PLANNING COMMISSION
MEETING AGENDA
REGULAR MEETING

500 W. Big Beaver
Troy, MI 48084
(248) 524-3364
www.troymi.gov
planning@troymi.gov

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

August 13, 2013 | **7:00 P.M.** | **Council Chambers**

1. ROLL CALL

2. APPROVAL OF AGENDA

3. APPROVAL OF MINUTES – July 23, 2013

4. PUBLIC COMMENTS – For Items Not on the Current Agenda

POSTPONED ITEM

5. PRELIMINARY SITE PLAN REVIEW – Proposed Cedar Pines Woods Site Condominium, 8 units/lots, East side of Crooks, South of Benjamin (6622 Crooks), Section 4, Currently Zoned R-1B (One Family Residential) District

PRELIMINARY SITE PLAN REVIEW

6. PRELIMINARY SITE PLAN REVIEW (File Number SP 921-A) – Proposed Briggs Park Condominiums, East side of Rochester, North of Lamb, Section 14, Currently Zoned RT (One Family Attached Residential) 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 Tagle called the Special/Study meeting of the Troy City Planning Commission to order at 7:15 p.m. on July 23, 2013 in the Council Chambers of the Troy City Hall.

1. ROLL CALL

Present:
Donald Edmunds
Edward Kempen
Tom Krent
Philip Sanzica
Robert Schultz
Thomas Strat
John J. Tagle

Absent:
Michael W. Hutson
Gordon Schepke

Also Present:
R. Brent Savidant, Planning Director
Lori Grigg Bluhm, City Attorney
Ben Carlisle, Carlisle/Wortman Associates, Inc.
Frank Boudon, Student Representative
Kathy L. Czarnecki, Recording Secretary

2. APPROVAL OF AGENDA

Resolution # PC-2013-07-058
Moved by: Schultz
Seconded by: Krent

RESOLVED, To approve the Agenda as prepared.

Yes: All present (7)
Absent: Hutson, Schepke

MOTION CARRIED

3. APPROVAL OF MINUTES

Mr. Edmunds asked that the July 9, 2013 Regular meeting minutes reflect the following revision:

> Page 4, Agenda item #7, Adria Estates Site Condominium, revise the first sentence to read: "Mr. Edmunds said he lives within close proximity of the proposed development and announced he was recusing himself from discussion and action on the item."

Resolution # PC-2013-07-059
Moved by: Edmunds
Seconded by: Strat

RESOLVED, To approve the minutes of the July 9, 2013 Regular meeting as revised.

Yes: All present (7)
Absent: Hutson, Schepke

MOTION CARRIED

4. PUBLIC COMMENTS – Items not on the Agenda

There was no one present who wished to speak.

5. ZONING BOARD OF APPEALS (ZBA) REPORT

Mr. Krent reported on the July 16, 2013 Zoning Board of Appeals (ZBA) meeting.

6. DOWNTOWN DEVELOPMENT AUTHORITY (DDA) REPORT

Mr. Savidant reported the July 17, 2013 regularly scheduled Downtown Development Authority (DDA) meeting was postponed to July 24, 2013.

7. PLANNING AND ZONING REPORT

Mr. Savidant gave an overview of current development activity.

SPECIAL USE REQUEST AND PRELIMINARY SITE PLAN REVIEW

8. PUBLIC HEARING – SPECIAL USE AND PRELIMINARY SITE PLAN REVIEW (File Number SU 409) – Proposed Faith Lutheran Church, West side of Dequindre, North of Big Beaver (37635 Dequindre), Section 24, Currently Zoned R-1D (One Family Residential) District

Mr. Carlisle reviewed the application seeking approval to add a youth center building, indoor recreation building and sports fields. He addressed the proposed screening to mitigate the potential impact on adjacent residential. Mr. Carlisle said a late submittal of a tree inventory lists only types of existing trees; not size or quality. He said the history of previous proposals by the church reveals concerns from adjacent neighbors for the loss of wooded areas within and to the periphery of the site. Mr. Carlisle said consideration should be given whether the preservation of the tree “collar” around the perimeter, or the installation of a wall and new trees, would better mitigate potential impact on adjacent neighbors.

Mr. Carlisle asked the applicant to address the issues cited in his report dated July 11, 2013 prior to the Planning Commission granting Preliminary Site Plan and Special Use approval.

Mr. Savidant said the department received four written correspondences in general opposition of the proposed application. He noted also that the petitioner submitted correspondence relating to the species of trees on site.

There was brief discussion on:

- Environmental protection of area.
- Wall and landscape screening as relates to Zoning Ordinance requirements.

The petitioner, Joseph Casiglia, and Nathan Robinson, the project engineer, were present.

Mr. Casiglia said they propose to continue the existing style of boundary for continuity around the entire perimeter of the property. Mr. Casiglia said there are a number of residential fences along the northern border but not one continuous fence. He said the physical wall would provide protection for the users of the sports fields and adjacent residents.

PUBLIC HEARING OPENED

Richard Beltz, 2422 Kingsbury, present to represent son David Beltz of 3373 Auburn and Mike Bobay of 3370 Auburn. He expressed concerns with the proposed masonry wall being so close to the side yard configurations of the homes on Auburn. Mr. Beltz circulated photographs and an alternative plan for the placement of the wall and landscaped screening.

Kevin Geyer, 2816 Majestic Court, voiced opposition to the masonry wall; he wants to preserve the existing trees and vegetation.

Carol Kiger, 37761 Dequindre, said the site plan does not show the wall and landscaping extending to her property, and asked if it should be. She addressed concerns with noise.

Charles Snell, 2987 Winter, asked the Board to grant approval of the plan as submitted this evening. Mr. Snell said he wanted trees preserved and a landscape buffer for the subdivision that went in behind his property, but the parcel was clear cut for construction.

Mike Bobay, 3370 Auburn, said the wall would have an adverse impact on his property value and recommended an alternate plan as suggested by Mr. Beltz.

Christina Beltz, 3373 Auburn, said she would like the trees to remain because they help buffer sound from various church activities.

PUBLIC HEARING CLOSED

Mr. Carlisle confirmed the petitioner is required to provide and the site plan must reflect the extension of the screening treatment to Dequindre. Mr. Carlisle addressed the differences of screening requirements for a site condominium development and a special use request.

Mr. Robinson said the intent is to clear cut the property and place a masonry wall on the church side of the property line. He addressed the existing tree types with respect to screening and stormwater management. He also addressed the church's desire for the wall as relates to safety and liability, particularly after the hours the sports fields would be used. Mr. Robinson said sports equipment would be mobile and stored in the recreation building when not in use. He said there would be no bleachers.

There was discussion on:

- Type of screening treatment; wall, landscape, combination of both.
- Effectiveness of wall, landscaping as sound barrier.
- Location, placement of wall; i.e., offset from property line; color of wall.
- Maintenance of area around wall if offset from property line.
- Protection of existing trees during construction.
- Aesthetics of area.

Chair Tagle advised the petitioner that a minimum of five affirmative votes are required for approval and with the absence of two Board members, a postponement could be requested until a full board is present.

Mr. Casiglia said he would like to proceed.

After a brief discussion, it was the consensus of the Board to postpone the item so the petitioner could come back with a revised site plan to address the items as discussed. They specifically asked the petitioner to provide additional landscaping for screening, provide a sample (cut sheet) of the masonry wall, submit a full tree survey and revise the site plan to show the full length of the masonry wall to the Dequindre.

Resolution # PC-2013-07-060

Moved by: Schultz
Seconded by: Krent

RESOLVED, To postpone the item to the September 24, 2013 Special/Study meeting.

Yes: All present (7)
Absent: Hutson, Schepke

MOTION CARRIED

ZONING ORDINANCE TEXT AMENDMENT

9. PUBLIC HEARING - ZONING ORDINANCE TEXT AMENDMENT (File Number ZOTA 245) – Sober Living Facilities

Mr. Savidant gave an account of the proposed Zoning Ordinance Text Amendment. At the recommendation of the City Attorney, Mr. Savidant suggested to replace the word "constitute" with "encompass" in the definition section. Section 2.02 DEFINITIONS to read: This definition does not *encompass* halfway houses for those released from prison or a homeless situation.

PUBLIC HEARING OPENED

No one was present to speak.

PUBLIC HEARING CLOSED

Mr. Schultz stated he cannot support a recommendation to City Council to amend the City's Zoning Ordinance to accommodate a classification of care facility which is not recognized, regulated nor licensed by the State of Michigan.

Resolution # PC-2013-07-061
Moved by: Kempen
Seconded by: Strat

RESOLVED, That the Planning Commission hereby recommends to the City Council that Articles 2, 4, 6, and 13 of Chapter 39 of the Code of the City of Troy, which includes miscellaneous provisions related to sober living facilities, be amended as printed on the proposed Zoning Ordinance Text Amendment *with the revision that the word "constitute" in the final sentence of Section 2.02 DEFINITIONS be replaced with the word "encompass".*

Yes: Edmunds, Kempen, Krent, Sanzica, Strat, Tagle
No: Schultz
Absent: Hutson, Schepke

MOTION CARRIED

Chair Tagle called for a break at 8:28 p.m. The meeting reconvened at 8:35 p.m.

CONDITIONAL REZONING REQUEST

10. PUBLIC HEARING – CONDITIONAL REZONING APPLICATION (File Number CR 009) – Proposed Troy Marriott Hotels, West side of Stephenson Highway, North of 14 Mile (333 Stephenson Highway), Section 35, From O (Office) District to OM (Office Mixed Use) District

Mr. Carlisle reviewed the proposed conditional rezoning application as relates to the conditions offered by the applicant and the conceptual site plan submittal. Mr. Carlisle stated that should the conditional rezoning be granted by City Council, the applicant is required to apply for Preliminary Site Plan and Special Use approval. Mr. Carlisle said the proposed conditional rezoning supports the Master Plan and surrounding areas, provided impacts upon adjacent properties are mitigated.

Andy Wakeland of Giffels Webster and Jeffrey Ryntz of Victor Saroki and Associates were present to represent the petitioner. Akram Namou of A&M Hospitality was also present.

Mr. Wakeland addressed their efforts to mitigate the potential impact to adjacent residential as relates to the proposed setbacks and screening. Mr. Wakeland provided a sight line profile from the proposed four-story hotel to adjacent residential.

Mr. Ryntz addressed the proposed building design and newer Fairfield Inn elevation. Mr. Ryntz also addressed the percentage of hotel windows facing adjacent residential, discussion with Marriott regarding frosted windows, the uses by right for the parcel as currently zoned, the transient and long term occupancy of each hotel, and the non-viability of the hotels if developed as three-story buildings.

Mr. Namou addressed the upscale design improvements and lighting standards of Marriott Hotels. He said the two hotels will complement each other.

PUBLIC HEARING OPENED

The following residents spoke in opposition addressing concerns with privacy, nuisance, screening, lighting, property values, current hotel occupancy rates and existing vacant buildings.

- Nick Penchof, 302 Redwood.
- James Stone, 314 Redwood.
- Sally Wilsher, 350 Redwood, circulated pictures of light exposure in home from existing hotel.
- Cindy Wilsher, 369 E Maple.
- Kay Vavruska, 278 Redwood.

- Mike Davey, 325 Redwood.
- Mary Jane Austin, 242 Redwood, circulated pictures of existing fencing with vegetative growth.

PUBLIC HEARING CLOSED

Mr. Namou said the proposed location is approved by Marriott and briefly addressed the criteria used in site selection. Mr. Namou said an open meeting was held in good faith for residents within a 300 foot radius to address concerns and answer questions. He said one resident attended. Mr. Namou said they want to be good neighbors and work with the neighbors to mitigate concerns going forward.

There was discussion on the process of a conditional rezoning application.

The Board asked if the petitioner would provide additional screening details, precise setbacks, sight-line information and consideration to various building configurations to mitigate the concerns expressed by adjacent residential.

The City Attorney suggested that should a recommendation to approve the application go forward to City Council, the Resolution should stipulate that approval is subject to 1) Site Plan and Special Use approval; 2) subject to the Development Agreement; and 3) list conditions voluntarily offered by the application.

The petitioner asked to postpone the item to the August 27, 2013 Special/Study meeting, at which time additional detail and information would be provided per discussion tonight.

OTHER BUSINESS

11. PUBLIC COMMENT – Items on Current Agenda

James Stone, 314 Redwood, addressed building vacancies and vacant parcels.

12. PLANNING COMMISSION COMMENT

There were general Planning Commission comments.

The Special/Study meeting of the Planning Commission adjourned at 9:53 p.m.

Respectfully submitted,

_____
John J. Tagle, Chair

_____
Kathy L. Czarnecki, Recording Secretary

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DATE: August 9, 2013

TO: Planning Commission

FROM: R. Brent Savidant, Planning Director

SUBJECT: PRELIMINARY SITE PLAN REVIEW – Proposed Cedar Pines Woods Site Condominium, 8 units/lots, East side of Crooks, South of Benjamin (6622 Crooks), Section 4, Currently Zoned R-1B (One Family Residential) District

The petitioner Trowbridge Companies submitted the above referenced Preliminary Site Plan Approval application for a 8-unit site condominium. The property is currently zoned R-1B (One Family Residential) District. The Planning Commission is responsible for granting Preliminary Site Plan Approval for site condominium applications.

The Planning Commission considered this item at the June 25, 2013 Special/Study meeting and postponed the item "to allow the applicant time to rework the site plan based on feedback and comments of the Planning Department, Planning Consultant and Planning Commission". The revised site plan is a proposed cluster layout that addresses many of the issues raised at the meeting.

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 June 25, 2013 Special/Study meeting (excerpt)
3. Report prepared by Carlisle/Wortman Associates, Inc.

cc: Applicant
File/Cedar Pines Woods Site Condominium

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PROPOSED RESOLUTION

PRELIMINARY SITE PLAN REVIEW – Proposed Cedar Pines Woods Site Condominium, 8 units/lots, East side of Crooks, South of Benjamin (6622 Crooks), Section 4, Currently Zoned R-1B (One Family Residential) District

Resolution # PC-2013-08-
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 Cedar Pines Woods Site Condominium, 8 units/lots, East side of Crooks, South of Benjamin (6622 Crooks), Section 4, Currently Zoned R-1B (One Family Residential) District, be granted, subject to the following:

1. Applicant shall work with City Attorney's Office to provide documentation to guarantee that all open space portions of the development will be preserved and maintained as approved and that all commitments for such preservation and maintenance are binding on successors and future owners of the subject property.
2. Applicant shall provide a tree survey one (1) year after the final certificate of occupancy is issued. Any tree that was removed or died as a result of construction that was shown to be preserved on the approved Preservation Plan shall be replaced at two inches for every one inch removed.
3. Applicant shall provide pedestrian connection via trail or path from the internal sidewalk to Crooks Road.

_____) or

(denied, for the following reasons: _____) or

(postponed, for the following reasons:_____)

Yes:
No:
Absent:

MOTION CARRIED / FAILED

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Cedar Pines Woods Site Condo

City of Troy Planning Department

Legend:

420 0 210 420 Feet

Scale 1: 2,523

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: 4/30/2013

Cedar Pines Woods Site Condo

City of Troy Planning Department

Legend:

Form Based Zoning (Current)

- (PUD) Planned Unit Development
- (CF) Community Facilities District
- (EP) Environmental Protection District
- (BB) Big Beaver Road (Form Based)
- (MR) 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 Distric
- (MF) Multi-Family Residential
- (MHP) Manufactured Housing
- (UR) Urban Residential
- (RC) Research Center District
- (PV) Planned Vehicle Sales

420 0 210 420 Feet

Scale 1: 2,523

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: 4/30/2013

SITE CONDOMINIUM DEVELOPMENT

8. PRELIMINARY SITE PLAN REVIEW – Proposed Cedar Pines Woods Site Condominium, 8 units/lots, East side of Crooks, South of Benjamin (6622 Crooks), Section 4, Currently Zoned R-1B (One Family Residential) District

Mr. Carlisle reviewed the Preliminary Site Plan application and addressed specific concerns relating to the landscape buffer, the road adjacent to single family homes and the configuration of Lots 6 and 7. He recommended the applicant consider site arrangement alternatives to address the incompatibility with and negative impact upon adjacent properties. Mr. Carlisle suggested options such as utilizing the cluster option, removing a number of lots and/or making the road private.

The applicant, Bruce Michael of Trowbridge Companies, was present. Mr. Michael addressed the landscape buffer, sidewalk requirements, location of road and the configuration of Lot 6. He indicated that he met with four adjacent homeowners who responded to a flyer notifying residents of the proposed development.

Vice Chair Edmunds opened the floor for public comment.

The following persons spoke in opposition of the development as proposed.

- Daniel Pratt, 847 Benjamin
- Don Pratt, 3031 Albany
- Joel Pumphrey, 6616 Glendale
- Paul Eichbrecht, 6605 Glendale
- Paul Pitts, 6617 Glendale
- Bob Solak, 879 Benjamin
- Anil Sethi, 831 Benjamin

The floor was closed for public comment.

There was discussion on:

- Challenging site to develop.
- Landscape buffer.
- Street location.
- Retention pond, capacity to share.
- Stormwater management.
- Cluster development option.
- Lots 6 and 7.
- Adverse impact on adjoining or nearby properties.

Ms. Bluhm addressed approval of an application that appears to meet all Zoning Ordinance requirements but might not meet the intent of the Zoning Ordinance and has potential to negatively impact the surrounding neighbors.

Mr. Michael requested to postpone the item so consideration can be given to developing the site utilizing the cluster option.

Resolution # PC-2013-06-052
Moved by: Schultz
Seconded by: Kempen

RESOLVED, To postpone the item to the August 13, 2013 Regular meeting to allow the applicant time to rework the site plan based on feedback and comments of the Planning Department, Planning Consultant and Planning Commission.

Yes: All present (8)
Absent: Tagle

MOTION CARRIED

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CARLISLE | WORTMAN associates, inc.
605 S. Main Street, Ste. 1
Ann Arbor, MI 48104
(734) 662-2200
(734) 662-1935 Fax

Date: June 17, 2013
August 8, 2013

Preliminary Site Condominium Review
For
City of Troy, Michigan

Applicant: Bruce Michael

Project Name: Cedar Pines

Plan Date: July 18, 2013

Location: East side of Crooks Road south of South Boulevard (to be accessed from west side of Merrick Drive).

Zoning: R1-B, One-family Residential District

Action Requested: Preliminary Site Condominium Approval

Required Information: Deficiencies noted.

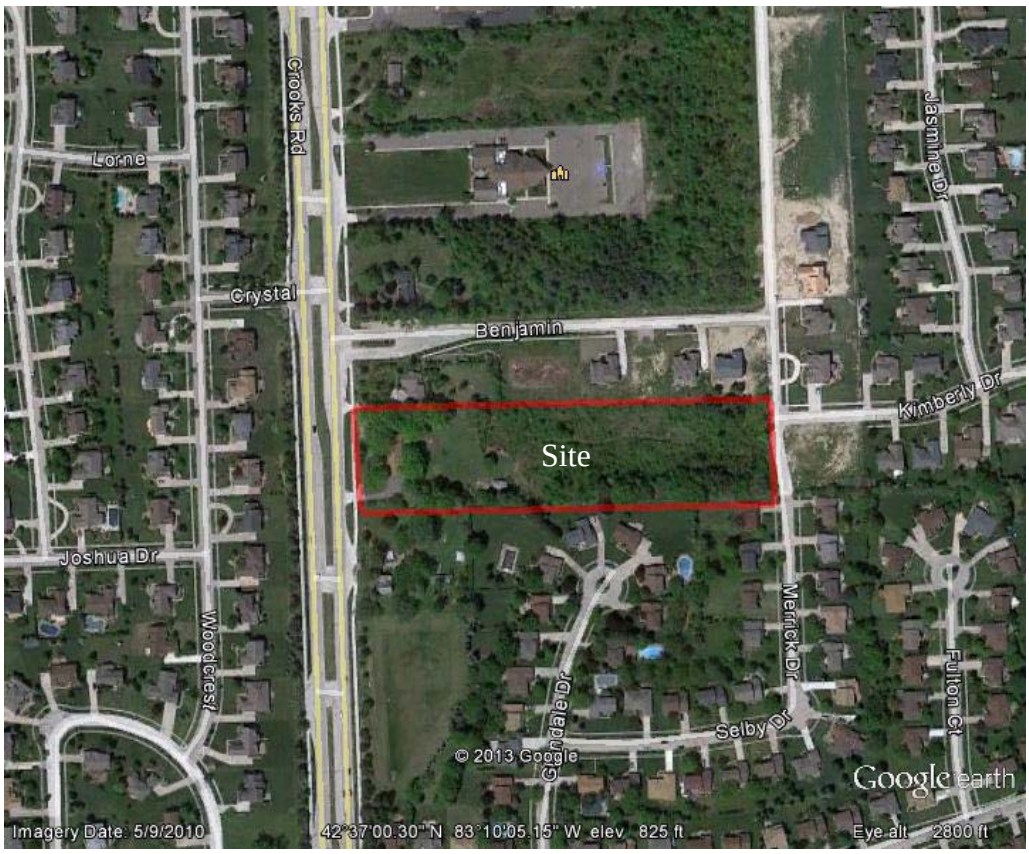
PROJECT AND SITE DESCRIPTION

We are in receipt of a site condominium application which includes a Site Plan, landscape plan, topographic survey, tree preservation plan, and application forms. The 4.36 acre site includes one single family house.

The applicant is requesting approval of an eight (8) unit single family detached site condominium project. Seven (7) of the lots will be accessed of a newly created single accessed Kimberly Court cul-de-sac. Kimberly Court will be private. The existing house, which makes up lot 8, will maintain its access off Crooks Road.

Location of Subject Property:
East side of Crooks Road, south of South Boulevard

Location and Aerial Image of Subject Site



Size of Subject Property:
The parcel is 4.36 net acres in area.

Proposed Uses of Subject Parcel:
Eight (8) detached, single family homes.

Current Use of Subject Property:
The subject property currently has one (1) single family home which will be retained as Lot 8.

Current Zoning:
The property is currently zoned R-1B, One-family Residential District.

Surrounding Property Details:

Direction	Zoning	Use
North	R-1B, One-family Residential District.	Single-family homes
South	R-1B, One-family Residential District.	Single-family homes
East	R-1B, One-family Residential District	Single-family homes
West	R-1B, One-family Residential District.	Single-family homes

PRIOR PLANNING COMMISSION REVIEW

The Planning Commission reviewed this item at their June 25, 2013 meeting. At that meeting the Planning Commission expressed strong concern over the lack of consistency and compatibility with adjacent properties. Specifically there was a stated concern that the Site Plan layout that creates negative impacts upon adjacent properties. The Planning Commission felt that the proposed development does not meet the general purpose of the Zoning Ordinance or the intent of the Site Condominium section of the ordinance and negatively impact adjacent neighbors. In addition, there were a number of adjacent property owners that expressed similar concerns regarding impacts upon their properties and the neighborhood in general.

The Planning Commission continued the matter to allow the applicant to reconfigure the site layout based on the Planners report and public feedback. See the June 10th Planner's Memo for more details.

SITE ARRANGEMENT

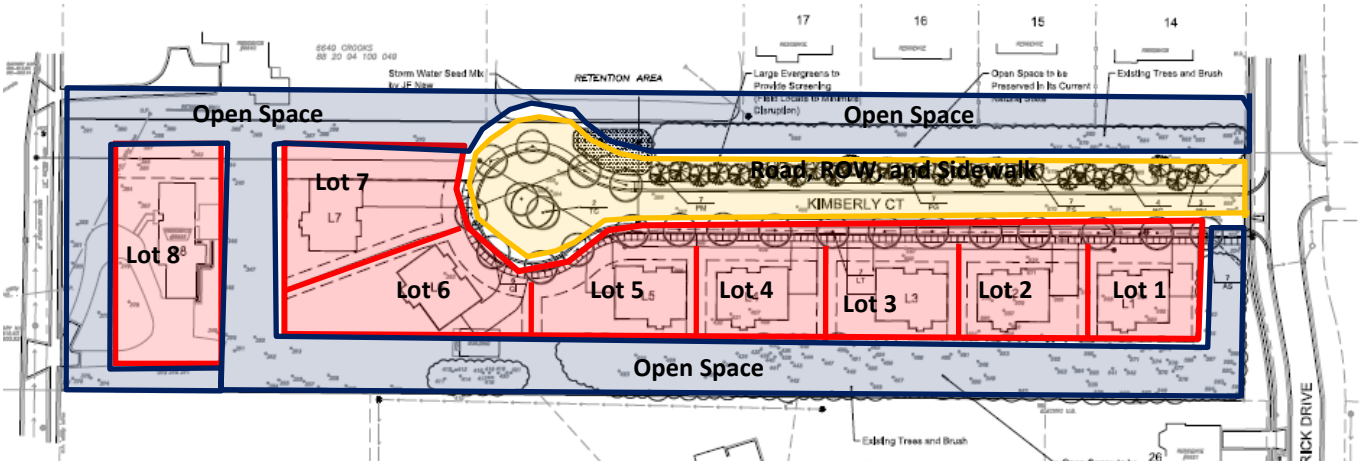
As presented as an option in the June 10th Planner's Memo, the applicant has revised their site layout in the cluster option with a private road. The cluster option is offered as an alternative to traditional residential development. The One-Family Cluster Option is intended to:

1. Encourage the use of property in accordance with its natural character.
2. Assure the permanent preservation of open space and other natural features.
3. Provide recreational facilities and/or open space within a reasonable distance of all residents of the One-Family Cluster development.
4. Allow innovation and greater flexibility in the design of residential developments.
5. Facilitate the construction and maintenance of streets, utilities and public services in a more economical and efficient manner.
6. Ensure compatibility of design and use between neighboring property.
7. Encourage a less sprawling form of development, thus preserving open space as undeveloped land.

The basic premise of cluster development is the preservation of open space. At a minimum, cluster development is required to maintain thirty (30) percent of the gross area of the site as dedicated open space held in common ownership.

We strongly encourage the applicant's attempt at providing a cluster development, and find that the cluster provided by the applicant is a better designed project than what was proposed as a conventional

subdivision. The properties to the north, adjacent to Benjamin, are over 160-feet from the front of new proposed homes. The properties that are to the south, located on Glendale, are over 90-feet from the rear of the new proposed homes. The proposed cluster development provides open space in perpetuity, preserves a significant number of trees, and provides a significant buffer to adjacent properties. The cluster design proposed is a benefit not only to the future owners of these units but also adjacent property owners.



Items to be addressed: *None*

AREA, WIDTH, HEIGHT, SETBACKS and REGULATORY FLEXABILITY

The proposed site condominium consists of 8-units. Seven (7) of the lots will be accessed of a newly created single accessed Kimberly Court cul-de-sac. The existing house, which makes up lot 8, will maintain its access off Crooks Road. T*he intent of the cluster development provisions is to relax the typical R-1B district bulk requirements in order encourage a less sprawling form of development. As set forth in 10.05.E the applicant is able seek specific departures from the dimensional requirements of the Zoning Ordinance for yards and units as a part of the approval process. The table below outlines the bulk requirements for cluster development:*

	Required:	Provided:	Compliance:
Density	Overall density shall not exceed the number of residential cluster units as developed under a conventional subdivision, unless a density bonus has been granted by City Council.	Applicant seeking 8 units	8 units is permitted based on underlying zoning
Perimeter Setback	Equal to the rear yard setback requirement for the underlying zoning district of the property directly adjacent to each border = 45 feet	45 foot minimum	Complies
Front Setback (building)	20 foot setback	+20 foot minimum	Compiles
Rear Setback (building)	25 foot setback	45 foot minimum	Complies
Side Setback (building)	7.5 foot setback	+7.5 foot minimum	Complies
Open Space Requirements: Minimum Percentage	30%	45%	Complies. Applicant must submit open space preservation covenant.
Open Space Requirements: Open space depth adjacent to exterior roads	100 feet in depth	+100 feet in depth	Complies. The open space along the exterior public roads shall be landscaped with a minimum of one (1) deciduous canopy tree (3 to 3½ inches in diameter) for each ten (10) feet of road frontage.

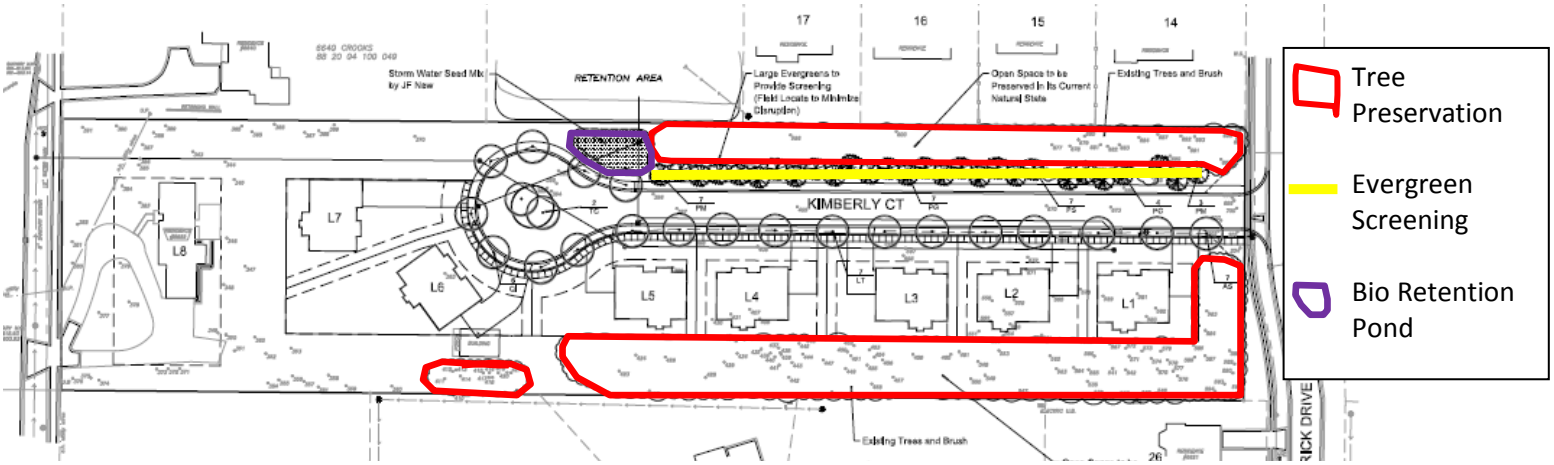
Items to be addressed: *None*

OPEN SPACE REQUIREMENTS

A requirement of the Cluster Option is to provide at least one (1) of the following open space benefits:

A. Significant Natural Features. Preservation of significant natural features contained on the site. The determination of whether the site has significant natural features shall be made by the Planning Commission after review of a Natural Features Analysis, prepared by the applicant, that inventories these features.
B. Recreation Facilities. If the site lacks significant natural features, it can qualify with the provision of usable recreation facilities to which all residents of the development shall have reasonable access.
C. Creation of Natural Features. If the site lacks significant natural features, a proposed development may also qualify if the development will create significant natural features such as wetlands. The determination of whether the site has significant natural features shall be made by the Planning Commission after review of a Site Analysis Plan, prepared by the applicant, that inventories these features.

The applicant proposes to preserve the trees and natural landscape along the northern and southern property lines, install a biorention pond, and provide evergreen screening along the northern side of the road.



The applicant has submitted a preliminary tree preservation plan, which shows which trees are to be removed and which are to be preserved as part of site development. The preservation area follows the building envelope and grading limit line. The July 15th submittal includes a tree inventory with size and species. Quality is not indicated. We have asked the applicant to provide additional information including narrative regarding quality of areas being preserved at the Planning Commission meeting. The Planning Commission shall determine if the provided natural features meets the preservation of natural features requirement as required in cluster development.

Guarantee of Open Space and Tree Preservation:

The applicant shall provide documentation to guarantee that all open space portions of the development will be preserved and maintained as approved and that all commitments for such preservation and maintenance are binding on successors and future owners of the subject property. All such documents shall be subject to approval by the City Attorney. No structures (pools, sheds) or equipment (play structures, etc) are permitted within the dedicated open space area.

The preservation of the existing natural area as shown on the Preservation Plan will be part of Site Plan approval. However, it is likely that during site construction and changes in site drainage as a result of development, some trees not indicated on the Tree Protection Preservation Plan will be lost. We recommended that as a condition of approval, the applicant provide a complete tree survey one (1) year after the final certificate of occupancy is issued. Any tree that was removed or died as a result of construction that was shown to be preserved on the approved Preservation Plan shall be replaced at two inches for every one inch removed.

Items to be addressed: *Tree survey to be completed one (1) year after the final certificate of occupancy is issued. Any tree that was removed or died as a result of construction that was shown to be preserved on the approved Preservation Plan shall be replaced at two inches for every one inch removed.*

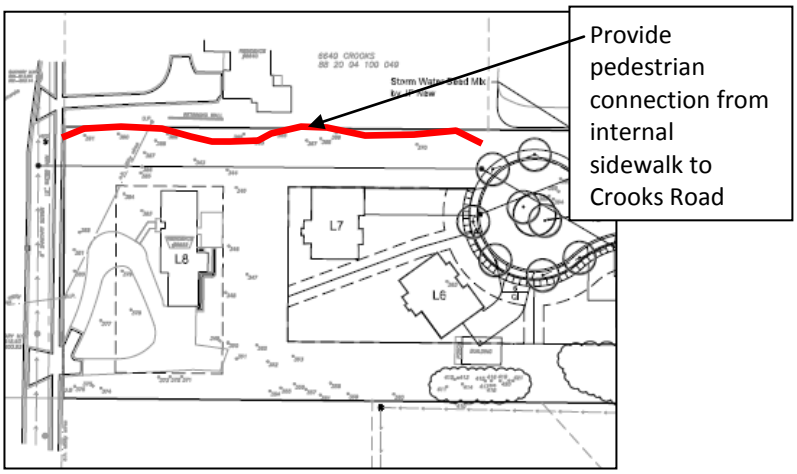
SITE ACCESS AND CIRCULATION

Vehicular

Access to the site will be from Merrick Drive with a 600 foot long cul-de-sac. Kimberly Court will be private.

Pedestrian

A five (5) foot sidewalk will be provided on the southern side of Kimberly Court. Based on the current site arrangement the provision of a sidewalk along the north side of the Kimberly Court is not advisable due to landscape screening. The applicant has shown a sidewalk along Merrick Drive. To connect Kimberly Court to Crooks Road, a pedestrian connection via trail or path should be provided from internal sidewalk to Crooks Road.



Items to be Addressed: *Provide pedestrian connection via trail or path from the internal sidewalk Crooks Road.*

STORMWATER

In addition to the onsite bioretention pond, the applicant proposes to expand the existing retention pond in the Cedar Pines Estates (northern side of proposed Kimberly Court. The detention pond expansion is close to the southern property line. The City Engineer notes that additional details need to be provided to determine if detention pond expansion is possible. If detention pond expansion is not possible, stormwater will be maintained on site and thus site arrangement will be affected. In addition, the applicant will need to work with Engineering regarding rear yard drainage. Engineering will be approved as part of final Site Plan approval.

Items to be Addressed: *None*

LANDSCAPING

Site condominium and subdivision landscaping are regulated by Section 13.02.F.2.

	Required	Provided	Compliance
Crooks Road Frontage	One large evergreen tree for every 50 lineal feet. 210 Feet = 4 trees	9 trees (5 new, 4 existing)	Complies

Merrick Drive Frontage	One tree for every 50 lineal feet. 210 Feet = 4 trees	8 trees (1 new, 7 existing)	Complies
Kimberly Court Frontage	One tree for every 50 lineal feet. 1250 feet = 25 trees	45 new trees	Complies

Site condominium landscaping requirements have been met.

Items to be Addressed: *None.*

SUBMITTAL REQUIREMENTS

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. ***40-foot private road has been s*****atisfied.**

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. **Satisfied**

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. **Not applicable.**

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. **Path or trail should be provided to Crooks Road.**

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. **Satisfied.**

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.**

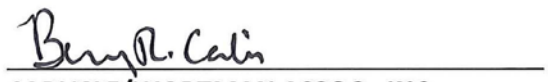
iii. The typical floor plans and elevations of the proposed buildings, with building height(s). **Satisfied.**

Items to be Addressed: *None*

RECOMMENDATIONS

We find that the cluster provided by the applicant is a better designed project than what was proposed as a conventional subdivision. We recommend preliminary Site Plan approval with the following conditions:

1. Applicant shall work with City Attorney's Office to provide documentation to guarantee that all open space portions of the development will be preserved and maintained as approved and that all commitments for such preservation and maintenance are binding on successors and future owners of the subject property.
2. Applicant shall provide a tree survey one (1) year after the final certificate of occupancy is issued. Any tree that was removed or died as a result of construction that was shown to be preserved on the approved Preservation Plan shall be replaced at two inches for every one inch removed.
3. Applicant shall provide pedestrian connection via trail or path from the internal sidewalk to Crooks Road.



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

cc:

CEDAR PINES WOODS
PRELIMINARY SITE PLAN

PART OF THE NW 1/4 SECTION 4, T.2N., R.11E.
CITY OF TROY, OAKLAND COUNTY, MICHIGAN

CITY OF TROY NOTES:

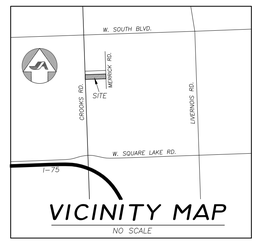
1. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF TROY.
2. THE CONTRACTOR SHALL CALL THE NATIONAL ONE-CALL DIALING NUMBER "811" OR THE NATIONAL ONE-CALL REFERRAL NUMBER 1-888-258-0808 AT LEAST 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
3. NO SITE LIGHTING IS PROPOSED FOR THIS DEVELOPMENT.
4. CONDOMINIUM LAYOUT AND DIMENSIONS ARE PRELIMINARY AND ARE SUBJECT TO MODIFICATION UPON FINAL ENGINEERING APPROVAL AND COMPUTATION OF THE MASTER DEED EXHIBIT "B".
5. LOT 8 MAY NOT BE INCLUDED IN THE CONDOMINIUM DOCUMENTS. OWNER IS PROPOSING TO DIVIDE LOT 8 FROM THE REMAINDER OF THE PARCEL. EASEMENTS FOR PUBLIC UTILITIES AND SURFACE DRAINAGE WILL BE ADDRESSED IN THE LAND DIVISION DOCUMENTS.
6. STORM WATER DETENTION IS PROPOSED IN THE CEDAR PINES ESTATES DETENTION BASIN FOR THE FRONT OF THE PROPOSED LOT 1 THROUGH 7 AND THE PROPOSED KIMBERLY COURT RIGHT-OF-WAY.
7. STORM WATER MANAGEMENT FOR THE REAR OF LOTS 1 THROUGH 6 IS PROPOSED IN NORTH-BRIDGE PARK SUBDIVISION NUMBER 1.
8. OWNER TO PROVIDE GEOTECHNICAL REPORTS FROM A MATERIALS TESTING COMPANY FOR FILL PLACED IN LOW AREA OF LOT 6.

PERMITS:

1. A SOIL EROSION AND SEDIMENTATION CONTROL PERMIT SHALL BE OBTAINED FROM THE CITY OF TROY.
2. CONTRACTOR SHALL OBTAIN A CONSTRUCTION PERMIT FROM THE ROAD COMMISSION FOR OAKLAND COUNTY (RCOC) FOR ALL WORK IN THE CROOKS ROAD RIGHT-OF-WAY.
3. CONTRACTOR SHALL OBTAIN A CONSTRUCTION PERMIT FROM THE CITY OF TROY FOR ALL WORK IN MERRICK DRIVE RIGHT-OF-WAY.

GENERAL NOTES:

1. THE SITE IMPROVEMENTS SHALL BE COMPLETED IN ACCORDANCE WITH THE PROPOSAL AND ACCOMPANYING SPECIFICATIONS FOR THIS PROJECT INCLUDING THE 2003 MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE CURRENT MICHIGAN MANUAL OF TRAFFIC CONTROL DEVICES.
3. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN ALL NECESSARY TEMPORARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH PART VI OF THE CURRENT MICHIGAN MANUAL OF TRAFFIC CONTROL DEVICES. COST OF TRAFFIC MAINTENANCE AND CONTROL SHALL BE INCLUDED IN THE CONTRACT UNIT PRICES BID FOR OTHER CONTRACT ITEMS.
4. ALL UTILITY TRENCHES UNDER OR WITHIN 5 FEET OF PAVEMENT, EXISTING OR PROPOSED, SHALL BE BACKFILLED WITH SAND COMPACTED TO 95% MODIFIED PROCTOR DENSITY. PIPE BEDDING AND COMPACTED SAND BACKFILL SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR WATER MAIN OR SEWER.
5. DEWATERING SYSTEMS USED BY THE CONTRACTOR WILL NOT BE PAID FOR SEPARATELY. PAYMENT FOR DEWATERING WILL BE INCLUDED IN THE CONTRACT UNIT PRICES BID FOR OTHER CONTRACT ITEMS.
6. ALL SOIL EROSION AND SILT MUST BE CONTROLLED AND CONTAINED ON SITE.
7. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING INTEGRITY OF UTILITY POLES. COST OF SPECIAL CONSTRUCTION METHODS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICES BID FOR OTHER ITEMS.
9. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING ALL DISTURBED AREAS TO THE CONDITIONS THAT EXISTED PRIOR TO CONSTRUCTION.



VICINITY MAP
NO SCALE

DRAWING INDEX

SHEET NO.	DESCRIPTION
T-1	COVER SHEET
C-1	PRELIMINARY SITE PLAN
C-2	PRELIMINARY GRADING PLAN
C-3	PRELIMINARY TREE PRESERVATION PLAN
C-4	TOPOGRAPHIC SURVEY
C-5	TREE LISTING
C-6	BIORETENTION AREA DETAILS
C-7	PARALLEL SITE PLAN
L-1	LANDSCAPE PLAN

PROJECT INFORMATION

LAND AREA (GROSS & NET)	4.356 ACRES
SITE ZONING	R-1-B, ONE FAMILY RESIDENTIAL
ADJACENT ZONING	R-1-B, ONE FAMILY RESIDENTIAL
TAX IDENTIFICATION NUMBER	20-04-100-015
ADDRESS	6622 CROOKS ROAD
PROPOSED OPEN SPACE	1.956 ACRES (45% OF SITE AREA)
LOT REQUIREMENTS (CLUSTER OPTION):	
MINIMUM UNIT AREA	N/A
MINIMUM UNIT WIDTH	N/A
FRONT YARD SETBACK	20 FEET
SIDE YARD SETBACK	7.5 FEET (15 FEET BETWEEN UNITS MINIMUM)
REAR YARD SETBACK	25 FEET
MINIMUM FLOOR AREA/UNIT	1,400 S.F.
NUMBER OF UNITS USING AVERAGE LOT SIZES (PARALLEL PLAN)	8 UNITS

OWNER

MR. ANTHONY RANDAZZO
TROWBRIDGE COMPANIES
2617 BEACON HILL DRIVE
AUBURN HILLS, MICHIGAN 48326

(248) 373-5080 EXT. 22 (PHONE)
(248) 373-1230 (FAX)

CIVIL ENGINEER

VITINS ENGINEERING
44275 BRANDYWYNE
CANTON, MICHIGAN 48187

(734) 453-3460 (PHONE)
(734) 453-5812 (FAX)

LANDSCAPE ARCHITECT

ALLEN DESIGN
557 CARPENTER
NORTHVILLE, MICHIGAN 48167

(248) 467-4668 (PHONE)

LAND SURVEYOR

JEKABSON & ASSOCIATES, P.C.
1320 GOLDSMITH
PLYMOUTH, MICHIGAN 48170

(734) 414-7200 (PHONE)
(734) 414-7272 (FAX)

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CANTON, MICHIGAN 48187
TELEPHONE: (734) 453-3460
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PROJECT TITLE
CEDAR PINES WOODS
PRELIMINARY SITE PLAN
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

SHEET NAME
COVER SHEET

PROJECT NUMBER
12140

SHEET NUMBER
T-1

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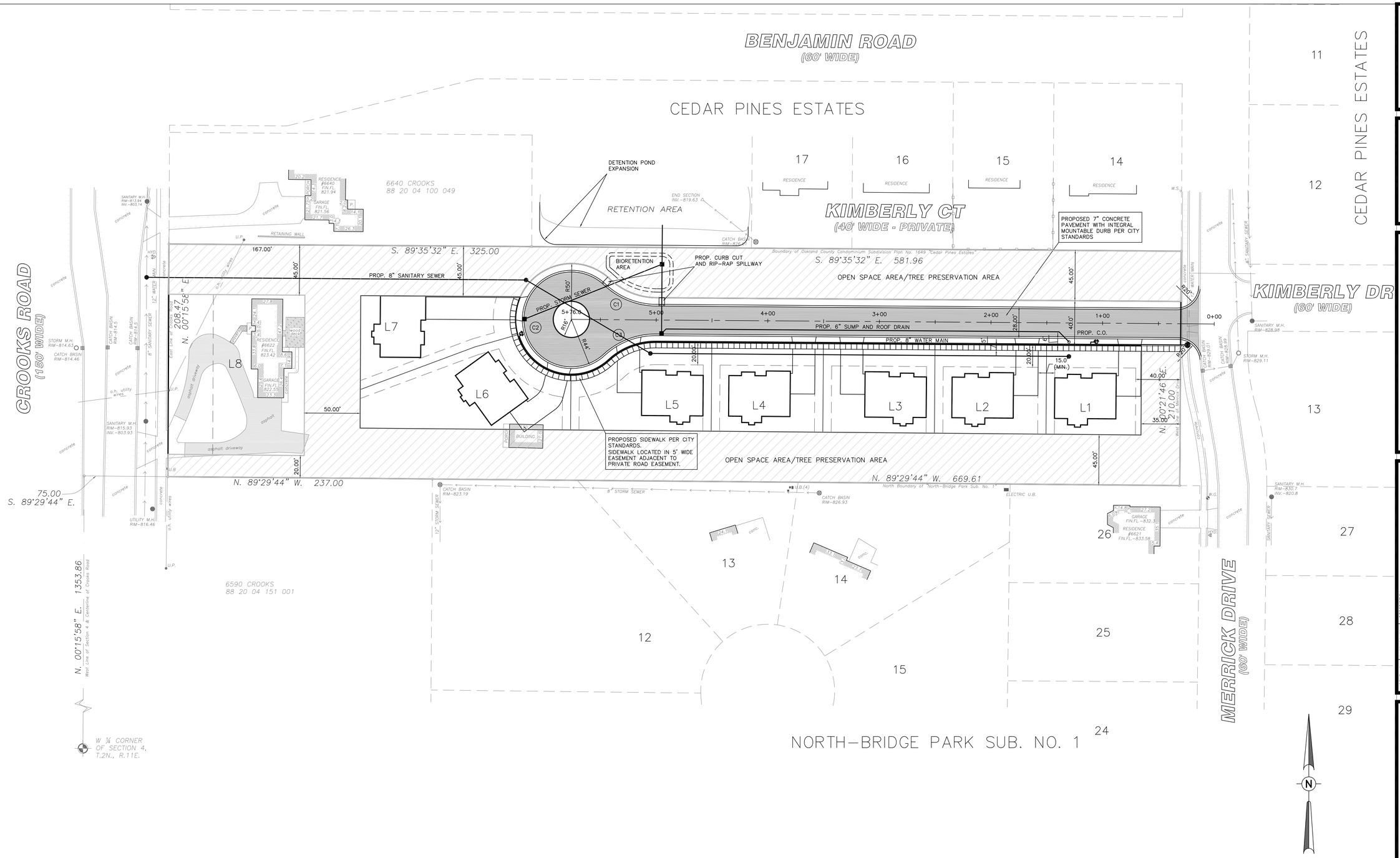

LEGEND:

C.B.	– CATCH BASIN		– LINE BREAK
M.H.	– MANHOLE		– ASPHALT PAVEMENT
C.O.	– CLEAN OUT		– CONCRETE PAVEMENT
CONC.	– CONCRETE		– LIGHT POLE
E.S.	– END SECTION		– UTILITY POLE
F.P.	– FLAG POLE		– SIGN
O.H.	– OVERHEAD	FIP	– FOUND IRON PIPE
U.G.	– UNDERGROUND	FSB	– FOUND STEEL BAR
HYD.	– HYDRANT	SSB	– SET STEEL BAR
GEN.	– GENERATOR	SRC	– SET RIVET IN CONCRETE
TRANS.	– TRANSFORMER	1 ACRE	– 43,560 SQUARE FEET
U.B.	– UTILITY BOX	R	– RECORDED
L.P.	– LIGHT POLE	M	– MEASURED
U.P.	– UTILITY POLE	C	– CALCULATED
B.P.	– BOLLARD POST		
W.G.	– WATER GATE		
W.S.	– WATER STOP		
W.V.	– WATER VALVE		

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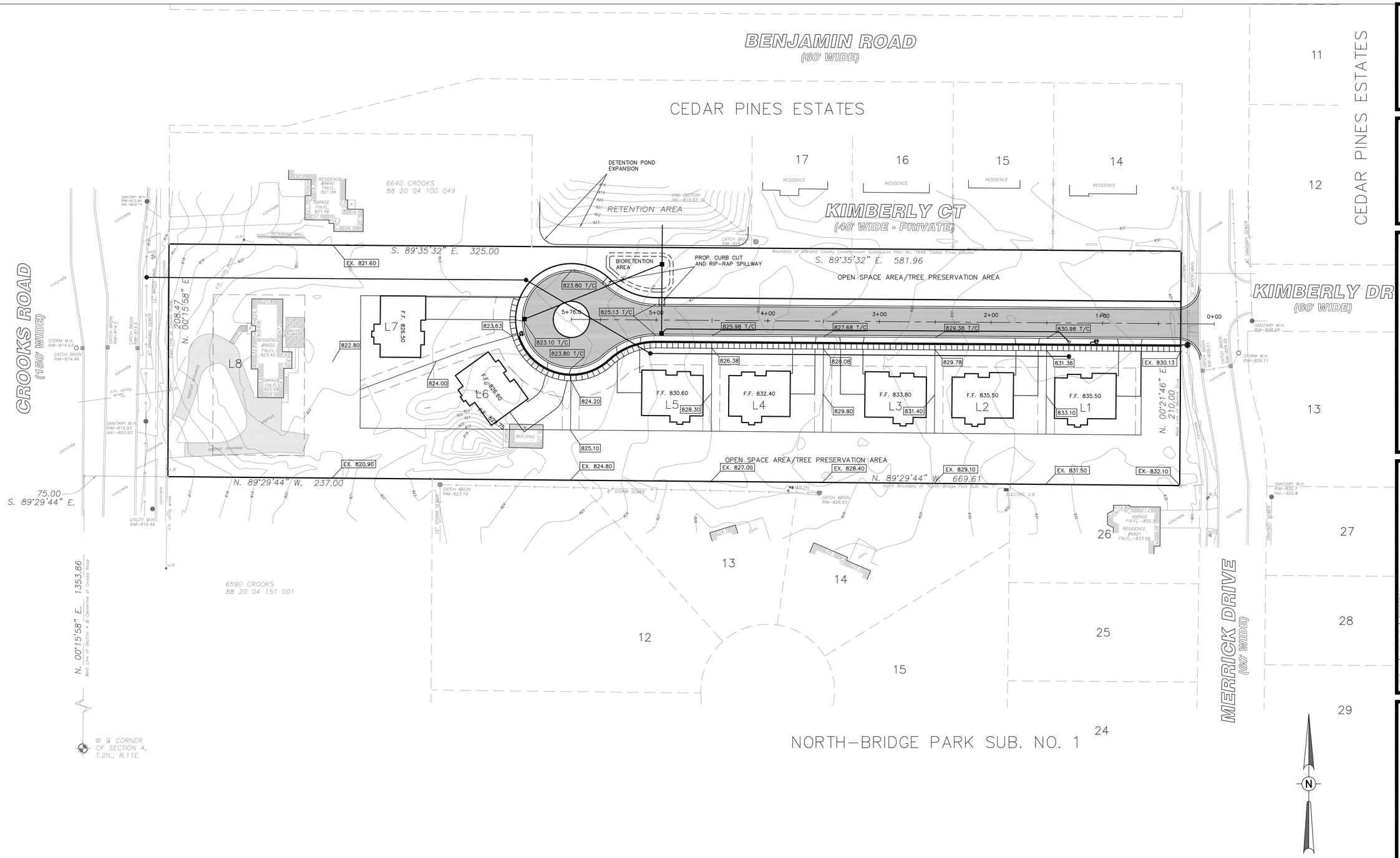
PROJECT TITLE
CEDAR PINES WOODS
PRELIMINARY SITE PLAN
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

SHEET NAME
SITE CONCEPT PLAN

PROJECT NUMBER
12140

SHEET NUMBER
C-1



SCALE: 1"=40'

LEGEND:

C.B.	– CATCH BASIN		– LINE BREAK
M.H.	– MANHOLE		– ASPHALT PAVEMENT
C.O.	– CLEAN OUT		– CONCRETE PAVEMENT
CONC.	– CONCRETE		– LIGHT POLE
E.S.	– END SECTION		– UTILITY POLE
F.P.	– FLAG POLE		– SIGN
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B.P.	– BOLLARD POST		
W.G.	– WATER GATE		
W.S.	– WATER STOP		
W.V.	– WATER VALVE		

LEGEND

000.00 = EXISTING ELEV.
000.00 = PROPOSED ELEV.

Soils:

Capac sandy loam (11B), 0 to 4% and Marlette sandy loam (10B), 1 to 6%

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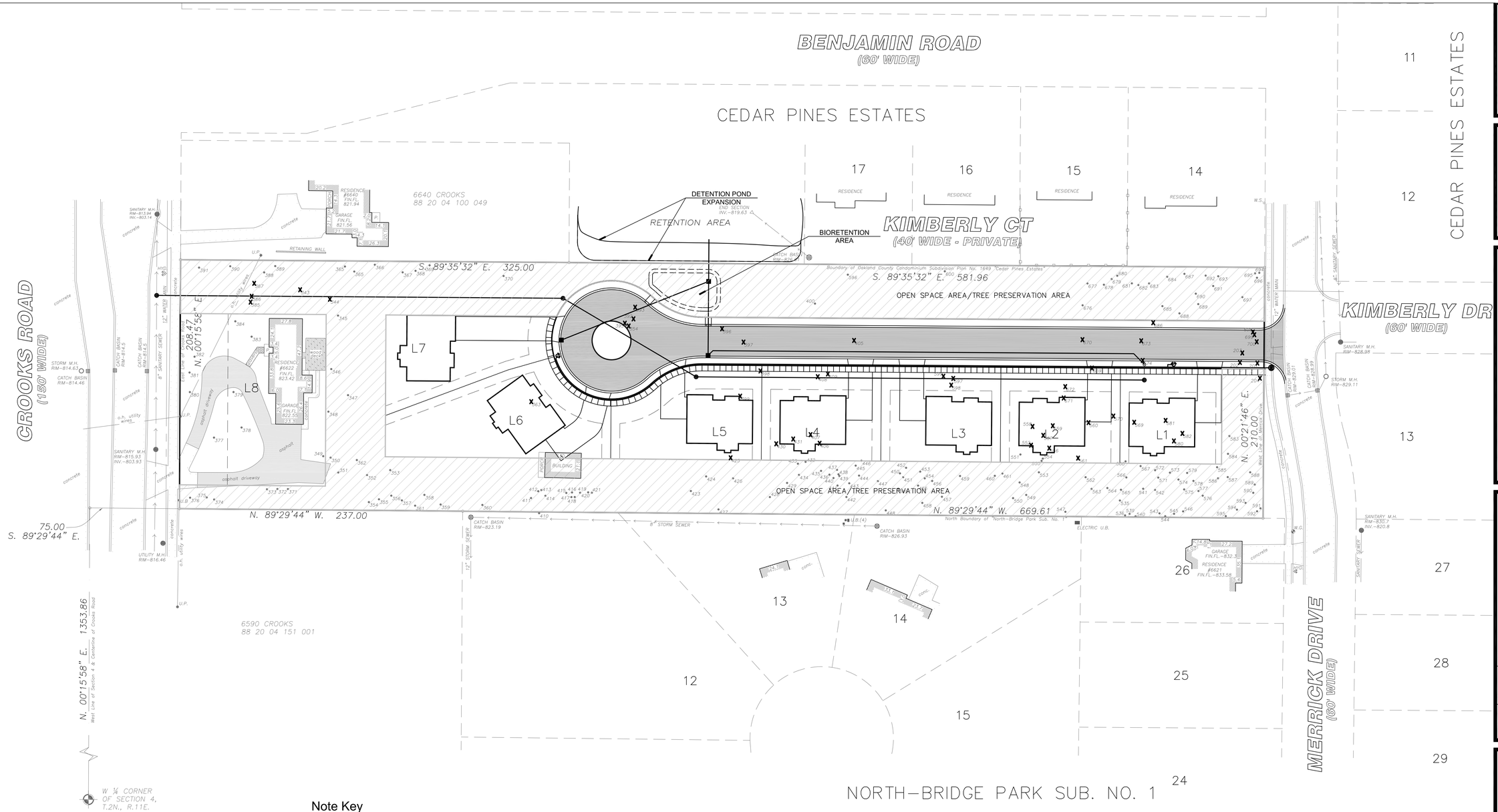
PROJECT TITLE
CEDAR PINES WOODS
PRELIMINARY SITE PLAN
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

SHEET NAME
PRELIMINARY GRADING PLAN

PROJECT NUMBER
12140

SHEET NUMBER
C-2



Note Key

x TREE TO BE REMOVED

Tree Preservation Notes

1. Dead and diseased trees will be removed in the open space/tree preservation area.

2. As noted on the drawing, trees will be removed for construction of the proposed sanitary sewer. Trees removed for sanitary sewer maintenance do not have to be replaced by the City of Novi.

3. Small trees and scrub shrubs will be removed in the open space/tree preservation area due to construction of the bioretention area.

NORTH

TREE PRESERVATION PLAN

SCALE: 1" = 40'-0"

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CEDAR PINES WOODS PRELIMINARY SITE PLAN
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

SHEET NAME

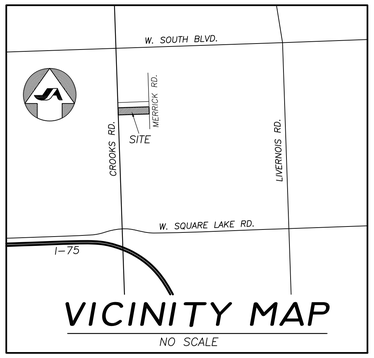
PRELIMINARY TREE PRESERVATION PLAN

PROJECT NUMBER

12140

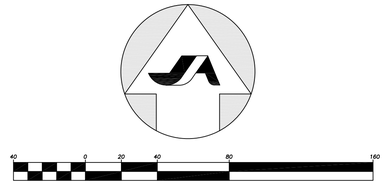
SHEET NUMBER

C-3



VICINITY MAP

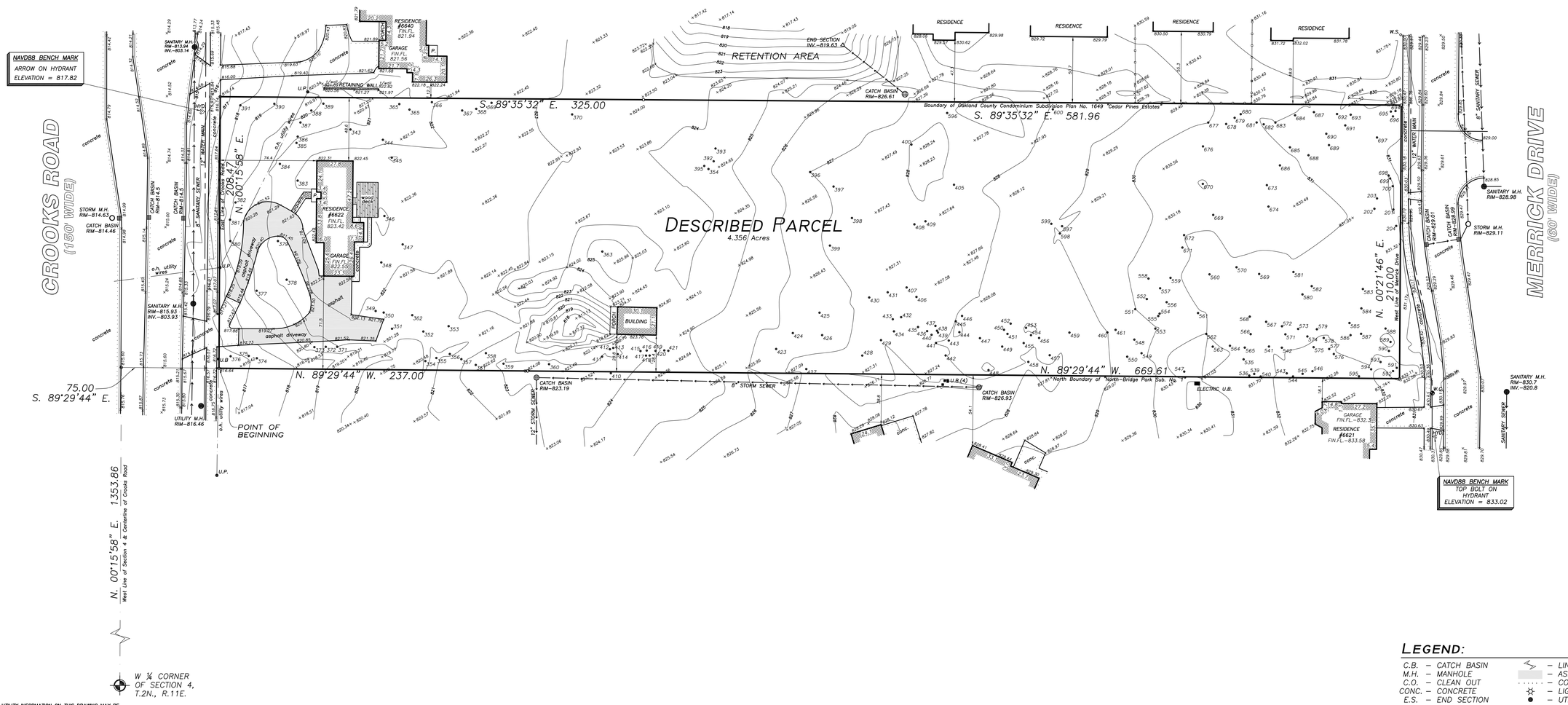
NO SCALE



(IN FEET)
1 inch = 40 feet

LEGAL DESCRIPTION

Part of the Northwest Quarter of Section 4, Town 2 North, Range 11 East, City of Troy, Oakland County, Michigan, described as: Commencing at the West Quarter Corner of Section 4; thence along the West Line of Section 4 and the Centerline of Crooks Road, North 00°15'58" East 1353.86 feet; thence South 89°29'44" East 75.00 feet to the Point of Beginning; thence along the East Line of Crooks Road, North 00°15'58" East 208.47 feet; thence South 89°35'32" East 325.00 feet; thence along the boundary of Oakland County Condominium Subdivision Plan No. 1649 "Cedar Pines Estates" South 89°35'32" East 581.96 feet; thence along the West Line of Merrick Drive, South 00°21'46" West 210.00 feet; thence along the North Boundary of "North-Bridge Park Sub. No. 1" as recorded in Liber 152 of Plats, Pages 39, 40, and 41, Oakland County Records, North 89°29'44" West 669.61 feet; thence continuing North 89°29'44" West 237.00 feet to the Point of Beginning. Contains 4.356 Acres. Subject to Easements and Restrictions of record.



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LEGEND:

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U.B.	– UTILITY BOX	R	– RECORDED
L.P.	– LIGHT POLE	M	– MEASURED
U.P.	– UTILITY POLE	C	– CALCULATED
B.P.	– BOLLARD POST		
W.G.	– WATER GATE		
W.S.	– WATER STOP		
W.V.	– WATER VALVE		

VITINS ENGINEERING
44275 BRANDYWINE
CANTON, MICHIGAN 48187
TELEPHONE: (734) 453-3460
FACSIMILE: (734) 453-5812

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Software Development

ISSUE NO.	DATE ISSUED:	DESCRIPTION:
1	4/11/2013	PRELIMINARY SITE PLAN REVIEW
2	6/3/2013	REVISED PER CITY REVIEW
3	7/15/2013	REVISED PER CITY REVIEW

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PROJECT TITLE

CEDAR PINES WOODS
PRELIMINARY SITE PLAN
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

SHEET NAME

TOPOGRAPHIC SURVEY

PROJECT NUMBER

12140

SHEET NUMBER

C-4

TAG#	SIZE	COMMON NAME	LATIN NAME
201	15"	HICKORY	CARYA OVATA
202	7	PINE	PINUS
203	5	WHITE PINE	PINUS STROBUS
204	6	CHERRY	PRUNUS SEROTINA
343	19	RED OAK	QUERCUS RUBRA
344	10	MAPLE	ACER
345	30	RED OAK	QUERCUS RUBRA
346	27	BLACK WALNUT	JUGLANS NIGRA
347	15	MAPLE	ACER
348	26	RED OAK	QUERCUS RUBRA
349	18	MAPLE	ACER
350	14	WHITE PINE	PINUS STROBUS
351	12	WHITE PINE	PINUS STROBUS
352	15	WHITE PINE	PINUS STROBUS
353	18	WHITE PINE	PINUS STROBUS
354	21	RED OAK	QUERCUS RUBRA
355	14	MAPLE	ACER
356	15	RED OAK	QUERCUS RUBRA
357	20	RED OAK	QUERCUS RUBRA
358	16	MAPLE	ACER
359	20	CHINESE ELM	ULMUS PARVIFOLIA
360	7	TWIN APPLE	MALUS
361	15	MAPLE	ACER
362	5	MAPLE	ACER
363	14	MAPLE	ACER
364	14	MAPLE	ACER
365	26	RED OAK	QUERCUS RUBRA
366	18	RED OAK	QUERCUS RUBRA
367	24	RED OAK	QUERCUS RUBRA
368	12	SPRUCE	PICEA
369	12	SPRUCE	PICEA
370	40	WILLOW	SALIX
371	12	CRABAPPLE	MALUS SYLVESTRIS
372	12	CRAB	MALUS SYLVESTRIS
373	12	CRAB	MALUS SYLVESTRIS
374	10	CRAB	MALUS SYLVESTRIS
375	10	CRAB	MALUS SYLVESTRIS
376	10	CRAB	MALUS SYLVESTRIS
377	30	RED OAK	QUERCUS RUBRA
378	18	MAPLE	ACER
379	18	MAPLE	ACER
380	9	WHITE PINE	PINUS STROBUS
381	12	WHITE PINE	PINUS STROBUS
382	14	WHITE PINE	PINUS STROBUS
383	27	RED OAK	QUERCUS RUBRA
384	24	MAPLE	ACER
385	12	MAPLE	ACER
386	12/9	TWIN MAPLE	ACER
387	12	MAPLE	ACER
388	22	RED OAK	QUERCUS RUBRA
389	12	MAPLE	ACER
390	18	RED OAK	QUERCUS RUBRA
391	22	RED OAK	QUERCUS RUBRA
392	6	BIRCH	BETULA
393	6	APPLE	MALUS
394	5	RED OAK	QUERCUS RUBRA
395	4	RED OAK	QUERCUS RUBRA
396	16	WHITE PINE	PINUS STROBUS
397	10	MAPLE	ACER
398	9	MAPLE	ACER
399	7	MAPLE	ACER
400	7	PINE	PINUS
405	6	WHITE PINE	PINUS STROBUS
406	11	RED OAK	QUERCUS RUBRA
407	6/4	TWIN MAPLE	ACER
408	5	ASH	FRAXINUS
409	5	ASH	FRAXINUS
410	8	TRIPLE HAWTHORN	CRATAEGUS
411	15	MAPLE	ACER
412	10	SPRUCE	PICEA
413	10	SPRUCE	PICEA
414	10	PINE	PINUS
415	13	SPRUCE	PICEA
416	12	SPRUCE	PICEA
417	10	WHITE PINE	PINUS STROBUS
418	17	WHITE PINE	PINUS STROBUS
419	5	SPRUCE	PICEA
420	11	PINE	PINUS
421	13	PINE	PINUS
423	12	TRIPLE MAPLE	ACER
424	15	ELM	ULMUS
425	12	PINE	PINUS
426	9	ELM	ULMUS
427	17	CHERRY	PRUNUS SEROTINA
428	10/7	TWIN MAPLE	ACER
429	12	ELM	ULMUS
430	10	MAPLE	ACER
431	12	MAPLE	ACER
432	12	MAPLE	ACER
433	12	MAPLE	ACER
434	15	PINE	PINUS
435	15	PINE	PINUS
436	15	PINE	PINUS
437	12	PINE	PINUS
438	11	PINE	PINUS
439	13	PINE	PINUS
440	10	PINE	PINUS
441	15	PINE	PINUS
442	12	PINE	PINUS
443	14	PINE	PINUS
444	8	MAPLE	ACER
445	10	CHERRY	PRUNUS SEROTINA
446	8	CHERRY	PRUNUS SEROTINA
447	16	WHITE PINE	PINUS STROBUS
448	24	QUAD. MAPLE	ACER
449	12	PINE	PINUS
450	12	PINE	PINUS
451	12	PINE	PINUS
452	18	WHITE PINE	PINUS STROBUS
453	8	CHERRY	PRUNUS SEROTINA
454	9	MAPLE	ACER
455	11	PINE	PINUS
456	9	MAPLE	ACER
457	18	MAPLE	ACER
458	12	MAPLE	ACER
459	10	MAPLE	ACER
460	12	ELM	ULMUS
461	18	WHITE PINE	PINUS STROBUS

TAG#	SIZE	COMMON NAME	LATIN NAME
535	5"	PINE	PINUS
536	14	CHERRY	PRUNUS SEROTINA
539	9	CHERRY	PRUNUS SEROTINA
540	13	CHERRY	PRUNUS SEROTINA
541	16	WHITE PINE	PINUS STROBUS
542	7	PINE	PINUS
543	8	CHERRY	PRUNUS SEROTINA
544	13	TWIN CHERRY	PRUNUS SEROTINA
545	8	CHERRY	PRUNUS SEROTINA
546	9	CHERRY	PRUNUS SEROTINA
547	30/24	TWIN MAPLE	ACER
548	9	TWIN ELM	ULMUS
549	14	MAPLE	ACER
550	12	MAPLE	ACER
551	9	CHERRY	PRUNUS SEROTINA
552	6	CHERRY	PRUNUS SEROTINA
553	9	ELM	ULMUS
554	9	ELM	ULMUS
555	19	WHITE PINE	PINUS STROBUS
556	7	HAWTHORN	CRATAEGUS
557	7	RED CEDAR	JUNIPERUS VIRGINIANA
558	6	PINE	PINUS
559	8	RED CEDAR	JUNIPERUS VIRGINIANA
560	16	TWIN PINE	PINUS
561	16	WHITE PINE	PINUS STROBUS
562	14	MAPLE	ACER
563	7	PINE	PINUS
564	15	WHITE PINE	PINUS STROBUS
565	14	WHITE PINE	PINUS STROBUS
566	8	PINE	PINUS
567	20	WHITE PINE	PINUS STROBUS
568	18	WHITE PINE	PINUS STROBUS
569	8	ELM	ULMUS
570	6	ELM	ULMUS
571	12	PINE	PINUS
572	12	PINE	PINUS
573	12	PINE	PINUS
574	8	PINE	PINUS
575	9	PINE	PINUS
576	11	WHITE PINE	PINUS STROBUS
577	15	ELM	ULMUS
578	14	PINE	PINUS
579	8	PINE	PINUS
580	8	ELM	ULMUS
581	9	ELM	ULMUS
582	10	MAPLE	ACER
583	9	PINE	PINUS
584	14	WHITE PINE	PINUS STROBUS
585	14	PINE	PINUS
586	12	PINE	PINUS
587	7	WHITE PINE	PINUS STROBUS
588	8	TWIN HICKORY	CARYA OVATA
589	9	HICKORY	CARYA OVATA
590	9	HICKORY	CARYA OVATA
591	10	HICKORY	CARYA OVATA
592	8	HICKORY	CARYA OVATA
593	19	HICKORY	CARYA OVATA
594	8	PEAR	PYRUS
595	12	CHERRY	PRUNUS SEROTINA
596	5	BIRCH	BETULA
597	7	PINE	PINUS
598	6	PINE	PINUS
599	5	PINE	PINUS
600	9	ELM	ULMUS
669	6	PINE	PINUS
670	5	PINE	PINUS
671	5	PINE	PINUS
672	5	CEDAR	THUJA OCCIDENTALIS
673	6	ELM	ULMUS
674	11	MAPLE	ACER
676	8	QUAD. RED OAK	QUERCUS RUBRA
677	8	ELM	ULMUS
678	12	WHITE PINE	PINUS STROBUS
679	11	ELM	ULMUS
680	22	WHITE PINE	PINUS STROBUS
681	9	PINE	PINUS
682	13	PINE	PINUS
683	15	WHITE PINE	PINUS STROBUS
684	16	WHITE PINE	PINUS STROBUS
685	21	WHITE PINE	PINUS STROBUS
686	9	ELM	ULMUS
687	20	WHITE PINE	PINUS STROBUS
688	21	WHITE PINE	PINUS STROBUS
689	21	WHITE PINE	PINUS STROBUS
690	12	PINE	PINUS
691	10	PINE	PINUS
692	10	PINE	PINUS
693	12	PINE	PINUS
694	8	HICKORY	CARYA OVATA
695	15	HICKORY	CARYA OVATA
696	15	HICKORY	CARYA OVATA
697	28	COTTONWOOD	POPULUS
698	9	HICKORY	CARYA OVATA
699	12	HICKORY	CARYA OVATA
700	7	HICKORY	CARYA OVATA

LEGEND:

C.B.	– CATCH BASIN		– LINE BREAK
M.H.	– MANHOLE		– ASPHALT PAVEMENT
C.O.	– CLEAN OUT		– CONCRETE PAVEMENT
CONC.	– CONCRETE		– LIGHT POLE
E.S.	– END SECTION		– UTILITY POLE
F.P.	– FLAG POLE		– SIGN
O.H.	– OVERHEAD	FIP	– FOUND IRON PIPE
U.G.	– UNDERGROUND	FSB	– FOUND STEEL BAR
HYD.	– HYDRANT	SSB	– SET STEEL BAR
GEN.	– GENERATOR	SRC	– SET RIVET IN CONCRETE
TRANS.	– TRANSFORMER	1 ACRE	– 43,560 SQUARE FEET
U.B.	– UTILITY BOX	R	– RECORDED
L.P.	– LIGHT POLE	M	– MEASURED
U.P.	– UTILITY POLE	C	– CALCULATED
B.P.	– BOLLARD POST		
W.G.	– WATER GATE		
W.S.	– WATER STOP		
W.V.	– WATER VALVE		

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44275 BRANDYWINE
CANTON, MICHIGAN 48187
TELEPHONE: (734) 453-3460
FACSIMILE: (734) 453-5812

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PROJECT TITLE
CEDAR PINES WOODS
PRELIMINARY SITE PLAN
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

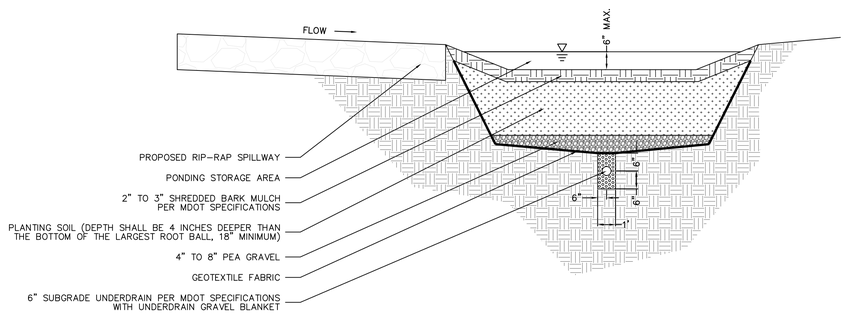
SHEET NAME
TREE LISTING

PROJECT NUMBER
12140

SHEET NUMBER
C-5

PROPOSED BIORETENTION AREA

NOT TO SCALE



Bioretention Area Notes:

Planting Soil: Planting soil should have a sandy loam, loamy sand, or loam texture per USDA textural triangle. Maximum clay content is <5%. The soil mixture should have pH between 5.5 and 6.5 with an organic content of 1.5- 3.0 %. The soil mixture should have an infiltration rate greater than 0.5 in/hour. The soil should be a uniform mix, free of stones, stumps, roots, or other similar objects larger than two inches. No other materials or substances should be mixed or dumped within the bioretention that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil should be free of Bermuda Grass, Quackgrass, Johnson Grass, Mugwort, Nutsedge, Poison Ivy, Canadian Thistle, Tearthub, or other noxious weeds.

Sand: Sand should be clean and free of deleterious materials. For planting soil, MDOT Class II clean sand is recommended.

Mulch: Mulch should consist of raw hardwood, MDOT Quality Product List (QPL). Grass clippings are unsuitable for mulch, primarily due to the excessive quantities of nitrogen built up in the materials.

Geotextile fabric: Geotextile fabric should maintain a flow rate of 125 GPM per square foot. MDOT specifications are recommended (Table 910-1).

Underdrain gravel blanket: The gravel blanket should be double washed, 1-1/2 inches in size. MDOT Class I porous material is recommended. Includes furnishing and lining the trench with geotextile.

Pea Gravel: Pea gravel should be washed, river-run, round diameter, 1/4 - 1/2 inches in size.

Bioretention Area Construction:

Construction traffic over bioretention areas should be avoided.

The area surrounding the bioretention areas should be stabilized prior to construction of the bioretention areas to minimize compaction and contamination of the bioretention site.

Placement of the planting soil in the bioretention area should be in lifts of 12 to 18 inches and lightly compacted. Minimal compaction effort can be applied to the soil by tamping with a bucket from a dozer or backhoe. Do not use heavy equipment within the bioretention facility. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

Compaction will significantly contribute to design failure. Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to re-fracture the soil profile through the 12-inch compaction zone. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before back filling the facility and placement of underdrain. Pump any ponded water before preparing (rototilling) base.

In order to speed up the *natural* compaction process, presoaking the placed soil may be performed. Significant settlement can occur after the first presoak, and additional settlement may occur subsequent to the initial wetting. If time and construction scheduling permits, it is preferable to allow natural settlement to occur with the help of rain events to presoak the soil medium.

Bioretention Area Maintenace:

Proper maintenance will not only increase the expected life span of the facility, but will also improve aesthetics. Annual maintenance of plant material, soil layer and the mulch layer is required for the overall success of bioretention systems.

Mulch should be re-applied once every six months, to maximize nitrogen uptake by the facility and to help control growth of unwanted plants. The mulch layer should be removed and replaced every 2 years.

Mulch should be uniformly applied approximately 2 to 3 inches in depth. Piling mulch around the base of the tree is not recommended as the tree may become infested with pests and diseases. Mulch applied any deeper than three inches reduces proper oxygen and carbon dioxide cycling between the soil and the atmosphere, and keeps roots from making good contact with the soil.

Soils begin filtering pollutants immediately but can lose their ability to function in this capacity over time. Evaluation of soil fertility is important in maintaining an effective bioretention system. It is recommended that soils be tested annually and replaced when soil fertility is lost. Depending on environmental factors, this usually occurs within 5-10 years of construction.

As with any garden, bioretention requires weeding to control growth of unwanted plants that can be invasive, consuming the intended planting, and destroying the aesthetic appeal. Weeding should be accomplished routinely and at least monthly.

Water in the facility should infiltrate the system within 4-6 hours or less. Clogging or blockage of either the surface layer or fines obstructing the filter fabric used between the gravel bed/underdrain and the surrounding planting soil usually causes pooling water. Including a clean out pipe in the underdrain system will provide access for cleaning the system. Removing the mulch layer and raking the surface may correct the surface blockage problem. For blocked filter fabric, use lengths of small reinforcing bar (e.g., 2-3 ft of #4 rebar) to puncture the fabric with holes every 1-foot on center. If the soils themselves are causing the problem, punch holes in the soil or optionally, install a "sand window" at least 1 foot wide running vertically to the underdrain system elevation.

If plants wilt during the heat of the day, but recover in the evening, watering is not necessary. The plants are simply conserving moisture. If they do not recover, watering is indicated. Another good rule of thumb is to stick a pencil or screwdriver about four inches into the soil. If the soil is moist at that depth, watering is not needed. If the soil is dry, and the shrubs or trees were planted within the last three years, watering is necessary.

If any of the plants do not perform well, become diseased or die, they should be replaced.

For trimming and harvesting, the current practice is to leave ornamental grasses and perennial seed heads standing to provide winter interest, wildlife forage, and homes for beneficial insects. Plants should not be cut back until spring when new growth commences, and even then it is only done for neatness; it does not impact growth. Plants may be pinched, pruned, sheared or deadheaded during the growing season to encourage more flowering, a bushier plant, or a fresh set of leaves. Diseased or damaged plant parts should be pruned as they occur. If a plant is pest-infested, perform cleanup in fall to deny the pest a winter home. Trees and shrubs may be pruned for shape or to maximize fruit production.

The properly designed bioretention area should thrive and allow planting materials to expand and propagate, eventually becoming overcrowded. If this occurs, perennial plants should be divided in spring or fall.

By design, bioretention facilities are located in areas where nutrients (especially nitrogen) are significantly elevated above natural levels. Fertilization in such areas usually is unnecessary, because it is unlikely that soil fertility will be the limiting factor in plant growth. If soil fertility is in doubt, a simple soil test can resolve the question. If fertilization should become necessary, an organic fertilizer will provide nutrients as needed without disrupting soil life.

Runoff flowing into bioretention facilities may carry trash and debris with it, particularly in commercial settings. Trash and debris should be removed regularly both to ensure that inlets do not become blocked and to keep the area from becoming unsightly.

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VITINS ENGINEERING
44275 BRANDYWINE
CANTON, MICHIGAN 48187
TELEPHONE: (734) 453-3460
FACSIMILE: (734) 453-5812

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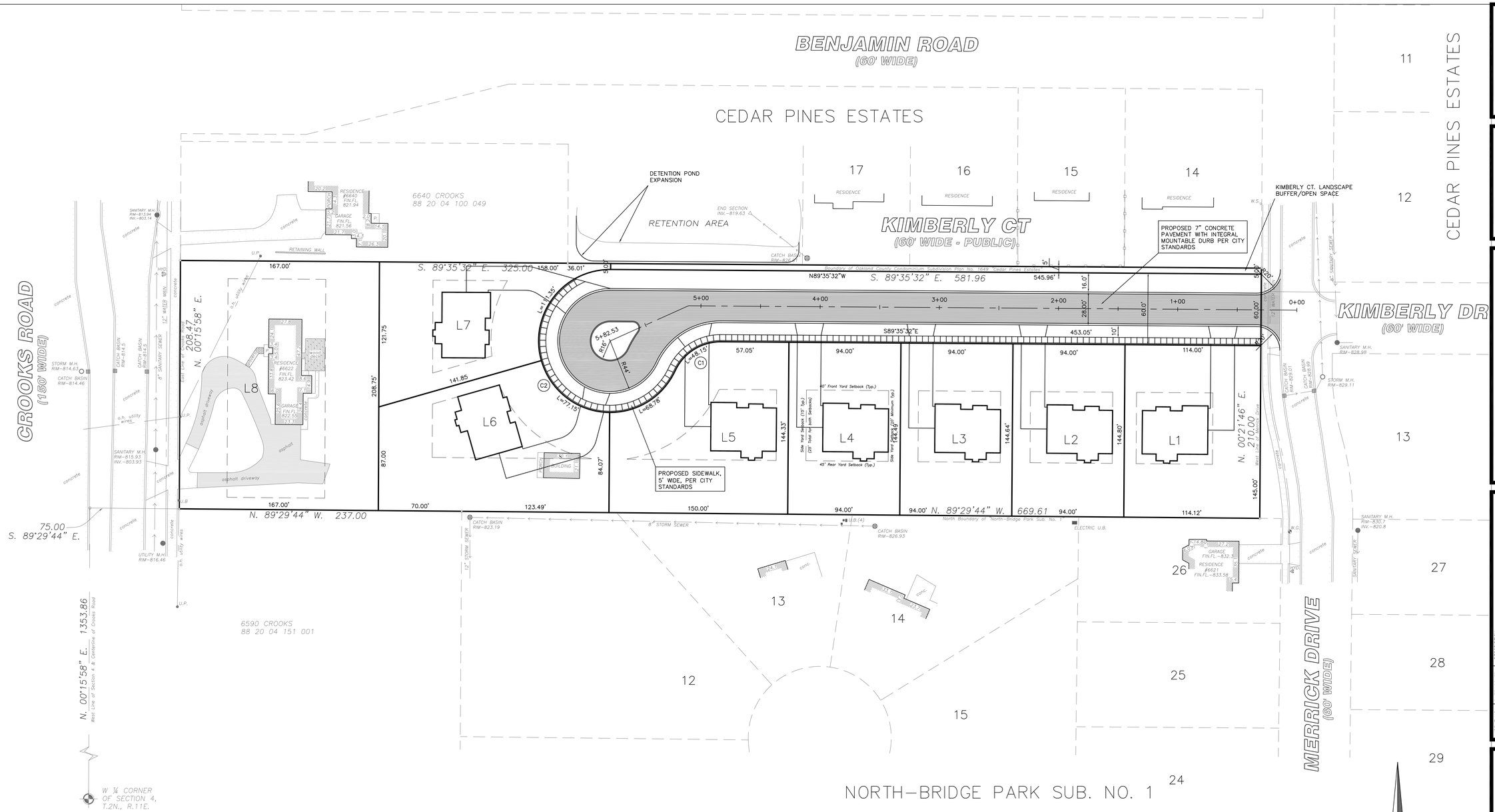
PROJECT TITLE
CEDAR PINES WOODS
PRELIMINARY SITE PLAN
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

SHEET NAME
BIORETENTION AREA DETAILS

PROJECT NUMBER
12140

SHEET NUMBER
C-6



CURVE NUMBER	ARC LENGTH	RADIUS	CENTRAL ANGLE	CHORD BEARING	DISTANCE
C1	48.15'	42.00'	65°41'03"	S 57°33'56" W	45.56'
C2	257.28'	60.00'	245°41'03"	N 32°26'04" W	100.82'

PARCEL	AREA	WIDTH AT SETBACK
L1	16,527.37 SF	114.04'
L2	13,604.06 SF	94.00'
L3	13,589.15 SF	94.00'
L4	13,574.23 SF	94.00'
L5	18,625.74 SF	161.55'
L6	20,056.41 SF	119.90'
L7	14,765.04 SF	95.23'
L8	34,837.34 SF	208.53'

SCALE: 1"=40'

LEGEND:

C.B.	– CATCH BASIN		– LINE BREAK
M.H.	– MANHOLE		– ASPHALT PAVEMENT
C.O.	– CLEAN OUT		– CONCRETE PAVEMENT
CONC.	– CONCRETE		– LIGHT POLE
E.S.	– END SECTION		– UTILITY POLE
F.P.	– FLAG POLE		– SIGN
O.H.	– OVERHEAD	FIP	– FOUND IRON PIPE
U.G.	– UNDERGROUND	FSB	– FOUND STEEL BAR
HYD.	– HYDRANT	SSB	– SET STEEL BAR
GEN.	– GENERATOR	SRC	– SET RIVET IN CONCRETE
TRANS.	– TRANSFORMER	1 ACRE	– 43,560 SQUARE FEET
U.B.	– UTILITY BOX	R	– RECORDED
L.P.	– LIGHT POLE	M	– MEASURED
U.P.	– UTILITY POLE	C	– CALCULATED
B.P.	– BOLLARD POST		
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44275 BRANDYWINE
CANTON, MICHIGAN 48187
TELEPHONE: (734) 453-3460
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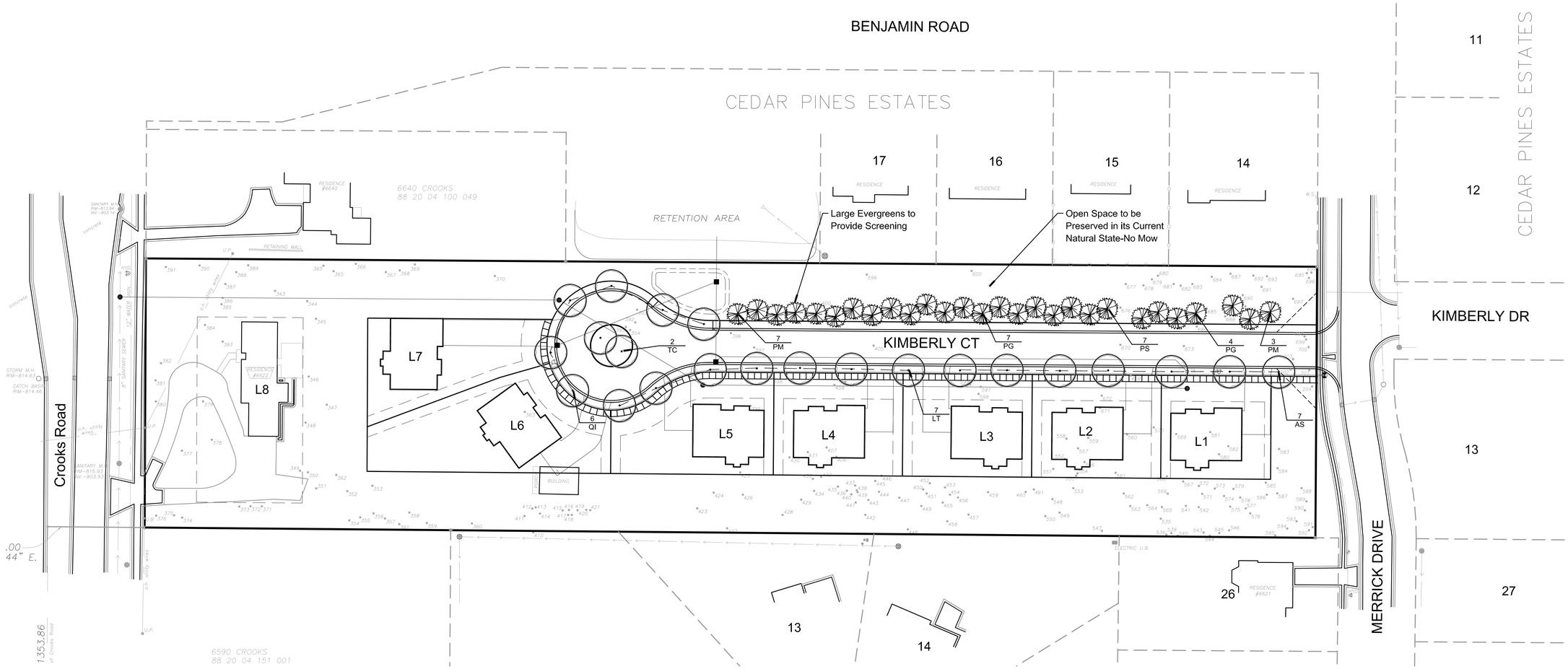
PROJECT TITLE
CEDAR PINES WOODS
PRELIMINARY SITE PLAN
CITY OF TROY
OAKLAND COUNTY, MICHIGAN

SHEET NAME
PARALLEL SITE PLAN

PROJECT NUMBER
12140

SHEET NUMBER
C-7



ALLEN DESIGN
LAND PLANNING / LANDSCAPE ARCHITECTURE
557 CARPENTER • NORTHVILLE, MI 48167
248.467.4668 • Fax 248.349.0559
Email: jca@wideopenwest.com

Seal:

STATE OF MICHIGAN
JAMES C. ALLEN
Landscape Architect
No. 1325
REGISTERED LANDSCAPE ARCHITECT

Title:

Landscape Plan

Project:

Cedar Pines Woods
Troy, Michigan

Prepared for:

Trowbridge Companies
2617 Beacon Hill Drive
Auburn Hills, MI 48326
248.373.5080

Revision:	Issued:
Site Plan Submission	July 15, 2013

Job Number:

13-026

Drawn By:	Checked By:
jca	jca

0' 10' 20' 40'

NORTH
1"=40'

Sheet No.

L-1

Landscape Summary

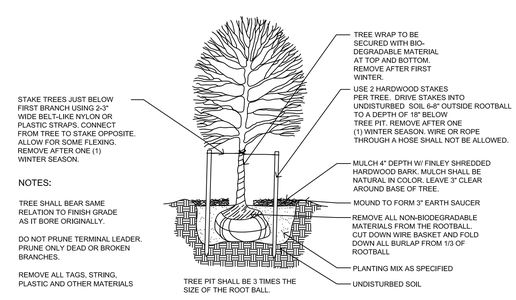
Street Trees

Frontage	1,096 l.f.
Trees Required	21.9 Trees (1 per 50')
Trees Provided	22 Trees

Plant List

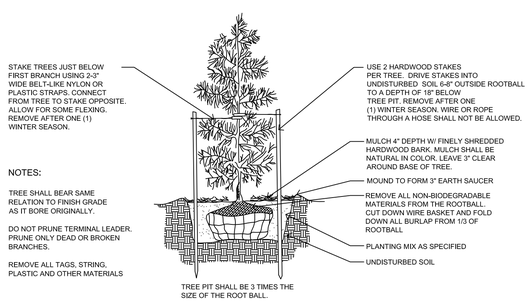
sym.	qty.	botanical name	common name	caliper	spacing	root	height
Street Trees							
AS	7	Acer saccharum	Sugar Maple	2.5"	as shown	B&B	
LT	7	Liriodendron tulipifera	Tulip Tree	2.5"	as shown	B&B	
QI	6	Quercus imbricaria	Shingle Oak	2.5"	as shown	B&B	
TC	2	Tilia cordata 'Chancole'	Cancellor Linden	2.5"	as shown	B&B	
	22	Trees Provided					

sym.	qty.	botanical name	common name	caliper	spacing	root	height
Buffer Trees							
PG	11	Picea glauca	White Spruce		as shown	B&B	12'-15'
PM	10	Picea mariana	Black Spruce		as shown	B&B	12'-15'
PS	7	Pinus strobus	White Pine		as shown	B&B	12'-15'
	28	Trees Provided					



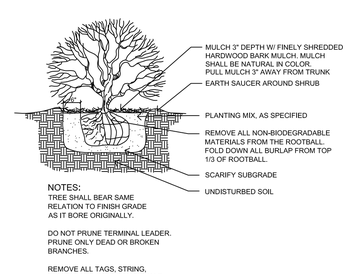
DECIDUOUS TREE PLANTING DETAIL

NTS



EVERGREEN TREE PLANTING DETAIL

NTS



SHRUB PLANTING DETAIL

NTS

LANDSCAPE REQUIREMENTS

1. The work shall consist of providing all necessary materials, labor, warrants, equipment, tools and supervision required for the completion as shown on the drawings.
2. The plant materials shall conform to type stated on the plant list. Sizes shall be the minimum stated on the plant list or larger. All measurements shall be in accordance with the latest edition of the "A.A.N. Standards for nursery stock."
3. The plant material shall be nursery grown and inspected by the owner's representative before planting. The owner's representative reserves the right to reject any plant material at any time.
4. Plants designated "B & B" shall be balled and burlapped with firm balls of earth.
5. The contractor is responsible for planting the materials at the correct grades and spacing. The plants shall be oriented as to give the best appearance.
6. When the plant has been properly set, the pit shall be backfilled with a topsoil mixture, gradually filling, patting and settling with water.
7. All plant materials shall be pruned and injuries repaired. The amount of pruning shall be limited to the removal of dead or injured twigs and to compensate for the loss of roots from transplanting. Cuts should be flush, leaving no stubs. Cuts over 1" shall be painted with tree paint.
8. The contractor agrees to guarantee all plant materials for the period of two years. At that time the owner's representative reserves the right for a final inspection. Plant material with 25% die back, as determined by the owner's representative shall be replaced. This guarantee includes the furnishing of new plants, labor and materials. These new plants shall also be guaranteed for the period of one year.
9. Topsoil shall be friable, fertile topsoil of clay loam character containing at least 5% but not more than 20% by weight of organic matter with a PH range from 6.0 to 7.0. Soil shall be free from clay lumps, coarse sand, plant roots, sticks and other foreign materials. foreign materials.
10. Seed mix shall consist of the following types and proportions:
    Kentucky Blue Grass - "Baron/Cherladelphi" 60%
    Chewing Chewing Fescue 15%
    Creeping Reed Fescue 15%
    Perennial Rye Grass 10%
    Weed content shall not exceed 1%.
    The mix shall be applied at a rate of 200 lbs./acre
11. Sod shall be two year old "Baron/Cherladelphi" Kentucky Blue Grass grown in a sod nursery on loam soil.
12. The Contractor shall verify all rights of way, easements, property lines and limits of work, etc. prior to commencing work.
13. The Contractor shall be responsible for contacting and coordinating with all pertinent utility companies 72 hours in advance of any digging to make himself familiar with all underground utilities, pipes and structures. The Contractor shall take sole responsibility for any cost incurred due to damage of said utilities.
14. The Contractor shall not willfully proceed with construction as designed when it is obvious that unknown obstructions and/or grade differences exist. Such conditions shall be immediately brought to the attention of the owner's representative and/or Landscape Architect. The Contractor shall assume full responsibility for all necessary revisions due to failure to give such notification.
15. Any discrepancies between dimensioned layout and actual field conditions shall be reported to the Owner's representative and Landscape Architect. Failure to make such discrepancies known will result in Contractor's responsibility and liability for any changes and associated cost.
16. The Contractor to verify percolation of all planting pits prior to installation of plant material.

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

GENERAL NOTES:

1. 2x10 FLOOR JOISTS @ 12" O.C. UNDER ALL TILE OR MARBLE FLOORS 20 LB DEAD LOAD REQUIRED.
2. ALL POURED CONCRETE WALLS TO BE BACKFILLED WITH SANDY TYPE SOIL AND BE WELL BRACED UNTIL CONCRETE IS THOROUGHLY CURED AND ADDITIONAL WEIGHT OF THE BUILDING IS IN PLACE.
3. ALL FLOOR JOISTS TO BE #2 OR BETTER HEM FIR WITH 1" X 3" CROSS BRIDGING 8'-0" O.C.
4. ROOF TRUSS DESIGNED BY TRUSS MANUFACTURER TO CONFORM TO ALL MINIMUM DESIGN LOAD REQUIREMENTS. BRACE ROOF TRUSSES AS RECOMENDED BY MANUFACTURER.
5. ROOF TRUSS FRAMING INDICATED ON DRAWINGS IS OUR ASSUMED LAYOUT. TRUSS MANUFACTURER SHOULD REVIEW THE DRAWING AND INDICATE TO ARCHITECT PRIOR TO FABRICATION, ANY CHANGE IN BEARING CONDITIONS THAT WOULD REQUIRE RE-FRAMING OF OUR STRUCTURE TO ACCOMODATE TRUSSES.
6. ALL POURED CONCRETE FOOTING TO BE A MINIMUM OF 3'-6" BELOW FINISHED GRADE BEARING ON UNDISTURBED VIRGIN SOIL WITH A MINIMUM BEARING CAPACITY OF 2,000 P.S.F. MUST BE VERIFIED BY SOILS ENGINEER IN THE FIELD FOR FOOTING INSPECTION.
7. ALL POURED CONCRETE WALLS WITH 7'-0" OR MORE BACKFILL TO BE REINFORCED WITH #4 BARS 16" O.C. VERTICALLY WITH ONE #4 BAR TOP AND BOTTOM OF WALL HORIZONTALLY. VERIFY IN FIELD FOR FOOTING INSPECTOR.
8. ALL WINDOW NUMBERS REFER TO ANDERSON 200 SERIES WINDOWS. IF ALTERNATE WINDOW MANUFACTURER IS USED. ALL SIZES AND SHAPES TO MATCH DIMENSIONALLY.
9. ALL ENGINEERED WOOD FLOOR TRUSSES TO BE #1 DENSE K.D. WITH 2" BY 6" CONTINUOUS RIBBON BRACING ON BOTTOM CORD 8'-0" O.C. (MINIMUM 2 PER SPAN) WELL NAILED TO TRUSSES. PROVIDE DRAFT-STOPPING.
10. THE ROOF TRUSS MANUFACTURER TO FURNISH SHOP DRAWING TO THE DESIGNER PRIOR TO FABRICATION OF THE TRUSSES.
11. ALL MICRO-LAM BEAMS TO BE JOINED TOGETHER PER MANUFACTURER'S SPECIFICATIONS.
12. ALL POURED CONCRETE WALLS WITH BRICK LEDGE GREATER THAN 4'-0" SHALL BE REINFORCED WITH #5 BARS 24" O.C. VERTICALLY WITH ONE #4 BAR TOP AND BOTTOM OF WALL HORIZONTALLY.
13. DO NOT SCALE DRAWING. USE PRINTED DIMENSIONS ONLY. IF ANY DISCREPANCY OCCURS, NOTIFY THE DESIGNER IMMEDIATELY FOR DIRECTION. BUILDER RESPONSIBLE TO HAVE REVIEWED ALL DRAWINGS AND IF ADDITIONAL CLARIFICATION OR INFORMATION IS NEEDED BUILDER IS TO CONTACT DESIGNER AND SALES COUNSELOR.
14. PROVIDE 15 POUND FELT AT UNTREATED EXPOSED LUMBER.
15. ALL BEDROOM WINDOWS TO MEET 2009 MICHIGAN RESIDENTIAL EGRESS CODES. ALL WINDOW SILLS, 72" ABOVE FINISH GRADE, SHALL HAVE THE BOTTOM OF THE OPENING LOCATED A MIN. OF 24" ABOVE FINISH FLOOR OF THE ROOM PER MRC 2009 SEC. R612.2.
16. PROVIDE FIBER-CEMENT, FIBER-MAT REINF. CEMENT, GLASS MAT GYPSUM BACKERS OR FIBER REINF. GYPSUM BACKERS AS BACKERS FOR TUB &/OR SHOWER WALL TILES AND PANELS. BACKERS MUST COMPLY W/ ASTM C 1288, C 1325, C1178 OR C 1278 AND BE INSTALLED PER MANUF. RECOMMENDATIONS. MRC 2009 SEC. R702.4.2.
17. WHERE HANDRAILS ARE SHOWN, HANDRAIL HEIGHT IS TO BE NOT LESS THAN 34" AFF. AND MORE THAN 38" AFF. PER R311.7.7.1 GUARD RAIL IS TO BE NOT LESS THAN 36" AFF. PER R312.2. (MRC-2009) PROVIDE HANDRAIL ON AT LEAST (1) SIDE OF EVERY STAIRWAY PER SECTION R311.7.7 OF THE 2009 MICHIGAN RESIDENTIAL CODE. HANDRAIL GRIP TO COMPLY WITH 2009 MICHIGAN RESIDENTIAL CODE SECTION R311.7.7.3.
18. DO NOT DRILL KITCHEN WINDOW DOUBLERS.
19. PROVIDE A BATH FAN WHERE SHOWN ON PLAN AND VENT FAN TO EXTERIOR AS REQUIRED.
20. TYPICAL ALL HABITABLE ROOMS TO HAVE PROPER LIGHT AND VENTILATION AND COMPLY WITH 2009 MICHIGAN RESIDENTIAL CODES.
21. PROVIDE ELECTRICAL SMOKE DETECTORS IN ALL SLEEPING AREAS, HALLWAYS, AND MECHANICAL ROOMS ON ALL FLOOR LEVELS, INCLUDING THE BASEMENT. SMOKE DETECTORS SHALL BE WIRED TOGETHER SO AS WHEN ONE SOUNDS THEY ALL SOUND AND HAVE BATTERY BACKUP PER SEC. R314 OF 2009 MICHIGAN RESIDENTIAL CODE.
22. PROVIDE ADEQUATE ROOF VENTILATION AND SOFFIT VENTILATION (MIN) AS REQUIRED. VERIFIED BY CALCULATION 1/150 OF AREA VENTILATION REQ'D PER SEC. R806.2.
23. TYPICALLY ALL PINS IN POURED CONCRETE FOUNDATION WALLS MUST BE REMOVED AND FILLED WITH FOUNDATION COATING PRIOR TO BACK FILL INSPECTION.
24. PROVIDE METAL FLASHING, COUNTER FLASHING AND STEPPED FLASHING WHERE NOTED AND BRICK AND SIDING MEET.
25. PROVIDE APPROVED SEALANT WHERE REQUIRED AND AS DETAILED BY MFG.
26. VERIFY ELECTRICAL SERVICE IN ACCOMMODATING ALL NEW WORK. VERIFY ALL PROPOSED ELECTRICAL OUTLETS, SWITCHES, DIMMERS, LIGHT LOCATION, ETC. INCLUDING CABLE AND PHONE PRE-WIRING SECURITY. TAKE INTO CONSIDERATION ALL ELECTRICAL INSTALLATION WITH OWNER, AND COMPLY WITH 2009 MICHIGAN RESIDENTIAL ELECTRICAL CODES.
27. VERIFY FIREPLACE OPTION WITH SUBDIVISION SPECS. AND WORK ORDER.
28. PROVIDE 2-LAYER MINERAL COATED ROLLED ROOFING AT ALL EAVES TO 24" INSIDE BUILDING. 2-LAYERS MUST BE CEMENTED TOGETHER VERIFY WITH BUILDING DEPARTMENT.
29. PROVIDE 2X6 WOLMANIZED PRESSURE TREATED SILL PLATE ON SILL SEALER WITH 1/2" ANCHOR BOLTS @ 6'-0" O.C. AND LOCATED NOT MORE THAN 12" INCHES AND NOT LESS THAN 3 1/2" INCHES FROM THE ENDS OF EACH PLATE SECTION. EXCEPTION: USE ANCHOR STRAPS, SPACED AS REQUIRED TO PROVIDE EQUIVALENT ANCHORAGE TO 1/2" INCH ANCHOR BOLTS
30. PROVIDE 4" PERF. DRAIN TILE CONT. AT BASEMENT FTG. IN 12" (MIN) PEASTONE WITH 2" BELOW DRAIN TILE. CONNECT TO SUMP AND STORM SEWER AS REQUIRED.
31. 6'-8" CLEAR HEADROOM REQUIRED ON ALL STAIRS.
32. CHIMNEY TERMINATION MUST PROJECT 2 FEET ABOVE ANY PART OF THE BUILDING WITHIN 10 FEET.
33. FIRESTOP ALL DROPS AND CHASES, ELECTRICAL, PLUMBING AND H.V.A.C.
34. PROVIDE 1/2" DRYWALL ON THE GARAGE SIDE OF WALLS COMMON TO RESIDENCE AND GARAGE. APPLY 5/8" TYPE "X" DRYWALL TO GARAGE CEILINGS AREAS BELOW HABITABLE ROOMS PER MRC 2009 TABLE R302.6.
35. LOWER LEVEL AREA CONSIDERED UNINHABITABLE. ANY FUTURE ALTERATIONS TO MODIFY LOWER LEVEL TO A HABITABLE SPACE WILL COMPLY STRICTLY TO THE 2009 MICHIGAN RESIDENTIAL CODE. EGRESS WINDOW(s) PROVIDED, AS REQUIRED, IN COMPLIANCE W/ MRC 2009 SEC. R310.1 - R310.5.
36. AREAS THAT REQUIRE TEMPERED GLASS:
    - A. FIXED AND SLIDING PANELS OF SLIDING TYPE DOORS.
    - B. SHOWER AND BATHTUB DOORS AND ENCLOSURES (IF APPLICABLE).
    - C. PANELS WITH A GLAZED AREA IN EXCESS OF 9 SQ. FT. WITH LOWEST EDGE LESS THAN 18 INCHES ABOVE THE FINISHED FLOOR LEVEL.
    - D. ALL OTHER AREAS AS CODE REQUIRES PER 2009 MICHIGAN RESIDENTIAL CODE.
37. ROOF VENTILATION WHERE EAVE OR CORNICE VENTS ARE INSTALLED INSULATION SHALL NOT BLOCK THE FREE FLOW OF AIR. A MINIMUM OF A 1" INCH SPACE SHALL BE PROVIDED BETWEEN THE INSULATION AND THE ROOF SHEATHING AT THE LOCATION OF THE VENTS.

NOTE:
ALL CODES SHALL COMPLY WITH THE INTERNATIONAL RESIDENTIAL CODES & 2009 MICHIGAN RESIDENTIAL CODE. THEY SHALL ALSO COMPLY WITH ANY JURISDICTION CODES IN THEIR RESPECTIVE COUNTY, CITY, VILLAGE, OR TOWNSHIP AND THEIR PROVISIONS AND ORDINANCES.

NOTE:
GENERAL NOTES INDICATED ABOVE ARE JUST A SMALL PORTION OF OUR STANDARD NOTES & THE 2009 MICHIGAN RESIDENTIAL CODE BUT THE CODE IS MUCH BROADER & SHOULD BE STRICTLY FOLLOWED BY BUILDERS, TRADES & CRAFTSMAN.

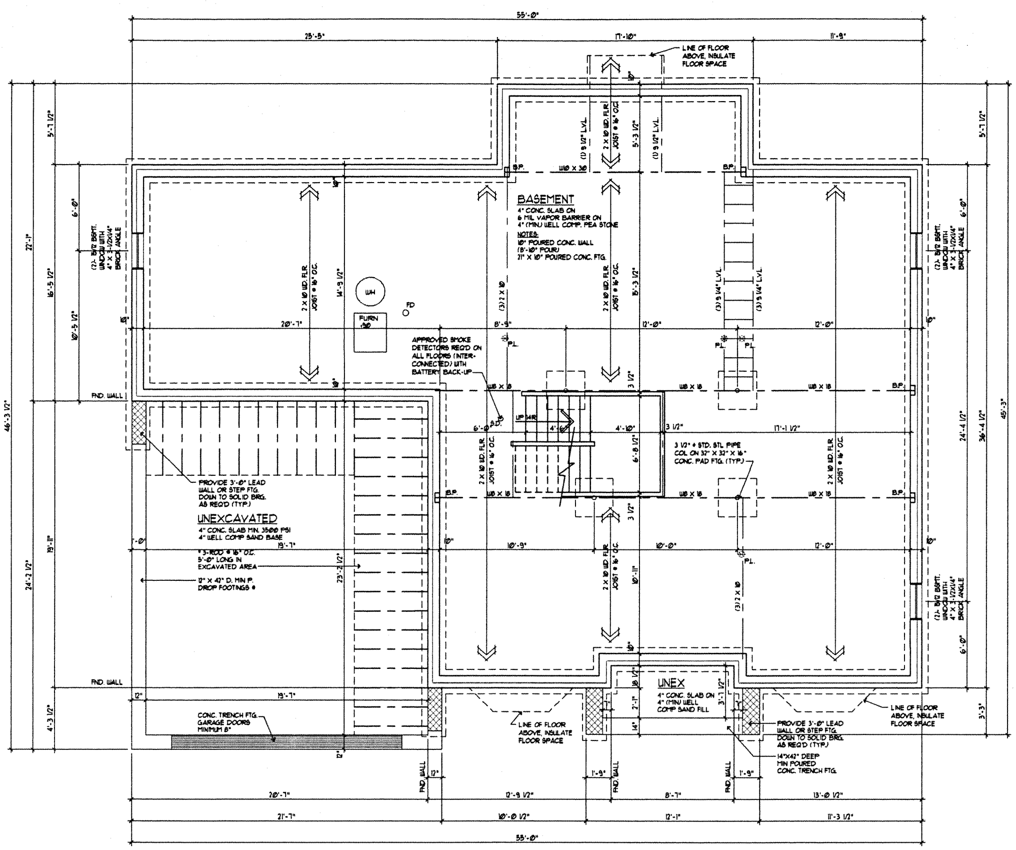
40. ALL STAIRWAYS SHALL BE ILLUMINATED WITH MIN. (1) FOOT CANDLE OF LIGHT.
41. PROVIDE UNDERSTAIR PROTECTION MRC 2009 ENCLOSED ACCESSIBLE SPACE UNDER SHALL HAVE WALLS, UNDER STAIR SURFACE AND ANY SOFFITS PROTECTED ON THE ENCLOSED SIDE WITH 1/2" GYPSUM BOARD.
42. UNEXCAVATED GARAGE SLAB SHALL COMPLY W/ TABLE R402.2 4" CONCRETE SLAB MIN. 3500 MINIMUM SPECFIED COMPRESSIVE STRENGTH OF CONCRETE ON 4" MIN. WELL COMPACTED SAND BASE.
43. PROVIDE NON-ABSORBENT FINISH, TO THE SURFACE OF ALL BATHING AREAS W/ WALL MOUNTED SHOWER HEADS, A MIN. OF 6'-0" ABOVE FINISH FLOOR PER MRC 2009 SEC. R307.2.
44. PROVIDE A 1 3/8" MIN. SOLID CORE FIRERATED DOOR BETWEEN GARAGE AND RESIDENCE MIN. 20 MINUTE FIRERATED R302.5.1.
45. BUILDER AND SUB BRICK CONTRACTORS TO PROVIDE WEEP HOLES RESTING ON THE FLASHING SPACED 33" O.C. MAX. (24" PREFERRED) AT HEAD DETAILS OF: WINDOWS, DOORS, BASEMENT WINDOWS AND GARAGE DOORS. ALSO PROVIDE FLASHING TO FACE OF BRICK W/ MIN. 8" VERTICAL LEG AND FORM END DAMS (LAP UNDER AIR/MOISTURE BARRIER). MICIGAN RESIDENTIAL CODE 2009 SEC. 703.7.5 - 703.8. A PRE-BRICK INSPECTION WILL BE REQ'D PRIOR TO BRICK INSTALLATION FOR FLASHING INSPECTION.
46. FASTENER SCHEDULE FOR STRUCTURAL MEMBERS TABLE R602.3 (1) WOOD STRUCTURAL PANELS, SUBFLOOR, ROOF AND WALL SHEATHING TO FRAMING AND PARTICLEBOARD WALL SHEATHING TO FRAMING, BUILDING MATERIALS OF 5/8"-1/2" USE 6d COMMON NAIL(SUBFLOOR, WALL) @ 6" FROM EDGES 12" INTERMEDIATE SUPPORTS AND USE 8d COMMON NAILS FOR ROOF 6" FROM EDGES 12" INTERMEDIATE.
47. BUILDER /OWNER TO PROVIDE WATERPROOFING TO CODE SUBMIT INFORMATION ON APPROVED PRODUCTS.
48. BUILDER/TRUSS MFG. TO PROVIDE TRUSS DESIGN DRAWINGS IN COMPLIANCE WITH MRC 2009 AND SHALL INCLUDE AT MINIMUM, THE INFORMATION SPECIFIED BELOW.
    1. SLOPE OR DEPTH, SPAN, AND SPACING
    2. LOCATION OF ALL JOINTS
    3. REQUIRED BEARING WIDTHS
    4. DESIGN LOADS AS APPLICABLE
       - 4.1 TOP CHORD LIVE LOAD (INCLUDING SNOW LOADS)
       - 4.2 TOP CHORD DEAD LOAD
       - 4.3 BOTTOM CHORD LIVE LOAD
       - 4.4 BOTTOM CHORD DEAD LOAD
       - 4.5 CONCENTRATED LOADS AND THEIR POINTS OF APPLICATION
       - 4.6 CONTROLLING WIND AND EARTH QUAKE LOADS
    5. ADJUSTMENTS TO LUMBER AND JOINT CONNECTOR DESIGN VALUES FOR CONDITIONS OF USE.
    6. EACH REACTION FORCE AND DIRECTION
    7. JOINT CONNECTOR TYPE AND DESCRIPTION E.G., SIZE THICKNESS OR GAUGE,& AND THE DIMENSIONED LOCATION OF EACH JOINT CONNECTOR EXCEPT WHERE SYMMETRICALLY LOCATED RELATIVE TO THE JOINT INTERACE.
    8. LUMBER SIZE, SPECIES AND GRADE FOR EACH MEMBER.
    9. CONNECTION REQUIREMENTS FOR:
       - 9.1 TRUSS-TO-TRUSS GIRDER
       - 9.2 TRUSS PLY TO PLY
       - 9.3 FIELD SPLICES
    10. CALCULATED DEFLECTION RATIO AND/OR MAXIMUM DESCRIPTION FOR LIVE AND TOTAL LOAD.
    11. MAXIMUM AXIAL COMPRESSION FORCES IN THE TRUSS MEMBERS TO ENABLE THE BUILDING DESIGNER TO DESIGN THE SIZE CONNECTIONS AND ANCHORAGE OF THE PERMANENT CONTINUOUS LATERAL BRACING. FORCES SHALL BE SHOWN ON THE TRUSS DRAWING OR ON SUPPLEMENTAL DOCUMENTS.
    12. REQUIRED PERMANENT TRUSS MEMBER BRACING LOCATION.

ALLOWABLE SPANS FOR LINTELS SUPPORTING MASONRY VENEER

TABLE R703.7.3.1 OF MRC 2009

SIZE OF ANGLE (IN) a, c	NO STORY ABOVE	ONE STORY ABOVE	TWO STORIES ABOVE	NO. OF 1/2" OR EQ. REINF. BARS b
3 X 3 X 1/4	6'-0"	4'-6"	3'-0"	1
4 X 3 X 1/4	8'-0"	6'-0"	4'-6"	1
5 X 3 1/2 X 5/16	10'-0"	8'-0"	6'-0"	2
6 X 3 1/2 X 5/16	14'-0"	9'-6"	7'-0"	2
(2) 6 X 3 1/2 X 5/16	20'-0"	12'-0"	9'-6"	4

a. LONG LEG OF THE ANGLE SHALL BE PLACED IN A VERTICAL POSITION
b. DEPTH OF REINFORCED LINTELS SHALL NOT BE LESS THAN 8 INCHES AND ALL CELLS OF HOLLOW MASONRY LINTELS SHALL BE GROUTED SOLID. REINFORCING BARS SHALL EXTEND NOT LESS THAN 8 INCHES INTO THE SUPPORT.
c. STEEL MEMBERS INDICATED ARE ADEQUATE TYPICAL EXAMPLES. OTHER STEEL MEMBERS, MEETING STRUCTURAL DESIGN REQUIREMENTS, MAY BE USED.



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

BUILDER

TROWBRIDGE CONSTRUCTION

PROJECT

THE ST JAMES

Date:

Revisions:

Drwn: AP

Chkd:

Sheet #

Job No::

GENERAL STRUCTURAL NOTES:

(REFER ONLY TO NOTES APPLICABLE TO THE PROJECT)

DESIGN CRITERIA:

- BUILDING CODES USED FOR DESIGN:
  2009 MICHIGAN RESIDENTIAL CODE (MRC)
- FLOOR LIVE AND DEAD LOADS:
  40 psf LIVE
  15 psf DEAD FOR WOOD, LINOLEUM AND CARPET FLOORING
  20 psf DEAD FOR THIN SET CERAMIC FLOORING
  35 psf DEAD FOR MARBLE / GRANITE FLOORING
- MINIMUM DEFLECTION CRITERIA:
  L/240 LIVE AND L/180 TOTAL FOR ROOF COMPONENTS
  L/360 LIVE AND L/240 TOTAL FOR FLOOR COMPONENTS WITH RIGID FLOORING (e.g. TILE)
  L/480 LIVE AND L/360 TOTAL FOR FLOOR COMPONENTS WITH FLEXIBLE FLOORING (e.g. CARPET)
- ROOF LIVE AND SNOW LOADS:
  FLAT-ROOF SNOW LOAD — Pg = 30 psf
  FLAT ROOF DEAD — 15 psf
- WIND LOADS:
  BASIC WIND SPEED — 90 MPH
  WIND IMPORTANCE FACTOR — Iw = 1.0
  BUILDING CATEGORY — II
  WIND EXPOSURE — B
- DESIGN STRENGTHS:
  CONCRETE:

CLASS	STRENGTH AT 28 DAYS (PSI)	LOCATION
A	3000	INTERIOR SLABS + WALLS
B	3000	FOOTINGS + FOUNDATION WALLS
C	3000	AIR-ENTRAINED EXTERIOR SLABS + WALLS

  CONCRETE REINFORCEMENT: — ASTM A615/A615M-08b (fy = 60 KSI)
  WELDED WIRE FABRIC: — ASTM A185-01

  STRUCTURAL STEEL:
  ANCHOR RODS: — ASTM A307-02
  ALTERNATIVELY - F554-99 GR 36 MAY BE USED

  MASONRY:
  NORMAL WEIGHT — Fm = 1500 PSI

FOUNDATIONS AND EARTHWORK:

- WATER SHALL NOT BE PERMITTED TO ACCUMULATE IN FOOTING EXCAVATIONS.
- PROVIDE A MINIMUM OF 6 INCHES OF GRANULAR FILL BELOW ALL INTERIOR SLABS-ON-GRADE.
- PROVIDE GRANULAR BACKFILL FOR BASEMENT WALLS. ALL BACKFILL SHALL BE WELL DRAINED.
- THE FOUNDATION DESIGN IS BASED ON A SOIL BEARING PRESSURE OF 1500 PSF. OTHERS SHALL DETERMINE THE ACTUAL BEARING VALUE OF THE SOIL.
- ALL FOOTING EXCAVATIONS SHALL BE INSPECTED, PRIOR TO CONCRETE PLACEMENT.
- WHERE COMPACTION OF FILL IS SPECIFIED, COMPACTION OF FILL MATERIAL SHALL BE A MINIMUM 95% OF MAXIMUM DRY DENSITY.
- BOTTOM OF EXTERIOR BUILDING FOOTINGS ARE TO BE AT LEAST 42 INCHES BELOW FINAL OUTSIDE GRADE REGARDLESS OF ELEVATION SHOWN ON PLAN.
- ALL CONTINUOUS FOOTINGS SHALL BE CENTERED UNDER WALLS AND ALL PIERS AND SPREAD FOOTINGS SHALL BE CENTERED UNDER COLUMNS OR PIERS UNLESS NOTED OTHERWISE.
- NO SLABS OR FOUNDATIONS SHALL BE PLACED INTO OR ADJACENT TO SUBGRADE CONTAINING WATER, ICE FROST OR ORGANIC MATERIAL.
- WHERE FOUNDATION WALLS ARE TO HAVE SOIL PLACED ON BOTH SIDES, PLACE SOIL SIMULTANEOUSLY SO AS TO MAINTAIN A COMMON ELEVATION ON EACH SIDE OF THE WALL.

CONCRETE:

- THE REINFORCING STEEL CONTRACTOR SHALL FABRICATE ALL REINFORCEMENT AND FURNISH ALL ACCESSORIES, CHAIRS, SPACER BARS AND SUPPORTS NECESSARY TO SECURE THE REINFORCEMENT UNLESS SHOWN OTHERWISE ON THE PLANS AND/OR DETAILS.
- REINFORCING STEEL SHALL BE ASTM A615 (GRADE 60).
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
- CONCRETE REINFORCEMENT SHALL BE PLACED ACCORDING TO THE CRSI "RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS".
- CONCRETE COVERAGE FOR REINFORCEMENT:
  FOOTINGS — 3"
  SLAB ON GRADE — CENTER OF SLAB
  WALLS EXPOSED TO EARTH — 2"
  COLUMN TIES — 1½"
- COMPRESSION LAP SPLICES FOR GRADE 60 BARS SHALL BE 30 BAR DIAMETER MINIMUM.
- TENSION LAP SPLICES SHALL BE AS DETAILED. USE CLASS "B" SPLICES UNO.
- ALL WELDED WIRE FABRIC LAPS SHALL BE 8" AT ENDS AND SIDES.
- BAR LENGTHS SHOWN DO NOT INCLUDE HOOKS OR BENDS.
- CONCRETE AT THE TIME OF PLACEMENT SHALL HAVE A SLUMP OF 4" ± 1" UNLESS A SUPER-PLASTICIZING AGENT IS USED.
- ALL OPENINGS IN CONCRETE WALLS SHALL HAVE (2) 5' x 4'-0" LONG BARS DIAGONALLY AT EACH CORNER.

MASONRY:

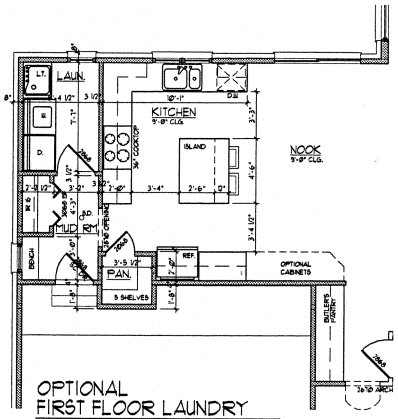
- GROUT FOR VERTICALLY REINFORCED MASONRY WALLS AND BOND BEAMS SHALL CONSIST OF: 1 PART CEMENT, 3½ PARTS FINE AGGREGATE, 2 PARTS PEA GRAVEL. FC' = 3,000 PSI AT 28 DAYS. GROUT SLUMP 9" TO 10". GROUT SOLID ALL CELLS CONTAINING REINFORCING.
- MASONRY WALLS SHALL HAVE HORIZONTAL REINFORCING CONSISTING OF GALVANIZED STANDARD WEIGHT 9 GAUGE DUR-O-WALL DVA 310 TRUSS TYPE OR EQUAL. REINFORCING LOCATED AT EVERY OTHER COURSE UNO.
- LAP ALL VERTICAL REINFORCING SPLICES 48 BAR DIAMETERS. 24" FOR #4 BARS, 30" FOR #5 BARS AND 36" FOR #6 BARS.
- ANCHOR BEAMS AND LINTELS TO WALL.
- MASONRY WALLS SHALL BE LAID UP AND GROUTED IN 4 FOOT LIFTS (LOW LIFT GROUTING PROCEDURE PER ACI 530). 8" CLEANOUTS ARE PROVIDED AT EACH GROUTED CORE. WALLS MAY BE GROUTED IN 8 FOOT LIFTS FOLLOWING THE HIGH-LIFT GROUTING PROCEDURE PER ACI 530.
- THE PROCEDURE OF ACI 530.1 FOR COLD WEATHER CONSTRUCTION SHALL BE ADHERED TO WHENEVER THE AIR OUTSIDE TEMPERATURE IS BELOW 40 DEGREES F.

STRUCTURAL STEEL:

- YIELD STRESS AND TYPE OF STEEL:
  FOR WIDE FLANGE SHAPES: ASTM A992 WITH YIELD STRESS OF 50,000 PSI.
  FOR S SHAPES, CHANNELS, ANGLES, BARS, PLATES AND RODS: ASTM A36 WITH YIELD STRESS OF 36,000 PSI.
  FOR RECTANGULAR AND SQUARE TUBULAR SHAPES: ASTM A500B WITH YIELD STRESS OF 46,000 PSI.
- BOLTS: USE CARBON OR ALLOY STEEL ASTM A325, ¾" DIA. OR LARGER IF REQUIRED BY CONNECTION DESIGN. ANCHOR BOLTS SHALL BE WEDGE STYLE ANCHOR, HILTI KWIK BOLT 3. NUTS: CARBON STEEL MEETING ASTM A563. WASHERS: HARDENED STEEL WASHERS MEETING ASTM F436. ASTM A307 BOLTS MAY BE USED FOR WOOD TO WOOD CONNECTIONS AND STEEL LINTEL TO WOOD CONNECTIONS.
- ANCHOR RODS: ASTM F554, GRADE 36.

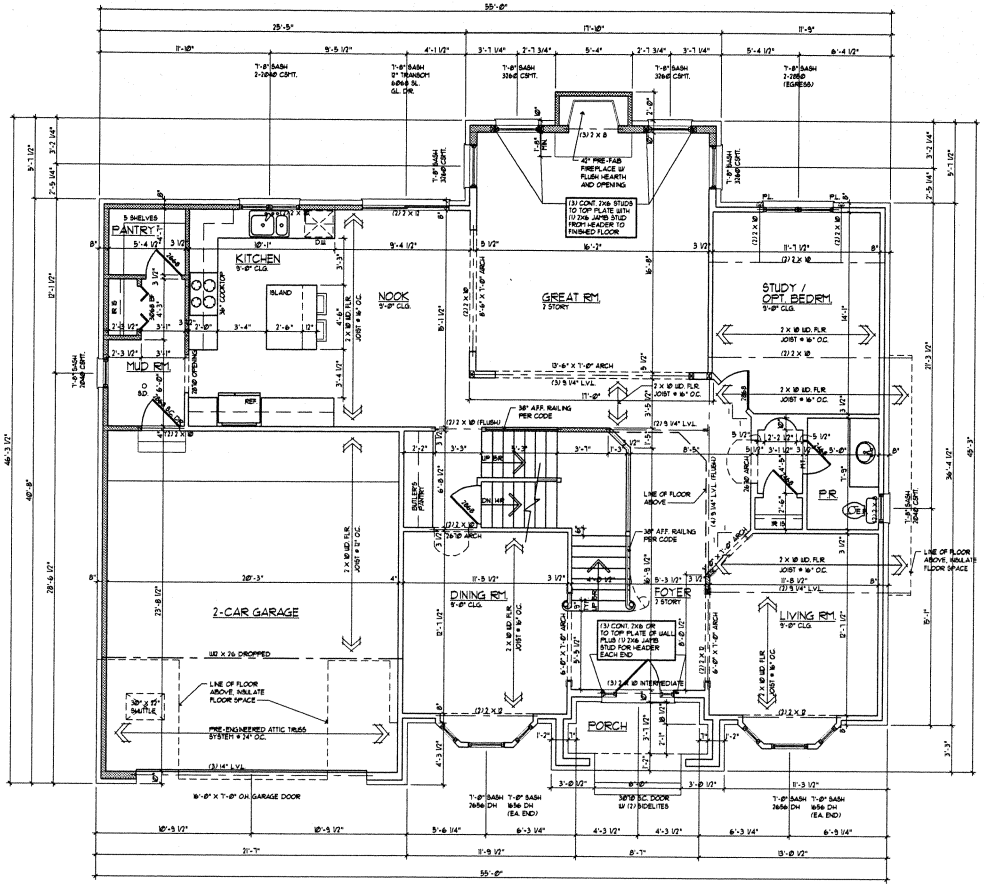
MISCELLANEOUS:

- PREFABRICATED I-JOISTS SHALL BE DESIGNED TO SUPPORT THEIR OWN WEIGHT PLUS THE SUPERIMPOSED DEAD AND LIVE LOADS STATED IN THE GENERAL NOTES AND 2009 MRC. I-JOIST SERIES MANUFACTURER SPACING, BRIDGING, BLOCKING AND DETAILING SHALL BE DESIGNED BY THE FLOOR SYSTEM PROVIDER SUCH THAT IT MEETS THE DESIGN CRITERIA HEREIN, AS A MINIMUM. THE CONTRACTOR SHALL SUBMIT, TO THE DESIGNER FOR REVIEW, THE DESIGN LAYOUT AND COMPONENT CALCULATIONS BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MICHIGAN, PRIOR TO USE IN THE STRUCTURE.
- MIN. LVL PROPERTIES SHALL BE: E = 1.2 x 10E6 psi, Fb = 2,550 psi, Fv = 285 psi.
- MIN. PSL COLUMN PROPERTIES SHALL BE: E = 1.6 x 10E6 psi, Fb = 2,400 psi. TRUS JOIST PARALLAM OR EQUAL.
- WALLS SHALL BE BRACED ACCORDING TO R602.10 OF THE 2009 MRC.
- TRUSSES SHALL BE BRACED IN ACCORDANCE WITH BCSI's OCTOBER 2009 "GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES".
- ALL POINT LOADS SHALL BE CONTINUOUSLY BLOCKED THROUGHOUT THE STRUCTURE TO THE FOUNDATION OR SUPPORT BEAM.
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
- THE STRUCTURAL DESIGN IS BASED ON THE BUILDING IN ITS COMPLETED STATE. CONTRACTORS AND THEIR SUBCONTRACTORS SHALL TAKE WHATEVER PRECAUTIONS MADE NECESSARY TO WITHSTAND ALL HORIZONTAL AND VERTICAL LOADINGS THAT MAY BE ENCOUNTERED DURING THE CONSTRUCTION PRIOR TO COMPLETION OF THE BUILDING.
- DO NOT SCALE DRAWINGS.



OPTIONAL FIRST FLOOR LAUNDRY

SCALE: ¼" = 1'-0"



FIRST FLOOR PLAN

SCALE: ¼" = 1'-0"

BUILDER

TROWBRIDGE CONSTRUCTION

PROJECT

THE ST JAMES

Date:

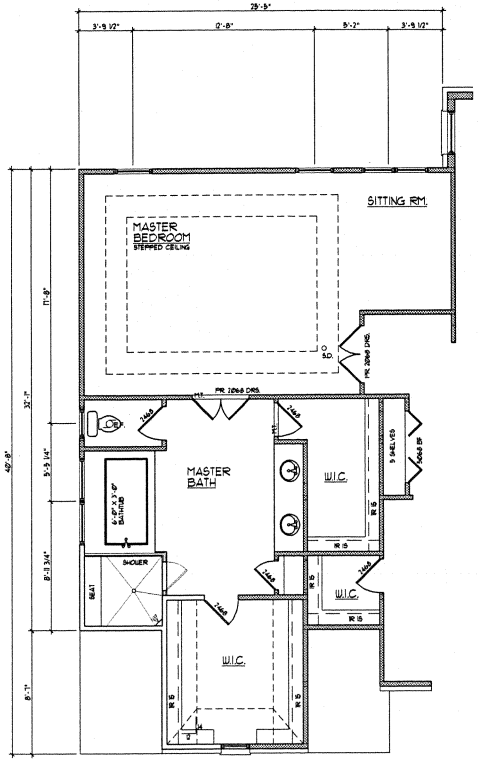
Revisions:

Drwn: AP

Chkd:

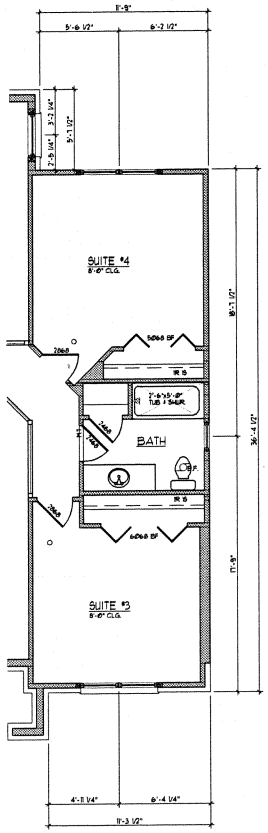
Sheet#

Job No::



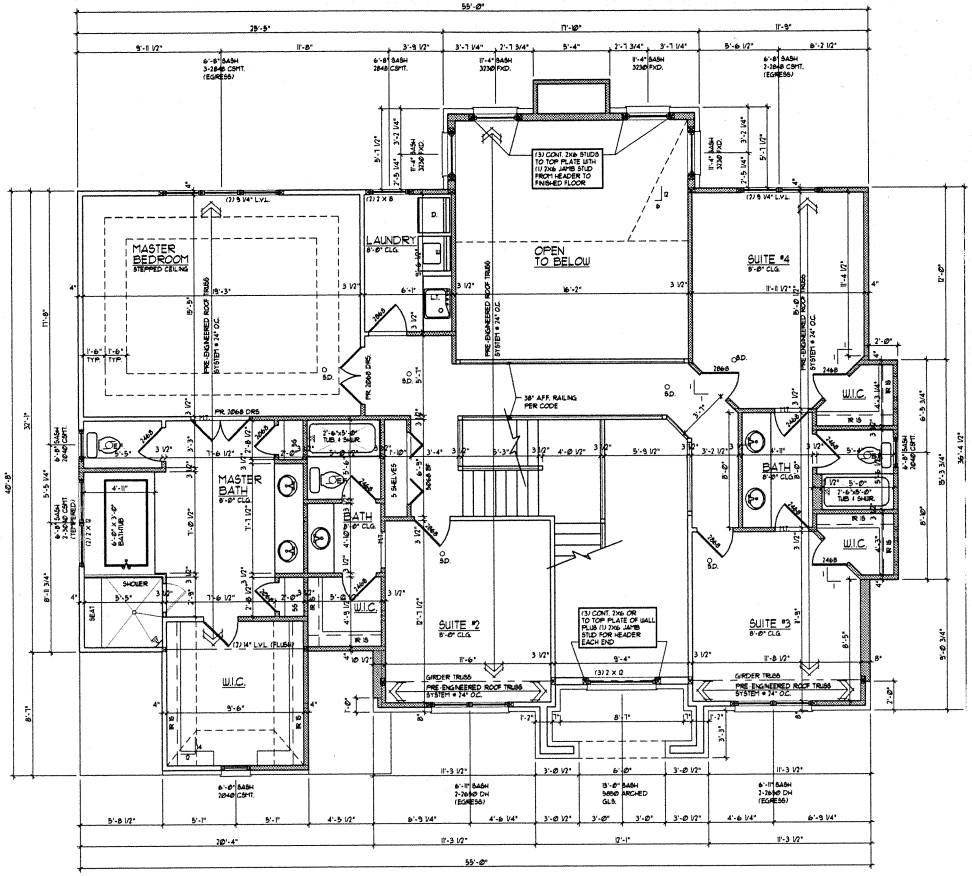
OPTIONAL MASTER SUITE

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



OPTIONAL HALL BATH

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



SECOND FLOOR PLAN

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

BUILDER

TROWBRIDGE CONSTRUCTION

PROJECT

THE ST JAMES

Date:

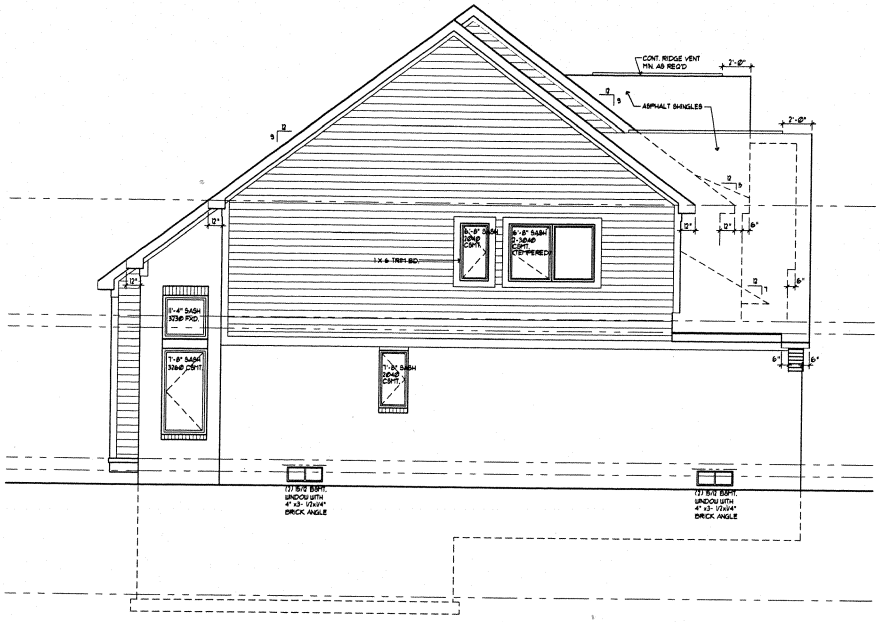
Revisions:

Drwn: AP

Chkd:

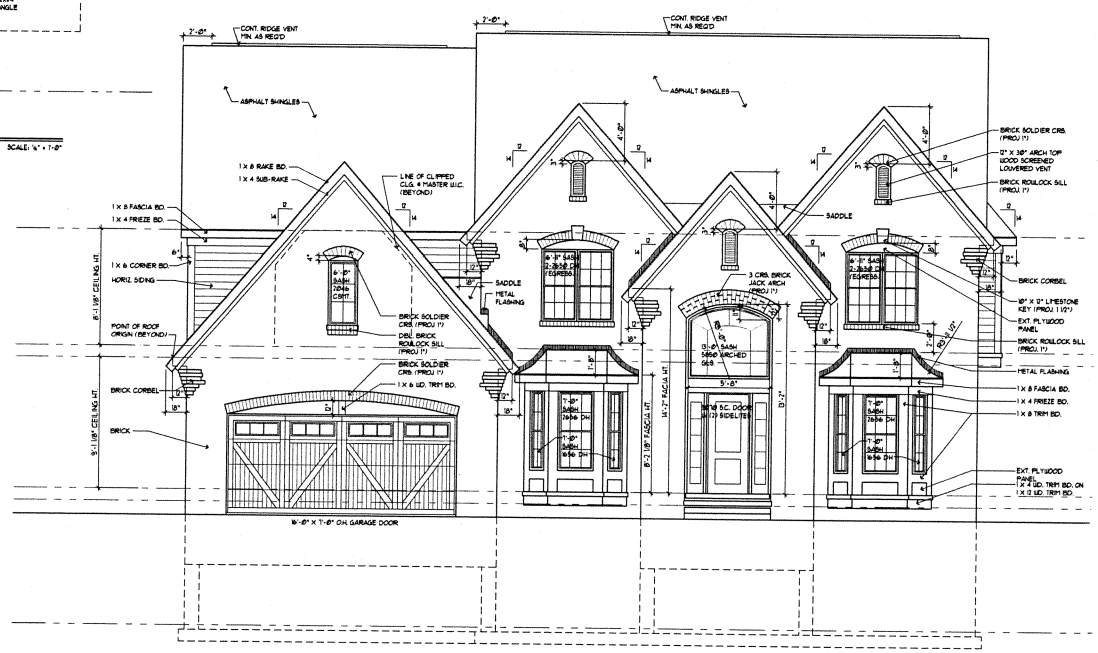
Sheet #

Job No::



LEFT ELEVATION

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



FRONT ELEVATION

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

BUILDER

TROWBRIDGE CONSTRUCTION

PROJECT

THE ST JAMES

Date:

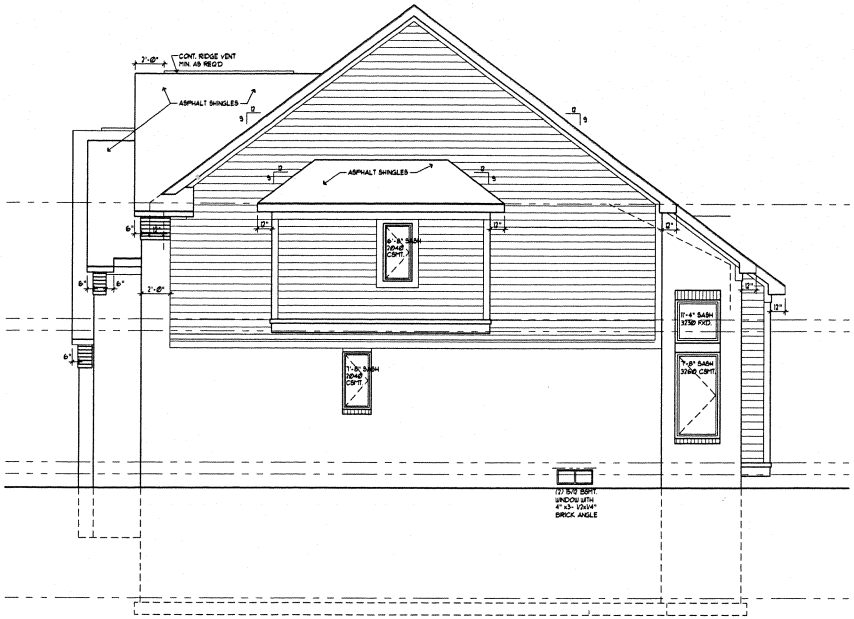
Revisions:

Drwn: AP

Chkd:

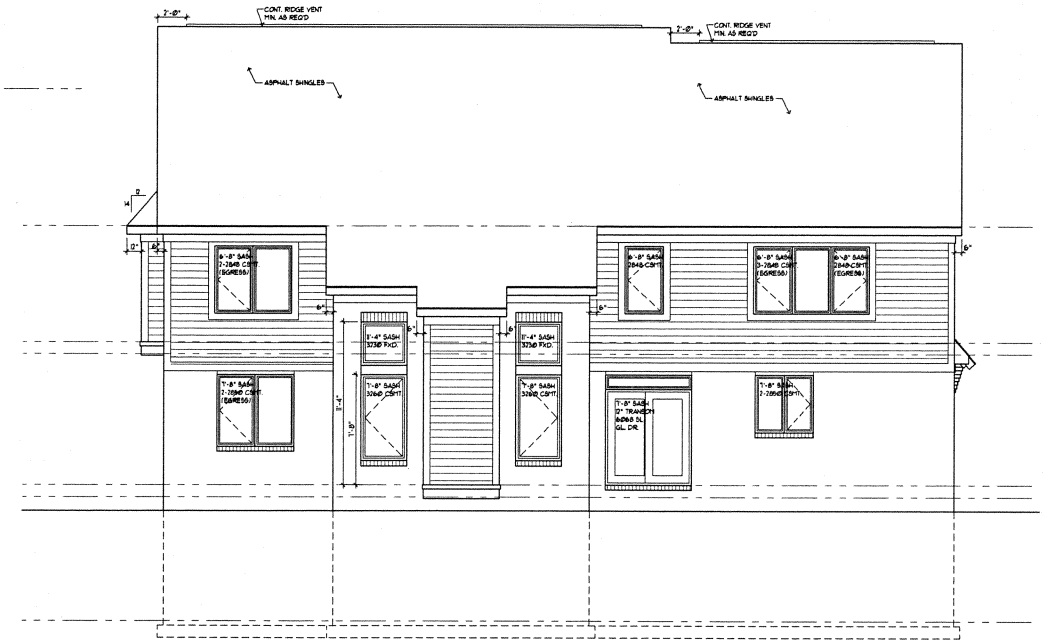
Sheet #

Job No::



RIGHT ELEVATION

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



REAR ELEVATION

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

BUILDER

TROWBRIDGE CONSTRUCTION

PROJECT

THE ST JAMES

Date:

Revisions:

Drwn: AP

Chkd:

Sheet #

Job No::

DATE: August 8, 2013

TO: Planning Commission

FROM: R. Brent Savidant, Planning Director

SUBJECT: PRELIMINARY SITE PLAN REVIEW (File Number SP 921-A) – Proposed Briggs Park Condominiums, East side of Rochester, North of Lamb, Section 14, Currently Zoned RT (One Family Attached Residential) District

The petitioner APR Development, LLC submitted the above referenced Preliminary Site Plan Approval application for a 4 additional residential units within the Briggs Park Condominium development. The original Briggs Park development was approved by the Planning Commission in 2005. The development was approved for a total of 54 units within 16 buildings. To date 4 buildings (15 units) have been built and 3 buildings (7 units) are under construction.

The Planning Commission is responsible for granting Preliminary Site Plan Approval for this item.

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 the recommendations included therein.

Attachments:

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

G:\SITE PLANS\SP 921 A Briggs Park Condominiums Sec 14\SP-921A PC Memo 08 13 2013.docx

PRELIMINARY SITE PLAN REVIEW

PRELIMINARY SITE PLAN REVIEW (File Number SP 921-A) – Proposed Briggs Park Condominiums, East side of Rochester, North of Lamb, Section 14, Currently Zoned RT (One Family Attached Residential) District

Resolution # PC-2013-08-
Moved by:
Seconded by:

RESOLVED, That Preliminary Site Plan Approval, pursuant to Article 8 of the Zoning Ordinance, as requested for the proposed Briggs Park Condominium, located on the east side of Rochester, north of Lamb, Section 14, within the RT (One Family Attached) district, be granted, subject to the following conditions:

1. Maintain Building 9 as three (3) unit building rather than the proposed four (4) unit building.
2. Provide maximum lot area covered by buildings calculation.
3. Place sidewalks within an access easement.
4. Add additional evergreen landscaping along Rochester Road, specifically adjacent to Building 11.

_____) or

(denied, for the following reasons: _____) or

(postponed, for the following reasons: _____)

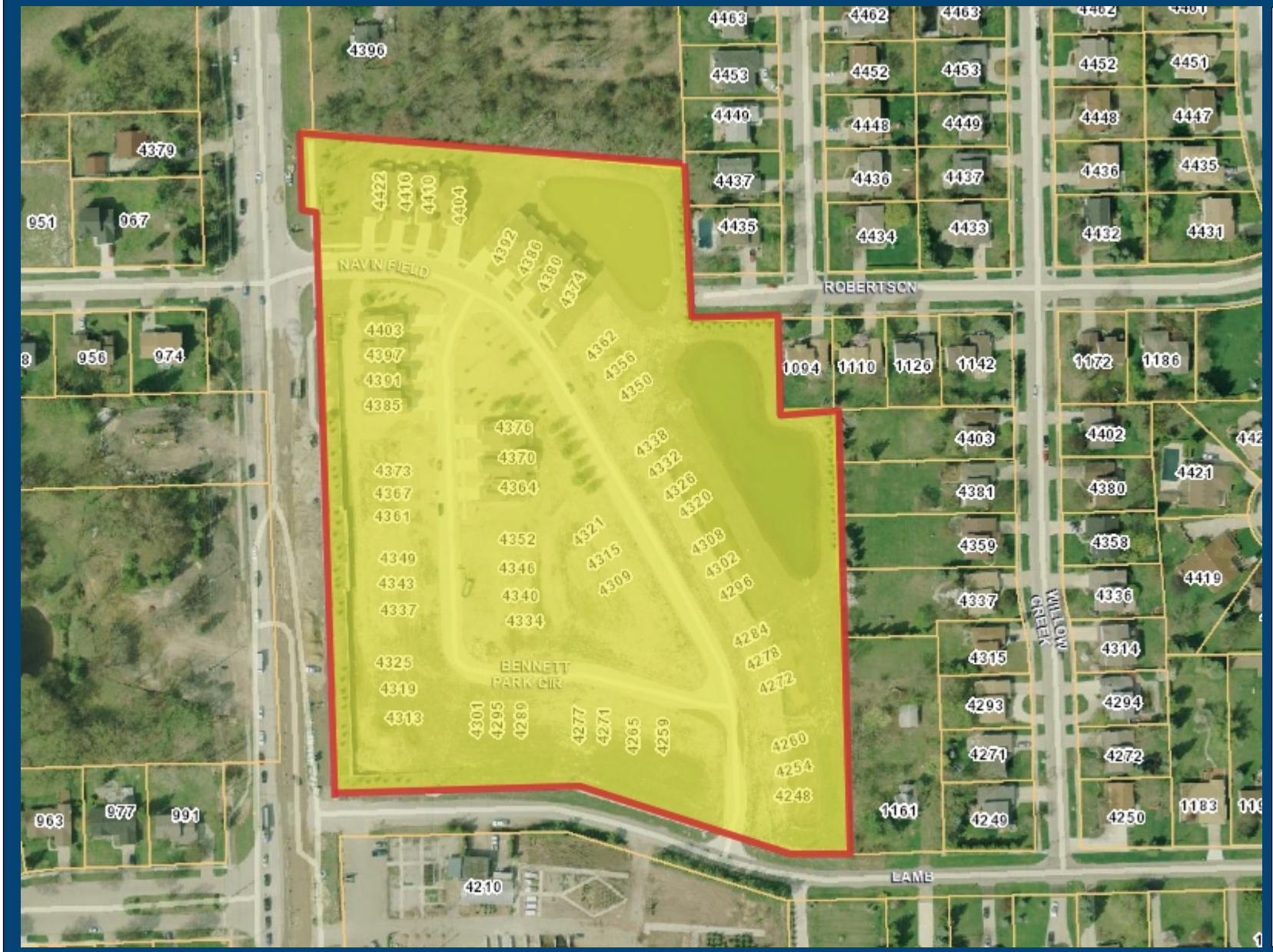
Yes:
No:

MOTION CARRIED/FAILED

G:\SITE PLANS\SP 921 A Briggs Park Condominiums Sec 14\Proposed PC Resolution 08 13 2013.doc

BRIGGS PARK CONDO'S, SP 921-A

City of Troy Planning Department



Legend:

526 0 263 526 Feet

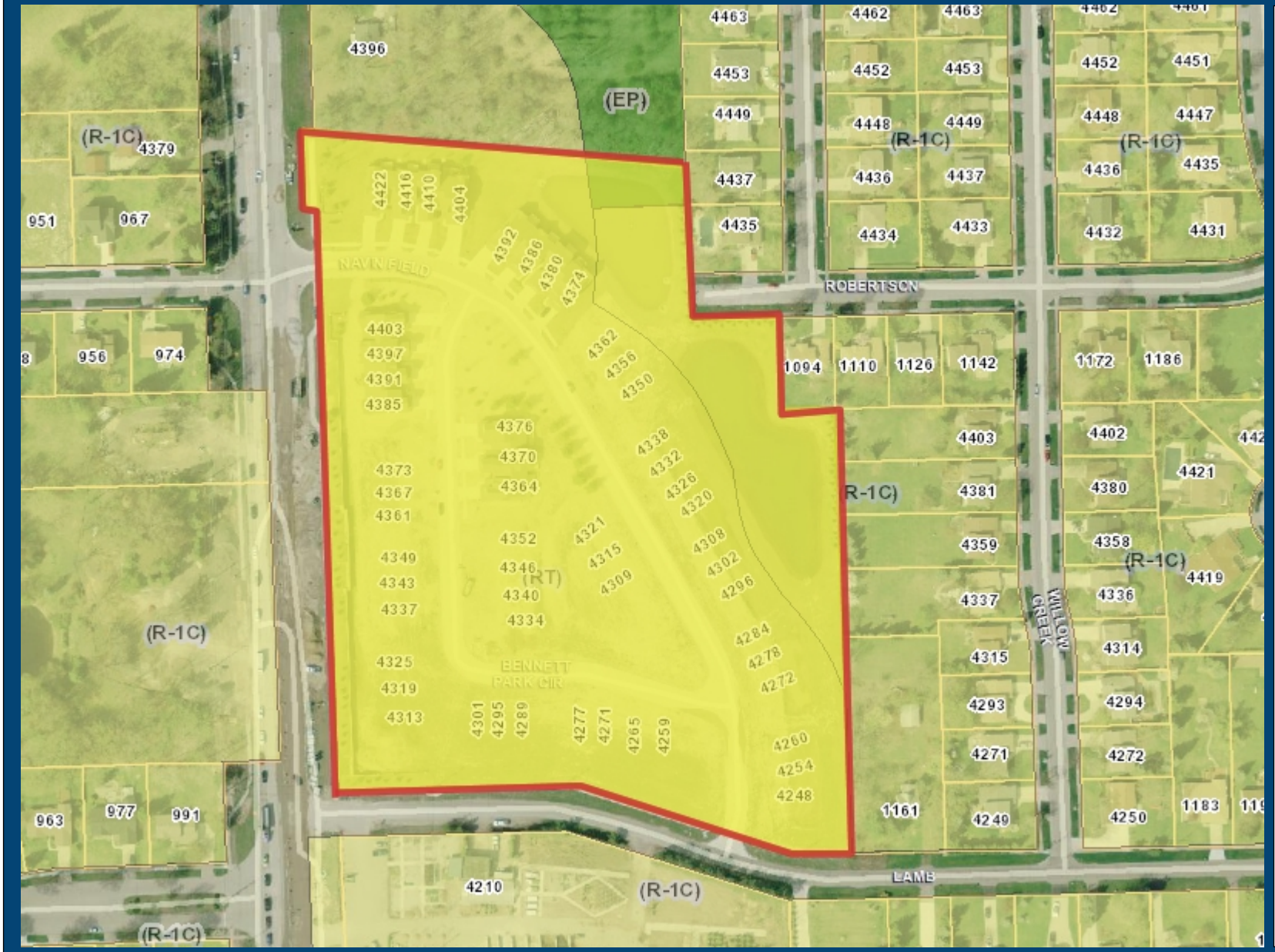
Scale 1: 3,154

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: 6/21/2013

BRIGGS PARK CONDO'S, SP 921-A

City of Troy Planning Department



Legend:

Form Based Zoning (Current)

- (PUD) Planned Unit Development
- (CF) Community Facilities District
- (EP) Environmental Protection District
- (BB) Big Beaver Road (Form Based)
- (MR) 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 Distric
- (MF) Multi-Family Residential
- (MHP) Manufactured Housing
- (UR) Urban Residential
- (RC) Research Center District
- (PV) Planned Vehicle Sales

526 0 263 526 Feet

Scale 1: 3,154

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: 6/21/2013

CARLISLE | WORTMAN associates, inc.
605 S. Main Street, Ste. 1
Ann Arbor, MI 48104
(734) 662-2200
(734) 662-1935 Fax

Date: August 8, 2013

Preliminary Site Condominium Review
For
City of Troy, Michigan

Applicant: Bruce Michael

Project Name: Briggs Park

Plan Date: June 11, 2013

Location: East side of Rochester Road, north of Lamb Road.

Zoning: RT, One-family Attached Residential

Action Requested: Preliminary Site Condominium Approval

Required Information: Deficiencies noted.

PROJECT AND SITE DESCRIPTION

We are in receipt of a site condominium application which includes architectural drawings, existing conditions plan, general site plan, grading / utility plan, landscape plan, and application forms. Briggs Park received Preliminary Site Plan Approval from the Planning Commission on December 13, 2005. Final Site Plan Approval was granted administratively on September 28, 2006. The approved layout for the 12 acre site included 54 attached condominium units within 16 buildings, comprised of a combination of 3-unit and 4-unit buildings. To date, 4 buildings (15 units) have been built and 3 buildings (7 units) are under construction.

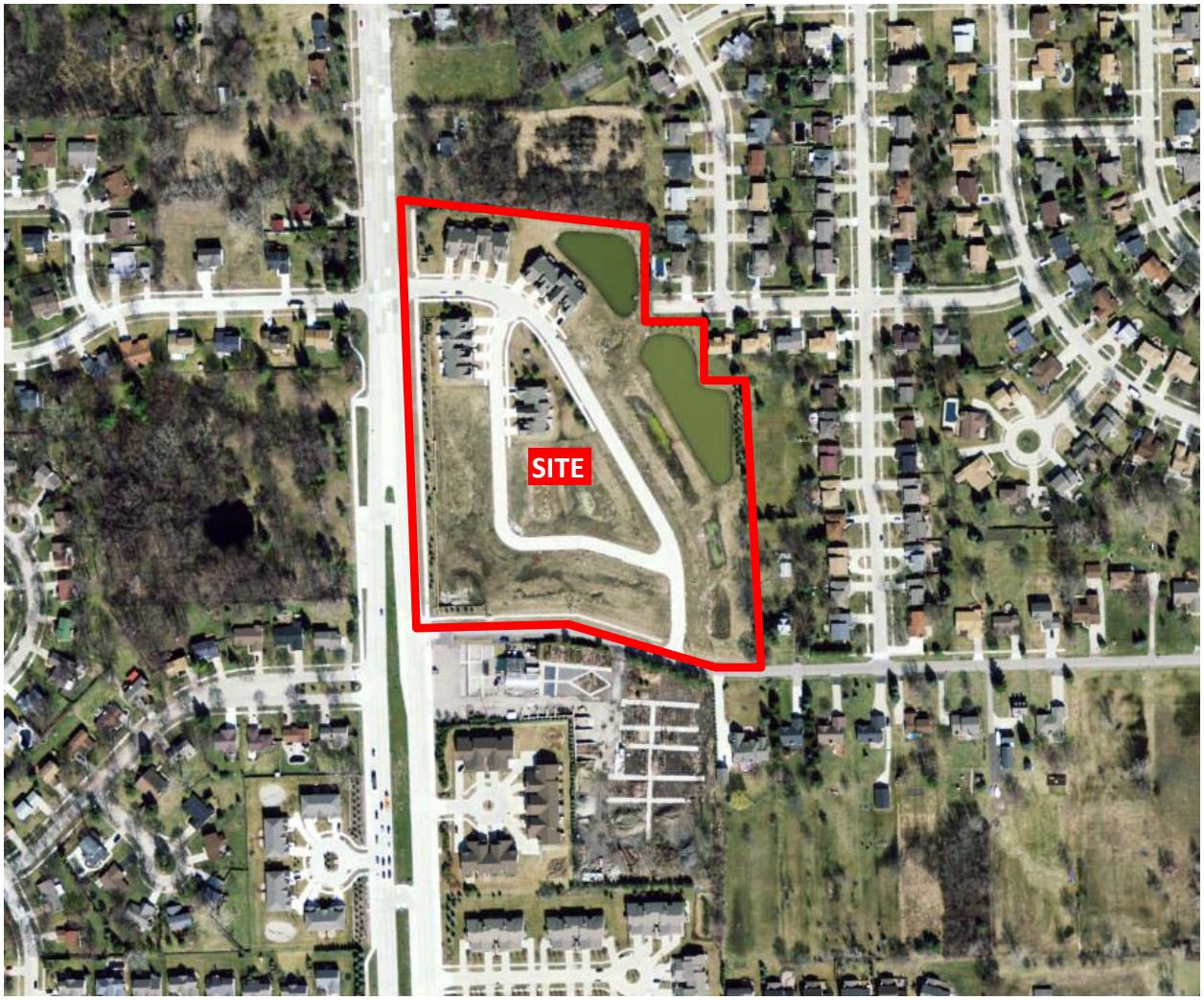
On May 24, 2011 the Planning Commission held a Special/Study meeting to provide feedback on a potential revision to the development which would replace 42 proposed attached units (in 12 buildings)

with 35 unattached units. Ultimately the applicant did not seek a Preliminary Site Plan Approval for this redesign.

The applicant is currently requesting approval to convert four (4) 3-unit buildings into 4-unit buildings, as shown in Table 1. The total number of units proposed would be increased from 54 units as approved in 2006 to 58 units. All units will be accessed off existing private streets (Navin Field Lane and Bennett Park Circle).

Location of Subject Property:
East side of Rochester Road, north side of Lamb, Section 14

Location and Aerial Image of Subject Site



Size of Subject Property:
The parcel 12.12 acres in area.

Proposed Uses of Subject Parcel:
Addition of four (4) attached single family condominium units, to be achieved by converting Building 5, Building 6, Building 9, and Building 16 from 3-unit to 4-unit buildings.

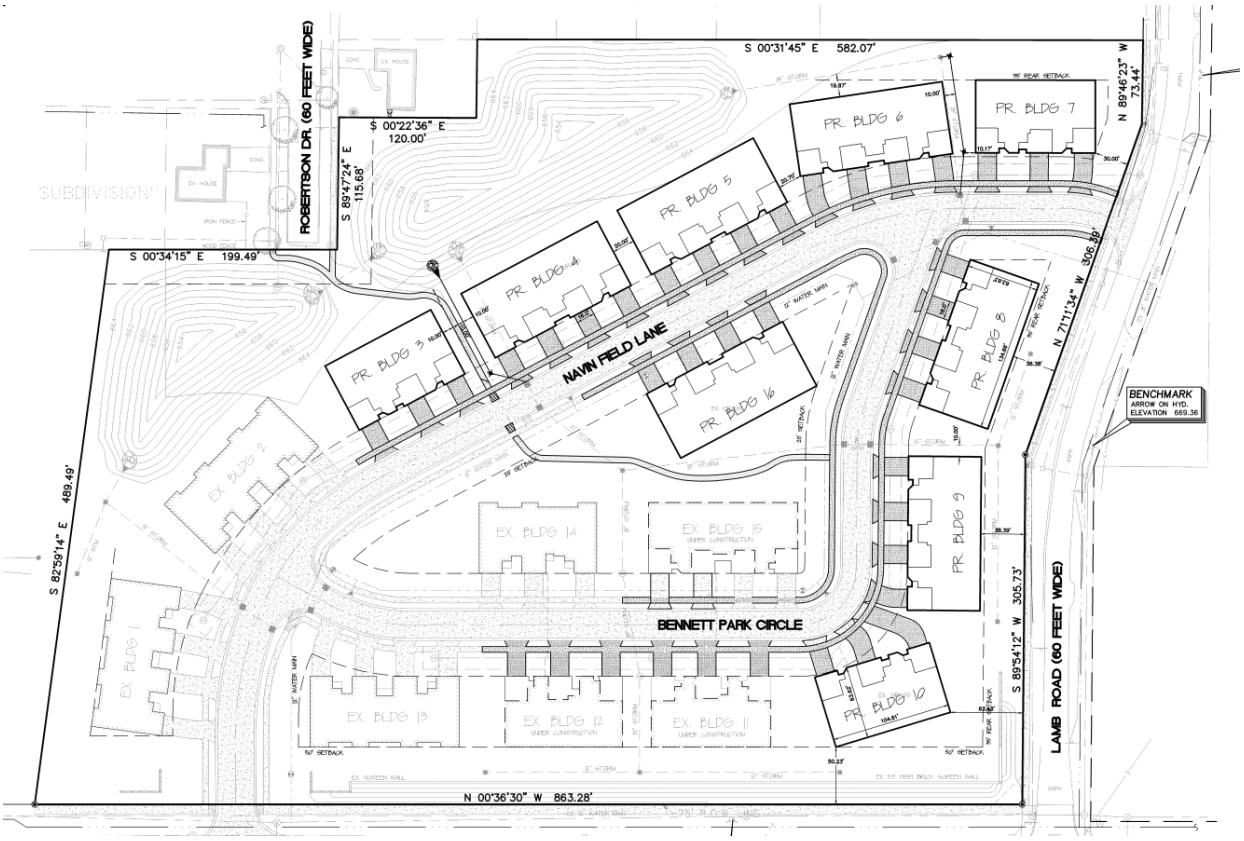
Current Use of Subject Property:
The subject property currently has four (4) completed buildings with 15 condominium units, and three (3) buildings with 7 more condominium units under construction.

Current Zoning:
The property is currently zoned RT, One-family Attached Residential. The northeast section of property is zoned EP, Environmental Protection.

Surrounding Property Details:

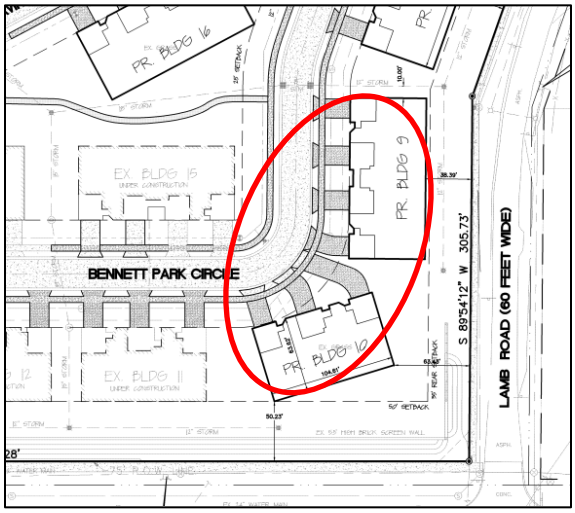
Direction	Zoning	Use
North	RT, One-family Attached Residential District	Single-family homes
South	R-1C, One-family Residential District	Single-family homes
East	R-1C, One-family Residential District EP, Environmental Protection District	Single-family homes Detention pond
West	R-1C, One-family Residential District	Single-family homes City parkland

SITE ARRANGEMENT



Proposed Change in Number of Condominium Units By Building			
Building #	**Approved Units 12/13/2013**	**Proposed Units 6/17/2013**	**Status**
1	4	4	Built
2	4	4	Built
3	3	3	Not Built
4	4	4	Not Built
5	3	4	Not Built
6	3	4	Not Built
7	3	3	Not Built
8	4	4	Not Built
9	3	4	Not Built
10	3	3	Not Built
11	3	3	Under construction
12	3	3	Under construction
13	4	4	Built
14	3	3	Built
15	4	4	Under construction
16	3	4	Not Built
Total Units	**54**	**58**	

Briggs Park is location on the Northeast side of the Rochester Road and Lamb Road intersection. The streets, utilities and sewer were installed as part of the initial site approval. Navin Field Lane runs NW-SE and provides access off of Rochester Road and Lamb Road. Bennett Park Circle is a secondary L-shaped internal street. Internal streets are 28' wide except at the entrance off of Rochester Road where it is 36' wide. Each unit has a driveway to a 2-car garage. There are two detentions ponds in the Northeast section of the property. A foot path running between the detention ponds provides a pedestrian connection from Robertson Drive to the site.



The owner occupied attached residential condominiums are arranged in 3-unit and 4-unit buildings. Buildings consist of four different unit types (A, B, C, D). The proposed plan calls for six (6) 3-unit and ten (10) 4-unit buildings, for a total of 58 residential units.

The conversion of Building 9 from a three (3) unit building to a four (4) unit building creates a congestion and circulation problem due to the number of driveways in close proximity. The applicant should maintain Building 9 as a three (3) unit building.

Items to be addressed: *Maintain Building 9 as three (3) unit building.*

AREA, WIDTH, HEIGHT, SETBACKS

Required and Provided Dimensions:

Table 4.07 establishes the requirements for the RT District. The requirements and the proposed dimensions are as follows:

	Required:	Provided:	Compliance:
Front	25 foot setback	+ 25 foot setbacks	Complies
Rear	35 foot setback	+ 35 foot setbacks	Complies
Side	10 foot minimum for least side setback, 20 foot minimum combined setback	+ 10 foot setbacks	Complies
Lot Size per Unit	5,000 square feet (for projects with sewer)	Averages 9,000 square feet lot area per unit	Complies
Maximum Height	30 feet, 2.5 story	Height is less than 30 feet	Complies
Lot Width	100 feet	Exceeds minimum	Complies

Maximum Lot Area Covered by Buildings	30 percent	Not provided.	**Insufficient information**
Minimum Floor Area per Unit	1,400 square feet	+ 4,000 square feet	Complies

Applicant should provide the maximum lot area covered by building calculation to confirm that 30% requirement is not exceeded.

Items to be addressed: *Provide maximum lot area covered by buildings calculation.*

NATURAL RESOURCES

The site has been mass graded for approved development. Natural resources will not be altered as result of any additional units.

Items to be Addressed: *None*

SITE ACCESS AND CIRCULATION

Vehicular
Navin Field Lane and Bennett Park Circle are existing private roads and will provide access to proposed building.

Pedestrian
A five (5) foot sidewalk will be provided on both sides Navin Field Lane and Bennett Park Circle. This will provide a continuous sidewalk network internally, and connect to the sidewalk along Lamb Road. As part of the final site approval the sidewalks shall be placed within an access easement. There is a proposed HWA pathway connecting the sidewalks along Robertson Drive between Building 3 and 4 to the sidewalk along the northside of Navin Field Lane. The pathway continues across the street, between Buildings 15 and 16, and connects to the sidewalk along the northside of Bennett Park Circle.

Items to be Addressed: *As part of the final site approval the sidewalks shall be placed within an access easement.*

STORMWATER

The applicant indicates that all site utilities including stormwater are already in place. Applicant will need to confirm that increase in building lot coverage does not affect stormwater management.

Items to be Addressed: *None*

LANDSCAPING

Site condominium and subdivision landscaping are regulated by Section 13.02.F.2.

Street	Required	Provided	Compliance
Rochester Road Frontage	One deciduous tree for every thirty (30) lineal feet. 850 feet = 29 trees	29 trees (5 new, 24 existing)	Complies
	One evergreen tree per 10 lineal feet. 850 feet = 85 trees	44 trees (5 new, 39 existing)	Does not comply. Planning Commission may grant relief.
Lamb Road Frontage	One deciduous tree for every thirty (30) lineal feet. 686 feet = 23 trees	28 trees (9 new, 19 existing)	Complies
Navin Field Lane	One tree for every 50 lineal feet. 1,050 feet = 21 trees	32 trees within ROW	Complies
Bennett Park Circle	One tree for every 50 lineal feet. 850 feet = 17 trees	27 trees within ROW	Complies

The site condominium abuts Rochester Road, which is a one hundred and twenty (120) foot public ROW; therefore, the alternative number 2 screening requirements set forth in Section 13.02 B, Screening Between Land Uses must be applied. Screening Alternative 2 requires one (1) evergreen tree per ten (10) lineal feet in combination with the one (1) deciduous tree per 30 feet.

The applicant has provided a screen wall along Rochester Road. The Planning Commission may approve the use of a wall in combination of landscaping, if the Planning Commission finds that such combination provides more effective screening. We find that the existing wall in combination with the landscaping provides an effective screen. However, there are sections along Rochester Road, specifically adjacent to Building 11, where additional evergreen plantings should be provided.

Items to be Addressed: *Add additional evergreen landscaping along Rochester Road, specifically adjacent to Building 11.*

SUBMITTAL REQUIREMENTS

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. ***40-foot private road has been s*****atisfied.**

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. **Satisfied**

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. **Not applicable.**

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. **Sidewalk will need to be placed within easement for final site plan approval.**

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. **Satisfied.**

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.**

Items to be Addressed:

RECOMMENDATIONS

We recommend approval of the preliminary site plan conditioned upon satisfactorily addressing the following items for the final site plan submittal:

1. Maintain Building 9 as three (3) unit building rather than the proposed four (4) unit building.
2. Provide maximum lot area covered by buildings calculation.
3. Place sidewalks within an access easement.
4. Add additional evergreen landscaping along Rochester Road, specifically adjacent to Building 11.

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

225-02-1315

cc:

BRIGGS PARK CONDOMINIUMS

PREPARED FOR

APR DEVELOPMENT, LLC.

LOCATION MAP

LEGAL DESCRIPTION

Land in the Southwest ¼ of Section 14, Town 2 North, Range 11 East, City of Troy, Oakland County, Michigan being more particularly described as: Commencing from the West ¼ Corner of said Section 14 along the East-West ¼ line of said Section 14 S. 89° 51' 34" E., 75.01 feet to a point on the Easterly 75 foot Right-of-Way line of Rochester Road (135 feet wide); thence along said Right-of Way line S. 00° 36' 30" E., 196.42 feet to the Point of Beginning; thence S. 82° 59' 14" E., 489.49 feet to a point on the Westerly line of "Shallowbrook Subdivision" recorded in Liber 144, Page 20-22 of Plats, Oakland County Records; thence along said line S. 00° 34' 15" E. (recorded as S., 00° 36' 58" E.), 199.49 feet; thence continuing along said line S. 89° 47' 24" E. (recorded as S. 89° 52' 42" E.), 115.68 feet said line also being the Southerly Right-of-Way line of Robertson Drive (60 feet wide); thence continuing along said Westerly line S. 00° 22' 36" E. (recorded as S. 00° 36' 30" E.), 120.00 feet; thence continuing along said line S. 89° 55' 56" E., 68.71 feet (recorded as S. 89° 52' 42" E., 68.32 feet); thence continuing along said line S. 00° 31' 45" E. (recorded as S. 00° 35' 30" E.), 582.07 feet to a point on the Northerly Right-of-Way line of Lamb Road (60 feet wide); thence commencing along said line in the following three (3) courses, N. 89 ° 46' 23" W., 73.44 feet (recorded as N. 89° 53' 15" W., 73.92 feet); thence N. 71° 11' 34" W., 306.39 feet (recorded as N. 71° 14' 00" W., 306.45 feet); thence S. 89° 54' 12" W. (recorded as S. 89° 58' 00" W.), 305.73 feet to a point on said Easterly Right-of-Way line of Rochester Road; thence along said line N. 00° 36' 30" W., 863.28 feet to the Point of Beginning. Containing 12.1249 Acres or 528,161.89 square feet.

SHEET INDEX

1. Cover Sheet
2. Existing Condition Plan
3. General Site Plan
4. Grading / Utility Plan
5. Landscape Plan

PART OF THE SOUTHWEST 1/4 OF SECTION 14, T.2N., R.11E.
CITY OF TROY, OAKLAND COUNTY, MICHIGAN

DEVELOPER

APR DEVELOPMENT, LLC.
2617 BEACON HILL DR.
AUBURN HILLS, MI 48326

PHONE: (248) 373-5080

CIVIL ENGINEER

NF ENGINEERS
46777 WOODWARD AVENUE
PONTIAC, MI 48342

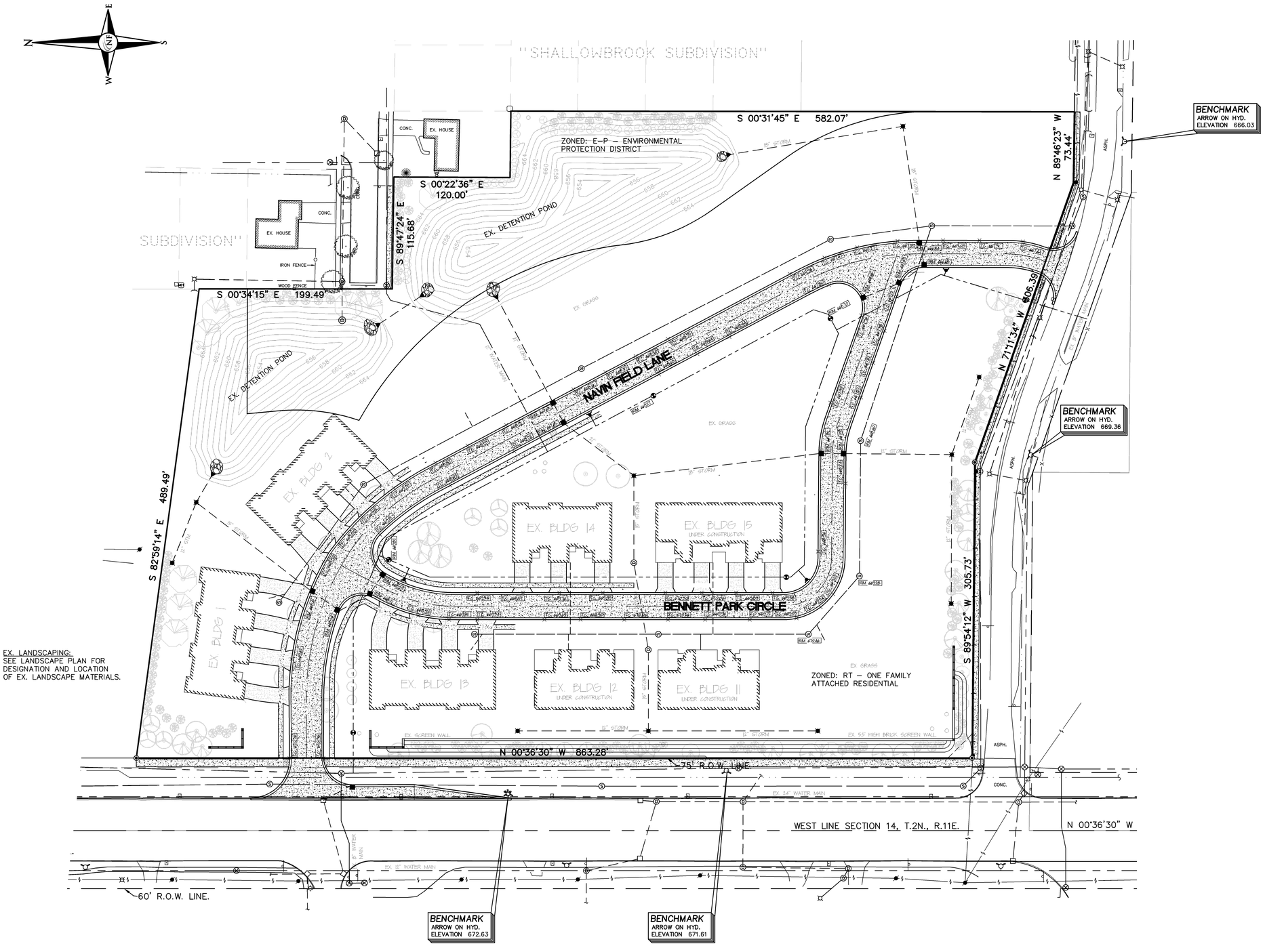
PHONE: (248) 332 7931
FAX: (248) 332-8257

PREPARED BY: STEVE SUTTON, P.E.

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

N/F JOB D622-04

ISSUE DATE: JUNE 11, 2013



EX. LANDSCAPING:
SEE LANDSCAPE PLAN FOR DESIGNATION AND LOCATION OF EX. LANDSCAPE MATERIALS.

PAVING LEGEND

EXISTING CONCRETE PAVEMENT

LEGEND

- CLEAN-OUT / MANHOLE — EXISTING SANITARY SEWER
- HYDRANT / GATE VALVE — EXISTING WATER MAIN
- INLET / RYCB / MANHOLE / CB — EXISTING STORM SEWER
- EXISTING BURIED CABLES
- EXISTING GAS MAIN
- UTILITY POLE / GUY POLE / GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN

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SEAL

PROJECT
Briggs Park
Condominiums

CLIENT
APR Development, LLC
2617 Beacon Hill Dr.
Auburn Hills, MI 48326

PROJECT LOCATION
Part of the SW ¼
of Section 14
T. 2 North, R.11 East
City of Troy,
Oakland County, Michigan

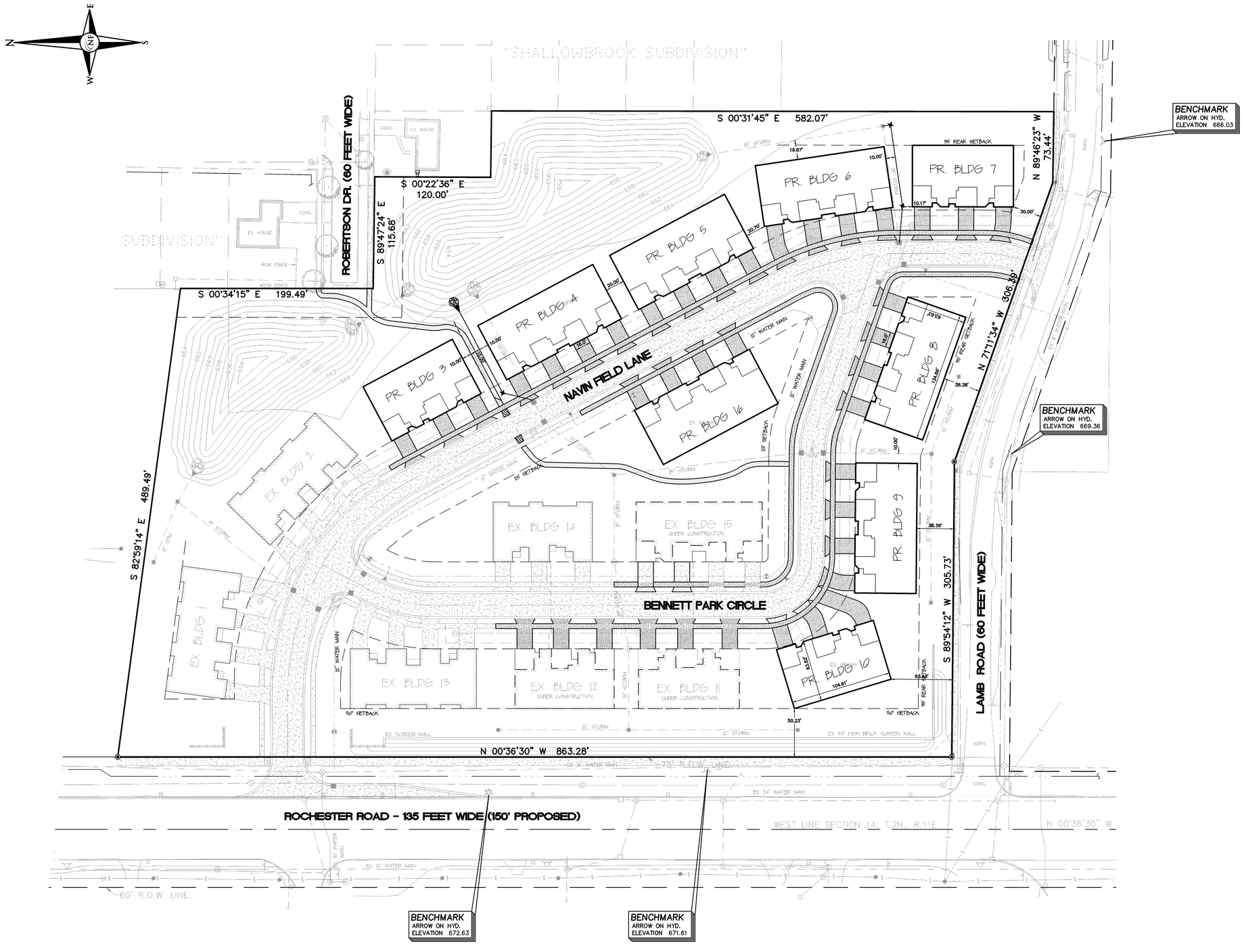
SHEET
Existing Condition Plan

811
Know what's below
Call before you dig.

DATE	ISSUED / REVISED

DRAWN BY: JCK
DESIGNED BY: SWS
APPROVED BY: SWS
DATE: June 11, 2013
SCALE: 1" = 50'

NFE JOB NO. D622-04
SHEET NO. 1



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SHEET
General Site Plan

EX. INFRASTRUCTURE:
EX. CONCRETE ROADWAYS AND ALL SITE UTILITIES (WATER, STORM, SANITARY, AND DETENTION) ARE IN PLACE. ONLY MINOR UTILITY RELOCATION PROPOSED.

PAVING LEGEND

- EXISTING CONCRETE PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED HMA PATHWAY

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATER MAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

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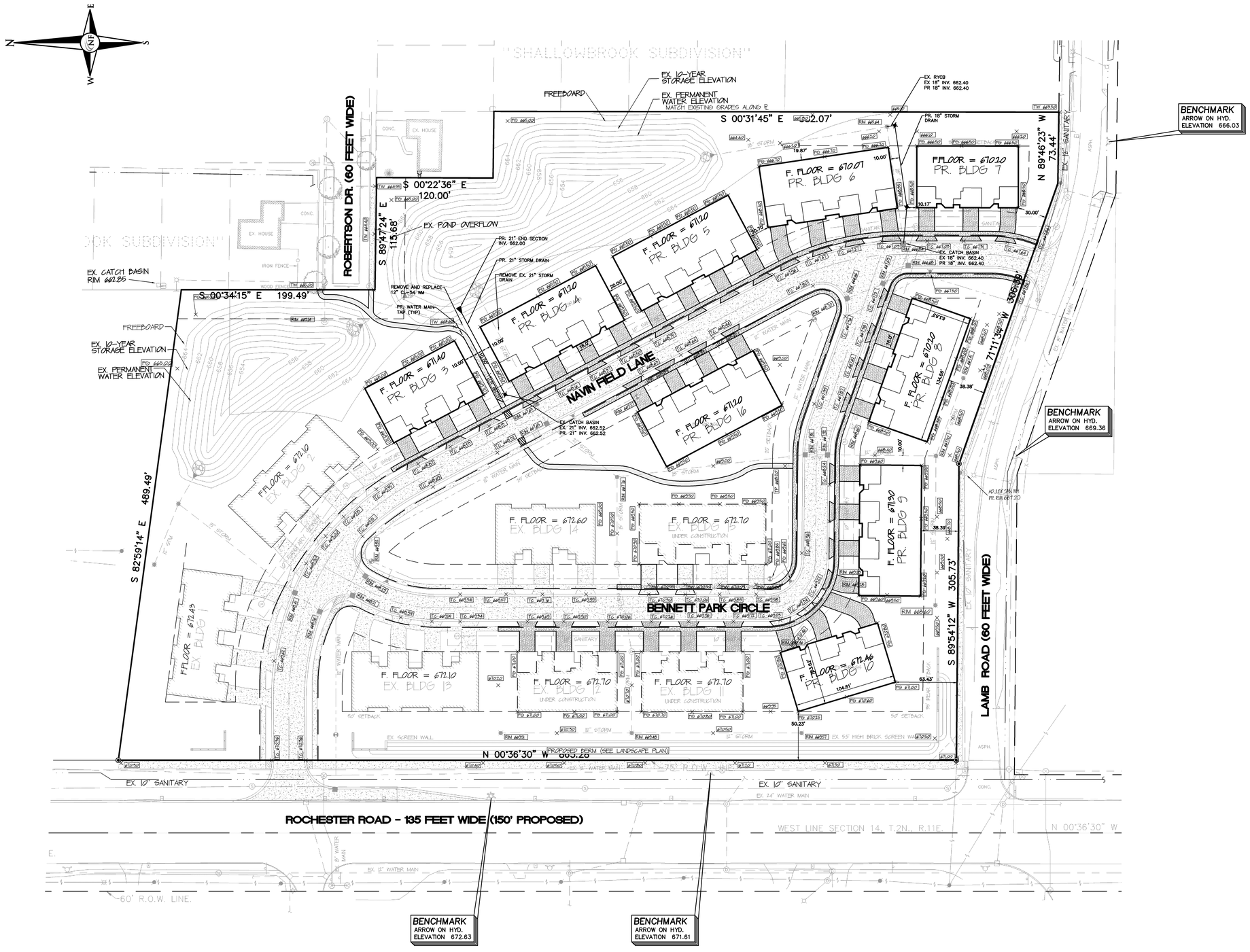
NFE JOB NO. D622-04
SHEET NO. 2



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SHEET
Grading - Utility Plan

GRADING NOTE

EX. UNDEVELOPED PORTION OF SITE WAS PREVIOUSLY MASS GRADED TO FACILITATE BUILDING CONSTRUCTION. MINOR GRADING ANTICIPATED ON A BUILDING BY BUILDING STANDPOINT.

NOTE

ALL TOP OF CURB (TC) AND RIM ELEVATIONS ARE BASED UPON AS-BUILT INFORMATION.

PAVING LEGEND

- EXISTING CONCRETE PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED HMA PATHWAY

LEGEND

- EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- PR. SANITARY SEWER
- PR. WATER MAIN
- PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

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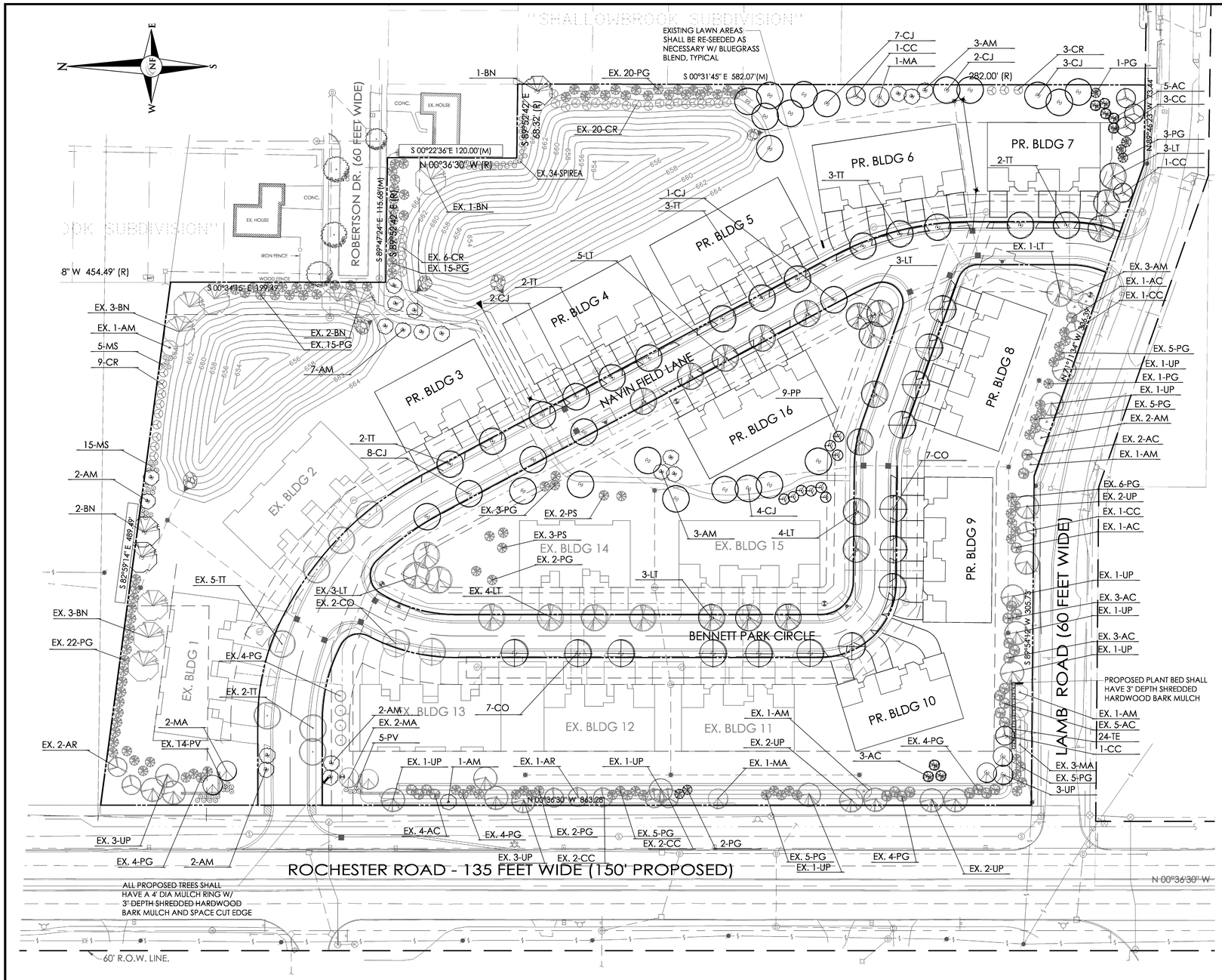
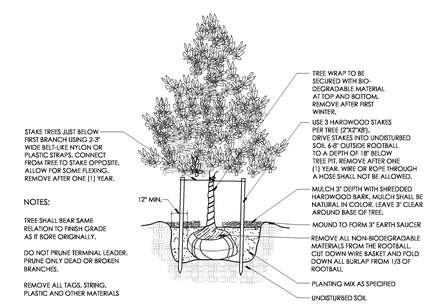
NFE JOB NO. D622-04
SHEET NO. 3



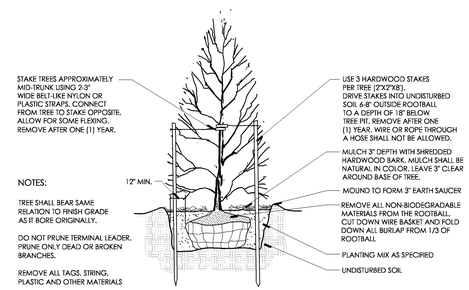
PLANT SCHEDULE

KEY	EX.	PROP.	BOTANICAL/COMMON NAME	SIZE	SPACING	ROOT	COMMENT
TREES							
AC	19	8	Abies concolor White Fir	8-10' HT	10' OC	B&B	FULL TO GROUND
AR	3	0	Acer rubrum Red Maple	8' HT	VARIES	B&B	CLUMP FORM
AM	9	20	Amelanchier 'Spring Glory' Downy Serviceberry	8' HT	VARIES	B&B	CLUMP FORM
BN	9	3	Betula nigra River Birch	12-14' HT	22' OC	B&B	CLUMP FORM
CC	6	6	Carpinus caroliniana American Hornbeam	2.5" CAL	VARIES	B&B	FULL BRANCHED HEAD
CO	2	14	Celtis occidentalis Hackberry	3" CAL	VARIES	B&B	FULL BRANCHED HEAD
CJ	0	27	Cercidiphyllum japonica Katsura tree	2.5" CAL	VARIES	B&B	FULL BRANCHED HEAD
LT	8	18	Liriodendron tulipifera Tulip tree	3" CAL	VARIES	B&B	FULL MATCHED HEADS
MA	6	3	Malus 'Spring Snow' Spring Snow Crabapple	2.5" CAL	VARIES	B&B	FULL MATCHED HEADS
PG	131	6	Picea glauca 'Densata' Black Hills Spruce	8-10' HT	10' OC	B&B	FULL TO GROUND
PP	0	9	Picea pungens Colorado Green Spruce	8-10' HT	10' OC	B&B	FULL TO GROUND
PS	5	0	Pinus strobus White Pine	8-10' HT			
TT	7	12	Tilia tomentosa Silver Linden	3" CAL	VARIES	B&B	FULL MATCHED HEADS
UP	20	3	Ulmus x 'Pioneer' Pioneer Elm	3" CAL	VARIES	B&B	FULL MATCHED HEADS
SHRUBS							
SJ	34	0	Spiraea japonica Japanese Spiraea	30" HT	3' OC	B&B	
CR	26	12	Cornus racemosa Gray Dogwood	36" HT	3' OC	B&B	
TE	0	24	Taxus x m. 'Everlow' Everlow Yew	18" HT	3' OC	B&B	MAINTAIN AS HEDGE
GROUNDCOVERS/PERENNIALS							
MS	0	20	Miscanthus sinensis Japanese Silver Grass	5 GAL	36" OC	CONT	
PV	14	5	Panicum virgatum Switch Grass	3 GAL	36" OC	CONT	



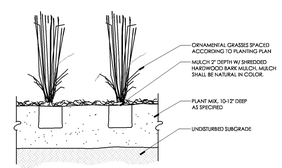
DECIDUOUS TREE PLANTING DETAIL

NTS



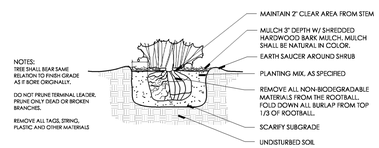
EVERGREEN TREE PLANTING DETAIL

NTS



ORNAMENTAL GRASS PLANTING DETAIL

NTS



HEDGE PLANTING DETAIL

NTS

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SHEET NO. 4