



500 West Big Beaver  
Troy, MI 48084  
troymi.gov

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planning@troymi.gov

## **PLANNING COMMISSION MEETING AGENDA REGULAR MEETING**

Tom Krent, Chairman, Davis Lambert, Vice Chairman  
Ollie Apahidean, Karen Crusse, Carlton Faison, Marianna Perakis,  
Michael W. Hutson, Sadek Rahman and John J. Tagle

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**February 11, 2020**

**7:00 P.M.**

**Council Chambers**

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1. ROLL CALL
2. APPROVAL OF AGENDA
3. APPROVAL OF MINUTES – January 28, 2020
4. PUBLIC COMMENT – For Items Not on the Agenda

### **PUBLIC HEARINGS**

5. PUBLIC HEARING – SPECIAL USE REQUEST (File Number SU2019-0044) – Proposed Korean United Methodist Church of Troy Parking Lot Expansion, West side of Dequindre, south of Square Lake (42693 Dequindre), Section 27, Zoned R-1C (One Family Residential) District.

### **SITE PLAN APPROVAL**

6. PUBLIC HEARING – SPECIAL USE REQUEST (File Number SP2020-0001) – Proposed Long Lake Shell Addition, Southwest corner of Long Lake and Dequindre, Section 13, Currently Zoned NN (Neighborhood Node “J”) District.

### **OTHER BUSINESS**

7. PUBLIC COMMENT – Items on Current Agenda
8. PLANNING COMMISSION COMMENT
9. 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](mailto: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 Krent called the Regular meeting of the Troy City Planning Commission to order at 7:00 p.m. on January 28, 2020 in the Council Chamber of the Troy City Hall.

1. ROLL CALL

Present:

- Ollie Apahidean
- Karen Crusse
- Michael W. Hutson
- Tom Krent
- David Lambert
- Marianna Perakis
- Sadek Rahman
- John J. Tagle

Absent:

- Carlton M. Faison

Also Present:

- R. Brent Savidant, Community Development Director
- Ben Carlisle, Carlisle Wortman Associates
- Julie Quinlan Dufrane, Assistant City Attorney
- Jackie Ferencz, Planning Department Administrative Assistant
- Kathy L. Czarnecki, Recording Secretary

2. APPROVAL OF AGENDA

**Resolution # PC-2020-01-007**

- Moved by: Hutson
- Support by: Apahidean

**RESOLVED**, To approve the Agenda as prepared.

- Yes: All present (8)
- Absent: Faison

**MOTION CARRIED**

3. APPROVAL OF MINUTES

**Resolution # PC-2020-01-008**

- Moved by: Lambert
- Support by: Rahman

**RESOLVED**, To approve the minutes of the January 14, 2020 Regular meeting as submitted.

- Yes: All present (8)
- Absent: Faison

**MOTION CARRIED**

4. PUBLIC COMMENT – Items not on the Agenda

Avis Landmesser, 568 Ottawa, asked if the number of residential units could be included in the Planning Commission Annual Report.

**CONDITIONAL REZONING**

5. PUBLIC HEARING – CONDITIONAL REZONING REQUEST (File Number CR 2019-001 – Proposed MNK TROY 1, LLC, East of Rochester, South of Shallowdale (88-20-14-152-001 and 88-20-14-301-031), Section 14, From R-1C (One Family Residential), RT (One Family Attached Residential) and EP (Environmental Protection) Districts to RT (One Family Attached Residential) District

Mr. Carlisle stated the proposed Conditional Rezoning previously considered by the Planning Commission at its October 22, 2019 meeting is revised to seek approval to rezone all portions of the two parcels to RT (One Family Attached Residential). He referenced the voluntary conditions offered by the applicant and specifically addressed the Open Space Preservation Area proposed for the EP-zoned portion. Mr. Carlisle said if the rezoning application is granted approval, additional details of the Open Space Preservation Area would need to be provided.

Mr. Carlisle briefly reviewed the initial application and comments both from the Planning Commission and the public.

Mr. Carlisle addressed the split zoning of the northern parcel and front portion of the southern parcel. He said the proposed rezoning to RT is consistent with the Master Plan, noting the site has been master planned for medium density and multiple family residential for the past 20 years. Mr. Carlisle indicated the applicant is providing increased setbacks along the northern and eastern property lines to provide additional buffer.

Mr. Carlisle addressed the eastern portion of the southern parcel that is zoned EP. He explained the applicant is seeking to use the parcel for overall density and stormwater management. He said the proposed detention pond is utilitarian in design and the double row of trees to screen is insufficient. Mr. Carlisle said that both the detention area and tree screening would not serve as an amenity to future residents of the development or adjacent residents. Mr. Carlisle said a naturalized pond area such as a bio-swale or raingarden would enhance the development.

Mr. Carlisle recommended that the Planning Commission consider the revised application, take into consideration public comments this evening and provide direction to the applicant.

John Thompson of Professional Engineering Associates distributed a handout incorporating changes in the voluntary conditions offered by the applicant. He referenced condition #3 relating to the detention basin design as a dry pond and the addition of condition #8 relating to rear yard relationship and setbacks to existing houses and condition #9 enhancement to the screening of the Open Space Easement.

Mr. Thompson stated the revisions to the application and to the conditions offered by the applicant are a result of the feedback received from the neighbors and the Planning Commission. Mr. Thompson said a major concern of the neighbors is vehicular headlights shining toward adjacent single family homes. He said the additional row of screening trees and the orientation of the buildings would address that concern. Also, Mr. Thompson said the neighbors want a dry pond. The neighbors hope a dry pond improves the existing geese problem they are having as well eliminate insects drawn to standing water. He said a utilitarian design of the dry pond is preferred both by the neighbors and City departments for easier maintenance. Mr. Thompson addressed the proposed development as relates to the Rezoning Standards.

#### PUBLIC HEARING OPENED

- Naresh Gupta, 4337 Bennett Park Circle; addressed overall development along Rochester Road corridor from I-75 to the southern border of Troy as relates to the Master Plan and density, addressed concerns with traffic impact from development.
- Jim McCauley, 4435 Harold; representative of Shallowbrook Homeowners' Association. Mr. McCauley said the neighbors met with the builders since the application was considered in October and they are in support of the proposed development at this point in time. He referenced condition #8 offered by the applicant. Mr. McCauley said the intent with the rear yard relationship and a minimum of 35 feet building setbacks to existing houses on Shallowdale is to serve as a buffer, similar to the buffer of the existing EP-zoned parcel. He said the setbacks and additional screening will alleviate the concern of vehicular lights shining into the homes. Mr. McCauley said the neighbors want a dry detention basin to distract geese from their homes. Mr. McCauley asked that the applicant explore further turning either Building 3 or Building 4 to a rear yard setback to the dry detention pond; he was told it's not feasible but he is asking the applicant to research that matter further.
- Jon Hughes, 4495 Harold; expressed disappointment that they are losing the natural environment with the proposed development.

Mr. Savidant clarified for the record that Mr. McCauley was granted additional time to speak because he is spoke on behalf of the homeowners' association.

#### PUBLIC HEARING CLOSED

There was discussion on:

- Landscaped screening of adjacent single family residential.
- Density; calculations, increase in number of units.
- History of EP-zoned parcel(s).
- Detention pond; as amenity, dry versus wet.
- Stormwater management; consideration of underground.
- Orientation of Buildings 3 or 4 to mitigate neighbors' concern with vehicular lights; if not feasible, additional landscaping for screening.
- Building height; no higher than what is permitted in R-1C residential.
- Dry pond.
  - Neighbors' concern with existing geese; preference of neighbors.
  - Utilitarian pond; DPW and Engineering preference for maintenance.
  - Location, depth, slope, shape, size.

Ms. Dufrane addressed the voluntary conditions offered by the applicant in relation to a conceptual plan and not an actual site plan. Ms. Dufrane said it would be best to meet with the applicant, the homeowners' association representative, Planning Consultant and administration to craft and/or wordsmith the conditions associated with the Conditional Rezoning request prior to consideration by City Council.

Mr. Savidant informed the audience the role of the Planning Commission is to make a recommendation to City Council. The public would have an opportunity to speak at the time City Council considers the item, and again during Site Plan consideration if the Conditional Rezoning is granted.

The applicant was advised to update the concept plan to show the rotation of buildings and additional screening prior to consideration by City Council.

**Resolution # PC-2020-01-009**

Moved by: Lambert

Support by: Rahman

**RESOLVED**, That the Planning Commission hereby recommends to the City Council that the R-1C, RT and EP to RT Conditional Rezoning request, as per Section 16.04 of the City of Troy Zoning Ordinance, located on the east side of Rochester, south of Shallowdale, within Section 14, being approximately 1.877 acres in size, be **GRANTED** for the following reasons:

1. The request complies with the Master Plan.
2. The RT District would permit greater flexibility in use and development of the property.
3. The conditions offered by the applicant this evening reasonably protect the adjacent properties.
4. The rezoning would be compatible with surrounding zoning and land use.
5. The site can be adequately served with municipal water and sewer.
6. The development of the property should not unreasonably impact adjacent properties.

Yes: All present (8)  
Absent: Faison

**MOTION CARRIED**

**OTHER BUSINESS**

6. PLANNING COMMISSION 2019 ANNUAL REPORT

Mr. Savidant said the 2019 Planning Commission annual report indicates that 2019 was a very busy year. Mr. Savidant said he would look into the suggestion by Ms. Landmesser to include the number of residential units in the report.

7. PUBLIC COMMENT

There was no one present who wished to speak.

8. PLANNING COMMISSION COMMENT

There were general Planning Commission comments, some relating to

- Positive outcome of communication between developer and neighbors to resolve concerns.
- Update on Tollbrook lawsuit.
- Joint City Council and Planning Commission meeting; February 4, Community Center Room 303, agenda, public engagement.
- 2020 Michigan Regional Future City Competition.

The Regular meeting of the Planning Commission adjourned at 8:43 p.m.

Respectfully submitted,

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Tom Krent, Chair

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Kathy L. Czarnecki, Recording Secretary

DATE: February 7, 2020

TO: Planning Commission

FROM: R. Brent Savidant, Community Development Director

SUBJECT: PUBLIC HEARING – SPECIAL USE REQUEST (File Number SU2019-0044) – Proposed Korean United Methodist Church of Troy Parking Lot Expansion, West side of Dequindre, south of Square Lake (42693 Dequindre), Section 27, Zoned R-1C (One Family Residential) District.

The petitioner Korean United Methodist Church of Troy submitted the above referenced Special Use Approval and Preliminary Site Plan Approval application to expand the existing church parking lot.

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

Attachments:

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

G:\SPECIAL USE\SU JPLN2019-0044 KOREAN UNITED METHODIST CHURCH\PC Memo 02 11 2020.docx

**PROPOSED RESOLUTION**

PUBLIC HEARING – SPECIAL USE REQUEST (File Number SU2019-0044) – Proposed Korean United Methodist Church of Troy Parking Lot Expansion, West side of Dequindre, south of Square Lake (42693 Dequindre), Section 27, Zoned R-1C (One Family Residential) District.

**Resolution # PC-2020-02-**

Moved by:

Seconded by:

**RESOLVED**, That Special Use Approval and Preliminary Site Plan Approval for the proposed Korean United Methodist Church of Troy Parking Lot Expansion, West side of Dequindre, south of Square Lake (42693 Dequindre), Section 27, Zoned R-1C (One Family Residential) District, be (granted, subject to the following conditions):

- 1. Add interior parking lot landscaping to break the long expanses of parking spaces.

\_\_\_\_\_ ) or

(denied, for the following reasons: \_\_\_\_\_) or

(postponed, for the following reasons: \_\_\_\_\_)

Yes:

No:

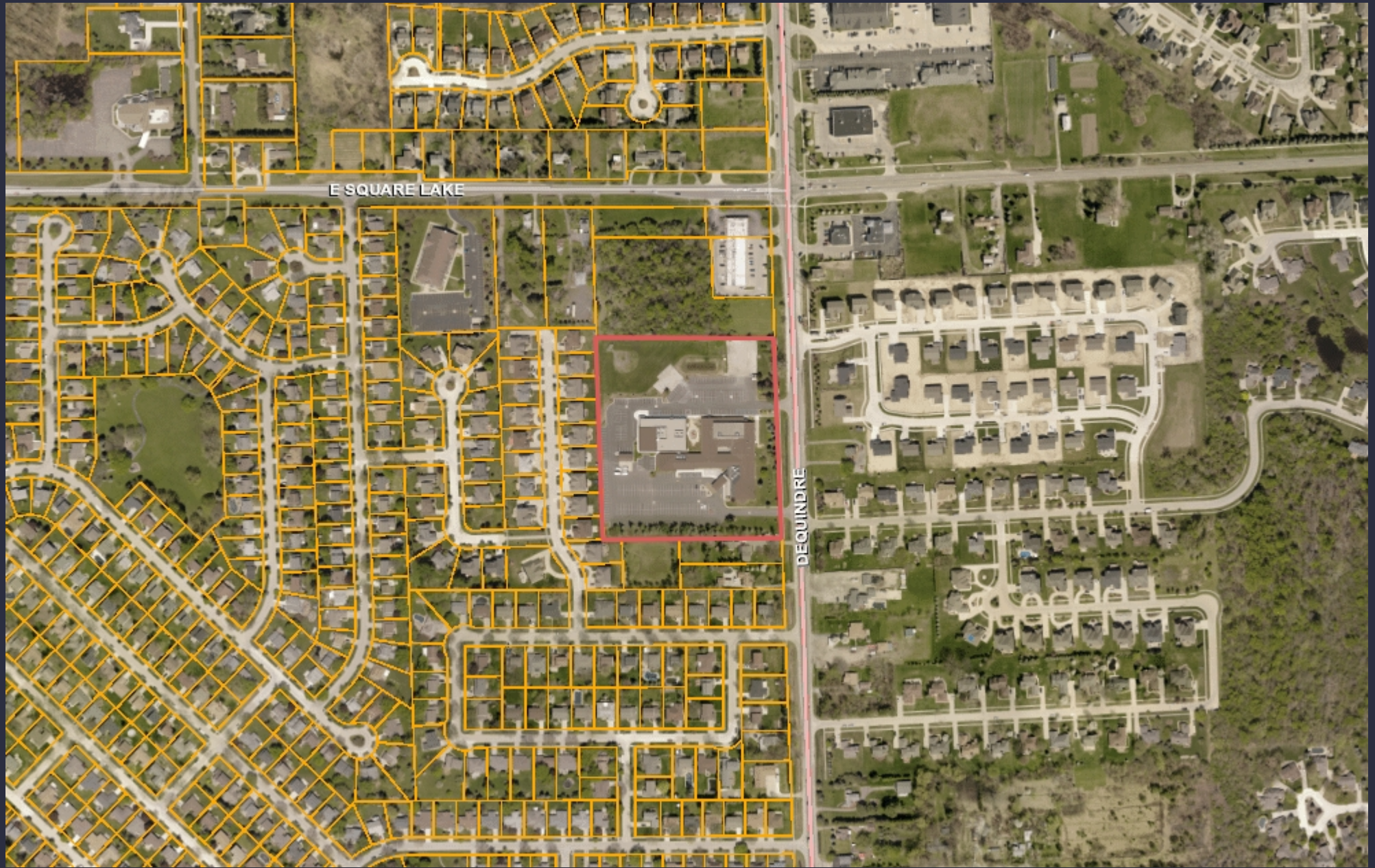
Absent:

**MOTION CARRIED / FAILED**





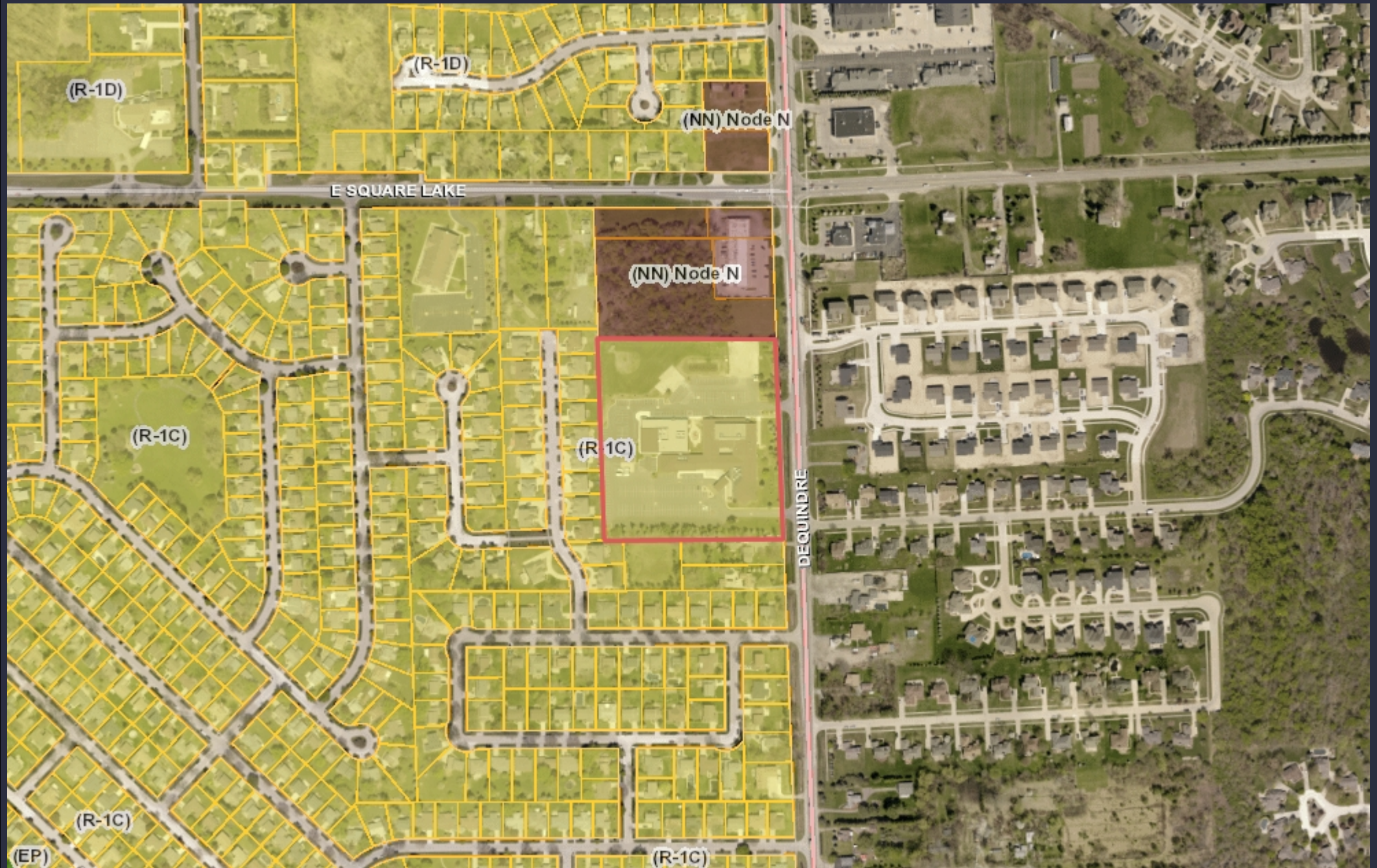
# GIS Online



1,189 0 595 1,189 Feet



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.



1,189 0 595 1,189 Feet



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.



**Carlisle | Wortman**  
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: February 5, 2020

## Special Use and Preliminary Site Plan Review For City of Troy, Michigan

<b>Applicant:</b>	Korean United Methodist Church
<b>Project Name:</b>	Church Parking Lot Expansion
<b>Plan Date:</b>	December 9, 2019
<b>Location:</b>	West side of Dequindre, south of Square Lake Road
<b>Zoning:</b>	R-1C Single Family Residential
<b>Action Requested:</b>	Special Use and Preliminary Site Plan Approval

### SITE DESCRIPTION

Korean United Methodist Church is an established church on the west side of Dequindre, south of Square Lake Road. The applicant is proposing the construction of a net 137 additional parking spaces. The parking expansion is located in two spots north of their existing parking lot. The larger area is currently grassed and a ballfield. The smaller area is gravel and currently used for overflow parking. Additional site improvements include landscape and lighting.



**Proposed Parking Lot  
Expansion Areas**

**Size of Subject Property:**

The parcel is 9.08 net acres

**Current Zoning:**

The property is currently zoned R1-C, Single Family Residential

**Surrounding Property Details:**

Direction	Zoning	Use
North	NN, Neighborhood Node	Vacant / Commercial
South	R1-C, Single Family	Single Family Residential
East	Sterling Heights	Single Family Residential
West	R1-C, Single Family	Single Family Residential

**NATURAL FEATURES**

**Topography:** A topographic survey has been provided on sheet C-1.0 and shows that the site is generally flat.

**Wetlands:** There are no wetlands on site.

**Floodplain:** There are no floodplains on site.

**Woodlands:** A tree inventory has been provided on sheet L-1.0. There are no protected trees that will be disturbed on site.

**Items to be addressed:** None

**SETBACKS**

Parking requires 10-foot setback for landscape buffer.

	Distance	Adjacent Land Use
North	10.47 at closet point	Vacant / Wooded
West	56 feet	Single Family Residential
East	51 feet	Dequindre Road

**Items to be addressed:** None

## PARKING

Section 13.06.G of the Zoning Ordinance requires:

	<b>Required</b>	<b>Provided</b>
Place of Worship: 1 per 3 seats in sanctuary	1,010 / 3 = 337 spaces	Existing = 399 Additional = 137 Total = 536
Barrier Free	15	15
<b>Total</b>	<b>337 spaces</b>	<b>536 spaces</b>

In order to not over park sites and to reduce unnecessary impervious surface, any parking that exceeds 20% of the parking requirement, requires special approval from the Planning Commission. In granting such additional space, the Planning Commission shall determine that such parking will be required, based on documented evidence, to accommodate the use on a typical day.

Based upon zoning ordinance requirements, the site already exceeds parking by 18%. With the additional parking, the applicant proposes to exceed the required parking by 59%. The applicant should prove to the satisfaction of the Planning Commission that the additional parking is necessary to accommodate the use on a typical day.

As part of the special use review, the Planning Commission can put reasonable conditions upon the parking lot expansion such as the use of pervious paving.

**Items to be Addressed:** 1). Prove to the satisfaction of the Planning Commission that the additional parking is necessary to accommodate the use on a typical day; and 2). As part of the special use review, the Planning Commission can put reasonable conditions upon the parking lot expansion such as the use of pervious paving.

**LANDSCAPING**

A landscaping plan has been provided on sheet L-1.0 and are supplemented by tree protection and planting details on sheet L-1.1. The following table discusses the development’s compliance with the landscape requirements set forth in Section 13.02.

	<b>Required:</b>	<b>Provided:</b>	<b>Compliance:</b>
<b>North and West Property Line:</b>			
<u>Landscape buffering:</u> Required buffering between two differentiating land uses. Alternative 1 or 2.	1 large evergreen every 10 feet or 1 narrow evergreen every 3 feet.	Existing brick wall	Complies
<b>Parking Lot Landscaping:</b>			
<u>1 tree every 8 spaces</u>	137 / 8 = 18	18, however only 1 is located within interior of parking lot	Complies with Planning Commission approval. See note below
<b>Overall:</b>			
<u>Site landscaping:</u> A minimum of twenty percent (20%) of the site area shall be comprised of landscape material. Up to twenty-five percent (25%) of the required landscape area may be brick, stone, pavers, or other public plaza elements, but shall not include any parking area or required sidewalks.	20%	30.7%	Complies

The Planning Commission should consider requiring the applicant to add interior parking lot landscaping to break the long expanses of parking spaces.

**Items to be Addressed:** *The Planning Commission should consider requiring the applicant to add interior parking lot landscaping to break the long expanses of parking spaces.*

**PHOTOMETRICS**

A photometric plan has been provided on sheet SL-1.1, and additional details are provided on sheet SL-1.2. The applicant is adding three (3) parking lot lights, two (2) are located in the larger parking lot addition, and one (1) is located in the smaller parking lot addition. The photometrics comply with all requirements.

**Items to be Addressed:** None

### **SPECIAL USE STANDARDS**

Section 9.03 outlines the criteria that must be considered prior to special land use approval. We have provided a summary of the proposed development considerations below:

1. Compatibility with Adjacent Uses.
2. Compatibility with the Master Plan.
3. Traffic Impact.
4. Impact on Public Service.
5. Compliance with Zoning Ordinance Standards.
6. Impact on the Overall Environment.
7. Special Use Approval Specific Requirements.

The applicant is adding additional parking to an existing church. Provided that the applicant can prove to the satisfaction of the Planning Commission that the additional parking is necessary to accommodate the use on a typical day, we find that the Special Use Standards have been met.

**Items to be addressed:** None

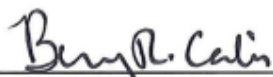
### **RECOMMENDATION**

We recommend that the Planning Commission hold a public hearing and discuss the need for additional parking to necessary to accommodate the use on a typical day. As part of the special use review, the Planning Commission can put reasonable conditions upon the parking lot expansion such as the use of pervious paving.

If the Planning Commission finds that the parking is necessary, we recommend special use and preliminary site plan approval with the following conditions:

1. Require the applicant to add interior parking lot landscaping to break the long expanses of parking spaces.

Sincerely,

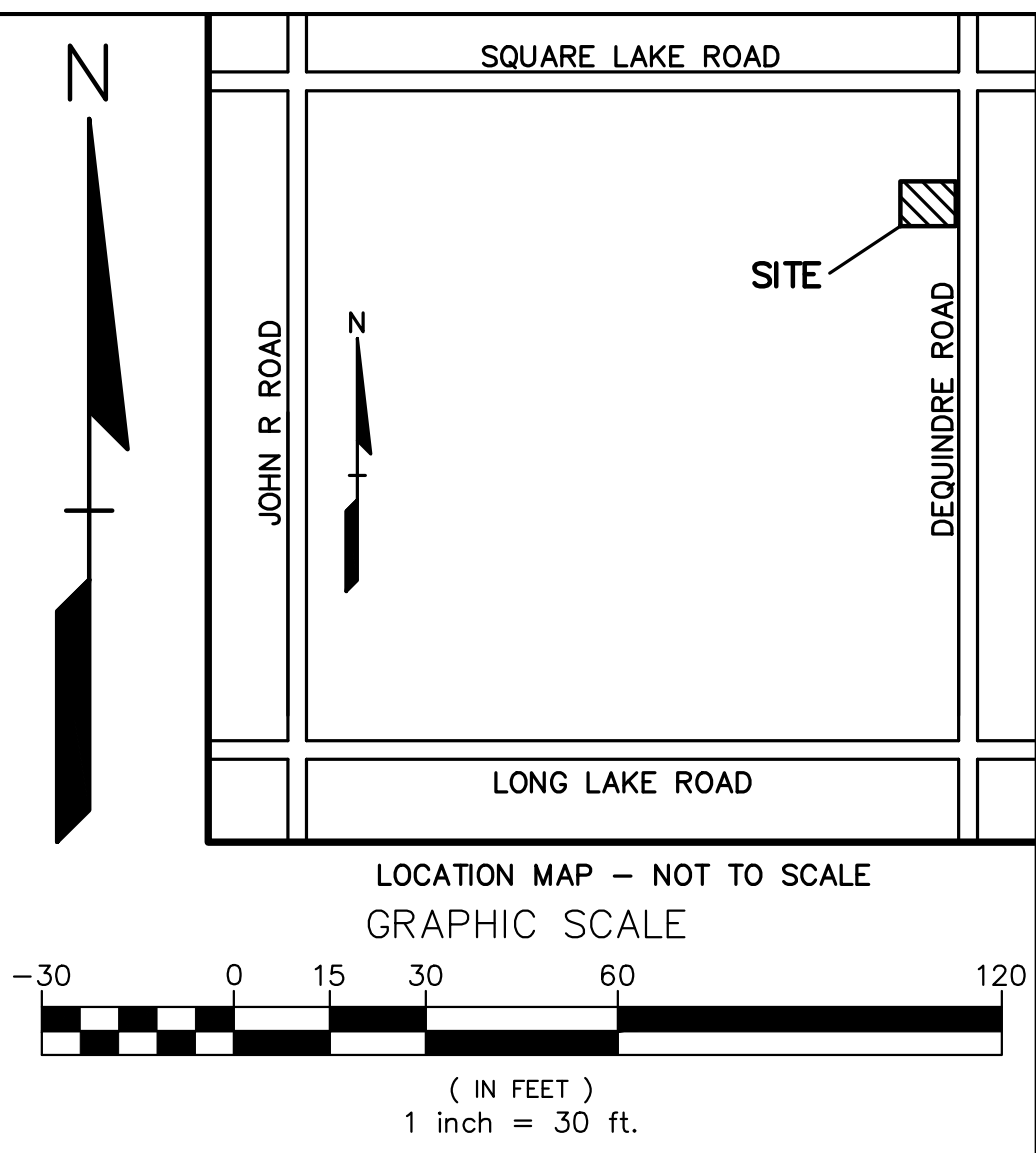
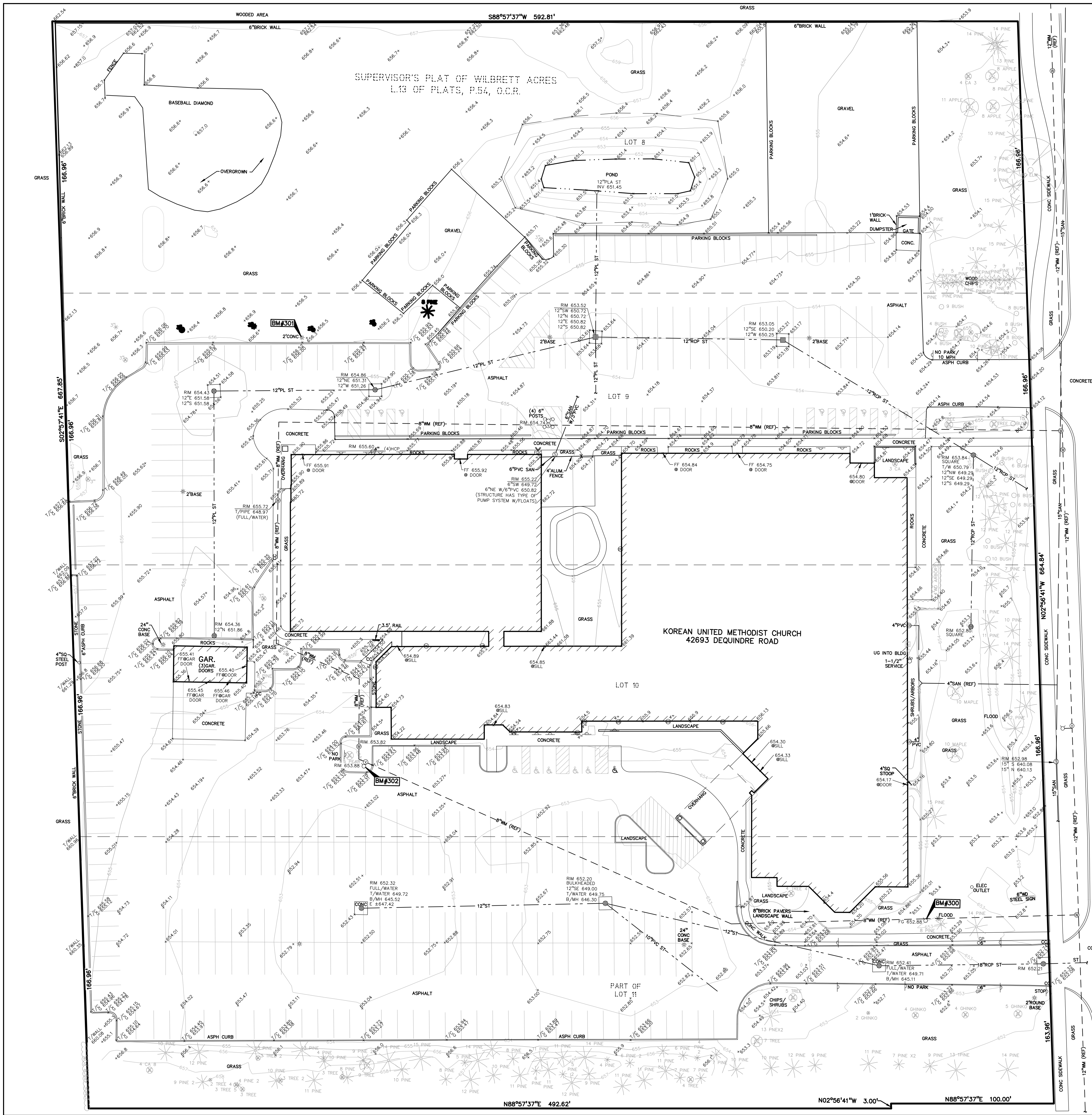


CARLISLE/WORTMAN ASSOC., INC.

Benjamin R. Carlisle, LEED AP, AICP







**LEGEND**

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

**EXISTING**

—OH—ELEC—V—V—	ELEC. PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE
—UG—CABLE—	UNDERGROUND CABLE TV, GUY PESTER
—UG—PHONE—	TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE
—UG—ELEC—	ELECTRIC U.G. CABLE, MANHOLE, WALKER & HANDHOLE
—GAS—	GAS MAIN, VALVE & GAS LINE MARKER
—WATER—	WATERMAIN, HYD. GATE VALVE, TAPPING SLEEVE & VALVE
—SEWER—	SANITARY SEWER, CLEANOUT & MANHOLE
—STONE—	STONE SEWER, CLEANOUT & MANHOLE
—COMB.—	COMBINED SEWER & MANHOLE
—SQUARE—	SQUARE, ROUND & REDUCE CATCH BASIN, YARD DRAIN
—POST—	POST INDICATOR VALVE
—VALVE—	WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF
—MOTOR—	MOTOR, TRANSFORMER, IRRIGATION CONTROL VALVE
—UNDEKED—	UNDEKED STRUCTURE
—ELEV.—	SPOT ELEVATION
—CONTOUR—	CONTOUR LINE
—FENCE—	FENCE
—RAIL—	GUARD RAIL
—STREET—	STREET LIGHT
—SIGN—	SIGN
—CONC.—	CONCRETE
—ASPH.—	ASPHALT
—GRAVEL—	GRAVEL SHOULDER
—WETLAND—	WETLAND

**REFERENCE DRAWINGS**

CONSTRUCTION PLANS, KOREAN UNITED METHODIST CHURCH OF TROY, PEA, INC.  
JOB NO. 2015-199, DATED APRIL 18, 2015, REV. DATE 4/28/16  
TOPOGRAPHIC SURVEY, PEA, INC. JOB NO. 2015-199, DATED AUGUST 5, 2015

**BENCHMARKS**  
(GPS DERIVED - NAVD88)

BM #300  
ARROW ON A HYDRANT LOCATED APPROX. 25'±  
SOUTHEAST FROM THE SOUTHEAST BUILDING CORNER.  
ELEV. - 655.02(R)

BM #301  
DRILLED MAG NAIL IN THE WEST SIDE OF THE STOP OF  
A CONCRETE LIGHT POLE BASE LOCATED APPROX. 90'±  
NORTHWEST FROM THE NORTHWEST BUILDING CORNER.  
ELEV. - 655.83(R) 655.85(M)

BM #302  
ARROW ON A HYDRANT LOCATED APPROX. 24'±  
SOUTHWEST OF THE SOUTHWEST BUILDING CORNER.  
ELEV. - 655.39(R) 655.43(M)

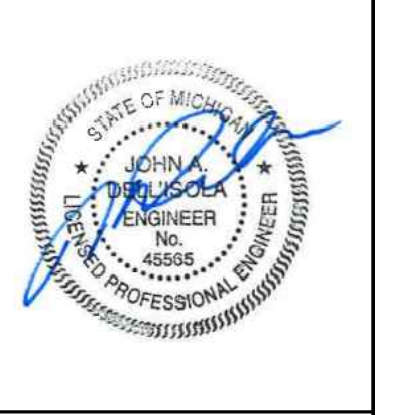
**LEGAL DESCRIPTION**

PARCEL ID 20-12-200-034  
Land in the City of Troy, Oakland County, Michigan, described as follows:  
T2N, R1E, SEC 12 SUPERVISOR'S PLAT OF WILBRETT ACRES LOTS 8, 9 & 10, ALSO LOT 11 EX: S 3 FT OF E 100 FT 1-26-03 FR 011, 012 & 019

**FLOODPLAIN NOTE:**  
BY GRAPHICAL PLOTTING, SITE IS WITHIN ZONE 'X'. AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN PER FLOOD INSURANCE RATE MAP NUMBER 26125C0552F, DATED SEPTEMBER 29, 2006.

**REVISIONS**

NO.	BY	CHK	DESCRIPTION	DATE



**CAUTION!**  
THE LOCATION AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS GIVEN FOR THE ACCURACY OF THESE UTILITIES. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

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Troy, MI 48063-1872  
t: 248.689.9090  
f: 248.689.1044  
www.peainc.com

**KOREAN UNITED METHODIST CHURCH**  
42693 DEQUINDRE ROAD  
TROY, MI 48063

**TOPOGRAPHIC SURVEY**  
**KOREAN UNITED METHODIST CHURCH**  
PART OF THE NE 1/4 OF SECTION 12, T. 2N., R. 1E., CITY OF TROY, OAKLAND COUNTY, MICHIGAN

DES.	GRB	DN.	GRB	SUR.	DLG	P.M.	ID

ORIGINAL ISSUE DATE:  
DECEMBER 9, 2019

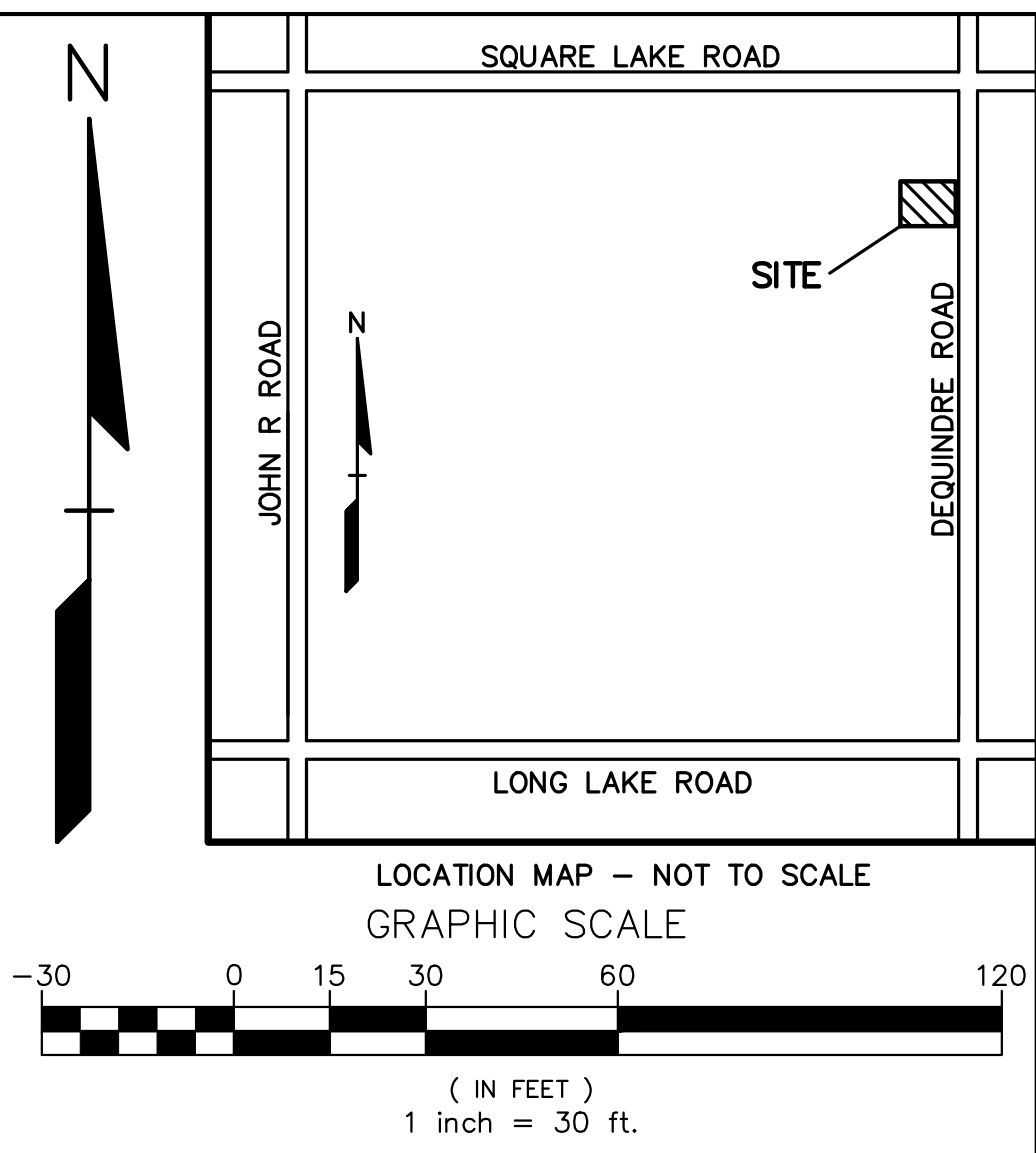
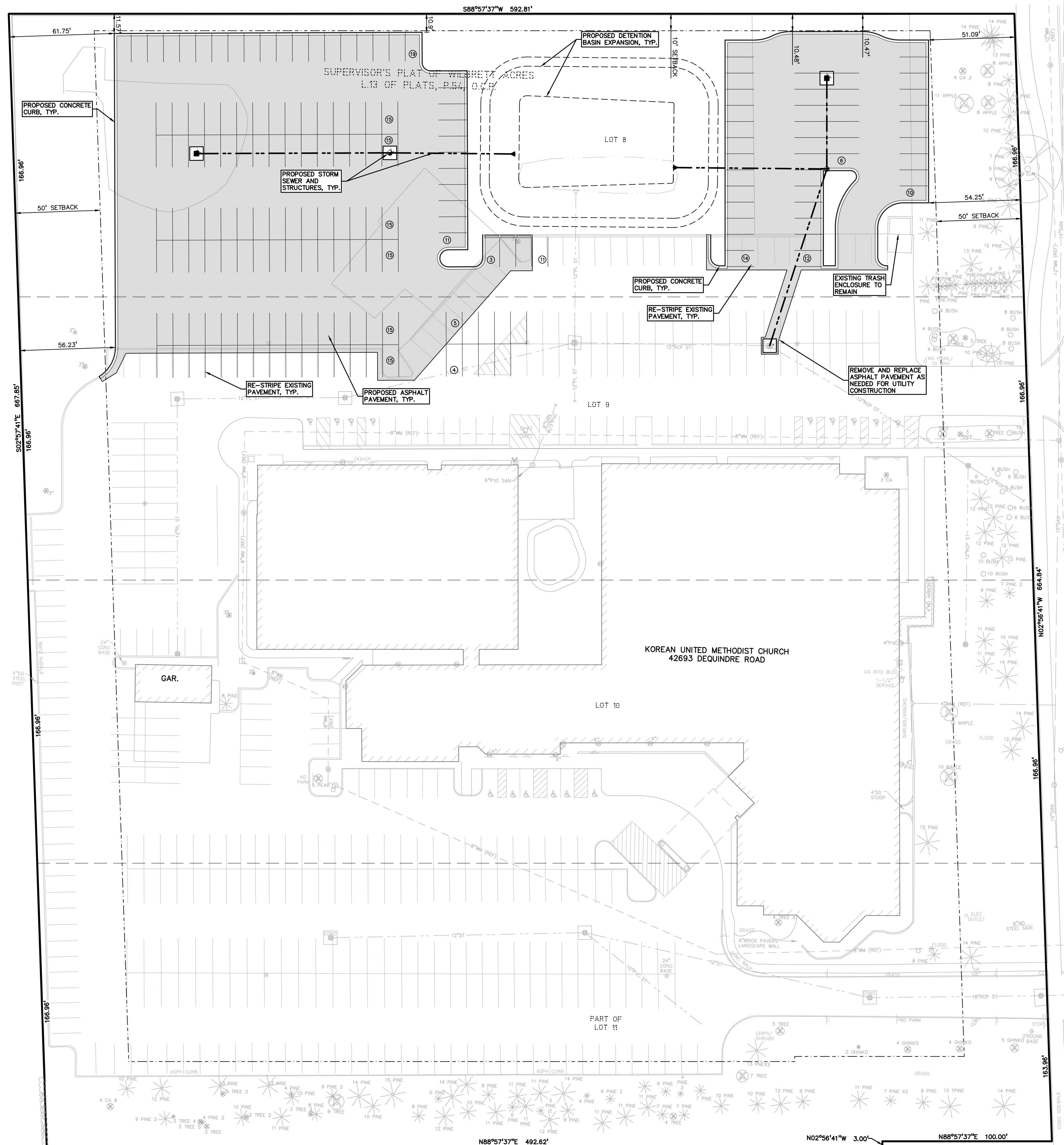
PEA JOB NO. 2019-400

SCALE: 1" = 30'

DRAWING NUMBER:  
**C-1.0**

**NOT FOR CONSTRUCTION**

XREF: S:\PROJECTS\2019\2019400\DWG\19400-TOPOBASE.DWG  
XREF: S:\PROJECTS\2019\2019400\DWG\CONSTRUCTION-V-BASE-19400.DWG  
XREF: S:\PROJECTS\2019\2019400\DWG\CONSTRUCTION-V-TBLK-19400.DWG



**LEGEND**

● IRON FOUND	⊗ MONUMENT FOUND	⊙ SEC. CORNER FOUND
⊗ IRON SET	⊙ MONUMENT SET	⊙ RECORDED
⊙ NAIL FOUND	⊙ MONUMENT SET	⊙ MEASURED
⊙ NAIL & CAP SET	⊙ MONUMENT SET	⊙ CALCULATED

**EXISTING**

- OH—ELEC—W—W— ELEC. PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE
- UG—CABLE—TV, CABLE, FIBER OPTIC UNDERGROUND CABLE TV, CABLE, FIBER OPTIC
- UG—PHONE—CABLE TELEPHONE U.G. CABLE, PEDestal & MANHOLE
- UG—ELEC—ELEC. U.G. CABLE, MANHOLE, METER & HANDHOLE
- GAS—GAS MAN, VALVE & GAS LINE MARKER
- WATER—WATER MAIN, HYD. GATE VALVE, TAPPING SLEEVE & VALVE
- SANITARY—SANITARY SEWER, CLEANOUT & MANHOLE
- STONE—STONE CURB, CLEANOUT & MANHOLE
- COMBINED—COMBINED SEWER & MANHOLE
- SQUARE—SQUARE, ROUND & REDUCE CATCH BASIN, YARD DRAIN
- POST—POST INDICATOR VALVE
- WATER—WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF
- METER—METER, TRANSFORMER, IRRIGATION CONTROL VALVE
- UNDETERMINED—UNDETERMINED STRUCTURE
- ⊙ SPOT ELEVATION
- CONTOUR—CONTOUR LINE
- FENCE—FENCE
- GUARD—GUARD RAIL
- STREET—STREET LIGHT
- SIGN—SIGN

**PROPOSED**

- CONC. CONCRETE
- ASPH. ASPHALT
- GRAVEL GRAVEL SHOULDER
- WETLAND WETLAND

**SITE DATA TABLE:**

**SITE AREA:** 9.08 ACRES (395,321 SQ.FT.) NET AND GROSS

**ZONING:** R-1C, ONE FAMILY RESIDENTIAL

**PROPOSED USE:** PLACE OF WORSHIP (SPECIAL USE), PARKING EXPANSION

**PARKING SETBACK REQUIREMENTS:**

FRONT SETBACK (EAST): 50 FEET REQUIRED 51.09' PROVIDED

SIDE SETBACK (NORTH): 10 FEET REQUIRED 10.47' PROVIDED

SIDE SETBACK (SOUTH): N/A

REAR SETBACK (WEST): 50 FEET REQUIRED 56.23' PROVIDED

**PARKING CALCULATIONS:**

PLACE OF WORSHIP = 1 SPACE PER 3 SEATS OR 6' OF PEWS IN MAIN UNIT OF WORSHIP

EXISTING SANCTUARY = 722 SEATS  
EXISTING ADDITION = 288 SEATS

TOTAL PARKING REQUIRED = 1010/3 = 337 SPACES

EXISTING PARKING ON-SITE = 384 SPACES INC. 15 H/C SPACES  
NET ADDITIONAL PARKING = 137 SPACES  
TOTAL PROPOSED PARKING SPACES = 521 SPACES INC. 15 H/C SPACES

**OPEN SPACE:**  
MINIMUM OPEN SPACE REQUIRED = 20%  
PROVIDED OPEN SPACE = 30.70%

**SITE SOILS INFORMATION:**  
ACCORDING TO THE USDA NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY FOR OAKLAND COUNTY, THE SITE CONSISTS OF THE FOLLOWING SOIL TYPES:  
123 A - DEL REY LOAM, 0 TO 2 PERCENT SLOPES

**REVISIONS**

No.	BY	CHK	DESCRIPTION	DATE

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**KOREAN UNITED METHODIST CHURCH**  
42693 DEQUINDE ROAD  
TROY, MI 48063

**OVERALL SITE PLAN**

**KOREAN UNITED METHODIST CHURCH**  
PART OF THE NE 1/4 OF SECTION 12, T. 2N, R. 11E,  
CITY OF TROY, OAKLAND COUNTY, MICHIGAN

DES.	GRB	DN.	GRB	SUR.	DLK	PLM.	ID.

ORIGINAL ISSUE DATE:  
DECEMBER 9, 2019

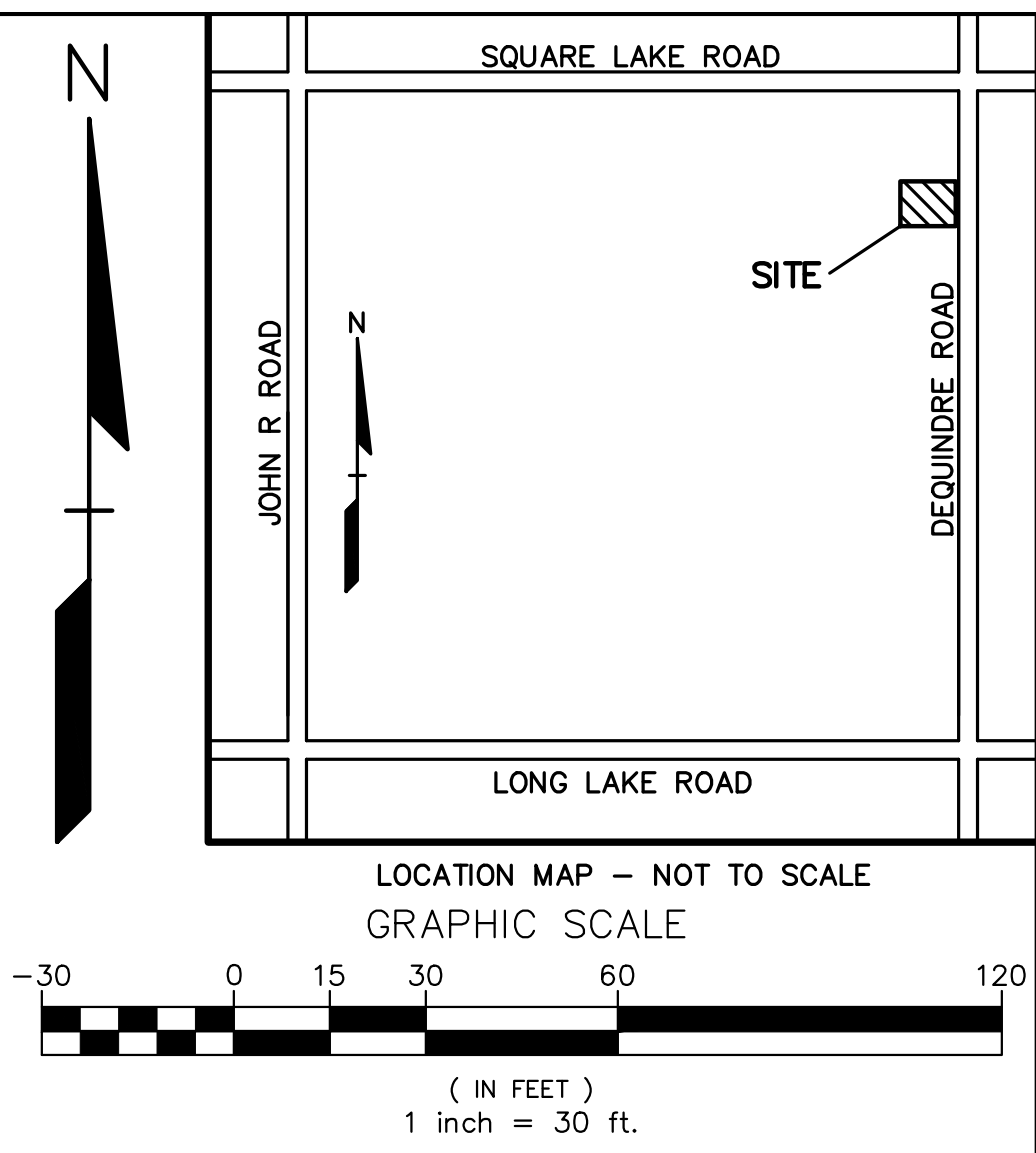
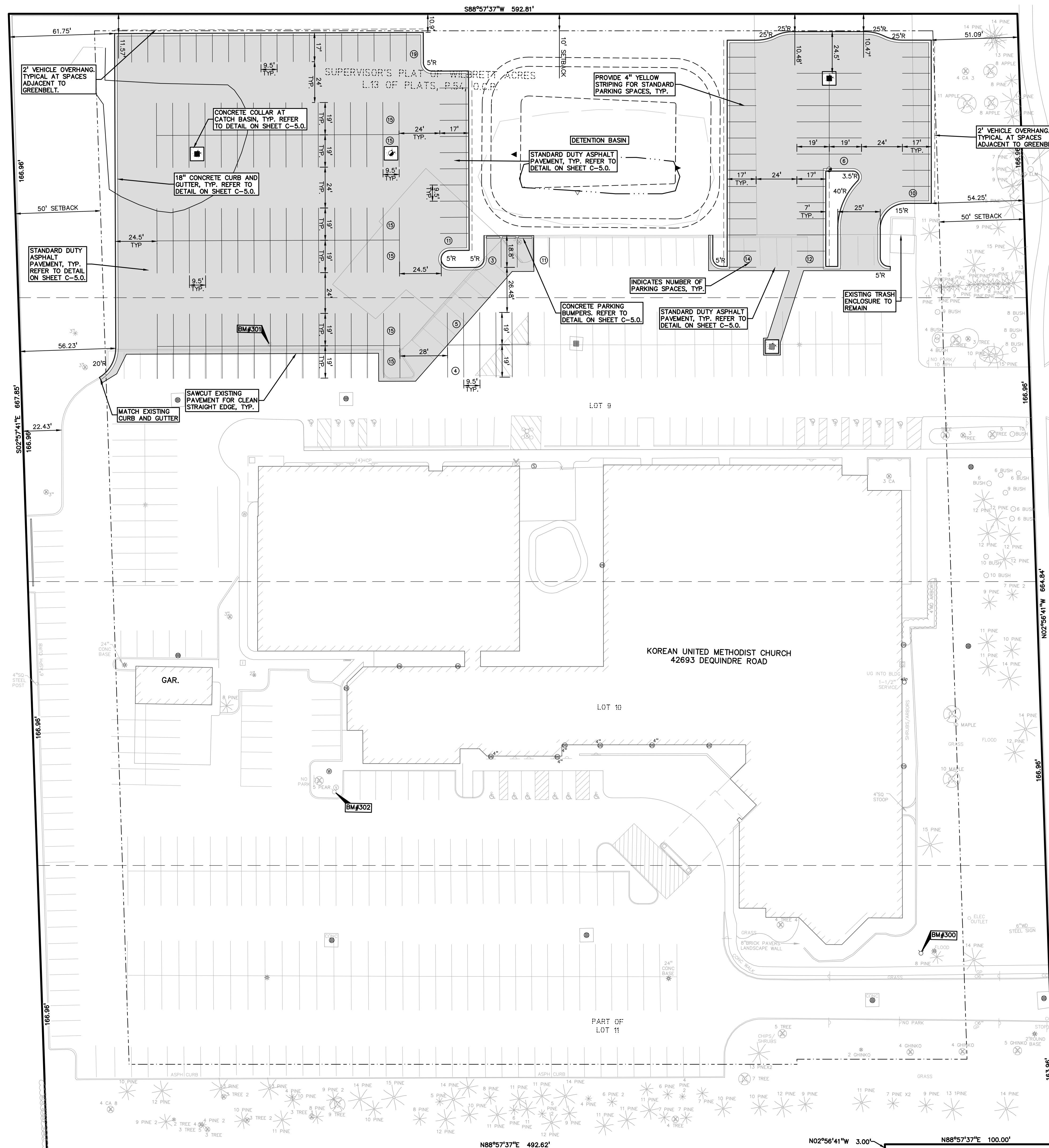
PEA JOB NO. 2019-400

SCALE: 1" = 30'

DRAWING NUMBER:  
**C-2.0**

**NOT FOR CONSTRUCTION**

XREF: S:\PROJECTS\2019\2019400\DWG\CONSTRUCTION\_V-BASE-19400.DWG  
S:\PROJECTS\2019\2019400\DWG\CONSTRUCTION\_V-TBLK-19400.DWG



**LEGEND**

EXISTING	PROPOSED
● IRON FOUND	● BRASS PLUG SET
⊗ IRON SET	⊗ MONUMENT FOUND
⊕ NAIL FOUND	⊕ MONUMENT SET
⊖ NAIL & CAP SET	⊖ RECORDED
	⊖ MEASURED
	⊖ CALCULATED
—OH—ELEC—V—V—	ELEC. PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE
—UG—CABLE—V—V—	UNDERGROUND CABLE TV, DATA FIBER/ST
—UG—PHONE—V—V—	TELEPHONE U.G. CABLE, PEDestal & MANHOLE
—UG—ELEC—V—V—	ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE
—UG—GAS—V—V—	GAS MAN, VALVE & GAS LINE MARKER
—UG—WATER—V—V—	WATERMAN, HYD. GATE VALVE, TAPPING SLEEVE & VALVE
—UG—SEWER—V—V—	SANITARY SEWER, CLEANOUT & MANHOLE
—UG—COMB—V—V—	COMBINED SEWER & MANHOLE
—UG—DRAIN—V—V—	SQUARE, ROUND & REDUCE CATCH BASIN, YARD DRAIN
—UG—POST—V—V—	POST INDICATOR VALVE
—UG—WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF	
—UG—MALBOR, TRANSFORMER, IRRIGATION CONTROL VALVE	
—UG—UNDEVELOPED STRUCTURE	
—UG—SPOT ELEVATION	
—UG—CONTOUR LINE	
—UG—FENCE	
—UG—GUARD RAIL	
—UG—STREET LIGHT	
—UG—SIGN	
—CONC.—	CONCRETE
—ASPH.—	ASPHALT
—GRAVEL—	GRAVEL SHOULDER
—WETLAND—	WETLAND

- GENERAL NOTES:**
- THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.
- ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF INTEGRAL CURB AND WALK, EDGE SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
  - REFER TO SHEET C-5.0 FOR ON-SITE PAVING DETAILS.
  - ALL CONSTRUCTION, WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT OSHA, MDOT AND CITY OF TROY STANDARDS AND REGULATIONS.
  - THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
  - THE CONTRACTOR MUST CONTACT THE ENGINEER SHOULD THEY ENCOUNTER ANY DESIGN ISSUES DURING CONSTRUCTION. IF THE CONTRACTOR MAKES DESIGN MODIFICATIONS WITHOUT THE WRITTEN DIRECTION OF THE DESIGN ENGINEER, THE CONTRACTOR DOES SO AT HIS OWN RISK.
  - ALL NECESSARY PERMITS, TESTING, BONDS AND INSURANCES ETC., SHALL BE PAID FOR BY THE CONTRACTOR. THE OWNER SHALL PAY FOR ALL CITY INSPECTION FEES.
  - ANY WORK WITHIN THE STREET OR HIGHWAY RIGHTS-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION AND SHALL NOT BEGIN UNTIL ALL NECESSARY PERMITS HAVE BEEN ISSUED FOR THE WORK.
  - ALL PROPERTIES OR FACILITIES IN THE SURROUNDING AREAS, PUBLIC OR PRIVATE, DESTROYED OR OTHERWISE DISTURBED DUE TO CONSTRUCTION, SHALL BE REPLACED AND/OR RESTORED TO THE ORIGINAL CONDITION BY THE CONTRACTOR.
  - THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADING, SIGNAGE, LIGHTS AND TRAFFIC CONTROL DEVICES TO PROTECT THE WORK AND SAFELY MAINTAIN TRAFFIC IN ACCORDANCE WITH LOCAL REQUIREMENTS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION). THE DESIGN ENGINEER, OWNER, CITY AND STATE SHALL NOT BE HELD LIABLE FOR ANY CLAIMS RESULTING FROM ACCIDENTS OR DAMAGES CAUSED BY THE CONTRACTOR'S FAILURE TO COMPLY WITH TRAFFIC AND PUBLIC SAFETY REGULATIONS DURING THE CONSTRUCTION PERIOD.
  - IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST THE TOP OF ALL EXISTING AND PROPOSED STRUCTURES (MANHOLES, CATCH BASINS, INLETS, GATE WELLS ETC.) WITHIN GRADED AND/OR PAVED AREAS TO FINAL GRADE SHOWN ON THE PLANS. ALL SUCH ADJUSTMENTS SHALL BE INCIDENTAL TO THE JOB AND WILL NOT BE PAID FOR SEPARATELY.
  - IN AREAS WHERE NEW PAVEMENTS ARE BEING CONSTRUCTED, THE TOPSOIL AND SOIL CONTAINING ORGANIC MATTER SHALL BE REMOVED PRIOR TO PAVEMENT CONSTRUCTION.
  - PROVIDE EXPANSION JOINTS AND JOINT SEALANT AT TWO "END-OF-RADIUS" LOCATIONS (OPPOSITE SIDES AT EACH LONG END) OF CONCRETE CURB ISLANDS.
  - CONSTRUCTION TRAFFIC SHOULD BE MINIMIZED ON THE NEW PAVEMENT. IF CONSTRUCTION TRAFFIC IS ANTIOPATED ON THE PAVEMENT STRUCTURE, THE INITIAL LIFT THICKNESS SHOULD BE INCREASED AND PLACEMENT OF THE FINAL LIFT COULD BE DELAYED UNTIL THE MAJORITY OF THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. THIS ACTION WILL ALLOW REPAIR OF LOCALIZED FAILURE, IF ANY DOES OCCUR, AS WELL AS REDUCE LOAD DAMAGE ON THE PAVEMENT SYSTEM.
  - PAVEMENT MIX DESIGNS SUBMITTED FOR REVIEW BY THE ENGINEER MUST FOLLOW THE CURRENT MDOT REVIEW CHECKLISTS AS SUMMARIZED BELOW:
    - CONCRETE MIX DESIGN REVIEW CHECKLIST (FORM 2000)
    - SUPERPAVE MIX DESIGN CHECKLIST (FORM 1862)
    - MARSHALL MIX DESIGN CHECKLIST (FORM 1849)

**REVISIONS**

No.	BY	CHK	DESCRIPTION	DATE

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PART OF THE NE 1/4 OF SECTION 12, T. 2N., R. 11E., CITY OF TROY, OKLAHOMA COUNTY, MICHIGAN

DES.	GRB	DN.	GRB	SUR.	DLC	P.M.	J.D.

ORIGINAL ISSUE DATE:  
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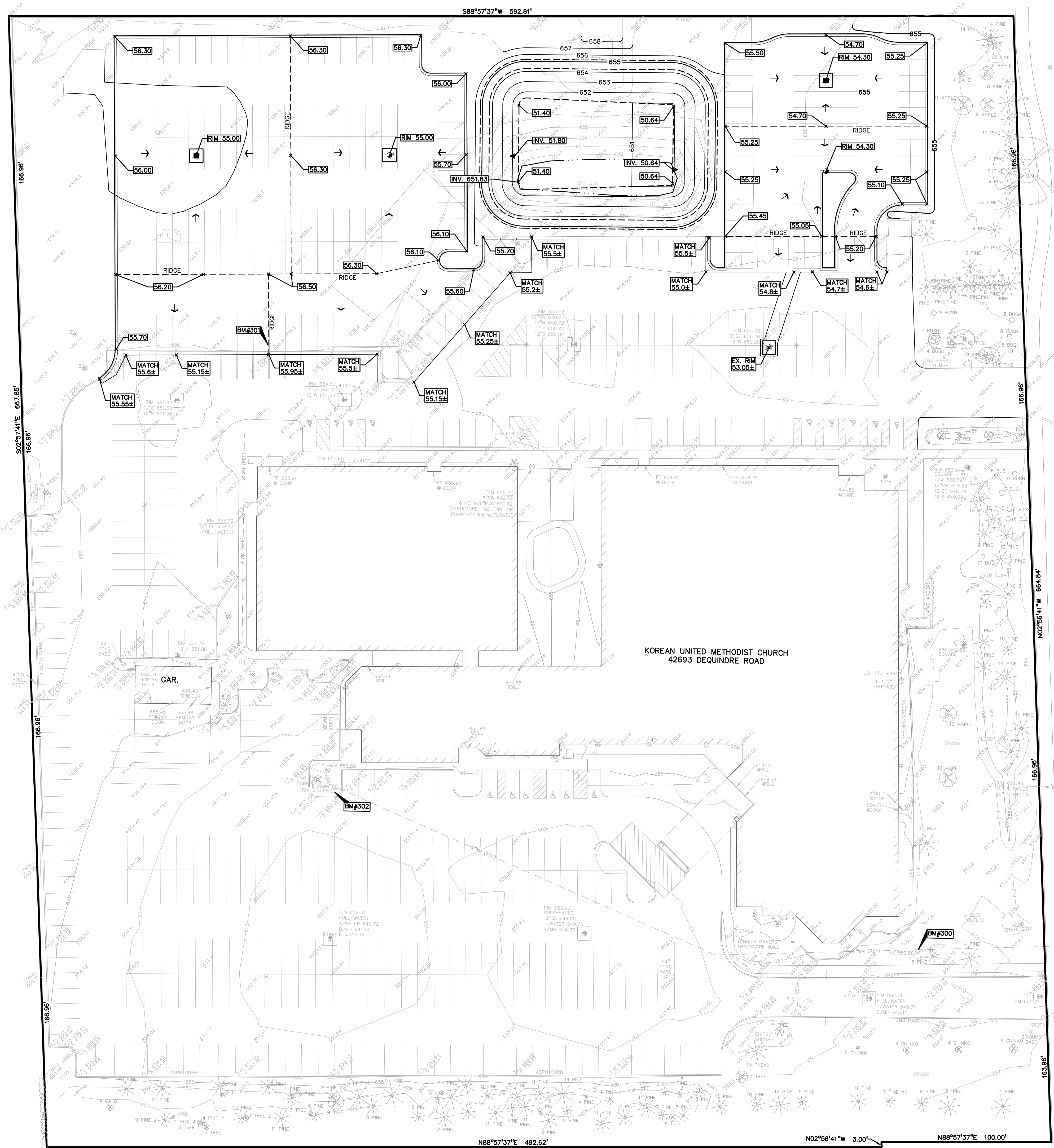
PEA JOB NO. 2019-400

SCALE: 1" = 30'

DRAWING NUMBER:  
**C-2.1**

**NOT FOR CONSTRUCTION**

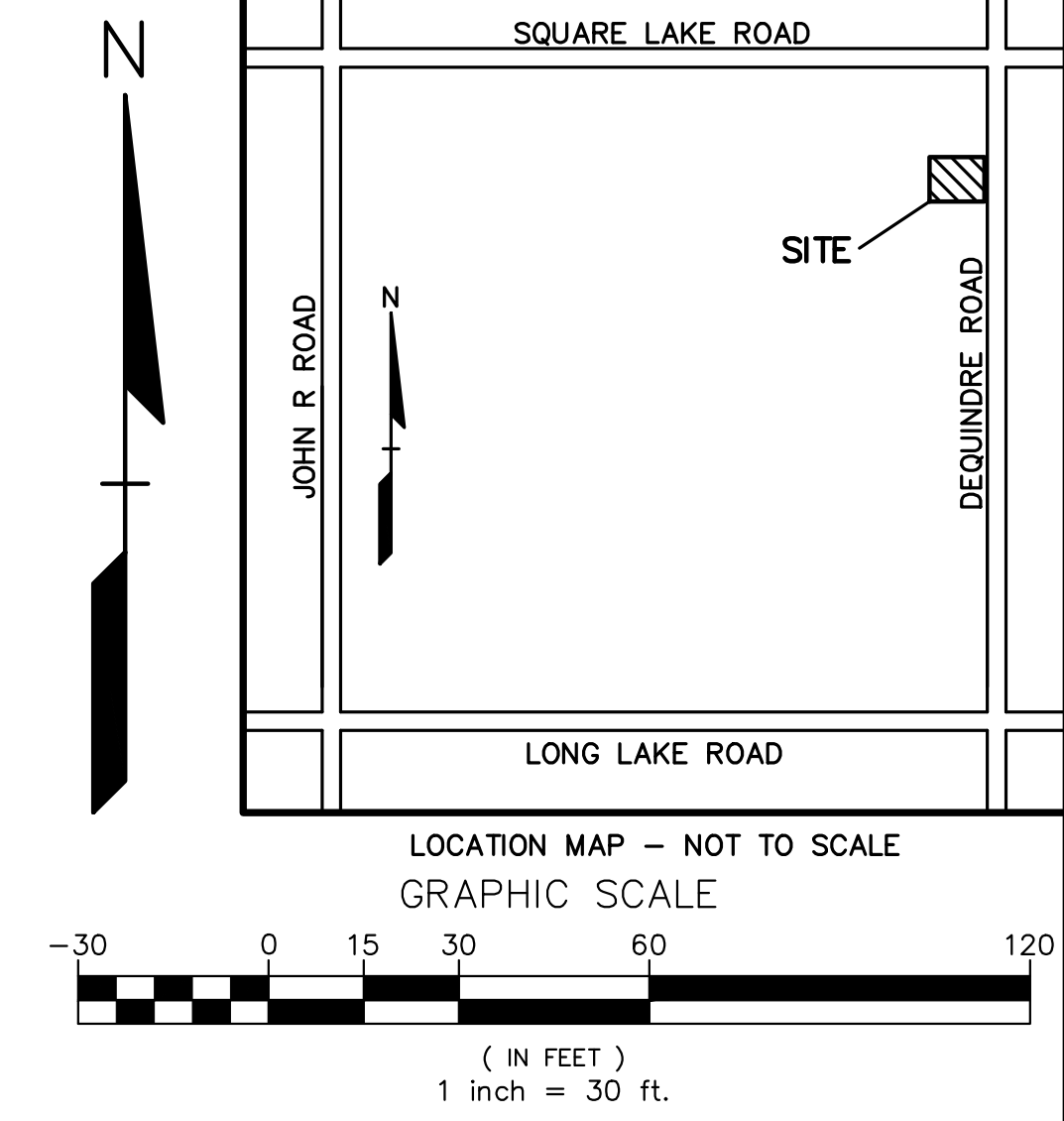
PROJECTS\2019\2019400\DWG\CONSTRUCTION\_V-BASE-19400.DWG  
PROJECTS\2019\2019400\DWG\CONSTRUCTION\_V-TBK-19400.DWG



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

**SYMBOLS: GRADING**  
 PROPOSED SPOT GRADE ELEVATION: TYPICALLY TOP OF PAVEMENT IN PAVED AREAS, GUTTER GRADE IN CURB LINES. ADD 500 TO ALL 4-DIGIT ELEVATION TO OBTAIN ACTUAL ELEVATIONS  
 PROPOSED CONTOUR LINE — 655 —  
 ABBREVIATIONS:  
 RIM = RIM ELEVATION  
 INV. = INVERT ELEVATION

**BENCHMARKS**  
 (GPS DERIVED - NAVD88)  
**BM #300**  
 ARROW ON A HYDRANT LOCATED APPROX. 25'-6" SOUTHWEST FROM THE SOUTHWEST BUILDING CORNER. ELEV. - 655.02(R)  
**BM #301**  
 DRILLED MAG NAIL IN THE WEST SIDE OF THE STOP OF A CONCRETE LIGHT POLE BASE LOCATED APPROX. 90'-6" NORTHWEST FROM THE NORTHWEST BUILDING CORNER. ELEV. - 655.63(R) 655.65(M)  
**BM #302**  
 ARROW ON A HYDRANT LOCATED APPROX. 24'-6" SOUTHWEST OF THE SOUTHWEST BUILDING CORNER. ELEV. - 655.39(R) 655.43(M)



**LEGEND**

EXISTING	PROPOSED
—OH—ELEC—W—V—	ELEC. PHONE OR CABLE TV, GUY LINE, POLE & GUY WIRE
—UG—CABLE—	UNDERGROUND CABLE TV, GUY PESTICIDE
—UG—PHONE—	TELEPHONE U.G. CABLE, PEDestal, MANHOLE
—UG—ELEC—	ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE
—UG—GAS—	GAS MAIN, VALVE & GAS LINE MARKER
—W—	WATERMAIN, HYD. GATE VALVE, TAPPING SLAVE & VALVE
—S—	SANITARY SEWER, CLEANOUT & MANHOLE
—S—	STONE SEWER, CLEANOUT & MANHOLE
—C—	COMBINED SEWER & MANHOLE
—S—	SQUARE, ROUND & RECTANGULAR CATCH BASIN, YARD DRAIN
—S—	POST INDICATOR VALVE
—S—	WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF
—S—	MALBORG, TRANSFORMER, IRRIGATION CONTROL VALVE
—S—	UNDEVELOPED STRUCTURE
—S—	SPOT ELEVATION
—S—	CONTOUR LINE
—S—	FENCE
—S—	GUARD RAIL
—S—	STREET LIGHT
—S—	SIEN
—S—	CONCRETE
—S—	ASPHALT
—S—	GRAVEL SHOULDER
—S—	WETLAND

DEQUINDRE ROAD  
 (120' WIDE)

- GENERAL GRADING AND EARTHWORK NOTES:**  
 THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT
- CONTRACTOR TO FIELD VERIFY ALL EXISTING TREES AND BRUSH AND REMOVE ALL THAT ARE NECESSARY TO GRADE SITE.
  - ALL GRADES ARE TO TOP OF PAVEMENT OR GUTTER UNLESS OTHERWISE NOTED.
  - THE STAGING OF CONSTRUCTION ACTIVITIES SHALL OCCUR ONLY WITHIN THE SITE BOUNDARIES. ANY CONSTRUCTION ACTIVITIES OUTSIDE OF THE SITE BOUNDARIES SHALL BE AT THE SOLE RESPONSIBILITY AND RISK OF THE CONTRACTOR.
  - ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL MEET THE REQUIREMENTS OF THE AUTHORIZED PUBLIC AGENCY OF JURISDICTION. AN EROSION CONTROL PERMIT MUST BE SECURED FROM THE CITY OF TROY PRIOR TO CONSTRUCTION.
  - ALL EARTHWORK AND GRADING OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE SOILS INVESTIGATION AND REPORT.
  - REFER TO SOIL EROSION CONTROL PLAN FOR ADDITIONAL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND NOTES.
  - THE DETENTION BASIN SIDE SLOPES AND ALL SLOPE EXCEEDING 1:6 MUST BE STABILIZED BY SODDING OR BY PLACING A MULCH BLANKET PEGGED IN PLACE OVER SEED.
  - ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED OR SODDED IN ACCORDANCE WITH THE LANDSCAPE PLANS. PROVIDE A MINIMUM OF 3" OF TOPSOIL IN THESE AREAS UNLESS OTHERWISE NOTED.
  - THE CONTRACTOR SHALL NOTE EXISTING UNDERGROUND UTILITIES WITHIN AND ADJACENT TO THE SITE. BACKFILL FOR EXISTING UTILITY TRENCHES SHALL BE EXAMINED CRITICALLY. ANY TRENCHES FOUND TO HAVE SOFT, UNSTABLE OR UNSUITABLE BACKFILL MATERIAL, IN THE OPINION OF THE THIRD PARTY TESTING COMPANY, THAT ARE TO BE WITHIN THE ZONE OF INFLUENCE OF PROPOSED BUILDINGS OR PAVEMENT SHALL BE COMPLETELY EXCAVATED AND BACKFILLED WITH SUITABLE MATERIAL.
  - ON-SITE FILL CAN BE USED IF THE SPECIFIED COMPACTION REQUIREMENTS CAN BE ACHIEVED. IF ON-SITE SOIL IS USED, IT SHOULD BE CLEAN AND FREE OF FROZEN SOIL, ORGANICS, OR OTHER DELETERIOUS MATERIALS.
  - THE FINAL SUBGRADE/EXISTING AGGREGATE BASE SHOULD BE THOROUGHLY PROFFEROLLED USING A FULLY LOADED TANDEM AXLE TRUCK OR FRONT END LOADER UNDER THE OBSERVATION OF A GEOTECHNICAL/PAVEMENT ENGINEER. LOOSE OR YIELDING AREAS THAT CANNOT BE MECHANICALLY STABILIZED SHOULD BE REINFORCED USING GEOTEXTILES OR REMOVED AND REPLACED WITH ENGINEERED FILL OR AS DICTATED BY FIELD CONDITIONS.
  - SUBGRADE UNDERCUTTING, INCLUDING BACKFILLING SHALL BE PERFORMED TO REPLACE MATERIALS SUSCEPTIBLE TO FROST HEAVING AND UNSTABLE SOIL CONDITIONS. ANY EXCAVATIONS THAT MAY BE REQUIRED BELOW THE TOPSOIL IN FILL AREAS OR BELOW SUBGRADE IN CUT AREAS WILL BE CLASSIFIED AS SUBGRADE UNDERCUTTING.
  - SUBGRADE UNDERCUTTING SHALL BE PERFORMED WHERE NECESSARY AND THE EXCAVATED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ANY SUBGRADE UNDERCUTTING SHALL BE BACKFILLED AS RECOMMENDED IN THE GEOTECHNICAL ENGINEERING REPORT FOR THE PROJECT.
  - ANY SUB-GRADE WATERING REQUIRED TO ACHIEVE REQUIRED DENSITY SHALL BE CONSIDERED INCIDENTAL TO THE JOB.

**REVISIONS**

NO.	BY	CHK	DESCRIPTION	DATE

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DES.	GRB	DN.	GRB	SUR.	DLG	P.M.	ID

ORIGINAL ISSUE DATE:  
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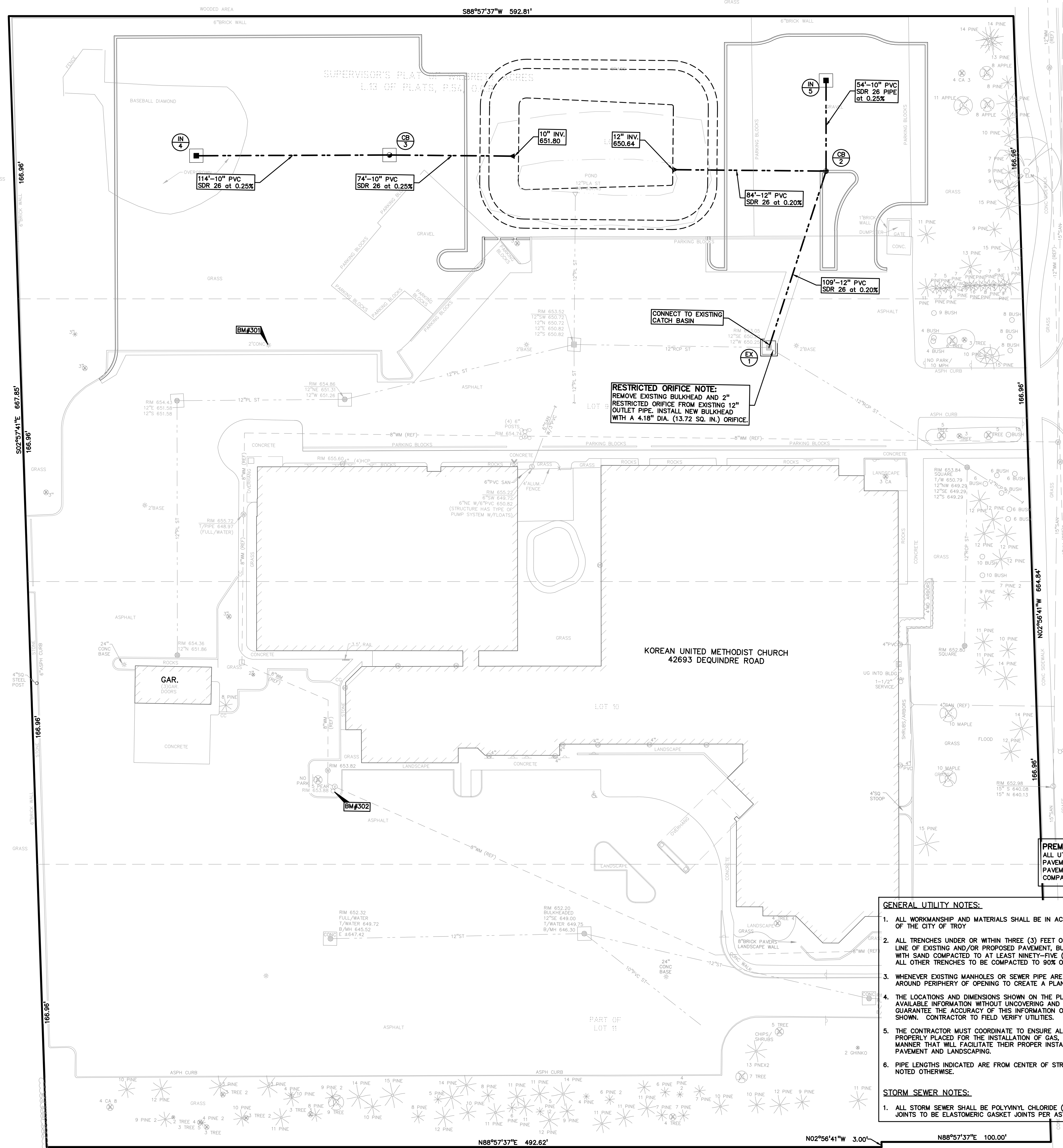
PEA JOB NO. 2019-400

SCALE: 1" = 30'

DRAWING NUMBER:  
**C-3.0**

**NOT FOR CONSTRUCTION**

XREF: S:\PROJECTS\2019\2019400\DWG\19400-TOPOBASE.DWG  
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 XREF: S:\PROJECTS\2019\2019400\DWG\CONSTRUCTION-V-TBK-19400.DWG



- STORM SEWER STRUCTURES:**
- EX 1 EXISTING CATCH BASIN  
RM 653.05  
EX. 12" SE 650.20  
EX. 12" W 650.25  
12" NE 650.25
  - CB 2 (4' DIA./2' SUMP) FLAT TOP STRUCTURE  
EJW #7045 WITH 'M1' GRATE & 7050 'TY' BACK  
RM 654.30  
12" SW 650.47  
12" W 650.47  
10" N 650.47
  - CB 3 (4' DIA./2' SUMP) FLAT TOP STRUCTURE  
EJW #1040 WITH  
TYPE 'M1' FLAT GRATE  
RM 655.00  
10" E 651.99  
10" W 651.99
  - IN 4 (2' DIA./2' SUMP) EJW #1130 WITH  
TYPE 'M1' FLAT GRATE  
RM 655.00  
10" E 652.28
  - IN 5 (2' DIA./2' SUMP) EJW #1130 WITH  
TYPE 'M1' FLAT GRATE  
RM 654.30  
10" S 650.61
- REFER TO CITY OF TROY STANDARD DETAIL SHEETS AND SHEET C-5.0 FOR ALL STORM SEWER STRUCTURES AND DETAILS.

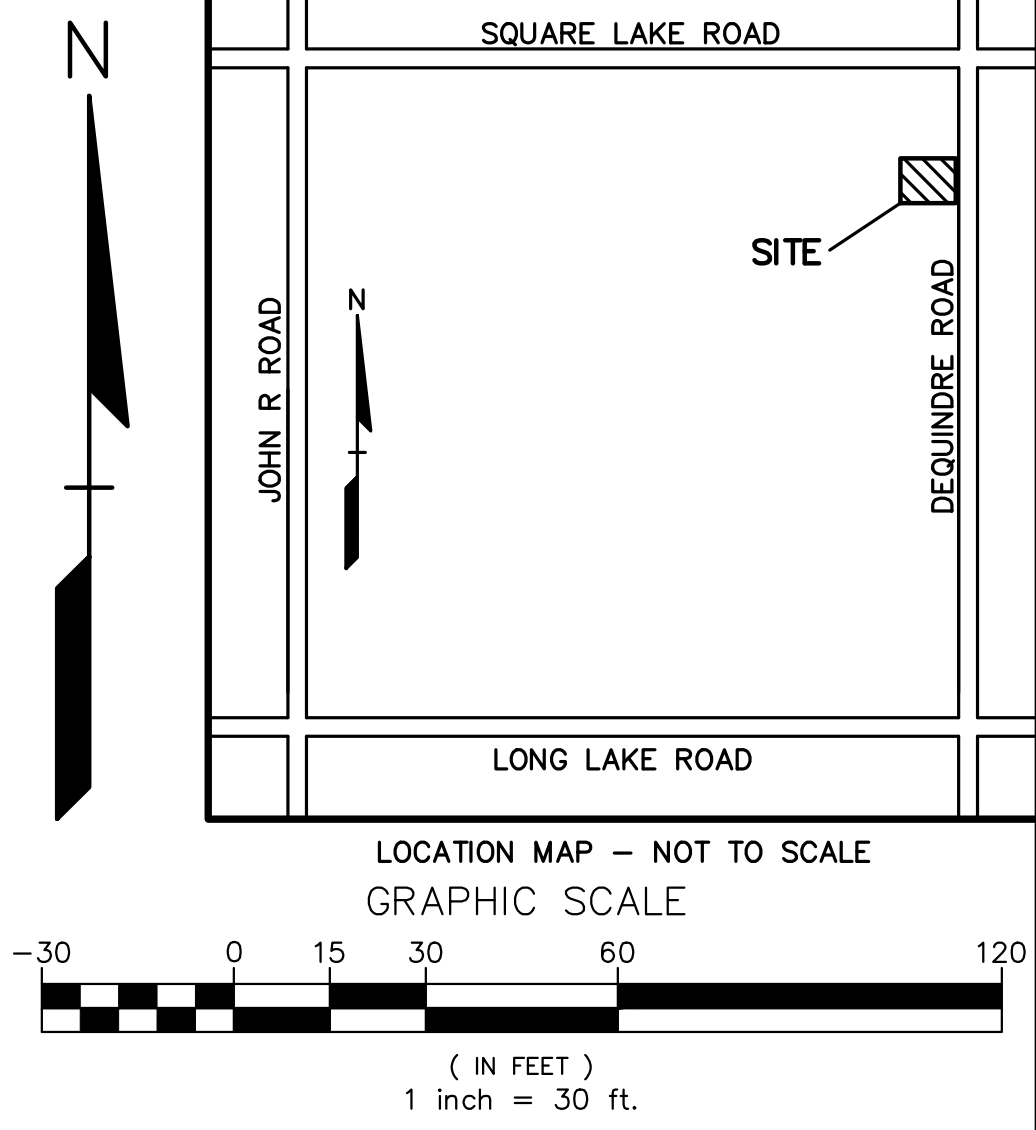
**RESTRICTED ORIFICE NOTE:**  
REMOVE EXISTING BULKHEAD AND 2" RESTRICTED ORIFICE FROM EXISTING 12" OUTLET PIPE. INSTALL NEW BULKHEAD WITH A 4.18" DIA. (13.72 SQ. IN.) ORIFICE.

**NOTE:**  
CONTRACTOR TO VERIFY ALL QUANTITIES. ANY DEVIATIONS TO THE PLAN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF PEA, INC. FOR VERIFICATION, PRIOR TO BIDDING.

**PREMIUM TRENCH BACKFILL NOTE:**  
ALL UTILITIES UNDER PAVEMENT OR WITHIN 3' OF THE EDGE OF PAVEMENT (OR WITHIN THE 45° LINE OF INFLUENCE OF PAVEMENT) SHALL HAVE M.D.O.T. CLASS II GRANULAR BACKFILL COMPACTED TO 95% MAX. DRY DENSITY (ASTM D-1557).

- GENERAL UTILITY NOTES:**
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF TROY
  - ALL TRENCHES UNDER OR WITHIN THREE (3) FEET OR THE FORTY-FIVE (45) DEGREE ZONE OF INFLUENCE LINE OF EXISTING AND/OR PROPOSED PAVEMENT, BUILDING PAD OR DRIVE APPROACH SHALL BE BACKFILLED WITH SAND COMPACTED TO AT LEAST NINETY-FIVE (95) PERCENT OF MAXIMUM UNIT WEIGHT (ASTM D-1557). ALL OTHER TRENCHES TO BE COMPACTED TO 90% OR BETTER.
  - WHENEVER EXISTING MANHOLES OR SEWER PIPE ARE TO BE TAPPED, DRILL HOLES 4" CENTER TO CENTER, AROUND PERIPHERY OF OPENING TO CREATE A PLANE OF WEAKNESS JOINT BEFORE BREAKING SECTION OUT.
  - THE LOCATIONS AND DIMENSIONS SHOWN ON THE PLANS FOR EXISTING UTILITIES ARE IN ACCORDANCE WITH AVAILABLE INFORMATION WITHOUT UNCOVERING AND MEASURING. THE DESIGN ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION OR THAT ALL EXISTING UNDERGROUND FACILITIES ARE SHOWN. CONTRACTOR TO FIELD VERIFY UTILITIES.
  - THE CONTRACTOR MUST MAINTAIN TO ENSURE ALL REQUIRED PIPES, CONDUITS, CABLES AND SLEEVES ARE PROPERLY PLACED FOR THE INSTALLATION OF GAS, ELECTRIC, PHONE, CABLE, IRRIGATION, ETC. IN SUCH A MANNER THAT WILL FACILITATE THEIR PROPER INSTALLATION PRIOR TO THE PLACEMENT OF THE PROPOSED PAVEMENT AND LANDSCAPING.
  - PIPE LENGTHS INDICATED ARE FROM CENTER OF STRUCTURE AND TO END OF FLARED END SECTION UNLESS NOTED OTHERWISE.

- STORM SEWER NOTES:**
- ALL STORM SEWER SHALL BE POLYVINYL CHLORIDE (PVC) SDR 26 PIPE (ASTM D3034) AND FITTINGS. ALL JOINTS TO BE ELASTOMERIC GASKET JOINTS PER ASTM D3212 UNLESS OTHERWISE NOTED.



**LEGEND**

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

**EXISTING**

- OH-ELEC-W-V-C- ELEC. PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE
- UG-CATV- UG-CATV
- UG-PHONE- UG-PHONE
- UG-ELEC- UG-ELEC.
- WATER- WATER MAIN, VALVE & GAS LINE MARKER
- SANITARY- SANITARY SEWER, CLEANOUT & MANHOLE
- COMBINED- COMBINED SEWER & MANHOLE
- SUMP- SQUARE, ROUND & BERTHE CATCH BASIN, YARD DRAIN POST INDICATOR VALVE
- WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF
- MALBOR, TRANSFORMER, IRRIGATION CONTROL VALVE
- UNDETERMINED STRUCTURE
- ⊙ SPOT ELEVATION
- CONTOUR LINE
- FENCE
- GUARD RAIL
- STREET LIGHT
- SIGN

**PROPOSED**

- CONCRETE
- ASPHALT
- GRAVEL SHOULDER
- WETLAND

**NORTH DETENTION SYSTEM**  
25 YEAR STORM DETENTION DESIGN

<b>Detention Basin</b>			
Contributing Area (A):	4.70	acre	
Allowable Discharge (Qa):	0.94	cms (=0.2 * acre)	
Coefficient of Runoff (Cr):	0.72		
<b>Calculation of Required Discharge/Acre</b>	Q = (Qa)/A(Cr)	0.28	cms/acre impervious
T = 25 + ((8062.5/Qa)^0.5)	144.69	minutes	
<b>Detention Storage Volume Required (25-yr Design Storm)</b>	Vs = (12900(T)(T+25)) - 40Q(T)	9,379	cf/acre impervious
Vt = (Vs)/A(Cr):	31,739	cf	
<b>Current Detention Storage Volume Required (25-yr Design Storm)</b>			
Current Overall Required:	31,739	cf	
Parking Lot Detention Provided:	7,184	cf (per records)	
Total Detention Basin Storage:	24,555	cf	

**Storage Provided in Detention Basin**  
25 Year Storage Elevation: 654.29  
Storage Elevation: 654.30  
Freeboard Elevation: 655.30

Elev. (ft)	Area (sq)	Vol. (cf)	Total Vol. (cf)
650.86	0	0	0
651.00	1,227	86	86
651.40	5,085	1,262	1,348
652.00	6,167	3,376	4,724
653.00	8,151	7,159	11,883
654.00	10,379	9,265	21,148
655.00	12,820	11,600	32,747

**Total Head**

654.30 WATER LEVEL	Diameter of holes =	4.18
650.39 ORIFICE CL	Number of holes =	1
3.91 TOTAL HEAD	CL Orifice	0.1742
	Outlet invert	650.22
	Orifice area =	0.0953 sq ft.
		13.72 sq in.

Q = 0.621 a (2gh)^0.5 = 0.9376 CFS  
 = 0.62 X 1 (0.0953 X (32.2)(2)(3.91)^0.5) = 0.9376 CFS  
 = 0.9376 X 1 = 0.9376 CFS

ORIFICE SIZE ADEQUATE

**REVISIONS**

NO.	BY	CHK	DESCRIPTION	DATE

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**KOREAN UNITED METHODIST CHURCH**  
42693 DEQUINDRE ROAD  
TROY, MI 48065

**PRELIMINARY UTILITY PLAN**  
**KOREAN UNITED METHODIST CHURCH**  
PART OF THE NE 1/4 OF SECTION 12, T. 2N., R. 11E., CITY OF TROY, OKLAHOMA COUNTY, MICHIGAN

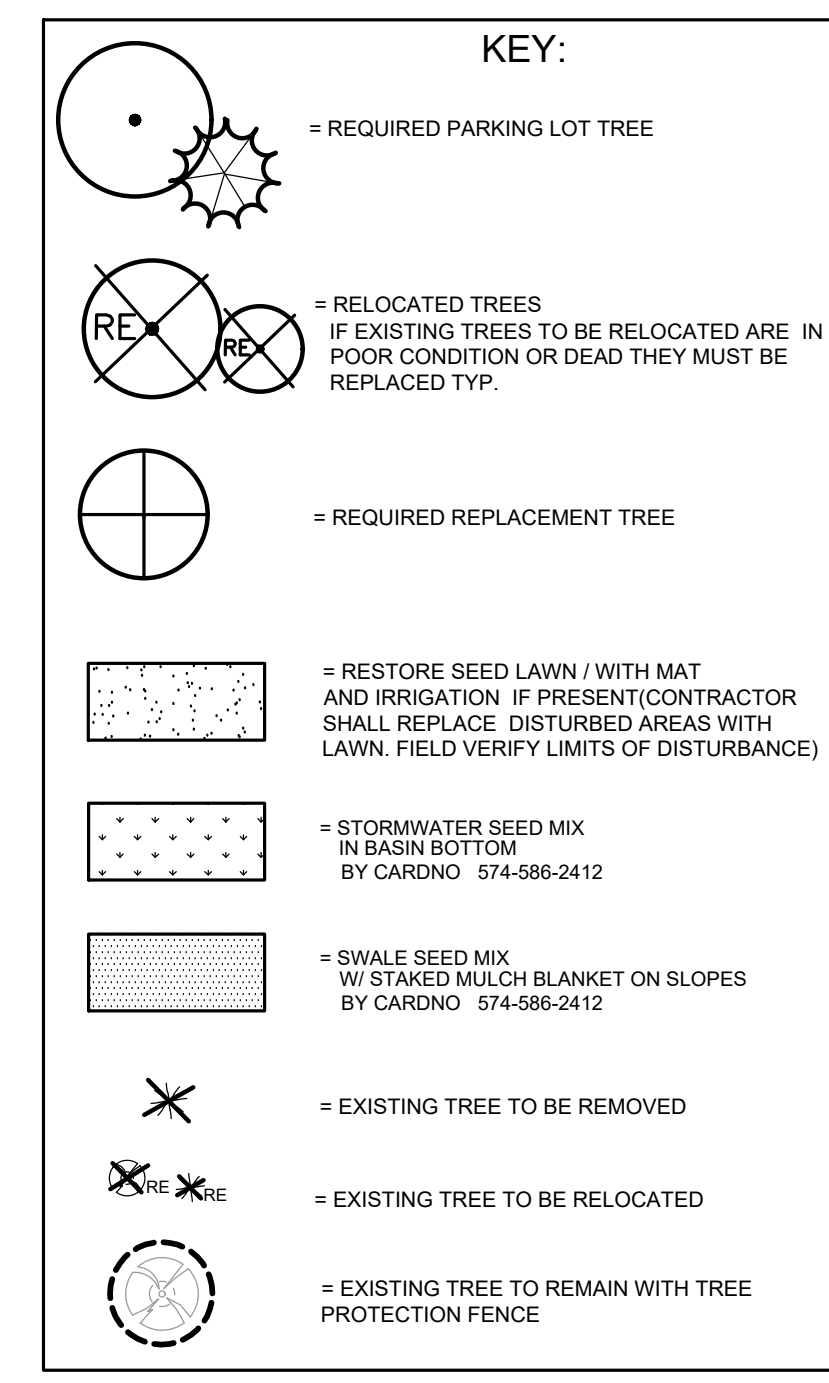
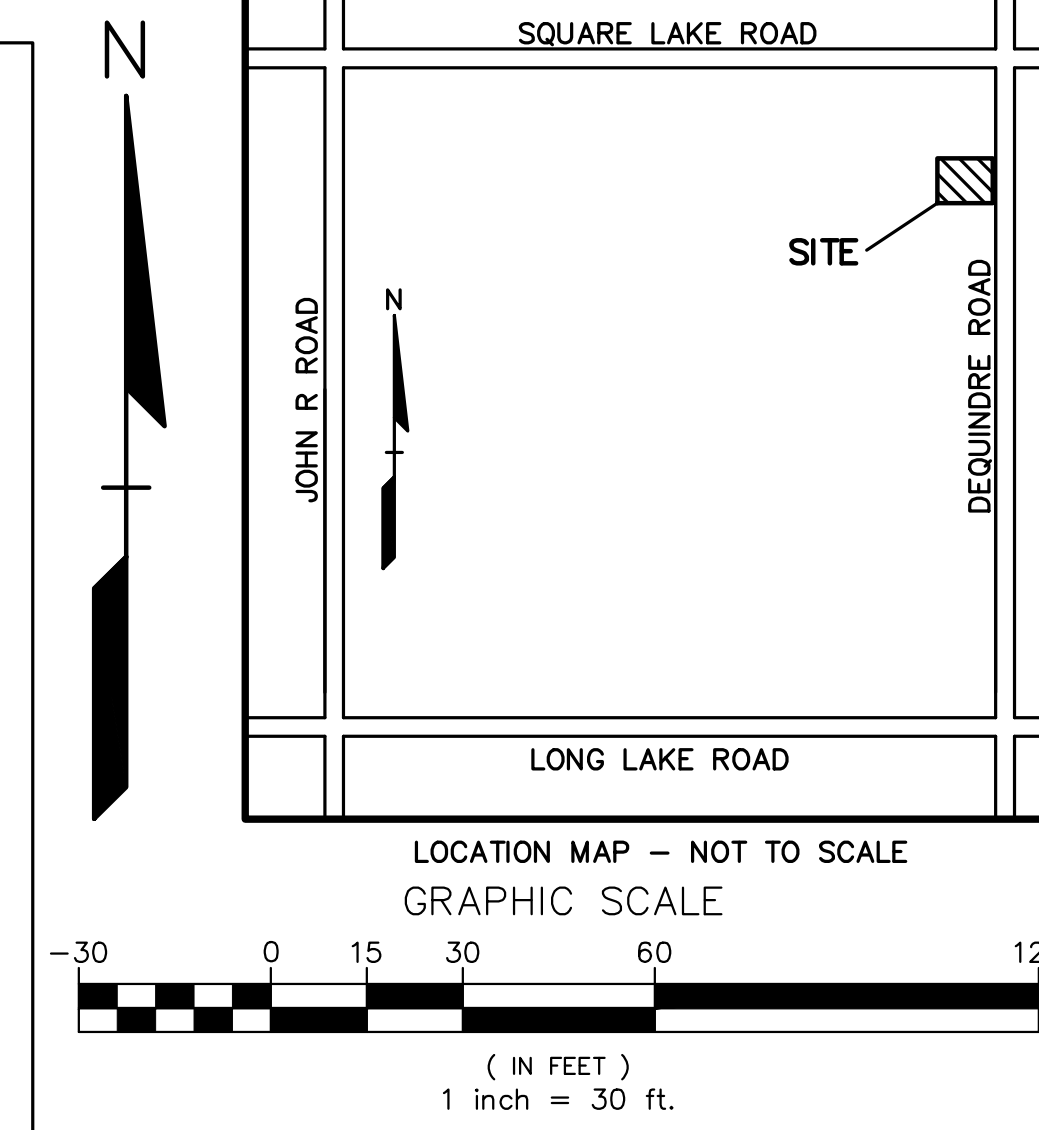
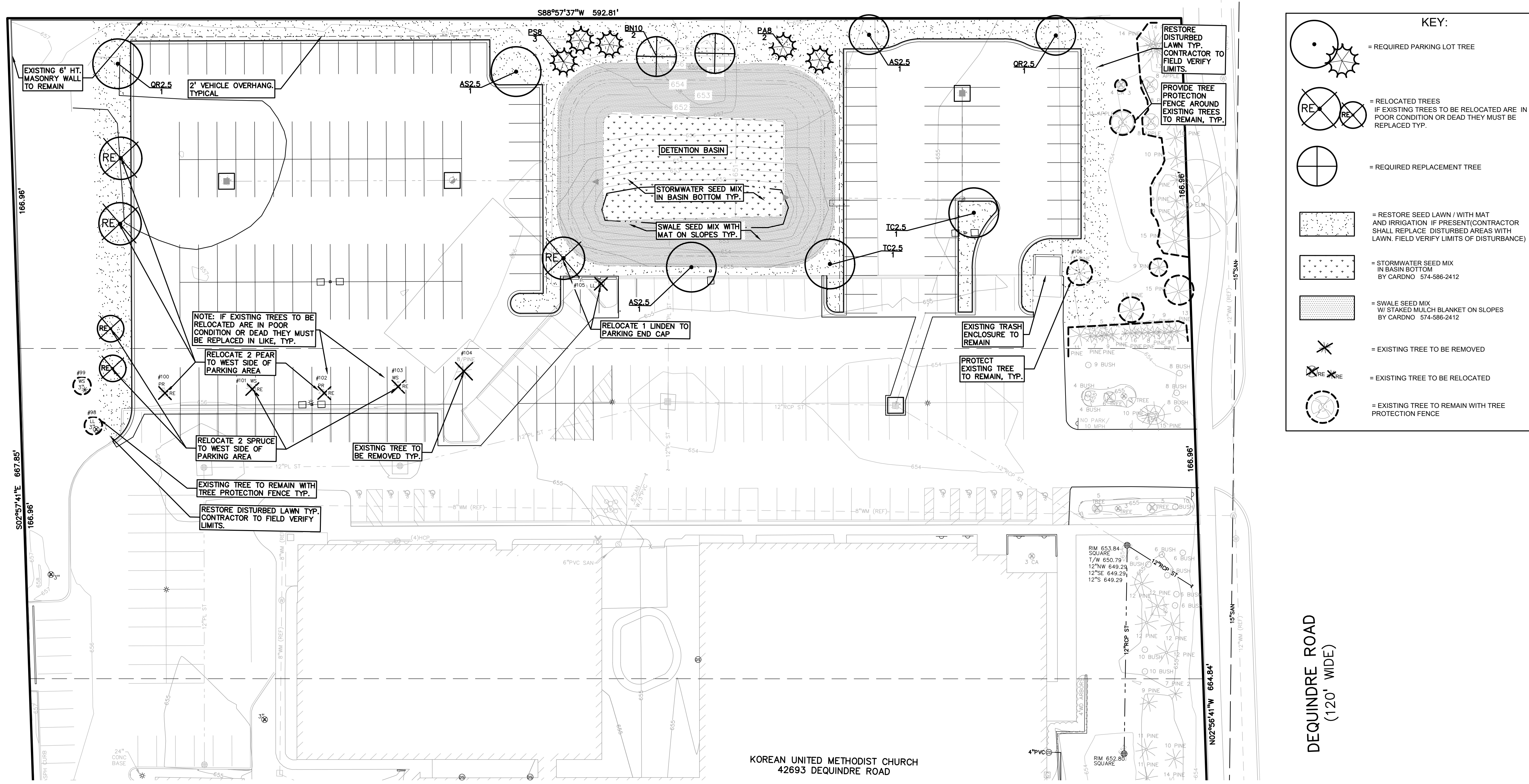
DES.	GRB	DN.	GRB	SUR.	DLG	PLM.	ID

ORIGINAL ISSUE DATE: DECEMBER 9, 2019  
 PEA JOB NO. 2019-400  
 SCALE: 1" = 30'  
 DRAWING NUMBER: **C-4.0**

**NOT FOR CONSTRUCTION**

XREF: S:\PROJECTS\2019\2019400\DWG\19400-TOPBASE.DWG  
 XREF: S:\PROJECTS\2019\2019400\DWG\CONSTRUCTION-V-BASE-19400.DWG  
 XREF: S:\PROJECTS\2019\2019400\DWG\CONSTRUCTION-V-TBLK-19400.DWG





**LANDSCAPE CALCULATIONS:**  
PER CITY OF TROY ZONING ORDINANCE, R1-B

**GREENBELT**  
REQUIRED: 1 TREE / 30 LF OF FRONTAGE  
DEQUINDRE RD.: 166.96 LF FRONTAGE/30 = 6 TREES  
PROVIDED: 6 EXISTING TREES AND WOODED AREA TO REMAIN

**PARKING LOT LANDSCAPING**  
REQUIRED: 1 TREE / 8 PARKING SPACES AND 3' HT BERM OR SHRUB BUFFER WHEN PARKING IS VISIBLE FROM ROAD R.O.W.  
137 ADDITIONAL PARKING SPACES / 8 = 17 TREES  
PROVIDED: 5 RELOCATE TREES, AND 12 PROPOSED TREES AND EXISTING DENSE VEGETATION TO REMAIN TO THE EAST. EXISTING BRICK SCREEN WALL TO REMAIN AT THE NORTH AND WEST PROPERTY LINE.

**GENERAL SITE LANDSCAPE**  
REQUIRED: 20% OF SITE AREA SHALL BE LANDSCAPE  
(9.08 AC) 395,321 SQ FT + 20% = 79,064 SQ FT  
PROVIDED: 30.70 % OPEN SPACE PROVIDED

**REPLACEMENT TREES**  
SEE EXISTING TREE LIST BELOW:  
EXISTING TREES WITHIN IMMEDIATE AREA OF CONSTRUCTION.  
REQUIRED:  
REMOVAL: 1 WOODLAND TREE, #104, 8" PINE TO BE REPLACED 50% DBH; 8 X .5 = 4" OF REPLACEMENT REQUIRED  
PROVIDED: 2, 2.5" CAL. DEC. TREES

**REVISIONS**

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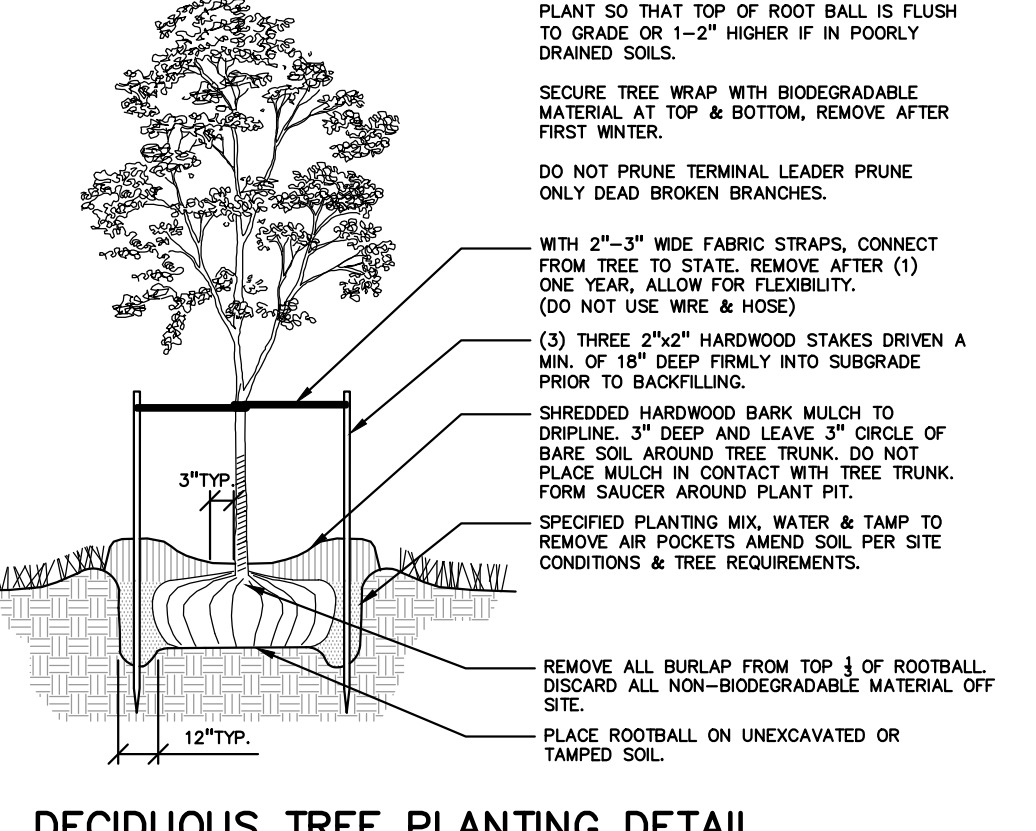
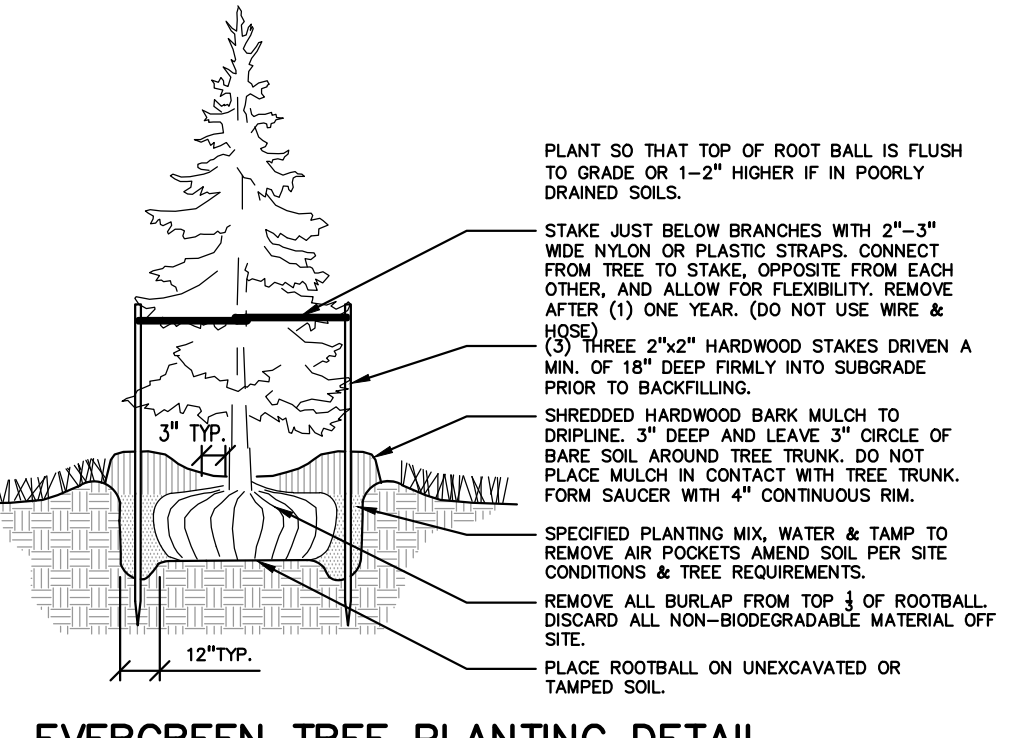
DES: JE DN, SUR: JE, DCL: JE, P.M: JE  
DATE: 10/20/2019

ORIGINAL ISSUE DATE:  
DECEMBER 9, 2019

PEA JOB NO. 2019-400

SCALE: 1" = 30'

DRAWING NUMBER:  
**L-1.0**



**PROPOSED DETENTION POND SEED MIX:**  
FOR ALL SEED MIXES, PROVIDE EROSION MAT ON SLOPES AND AREAS OF WASH OUT TYP. INSTALL AND PREP PER MANUFACTURERS SPECIFICATIONS.

Botanical Name	Common Name	Botanical Name	Common Name
Stormwater Seed Mix	CARDNO 574-586-2412	Swale Seed Mix	CARDNO 574-586-2412
Permanent Grasses/Sedges/Rubus:		Permanent Grasses/Sedges:	
<i>Botriochloa fluviatilis</i>	River Bulrush	<i>Andropogon gerardi</i>	Big Bluestem
<i>Carex crinitata</i>	Crested Owl Sedge	<i>Briely sedge</i>	Briely Sedge
<i>Carex lurida</i>	Bottlebrush Sedge	<i>Carex crinitata</i>	Crested Owl Sedge
<i>Carex vulpinoidea</i>	Brown Fox Sedge	<i>Carex lurida</i>	Bottlebrush Sedge
<i>Elymus virginicus</i>	Virginia Wild Rye	<i>Carex spp.</i>	Prairie Sedge Mix
<i>Glyceria striata</i>	Fowl Manna Grass	<i>Carex vulpinoidea</i>	Brown Fox Sedge
<i>Juncus effusus</i>	Common Rush	<i>Elymus virginicus</i>	Virginia Wild Rye
<i>Lewisia scopulorum</i>	Rice Cut Grass	<i>Glyceria striata</i>	Fowl Manna Grass
<i>Panicum virgatum</i>	Switch Grass	<i>Panicum virgatum</i>	Switch Grass
<i>Schoenoplectus tabernaemontani</i>	Softstem Bulrush	<i>Scirpus atrovirens</i>	Dark Green Rush
<i>Scirpus atrovirens</i>	Dark Green Rush	<i>Scirpus cyperinus</i>	Wool Grass
<i>Spartina pectinata</i>	Wool Grass		
Temporary Cover:	Common Oat	Temporary Cover:	Common Oat
<i>Avena sativa</i>	Annual Rye	<i>Lolium multiflorum</i>	Annual Rye
<i>Lolium multiflorum</i>	Annual Rye		
Forbs & Shrubs:	Water Plantain (Various Mix)	Forbs:	Water Plantain (Various Mix)
<i>Alisma spp.</i>	Swamp Milkweed	<i>Asclepias incarnata</i>	Swamp Milkweed
<i>Asclepias incarnata</i>	Swamp Milkweed	<i>Coroisopsis tridens</i>	Tall Coneopsis
<i>Bidens spp.</i>	Bidens (Various Mix)	<i>Eutrochium maculatum</i>	Spotted Joe-Pye Weed
<i>Helianthus autumnalis</i>	Sneezeweed	<i>Iris virginica</i>	Blue Flag
<i>Iris virginica</i>	Blue Flag	<i>Lycopus americanus</i>	Common Water Horehound
<i>Lycopus americanus</i>	Common Water Horehound	<i>Mimulus ringens</i>	Monkey Flower
<i>Mimulus ringens</i>	Monkey Flower	<i>Oligoneuron sedoides</i>	Robert's Goldenrod
<i>Oligoneuron sedoides</i>	Robert's Goldenrod	<i>Parthenocissus vitacea</i>	Ditch Stonecrop
<i>Parthenocissus vitacea</i>	Ditch Stonecrop	<i>Polygonum spp.</i>	Pinkweed (Various Mix)
<i>Polygonum spp.</i>	Pinkweed (Various Mix)	<i>Rudbeckia subtomentosa</i>	Sweet Black-Eyed Susan
<i>Rudbeckia subtomentosa</i>	Sweet Black-Eyed Susan	<i>Rudbeckia triloba</i>	Brown-Eyed Susan
<i>Rudbeckia triloba</i>	Brown-Eyed Susan	<i>Sagittaria latifolia</i>	Common Arrowhead
<i>Sagittaria latifolia</i>	Common Arrowhead	<i>Sarisa helocarpa</i>	Wild Sesame
<i>Sarisa helocarpa</i>	Wild Sesame	<i>Siphium terriberrimum</i>	Prarie Dock
<i>Siphium terriberrimum</i>	Prarie Dock	<i>Symphoricarpon novae-angliae</i>	New England Aster
<i>Symphoricarpon novae-angliae</i>	New England Aster	<i>Thalictrum dasycarpum</i>	Blue Verain
<i>Thalictrum dasycarpum</i>	Blue Verain		
		<i>Zizia aurea</i>	Golden Alexanders

**PROPOSED TREE LIST:**

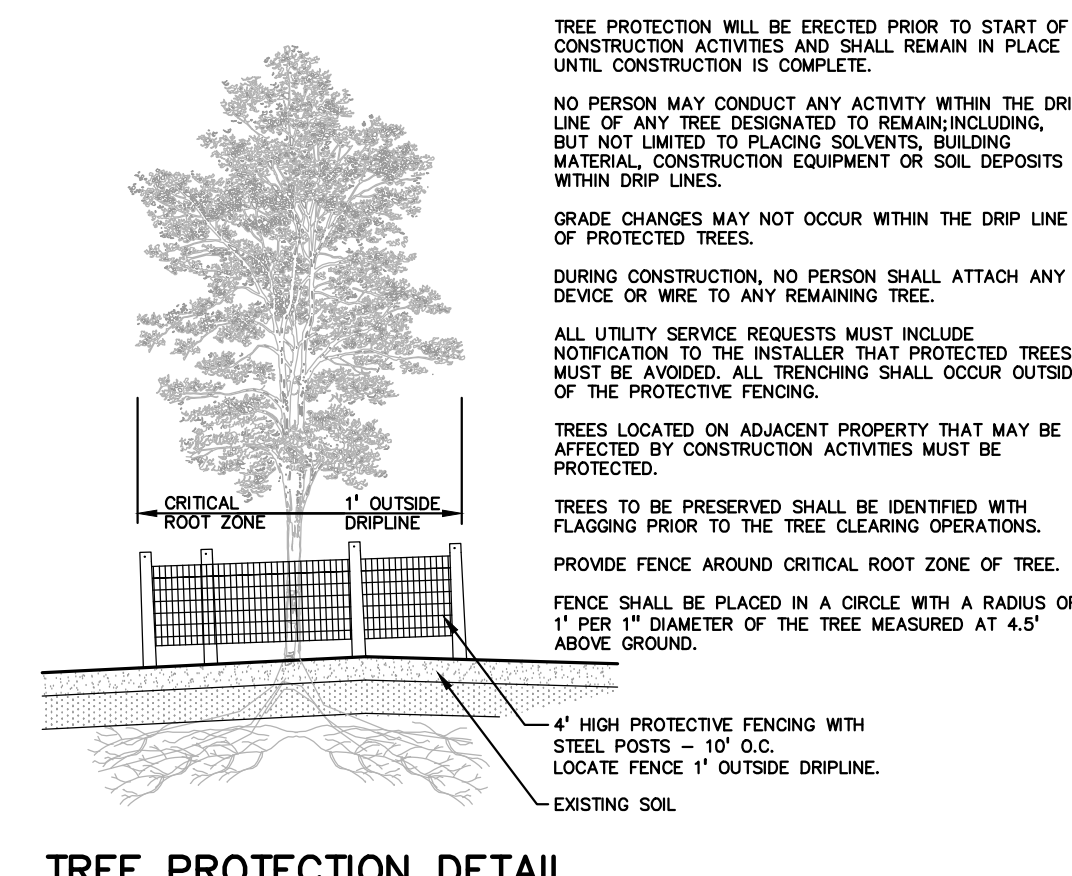
QUANTITY	KEY/SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC
3	AS2.5	Sugar Maple	<i>Acer saccharum 'Legacy'</i>	2.5" Cal.	B&B
2	BN10	River Birch	<i>Betula nigra</i>	10' Ht.	B&B
2	QR2.5	Red Oak	<i>Quercus rubra</i>	2.5" Cal.	B&B
2	TC2.5	Greenspire Linden	<i>Tilia cordata 'Greenspire'</i>	2.5" Cal.	B&B
9	TOTAL DEC.				

**EVERGREEN PLANT LIST:**

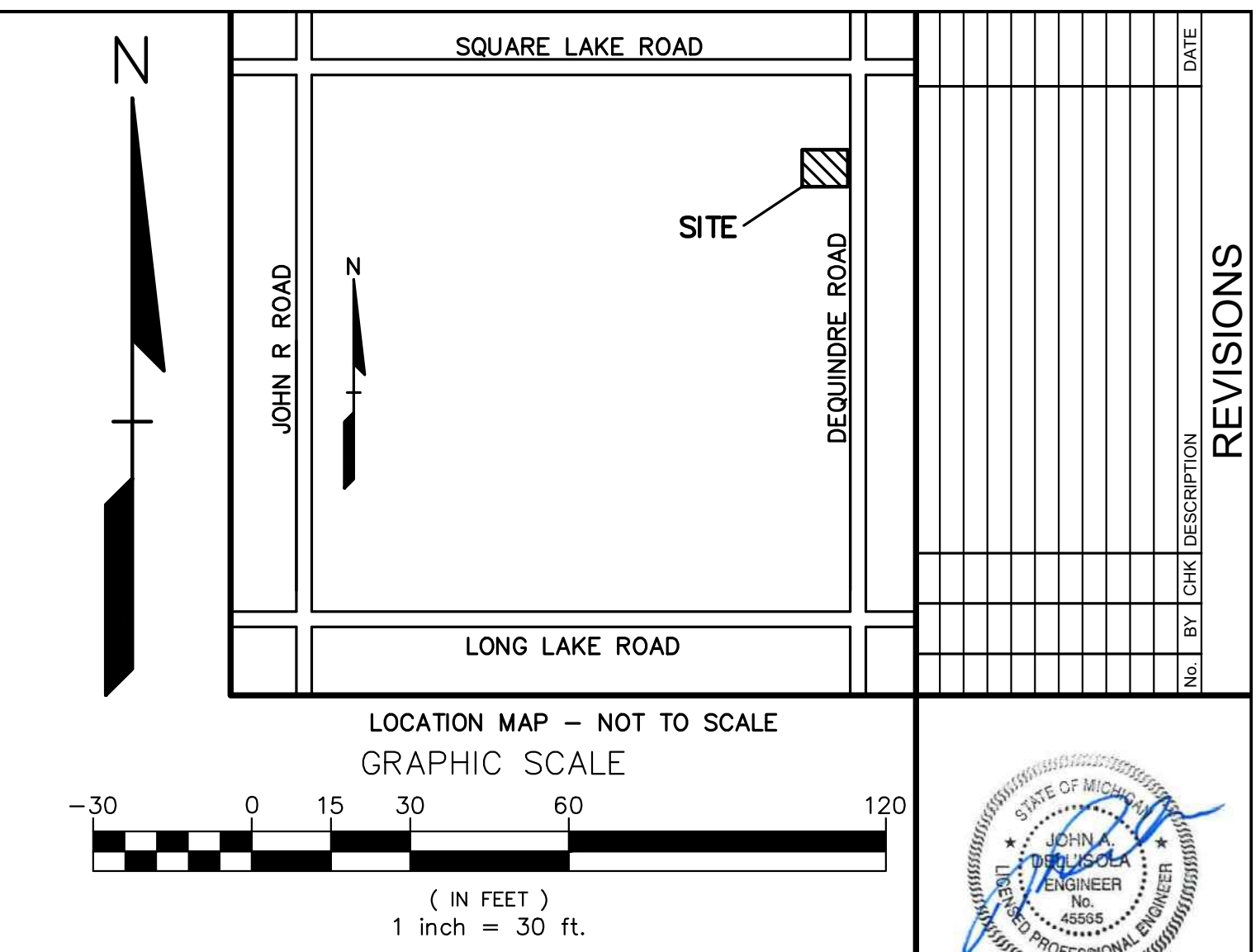
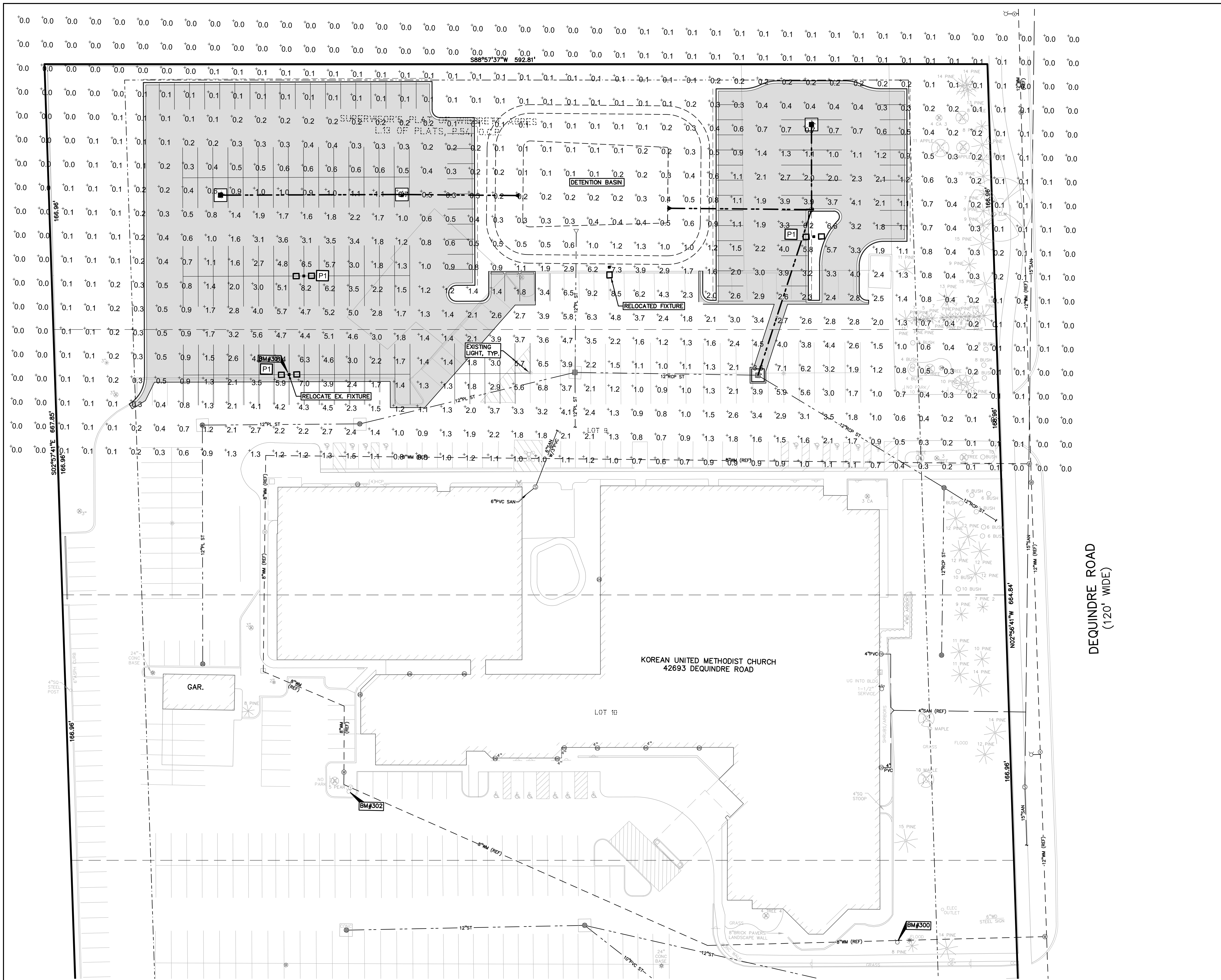
QUANTITY	KEY/SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC
2	PA8	Norway Spruce	<i>Picea abies</i>	8' Ht.	B&B
3	PS8	Eastern White pine	<i>Pinus strobus</i>	8' Ht.	B&B
5	TOTAL EVG.				

**EXISTING TREE LIST: WITHIN IMMEDIATE AREA OF CONSTRUCTION**

PLAN #	CODE	DBH	COMMON NAME	LATIN NAME	COND.	NOTE	SAVE / REMOVE / RELOCATE
98	LL	3	Littleleaf Linden	<i>Tilia Cordata</i>	Good		S
99	WS	3	White Spruce	<i>Picea glauca</i>	Good		S
100	PR	3	Pear	<i>Pyrus communis</i>	Good		R
101	WS	3	White Spruce	<i>Picea glauca</i>	Good		RELOCATE
102	PR	2	Pear	<i>Pyrus communis</i>	Good		RELOCATE
103	WS	2	White Spruce	<i>Picea glauca</i>	Good		RELOCATE
104	WP	8	(Eastern) White Pine	<i>Pinus strobus</i>	Good		R
105	LL	3	Littleleaf Linden	<i>Tilia Cordata</i>	Good		RELOCATE
106	WP	11	(Eastern) White Pine	<i>Pinus strobus</i>	Good		S







**LEGEND**

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

**EXISTING**

—ELEC—	ELEC. PHONE OR CABLE TV OR GAS LINE, POLE & GUY WIRE
—UG-CAT—	UNDERGROUND CABLE TV, GUY FEEDSTOCK
—UG-PHONE—	TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE
—UG-ELEC—	ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE
—GAS—	GAS MAN, VALVE & GAS LINE MARKER
—WATER—	WATERMAN, HYD. GATE VALVE, TAPPING SLEEVE & VALVE
—SANITARY—	SANITARY SEWER, CLEANOUT & MANHOLE
—STORM—	STORM SEWER, CLEANOUT & MANHOLE
—COMBINED—	COMBINED SEWER & MANHOLE
—SQUARE, ROUND & REDUCED CATCH BASIN, YARD DRAIN	
—POST INDICATOR VALVE	
—WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF	
—MELBOUR, TRANSFORMER, IRRIGATION CONTROL VALVE	
—UNDEVELOPED STRUCTURE	
—SPOT ELEVATION	
—CONTOUR LINE	
—FENCE	
—GUARD RAIL	
—STREET LIGHT	
—SIGN	

**PROPOSED**

—ELEC—	ELEC. PHONE OR CABLE TV OR GAS LINE, POLE & GUY WIRE
—UG-CAT—	UNDERGROUND CABLE TV, GUY FEEDSTOCK
—UG-PHONE—	TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE
—UG-ELEC—	ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE
—GAS—	GAS MAN, VALVE & GAS LINE MARKER
—WATER—	WATERMAN, HYD. GATE VALVE, TAPPING SLEEVE & VALVE
—SANITARY—	SANITARY SEWER, CLEANOUT & MANHOLE
—STORM—	STORM SEWER, CLEANOUT & MANHOLE
—COMBINED—	COMBINED SEWER & MANHOLE
—SQUARE, ROUND & REDUCED CATCH BASIN, YARD DRAIN	
—POST INDICATOR VALVE	
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—CONTOUR LINE	
—FENCE	
—GUARD RAIL	
—STREET LIGHT	
—SIGN	

**CONCRETE**

CONC.	CONCRETE
ASPH.	ASPHALT
GRAVEL	GRAVEL SHOULDER
WETLAND	WETLAND

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- GENERAL SITE LIGHTING NOTES:**
1. THE LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.
  2. ALL POLES ARE TO BE MOUNTED ON CONCRETE PEDESTALS 2 FEET ABOVE GRADE AS SHOWN IN DETAIL.
  3. ALL POLES LOCATED OUTSIDE OF THE PARKING LOT AREA SHALL BE LOCATED 3 FEET FROM BACK OF CURB OR EDGE OF SIDEWALKS.
  4. SHOP DRAWINGS FOR THE ELECTRICAL WIRING OF THE FIXTURES NEED TO BE SUPPLIED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR COORDINATION OF UNDERGROUND CONDUIT AND APPROVAL OF LAYOUT.
  5. ALL AREA LIGHT FIXTURES ARE TO BE DOWNWARD DIRECTED.
  6. CONTRACTOR SHALL FURNISH, INSTALL AND CONNECT ALL MATERIALS AND EQUIPMENT FOR THIS WORK UNLESS OTHERWISE NOTED.
  7. COORDINATE LIGHT FIXTURE PLACEMENT AND INSTALLATION WITH LANDSCAPE.
  8. ALL CONDUCTORS SHALL BE IN CONDUIT.
  9. ALL OUTDOOR LIGHTING FIXTURES, EXISTING OR HEREIN AFTER INSTALLED AND MAINTAINED UPON PRIVATE PROPERTY, SHALL BE TURNED OFF OR REDUCED IN LIGHTING INTENSITY BETWEEN 11:00 P.M. AND SUNRISE.

**SITE PHOTOMETRIC DATA:**

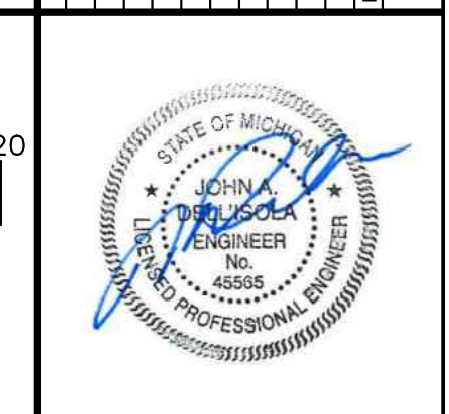
1. SITE FOOTCANDLE MAX	ALLOWED 10 FC	PROPOSED 9.2 FC
2. SITE FOOTCANDLE AT PROPERTY (MAX)	RESIDENTIAL 0.1 FC	0.1 FC (MAX)
NON-RESIDENTIAL	1.0 FC	0.2 FC (MAX)
3. FIXTURE HEIGHT (SITE):	25 FT. (MAX)	22 FT.

**Schedule**

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
□	P1	3	Cree Inc	OSQ-A-xx-SME-T-57K-UL-xxxx CONFIGURED FROM OSQ-A-xx-SME-U-30K-UL-xxxx	CONFIGURED FROM Cree OSQ Series Area Luminaire, Type V Medium, U Input Power Designator, 3000K	XHP70	1	OSQ-A-XX-SME-T-57K-UL-XXXX_CONFIGURED.ies	21844	0.85	332
□	P2	0	Cree Inc	OSQ-A-xx-3ME-U-57K-UL-xxxx w/OSQ-BLSLF	Cree OSQ Series Area Luminaire, Type III Medium w/ Backlight Shield, U Input Power Designator, 3000K	MDA	1	OSQ-A-xx-3ME-U-57K-UL-xxxx_w_OSQ-BLSLF_FL0769-001A.ies	23600	0.95	211.5

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CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH THE MICHIGAN PROFESSIONAL ENGINEERING ACT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FOR THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY THAT THE CONTRACTOR SHALL MAKE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONSTRUCTION SCHEDULES. CONTRACTOR FURTHER AGREES TO DEFINE, INDICATE AND LOCATE DESIGN PROFESSIONAL OR ALLIED IN CONNECTION WITH THE PERFORMANCE OF THIS PROJECT EXCEPT LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL.

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42695 DEQUINDRE ROAD  
TROY, MI 48065

**SITE PHOTOMETRIC PLAN**  
**KOREAN UNITED METHODIST CHURCH**  
PART OF THE NE 1/4 OF SECTION 12, T. 2N., R. 11E.,  
CITY OF TROY, OKLAHOMA COUNTY, MICHIGAN

DES.	GRB	DN.	GRB	SUR.	DLC	DLC	P.M.	J.D.
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ORIGINAL ISSUE DATE:  
DECEMBER 9, 2019

PEA JOB NO. 2019-400

SCALE: 1" = 30'

DRAWING NUMBER:  
**SL-1.1**

**OSQ Series**  
OSQ™ LED Area/Flood Luminaire – Large

**Product Description**  
The OSQ™ Area/Flood luminaire blends extreme optical control, advanced thermal management and modern, clean aesthetics. Built to last, the housing is rugged cast aluminum with an integral, weatherlight LED driver compartment. Versatile mounting configurations offer simple installation. Its slim, low-profile design minimizes wind load requirements and blends seamlessly into the site providing even, quality illumination. The "T" input power designator is a suitable upgrade for HID applications up to 1000 Watts, and the "U" input power designator is a suitable upgrade for HID applications up to 1500 Watts.

**Applications:** Parking lots, walkways, campuses, auto dealerships, office complexes, tunnels, underpasses and internal roadways

**Performance Summary**  
NanoOptic® Precision Delivery Grid™ optic  
Assembled in the U.S.A. of U.S. and imported parts  
**Initial Delivered Lumens:** Up to 27,103  
Efficacy: Up to 139 LPW  
CRI: Minimum 70 CRI (3000K, 4000K & 5700K); 90 CRI (5000K)  
CCT: 3000K, 4000K, 5000K, 5700K  
**Limited Warranty:** 10 years on luminaire/10 years on Colorfast DeltaGuard® finish/5 years on Synapse wireless control accessories/1 year on luminaire accessories

\*See <http://www.creeledighting.com/external/warranty-form>

**Ordering Information**

Each assembled luminaire is composed of two components that must be ordered separately.  
Example Mount: OSQ-B-AA5V Luminaire: OSQ-A-NM-2ME-T-40W-UL-5V

**Mount Luminaire must be ordered separately\***

OSQ-	Color Options:	SV Silver	BK Black	BZ Bronze	WH White
OSQ-B-AA Adjustable Arm					
OSQ-BA Direct Arm					
OSQ-L-TSP Transportation Mount (stainless steel; do not specify color)					
OSQ-TM Trunion Mount					

\*Reference EPA and pole configuration suitability data beginning on page 9

**Luminaire [Mount must be ordered separately]**

OSQ	A	NM	Input Power Designator	CCT	Voltage	Color Options	Options
OSQ	A	NM	40W 70 CRI U 3000K 4000K 5000K 5700K	3000K 4000K 5000K 5700K	UL Universal 120-277V UL Universal 347-480V	BK Black SV Silver WH White	<b>PML Programmable Multi-Level, up to 40' Mounting Height</b> - Refer to PML spec sheet for details - Intended for downlight applications at maximum mounting height of 40' <b>18-30" Mounting Height</b> - Refer to PML spec sheet for details - Intended for downlight applications at 18" to 30" <b>Field Adjustable Output</b> - Must select O1, O4, O5, O4, O2, O2, or O1 for T input power designator - Must select O1, O4, O7, O4, O4, O4, O2, O2 or O1 for U input power designator - Offers full range adjustability - Refer to pages 11-12 for power and lumen values <b>RL Remote Left</b> - LED and optic are rotated to the left - Refer to R/R/L configuration diagram on page 13 for optic directionality <b>RR Remote Right</b> - LED and optic are rotated to the right - Refer to R/R/L configuration diagram on page 13 for optic directionality <b>R NEMA 7-Pin Photocell Receptacle</b> - 7-pin receptacle per ANSI C136.41 - Intended for downlight applications with maximum mounting height of 40' <b>PML2 Programmable Multi-Level, 18-30" Mounting Height</b> - Refer to PML2 spec sheet for details - Intended for downlight applications at 18" to 30" <b>Field Adjustable Output</b> - Must select O1, O4, O5, O4, O2, O2, or O1 for T input power designator - Must select O1, O4, O7, O4, O4, O4, O2, O2 or O1 for U input power designator - Offers full range adjustability - Refer to pages 11-12 for power and lumen values <b>RR Remote Right</b> - LED and optic are rotated to the right - Refer to R/R/L configuration diagram on page 13 for optic directionality <b>CA Residents Warning:</b> Cancer and Reproductive Harm - www.p66.com/crtps.ca.gov

\*As table with Backlight Shield when ordered with field-installed accessory (see table above)



US: [creeledighting.com](http://creeledighting.com) (800) 234-6800  
Canada: [creeledighting-canada.com](http://creeledighting-canada.com) (800) 473-1234



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OSQ™ LED Area/Flood Luminaire – Large

- Product Specifications**  
**CONSTRUCTION & MATERIALS**
- Slim, low profile design minimizes wind load requirements
  - Luminaire housing is rugged die cast aluminum with an integral, weatherlight LED driver compartment and performance heat sink
  - Convenient interlocking mounting method on direct arm mount
  - Mounting adaptor is rugged die cast aluminum and mounts to 3-4" (76-102mm) square of main structure, secured by two 5/16-18 UNC bolts spaced on 2" (51mm) centers
  - Mounting for the adjustable arm mount adaptor is rugged die cast aluminum and mounts to 2" (51mm) ID, 2.375" (60mm) O.D. tenon
  - Adjustable arm mount can be adjusted 180° in 2.5° increments
  - Trunion mount is constructed of A302 and A304 stainless steel and is adjustable from 0-180° in 15° degree increments. Trunion mount secures to surface with 1/4" (6.35mm) bolt or 1/2" (12.7mm) or 3/8" (9.52mm) bolts
  - Includes 18" (457mm) 185 or 145 cord exiting the luminaire. When ordered with R option, 18" (457mm) 187 or 147 cord is provided
  - Designed for uplight and downlight applications
  - Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Silver, bronze, black, and white are available
  - **Weight:** OSQ-DA: 32.4 lbs. (14.7kg); OSQ-B-AA: 32.0 lbs. (14.5kg); OSQ-L-TSP: 44 lbs. (20.0kg); OSQ-TM: 36.1 lbs. (16.4kg)

- ELECTRICAL SYSTEM**
- **Input Voltage:** 120-277V or 347-480V, 50/60Hz, Class 1 drivers
  - **Power Factor:** > 0.9 at full load
  - **Total Harmonic Distortion:** < 20% at full load
  - Integral 10kV surge suppression protection standard
  - When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
  - Consult factory if in-luminaire fusing is required
  - Designed with 0-10V dimming capabilities. Controls by others
  - Refer to Dimming spec sheet for details
  - **10V Source Currents:** 0.15mA
- REGULATORY & LOCAL QUALIFICATIONS**
- cULus Listed
  - Suitable for wet locations
  - Enclosure rated IP66 per IEC 60529 when ordered without R option
  - Consult factory for CE certified products
  - Certified to ANSI C136.31-2001, 20 bridge and overpass vibration standards with AA, DA, TM, and TSP mounts. For adjustable arm applications requiring ANSI C136.31-2001 3G vibration certification, ensure that existing or new adjustable arm mount model number matches OSQ-B-AA for all OSQ large housing luminaires with power designations "T" and "U"
  - ANSI C136.2 10kV surge protection, tested in accordance with IEEE/ANSI C62.41.2
  - Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
  - Luminaire and finish endure tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
  - Meets Buy American requirements within ARRA
  - DLC and DLC Premium qualified versions available with 70 CRI. Some exceptions apply. Please refer to <https://www.designlights.org/search/> for most current information
  - RoHS compliant. Consult factory for additional details
  - Dark Sky Friendly, IGA approved when ordered with 30K CCT and direct or transportation mounts only. Please refer to <https://www.darksky.org/> for more information
  - **CA RESIDENTS WARNING:** Cancer and Reproductive Harm - www.p66.com/crtps.ca.gov

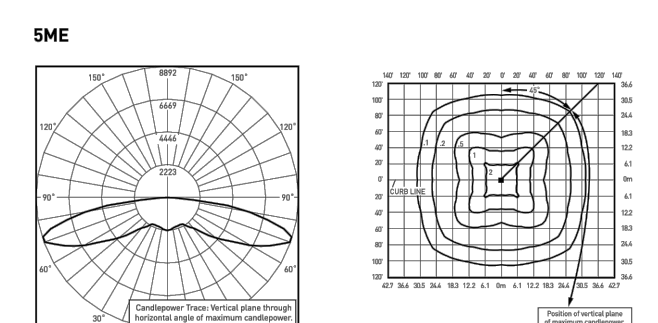
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OSQ™ LED Area/Flood Luminaire – Large

**Photometry**  
All published luminaire photometric testing performed to IESNA LM-79-08 standards. To obtain an IES file specific to your project consult: <http://creeledighting.com/products/outdoor/area/osq-series>



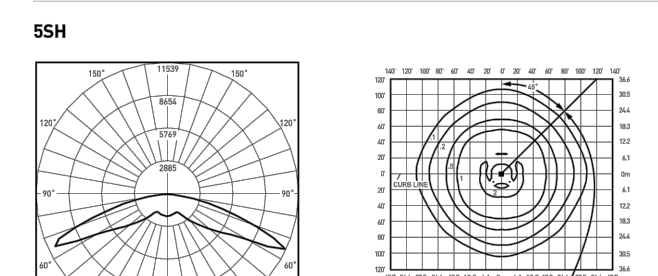
CESTL Test Report # PL07882-001A  
OSQ-A\*\* 3000K, w/500-BLSLF  
Mounting Height: 29' 7" and A.F.G.  
Initial Delivered Lumens: 21,410

OSQ-A\*\* 5000K, w/500-BLSLF  
Mounting Height: 29' 7" and A.F.G.  
Initial Delivered Lumens: 24,666  
Initial FC at grade

**Type V Medium Distribution**

Input Power Designator	3000K (70 CRI)		4000K (70 CRI)		5000K (90 CRI)		5700K (70 CRI)	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
T	23,213	85 UB 05	21,469	85 UB 05	19,800	85 UB 05	22,330	83 UB 03
U	23,222	85 UB 05	24,666	85 UB 05	23,400	85 UB 05	27,103	83 UB 03

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens.  
\*\* For more information on the IES BUG (Backlight-Uplight-Correlated) Rating visit: <https://www.ies.org/wp-content/uploads/2017/02/15-11BUGRatingAddendum.pdf>. Valid with no tilt.



CESTL Test Report # PL10754-001A  
OSQ-A\*\* 3000K, w/500-BLSLF  
Mounting Height: 29' 7" and A.F.G.  
Initial Delivered Lumens: 25,479

OSQ-A\*\* 5000K, w/500-BLSLF  
Mounting Height: 29' 7" and A.F.G.  
Initial Delivered Lumens: 28,051  
Initial FC at grade

**Type V Short Distribution**

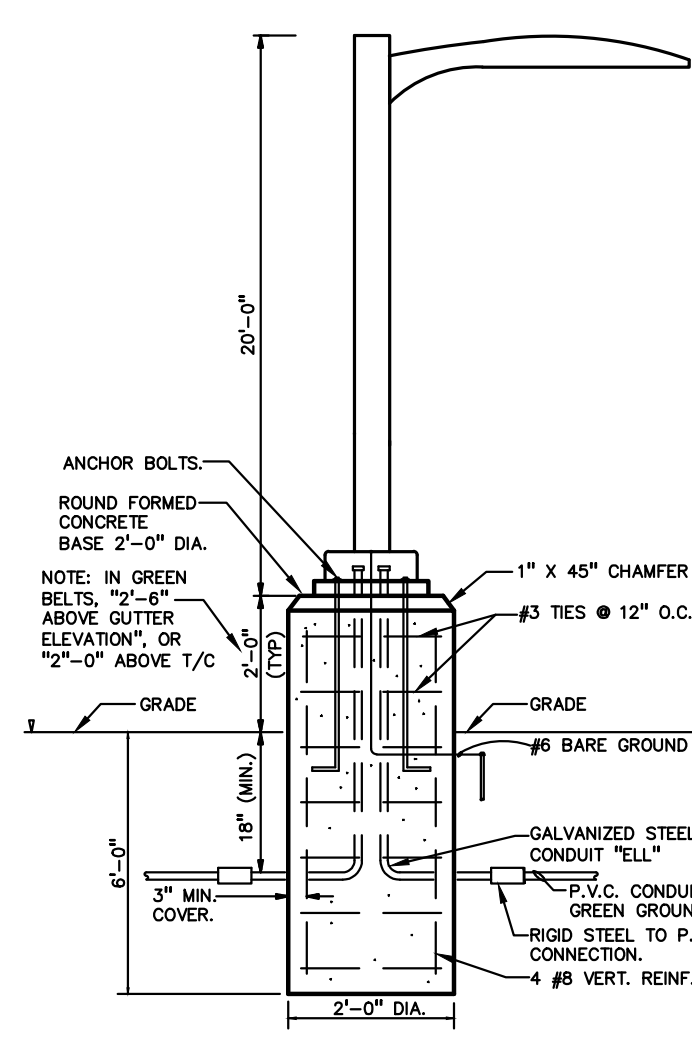
Input Power Designator	3000K (70 CRI)		4000K (70 CRI)		5000K (90 CRI)		5700K (70 CRI)	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
T	21,349	85 UB 03	22,475	85 UB 03	20,700	85 UB 03	23,669	85 UB 03
U	21,357	85 UB 03	24,051	85 UB 03	24,700	85 UB 03	26,504	85 UB 04

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens.  
\*\* For more information on the IES BUG (Backlight-Uplight-Correlated) Rating visit: <https://www.ies.org/wp-content/uploads/2017/02/15-11BUGRatingAddendum.pdf>. Valid with no tilt.

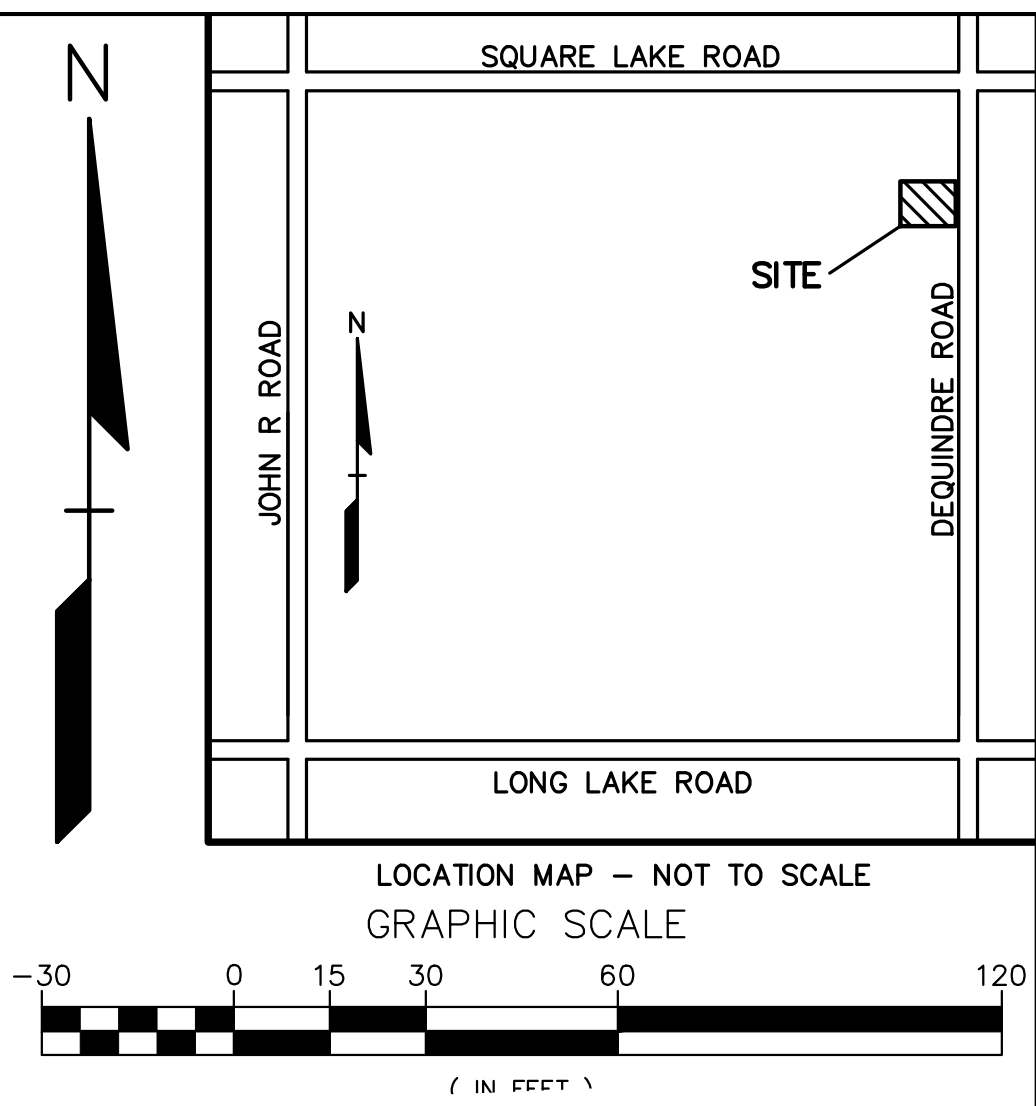
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CONCRETE BASE DETAIL  
NOT TO SCALE



LOCATION MAP – NOT TO SCALE  
GRAPHIC SCALE  
( IN FEET )

NO.	REV.	CHK.	DESCRIPTION	DATE

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PART OF THE NE 1/4 OF SECTION 12, T. 2N., R. 11E.,  
CITY OF TROY, OKLAHOMA COUNTY, MICHIGAN

DES. GRB DN. SUR. DLC P.M. ID  
GRB DN. SUR. DLC P.M. ID  
DES. GRB DN. SUR. DLC P.M. ID

ORIGINAL ISSUE DATE:  
DECEMBER 9, 2019

PEA JOB NO. 2019-400

SCALE: 1" = 30'  
DRAWING NUMBER:

**SL-1.2**

**NOT FOR CONSTRUCTION**

XREF: S:\PROJECTS\2019\2019400\DWG\CONSTRUCTION\V-BASE-19400.DWG  
XREF: S:\PROJECTS\2019\2019400\DWG\CONSTRUCTION\V-TLBK-19400.DWG

GENERAL NOTES

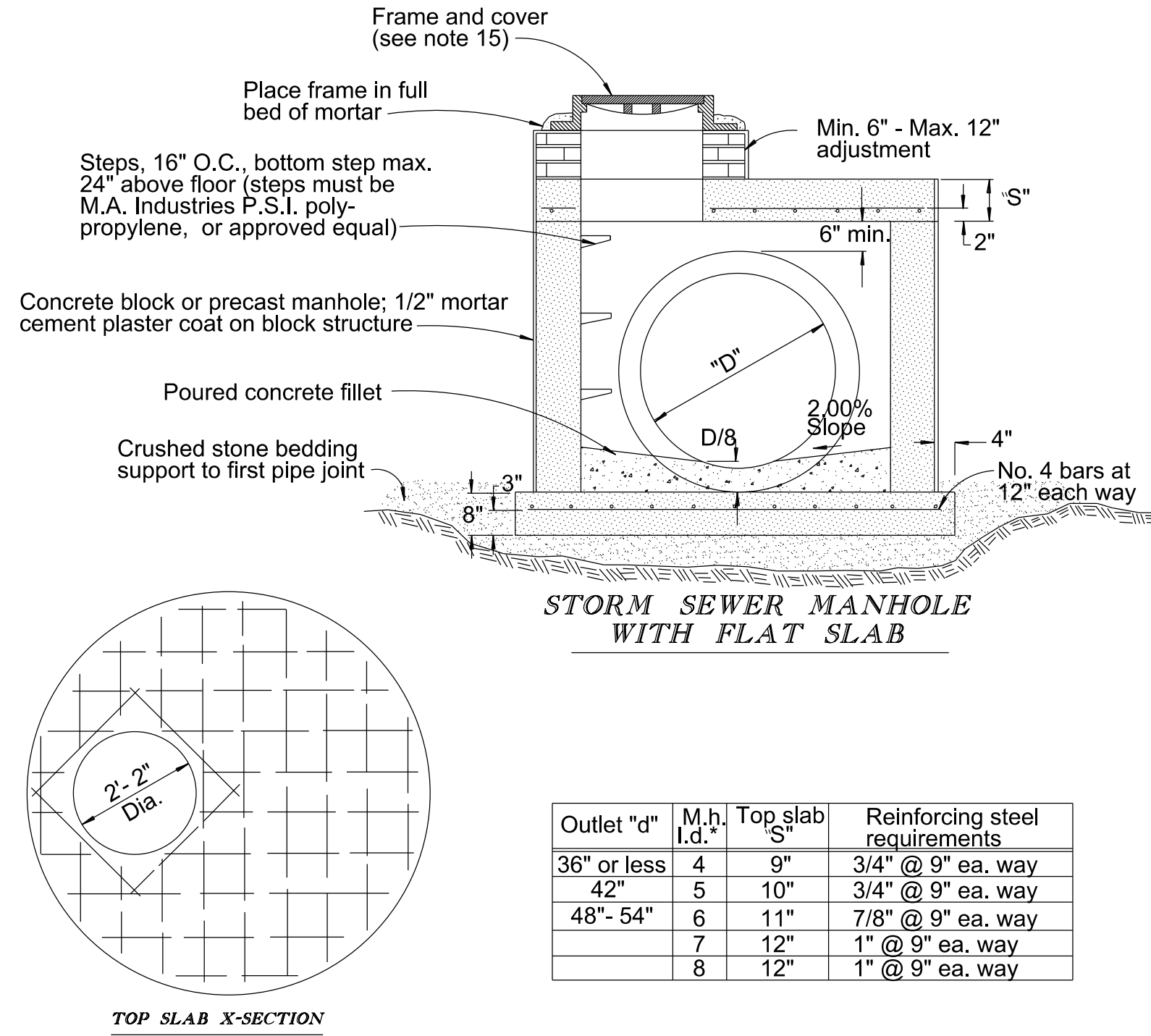
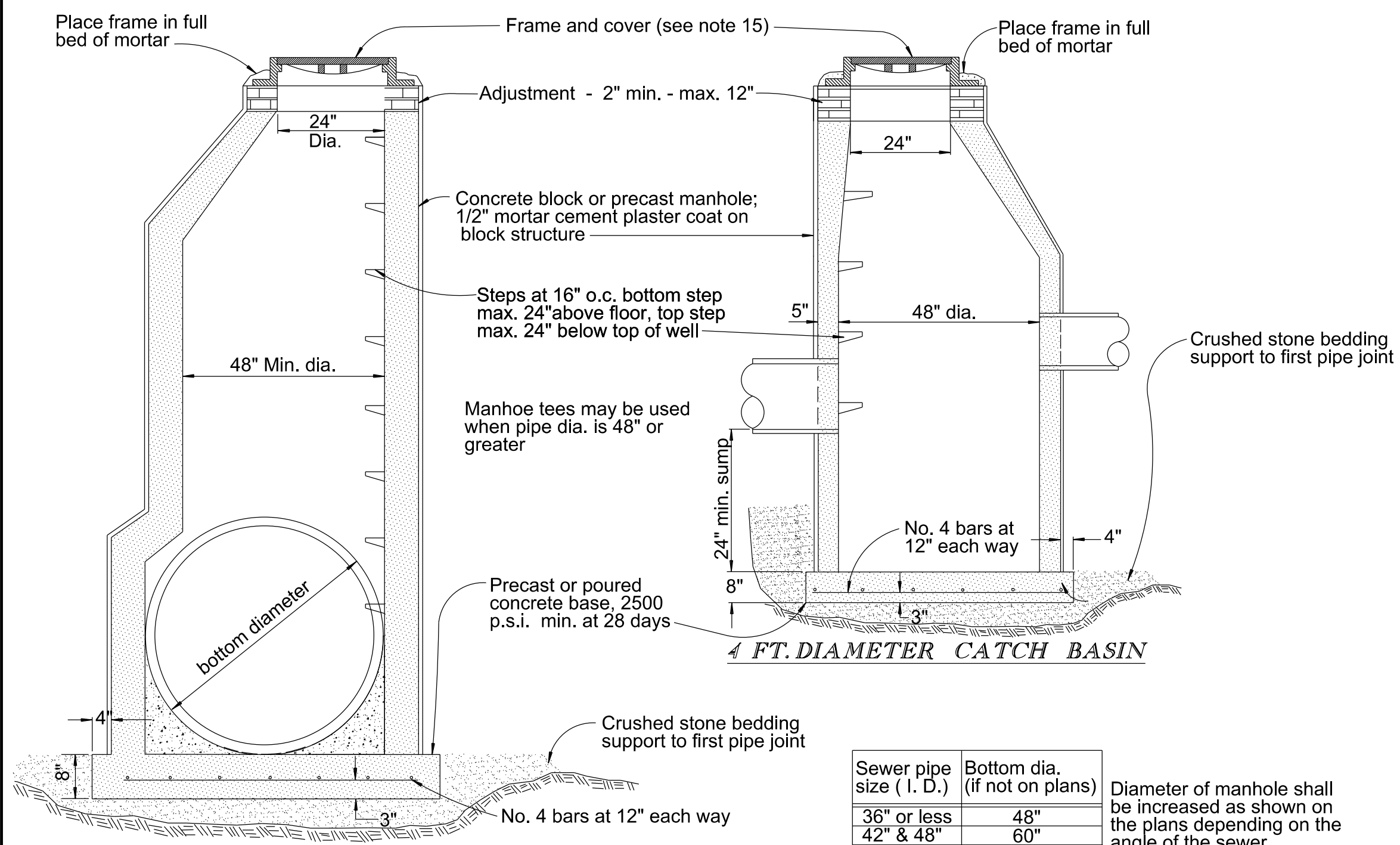
- All construction shall conform to the current standards and specifications of the City of Troy. Prior to construction, the contractor shall attend a reconstruction meeting at a time and place arranged by the City Engineer, in which various utility companies and governmental agency representatives will be present. The design engineer shall submit approved plans to all utility companies and governmental agencies 10 (ten) days prior to the reconstruction meeting. Construction shall start within 3 (three) weeks of meeting. The contractor shall notify the City Engineer 72 hours prior to starting any work.
- The entire project area of publicly funded projects, and all areas not under the ownership of any private developer for privately funded projects, shall be digitally recorded in color prior to the start of construction. The DVD shall be utilized by the City to determine construction related damage and to assure adequate restoration.
- Before start of construction, the contractor must request and have in their possession a copy of a valid permit to construct a connection to, or an extension of, the Storm Water Drainage System.
- Prior to any excavation, the contractor shall call Miss Dig (1-800-482-7171) for the location of underground facilities and shall also notify representatives of other utilities located in the vicinity of the work. The contractor shall assume responsibility for the protection of all existing utilities, services and mains during construction. All costs for locating, removing and replacing or relocating these utilities, services and mains shall be included in the cost of constructing the sanitary sewer. All utilities, services and mains damaged during construction shall be repaired with like material. The contractor shall verify the depth and horizontal location of all existing utilities, services and mains before any work is started. The exact location of existing utilities, services and mains shall be determined by hand digging.
- A City of Troy, Water Resources Commissioner's, Road Commission for Oakland County, and/or Michigan Department of Transportation permit is required for all construction within their Right-of-Ways. WRC must witness the new connection, contact the WRC office at 248-865-1105 - 48 hours prior to starting work. It is the contractor's responsibility to secure all permits and bonds prior to construction, or to insure that all required permits and bonds have been obtained prior to starting construction.
- The contractor shall abide by all the requirements of the Right-of-Way owner regarding construction of storm sewer mains, maintaining traffic, barricading, boring, backfill and restoration. There will be no additional compensation due the contractor for complying with these requirements.
- The contractor shall implement all soil erosion control measures indicated in the permit and/or shown on the plans prior to making any earth changes.
- Prior to the start of construction, the contractor shall furnish material certificates to the City verifying that all the materials used on the project are in accordance with the specifications.
- All construction changes must have written approval of the Project Engineer.

- Sewer Pipe Material:
  - Reinforced concrete circular sewer pipe conforming to the current ASTM specification C-76 (Wall C) with size and class as indicated on the plans; minimum class III. All reinforced concrete sewer pipe shall be cast with reinforcing steel extending into the spigots. All joints and gaskets shall be modified tongue and groove, conforming to the requirements of ASTM (C-443). All sewer pipe 30" and larger shall have pointed joints.
  - Plastic circular sewer pipe conforming to the current ASTM specifications for PVC Corrugated with smooth interior wall (A-2000) or high-performance polypropylene (N-12 HP) when approved for use by the City Engineer. All joints and gaskets shall conform to the respective ASTM specifications.
  - The following storm sewer pipe materials may be used only with approval of the City Engineer. If soils PH & Resistivity tests demonstrate a PH of 5.0 to 9.0 and an Electrical Resistance of 2000 OHM/CM/CU or higher, then helically corrugated, full welded seam, AASHTO M-218 steel pipe, gauge as shown, manufactured according to AASHTO M-36 with 2 2/3" x 1/2", aluminumized at 1.00 oz per sq. ft. per AASHTO M-274 may be used. Corrugated steel pipe shall have two circumferential corrugations rolled on each end of each section. Steel coupling bands of the same material as the pipe, fitting the pipe configuration with two "O" Ring rubber gaskets shall produce a watertight joint ("Hugger Bands").
  - Underdrains, rear yard and ditches, slotted perforations of 1.90 - 2.00 square inches per foot of pipe length. A-2000, N-12 or approved equal.
  - All sump and building service connections shall be 3" Polyvinyl Chloride (PVC) sewer pipe, schedule 40 with chemically fused joints and connect to a catch basin or manhole. No blind taps. The joint between two dissimilar sizes or types of building lead pipe shall be made with a proper fitting acceptable to the City Engineer.
- All new manholes shall have approved flexible, water-tight seals where pipes pass through walls. Manholes shall be precast reinforced concrete in accordance with ASTM C478 current specifications. Precast manhole joints and gaskets shall be modified tongue and groove in accordance with ASTM C443 current specifications. Precast manhole cone sections shall be City of Troy modified eccentric cone type.
- All precast manholes, slab bases, concrete pipe and concrete channelization shall be manufactured with Type II, IP or IIA cement.
- Manhole steps shall normally be provided on a back wall of the manhole furthest from traffic, manhole steps shall be factory installed at 16 inches center to center spacing. Steps shall be M.A. Industries P.S.I. Polypropylene MSU #360 ALU Poly (or approved equal).
- Existing manholes shall be tapped by coring for sewers 6" thru 15" in diameter. Manhole taps for 18" diameter sewers and larger shall have holes drilled at 4 inches center to center around the periphery of the opening to create a plane of weakness before breaking out the section. Non-shrink grout shall be used to seal the opening and a concrete collar shall be poured 12 inches around the pipe and extend 12 inches beyond the opening. If the wall of the structure being tapped is damaged, the City shall decide if it can be repaired and approve the method. If the structure cannot be repaired it will be replaced.

- A mainline trace wire must be installed, with all service lateral trace wires properly connected to the mainline trace wire, to ensure full tracing/locating capabilities from a single connection point. Lay mainline trace wire continuously, by-passing around the outside of manholes/structures on the North or East side. Trace wire on all storm sewer laterals must terminate at an approved trace wire access box color coded green and located directly above the service lateral at the edge of road right of way.
- Unless otherwise noted on the plans, structure frame and covers shall be as follows:
  - Manhole - EJ 1000 with type "C" perforated cover with CITY OF TROY STORM on cover.
  - Catch Basin in pavement - EJ 5080 with sinusoidal m2 grate, or equal, in residential areas.
  - Catch Basin in pavement - EJ 5105 with sinusoidal m2 grate, or equal, in non-residential areas.
  - Catch Basin not in pavement - EJ 1000 with type M, N, or O1 heavy duty grate, or equal.
  - Catch Basin in Landscape area or Roadside Ditch may require the use of the following:
    - EJ 1040 type "N" oval grate or type O2 beehive grate
    - EJ 1130 type "N" oval grate or type O1 beehive grate
    - EJ 2800 type "N" oval grate or type O2 beehive grate
    - EJ 6508 or EJ 6517

- The contractor shall provide a 3 year maintenance and guarantee bond to the City, dated from the time of final acceptance by the City. The bond amount shall be 35% of constructions costs.
- Before final acceptance, As-Built drawings must be submitted to the City of Troy Engineering Department. One electronic copy ( PDF ) and one digital copy ( DWG or DGN ) is required.

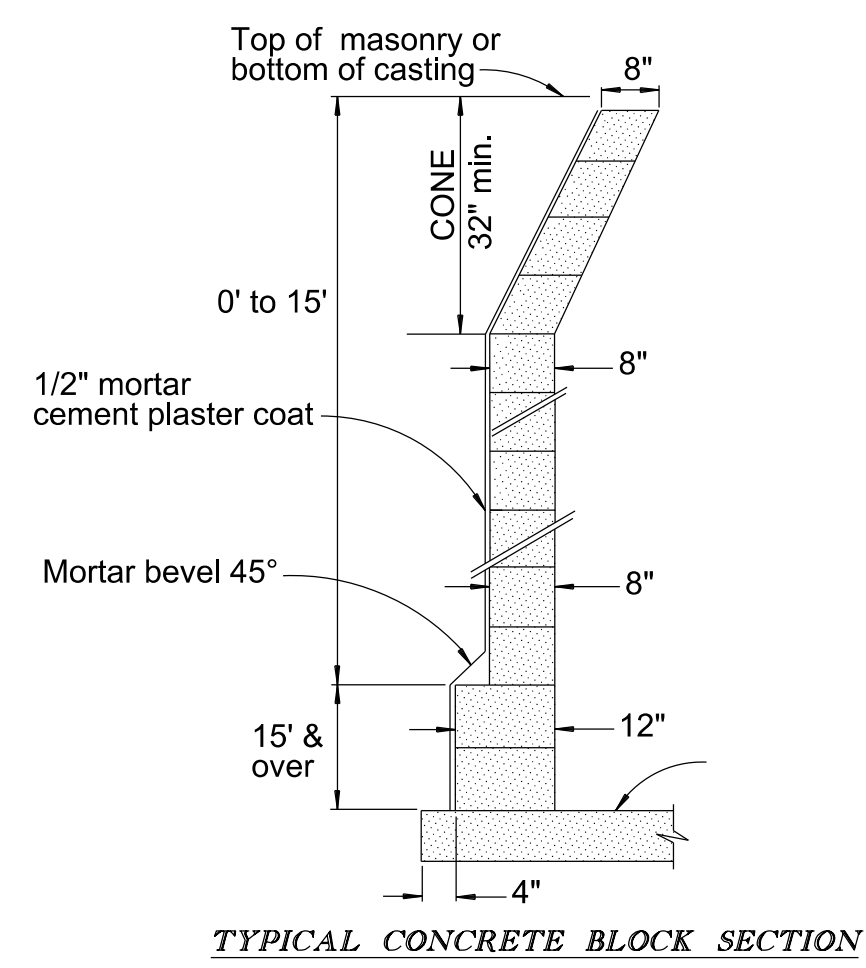
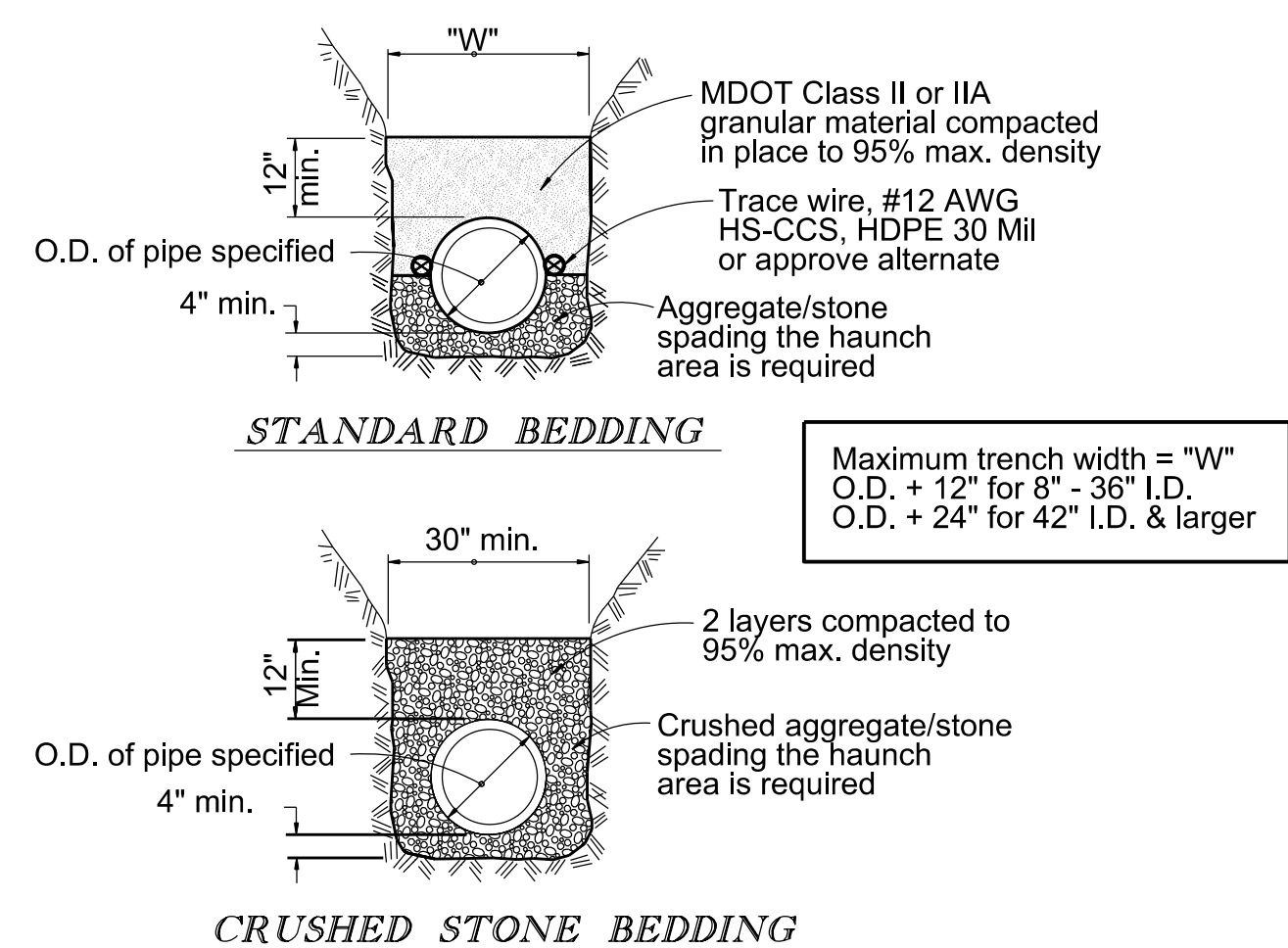
- Contractor Note: The locations of existing underground utilities shall be determined by the contractor. The contractor shall determine the exact location of all existing utilities before commencing work. The contractor shall be fully responsible for any and all damages which might be occasioned by their failure to exactly locate and preserve any and all underground utilities.
- 3 FULL WORKING DAYS BEFORE YOU DIG CALL 811 Know what's below Call before you dig MISSOURI MISSOURI MISSOURI 1-800-482-7171 www.missouri.gov
- Steel Grates for End Sections See current MDOT detail Required for 12" dia. and greater
- 2" LETTERS (CITY OF TROY STORM)
- (2) 1" HOLES



STORM SEWER MANHOLE

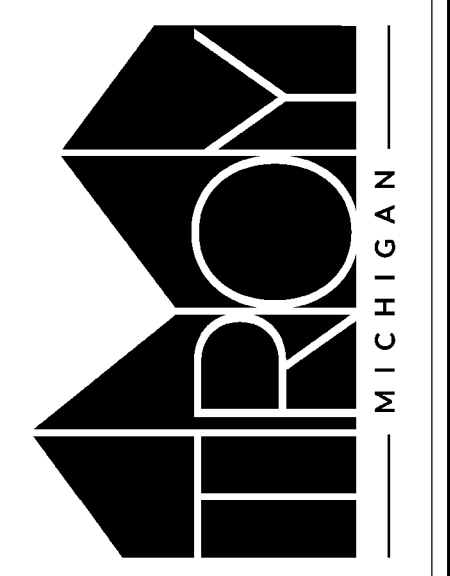
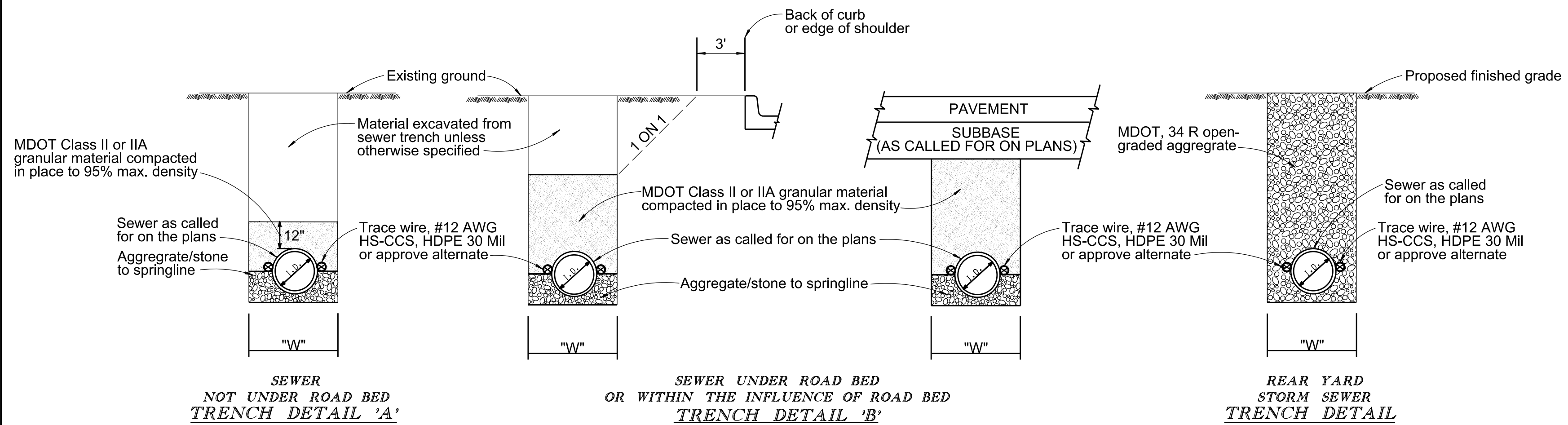
GENERAL PIPE BEDDING & TRENCH NOTES

- The contractor shall install the pipe in accordance with the bedding detail required for the pipe depth (measured from the top of the pipe), and trench width (measured across the trench at the top of the pipe) constructed. Alternate material and methods must be approved in writing by the City Engineer
  - Crushed stone bedding shall be utilized for dewatered ground trench's, trenches greater than 30" in width or 20' in depth.
  - Bedding material shall be as follows:
    - Standard bedding - MDOT 6A, 17A or 34R
    - Crushed stone bedding - MDOT 25A or 34G
    - MDOT Class II or IIA granular material
  - Backfill material shall be as follows:
    - Excavated material - T.D. - A
    - MDOT Class II granular material - T.D. - B
- Bedding shall be defined as that material placed from four (4) inches below the pipe to a point twelve (12) inches above the pipe.



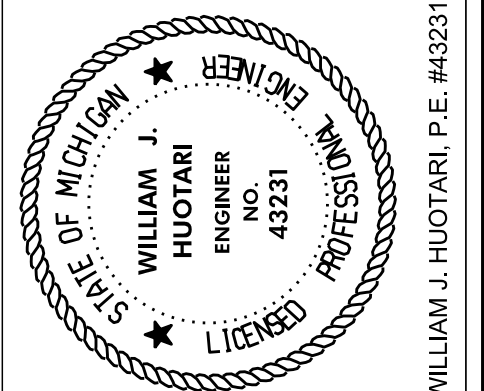
NOTE: Unless otherwise authorized by the City Engineer, each structure shall be constructed totally of either precast segments or built - up with mortar and block

NOTE: Crushed concrete will not be allowed as bedding or backfill with underdrains or rear yard storm sewer



STANDARD STORM SEWER DETAILS  
ENGINEERING DEPARTMENT

APPROVED BY: WILLIAM J. HUOTARI, CITY ENGINEER  
DATE: JUNE 2019



Contractor Note: The locations of existing underground utilities shall be determined by the contractor. The contractor shall determine the exact location of all existing utilities before commencing work. The contractor shall be fully responsible for any and all damages which might be occasioned by their failure to exactly locate and preserve any and all underground utilities.

3 FULL WORKING DAYS BEFORE YOU DIG CALL 811 Know what's below Call before you dig MISSOURI MISSOURI MISSOURI 1-800-482-7171 www.missouri.gov

Steel Grates for End Sections See current MDOT detail Required for 12" dia. and greater

2" LETTERS (CITY OF TROY STORM)

(2) 1" HOLES

17. The contractor shall provide a 3 year maintenance and guarantee bond to the City, dated from the time of final acceptance by the City. The bond amount shall be 35% of constructions costs.

18. Before final acceptance, As-Built drawings must be submitted to the City of Troy Engineering Department. One electronic copy ( PDF ) and one digital copy ( DWG or DGN ) is required.

CONTRACT NO. XX-XX  
PROJECT NO. XX-XXX-X

**From:** [Brent Savidant](#)  
**To:** [Jackie Ferencz](#)  
**Subject:** FW: Korean United Methodist  
**Date:** Friday, February 7, 2020 11:32:24 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)  
[image005.png](#)  
[image006.png](#)

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**R. Brent Savidant, AICP**  
**Community Development Director**  
**City of Troy**  
O: 248.524.3366



---

**From:** Timothy T. Yu [mailto:timothy.t.yu@gm.com]  
**Sent:** Friday, February 7, 2020 11:12 AM  
**To:** Brent Savidant <SavidantB@troymi.gov>; 'jdellisola@peainc.com' <jdellisola@peainc.com>  
**Subject:** RE: Korean United Methodist

Good morning Brent,

Thank you for your and the Planning Commission consideration of our church parking lot expansion requirements. I provide the following information to explain the additional parking requirements:

- Our church has several worship times (8 and 11am Korean language worship; 9 and 11am English worship; 1:30pm young adults; 11am children worship)
  - having several worship times help the parking situation but does not completely address the shortage that we experience each Sunday where people actually leave because they cannot find a spot to park
- Current parking capacity (after completion of the new building in 2017) - 400
- Current temporary overflow parking capacity (area covered w/crushed rocks) - 50
- Church membership as of Dec 1, 2019 was 2,566 including children (695 families)
- Average attendance on Sundays is ~ 1,500 adults and children
- We continue to have new visitors to our church almost every Sunday who join as new members (Michigan being the core of the big 3 automotive OEMs, many automotive supplier companies from Korea are continuing to set up offices in the Detroit and suburb areas and sending employees to live in the area and support their business with the auto OEMs)
- Additionally, we have Korean language school (~200 students) from 9:30-11am each Sunday attended by some students who don't participate in worship which also contributes to the additional parking requirements

Please let me know if you have questions or need additional information. Have a blessed day!

---

**From:** Brent Savidant [<mailto:SavidantB@troymi.gov>]

**Sent:** Thursday, February 06, 2020 9:33 AM

**To:** Timothy T. Yu <[timothy.t.yu@gm.com](mailto:timothy.t.yu@gm.com)>; 'jdellisola@peainc.com' <[jdellisola@peainc.com](mailto:jdellisola@peainc.com)>

**Subject:** [EXTERNAL] Korean United Methodist

**ATTENTION:** This email originated from outside of GM.

Tim and John:

The Zoning Ordinance mandates that the Planning Commission may approve a parking lot that provides over 25% more parking than required. They will want you to provide justification for the need for 59% more parking than required by the Zoning Ordinance. This does not mean you have to submit a complicated and lengthy study. But you do need to justify why the church needs so much parking. For example, is the church growing in members? If so, please provide numbers. Is it a regional church, drawing from a large area? Please explain.

Please provide evidence for the Planning Commission to consider on Tuesday.

Thanks.



**R. Brent Savidant, AICP**  
**Community Development Director**  
**City of Troy**  
O: 248.524.3366



Nothing in this message is intended to constitute an electronic signature unless a specific statement to the contrary is included in this message.

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DATE: February 7, 2020

TO: Planning Commission

FROM: R. Brent Savidant, Community Development Director

SUBJECT: PUBLIC HEARING – SPECIAL USE REQUEST (File Number SP2020-0001) –  
Proposed Long Lake Shell Addition, Southwest corner of Long Lake and Dequindre,  
Section 13, Currently Zoned NN (Neighborhood Node “J”) District.

The petitioner Art Kalajian submitted the above referenced Special Use Approval and Preliminary Site Plan Approval application for an addition to an existing gas station.

The application as submitted requires a variance from the Zoning Board of Appeals, therefore the Planning Commission will not be taking action on this item at this time. This is an opportunity to provide feedback on this project before it goes before the Zoning Board of Appeals for consideration.

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

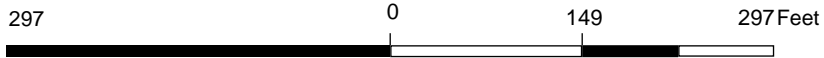
Attachments:

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

G:\SITE PLANS\SP JPLN2020-00001 (SU) LONG LAKE SHELL\PC Memo 02 11 2020.docx



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.



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## Carlisle | Wortman

ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: February 6, 2020

# Preliminary Site Plan and Special Use Review For City of Troy, Michigan

<b>Project Name:</b>	Shell Gas Station
<b>Plan Date:</b>	December 28, 2019
<b>Location:</b>	2970 E. Long Lake (Southwest corner of Long Lake and Dequindre)
<b>Zoning:</b>	NN, Neighborhood Node
<b>Action Requested:</b>	Site Plan and Special Use Approval

## PROJECT AND SITE DESCRIPTION

The applicant is proposing to construct a 1,618 sq/ft ground floor addition and a 760 sq/ft second floor addition to the existing gas station at the southwest corner of Long Lake and Dequindre. The ground floor addition is for the purpose of both expanding the existing convenience store and to add additional indoor auto and part storage area. The second story addition is a private office. The proposed expansion is located on the rear of the existing building.

The applicant is not proposing any changes to building orientation, canopy orientation, or site access. However, as part of the site reinvestment, the applicant proposes significant façade improvements, and site landscaping improvements.

The site is located in Neighborhood Node J, site type A. The auto repair expansion requires a Special Use.

Location of Subject Property:

2970 Long Lake



Size of Subject Property:

1.01 acres in area (gross)  
0.58 acres in area (net)

Proposed Uses of Subject Parcel:

Gas Station (expansion)

Current Zoning:

The property is currently zoned NN, Neighborhood Node

Surrounding Property Details

Direction	Zoning	Use
North	NN, Neighborhood Node	Commercial
South	NN, Neighborhood Node	Parking for Commercial
East	Sterling Heights	Gas Station
West	Neighborhood Node	Commercial

## **BUILDING ORIENTATION AND LAYOUT**

The applicant is proposing to construct a 1,618 sq/ft ground floor addition and a 760 sq/ft second floor addition to the existing gas station at the southwest corner of Long Lake and Dequindre. The ground floor addition is for the purpose of both expanding the existing convenience store and to add additional indoor auto and part storage area. The second story addition is a private office. The proposed expansion is located on the rear of the existing building.

As seen by the aerial photo the site has parking and vehicle storage along the southern property line, the western property line, and in the rear of the building. Though the applicant is not proposing any changes to building orientation, canopy orientation, or site access, they are adding intensity to the small site by increasing the square footage for convenience store and storage area. To confirm the adequacy of access, circulation, and parking, we offer the following comments for the Planning Commission to consider and for the applicant to address (see site plan below that highlights comments):

- 1 The current site includes vehicle storage in an “alley” located between the western property line and the building. Is the applicant planning on keeping cars in this alley area? This alley is also the area where the proposed trash enclosure is located. How can the trash trucks get access to the trash enclosure with cars parked in alley?
- 2 The alley between western property line and building is 10-foot wide. Even if parking wasn’t located in the alley, can a trash truck maneuver in this small area.
- 3 Section 6.26 of the Zoning Ordinance states that for auto repair facilities: Outdoor storage shall be enclosed by an opaque fence up to eight (8) feet in height and/or landscape screening meeting the standards set forth in Section 13.02.B.” The applicant doesn’t indicate any screening. Is overnight parking of vehicles repaired appropriate for this site. Planning Commission can consider condition that does not permit overnight parking.
- 4 Automobile oriented uses requires the screening of either 1 tree every 10 feet or a wall screening from office uses. There is an existing office use adjacent to the west. Where the applicant proposes the “alley” that property line is supposed to be screened either with a wall or landscaping.
- 5 The farthest south parking spot along the western property line blocks access to the “alley”
- 6 The parking spot adjacent to the southernmost access point on Dequindre could block access off Dequindre when cars are pulling into and out of this spot.
- 7 From aerial photos site parking appears to already be an issue. With the proposed addition, the site is under-parked from a zoning requirement perspective. See parking section below.
- 8 On the floor plans there is an area labeled as a “waiting area” and drink bar. Is this intended to be an area for people waiting for vehicle repair?



**AREA, WIDTH, HEIGHT, SETBACKS**

Required and Provided Dimensions:

The site is being developed as Building Form A. Table 5.03.B1 establishes the dimensional requirements for the Building Form A:

	<b>Required</b>	<b>Provided</b>	<b>Compliance</b>
Front (Maple Road)	10 foot build-to-line	75-feet	Legal non-conforming
Front (Dequindre)	10-foot build-to-line	77-feet	Legal non-conforming
Side	0	0-feet	Complies
Rear	30-feet	13-feet	Does not comply. Requires a variance from the Zoning Board of Appeals
Open Space	30 percent	78%	This seems incorrect and needs to be clarified
Building Height	Minimum 14 feet Maximum 45 feet	18 feet	Complies
Parking	Not located in front yard + screening	Not located in front yard and screened	Screen Parking Parallel to Dequindre

The applicant proposes to expand the building in the rear. The western property line is considered the rear property line, and as such it requires a 30-foot setback. The existing building is non-conforming with only a 13-foot setback. The applicant is seeking to expand (lengthen) the existing non-conforming. The expansion requires a variance from the Zoning Board of Appeals.

In addition, the applicant shall screen the parking that is parallel to Dequindre, similar to how they are screening the parking parallel to Long Lake.

**Items to be Addressed:** 1). Obtain a variance from Zoning Board of Appeals to expand (lengthen) the existing non-conforming structure; and 2). Screen parking that is parallel to Dequindre.

**SITE ACCESS AND CIRCULATION**

Vehicular access and Circulation:

Access to the site will be the existing curb cuts on Long Long and Dequindre. Both are County roads. Any work will require permit from the County. The County in their review may require the applicant to remove a curb-cut.

The Fire Department has reviewed circulation and notes that it is sufficient. As noted earlier, we have expressed concern with the parking space is parallel to the Dequindre. This space may need to be removed to ensure proper access and site circulation.

**Items to be Addressed: None**

**PARKING**

Gas Station/Auto Repair ordinance requires as set forth in table 13.06.a:

	Required	Provided
Vehicle Fueling Station: 1 space for each 125 square feet of net floor area, plus 2 parking spaces per fueling station	10 spaces at 5 fueling stations + 1,220 square feet / 125 = 10 spaces	18 spaces + 10 fueling stations
Vehicle Repair Station 2 spaces for each service bay, plus 1 space for each tow truck if applicable, plus adequate spaces for overnight parking, plus 1 space per 1 employee on the largest typical shift	3 bays = 6 spaces 3 employees = 3 spaces	
Office: 1 space for each 300 square feet of gross floor area	760 square feet / 300 = 3 spaces	
Barrier Free	1	1
Bicycle Parking	2	0
<b>Total</b>	<b>22 automobile + 2 bicycle</b>	<b>18 automobile + 10 at fueling stations</b>

The use is under parked by at least 4 spaces. In addition, we note that two (2) spaces are located in places that will hinder site circulation and access. The applicant shall either provide additional parking, reduce square footage to reduce parking demand, or provide a parking study to the Planning Commission to confirm parking is sufficient.

Applicant shall also provide bicycle parking.

**Items to be Addressed:** 1). *Either provide additional parking, reduce square footage to reduce parking demand, or provide a parking study to the Planning Commission to confirm parking is sufficient; and 2). Add bicycle parking.*

## LANDSCAPING

The applicant has provided additional landscaping but a detailed landscape plan and landscape calculations was not provided. For example, there are areas highlighted with landscaping but size and species were not indicated.

The applicant notes 6' masonry wall to screen trash enclosure. Trash screening details were not provided on the plans.

**Items to be Addressed:** 1). Provide landscape details; and 2). Provide trash enclosure details.

## PHOTOMETRICS

The applicant indicated that they are not adding any additional site lighting. It is assumed that based upon a new façade, new lighting will be provided on the building. The applicant should provide building lighting fixture details.

**Items to be Addressed:** Provide building lighting fixture details.

## ELEVATIONS AND FLOOR PLANS

The applicant has submitted elevations and floor plans. The applicant is making a significant investment in the façade. The proposed materials include painted brick veneer (existing), glass, cement fiber wall panels, and decorative CMU units.

The applicant has been asked to provide material samples at the meeting and a 3-d model of building.

**Items to be Addressed:** Provide building material samples and 3-d model of building.

## DESIGN STANDARDS

Developments within the Maple Road form-based district must comply with Design Standards outlined in section 5.05.

### Building Orientation and Entrance

- a. **Primary Entrance:** The primary building entrance shall be clearly identifiable and useable and located in the front façade parallel to the street. **The primary entrance is located in the front façade facing Long Lake.**
- b. **Recessed Doorways.** Where the building entrance is located on or within five (5) feet of a lot line, doorways shall be recessed into the face of the building. **Not applicable**

- c. *Residential Dwellings. Entrances for all residential dwellings shall be clearly defined by at least one (1) of the following:*
- I. *Projecting or recessed entrance. A recessed entrance is required if the building entrance is located on or within five (5) feet of the lot line.*
  - II. *Stoop or enclosed or covered porch.*
  - III. *Transom and/or side light window panels framing the door opening.*
  - IV. *Architectural trim or unique color treatments framing the door opening*

**Not Applicable**

Ground Story Activation

- a. *The first floor of any front façade facing a right-of-way shall be no less than fifty (50) percent windows and doors, and the minimum transparency for facades facing a side street, side yard, or parking area shall be no less than 30 percent of the façade. Transparency alternatives are permitted up to 80% of the 50% total along the front of buildings, and up to 100% of the sides of buildings. The minimum transparency requirement shall apply to all sides of a building that abut an open space, including a side yard, or public right-of-way. Transparency requirements shall not apply to sides which abut an alley.*

***The applicant has met the transparency requirements on the Dequinidre and Long Lake elevation.***

Transitional Features

- a. *Transitional features are architectural elements, site features, or alterations to building massing that are used to provide a transition between higher intensity uses and low- or moderate-density residential areas. These features assist in mitigating potential conflicts between those uses. Transitional features are intended to be used in combination with landscape buffers or large setbacks.*

***Provided that the noted site plan issues are addressed, transitional features are provided.***

Site Access and Parking

- a. *Required Parking. Off-street parking shall be provided in accordance with the standards set forth in Article 13, Site Design Standards.*

***The applicant does not meet the parking requirements.***

- b. *Location.*

- I. *When parking is located in a side yard (behind the front building line) but fronts on the required building line, no more than fifty (50) percent of the total site's linear feet along the required building line or one hundred (100) feet, whichever is less, shall be occupied by parking.*

**Not Applicable**



- II. *For a corner lot, shall be no more than fifty (50) percent of the site's cumulative linear feet along the required building lines or one hundred (100) feet, whichever is less, shall be occupied by parking. The building shall be located in the corner of the lot adjacent to the intersection.*

**Complies**

- III. *For a double frontage lot or a lot that has frontage on three (3) streets, the cumulative total of all frontages occupied by parking shall be no more than sixty-five (65) percent of the total site's linear feet along a required building line or one hundred and twenty-five (125) feet, whichever is less.*

**Not Applicable**

- IV. *Where off-street parking is visible from a street, it should be screened in accordance with the standards set forth in Section 13.02.C.*

***The applicant has not screened parking along Dequindre in compliance with section 13.0.2.C.***

**Items to be Addressed:** *Address site plan issues noted.*

For any special use, according to Section 9.02.D, the Planning Commission shall *"...review the request, supplementary materials either in support or opposition thereto, as well as the Planning Department's report, at a Public Hearing established for that purpose, and shall either grant or deny the request, table action on the request, or grant the request subject to specific conditions."*

Section 9.03 states that before approving any requests for Special Use Approval, the Planning Commission shall consider:

1. *Compatibility with Adjacent Uses.*
2. *Compatibility with the Master Plan.*
3. *Traffic Impact.*
4. *Impact on Public Services.*
5. *Compliance with Zoning Ordinance Standards.*
6. *Impact on the Overall Environment. The proposed Special Use shall no*
7. *Special Use Approval Specific Requirements.*

Based upon the noted outstanding issues we cannot adequately address the special use standards.

**Items to be addressed:** *None*

## RECOMMENDATION

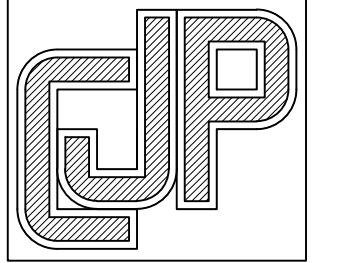
We support the reinvestment in the site but there are a number of outstanding issues that the applicant must address:

1. By ordinance the Planning Commission cannot take action until and if the rear yard variance is granted by the Zoning Board of Appeals. If the Zoning Board of Appeals does not grant the variance, the applicant will be required to amend the site plan.
2. There are a number of site plan issues that need to be discussed by the Planning Commission and addressed by the applicant:
  - a. The current site includes vehicle storage in an “alley” located between the western property line and the building. Is the applicant planning on keeping cars in this alley area? This alley is also the area where the proposed trash enclosure is located. How can the trash trucks get access to the trash enclosure with cars parked in alley?
  - b. The alley between western property line and building is 10-foot wide. Even if parking wasn’t located in the alley, can a trash truck maneuver in this small area.
  - c. Section 6.26 of the Zoning Ordinance states that for auto repair facilities: Outdoor storage shall be enclosed by an opaque fence up to eight (8) feet in height and/or landscape screening meeting the standards set forth in Section 13.02.B.” The applicant doesn’t indicate any screening. Is overnight parking of vehicles repaired appropriate for this site. Planning Commission can consider condition that does not permit overnight parking.
  - d. Automobile oriented uses requires the screening of either 1 tree every 10 feet or a wall screening from office uses. There is an existing office use adjacent to the west. Where the applicant proposes the “alley” is supposed to be screened either with a wall or landscaping.
  - e. The farthest south parking spot along the western property line blocks access to the “alley”
  - f. The parking spot adjacent to the southernmost access point on Dequindre could block access off Dequindre when cars are pulling into and out of this spot.
  - g. From aerial photos site parking appears to already be an issue. With the proposed additions, the site is underparked from a zoning requirement perspective. See parking section below.
  - h. On the floor plans there is an area labeled as a “waiting area” and drink bar. Is this intended to be an area for people waiting for vehicle repair?
  - i. Screen parking that is parallel to Dequindre.
  - j. Either provide additional parking, reduce square footage to reduce parking demand, or provide a parking study to the Planning Commission to confirm parking is sufficient.
  - k. Add bicycle parking.
  - l. Provide landscape details.
  - m. Provide trash enclosure details.
  - n. Building lighting fixture details.
  - o. Provide building material details and 3-d modeling.

- p. Provide accurate open space calculation.

We recommend that the Planning Commission hold a public hearing, consider public testimony, and postpone action for the application to be considered by the Zoning Board of Appeals and allow the applicant to amend the site plan as noted in the report.

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



**CJP**  
ENGINEERING & DESIGN, LLC  
28763 NORTHWESTERN HWY  
SUITE 225  
SOUTHFIELD, MI 48034  
Office (248)747-4562  
Fax (248)297-6121  
Cell (248)376-5006  
harishakim@yahoo.com

**PROJECT:**

SHELL GAS STATION  
PROPOSED BUILDING  
RENOVATION

**LOCATION:**

2970 E LONG LAKE RD.  
TROY, MI 48085

**OWNER:**

STARCO MANAGEMENT COMPANY  
2970 E LONG LAKE RD.  
TROY, MI 48085  
ph. (248)689-8200  
starcomanagement@yahoo.com

**SUBMITAL:**

**DATE**

12/17/2019

**REVISIONS:**

**DESIGNED BY:**

**DRAWN BY:**

**APPROVED BY:**

HARIS HAKIM, P.E.

**SEAL**

**SHEET TITLE**

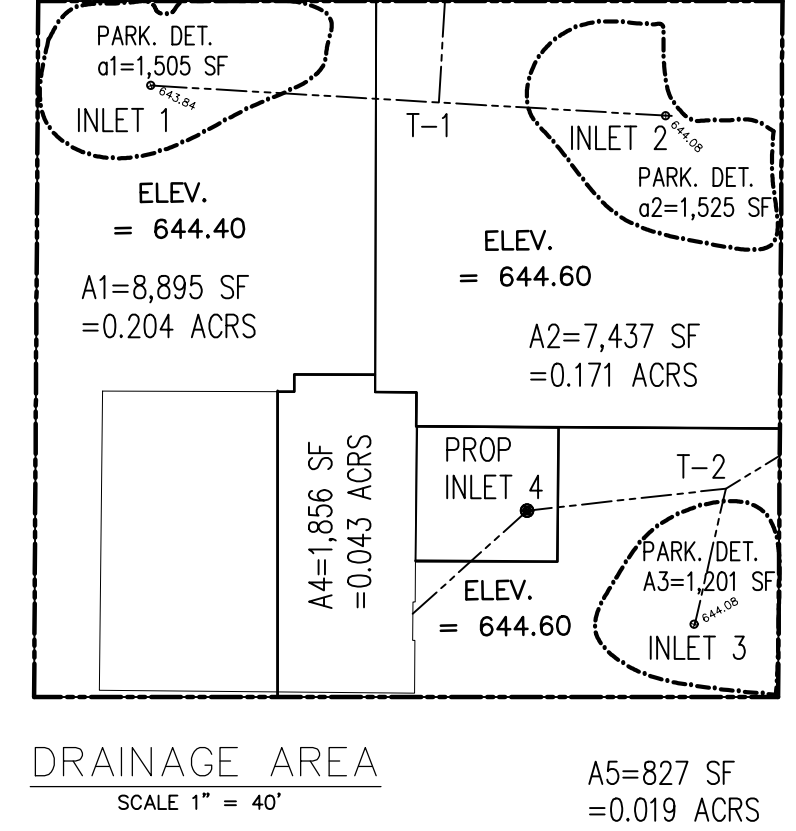
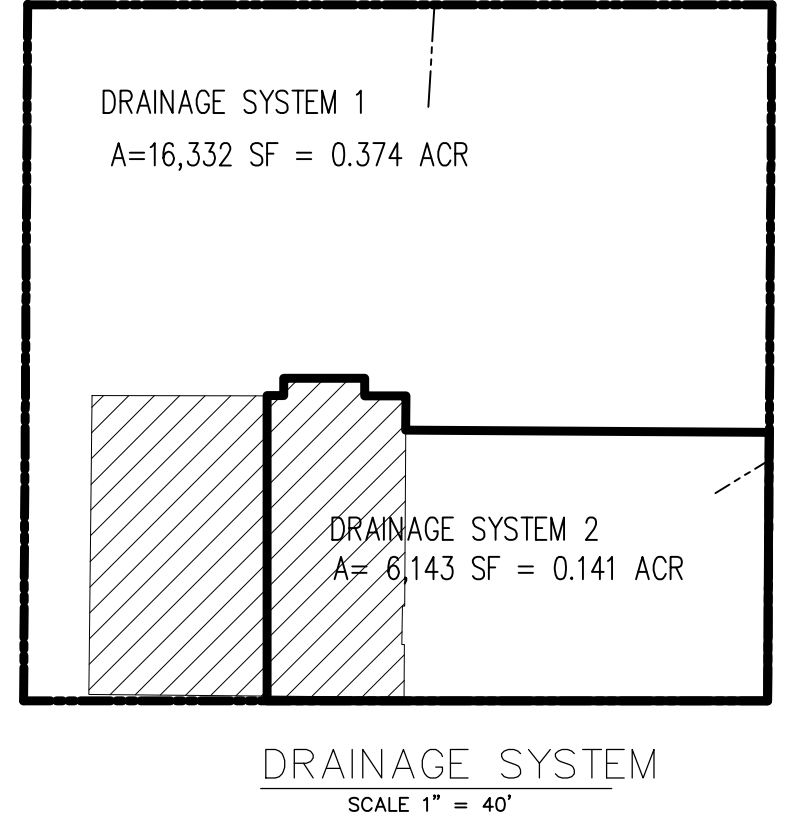
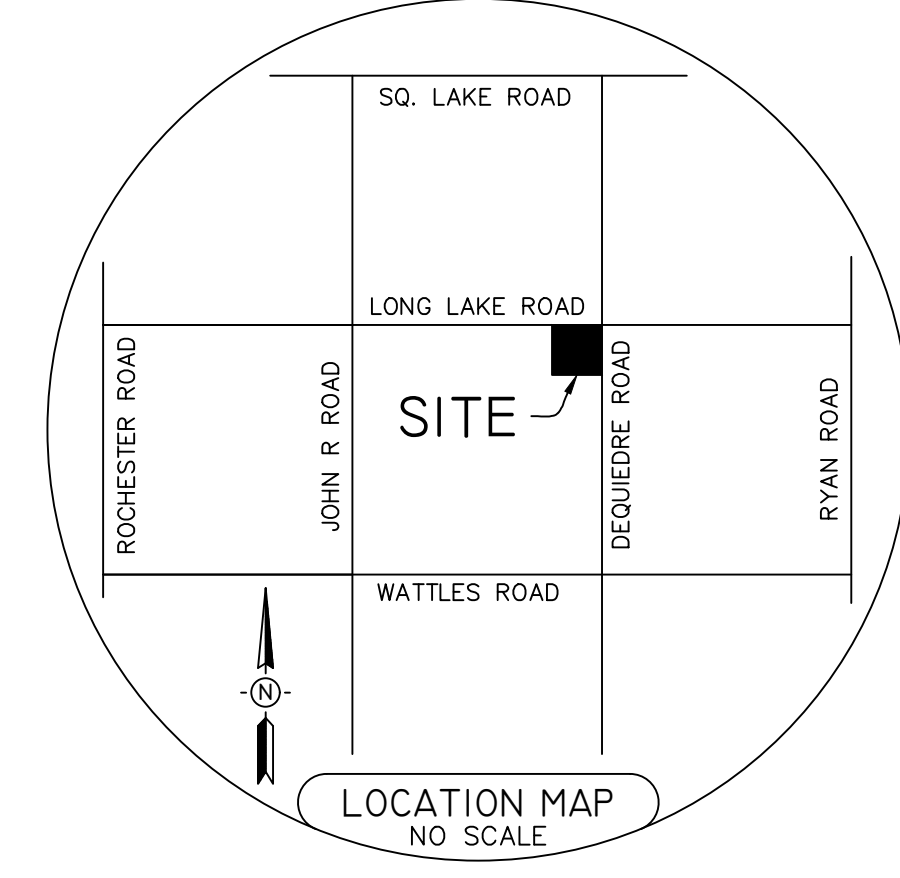
SITE PLAN / DRAINAGE

**SCALE**

NOTED

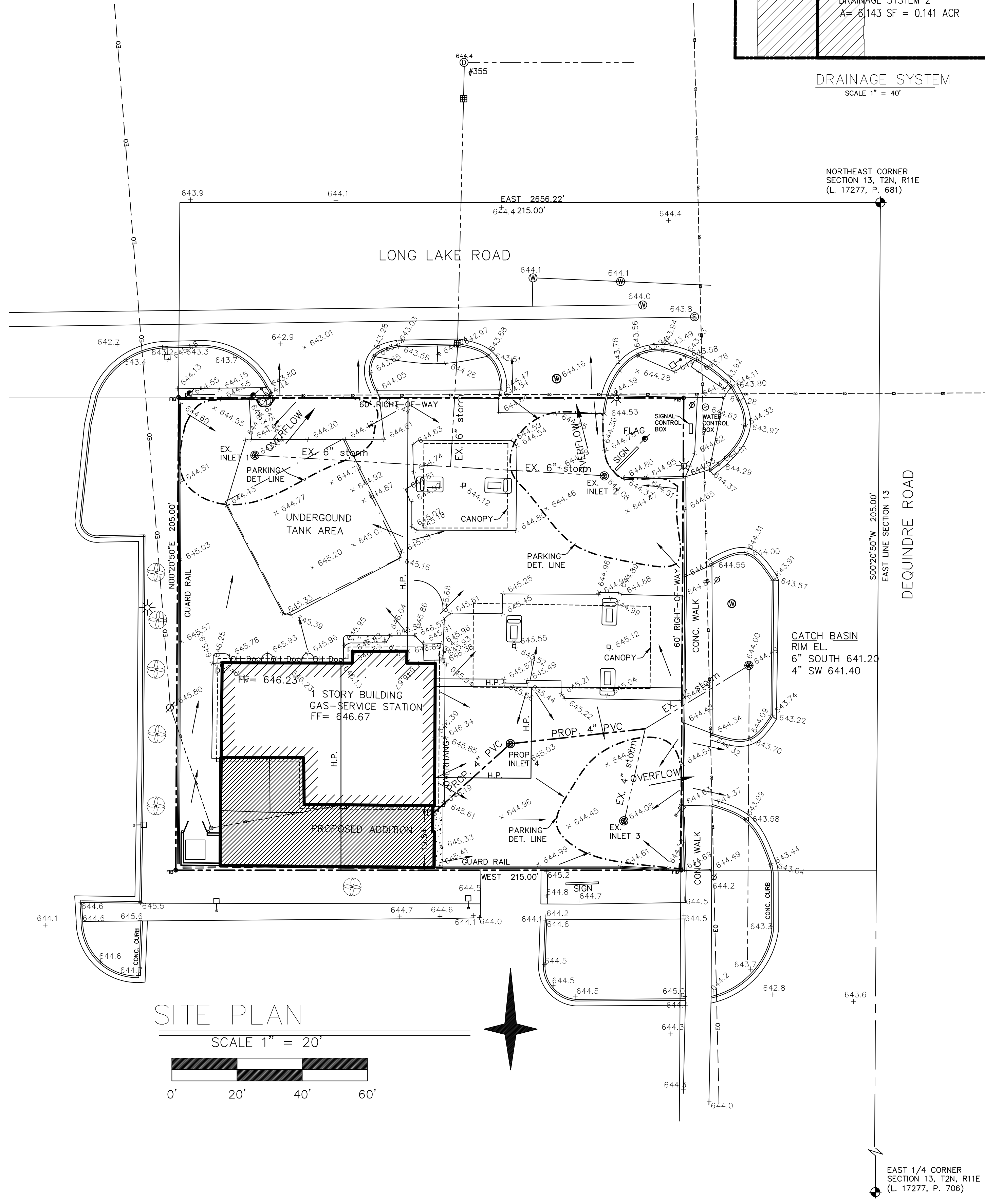
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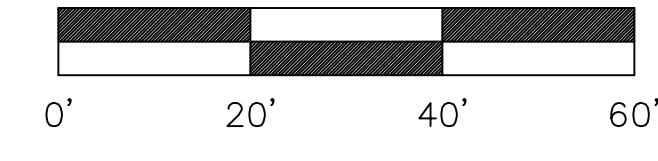
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**NOTE**  
THE PROPOSED ADDITION IS ON EXISTING PAVEMENT AND WILL NOT ADD ANY HARD SURFACE AREA OR EXTRA DRAINAGE TO THE EXISTING STORM SYSTEM



**SITE PLAN**

SCALE 1" = 20'



**DRAINAGE CALCULATIONS**

**1-FORMULAS AND COEFFICIENTS**

OAKLAND COUNTY STANDARD REQUIREMENTS, RULES AND DESIGN CRITERIA FOR SUBDIVISION DRAINAGE IN OAKLAND COUNTY WAS USED IN THE DESIGN OF DRAINAGE SYSTEM.  
THE FOLLOWING DESIGN PARAMETERS AND EQUATIONS USED IN RUNOFF AND STORM SEWER CALCULATIONS:

- a-STORM WATER FLOW AND PIPES SIZING:  
-RATIONAL METHOD FOR RUNOFF CALCULATIONS WAS USED Q=CIA.  
-THE FOLLOWING COEFFICIENTS OF IMPERVIOUSNESS WAS USED  
C=0.90 FOR PAVEMENT  
C=0.15 FOR LAWN  
-STORM DRAINAGE SYSTEM WAS DESIGNED TO BE CAPABLE TO CARRY A 10 YEAR INTENSITY RAINFALL.  
-THE RAINFALL INTENSITY "I" FORMULA USED WAS:  $I=175/(T+25)$   
-MANNING FORMULA WAS USED TO SIZE THE PIPES ( $Q = \frac{1.48}{n} A R^{2/3} S^{1/2}$ )  
MANNING COEFFICIENT n= 0.008 FOR PLASTIC PIPES (PVC)  
MANNING COEFFICIENT n= 0.012 FOR CONCRETE PIPES

**b-DRAINAGE SYSTEM:**

-THE SITE DRAINAGE SYSTEM CONSISTS OF TWO DISCHARGE OUTLETS, ONE OF 6" OUTLET DISCHARGES IN LONG LAKE RD, AND THE OTHER OF 4" OUTLET DISCHARGES IN DEQUINDRE RD. THESE TWO OUTLETS ARE CURRENTLY EXISTING AND IN GOOD CONDITIONS AS VERIFIED WITH VIDEO CAMERA.  
THE EXISTING OUTLET FLOW WILL BE CONSIDERED AS THE ALLOWABLE FLOW WHEN CALCULATING THE 25 YEARS DETENTION REQUIREMENT.

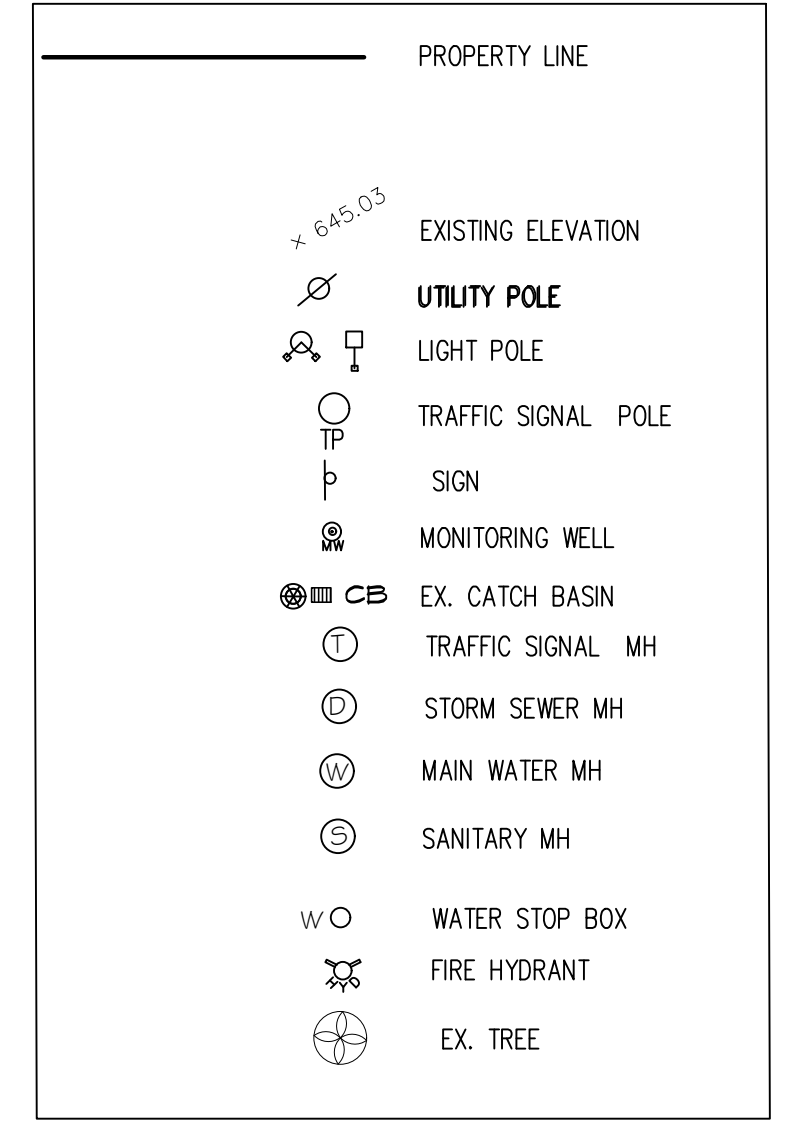
**c-DETENTION REQUIREMENT:**

- ADDITIONAL DEVELOPED DRAINAGE AREA:  
-DETENTION BASIN SHALL BE DESIGNED TO STORE STORM WATER FROM A 25-YEAR FREQUENCY RAINFALL OVER THE ENTIRE SITE AREA.  
-THE ALLOWABLE OUTFLOW FOR SYSTEM 1= Qa1 = THE 6"Ø DRAIN FLOW CAPACITY  
- THE ALLOWABLE OUTFLOW FOR SYSTEM 2= Qa2 = THE 4"Ø DRAIN FLOW CAPACITY  
-STORAGE TIME FOR 25 YEAR STORM,  $T = \sqrt[8]{8062.50/Q_0} - 25$   
-VOLUME OF STORAGE FORMULA:  
 $V_S = ((12900XT)/(T+25)) - (40XQ_0XT)$  cu.ft./ ACRE IMPERVIOUSNESS

**2-CALCULATIONS**

SYSTEM 1	SYSTEM 2
$Q_0 = 0.62 * A \sqrt{2} g h$	$Q_0 = 0.62 * A \sqrt{2} g h$
$A = 0.196 \text{ ft}^2$	$A = 0.087 \text{ ft}^2$
$g = 32.2 \text{ ft/s}^2$	$g = 32.2 \text{ ft/s}^2$
$h = 3.2 \text{ ft}$	$h = 3.2 \text{ ft}$
$Q_0 = 0.62 * 0.196 \sqrt{2} * 32.2 * 3.5$	$Q_0 = 0.62 * 0.087 \sqrt{2} * 32.2 * 3.5$
$Q_0 = 1.824 \text{ cfs}$	$Q_0 = 0.77 \text{ cfs}$
DETENTION VOLUME FOR THE PROPOSED CONDITIONS TO BE BASED ON 25 YEAR STORM: AREA = 16,332 SF = 0.374 Acre C = 0.90 $Q_0 = Q_0 / (A \times C)$ $Q_0 = 1.824 / (0.374 * 0.90) = 5.41 \text{ cfs}$ $T_{25} = -25 + \sqrt[8]{\frac{8,062.5}{Q_0}} = -25 + \sqrt[8]{\frac{8,062.5}{5.41}} = 13.6 \text{ MIN.}$ $V_{25} = \frac{12,900 T_{25}}{T+25} - 40 Q_0 T_{25} = \frac{12,900 * 13.6}{13.6+25} - 40 * 5.41 * 13.6$ $V_{25} = 1,602 \text{ CU. FT. / Acre imperviousness}$ $V_{25} = V_{25} * A_C = 1,602 * 0.374 * 0.90 = 539 \text{ Cu.Ft.}$	DETENTION VOLUME FOR THE PROPOSED CONDITIONS TO BE BASED ON 25 YEAR STORM: AREA = 6,143 SF = 0.141 Acre C = 0.90 $Q_0 = Q_0 / (A \times C)$ $Q_0 = 0.77 / (0.141 * 0.90) = 6.07 \text{ cfs}$ $T_{25} = -25 + \sqrt[8]{\frac{8,062.5}{Q_0}} = -25 + \sqrt[8]{\frac{8,062.5}{6.07}} = 11.4 \text{ MIN.}$ $V_{25} = \frac{12,900 T_{25}}{T+25} - 40 Q_0 T_{25} = \frac{12,900 * 11.4}{11.4+25} - 40 * 6.07 * 11.4$ $V_{25} = 1,272 \text{ CU. FT. / Acre imperviousness}$ $V_{25} = V_{25} * A_C = 1,272 * 0.141 * 0.90 = 161.4 \text{ Cu.Ft.}$
AVAILABLE STORAGE: PARKING DET. V1=1/3 X 1,505 X 0.56 = 281 CU.FT. PARKING DET. V2=1/3 X 1,525 X 0.52 = 264 CU.FT. TOTAL AVAILABLE PARKING DET. =545 CU.FT. > 539 cu.ft.	AVAILABLE STORAGE: PARKING DET. V3 =1/3 X 1,201 X 0.52 = 208 CU.FT. > 161.4 cu.ft.
TOTAL REQUIRED DETENTION = 539+161 = 700 cu.ft. TOTAL PROVIDED PARKING DET. =545 + 208 = 753.00 CU.FT. > 700 CU.FT.	

**LEGEND:**



**Legal Description (as furnished by owner):**

Part of the Northeast quarter of Section 13, Township, 2 North, Range 11 East, City of Troy, Oakland County, Michigan, described as: Beginning at the Northeast corner of Section 13, thence along the East line of said Section South 00 degrees 20 minutes 50 seconds West 205 feet; thence due West 215 feet; thence North 00 degrees 20 minutes 50 seconds East 205 feet; thence along the North line of said Section Due East 215 feet to the point of beginning subject, however, to the rights of the public for roadway purposes and of any governmental unit over the North 60 feet and the East 60 feet thereof.

- THE UNDERGROUND DRAINAGE AS HEREON SHOWN ARE BASED ON FIELD OBSERVATIONS AND A CAREFUL REVIEW OF MUNICIPAL AND UTILITY RECORDS, AND THE VIDEO CAMERA BY PLUMBING COMPANY HIRED BY THE OWNER. HOWEVER IT IS NOT POSSIBLE TO DETERMINE THE PRECISE SIZE, LOCATION, DEPTH, OR ANY OTHER CHARACTERISTICS OF UNDERGROUND UTILITIES WITHOUT EXCAVATION. THEREFORE WE CAN NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE BURIED UTILITY INFORMATION HEREON SHOWN.

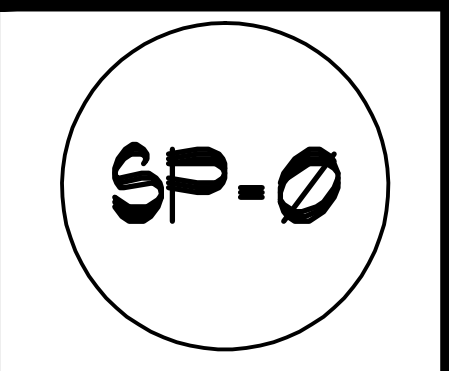
**PROPOSED BUILDING RENOVATION & ADDITION**

OWNER & CONTACT PERSON  
 SAM ASKAR  
 PH: 248-961-3010  
 E-MAIL: bdaskar@gmail.com

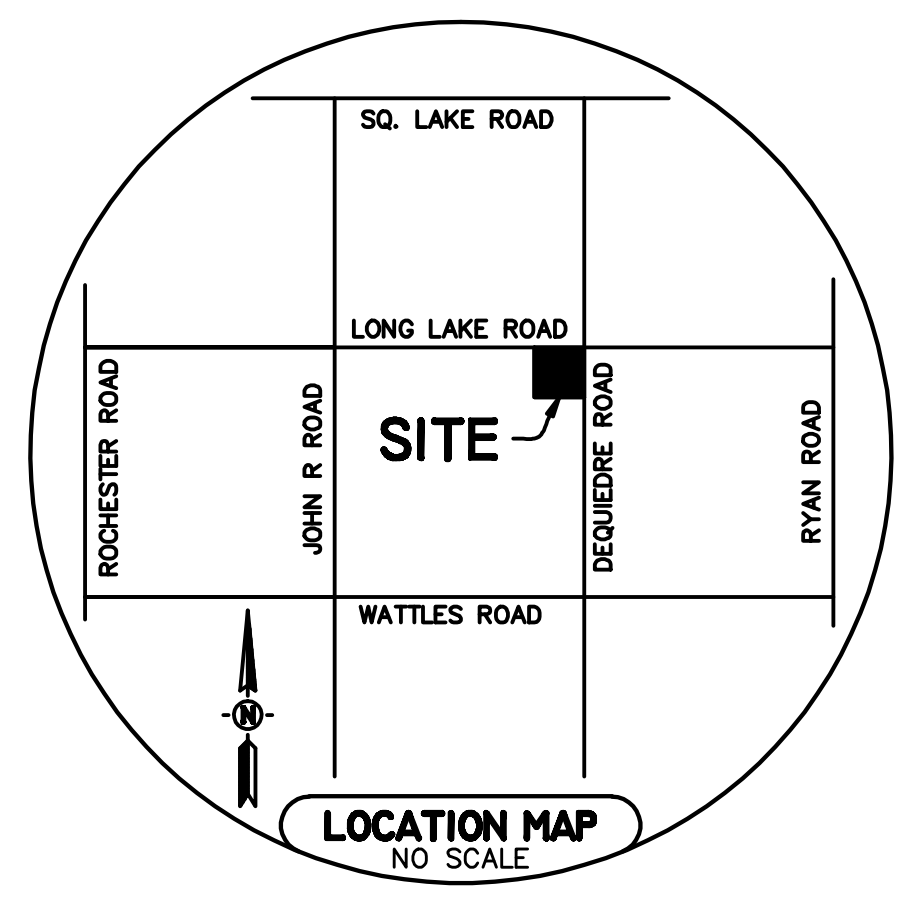
**SHELL GAS STATION**  
 2970 EAST LONG LAKE TROY, MI. 48068

DESCRIPTION:  
**COVER SHEET & ARCHITECTURAL SITE & LANDSCAPING PLAN**  
 JOB NO. 866-19

DATE	ISSUE	DESIGN BY
12-19-2019	PERMIT	AEK
12-28-2019		



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PID: 882013228011

**GENERAL SITE & BUILDING INFORMATION**

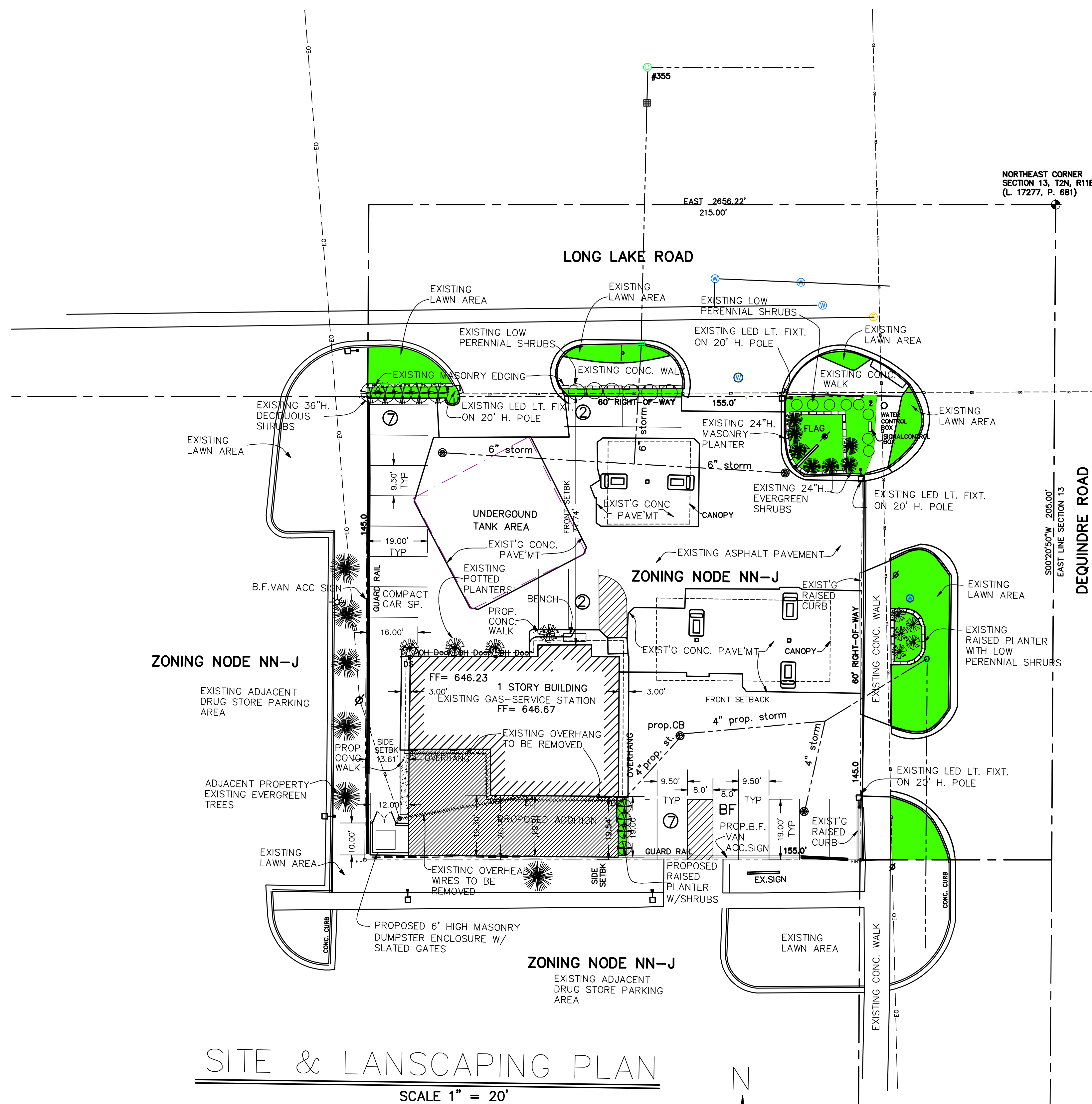
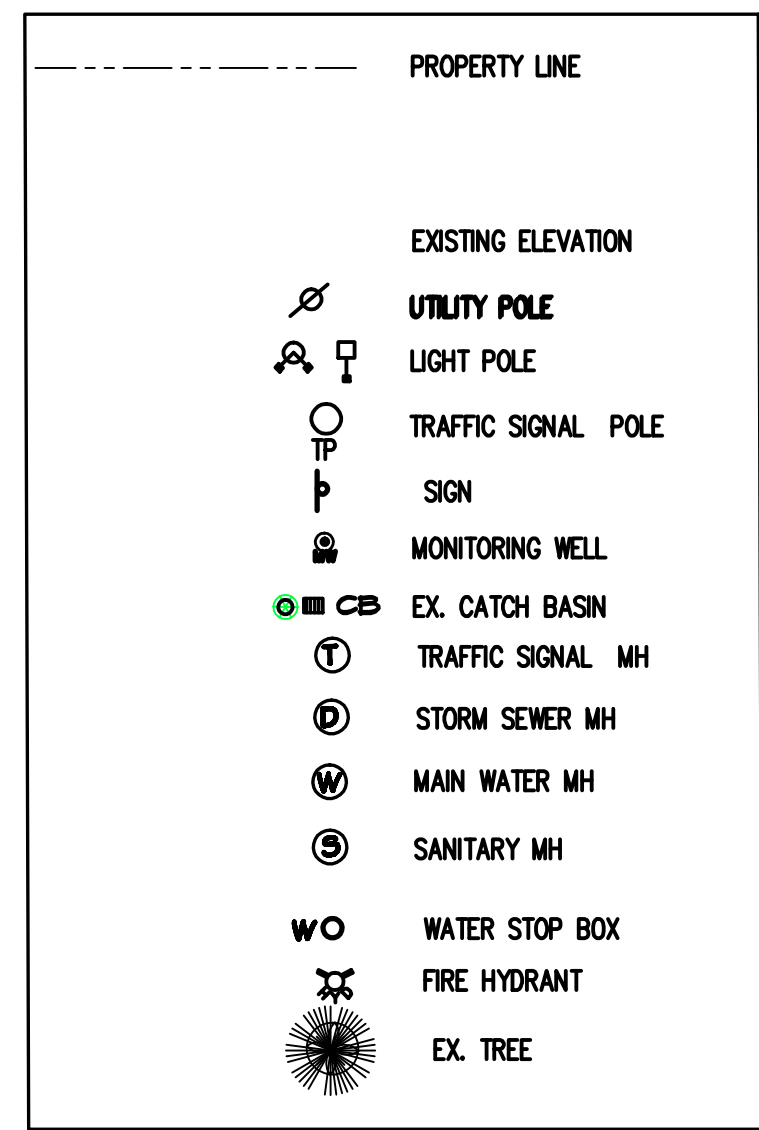
- ZONING** - NODE NN-J  
STREET-HIGH INTENSITY NN-A
- USE GROUP** - GAS STATION WITH REPAIR FACILITY
- SITE AREA** - 44,075 SF (1.01 ACRES)  
SITE AREA EXCLUDING ROWS: 22,475 SF (0.52 ACRES)
- OPEN SPACE**  
REQUIRED OPEN SPACE - 30%  
PROVIDED OPEN SPACE - 17,569/22,475 = 78%
- FORM BASE SETBACKS (BUILD'G. FORM A)**  
REQUIRED FRONT - 10' - PROVIDED - 15.1' & 11.1'  
REQUIRED SIDES - 0' - PROVIDED - 0.53'  
REQUIRED REAR - 30' - PROVIDED - 13.6'
- BUILDING AREAS**
  - EXISTING BUILDING - 2,528 GSF.
  - PROPOSED GROUND FLOOR ADDITION - 1,618 GSF.
  - PROPOSED SECOND FLOOR - 1,600 GSF.
  - TOTAL BUILDING - 4,906 GSF.
- PARKING REQUIREMENTS**
  - GAS STATION - 2 SPACES PER FUELING STATION PLUS EACH 125 SF. OF NET FLOOR AREA
  - REPAIR STATION - 2 SPACES/EA. BAY PLUS 1 SPACE PER EACH EMPLOYEE PLUS ADEQUATE SPACES FOR OVERNIGHT PARKING
  - COMMERCIAL RETAIL AREA - 1 SPACE PER EA. 250 GSF

3 BAYS X 2 = 6 SPACES  
 STORAGE OR 2 ADDIT'L BAYS X 2 = 4 SPACES PLUS 3 EMPLOYEES = 3 SPACES  
 PLUS RETAIL (150 SF.) EXISTING + PROPOSED RETAIL (410 SF.) = 1220 SF.  
 1220 SF / 250 SF. = 5 SPACES  
 TOTAL CAR SPACES REQUIRED = 10 SPACES  
 PROVIDED - 10 CAR SPACES (EXISTING)

(DOES NOT COUNT FILLING STATION PARKING AREAS)

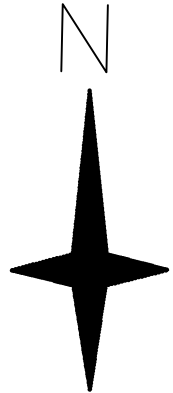
OVERNIGHT CAR STORAGE WITHIN PROPOSED STORAGE AREA AND ALONG WEST DRIVE AREA
- SITE LIGHTING**  
EXISTING SITE LIGHTING ARE (4) LED LIGHT FIXTURES ON 20' HIGH POLES AT THE (4) ENTRANCE/EGRESS DRIVES AND FROM GAS PUMP SURF. MOUNTED PUMP STATION CANOPIES.  
THERE ARE ALSO EXISTING PERIMETER BUILDING INDIRECT STRIP LIGHTS AS WELL AS PROPOSED RECESSED DOWN LIGHTING UNDER THE PROPOSED ENTRANCE CANOPY.
- LANDSCAPING (15% REQUIRED)**  
EXISTING LANDSCAPING ARE FRONTAGE GREENBELTS AND RAISED PLANTING AREAS WITH DECIDUOUS AND EVERGREEN SHRUBS AND LARGE POTTED PLANTS ALONG THE EXISTING BUILDING EXTERIOR.  
ADDITIONAL POTTED PLANTS ARE PROPOSED ALONG THE MAIN ENTRANCE AND A RAISED LANDSCAPING PLANTER ALONG THE EAST SIDE OF THE PROPOSED ADDITION. SEE ENLARGED FLOOR PLAN SHEET A-10
- SIGNS**  
EXISTING GROUND SIGN APPROXIMATELY 45 SF. OCCURS AT NORTH EAST CORNER OF PROPERTY ON A 2' HIGH RAISED LANDSCAPING AREA WHICH IS TO REMAIN AS IS.  
THE PROPOSED RE-FACING OF THE BUILDING NORTH ELEVATION IS TO RE-USE THE EXISTING SIGNAGE CURRENTLY ON THE EXISTING FACADE.  
NO NEW SIGNS ARE CURRENTLY BEING PROPOSED.
- EXTERIOR ELEVATION FRONTAGE TRANSPARENCY (BUILDING FORM A)**  
50% TRANSPARENCY IS REQUIRED BETWEEN FOR ROW FRONTAGE AND 30% FOR SIDES MEASURED BETWEEN 2'-8" ABOVE FINISH FLOOR.  
THE NORTH ELEVATION ALONG LONG LAKE ROAD FRONTAGE HAS A EXISTING 53% (50% REQ'D.) TRANSPARENCY TO REMAIN AS IS.  
THE EAST ELEVATION ALONG DEQUINDRE ROAD ROW FRONTAGE HAS A 70% (50% REQ'D.) TOTAL TRANSPARENCY WHICH INCLUDES THE EXISTING EXTERIOR AREA WITH THE PROPOSED ADDITION.  
THE WEST SIDE ELEVATION FACING THE ADJACENT SITE HAS A SIDE TRANSPARENCY OF 56% (30% REQ'D.) OF THE WALL AREA

**LEGEND:**

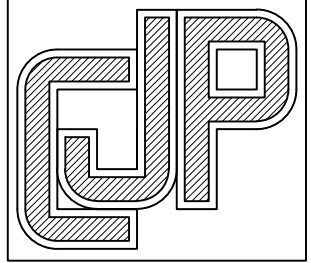


**SITE & LANDSCAPING PLAN**

SCALE 1" = 20'



EAST 1/4 CORNER SECTION 13, T2N, R11E (L. 17277, P. 706)



CJP  
ENGINEERING & DESIGN, LLC

28763 NORTHWESTERN HWY  
SUITE 225  
SOUTHFIELD, MI 48034  
Office (248)747-4562  
Fax (248)297-6121  
Cell (248)376-5006  
harishakim@yahoo.com

**PROJECT:**

SHELL GAS STATION  
PROPOSED BUILDING  
RENOVATION

**LOCATION:**

2970 E LONG LAKE RD.  
TROY, MI 48085

**OWNER:**

STARCO MANAGEMENT COMPANY  
2970 E LONG LAKE RD.  
TROY, MI 48085  
ph. (248)689-8200  
starcomanagement@yahoo.com

**SUBMITAL:**

**DATE**

12/17/2019

**REVISIONS:**

**DESIGNED BY:**

**DRAWN BY:**

**APPROVED BY:**

HARIS HAKIM, P.E.

**SEAL**

**SHEET TITLE**

SURVEY

**SCALE**

NOTED

**SHEET #**

SP-1

BENCHMARK  
RR SPIKE IN W. SIDE OF UTILITY  
POLE @ NE CORNER OF LONG LAKE  
& DEQUINDRE ROADS ELEV.=  
644.05 (NAVD 88)

**Legal Description (as furnished by owner):**

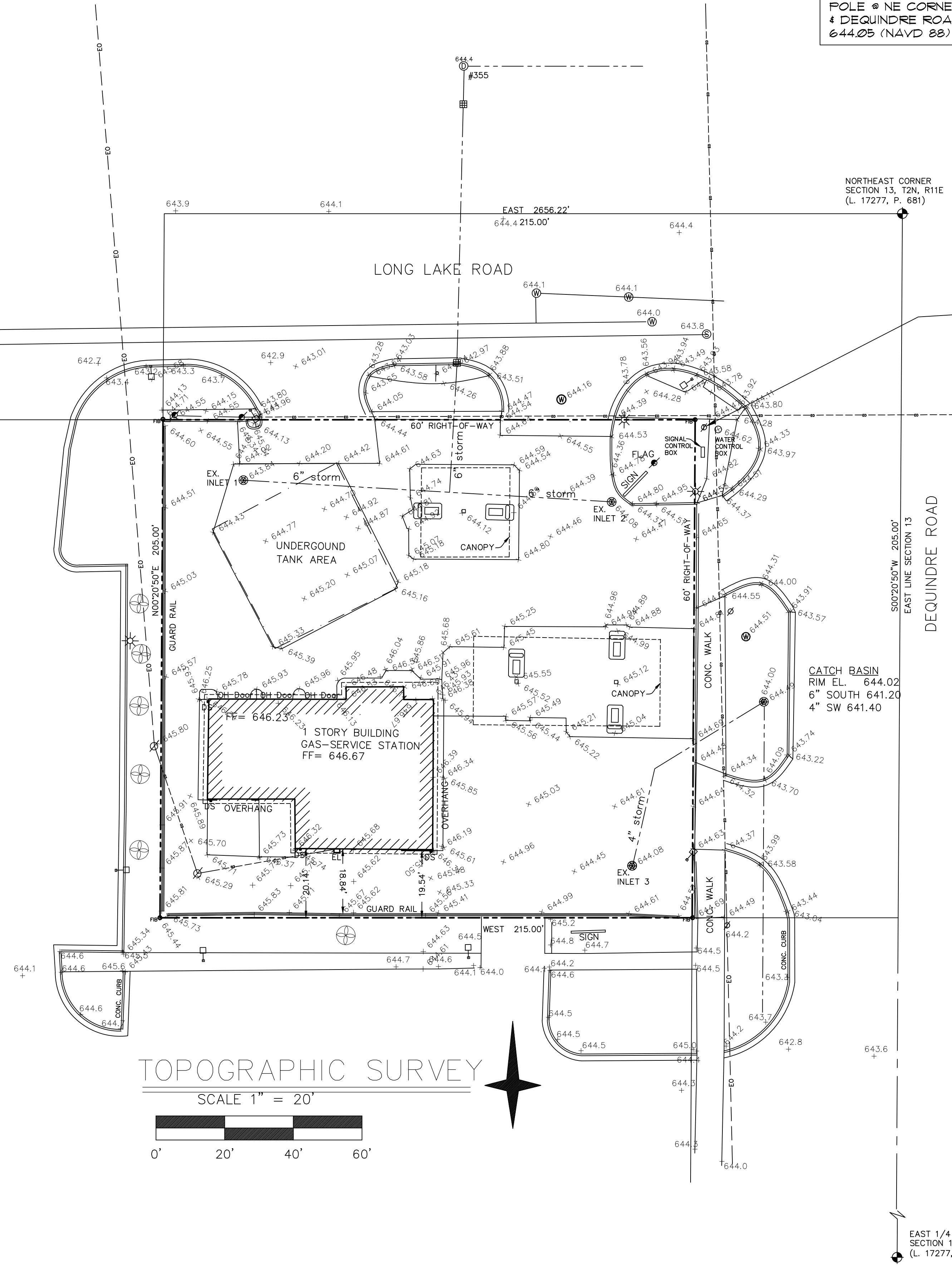
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BENCHMARK  
SE BOLT AT BASE OF TRAFFIC  
SIGNAL POLE ELEV.= 645.76  
(NAVD 88)

**LEGEND:**

	PROPERTY LINE
	EXISTING ELEVATION
	UTILITY POLE
	LIGHT POLE
	TRAFFIC SIGNAL POLE
	SIGN
	MONITORING WELL
	EX. CATCH BASIN
	TRAFFIC SIGNAL MH
	STORM SEWER MH
	MAIN WATER MH
	SANITARY MH
	WATER STOP BOX
	FIRE HYDRANT
	EX. TREE

- THE UNDERGROUND DRAINAGE AS HEREON SHOWN ARE BASED ON FIELD OBSERVATIONS AND A CAREFUL REVIEW OF MUNICIPAL AND UTILITY RECORDS, AND THE VIDEO CAMERA BY PLUMBING COMPANY HIRED BY THE OWNER HOWEVER IT IS NOT POSSIBLE TO DETERMINE THE PRECISE SIZE, LOCATION, DEPTH, OR ANY OTHER CHARACTERISTICS OF UNDERGROUND UTILITIES WITHOUT EXCAVATION. THEREFORE WE CAN NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE BURIED UTILITY INFORMATION HEREON SHOWN.



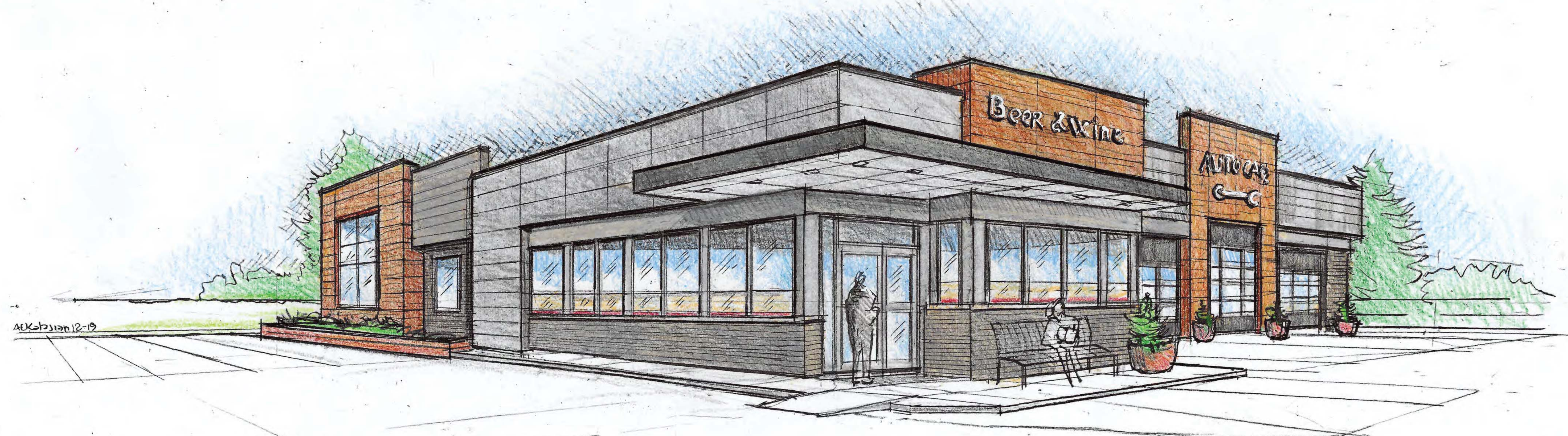
**TOPOGRAPHIC SURVEY**

SCALE 1" = 20'



EAST 1/4 CORNER  
SECTION 13, T2N, R11E  
(L. 17277, P. 706)

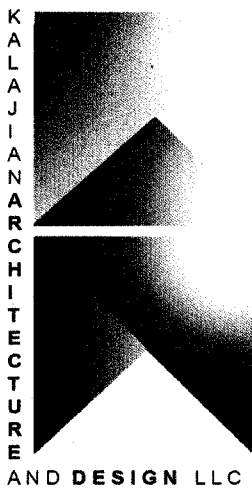




**NW STREET VIEW**

<p>KALAJIAN ARCHITECTURE &amp; DESIGN LLC 1871 AUSTIN DRIVE TROY MICHIGAN 48063 OFFICE: 248-524-3616 FAX: 248-524-0217 aekalajian@sbcglobal.net</p>	<p>PROPOSED BUILDING RENOVATION &amp; ADDITION</p>	<p><b>SHELL GAS STATION</b> 2970 EAST LONG LAKE TROY, MI. 48385</p>	<p>DESCRIPTION: EXTERIOR ELEVATIONS &amp; EXTERIOR PERSPECTIVE</p>	<p>SEAL:</p>	<p>DATE: 3-30-2019</p>	<p>BY: AEC</p>	<p>SHT. NO.</p>
					<p>OWNER &amp; CONTACT PERSON SAM ASKAR</p>	<p>PH: 248-961-3010 E-MAIL: bdaskar@gmail.com</p>	<p><b>A-20</b></p>





1871 AUSTIN DR., TROY, MI. 48083  
o : 248-524-3616 f: 248-524-0217  
e : aekalajian@sbcglobal.net

## **Long Lake /Dequindre Shell Station**

**Re: Project at 2970 E. Long Lake Rd. Troy, Mi.48385**

January 03, 2020

### **Architectural Design Concept**

Attn: Brent Savident  
Planning Director

The Owner to this facility, Sam Askar of Elbassim LLC., is desirous to give a new look to the existing gas station/retail/repair facility of 2,528 sf. as well as adding to the side/rear of existing facility with a ground floor addition of approximately 1,618 gsf. and a second floor 760 gsf.

**Project Scope:** this project is further addressed below as outlined in part 6 sections A-F within the site Plan Application Form :

**6.A. Character of the Ares :** The Site is currently a fully developed hard surface area with some frontage landscaping as shown within the site plan. A additional catch basin is proposed in order improve the storm detention system to current standards.

The (4) existing entrance/egress into the site are to remain as is which was reviewed by the City Traffic Engineer. The primary change that is being proposed will occur to the existing building which occurs within the SW portion of the site.

**B. Design Concept:** The primary design goals are to enhance the look of the existing building into a more contemporary looking structure and expand the building within the current outdoor storage area along the southwest portion of the site which fronts the parking spaces of the adjacent drug store.

**C. Achieving the Design Concept:** This proposed addition not only provides additional retail to a small and tight retail area but provides a waiting area for the patrons that may wait as their car is being serviced and provides an enclosed area for the current outdoor storage of tires and some of the vehicles undergoing repair.

The proposed building face lift as well as the proposed addition will enhance the visual impact of the building and cleanup the overall site. The middle service bay overhead door is also being proposed with an increased in height to facilitate taller vehicles.

**D. Description of the intended uses:** The addition moves the present Owners private office onto a larger second floor area within the proposed addition. The proposed ground floor addition of 1,618 gsf. will expand the present retail area , provide a waiting area for customers and add storage to the rear to 2 of the 3 repair auto bays which can store equipment, tires and vehicles being repaired.

**E. Description of the building materials:** The proposed addition along the street frontage will have cement fiber board wall panels with glazing. The rear and sides of the proposed addition will be decorative cmu blocks.

The exterior sides of the existing building will have a new façade fiber cement wall panels above the existing glazing and entrance . A larger projected entrance canopy of cement fiber panel is proposed over the existing entrance and the existing brick and overhead doors are to be repainted.

The primary change is to the façade material is the replacement of the sloped current EIFS. mansard with a vertical fiber cement wall system with various textures and coloration as shown within the proposed perspective and elevations..

**F. Form base district transparency requirements:** This project has been primarily developed prior to the current form base zoning guidelines. This proposed project fits the designation of Building Form A where the ROW building elevation frontage require a 50% transparency and the sides a 30% transparency as measured from 2'-8' above finish floor.

The frontage facing Long Lake(North Elevation) has a transparency of 53% of the total exterior elevation wall area and is comprised of all the existing window glazing and glass doors.

The frontage facing Dequindre Rd.(East Elevation) has a glazing transparency of approximately 70% of the total proposed and existing exterior elevation where 70% of this exterior is existing.

The side elevation (West Elevation) has a transparency of 56%.

Sincerely,



Arthur E. Kalajian R.A



2970

Beer & Wine

AUTO CARE

ATM

OPEN

