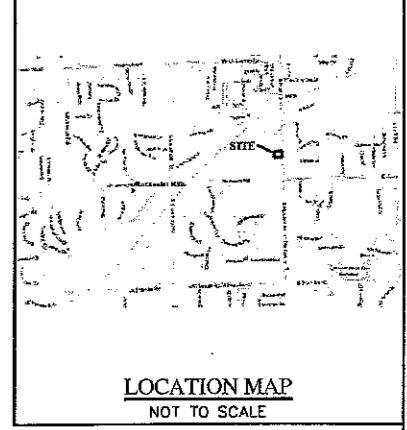


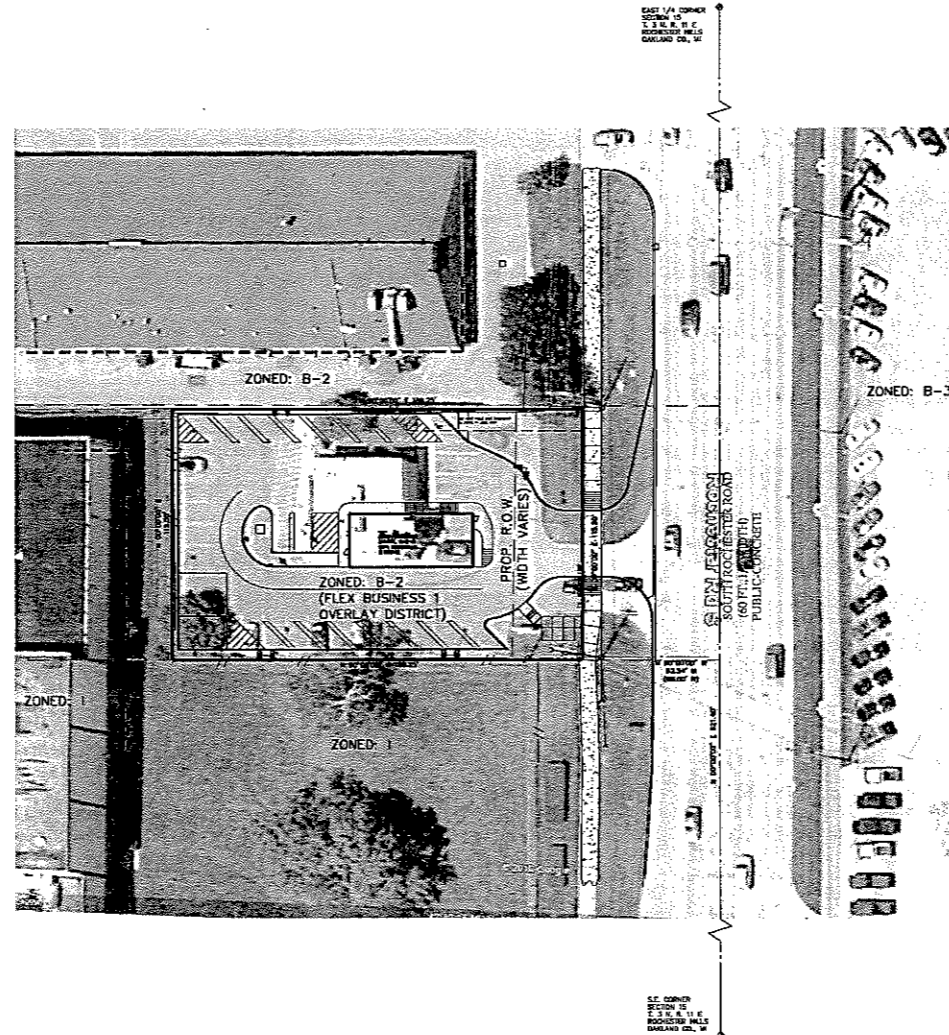
# SITE PLAN FOR TIM HORTON'S 940 SOUTH ROCHESTER ROAD ROCHESTER HILLS, MICHIGAN



**DEVELOPER:**  
TIM HORTON'S USA, INC.  
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PHONE: (810) 844-2747 FAX: (810) 229-3072  
CONTACT: MARK KELLENBERGER  
EMAIL: KELLENBERGER\_MARK@TIMHORTONS.COM

**CIVIL ENGINEER/SURVEYOR:**  
ZEIMET WOZNAK AND ASSOCIATES, INC.  
55800 GRAND RIVER, SUITE 100  
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**LANDSCAPE ARCHITECT:**  
RUSSELL DESIGN, INC.  
114 RAYSON STREET, SUITE 2A  
NORTHVILLE, MI 48167  
PHONE: (248) 374-3222 FAX: (248) 374-3463  
CONTACT: MARC RUSSELL, ASLA  
EMAIL: MARC@RUSSELLDESIGN.NET



**SHEET INDEX**

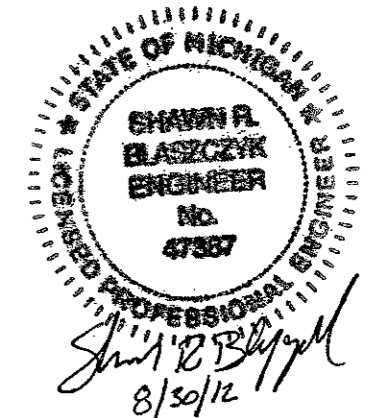
- COVER SHEET
  - SP-1 EXISTING CONDITIONS
  - SP-2 REMOVALS PLAN
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  - SP-4 GRADING AND DRAINAGE PLAN
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- A2 EQUIPMENT PLAN
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  - 10F1 PHOTOMETRIC PLAN

**LEGAL DESCRIPTOR (PER TITLE COMMITMENT)**

PART OF THE SOUTHEAST 1/4 OF SECTION 15, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILL, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: BEGINNING AT A POINT DISTANT NORTH 621.40 FEET AND THENCE WEST 33.00 FEET FROM THE SOUTHEAST CORNER OF SAID SECTION 15; THENCE WEST 565.71 FEET; THENCE NORTH 115.50 FEET; THENCE EAST 565.71 FEET; THENCE SOUTH 115.50 FEET TO THE POINT OF BEGINNING, EXCEPT THE WEST 350.46 FEET, ALSO EXCEPT THE EAST 27.00 FEET TAKEN FOR ROAD.

**LEGAL DESCRIPTOR (AS SURVEYED)**

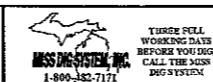
PART OF THE SOUTHEAST 1/4 OF SECTION 15, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILL, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: BEGINNING AT A POINT DISTANT NORTH 621.40 FEET AND THENCE WEST 62.54 (60.00 FEET RECORD) FEET TO A POINT OF BEGINNING ON THE WEST RIGHT-OF-WAY LINE OF ROCHESTER ROAD (60 FEET WIDE, 1/2 WIDTH) FROM THE SOUTHEAST CORNER OF SAID SECTION 15; THENCE WEST 188.25 FEET; THENCE NORTH 115.50 FEET; THENCE EAST 188.25 FEET; THENCE SOUTH 115.50 FEET TO THE POINT OF BEGINNING, CONTAINING 0.50 ACRES OF LAND MORE OR LESS.



**NOTE:**  
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REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
PER CITY COMMENTS	8/10/12	SRB									

**ZEIMET WOZNAK & ASSOCIATES**  
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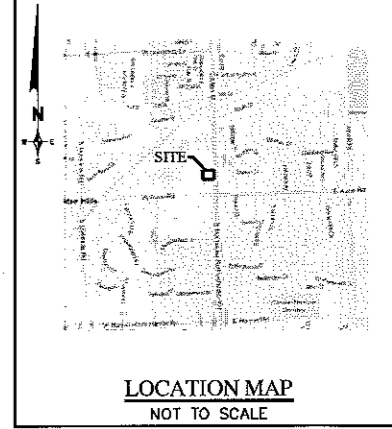
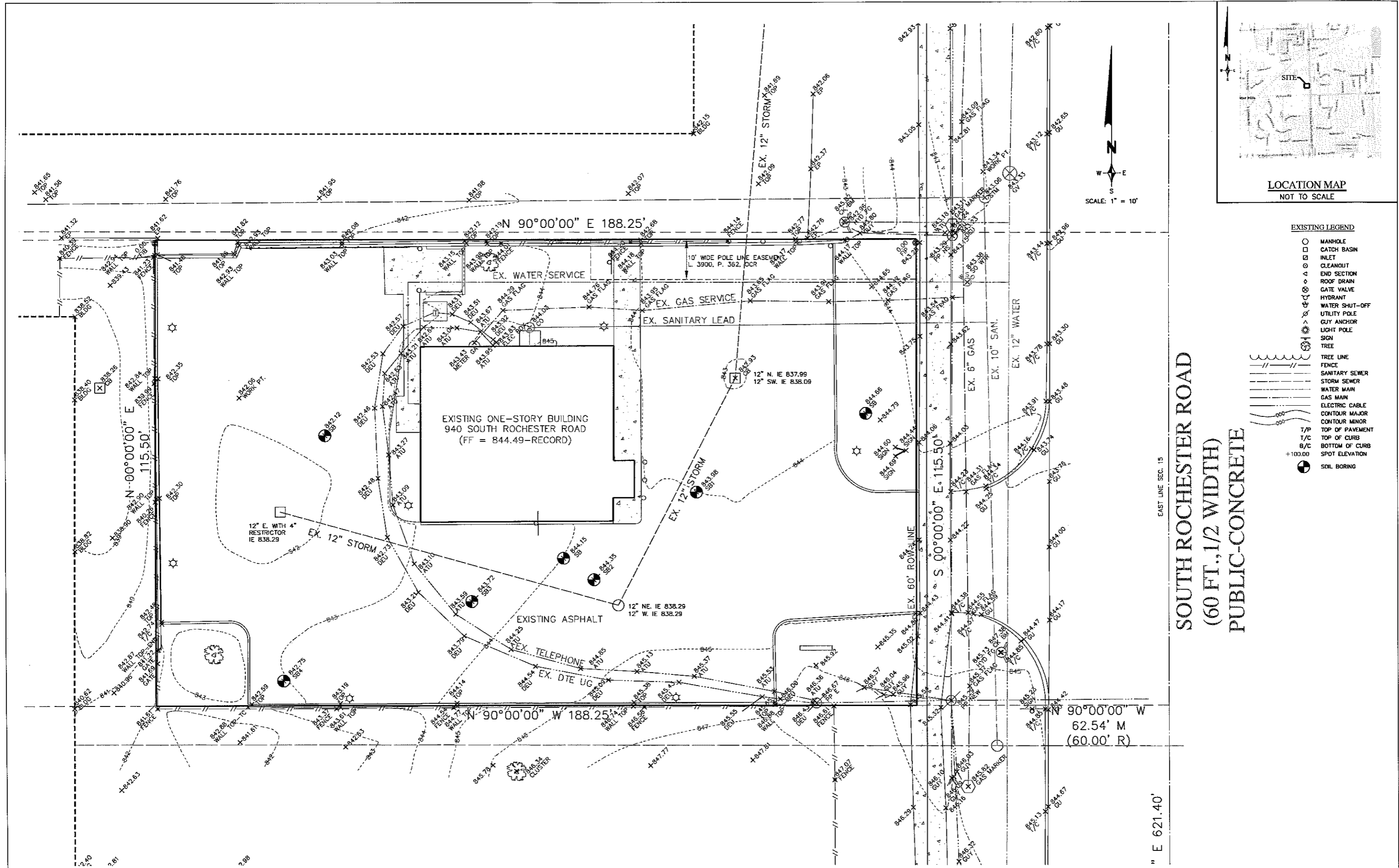
**COVER SHEET**  
TIM HORTON'S  
ROCHESTER HILLS, MICHIGAN

DATE	6/8/12	SCALE	HOR: 1" = 40'
DESIGNED BY	SRB	JOB NO.	12109
DRAWN BY	SRB	SHEET	

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CITY FILE NO. 12-008

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**EXISTING LEGEND**

- MANHOLE
- CATCH BASIN
- ◇ INLET
- CLEANOUT
- END SECTION
- ROOF DRAIN
- GATE VALVE
- HYDRANT
- WATER SHUT-OFF
- UTILITY POLE
- GUY ANCHOR
- LIGHT POLE
- SIGN
- TREE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- WATER MAIN
- GAS MAIN
- ELECTRIC CABLE
- CONTOUR MAJOR
- CONTOUR MINOR
- T/P TOP OF PAVEMENT
- T/C TOP OF CURB
- B/C BOTTOM OF CURB
- +100.00 SPOT ELEVATION
- SOIL BORING

**SOUTH ROCHESTER ROAD  
(60 FT., 1/2 WIDTH)  
PUBLIC-CONCRETE**

EAST LINE SEC. 15

" E 621.40'

NOT FOR CONSTRUCTION  
CITY FILE NO. 12-008

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
PER CITY COMMENTS	8/10/12	SRB									

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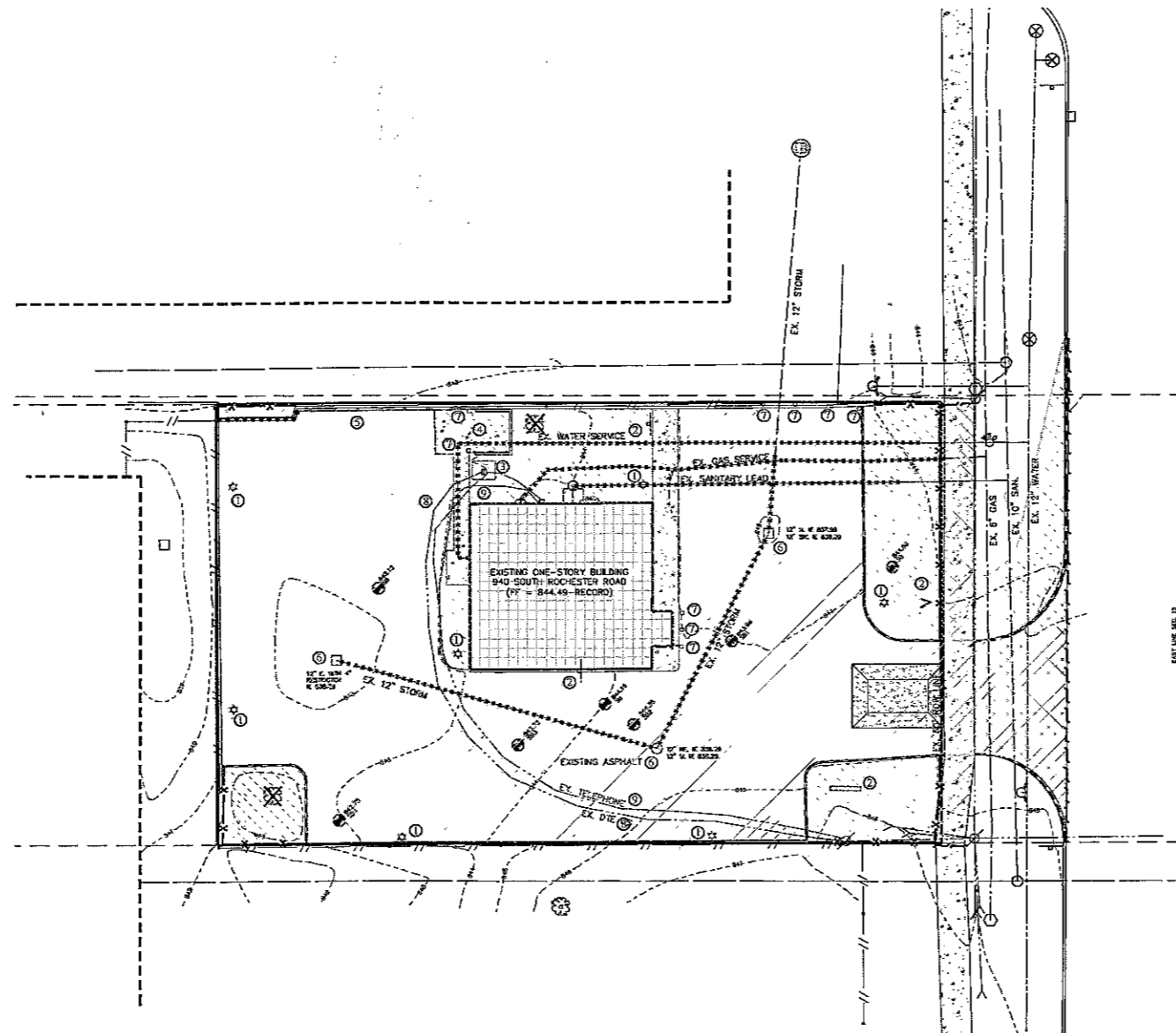
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**PROJECT SPONSOR:**  
TIM HORTON'S USA  
565 EAST GRAND RIVER, SUITE 101  
BRIGHTON, MI 48116 (810) 844-2747

**EXISTING CONDITIONS**  
TIM HORTON'S  
ROCHESTER HILLS, MICHIGAN

DATE 6/8/12 SCALE HOR: 1" = 20'  
DESIGNED BY SRB JOB NO. 12109 VER: 1" = N/A  
DRAWN BY SRB SHEET SP-1

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**EXISTING LEGEND**

- MANHOLE
- CATCH BASIN
- ◻ INLET
- ⊙ CLEANOUT
- △ END SECTION
- ◇ ROOF DRAIN
- ⊗ GATE VALVE
- ⊕ HYDRANT
- ⊖ WATER SHUT-OFF
- ⊙ UTILITY POLE
- ⊙ GUY ANCHOR
- ⊙ LIGHT POLE
- ⊙ SIGN
- ⊙ TREE
- TREE LINE
- FENCE
- SANITARY SEWER
- STORM SEWER
- WATER MAIN
- GAS MAIN
- ELECTRIC CABLE
- CONTOUR MAJOR
- CONTOUR MINOR
- T/P TOP OF PAVEMENT
- T/C TOP OF CURB
- B/C BOTTOM OF CURB
- +100.00 SPOT ELEVATION

**REMOVALS LEGEND:**

- CONCRETE PAVEMENT / SLAB AND BASE TO BE REMOVED
- ASPHALT PAVEMENT TO BE REMOVED. EXISTING BASE TO REMAIN EXCEPT IN PROPOSED GREENBELT AREAS.
- BUILDING, FOUNDATION, SLAB AND FOOTING TO BE REMOVED
- REMOVE EXISTING VEGETATION AND TOPSOIL
- REMOVE CURB / CURB AND GUTTER
- EXISTING WALL TO BE REMOVED
- EXISTING UTILITY SERVICE TO BE REMOVED (CUT AND CAP FOR NEW CONNECTIONS)
- REMOVE EXISTING TREE, STUMP AND ROOTS
- SAWCUT CLEAN EDGE
- CATCH BASIN INLET FILTER
- EROSION CONTROL SILT FENCE
- GRAVEL MUD TRACKING MAT

**KEY:**

- ① EXISTING LIGHT POLE AND BASE TO BE REMOVED
- ② EXISTING SIGN AND BASE TO BE REMOVED
- ③ EXISTING TRANSFORMER TO BE REMOVED
- ④ EXISTING DUMPSTER ENCLOSURE TO BE REMOVED
- ⑤ EXISTING GUARD RAIL TO BE REMOVED
- ⑥ REMOVE / ABANDON EXISTING CATCH BASIN/MANHOLE
- ⑦ EXISTING BOLLARDS TO BE REMOVED
- ⑧ REMOVE / RELOCATE EXISTING DETROIT EDISON UNDERGROUND LINE PER DIRECTION OF OWNER
- ⑨ REMOVE / RELOCATE EXISTING UNDERGROUND TELEPHONE LINE PER DIRECTION OF OWNER

**NOTE:**  
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PER CITY COMMENTS	8/10/12	SRB									

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 565 EAST GRAND RIVER, SUITE 101  
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**REMOVALS PLAN**  
**TIM HORTON'S**  
 ROCHESTER HILLS, MICHIGAN

DATE: 6/8/12 SCALE: HOR: 1" = 20' VER: 1" = N/A  
 DESIGNED BY: SRB JOB NO.: 12109  
 DRAWN BY: SRB SHEET: SP-2

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 CITY FILE NO. 12-008

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GENERAL NOTES:

- 1. ALL EXTERIOR LIGHTING SHALL BE SHIELDED AND DIRECTED AWAY FROM ADJACENT PROPERTIES.
2. ALL TRASH RECEPTACLES SHALL BE SCREENED BY MASONRY WALLS TO MATCH REAR BUILDING WALLS AND HAVE SOLID WOOD GATES. THIS SCREENING SHALL BE AT LEAST SIX FEET IN HEIGHT OR THE MINIMUM HEIGHT OF THE STORAGE RECEPTACLES AND MEET ALL ORDINANCE REQUIREMENTS.
3. TRANSFORMERS SHALL BE LOCATED BEHIND THE BUILDING AS INDICATED ON THE SITE PLAN AND SHALL BE SCREENED USING LANDSCAPING. THE SCREENING SHALL MEET ALL ORDINANCE REQUIREMENTS.
4. ASPHALT SURFACING SHALL BE USED FOR ALL PARKING AREAS AND DRIVEWAYS, AND SHALL MEET ALL ORDINANCE REQUIREMENTS.
5. ALL BUILDING AND SITE SIGNAGE SHALL BE SUBMITTED FOR REVIEW AT A LATER DATE AND WILL BE IN CONFORMANCE WITH THE CITY OF ROCHESTER HILLS REQUIREMENTS AND A SEPARATE SIGN PERMIT WILL BE OBTAINED FROM THE BUILDING DEPARTMENT. BARRIER FREE RAMPS WILL BE PROVIDED AT ALL SIDEWALK APPROACHES.
6. ALL ROOF TOP MECHANICAL EQUIPMENT WILL BE SCREENED BY BUILDING PARAPET WALLS.
7. TYPICAL PARKING SPACE SIZE IS 10'x18', WITH A MINIMUM 24' WIDE AISLE.
8. TYPICAL BARRIER FREE PARKING SPACE DIMENSION IS 8'x18' WITH EITHER A 5'x18' ACCESS SPACE BETWEEN OR A 8'x18' VAN ACCESSIBLE SPACE BETWEEN PER THE 'MICHIGAN BARRIER FREE DESIGN MANUAL'. ALL B.F. SPACES SHALL BE MARKED WITH AN ABOVE GRADE SIGN.
9. THE SITE PLAN SHALL BE SUBJECT TO WRITTEN APPROVAL BY THE CITY'S FIRE MARSHALL.
10. THE SITE PLAN SHALL BE SUBJECT TO WRITTEN APPROVAL BY THE CITY'S ENGINEER.
11. FIRE LANES SHALL BE DESIGNATED BY THE FIRE CODE OFFICIAL, AND SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF THE FIRE LANE WITH FIRE LANE SIGNS, SPACED NOT MORE THAN 100' APART (NO STOPPING, STANDING, PARKING, FIRE-LANE) AND IN CONFORMANCE WITH THE 'MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES'. (FIRE PREVENTION ORDINANCE CHAPTER 58, SECTION 506.3)
12. ALL PORTIONS OF A BUILDING SHALL BE WITHIN 150' OF AN APPROVED FIRE DEPARTMENT ACCESS ROAD.
13. FIRE DEPARTMENT ACCESS ROADS SHALL BE A MINIMUM 20' WIDE AND PAVED.
14. FDC'S SHALL NOT BE OBTAINED OR OBSTRUCTED BY LANDSCAPING, PARKING, OR BY ANY OTHER PERMANENT OR TEMPORARY MATERIALS OR DEVICE. THEY SHALL BE LOCATED ON THE STREET FRONT OF THE BUILDING AND WITHIN 100' OF A FIRE HYDRANT AND WITHIN 50' OF AN APPROVED FIRE ACCESS ROAD. (FIRE PREVENTION ORDINANCE CHAPTER 58, SECTION 912.7 AND SECTION 58-90).
15. EXIT DOORS SHALL REMAIN FREE OF OBSTRUCTIONS AT ALL TIMES. PROVIDE GUARD POSTS OR OTHER ACCEPTABLE MEANS OF PROTECTING EXIT DOORS ONTO DRIVES AND PARKING AREAS. (FC 2006 SECTION 102B.2).
16. OPEN BURNING IS NOT PERMITTED INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING MATERIALS. OPEN BURNING FOR WARMING OF SAND AND/OR WATER FOR PREPARATION OF MORTAR SHALL BE WITHIN THE CITY OF ROCHESTER HILLS BURN PERMIT GUIDELINES. (FIRE PREVENTION ORDINANCE CHAPTER 58, SECTIONS 307.6.2 AND 307.6.2.3).
17. CONSTRUCTION SITE SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC 2006 CHAPTER 14. THIS INCLUDES MAINTAINING FIRE DEPARTMENT ACCESS ROADS AND FIRE HYDRANTS OPERATIONAL PRIOR TO BUILDING CONSTRUCTION. ALL FIRE HYDRANTS WILL BE OPERATIONAL PRIOR TO BUILDING CONSTRUCTION BASED ON THE IFC 2006.
18. FIRE HYDRANT REQUIREMENTS WILL BE BASED ON CONSTRUCTION TYPE AND SQUARE FOOTAGE OF THE BUILDING.
19. DIMENSIONS FOR PARKING SPACES AND MANEUVERING LANES ARE MEASURED FROM THE FACE OF CURB.
20. THERE WILL BE NO INDUSTRIAL WASTE OR PROPANE TANKS LOCATED ON-SITE.
21. ALL CURBED PARKING LOT ISLANDS SHALL BE 2'-3" SHORTER THAN THE ADJACENT PARKING SPACES AND DRIVEWAYS.
22. SEE PHOTOMETRIC PLAN FOR EXACT LOCATION OF PROPOSED LIGHT POLES.
23. ACCESS TO PROPOSED CONSTRUCTION SITE SHALL BE PROVIDED AND MAINTAINED FROM ROCHESTER ROAD.
24. ALL HANDICAP SPACES ARE TO RECEIVE A HANDICAP SIGN AND HANDICAP SYMBOL. PAINTED ON THE ASPHALT. THE STALL ADJACENT TO AN 8' STRIPED AISLE IS TO RECEIVE A 'VAN ACCESSIBLE' SIGN.
25. HANDICAP RAMPS TO HAVE A MAXIMUM 1:12 SLOPE AND MUST BE CONSTRUCTED PER ADA AND MICHIGAN BARRIER FREE STANDARDS.
26. A 'KNOX' KEY SYSTEM SHALL BE INSTALLED IN A LOCATION APPROVED BY THE FIRE CODE OFFICIAL. ORDERING INFORMATION IS AVAILABLE FROM THE FIRE DEPARTMENT. (FC 2006 SECTION 506).

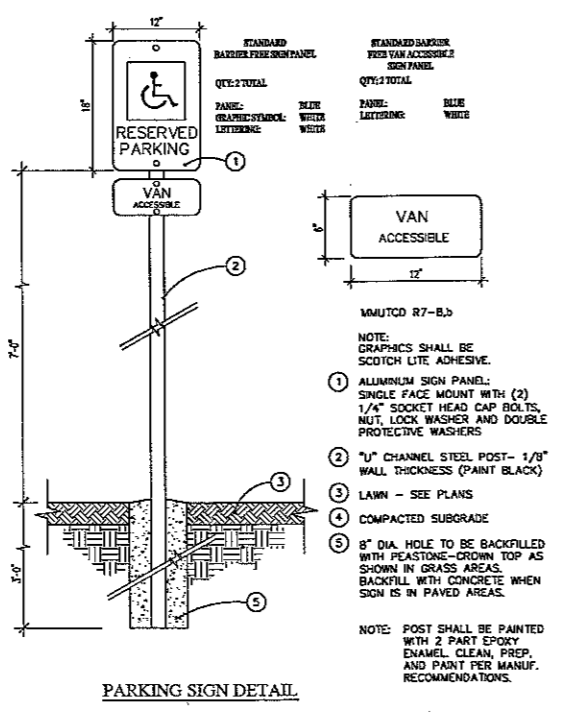
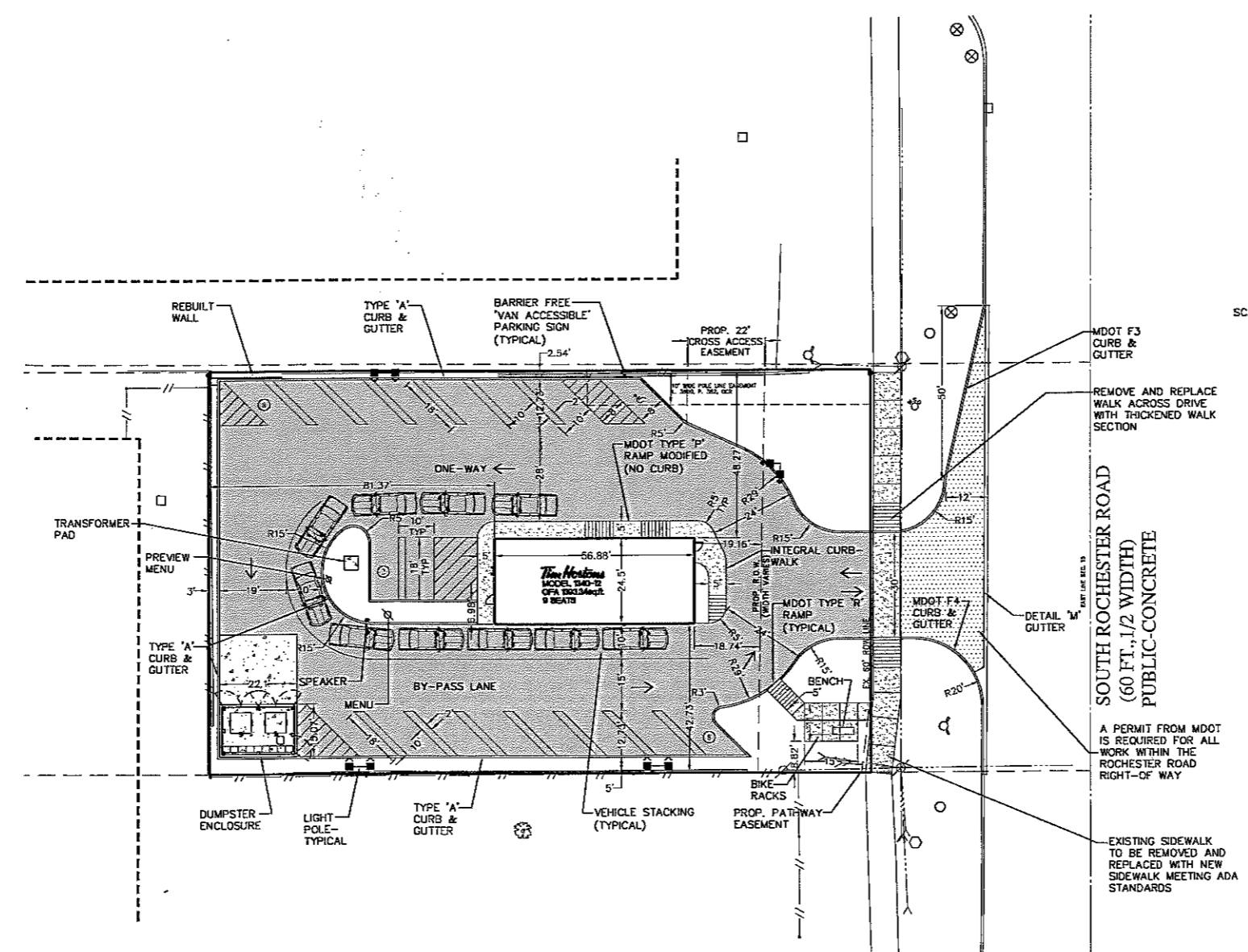
BUILDING CODE COMPLIANCE:

- BUILDING CODE: 2009 MICHIGAN BUILDING CODE
1. AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM IS NOT PROVIDED.
2. THE BUILDING CONSTRUCTION CLASSIFICATION WILL BE TYPE V-B (TABLE 601)
3. THE BUILDING USE WILL BE A2.

PARKING / BUILDING DATA:

ZONING: B-2 (GENERAL BUSINESS) USING THE FLEX BUSINESS 1 OVERLAY OPTION
BUILDING AREA: 1,393 SF (PROPOSED TIM HORTON'S)
PARKING REQUIRED: 1 SPACE PER 400 S.F.
1,393 SF / 400 = 3.48, 4 SPACES REQUIRED MINIMUM
MAXIMUM PARKING = 200% x 4 SPACES = 8 SPACES
PARKING PROVIDED: 18 SPACES
BARRIER FREE SPACES: 1 SPACE
PROVIDED: 1 SPACE (VAN ACCESSIBLE)
SETBACKS: FRONT 15'-25', SIDE 0', REAR 0'
BUILDING FRONTAGE: REQUIRED = 40%
A MODIFICATION OF THIS REQUIREMENT TO 21.3% IS REQUESTED.

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LEGEND table with columns for EXISTING and PROPOSED symbols and their corresponding names like Manhole, Catch Basin, Inlet, etc.

GENERAL NOTES: 1. ALL PROPOSED DIMENSIONS ARE TO FACE OF CURB OR FACE OF BUILDING UNLESS NOTED OTHERWISE.

PAVEMENT SPECIFICATIONS table listing materials like Regular Duty Asphalt, Concrete Sidewalk, Concrete Dumpster Pad, and Concrete Entrance with their respective specifications.

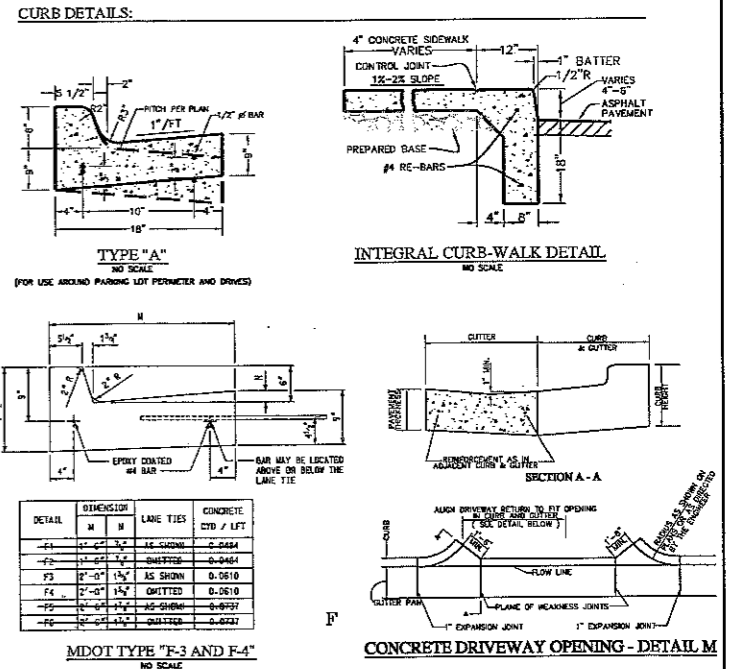


Table with columns for DETAIL, DIMENSION, LANE TIES, and CONCRETE, listing specific detail numbers and their dimensions.

NOT FOR CONSTRUCTION CITY FILE NO. 12-008

Revisions table with columns for REVISIONS, DATE, BY, and a grid for tracking changes.

ZIMET WOZNAK & ASSOCIATES logo and contact information including address and phone number.

CLIENT: TIM HORTON'S USA, 565 EAST GRAND RIVER, SUITE 101, BRIGHTON, MI 48116, (810) 844-2747

DIMENSION AND PAVING PLAN, TIM HORTON'S, ROCHESTER HILLS, MICHIGAN, SHEET SP-3

Table with columns for DATE, SCALE, HOR, VER, DESIGNED BY, JOB NO., DRAWN BY, and SHEET.

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**STORMWATER MANAGEMENT CALCULATIONS**

**1. Existing site conditions**

The existing 0.50 acre site is fully developed as a Dunkin' Donuts. The property consists of a building centrally located on the site with asphalt parking and concrete sidewalks. A dumpster is located between the north side of the building and the property line. Small concrete retaining walls are along the north and south property lines. Water, sanitary, gas, and electric services extend to the building from the Rochester Road right-of-way. A 12" diameter storm sewer runs from the west side of the building around the south and east sides and discharges to the north to the storm sewer system of the adjacent strip mall. The most upstream catch basin has a 4" restricted outlet with a restricted opening frame and cover. Per the City's records, detention is provided on the parking lot surface.

**2. Proposed site conditions**

The site is proposed to be completely redeveloped as a Tim Horton's café and bake shop. The existing building, paving and infrastructure shall be demolished and removed. A new building with drive through, parking lot, and utilities shall be installed.

**3. Stormwater Requirements**

Stormwater treatment and detention shall be per the current standards and specifications of the City of Rochester Hills. The current standards for water quality is to pre-treat the first flush event. Due to site constraints the preferred method of using a forebay is not feasible. Therefore, a mechanical treatment device that can remove at least 80% of the TSS shall be utilized. Stormwater detention shall be provided to collect and store a 25-year storm event. The current standards do not allow the use of parking lot storage. Therefore, again due to site constraints the preferred use of a detention basin is not feasible. Thus, an underground detention system shall be used.

**4. Detention Calculations**

Area = 0.50 acres = 21,743 sf  
 Runoff, C: Building/Pavement = 17,342 sf @ 0.95 = 14,475  
 Lawn/Open = 4,401 sf @ 0.30 = 1,320  
 C = 17,795/21,743 = 0.82 Use C = 0.85

$Q_0 = 0.20 \text{ cfs/acre} = 0.20 \times 0.50 = 0.10 \text{ cfs}$   
 $Q_0 = Q_0 / (A \times C) = 0.10 / (0.50 \times 0.85) = 0.235 \text{ cfs/ac.-imp.}$   
 $T_{25} = 25 + \sqrt{16,025.70 Q_0} = 25 + \sqrt{16,025.70 \times 0.235} = 160.2 \text{ minutes}$   
 $V_{25} = [(12,900 \times T) / (T + 25)] - (40 \times Q_0 \times T)$   
 $= [(12,900 \times 160.2) / (160.2 + 25)] - (40 \times 0.235 \times 160.2)$   
 $= 9,652.76 \text{ cf/ac.-imp.}$   
 $V_{25} = V_{25} \times A \times C = 9,652.76 \times 0.50 \times 0.85 = 4,103 \text{ cf}$

**Water Quality (first flush)**

$WQV = 1,815 \times A \times C = 1,815 \times 0.50 \times 0.85 = 771 \text{ cf}$

A mechanical treatment device meeting the current City standards shall be used in lieu of a forebay.

Size water quality treatment flow for the 1-year, 0.5" storm with a 15 minute time of concentration.

$Q = CIA$   
 $I = 72 / (T + 25) = 72 / (16.4 + 25) = 1.74 \text{ inch/hour}$   
 $Q = 0.85 \times 1.74 \times 0.50 = 0.74 \text{ cfs}$

Use a CDS PMU2025 with a maximum treatment capacity of 0.75 cfs per the Table on page 4-38 of the Rochester Hills Engineering Design Standards.

**Channel Protection (bankfill)**

$CPV = 4,788 \times A \times C = 4,788 \times 0.50 \times 0.85 = 2,046 \text{ cf}$

This volume of runoff shall be stored and released within the detention system for between 24 and 48 hours via a restricted outlet.

**Detention provided**

Due to limited open space on the site, an underground detention system with a gravity outlet shall be used to store the 25-year storm runoff.

Minimum pipe size allowed for underground storage = 48"Ø

Using 48" amp, a volume of 4,134 cf can be achieved using the following configuration:  
 3 parallel rows of 99' long  
 2 headers at 16' long

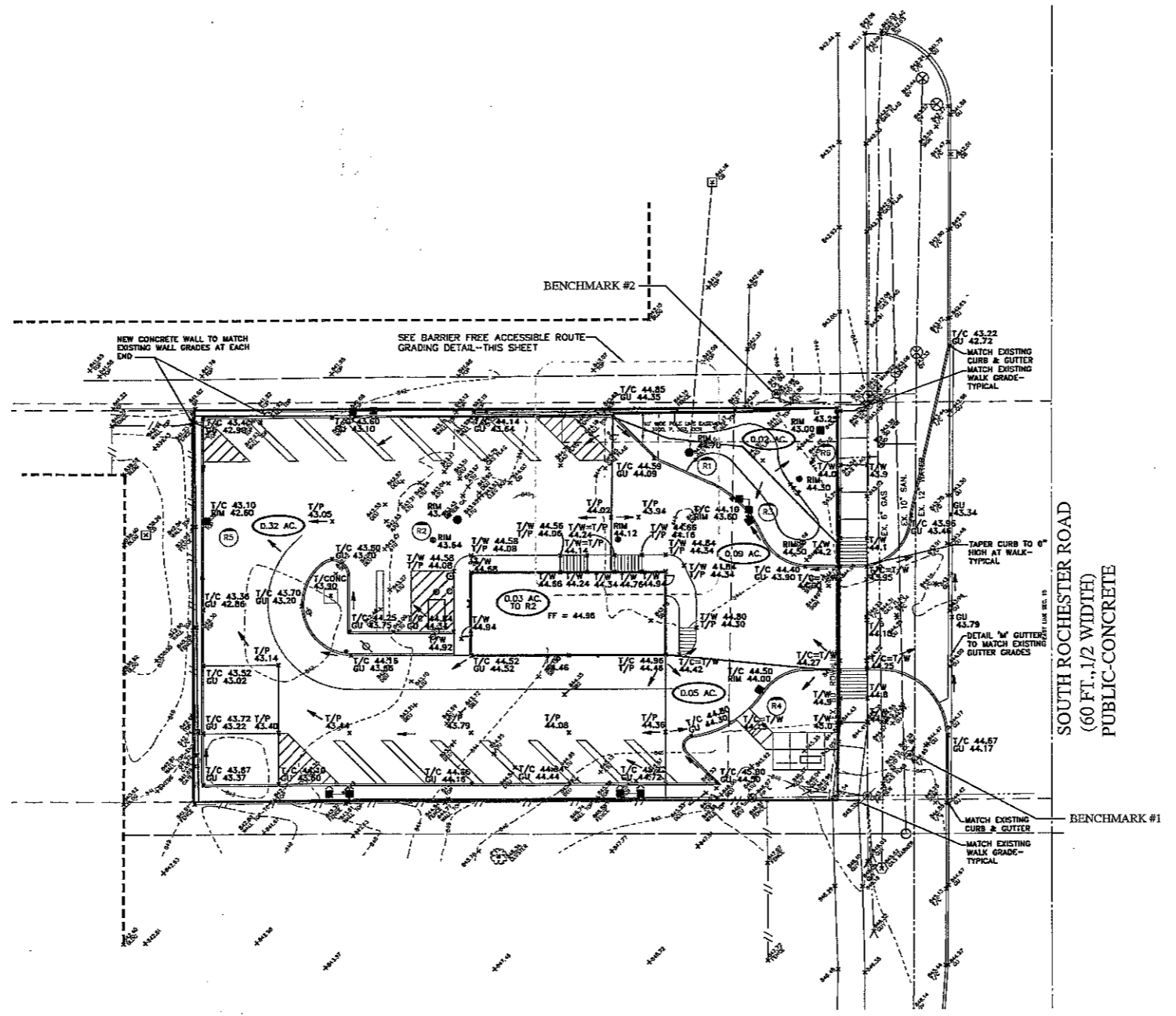
**Outlet Control Structure**

An outlet control structure using a weir with restricted openings shall be placed adjacent to the detention system to restrict the discharge to the allowable outflow rates for the water quality, channel protection and 25-year storm events.

$Q = 0.10 \text{ cfs} = 0.62 \times A \times \sqrt{2gh}$   
 $H = 41.99 - 37.99 = 4.0'$   
 $0.10 = 0.62 \times A \times \sqrt{2 \times 32.2 \times 4.0} = 0.01 \text{ sf}$   
 This equates to a 1.35" diameter orifice. The minimum allowable orifice per the City design standards is 4" diameter. Therefore, use a 4" diameter orifice with a 1.3" diameter hole drilled into the bottom cap of a 4" tee.

Set top of overflow weir (wall) at the top of storage elevation of 842.00.

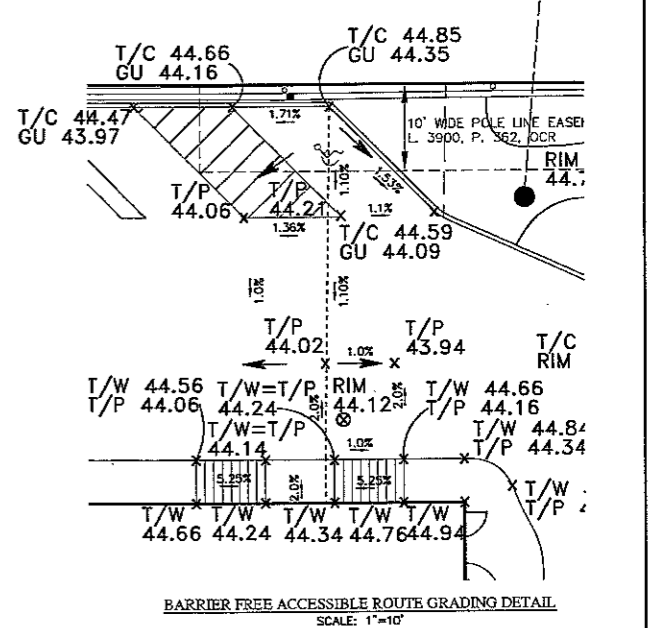
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LEGEND	
EXISTING	PROPOSED
○ MANHOLE	● MANHOLE
□ CATCH BASIN	■ CATCH BASIN
⊠ INLET	⊠ INLET
⊙ CLEANOUT	⊙ CLEANOUT
△ END SECTION	△ END SECTION
⬇ ROOF DRAIN	⬇ ROOF DRAIN
⊕ GATE VALVE	⊕ GATE VALVE
⊖ HYDRANT	⊖ HYDRANT
⊗ WATER SHUT-OFF	⊗ WATER SHUT-OFF
⊘ UTILITY POLE	⊘ UTILITY POLE
⊙ GUY ANCHOR	⊙ GUY ANCHOR
⊙ LIGHT POLE	⊙ LIGHT POLE
⊙ SIGN	⊙ SIGN
⊙ TREE	⊙ TREE REMOVAL
--- TREE LINE	--- SANITARY SEWER
--- SANITARY SEWER	--- STORM SEWER
--- STORM SEWER	--- WATER MAIN
--- WATER MAIN	--- SIGN
--- GAS MAIN	--- CONTOUR MAJOR
--- ELECTRIC CABLE	--- CONTOUR MINOR
--- CONTOUR MAJOR	--- PROPOSED GRADE
--- CONTOUR MINOR	--- T/C = TOP OF CURB
--- SPOT ELEVATION	--- T/W = TOP OF WALK
	--- T/P = TOP OF PAVEMENT
	--- G = GROUND
	--- GU = GUTTER
	--- FG = FINISH GRADE
	--- FF = FINISH FLOOR

- BENCHMARKS: (USGS DATUM)**
- "M" IN MUELLER ON HYDRANT FLANGE AT SOUTHEAST CORNER OF SITE. ELEVATION: 847.38
  - ARROW ON HYDRANT AT NORTHEAST CORNER OF SITE. ELEVATION: 845.03

- GRADING NOTES:**
- EXISTING TOPOGRAPHY SHOWN PER SURVEY BY OTHERS AS PROVIDED BY OWNER AND SUPPLEMENTED BY ZWA
  - SEED AND MULCH ALL AREAS DISTURBED DUE TO GRADING.
  - PEAT, OR ANY OTHER UNSUITABLE MATERIALS ENCOUNTERED IN CONSTRUCTION AREAS SHALL BE REMOVED AND BACKFILLED WITH COMPACTED SUITABLE MATERIAL (95% DENSITY). ALL ON-SITE WORK SHALL CONFORM, AT A MINIMUM, TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER HILLS.
  - ALL WORK WITHIN THE CONSTRUCTION LIMITS SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY.
  - ALL PROPOSED GRADES SHOWN IN PAVED AREAS ARE TOP OF PAVEMENT (T/P) UNLESS SPECIFIED OTHERWISE.
  - ADD 800.00 TO PROPOSED GRADES TO OBTAIN SITE DATUM ELEVATION.



REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
PER CITY COMMENTS	8/10/12	SRB									

**ZIMET WOZNAK & ASSOCIATES**  
 Civil Engineers & Land Surveyors  
 5500 GRAND RIVER AVE., SUITE 100  
 NEW HUDSON, MICHIGAN 48165  
 P: (248) 437-3000 F: (248) 437-3227 www.zimetwoz.com

CLIENT: TIM HORTON'S USA  
 565 EAST GRAND RIVER, SUITE 101  
 BRIGHTON, MI 48116 (810) 844-2747

**GRADING AND DRAINAGE PLAN**  
 TIM HORTON'S  
 ROCHESTER HILLS, MICHIGAN

NOT FOR CONSTRUCTION  
 CITY FILE NO. 12-008

DATE: 8/9/12	SCALE: HOR: 1" = 20'
DESIGNED BY: SRB	VER: 1" = N/A
DRAWN BY: SRB	JOB NO. 12109
	SHEET SP-4



**SANITARY SEWER BASIS OF DESIGN**

A. CONTRIBUTION TO EXISTING 10" SEWER:

BLDG. DESIGNATION	BLDG. USE	AREA (SF)	SEATS	UNIT FACTOR	UNITS
Tim Horton's	Restaurant	1,393	9	0.15/unit	1.37

No. of people = 3.5 ppu x 1.17 units = 4.09 people

Average daily flow = 100 gpcd x 4.09 people = 0.0006 cfs  
(7.5 x 24 x 3600)

Peak daily flow = 4 x 0.0006 = 0.0025 cfs  
An 10" sewer at 0.28% (minimum) has a capacity of 1.15 cfs.

**WATERMAIN BASIS OF DESIGN**

INITIAL SERVICE CONNECTIONS:	0
TOTAL SERVICE CONNECTIONS:	4.09 (NUMBER OF PEOPLE)
INITIAL DESIGN AVERAGE DAY FLOW:	0 MGD
INITIAL MAXIMUM DAY FLOW:	0 MGD
TOTAL DESIGN AVERAGE DAY FLOW:	4.09 x 1201,000,000 = 0.0005 MGD
TOTAL MAXIMUM DAY FLOW:	3 x 0.0005 = 0.0015 MGD

**FIRE DEPARTMENT NOTES:**

- FOR COMMERCIAL BUILDINGS OVER 30- FEET HIGH OR 3 STORIES REQUIRE TWO OR MORE SEPARATE FIRE ACCESS ROADS AT LEAST 26- FEET WIDE. AT LEAST ONE ROAD SHALL BE WITHIN A MINIMUM 15- FEET AND A MAXIMUM 30- FEET FROM THE BUILDING AND SHALL BE POSITIONED PARALLEL TO ONE ENTIRE SIDE OF THE BUILDING.
- FIRE LANES SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF THE FIRE LANE. WITH FIRE LANE SIGNS SPACED NOT MORE THAN 100 FEET APART. FIRE LANE SIGNS SHALL READ "NO STOPPING, STANDING, PARKING, FIRE LANE", AND IN CONFORMANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- A 3- FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND FIRE HYDRANTS.
- FIRE DEPARTMENT CONNECTIONS, WHEN REQUIRED, SHALL BE LOCATED VISIBLY ON THE STREET FRONT OF THE BUILDING, WITHIN 50- FEET OF AN APPROVED FIRE DEPARTMENT ACCESS ROAD AND A FIRE HYDRANT SHALL BE LOCATED WITHIN 100- FEET OF THE F.D.C.
- FIRE DEPARTMENT CONNECTIONS SHALL NOT BE OBSCURED OR OBSTRUCTED BY LANDSCAPING, PARKING OR BY ANY OTHER PERMANENT OR TEMPORARY MATERIALS OR DEVICE.
- CONSTRUCTION SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC CHAPTER 14.
- OPEN BURNING IS NOT PERMITTED, INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING MATERIALS. OPEN BURNING FOR WARMING OF SAND AND/OR WATER FOR PREPARATION OF MORTAR SHALL BE WITHIN CITY OF ROCHESTER HILLS BURN PERMIT GUIDELINES. CONTACT ROCHESTER HILLS FIRE DEPARTMENT FOR PERMIT INFORMATION.
- A "KNOX" KEY SYSTEM MAY BE REQUIRED IN A LOCATION APPROVED BY THE FIRE CODE OFFICIAL. ORDERING INFORMATION IS AVAILABLE FROM THE FIRE DEPARTMENT.

**HYDRANT REQUIREMENTS:**

- BUILDING CONSTRUCTION- TYPE V-B
  - BUILDING AREA- 1,393 S.F.
  - REQUIRED FIRE FLOW- 1,500 GPM
  - REQUIRED HYDRANTS- 1 WITH 500' AVERAGE SPACING
- REQUIRED FIRE FLOW AND HYDRANTS TAKEN FROM TABLES B105.1 AND C105.1 IN THE CITY OF ROCHESTER HILLS ENGINEERING DESIGN STANDARDS.

**SANITARY SEWER NOTES:**

- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE AGENCY HAVING JURISDICTION OVER THAT WORK.
- ALL SANITARY SEWER BUILDING LEADS WILL BE SOLID WALL PVC SDR 23.5 PIPE.
- SANITARY SEWER DROP CONNECTIONS MUST BE EXTERNAL TYPE.
- THE MINIMUM SLOPE FOR 6" SANITARY BUILDING LEADS IS 1.00%.
- ALL PROPOSED SEWERS SHALL HAVE CHEMICALLY WELDED JOINTS.
- THE CONTRACTOR SHALL HAVE A TELEVISION INSPECTION OF THE EXISTING SANITARY LEAD PERFORMED PRIOR TO CONSTRUCTION TO VERIFY THE CONDITION OF THE EXISTING PIPE. THE CITY INSPECTOR SHALL WITNESS THE SCOPE AND A VIDEO COPY SHALL BE PROVIDED TO THE CITY.

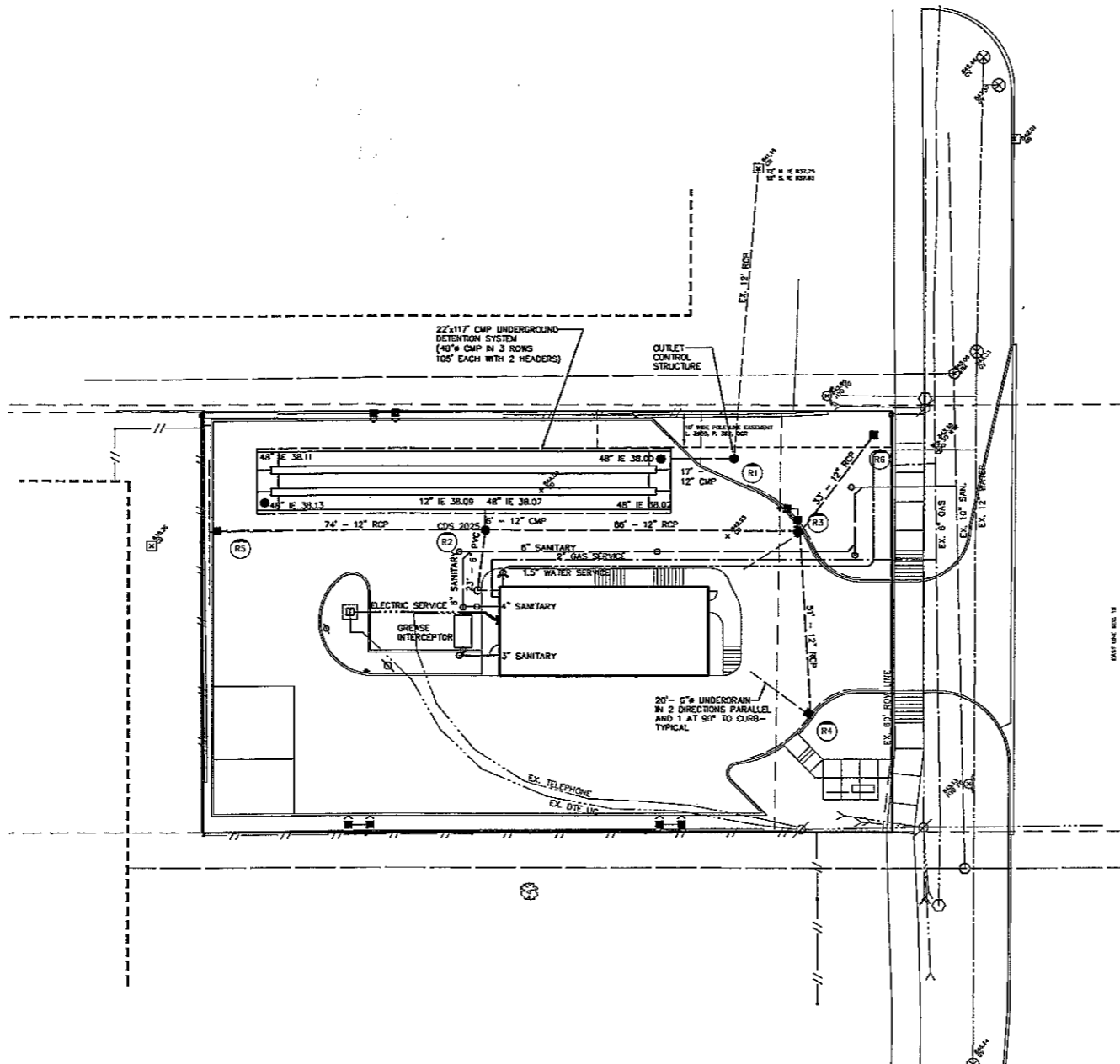
**WATERMAIN NOTES:**

- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE AGENCY HAVING JURISDICTION OVER THAT WORK.
- ALL HYDRANTS, INCLUDING NOZZLES AND PROJECTIONS SHALL BE 3" MINIMUM FROM EDGE OF SIDEWALK OR 6" MINIMUM FROM BACK OF CURB.
- THE WATERMAIN WILL HAVE A MINIMUM OF 6 FEET OF COVER.
- THE CONTRACTOR SHALL DETERMINE DEGREE OF BEND FOR THE WATERMAIN FITTINGS. PIPE DEFLECTIONS SHALL NOT EXCEED 75% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE DEFLECTION.
- WATERMAIN 8" AND LARGER SHALL BE CEMENT-LINED (DOUBLE THICKNESS), DUCTILE IRON PIPE CLASS 54.
- A VERTICAL SEPARATION OF 18 INCHES MUST BE MAINTAINED BETWEEN THE WATERMAIN AND SANITARY SEWERS, STORM SEWERS, OR OTHER PROPOSED UTILITIES.
- ALL GATE VALVES SHALL BE RESILIENT WEDGE OR SEATED TYPE GATE VALVE (C.I.W. OR U.S. PIPE).
- RESTRAINED RODDED JOINTS SHALL BE USED AT ALL VERTICAL BENDS. THE NUMBER OF RESTRAINED RODDED JOINTS REQUIRED SHALL BE DETERMINED BY THE MANUFACTURER. SUBJECT TO APPROVAL BY THE CITY ENGINEER.
- USE HYDRANT CONNECTION DETAILS PER CURRENT CITY STANDARD DETAIL SHEET.
- WATER SERVICES SHALL BE SDR-9 POLY PIPE OR TYPE "K" COPPER.

**STORM SEWER NOTES:**

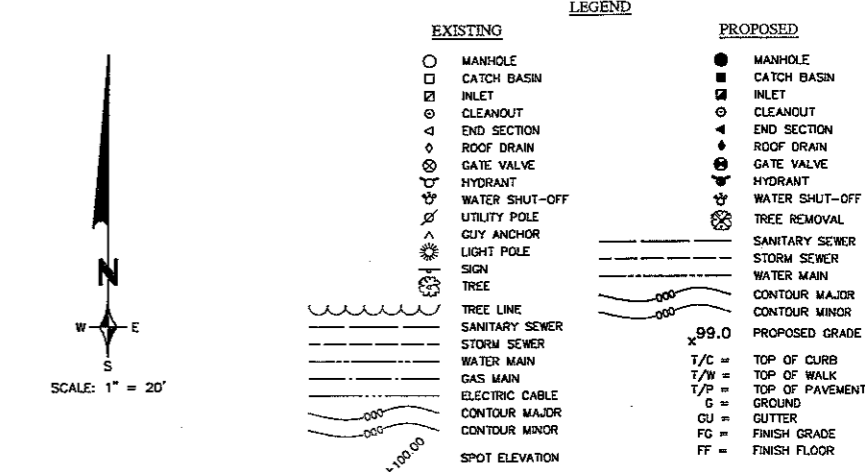
- PROPOSED STRUCTURE COVERS/GRATES SHALL BE PROVIDED AS REQUIRED ON THE CITY OF ROCHESTER HILLS STANDARD DETAIL SHEETS.
- EDGE DRAIN TO BE 20" IN EACH DIRECTION AT 90° ANGLES FROM INLET STRUCTURES LOCATED IN PAVED AREAS.
- STRUCTURAL CALCULATIONS AND SHOP DRAWINGS, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER (REGISTERED IN THE STATE OF MICHIGAN) SHALL BE SUBMITTED TO THE CITY FOR REVIEW PRIOR TO CONSTRUCTION OF ALL STORM SEWER STRUCTURES GREATER THAN 6 FEET IN DIAMETER.
- PROPOSED ROOF DRAINS SHALL BE SCHEDULE 40 PVC PIPE WITH CHEMICALLY WELDED JOINTS.
- PROPOSED STORM SEWER PIPE SHALL BE REINFORCED CONCRETE CLASS IV WITH RUBBER GASKETS AND CLASS B BEDDING.

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SOUTH ROCHESTER ROAD  
(60 FT., 1/2 WIDTH)  
PUBLIC-CONCRETE

PROJECT: Tim Horton's		JOB NO. 11189		CONTRACT: Rochester Hills		COUNTY: Oakland		DATE: August 3, 2012											
FROM	TO	INCR.	OF	AREA	TIME	Q=GA	CAPAC.	DEAM.	LENGTH	SLOPE	SLOPE	VEL.	TRAP	H.G.	GR. ELEV.	INVERT	LOWER	INVERT	LOWER
MP	MP	MENT	OF	100%	(HR)	PER	(C.F.S.)	(IN)	(FT.)	(%)	(%)	(FT./SEC)	(IN)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)
R1	R2	0.05	0.05	0.05	15.00	4.35	0.10	2.0	12	51	0.32	0.32	2.6	0.3	\$42.66	\$44.00	\$43.00	\$39.75	\$39.59
R2	R3	0.11	0.16	0.05	0.14	15.59	4.34	0.59	2.0	12	0.32	0.32	2.6	0.5	\$42.29	\$43.00	\$42.26	\$38.59	\$38.22
R3	UGC	0.09	0.21	0.05	0.43	15.59	4.26	1.82	2.0	12	0.32	0.32	2.6	0.0	\$42.02	\$43.00	-	\$38.11	\$38.02
R5	R2	0.32	0.32	0.05	0.27	15.00	4.28	1.10	2.0	12	0.32	0.32	2.6	0.0	\$42.00	\$43.00	\$43.00	\$38.46	\$38.21
R6	R1	0.02	0.02	0.05	0.02	15.00	4.28	0.07	2.0	12	0.32	0.32	2.6	0.2	0.11	\$42.00	\$43.00	\$38.50	\$38.09



- GENERAL NOTES:**
- M.D.O.T. CLASS II BACKFILL TO BE COMPACTED IN 6" LAYERS TO 95% OF MAXIMUM UNIT WEIGHT, ABOVE REQUIRED UNDER OR WITHIN A 1 ON 1 SLOPE OF EXISTING OR PROPOSED PAVEMENT.
  - ALL CONTRACTORS SHALL NAME ZEMET-WOZNAK & ASSOCIATES AS ADDITIONALLY INSURED ON ALL INSURANCE POLICIES.

**DYODS™**  
Design Your Own Detention System

**CANTECH**  
CONSTRUCTION PRODUCTS INC.

Project Summary:  
Date: 5/22/2012  
Project Name: Tim Horton's  
City/County: Rochester Hills, MI  
State: Michigan  
Designed By: Zemet-Wozniak  
Company: Zemet-Wozniak  
Telephone: 248-437-6009

Enter Information in Blue Cells

**Corrugated Metal Pipe Calculator**

Storage Volume Required (cu ft): 4,134  
Limiting Width (ft): 25.00  
Invert Depth Below Asphalt (ft): 8.00  
Soil or Perforated Pipe: Solid  
Shape or Diameter (ft): 12.57  
Number of Barrels: 9  
Spacing between Barrels (ft): 2.00  
Stone Width Above Perforated System (ft): 0.00  
Depth A: Porous Stone Above Pipe (ft): 0.00  
Stone Porosity (to 40%): 40

**System Storage**

Porous Stone Storage: 4,134 cu ft  
Total Storage Provided: 4,134 cu ft (100.0% of Required Storage)  
Number of Barrels: 9  
Length per Barrel: 99.0 ft  
Length per Header: 18.0 ft  
Rectangular Footprint (W x L): 20.0 ft x 111.2 ft

**CONCRETE CHAMBER MATERIALS QUANTITIES**

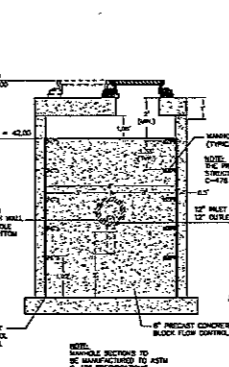
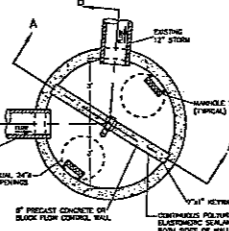
Total CMP Footings: 328 ft  
Approximate Total Pieces: 17 pieces  
Approximate Coupling Bands: 18 bands  
Approximate Trunkheads: 3 trunkheads

**Construction Quantities\***

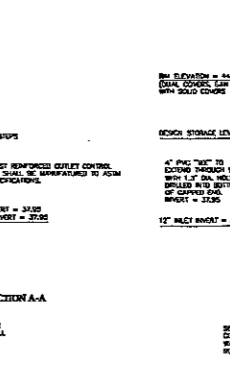
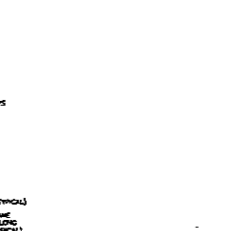
Total Excavation: 404 cu yd  
Porous Stone Backfill For Storage: 0 cu yd  
Backfill to Grade Excluding Stone: 341 cu yd

\*Construction quantities are approximate and should be verified upon final design.

**System Layout**



**OUTLET CONTROL STRUCTURE**  
SCALE 1/4" = 1'-0"



**OUTLET CONTROL STRUCTURE**  
SCALE 1/4" = 1'-0"

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
PER CITY COMMENTS	8/10/12	SRB									

**ZEMET WOZNAK & ASSOCIATES**  
Civil Engineers & Land Surveyors  
5500 GRAND RIVER AVE., SUITE 101  
NEW HUDSON, MICHIGAN 48165  
P: (248) 437-5099 F: (248) 437-3232 www.zemetwoznak.com

**MISS DESIGN SYSTEMS**  
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**CLIENT:**  
TIM HORTON'S USA  
565 EAST GRAND RIVER, SUITE 101  
BRIGHTON, MI 48116  
(610) 844-2747

**UTILITY PLAN**  
**TIM HORTON'S**  
ROCHESTER HILLS, MICHIGAN

DATE: 6/8/12 SCALE: HOR: 1" = 20' VER: 1" = 8'/4"  
DESIGNED BY: SRB JOB NO.: 12109  
DRAWN BY: SRB SHEET: SP-5

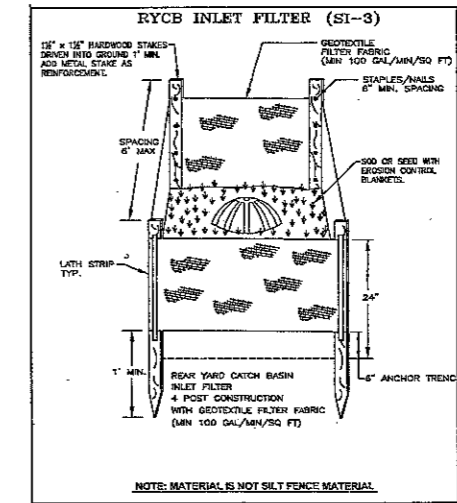
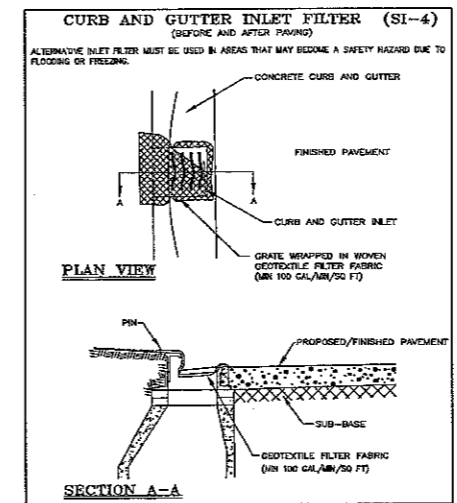
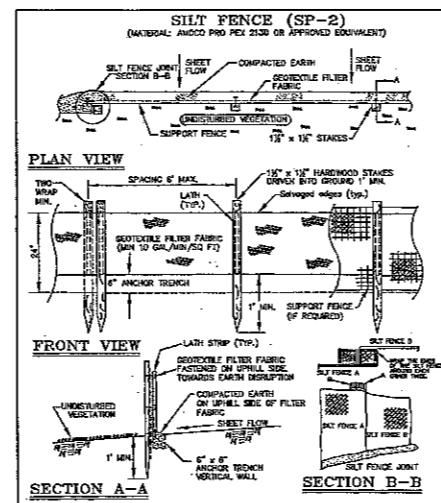
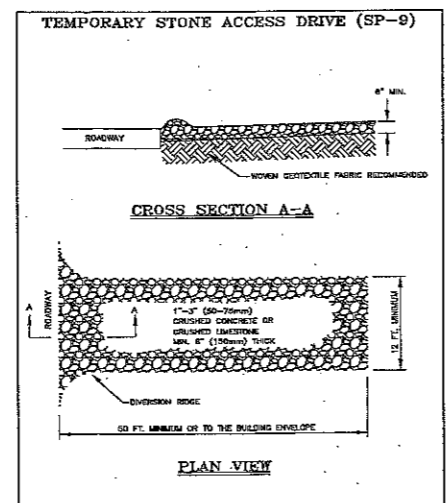
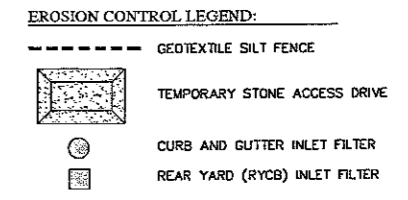
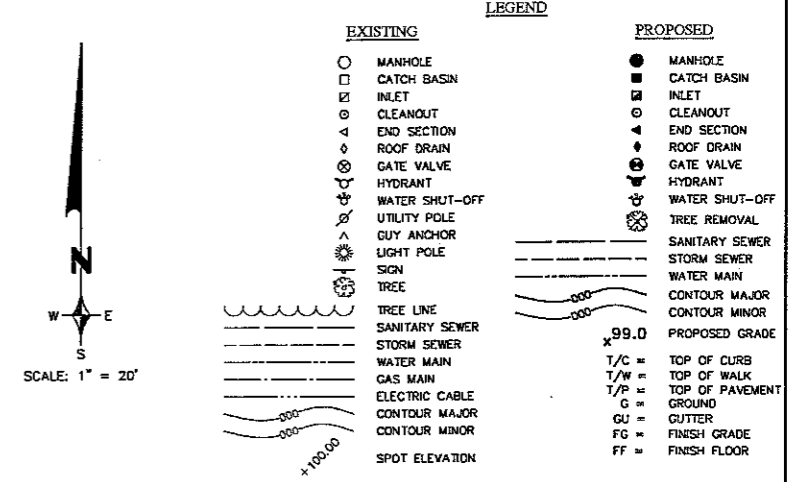
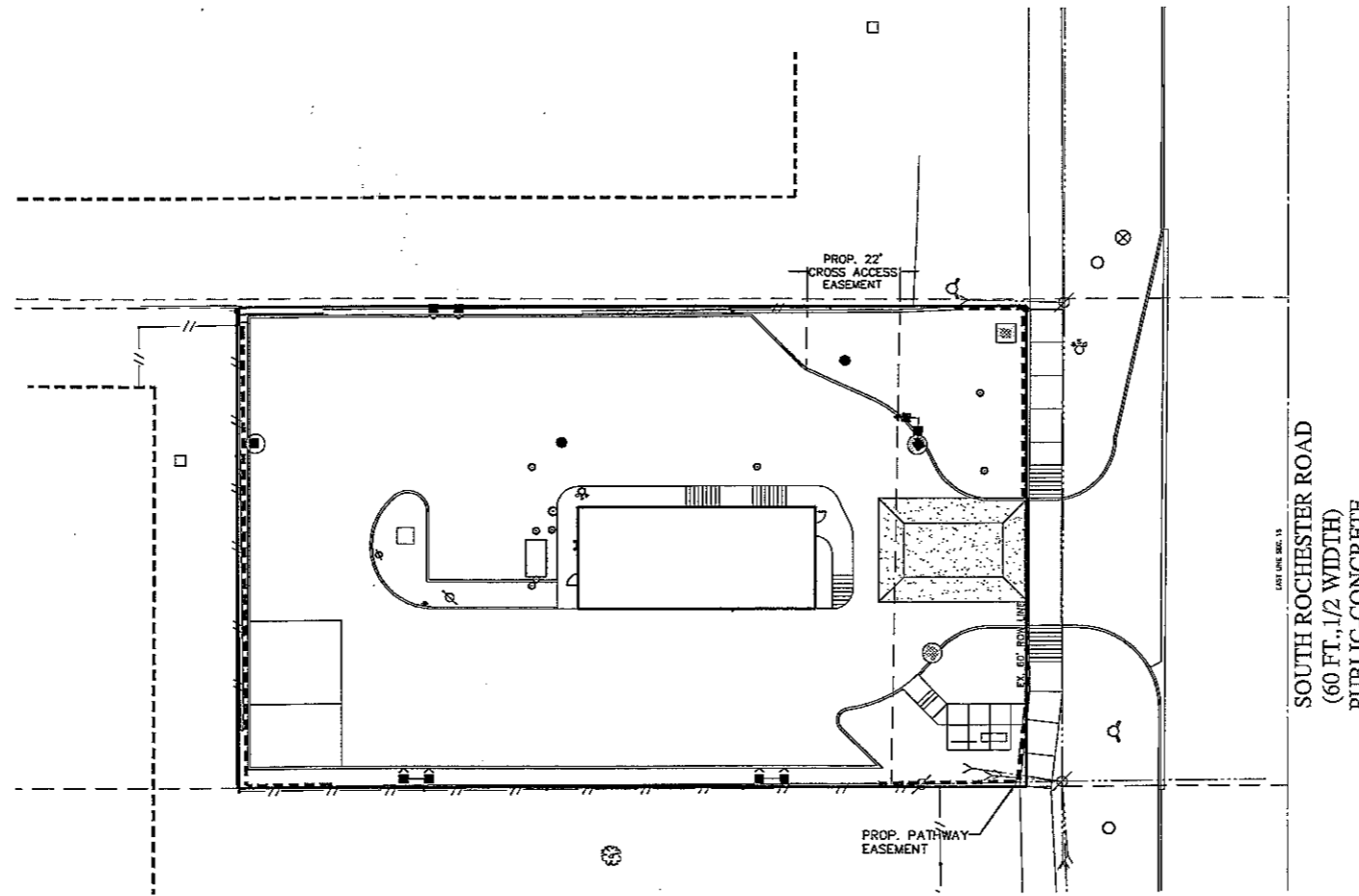
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**CONSTRUCTION AND SOIL EROSION WORK SCHEDULE:**

1. PLACE SILT FENCE AROUND PROPOSED CONSTRUCTION AREA AS SHOWN ON THIS PLAN.
2. INSTALL GRAVEL MUD TRACKING MAT NEAR ENTRANCE WHERE INDICATED.
3. INSTALL INLET FILTERS ON ALL EXISTING DRAINAGE STRUCTURES.
4. DEMOLISH EXISTING BUILDING AND PAVEMENT PER DEMOLITION PLAN AND DISPOSED OF MATERIAL OFFSITE IN AN APPROVED LANDFILL.
5. MASS GRADE BUILDING PAD AND PARKING AREA.
6. START BUILDING CONSTRUCTION.
7. INSTALL SANITARY, STORM AND WATERMAIN COMPLETE. INSTALL LOW POINT INLET FILTERS ON ALL DRAINAGE STRUCTURES.
8. INSTALL PAVEMENT, REPAIR OR REPLACE LOW POINT INLET FILTERS AS REQUIRED. SEED & MULCH ALL AREAS DISTURBED BY CONSTRUCTION.
9. COMPLETE BUILDING CONSTRUCTION AND FINAL LANDSCAPING.
10. SEED AND MULCH ANY DISTURBED AREA.
11. REMOVE TEMPORARY EROSION CONTROLS UPON STABILIZATION OF SITE.
12. IT SHALL BE THE DEVELOPER'S RESPONSIBILITY TO INSURE THAT ALL EROSION CONTROL DEVICES ARE MAINTAINED AS REQUIRED THROUGHOUT THE CONSTRUCTION AND THAT THE STREETS ARE KEPT FREE OF MUD AND CONSTRUCTION DEBRIS. THE ACCUMULATED SEDIMENT MUST BE REMOVED FROM THE SEDIMENT BASINS PERIODICALLY THROUGHOUT THE CONSTRUCTION OF THIS PROJECT.

**CITY OF ROCHESTER HILLS SESC NOTES:**

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF THE DARLAND COUNTY DRAIN COMMISSIONER.
2. ALL TEMPORARY AND PERMANENT (POST CONSTRUCTION) SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO THE CITY OF ROCHESTER HILLS CURRENT MS4 PERMIT. ANY CONFLICT BETWEEN THESE STANDARDS AND THE MS4 PERMIT, THE PERMIT'S CONDITIONS SHALL TAKE PRECEDENCE.
3. DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR FOR EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
4. ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS.
5. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHEN REQUIRED AND AS DIRECTED ON THESE PLANS. HE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES, AND OTHER EARTH CHANGES HAVE BEEN ACCOMPLISHED. THIS WOULD INCLUDE TEMPORARY SEDIMENTATION PONDS AND TEMPORARY S&S FILTERS.
6. STAGING THE WORK WILL BE DONE BY THE CONTRACTOR AS DIRECTED IN THESE PLANS AND AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH.
7. SOIL EROSION CONTROL PRACTICES SHALL BE ESTABLISHED IN THE EARLY STAGES OF CONSTRUCTION BY THE CONTRACTOR. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.



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**NOTE:**  
THIS PLAN ILLUSTRATES THE MINIMUM EROSION CONTROLS NEEDED TO PREVENT SILTS FROM LEAVING THE SITE AND IS SUBJECT TO CHANGE AS CONDITIONS IN THE FIELD WARRANT.

NOT FOR CONSTRUCTION  
CITY FILE NO. 12-008

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REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
PER CITY COMMENTS	8/10/12	SRB									

**ZIMET WOZNAK ASSOCIATES**  
Civil Engineers & Land Surveyors  
5580 GRAND RIVER AVE., SUITE 101  
NEW BUDSON, MICHIGAN 48165  
P: (248) 437-5099 F: (248) 437-5222 www.zimetwoznak.com

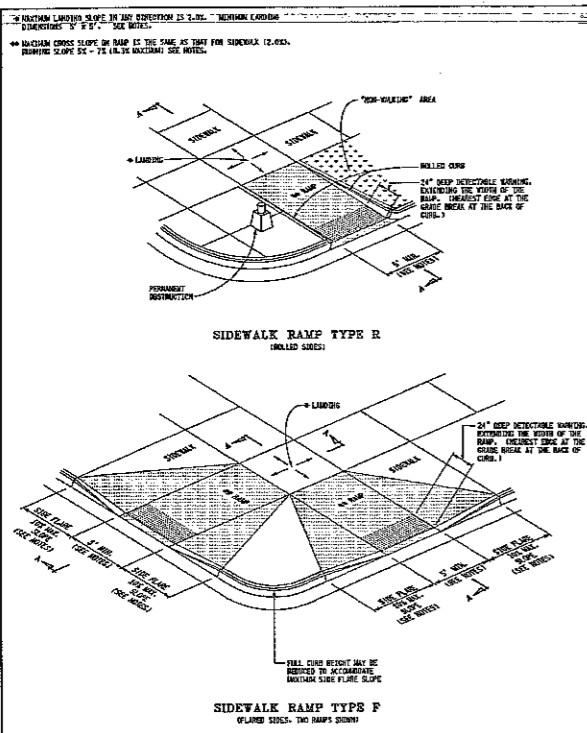
**MISS DIG SYSTEM INC.**  
1-800-482-7171

CLIENT:  
TIM HORTON'S USA  
565 EAST GRAND RIVER, SUITE 101  
BRIGHTON, MI 48116 (810) 844-2747

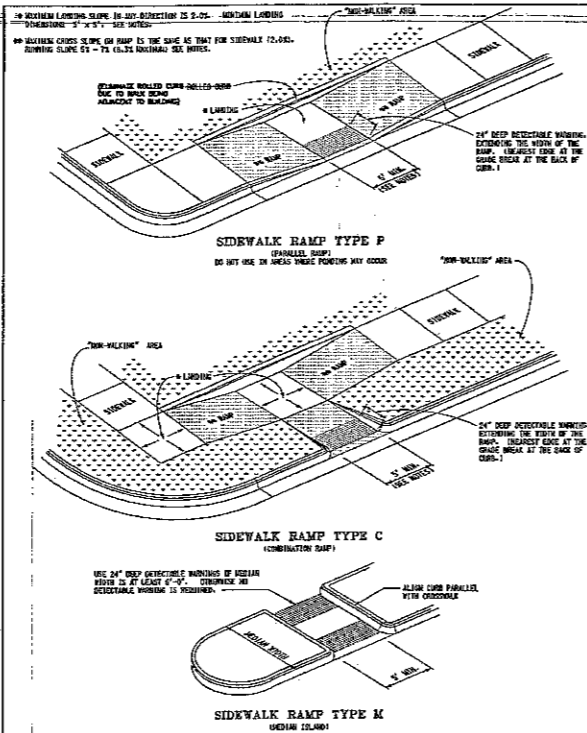
**SOIL EROSION AND SEDIMENTATION CONTROL PLAN**  
TIM HORTON'S  
ROCHESTER HILLS, MICHIGAN

DATE	8/8/12	SCALE	HOR: 1" = 20'
DESIGNED BY	SRB	JOB NO.	12109
DRAWN BY	SRB	SHEET	SP-6

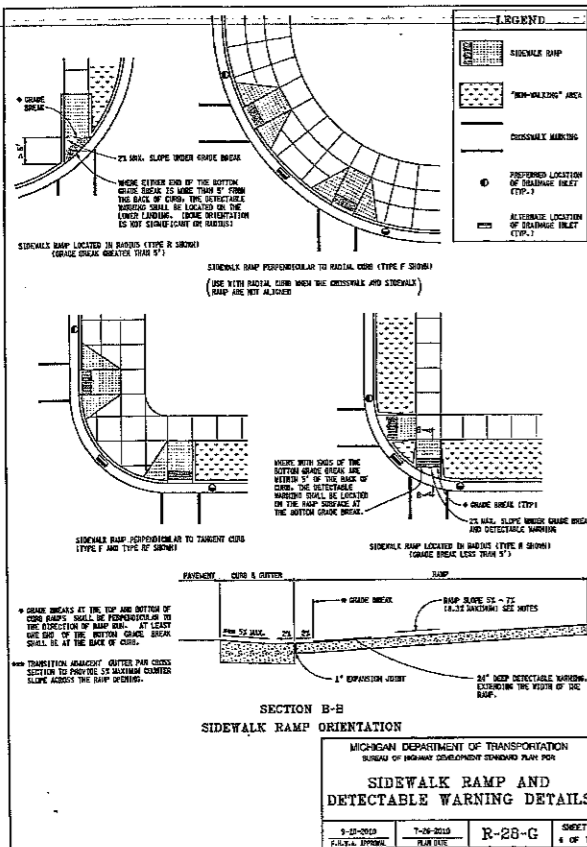
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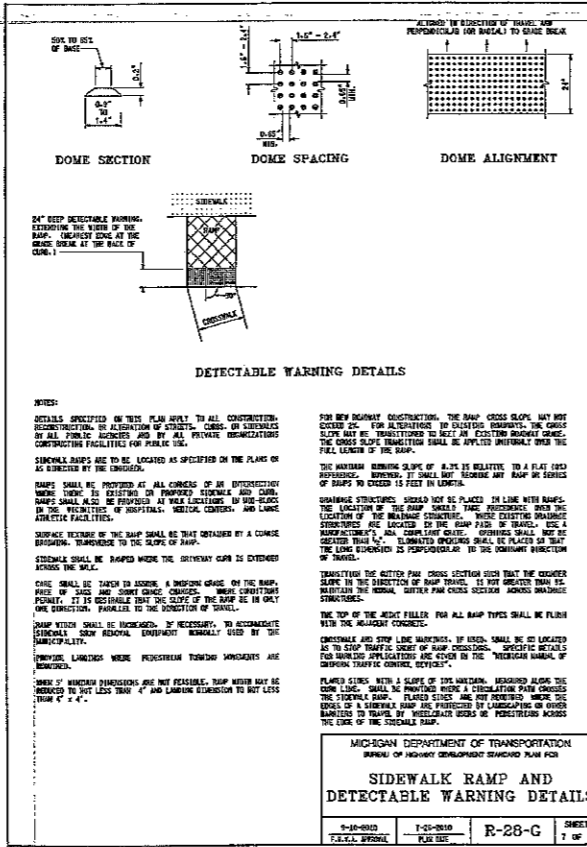
**SIDEWALK RAMP AND DETECTABLE WARNING DETAILS**  
 R-28-G SHEET 1 OF 2  
 MICHIGAN DEPARTMENT OF TRANSPORTATION  
 BUREAU OF HIGHWAY DEVELOPMENT SERVICES PLAN FOR



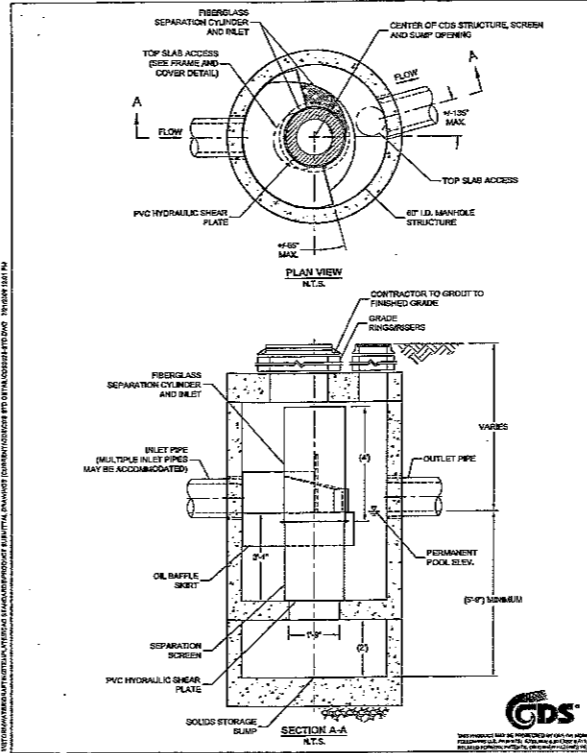
**SIDEWALK RAMP AND DETECTABLE WARNING DETAILS**  
 R-28-G SHEET 2 OF 2  
 MICHIGAN DEPARTMENT OF TRANSPORTATION  
 BUREAU OF HIGHWAY DEVELOPMENT SERVICES PLAN FOR



**SIDEWALK RAMP AND DETECTABLE WARNING DETAILS**  
 R-28-G SHEET 4 OF 1  
 MICHIGAN DEPARTMENT OF TRANSPORTATION  
 BUREAU OF HIGHWAY DEVELOPMENT SERVICES PLAN FOR



**SIDEWALK RAMP AND DETECTABLE WARNING DETAILS**  
 R-28-G SHEET 3 OF 1  
 MICHIGAN DEPARTMENT OF TRANSPORTATION  
 BUREAU OF HIGHWAY DEVELOPMENT SERVICES PLAN FOR



**CDS2025 DESIGN NOTES**  
 CDS2025 TREATMENT CAPACITY IS 1.4 CFS, OR PER LOCAL REGULATIONS. MAXIMUM DIURNAL BYPASS CAPACITY IS 14.4 CFS. IF THE SITE CONDITIONS EXCEED 14.4 CFS, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.  
 THE STANDARD CDS2025 CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

RESERVIATION MODEL NUMBER	CONFIGURATION DESCRIPTION
G	GRADED INLET ONLY (NO INLET PIPE)
GP	GRADED INLET WITH INLET PIPE OR PIPES
K	GRASS INLET ONLY AND INLET PIPE
NP	CURB INLET WITH INLET PIPE OR PIPES
B	SEPARATE GRASS BUFFER (SMALLEST INLET PIPE REQUIRED FOR THIS CONFIGURATION)
W	SEGMENT WITH FLOOR ALIGNS TIGHT CONFINING UNITS

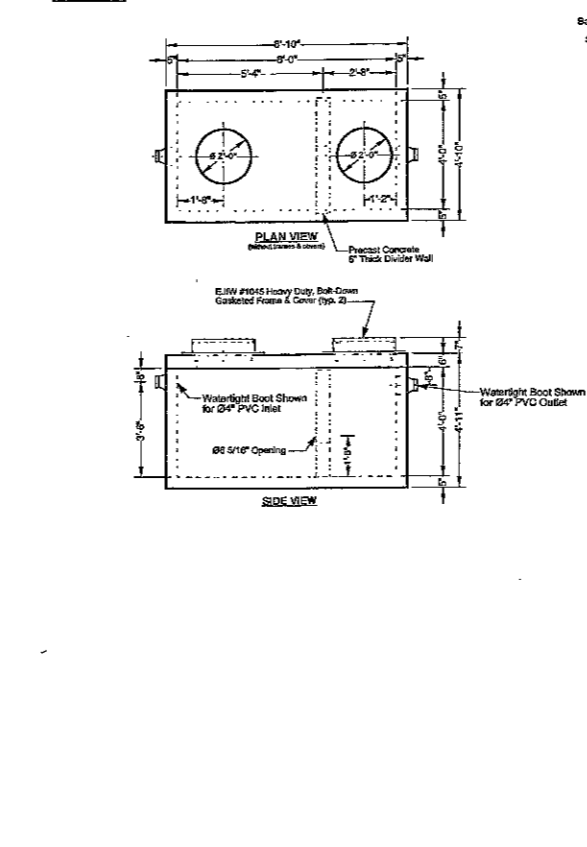
**SITE SPECIFIC DATA REQUIREMENTS**

STRUCTURE ID	WATER QUALITY FLOW RATE (CFS)	PEAK FLOW RATE (CFS)	RETURN PERIOD OF PEAK FLOW (YRS)	SCREEN APERTURE (SHA OR 475)
INLET PIPE 1				
INLET PIPE 2				
OUTLET PIPE				

**GENERAL NOTES**  
 1. CONTRACTOR TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.  
 2. DIMENSIONS SHOWN WITH 1/8" TOLERANCE UNLESS OTHERWISE SPECIFIED. ACTUAL DIMENSIONS MAY VARY.  
 3. FOR FABRICATION DRAWINGS WITH DETAIL STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR LOCAL CDS2025 REPRESENTATIVE: www.cds2025.com  
 4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.  
 5. STRUCTURE AND CASTINGS SHALL MEET AASHTO H-20 LOAD RATING.  
 6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

**INSTALLATION NOTES**  
 1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR AMT-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.  
 2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE, LIFTING CLUTCHES PROVIDED.  
 3. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.  
 4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT WITH MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.  
 5. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE AND NOT MINIMAL. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

**Tim Horton's**  
 500 Gallon Interceptor - 8' x 4' x 4'  
 Advance Concrete Products Company  
 (800) 824-8351 (248) 887-4173 Fax: (248) 887-2755



**Notes:**  
 1. WHERE INVERT STRUCTURE IS LOCATED AT CURB LINE, PROVIDE TWO (2) 20" LONGTIES @ 100' AND PARALLEL TO CURB.  
 2. WHERE INVERT STRUCTURE IS WITHIN GRADED AREA, PROVIDE FOUR (4) 20" LONGTIES @ 100'.  
 3. ADDITIONAL UNDERDRAIN MAY BE REQUIRED AS DIRECTED BY THE SOILS ENGINEER IN THE FIELD.

**TYPICAL UNDERDRAIN DETAIL**  
 NO SCALE

NOT FOR CONSTRUCTION  
 CITY FILE NO. 12-005

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
PER CITY COMMENTS								

**ZEMET WOZNAK**  
 CONSULTANTS  
 Civil Engineers & Land Surveyors  
 5800 GRAND RIVER AVE., SUITE 100  
 NEW HUDSON, MICHIGAN 48165  
 P: (248) 437-5099 F: (248) 437-5222 www.zemetwozniak.com

**TERRE FULL**  
 WORKING DAYS  
 BEFORE KICKOFF.  
 CALL THE MISS  
 DIG SYSTEM

**CLIENT:**  
 TIM HORTON'S USA  
 565 EAST GRAND RIVER, SUITE 101  
 BRIGHTON, MI 48116  
 (810) 844-7477

**MISCELLANEOUS DETAILS**  
**TIM HORTON'S**  
 ROCHESTER HILLS, MICHIGAN

DATE: 8/8/12  
 SCALE: HOR: 1" = N/A  
 VER: 1" = N/A  
 DESIGNED BY: SRB  
 JOB NO.: 12109  
 DRAWN BY: SRB  
 SHEET: SP-7

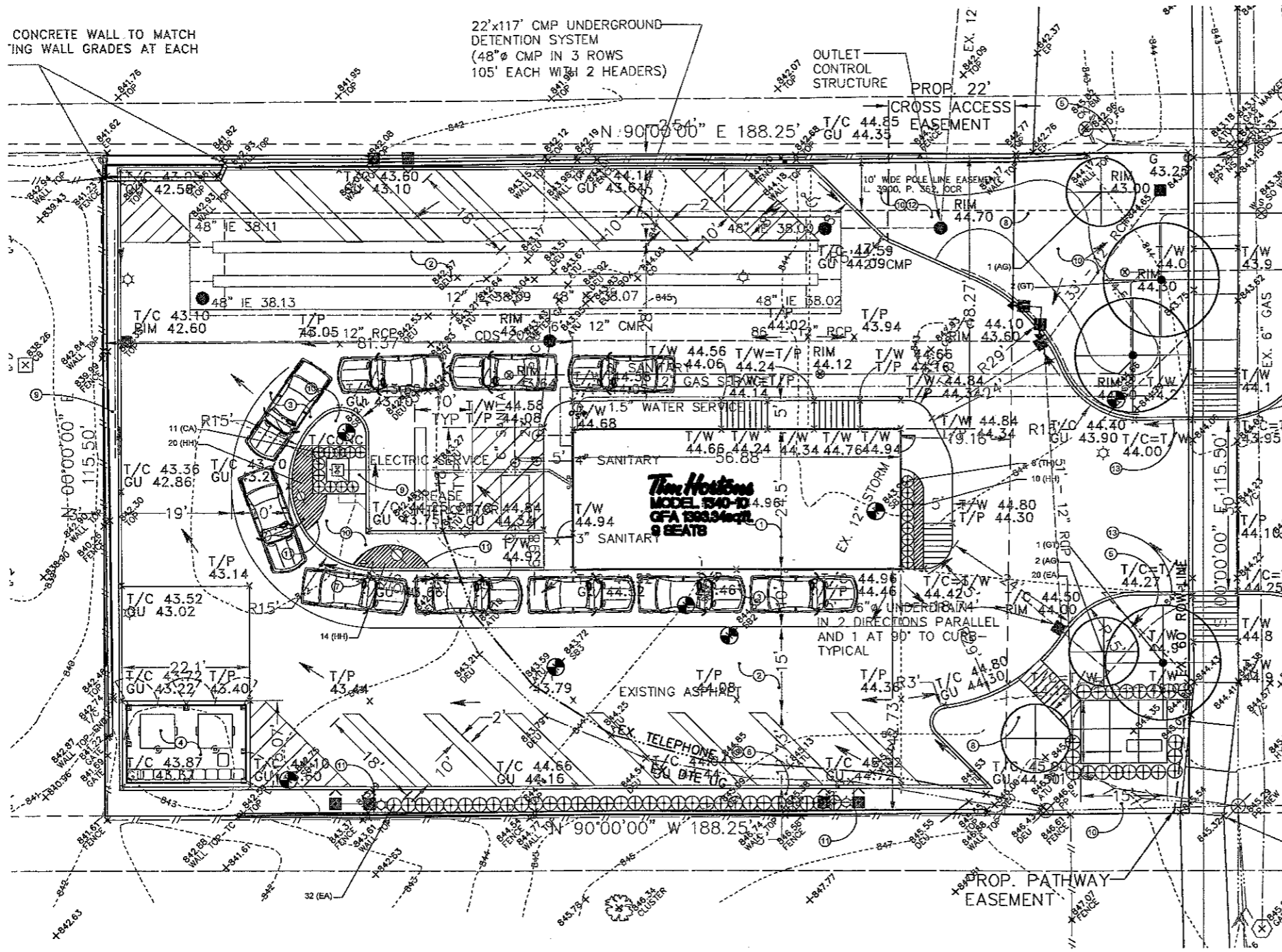


CONCRETE WALL TO MATCH  
ING WALL GRADES AT EACH

22'x117' CMP UNDERGROUND  
DETENTION SYSTEM  
(48"Ø CMP IN 3 ROWS  
105' EACH WITH 2 HEADERS)

OUTLET  
CONTROL  
STRUCTURE

CROSS ACCESS  
EASEMENT



**Note Key**

- ① PROPOSED BUILDING
- ② PARKING LOT
- ③ PROPOSED DRIVE THRU LANE
- ④ PROPOSED DUMPSTER AND ENCLOSURE
- ⑤ DECIDUOUS TREE PLANTING, SEE TYP. DETAIL
- ⑥ HEDGE PLANTINGS, SEE TYP. DETAIL
- ⑦ PERENNIAL PLANTINGS, SEE TYP. DETAIL
- ⑧ ORNAMENTAL TREE PLANTING, SEE TYP. DETAIL
- ⑨ 4" DEPTH SHREDDED BARK MULCH IN PLANTING BEDS AND EVERGREEN TREE BEDS. 2" DEPTH FOR ALL GROUNDCOVERS.
- ⑩ SODDED LAWN ON 4" DEPTH TOPSOIL, TYP.
- ⑪ METAL EDGING BETWEEN LAWN AND LANDSCAPE BED.
- ⑫ SNOW STORAGE AREA
- ⑬ 15 FOOT VIEW TRIANGLE

**Landscape Maintenance**

LANDSCAPING REQUIRED BY THIS ORDINANCE SHALL BE MAINTAINED IN A HEALTHY, NEAT AND ORDERLY APPEARANCE, FREE FROM REFUSE AND DEBRIS. ALL UNHEALTHY AND DEAD PLANT MATERIAL SHALL BE REPLACED IMMEDIATELY, UNLESS THE SEASON IS NOT APPROPRIATE FOR PLANTING, IN WHICH CASE SUCH PLANT MATERIAL SHALL BE REPLACED AT THE BEGINNING OF THE NEXT PLANTING SEASON. THE OWNER SHALL INSURE PERPETUAL AND MANDATORY MAINTENANCE AND/OR REPLACEMENT OF VEGETATIVE PLANTINGS PURSUANT TO THE APPROVED LANDSCAPE PLAN.

ALL PLANT MATERIAL SHALL BE LOCALLY GROWN OR OF THIS NORTH MICHIGAN REGION AND CONFORM TO THE CURRENT AAS STANDARDS. USE NO.1 GRADE PLANT MATERIAL.

PRUNING SHALL BE MINIMAL AT THE TIME OF PLANTING, ONLY TO REMOVE DEAD OR DISEASED BRANCHES. SUBSEQUENT PRUNING SHALL ASSURE PROPER MATURATION OF PLANTS TO ACHIEVE THEIR APPROVED PURPOSE.

ALL LANDSCAPED AREAS WILL BE IRRIGATED WITH AN AUTOMATIC IRRIGATION SYSTEM. THE SYSTEM WILL BE DESIGNED TO MINIMIZE WATER USAGE AND SHALL BE TURNED OFF DURING EMERGENCIES, PERIODS OF PROTRACTED RAINFALL, OR WATER RATIONING PERIODS.

**Plant Schedule:**

sym.	qty.	botanical name	common name	size	spacing	root	ht/width	comments	estimated cost
AG	3	Amaranthus 's.g. Autumn Brilliance'	Autumn Brilliance Spineberry	8'-7"	as shown	B&B	ht.	Multistem, 3 stems minimum	\$ 825.00
GT	3	Gleditsia 's.g. Skyline'	Skyline Honeylocust	3.0' cal.	as shown	B&B		Single, Straight Trunk, Matched	\$ 975.00
<b>Shrubs</b>									
EA	52	Euonymus a. 'Compact'	Compact Burning Bush	30"-36"	30" o.c.	B&B	30" ht. min		\$ 2,600.00
TH	8	Taxus 'Hicks'	Hicks Yew	30"-36"	as shown	B&B	30" ht. min		\$ 600.00
<b>Perennials and Ornamental Grasses</b>									
CA	11	Calamagrostis a. 'Karl Foerster'	Karl Foerster Reed Grass	2 gal.	as shown	Cont.			\$ 220.00
HH	44	Hemerocallis 'Happy Returns'	Happy Returns Daylily	1 gal.	18" o.c.	Cont.			\$ 528.00
									<b>Total Cost \$ 5,748.00</b>

**Site Landscape Tabulations**

**INTERIOR PARKING AREA LANDSCAPE REQUIREMENTS:**  
LESS THAN 20 PARKING SPACES ARE PROPOSED, NO INTERIOR PARKING LOT LANDSCAPE IS REQUIRED.

**R.O.W. LANDSCAPE REQUIREMENTS:**  
One (1) Canopy Tree and One (1) Ornamental Tree is required for each 35 LF of frontage along a public road R.O.W.

Rochester Road:  
115.50 LF of Road Frontage / 35 = 3.3 each Canopy and Ornamental Trees

TOTAL FRONTAGE TREES REQUIRED: 3 Each - Canopy and Ornamental  
TOTAL FRONTAGE TREES PROVIDED: 3 Each - Canopy and Ornamental

TOTAL FRONTAGE SHRUBS REQUIRED: 9  
TOTAL FRONTAGE TREES PROVIDED: 20

**OUTDOOR AMENITY SPACE REQUIREMENTS: 2% OF GROSS LAND AREA**  
REQUIRED OUTDOOR AMENITY SPACE: 465 SF  
PROVIDED OUTDOOR AMENITY SPACE: 325 SF



114 Rayson Street Suite 2A Northville, MI 48167  
ph. 248.374.3222 fax 248.374.3463

Project:  
**Tim Hortons**  
Rochester Hills, Michigan

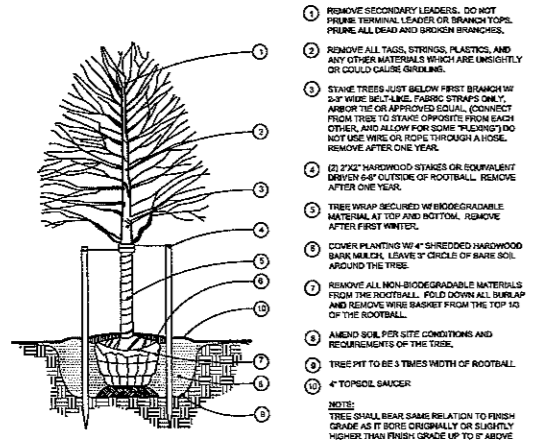
Client:  
**Tim Hortons USA**  
Brighton, MI 48116

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Checked: MR  
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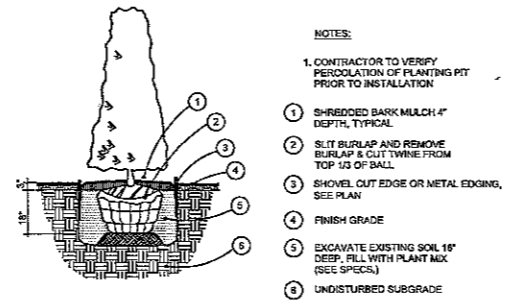
Revisions:  
05.30.12 REVIEW  
06.05.12 REVISION PER OWNER  
06.06.12 REVISION PER OWNER  
08.10.12 REVISION PER CITY

PRELIMINARY  
NOT FOR CONSTRUCTION

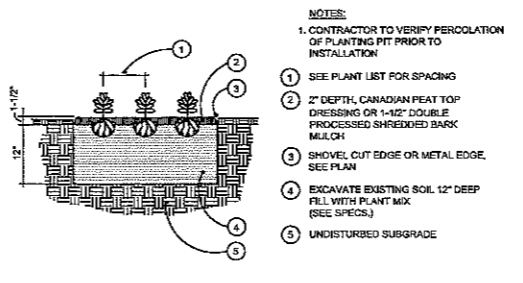
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**L-1**  
© 2012 Russell Design, Inc.



1 DECIDUOUS TREE PLANTING DETAIL  
NOT TO SCALE



2 HEDGE PLANTING DETAIL  
NOT TO SCALE



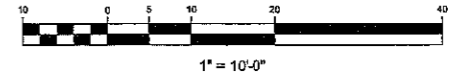
3 PERENNIAL/GROUNDCOVER PLANTING DETAIL  
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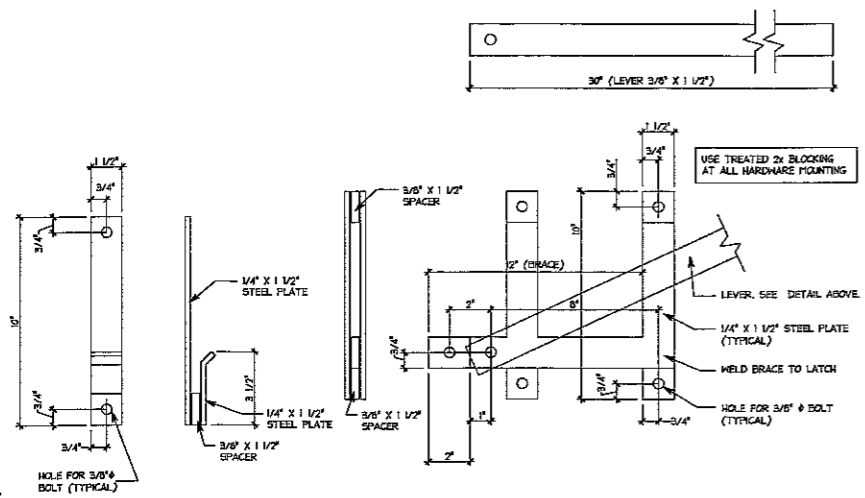


3 FULL WORKING DAYS  
BEFORE YOU DIG CALL  
**811**  
Know what's below  
Call before you dig  
MISS DIG Systems, Inc. www.missdig.net

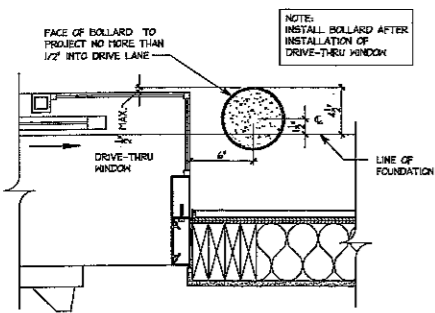


NORTH  
GRAPHIC SCALE

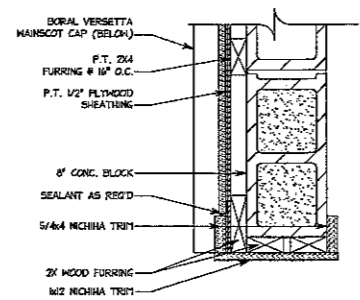




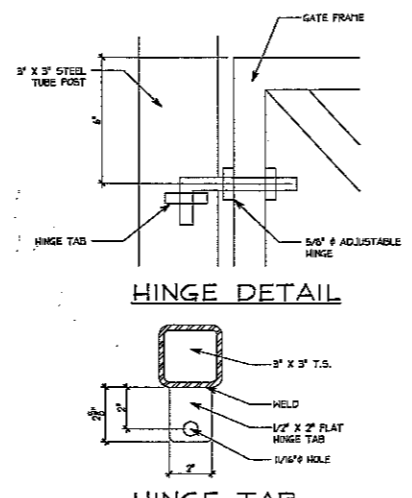
LATCH DETAILS 8  
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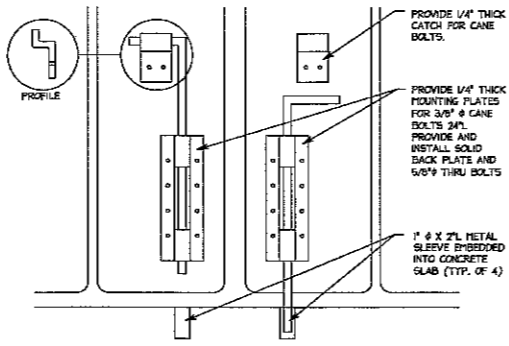
BOLLARD PLACEMENT DETAIL 10  
3/4" = 1'-0"



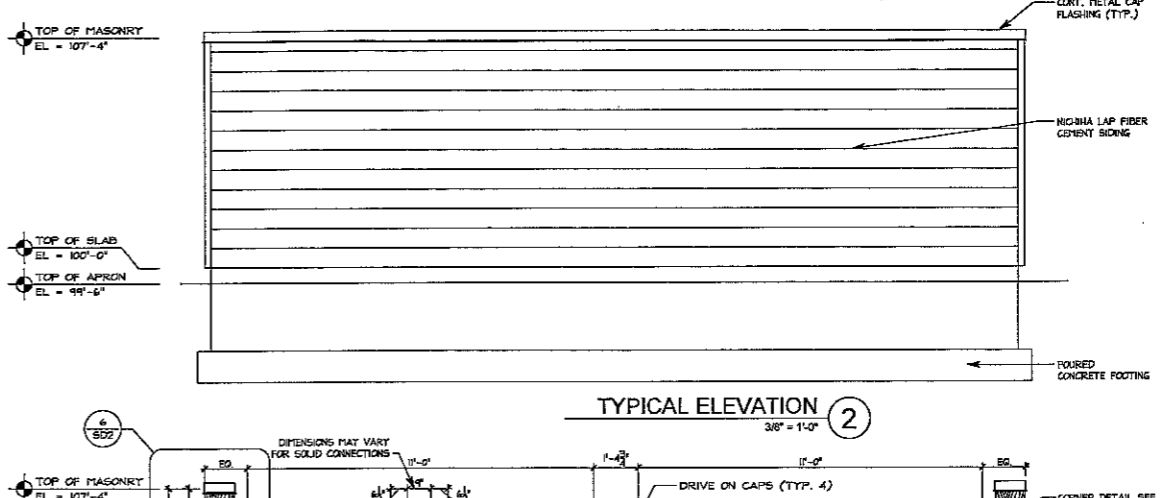
CORNER DETAIL 7  
1-1/2" = 1'-0"



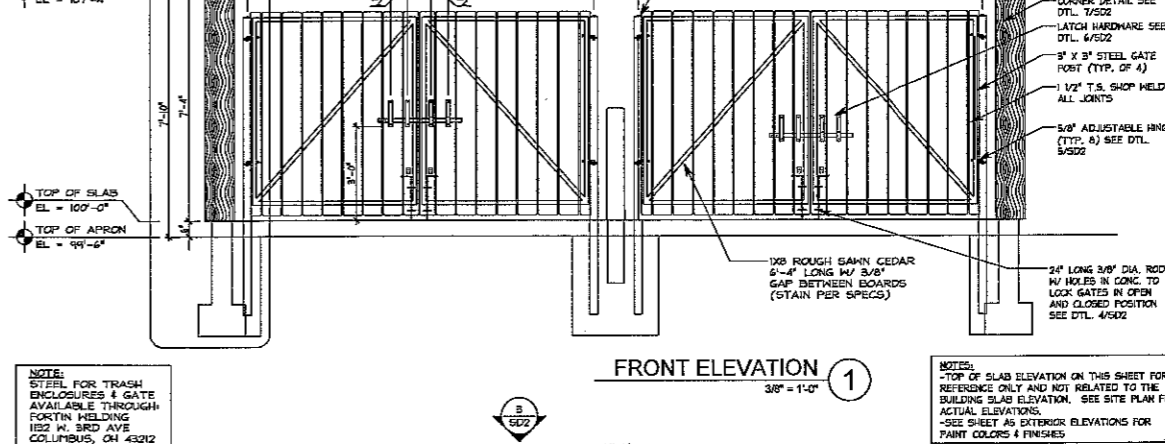
HINGE DETAILS 5  
3/4" = 1'-0"



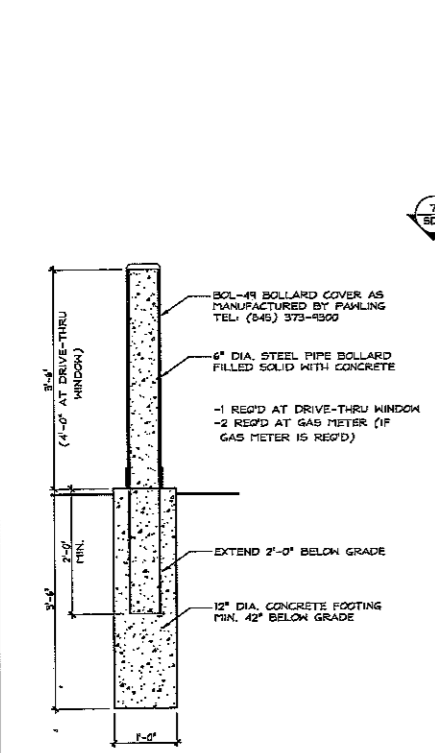
FLOOR BOLT DETAIL 4  
3/4" = 1'-0"



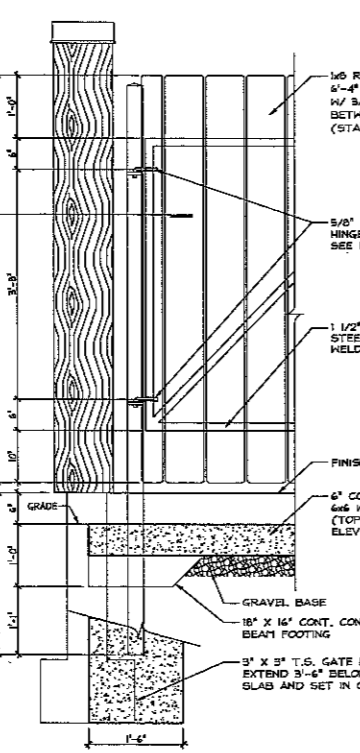
TYPICAL ELEVATION 2  
3/8" = 1'-0"



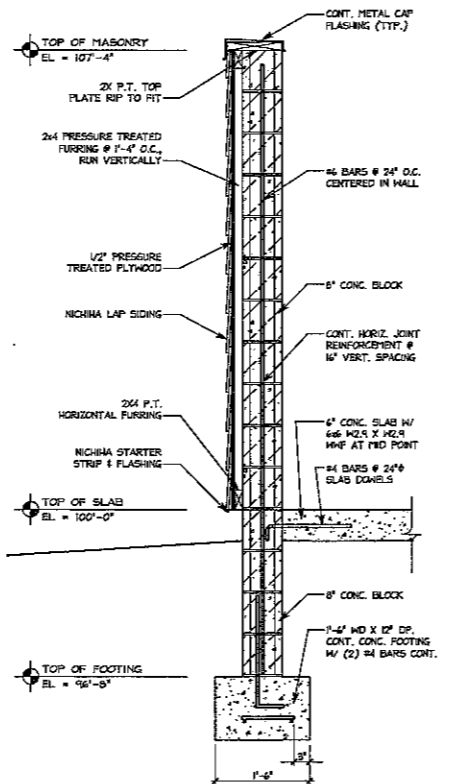
FRONT ELEVATION 1  
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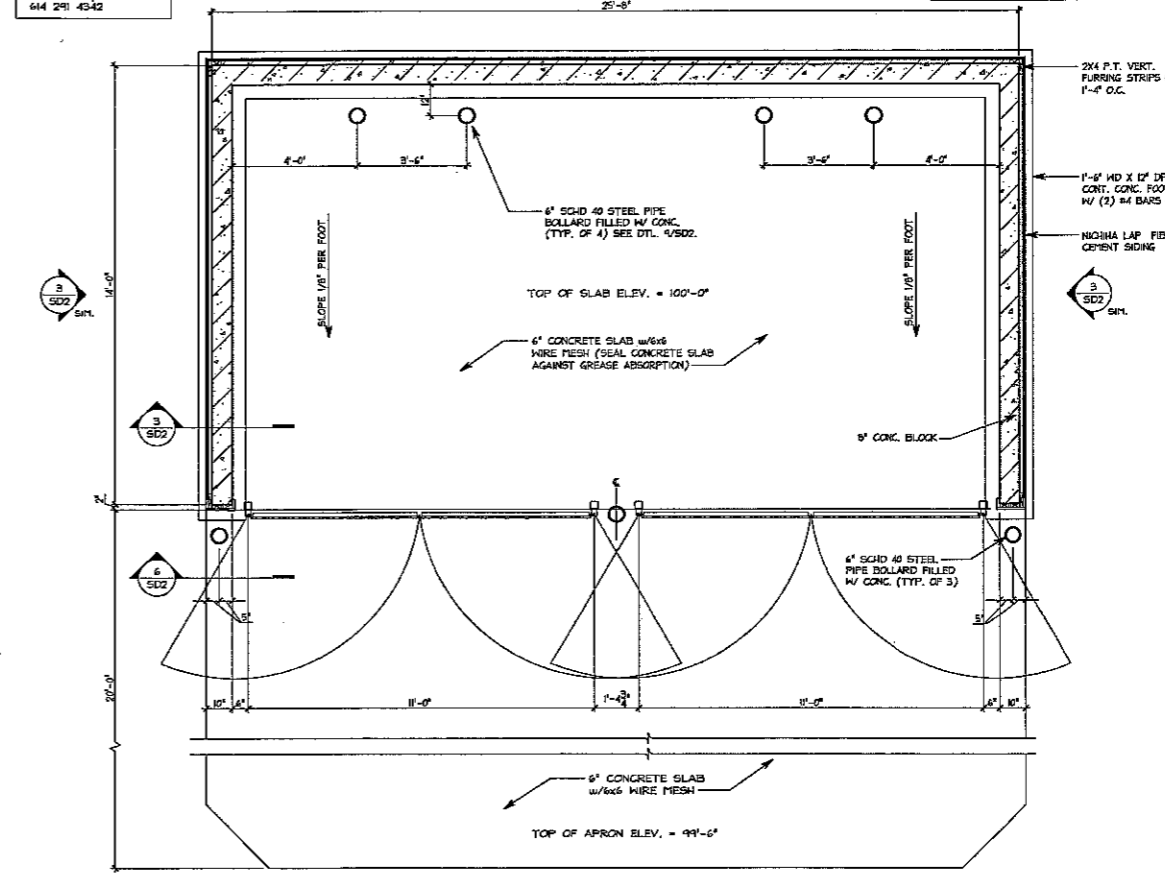
BOLLARD DETAIL 9  
3/4" = 1'-0"



HINGE POST 6  
3/4" = 1'-0"



WALL SECTION 3  
3/4" = 1'-0"



TRASH ENCLOSURE PLAN  
3/8" = 1'-0"

REV.	DATE	DESCRIPTION

SHREMSHOCK  
 Shremshock Architects, Inc.  
 4801  
 614.484.6000

Tim Hortons  
 NOT FOR CONSTRUCTION ANYWHERE U.S.A.  
 TDL STORE NUMBER

SITE DETAILS-  
 TRASH ENCLOSURE  
 LAP SIDING

DESIGN DEVELOPMENT  
 NOT FOR CONSTRUCTION

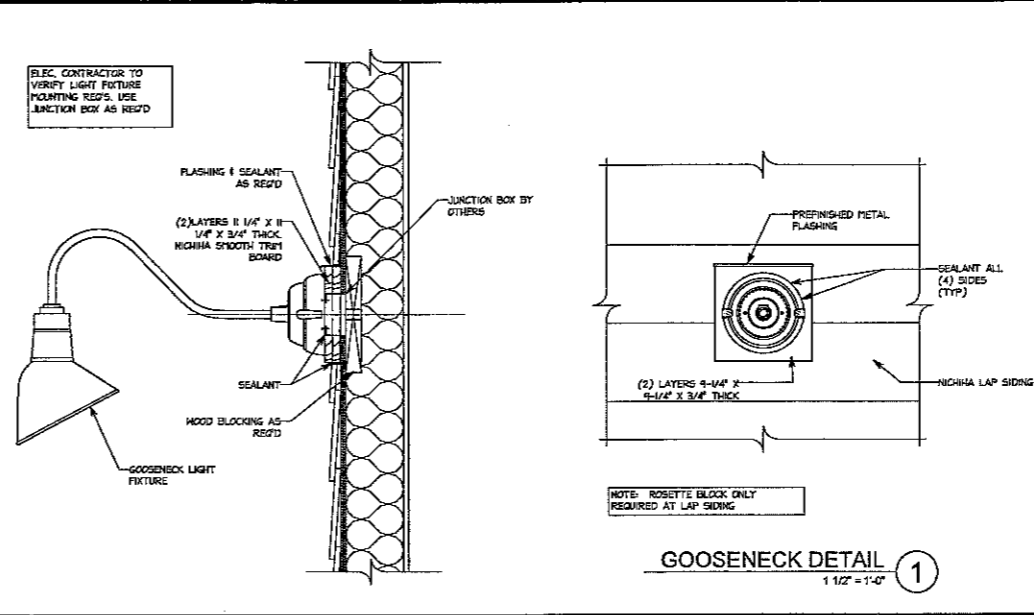
SAI# 12000

DRAWING NUMBER:  
 SD2

DRAWN BY: DDS CHECKED BY: MLL



EXTERIOR FINISH SCHEDULE					
TAG	PRODUCT	MFG.	PATTERN & COLOR	COMMENTS	SUPPLIER/CONTACT
FC-1	LAP SIDING	NICHHA FIBER CEMENT PRODUCTS	SIERRA PREMIUM SMOOTH 8-3/4" LAP SIDING, PRE-PRIMED G.C. TO PAINT IN FIELD.		NICHHA CONTACT: MICHAEL NUSSO (770) 603-1466, 1-844-294-5407, EMAIL: PUS55@NICHHA.COM
FC-2	ARCHITECTURAL BLOCK	NICHHA FIBER CEMENT PRODUCTS	ARCHITECTURAL BLOCK PANELS, SIERRA PREMIUM SMOOTH 8-3/4" PRE-PRIMED G.C. TO PAINT IN FIELD.		
FC-3	KURASTONE	NICHHA FIBER CEMENT PRODUCTS	KURASTONE WALL PANELS, COLOR: MOUNTAIN VIEW; AT-118-US BORDER PIECES (L&C) COLOR: MOUNTAIN VIEW; ATD-118-US CORNER PIECES COLOR: MOUNTAIN VIEW; ATD-118-US		
FC-4	TRIM	NICHHA FIBER CEMENT PRODUCTS	1/2" X 3/4" SMOOTH TRIM BOARDS PRE-PRIMED G.C. TO PAINT IN FIELD.		
FC-5	TRIM	NICHHA FIBER CEMENT PRODUCTS	3/4" X 3/4" SMOOTH TRIM BOARDS PRE-PRIMED G.C. TO PAINT IN FIELD.		
FC-6	VERSETTA STONE HANSCOT CAP	SERIAL STONE PRODUCTS	VERSETTA STONE HANSCOT SILL COLOR TO MATCH KURASTONE COLOR: TAUPE	INCLUDE IN NICHHA PACKAGE	
EP-1	PAINT	NICHHA FIBER CEMENT PRODUCTS	COLOR: TDL SH604 FRENCH ROAST	SEALANT: TITIBOND HEATHER MASTER SEALANT COLOR: 4471	
EP-2	PAINT	NICHHA FIBER CEMENT PRODUCTS	COLOR: TDL SH408 LATTE	SEALANT: TITIBOND HEATHER MASTER SEALANT COLOR: 4428	
EP-3	PAINT	NICHHA FIBER CEMENT PRODUCTS	COLOR: TDL SH662 RUGGED BROWN	SEALANT: TITIBOND HEATHER MASTER SEALANT COLOR: 4428	
EP-4	PAINT	NICHHA FIBER CEMENT PRODUCTS	COLOR: TDL SH410 CAVIAR		
CR-1	CORNICE	CANAMOULD	CANAMOULD CORNICE #H503		
MC-1	METAL COPING	DURO-LAST	CUSTOM PREFINISHED METAL COPING KYNAR COLOR TO MATCH SH 410 CAVIAR	INCLUDED IN ROOFING PACKAGE	DURO-LAST CONTACT: STEVE RUTH (500) 246-0220
MC-2	METAL COPING	DURO-LAST	2-PIECE COMPRESSION EDGE W/ 4" HIGH PREFINISHED METAL COVER, KYNAR COLOR TO MATCH SH 410 CAVIAR	INCLUDED IN ROOFING PACKAGE	



- GENERAL NOTES**
- SEALANT AROUND DOOR/WINDOW FRAMES COLOR TO MATCH ADJACENT MATERIAL.
  - ALL EXTERIOR FIBER CEMENT SHALL BE PREFINISHED BY THE MANUFACTURER WHEREVER POSSIBLE.
  - ALL SEALANTS USED SHALL BE COLOR MATCHED TO THE ADJACENT MATERIAL OR AS LISTED.

- EXTERIOR ELEVATION KEYED NOTES:**
- PREFINISHED METAL COPING W/ DRIP EDGE.
  - GAS METER. VERIFY EXACT LOCATION W/ UTILITY COMPANY, CIVIL DRAWINGS AND TDL REPRESENTATIVE.
  - ANODIZED ALUMINUM STOREFRONT W/ INSULATED GLAZING. SEE WINDOW SCHEDULE ON SHEET A11 AND EXTERIOR FINISH SCHEDULE ON SHEET A5.
  - FOUNDATION (SEE STRUCTURAL).
  - INTERNALLY ILLUMINATED BUILDING SIGNAGE PROVIDED AND INSTALLED BY TDL. G.C. TO PROVIDE ALL REQUIRED BLOCKING AND FINAL ELECTRICAL CONNECTION. SIGN MANUFACTURER SHALL OBTAIN SIGNAGE PERMITS FROM THE CITY BASED ON LOCAL REQUIREMENTS. G.C. SHALL VERIFY ACTUAL LOCATION AND SIZE OF SIGNS WITH SIGN MANUFACTURER. APPROVED DRAWINGS AND COORDINATE LOCATIONS FOR BLOCKING AND UTILITIES.
  - CONTINUOUS CONCRETE FOOTING. (SEE STRUCTURAL).
  - PROVIDE & INSTALL 4" DIA. CONCRETE FILLED STEEL PIPE BOLLARDS AROUND GAS METER AND CT CABINET PER LOCAL CODES & UTILITY COMPANY REQUIREMENTS. PAINT BOLLARDS COLOR: TDL.
  - CAST STONE SILL. SEE FINISH SCHEDULE.
  - AUTOMATIC SHIPARTING DRIVE THRU WINDOW FURNISHED BY TDL AND INSTALLED BY G.C. VERIFY MANUFACTURER & DELIVERY W/ TDL REPRESENTATIVE.
  - LINE OF ROOF BEHIND.
  - NOT USED.
  - NOT USED.
  - GOOSENECK LIGHT FIXTURES ABOVE SIGNAGE BAND MOUNT J-BOX @ 12'-4"
  - HOLLOW METAL DOOR & FRAME. PAINT: PAINT REAR DOOR AND FRAME EP-2.
  - C/T CABINET AND METER AS REQ'D. VERIFY WITH LOCAL ELECTRICAL COMPANY.
  - PRE-ENGINEERED AWNING PROVIDED AND INSTALLED BY OWNER. G.C. SHALL COORDINATE AND INSTALL BLOCKING IN WALL AS REQUIRED.
  - GENERAL PURPOSE LIGHT FIXTURE AS SPECIFIED ON SHEET E1 MOUNT FIXTURE @ 12'-4" A.F.F.
  - G.C. TO PROVIDE & INSTALL 6" DIA. CONC. FILLED PIPE BOLLARD @ DRIVE-THRU WINDOW. SEE PLACEMENT DETAIL ON SHEET 50-1.
  - (2) LAYERS 1/4" X 3/4" THICK NICHHA SMOOTH TRIM BOARD. SEE DETAILS ON A7.1.
  - PROVIDE NICHHA TRIM AT PARAPET END. COLOR TO MATCH ADJACENT TRIM.
  - DASHED LINE INDICATES EXTENT OF WINDOW FRAME ON UNDERSIDE OF CANOPY.
  - CONCENTRIC VENTS FOR WATER HEATER.
  - LINE OF PARAPET BEYOND.
  - ROOFTOP EQUIPMENT/EXHAUST FANS BEYOND.

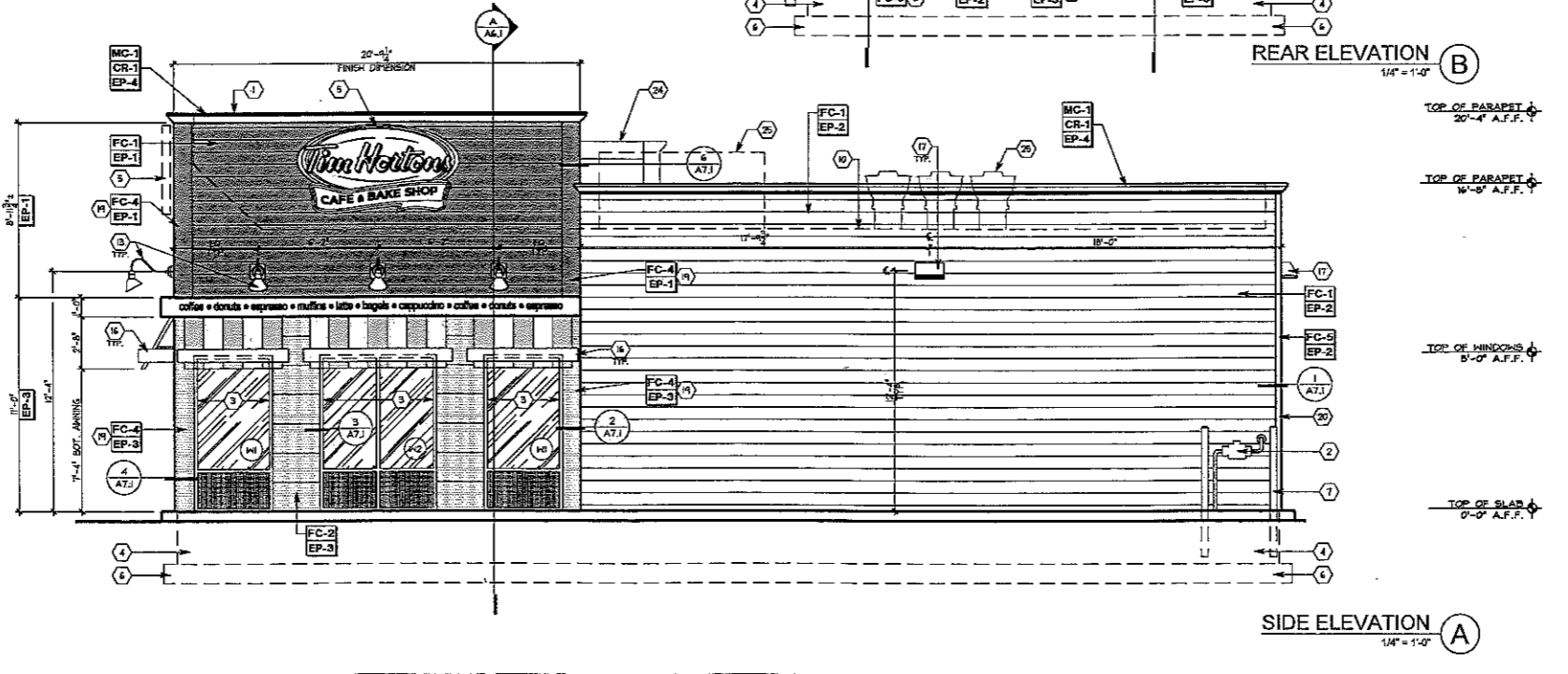
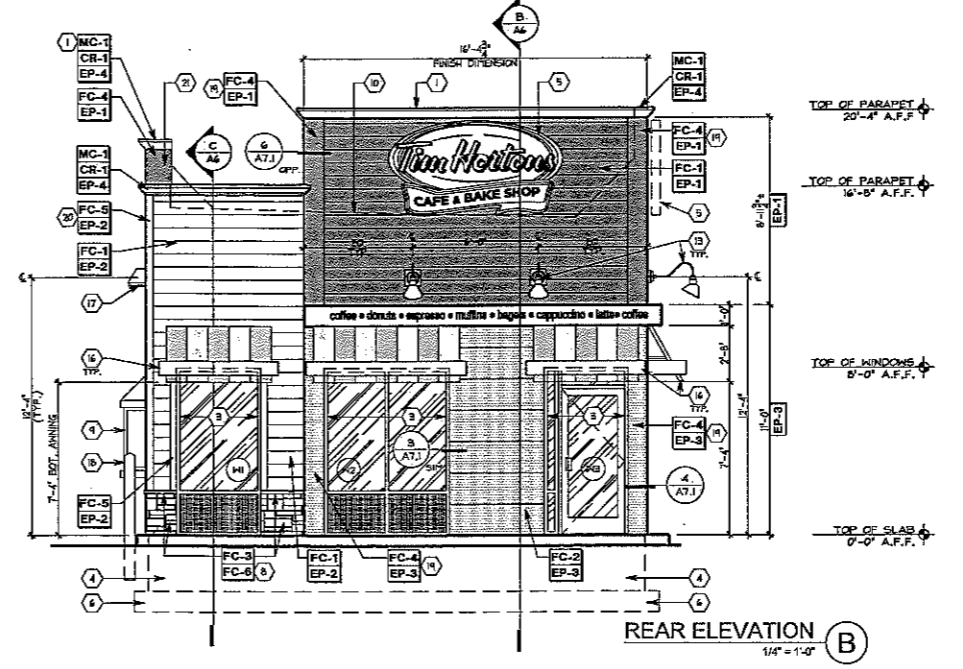
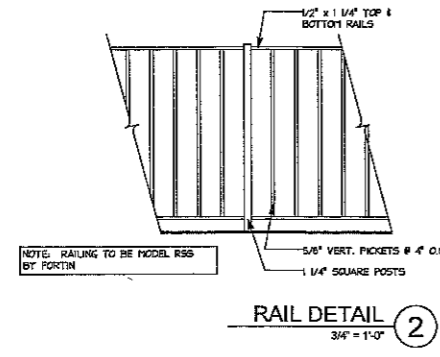
REVISION/UPLOAD DATE		
REV.	DATE	DESCRIPTION
RFFM	08/22/12	FINALS UPLOAD

SHREMSHOCK  
 Shremshock Architects, Inc.  
 1015 S. UNIVERSITY AVE., SUITE 100  
 ROCHESTER, NY 14620  
 P: 585.424.6000 F: 585.424.6008  
 www.shremshock.com

**Tim Hortons**  
 MODEL 1340-12 (U.S.)  
 940 S. ROCHESTER RD.  
 ROCHESTER HILLS, MI.  
 TDL STORE NUMBER 914771

EXTERIOR ELEVATIONS  
 DRAWN BY: DDS CHECKED BY: MLL

SAI # 120467  
 DRAWING NUMBER:  
**A5.0**



**EXTERIOR FINISH SCHEDULE**

TAG	PRODUCT	MFG.	PATTERN & COLOR	COMMENTS	SUPPLIER/CONTACT
FC-1	LAP SIDING	NICHIA FIBER CEMENT PRODUCTS	SIERRA PREMIUM SMOOTH 8-3/4" LAP SIDING, PRE-PRIMED G.C. TO PAINT IN FIELD.		NICHIA CONTACT: MICHAEL RUSCO (770) 905-1464, 1-866-424-4421, EMAIL: YRUSCO@NICHIA.COM
FC-2	ARCHITECTURAL BLOCK	NICHIA FIBER CEMENT PRODUCTS	ARCHITECTURAL BLOCK PANELS, SIERRA PREMIUM SMOOTH 8-3/4" PRE-PRIMED G.C. TO PAINT IN FIELD.		
FC-3	KURASTONE	NICHIA FIBER CEMENT PRODUCTS	KURASTONE WALL PANELS. COLOR: MOUNTAIN (ITEM: ATB-118-US) BORDER PIECES (L.C.) COLOR: MOUNTAIN (ITEM: ATB-118L-US) CORNER PIECES COLOR: MOUNTAIN (ITEM: ATD-118-US)		
FC-4	TRIM	NICHIA FIBER CEMENT PRODUCTS	1/2" X 3/4" SMOOTH TRIM BOARDS PRE-PRIMED G.C. TO PAINT IN FIELD.		
FC-5	TRIM	NICHIA FIBER CEMENT PRODUCTS	3/2" X 3/4" SMOOTH TRIM BOARDS PRE-PRIMED G.C. TO PAINT IN FIELD.		
FC-6	VERSETTA STONE HANSKOT CAP	BORAL STONE PRODUCTS	VERSETTA STONE HANSKOT SILL COLOR TO MATCH KURASTONE COLOR: TAURE	INCLUDE IN NICHIA PACKAGE	
EP-1	PAINT	NICHIA FIBER CEMENT PRODUCTS	COLOR: TDL SW6024 FRENCH ROAST	SEALANT: TITEBOND WEATHER MASTER SEALANT COLOR: 4421	
EP-2	PAINT	NICHIA FIBER CEMENT PRODUCTS	COLOR: TDL SW6106 LATTE	SEALANT: TITEBOND WEATHER MASTER SEALANT COLOR: 4421	
EP-3	PAINT	NICHIA FIBER CEMENT PRODUCTS	COLOR: TDL SW6022 RUGGED BROWN	SEALANT: TITEBOND WEATHER MASTER SEALANT COLOR: 4421	
EP-4	PAINT	NICHIA FIBER CEMENT PRODUCTS	COLOR: TDL SW6190 CAVIAR	SEALANT: TITEBOND WEATHER MASTER SEALANT COLOR: 4421	
CR-1	CORNICE	CANAFOULD	CANAFOULD CORNICE #4509		
MC-1	METAL COPING	DURO-LAST	CUSTOM PREFINISHED METAL COPING KYNAR COLOR TO MATCH SK 6990 CAVIAR	INCLUDED IN ROOFING PACKAGE	DURO-LAST CONTACT: STEVE RUTH (800) 248-0200
MC-2	METAL COPING	DURO-LAST	2-PIECE COMPRESSION EDGE 1/2" HIGH PREFINISHED METAL COVER, KYNAR COLOR TO MATCH SK 6990 CAVIAR	INCLUDED IN ROOFING PACKAGE	

**GENERAL NOTES**

- SEALANT AROUND DOOR/WINDOW FRAMES COLOR TO MATCH ADJACENT MATERIAL.
- ALL EXTERIOR FIBER CEMENT SHALL BE PREFINISHED BY THE MANUFACTURER WHEREVER POSSIBLE.
- ALL SEALANTS USED SHALL BE COLOR MATCHED TO THE ADJACENT MATERIAL OR AS LISTED.

**REVISION/UPLOAD DATE**

REV.	DATE	DESCRIPTION
RPP#4	08/22/12	FINALS UPLOAD

LAST DESIGN BULLETIN

NO./L	DATE	DESCRIPTION
4-6-12	08/10/12	1st CLARIFICATION

DATE ISSUED: 08/22/2012

**EXTERIOR ELEVATION KEYED NOTES:**

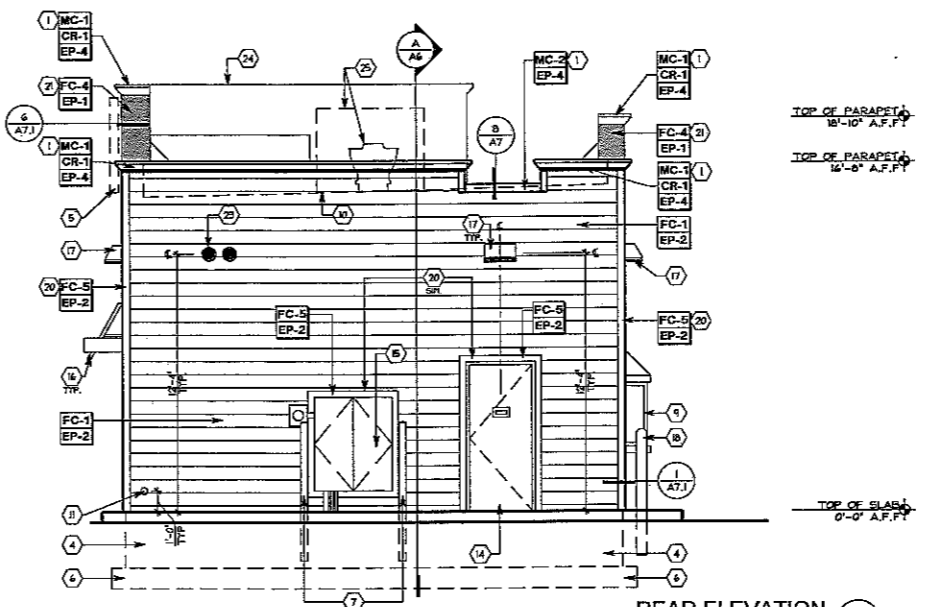
- PREFINISHED METAL COPING W/ DRIP EDGE.
- GAS METER. VERIFY EXACT LOCATION W/ UTILITY COMPANY, CIVIL DRAWINGS AND TDL REPRESENTATIVE.
- CLEAR ANODIZED ALUMINUM STOREFRONT W/ INSULATED GLAZING. SEE WINDOW SCHEDULE ON SHEET A11 AND EXTERIOR FINISH SCHEDULE ON SHEET A5.
- FOUNDATION. (SEE STRUCTURAL)
- INTERNALLY ILLUMINATED BUILDING SIGNAGE PROVIDED AND INSTALLED BY TDL. G.C. TO PROVIDE ALL REQUIRED BLOCKING AND FINAL ELECTRICAL CONNECTION. SIGN MANUFACTURER SHALL OBTAIN SIGNAGE PERMITS FROM THE CITY BASED ON LOCAL REQUIREMENTS. G.C. SHALL VERIFY ACTUAL LOCATION AND SIZE OF SIGNS WITH SIGN MANUFACTURER. APPROVED DRAWINGS AND COORDINATE LOCATIONS FOR BLOCKING AND UTILITIES.
- CONTINUOUS CONCRETE FOOTING. (SEE STRUCTURAL)
- PROVIDE & INSTALL 6" DIA. CONCRETE FILLED STEEL PIPE BOLLARDS AROUND GAS METER AND CT CABINET PER LOCAL CODES & UTILITY COMPANY REQUIREMENTS. PAINT BOLLARDS COLOR TBD.
- CAST STONE SILL. SEE FINISH SHEET.
- AUTOMATIC DISAPPEARING DRIVE THRU WINDOW FURNISHED BY TDL AND INSTALLED BY G.C. VERIFY MANUFACTURER & DELIVERY W/ TDL REPRESENTATIVE.
- LINE OF ROOF BEHIND.
- ZURN Z-M9 DOWNSPOUT NOZZLE FOR SECONDARY ROOF OVERLAP. NOZZLE TO DISCHARGE 8" MIN. A.F.F. PER CODE.
- NOT USED.
- GOOSNECK LIGHT FIXTURES ABOVE SIGNAGE BAND MOUNT J-BOX 8" 12"-4"
- HOLLOW METAL DOOR & FRAME. PAINT. PAINT REAR DOOR AND FRAME EP-2.
- C/T CABINET AND METER AS REQ'D. VERIFY WITH LOCAL ELECTRICAL COMPANY.
- PRE-ENGINEERED AWNING PROVIDED AND INSTALLED BY OWNER. G.C. SHALL COORDINATE AND INSTALL BLOCKING IN WALL AS REQUIRED.
- GENERAL PURPOSE LIGHT FIXTURE AS SPECIFIED ON SHEET B1 MOUNT FIXTURE 8" 12"-4" A.F.F.
- G.C. TO PROVIDE & INSTALL 6" DIA. CONC. FILLED PIPE BOLLARD # DRIVE-THRU WINDOW. SEE PLACEMENT DETAIL ON SHEET 50-01.
- (2) LAYERS 1/4" X 3/4" THICK NICHIA SMOOTH TRIM BOARD. SEE DETAILS ON A11.
- (2) LAYERS 3/4" X 3/2" PREFINISHED FIBER CEMENT TRIM BOARD. SEE DETAIL 2/A11.
- PROVIDE NICHIA BX TRIM AT PARAPET END. COLOR TO MATCH ADJACENT TRIM.
- NOT USED.
- CONCENTRIC VENTS FOR WATER HEATER.
- LINE OF PARAPET BEYOND.
- ROOFTOP EQUIPMENT/EXHAUST FANS BEYOND.

**SHREMSHOCK**  
Shremshock Architects, Inc.  
100 S. Main St., Suite 200  
Rochester, NY 14610  
Tel: 585.452.0500 Fax: 585.452.0501

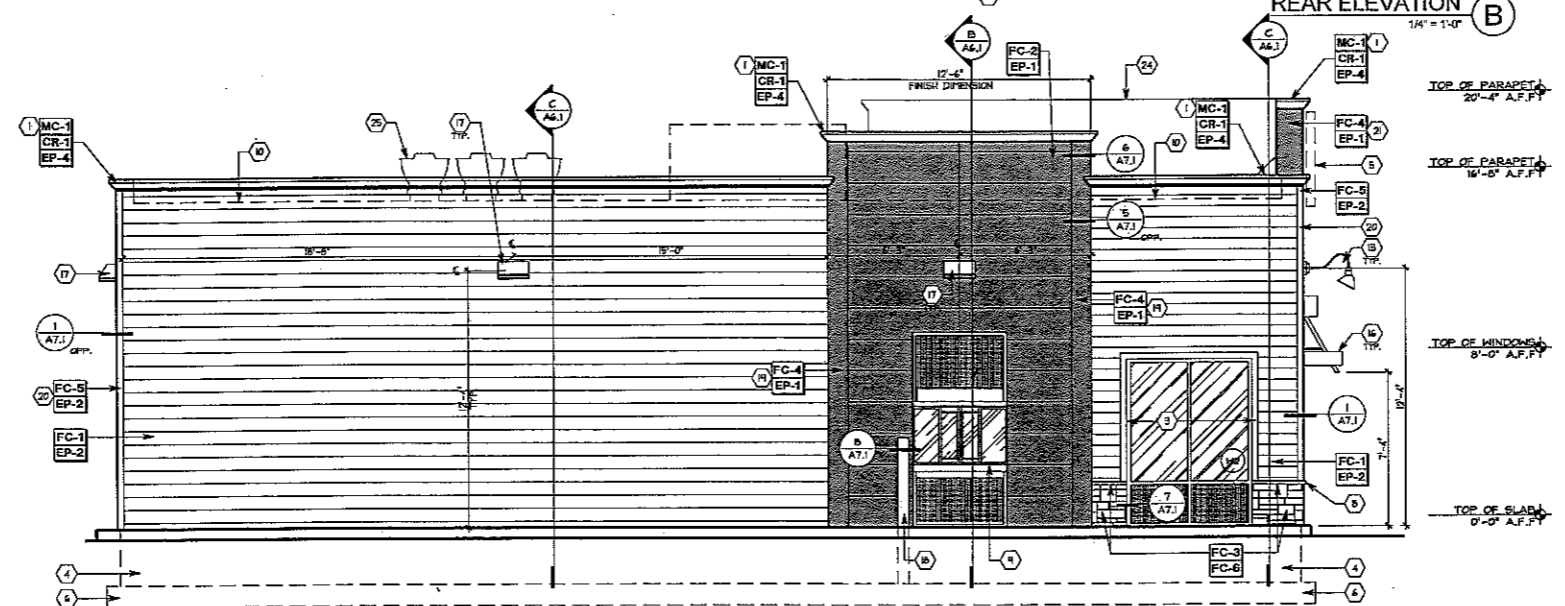
**Tim Hortons**  
MODEL 1340-12 (U.S.)  
940 S. ROCHESTER RD.  
ROCHESTER HILLS, MI.  
TDL STORE NUMBER 914777

**SYMBOL LEGEND**

- ELEVATION REFERENCE
- WALL / BUILDING SECTION REFERENCE
- NOTE REFERENCE. SEE EXTERIOR ELEVATION CODED NOTES
- WINDOW NUMBER. REFER TO SCHEDULES ON DRAWING A11.



**REAR ELEVATION (B)**  
1/4" = 1'-0"



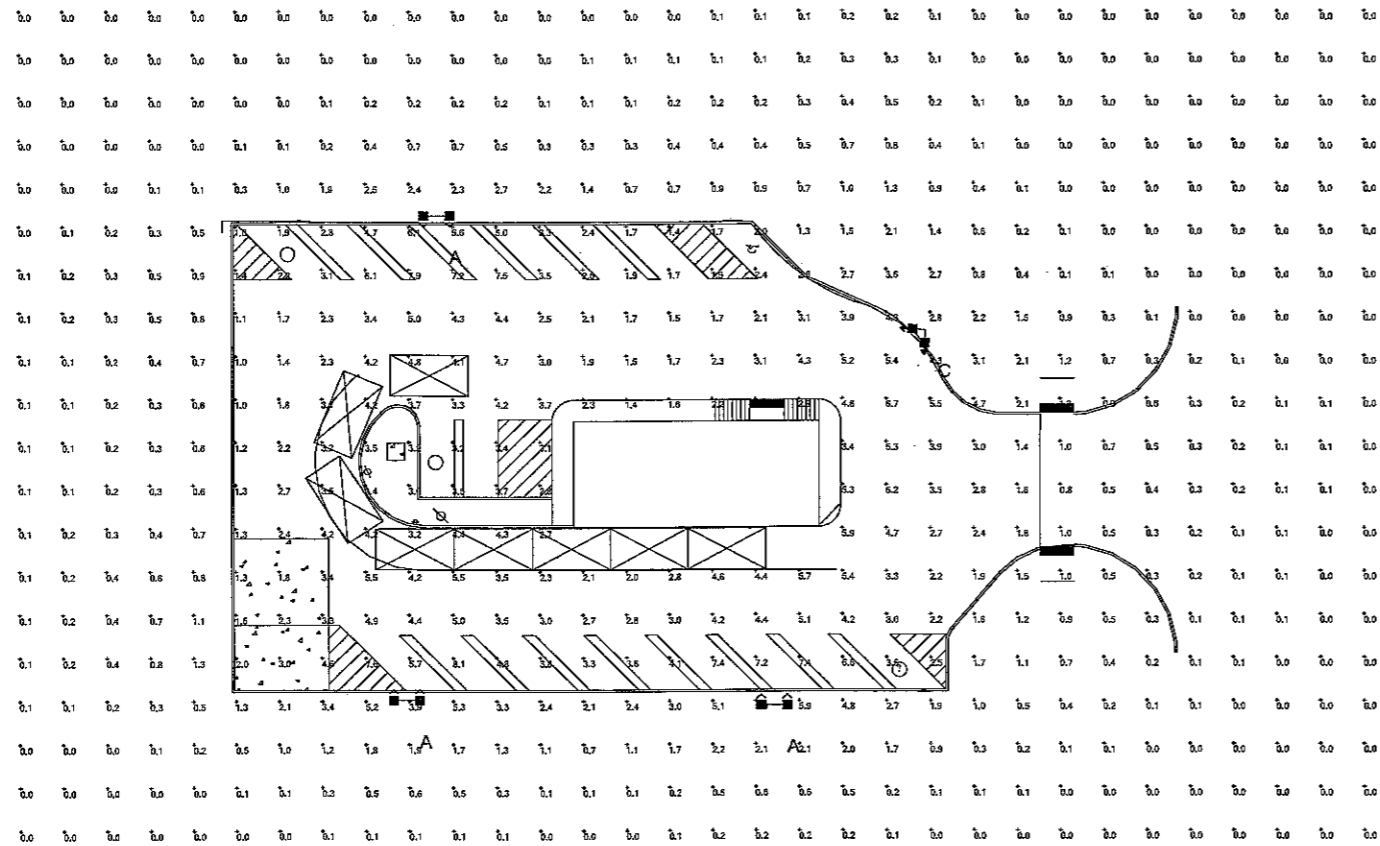
**SIDE ELEVATION (A)**  
1/4" = 1'-0"

**EXTERIOR ELEVATIONS**  
DRAWN BY: DDS CHECKED BY: MLL

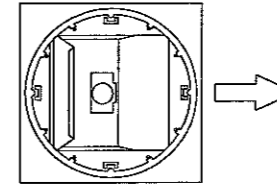
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DRAWING NUMBER:  
**A5.1**



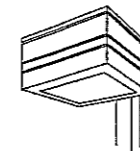
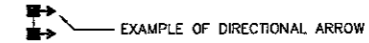


**IMPORTANT**



**ROTATED REFLECTOR**

NOTE: Reflector MUST be field rotated by the CONTRACTOR to correspond with the direction indicated by the arrows on this layout.



**GREENBRIAR  
FLAT LENS  
IESNA FULL CUTOFF**

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
ALL CALC POINTS	Illuminance	Fc	1.28	8.1	0.0	N.A.	N.A.
PARKING SUMMARY	Illuminance	Fc	3.45	8.1	0.8	4.31	10.13

Luminaire Schedule								
Symbol	Qty	Label	Arrangement	Description	LLF	Lumens/Lamp	Arr. Lum. Lumens	Arr. Watts
	1	C	2 @ 90 DEGREES	GFM-FP-320-PSMV-F D90 ON 24' POLE + 2' BASE	0.720	34000	30334	736
	3	A	ROTATED 2 IN 90	GFM-FP-320-PSMV-F D180 2RTD ON 24' POLE + 2' BASE	0.720	34000	30334	736

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

This lighting pattern represents illuminance levels calculated from laboratory data taken under controlled conditions utilizing current industry standard lamp ratings in accordance with Illuminating Engineering Society approved methods. Actual performance of any manufacturer's luminaire may vary due to variation in electrical voltage, tolerance in lamps and other variable field conditions. Calculations do not include obstructions such as buildings, curbs, landscaping, or any other architectural elements unless noted.

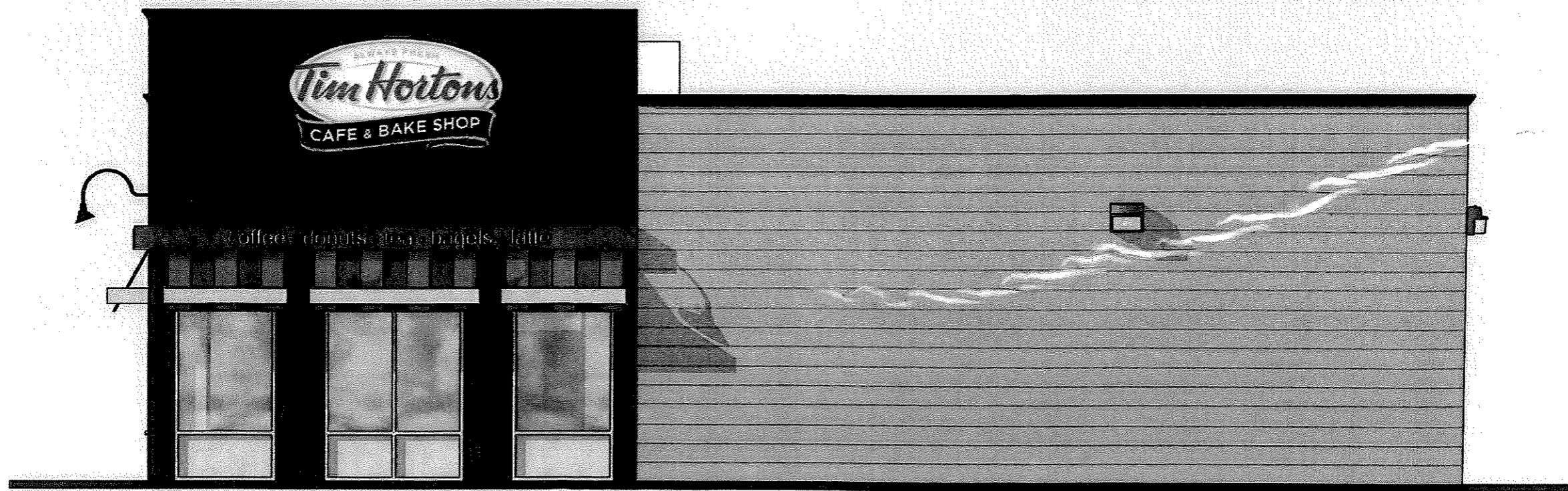
Total Project Watts  
Total Watts = 2944

**Light Industries**  
LIGHTING PROPOSAL FOR  
TIM HORTONS  
ROCHESTER RD  
ROCHESTER HILLS, MI  
SCALE: 1"=20'  
DATE: 5/25/12  
BY: JLS  
LO- 111472  
SHEET 1 OF 1



MODEL 1340-12  
EXTERIOR ELEVATIONS





MODEL 1340-12  
EXTERIOR ELEVATIONS

