

OWOSSO

Brownfield Redevelopment Authority



Regular Meeting
8:30 a.m., August 25, 2015
Owosso City Council Chambers
Owosso City Hall



MEMORANDUM

301 W. MAIN ▪ OWOSSO, MICHIGAN 48867-2958 ▪ WWW.CI.OWOSSO.MI.US

DATE: August 21, 2015

TO: Owosso Brownfield Redevelopment Authority Board

FROM: Susan Montenegro

RE: BRA Meeting of August 25, 2015

Please see the enclosed packet for the Owosso Brownfield Redevelopment Authority (BRA) meeting of Tuesday, August 25, 2015. This meeting will be at **8:30am** in the city council chambers of city hall, 301 W. Main St., Owosso, MI.

The authority is meeting to hold a public hearing and deliberate on Qdoba/Owosso Cleaners Brownfield plan, #16. The applicant is seeking to capture local and state school taxes (MEGA). Notice has been distributed to all local taxing jurisdictions.

The BRA is also to hold its annual meeting which includes the selection of officers. Currently, David Vaughn sits as the Chairperson, John Horvath as Vice-Chairperson and General Grant as the Secretary/Treasurer. Normally, the bylaws call for the establishment of a nomination committee, but I expect we can move forward with nomination as taken on the floor. Even though we haven't met since November of last year we still need to have the formal process of officer selection completed.

The site developer and/or his representative will be available to further explain the project. That is all for now. **Contact me if you have any questions, comments, or other information for the BRA.**

Meeting Agenda
Brownfield Redevelopment Authority
Tuesday, August 25, 2015, 8:30 a.m.
Owosso City Council Chambers, 301 W Main Street
Owosso, MI

Call to order and roll call:

Review and approval of agenda: August 25, 2015

Review and approval of minutes: November 19, 2014

Communications:

- 1) Resolutions (Reference)
- 2) Staff memorandum (Reference)
- 3) Regular meeting minutes of November 19, 2014 (Resolution)
- 4) Brownfield notices
- 5) Brownfield Plan #16
- 6) Reimbursement agreement for plan #16
- 7) MDEQ Grant and Loan Application

Public Comments:

Public Hearings: 910 E. Main Street

Items of Business:

- 1) 910 E. Main Street – Brownfield Plan Approval
- 2) Election of Officers

Public Comments:

Board Comments:

Adjournment:

[The City of Owosso will provide necessary reasonable auxiliary aids and services, such as signers for the hearing impaired and audio tapes of printed materials being considered at the meeting, to individuals with disabilities at the meeting/hearing upon 72 hours notice to the City of Owosso. Individuals with disabilities requiring auxiliary aids on services should contact the City of Owosso by writing or calling Amy Kirkland, City Clerk, 301 W. Main St, Owosso, MI 48867 (989) 725-0500 or on the Internet. The City of Owosso Website address is www.ci.owosso.mi.us.]

Affirmative Resolutions
Brownfield Redevelopment Authority
Tuesday, August 25, 2015, 8:30 a.m.
Owosso City Council Chambers, 301 W Main Street
Owosso, MI

Resolution 150825-01

Motion: _____
Support: _____

The Owosso Brownfield Redevelopment Authority hereby approves the agenda of August 25, 2015 as presented.

Ayes: _____
Nays: _____

Approved: _____ Denied: _____

Resolution 150825-02

Motion: _____
Support: _____

The Owosso Brownfield Redevelopment Authority hereby approves the minutes of November 19, 2014 as presented.

Ayes: _____
Nays: _____

Approved: _____ Denied: _____

Resolution 150825-03

Motion: _____
Support: _____

WHEREAS, the Brownfield Redevelopment Authority (the "Authority") of the City of Owosso, pursuant to and in accordance with the provisions of the Brownfield Redevelopment Financing Act, being Act 381 of the Public Acts of the State of Michigan of 1996, as amended (the "Act"), has prepared and recommended for approval by the Authority a Brownfield Plan entitled District #16, "910 E. Main Street" (the "Plan"), pursuant to and in accordance with Section 13 of the Act; and

WHEREAS, the Authority has, at least ten (10) days but not more than forty (40) days before the meeting of the Authority at which this resolution has been considered, provided notice to and fully informed all taxing jurisdictions which are affected by the Financing Plan (the "Taxing Jurisdictions") about the fiscal and economic implications of the proposed Financing Plan, and the Authority has previously provided to the Taxing Jurisdictions a reasonable opportunity to express their views and recommendations regarding the Financing Plan and in accordance with Sections 13 (10) and 14 (1) of the Act; and

WHEREAS, the Authority has made the following determinations and findings:

- A. The Plan constitutes a public purpose under the Act;
- B. The Plan meets all of the requirements for a Brownfield Plan set forth in Section 13 of the Act;
- C. The proposed method of financing the costs of the eligible activities, as described in the Plan is feasible and the Authority has the ability to arrange the financing;
- D. The costs of the eligible activities proposed in the Plan are reasonable and necessary to carry out the purposes of the Act;
- E. The amount of captured taxable value estimated to result from the adoption of the Plan is reasonable; and
- F. The square footage of the proposed building is 6,291 square feet.
- G. Line item cost details are eligible expenses that serve a public good.
- H. Local redevelopment area details are accurate.

WHEREAS, as a result of its review of the Plan and upon consideration of their views and recommendations of the Taxing Jurisdictions, the Authority desires to proceed with approval of the Plan and to forward the Plan to the City Council of the City of Owosso for adoption.

NOW THEREFORE, BE IT RESOLVED THAT:

1. **Plan Approved.** Pursuant to the authority vested in the Authority by the Act, and pursuant to and in accordance with the provisions of Section 14 of the Act, the Plan is hereby approved in the form considered by the Authority on August 25, 2015, and maintained on file in the office of the City Clerk.
2. **Severability.** Should any section, clause or phrase of this Resolution be declared by the Courts to be invalid, the same shall not affect the validity of this Resolution as a whole nor any part thereof other than the part so declared to be invalid.
3. **Repeals.** All resolutions or parts of resolutions in conflict with any of the provisions of this Resolution are hereby repealed.

Resolution 150825-04

Motion: _____

Support: _____

The Owosso Brownfield Redevelopment Authority hereby elects its new slate of officers for the 2015/2016 Fiscal Year.

Chairperson _____

Vice-Chairperson _____

Secretary/Treasurer _____

Ayes: _____

Nays: _____

Approved:____

Denied:____

Resolution 150825-05

Motion:_____

Support:_____

The Owosso Brownfield Redevelopment Authority hereby adjourns the August 25, 2015 meeting, effective at _____am.

Ayes:_____

Nays:_____

Approved:____

Denied:____

MINUTES
OWOSSO BROWNFIELD REDEVELOPMENT AUTHORITY
MEETING OF NOVEMBER 19, 2014

Meeting was called to order at 8:33 a.m. by Chairman Vaughn.

Roll Call was taken by recording secretary Marty Stinson.

Members Present: Larry Cook, Mark Erickson, Secretary/Treasurer General Grant, Vice-Chairman, John Horvath, Chairman David Vaughn, Richard Williams.

Members Absent: Mike Bazelides, Loreen Bailey, Vacancy.

Others Present: Susan Montenegro, Assistant City Manager and Director of Community Development; JP Buckingham, Tri Terra; Ryan J. Kincaid, Kincaid Henry Building Group, Inc.; Jeff Deason, Shiawassee Regional Chamber of Commerce President and CEO; Justin Horvath, Shiawassee Economic Development Partnership; Bill Brown, City Attorney; Don Crawford, City Manager; Burton Fox, Councilmember.

AGENDA:

It was moved by Authority Member Horvath and supported by Authority Member Williams to approve the agenda for November 19, 2014 as presented.

Yeas all. Motion passed.

MINUTES:

It was moved by Authority Member Cook and supported by Authority Member Horvath to approve the minutes of the meeting from November 7, 2013 with the correction that Richard Williams was present.

Yeas all. Motion passed.

COMMUNICATIONS:

1. Resolutions (Reference)
2. Staff memorandum (Reference)
3. Regular meeting minutes of November 7, 2013 (Resolution)
4. Revised Armory brownfield plan # 1
5. Plan change summary and notices

PUBLIC COMMENTS: None

ITEMS OF BUSINESS:

1. Selection of Officers

It was moved by Authority Member Erickson to keep the previous slate of officers of Chairman Vaughn, Vice-Chairman Horvath, and Secretary/Treasurer Grant for 2014/15.

Yeas all. Motion carried.

PUBLIC HEARING:

1. Owosso Brownfield Redevelopment District #15 / Amendment #1
Armory Building, 201 & 215 N. Water Street

TJ Buckingham from Tri Terra is working the Kincaid Henry Building Group, Inc. He described the difference between this and the meeting of a year ago. The previous number was \$495,000 and has changed this year to \$497,255 with the addition of a school tax. 21 mills was added which reduces the impact to the \$497,255. Today's plan is an amendment with the main difference of the added school tax of 21 mills. The additional \$2,255 is the work plan. The local

schools are held harmless – this comes from the state. The anticipated SEV taxable is around \$1,000,000.

MEDC needs to approve it. Authority Member Cook, City Assessor said the recapture will not start until 2016.

Ryan Kincaid said the goal is to have it completed before the end of 2015 so it will be done to celebrate the 100th anniversary of the building.

Authority Member Williams said that page 5 of the exhibit is currently blank for the board members. It will tie to the table. The city is going to come in last. The table will adjust after 2016 for eligible expenses with soft costs – engineering and out of pocket expenses.

Ms Montenegro noted that the captured taxes date will be changed to 2046.

Motion by Authority Member Horvath, supported by Authority Member Grant to approve the amended redevelopment plan and the exhibits:

WHEREAS, the Brownfield Redevelopment Authority (the Authority”) of the City of Owosso, pursuant to and in accordance with the provisions of the Brownfield Redevelopment Financing Act, being Act 381 of the Public Acts of the State of Michigan of 1996, as amended (the “Act”), has prepared and recommended for approval by the Authority a Brownfield Plan Amendment entitled “District #15, Armory Project” (the “Plan”), pursuant to and in accordance with Section 13 of the Act; and

WHEREAS, the Authority has, at least ten (10) days but not more than forty (40) days before the meeting of the Authority at which this resolution has been considered, provided notice to and fully informed all taxing jurisdictions which are affected by the Financing Plan (the “Taxing Jurisdictions”) about the fiscal and economic implications of the proposed Financing Plan, and the Authority has previously provided to the Taxing Jurisdictions a reasonable opportunity to express their views and recommendations regarding the Financing Plan and in accordance with Sections 13 (10) and 14 (1) of the Act; and

WHEREAS, the Authority has made the following determinations and findings:

- A. The Plan constitutes a public purpose under the Act;**
- B. The Plan meets all of the requirements for a Brownfield Plan set forth in Section 13 of the Act;**
- C. The proposed method of financing the costs of the eligible activities, as described in the Plan is feasible and the Authority has the ability to arrange the financing;**
- D. The costs of the eligible activities proposed in the Plan are reasonable and necessary to carry out the purposes of the Act;**
- E. The amount of captured taxable value estimated to result from the adoption of the Plan is reasonable; and**
- F. The square footage of the building is 30,000 square feet**

G. Line item cost details are eligible expenses that serve a public good.

H. Local redevelopment area details are accurate.

WHEREAS, as a result of its review of the Plan, and upon consideration of their views and recommendations of the Taxing Jurisdictions, the Authority desires to proceed with approval of the Amended Plan #1 and to forward the Plan to the City Council of the City of Owosso for adoption.

NOW THEREFORE, BE IT RESOLVED THAT:

- 1. Plan Approved. Pursuant to the authority vested in the Authority by the Act, and pursuant to and in accordance with the provisions of Section 14 of the Act, the Amended Plan is hereby approved in the form considered by the Authority on November 19, 2014, and maintained on file in the office of the City Clerk.**
- 2. Severability. Should any section, clause or phrase of this Resolution be declared by the Courts to be invalid, the same shall not affect the validity of this Resolution as a whole nor any part thereof other than the part so declared to be invalid.**
- 3. Repeals. All resolutions or parts of resolutions in conflict with any of the provisions of this Resolution are hereby repealed.**

CAPTURED TAXES TRANSFER AGREEMENT – DDA AND OBRA

The Agreement is made this _____ day of _____, 2014 by the Owosso Downtown Development Authority, A Michigan municipal Corporation, with business offices at 301 West Main Street, Owosso, Michigan 48867 (“DDA”) and the City of Owosso Brownfield Redevelopment Authority, a Michigan municipal corporation, of 301 West Main Street, Owosso, Michigan 48867 (“Authority”).

WHEREAS Authority has completed a City Council adopted Brownfield Redevelopment Plan (“OBRA Plan”), as amended, in compliance with PA 381 of 1996 as amended, for the parcels at 201 and 215 North Water Street, (“Site”) in downtown Owosso, with said parcel lying within the boundary of the DDA; and

WHEREAS said Brownfield Redevelopment Plan details eligible project costs for the City and the Chamber Support Corporation, of 215 North Water Street, Owosso, Michigan 48867 (“Developer”), with said costs eligible for reimbursement from tax increment financing; and

WHEREAS the DDA has an existing tax increment financing plan on the site through the year 2046 that captures local taxes, except for the Regional Education Service District tax revenues, and desires to transfer captured tax revenues from the captured assessed valuation on the Site to the Authority for the purpose of reimbursement to the City and Developer.

NOW THEREFORE, IT IS HEREBY AGREED AS FOLLOWS:

1. The DDA hereby agrees that captured tax revenues from the captured assessed valuation on the Site may be transferred to the Authority.
2. In each year of the OBRA Plan, Authority shall submit to the DDA its annual report on the site showing the amount of tax increments owing to the City or Authority and Developer. DDA shall authorize the City Treasurer to transfer DDA's tax increments on the site to the Authority.
3. This Agreement shall terminate in 2046 at the end of the DDA's Development and Financing Plan. It is understood between the parties that if the DDA plan is amended to extend for any number of years up to and including 2046, DDA shall transfer its tax increments on the site to the Authority. If the Developer's reimbursements are completed before 2046 or any DDA tax increment plan extension thereafter prior to 2046, the DDA is no longer obligated to transfer tax increments to the Authority and the Agreement shall be declared null and void.
4. The parties designate the Authority as the agent to receive and disburse all tax increment revenues generated by the eligible properties until such time as all obligations of the approved Plan have been satisfied.
5. The Agreement shall commence upon its approval by the legislative bodies of the DDA and Authority and duly executed by their authorized representatives and filed with the Shiawassee County Clerk and Secretary of State of the State of Michigan.
6. To the extent that any provisions contained in this Agreement is deemed unenforceable, to the extent possible, the remaining terms shall remain in effect.
7. The parties agree that the transfer of tax increment revenue from the eligible property to reimburse eligible activities and Authority administration fees shall begin once tax increment revenues are collected from the eligible property, which will occur after the official approval of the Plan by the Shiawassee County Board of Commissions. This contract extends until all obligations under this contract are met.

IN WITNESS WHEREOF the parties have executed this Agreement as of the date set forth above.

WITNESSES:

**OWOSSO BROWNFIELD REDEVELOPMENT
AUTHORITY**

BY: _____

ITS: _____

**OWOSSO DOWNTOWN DEVELOPMENT
AUTHORITY**

BY: _____

ITS: _____

REIMBURSEMENT AGREEMENT

THIS Brownfield Reimbursement Agreement is made as of November 19, 2014, among the Owosso Brownfield Redevelopment Authority (the "Authority"), a public body corporate with offices at 301 West Main Street, Owosso, Michigan 48867; and Chamber Support Corporation, the principal address of which is 215 North Water Street, Owosso, Michigan 48867 (the "Developer").

RECITALS

A. The Authority was created by the City pursuant to the Brownfield Redevelopment financing Act 1996 P.A. 381, as amended (the "Act"), and, pursuant to the Act, the Authority has prepared a Brownfield Plan to include the Property (as defined below) which was duly approved by the Owosso Brownfield Redevelopment Authority on November 7, 2013 following a public hearing on November 7, 2013, a copy of which is attached as Exhibit A (the "Brownfield Plan").

B. The Developer plans to acquire the former Armory (201 North Water Street) and the Chamber building (215 North Water Street) in the City of Owosso which is described on the attached Exhibit B (the Property") and which, due to the presence of the Property of certain hazardous substances as described in the Brownfield Plan is a "facility" and "eligible property" and is therefore commonly referred to as a "brownfield".

C. Provided it obtains any needed zoning and building approvals from the City and others, the Developer plans to develop the property (the "Improvements") into office space. This will increase the tax base for taxing jurisdictions, create new office space, recreational activities, uplift property values and enhance nearby neighborhoods.

D. In order to make the Improvements on the Property, the Developer will incur costs to complete the Eligible Activities as more fully described in the Brownfield Plan ("Eligible Costs").

E. In accordance with Act 381 and the Brownfield Plan, the parties desire to use the property tax revenues that are generated from an increase in the tax value of the Property resulting from its development ("Tax Increment Revenues") to reimburse the parties for Eligible Costs and administrative costs they incur in redeveloping the Property.

F. The Brownfield Plan for the Property describes the activities and their attendant costs in summary form based upon the information provided by the Developer; sets out an estimate of the captured taxable value, an estimate of the tax increment revenues, an estimate of the reimbursement payment schedule and an estimate of the impact of tax increment financing on the revenues of the taxing jurisdictions. The eligible activities

costs in the Brownfield Plan are estimated budgeted amounts. Prior to initiation of eligible activities, the Developer shall submit an Implementation Plan to the Authority; and

G. Accordingly, the purpose of this Agreement is to set out the obligations of the parties to this Agreement for reimbursement of the eligible costs as approved by the Authority and the city.

TERMS AND CONDITIONS

In exchange for the consideration in and referred to by this Agreement, the parties agree as follows:

1. **Brownfield Plan.** To the extent provisions of the Brownfield Plan conflict with this Agreement, the terms and conditions of the Brownfield Plan control. To the extent provisions of the Brownfield Plan or this Agreement conflict with Act 381, Act 381 controls. Changes or additions to the Brownfield Plan may be submitted in writing to the Authority and to the City for approval. If such changes or additions increase the total cost of the eligible activities to an amount greater than in the approved Brownfield Plan, an amended Brownfield Plan incorporating the cost of said changes or additions may be approved at the sole discretion of the Authority and the City.

2. **Construction of Development.** If it elects to, the Developer may proceed with due care obligations to complete the Improvements and undertake and complete the eligible activities resulting in the Eligible Costs, all in accordance with this Agreement, the Brownfield Plan and all applicable laws, rules regulations, permits, orders and directives of any official or agency of competent jurisdiction. The Developer shall undertake and achieve substantial completion of the Development as described above within a reasonable time after the Brownfield Plan is approved by the Authority and the City.

- a. The parties agree that this Agreement and the Tax Increments Revenues collected and distributed pursuant to the Brownfield Plan are intended to fund only the Eligible Costs that have been approved by the Authority.
- b. Prior to the initiation of eligible activities, the Developer shall submit a detailed Implementation Plan that includes, at a minimum, applicable estimates of the following items related solely to eligible activities;
 - (I) Cost estimates for project costs related to eligible activities; and
 - (II) The Implementation Plan costs shall be provided in the same format as Exhibit A to the Brownfield Plan for the Brownfield Plan costs approved by the Authority.
- c. The Developer shall comply fully with all local ordinances, state and federal laws, and all applicable local, state and federal rules and regulations. Nothing in this Agreement shall abrogate the effect of any local ordinance.
- d. This Agreement does not obligate the City to issue any permit required by law to implement the Development.

- e. **Noncompliance with this Agreement or discovery of material irregularities at any time are regarded as material breaches of this Agreement. The Authority, in addition to any other remedy provided by law, may do one or more of the following:**
 - (I) **withhold future payments to the extent such reimbursed payments relate directly to the noncompliance with the Agreement;**
 - (II) **recover reimbursement payments already disbursed to the extent such reimbursed payments relate directly to the noncompliance with the Agreement; or****terminate this Agreement.**

3. **Capture of Taxes. The City shall, during the term of this Agreement, collect all Tax Increment Revenues from the Property and transmit 100% of the eligible incremental local tax revenues generated from real and personal property to reimburse the Developer for the costs of eligible activities based upon the following priority:**

First, State of Michigan Brownfield Redevelopment Fund:

Second, planned administrative costs of \$1,500.00 per year;

Third, Developer's Eligible Expenses; and

Fourth, eligible architectural and engineering costs of public infrastructure improvements.

Such reimbursements shall not be more than the tax increment revenues captured during the duration of the Brownfield Plan from the taxable improvements located on the Property, including both real property and personal property. Nor shall the total amount of reimbursement be for more than the reasonable and necessary cost of the eligible activities approved by the Authority or otherwise permitted by the Act.

4. **Submission of Costs. Before requesting any reimbursement, the Developer shall pay and submit an affidavit of payment for the reasonable and necessary costs of the eligible activities that have been approved by the Authority. For those Eligible Costs for which the Developer seeks reimbursement from the Authority, the Developer shall submit to the Authority such of the following as may be required by Authority representatives;**

- a. **a written statement detailing the costs;**
- b. **a written explanation as to why reimbursement is appropriate under the Plan and this Agreement;**
- c. **copies of invoices from consultants, contractors, engineers, attorneys or others who provided such services;**
- d. **copies of Full Unconditional Waiver(s) from the vendor(s) documenting that the invoice was actually paid;**

- e. if, not already submitted, copies of the contract with the contractor or supplier providing the services or supplies for which reimbursement is sought;
- f. a statement from the engineer and project manager overseeing the work recommending payment; and
- g. any other documentation requested by the Authority, in a format and on such forms approved by the Authority, with the Developer's request for reimbursement to assist the Authority in determining whether the work was performed as approved.

All documentation related to the request for reimbursement shall be submitted within ninety (90) days after the completion of each approved eligible activity. No later than receipt of a Certificate of Occupancy and prior to reimbursement payments being initiated, the Developer shall submit to the Authority a report of the results of the eligible activities performed. Such results shall include, without limitation, any abatement reports, demolition and disposal documentation, supplemental environmental investigation reports and response activity reports. In addition, the Developer shall submit construction lien waivers from the contractors and subcontractors for the approved eligible activities prior to any payments being initiated. The Developer may submit a reimbursement request including such information whenever it is available for many years thereafter. The Developer and Authority agree that no reimbursement requests will be accepted by the Authority after December 31, 2017.

In no event shall Eligible Costs exceed the estimates developed pursuant to paragraphs 2.b(i) and (ii) unless the Brownfield Plan is amended pursuant to paragraph 1.

If all real and personal property taxes relating to the site are not paid before interest and penalties attach, the duty to pay reimbursements to the Developer or it assigns shall cease.

5. **Payments.** Payments to the Developer shall be made as follows:

- a. Within 60 days of its receipt of the materials identified in paragraph 4 above, the Authority shall decide whether the payment request is for Eligible Costs and whether such costs are accurate. The Authority will determinate the amount to be reimbursed, based upon the reasonable and necessary costs of the eligible activities approved by the Authority and the State or otherwise permitted by the Act in light of the actual costs presented in the Developer's submitted documentation. Such amount shall not exceed the amounts set forth in Section 5(d), subject to such amendments as may have been approved by the Authority, nor shall such costs be reduced by the Authority without good cause shown, such approvals not to be withheld unreasonably. If the Authority determines all or a portion of the requested payment is for the Eligible Costs and is accurate, it shall see that the portion of the payment request

that is for Eligible Cost and is accurate is processed as provided in subparagraph (b) below. If the Authority disputes the accuracy of any portion of any payment request or that any portion of any payment is for the Eligible Costs, it shall notify the Developer in writing of its determination and reasons for its determination. The Developer shall have 28 days to address the reasons given by the Authority and shall have an opportunity to meet with the Authority's representatives or, if the Authority Board consents, to meet with the Authority's Board to discuss and resolve any remaining dispute. In doing so, the Developer shall provide the Authority a written response to the Authority's decision and the reasons given by the Authority. If the parties do not resolve the dispute in such a manner, it shall be resolved as provided I paragraph 6 below.

- b. Once it approves any request for payment as Eligible Costs and approves the accuracy of such costs, the Authority shall pay to the Developer the amounts for which submissions have been made pursuant to paragraph 4 of the Agreement by June 30th of the following year, as directed by the Brownfield Plan, until all of the amounts for which submissions have been made have been fully paid to the Parties, or the repayment obligation expires, whichever occurs first.
- c. The repayment obligation under this Agreement shall expire upon the payment by the Authority to the Parties of all amounts due to the Parties under this Agreement or on December 31, 2046, whichever occurs first.
- d. The amount to be reimbursed under this Agreement shall:
 1. The OBRA will use captured taxes as referred to in (3) to reimburse the Developer for Eligible Costs total amount not to exceed \$497,255.
 2. The amount of Eligible Costs to be reimbursed with the capture of taxes levied for school operating purposes ("School Taxes") is estimated to be \$225,654.
 3. The amount of Eligible Costs to be reimbursed with the capture of taxes not levied for school operating purposes ("Local Taxes") is estimated to be \$271,601.
 4. Upon payment to Developer of total reimbursement as outlined above being met, or expiration of the Plan, reimbursements to Developer shall cease.
- e. The sole source for any reimbursement shall be Tax Increment Revenues. To the extent permitted by law, such reimbursements, once approved by the Authority under subparagraph b. above shall be and remain valid and binding obligations of the Authority until paid or until expiration of the time for payment as provided in subparagraphs c. and d. above. However, the Developer shall bear any risk of a chance in law

prohibiting reimbursement at the time Tax Increment revenues are available for reimbursement to the Developer for costs that were Eligible Costs at the time the Authority approved them. In no event shall the Developer be reimbursed for any approved eligible costs that have been or will be reimbursed or credited against other obligations by any other governmental entity.

- f. If any of the Property is substantially destroyed by fire or natural events or causes as determined by the Building and Engineering Department Director of the City, this Agreement shall terminate unless reconstruction occurs at any equal or greater taxable value within twelve (12) months of the date of the loss. No payments shall be made during the period of reconstruction. Payments shall resume when the reconstruction is substantially complete as determined by the Building Official.
- g. In addition to any other remedies provided in this Agreement, if any payment made by the Authority is determined to be improper or outside of the scope of its obligations under this Agreement, or in the event of the Developer's breach or default of this Agreement, the Developer shall, at the request of the Authority, repay or return any monies paid by the Authority that are directly related to said breach, default or improper payment.

6. **Dispute as to Eligible Costs.** If there is a dispute over whether a cost submitted by the Developer is an "Eligible Cost", the dispute shall be resolved by an independent qualified professional chosen by mutual agreement of the parties. If the parties are unable to agree upon a professional, then each party (the City, the Authority and the Developer) shall appoint an independent qualified professional to review the Authority's decision, provided that each party chooses a professional that has not been directly employed by or provided services to that party for a period of two (2) years before the date of proposed appointment. If and to the extent that two of the three qualified professionals so selected agree that costs submitted are eligible pursuant to Brownfield Plan and was previously approved by the Authority, this shall constitute an award and the Developer shall be reimbursed those costs in accordance with this Agreement. In addition, any such award may be used as the basis for the Shiawassee County Circuit Court rendering judgment that such award constitutes a final decision under statutory arbitration.

7. **Assignment of Future Reimbursement Revenue.** The Developer may assign its reimbursement rights under this Agreement via a written instrument, a copy of which must be provided to the Authority no later than thirty (30) days prior to such assignment. However, any such right to reimbursement shall always remain contingent upon material compliance with all aspects of this Agreement on the part of the Developer and any of its assigns, successors, transferees and heirs.

8. **Adjustments.** If, due to an appeal of any tax assessment or reassessment or any other reason, the Authority is required to reimburse any Tax Increment Revenues, the Authority may deduct the amount of any such reimbursement from any amounts due and owing the Developer, or, if all amounts due the Developer under this Agreement have been fully paid, the Authority may invoice the Developer for the amount of such

reimbursement and the Developer shall pay the Authority such invoiced amount within 30 days of the Developer's receipt of the invoice from the Authority. Nothing in this Agreement shall limit the right of the Developer to appeal any tax assessment.

9. **Obligation to Fund Eligible Activities.** The Developer shall pay for the Eligible Costs with its own funds and receive reimbursement from the Authority by available Tax Increment Revenues. It is anticipated that there will be sufficient available Tax Increment revenues to pay for all Eligible Costs under this Agreement. However, if for any reason increased Tax Increment Revenues from the Development do not result in sufficient revenues to satisfy such obligations, the Developer agrees and understands that it will have no claim or further recourse of any kind or nature against the City or the Authority and the Developer shall assume full responsibility for any such loss or costs.

10. **Access for Inspection.** Employees and agents of the Authority and the City are authorized to enter upon the Property following a minimum of one (1) business day notice to the Developer for the purpose of inspecting the work related to the authorized eligible activities and making determinations that such work is being performed in accordance with the Brownfield Plan in a workmanlike manner.

11. **Indemnification.** The Developer shall defend, indemnify and hold the City and Authority, and their agents, representatives and employees (hereinafter "Indemnified Persons") harmless from any loss, expense (including reasonable legal counsel fees) or liability of any nature due to any and all suits, actions, legal or administrative proceedings or claims arising from or on account of the acts or omissions of the Developer, its officers, employees, agent or any persons acting on its behalf or under its control, in implementing the eligible activities described in the approved work plans or arising in any way from this Agreement, including but not limited to, claims for damages, reimbursement or set-off arising from, or on account of, any contract, agreement or arrangement between the Developer and any person for the performance of eligible activities or the terms of this Agreement, including claims on account of construction delays.

12. **Insurance.** During construction, the Developer and any contractor or subcontractor shall provide and maintain comprehensive general liability insurance with the limits of One Million and No/100 (\$1,000,000.00) Dollars combined single limit, for claims which may arise from the Developer's operations under this Agreement, naming the Authority and the City as additionally names insureds. Proof of such insurance shall be provided to the Authority in care of the Authority's Administrator prior to initiating any redevelopment activities.

13. **Termination.** This Agreement shall terminate on the earlier to occur of:
- a. The date on which the Authority is no longer authorized to capture tax increment revenues;
 - b. on the date the Brownfield Plan expires;
 - c. the date when the amount due under this Agreement has been paid;

- d. upon default of this Agreement by Developer, including, without limitation, if the Development is not completed within sixty (60) months from the effective date of this Agreement; or
- e. upon such other conditions as set forth in this Agreement.

14. **Payment of Taxes.** Developer or any of its successor or assignees of the Development shall pay all real and personal property taxes levied on any portion of the Development on or before the date the same are payable, before any additional interest penalty for late payment is applied.

15. **Miscellaneous.**

- a. This is the entire agreement between the parties as to its subject. All previous negotiation, statements and preliminary instruments of the parties or their representative are merged in this Agreement. It shall not be amended or modified except in writing signed by all the parties. It shall not be affected by any course of dealing and the waiver of any breach shall not constitute a waiver of any subsequent breach of the same or any other provision. Any revision of this Agreement shall not be effective until the provision of a thirty (30) day notice by the City and the Authority to the other parties hereto so that this Agreement remains in full compliance with any applicable Federal, State or local law or regulation.
- b. This Agreement and the rights and obligations under this Agreement except as previously noted, are unassignable and non-transferrable without the consent of the parties. It shall however, be binding upon any successors or permitted assigns of the parties.
- c. this Agreement shall become effective when approved by the Michigan Strategic Fund, the Michigan Economic Development Fund and, if necessary, the Michigan Department of Environmental Quality, and executed by the Authority and the Developer.
- d. All parties had input into the drafting of the Agreement and all had the advice of legal counsel before entering into this Agreement. In the event an ambiguity of any language in this Agreement arising, such ambiguity shall not be construed against any party.
- e. Except as otherwise provided in this Agreement, all representatives, warranties, covenants and agreements of the parties contained or made pursuant to this Agreement shall survive the execution of this Agreement.
- f. Notice shall be complete when delivered by personal delivery, by courier or deliver service (such as UPS, FedEx or other service) or by certified mail, return receipt requested to the addresses first above written. If any party refuses to accept delivery when presented, delivery shall be deemed to have occurred at the time of such refusal. Any such notice and communication shall be addressed as follows:

**If to the Authority: Owosso Brownfield Redevelopment Authority
301 West Main Street
Owosso, Michigan 48867
Attention: City Clerk**

**If to the Developer: Chamber Support Corporation
215 North Water Street
Owosso, Michigan 48867
Attention: Jeff Deason, President**

- g. This Agreement shall be governed by the laws of the State of Michigan. To the extent permitted by law, the jurisdiction and venue for any action brought pursuant to, arising from or to enforce any provision of this Agreement shall be solely in the state courts in Shiawassee County, Michigan.**

By signing below all parties represent and warrant their authority to enter into this Agreement on behalf of the respective organizations. The parties have signed this Agreement as of the date first written above.

**OWOSSO BROWNFIELD REDEVELOPMENT
AUTHORITY**

CHAMBER SUPPORT CORPORATION

**BY _____
Susan Montenegro
ITS: Assistant City Manager**

**BY: _____
Jeff Deason
ITS: President**

Yeas all. Motion Carried.

PUBLIC COMMENTS: None

BOARD COMMENTS: None

ADJOURNMENT:

Motion by Board Member Grant, supported by Board Member Cook to adjourn the meeting at 9:03 a.m.

Yeas all. Motion Carried.

mms

General Grant, Secretary/Treasurer

ACT 381 COMBINED BROWNFIELD PLAN

TO CONDUCT ELIGIBLE DEQ RESPONSE AND/OR MSF NON-ENVIRONMENTAL ACTIVITIES

**OWOSSO QDOBA AND RETAIL
830, 832, 834, AND 910 EAST MAIN STREET
OWOSSO, SHIAWASSEE COUNTY, MICHIGAN**

August 13, 2015

Prepared on Behalf of:

Southwind Restaurants, LLC
109 East Broadway
Mount Pleasant, Michigan 48858
Contact Person: Kevin Egnatuk
Telephone: 989-205-1136

Prepared By:

PM Environmental, Inc.
3340 Ranger Road
Lansing, Michigan 48906
Contact Person: Jessica DeBone
Telephone: (517) 325-9875

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Lansing, Michigan 48906
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1.0 INTRODUCTION

1.1 Proposed Redevelopment and Future Use

Southwind Restaurants, LLC (“Southwind”), intends to demolish the vacant 2,236 square foot commercial building and three vacant dwellings (two with outbuildings/garages) totaling 3,692 square feet for the construction of a new retail plaza. The plaza will consist of a single building with a 2,808 square foot restaurant and two tenant spaces of 1,713 and 1,770 square feet, for a total of 6,291 square feet. Additionally, a parking lot will be constructed to the north and east of the new commercial building with surrounding landscaping. The proposed building will be a single-story slab-on-grade structure. The site will require new curbs, gutters, and approaches.

It is anticipated that the new restaurant will create 12 full time jobs and 15 part time jobs and the two retail spaces will create an additional 10 full time jobs and 15 part time jobs.

Anticipated total cost and private investment for this project is estimated to be approximately \$2.5 Million, including acquisition. Of this total investment approximately \$886,000 is contributed towards the hard cost investment of the building.

A rendering of the building is provided as Figure 6 of this Plan.

1.2 Eligible Property Information

1.2.1 Property Eligibility and Location

The eligible property consists of one parcel, which was combined from four legal parcels with street addresses of 830, 832, 834, and 910 East Main Street, Shiawassee County, Michigan. The subject property is listed under the new combined parcel number of 050-580-000-070-00 and totals .68 acres. The subject property is considered “eligible property” as defined by Act 381, Section 2 because (a) the subject property was previously utilized or is currently utilized for a commercial purpose; (b) it is located within the City of Owosso, a qualified local governmental unit under Act 381, as amended; and (c) the subject property is determined to be a “facility.”

Parcel Legal Description: LOT 83, 84, 85, & 87 STAFFORD GARDNER & TRANKLES CENTRAL ADD EXC N 10' OF SD LOTS. ALSO EXC A PART OF LOT 87 BEG AT A PT ON E LN LOT 87 25' SOUTH OF NE COR TH N ON E LN 15' TH W 15' TH SE'LY TO POB

A property location map and eligible property map are included as Figures 1 and 2 of this Plan.

1.2.2 Current Ownership

The subject property is currently owned by Southwind Restaurant, LLC; 109 East Broadway, Mount Pleasant, Michigan 48858. Southwind purchased the subject property in November 16, 2014.

Contact Person: Kevin Egnatuk
Phone: 989-205-1136
Email: kegnatuk@comcast.net

1.2.3 Proposed Future Ownership

The proposed future ownership will remain the same.

1.2.4 Delinquent Taxes, Interest, and Penalties

There are no delinquent taxes for the subject property as of the completion of this report.

1.2.5 Existing and Proposed Future Zoning for Each Eligible Property

The subject property is currently B-4: General Business District. It is proposed that the zoning remain unchanged.

1.3 Historical & Previous Use and Ownership of Each Eligible Property

The residential parcels (moving west to east on the subject property) formerly known as 830, 832, and 834 East Main Street, were developed with several dwellings in the 1930s and have been utilized for residential purposes since that time. Prior ownership for each address is outlined below;

- 830 East Main Street: SMITH, RANDALL
- 832 East Main Street: MOREL, LAVERNE W. & MARION L. TRUST
- 834 East Main Street: SHUSTER, TERRANCE L & WENDY

910 East Main Street, the eastern most building, was developed in at least the early 1930s with a gasoline filling and/or service station. The property was occupied by various filling stations and automotive service stations until the 1960s, was occupied various drycleaners from the 1960s until 2012, and has been vacant since that time. Most recent ownership was under ACKELS, JEREMY J., preceded by RUBOB REAL ESTATE, LLC in 2013 and NUDI, LOUIS S. ESTATE in 2012 and ROSE WORKS, LLC from 2004 through 2012.

1.4 Current Use of Each Eligible Property

The subject property is currently vacant.

1.5 Summary of Liability

The current owner and developer, Southwind Restaurants, LLC prepared and submitted a Baseline Environmental Assessment (BEA) in accordance with Part 201 and is not a liable party.

Review of city directories indicate that prior ownership of the eastern most building was listed as East Side Super Service beginning in the early 1930s, and Palmer's Sales and Service Filling Station in 1945. The subject property was likely operating as a filling station and automotive service garage until the early 1960s. The subject property operated as a drycleaners under various names from the late 1960s until 2012, including John's One Hour Martinizing & Shirt Laundry; One Hour Martinizing & Shirt Laundry; Munley Co; and Eastside Cleaners. Assessment records indicate Rubob Real Estate LLC purchased the eastern building in June 2012 from Nudi Louis. According to previous site investigations Rubob Real Estate LLC did not occupy or lease

the subject property. Jeremy Ackels purchased the subject property in August 2013, which remained unoccupied during ownership. A viable liable party is not identified at this time.

1.6 Summary of Environmental Study Documents

Global Environmental Engineering (GEE) completed a Phase I Environmental Site Assessment (ESA) for the subject property on October 7, 2014.

Recognized Environmental Conditions identified as part of the GEE Phase I ESA are outlined below.

- Based on review and the completion of a previous Phase I ESA, the subject property (910 East Main, eastern building) historically operated as a gasoline station and automotive service garage from the late 1920's to early 1960s and a drycleaners from the late 1960s to 2012. A BEA was completed for the subject property in August 2012 by Rubob Real Estate LLC and Crowne Point Properties LLC indicating the presence of 1,2,4-trimethylbenzene, n-propylbenzene, n-butylbenzene, cis-1,2-dichloroethylene, tetrachloroethylene, trichloroethylene in the groundwater.
- The subject property (formerly) known as 834 East Main Street is a residential parcel located adjacent to the 910 East Main Street (eastern most building) parcel. During previous investigations, the 910 East Main street parcel was not delineated as part of the scope of work. The potential exists that the historical use of the 910 E Main Street parcel could have negatively affected the 834 East Main Street parcel.

GEE completed a Phase II investigation on July 31, 2012, which included a subsurface investigation on the subject property. Eight (8) soil borings were completed using a Geoprobe direct push tool operated by Fibertec of Brighton, Michigan to depths between 12 and 16 feet below surface grade. Soil cores were collected in four-foot lengths and logged in the field. The soils from each core were screened for presence of contaminants using visual, olfactory and a hand held organic vapor analyzer.

Each soil sample collected was preserved, transported, and analyzed in accordance with MDEQ Remediation and Redevelopment Division (RRD) Operational Memorandum No 2, Sampling Guidance, dated October 22, 2004. Global delivered the samples using chain-of-custody procedures to Merit Laboratories, Inc. in East Lansing, Michigan for laboratory analysis. Analysis included volatile organic compounds (VOCs), polynuclear aromatic compounds (PNAs), lead (Pb), cadmium (Cd), and chromium (Cr). Five soil samples were submitted for analysis and two additional soil samples were submitted and held by the lab pending results of the initial five samples. Perched groundwater was encountered in one of the soil borings at a depth of approximately 14-16 feet below grade. A groundwater sample was collected from a temporary monitoring well and submitted to the lab for analysis.

The compounds detected within the laboratory analytical results of the soil and groundwater samples were compared to the MDEQ Generic Cleanup Criteria and Screening Levels as presented in Part 201 Rules 299.1 through 299.50, dated December 30, 2013 entitled "Cleanup Criteria Requirements for Response Activity."

The soil borings were drilled along the north, east, and southeast sides of the eastern most subject property building in areas believed most likely to reveal impact from historical gas station, automotive garage and dry-cleaning activities. Laboratory results indicated detectable concentrations of several compounds in all five of the soil samples. Compounds detected include: 1,2,4-trimethylbenzene, n-propylbenzene, n-butylbenzene, cis-1-2-dichloroethylene, tetrachloroethylene, trichloroethylene and naphthalene. The groundwater collected identified cis-1-2-dichloroethylene and tetrachloroethylene.

1,2,4-trimethylbenzene, n-propylbenzene, n-butylbenzene, cis-1-2-dichloroethylene, tetrachloroethylene, trichloroethylene and naphthalene exceed the Part 201 Generic Cleanup Criteria and Screening Levels for soil; and, cis-1-2-dichloroethylene and tetrachloroethylene exceed the Part 201 Generic Cleanup Criteria and Screening Levels for groundwater.

A BEA and Section 7a Compliance Analysis were completed by GEE on November 20, 2014 based on the facility status of the subject property.

1.7 Summary of Environmental/Brownfield Conditions

PM Environmental Inc., (PM) completed additional soil and groundwater investigation activities in April, 2015. Investigations were conducted to investigate areas where excavation of utilities, building footings, and other infrastructure features are planned during construction, and in areas south and west of the eastern most subject property building, which were not previously investigated, to further assess soil and/or groundwater concentrations. The additional investigation was required to assess appropriate soil management, potential subject property exposure and related due care consideration during and following redevelopment activities.

Investigations document VOC and PNA concentrations in soil above the Part 201 Residential and Nonresidential Groundwater Surface Water Interface Protection (GSIP), Drinking Water Protection (DWP), Direct Contact (DC), and Soil Volatilization to Indoor Air (SVII) cleanup criteria, and Soil Saturation (Csat) Screening Levels. Concentrations of VOCs and/or PNAs in groundwater were identified above the above Part 201 Drinking Water Protection (DWP) and Groundwater Surface Water Interface (GSI) criteria.

The subject property is a "facility" in accordance with Part 201 of P.A. 451, as amended, and the rules promulgated thereunder. No underground storage tanks (USTs) are known to be present.

As previously stated a BEA was completed for Southwind Restaurants, LLC, within 45 days of their purchase.

Soil and groundwater analytical tables from the April 2015 investigations are provided as Table 1 and Table 2 of this Plan. Soil boring locations and analytical data are provided in Figures 4A-4C of this Plan.

1.8 Summary of Functionally Obsolete Blighted and/or Historic Conditions

Not applicable to this project.

1.9 Summary of Historic Qualities

Not applicable to this project.

2.0 DESCRIPTION OF COSTS & SCOPE OF WORK

Tax Increment Financing revenues will be used to reimburse the costs of “eligible activities” (as defined by Section 2 of Act 381, as amended) as permitted under the Brownfield Redevelopment Financing Act that include: Baseline Environmental Site Assessments, Due Care Activities, Additional Response Activities (Demolition), Asbestos Survey, Abatement and Reporting, and preparation of a Brownfield Plan as described in this Plan. A complete listing of these activities is included in Table 3 of this Plan.

2.1 DEQ Eligible Activities

2.1.1 Baseline Environmental Assessment

Baseline Environmental Assessment activities include Phase I ESA, Phase II ESA, Baseline Environmental Assessment, and Documentation of Due Care Compliance at a total cost of \$14,000.

2.1.2 Due Care Activities

As it pertains to the activities needed to safely redevelop the site and comply with Due Care as a non-liaible party, the following activities are proposed.

2.1.2.1 Disposal and Transport of Contaminated Soils

Disposal and transport of chlorinated solvent contaminated soils to a Type II landfill and groundwater management and disposal to a licensed facility associated with development activities are anticipated to include contaminated soil and groundwater associated with building improvements for the construction of building foundations, parking and driveway features, and associated utility infrastructure at an estimated cost of \$152,000. Each excavation area is broken out below based on anticipated cubic yards of contaminated soil to be transported and disposed.

- Building Footing Excavation Areas (90 cubic yards);
- Alleyway Storm Sewer Excavation and Grading (100 cubic yards);
- Parking Lot and Sidewalk Curb and Gutter Excavation (40 cubic yards);
- Parking Lot Entrance/Approach Excavation/Grading (60 cubic yards);
- Utility Trenching/Excavation (90 cubic yards);
- Groundwater Removal, Management, and Disposal (8,000 gallons).

An O&M plan will be prepared for all areas where building foundation and other surface cover is required to prevent unacceptable exposures.

2.1.2.2 Removal, Transport and Disposal of Contaminated Building Materials

Removal, transport and disposal of approximately 55 cubic yards of contaminated concrete building slab and footing materials is required following demolition activities of existing site improvements at an estimated cost of \$25,000.

2.1.2.3 Chemical Resistant Gasketing

Chemical-Resistant Nitrile Gasketing for Sanitary, Storm, and Water Utility Piping is required to prevent migration of any residual contaminated soil following excavation activities at an estimated cost of \$5,500.

2.1.2.4 Vapor Barrier System

Design and Installation of a Passive Spray-Applied Vapor Barrier System for the New Building at an estimated cost of \$38,000.

As indicated in Section 1.1, the subject property will be redeveloped with a new building containing three tenant spaces; therefore, the vapor intrusion pathway is relevant. Due to the identified exceedances of the Part 201 Nonresidential SVII cleanup criteria in the vadose zone, the MDEQ Nonresidential VISLs, and because petroleum and chlorinated VOC and PNA soil impacts exceeding the Part 201 GCC are present beneath the subject property, including those that are representative of residual LNAPL saturation, a Land Science Technologies Geo-Seal® passive vapor intrusion barrier system that is compatible with the compounds identified in soil and groundwater will be installed at the proposed subject property building prior to occupancy, to prevent soil gas from entering the building and prevent potential inhalation exposures to occupants.

Vapor barrier design specifications and layout will be consistent with the guidelines included in the May 2013 MDEQ Guidance Document for the Vapor Intrusion Pathway. Following installation, the vapor barrier system will be operated in accordance with a system-specific operation and maintenance (O&M) manual prepared by the system engineer. The O&M manual will include a contingency plan to convert the passive system to an active system using in-line vent fans in the event that O&M inspections demonstrate that the venting system is ineffective and/or if the vapor barrier liner system is damaged or cannot be repaired. O&M actions will include periodic smoke testing events to document continuity of flow within the vapor barrier system, visual inspections of the vapor barrier system components (test ports, vent risers/valves/rain caps) for damage, and insertion of smoke tubes within test ports to demonstrate passive flow within the system (i.e. visual indication) and that the system is exhausting via the vent risers. Records of vapor barrier system installation, O&M, and contingency actions will be maintained by Southwind Restaurants, LLC.

Installation and maintenance of a vapor barrier and ventilation system will consist of the following components to prevent intrusion of sub-slab vapors from entering the building:

- Approximately 300 linear-feet of fabric-wrapped VaporVent® trenchless gas collection piping installed beneath the floor slab. The VaporVent® acts as a means for collection and pressure relief of sub-slab vapors via vertical vent piping that exits above the roof line

of the building. Appendix C includes technical specifications for the VaporVent® piping and associated end outlets.

Additional sub-grade utilities (i.e. plumbing, electrical etc.) will be installed under the building slab prior to the installation of the spray-applied vapor barrier membrane system.

- Four three-inch diameter vertical poly-vinyl chloride (PVC) vent pipes, which are connected to the VaporVent® piping via VaporVent® end outlet fittings will be installed within the Building. Each vertical vent will be located within the interior wall spaces (i.e., supported as required by local plumbing code), will exit approximately 2-feet above the finished roof parapet, will be oriented with vertical outlets to induce passive flow within the system, and will be equipped with rain caps to prevent intrusion of precipitation during storm events. No roof-mounted heating, ventilation, and air conditioning system air intakes will be present within 15 feet of the vapor barrier roof vents. All vent piping will be equipped with labels identifying them as vapor mitigation system components.

Each vent stack will be equipped with a shutoff valve. Four 2-inch diameter test ports will be installed at the southern exterior wall of the building, which will correspond to the four main legs of the vapor barrier venting system within the building. The test ports will be used in combination with the vent riser shutoff valves to assist with O&M inspections and smoke testing events conducted on the system to verify performance. The shutoff valves will be used to close off individual vent risers during O&M/smoke testing events to demonstrate that the vent risers are in communication with the subsurface environment and to demonstrate continuity of flow between the risers.

To ensure the integrity of the vapor barrier, no additional test ports are proposed within the building other than those outlined above.

- A spray applied vapor barrier system consisting of an initial layer of Geo-Seal® Film-11 Geomembrane (i.e. cross-laminated high-density polyethylene membrane) over the entire interior footprint of the building followed by the installation of associated penetration/detailing fabric at all penetration locations; a spray application of Geo-Seal® CORE vapor barrier material at a thickness of 60 mils; followed by a top layer of Geo-Seal® BOND protection material.

The vapor barrier material will be spray applied to a height of 4-inches around the perimeter walls, which will ensure a vapor tight seal for the system as a whole, and match the thickness of the surface concrete cap. Coupon testing will be conducted during vapor barrier installation, per manufacturer requirements, to document that the required barrier thickness specification is met. Records of coupon testing will be maintained by Southwind Restaurants, LLC.

The layered construction of the vapor barrier provides additional strength relative to the spray-applied barrier material alone, provides a uniform substrate for product application, and provides puncture resistance and increases adhesion to the surface concrete cap applied over horizontal areas. The vapor barrier components were designed by the manufacturer to control vapor intrusion associated with the contaminants identified in soil and groundwater at the subject property including petroleum compounds such as benzene toluene, ethylbenzene, and xylenes (collectively referred to as BTEX), PNAs, and

chlorinated solvents. Refer to Appendix C for Geo-Seal® Film-11 Geomembrane, Geo-Seal® CORE, and Geo-Seal® BOND product specifications.

Manufacturer-published diffusion rate specifications for compounds representative of volatile contaminants of concern identified in soil and groundwater beneath the eastern portion of the subject property (building), include the following:

- Benzene – 6.9E-16 m²/second
 - PCE – 4.0E-17 m²/second
- Prior to the installation of the vapor barrier, all sub-slab utilities are installed and stubbed above finished floor elevation to facilitate installation of the vapor barrier such that all penetrations are encapsulated with the vapor barrier material using manufacturer-specified termination method, to ensure a vapor-tight seal. Vent riser outlet stubs will be temporarily capped and labeled as “vapor mitigation system piping” prior to sealing with the vapor barrier material to ensure that they are differentiated from other piping stubs. Refer to Appendix C for typical penetration sealing diagrams.
 - The vapor barrier test ports will be used during construction-phase and post-construction smoke testing and O&M inspection events. During each smoke testing event, indicator smoke will be introduced into each of the vapor barrier test ports to demonstrate the following:
 - Overall tightness of the vapor barrier following initial application over horizontal areas (i.e., as evidenced by the lack of indicator smoke);
 - Overall system tightness prior to occupancy of the building;
 - Continuity of flow through the VaporVent® piping (i.e., visual indication via the presence of smoke exiting the vent stacks);
 - Integrity of the vapor barrier system, which will be documented via a visual inspection of the first floor areas of the building, including all tenant spaces.

O&M inspection events will include visual inspections of the vapor barrier system components (test ports, vent risers/valves/rain caps) for damage that could inhibit the function of the system. Each will also include the insertion of smoke tubes within each of the vapor barrier system test ports to demonstrate passive flow within the system (i.e. visual indication) and that the system is exhausting via the vent risers.

The test ports will be equipped with vapor tight, locking caps when not in use.

The schedule for smoke testing and O&M inspection activities will be in general accordance with the table below:

Smoke Testing and O&M Inspection Schedule

Frequency	Smoke Testing Events	O&M Inspection Events
During Vapor Barrier Installation	X	
Following Concrete Cap Installation	X	
Following Vent Riser Installation	X	X
1 Week Prior to Building Occupancy	X	X
Quarterly During Building Operations		X
Annually During Building Operations	X	

X = Acton conducted during the specified timeframe

- A surface cap of reinforced concrete, in the form of the building floor slab (4" minimum thickness) will be applied over all horizontal areas of the building footprint to protect the vapor barrier membrane and provide an attachment point for interior wall framing and other interior building components. Building/construction plans will require that all floor fastener depths be less than the thickness of the surface concrete cap.

2.1.2.5 Visual Demarcation Underlayment

Installation of Visual Demarcation Underlayment in non-paved areas requiring a dermal contact surface barrier to ensure the safety of anyone digging on the subject property following development and/or public safety should the non-paved area become eroded at an estimated cost of \$1,250. While the northeast corner of the property will be paved, the demarcation underlayment will be needed in unpaved areas adjacent to the north and east right-of-way surrounding the property.

An O&M plan will be prepared for all areas where building foundation and other surface cover is required to prevent unacceptable exposures.

2.1.2.6 Oversight, Monitoring, Reporting

Plan for Response Activity Preparation, Oversight, Monitoring, Laboratory Analysis, Project Management, and Reporting associated with Due Care Activities by and Environmental Professional is estimated at a cost of \$18,000.

2.1.1 Additional Response Activities

2.1.1.1 Demolition

Demolition of the former Dry Cleaner building and improvements will be required to access the contaminated soil for remediation and due care activities. Demolition includes the 2,236 square foot commercial building located on the eastern portion of the subject property as well as surrounding concrete and grass surface cover totaling approximately 8,000 square feet, estimated at a cost of \$15,000.

The three vacant dwellings (two with outbuildings/garages) totaling 3,692 square feet will be demolished by the developer for the construction of the new retail plaza at an estimated cost of \$20,000.

2.1.1.1 Asbestos Survey

A Pre-Renovation Asbestos Containing Materials (ACM) Survey was conducted to identify, locate, classify, analyze, and estimate quantities of ACM that must be removed or managed according to Federal, State, or local agency requirements prior to demolition at a cost of \$5,830.

2.1.2 Develop/Prepare Combined Brownfield Plan

Preparation of the Combined Brownfield Plan and associated activities (e.g. meetings with the City of Owosso Brownfield Redevelopment Authority (OBRA), etc.) at a cost of approximately \$12,000.

2.2 MSF Eligible Activities

MSF Eligible Activities are not applicable to this Plan.

2.3 Local Only Eligible Activities

2.3.1 Asbestos Abatement

The identified ACM at the subject property will be disturbed as part of the demolition activities and therefore, will require abatement prior to demolition by a licensed asbestos abatement contractor. If additional suspect materials are identified during renovation, these materials will be sampled to determine their characteristics (i.e. whether they must be treated as ACM or not) or assumed to be ACM and handled accordingly and prior to their removal and disposal. Pre-Demolition Asbestos Abatement, Oversight, and Clearance Testing is estimated at a cost of \$16,750.

3.0 TAX INCREMENT REVENUE ANALYSIS

3.1 Estimate of Captured Taxable Value and Tax Increment Revenues

Incremental taxes on real property included in the redevelopment project will be captured under this Plan to reimburse eligible activity expenses. Tax increment revenue capture is estimated to begin in 2016. The effective base taxable value of the land and real property is \$184,000; no personal property is associated with the site. The estimated taxable value of the completed development is \$575,000 estimated to begin in summer of 2016. Tax increment revenue assumes a one-year phase-in for completion of the redevelopment, which has been incorporated into the tax impact and cash flow assumptions for this work plan. An annual increase in taxable value of 1% has been used for calculation of future tax increments in this work plan.

The OBRA will capture tax increment revenues for 5 years following payback, to build the Local Site Remediation Revolving Fund (LSRRF). The estimated captured taxable value and tax increment revenues for the subject property and millages levied by the taxing jurisdictions for each year of the Plan are presented in Table 4.

3.2 Method of Financing and Description of Advances Made by the Municipality

Eligible activities presented in this plan are anticipated to be funded partially through a MDEQ Brownfield Redevelopment Loan totaling \$292,963, which will pay for the necessary Due Care Activities. The MDEQ Loan will be repaid with Tax Increment Financing Revenues created as a result of the new investment on the subject property.

Additional remediation and soil excavation activities outside of this Plan are anticipated to be funded through a MDEQ Grant totaling \$249,000 and additional State funds encumbered by the MDEQ. These activities are anticipated to include the following;

- Additional Soil and Groundwater Characterization and Delineation Activities
- Bid Specification Preparation, Bid Meeting and Contactor Selection
- Excavation Contractor Mobilization/Demobilization
- Shoring Design and Installation (195 linear feet)
- Removal and Disposal of up to 1,435 cubic yards of contaminated, land-disposal restricted soils
- Removal and Disposal of up to 635 cubic yards of contaminated soils
- Removal and Disposal of up to 15,000 gallons of contaminated groundwater
- Excavation Backfilling and Compaction
- Pavement Cover Installation
- Environmental Professional Excavation Oversight, Onsite and Perimeter Air Monitoring, Excavation Verification Sampling, and Laboratory Analysis
- Environmental Professional Project Management and Reporting

Figure 4A includes the anticipated excavation area and proposed delineation boring/sample locations associated with the MDEQ Grant activities.

Additional activities not paid for by the MDEQ Loan under this Plan totaling \$52,005 will be initially funded by Southwind. Costs for the eligible activities funded by Southwind will be repaid under the Michigan brownfield redevelopment financing program with incremental taxes generated by the future development of the subject property. No advances will be made by the municipality for this project.

These costs are broken out further in Table 3 attached to this Plan.

3.3 Maximum Amount of Note or Bonded Indebtedness

The City of Owosso will act as the grantee for the MDEQ Loan anticipated for this project.

3.4 Duration of Brownfield Plan

The duration of this work plan should be not less than the period required to reimburse all eligible activities plus five years for additional capture to build the LSRRF. The approval date of the Brownfield Plan by the City Council will mark the beginning of the reimbursement period, unless modified at the discretion of the City as allowed under Act 381.

In no event, shall this Plan extend beyond the capture period for the City's local revolving loan fund, or the maximum term of 35 years allowed by Section 13 of Act 381.

3.5 Estimated Impact of Tax Increment Financing on Revenues of Taxing Jurisdictions

Tax increments are projected to be captured and applied to (i) reimbursement of eligible activity costs to the MDEQ Loan, (ii) reimbursement of eligible activity costs for the developer, (iii) payment of OBRA administrative and operating expenses, (iv) payment to the State Brownfield Fund and (v) deposits into the OBRA's LSRRF, as follows:

Total Activities Funded by TIF	Estimated Costs
MDEQ Brownfield Redevelopment Loan Reimbursement	\$ 292,963
Developer Reimbursement	\$ 74,967
OBRA Administrative Fees	\$ 24,000
State Brownfield Fund	\$ 32,838
Capture for Local Site Remediation Revolving Fund	\$ 120,288
Total	\$ 545,056

Taxes will continue to be generated to taxing jurisdictions on local captured millages and state school millages at the base taxable value of \$184,000 throughout the duration of this plan totaling approximately \$226,416 or \$9,434 annually as presented in the table below.

Local Tax Millages		
Seniors	0.3500	\$ 64
Med Care	2.0000	\$ 368
Veterans PA214	0.1000	\$ 18
Veterans Voted	0.1400	\$ 26
MSU Extension	0.0500	\$ 9
INTMD Sch	3.9040	\$ 718
Library	1.2500	\$ 230
City Oper	14.0370	\$ 2,583
SATA	0.3285	\$ 60
County Oper	5.1146	\$ 941
Total Local Taxes (capturable)	27.2741	\$ 5,018
School Millages		
School Operating	18.0000	\$ 3,312
SET (only 3 millages are available for BF TIF capture)	6.0000	\$ 1,104
Total School Taxes	24.0000	\$ 4,416
Total Local and School Taxes	51.2741	\$ 9,434

Non-capturable millages will see an immediate increase in tax revenue following redevelopment and will provide anticipated new tax revenue of \$4,012 throughout the duration of this plan.

For a complete breakdown of the captured millages and developer reimbursement please see Table 4.

4.0 INFORMATION REQUIRED BY SECTION 15(15) OF THE STATUTE FOR NON-ENVIRONMENTAL ACTIVITIES (required for work plans submitted for MSF consideration)

This section is not required for non-MSF work plans.

5.0 SCHEDULE AND COSTS

5.1 Schedule

August-September 2015:

- Combined Brownfield Plan Application and Approval
- MEDQ Grant and Loan Application and Approval

October 2015:

- Pre-construction Soil, Groundwater, and Concrete Characterization Delineation Activities (outside of this Plan, anticipated to be funded through MDEQ Grant)
- Asbestos Abatement Activities
- Demolition Activities
- Transport and Disposal of Contaminated Building Materials
- MDEQ Remediation Activities (outside of this Plan, anticipated to be funded through MDEQ Grant and other State funds)

Spring 2016:

- Transport and Disposal of Contaminated Soil Associated with Development Activities
- Installation of Chemical-resistant Gasketing for Utilities
- Vapor Barrier Installation
- Installation of Visual Demarcation Underlayment
- Environmental Professional Oversight and Reporting Activities

5.2 Estimated Costs

5.2.1 Summary of Total Project Costs

A full listing of eligible brownfield activities is provided in Table 3 of this plan. Total investment for this project is estimated at \$2,548,703, these costs are further detailed in section 5.3.

5.3 Sources and Uses of Incentives and Funds

Sources and Uses			
Sources	Amount	Uses	Amount
Developer Equity	\$ 302,577	Acquisition	\$ 558,402
Permanent Financing	\$ 1,330,000	Hard Costs	\$ 885,988
Operating Note	\$ 400,000	Environmental Due Care	\$ 239,750
MDEQ Loan	\$ 292,963	Environmental Excavation	
MDEQ Grant	\$ 249,000	Activities	\$ 249,000
		Demolition	\$ 35,000
		Soft Costs	\$ 86,400
		New Equipment	\$ 520,000
Total Sources of Capital	\$ 2,574,540	Total Uses of Capital	\$ 2,574,540

5.4 Summary of Relocation Actions

5.4.1 Estimates of Residents and Displacement of Individuals/Families

The property was vacant at time of purchase therefore this section is not applicable to this project.

5.4.2 Plan for Relocation of Displaced Persons

Not applicable to this project.

5.4.3 Provisions for Relocation Costs

Not applicable to this project.

5.4.4 Strategy for Compliance with Michigan’s Relocation Assistance Law

Not applicable to this project.

5.5 Description of Proposed Use of Local Site Remediation Revolving Fund

Not applicable to this project.

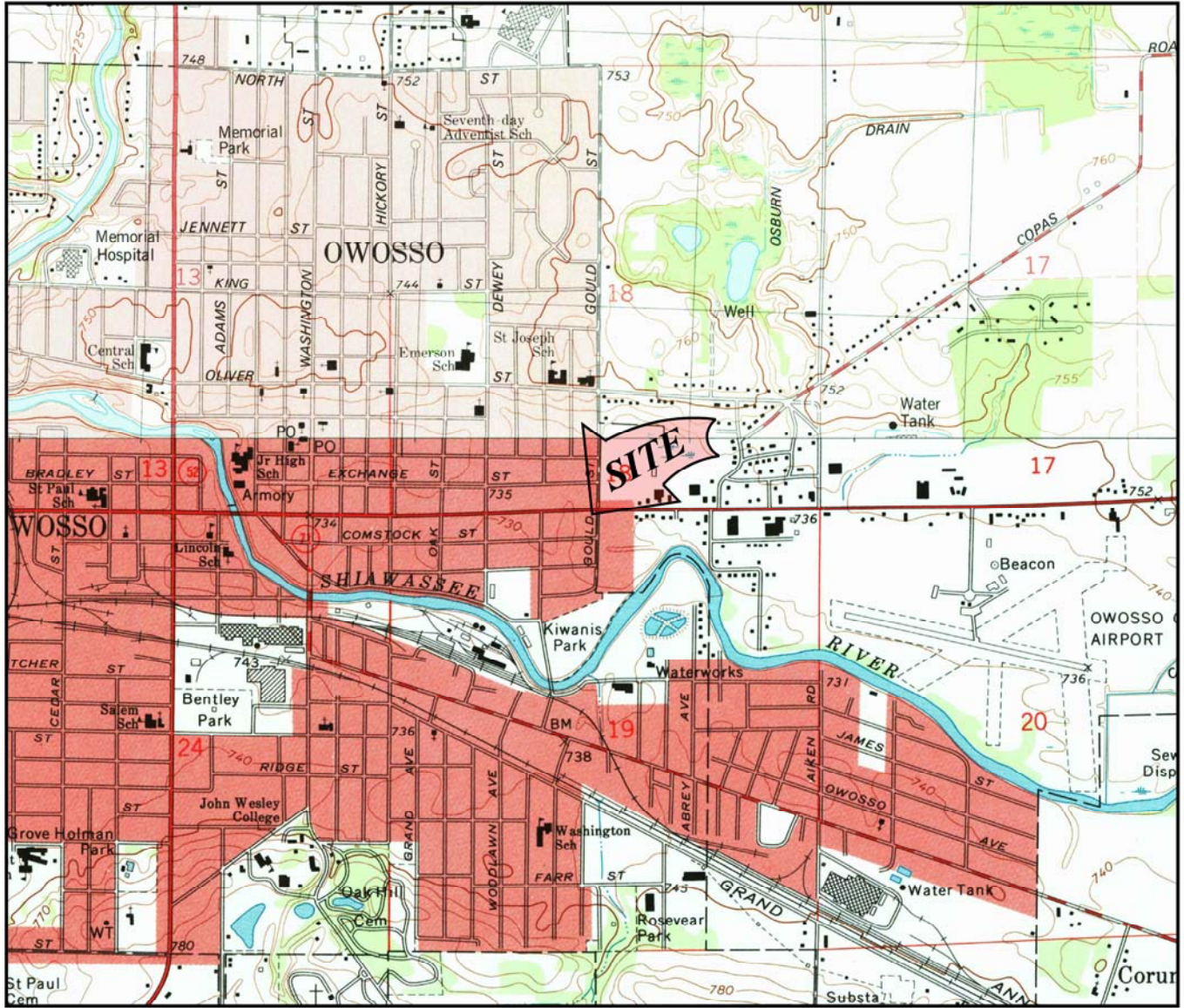
5.6 Other Material that the Authority or Governing Body Considers Pertinent

No additional material attached.

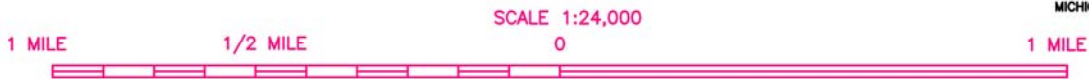
FIGURES

Figure 1

Scaled Property Location Map



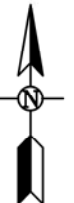
SHIAWASSEE COUNTY



SCALE 1:24,000

FIGURE 1

PROPERTY VICINITY MAP
 USGS, 7.5 MINUTE SERIES
 OWOSSO NORTH, MI QUADRANGLE, 1974.
 OWOSSO SOUTH, MI QUADRANGLE, 1972.



PROJ:
 COMMERCIAL PROPERTY
 830, 832, 834, AND 910 EAST MAIN
 STREET
 OWOSSO, MI

THIS IS NOT A LEGAL
 SURVEY
 VERIFY SCALE
 0 2,000'
 IF NOT 1" ON THIS
 SHEET, ADJUST
 SCALES ACCORDINGLY.

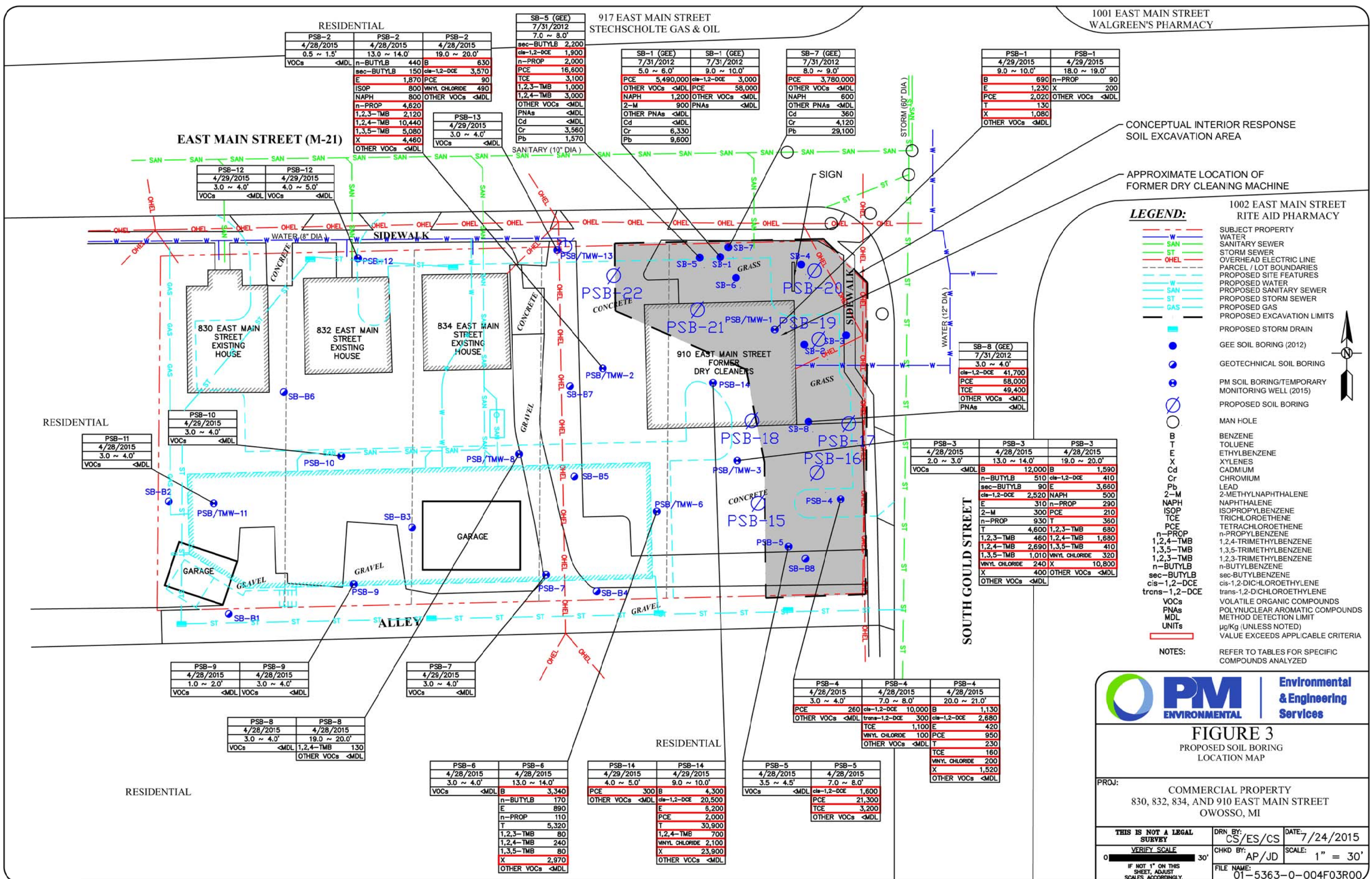
DRN BY:	CS	DATE:	6/8/2015
CHKD BY:	AP	SCALE:	1" = 2,000'
FILE NAME:	01-5363-0-001F01R00		

Figure 2

Eligible Property Map

Figure 3

Sampling Location Map



1001 EAST MAIN STREET
WALGREEN'S PHARMACY

CONCEPTUAL INTERIOR RESPONSE
SOIL EXCAVATION AREA

APPROXIMATE LOCATION OF
FORMER DRY CLEANING MACHINE

1002 EAST MAIN STREET
RITE AID PHARMACY

LEGEND:

- W WATER
- SAN SANITARY SEWER
- ST STORM SEWER
- OHEL OVERHEAD ELECTRIC LINE
- Parcel / Lot Boundaries
- Proposed Site Features
- Proposed Water
- Proposed Sanitary Sewer
- Proposed Storm Sewer
- Proposed Gas
- Proposed Excavation Limits
- Proposed Storm Drain
- GEE SOIL BORING (2012)
- GEOTECHNICAL SOIL BORING
- PM SOIL BORING/TEMPORARY MONITORING WELL (2015)
- PROPOSED SOIL BORING
- MAN HOLE
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X XYLENES
- Cd CADMIUM
- Cr CHROMIUM
- Pb LEAD
- 2-M 2-METHYLNAPHTHALENE
- NAPH NAPHTHALENE
- ISOP ISOPROPYLBENZENE
- TRICH TRICHLOROETHENE
- PCE TETRACHLOROETHENE
- n-PROP n-PROPYLBENZENE
- 1,2,3-TMB 1,2,3-TRIMETHYLBENZENE
- 1,2,4-TMB 1,2,4-TRIMETHYLBENZENE
- 1,3,5-TMB 1,3,5-TRIMETHYLBENZENE
- 1,2,3-TMB 1,2,3-TRIMETHYLBENZENE
- n-BUTYLB n-BUTYLBENZENE
- sec-BUTYLB sec-BUTYLBENZENE
- cis-1,2-DCE cis-1,2-DICHLOROETHYLENE
- trans-1,2-DCE trans-1,2-DICHLOROETHYLENE
- VOCs VOLATILE ORGANIC COMPOUNDS
- PNAs POLYNUCLEAR AROMATIC COMPOUNDS
- MDL METHOD DETECTION LIMIT
- UNITS µg/Kg (UNLESS NOTED)
- VALUE EXCEEDS APPLICABLE CRITERIA

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

PM ENVIRONMENTAL | Environmental & Engineering Services

FIGURE 3
PROPOSED SOIL BORING LOCATION MAP

PROJ: COMMERCIAL PROPERTY
830, 832, 834, AND 910 EAST MAIN STREET
OWOSSO, MI

THIS IS NOT A LEGAL SURVEY
VERIFY SCALE
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRN BY: CS/ES/CS
CHKD BY: AP/JD
FILE NAME: 01-5363-0-004F03R00

DATE: 7/24/2015
SCALE: 1" = 30'

RESIDENTIAL

PSB-2	PSB-2	PSB-2
4/28/2015	4/28/2015	4/28/2015
0.5 ~ 1.5'	13.0 ~ 14.0'	19.0 ~ 20.0'
VOCs <MDL	n-BUTYLB 440	B 630
	sec-BUTYLB 150	cis-1,2-DCE 3,570
	E 1,870	PCE 90
	ISOP 800	VINYL CHLORIDE 490
	NAPH 800	OTHER VOCs <MDL
	n-PROP 4,620	
	1,2,3-TMB 2,120	
	1,2,4-TMB 10,440	
	1,3,5-TMB 5,080	
	X 4,460	
	OTHER VOCs <MDL	

SB-5 (GEE)
7/31/2012
7.0 ~ 8.0'

sec-BUTYLB	2,200
cis-1,2-DCE	1,900
n-PROP	2,000
PCE	16,600
TCE	3,100
1,2,3-TMB	1,000
1,2,4-TMB	3,000
OTHER VOCs	<MDL
PNAs	<MDL
Cd	<MDL
Cr	3,560
Pb	1,570

SB-1 (GEE) 7/31/2012 5.0 ~ 6.0'

PCE	5,490,000
OTHER VOCs	<MDL
NAPH	1,200
2-M	900
OTHER PNAs	<MDL
Cd	<MDL
Cr	6,330
Pb	9,600

SB-7 (GEE) 7/31/2012 8.0 ~ 9.0'

PCE	3,780,000
OTHER VOCs	<MDL
NAPH	600
OTHER PNAs	<MDL
Cd	360
Cr	4,120
Pb	29,100

PSB-1 4/29/2015 9.0 ~ 10.0'

B	690	n-PROP	90
E	1,230	X	200
PCE	2,020	OTHER VOCs	<MDL
T	130		
X	1,080		
OTHER VOCs	<MDL		

PSB-12 4/29/2015 3.0 ~ 4.0'

VOCs	<MDL
------	------

PSB-13 4/29/2015 3.0 ~ 4.0'

VOCs	<MDL
------	------

PSB-10 4/29/2015 3.0 ~ 4.0'

VOCs	<MDL
------	------

PSB-11 4/28/2015 3.0 ~ 4.0'

VOCs	<MDL
------	------

PSB-9 4/28/2015 1.0 ~ 2.0'

VOCs	<MDL
------	------

PSB-7 4/28/2015 3.0 ~ 4.0'

VOCs	<MDL
------	------

PSB-8 4/28/2015 3.0 ~ 4.0'

VOCs	<MDL
------	------

PSB-6 4/28/2015 13.0 ~ 14.0'

B	3,340
n-BUTYLB	170
E	890
n-PROP	110
T	5,320
1,2,3-TMB	80
1,2,4-TMB	240
1,3,5-TMB	80
X	2,970
OTHER VOCs	<MDL

PSB-14 4/29/2015 4.0 ~ 5.0'

PCE	300
OTHER VOCs	<MDL

PSB-5 4/28/2015 3.5 ~ 4.5'

VOCs	<MDL
------	------

PSB-4 4/28/2015 7.0 ~ 8.0'

PCE	260
OTHER VOCs	<MDL

PSB-3 4/28/2015 2.0 ~ 3.0'

VOCs	<MDL
------	------

SB-8 (GEE) 7/31/2012 3.0 ~ 4.0'

cis-1,2-DCE	41,700
PCE	68,000
TCE	49,400
OTHER VOCs	<MDL
PNAs	<MDL

PSB-3 4/28/2015 13.0 ~ 14.0'

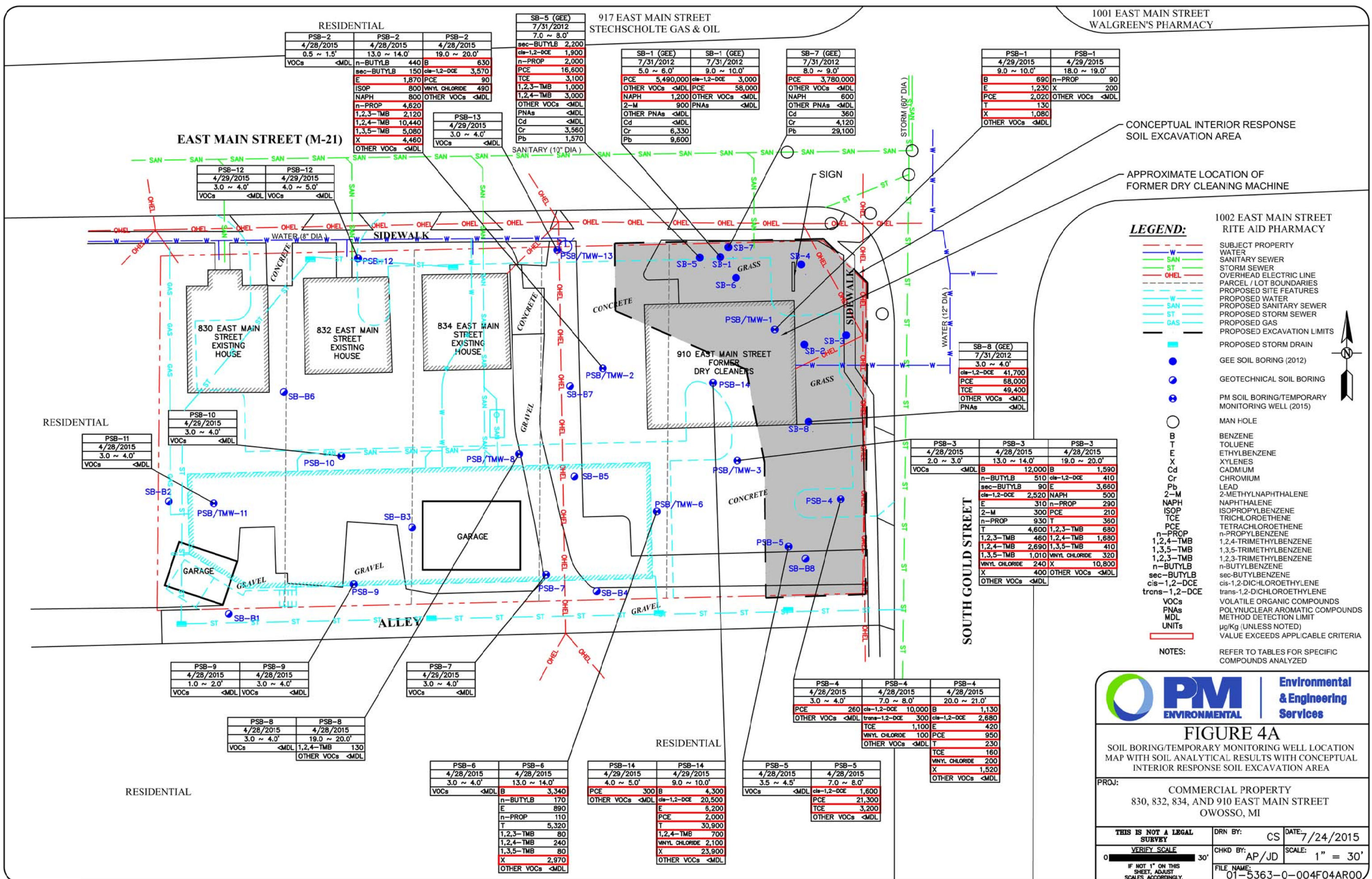
B	12,000	B	1,590
n-BUTYLB	510	cis-1,2-DCE	410
sec-BUTYLB	90	E	3,680
cis-1,2-DCE	2,520	NAPH	500
E	310	n-PROP	290
2-M	300	PCE	210
n-PROP	930	T	360
T	4,600	1,2,3-TMB	680
1,2,3-TMB	460	1,2,4-TMB	1,680
1,2,4-TMB	2,690	1,3,5-TMB	410
1,3,5-TMB	1,010	VINYL CHLORIDE	320
VINYL CHLORIDE	240	X	10,800
X	400	OTHER VOCs	<MDL
OTHER VOCs	<MDL		

PSB-4 4/28/2015 7.0 ~ 8.0'

PCE	10,000	B	1,130
OTHER VOCs	<MDL	trans-1,2-DCE	300
TCE	1,100	E	420
VINYL CHLORIDE	100	PCE	950
OTHER VOCs	<MDL	T	230
		TCE	160
		VINYL CHLORIDE	200
		X	1,520
		OTHER VOCs	<MDL

Figure 4

Map of Known Extent of Contamination



LEGEND:

- SUBJECT PROPERTY
- WATER
- SANITARY SEWER
- STORM SEWER
- OVERHEAD ELECTRIC LINE
- PARCEL / LOT BOUNDARIES
- PROPOSED SITE FEATURES
- PROPOSED WATER
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED GAS
- PROPOSED EXCAVATION LIMITS
- PROPOSED STORM DRAIN
- GEE SOIL BORING (2012)
- GEOTECHNICAL SOIL BORING
- PM SOIL BORING/TEMPORARY MONITORING WELL (2015)
- MAN HOLE

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

PM ENVIRONMENTAL | Environmental & Engineering Services

FIGURE 4A
SOIL BORING/TEMPORARY MONITORING WELL LOCATION MAP WITH SOIL ANALYTICAL RESULTS WITH CONCEPTUAL INTERIOR RESPONSE SOIL EXCAVATION AREA

PROJ: COMMERCIAL PROPERTY
830, 832, 834, AND 910 EAST MAIN STREET
OWOSSO, MI

THIS IS NOT A LEGAL SURVEY
VERIFY SCALE
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRN BY: CS DATE: 7/24/2015
CHKD BY: AP/JD SCALE: 1" = 30'
FILE NAME: 01-5363-0-004F04AR00

RESIDENTIAL

PSB-2	PSB-2	PSB-2
4/28/2015	4/28/2015	4/28/2015
0.5 ~ 1.5'	13.0 ~ 14.0'	19.0 ~ 20.0'
VOCs <MDL	n-BUTYLB 440 B	cis-1,2-DCE 3,570
	sec-BUTYLB 150	E 1,870
	E 1,870	PCE 90
	ISOP 800	VNYL CHLORIDE 490
	NAPH 800	OTHER VOCs <MDL
	n-PROP 4,620	
	1,2,3-TMB 2,120	
	1,2,4-TMB 10,440	
	1,3,5-TMB 5,080	
	X 4,460	
	OTHER VOCs <MDL	

**917 EAST MAIN STREET
STECHSCHOLTE GAS & OIL**

SB-5 (GEE)	SB-1 (GEE)	SB-7 (GEE)
7/31/2012	7/31/2012	7/31/2012
7.0 ~ 8.0'	5.0 ~ 6.0'	8.0 ~ 9.0'
sec-BUTYLB 2,200	PCE 5,490,000	OTHER VOCs <MDL
cis-1,2-DCE 1,900	OTHER VOCs <MDL	
n-PROP 2,000	NAPH 1,200	OTHER VOCs <MDL
PCE 16,600	2-M 900	OTHER VOCs <MDL
TCE 3,100	OTHER PNAAs <MDL	
1,2,3-TMB 1,000	Cd <MDL	
1,2,4-TMB 3,000	Cr 3,560	
OTHER VOCs <MDL	Pb 1,570	
PNAAs <MDL		
Cd <MDL		
Cr 3,560		
Pb 1,570		

**1001 EAST MAIN STREET
WALGREEN'S PHARMACY**

PSB-1	PSB-1
4/29/2015	4/29/2015
9.0 ~ 10.0'	18.0 ~ 19.0'
B 690	n-PROP 90
E 1,230	X <MDL
PCE 2,020	OTHER VOCs <MDL
T 130	
X 1,080	
OTHER VOCs <MDL	

PSB-12

PSB-12	PSB-12
4/29/2015	4/29/2015
3.0 ~ 4.0'	4.0 ~ 5.0'
VOCs <MDL	VOCs <MDL

PSB-10

PSB-10	PSB-10
4/29/2015	4/29/2015
3.0 ~ 4.0'	
VOCs <MDL	

PSB-9

PSB-9	PSB-9
4/28/2015	4/28/2015
1.0 ~ 2.0'	3.0 ~ 4.0'
VOCs <MDL	VOCs <MDL

PSB-8

PSB-8	PSB-8
4/28/2015	4/28/2015
3.0 ~ 4.0'	19.0 ~ 20.0'
VOCs <MDL	1,2,4-TMB 130
	OTHER VOCs <MDL

PSB-6

PSB-6	PSB-6
4/28/2015	4/28/2015
3.0 ~ 4.0'	13.0 ~ 14.0'
VOCs <MDL	B 3,340
	n-BUTYLB 170
	E 890
	n-PROP 110
	T 5,320
	1,2,3-TMB 80
	1,2,4-TMB 240
	1,3,5-TMB 80
	X 2,970
	OTHER VOCs <MDL

PSB-14

PSB-14	PSB-14
4/29/2015	4/29/2015
4.0 ~ 5.0'	9.0 ~ 10.0'
PCE 300	B 4,300
OTHER VOCs <MDL	cis-1,2-DCE 20,500
	E 6,200
	PCE 2,000
	T 30,900
	1,2,4-TMB 700
	VNYL CHLORIDE 2,100
	X 23,900
	OTHER VOCs <MDL

PSB-5

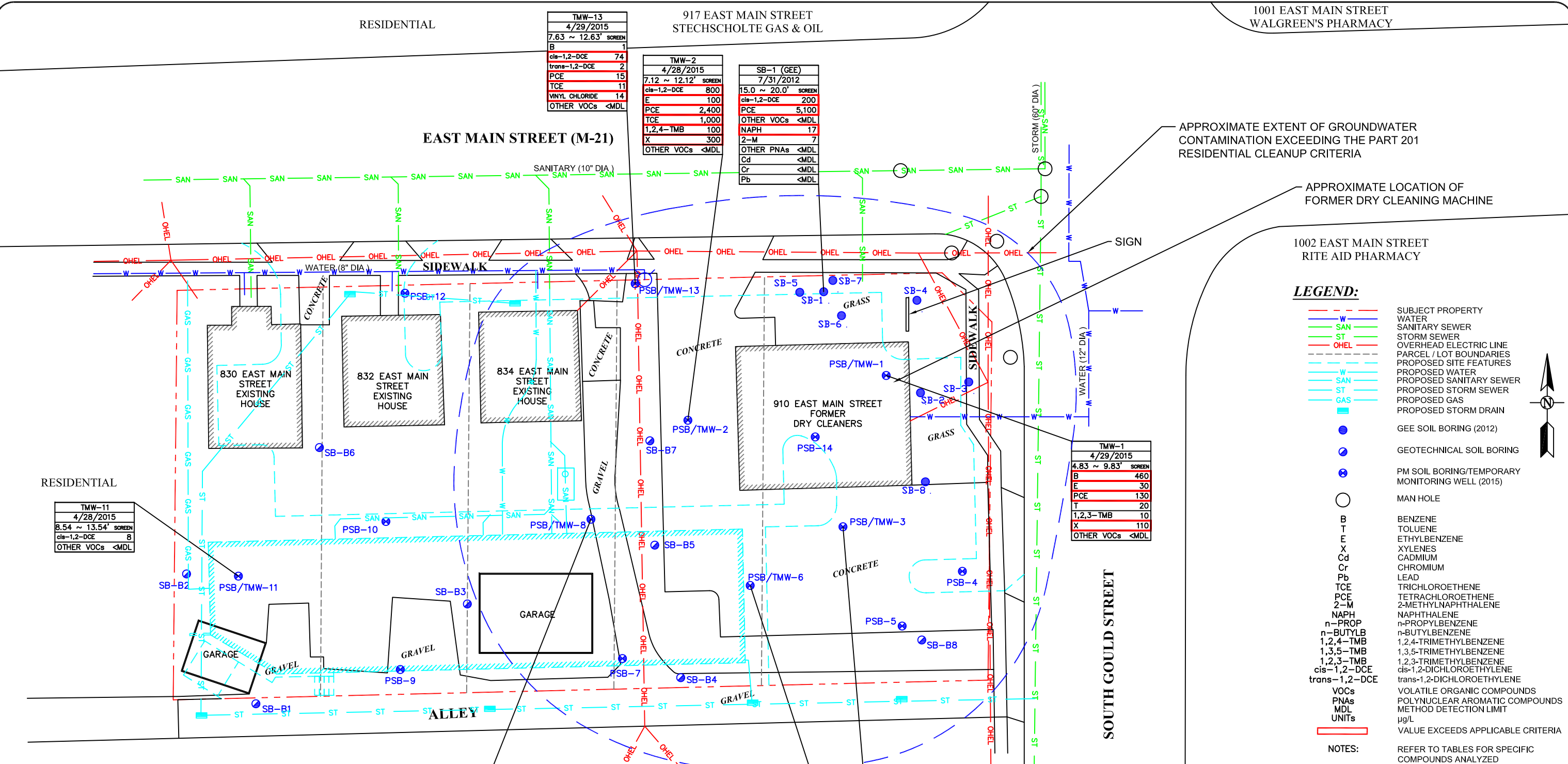
PSB-5	PSB-5
4/28/2015	4/28/2015
3.5 ~ 4.5'	7.0 ~ 8.0'
VOCs <MDL	cis-1,2-DCE 1,600
	PCE 21,300
	TCE 3,200
	OTHER VOCs <MDL

PSB-3

PSB-3	PSB-3	PSB-3
4/28/2015	4/28/2015	4/28/2015
2.0 ~ 3.0'	13.0 ~ 14.0'	19.0 ~ 20.0'
VOCs <MDL	B 12,000	B 1,590
	n-BUTYLB 510	cis-1,2-DCE 410
	sec-BUTYLB 90	E 3,680
	cis-1,2-DCE 2,520	NAPH 500
	E 310	n-PROP 290
	2-M 300	PCE 210
	n-PROP 930	T 380
	T 4,600	1,2,3-TMB 680
	1,2,3-TMB 460	1,2,4-TMB 1,680
	1,2,4-TMB 2,690	1,3,5-TMB 410
	1,3,5-TMB 1,010	VNYL CHLORIDE 320
	VNYL CHLORIDE 240	X 10,800
	X 400	OTHER VOCs <MDL
	OTHER VOCs <MDL	

PSB-4

PSB-4	PSB-4	PSB-4
4/28/2015	4/28/2015	4/28/2015
3.0 ~ 4.0'	7.0 ~ 8.0'	20.0 ~ 21.0'
PCE 260	cis-1,2-DCE 10,000	B 1,130
OTHER VOCs <MDL	trans-1,2-DCE 300	cis-1,2-DCE 2,680
	TCE 1,100	E 420
	VNYL CHLORIDE 100	PCE 950
	OTHER VOCs <MDL	T 230
		TCE 160
		VNYL CHLORIDE 200
		X 1,520
		OTHER VOCs <MDL



TMW-13	
4/29/2015	
7.63 ~ 12.63' SCREEN	
B	1
cis-1,2-DCE	74
trans-1,2-DCE	2
PCE	15
TCE	11
VINYL CHLORIDE	14
OTHER VOCs	<MDL

TMW-2	
4/28/2015	
7.12 ~ 12.12' SCREEN	
cis-1,2-DCE	800
E	100
PCE	2,400
TCE	1,000
1,2,4-TMB	100
X	300
OTHER VOCs	<MDL

SB-1 (GEE)	
7/31/2012	
15.0 ~ 20.0' SCREEN	
cis-1,2-DCE	200
PCE	5,100
OTHER VOCs	<MDL
NAPH	17
2-M	7
OTHER PNAs	<MDL
Cd	<MDL
Cr	<MDL
Pb	<MDL

TMW-1	
4/29/2015	
4.83 ~ 9.83' SCREEN	
B	460
E	30
PCE	130
T	20
1,2,3-TMB	10
X	110
OTHER VOCs	<MDL

TMW-11	
4/28/2015	
8.54 ~ 13.54' SCREEN	
cis-1,2-DCE	8
OTHER VOCs	<MDL

TMW-8	
4/28/2015	
8.77 ~ 13.77' SCREEN	
cis-1,2-DCE	60
E	340
n-PROP	110
1,2,3-TMB	170
1,2,4-TMB	610
1,3,5-TMB	170
X	700
OTHER VOCs	<MDL

TMW-6	
4/28/2015	
9.68 ~ 14.68' SCREEN	
B	20
n-BUTYLB	10
cis-1,2-DCE	260
E	10
n-PROP	30
VINYL CHLORIDE	90
OTHER VOCs	<MDL

TMW-3	
4/28/2015	
7.19 ~ 12.19' SCREEN	
E	300
n-PROP	200
1,2,3-TMB	200
1,2,4-TMB	1,100
1,3,5-TMB	300
X	500
OTHER VOCs	<MDL

LEGEND:

- SUBJECT PROPERTY
- WATER
- SANITARY SEWER
- STORM SEWER
- OVERHEAD ELECTRIC LINE
- PARCEL / LOT BOUNDARIES
- PROPOSED SITE FEATURES
- PROPOSED WATER
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED GAS
- PROPOSED STORM DRAIN
- GEE SOIL BORING (2012)
- ⊙ GEOTECHNICAL SOIL BORING
- ⊕ PM SOIL BORING/TEMPORARY MONITORING WELL (2015)
- MAN HOLE
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X XYLENES
- Cd CADMIUM
- Cr CHROMIUM
- Pb LEAD
- TCE TRICHLOROETHENE
- PCE TETRACHLOROETHENE
- 2-M 2-METHYLNAPHTHALENE
- NAPH NAPHTHALENE
- n-PROP n-PROPYLBENZENE
- n-BUTYLB n-BUTYLBENZENE
- 1,2,4-TMB 1,2,4-TRIMETHYLBENZENE
- 1,3,5-TMB 1,3,5-TRIMETHYLBENZENE
- 1,2,3-TMB 1,2,3-TRIMETHYLBENZENE
- cis-1,2-DCE cis-1,2-DICHLOROETHYLENE
- trans-1,2-DCE trans-1,2-DICHLOROETHYLENE
- VOCs VOLATILE ORGANIC COMPOUNDS
- PNAs POLYNUCLEAR AROMATIC COMPOUNDS
- MDL METHOD DETECTION LIMIT
- UNITS μg/L
- VALUE EXCEEDS APPLICABLE CRITERIA

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED



FIGURE 4C
SOIL BORING/TEMPORARY MONITORING WELL
LOCATION MAP WITH GROUNDWATER
ANALYTICAL RESULTS

PROJ: COMMERCIAL PROPERTY
830, 832, 834, AND 910 EAST MAIN STREET
OWOSSO, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: CS	DATE: 7/24/2015
VERIFY SCALE	CHKD BY: AP/JD	SCALE: 1" = 30'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		
FILE NAME: 01-5363-0-004F04CR00		

Figure 5

Color Site Photographs



Photographs collected during site reconnaissance on April 14, 2015 through April 16, 2015
PM Project No. 01-5363-0-002
Location: 910, 834, 832 and 830 East Main Street, Owosso, Michigan

Photograph 1



Exterior view of 910 East Main Street

Photograph 2



Interior view of 910 East Main Street



Photographs collected during site reconnaissance on April 14, 2015 through April 16, 2015
PM Project No. 01-5363-0-002
Location: 910, 834, 832 and 830 East Main Street, Owosso, Michigan

Photograph 3



Interior view of 910 East Main Street

Photograph 4



Exterior view of 834 East Main Street



Photographs collected during site reconnaissance on April 14, 2015 through April 16, 2015
PM Project No. 01-5363-0-002
Location: 910, 834, 832 and 830 East Main Street, Owosso, Michigan

Photograph 5



Interior view of 834 East Main Street

Photograph 6



View of detached garage associated with 834 E. Main Street



Photographs collected during site reconnaissance on April 14, 2015 through April 16, 2015
PM Project No. 01-5363-0-002
Location: 910, 834, 832 and 830 East Main Street, Owosso, Michigan

Photograph 7



Interior view of detached garage associated with 834 E. Main Street

Photograph 8



Exterior view of 832 E. Main



Photographs collected during site reconnaissance on April 14, 2015 through April 16, 2015
PM Project No. 01-5363-0-002
Location: 910, 834, 832 and 830 East Main Street, Owosso, Michigan

Photograph 9



Interior view of 832 E. Main

Photograph 10



Exterior view of 830 E. Main Street



Photographs collected during site reconnaissance on April 14, 2015 through April 16, 2015
PM Project No. 01-5363-0-002
Location: 910, 834, 832 and 830 East Main Street, Owosso, Michigan

Photograph 11



Interior view of 830 E. Main Street

Photograph 12



View of detached shed associated with 830 East Main



Photographs collected during site reconnaissance on April 14, 2015 through April 16, 2015
PM Project No. 01-5363-0-002
Location: 910, 834, 832 and 830 East Main Street, Owosso, Michigan

Photograph 13



View of Subject Property from NE Corner of Intersection

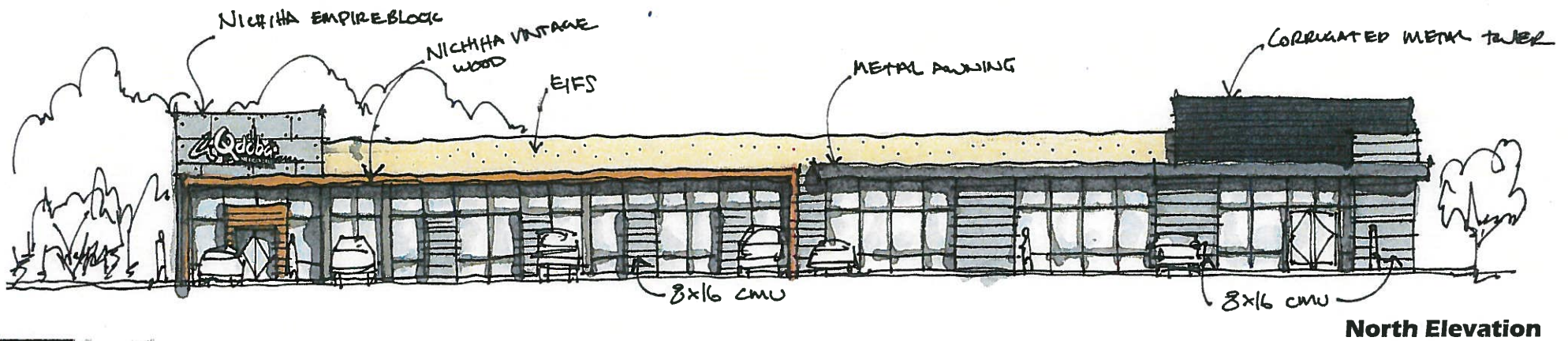
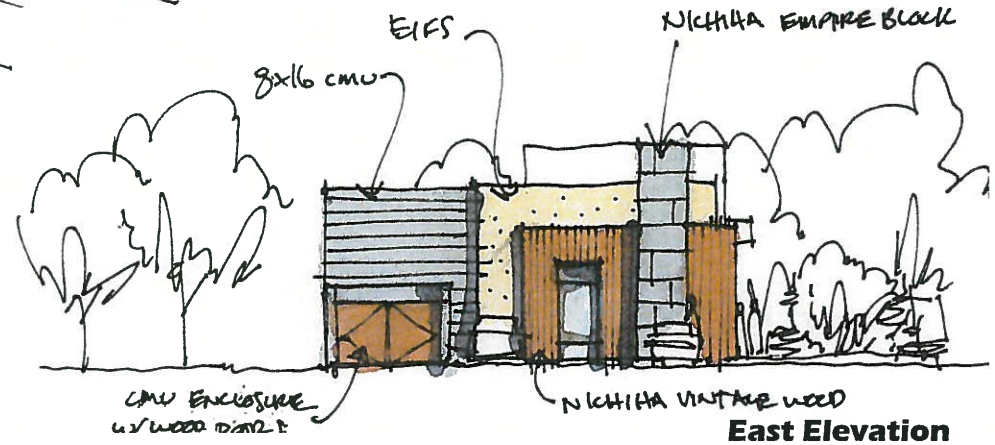
Photograph 14



View of Subject Property from the West

Figure 6

Redevelopment Project Renderings



Imagine

Create

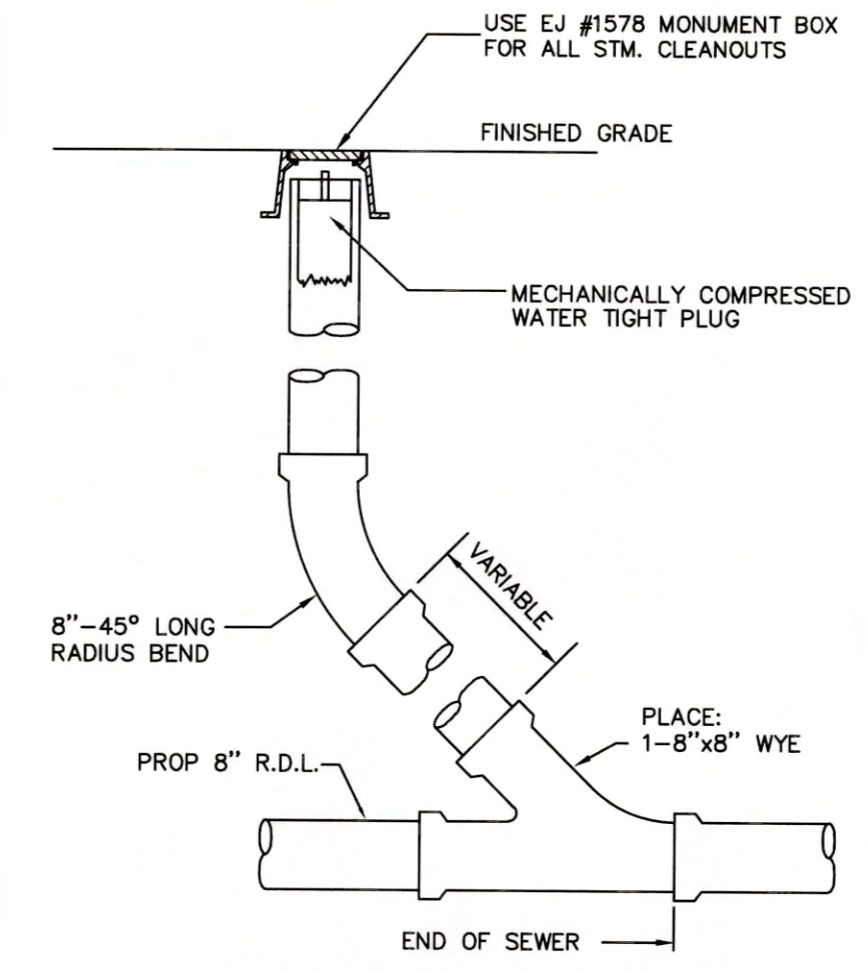
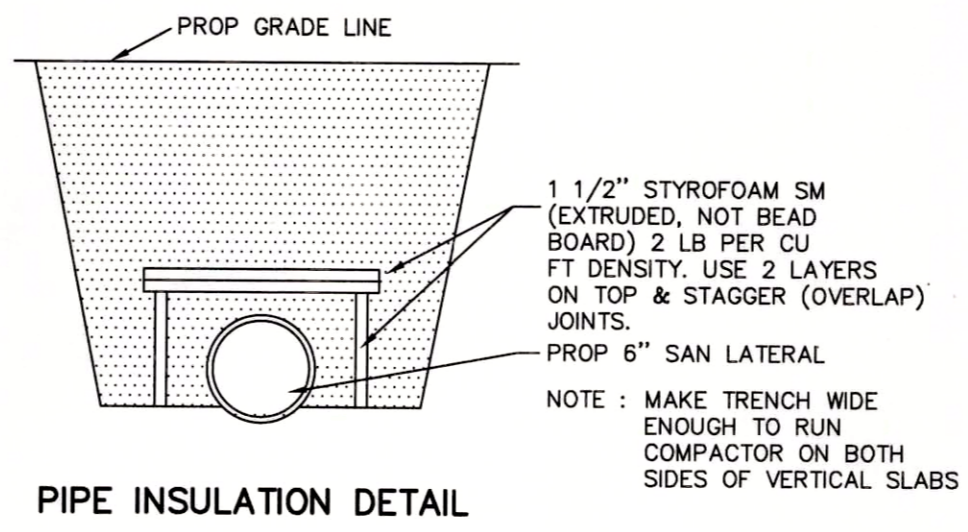
Excite

Dual Tenant Building

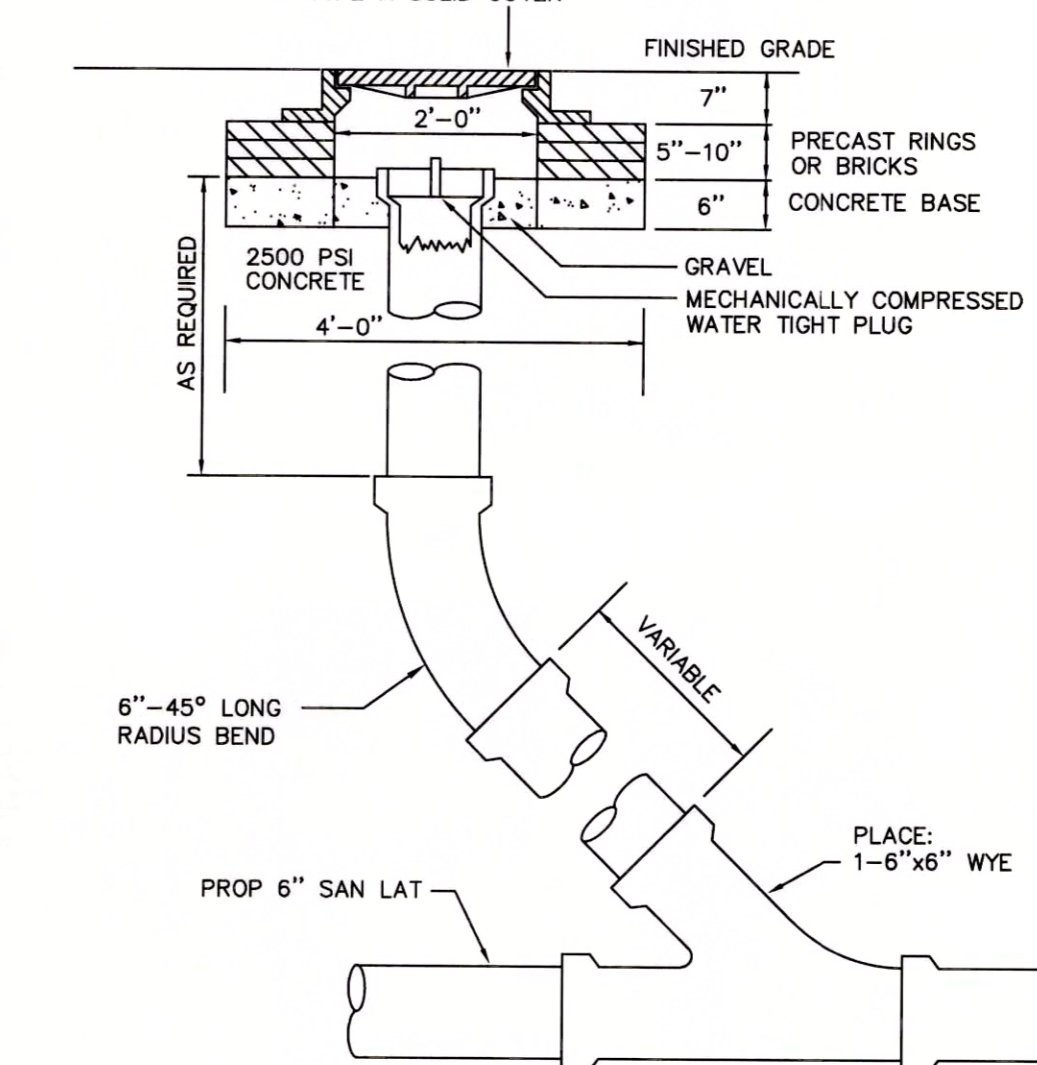
Main St. & South Gould_Owosso, MI

Figure 7

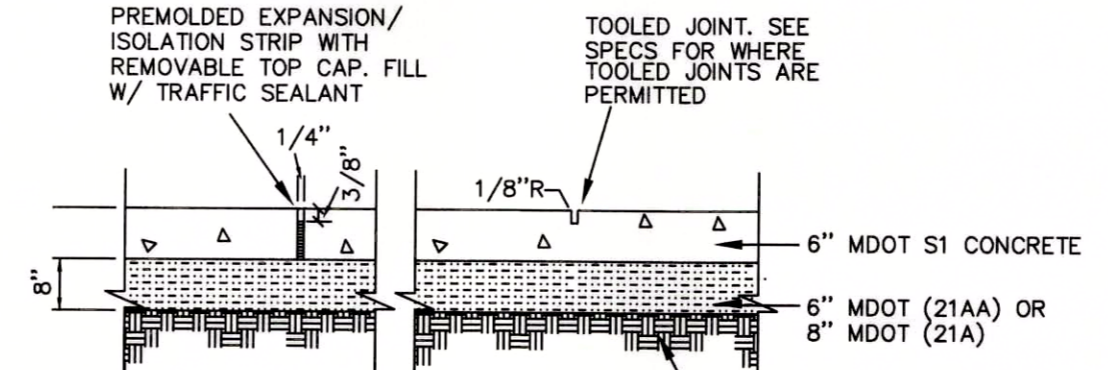
Engineering Site Plans



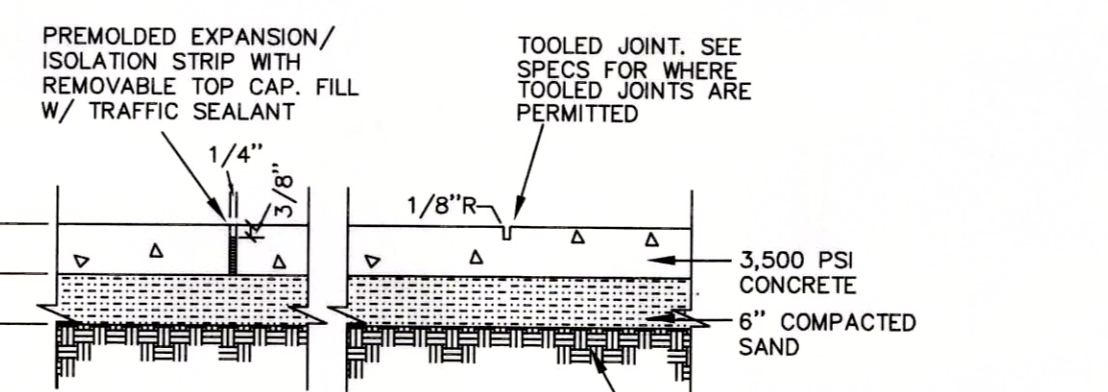
8" ROOF DRAIN LEAD (R.D.L.) CLEANOUT DETAIL



SAN SEWER LATERAL CLEANOUT DETAIL



HEAVY DUTY CONC. DETAIL (CONFIRM WITH SOIL REPORT)



4" CONCRETE WALKWAY DETAIL

- GENERAL NOTES:**
- Legal Description: Lots 83-87, Stafford Gardner & Trankles Central Add. except the N. 10' of said lots and also except a part of Lot 87 beginning at a point on the E. line Lot 87, 25' S. of the NE corner; thence N. on the E. line 15'; thence SE'ly to POB.
 - This property contains approximately 0.7 acres.
 - Existing Zoning - B-4 General Business District
Building Setback Requirements:
Front yard: 15 feet
Side yard:
-Corner lot which borders on a residential district to the rear: 20 feet
-Exterior side yard abutting a residential district: 10 feet
Rear yard: Adjacent to R-1, R-2 or RT-1 district: 10 percent of the depth of the lot 13 feet provided to center of alley
 - Parking Requirements:
Restaurant:
1 per 75 s.f. of useable floor area:
2800 s.f.-80% useable=2240 s.f. / 75 = 30 spaces
Retail:
1 per each 200 s.f. of useable floor area:
3407 s.f.-80% useable = 2726 s.f. / 200 = 14 spaces
TOTAL required: 44 spaces
Parking Provided:
Standard spaces 44
Barrier free spaces 2
TOTAL 46
 - Underground utilities:
Sanitary sewer - connect to existing sanitary sewer leads under M-21 (provide grease trap as necessary)
Watermain - connect to existing 8" watermain along south ROW of M-21
Storm sewer - provide catch basins in parking lot with outlet pipe tapped into 60 inch storm sewer along Gould Ave., as shown
 - Site is in Shiawassee River 100 year floodplain. Floodplain earth fill and compensating floodplain earth cut at 930 Jerome Ave. shall be performed in compliance with the terms and specifications of MDEQ Permit No. 14-78-0006-P issued January 23, 2015.
 - Work inside M-21 ROW to be coordinated with MDOT.
 - Due diligence must be exercised regarding on site environmental conditions as outlined in the global environmental engineering inc. reports dated Aug. 10, 2012 titled: Baseline Environmental Assessment Report and Section 7a Compliance Analysis for the 910 East Main Street Site.
 - All curb radius are 5' to face unless otherwise noted.
For existing soils and engineered fill specifications recommendations and light duty asphalt, medium duty asphalt, and concrete section requirements.
Refer to: Geotechnical Engineering Investigation Report dated March 19, 2015
W.E.S.T./Project No. 15-0014
By: Wolvshre Engineering & Surveyors, Inc.
312 North Street
Mason, MI 48854
Attn: Dan Wisinski
Phone: (517) 676-9200
11. PM Environmental J. Adam Patton, CHMM
Phone: (517) 325-9867
Cell: (517) 202-4288

STORM SEWER NOTES:

- 1.12" storm sewer pipe shall be SLPPP with water tight joint connection
- 2.All 15" storm sewer pipe shall be C-76-III, or SLPPP with water tight joint connections.
- 3.8" Roof drain lead and storm sewer pipe shall be PVC Schedule 40, or PVC SDR-26 pipe.
- 4.Storm sewer manhole and catchbasin structures shall be pre-cast concrete, per industry standards.

SANITARY SEWER AND WATERMAIN NOTES:

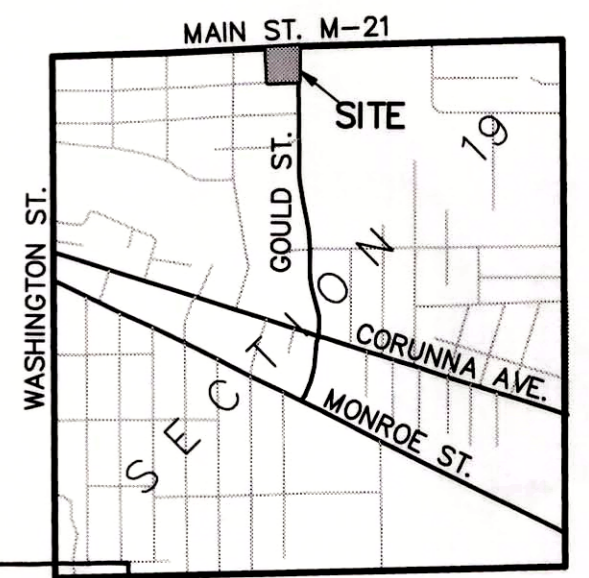
1. All sanitary sewer and watermain materials and construction methods shall conform to the standard specifications and details of the City of Owosso.
2. Verify existing sanitary lateral location, size, and depth before construction.
3. Any un-used (abandoned) sanitary lateral and water services shall be plugged and trench backfilled per City of Owosso approved methods. Existing size, location and depth information shall be furnished to the City of Owosso for accurate record keeping purposes.
4. Place proposed 8" sanitary lateral over proposed 15" storm sewer.
5. Proposed sanitary lateral and water service to have minimum 4 feet of earth cover, unless insulated and approved by the City.



Know what's below.
Call before you dig.



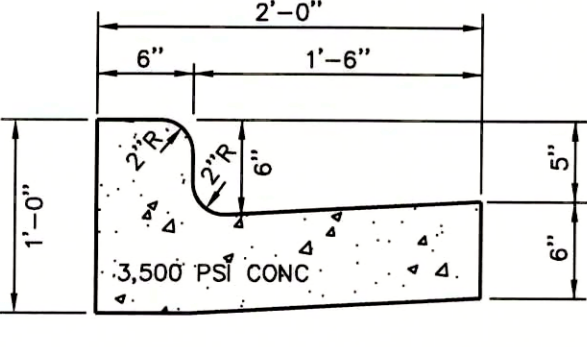
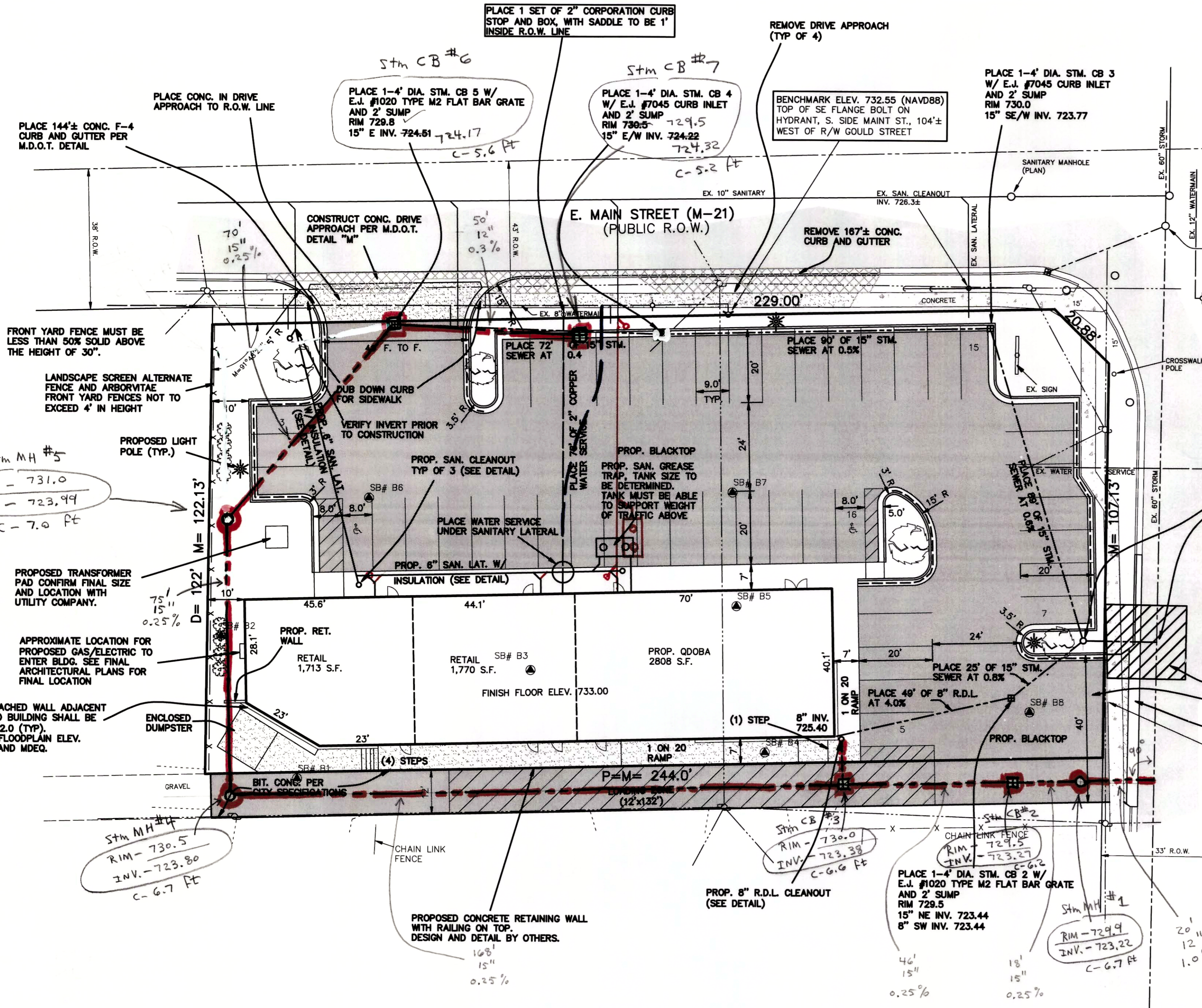
may 11, 2015 Concept
Utility Design Change
WORK SHEET 1.0f2



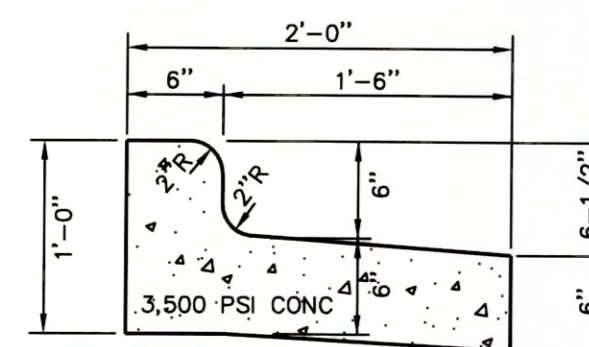
QDOBA/RETAIL SITE RE-DEVELOPMENT AND UTILITY PLAN

FOR: SOUTHWIND RESTAURANTS
109 EAST BROADWAY
MT. PLEASANT, MI 48858
ATTN: KEVIN EGNATUK
IN: PART OF THE NW 1/4, SECTION 19, T7N, R3E,
CITY OF OWOSSO, SHIAWASSEE COUNTY, MICHIGAN

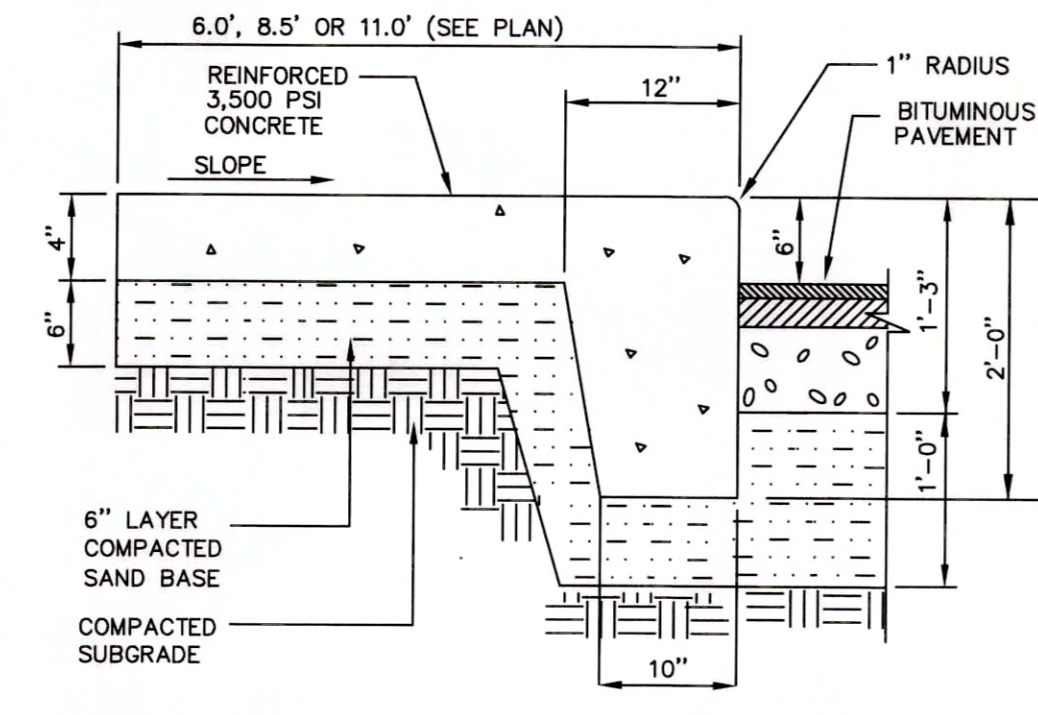
REVISIONS:	DRAWN BY: JSD	PROJ. ENG.: DDG	SHEET 2 of 3
3/20/15 REV. PER OWNER (JSD)	APPROVED BY: DDG	PROJ. SURV.: BMF	
	FILE NO.: 141574E	DATE: 3/2/2015	



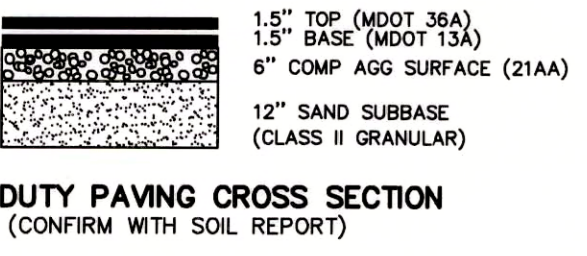
24" HEAD CURB DETAIL (PITCHED IN)



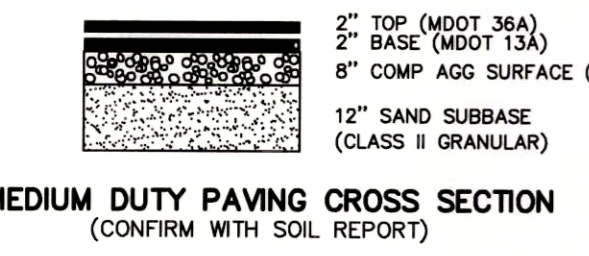
24" HEAD CURB DETAIL (PITCHED OUT)



INTEGRAL CONC WALK/CURB



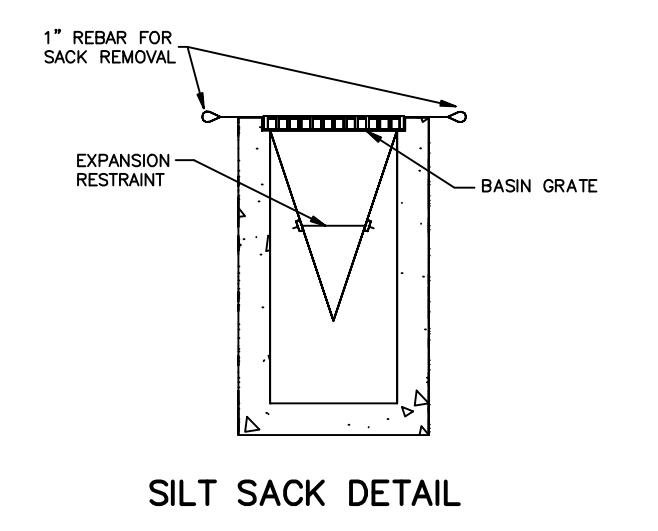
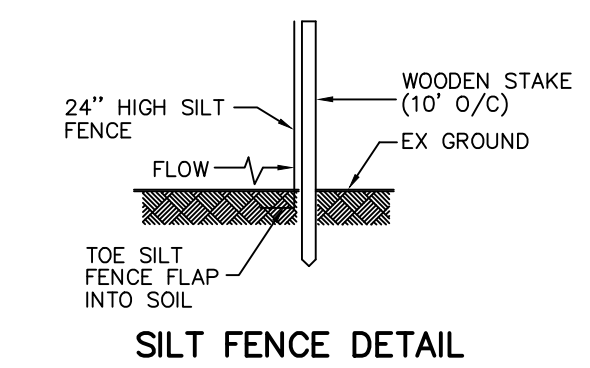
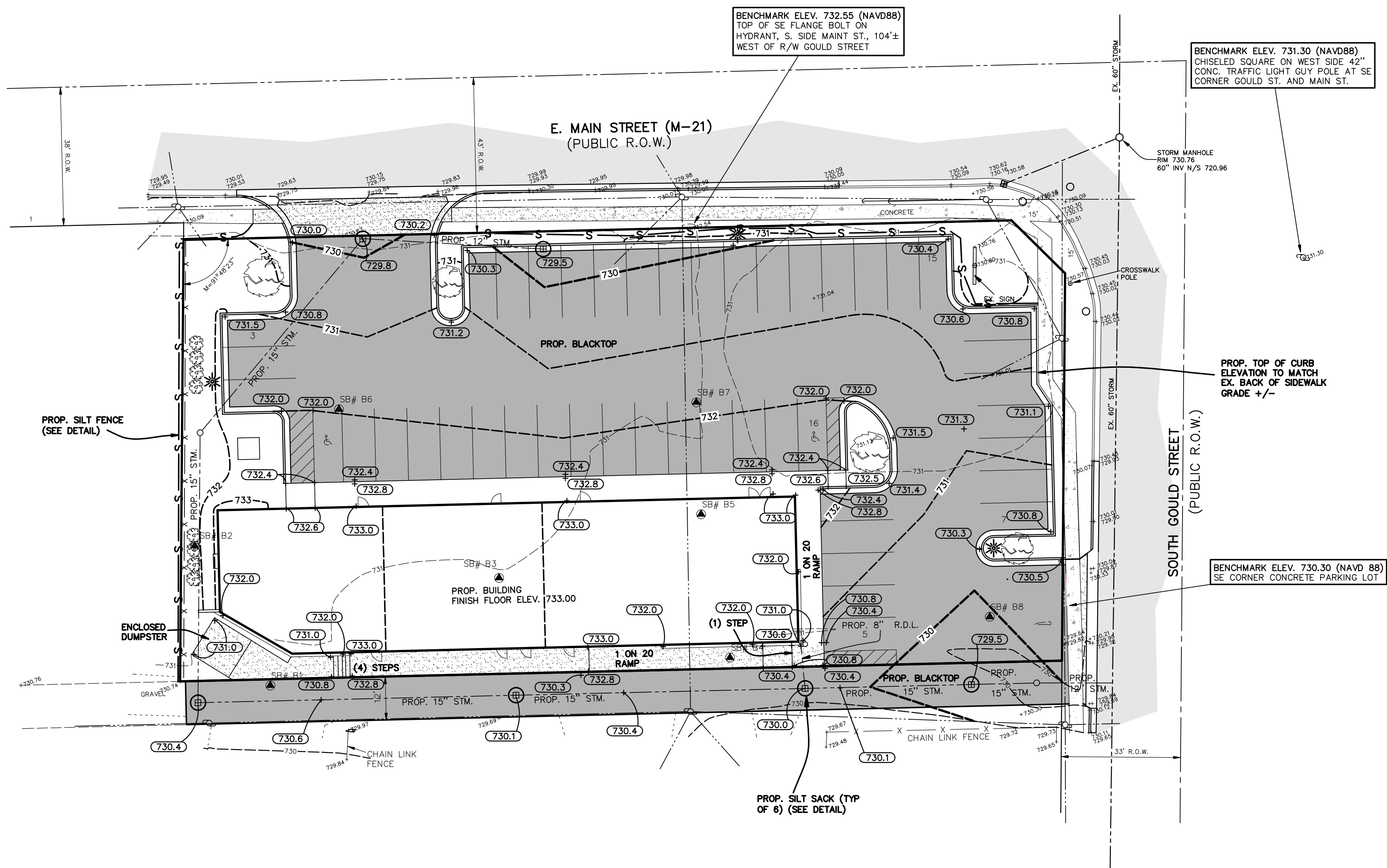
LIGHT DUTY PAVING CROSS SECTION (CONFIRM WITH SOIL REPORT)



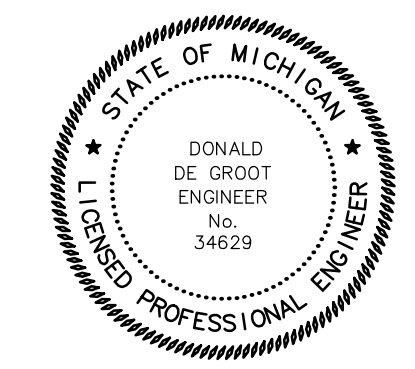
MEDIUM DUTY PAVING CROSS SECTION (CONFIRM WITH SOIL REPORT)

EX. STM. MH
RIM 729.11
60" N/S INV. 720.71

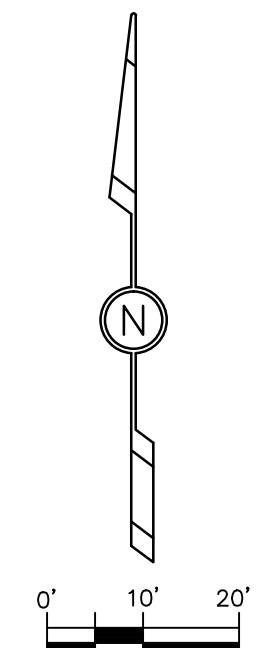
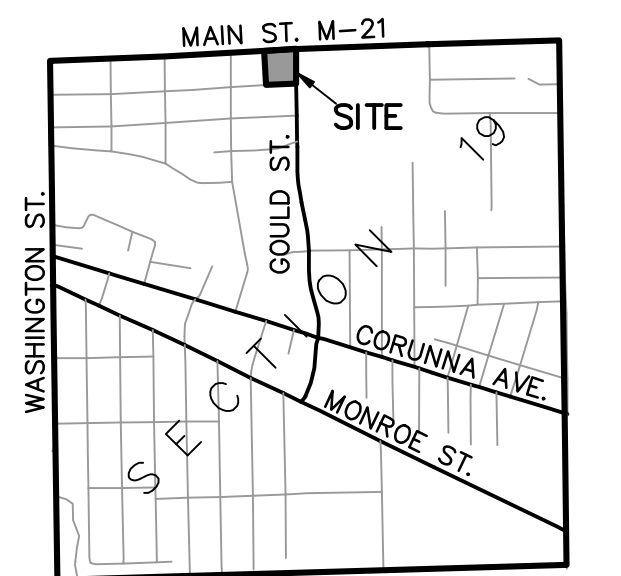
SCALE: 1" = 20'



- SOIL EROSION CONTROL NOTES :
1. ALL SOIL EROSION CONTROL MEASURES ARE TO BE IN PLACE PRIOR TO THE START OF ANY GRADING.
 2. INSPECT AND MAINTAIN ALL TEMPORARY SOIL EROSION CONTROLS AFTER EACH SIGNIFICANT RAINFALL AND UNTIL THE SITE HAS BEEN PERMANENTLY STABILIZED.
 3. ALL NON-PAVED SURFACES SHALL BE TOPSOILED WITH MINIMUM OF 4\"/>



Know what's below.
Call before you dig.



SCALE: 1" = 20'

GRADING AND SOIL EROSION CONTROL PLAN QDOBA/RETAIL SITE RE-DEVELOPMENT AT 910 E. MAIN ST.		
FOR: SOUTHWIND RESTAURANTS 109 EAST BROADWAY MT. PLEASANT, MI 48858 ATTN: KEVIN EGNATUK		
IN: PART OF THE NW 1/4, SECTION 19, T7N, R3E, CITY OF OWOSSO, SHIAWASSEE COUNTY, MICHIGAN		
REVISIONS: _____ _____ _____	DRAWN BY: JSD APPROVED BY: DDG FILE NO.: 141574E	PROJ. ENG.: DDG PROJ. SURV.: BMF DATE: 3/2/2015
5/28/15 REV-BROWNFIELD RE-DEVELOPMENT 3/20/15 REV-PER OWNER (JSD)	SHEET 3 of 3	

P:\Projects\141574\Drawings\dwg\141574-ALTI.dwg, GRD, 5/28/2015 4:06:18 PM, zheydenburg

GENERAL NOTES:

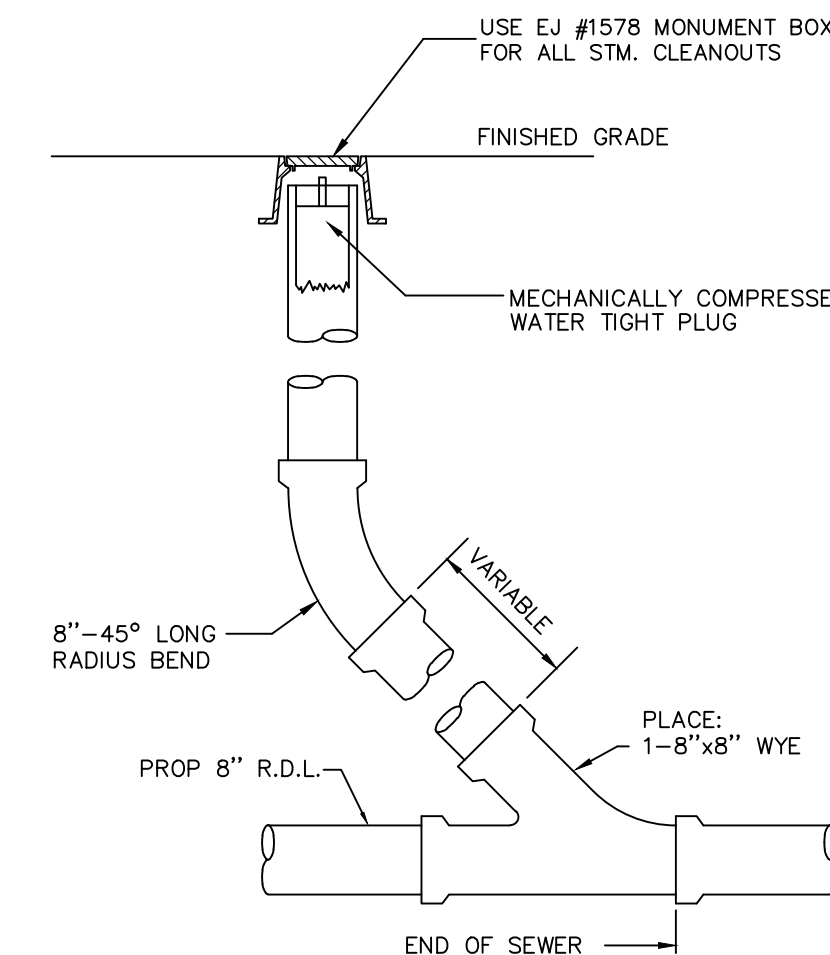
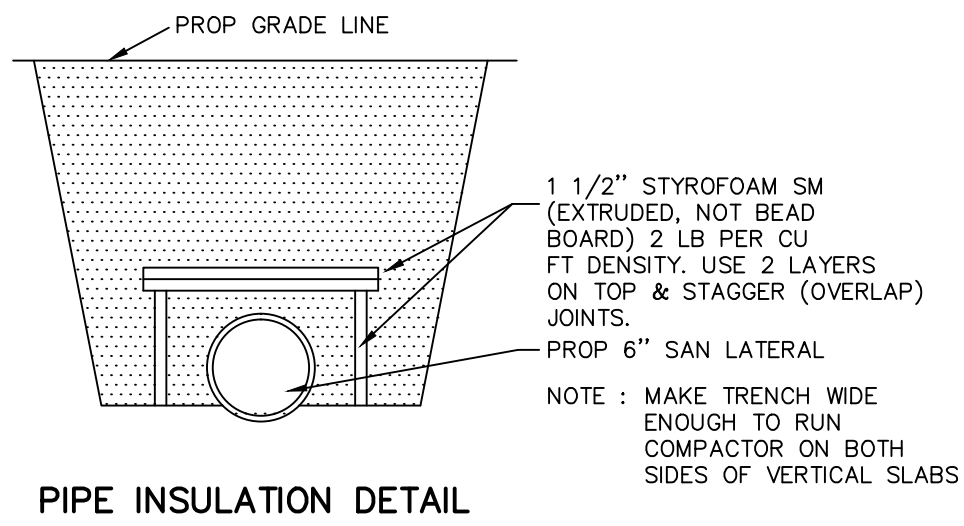
- Legal Description: Lots 83-87, Stafford Gardner & Trankles Central Add. except the N. 10' of said lots and also except a part of Lot 87 beginning at a point on the E. line Lot 87, 25' S. of the NE corner; thence N. on the E. line 15'; thence SE 1/4 to POB.
- This property contains approximately 0.7 acres.
- Existing Zoning - B-4 General Business District
 Building Setback Requirements:
 Front yard: 15 feet
 Side yard:
 -Corner lot which borders on a residential district to the rear: 20 feet
 -Exterior side yard abutting a residential district: 10 feet
 Rear yard: Adjacent to R-1, R-2 or RT-1 district: 10 percent of the depth of the lot 13 feet provided to center of alley
- Parking Requirements:
 Restaurant:
 1 per 75 s.f. of useable floor area:
 2800 s.f.-80% useable=2240 s.f. / 75 = 30 spaces
 Retail:
 1 per each 200 s.f. of useable floor area:
 3407 s.f.-80% useable = 2726 s.f. / 200 = 14 spaces
 TOTAL required: 44 spaces
 Parking Provided:
 Standard spaces 44
 Barrier free spaces 2
 TOTAL 46
- Underground utilities:
 Sanitary sewer - connect to existing sanitary sewer leads under M-21 (provide grease trap as necessary)
 Watermain - connect to existing 8" watermain along south ROW of M-21
 Storm sewer - provide catch basins in parking lot with outlet pipe tapped into 60 inch storm sewer along Gould Ave., as shown
- Site is in Shiawassee River 100 year floodplain. Floodplain earth fill and compensating floodplain earth cut at 930 Jerome Ave. shall be performed in compliance with the terms and specifications of MDEQ Permit No. 14-78-0006-P issued January 23, 2015.
- Work inside M-21 ROW to be coordinated with MDOT.
- Due diligence must be exercised regarding on site environmental conditions as outlined in the global environmental engineering inc. reports dated Aug. 10, 2012 titled: Baseline Environmental Assessment Report and Section 7a Compliance Analysis for the 910 East Main Street Site.
- All curb radius are 5' to face unless otherwise noted.
- For existing soils and engineered fill specifications recommendations and light duty asphalt, medium duty asphalt, and concrete section requirements, Refer to: Geotechnical Engineering Investigation Report dated March 19, 2015 W.E.S.I. Project No. 15-0014 By: Wolverine Engineering & Surveyors, Inc. 312 North Street Mason, MI 48854 Attn: Dan Wisinski Phone: (517) 676-9200
- For Brownfield Re-Development on the site, all construction activities must follow the MDEQ and PM ENVIRONMENTAL INC. requirements and recommendations. J. ADAM PATTON, CHMM Phone: (517) 325-9867 Cell: (517) 202-4288 PM ENVIRONMENTAL, INC. 3340 Ranger Road Lansing, MI 48906

STORM SEWER NOTES:

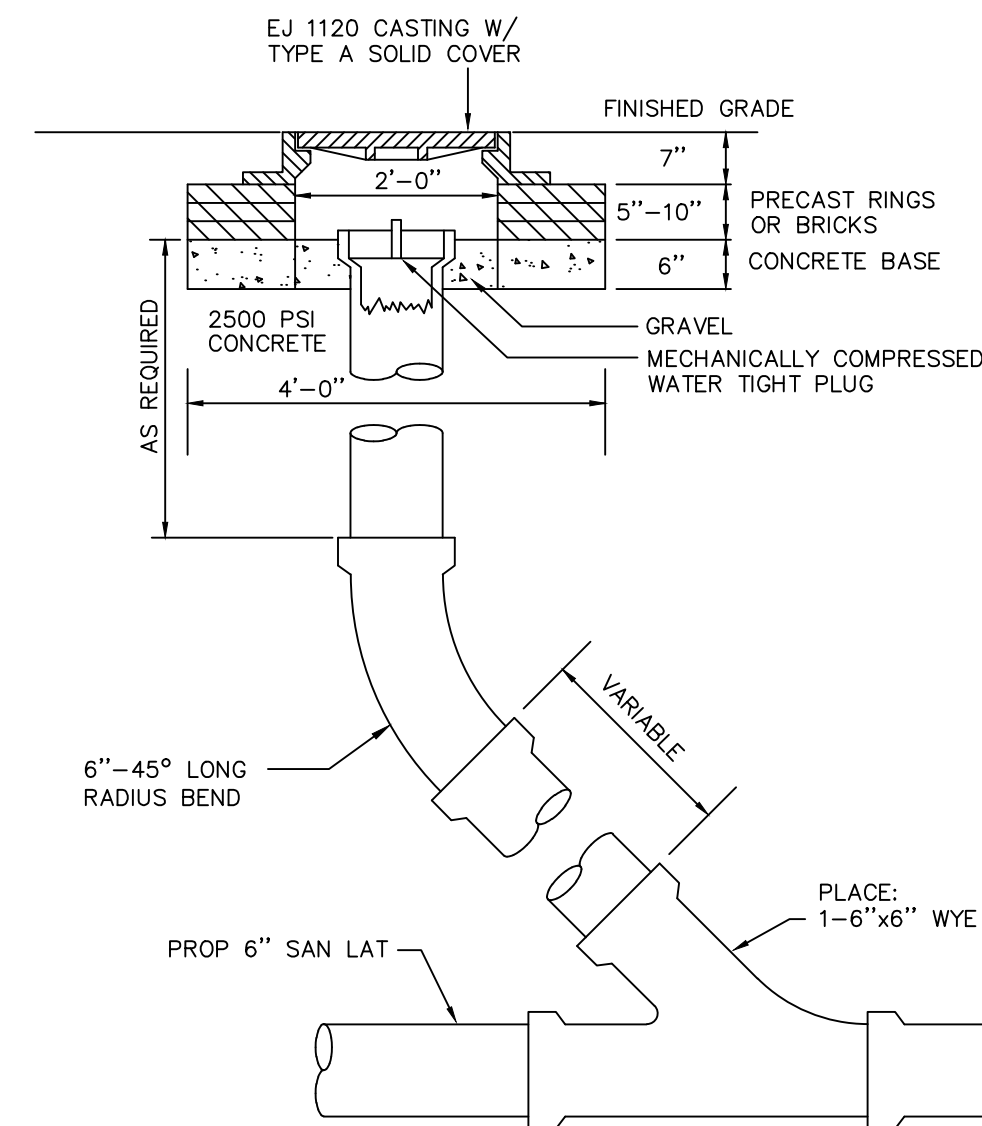
- All storm sewer installation and materials for structures and pipe, including gaskets and seals to follow the requirements and recommendations of the MDEQ and PM ENVIRONMENTAL INC. for the Brownfield Re-Development. See general note No. 11 above.

SANITARY SEWER AND WATERMAIN NOTES:

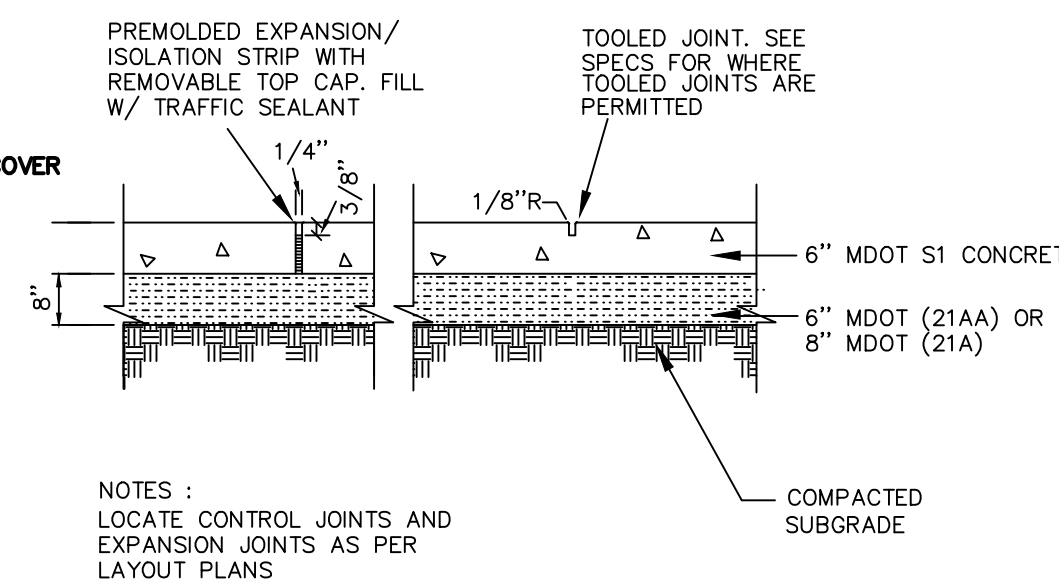
- All sanitary sewer and watermain materials and construction methods shall conform to the standard specifications and details of the City of Owosso.
- Verify existing sanitary lateral location, size, and depth before construction.
- Any un-used (abandoned) sanitary lateral and water services shall be plugged and trench backfilled per City of Owosso approved methods. Existing size, location and depth information shall be furnished to the City of Owosso for accurate record keeping purposes.
- Proposed sanitary lateral and water service to have minimum 4 feet of earth cover, unless insulated and approved by the City.



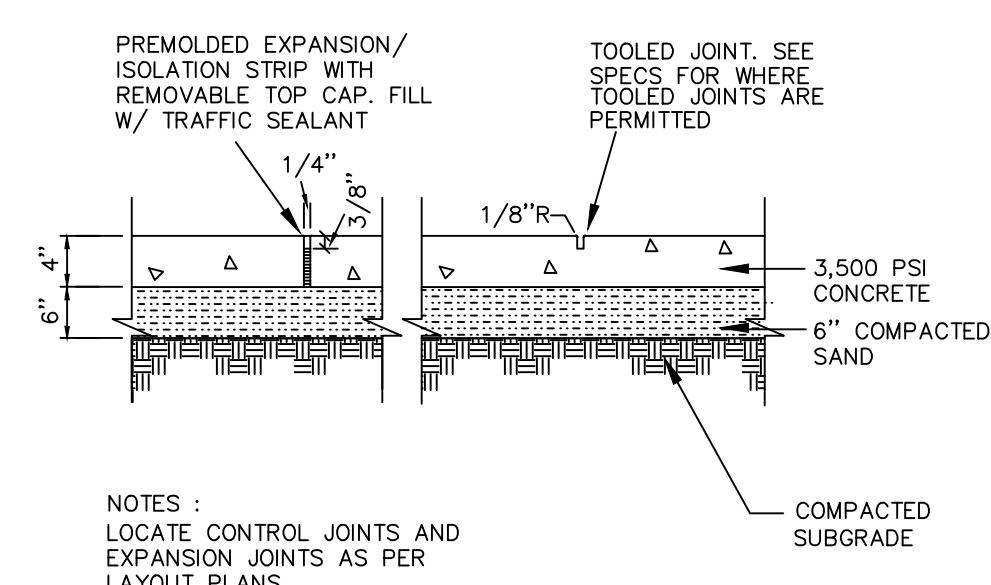
8" ROOF DRAIN LEAD (R.D.L.) CLEANOUT DETAIL



SAN SEWER LATERAL CLEANOUT DETAIL



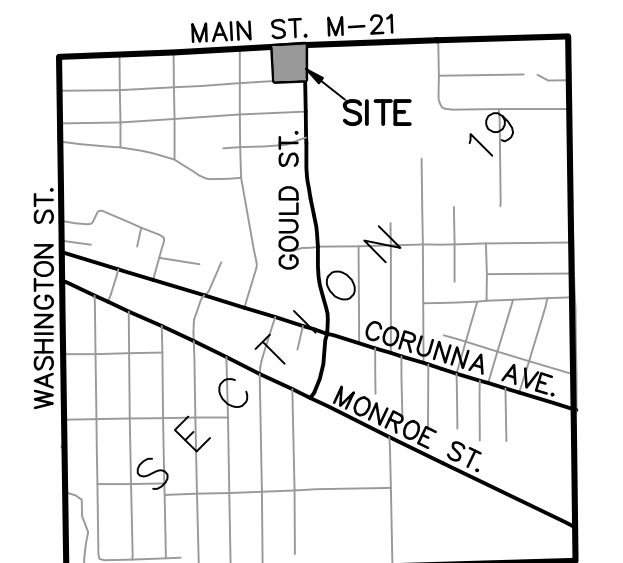
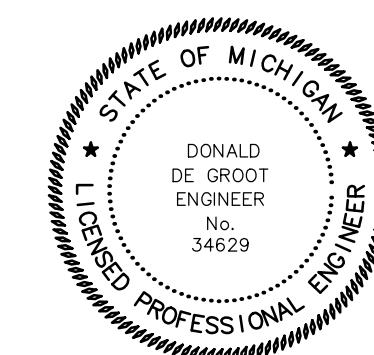
HEAVY DUTY CONC. DETAIL
(CONFIRM WITH SOIL REPORT)



4" CONCRETE WALKWAY DETAIL



Know what's below.
Call before you dig.



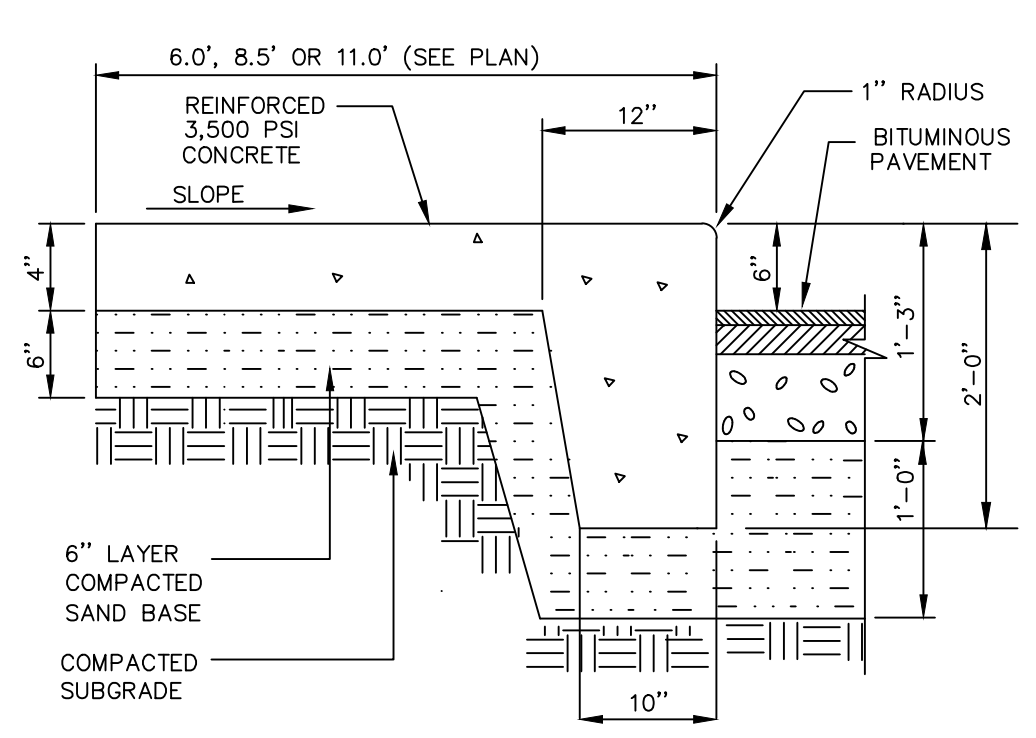
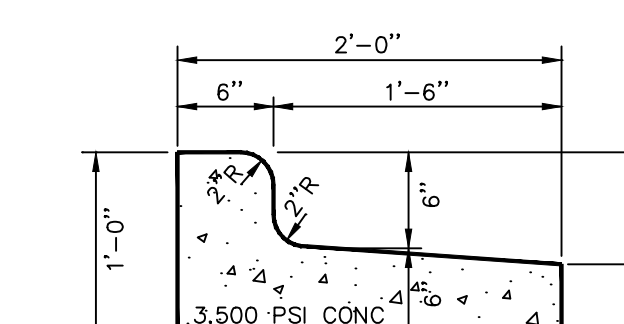
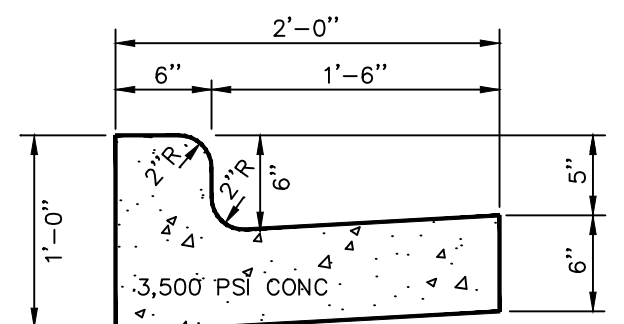
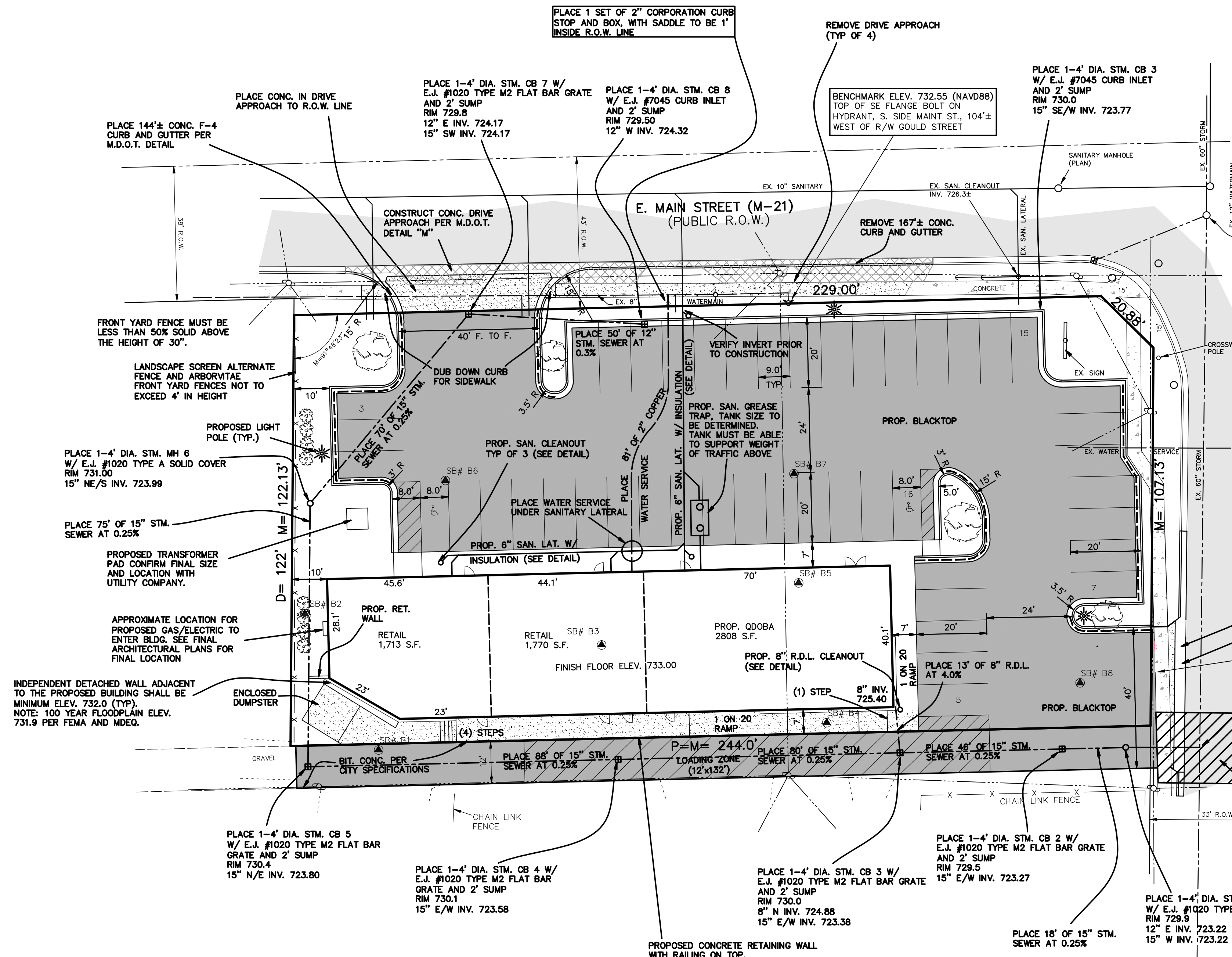
LOCATION MAP

QDOBA/RETAIL SITE RE-DEVELOPMENT AND UTILITY PLAN

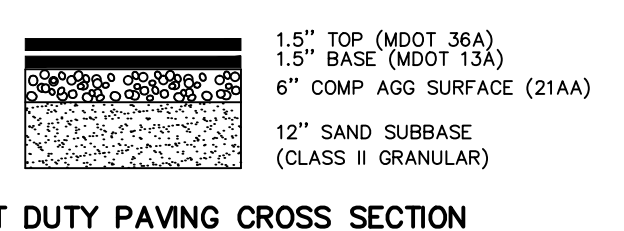
FOR: SOUTHWIND RESTAURANTS
109 EAST BROADWAY
MT. PLEASANT, MI 48858
ATTN: KEVIN EGNATUK
IN: PART OF THE NW 1/4, SECTION 19, T7N, R3E,
CITY OF OWOSSO, SHIAWASSEE COUNTY, MICHIGAN

REVISIONS:	DATE:	BY:

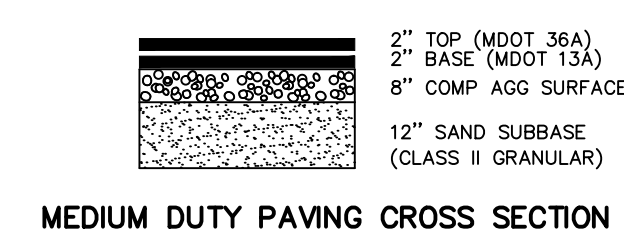
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3/20/15 REV. PER OWNER (USD)	APPROVED BY: DDG	PROJ. SURV.: BMF
3/10/15 REV. SAN. LATERAL (USD)	FILE NO.: 141574E	DATE: 3/2/2015



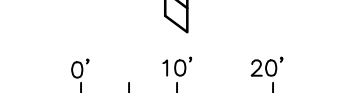
INTEGRAL CONC WALK/CURB



LIGHT DUTY PAVING CROSS SECTION
(CONFIRM WITH SOIL REPORT)

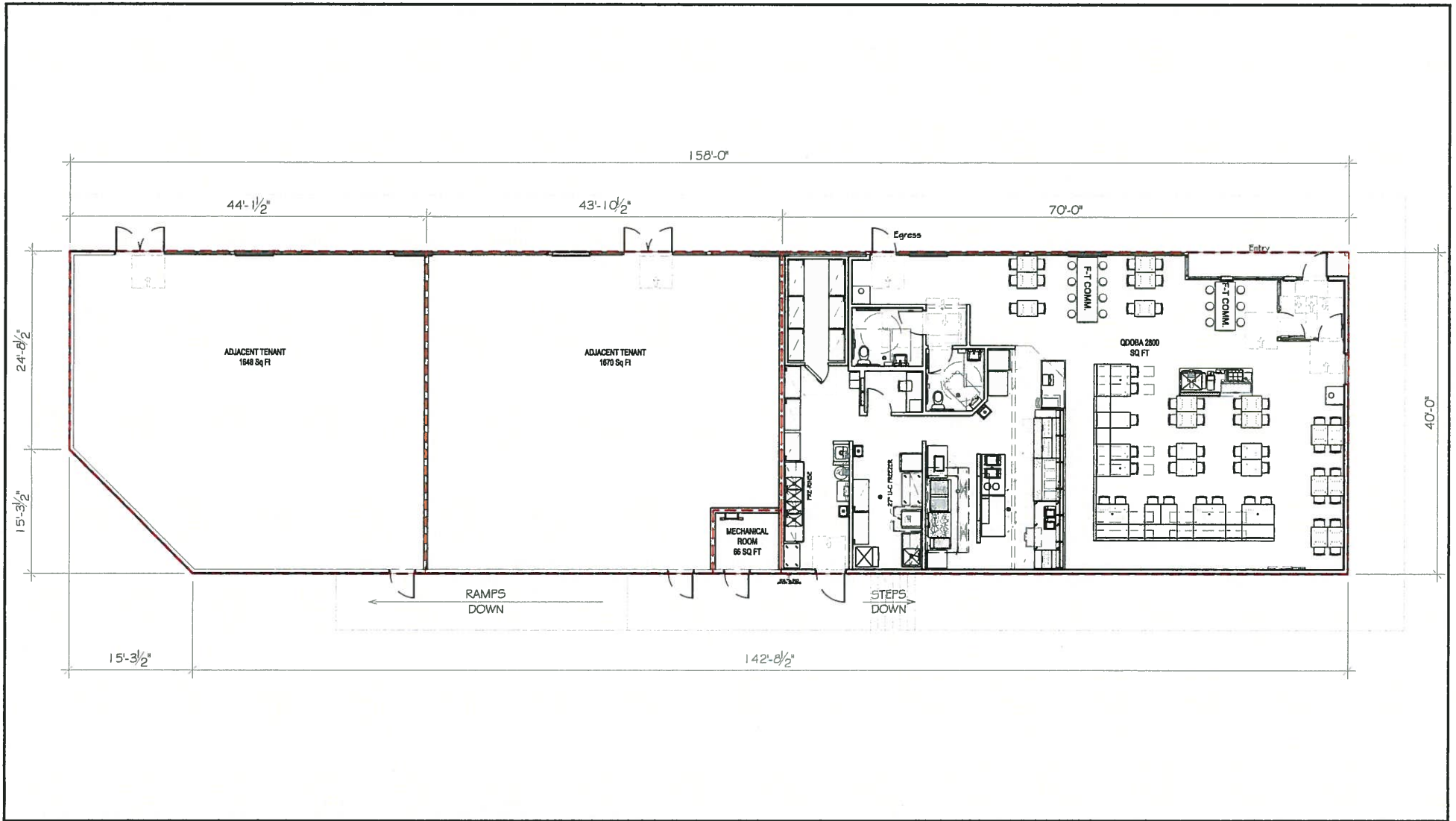


MEDIUM DUTY PAVING CROSS SECTION
(CONFIRM WITH SOIL REPORT)



SCALE: 1" = 20'

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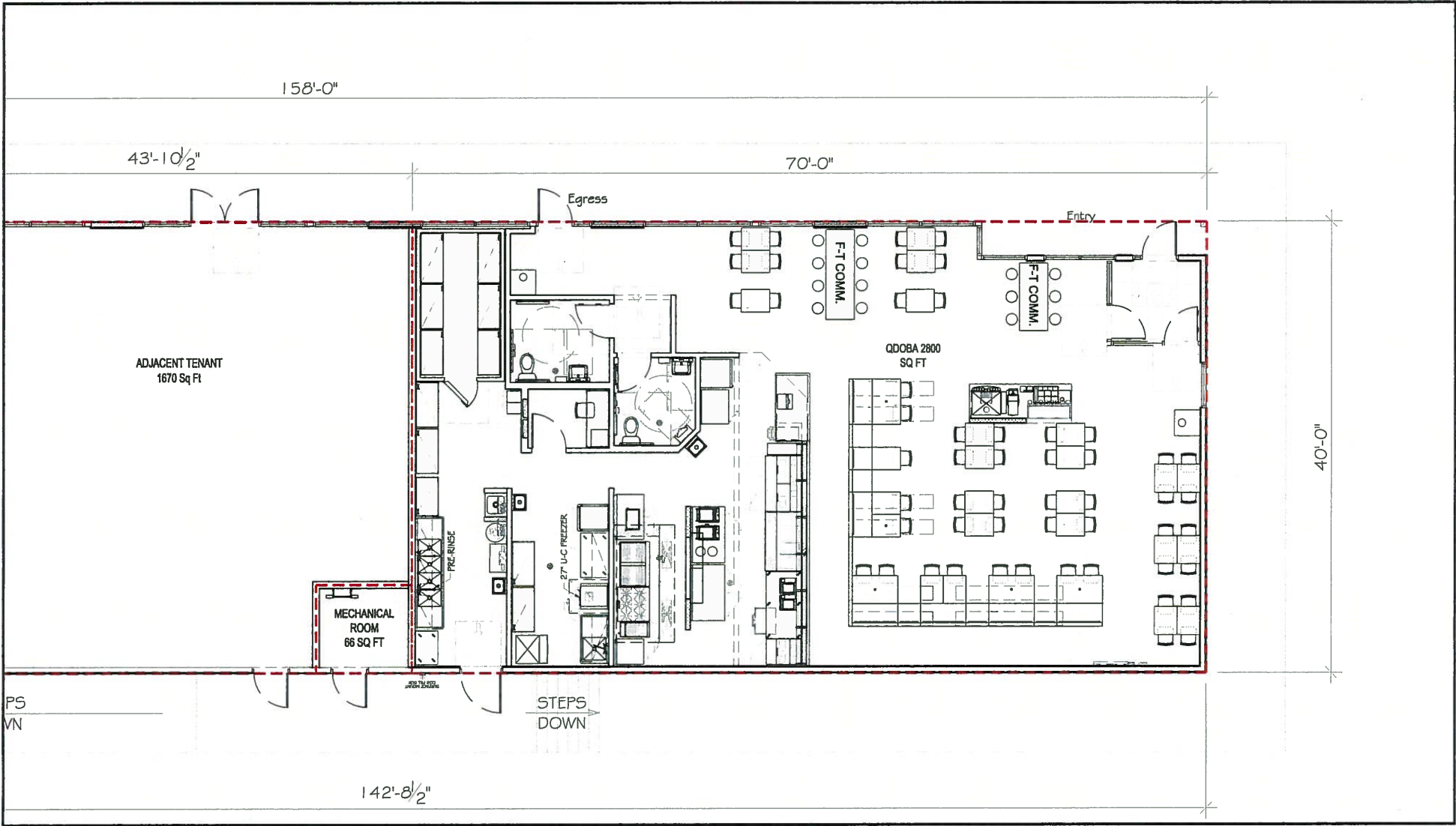
PROJ. NO.: 14-400	LOD 6191 Sq Ft						
DATE: 01/22/15	—						
SHEET # 005	—						
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OWNER	DATE	REVISION					
JTC	—	—					

OWNER / TENANT:
Johnroe
—
SCALE:
N.T.S.



THIS SCHEMATIC WAS PRODUCED FROM INFORMATION PROVIDED. A SITE SURVEY SHOULD BE COMPLETED TO VERIFY EXISTING CONDITIONS


 188 WEST MAIN ST.
LENA, IL 61048
PH: 815-369-9155
FAX: 815-369-4495
WWW.LOMBDESIGN.COM



PROJ. NO. 14-180
 DATE: 01/22/15
 SHEET # 005

Schematic
 2800 Sq Ft
 80 Seats

QDOBA
 Multi-Tenant Building
 Owosso, MI

OWNER / TENANT:
 Johroo

SCALE:
 1/8" = 1'-0"



THIS SCHEMATIC WAS PRODUCED FROM INFORMATION PROVIDED. A SITE SURVEY SHOULD BE COMPLETED TO VERIFY EXISTING CONDITIONS

UNILE Design Group

158 WEST MAIN ST.
 LENA, IL 61048

PH: 815-369-9135
 FAX: 815-369-4485
 WWW.UNILEDIGN.COM

TABLES

Table 1

Summary of Soil Analytical Results

TABLE 1 (1 OF 1)
SUMMARY OF SOIL ANALYTICAL RESULTS
830, 832, 834, 910 EAST MAIN STREET, OWOSSO, MICHIGAN
PM PROJECT #01-5363-0-001

VOLATILE ORGANIC COMPOUNDS, POLYNUCLEAR AROMATIC COMPOUNDS, & METALS (µg/Kg)			Benzene	n-Butylbenzene	sec-Butylbenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Ethylbenzene	Isopropyl benzene	2-Methylnaphthalene	Naphthalene	n-Propylbenzene	Tetrachloroethylene	Toluene	Trichloroethylene	1,2,3-Trimethylbenzene*	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	Xylenes	Other VOCs	Naphthalene	2-Methylnaphthalene	Other PNAs	Cadmium	Chromium	Lead	
Chemical Abstract Service Number (CAS#)			71432	104518	135988	156592	156605	100414	98828	91576	91203	103651	127184	108883	79016	526738	95636	108678	75014	1330207	Various	91203	91576	Various	7440439	16065831	7439921	
Sample ID	Sample Date	Sample Depth (feet bgs)	VOCs																				PNAs			Metals		
SB-1 (GEE)	7/31/2012	5.0-6.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20	<MDL	1,200	900	<MDL	<200	6,330	9,600	
SB-1 (GEE)	7/31/2012	9.0-10.0	<10	<10	<10	3,000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20	<MDL	<330	<330	<MDL	NA	NA	NA	
SB-2 (GEE)	7/31/2012	10.0-11.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-3 (GEE)	7/31/2012	10.0-11.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-5 (GEE)	7/31/2012	7.0-8.0	<10	<10	2,200	1,900	<10	<10	<10	<10	<10	2,000	16,600	<10	3,100	1,000	3,000	<10	<10	<20	<MDL	<330	<330	<MDL	<200	3,560	1,570	
SB-7 (GEE)	7/31/2012	8.0-9.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	3,780,000	<10	<10	<10	<10	<10	<10	<20	<MDL	600	<330	<MDL	360	4,120	29,100	
SB-8 (GEE)	7/31/2012	3.0-4.0	<10	<10	<10	41,700	<10	<10	<10	<10	<10	<10	68,000	<10	49,400	<10	<10	<10	<10	<20	<MDL	<330	<330	<MDL	NA	NA	NA	
PSB-1	04/29/2015	9.0-10.0	690	<80	<80	<80	<80	1,230	<400	<200	<400	<80	2,020	130	<80	<80	<80	<80	<80	1,080	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-1	04/29/2015	18.0-19.0	<70	<70	<70	<70	<70	<70	<400	<100	<400	90	<70	<70	<70	<70	<70	<70	<70	200	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-2	04/28/2015	0.5-1.5	<70	<70	<70	<70	<70	<70	<300	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-2	04/28/2015	13.0-14.0	<70	440	150	<70	<70	1,870	800	<100	800	4,620	<70	<70	<70	2,120	10,440	5,080	<70	4,460	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-2	04/28/2015	19.0-20.0	630	<70	<70	3,570	<70	<70	<300	<100	<300	<70	90	<70	<70	<70	<70	<70	490	<170	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-3	04/28/2015	2.0-3.0	<80	<80	<80	<80	<80	<80	<400	<200	<400	<80	<80	<80	<80	<80	<80	<80	<80	<280	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-3	04/28/2015	13.0-14.0	12,000	510	90	2,520	<70	310	<300	300	<300	930	<70	4,600	<70	460	2,690	1,010	240	400	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-3	04/28/2015	19.0-20.0	1,590	<70	<70	410	<70	3,660	<400	<100	500	290	210	360	<70	680	1,680	410	320	10,800	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-4	04/28/2015	3.0-4.0	<90	<90	<90	<90	<90	<400	<200	<400	<90	260	<90	<90	<90	<90	<90	<90	<90	<290	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-4	04/28/2015	7.0-8.0	<100	<100	<100	10,000	300	<100	<500	<200	<500	<100	<100	<100	1,100	<100	<100	<100	100	<300	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-4	04/28/2015	20.0-21.0	1,130	<80	<80	2,680	<80	420	<400	<200	<400	<80	950	230	160	<80	<80	<80	200	1,520	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-5	04/28/2015	3.5-4.5	<70	<70	<70	<70	<70	<70	<300	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-5	04/28/2015	7.0-8.0	<100	<100	<100	1,600	<100	<100	<500	<200	<500	<100	21,300	<100	3,200	<100	<100	<100	<100	<300	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-6	04/28/2015	3.0-4.0	<80	<80	<80	<80	<80	<80	<400	<200	<400	<80	<80	<80	<80	<80	<80	<80	<80	<280	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-6	04/28/2015	13.0-14.0	3,340	170	<70	<70	<70	890	<300	<100	<300	110	<70	5,320	<70	80	240	80	<70	2,970	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-7	04/29/2015	3.0-4.0	<70	<70	<70	<70	<70	<70	<400	<100	<400	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-8	04/28/2015	3.0-4.0	<70	<70	<70	<70	<70	<70	<400	<100	<400	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-8	04/28/2015	19.0-20.0	<80	<80	<80	<80	<80	<80	<400	<200	<400	<80	<80	<80	<80	130	<80	<80	<80	<280	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-9	04/28/2015	1.0-2.0	<70	<70	<70	<70	<70	<70	<300	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-9	04/28/2015	3.0-4.0	<80	<80	<80	<80	<80	<80	<400	<200	<400	<80	<80	<80	<80	<80	<80	<80	<80	<280	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-10	04/29/2015	3.0-4.0	<70	<70	<70	<70	<70	<70	<300	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-11	04/28/2015	3.0-4.0	<60	<60	<60	<60	<60	<60	<300	<100	<300	<60	<60	<60	<60	<60	<60	<60	<60	<160	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-12	04/29/2015	3.0-4.0	<60	<60	<60	<60	<60	<60	<300	<100	<300	<60	<60	<60	<60	<60	<60	<60	<60	<160	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-12	04/29/2015	4.0-5.0	<70	<70	<70	<70	<70	<70	<300	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-13	04/29/2015	3.0-4.0	<70	<70	<70	<70	<70	<70	<300	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-14	04/29/2015	4.0-5.0	<80	<80	<80	<80	<80	<80	<400	<200	<400	<80	300	<80	<80	<80	<80	<80	<80	<280	<MDL	NA	NA	NA	NA	NA	NA	NA
PSB-14	04/29/2015	9.0-10.0	4,300	<400	<400	20,500	<400	6,200	<2,000	<700	<2,000	<400	2,000	30,900	<400	700	<400	2,100	23,900	<MDL	NA	NA	NA	NA	NA	NA	NA	

Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013
MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013

Residential (µg/Kg)																											
Statewide Default Background Levels	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,200	18,000	21,000
Drinking Water Protection (Res DWP)	100	1,600	1,600	1,400	2,000	1,500	91,000	57,000	35,000	1,600	100	16,000	100	1,800	2,100	1,800	40	5,600	Various	35,000	57,000	Various	6,000	30,000	7,00E+05		
Groundwater Surface Water Interface Protection (GSIP)	4,000 (X)	ID	ID	12,000	30,000 (X)	360	3,200	730	ID	1,200 (X)	5,400	4,000 (X)	570	570	1,100	280 (X)	820	Various	730	4,200	Various	(G,X)	3,300	(G,X)			
Soil Volatilization to Indoor Air Inhalation (Res SVII)	1,600	ID	ID	22,000	23,000	87,000	4.0E+05 (C)	2.70E+06	2.50E+05	ID	11,000	3.3E+05 (C)	1,000	2.6E+06 (C)	4.3E+06 (C)	2.6E+06 (C)	270	6.3E+06 (C)	Various	2.50E+05	2.70E+06	Various	NLV	NLV	NLV		
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)	13,000	ID	ID	1.80E+05	2.80E+05	7.20E+05	1.70E+06	1.50E+06	3.00E+05	ID	1.70E+05	2.80E+06	11,000														

Table 2

Summary of Groundwater Analytical Results

**TABLE 2 (1 OF 1)
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
830, 832, 834, 910 EAST MAIN STREET, OWOSSO, MICHIGAN
PM PROJECT #01-5363-0-001**

VOLATILE ORGANIC COMPOUNDS, POLYNUCLEAR AROMATIC COMPOUNDS & METALS (µg/L)				Benzene	n-Butylbenzene	cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	Ethylbenzene	n-Propylbenzene	Tetrachloroethylene	Toluene	Trichloroethylene	1,2,3-Trimethylbenzene ⁵	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	Xylenes	Other VOCs	Naphthalene	2-Methylnaphthalene	Other PNAs	Cadmium	Chromium	Lead	
Chemical Abstract Service Number (CAS#)				71432	104518	156592	156605	100414	103651	127184	108883	79016	526738	95636	108678	75014	1330207	Various	91203	91576	Various	7440439	16065831	7439921	
Sample ID	Sample Date	Screen Depth (feet bgs)	Depth to Groundwater (feet bgs)	VOCs														PNAs			Metals				
SB-1 Water (GEE)	7/31/2012	15.0-20.0	16.0	<1	<1	200	<1	<1	<1	5,100	<1	<1	<1	<1	<1	<1	<1	<MDL	17	7	<MDL	<1	<10	<3	
TMW-1	04/29/2015	4.83-9.83	6.86	460	<10	<10	<10	30	<10	130	20	<10	10	<10	<10	<10	110	<MDL	NA	NA	NA	NA	NA	NA	
TMW-2	04/28/2015	7.12-12.12	6.63	<100	<100	800	<100	100	<100	2,400	<100	1,000	<100	100	<100	<100	300	<MDL	NA	NA	NA	NA	NA	NA	
TMW-3	04/28/2015	7.19-12.19	7.43	<100	<100	<100	<100	300	200	<100	<100	<100	200	1,100	300	<100	500	<MDL	NA	NA	NA	NA	NA	NA	
TMW-6	04/28/2015	9.68-14.68	7.02	20	10	260	<10	10	30	<10	<10	<10	<10	<10	<10	90	<30	<MDL	NA	NA	NA	NA	NA	NA	
TMW-8	04/28/2015	8.77-13.77	6.93	<50	<50	60	<50	340	110	<50	<50	<50	170	610	170	<50	700	<MDL	NA	NA	NA	NA	NA	NA	
TMW-11	04/28/2015	8.54-13.54	9.22	<1	<1	8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	NA	NA	NA	NA	NA	NA	
TMW-13	04/29/2015	7.63-12.63	6.83	1	<1	74	2	<1	<1	15	<1	11	<1	<1	<1	14	<3	<MDL	NA	NA	NA	NA	NA	NA	
Generic Groundwater Cleanup Criteria Table 1: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013 MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013																									
Residential/Nonresidential (µg/L)																									
Residential Drinking Water (Res DW)	5.0 (A)	80	70 (A)	100 (A)	74 (E)	80	5.0 (A)	790 (E)	5.0 (A)	63 (E)	63 (E)	72 (E)	2.0 (A)	280 (E)	Various	520	260	Various	5.0 (A)	100 (A)	4.0 (L)				
Residential Health Based Drinking Water Values	NL	NL	NL	NL	700 (E)	NL	NL	1,000 (E)	NL	NL	1,000 (E)	1,000 (E)	NL	10,000 (E)	Various	NL	NL	Various	NL	NL	NL				
Nonresidential Drinking Water (Nonres DW)	5.0 (A)	230	70 (A)	100 (A)	74 (E)	230	5.0 (A)	790 (E)	5.0 (A)	63 (E)	63 (E)	72 (E)	2.0 (A)	280 (E)	Various	1,500	750	Various	5.0 (A)	100 (A)	4.0 (L)				
Nonresidential Health Based Drinking Water Values	NL	NL	NL	NL	700 (E)	NL	NL	1,000 (E)	NL	NL	2,900 (E)	2,900 (E)	NL	10,000 (E)	Various	NL	NL	Various	NL	NL	NL				
Groundwater Surface Water Interface (GSI)	200 (X)	ID	620	1,500 (X)	18	ID	60 (X)	270	200 (X)	17	17	45	13 (X)	41	Various	11	19	Various	{G,X}	11	{G,X}				
Residential Groundwater Volatilization to Indoor Air Inhalation (Res GVII) ²	5,600	ID	93,000	85,000	1.10E+05	ID	25,000	5.3E+5 (S)	2,200	56,000 (S)	56,000 (S)	61,000 (S)	1,100	1.9E+5 (S)	Various	31,000 (S)	25,000 (S)	Various	NLV	NLV	NLV				
Nonresidential Groundwater Volatilization to Indoor Air Inhalation (Nonres GVII) ²	35,000	ID	2.10E+05	2.00E+05	1.7E+5 (S)	ID	1.70E+05	5.3E+5 (S)	4,900	56,000 (S)	56,000 (S)	61,000 (S)	13,000	1.9E+5 (S)	Various	31,000 (S)	25,000 (S)	Various	NLV	NLV	NLV				
Screening Levels (µg/L)																									
Residential Groundwater Vapor Intrusion Screening Levels (GW_{VI-res}) ³	27	91	83	360	700	92	94	36,000	9.8	2,400	1,700	1200	2.8	10,000	Various	240	9.40E+02	Various	NL	NL	NL				
Nonresidential Groundwater Vapor Intrusion Screening Levels (GW_{VI-nr}) ³	140	380	350	1,500	2,600	390	460	1.50E+05	41	10,000	7,300	5,100	52	10,000	Various	1,200	3.9E+03	Various	NL	NL	NL				
Residential Vapor Intrusion Shallow Groundwater Screening Levels (GW_{VI-sump-res}) ⁴	5.0	1.0	70	100	700	1.0	5.0	1,000	5.0	5.0	1.7	1.2	2.0	10,000	Various	5.0	5	Various	NL	NL	NL				
Nonresidential Vapor Intrusion Shallow Groundwater Screening Levels (GW_{VI-sump-nr}) ⁴	5.0	1.0	70	100	700	1.0	5.0	1,000	5.0	10	7.3	5.1	2.0	10,000	Various	5.0	5	Various	NL	NL	NL				
Water Solubility	1.75E+06	NA	3.50E+06	6.30E+06	1.69E+05	NA	2.00E+05	5.26E+05	1.10E+06	56,000	56,000	61,000	2.76E+06	1.86E+05	Various	31,000	25000	Various	NA	NA	NA				
Flammability and Explosivity Screening Level	68,000	ID	5.30E+05	2.30E+05	43,000	ID	ID	61,000	ID	56,000 (S)	56,000 (S)	ID	33,000	70,000	Various	NA	ID	Various	ID	ID	ID				
Acute Vapor Intrusion Screening Levels for Groundwater (µg/L)																									
IRASL Groundwater (AGW_{VI})	11,000	NL	6.4E+06	4,000	NL	NL	5.2E+04	2.6E+05	2.0E+06	NL	NL	NL	3.0E+05	1.5E+05	Various	NL	NL	Various	NL	NL	NL				
IRASL Groundwater In Contact With Structure (AGW_{VI+sump})	11	NL	6,400	4.0	NL	NL	53	260	2,000	NL	NL	NL	300	150	Various	NL	NL	Various	NL	NL	NL				

- Applicable Criteria/RBSL Exceeded
- BOLD** Value Exceeds Applicable Criteria
- Nonresidential VISL Exceeded
- bgs Below Ground Surface (feet)
- ND Not detected at levels above the laboratory Method Detection Limit (MDL) or Minimum Quantitative Level (MQL)
- ¹ Rule 323.1057 of Part 4 Water Quality Standards
- ² Tier 1 GVII Criteria based on 3 meter (or greater) groundwater depth
- ³ (2013 Vapor Intrusion Guidance) Screening Levels based on depth to groundwater less than 1.5 meters and not in contact with building foundation
- ⁴ (2013 Vapor Intrusion Guidance) Screening levels based on groundwater in contact with the building foundation or within a sump
- ⁵ 1,2,3-Trimethylbenzene RBSLs based on the more restrictive of 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
- NA Not Applicable
- NL Not Listed
- NLL Not Likely to Leach
- NLV Not Likely to Volatilize
- ID Insufficient Data

Table 3

Summary of Costs for Eligible Activities

Table 3: Estimated Costs of Eligible Activities				
Item/Activity	TOAL ESTIMATED COSTS	MDEQ BROWNFIELD REDEVELOPMENT LOAN ELIGIBLE ACTIVITIES	MDEQ AND LOCAL ACT 381 ELIGIBLE ACTIVITIES	LOCAL ACT 381 ELIGIBLE ACTIVITIES
Baseline Environmental Assessments				
Phase I ESA, Phase II/BEA	\$ 2,250		\$ 2,250	
Documentation of Due Care Compliance	\$ 8,050		\$ 8,050	
Baseline Environmental Assessments Sub-Total	\$ 10,300		\$ 10,300	
Due Care Activities				
Transport and disposal of contaminated waste soil associated with building footing, utility, parking lot, sidewalk, curb, and gutter excavation and groundwater removal management and disposal	\$ 152,000	\$ 152,000		
Removal, transport and disposal of contaminated concrete building slab and footing materials	\$ 25,000	\$ 25,000		
Chemical-resistant gasketing for sanitary, storm, and water utility piping	\$ 5,500	\$ 5,500		
Design and installation of passive spray-applied vapor barrier system	\$ 38,000	\$ 38,000		
Installation of visual demarcation underlayment in non-paved areas requiring dermal contact surface barrier	\$ 1,250	\$ 1,250		
Response activity preparation planning, oversight, monitoring, laboratory analysis, project management and reporting by an environmental professional	\$ 18,000	\$ 18,000		
Due Care Activities Sub-Total	\$ 239,750	\$ 239,750		
Additional Response Activities				
Building and Site Demolition	\$ 35,000	\$ 15,000	\$ 20,000	
Demolition Sub-Total	\$ 35,000	\$ 15,000	\$ 20,000	
Asbestos				
Pre-Demo Asbestos Survey/Reporting	\$ 5,830		\$ 5,830	
Asbestos Abatement, Oversight, Clearance Testing	\$ 16,750			\$ 16,750
Asbestos Sub-Total	\$ 22,580		\$ 5,830	\$ 16,750
Preparation of Brownfield Plan and Act 381 Workplan				
Brownfield Plan and Act 381 Work Plan	\$ 12,000		\$ 12,000	
Brownfield Plan and Act 381 Work Plan Sub-Total	\$ 12,000		\$ 12,000	
Project Sub Totals	\$ 319,630	\$ 254,750	\$ 48,130	\$ 16,750
15% Contingency (Excludes Baseline Environmental Assessments and Brownfield Plan/Act 381 Work Plan)	\$ 44,600	\$ 38,213	\$ 3,875	\$ 2,513
Developer Eligible Reimbursement Total	\$ 364,230	\$ 292,963	\$ 52,005	\$ 19,263
TIF Capture for Local Site Remediation Revolving Fund (Local Only Taxes)	\$ 113,580		\$ 56,146	\$ 57,434
Total Cost of Eligible Activities to be Funded through TIF	\$ 477,810	\$ 292,963	\$ 108,151	\$ 76,696

Table 4

MDEQ and Local Tax Capture Reimbursement Schedule

Tax Increment Financing Estimates
Table 4

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	
	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	
\$	184,000	\$ 184,000	\$ 184,000	\$ 184,000	\$ 184,000	\$ 184,000	\$ 184,000	\$ 184,000	\$ 184,000	\$ 184,000	\$ 184,000	
\$	647,924	\$ 654,404	\$ 660,948	\$ 667,557	\$ 674,233	\$ 680,975	\$ 687,785	\$ 694,663	\$ 701,609	\$ 708,625	\$ 715,712	
\$	463,924	\$ 470,404	\$ 476,948	\$ 483,557	\$ 490,233	\$ 496,975	\$ 503,785	\$ 510,663	\$ 517,609	\$ 524,625	\$ 531,712	
\$	162	\$ 165	\$ 167	\$ 169	\$ 172	\$ 174	\$ 176	\$ 179	\$ 181	\$ 184	\$ 186	\$ 3,831
\$	928	\$ 941	\$ 954	\$ 967	\$ 980	\$ 994	\$ 1,008	\$ 1,021	\$ 1,035	\$ 1,049	\$ 1,063	\$ 21,892
\$	46	\$ 47	\$ 48	\$ 48	\$ 49	\$ 50	\$ 50	\$ 51	\$ 52	\$ 52	\$ 53	\$ 1,095
\$	65	\$ 66	\$ 67	\$ 68	\$ 69	\$ 70	\$ 71	\$ 71	\$ 72	\$ 73	\$ 74	\$ 1,532
\$	23	\$ 24	\$ 24	\$ 24	\$ 25	\$ 25	\$ 25	\$ 26	\$ 26	\$ 26	\$ 27	\$ 547
\$	1,811	\$ 1,836	\$ 1,862	\$ 1,888	\$ 1,914	\$ 1,940	\$ 1,967	\$ 1,994	\$ 2,021	\$ 2,048	\$ 2,076	\$ 42,733
\$	580	\$ 588	\$ 596	\$ 604	\$ 613	\$ 621	\$ 630	\$ 638	\$ 647	\$ 656	\$ 665	\$ 13,682
\$	6,512	\$ 6,603	\$ 6,695	\$ 6,788	\$ 6,881	\$ 6,976	\$ 7,072	\$ 7,168	\$ 7,266	\$ 7,364	\$ 7,464	\$ 153,647
\$	152	\$ 155	\$ 157	\$ 159	\$ 161	\$ 163	\$ 165	\$ 168	\$ 170	\$ 172	\$ 175	\$ 3,596
\$	2,373	\$ 2,406	\$ 2,439	\$ 2,473	\$ 2,507	\$ 2,542	\$ 2,577	\$ 2,612	\$ 2,647	\$ 2,683	\$ 2,719	\$ 55,984
\$	12,653	\$ 12,830	\$ 13,008	\$ 13,189	\$ 13,371	\$ 13,555	\$ 13,740	\$ 13,928	\$ 14,117	\$ 14,309	\$ 14,502	\$ 298,539
\$	8,351	\$ 8,467	\$ 8,585	\$ 8,704	\$ 8,824	\$ 8,946	\$ 9,068	\$ 9,192	\$ 9,317	\$ 9,443	\$ 9,571	\$ 197,026
\$	2,784	\$ 2,822	\$ 2,862	\$ 2,901	\$ 2,941	\$ 2,982	\$ 3,023	\$ 3,064	\$ 3,106	\$ 3,148	\$ 3,190	\$ 65,675
\$	11,134	\$ 11,290	\$ 11,447	\$ 11,605	\$ 11,766	\$ 11,927	\$ 12,091	\$ 12,256	\$ 12,423	\$ 12,591	\$ 12,761	\$ 262,701
\$	23,787	\$ 24,120	\$ 24,455	\$ 24,794	\$ 25,136	\$ 25,482	\$ 25,831	\$ 26,184	\$ 26,540	\$ 26,900	\$ 27,263	\$ 561,240
\$	221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 4,012
\$	221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 221	\$ 4,012
\$	1,392	\$ 1,411	\$ 1,431	\$ 1,451	\$ 1,471	\$ 1,491	\$ 1,511	\$ 1,532	\$ 1,553	\$ 1,574	\$ 1,595	\$ 32,838
\$	1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 24,000
\$	11,653	\$ 11,830	\$ 12,008	\$ 12,189	\$ 12,371	\$ 12,555	\$ 12,740	\$ 12,928	\$ 13,117	\$ 13,309	\$ 13,502	\$ 274,539
\$	9,742	\$ 9,878	\$ 10,016	\$ 10,155	\$ 10,295	\$ 10,436	\$ 10,579	\$ 10,724	\$ 10,870	\$ 11,017	\$ 11,166	\$ 229,863
\$	21,396	\$ 21,708	\$ 22,024	\$ 22,343	\$ 22,666	\$ 22,991	\$ 23,320	\$ 23,652	\$ 23,987	\$ 24,326	\$ 24,668	\$ 504,402
\$	272,717	\$ 294,426	\$ 316,450	\$ 338,793	\$ 361,459	\$ 384,450	\$ 407,770	\$ 431,421	\$ 455,408	\$ 479,734	\$ 504,402	
\$	11,653	\$ 10,768.91										\$ 158,760
\$	9,742	\$ 9,476.16										\$ 134,203
\$	20,245	\$ -										
\$	-	\$ 1,061	\$ 12,008	\$ 12,189	\$ 3,284							\$ 28,542
\$	-	\$ 402	\$ 10,016	\$ 10,155	\$ 2,890							\$ 23,463
\$	52,005	\$ 50,541	\$ 28,517	\$ 6,174	\$ -							
\$	-	\$ -	\$ -	\$ -	\$ 9,087	\$ 12,555	\$ 6,708					\$ 28,349
\$	19,263	\$ 19,263	\$ 19,263	\$ 19,263	\$ 19,263	\$ 6,708	\$ (0)					
							\$ 6,032	\$ 12,581	\$ 12,759	\$ 12,940	\$ 13,122	\$ 57,434
							\$ 10,915	\$ 11,071	\$ 11,228	\$ 11,386	\$ 11,546	\$ 56,146

Tax Ratio	
Local Tax	53%
School Tax	47%

Brownfield Plan Eligible Expense Ratio		
MDEQ	\$ 344,967	94.71%
LOCAL	\$ 19,263	5.29%
TOTAL	\$ 364,230	100.00%

Eligible activity school/local reimbursement breakdown	
	MDEQ
Local Taxes	\$187,302
School Taxes	\$157,665
	\$ 344,967

ATTACHMENTS

Attachment A

Approved Brownfield Plan and Resolution

(Available following local approval and execution)

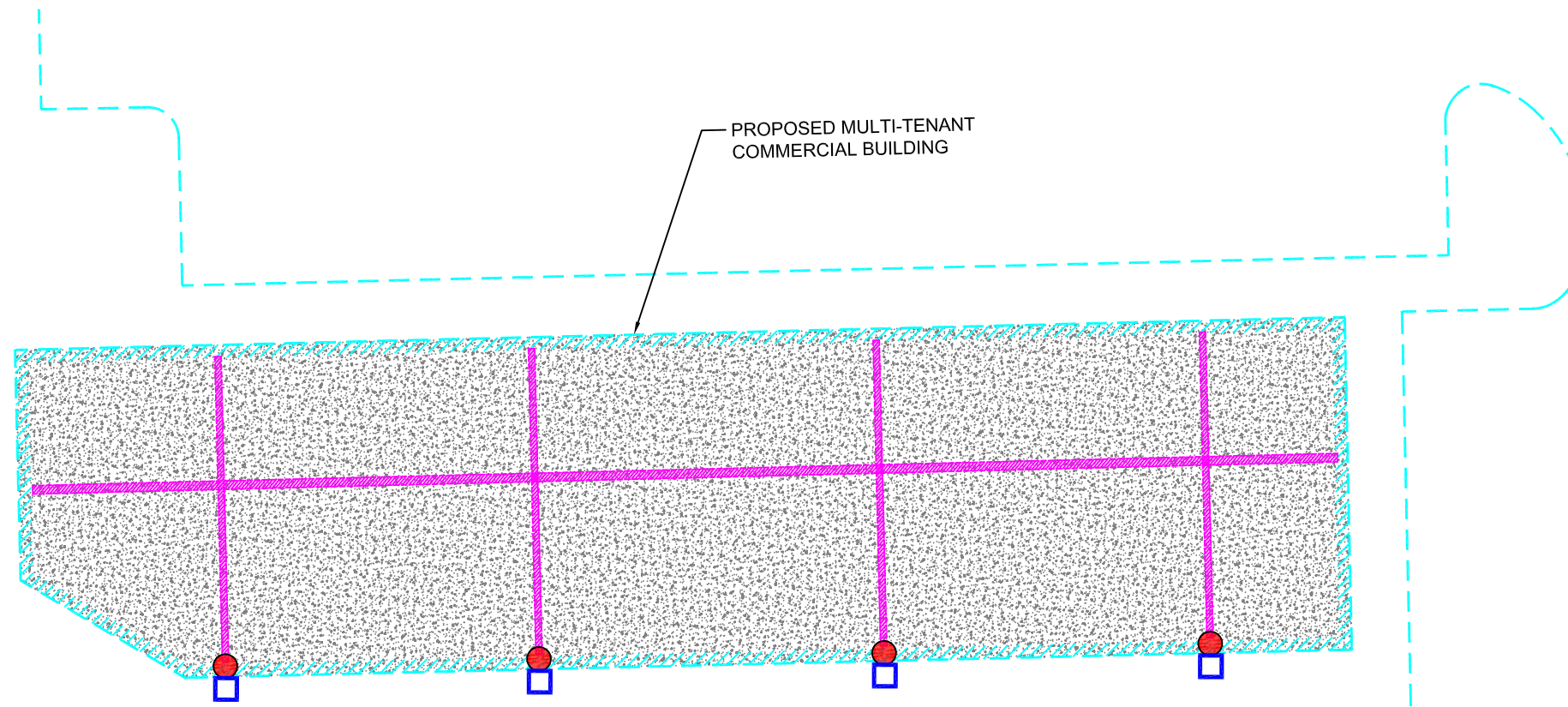
Attachment B

Reimbursement Agreement

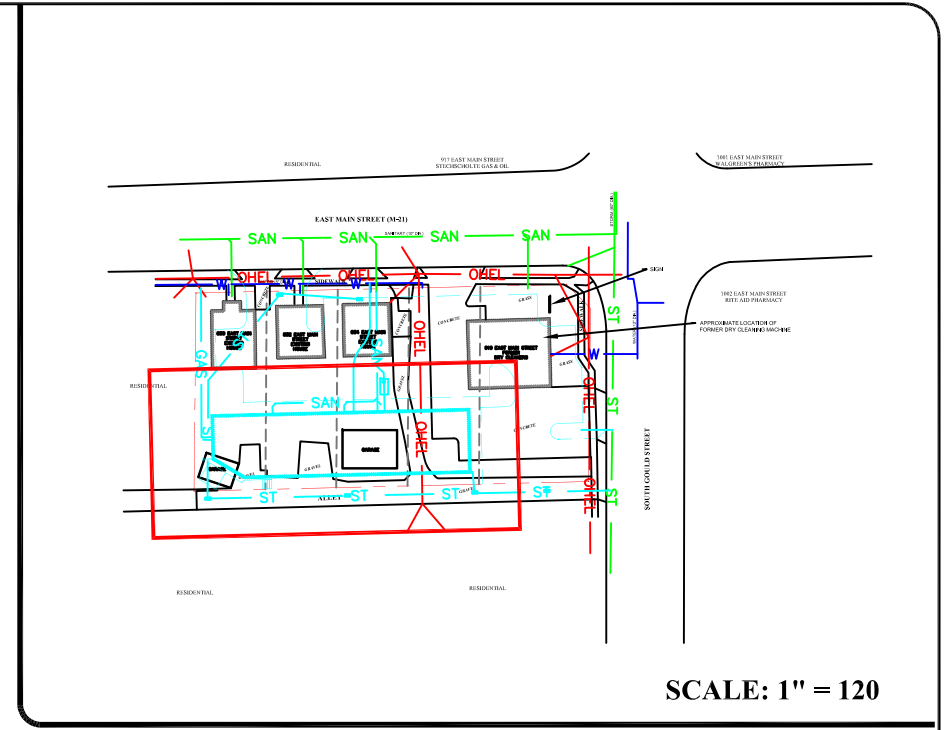
(Available following local approval and execution)

Attachment C

Vapor Barrier Specifications



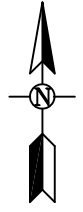
PROPOSED MULTI-TENANT
COMMERCIAL BUILDING



SCALE: 1" = 120

LEGEND:

- SUBJECT PROPERTY
- W WATER
- SAN SANITARY SEWER
- ST STORM SEWER
- OHEL OVERHEAD ELECTRIC LINE
- PARCEL / LOT BOUNDARIES
- PROPOSED SITE FEATURES
- W PROPOSED WATER
- SAN PROPOSED SANITARY SEWER
- ST PROPOSED STORM SEWER
- GAS PROPOSED GAS
- CONCRETE PAVEMENT
- VAPOR VENT SOIL GAS COLLECTION PIPING
- VAPOR BARRIER VENT RISER (SEE NOTES 1 AND 2)
- VAPOR BARRIER SYSTEM TEST PORT (SEE NOTE 3)



- NOTE (1) ALL VAPOR BARRIER VENT PIPING TO BE EQUIPPED WITH LABELS IDENTIFYING THEM AS VAPOR MITIGATION SYSTEM COMPONENTS. THIS INCLUDES ALL VERTICAL RISERS ABOVE THE ROOF LINE.
- NOTE (2) ALL VAPOR BARRIER VENT RISER OUTLETS WILL BE INSTALLED VERTICALLY AND WILL BE EQUIPPED WITH SHUTOFF VALVES AND RAIN CAPS.
- NOTE (3) VAPOR BARRIER TEST PORTS WILL BE INSTALLED AT THE SOUTH BUILDING WALL AND WILL BE INSTALLED IN-LINE WITH SHUTOFF VALVES LOCATED ABOVE THE PORT ORIFICE.

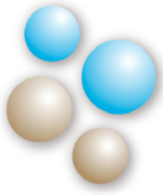
**Environmental
& Engineering
Services**

FIGURE C1
PROPOSED VAPOR BARRIER LAYOUT

PROJ: COMMERCIAL PROPERTY
830, 832, 834, AND 910 EAST MAIN STREET
OWOSSO, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: CS	DATE: 5/7/2015
VERIFY SCALE	CHKD BY: AP	SCALE: 1" = 20'
0 XXXXXXXXXX 20'	FILE NAME: 01-5363-0-001FC1R00	

IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



April 28, 2015

Adam Patton
Manager – Site Investigation Services
PM Environmental
3340 Ranger Road
Lansing, MI 48906

Re: Qdoba Retail – Owosso, MI – Geo-Seal[®] Site Compatibility

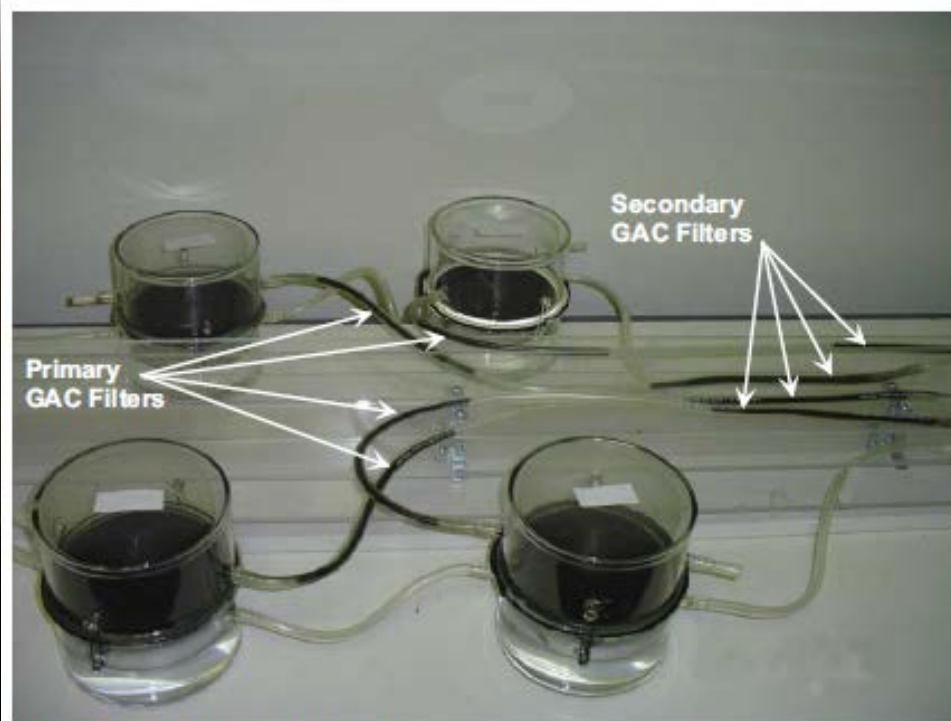
Dear Mr. Patton,

Upon review of the soil concentrations of PCE and an attachment provided from Global Environmental Engineering Inc. with soil boring data for the above referenced site, Land Science recommends the use of the FILM 11 base layer to be used in lieu of the Geo-Seal BASE layer. The FILM 11 base layer is an 11 mil cross laminated HDPE sheet which will provide additional chemical resistance protection per the site conditions. Therefore, Land Science Technologies verifies compatibility of the Geo-Seal system for the site and will approve warranty upon request.

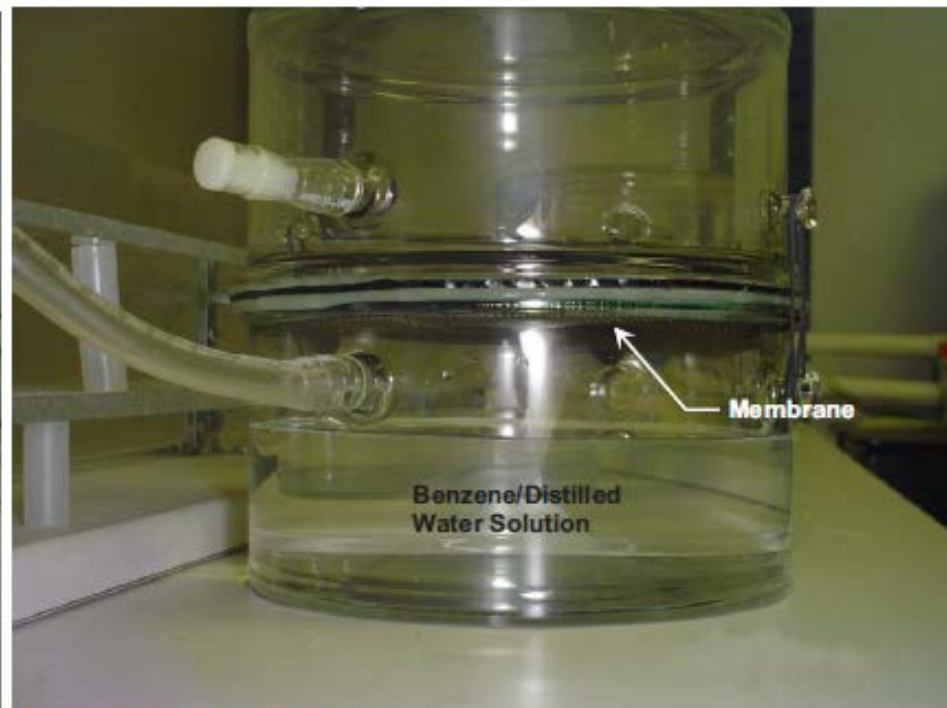
Sincerely,

Adam Richards, PE
Central Region Technical Manager
arichards@landsciencetech.com
M: 312.515.1935

GeoKinetics Method



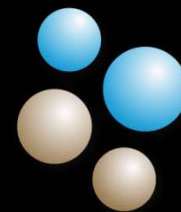
Overview of Diffusion Test Chambers



Close-Up of Diffusion Test Chamber

Diffusion Rates ~ PCE

Product	Contaminant	Test Concentration	Result
Liquid Boot	PCE	6,000 mg/m ³	2.74 x 10 ⁻¹⁴ m ² /sec
Liquid Boot Plus	PCE	120,000 mg/m ³	3.1 x 10 ⁻¹⁶ m ² /sec
Geo-Seal	PCE	90,000 mg/m³	4.0 x 10⁻¹⁷ m²/sec

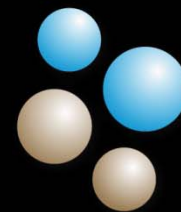


Land Science[™]
Technologies

A DIVISION OF REGENESIS

Diffusion Rates ~ Benzene

Product	Contaminant	Test Concentration	Result
Liquid Boot	Benzene	43,000 ppm	$3.35 \times 10^{-11} \text{ m}^2/\text{sec}$
Liquid Boot Plus	Benzene	Not reported	$4.5 \times 10^{-15} \text{ m}^2/\text{sec}$
Geo-Seal	Benzene	125,500 ppm	$6.9 \times 10^{-16} \text{ m}^2/\text{sec}$



Land Science[™]
Technologies

A DIVISION OF REGENESIS

Geo-Seal® FILM-11 Layer

The Geo-Seal™ FILM-11 layer is comprised of a high strength, cross laminated HDPE membrane (Class A Rating). The FILM-11 layer is installed over the substrate and the cross laminated HDPE provides the ideal surface for the application of the Geo-Seal CORE component. The FILM-11 layer can be used in lieu of, or in addition to, the standard Geo-Seal BASE layer to increase the performance of the standard Geo-Seal system or to meet the project needs.

PROPERTIES	TEST METHOD	Geo-Seal FILM-11
Film Thickness		11 mil
Classification	ASTM E 1745-09	Exceed Class A,B and C
Tensile	ASTM E 154-93	50 lbs / in
Puncture Resistance	ASTM D 1709	2400 grams
Water Vapor Permeance	ASTM E 96	0.020 Perms
Life Expectancy	ASTM E 154-93	Indefinite
Chemical Resistance	ASTM E 154-93	Excellent
Packaging: 12.75'x200'		

Vapor-Vent™

Vapor-Vent™ is a low profile, trenchless, flexible, sub slab vapor collection system used in lieu of perforated piping. Installation of Vapor-Vent increases construction productivity as it eliminates time consuming trench digging and costly gravel importation. Vapor-Vent is offered with two different core materials, Vapor-Vent POLY is recommended for sites with inert methane gas and Vapor-Vent is recommended for sites with aggressive chlorinated volatile organic or petroleum vapors.

VENT PROPERTIES	TEST METHOD	Vapor-Vent POLY	Vapor-Vent
Material		Polystyrene	HDPE
Comprehensive Strength	ASTM D-1621	9,500 lbs / ft ²	11,400 psf
Flow Rate (Hydraulic gradient = .1)	ASTM D-4716	30 gpm/ft width	30 gpm/ft width
Chemical Resistance		N/A	Excellent
FABRIC PROPERTIES	TEST METHOD	Vapor-Vent POLY	Vapor-Vent
Grab Tensile Strength	ASTM D-4632	100 lbs.	110 lbs.
Puncture Strength	ASTM D-4833	65 lbs.	30 lbs.
Mullen Burst Strength	ASTM D-3786	N/A	90 PSI
AOS	ASTM D-4751	70 U.S. Sieve	50 U.S. Sieve
Flow Rate	ASTM D-4491	140 gpm / ft ²	95 gpm / ft ²
UV Stability (500 hours)	ASTM D-4355	N/A	70% Retained
DIMENSIONAL DATA		Vapor-Vent POLY	Vapor-Vent
Thickness		1"	1"
Standard Widths		12"	12"
Roll Length		165 ft	165 ft
Roll Weight		65 lbs	68 lbs

Geo-Seal® Vapor Intrusion Barrier
02 56 19.13
Fluid-Applied Gas Barrier
Version 1.4

Note: If membrane will be subjected to hydrostatic pressure, please contact Land Science Technologies™ for proper recommendations.

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including general and supplementary conditions and Division 1 specification sections, apply to this section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Substrate preparation:
 - 2. Vapor intrusion barrier components:
 - 3. Seam sealer and accessories.
- B. Related Sections: The following sections contain requirements that relate to this section:
 - 1. Division 2 Section “Earthwork”, “Pipe Materials”, “Sub-drainage Systems”, “Gas Collection Systems”:
 - 2. Division 3 Section “Cast-in-Place Concrete” for concrete placement, curing, and finishing:
 - 3. Division 5 Section “Expansion Joint Cover Assemblies”, for expansion-joint covers assemblies and installation.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Provide a vapor intrusion barrier system that prevents the passage of methane gas and/or volatile organic compound vapors and complies with physical requirements as demonstrated by testing performed by an independent testing agency of manufacturer’s current vapor intrusion barrier formulations and system design.

1.4 SUBMITTALS

- A. Submit product data for each type of vapor intrusion barrier, including manufacturer’s printed instructions for evaluating and preparing the substrate, technical data, and tested physical and performance properties.
- B. Project Data - Submit shop drawings showing extent of vapor intrusion barrier, including details for overlaps, flashing, penetrations, and other termination conditions.
- C. Samples – Submit representative samples of the following for approval:
 - 1. Vapor intrusion barrier components.
- D. Certified Installer Certificates – Submit certificates signed by manufacturer certifying that installers comply with requirements under the “Quality Assurance” article.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who has been trained and certified in writing by the membrane manufacturer, Land Science Technologies™ for the installation of the Geo-Seal® System.
- B. Manufacturer Qualification: Obtain vapor intrusion barrier materials and system components from a single manufacturer source Land Science Technologies.
- C. Field Sample: Apply vapor intrusion barrier system field sample to 100 ft² (9.3 m²) of field area demonstrate application, detailing, thickness, texture, and standard of workmanship.
 - 1. Notify engineer or special inspector one week in advance of the dates and times when field sample will be prepared.
 - 2. If engineer or special inspector determines that field sample, does not meet requirements, reapply field sample until field sample is approved.
 - 3. Retain and maintain approved field sample during construction in an undisturbed condition as a standard for judging the completed methane and vapor intrusion barrier. An undamaged field sample may become part of the completed work.
- D. Pre-installation Conference: A pre-installation conference shall be held prior to application of the vapor intrusion barrier system to assure proper site and installation conditions, to include contractor, applicator, architect/engineer, other trades influenced by vapor intrusion barrier installation and special inspector (if any).

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site as specified by manufacturer labeled with manufacturer's name, product brand name and type, date of manufacture, shelf life, and directions for storing and mixing with other components.
- B. Store materials as specified by the manufacturer in a clean, dry, protected location and within the temperature range required by manufacturer. Protect stored materials from direct sunlight. If freezing temperatures are expected, necessary steps should be taken to prevent the freezing of the Geo-Seal CORE and Geo-Seal CORE Detail components.
- C. Remove and replace material that cannot be applied within its stated shelf life.

1.7 PROJECT CONDITIONS

- A. Protect all adjacent areas not to be installed on. Where necessary, apply masking to prevent staining of surfaces to remain exposed wherever membrane abuts to other finish surfaces.
- B. Perform work only when existing and forecasted weather conditions are within manufacturer's recommendations for the material and application method used.
- C. Minimum clearance of 24 inches is required for application of product. For areas with less than 24-inch clearance, the membrane may be applied by hand using Geo-Seal CORE Detail.
- D. Ambient temperature shall be within manufacturer's specifications. (Greater than +45°F/+7°C.) Consult manufacturer for the proper requirements when desiring to apply Geo-Seal CORE below 45°F/7°C.
- E. All plumbing, electrical, mechanical and structural items to be under or passing through the vapor intrusion barrier system shall be positively secured in their proper positions and appropriately protected prior to membrane application.
- F. Vapor intrusion barrier shall be installed before placement of fill material and reinforcing steel. When not possible, all exposed reinforcing steel shall be masked by general contractor prior to membrane application.
- G. Stakes used to secure the concrete forms **shall not penetrate** the vapor intrusion barrier system after it has been installed. If stakes need to puncture the vapor intrusion barrier system after it has been installed, the necessary repairs need to be made by a certified Geo-Seal applicator. To confirm the staking procedure is in agreement with the manufacturer's recommendation, contact Land Science Technologies.

1.8 WARRANTY

- A. General Warranty: The special warranty specified in this article shall not deprive the owner of other rights the owner may have under other provisions of the contract documents, and shall be in addition to, and run concurrent with, other warranties made by the contractor under requirements of the contract documents.
- B. Special Warranty: Submit a written warranty signed by vapor intrusion barrier manufacturer agreeing to repair or replace vapor intrusion barrier that does not meet requirements or that does not remain methane gas and/or volatile organic compound vapor tight within the specified warranty period. Warranty does not include failure of vapor intrusion barrier due to failure of substrate prepared and treated according to requirements or formation of new joints and cracks in the attached to structures that exceed 1/16 inch (1.58 mm) in width.
 - 1. Warranty Period: 1 year after date of substantial completion.
- C. Additional warranties are available upon request to the manufacturer.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Geo-Seal; Land Science Technologies™, San Clemente, CA. (949) 481-8118
 - 1. Geo-Seal BASE sheet layer
 - 2. Geo-Seal CORE spray layer and Geo-Seal CORE Detail
 - 3. Geo-Seal BOND protection layer

2.2 VAPOR INTRUSION BARRIER SPRAY MATERIALS

- A. Fluid applied vapor intrusion barrier system – Geo-Seal CORE; a single course, high build, polymer modified, asphalt emulsion. Waterborne and spray applied at ambient temperatures. A nominal thickness of 60 dry mils, unless specified otherwise. Non-toxic and odorless. Geo-Seal CORE Detail has similar properties with greater viscosity and is roller or brush applied. Manufactured by Land Science Technologies.

B. Fluid applied vapor intrusion barrier physical properties.

Geo-Seal CORE – TYPICAL CURED PROPERTIES

Properties	Test Method	Results
Tensile Strength - CORE only	ASTM 412	32 psi
Tensile Strength - Geo-Seal System	ASTM 412	662 psi
Elongation	ASTM 412	4140%
Resistance to Decay	ASTM E 154 Section 13	4% Perm Loss
Accelerated Aging	ASTM G 23	No Effect
Moisture Vapor Transmission	ASTM E 96	.026 g/ft ² /hr
Hydrostatic Water Pressure	ASTM D 751	26 psi
Perm rating	ASTM E 96 (US Perms)	0.21
Methane transmission rate	ASTM D 1434	Passed
Adhesion to Concrete & Masonry	ASTM C 836 & ASTM C 704	11 lbf./inch
Hardness	ASTM C 836	80
Crack Bridging	ASTM C 836	No Cracking
Heat Aging	ASTM D 4068	Passed
Environmental Stress Cracking	ASTM D 1693	Passed
Oil Resistance	ASTM D543	Passed
Soil Burial	ASTM D 4068	Passed
Low Temp. Flexibility	ASTM C 836-00	No Cracking at -20°C
Resistance to Acids:		
Acetic		30%
Sulfuric and Hydrochloric		13%
Temperature Effect:		
Stable		248°F
Flexible		13°F

Geo-Seal CORE Detail – TYPICAL CURED PROPERTIES

Properties	Test Method	Results
Tensile Strength	ASTM 412	32 psi
Elongation	ASTM 412	3860%
Resistance to Decay	ASTM E 154 Section 13	9% Perm Loss
Accelerated Aging	ASTM G 23	No Effect
Moisture Vapor Transmission	ASTM E 96	.026 g/ft ² /hr
Hydrostatic Water Pressure	ASTM D 751	28 psi
Perm rating (US Perms)	ASTM E 96	0.17
Methane transmission rate	ASTM D 1434	Passed
Adhesion to Concrete & Masonry	ASTM C 836	7 lbf./inch
Hardness	ASTM C 836	85
Crack Bridging	ASTM C 836	No Cracking
Low Temp. Flexibility	ASTM C 836-00	No Cracking at -20°C
Resistance to Acids:		
Acetic		30%
Sulfuric and Hydrochloric		13%
Temperature Effect:		
Stable		248°F
Flexible		13°F

2.3 VAPOR INTRUSION BARRIER SHEET MATERIALS

- A. The Geo-Seal BASE layer and Geo-Seal BOND layer are chemically resistant sheets comprised of a 5 mil high density polyethylene sheet thermally bonded to a 3 ounce non woven geotextile.
- B. Sheet Course Usage
 1. As foundation base layer, use Geo-Seal BASE course and/or other base sheet as required or approved by the manufacturer.
 2. As top protective layer, use Geo-Seal BOND layer and/or other protection as required or approved by the manufacturer.
- C. Geo-Seal BOND and Geo-Seal BASE physical properties.

Properties	Test Method	Results
Film Thickness		5 mil
Composite Thickness		18 mil
Water Vapor Permeability	ASTM E 96	0.214
Adhesion to Concrete	ASTM D 1970	9.2 lbs/inch ²
Dart Impact	ASTM D 1790	>1070 gms, method A
		594 gms, method B
Puncture Properties Tear	ASTM B 2582 MD	11,290 gms
	ASTM B 2582 TD	13,150 gms

2.4 AXILLARY MATERIALS

- A. Geo-Seal FILM-11 may be used in lieu of, or in addition to, the standard Geo-Seal BASE and Geo-Seal BOND material when project conditions require a higher level of chemical resistance or greater durability is required. Contact Land Science Technologies for the proper recommendation and approval.

Properties	Test Method	Results
Film Thickness		11 mil
Classification	ASTM E 1745-09	Exceed Class A,B and C
Tensile	ASTM E 154-93	45 lbs / in
Puncture Resistance	ASTM D 1709	2400 grams
Water Vapor Permeance	ASTM E 96	0.020 Perms
Life Expectancy	ASTM E 154-93	Indefinite
Chemical Resistance	ASTM E 154-93	Excellent

- B. Sheet Flashing: 60-mil reinforced modified asphalt sheet good with double-sided adhesive.
- C. Reinforcing Strip: Manufacturer's recommended polypropylene and polyester fabric.
- D. Gas Venting Materials: Geo-Seal Vapor-Vent or Geo-Seal Vapor-Vent Poly, and associated fittings.
- E. Seam Detailing Sealant Mastic: Geo-Seal CORE Detail, a high or medium viscosity polymer modified water based asphalt material.
1. Back Rod: Closed-cell polyethylene foam.

PART 3 – EXECUTION

3.1 AUXILIARY MATERIALS

- A. Examine substrates, areas, and conditions under which vapor intrusion barrier will be applied, with installer present, for compliance with requirements. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 SUBGRADE SURFACE PREPARATION

- A. Verify substrate is prepared according to manufacturer's recommendations. On a horizontal surface, the substrate should be free from material that can potentially puncture the vapor intrusion barrier. Additional protection or cushion layers might be required if the earth or gravel substrate contains too many jagged points and edges that could puncture one or more of the system components. Contact manufacturer to confirm substrate is within manufactures recommendations.
- B. Geo-Seal can accommodate a wide range of substrates, including but not limited to compacted earth, sand, aggregate, and mudslabs.
1. Compacted Earth: Remove pieces of debris, gravel and/or any other material that can potentially puncture the Geo-Seal BASE. Remove any debris from substrate that can potentially puncture the Geo-Seal system prior to application.
 2. Sand: A sand subgrade requires no additional preparation, provided any material that can potentially puncture the Geo-Seal BASE layer is not present.
 3. Aggregate: Contact the manufacturer to ensure the aggregate layer will not be detrimental to the membrane. **The gravel layer must be compacted and rolled flat.** Ideally a ¾" minus gravel layer with rounded edges should be specified; however the Geo-Seal system can accommodate a wide variety of different substrates. Contact Land Science Technologies if there are questions regarding the compatibility of Geo-Seal and the utilized substrate. Exercise caution when specifying pea gravel under the membrane, if not compacted properly, pea gravel can become an unstable substrate.
 4. Mudslabs: The use of a mudslab under the Geo-Seal system is acceptable, contact Land Science Technologies for job specific requirements.
- C. Mask off adjoining surface not receiving the vapor intrusion barrier system to prevent the spillage or over spray affecting other construction.

- D. Earth, sand or gravel subgrades should be prepared and compacted to local building code requirements.

3.3 CONCRETE SURFACE PREPARATION

- A. Clean and prepare concrete surface to manufacturer's recommendations. In general, only apply the Geo-Seal CORE material to dry, clean and uniform substrates. Concrete surfaces must be a light trowel, light broom or equivalent finish. Remove fins, ridges and other projections and fill honeycomb, aggregate pockets, grout joints and tie holes, and other voids with hydraulic cement or rapid-set grout. It is the applicator's responsibility to point out unacceptable substrate conditions to the general contractor and ensure the proper repairs are made.
- B. When applying the Geo-Seal CORE or Geo-Seal CORE Detail material to concrete it is important to not apply the product over standing water. Applying over standing water will result in the membrane not setting up properly on the substrate
- C. Surfaces may need to be wiped down or cleaned prior to application. This includes, but is not limited to, the removal of forming oils, concrete curing agents, dirt accumulation, and other debris. Contact form release agent manufacturer or concrete curing agent manufacturer for VOC content and proper methods for removing the respective agent.
- D. Applying the Geo-Seal CORE to "green" concrete is acceptable and can be advantageous in creating a superior bond to the concrete surface. To help reduce blistering, apply a primer coat of only the asphalt component of the Geo-Seal CORE system. Some blistering of the membrane will occur and may be more severe on walls exposed to direct sunlight. Blistering is normal and will subside over time. Using a needle nose depth gauge confirm that the specified mil thickness has been applied.

3.4 PREPARATIONS AND TREATMENT OF TERMINATIONS

- A. Prepare the substrate surface in accordance with Section 3.3 of this document. Concrete surfaces that are not a light trowel, light broom or equivalent finish, will need to be repaired.
- B. Terminations on horizontal and vertical surfaces should extend 6" onto the termination surface. Job specific conditions may prevent a 6" termination. In these conditions, contact manufacturer for recommendations.
- C. Apply 30 mils of Geo-Seal CORE to the terminating surface and then embed the Geo-Seal BASE layer by pressing it firmly into the Geo-Seal CORE layer. Next, apply 60 mils of Geo-Seal CORE to the BASE layer. When complete, apply the Geo-Seal BOND layer. After the placement of the Geo-Seal BOND layer is complete, apply a final 30 mil seal of the Geo-Seal CORE layer over the edge of the termination. For further clarification, refer to the termination detail provided by manufacturer.
- D. The stated termination process is appropriate for terminating the membrane onto exterior footings, pile caps, interior footings and grade beams. When terminating the membrane to stem walls or vertical surfaces the same process should be used.

3.5 PREPARATIONS AND TREATMENT OF PENETRATIONS

- A. All pipe penetrations should be securely in place prior to the installation of the Geo-Seal system. Any loose penetrations should be secured prior to Geo-Seal application, as loose penetrations could potentially exert pressure on the membrane and damage the membrane after installation.
- B. To properly seal around penetrations, cut a piece of the Geo-Seal BASE layer that will extend 6" beyond the outside perimeter of the penetration. Cut a hole in the Geo-Seal BASE layer just big enough to slide over the penetration, ensuring the Geo-Seal BASE layer fits snug against the penetration, this can be done by cutting an "X" no larger than the inside diameter of the penetration. There should not be a gap larger than a 1/8" between the Geo-Seal BASE layer and the penetration. Other methods can also be utilized, provided, there is not a gap larger than 1/8" between the Geo-Seal BASE layer and the penetration.
- C. Seal the Geo-Seal BASE layer using Geo-Seal CORE or Geo-Seal CORE Detail to the underlying Geo-Seal BASE layer.
- D. Apply one coat of Geo-Seal CORE Detail or Geo-Seal CORE spray to the Geo-Seal BASE layer and around the penetration at a thickness of 30 mils. Penetrations should be treated in a 6-inch radius around penetration and 3 inches onto penetrating object.
- E. Embed a fabric reinforcing strip after the first application of the Geo-Seal CORE spray or Geo-Seal CORE Detail material and then apply a second 30 mil coat over the embedded joint reinforcing strip ensuring its complete saturation of the embedded strip and tight seal around the penetration.
- F. After the placement of the Geo-Seal BOND layer, a cable tie should then be placed around the finished penetration. The cable tie should be snug, but not overly tight so as to slice into the finished seal.

OPTION: A final application of Geo-Seal CORE may be used to provide a finishing seal after the Geo-Seal BOND layer has been installed.

NOTE: Metal or other slick penetration surfaces may require treatment in order to achieve proper adhesion. For plastic pipes, sand paper may be used to achieve a profile, an emery cloth is more appropriate for metal surfaces. An emery cloth should also be used to remove any rust on metal surfaces.

3.6 GEO-SEAL BASE LAYER INSTALLATION

- A. Install the Geo-Seal BASE layer over substrate material in one direction with six-inch overlaps and the geotextile (fabric side) facing down.
- B. Secure the Geo-Seal BASE seams by applying 60 mils of Geo-Seal CORE between the 6" overlapped sheets with the geotextile side down.
- C. Visually verify there are no gaps/fish-mouths in seams.
- D. For best results, install an equal amount of Geo-Seal BASE and Geo-Seal CORE in one day. Leaving unsprayed Geo-Seal BASE overnight might allow excess moisture to collect on the Geo-Seal BASE. If excess moisture collects, it needs to be removed.

NOTE: In windy conditions it might be necessary to encapsulate the seam by spraying the Geo-Seal CORE layer over the completed Geo-Seal BASE seam.

3.7 GEO-SEAL CORE APPLICATION

- A. Set up spray equipment according to manufacturer's instructions.
- B. Mix and prepare materials according to manufacturer's instructions.
- C. The two catalyst nozzles (8001) should be adjusted to cross at about 18" from the end of the wand. This apex of catalyst and emulsion spray should then be less than 24" but greater than 12" from the desired surface when spraying. When properly sprayed the fan pattern of the catalyst should range between 65° and 80°.
- D. Adjust the amount of catalyst used based on the ambient air temperature and surface temperature of the substrate receiving the membrane. In hot weather use less catalyst as hot conditions will quickly "break" the emulsion and facilitate the curing of the membrane. In cold conditions and on vertical surfaces use more catalyst to "break" the emulsion quicker to expedite curing and set up time in cold conditions.
- E. To spray the Geo-Seal CORE layer, pull the trigger on the gun. A 42° fan pattern should form when properly sprayed. Apply one spray coat of Geo-Seal CORE to obtain a seamless membrane free from pinholes or shadows, with an average dry film thickness of 60 mils (1.52 mm).
- F. Apply the Geo-Seal CORE layer in a spray pattern that is perpendicular to the application surface. The concern when spraying at an angle is that an area might be missed. Using a perpendicular spray pattern will limit voids and thin spots, and will also create a uniform and consistent membrane.
- G. Verify film thickness of vapor intrusion barrier every 500 ft². (46.45 m²), for information regarding Geo-Seal quality control measures, refer to the quality control procedures in Section 3.9 of this specification.
- H. The membrane will generally cure in 24 to 48 hours. As a rule, when temperature decreases or humidity increases, the curing of the membrane will be prolonged. The membrane does not need to be fully cured prior the placement of the Geo-Seal BOND layer, provided mil thickness has been verified and a smoke test will be conducted.
- I. **Do not penetrate** membrane after it has been installed. If membrane is penetrated after the membrane is installed, it is the responsibility of the general contractor to notify the certified installer to make repairs.
- J. If applying to a vertical concrete wall, apply Geo-Seal CORE directly to concrete surface and use manufacturer's recommended protection material based on site specific conditions. If applying Geo-Seal against shoring, contact manufacturer for site specific installation instructions.

NOTE: Care should be taken to not trap moisture between the layers of the membrane. Trapping moisture may occur from applying a second coat prior to the membrane curing. Repairs and detailing may be done over the Geo-Seal CORE layer when not fully cured.

3.8 GEO-SEAL BOND PROTECTION COURSE INSTALLATION

- A. Install Geo-Seal BOND protection course perpendicular to the direction of the Geo-Seal BASE course with overlapped seams over nominally cured membrane no later than recommended by manufacturer and before starting subsequent construction operations.
- B. Sweep off any water that has collected on the surface of the Geo-Seal CORE layer, prior to the placement of the Geo-Seal BOND layer.
- C. Overlap and seam the Geo-Seal BOND layer in the same manner as the Geo-Seal BASE layer.
- D. To expedite the construction process, the Geo-Seal BOND layer can be placed over the Geo-Seal CORE immediately after the spray application is complete, provided the Geo-Seal CORE mil thickness has been verified.

3.9 QUALITY ASSURANCE

- A. The Geo-Seal system must be installed by a trained and certified installer approved by Land Science Technologies.

- B. For projects that will require a material or labor material warranty, Land Science Technologies will require a manufacturer's representative or certified 3rd party inspector to inspect and verify that the membrane has been installed per the manufacturer's recommendations.

The certified installer is responsible for contacting the inspector for inspection. Prior to application of the membrane, a notice period for inspection should be agreed upon between the applicator and inspector.

- C. The measurement tools listed below will help verify the thickness of the Geo-Seal CORE layer. As measurement verification experience is gained, these tools will help confirm thickness measurements that can be obtained by pressing one's fingers into the Geo-Seal CORE membrane.

To verify the mil thickness of the Geo-Seal CORE, the following measurement devices are required.

1. Mil reading caliper: Calipers are used to measure the thickness of coupon samples. To measure coupon samples correctly, the thickness of the Geo-Seal sheet layers (18 mils each) must be taken into account. Mark sample area for repair.
2. Wet mil thickness gauge: A wet mil thickness gauge may be used to quickly measure the mil thickness of the Geo-Seal CORE layer. The thickness of the Geo-Seal sheet layers do not factor into the mil thickness reading.

NOTE: When first using a wet mil thickness gauge on a project, collect coupon samples to verify the wet mil gauge thickness readings.
3. Needle nose digital depth gauge: A needle nose depth gauge should be used when measuring the Geo-Seal CORE thickness on vertical walls or in field measurements. Mark measurement area for repair.

To obtain a proper wet mil thickness reading, take into account the 5 to 10 percent shrinkage that will occur as the membrane fully cures. Not taking into account the thickness of the sheet layers, a freshly sprayed membrane should have a minimum wet thickness of 63 (5%) to 66 (10%) mils.

Methods on how to properly conduct Geo-Seal CORE thickness sampling can be obtained by reviewing literature prepared by Land Science Technologies.

- D. It should be noted that taking too many destructive samples can be detrimental to the membrane. Areas where coupon samples have been removed need to be marked for repair.
- E. Smoke Testing is highly recommended and is the ideal way to test the seal created around penetrations and terminations. Smoke Testing is conducted by pumping non-toxic smoke underneath the Geo-Seal vapor intrusion barrier and then repairing the areas where smoke appears. Refer to smoke testing protocol provided by Land Science Technologies. For projects that will require a material or labor material warranty, Land Science Technologies will require a smoke test.
- F. Visual inspections prior to placement of concrete, but after the installation of concrete reinforcing, is recommended to identify any punctures that may have occurred during the installation of rebar, post tension cables, etc. Punctures in the Geo-Seal system should be easy to identify due to the color contrasting layers of the system.

Vapor-Vent™
SOIL GAS COLLECTION SYSTEM
Version 1.5

SECTION 02 56 19 – GAS CONTROL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Substrate preparation.
 - 2. Vapor-Vent™ installation.
 - 3. Vapor-Vent accessories.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 2 Section “Earthwork”, “Pipe Materials”, “Sub-drainage systems”, “Gas Control System”, “Fluid-Applied gas barrier”.
 - 2. Division 3 Section “Cast-in-Place Concrete” for concrete placement, curing, and finishing.
 - 3. Division 5 Section “Expansion Joint Cover Assemblies”, for expansion-joint covers assemblies and installation.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Provide a gas venting material that collects gas vapors and directs them to discharge or to collection points as specified in the gas vapor collection system drawings and complies with the physical requirements set forth by the manufacturer.

1.4 SUBMITTALS

- A. Submit Product Data for each type of gas venting system specified, including manufacturer’s specifications.
- B. Sample – Submit representative samples of the following for approval:
 - 1. Gas venting, Vapor-Vent.
 - 2. Vapor-Vent accessories.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who is certified in writing and approved by vapor intrusion barrier manufacturer Land Science Technologies for the installation of the Geo-Seal® vapor intrusion barrier system.
- B. Manufacturer Qualification: Obtain gas venting, vapor intrusion barrier and system components from a single manufacturer Land Science Technologies
- C. Pre-installation Conference: A pre-installation conference shall be held prior to installation of the venting system, vapor intrusion barrier and waterproofing system to assure proper site and installation conditions, to include contractor, applicator, architect/engineer and special inspector (if any).

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site as specified by manufacturer labeled with manufacturer’s name, product brand name and type, date of manufacture, shelf life, and directions for handling.

- B. Store materials as specified by the manufacturer in a clean, dry, protected location and within the temperature range required by manufacturer. Protect stored materials from direct sunlight.
- C. Remove and replace material that is damaged.

PART 2 – PRODUCTS

2.1 MANUFACTURER

- A. Land Science Technologies, San Clemente, CA. (949) 481-8118

- 1. Vapor-Vent™

2.2 GAS VENT MATERIALS

- A. Vapor-Vent – Vapor-Vent is a low profile, trenchless, flexible, sub slab vapor collection system used in lieu or in conjunction with perforated piping. Vapor-Vent is offered with two different core materials, Vapor-Vent POLY is recommended for sites with inert methane gas and Vapor-Vent is recommended for sites with aggressive chlorinated volatile organic or petroleum vapors. Manufactured by Land Science Technologies
- B. Vapor-Vent physical properties

VENT PROPERTIES	TEST METHOD	VAPOR-VENT POLY	VAPOR-VENT
Material		Polystyrene	HDPE
Comprehensive Strength	ASTM D-1621	9,000 lbs / ft ²	11,400 lbs / ft ²
In-plane flow (Hydraulic gradient-0.1)	ASTM D-4716	30 gpm / ft of width	30 gpm / ft of width
Chemical Resistance		N/A	Excellent
FABRIC PROPERTIES	TEST METHOD	VAPOR-VENT POLY	VAPOR-VENT
Grab Tensile Strength	ASTM D-4632	100 lbs.	110 lbs.
Puncture Strength	ASTM D-4833	65 lbs.	30 lbs.
Mullen Burst Strength	ASTM D-3786	N/A	90 PSI
AOS	ASTM D-4751	70 U.S. Sieve	50 U.S. Sieve
Flow Rate	ASTM D-4491	140 gpm / ft ²	95 gpm / ft ²
UV Stability (500 hours)	ASTM D-4355	N/A	70% Retained
DIMENSIONAL DATA			
Thickness		1"	1"
Standard Widths		12"	12"
Roll Length		165 ft	165 ft
Roll Weight		65 lbs	68 lbs

2.3 AUXILIARY MATERIALS

- A. Vapor-Vent End Out
- B. Reinforced Tape.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions under which gas vent system will be installed, with installer present, for compliance with requirements. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 SUBSTRATE PREPARATION

- A. Verify substrate is prepared according to project requirements.

3.3 PREPARATION FOR STRIP COMPOSITE

- A. Mark the layout of strip geocomposite per layout design developed by engineer.

3.4 STRIP GEOCOMPOSITE INSTALLATION

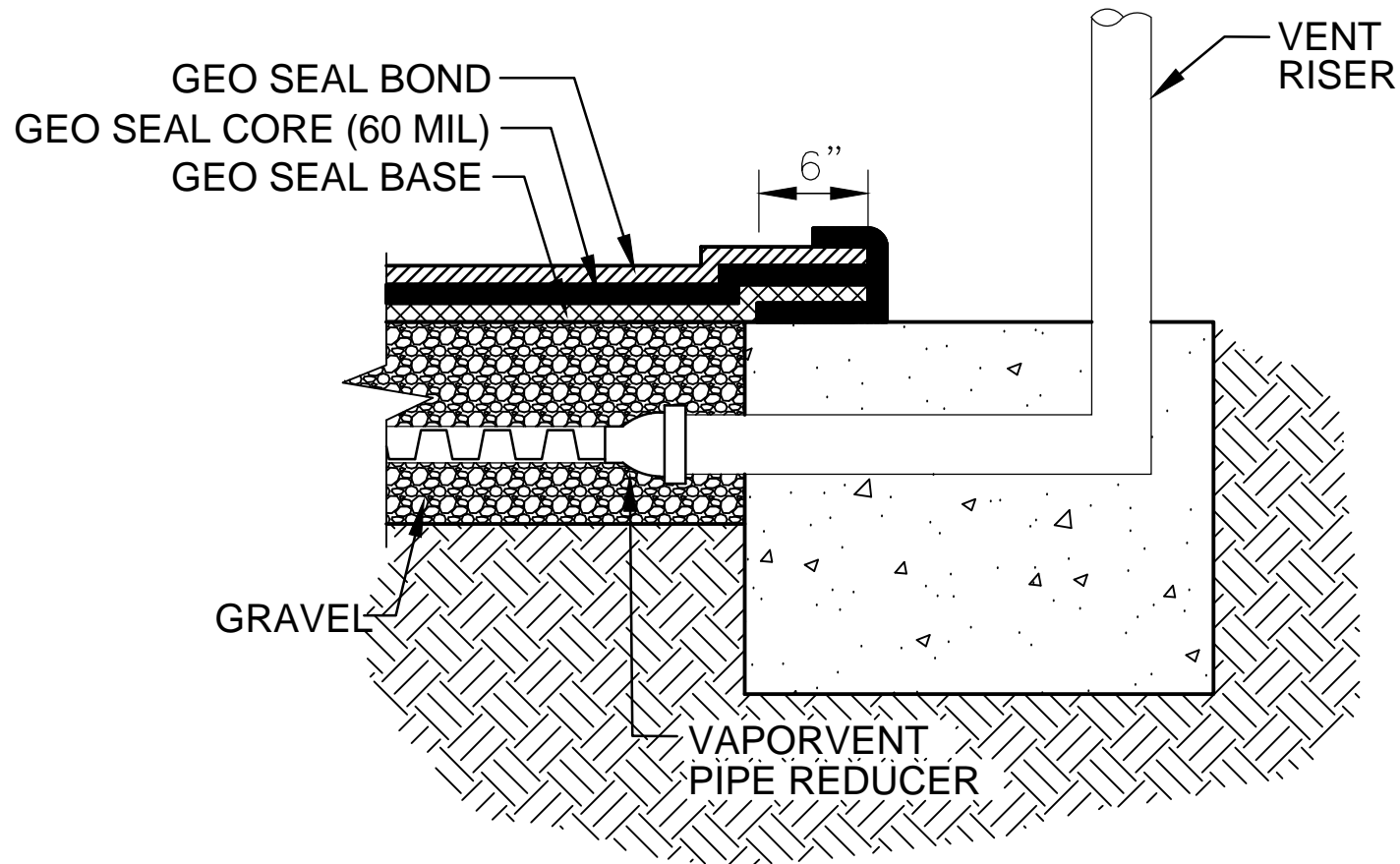
- A. Install Vapor-Vent over substrate material where designated on drawings with the flat base of the core placed down and shall be overlapped in accordance with manufacturer's recommendations.
- B. At areas where Vapor-Vent strips intersect cut and fold back fabric to expose the dimpled core. Arrange the strips so that the top strip interconnects into the bottom strip. Unfold fabric to cover the core and use reinforcing tape, as approved by the manufacturer, to seal the connection to prevent sand or gravel from entering the core.
- C. When crossing Vapor-Vent over footings or grade beams, **consult with the specifying environmental engineer and structural engineer for appropriate use and placement of solid pipe materials**. Place solid pipe over or through concrete surface and attach a Vapor-Vent End Out at both ends of the pipe before connecting the Vapor-Vent to the pipe reducer. Seal the Vapor-Vent to the Vapor-Vent End Out using fabric reinforcement tape. Refer to Vapor-Vent detail provided by Land Science Technologies.
- D. Place vent risers per specifying engineer's project specifications. Connect Vapor-Vent to Vapor-Vent End Out and seal with fabric reinforced tape. Use Vapor-Vent End Out with the specified diameter piping as shown on system drawings.

3.5 PLACEMENT OF OVERLYING AND ADJACENT MATERIALS

- A. All overlying and adjacent material shall be placed or installed using approved procedures and guidelines to prevent damage to the strip geocomposite.
- B. Equipment shall not be directly driven over and stakes or any other materials may not be driven through the strip geocomposite.



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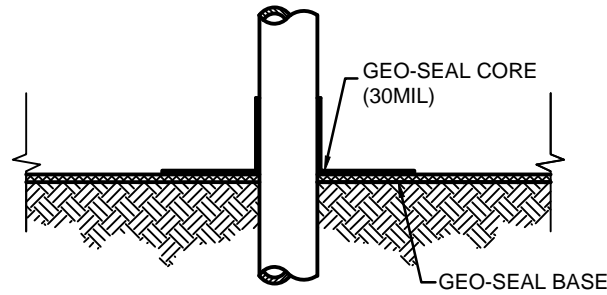
Geo-Seal[®]
Vapor Intrusion Barrier

DATE
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TITLE

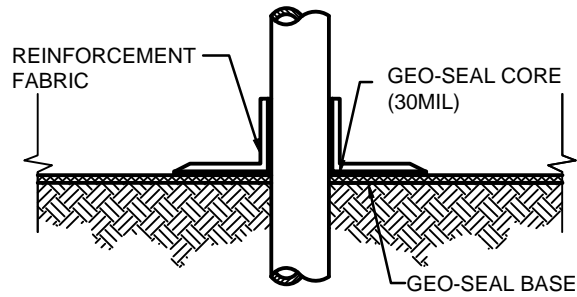
VAPOR-VENT
VENT RISER



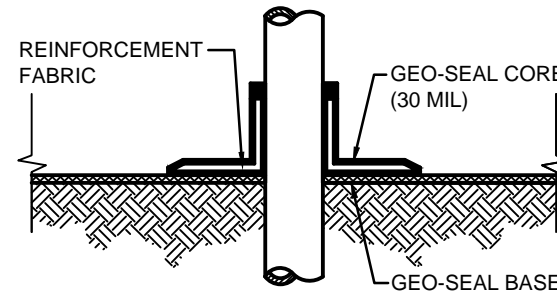
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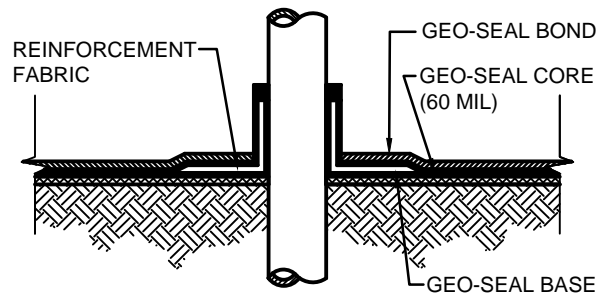
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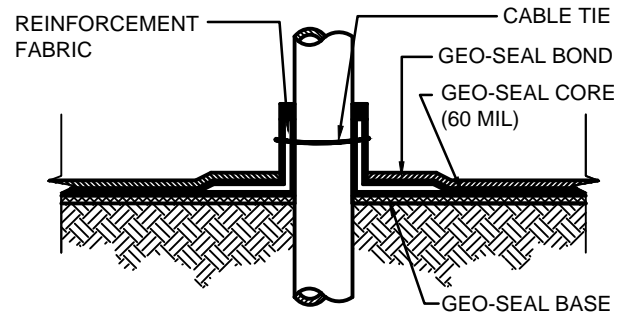
STEP 2



STEP 3



STEP 4



STEP 5

Geo-Seal[®]

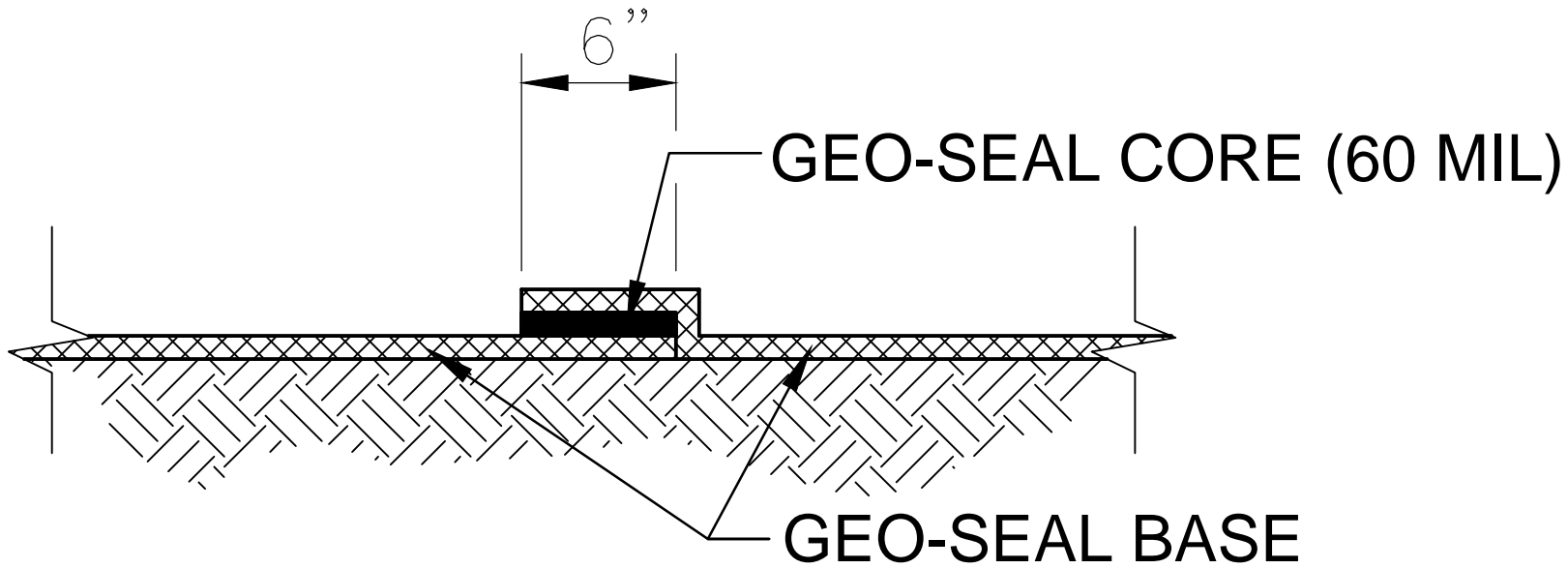
Vapor Intrusion Barrier

DATE _____
SCALE _____
TITLE _____

PENETRATION
SEQUENCE



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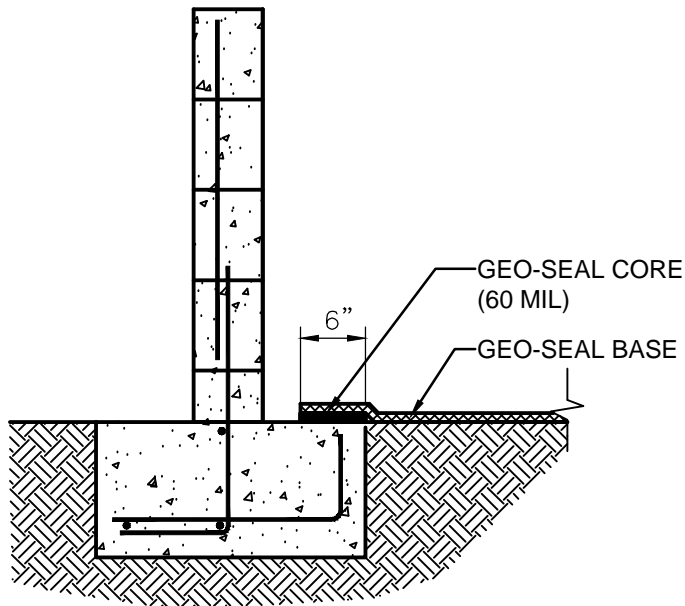
Geo-Seal[®]
Vapor Intrusion Barrier

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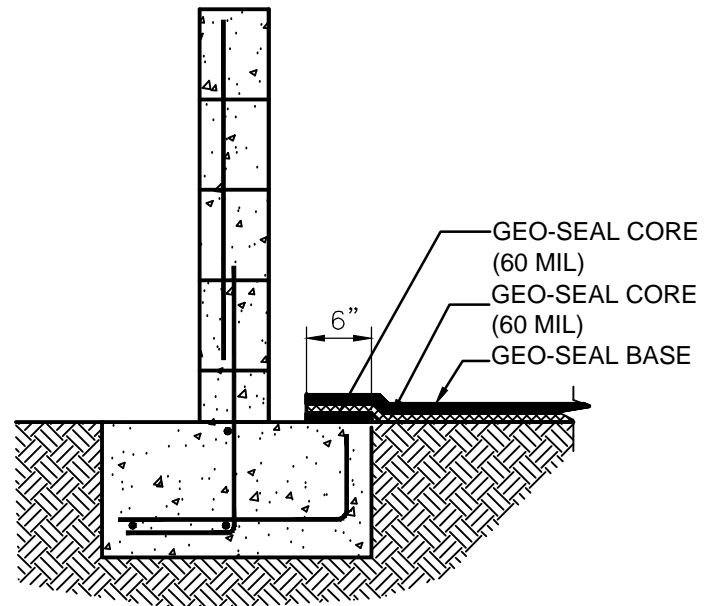
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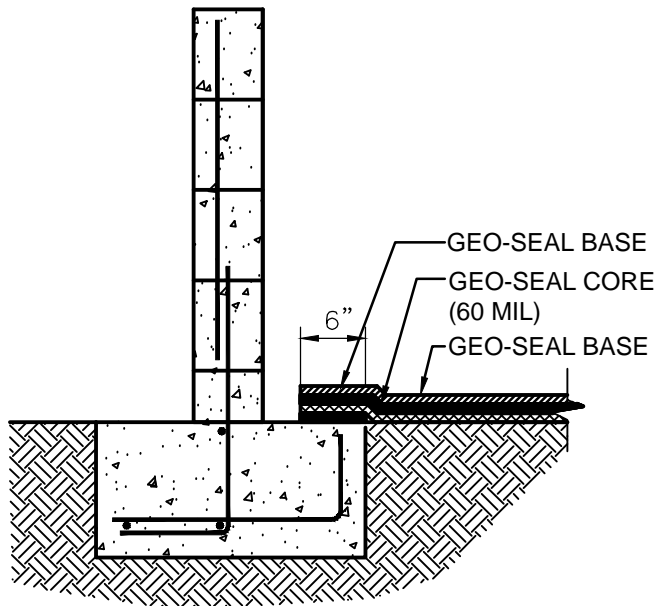
BASE OVERLAP
DETAIL



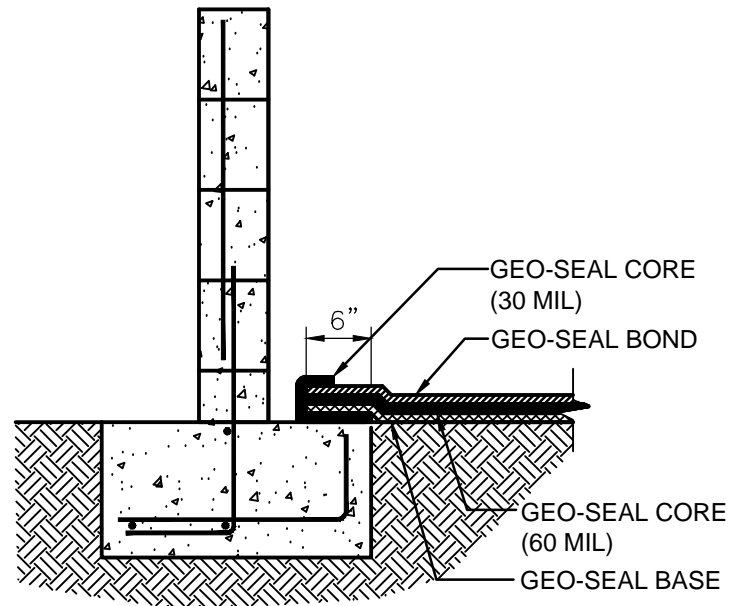
STEP 1



STEP 2



STEP 3



STEP 4

Geo-Seal[®]

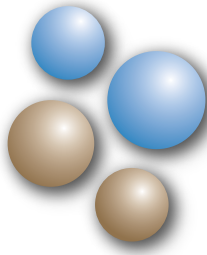
Vapor Intrusion Barrier

DATE

SCALE

TITLE

TERMINATION
 SEQUENCE



Land ScienceTM
Technologies

A DIVISION OF REGENESIS, Inc.

 **Geo-Seal**[®]
Vapor Intrusion Barrier



www.landsciencetech.com



Geo-Seal® is an advanced composite gas vapor management technology (patent pending) designed to eliminate potential indoor air quality health risks associated with subsurface contaminant vapor intrusion.

Geo-Seal is an ideal gas vapor management technology designed for use on Brownfields or any type of environmentally impaired site, i.e. manufacturing facilities, dry cleaners, gasoline service stations, landfills, etc. **Geo-Seal** is placed between the foundation of the building and the soil pad to eliminate vapor exposure pathways and stop contaminated vapors from permeating through the slab. Vapor management systems incorporating both **Geo-Seal** vapor barrier and *Vapor-Vent* ventilation provide industry leading sub-foundation vapor mitigation technology. By deploying these systems developers ensure a healthy indoor environment while reducing the cost of site remediation and expediting site construction.

Triple-Layer Protection

The triple-layer system used in **Geo-Seal** provides maximum redundancy and protection against the formation of vapor pathways both during and after installation. Such pathways can result from chemically induced materials breakdown, punctures, and seam weaknesses resulting from poor detail work and/or application installation imperfections around penetrations. **Geo-Seal** also provides unmatched protection from a range of contaminant vapors including those from petroleum-based products and chlorinated hydrocarbons.

Field-Proven Technology

Geo-Seal is manufactured in partnership with E-Pro™ Systems which has over 20 years experience in the building products industry and a leading track record in barrier systems for vapor and waterproofing applications.

Geo-Seal®

Diagram

Diagram labels

1 *Geo-Seal* BASE - The BASE layer is rolled out geotextile facing down, which allows *Geo-Seal* CORE to be applied directly to the high density polyethylene. The BASE layer provides the ultimate substrate and enables the spray layer to be free of shadowing and pinholes.

2 *Geo-Seal* CORE - The CORE is applied at 60 mils, is sprayed to the base layer, seals around penetrations and seals the seams of the BASE layer.

3 *Geo-Seal* BOND - A proprietary protection layer is placed over the CORE layer to enhance the curing of the membrane and increase puncture resistance.

4 Vapor-Vent:

- Eliminates the need for trenching
- Cost-effective compared to pipe and gravel systems
- Eliminates long-term costs when configured as a passive system
- Allows for rapid installation
- When used with *Geo-Seal* provides maximum protection against contaminated vapor



OPEN FLAP FOR
GEO-SEAL
FEATURES

Geo-Seal® Triple-Layer System

(2 Chemical Resistant Layers + 1 Spray Applied Core Layer)

Dual Chemical Resistant Layers

The **BASE** layer (bottom) and the **BOND** layer (top) are composed of a high-density polyethylene material bonded to a geo-textile on the out-facing side. High density polyethylene is known for chemical resistance, high tensile strength, excellent stress-crack resistance and for highly reliable subsurface containment. The geo-textile which is physically bonded to the chemical resistant layer accomplishes two goals; it allows the BOND layer to adhere to the slab, and provides a friction course between the BASE layer and the soil.

Spray Applied CORE Layer

The CORE layer is composed of a unique, elastic co-polymer modified asphaltic membrane which also provides additional protection against vapor transmission. This layer creates a highly-effective seal around slab penetrations and eliminates the need for mechanical fastening at termination points.

Chemical Resistance

The dual chemical resistant layers combined with the spray CORE form a barrier resistant to the most concentrated chemical pollutant vapors.

Enhanced Curing

Geo-Seal is “construction friendly” as the reduced curing time of the *Geo-Seal* CORE layer and the ability to apply it in cooler temperatures ensures quick installation and minimizes the impact on construction schedules.

Puncture Resistance

Geo-Seal forms a highly puncture resistant barrier that greatly reduces the chance of damage occurring after installation and prior to the placement of concrete.

Removing Contained Vapors

Vapor-Vent can be used in conjunction with *Geo-Seal* to alleviate the buildup of vapors beneath structures as a result of vapor barrier implementation. *Vapor-Vent* can be utilized as an active or passive ventilation system depending on the requirements of the design engineer.

Certified Applicator Network

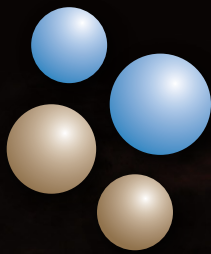
The application of *Geo-Seal* and *Vapor-Vent* can be performed by any one of many certified applicators throughout the country.

Service and Support

Geo-Seal representatives are available to provide job and site specific assistance. A local representative can ensure *Geo-Seal* and *Vapor-Vent* is installed as per the specification.



Geo-Seal®



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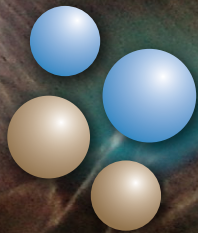
*Land Science Technologies (LST)*TM is dedicated to providing advanced technologies for sustainable land development. A goal of LST is to provide innovative and technically sound development solutions for underutilized environmentally impaired properties, commonly referred to as Brownfields.

LST's cost-effective, industry leading technologies offer engineering firms and real estate developers solutions to issues facing the development of Brownfields today. LST is a division of *Regenesi*s, Inc.**, a global leader in groundwater and soil remediation technologies since 1994.



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Attachment D

MDEQ Vapor Intrusion Review Documentation

REQUEST FOR VAPOR INTRUSION REVIEW

TO BE FILLED OUT BY SUBMITTER:

DOCUMENT TITLE: 381 Brownfield Redevelopment – Eastside (Owosso) Dry Cleaners

PROJECT MGR: Eric Van Riper (Part 201) and Kim Sakowski (381)

DATE: 8/11/15

SITE NAME: (Former) Eastside Owosso Dry Cleaners and Historic Gasoline Stations

COUNTY/TWP: Owosso, MI

STIE ID 78000161

INDEX 44809

PCA: 30740

PROJ: 457097

DATE REVIEW NEEDED: August 11, 2015

COMMENTS/QUESTIONS FROM PM:

Please complete VI review for the adequacy of the proposed vapor barrier for the 381 project.

TO BE FILLED OUT BY REVIEWER:

DATE REVIEW COMPLETED: August 11, 2015

COMMENTS FROM REVIEWER:

Conclusion: The proposed passive (can convert to active) Geo-Seal Vapor barrier system, if properly implemented, should prevent unacceptable risk from sub-surface vapors emanating from chlorinated solvent and petroleum impacted groundwater and soils not excavated out. It is our understanding that the bulk of the grossly chlorinated solvent impacted soils under the proposed parking area will be excavated out utilizing other state funding sources. It is also our understanding that the proposed passive VI mitigation system is reviewed and approved by a private party engineer. Land Science is certifying their product for this project.

Discussion: The consultant utilized DEQ VI guidance (Appendix C.6- checklist for reviewing the design of a passive mitigation system). Since the venting collection system is different than table A.6.1 of our VI guidance, we leave it to the engineers and post-installation testing to determine if four risers is appropriate to gather the vapors and properly vent them to the outside. The proposed vapor mitigation system comprises two spray sealant layers, a core layer applied above a network of vapor vent lines designed to eliminate trenching (applied as a layer). The vapor vent lines are separated by about 360 feet of permeable material (gravel). Vent risers are connected and will exit the south side of the building connected to the north-south piping runs. On the south side of the

proposed building, vapor test ports are connected to each of the four (4) vents for smoke and pressure testing. The materials used within the layers are chemically resistant for the contaminants of concern.

VI CSM: While the VI CSM is not fully developed, the soils data indicate maximum concentrations of benzene (PSB/TW-6) are at 4,300 ug/kg benzene at 9'-10' depth near the proposed building footprint. To the east and northeast of the proposed non-residential building, a parking lot will be located over soils grossly impacted chlorinated and Stoddard solvents (petroleum based) of the former Eastside (Owosso) Dry Cleaners Part 201 facility. Maximum concentrations in the soils include 5,490,000 ug/kg PCE, 49,400 TCE ug/kg, 41,700 ug/kg cis-1,2 DCE and 490 ug/kg vinyl chloride. State-funded proposed work will excavate out the majority of these soils (manifest out as F-listed waste). Maximum concentrations of solvents in the shallow groundwater (4.8'-10' BGL) include PCE at 5,100 ug/l; TCE at 1,000 ug/l and vinyl chloride at 90 ug/l. Benzene maximum concentrations are 460 ug/l. Since these contaminants exceed VI screening levels for shallow groundwater, a pre-emptive approach to address VI risk is appropriate especially since full delineation of contaminants released over the years is not complete.

The 381 work plan includes excavation and disposal of up to 635 cubic yards of soils and 15,000 gallons of contaminated groundwater within the work area of the building footprint which will remove the shallow soils contamination and provide a layer of clean backfill to support bio-attenuation of at least some of the petroleum based vapors. The implementation of the VI mitigation system will include pre-installation of utility penetrations through the floor so that they may be properly sealed by the Geo-Seal multi-layer product. Smoke and "coupon" (swatches of the VI barrier) testing will be used to verify the integrity of the system. Depending on these and pressure test results, whether or not the system operates in a passive or active mode will be determined.

Essentially, this mitigation system appears to be designed to account for substantially higher concentrations of contaminants and is appropriate as a "belt and suspenders" approach that should achieve due care compliance over time if the O&M plan is implemented.

	8-11-15
	8-11-2015

Reviewer's Signatures

Date



www.Michigan.gov/DEQ

Remediation and Redevelopment Division

BROWNFIELD REDEVELOPMENT GRANT AND LOAN APPLICATION

RICK SNYDER, GOVERNOR
DAN WYANT, DIRECTOR

Authority: Parts 195, 196, and 201 of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

CITY OF OWOSSO

APPLICATION

FOR

**BROWNFIELD REDEVELOPMENT
GRANT AND LOAN**

OWOSSO QDOBA AND RETAIL

July 31, 2015

Applicant and Project Information

Name and address of the project (please include zip code)	Owosso Qdoba and Retail 830, 832, 834, and 910 East Main Street, Owosso, Shiawassee County, MI	Amount of funding requested	\$541,963 Total (\$249,000 grant and \$292,963 loan)
Applicant name and address (please include zip code)	City of Owosso	Applicant's Federal Identification Number	
Applicant representative's name, title, phone, and email address (see pages 1-2 of the instructions)	Ms. Susan Montenegro Assistant City Manager/Director of Community Development Susan.montenegro@ci.owosso.mi.us	Applicant project contact's name, title, phone, and email address (see pages 1-2 of the instructions)	Ms. Susan Montenegro Assistant City Manager/Director of Community Development Susan.montenegro@ci.owosso.mi.us
State House of Representatives district number where the project site is located	District 85	State Senate district number where the project site is located	District 24
Permanent jobs created	22 Fulltime; 30 Part Time	Private investment	\$2 Million
Proposed new use	Retail	Known contaminants	VOCs, PNAs/SVOCs
Did the applicant cause or contribute to contamination that is known or may be discovered at the project site?	To the best of my knowledge, the applicant: Did not cause or contribute to contamination <input checked="" type="checkbox"/> May have caused or contributed to contamination <input type="checkbox"/>		
Did the developer cause or contribute to contamination that is known or may be discovered at the project site?	To the best of my knowledge, the developer: Did not cause or contribute to contamination <input checked="" type="checkbox"/> May have caused or contributed to contamination <input type="checkbox"/>		

Environmental Outcomes

Latitude and longitude of the project site, to eight digits after the period	42.997487, -84.158082	Size of the property	.68 Acres
Is the property a facility under Part 201 or a site under Part 213?	Part 201	Who is the owner of the property and when was the property was acquired?	Owner: Southwind Restaurant, LLC Acquisition Date: 11-16-2014
Is the current owner also the operator of the property? If the operator and the owner are not the same, please indicate when the current operator began to use the property	The property is currently unoccupied, and therefore does not have a current operator	List current and historical uses of the property, with dates if known	<u>910 East Main Street:</u> Early 1930's-1960's: Occupied by various gasoline filling and/or service stations 1960's until 2012: Occupied by Various Drycleaners <u>830-834 East Main Street:</u> Originally developed in the 1930's with several dwellings and utilized for residential purposes since that time.
If the property was acquired after June 5, 1995, was a BEA completed by the current owner?	A BEA was completed for Southwind Restaurant, LLC within 45 days of acquisition	How was the property acquired? For example, voluntary purchase, inheritance, condemnation, or tax reversion	Voluntary Purchase

The requested funds are needed for the following eligible activities:

- | | |
|--|--|
| <input type="checkbox"/> Phase I/Phase II Investigation
<input type="checkbox"/> Baseline Environmental Assessment
<input checked="" type="checkbox"/> Due Care Planning
<input checked="" type="checkbox"/> Implementation of a Due Care Response Activity | <input checked="" type="checkbox"/> Vapor Mitigation
<input checked="" type="checkbox"/> Other Environmental Response Actions
<input type="checkbox"/> Interim Response Action
<input checked="" type="checkbox"/> Demolition |
|--|--|

1. Describe the known or suspected environmental condition of the property, including whether contamination is confirmed or suspected and the presence of any underground storage tanks.

Global Environmental Engineering (GEE) completed a Phase I Environmental Site Assessment (ESA) for the subject property on October 7, 2014.

Recognized Environmental Conditions identified as part of the GEE Phase I ESA are outlined below.

- Based on review and the completion of a previous Phase I ESA, the subject property (910 East Main, eastern building) historically operated as a gasoline station and automotive service garage from the late 1920's to early 1960s and a drycleaners from the late 1960s to 2012. A BEA was completed for the subject property in August 2012 by Rubob Real Estate LLC and Crowne Point Properties LLC indicating the presence of 1,2,4-trimethylbenzene, n-propylbenzene, n-butylbenzene, cis-1,2-dichloroethylene, tetrachloroethylene, trichloroethylene in the groundwater.
- The subject property (formerly) known as 834 East Main Street is a residential parcel located adjacent to the 910 East Main Street (western most building) parcel. During previous investigations, the 910 East Main street parcel was not delineated as part of the scope of work. The potential exists that the historical use of the 910 E Main Street parcel could have negatively affected the 834 East Main Street parcel.

GEE completed a Phase II investigation on July 31, 2012, which included a subsurface investigation on the subject property. Eight (8) soil borings were completed using a Geoprobe direct push tool operated by Fibertec of Brighton, Michigan to depths between 12 and 16 feet below surface grade. Soil cores were collected in four-foot lengths and logged in the field. The soils from each core were screened for presence of contaminants using visual and olfactory methods and a hand held organic vapor analyzer.

Each soil sample collected was preserved, transported, and analyzed in accordance with MDEQ Remediation and Redevelopment Division (RRD) Operational Memorandum No 2, Sampling Guidance, dated October 22, 2004. Global delivered the samples using chain-of-custody procedures to Merit Laboratories, Inc. in East Lansing, Michigan for laboratory analysis. Analysis included volatile organic compounds (VOCs), polynuclear aromatic compounds (PNAs), lead (Pb), cadmium (Cd), and chromium (Cr). Five soil samples were submitted for analysis and two additional soil samples were submitted and held by the lab pending results of the initial five samples. Perched groundwater was encountered in one of the soil borings at a depth of approximately 14-16 feet below grade. A groundwater sample was collected from a temporary monitoring well and submitted to the lab for analysis.

The compounds detected within the laboratory analytical results of the soil and groundwater samples were compared to the MDEQ Generic Cleanup Criteria and Screening Levels as presented in Part 201 Rules 299.1 through 299.50, dated December 30, 2013 entitled "Cleanup Criteria Requirements for Response Activity."

The soil borings were drilled along the north, east, and southeast sides of the western most subject property building in areas believed most likely to reveal impact from historical gas station, automotive garage and dry-cleaning activities. Laboratory results indicated detectable concentrations of several compounds in all five of the soil samples. Compounds

detected include: 1,2,4-trimethylbenzene, n-propylbenzene, n-butylbenzene, cis-1-2-dichloroethylene, tetrachloroethylene, trichloroethylene and naphthalene. The groundwater collected identified cis-1-2-dichloroethylene and tetrachloroethylene.

1,2,4-trimethylbenzene, n-propylbenzene, n-butylbenzene, cis-1-2-dichloroethylene, tetrachloroethylene, trichloroethylene and naphthalene exceed the Part 201 Generic Cleanup Criteria and Screening Levels for soil; and, cis-1-2-dichloroethylene and tetrachloroethylene exceed the Part 201 Generic Cleanup Criteria and Screening Levels for groundwater.

A BEA and Section 7a Compliance Analysis were completed by GEE on November 20, 2014 based on the facility status of the subject property.

PM Environmental Inc., (PM) completed additional soil and groundwater investigation activities in April, 2015 consisting of the advancement of fourteen (14) soil borings and six (6) temporary monitoring wells using a geoprobe drill rig. Investigations were conducted to investigate areas where excavation of utilities, building footings, and other infrastructure features are planned during construction, and in areas south and west of the western most subject property building, which were not previously investigated, to further assess soil and/or groundwater concentrations. The additional investigation was required to assess appropriate soil management, potential subject property exposure and related due care consideration during and following redevelopment activities.

Investigations document VOC and PNA concentrations in soil above the Part 201 Residential and Nonresidential Groundwater Surface Water Interface Protection (GSIP), Drinking Water Protection (DWP), Direct Contact (DC), and Soil Volatilization to Indoor Air (SVII) cleanup criteria, and Soil Saturation (Csat) Screening Levels. Concentrations of VOCs and/or PNAs in groundwater were identified above the above Part 201 Drinking Water Protection (DWP) and Groundwater Surface Water Interface (GSI) criteria.

The subject property is a "facility" in accordance with Part 201 of P.A. 451, as amended, and the rules promulgated thereunder. No underground storage tanks (USTs) are known to be present.

Soil boring locations and analytical data are provided in Attachment B of this application.

Soil and groundwater analytical tables from the April 2015 investigations are provided in Attachment C of this application.

2. Describe the response activities that are believed to be necessary for redevelopment and reuse of the property. Include an estimated cost for each item in the Sources of Project Funding Table on page 5.

Response activities that are believed necessary for site redevelopment and reuse include:

- Pre-Demolition Asbestos Abatement, Oversight, and Clearance Testing;
- Demolition of the 2,236 square foot commercial building located on the eastern portion of the subject property as well as surrounding concrete and grass surface cover totaling approximately 8,000 square feet;
- Developer demolition of three vacant dwellings (two with outbuildings/garages) totaling 3,692 square feet;

- Removal and disposal of chlorinated solvent contaminated soils required for the construction of building foundations, parking and driveway features, and associated utility infrastructure as follows:
 - Building Footing Excavation Areas (90 cubic yards);
 - Alleyway Storm Sewer Excavation and Grading (100 cubic yards);
 - Parking Lot and Sidewalk Curb and Gutter Excavation (40 cubic yards);
 - Parking Lot Entrance/Approach Excavation/Grading (60 cubic yards);
 - Utility Trenching/Excavation (90 cubic yards);
- Groundwater Removal, Management, and Disposal (8,000 gallons);
- Removal and disposal of contaminated concrete building slab and footing materials;
- Chemical-Resistant Gasketing for Sanitary, Storm, and Water Utility Piping;
- Design and Installation of a Passive Spray-Applied Vapor Barrier System for the Proposed Building;
- Installation of Visual Demarcation Underlayment in Non-Paved Areas Requiring a Dermal Contact Surface Barrier;
- Plan for Response Activity Preparation, Oversight, Monitoring, Laboratory Analysis, Project Management, and Reporting (Environmental Professional).

In addition to the response activities necessary for the planned redevelopment and reuse of the property summarized above, chlorinated solvent-contaminated soils above the perched water table (8' maximum depth) that exceeds the Part 201 Nonresidential Soil Volatilization to Indoor Air Inhalation (SVII) criteria and/or Soil Saturation (C_{sat}) Screening Levels are also proposed to eliminate source soils that will continue to represent a source of groundwater and vapor contamination that may migrate to nearby residential receptors and a nearby municipal water supply well located south of the property.

Response activities associated with source soil removal include:

- Additional Soil, Groundwater, and Concrete Characterization and Delineation Activities;
- Bid Specification Preparation, Bid Meeting and Contactor Selection;
- Excavation Contractor Mobilization/Demobilization;
- Shoring Design and Installation (195 linear feet);
- Removal, Transport and Disposal of 1,435 cubic yards of land-disposal restricted soils;
- Removal, Transport and Disposal of 635 cubic yards of hazardous soils;
- Removal, Transport and Disposal of 15,000 gallons of hazardous groundwater;
- Excavation Backfilling and Compaction;
- Pavement Cover Installation;
- Environmental Professional Excavation Oversight, Onsite and Perimeter Air Monitoring, Excavation Verification Sampling, and Laboratory Analysis;
- Environmental Professional Project Management and Reporting.

3. If grant or loan funds are requested for building demolition, describe the condition of the building. Does it present a health or safety threat? Does the structure impede the proposed response activities?

The former dry cleaner building on the western portion of the subject property will utilize loan funds for demolition. The building is currently secured to prevent potential trespassing on the property. However asbestos containing materials have been identified in damaged condition within the building presenting a health and safety concern to anyone who trespasses.

Additionally, the building and site improvements (landscaping, sidewalks, pavement etc.) currently impede on the proposed excavation activities to take place on the property. Demolition will be required prior to execution of the proposed response activities.

4. Will nonpoint source pollution controls be used on the site? Please describe.

Non-point source controls are not applicable to this project.

5. Provide an approximate schedule for conducting response activities and implementing the proposed or projected economic development. Include any deadlines or factors affecting implementation of the project, such as other grants or developer deadlines.

Demolition will take place following approval of the MDEQ Grant/Loan Application and approval of a Public Act 381 Combined Brownfield Plan by the City of Owosso and MDEQ. Demolition is scheduled to take place immediately following these approvals.

Additional soil and groundwater characterization and delineation activities will take place following demolition during the fall of 2015. Excavation/removal, transport and disposal of contaminated source soils will take place during the fall of 2015 with development activities beginning in the spring of 2016.

Economic Outcomes			
Is a developer committed to the project? Name of developer, if any	Yes, Southwind Restaurants, LLC	Projected number of <u>permanent jobs</u> created by the new development (do not include construction or other temporary jobs)	Full-time: 22 Part-time: 30
Proposed new development or development type	Restaurant and Retail Plaza	Projected amount of <u>private investment</u> created by the new development	\$2 Million (excludes ask for grant and loan)
Current State Equalized Value (SEV)	\$184,000	Projected SEV	\$575,000

1. Describe the redevelopment or potential for redevelopment and how it will result in new jobs, investment of private funds in improving or reusing the property, and/or an increase in the community’s tax base.

Southwind Restaurants, LLC (“Southwind”), intends to demolish the vacant 2,236 square foot commercial building and three vacant dwellings (two with outbuildings/garages) totaling 3,692 square feet for the construction of a new retail plaza. The plaza will consist of a single building with a 2,808 square foot restaurant and two tenant spaces of 1,713 and 1,770 square feet, for a total of 6,291 square feet. Additionally, a parking lot will be constructed to the north and east of the new commercial building with surrounding landscaping. The proposed building will be a single-story slab-on-grade structure. The site will require new curbs, gutters, and approaches.

It is anticipated that the new restaurant will create 12 full time jobs and 15 part time jobs and the two retail spaces will create an additional 10 full time jobs and 15 part time jobs.

Anticipated total cost for this project is estimated to be approximately \$2.5 Million, including acquisition and the MDEQ grant/loan request. Of this total investment approximately 886,000 is contributed towards the hard cost investment of the building.

2. Describe the status of the developer’s financing for the project.

The project will be financed through Mercantile Bank in East Lansing, Michigan. The terms consist of a traditional 15 year mortgage for approximately \$1,330,000, collateralized with the land and building, an additional operating note, with a five year amortization for approximately \$400,000, with the equipment and restaurant (Qdoba) décor package serving as collateral. The balance of the project costs will be from developer equity in the project.

3. Indicate whether there is a purchase agreement or a development agreement, and the terms of the agreement, especially in regard to release of grant or loan dollars for the project.

A development agreement/reimbursement agreement will be prepared and executed between the City of Owosso's Brownfield Redevelopment Authority and the Developer, Southwind Restaurants, LLC. The agreement will outline the various milestones and details of the development that must be met to receive tax increment financing for this project as well as outline the repayment terms for the Loan via the tax increment revenues.

4. If a developer is committed to the project, provide a brief summary of the developer's business experience, including any other businesses, terms and conditions of their participation in the project, bankruptcies, and civil or criminal enforcement actions related to environmental violations.

Southwind Restaurants, LLC is an affiliate of Northwind Investments, Inc; both are established under the same ownership. Northwind Investments, Inc. was incorporated in 1978 in Michigan and is the "Burger King" arm of the company. Northwind has since developed over 29 Burger King Restaurants.

Southwind was established and began their involvement with Qdoba Mexican Grill in 2005 with their first location in Lansing, Michigan. Southwind has a Development Agreement with Qdoba Restaurant Corporation (Denver, Colorado) to develop 4 additional Qdoba Mexican Grills, over the next 2 years.

In addition, the developers own and operate the Northwind Travel Center under Petrogroup, LLC, a truck stop, deli, and convenience store in Reed City, Michigan. The developer also as own an employee leasing company, Premier Resources, LLC, that leases employees to all of the related entities.

The LLCs, which are all under the same ownership have not had bankruptcies, and civil or criminal enforcement actions of any kind.

5. Are there any known legal, access, or title issues, liable party actions, or liens or easements on the property that could affect the proposed economic development?

There are no known legal, access, or title issues, liable party actions, or liens or easements on the property.

Community Outcomes			
Is existing infrastructure used?	Yes	Are Smart Growth, green building, or placemaking concepts used?	Yes
Current zoning of the property	B-4: General Business District	Projected zoning	B-4: General Business District

1. Describe how the proposed development fits into the community’s development plans, and how it will affect the community as a whole and the area immediately surrounding the project site. Will the project result in any social or community benefits? Is the community in which the project is located economically disadvantaged or depressed?

This property is the first sight as you enter the City of Owosso from the east, currently characterized by vacant and blighted buildings. The Owosso Main Street program holds a goal of creating a gathering place to work, eat, play, and stay. Through redevelopment of this corner, visitors and residents alike will have a fresh view of the City’s eastern entrance, which will provide an inviting place to dine and shop. In addition to supporting the goals of the Main Street Program, several planning and economic development goals found in the City’s master plan will be supported including;

- protection of health, safety, and the general wellbeing of the community through cleaning up of a contaminated property located within a walkable area of the community;
- support of well planned, quality and sustainable growth through the reuse of a previously developed property;
- reuse of existing development areas which supports jobs growth in the City; and
- improvement and beautification of a major gateway and corridor within the community, among others.

Through support of these goals and objectives identified by the City, the community as whole will see increased investment, employment and consumer opportunities as a result of this project.

As proposed, the project will significantly enhance the physical and aesthetic appearance and economic value of the immediate area. The project will likely result in additional improvement of this intersection thus acting as a catalyst for future growth.

The City of Owosso is struggling with a poverty level that is 7% higher than the national average and a median household income that is over \$13,000 below the national average. This project will bring new jobs to the community over the next year and into the future as additional development occurs in this area as a result of this investment.

2. Describe the neighborhood around the property. Are there other viable commercial businesses nearby? Is there a large amount of vacant, developable land in the community and/or the neighborhood, or is the supply of developable land relatively low? Is the demand for property in the community and/or neighborhood high? If the site is in or within walking distance of a traditional downtown or a Michigan Main Street please describe how the development will enhance the neighborhood.

The property is located at the eastern border of the City surrounded by both commercial and residential properties. There are several other viable businesses nearby, including pharmacies and retail stores, however, these sit outside of the City limits and are not contributing towards the tax base. The property is adjoined to the North by a gasoline dispensing station, which may have opportunity for future investment.

Demand for development in the surrounding townships, which are characterized by farm land, has become lower as there is an increased focus for development within communities that provide a traditional downtown. The City of Owosso must promote investment in previously developed land to meet any demand for new businesses.

The property is located within a half mile of the City's historic downtown and serves as a gateway into the community. The planned improvements will dramatically change the gateway for the better as visitors feel welcomed by thriving businesses as they enter the City.

3. If applicable, describe how the project demonstrates the principles of site reuse, greenspace preservation, smart growth, reduction of storm water runoff, walkability, outdoor recreation that is accessible to people with disabilities, placemaking, LEED building standards, green roofs or parking, green remediation, or other sustainable development concepts, and how it will protect human health and the environment.

The project will bring a vacant and contaminated property back to safe and successful reuse along one of the City's main commercial corridors. Placemaking concepts will be applied to the project through creating a more inviting gateway on the eastern entrance to the City. The proposed soil excavation activities will also to eliminate source soils that will continue to represent a source of groundwater and vapor contamination that may migrate to nearby residential receptors and a nearby municipal water supply well located south of the property. The redevelopment will further the City's commitment to the redevelopment of brownfields to protect the environment and human health.

Local Commitment

Describe the local government's financial commitment to the project. Is the applicant willing to accept a grant and loan, or loan funding only? Include any federal, state (other than the proposed grant), or local incentives offered to the developer as part of the project. If the local government is unable to make a financial commitment to the project, explain why. Include amounts in the Sources of Project Funding table below.

The local development anticipates approving a brownfield plan that will allow for repayment of the loan through tax increment financing revenues. In addition, approximately \$70,000 of Public Act 381 Eligible Activities will likely be approved for developer reimbursement following repayment of the MDEQ Loan that is being requested.

The MDEQ anticipates utilizing Strategic Water Quality Improvement Funding (SWQIF) to assist in additional cleanup costs on the project, outside of what is proposed under this grant and loan application

Sources of Project Funding

USES OF FUNDS	Brownfield Grant or Loan	Developer Funds (private)	BRA Funds (non- brownfield loan)	SWQIF	Total
Investigation/ Delineation Activities					
Baseline Environmental Assessment Activities			\$10,300		\$10,300
Due Care	\$221,750				\$221,750
MDEQ Remediation Activities	\$249,000 (grant)			\$769,500	\$1,018,500
Demolition	\$15,000 (loan)		\$20,000		\$35,000
Environmental Oversight Professional	\$18,000 (loan)			\$50,500	\$68,500
Pre-Demo Asbestos Survey			\$7,830		\$7,830
Pre-Demo Asbestos Abatement, Oversight and Clearance Testing			\$16,750		\$16,750
Brownfield Plan Preparation			\$12,000		\$12,000
Contingency (15% of Loan Only for DEQ Grant/Loan)	\$38,213		\$6,388		\$44,601
Non-environmental costs, such as infrastructure, construction, equipment		\$2,050,790			\$2,050,790
TOTAL	\$541,963	\$2,050,790	\$73,268	\$820,000	\$3,486,021

Attachments

- A. Maps showing the location of the project area
- B. Maps showing Soil Boring/Temporary Monitoring Well Location with Analytical Results
- C. Soil and Groundwater Analytical Tables
- D. Preliminary Site Plans
- E. A resolution adopted by the applicant's governing body, verifying that the project will be undertaken if funding is awarded, and that the development is consistent with local development and redevelopment plans and zoning ordinances.
- F. High quality, publishable digital photos of the site; provided electronically in jpg format

Certification

The undersigned, as the representative of the applicant, certifies that the applicant will comply with all applicable state and federal statutes and regulations, including those associated with the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, its administrative rules, and those statutes related to civil rights, equal opportunity, labor standards, environmental protection, and historic preservation.

The undersigned, as the representative of the applicant, certifies that the property(ies) at which grant or loan funds will be used are within the jurisdiction of the applicant.

The undersigned, as the representative of the applicant, certifies that within the last 24 months, the applicant has not had a grant from the Department of Environmental Quality (DEQ) revoked or terminated, and has not been determined by the DEQ to be unable to manage a grant.

The undersigned, as the representative of the applicant, certifies that a source of funding for ongoing maintenance and operation of the proposed project, if required, has been identified.

The undersigned, as the representative of the applicant, verifies that the applicant passed its most recent audit and acknowledges that the DEQ may review the auditor's conclusions posted on the Michigan Department of Treasury web site.

The undersigned, as the representative of the applicant, certifies that the information provided in this application and its attachments is true and complete to the best knowledge and belief of the applicant and the undersigned.

Typed name of Applicant's Representative

Signature

Title

Date

Please submit **two complete printed copies of the application and one electronic copy**.
Completed applications should be sent to:

Department of Environmental Quality
Brownfield Redevelopment Grant and Loan Unit
Remediation and Redevelopment Division
P.O. Box 30426
Lansing, Michigan 48909-7926

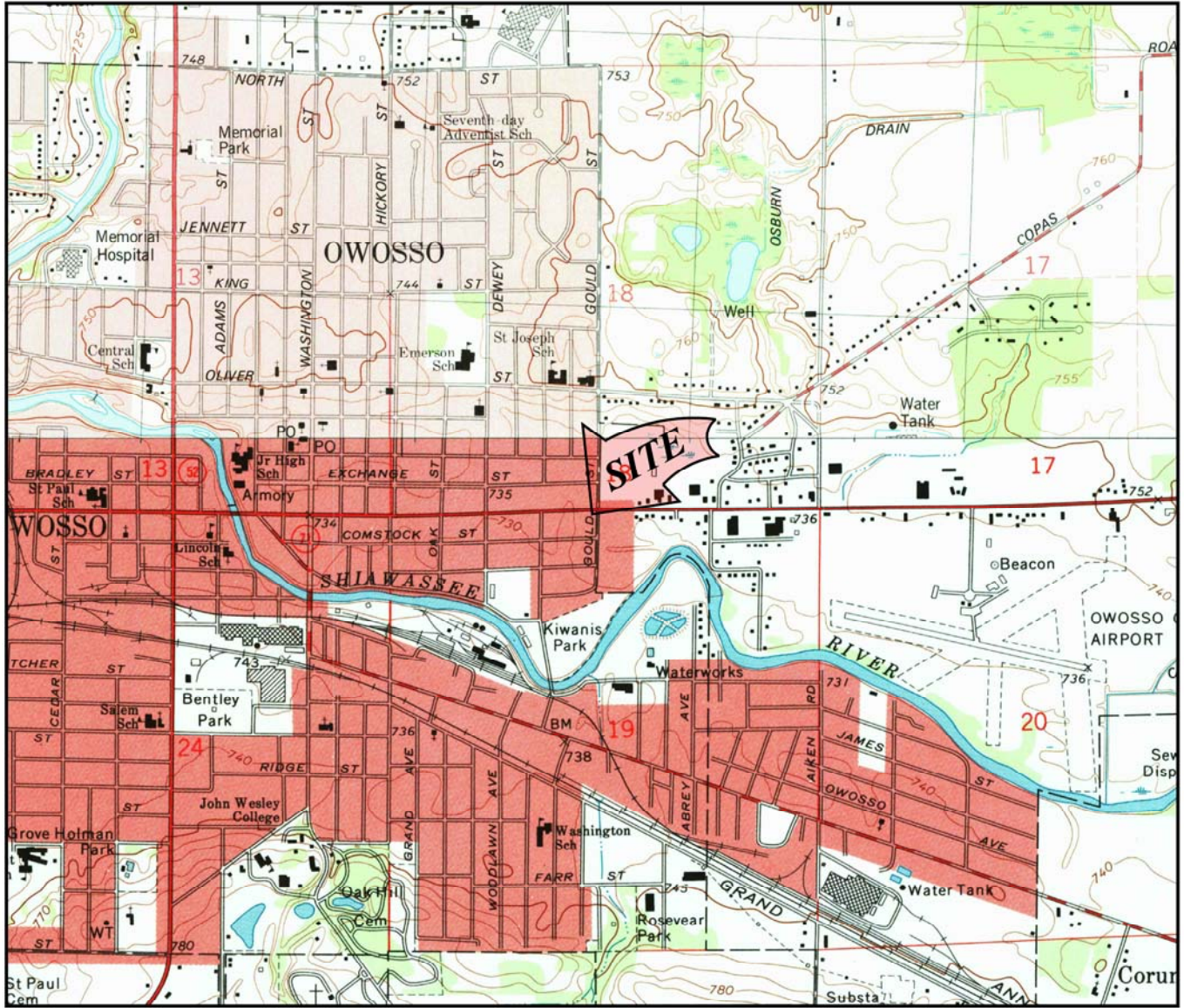
Send electronic copies by e-mail to westmorelandb@michigan.gov.

Please call 517-284-5169 with any questions.

ATTACHMENTS

Attachment A

Project Location Maps



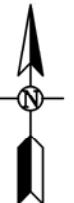
SHIAWASSEE COUNTY



SCALE 1:24,000

FIGURE 1

PROPERTY VICINITY MAP
 USGS, 7.5 MINUTE SERIES
 OWOSSO NORTH, MI QUADRANGLE, 1974.
 OWOSSO SOUTH, MI QUADRANGLE, 1972.



PROJ:
 COMMERCIAL PROPERTY
 830, 832, 834, AND 910 EAST MAIN
 STREET
 OWOSSO, MI

THIS IS NOT A LEGAL
 SURVEY
 VERIFY SCALE
 0 2,000'
 IF NOT 1" ON THIS
 SHEET, ADJUST
 SCALES ACCORDINGLY.

DRN BY:	CS	DATE:	6/8/2015
CHKD BY:	AP	SCALE:	1" = 2,000'
FILE NAME:	01-5363-0-001F01R00		

RESIDENTIAL

917 EAST MAIN STREET
STECHSCHOLTE GAS & OIL

1001 EAST MAIN STREET
WALGREEN'S PHARMACY

EAST MAIN STREET (M-21)

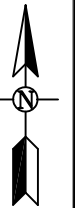
SANITARY (10" DIA)

STORM (60" DIA)

SIGN

1002 EAST MAIN STREET
RITE AID PHARMACY

APPROXIMATE LOCATION OF
FORMER DRY CLEANING MACHINE



LEGEND:

- SUBJECT PROPERTY
- WATER
- SANITARY SEWER
- STORM SEWER
- OVERHEAD ELECTRIC LINE
- PARCEL / LOT BOUNDARIES
- PROPOSED SITE FEATURES
- PROPOSED WATER
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED GAS

RESIDENTIAL

830 EAST MAIN STREET
EXISTING HOUSE

832 EAST MAIN STREET
EXISTING HOUSE

834 EAST MAIN STREET
EXISTING HOUSE

910 EAST MAIN STREET
FORMER DRY CLEANERS

GARAGE

GARAGE

GRAVEL

GRAVEL

GRAVEL

GRAVEL

ALLEY

SOUTH GOULD STREET

RESIDENTIAL

RESIDENTIAL



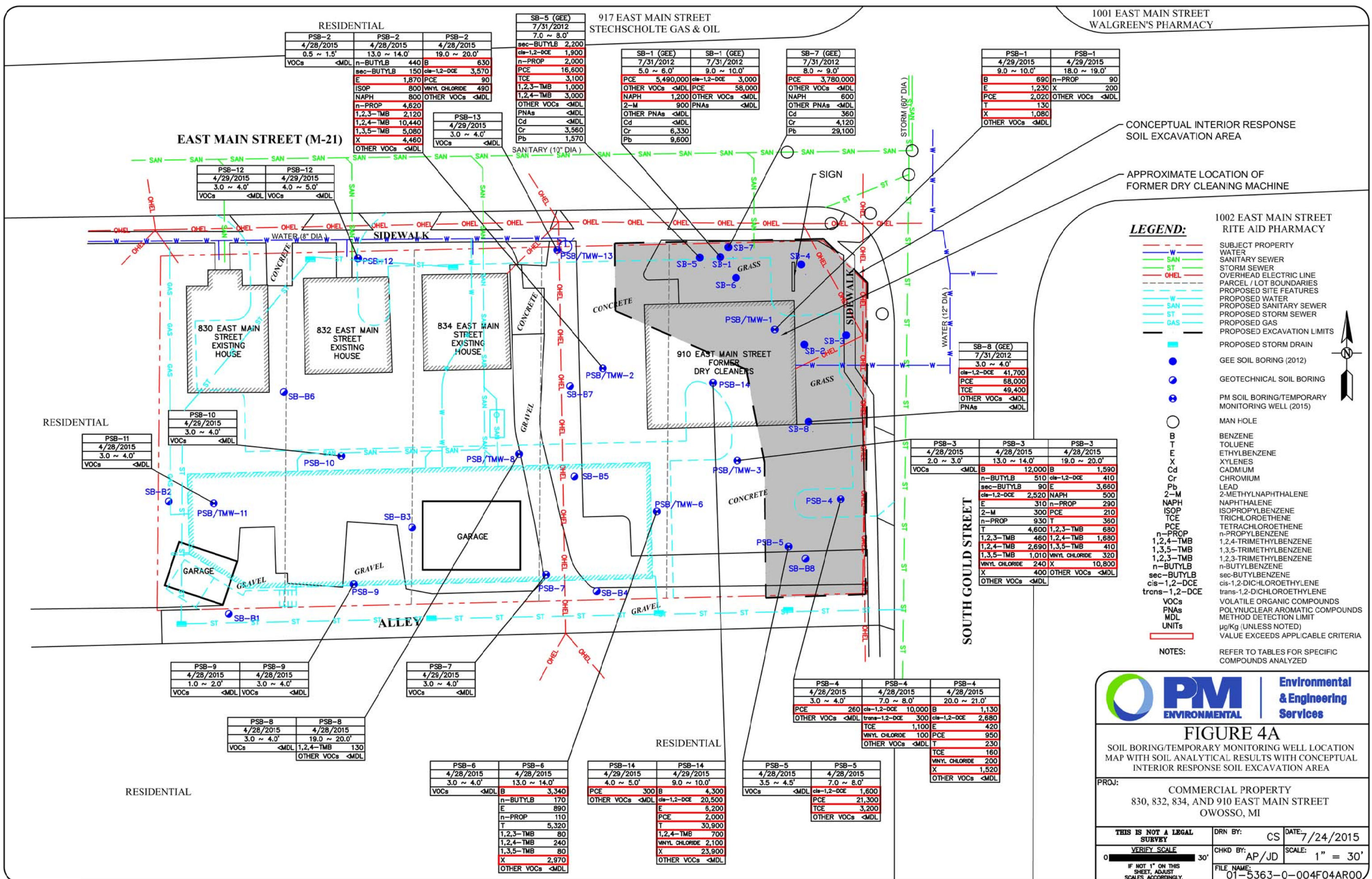
FIGURE 2
GENERALIZED DIAGRAM OF THE SUBJECT
PROPERTY AND ADJOINING PROPERTIES

PROJ: COMMERCIAL PROPERTY
830, 832, 834, AND 910 EAST MAIN STREET
OWOSSO, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: CS	DATE: 5/7/2015
VERIFY SCALE	CHKD BY: AP	SCALE: 1" = 30'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	FILE NAME: 01-5363-0-001F02R00	

Attachment B

Soil Boring/Temporary Monitoring Well Locations and Analytical Results



LEGEND:

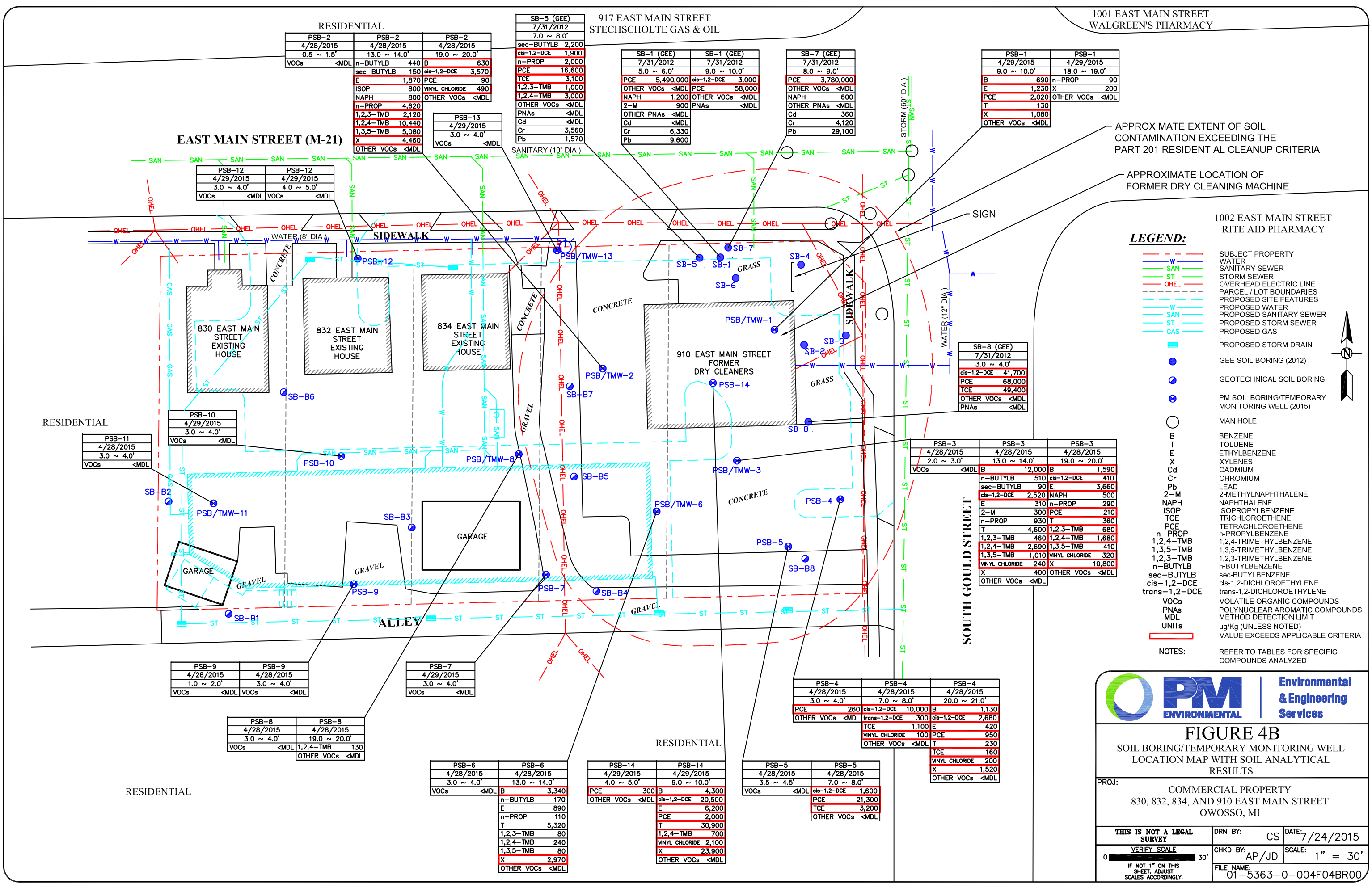
- SUBJECT PROPERTY
- WATER
- SANITARY SEWER
- STORM SEWER
- OVERHEAD ELECTRIC LINE
- PARCEL / LOT BOUNDARIES
- PROPOSED SITE FEATURES
- PROPOSED WATER
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED GAS
- PROPOSED EXCAVATION LIMITS
- PROPOSED STORM DRAIN
- GEE SOIL BORING (2012)
- GEOTECHNICAL SOIL BORING
- PM SOIL BORING/TEMPORARY MONITORING WELL (2015)
- MAN HOLE
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X XYLENES
- Cd CADMIUM
- Cr CHROMIUM
- Pb LEAD
- 2-M 2-METHYLNAPHTHALENE
- NAPH NAPHTHALENE
- ISOP ISOPROPYLBENZENE
- TCE TRICHLOROETHENE
- PCE TETRACHLOROETHENE
- n-PROP n-PROPYLBENZENE
- 1,2,3-TMB 1,2,3-TRIMETHYLBENZENE
- 1,2,4-TMB 1,2,4-TRIMETHYLBENZENE
- 1,3,5-TMB 1,3,5-TRIMETHYLBENZENE
- 1,2,3-TMB 1,2,3-TRIMETHYLBENZENE
- n-BUTYLB n-BUTYLBENZENE
- sec-BUTYLB sec-BUTYLBENZENE
- cis-1,2-DCE cis-1,2-DICHLOROETHYLENE
- trans-1,2-DCE trans-1,2-DICHLOROETHYLENE
- VOCs VOLATILE ORGANIC COMPOUNDS
- PNAs POLYNUCLEAR AROMATIC COMPOUNDS
- MDL METHOD DETECTION LIMIT
- UNITS μg/Kg (UNLESS NOTED)
- VALUE EXCEEDS APPLICABLE CRITERIA

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED



FIGURE 4A
SOIL BORING/TEMPORARY MONITORING WELL LOCATION MAP WITH SOIL ANALYTICAL RESULTS WITH CONCEPTUAL INTERIOR RESPONSE SOIL EXCAVATION AREA

PROJ: COMMERCIAL PROPERTY 830, 832, 834, AND 910 EAST MAIN STREET OWOSSO, MI		
THIS IS NOT A LEGAL SURVEY	DRN BY: CS	DATE: 7/24/2015
VERIFY SCALE	CHKD BY: AP/JD	SCALE: 1" = 30'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		
FILE NAME: 01-5363-0-004F04AR00		



LEGEND:

- SUBJECT PROPERTY
- W WATER
- SAN SANITARY SEWER
- ST STORM SEWER
- OHEL OVERHEAD ELECTRIC LINE
- PARCEL / LOT BOUNDARIES
- PROPOSED SITE FEATURES
- W PROPOSED WATER
- SAN PROPOSED SANITARY SEWER
- ST PROPOSED STORM SEWER
- GAS PROPOSED GAS
- PROPOSED STORM DRAIN
- GEE SOIL BORING (2012)
- GEOTECHNICAL SOIL BORING
- PM SOIL BORING/TEMPORARY MONITORING WELL (2015)
- MAN HOLE
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X XYLENES
- Cd CADMIUM
- Cr CHROMIUM
- Pb LEAD
- 2-M 2-METHYLNAPHTHALENE
- NAPH NAPHTHALENE
- ISOP ISOPROPYLBENZENE
- TCE TRICHLOROETHENE
- PCE TETRACHLOROETHENE
- n-PROP n-PROPYLBENZENE
- 1,2,3-TMB 1,2,3-TRIMETHYLBENZENE
- 1,2,4-TMB 1,2,4-TRIMETHYLBENZENE
- 1,3,5-TMB 1,3,5-TRIMETHYLBENZENE
- 1,2,3-TMB 1,2,3-TRIMETHYLBENZENE
- n-BUTYLB n-BUTYLBENZENE
- sec-BUTYLB sec-BUTYLBENZENE
- cis-1,2-DCE cis-1,2-DICHLOROETHYLENE
- trans-1,2-DCE trans-1,2-DICHLOROETHYLENE
- VOCs VOLATILE ORGANIC COMPOUNDS
- PNAs POLYNUCLEAR AROMATIC COMPOUNDS
- MDL METHOD DETECTION LIMIT
- UNITS μg/Kg (UNLESS NOTED)
- VALUE EXCEEDS APPLICABLE CRITERIA

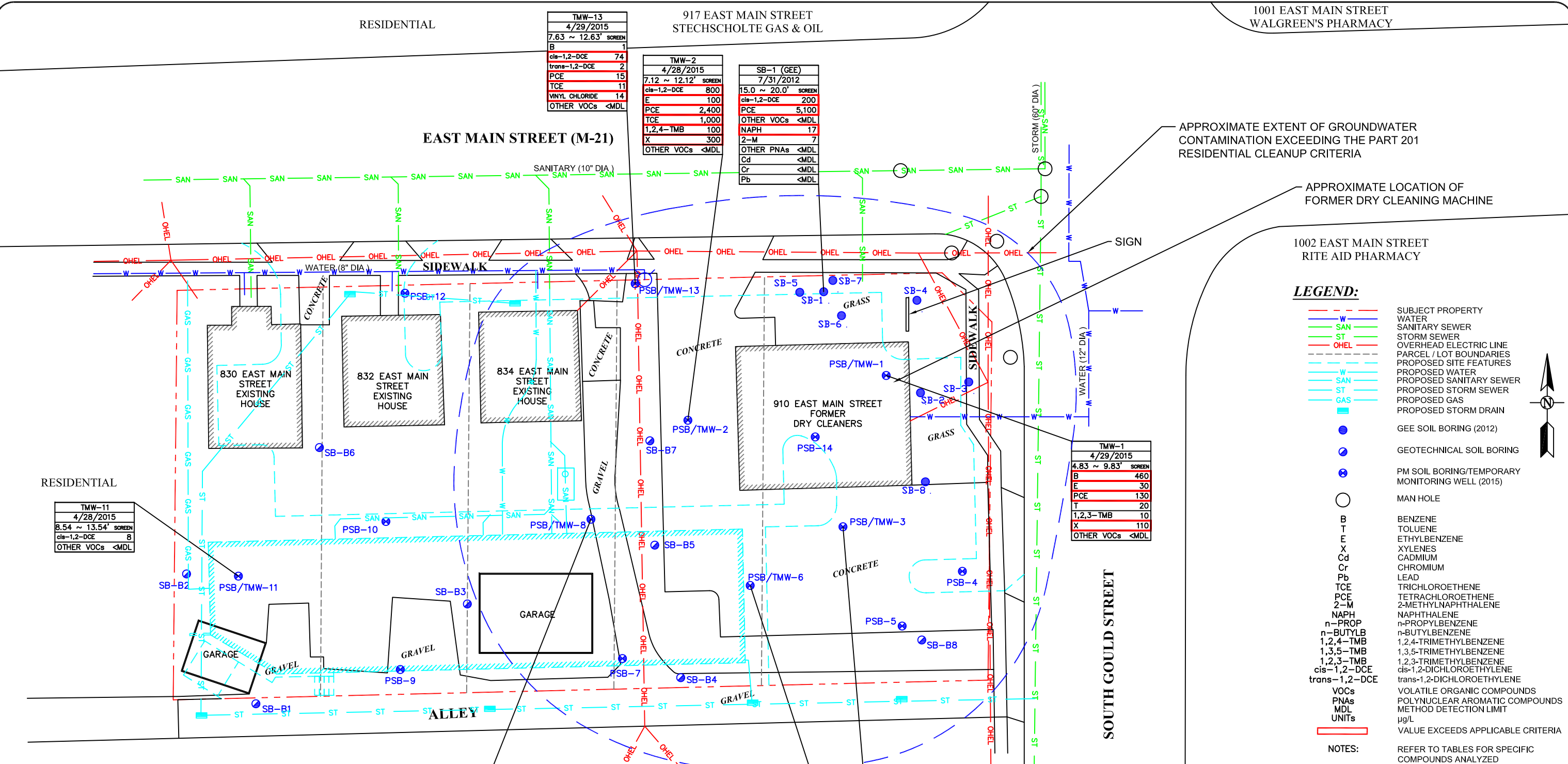
NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

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FIGURE 4B
SOIL BORING/TEMPORARY MONITORING WELL LOCATION MAP WITH SOIL ANALYTICAL RESULTS

PROJ: COMMERCIAL PROPERTY
830, 832, 834, AND 910 EAST MAIN STREET
OWOSSO, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: CS	DATE: 7/24/2015
VERIFY SCALE	CHKD BY: AP/JD	SCALE: 1" = 30'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	FILE NAME: 01-5363-0-004F04BR00	



APPROXIMATE EXTENT OF GROUNDWATER CONTAMINATION EXCEEDING THE PART 201 RESIDENTIAL CLEANUP CRITERIA

APPROXIMATE LOCATION OF FORMER DRY CLEANING MACHINE

1002 EAST MAIN STREET RITE AID PHARMACY

LEGEND:

- SUBJECT PROPERTY
- WATER
- SANITARY SEWER
- STORM SEWER
- OVERHEAD ELECTRIC LINE
- PARCEL / LOT BOUNDARIES
- PROPOSED SITE FEATURES
- PROPOSED WATER
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED GAS
- PROPOSED STORM DRAIN
- GEE SOIL BORING (2012)
- ⊙ GEOTECHNICAL SOIL BORING
- ⊕ PM SOIL BORING/TEMPORARY MONITORING WELL (2015)
- MAN HOLE
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X XYLENES
- Cd CADMIUM
- Cr CHROMIUM
- Pb LEAD
- TCE TRICHLOROETHENE
- PCE TETRACHLOROETHENE
- 2-M 2-METHYLNAPHTHALENE
- NAPH NAPHTHALENE
- n-PROP n-PROPYLBENZENE
- n-BUTYLB n-BUTYLBENZENE
- 1,2,4-TMB 1,2,4-TRIMETHYLBENZENE
- 1,3,5-TMB 1,3,5-TRIMETHYLBENZENE
- 1,2,3-TMB 1,2,3-TRIMETHYLBENZENE
- cis-1,2-DCE cis-1,2-DICHLOROETHYLENE
- trans-1,2-DCE trans-1,2-DICHLOROETHYLENE
- VOCs VOLATILE ORGANIC COMPOUNDS
- PNAs POLYNUCLEAR AROMATIC COMPOUNDS
- MDL METHOD DETECTION LIMIT
- UNITS μg/L
- VALUE EXCEEDS APPLICABLE CRITERIA

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED



FIGURE 4C
SOIL BORING/TEMPORARY MONITORING WELL LOCATION MAP WITH GROUNDWATER ANALYTICAL RESULTS

PROJ: COMMERCIAL PROPERTY
830, 832, 834, AND 910 EAST MAIN STREET
OWOSSO, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: CS	DATE: 7/24/2015
VERIFY SCALE	CHKD BY: AP/JD	SCALE: 1" = 30'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		
FILE NAME: 01-5363-0-004F04CR00		

TMW-13	4/29/2015
7.63 ~ 12.63' SCREEN	
B	1
cis-1,2-DCE	74
trans-1,2-DCE	2
PCE	15
TCE	11
VINYL CHLORIDE	14
OTHER VOCs	<MDL

TMW-2	4/28/2015
7.12 ~ 12.12' SCREEN	
cis-1,2-DCE	800
E	100
PCE	2,400
TCE	1,000
1,2,4-TMB	100
X	300
OTHER VOCs	<MDL

SB-1 (GEE)	7/31/2012
15.0 ~ 20.0' SCREEN	
cis-1,2-DCE	200
PCE	5,100
OTHER VOCs	<MDL
NAPH	17
2-M	7
OTHER PNAs	<MDL
Cd	<MDL
Cr	<MDL
Pb	<MDL

TMW-1	4/29/2015
4.83 ~ 9.83' SCREEN	
B	460
E	30
PCE	130
T	20
1,2,3-TMB	10
X	110
OTHER VOCs	<MDL

TMW-8	4/28/2015
8.77 ~ 13.77' SCREEN	
cis-1,2-DCE	60
E	340
n-PROP	110
1,2,3-TMB	170
1,2,4-TMB	610
1,3,5-TMB	170
X	700
OTHER VOCs	<MDL

TMW-6	4/28/2015
9.68 ~ 14.68' SCREEN	
B	20
n-BUTYLB	10
cis-1,2-DCE	260
E	10
n-PROP	30
VINYL CHLORIDE	90
OTHER VOCs	<MDL

TMW-3	4/28/2015
7.19 ~ 12.19' SCREEN	
E	300
n-PROP	200
1,2,3-TMB	200
1,2,4-TMB	1,100
1,3,5-TMB	300
X	500
OTHER VOCs	<MDL

Attachment C

Soil and Groundwater Analytical Tables

TABLE 1 (1 OF 1)
SUMMARY OF SOIL ANALYTICAL RESULTS
830, 832, 834, 910 EAST MAIN STREET, OWOSSO, MICHIGAN
PM PROJECT #01-5363-0-001

VOLATILE ORGANIC COMPOUNDS, POLYNUCLEAR AROMATIC COMPOUNDS, & METALS (µg/Kg)			Benzene	n-Butylbenzene	sec-Butylbenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Ethylbenzene	Isopropyl benzene	2-Methylnaphthalene	Naphthalene	n-Propylbenzene	Tetrachloroethylene	Toluene	Trichloroethylene	1,2,3-Trimethylbenzene*	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	Xylenes	Other VOCs	Naphthalene	2-Methylnaphthalene	Other PNAs	Cadmium	Chromium	Lead	
Chemical Abstract Service Number (CAS#)			71432	104518	135988	156592	156605	100414	98828	91576	91203	103651	127184	108883	79016	526738	95636	108678	75014	1330207	Various	91203	91576	Various	7440439	16065831	7439921	
Sample ID	Sample Date	Sample Depth (feet bgs)	VOCs																				PNAs			Metals		
SB-1 (GEE)	7/31/2012	5.0-6.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20	<MDL	1,200	900	<MDL	<200	6,330	9,600	
SB-1 (GEE)	7/31/2012	9.0-10.0	<10	<10	<10	3,000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<20	<MDL	<330	<330	<MDL	NA	NA	NA	
SB-2 (GEE)	7/31/2012	10.0-11.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SB-3 (GEE)	7/31/2012	10.0-11.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SB-5 (GEE)	7/31/2012	7.0-8.0	<10	<10	2,200	1,900	<10	<10	<10	<10	<10	2,000	16,600	<10	3,100	1,000	3,000	<10	<10	<20	<MDL	<330	<330	<MDL	<200	3,560	1,570	
SB-7 (GEE)	7/31/2012	8.0-9.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	3,780,000	<10	<10	<10	<10	<10	<10	<20	<MDL	600	<330	<MDL	360	4,120	29,100	
SB-8 (GEE)	7/31/2012	3.0-4.0	<10	<10	<10	41,700	<10	<10	<10	<10	<10	<10	68,000	<10	49,400	<10	<10	<10	<10	<20	<MDL	<330	<330	<MDL	NA	NA	NA	
PSB-1	04/29/2015	9.0-10.0	690	<80	<80	<80	<80	1,230	<400	<200	<400	<80	2,020	130	<80	<80	<80	<80	<80	1,080	<MDL	NA	NA	NA	NA	NA	NA	
PSB-1	04/29/2015	18.0-19.0	<70	<70	<70	<70	<70	<70	<400	<100	<400	90	<70	<70	<70	<70	<70	<70	<70	200	<MDL	NA	NA	NA	NA	NA	NA	
PSB-2	04/28/2015	0.5-1.5	<70	<70	<70	<70	<70	<70	<300	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	
PSB-2	04/28/2015	13.0-14.0	<70	440	150	<70	<70	1,870	800	<100	800	4,620	<70	<70	<70	2,120	10,440	5,080	<70	4,460	<MDL	NA	NA	NA	NA	NA	NA	
PSB-2	04/28/2015	19.0-20.0	630	<70	<70	3,570	<70	<70	<300	<100	<300	<70	90	<70	<70	<70	<70	<70	490	<170	<MDL	NA	NA	NA	NA	NA	NA	
PSB-3	04/28/2015	2.0-3.0	<80	<80	<80	<80	<80	<80	<400	<200	<400	<80	<80	<80	<80	<80	<80	<80	<80	<280	<MDL	NA	NA	NA	NA	NA	NA	
PSB-3	04/28/2015	13.0-14.0	12,000	510	90	2,520	<70	310	<300	300	<300	930	<70	4,600	<70	460	2,690	1,010	240	400	<MDL	NA	NA	NA	NA	NA	NA	
PSB-3	04/28/2015	19.0-20.0	1,590	<70	<70	410	<70	3,660	<400	<100	500	290	210	360	<70	680	1,680	410	320	10,800	<MDL	NA	NA	NA	NA	NA	NA	
PSB-4	04/28/2015	3.0-4.0	<90	<90	<90	<90	<90	<400	<200	<400	<90	260	<90	<90	<90	<90	<90	<90	<90	<290	<MDL	NA	NA	NA	NA	NA	NA	
PSB-4	04/28/2015	7.0-8.0	<100	<100	<100	10,000	300	<100	<500	<200	<500	<100	<100	<100	1,100	<100	<100	<100	100	<300	<MDL	NA	NA	NA	NA	NA	NA	
PSB-4	04/28/2015	20.0-21.0	1,130	<80	<80	2,680	<80	420	<400	<200	<400	<80	950	230	160	<80	<80	<80	200	1,520	<MDL	NA	NA	NA	NA	NA	NA	
PSB-5	04/28/2015	3.5-4.5	<70	<70	<70	<70	<70	<70	<300	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	
PSB-5	04/28/2015	7.0-8.0	<100	<100	<100	1,600	<100	<100	<500	<200	<500	<100	21,300	<100	3,200	<100	<100	<100	<100	<300	<MDL	NA	NA	NA	NA	NA	NA	
PSB-6	04/28/2015	3.0-4.0	<80	<80	<80	<80	<80	<80	<400	<200	<400	<80	<80	<80	<80	<80	<80	<80	<80	<280	<MDL	NA	NA	NA	NA	NA	NA	
PSB-6	04/28/2015	13.0-14.0	3,340	170	<70	<70	<70	890	<300	<100	<300	110	<70	5,320	<70	80	240	80	<70	2,970	<MDL	NA	NA	NA	NA	NA	NA	
PSB-7	04/29/2015	3.0-4.0	<70	<70	<70	<70	<70	<70	<400	<100	<400	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	
PSB-8	04/28/2015	3.0-4.0	<70	<70	<70	<70	<70	<70	<400	<100	<400	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	
PSB-8	04/28/2015	19.0-20.0	<80	<80	<80	<80	<80	<80	<400	<200	<400	<80	<80	<80	<80	130	<80	<80	<80	<280	<MDL	NA	NA	NA	NA	NA	NA	
PSB-9	04/28/2015	1.0-2.0	<70	<70	<70	<70	<70	<70	<300	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	
PSB-9	04/28/2015	3.0-4.0	<80	<80	<80	<80	<80	<80	<400	<200	<400	<80	<80	<80	<80	<80	<80	<80	<80	<280	<MDL	NA	NA	NA	NA	NA	NA	
PSB-10	04/29/2015	3.0-4.0	<70	<70	<70	<70	<70	<70	<300	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	
PSB-11	04/28/2015	3.0-4.0	<60	<60	<60	<60	<60	<60	<300	<100	<300	<60	<60	<60	<60	<60	<60	<60	<60	<160	<MDL	NA	NA	NA	NA	NA	NA	
PSB-12	04/29/2015	3.0-4.0	<60	<60	<60	<60	<60	<60	<300	<100	<300	<60	<60	<60	<60	<60	<60	<60	<60	<160	<MDL	NA	NA	NA	NA	NA	NA	
PSB-12	04/29/2015	4.0-5.0	<70	<70	<70	<70	<70	<70	<300	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	
PSB-13	04/29/2015	3.0-4.0	<70	<70	<70	<70	<70	<70	<300	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL	NA	NA	NA	NA	NA	NA	
PSB-14	04/29/2015	4.0-5.0	<80	<80	<80	<80	<80	<80	<400	<200	<400	<80	300	<80	<80	<80	<80	<80	<80	<280	<MDL	NA	NA	NA	NA	NA	NA	
PSB-14	04/29/2015	9.0-10.0	4,300	<400	<400	20,500	<400	6,200	<2,000	<700	<2,000	<400	2,000	30,900	<400	700	<400	2,100	23,900	<MDL	NA	NA	NA	NA	NA	NA	NA	

Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013
MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013

Residential (µg/Kg)																											
Statewide Default Background Levels	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,200	18,000	21,000
Drinking Water Protection (Res DWP)	100	1,600	1,600	1,400	2,000	1,500	91,000	57,000	35,000	1,600	100	16,000	100	1,800	2,100	1,800	40	5,600	Various	35,000	57,000	Various	6,000	30,000	7,00E+05		
Groundwater Surface Water Interface Protection (GSIP)	4,000 (X)	ID	ID	12,000	30,000 (X)	360	3,200	730	ID	1,200 (X)	5,400	4,000 (X)	570	570	1,100	280 (X)	820	Various	730	4,200	Various	(G,X)	3,300	(G,X)			
Soil Volatilization to Indoor Air Inhalation (Res SVII)	1,600	ID	ID	22,000	23,000	87,000	4.0E+05 (C)	2.70E+06	2.50E+05	ID	11,000	3.3E+05 (C)	1,000	2.6E+06 (C)	4.3E+06 (C)	2.6E+06 (C)	270	6.3E+06 (C)	Various	2.50E+05	2.70E+06	Various	NLV	NLV	NLV		
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)	13,000	ID	ID	1.80E+05	2.80E+05	7.20E+05	1.70E+06	1.50E+06	3.00E+05	ID	1.70E+05	2.80E+06	11,000	1.60E+07	2.10E+07	1.60E+07	4,200	4.60E+07	Various	3.00E+05	1.50E+06	Various	NLV	NLV	NLV		
Ambient Air Finite VSI for 5 Meter Source Thickness	34,000	ID	ID	4.20E+05	8.30E+05	1.00E+06	1.70E+06	1.50E+06	3.00E+05	ID	4.80E+05	5.10E+06	25,000	3.80E+08	5.00E+08	3.80E+08	30,000	6.10E+07	Various	3.00E+05	1.50E+06	Various	NLV	NLV	NLV		
Ambient Air Finite VSI for 2 Meter Source Thickness																											

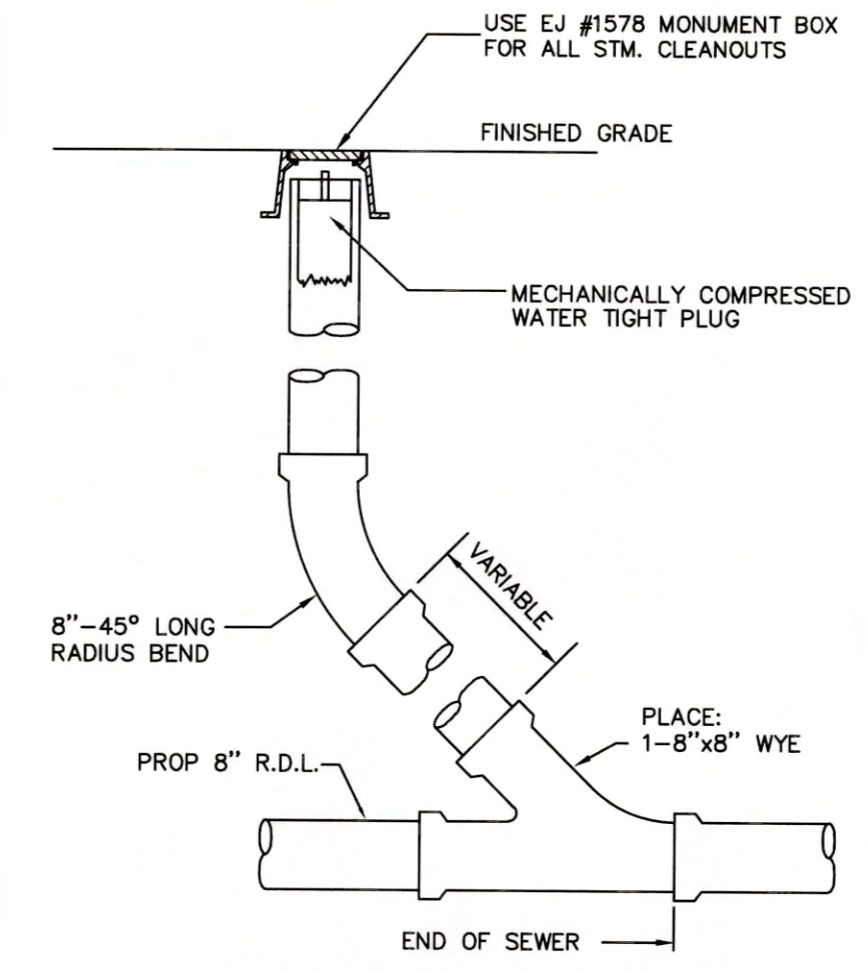
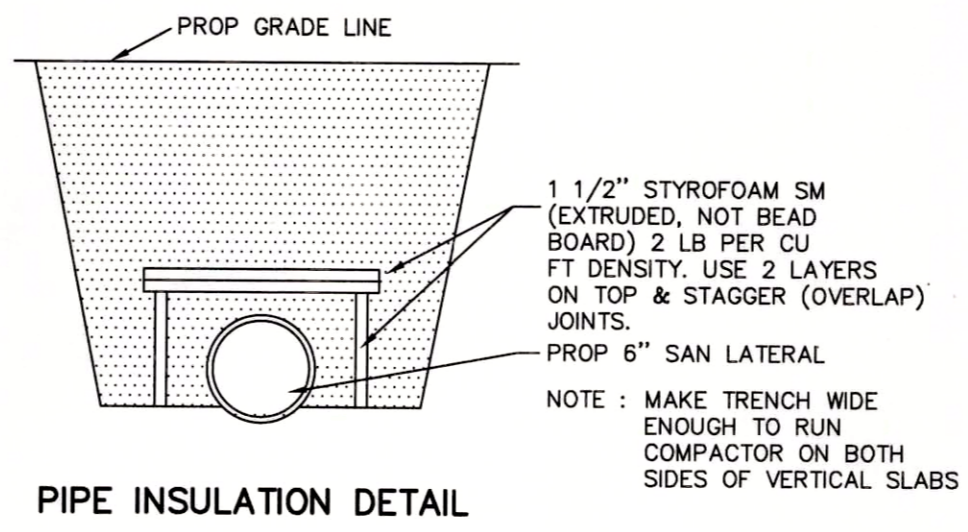
**TABLE 2 (1 OF 1)
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
830, 832, 834, 910 EAST MAIN STREET, OWOSSO, MICHIGAN
PM PROJECT #01-5363-0-001**

VOLATILE ORGANIC COMPOUNDS, POLYNUCLEAR AROMATIC COMPOUNDS & METALS (µg/L)				Benzene	n-Butylbenzene	cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	Ethylbenzene	n-Propylbenzene	Tetrachloroethylene	Toluene	Trichloroethylene	1,2,3-Trimethylbenzene ⁵	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	Xylenes	Other VOCs	Naphthalene	2-Methylnaphthalene	Other PNAs	Cadmium	Chromium	Lead	
Chemical Abstract Service Number (CAS#)				71432	104518	156592	156605	100414	103651	127184	108883	79016	526738	95636	108678	75014	1330207	Various	91203	91576	Various	7440439	16065831	7439921	
Sample ID	Sample Date	Screen Depth (feet bgs)	Depth to Groundwater (feet bgs)	VOCs														PNAs			Metals				
SB-1 Water (GEE)	7/31/2012	15.0-20.0	16.0	<1	<1	200	<1	<1	<1	5,100	<1	<1	<1	<1	<1	<1	<1	<MDL	17	7	<MDL	<1	<10	<3	
TMW-1	04/29/2015	4.83-9.83	6.86	460	<10	<10	<10	30	<10	130	20	<10	10	<10	<10	<10	110	<MDL	NA	NA	NA	NA	NA	NA	
TMW-2	04/28/2015	7.12-12.12	6.63	<100	<100	800	<100	100	<100	2,400	<100	1,000	<100	100	<100	<100	300	<MDL	NA	NA	NA	NA	NA	NA	
TMW-3	04/28/2015	7.19-12.19	7.43	<100	<100	<100	<100	300	200	<100	<100	<100	200	1,100	300	<100	500	<MDL	NA	NA	NA	NA	NA	NA	
TMW-6	04/28/2015	9.68-14.68	7.02	20	10	260	<10	10	30	<10	<10	<10	<10	<10	<10	90	<30	<MDL	NA	NA	NA	NA	NA	NA	
TMW-8	04/28/2015	8.77-13.77	6.93	<50	<50	60	<50	340	110	<50	<50	<50	170	610	170	<50	700	<MDL	NA	NA	NA	NA	NA	NA	
TMW-11	04/28/2015	8.54-13.54	9.22	<1	<1	8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	NA	NA	NA	NA	NA	NA	
TMW-13	04/29/2015	7.63-12.63	6.83	1	<1	74	2	<1	<1	15	<1	11	<1	<1	<1	14	<3	<MDL	NA	NA	NA	NA	NA	NA	
Generic Groundwater Cleanup Criteria Table 1: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013 MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013																									
Residential/Nonresidential (µg/L)																									
Residential Drinking Water (Res DW)	5.0 (A)	80	70 (A)	100 (A)	74 (E)	80	5.0 (A)	790 (E)	5.0 (A)	63 (E)	63 (E)	72 (E)	2.0 (A)	280 (E)	Various	520	260	Various	5.0 (A)	100 (A)	4.0 (L)				
Residential Health Based Drinking Water Values	NL	NL	NL	NL	700 (E)	NL	NL	1,000 (E)	NL	NL	1,000 (E)	1,000 (E)	NL	10,000 (E)	Various	NL	NL	Various	NL	NL	NL				
Nonresidential Drinking Water (Nonres DW)	5.0 (A)	230	70 (A)	100 (A)	74 (E)	230	5.0 (A)	790 (E)	5.0 (A)	63 (E)	63 (E)	72 (E)	2.0 (A)	280 (E)	Various	1,500	750	Various	5.0 (A)	100 (A)	4.0 (L)				
Nonresidential Health Based Drinking Water Values	NL	NL	NL	NL	700 (E)	NL	NL	1,000 (E)	NL	NL	2,900 (E)	2,900 (E)	NL	10,000 (E)	Various	NL	NL	Various	NL	NL	NL				
Groundwater Surface Water Interface (GSI)	200 (X)	ID	620	1,500 (X)	18	ID	60 (X)	270	200 (X)	17	17	45	13 (X)	41	Various	11	19	Various	{G,X}	11	{G,X}				
Residential Groundwater Volatilization to Indoor Air Inhalation (Res GVII) ²	5,600	ID	93,000	85,000	1.10E+05	ID	25,000	5.3E+5 (S)	2,200	56,000 (S)	56,000 (S)	61,000 (S)	1,100	1.9E+5 (S)	Various	31,000 (S)	25,000 (S)	Various	NLV	NLV	NLV				
Nonresidential Groundwater Volatilization to Indoor Air Inhalation (Nonres GVII) ²	35,000	ID	2.10E+05	2.00E+05	1.7E+5 (S)	ID	1.70E+05	5.3E+5 (S)	4,900	56,000 (S)	56,000 (S)	61,000 (S)	13,000	1.9E+5 (S)	Various	31,000 (S)	25,000 (S)	Various	NLV	NLV	NLV				
Screening Levels (µg/L)																									
Residential Groundwater Vapor Intrusion Screening Levels (GW_{VI-res}) ³	27	91	83	360	700	92	94	36,000	9.8	2,400	1,700	1200	2.8	10,000	Various	240	9.40E+02	Various	NL	NL	NL				
Nonresidential Groundwater Vapor Intrusion Screening Levels (GW_{VI-nr}) ³	140	380	350	1,500	2,600	390	460	1.50E+05	41	10,000	7,300	5,100	52	10,000	Various	1,200	3.9E+03	Various	NL	NL	NL				
Residential Vapor Intrusion Shallow Groundwater Screening Levels (GW_{VI-sump-res}) ⁴	5.0	1.0	70	100	700	1.0	5.0	1,000	5.0	5.0	1.7	1.2	2.0	10,000	Various	5.0	5	Various	NL	NL	NL				
Nonresidential Vapor Intrusion Shallow Groundwater Screening Levels (GW_{VI-sump-nr}) ⁴	5.0	1.0	70	100	700	1.0	5.0	1,000	5.0	10	7.3	5.1	2.0	10,000	Various	5.0	5	Various	NL	NL	NL				
Water Solubility	1.75E+06	NA	3.50E+06	6.30E+06	1.69E+05	NA	2.00E+05	5.26E+05	1.10E+06	56,000	56,000	61,000	2.76E+06	1.86E+05	Various	31,000	25000	Various	NA	NA	NA				
Flammability and Explosivity Screening Level	68,000	ID	5.30E+05	2.30E+05	43,000	ID	ID	61,000	ID	56,000 (S)	56,000 (S)	ID	33,000	70,000	Various	NA	ID	Various	ID	ID	ID				
Acute Vapor Intrusion Screening Levels for Groundwater (µg/L)																									
IRASL Groundwater (AGW_{VI})	11,000	NL	6.4E+06	4,000	NL	NL	5.2E+04	2.6E+05	2.0E+06	NL	NL	NL	3.0E+05	1.5E+05	Various	NL	NL	Various	NL	NL	NL				
IRASL Groundwater In Contact With Structure (AGW_{VI-sump})	11	NL	6,400	4.0	NL	NL	53	260	2,000	NL	NL	NL	300	150	Various	NL	NL	Various	NL	NL	NL				

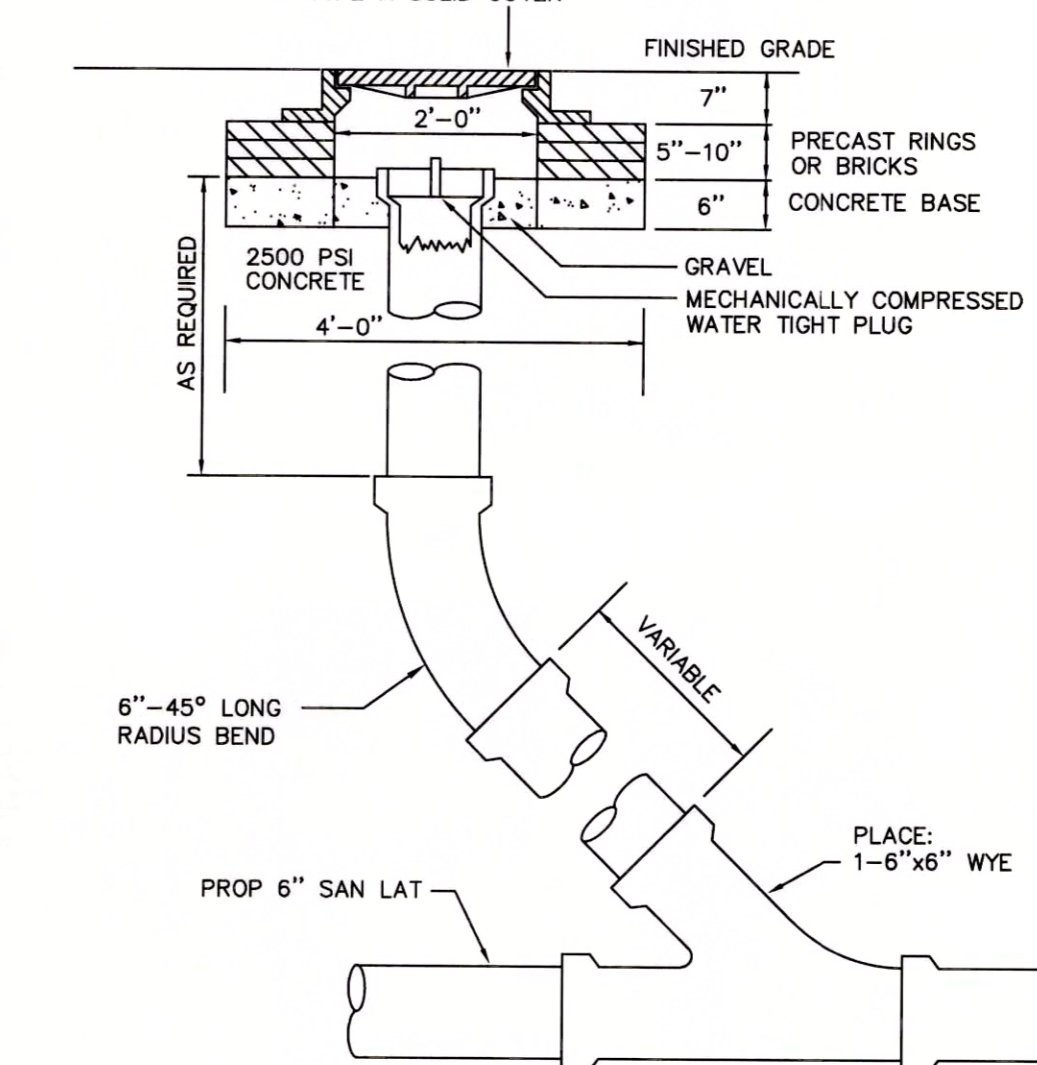
- Applicable Criteria/RBSL Exceeded
- BOLD** Value Exceeds Applicable Criteria
- Nonresidential VISL Exceeded
- bgs Below Ground Surface (feet)
- ND Not detected at levels above the laboratory Method Detection Limit (MDL) or Minimum Quantitative Level (MQL)
- ¹ Rule 323.1057 of Part 4 Water Quality Standards
- ² Tier 1 GVII Criteria based on 3 meter (or greater) groundwater depth
- ³ (2013 Vapor Intrusion Guidance) Screening Levels based on depth to groundwater less than 1.5 meters and not in contact with building foundation
- ⁴ (2013 Vapor Intrusion Guidance) Screening levels based on groundwater in contact with the building foundation or within a sump
- ⁵ 1,2,3-Trimethylbenzene RBSLs based on the more restrictive of 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
- NA Not Applicable
- NL Not Listed
- NLL Not Likely to Leach
- NLV Not Likely to Volatilize
- ID Insufficient Data

Attachment D

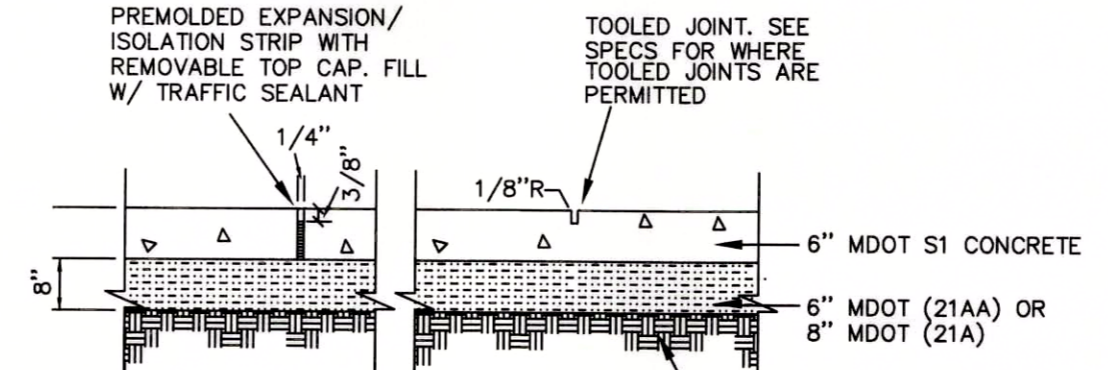
Preliminary Site Maps



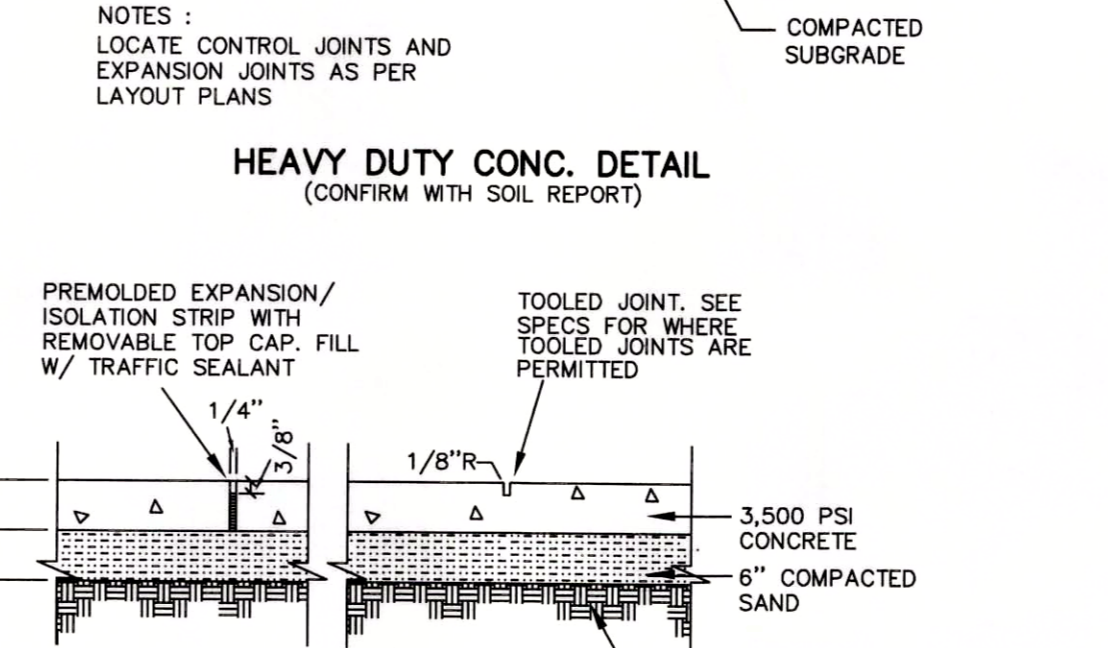
8" ROOF DRAIN LEAD (R.D.L.) CLEANOUT DETAIL



SAN SEWER LATERAL CLEANOUT DETAIL



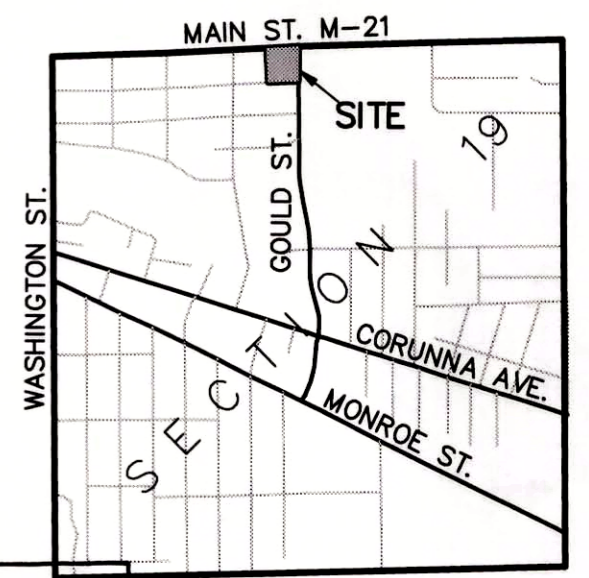
HEAVY DUTY CONC. DETAIL (CONFIRM WITH SOIL REPORT)



4" CONCRETE WALKWAY DETAIL

- GENERAL NOTES:**
- Legal Description: Lots 83-87, Stafford Gardner & Trankles Central Add. except the N. 10' of said lots and also except a part of Lot 87 beginning at a point on the E. line Lot 87, 25' S. of the NE corner; thence N. on the E. line 15'; thence SE'ly to POB.
 - This property contains approximately 0.7 acres.
 - Existing Zoning - B-4 General Business District
Building Setback Requirements:
Front yard: 15 feet
Side yard:
-Corner lot which borders on a residential district to the rear: 20 feet
-Exterior side yard abutting a residential district: 10 feet
Rear yard: Adjacent to R-1, R-2 or RT-1 district: 10 percent of the depth of the lot 13 feet provided to center of alley
 - Parking Requirements:
Restaurant:
1 per 75 s.f. of useable floor area:
2800 s.f. - 80% useable = 2240 s.f. / 75 = 30 spaces
Retail:
1 per each 200 s.f. of useable floor area:
3407 s.f. - 80% useable = 2726 s.f. / 200 = 14 spaces
TOTAL required: 44 spaces
Parking Provided:
Standard spaces 44
Barrier free spaces 2
TOTAL 46
 - Underground utilities:
Sanitary sewer - connect to existing sanitary sewer leads under M-21 (provide grease trap as necessary)
Watermain - connect to existing 8" watermain along south ROW of M-21
Storm sewer - provide catch basins in parking lot with outlet pipe tapped into 60 inch storm sewer along Gould Ave., as shown
 - Site is in Shiawassee River 100 year floodplain. Floodplain earth fill and compensating floodplain earth cut at 930 Jerome Ave. shall be performed in compliance with the terms and specifications of MDEQ Permit No. 14-78-0006-P issued January 23, 2015.
 - Work inside M-21 ROW to be coordinated with MDOT.
 - Due diligence must be exercised regarding on site environmental conditions as outlined in the global environmental engineering inc. reports dated Aug. 10, 2012 titled: Baseline Environmental Assessment Report and Section 7a Compliance Analysis for the 1910 East Main Street Site.
 - All curb radius are 5' to face unless otherwise noted.
For existing soils and engineered fill specifications recommendations and light duty asphalt, medium duty asphalt, and concrete section requirements.
Refer to: Geotechnical Engineering Investigation Report dated March 19, 2015
W.E.S.T./Project No. 15-0014
By: Wolvshre Engineering & Surveyors, Inc.
312 North Street
Mason, MI 48854
Attn: Dan Wisinski
Phone: (517) 676-9200
11. PM Environmental J. Adam Patton, CHMM
Phone: (517) 325-9867
Cell: (517) 202-4288

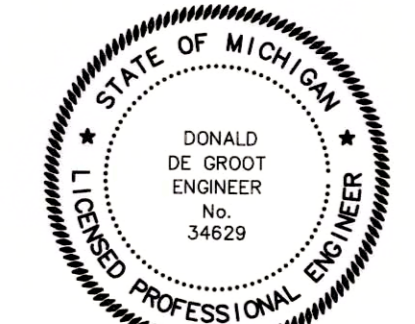
- STORM SEWER NOTES:**
- 12" storm sewer pipe shall be SLPPP with water tight joint connection
 - All 15" storm sewer pipe shall be C-76-III, or SLPPP with water tight joint connections.
 - 8" Roof drain lead and storm sewer pipe shall be PVC Schedule 40, or PVC SDR-26 pipe.
 - Storm sewer manhole and catchbasin structures shall be pre-cast concrete, per industry standards.
- SANITARY SEWER AND WATERMAIN NOTES:**
- All sanitary sewer and watermain materials and construction methods shall conform to the standard specifications and details of the City of Owosso.
 - Verify existing sanitary lateral location, size, and depth before construction.
 - Any un-used (abandoned) sanitary lateral and water services shall be plugged and trench backfilled per City of Owosso approved methods. Existing size, location and depth information shall be furnished to the City of Owosso for accurate record keeping purposes.
 - Place proposed 8" sanitary lateral over proposed 15" storm sewer.
 - Proposed sanitary lateral and water service to have minimum 4 feet of earth cover, unless insulated and approved by the City.



LOCATION MAP



Know what's below.
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may 11, 2015 Concept
Utility Design Change
WORK SHEET 1.0f2

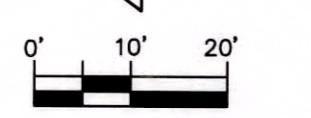
QDOBA/RETAIL SITE RE-DEVELOPMENT AND UTILITY PLAN

FOR: SOUTHWIND RESTAURANTS
109 EAST BROADWAY
MT. PLEASANT, MI 48858
ATTN: KEVIN EGNATUK

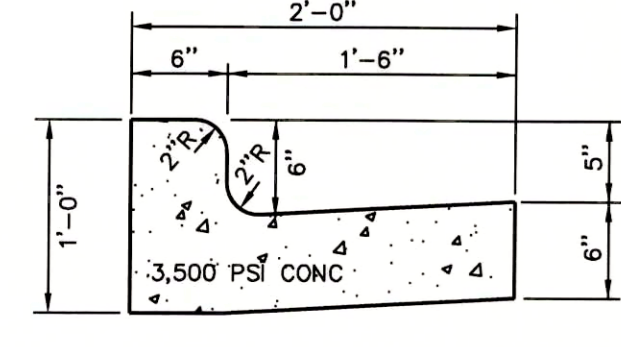
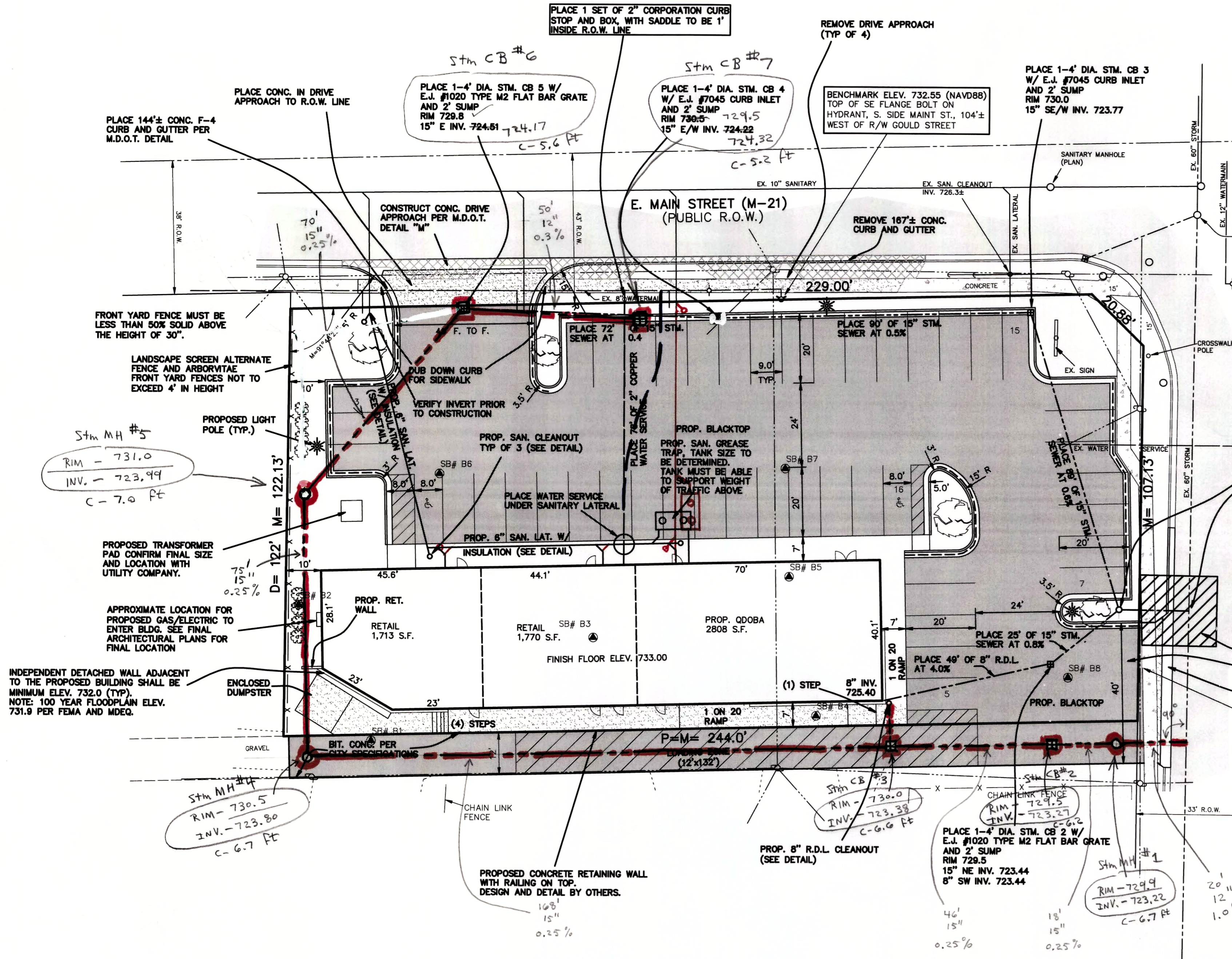
IN: PART OF THE NW 1/4, SECTION 19, T7N, R3E,
CITY OF OWOSSO, SHIAWASSEE COUNTY, MICHIGAN

REVISIONS:	DATE	BY	APP. BY
3/20/15 REV. PER OWNER (JSD)		JSD	
3/10/15 REV. SAN. LATERAL (JSD)		JSD	

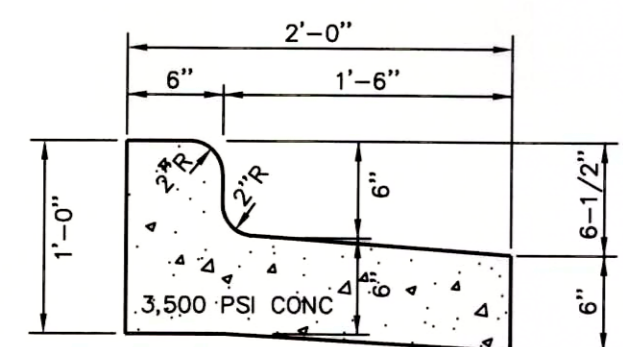
DRAWN BY: JSD	PROJ. ENG.: DDG	SHEET 2 of 3
APPROVED BY: DDG	PROJ. SURV.: BMF	
FILE NO.: 141574E	DATE: 3/2/2015	



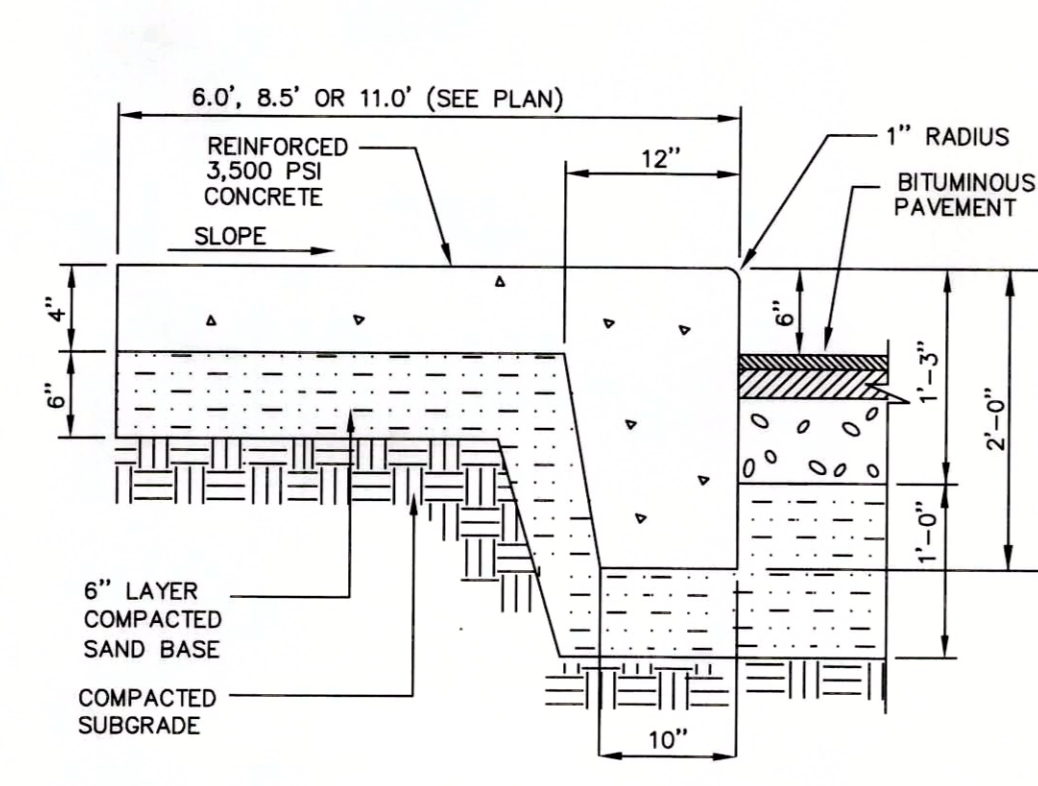
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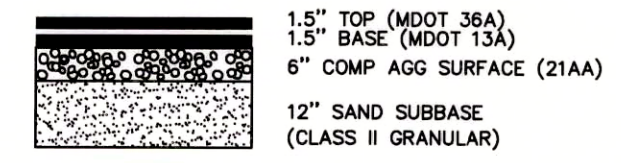
24" HEAD CURB DETAIL (PITCHED IN)



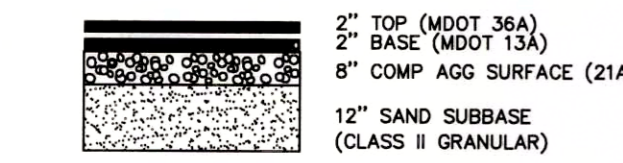
24" HEAD CURB DETAIL (PITCHED OUT)



INTEGRAL CONC WALK/CURB

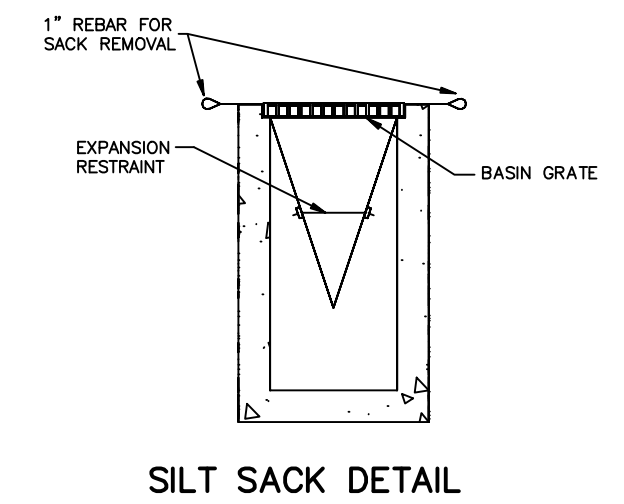
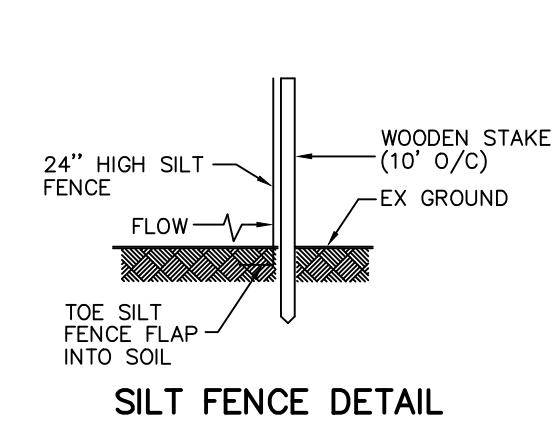
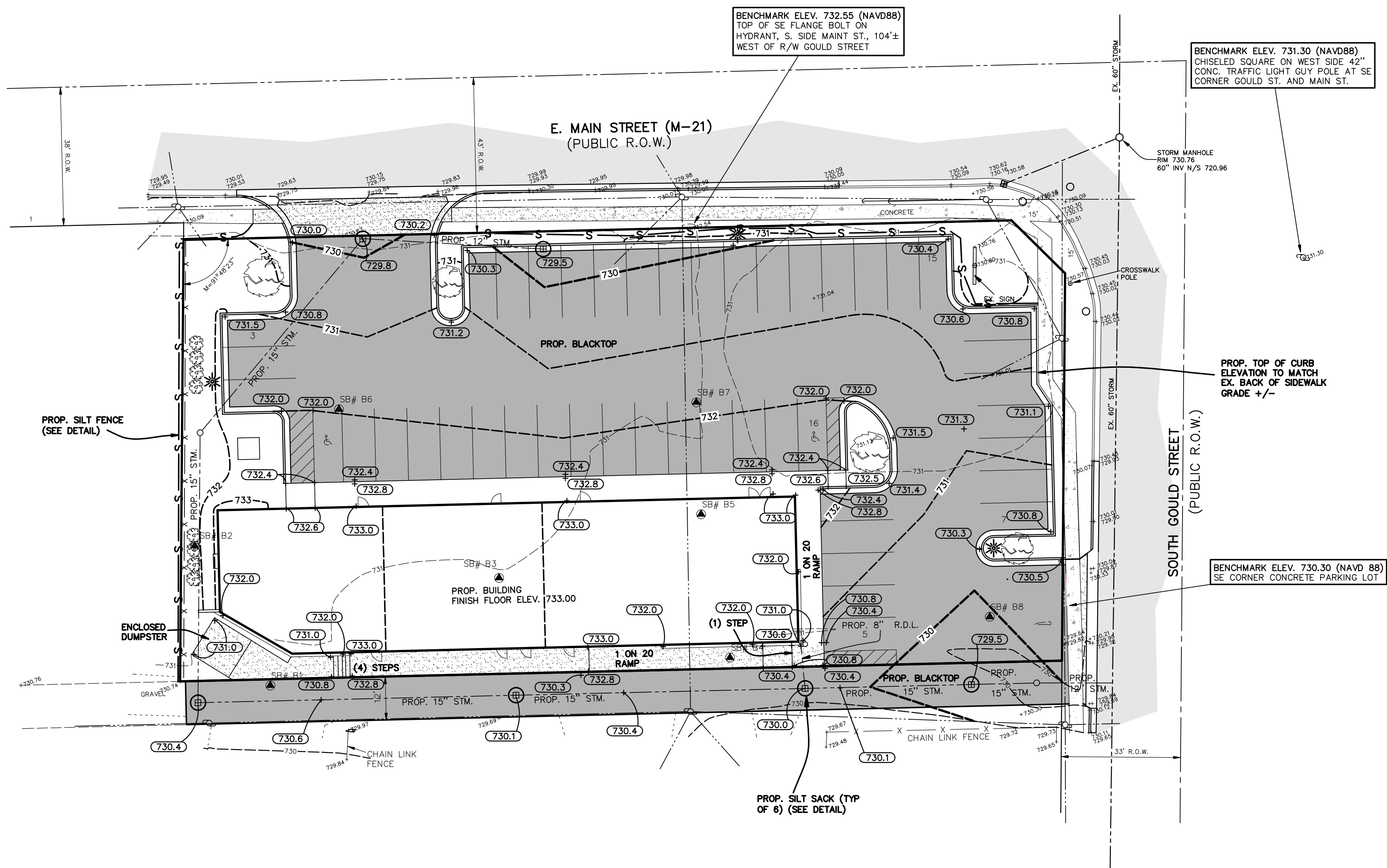


LIGHT DUTY PAVING CROSS SECTION (CONFIRM WITH SOIL REPORT)



MEDIUM DUTY PAVING CROSS SECTION (CONFIRM WITH SOIL REPORT)

EX. STM. MH
RIM 729.11
60" N/S INV. 720.71

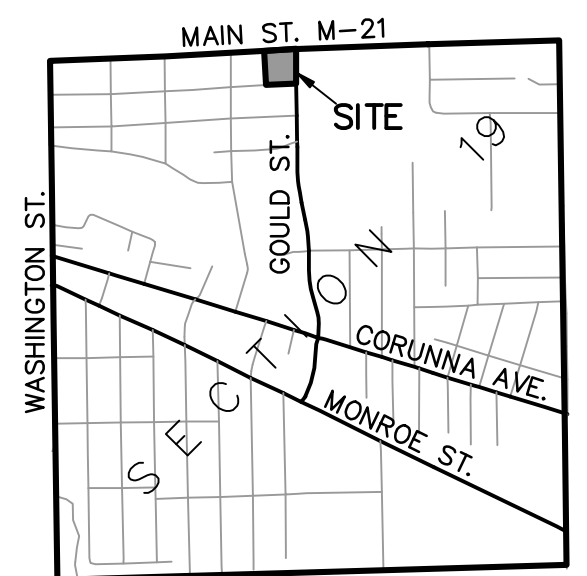


SOIL EROSION CONTROL NOTES :

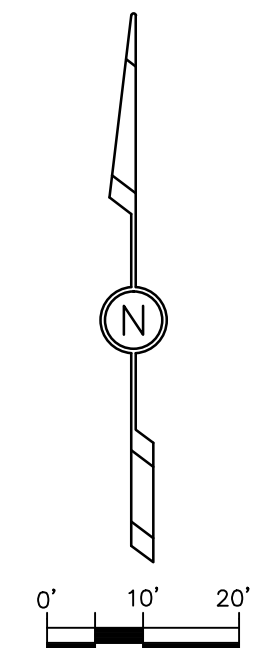
1. ALL SOIL EROSION CONTROL MEASURES ARE TO BE IN PLACE PRIOR TO THE START OF ANY GRADING.
2. INSPECT AND MAINTAIN ALL TEMPORARY SOIL EROSION CONTROLS AFTER EACH SIGNIFICANT RAINFALL AND UNTIL THE SITE HAS BEEN PERMANENTLY STABILIZED.
3. ALL NON-PAVED SURFACES SHALL BE TOPSOILED WITH MINIMUM OF 4" TOPSOIL AND SEEDED.
4. PLACE ALL NEW STORM CATCHBASIN GRATES IN SILT SACKS UNTIL PAVING BEGINS.
5. PLACE SILT FENCE AS SHOWN ON PLAN AND PER DETAIL.
6. CONTRACTOR SHALL MINIMIZE TRACKING OF MUD AND SOIL ONTO ROADWAYS.
7. AREA OF DISTURBANCE IS 0.76 ACRES.



Know what's below.
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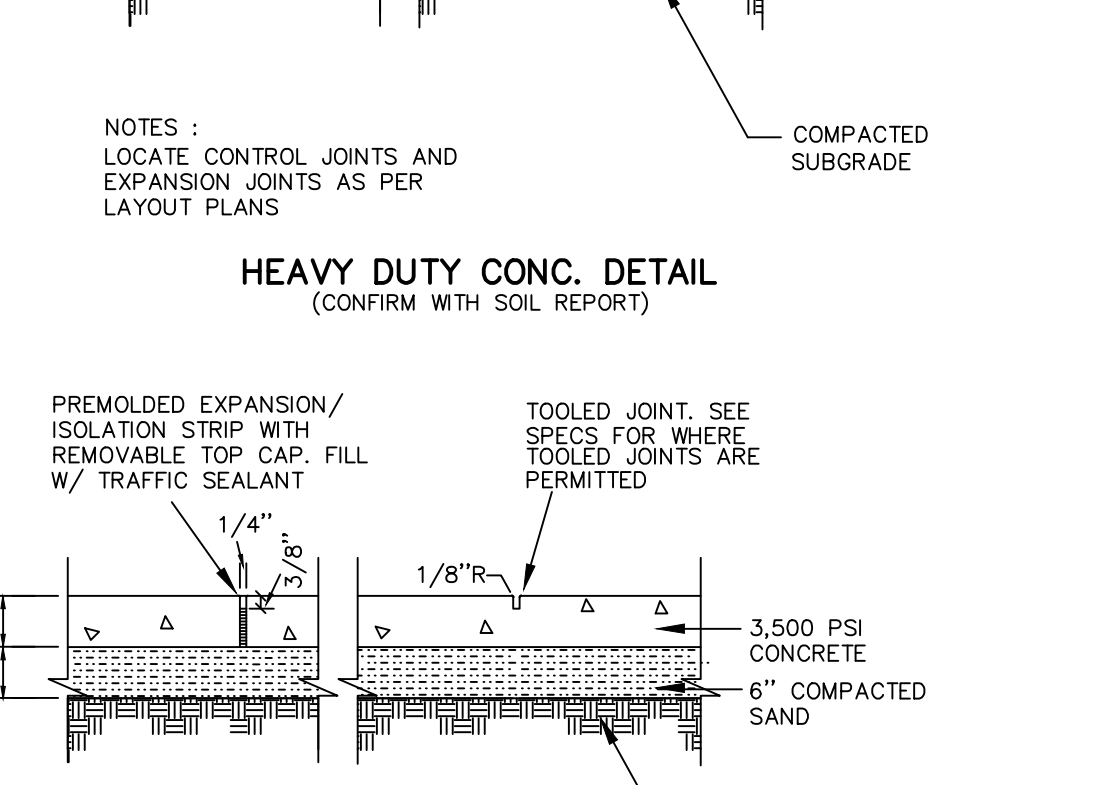
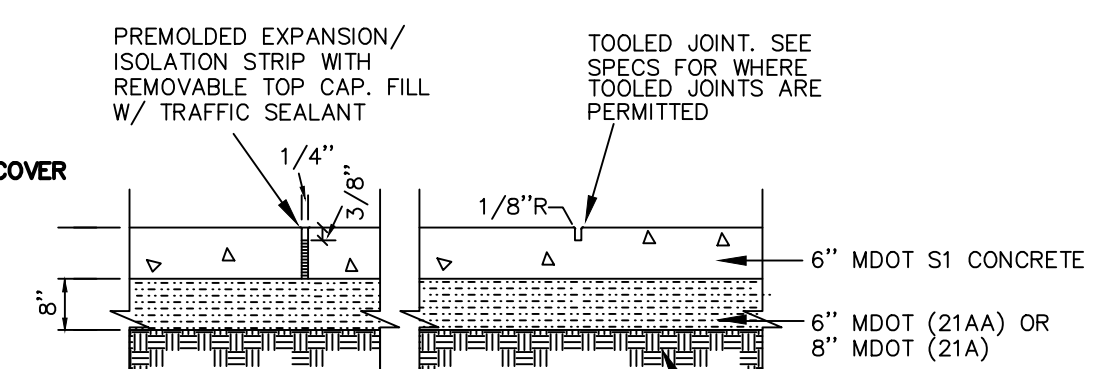
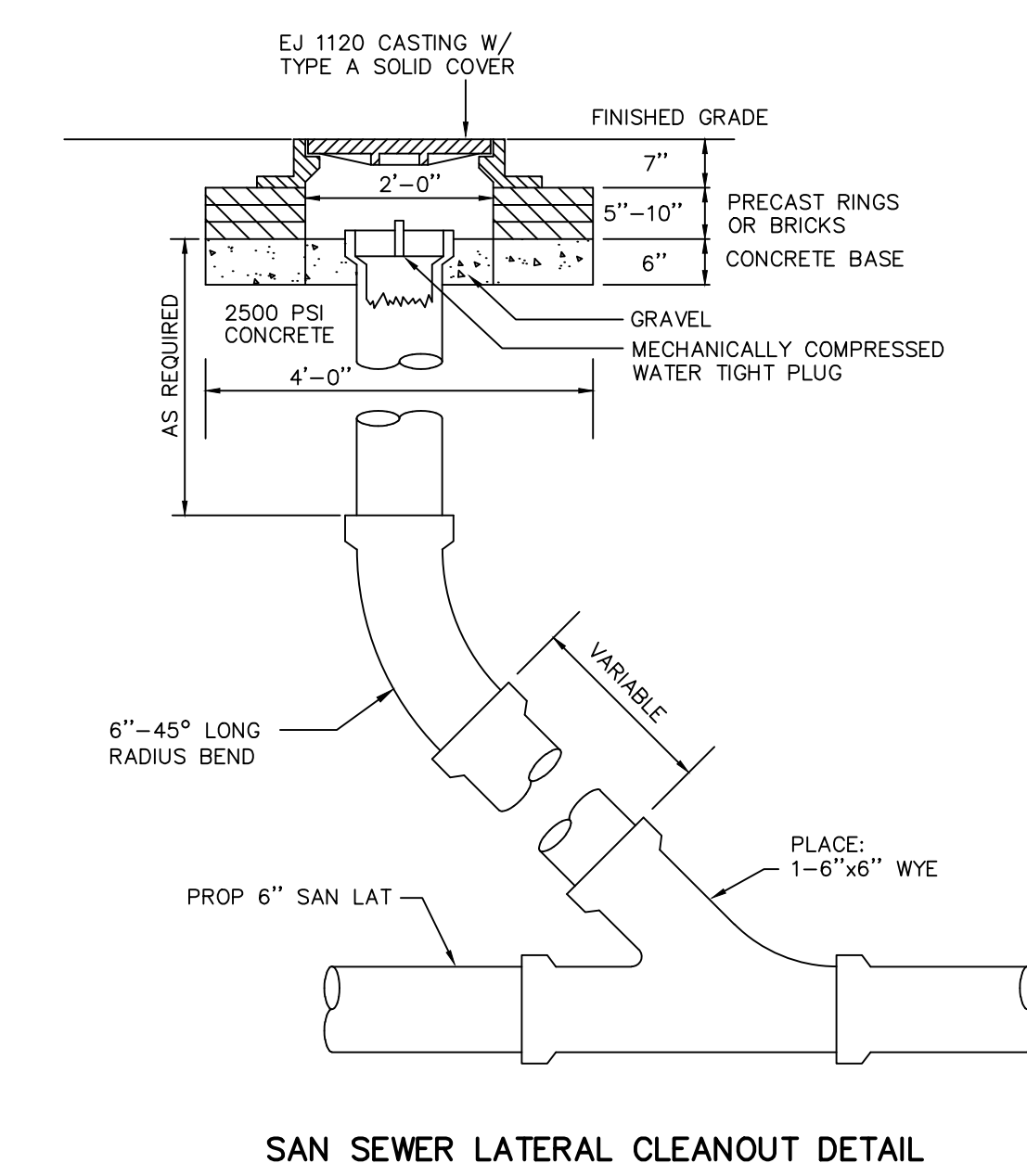
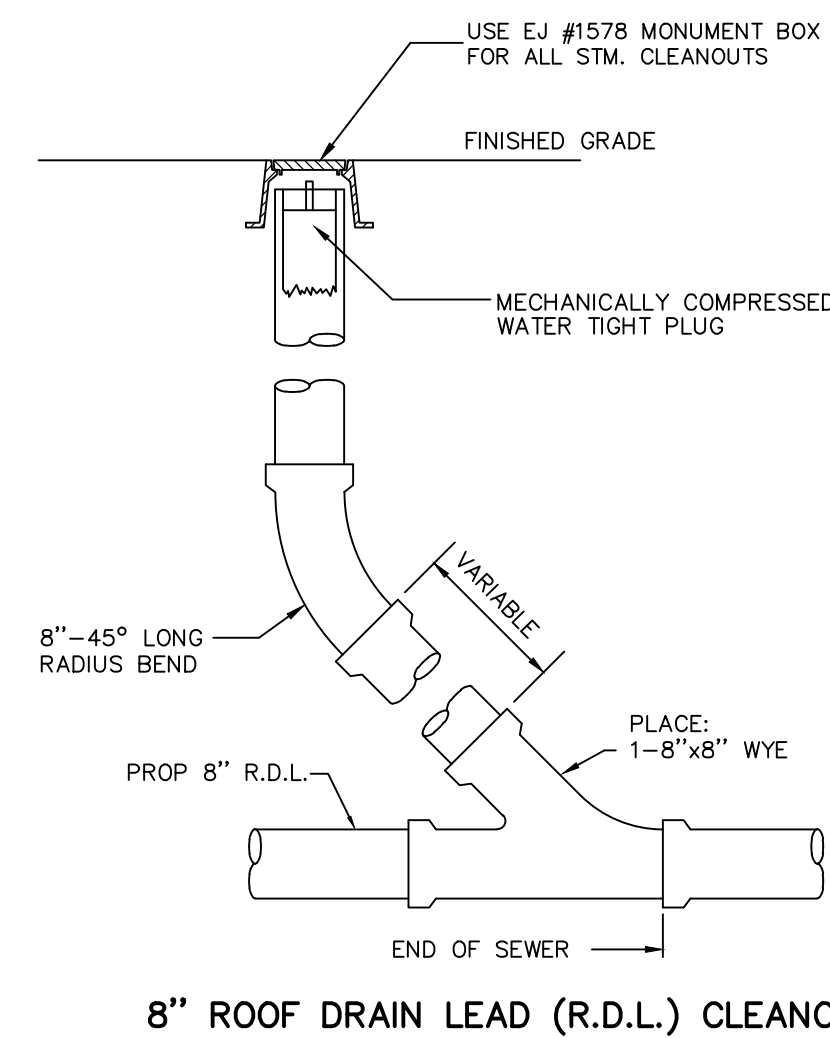
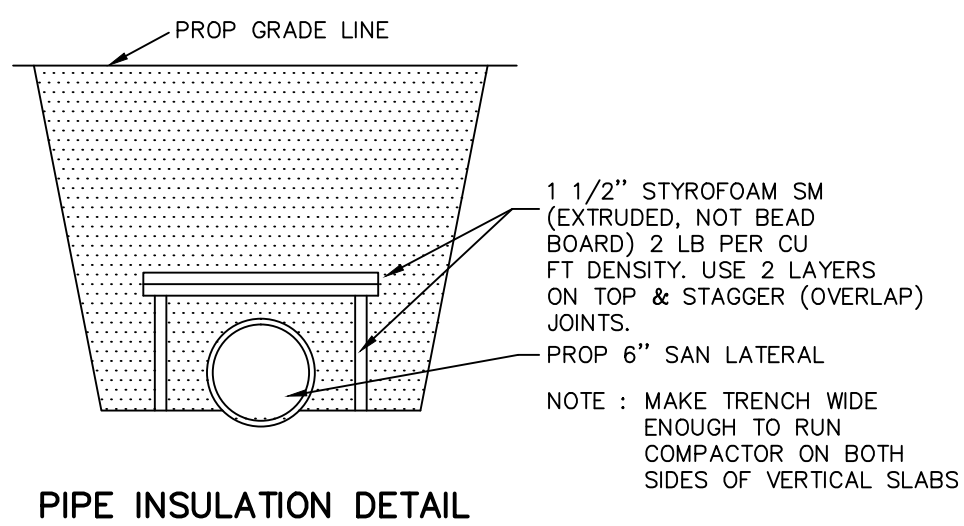


LOCATION MAP



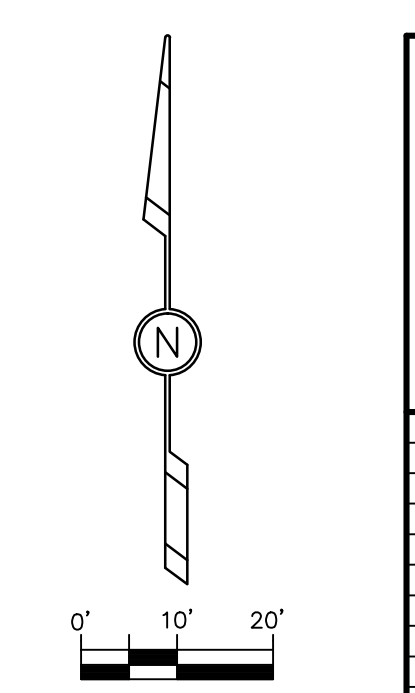
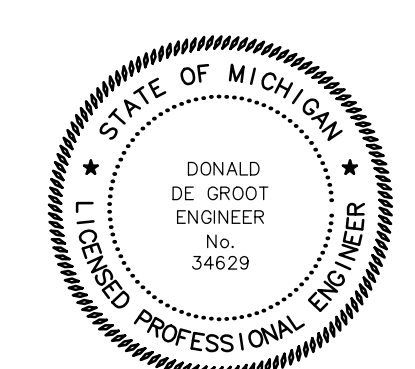
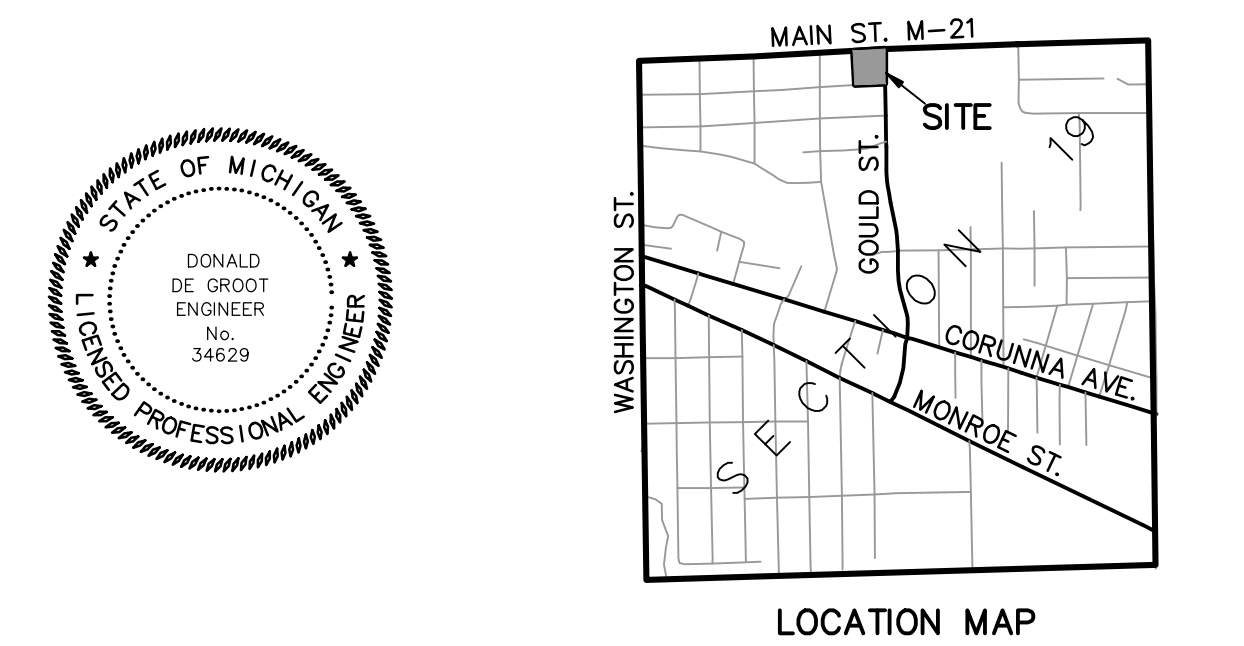
SCALE: 1" = 20'

GRADING AND SOIL EROSION CONTROL PLAN QDOBA/RETAIL SITE RE-DEVELOPMENT AT 910 E. MAIN ST.		
FOR: SOUTHWIND RESTAURANTS 109 EAST BROADWAY MT. PLEASANT, MI 48858 ATTN: KEVIN EGNATUK		
IN: PART OF THE NW 1/4, SECTION 19, T7N, R3E, CITY OF OWOSSO, SHIAWASSEE COUNTY, MICHIGAN		
REVISIONS: _____ _____ _____	DRAWN BY: JSD APPROVED BY: DDG FILE NO.: 141574E	PROJ. ENG.: DDG PROJ. SURV.: BMF DATE: 3/2/2015
5/28/15 REV-BROWNFIELD RE-DEVELOPMENT 3/20/15 REV. PER OWNER (JSD)	SHEET 3 of 3	



- GENERAL NOTES:**
- Legal Description: Lots 83-87, Stafford Gardner & Trankles Central Add. except the N. 10' of said lots and also except a part of Lot 87 beginning at a point on the E. line Lot 87, 25' S. of the NE corner; thence N. on the E. line 15'; thence SE 1/4 to POB.
 - This property contains approximately 0.7 acres.
 - Existing Zoning - B-4 General Business District
 Building Setback Requirements:
 Front yard: 15 feet
 Side yard:
 -Corner lot which borders on a residential district to the rear: 20 feet
 -Exterior side yard abutting a residential district: 10 feet
 Rear yard: Adjacent to R-1, R-2 or RT-1 district: 10 percent of the depth of the lot 13 feet provided to center of alley
 - Parking Requirements:
 Restaurant:
 1 per 75 s.f. of useable floor area:
 2800 s.f.-80% useable=2240 s.f. / 75 = 30 spaces
 Retail:
 1 per each 200 s.f. of useable floor area:
 3407 s.f.-80% useable = 2726 s.f. / 200 = 14 spaces
 TOTAL required: 44 spaces
 Parking Provided:
 Standard spaces 44
 Barrier free spaces 2
 TOTAL 46
 - Underground utilities:
 Sanitary sewer - connect to existing sanitary sewer leads under M-21 (provide grease trap as necessary)
 Watermain - connect to existing 8" watermain along south ROW of M-21
 Storm sewer - provide catch basins in parking lot with outlet pipe tapped into 60 inch storm sewer along Gould Ave., as shown.
 - Site is in Shiawassee River 100 year floodplain. Floodplain earth fill and compensating floodplain earth cut at 930 Jerome Ave. shall be performed in compliance with the terms and specifications of MDEQ Permit No. 14-78-0006-P issued January 23, 2015.
 - Work inside M-21 ROW to be coordinated with MDOT.
 - Due diligence must be exercised regarding on site environmental conditions as outlined in the global environmental engineering inc. reports dated Aug. 10, 2012 titled: Baseline Environmental Assessment Report and Section 7a Compliance Analysis for the 910 East Main Street Site.
 - All curb radius are 5' to face unless otherwise noted.
 - For existing soils and engineered fill specifications recommendations and light duty asphalt, medium duty asphalt, and concrete section requirements, Refer to: Geotechnical Engineering Investigation Report dated March 19, 2015 W.E.S.I. Project No. 15-0014 By: Wolverine Engineering & Surveyors, Inc. 312 North Street Mason, MI 48854 Attn: Dan Wisinski Phone: (517) 676-9200
 - For Brownfield Re-Development on the site, all construction activities must follow the MDEQ and PM ENVIRONMENTAL INC. requirements and recommendations. J. ADAM PATTON, CHMM Phone: (517) 325-9867 Cell: (517) 202-4288 PM ENVIRONMENTAL, INC. 3340 Ranger Road Lansing, MI 48906

- STORM SEWER NOTES:**
- All storm sewer installation and materials for structures and pipe, including gaskets and seals to follow the requirements and recommendations of the MDEQ and PM ENVIRONMENTAL INC. for the Brownfield Re-Development. See general note No. 11 above.
- SANITARY SEWER AND WATERMAIN NOTES:**
- All sanitary sewer and watermain materials and construction methods shall conform to the standard specifications and details of the City of Owosso.
 - Verify existing sanitary lateral location, size, and depth before construction.
 - Any un-used (abandoned) sanitary lateral and water services shall be plugged and trench backfilled per City of Owosso approved methods. Existing size, location and depth information shall be furnished to the City of Owosso for accurate record keeping purposes.
 - Proposed sanitary lateral and water service to have minimum 4 feet of earth cover, unless insulated and approved by the City.



QDOBA/RETAIL SITE RE-DEVELOPMENT AND UTILITY PLAN

FOR: SOUTHWIND RESTAURANTS
 109 EAST BROADWAY
 MT. PLEASANT, MI 48858
 ATTN: KEVIN EGNATUK

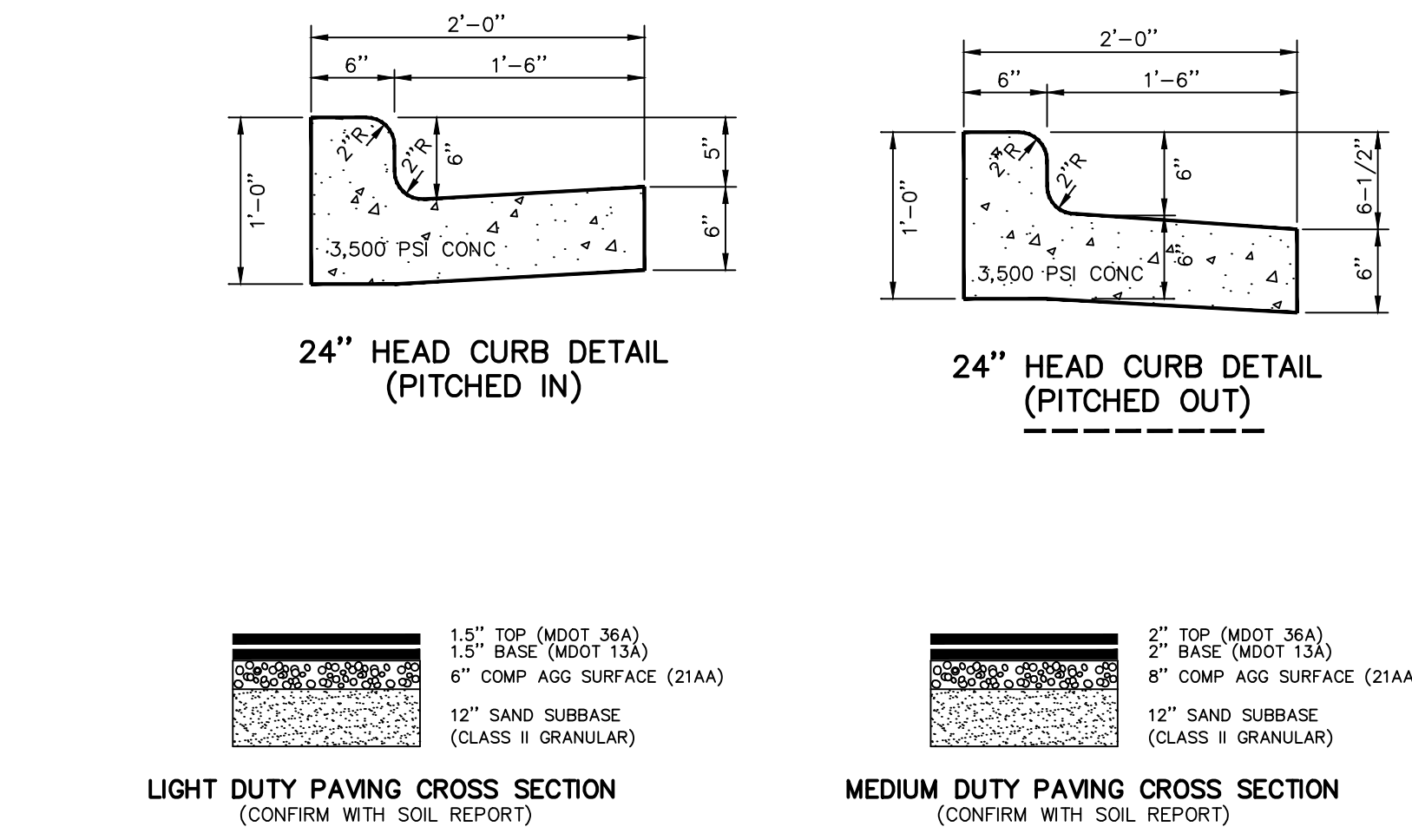
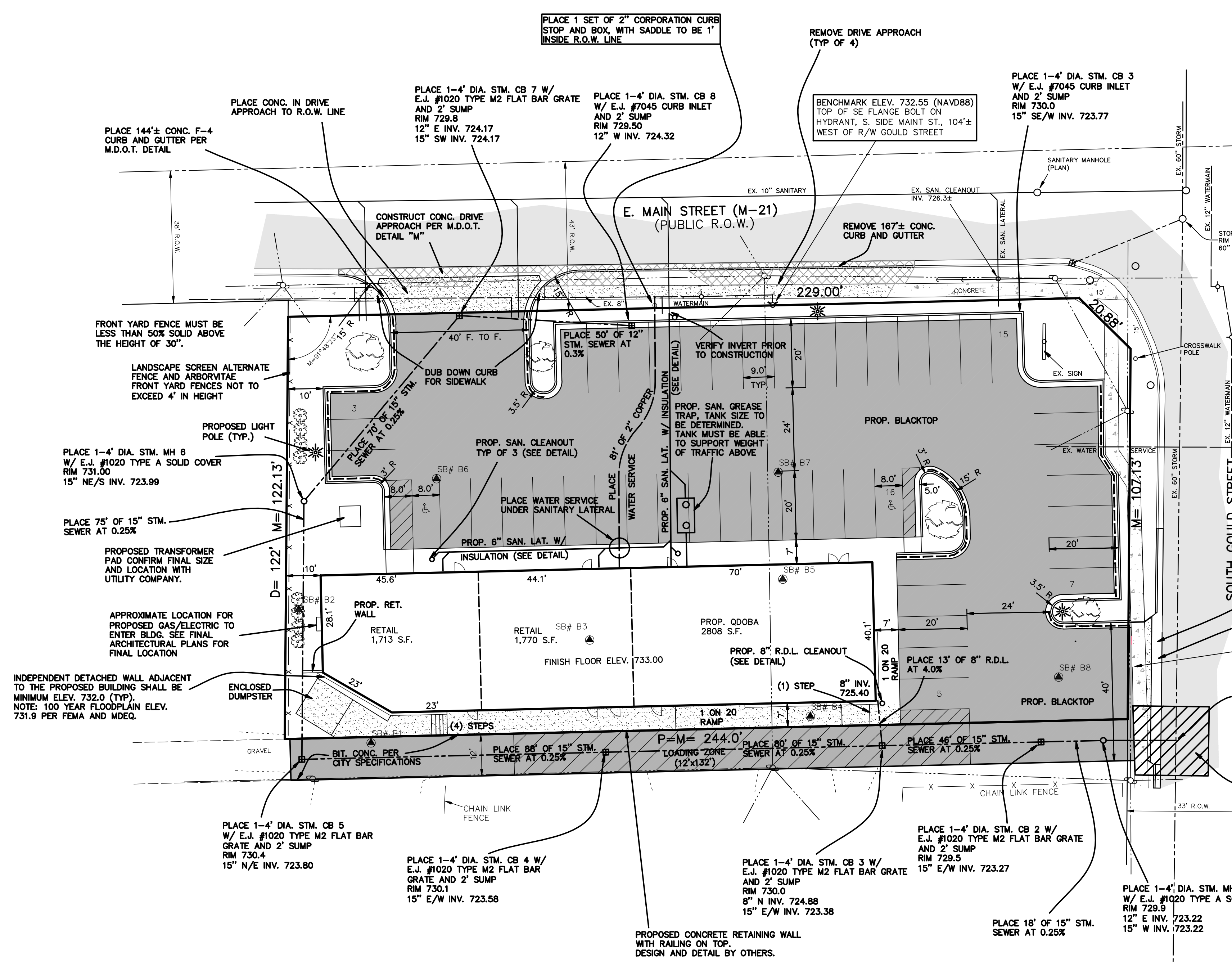
IN: PART OF THE NW 1/4, SECTION 19, T7N, R3E,
 CITY OF OWOSSO, SHIAWASSEE COUNTY, MICHIGAN

REVISIONS:

5/28/15 REV.-BROWNFIELD RE-DEVELOPMENT	DRAWN BY: JSD	PROJ. ENG.: DDG
3/20/15 REV. PER OWNER (USD)	APPROVED BY: DDG	PROJ. SURV.: BMF
3/10/15 REV. SAN. LATERAL (USD)	FILE NO.: 141574E	DATE: 3/2/2015

www.exxelengineering.com

5252 Clyde Park, S.W. • Grand Rapids, MI 49509
 Phone: (616) 531-3660 Fax: (616) 531-2121

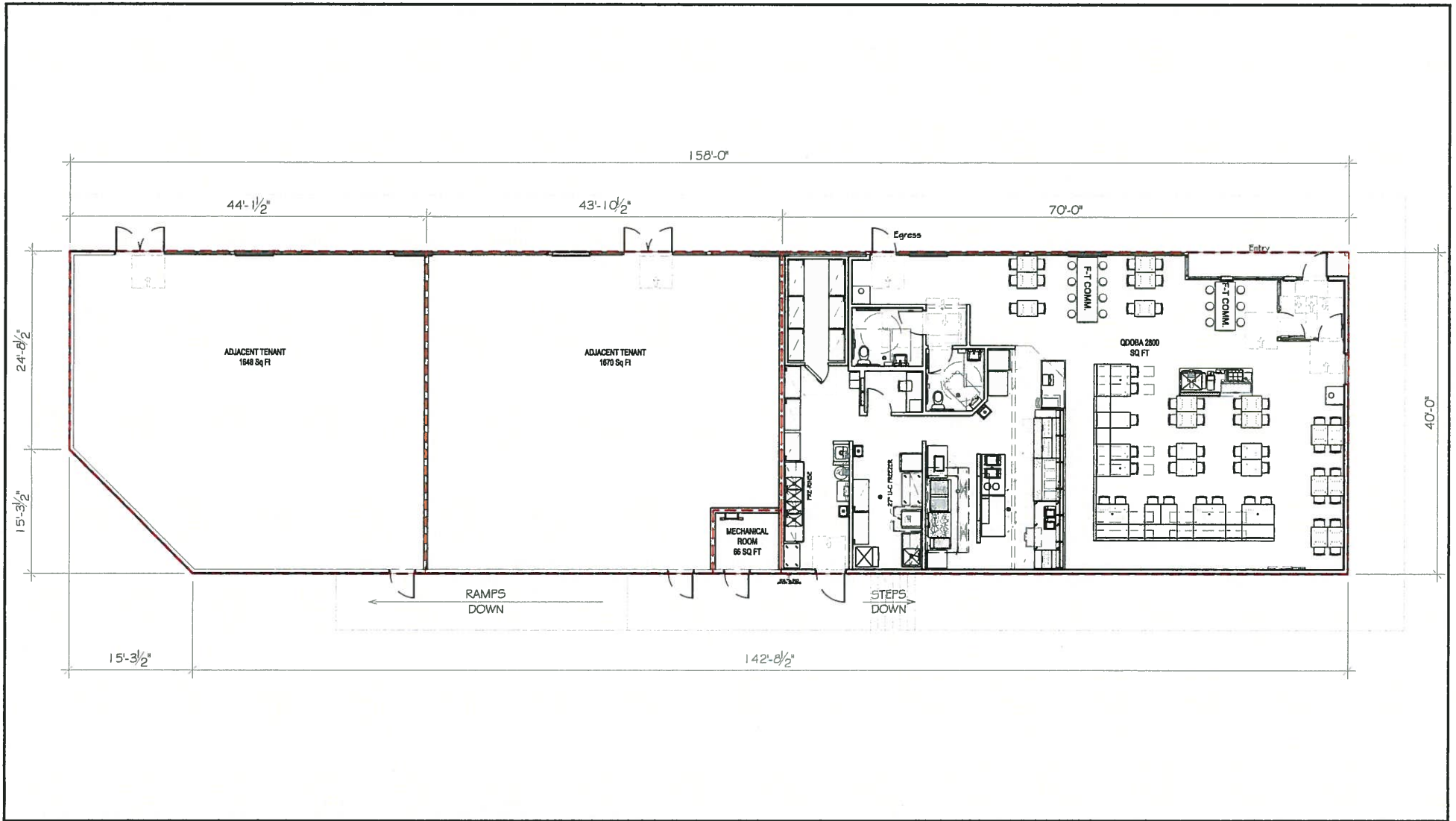


LIGHT DUTY PAVING CROSS SECTION (CONFIRM WITH SOIL REPORT)
 1.5" TOP (MDOT 36A)
 1.5" BASE (MDOT 13A)
 6" COMP AGG SURFACE (21AA)
 12" SAND SUBBASE (CLASS II GRANULAR)

MEDIUM DUTY PAVING CROSS SECTION (CONFIRM WITH SOIL REPORT)
 2" TOP (MDOT 36A)
 2" BASE (MDOT 13A)
 8" COMP AGG SURFACE (21AA)
 12" SAND SUBBASE (CLASS II GRANULAR)

INTEGRAL CONC WALK/CURB

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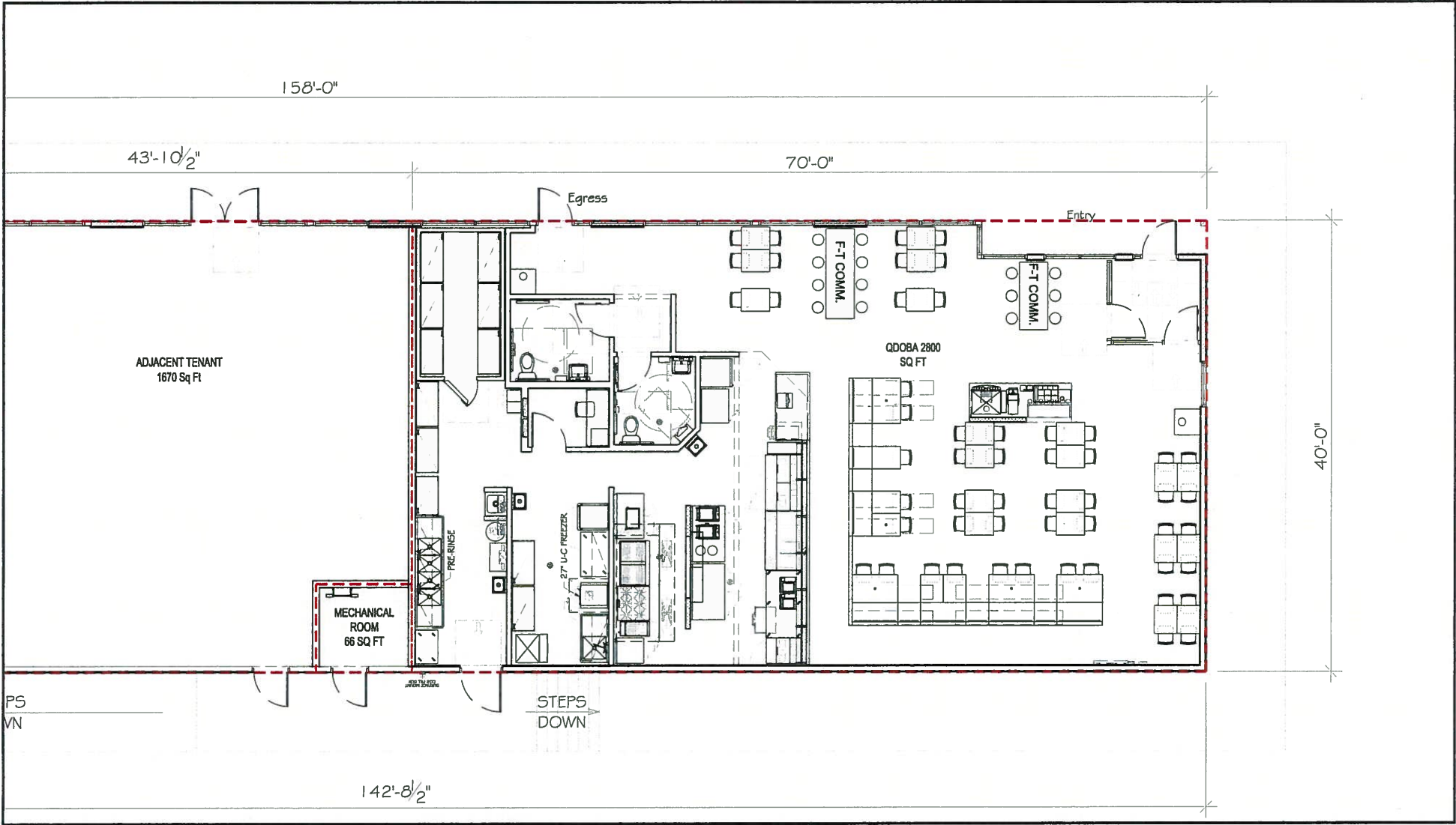


PROJ. NO.: 14-400	LOD 6191 Sq Ft	OWNER / TENANT: Johnroe
DATE: 01/22/15		SCALE: N.T.S.
SHEET # 005	Multi-Tenant Building Owosso, MI	



THIS SCHEMATIC WAS PRODUCED FROM INFORMATION PROVIDED. A SITE SURVEY SHOULD BE COMPLETED TO VERIFY EXISTING CONDITIONS


 188 WEST MAIN ST.
 LENA, IL 61048
 PH: 815-369-9155
 FAX: 815-369-4495
 WWW.LOMBDESIGN.COM



PROJ. NO. 14-180
 DATE: 01/22/15
 SHEET # 005

Schematic
 2800 Sq Ft
 80 Seats

QDOBA
 Multi-Tenant Building
 Owosso, MI

OWNER / TENANT:
 Johroo

SCALE:
 1/8" = 1'-0"

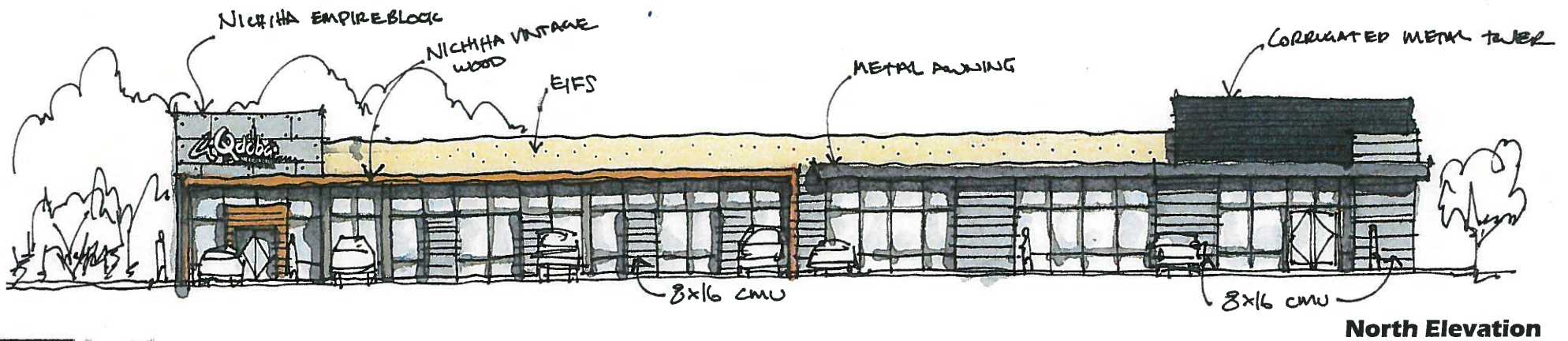
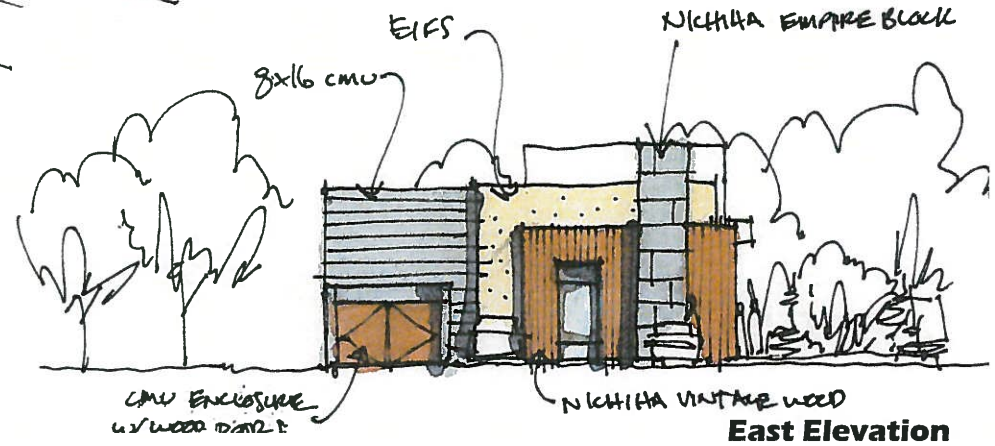


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UNILE Design Group

158 WEST MAIN ST.
 LENA, IL 61048

PH: 815-369-9135
 FAX: 815-369-4485
 WWW.UNILEDIGN.COM



Imagine

Create

Excite

Dual Tenant Building

Main St. & South Gould_Owosso, MI

Attachment E

Governing Body Resolution

Attachment F

Digital Photos of the Site

(Attached via Disc)

REIMBURSEMENT AGREEMENT

This Brownfield Redevelopment Loan Agreement is made on this _____ day of _____, 2015 between SOUTHWIND RESTAURANTS, LLC of 109 East Broadway Street, Mount Pleasant, Michigan 48858 ("Southwind") and the Owosso Brownfield Redevelopment Authority (the "Authority").

RECITALS

A. Southwind is the owner of certain property located at the southwest corner of East Main Street and South Gould Street in the City of Owosso. The property is legally described on the attached Exhibit A (the "Property").

B. The Property has been deemed a "facility" under Part 201 of Michigan's National Resources and Environmental Protection Act ("Part 201").

C. Southwind proposes to construct a commercial retail development on the Property (the "Development") in accordance with the Site Plan approved by the City of Owosso Planning Commission on September 22, 2014.

D. There are certain eligible costs which Southwind will incur as a result of the redevelopment of the Property consisting of certain environmental assessment activities, due care activities, additional response activities (demolition), and asbestos abatement activities and other costs which are eligible for reimbursement under Act 381 (collectively referred to as "Eligible Activities".) The City of Owosso Brownfield Redevelopment Authority ("OBRA") has incurred and will continue to incur certain costs in connection with the Brownfield Plan ("Administrative Costs"), for administrative and operating activities, and for preparing and administering this project. The cost of the Eligible Activities and the Administrative Costs are collectively referred to as "Costs" or "Eligible Costs". The types of Eligible Activities and the Eligible Activity Costs are more fully described in the Brownfield Plan adopted on _____ by the OBRA and approved by the City Council on _____, pursuant to Act 381. The costs and activities identified in the Brownfield Plan are estimates; the actual costs may vary depending on the nature and extent of unknown conditions encountered on the Property. However, the maximum reimbursement for Eligible Activity costs is capped at the amount approved in the Brownfield Plan and further limited by the terms of this agreement.

E. In order to facilitate the redevelopment of the Property, the City has entered into a CMI Brownfield Development Loan Contract with the Michigan Department of Environmental Quality ("MDEQ") dated 2015 (the "City/MDEQ Loan Agreement"). Under the City/MDEQ Loan Agreement, the MDEQ has committed to make available to the City the amount of Two Hundred Ninety-Two Thousand Nine Hundred Sixty Three Dollars (\$292,963) to provide loan funding to cover costs associated with the redevelopment of the Property.

F. The proceeds of the MDEQ loan to the City will be made available to fund eligible expenses necessary for the redevelopment of the Property, which will include the costs identified in Exhibit B ("Eligible Expenses").

G. This Agreement also sets forth the terms and conditions under which Southwind and the City will utilize and repay the loan proceeds made available by MDEQ to the City and Southwind for Eligible Activities incurred outside of the MDEQ Loan as approved in the Brownfield Plan attached here to as Exhibit C.

In consideration of the premises and mutual covenants contained in this Agreement, Southwind

and the City hereby agree as follows:

1. Development. Southwind shall commence work to implement the activities to be funded by the MDEQ loan proceeds after a work plan for such activities is approved by the City and MDEQ. Southwind will use its reasonable best efforts to complete such work by September 30, 2016. For those costs which Southwind seeks reimbursement from available Tax Increment Revenue (TIR) and/or MDEQ Loan proceeds, Southwind shall submit a Brownfield Plan and Work Plan, which identifies the activities, cost budget and schedule to complete the activities.

- a. The parties agree that this Agreement and the Tax Increment Revenues collected and distributed pursuant to the Brownfield Plan are intended to fund only the Eligible Costs that have been approved by the Authority.
- b. Prior to the initiation of eligible activities, Southwind shall submit a detailed Implementation Plan that includes, at a minimum, applicable estimates of the following items related solely to eligible activities;
 - (i) Cost estimates for project costs related to eligible activities; and
 - (ii) The Implementation Plan costs shall be provided in the same format as Exhibit A to the Brownfield Plan for the Brownfield Plan costs approved by the Authority.
- c. Southwind shall comply fully with all local ordinances, state and federal laws, and all applicable local, state and federal rules and regulations. Nothing in this Agreement shall abrogate the effect of any local ordinance.
- d. The Agreement does not obligate the City to issue any permit required by law to implement the Development.
- e. Noncompliance with this Agreement or discovery of material irregularities at any time are regarded as material breaches of this Agreement. The Authority, in addition to any other remedy provided by law, may do one or more of the following:
 - (i) withhold future payments to the extent such reimbursed payments relate directly to the noncompliance with the Agreement;
 - (ii) recover reimbursement payments already disbursed to the extent such reimbursed payments relate directly to the noncompliance with the Agreement; or
 - (iii) terminate this Agreement.

2. Capture of Taxes. The City shall, during the term of this Agreement, collect all Tax Increment Revenues from the Property and transmit revenues generated from real and personal property to reimburse the parties for the costs of eligible activities based upon the following priority:

- (i) Michigan Department of Environmental Quality – Remediation and Redevelopment Division;
- (ii) Planned administrative costs of \$1,000.00 per year;
- (iii) Southwind's Eligible Expenses; and
- (iv) Local Site Remediation Revolving Loan Fund.

Such reimbursement shall not be more than the tax increment revenues captured during the

duration of the Brownfield Plan from the taxable improvements located on the Property, including both real property and personal property. Nor shall the total amount of reimbursement be for more than the reasonable and necessary cost of the eligible activities approved by the Authority or otherwise permitted by the Act.

2. Submittal of Costs. Before requesting any reimbursement, Southwind shall pay and submit an affidavit of payment for the reasonable and necessary costs of the eligible activities that have been approved by the Authority. For those Eligible Costs for which the Southwind seeks reimbursement from the Authority, Southwind shall submit to the Authority such of the following as may be required by Authority representatives:

- a. a written statement detailing the costs;
- b. a written explanation as to why reimbursement is appropriate under the Plan and this Agreement;
- c. copies of invoices from consultants, contractors, engineers, attorneys or others who provided such services;
- d. copies of full unconditional waiver(s) from the vendor(s) documenting that the invoice was actually paid;
- e. if, not already submitted, copies of the contract with the contractor or supplier providing the services or supplies for which reimbursement is sought;
- f. a statement from the engineer and project manager overseeing the work recommending payment; and
- g. any other documentation requested by the Authority, in a format and on such forms approved by the Authority, with Southwind's request for reimbursement to assist the Authority in determining whether the work was performed as approved.

All documentation related to the request for reimbursement shall be submitted within ninety (90) days after the completion of each approved eligible activity. No later than receipt of a Certificate of Occupancy and prior to reimbursement payments being initiated, Southwind shall submit to the Authority a report of the results of the eligible activities performed. Such results shall include, without limitation, any abatement reports, demolition and disposal documentation, supplemental environmental investigation reports and response activity reports. In addition, Southwind shall submit construction lien waivers from the contractors and subcontractors for the approved eligible activities prior to any payments being initiated. Southwind may submit a reimbursement request including such information whenever it is available for many years thereafter. Southwind and Authority agree that no reimbursement requests will be accepted by the Authority after December 31, 2016.

In no event shall Eligible Costs exceed the estimates developed pursuant to paragraphs 2.b(i) and (ii) unless the Brownfield Plan is amended pursuant to paragraph 1.

If all real and personal property taxes relating to the site are not paid before interest and penalties attach, the duty to pay reimbursements to Southwind or it assigns shall cease.

3. Payment of Eligible Brownfield Plan and Work Plan Costs. Payments to Southwind shall be made as follows:

- a. Within 60 days of its receipt of the materials identified in paragraph 4 above, the Authority

shall decide whether the payment request is for Eligible Costs and whether such costs are accurate. The Authority will determine the amount to be reimbursed, based upon the reasonable and necessary costs of the eligible activities approved by the Authority and the State or otherwise permitted by the Act in light of the actual costs presented in Southwind's submitted documentation. Such amount shall not exceed the amounts set forth in Section 5(d), subject to such amendments as may have been approved by the Authority, nor shall such costs be reduced by the Authority without good cause shown, such approvals not to be withheld unreasonably. If the Authority determines all or a portion of the requested payment is for the Eligible Costs and is accurate, it shall see that the portion of the payment request that is for Eligible Cost and is accurate is processed as provided in subparagraph (b) below. If the Authority disputes the accuracy of any portion of any payment request or that any portion of any payment is for the Eligible Costs, it shall notify Southwind in writing of its determination and reasons for its determination. Southwind shall have 28 days to address the reasons given by the Authority and shall have an opportunity to meet with the Authority's representatives or, if the Authority Board consents, to meet with the Authority's Board to discuss and resolve any remaining dispute. In doing so, Southwind shall provide the Authority a written response to the Authority's decision and the reasons given by the Authority. If the parties do not resolve the dispute in such a manner, it shall be resolved as provided in paragraph 6 below.

- b. Once it approves any request for payment as Eligible Costs and approves the accuracy of such costs, the Authority shall pay Southwind the amounts for which submissions have been made pursuant to paragraph 4 of this Agreement by June 30th of the following year, as directed by the Brownfield Plan, until all of the amounts for which submissions have been made have been fully paid to the Parties, or the repayment obligation expires, whichever occurs first.
- c. The repayment obligation under this Agreement shall expire upon the payment by the Authority to the Parties of all amounts due to the Parties under this Agreement or on December 31, 2039, whichever occurs first.
- d. The amount to be reimbursed under this Agreement shall:
 1. The OBRA will use captured taxes as referred to in (3) to reimburse Southwind for Eligible Costs total amount not to exceed \$482,548.
 2. The amount of Eligible Costs to be reimbursed with the capture of taxes levied for school operating purposes ("School Taxes") is estimated to be \$110,400.
 3. The amount of Eligible Costs to be reimbursed with the capture of taxes not levied for school operating purposes ("Local Taxes") is estimated to be \$124,450.
 4. Upon payment to Southwind of total reimbursement as outlined above being met, or expiration of the Plan, reimbursements to Southwind shall cease.
- e. The sole source for any reimbursement shall be Tax Increment Revenues. To the extent permitted by law, such reimbursements, once approved by the Authority under subparagraph b. above shall be and remain valid and binding obligations of the Authority until paid or until expiration of the time for payment as provided in subparagraphs c. and d. above. However, Southwind shall bear any risk of a change in law prohibiting reimbursement at the time Tax Increment revenues are available for reimbursement to Southwind for costs that were Eligible Costs at the time the Authority approved them. In no event shall Southwind be reimbursed for any approved eligible costs that have been or will be reimbursed or credited against other obligations by any other governmental entity.

- f. If any of the Property is substantially destroyed by fire or natural events or causes as determined by the building official of the City, this Agreement shall terminate unless reconstruction occurs at any equal or greater taxable value within twelve (12) months of the date of the loss. No payments shall be made during the period of reconstruction. Payments shall resume when the reconstruction is substantially complete as determined by the Building Official.
- g. In addition to any other remedies provided in this Agreement, if any payment made by the Authority is determined to be improper or outside of the scope of its obligations under this Agreement, or in the event of Southwind's breach or default of this Agreement, Southwind shall, at the request of the Authority, repay or return any monies paid by the Authority that are directly related to said breach, default or improper payment.

4. Adjustments to Eligible Costs. An estimate of the costs to be included as Eligible Costs is included in the Brownfield Plan and Work Plan. Adjustments for types and amount of costs may be made upon submittal by Southwind with an explanation as to the reason for the change in cost amount or type of activity, and the City shall be obligated to make MDEQ loan proceeds available on an adjusted basis provided the total costs to be reimbursed for the project do not exceed the total loan amount stated in the City/MDEQ Loan Agreement and the costs are eligible.

5. Dispute ad to Eligible Costs. If there is a dispute over whether a cost submitted by Southwind is an "Eligible Cost", the dispute shall be resolved by an independent qualified professional chosen by mutual agreement of the parties. If the parties are unable to agree upon a professional, then each party (the City, the Authority and Southwind) shall appoint an independent qualified professional to review the Authority's decision, provided that each party chooses a professional that has not been directly employed by or provided services to that party for a period of two (2) years before the date of proposed appointment. If and to the extent that two of the three qualified professionals so selected agree that costs submitted are eligible pursuant to Brownfield Plan and was previously approved by the Authority, this shall constitute an award and Southwind shall be reimbursed those costs in accordance with this Agreement. In addition, any such award may be used as the basis for the Shiawassee County Circuit Court rendering judgment that such award constitutes a final decision under statutory arbitration.

6. Reporting. Southwind shall complete and submit to the City quarterly progress reports, which satisfy the City's obligation as borrower under the City/MDEQ Loan Agreement and under Act 381. The report shall be sent by the City in time for the City to meet the deadlines for submittal under the City/MDEQ Loan Agreement and Act 381.

7. Compliance with the City/MDEQ Loan Agreement. Southwind agrees to comply with the terms and conditions of the City/MDEQ Loan Agreement. Southwind shall not take any action or fail to take any action which would cause the City, as the borrower under the City/MDEQ Loan Agreement, to be in default or violate any provision of the City/MDEQ Loan Agreement. If the City claims that Southwind has caused the City to be in default or violate a provision of the City/MDEQ Loan Agreement, the City shall provide written notice of the claimed default or violation and Southwind shall cure the default within thirty (30) days of the date of receipt of such notice; provided, however, that if the claimed default or violation cannot be reasonably cured within that time period, the City may elect to grant Southwind an additional period of time to cure the default.

8. Loan Payments by Southwind. Under the City/MDEQ Loan Agreement, as reflected on the Amortization Schedule attached as Exhibit B to that agreement, the City is required to make loan payments to the MDEQ. The parties mutually agree and understand that tax increment revenues generated in accordance with a Brownfield Plan approved by the OBRA and will be used to repay the MDEQ loan proceeds. It is expected that there will be sufficient available tax increment revenues to repay

the full MDEQ loan amount. However, if the tax increment revenues are insufficient for this purpose, Southwind agrees and understands it will remain obligated to make the MDEQ loan installment payments as stated in the City/MDEQ Loan Agreement.

9. Access for Inspection. Employees and agents of the Authority and the City are authorized to enter upon the Property following a minimum of one (1) business day notice to Southwind for the purpose of inspecting the work related to the authorized eligible activities and making determinations that such work is being performed in accordance with the Brownfield Plan in a workmanlike manner.

10. Indemnification. Southwind shall defend, indemnify and hold the City and Authority, and their agents, representatives and employees (hereinafter "Indemnified Persons") harmless from any loss, expense (including reasonable legal counsel fees) or liability of any nature due to any and all suits, actions, legal or administrative proceedings, or claims arising from or on account of the acts or omissions of Southwind, its officers, employees, agent or any persons acting on its behalf or under its control, in implementing the eligible activities described in the approved work plans or arising in any way from this Agreement, including but not limited to, claims for damages, reimbursement or set-off arising from, or on account of, any contract, agreement or arrangement between Southwind and any person for the performance of eligible activities or the terms of this Agreement, including claims on account of construction

11. Insurance. During construction, Southwind and any contractor or subcontractor shall provide and maintain comprehensive general liability insurance with the limits of One Million and No/100 (\$1,000,000.00) Dollars combined single limit, for claims which may arise from Southwind's operations under this Agreement, naming the Authority and the City as additionally names insureds. Proof of such insurance shall be provided to the Authority in care of the Authority's Administrator prior to initiating any redevelopment activities.

12. Payment of Taxes. Southwind or any of its successor or assignees of Southwind shall pay all real and personal property taxes or special assessments levied on any portion of the Development on or before the date the same are payable, before any additional interest penalty for late payment is applied.

13. Remedies. If either the City or Owosso defaults under this Agreement, the nondefaulting party may pursue all legal and equitable remedies available under Michigan law.

14. Assignment. Southwind's rights and obligations under this Agreement may not be assigned without prior written consent of the City, should a consent be required it will not be unreasonably withheld.

15. Waiver. No term, condition, covenant or provision as to this Agreement may be waived, except in writing, signed by the waiving party. No oral statements, course of conduct or course of dealing shall be deemed a waiver. No waiver by any party of any violation or breach of this Agreement shall be deemed or construed to be a waiver of any other violation or breach, whether continuing waiver of any violation or breach.

16. Termination. This Agreement shall terminate when all of the obligations required under this agreement have been fulfilled, a default has occurred, or upon mutual agreement of the parties.

17. Notices. All notices and communications required by this Agreement shall be in writing and shall be sufficiently given and deemed delivered when received if mailed by registered or certified mail or upon receipt of facsimile addressed to the respective parties as follows:

If to City of Owosso:

City Clerk
Owosso City Hall
301 West Main Street, Owosso, Michigan 48867
Telephone No. (989) 725-0599

If to Southwind Restaurants, LLC

Kevin Egnatuk
Southwind Restaurants, LLC
109 East Broadway, Mount Pleasant, Michigan 48858
Telephone No. (989) 205-1136

or to such other addresses such party may specify by appropriate notice.

By signing below, all parties represent and warrant their authority to enter into this Agreement on behalf of the respective organizations. The parties have signed this Agreement as of the date first written above.

Owosso Brownfield Redevelopment Authority

By: _____
David Vaughn
Its: President

By: _____
General Grant
Its: Secretary

Southwind Restaurants, LLC

By: _____
Kevin Egnatuk

Its: _____