</sup>	DF Double size (208, 240, 480V) <sup>8</sup>	DNAXD Natural aluminum
PIRBS Fire-gas receptacle only (control ordered separately) <sup>10</sup>	PIRBS High/low motion/ambient sensor 8-15' mounting height, ambient sensor enabled at 36" <sup>5,6</sup>	LW Left mount optics <sup>11</sup>	DNWDD White
PIRBT Seven-pin receptacle only (load not listed) (control ordered separately) <sup>10</sup>	PIRBT High/low motion/ambient sensor 10-37' mounting height, ambient sensor enabled at 36" <sup>5,6</sup>	R90 Right mount optics <sup>11</sup>	EDDDB Textured dark bronze
DWG 0-10V dimming extend-out back (allowing for external control (control ordered separately))	FAO Field adjustable output <sup>12</sup>	DDL Diffused drop lens <sup>13</sup>	DNMDD Textured natural aluminum
		SS Bird spikes <sup>14</sup>	DNWGD Textured white aluminum
		ES External glare shield <sup>15</sup>	

LITHONIA LIGHTING  
 One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.705.7378 • www.lithonia.com  
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Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Lumens per Lamp	LLF	Wattage	Mounting Height
A	A	6	Lithonia Lighting	DSXO LED P7 40K T4M MVOLT	DSXO LED AREA LIGHT, P7 FORWARD OPTICS, 4000K, TYPE 4 MEDIUM DISTRIBUTION	LED	1	17969	0.9	166	20'-0"
B	B	1	Lithonia Lighting	DSXO LED P5 40K BLC MVOLT	DSXO LED AREA LIGHT, P7 FORWARD OPTICS, 4000K, BACKLIGHT CONTROL DISTRIBUTION	LED	1	9576	0.9	89	20'-0"
C	C	2	Lithonia Lighting	DSXO LED P7 40K T5W MVOLT	DSXO LED AREA LIGHT, P7 FORWARD OPTICS, 4000K, TYPE 5 WIDE DISTRIBUTION	LED	1	18933	0.9	332	20'-0"
D	D	11	Lithonia Lighting	DSXO LED P7 40K T4M MVOLT WBA	DSXO LED AREA LIGHT, P7 FORWARD OPTICS, 4000K, TYPE 4 MEDIUM DISTRIBUTION, WALL BRACKET	LED	1	17969	0.9	166	20'-0"

Statistics							
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
PARKING LOT	+	2.6 fc	5.8 fc	0.4 fc	14.5:1	6.5:1	0.4:1
PROPERTY LINE	+	0.1 fc	0.5 fc	0.0 fc	N/A	N/A	0.2:1

**Mounting Height Note**

MOUNTING HEIGHT IS MEASURED FROM GRADE TO FACE OF FIXTURE. POLE HEIGHT SHOULD BE CALCULATED AS THE MOUNTING HEIGHT LESS BASE HEIGHT.

**Drawing Note**

THIS DRAWING WAS GENERATED FROM AN ELECTRONIC IMAGE FOR ESTIMATION PURPOSE ONLY. LAYOUT TO BE VERIFIED IN FIELD BY OTHERS.

**General Note**

1. SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.  
 2. CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 0' - 0"

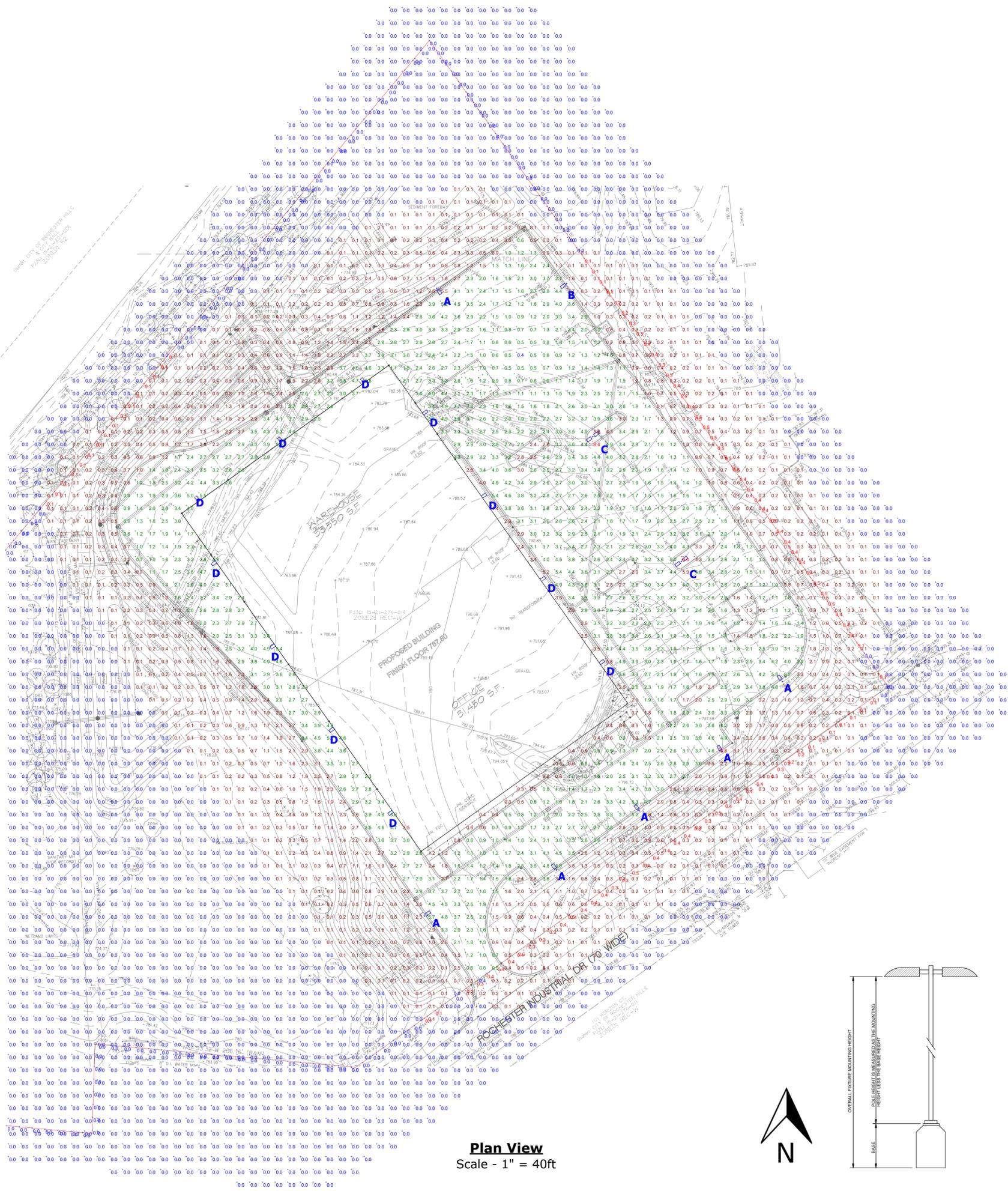
THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS. MOUNTING HEIGHTS INDICATED ARE FROM GRADE AND/OR FLOOR UP.

THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.

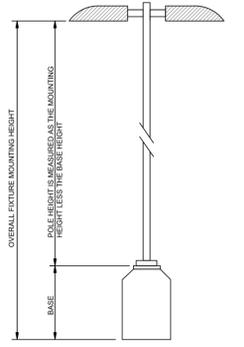
UNLESS EXEMPT, PROJECT MUST COMPLY WITH LIGHTING CONTROLS REQUIREMENTS DEFINED IN ASHRAE 90.1 2013. FOR SPECIFIC INFORMATION CONTACT GBA CONTROLS GROUP AT ASG@GASSERBUSH.COM OR 734-266-6705.

**Ordering Note**

FOR INQUIRIES CONTACT GASSER BUSH AT QUOTES@GASSERBUSH.COM OR 734-266-6705.



**Plan View**  
 Scale - 1" = 40ft



ISSUED FOR	DATE
SFA	1.21.20
	2.28.20

**ARCHITECTURAL DESIGN**  
**RESIDENTIAL**  
**COMMERCIAL**  
**INDUSTRIAL**

G.A.V. ASSOCIATES, INC.  
 24001 ORCHARD LAKE RD., STE. 180A  
 FARMINGTON, MICHIGAN 48336  
 PH: (248) 885-8101  
 WEB: WWW.GAVASSOCIATES.COM



**GENERAL DEVELOPMENT COMPANY**  
 TWO TOWNE SQUARE SUITE 850  
 SOUTHFIELD, MI 48076  
 (248) 357-3777

PROPOSED NEW FACILITY:  
 AUBURN PHARMACEUTICAL  
 ROCHESTER INDUSTRIAL DRIVE  
 ROCHESTER HILLS, MICHIGAN

DRAWN:	DESIGNED:	CHECKED:
RA	AV	AV

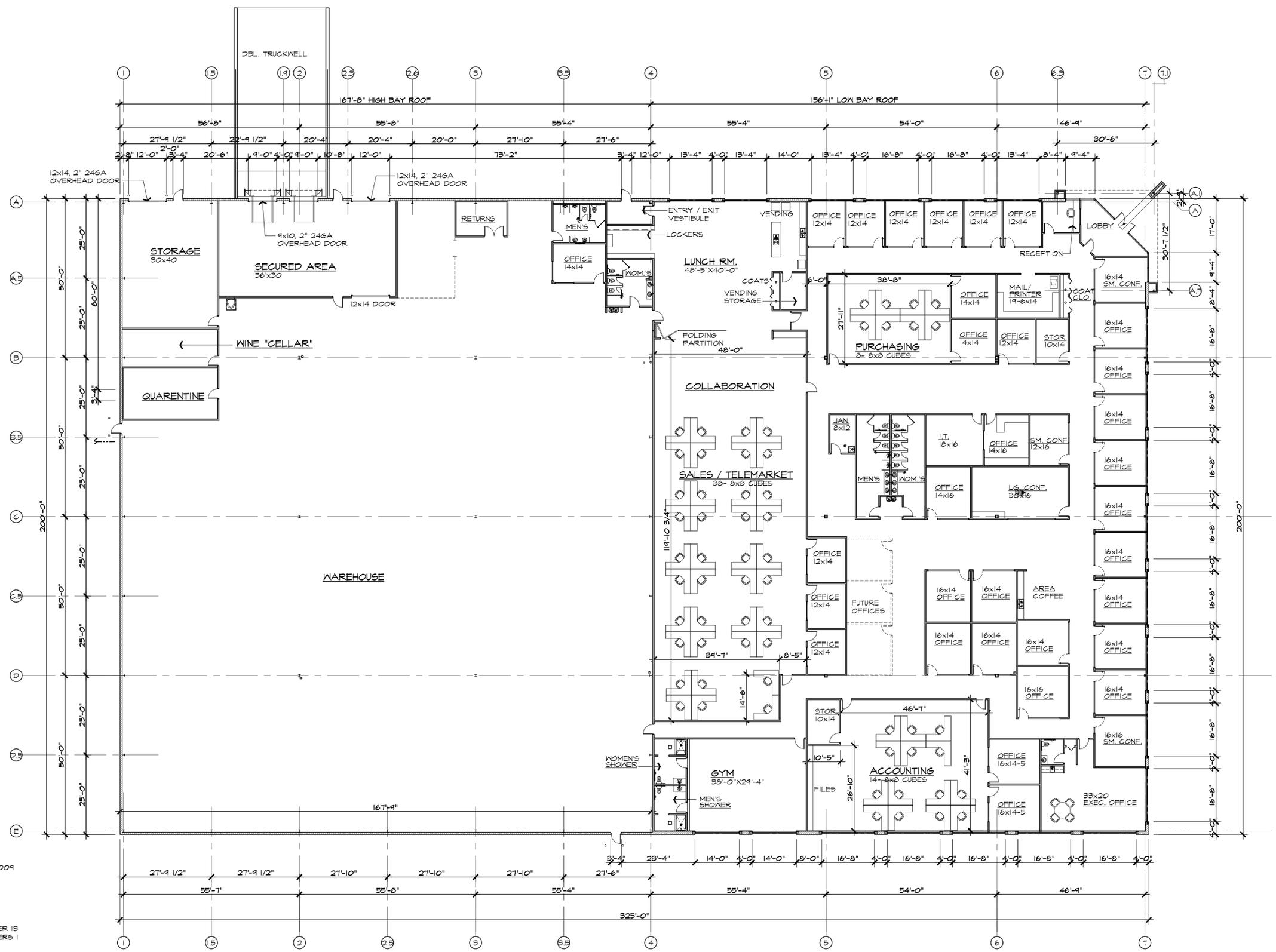
SCALE: 1/16" = 1'-0"

FILE NAME: .

JOB #: 19008

SHEET TITLE  
 FLOOR PLAN

SHEET #  
 A.101



**CODE REFERENCE**

- \* MICHIGAN BUILDING CODE 2015
- \* MICHIGAN BARRIER FREE CODE # ICC/ANSI A117.1 2009 MICHIGAN BARRIER FREE DESIGN LAW P.A. 1 OF 1966 AS AMENDED
- \* MICHIGAN MECHANICAL CODE 2015 (M.M.C.)
- \* MICHIGAN PLUMBING CODE 2015 (M.P.C.)
- \* INTERNATIONAL FUEL GAS CODE 2015 (I.F.G.C.)
- \* MBC 2015 (MICHIGAN BUILDING CODE 2015) - CHAPTER 13 & MEC 2015 (MICHIGAN ENERGY CODE 2015)-CHAPTERS 1 THROUGH 6 & MICHIGAN ENERGY CODE, PART 10a, RULES/ANSI/ASHRAE/IES STANDARD 90.1-2013
- \* NATIONAL ELECTRICAL CODE 2017 N.E.C. IV PART 8 AMENDMENTS (N.E.C.)
- \* INTERNATIONAL FIRE CODE 2015 (I.F.C.)
- \* PROJECT SHALL COMPLY W/ MBC 2015 CHP. 35
- \* NFPA 13-2013 & NFPA 12-2013

**BUILDING DATA**

BUILDING AREA:  
 TOTAL AREA: 65,000 GROSS S.F.  
 WAREHOUSE: 33,668 GROSS S.F.  
 OFFICE AREA: 31,368 GROSS S.F.

**USE GROUP:**

MIXED NON-SEPARATED B (BUSINESS) / S-1 (MODERATE HAZARD WAREHOUSE)  
 CONSTRUCTION CLASS: IIB

**ALLOWED BUILDING AREA SECTION 506**

**At VALUES**  
 S-1 USE BASE AREA: 70,000 S.F.  
 B USE BASE AREA: 92,000 S.F.

**FRONTAGE INCREASE (506.3)**  
 $IF = [ P/P - 0.25 ] W/30$   
 $= [ 1050 / 1050 - 0.25 ] W/30$   
 $= .75$

**MAX. AREA (506.2.3) USING S-1**  
 SINGLE OCCUPANCY ONE STORY  
 $A_0 = At + (NS \times IF)$   
 $= 70,000 + (17,500 \times .75)$   
 $= 103,125$   
 $= 83,125$  S.F. MAX ALLOWED  
 $= 65,000$  ACTUAL



**FLOOR PLAN**

TOTAL S.F. (WAREHOUSE & OFFICE AREA)  
 65,000 S.F.

SCALE: 1/16" = 1'-0"



ISSUED FOR	DATE
SFA	2.18.20
	2.28.20

**ARCHITECTURAL DESIGN**

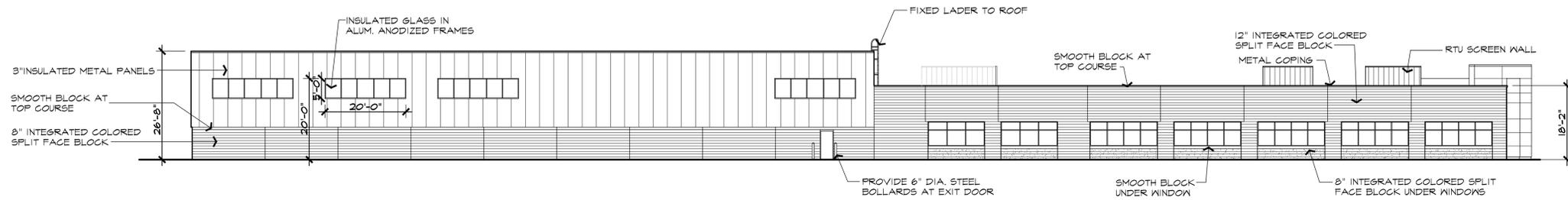
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COMMERCIAL  
INDUSTRIAL

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FARMINGTON, MICHIGAN 48336  
PH: (248) 854-9101  
WEB: WWW.GAVASSOCIATES.COM



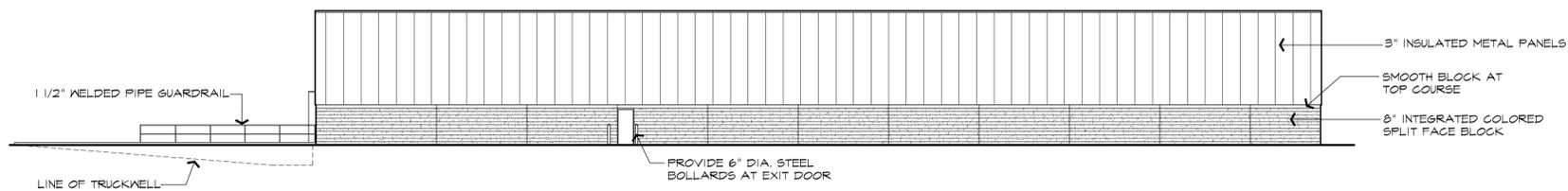
**GENERAL DEVELOPMENT COMPANY**  
TWO TOWNE SQUARE SUITE 850  
SOUTHFIELD, MI 48076  
(248) 387-3777

PROPOSED NEW FACILITY:  
AUBURN PHARMACEUTICAL  
ROCHESTER INDUSTRIAL DRIVE  
ROCHESTER HILLS, MICHIGAN



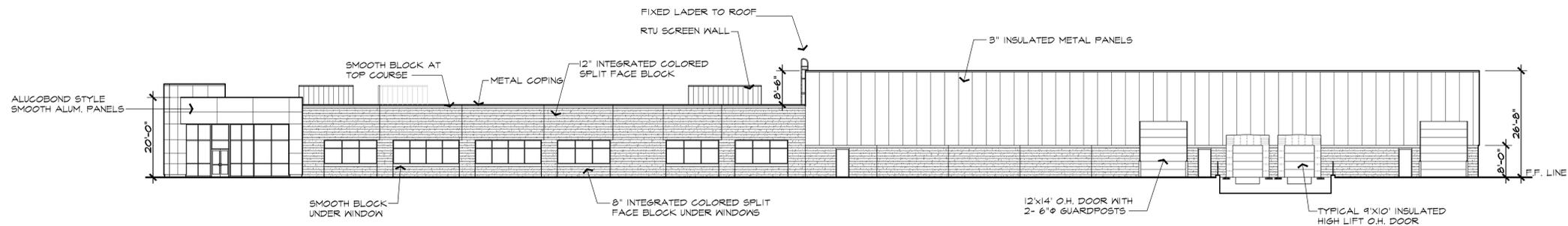
**SOUTH ELEVATION**

SCALE: 1/16" = 1'-0"



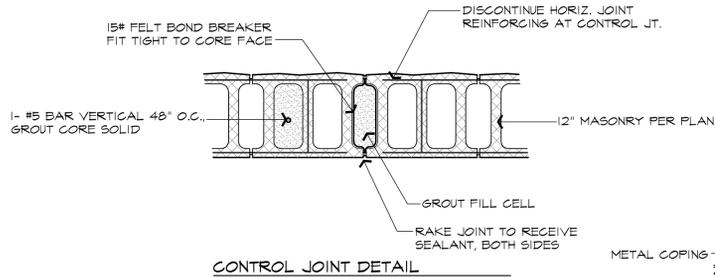
**WEST ELEVATION**

SCALE: 1/16" = 1'-0"

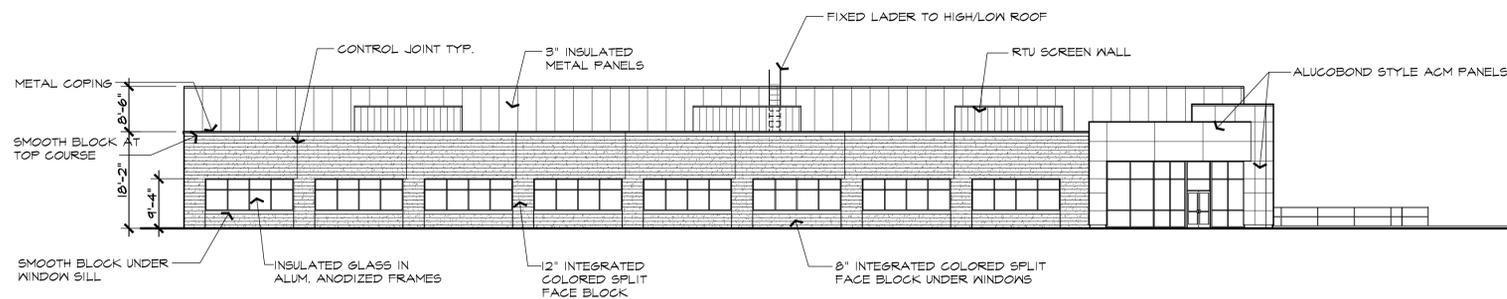


**NORTH ELEVATION**

SCALE: 1/16" = 1'-0"



**CONTROL JOINT DETAIL**



**EAST ELEVATION**

SCALE: 1/16" = 1'-0"

**NOTE:**  
ALL PROPOSED ROOF TOP EQUIPMENT SHALL BE SCREENED PER ROCHESTER HILLS ZONING ORDINANCE. LOCATION AND QUANTITY UNKNOWN AT THIS TIME.  
NO NEW SIGNS ARE PROPOSED AT THIS TIME. ANY NEW PROPOSED SIGNS SHALL BE SUBMITTED UNDER A SEPARATE PERMIT



DRAWN:	DESIGNED:	CHECKED:
RA	AV	AV

SCALE :

FILE NAME :

JOB #: 19008

SHEET TITLE  
EXTERIOR  
ELEVATIONS

SHEET #  
A.201