

PLANNING COMMISSION MEETING AGENDA REGULAR MEETING

500 W. Big Beaver
Troy, MI 48084
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planning@troymi.gov

Mark Maxwell, Chair and John J. Tagle, Vice Chair
Donald Edmunds, Michael W. Hutson, Tom Krent, Philip Sanzica
Gordon Schepke, Robert Schultz and Thomas Strat

April 10, 2012

7:30 P.M.

Council Chambers

1. ROLL CALL
2. APPROVAL OF AGENDA
3. APPROVAL OF MINUTES – March 27, 2012 Special/Study and Special Meetings
4. PUBLIC COMMENTS – For Items Not on the Current Agenda

SITE CONDOMINIUM DEVELOPMENT

5. PRELIMINARY SITE PLAN REVIEW – Proposed Tuscany Estates Site Condominium, 11 units/lots, West side of Dequindre, North of Winter Drive, Section 24, Currently Zoned R-1C (One Family Residential) District

PRELIMINARY SITE PLAN REVIEW

6. PRELIMINARY SITE PLAN REVIEW (File Number SP 973) – Proposed Old Dominion Freight Line, South Side of Big Beaver, West of Bellingham (1310 E Big Beaver), Section 26, Currently Zoned IB (Integrated Industrial and Business) District

OTHER BUSINESS

7. PUBLIC COMMENTS – For Items on Current Agenda
8. PLANNING COMMISSION COMMENTS

ADJOURN

NOTICE: People with disabilities needing accommodations for effective participation in this meeting should contact the City Clerk by e-mail at clerk@troymi.gov or by calling (248) 524-3317 at least two working days in advance of the meeting. An attempt will be made to make reasonable accommodations.

Chair Maxwell called the Special/Study meeting of the Troy City Planning Commission to order at 7:30 p.m. on March 27, 2012 in the Council Board Room of the Troy City Hall.

1. ROLL CALL

Present:

Donald Edmunds
Michael W. Hutson
Tom Krent
Mark Maxwell
Gordon Schepke
Thomas Strat
John J. Tagle

Absent:

Philip Sanzica
Robert Schultz

Also Present:

Allan Motzny, Assistant City Attorney
Ben Carlisle, Carlisle/Wortman Associates, Inc.
Kathy L. Czarnecki, Recording Secretary

2. APPROVAL OF AGENDA

Resolution # PC-2012-03-017

Moved by: Edmunds
Seconded by: Tagle

RESOLVED, To approve the Agenda as printed.

Yes: All present (7)
Absent: Sanzica, Schultz

MOTION CARRIED

3. MINUTES

Resolution # PC-2012-03-018

Moved by: Krent
Seconded by: Schepke

RESOLVED, To approve the minutes of the March 13, 2012 Regular meeting as published.

Yes: All present (7)
Absent: Sanzica, Schultz

MOTION CARRIED

4. PUBLIC COMMENT – For Items Not on the Agenda

Mr. Strat gave an overall report on past Zoning Board of Appeals meetings.

SPECIAL USE REQUEST

5. SPECIAL USE REQUEST AND PRELIMINARY SITE PLAN REVIEW (File Number SU 394) – Proposed Tim Hortons Restaurant, North side of Maple Road, West of John R (1905 E Maple), Section 26, Currently Zoned GB (General Business) District

Mr. Carlisle addressed the site plan revisions relating to circulation, accessibility, landscaping and lighting.

Resolution # PC-2012-03-019

Moved by: Edmunds

Seconded by: Hutson

RESOLVED, That Special Use Approval and Preliminary Site Plan Approval for the proposed Tim Horton’s Restaurant, located on the north side of Maple Road and west of John R (1905 E Maple), Section 26, currently zoned GB (General Business) District, be granted, subject to the following:

- 1. Turn the bicycle rack 90-degrees so that bikes can be safely parked and not overhang into the pedestrian sidewalk.

Yes: All present (7)

Absent: Sanzica, Schultz

MOTION CARRIED

OTHER BUSINESS

6. PUBLIC COMMENT – Items on Current Agenda

There was no one present who wished to speak.

7. PLANNING COMMISSION COMMENT

None.

The Special/Study meeting of the Planning Commission adjourned at 7:10 p.m.

Respectfully submitted,

Mark Maxwell, Chair

Kathy L. Czarnecki, Recording Secretary

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Chair Maxwell called the Special Meeting of the Troy City Planning Commission to order at 7:30 p.m. on March 27, 2012 in the Council Board Room of the Troy City Hall.

1. ROLL CALL

Present:

Donald Edmunds
Michael W. Hutson
Tom Krent
Mark Maxwell
Philip Sanzica
Gordon Schepke
Thomas Strat
John J. Tagle

Absent:

Robert Schultz

Also Present:

R. Brent Savidant, Planning Director
Allan Motzny, Assistant City Attorney
Ben Carlisle, Carlisle/Wortman Associates, Inc.
Mark Miller, Director of Economic & Community Development
Steve Vandette, City Engineer
William Huotari, Deputy City Engineer
Kathy L. Czarnecki, Recording Secretary

2. MULTI-MODAL TRANSIT FACILITY PRESENTATION

Project Background

Mr. Savidant gave a PowerPoint presentation on the sequential elements of the project and identified the following design enhancements associated with Preliminary Site Plan approval by City Council.

- a. Building façade articulation
- b. A more identifiable building entrance
- c. Enhancing the sense of arrival by focusing on a major point of interest
- d. Establishing visual interest with human-scale elements in the building
- e. Creating transitional features between the building, the bridge structure and platform
- f. Offering additional cost effective, sustainable design features

Project Team Introductions

Mike MacDonald of Hubbell Roth & Clark (HRC), design team project manager, introduced the following team members:

Wally Alix, Hubbell Roth & Clark
Jim Surhigh, Hubbell Roth & Clark
Mike Kirk, Neumann/Smith Architecture
Scott Bonney, Neumann/Smith Architecture
Rich Houdek, Grissim Metz Andriese
Allen Blower, Clark Construction
Dan Rogers, Clark Construction

Overview of Project Team Design Opportunity Sketches submitted with Proposal

Messrs. MacDonald, Kirk and Bonney presented an overview of the project with the assistance of visual illustrations. The design team announced that they would work on a closer spatial relationship between the building and the parking area.

Planning Commission Design Input

Mr. Tagle applauded the team for an excellent job. He said the project speaks well to the quality of the City, provides a nice gateway and makes a modern statement.

Mr. Strat echoed Mr. Tagle's favorable comments. He is very pleased, noting a night and day difference from the original plan. Mr. Strat said the design addresses safety and transparency. Mr. Strat suggested 1) implementing a green roof on the waiting area if budget allows, and 2) extending the glass to the bridge floor to complete transparency. He applauded the stairway; said it serves as a beacon as well as being functional. Mr. Strat addressed screening of the rooftop mechanical equipment.

Mr. Schepke addressed concerns with the isolation and lack of lighting on the Birmingham side and suggested a closed circuit camera monitoring system. He asked if there would be a manned ticket counter and how snow removal equipment would be utilized.

Mr. Sanzica said he is impressed with the quality of the graphics. He agreed that moving the building closer to Doyle would be beneficial, and asked if there are plans for long-term and short-term parking. Mr. Sanzica asked the design team to address stormwater management. He suggested low maintenance for any type of stormwater management installed/constructed; i.e., rain gardens, bioswales.

Mr. Hutson suggested softening the structure with landscaping.

Mr. Krent applauded the design team for its consideration to human interest and excellent attention to details. He gave kudos to the raised crosswalks and signage, noting he likes the simplicity of the “Troy Transit Center” name.

Mr. Edmunds said the design team did a great job. He asked (1) if there would be access to the restrooms when the building is locked, and (2) if there would be opportunity for alternate bidding, specifically for a geothermal system.

Chair Maxwell applauded the design team. Chair Maxwell said the design is a big improvement from the original design; it is a functional, more cohesive and coordinated design. He agreed the waiting area should be closer to the parking.

Responses to Planning Commission Input/Comments

Mr. Vandette stated that closed circuit cameras are budgeted and Management would work closely with the City’s Police Department to identify areas to observe and monitor, and briefly addressed monitoring of restrooms. Mr. Vandette said there would be no manned ticket counter. He said Amtrak is currently transitioning from kiosks to online ticket purchases only, so at this time he is not sure if there will be a kiosk on site as originally planned.

Mr. Miller confirmed that Management would coordinate and work closely with the City’s Police Department to monitor remotely the area. He indicated Management is analyzing the hours of restroom operation and provisions for short-term and long-term parking. Mr. Miller said there is allowance in the design for modifications in the future.

Mr. MacDonald addressed:

- Lighting. Amtrak requires two times luminance at the platform.
- Snow removal equipment. Equipment would be brought over the right-of-way, not taken over the bridge, nor could a platform be constructed.
- Stormwater management. Parking area would remain the same; remaining area would be researched and made sustainable.
- Utility easements and existing high voltage towers (40 foot square in size).
- Landscaping. Illustrations exclusive of landscaping, landscaping is budgeted and design team will work closely with Grissim Metz. There is limited or no irrigation on site.

Mr. Blower, construction manager, stated there would be opportunity for alternate bidding and a geothermal system could be under consideration. Mr. Blower addressed the complexity and challenges of working with the railroad right of way, the scheduling and sequencing of trains, as well as utility easements. He said construction could start

as early as October, contingent on various approvals from the Federal Railroad Administration (FRA) and Canadian National (CN). Mr. Blower said the duration of construction would be 10-12 months.

Public Comment

Paul Lin, resident and former architect, congratulated the Planning Commission on the project. He applauded the design team for an excellent job and gave the project an A+. Mr. Lin agreed with comments to move the building closer to the parking area and to extend the glass to the bottom of the bridge for transparency. Mr. Lin recommended that the elevators are 6' x 8' for handicap accessibility. He suggested no landscaping near the building for security purposes. Mr. Lin said it is critical to address the proximity of the high voltage towers to the site and the impact given if the line falls.

Ted Wilson, Chamber of Commerce representative, suggested using colored lighting during night hours. Mr. Wilson suggested implementing skylights in the waiting area if a green roof is not attainable for budget reasons. He addressed the size of the mechanical support area in relation to the restrooms.

The Special meeting of the Planning Commission adjourned at 8:40 p.m.

Respectfully submitted,

Mark Maxwell, Chair

Kathy L. Czarnecki, Recording Secretary

DATE: April 3, 2012

TO: Planning Commission

FROM: R. Brent Savidant, Planning Director

SUBJECT: PRELIMINARY SITE PLAN REVIEW – Proposed Tuscany Estates Site Condominium, 11 units/lots, West side of Dequindre, North of Winter Drive, Section 24, Currently Zoned R-1C (One Family Residential) District

The petitioner Mondrian Properties submitted the above referenced Preliminary Site Plan Approval application for an 11-unit site condominium. The Planning Commission considered this application at the January 10, 2012 Regular meeting and postponed the item “until all requirements as listed by staff are met and the application has been resubmitted”. The applicant revised the site plan as recommended.

The property is currently zoned R-1C (One Family Residential) District. The Planning Commission is responsible for granting Preliminary Site Plan Approval for site condominium applications.

The attached report prepared by Carlisle/Wortman Associates, Inc. (CWA), the City’s Planning Consultant, summarizes the project. CWA prepared the report with input from various City departments including Planning, Engineering, Public Works and Fire. City Management supports the findings of fact contained in the report and recommends approval of the project, as noted.

Attachments:

1. Maps
2. Minutes from January 10, 2012 Planning Commission meeting (excerpt)
3. Report prepared by Carlisle/Wortman Associates, Inc.
4. Tuscany Estates Wetlands Determination

cc: Applicant
File/Tuscany Estates Site Condominium

PROPOSED RESOLUTION

PRELIMINARY SITE CONDOMINIUM PLAN REVIEW – Proposed Tuscany Estates Site Condominium, 11 units/lots, West side of Dequindre, North of Winter Drive, Section 24, Currently Zoned R-1C (One Family Residential) District

Proposed Resolution # PC-2012-04-

Moved by:

Seconded by:

RESOLVED, That Preliminary Site Condominium Approval, pursuant to Article 8 and Section 10.02 of the Zoning Ordinance, as requested for Tuscany Estates Site Condominium, 11 units/lots, west side of Dequindre, north of Winter Drive, Section 24, within the R-1C (One Family Residential) District, be granted, subject to the following:

1. Revise plans to indicate a street light will be provided per City standards; and
2. Consider potential guardrail alternatives or landscaping to screen.

_____) or

(denied, for the following reasons: _____) or

(postponed, for the following reasons: _____)

Yes:

No:

MOTION PASSED / FAILED



Legend

- Road Centerline
 - Major Road
 - Industrial Road
 - Local Road
- Ponds and Basins
- Streams and Creeks
- Parcels
- Aerial Photos - 2010
 - Red: Band_1
 - Green: Band_2
 - Blue: Band_3

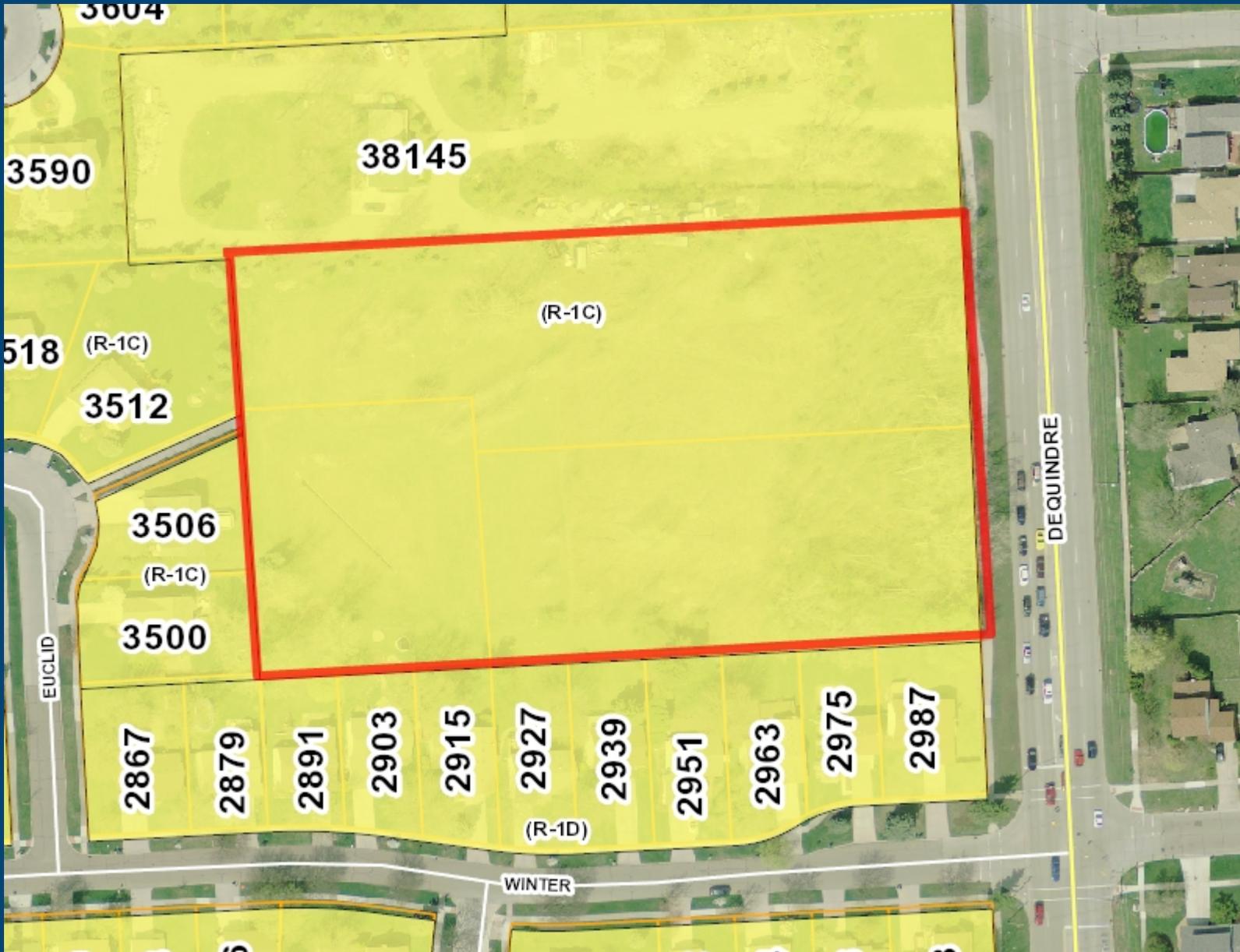
234 0 117 234Feet

Scale 1: 1,404



Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.

Printed: 12/7/2011



Legend

Road Centerline

- Major Road
- Industrial Road
- Local Road

Current Zoning Ordinance

- (PUD) Planned Unit Development
- (CF) Community Facilities District
- (EP) Environmental Protection District
- (BB) Big Beaver Road (Form Based)
- (MRF) Maple Road (Form Based)
- (NN) Neighborhood Nodes (A-U)
- (CB) Community Business
- (GB) General Business
- (IB) Integrated Industrial Business District
- (O) Office Building District
- (OM) Office Mixed Use
- (P) Vehicular Parking District
- (R-1A) One Family Residential District
- (R-1B) One Family Residential District
- (R-1C) One Family Residential District
- (R-1D) One Family Residential District
- (R-1E) One Family Residential District
- (RT) One Family Attached Residential District
- (MR) Multi-Family Residential
- (MHP) Manufactured Housing
- (UR) Urban Residential
- (RC) Research Center District
- (PV) Planned Vehicle Sales

Ponds and Basins

Streams and Creeks

Parcels

Aerial Photos - 2010

- Red: Band_1
- Green: Band_2
- Blue: Band_3

234 0 117 234Feet

Scale 1: 1,404



SITE CONDOMINIUM DEVELOPMENT

6. PRELIMINARY SITE PLAN REVIEW – Proposed Tuscany Estates Site Condominium, 11 units/lots, West side of Dequindre, North of Winter Drive, Section 24, Currently Zoned R-1C (One Family Residential) District

Resolution # PC-2012-01-004

Moved by: Ullmann

Seconded by: Schultz

RESOLVED, To postpone the item until all requirements as listed by staff are met and the application has been resubmitted.

Yes: All present (9)

MOTION CARRIED



CARLISLE/WORTMAN ASSOCIATES, INC.
Community Planners /Landscape Architects

605 S. Main, Suite 1
Ann Arbor, MI 48104
734-662-2200
fax 734-662-1935

6401 Citation Drive, Suite E
Clarkston, MI 48346
248-625-8480
fax 248-625-8455

Date: January 5, 2012
Revised: March 22, 2012

Site Condominium Review For City of Troy, Michigan

Applicant: Joe Maniaci

Project Name: Tuscany Estates

Plan Date: March 16, 2012

Location: West side of Dequindre Road, between Big Beaver Road and Wattles Road

Zoning: R1-C, One-family Residential District

Action Requested: Site Condominium Approval

Required Information: Deficiencies noted

PROJECT AND SITE DESCRIPTION

We are in receipt of a site condominium application which includes a site plan, landscape plan, topographic survey, tree survey, grading and utility plan, wetlands letter, and application forms. This project was previously approved with modified details, but has since expired. This application constitutes a fresh application under the current City of Troy 2011 Zoning Ordinance. The plan submittal provides sufficient information for a preliminary review.

The applicant intends to gain approval for an 11-lot single family detached site condominium project. The proposed residential use is permitted by right in the R-1C District.

Location of Subject Property:

West side of Dequindre Road, between Big Beaver Road and Wattles Road.



Size of Subject Property:

The parcel is 4.29 acres in area.

Proposed Uses of Subject Parcel:

The applicant proposes to use the site for eleven (11) detached, single family homes.

Current Use of Subject Property:

The subject property is currently vacant.

Current Zoning:

The property is currently zoned R-1C, One-family Residential District.

Surrounding Property Details

Direction	Zoning	Use
North	R-1C, One-family Residential District.	Single-family homes
South	R-1D, One-family Residential District.	Single-family homes
East	City Boundary, Dequindre Road	Single-family homes
West	R-1C, One-family Residential District.	Single-family homes

PREVIOUS PLANNING COMMISSION CONSIDERATION

The application was first reviewed by the Planning Commission at their January 10, 2012 meeting. At that meeting the subject was tabled to address the following issues raised by the Planning Commission and City Staff:

- Identify maximum proposed height, minimum floor area unit, and proposed lot coverage.
- Provide a cul-de-sac or turnaround that is acceptable to the City engineering department. Add to site plan
- Provide a deceleration lane on southbound Dequindre Road.
- Provide a street light at the Dequindre Road intersection with the new proposed public road.
- Verify that residential driveways will not conflict with proposed crosswalk ramps.
- Provide updated wetlands information and stormwater conditions.
- Add street trees throughout the project.
- Comply with frontage screening requirements along Dequindre Road by providing 33 evergreen trees.
- Demonstrate full compliance with Section 10.02.E (Site Condominium Improvements)
- Provide all required information of Section 8.05.A.7.o (Site Plan Review Submittal Requirements); specifically, provided typical floor plans and elevations of proposed buildings, with building heights.

Please refer to our January 5, 2012 memo for details regarding a complete Site Condominium Review. Since the January 10, 2012 meeting the applicant has addressed the following issues raised by the Planning Commission:

AREA, WIDTH, and HEIGHT

Required and Provided Dimensions:

Table 4.06.C establishes the requirements for the R-1C District. The requirements and the proposed dimensions are as follows:

	<u>Required:</u>	<u>Provided:</u>	<u>Compliance:</u>
Front	30 foot setback	30 foot setback	Complies
Rear	40 foot setback	40 foot setback	Complies

Sides	10 foot minimum for least side setback, 20 foot minimum combined setback	10 foot minimum for least side setback, 20 foot minimum combined setback	Complies
Lot Size per Unit	10,500 square feet (for projects with sewer)	10,569 square feet smallest; 12,153 square feet average	Complies
Maximum Height	30 feet, 2.5 story	25 feet	Complies
Lot Width	85 feet	80 feet smallest, 87.4 average*	Complies
Maximum Lot Area Covered by Buildings	30 percent	30 percent	Complies
Minimum Floor Area per Unit	1,200 square feet	1,805 square feet	Complies

*The lot size average option has been applied and Section 10.02 standards have been met.

Items to be Addressed: None

SITE ACCESS

There were two specific issues regarding site access:

Provide a deceleration lane on southbound Dequindre Road

As required, the applicant has provided a deceleration lane on southbound Dequindre Road. Traffic Engineering raised no objections to the revised plan as submitted. All previous comments have been addressed by the applicant.

Provide a street light at the Dequindre Road intersection with the new proposed public road.

A note on the site plan indicates that the applicant will provide a traffic light per City of Troy requirements. The City was not requesting a traffic light, rather a street light. The applicant should revise a note on their plans to state that a street light will be provided.

Items to be Addressed: *Revise plans to indicate a street light will be provided per city standards.*

INTERNAL CIRCULATION

Due to the unknown status of the property to the north which might provide a future connection, the applicant was required to install either a cul-de-sac or "T" turnaround that meet the City Engineering Departments requirements. The applicant has provided a "T" turnaround which terminates at the end of Siena Drive between lots 4 and 5 that meets City Engineering Departments Requirements.

At the termination of the "T" the applicant shows a guardrail. The applicant is encouraged to install something more decorative than a standard metal beam guardrail. Potential alternatives include timber or stone. If a metal beam guardrail is provided landscaping should be used to screen.

Items to be Addressed: *Consider potential guard rail alternatives or landscaping to screen.*

WETLANDS

The site is encumbered by wetlands and is also partially within the 100 and 500 year floodplains. As a result, the site plan includes significant floodplain fill. The applicant has submitted a letter from ASTI Environmental regarding the status of regulated onsite wetlands and watercourses. In order for a wetland to be regulated by the Michigan DEQ such wetland must be either greater than 5 acres in size or connected or located within 500 feet from a lake, stream, or pond.

The applicant indicates that there are two small wetlands on site. Both wetlands are less than 5 acres in size. The Shannon Drain, an Oakland County Drain, runs along the northern property boundary. However, because the drain does not have any "definite banks, a bed, and visible evidence of a continued flow or continued occurrence of water," it is ASTI Environmental's opinion that this portion of Shannon Drain does not exhibit the characteristics of a stream, and therefore, the wetlands on the subject property are not likely to be regulated by the Michigan DEQ.

The Engineering Department notes that all questions related to wetlands as to whether they are regulated or if the Shanahan Drain is a stream according to the State of Michigan definition needs to be relayed to the MDEQ. The City of Troy has no jurisdiction in this matter. The opinions provided in this site plan submittal are sufficient for preliminary, but the final determination on wetlands and requirements associated with working in wetlands need to be requested from the MDEQ and the MDEQ will determine if construction can proceed or not.

While the applicant's expert has indicated that they don't feel the wetlands are regulated, the applicant is still required to obtain a series of permits from the Oakland County Water Resources Commissioner, Michigan Department of Environmental Quality, Road Commission for Oakland County, and the City of Troy prior to final site plan approval.

Items to be Addressed: Obtain all necessary permits from Oakland County Water Resources Commissioner, Michigan Department of Environmental Quality, Road Commission for Oakland County, and the City of Troy prior to final site plan approval.

STORMWATER MANAGEMENT

The Engineering Department notes that the requirements for working in a floodplain will include some sort of compensating cut & fill areas. The locations of these areas need to be accounted for in the planning of this development and indicated on the plans.

The detention pond for this site will need to be sized for a 10 year storage volume for all the off-site tributary area, and a 25 year storage volume for all the onsite tributary area. Please note that the OCWRC may require 100 year storage volume due to the pond's proximity to the Shanahan Drain.

The Building Departments notes that the applicant shall revise plans with correct January 16, 2009 FIRM floodplain data.

Items to be Addressed: 1) Provide cut and fill information as requested by the Engineering Department, prior to Final Site Plan Approval; 2) provide sufficient detention pond storage volume to comply with OCWRC and City of Troy standards, prior to Final Site Plan Approval; and 3) revise plans with correct January 16, 2009 FIRM floodplain data, prior to Final Site Plan Approval.

LANDSCAPING

Site condominium and subdivision landscaping are regulated by Section 13.02.F.2. The plan includes 3 sweet gums, 20 burr oaks, 17 Colorado spruces, and 17 white pines. All proposed species fall within Troy regulations and are not prohibited.

Landscaping requirements and treatment by applicant are:

- a. *The frontage of all internal public or private streets shall be landscaped with the equivalent of one (1) tree for every fifty (50) lineal feet, or fraction thereof. Such street trees shall meet the minimum size, spacing and species requirements set forth in Sections 13.02.H, Minimum Size and Spacing Requirements, and Section 13.02.I, Prohibited Species.*

The applicant has provided 20 burr oaks every 50 feet along the newly created Siena Drive. The applicant complies with this provision.

- b. *Where a subdivision or site condominium contains uses which are more intense or incompatible with an adjoining property, the screening requirements set forth in Section 13.02.B, Screening Between Land Uses, shall be met. The preservation of existing trees along perimeter boundaries is encouraged regardless of whether screening is required.*

Though the provision does not apply, the applicant notes that that they are preserving 6 existing trees.

- c. *Where a subdivision or site condominium abuts a public road right-of way located outside of the proposed subdivision or site condominium, the screening requirements set forth in Section 13.02.B, Screening Between Land Uses shall be met in the following manner:*
 1. *Where a subdivision or site condominium abuts I-75 or a street right-of-way of two hundred and four (204) feet as designated in the City of Troy Master Plan, the screening alternative number 3, as set forth in Section 13.02, subsection B.2.c, shall be required.*
 2. *Where a subdivision or site condominium abuts a street right-of-way of either one hundred and twenty (120) or one hundred and fifty (150) feet as designated in the City of Troy Master Plan, the screening alternative number 2, as set forth in Table 13.02-A, shall be required.*

The applicant has provided an extensive planting schedule along Dequindre Road, where the site has 329.9 feet of frontage. That 329.9 feet of frontage requires 33 large evergreens. As proposed, the frontage contains 17 colorado spruces, and 16 white pines. The applicant complies with this provision.

- d. *A landscape plan for a subdivision or site condominium development shall also include landscaping details of the entrance to the development, stormwater retention and/or detention*

areas, community buildings and other recreational areas, and any other site improvement which would be enhanced through the addition of landscaping.

The applicant does not show any landscaping or the proposed seed mix for the detention basin perimeter. All landscaping, slopes, and design characteristics of the basin must be approved by the City engineer.

Items to be Addressed: *Ensure that landscaping, slopes, and design characteristics of the basin comply with City engineering requirements, prior to Final Site Plan Approval.*

SITE CONDOMINIUM IMPROVEMENTS

The plans were signed and sealed by Fazel Khan, Engineer.

Section 10.02.C requires that all site condominium projects shall comply with the standards and procedures set forth in Article 8, Site Plan Review and several unique standards. The only standard for the preliminary plan is that the street pattern and fully dimensioned residential parcel layout, including proposed building configurations, as well as preliminary sanitary sewer, storm sewer, and water main layout must also be submitted. This submittal includes all the required information,

Section 10.02.E. regulates physical improvements associated with condominium projects. It requires the following:

- 1. Principal access and circulation through a site condominium shall be provided by public streets constructed to City standards, within sixty (60) foot wide rights-of-way. Secondary access and circulation through such developments, on which some of the residential parcels may have their sole frontage, may be provided by twenty-eight (28) foot wide streets constructed to City public street standards, within forty (40) foot private easements for public access. **Satisfied***
- 2. Principal access to site condominium of five (5) acres or less in area may be provided by way of twenty-eight (28) foot wide streets constructed to City public street standards, within forty (40) foot private easements for public access, when in the opinion of the City Council the property configuration is such that the provision of conforming dwelling unit parcels is impractical. **Not applicable***
- 3. All entrances to major or secondary thoroughfares shall include deceleration, acceleration and passing lanes as required by Engineering Standards of the City of Troy. **Satisfied***
- 4. Sidewalks shall be constructed, in accordance with City Standards, across the frontage of all dwelling unit parcels. Utilities shall be placed within street rights-of-way, or within easements approved as to size and location by the City Engineer. **Satisfied***
- 5. All shall be served by public water, sanitary sewer, storm sewer and detention/retention systems constructed to City standards, at the expense of the developer. Easements over these systems shall be conveyed and recorded before occupancy permits are issued for dwelling units. **The applicant has proposed full utilities, but all proposed configurations and easements are subject to approval by the City engineering department.***

As noted above, all condominium projects are subject to Section 8.05.A.7, which establishes the requirements for a preliminary site plan submittal, which is required under the site condominium regulations. Three additional requirements are specifically identified for residential projects. The three additional requirements, identified in 8.05.A.7.o, include:

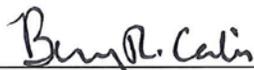
- i. *Calculation of the dwelling unit density allowable and a statement of the number of dwelling units, by type, to be provided. **Satisfied.***
- ii. *Topography on site and fifty (50) feet beyond, drawn at two (2) foot contour intervals, with existing drainage courses, flood plains, wetlands, and tree stands indicated. **Satisfied.***
- iii. *The typical floor plans and elevations of the proposed buildings, with building height(s). **Satisfied. The floor plans indicate a 2-car garage, 4 bedroom, 2.5 bath, 2,476 square feet home. The applicant has submitted four (8) design options. While not all materials have been indicated the use of brick veneer is the dominate finishing material, but different design options include use of limestone, brick sill, cedar shake siding.***

Items to be Addressed: None

RECOMMENDATIONS

We support the proposed project and believe the project does meets requirements. We recommend the Planning Commission approve the preliminary site condominium application conditioned on the applicant satisfying the following requirements:

1. Revise plans to indicate a street light will be provided per city standards; and
2. Consider potential guard rail alternatives or landscaping to screen.



CARLISLE/WORTMAN ASSOC., INC.
Benjamin R. Carlisle, LEED AP, AICP

225-02-1123

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Brighton, MI 48116-2160

800 395-ASTI
Fax: 810.225.3800

www.asti-env.com

Sent Via Email Only

March 6, 2012

Mr. Fazal Khan
Fazal Khan & Associates Inc.
43279 Schoenherr Rd.
Sterling Heights, MI 48313

RECEIVED

MAR 19 2012

PLANNING

*RE: Wetland & Stream Determination and Jurisdictional Assessment
Tuscany Estates, Dequindre Road, Troy, MI
(ASTI File DCM564-11)*

Dear Mr. Khan:

On March 2, 2012, ASTI staff conducted a field investigation on the above-referenced site in order to provide an opinion regarding the status of regulated wetlands and watercourses on the subject parcel.

Two small wetlands were located on the subject parcel. Each of these wetlands is significantly less than 5 acres in size. As such, for either of these wetlands to be regulated by the Michigan Department of Environmental Quality (DEQ) under MCL324 Part 303, Wetland Protection, the wetland would need to be connected to or located within 500 feet from a lake, stream or pond.

The Shannon Drain, an Oakland County Drain, runs along the northern property boundary. In order for a watercourse such as a county drain to be considered a "stream" under statutory definition, it must have "definite banks, a bed, and visible evidence of a continued flow or continued occurrence of water." At the time of the field investigation, the drain lacked a "bed" and instead contained a muck bottom substrate; therefore, in ASTI's opinion, the drain does not meet the definition of a stream under MCL324 Part 301, Inland Lakes and Streams.

Thus, it is ASTI's opinion that this portion of the Shannahan Drain does not exhibit the characteristics of a stream and, therefore, the wetlands on the subject property are likely not regulated by the Michigan DEQ. Please note, however, that this letter represents the professional opinion of ASTI and that the Michigan



DEQ has the final authority on the location and jurisdiction of wetlands and streams in the State of Michigan.

If you have any questions or comments, please do not hesitate to call me at **800.395.ASTI**. We appreciate the opportunity to assist you with this project.

Cordially,

ASTI ENVIRONMENTAL (ASTI)

A handwritten signature in black ink that reads "Dianne C. Martin". The signature is written in a cursive style with a long horizontal flourish at the end.

Dianne C. Martin
Director, Resource Assessment & Management
Professional Wetland Scientist #1313

TUSCANY ESTATES SITE CONDOMINIUMS

PART OF THE NORTHEAST 1/4 OF SECTION 24, TOWN 2
NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND
COUNTY, MICHIGAN

DESCRIPTION OF PROPERTY (FROM RECORD)

20-24-226-109
PART OF THE E 1/2 OF THE E 1/2 OF SECTION 24, T2N, R11E, CITY OF TROY, OAKLAND COUNTY, MICHIGAN, BEGINNING AT A POINT DISTANT N00°34'1"E 165.00 FEET FROM THE NORTHEAST CORNER OF LOT 221 OF BEAVER TRAIL SUBDIVISION NO. 2, THENCE S09°44'14"W 306.30 FEET; THENCE N01°11'59"W 42.96 FEET; THENCE S09°44'14"W 100.00 FEET; THENCE N01°11'59"W 122.04 FEET; THENCE N09°44'14"E 570.49 FEET; THENCE S00°13'41"W 165.00 FEET; THENCE S00°13'41"W 165.00 FEET TO THE POINT OF BEGINNING.

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4.290 ACRE PARCEL
PART OF THE NORTHEAST 1/4 OF SECTION 24, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 24; THENCE S00°11'47"W 2.71 FEET ALONG THE EAST LINE OF SECTION 24; THENCE S09°44'14"W 60.00 FEET TO THE POINT OF BEGINNING, SAID POINT BEING THE NORTHEAST CORNER OF BEAVER TRAIL SUBDIVISION NO. 2 RECORDED IN LIEB 134, PAGE 20-23, OAKLAND COUNTY RECORDS; THENCE EXTENDING S09°44'14"W 562.20 FEET ALONG THE NORTH LINE OF SAID BEAVER TRAIL SUBDIVISION NO. 2, TO THE EAST LINE OF BEAVER CREEK SUBDIVISION, RECORDED IN LIEB 224 OF PLATS, PAGES 30-31, OAKLAND COUNTY RECORDS; THENCE N00°11'59"W 330.00 FEET (RECORDED) N01°24'37"W 329.70 FEET (MEASURED) ALONG THE EAST LINE OF SAID BEAVER CREEK SUBDIVISION; THENCE N09°44'14"E 570.49 FEET (RECORDED) S71°6'1 FEET (MEASURED); THENCE S00°13'25"W 330.00 (RECORDED) 326.41 FEET (MEASURED) AND S00°11'47"W 5.28 FEET ALONG THE 60 FOOT RIGHT-OF-WAY LINE OF DEQUINDRE ROAD TO THE POINT OF BEGINNING, CONTAINING 4.290 ACRES OF LAND, SUBJECT TO ANY EASEMENTS AND/OR RIGHT OF WAY RECORDED OR OTHERWISE.

BENCHMARKS

BENCH MARK NO. 1 (SHOWN)
NORTH RIM OF STORM MANHOLE IN SIDEWALK, WEST SIDE DEQUINDRE, 350± NORTH OF WINTER DRIVE. ELEV. 634.16

BENCH MARK NO. 2 (SHOWN)
SET MAG NAIL IN THE EAST FACE OF 16" MARL, 50' EAST OF THE NORTHWEST PROPERTY CORNER. ELEV. 638.46

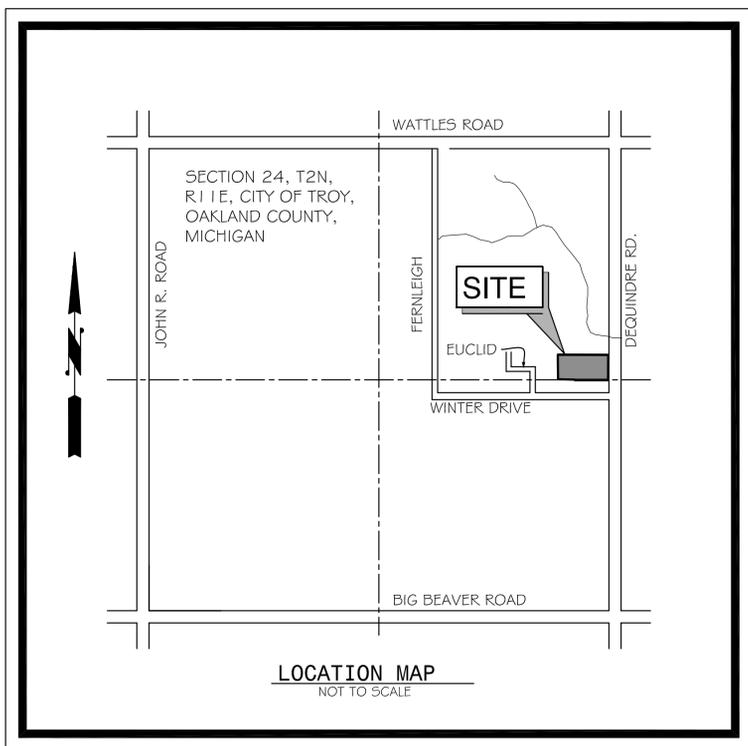
BENCH MARK NO. 3 (SHOWN)
MARKERED "X" ON THE TOP OF 24" CONCRETE END SECTION AT THE NORTHWEST CORNER OF DETENTION POND AT THE NORTHWEST END OF STEEL GRATE. ELEV. 634.24

BENCH MARK NO. 4 (SHOWN)
MARKERED "X" ON THE NORTH RIM OF CATCH BASIN WITH BEEHIVE COVER, 5± SOUTH OF THE SOUTH PROPERTY LINE, 220± WEST OF DEQUINDRE, 5± EAST OF TRANSFORMER. ELEV. 635.90

BENCH MARK NO. 5 (SHOWN)
SOUTHEAST CORNER OF CONCRETE DUMPSTER PAD, 325± WEST OF DEQUINDRE, 100± NORTH OF THE NORTH PROPERTY LINE, 30± EAST OF THE SHANAHAN DRAIN. ELEV. 636.02

INDEX OF SHEETS

- SHEET 1 COVER SHEET
- SHEET 2 TOPOGRAPHICAL SURVEY AND REMOVAL PLAN / TREE SURVEY
- SHEET 3 PRELIMINARY SITE PLAN
- SHEET 4 PRELIMINARY UTILITY AND GRADING PLAN
- SHEET 5 LANDSCAPE PLAN



OWNER / DEVELOPER

JOE MANIACI
50215 SCHOENHERR ROAD
SHELBY TOWNSHIP, MI 48315

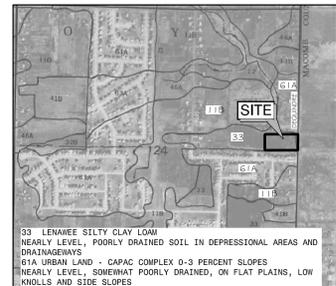
SURVEYOR / ENGINEER

FAZAL KHAN & ASSOCIATES, INC.
43279 SCHOENHERR ROAD
STERLING HEIGHTS, MI 48313
PHONE (586) 739-8007

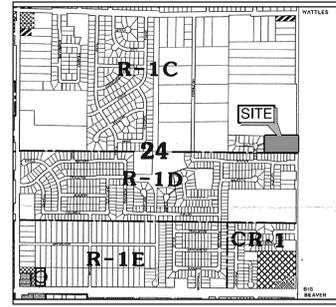
WETLAND CONSULTANT

ASTI ENVIRONMENTAL
10448 CITATION DRIVE, SUITE 100
BRIGHTON, MI 48116
PHONE (800) 395-ASTI

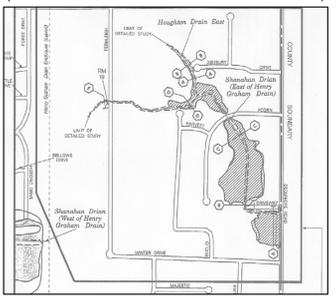
SOILS MAP



ZONING MAP



F.I.R.M. MAP
(REVISED PER LOMR CASE NO: 05-05-1312P)



ALL DRAWINGS, SPECIFICATIONS, AND OTHER RELATED DOCUMENTS ARE THE COPYRIGHT PROPERTY OF FAZAL KHAN & ASSOCIATES, INC. AND SHALL BE RETURNED UPON REQUEST.

REPRODUCTION OF DRAWINGS AND RELATED DOCUMENTS, IN WHOLE OR IN PART, IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF FAZAL KHAN & ASSOCIATES, INC.

THE CONTRACTOR SHALL CHECK AND VERIFY ALL PERTINENT DIMENSIONS AND REPORT ANY DISCREPANCIES TO FAZAL KHAN & ASSOCIATES, INC. BEFORE PROCEEDING WITH THE WORK.

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF ALL GOVERNING AGENCIES.

ALL WATERMANS, SANITARY SEWERS (AND LEADS) AND STORM SEWERS UNDER PROPOSED OR EXISTING PAVEMENT OR WITHIN 3 FT. OF PAVEMENT TO BE SAND BACK FILLED AND COMPACTED TO 95% OPTIMUM DENSITY (PROCTOR). ALSO ALL UTILITY CROSSINGS TO BE SAND BACKFILLED. SAND BACK FILLING TO BE INCIDENTAL TO CONTRACT.

PLANS SUBMITTED TO:	DATE SUBMITTED:	COMMENTS RECEIVED:	RE-SUBMITTED:	COMMENTS RECEIVED:	RE-SUBMITTED:	DATE APPROVED:	ADDRESS AND PHONE #:
CITY PLANNING DEPARTMENT	12-06-2011	01-05-2012	03-16-2012				



DATE	REVISIONS

TUSCANY ESTATES
PART OF THE NORTHEAST 1/4 OF SECTION 24, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN

FAZAL KHAN & ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
43279 SCHOENHERR ROAD, STERLING HEIGHTS, MI 48313
PHONE (586) 739-8007 FAX (586) 395-6864
WWW.FAZALKHAN.COM

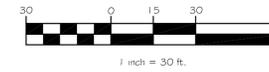
COVER SHEET

PROJECT NO.	11-017
CLIENT	JOE MANIACI
DATE	11-11-2011
DRAWN BY	W.J.S.
CHECKED BY	C.I.
PRELIMINARY	<input checked="" type="checkbox"/>
CONSTRUCTION	<input type="checkbox"/>
AS-BUILT	<input type="checkbox"/>
SCALE	NONE
SHEET NO.	1

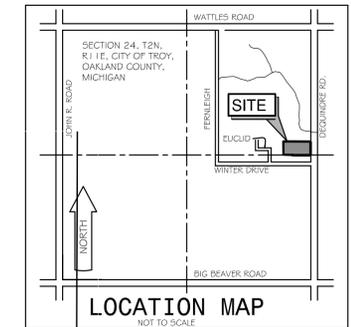
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PART OF THE NORTHEAST 1/4 OF SECTION 24, TOWN 2 NORTH,
RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN

GRAPHIC SCALE



NOTE:
UNDERGROUND UTILITY LOCATIONS ARE
APPROXIMATE. CONTRACTOR TO
VERIFY LOCATIONS.



100 YEAR FLOODPLAIN
PER LOMR DATED
OCTOBER 18, 2005

500 YEAR FLOODPLAIN
PER LOMR DATED
OCTOBER 18, 2005

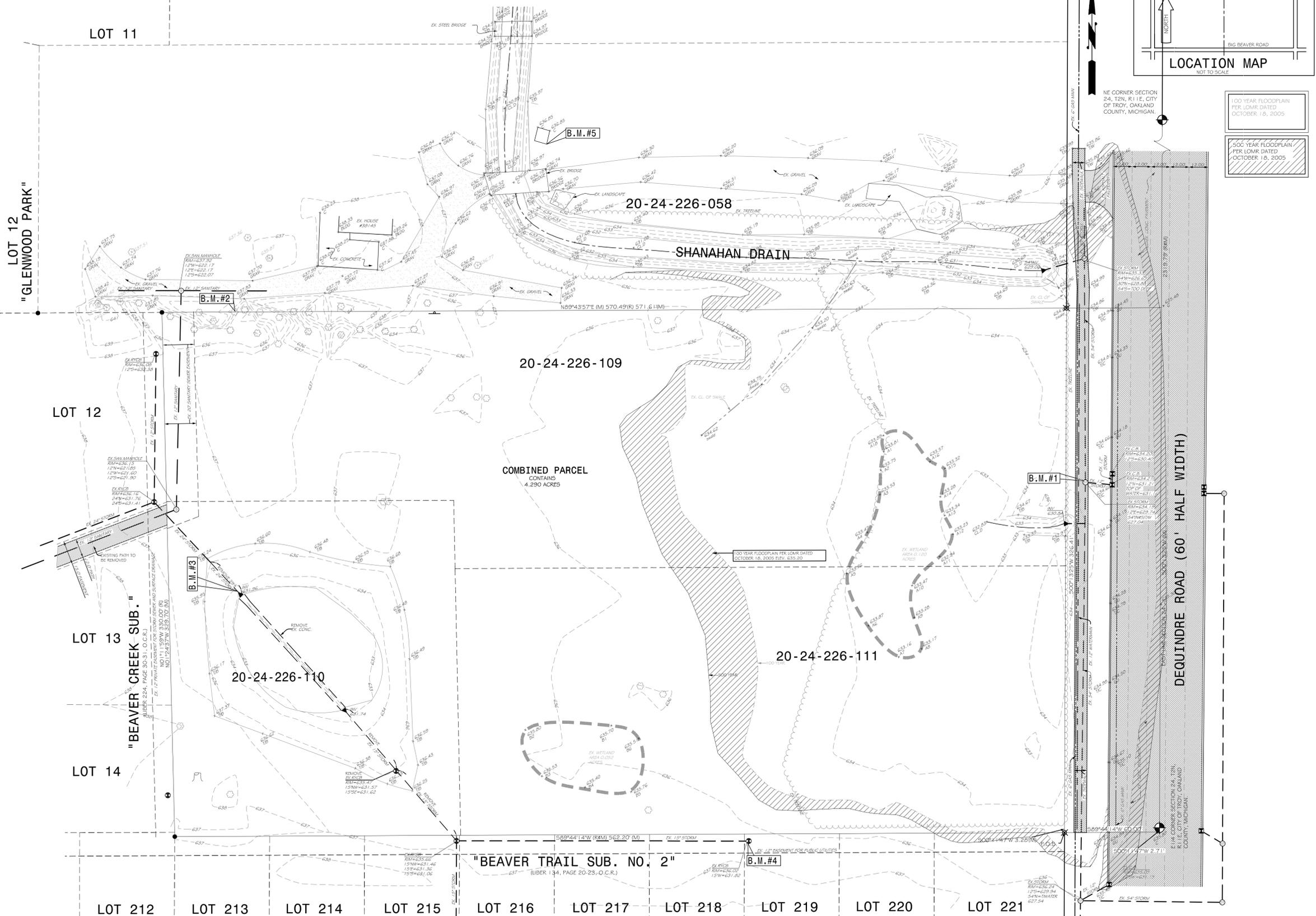
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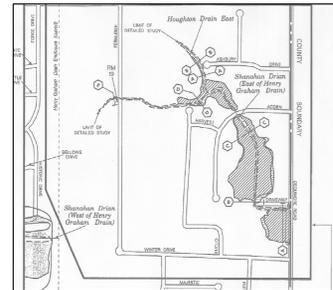
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(REVISED PER LOMR CASE NO: 05-05-1312P)



BENCHMARKS

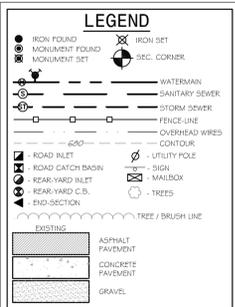
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SOUTHEAST CORNER OF CONCRETE DUMPSTER PAD, 325± WEST OF DEQUINDRE, 100± NORTH OF THE NORTH PROPERTY LINE, 30± EAST OF THE SHANAHAN DRAIN. ELEV. 636.82



72 HOURS OF SERVICE AVAILABLE BECAUSE OF OUR LOCATION 1-800-482-7116 (TOLL FREE)

TUSCANY ESTATES
PART OF THE NORTHEAST 1/4 OF SECTION 24, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN

FAZAL KHAN & ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
43279 SHOEBEER STERLING HEIGHTS, MI 48313
PHONE (585) 398-9644 FAX (585) 398-9944
WWW.FAZALKHAN.COM

TOPOTHOGRAPHICAL SURVEY AND REMOVAL PLAN / TREE SURVEY

PROJECT NO. 11-017
DATE 11-11-2011
DRAWN BY M.J.B.
CHECKED BY C.T.I.

PRELIMINARY
CONSTRUCTION
AS-BUILT

SCALE 1" = 30'

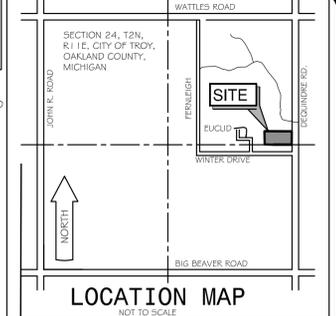
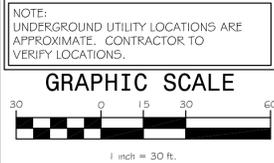
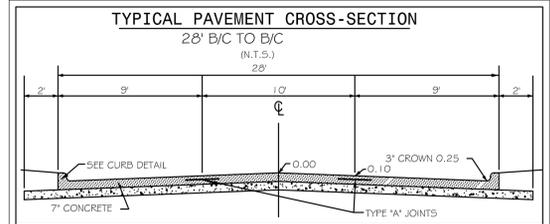
SHEET NO. 2

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NOTE: PARCEL #20-24-226-110 IS CURRENTLY OWNED BY THE CITY OF TROY FOR DETENTION BASIN OPERATION AND MAINTENANCE. THE CITY MANAGER AND CITY ENGINEER HAVE AGREED TO ACCEPT THE REVISED DETENTION EASEMENT AREA TO REPLACE THE EXISTING DETENTION.

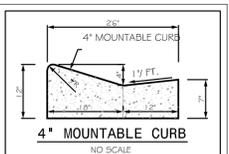
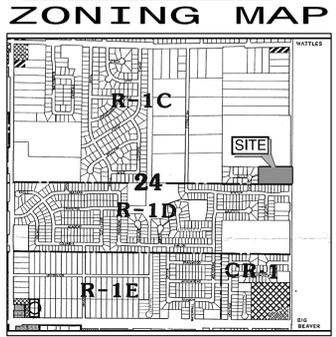
TUSCANY ESTATES
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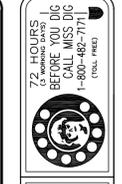
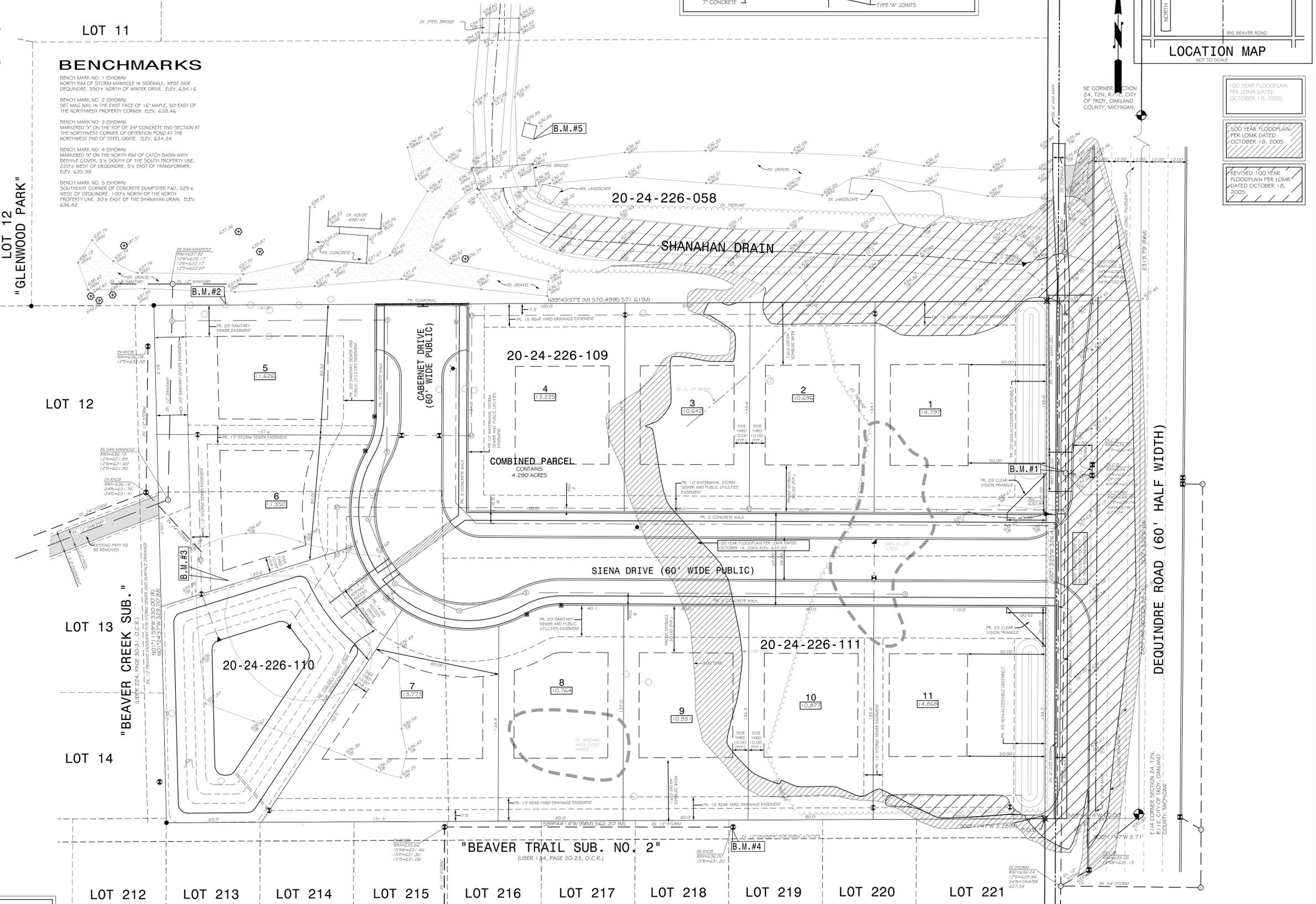
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Table with 3 columns: LOT WIDTH, LOT DEPTH, LOT AREA. Includes zoning data (R-1-C), setbacks (FRONT 30', SIDE 10', REAR 40'), and lot averaging calculations.



LEGEND table listing symbols for IRON FOUND, MONUMENT FOUND, WATER MAIN, SANITARY SEWER, STORM SEWER, FENCE LINE, OVERHEAD WIRES, ROAD INLET, ROAD CATCH BASIN, REAR-YARD CURB, END SECTION, and 7" THICK CONCRETE PAVEMENT.



REVISIONS table with columns for DATE, REVISIONS, and a grid for tracking changes.

TUSCANY ESTATES
PART OF THE NORTHEAST 1/4 OF SECTION 24, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN

FAZAL KHAN & ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
4825 SPRINGBROOK DRIVE, SUITE 100, TROY, MI 48063
PHONE: (313) 486-7710 FAX: (313) 486-7711
WWW.FAZALKHAN.COM

PRELIMINARY SITE PLAN

Project information table including PROJECT NO. 11-017, DATE 11-11-2011, CLIENT JOE MANIACI, and SHEET NO. 3.

NOTE: DEQ PERMIT REQUIRED FOR WORK IN THE FLOODPLAIN

DESCRIPTION OF PROPERTY (FROM RECORD)

20-24-226-102
PART OF THE E 1/2 OF THE E 1/2 OF SECTION 24, T2N, R11E, CITY OF TROY, OAKLAND COUNTY, MICHIGAN, BEGINNING AT A POINT DISTANT N00°13'41"E 165.00 FEET FROM THE NORTHEAST CORNER OF LOT 221 OF BEAVER TRAIL SUBDIVISION NO. 2, THENCE S89°44'14"W 326.36 FEET; THENCE N01°11'59"W 42.96 FEET; THENCE S89°44'14"W 180.00 FEET; THENCE N01°11'59"W 122.04 FEET; THENCE N89°44'14"E 570.49 FEET; THENCE S00°13'41"W 165.00 FEET; THENCE S00°13'41"W 165.00 FEET TO THE POINT OF BEGINNING.

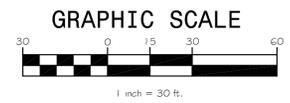
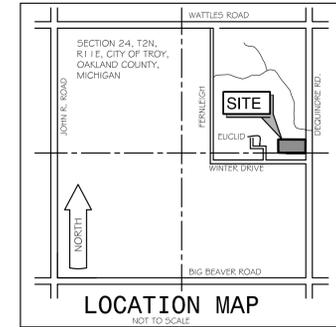
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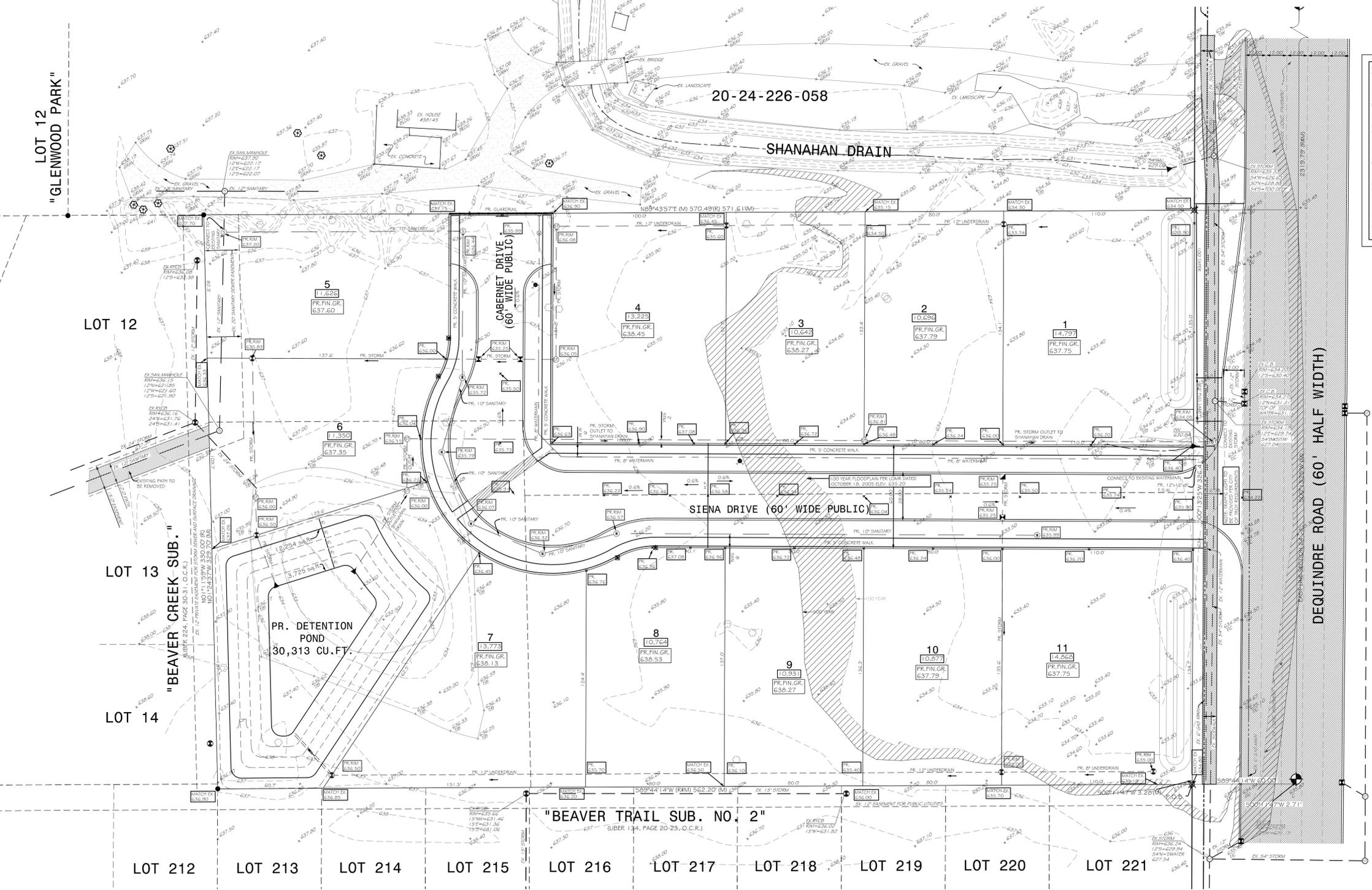
4.290 ACRE PARCEL
PART OF THE NORTHEAST 1/4 OF SECTION 24, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 24, THENCE S00°11'47"W 2.71 FEET ALONG THE EAST LINE OF SECTION 24; THENCE S89°44'14"W 60.00 FEET TO THE POINT OF BEGINNING, SAID POINT BEING THE NORTHEAST CORNER OF BEAVER TRAIL SUBDIVISION NO. 2 RECORDED IN LIBER 134, PAGE 20-23, OAKLAND COUNTY RECORDS, THENCE EXTENDING S89°44'14"W 562.20 FEET ALONG THE NORTH LINE OF SAID BEAVER TRAIL SUBDIVISION NO. 2, TO THE EAST LINE OF BEAVER CREEK SUBDIVISION, RECORDED IN LIBER 224 OF PLATS, PAGES 30-31, OAKLAND COUNTY RECORDS; THENCE N00°11'59"W 330.00 FEET (RECORDED) N01°24'37"W 329.70 FEET (MEASURED) ALONG THE EAST LINE OF SAID BEAVER CREEK SUBDIVISION, THENCE N89°44'14"E 570.49 FEET (RECORDED) S71°16'1 FEET (MEASURED); THENCE S00°13'29"W 330.00 (RECORDED) 356.41 FEET (MEASURED) AND S00°11'47"W 3.28 FEET ALONG THE 60 FOOT RIGHT-OF-WAY LINE OF DEQUINDRE ROAD TO THE POINT OF BEGINNING, CONTAINING 4.290 ACRES OF LAND, SUBJECT TO ANY EASEMENTS AND/OR RIGHT OF WAY RECORDED OR OTHERWISE.

TUSCANY ESTATES
PART OF THE NORTHEAST 1/4 OF SECTION 24, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN

NOTE: UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY LOCATIONS.



72 HOURS (MIN) CALL MISS DIG (TOL. FREE)
BY:
REMARKS:
DATE:
REVISIONS:



DEFENTION CALCULATION 10 YEAR STORM PER OAKLAND COUNTY STANDARDS
BEAVER CREEK SUBDIVISION & "TUSCANY ESTATES SITE CONDOMINIUM"
1+75/1+25
ALLOWABLE DISCHARGE CFS/ACRE C1 = 0.20 CFS/ACRE
TIME INITIAL 1 = 20.00 MINUTES
ACRES A = 5.00 ACRES
RUNOFF COEFF C = 0.35
TOTAL ALLOWABLE DISCHARGE Q0 = CA x C1 x A = 1.00 CFS
ALLOWABLE OUTFLOW Q0 = CA x (A x C1) = 0.57 CFS
PEAK STORAGE TIME Tm = 25 + (50R(6602.5 / Q0)) = 82.17 MINUTES
MAX. STORAGE VOLUME/ACRE VS = (10000 x T / (1 + 20)) + (60 x 20,069.72) = 6,172.45 CU.FT./ACRE
STORAGE REQUIRED "BEAVER CREEK SUBDIVISION" V = VS x A x C = 10,801.79 CU.FT.
ALLOWABLE DISCHARGE CFS/ACRE C1 = 0.20 CFS/ACRE
TIME INITIAL 1 = 20.00 MINUTES
ACRES A = 4.29 ACRES
RUNOFF COEFF C = 0.35
TOTAL ALLOWABLE DISCHARGE Q0 = CA x C1 x A = 0.86 CFS
ALLOWABLE OUTFLOW Q0 = CA x (A x C1) = 0.57 CFS
PEAK STORAGE TIME Tm = 25 + (50R(6602.5 / Q0)) = 82.17 MINUTES
MAX. STORAGE VOLUME/ACRE VS = (10000 x T / (1 + 20)) + (60 x 20,069.72) = 6,172.45 CU.FT./ACRE
STORAGE REQUIRED "TUSCANY ESTATES SITE CONDOMINIUM" V = VS x A x C = 20,069.72 CU.FT.
STORAGE HEIGHT PROVIDED H = 4.00 FEET
TOP AREA OF BASIN A1 = 12,354.00 SQ.FT.
BOTTOM AREA OF BASIN A2 = 3,726.00 SQ.FT.
TOTAL STORAGE VOLUME PROVIDED V = (A1 + A2 - 50R(A1 x A2)) x H / 30,315.98 CU.FT.

BENCHMARKS

BENCH MARK NO. 1 (SHOWN)
NORTH RIM OF STORM MANHOLE IN SIDEWALK, WEST SIDE DEQUINDRE, 350± NORTH OF WINTER DRIVE. ELEV. 634.16
BENCH MARK NO. 2 (SHOWN)
SET MAG NAIL IN THE EAST FACE OF 16" MAPLE, 50' EAST OF THE NORTHWEST PROPERTY CORNER. ELEV. 638.46
BENCH MARK NO. 3 (SHOWN)
MARKERED "X" ON THE TOP OF 24" CONCRETE END SECTION AT THE NORTHWEST CORNER OF DETENTION POND AT THE NORTHWEST END OF STEEL GRATE. ELEV. 634.24
BENCH MARK NO. 4 (SHOWN)
MARKERED "X" ON THE NORTH RIM OF CATCH BASIN WITH BEEHIVE COVER, 5± SOUTH OF THE SOUTH PROPERTY LINE, 220± WEST OF DEQUINDRE, 5± EAST OF TRANSFORMER. ELEV. 635.98
BENCH MARK NO. 5 (SHOWN)
SOUTHEAST CORNER OF CONCRETE DUMPSITE PAD, 325± WEST OF DEQUINDRE, 100± NORTH OF THE NORTH PROPERTY LINE, 30± EAST OF THE SHANAHAN DRAIN. ELEV. 636.82



TUSCANY ESTATES
PART OF THE NORTHEAST 1/4 OF SECTION 24, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN

FAZAL KHAN & ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
4825 PHOENIX BLVD., SUITE 100
TROY, MI 48063
WWW.FAZALKHAN.COM

PRELIMINARY UTILITY AND GRADING PLAN

PROJECT NO. 11-017
DATE 11-11-2011
CLIENT JOE MANIACI
DESIGNED BY M.J.B.
CHECKED BY C.T.
SCALE 1" = 30'
SHEET NO. 4

DESCRIPTION OF PROPERTY (FROM RECORD)

20-24-226-109

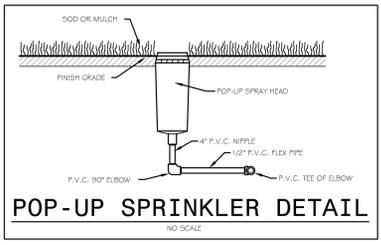
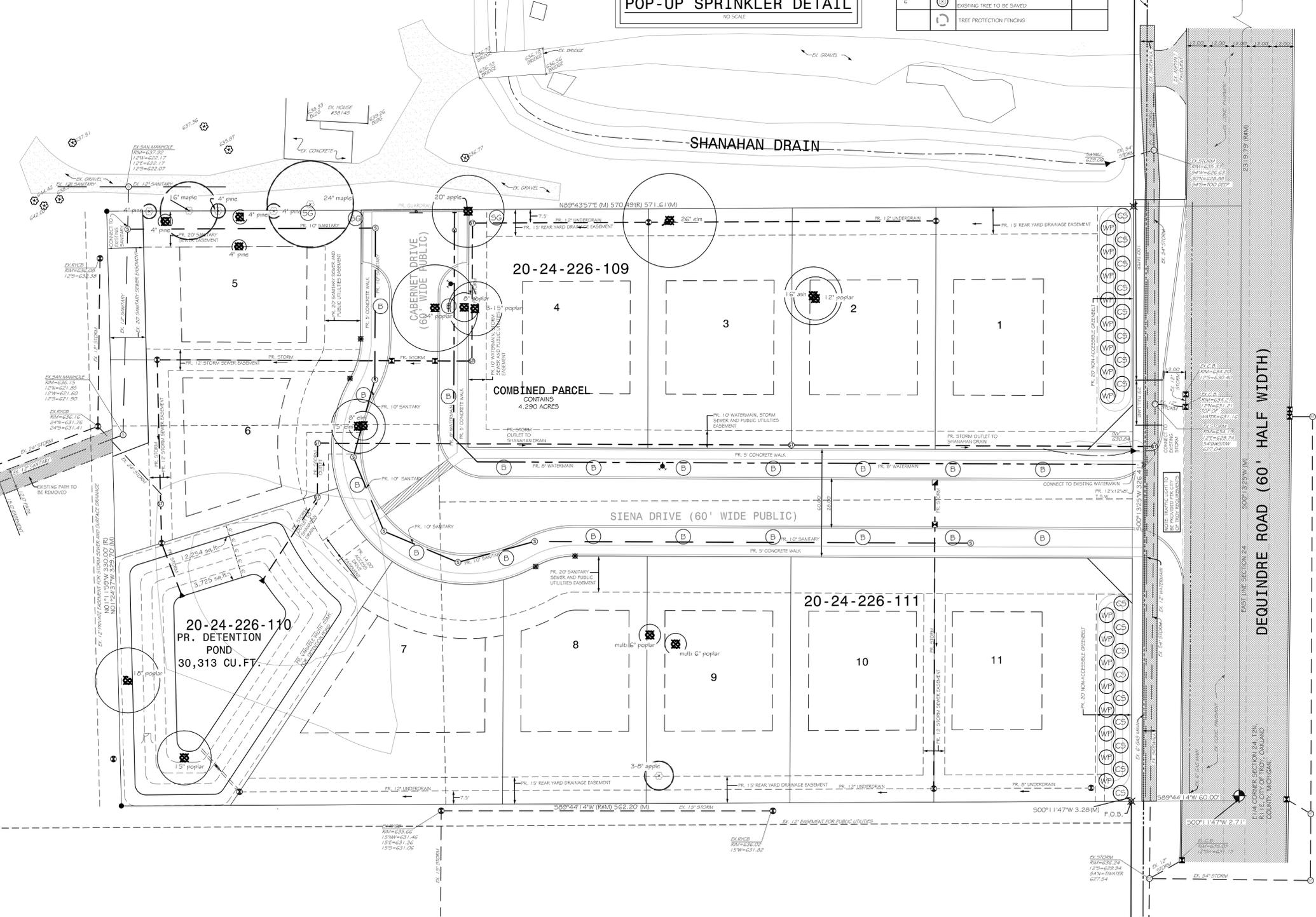
PART OF THE E 1/2 OF THE E 1/2 OF SECTION 24, T2N, R11E, CITY OF TROY, OAKLAND COUNTY, MICHIGAN, BEGINNING AT A POINT DISTANT N00°13'41"W 165.00 FEET FROM THE NORTHEAST CORNER OF LOT 221 OF BEAVER TRAILS SUBDIVISION NO. 2; THENCE S89°44'14"W 566.38 FEET; THENCE N01°11'59"W 42.96 FEET; THENCE S89°44'14"W 160.00 FEET; THENCE N01°11'59"W 52.04 FEET; THENCE N89°44'14"E 570.49 FEET; THENCE S00°13'41"W 165.00 FEET; THENCE S00°13'41"W 165.00 FEET TO THE POINT OF BEGINNING.

20-24-226-110

PART OF THE E 1/2 OF THE E 1/2 OF SECTION 24, T2N, R11E, CITY OF TROY, OAKLAND COUNTY, MICHIGAN, BEGINNING AT A POINT DISTANT N89°22'00"W 622.48 FEET FROM THE EAST CORNER OF SECTION 24, THENCE N01°11'59"W 199.40 FEET; THENCE N89°44'14"E 160.00 FEET; THENCE S01°11'59"E 207.96 FEET; THENCE S89°44'14"W 80.00 FEET; THENCE S01°11'59"W 6.56 FEET TO THE POINT OF BEGINNING.

20-24-226-111

PART OF THE NORTHEAST 1/4 OF SECTION 24, T2N, R11E, CITY OF TROY, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 24; THENCE S00°11'47"W 27.71 FEET ALONG THE EAST LINE OF SECTION 24; THENCE S89°44'14"W 60.00 FEET TO THE POINT OF BEGINNING, SAID POINT BEING THE NORTHEAST CORNER OF BEAVER TRAILS SUBDIVISION NO. 2 RECORDED IN LIBER 34, PAGE 20-23, OAKLAND COUNTY RECORDS; THENCE EXTENDING S89°44'14"W 562.20 FEET ALONG THE NORTH LINE OF SAID BEAVER TRAILS SUBDIVISION NO. 2, TO THE EAST LINE OF BEAVER CREEK SUBDIVISION, RECORDED IN LIBER 224 OF PLATS, PAGES 30-31, OAKLAND COUNTY RECORDS; THENCE N00°11'59"W 330.00 FEET (RECORDED) N01°24'37"W 329.70 FEET (MEASURED) ALONG THE EAST LINE OF SAID BEAVER CREEK SUBDIVISION; THENCE N89°44'14"E 570.49 FEET (RECORDED) S71°51'11"E 161.00 FEET (MEASURED); THENCE S00°13'25"W 330.00 FEET (RECORDED) S26°41'11"E (MEASURED) AND S00°11'47"W 3.28 FEET ALONG THE 60 FOOT RIGHT-OF-WAY LINE OF DEQUINDRE ROAD TO THE POINT OF BEGINNING, CONTAINING 4.290 ACRES OF LAND, SUBJECT TO ANY EASEMENTS AND/OR RIGHT OF WAY RECORDED OR OTHERWISE.

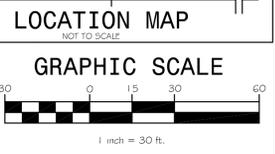
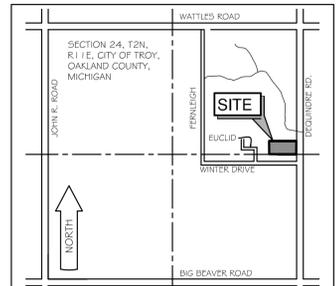
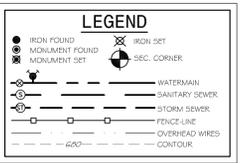


PLANTING SCHEDULE:

QUANTITY	SYMBOL	BOTANICAL NAME COMMON NAME	SIZE CONDITION
3	(SG)	LIQUIDAMBAR STYRACULIFERA SWEET GUM	3" CAL B&B
20	(B)	QUERCUS MACROCARPA BURR OAK (LARGE DECIDUOUS)	3" CAL B&B
17	(CS)	PICEA FLUNGENS COLORADO SPRUCE	6" HGT. B&B
16	(WP)	PINUS STROBUS WHITE PINE (LARGE EVERGREEN)	6" HGT. B&B
16	(X)	EXISTING TREE TO BE REMOVED	
6	(C)	—PIPELINE EXISTING TREE TO BE SAVED	
	(F)	TREE PROTECTION FENCING	

MAINTENANCE, INSTALLATION, AND IRRIGATION
Landscape plantings shall be installed between April 1 and November 15, in a sound, workman-like manner and according to accepted good planting procedures. (See City of Troy Planting Detail). Maintenance of required plantings by the owner shall be carried out so as to present a healthy, neat and orderly appearance, free from refuse and debris and according to city of Rochester Hills ordinance requirements. All unhealthy and dead material shall be replaced within one (1) year, or the next appropriate planting period, whichever comes first. All landscaped areas shall be provided with an underground irrigation system. Tree stakes and guy wires to be removed after one year; tree wrap is to be removed after one tree season. Trees shall be guaranteed for two growing seasons after installation.

IRRIGATION
Landscape areas shall be automatically irrigated with an underground irrigation system.



BENCHMARKS

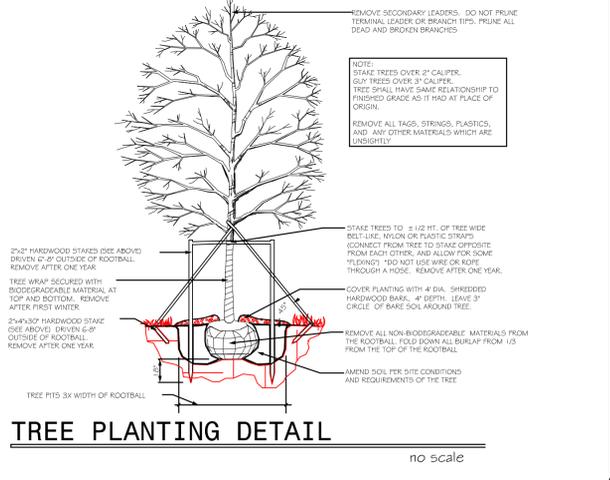
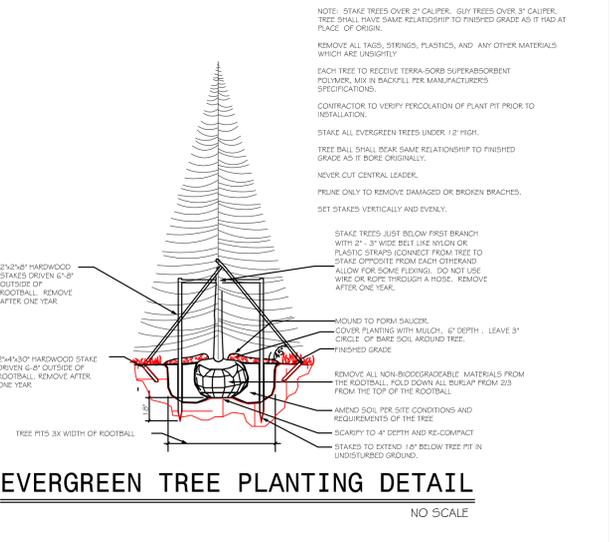
BENCH MARK NO. 1 (SHOWN)
NORTH RIM OF STORM MANHOLE IN SIDEWALK, WEST SIDE DEQUINDRE, 350'± NORTH OF WINTER DRIVE. ELEV. 634.16

BENCH MARK NO. 2 (SHOWN)
SET MAG NAIL IN THE EAST FACE OF 1" MAPLE, 50' EAST OF THE NORTHWEST PROPERTY CORNER. ELEV. 638.46

BENCH MARK NO. 3 (SHOWN)
MARKER "X" ON THE TOP OF 24" CONCRETE END SECTION AT THE NORTHWEST CORNER OF DETENTION POND AT THE WEST END OF STEEL GRATE. ELEV. 634.24

BENCH MARK NO. 4 (SHOWN)
MARKER "X" ON THE NORTH RIM OF CATCH BASIN WITH BEEHIVE COVER, 5'± SOUTH OF THE SOUTH PROPERTY LINE, 20'± WEST OF DEQUINDRE, 5'± EAST OF TRANSFORMER. ELEV. 635.90

BENCH MARK NO. 5 (SHOWN)
SOUTHEAST CORNER OF CONCRETE DUMPSTER PAD, 325'± WEST OF DEQUINDRE, 100'± NORTH OF THE NORTH PROPERTY LINE, 30'± EAST OF THE SHANAHAN DRAIN. ELEV. 636.82



72 HOURS
CIVIL ENGINEERS & LAND SURVEYORS
BEFORE ANY CONSTRUCTION
1-800-482-7771
(TOLL FREE)

REMARKS

DATE

REVISIONS

TUSCANY ESTATES
PART OF THE NORTHEAST 1/4 OF SECTION 24, TOWN 2 NORTH, RANGE 11 EAST, CITY OF TROY, OAKLAND COUNTY, MICHIGAN

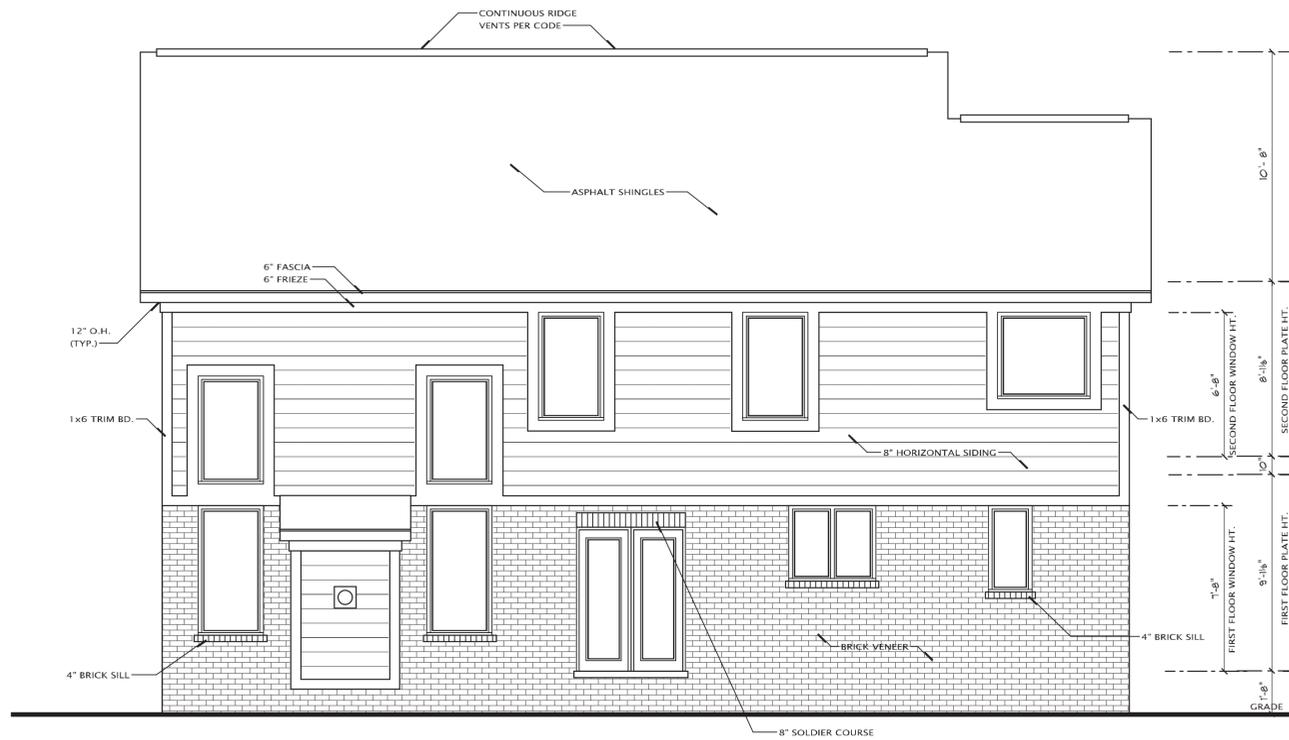
FAZAL KHAN & ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
8225 SPRINGBROOK STREET, SUITE 100
TROY, MI 48063
WWW.FAZALKHAN.COM

LANDSCAPE PLAN

PROJECT NO. 11-011
DATE 11-11-2017
DRAWN BY M.J.B.
CHECKED BY C.T.I.

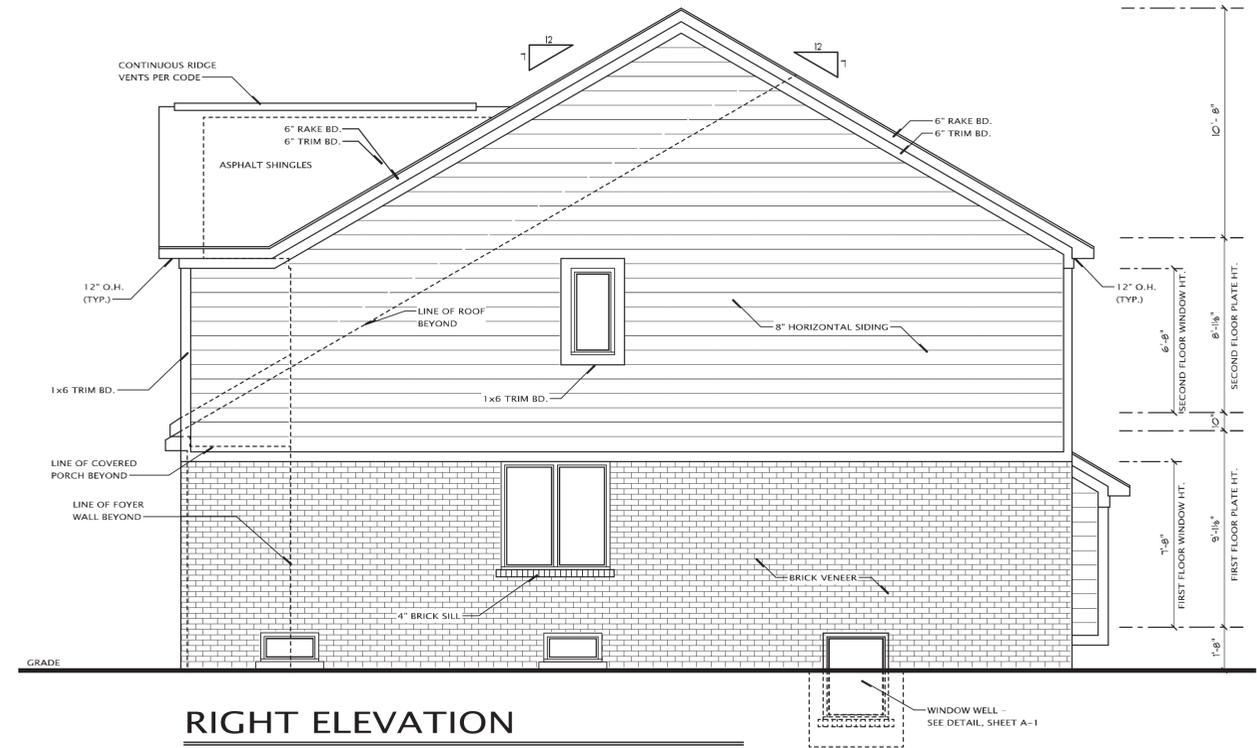
CLIENT JOE MANIACI
PRELIMINARY
CONSTRUCTION
AS-BUILT

SHEET NO. 5
SCALE 1" = 30'



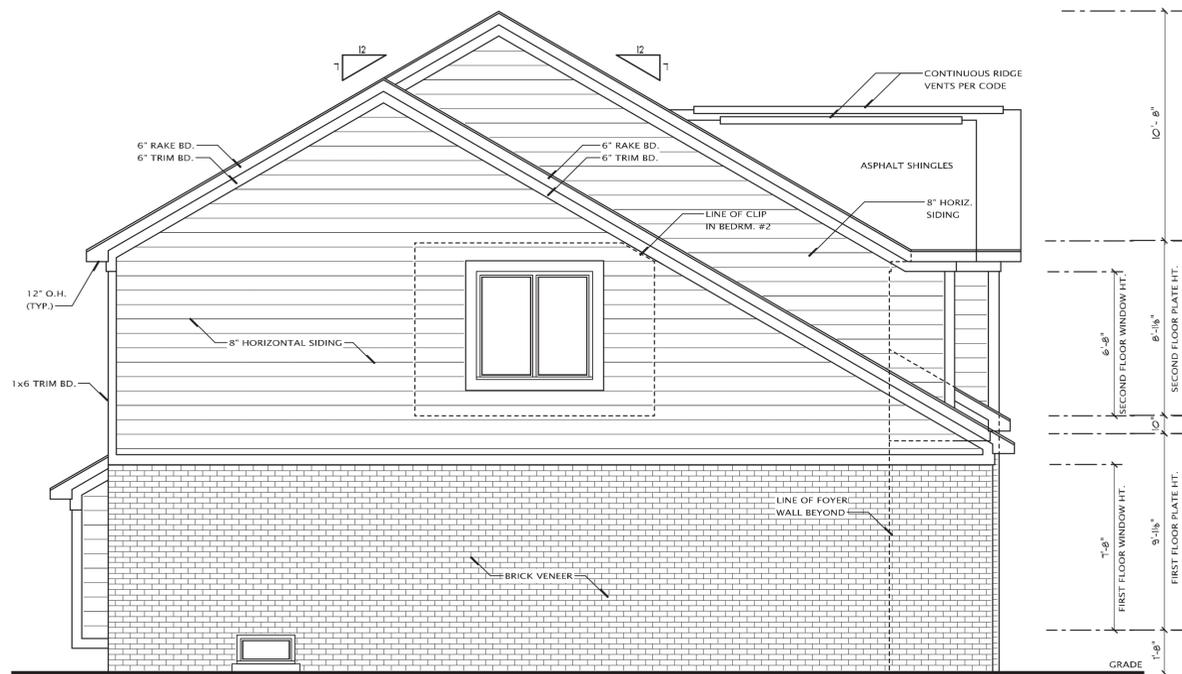
REAR ELEVATION

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



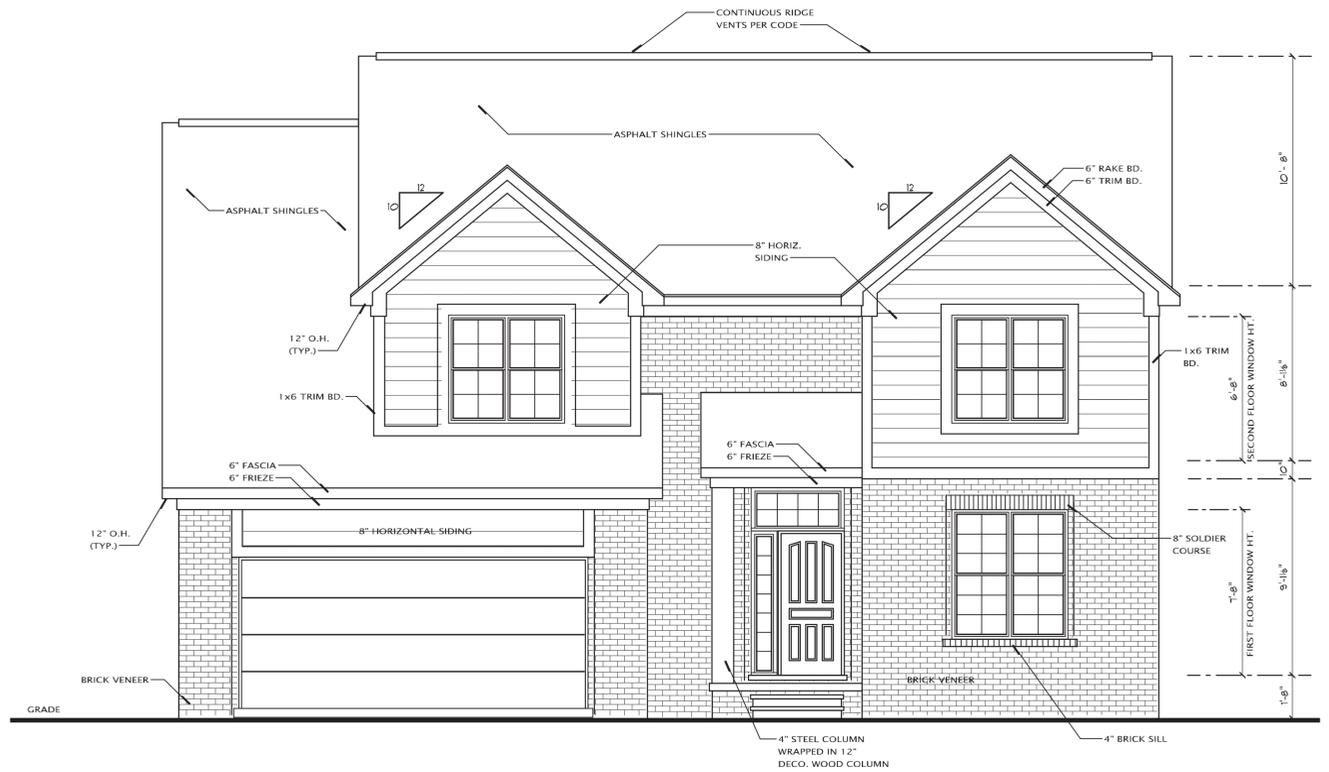
RIGHT ELEVATION

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



LEFT ELEVATION

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



STANDARD FRONT ELEVATION "A"

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

ANTONINO SCAVO & ASSOCIATES, INC.
ARCHITECTS • PLANNERS

48153 VAN DYKE AVENUE
SHELBY TOWNSHIP, MICHIGAN 48317
TEL 586.685.0160 • FAX 586.685.0162
WWW.ANTONINOSCAVO.COM

THE IDEAS AND DESIGN CONCEPTS EXPRESSED HEREIN AND THE GRAPHICALLY DISPLAYED ARRANGEMENT OF THEIR COMPONENTS REPRESENTED BY THIS DRAWING HAVE BEEN DEVELOPED FOR THE EXCLUSIVE USE OF THE SPECIFIED PROJECT AND ARE THE SOLE PROPERTY OF ANTONINO SCAVO & ASSOCIATES, INCORPORATED. A CONVEYANCE OR DISCLOSURE OF THE IDEAS DESIGN CONCEPTS OR USE OF ANY GRAPHICALLY DISPLAYED ARRANGEMENTS OF THE COMPONENTS SHALL BE AT THE DISCRETION AND ONLY THROUGH THE EXPRESSED WRITTEN CONSENT OF ANTONINO SCAVO & ASSOC., INC. ALL MATERIALS HEREIN ARE PROPRIETARY AND COPYRIGHTED

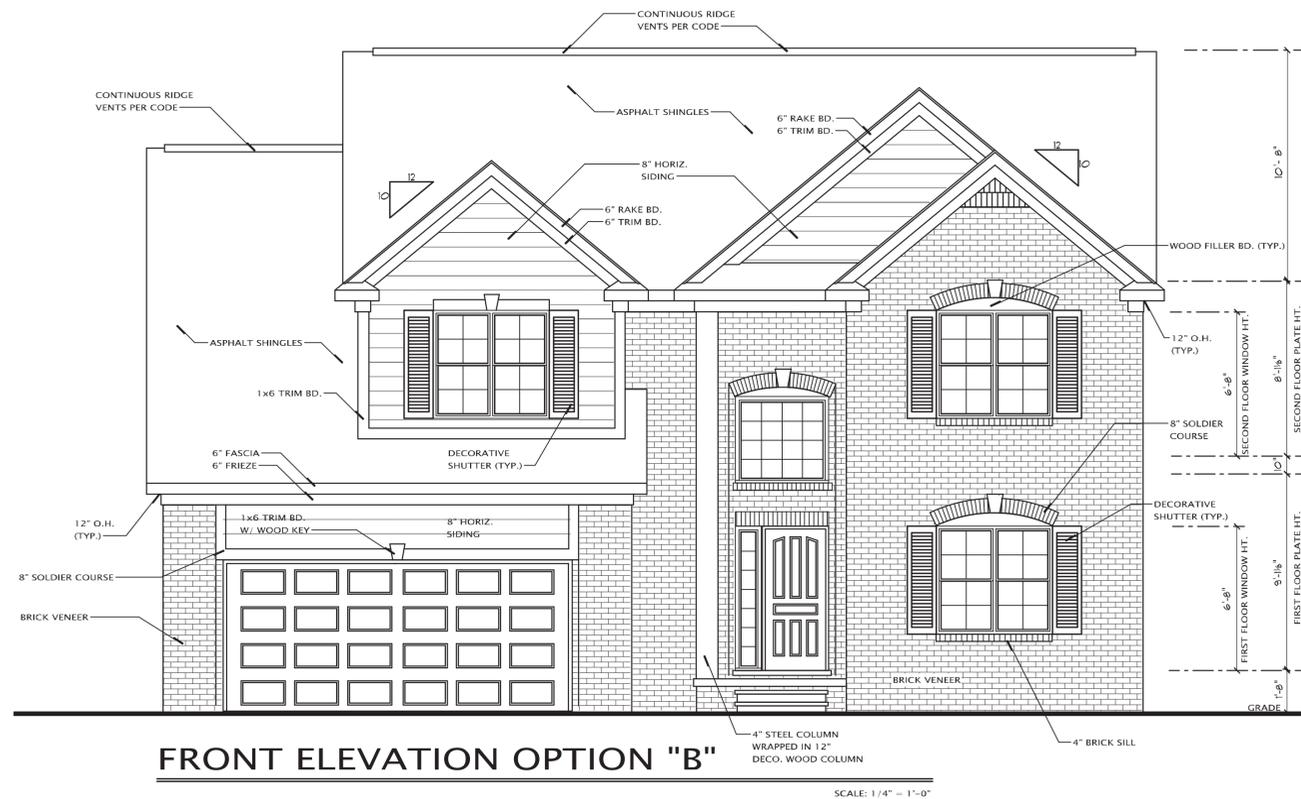
PROJECT:
COLONIAL

OWNER/CONTRACTOR:
MONDRIAN PROPERTIES

ARCHITECT'S SEAL AND SIGNATURE:

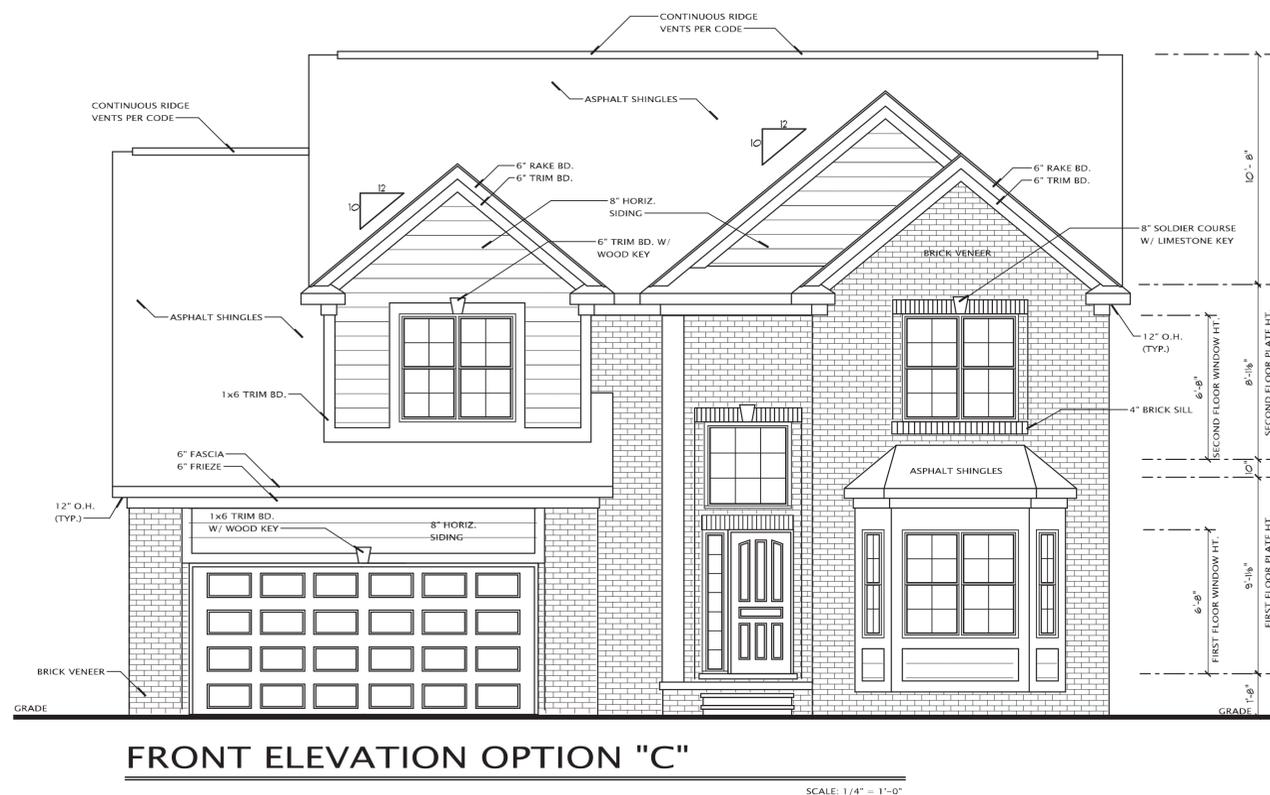
SHEET TITLE:
STANDARD ELEVATIONS

DATE:	DRAWN BY:
	CHECKED BY:
	JOB NUMBER:
	SHEET NUMBER:



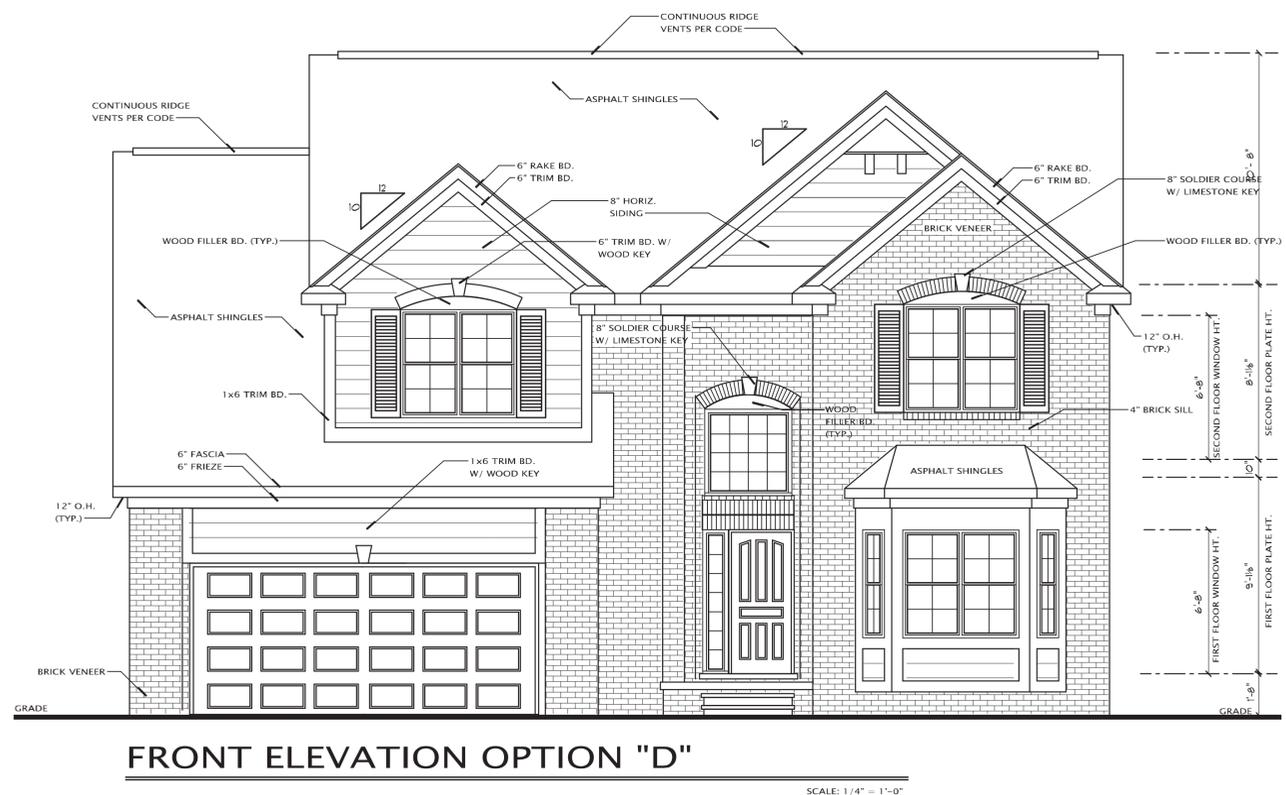
FRONT ELEVATION OPTION "B"

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



FRONT ELEVATION OPTION "C"

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



FRONT ELEVATION OPTION "D"

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

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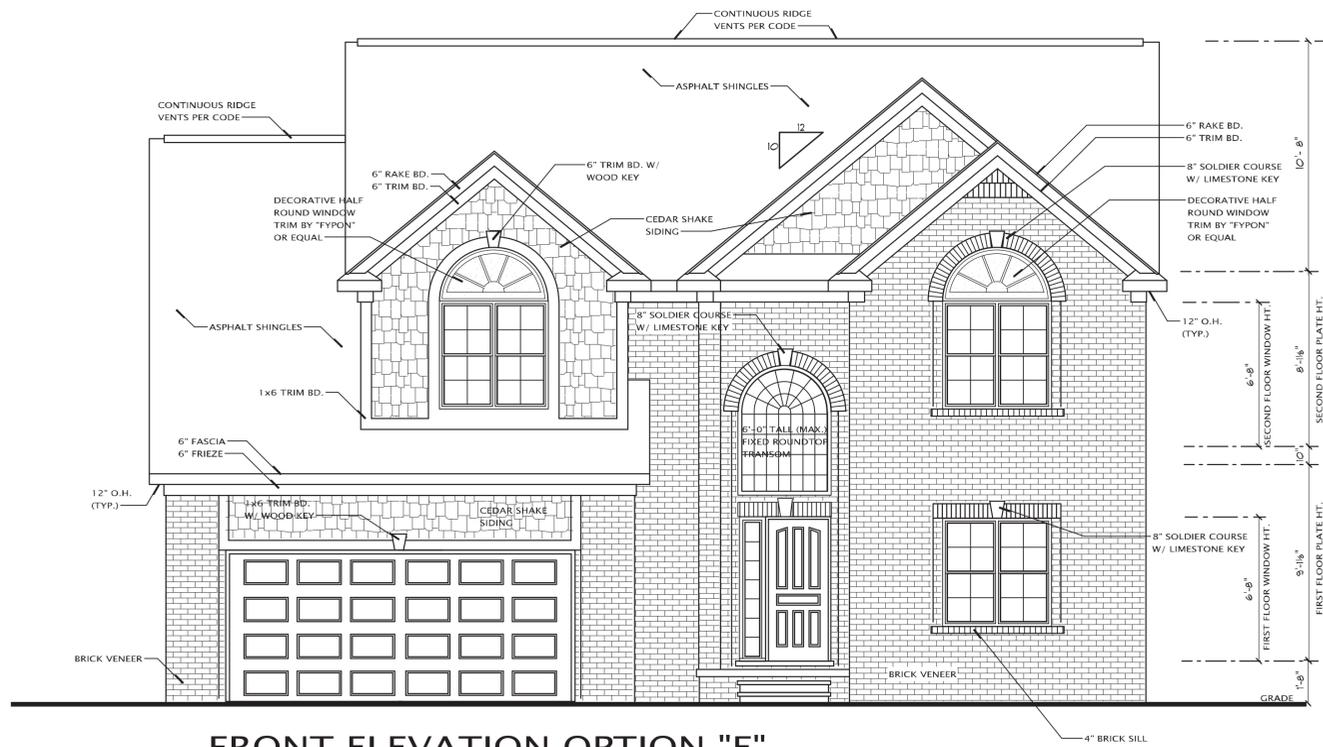
PROJECT:
COLONIAL

OWNER/CONTRACTOR:
MONDRIAN PROPERTIES

ARCHITECT'S SEAL AND SIGNATURE:

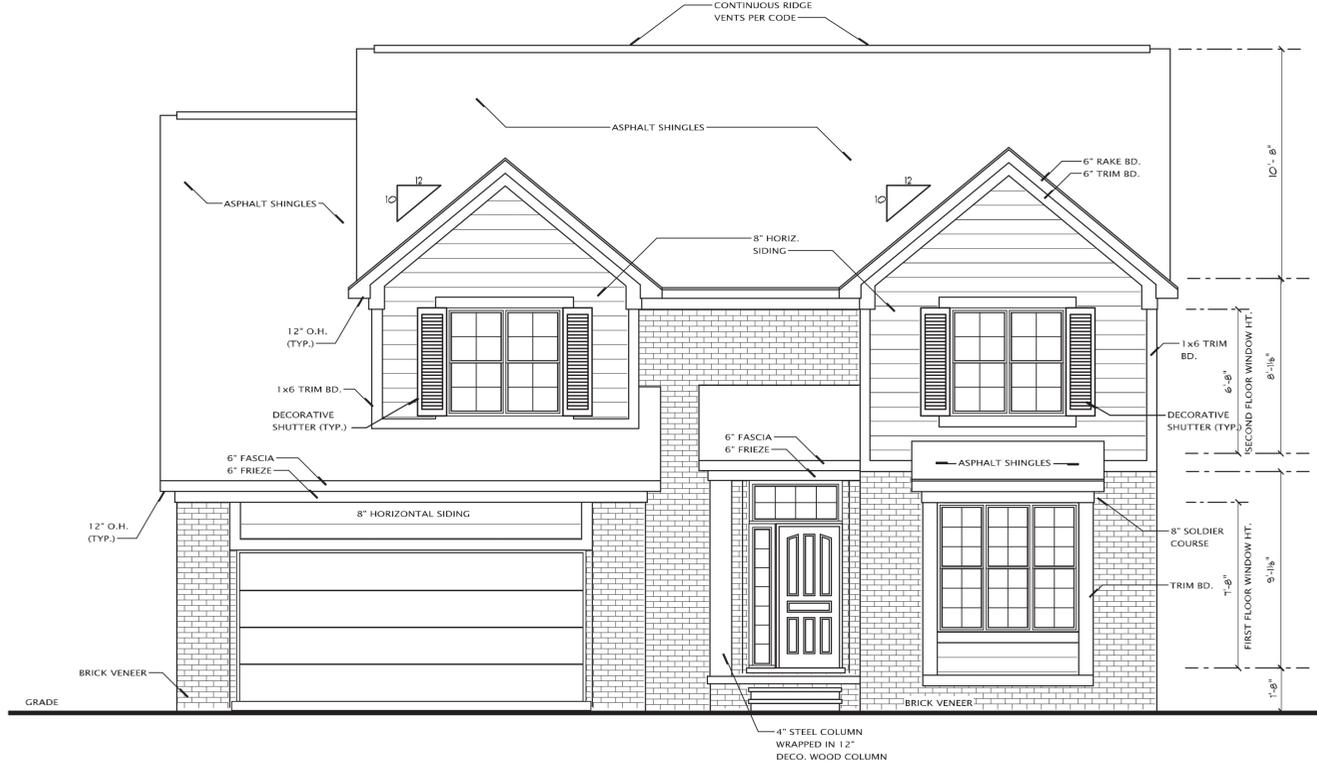
SHEET TITLE:
STANDARD ELEVATIONS

DATE: _____ DRAWN BY: _____
CHECKED BY: _____
JOB NUMBER: _____
SHEET NUMBER: _____



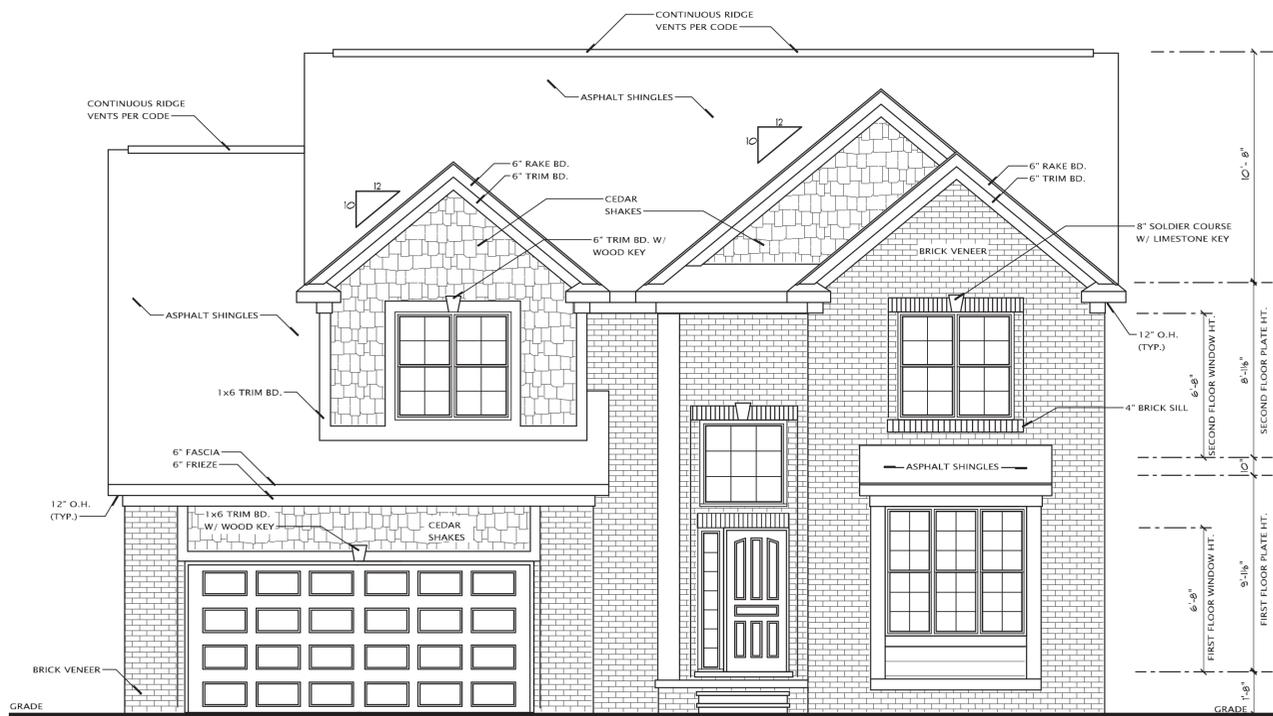
FRONT ELEVATION OPTION "E"

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



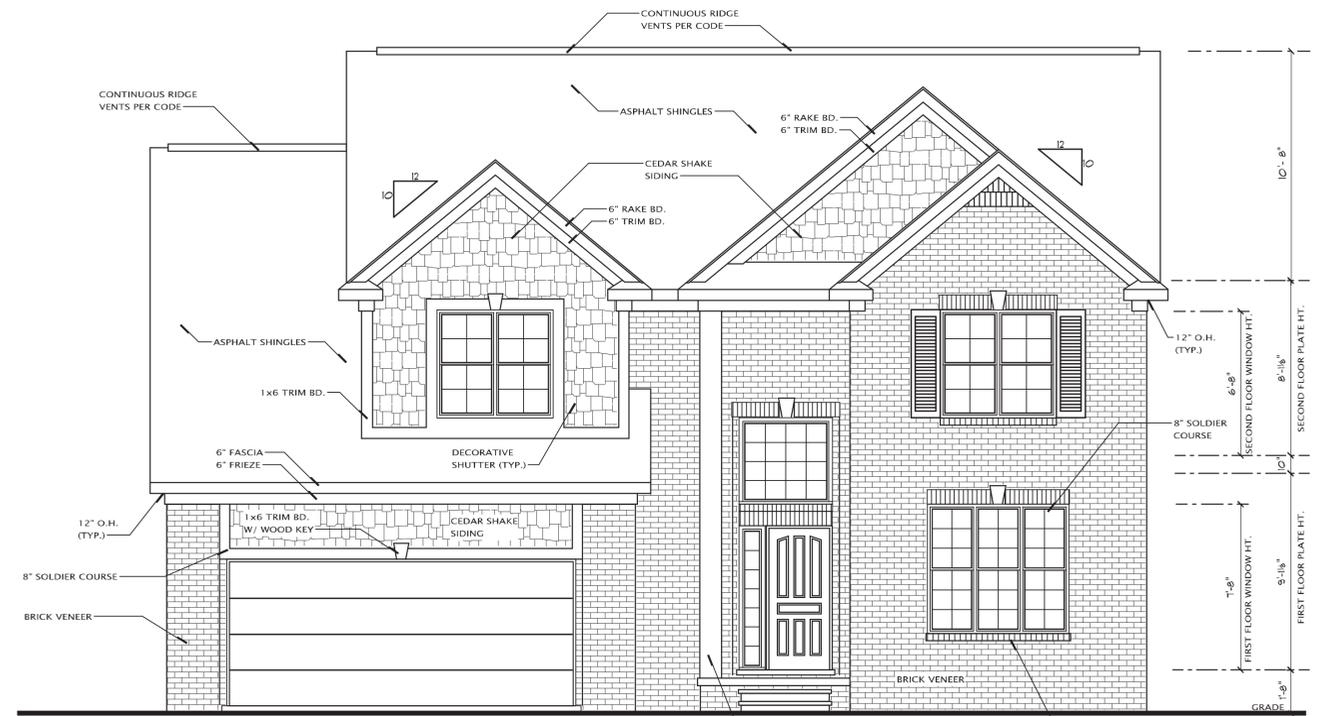
STANDARD FRONT ELEVATION "F"

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



FRONT ELEVATION OPTION "G"

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



FRONT ELEVATION OPTION "H"

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

ANTONINO SCAVO & ASSOCIATES, INC.
ARCHITECTS • PLANNERS

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SHELBY TOWNSHIP, MICHIGAN 48317
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PROJECT:
COLONIAL

OWNER/CONTRACTOR:
MONDRIAN PROPERTIES

ARCHITECT'S SEAL AND SIGNATURE:

SHEET TITLE:

DATE: DRAWN BY:
CHECKED BY:
JOB NUMBER:
SHEET NUMBER:

DATE: April 4, 2012

TO: Planning Commission

FROM: R. Brent Savidant, Planning Director

SUBJECT: PRELIMINARY SITE PLAN REVIEW (File Number SP 973) – Proposed Old Dominion Freight Line, South Side of Big Beaver, West of Bellingham (1310 E Big Beaver), Section 26, Currently Zoned IB (Integrated Industrial and Business) District

The petitioner D. F. Chase, Inc. submitted the above referenced Preliminary Site Plan Approval application for an Old Dominion Freight Line trucking facility.

The property is currently zoned IB (Integrated Industrial and Business) District, and is bordered on three sides by IB zoning. Therefore the Planning Commission is the review and approval body for this application.

The petitioner is upgrading a former trucking facility, which has been vacant for some time and is dilapidated.

The attached report prepared by Carlisle/Wortman Associates, Inc. (CWA), the City's Planning Consultant, summarizes the project. CWA prepared the report with input from various City departments including Planning, Engineering, Public Works and Fire. City Management supports the findings of fact contained in the report and recommends approval of the project, as noted.

Attachments:

1. Maps
2. Report prepared by Carlisle/Wortman Associates, Inc.

cc: Applicant
File/ SP 973

G:\SITE PLANS\SP 973 Old Dominion Freight Line Sec 26\SP-973 PC Memo 04 10 12.docx

PROPOSED RESOLUTION

PRELIMINARY SITE PLAN REVIEW – Proposed Old Dominion Freight Line, South Side of Big Beaver, West of Bellingham (1310 E Big Beaver), Section 26, Currently Zoned IB (Integrated Industrial and Business) District

Proposed Resolution # PC-2012-04-

Moved by:

Seconded by:

RESOLVED, That Preliminary Site Plan Approval, pursuant to Article 8 of the Zoning Ordinance, as requested for Old Dominion Freight Line, south side of Big Beaver, west of Bellingham (1310 E Big Beaver), Section 26, within the IB (Integrated Industrial and Business) district, be granted, subject to the following:

1. Confirm that the installation of the stormwater basin will maintain the necessary landscape screen as required under Section 13.02.B.
2. Remove excess parking or apply for a waiver from the parking limitation. If seeking parking waiver, provide evidence to Planning Commission as to why excess parking is needed.
3. Submit pole heights, building lighting heights, and lighting cut sheets from the manufacturer.
4. Show existing flood plain and proposed changes to flood plain on final site plan.
5. Obtain all necessary permits from Oakland County Water Resources Commissioner, Michigan Department of Environmental Quality, and the City of Troy prior to final site plan approval.

_____) or

(denied, for the following reasons: _____) or

(postponed, for the following reasons: _____)

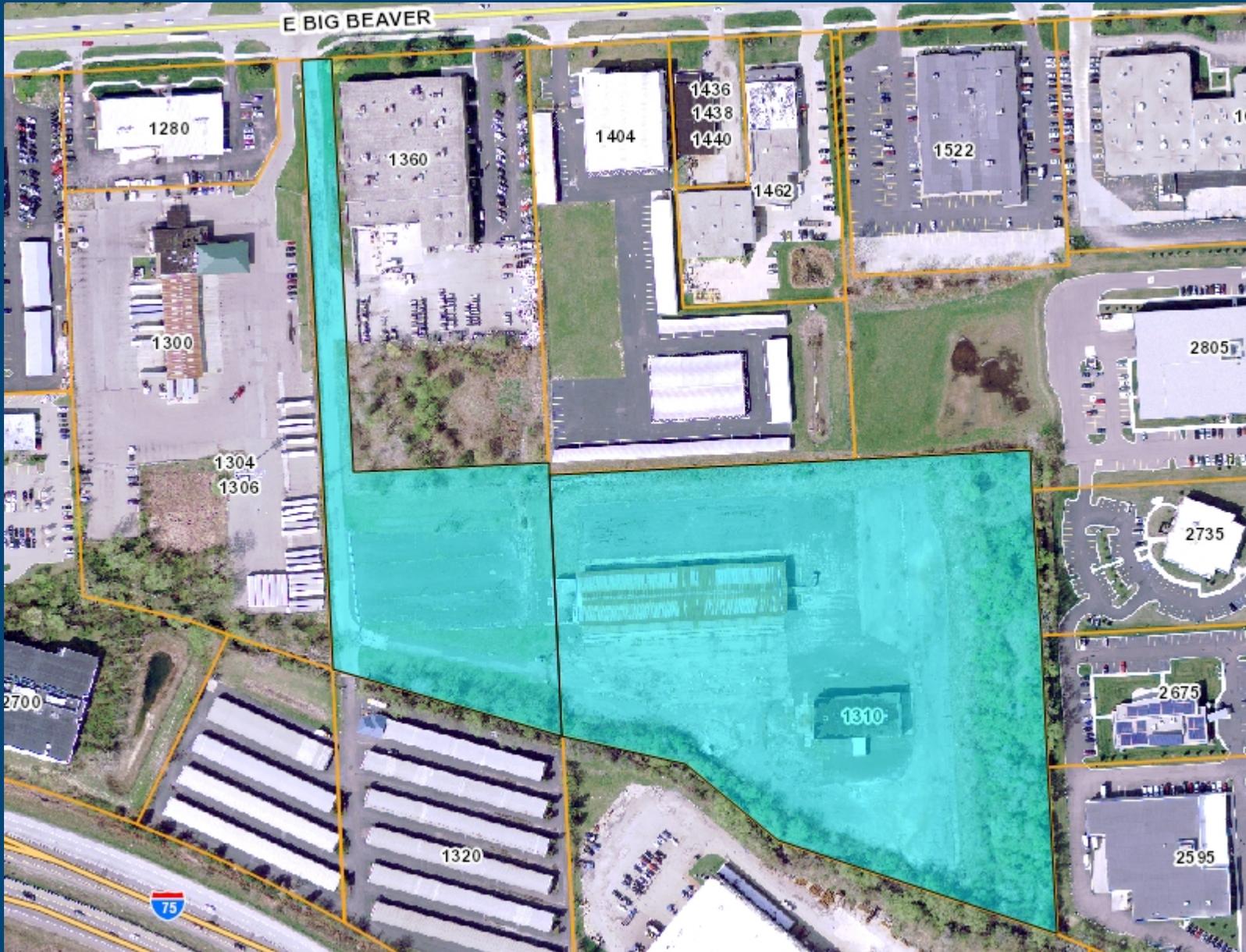
Yes:

No:

MOTION PASSED / FAILED

1310 E Big Beaver, Old Dominion Freight Line

City of Troy Planning Department



Legend

-  I-75
- Road Centerline**
 -  Major Road
 -  Industrial Road
 -  Local Road
-  Ponds and Basins
-  Streams and Creeks
-  Parcels
- Aerial Photos - 2010**
 -  Red: Band_1
 -  Green: Band_2
 -  Blue: Band_3

499 0 250 499Feet

Scale 1: 2,995

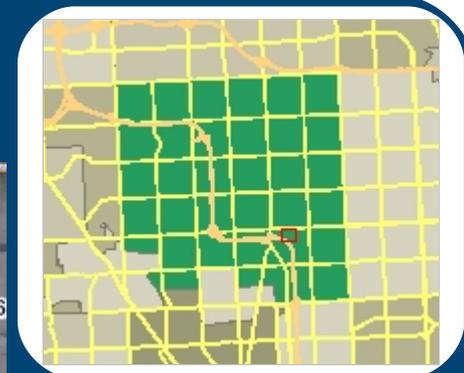


Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.

Printed: 3/22/2012

1310 E Big Beaver, Old Dominion Freight Line

City of Troy Planning Department



Legend

-  I-75
- Road Centerline**
 -  Major Road
 -  Industrial Road
 -  Local Road
- Current Zoning Ordinance**
 -  (PUD) Planned Unit Development
 -  (CF) Community Facilities District
 -  (EP) Environmental Protection District
 -  (BB) Big Beaver Road (Form Based)
 -  (MRF) Maple Road (Form Based)
 -  (NN) Neighborhood Nodes (A-U)
 -  (CB) Community Business
 -  (GB) General Business
 -  (IB) Integrated Industrial Business District
 -  (O) Office Building District
 -  (OM) Office Mixed Use
 -  (P) Vehicular Parking District
 -  (R-1A) One Family Residential District
 -  (R-1B) One Family Residential District
 -  (R-1C) One Family Residential District
 -  (R-1D) One Family Residential District
 -  (R-1E) One Family Residential District
 -  (RT) One Family Attached Residential District
 -  (MR) Multi-Family Residential
 -  (MHP) Manufactured Housing
 -  (UR) Urban Residential
 -  (RC) Research Center District
 -  (PV) Planned Vehicle Sales
-  Ponds and Basins
-  Streams and Creeks
-  Parcels
- Aerial Photos - 2010**
 -  Red: Band_1
 -  Green: Band_2
 -  Blue: Band_3

499 0 250 499Feet

Scale 1: 2,995



Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.

Printed: 3/22/2012



CARLISLE/WORTMAN ASSOCIATES, INC.
Community Planners /Landscape Architects

605 S. Main, Suite 1
Ann Arbor, MI 48104
734-662-2200
fax 734-662-1935

6401 Citation Drive, Suite E
Clarkston, MI 48346
248-625-8480
fax 248-625-8455

Date: April 5, 2012

Site Plan Review For City of Troy, Michigan

Applicant:	PEA Professional Engineering Associates
Project Name:	Old Dominion Freight Line
Plan Date:	March 16, 2012
Location:	1310 Big Beaver Road. South side of Big Beaver Road, between Rochester Road and John R Road
Zoning:	IB, Integrated Industrial Business District
Action Requested:	Site Plan Approval
Required Information:	Deficiencies noted

PROJECT AND SITE DESCRIPTION

The applicant proposes to improve an existing but vacant freight warehouse and truck storage site at 1310 Big Beaver Road. The existing gravel, 15.88 acre site is currently improved with two buildings totaling 34,000 sq/ft. The applicant is proposing to remove and reconstruct the existing 34,000 sq/ft warehousing facility and vehicle maintenance facility, add an attached 5,330 sq/ft office building to the warehousing facility, add an additional one-hundred (100) truck parking/storage areas, add additional stormwater management capacity, add two truck fueling islands, and construct a new 110 space employee parking lot.

The site is accessed of a shared drive with Simply Self Storage off Big Beaver Road. The proposed use is permitted by right in the IB District.

Old Dominion
 April 5, 2012

Location of Subject Property:

South side of Big Beaver Road, between Rochester Road and John R Road.



Size of Subject Property:

The parcel is 15.55 acres in area.

Proposed Uses of Subject Parcel:

The applicant proposes to reuse site as truck warehousing and storage.

Current Use of Subject Property:

The subject property is currently improved but vacant.

Current Zoning:

The property is currently zoned IB, Integrated Industrial Business District

Surrounding Property Details

Direction	Zoning	Use
North	IB, Integrated Industrial Business District	Industrial
South	IB, Integrated Industrial Business District, I-75	Self-storage facility
East	RC, Research Center District	Industrial
West	IB, Integrated Industrial Business District	Industrial

AREA, WIDTH, and HEIGHT

Required and Provided Dimensions:

Table 4.15.C establishes the requirements for the IB District. The requirements and the proposed dimensions are as follows:

	Required:	Provided:	Compliance:
Front	30 foot setback	Not applicable	Complies
Rear	20 foot setback	168 foot minimum	Complies
Sides	10 foot minimum for least side setback, 20 foot minimum combined setback	171 foot minimum	Complies
Maximum Height	50 feet, 4 story	24'-6" (office) 20'-9" (warehouse) 23'-0" (vehicle maintenance)	Complies
Maximum Lot Area Covered by Buildings	40 percent	30 percent	Complies

The proposed site improvements comply with all bulk and setback requirements under Table 4.15.C.

Items to be Addressed: None

ACCESS AND INTERNAL CIRCULATION

As this is an automobile and truck-oriented use, access and circulation are of utmost importance. Primary access to the site will remain via a shared access drive with Simply Self Storage off Big Beaver Road. There are no changes to the access point to the site or changes to the ROW as part of the project, however after final construction the applicant will be required to improve the access road, as it is currently in major disrepair.

From the shared drive off Big Beaver Road, there is a separate entrance for the employee parking lot and for the warehouse and storage portion of the site. For the warehousing and storage portion of the property, all internal access drives and lanes are sufficient for internal truck circulation. No drive is less than 36-feet and the necessary turning areas are provided. For employee parking area, all parking spots are the required length of 19-feet and all drive-aisles are the required width of 24-feet. Circulation within the parking lot is sufficient.

Fire Administration and the Engineering Department have reviewed access and circulation and raise no objections to the plans as submitted.

Items to be Addressed: None.

LANDSCAPING

The submitted landscape plan includes calculations on how screening, parking lot, and general site landscaping are being met.

Screening:

Section 13.02.B requires screening between adjacent land uses in the form of one (1) large evergreen tree every ten (10) feet where existing screening. Based on the adjacent uses, the applicant only is required to provide screening along the east property line, adjacent to the property zoned Research Center District. The applicant proposes to maintain the existing berm and plant buffer along a majority of the east property line. Where necessary the applicant proposes additional screening in the form of twenty-four (24) white spruce trees. The proposed location of the stormwater basin appears to impact a number of existing trees, which are proposed to remain as part of the necessary screening. The applicant should confirm that the installation of the stormwater basin will maintain the necessary screen as required under Section 13.02.B.

In addition, the applicant is required to screen a propane tank that is adjacent to the new employee parking lot, which the applicant proposes to screen via four (4) spruce trees.

Parking lot landscaping:

Section 13.02.C, which establishes the requirements for parking lot landscaping, requires one (1) tree for every eight (8) parking spaces. The applicant's proposed 110-space employee lot requires fourteen (14) trees. The applicant is proposing eight (8) honeylocust, two (2) swamp white oak, and four (4) linden trees, a total of fourteen (14) trees. The proposed parking lot landscaping is sufficient.

Minimum Landscaped Area / Use of Native Plants:

20 percent of the site must be landscaped area. The site is approximately 691,700 square feet, which requires approximately 138,300 square feet of landscaping. With parking lot landscaping and buffer/screening landscaping along the site perimeter the applicant notes that they are providing over 304,900 square feet of landscaping. This total is approximately 44.0 percent of the site. Furthermore, 50 percent of the proposed planting must be native. 34 of the applicant's proposed 42 trees, a total of 81 percent are native.

The total amount of landscaping and use of native species is sufficient.

Items to be Addressed: Confirm that the installation of the stormwater basin will maintain the necessary screen as required under Section 13.02.B.

PARKING AND LOADING

Parking Calculations:

As required under Section 13.06, the parking calculations are as follows:

<u>Regulation</u>	<u>Required</u>	<u>Provided</u>	<u>Compliance</u>
Office: 1 space per 300 sq/ft of net floor area	5,330 sq/ft divided by 300 = 18	110	The 110 spaces provided exceed the ordinance minimum by greater than 20%
Warehousing: 1 space per 1,500 sq/ft + 1 space for each employee on largest typical shift (which includes total number of truck drivers)	18,802 sq/ft divided by 1,500 + 5 warehouse employees + 28 truck driver employees = 46		
Vehicle Repair: 2 spaces per bay + 1 space per employee on largest typical shift	5 bays + 6 employees = 16		
Total	80		
Barrier Free	5	5	Complies based on 110 parking spaces provided.

The 110 parking spaces provided exceed the 20% parking increase as allowed by ordinance. As such the applicant should reduce the number of spaces to a maximum of 96 or apply for a waiver from the parking limitation and present evidence to the Planning Commission why excess parking is needed.

In addition to the 110 spaces provided for automobile parking, as part of the designated use of the site the applicant is providing 21 spaces for 55’ trailers, 60 spaces for 30’ trailers, 19 spaces for 20’ trailers. The 100 spaces for truck trailer parking are considered a use and as such are not regulated under the parking section of the ordinance.

Items to be Addressed: 1). Remove excess parking or apply for a waiver from the parking limitation; and 2). If seeking parking waiver, provide evidence to Planning Commission as why excess parking is needed.

LIGHTING

The applicant has provided a lighting (photometric) plan. Based on adjacent uses, footcandle levels shall not exceed one (1.0) foot-candle along any property line, which the applicant complies with.

While the applicant has provided a light fixture schedule on their photometric plan, pole heights and building lighting heights have not been indicated. The applicant should submit pole heights, building lighting heights, and lighting cut sheets from the manufacturer at the time of final site plan submittal.

Items to be Addressed: Submit pole heights, building lighting heights, and lighting cut sheets from the manufacturer at the time of final site plan submittal.

STORMWATER MANAGEMENT

The site is located in a flood plain and adjacent to the Sturgis Drain. The applicant has made a separate detailed submittal to Engineering to review the flood plain and proposed changes. The Engineering Department has reviewed the stormwater management plan and notes that the existing flood plain and proposed changes to flood plain should be shown on the final site plan. Engineering has no objections with preliminary site plan.

Items to be Addressed: 1). *Show existing flood plain and proposed changes to flood plain on final site plan;* 2). *Obtain all necessary permits from Oakland County Water Resources Commissioner, Michigan Department of Environmental Quality, and the City of Troy prior to final site plan approval.*

RECOMMENDATIONS

The applicant is making a major investment and greatly improving a currently vacant site. We support the proposed project and believe the project meets ordinance requirements. We recommend the Planning Commission approve the preliminary site plan application conditioned on the applicant satisfying the following requirements for final site plan submittal:

1. Confirm that the installation of the stormwater basin will maintain the necessary landscape screen as required under Section 13.02.B.
2. Remove excess parking or apply for a waiver from the parking limitation. If seeking parking waiver, provide evidence to Planning Commission as to why excess parking is needed.
3. Submit pole heights, building lighting heights, and lighting cut sheets from the manufacturer.
4. Show existing flood plain and proposed changes to flood plain on final site plan.
5. Obtain all necessary permits from Oakland County Water Resources Commissioner, Michigan Department of Environmental Quality, and the City of Troy prior to final site plan approval.



CARLISLE/WORTMAN ASSOC., INC.
Benjamin R. Carlisle, LEED AP, AICP

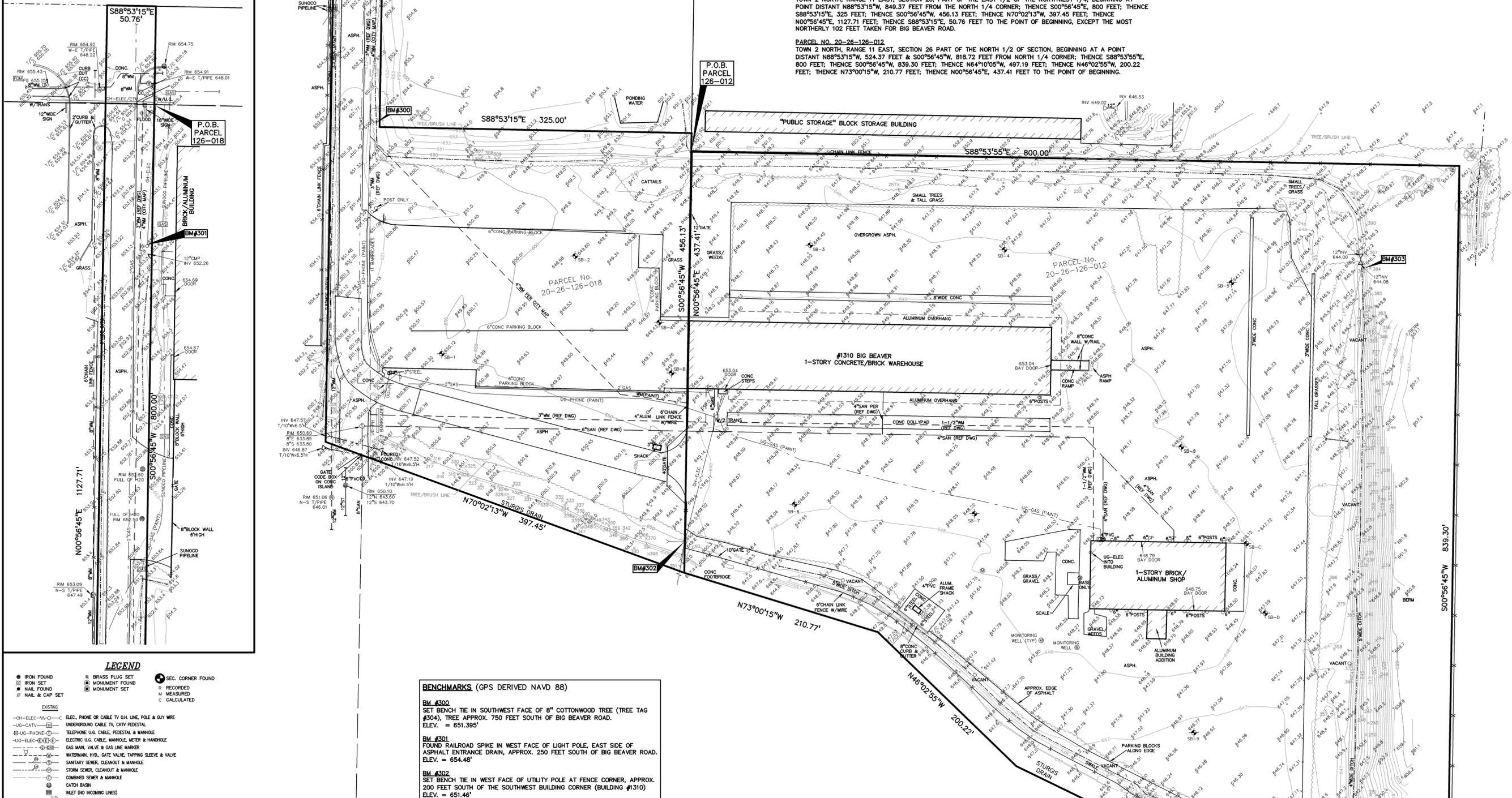
225-02-1123

BIG BEAVER ROAD
(102' HALF WIDTH - PUBLIC)

LEGAL DESCRIPTIONS
(PER OAKLAND COUNTY TAX RECORDS)

PARCEL NO. 20-26-126-018
TOWN 2 NORTH, RANGE 11 EAST, SECTION 26, PART OF THE EAST 1/2 OF THE NORTHWEST 1/4, BEGINNING AT POINT DISTANT N88°53'15"W, 849.37 FEET FROM THE NORTH 1/4 CORNER; THENCE S00°56'45"E, 800 FEET; THENCE S88°53'15"E, 325 FEET; THENCE S00°56'45"W, 456.13 FEET; THENCE N70°02'13"W, 397.45 FEET; THENCE N00°56'45"E, 1127.71 FEET; THENCE S88°53'15"E, 50.76 FEET TO THE POINT OF BEGINNING, EXCEPT THE MOST NORTHERLY 102 FEET TAKEN FOR BIG BEAVER ROAD.

PARCEL NO. 20-26-126-012
TOWN 2 NORTH, RANGE 11 EAST, SECTION 26 PART OF THE NORTH 1/2 OF SECTION, BEGINNING AT A POINT DISTANT N88°53'15"W, 524.37 FEET & S00°56'45"W, 818.72 FEET FROM NORTH 1/4 CORNER; THENCE S88°53'55"E, 800 FEET; THENCE S00°56'45"W, 839.30 FEET; THENCE N64°10'05"W, 497.19 FEET; THENCE N46°02'55"W, 200.22 FEET; THENCE N73°00'15"W, 210.77 FEET; THENCE N00°56'45"E, 437.41 FEET TO THE POINT OF BEGINNING.



- LEGEND**
- IRON FOUND
 - ⊗ IRON SET
 - ⊗ NAIL FOUND
 - ⊗ NAIL & CAP SET
 - ⊕ BRASS PLUG SET
 - ⊕ MONUMENT FOUND
 - ⊕ MONUMENT SET
 - ⊕ SEC. CORNER FOUND
 - ⊕ RECORDED
 - ⊕ MEASURED
 - ⊕ CALCULATED

- EXISTING**
- ELEC. PHONE OR CABLE TV OH. LINE, POLE & GUY WIRE
 - UG-CATV
 - UG-PHONE
 - UG-ELEC.
 - GAS MAIN, VALVE & GAS LINE MARKER
 - WATERMAIN, HYD., GATE VALVE, TAPPING SLAVE & VALVE
 - SANITARY SEWER, CLEANOUT & MANHOLE
 - STORM SEWER, CLEANOUT & MANHOLE
 - COMBINED SEWER & MANHOLE
 - CATCH BASIN
 - INLET (NO INCOMING LINES)
 - YARD DRAIN (2" DIA. & SMALLER)
 - POST INDICATOR VALVE
 - WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF
 - METER BOX, TRANSFORMER, IRRIGATION CONTROL VALVE
 - UNIDENTIFIED STRUCTURE
 - SPOT ELEVATION
 - AS BUILT ELEVATION
 - CONTOUR LINE
 - FENCE
 - GUARD RAIL
 - STREET LIGHT
 - SIGN
- CONCRETE**
- ASPHALT**
- WETLAND**

REFERENCE DRAWINGS

CITY OF TROY G.I.S. WATER MAIN MAPS, RECEIVED FEBRUARY 28, 2012
 CITY OF TROY G.I.S. SANITARY SEWER MAP DATED JAN. 2012
 OAKLAND COUNTY STURGIS DRAIN MAPS
 NOT AVAILABLE AT TIME OF SURVEY
 NOT AVAILABLE AT TIME OF SURVEY
 NOT AVAILABLE AT TIME OF SURVEY
 CONSUMERS ENERGY QUARTER SECTION MAP 02-61-26-2, DATED 02/22/12
 NOT AVAILABLE AT TIME OF SURVEY
 NOT AVAILABLE AT TIME OF SURVEY
 "SITE PLAN - TRUCK TERMINAL OFFICE & GARAGE, SHEET M-1"
 CAMPBELL ENGINEERING, JOB #6607
 "ALTA/ACSM LAND TITLE SURVEY - 00 BIG BEAVER" BOOK & CLARK'S NATIONAL SURVEYORS NETWORK, PROJ #201101889-1, DATED 11-30-11

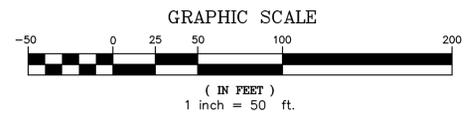
BENCHMARKS (GPS DERIVED NAVD 88)

- BM #300**
SET BENCH TIE IN SOUTHWEST FACE OF 8" COTTONWOOD TREE (TREE TAG #304), TREE APPROX. 750 FEET SOUTH OF BIG BEAVER ROAD. ELEV. = 651.395'
- BM #301**
FOUND RAILROAD SPIKE IN WEST FACE OF LIGHT POLE, EAST SIDE OF ASPHALT ENTRANCE DRAIN, APPROX. 250 FEET SOUTH OF BIG BEAVER ROAD. ELEV. = 654.48'
- BM #302**
SET BENCH TIE IN WEST FACE OF UTILITY POLE AT FENCE CORNER, APPROX. 200 FEET SOUTH OF THE SOUTHWEST BUILDING CORNER (BUILDING #1310). ELEV. = 651.48'
- BM #303**
SET BENCH TIE IN WEST FACE OF 9" ELM TREE (TREE TAG #362), APPROX. 200 FEET EAST OF THE ASPHALT PARKING LOT. ELEV. = 647.51'

FLOODPLAIN:
(Per Flood Insurance Rate Map Number 26125C-0561F, Revised Date January 16, 2009)

- SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**
The 1% annual chance flood (100 year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE AE - Base Flood Elevations determined.**
- FLOODWAY AREAS IN ZONE AE**
The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS**
ZONE X - Area of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
ZONE X - Area to be determined outside of the 0.2% annual chance floodplain.

LOCATION MAP NOT TO SCALE



NO.	BY	CHK	DESCRIPTION	DATE

CAUTION!
THE LOCATION AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO GUARANTEE IS GIVEN BY THE ENGINEER OR SURVEYOR AS TO THE ACCURACY OF THESE UTILITIES. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATION AND ELEVATION PRIOR TO THE START OF CONSTRUCTION.

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CONTRACTOR/CONTRACTOR AGENTS THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR/CONTRACTOR WILL BE REQUIRED TO ASSUME FULL AND COMPLETE RESPONSIBILITY FOR THE ACCURACY OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THE CONTRACTOR SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS PROFESSIONAL ENGINEERING ASSOCIATES, INC. FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT EXCEPT LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL.

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Phone: (248) 689-9090
Fax: (248) 689-1044
website: www.peainc.com

D.F. CHASE, INC.
3001 AMORY DRIVE, SUITE #200
NASHVILLE, TN 37204

TOPOGRAPHIC SURVEY
OLD DOMINION FREIGHT LINE
CITY OF TROY, OAKLAND COUNTY, MICHIGAN

DES. JPB
DN. JPB
SUR. JPB
KTR. JPB
P.M. JPB

ORIGINAL ISSUE DATE: MARCH 16, 2012
PEA JOB NO. 2011-245
SCALE: 1" = 50'
DRAWING NUMBER:
P-1.0

REF: L:\2011\245\DWG\TOPBASE-11245.DWG
REF: L:\2011\245\DWG\SITE PLAN\245-11245.DWG
REF: L:\2011\245\DWG\SITE PLAN\245-11245.DWG

RECORD DESCRIPTION

Land situated in the City of Troy, County of Oakland, and State of Michigan, described as:

PARCEL I:
Part of the East 1/2 of the Northwest 1/4 of Section 26, Town 2 North, Range 11 East, City of Troy, Oakland County, Michigan, described as: Beginning at a point distant North 88 degrees 53 minutes 15 seconds West, 849.37 feet from the North 1/4 corner; thence South 00 degrees 56 minutes 45 seconds East, 50.76 feet; thence South 88 degrees 53 minutes 15 seconds East, 325 feet; thence South 00 degrees 56 minutes 45 seconds West, 456.13 feet; thence North 70 degrees 02 minutes 13 seconds West, 397.45 feet; thence North 00 degrees 56 minutes 45 seconds East, 1127.71 feet; thence South 88 degrees 53 minutes 15 seconds East, 50.76 feet to the point of beginning, EXCEPT the Northerly 102 feet of the most Westerly 50.76 feet, as conveyed to City of Troy for Big Beaver Road by deed recorded in Liber 10375, Page 773.

PARCEL II:
Part of the North 1/2 of Section 26, Town 2 North, Range 11 East, City of Troy, Oakland County, Michigan, described as: Beginning at a point distant North 88 degrees 53 minutes 15 seconds West, 524.37 feet and South 00 degrees 56 minutes 45 seconds West, 818.72 feet from the North 1/4 corner; thence South 88 degrees 53 minutes 15 seconds East, 800 feet; thence South 00 degrees 56 minutes 45 seconds West, 839.30 feet; thence North 64 degrees 10 minutes 05 seconds West, 497.19 feet; thence North 46 degrees 02 minutes 55 seconds West, 200.22 feet; thence North 73 degrees 00 minutes 15 seconds West, 210.77 feet; thence North 00 degrees 56 minutes 45 seconds East, 437.41 feet to the point of beginning.

PARCEL III:
Fifteen foot sanitary sewer easement over the East 15 feet of the West 43 feet of the following described parcel, being the easement retained in Warranty Deed from Truck Terminal Realty Co. to Nolan Brothers, Inc., a Minnesota Corporation, dated October 8, 1973, recorded May 13, 1974 in Liber 6289, Page 757, Oakland County Records, over the following described land: Part of the Northwest 1/4 Section 26, Town 2 North, Range 11 East, City of Troy, Oakland County, Michigan, more particularly described as beginning at a point distant North 88 degrees 53 minutes 15 seconds West, 900.13 feet and South 00 degrees 56 minutes 45 seconds West, 1127.71 feet from the North 1/4 corner of said Section 26; thence South 70 degrees 02 minutes 13 seconds East, 397.45 feet; thence South 00 degrees 56 minutes 45 seconds West, 585.80 feet to the Northeastly right of way line of Interstate Route 75; thence along the said right of way line 479.20 feet along the arc of a curve to the left, whose radius is 2655.48 feet, chord bearing North 50 degrees 47 minutes 22 seconds West, 478.55 feet; thence North 00 degrees 56 minutes 45 seconds East, 418.94 feet to the point of beginning.

Assurance Note: The above legal description describes the same property as in Schedule A of Title Commitment No. N-106568 of Fidelity National Title Insurance Company bearing an effective date of 10/19/2011 at 8:00 A.M.

* - should read: West
** - should read: 15 seconds

ALTA/ACSM LAND TITLE SURVEY

OD Big Beaver Project
1310 East Big Beaver Road, Troy, MI 48083

based on Title Commitment No. N-106568 of Fidelity National Title Insurance Company bearing an effective date of October 19, 2011

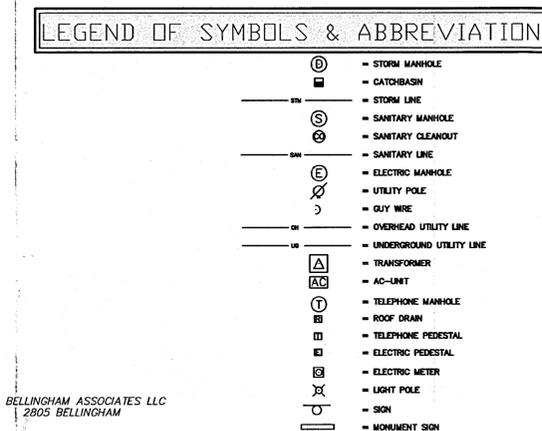
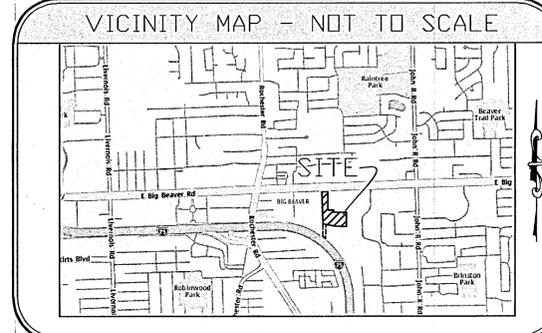
Surveyor's Certification
To: Fidelity National Title Insurance Company and Bock & Clark Corporation.

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2011 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 6(b), 7(a), 7(b)(1), 8, 11(a), 13, 18, and 21 of Table A thereof. The field work was completed on November 21, 2011.

Wendy S. Fuller
Registration No. 47969
within the State of Michigan
Date of Survey: November 21, 2011
Date of Last Revision: 11/30/2011 Ref. No. - 1159

LSG Engineers & Surveyors
3135 Pine Tree Rd, Suite D
Lansing, MI 48911
Phone: (517) 393-2902

Network Project No. 201101889-1



CURVE TABLE

NUMBER	ARC LENGTH	RADIUS	CHORD DIRECTION	CHORD LENGTH
C1	479.20' (R)	2655.48' (R)	N50°47'22" W (R)	478.55' (R)

UTILITY NOTES

(UNI) All utilities were located per field observations.

SIGNIFICANT OBSERVATIONS

(A) Fence encroachment in the Southeast corner onto adjacent property by 3.1'±, see drawing for detail.

MISCELLANEOUS NOTES

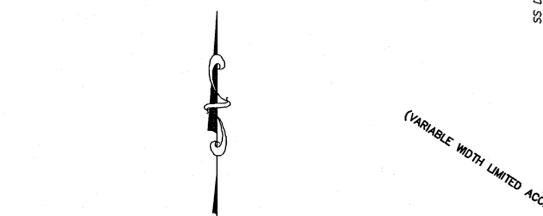
- (MNI) Bearings were established by holding a course of N88°53'15" W along the North line of Section 26, per the description of record.
- (MN2) There was no observable evidence of cemeteries / burial grounds on the subject property.
- (MN3) There is no observable evidence of site use as a solid waste dump, sump or sanitary landfill. However, observations were not made by a qualified environmental specialist and are a matter of interpretation.
- (MN4) Address information was obtained from public records.
- (MNS) Parcel I has direct access to Big Beaver Road a public road. Parcel II has access to Big Beaver Road, asphalt drive, through Parcel I.

ITEMS CORRESPONDING TO SCHEDULE B

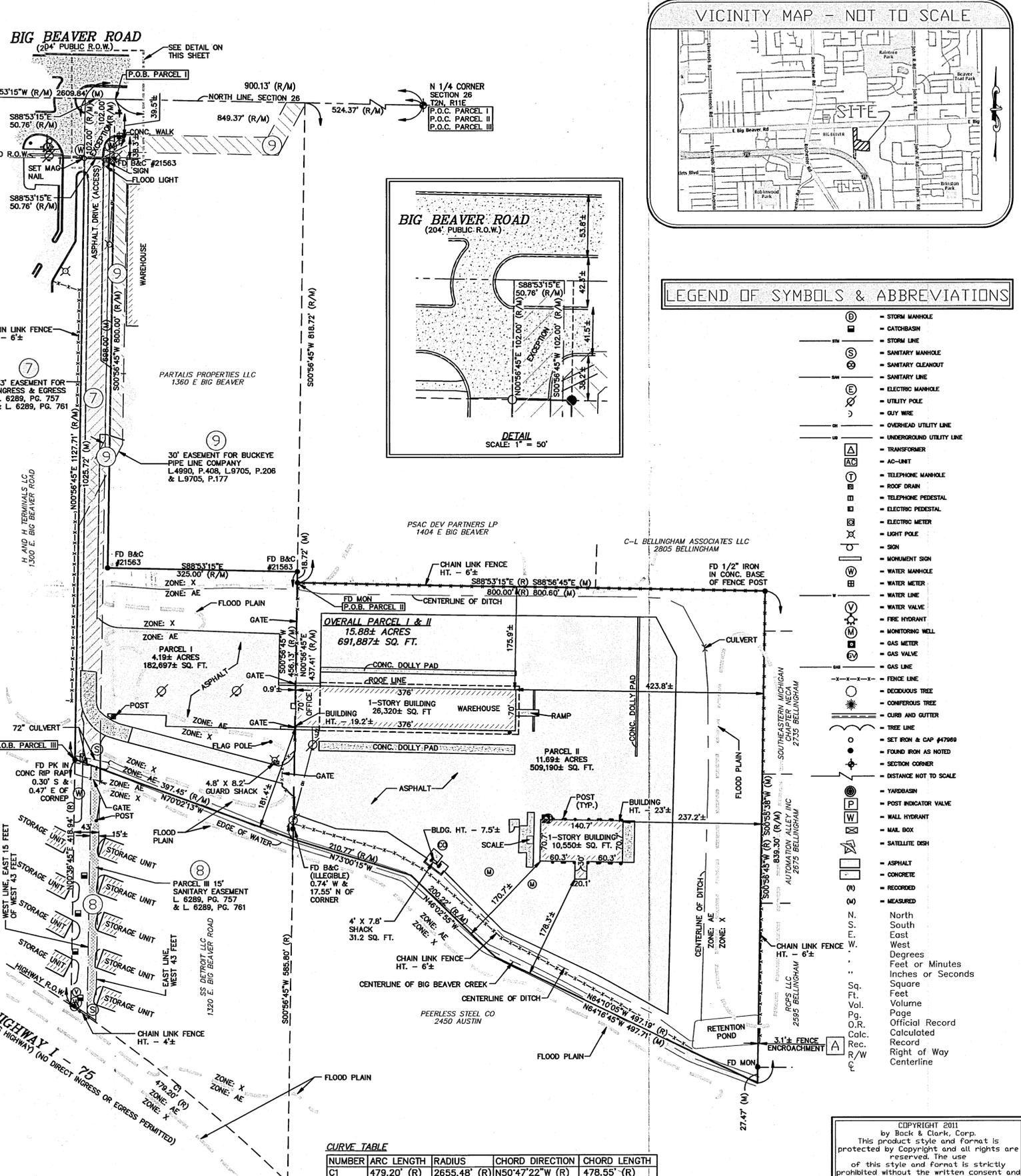
- (7) Rights of other parties over the Forty-three (43) foot easement for ingress and egress along the Westerly side of Parcel I to and from the land adjacent to and to the South thereof, and the terms, conditions and provisions relative to said easement as set forth in Warranty Deed recorded in Liber 6289, Page 757 and in Agreement recorded in Liber 6289, Page 761. Affects subject property and is plotted hereon.
- (8) Terms, conditions and provisions relative to the fifteen (15) foot sanitary sewer easement as set forth in the Warranty Deed recorded in Liber 6289, Page 757 and in Agreement recorded in Liber 6289, Page 761. Affects subject property and is plotted hereon.
- (9) Terms, conditions and provisions which are recited in Pipe Line Easement in favor of The Imperial Oil Company Limited, recorded in Liber 255, Page 623 and The Buckeye Pipe Line Company, an Ohio corporation recorded in Liber 3271, Page 174 and in Liber 4990, Page 408. Assignment and Assumption of Rights of Way recorded in Liber 9705, Page 177 and in Liber 9705, Page 206. Assignment recorded in Liber 8982, Page 416. Notice Pursuant to Act 200, P.A. 1945 recorded in Liber 4382, Page 670. (Liber 255, Page 623 & Liber 4382, Page 670 - unable to determine, document contains insufficient to plot hereon. Liber 3271, Page 174 - does not affect subject property and is not plotted hereon. Liber 4990, Page 408, Liber 9705, Page 206 & Liber 9705, Page 177 affects subject property and is plotted hereon.)
- (10) Easement in favor of the Oakland County Department of Public Works, a Michigan Statutory Corporation for sanitary sewer, as recorded in Liber 4521, Page 415. Does not affect subject property and is not plotted hereon.

ZONING INFORMATION

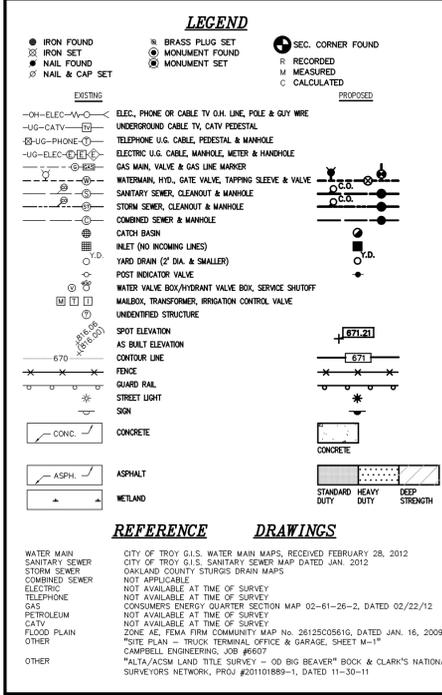
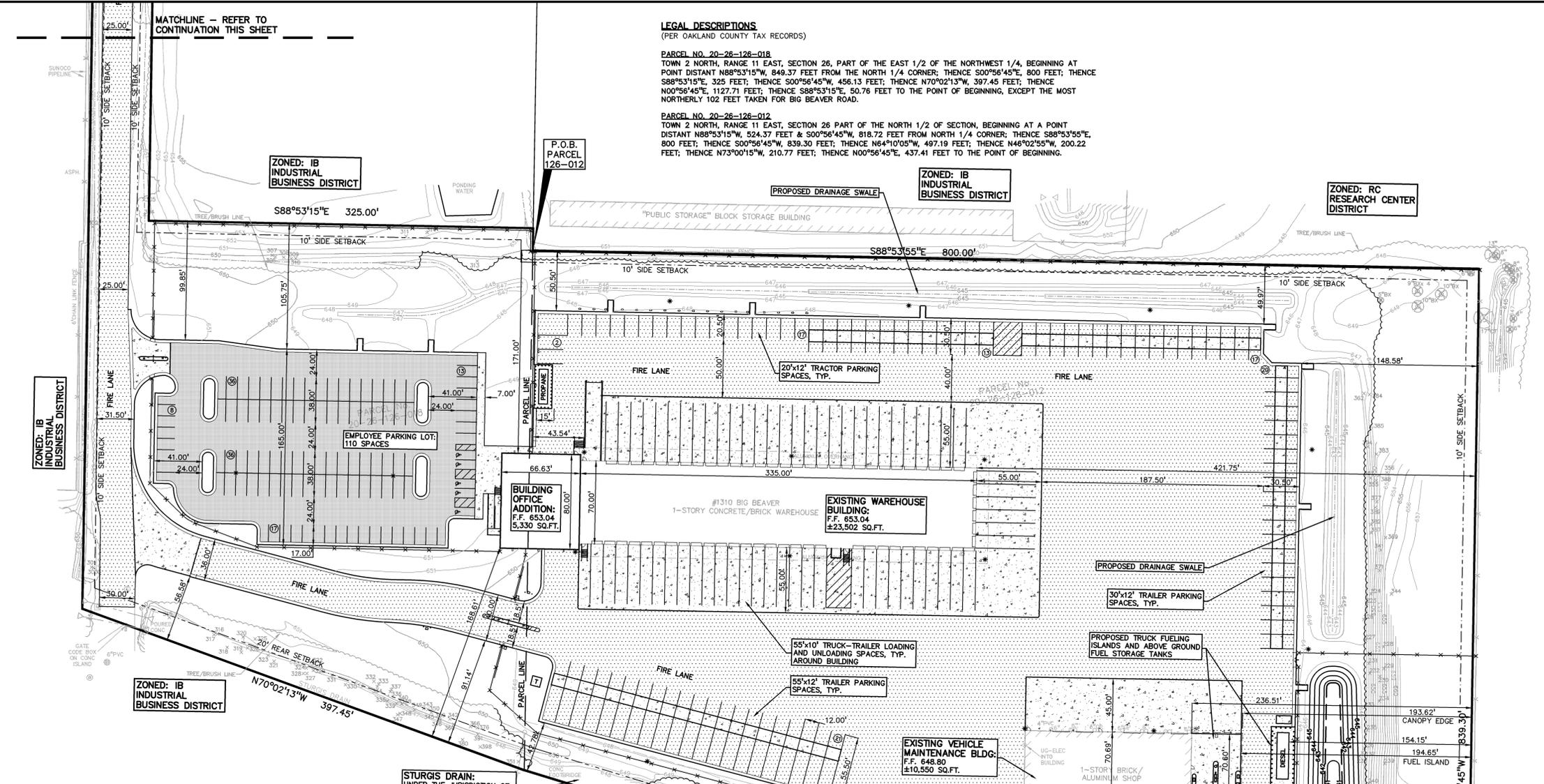
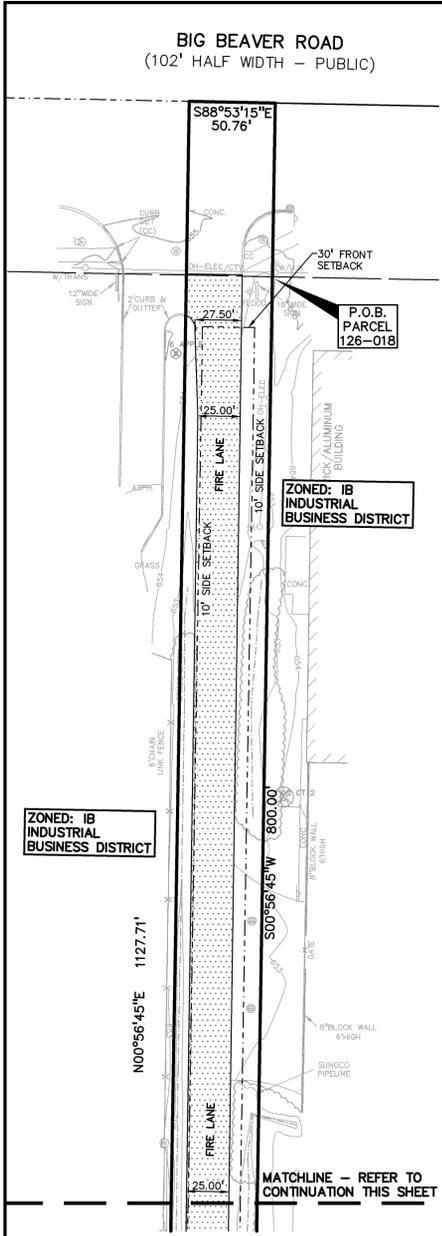
The surveyor was not provided with zoning information by the insurer pursuant to Table A Item 6b.



FLOOD NOTE: By graphic plotting only, this property is in Zone(s) AE & X of the Flood Insurance Rate Map, Community Panel No. 8615C0561G, which bears an effective date of January 16, 2009 and is in a Special Flood Hazard Area. As shown on the FEMA website (http://msc.fema.gov) by FIRette created on November 15, 2011 we have learned this community does currently participate in the program. No field surveying was performed to determine this zone and an elevation certificate may be needed to verify this determination or apply for a variance from the Federal Emergency Management Agency.



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SITE DATA TABLE:

ZONING:
 EXISTING ZONING: I-B (INTEGRATED BUSINESS DISTRICT)
 PROPOSED ZONING: I-B (INTEGRATED BUSINESS DISTRICT)

SITE AREA:
 GROSS AND NET SITE AREA = ±15.88 ACRES

SETBACKS:

REQUIRED	PROVIDED
FRONT YARD: 30 FEET	NOT APPLICABLE
SIDE YARD: 10 FEET EACH	171.00 FEET MINIMUM (VARIES THROUGHOUT SITE)
REAR YARD: 20 FEET	170.57 FEET (TO VEHICLE MAINTENANCE BUILDING) 168.61 FEET (TO THE WAREHOUSING BUILDING)

FUEL ISLAND SETBACKS:

REQUIRED	PROVIDED
CANOPY SUPPORT: 35 FEET	215.45 FEET
PUMP ISLAND: 30 FEET	194.65 FEET
CANOPY EDGE: 25 FEET	193.62 FEET

BUILDING INFORMATION:
 TOTAL GROSS BUILDING AREA = 39,382 SQ.FT.
 THE WAREHOUSE (DOCK HIGH) BUILDING AND THE VEHICLE REPAIR BUILDING ARE EXISTING BUILDINGS ON THE SITE. THESE BUILDINGS WILL BE REHABILITATED AS PART OF THIS PROJECT. THE EXISTING OFFICE BUILDING WILL BE REMOVED AND REPLACED WITH A NEW OFFICE BUILDING AS SHOWN.

GROSS OFFICE AREA = 5,330 SQ.FT.
 GROSS WAREHOUSE BUILDING AREA = 23,502 SQ.FT.
 NET WAREHOUSE BUILDING AREA = 80% OF GROSS AREA = 18,802 SQ.FT.
 GROSS VEHICLE MAINTENANCE BUILDING AREA = 10,550 SQ.FT. (5 BAYS)

MAXIMUM ALLOWED BUILDING HEIGHT = 50 FEET OR 4 STORIES
 PROPOSED/EXISTING BUILDING HEIGHT:
 OFFICE BUILDING = 24'-6"
 WAREHOUSE BUILDING = 20'-9"
 VEHICLE MAINTENANCE BUILDING = 23'-0"

TOTAL NUMBER OF EMPLOYEES ON LARGEST SHIFT = 11 OFFICE, 28 DRIVERS, 5 MAINTENANCE, 5 WAREHOUSE

PARKING CALCULATIONS:

OFFICE:
 GROSS FLOOR AREA = 5,330 SQ.FT.
 REQUIRED PARKING = 1 SPACE PER 300 SQ.FT. G.F.A. + (28 DRIVERS) = 46 SPACES

WAREHOUSE:
 NET WAREHOUSE AREA = 18,802 SQ.FT.
 REQUIRED PARKING = 1 SPACES PER 1500 SQ.FT. NET AREA + 1 PER EMPLOYEE
 REQUIRED PARKING = 5 EMPLOYEES PLUS (18802/1500) = 18 SPACES

VEHICLE REPAIR:
 VEHICLE REPAIR BUILDING HAS 5 SERVICE BAYS
 REQUIRED PARKING = 2 SPACES PER BAY PLUS 1 SPACE PER EMPLOYEE
 REQUIRED PARKING = 6 EMPLOYEES PLUS (5 BAYS x 2) = 16 SPACES

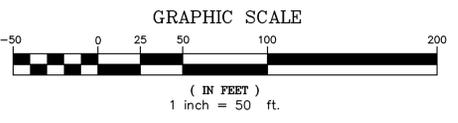
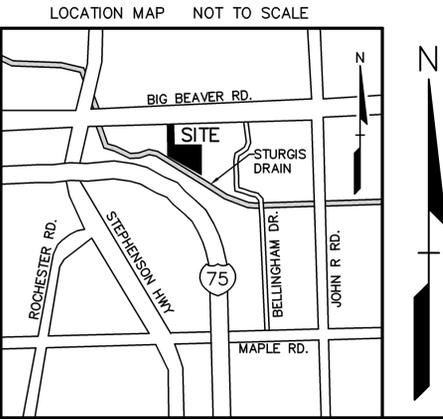
TOTAL REQUIRED PARKING BASED ON PROPOSED USE = 80 SPACES
 TOTAL PARKING PROVIDED = 110 SPACES INCLUDING 5 H/C SPACES

TOTAL 55' TRAILER PARKING SPACES = 21 SPACES
 TOTAL 30' TRAILER PARKING SPACES = 60 SPACES
 TOTAL 20' TRACTOR PARKING SPACES = 19 SPACES

GENERAL NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

- ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
- REFER TO SHEET P-2.1 AND P-2.2 FOR SITE PLANS AND DETAILS.
- REFER TO CONSTRUCTION PLANS FOR ON-SITE SIDEWALK RAMP DETAILS.
- 'NO PARKING-FIRE LANE' SIGNS SHALL BE POSTED ALONG ALL FIRE LANES AT 100 FOOT INTERVALS OR AS DIRECTED BY THE FIRE OFFICIAL (REFER TO SHEETS P-2.1 AND P-2.2)
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF TROY CURRENT STANDARDS AND REGULATIONS.
- THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- ANY WORK WITHIN THE STREET OR HIGHWAY RIGHT-OF-WAYS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION AND SHALL NOT BEGIN UNTIL ALL NECESSARY PERMITS HAVE BEEN ISSUED FOR THE WORK.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST THE TOP OF ALL EXISTING AND PROPOSED STRUCTURES (MANHOLES, CATCH BASINS, INLETS, GATE WELLS ETC.) WITHIN GRADED AND/OR PAVED AREAS TO FINAL GRADE SHOWN ON THE PLANS. ALL SUCH ADJUSTMENTS SHALL BE INCIDENTAL TO THE JOB AND WILL NOT BE PAID FOR SEPARATELY.
- SITE IS WITHIN A 100-YR FLOODPLAIN AS DETERMINED BY FEMA MAP NUMBER 26125C0561G. AN IDEO PERMIT IS REQUIRED FOR WORK WITHIN A 100-YR FLOODPLAIN. SEE SHEET P-1.0 FOR GRAPHIC ILLUSTRATION OF FLOODPLAIN BOUNDARY.
- THIS SITE DRAINS TO A PROPOSED DETENTION BASIN.



LEGAL DESCRIPTIONS
 (PER OAKLAND COUNTY TAX RECORDS)

PARCEL NO. 20-26-126-018
 TOWN 2 NORTH, RANGE 11 EAST, SECTION 26, PART OF THE EAST 1/2 OF THE NORTHWEST 1/4, BEGINNING AT POINT DISTANT N88°53'15"W, 849.37 FEET FROM THE NORTH 1/4 CORNER; THENCE S00°56'45"E, 800 FEET; THENCE S88°53'15"E, 325 FEET; THENCE S00°56'45"W, 456.13 FEET; THENCE N70°02'13"W, 397.45 FEET; THENCE N00°56'45"E, 1127.71 FEET; THENCE S88°53'15"E, 50.76 FEET TO THE POINT OF BEGINNING, EXCEPT THE MOST NORTHERLY 102 FEET TAKEN FOR BIG BEAVER ROAD.

PARCEL NO. 20-26-126-012
 TOWN 2 NORTH, RANGE 11 EAST, SECTION 26 PART OF THE NORTH 1/2 OF SECTION, BEGINNING AT A POINT DISTANT N88°53'15"W, 524.37 FEET & S00°56'45"W, 818.72 FEET FROM NORTH 1/4 CORNER; THENCE S88°53'15"E, 800 FEET; THENCE S00°56'45"W, 839.30 FEET; THENCE N64°10'05"W, 497.19 FEET; THENCE N46°02'55"W, 200.22 FEET; THENCE N73°00'15"W, 210.77 FEET; THENCE N00°56'45"E, 437.41 FEET TO THE POINT OF BEGINNING.

REVISIONS

NO.	BY	CHK	DESCRIPTION	DATE

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 3001 AMORY DRIVE, SUITE #220
 NASHVILLE, TN 37204

OVERALL SITE PLAN
OLD DOMINION FREIGHT LINE
 1310 BIG BEAVER ROAD
 CITY OF TROY, OAKLAND COUNTY, MICHIGAN

DES. JPB
 DN. JPB
 SUR. JPB
 KTR. JPB
 P.M. JPB

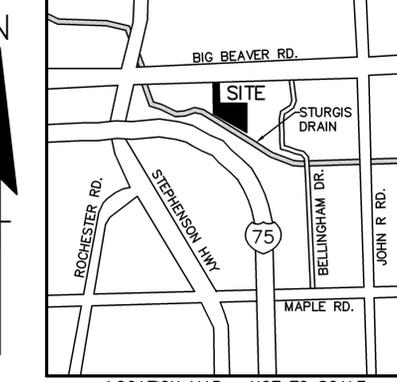
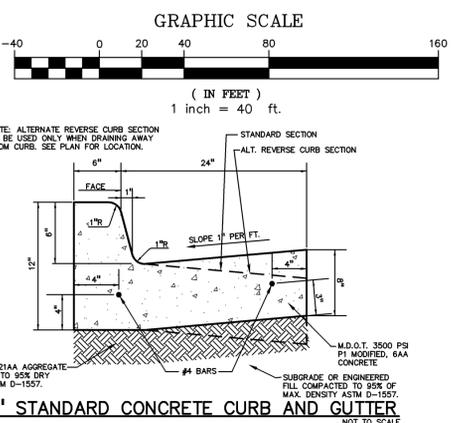
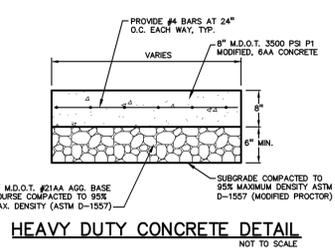
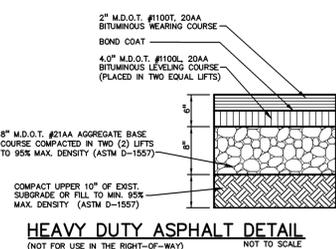
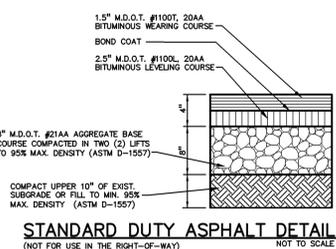
ORIGINAL ISSUE DATE: MARCH 16, 2012
 PEA JOB NO. 2011-245
 SCALE: 1" = 50'
 DRAWING NUMBER:
P-2.0

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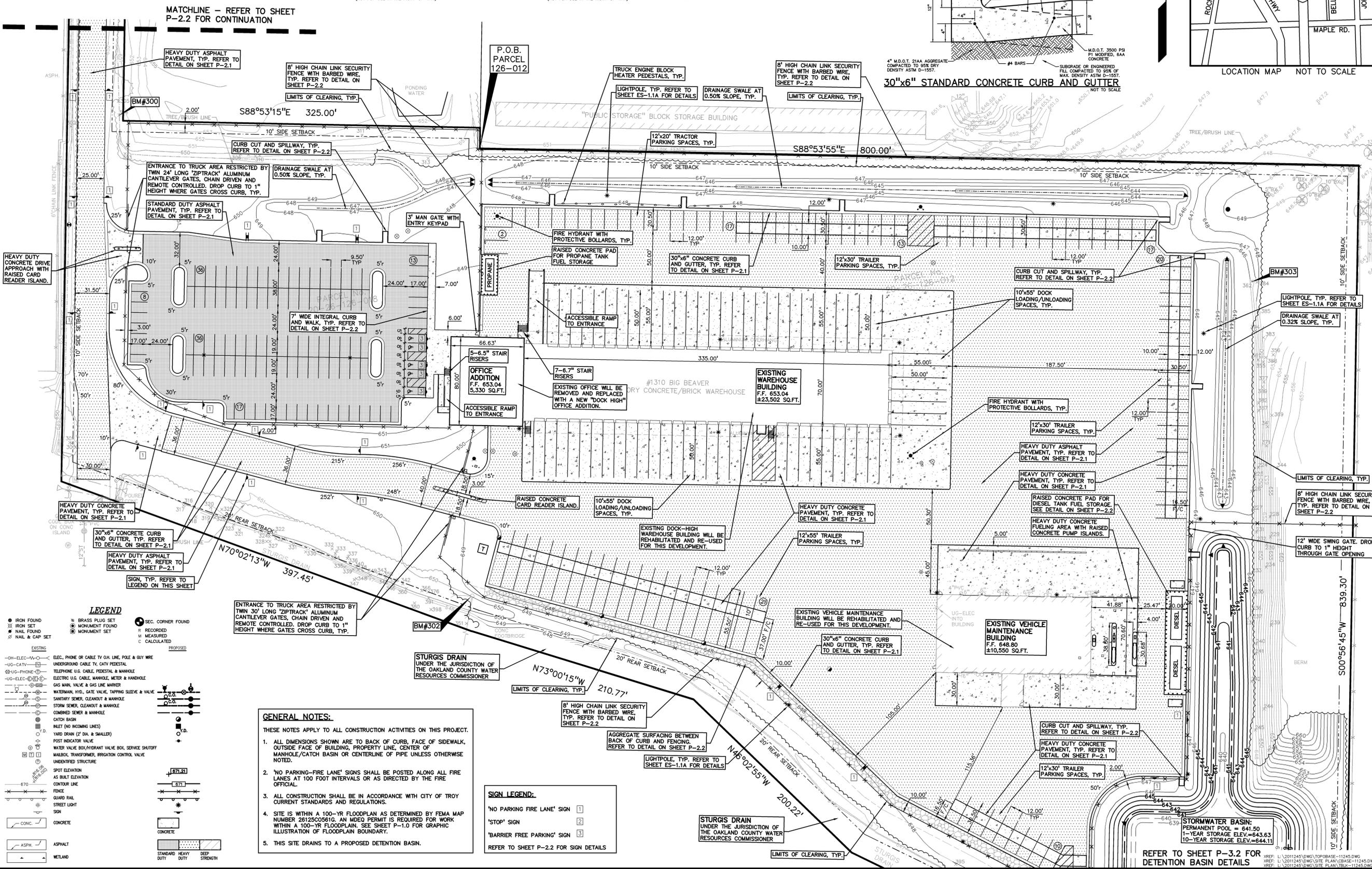
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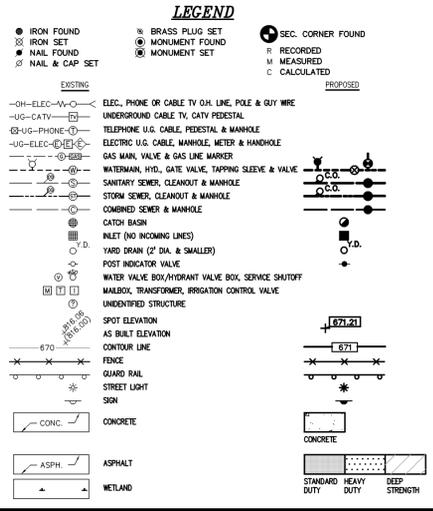
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SITE PLAN - SITE
OLD DOMINION FREIGHT LINE
1310 BIG BEAVER ROAD
CITY OF TROY, OAKLAND COUNTY, MICHIGAN

DES. JPB
DWN. JPB
SUR. JPB
KTR. JPB
P.M. JPB

ORIGINAL ISSUE DATE: MARCH 16, 2012
PEA JOB NO. 2011-245
SCALE: 1" = 40'
DRAWING NUMBER:
P-2.1



GENERAL NOTES:
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- THIS SITE DRAINS TO A PROPOSED DETENTION BASIN.

SIGN LEGEND:

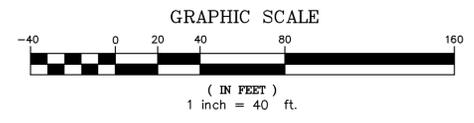
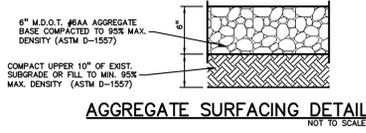
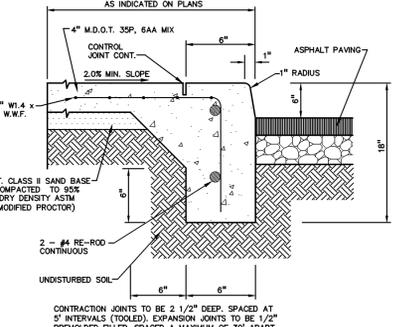
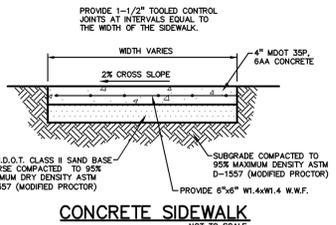
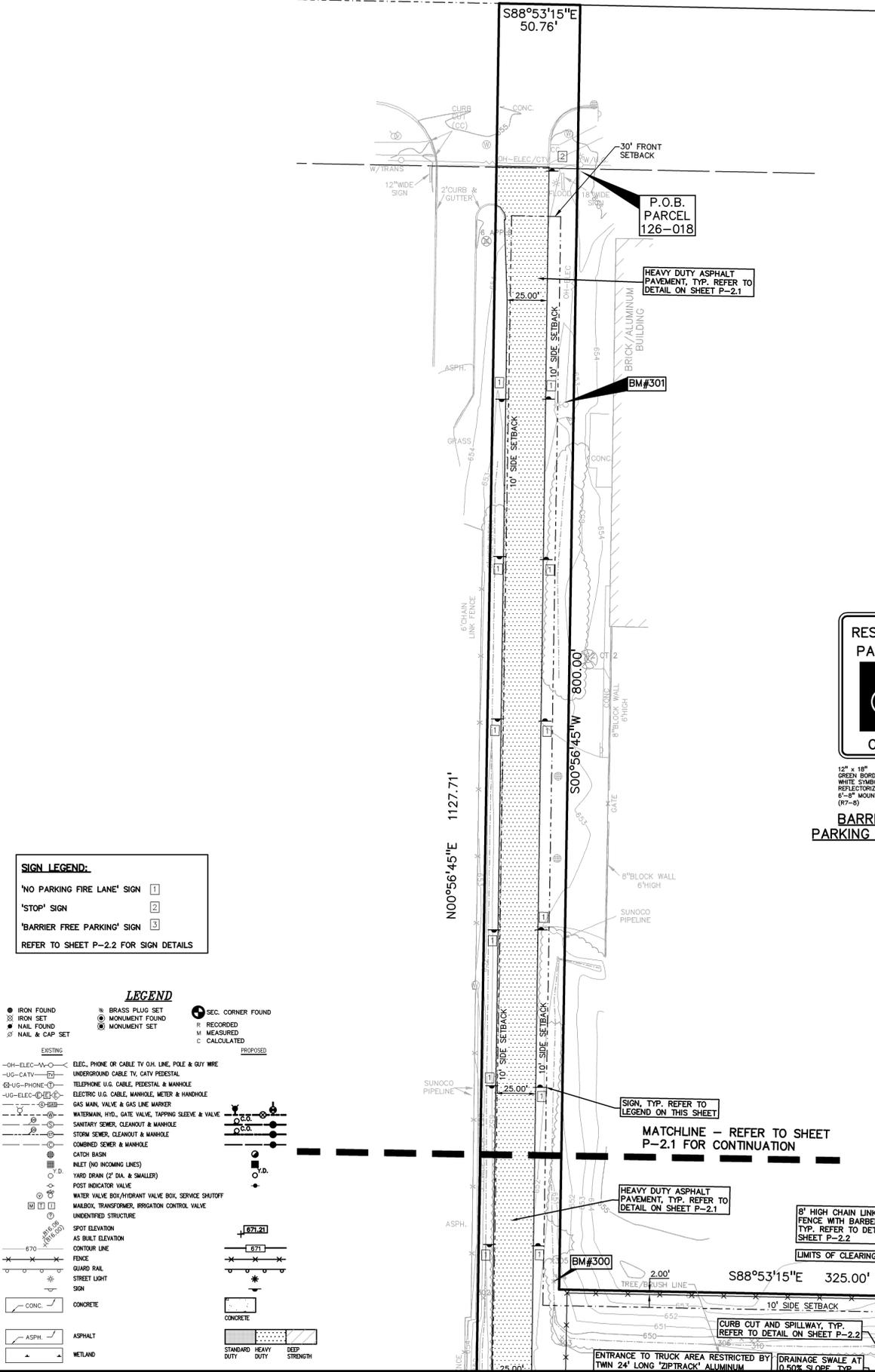
- 'NO PARKING FIRE LANE' SIGN 1
- 'STOP' SIGN 2
- 'BARRIER FREE PARKING' SIGN 3

REFER TO SHEET P-2.2 FOR SIGN DETAILS

STURGIS DRAIN
UNDER THE JURISDICTION OF THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER

STURGIS DRAIN
UNDER THE JURISDICTION OF THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER

BIG BEAVER ROAD
(102' HALF WIDTH - PUBLIC)



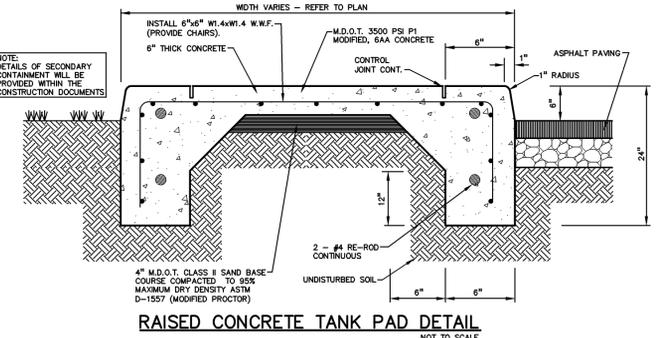
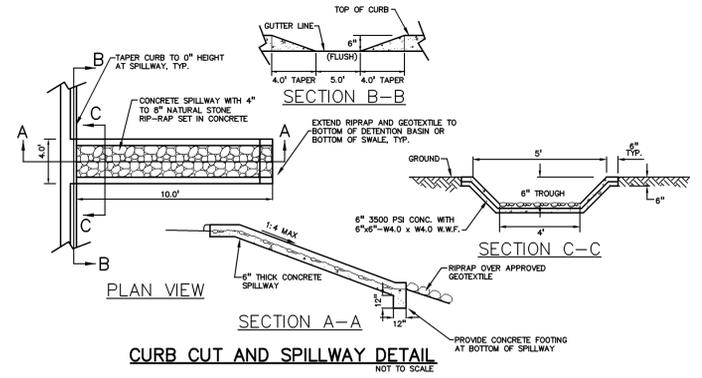
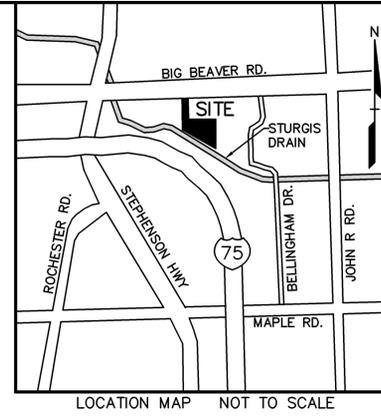
BENCHMARKS (GPS DERIVED NAVD 88)

BM #300
SET BENCH TIE IN SOUTHWEST FACE OF 8\"/>

BM #301
FOUND RAILROAD SPIKE IN WEST FACE OF LIGHT POLE, EAST SIDE OF ASPHALT ENTRANCE DRAIN, APPROX. 250 FEET SOUTH OF BIG BEAVER ROAD. ELEV. = 654.48'

BM #302
SET BENCH TIE IN WEST FACE OF UTILITY POLE AT FENCE CORNER, APPROX. 200 FEET SOUTH OF THE SOUTHWEST BUILDING CORNER (BUILDING #1310) ELEV. = 651.46'

BM #303
SET BENCH TIE IN WEST FACE OF 9\"/>



RESERVED PARKING SIGN DETAIL
NOT TO SCALE



NO PARKING SIGN DETAIL
NOT TO SCALE



STOP SIGN DETAIL
NOT TO SCALE

SIGN LEGEND:

'NO PARKING FIRE LANE' SIGN 1

'STOP' SIGN 2

'BARRIER FREE PARKING' SIGN 3

REFER TO SHEET P-2.2 FOR SIGN DETAILS

LEGEND

● IRON FOUND ⊗ BRASS PLUG SET ⊕ SEC. CORNER FOUND

⊙ IRON SET ⊙ MONUMENT FOUND ⊕ RECORDED

⊙ NAIL FOUND ⊙ MONUMENT SET ⊕ MEASURED

⊙ NAIL & CAP SET ⊕ CALCULATED

EXISTING PROPOSED

—OH—ELEC—W—O—ELEC. PHONE OR CABLE TV OR LINE, POLE & GUY WIRE

—UG—CATV—ELEC. UNDERGROUND CABLE TV, CABLE FEEDSTOCK

—UG—PHONE—ELEC. TELEPHONE U.G. CABLE, FEEDSTOCK & MANHOLE

—UG—ELEC—ELEC. ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE

—GAS—ELEC. GAS MAIN, VALVE & GAS LINE MARKER

—WATER—ELEC. WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE

—SEWER—ELEC. SANITARY SEWER, CLEANOUT & MANHOLE

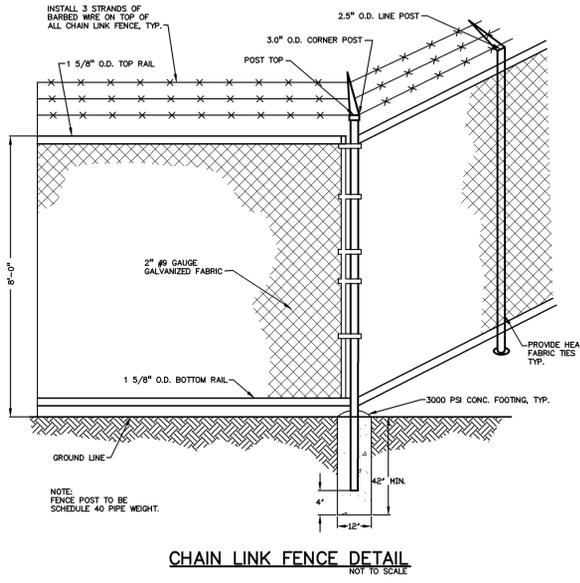
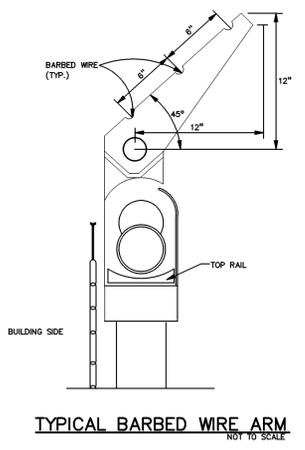
—STORM—ELEC. STORM SEWER, CLEANOUT & MANHOLE

—COMBINED—ELEC. COMBINED SEWER & MANHOLE

—CATCH—ELEC. CATCH BASIN

—INLET—ELEC. INLET (NO INCOMING LINES)

—YARD—ELEC. YARD DRAIN (2\"/>



NO.	BY	CHK	DESCRIPTION	DATE

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NASHVILLE, TN 37204

SITE PLAN - ACCESS DRIVE & BASIN
OLD DOMINION FREIGHT LINE
1310 BIG BEAVER ROAD
CITY OF TROY, OKLAHOMA COUNTY, MICHIGAN

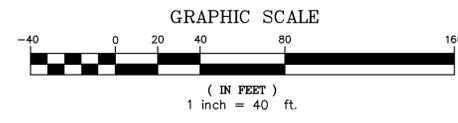
DES. JPB DN. JPB SUR. KTR P.M. JPB

ORIGINAL ISSUE DATE: MARCH 16, 2012
PEA JOB NO. 2011-245
SCALE: 1" = 40'
DRAWING NUMBER:
P-2.2

XREF: L:\2011245\DWG\TOP\BASE-11245.DWG
XREF: L:\2011245\DWG\SITE PLAN\245-11245.DWG
XREF: L:\2011245\DWG\SITE PLAN\TBLK-11245.DWG

BENCHMARKS (GPS DERIVED NAVD 88)

- BM #300**
SET BENCH TIE IN SOUTHWEST FACE OF 8" COTTONWOOD TREE (TREE TAG #304), TREE APPROX. 750 FEET SOUTH OF BIG BEAVER ROAD.
ELEV. = 651.395'
- BM #301**
FOUND RAILROAD SPIKE IN WEST FACE OF LIGHT POLE, EAST SIDE OF ASPHALT ENTRANCE DRAIN, APPROX. 250 FEET SOUTH OF BIG BEAVER ROAD.
ELEV. = 654.48'
- BM #302**
SET BENCH TIE IN WEST FACE OF UTILITY POLE AT FENCE CORNER, APPROX. 200 FEET SOUTH OF THE SOUTHWEST BUILDING CORNER (#310)
ELEV. = 651.46'
- BM #303**
SET BENCH TIE IN WEST FACE OF 9" ELM TREE (TREE TAG #362), APPROX. 50 FEET EAST OF THE ASPHALT PARKING LOT.
ELEV. = 647.51'

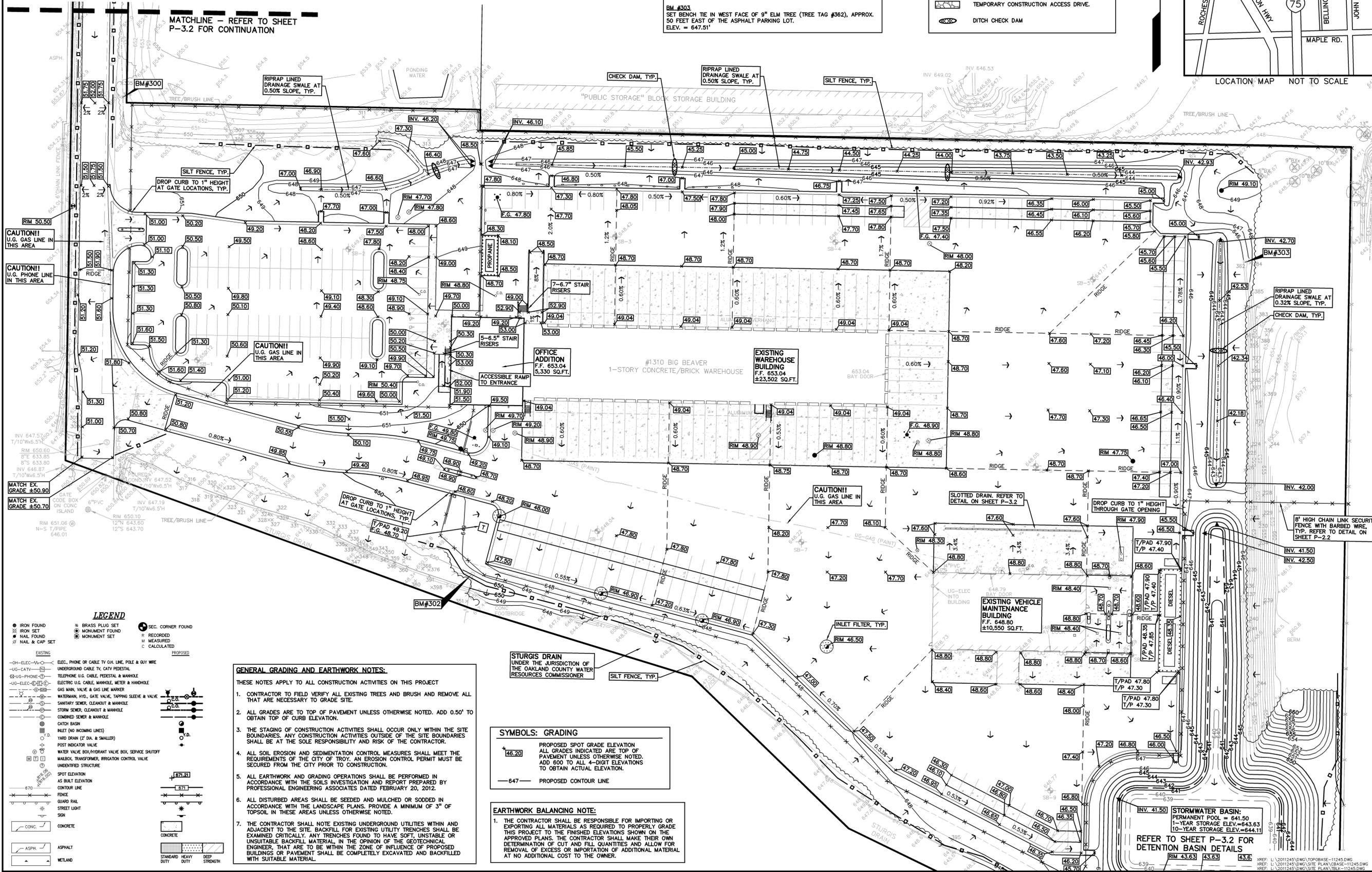


SYMBOLS: EROSION CONTROL

- SILT FENCE, TYP.
- STORM SEWER INLET FILTER
- TEMPORARY CONSTRUCTION ACCESS DRIVE.
- DITCH CHECK DAM



NO.	BY	CHK	DESCRIPTION	DATE



MATCHLINE - REFER TO SHEET P-3.2 FOR CONTINUATION

CAUTION!! U.G. GAS LINE IN THIS AREA

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OLD DOMINION FREIGHT LINE
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KTR. JPB
P.M. JPB

ORIGINAL ISSUE DATE: MARCH 16, 2012
PEA JOB NO. 2011-245
SCALE: 1" = 40'
DRAWING NUMBER:
P-3.1

LEGEND

- IRON FOUND
- IRON SET
- NAIL FOUND
- NAIL & CAP SET
- BRASS PLUG SET
- MONUMENT FOUND
- MONUMENT SET
- RECORDED CORNER
- MEASURED CORNER
- CALCULATED CORNER
- ELEC. PHONE OR CABLE TV OR LINE POLE & GUY WIRE
- UNDERGROUND CABLE TV, CABLE, FIBER OPTIC
- TELEPHONE U.G. CABLE, MANHOLE, METER & HANDHOLE
- ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE
- GAS MAIN, VALVE & GAS LINE WARNER
- WATERMAIN, HYD. GATE VALVE, TAPPING SLEEVE & VALVE
- SANITARY SEWER, CLEANOUT & MANHOLE
- STORM SEWER, CLEANOUT & MANHOLE
- COMBINED SEWER & MANHOLE
- CATCH BASIN
- INLET (NO INCOMING LINES)
- YARD DRAIN (2" DIA. & SMALLER)
- POST INDICATOR VALVE
- WATER VALVE, BOX/HYDRANT VALVE, BOX, SERVICE SHUTOFF
- MANGROVE, TRANSFORMER, IRRIGATION CONTROL VALVE
- UNIDENTIFIED STRUCTURE
- SPOT ELEVATION
- AS BUILT ELEVATION
- CONTOUR LINE
- FENCE
- GUARD RAIL
- STREET LIGHT
- SIGN
- CONC. CONCRETE
- ASPH. ASPHALT
- WETLAND
- STANDARD DUTY
- HEAVY DUTY
- DEEP STRENGTH

GENERAL GRADING AND EARTHWORK NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING TREES AND BRUSH AND REMOVE ALL THAT ARE NECESSARY TO GRADE SITE.
2. ALL GRADES ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED. ADD 0.50' TO OBTAIN TOP OF CURB ELEVATION.
3. THE STAGING OF CONSTRUCTION ACTIVITIES SHALL OCCUR ONLY WITHIN THE SITE BOUNDARIES. ANY CONSTRUCTION ACTIVITIES OUTSIDE OF THE SITE BOUNDARIES SHALL BE AT THE SOLE RESPONSIBILITY AND RISK OF THE CONTRACTOR.
4. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL MEET THE REQUIREMENTS OF THE CITY OF TROY. AN EROSION CONTROL PERMIT MUST BE SECURED FROM THE CITY PRIOR TO CONSTRUCTION.
5. ALL EARTHWORK AND GRADING OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE SOILS INVESTIGATION AND REPORT PREPARED BY PROFESSIONAL ENGINEERING ASSOCIATES DATED FEBRUARY 20, 2012.
6. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED OR SOODED IN ACCORDANCE WITH THE LANDSCAPE PLANS. PROVIDE A MINIMUM OF 3" OF TOPSOIL IN THESE AREAS UNLESS OTHERWISE NOTED.
7. THE CONTRACTOR SHALL NOTE EXISTING UNDERGROUND UTILITIES WITHIN AND ADJACENT TO THE SITE. BACKFILL FOR EXISTING UTILITY TRENCHES SHALL BE EXAMINED CRITICALLY. ANY TRENCHES FOUND TO HAVE SOFT, UNSTABLE OR UNSUITABLE BACKFILL MATERIAL, IN THE OPINION OF THE GEOTECHNICAL ENGINEER, THAT ARE TO BE WITHIN THE ZONE OF INFLUENCE OF PROPOSED BUILDINGS OR PAVEMENT SHALL BE COMPLETELY EXCAVATED AND BACKFILLED WITH SUITABLE MATERIAL.

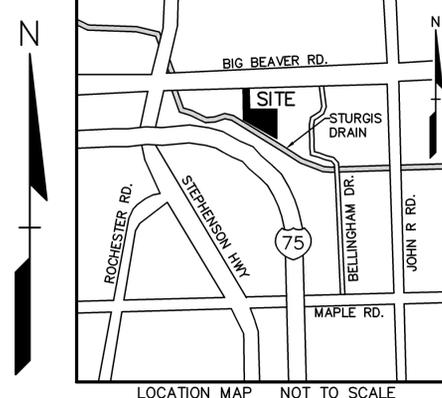
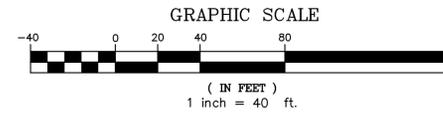
SYMBOLS: GRADING

- PROPOSED SPOT GRADE ELEVATION
- ALL GRADES INDICATED ARE TOP OF PAVEMENT UNLESS OTHERWISE NOTED. ADD 600 TO ALL 4-DIGIT ELEVATIONS TO OBTAIN ACTUAL ELEVATION.
- PROPOSED CONTOUR LINE

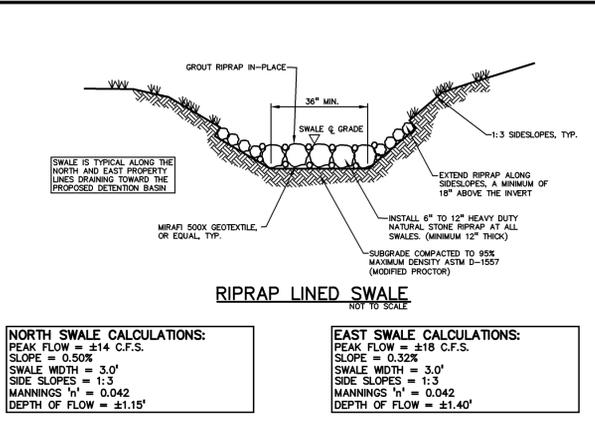
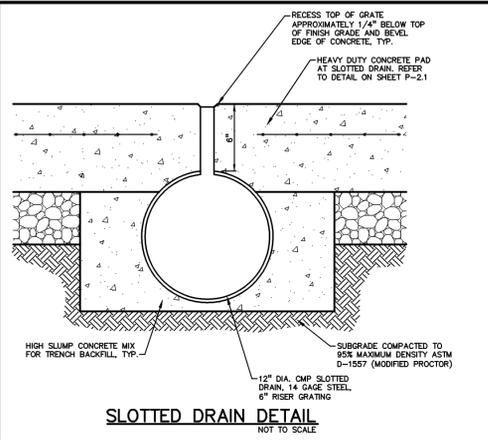
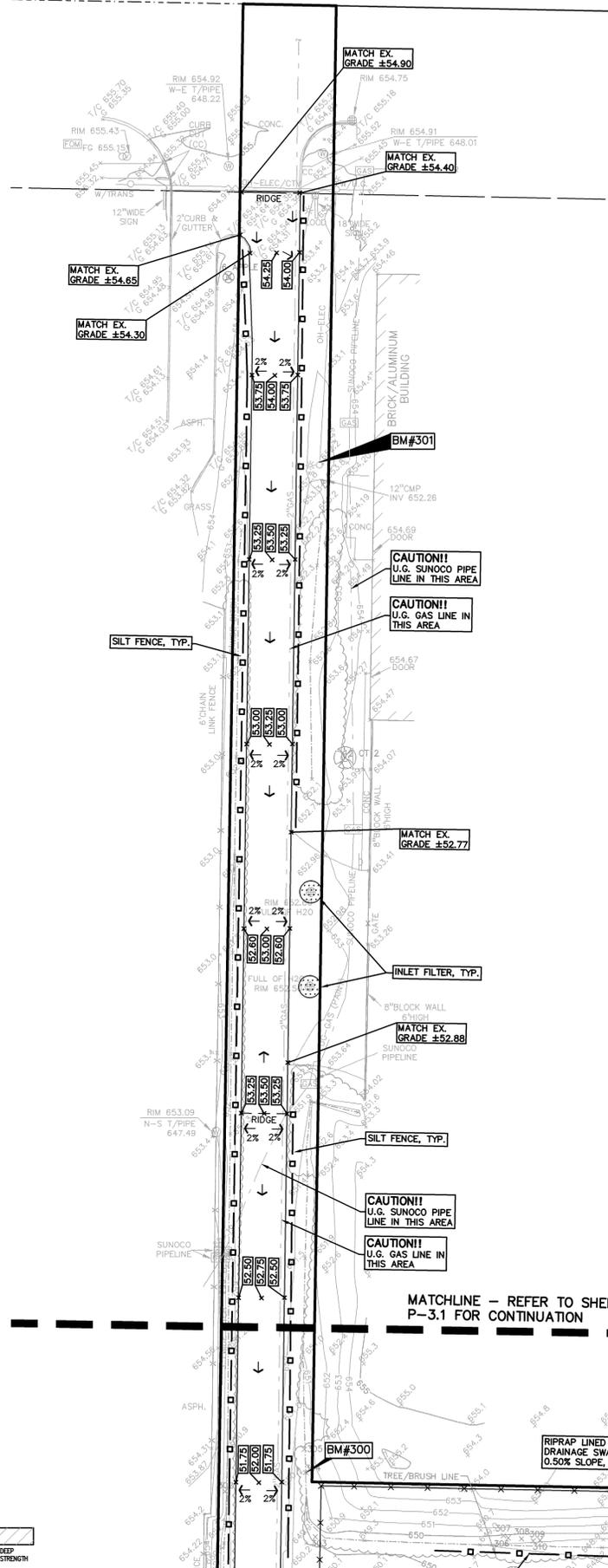
EARTHWORK BALANCING NOTE:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPORTING OR EXPORTING ALL MATERIALS AS REQUIRED TO PROPERLY GRADE THIS PROJECT TO THE FINISHED ELEVATIONS SHOWN ON THE APPROVED PLANS. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF CUT AND FILL QUANTITIES AND ALLOW FOR REMOVAL OF EXCESS OR IMPORTATION OF ADDITIONAL MATERIAL AT NO ADDITIONAL COST TO THE OWNER.

BIG BEAVER ROAD
(102' HALF WIDTH - PUBLIC)

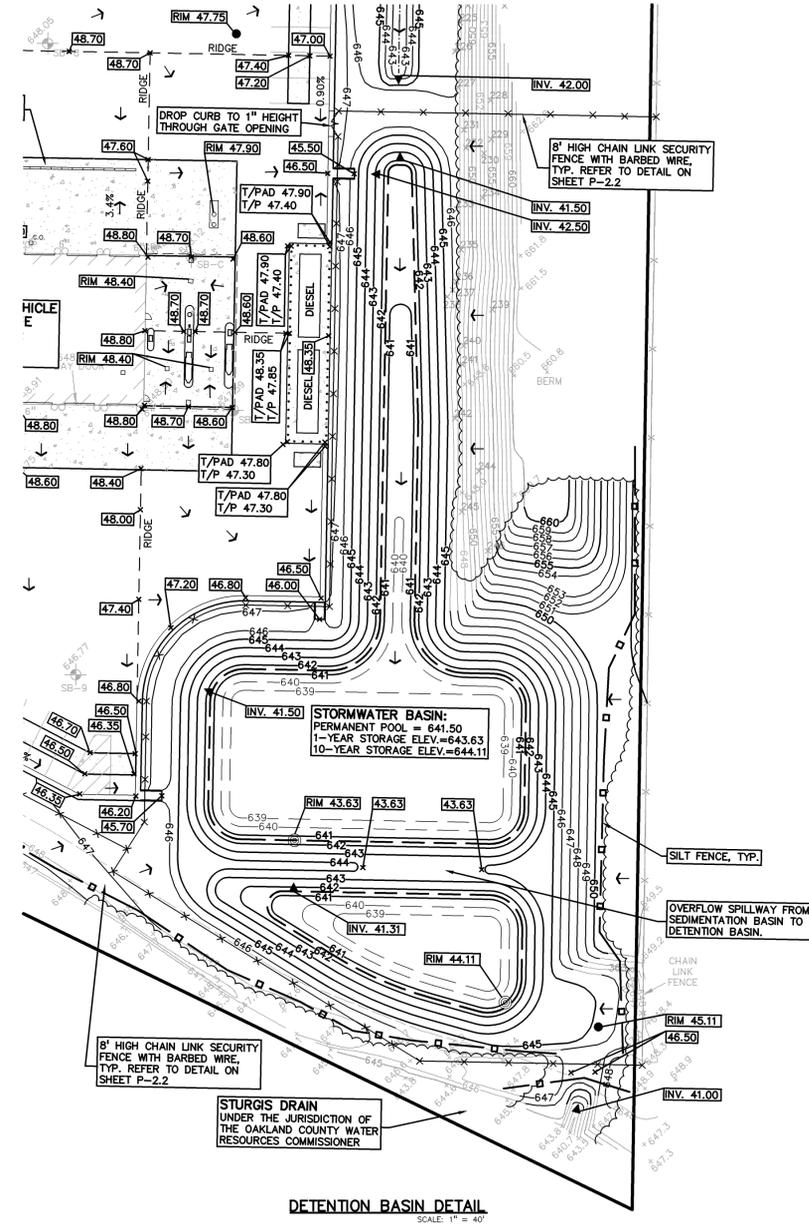


NO.	BY	CHK	DESCRIPTION	DATE



NORTH SWALE CALCULATIONS:
PEAK FLOW = ±14 C.F.S.
SLOPE = 0.50%
SWALE WIDTH = 3.0'
SIDE SLOPES = 1:3
MANNINGS 'n' = 0.042
DEPTH OF FLOW = ±1.15'

EAST SWALE CALCULATIONS:
PEAK FLOW = ±18 C.F.S.
SLOPE = 0.32%
SWALE WIDTH = 3.0'
SIDE SLOPES = 1:3
MANNINGS 'n' = 0.042
DEPTH OF FLOW = ±1.40'



LEGEND

● IRON FOUND	⊗ BRASS PLUG SET	⊕ SEC. CORNER FOUND
⊗ IRON SET	⊙ MONUMENT FOUND	⊖ RECORDED
● NAIL FOUND	⊙ MONUMENT SET	⊘ MEASURED
⊙ NAIL & CAP SET	⊙	⊘ CALCULATED

— OH—ELEC—W—	ELEC. PHONE OR CABLE TV OR LINE, POLE & GUY WIRE
— UG—CATV—	UNDERGROUND CABLE TV, CABLE FEEDLINE
— UG—PHONE—	TELEPHONE U.G. CABLE, FEEDLINE & MANHOLE
— UG—ELEC—	ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE
— GAS—	GAS MAIN, VALVE & GAS LINE WARNER
— WATERMAN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE	
— SANITARY SEWER, CLEANOUT & MANHOLE	
— STORM SEWER, CLEANOUT & MANHOLE	
— COMBINED SEWER & MANHOLE	
⊙ CATCH BASIN	
⊙ INLET (NO INCOMING LINES)	
⊙ YARD DRAIN (2" DIA. & SMALLER)	
⊙ POST INDICATOR VALVE	
⊙ WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF	
⊙ WALKWAY, TRANSFORMER, IRRIGATION CONTROL VALVE	
⊙ UNIDENTIFIED STRUCTURE	
⊙ SPOT ELEVATION	
⊙ AS BUILT ELEVATION	
— 670 —	CONTOUR LINE
— FENCE	
— GUARD RAIL	
— STREET LIGHT	
— SIGN	
— CONC. —	CONCRETE
— ASPH. —	ASPHALT
— WETLAND	
— STANDARD DUTY	
— HEAVY DUTY	
— DEEP STRENGTH	

CAUTION!!
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CONTRACTOR CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE SAFETY OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THE CONTRACTOR SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL.

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website: www.peainc.com

D.F. CHASE, INC.
3001 AMORY DRIVE, SUITE #200
NASHVILLE, TN 37204

GRADING PLAN - ACCESS DRIVE & BASIN
OLD DOMINION FREIGHT LINE
1310 BIG BEAVER ROAD
CITY OF TROY, OKLAHOMA COUNTY, MICHIGAN

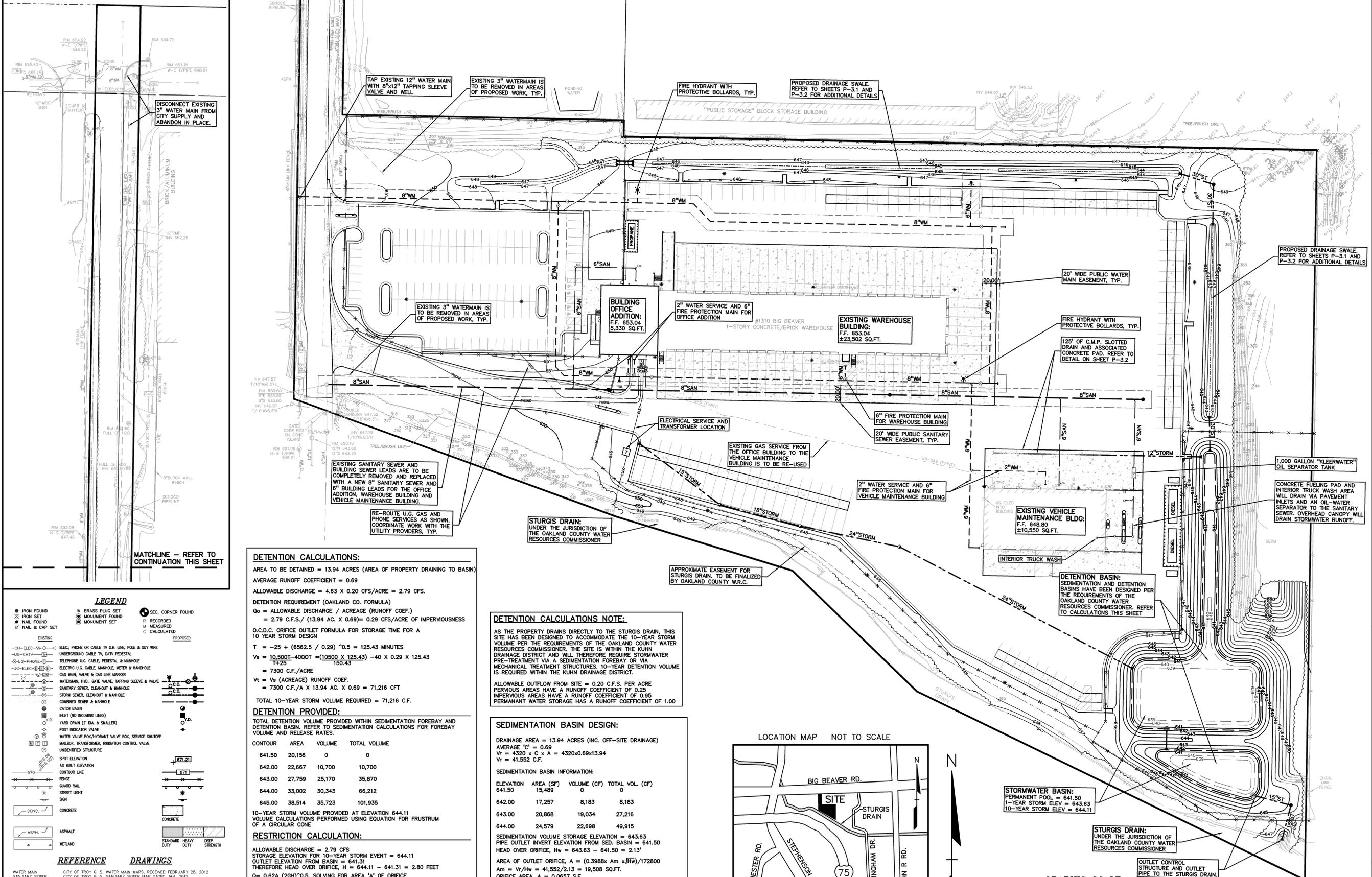
DES. JPB
DN. JPB
SUR. JPB
KTR. JPB
P.M. JPB

ORIGINAL
ISSUE DATE: MARCH 16, 2012
PEA JOB NO. 2011-245
SCALE: 1" = 40'
DRAWING NUMBER:
P-3.2

XREF: L:\2011\245\DWG\TOP\BASE-11245.DWG
XREF: L:\2011\245\DWG\SITE\PLAN\245-11245.DWG
XREF: L:\2011\245\DWG\SITE\PLAN\TBLK-11245.DWG

BIG BEAVER ROAD
(102' HALF WIDTH - PUBLIC)

MATCHLINE - REFER TO
CONTINUATION THIS SHEET



DISCONNECT EXISTING
3" WATER MAIN FROM
CITY SUPPLY AND
ABANDON IN PLACE.

TAP EXISTING 12" WATER MAIN
WITH 8"x12" TAPPING SLEEVE
VALVE AND WELL.

EXISTING 3" WATERMAIN IS
TO BE REMOVED IN AREAS
OF PROPOSED WORK, TYP.

FIRE HYDRANT WITH
PROTECTIVE BOLLARDS, TYP.

PROPOSED DRAINAGE SWALE.
REFER TO SHEETS P-3.1 AND
P-3.2 FOR ADDITIONAL DETAILS.

EXISTING 3" WATERMAIN IS
TO BE REMOVED IN AREAS
OF PROPOSED WORK, TYP.

BUILDING OFFICE
ADDITION:
F.F. 653.04
5,330 SQ.FT.

2" WATER SERVICE AND 6"
FIRE PROTECTION MAIN FOR
OFFICE ADDITION

EXISTING WAREHOUSE
BUILDING:
F.F. 653.04
#2,250 SQ.FT.

20' WIDE PUBLIC WATER
MAIN EASEMENT, TYP.

PROPOSED DRAINAGE SWALE.
REFER TO SHEETS P-3.1 AND
P-3.2 FOR ADDITIONAL DETAILS.

FIRE HYDRANT WITH
PROTECTIVE BOLLARDS, TYP.

125' OF C.M.P. SLOTTED
DRAIN AND ASSOCIATED
CONCRETE PAD. REFER TO
DETAIL ON SHEET P-3.2.

EXISTING SANITARY SEWER AND
BUILDING SEWER LEADS ARE TO
BE COMPLETELY REMOVED AND
REPLACED WITH A NEW 8" SANITARY
SEWER AND 6" BUILDING LEADS FOR
THE OFFICE ADDITION, WAREHOUSE
BUILDING AND VEHICLE MAINTENANCE
BUILDING.

RE-ROUTE U.G. GAS AND
PHONE SERVICES AS SHOWN.
COORDINATE WORK WITH THE
UTILITY PROVIDERS, TYP.

STURGIS DRAIN:
UNDER THE JURISDICTION OF
THE OAKLAND COUNTY WATER
RESOURCES COMMISSIONER

APPROXIMATE EASEMENT FOR
STURGIS DRAIN. TO BE FINALIZED
BY OAKLAND COUNTY W.R.C.

6" FIRE PROTECTION MAIN FOR
WAREHOUSE BUILDING

20' WIDE PUBLIC SANITARY
SEWER EASEMENT, TYP.

EXISTING VEHICLE
MAINTENANCE BLDG:
F.F. 648.80
#10,550 SQ.FT.

1,000 GALLON "KLEERWATER"
OIL SEPARATOR TANK

CONCRETE FUELING PAD AND
INTERIOR TRUCK WASH AREA
WILL DRAIN VIA PAVEMENT
INLETS AND AN OIL-WATER
SEPARATOR TO THE SANITARY
SEWER. OVERHEAD CANOPY WILL
DRAIN STORMWATER RUNOFF.

DETENTION BASIN:
SEDIMENTATION AND DETENTION
BASINS HAVE BEEN DESIGNED PER
THE REQUIREMENTS OF THE
OAKLAND COUNTY WATER
RESOURCES COMMISSIONER. REFER
TO CALCULATIONS THIS SHEET

LEGEND

- IRON FOUND
 - ⊗ IRON SET
 - ⊙ NAIL FOUND
 - ⊚ NAIL & CAP SET
 - ⊕ SEC. CORNER FOUND
 - ⊖ RECORDED
 - ⊗ MEASURED
 - ⊘ CALCULATED
- EXISTING**
- OH-ELEC-VV- O ELEC. PHONE OR CABLE TV OH. LINE, POLE & GUY WIRE
 - UG-CATV- O UNDERGROUND CABLE TV, CATH. PEDESTAL
 - UG-PHONE- O TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE
 - UG-ELEC- O ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE
 - GAS- O GAS MAIN, VALVE & GAS LINE MARKER
 - WATER- O WATERMAIN, HYD. GATE VALVE, TAPPING SLEEVE & VALVE
 - S-S- O SANITARY SEWER, CLEANOUT & MANHOLE
 - S-S- O STORM SEWER, CLEANOUT & MANHOLE
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- PROPOSED**
- ⊙ CONCRETE
 - ⊙ ASPHALT
 - ⊙ WETLAND
 - ⊙ STANDARD DUTY
 - ⊙ MEAT DUTY
 - ⊙ DEEP STRENGTH

REFERENCE DRAWINGS

CITY OF TROY G.I.S. WATER MAIN MAPS, RECEIVED FEBRUARY 28, 2012
CITY OF TROY G.I.S. SANITARY SEWER MAP DATED JAN. 2012
OAKLAND COUNTY STURGIS DRAIN MAPS
NOT AVAILABLE AT TIME OF SURVEY
NOT AVAILABLE AT TIME OF SURVEY
CONSUMERS ENERGY QUARTER SECTION MAP 02-61-26-2, DATED 02/22/12
NOT AVAILABLE AT TIME OF SURVEY
NOT AVAILABLE AT TIME OF SURVEY
"SITE PLAN - TRUCK TERMINAL OFFICE & GARAGE, SHEET M-1"
CAMBELL ENGINEERING, JOB #6607
"ALTA/ACSM LAND TITLE SURVEY - 00 BIG BEAVER" BOOK & CLARK'S NATIONAL
SURVEYORS NETWORK, PROJ #201101889-1, DATED 11-30-11

DETENTION CALCULATIONS:

AREA TO BE DETAINED = 13.94 ACRES (AREA OF PROPERTY DRAINING TO BASIN)
AVERAGE RUNOFF COEFFICIENT = 0.69
ALLOWABLE DISCHARGE = 4.63 X 0.20 CFS/ACRE = 2.79 CFS.
DETENTION REQUIREMENT (OAKLAND CO. FORMULA)
Qo = ALLOWABLE DISCHARGE / ACREAGE (RUNOFF COEF.)
= 2.79 C.F.S. / (13.94 AC. X 0.69) = 0.29 CFS/ACRE OF IMPERVIOUSNESS
O.C.D.C. ORIFICE OUTLET FORMULA FOR STORAGE TIME FOR A 10 YEAR STORM DESIGN
T = -25 + (6562.5 / 0.29) ^ 0.5 = 125.43 MINUTES
Vs = 10,500T - 4000T = (10500 X 125.43) - 40 X 0.29 X 125.43
T = 25
Vs = 7300 C.F./ACRE
Vt = Vs (ACREAGE) RUNOFF COEF.
= 7300 C.F./A X 13.94 AC. X 0.69 = 71,216 CFT
TOTAL 10-YEAR STORM VOLUME REQUIRED = 71,216 C.F.

DETENTION PROVIDED:

TOTAL DETENTION VOLUME PROVIDED WITHIN SEDIMENTATION FOREBAY AND DETENTION BASIN. REFER TO SEDIMENTATION CALCULATIONS FOR FOREBAY VOLUME AND RELEASE RATES.

CONTOUR	AREA	VOLUME	TOTAL VOLUME
641.50	20,156	0	0
642.00	22,667	10,700	10,700
643.00	27,759	25,170	35,870
644.00	33,002	30,343	66,212
645.00	38,514	35,723	101,935

10-YEAR STORM VOLUME PROVIDED AT ELEVATION 644.11
VOLUME CALCULATIONS PERFORMED USING EQUATION FOR FRUSTRUM OF A CIRCULAR CONE

RESTRICTION CALCULATION:

ALLOWABLE DISCHARGE = 2.79 CFS
STORAGE ELEVATION FOR 10-YEAR STORM EVENT = 644.11
OUTLET ELEVATION FROM BASIN = 641.31
THEORETICAL HEAD OVER ORIFICE, H = 644.11 - 641.31 = 2.80 FEET
Q = 0.62A (2GH)^0.5, SOLVING FOR AREA 'A' OF ORIFICE
A = 0 = 2.79
0.62(2GH)^0.5 = 0.62(2X32.2X2.80)^0.5 = 0.335 SQ.FT.
= 48.26 SQ. IN. = 7.84" DIA. OPENING
INSIDE DIAMETER OF 8" PVC SDR 26 PIPE = 7.71", THEREFORE OK
A SECTION OF 8" PVC SDR 26 PIPE WILL BE INSTALLED IN THE DOWNSTREAM
END OF THE 15" OUTLET PIPE FROM THE BASIN. THE REMAINDER OF THE PIPE
OPENING WITHIN THE 15" CARRIER PIPE WILL BE BULKHEADED.

DETENTION CALCULATIONS NOTE:

AS THE PROPERTY DRAINS DIRECTLY TO THE STURGIS DRAIN, THIS SITE HAS BEEN DESIGNED TO ACCOMMODATE THE 10-YEAR STORM VOLUME PER THE REQUIREMENTS OF THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER. THE SITE IS WITHIN THE KUHN DRAINAGE DISTRICT AND WILL THEREFORE REQUIRE STORMWATER PRE-TREATMENT VIA A SEDIMENTATION FOREBAY OR VIA MECHANICAL TREATMENT STRUCTURES. 10-YEAR DETENTION VOLUME IS REQUIRED WITHIN THE KUHN DRAINAGE DISTRICT.
ALLOWABLE OUTFLOW FROM SITE = 0.20 C.F.S. PER ACRE
PERVIOUS AREAS HAVE A RUNOFF COEFFICIENT OF 0.25
IMPERVIOUS AREAS HAVE A RUNOFF COEFFICIENT OF 0.65
PERMANENT WATER STORAGE HAS A RUNOFF COEFFICIENT OF 1.00

SEDIMENTATION BASIN DESIGN:

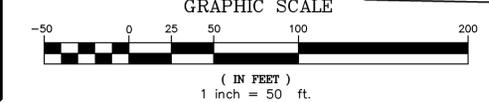
DRAINAGE AREA = 13.94 ACRES (INC. OFF-SITE DRAINAGE)
AVERAGE 'C' = 0.69
Vr = 4320 x C x A = 4320x0.69x13.94
Vr = 41,552 C.F.
SEDIMENTATION BASIN INFORMATION:
ELEVATION AREA (SF) VOLUME (CF) TOTAL VOL. (CF)
641.50 15,489 0 0
642.00 17,257 8,183 8,183
643.00 20,868 19,034 27,216
644.00 24,579 22,698 49,915
SEDIMENTATION VOLUME STORAGE ELEVATION = 643.63
PIPE OUTLET INVERT ELEVATION FROM SED. BASIN = 641.50
HEAD OVER ORIFICE, Hw = 643.63 - 641.50 = 2.13'
AREA OF OUTLET ORIFICE, A = (0.3988x Am x Hw)/172800
Am = Vr/Hw = 41,552/2.13 = 19,508 SQ.FT.
ORIFICE AREA, A = 0.0657 S.F.
= 9.46 SQ. IN. = 3.47" DIA. OPENING
12" OUTLET PIPE FROM SEDIMENTATION BASIN TO DETENTION BASIN WILL HAVE A 6" PVC SCH. 4 PIPE INSTALLED IN THE INVERT WITH A PLAIN CAP INSTALLED OVER THE INLET. REMAINDER OF 12" CARRIER PIPE WILL BE BULKHEADED. CAP OVER 6" PVC PIPE SHALL BE CORED WITH A 3.5" DIA. HOLE FOR OUTLET RESTRICTION.

LOCATION MAP NOT TO SCALE



STORMWATER BASIN:
PERMANENT POOL = 641.50
1-YEAR STORM ELEV = 643.63
10-YEAR STORM ELEV = 644.11

STURGIS DRAIN:
UNDER THE JURISDICTION OF
THE OAKLAND COUNTY WATER
RESOURCES COMMISSIONER



NO.	BY	CHK	DESCRIPTION	DATE

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website: www.peainc.com

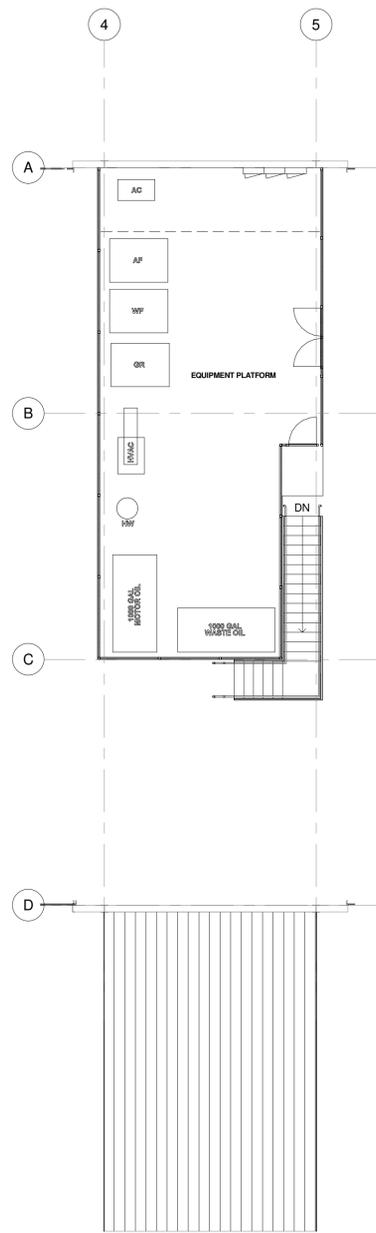
D.F. CHASE, INC.
3001 AMORY DRIVE, SUITE #200
NASHVILLE, TN 37204

**PRELIMINARY UTILITY PLAN
OLD DOMINION FREIGHT LINE**
1310 BIG BEAVER ROAD
CITY OF TROY, OAKLAND COUNTY, MICHIGAN

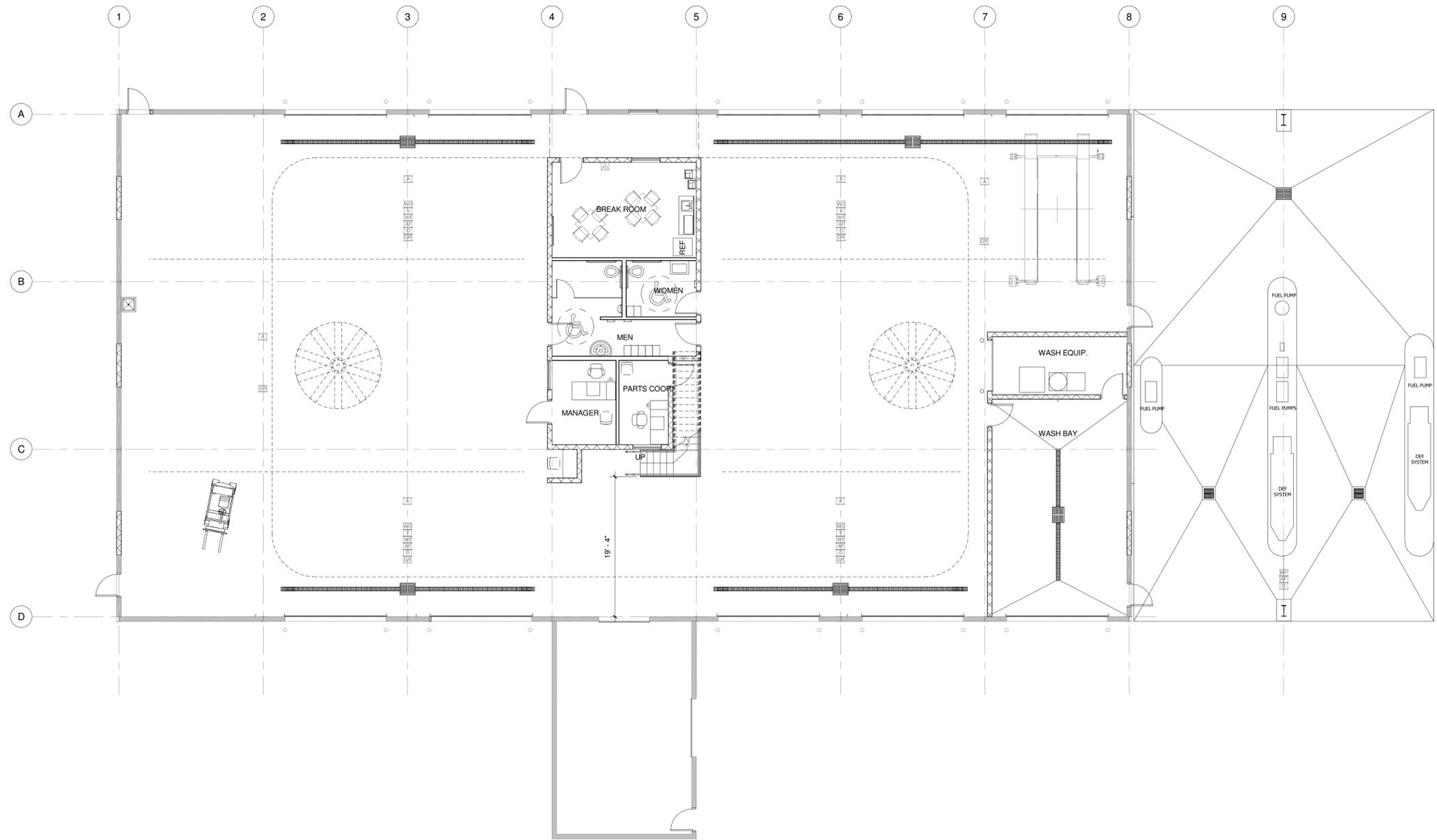
DES. JPB
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REF: L:\2011245\DWG\TOP\BASE-11245.DWG
REF: L:\2011245\DWG\SITE PLAN\245-11245.DWG
REF: L:\2011245\DWG\SITE PLAN\245-11245.DWG



EQUIPMENT PLATFORM



FIRST FLOOR

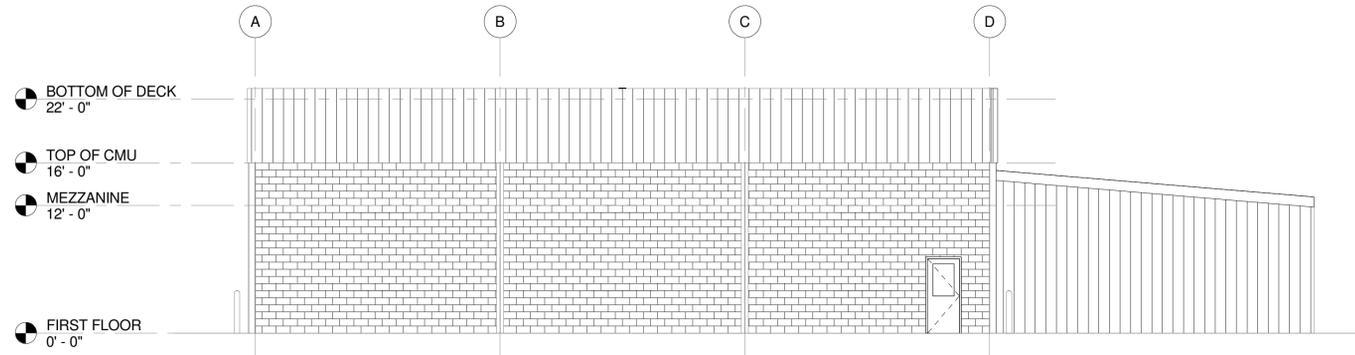


Old Dominion Freight Line Troy, MI
Shop Floor Plan

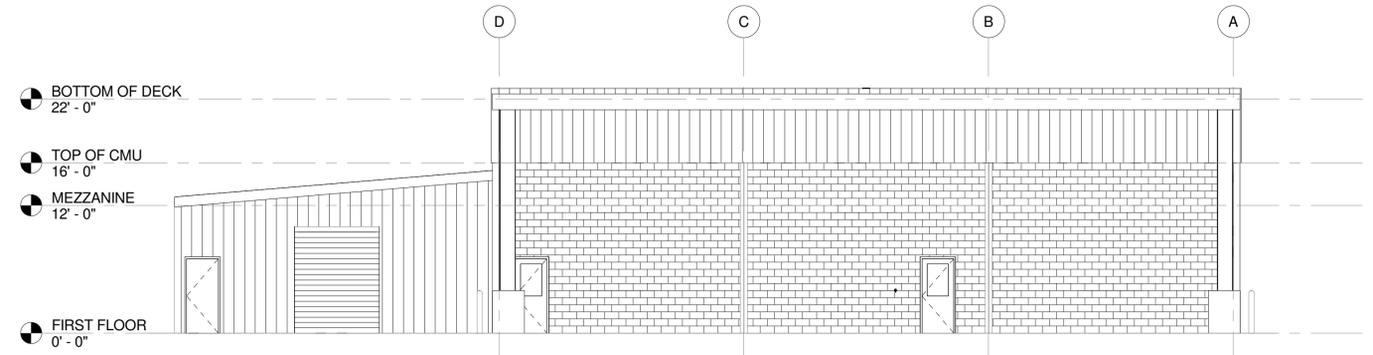
24 x 36 = 1/8" = 1'-0"
11 x 17 = NO SCALE
02/27/2012



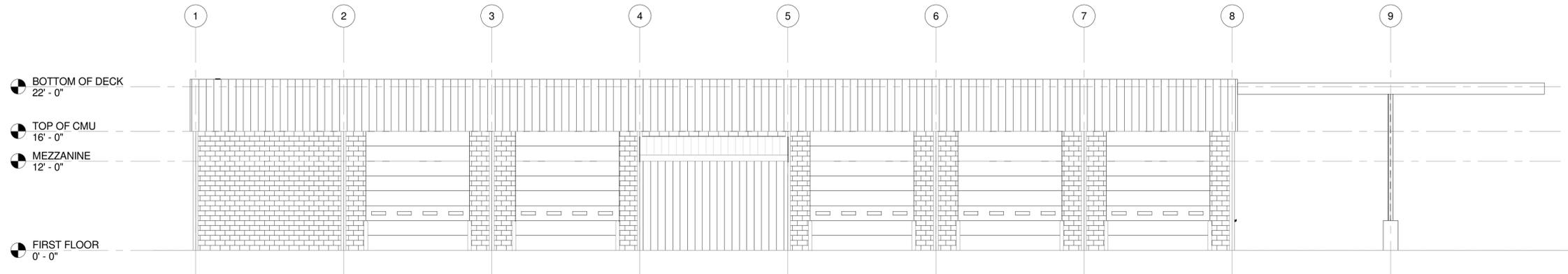
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Nashville, Tennessee 37203
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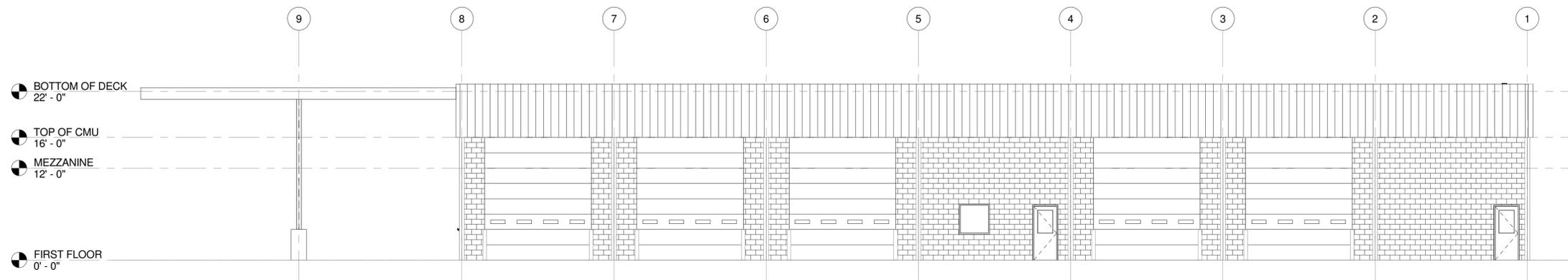
PRESENTATION - EAST ELEVATION



PRESENTATION - WEST ELEVATION



PRESENTATION - SOUTH ELEVATION



PRESENTATION - NORTH ELEVATION

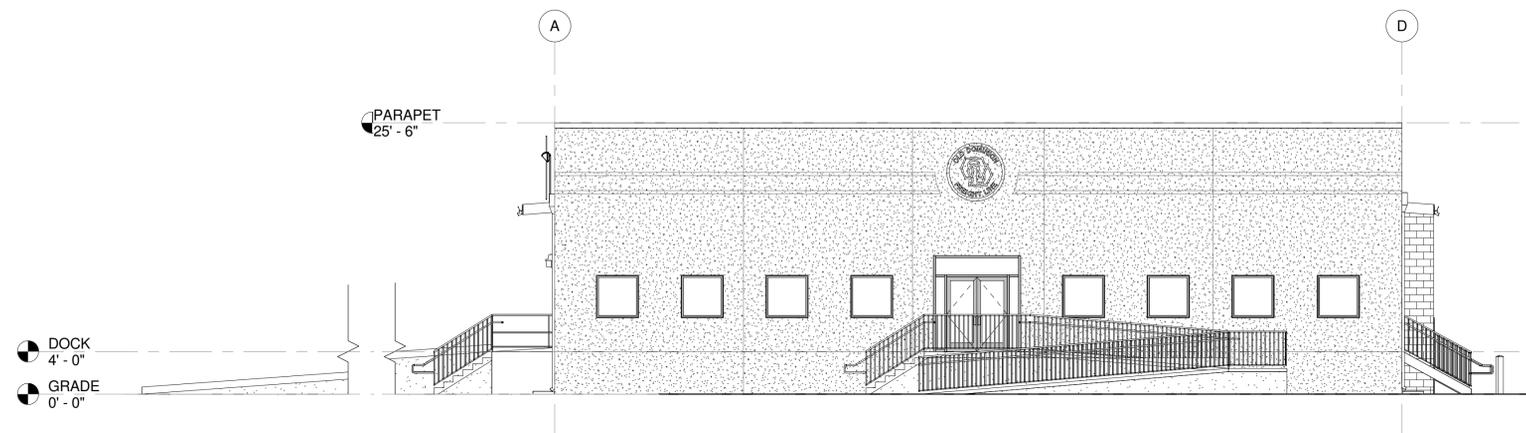


Old Dominion Freight Line Troy, MI
Elevations

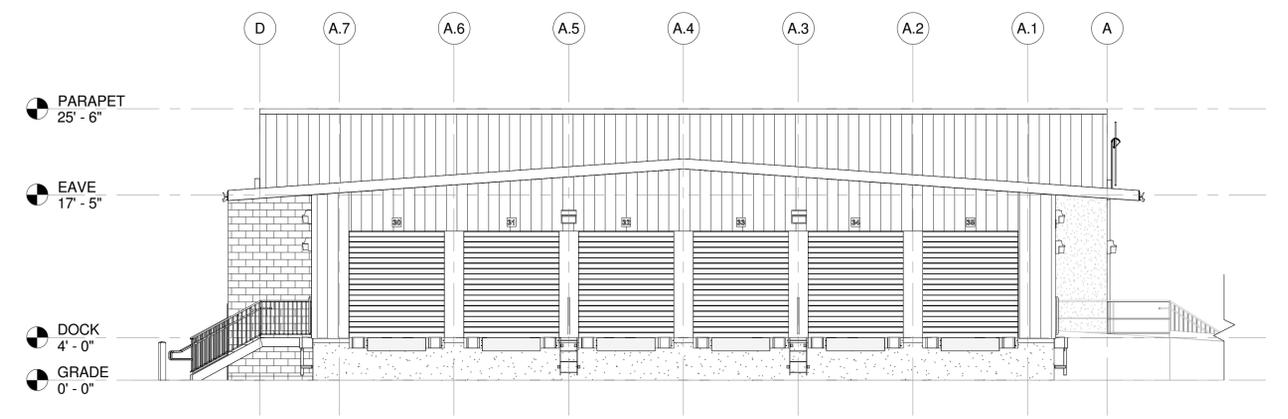
24 x 36 = 1/8" = 1'-0"
11 x 17 = NO SCALE
03/06/12



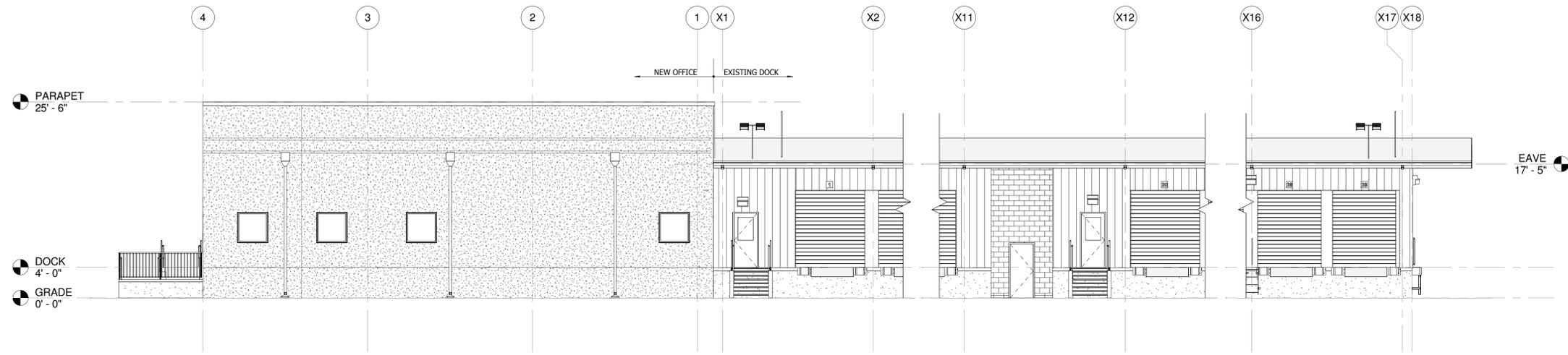
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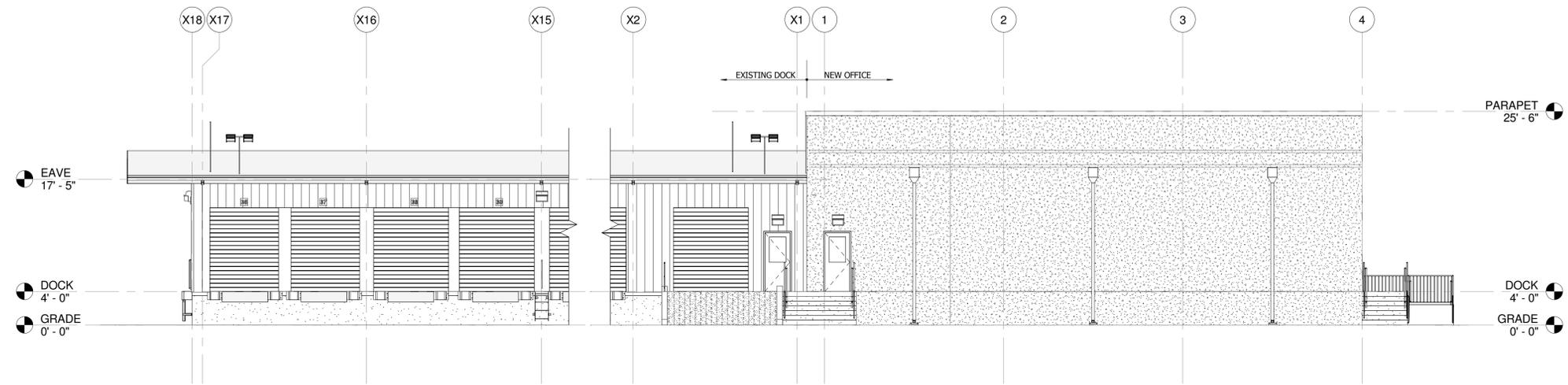
EAST ELEVATION



WEST ELEVATION



SOUTH ELEVATION



NORTH ELEVATION

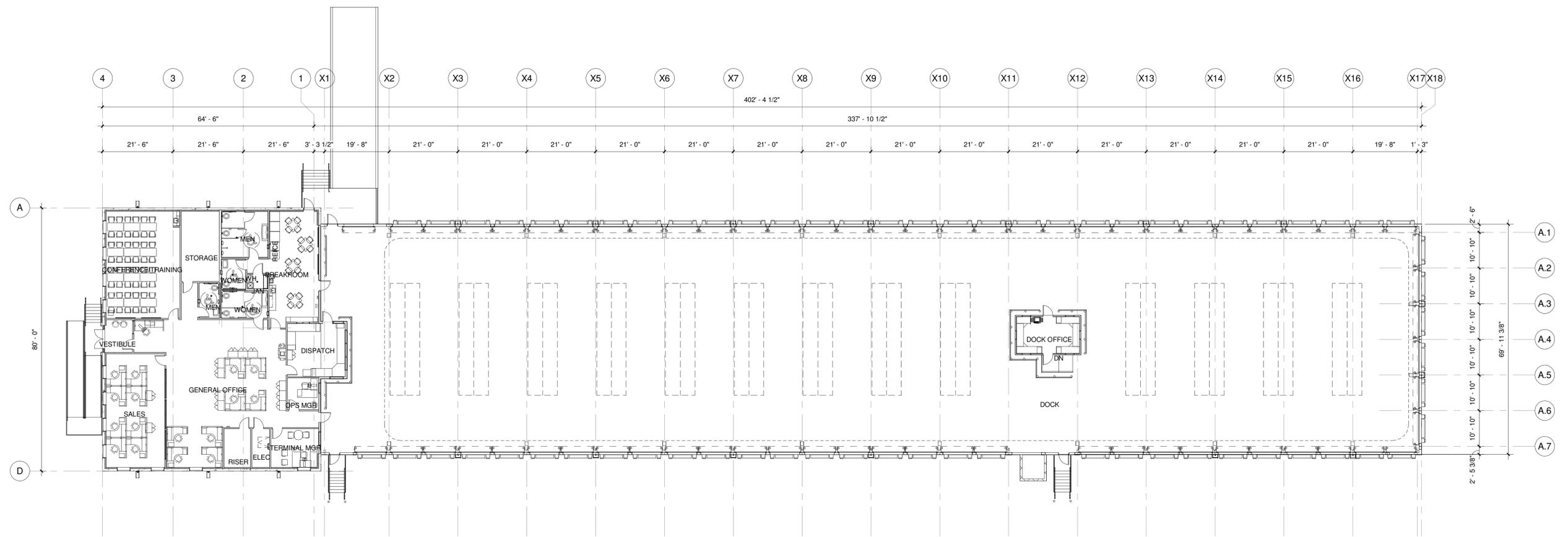


Old Dominion Freight Line - Troy, MI
Terminal Elevations

24 x 36 = 1/8" = 1'-0"
11 x 17 = NO SCALE
03/06/12



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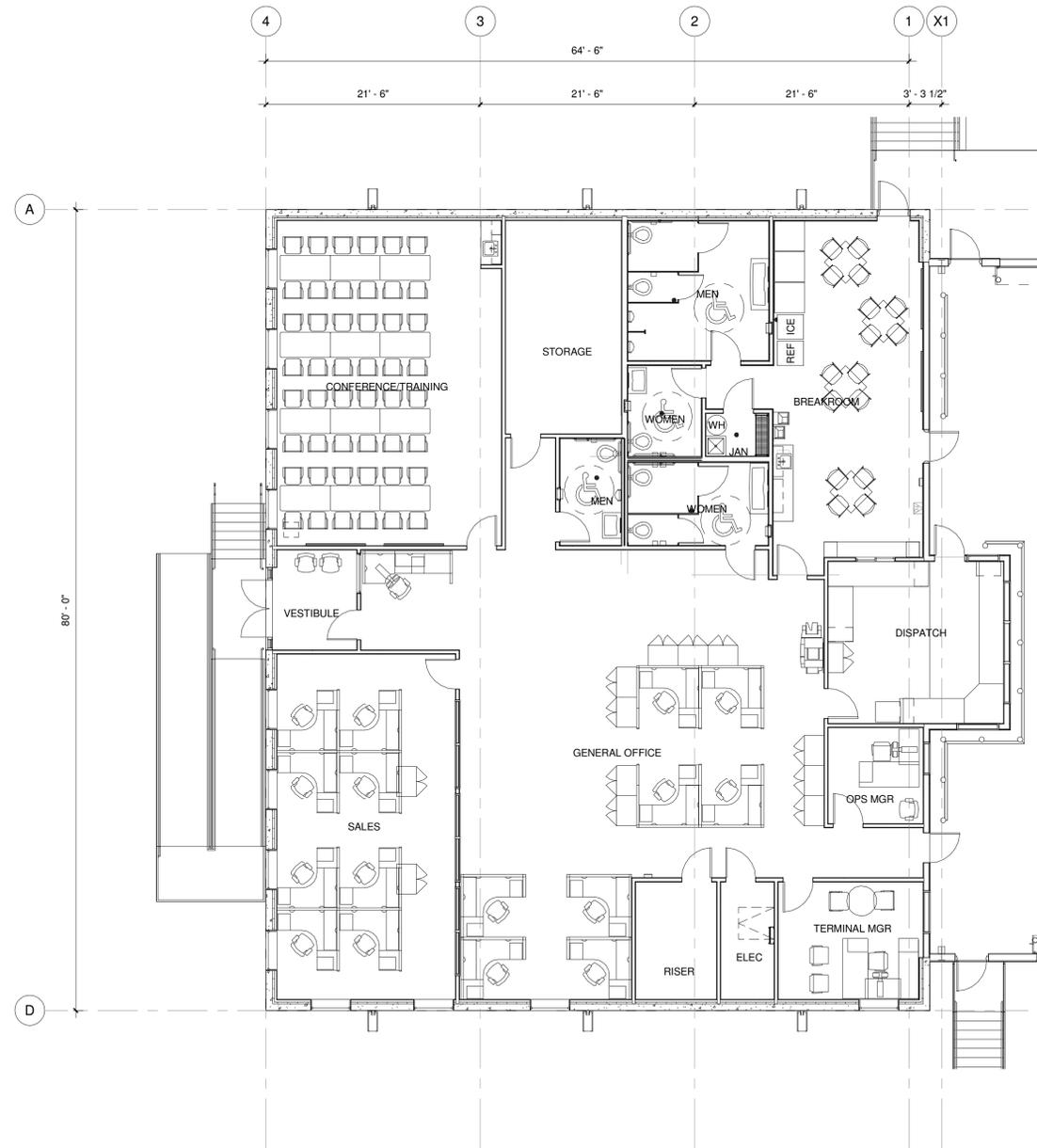


Old Dominion Freight Line - Troy, MI
Terminal Overall

24 x 36 = 1/16" = 1'-0"
11 x 17 = NO SCALE
03/06/2012



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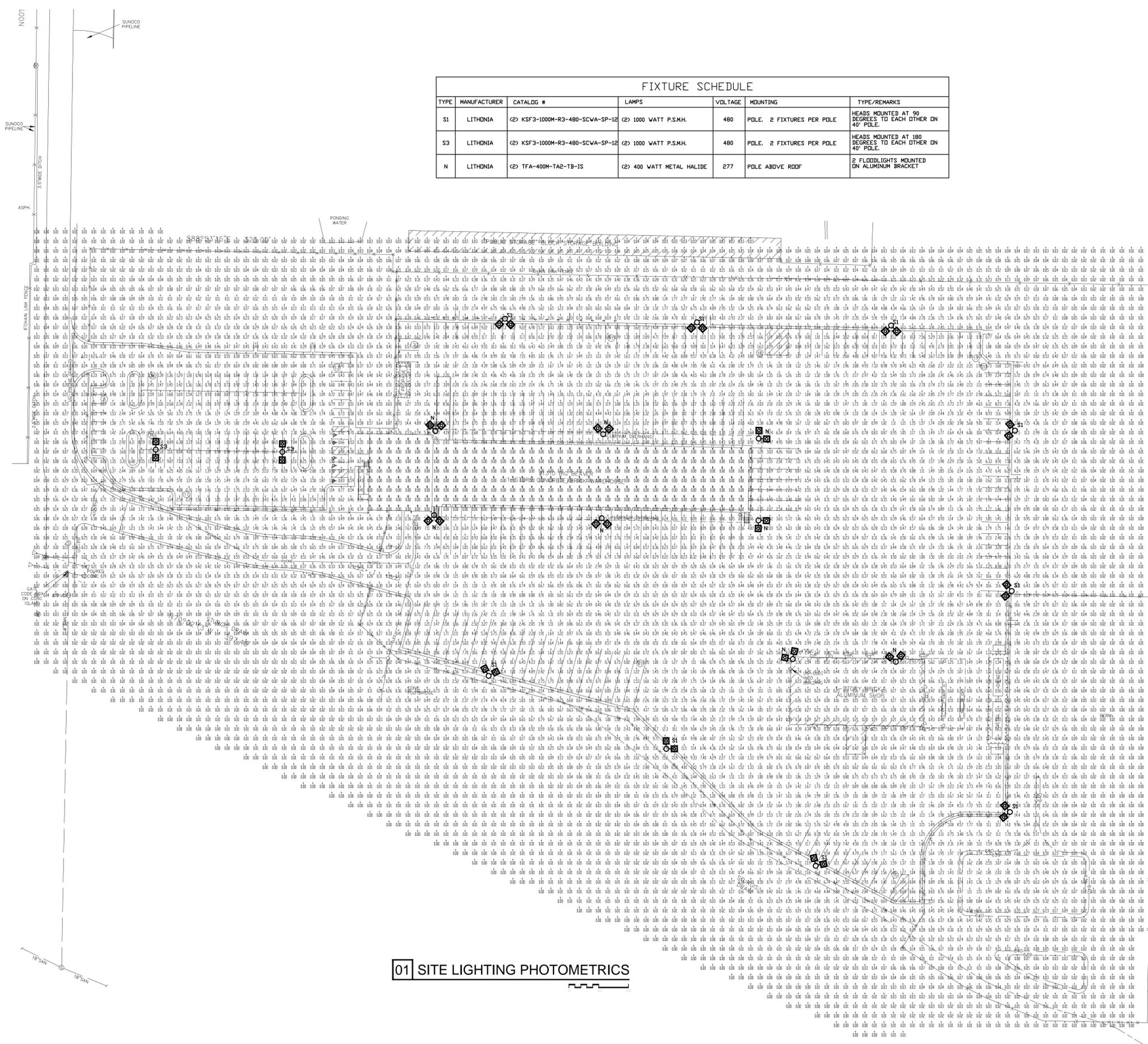


Old Dominion Freight Line - Troy, MI
Terminal Office

24 x 36 = 1/8" = 1'-0"
11 x 17 = NO SCALE
03/06/2012



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FIXTURE SCHEDULE						
TYPE	MANUFACTURER	CATALOG #	LAMPS	VOLTAGE	MOUNTING	TYPE/REMARKS
S1	LITHONIA	(2) KSF3-1000M-R3-480-SCWA-SP-12	(2) 1000 WATT P.S.M.H.	480	POLE. 2 FIXTURES PER POLE	HEADS MOUNTED AT 90 DEGREES TO EACH OTHER ON 40" POLE.
S3	LITHONIA	(2) KSF3-1000M-R3-480-SCWA-SP-12	(2) 1000 WATT P.S.M.H.	480	POLE. 2 FIXTURES PER POLE	HEADS MOUNTED AT 180 DEGREES TO EACH OTHER ON 40" POLE.
N	LITHONIA	(2) TFA-400M-TA2-TB-IS	(2) 400 WATT METAL HALIDE	277	POLE ABOVE ROOF	2 FLOODLIGHTS MOUNTED ON ALUMINUM BRACKET

01 SITE LIGHTING PHOTOMETRICS



Contractor:
D.F. CHASE
 3001 ARMORY DRIVE
 SUITE 225
 NASHVILLE, TENNESSEE 37204
 LICENSE # CCR0002002



A Terminal Renovation for:
OLD DOMINION FREIGHT LINE
 1310 East Big Beaver Road
 Troy, MI

Plan Check: 3-05-11

Project No. 11081

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Sheet Name:
 SITE ELECTRICAL PLAN
 Sheet Number:

ES1.1A