Planning Commission
97 North Broad Street
Hillsdale, Michigan 49242-1695
(517) 437-6440 Fax: (517) 437-6450

Planning Commission Agenda
November 19, 2019

I. Call to Order 5:30
- A. Pledge of Allegiance
- B. Roll Call

II. Public Comment
Any Commission related item – 3 min. limit

III. Consent Items/Communications
- A. Approval of agenda – **Action**
- B. Approval of Planning Commission 10.15.2019 minutes – **Action**

IV. Member recognition
- A. Amber Yoder
- B. Kerry Laycock

V. Site Plan Reviews
- A. 181 Uran – New Communications Tower
- B. 3011 W. Carleton – New Taco Bell Restaurant

VI. Old Business
None

VII. New Business
None

VIII. Master Plan Review
Joint Meeting – January 25, 2019

IX. Zoning Ordinance Review
- A. Short term rental ordinance

X. Zoning Administrator Report

XI. Commissioner's Comments

XII. Adjournment

Next meeting December 17, 2019 at 5:30 pm

Planning Commission
97 North Broad Street
Hillsdale, Michigan 49242-1695
(517) 437-6440 Fax: (517) 437-6450

PLANNING COMMISSION MINUTES
HILLSDALE CITY HALL,
97 N. Broad Street
October 15, 2019 at 5:30 PM

I. Call to Order

A. Vice Chairman Samuel Nutter called the meeting to order at 5:29 pm
B. Members present: Secretary Kerry Laycock, Mayor Pro-tem William Morrisey, Commissioners Eric Moore, Ron Scholl and Penny Swan
C. Chairwoman Amber Yoder was absent.
D. Others present: Alan Beeker for the City, Jack McLain, Alison McDowell and David Stewart representing Kingdom Geekdom, Ronald Redick with Mika Meyers, PLC on behalf of SBA 2012 TC Assets, LLC (SBA) and Ben Herrick with Faulk and Foster on behalf of Tillman Infrastructure.

II. Public Comment

Jack McLain spoke on the petition for a new communication tower. He stated that the proposed tower is less than 170 from a trailer park and that it is not near the center of the industrial park as stated in the petition. He further stated that the new ATT tower near Fayette Street does not comply with the fall zone requirements. Mr. McLain also had questions about new wayfinding signage. He inquired about the source of the new signs. Mr. Beeker suggested he speak with someone in the Street Department.

III. Consent Items/Communications

Commissioner Laycock moved to approve the consent items. Commissioner Moore seconded. All were in favor.

IV. Site plan review

A. 181 Uran – New communications tower.

Mr. Beeker introduced the project and noted that a lot-split is required, and that a small part of the site will be leased land. Tillman Infrastructure (the petitioner) is preparing the required description. The split must be a condition of approval if the petition is approved by the Planning Commission.

Mr. Herrick spoke on behalf of Tillman. He stated the fall zone is within the engineered specifications. He argued that the ordinance allows for engineered fall zones within the setbacks. He further argued that the use is permitted by right within the industrial zone. He also claimed the tower is more than 170 feet from the mobile home park.

Commissioner Swan stated that she is concerned that she has not had time to read the additional documents that were brought forth at the meeting and were not contained in the meeting packet. Other Commissioners agreed.

Mr. Redick of Mika Meyers and representing SBA noted the proposed tower is 1.3 miles from SBA's existing tower and that it would be unnecessary and duplicative infrastructure. He suggested that the master plan calls for industrial development within existing infrastructure. He claimed that proper public notice was not given. He further claimed that the set-back does not comply with the ordinance and that the ordinance requires a fall zone equal to the height of the tower (not the engineered crumple-height). Mr. Redick also claimed that Tillman aggressively seeks to duplicate SBA towers is rural communities "without a lot of regulation." He also asserted that Tillman encourages planning commissions "to bend

the rules to help them." He suggested that the Planning Commission require an independent engineering study. A letter from Mr. Redick was distributed at the meeting and attached herewith.

Commissioner Laycock informed Mr. Redick that the Hillsdale Planning Commission does not bend the rules. He also informed Mr. Redick that the City supports economic development, encourages competition and does not pick winners and losers. Commissioner Laycock also asked Mr. Redick who would pay for an additional engineering study. Mr. Redick suggested that the petitioner be required to pay for the study as a condition of approval.

Commissioner Morrisey asked Mr. Beeker if the City Attorney had reviewed the language of the ordinance regarding fall-zones. Mr. Beeker indicated that he had requested review and that it was not yet complete.

Commissioner Scholl asked for clarification on the 95-foot crumple zone.

Commissioner Nutter asked for the reason that a new tower was being requested. Mr. Herrick indicated that it was requested by Verizon and that SBA currently hosts Verizon's communication equipment on its existing tower.

Commissioner Laycock moved to table the request pending review by the City Attorney. Commissioner Swan seconded. A roll-call vote was taken. All were in favor.

V. Presentation

A. Kingdom Geekdom

Ms. McDowell spoke on behalf of Kingdom Geekdom. She indicated the company had outgrown its present location downtown and wanted to build a new structure on property they own on S. Wolcott Street and to make use of the natural features of the property. Current zoning does not allow such a use and they are considering requesting a rezoning.

Commissioner Swan indicated she did not want to set a precedent by rezoning a parcel within a larger zone.

Commissioner Laycock inquired about on-site parking. Ms. McDowell suggested that there would be a maximum of 15 cars present at any time and the site could accommodate parking for 30 people.

Commissioner Scholl asked Mr. Beeker if the current zoning was single-family. Mr. Beeker responded that it is. Commissioner Scholl asked if this request is considered "spot-zoning." Mr. Beeker indicated that there is no technical definition nor legal prohibition of spot zoning. Mr. Beeker went on to suggest that this kind of action is what is considered spot-zoning and generally attempts are made to avoid such actions. Mr. Beeker also indicated that it is difficult to categorize the business and to know how to properly zone for it.

Commissioner Nutter asked if the business can succeed in a low-traffic area. Ms. McDowell expressed confidence that it could.

Commissioner Laycock spoke in favor of using a zoning tool for an area larger than the two lots owned by the petitioners – consistent with form-based (as opposed to use-based) zoning. Mr. Beeker spoke about the use of overlay zoning and commented that it is used elsewhere in the City. There was general agreement among Commissioners that such an approach might be appropriate in this case and offered encouragement to the Kingdom Geekdom representatives to continue to work on their project.

B. Wayfinding signage

Mr. Beeker briefly reviewed the Economic Development Corporation's (EDC) plan for the installation of wayfinding signage. A representative for the project was not present. Mr. Beeker told the Planning Commission that EDC is garnering support from other groups prior to presenting to Council for help with funding. There was no further discussion.

VI. Old business

Commissioner Nutter reviewed a draft of the Planning Commission annual report. He intends to present it to Council in November.

VII. New Business

There was no new business.

VIII. Master Plan review

Mr. Beeker indicated that there is a proposal for a joint meeting of City Council, the Planning Commission, the Economic Development Corporation and the Tax Increment Finance Authority. A facilitated goal setting meeting is proposed for January 2020.

IX. Zoning Ordinance Review

There was no discussion of zoning ordinance.

X. Zoning Administrator's Report

Mr. Beeker discussed the 2019 planning conference. Mr. Beeker also discussed a meeting with MDOT regarding what is required of the City in order to implement its "placemaking strategy" and the reconfiguration of Broad Street.

Mr. Beeker also noted that Commissioners Yoder and Laycock terms will end in November. He indicated an interest in finding replacement commissioners with a background in realty or construction.

XI. Commissioner Comments

There were no Commissioner comments.

XII. Adjournment

Commissioner Swan motioned to adjourn. Commissioner Morrisey seconded. All in favor. The meeting adjourned at 6:37 pm.

Next meeting: November 19, 2019 at 5:30 pm.

TO: **Planning Commission**

FROM: **Zoning Administrator**

DATE: **November 12, 2019**

RE: **181 Uran St.**

Background: Tillman Infrastructure has submitted plans for a new communications tower in the Manufacturing Park. The project was submitted for final remove at the October regular meeting. SBA Communications, the owner of the existing tower in the park, sent an attorney from Mika Meyers to voice objection to the tower stating that the current ordinance was being interpreted incorrectly and the proposed project did not comply. The Planning Commission tabled the review and asked that the City Attorney review the existing ordinance and the grounds on which it was reviewed. The Attorney has reviewed and submitted a response. He concurs with the review of the Zoning Administrator and the Planning Commission. Tillman has also submitted a revised site plan that responds to the land division requirement and the requests from the Department Head review.

MEMORANDUM

To: City of Hillsdale Planning Commission

From: John P. Lovinger, Hillsdale City Attorney

Date: November 1, 2019

Re: Section 36-464 of the City of Hillsdale Zoning Ordinance

The City of Hillsdale Planning Commission has requested that I provide a legal opinion regarding the appropriate interpretation and application of Section 36-464 of the City of Hillsdale Zoning Ordinance. Specifically, a question has arisen regarding the proper interpretation and application of Section 36-464(2) of the Ordinance.

The issue involves a request by Tillman Infrastructure to construct a 170 foot tall communications tower on a parcel of property subject to the City of Hillsdale Zoning Ordinance. The proposed tower has a calculated fall distance, as certified by engineers for Tillman, of 95 feet.

The Ordinance Section in question is the following:

Sec. 36-464. - Communication/transmission towers.

Communication/transmission towers and their attendant facilities shall be permitted in I districts subject to the following conditions:

...

(2) The use shall be located centrally on a continuous parcel having horizontal dimensions of not less than one times the height of the structure, or not less than one times the height of the calculated fall distance, as measured from the base of the structure to all points on the property line, or a minimum distance of 30 feet from all points on the property line, whichever is greater.

I have reviewed the provisions of Section 36-464(2) of the Ordinance and have concluded that the section can be interpreted in alternative ways. In the paragraphs that follow, I will discuss the alternative interpretations as well as my conclusion regarding the appropriate interpretation of the ordinance section.

Some initial observations of the section include the fact that the term "horizontal dimensions" is not specifically defined by Section 36-6 of the Ordinance. All parties, however, appear to acknowledge that the term can be equated with the term "Setback" and should be construed in this case to mean the distance from the base of the structure to all property lines. It is also noteworthy that the first alternative for

measurement set forth in the ordinance section involving a measurement of "one times the height of the structure", does not contain language that refers to a measurement "to all points on the property line".

Prior to undertaking the analysis of the interpretation of the zoning ordinance section in question, consideration must be given to the proper role of the interpreting body which in this matter is the City of Hillsdale Planning Commission. In Fremont Twp. V. McGarvie, 164 Mich App 611, 614 (1987), the Michigan Court of appeals stated:

> The underlying principle of the proper construction of a zoning ordinance is to discover and give effect to the intent of the lawmaker. *Bangor Twp. v Spresny,* 143 Mich. App. 177 (1985). When interpreting the language of an ordinance to determine the extent of a restriction upon the use of the property, the language must be interpreted, where doubt exists, in favor of the property owner. *Talcott v Midland,* 150 Mich. App. 143, 147 (1985).

Accordingly, we must first determine the purpose and intent of the inclusion of this zoning regulation in the zoning ordinance. If there is any doubt regarding the extent of a restriction, the ordinance provision must be interpreted in favor of the property owner.

The apparent purpose of the Section 36-464(2) is to provide safety to adjoining parcels in the event that a communications tower erected on a parcel should fall. Having determined the purpose or intent of the ordinance section, consideration of the alternative interpretations being advanced in this matter must be undertaken.

The interpretation being advanced by legal counsel for SBA Communications Corporation ("SBA") is based upon SBA's reading of the section and the interpretive diagramming of the section as set forth in the format of the ordinance section below. This format differs from the actual text of the ordinance section. SBA asserts that the ordinance must be interpreted as follows:

> The use shall be located centrally on a continuous parcel having horizontal dimensions of:
>
> (a) not less than one times the height of the structure, or
>
> (b) not less than one times the height of the calculated fall distance, as measured from the base of the structure to all points on the property line, or
>
> (c) a minimum distance of 30 feet from all points on the property line,
>
> whichever is greater.

Pursuant to this interpretation, the largest and most restrictive of the three possible criteria must be followed. SBA asserts that because the proposed Tillman tower is 170 feet in height, and the proposed location of the tower is less than 170 feet from one or

more of the boundaries of the subject property, the tower construction should not be approved. This interpretation essentially provides that any tower that is greater than 30 feet in height must be placed upon a parcel at a location that is no closer than a distance equal to one times the height of the structure. Any tower with a height less than 30 feet must be placed at least 30 feet from all points on the applicable property lines.

The interpretation that historically has been followed by the City of Hillsdale Zoning Administrator is that a tower must be paced at a location that is either not less than one times the height of the structure from any boundary, or not less than one times the height of the calculated fall distance, as measured from the base of the structure to all points on the property line, but in no case closer than 30 feet from any point on any property line. This interpretation encompasses all of the alternative distances set forth in the ordinance section as well as the purpose of the ordinance section which is to provide safety to adjoining parcels in the event that a communications tower erected on a parcel should fall. Pursuant to the interpretation adopted by the City of Hillsdale Zoning Administrator, the proposed Tilman tower complies with the ordinance section because it has a calculated fall distance of 95 feet which is not greater than the distance to any of the subject parcels boundary lines as measured from the base of the structure.

The interpretation being advanced by SBA fails to consider and ignores the meaning, application, and effect of the second measurement criteria. Specifically, pursuant to the SBA interpretation, if a tower is over 30 feet in height, its location on a parcel must be no closer to any lot line than the actual height of the tower. If a tower is under 30 feet in height, the tower must be placed at least 30 feet from all points on the property line. Based upon this interpretation, Section 36-464(2) should be worded as follows:

> The use shall be located centrally on a continuous parcel having horizontal dimensions of:
>
> (a) not less than one times the height of the structure, or
>
> (b) a minimum distance of 30 feet from all points on the property line, whichever is greater.

The interpretation being advanced by SBA contradicts a basic tenet of statutory and ordinance construction followed in the State of Michigan. In Michigan Properties, LLC v. Meridian Township, 491 Mich. 518, 528 (2012) the Michigan Supreme Court stated:

> When interpreting statutes, this Court must "ascertain and give effect to the intent of the Legislature." *People v. Koonce,* 466 Mich. 515, 518, (2002). In interpreting a statute, this Court avoids a construction that would render any part of the statute surplusage or nugatory. People v. McGraw, 484 Mich. 120, 126, (2009), citing *Baker v. Gen. Motors Corp.,* 409 Mich. 639, 665, (1980). When considering the correct interpretation, the statute must be read as a whole. *Sun Valley Foods Co. v. Ward,* 460 Mich. 230, 237, (1999). Individual words and phrases, while

important, should be read in the context of the entire legislative scheme. *Herman v. Berrien Co.,* 481 Mich. 352, 366, (2008).

The same principal of statutory and ordinance construction and interpretation has been held to apply to interpretation and application of zoning ordinances. Fremont Township v. McGarvie, 164 Mich. App. 611, 615 (Mich. App. 1987).

Applying the rules of statutory and ordinance construction set forth in the cases above to the interpretation of the City of Hillsdale Zoning Ordinance section in question, compels a different interpretation than that being proposed by SBA. If all portions of the applicable section are to be given meaning, the planning commission can authorize the construction of the Tillman tower as long as the parcel upon which the tower is to be placed has horizontal dimensions equal to or greater than either the actual height of the tower, the calculated fall distance of the tower, as measured from the base of the tower structure to all points on the property line, but no closer than 30 feet from all points on the property line. This interpretation takes into account all of the provisions of Section 36-464(2) and does not ignore an entire criteria for conformance. The proposed Tillman tower has a calculated fall distance that is less than or equal to the distance from the base of the tower to all points on the parcel boundary lines. Accordingly, the proposed tower fits within the criteria of alternative two of the ordinance.

As mentioned above, under the SBA interpretation, all towers over the height of 30 feet must be placed on a parcel no closer to any boundary than the actual height of the tower. All towers of less than 30 feet must be placed at least 30 feet from all points on the property line. Pursuant to the SBA interpretation, it is unnecessary to consider the calculated fall distance of the tower structure. Acceptance of this interpretation leads to the question of why the portion of Section 36-0464(2) involving calculated fall distance is even included in the section. The answer is that the drafters of the ordinance intended to provide alternative means of accomplishing safe installation of a communications towers. The alternative that involves calculated fall distance recognizes that communication towers are often designed to fall in a manner so that the tower will not simply fall directly over without collapsing in a manner that decreases the fall distance of the tower. If a tower has a calculated fall distance that is less than the actual height of the tower, the tower can be installed on a property closer to a boundary line than the actual height of the tower while achieving the safety to adjoining properties that the Zoning Ordinance contemplates. The interpretation advanced by SBA ignores the second criteria and results in the second criteria being surplusage or nugatory. This interpretation, therefore, should not be followed.

It is safe to assume that tower structures either have a calculated fall distance that is less than the actual height of the tower or they do not. If a tower is constructed in such a way that its calculated fall distance is the same as the actual height of the tower, then the tower may only be placed on a parcel that has horizontal dimensions of not less than one times the height of the tower structure. Conversely, giving

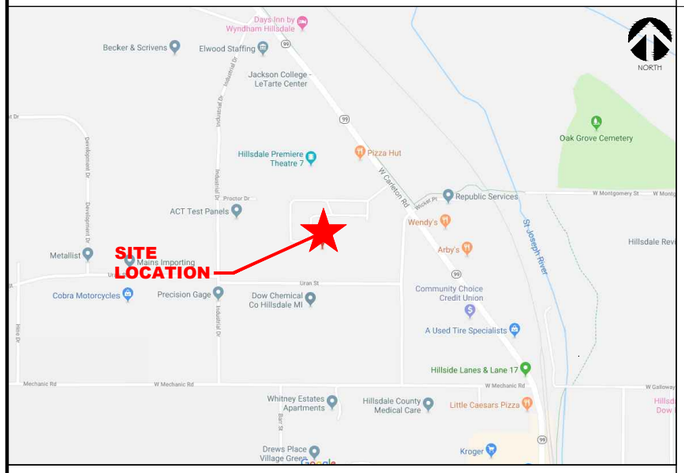
meaning and application to all of the language contained in Section 36-464(2), if the calculated fall distance of the tower, as measured from the base of the tower structure to all points on the property line, is equal to or less than the distance to all points on the property line and the tower is placed at least 30 feet from all points on the property line, such tower placement would conform to the ordinance section. One can envision a tower of over 30 feet that has a calculated fall distance, as measured from the base of the tower structure to all points on the property line, that is less than 30 feet. In such a case the base of the tower must be at least 30 feet from all points on the property line. The inclusion of identical terms in the second and third criteria that refers "to all points on the property line" is further indication that the second criteria envisions a setback less than the actual height of the structure, but sets a minimum distance from the property line.

This opinion regarding the interpretation of the ordinance provision in question is not based upon the assertion that to follow the SBA proffered interpretation would lead to an "absurd result". Under that doctrine, which SBA's counsel correctly asserts is no longer supported by Michigan case law, portions of the text of a statute or ordinance are ignored in order to avoid what is perceived as an unjust result. To the contrary, this opinion is based upon a reading of the entire ordinance section while endeavoring to give meaning to all portions of the section, the purpose for which the section was included in the zoning ordinance, and to interpret the section in a manner that resolves doubt in a favor of the property owner.

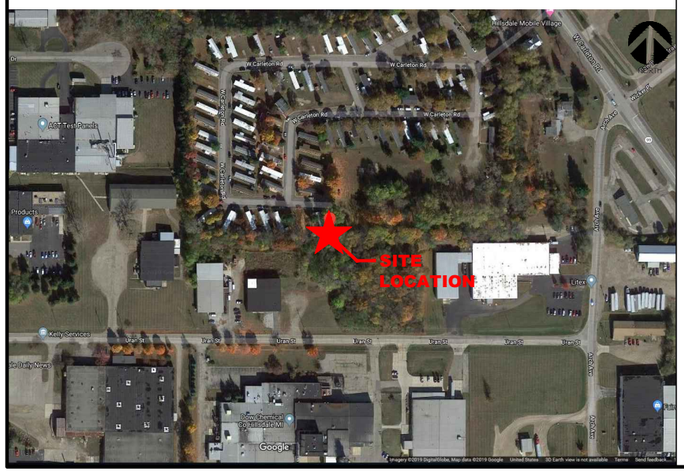
TILLMAN INFRASTRUCTURE

PROJECT: NEW SITE BUILD
SITE NAME: N/A
SITE CASCADE: TI-OPP-13241 (B)
SITE ADDRESS: 181 URAN SREET HILLSDALE, MI 49242 HILLSDALE COUNTY
PARCEL #: 006-222-151-05
SITE TYPE: 170'-0" SELF-SUPPORT
SUBMITTAL: ZONING DRAWINGS

VICINITY MAP:



AERIAL MAP:



PROJECT INFORMATION:

SITE ADDRESS:
181 URAN SREET
HILLSDALE, MI 49242
HILLSDALE COUNTY

SITE COORDINATES:
LATITUDE: N 41° 56' 15.87" (41.9377422°)
LONGITUDE: W 84° 38' 58.25" (-84.6495130°)

MUNICIPAL ID:
PARCEL ID: 30-006-222-151-05
ZONE: I-1 LIGHT INDUSTRIAL

PROPERTY OWNER:
HAYLETT, TIMOTHY M & MICHELLE L
7676 S HILLSDALE ST
HILSDALE, MI 49242

A&E FIRM
RAMAKER & ASSOCIATES, INC.
855 COMMUNITY DRIVE
SAUK CITY, WI 53583
CONTACT: MIKE REEVE
EMAIL: MREEVE@RAMAKER.COM
PHONE: (608) 643-4100

SITE ACQUISITION
FAULK & FOSTER
NORTHWEST REGIONAL OFFICE
678 FRONT AVENUE NW, SUITE 215
GRAND RAPIDS, MI 49504
PHONE: 248.891.9214
FAX: 616.647.8614
CONTACT: BEN HERRICK

APPLICANT
TILLMAN INFRASTRUCTURE LLC
152 W. 57TH STREET, 8TH FLOOR,
NEW YORK, NY, 10019
PHONE: 646.578.8394

APPROVALS:

CONSTRUCTION MANAGER:	
SITE ACQUISITION:	
LANDLORD:	

SHEET INDEX

SHEET NUMBER	SHEET DESCRIPTION
T-1	COVER SHEET
Z-1	OVERALL PARCEL LAYOUT
Z-2	ENLARGED PARCEL LAYOUT
Z-3	ENLARGED SITE PLAN
Z-4	TOWER ELEVATION
Z-5	ACCESS ROAD SPECIFICATION

CODE COMPLIANCE:

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. 2015 INTERNATIONAL BUILDING CODE
2. INTERNATIONAL MECHANICAL CODE
3. ANSI/TIA-222 STRUCTURAL STANDARD
4. NFPA 780 - LIGHTNING PROTECTION CODE
5. UNIFORM PLUMBING CODE
6. NATIONAL ELECTRICAL CODE

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GRAND RAPIDS, MI 49504

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Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Michigan.

STATE OF MICHIGAN * MICHAEL L. PINSKE ENGINEER No. 6201056754 * LICENSED PROFESSIONAL ENGINEER

Michael L. Pinske: 11/01/2019 Date:

3	11/05/19	REVISED PER COMMENTS
2	11/01/19	REVISED PER COMMENTS
1	10/29/19	REVISED PER COMMENTS

ISSUE PHASE: ZONING DRAWINGS DATE ISSUED: 09/19/2019

PROJECT TITLE:
TI-OPP-13241
CANDIDATE (B)

PROJECT INFORMATION:
181 URAN SREET
HILLSDALE, MI 49242
HILLSDALE COUNTY
PARCEL #: 006-222-151-05

SHEET TITLE:
TITLE SHEET

SCALE: NONE

PROJECT NUMBER: 43301
SHEET NUMBER: T-1

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-221-226-19
PARCEL OWNER: ACT TEST PANELS LLC

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-221-226-18
PARCEL OWNER: ACT TEST PANELS LLC

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-221-226-17
PARCEL OWNER: ACT TEST PANELS LLC

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-222-100-09
PARCEL OWNER: JAMISON MANAGEMENT COMPANY

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-222-100-10
PARCEL OWNER: PENN, MICHAEL A

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-222-100-11
PARCEL OWNER: LITEX, INC

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-221-226-21
PARCEL OWNER: LEONARD'S PROPERTY MANAGEMENT LLC

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-221-226-20
PARCEL OWNER: CONDON FAMILY LLC

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-222-151-06
PARCEL OWNER: ROGERS, DEWEY & ANGELA M

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-221-226-04
PARCEL OWNER: CITY OF HILLSDALE

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-222-151-04
PARCEL OWNER: LITEX, INC

100'-0" 168'-9" R95'-0" 187'-6" 95'-5"

OHEx

URAN STREET

RW

1
Z-2

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-221-276-01
PARCEL OWNER: TWO2ONE, LLC

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-222-152-12
PARCEL OWNER: ESSEX SPECIALITY PRODUCTS, INC

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-222-152-10
PARCEL OWNER: BUNDY CORPORATION

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-221-276-04
PARCEL OWNER: EP CUSTODIAL TRUST

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-221-276-09
PARCEL OWNER: HILLSDALE PROPERTIES, LLC

PARCEL DISTRICT: CITY OF HILLSDALE
PARCEL ID: 30-006-222-152-05
PARCEL OWNER: CITY OF HILLSDALE

NOTE:
- **LENGTH OF PROPOSED ACCESS DRIVE APPROXIMATELY ±200'-0" LONG.**

COUNTY ZONING DATA

ZONING CLASSIFICATION/DISTRICT	**I-1 LIGHT INDUSTRIAL**
ADJACENT ZONING - NORTH, SOUTH, EAST, & WEST	**I-1 LIGHT INDUSTRIAL**
JURISDICTION	**HILLSDALE COUNTY**
ZONING CATEGORY	**I-1 LIGHT INDUSTRIAL**

ZONING REQUIREMENTS

SETBACKS	REQUIREMENT	ACTUAL
FRONT	TOWER HEIGHT = 170'	±187'-6"
REAR	TOWER HEIGHT = 170'	±304'-9"
SIDE (R)	TOWER HEIGHT = 170'	±95'-5"
SIDE (L)	TOWER HEIGHT = 170'	±168'-9"

NORTH

OVERALL PARCEL LAYOUT (1)
SCALE: 1" = 150'

TILLMAN INFRASTRUCTURE
152 WEST 57TH STREET
27TH FLOOR
NEW YORK, NY

Faulk&Foster
NORTHWEST REGIONAL OFFICE
678 FRONT AVENUE NW, SUITE 215
GRAND RAPIDS, MI 49504

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Sauk City, WI • Willmar, MN
Woodcliff Lake, NJ • Bayamon, PR

Certification & Seal:

3	11/05/19	REVISED PER COMMENTS
2	11/01/19	REVISED PER COMMENTS
1	10/29/19	REVISED PER COMMENTS

ISSUE PHASE: ZONING DRAWINGS
DATE ISSUED: 09/19/2019

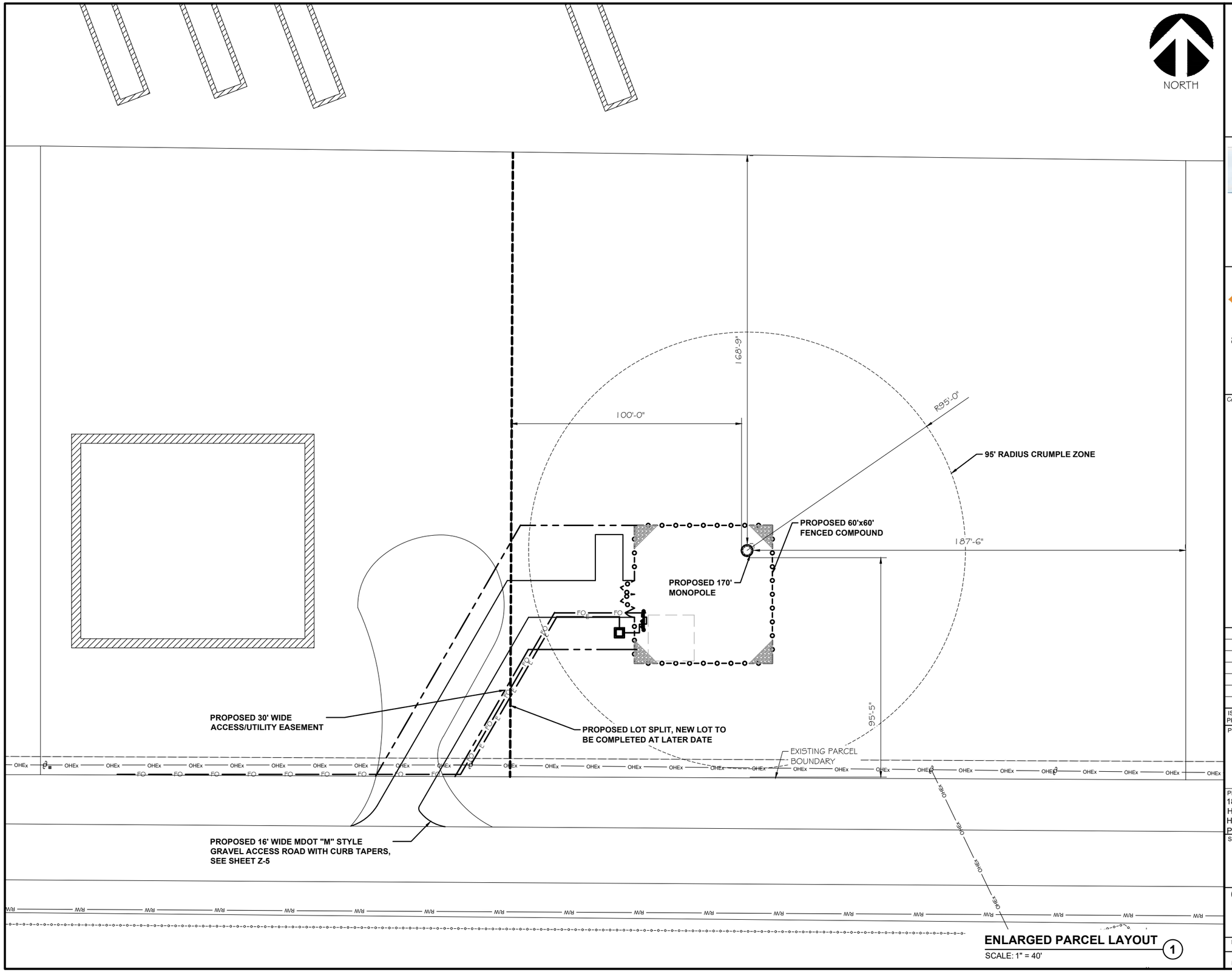
PROJECT TITLE:
TI-OPP-13241 CANDIDATE (B)

PROJECT INFORMATION:
181 URAN SREET
HILLSDALE, MI 49242
HILLSDALE COUNTY
PARCEL #: 006-222-151-05

SHEET TITLE:
OVERALL SITE PLAN

0 75' 150' 300'
11" x 17" - 1" = 150'
22" x 34" - 1" = 75'

PROJECT NUMBER: 43301
SHEET NUMBER: Z-1



ENLARGED PARCEL LAYOUT (1)
SCALE: 1" = 40'

TILLMAN INFRASTRUCTURE
152 WEST 57TH STREET
27TH FLOOR
NEW YORK, NY

Faulk&Foster
NORTHWEST REGIONAL OFFICE
678 FRONT AVENUE NW, SUITE 215
GRAND RAPIDS, MI 49504

RAMAKER & ASSOCIATES, INC.
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855 Community Dr, Sauk City, WI 53583
608-643-4100 www.Ramaker.com
Sauk City, WI • Willmar, MN
Woodcliff Lake, NJ • Bayamon, PR

Certification & Seal:

3	11/05/19	REVISED PER COMMENTS
2	11/01/19	REVISED PER COMMENTS
1	10/29/19	REVISED PER COMMENTS

ISSUE PHASE: ZONING DRAWINGS
DATE ISSUED: 09/19/2019

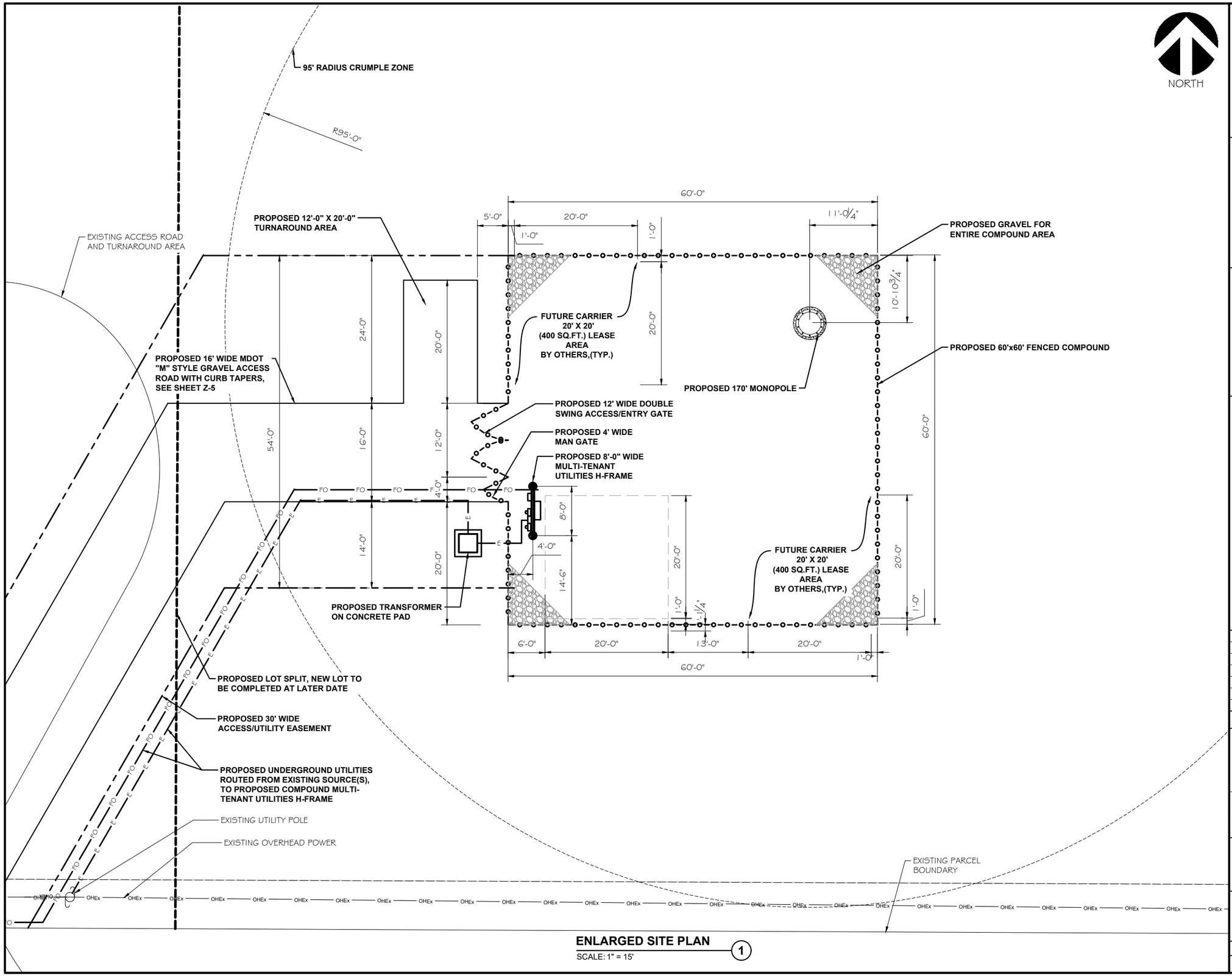
PROJECT TITLE:
TI-OPP-13241
CANDIDATE (B)

PROJECT INFORMATION:
181 URAN SREET
HILLSDALE, MI 49242
HILLSDALE COUNTY
PARCEL #: 006-222-151-05

SHEET TITLE:
ENLARGED PARCEL LAYOUT

0 20' 40' 80'
11" x 17" - 1" = 40'
22" x 34" - 1" = 20'

PROJECT NUMBER: 43301
SHEET NUMBER: Z-2



ENLARGED SITE PLAN

SCALE: 1" = 15' (1)

TILLMAN INFRASTRUCTURE
152 WEST 57TH STREET
27TH FLOOR
NEW YORK, NY

Faulk&Foster
NORTHWEST REGIONAL OFFICE
678 FRONT AVENUE NW, SUITE 215
GRAND RAPIDS, MI 49504

RAMAKER & ASSOCIATES, INC.
100% EMPLOYEE-OWNED
855 Community Dr, Sauk City, WI 53583
608-643-4100 www.Ramaker.com
Sauk City, WI • Willmar, MN
Woodcliff Lake, NJ • Bayamon, PR

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ISSUE PHASE: ZONING DRAWINGS
DATE ISSUED: 09/19/2019

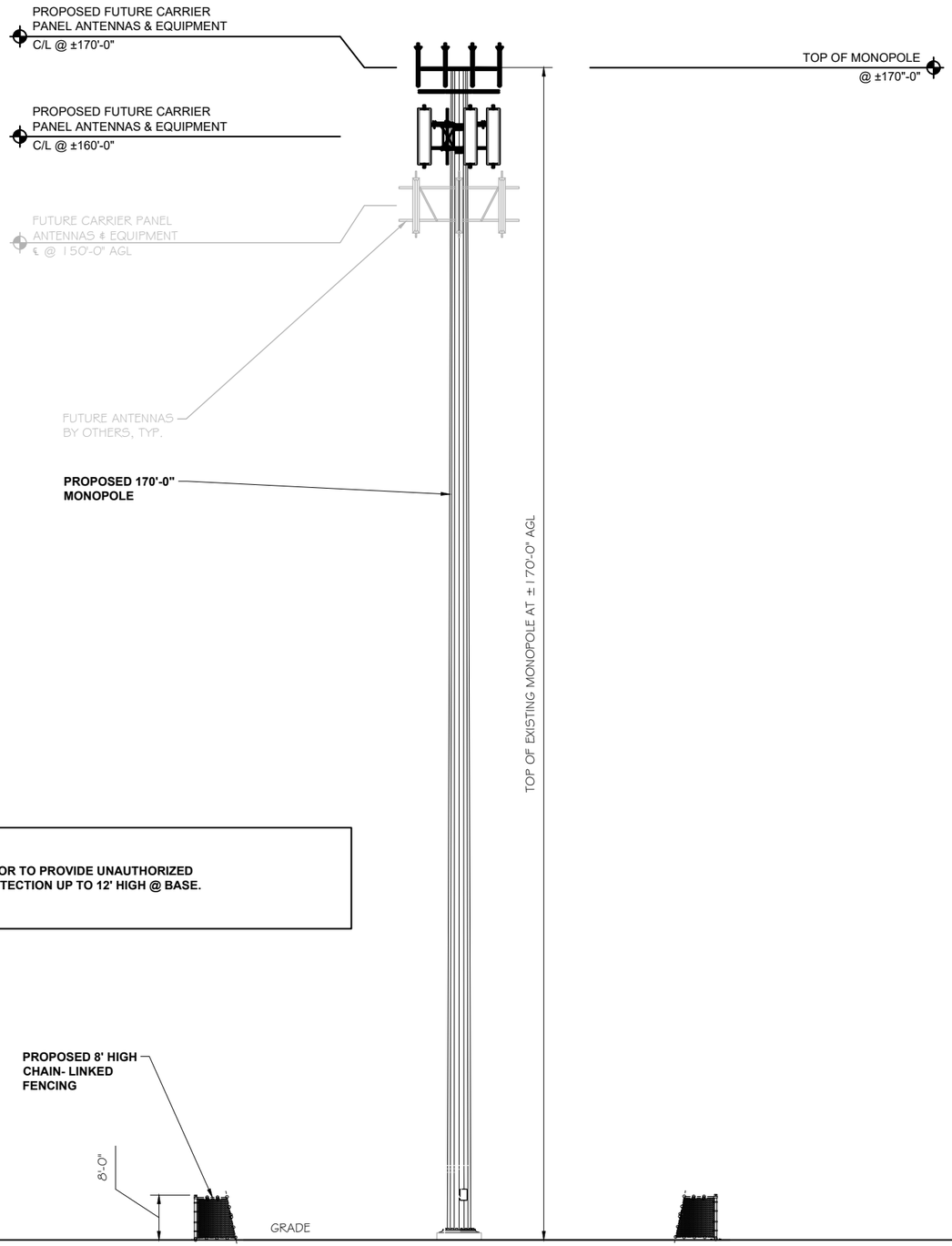
PROJECT TITLE:
TI-OPP-13241 CANDIDATE (B)

PROJECT INFORMATION:
181 URAN SREET
HILLSDALE, MI 49242
HILLSDALE COUNTY
PARCEL #: 006-222-151-05

SHEET TITLE:
ENLARGED SITE PLAN

0 7.5' 15' 30'
11" x 17" - 1" = 15'
22" x 34" - 1" = 7.5'

PROJECT NUMBER: 43301
SHEET NUMBER: Z-3



NOTE:
***TOWER VENDOR TO PROVIDE UNAUTHORIZED CLIMBING PROTECTION UP TO 12' HIGH @ BASE.**

TOWER ELEVATION (1)
SCALE: 1" = 30'

TILLMAN INFRASTRUCTURE
152 WEST 57TH STREET
27TH FLOOR
NEW YORK, NY

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ISSUE PHASE: ZONING DRAWINGS
DATE ISSUED: 09/19/2019

PROJECT TITLE:

TI-OPP-13241
CANDIDATE (B)

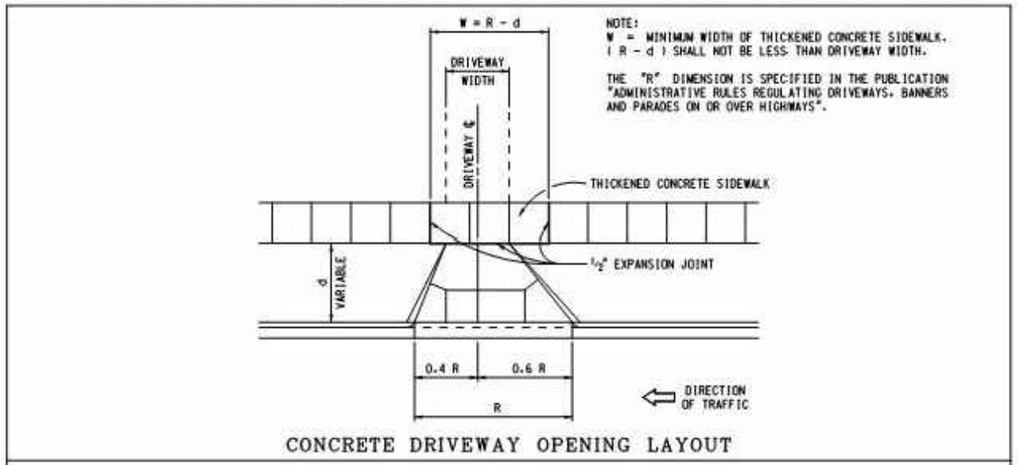
PROJECT INFORMATION:
181 URAN SREET
HILLSDALE, MI 49242
HILLSDALE COUNTY
PARCEL #: 006-222-151-05

SHEET TITLE:

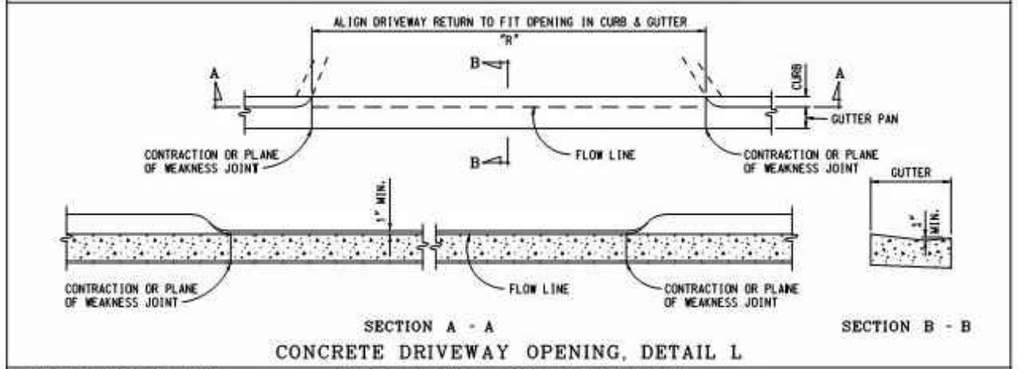
TOWER ELEVATION

0 15' 30' 60'
11" x 17" - 1" = 30'
22" x 34" - 1" = 15'

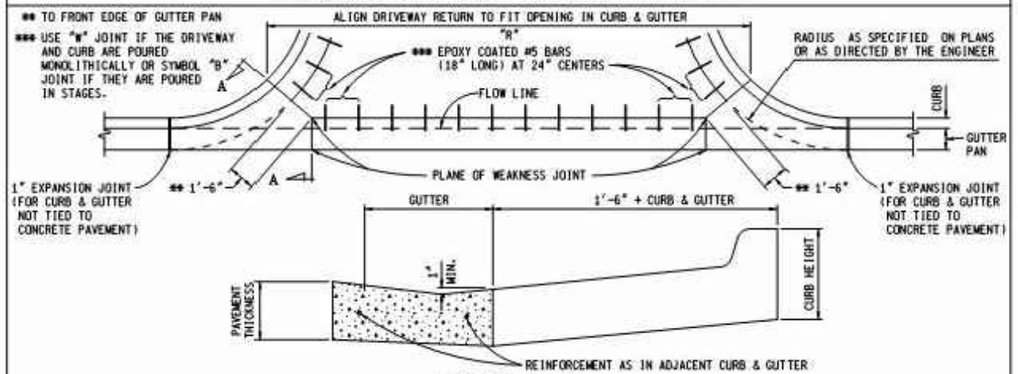
PROJECT NUMBER: 43301
SHEET NUMBER: Z-4



CONCRETE DRIVEWAY OPENING LAYOUT



CONCRETE DRIVEWAY OPENING, DETAIL L



SECTION A - A

CONCRETE DRIVEWAY OPENING, DETAIL M

NOTE:
FOR ROADWAYS WITH CONCRETE PAVEMENTS, LONGITUDINAL LANE TIES WILL BE CONTINUOUS THROUGH THE DRIVEWAY OPENING AND THE SPACING OF THE #5 BARS IN CONCRETE DRIVEWAYS SHALL BE ADJUSTED TO AVOID CONFLICT WITH THE LONGITUDINAL LANE TIES.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

9-30-2014 F.H.W.A. APPROVAL	7-1-2014 PLAN DATE	R-29-I	SHEET 2 OF 4

ACCESS ROAD SPECIFICATION (1)
SCALE: NTS

TILLMAN INFRASTRUCTURE
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27TH FLOOR
NEW YORK, NY

Faulk&Foster
NORTHWEST REGIONAL OFFICE
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CANDIDATE (B)

PROJECT INFORMATION:
181 URAN SREET
HILLSDALE, MI 49242
HILLSDALE COUNTY
PARCEL #: 006-222-151-05

SHEET TITLE:
ACCESS ROAD SPECIFICATION

SCALE: NONE

PROJECT NUMBER: 43301
SHEET NUMBER: Z-5

TO: **Planning Commission**

FROM: **Zoning Administrator**

DATE: **November 12, 2019**

RE: **3011 W. Carleton St.**

Background: Desine, Inc., on behalf of the owner, has submitted site plans for the construction of a new Taco Bell restaurant. The staff review is included from the meeting held on October 7, 2019. Revised drawings were submitted on October 18, 2019 and address the issues raised at the Department Head meeting.

CITY OF
HILLSDALE

ALAN C. BEEKER
ZONING ADMINISTRATOR
97 NORTH BROAD STREET
HILLSDALE, MICHIGAN 49242-1695
(517) 437-6449 FAX: (517) 437-6450

October 7, 2019

Below is a list of the items cited during the meeting to review the plans of the proposed development to be located at 3011 West Carleton Street. The project includes a new restaurant building with a drive thru.

Present: Matt Taylor (City Engineer), Scott Hephner (Police & Fire Chief), Mark Hawkins (Deputy Fire Chief), Jake Hammel (Dept. of Public Services Director), Bill Briggs (Board of Public Utilities Water Dept.), Alan Beeker (Zoning Administrator), Chris McArthur (Board of Public Utilities Director), Chad Culbert (Board of Public Utilities Electric Dept.), James Barnwell and Fernando Abudeye (Desine, Inc.) and

Zoning
- No issues.

City Engineer
- Architect is still waiting for results of MDOT's review of the storm water plan.
- City will accept the MDOT review in place of own.

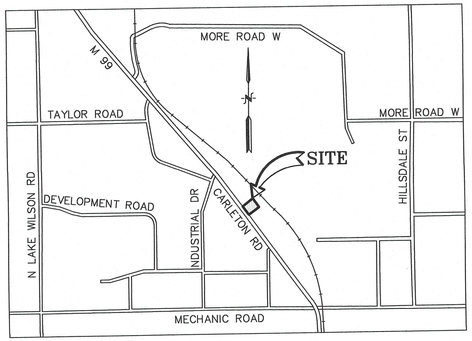
Public Services
- Truncated domes at ends of sidewalk leading to drive should be removed.
- Will contact MDOT to verify the use of the domes.

Public Safety
Fire Department
- No issues

Police Department
- Would prefer a one-way route around building but would accept a stop sign to be located at end of drive thru route where it Ts with the parking lot drive.

Board of Public Utilities (BPU)
- Owner to request removal of existing unused power pole.
- BPU to contact ATT to take control of existing poles that lead to site.

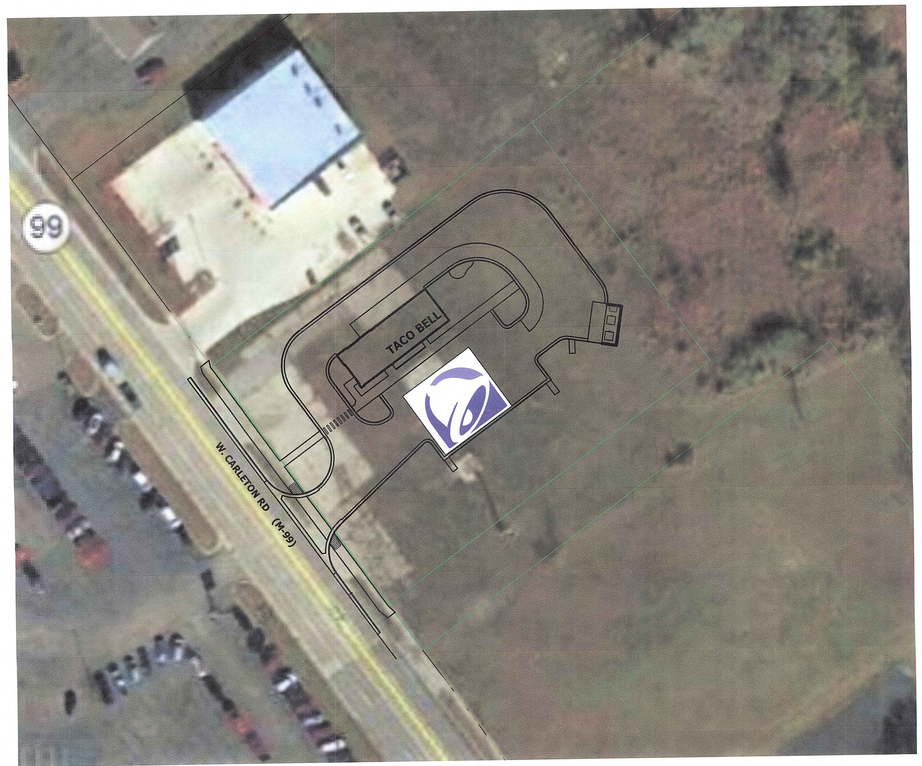
The Planning Commission will review the drawings at the regular meeting which will be held on November 19, 2019 at 5:30 pm. The location will be at City Hall, 97 N. Broad St. in the 2nd Floor Conference Room.



LOCATION MAP
SCALE: 1in. = 2000ft.

SITE PLAN
FOR
TACO BELL

3011 W. CARLETON ROAD
CITY OF HILLSDALE, MICHIGAN
A PART OF THE SW 1/4 OF SECTION 15, T6S, R3W
CITY OF HILLSDALE, HILLSDALE COUNTY, MICHIGAN 49242



AERIAL PHOTOGRAPHY
SCALE: 1"=50'

Google maps

SHEET INDEX

Land situated in the City of Hillsdale, County of Hillsdale, State of Michigan, described as follows:

Commencing at the Southwest Corner of Section 15, Town 6 South, Range 3 West, City of Hillsdale, Hillsdale County, Michigan; thence S89°11'49"E (SPCS) 659.58 feet along the South line of said Section 15 to its intersection with the Centerline of West Carleton Road (State Highway M-99); thence N56°44'02"E (SPCS) 43.03 feet *(recorded as Northeasterly 43 feet)*; thence N35°55'21"W (SPCS) *(recorded as N36°07'45"W)* 40.00 feet along the Northeasterly line of said West Carleton Road (43 foot wide 1/2 Right-of-way) to the **PLACE OF BEGINNING**; thence continuing N35°55'21"W (SPCS) *(recorded as N36°07'45"W)* 207.50 feet along said road Right-of-way line; thence N53°39'27"E (SPCS) *(recorded as Northeasterly)* 282.00 feet; thence S35°55'21"E (SPCS) *(recorded as Southeasterly)* 207.50 feet; thence S53°39'27"W (SPCS) 282.00 feet to the Place of Beginning. Containing 1.34 acres, more or less. Being a part of the Southwest 1/4 of Section 15, Town 6 South, Range 3 West, City of Hillsdale, Hillsdale County, Michigan. Subject to and together with all easements and restrictions affecting title to the described above premises.

Tax ID No.: 30-006-015-300-25
Also known as: 3011 W. Carleton Road, Hillsdale, Michigan 49242

NOTES:
- (SPCS) denotes line bearing value related to the Grid North of State Plane Coordinates System as defined in Michigan Coordinate System Act 9 of 1964, Section 5a(c).
- *(recorded as)* denotes line bearing value as recorded.

PLAN DISTRIBUTION LIST

DATE OF APPLICATION	CONSTRUCTION SET DATE	AGENCY	CONTACT NAME	DESCRIPTION	STATUS
SEPT. 19, 2019	SEPT. 16, 2019	CITY OF HILLSDALE PLANNING & ZONING	ALAN BEEKER	SITE PLAN APPLICATION	PENDING
SEPT. 19, 2019	SEPT. 16, 2019	M.D.O.T. CPS PORTAL	DOUG JORDAN	R.O.W. PERMIT	PENDING
OCT. 21, 2019	OCT. 18, 2019	CITY OF HILLSDALE PLANNING & ZONING	ALAN BEEKER	SITE PLAN APPLICATION	PENDING
OCT. 21, 2019	OCT. 18, 2019	M.D.O.T. CPS PORTAL	DOUG JORDAN	R.O.W. PERMIT	PENDING

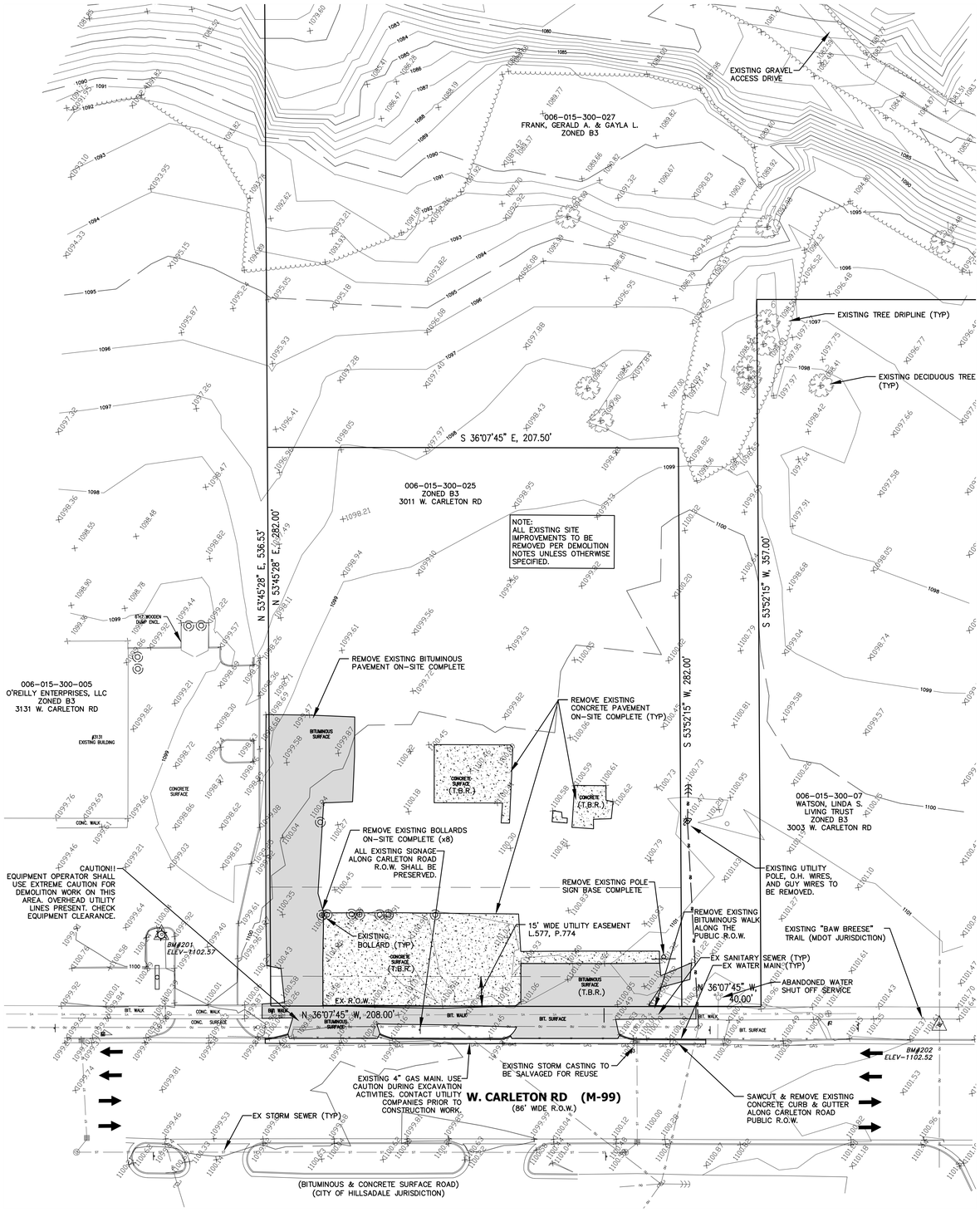
STATE OF MICHIGAN
JAMES E. VOLLMAR
REGISTERED
LANDSCAPE
ARCHITECT
No. 23075
LICENSED PROFESSIONAL

ENGINEER/SURVEYOR
DESINE INC.
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114
PHONE: (810) 227-9533

DEVELOPER / APPLICANT
OLD WEST PROPERTIES, L.L.C.
7915 KENSINGTON CT.
BRIGHTON, MICHIGAN 48116
PHONE: (517) 521-3907

ARCHITECT
PUCCI + VOLLMAR AND ARCHITECTS, PC
508 E. GRAND RIVER AVE, SUITE 100B
BRIGHTON, MI 48116-1566
PHONE: (810) 225-2930

REVISED	SCALE: AS NOTED
SEPT. 16, 2019	PROJECT No.: 193636
	DWG NAME: 3636 COV
	PRINT: OCT 18, 2019



GRAPHIC SCALE

30 0 15 30 60

(IN FEET)

1 INCH = 30 FEET

LEGEND

- MISC. STRUCTURE (AS LABELED)
- BOLLARD
- SIGN
- LIGHT BASE
- UTILITY MANHOLE (AS LABELED)
- UTILITY POLE W/GUY WIRE
- OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
- U/G LINES (ELECTRIC/PHONE/CABLE)
- DECIDUOUS TREE W/IDENTIFIER
- CONIFEROUS TREE W/IDENTIFIER
- FENCE (CHAIN LINK UNLESS OTHERWISE STATED)
- EX 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
- EX STORM WATER DRAINAGE PIPE
- HYDRANT
- WATER SHUT OFF
- WATER VALVE
- WATER VALVE BOX
- WATER MAIN
- GAS SHUT OFF
- U/G GAS
- 1' CONTOUR
- 5' CONTOUR
- SOIL BORING W/ INDENTIFIER
- CONCRETE TO BE REMOVED
- BITUMINOUS PAVEMENT TO BE REMOVED
- TO BE REMOVED

DEMOLITION NOTES:

1. 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.

2. 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.

3. 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.

4. 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.

5. Contractor shall recycle and/or dispose of all demolition debris in accordance with the appropriate Local, County, State and Federal regulations.

6. 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.

7. 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.

8. 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.

9. 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.

10. 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.

11. 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.

12. 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).

BENCHMARKS

DATUM BASED ON NGS OPUS SOLUTION REPORT, DATED APRIL 9, 2019 AT 1:50 PM

BENCHMARK #201
"X" ON SOUTH SIDE OF A LIGHT POLE BASE, LOCATED IN CURB/LANDSCAPE ISLAND, LOCATED WESTERLY SIDE OF #3131.
ELEVATION = 1102.57 (NAVD 88)

BENCHMARK #202
SPIKE IN THE NORTH SIDE OF AN UTILITY POLE, LOCATED NE'LY SIDE OF W. CARLETON ROAD, 92± FEET SE'LY OF THE SE CORNER OF #3011.
ELEVATION = 1102.52 (NAVD 88)

Land situated in the City of Hillsdale, County of Hillsdale, State of Michigan, described as follows:

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Tax ID No.: 30-006-015-300-025
Also known as: 3011 W. Carleton Road, Hillsdale, Michigan 49242

NOTES:
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STRUCTURE INVENTORY

SANITARY SEWER MANHOLE #1
RIM 1100.26 (TO BE ADJUSTED)
N 10" IRON 1087.26
S 10" SDR 1087.36

SANITARY SEWER MANHOLE #2
RIM 1101..34
N 10" IRON 1088.59
S 10" IRON 1088.69

CATCH BASIN #3
RIM 1100.06 (TO BE ADJUSTED)
W 15" RCP 1095.51

TREE SCHEDULE

No.	DESCRIPTION
1	COTTONWOOD 30"
2	DEAD 12"
3	DEAD 8"
4	DEAD 6"
5	DEAD 12" TWIN
6	CHEERY 8"
7	BASSWOOD 12" TRI
8	BASSWOOD 15" TRI
9	OAK 6"
10	CHERRY 12" TWIN

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

DESIGN: FAF
DRAFT: SES
CHECK: JMB

REVISION #	DATE	REVISION-DESCRIPTION
1	10/18/19	REVISED PER CITY OF HILLSDALE PRELIMINARY MEETING REVIEW COMMENTS ON 10/01/19

REVISION #	DATE	REVISION-DESCRIPTION

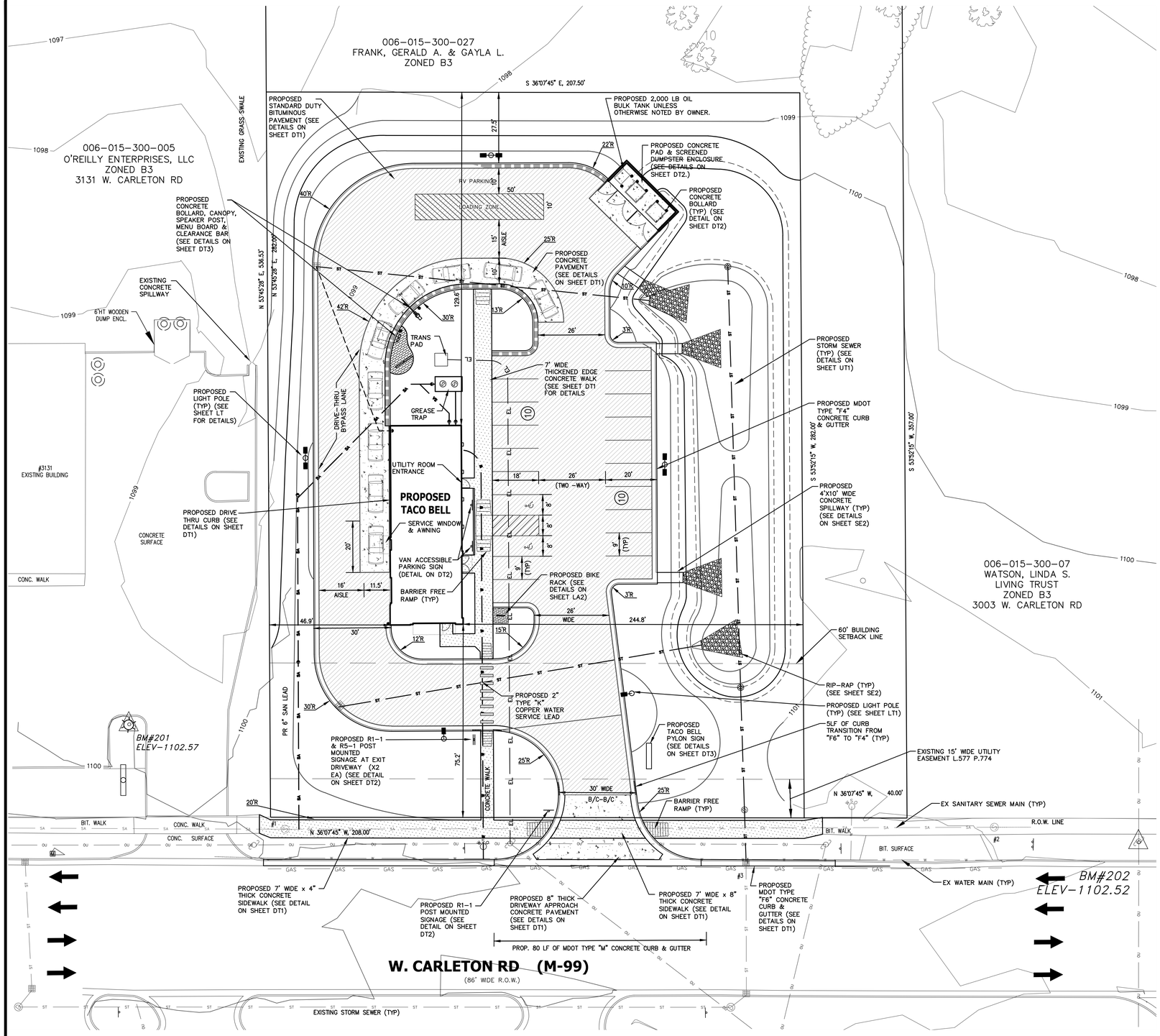
3011 W. CARLETON RD
TACO BELL

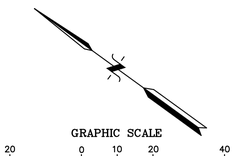
EXISTING CONDITIONS AND DEMOLITION PLAN

CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: 1"=30'
PROJECT No.: 193636
DWG NAME: 3636 EX
ISSUED: OCT 18, 2019

EX





LEGEND

- MISC. STRUCTURE (AS LABELED)
- BOLLARD
- SIGN
- PROP. SIGNS
- LIGHT BASE
- UTILITY MANHOLE (AS LABELED)
- UTILITY POLE W/GUY WIRE
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- PROP. CONCRETE CURB
- PROP. CONCRETE REVERSE CURB
- SANITARY SEWER MANHOLE W/IDENTIFIER
- SANITARY SEWER PIPE
- CLEAN OUT

EXISTING	PROPOSED	
		STORM WATER MANHOLE W/IDENTIFIER
		CATCH BASIN W/IDENTIFIER
		FLARED END SECTION
		EX STORM WATER DRAINAGE PIPE
		PROP STORM WATER DRAINAGE PIPE

- HYDRANT
- WATER SHUT OFF
- WATER VALVE
- WATER VALVE BOX
- WATER MAIN
- GAS SHUT OFF
- U/G GAS
- EX 1' CONTOUR
- EX 5' CONTOUR
- PROP. CONCRETE PAVEMENT
- PROP. BITUMINOUS PAVEMENT
- PROP. CONCRETE WALK
- PROP. LIGHT POLES
- PROP. BRICK EMBOSSED CONCRETE W/SLATE GREY PLATINUM RELEASED COLOR HARDENER FROM LM SCHOFIELD
- PROPOSED BARRIER FREE RAMP
- PROPOSED TRAFFIC FLOW ARROW

NOTES:

1. For speaker box, canopy menu board & clearance bar details, see sheet DT3.
2. Loading zone and dumpster to be accessed only when business is closed.
3. Any damaged sidewalk, as a result of this project activity located within the W. Carleton Rd. public road R.O.W., shall be reconstructed per MDOT standards or as directed by the City engineer.
4. Restore all disturbed areas and features within the W. Carleton Rd. public road R.O.W. to its original conditions per MDOT standards or as directed by the City engineer.
5. The developer is responsible for resolving any drainage problems on adjacent properties which are the result of the developer's actions.
6. All disturbed areas within the Carleton Rd. Road R.O.W. shall be top soiled, seeded & mulched to match existing areas per current MDOT standards and specifications.

SITE DATA

#3011 W. CARLETON RD., HILLSDALE, MI 49242.
REQUIREMENTS FOR B-3, GENERAL BUSINESS DISTRICT PER ZONING ORDINANCE.

FEATURE:	REQUIRED:	PROPOSED:
FRONT BUILDING SETBACK:	60 FEET (Sec 36-293)	75.0 FEET
SIDE BUILDING SETBACK:	N/A (Sec 36-293)	134.0 FEET (NW) & 41.0 FEET (SE)
REAR BUILDING SETBACK:	N/A (Sec 36-293)	129.0 FEET
MAX BUILDING HEIGHT:	2-1/2 STORIES / 35 FEET (Sec.36-411)	23 FEET / 1 STORY
FRONT PARKING SETBACK	10 FEET (Sec. 36-278.11)	81.5 FEET
ADJ. TO COMMON PROP. LINE SETBACK	10 FEET (Sec. 36-278.11)	12 FEET (NW) & 59 FEET (SE)
REAR PARKING SETBACK	5 FEET (Sec. 36-278.11)	27.5 FEET
MIN. BUILDING AREA:	N/A	2,079 SQ. FT. (G.F.A.)
MIN. LOT AREA:	N/A	1.34 Ac. (GROSS) / 1.27 Ac. (NET)
MAX LOT COVERAGE:	N/A	3.55%
REQUIRED PARKING SPACES (Commercial Restaurants not located in a retail center Sec.36-600)	1 FOR EVERY 100 SF OF U.F.A. CALCULATED @85% OF G.F.A. TOTAL REQ = (0.85 x 2,079) x (1/100) = 18 REQUIRED	1 RV PARKING STALL 2 BARRIER FREE STALL 18 REGULAR STALLS 21 SPACES TOTAL
REQ. NO. BARRIER FREE SPACES:	2 SPACES	2 B.F. SPACES (VAN ACCESSIBLE)
REQ. NO. OF STACKING SPACES:	5 PER WINDOW SERVING FOOD (Sec 82-455)	7 SPACES (10' W X 20' L)
LOADING AREA	1 REQUIRED FOR COMMERCIAL BUSSINESS	1 SPACE (10' X 50' FOR AFTER HOURS DELIVERIES)

BENCHMARKS

DATUM BASED ON NGS OPUS SOLUTION REPORT, DATED APRIL 9, 2019 AT 1:50 PM

BENCHMARK #201
"X" ON SOUTH SIDE OF A LIGHT POLE BASE, LOCATED IN CURB/LANDSCAPE ISLAND, LOCATED WESTERLY SIDE OF #3131.
ELEVATION = 1102.57 (NAVD 88)

BENCHMARK #202
SPIKE IN THE NORTH SIDE OF AN UTILITY POLE, LOCATED NE'LY SIDE OF W. CARLETON ROAD, 92± FEET SE'LY OF THE SE CORNER OF #3011.
ELEVATION = 1102.52 (NAVD 88)

STRUCTURE INVENTORY

SANITARY SEWER MANHOLE #1
RIM 1100.26 (TO BE ADJUSTED)
N 10" IRON 1087.26
S 10" SDR 1087.36

SANITARY SEWER MANHOLE #2
RIM 1101.34
N 10" IRON 1088.59
S 10" IRON 1088.69

CATCH BASIN #3
RIM 1100.06 (TO BE ADJUSTED)
W 15" RCP 1095.51

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CIVIL ENGINEERS
LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

REVISION #	DATE	REVISION-DESCRIPTION
1	10/18/19	REVISED PER CITY OF HILLSDALE PRELIMINARY MEETING REVIEW COMMENTS ON 10/01/19

REVISION #	DATE	REVISION-DESCRIPTION

DESIGN: FAF
DRAFT: SES
CHECK: JMB

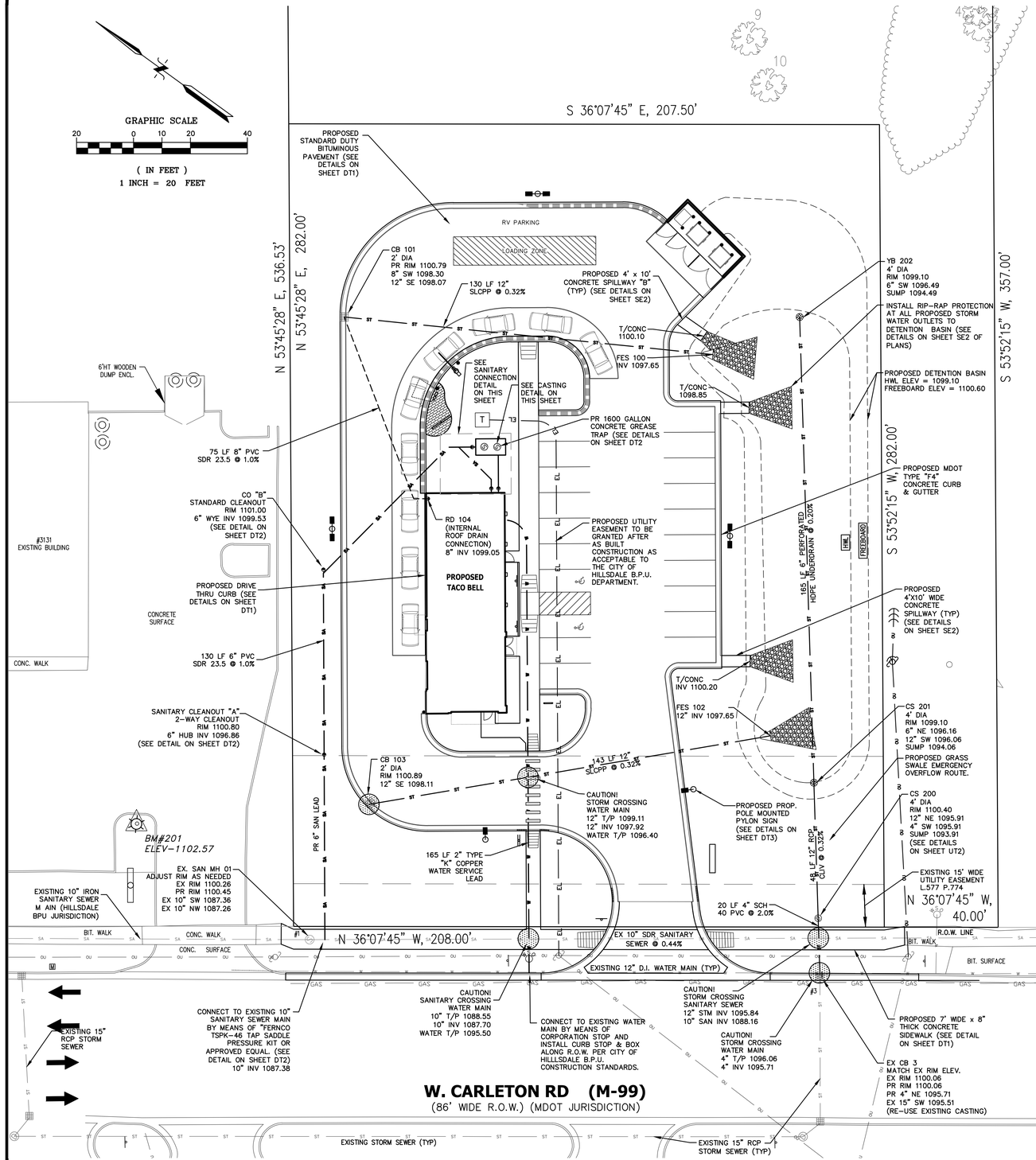
3011 W. CARLETON RD
TACO BELL

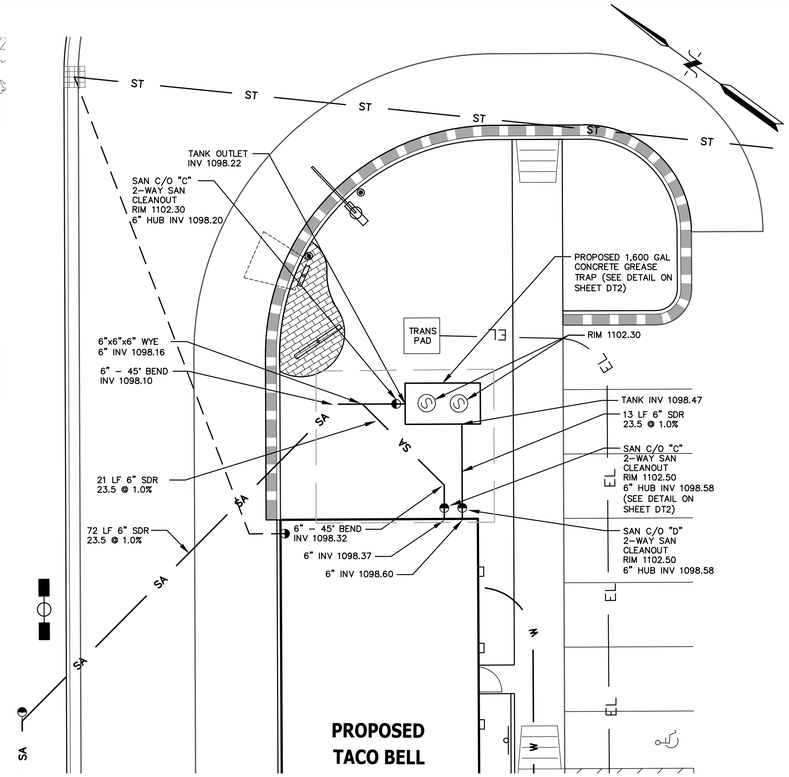
SITE PLAN

CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: 1"=20'
PROJECT No.: 193636
DWG NAME: 3636 SP
ISSUED: OCT 18, 2019

SP





SANITARY CONNECTION DETAIL

SCALE: 1"=10'

BENCHMARKS

DATUM BASED ON NGS OPUS SOLUTION REPORT, DATED APRIL 9, 2019 AT 1:50 PM

BENCHMARK #201
"X" ON SOUTH SIDE OF A LIGHT POLE BASE, LOCATED IN CURB/LANDSCAPE ISLAND, LOCATED WESTERLY SIDE OF #31.31.
ELEVATION = 1102.57 (NAVD 88)

BENCHMARK #202
SPIKE IN THE NORTH SIDE OF AN UTILITY POLE, LOCATED NE'LY SIDE OF W. CARLETON ROAD, 92± FEET SE'LY OF THE SE CORNER OF #3011.
ELEVATION = 1102.52 (NAVD 88)

NOTES:

1. Sanitary & Water connection must be witnessed the City of Hillsdale B.P.U. staff. A minimum of 24 hour notice is required. Contact B.P.U. Superintendent, Bill Briggs, @ (517) 437-3387.

2. Tracer wire shall be provided on all plastic sanitary sewer service lines.

STRUCTURE INVENTORY

SANITARY SEWER MANHOLE #1
RIM 1100.26 (TO BE ADJUSTED)
N 10" IRON 1087.26
S 10" SDR 1087.36

SANITARY SEWER MANHOLE #2
RIM 1101.34
N 10" IRON 1088.59
S 10" IRON 1088.69

CATCH BASIN #3
RIM 1100.06 (TO BE ADJUSTED)
W 15" RCP 1095.51

LEGEND

- MISC. STRUCTURE (AS LABELED)
- BOLLARD
- SIGN
- LIGHT BASE
- UTILITY METERS & BOXES (ELECTRIC METER, GAS METER, WATER METER, PHONE BOX, CATV BOX, MAIL BOX)
- OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
- U/G UTILITY LINES (ELECTRIC/PHONE/CABLE)
- DECIDUOUS TREE W/IDENTIFIER
- CONIFEROUS TREE W/IDENTIFIER
- FENCE (CHAIN LINK UNLESS OTHERWISE STATED)
- CONCRETE CURB (UNLESS OTHERWISE STATED)
- SANITARY SEWER MANHOLE W/IDENTIFIER
- SANITARY SEWER PIPE
- CLEAN OUT
- STORM WATER MANHOLE W/IDENTIFIER
- CATCH BASIN W/IDENTIFIER
- STORM DRAINAGE LINE
- HYDRANT
- WATER SHUT OFF
- WATER VALVE
- WATER VALVE BOX
- WATER MAIN
- WATER MAIN EASEMENT
- GAS SHUT OFF
- U/G GAS
- PROP. CONCRETE CURB
- PROP. REVERSE CONCRETE CURB
- PROP. SANITARY LEAD
- PROP. CLEAN OUT
- PROP. STORM DRAINAGE LINE
- PROP. CATCH BASIN
- PROP. LIGHT POLE

STRUCTURE / CASTING SCHEDULE

Structure	Diameter	Casting Type
Storm Sewer		
EX. CB #3	4 ft	*(REUSE)*
CB-101, CB-103	2 ft	EJIW 7000-M1-T1
CS 200	4 ft	EJIW 1986Z FRAME & 1986E COVER
		(SOLID COVER)
YB 202	4 ft	EJIW 1045Z-1040N
		(BEEHIVE GRATE)
Sanitary Sewer		
Cleanout	4"-8"	*EJIW 1578*
	10"-18"	EJIW 1545 w/solid cover
Grease Trap	2'	EJIW 1040 a (Heavy Duty)
		EJIW 1040Z (Frame)

NOTED: *PROPOSED **CS 200** COVER SHALL BE BY BEST WINDOW GUARD CO., DETROIT, 1-313-838-4627 OR APPROVED EQUAL. WELD 0.5" DIA. ROUND BARS AT 3.5" ON CENTER, EACH WAY TO MAKE GRID. WRAP GRIP WITH 3" x 0.25" BENT BAR. WELD ALL JOINTS FULL STRENGTH PER CURRENT AWS CODE. SIZE COVER TO MOUNT OVER OUTSIDE*

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2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

DESIGN: FAF
DRAFT: SES
CHECK: JMB

REVISION #	DATE	REVISION-DESCRIPTION
1	10/18/19	REVISED PER MDOT REVIEW COMMENTS ON 10/01/19

REVISION #	DATE	REVISION-DESCRIPTION

3011 W. CARLETON RD TACO BELL

UTILITY PLAN

CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: 1"=20'
PROJECT No.: 193636
DWG NAME: 3636 UT
ISSUED: OCT 18, 2019

UT1

HISTORICAL UNDETAINED STORM WATER RUN-OFF

Drainage Structure	Tributary Areas (acres) Pavement	Building	Lawn	(Acres)	Calculated "C" Factor
	0.90	**0.95**	**0.20**		
EXISTING	0.17	0.15	0.05	0.37	0.83
Totals	***0.17***	***0.15***	***0.05***	***0.37***	***0.83***

PROPOSED UNDETAINED RUN-OFF TO M.D.O.T.

Drainage Structure	Tributary Areas (acres) Pavement	Building	Lawn	Total Area (Acres)	Calculated
	0.90	**0.95**	**0.20**		
MDOT "A"	0.03		0.14	0.17	0.32
Totals	***0.03***	***0.00***	***0.14***	***0.17***	***0.32***

PROPOSED STORM WATER RUN-OFF

Drainage Structure	Tributary Areas (acres) Pavement	Building	Lawn	Total Area (Acres)	Calculated "C" Factor
	0.90	**0.95**	**0.20**		
CB-101	0.13	0.05	0.03	0.21	0.81
CB-103	0.07	0.00	0.01	0.08	0.81
SPILLWAY "B"	0.08	0.00	0.01	0.09	0.82
SPILLWAY "C"	0.09	0.00	0.00	0.09	0.90
SPILLWAY "D"	0.13	0.00	0.02	0.15	0.81
POND			0.35	0.30	0.20
Totals	***0.50***	***0.05***	***0.42***	***0.97***	***0.60***

REQUIRED DETENTION VOLUME CALCULATION

Tributary Area (A) = 0.97 Acres

Run-off Coefficient (C) = 0.60

Design Constant (Ki) = 0.58

Allowable Outflow Rate (Qo)* = 0.70 cfs

MDOT REQUIREMENTS

		100 YEAR STORM					*50 YEAR STORM*					*10 YEAR STORM*				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Duration (Minutes)	Duration (Seconds)	Intensity (100- yr Storm) (In/Hr)	Col. #2 x Col. #3 (Inches)	Inflow Volume = Col. #4 x Ki (Cu. Ft.)	Outflow Volume = Col. #2 x Qo (Cu. Ft.)	Storage Volume = Col. #5 - Col. #6 (Cu. Ft.)	Intensity (50- yr Storm) (In/Hr)	Col. #2 x Col. #8 (Inches)	Inflow Volume = Col. #9 x Ki (Cu. Ft.)	Outflow Volume = Col. #2 x Qo (Cu. Ft.)	Storage Volume = Col. #10 - Col. #11 (Cu. Ft.)	Intensity (50- yr Storm) (In/Hr)	Col. #2 x Col. #13 (Inches)	Inflow Volume = Col. #14 x Ki (Cu. Ft.)	Outflow Volume = Col. #2 x Qo (Cu. Ft.)	Storage Volume = Col. #10 - Col. #11 (Cu. Ft.)
5	300	9.17	2,750	1,599	210	1,389	8.17	2,450	1,425	210	1,215	5.83	1,750	1,018	210	808
10	600	7.86	4,714	2,741	420	2,321	7.00	4,200	2,442	420	2,022	5.00	3,000	1,745	420	1,325
15	900	6.88	6,188	3,598	630	2,968	6.13	5,513	3,206	630	2,576	4.38	3,938	2,290	630	1,660
20	1,200	6.11	7,333	4,264	840	3,424	5.44	6,533	3,799	840	2,959	3.89	4,667	2,714	840	1,874
30	1,800	5.00	9,000	5,234	1,260	3,974	4.45	8,018	4,663	1,260	3,403	3.18	5,727	3,330	1,260	***2,070***
60	3,600	3.24	11,647	6,773	2,520	***4,253***	2.88	10,376	6,034	2,520	***3,514***	2.06	7,412	4,310	2,520	1,790
90	5,400	2.39	12,913	7,509	3,780	3,729	2.13	11,504	6,690	3,780	2,910	1.52	8,217	4,778	3,780	998
120	7,200	1.90	13,655	7,940	5,040	2,900	1.69	12,166	7,074	5,040	2,034	1.21	8,690	5,053	5,040	13
150	9,000	1.57	14,143	8,224	6,300	1,924	1.40	12,600	7,327	6,300	1,027	1.00	9,000	5,234	6,300	-1,067
180	10,800	1.34	14,488	8,425	7,560	865	1.20	12,907	7,506	7,560	-54	0.85	9,220	5,361	7,560	-2,199

Note: > Figures in Columns (3) are computed by the formula **I = 275 / (t + 25)** (i.e. 100=yr Curve)
> Figures in Columns (8) are computed by the formula **I = 245 / (t + 25)** (i.e. 50=yr Curve)
> Figures in Columns (13) are computed by the formula **I = 175 / (t + 25)** (i.e. 10=yr Curve)

* Allowable outflow rate Qo per Jackson MDOT TSC.

The Water Quality Volume shall be provided for the entire site tributary area at the following rates:

? First 1/2" of runoff from unpaved areas = (0.5" / 12) x (0.97 * 43,560) = *1,760 ft³*

DISCHARGE TO MDOT R.O.W. SUMMARY				
Frequency	Restricted Flow (CFS)	Unrestricted Flow (CFS)	Total Proposed Flow (CFS)	Existing Flow (CFS)
10 Year Event	0.04	0.18	0.22	1.04
50 Year Event	0.48	0.23	0.71	1.32
100 Year Event	0.58	0.25	0.83	1.44

PROPOSED DETENTION VOLUME

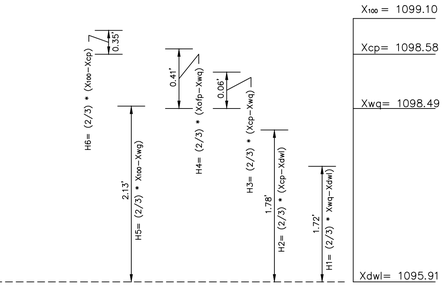
POND DEPTH (FT)	ELEV.	CONTOUR AREA (SF)	INCREMENTAL VOLUME (CF)	TOTAL VOLUME (CF)
BOTT.	1098.00	2,479	0	0
1.0	1099.00	4,846	3,597	3,597
2.0	1100.00	8,435	6,558	10,155
FREEBOARD	1100.60	10,376	5,633	15,788

Water Quality Elevation:	ELEV	VOLUME	VOLUME REQ.	ELEVATION CALC
LOWER	1098.00	0	***1,760***	1098.49
HIGHER	1099.00	3,597		

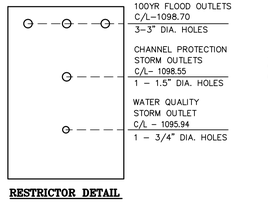
Channel Protection Elevation (10 Yr. Storm):	ELEV	VOLUME	VOLUME REQ.	ELEVATION CALC
LOWER	1098.00	0	***2,070***	1098.58
HIGHER	1099.00	3,597		

50-Yr. Storm Elevation:	ELEV	VOLUME	VOLUME REQ.	ELEVATION CALC
LOWER	1098.00	0	***3,514***	1098.98
HIGHER	1099.00	3,597		

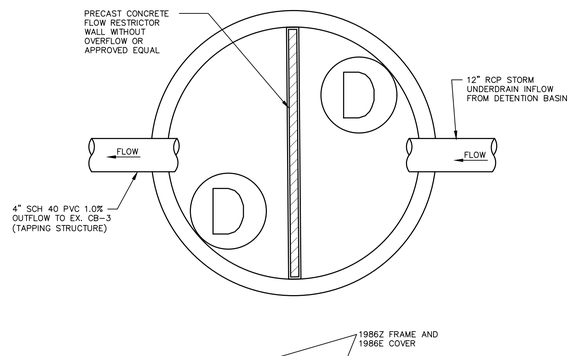
100-Yr. Storm Elevation:	ELEV	VOLUME	VOLUME REQ.	ELEVATION CALC
LOWER	1099.00	3,597	***4,253***	1099.10
HIGHER	1100.00	10,155		

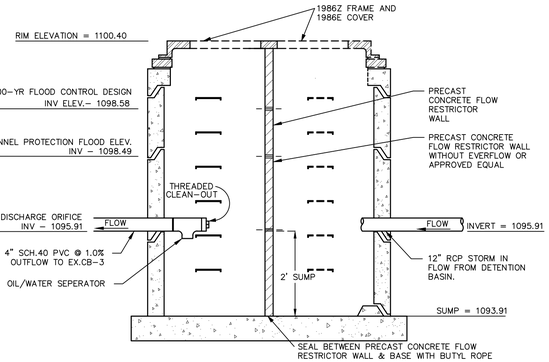


CS-200 ORIFICE ELEVATION CALCULATION



RESTRICTOR DETAIL





CONTROL STRUCTURE (CS-200) DETAIL

NOT TO SCALE

NOTES:
1. LOCATE MH OPENING AND STEPS AS NEEDED TO PROVIDE ACCESSIBLE CLEARANCE TO PIPING

TACO BELL HILLSDALE CONTROL STRUCTURE (CS-201) CALCULATIONS

Tributary Area :	**A** =	0.97	Acres	
Compound Runoff Coefficient :	**C** =	0.60		
Orifice Flow Coefficient :	**c** =	0.62		
Design Release Rate=	Q_o =	0.72	CFS / Ac.	
Allowable Outflow Rate :	Q_a ‡ =	0.70	CFS	***‡:** Allowable outflow rate per MDOT's Jackson TSC office review letter dated Oct. 01, 2019.*
Required 100 Yr. Volume :	V_{100} =	4,253	CF	
Required Channel Protection Volume :	V_{CP} =	2,070	CF	
Required Water Quality Volume :	V_{WQ}=	1,760	CF	
Discharge Pipe Water Level Invert:	X_{dwl}=	1095.91	FT	
Water Quality Elevation :	X_{wq} =	1098.49	FT	
Channel Protection Elevation :	X_{cp} =	1098.58	FT	
100 Yr. Storm Elevation :	X_{100} =	1099.10	FT	
High Water Level @ Freeboard Elev. :	**HWL** =	1100.60	FT	

CALCULATIONS					DESCRIPTION
WATER QUALITY:					
$Q_{wq\ (max)}$ =	V_{WQ} * (1 / 24 hrs) * (1 / 3600 sec) =		0.02	CFS	*(Max. allowed first flush discharge rate.)*
H_1 =	(2 / 3) * (X_{wq} - X_{dwl}) =		1.72	FT	
A_{wq} =	Q_{wq} / (c * SQRT(2 * 32.2 * H_1)) =		0.003	SF	
N_{wq} =	A_{wq} / 0.003 =		1.1	3/4" holes	
Use N_{wq} = **1**	3/4" Holes at Centerliine Elevation =	***1095.94***			
Q_1 =	(c * N_{wq} * 0.003 * SQRT(2 * 32.2 * H1)) =		0.020	CFS	*(Total discharge rate for water quality.)*
	Approx. Water Quality Detention Duration =		**24.98**	hours	
CHANNEL PROTECTION (10 YR. STORM):					
H_2 =	(2 / 3) * (X_{cp} - X_{dwl}) =		1.78	FT	*(H_2 is the hydraulic head for water quality orifices.)*
Q_{dwl} =	c * N_{wq} * 0.003 * SQRT(2 * 32.2 * H_2) =		0.020	CFS	*(Flow rate thru water quality orifice)*
Vprovided =	Q_{dwl} * 24 hrs * (3600 sec / 1 hr) =		1,719	CF	*(Vol. discharged thru water quality orifice over 24hr.)*
Vresidual =	V_{cp} - Vprovided =		351	CF	*(Residual volume to be discharge thru channel protection orifices.)*
>Calculate orifices for required channel protection residual volume					
$Q_{cp\ (max)}$ =	Vresidual * (1 / 24 hrs) * (1 / 3600 sec) =		0.004	CFS	*(Max. allowed channel protection discharge rate.)*
H_3 =	(2 / 3) * (X_{cp} - X_{wq}) =		0.06	FT	*(H_3 is the hydraulic head for channel protection orifices.)*
A_{cp} =	Q_{cp} / (c * SQRT(2 * 32.2 * H_3)) =		0.003	SF	
N_{cp} =	A_{cp} / 0.0123 =		0.3	1-1/2" Holes	
Use N_{CP} = **1**	1-1/2" Holes at Centerline Elevation =	***1098.55***			
$Q_{cp\ (actual)}$ =	(c * N_{cp} * 0.0123 * SQRT(2 * 32.2 * H_3)) =		0.015	CFS	*(Actual discharge rate thru channel protection orifices.)*
Q_2 =	$Q_{cp\ (actual)}$ + Q_{dwl} =		0.035	CFS	*(Total discharge rate for channel protection volume.)*
	Approx. Channel Protection Detention Duration =		**16.63**	hours	
100 YR. STORM:					
H_4 =	(2 / 3) * (X_{100} - X_{wq}) =		0.41	FT	*(H_4 is the hydraulic head for channel protection orifices.)*
H_5 =	(2 / 3) * (X_{100} - X_{dwl}) =		2.13	FT	*(H_5 is the hydraulic head for water quality orifices.)*
Q_{cp} + Q_{wq} =	[c * N_{CP} * 0.0123 * SQRT(2 * 32.2 *((2/3) * H_4))] + [c * N_{WQ} * 0.003 * SQRT(2 * 32.2 * ((2/3) * H_5))] =		0.06	CFS	*(Flow rate thru water quality and channel protection orifices.)*
>Calculate orifices for required 100 Yr. Storm flow rate					
$Q_{100\ (max)}$ =	Q_a - (Q_{cp} + Q_{wq}) =		0.64	CFS	*(Max. allowed overbank flood protection discharge rate.)*
H_6 =	(2 / 3) * (X_{100} - X_{cp}) =		0.35	FT	*(H_6 is the hydraulic head for overbank flood protection orifices.)*
A_{ofp} =	Q_{100} / (c * SQRT(2 * 32.2 * H_6)		0.22	SF	
N_{100} =	A_{100} / 0.049=		4.4	3" Holes	
Use N_{100} = **3**	3" Holes at Centerline Elevation =	***1098.70***			
$Q_{100\ (actual)}$ =	(c * N_{100} * 0.049 * SQRT(2 * 32.2 * H_6)) =		0.43	CFS	
Q_3 =	**$Q_{100\ (actual)}$ + [Q_{cp} + $Q_{w\,q}$]**		**0.49**	**CFS**	***< Q_a of 0.70 CFS, OK.***

RATIONAL METHOD PEAK RUNOFF EQUATION

Q = C * A * I

Where:
C= Weighted Runoff Coeficient.
I = Rainfall Intensity (inches).‡
A= Subject Watershed Area.

	EX. CONDITIONS C	A (acres)	I (inches)	Q_{ex} (cfs)	Tc (Min.)	Vol. (ft^3)	PROP. CONDITIONS C	A (acres)	I (inches)	Q_{prop} (cfs)	Tc (Min.)	Vol. (ft^3)
10 YR.	0.83	0.37	3.38	***1.04***	15.00	***936***	0.32	0.17	3.38	***0.18***	15.00	***162***
50YR.	0.83	0.37	4.31	***1.32***	15.00	***1,188***	0.32	0.17	4.31	***0.23***	15.00	***207***
100 YR.	0.83	0.37	4.68	***1.44***	15.00	***1,296***	0.32	0.17	4.68	***0.25***	15.00	***225***

***‡:** Rainfall Intensity data taken from Apendix 3B of "MDOT Drainage Manual" January 2006 for Southeast Michigan Zone 10, and a time of concentration of 15 min.*

MDOT 2484 (01/18) Page 2 of 2

Data Summary

Frequency	*Existing* flow to MDOT ROW Discharge (cfs)	Run off Volume (cft)	*Proposed* flow to MDOT ROW Without detention Discharge (cfs)	Velocity * (ft/s)	Run off Volume (cft)	With required detention*** Discharge (cfs)	Velocity (ft/s)	Required Storage Volume** (cft)	Water Surface Elevation (ft)
10-year Storm Event	*1.04*	*936*	*0.18*	*N/A*	*162*	*0.04*	*2.00*	*3,016*	*1098.68*
50-year Storm Event	*1.32*	*1188*	*0.23*	*N/A*	*207*	*0.48*	*2.00*	*4,653*	*1099.03*
100-year Storm Event Harmful Interference Evaluation	*1.44*	*1296*	*0.25*	*N/A*	*225*	*0.58*	*2.00*	*5,367*	*1099.14*
Drainage Area (Acres)	*0.37*		*0.17*						
Design Storage Volume (cft)								*15,788 CF*	

* Not applicable (N/A) if "sheet flow" into MDOT right of Way, or detention is proposed.
** Difference in volume between the proposed and existing conditions.
i.e. Required Storage Volume = Proposed Volume - Existing Volume, or (N/A) if Proposed Volume <= Existing Volume
*** Not required if proposed discharge is less than or equal to the existing discharge without detention.

RESTRICTED FLOW CALCS TO MDOT R.O.W.			
10 Year Event Elevation	1098.58 (X_{10})		
50 Year Event Elevation	1098.98 (X_{50})		
100 Year Event Elevation	1099.10 (X_{100})		
A Level Orifice Elevation	1095.91 (1 x 0.75" Hole) (X_A)		
B Level Orifice Elevation	1098.49 (1 x 1.5" Holes) (X_B)		
C Level Orifice Elevation	1098.58 (4 x 3" Holes) (X_C)		
Using the orifice flow equation: $Q = CdA\sqrt{2gh}$			
10 Year Event Flow			
Q_{10} =	[c * 1 * 0.003 * SQRT(2 * 32.2 * (X_{10} - X_B))] +		
	[c * 1 * 0.0123 * SQRT(2 * 32.2 * (X_{10} - X_B))] +	0.04	CFS
50 Year Event Flow			
Q_{50} =	[c * 1 * 0.003 * SQRT(2 * 32.2 * (X_{50} - X_A))] +		
	[c * 1 * 0.0123 * SQRT(2 * 32.2 * (X_{50} - X_B))] +		
	[c * 3 * 0.049 * SQRT(2 * 32.2 * (X_{50} - X_C))] =	0.48	CFS
100 Year Event Flow			
Q_{100} =	[c * 1 * 0.003 * SQRT(2 * 32.2 * (X_{100} - X_A))] +		
	[c * 1 * 0.0123 * SQRT(2 * 32.2 * (X_{100} - X_B))] +		
	[c * 4 * 0.049 * SQRT(2 * 32.2 * (X_{100} - X_C))] =	0.58	CFS

Project: Taco Bell, #3001 W. Carleton Rd. Project:# 9193636
Location: City of Hillsdale, MI. Date: 16-Oct-19
County: Hillsdale County.
Design Criteria: 10 year event (I = 175 / (T + 25))

SLCPP / PVC **n** =	0.010
RCP **n** =	0.013
HDPES **n** =	0.010

	Stays as built

From MH# CB# FES#	To MH# CB# FES#	Pipe Material	Inc. Acres "A"	"C"	Eqv. Area 1 CA	Total Area 1 CA	T Time Min.	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	Ground Elev. Lower end	Invert Elev. Upper end	Invert Elev. Lower end	COVER Upper end	COVER Lower end	RIM-HGL
TACO BELL, CITY OF HILLSDALE PIPE CALCULATIONS:																								
RD 104	101	PVC	0.04	0.90	0.04	0.04	15.0	4.38	0.15	8	1.00	0.01	75	4.50	0.3	1.57	1099.18	1102.60	1100.79	1099.05	1098.30	2.79	1.73	3.42
101	100	SLCPP	0.08	0.67	0.05	0.09	15.3	4.34	0.39	12	0.32	0.01	130	3.33	0.6	2.62	1099.17	1100.79	1097.65	1098.07	1097.65	1.62	---	1.62
103	102	SLCPP	0.07	0.60	0.04	0.13	15.0	4.38	0.57	12	0.32	0.02	143	3.33	0.7	2.62	1099.16	1100.79	1097.65	1098.11	1097.65	1.58	---	1.63
																	1099.14	***=HWL (see calculations for HWL on this sheet)***						
CS-201	CS-200	RCP							0.17	12	0.32	0.00	48	3.33	0.2	2.62	1096.91	1098.70	1099.20	1096.06	1095.91	1.54	2.19	1.79
CS-200	CB #3	PVC							0.17	4	1.00	0.47	20	2.18	0.2	0.19	1096.85	1099.20	1100.19	1095.91	1095.71	2.86	4.05	2.35
																	1096.76	***=HWL (crown elevation of 15" outlet pipe @ existing storm CB#3)***						

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CIVIL ENGINEERS
LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

DESIGN: FAF
DRAFT: SES
CHECK: JMB

REVISION #	DATE	REVISION-DESCRIPTION
1	10/17/19	REVISED PER MDOT REVIEW COMMENTS ON 10/01/19

REVISION #	DATE	REVISION-DESCRIPTION

3011 W. CARLETON RD
TACO BELL

STORM SEWER CALCULATIONS AND DETAILS

CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: AS NOTED
PROJECT No.: 193636
DWG NAME: 3636 UT
ISSUED: OCT 18, 2019

UT2

STRUCTURE INVENTORY

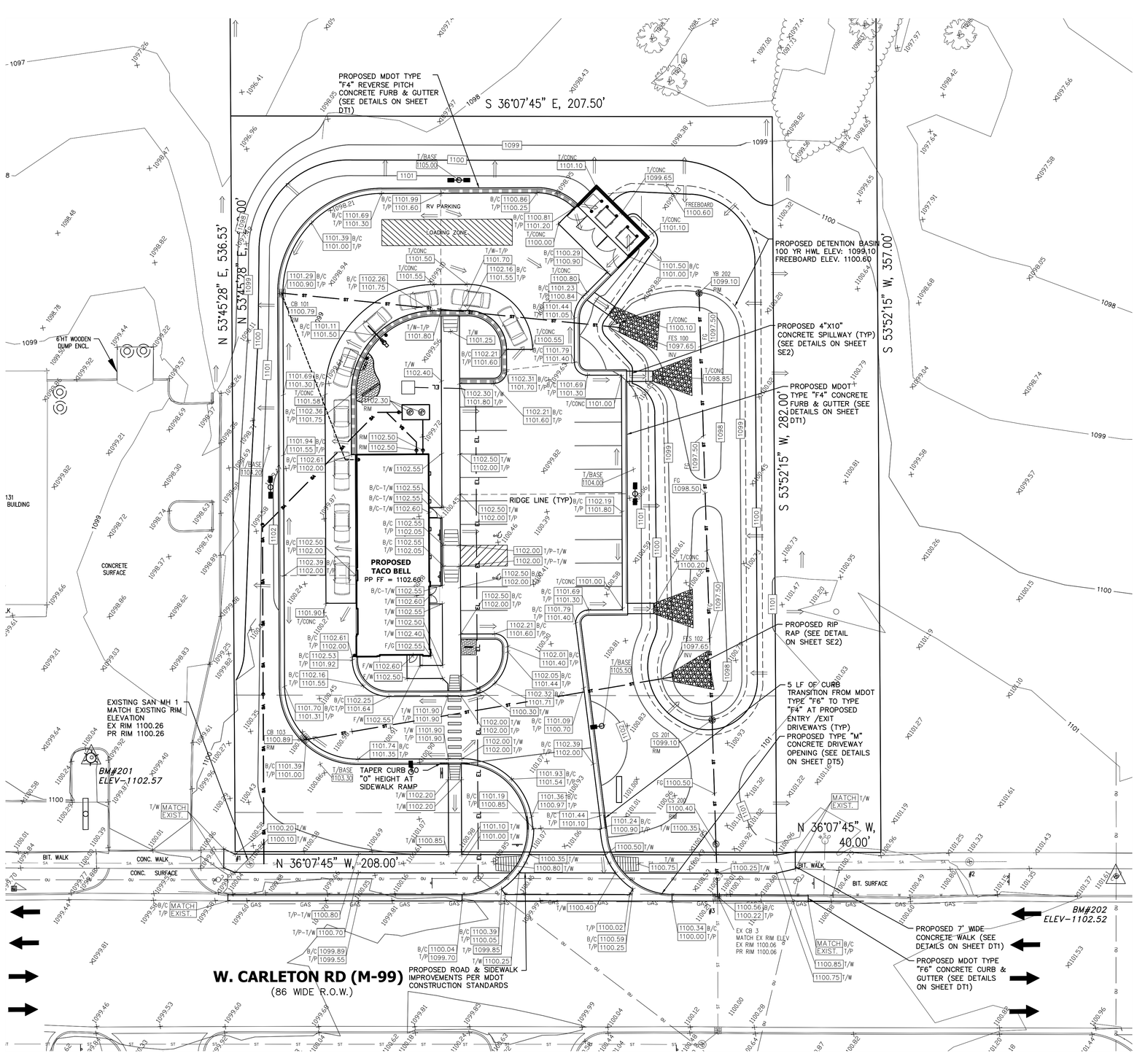
SANITARY SEWER MANHOLE #1
RIM 1100.26 (TO BE ADJUSTED)
N 10" IRON 1087.26
S 10" SDR 1087.36

SANITARY SEWER MANHOLE #2
RIM 1101.34
N 10" IRON 1088.59
S 10" IRON 1088.69

CATCH BASIN #3
RIM 1100.06 (TO BE ADJUSTED)
W 15" RCP 1095.51

TREE SCHEDULE

No.	DESCRIPTION
1	COTTONWOOD 30"
2	DEAD 12"
3	DEAD 8"
4	DEAD 6"
5	DEAD 12" TWIN
6	CHEERY 8"
7	BASSWOOD 12" TRI
8	BASSWOOD 15" TRI
9	OAK 6"
10	CHERRY 12" TWIN



GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 INCH = 20 FEET

LEGEND

- MISC. STRUCTURE (AS LABELED)
- BOLLARD
- SIGN
- LIGHT BASE
- UTILITY MANHOLE (AS LABELED)
- UTILITY POLE W/GUY WIRE
- OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
- U/G LINES (ELECTRIC/PHONE/CABLE)
- DECIDUOUS TREE W/IDENTIFIER
- CONIFEROUS TREE W/IDENTIFIER
- FENCE (CHAIN LINK UNLESS OTHERWISE STATED)
- EX CONCRETE CURB
- PROP. CONCRETE CURB
- PROP. CONCRETE REVERSE CURB
- SANITARY SEWER MANHOLE W/IDENTIFIER
- SANITARY SEWER PIPE
- CLEAN OUT
- STORM WATER MANHOLE W/IDENTIFIER (EXISTING / PROPOSED)
- CATCH BASIN W/IDENTIFIER
- FLARED END SECTION
- EX STORM WATER DRAINAGE PIPE
- PROP STORM WATER DRAINAGE PIPE
- HYDRANT
- WATER SHUT OFF
- WATER VALVE
- WATER VALVE BOX
- WATER MAIN
- GAS SHUT OFF
- U/G GAS
- EX 1' CONTOUR
- EX 5' CONTOUR
- PR 1' CONTOUR
- PR 5' CONTOUR
- SPOT ELEVATION (B/C BACK OF CURB, T/W TOP OF WALK, T/P TOP OF PAVEMENT, T/C TOP OF CONCRETE)
- EXISTING SPOT ELEVATION

NOTE:
ALL DISTURBED AREAS WITHIN THE CARLETON ROAD ROAD R.O.W. SHALL BE TOP SOILED, SEEDED, AND MULCHED TO MATCH EXISTING AREAS PER CURRENT MDOT STANDARDS AND SPECIFICATIONS.

BENCHMARKS

DATUM BASED ON NGS OPUS SOLUTION REPORT, DATED APRIL 9, 2019 AT 1:50 PM

BENCHMARK #201
"X" ON SOUTH SIDE OF A LIGHT POLE BASE, LOCATED IN CURB/LANDSCAPE ISLAND, LOCATED WESTERLY SIDE OF #3131.
ELEVATION = 1102.57 (NAVD 88)

BENCHMARK #202
SPIKE IN THE NORTH SIDE OF AN UTILITY POLE, LOCATED NE'LY SIDE OF W. CARLETON ROAD, 92± FEET SE'LY OF THE SE CORNER OF #3011.
ELEVATION = 1102.52 (NAVD 88)

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REVISION #	DATE	REVISION-DESCRIPTION
1	10/18/19	REVISED PER MDOT REVIEW COMMENTS ON 10/01/19

REVISION #	DATE	REVISION-DESCRIPTION

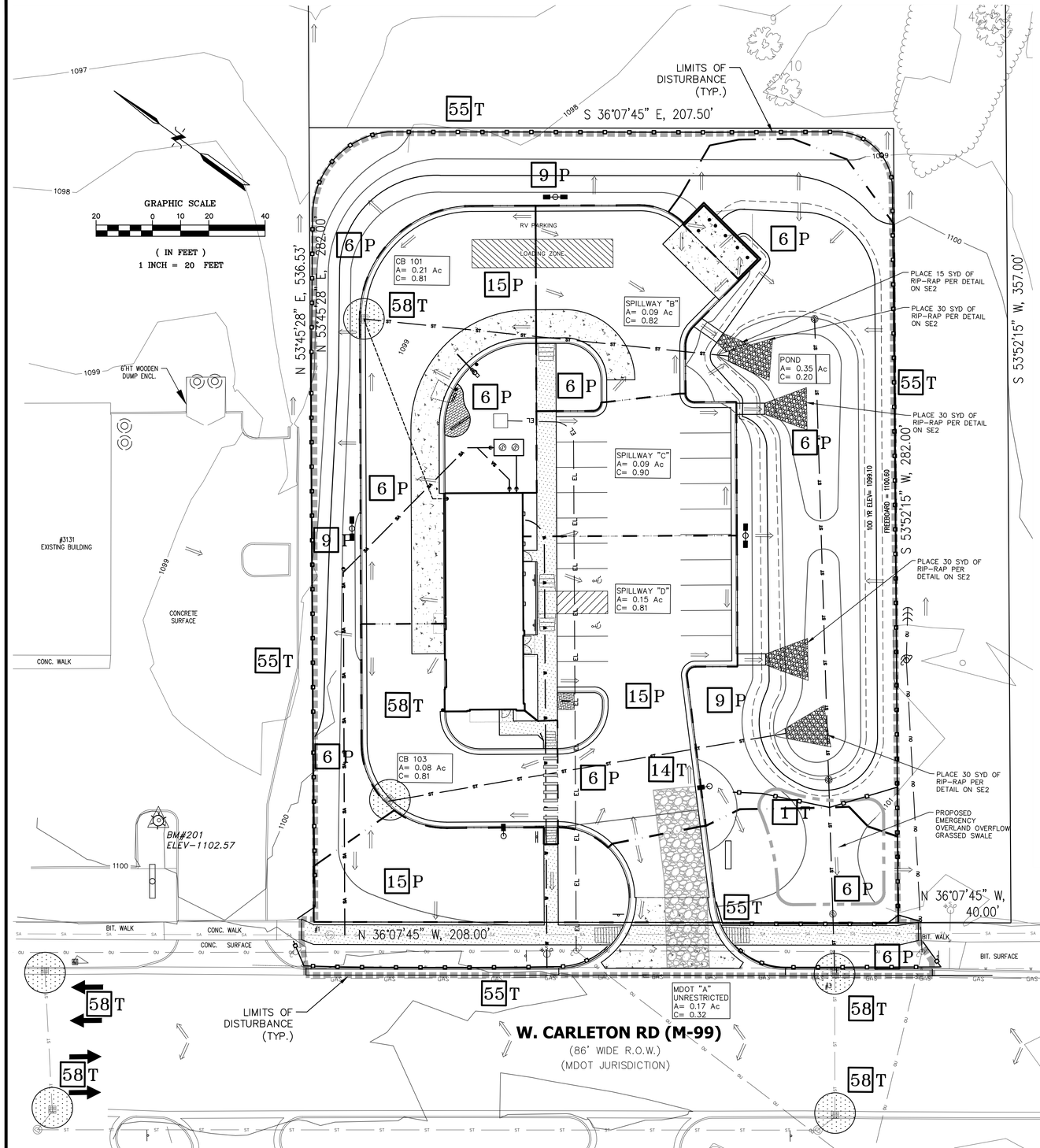
3011 W. CARLETON RD. TACO BELL

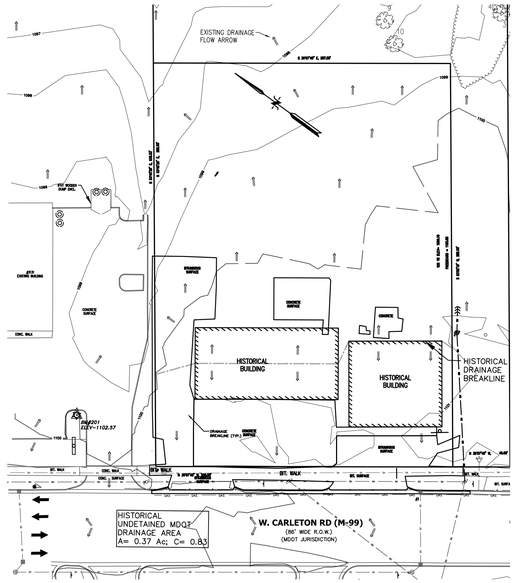
GRADING PLAN

CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: 1" = 20'
PROJECT No.: 193636
DWG NAME: 3636 GR
ISSUED: OCT 18, 2019

GR





HISTORICAL WATERSHED DETAIL

SCALE: 1" = 50'

LEGEND

- MISC. STRUCTURE (AS LABELED)
- BOLLARD
- SIGN
- LIGHT BASE
- UTILITY METERS & BOXES (ELECTRIC METER, GAS METER, WATER METER, PHONE BOX, CATV BOX, MAIL BOX)
- OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
- U/G UTILITY LINES (ELECTRIC/PHONE/CABLE)
- DECIDUOUS TREE W/IDENTIFIER
- CONIFEROUS TREE W/IDENTIFIER
- FENCE (CHAIN LINK UNLESS OTHERWISE STATED)
- CONCRETE CURB (UNLESS OTHERWISE STATED)
- SANITARY SEWER MANHOLE W/IDENTIFIER
- SANITARY SEWER PIPE
- CLEAN OUT
- STORM WATER MANHOLE W/IDENTIFIER
- CATCH BASIN W/IDENTIFIER
- STORM DRAINAGE LINE
- HYDRANT
- WATER SHUT OFF
- WATER VALVE
- WATER VALVE BOX
- WATER MAIN / WATER MAIN EASEMENT
- GAS SHUT OFF
- U/G GAS
- PROP. CONCRETE CURB
- PROP. REVERSE CONCRETE CURB
- PROP. SANITARY LEAD
- PROP. CLEAN OUT
- PROP. STORM DRAINAGE LINE
- PROP. CATCH BASIN
- PROP. LIGHT POLE

TOTAL SITE AREA = 1.34Ac.
TOTAL DISTURBED AREA = 1.41Ac.
DISTANCE TO NEAREST WATERCOURSE: 1,000 FT. (ST. JOSEPH RIVER)

A SOIL EROSION & SEDIMENTATION CONTROL PERMIT FROM THE HILLSDALE COUNTY DRAIN OFFICE IS REQUIRED FOR THIS PROJECT.

NOTE:
SESC MEASURES SHALL BE MAINTAINED WEEKLY AND AFTER EVERY STORM

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

1	STRIPPING & STOCKPILING TOPSOIL	TOPSOIL MAY BE STOCKPILED ABOVE BORROW AREAS TO ACT AS A DIVERSION STOCKPILE SHOULD BE TEMPORARILY SEEDED
6	SEEDING WITH MULCH AND/OR MATTING	FACILITATES ESTABLISHMENT OF VEGETATIVE COVER EFFECTIVE FOR DRAINAGEWAYS WITH LOW VELOCITY EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL SHOULD INCLUDE PREPARED TOPSOIL BED
9	VEGETATIVE BUFFER STRIP	SLOWS RUNOFF VELOCITY FILTERS SEDIMENT FROM RUNOFF REDUCES VOLUME OF RUNOFF ON SLOPES
13	RIPRAP, RUBBLE, GABIONS	USED WHERE VEGETATION IS NOT EASILY ESTABLISHED EFFECTIVE FOR HIGH VELOCITIES OR HIGH CONCENTRATION PERMITS RUNOFF TO INFILTRATE SOIL DISSIPATES ENERGY FLOW AT SYSTEM OUTLETS
14	AGGREGATE COVER	STABILIZES SOIL SURFACE, THUS MINIMIZING EROSION PERMITS CONSTRUCTION TRAFFIC IN ADVERSE WEATHER MAY BE USED AS PART OF PERMANENT BASE CONSTRUCTION OF PAVED AREAS
15	PAVING	PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF, VOLUME AND VELOCITY IRREGULAR SURFACE WILL HELP SLOW VELOCITY
55	GEOTEXTILE SILT FENCE	USES GEOTEXTILE AND POSTS OR POLES MAY BE CONSTRUCTED OR PREPACKAGED EASY TO CONSTRUCT AND LOCATE AS NECESSARY
58	INLET SEDIMENT FILTER	USES PREPACKAGED GEOTEXTILE SACKS FILTERS SEDIMENT FROM RUNOFF AT CATCH BASIN INLET EASY TO INSTALL AND MAINTAIN

T = TEMPORARY P = PERMANENT
TOTAL DISTURBED AREA 1.41 AC.

NOTE:
ALL DISTURBED AREAS WITHIN THE CARLETON ROAD ROAD R.O.W. SHALL BE TOP SOILED, SEEDED, AND MULCHED TO MATCH EXISTING AREAS PER CURRENT MDOT STANDARDS AND SPECIFICATIONS.

HISTORICAL UNDETAINED STORM WATER RUN-OFF

Drainage Structure	Tributary Areas (acres) Pavement	Building	Lawn	Total Area (Acres)	Calculated "C" Factor
	0.90	0.95	0.20		
EXISTING	0.17	0.15	0.05	0.37	0.83
Totals	*0.17*	*0.15*	*0.05*	*0.37*	*0.83*

PROPOSED UNDETAINED RUN-OFF TO M.D.O.T.

Drainage Structure	Tributary Areas (acres) Pavement	Building	Lawn	Total Area (Acres)	Calculated "C" Factor
	0.90	0.95	0.20		
MDOT "A"	0.03		0.14	0.17	0.32
Totals	*0.03*	*0.00*	*0.14*	*0.17*	*0.32*

PROPOSED STORM WATER RUN-OFF

Drainage Structure	Tributary Areas (acres) Pavement	Building	Lawn	Total Area (Acres)	Calculated "C" Factor
	0.90	0.95	0.20		
CB-101	0.13	0.05	0.03	0.21	0.81
CB-103	0.07	0.00	0.01	0.08	0.81
SPILLWAY "B"	0.08	0.00	0.01	0.09	0.82
SPILLWAY "C"	0.09	0.00	0.00	0.09	0.90
SPILLWAY "D"	0.13	0.00	0.02	0.15	0.81
POND	0.00	0.00	0.35	0.35	0.20
Totals	*0.50*	*0.05*	*0.42*	*0.97*	*0.60*

BENCHMARKS

DATUM BASED ON NGS OPUS SOLUTION REPORT, DATED APRIL 9, 2019 AT 1:50 PM

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REVISION #	DATE	REVISION-DESCRIPTION
1	10/18/19	REVISED PER MDOT REVIEW COMMENTS ON 10/01/19

REVISION #	DATE	REVISION-DESCRIPTION

3011 W. CARLETON RD.
TACO BELL

SOIL EROSION AND SEDIMENTATION CONTROL PLAN

CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: AS NOTED
PROJECT No.: 193636
DWG NAME: 3636 SE
ISSUED: OCT 18, 2019

SE1

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
16B	Fox sandy loam, till plain, 2 to 6 percent slopes	29.2	41.5%
16C2	Fox sandy loam, Huron Lobe, 6 to 12 percent slopes, eroded	0.4	0.6%
16D2	Fox gravelly sandy loam, 12 to 18 percent slopes, eroded	4.2	6.0%
33	Houghton muck, disintegration moraine, 0 to 2 percent slopes	1.3	1.8%
37A	Matherton loam, 0 to 3 percent slopes	1.5	2.1%
51	Glendora mucky loamy sand, frequently flooded	11.6	16.5%
55	Pits, gravel	22.1	31.5%
Totals for Area of Interest		**70.3**	**100.0%**

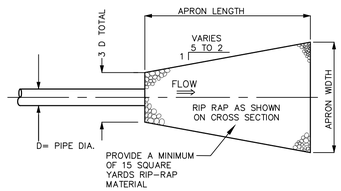
MIN. RIP RAP DIMENSIONS

PIPE DIAMETER (inch)	APRON LENGTH (feet)	(1) APRON WIDTH (feet)	(2) ALTERNATE APRON WIDTH (feet)
12	15	15	16
15	15	15	20
18	18	15	24
21	21	15	28
24	24	16	32
30	30	20	40
36	36	24	48
42	42	28	56

UNLESS SHOWN OTHERWISE ON PLANS.
May be varied to match natural features; ie when meeting ex. ditch, apron width to match channel bottom extending up sides to a depth of 1/2 pipe dia.

(1) APRON WIDTH FOR USE IN DITCHES AND SWALES

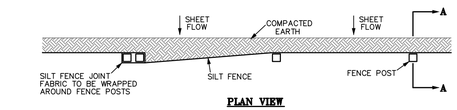
(2) APRON WIDTH FOR USE IN FLAT AREAS WHERE SHEET FLOW DESIRED



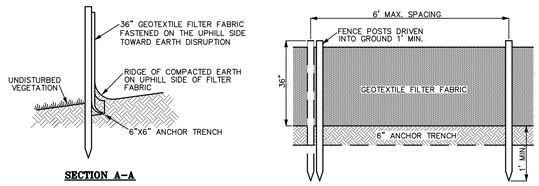
13 RIP RAP PLAN
NOT TO SCALE

TIME LINE OF SOIL EROSION CONTROL AND CONSTRUCTION SEQUENCE						
CONSTRUCTION & WORK	2020					
CATEGORIES*	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	
1 - OBTAIN PERMITS						
2 - SESC MEASURES						
3 - INSPECT / MAINTAIN						
4 - DEMOLITION WORK						
5 - EARTH WORK						
6 - UTILITIES						
7 - BUILDING						
8 - PAVEMENT						
9 - IRRIGATION						
10 - TOPSOIL/VEGETATION						
11 - LANDSCAPING						
12 - RESTORATION						
13 - PERMIT CLOSURE						

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



PLAN VIEW

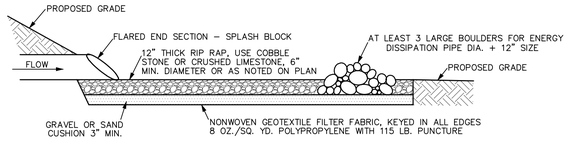


SECTION A-A

FRONT VIEW

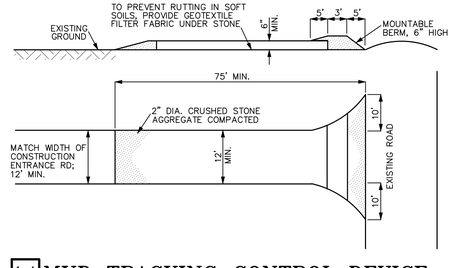
55 SILT FENCE
NOT TO SCALE

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



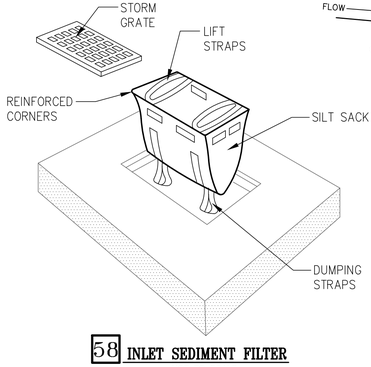
13 RIP RAP CROSS SECTION
NOT TO SCALE

NOTES:
1. GROUT RIP RAP WITH A 6" THICK CEMENT SLURRY FOR SLOPES STEEPER THAN 20%, 5 ON 1.
2. PROVIDE ANIMAL GUARDS ON ALL STORM SEWER 15" DIA. OR GREATER, INCIDENTAL TO FES PIPE.

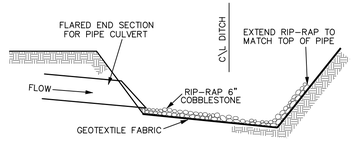


14 MUD TRACKING CONTROL DEVICE
NOT TO SCALE

NOTE:
WHEN ACCEPTABLE TO ENGINEER, CONTRACTOR MAY INSTALL STONE BELOW THE SUBGRADE ELEVATION; THUS STONE MAY BE LEFT IN PLACE BELOW PAVEMENT.

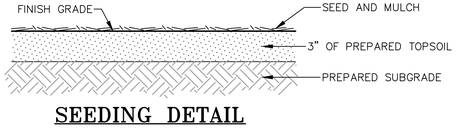


58 INLET SEDIMENT FILTER
NOT TO SCALE



BASIN OUTLET
NOT TO SCALE

NOTE:
EXTEND LIMITS OF RIP-RAP 4' UPSTREAM AND 8' DOWNSTREAM OF CULVERT C\L.



SEEDING DETAIL
NOT TO SCALE

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 MDEQ 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.

BASIN PERFORATED STANDPIPES / CONTROL STRUCTURES: Standpipes shall be inspected for soil accumulation, soil caking and mechanical failure/damage. The filter stone around the standpipe shall be removed and replaced each time it becomes clogged with sediment. All mechanical failure/damage shall be repaired immediately.

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 or way and/or paved access route shall be performed as necessary to maintain the access route free of sediment and debris.

DETENTION BASIN (DRY BOTTOM): Dry bottom detention basins shall be inspected to ensure erosion is not occurring along the inlet locations, banks and/or bottom of the basin and for sediment accumulation. Regular maintenance of the basin includes routine mowing of the buffer/filter strip, side slopes and basin floor and removal of litter and debris accumulation. Address vegetation and/or erosion concerns as soon as weather permits. Remove sediment from basin every 5 to 10 years or sooner if sediment accumulation adversely affects the operation of the basin. Sediment that is removed shall be

RIPRAP: Inspect riprap immediately following the first rainfall event following installation of the riprap. Continue to perform inspections of the riprap at each periodic site inspection. Riprap shall be inspected to ensure erosion is not occurring within and/or around the riprap. The discharge point shall be inspected to ensure that concentrated flows are not causing erosion downstream. Displaced riprap shall be removed from downstream locations and the riprap beds shall be repaired or replaced. Significant sediment buildup shall be removed from riprap beds. Repair or replace failing or displaced riprap immediately. Address vegetation and/or erosion concerns as soon as weather permits.

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.

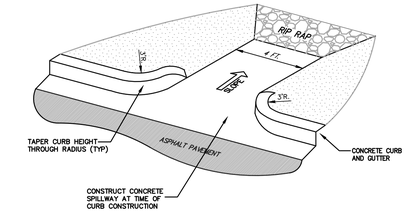
SILT FENCE: Silt fencing shall be inspected for soil accumulation/clogging, undercutting, overtopping and sagging. Soil accumulation shall be removed from the face of the silt fence each time it reaches half the height of the fence. Removed sediment shall be disposed of in a stable upland site or added to a spoils stockpile. When undercutting occurs, grade out areas of concentrated flow upstream of the silt fence to remove channels and/or gullcys 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.

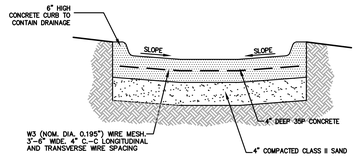
SOD: Newly sodded areas shall be inspected to ensure sod is maturing. Sod shall be inspected for failure, erosion or damage. Slipping or eroding sod on steep slopes shall be immediately repaired or replaced and staked in place. Damaged or failed sod shall be immediately replaced.

SPILLWAYS: Spillways shall be inspected to ensure that erosion is not occurring within and/or around the spillway. The discharge point shall be inspected to ensure that concentrated flows are not causing erosion downstream. Inspect the spillway for cracked concrete, uneven and/or excessive settling and proper function. Repair or replace failing spillways immediately. Address vegetation and/or erosion concerns as soon as weather permits.

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.





PARKING CONCRETE SPILLWAY DETAILS
NOT TO SCALE

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

1	STRIPPING & STOCKPILING TOPSOIL	TOPSOIL MAY BE STOCKPILED ABOVE BORROW AREAS TO ACT AS A DIVERSION STOCKPILE SHOULD BE TEMPORARILY SEEDED
6	SEEDING WITH MULCH AND/OR MATTING	FACILITATES ESTABLISHMENT OF VEGETATIVE COVER EFFECTIVE FOR DRAINAGEWAYS WITH LOW VELOCITY EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL SHOULD INCLUDE PREPARED TOPSOIL BED
9	VEGETATIVE BUFFER STRIP	SLOWS RUNOFF VELOCITY FILTERS SEDIMENT FROM RUNOFF REDUCES VOLUME OF RUNOFF ON SLOPES
13	RIPRAP, RUBBLE, GABIONS	USED WHERE VEGETATION IS NOT EASILY ESTABLISHED EFFECTIVE FOR HIGH VELOCITIES OR HIGH CONCENTRATION PERMITS RUNOFF TO INFILTRATE SOIL DISSIPATES ENERGY FLOW AT SYSTEM OUTLETS
14	AGGREGATE COVER	STABILIZES SOIL SURFACE, THUS MINIMIZING EROSION PERMITS CONSTRUCTION TRAFFIC IN ADVERSE WEATHER MAY BE USED AS PART OF PERMANENT BASE CONSTRUCTION OF PAVED AREAS
15	PAVING	PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF, VOLUME AND VELOCITY IRREGULAR SURFACE WILL HELP SLOW VELOCITY
55	GEOTEXTILE SILT FENCE	USES GEOTEXTILE AND POSTS OR POLES MAY BE CONSTRUCTED OR PREPACKAGED EASY TO CONSTRUCT AND LOCATE AS NECESSARY
58	INLET SEDIMENT FILTER	USES PREPACKAGED GEOTEXTILE SACKS FILTERS SEDIMENT FROM RUNOFF AT CATCH BASIN INLET EASY TO INSTALL AND MAINTAIN

T = TEMPORARY P = PERMANENT

TOTAL DISTURBED AREA 1.41 AC.

SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

1. 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.

2. 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.

3. 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.

4. 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.

5. 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.

6. The Contractor shall strip and stockpile topsoil from all areas of proposed disturbance. Topsoil stockpiles shall be located in accordance with the Project Plans. Topsoil stockpiles shall be stabilized with vegetative growth (or matted with straw during the non-growing season) to prevent wind and water erosion. A temporary diversion berm and/or silt fence shall encompass all earthen material stockpiles, including but not limited to topsoil, sand and gravel.

7. The Contractor shall install Soil Erosion Control Measures associated with the proposed storm sewer system during storm sewer construction. Inlet structure filters shall be installed immediately following completion of each storm inlet structure. Riprap shall be installed immediately following the installation of each flared end section with the following exception: Storm drain outlets that do NOT empty into a Retention, Detention or Sedimentation Basin shall have a temporary 5' wide x 10' long x 3' deep sump installed at the termination of the storm sewer. Upon completion of the stabilization work, the sump area shall be filled and riprap shall be installed in accordance with the Project Plans.

8. The Contractor shall install filter stone around the storm basin control structure(s) in accordance with the Project Plans immediately following installation of the control structure(s). The filter stone shall be monitored for sediment build up. The filter stone may need to be cleaned and/or replaced as site conditions require and as directed by the Permitting Agency and/or the Engineer.

9. 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.

10. 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.

SOIL EROSION CONTROL AND CONSTRUCTION SEQUENCE:

1. 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.

2. Prior to commencement of any earth disruption, install Silt Fence, Mud Tracking Control Devices, and Culvert Sediment Trap at the existing culvert in accordance with the Soil Erosion and Sedimentation Control Plan and the Soil Erosion and Sedimentation Control Permit.

3. 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.

4. 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.

5. Strip and stockpile topsoil. Perform mass grading 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.

6. Construct underground utilities including sanitary sewer, water main, storm sewer, and conduit for underground public utilities. Install appropriate Soil Erosion Control Measures, including inlet sediment filters on new catch basins, in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.

7. Construct building in accordance with the Site Plan and Architectural 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.

8. Install light pole bases and 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.

9. 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.

10. 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.

11. Place topsoil and hydroseed within 5 days of finish grade for establishment of vegetative ground cover outside of pavement and mulched 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.

12. 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.

13. Following establishment of sufficient vegetative ground cover and receipt of approval from the Permitting Agency, remove all *temporary* Soil Erosion Control Measures, remove all sediment accumulation from the detention basin, clean all storm sewer structures, and repair any permanent Soil Erosion Control Measures as directed by the Engineer and/or the Permitting Agency.

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BRIGHTON, MICHIGAN 48114

DESIGN: FAF
DRAFT: SES
CHECK: JMB

REVISION #	DATE	REVISION-DESCRIPTION

REVISION #	DATE	REVISION-DESCRIPTION

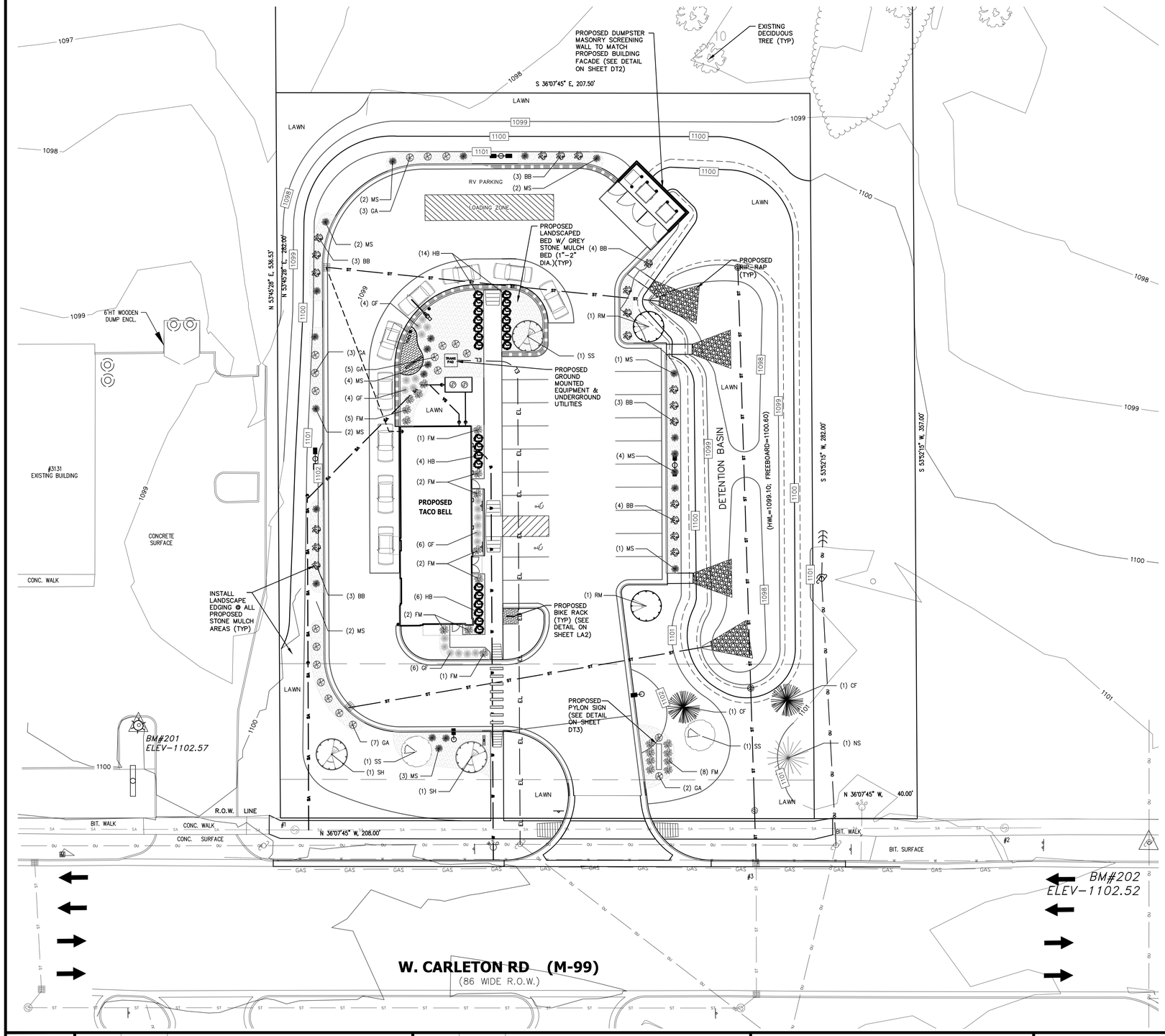
3011 W. CARLETON RD.
TACO BELL

SOIL EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS

CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: AS NOTED
PROJECT No.: 193636
DWG NAME: 3636 SE
ISSUED: OCT 18, 2019

SE2



GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

1 INCH = 20 FEET

LANDSCAPING CALCULATIONS

CATEGORY / CALCULATION	REQUIRED		EXISTING PRESERVED			PROPOSED			TOTAL PROVIDED		
	TREES	SHRUBS	TREES	SHRUBS	PERENNIALS & GRASESS	TREES	SHRUBS	PERENNIALS & GRASESS	TREES	SHRUBS	PERENNIALS & GRASESS
PARKING LOT LANDSCAPING (Sec. 36-150):											
INTERIOR PARKING LOT LANDSCAPE:											
1 TREE PER 10 PARKING SPACES.											
(20 SPACES) X (1 TREE PER 10 SPACES) =	2	0	0	0	0	3	0	0	3	0	0
SHRUB PLANTINGS AT A RATE NOT SPECIFIED SHALL BE PROVIDED SURROUNDING THE PROPOSED PARKING LOT ON-SITE	YES		0	0	0	0	26	16	0	26	16
FOUNDATION PLANTINGS :											
AMMOUNT REQUIRED NOT SPECIFIED	NO		0	0	0	0	20	10	0	20	10
FRONT YARD LANDSCAPING (SEC 36-150):											
ONE EVERGREEN TREE OR SHRUB PER 1,000 SF OF GREENBELT AREA											
(1 TREE/SHRUB) X (8,353 SF / 1,000) =	8	0	0	0	0	3	9	0	3	9	0
ONE SMALL / LARGE DEC. TREE PER 2,000 SF OF GREENBELT AREA											
(1 TREE/SHRUB) X (8,353 SF / 2,000) =	4	0	0	0	0	4	8	3	4	8	3
TRANS PAD AND GROUND MOUNTED APPLIANCES :											
SCREENING OF THE TRANSFORMER OR GROUND MOUNTED APPLIANCES SHALL BE PROVIDED	YES		0	0	0	0	5	0	0	5	0
BIKE RACKS :											
ONE BIKE RACK FOR A MIN. OF 3 BIKES PARKING	NO		NO			YES			1 @ 2 COUNT		
ENHANCED LANDSCAPE (SURROUNDING MENU BOARD) :											
AMMOUNT REQUIRED NOT SPECIFIED	NO		0	0	0	0	13	18	0	13	18

PROPOSED LANDSCAPE PLANTING LEGEND

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	MINIMUM SIZE	ROOT
DECIDUOUS TREES					
CF	2	*Abies Concolor*	Concolor Fir	6' Height	B & B
NS	1	*Picea Abies*	Norway Spruce	6' Height	B & B
DECIDUOUS TREES					
RM	2	*Acer Rubrum*	Red Maple	2" Caliper	B & B
SH	2	*Gleditsia Triancanthos 'Sunburst'*	Sunburst Honey Locust	2" Caliper	B & B
SS	3	*Malus 'Spring Snow'*	Spring Snow Crabapple	2" Caliper	B & B
EVERGREEN SHRUBS					
GA	20	*Thuja Occidentalis 'Golden Glove'*	Golden Glove Arborvitae	24" Height	Container
DECIDUOUS SHRUBS					
BB	20	*Euonymus alata 'Compacta'*	Dwarf Burning Bush	24" Height	Container
FM	21	*Physocarpus Opulifolia 'Dart's Gold'*	Flaming Mound Spirea	18" Height	Container
GF	14	*Potentilla 'Goldfinger'*	Gold Finger Potentilla	24" Height	Container
SUPPLEMENTAL PERENNIALS & GRASSES					
MS	23	*Miscanthus Sinensis*	Maiden Silver Grass	24" Height	Container
HB	24	*Lavandula Angustifolia 'Hidcote Blue'*	Hidcote Blue English Lavender	18" Height	Container

LEGEND

- MISC. STRUCTURE (AS LABELED)
- BOLLARD
- SIGN
- LIGHT BASE
- UTILITY MANHOLE (AS LABELED)
- UTILITY POLE W/GUY WIRE
- OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
- U/G LINES (ELECTRIC/PHONE/CABLE)
- DECIDUOUS TREE W/IDENTIFIER
- CONIFEROUS TREE W/IDENTIFIER
- FENCE (CHAIN LINK UNLESS OTHERWISE STATED)
- EX CONCRETE CURB
- PROP. CONCRETE CURB
- PROP. CONCRETE REVERSE CURB
- SANITARY SEWER MANHOLE W/IDENTIFIER
- SANITARY SEWER PIPE
- CLEAN OUT

EXISTING	PROPOSED	
		STORM WATER MANHOLE W/IDENTIFIER
		CATCH BASIN W/IDENTIFIER
		FLARED END SECTION
		EX STORM WATER DRAINAGE PIPE
		PROP STORM WATER DRAINAGE PIPE
		HYDRANT
		WATER SHUT OFF
		WATER VALVE
		WATER VALVE BOX
		WATER MAIN
		GAS SHUT OFF
		U/G GAS
		EX 1' CONTOUR
		EX 5' CONTOUR
		PROP. BRICK EMBOSSED CONCRETE W/SLATE GREY PLATINUM RELEASED COLOR HARDENER FROM LM SCHOFIELD

NOTE:
ALL DISTURBED AREAS WITHIN THE CARLETON ROAD ROAD R.O.W. SHALL BE TOP SOILED, SEEDED, AND MULCHED TO MATCH EXISTING AREAS PER CURRENT MDOT STANDARDS AND SPECIFICATIONS.

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DESIGN: FAF
DRAFT: SES
CHECK: JMB

REVISION #	DATE	REVISION-DESCRIPTION
1	10/18/19	REVISED PER MDOT REVIEW COMMENTS ON 10/01/19

REVISION #	DATE	REVISION-DESCRIPTION

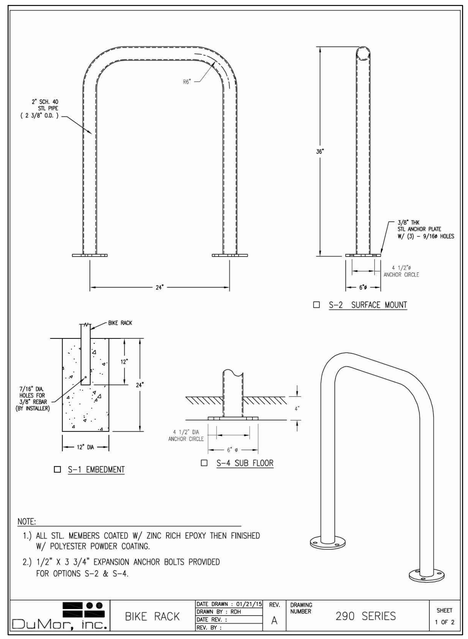
3011 W. CARLETON RD TACO BELL

LANDSCAPE PLAN

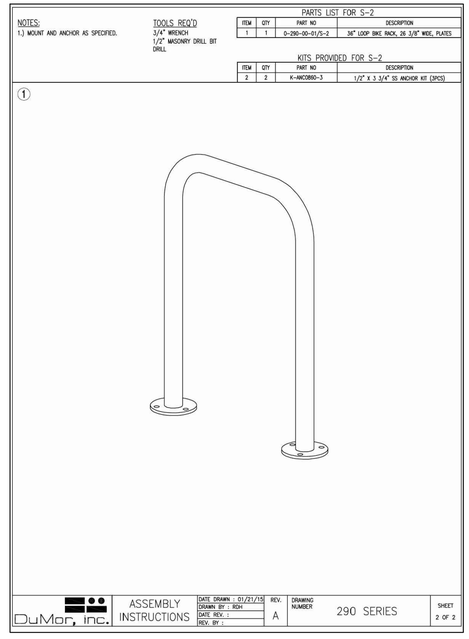
CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: 1"=20'
PROJECT No.: 193636
DWG NAME: 3636 LA
ISSUED: OCT 18, 2019

LA1



NOTE:
SEE SHEET SP FOR PROPOSED BIKE RACK LOCATIONS



LANDSCAPING NOTES:

1) All planting sizes shown shall be at the time of planting.

2) All plant material shall be free of disease and insects and shall conform to the american standard for nursery stock of the American Association of Nurseryman.

3) All landscaping shall be maintained in a healthy condition. Any dead or diseased plantings shall be removed and replaced within 1 year.

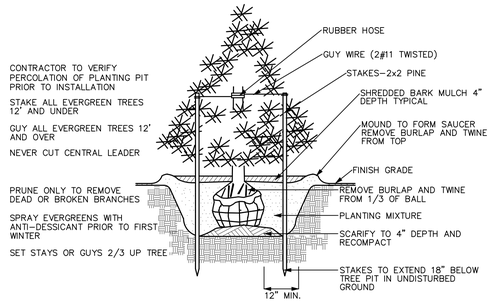
4) All landscaped beds to be mulched will have a Grey Stone mulch bed unless otherwise noted or approved by owner (1"-2" dia. Typical).

5) All plant material to be used shall be as specified or approved equal.

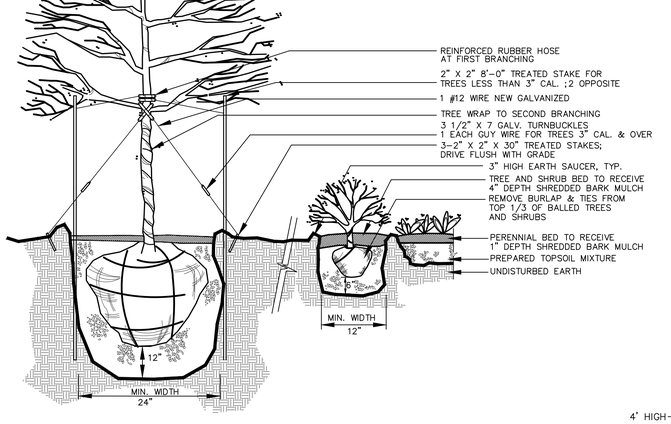
6) All unpaved areas and areas not otherwise proposed as a landscape bed or an area to be Grey Stone mulch bed shall be seeded to establish a vegetative lawn cover.

7) Providing irrigation system in landscaped areas is part of the work. Landscape contractor shall provide system designed to meet the owner's needs and provide external sensors. Any power supply necessary is incidental to the work.

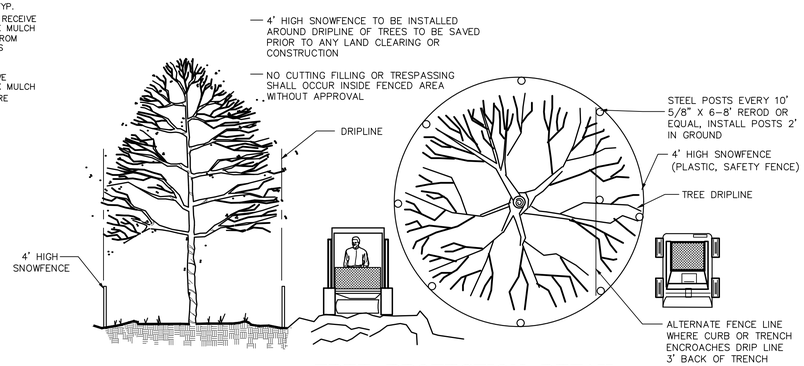
8) Landscaping shown is minimum planting required. Owner may install more plantings meeting all City Standards. Provide 4" of screened topsoil on top of suitable soils in all areas specified for sod or seed lawn.



TYPICAL EVERGREEN TREE PLANTING
NOT TO SCALE



TYPICAL TREE/SHRUB/PERENNIAL PLANTING
NOT TO SCALE



TREE PROTECTION DETAIL
NOT TO SCALE

LANDSCAPING NOTES:

1. All minimum planting sizes specified on the Project Plans shall be at the time of planting.

2. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. The sides of planting excavations in heavy and/or wet soils shall be scarified with a fork, pick or shovel to eliminate glazing.

8. 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.

9. 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.

10. Perennials shall be planted on a 3" minimum bed of prepared peat moss, composted manure and topsoil mixture.

11. 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.

12. Ground cover within landscape beds shall be decorative stone. Decorative stone shall be 2" to 4" diameter washed river rock placed 4" deep unless noted otherwise.

13. 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.

14. 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.

15. 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 ½" 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 ½" 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.

16. 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.

17. 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.

18. 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.

19. 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, Chewings 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.

20. 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.

21. The existing irrigation system shall be modified as a part of this project. The existing irrigation system shall be inspected and tested to determine the limits of irrigation and condition of the irrigation system. The irrigation system shall be modified as necessary to accommodate the proposed site improvements and to provide irrigation to all lawn and landscape areas within the limits of irrigation as shown on the Landscape Plan. All broken, damaged and/or inoperable portions of the existing irrigation system shall be repaired or replaced as necessary. All existing sprinkler heads that are to remain shall be adjusted as necessary for proper operation and coverage. The Contractor shall submit an irrigation system design and shop drawings to the Owner for review and approval prior to installation. Irrigation systems shall be designed to utilize the minimum amount of water necessary to provide sufficient irrigation, satisfy the Local Municipal requirements and site conditions and shall include a rain sensor. A separate water meter, if not already existing, shall be installed as a part of the irrigation system modification to allow for reduced rate metering by the Local Municipality and/or Water Authority. The Contractor shall be responsible for coordinating installation of irrigation lines, sleeves, plumbing connections, controls and appurtenances at the appropriate stages of construction. All existing irrigations lines and systems that are to remain that are cut, plugged, spliced, damaged and/or otherwise modified during demolition and/or construction activities shall be properly repaired, replaced, reconnected and/or adjusted as necessary to ensure proper operation.

22. All existing on-site trees shall be trimmed / pruned as directed by the Owner.

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BRIGHTON, MICHIGAN 48114

DESIGN: FAF
DRAFT: SES
CHECK: JMB

REVISION #	DATE	REVISION-DESCRIPTION

REVISION #	DATE	REVISION-DESCRIPTION

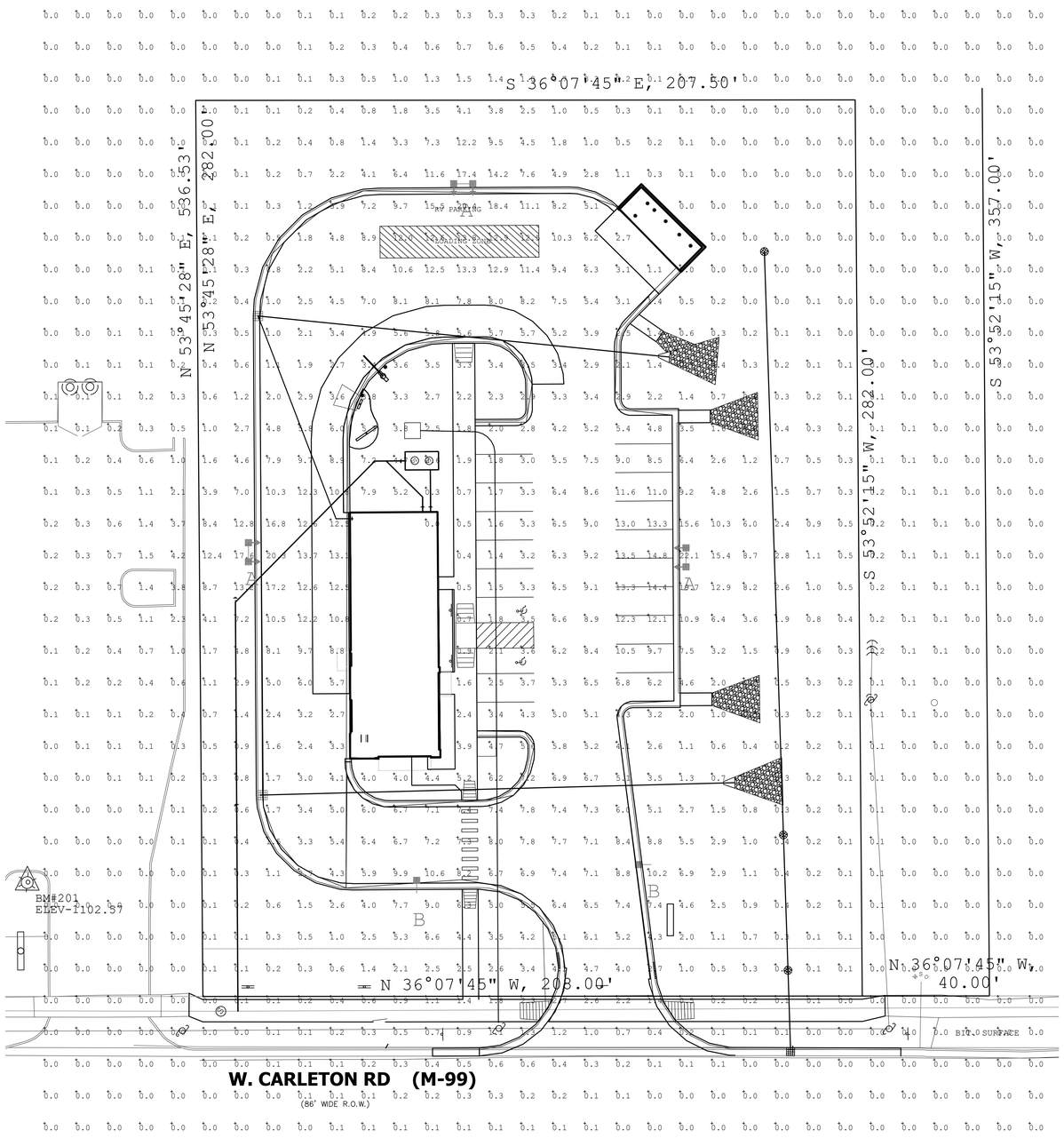
3011 W. CARLETON RD
TACO BELL

LANDSCAPE
NOTES & DETAILS

CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: AS NOTED
PROJECT No.: 193636
DWG NAME: 3636 LA
ISSUED: OCT 18, 2019

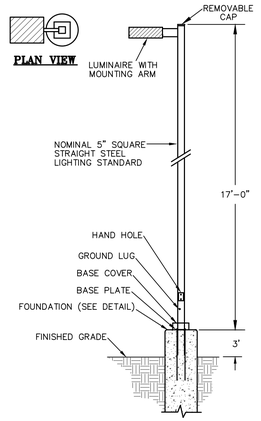
LA2



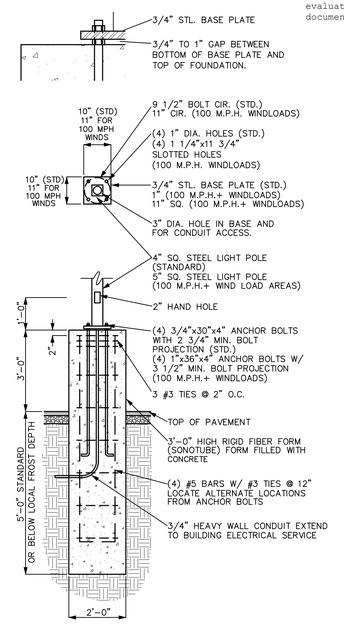
GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 INCH = 20 FEET



LIGHT POLE
NOT TO SCALE



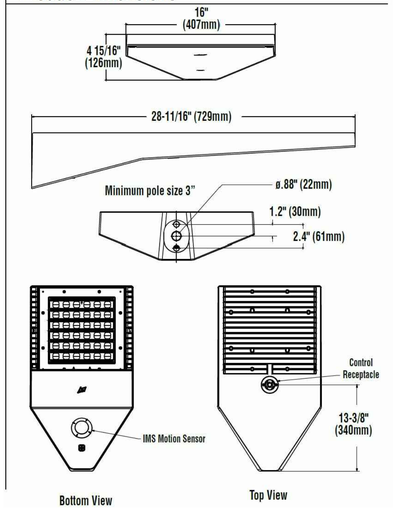
LIGHT STANDARD DETAIL
NOT TO SCALE

NOTES
1. 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.
2. FOUNDATIONS SHALL EXTEND BELOW FROST DEPTH PER LOCAL CODES.
3. CONCRETE SHALL HAVE MIN 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.

Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine the applicability of the layout to existing or future field conditions.

This lighting plan represents illumination levels calculated from laboratory data taken under controlled conditions in accordance with The Illuminating Engineering Society (IES) approved methods. Actual performance of any manufacturer's luminaires may vary due to changes in electrical voltage, tolerance in lamps/LED's and other variable field conditions. Calculations do not include obstructions such as buildings, curbs, landscaping, or any other architectural elements unless noted. Fixture nomenclature noted does not include mounting hardware or poles. This drawing is for photometric evaluation purposes only and should not be used as a construction document or as a final document for ordering product.

Product Dimensions



LIGHTING PROPOSAL LO-148851-1

TACO BELL WEST CARLETON RD BRIGHTON, MI			
BY: ASK	DATE:8-27-19	REV:10/14/19	SHEET 1 OF 1

NOTE:
FOR ORDERING & PRODUCT I N FORMATION, CONTACT:
RACHEL SONNENBERG
WALSH, LONE & COMPANY INC.
25 S. WASHINGTON ST.
NAPPERVILLE, IL 60540
TEL (630) 527-9933 ext. 1002
rachel.connenberg@walshlong.com

LED AREA LIGHT
NOT TO SCALE

Luminaire Schedule										
Symbol	Qty	Label	Arrangement	Description	LLD	UDF	LLF	Arr. Lum. Lumens	Arr. Watts
	3	A	D180° 2RTD	SLM-LED-30L-SIL-(1)FT-L;(1)FT-R-50-70CRI-D180-20' MH	1.000	1.000	1.000	63478	497.2
	2	B	SINGLE	SLM-LED-30L-SIL-FT-50-70CRI-SINGLE-20' MH	1.000	1.000	1.000	31739	248.6

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
ALL CALC POINTS	Illuminance	Fc	2.10	22.1	0.0	N.A.	N.A.
INSIDE CURB	Illuminance	Fc	6.90	20.4	1.0	6.90	20.40

Ordering Guide

TYPICAL ORDER EXAMPLE: **SLM LED 36L SIL FTA UNV DIM 50 70CRI ALSCS04 BRZ IL**

Luminaire Prefix	Light Source	Lumen Package*	Light Output	Distribution	Orientation†	Voltage	Driver
SLM Slice Medium	**LED**	**9L** - 9,000 lms **12L** - 12,000 lms **18L** - 18,000 lms **24L** - 24,000 lms **30L** - 30,000 lms **36L** - 36,000 lms **42L** - 42,000 lms *Consult factory for programmable wattages and lumen packages	**SIL** - Silicone	**2** - Type 2 **3** - Type 3 **5W** - Type 5 Wide **FT** - Forward Throw **FTA** - Forward Throw Automotive	**(blank)** - standard **L** - Optics rotated left 90 **R** - Optics rotated right 90	**UNV** - Universal Voltage (120-277V) **HV** - High Voltage (347-480V)	**DIM** - 0-10V Dimming (0-10%)

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DESIGN: FAF
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REVISION #	DATE	REVISION-DESCRIPTION
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REVISION #	DATE	REVISION-DESCRIPTION

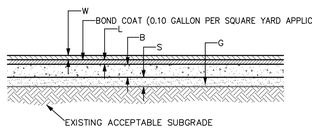
3011 W. CARLETON RD.
TACO BELL

LIGHTING PLAN AND DETAILS

CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: 1"=20'
PROJECT No.: 193636
DWG NAME: 3636 LT
ISSUED: OCT 18, 2019

LT



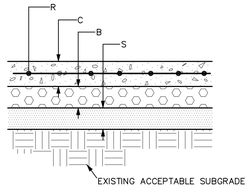
PRIVATE PAVEMENT CROSS SECTION

NOT TO SCALE

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

PAVEMENT CROSS SECTION NOTES:

1. Refer to the General Notes, Road Construction Notes and Typical Road Cross Section detail on the project plans for additional requirements.
2. Unsuitable soils found within the 1 on 1 influence zone of the roadway, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced up to the proposed subgrade elevation with MDOT Class III granular material compacted to 95% maximum unit weight, modified proctor.
3. Contractor shall proof roll prepared subgrade as directed by Engineer. Unacceptable areas of subgrade shall be undercut and replaced as directed by Engineer. See Subgrade Undercut & Replacement Cross Section detail for additional requirements.
4. Owner/Developer may delay placement of the bituminous wearing course. Repair of the bituminous leveling course may be necessary due to any delay in placement of the bituminous wearing course. Substantial repair to the bituminous leveling course may be necessary if placement of the bituminous wearing course is delayed for more than 12 months after placement of the bituminous leveling course. The bituminous leveling course shall be repaired as directed by Engineer prior to placement of the bituminous wearing course.



ON SITE CONCRETE PAVEMENT CROSS-SECTION

NOT TO SCALE

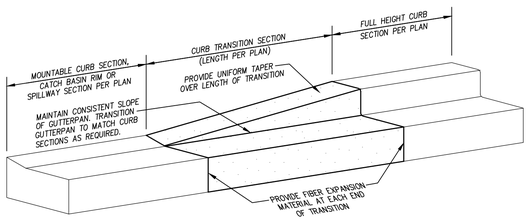
KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM THICKNESS
R	REINFORCEMENT	N/A	N/A
C	CONCRETE **	MDOT 601, P1	8"
B	AGGREGATE BASE	MDOT 21AA	6"
S	SAND BASE	N/A	N/A

**CONCRETE TO BE NON REINFORCED CONCRETE, SIX SACKS, AIR ENTRAINED, TWENTY EIGHT DAY COMPRESSIVE STRENGTH OF 3,500 PSI.

COMMERCIAL APPROACH CONCRETE PAVEMENT CROSS-SECTION

NOT TO SCALE

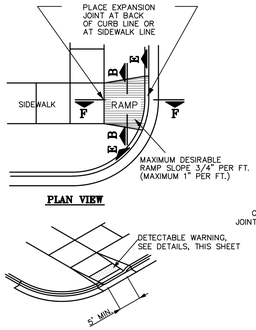
KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM THICKNESS
R	REINFORCEMENT	N/A	N/A
C	CONCRETE **	MDOT 601, P1	8"
B	AGGREGATE BASE	MDOT 21AA	6"
S	SAND BASE	MDOT CLII	6"

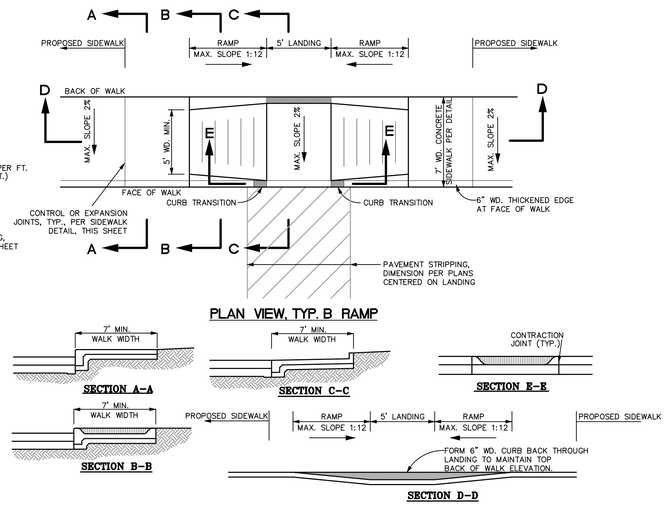


CURB TRANSITION DETAIL

NOT TO SCALE

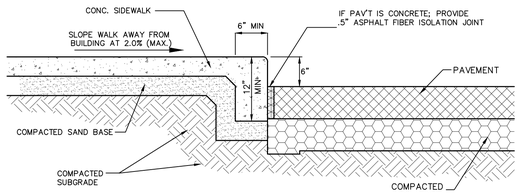
NOTES:
1. CURB TRANSITIONS SHALL BE SMOOTH. PROVIDE SPECIAL FORMING AND LABOR IF NEEDED. CURB TRANSITIONS ARE INCIDENTAL TO CURB WORK.
2. CONTRACTOR SHALL ADJUST THE ELEVATION OF THE TOP OF CURB AS NEEDED TO MAINTAIN THE GUTTER LINE AT A CONSTANT SLOPE BETWEEN THE DIFFERENT CURB CROSS SECTIONS.
3. WHEN PRESENT, THE CURB TRANSITION MAY BEGIN AT A CATCH BASIN OR PAVED SPILLWAY SECTION.





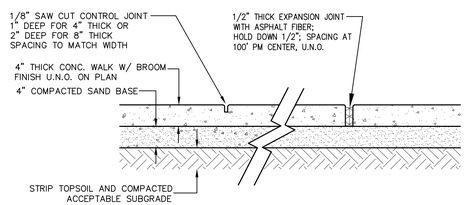
BARRIER FREE RAMP DETAILS

NOT TO SCALE



THICKENED EDGE WALK & ISOLATION JOINT DETAIL

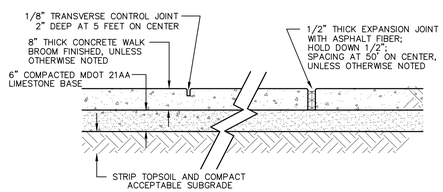
NOT TO SCALE



SIDEWALK CROSS SECTION

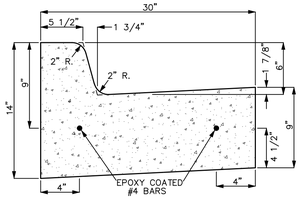
NOT TO SCALE

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



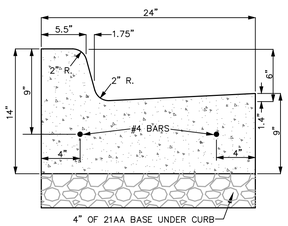
SIDEWALK CROSS SECTION FOR DRIVEWAY APPROACH

NOT TO SCALE



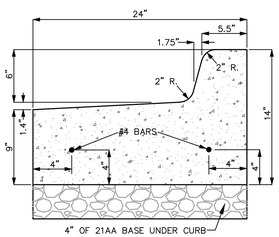
MDOT TYPE F6 CURB

NOT TO SCALE



CONC. CURB DETAIL -MDOT TYPE F4

NOT TO SCALE

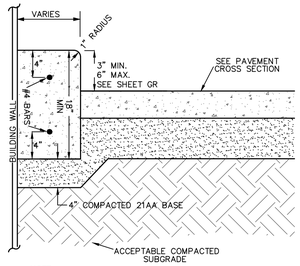


CONC. CURB DETAIL -MDOT TYPE F4 REVERSE PITCH

NOT TO SCALE

DRIVEWAY AND PARKING LOT CONSTRUCTION NOTES:

1. The grading, driveway and parking lot specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional requirements.
2. Driveway and Parking Lot work shall include site clearing of vegetation and tree stumps; stripping and stockpiling of topsoil for reuse; mass grading cuts and fills; removal of unsuitable soils from the paved surface influence area; culvert placement; subgrade preparation including fine grading and proof roll; subgrade undercuts and/or placement of geotextile fabric if needed; placement and preparation of granular subbase and aggregate base courses including fine grading and compaction; placement of concrete curb and gutter; watering of aggregate base within 24 hours of paving to obtain optimum moisture content; bituminous and/or concrete pavement including placement, compaction and bond coats; cleaning of bituminous pavements between courses if needed; preparation, finish work and restoration as needed to connect to existing pavements, ditches, driveways, etc.; adjustment of storm and utility structure castings to match finish grade; placement of shoulders and finish grading of ditches; pavement markings; topsoil placement; seed & mulch; site cleanup; restoration; and other work as shown on the project plans and specifications.
3. Existing and proposed grades shown in the driveway profile view(s) are along the centerline of each driveway. Proposed contours for ditches, curbs, driveway crown and pavement slope may not be shown in the plan view and/or grading plan.
4. Contractor shall coordinate scheduling a Pre-Construction Meeting with Engineer prior to commencement of driveway and/or parking lot work.
5. Contractor shall coordinate construction staking, testing, documentation submittal and observation with the appropriate Agency, Surveyor and/or Engineer as required for construction, certification and/or acceptance of the driveway(s) and/or parking lot(s). All materials used and work done shall meet or exceed the requirements and specifications noted on the project plans. Any materials used or work done that does not meet said requirements 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.
6. Contractor shall take all appropriate job site safety precautions. Refer to the Traffic Control specifications of the appropriate Regulatory Agency for work within a public road right of way.
7. Contractor shall take precautions to prevent contamination of driveway and/or parking lot materials during handling, installation and construction procedures. Contaminated materials shall be removed and replaced at Contractor's expense.
8. Clear vision areas shall be created where required; refer to the Clear Vision Area detail on the project plans. Relocate existing signs/utilities as acceptable to the appropriate Agency. Owner/Developer shall coordinate installation of permanent street signage after completion of roadwork.
9. When side slopes within utility easements exceed 1 on 10 (10%), Contractor shall rough grade a flat shelf within the easement area as acceptable to Engineer and restore following underground utility installation.



NOTE:
REFER TO "PRIVATE DEVELOPMENT CURB NOTES" WITHIN CONSTRUCTION DOCUMENTS FOR SPECIFICATIONS.

DRIVE-THRU CURB

NOT TO SCALE

PRIVATE DEVELOPMENT CURB NOTES:

1. Refer to the project plans for the proposed locations of the specific curb types.
2. The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the Private Road Construction Notes and/or Driveway and Parking Lot Construction Notes and the General Notes on the project plans for additional requirements.
3. Concrete material shall meet or exceed the specification requirements of the appropriate Local Municipality. Unless specified otherwise by the Local Municipality, concrete material shall be air-entrained and shall have a minimum 28-day class design strength of 3500 psi. Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Local Municipality and Engineer for review and approval prior to use.
4. Install transverse contraction control joints in accordance with the Local Municipality requirements. If not specified by the Local Municipality, then install transverse contraction control joints in curb with 1" minimum depth at 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
5. Install transverse expansion control joints in accordance with the Local Municipality requirements. If not specified by the Local Municipality, then install transverse expansion control joints in curb as follows: 300' 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.
6. Provide 0.5" asphalt fiber control joint between back of curb and all other concrete structures, such as concrete sidewalks and concrete driveways.
7. Curb Contractor shall provide final adjustment of catch basin castings in curb line. Castings shall be tuck pointed to structure water tight with concrete or mortar inside and outside of casting.
8. 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. Install curb cuts for all existing and proposed vehicular ramps and drives as noted on the project plans.

GENERAL NOTES:

1. 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.
2. 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).
3. 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.
4. 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.
5. 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.
6. Contractor shall contact the MISS DIG 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.
7. Contractor shall coordinate scheduling a Pre-Construction Meeting with Engineer prior to commencement of work.
8. 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.
9. 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.
10. 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, shoring, 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.
11. 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.
12. 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.
13. 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.
14. Contractor shall notify Owner/Developer and Engineer immediately upon encountering any field conditions, which are inconsistent with the project plans and/or specifications.
15. 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.
16. 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.
17. 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.
18. 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.

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2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

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SITE DEVELOPMENT NOTES AND DETAILS

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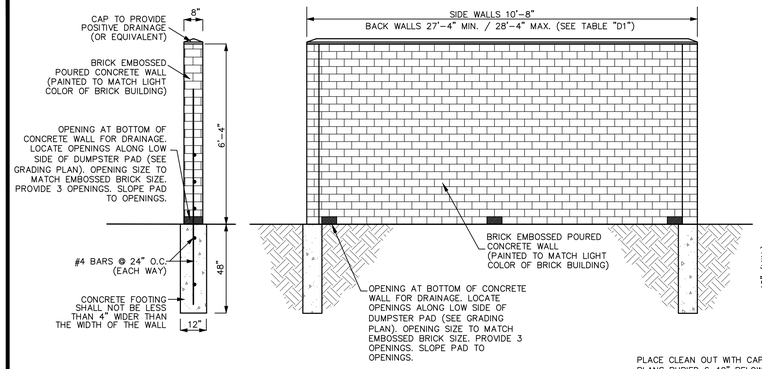
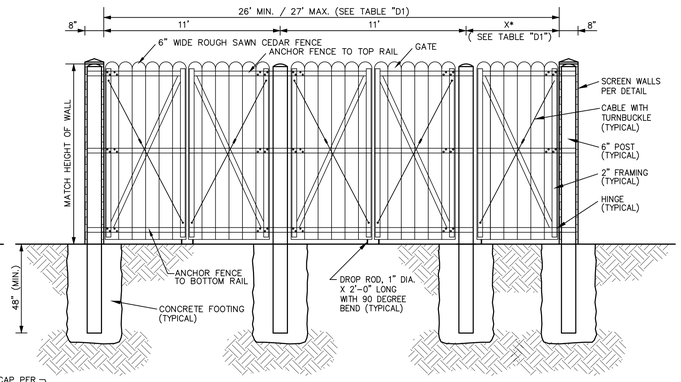
ISSUED: OCT 18, 2019

DT1



DUMPSTER ENCLOSURE DETAIL

NO SCALE



DUMPSTER GATE

NO SCALE

NOTE: ALL POLES, RAILS AND HARDWARE SHALL BE GALVINIZED STEEL.

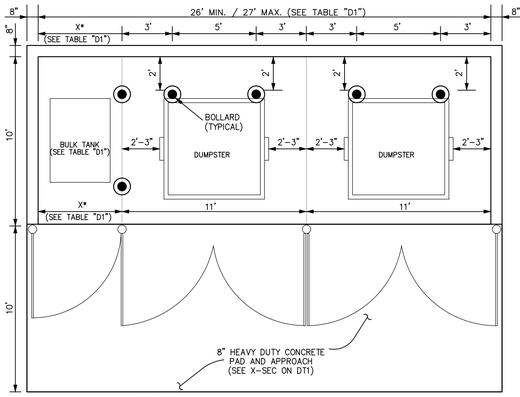


TABLE D1

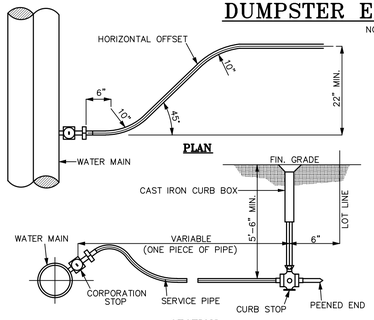
BULK TANK SIZE	BULK TANK CAPACITY	X* (FEET)
60"W X 43"D X 36"H	2,000 LBS.	5'
60"W X 31"D X 36"H	1,500 LBS.	4'

NOTED:
REFER TO SITE PLAN SHEET FOR PROPOSED BULK TANK FOR THIS SITE.

SIGN SCHEDULE

SIGN	KEY	SIZE (W x H)	TYPE OR MOUNT	MOUNTING HEIGHT	QUANTITY
RESERVED PARKING ONLY	R7-8	12" x 18"	POST MOUNTED	7'-6"	2
VAN ACCESSIBLE	R7-8a	12" x 6"	POST MOUNTED	7'-0"	2
STOP	R1-1	30" x 30"	POST MOUNTED	7'-0"	2
DO NOT ENTER	R5-1	30" x 30"	POST MOUNTED	7'-0"	1

ALL TRAFFIC SIGNAGE WILL COMPLY WITH CURRENT MMUTCD STANDARDS.



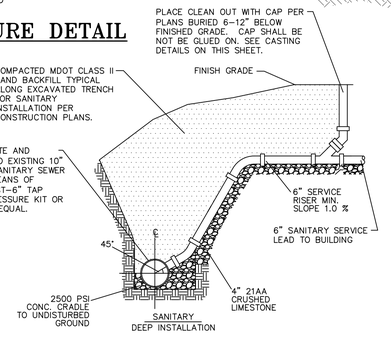
SECTION

WATER SERVICE CONNECTION

NOT TO SCALE

NOTES:
1. FURNISH LARGER DIAMETER SERVICE WHEN SHOWN ON PLANS.
2. CURB BOX SHALL BE 6" MIN. DISTANCE FROM ALL OTHER UTILITIES.

SERVICE PIPE	CORP. STOP	CURB STOP	SERVICE BOX
1"	1"	1"	2 1/2"
1 1/2"	1 1/4" X 1 1/2"	1 1/2"	3"
2"	1 1/2" X 2"	2"	3"
1 1/4"	1 1/4"	1 1/4"	3"



NOTES

1. SANITARY LEADS SHALL BE PVC SDR 23.5 WITH RUBBER GASKET JOINTS, OR APPROVED EQUIVALENT. PROVIDE A 6" DIAMETER PIPE WITH A MINIMUM SLOPE OF 1.0%, OR AS REQUIRED BY CODE. TEES OR WYES ARE ACCEPTABLE.

2. CONTRACTOR SHALL FIELD LOCATE ALL CROSSING UTILITIES AND TAKE PRECAUTIONS. MAINTAIN 1.5' MINIMUM VERTICAL CLEARANCE BETWEEN WATER MAIN AND SANITARY SEWER PER CODE. CONTRACTOR SHALL COORDINATE THE LOCATION OF SANITARY LEAD TO PREVENT CONFLICTS WITH WATER MAIN AND SERVICES, STORM SEWERS AND ANY UNDERGROUND IMPROVEMENTS.

3. MAINTAIN SLOPE OF LEAD AS NEEDED TO PROVIDE MINIMUM PIPE COVER OVER LEAD PER CODE, TYPICALLY 4'. WHEN PIPE COVER BELOW GRADE IS LESS THAN 4' OR WHEN REQUIRED, PROVIDE 2"X24" STYROFOAM INSULATION OR EQUIVALENT, LOCATED 12" ABOVE TOP OF PIPE (DO NOT USE BEAD BOARD).

4. SERVICE RISERS MEASUREMENT IS HORIZONTAL ALONG THE CENTERLINE OF THE LEAD AS CONSTRUCTED FROM THE MAIN TO THE PLUG. PAYMENT SHALL BE MEASURED HORIZONTAL, NOT VERTICAL.

5. THERE SHALL BE NO 90° BENDS ALLOWED IN THE SERVICE RISERS.

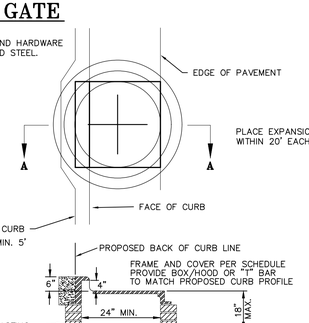
6. CLEAN OUTS ARE REQUIRED EVERY 90 FEET OR AS LOCATED PER PLANS.

7. SANITARY CONNECTION MUST BE WITNESSED BY THE CITY OF HILLSDALE B.P.U. STAFF. A MINIMUM OF 24 HR. NOTICE IS REQUIRED. CONTACT BILL BRIGGS (SUPERINTENDENT OF SEWER COLLECTION AND WASTE WATER TREATMENT) @ (517) 437–3387.

8. TRACER WIRE SHALL BE PROVIDED ON ALL PLASTIC SERVICE LINES.

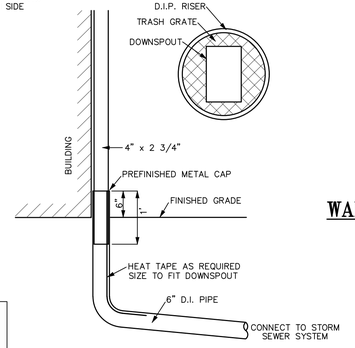
RISER AND SERVICE LEAD

NOT TO SCALE



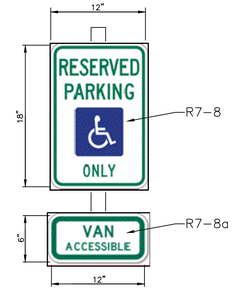
CURB LINE CASTING DETAIL

NOT TO SCALE



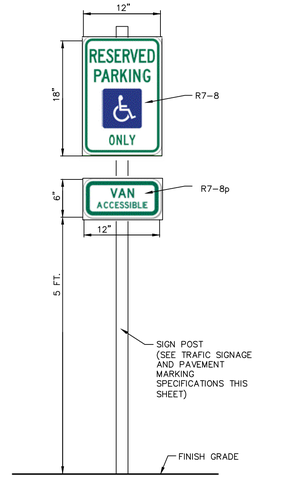
DOWNSPOUT CONNECTION DETAIL

NOT TO SCALE



WALL MOUNTED BARRIER FREE PARKING SIGN DETAIL

NOT TO SCALE



POST MOUNTED BARRIER FREE PARKING SIGN DETAIL

NOT TO SCALE

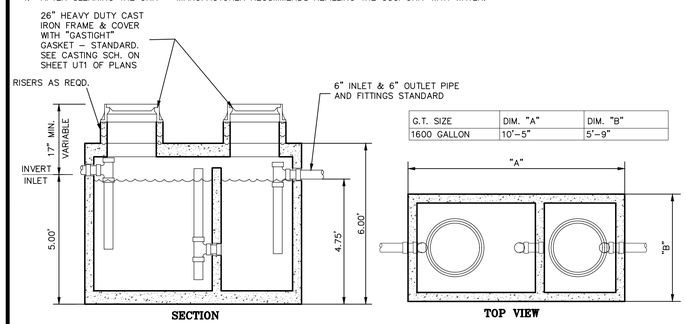
MAINTENANCE GUIDELINES

1. ALL GREASE INTERCEPTOR TANKS WILL REQUIRE PERIODIC MAINTENANCE DEPENDING ON SPECIFIC SITE CONDITIONS.

2. TYPICAL GREASE INTERCEPTOR CLEANING FREQUENCY CAN BE WEEKLY, MONTHLY, QUARTERLY, OR AS DICTATED BY THE ESTABLISHMENTS NEEDS. THIS WILL BE BASED ON THE BUILDING WASTE EFFLUENT DISCHARGE CAPACITY AND CONCENTRATION. NOTE, MATERIAL IS REMOVED EASIER WHEN IT IS REMOVED ON A REGULAR BASIS.

3. DISPOSAL OF MATERIAL FROM THE GREASE INTERCEPTOR ARE SIMILAR TO THAT OF ANY OTHER BEST MANAGEMENT PRACTICES (BMP). LOCAL GUIDELINES SHOULD BE CONSULTED PRIOR TO DISPOSAL OF THE GREASE INTERCEPTOR CONTENTS. WASTE PRODUCTS SHOULD BE REMOVED BY A LICENSED WASTE MANAGEMENT COMPANY.

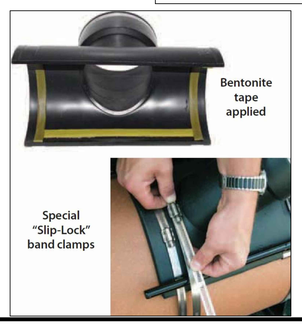
4. AFTER CLEANING THE UNIT – MANUFACTURER RECOMMENDS REFILLING THE GGGI UNIT WITH WATER.



G.T. SIZE	DIM. "A"	DIM. "B"
1600 GALLON	10'–5"	5'–9"

EXTERIOR GREASE TRAP

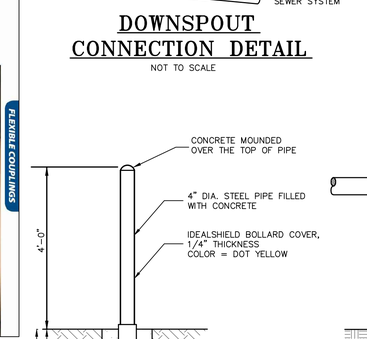
NOT TO SCALE



TSPK TECHNICAL SPECS

- BENTONITE TAPE PROVIDES FOR A WATER TIGHT SEAL
- PRESSURE TEST TO HOLD 10 PSI
- RUBBER COATED STEEL REINFORCING BARS APPLY EVEN SEALING PRESSURE
- TWO 300 SERIES STAINLESS STEEL CLAMPS ARE "SLIP–LOCK" FOR FAST AND EASY INSTALLATION

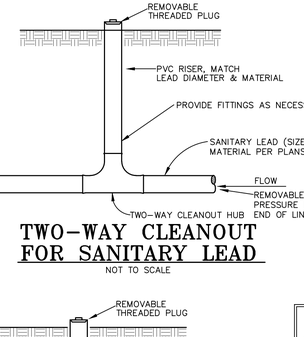
PART NO.	DESCRIPTION
TSPK–46	PRESSURE KIT FOR FERNCO FLEXIBLE TAP SADDLES FITS MODEL: TST–4, TST–6, TSW–4, AND TSW–6



CONCRETE BOLLARD DETAIL

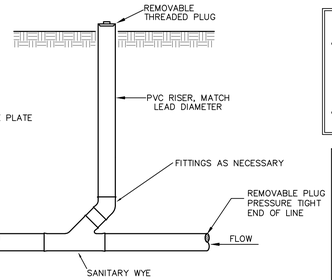
NOT TO SCALE

NOTE:
PAINT ALL EXTERIOR SURFACES WITH ONE COAT METAL PRIMER



TWO–WAY CLEANOUT FOR SANITARY LEAD

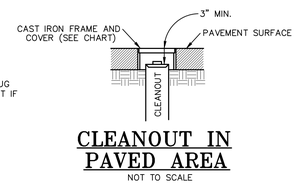
NOT TO SCALE



STANDARD CLEANOUT FOR SANITARY LEAD

NOT TO SCALE

CLEANOUT DIA.	FRAME AND COVER
4"–8"	EJIW 1578
10"–18"	EJIW 1545 W/ SOLID COVER



CLEANOUT IN PAVED AREA

NOT TO SCALE

CITY OF HILLSDALE DPW NOTES:

- RECONNECTION TO THE WATER MAIN AND SANITARY SEWER MUST BE WITNESSED BY THE CITY. PRESSURE TESTS MUST ALSO BE WITNESSED BY DPW STAFF. A MINIMUM OF 24 HR. NOTICE IS REQUIRED. (517) 437–3387
- TRACER WIRE SHALL BE PROVIDED ON ALL PLASTIC SERVICE LINES.

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

REVISION #	DATE	REVISION-DESCRIPTION
1	10/18/19	REVISED PER CITY OF HILLSDALE PRELIMINARY MEETING REVIEW COMMENTS ON 10/17/19

DESIGN: FAF
DRAFT: SES
CHECK: MJB

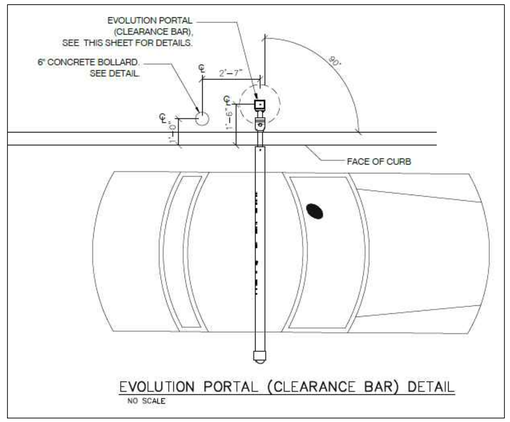
3011 W. CARLETON RD. TACO BELL

SITE DEVELOPMENT NOTES AND DETALS

CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: AS NOTED
PROJECT No.: 193636
DWG NAME: 3636 DT
ISSUED: OCT 18, 2019

DT2



EVOLUTION PORTAL (CLEARANCE BAR) DETAIL

NOT TO SCALE

Re: Drive-Thru Sound Pressure Levels From the Menu Board or Speaker Post

The sound pressure levels from the menu board or speaker post are as follows:

1. Sound pressure level (SPL) contours (A weighted) were measured on a typical HME SPP2 speaker post. The test condition was for pink noise set to 84 dBA at 1 foot in front of the speaker. All measurements were conducted outside with the speaker post placed 8 feet from a non-absorbing building wall and at an oblique angle to the wall. These measurements should not be construed to guarantee performance with any particular speaker post in any particular environment. They are typical results obtained under the conditions described above.

2. The SPL levels are presented for different distances from the speaker post:

Distance from the Speaker (Feet)	SPL (dBA)
1 foot	84 dBA
2 feet	78 dBA
4 feet	72 dBA
8 feet	66 dBA
16 feet	60 dBA
32 feet	54 dBA

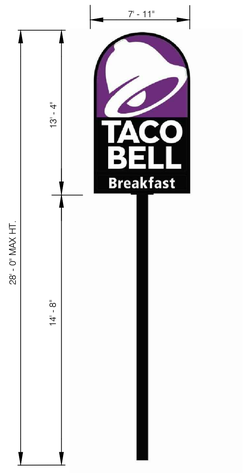
3. The above levels are based on factory recommended operating levels, which are preset for HME components and represent the optimum level for drive-thru operations in the majority of the installations.

Also, HME incorporates automatic volume control (AVC) into many of our Systems. AVC will adjust the outbound volume based on the outdoor, ambient noise level. When ambient noise levels naturally decrease at night, AVC will reduce the outbound volume on the system. See below for example:

Distance from Outside Speaker	Decibel Level of standard system with 45 dB of outside noise without AVC	Decibel level of standard system with 45 dB of outside noise with AVC active
1 foot	84 dBA	60 dBA
2 feet	78 dBA	54 dBA
4 feet	72 dBA	48 dBA
8 feet	66 dBA	42 dBA
16 feet	60 dBA	36 dBA

If there are any further questions regarding this issue please contact HME customer service at 1-800-848-4468.

Thank you for your interest in HME's products.



V-01.100

DESCRIPTION:
Pylon Sign 100 SF
with Breakfast

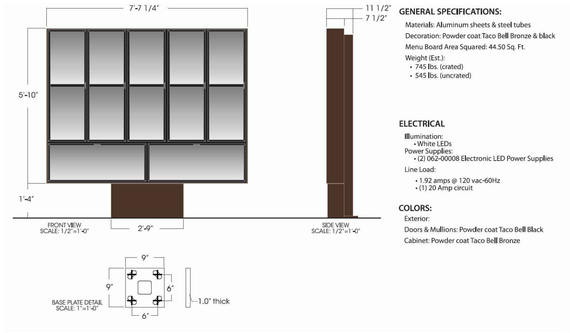
Area: 100 SF

Optional messaging:

We Deliver

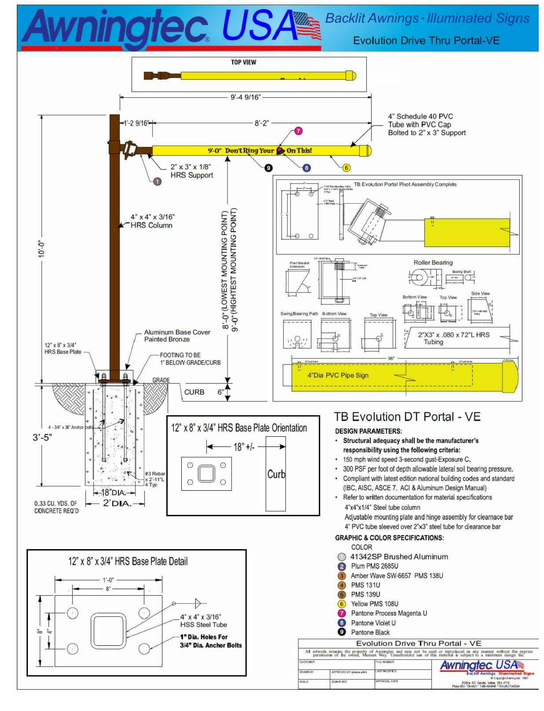
PROPOSED PYLON SIGN

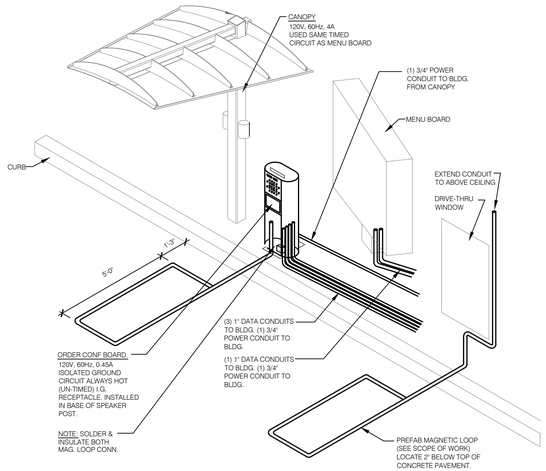
NO SCALE

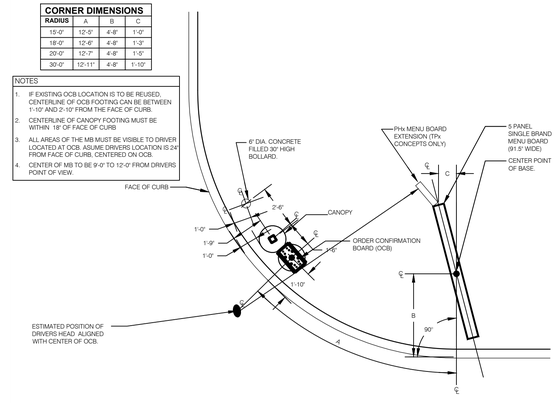


ENLARGED MENU BOARD DETAIL

NO SCALE







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DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: SES						
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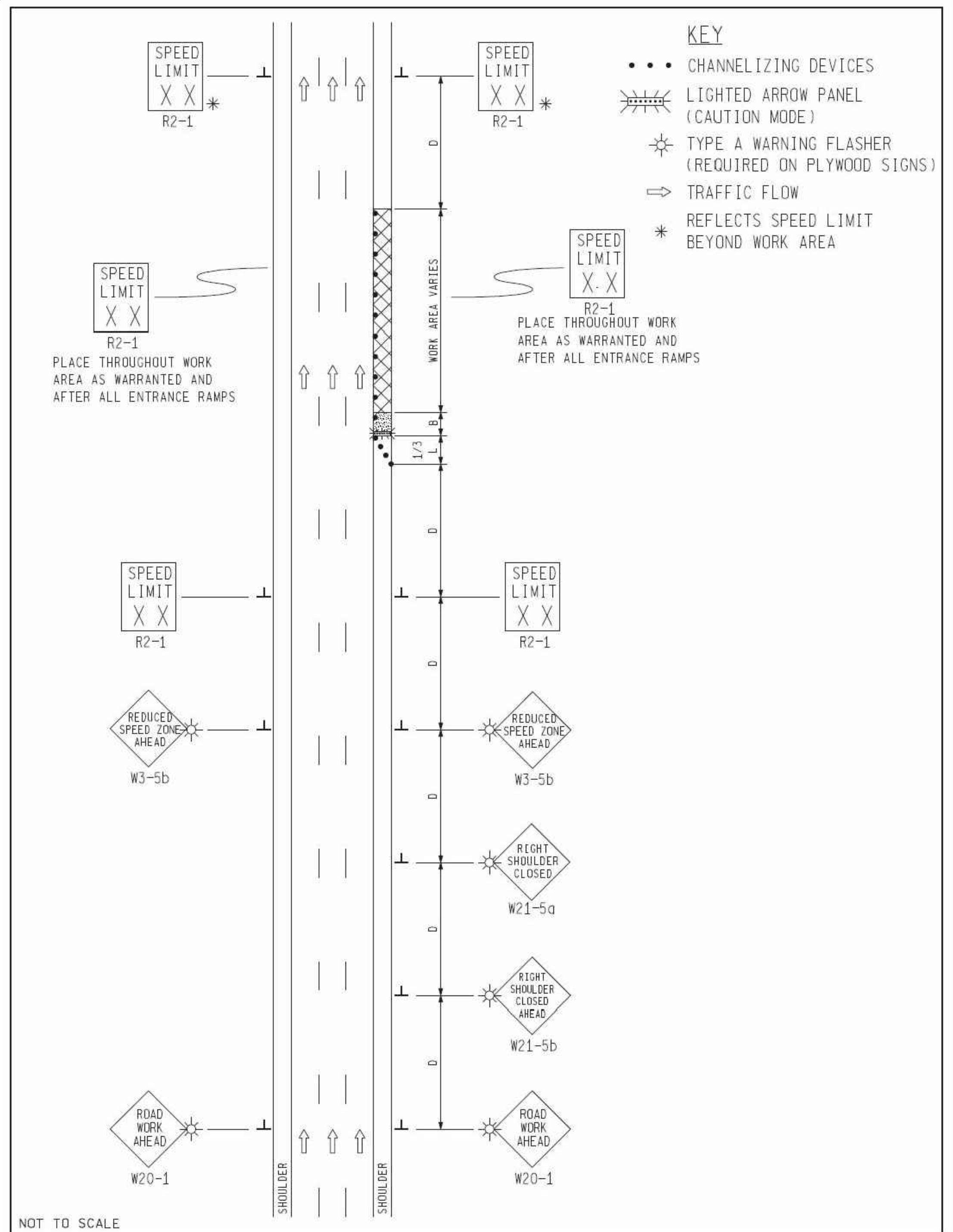
TACO BELL

TACO BELL CORPORATE
NOTES
AND DETAILS

CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

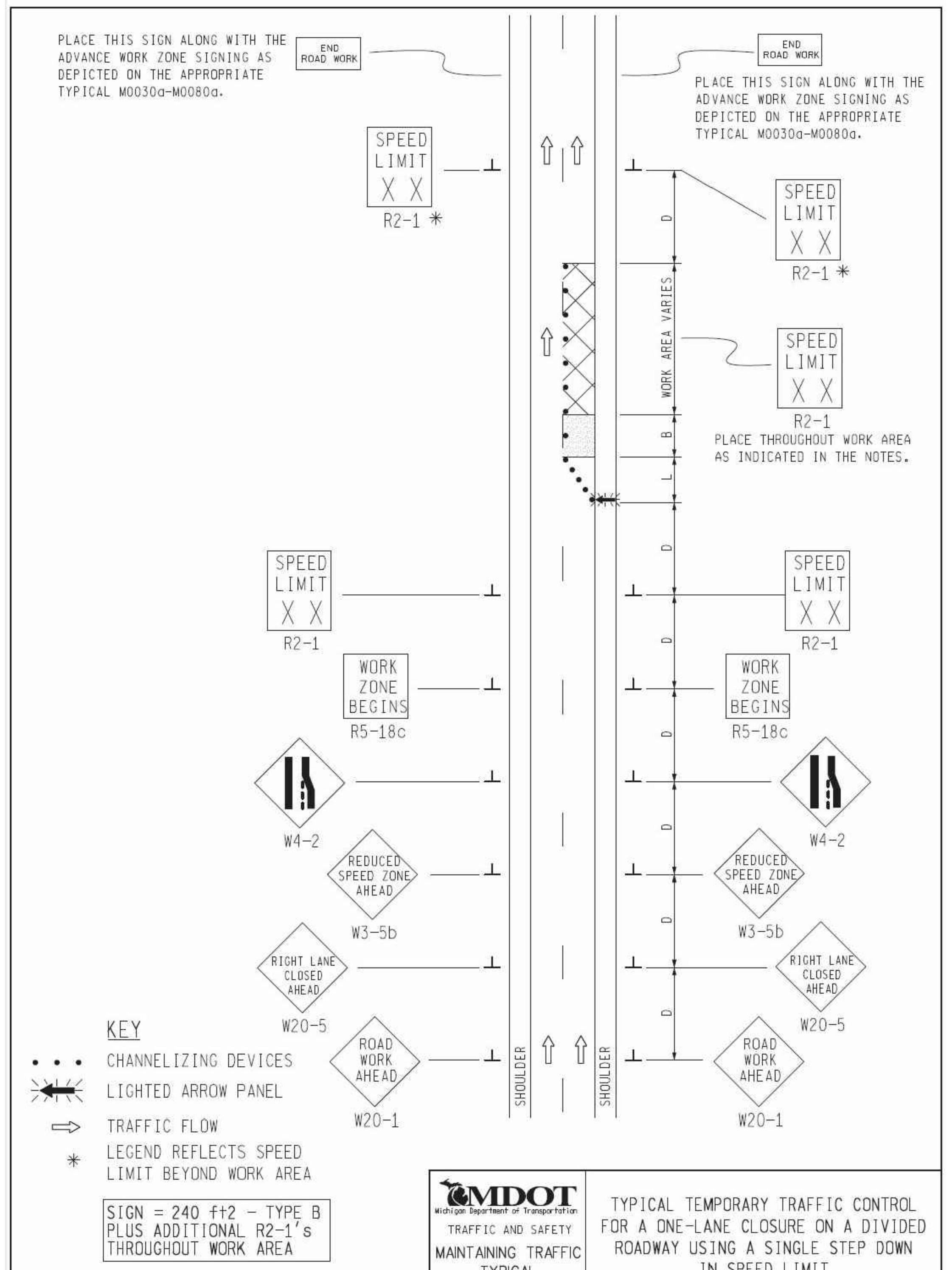
SCALE: AS NOTED
PROJECT No.: 193636
DWG NAME: 3636 DT
ISSUED: OCT 18, 2019

DT3



SHOULDER CLOSURE ON A DIVIDED ROADWAY OR FREEWAY WITH A MAXIMUM 10 MPH SPEED REDUCTION

MDOT — OPERATIONS | DURATION: SHORT-TERM STATIONARY, SHORT DURATION | 01/01/07 REV. DATE: | MD - 12c | PAGE A9



NOT TO SCALE

MDOT TRAFFIC AND SAFETY — MAINTAINING TRAFFIC TYPICAL — TYPICAL TEMPORARY TRAFFIC CONTROL FOR A ONE-LANE CLOSURE ON A DIVIDED ROADWAY USING A SINGLE STEP DOWN IN SPEED LIMIT
DRAWN BY: CON:AE:djf | CHECKED BY: BMM:CRB | OCTOBER 2011 PLAN DATE: | M0740a | SHEET 1 OF 2
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0740a.dgn REV. 10/26/2011

NOTES

1B. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
L = MINIMUM LENGTH OF TAPER
B = LENGTH OF LONGITUDINAL BUFFER
SEE M0020a FOR "D," "L," AND "B" VALUES

2. ALL NON-APPLICABLE SIGNING WITHIN THE CIA SHALL BE MODIFIED TO FIT CONDITIONS, COVERED OR REMOVED.

3. DISTANCES BETWEEN SIGNS, THE VALUES FOR WHICH ARE SHOWN IN TABLE D, ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER.

3A. THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE ADJUSTED APPROPRIATELY.

4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.

6. WHEN CALLED FOR IN THE FHWA ACCEPTANCE LETTER FOR THE SIGN SYSTEM SELECTED, THE TYPE A WARNING FLASHER, SHOWN ON THE WARNING SIGNS, SHALL BE POSITIONED ON THE SIDE OF THE SIGN NEAREST THE ROADWAY.

7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHLY REQUIREMENTS STIPULATED IN THE CURRENT EDITION OF THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS. ONLY DESIGNS AND MATERIALS APPROVED BY MDOT WILL BE ALLOWED.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

16A. ADDITIONAL SPEED LIMIT SIGNS REFLECTING THE REDUCED SPEED SHALL BE PLACED AFTER EACH MAJOR CROSSROAD THAT INTERSECTS THE WORK AREA WHERE THE REDUCED SPEED IS IN EFFECT, AND AT INTERVALS ALONG THE ROADWAY SUCH THAT NO SPEED LIMIT SIGNS REFLECTING THE REDUCED SPEED ARE MORE THAN TWO MILES APART.

16B. WHEN REDUCED SPEED LIMITS ARE UTILIZED IN THE WORK AREA, ADDITIONAL SPEED LIMIT SIGNS RETURNING TRAFFIC TO ITS NORMAL SPEED SHALL BE PLACED BEYOND THE LIMITS OF THE REDUCED SPEED AS INDICATED.

16E. WHEN EXISTING SPEED LIMITS ARE REDUCED MORE THAN 10 MPH, THE SPEED LIMIT SHALL BE STEPPED DOWN IN NO MORE THAN 10 MPH INCREMENTS.

21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.

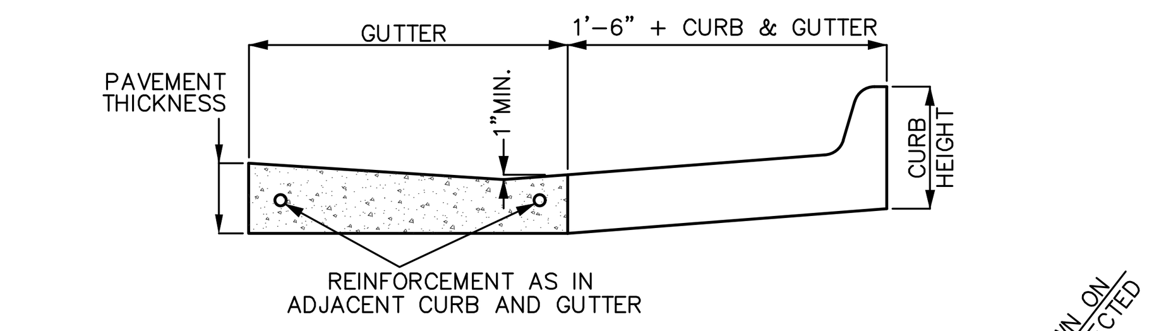
26. THE LIGHTED ARROW PANEL SHALL BE LOCATED AT THE BEGINNING OF THE TAPER AS SHOWN. WHEN PHYSICAL LIMITATIONS RESTRICT ITS PLACEMENT AS INDICATED, THEN IT SHALL BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE.

SIGN SIZES

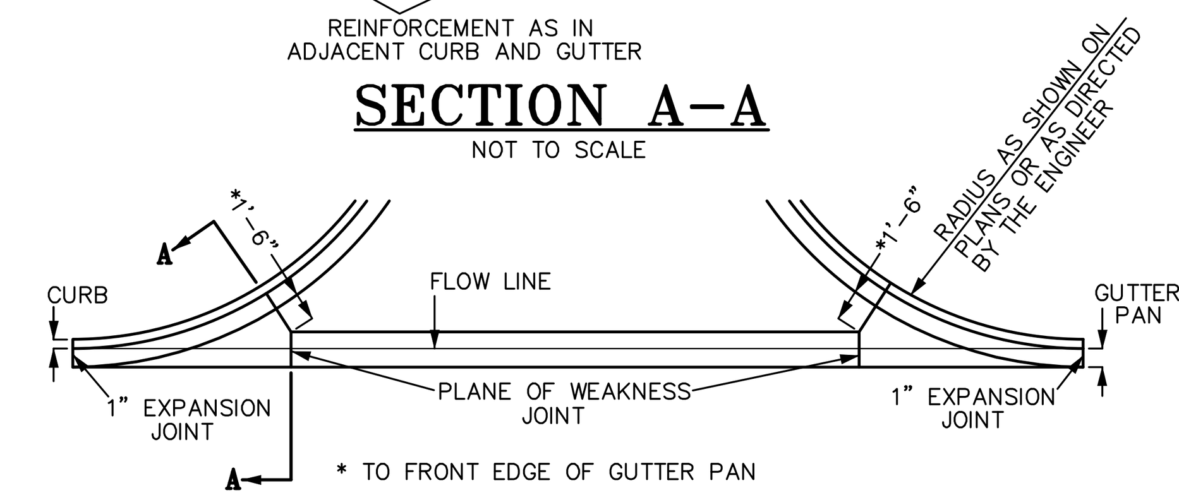
DIAMOND WARNING - 48" x 48"
RECTANGULAR REGULATORY - 48" x 60"
R5-18c REGULATORY - 48" x 48"

NOT TO SCALE

MDOT TRAFFIC AND SAFETY — MAINTAINING TRAFFIC TYPICAL — TYPICAL TEMPORARY TRAFFIC CONTROL FOR A ONE-LANE CLOSURE ON A DIVIDED ROADWAY USING A SINGLE STEP DOWN IN SPEED LIMIT
DRAWN BY: CON:AE:djf | CHECKED BY: BMM:CRB | OCTOBER 2011 PLAN DATE: | M0740a | SHEET 2 OF 2
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0740a.dgn REV. 10/26/2011



SECTION A-A
NOT TO SCALE



CONCRETE DRIVEWAY OPENING
MDOT DETAIL "M"
NOT TO SCALE

MINIMUM MERGING TAPER LENGTH "L" (FEET)

OFFSET FEET	25	30	35	40	45	50	55	60	65	70
	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)									
1	10	15	20	27	45	50	55	60	65	70
2	21	30	41	53	90	100	110	120	130	140
3	31	45	61	80	135	150	165	180	195	210
4	42	60	82	107	180	200	220	240	260	280
5	52	75	102	133	225	250	275	300	325	350
6	63	90	123	160	270	300	330	360	390	420
7	73	105	143	187	315	350	385	420	455	490
8	83	120	163	213	360	400	440	480	520	560
9	94	135	184	240	405	450	495	540	585	630
10	104	150	204	267	450	500	550	600	650	700
11	115	165	225	293	495	550	605	660	715	770
12	125	180	245	320	540	600	660	720	780	840
13	135	195	266	347	585	650	715	780	845	910
14	146	210	286	374	630	700	770	840	910	980
15	157	225	307	400	675	750	825	900	975	1050

TAPER LENGTH "L" IN FEET

THE FORMULAS FOR THE MINIMUM LENGTH OF A MERGING TAPER IN DERIVING THE "L" VALUES SHOWN IN THE ABOVE TABLES ARE AS FOLLOWS:

$"L" = \frac{W \times S^2}{60}$ WHERE POSTED SPEED PRIOR TO THE WORK AREA IS 40 MPH OR LESS

$"L" = S \times W$ WHERE POSTED SPEED PRIOR TO THE WORK AREA IS 45 MPH OR GREATER

L = MINIMUM LENGTH OF MERGING TAPER
S = POSTED SPEED LIMIT IN MPH PRIOR TO WORK AREA
W = WIDTH OF OFFSET

TYPES OF TAPERS	TAPER LENGTH
UPSTREAM TAPERS	
MERGING TAPER	L - MINIMUM
SHIFTING TAPER	1/2 L - MINIMUM
SHOULDER TAPER	1/3 L - MINIMUM
TWO-WAY TRAFFIC TAPER	100 ' - MAXIMUM
DOWNSTREAM TAPERS (USE IS OPTIONAL)	100 ' - MINIMUM (PER LANE)

MDOT TRAFFIC AND SAFETY — MAINTAINING TRAFFIC TYPICAL — TABLES FOR "L", "D" AND "B" VALUES
DRAWN BY: CON:AE:djf | CHECKED BY: BMM | JUNE 2006 PLAN DATE: | M0020a | SHEET 1 OF 2
FILE: K:/DGN/TSR/STDS/ENGLISH/MNTTRF/M0020a.dgn REV. 08/21/2006

DISTANCE BETWEEN TRAFFIC CONTROL DEVICES "D" AND LENGTH OF LONGITUDINAL BUFFER SPACE ON "WHERE WORKERS PRESENT" SEQUENCES

"D" DISTANCES	25	30	35	40	45	50	55	60	65	70
	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)									
D (FEET)	250	300	350	400	450	500	550	600	650	700

GUIDELINES FOR LENGTH OF LONGITUDINAL BUFFER SPACE "B"

SPEED* MPH	LENGTH FEET
20	33
25	50
30	83
35	132
40	181
45	230
50	279
55	329
60	411
65	476
70	542

* POSTED SPEED, OFF PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED

1 BASED UPON AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) BRAKING DISTANCE PORTION OF STOPPING SIGHT DISTANCE FOR WET AND LEVEL PAVEMENTS (A POLICY ON GEOMETRIC DESIGN OF HIGHWAY AND STREETS), AASHTO. THIS AASHTO DOCUMENT ALSO RECOMMENDS ADJUSTMENTS FOR THE EFFECT OF GRADE ON STOPPING AND VARIATION FOR TRUCKS.

MDOT TRAFFIC AND SAFETY — MAINTAINING TRAFFIC TYPICAL — TABLES FOR "L", "D" AND "B" VALUES
DRAWN BY: CON:AE:djf | CHECKED BY: BMM | JUNE 2006 PLAN DATE: | M0020a | SHEET 2 OF 2
FILE: K:/DGN/TSR/STDS/ENGLISH/MNTTRF/M0020a.dgn REV. 08/21/2006

LANE CLOSURE NOTIFICATION/REQUEST FORM

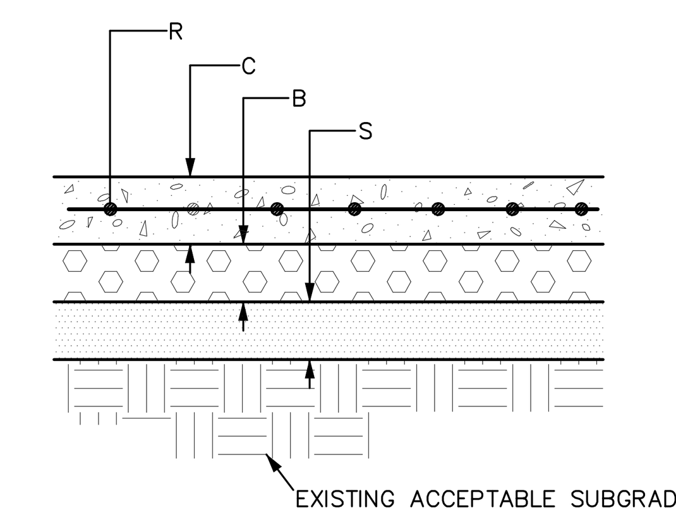
(FOR SHIFTS, LANE, SHOULDER AND RAMP CLOSURES)
MDOT BRIGHTON TSC

Contract ID (CS-JN): ______________ Contract Description: ______________
Prime Contractor: ______________
24 Hour Contact: ______________ Phone Number: ______________
Submittal Date: ______________

ROUTE	DIR.	LOCATION OF CLOSURE (CROSS STREETS)	WORK DESCRIPTION	EXISTING # OF LANES	CLOSURE TYPE (SINGLE LANE, SHOULDER, ECT)	SIDE OF THE ROAD	DURATION OF CLOSURE	DATE	TIME	DURATION TYPE	RESTRICT.	PER MOT (YES/NO)	VERIFIED (MDOT INITIALS)
						☐ Left ☐ Center ☐ Right	CLOSE / OPEN			☐ Full Time ☐ Re-occurring ☐ Intermittent	☐ Height ☐ Weight ☐ Width		
						☐ Left ☐ Center ☐ Right	CLOSE / OPEN			☐ Full Time ☐ Re-occurring ☐ Intermittent	☐ Height ☐ Weight ☐ Width		
						☐ Left ☐ Center ☐ Right	CLOSE / OPEN			☐ Full Time ☐ Re-occurring ☐ Intermittent	☐ Height ☐ Weight ☐ Width		
						☐ Left ☐ Center ☐ Right	CLOSE / OPEN			☐ Full Time ☐ Re-occurring ☐ Intermittent	☐ Height ☐ Weight ☐ Width		
						☐ Left ☐ Center ☐ Right	CLOSE / OPEN			☐ Full Time ☐ Re-occurring ☐ Intermittent	☐ Height ☐ Weight ☐ Width		

Additional Notes: ______________

1. If the request is not per the MOT (Maintenance of Traffic), please submit to the Engineer 7 calendar days in advance of the lane closure for approval. Explain why the work can't be done per the MOT under Additional Notes.
2. If the notification is per the MOT, please submit to the Engineer 3 calendar days in advance of the lane closure for advance notice.
3. Resubmit if the date and/or times change.
4. Contact the Engineer if the lane restriction is opened early.
5. If there is a detour proposed, please describe under Additional Notes



COMMERCIAL APPROACH CONCRETE PAVEMENT CROSS-SECTION

NOT TO SCALE

KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM THICKNESS
R	REINFORCEMENT	N/A	N/A
C	CONCRETE**	MDOT 601, P1	8"
B	AGGREGATE BASE	MDOT 21AA	6"
S	SAND BASE	MDOT CII	6"

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

DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: SES						
CHECK: MJB						

3011 W. CARLETON RD.
TACO BELL

MDOT NOTES AND DETAILS

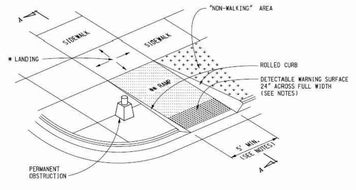
CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: AS NOTED
PROJECT No.: 193636
DWG NAME: 3636 DT
ISSUED: OCT 18, 2019

DT4

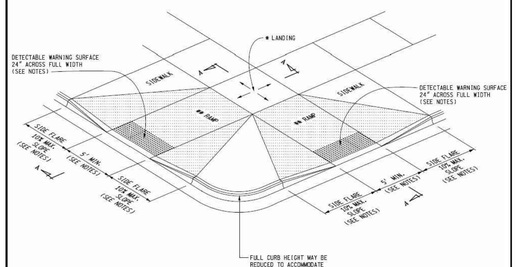
* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES. IF THE RAMP RUNNING SLOPE IS LESS THAN 5% A TOP LANDING IS NOT REQUIRED.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



SIDEWALK RAMP TYPE R

(ROLLED SIDES)



SIDEWALK RAMP TYPE F

(FLARED SIDES, TWO RAMPS SHOWN)

DEPARTMENT OF TRANSPORTATION

PREPARED BY DESIGN DIVISION

DRAWN BY: M.L.T.

CHECKED BY: K.L.F.

DEPARTMENT DIRECTOR
Kirk T. Steudle

APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT

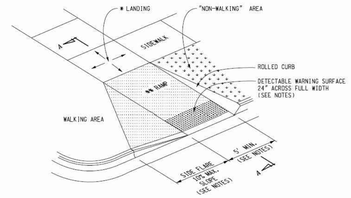
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL	PLAN DATE		SHEET
	10-20-2017	R-28-J	1 OF 7

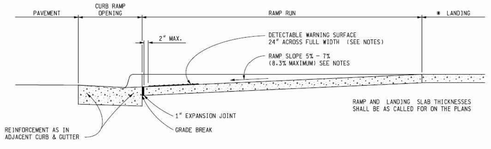
* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES. IF THE RAMP RUNNING SLOPE IS LESS THAN 5% A TOP LANDING IS NOT REQUIRED.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



SIDEWALK RAMP TYPE RF

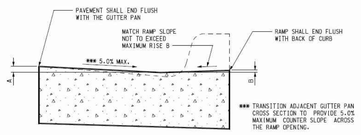
(ROLLED / FLARED SIDES)



CURB TYPE	MAXIMUM RISE (INCHES) A	B
B1	3/8	1
B2	3/8	1
B3	3/8	1
D1	3/8	1
D2	3/8	1
D3	3/8	1
C1	1/2	1/2
C2	1/2	1/2
C3	3/8	1/2
C4	3/8	1/2
C5	1	1/2
C6	1	1/2
F1	1/2	1/2
F2	1/2	1/2
F3	3/8	1/2
F4	3/8	1/2
F5	1	1/2
F6	1	1/2

FOR CURB TYPES SEE STANDARD PLAN R-30-SERIES

SECTION A-A



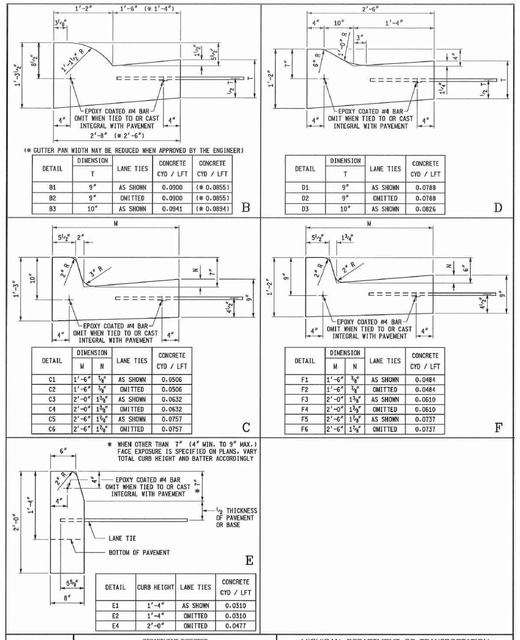
SECTION THROUGH CURB RAMP OPENING

(TYPICAL ALL RAMP TYPES)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL	PLAN DATE		SHEET
	10-20-2017	R-28-J	2 OF 7



* GUTTER PAN WIDTH MAY BE REDUCED WHEN APPROVED BY THE ENGINEER)

DETAIL	DIMENSION T	LANE TIES	CONCRETE CYD / LFT
B1	9"	AS SHOWN	0.0900 (@ 0.0855)
B2	9"	OMITTED	0.0900 (@ 0.0855)
B3	10"	AS SHOWN	0.0941 (@ 0.0894)

DETAIL	DIMENSION T	LANE TIES	CONCRETE CYD / LFT
D1	9"	AS SHOWN	0.0788
D2	9"	OMITTED	0.0788
D3	10"	AS SHOWN	0.0826

DETAIL	DIMENSION W	N	LANE TIES	CONCRETE CYD / LFT
C1	1'-6"	3/4"	AS SHOWN	0.0506
C2	1'-6"	3/4"	OMITTED	0.0506
C3	2'-0"	1¾"	AS SHOWN	0.0632
C4	2'-0"	1¾"	OMITTED	0.0632
C5	2'-6"	1¾"	AS SHOWN	0.0757
C6	2'-6"	1¾"	OMITTED	0.0757

DETAIL	DIMENSION W	N	LANE TIES	CONCRETE CYD / LFT
F1	1'-6"	3/4"	AS SHOWN	0.0484
F2	1'-6"	3/4"	OMITTED	0.0484
F3	2'-0"	1¾"	AS SHOWN	0.0610
F4	2'-0"	1¾"	OMITTED	0.0610
F5	2'-6"	1¾"	AS SHOWN	0.0737
F6	2'-6"	1¾"	OMITTED	0.0737

* WHEN OTHER THAN 7" (4" MIN. TO 9" MAX.) FACE EXPOSURE IS SPECIFIED ON PLANS, VARY TOTAL CURB HEIGHT AND BATTER ACCORDINGLY

DETAIL	CURB HEIGHT	LANE TIES	CONCRETE CYD / LFT
E1	1'-4"	AS SHOWN	0.0310
E2	1'-4"	OMITTED	0.0310
E4	2'-0"	OMITTED	0.0477

DEPARTMENT OF TRANSPORTATION

PREPARED BY DESIGN DIVISION

DRAWN BY: M.L.T.

CHECKED BY: K.L.F.

DEPARTMENT DIRECTOR
Kirk T. Steudle

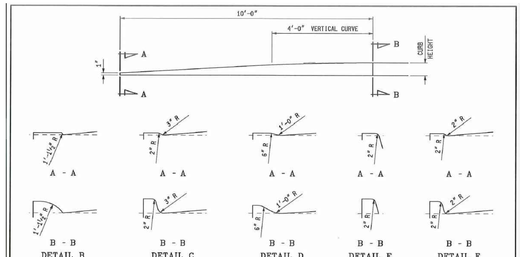
APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____ DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT

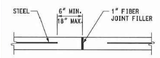
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

CONCRETE CURB AND CONCRETE CURB & GUTTER

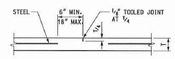
F.H.W.A. APPROVAL	PLAN DATE		SHEET
9-30-2014	2-6-2014	R-30-G	1 OF 2



CONCRETE CURB, CURB AND GUTTER ENDINGS



1" FIBER JOINT FILLER



CONTRACTION JOINT

NOTES:

CURB AND GUTTER RADII SHALL BE DIMENSIONED TO THE FRONT EDGE OF THE GUTTER PAN OR EDGE OF PAVEMENT.

CONCRETE CURB AND GUTTER ENDINGS WILL BE PAID FOR IN LINEAR FEET OF THE ADJACENT CURB DETAIL.

JOINTS SHALL BE PLACED AT RIGHT ANGLES TO THE EDGE OF CONCRETE CURB AND GUTTER.

JOINTS DETAILED ON THE PLANS SHALL SUPERSEDE THOSE SPECIFIED ON THIS STANDARD PLAN.

BOTTOM SLOPE OF CURB AND GUTTER STRUCTURE MAY BE THE SAME SLOPE AS BOTTOM OF PAVEMENT. BACK OF CURB AND VERTICAL EDGE OF GUTTER PAN MAY HAVE A MAXIMUM ½" BATTER TO FACILITATE FORMING.

WHEN CURB AND GUTTER IS CAST INTEGRALLY, SEE CURRENT STANDARD PLAN R-31-SERIES.

ALL JOINTS FOR CURB OR CURB AND GUTTER ARE INCLUDED IN THE PAY ITEM FOR THE CURB OR CURB AND GUTTER.

JOINTS IN CURB OR CURB AND GUTTER NOT TIED TO CONCRETE PAVEMENT; ADJACENT TO CONCRETE BASE COURSE; OR ADJACENT TO HMA PAVEMENT:

A. PLACE 1" FIBER JOINT FILLER AT 400' MAXIMUM INTERVALS.
B. PLACE 1" FIBER JOINT FILLER AT SPRING POINTS OF INTERSECTING STREETS.
C. PLACE ½" ISOLATION JOINT AT CATCH BASINS PER STANDARD PLAN R-37-SERIES.
D. PLACE CONTRACTION JOINTS AT 40' MAXIMUM INTERVALS.

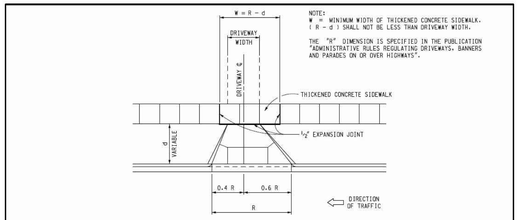
JOINTS IN CURB OR CURB AND GUTTER TIED TO JOINTED PAVEMENT

A. PLACE 1" FIBER JOINT FILLER OPPOSITE ALL TRANSVERSE EXPANSION JOINTS IN PAVEMENT.
B. PLACE ½" ISOLATION JOINT AT CATCH BASINS PER STANDARD PLAN R-37-SERIES.
C. PLACE CONTRACTION JOINTS OPPOSITE ALL TRANSVERSE CONTRACTION JOINTS IN PAVEMENT.
D. A SYMBOL (B) JOINT SHALL BE PLACED BETWEEN CURB OR CURB AND GUTTER AND ADJACENT CONCRETE PAVEMENT AS SPECIFIED ON STANDARD PLAN R-41-SERIES.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

CONCRETE CURB AND CONCRETE CURB & GUTTER

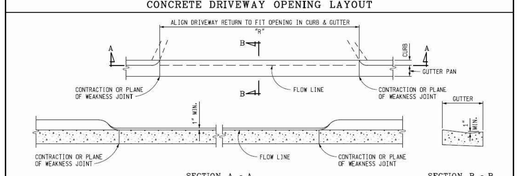
F.H.W.A. APPROVAL	PLAN DATE		SHEET
9-30-2014	2-6-2014	R-30-G	2 OF 2



NOTE:
W = MINIMUM WIDTH OF THICKENED CONCRETE SIDEWALK.
(R - d) SHALL NOT BE LESS THAN DRIVEWAY WIDTH.

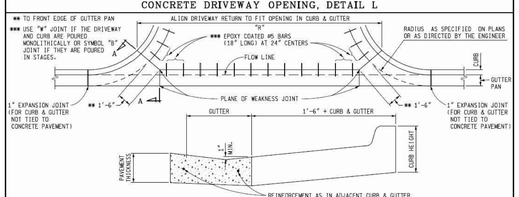
THE "R" DIMENSION IS SPECIFIED IN THE PUBLICATION "ADMINISTRATIVE RULES REGULATING DRIVEWAYS, BANNERS AND PARADES ON OR OVER HIGHWAYS".

CONCRETE DRIVEWAY OPENING LAYOUT



SECTION A - A SECTION B - B

CONCRETE DRIVEWAY OPENING, DETAIL L



SECTION A - A

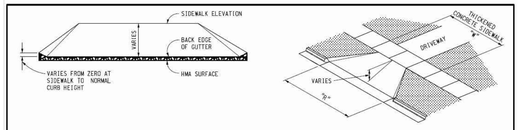
CONCRETE DRIVEWAY OPENING, DETAIL M

NOTE:
FOR ROADWAYS WITH CONCRETE PAVEMENTS, LONGITUDINAL LANE TIES WILL BE CONTINUOUS THROUGH THE DRIVEWAY OPENING AND THE SPACING OF THE #5 BARS IN CONCRETE DRIVEWAYS SHALL BE ADJUSTED TO AVOID CONFLICT WITH THE LONGITUDINAL LANE TIES.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

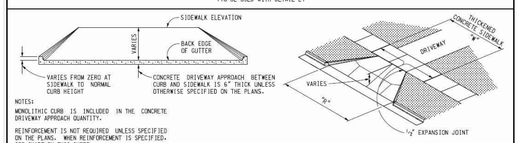
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

F.H.W.A. APPROVAL	PLAN DATE		SHEET
9-30-2014	7-1-2014	R-29-I	2 OF 4



HMA DRIVEWAY APPROACH

(TO BE USED WITH DETAIL L)

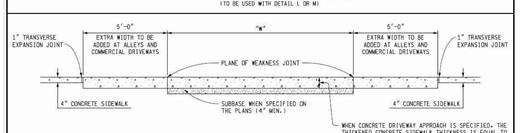


NOTES:
MONOLITHIC CURB IS INCLUDED IN THE CONCRETE DRIVEWAY APPROACH QUANTITY.

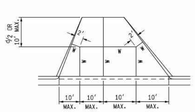
REINFORCEMENT IS NOT REQUIRED UNLESS SPECIFIED ON THE PLANS. WHEN REINFORCEMENT IS SPECIFIED, SEE CHART ON THIS SHEET.

CONCRETE DRIVEWAY APPROACH

(TO BE USED WITH DETAIL L OR M)



THICKENED CONCRETE SIDEWALK



ADJUST DRIVEWAY JOINTS AS NEEDED TO ALIGN WITH ANY COINCIDING TRANSVERSE PAVEMENT JOINTS.

JOINT LAYOUT IS AS INDICATED OR AS DIRECTED BY THE ENGINEER.

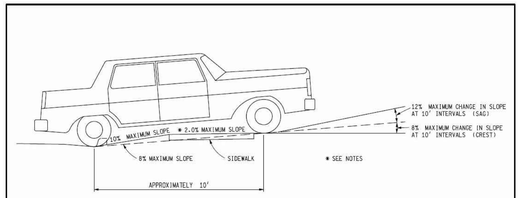
INTERMEDIATE DRIVEWAY JOINT DETAILS

REINFORCEMENT FOR CONCRETE DRIVEWAYS		
CONCRETE DRIVEWAY THICKNESS	WIRE SIZE (6" x 6" MESH)	AVERAGE WEIGHT (LBS/100 SFT)
LESS THAN 8"	W1.4	21
	W2.9	42
8" OR GREATER	USE WIRE FABRIC REINFORCEMENT SPECIFIED ON STANDARD PLAN R-37-SERIES	

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

F.H.W.A. APPROVAL	PLAN DATE		SHEET
9-30-2014	7-1-2014	R-29-I	3 OF 4



LOW VOLUME COMMERCIAL OR RESIDENTIAL DRIVEWAY SLOPES

COMMERCIAL DRIVEWAY PROFILE FOR MAJOR TRAFFIC GENERATORS

NOTES:

FOR DRIVEWAY DESIGN REFER ALSO TO "ADMINISTRATIVE RULES REGULATING DRIVEWAYS, BANNERS, AND PARADES ON OR OVER HIGHWAYS" AND GEOMETRIC DESIGN G-680-SERIES: COMMERCIAL DRIVEWAYS.

FOR CURB AND GUTTER DETAILS, SEE STANDARD PLAN R-30-SERIES.

TRANSVERSE SIDEWALK SLOPES ARE TYPICALLY 1.5% (2.0% MAX(MUM). IN ORDER TO MEET SITE CONDITIONS, IF THE TRANSVERSE SLOPE IS REQUIRED TO BE LESS THAN 1.5%, LONGITUDINAL DRAINAGE MUST BE PROVIDED.

WHEN SETTING GRADES FOR COMMERCIAL DRIVES, THE TYPES OF VEHICLES USING THE DRIVE SHOULD BE CONSIDERED.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

F.H.W.A. APPROVAL	PLAN DATE		SHEET
9-30-2014	7-1-2014	R-29-I	4 OF 4

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

DESIGN: FAF
DRAFT: SES
CHECK: MJB

REVISION #	DATE	REVISION-DESCRIPTION
1	10/18/19	REVISED PER MDOT REVIEW COMMENTS ON 10/01/19

REVISION #	DATE	REVISION-DESCRIPTION

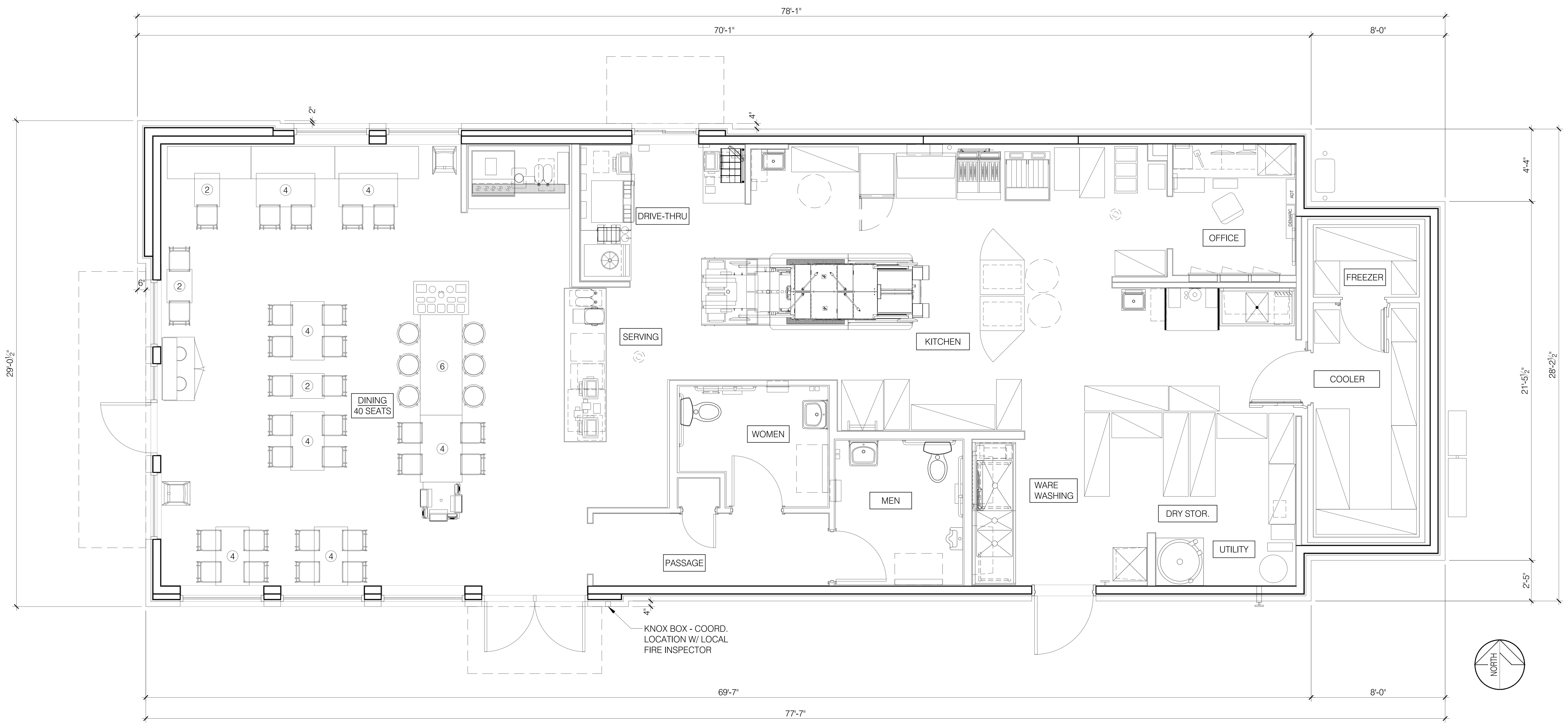
3011 W. CARLETON RD. TACO BELL

MDOT NOTES AND DETAILS

CLIENT:
OLD WEST PROPERTIES
7915 KENSINGTON CT
BRIGHTON, MI 48116
(248) 446-0100

SCALE: AS NOTED
PROJECT No.: 193636
DWG NAME: 3636 DT
ISSUED: OCT. 18, 2019

DT5



FLOOR PLAN

1/4"=1'-0"

2015 MICHIGAN BUILDING CODE REVIEW

GENERAL BUILDING INFORMATION:

2,159 GROSS SQ. FT. (PER THE ZONING ORDINANCE)
1,921 GROSS SQ. FT. (PER THE BUILDING CODE)
(1) STORY / MAX. HEIGHT 24'-0"   NOT SPRINKLED

CHAPTER 3 - OCCUPANCY: A-2 RESTAURANT (303.3)

CHAPTER 5 - GENERAL BUILDING LIMITATIONS (USE GROUP A-2 / CONSTRUCTION TYPE VB):

ALLOWABLE HEIGHT (T.504.3) = 40'-0"
ALLOWABLE STORIES (T.504.4) = 1 STORY
PROPOSED HEIGHT = 24'-0" / 1 STORY (COMPLIES)

ALLOWABLE AREA FACTOR (T.506.2) = NS
ALLOWABLE AREA = 6,000 SQ. FT.
PROPOSED AREA = 1,921 SQ. FT. (PER THE BUILDING CODE - COMPLIES)

CHAPTER 6 - CONSTRUCTION TYPE:

CONSTRUCTION TYPE = TYPE VB: COMBUSTIBLE/UNPROTECTED (SECTION 602.5)
FIRE-RATED ASSEMBLIES PER TABLE 601 = 0-HOUR
FIRE-RATED ASSEMBLIES PER TABLE 602 = 0-HOUR

CHAPTER 7 - FIRE-RESISTANCE-RATED CONSTRUCTION

720.3 - EXPOSED INSULATION MATERIALS SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 450.

CHAPTER 8 - INTERIOR FINISHES:

803.2 - ALL FINISH MATERIALS LESS THAN .036" THICK DIRECTLY APPLIED TO SURFACES OF WALLS OR CEILINGS SHALL NOT BE REQUIRED TO BE TESTED.

TABLE 803.11 - WALL AND CEILING FINISHES:
- EXITS + CORRIDORS = CLASS 'A'
  - FLAME SPREAD = 0-25.
  - SMOKE DEVELOPED = 0-450.
- ROOMS AND ENCLOSED SPACES = CLASS 'C' (SEE NOTE 'e').
  - FLAME SPREAD = 0-200.
  - SMOKE DEVELOPED = 0-450.

FLOOR FINISHES (SECT. 804.4.2):
- EXITS = CLASS II PER NFPA 253 (0.22 WATTS/CM^2 OR GREATER)
- ALL OTHER ROOMS SHALL COMPLY WITH DOC FF-1 "PILL TEST" (CPSC 16 CFR) OR WITH ASTM D 2859.

806.3 - DECORATIONS AND TRIM INCLUDING BLINDS/DRAPERIES ETC. ARE REQUIRED TO BE FLAME RESISTANT COMPLYING WITH NFPA 701, OR NON-COMBUSTIBLE.
806.7 - ALL INTERIOR TRIM SHALL HAVE A MINIMUM CLASS 'C' FLAME SPREAD = 76-200 AND SMOKE-DEVELOPED INDEX = 0-450
806.8 - WALL BASE = CLASS II MINIMUM.

CHAPTER 9 - FIRE PROTECTION SYSTEMS:

903.2.1.2 - THIS BUILDING IS NOT REQUIRED TO BE EQUIPPED THROUGHOUT WITH AN AUTOMATIC FIRE SUPPRESSION SYSTEM.

907.2.1 - A FIRE ALARM SYSTEM IS NOT REQUIRED FOR GROUP 'A' OCCUPANCIES WITH AN OCCUPANT LOAD LESS THAN 300.

CHAPTER 10 - MEANS OF EGRESS:

OCCUPANT LOAD (TABLE 1004.1.2):

ASSEMBLY WITH FIXED SEATS - TABLES AND CHAIRS (1004.4):
TOTAL NUMBER OF SEATS = 40 OCCUPANTS

BUSINESS AREAS:
100 GSF. PER OCCUPANT
57 GSF. / 100 GSF./OCCUPANT = 1 OCCUPANT MINIMUM

KITCHEN AREAS:
200 GSF. PER OCCUPANT
696 GSF. / 200 GSF./OCCUPANT = 4 OCCUPANTS MINIMUM

STORAGE/UTILITY AREAS:
300 GSF. PER OCCUPANT
268 GSF. / 300 GSF./OCCUPANT = 1 OCCUPANT MINIMUM

TOTAL OCCUPANT LOAD = 40 + 1 + 4 + 1 = 46 OCCUPANTS MIN.

MIN. EGRESS WIDTH REQ'D. (1005.3.2):
- EGRESS COMPONEMTS = .2" PER OCCUPANT
- REQUIRED DOOR WIDTH = (.2)(46) = 10" MIN.
- PROVIDED = (3) @ 32" + (1) @ 38" = 134" (COMPLIES)

CORRIDOR/AISLE WIDTH = 44" MIN. (T.1020.2)

NUMBER OF EXITS (1006.2.1):
- (2) EXITS REQUIRED
- (3) EXITS PROVIDED (COMPLIES)

DOOR SWING (1010.1.2.1):
DOORS SHALL SWING IN THE DIRECTION OF EGRESS TRAVEL WHERE SERVING A ROOM OR AREA CONTAINING AN OCCUPANT LOAD OF 50 OR MORE PERSONS.

MINIMUM NUMBER OF PLUMBING FACILITIES PER THE 2015 MICHIGAN PLUMBING CODE - TABLE P403.1

OCCUPANCY AND OCCUPANT LOAD (P.403.2 - SEPARATE FACILITIES REQ'D. PER SEX)	WATER CLOSETS	LAVATORIES	DRINKING FOUNTAINS	SERVICE SINKS
ASSEMBLY (A-2) RESTAURANT = 46 OCCUPANTS	REQUIRED = 1/75 = 46/75 = 1 REQ'D. FOR EACH SEX	REQUIRED = 1/200 = 46/200 = 1 REQ'D. FOR EACH SEX	NOT REQUIRED IN RESTAURANTS PER P410.4	1 REQUIRED PER BUILDING
NUMBER OF FIXTURES PROVIDED	1 W.C. PER SEX	1 LAV. PER SEX	0	1

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508 E. GRAND RIVER AVE, SUITE 100B, BRIGHTON, MI 48116-1566
PHONE (810) 225-2930
www.pv-architects.com

STATE OF MICHIGAN
KARL VOLLMAR
ARCHITECT
No. 1301039372
LICENSED ARCHITECT

TACO BELL
EXP40

PROJECT: TACO BELL - HILLSDALE
3011 W. CARLETON ROAD (M-99)
HILLSDALE, MICHIGAN

SHEET TITLE: FLOOR PLAN

DATE	ISSUED FOR:
9-18-2019	REVISED SIGNAGE
9-4-2019	SITE PLAN SUBMITTAL

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DRAWN BY: KV
APPROVED BY: KV

PROJECT: 1916

SHEET: A1

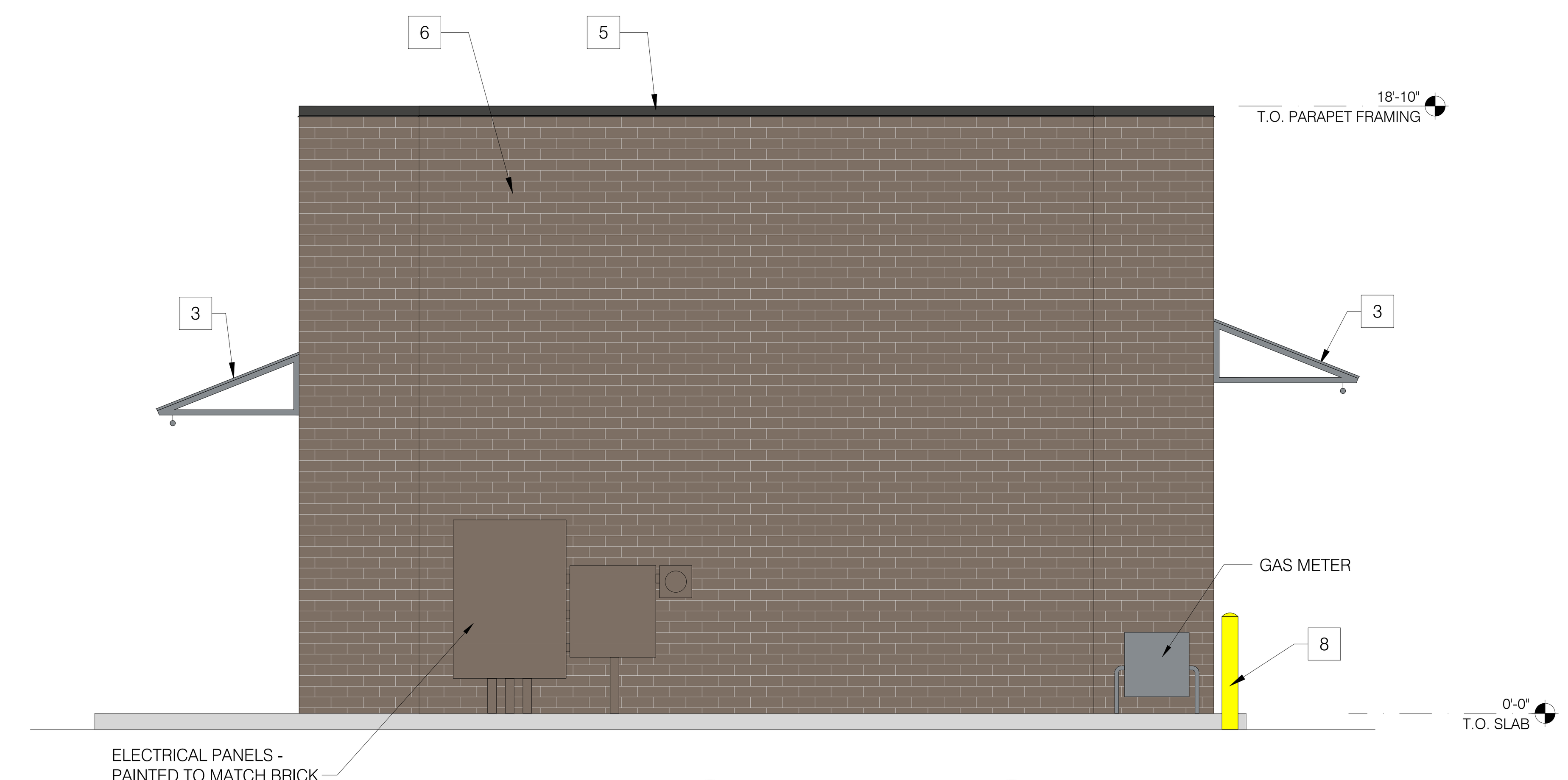
WALK-UP (SOUTH) ELEVATION

1/4" = 1'-0"

FRONT (WEST) ELEVATION

1/4" = 1'-0"

MATERIAL SPECIFICATIONS		
SYMBOL	AREA	COLOR/NOTES
1	FACE BRICK	HEBRON SILVERADO - MORTAR COLOR TO MATCH BRICK
2	FACE BRICK	HEBRON MEDORA - MORTAR COLOR TO MATCH BRICK
3	CORRUGATED METAL AWNING ROOF	S-DECK PREWEATHERED GALVALUME
4	PREFINISHED METAL PARAPET CAP	PAC-CLAD DARK BRONZE
5	PREFINISHED METAL PARAPET CAP	PAC CLAD SIERRA TAN
6	FACE BRICK	HEBRON MADISON - MORTAR COLOR TO MATCH BRICK
7	CLEAR INSULATING GLASS IN ANOD. ALUM. FRAMES	ARCHITECTURAL CLASS II CLEAR ANODIZING
8	CONCRETE FILLED STEEL PIPE BOLLARD WITH PLASTIC SLEEVE	YELLOW - 1/4" THICK PLASTIC COVER (US.POSTMAN.COM) OR EQUAL
9	PARAPET BACK ROOFING	DUROLAST - THE COLOR SHALL BE FACTORY COLORED "TAN." EQUAL ALTERNATE ALLOWED.
10	WALL MURAL	TSW8 ACRYLI-MASTER GRAFFITI RESISTANT COATING
11	PREFINISHED METAL PARAPET CAP (TOWER)	PAC-CLAD COLONIAL RED



REAR (EAST) ELEVATION

1/4" = 1'-0"

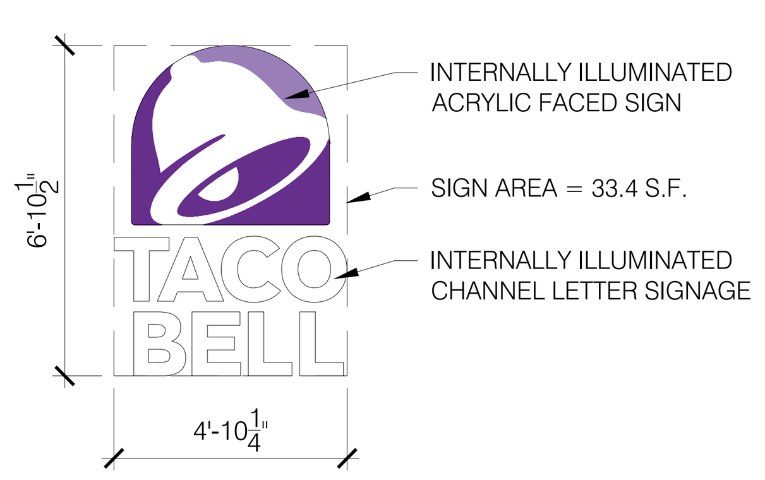
WALL SIGNAGE REGULATIONS:
ZONING: B-3 (GENERAL BUSINESS)

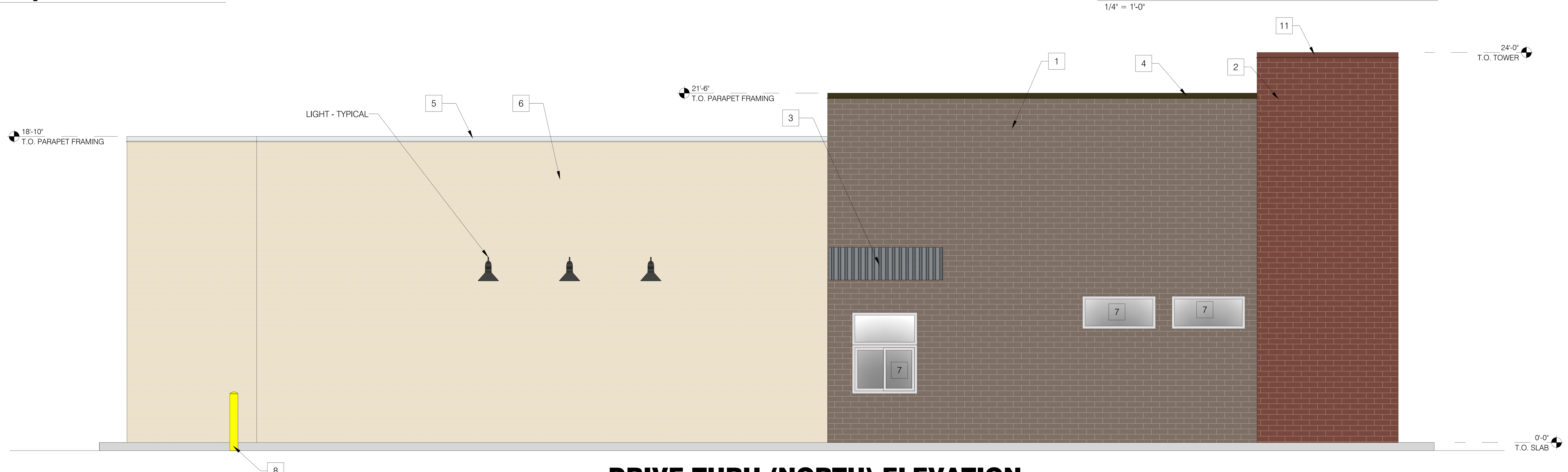
QUANTITY ALLOWED = ONE SIGN ON MAIN FRONTAGE AND A SECONDAY SIGN ALLOWED ON FRONTAGE FACING PARKING

SIZE ALLOWED FOR ALL SIGNS = 8% OF MAIN FRONTAGE FACADE
= 0.08 x 649 SF. = 51 SF. MAX.

MAIN FRONTAGE WALL SIGN AREA ALLOWED = 51 SF. MAX.
SIGN AREA PROPOSED = 33.4 SF. (COMPLIES)

SECONDARY SOUTH WALL SIGN AREA ALLOWED = 51 SF. MAX.
SIGN AREA PROPOSED = 33.4 SF. (COMPLIES)





DRIVE-THRU (NORTH) ELEVATION

1/4" = 1'-0"

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TACO BELL
EXP40

PROJECT
TACO BELL - HILLSDALE
3011 W. CARLETON ROAD (M-99)
HILLSDALE, MICHIGAN

SHEET TITLE
EXTERIOR ELEVATIONS

DATE:	ISSUED FOR:
9-4-2019	SITE PLAN SUBMITTAL
9-18-2019	REVISED SIGNAGE

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DRAWN BY: KV
APPROVED BY: KV

PROJECT: 1916

SHEET:
A2

TO: **Planning Commission**

FROM: **Zoning Administrator**

DATE: **November 12, 2019**

RE: **Short Term Rental Ordinance**

Background: In 2018, we worked on updating and expanding the existing Bed & Breakfast ordinance to include all short term rentals. With the explosion of private online vacation rental sites, it is something that the city wants to be able regulate in a way that keeps the renter, landlord and neighbors happy. We had submitted the proposed ordinance to the City Attorney and had received his response. At the same time, legislation was proposed to regulate short term rentals and as one of the suggestions, the legislation would amend the Zoning Enabling Act which would remove all control from the local municipality. Because of that, we were advised to wait to complete the adoption process for our ordinance. It has now been more than a year and the proposed state legislation is still in committee. We have been approached by a couple of property owners that wish to open new Bed and Breakfasts. Because of that, I thought we should complete the adoption process. Included is the ordinance that would be submitted to Council for your final review and I am requesting that you set the public hearing date.

Chapter 36, Article IV- Supplemental Regulation

Sec. 36-436 Bed and Breakfast Operations as defined in Sec. 36-6 are permitted subject to the following:

1. The bed and breakfast operation shall be conducted entirely within the dwelling unit on the premises, which dwelling unit shall comply with the International Property Maintenance Code (IPMC) bedroom and living room requirements as adopted by the City, and which dwelling unit shall be located on a private lot. The dwelling unit shall not be physically altered for the primary purpose of increasing the space available for the bed and breakfast operation.
2. A bathroom shall be provided on each floor where bed and breakfast sleeping rooms are provided and there shall be at least one bathroom for every four bed and breakfast sleeping rooms.
3. There shall be provided a minimum of one parking space for the dwelling unit plus one additional parking space for each bed and breakfast room within the dwelling unit.
4. There may be one unanimated, non-illuminated sign attached to the dwelling unit according to allowances within Chapter 26 of the sign ordinance.
5. During such times as the bed and breakfast operation is being conducted, the premises shall not be used for any other permitted use or use subject to special conditions, other than as a single-family dwelling unit. The facilities provided on the premises shall be exclusively for the use of bed and breakfast guests and residents of the dwelling unit.
6. If the Owner is not on-site at the time of rental, the Owner must provide a contact person. This contact person must be available to accept telephone calls at all times that the dwelling is rented. The contact person must have a key to the dwelling and be capable of being physically present at the dwelling within two hours to address issues within the same time frame.

Sec. 36-437 Short Term Rentals as defined in Sec. 36-6 are permitted subject to the following:

1. Occupants shall not encroach on neighboring properties.
2. Campfires shall be maintained in designated fire pits and comply with Hillsdale Municipal Code, Sec. 16-46.
3. Owners shall provide sufficient waste receptacles which shall be screened from view. Premises shall be free of visible debris. Garbage shall be disposed of on not less than a weekly basis.
4. Room Area: shall comply with International Property Maintenance Code (IPMC) bedroom and living room requirements as adopted by the City.
5. Occupants shall not create a nuisance. For purposes of this subjection, a nuisance includes but is not limited to the following:
    a. An activity that violates the city noise regulations found in the Hillsdale Municipal Code, Chapter 14, Article III; and
    b. Any activity that violates the city firework regulations found in the Hillsdale Municipal Code, Sec. 22-234.
6. If the owner of the Premises does not reside in the dwelling unit, the owner must provide him or herself, or provide a contact person. This contact person must be available to accept telephone calls at all times that the dwelling is rented. The contact person must have a key to the dwelling and be capable of being physically present at the dwelling within two hours to address issues within the same time frame.

Secs. 36-438—36-460. - Reserved.