



**CITY OF OWOSSO
PLANNING COMMISSION
Regular Meeting**

Monday, January 27, 2020 at 6:30 p.m.
Council Chambers – Owosso City Hall
301 W. Main Street, Owosso, MI 48867

AGENDA

CALL TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL

APPROVAL OF AGENDA – January 27, 2020

APPROVAL OF MINUTES – September 23, 2019

PUBLIC HEARING:

OLD BUSINESS:

NEW BUSINESS:

1. Site Plan Review – 1107 W Main St – New car wash
2. Recreational Marijuana
3. 2020-2026 CIP (Capital Improvement Plans)

OTHER BOARD BUSINESS

PUBLIC COMMENTS AND COMMUNICATIONS

ADJOURNMENT

Next regular meeting will be on Monday, February 24, 2020

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

**MINUTES
REGULAR MEETING OF THE OWOSSO PLANNING COMMISSION
COUNCIL CHAMBERS, CITY HALL
MONDAY, SEPTEMBER 23, 2019 – 6:30 P.M.**

CALL TO ORDER: Chairman Wascher called the meeting to order at 6:30 p.m.

PLEDGE OF ALLEGIANCE: Recited

ROLL CALL: Tanya Buckelew

MEMBERS PRESENT: Chairman Wascher, Vice-Chair Livingston, Secretary Fear, Commissioners Jenkins, Law, Robertson, Taylor and Yerian

MEMBERS ABSENT: Commissioner Kirkland

OTHERS PRESENT: Justin Sprague, CIB Planning, Robert Bates, HG Realty

APPROVAL OF AGENDA:

MOTION BY VICE-CHAIR LIVINGSTON, SUPPORTED BY SECRETARY FEAR TO APPROVE THE AGENDA FOR SEPTEMBER 23, 2019.

YEAS ALL. MOTION CARRIED.

APPROVAL OF MINUTES:

MOTION BY VICE-CHAIR LIVINGSTON, SUPPORTED BY COMMISSIONER LAW TO APPROVE THE MINUTES FOR THE AUGUST 26, 2019 MEETING.

YEAS ALL. MOTION CARRIED.

PUBLIC HEARINGS:

1. Administrative Site Plan Review Ordinance Amendments

Justin Sprague, CIB Planning, reviewed the proposed amendments. Chairman Wascher opened the Public Hearing at 6:35 pm. Robert Bates, HG Realty, questioned how many would see the plans before determining it can be administrative or would be sent to the Planning Commission. Mr. Sprague responded with at least 6 city employees would review the determination. This includes CIB Planning, the building department, city manager, engineer and utilities director. Public Hearing was closed at 6:38 pm.

MOTION BY COMMISSIONER LAW, SUPPORTED BY VICE-CHAIR LIVINGSTON TO ADVANCE THE ADMINISTRATIVE SITE PLAN REVIEW ORDINANCE AMENDMENTS TO THE CITY COUNCIL FOR THEIR CONSIDERATION AND ADOPTION.

RCV VOTE ALL YEAS MOTION CARRIED

2. Sign Ordinance Amendments

Justin Sprague reviewed the amendments. Chairman Wascher opened the Public Hearing at 6:40 pm; no one was in attendance to speak and closed Public Hearing,

MOTION BY VICE-CHAIR LIVINGSTON, SUPPORTED BY COMMISSIONER TAYLOR TO ADVANCE THE SIGN ORDINANCE AMENDMENTS TO THE CITY COUNCIL FOR THEIR CONSIDERATION AND ADOPTION.

RCV VOTE ALL YEAS MOTION CARRIED

OLD BUSINESS: NONE

NEW BUSINESS: NONE

OTHER BOARD BUSINESS: NONE

PUBLIC COMMENTS AND COMMUNICATIONS:

Discussion about recreational marijuana and holding a public forum.
Matthews Building – discussions about the timeline for the renovations to begin.
Master Plan Update – draft should be presented to the Planning Commission at the October or November meeting.
Thank you to Linda Robertson for stepping up to be a member of the Planning Commission due to Jake Adam's moving outside the city.

ADJOURNMENT

MOTION BY COMMISSIONER LAW, SUPPORTED BY COMMISSIONER TAYLOR TO ADJOURN AT 6:58 P.M. UNTIL THE NEXT MEETING ON OCTOBER 28, 2019.

YEAS ALL, MOTION CARRIED.

Janae L. Fear, Secretary



January 21, 2020

Planning Commission
 City of Owosso
 301 W. Main Street
 Owosso, Michigan 48867

Subject: 1107 W. Main Site Plan Review. Approximately 0.31 acres, located on the south side of M-21. Zoned B-3, Central Business.

Attention: Mr. Brad Hissong, Building Official

Dear Planning Commissioners:

At your request, we have completed our review of the above site plan build a new car wash on a piece of property located on M-21 at the intersection of State Street. The building site include the construction of a new car wash, addition of 8 parking spaces, be accessed from and ingress through the existing western alley and have an egress to State Street. The property is currently zoned B-3, Central Business, where this use is a permitted land use.

The opinions in this report are based on a review of the site plan submitted by the applicant and conformance to ordinance standards. Please note that the applicant and their design professionals shall be responsible for the accuracy and validity of information presented with the application. In reaching a decision on the application, the Planning Commission should consider our comments along with those from other staff and consultants, additional information provided by the applicant, and your own findings based on ordinance standards as part of your deliberation.

REVIEW COMMENTS

Section 36-390 of the City of Owosso Zoning Ordinance lists the submittal requirements for site plan review. Based on our review of the proposal, discussions with Mr. Nathan Henne, City Manager, meetings with the applicant and a visit to the site, we offer the following comments for your consideration:

1. **Information items.** The site plan meets the informational requirements of the ordinance.
2. **Area and Bulk.** The proposed site was reviewed in accordance with *Article 16, Schedule of Regulations*, as described in the following table.

	Required	Provided	Comments
1107 W. Main (B-3 ZONING)			

	Required	Provided	Comments
Front Yard Building Setback	0 ft. (M-21) 0 ft. (State)	51 ft. 21 ft	In compliance
Side Yard Building Setback	0	59.	In compliance
Rear Yard Building Setback	0 ft.	0 ft.	In compliance
Maximum Building Height	35 ft.	NP	In compliance

3. Building Design & Materials. The ordinance states that durable building materials which provide an attractive, quality appearance must be utilized. **The applicant has not provided an elevation or detail of proposed building materials. This will be required for Planning Commission Approval**

4. Building Height. The proposed building complies with the maximum building height.

5. Mechanical Units. No new mechanical units are proposed on the plan. **The applicant will need to verify this with the Planning Commission to ensure compliance.**

6. Dumpster. **The applicant has not shown a dumpster or trash receptacle enclosure on the site plan. This will need to be added to ensure compliance with the ordinance if a dumpster will be on location.**

7. Parking Lot Requirements. **The applicant is adding 8 parking spaces which is in compliance with the ordinance, but they have not provided a loading space, which is required for buildings exceeding 1,400 sf. There are adequate stacking spaces available to meet the requirements of the ordinance.**

8. Landscaping. **The applicant has not prepared a landscaping plan for review at this time. The ordinance requires a 4'6" screening wall along the southern property line where the property is adjacent to a residential zoning district. This will need to be provided before Planning Commission provides final approval of the site plan or can be a condition of final approval of the site plan.**

11. Other Approvals. The proposed site plan must be reviewed and approved by the appropriate city departments, consultants, and agencies.

RECOMMENDATION

Based upon the above comments, **we recommend approval of the 1107 W Main Street Site Plan, conditioned upon the following:**

1. Submission of a revised site plan that satisfactorily addresses the items in this letter, for administrative review and approval;
2. Use of materials consistent with the ordinance that are acceptable to the Planning Commission;
3. The addition of a loading space;
4. An acceptable landscape and screening plan showing the inclusion of a screening wall on the southern property line;
5. Verification of on-site mechanical units and appropriate screening;
6. Verification of an on-site dumpster and appropriate screening; and
7. Review and approval by the appropriate city departments, consultants, and agencies.

City of Owosso Planning Commission

1107 W Main Site Plan Review

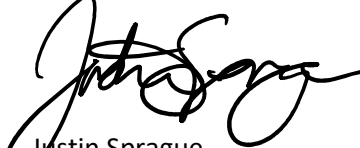
January 21, 2020

Page 3

If you have any further questions, please contact us at 810-734-0000.

Sincerely,

CIB Planning

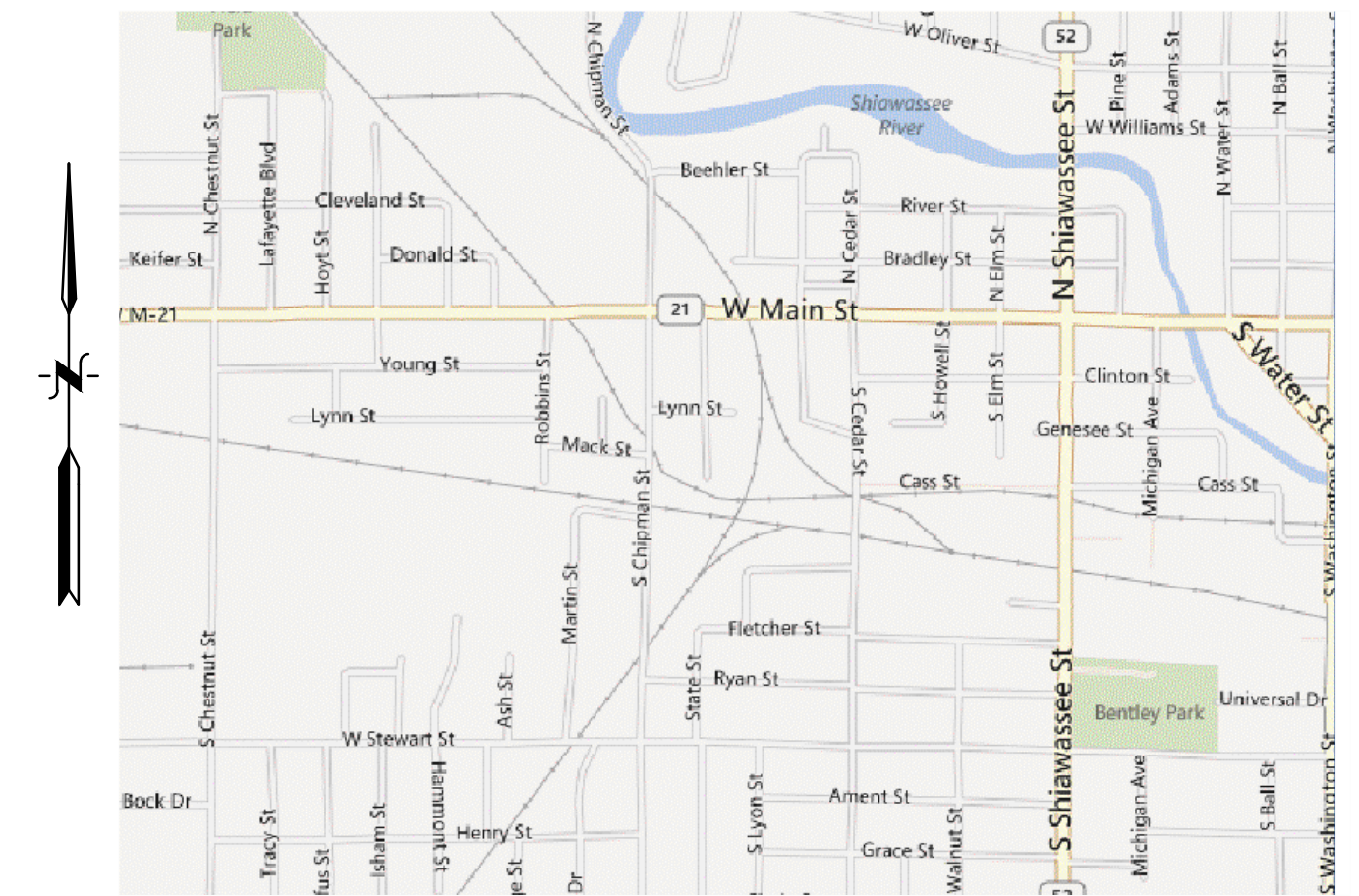


Justin Sprague
Vice President

SITE PLAN FOR

WESTOWN CAR WASH

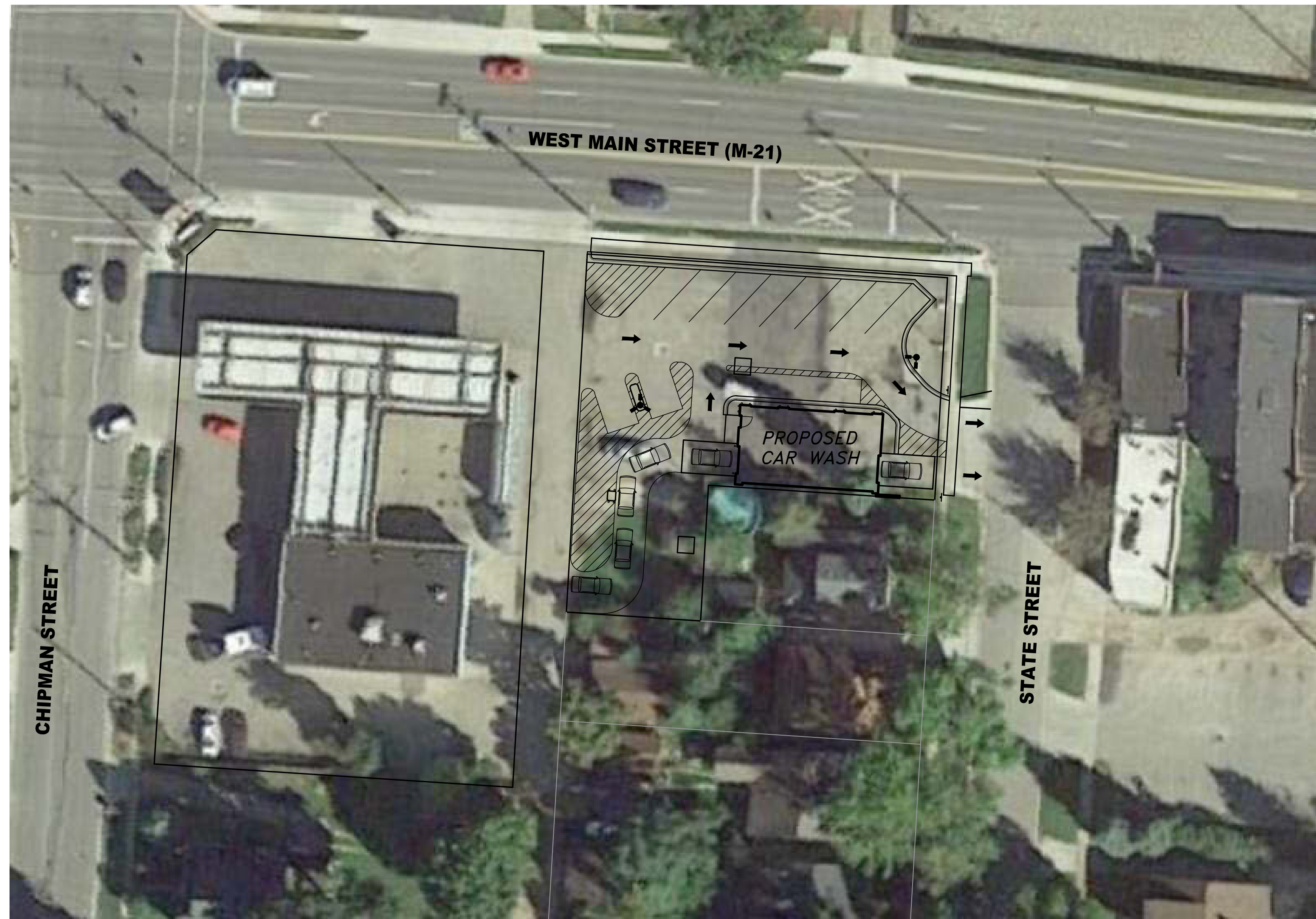
1107 WEST MAIN STREET
 A PART OF THE NORTHWEST 1/4 OF SECTION 24
 CITY OF OWOSSO, SHIAWASSEE COUNTY, MICHIGAN



LOCATION MAP
 NOT TO SCALE

LEGAL DESCRIPTION

PARCEL No. 050-100-001-001-00
 LOT 1 AND THE NORTH 16 FEET OF THE EAST 82.5 FEET AND THE WEST 49.5 FEET OF LOT 4, BLOCK A OF "MARY A CHIPMANS ADDITION TO CITY OF OWOSSO," ACCORDING TO THE PLAT THEREOF, AS RECORDED IN LIBER 21 OF DEEDS, PAGE 632, SHIAWASSEE COUNTY RECORDS, EXCEPTING AT A POINT ON THE NORTH LINE OF LOT 2 WHICH IS 10 FEET FROM THE NORTHWEST CORNER OF LOT 2; THENCE WEST 10 FEET; THENCE SOUTH ON THE WEST LINE 10 FEET; THENCE NORTHEASTERLY TO THE POINT OF BEGINNING.



SHEET INDEX

- EX** EXISTING CONDITIONS & DEMOLITION PLAN
- SP** SITE PLAN
- UT** UTILITY PLAN
- GR** GRADING AND PAVING PLAN
- SE** SOIL EROSION CONTROL PLAN, NOTES AND DETAILS
- LA** LANDSCAPE PLAN
- LT** LIGHTING PLAN
- DT1** SITE PAVEMENT NOTES AND DETAILS
- DT2** WATER LEAD & SANITARY LEAD NOTES AND DETAILS
- DT3** STORM SEWER NOTES AND DETAILS
- A1** BUILDING FLOOR PLAN & EXTERIOR ELEVATIONS

BENCHMARK

BENCHMARK #1: OFFSITE
 REF: DATUM PER SITE PLAN BY ELDRIDGE
 ENGINEERING, PROJECT No. 89-371-4, DATED
 02/09/89
 MDOT BM#7, CHISELED "X" ON SOUTHERLY
 FLANGE BOLT ON HYDRANT, LOCATED 45± FEET
 SOUTH OF CENTERLINE OF MAIN STREET AND
 24± FEET EAST OF CENTERLINE OF STATE
 STREET.
 ELEVATION = 741.55

AERIAL PHOTOGRAPHY BY:

Aerial photographic underlay is an unrectified image and is orientated to the engineering line work within reasonable accuracy and precision, and may not accurately depict current site conditions.



ARCHITECT
 WESTWARD ARCHITECTURE
 922 N. CENTER AVE.
 GAYLORD, MI. 49735
 (989) 370-9431

OWNER/DEVELOPER
 WAKELAND OIL COMPANY
 P.O. BOX 346
 OWOSSO, MI. 48867
 (989) 723-5500

CIVIL ENGINEER/LAND SURVEYOR
 DESINE INC.
 2183 PLESS DRIVE
 BRIGHTON, MI. 48114
 (810) 227-9533

REVISED	SCALE: NONE
	PROJECT No.: 9193633
	DWG NAME: 3633-COV
	PRINT: DEC. 13, 2019

**EXISTING UTILITY
STRUCTURE INVENTORY**

STORM DRAIN MANHOLE #1
RIM 740.82
SOUTHWEST 12" 737.29
WEST INVERT NOT FIELD VERIFIED
NORTH INVERT NOT FIELD VERIFIED
EAST INVERT NOT FIELD VERIFIED

CATCH BASIN #2
RIM 740.44
NORTHEAST 12" 737.44

STORM DRAIN MANHOLE #3
RIM 740.38
SOUTH 12" 737.03
NORTH 736.48
SOUTHEAST 12" 737.23

CATCH BASIN #4
RIM 739.94
NORTHWEST 12" 737.74

STORM DRAIN MANHOLE #5
RIM 739.89
NORTH 12" 737.26
WEST 8" 737.39
NORTH 12" 737.49

CATCH BASIN #6
RIM 739.42
SOUTHWEST 12" 737.02

CATCH BASIN #7
RIM 740.06
EAST 8" INVERT NOT FIELD VERIFIED

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STORM DRAIN MANHOLE #9
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EAST 8" 738.28
WEST 6" 738.28

CATCH BASIN #10
RIM SE CORNER 741.23
EAST 4" INVERT NOT FIELD VERIFIED
WEST 8" 738.03
NORTH INVERT NOT FIELD VERIFIED
SOUTH 4" 740.39

CATCH BASIN #11
RIM 740.99
EAST 8" 738.59

CATCH BASIN #12
RIM SOUTHEAST CORNER 741.39
NORTH 4" 740.67

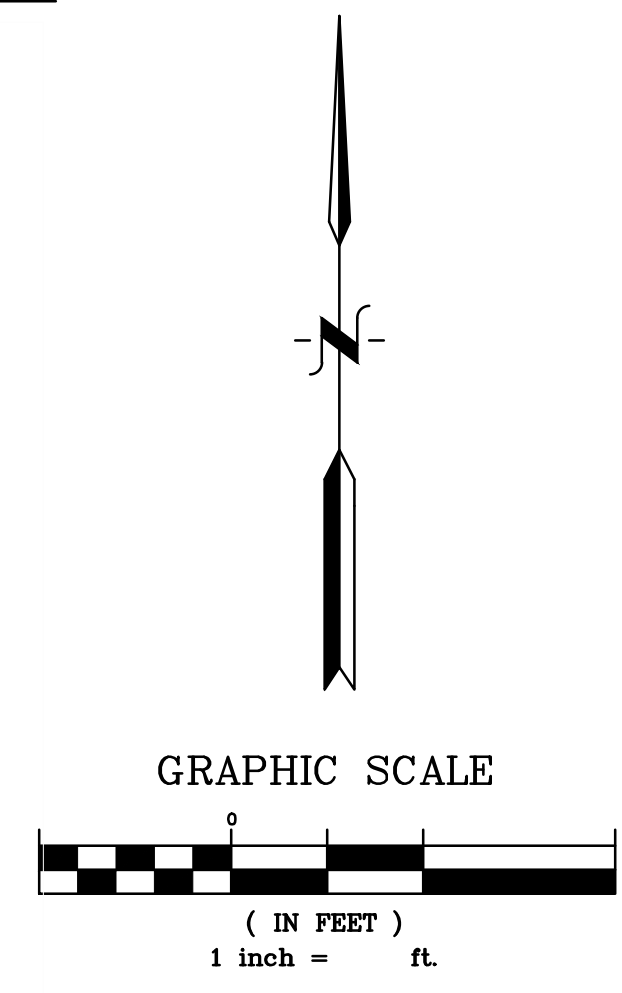
CATCH BASIN #13
RIM 741.41
NORTHEAST 4" 740.61

CATCH BASIN #14
RIM 741.44
SOUTH 6" 738.14
WEST 12" 737.64
NORTH 6" 738.19
EAST 12" 737.59

CATCH BASIN #15
RIM NOT FIELD VERIFIED
INVERTS NOT FIELD VERIFIED

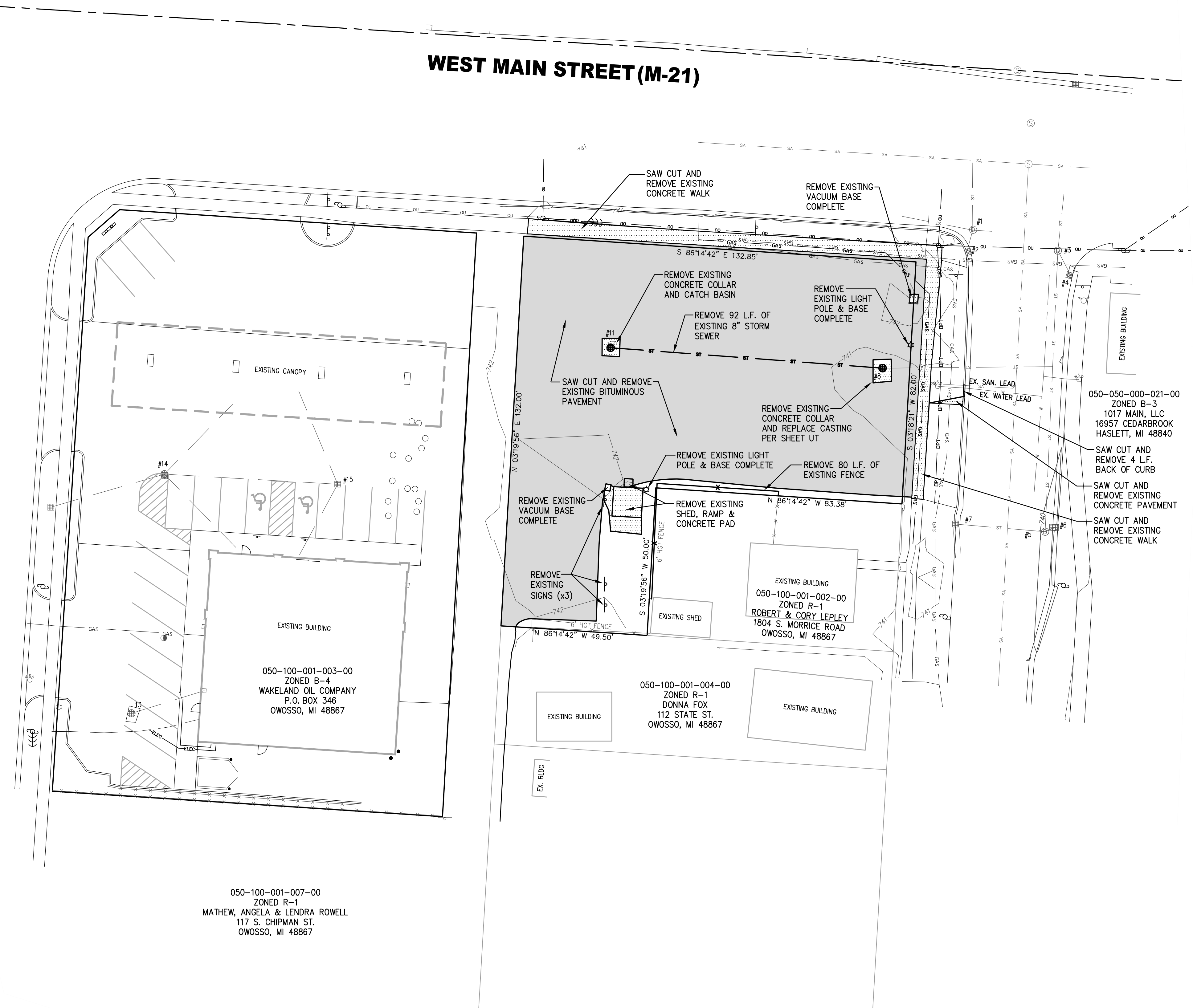
DEMOLITION NOTES:

- The demolition specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional requirements.
- Contractor shall contact the 811 Underground Public Utility Locating System or other appropriate local underground utility locating Agency, a minimum of three (3) working days prior to performing demolition work. Existing utility information on the project plans may be from information disclosed to this firm by the Utility Companies, Local, County or State Agencies, and/or various other sources. No guarantee is given as to the completeness or accuracy thereof. Prior to construction, locations and depths of all existing utilities (in possible conflict with the proposed improvements) shall be verified in the field.
- Contractor shall contact the appropriate Agencies to coordinate disconnect of the electric, gas, phone, cable and other public utilities as necessary prior to performing demolition work.
- Contractor shall contact the appropriate Agencies to coordinate removal and/or relocation of any underground and/or overhead public utility lines as necessary prior to performing demolition work.
- Contractor shall recycle and/or dispose of all demolition material and debris in accordance with the appropriate Local, County, State and Federal regulations.
- All bituminous and concrete pavement to be removed shall be saw cut at the limits of removal to provide for a clean straight edge for future abutment.
- All existing irrigation lines to be removed shall be terminated at the limits of demolition or as necessary to allow for construction of the proposed site improvements. Ends of pipe shall be capped and the location of marked for future connection.
- All existing water main and sanitary sewer to be removed shall be terminated at the limits of demolition or as indicated on the project plans. Temporary plugs shall be installed in the ends of pipe in accordance with the appropriate Agency and the locations of marked for future connection. Permanent plugs shall be installed in the ends of pipe in accordance with the appropriate Agency. The Contractor shall record the location of all permanent plugs and provide the location information to the appropriate Agency.
- All existing storm sewer to be removed shall be terminated at the limits of demolition or as indicated on the project plans. Temporary plugs shall be installed in the ends of pipe in accordance with the appropriate Agency and the locations of marked for future connection. Permanent bulkheads shall be installed in the ends of pipe and/or openings in terminating structures in accordance with the appropriate Agency. The Contractor shall record the location of all permanent bulkheads and provide the location information to the appropriate Agency.
- All existing light sources to be removed shall have their power cables removed up to the power source or properly terminated for future connection at the limits of demolition or as necessary to allow for construction of the proposed site improvements. Removal and termination of power cables shall be performed in accordance with local electric codes.
- All existing utility meters to be removed shall be properly removed to allow for reuse. Any existing utility meters that are not to be reused as a part of this project shall be returned to the appropriate Agency.
- All trenches and/or excavations resulting from the demolition of underground utilities, building foundations, etc., that are located within the 1 on 1 influence zone of proposed structures, paved areas and/or other areas subject to vehicular traffic shall be backfilled with MDOT Class III granular material (or better) to the proposed subgrade elevation. Backfill shall be placed using the controlled density method (12" maximum lifts, compacted to 95% maximum unit weight, Modified Proctor).



CHIPMAN STREET

WEST MAIN STREET (M-21)



050-100-001-007-00
ZONED R-1
MATHEW, ANGELA & LENDRA ROWELL
117 S. CHIPMAN ST.
OWOSSO, MI 48867

050-100-001-004-00
ZONED R-1
DONNA FOX
112 STATE ST.
OWOSSO, MI 48867

EXISTING BUILDING
050-100-001-002-00
ZONED R-1
ROBERT & CORY LEPLEY
1804 S. MORRICE ROAD
OWOSSO, MI 48867

050-050-000-021-00
ZONED B-3
1017 MAIN, LLC
16957 CEDARBROOK
HASLETT, MI 48840

LEGEND

- = MISC. STRUCTURE (AS LABELED)
- = BOLLARD
- = SIGN
- = LIGHT BASE
- = STREET LIGHT
- = OVERHEAD TRAFFIC SIGNAL
- = UTILITY METERS & BOXES (ELECTRIC METER, GAS METER, WATER METER, PHONE BOX, CATV BOX, MAIL BOX)
- = AIR CONDITIONER UNIT
- = UTILITY MANHOLE (AS LABELED)
- = UTILITY POLE W/GUY WIRE
- = OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
- = U/G UTILITY LINES (ELECTRIC/PHONE/CABLE)
- = DECIDUOUS TREE W/IDENTIFIER
- = CONIFEROUS TREE W/IDENTIFIER
- = DECIDUOUS SHRUB
- = EXISTING TREE DRIP LINE
- = FENCE (CHAIN LINK UNLESS OTHERWISE STATED)
- = GUARD RAIL
- = EDGE OF GRAVEL
- = CONCRETE CURB (UNLESS OTHERWISE STATED)
- = SANITARY SEWER MANHOLE W/IDENTIFIER
- = SANITARY SEWER PIPE
- = CLEAN OUT
- = STORM WATER MANHOLE W/IDENTIFIER
- = CATCH BASIN W/IDENTIFIER
- = FLARED END SECTION
- = STORM WATER DRAINAGE PIPE
- = HYDRANT
- = WATER SHUT OFF
- = WATER VALVE
- = WATER VALVE BOX
- = GAS SHUT OFF
- = U/G GAS
- = SPOT ELEVATION
- = 1' CONTOUR
- = 5' CONTOUR
- = EXISTING LIGHT POLE
- = EXISTING CONCRETE TO BE REMOVED
- = EXISTING BITUMINOUS PAVEMENT TO BE REMOVED

BENCHMARK

BENCHMARK #1: OFFSITE
REF: DATUM PER SITE PLAN BY ELDRIDGE
ENGINEERING, PROJECT No. 89-371-4, DATED
02/09/99
MDOT BM#7, CHISELED "X" ON SOUTHERLY
FLANGE BOLT ON HYDRANT, LOCATED 45± FEET
SOUTH OF CENTERLINE OF MAIN STREET AND
24± FEET EAST OF CENTERLINE OF STATE
STREET.
ELEVATION = 741.55

DESIGN: CAG	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.						
CHECK: CAG						

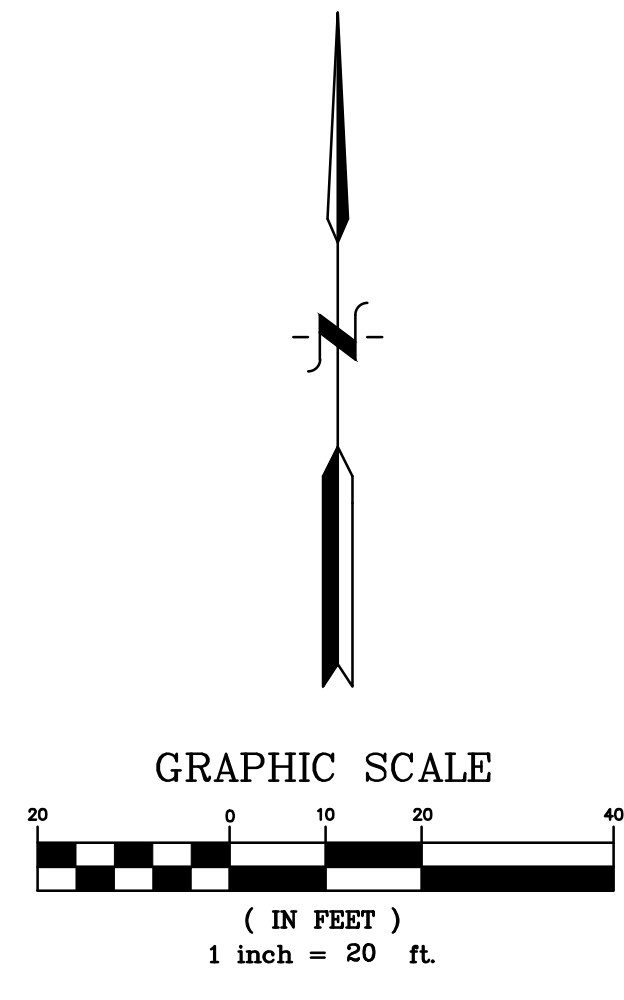
**WESTOWN
CAR WASH**

**EXISTING CONDITIONS
AND DEMOLITION PLAN**

CLIENT: WAKELAND OIL COMPANY
P.O. BOX 346
OWOSSO, MI 48867
(989) 723-5500

SCALE: 1"=20'
PROJECT No.: 9193633
DWG NAME: 3633-EX
ISSUED: DEC. 13, 2019

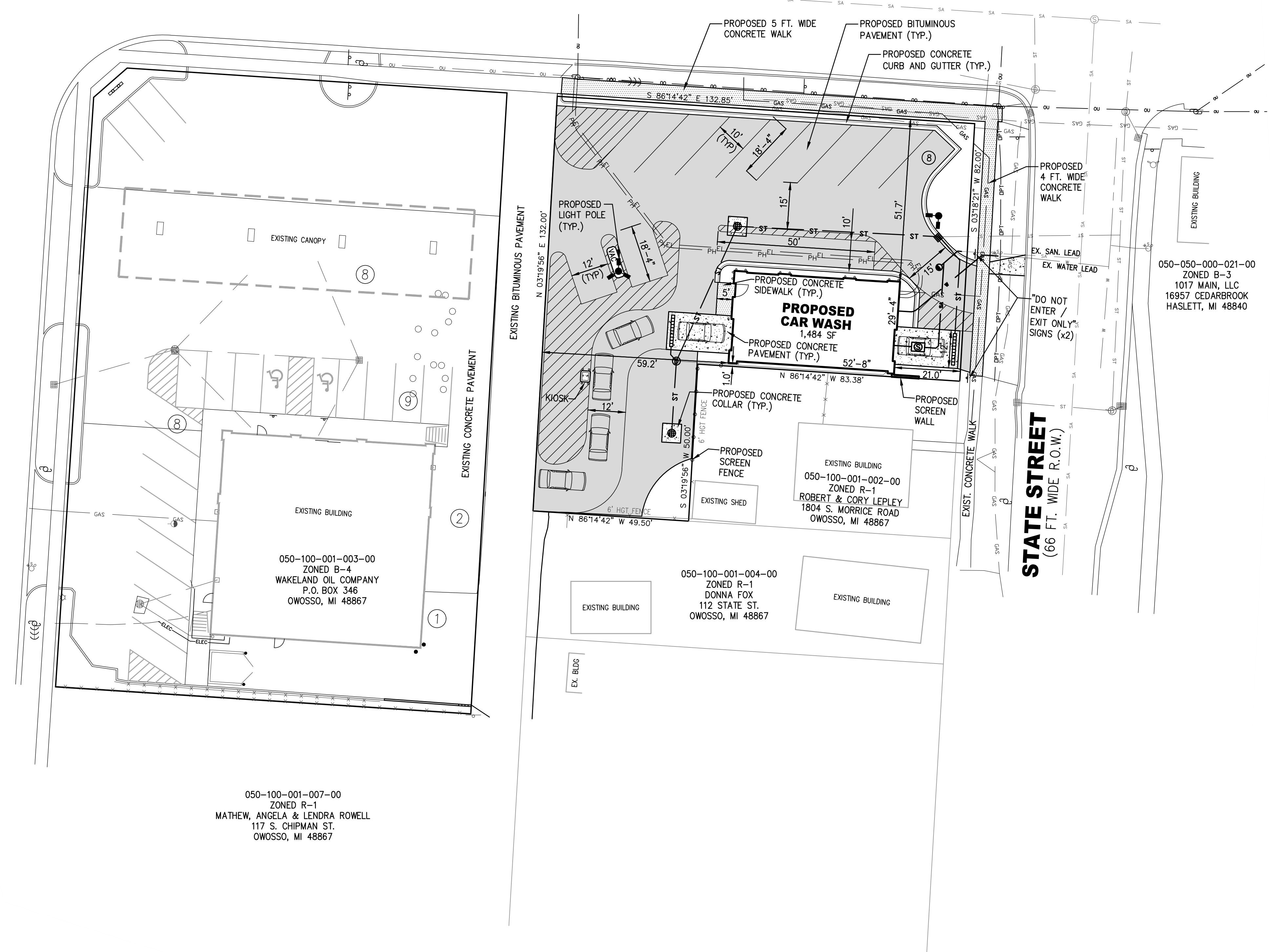
EX



CHIPMAN STREET
(47 FT. WIDE R.O.W.)

WEST MAIN STREET (M-21)
(R.O.W. WIDTH VARIES)

STATE STREET
(66 FT. WIDE R.O.W.)



- LEGEND**
- = MISC. STRUCTURE (AS LABELED)
 - = BOLLARD
 - = SIGN
 - = LIGHT BASE
 - = STREET LIGHT
 - = OVERHEAD TRAFFIC SIGNAL
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 - = U/G GAS
 - = SPOT ELEVATION
 - = 1' CONTOUR
 - = 5' CONTOUR
 - = EXISTING LIGHT POLE
 - = PROPOSED LIGHT POLE
 - = PROPOSED WATER MAIN
 - = PROPOSED STORM SEWER
 - = PROPOSED STORM STRUCTURES
 - = PROPOSED CURB AND GUTTER

SITE DATA:

PARCEL NO.: 050-100-001-001-00
 ADDRESS: 1107 W. MAIN STREET
 PROJECT AREA: 0.31 ACRES
 ZONING DISTRICT: B3
 EXISTING USE: VACANT/PARKING
 PROPOSED USE: CAR WASH
 EXISTING BUILDING LOT COVERAGE: 0.7%
 PROPOSED BUILDING LOT COVERAGE: 11.0%
 EXISTING IMPERVIOUS AREA: 12,409 SF (92%)
 PROPOSED IMPERVIOUS AREA: 12,537 SF (93%)

BENCHMARK

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 MATHEW, ANGELA & LENDRA ROWELL
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050-100-001-004-00
 ZONED R-1
 DONNA FOX
 112 STATE ST.
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050-050-000-021-00
 ZONED B-3
 1017 MAIN, LLC
 16957 CEDARBROOK
 HASLETT, MI 48840

DESIGN: CAG	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.						
CHECK: CAG						

**WESTOWN
CAR WASH**

SITE PLAN

CLIENT:
WAKELAND OIL COMPANY

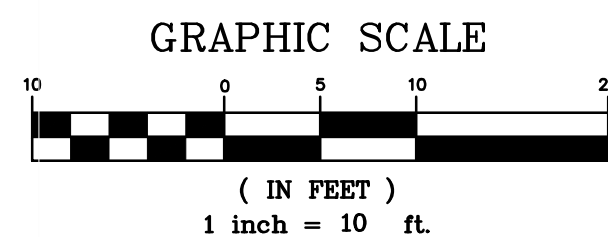
P.O. BOX 346
OWOSSO, MI. 48867
(989) 723-5500

SCALE: 1"=20'
PROJECT No.: 9193633
DWG NAME: 3633-SP
ISSUED: DEC. 13, 2019

SP

**EXISTING UTILITY
STRUCTURE INVENTORY**

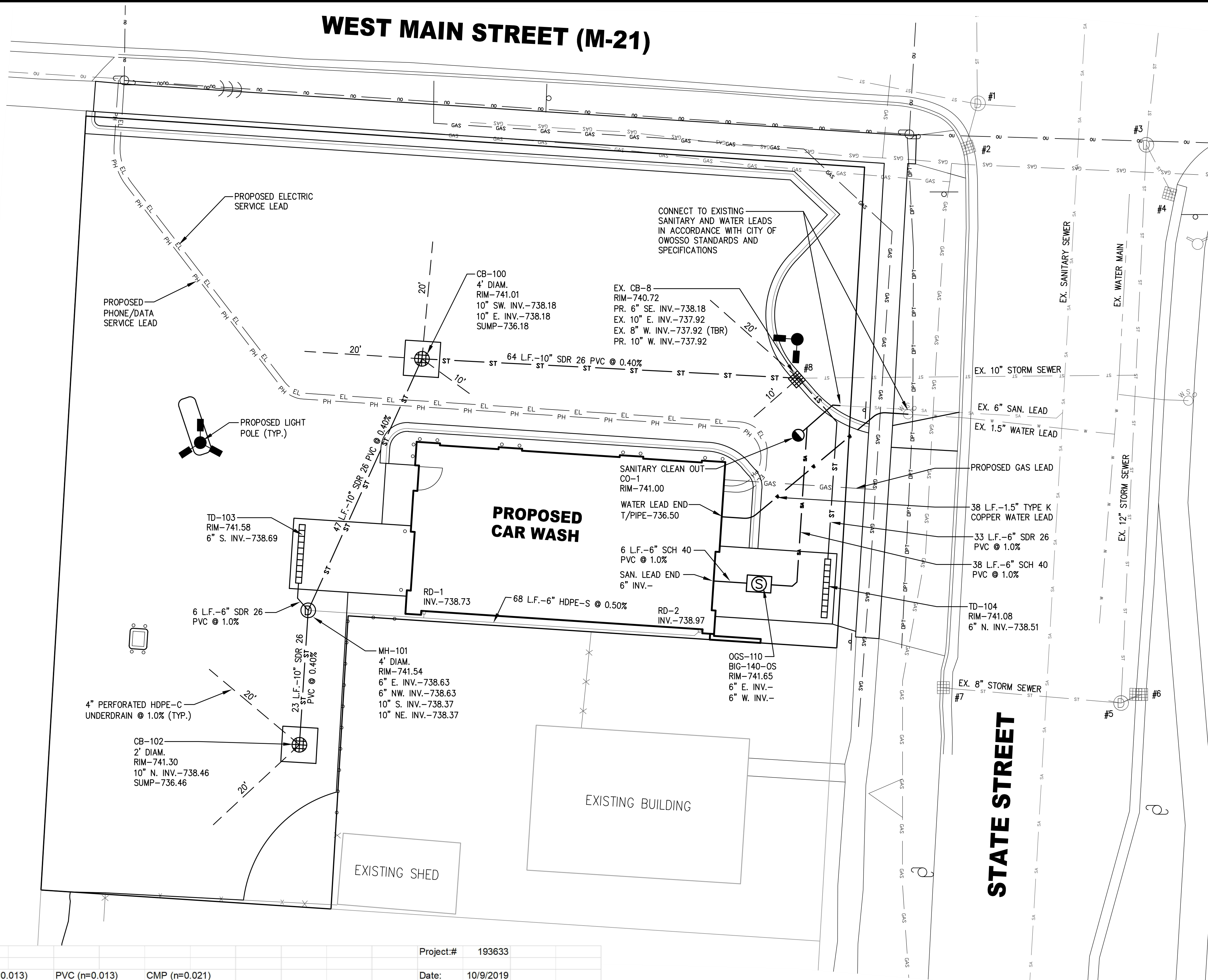
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SOUTH 6" 738.14
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EAST 12" 737.59
- CATCH BASIN #15
RIM NOT FIELD VERIFIED
INVERTS NOT FIELD VERIFIED



UTILITY NOTES:

1. The existing sanitary sewer lead shall be TV inspected to verify that it is suitable for reuse prior to connection. If it is determined that the existing lead is not suitable for reuse, then a new 6" diameter sanitary lead shall be installed in accordance with the City of Owosso standards and specifications and the project plans.
2. Coordinate installation of electric, gas and telecommunication utility service leads with the appropriate local utility providers.

WEST MAIN STREET (M-21)



LEGEND

- = MISC. STRUCTURE (AS LABELED)
- = BOLLARD
- = SIGN
- = LIGHT BASE
- = STREET LIGHT
- = OVERHEAD TRAFFIC SIGNAL
- = UTILITY METERS & BOXES (ELECTRIC METER, GAS METER, WATER METER, PHONE BOX, CATV BOX, MAIL BOX)
- = AIR CONDITIONER UNIT
- = UTILITY MANHOLE (AS LABELED)
- = UTILITY POLE W/GUY WIRE
- = OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
- = U/G UTILITY LINES (ELECTRIC/PHONE/CABLE)
- = DECIDUOUS TREE W/IDENTIFIER
- = CONIFEROUS TREE W/IDENTIFIER
- = DECIDUOUS SHRUB
- = EXISTING TREE DRIP LINE
- = FENCE (CHAIN LINK UNLESS OTHERWISE STATED)
- = GUARD RAIL
- = EDGE OF GRAVEL
- = CONCRETE CURB (UNLESS OTHERWISE STATED)
- = SANITARY SEWER MANHOLE W/IDENTIFIER
- = SANITARY SEWER PIPE
- = CLEAN OUT
- = STORM WATER MANHOLE W/IDENTIFIER
- = CATCH BASIN W/IDENTIFIER
- = FLARED END SECTION
- = STORM WATER DRAINAGE PIPE
- = HYDRANT
- = WATER SHUT OFF
- = WATER VALVE
- = WATER VALVE BOX
- = WATER MAIN
- = GAS SHUT OFF
- = U/G GAS
- = EXISTING LIGHT POLE
- = PROPOSED LIGHT POLE
- = PROPOSED WATER MAIN
- = PROPOSED STORM SEWER
- = PROPOSED STORM STRUCTURES
- = PROPOSED CURB AND GUTTER

UTILITY STRUCTURE CASTING SCHEDULE	
STORM MANHOLE (MH):	EJ 1040Z-A-STORM
CURB LINE CATCH BASIN (CB):	EJ 7045Z-M1-7050T1
PAVEMENT CATCH BASIN (CB):	EJ 1040Z-M1
TRENCH DRAIN (TD):	MIFAB T1500-PR-4
SANITARY CLEANOUT (CO):	EJ 1578Z-A

BENCHMARK

BENCHMARK #1: OFFSITE
REF: DATUM PER SITE PLAN BY ELDRIDGE ENGINEERING, PROJECT No. 89-371-4, DATED 02/09/89
MDOOT BM#7, CHISELED "X" ON SOUTHERLY FLANGE BOLT ON HYDRANT, LOCATED 45± FEET SOUTH OF CENTERLINE OF MAIN STREET AND 24± FEET EAST OF CENTERLINE OF STATE STREET.
ELEVATION = 741.55

Project: Westown Car Wash																	Project# 193633			
Design Criteria: 10 year event (I = 175/t + 25) HDPE-S (n=0.010) RCP (n=0.013) PVC (n=0.013) CMP (n=0.021)																	Date: 10/9/2019			
From MH#	To MH#	Inc. Acres	Eqv. Area 100%	Total Area 100%	T Time	I Inch Per Hour	Q (CIA) c.f.s.	Dia. of pipe inch	Slope pipe %	Slope H.G. %	Length of line ft.	Vel. Flow full ft./sec.	Time of flow min.	Cap of pipe c.f.s.	H.G. Elev. upper end	Ground Elev. Upper end	Lower end	Invert Elev. Upper end	Lower end	
RD-2	RD-1	0.02	0.80	0.02	0.02	15.0	4.38	0.09	6	0.50	0.02	48	2.63	0.3	0.52	739.15	741.5	741.5	738.97	738.73
RD-1	101	0.02	0.80	0.02	0.04	15.3	4.34	0.17	6	0.50	0.05	20	2.63	0.1	0.52	739.14	741.5	741.54	738.73	738.63
103	101	0.02	0.90	0.02	0.02	15.0	4.38	0.09	6	1.00	0.02	6	2.86	0.1	0.56	739.13	741.58	741.54	738.69	738.63
102	101	0.07	0.81	0.06	0.06	15.0	4.38	0.26	10	0.40	0.01	23	2.54	0.2	1.39	739.20	741.30	741.54	738.46	738.37
101	100	0.00	0.00	0.00	0.12	15.4	4.33	0.52	10	0.40	0.06	47	2.54	0.3	1.39	739.04	741.54	741.01	738.37	738.18
100	8	0.13	0.90	0.09	0.21	15.7	4.30	0.90	10	0.40	0.18	64	2.54	0.4	1.39	738.87	741.01	740.72	738.18	737.92
104	8	0.01	0.90	0.01	0.01	15.0	4.38	0.04	6	1.00	0.01	33	2.86	0.2	0.56	738.68	741.08	740.72	738.31	738.18
8	TEE	0.05	0.90	0.05	0.27	16.1	4.26	1.15	10	1.25	0.28	57	4.49	0.2	2.45	738.20	740.72	740.17	737.92	737.21

RUNOFF COEFFICIENT CALCULATIONS

STRUCTURE	LAWN AREA C = 0.25	STONE AREA C = 0.80	ROOF AREA C = 0.80	PAVEMENT AREA C = 0.90	TOTAL AREA (A)	Cave
RD-1	0.00	0.00	0.02	0.00	0.02	0.80
RD-2	0.00	0.00	0.02	0.00	0.02	0.80
CB-8	0.00	0.00	0.00	0.05	0.05	0.90
CB-100	0.00	0.00	0.00	0.13	0.13	0.90
MH-101	0.00	0.00	0.00	0.00	0.00	0.00
CB-102	0.01	0.00	0.00	0.06	0.07	0.81
TD-103	0.00	0.00	0.00	0.02	0.02	0.90
TD-104	0.00	0.00	0.00	0.01	0.01	0.90

DESIGN: CAG	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.			
CHECK: CAG			

**WESTOWN
CAR WASH**

UTILITY PLAN

CLIENT: WAKELAND OIL COMPANY	SCALE: 1"=10'
P.O. BOX 346 OWOSSO, MI. 48867 (989) 723-5500	PROJECT No.: 9193633
	DWG NAME: 3633-UT
	ISSUED: DEC. 13, 2019

UT

LEGEND

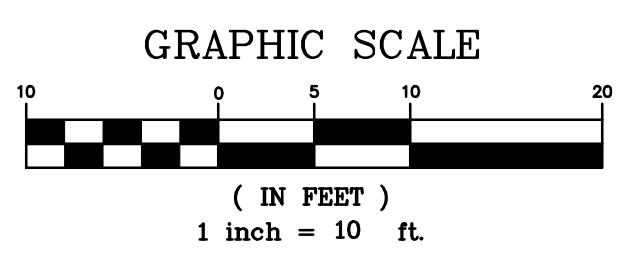
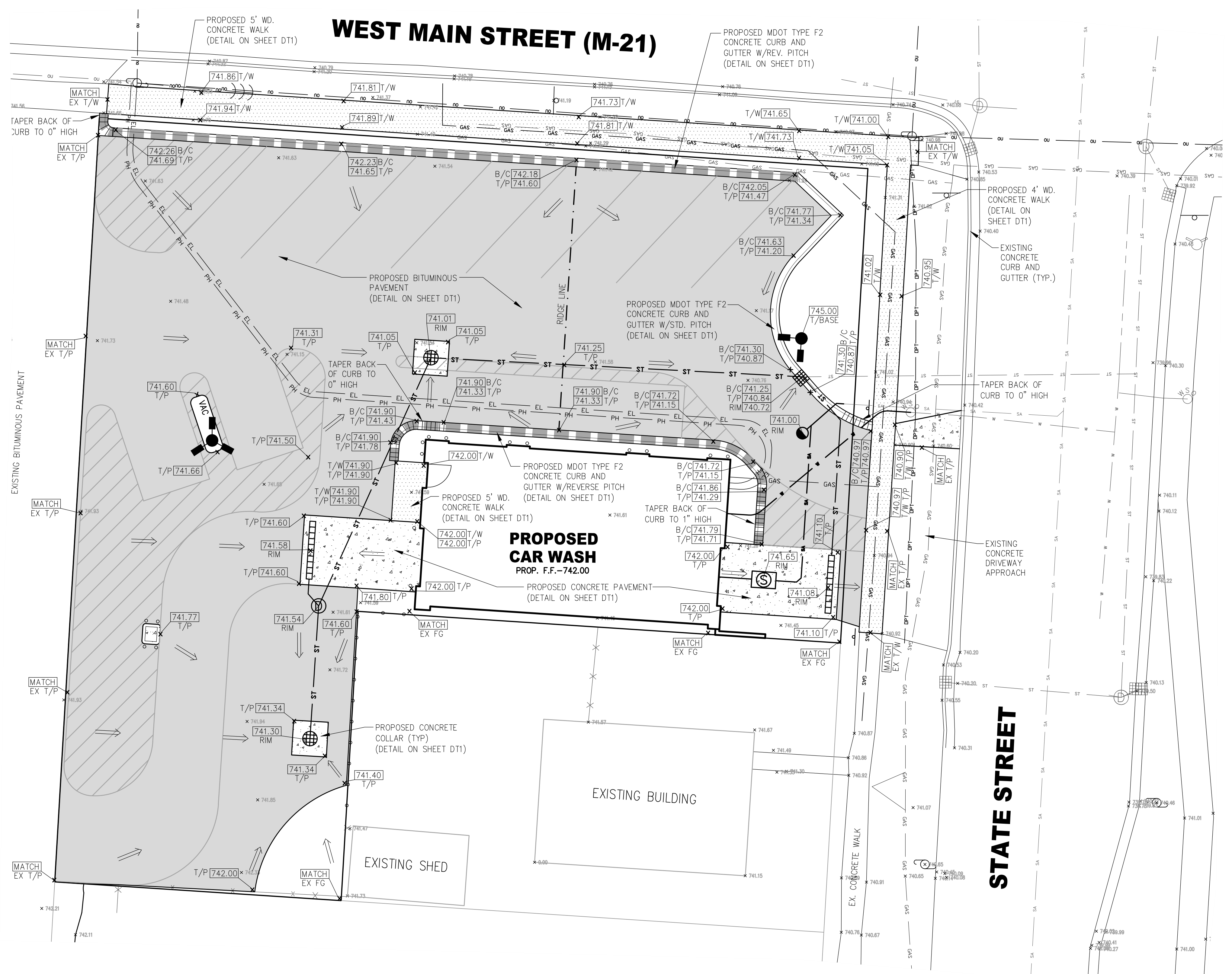
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- = FLARED END SECTION
- = STORM WATER DRAINAGE PIPE
- = HYDRANT
- = WATER SHUT OFF
- = WATER VALVE
- = WATER VALVE BOX
- = WATER MAIN
- = GAS SHUT OFF
- = U/G GAS
- = SPOT ELEVATION
- = 1' CONTOUR
- = 5' CONTOUR
- = EXISTING LIGHT POLE
- = PROPOSED LIGHT POLE
- = PROPOSED WATER MAIN
- = PROPOSED STORM SEWER
- = PROPOSED STORM STRUCTURES
- = PROPOSED CONCRETE WALK
- = PROPOSED CONCRETE PAVEMENT
- = PROPOSED BITUMINOUS PAVEMENT
- = PROPOSED CONCRETE CURB & GUTTER W/STD. PITCH
- = PROPOSED CONCRETE CURB & GUTTER W/REV. PITCH
- = PROPOSED SPOT ELEVATIONS
- = PROPOSED FLOW ARROW

BENCHMARK

BENCHMARK #1: OFFSITE
 REF: DATUM PER SITE PLAN BY ELDRIDGE
 ENGINEERING, PROJECT No. 89-371-4, DATED
 02/09/89
 MDOT BM#7, CHISELED "X" ON SOUTHERLY
 FLANGE BOLT ON HYDRANT, LOCATED 45± FEET
 SOUTH OF CENTERLINE OF MAIN STREET AND
 24± FEET EAST OF CENTERLINE OF STATE
 STREET.
 ELEVATION = 741.55

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 BRIGHTON, MICHIGAN 48114



DESIGN: CAG	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.						
CHECK: CAG						

**WESTOWN
 CAR WASH**

**GRADING AND PAVING
 PLAN**

CLIENT: WAKELAND OIL COMPANY
 P.O. BOX 346
 OWOSSO, MI. 48867
 (989) 723-5500

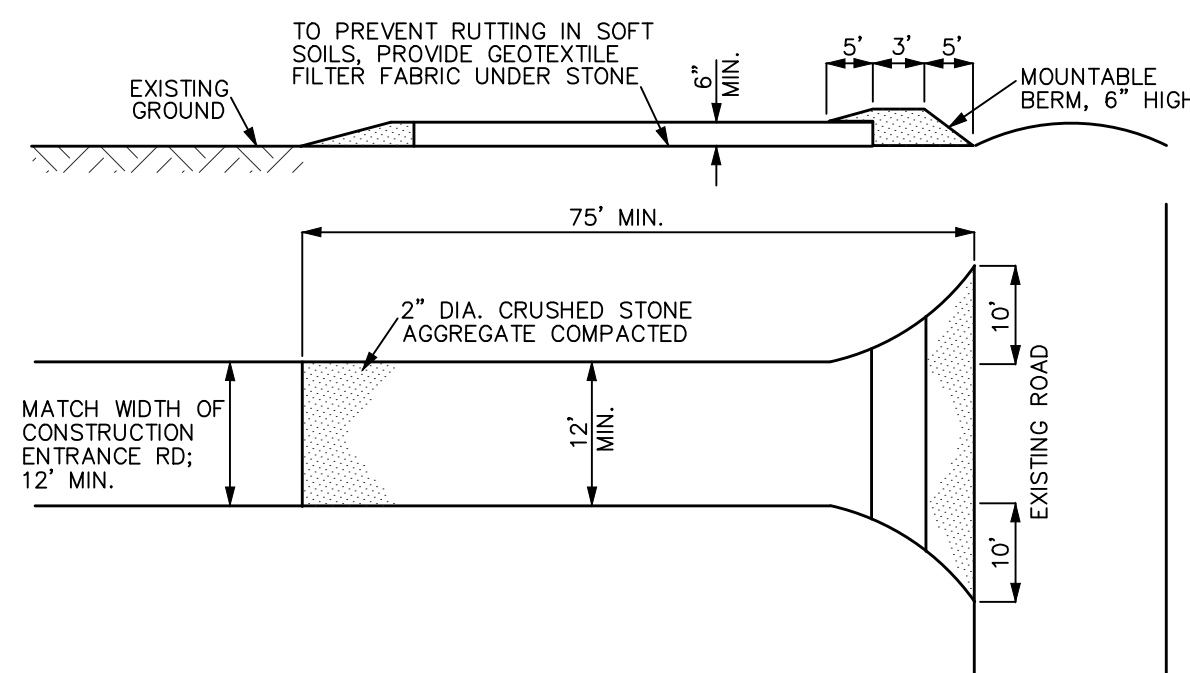
SCALE: 1"=10'
 PROJECT No.: 9193633
 DWG NAME: 3633-GR
 ISSUED: DEC. 13, 2019

GR

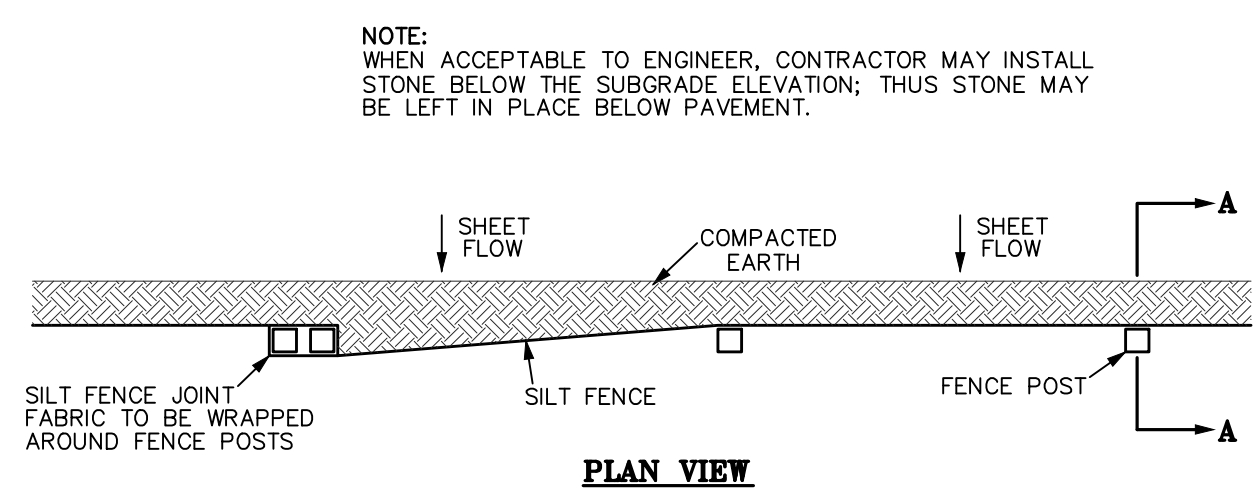


Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Bh	Berville loam	0.1	48.7%
Sn	Sloan loam	0.1	51.3%
Totals for Area of Interest		0.3	100.0%

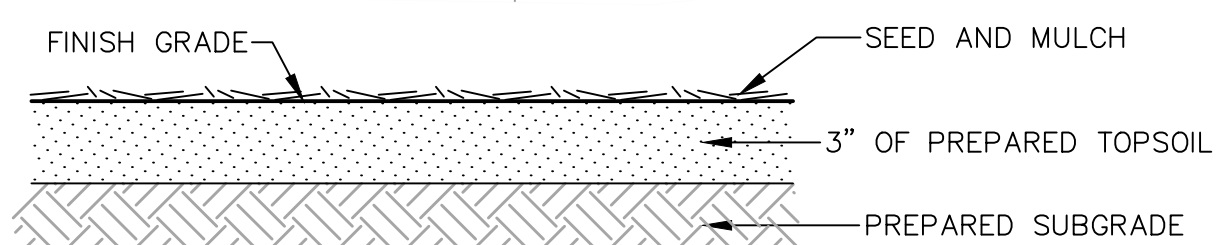


14 MUD TRACKING CONTROL DEVICE



55 SILT FENCE

- NOTES:
- REPAIR AND REPLACE SILT FENCE AS NEEDED, INCIDENTAL.
 - FIELD LOCATE SILT FENCE TO FOLLOW CONSTANT CONTOUR ELEVATIONS.
 - OVERLAP FENCES AT JOINTS.
 - INSTALL FILTER BERM AT LOW POINTS WHERE INDICATED ON PLANS.



SEEDING DETAIL

- MAINTENANCE NOTES FOR SOIL EROSION CONTROL MEASURES:
- The Construction Site and all Soil Erosion Control Measures shall be inspected periodically in accordance with the appropriate local municipality/authority and the EGLE NPDES rules and regulations. At a MINIMUM, inspections shall be performed once a week and within 24 hours following a storm event resulting in 1" of rainfall or greater. Inspections shall be performed throughout the duration of the construction process and until the site is completely stabilized. Following construction, the owner (or its assignee) shall periodically inspect all permanent soil erosion control measures to ensure proper operation.
 - CATCH BASINS: Catch basins shall be inspected for accumulation of solids and sediment. Solids and sediment shall be removed from the catch basins by vacuum or adductor cleaning. Cleaning should be performed before the catch basin sumps are half full.
 - MUD TRACKING CONTROL DEVICE / CONSTRUCTION ACCESS: Mud tracking control devices shall be inspected for significant mud accumulation and to ensure the access is not eroding into public rights of way or drainage features. Add additional layers of stone or remove and replace stone each time the stone becomes covered with mud. All sediment dropped or eroded onto public rights of way shall be removed immediately. Sweeping of the public rights of way and/or paved access route shall be performed as necessary to maintain the access route free of sediment and debris.
 - SEEDING: Newly seeded areas shall be inspected until substantial vegetative growth is obtained. Seeded areas shall be inspected to ensure erosion is not occurring in the seeded area and vegetative growth is promoted. Eroded areas shall be finish graded as necessary to removal erosion channels or gulleys and new seed placed as soon as weather permits.
 - SILT FENCE: Silt fencing shall be inspected for soil accumulation/clogging, undercutting, overtopping and sagging. Soil accumulation shall be removed from the face of the silt fence each time it reaches half the height of the fence. Removed sediment shall be disposed of in a stable upland site or added to a spoils stockpile. When undercutting occurs, grade out areas of concentrated flow upstream of the silt fence to remove channels and/or gulleys and repair or replace silt fence ensuring proper trenching techniques are utilized. Silt fencing, which sags, falls over or is not staked in shall be repaired or replaced immediately. Silt fencing fabric, which decomposes or becomes ineffective, shall be removed and replaced with new fabric immediately. Silt fencing shall be removed once vegetation is well established and the up-slope area is fully stabilized.
 - SOD: Newly sodded areas shall be inspected to ensure sod is maturing. Sod shall be inspected for failure, erosion or damage. Slipping or eroding sod on steep slopes shall be immediately repaired or replaced and staked in place. Damaged or failed sod shall be immediately replaced.
 - STOCKPILES: Temporary and permanent topsoil and spoils stockpiles shall be seeded to promote vegetative growth. Stockpiles shall be inspected to ensure excessive erosion has not occurred. When runoff or wind erosion is evident, reduce the side slopes of the stockpile or stabilize the stockpile with pieces of staked sod laid perpendicular to the slope. When filter fencing is used around a stockpile, the fencing shall be inspected to ensure piping has not occurred under the fencing and to ensure the fencing has not collapsed due to soil slippage or access by construction equipment. Repair or replace damaged fencing immediately. Berms at the base of stockpiles, which become damaged, shall be replaced.
 - STORM STRUCTURE INLET FILTER: Inlet filters shall be inspected for sediment accumulation, clogging and damage. When stone is used in conjunction with inlet filter fabric, replace the stone each time it becomes clogged with sediment. Clean or replace the inlet filter fabric each time it becomes clogged with sediment. Reinstall or replace fallen filter fabrics immediately. Replace damaged filter fabrics immediately.

MAINTENANCE NOTES FOR SOIL EROSION CONTROL MEASURES:

The Construction Site and all Soil Erosion Control Measures shall be inspected periodically in accordance with the appropriate local municipality/authority and the EGLE NPDES rules and regulations. At a MINIMUM, inspections shall be performed once a week and within 24 hours following a storm event resulting in 1" of rainfall or greater. Inspections shall be performed throughout the duration of the construction process and until the site is completely stabilized. Following construction, the owner (or its assignee) shall periodically inspect all permanent soil erosion control measures to ensure proper operation.

CATCH BASINS: Catch basins shall be inspected for accumulation of solids and sediment. Solids and sediment shall be removed from the catch basins by vacuum or adductor cleaning. Cleaning should be performed before the catch basin sumps are half full.

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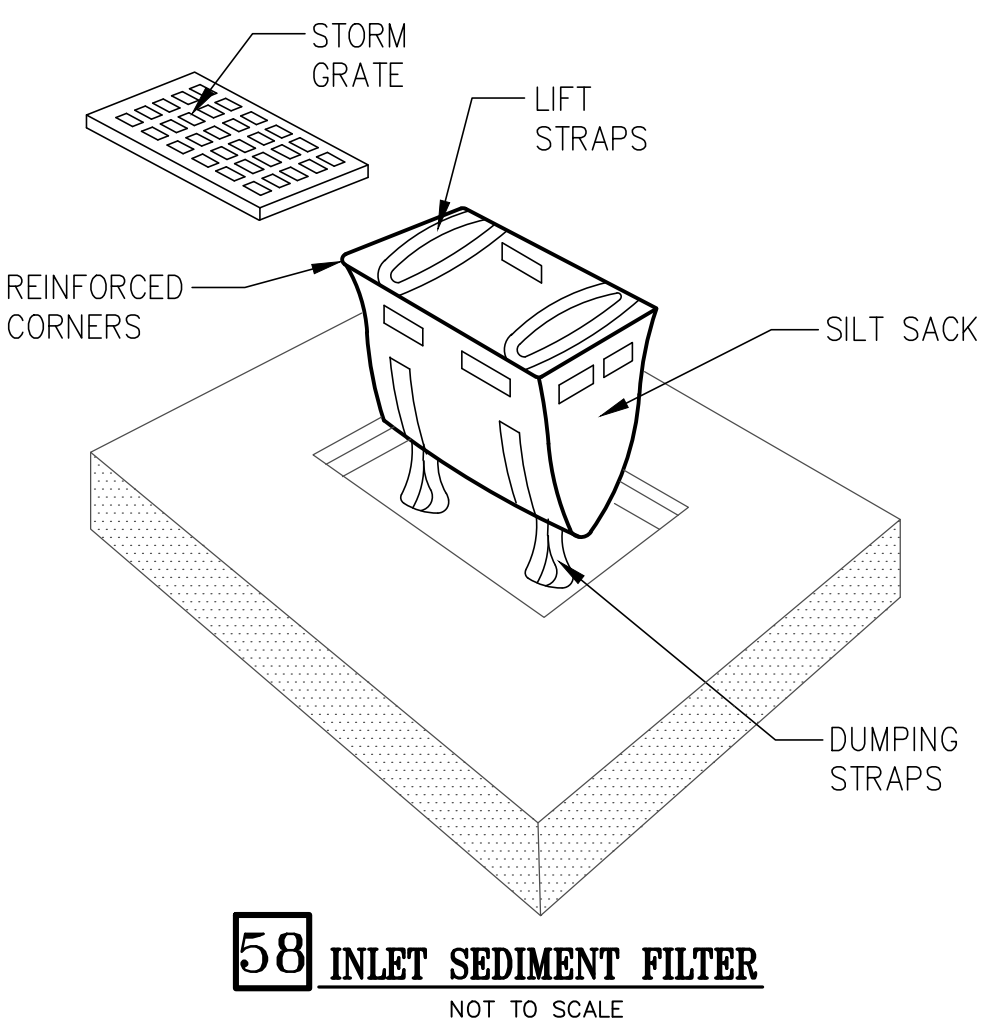
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SOD: Newly sodded areas shall be inspected to ensure sod is maturing. Sod shall be inspected for failure, erosion or damage. Slipping or eroding sod on steep slopes shall be immediately repaired or replaced and staked in place. Damaged or failed sod shall be immediately replaced.

STOCKPILES: Temporary and permanent topsoil and spoils stockpiles shall be seeded to promote vegetative growth. Stockpiles shall be inspected to ensure excessive erosion has not occurred. When runoff or wind erosion is evident, reduce the side slopes of the stockpile or stabilize the stockpile with pieces of staked sod laid perpendicular to the slope. When filter fencing is used around a stockpile, the fencing shall be inspected to ensure piping has not occurred under the fencing and to ensure the fencing has not collapsed due to soil slippage or access by construction equipment. Repair or replace damaged fencing immediately. Berms at the base of stockpiles, which become damaged, shall be replaced.

STORM STRUCTURE INLET FILTER: Inlet filters shall be inspected for sediment accumulation, clogging and damage. When stone is used in conjunction with inlet filter fabric, replace the stone each time it becomes clogged with sediment. Clean or replace the inlet filter fabric each time it becomes clogged with sediment. Reinstall or replace fallen filter fabrics immediately. Replace damaged filter fabrics immediately.



58 INLET SEDIMENT FILTER

TIME LINE OF SOIL EROSION CONTROL AND CONSTRUCTION SEQUENCE

CONSTRUCTION & WORK CATEGORIES*	CONSTRUCTION PERIOD																								
	Month	1			2			3			4			5			6								
Week	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1. OBTAIN PERMITS																									
2. INSTALL INITIAL SESC MEASURES																									
3. INSPECT & MAINTAIN SESC MEASURES																									
4. DEMOLITION WORK																									
5. EARTHWORK																									
6. BUILDING CONSTRUCTION																									
7. UNDERGROUND UTILITY WORK																									
8. SITE LIGHTING WORK																									
9. CURB, SIDEWALK & PAVEMENT WORK																									
10. BACKFILL & FINISH GRADE WORK																									
11. TOPSOIL, SEED & MULCH																									
12. LANDSCAPE WORK																									
13. REMOVE TEMPORARY SESC MEASURES																									

*REFER TO THE MAJOR WORK ITEMS OUTLINED IN THE SOIL EROSION CONTROL AND CONSTRUCTION SEQUENCE NOTES.

SOIL EROSION CONTROL AND CONSTRUCTION SEQUENCE:

- Obtain all necessary Soil Erosion and Sedimentation Control related permits from the appropriate Local, County and/or State Agencies. Refer to the General Notes on the project plans for additional requirements.
- Prior to commencement of any earth disruption, install Silt Fence and Inlet Sediment Filters at existing storm sewer catch basins in accordance with the Soil Erosion and Sedimentation Control Plan and the Soil Erosion and Sedimentation Control Permit.
- Inspect and maintain all Soil Erosion Control Measures daily. Maintain all Soil Erosion Control Measures as necessary and as directed by the Engineer and/or the Permitting Agency.
- Perform demolition work. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Perform earthwork and land balancing. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Construct building in accordance with the Site Plan and Building Plans. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Construct underground utilities including sanitary sewer leads, water leads, storm sewer, roof drains, underdrain and public utilities. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Install light pole bases, poles fixtures and underground electric. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Construct curb & gutter, sidewalk and paved parking and roadway areas. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Backfill curb and sidewalks and finish grade all disturbed areas outside of pavement areas. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Place topsoil, seed, and mulch within 5 days of finish grade for establishment of vegetative ground cover outside of pavement and decorative stone landscape bed areas. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Landscape site in accordance with the Project Landscape Plan. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Following establishment of sufficient vegetative ground cover and receipt of approval from the Permitting Agency, remove all temporary Soil Erosion Control Measures, clean all storm sewer structures, and repair any permanent Soil Erosion Control Measures as directed by the Engineer and/or the Permitting Agency.

SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

- The Soil Erosion and Sedimentation Control Specifications of the appropriate Local, County and/or State Agencies are a part of this work. Refer to the General Notes on the Project Plans for additional requirements.
- The Soil Erosion and Sedimentation Control (SESC) Permit Holder shall be responsible for compliance with the SESC Permit requirements for the duration of the project and until receipt of final approval from the Permitting Agency. For any site with an earth disturbance area of 1 acre or greater, the SESC Permit Holder shall retain a Certified Storm Water Operator in accordance with the SESC Permit requirements. The Certified Storm Water Operator shall perform routine inspections of the site and the SESC measures and file inspection reports in accordance with the SESC permit requirements. For any site with an earth disturbance area of 5 acres or greater, the SESC Permit Holder shall file a National Pollutant Discharge Elimination System (NPDES) Notice of Coverage Form with the State DEQ prior to any earth disruption.
- The Contractor shall install the appropriate Soil Erosion Control Measures in accordance with the Project Plans prior to massive earth disruption, including but not limited to; silt fence, mud tracking control mats and sediment filters on existing storm sewer structures. Demolition work may be necessary prior to installation of some soil erosion control measures. In such cases, postpone installation of affected soil erosion control measures until immediately following demolition work. Refer to the Project Plans and the Soil Erosion Control and Construction Sequence for additional requirements.
- The Contractor shall schedule work so as to minimize the period of time that an area is exposed and disturbed. The Contractor shall observe the grading limits and limits of disturbance in accordance with the Project Plans. The Contractor shall maintain an undisturbed vegetative buffer around the work when shown on the Project Plans.
- The Contractor shall install and maintain Soil Erosion Control Measures in accordance with the Project Plans during the appropriate phases of construction. The Project Plans show the minimum requirements for Soil Erosion Control Measures. The Contractor shall install additional Soil Erosion Control Measures as necessary due to site conditions and as directed by the Permitting Agency and/or Engineer. The Contractor shall perform routine inspection and maintenance of all Soil Erosion Control Measures to ensure compliance with the permit requirements and proper operation of the Soil Erosion Control Measures.
- All disturbed areas outside of paved areas shall be restored within 5 days of finish grading. Proposed vegetative areas shall be restored with a minimum of 3-inches of topsoil, then seeded and mulched, unless noted otherwise on the Project Plans. During the non-growing season, temporary stabilization shall be provided using straw matting or as directed by the Permitting Agency and/or the Engineer.
- Following complete site restoration and stabilization; sediment shall be removed from all storm sewer structures, paved areas and storm basins. The SESC Permit Holder shall contact the Permitting Agency to request closure of the SESC Permit. For any site with an earth disturbance area of 5 acres or greater, the SESC Permit Holder shall file a NPDES Notice of Termination Form with the State DEQ.

BENCHMARK

BENCHMARK #1: OFFSITE
REF: DATUM PER SITE PLAN BY ELDRIDGE ENGINEERING, PROJECT No. 89-371-4, DATED 02/09/89
MDOT BM#7, CHISELED "X" ON SOUTHERLY FLANGE BOLT ON HYDRANT, LOCATED 45± FEET SOUTH OF CENTERLINE OF MAIN STREET AND 24± FEET EAST OF CENTERLINE OF STATE STREET.
ELEVATION = 741.55

SOIL EROSION MEASURES

4	VEGETATIVE SPECIFICATION	SOIL MULCH: A VARIETY OF PLANT MATERIALS. STABILIZES SOIL. SLOWS RUNOFF VELOCITY. FACILITATES ESTABLISHMENT OF VEGETATIVE COVER.
6	SEEDING WITH MULCH AND/OR NUTRIENT	STABILIZES SOIL SURFACE. THIS WINNING EROSION PREVENTS CONSTRUCTION TRAFFIC IN WINDY WEATHER. MAY BE USED AS PART OF PERMANENT BASE CONSTRUCTION OF PAVED AREAS.
14	AGROSCAPE COVER	PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF VOLUME AND VELOCITY. IRREGULAR SURFACE WILL HELP SLOW VELOCITY.
15	FRANC	USES GEOTEXTILE AND POSTS OR POLES. MUST BE CONSTRUCTED BY PROFESSIONALS. EASY TO CONSTRUCT AND LOCATE AS NECESSARY.
55	VEGETATIVE SILT FENCE	USES PREPACKAGED GEOTEXTILE SACKS. FILTERS SEDIMENT FROM RUNOFF AT CATCH BASIN INLET. EASY TO INSTALL AND MAINTAIN.
58	INLET SEDIMENT FILTER	

T = TEMPORARY P = PERMANENT

AREA OF DISTURBANCE = 0.37 AC.

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DESIGN: CAG	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.						
CHECK: CAG						

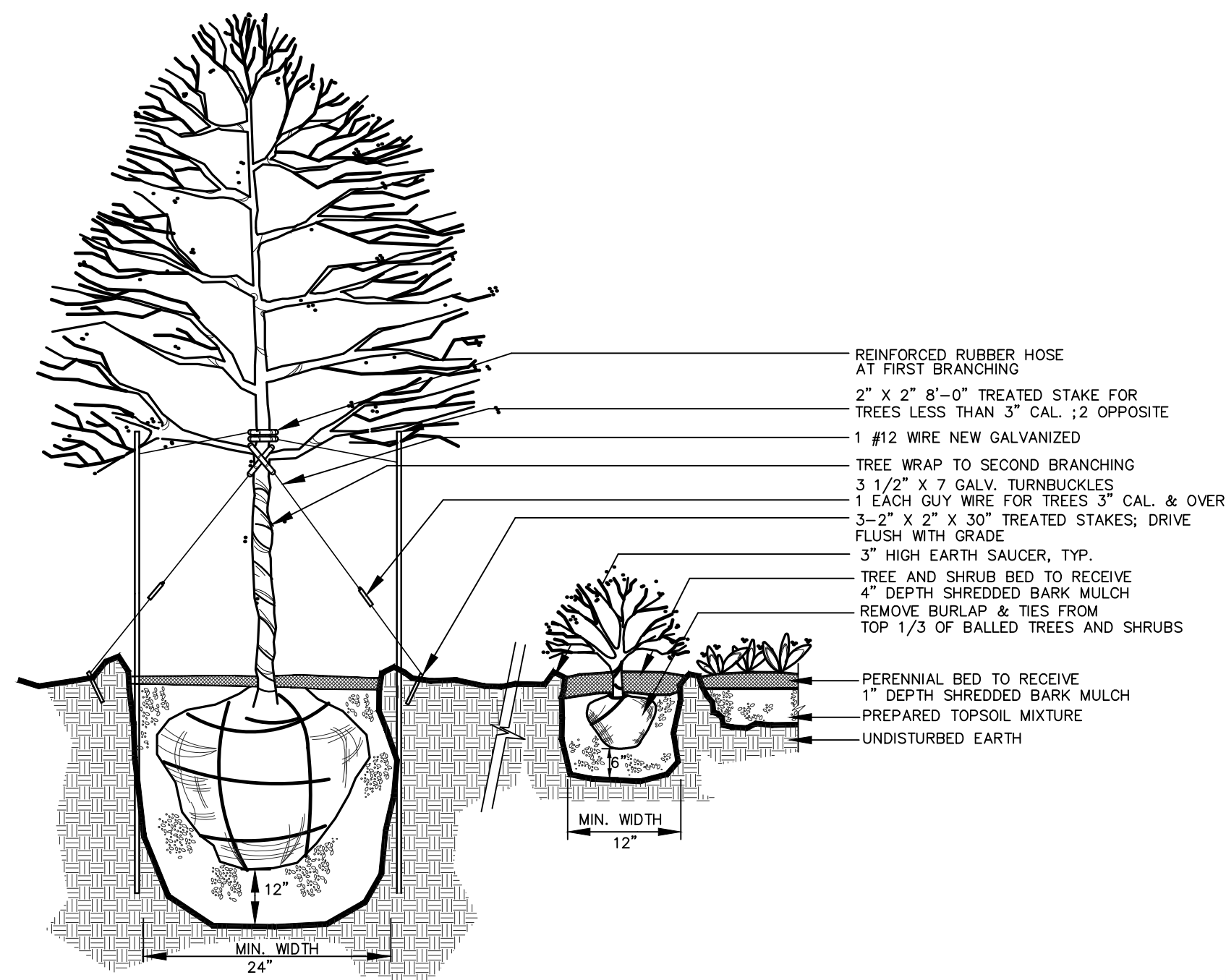
WESTOWN
CAR WASH

SOIL EROSION CONTROL PLAN,
NOTES AND DETAILS

CLIENT:
WAKELAND OIL COMPANY
P.O. BOX 346
OWOSSO, MI. 48867
(989) 723-5500

SCALE: 1"=30'
PROJECT No.: 9193633
DWG NAME: 3633-SE
ISSUED: DEC. 13, 2019

SE

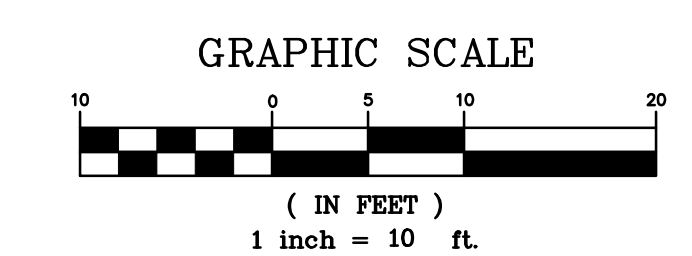
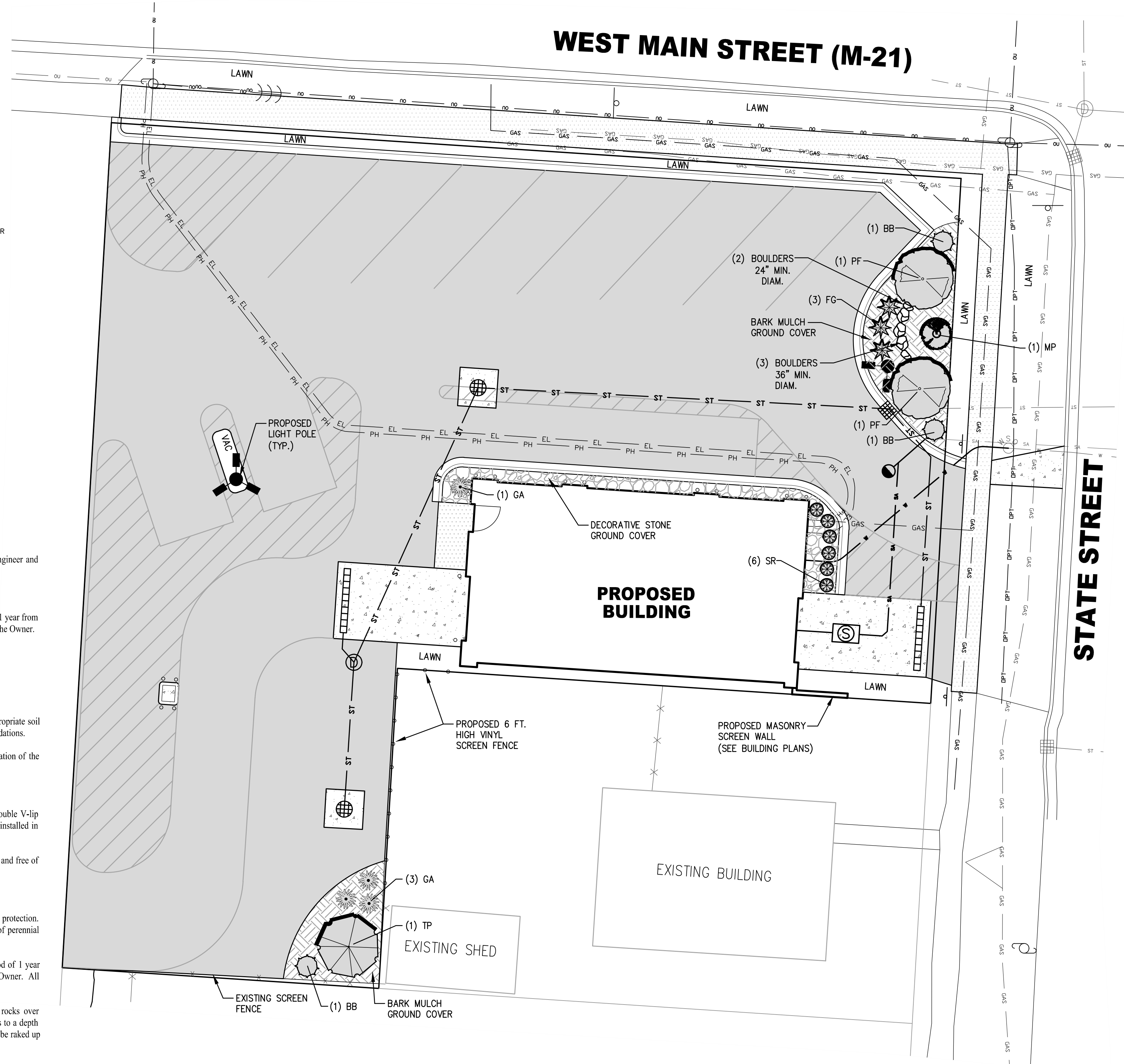


TYPICAL TREE/SHRUB/PERENNIAL PLANTING

NOT TO SCALE

LANDSCAPING NOTES:

- All minimum planting sizes specified on the Project Plans shall be at the time of planting.
- All landscape materials shall be as specified on the Project Plans or approved equal. Substitutions shall not be made without prior written approval from the Project Engineer and receipt of the Owner's Authorization.
- All plant material shall be free of disease and insects and shall conform to the American Standard of Nursery Stock of the American Association of Nurserymen.
- All landscape plantings shall be planted and maintained in a healthy condition and shall be guaranteed by the Landscape Contractor and/or Supplier for a minimum period of 1 year from the time of planting. Any plantings that die or become diseased during the guarantee period shall be removed and replaced by the Landscape Contractor and/or Supplier at no cost to the Owner.
- Excavations for container or balled plantings shall be no deeper than the root ball or container and shall be at least twice the diameter of the root ball or container.
- Excavations for bare root plantings shall be no deeper than the longest roots and shall be at least twice the diameter of the root spread.
- The sides of planting excavations in heavy and/or wet soils shall be scarified with a fork, pick or shovel to eliminate glazing.
- Landscape planting backfill shall consist of a prepared mixture of peat moss, composted manure and topsoil or suitable excavated native soil material mixed with the appropriate soil conditioners that are compatible with the native soil and plant species. The type and mixture ratio of soil conditioners shall be in accordance with the Landscape Supplier's recommendations.
- The Landscape Contractor shall stake and reinforce all trees to prevent wind damage. The Landscape Contractor shall remove all tree reinforcement and stakes upon expiration of the guarantee period.
- Perennials shall be planted on a 3" minimum bed of prepared peat moss, composted manure and topsoil mixture.
- Landscape beds shall be separated from lawn areas with landscape edging. Landscape edging shall be black heavy-duty polyethylene type with UV protection and a double V-lip bottom edge to prevent frost heave. Landscape edging shall be staked in accordance with the Manufacturer's recommendations to prevent frost heave. Landscape edging shall be installed in strict accordance with the Manufacturer's specifications and recommendations.
- Mulch ground cover, where specified on the project plans, shall be bark mulch, consisting of 50% shredded bark and 50% wood chips, 3/4 to 2 inch in size, uniformly mixed and free of elm wood. Bark mulch shall be placed uniformly throughout the landscape bed, 3" deep within tree and shrub beds and 1" deep within perennial beds.
- Decorative stone ground cover, where specified on the project plans, shall be 2" to 4" diameter washed river rock placed 4" deep.
- Ground cover within landscape beds shall be placed over a landscape fabric weed barrier. Landscape fabric shall be non-woven, 4 oz. per sq. yd. minimum weight, with UV protection. Landscape fabric shall be installed in strict accordance with the Manufacturer's specifications and recommendations. Landscape fabric shall not be installed over or within 12 inches of perennial plantings.
- Lawn areas shall be established with 3" minimum depth of prepared topsoil and hydroseed. The Landscape Contractor shall guarantee all lawn areas for a minimum period of 1 year from time of seeding. All lawn areas that do not take root or die during the guarantee period shall be re-hydroseeded as appropriate by the Landscape Contractor at no cost to the Owner. All lawn areas that become diseased during the guarantee period shall be removed and re-hydroseeded as appropriate by the Landscape Contractor at no cost to the Owner.
- Topsoil shall be a dark, organic, natural surface soil free of clay lumps, peat, muck, subsoil, noxious weeds and other foreign material such as roots, sticks and rocks over 1/2" diameter. Topsoil shall not be frozen or muddy. All earthen areas to receive topsoil shall be finish graded and properly trimmed. Topsoil shall be spread on the prepared areas to a depth of 3 inches. After spreading, any large clods and lumps of topsoil shall be broken up and pulverized. Stones and rocks over 1/2" in diameter, roots, litter and all foreign matter shall be raked up and disposed of by the Landscape Contractor. Seed and mulch shall be placed within 5 days of topsoil placement.
- Seed mixture for lawn areas shall consist of 10% Kentucky Blue Grass, 20% Perennial Rye Grass, 30% Hard Fescue and 40% Creeping Red Fescue. Hydroseed shall be placed within 5 days of topsoil placement and shall be placed to provide complete and uniform coverage. Fertilizer shall be placed at 80 pounds per acre, hydro mulch at 1,200 pounds per acre and water at 500 gallons per acre unless otherwise specified by the Seed Distributor/Manufacturer. All over spray areas shall be properly cleaned and restored at no expense to the contract.
- Seed and mulch may be substituted for hydroseed when authorized by the Owner. Seed mixtures shall meet the requirements for lawn areas as outlined above. Seed shall be uniformly applied at a rate of 220 lbs per acre unless otherwise recommended by the seed Distributor/Manufacturer. Seed mixture shall be fertilized. Fertilizer shall be uniformly applied at of 240 pounds per acre of chemical fertilizer nutrients in equal portions (10-10-10) of Nitrogen, Phosphoric Acid and Potash.
- All seeded areas with a slope less than 1:4 shall be stabilized with straw mulch placed at 2 tons per acre unless otherwise recommended by the seed Distributor/Manufacturer. Erosion control blankets shall be substituted for straw mulch in roadway greenbelts, lawn areas adjacent to heavy traffic, lawn areas subject to high winds, slopes of 1:4 or greater and within ditches, swales and other areas exposed to concentrated overland storm water flow. Erosion control blankets shall consist of 100% straw fiber matrix with photodegradable polypropylene netting and have a 12-month minimum longevity rating. Erosion control blankets shall be pinned with biodegradable pins and shall be installed in accordance with the Manufacturer's recommendations.
- Sod shall only be utilized where specified on the project plans. (Sod may be substituted for hydroseed when required by the Municipality or if necessary, for site stabilization late in the growing season. Sod shall not be substituted without receipt of the Owner's Authorization.) Sod shall be a drought tolerant species consisting primarily of Fine Leafed Fescues including Red Fescue, Cheatings Fescue and Hard Fescue with Kentucky Bluegrass filler for hardiness. Sod shall be placed on a prepared subgrade. Subgrade shall be finish graded and tilled to a depth of 4" to 6". All foreign material, roots, sticks, large soil clumps and rocks over 2" diameter shall be removed from the subgrade. Sod shall not be placed on frozen or saturated subgrade. Fertilizer, lime and/or compost shall be placed over the prepared subgrade in accordance with the Sod Supplier/Manufacturer's recommendations. Sod shall be placed in accordance with the Sod Supplier/Manufacturer's recommendations. Sod shall be installed with biodegradable stakes on slopes of 1:4 or greater and within ditches, swales and other areas exposed to concentrated overland storm water flow. All sod shall be planted and maintained in a healthy condition and shall be guaranteed by the Landscape Contractor and/or Supplier for a minimum period of 1 year from the time of planting. Any sod that dies or become diseased during the guarantee period shall be removed and replaced by the Landscape Contractor and/or Supplier at no cost to the Owner.
- The Landscape Contractor shall be responsible for watering non-irrigated plantings and sod during dry weather conditions throughout the guarantee period as necessary to promote growth and establishment.



LEGEND

- MISC. STRUCTURE (AS LABELED)
- BOLLARD
- SIGN
- LIGHT BASE
- STREET LIGHT
- OVERHEAD TRAFFIC SIGNAL
- UTILITY METERS & BOXES (ELECTRIC METER, GAS METER, WATER METER, PHONE BOX, CATV BOX, MAIL BOX)
- AIR CONDITIONER UNIT
- UTILITY MANHOLE (AS LABELED)
- UTILITY POLE W/GUY WIRE
- OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
- U/G UTILITY LINES (ELECTRIC/PHONE/CABLE)
- DECIDUOUS TREE W/IDENTIFIER
- CONIFEROUS TREE W/IDENTIFIER
- DECIDUOUS SHRUB
- EXISTING TREE DRIP LINE
- FENCE (CHAIN LINK UNLESS OTHERWISE STATED)
- GUARD RAIL
- EDGE OF GRAVEL
- CONCRETE CURB (UNLESS OTHERWISE STATED)
- SANITARY SEWER MANHOLE W/IDENTIFIER
- SANITARY SEWER PIPE
- CLEAN OUT
- STORM WATER MANHOLE W/IDENTIFIER
- CATCH BASIN W/IDENTIFIER
- FLARED END SECTION
- STORM WATER DRAINAGE PIPE
- HYDRANT
- WATER SHUT OFF
- WATER VALVE
- WATER VALVE BOX
- WATER MAIN
- GAS SHUT OFF
- U/G GAS
- EXISTING LIGHT POLE
- PROPOSED LIGHT POLE
- PROPOSED WATER MAIN
- PROPOSED STORM SEWER
- PROPOSED STORM STRUCTURES
- PROPOSED CURB AND GUTTER

BENCHMARK

BENCHMARK #1: OFFSITE
 REF: DATUM PER SITE PLAN BY ELDRIDGE ENGINEERING, PROJECT No. 89-371-4, DATED 02/09/89
 MDOT BM#7, CHISELED "X" ON SOUTHERLY FLANGE BOLT ON HYDRANT, LOCATED 45± FEET SOUTH OF CENTERLINE OF MAIN STREET AND 24± FEET EAST OF CENTERLINE OF STATE STREET.
 ELEVATION = 741.55

PROPOSED LANDSCAPE PLANTING LEGEND					
KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	MINIMUM SIZE	ROOT
ORNAMENTAL TREES					
PF	2	<i>Malus 'Prairifire'</i>	Prairifire Flowering Crabapple	1.5" Caliper	B & B
TP	1	<i>Prunus cerasifera 'Thundercloud'</i>	Thundercloud Flowering Plum	1.5" Caliper	B & B
EVERGREEN TREES					
MP	1	<i>Pinus mugo var. pumilio</i>	Dwarf Mugo Pine	24" Height	Container
EVERGREEN SHRUBS					
GA	4	<i>Thuja Occidentalis 'Golden Globe'</i>	Golden Globe Arborvitae	24" Height	Container
SR	6	<i>Juniperus scopulorum 'Skyrocket'</i>	Skyrocket Juniper	24" Height	Container
DECIDUOUS SHRUBS					
BB	3	<i>Evonymus alata 'Compacta'</i>	Dwarf Burning Bush	24" Height	Container
ORNAMENTAL GRASSES					
FG	3	<i>Pennisetum alopecuroides 'Hameln'</i>	Dwarf Fountain Grass	12" Height	Container

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DESIGN INC
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 CIVIL ENGINEERS
 LAND SURVEYORS
 2183 PLESS DRIVE
 BRIGHTON, MICHIGAN 48114

DESIGN: CAG	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.						
CHECK: CAG						

WESTOWN CAR WASH

LANDSCAPE PLAN

CLIENT: WAKELAND OIL COMPANY
 P.O. BOX 346
 OWOSSO, MI. 48867
 (989) 723-5500

SCALE: 1"=10'
 PROJECT No.: 9193633
 DWG NAME: 3633-LA
 ISSUED: DEC. 13, 2019

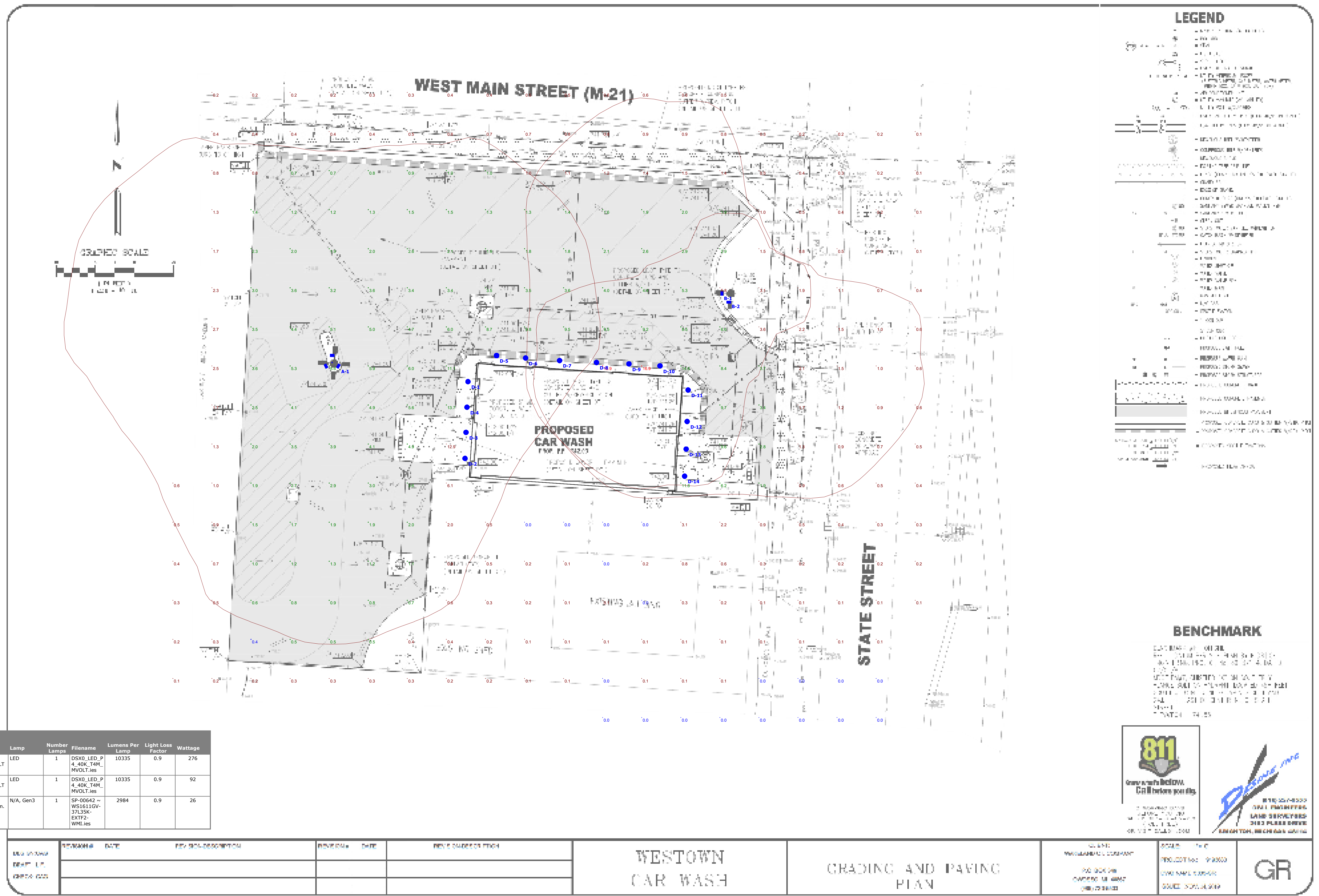
LA



RIM WAREHOUSE SHADE
CLASSIC INTERIOR CLASSICS

ITEM	QTY	DESCRIPTION	UNIT
1	1	Blue Warehouse Shade	Each
2	2	Yellow Warehouse Shade	Each
3	2	Black Warehouse Shade	Each
4	2	Red Warehouse Shade	Each

SPECTRUM LIGHTING INC.



Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
□	A	1	Lithonia Lighting	DSX0 LED P4 40K T4M MVOLT	DSX0 LED P4 40K T4M MVOLT	LED	1	DSX0_LED_P4_40K_T4M_MVOLT.lvs	10335	0.9	276
□	B	2	Lithonia Lighting	DSX0 LED P4 40K T4M MVOLT	DSX0 LED P4 40K T4M MVOLT	LED	1	DSX0_LED_P4_40K_T4M_MVOLT.lvs	10335	0.9	92
○	D	14	Spectrum Lighting		Warehouse Shade 16" Nom. Diam x 11" H	N/A, Gen3	1	SP-00642 ~ WS1611GV-37L35K-EXT2-WML.lvs	2984	0.9	26

REV	DATE	DESCRIPTION	BY	DATE	DESCRIPTION	PROJECT	SCALE	DATE	BY
1						WESTTOWN CAR WASH	GRADING AND PAVING PLAN		

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
OVERALL SITE PLAN	+	1.9 fc	16.9 fc	0.0 fc	N/A	N/A
PARKING AREA	X	3.9 fc	16.9 fc	0.4 fc	42.3:1	9.8:1

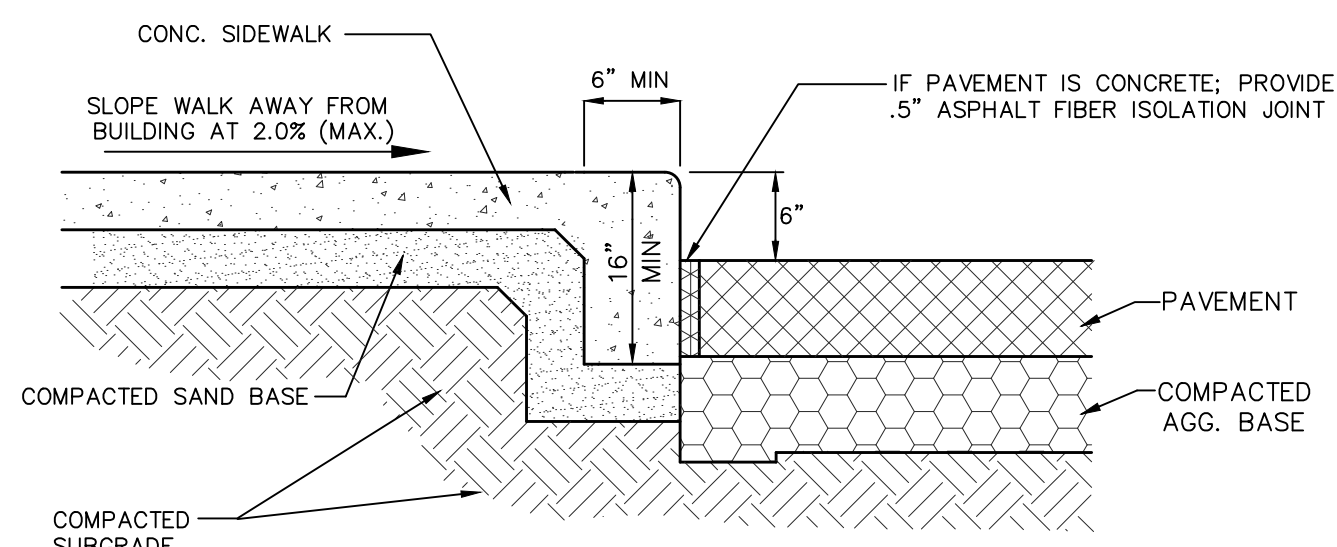
Note
THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS. MOUNTING HEIGHTS INDICATED ARE FROM GRADE AND/OR FLOOR UP.

THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.

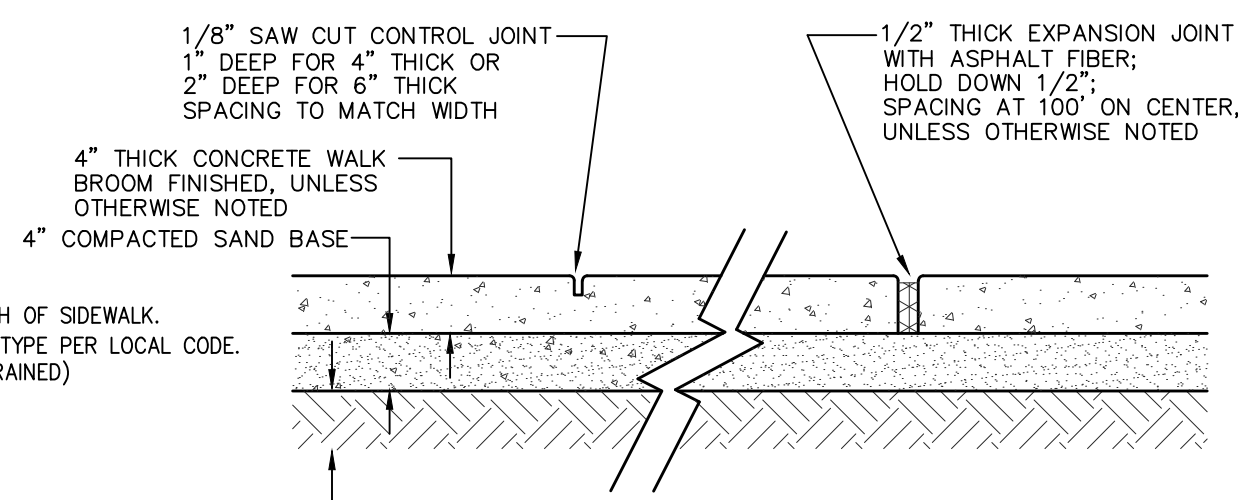
Plan View
Scale - 1" = 12ft

LT

Designer
Date
11/26/2019
Scale
Not to Scale
Drawing No.
Summary

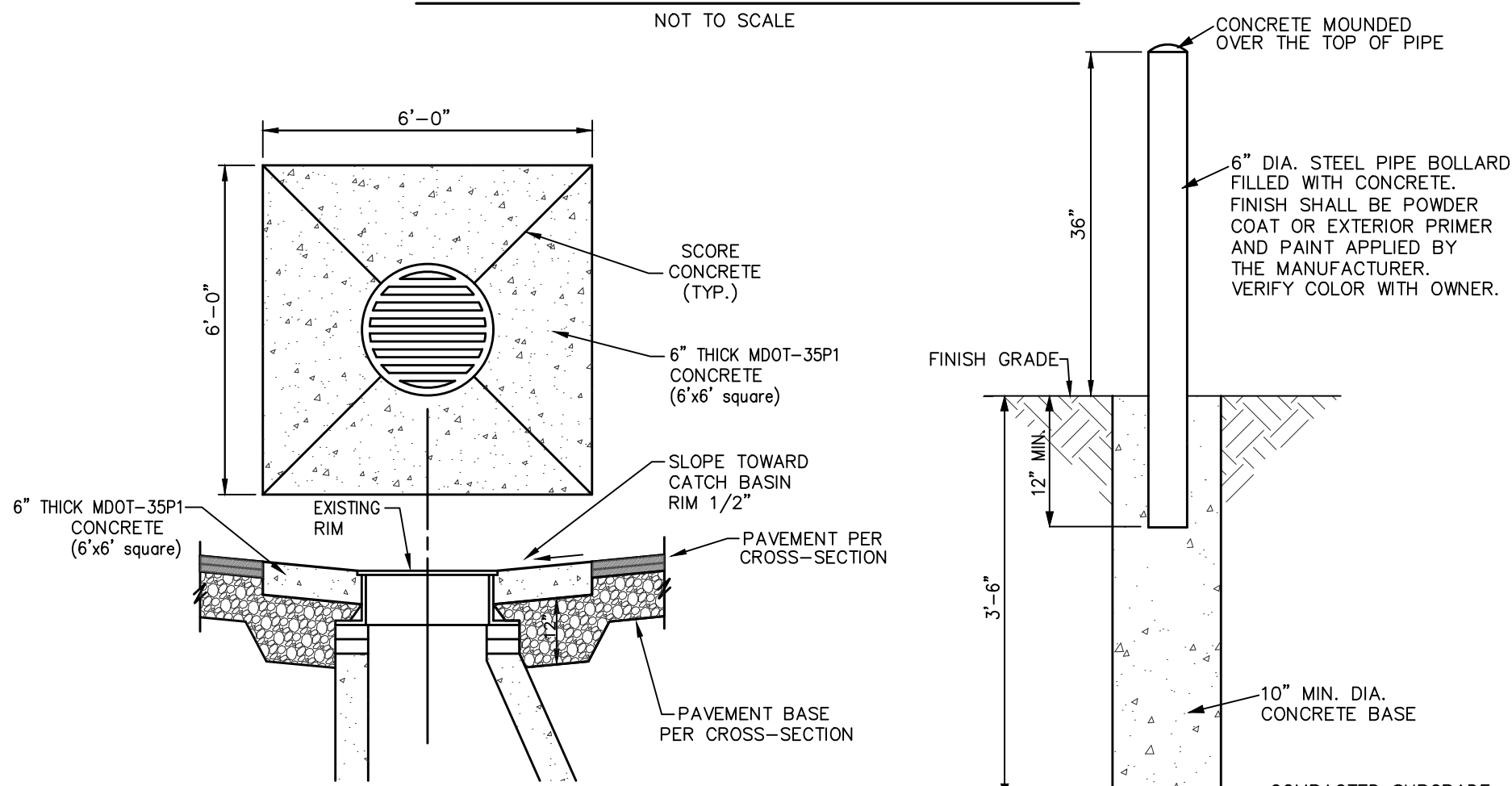


SIDEWALK WITH INTEGRAL CURB & ISOLATION JOINT DETAIL
NOT TO SCALE



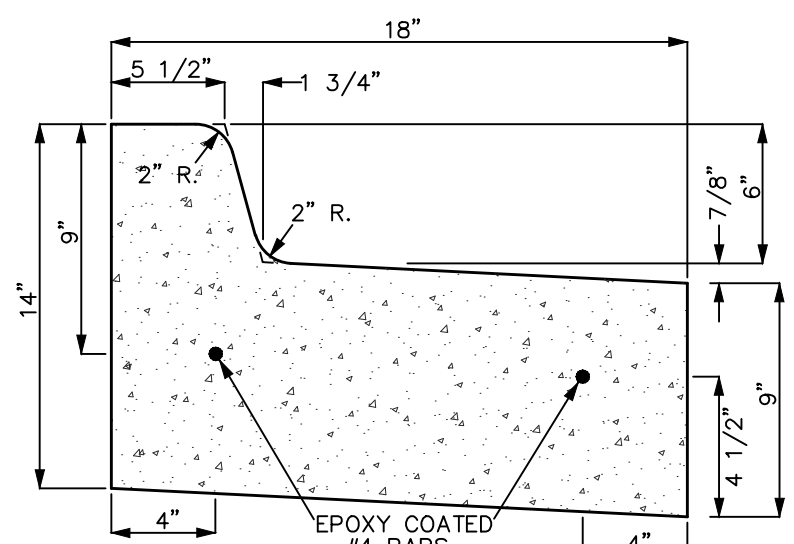
SIDEWALK CROSS SECTION
NOT TO SCALE

NOTES:
1. SEE PLAN FOR WIDTH OF SIDEWALK.
2. PROVIDE CONCRETE TYPE PER LOCAL CODE. (3500 PSI AIR ENTRAINMENT)

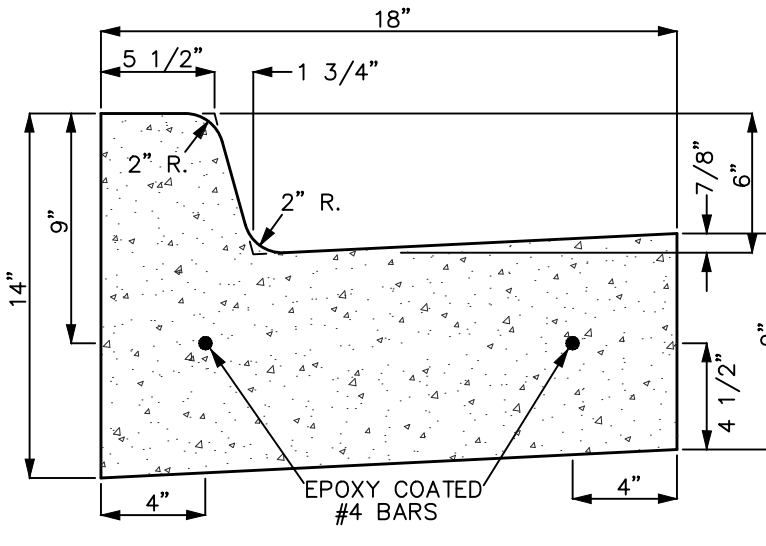


CATCH BASIN COLLAR
NOT TO SCALE

BOLLARD POST DETAIL
NOT TO SCALE



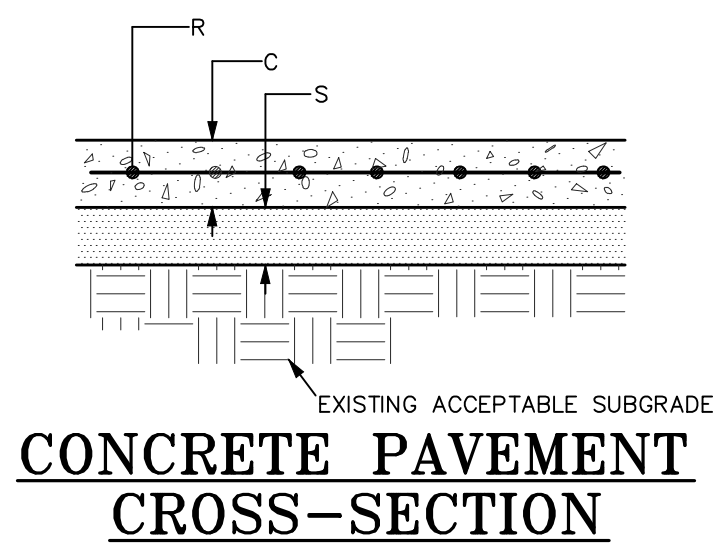
MDOT TYPE F2 CURB REVERSE PITCH
NOT TO SCALE



MDOT TYPE F2 CURB
NOT TO SCALE

CONCRETE CURB NOTES:

- Refer to the project plans for the proposed locations of the specific curb types.
- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the General Notes and Curb Cross Section Details on the project plans for additional requirements.
- Extend the base and/or subbase material of the appropriate adjacent pavement cross-section horizontally to 1 foot behind the back of curb. Concrete curb shall be constructed on no less than 6" of combined depth of compacted base/subbase material.
- Concrete material shall be MDOT P1 (I-A) 6.0 sack concrete pavement mixture with a minimum 28 day design compressive strength of 4,000 PSI and 6.5% (+/-1.5%) entrained air. Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Local Municipality and Engineer for review and approval prior to use.
- Install transverse contraction control joints in concrete curb with 1" minimum depth at 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in concrete curb as follows: 400' maximum on center, at spring points of intersecting streets and within 10' on each side of catch basins. Transverse expansion control joints shall be 1" thick asphalt fiber joint filler matching entire curb cross section.
- Provide 1" asphalt fiber control joint between back of curb and all other concrete structures, such as concrete sidewalks and concrete driveways.
- Curb Contractor shall provide final adjustment of catch basin castings in curb line. Castings shall be tucked pointed to structure water tight with concrete or mortar inside and outside of casting.
- Install curb cuts for all existing and proposed sidewalks and pedestrian ramps in accordance with the American Disabilities Act and the Barrier Free Design requirements of the appropriate Local, County and/or State Agency. Refer to MDOT Standard Plan R-28, latest revision. Install curb cuts for all existing and proposed vehicular ramps and drives as noted on the project plans.

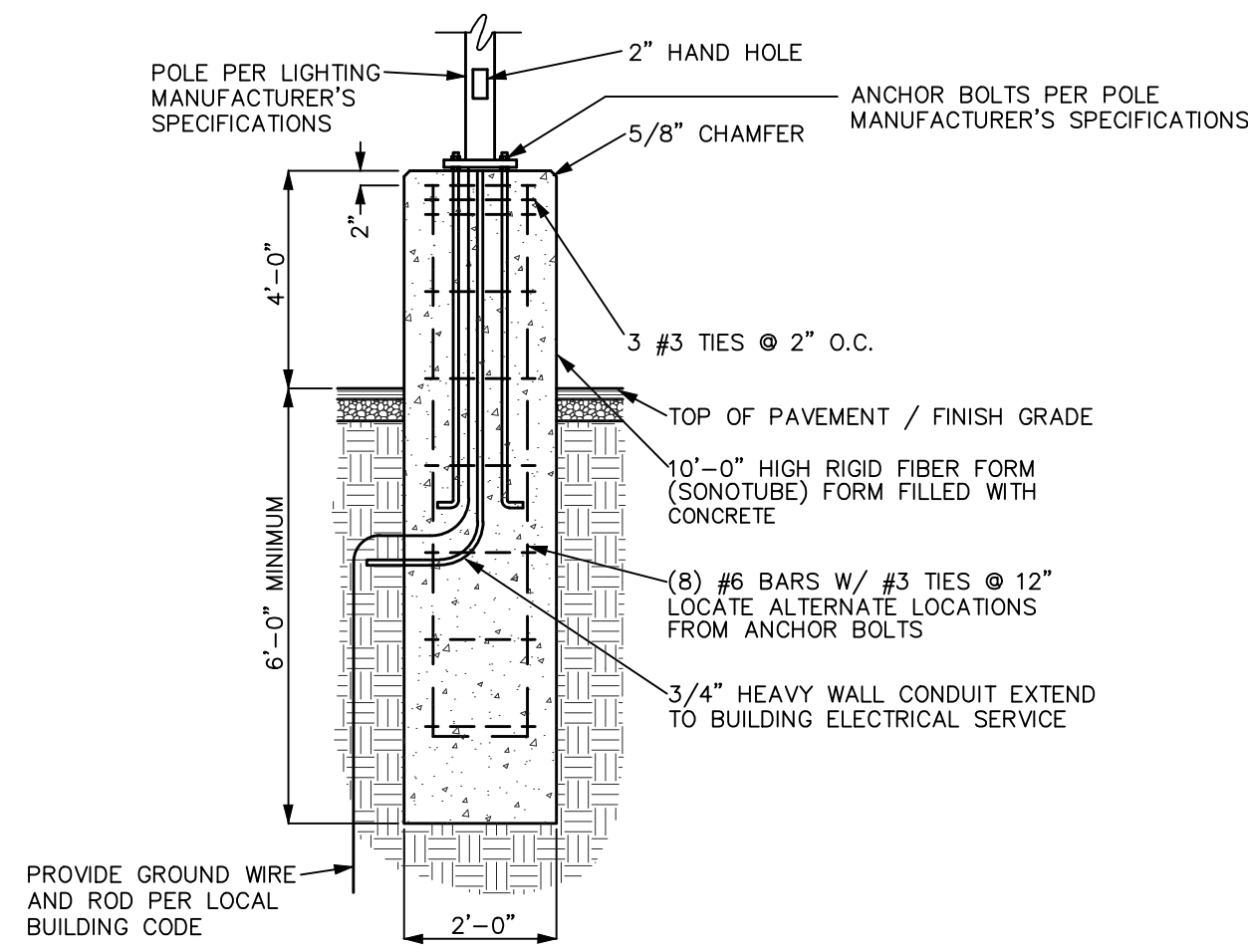


CONCRETE PAVEMENT CROSS-SECTION
NOT TO SCALE

KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM THICKNESS
R	REINFORCEMENT	WWF 8 x 8	N/A
C	CONCRETE	MDOT P1-1A-6 SACK	6"
S	GRANULAR SUBBASE	MDOT CLASS II	12"

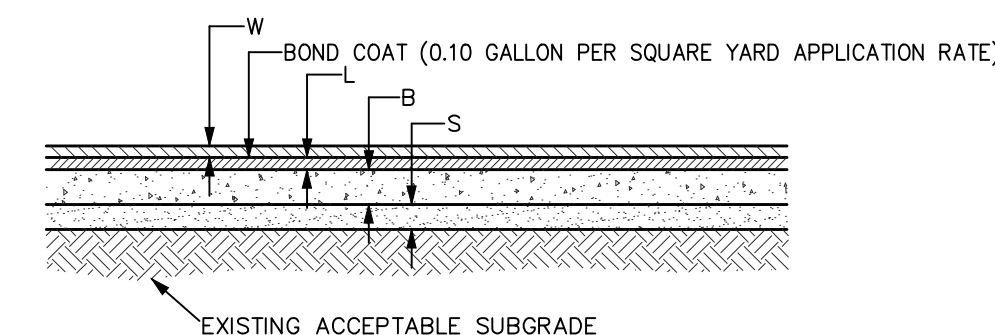
CONCRETE PAVEMENT CROSS SECTION NOTES:

- The construction specifications of the Local Municipality are a part of this work. Refer to the General Notes and the Concrete Pavement Cross Section Detail on the Project Plans for additional requirements.
- The concrete pavement cross section specifications are based on typical weather conditions during the June through September Construction Season. If the concrete pavement areas are to be constructed during any other time of the year and/or if weather conditions are unseasonably wet, then modifications to the concrete pavement cross section specifications may be necessary. If either of these conditions exists, then contact the Material Testing Engineer and/or the Project Engineer for additional requirements.
- The existing subgrade soils shall be prepared prior to placement of the subbase material. Unsuitable soils found within the 1 on 1 influence zone of the proposed pavement areas, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced with structural fill. Structural fill shall be MDOT Class II granular material placed in accordance with the General Notes on the Project Plans.
- The concrete pavement subgrade shall be prepared and proof rolled. The Material Testing Engineer and/or the Project Engineer shall observe the subgrade proof roll. Areas of subgrade that do not pass a proof roll inspection shall be underlain in accordance with the Subgrade Undercut Notes and Details on the Project Plans. Alternative means of subgrade stabilization may be considered when recommended by the Material Testing Engineer. Alternative methods shall not be performed without receipt of the Owner's Authorization.
- The concrete pavement compacted subbase material shall be MDOT Class II granular material. No subbase material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The subbase shall be compacted to a minimum of 95% of the maximum unit weight, Modified Proctor.
- Concrete material shall be MDOT P1 (I-A) 6.0 sack concrete pavement mixture with a minimum 28-day design compressive strength of 4,000 PSI and 6.5% (+/-1.5%) entrained air. The Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Material Testing Engineer for review and approval prior to use.
- Install transverse and longitudinal contraction joints in accordance with the Local Municipality. If not specified by the Local Municipality, then install contraction joints with 1" minimum depth and 10' maximum on center spacing. Tool joints in fresh concrete or saw cut within 4 hours after placement with soft cut saws.
- Provide 1" asphalt fiber control joint between concrete pavement and all other concrete structures such as concrete building foundations, concrete curb and concrete sidewalks.
- The Concrete Pavement shall not be exposed to vehicular traffic until the concrete has reached at least 75% of the design flexural strength.



LIGHT POLE BASE STANDARD DETAIL
NOT TO SCALE

- NOTES
- FOUNDATION SHOWN IS A TYPICAL DESIGN. WIND LOADS MORE THAN 100 MPH AND UNSTABLE SOIL CONDITIONS MAY REQUIRE AN ALTERNATE DESIGN. VERIFY CONDITION OF SOILS WITH SOILS REPORT.
 - FOUNDATIONS SHALL EXTEND BELOW FROST DEPTH PER LOCAL CODES.
 - CONCRETE SHALL HAVE MIN 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.

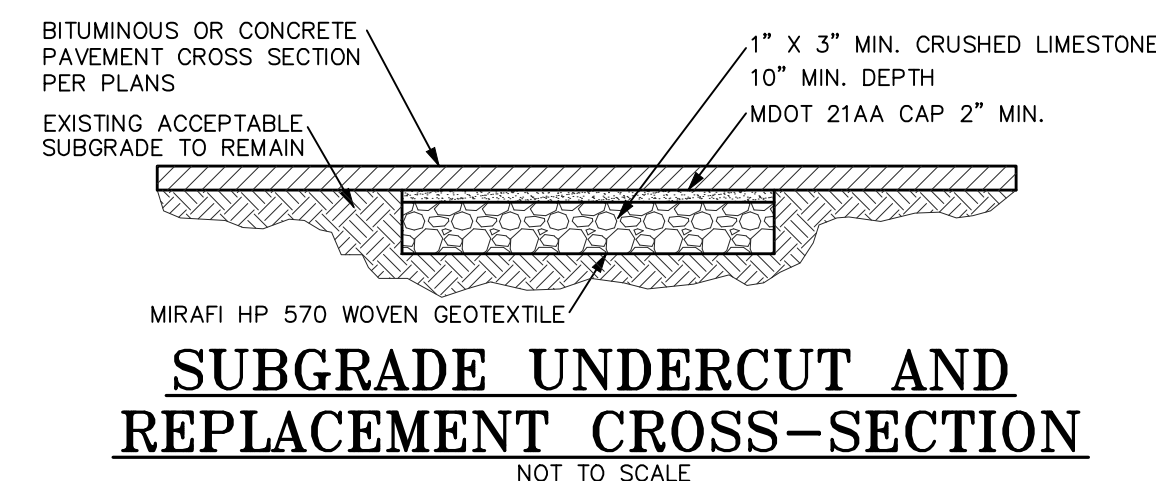


BITUMINOUS PAVEMENT CROSS SECTION
NOT TO SCALE

KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
W	WEARING COURSE	MDOT 36A	1.5"
L	LEVELING COURSE	MDOT 13A	2"
B	AGGREGATE BASE	MDOT 21AA LESTONE	8"
S	GRANULAR SUBBASE	MDOT CLASS II	6"

BITUMINOUS PAVEMENT CROSS SECTION NOTES:

- The construction specifications of the Local Municipality are a part of this work. Refer to the General Notes and the Bituminous Pavement Cross Section Detail on the Project Plans for additional requirements.
- The bituminous pavement cross section specifications are based on typical weather conditions during the June through September Construction Season. If the bituminous parking area and/or bituminous driveways are to be constructed during any other time of the year and/or if weather conditions are unseasonably wet, then modifications to the bituminous pavement cross section specifications may be necessary. If either of these conditions exists, then contact the Material Testing Engineer and/or the Project Engineer for additional requirements.
- The existing subgrade soils shall be prepared prior to placement of the subbase material. Unsuitable soils found within the 1 on 1 influence zone of the proposed pavement areas, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced with structural fill. Structural fill shall be MDOT Class II granular material placed in accordance with the General Notes on the Project Plans.
- The bituminous pavement subgrade shall be prepared and proof rolled. The Material Testing Engineer and/or the Project Engineer shall observe the subgrade proof roll. Areas of subgrade that do not pass a proof roll inspection shall be underlain in accordance with the Subgrade Undercut Notes and Details on the Project Plans. Alternative means of subgrade stabilization may be considered when recommended by the Material Testing Engineer. Alternative methods shall not be performed without receipt of the Owner's Authorization.
- The bituminous pavement granular subbase material shall be MDOT Class II sand. No granular subbase material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The granular subbase shall be compacted to a minimum of 95% of the maximum unit weight, Modified Proctor.
- The bituminous pavement aggregate base material shall be MDOT 21AA crushed angular limestone or crushed angular natural stone aggregate material. Crushed concrete shall NOT be utilized for the aggregate base. No aggregate base material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The aggregate base shall be compacted to a minimum of 95% of the maximum unit weight, Modified Proctor.
- The bituminous pavement leveling course material shall be MDOT 13A bituminous material placed in 1 lift. The bituminous pavement wearing course material shall be MDOT 36A bituminous material placed in 1 lift. The bituminous pavement leveling and wearing courses shall NOT be combined into a single course. No bituminous material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. Compaction of the leveling course shall be achieved prior to placement of the wearing course. Any sediment, soil, debris and other foreign materials that accumulate on the leveling course shall be removed prior to placement of the wearing course. The bond coat shall be sprayed on the leveling course within 24 hours of placement of the wearing course. The bituminous pavement material shall be compacted to a minimum of 95% of the 50-blow Marshall Density.
- Placement of the bituminous pavement leveling course and bituminous pavement wearing course shall be performed in two separate mobilizations. Placement of the bituminous pavement leveling course shall be postponed as directed by the General Contractor and/or the Owner until the majority of the construction activities are complete. Repair of the bituminous leveling course may be necessary due to construction traffic and/or any delay in placement of the bituminous wearing course. The bituminous leveling course shall be repaired as directed by Material Testing Engineer and/or Owner prior to placement of the bituminous wearing course.
- Bituminous mix designs shall be developed in accordance with the MDOT HMA Production Manual. The Contractor shall submit the bituminous pavement mix designs to the Material Testing Engineer for review and approval a minimum of 3 business days prior to use. Bituminous pavement mix design shall not commence without receipt of the Material Testing Engineer's approval of the bituminous mix designs. The bituminous pavement mix design shall be a virgin mix. RAP mixtures shall not be utilized without prior written approval of the Material Testing Engineer and receipt of the Owner's authorization. RAP mixtures, if authorized, shall be designed and produced in accordance with MDOT Tier I or Tier II RAP Mixture Specifications. In no instance shall MDOT Tier III or non-MDOT RAP mixtures be permitted or utilized.

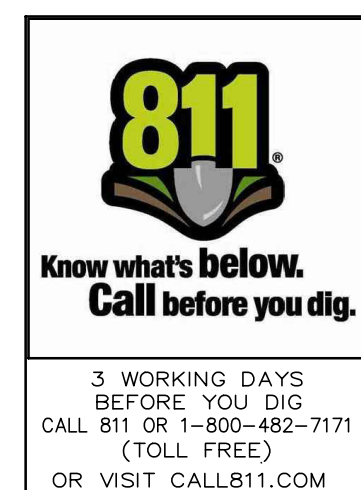


PAVEMENT SUBGRADE UNDERCUT NOTES:

- Areas of pavement subgrade that do not pass a proof roll inspection shall be undercut when directed by the Material Testing Engineer and/or Project Engineer. All undercut work shall be witnessed and field measured by the Material Testing Engineer and/or Project Engineer. Copies of the field notes depicting the field measurements of the undercut areas shall be provided to the General Contractor and/or Earthwork Subcontractor.
- Undercut areas shall be excavated to a depth of 12" below the proposed subgrade elevation using an Excavator or Backhoe with a Smooth Edged Ditching Bucket so as not to scarify the underlying soils. Undercut areas shall remain free of all construction traffic and equipment to avoid rutting and/or tracking of the underlying soils.
- Mirafi HP 570 Woven Geotextile Fabric (or approved equal) shall be placed over all undercut areas per the Manufacturer's specifications. Overlap all seams a minimum of 12" unless specified otherwise by the Manufacturer.
- Backfill the undercut areas with 1" x 3" minimum size crushed angular limestone and cap with 21AA crushed angular limestone up to the proposed subgrade elevation. Crushed concrete material shall NOT be substituted for crushed limestone material. The backfill material shall be spread with a Wide Track Dozer to minimize loading on the underlying soils. Static roll the backfill material with a large smooth drum roller.
- Construct the appropriate Bituminous or Concrete Pavement Cross Section over the undercut areas per the Project Plans.
- The General Contractor and/or Earthwork Subcontractor shall provide Owner with unit pricing to perform subgrade undercut work per square yard (SY) of undercut area. Undercut Unit Pricing SHALL include excavation, loading, hauling and offsite disposal of excess spoils, placement of geotextile fabric and backfill including all labor, equipment and materials necessary to complete pavement subgrade undercut work as specified on the Project Plans.

GENERAL NOTES:

- Contractor shall perform the work in accordance with the requirements of the appropriate Local, County and State Agencies and all other Government and Regulatory Agencies with jurisdiction over the project. Contractor shall notify the appropriate Agencies in advance of each stage of work in accordance with each Agency's requirements.
- Contractor shall comply with all permit, insurance, licensing and inspection requirements associated with the work. Prior to construction, Contractor and Owner/Developer shall determine who is responsible for obtaining each required permit. Contractor shall verify that the each required permit has been obtained prior to commencement of the stage of work associated with the required permit(s).
- Contractor shall furnish liability insurance and property damage insurance to save harmless the Owner, Developer, Architect, Engineer, Surveyor and Government Agencies for any accident occurring during the construction period. Refer to the appropriate Local, County and State Agencies for additional requirements. Copies of insurance certifications shall be made available to the Owner/Developer.
- Contractor shall conduct and perform work in a safe and competent manner. Contractor shall perform all necessary measures to provide for traffic and pedestrian safety from the start of work and through substantial completion. Contractor shall determine procedures and provide safety equipment such as traffic controls, warning devices, temporary pavement markings and signs as needed. Contractor shall comply with the safety standards of the State Department of Labor, the occupational health standards of the State Department of Health and safety regulations of the appropriate Local, County, State and Federal Agencies. Refer to the safety specifications of the appropriate Regulatory Agencies. The Contractor shall designate a qualified employee with complete job site authority over the work and safety precautions; said designated employee shall be on site at all times during the work.
- Contractor shall coordinate scheduling of all work in the proper sequence, including work by Subcontractors. Additional costs due to improper planning by Contractor or work done out of sequence as determined by standard acceptable construction practices, shall be Contractor's responsibility.
- Contractor shall contact the 811 Underground Public Utility Locating System or other appropriate local underground utility locating Agency, a minimum of three (3) working days prior to construction. Existing utility information on the project plans may be from information disclosed to this firm by the Utility Companies, Local, County or State Agencies, and/or various other sources. No guarantee is given as to the completeness or accuracy thereof. Prior to construction, locations and depths of all existing utilities (in possible conflict with the proposed improvements) shall be verified in the field.
- Contractor shall coordinate scheduling a Pre-Construction Meeting with Engineer prior to commencement of work.
- The Local Municipality, County and/or State in which the project is located may require an Engineer's Certification of construction of the proposed site improvements. Contractor shall verify the certification requirements with Engineer prior to commencement of work. Contractor shall coordinate construction staking, testing, documentation submittal and observation with the appropriate Agency, Surveyor and/or Engineer as required for Engineer's Certification and Government Agency Acceptance. All materials used and work done shall meet or exceed the requirements of certification and acceptance, the contract documents and the material specifications noted on the project plans. Any materials used or work done that does not meet said requirements, contract documents and/or specifications shall be replaced and/or redone at Contractor's expense. The Owner/Developer may wait for test results, certifications and/or Agency reviews prior to accepting work.
- Engineer may provide subsurface soil evaluation results, if available, to Contractor upon request. Subsurface soil evaluation results, soils maps and/or any other documentation does NOT guarantee existing soil conditions or that sufficient, acceptable on-site granular material is available for use as structural fill, pipe bedding, pipe backfill, road subbase or use as any other granular material specified on the project plans. On-site granular material that meets or exceeds the material specifications noted on the project plans may be used as structural fill, pipe bedding, pipe backfill and/or road subbase material. On-site granular material shall be stockpiled and tested as acceptable to the appropriate Agency and/or Engineer prior to use.
- During the performance of their work, Contractor shall be solely responsible for determining soil conditions and appropriate construction methods based on the actual field conditions. Contractor shall furnish, install and maintain sheeting, bracing and/or other tools and equipment and/or construction techniques as needed for the safety and protection of the workers, pedestrians and vehicular traffic and for protection of adjacent structures and site improvements.
- Contractor shall install temporary and permanent soil erosion and sedimentation control devices at the appropriate stages of construction in accordance with the appropriate regulatory Agencies. Refer to Soil Erosion and Sedimentation Control Plans and Notes on the project plans.
- Structural fill shall be placed as specified on the project plans and within the 1 on 1 influence zone of all structures, paved areas and other areas subject to vehicular traffic. Structural fill shall be placed using the controlled density method (12" maximum lifts, compacted to 95% maximum unit weight, modified proctor). Fill material shall meet or exceed the specifications noted on the project plans or as directed by Engineer when not specified on the project plans.
- All existing monuments, property corners, ground control and benchmarks shall be protected and preserved; and if disturbed by Contractor, shall be restored at Contractor's expense. Contractor shall notify Surveyor of any conflicts between existing monuments, property corners, ground control and/or benchmarks and the proposed site improvements.
- Contractor shall notify Owner/Developer and Engineer immediately upon encountering any field conditions, which are inconsistent with the project plans and/or specifications.
- When noted on the project plans for demolition and/or removal, Contractor shall remove existing structures, building and debris and recycle and/or dispose of in accordance with Local, County, State and Federal regulations.
- Contractor shall remove excess construction materials and debris from site and perform restoration in accordance with the project plans and specifications. Disposing of excess materials and debris shall be performed in accordance with Local, County, State and Federal regulations.
- Construction access to the site shall be located as acceptable to the Owner/Developer and to the appropriate Local, County and/or State Agency with jurisdiction over the road(s) providing access to the site. Construction access shall be maintained and cleaned in accordance with the appropriate Local, County and/or State Agencies and as directed by Owner/Developer and/or Engineer.
- Contractor shall take necessary precautions to protect all site improvements from heavy equipment and construction procedures. Damage resulting from Contractor actions shall be repaired at Contractor's expense.



DESIGN: CAG	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.						
CHECK: CAG						

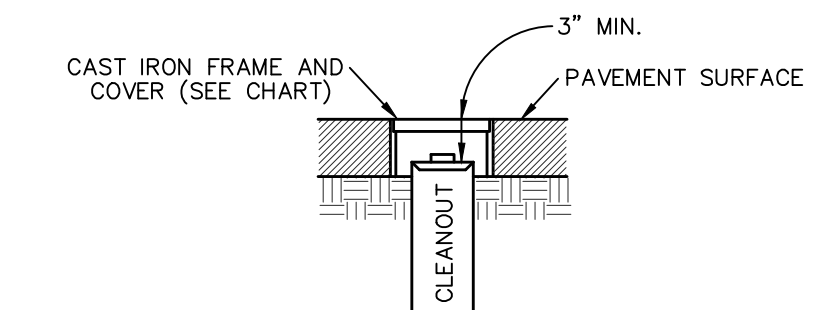
WESTOWN CAR WASH

SITE PAVEMENT NOTES AND DETAILS

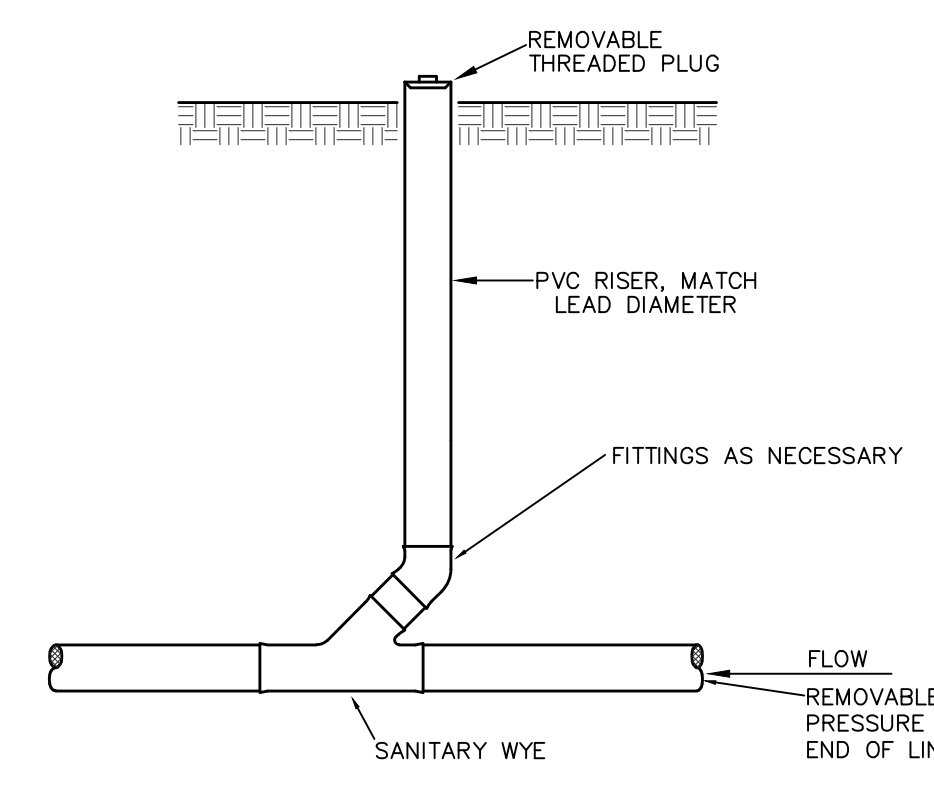
CLIENT: WAKELAND OIL COMPANY	SCALE: N/A
P.O. BOX 346 OWOSSO, MI. 48867 (989) 723-5500	PROJECT No.: 9193633
	DWG NAME: 3633-DT
	ISSUED: DEC. 13, 2019

DT1

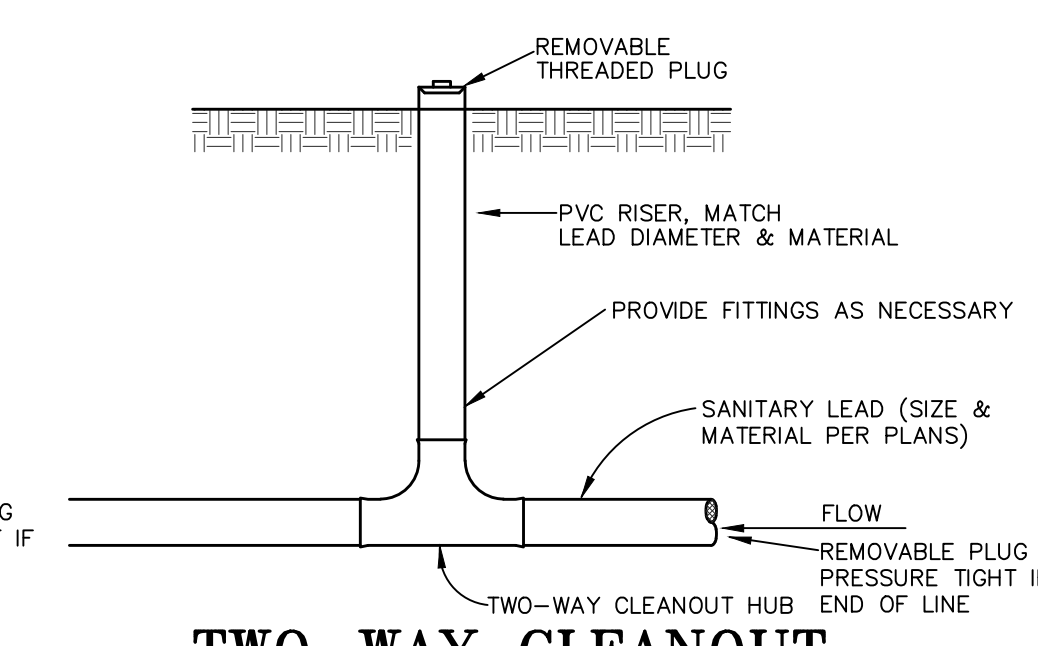
CLEANOUT DIA.	FRAME AND COVER
4"-8"	EJW 1578
10"-18"	EJW 1040Z-A-SANITARY



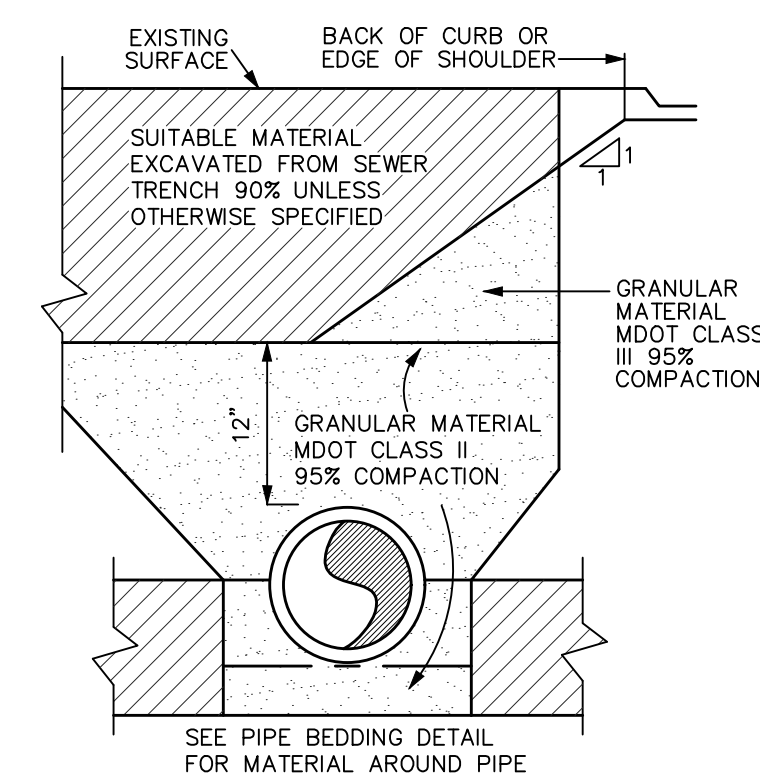
CLEANOUT IN PAVED AREA
NOT TO SCALE



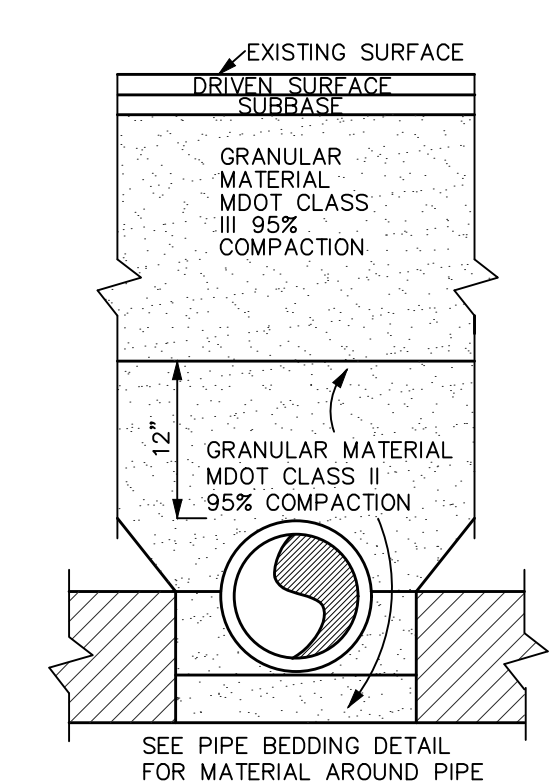
STANDARD CLEANOUT FOR SANITARY LEAD
NOT TO SCALE



TWO-WAY CLEANOUT FOR SANITARY LEAD
NOT TO SCALE

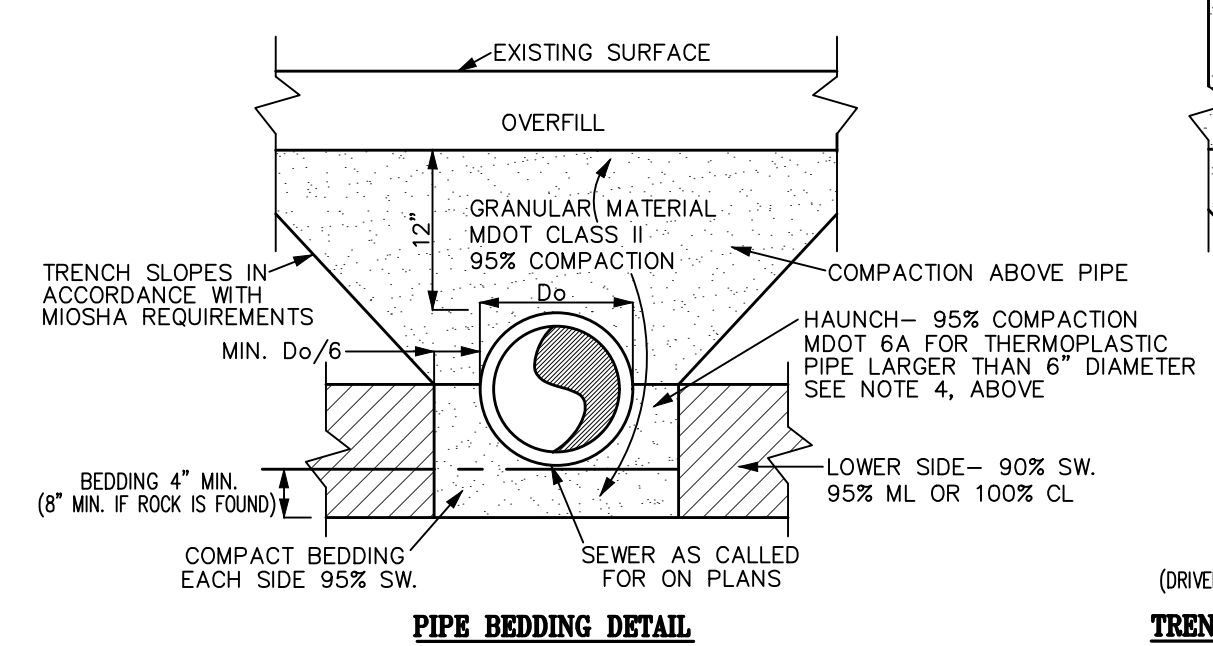


TRENCH A - PIPE UNDER OR WITHIN INFLUENCE OF DRIVEN SURFACE
NOT TO SCALE



TRENCH B - PIPE NOT UNDER DRIVEN SURFACES
NOT TO SCALE

- NOTES:**
- COMPACTION PRESENTED AS STANDARD PROCTOR VALUES.
 - SOIL TYPES** AASHTO DESIG.
GRAVEL SANDY (SW) A1, A3
SANDY SILTY (ML) A2, A4
SILTY CLAY (CL) A5, A6, A7
 - SOIL IN HAUNCH AND LOWER SIDE ZONES OUTSIDE OF D_o/6 FROM SPRING LINE SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS THE SOIL IN THE OVERFILL ZONE.
 - MATERIALS AROUND THERMO. PLASTIC PIPE WITH DIAMETER 6 INCHES SHALL PASS 0.5 INCH SIEVE. MATERIALS AROUND OTHER PIPES SHALL PASS 1.5 INCH SIEVE.



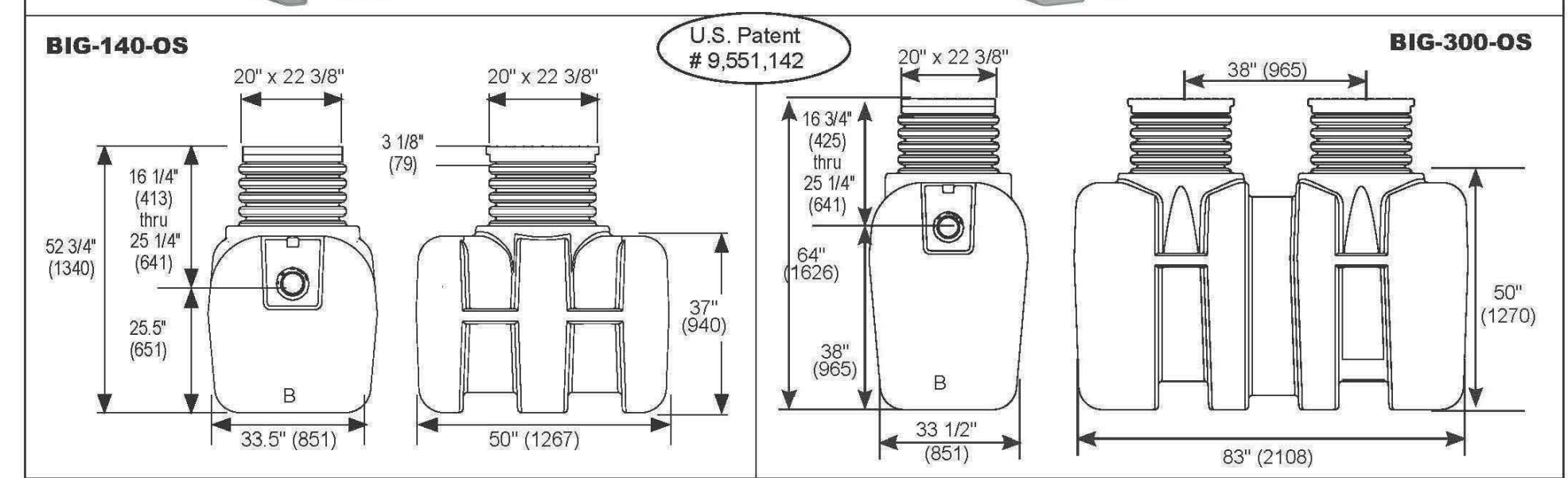
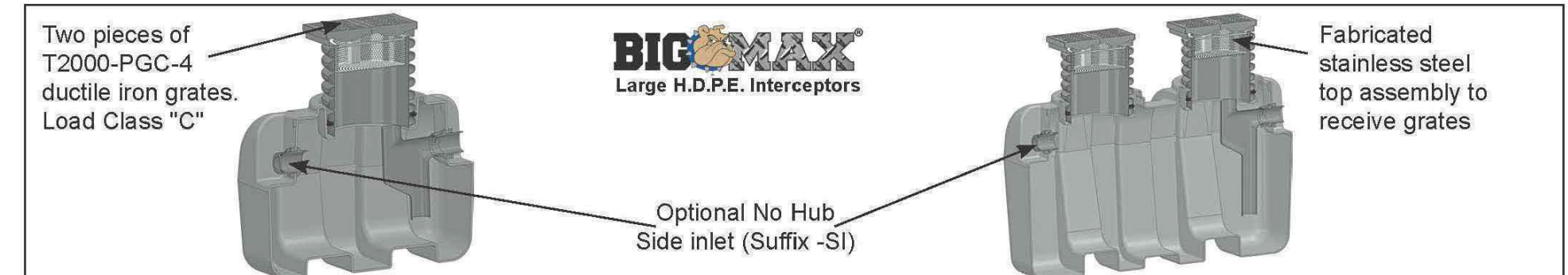
PIPE BEDDING DETAIL
NOT TO SCALE

TRENCH DETAILS
NOT TO SCALE

Location: _____
MIFAB® BIG-OS Big Max® - 75 and 100 GPM HDPE Oil / Sediment Interceptors

Specification: MIFAB® Series BIG-____-OS (indicate model) HDPE rotational molded oil / sediment interceptor with liquid holding capacity of _____ (indicate). Unit shall include: 3/8" uniform wall thickness, deep seal trap covered by Load Class "C" ductile iron top inlet grates, sediment bucket (1/4" diameter holes) within adjustable top assembly system, internal air relief by-pass and sample port access. For indoor/outdoor use.

Function: Oil / sediment interceptors are required anywhere oil and sediment may be introduced to the public sewer system in applications such as: repair garages, oil change stations, car wash facilities, parking garages and facilities where oil and flammable liquid waste are produced as a result of manufacturing, storage, maintenance, repair or testing processes. Sediment and debris are collected inside of the internal sediment bucket. Regular maintenance is required to keep the interceptor functioning. Interceptor to be installed flush with the floor. Standard BIG-OS models are made with "special duty" load rated (over 10,000 lbs.) ductile iron top inlet grates. The optional -SI models are made with an 4" no hub inlet opposite the outlet.



Model No.	SLUDGE CAPACITY (LBS.)	Liquid Holding Capacity (Gallons)	B Width	Shipping Weight (Lbs.)
BIG-140-OS	750 Lbs. (105 Gallons)	140	33.50"	250
BIG-300-OS	1,150 Lbs. (160 Gallons)	300	33.50"	375

Suffix	Description	Model No.
-S	Stainless steel veneer bolted to top of ductile iron grates	
-AK	Anchor kit (set of four) - for BIG-140-OS	BIG-750-AK-SET
-AK	Anchor kit (set of four) - for BIG-300-OS	BIG-1150-AK-SET
-C	Lid extension (specify "C" dimension req.) - for BIG-140-OS (This is up to a 44" high extension system)	BIG-EXT-44
-C	Lid extension (specify "C" dimension req.) - for BIG-300-OS (This is up to a 44" high extension system)	BIG-EXT-44 (2 pos req.)
-C+	Lid extension from 44" to 72" (specify "C" dimension req.) For BIG-140-OS, Per inch price.	BIG-EXT-72
-C+	Lid extension from 44" to 72" (specify "C" dimension req.) For BIG-300-OS, Per inch price.	BIG-EXT-72 (2 pos req.)
-FB	0" no hub outlet	BIG-PF8
-FL-C	Membrane clamp kit	BIG-FLC
-HLA	High level alarm and float switch (to be installed on site)	BIG-HLA
-LHSI	4" no hub inlet on left hand side	BIG-PF4
-LHSO	4" no hub outlet on left hand side	BIG-PF4
-RHSI	4" no hub inlet on right hand side	BIG-PF4
-RHSO	4" no hub outlet on right hand side	BIG-PF4
-RPO	4" Remote pump outlet connections on top of interceptor - specify location and number required	BIG-RPO
-SI	No hub side inlet located on opposite side of outlet	BIG-SO
-SP	External Sampling port - inline, high connections	BIG-SP
-SP-L	External Sampling port - inline, low connections	BIG-SP-L
-SP-OF	External Sampling port - offset	BIG-SP-OF
-T	Female threaded connections (for each)	BIG-PF(*)-FT(*) (*) Specify Conn. Size

CALIFORNIA PROPOSITION 65 WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Job Name: _____ Page No: _____
 Section No: _____ Contractor: _____
 Schedule No: _____ Purchase Order No: _____

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2019-02-12

OIL AND GRIT SEPARATOR DETAIL
NOT TO SCALE

DESIGN: CAG	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.						
CHECK: CAG						

WESTOWN
CAR WASH

WATER LEAD &
SANITARY LEAD
NOTES AND DETAILS

- GRAVITY SANITARY SEWER LEAD NOTES:**
- The Local Plumbing Code and sanitary sewer specifications of the Local Municipality are a part of this work. Refer to the General Notes and Gravity Sanitary Sewer Notes on the project plans for additional information and requirements.
 - Sanitary Sewer Leads shall be PVC pipe conforming to ASTM D3034, maximum SDR of 26. Pipe joints shall be push on bell-and-spigot type joints conforming to ASTM D3212 with factory installed flexible elastomeric gaskets conforming to ASTM F477. Solvent cemented joints shall only be used when noted on the project plans for specific applications and shall conform to ASTM D2855. Provide pipe diameter and slope per project plans. When proposed lead information is not noted on the project plans, provide 4" minimum diameter at 2.0% minimum slope for single family residential and 6" minimum diameter at 1.0% minimum slope for multiple family residential and all non-residential uses.
 - Connect sanitary sewer leads to the sanitary main in the locations shown on the project plans. For new sanitary sewer main, install a wye fitting rotated upward at 45 degrees to the sanitary main as shown in the sanitary lead detail. Install wye fittings so that the wye branches out away from the sanitary main opposite of the direction of flow. For existing sanitary sewer main, tap main and install a saddle with stainless steel clamps and hardware in accordance with the Local Code. For connection to a new sanitary sewer structure, provide water tight factory installed rubber boot connector within the structure. For connection to an existing sanitary sewer structure, core drill the manhole wall and install a resilient boot. Connections to sanitary structures shall be at the invert elevation noted on the project plans. When proposed invert is not noted on the project plans, install sanitary lead invert 0.10' minimum, 2.0' maximum above the downstream sewer main invert.
 - Install a 45 degree riser at the connection to the sanitary sewer main per the project plans or as the site conditions allow. The invert elevation at the 45 degree bend located at the end of the riser shall be 6" minimum above the sanitary sewer main invert.
 - Contractor shall field locate all existing utilities prior to work. Contractor shall provide all bends and fittings as needed, incidental to work, to install the sanitary sewer leads and to provide the required clearance between the sanitary sewer leads and all existing and proposed utilities while maintaining the proposed minimum pipe slope and proposed lead end invert elevation. Contractor shall notify the Engineer immediately of any utility crossing conflicts.
 - Provide 4.0' minimum cover from the top of the sanitary sewer lead pipe to the proposed finished grade when site conditions allow. When pipe cover is less than 4.0', install 2" thick by 24" wide Styrofoam insulation centered over pipe at 12" above top of pipe or as required by Local Code. Backfill all sanitary sewer leads in accordance with the trench details on the project plans.
 - For vacant property or when connection of the sanitary sewer lead to a building is not to be performed as a part of this project, install a 45 degree lead end riser starting at the proposed lead end and extending above proposed finish grade, 2.0' minimum, 4.0' maximum. Install a pressure tight plug and restrained joints as needed to allow for pressure testing of sanitary sewer. When connection of the sanitary lead to a building is to be performed as part of this project or when installation of a 45 degree lead end riser will conflict with the existing land use, install a temporary, water tight and pressure tight plug in the end of the lead and mark the lead end with a 2" x 4" wooden stake extending a minimum of 12" above proposed finish grade, incidental to work, or other lead end marking system as required by the Local Municipality.

- WATER LEAD NOTES:**
- The water lead specifications of the City of Owosso are a part of this work. Refer to the General Notes on the project plans for additional requirements.
 - Type K Copper when shown on the project plans shall be Type K soft temper copper water tube with flared joints for underground service conforming to ASTM B88.
 - Connect to the existing water service lead in accordance with the project plans. The water service lead shall be installed in accordance with the project plans. Service leads 2" diameter or less shall be Type K copper and shall include a corporation stop, curb stop and curb box. Corporation stop shall conform to AWWA C-800 with copper American National Taper pipe threads conforming to ASA B2.1 1960. Curb stops shall conform to AWWA C-800 and shall be drip-tight, ball type with 300-psig working pressure rating. Curb boxes shall fit curb stop and be extension type of suitable length complete with lid and stationary rod. Provide all materials and labor required for a complete watertight connection, incidental to work.
 - Backfill the water service lead in accordance with the Pipe Trench details provided on the project plans. Provide pipe bedding that meets or exceeds both the specifications of the Pipe Trench details on the project plans and the recommendation of the pipe manufacturer, incidental to work. Provide 5'-6" minimum cover.
 - Provide 10' minimum horizontal separation and 1.5' minimum vertical separation between water service and both sanitary sewer and storm sewer.
 - Contractor shall flush, test and chlorinate the water lead in accordance with the City of Owosso.

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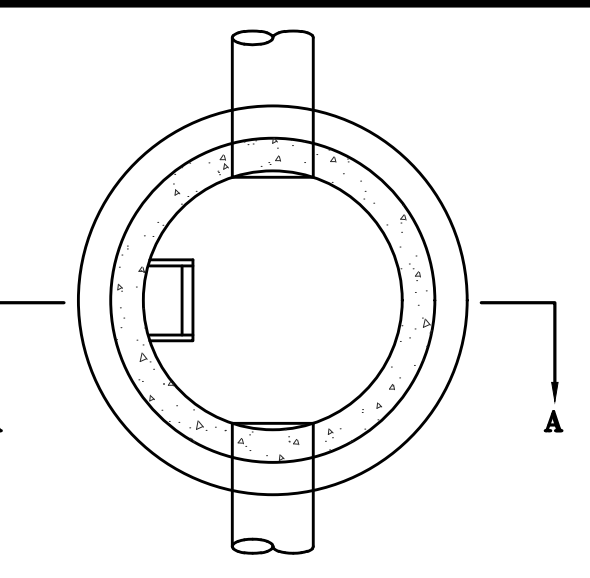
DESIGN INC.
(810) 227-9533
CIVIL ENGINEERS
LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

DT2

CLIENT: WAKELAND OIL COMPANY	SCALE: N/A
P.O. BOX 346 OWOSSO, MI. 48867 (989) 723-5500	PROJECT No.: 9193633 DWG NAME: 3633-DT ISSUED: DEC. 13, 2019

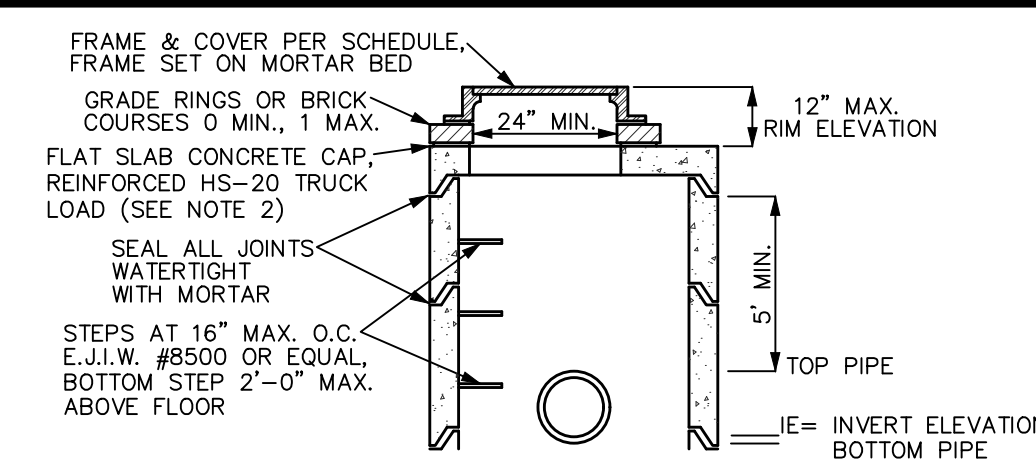
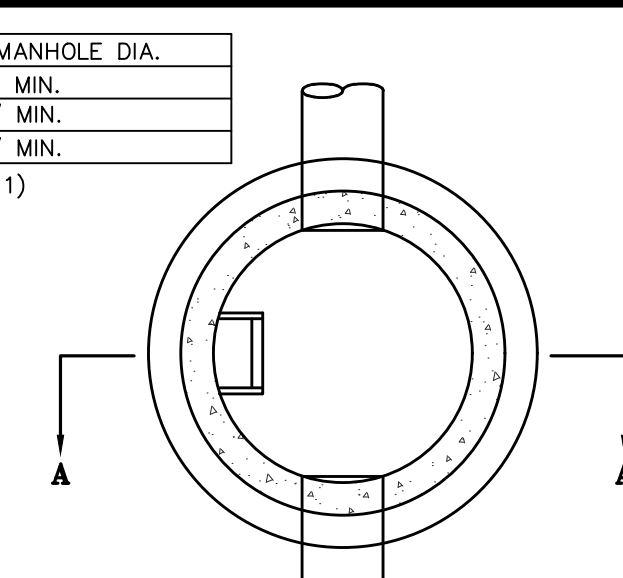
PIPE SIZE	MIN. CATCH BASIN DIA.
12"-24"	4'-0" MIN.
24"-36"	5'-0" MIN.
42"-48"	6'-0" MIN.

(SEE NOTE 1)



PIPE SIZE	MIN. MANHOLE DIA.
12"-24"	4'-0" MIN.
24"-36"	5'-0" MIN.
42"-48"	6'-0" MIN.

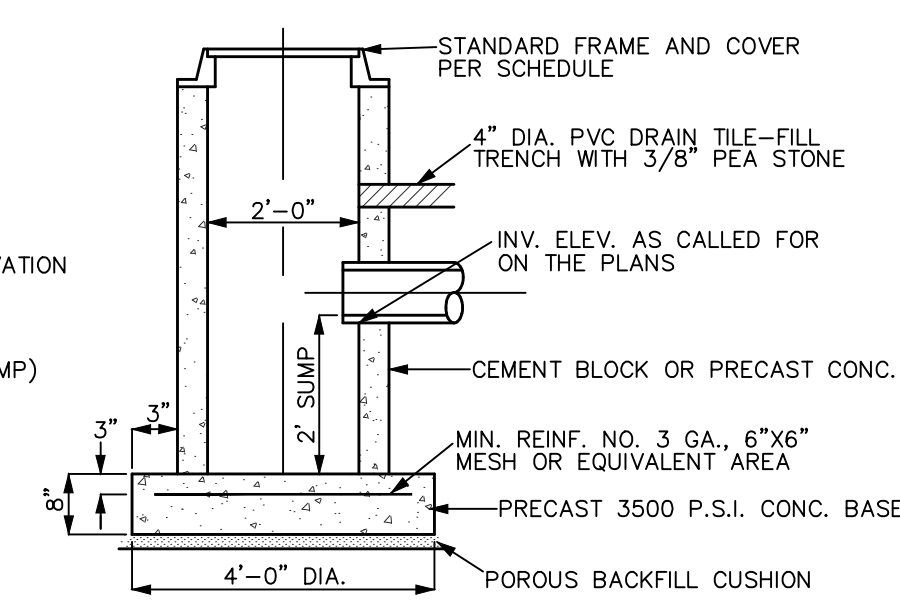
(SEE NOTE 1)



LOW PROFILE STORM STRUCTURE

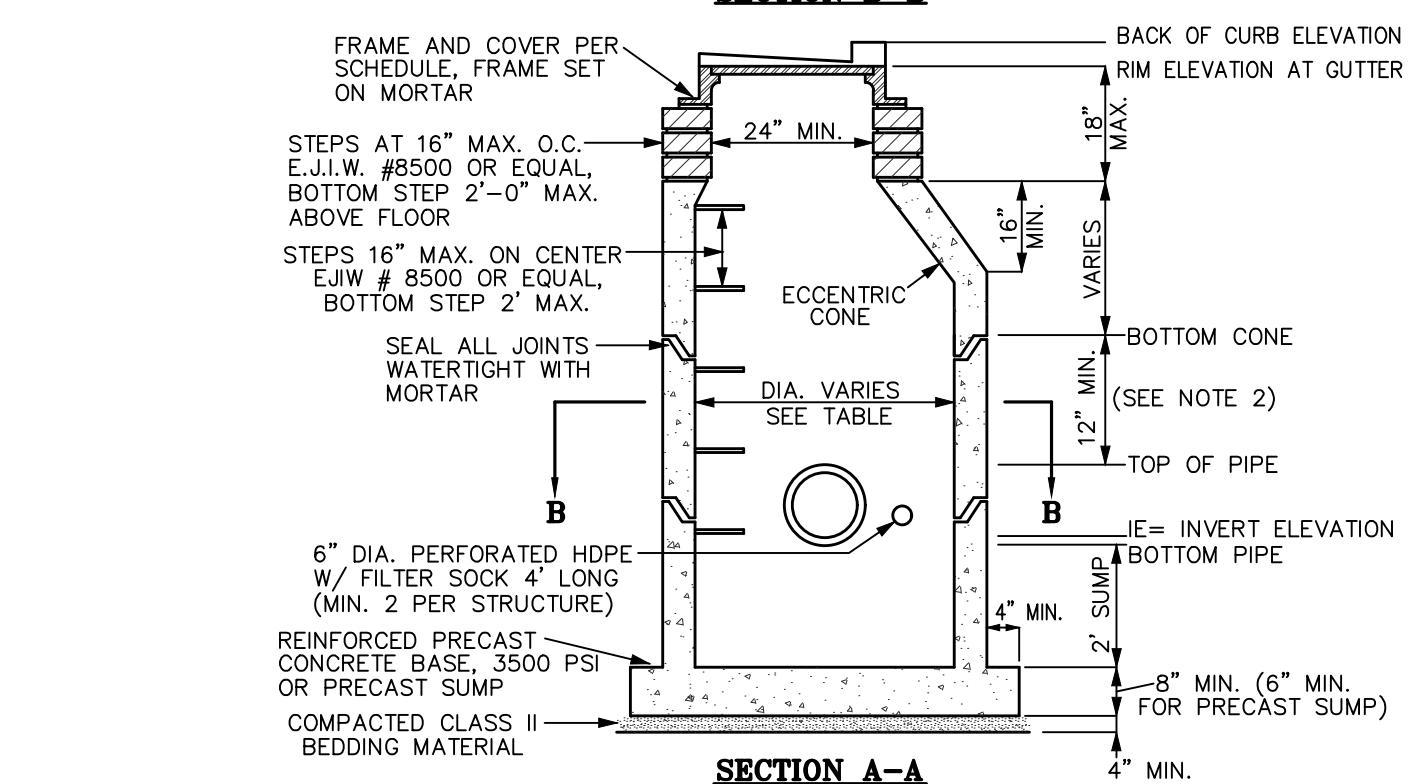
NOT TO SCALE

- NOTES:
- CONTRACTOR/MANUFACTURER SHALL DETERMINE WHEN LOW PROFILE STRUCTURES ARE NECESSARY AND PROVIDE INCIDENTAL TO WORK.
 - CLEARANCE FROM TOP OF PIPE TO BOTTOM OF FLAT SLAB CONCRETE CAP SHALL BE 5" MINIMUM. CONTRACTOR SHALL PROVIDE SPECIAL MATERIALS AND LABOR INCLUDING LOW PROFILE CASTINGS AND REDUCED THICKNESS FLAT SLAB CONCRETE CAPS (6" MINIMUM THICKNESS) REINFORCED FOR HS-20 TRUCK LOADS AS NEEDED TO PROVIDE 5" MINIMUM CLEARANCE INCIDENTAL TO WORK.
 - SEE STORM STRUCTURE "A" AND "B" DETAILS FOR ADDITIONAL REQUIREMENTS INCLUDING SUMP/FLOW CHANNEL SPECIFICATIONS.



STANDARD 2' DIA. CATCH BASIN

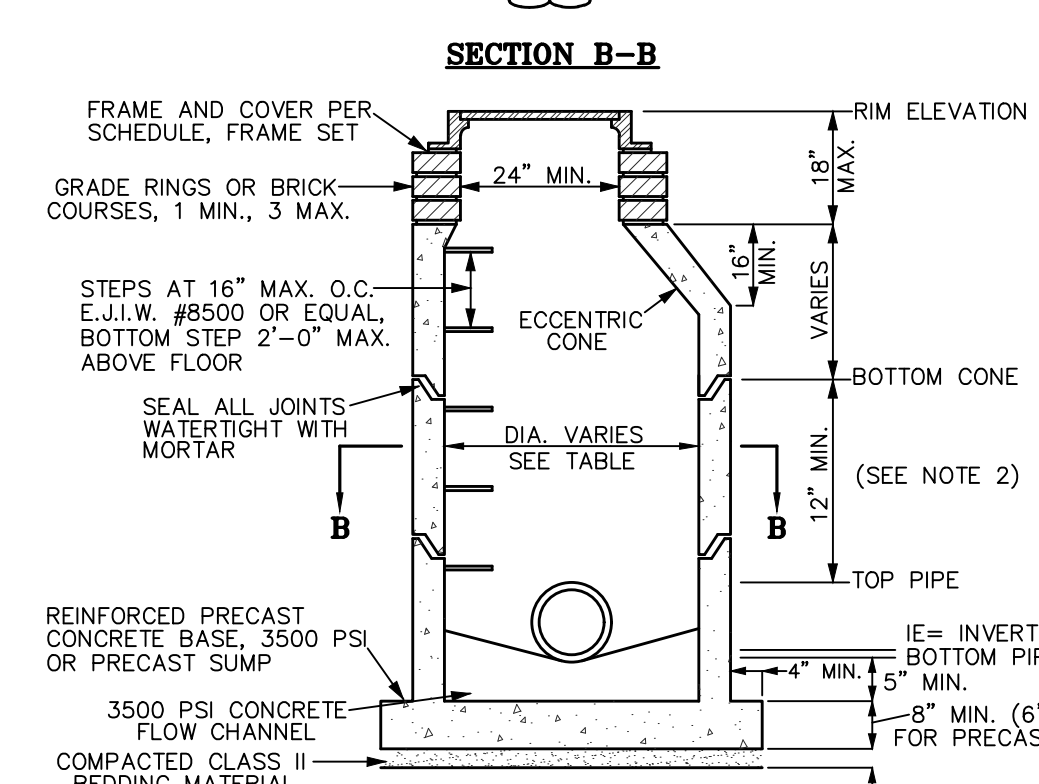
NOT TO SCALE



STORM STRUCTURE "A" STANDARD CATCH BASIN

NOT TO SCALE

- NOTES:
- FURNISH LARGER STRUCTURE DIAMETER AS NEEDED TO MAINTAIN 6" MIN CLEAR BETWEEN PIPE OPENINGS.
 - FURNISH LOW PROFILE STRUCTURE ONLY WHEN NECESSARY TO MAINTAIN PROPER CLEARANCE ABOVE PIPES.

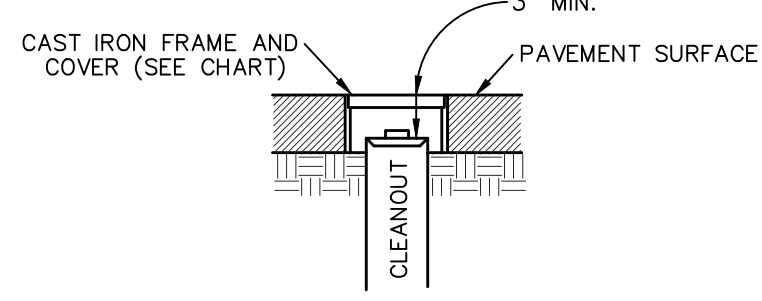


STORM STRUCTURE "B" STANDARD MANHOLE

NOT TO SCALE

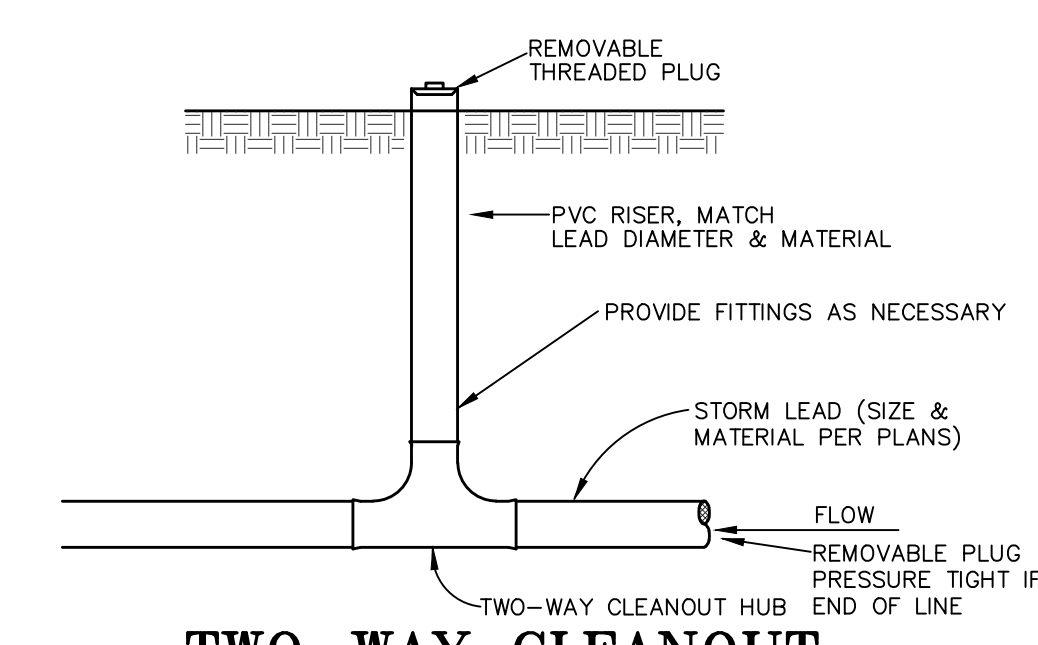
- NOTES:
- FURNISH LARGER STRUCTURE DIAMETER AS NEEDED TO MAINTAIN 6" MIN CLEAR BETWEEN PIPE OPENINGS.
 - FURNISH LOW PROFILE STRUCTURE ONLY WHEN NECESSARY TO MAINTAIN PROPER CLEARANCE ABOVE PIPES.

CLEANOUT DIA.	FRAME AND COVER
4"-8"	EJW 1578
10"-18"	EJW 1040Z-A-STORM



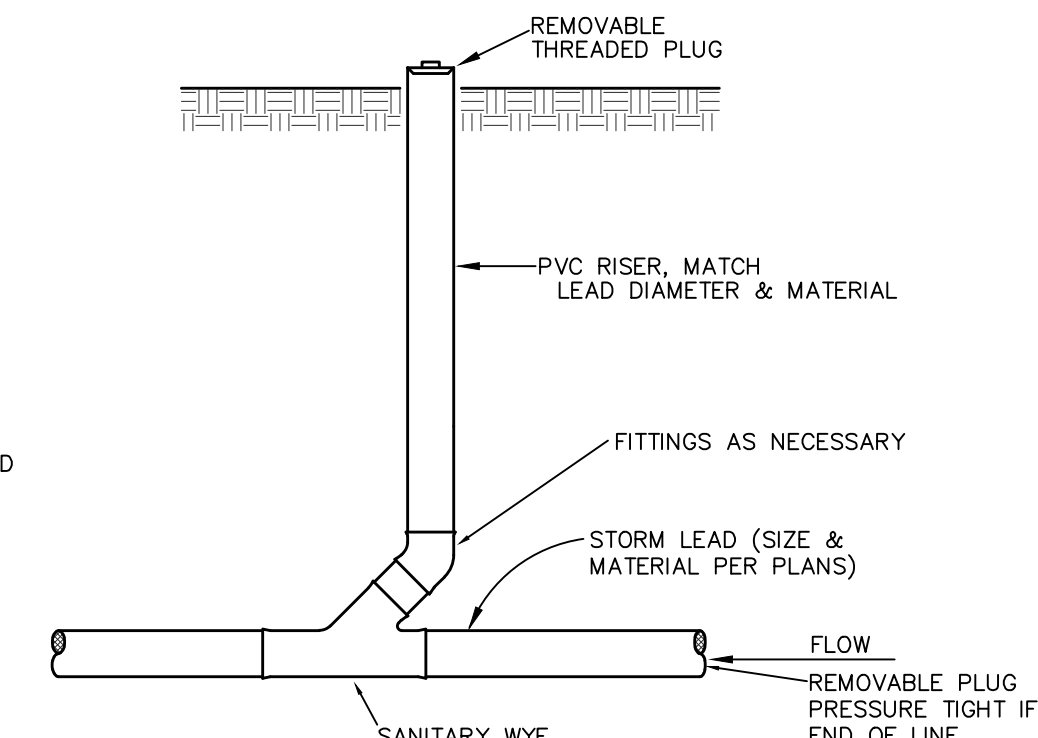
CLEANOUT IN PAVED AREA

NOT TO SCALE



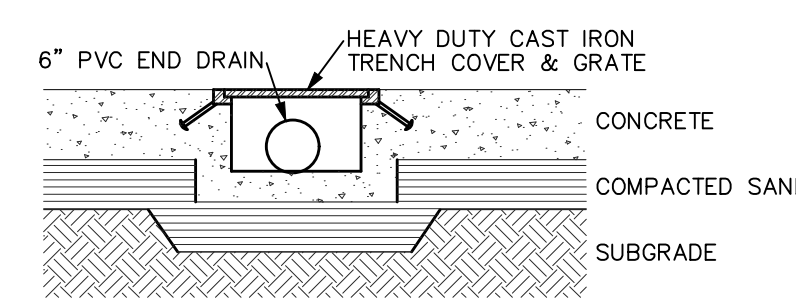
TWO-WAY CLEANOUT FOR STORM LEAD

NOT TO SCALE



STANDARD CLEANOUT FOR STORM LEAD

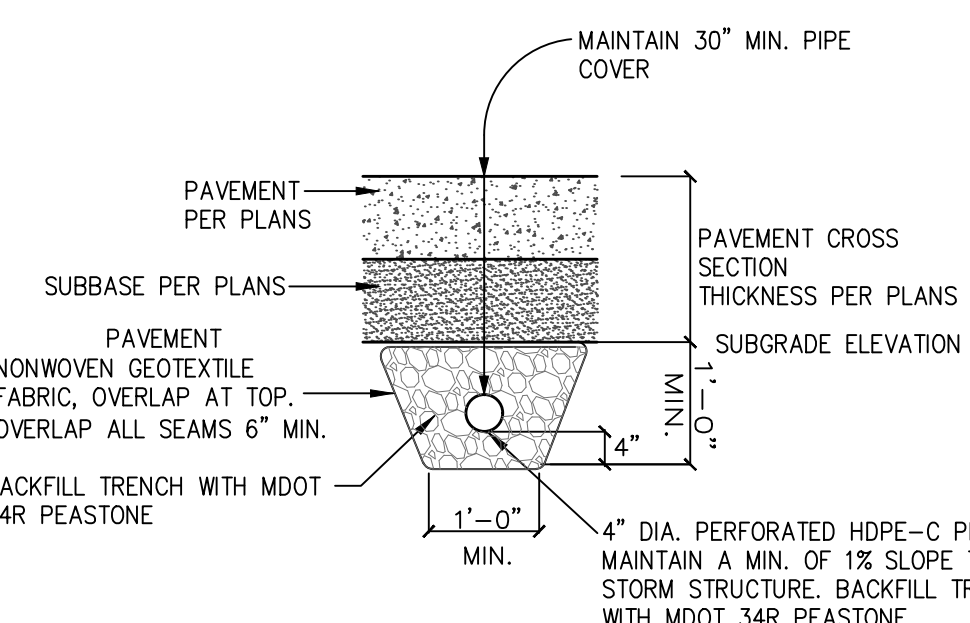
NOT TO SCALE



TRENCH DRAIN

NOT TO SCALE

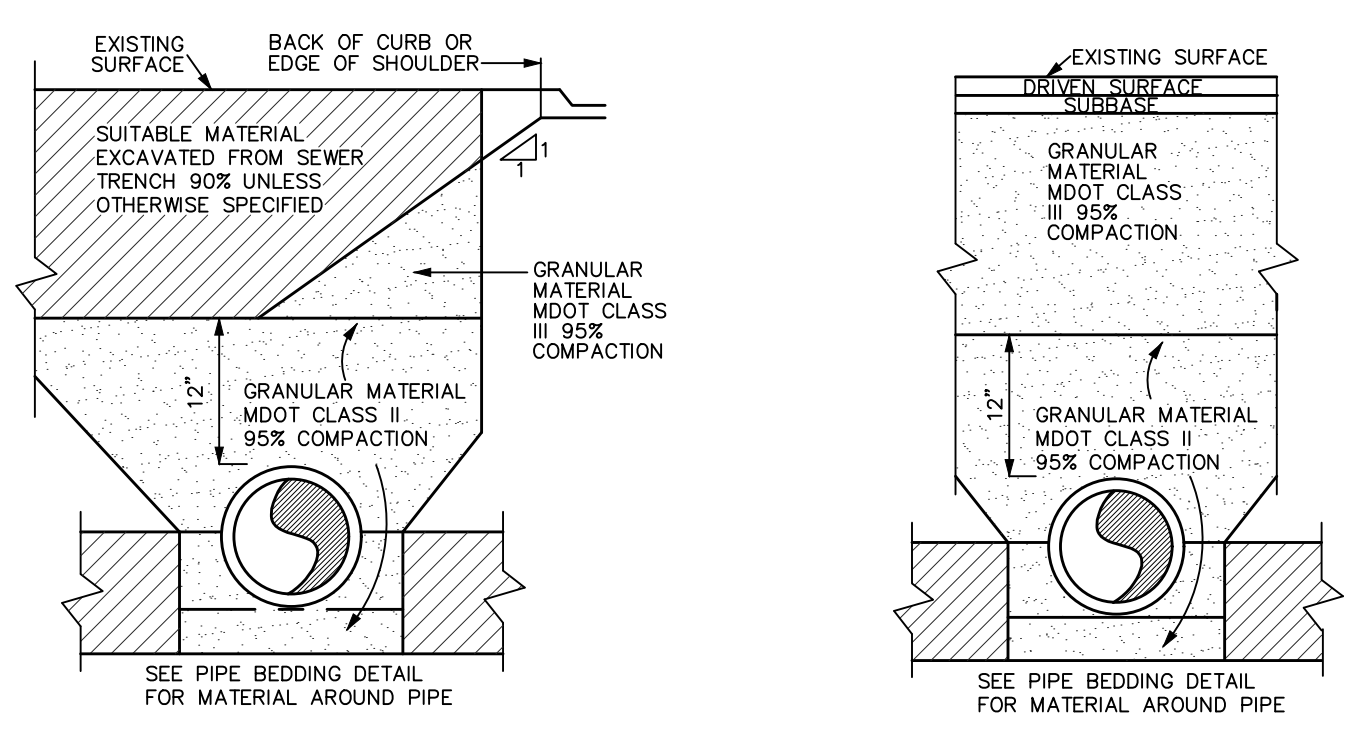
- NOTES:
- TRENCH DRAIN SHALL BE DESIGNED FOR H-20 WHEEL LOADS.
 - SEE CONCRETE PAVEMENT CROSS-SECTION SHEET.



UNDERDRAIN CROSS SECTION DETAIL B-B

NOT TO SCALE

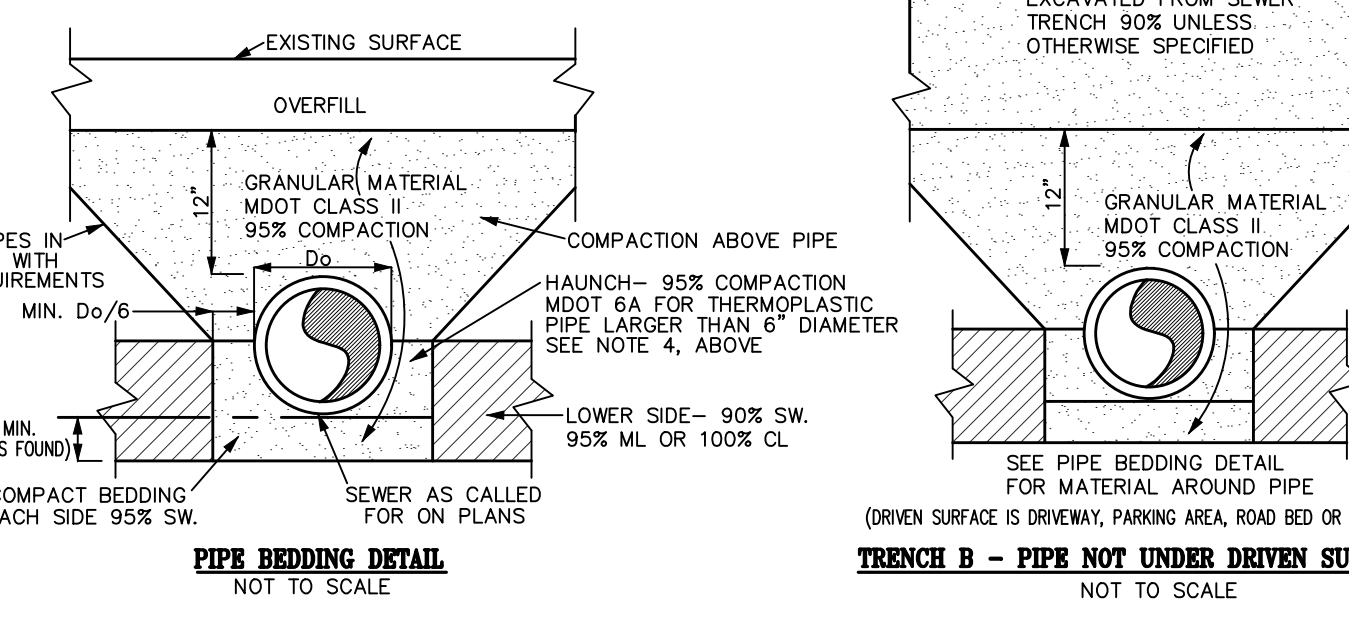
- PAVEMENT UNDERDRAIN NOTES:
- Install the appropriate number of underdrains at the length and direction shown and/or specified on the Project Plans. Maintain a minimum pipe slope of 1.0% down gradient toward the storm structure and a minimum of 30" of pipe cover. When storm sewer elevations interfere with underdrains, offset underdrain trench away from storm sewer trench as necessary to clear storm sewer pipe. Maintain proposed direction and location of underdrain to the greatest extent feasible.
 - Loop underdrain around the storm structure in a donut configuration and tap the storm structure at a single location. When storm sewer elevations interfere with underdrain loop, utilize 1/2 to 3/4 loop as necessary to clear storm sewer. Multiple taps shall only be performed when storm sewer interference does not allow for a single tap. Locate tap(s) so as not to interfere with storm structure steps. Tuck point opening around underdrain tap location(s) water tight with mortar cement.
 - Backfill all underdrain trenches up to the proposed pavement subgrade elevation with MDOT 34R peastone. When underdrain is located in lawn area, backfill trench to a minimum of 6" above top of underdrain pipe.
 - Wrap all underdrain trenches with nonwoven geotextile fabric. Overlap fabric at top of trench the entire width of trench. Overlap all fabric seams a minimum of 6".
 - Provide all underdrain fittings and caps incidental to underdrain work.
 - Contractor shall take caution and perform the necessary measures to protect underdrain during pavement subgrade preparation and throughout the site construction process. Any and all damage to underdrain pipe, trench and/or fabric surround shall be repaired immediately incidental to underdrain work.



TRENCH A - PIPE UNDER OR WITHIN INFLUENCE OF DRIVEN SURFACE

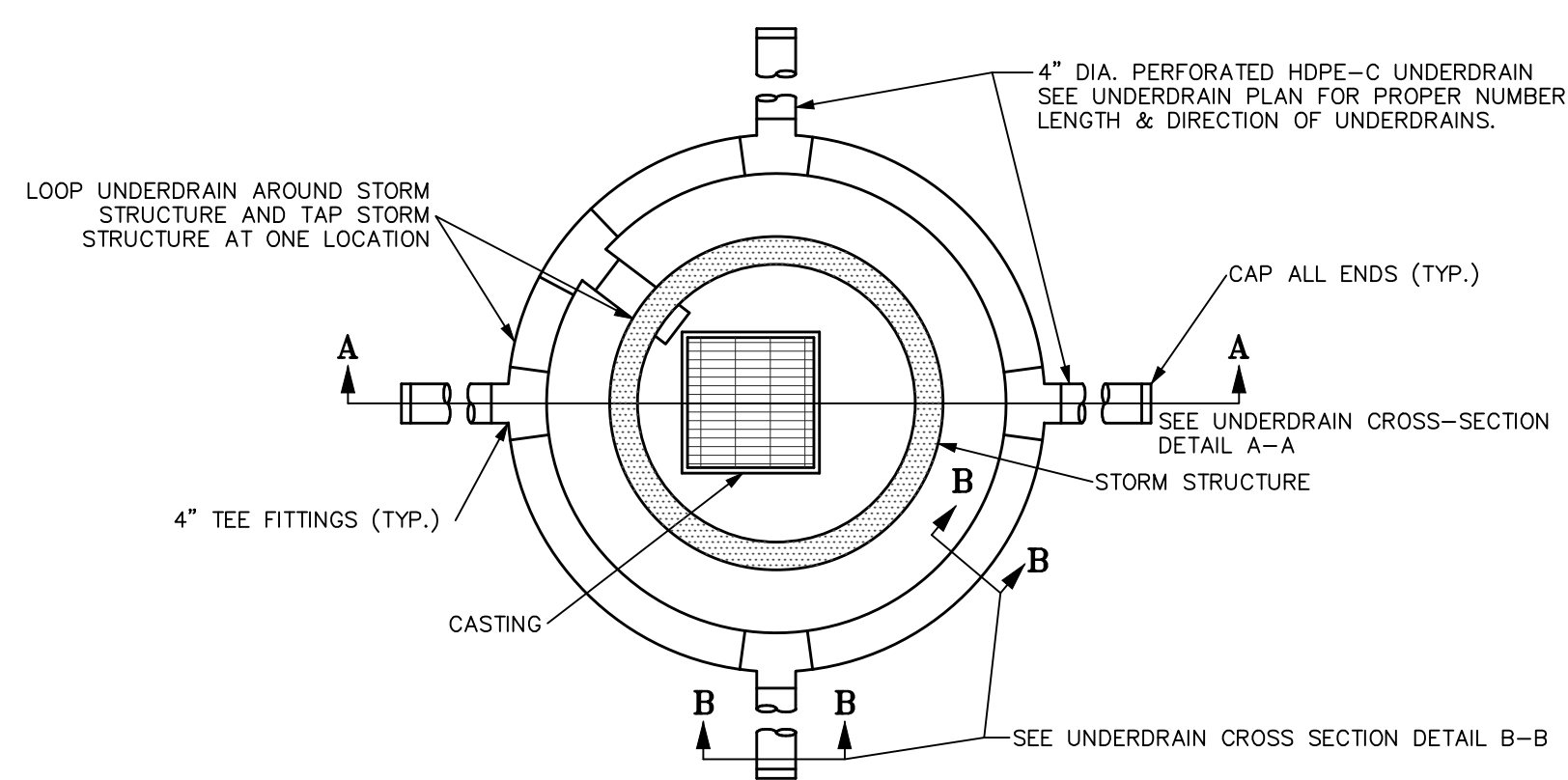
NOT TO SCALE

- NOTES:
- COMPACTION PRESENTED AS STANDARD PROCTOR VALUES.
 - SOIL TYPES AASHTO DESIG. GRAVEL SANDY (SW) A1, A3 SANDY SILTY (M) A2, A4 SILTY CLAY (CL) A5, A6, A7
 - SOIL IN HAUNCH AND LOWER SIDE ZONES OUTSIDE OF D_o/6 FROM SPRING LINE SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS THE SOIL IN THE OVERFILL ZONE.
 - MATERIALS AROUND THERMO. PLASTIC PIPE WITH DIAMETER 6 INCHES SHALL PASS 0.5 INCH SIEVE. MATERIALS AROUND OTHER PIPES SHALL PASS 1.5 INCH SIEVE.



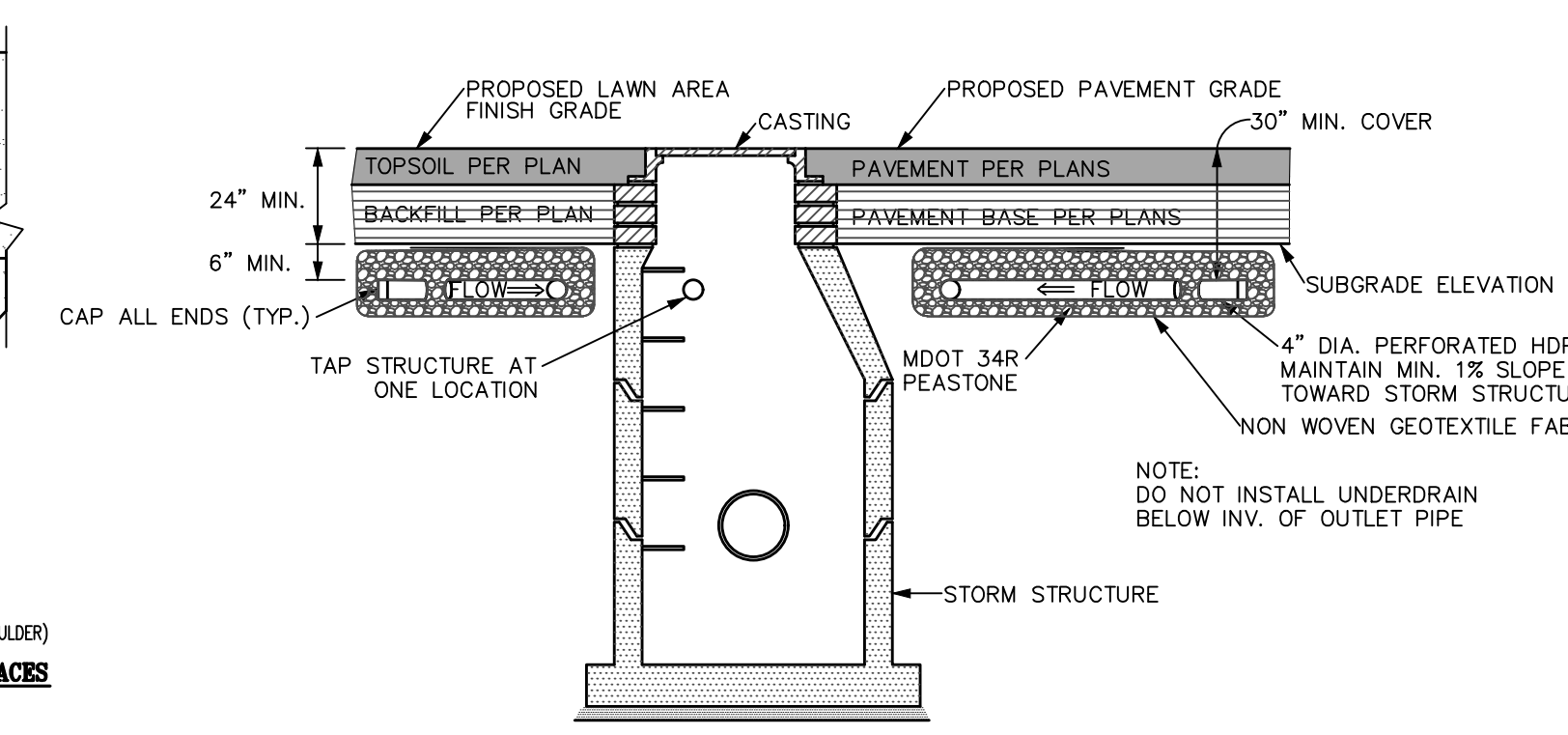
TRENCH B - PIPE NOT UNDER DRIVEN SURFACES

NOT TO SCALE



UNDERDRAIN CONNECTION TO STORM STRUCTURE DETAIL

NOT TO SCALE



UNDERDRAIN CROSS SECTION DETAIL A-A

NOT TO SCALE

- STORM SEWER NOTES:
- The storm sewer and stormwater management specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional requirements.
 - Storm sewer work shall include clearing of vegetation and tree stumps, stripping and stockpiling of topsoil for reuse, excavation of pipe trench, placement of pipe bedding, placement of pipe and structures including castings, connection to existing structures, tuck pointing of structures, backfill of pipe trench, compaction of backfill, finish grading to provide positive drainage to structures, adjustment of castings to match finish grade, topsoil placement, seed & mulch, site cleanup and restoration, and other work as shown on the project plans and specifications.
 - Existing and proposed grades shown in profile view, when provided on the project plans, may be in relation to the centerline of road or item other than the centerline of pipe. The pipe lengths and grades shown in profile view on the project plans may not be to scale.
 - RCP when shown on the project plans shall be reinforced concrete pipe and shall conform to the specifications for reinforced concrete pipe per ASTM C76. RCP pipe joints shall be bell-and-spigot with rubber gaskets conforming to ASTM C433. Non-gasketed joints shall only be utilized when authorized by the Owner, Engineer AND Municipality. Non-gasketed joints of pipe having a diameter of 30 inches or greater shall be tuck-pointed on the inside with cement mortar after the backfill process is complete. Install reinforced concrete end sections incidental to work. Saw cut pipes to length as needed. When pipe class is not shown on the project plans, provide the following:

Pipe cover to proposed grade:	0 to 4 feet	Class V
	4.1 to 10 feet	Class III*
	10.1 to 18 feet	Class IV
	18.1 feet and greater	Class V
 - * Use Class IV under paved surfaces
 - CMP when shown on the project plans shall be corrugated metal pipe and shall conform to the specifications for corrugated metal pipe per AASHTO Designation M36. CMP shall be 16-gauge steel minimum for 24 inch diameter or smaller and 14-gauge steel minimum for 30 inch diameter or greater. Install galvanized steel end sections and connection bands, incidental to work. Connection bands for CMP pipe joints located under paved surfaces shall be gasketed couplers. Saw cut pipes to length as needed.
 - HDPE - Type S when shown on the project plans shall be high density polyethylene pipe with a smooth interior and shall conform to the specifications for high density polyethylene pipe per AASHTO Designation M252 Type S for pipes of 3" to 10" diameter and per AASHTO Designation M294 Type S for pipes of 12" to 60" diameter. HDPE - Type S pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with rubber gaskets conforming to ASTM F477. Tamp backfill at spring line of HDPE - Type S pipe. Install high density polyethylene end sections incidental to work. Saw cut pipes to length as needed.
 - HDPE - Type C when shown on the project plans shall be high density polyethylene pipe with a corrugated interior and shall conform to the specifications for high density polyethylene pipe per AASHTO Designation M252 for pipes of 3" to 10" diameter and per AASHTO Designation M294 for pipes of 12" to 60" diameter. HDPE - Type C pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with rubber gaskets conforming to ASTM F477. Tamp backfill at spring line of HDPE - Type C pipe. Install high density polyethylene end sections incidental to work. Saw cut pipes to length as needed.
 - CPVC when shown on the project plans shall be corrugated polyvinyl chloride pipe and shall conform to the specifications for corrugated polyvinyl chloride pipe per ASTM F794 and F949. CPVC pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with rubber gaskets conforming to ASTM F477. Tamp backfill at spring line of CPVC pipe. Install high density polyethylene end sections incidental to work. Saw cut pipes to length as needed.
 - PVC when shown on the project plans shall be polyvinyl chloride pipe and shall conform to the specifications for polyvinyl chloride pipe per ASTM D2751, maximum SDR of 26. PVC pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with rubber gaskets conforming to ASTM F477 or solvent welded type conforming to ASTM D2564. Tamp backfill at spring line of PVC pipe. Saw cut pipes to length as needed.
 - Concrete storm structures shall be pre-cast and shall conform to the specification of pre-cast concrete structures per ASTM C478. Joints of concrete storm structure sections shall be bell-and-spigot with rubber gaskets conforming to ASTM C433. Brick, concrete block or cast in place storm structures may be substituted for pre-cast storm structures ONLY when authorized by the Owner, Engineer AND Municipality; refer to MDOT standard plan R-1, latest revision. Pipe openings in pre-cast structures shall be factory installed. All temporary openings in storm structures shall be tuck-pointed watertight with cement mortar. Refer to MDOT standard plan R-2, latest revision, for alternate on-line storm structure details when pipe exceeds 42 inch diameter.
 - Tap existing structures as acceptable to the Engineer and Municipality, incidental to work. All temporary openings in storm structures shall be tuck-pointed watertight with cement mortar.
 - Backfill all storm sewer in accordance with the Pipe Trench details provided on the project plans. Provide pipe bedding that meets or exceeds both the specifications of the Pipe Trench details on the project plans and the recommendation of the pipe manufacturer, incidental to work.
 - When edge drains and/or under drains are shown on the project plans, connection to storm structures is incidental to work. During storm sewer construction, install first 10 linear feet of edge drain and/or under drain from the storm structures in each specified direction and install temporary cap at end. Complete installation of edge drain following preparation of the subgrade when under paved surface or following finish grade when not under paved surface.
 - Install removable plugs in storm sewer stubs as acceptable to Engineer and Municipality, incidental to work. Mark the end of all storm sewer stubs with a 2" x 4" wooden stake extending a minimum of 12" above finish grade, incidental to work.
 - Storm structure castings shall be coated with water based asphaltic paint by the manufacturer. Seams and temporary openings between storm structures and castings shall be tuck-pointed water tight with cement mortar. Coordinate correct curb box / hood / "T" back as needed to match curb profile. See casting schedule on project plans for additional requirements.
 - Provide 3.5" minimum cover from the top of pipe of all roof drain pipes to the proposed finish grade when site conditions allow. When pipe cover is less than 3.5", install 2" thick by 24" wide Styrofoam insulation centered over the top of pipe at 12" above top of pipe or as required by the Local Municipality.



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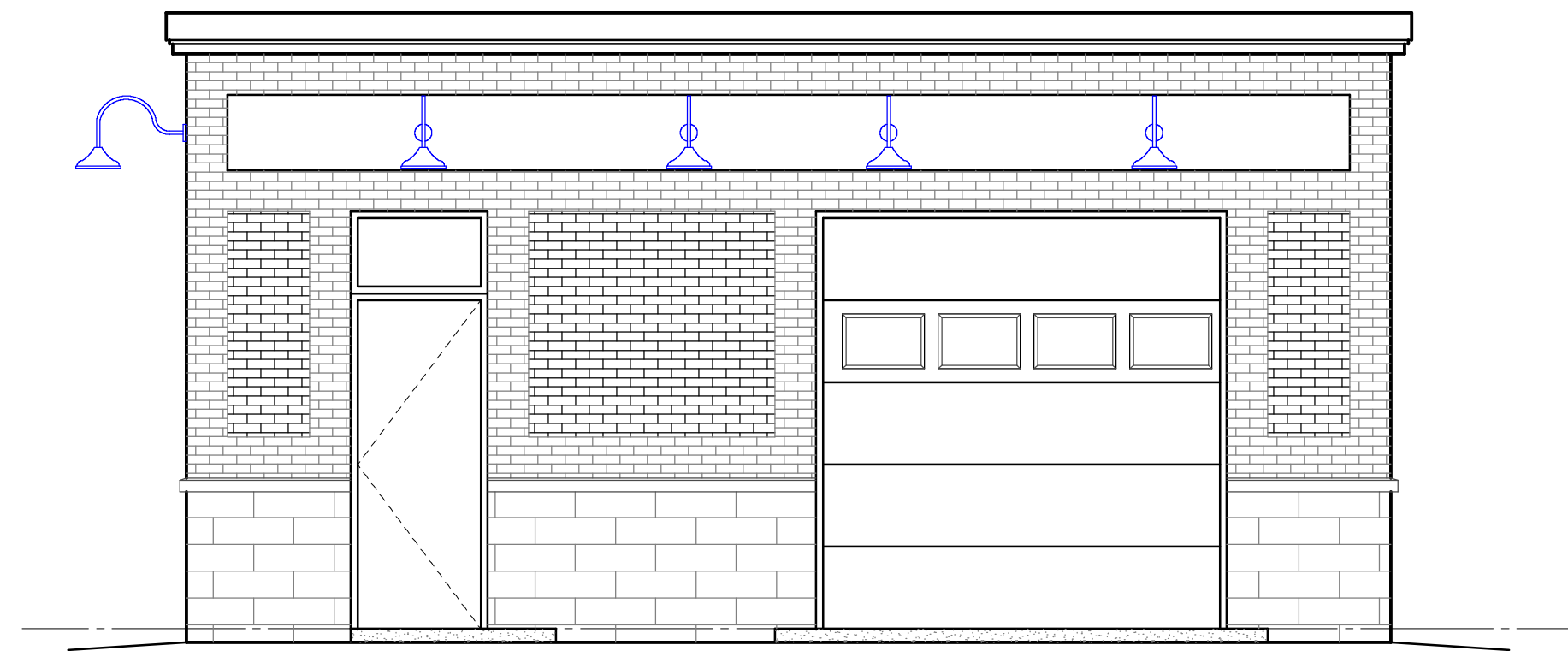
DESIGN: CAG	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.						
CHECK: CAG						

WESTOWN
CAR WASH

STORM SEWER
NOTES AND DETAILS

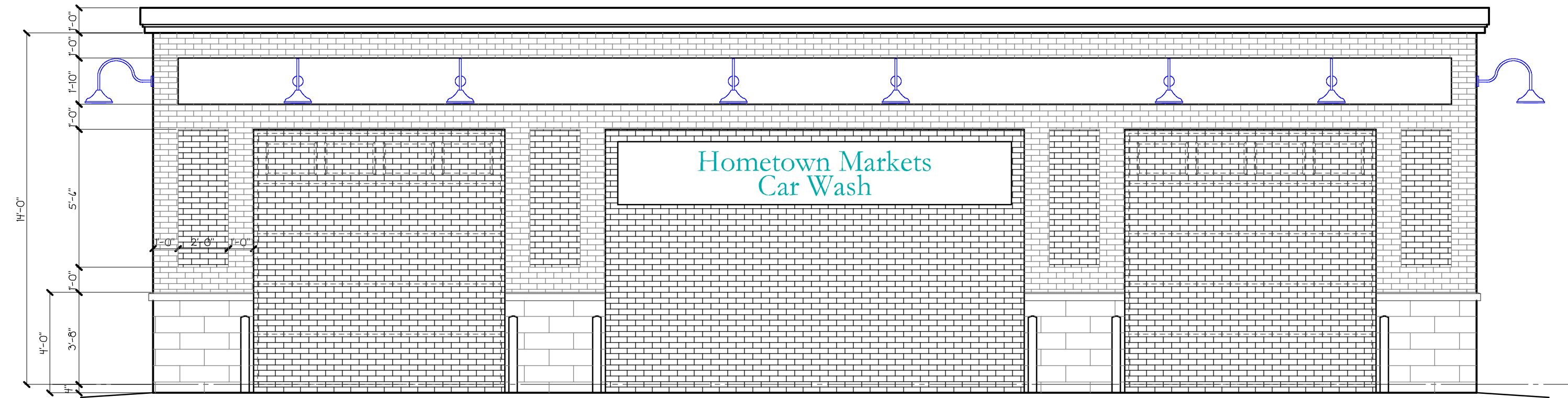
CLIENT: WAKELAND OIL COMPANY	SCALE: N/A
P.O. BOX 346 OWOSSO, MI. 48867 (989) 723-5500	PROJECT No.: 9193633 DWG NAME: 3633-DT ISSUED: DEC. 13, 2019

DT3



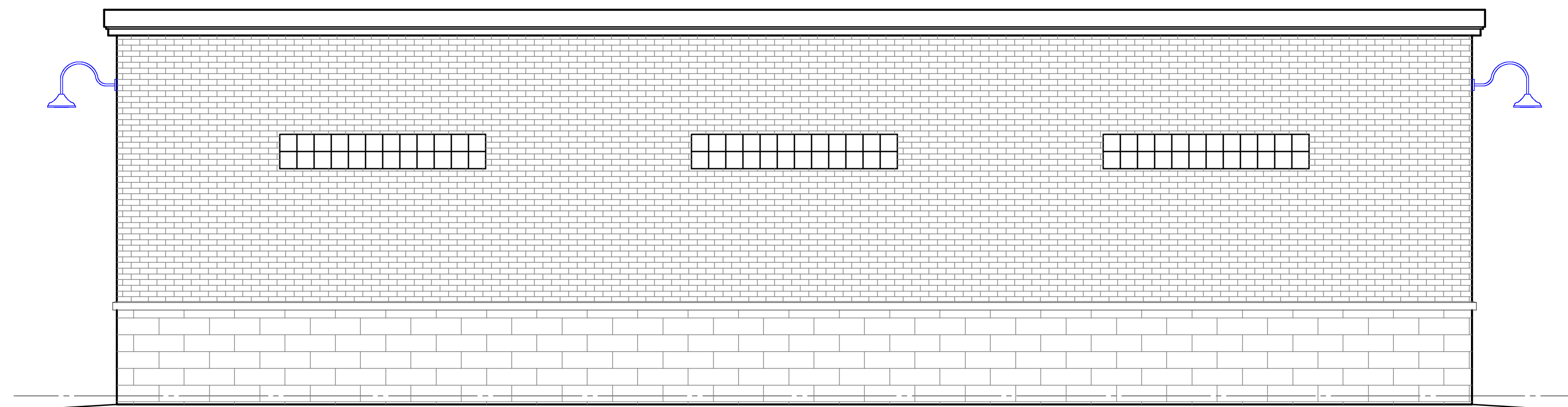
WEST ELEVATION

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



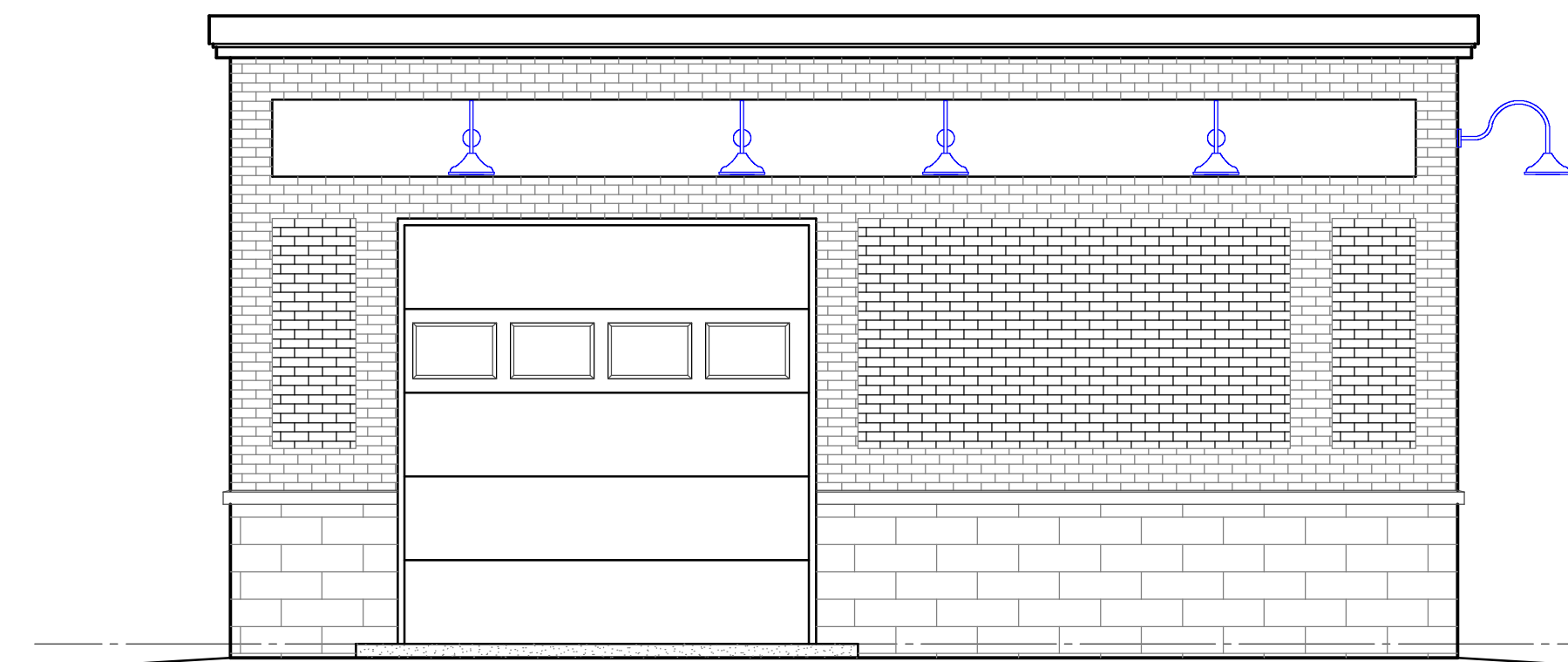
NORTH ELEVATION

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



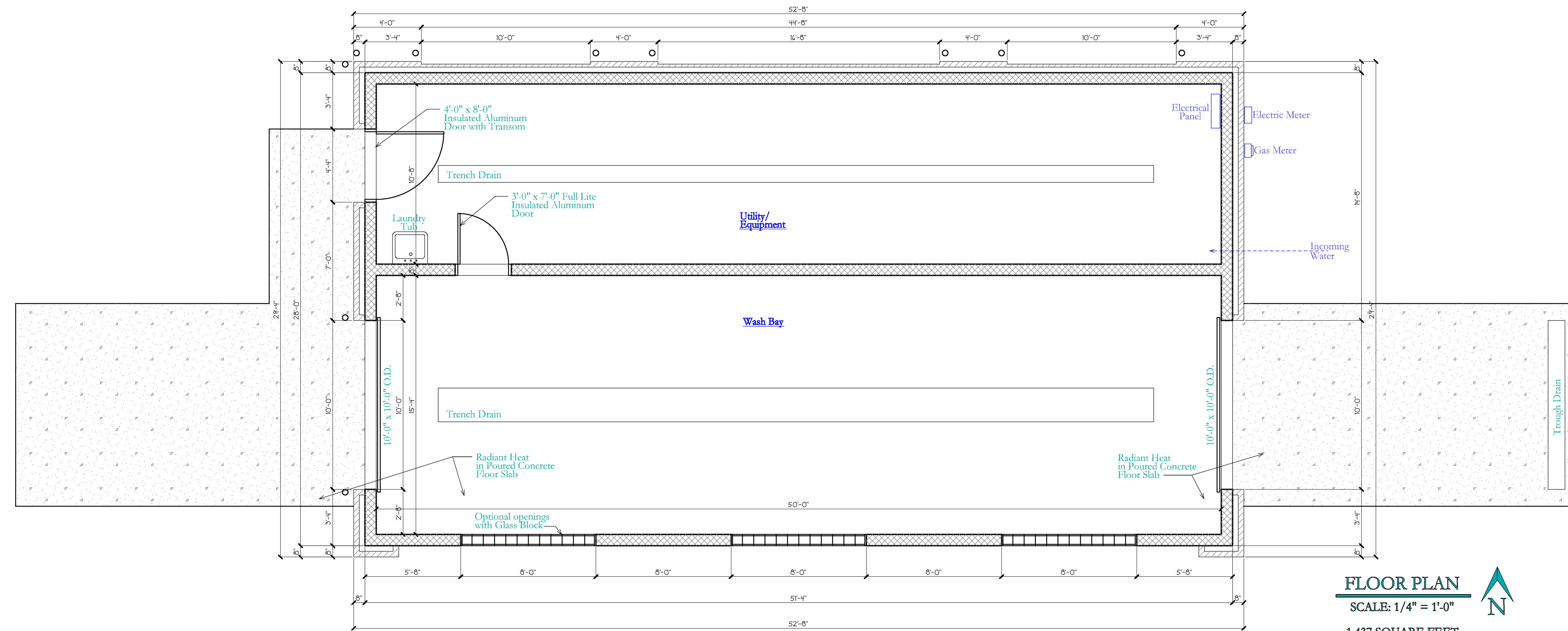
SOUTH ELEVATION

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



EAST ELEVATION

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



FLOOR PLAN

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

1,437 SQUARE FEET



Description	Date
Owner Review	Nov. 6, 2019

W Westward Architecture
 2036 Fischer Road
 Gaylord, Michigan
 westwardarchitecture.com

Project Number: 2019-1143
 Project Name: H.M. Westown Car Wash
 Project Address: 1107 W. Main Street
 Owosso, MI



CAPITAL IMPROVEMENT PLAN

**CITY OF OWOSSO
2020-2026**

City Council

Christopher Eveleth, Mayor
Susan Osika, Mayor Pro-Tem
Loreen Bailey
Janae Fear
Jerry Haber
Daniel Law
Nicholas Pidek

Planning Commission

William Wascher, Chair
Francis Livingston, Vice Chair
Janae Fear, Secretary
Pete Yerian
Linda Robertson
Daniel Law
Thomas Taylor

Capital Improvement Review Committee

Josh Adams, Main Street, DDA & Parks and Rec Director
Glenn Chinavare, Director of Public Services
Owosso Historic Commission Executive Committee
Cheryl Grice, Finance Director
Nathan Henne, City Manager
Amy Kirkland, City Clerk
Kevin Lenkart, Director of Public Safety
Jessica Unangst, Human Resources & IT Director

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CAPITAL IMPROVEMENT PLAN (CIP) OVERVIEW

WHAT IS A CIP?

The Capital Improvement Plan (CIP) serves as the city's multi-year planning instrument used to identify needs and financing sources for public infrastructure improvements. Preparation of the CIP is performed under the authority of the Michigan Planning Enabling Act:

"The capital improvements program shall show those public structures and improvements, in the general order of their priority that in the commission's judgment will be needed or desirable and can be undertaken within the ensuing 6-year period. The capital improvements program shall be based upon the requirements of the local unit of government for all types of public structures and improvements. Consequently, each agency or department of the local unit of government with authority for public structures or improvements shall upon request furnish the planning commission with lists, plans, and estimates of time and cost of those public structures and improvements."

A comprehensive CIP is an essential tool for the planning and development of the social, physical, and economic wellbeing of the community. This process is a necessary step in an organized effort to strengthen the quality of public facilities and services; provide a framework for the realization of community goals and objectives; and provide a sound basis on which to build a healthy and vibrant community.

Some of the many benefits that the CIP provides the residents and stakeholders include:

- Use as a tool to optimize the use of revenue
- Focus attention on community goals, needs, and capabilities
- Guide future growth and development
- Encourage efficient government
- Improve intergovernmental and regional cooperation
- Help maintain a sound and stable financial program
- Enhance opportunities for the participation in federal and/or state grant programs

A CIP project is defined as a major expenditure that includes one or more of the following:

1. Any construction of a new facility (i.e. public building, water/sewer mains, storm sewers, roads, and recreation facilities), an addition to, or an extension of such a facility, provided that the cost is \$10,000 or more and will have a useful life of one year or more.
2. Any rehabilitation of all or a part of a building, its grounds, a facility, or equipment, provided that the cost is \$10,000 or more and will have a useful life of one year or more.
3. Any purchase or replacement of major equipment to support community programs provided that the cost is \$10,000 or more, will have a useful life of one year or more and will be considered a capital asset
4. Any planning, feasibility, engineering, or design study provided that the cost is \$10,000 or more.
5. Any acquisition of land for a public purpose.

CIP AND BUDGET PROCESS

The CIP process precedes the budget process and is used by City Council when developing the annual budget. Recommending approval of the CIP by the Planning Commission does not mean that they grant final approval of all projects contained within the plan. Rather by recommending approval of the CIP, the Planning Commission acknowledges that these projects represent a reasonable interpretation of the upcoming needs for the community and that projects contained in the first year of the plan are suitable for inclusion in the upcoming budget, if funding is available.

Priority rankings do not necessarily correspond to funding sequence. For example, a road project which is ranked lower than a park project may be funded before the park project because the road project has access to a road millage revenue source, whereas a park project may have to compete for funding from other revenue sources, like grants or general fund dollars.

It is important to keep in mind that the CIP is a planning tool, a guide that deals with physical condition and improvements throughout the City over a six year period of time. It is subject to changing priorities based on needs, wants reflected in our community and its citizenry.

CIP DEVELOPMENT PROCESS

In the fall, the CIP Plan Group members submitted proposed projects for the CIP. A draft list of projects was then created by the CIP Project Lead. The list of projects was then reviewed by the CIP Plan Group and the Year 1 projects were ranked based on the following:

1. Is the proposed project already in process due to its inclusion in the current budget year? Is the project under construction, under contract, and is there a continuing debt obligation payable?
2. Is the project mandated by law or court action?
3. Is there a relationship between the proposed project and the City's goals and objectives and/or the goals and objectives of the appropriate board or commission?
4. Is alternative funding available? Is funding available through other sources or is funding available through land contract or bonding to minimize annual cost requirement?
5. Does the proposed project generate revenue for the general fund and/or other funds? This item should be determined based upon an annual forecast and the schedule of revenues should be designated by the appropriate fund.
6. Does the proposed project result in the use of supplementary funds for "leverage" using matching funds with other funding sources.

Once the Committee members ranked the Year 1 projects, the list was then forwarded to the Administrative Team for final scoring of the projects requested prior to the draft CIP being created. Once the draft CIP document is compiled, it is forwarded on to Planning Commission for adoption after review during an open meeting. City Council adopts the CIP after the Planning Commission and prior to the budget adoption. CIP should be used as a tool by City Council during the budget process.

FUNDING

Each year during the Budget process City Council will review the CIP Year 1 projects and evaluate the available revenue to determine the feasibility of funding projects. While recommended funding sources are listed in the CIP, those may change during the budget process. Some Year 1 projects may also remain unfunded during the Budget process.

Below you will find a brief description of the possible funding sources for the six year CIP:

Major and Local Street Fund – The major and local street funds are considered special revenue funds which utilize state and weight tax revenues for the maintenance and improvements to city streets.

Bond - When the City sells bonds, purchasers are, in effect, lending the community money. The money is repaid, with interest, from taxes or fees over the years. The logic behind issuing bonds (or “floating a bond issue”) for capital projects is that the citizens who benefit from the capital improvements over a period of time should help the community pay for them.

Grants - The federal and state governments make funds available to communities through numerous grants and aid programs. The City has no direct control over the amount of grant money awarded to the City or if a grant is awarded. MMRMA, our liability/property insurer, also offers grants. These are risk avoidance grants, as well as, some training grants.

Special Assessment District - Capital improvements that benefit particular properties, rather than the community as a whole, may be financed more equitably by a special assessment, i.e., by those who directly benefit. Local improvements often financed by this method include street improvements (including pavement, curb and gutter, sidewalks, etc.).

General Fund – The general fund is the City’s primary operating fund. The general fund is a government fund that generates revenues to cover general operational expenses and is accounted for on the modified accrual basis. Modified accrual basis of accounting is a blend of both cash and full accrual. Revenue is recognized when it is considered available and measurable, while expenses are recognized when the liability has occurred.

Motor Pool - This fund operates like a business by purchasing and maintaining much of the city vehicles and equipment. When other funds require the use of this equipment or vehicles, they are charged rental income.

Sewer Fund – The sewer fund collects user fees to operate and maintain the city’s sewer system.

Water Fund – The water fund collects user fees to operate and maintain the city’s water system.

Wastewater Treatment Fund – This fund accounts for the treatment of waste water utilizing user fees from the city’s water fund and user fees from the Mid-County service area participants.

Downtown Development Authority (DDA) Fund – The DDA collects revenues from taxes generated by a 2-mil levy and a tax increment financing district. Proceeds from these revenues are used as operating monies and as debt service for physical improvements and other activities in the DDA boundary.

Parks and Historic Millage – This millage was approved by the voters in November of 2018. This millage will levy a new additional millage of one mill (\$1.00 per \$1,000.00) on the taxable value of property located in the City of Owosso. The millage shall be levied for two years beginning with the 2019 tax levy year and running through the 2020 tax year (inclusive). As approved, the millage will provide funding to the City of Owosso Parks and Recreation Commission and the City of Owosso Historical Commission. Revenue will be used to maintain, improve, and upgrade parks and preserve historical sites within the City of Owosso.

Donations & Private Sponsorship – This funding source is based on dollars or in-kind donations received from individuals or businesses for specific projects or to specific organizations.

CIP COMPONENTS

The components of the CIP have been established as follows:

CATEGORY	DEPARTMENT
Comm Dev	Community Development
Historical	Historical Facilities
IT	Information Technology
Main St/DDA	Main Street and Downtown Development Authority
Parks and Rec	Parks and Recreation
Public Safety	Public Safety
Public Service	Public Service
Public Works	Public Works
WTP	Water Treatment Plant
WWTP	Waste Water Treatment Plant

PROJECTS BY CATEGORY

CATEGORY	PROJECT NAME	FUNDING SOURCE	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	TOTAL
Comm Dev	Ada Street Demo	General Fund		\$ 15,000						\$ 15,000
Comm Dev	Grover Street Demo	General Fund	\$ 15,000							\$ 15,000
Comm Dev	Zoning Ordinance Update	General Fund	\$ 20,000	\$ 20,000						\$ 20,000
Comm Dev	TOTAL		\$ 35,000	\$ 35,000	\$ -	\$ -	\$ -	\$ -		\$ 70,000
Historical	Curwood Castle Exterior Lighting	Millage, Grants							\$ 15,000	\$ 15,000
Historical	Historic Owosso Sign replacement (4), Gould House Sign Replacement	Millage	\$ 10,000							\$ 10,000
Historical	Curwood Castle HVAC Replacement	Millage, Donations					\$ 80,000			\$ 80,000
Historical	Curwood Castle Roof, Gutter, Flashing, and Plaster Repair	Millage, Donations		\$ 15,000						\$ 15,000
Historical	Curwood Castle Energy Efficient Windows	Millage, Grants				\$ 15,000				\$ 15,000
Historical	Gould House Porch Rebuild (3)	Millage, Donations, General Fund			\$ 60,000					\$ 60,000
Historical	Gould House Energy Efficient Windows	Millage, Grants					\$ 35,000			\$ 35,000
Historical	Gould House Furnace Replacement(3) and Hot Water Replacement (3)	Millage, Donations, General Fund		\$ 20,000						\$ 20,000
Historical	Gould House Plumbing/Drain Work	Millage, General Fund			\$ 20,000					\$ 20,000
Historical	Gould House Exterior (Painting, Tuckpointing)	Millage, Donations, General Fund				\$ 25,000				\$ 25,000
Historical	Gould House Carriage House Restoration	Grants						\$ 100,000		\$ 100,000
Historical	Gould House Interior Restoration	Millage, General Fund					\$ 35,000			\$ 35,000
Historical	Gould House Roof, Gutter, and Soffit Repair	Millage, General Fund		\$ 20,000						\$ 20,000
Historical	TOTAL		\$ 10,000	\$ 55,000	\$ 80,000	\$ 40,000	\$ 70,000	\$ 80,000	\$ 115,000	\$ 450,000
IT	General IT Upgrades	General Fund	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 70,000
IT	Core Switch	General Fund		\$ 53,490						\$ 53,490
IT	Replace Cisco Routers	General Fund			\$ 30,000					\$ 30,000
IT	Replace Battery back up	General Fund	\$ 25,000							\$ 25,000
IT	Replace Phone Handsets	General Fund		\$ 10,000	\$ 14,000					\$ 24,000
IT	Replacement of Firewall	General Fund, MMRPA RAP Grant				\$ 28,000				\$ 28,000
IT	Election Equipment Upgrades	General Fund	\$ 16,422							\$ 16,422
IT	Water Meter Customer Portal	Water Fund	\$ 25,000	\$ 19,000	\$ 19,000	\$ 19,000	\$ 19,000	\$ 19,000		\$ 120,000
IT	TOTAL		\$ 76,422	\$ 92,490	\$ 73,000	\$ 57,000	\$ 29,000	\$ 29,000	\$ 10,000	\$ 366,912
Main St/DDA	ATV with snow blower/plow for Downtown Snow Removal	DDA, General Fund			\$ 15,000					\$ 15,000
Main St/DDA	Downtown Planters	DDA, General Fund		\$ 10,000	\$ 10,000					\$ 20,000
Main St/DDA	Downtown Security Cameras	DDA, Donations, Grant					\$ 11,000			\$ 11,000
Main St/DDA	Downtown Streetscape Improvements	DDA, General Fund		\$ 10,000	\$ 10,000	\$ 10,000				\$ 30,000
Main St/DDA	TOTAL		\$ -	\$ 20,000	\$ 35,000	\$ 10,000	\$ 11,000	\$ -	\$ -	\$ 76,000
Parks and Rec	Adams Park Pavilion	Grant, Donations							\$ 10,000	\$ 10,000
Parks and Rec	Barrier Free Landing at Oakwood Ave Bridge	Millage, Grant, Donations					\$ 40,000			\$ 40,000
Parks and Rec	Bennett Additional Parking	Millage		\$ 20,000						\$ 20,000
Parks and Rec	Bennett Field Light Replacement (6)	Millage		\$ 20,000						\$ 20,000
Parks and Rec	Bennett Field Drainage	Millage			\$ 10,000					\$ 10,000
Parks and Rec	Collamer Park Boat Launch	General Fund, Grant, Donation			\$ 15,000					\$ 15,000
Parks and Rec	Collamer Park Floating Dock Rehab	Millage		\$ 20,000						\$ 20,000
Parks and Rec	Collamer Park East Side Parking	General Fund, Grant, Donation			\$ 30,000					\$ 30,000
Parks and Rec	Collamer Park Fishing Pier	General Fund, Grant, Donation			\$ 15,000					\$ 15,000
Parks and Rec	Middle School Kayak/Canoe Landing	Grant, Donation			\$ 20,000					\$ 20,000
Parks and Rec	Curwood Castle Parking Lot Improvements	Millage							\$ 200,000	\$ 200,000
Parks and Rec	Grove Holman - Pool Building Rehabilitation	Grant, Millage	\$ 150,000							\$ 150,000
Parks and Rec	Grove Holman Parking Lot	Millage		\$ 35,000						\$ 35,000
Parks and Rec	Hugh Parker Equipment Storage Building	Grant, Donation					\$ 30,000			\$ 30,000
Parks and Rec	Hugh Parker Field Improvements	General Fund, Grant, Donation					\$ 30,000			\$ 30,000
Parks and Rec	N. Chipman Footbridge	General Fund, Grant, Donation					\$ 100,000			\$ 100,000
Parks and Rec	Park Entrance Signage	General Fund, Grant, Donation					\$ 80,000			\$ 80,000
Parks and Rec	Rosevear Drain Culvert	General Fund, Grant, Donation				\$ 30,000				\$ 30,000
Parks and Rec	Rosevear Parking Lot	General Fund, Grant, Donation				\$ 30,000				\$ 30,000
Parks and Rec	Rosevear to Collamer Connection Path	General Fund, Grant, Donation				\$ 30,000				\$ 30,000
Parks and Rec	Rudy DeMuth Oakwood Parking Lot	General Fund, Grant, Donation				\$ 100,000				\$ 100,000
Parks and Rec	Rudy DeMuth Parking Removal	General Fund, Grant, Donation				\$ 10,000				\$ 10,000
Parks and Rec	Permanent Connection to CIS Trail	Grants					\$ 1,000,000			\$ 1,000,000

PROJECTS BY CATEGORY

CATEGORY	PROJECT NAME	FUNDING SOURCE	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	TOTAL
Public Service	Seventh Street Rehabilitation	Bond, SAD	\$ 188,972							\$ 188,972
Public Service	Seventh Street Water Main	Water Fund	\$ 56,025							\$ 56,025
Public Service	Sewer Rehab-St. Construction	Wastewater Fund	\$ 326,000	\$ 1,400,000						\$ 1,726,000
Public Service	Shady Lane - Resurfacing	Bond, SAD			\$ 125,000	\$ 165,700				\$ 290,700
Public Service	Sidewalk Replacement	Act-51 local & major street fund	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 90,000	\$ 630,000
Public Service	Stewart Street Rehabilitation	Bond, SAD, TEDF Category F grant				\$ 362,200	\$ 200,000			\$ 562,200
Public Service	Storm Sewer Lining	Bond, SAD	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 1,400,000
Public Service	Street Patch	Act-51 local & major street fund, water, sewer fund	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 70,000	\$ 490,000
Public Service	Summit Street Rehabilitation	Bond, SAD, Water Fund	\$ 677,000	\$ 200,000						\$ 877,000
Public Service	Washington Street Road Rehabilitation - Gute to M-71	Bond, Grant, SAD, Water Fund	\$ 1,193,200							\$ 1,193,200
Public Service	Water Main Replacement - 2020 - Construction Misc Other	Water Fund		\$ 1,716,800						\$ 1,716,800
Public Service	Water Main Replacement - 2021 - Construction Misc Other	Water Fund			\$ 2,221,500					\$ 2,221,500
Public Service	Water Main Replacement - 2022 - Construction Misc Other	Water Fund				\$ 1,114,600				\$ 1,114,600
Public Service	Water Main Replacement - 2023 - Construction Misc Other	Water Fund					\$ 2,390,000			\$ 2,390,000
Public Service	Water Main Replacement - 2024 - Construction Misc Other	Water Fund						\$ 2,479,000		\$ 2,479,000
Public Service	Williams Street Rehabilitation - N. Shiawassee to Washington	Bond, SAD	\$ 777,053							\$ 777,053
Public Service	Woodlawn Avenue Rehabilitation - Farr to Auburndale	Bond, SAD			\$ 90,000	\$ 100,000				\$ 190,000
Public Service	Woodlawn Avenue Rehabilitation - Monroe to Corunna	Bond, SAD			\$ 60,000	\$ 60,000				\$ 120,000
Public Service	TOTAL		\$ 5,587,243	\$ 7,813,500	\$ 5,259,600	\$ 3,316,200	\$ 6,276,400	\$ 5,178,800	\$ 4,012,700	\$ 37,444,443
Public Works	1/2 Ton Pickup	Motor Pool						\$ 25,600		\$ 25,600
Public Works	Administrative Car (2)	Motor Pool		\$ 24,000	\$ 24,000					\$ 48,000
Public Works	Bucket Truck= - Ariel Lift	Motor Pool			\$ 210,000					\$ 210,000
Public Works	Carpet for Finance/IT Wing of City Hall	General Fund		\$ 10,000						\$ 10,000
Public Works	City Hall Front Steps	General Fund		\$ 15,000						\$ 15,000
Public Works	Hook Lift Bodies	Motor Pool		\$ 17,000						\$ 17,000
Public Works	Leaf Vac Machine	Motor Pool						\$ 60,000		\$ 60,000
Public Works	Library Air Conditioning	General Fund		\$ 30,000						\$ 30,000
Public Works	Mower Deck Front - John Deere 72"	Motor Pool		\$ 24,917						\$ 24,917
Public Works	Mower Blower - John Deere	Motor Pool					\$ 27,083			\$ 27,083
Public Works	Oakwood Ballfield Lighting Improvements	General Fund		\$ 12,000						\$ 12,000
Public Works	Overhead Street Lights and Poles	General Fund	\$ 10,000	\$ 10,000	\$ 10,000					\$ 30,000
Public Works	Paint Stripe Machine	Motor Pool	\$ 13,000							\$ 13,000
Public Works	Pavement Saw	Motor Pool		\$ 12,600						\$ 12,600
Public Works	Pickup 4X4 W-Blade	Motor Pool	\$ 61,600			\$ 42,000				\$ 103,600
Public Works	Pickups - 3/4 Ton	Motor Pool			\$ 82,500	\$ 58,000		\$ 59,733		\$ 200,233
Public Works	Public Works Building Improvements	General Fund, Motor Pool	\$ 12,000	\$ 15,000	\$ 45,000					\$ 72,000
Public Works	Salt Trucks - Single Axle	Motor Pool	\$ 275,000							\$ 275,000
Public Works	Security & Accessibility Technology at City Hall	General Fund	\$ 10,000							\$ 10,000
Public Works	Sign Truck - 1 Ton	Motor Pool		\$ 126,000				\$ 40,667		\$ 166,667
Public Works	Skid Steer - W/Attachments	Motor Pool						\$ 85,000		\$ 85,000
Public Works	Sweeper	Motor Pool						\$ 300,000		\$ 300,000
Public Works	Single Axle - 5 Yard Dump	Motor Pool		\$ 100,750						\$ 100,750
Public Works	Tandem Axle - 10 Yard Dump	Motor Pool		\$ 152,000						\$ 152,000
Public Works	Sewer Vactor Truck	Motor Pool						\$ 600,000		\$ 600,000
Public Works	Tractor 4X4 - Mowing	Motor Pool				\$ 40,500				\$ 40,500
Public Works	Wheel Loaders - 2	Motor Pool					\$ 561,000			\$ 561,000
Public Works	TOTAL		\$ 381,600	\$ 549,267	\$ 371,500	\$ 140,500	\$ 588,083	\$ 1,111,000	\$ 60,000	\$ 3,201,950
WTP	16" High Service Pipe	Water Fund, DWRF		\$ 479,000						\$ 479,000
WTP	Chlorine Distribution Tanks	Water Fund						\$ 40,000		\$ 40,000
WTP	CO2 Distribution System Rehab	Water Fund					\$ 100,000			\$ 100,000
WTP	Filter BW Pump (2),VFD, Controls	Water Fund, DWRF		\$ 460,000						\$ 460,000
WTP	Fluoride Distribution System	Water Fund						\$ 27,000		\$ 27,000
WTP	Hintz Well Phase II	Water Fund	\$ 155,000							\$ 155,000
WTP	Induced Draft Aerator Rehab	Water Fund					\$ 40,000			\$ 40,000
WTP	Lagoon Security Fence	Water Fund			\$ 40,400					\$ 40,400
WTP	No. 1 HS Pump and Controls	Water Fund		\$ 52,000						\$ 52,000
WTP	SCADA Controls	Water Fund		\$ 180,000	\$ 180,000					\$ 360,000

PROJECTS BY CATEGORY

CATEGORY	PROJECT NAME	FUNDING SOURCE	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	TOTAL
WTP	Standpipe & Booster Pump Station Rehab	Water Fund				\$ 451,000				\$ 451,000
WTP	West Elevated Tower Rehab	Water Fund				\$ 330,000				\$ 330,000
WTP	TOTAL		\$ 155,000	\$ 1,171,000	\$ 220,400	\$ 781,000	\$ 140,000	\$ 67,000	\$ -	\$ 2,534,400
WWTP	Administration Building Rehabilitation	Wastewater Fund		\$ 200,000	\$ 200,000					\$ 400,000
WWTP	Backup Generator - WWTP	Wastewater Fund	\$ 350,000							\$ 350,000
WWTP	Beehler/Bradley St Retention Basin	MDEQ SRF Loan							\$ 3,500,000	\$ 3,500,000
WWTP	East Roughing Tower Pump	Wastewater Fund				\$ 20,000				\$ 20,000
WWTP	Electrical/Instrumentation Rehabilitation - misc.	Wastewater Fund	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 140,000
WWTP	Grit Removal System	Wastewater Fund, Grant, SRF		\$ 1,030,000						\$ 1,030,000
WWTP	Main Building Roof Replacement	Wastewater Fund, Grant, SRF			\$ 398,000					\$ 398,000
WWTP	Nitrification Tower Replacement	Wastewater Fund, Grant, SRF						\$ 2,500,000		\$ 2,500,000
WWTP	Pump & Motor Replacement	Wastewater Fund	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 140,000
WWTP	SCADA System Install	Wastewater Fund					\$ 300,000			\$ 300,000
WWTP	Screw Pumps - 3	Wastewater Fund, Grant		\$ 1,200,000						\$ 1,200,000
WWTP	Secondary Clarifier Flight Chain Repair	Wastewater Fund	\$ 25,000							\$ 25,000
WWTP	Secondary Clarifier Replacement	Wastewater Fund				\$ 2,500,000				\$ 2,500,000
WWTP	Sludge Dewatering - Compactor	Wastewater Fund, Grant			\$ 1,375,000					\$ 1,375,000
WWTP	Sludge Dewatering Centrifuge Rehab	Wastewater Fund					\$ 60,000			\$ 60,000
WWTP	Tertiary Pump Replacement	Wastewater Fund	\$ 20,000		\$ 20,000	\$ 20,000				\$ 60,000
WWTP	Van Replacement	Wastewater Fund	\$ 25,000							\$ 25,000
WWTP	West Roughing Tower Pump	Wastewater Fund					\$ 20,000			\$ 20,000
WWTP	TOTAL		\$ 460,000	\$ 2,470,000	\$ 2,033,000	\$ 2,580,000	\$ 420,000	\$ 2,540,000	\$ 3,540,000	\$ 14,043,000
TOTAL			\$ 6,964,265	\$ 12,406,715	\$ 8,536,000	\$ 7,223,700	\$ 8,865,483	\$ 9,232,800	\$ 16,997,700	\$ 70,226,663

COMMUNITY DEVELOPMENT PROJECTS

1. 424 Grover Street Demolition – COMPLETE

Project Year:	2019-20	Estimated Cost:	\$15,000
Primary Funding Source:	General Fund	Add Funding Source:	Grant
Ranking:	Low		

Description: This project would involve hiring a consultant to test and abate any found asbestos, demolish the existing home, backfill, and plant grass.

2. Zoning Ordinance Update – IN PROCESS

Project Year:	2019-21	Estimated Cost:	\$40,000
Primary Funding Source:	General Fund	Add Funding Source:	Grant
Ranking:	Low		

Description: This project would involve issuing an RFP to secure a consulting firm to handle the update of the existing zoning and sign ordinance. This would occur after the competition of the Master Plan update. The Master Plan will provide framework for the zoning ordinance update.

3. 900 Ada Street Demolition

Project Year:	2020-21	Estimated Cost:	\$15,000
Primary Funding Source:	General Fund	Add Funding Source:	Grant
Ranking:	Low		

Description: This project would involve hiring a contractor to test and abate any found asbestos, demolish the existing home, backfill, and plant grass.

MAIN STREET AND DDA PROJECTS

1. Downtown Planters

Project Year:	2020-22	Estimated Cost:	\$20,000
Primary Funding Source:	DDA, General Fund	Add Funding Source:	Donation
Ranking:	Low		

Description: Install new movable planters for the downtown district.

2. Downtown Streetscape Improvements

Project Year:	2019-22	Estimated Cost:	\$30,000
Primary Funding Source:	DDA, General Fund	Add Funding Source:	Grant
Ranking:	Medium		

Project Description: Repair/replace flowerbeds, trees, sidewalks, and parking lots in the downtown district.

3. ATV with Snow Blower/Plow

Project Year:	2021-22	Estimated Cost:	\$15,000
Primary Funding Source:	DDA, General Fund	Add Funding Source:	Donation
Ranking:	Low		

Description: Purchase an ATV/UTV with snow removal capability to clear snow and salt sidewalks during the winter months for the downtown district.

4. Downtown Security Cameras

Project Year:	2023-24	Estimated Cost:	\$11,000
Primary Funding Source:	DDA, Donation	Add Funding Source:	Grant
Ranking:	Low		

Description: Install security cameras in the downtown district.

HISTORICAL FACILITIES PROJECTS

1. Historic Sign Replacement – COMPLETE

Project Year:	2019-20	Estimated Cost:	\$10,000
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	Low		

Description: This project would involve replacing the ‘welcome to historic Owosso’ signs throughout the city as well as the signs in Curwood Castle Park.

2. Curwood Castle Roof, Gutter, Flashing, and Plaster Repair

Project Year:	2020-21	Estimated Cost:	\$15,000
Primary Funding Source:	Millage	Add Funding Source:	
Ranking:	Medium		

Description: Repair and maintenance of the slate roof on the Castle. Also repair of the copper gutters and flashing. Repair to sections of the interior plaster that looks to have minor leaks due to condition of flashing/roof.

3. Gould House furnace Replacement (3) and Hot Water Heater Replacement (3)

Project Year:	2020-21	Estimated Cost:	\$20,000
Primary Funding Source:	Millage	Add Funding Source:	
Ranking:	Medium		

Description: Replace the 3 forced air furnaces in the Gould House with new efficient units. Also replace the 3 hot water heaters that serve the two apartments and the first floor museum space. They are between 10-20 years old.

4. Gould House Roof, Gutter, and Soffit Repair

Project Year:	2020-21	Estimated Cost:	\$20,000
Primary Funding Source:	Millage	Add Funding Source:	
Ranking:	High		

Description: Repair leaks in the Gould House gutters, water damaged soffit, and repair areas of roof that may need attention.

5. Gould House Porch Rebuild (3)

Project Year:	2021-22	Estimated Cost:	\$60,000
Primary Funding Source:	Millage	Add Funding Source:	

HISTORICAL FACILITIES PROJECTS

Ranking: Medium

Description: Rebuild the 3 porches on the Gould House.

6. Gould House Plumbing and Drain Reconfiguration

Project Year:	2021-22	Estimated Cost:	\$20,000
Primary Funding Source:	Millage	Add Funding Source:	
Ranking:	Low		

Description: Reconfigure or improve plumbing in the Gould House in the exterior walls to prevent freezing in the winter months.

7. Curwood Castle Energy Efficient Windows

Project Year:	2022-23	Estimated Cost:	\$15,000
Primary Funding Source:	Millage	Add Funding Source:	Donation, Grant
Ranking:	Low		

Description: Replace windows in Curwood Castle for more efficiency while preserving the historical nature of the building.

8. Gould House Exterior (Painting and Tuck-pointing)

Project Year:	2022-23	Estimated Cost:	\$25,000
Primary Funding Source:	Millage	Add Funding Source:	Donations
Ranking:	Low		

Description: Paint the wood exterior and windows of the Gould House and perform tuck-pointing on the brick exterior where needed.

9. Gould House Energy Efficient Windows

Project Year:	2023-24	Estimated Cost:	\$35,000
Primary Funding Source:	Millage	Add Funding Source:	Donation, Grant
Ranking:	Low		

Description: Replace windows in the Gould House for more efficiency while preserving the historic nature of the building.

HISTORICAL FACILITIES PROJECTS

10. Gould House Interior Restoration

Project Year:	2023-24	Estimated Cost:	\$35,000
Primary Funding Source:	Millage	Add Funding Source:	Donation
Ranking:	Low		

Description: Repair plaster on the first floor to fix cracking in the ceiling and walls. Paint interior to match great room.

11. Curwood Castle HVAC System Replacement

Project Year:	2024-25	Estimated Cost:	\$80,000
Primary Funding Source:	Millage	Add Funding Source:	Donation, Grant
Ranking:	Low		

Description: Replace current hot water heat system in the Castle with a heating and cooling system. Reconfiguration or minor building alterations may be necessary.

12. Curwood Castle Exterior Lighting Improvements

Project Year:	2025-26	Estimated Cost:	\$15,000
Primary Funding Source:	Millage, General Fund	Add Funding Source:	Grant, Donation
Ranking:	Low		

Description: Replace the existing exterior lighting system at the Castle with a better and/or more efficient system.

13. Gould House Carriage House Restoration

Project Year:	2025-26	Estimated Cost:	\$100,000
Primary Funding Source:	Millage, General Fund	Add Funding Source:	Grant, Donation
Ranking:	Low		

Description: Rehabilitation/restore the carriage house at the Gould House. This would include a new roof, repainting, structural repair, and electricity.

INFORMATION TECHNOLOGY PROJECTS

1. General IT Upgrades

Project Year:	2019-26	Estimated Cost:	\$70,000
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	Medium		

Description: Replacement of computers, printers, etc. as needed. Scheduled replacement, replacement of worn-out and obsolete equipment.

2. Replace Battery Backup – COMPLETE

Project Year:	2019-20	Estimated Cost:	\$25,000
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	Medium		

Description: Replacement of worn-out, obsolete equipment and increase safety of City’s cyber storage capabilities.

3. Election Equipment Upgrades – COMPLETE

Project Year:	2019-20	Estimated Cost:	\$16,422
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	Medium		

Description: Replace 6 election laptops and the purchase of a 2nd AVCB scanning unit. This includes the printer and cabinets.

4. Water Meter Customer Portal (ACE)

Project Year:	2019-25	Estimated Cost:	\$120,000
Primary Funding Source:	Water Fund	Add Funding Source:	
Ranking:	Medium		

Description: ACLARA Technologies “Adaptive Consumer Engagement” (ACE) application. Allows water customers to access their water account information from home electronics and cell phones.

5. Cisco Core Switch

Project Year:	2020-21	Estimated Cost:	\$53,490
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	Medium		

INFORMATION TECHNOLOGY PROJECTS

Description: Replace the phone system supporting hardware in preparation for phone and router replacement in 2021-22. The current hardware has reached the end of its useful life.

6. Replace Phone Handsets

Project Year:	2020-22	Estimated Cost:	\$24,000
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	Medium		

Description: Scheduled replacement of obsolete equipment.

7. Replace Cisco Routers

Project Year:	2021-22	Estimated Cost:	\$30,000
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	Medium		

Description: Replace phone systems integrated service routers to match the previous year's phone system core switch.

8. Firewall Replacement

Project Year:	2022-23	Estimated Cost:	\$28,000
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	High		

Description: Scheduled replacement and upgrade of obsolete cyber protection equipment and software.

PARKS AND RECREATION PROJECTS

1. Grove Holman Pool Building Rehabilitation NOT COMPLETE

Project Year:	2019-20	Estimated Cost:	\$150,000
Primary Funding Source:	Grant	Add Funding Source:	Millage
Ranking:	Medium		

Description: Remodel the interior and exterior of the old Holman Pool building to serve as a concession stand, warming hut, equipment rental, and storage building for the park’s amenities. DNR TRUST FUND GRANT NOT AWARDED.

2. Adams Park Pavilion

Project Year:	2020-21	Estimated Cost:	\$10,000
Primary Funding Source:	Millage	Add Funding Source:	Grant, Donation
Ranking:	Low		

Description: Build a pavilion in Adams Park

3. Barrier Free Landing at Oakwood Ave Bridge

Project Year:	2020-21	Estimated Cost:	\$40,000
Primary Funding Source:	Millage	Add Funding Source:	Grant
Ranking:	High		

Description: Install barrier free canoe/kayak landing site at Oakwood Avenue Bridge

4. Bennet Field Additional Parking

Project Year:	2020-21	Estimated Cost:	\$20,000
Primary Funding Source:	Millage	Add Funding Source:	
Ranking:	Medium		

Description: Designate extra area within park for additional 20-40 spaces

5. Harmon Patridge Park Trail Rehabilitation

Project Year:	2020-21	Estimated Cost:	\$10,000
Primary Funding Source:	Millage	Add Funding Source:	Donation
Ranking:	High		

Description: Work with the Rotary Club to replace all gravel on the walking trail

PARKS AND RECREATION PROJECTS

6. Bennet Field Drainage

Project Year:	2020-21	Estimated Cost:	\$10,000
Primary Funding Source:	Millage	Add Funding Source:	
Ranking:	Low		

Description: Address the flow and drainage issues on the junior playing field and in the parking lot

7. Collamer Park Boat Launch

Project Year:	2021-22	Estimated Cost:	\$15,000
Primary Funding Source:	Millage	Add Funding Source:	Grant, Donation
Ranking:	Low		

Description: Build a boat launch on Hopkins Lake in Collamer Park

8. Baseball/Softball Field Light Replacement

Project Year:	2020-21	Estimated Cost:	\$20,000
Primary Funding Source:	Millage	Add Funding Source:	
Ranking:	High		

Description: Replace ball field lights at Rudy Demuth and Bennet Park

9. Grove Holman Parking Lot Improvements

Project Year:	2020-21	Estimated Cost:	\$15,000
Primary Funding Source:	Millage	Add Funding Source:	
Ranking:	High		

Description: With the completion of the skate park and the possible repurposing of the Holman Pool building, the parking lot needs to be repaved as it is in very poor shape

10. Improved Connection to CIS Trail

Project Year:	2021-22	Estimated Cost:	\$2,000,000
Primary Funding Source:	Grant	Add Funding Source:	
Ranking:	High		

Description: Link the City’s river trail system to the CIS trail that currently ends in Owosso Township. This is an improvement to the current route that comes in at the north end of the city. This will

PARKS AND RECREATION PROJECTS

require an easement or maintenance agreement with the RR as the new connection would utilize about a mile of RR right of way. MDOT TAP Grant with a match from DNR Trust Fund Grant would fund the project.

11. Collamer Park East Side Parking

Project Year:	2021-22	Estimated Cost:	\$30,000
Primary Funding Source:	Millage	Add Funding Source:	Grant, Donation
Ranking:	Low		

Description: Develop parking on east side of Hopkins Lake with the fishing pier to satisfy the needs of the trailhead and pier at the south end of Palmer Street.

12. Collamer Park Fishing Pier

Project Year:	2021-22	Estimated Cost:	\$15,000
Primary Funding Source:	Millage	Add Funding Source:	Grant, Donation
Ranking:	Low		

13. Curwood Area Boat Launch

Project Year:	2021-22	Estimated Cost:	\$20,000
Primary Funding Source:	Millage	Add Funding Source:	Grant, Donation
Ranking:	High		

Description: Build a canoe/kayak launch at or near the middle school. An alternate location to improve parking availability could be behind retriever solutions just downstream. An agreement with the property would have to be executed for this alternate location and a sidewalk will have to be built to the launch at the water’s edge.

14. Hugh Parker Equipment Storage Building

Project Year:	2023-24	Estimated Cost:	\$20,000
Primary Funding Source:	Millage	Add Funding Source:	Donation
Ranking:	Low		

Description: Build and equipment shed possibly in partnership with service groups.

15. Hugh Parker Field Improvements

Project Year:	2023-24	Estimated Cost:	\$30,000
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PARKS AND RECREATION PROJECTS

Primary Funding Source: General Fund Add Funding Source: Grant
Ranking: Low

Description: Build a non-motorized path connecting Rosevear to Collamer Park through the industrial park

21. Rudy Demuth Oakwood Parking Lot

Project Year: 2025-26 Estimated Cost: \$10,000
Primary Funding Source: General Fund Add Funding Source:
Ranking: Low

Description: Eliminate Parking between ball diamonds but maintain the gated service drive

PUBLIC SAFETY PROJECTS

1. Coban Server COMPLETED

Project Year:	2019-20	Projected Cost:	\$10,000
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	Low		

Description: This server would allow for the implementation of body cameras

2. Jaws of Life Replacement NOT COMPLETED

Project Year:	2019-20	Projected Cost:	\$30,000
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	Low		

Description: Purchase of the jaws-of-life to replace a worn out/obsolete one. This purchase will increase safety and improvement service in the community.

3. Lucas Device (CPR Machine) COMPLETE

Project Year:	2019-20	Projected Cost:	\$17,000
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	Medium		

Description: Purchase a Lucas Device to automate the CPR that is sometimes required in life-saving activities.

4. Patrol Vehicle Replacement

Project Year:	2019-26	Projected Cost:	\$400,000
Primary Funding Source:	General Fund	Add Funding Source:	USDA Grant
Ranking:	Medium		

Description: Purchase of four vehicles every three years to replace a worn out/obsolete units. This purchase will increase safety and improvement service in the community.

5. Automatic External Defibrillator (AED)

Project Year:	2020-21	Projected Cost:	\$28,000
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	Low		

PUBLIC SAFETY PROJECTS

Description: Purchase of an AED machine to replace a worn out/obsolete one. This purchase will increase safety and improvement service in the community.

6. Detective Car

Project Year:	2020-21	Projected Cost:	\$30,000
Primary Funding Source:	General Fund	Add Funding Source:	USDA Grant
Ranking:	Low		

Description: Replace one of the unmarked detective cars.

7. Radio Replacement

Project Year:	2021-22	Projected Cost:	\$200,000
Primary Funding Source:	General Fund	Add Funding Source:	
Ranking:	Medium		

Description: Purchase of 50 radios to replace worn out/obsolete units.

8. Self-Contained Breathing Apparatus (SCBA) Tanks

Project Year:	2021-22	Projected Cost:	\$125,000
Primary Funding Source:	General Fund	Add Funding Source:	Grant
Ranking:	Medium		

Description: Purchase of 25 SCBA bottles which are scheduled for replacement.

9. Public Safety Building Replacement

Project Year:	2025-26	Projected Cost:	\$9,000,000
Primary Funding Source:	General Fund	Add Funding Source:	Grant, Bond
Ranking:	Medium		

Description: Demolish and replace existing Public Safety building with a more energy efficient building per the needs assessment of the current building that was completed in the 2017-2018 budget year.

PUBLIC SERVICE PROJECTS

1. Abrey Avenue Resurfacing COMPLETED

Project Year:	2019-20	Projected Cost:	\$57,237
Primary Funding Source:	Bond	Add Funding Source:	SAD

Description: Melinda Street to Allendale Avenue. City project for .11 mile road resurfacing; altogether with related work items plus engineering fee.

2. Ada Street Reconstruction

Project Year:	2024-26	Projected Cost:	\$137,700
Primary Funding Source:	Bond, SAD	Add Funding Source:	Act 51

Description: From Jennett St to Campbell Dr. City project for .11 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

3. Allendale Avenue Resurfacing COMPLETED

Project Year:	2019-20	Projected Cost:	\$116,745
Primary Funding Source:	Bond	Add Funding Source:	SAD

Description: From Gould Street to east city limits. City project for .23 mile road resurfacing; altogether with related work items plus engineering fee.

4. Ball Street Rehabilitation

Project Year:	2023-25	Projected Cost:	\$778,500
Primary Funding Source:	Bond, SAD	Add Funding Source:	Act 51

Description: From Exchange Street to King Street. City project for .43 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

5. Broadway Avenue Rehabilitation

Project Year:	2023-25	Projected Cost:	\$280,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	Act 51

Description: From Auburndale Avenue to Monroe Street. City project for .17 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

PUBLIC SERVICE PROJECTS

6. Campbell Drive Rehabilitation

Project Year:	2024-26	Projected Cost:	\$320,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	Act 51

Description: From Ada St to Ada St. City project for .17 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

7. Carmody Street Rehabilitation

Project Year:	2021-22	Projected Cost:	\$50,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From Main Street to Cleveland Avenue. City project for .13 mile road rehabilitation (crush, stabilize, cap); altogether with related work items.

8. Cedar Street Rehabilitation – Phase 1

Project Year:	2019-21	Projected Cost:	\$771,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	Water

Description: From South Street to Hampton Street. City project for .25 mile road rehabilitation (pavement replacement), water main, isolated curb and gutter replacement, ADA sidewalks, and storm sewer; altogether with related work items plus engineering fee.

9. Cedar Street Rehabilitation – Phase 2

Project Year:	2023-24	Projected Cost:	\$1,080,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	Water

Description: From Hampton Street to Main Street. City project for .75 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

10. Center Street Rehabilitation – King to Alturas

Project Year:	2020-21	Projected Cost:	\$283,200
Primary Funding Source:	Bond, SAD	Add Funding Source:	Water

PUBLIC SERVICE PROJECTS

Description: From King Street to 132 feet north of Alturas Drive. City project for .26 mile road rehabilitation (crush, stabilize, cap) and water main; altogether with related work items plus engineering fee.

11. Center Street Resurfacing – Alturas to North

Project Year:	2020-22	Projected Cost:	\$424,600
Primary Funding Source:	Bond, SAD	Add Funding Source:	Water

Description: From 132 feet north of Alturas Drive to North Street. City project for .26 mile road resurfacing, water main, and isolated curb and gutter replacement; altogether with related work items plus engineering fee.

12. Chip Seal Program

Project Year:	2019-26	Projected Cost:	\$1,400,000
Primary Funding Source:	Act 51	Add Funding Source:	

Description: General maintenance operation for existing asphalt road pavement surfaces. Chip seal is a proven low-budget method for prolonging pavement life and delaying higher cost pavement treatments. This program is reintroduced as a CIP item. A map representing approximately 20 miles of suitable streets for chip seal is attached. Total estimated cost for treating all these streets is \$1,400,000. City staff will prioritize work sites and develop annual project lists for the six-year period.

13. Chipman Street Resurfacing

Project Year:	2023-24	Projected Cost:	\$366,400
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From Harding Avenue to North Street. City project for .32 mile road resurfacing, isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

14. Chipman Street Reconstruction

Project Year	2021-23	Projected Cost:	\$366,400
Primary Funding Source:	Bond, SAD	Add Funding Source:	MDOT Grant

Description: From Main Street to North Street. City/MDOT project for .17 mile road reconstruction along with HMA pavement, curb and gutter, ADA sidewalks, storm sewer, permanent signing and pavement markings; altogether with related work items plus engineering fee.

PUBLIC SERVICE PROJECTS

15. Clark Avenue Resurfacing

Project Year:	2019-21	Projected Cost:	\$469,500
Primary Funding Source:	Bond, SAD	Add Funding Source:	Water

Description: From Oliver Street to King Street. City project for .18 mile road resurfacing, isolated curb and gutter replacement, ADA sidewalk ramps, storm sewer, and watermain; altogether with related work items plus engineering fee.

16. Clinton Street Rehabilitation

Project Year:	2023-25	Projected Cost:	\$420,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From Cedar Street to Shiawassee Street. City project for .24 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

17. Comstock Street Rehabilitation

Project Year:	2024-26	Projected Cost:	\$685,600
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From Park St to Gould St. City project for .59 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

18. Clyde Street Resurfacing

Project Year:	2021-22	Projected Cost:	\$55,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From Walnut Street to Shiawassee Street. City project for .13 mile road rehabilitation (crush, stabilize, cap); altogether with related work items.

19. Dewey Street Rehabilitation

Project Year:	2025-26	Projected Cost:	\$1,122,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

PUBLIC SERVICE PROJECTS

Description: From Comstock Street to King Street. City project for .57 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

20. Division Street Rehabilitation

Project Year:	2020-22	Projected Cost:	\$315,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From Harper Street to Ridge Street. City project for .15 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

21. Elm Street Reconstruction

Project Year:	2025-26	Projected Cost:	\$303,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From Main Street to River Street. City project for .13 mile road reconstruction along with new curb and gutter, ADA sidewalk ramps, and storm sewer; altogether with related work items.

22. Exchange Street Rehabilitation

Project Year:	2021-23	Projected Cost:	\$414,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From Saginaw Street to Dewey Street. City project for .27 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

23. Gould Street Rehabilitation (Oliver to Moore)

Project Year:	2021-22	Projected Cost:	\$700,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	Grant

Description: From Oliver Street to Moore Street. City project for .50 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

24. Gould Street Rehabilitation (North to Moore)

PUBLIC SERVICE PROJECTS

Project Year:	2024-26	Projected Cost:	\$473,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	Water

Description: From Moore Street to North Street. City project for .24 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

25. Huntington Drive Rehabilitation

Project Year:	2025-26	Projected Cost:	\$156,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From Moore Street to Stevens Street. City project for .15 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

26. Howell Street Resurfacing

Project Year:	2021-22	Projected Cost:	\$43,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From south end of street to Clinton Street. City project for .07 mile road rehabilitation (crush, stabilize, cap); altogether with related work items.

27. King Street Rehabilitation

Project Year:	2022-24	Projected Cost:	\$1,000,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	Grant

Description: From Seventh Street to Shiawassee Street. City/MDOT project for .41 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

28. Lynn Street Resurfacing

Project Year:	2021-22	Projected Cost:	\$20,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From west end of street to Howell Street. City project for .06 mile road rehabilitation (crush, stabilize, cap); altogether with related work items.

29. Maple Street Reconstruction

PUBLIC SERVICE PROJECTS

Project Year: 2021-23 Projected Cost: \$230,500
 Primary Funding Source: Bond, SAD Add Funding Source: Water

Description: From Corunna Avenue to north end. City project for .07 mile road reconstruction along with new curb and gutter, ADA sidewalk ramps, and storm sewer; altogether with related work items.

30. Martin Street Rehabilitation

Project Year: 2024-26 Projected Cost: \$287,600
 Primary Funding Source: Bond, SAD Add Funding Source:

Description: From Stewart Street to Milwaukee Street. City project for .27 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

31. Mason Street Rehabilitation

Project Year: 2022-24 Projected Cost: \$650,000
 Primary Funding Source: Bond, SAD Add Funding Source:

Description: From Park Street to Dewey Street. City project for .33 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

32. Monroe Street Resurfacing (McMillan to Ease City Limit) COMPLETED

Project Year: 2019-20 Projected Cost: \$45,300
 Primary Funding Source: Bond, SAD Add Funding Source:

Description:

33. Monroe Street Rehabilitation (Washington to Broadway)

Project Year: 2023-25 Projected Cost: \$520,000
 Primary Funding Source: Bond, SAD Add Funding Source:

Description: From Washington Street to Broadway Street. City project for .39 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

PUBLIC SERVICE PROJECTS

34. North Street Rehabilitation (Hickory to Gould)

Project Year:	2020-21	Projected Cost:	\$1,899,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	Water

Description: From Hickory Street to Gould Street. City project for .47 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items plus engineering fee.

35. North Street Rehabilitation (N Shiawassee to Hickory)

Project Year:	2022-24	Projected Cost:	\$610,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	Grant

Description: From Shiawassee Street to Hickory Street. City project for .49 mile road resurfacing, isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items plus engineering fee.

36. North Street Resurfacing (West City Limit to N. Chipman) COMPLETED

Project Year:	2019-20	Projected Cost:	\$177,500
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From west city limits to Chipman Street. City project for .50 mile road rehabilitation (Crush, Stabilize, Cap); altogether with related work items plus engineering fee.

37. Palmer Avenue Resurfacing COMPLETED

Project Year:	2019-20	Projected Cost:	\$91,700
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From Gute Street to Prindle Street. City project for .09 mile road resurfacing and isolated curb and gutter replacement; altogether with related work items plus engineering fee.

38. Pearce Street Resurfacing

Project Year:	2021-22	Projected Cost:	\$200,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From South Street to Hampton Street. City project for .25 mile road rehabilitation (crush, stabilize, cap); altogether with related work items.

PUBLIC SERVICE PROJECTS

39. Pilot Drinking Water Grant COMPLETED

Project Year:	2019-20	Projected Cost:	\$508,000
Primary Funding Source:	DEQ Grant	Add Funding Source:	

Description: Identification, mapping, and replacement of lead and galvanized water service lines. Development of Asset Management Plan for future replacements.

40. Retaining Wall Replacement at City Hall

Project Year:	2020-21	Projected Cost:	\$188,000
Primary Funding Source:	General Fund	Add Funding Source:	

Description: Restore and reconstruct collapsed retaining wall between the Shiawassee River and City hall. Replace sidewalk, handrails, and lighting within project area.

41. Ryan Street Reconstruction COMPLETED

Project Year:	2019-20	Projected Cost:	\$461,500
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From Chipman Street to Cedar Street. City project for .25 mile road reconstruction, curb and gutter replacement, ADA sidewalks, and storm sewer; altogether with related work items plus engineering fee.

42. S Washington Water Main (W Stewart St to Corunna Ave) COMPLETED

Project Year:	2019-20	Projected Cost:	\$54,000
Primary Funding Source:	Water	Add Funding Source:	

Description: Replace water main from W. Stewart St to Corunna Avenue. DPW crews will perform from W. Stewart to Milwaukee. Contractor to perform from Milwaukee to Corunna Ave.

43. Sanitary Sewer Interceptor

Project Year:	2020-21	Projected Cost:	\$220,000
Primary Funding Source:	Wastewater	Add Funding Source:	

Description: Televis, inspect, and clean 27-inch sewer main along Shiawassee River.

44. Sanitary Sewer Manhole Survey COMPLETED

PUBLIC SERVICE PROJECTS

Project Year: 2019-20 Projected Cost: \$67,900
 Primary Funding Source: Wastewater Add Funding Source:

Description: Structural analysis of sanitary sewer manholes. Of the nearly 1,384 structures, 759 remain to be evaluated for replacement or repair. 625 were surveyed and rated during 2016 thru 2017.

45. Seventh Street Rehabilitation COMPLETED

Project Year: 2019-20 Projected Cost: \$189,000
 Primary Funding Source: Bond, SAD Add Funding Source:

Description: From Oliver Street to King Street. City project for .14 mile road resurfacing, isolated curb and gutter replacement, ADA sidewalks, and storm sewer; altogether with related work items plus engineering fee.

46. Seventh Street Watermain COMPLETE

Project Year: 2019-20 Projected Cost: \$56,000
 Primary Funding Source: Water Add Funding Source:

Description: Replace water main from W. Oliver St to W. King St. DPW Crews to perform.

47. Sewer Rehab (Street Construction)

Project Year: 2019-21 Projected Cost: \$1,726,000
 Primary Funding Source: Wastewater Add Funding Source:

Description: Repair of sanitary sewer main and manholes, with some replacements (minimal), as identified during condition assessments performed 2017 during SAW Grant project initiatives.

48. Shady Lane Resurfacing

Project Year: 2021-23 Projected Cost: \$290,700
 Primary Funding Source: Bond, SAD Add Funding Source:

Description: From Meadow Drive to Chipman Street. City project for .22 mile road resurfacing, isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

49. Sidewalk Replacement

PUBLIC SERVICE PROJECTS

Project Year: 2019-26 Projected Cost: \$630,000
 Primary Funding Source: Act 51 Add Funding Source: Water, Sewer

Description: Replace misaligned, deteriorated, or damaged sections of sidewalk in the city. Construct sidewalks so they are ADA compliant.

50. Stewart Street Rehabilitation

Project Year: 2022-24 Projected Cost: \$563,200
 Primary Funding Source: Bond, SAD Add Funding Source: Grant

Description: From Shiawassee Street to Washington Street. City/MDOT project for .31 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

51. Storm Sewer Lining

Project Year: 2019-26 Projected Cost: \$1,400,000
 Primary Funding Source: Bond, SAD Add Funding Source:

Description: Various locations in conjunction with road projects. Best practice method is to evaluate existing storm sewer during a project's design phase. Best construction choice is made, either open-cut or lining. Those sewers recommended for lining should be bundled and done on a two year rotation cycle. Sewer lining is a more economical and less intrusive method for prolonging life expectancy of a sewer versus open-cut method.

52. Street Patching

Project Year: 2019-26 Projected Cost: \$490,000
 Primary Funding Source: Act 51 Add Funding Source: Water, Sewer

Description: Remove patches that were cold patched over the winter and replace with hot mix asphalt. These patches are caused by water main breaks, sewer repairs, catch basin repairs, etc.

53. Summit Street Rehabilitation

Project Year: 2019-21 Projected Cost: \$877,000
 Primary Funding Source: Bond, SAD Add Funding Source: Water

Description: From Abbott Street to Rubelman Drive. City project for .30 mile road resurfacing, isolated curb and gutter replacement, ADA sidewalk ramps, storm sewer, and watermain; altogether with related work items plus engineering fee.

PUBLIC SERVICE PROJECTS

54. Washington Street Rehabilitation

COMPLETED

Project Year:	2019-20	Projected Cost:	\$1,200,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	Grant, Water

Description: From Gute Street to M-71. City/MDOT project for .34 mile road rehabilitation (pavement replacement) including isolated curb and gutter replacement, ADA sidewalk ramps, storm sewer, watermain, bike lanes, permanent signing and pavement markings; altogether with related work items plus engineering fee.

55. 2020 Water Main Replacement

Project Year:	2020-21	Projected Cost:	\$1,716,800
Primary Funding Source:	Water	Add Funding Source:	

Description:
 S. Cedar - South to Hampton
 Dewey - Brandon to Moore
 Cleveland - Chestnut to Brooks
 Lafayette - M-21 to Cleveland
 Robbins - Mack to S. End (DPW Project)
 Morris - Mack to N. End (DPW Project)

56. 2021 Water Main Replacement

Project Year:	2021-22	Projected Cost:	\$2,221,500
Primary Funding Source:	Water	Add Funding Source:	

Description:
 Clyde - Walnut to Shiawassee
 Lynn - W. End to Howell
 N. Dewey - M-21 to King (DPW Project)
 W. North - N. M52 to N. Gould
 Milwaukee - S.Lyon to S.Cedar (DPW Project)
 Huron - Huggins to W. End (DPW Project)

57. 2022 Water Main Replacement

Project Year:	2022-23	Projected Cost:	\$1,114,600
Primary Funding Source:	Water	Add Funding Source:	

PUBLIC SERVICE PROJECTS

Description:

Genesee - Michigan to Green
 Grace - M-52 to Cedar
 Young - Chestnut to Brooks
 Nafus - Frederick to Freeman
 Tracy- Frederick to Stewart
 Grand - Auburndale to Franklin
 Grace - Cedar to Lyons
 Nafus - Frederick to S. End (DPW Project)
 Genesee - Mich Ave to W. End (DPW Project)
 Shady Lane - Meadow to Chipman
 Woodlawn - Farr to Auburndale

58. 2023 Water Main Replacement

Project Year:	2023-24	Projected Cost:	\$2,390,000
Primary Funding Source:	Water	Add Funding Source:	

Description:

Adams - Oliver to King
 Adams - Elizabeth to N. of Jennett
 Ball - Exchange to Mason
 Ball - Oliver to 450 North St
 Brandon - Summit to Dingwall
 Dingwall - Brandon to N. End
 Gilbert - Mason to Oliver
 Cedar - Hampton to Main St
 Chipman - Harding to North

59. 2024 Water Main Replacement

Project Year:	2024-25	Projected Cost:	\$2,479,000
Primary Funding Source:	Water	Add Funding Source:	

Description:

Gould - Exchange to Oliver
 Gould - Oliver to North
 Huntington - Moore to Stevens
 Jennett - M-52 to Adams
 Mason - Dewey to Gilbert
 Mason - Saginaw to Dewey
 Oak - M-21 to Williams

PUBLIC SERVICE PROJECTS

Clinton - Cedar to Shiawassee
 Monroe - Washington to Broadway
 Williams - Washington to Oak

60. Williams Street Rehabilitation COMPLETED

Project Year:	2019-20	Projected Cost:	\$777,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From N Shiawassee to Washington Street. City project for .40 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

61. Woodlawn Avenue Rehabilitation

Project Year:	2021-23	Projected Cost:	\$190,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

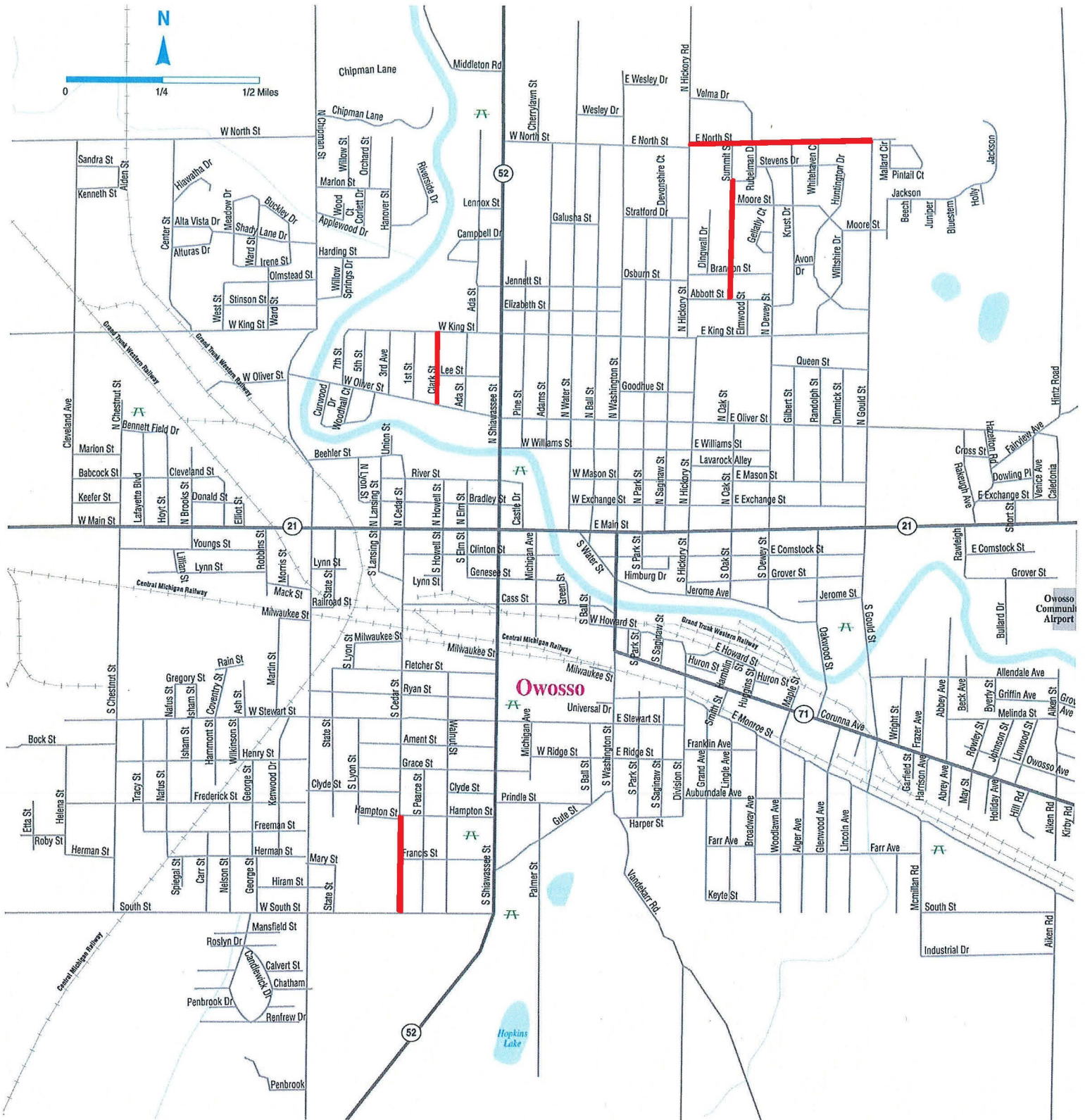
Description: From Farr Avenue to Auburndale Avenue. City project for .16 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

62. Woodlawn Avenue Rehabilitation

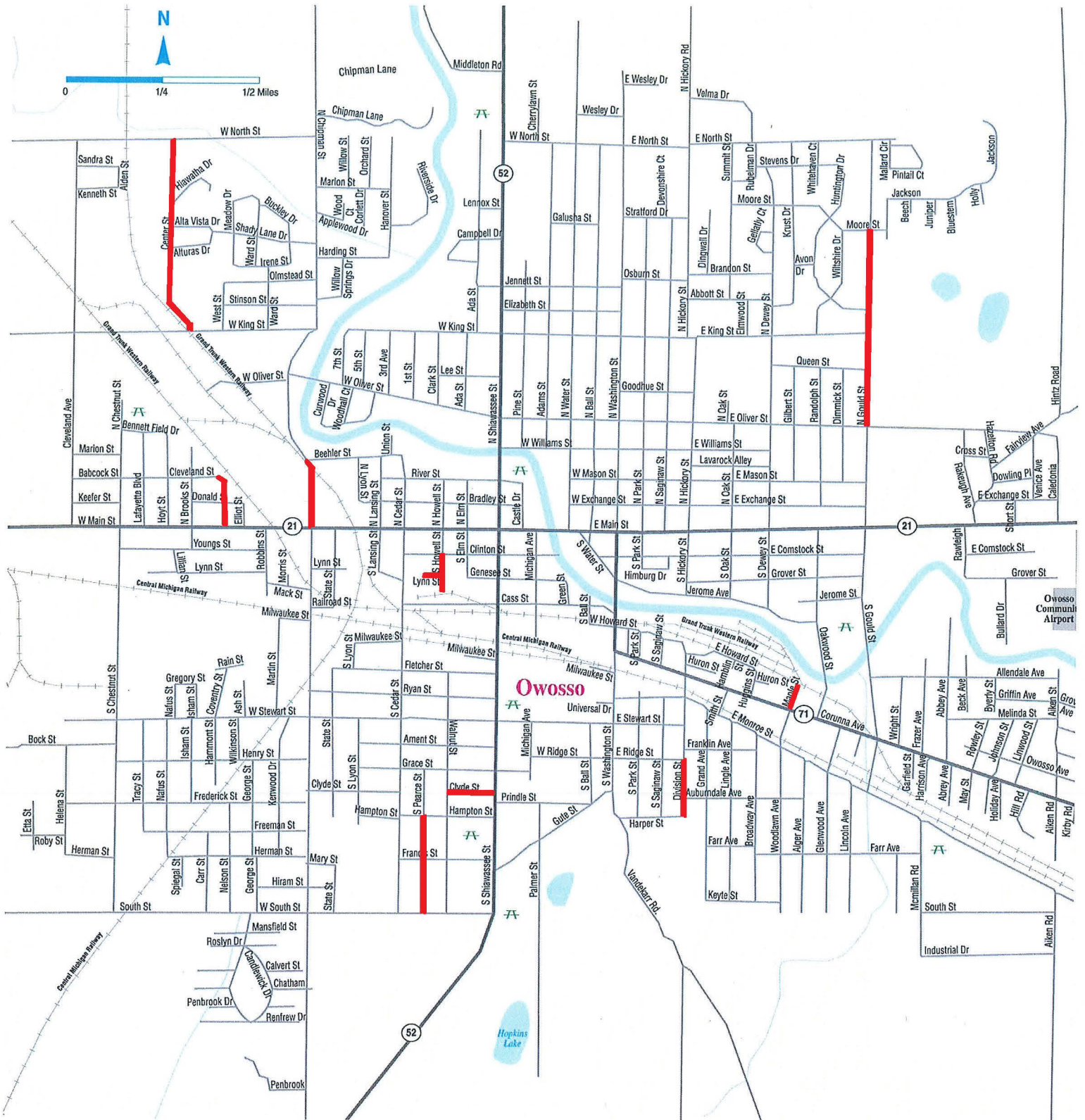
Project Year:	2021-23	Projected Cost:	\$120,000
Primary Funding Source:	Bond, SAD	Add Funding Source:	

Description: From Monroe St to Corunna Ave. City project for .10 mile road rehabilitation (pavement replacement), isolated curb and gutter replacement, ADA sidewalk ramps, and storm sewer; altogether with related work items.

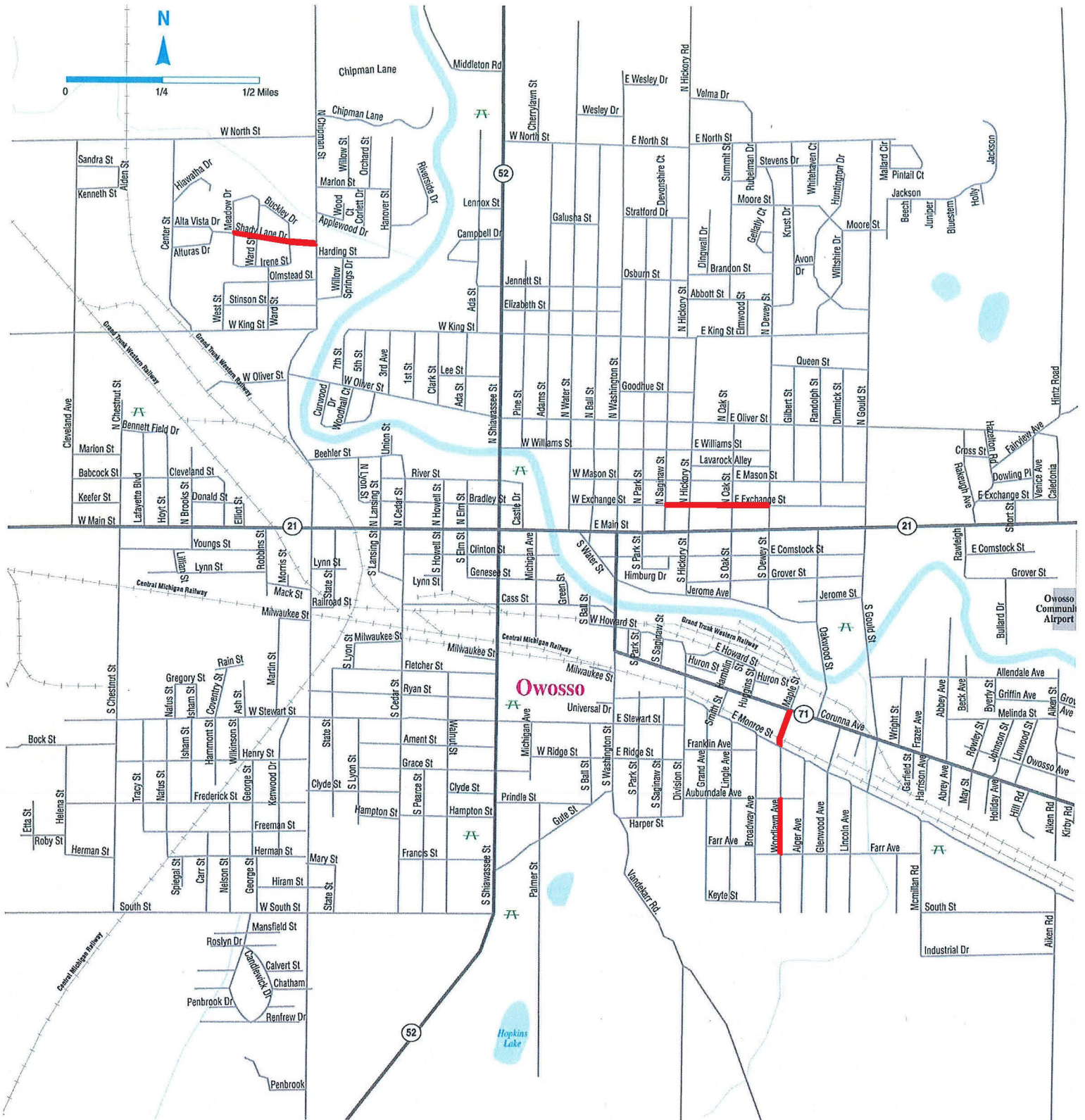
2020 CIP SITE MAP



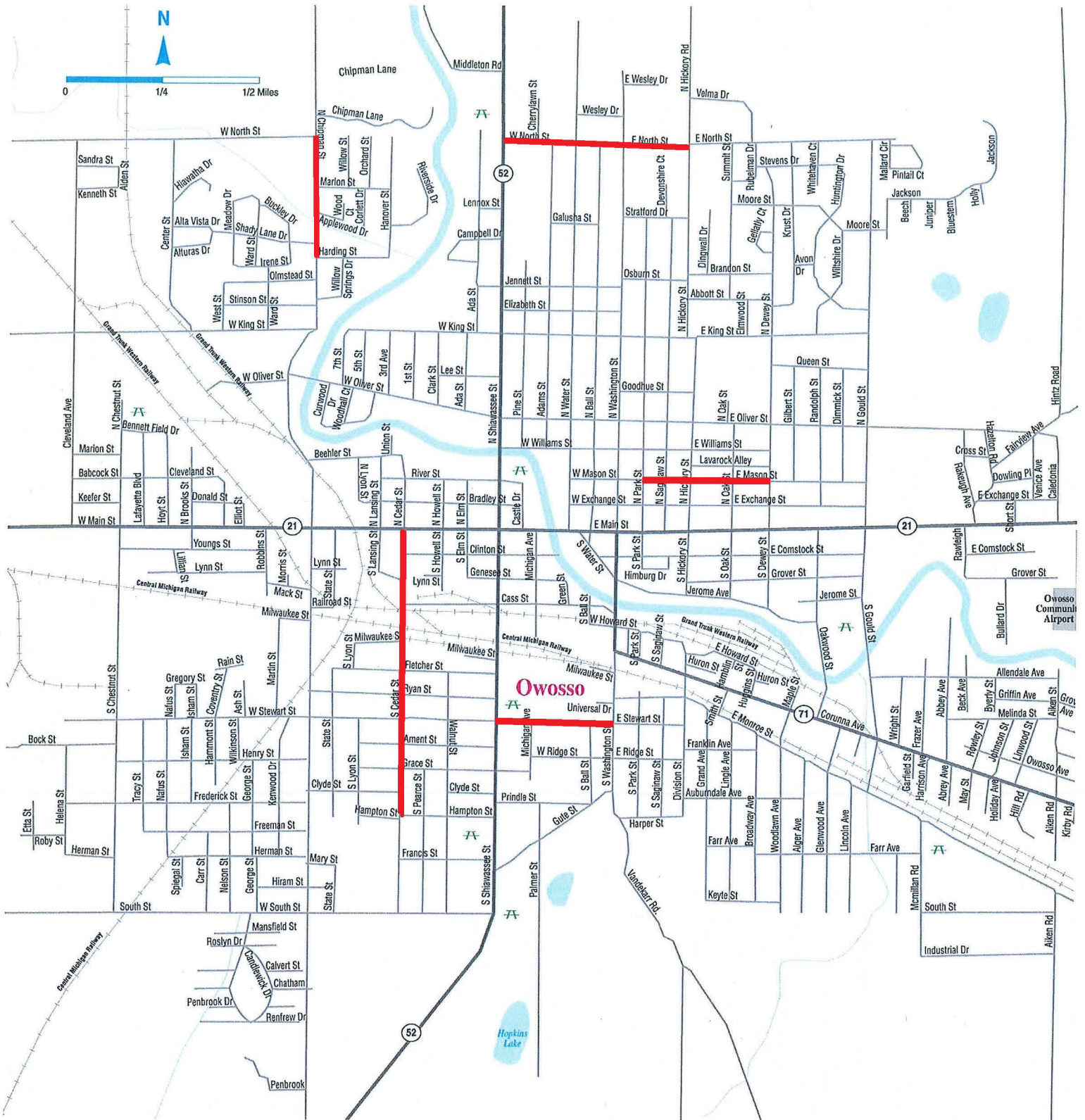
2021 CIP SITE MAP



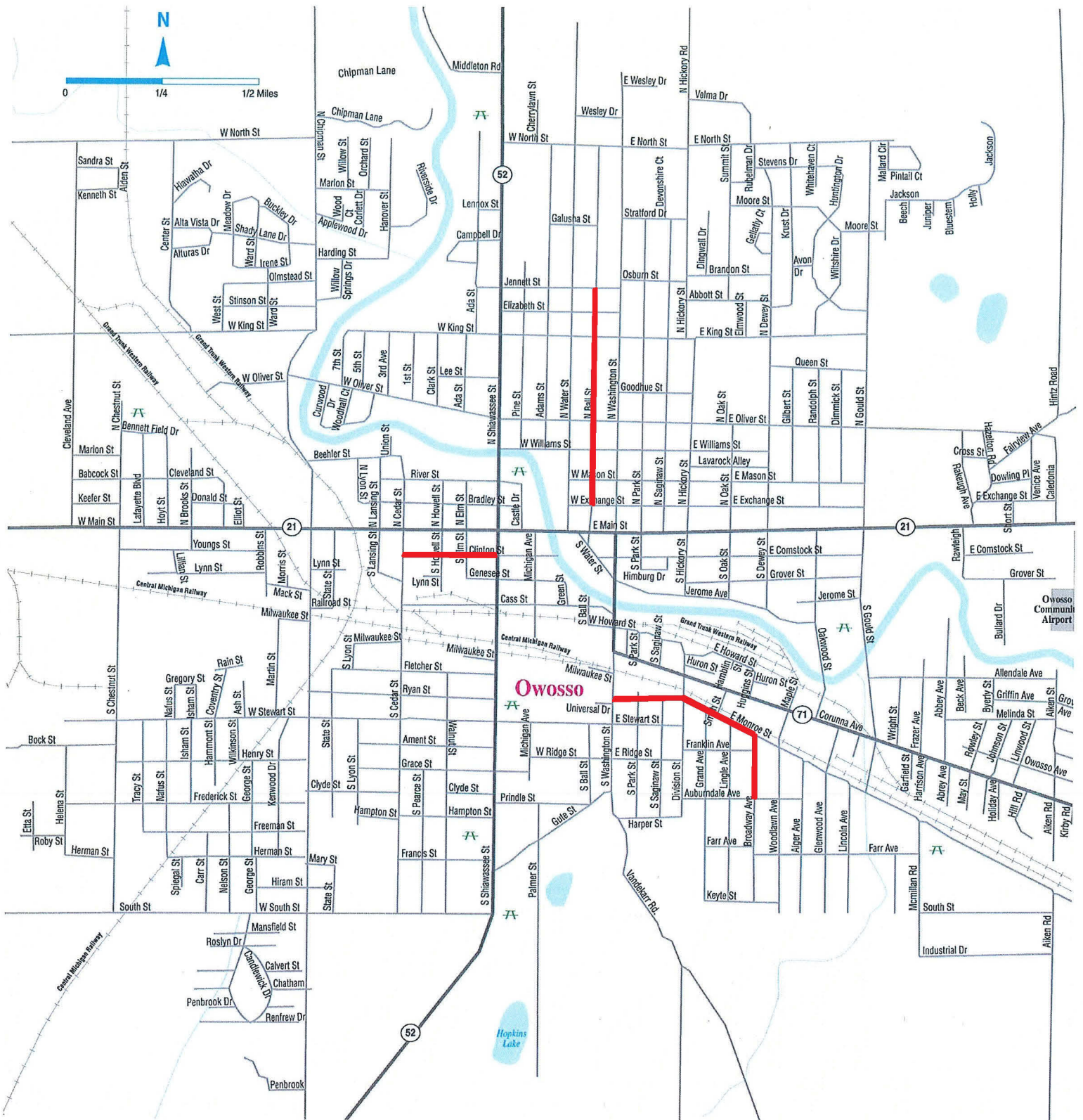
2022 CIP SITE MAP



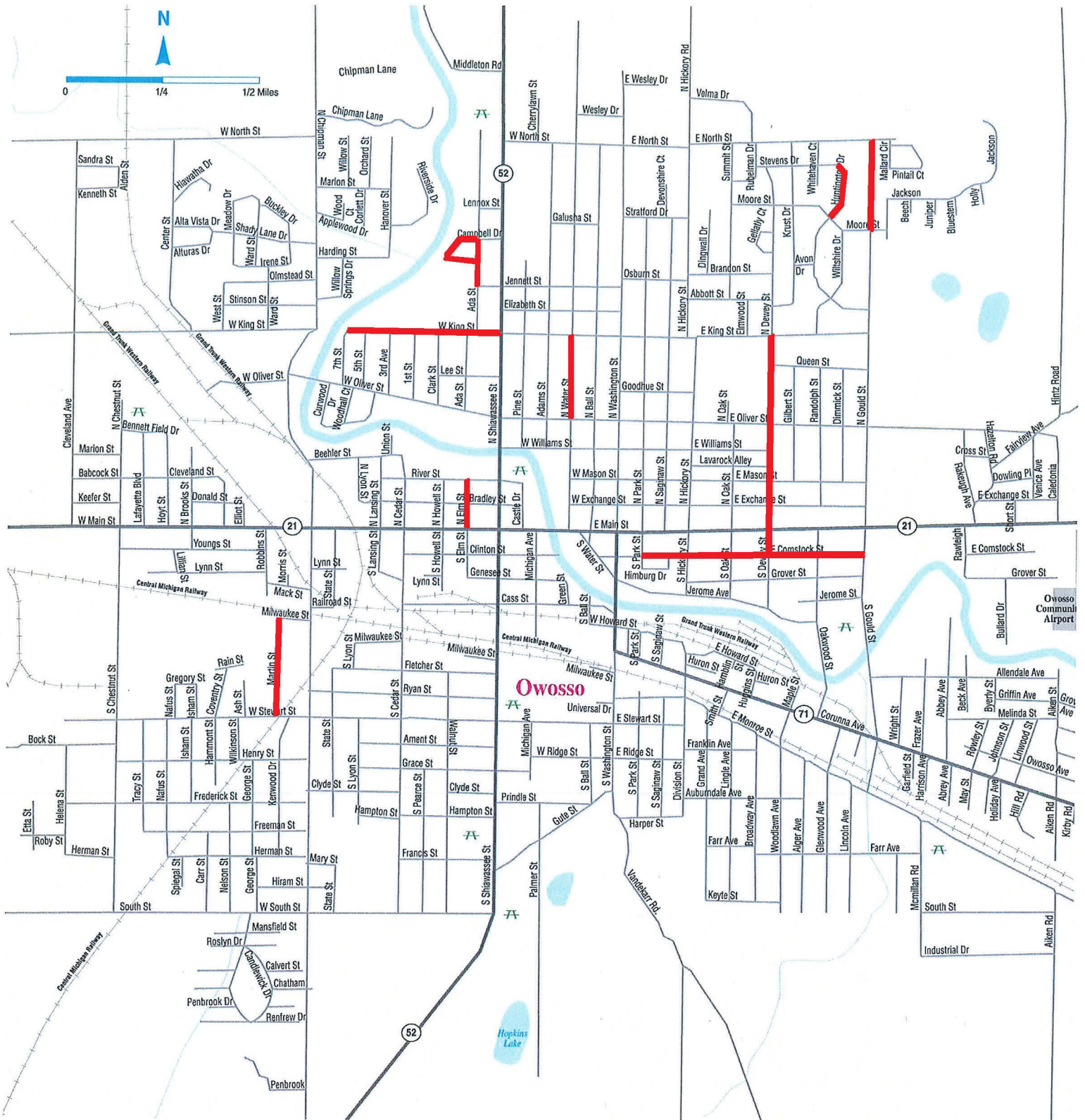
2023 CIP SITE MAP



2024 CIP SITE MAP



2025 CIP SITE MAP



PUBLIC WORKS PROJECTS

1. 1/2 Ton Pickup

Project Year:	2024-25	Projected Cost:	\$25,600
Primary Funding Source:	Motor Pool	Add Funding Source:	

Description: Scheduled replacement of existing unit.

2. Administrative Car (2)

Project Year:	2020-22	Projected Cost:	\$48,000
Primary Funding Source:	Motor Pool	Add Funding Source:	

Description: Purchase 2 new administrative cars to replace the current Chevy Impala models.

3. Bucket Truck/Aerial Lift Purchase

Project Year:	2021-22	Projected Cost:	\$210,000
Primary Funding Source:	Motor Pool	Add Funding Source:	

Description: Scheduled replacement of one of the two existing units

4. Replace Carpet in Finance Wing of City Hall

Project Year:	2020-21	Projected Cost:	\$10,000
Primary Funding Source:	General Fund	Add Funding Source:	

Description: Replace carpet in 2nd floor east wing of City Hall.

5. Repair City Hall Front Steps

Project Year:	2020-21	Projected Cost:	\$15,000
Primary Funding Source:	General Fund	Add Funding Source:	

Description: Rehab of front steps to correct misalignments, control separations, to extend usefulness and enhance aesthetics and insure safe ingress and egress to the building.

6. Hook Lift Bodies

Project Year:	2020-21	Projected Cost:	\$17,000
Primary Funding Source:	Motor Pool	Add Funding Source:	

Description: Purchase of 2 hook lifts – chipper box and flat bed.

PUBLIC WORKS PROJECTS

7. Purchase Leaf Vac Machine

Project Year:	2025-26	Projected Cost:	\$60,000
Primary Funding Source:	Motor Pool	Add Funding Source:	

Description: Purchase a leaf vac attachment for dump truck to improve annual leaf pickup service.

8. Replace Library Air Conditioners

Project Year:	2020-21	Projected Cost:	\$30,000
Primary Funding Source:	General Fund	Add Funding Source:	

Description: Replace two 40 year old air conditioning units. Engineer and design system for efficiently cooling the building

9. Purchase 72" John Deere Mower

Project Year:	2020-21	Projected Cost:	\$24,917
Primary Funding Source:	Motor Pool	Add Funding Source:	

Description: Purchase 72" front-deck John Deere mower to replace the current unit that has reached the end of its useful life.

10. John Deere Mower Blower

Project Year:	2023-24	Projected Cost:	\$27,000
Primary Funding Source:	Motor Pool	Add Funding Source:	

Description: Purchase a snow blowing machine to improve snow removal services

11. Overhead Street Lights and Poles

Project Year:	2019-22	Projected Cost:	\$30,000
Primary Funding Source:	General Fund	Add Funding Source:	Donation

Description: Overhead poles in and around downtown are showing corrosive effects, creating integrity concerns. Consideration should be for a multi-year replacement program upgrading poles and light fixtures. (These are not the decorative chairman DDA lights).

12. Paint Stripe Machine

PUBLIC WORKS PROJECTS

Project Year: 2019-20 Projected Cost: \$13,000
 Primary Funding Source: Motor Pool Add Funding Source:

Description: Purchase to replace an existing paint stripping machine purchased in 1991 due to being worn-out equipment.

13. Purchase 4x4 Pickup and Snow Blade COMPLETED

Project Year: 2019-20 Projected Cost: \$61,600
 Primary Funding Source: Motor Pool Add Funding Source:

Description: Scheduled replacement of existing unit.

14. Purchase ¾ Pickups (4)

Project Year: 2021-25 Projected Cost: \$200,000
 Primary Funding Source: Motor Pool Add Funding Source:

Description: Scheduled replacement of existing units.

15. Public Works Building Improvements

Project Year: 2019-22 Projected Cost: \$72,000
 Primary Funding Source: General Fund Add Funding Source: Motor Pool

Description: Replacement of insulated overhead doors in main building. Priority - High. Re-roof main building with steel sheeting, facility upgrades. Priority - Medium. Added storage facilities. Priority - Low.

16. Purchase Single Axle Salt Trucks (2) COMPLETED

Project Year: 2019-20 Projected Cost: \$297,600
 Primary Funding Source: Motor Pool Add Funding Source:

Description: Scheduled replacement of existing units

17. Security and Accessibility Technology for City Hall

Project Year: 2019-20 Projected Cost: \$10,000
 Primary Funding Source: General Fund Add Funding Source:

PUBLIC WORKS PROJECTS

Description: Place a panic button in lobby of City Hall and on all employees' computers. Add an ADA accessible entrance to the lower floor of City Hall which would include ADA push buttons for the doors.

18. Purchase 1-Ton Sign Truck

Project Year:	2020-21	Projected Cost:	\$126,000
Primary Funding Source:	Motor Pool	Add Funding Source:	

Description: Scheduled replacement of existing unit

19. Skid Steer w/ Attachments

Project Year:	2024-25	Projected Cost:	\$85,000
Primary Funding source:	Motor Pool	Add Funding Source:	

Description: Scheduled replacement of existing unit.

20. Street Sweeper

Project Year:	2024-25	Projected Cost:	\$300,000
Primary Funding Source:	Motor Pool	Add Funding Source:	

Description: Scheduled replacement of one of the city's two Elgin sweepers.

21. Single Axle 5-yard Dump Truck

Project Year:	2020-21	Projected Cost:	\$100,750
Primary Funding Source:	Motor Pool	Add Funding Source:	

Description: Scheduled replacement of existing unit

22. Tandem Axle 10-yard Dump Truck

Project Year:	2020-21	Projected Cost:	\$152,000
Primary Funding Source:	Motor Pool	Add Funding Source:	

Description: Scheduled replacement of existing unit

23. Sewer Vactor Truck

Project Year:	2024-25	Projected Cost:	\$600,000
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PUBLIC WORKS PROJECTS

Primary Funding Source: Motor Pool Add Funding Source:

Description: Scheduled replacement of existing unit

24. 4x4 Tractor – Mowing

Project Year: 2022-23 Projected Cost: \$40,500
Primary Funding Source: Motor Pool Add Funding Source:

Description: Scheduled replacement of existing unit

25. Wheel Loader (2)

Project Year: 2023-24 Projected Cost: \$561,000
Primary Funding Source: Motor Pool Add Funding Source:

Description: Scheduled replacement of existing units

WATER TREATMENT PROJECTS

1. 16” High Service Pipe Replacement

Project Year:	2020-21	Projected Cost:	\$479,000
Primary Funding Source:	DWRF Loan	Add Funding Source:	Water

Description: This pipe is located in the basement of the WTP has needed replacement for decades. It potentially will burst if not replaced.

2. Chlorine Distribution Tanks

Project Year:	2024-25	Projected Cost:	\$40,000
Primary Funding Source:	Water	Add Funding Source:	

Description: Replacement of existing worn out equipment

3. CO2 Distribution System Rehab

Project Year:	2023-24	Projected Cost:	\$100,000
Primary Funding Source:	Water	Add Funding Source:	

Description: Replacement of existing worn out equipment and explanation of service life

4. Filter Backwash Pump, VFD, and Controls

Project Year:	2020-21	Projected Cost:	\$460,000
Primary Funding Source:	DWRF Loan	Add Funding Source:	Water

Description: Replace existing 1940 backwash pump with new unit and add redundant unit with controls.

5. Fluoride Distribution System

Project Year:	2024-25	Projected Cost:	\$27,000
Primary Funding Source:	Water	Add Funding Source:	

Description: Replacement of existing worn out equipment

6. Hintz Well Phase II

Project Year:	2019-20	Projected Cost:	\$155,000
Primary Funding Source:	Water	Add Funding Source:	Grant

WATER TREATMENT PROJECTS

Description: Maximum aquifer withdrawal is possible if a 2nd well can be permitted by the State. This location is our best water quality, an excellent location, already piped for larger RW capacity. SCADA monitoring controls and an emergency generator are included in planning.

7. Induced Draft Aerator Rehab

Project Year:	2023-24	Projected Cost:	\$40,000
Primary Funding Source:	Water	Add Funding Source:	

Description: Replacement of existing worn out equipment and explanation of service life

8. Lagoon Security Fence

Project Year:	2021-22	Projected Cost:	\$40,400
Primary Funding Source:	Water	Add Funding Source:	

Description: Repair of damaged fence and installation of 1,700 lin. ft. of new fence with signage installed.

9. No. 1 High Service Pump and Controls

Project Year:	2020-21	Projected Cost:	\$52,000
Primary Funding Source:	Water	Add Funding Source:	

Description: Replacement of existing worn out equipment

10. SCADA Controls

Project Year:	2020-22	Projected Cost:	\$360,000
Primary Funding Source:	DWRF Loan	Add Funding Source:	Water

Description: Existing hardware and software is outdated. Upgrades should have been completed before 2014. This proposal will include automation of distribution controls allowing for future unattended WTP operations during third shifts.

11. Standpipe and Booster Pump Station Rehab

Project Year:	2022-23	Projected Cost:	\$451,000
Primary Funding Source:	DWRF Loan	Add Funding Source:	Water

Description: Complete interior piping and tank repaint. Complete exterior repaint. Lead joint and valve replacement. Included installation of mixer @ \$30,000.00.

WATER TREATMENT PROJECTS

12. West Elevated Tower Rehab

Project Year:	2022-23	Projected Cost:	\$330,000
Primary Funding Source:	DWRF Loan	Add Funding Source:	Water

Description: Repaint the interior and exterior of the water tower. This will include the installation of a mixer @ \$30,000.

WASTEWATER TREATMENT PLANT PROJECTS

1. Administration Building Rehab

Project Year: 2020-22 Projected Cost: \$400,000
 Primary Funding Source: Wastewater Add Funding Source:

Description: The administration/laboratory building is the original 1935 plant building, with conversion to its current configuration in 1980. Repointing and reroofing are necessary to remedy significant leaking which occurs during storm events. Doors need to be replaced. Interior water-damaged areas need rehabilitation, and additional office, meeting, and storage areas can be added with better use of available space. Consulting engineers and mechanical contractors would be necessary for design and construction.

2. Backup Generator COMPLETED

Project Year: 2019-20 Projected Cost: \$350,000
 Primary Funding Source: Wastewater Add Funding Source:

Description: Purchase/install of a generator (750 kW) for use as a backup power source. There is currently no generator at the plant. Consulting engineers (from Consumers Energy) and mechanical contractors will be necessary for design and install. Preliminary engineering may start as early as December 2018.

3. Beehler/Bradley St Retention Basin

Project Year: 2025-26 Projected Cost: \$3,500,000
 Primary Funding Source: SRF Loan Add Funding Source: Wastewater

Description: Construct a sanitary sewer pumping station on 1112 Beehler Street and pump raw wastewater from the 27-inch interceptor along the Shiawassee River to a 1 million gallon retention basin to be constructed at 1000 Bradley Street.

4. East Roughing Tower Pump

Project Year: 2022-23 Projected Cost: \$20,000
 Primary Funding Source: Wastewater Add Funding Source:

Description: Scheduled rehabilitation of existing pump/motor to original specs

5. Electrical/Instrumentation Rehab

Project Year: 2019-26 Projected Cost: \$140,000
 Primary Funding Source: Wastewater Add Funding Source:

WASTEWATER TREATMENT PLANT PROJECTS

Description: Repair/replace existing electrical distribution equipment, controllers, vfds, and miscellaneous instrumentation.

6. Grit Removal System

Project Year:	2020-21	Projected Cost:	\$1,030,000
Primary Funding Source:	SRF Loan, Wastewater	Add Funding Source:	Grant

Description: The original automatic grit removal system was removed in the early 1990's and never replaced. Manual removal of accumulated grit has not proven to be an effective approach to this standard, vital part of headworks operation. Without effective grit removal, downstream process equipment is worn out much faster, with higher rehab costs occurring at a frequent rate. Consulting engineers and mechanical contractors would be necessary for design and installation. The cost would also include cleanout of existing grit chamber.

7. Main Building Roof Replacement

Project Year:	2021-22	Projected Cost:	\$398,000
Primary Funding Source:	SRF Loan, Wastewater	Add Funding Source:	Grant

Description: Replacing the existing roofing on the main plant building. The original (1980) built-up roof (concrete slab, insulation, asphalt/felt) was recovered in 1988 with an EPDM membrane. Due to significant leaking, this roof requires patching/repair annually. Replacement would be down to the existing concrete slabs.

8. Nitrification Tower Replacement (3)

Project Year:	2024-25	Projected Cost:	\$2,500,000
Primary Funding Source:	SRF Loan, Grant	Add Funding Source:	Wastewater

Description: Replacement of the (3) existing nitrification towers, which date back to 1986. The interior plastic media has exceeded its original life expectancy (25 years), and there is structural degradation of the tank concrete to the failure point in several areas. Consulting engineers and mechanical contractors would be necessary for design and construction.

9. Pump and Motor Replacement

Project Year:	2019-26	Projected Cost:	\$140,000
Primary Funding Source:	Wastewater	Add Funding Source:	

Description: Repair/replace miscellaneous process pumps/motors

WASTEWATER TREATMENT PLANT PROJECTS

10. SCADA System

Project Year:	2023-24	Projected Cost:	\$300,000
Primary Funding Source:	Wastewater	Add Funding Source:	Grant

Description: There is currently no SCADA (Supervisory Control and Data Acquisition) system installed at the WWTP. As our processes are upgraded, a SCADA system will be installed, allowing for greater and more effective control. SCADA allows more automatic adjustments for changing conditions, and removes the need for a 3rd shift operator to be present in normal conditions.

11. Screw Pumps (3)

Project Year:	2020-21	Projected Cost:	\$1,200,000
Primary Funding Source:	SRF Loan, Grant	Add Funding Source:	

Description: Purchase of 3 screw pumps to replace worn out equipment

12. Secondary Clarifier Flight Chain Replacement COMPLETED

Project Year:	2019-20	Projected Cost:	\$25,000
Primary Funding Source:	Wastewater	Add Funding Source:	

Description: Preventive replacement of the chain link pins on eight chains between the two clarifiers. The clarifier sludge scrapers/flights are driven by a chain and sprocket system, which dates back to 1986. The pins which hold the chain links together are well past their expected lifespan, with most of them worn close to failure point. WWTP staff will install.

13. Secondary Clarifier Replacement

Project Year:	2022-23	Projected Cost:	\$2,500,000
Primary Funding Source:	Wastewater	Add Funding Source:	Grant

Description: Purchase/construction of secondary clarifiers. Existing clarifiers date back to 1935, with rehab in 1986. Existing clarifiers are undersized for the plant process and structural degradation is to the point of failure at several points. Consulting engineers and mechanical contractors would be necessary for design and construction.

14. Sludge Dewatering Compactor

Project Year:	2021-22	Projected Cost:	\$1,375,000
Primary Funding Source:	Wastewater, SRF	Add Funding Source:	Grant

WASTEWATER TREATMENT PLANT PROJECTS

Description: Replace existing dewatering centrifuge with a new screw compactor system and relegate centrifuge to backup system

15. Sludge Dewatering Centrifuge Rehab

Project Year:	2023-24	Projected Cost:	\$60,000
Primary Funding Source:	Wastewater	Add Funding Source:	

Description: Rehabilitation of existing unit to original specs

16. Tertiary Pump Replacement

Project Year:	2019-20, 2021-23	Projected Cost:	\$60,000
Primary Funding Source:	Wastewater	Add Funding Source:	

Description: Scheduled rehabilitation of existing pump/motor to original specs

17. Van Replacement

COMPLETED

Project Year:	2019-20	Projected Cost:	\$25,000
Primary Funding Source:	Wastewater	Add Funding Source:	

Description: Purchase of a van to replace an existing worn-out van

18. West Roughing Tower Pump

Project Year:	2023-24	Projected Cost:	\$20,000
Primary Funding Source:	Wastewater	Add Funding Source:	

Description: Scheduled rehabilitation of existing pump/motor to original specs