ADDENDUM NO. 1

PRE-BID MEETING
NEW BUS GARAGE BUILDING
OWOSSO PUBLIC SCHOOLS

TO: ALL PROSPECTIVE BIDDERS ON THE SUBJECT PROJECT

RE: CHANGES TO BIDDING DOCUMENTS

Acknowledge Receipt of this Addendum on Page P-1 of the Bidform (Proposal) where indicated.

Please see the enclosed information:

1. Pre-Bid Meeting Minutes
2. Pre-Bid Meeting Sign-In Sheet
3. Changes and Clarifications not discussed at Pre-Bid

Specifications:

1. None

Please sign the Acknowledgment below and attach this Addendum No. 1 to the front of your bidding document. Acknowledge the same in the Bid Form (Proposal).

Prepared by:

SPICER GROUP, INC.

Darrick W. Huff, P.E.
Project Manager
August 4, 2016

ACKNOWLEDGMENT ADDENDUM NO. 1

BIDDER: _____

BY: _____

DATE: _____

MEETING MINUTES

2016 Sinking Fund Improvements
New Bus Garage Building
Owosso Public Schools

Mandatory Pre-Bid Conference
Wednesday, August 3, 2016 at 1:00 PM

1. Introductions – See attached Sign-In Sheet.

2. Addendum to be issued by Thursday. Bid opening is August 10, 2016 at 3:00 PM.

3. This is not a prevailing wage job.

4. All work shall be complete within 4 months of the Notice to Proceed. Project shall be ready for final inspection by 4 months after Notice to Proceed. (Agreement, Article 3)

5. Liquidated damages of $500.00 per day are applicable for not completing the work within the allotted time, per the specification. (Agreement, Article 3)

6. State of Michigan background checks are required for all contractor personnel that are to be on site (Agreement, Article 9, Part 9.8).

7. Contractors are encouraged to schedule a follow-up site visits by contacting: John Klapko, Director of Operations, Owosso Public Schools, (989) 729-5701. The building will be made available for Contractor inspection after students are out of the building, by appointment only.

8. "Owners Discretionary Allowance" funds are not the contractor's money. All funds not used will be a credited back to the Owner before final payment. (Section 01019, Part 1.3, and Bid Form, Item 6)

9. All questions concerning plans and specifications are to be directed to Mark Latsch, Spicer Group, Inc. at (989) 754-4717, or markl@spicergroup.com

10. Work place safety is the responsibility of the Contractor.

11. The contractor, shall provide the owner with a proposed work plan for review and approval, prior to award of the contract.

12. Bi-weekly progress meetings will be held during construction. Meetings will be the responsibility of the General Contractor and attendance by all contractors and sub-contractors working on this project is required.

13. All questions in this meeting will be addressed to all bidders via an addendum and posted the Spicer Group, Inc. website. As part of registering on the website for plans/specifications, you were asked to provide an email address. You will be notified through that email address when addendum(s) are posted to the website.

14. Contractor is responsible for all project coordination as discussed in Section 01039, including but not limited to:
    A. Coordinate scheduling, submittals, and Work of the various Sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements.

15. Work shall be performed in non-student occupied areas during school hours with the advanced approval of the school district.

16. Review Bid Form and Scope of Work.

BID FORM

1.	Lump Sum	Site Work	$ _____
2.	Lump Sum	Building	$ _____
3.	Lump Sum	Lift System	$ _____
4.	Lump Sum	Utility Allowance	$ 10,000.00
5.	Lump Sum	**Owner's Discretionary Allowance**	$ 25,000.00

17. Discussion and Question and Answer.

    A. The payment made to Contractor's will be monthly based on work completed.

    B. Request for Information (Prior to Pre-Bid)
        1. Specifications for Lift
            a. 4-post permanent mount
            b. Hydraulic
            c. 30.000 pound working load
            d. Challenger-CHG-44030, Mohawk TR-33 or equal
        2. Sheet 2-Wedging
            a. Delete wedging
            b. See revised removal limits – attachment
            c. Add swale to east along fence
        3. Door Specifications – See attached spec.
        4. Lighting Fixtures
            a. Provide lighting fixtures as needed in plans for equal grade as called for in the plans.
        5. Schedule
            a. No additional for winter work
            b. No change to bid date
            c. Assume award in November
            d. Willing to allow construction in Spring unless utilities installed while groundwater is at its lowest.
        6. Soil Borings
            a. Will provide info when report is completed
            b. Assume good soils

7. Job Site Signage
    a. The Contractor shall be responsible for constructing and installing signs at the project site, as required by code. These signs shall be submitted as shop drawings for review and approval. See attached sign drawing.
8. Compaction
    a. Testing by Contractor
    b. Concrete testing by Spicer Group
9. Oil Water Separator shall be designed for a 100 gallon per minute flow rate.

C. Changes after Pre-Bid
1. Thicken concrete 3'x3'x12" at lift posts.
2. Existing site gas line Sketch is attached for your information.
3. City of Owosso Utilities – See attached Water and Sewer Connection Fees.
4. Drain all roof water to new easterly constructed swale.
5. Clarification: The compressor is part of contractors bid.
6. Clarification: The interior steel liner for walls and ceiling to be minimum 29 gauge.

The above minutes represent the writer's recollection of events and issues discussed and decisions reached. Corrections to these minutes (in writing) are encouraged from all parties. Please provide written response to Spicer Group as soon as possible so that the corrections can be made promptly.

SIGN-IN SHEET

2016 SINKING FUND IMPROVEMENTS
NEW BUS GARAGE BUILDING
OWOSSO PUBLIC SCHOOLS

Wednesday, August 3, 2016 **Pre Bid Conference at 1:00 p.m.**

Please Print Legibly – You won't receive addendum information if we can't read your writing

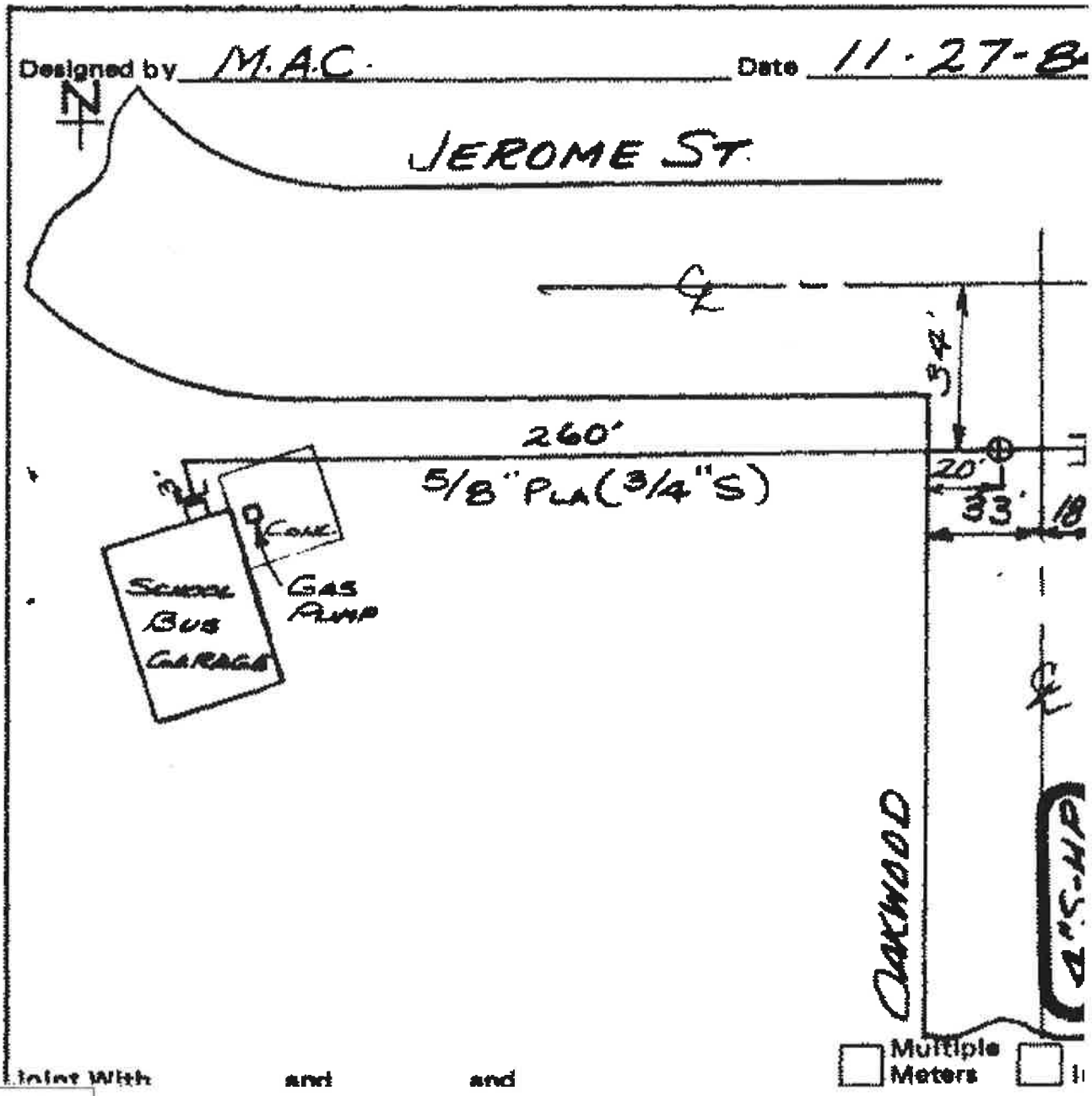
	CONTACT NAME	COMPANY	E-MAIL	PHONE NUMBER	FAX NUMBER
1	Darrick Huff	Spicer Group, Inc.	darrickh@spicergroup.com	989-754-4717	989-754-4440
2	Mark Latsch	Spicer Group, Inc.	markl@spicergroup.com	989-754-4717	989-754-4440
3	John Klapko	Owosso Public Schools	klapkoj@owosso.k12.mi.us	989-729-5701	989-729-6706
4	Jerry Fleis	F+V Const.	JFLeis@FV-construction.com	616-588-1918	616-977-4800
5	Jerry Carter	Moore Trosper Construction	INFO@Mooretrosper.com	517-694-6310	517-697-1173
6	Ernie Perrin	Perrin Const Co.	PERRIN6@FRONTIER.com	989-288-6046	989288273
7	Eddie Lovell	Axium Const	DIEB@AXIUMCONS.com	(248) 763-8948	
8	Lisa Boesch	Boesch Builders	boeschbuilders@speednetllc.com	989 656 7154	989 656 3804
9	Ann Cuban	Boesch Builders			
10	ERIC REED	LANX CONSTRUCTION	ERIC@LANXCONSTRUCTION.com	517.694.0817	517.694.0159
11	BRIAN HUSKA	HUSKA CONST.	HUSKABO@FRONTIER.com	989.239.2486	—
12	Ron Mallory	MALLORY BLDG	mallorybuilding@aol.com	517-339-3780	517-339-3790
13	MATT BRONNER	BRONNER Const	matt@bronnerconstruction.com	989-652-3229	989-652-3646
14	Jim Heinowski	Trumble Builders	Jim.Heinowski@Trumblegroup.com	517-240-3746	517-664-9424
15	Kyle Lange	Discount Elec.	KyleLange92@gmail.com	517.489-6662	—
16	Mike Berthume	Michael Berthume	Mberthume@gmail.com	517-002-6056	989-725-1492
17	Dennis Kendall	LA Construction	dennis.kendall.la@gmail.com	810-908-2522	—
18	Jerry Patterson	North American	NAOOJ@Frontier.com	989-723-2931	
19	ADAM DUNCAN	WILLIAM E WALTER	ADUNCAN@WILLIAMEWALTER.com	810-252-9441	
20	Rod Bauer	RCL Construction	rod@rclconstruct.com	989 687 5319	989687 5378
21	MEL SAJDAK	SAJDAK Contractor	SAJDAKContractor@HotMail.com	989-942-7337	989-202-2613
22	Mick Sivyer	Sivyer E		517-202-4864	
23					

PP 4.2.3.4 & PP 4.3.2

PP 4.2.6.4.2

Consumers Energy

Address: **630 JEROME AVE, OWOSSO**
Gas Service Extension:**5/8" P** , Inserted: **Y** , Year Installed: **1984**



Previous

WARNING: ALL LOCATIONS ARE APPROXIMATE. FACILITIES MAY HAVE BEEN ADDED AND/OR ALTERED AFTER MAP REVISED DATE. IF YOU ARE DIGGING, LOCATIONS MUST BE VERIFIED BY FIELD STAKING UPON REQUEST AT NO CHARGE, BY CALLING MISS DIG 3 WORKING DAYS IN ADVANCE AT 1-800-482-7171. USE OF THIS WEB SITE DOES NOT

POLYURETHANE INSULATED THERMALLY BROKEN LIGHT RIBBED STEEL DOORS

1. Overhead doors to be premium duty Insulated Door: Clopay Model 3722 or similar
2. Door Size: Refer to drawings.
3. Overall Panel Thickness: 2-inches (51 mm).
4. Steel Skin Thickness: Minimum 20 gauge exterior; minimum 27 gauge interior.
5. End Stiles: Galvanized steel end stiles, engineered for easy hardware attachment through pre-punched holes. Minimum 18 gauge, 0.045 inch (1.14 mm) thick for single end hinge style and 16 gauge .056 inch (1.42 mm) minimum for double end hinge style.
6. Astragal: U-shaped flexible PVC in retainer of full-length 0.055 inch (1.4 mm) rigid PVC.
7. Thermal Resistance (R-value): 17.2 deg F hr sq ft/Btu (3.0 (K sq m)/W); calculated door section R-value in accordance with DASMA TDS-163.
8. Windows: None.
9. Finish: Stucco embossed texture with shallow U ribbed pattern, white interior, with stucco embossed texture with flush exterior as follows:
   a. White.
10. Locking: No Lock.
11. Weatherstripping: Provide complete perimeter seals selected from manufacturer's standard options. Provide flexible top seal, flexible jamb seal and U shaped bottom seal.
12. Tracks: Vertical tracks minimum 0.061 inch (1.55 mm) galvanized steel tapered and mounted for wedge type closing. Horizontal tracks minimum 0.075 inch (1.91 mm) galvanized steel, reinforced with minimum 0.0897 inch (2.28 mm) galvanized steel angles as required:
    a. Track Width: 3 inches (75 mm).
    b. Provide standard lift tracks with 15 inches (381 mm) radius track as indicated.
13. Spring Counterbalance: Torsion spring counterbalance mechanism sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of die cast aluminum with high strength galvanized aircraft cable with minimum 7 to 1 safety factor.
    a. High Cycle Spring: 25,000 cycles.

DOOR OPERATORS

1. Door operators shall be manufactured by the Chamberlain Group, Inc. Lift-Master, Model MT, Medium-Duty Trolley Operator for standard lift sectional doors, or equal.
2. Product: Provide Model MT, medium-duty, UL listed, belt drive trolley type operators, ½ hp minimum. Verify voltage and phase..
3. The Owner shall be provided with two (2) remote control hand held units per door. Sequence coordination for all doors.
4. Limit switches: Fully adjustable, driven linear type limit switch mechanism shall synchronize the operators with the door. The motor shall be removable without affecting the limit switch settings.
5. Warranty: 2-year warranty.

301 W MAIN ST • OWOSSO, MI 48867-2958 • 989-725-0555 • FAX 989-723-8854

August 3, 2016

Re: Water & Sanitary Sewer Connection Tap Fees – New School Bus Garage @ 630 Jerome Street

City will perform taps on 15 inch sanitary sewer main located on Jerome Street, and the 12 inch water main located on Oakwood Avenue. City will provide 5/8" meter and meter horn for new service line connection.

Contractor for Owosso School District will perform all construction excavation and/or directional boring (at owners choice), from the building to the sanitary sewer and water mains located in the street right of way.

Water Main Tap: City will make connection/tap at water main. Contractor will install 1 ½ inch Type-K copper service line from 12 inch water main to the curb stop shutoff valve. Contractor will then install service line from curb stop to the building. City will install 5/8 inch meter and meter horn to piping provided by contractor inside the building.

- City will provide the necessary fittings (except 1 ½ inch copper pipe) for water main tap and curb stop connections.

Sanitary Sewer Tap: City to make connection/tap at the 15 inch sewer main via saddle. Contractor will install 6-inch SDR-26 service lateral from sewer main saddle to the new building.

- City will provide the tapping saddle.

Water Service Line Charge:

- 5 / 8 inch meter Time & Material (Meter Insp) for one (1) hour @ 53.24 ..... $53.24

12 inch Water Main Tap & Curb Stop Installation Costs

- Material:

Tapping saddle	$338.94		
1 ½ inch Flared Ballcorp	$197.93		
1 ½ inch Flared Curb Stop	$294.75		
Valve Box	$81.57		
Valve Box extension 30"	$30.00	Total Material	$943.19

- Equipment:

#215 Tap Machine (2 hr @ $11.52)	$23.04		
#315 Power Unit (2 hr @ $2.31)	$4.36		
#316 Generator (2 hr @ $2.22)	$4.44		
#327 Pick-up (3 hr @ $15.45)	$46.35	Total Equipment.....	$78.19

- Labor:

Skilled Operators – 2 each @$37.79/hr X 3 hours each

Total Labor..... $226.74

Water System Charge

- 5 / 8 inch meter — $400.00 X 1 = ... $400.00

Meter Charge

- 5 / 8 inch meter — $198.00 Cost of meter X 1 = ... $198.00

Meter Deposit

- 5 / 8 inch meter $75.00

Total Water Fees **$1,974.36**

Sanitary Sewer Service Line Charge

- Cost of 15 inch tapping saddle..... $157.26
- Cost of labor for tap. Skilled Operator's 2 each @ $37.79/Hour X 1.5 hours..... $113.37
- Vehicle charge @ $15.45/hour X 1.5 hours..... $23.18

Total Sewer Fees **$293.81**

Glenn M. Chinavare

Director of Utility Operations

SANITARY SEWER

STANDARDS FOR

THE CITY OF OWOSSO

CHAPTER 3
STANDARDS OF DESIGN

PLANS AND SPECIFICATIONS

1. The plans and specifications shall be prepared by a professional engineer registered in the State of Michigan.

2. Plans shall consist of a cover sheet showing a location map and site plan of the proposed project, plan and profile sheets covering all the proposed sanitary sewer construction, i.e. gravity lines, force mains, and lift stations, and a standard detail sheet. Plan sheet size shall be 24" x 36". Plan scale shall be 1 inch = 40 feet and profile at 1 inch = 4 feet vertically. Alternatively, plan scale shall be 1 inch = 50 feet horizontally and profile at 1 inch = 5 feet vertically.

3. Elevations shall be based upon on the North American Vertical Datum of 1988 (NAVD88), which shall be noted on the plans with the appropriate conversion to the National Geodetic Vertical Datum of 1929 (NGVD29). Elevations based upon an assumed datum will not be approved. All bench marks will be shown on the final record drawings.

4. Plan profiles shall indicate existing and proposed ground levels, U.S.G.S. elevations, and stationing.

5. Copies of plans and specifications shall be submitted by the developer to the City for preliminary approval in accordance with Appendix C. All plans and specifications submitted for approval shall be sealed by the registered engineer in charge of design. Modifications required to meet the City Standards, if any, will be noted on 2 sets, with 1 such set returned to the developer for final corrections within 90 days of receipt.

6. Copies of final plans and specifications shall be submitted by the developer to the City for approval in accordance with Appendix C. All plans and specifications submitted for approval shall be sealed by the registered engineer in charge of design.

7. The City will secure the sanitary sewer construction permit from the MDEQ. The Developer will provide the Basis of Design and pertinent information required for the permit application. Copies of plans and specifications sealed by the registered engineer in charge of design to accompany the permit application shall be provided in accordance with Appendix C. The Developer will be responsible for securing all other permits required for the sanitary sewer construction.

8. In accordance with Appendix C, two (2) sets of record blue line prints and two (2) computer discs or an electronic memory storage equivalent as approved by the City with the same, having each drawing saved as a separate file shall be submitted upon completion of the construction project in both AutoCad & PDF formatting. Utility information for record drawings shall be provided in the following format:

CITY UTILITY MAPS - AUTOCAD FILE INFORMATION

Version: AutoCAD as approved by the City
File: Single file showing all as-built sections
Orientation: North up or to the left
Units: AutoCAD Engineering
Layers:

Information Name Line Type Color Text Height

- right-of-way(s) ROAD continuous 3
- road name ROADNAME continuous 2 15' - 0"
- water main WM hidden 9
- water main text WMTEXT continuous 4 20' - 0"
- sewer main SEWER hidden 9
- sewer main text SWRTEXT continuous 4 20' - 0"
- river banks RIVER continuous 5
- section SECTION center 8

The location of wyes and tapping saddles, manholes and the intersection of the service lateral and the respective property line shall be witnessed from at least two (2) permanent topographic features. Record drawings information shall include survey elevations at finished grade above the utility pipe to document that depth of cover conforms to approved design. Record drawings information shall include the manhole numbering scheme as provided by the City. Record drawings information shall be provided on separate drawings, and shall not be provided as corrections, cross-outs, changes, or other alterations to design plans.

9. All required easements must be secured, and a copy must be filed with the Shiawassee County Clerk's Office, other applicable municipal office, and a copy submitted to the City.

SANITARY SEWERS

SCOPE

These standards establish the minimum requirements for the design of sanitary sewers in the City. All plans shall conform to the Recommended Standards for Wastewater Facilities – 2014 Edition, Great Lakes-Upper Mississippi River Board, commonly known as the "10 States Standards".

1. LOCATION. The location of the sanitary sewer within the street right-of-way shall be at the center line of the roadway. Sanitary Sewer locations for streets with a width greater than two lanes will be reviewed on a case by case basis. All cross-country sanitary sewers shall be installed with a service road designed for year-round access to each manhole by the City's cleaning equipment.

2. EASEMENTS. The minimum easement width for sanitary sewer located outside of the public right-of-way shall be set at 30 feet or a width of two times the maximum depth of the sanitary sewer, whichever is greater. The easement shall be located and recorded in GPS coordinate format using current North American Datum 1983 (NAD83) or Michigan

State Plane Coordinate System of 1983, South Zone for this region. All manholes, forcemains, and lift stations shall be located using this same method.

3. MINIMUM GRADES AND VELOCITIES. Sanitary sewers shall be designed to maintain a minimum velocity of 2 feet per second: maximum velocity shall not exceed 10 feet per second.

Required minimum grades for various size sanitary sewers shall be as listed below:

- 6" (lateral) 1.00%
- 8" 0.50 with a minimum 0.60% grade on dead end runs
- 10" 0.28%
- 12" 0.22%
- 15" 0.15%
- 18" 0.12%
- 24" 0.08%

The developer is responsible for utilizing competent contractors that have sufficient experience in the use of in-line lasers and experienced in the use of a level transit for certifying that the laser grade is correct. Sanitary sewers and manholes installed at less than the minimum grades and elevations will be subject to rejection or fees as outlined in the Construction Specifications.

4. MINIMUM DIAMETER. The minimum diameter of collection sewers shall be 8 inches and the minimum diameter of the service lateral shall be 6 inches.

5. MANHOLES. Shall be constructed at all changes in grade, size, and alignment of the sanitary sewer. The minimum depth of a manhole shall be 42 inches from the surface of the final grade to the invert elevation of the manhole. The maximum run between manholes shall be 400 feet. All manholes shall be precast concrete with rubber "O" rings at joints. All pipe openings shall be cast in the precast section or cored in the finished wall. Manhole pipe connections shall be furnished with an integrally cast seal system, equal to "Press Wedge 11", "Kor-N-Seal", "Lock Joint Flexible Manhole Sleeve", or equivalent. Sanitary manholes shall have integral concrete manhole bottoms. The City's manhole numbering shall be placed on all sanitary sewer manholes. The City will provide the developer/design engineer with the manhole number sequence to be used on the project. These manhole numbers must be utilized on all references to testing and televising before final acceptance. All manholes shall be located and recorded in GPS coordinate format, using current North American Datum 1983 (NAD83) or Michigan State Plane Coordinate System of 1983, South Zone referencing for this region. No precast flow channels will be accepted.

The minimum inside diameter of a sanitary sewer manhole for sewers up to 21 inches in diameter shall be 48 inches. For sanitary sewer 24 to 36 inches in diameter, the minimum inside diameter of the sanitary manholes shall be 60 inches. A larger diameter manhole may be required for right angle installation of sewers at the upper limit (i.e. 60 inch diameter manhole for 21 inch sewers at a right angle). Manholes shall be upsized to accommodate multiple pipes and maintain the structural integrity of the manhole

between cored openings. Internal drops shall be provided on newly constructed manholes. The minimum inside diameter for manholes containing inside drop pipes shall be 60 inches. Diameters for manholes containing multiple internal drops shall be approved by the Municipal Engineer and the City. In general, a four foot diameter clear opening should be provided in manholes containing internal drop structures. External drops may be required for connections to existing manholes and shall be approved by the Municipal Engineer and the City.

All adjustments to manholes shall be made with LADtech HDPE manhole adjustment rings, UGT adjusting rings with Veil Wrap, or equivalent as approved by the City. Any slope adjustments will be made using the appropriate sized rings to match the correct height and angle. Any adjustments to existing manhole structures shall be made by either using the HDPE adjustment rings as noted above; with a maximum adjustment of 12 inches on top of the precast cone section. All adjustments shall be externally sealed with a waterproof flexible sealant approved by the City and/or the Municipal Engineer. Invert elevations of all sanitary sewer pipes entering the manholes shall be shown on all construction and final record plans. These inverts shall be taken before the cone section of the manhole is set in place. The minimum requirement for invert drops through manhole structures shall be 0.10 feet. Manhole structures with horizontal alignment deflections (from straight through) of greater than 45 degrees but less than 90 degrees shall include a 0.2 foot drop between inlet and outlet. For changes in pipe diameters, additional drop through the manhole is required based on matching at 0.8 times the diameter of the inlet and outlet pipes. Flow channels shall be a minimum ID same as the largest pipe on the downstream side of the manhole. Preformed flow channels on concrete manholes shall not be allowed. New sanitary sewer connections into existing manhole structures shall not compromise the integrity of the structure. The existing structure shall be reconditioned or replaced at the discretion of the City and the Municipal Engineer at the cost of the Developer.

Existing manholes and concrete pipes that are designated to receive discharges from sewage force mains shall be lined to protect the structures from corrosion. Linings shall be approved by the Municipal Engineer and the City. The linings shall be completed through the entire stretch of pipe, including the downstream manhole for a distance of 1000 feet or three stretches of sewer between manholes, whichever is greater or as directed by the Municipal Engineer and the City. For force main discharges into manholes of new construction, the manholes shall be constructed from materials resistant to hydrogen sulfide related corrosion as approved by the Municipal Engineer and the City.

Access to manholes will not be restricted. Changes in grade for any purpose shall require the adjustment of the manhole to grade at the cost of the organization or individual causing such change to grade. Structures, fences, and plantings shall not obscure, block or in any manner restrict access to the manhole.

All industrial users or commercial users designated by the City shall provide a sanitary sewer manhole for sampling purposes at the site's property line/right-of-way or other location approved by the City. Access easements shall be provided to the City when the sampling manhole is located on private property. Appropriate sand / oil / grease

interceptors as approved by the Municipal Engineer and the City shall be provided and maintained as required.

6. VORTEX MANHOLE INSERT. Shall be installed per the Factory Representative and Municipal Engineers recommendations only. If in the roadways, two castings and covers shall be installed, one over the Vortex and the second over the discharge invert. Minimum manhole diameter for a Vortex installation is 6 foot.

7. MANHOLE CASTING. The standard sanitary manhole casting shall have a 24 inch clear opening. Refer to the table of standard castings and valves for the municipalities' standard manhole castings. Final record drawings shall show final "Top of Casting" elevation. The specific cover design for the City is supplied by East Jordan Iron Works (104429).

8. SERVICE LATERALS. Connection of the service laterals to the collection sewer shall be by means of a sanitary sewer pipe wye or tapping saddle. The service lateral shall be constructed to a point fifteen (15) feet inside the property line of all lots and marked in accordance with the sanitary sewer standards of construction included herein. In addition; the Developer shall be required to furnish, to the City, a map indicating the precise location of all sanitary sewer laterals at the property line intersection. Laterals shall be located from the downstream manhole. The location shall be witnessed from 2 recoverable reference points. For service laterals of extended length, clean-outs shall be constructed at 90 feet intervals. Where sanitary sewers are deeper than 15 feet, 6 inch diameter risers shall be constructed as such that the service lateral is a maximum of 11 feet below finish grade at the property line. PVC fittings shall be encased with crushed limestone or crushed clean concrete (without reinforcing steel), no larger than one-inch in size and installed with the branch connection tilted 45^0 from the vertical. These "deep laterals" shall follow the specifications for proper installation.

9. SUBSURFACE SOIL CONDITIONS. The Developer shall provide sufficient soil borings along the sanitary sewer route to accurately describe the prevailing soil conditions. The soil borings shall be reviewed and classifications provided by a Professional Engineer registered in the State of Michigan. Auger sampling is not allowed. Samples shall be obtained following the Split-Barrel Sampling Procedure and n-values provided. Continuous Geoprobe samples may be accepted if conditions warrant and prior approval is granted by the Municipal Engineer. The borings shall be constructed to a minimum depth of five (5) feet below the proposed invert elevation of the sanitary sewer and, in general, shall be spaced no more than 400 feet on center along the proposed sanitary sewer route. However, where unstable soils are present, the Municipal Engineer shall indicate additional locations and depths for soil borings to help delineate suspected areas of unsuitable soils. Additional measures may be required to support the sanitary sewer and manhole structures if unsuitable soils exist.

10. LIFT STATIONS.

a. General: Lift station site plans shall be reviewed and approved by the City for site-specific concerns that may impact facility operation and maintenance. The City will review designs for general aesthetics, compatibility with the environment and incorporation of low-maintenance landscaping. Access roads to lift

stations shall be designed as a paved bituminous, concrete, or surface approved by the City and the municipal engineer. The access road shall be designed to allow concurrent access to the wet well of the lift station for a crane truck and "vactor". No grades in excess of 8 percent shall be permitted. The access shall be optimally located to provide equipment access for lift station operation and maintenance.

b. Design: The design of sewage lift stations shall be completed by the Municipal Engineer on behalf of the City and shall be site specific. The Developer shall provide the basis of design for the wastewater flows tributary to the lift station to the Municipal Engineer. Specifications and detailed drawings shall be provided to the Developer for inclusion of the construction drawings. The Developer shall be responsible for the cost associated with the design of lift stations. The Developer shall be responsible for providing record drawings of the lift stations. Record drawings shall include location and elevations of all underground piping, conduit, wiring, ducts, and appurtenances. If the Developer elects to have the Municipal Engineer provide the record drawings of lift stations, the Developer shall be responsible for the Municipal Engineer's cost.

- In general, stations will consist of submersible pump lift station with concrete wet well chamber, flow meter chamber (where required by Municipal Engineer) and an exterior valve chamber. Flow meter type shall be specified by the City or the municipal engineer. Lift Stations designed for peak hourly flows of 350 GPM or greater shall have flow meters installed, unless such installation is not approved by the municipality/s having ownership. The concrete wet well shall have precast sections or poured sections with polycrete resistant to hydrogen sulfide related corrosion. Exterior wet well joints and through the wall intrusions shall be externally sealed with an approved water resistant coating, such as a cretex wrap, infishield seal wrap, or equal. The subsurface exterior of valve and flow meter chambers shall be coated with an approved water resistant coating. A sump pump or gravity water removal system as approved by the City and/or the Municipal Engineer shall be provided for valve and flow meter chambers. The valve chamber shall include a force main bypass connection with an isolation valve.

Submersible pump lift stations shall be equipped with stainless steel slide rails & lift chains/cables to facilitate the removal of the pumps for repair. All hardware and appurtenances within the wet well shall be stainless steel. All lift stations shall be equipped with high & low level alarms. All pumping stations located in the Municipalities shall be equipped with a telemetry system compatible with that in current use by the City. Coordination with the telemetry installation will be through the Utility Department of the City.

Lift station design shall conform to the guidelines contained in the Recommended Standards for Wastewater Facilities, Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (Ten-States Standards) unless otherwise noted or approved. All submersible pump lift stations shall be provided with intrinsically safe electrical control systems, a transducer level control system, along with a redundant "direct wired" configuration capable of

operating a pump independent of the Programmable Logic Controller (PLC), for a high and low level alarm float. Lift station design shall be subject to the approval of the City. Mechanical Aeration and/or chemical feed equipment as specified by the Municipal Engineer and the City may be required at pump stations due to extended force main length and/or long detention time for odor control and structural deterioration prevention.

There shall be three (3) sets of Lift Station operation and maintenance manuals supplied to the City upon completion of the project. The Developer shall be required to provide an electrical generator of sufficient capacity to operate the lift station and may be required to provide a flow measuring device approved by the Municipality Engineer. Lift station wetwells shall be constructed with gas tight access hatches, level with the top of the precast structure. Access hatches shall have hinged safety grating built as an integrated part of the fabricated batch assembly.

Service panels, generators and other equipment designated at the discretion of the Authority shall be protected from vehicular traffic by the placement of bollards. The Developer shall arrange for a technical representative of the pump manufacturer to inspect the equipment installation, supervise mechanical adjustments, conduct startup of the equipment, supervise testing and instruct City staff in the operation and maintenance of the lift station. Sixty (60) days after successful startup of the lift station, the Developer shall conduct a wet well drawdown test to verify the capacity and head conditions of the lift station installation. The Developer shall provide all required testing equipment and personnel and tests shall be conducted in the presence of City staff.

Service panels shall be constructed in a manner to protect all internal components from hazardous environments. Panels shall be designed to accommodate ease of maintenance and repair, as well as efficient ventilation for the cooling and heating of internal components. The City will specify the configuration for design build of the control panel to include components such as: Programmable Logic Controller (PLC), variable speed drives, motor starters, radios, rain gauges, number of pumps, and flow meters where required.

11. INVERTED SIPHONS. The use of inverted siphons will not be approved unless specific conditions warrant their use.

12. ILLEGAL CONNECTIONS. The connection of footing drains, roof-down spouts, basement sump pumps, or other similar discharges including storm water and surface waters shall not be connected directly or indirectly to any sanitary sewer lateral.

13. CONNECTION ELEVATIONS. Minimum cover over the service lateral shall be as set forth in the State Plumbing Code.

14. TRENCH LOADING DESIGN. All sanitary sewers shall be designed so as to resist all trench backfill and construction load or anticipated superimposed loadings utilizing a factor of safety of 2.

15. TELEMETRY SYSTEM. The telemetry system design shall be as specified in Appendix B. Costs associated with installation and connection with existing City systems shall be borne by the Developer.

16. RESIDENTIAL & COMMERCIAL CONNECTION REQUIREMENTS. All connections to the sanitary sewer system or service lead shall be inspected by the designated City staff.

a. All connections will follow the same test requirements as in the Special Provisions for Sanitary Sewer of these Construction Standards.

b. Any sanitary sewer service within 50-feet of a private well head must comply with MDEQ regulations for well head protection.

c. All commercial grease or sand trap/interceptors must be designed and placed appropriately as per the Municipal Engineers direction.

d. Connections to the sanitary sewer system shall have an approved backflow preventer installed within the building drainage system as required by the State plumbing code or as directed by the City or the Municipal Engineer.

e. A sampling manhole will be required for designated commercial and all industrial connections.

f. Clean-out within 10-ft of building, at every 90-ft of straight run, and at each 90 degree change (two each 45 degree connectors).

17. PRETREATMENT. The requirements for sand, oil, and oil and grease interceptors shall conform to requirements of the City's Industrial Pretreatment Program.

18. FUTURE CONNECTION STUBS. The Developer shall be required to install sanitary sewer stubs to the limits of the development to provide for future service extensions to adjacent properties. Stubs for adjacent properties or future phases within the same Development shall terminate at the upstream end at a manhole unless otherwise approved by the Municipal Engineer and the City.

SITE GRADING

SCOPE

These standards establish the minimum requirements for the design of site grading.

PLANS AND SPECIFICATIONS

1. The plans and specifications shall be prepared by a professional engineer registered in the State of Michigan.

2. Plans shall consist of a cover sheet showing a location map and site plan of the proposed project, a plan sheet showing the street and lot drainage, and a standard detail sheet. Plan sheet size shall be 24" x 36". Plan scale shall be 1 inch = 40 feet and

profile at 1 inch = 4 feet vertically. Alternatively, plan scale shall be 1 inch = 50 feet horizontally and profile at 1 inch = 5 feet vertically.

3. Elevations shall be based upon on the North American Vertical Datum of 1988 (NAVD88), which shall be noted on the plans with the appropriate conversion to the National Geodetic Vertical Datum of 1929 (NGVD29). Elevations based upon an assumed datum will not be approved.

4. The site plan for street and lot layout shall indicate both existing and proposed contours at a 2 foot contour interval. Individual lot drainage patterns shall be indicated on the plan.

5. Plans and specifications shall be submitted by the developer to the City for preliminary approval in accordance with Appendix C. All plans and specifications submitted for approval shall be sealed by the registered engineer in charge of design. Modifications required to meet the Municipal Standards, if any, will be noted on 2 sets, with 1 such set returned to the developer for final corrections.

6. Final plans and specifications shall be submitted by the developer to the City for approval in accordance with Appendix C. All plans and specifications submitted for approval shall be sealed by the registered engineer in charge of design.

7. The developer will be responsible for securing all State and local construction permits. Standards of Design – Grading Site grading shall be designed to allow for drainage of storm water away from residential or commercial buildings. Grades shall be such as to minimize earth settlement problems, avoid concentrating runoff onto adjacent properties, prevent creation of water pockets or pools of standing water, and to minimize erosion. The grading design shall incorporate natural drainage courses where possible. In areas where natural drainage is not present, surface (ditches) or subsurface (storm sewers) drainage shall be provided for collection and disposal of storm runoff. It is the intent of these regulations that the grading design minimizes the need for banks, retaining walls, or terracing. Minimum grade away from structures shall be 2 percent. On slopes of 3.5 horizontal to 1 vertical or greater, Class A sod with pegs must be provided to minimize erosion. The maximum allowable slope shall be 3.5 horizontal to 1 vertical. Site grading shall conform to the applicable sections of the Soil Erosion and Sedimentation Control Act. Tree placement in areas of utility conflict will be by hand digging only and shall be coordinated with the City.

TABLE OF STANDARD MATERIALS – SANITARY SEWER SYSTEMS

Sanitary Manhole Castings	EJIW 1040A
Cover	104429EJIW
Sanitary Sewer Mainline	SDR-26 PVC ASTM D3034, PS46 PVC ASTM F679, DIP-CL52, RCP, GRP, or PCP in conformance with the Sanitary Sewers Special Provision
Sanitary Laterals to Property Line	SDR-26 PVC ASTM D3034
Residential & Commercial service leads	SCH80 PVC 4"-6" ASTM D1785, SDR-26 PVC 4"-6" ASTM D3034, Pressure Pipe Service Leads SCH80 PVC 1 ½" to 2 ½" ASTM D1785 (Grinder Pumps)

LIFT STATION EQUIPMENT

Check Valves:	Golden-Andersen Swing Check
Plug Valves:	DeZurik
Raw Sewage Submersible Pumps:	ABS, Flygt, Gorman-Rupp, or as approved by the City.

STORM SEWER SYSTEM

Storm service leads SCH 40 minimum 4" ASTM D1785 for Residential connections or SDR-35 or SDR-26 ASTM D3034

OWOSSO PUBLIC SCHOOLS

2013 Sinking Fund Improvements

SAMPLE

OWOSSO HIGH SCHOOL

- Parking Lot Reconstruction
- Tennis Court Rehabilitation
- Auditorium Theatrical Lighting Improvements
- Pool & Locker Room Restroom Improvements
- Pool Dehumidification System

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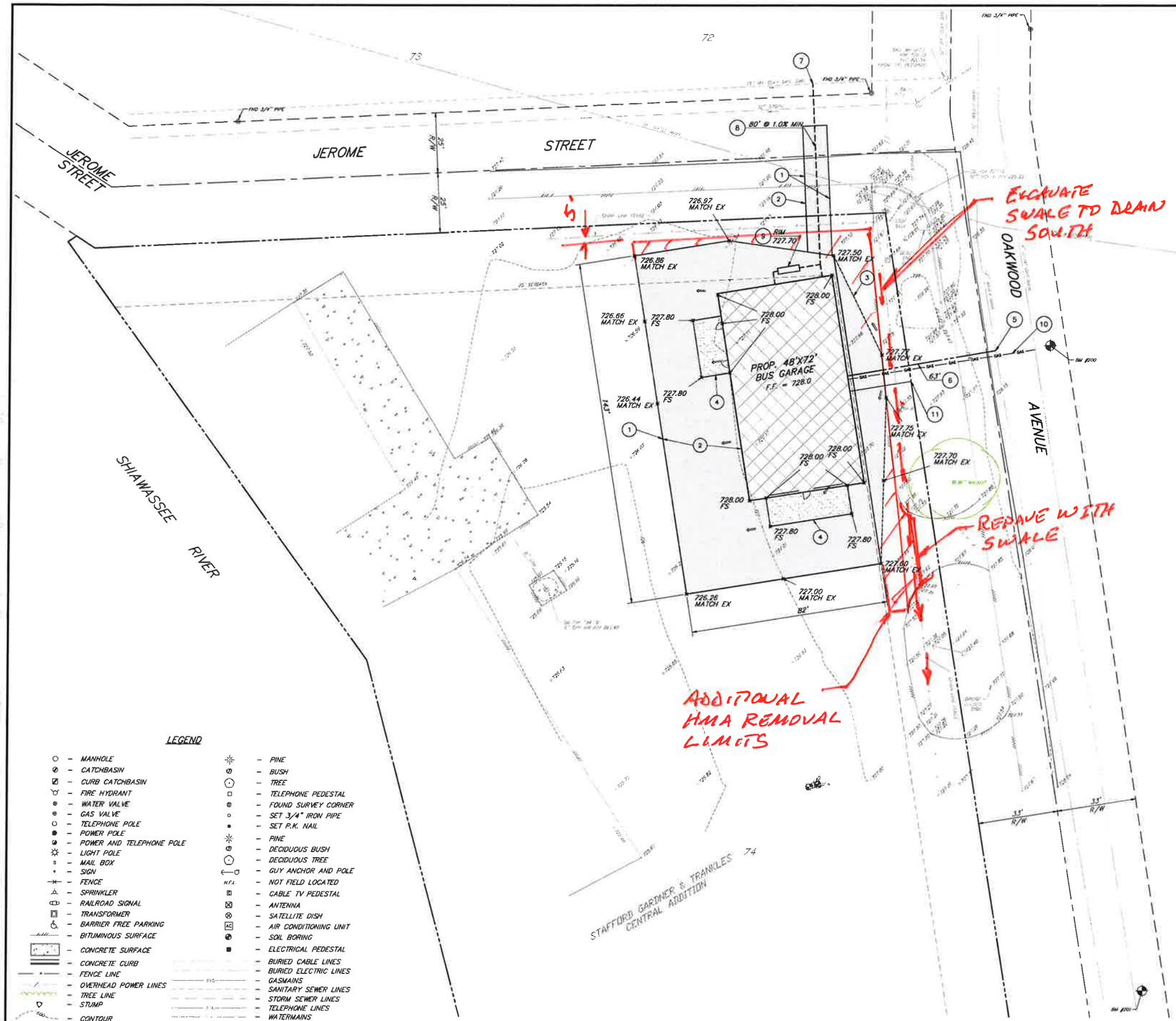


ZONING

The subject property is zoned "R1":

Minimum Lot Area	7200 sq. ft.
Minimum Lot Width	60 ft.
Front Yard Setback	25 ft.
Side Yard Setback	8 ft.
Rear Yard Setback	35 ft.
Maximum Building Height	30 ft

For more Zoning information see City of Owosso Zoning Ordinances.

FLOOD PLAIN NOTE

According to the Federal Emergency Management Agency Maps, Community Panel #2605950004 B the subject property lies within Zone AE, base flood elevation determined to be 731.5±.

BENCH MARK

#200 – SET GEAR SPIKE IN WEST FACE OF POWER POLE EAST SIDE OF OAKWOOD AVE., 60'± SOUTH OF JEROME STREET.
ELEV. 728.12 NAVD 88

#201 – SET GEAR SPIKE IN WEST FACE OF POWER POLE EAST SIDE OF OAKWOOD AVE., 350'± SOUTH OF JEROME STREET.
ELEV. 728.61 NAVD 88

N

0 5 10 20 40

SECTION 19
T.7 N. – R.3 E.
CITY OF OWOSSO
SHIAWASSEE COUNTY, MICHIGAN

SITE WORK

Contractor shall call "Miss Dig" 811 a minimum of 3 working days prior to any construction for the locations of existing underground utilities. The existing utilities on these drawings have been shown according to the best available information. The Contractor shall field locate all utilities and notify the engineer where possible conflict exists prior to beginning construction.

Electric service to building and parking lot lights shall be underground. All utility company service lines and pad locations are shown for reference only. Exact locations to be coordinated with utility company.

Prior to commencing construction, the Contractor is responsible for obtaining all permits required by the appropriate municipalities. Construction procedures shall conform to the requirements of the appropriate municipalities. All drives and approaches shall be constructed according to requirements of the appropriate governing authority.

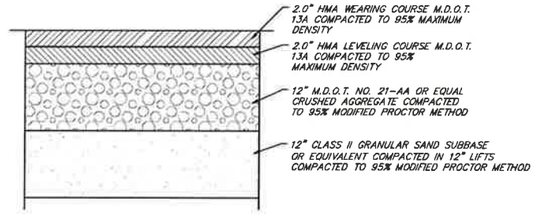
All trenched construction under gravel, paved surfaces or utilities shall be backfilled with class II sand or other approved granular material in 12" layers and compacted to 95% of its maximum unit weight.

Unpaved areas shall be smoothly graded and the surface stabilized by seeding or otherwise. The maximum desirable slope is 3 horizontal to 1 vertical unless noted otherwise.

Contractor shall sawcut pavement and curb & gutter for a clean edge to install proposed pavement and curb & gutter.

Contractor is responsible to maintain positive drainage pattern to ensure no ponding of water on adjacent existing and proposed paved surfaces.

All work to be performed in accordance with the current MDOT standard specifications for construction unless otherwise noted.



ASPHALT PAVEMENT
NOT TO SCALE

LEGEND

- MANHOLE
- CATCHBASIN
- CURB CATCHBASIN
- FIRE HYDRANT
- WATER VALVE
- GAS VALVE
- TELEPHONE POLE
- POWER POLE
- POWER AND TELEPHONE POLE
- LIGHT POLE
- MAIL BOX
- SIGN
- FENCE
- SPRINKLER
- RAILROAD SIGNAL
- TRANSFORMER
- BARRIER FREE PARKING
- BITUMINOUS SURFACE
- CONCRETE SURFACE
- CONCRETE CURB
- FENCE LINE
- OVERHEAD POWER LINES
- TREE LINE
- STUMP
- CONTOUR
- PROPOSED DRAINAGE FLOW
- PROPOSED SPOT ELEVATION LABELS
  G = GUTTER
  TW = WALK
  TC = TOP OF CURB
  FS = FINISH SURFACE
- PINE
- BUSH
- TREE
- TELEPHONE PEDESTAL
- FOUND SURVEY CORNER
- SET 3/4" IRON PIPE
- SET P.K. NAIL
- PINE
- DECIDUOUS BUSH
- DECIDUOUS TREE
- GUY ANCHOR AND POLE
- NOT FIELD LOCATED
- CABLE TV PEDESTAL
- ANTENNA
- SATELLITE DISH
- AIR CONDITIONING UNIT
- SOIL BORING
- ELECTRICAL PEDESTAL
- BURIED CABLE LINES
- BURIED ELECTRIC LINES
- GASMAINS
- SANITARY SEWER LINES
- STORM SEWER LINES
- TELEPHONE LINES
- WATERMAINS

CONSTRUCTION NOTES:

1. SAWCUT EXISTING ASPHALT AND REMOVE.
2. ASPHALT PAVEMENT – SEE DETAIL.
3. WEDGE ASPHALT PAVEMENT, TO PROVIDE POSITIVE DRAINAGE AROUND BUILDING.
4. CONCRETE – SEE ARCHITECTURAL FLOOR PLAN SHEET A2.
5. CONNECT TO EXISTING WATER MAIN PER CITY OF OWOSSO STANDARDS.
6. WATER SERVICE LEAD – 1-1/2" TYPE-K COPPER.
7. CONNECT TO EXISTING SANITARY PER CITY OF OWOSSO STANDARDS.
8. 6" SANITARY LEAD – PVC, SDR35, TYPE PSM PLASTIC, CONFORMING TO ANSI/ASTM D3034 WITH RUBBER GASKET JOINTS.
9. OIL SEPARATOR.
10. 1" GAS SERVICE CONNECTION TO BE COORDINATED THROUGH UTILITY COMPANY.
11. ELECTRIC SERVICE LINE. EXACT LOCATIONS TO BE COORDINATED WITH UTILITY COMPANY.

BY	MARK	REVISIONS	DATE

THE WORK REPRESENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER FOR THIS SPECIFIC APPLICATION AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCORDANCE WITH THE CONDITIONS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE ENGINEER DOES NOT GUARANTEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, CONDITION, DESIGN OR PURPOSE.

OWOSSO SCHOOLS
1405 WEST NORTH STREET
OWOSSO, MI 48867

SITE PLAN
BUS GARAGE
2016 SINKING FUND IMPROVEMENTS
OWOSSO PUBLIC SCHOOLS

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ST. JOHNS, MI
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DE. BY: CAR DR. BY: CAR	CH. BY: MAL APP. BY: DWH	PROJECT NO. 123146SG2016	
STDS.		SHEET 2 OF 14	C 1
DATE JULY, 2016 SCALE 1" = 20'		FILE NO. DA-1292-2	