BOARD OF ZONING APPEALS
STAFF REPORT

To:	Members of the Board of Zoning Appeals
From:	Tom Vander Woude, Planning Director
Meeting Date:	July 13, 2021
Agenda Item:	BZA Docket No. 21-002
Hearing:	**PUBLIC HEARING**
Summary:	Guy Costanza/GM Contracting representing Vincent Cryns requesting approval of multiple variances for a proposed commercial development at 407-411 Ridge Road.

Applicant:	Guy Costanza/GM Contracting
Property Address:	407-411 Ridge Road
Current Zoning:	CD-5 Urban Center Character District
Adjacent Zoning:	North: CD-5 South: CD-5 East: CD-5 West: NICTD/Monon ROW
Action Requested:	Approve variances
Additional Actions Required:	Findings of Fact
Attachments:	BZA 21-002 variance application Ridge Café Addition plan set prepared by Torrenga Engineering revised 06.15.2021

Figure 1: Subject property highlighted in blue.

BACKGROUND

Guy Costanza/GM Contracting has requested approval of multiple variances in connection with an application to construct an approximately 2500 sf commercial building with parking lot at 407-411 Ridge Road. The subject property is approximately 0.495 acres.

The history of this project is described below. An application for development plan approval under PC 20-009 was submitted on September 25, 2020 and is currently pending. An additional application for subdivision, PC 20-011, was submitted on November 25, 2020 and was approved by the Plan Commission contingent upon the approval of the development plan.

PROJECT HISTORY

A subdivision application was submitted for this property in December 2019. A preliminary hearing was held in December 2019. The Plan Commission held a public hearing in February 2020, at which the board tabled the petition to allow Mr. Costanza to develop a more detailed proposal. The proposal was tabled

again in March, April, May, and June. During these months, multiple revisions were made to the plans; the last revisions were presented in May.

In May 2020, the Board of Zoning Appeals approved the following variances for the property:

CODE CITATION	REQUIRED	PROPOSED
OFF STREET PARKING Sec. 26-931 (13) Restaurants dispensing food and/or beverages for consumption on the premises: One space for each 2.5 seats or five spaces for each 300 square feet of floor area, whichever is greater	42 parking spaces	31 parking spaces
SETBACK Sec. 26-602 (1) a. Every front yard shall have a planting strip or green area for a minimum of 20 feet.	20' planting strip	4.5' – 13.5' planting strip (approximate)
SETBACK Sec. 26-602 (1) c. In all C-1 zoning districts, the front building setback line shall be established as follows: A new building shall not be located farther forward than the nearest existing building on any adjacent properly within 400 feet of the proposed building, measured without crossing a public street or alley. Where an existing building within 400 feet has a setback less than 35 feet, all new buildings shall nevertheless have a minimum front setback of 35 feet.	35' front building setback	11.64' – 20.59' building setback

The approval was made upon the following conditions:

1. The number of seats in the building be limited to 77
2. The building must adhere to all the building standards of the current zoning code
3. The height of the building must be equivalent to two stories though it is not required to have an actual, occupiable second story.

The Plan Commission application was formally withdrawn on July 29, 2020.

An application for development plan approval was submitted under PC 20-009 on September 25, 2020. An additional application for subdivision, PC 20-011, was submitted on November 25, 2020. These applications are both subject to the current zoning standards which differ from those that were in place when the withdrawn applications were submitted.

In January 2021, the Plan Commission approved the preliminary plat under PC 20-011 upon the condition of the final approval of the development plan. On that same date, the Plan Commission tabled the development plan because it was incomplete and did not conform to the zoning code.

Rather than revise the plans again to meet the code standards, the applicant is now requesting variances.

A preliminary hearing was held in February 2021. The applicant did not appear to present the petition, and it was tabled through June 2021 at which time the public hearing was scheduled.

DISCUSSION

The applicant is proposing an approximately 2500 square foot commercial building with 31 parking spaces and some internal and perimeter landscaping. Revised plans were submitted on January 26, 2021 and tabled by the Plan Commission again in February. Access to the lot is provided by a right-in/right-out drive aisle at the southeast corner of the site. Forty feet of right of way for Ridge Road is being dedicated along the south edge of the property.

CD-5 District Standards

This project is in the CD-5 Urban Center Character District. The following variances are being requested:

Standard	Requirement	Proposed
Side setback	0'-24'	77'
Frontage buildout	80%	Approx. 39%
Entrances	Front Façade	East side of building
Parking	31 spaces (per approved variance)	30 spaces

Staff notes that the parking variance is now required because the plans were modified after the preliminary hearing to move the location of the parking area to the third lot layer, which resulted in the elimination of one parking space.

The following variance requests have been withdrawn.

Standard	Requirement	Proposed
Off-Street parking location	3rd lot layer only	2nd lot layer
Street screen location	Coplanar with façade	In line with parking lot.

Staff notes that the plans now include underground detention rather than an open detention pond.

VARIANCE STANDARDS

The variance process is established to provide relief to a property owner when, due to unique circumstances, compliance with the zoning code imposes a hardship or practical difficulty on a property owner. The BZA is under no obligation to grant a variance. It is the petitioner's responsibility to prove a hardship or practical difficulty. The BZA should ask the petition to address the criteria listed below.

Sec. 26-6.804.I of the Munster Zoning Code states that the basis for a variance is as follows:

g. General Standards.

A Variance may be granted only if the Decision-Making Authority has made the following determinations for such Variance:

i. the practical difficulties or unnecessary hardships that would be incurred by strict application of the Use or Development standard, as applicable, are unique and not shared by all properties in the vicinity and are not self-imposed;
ii. such Variance is the minimum Variance that will relieve such practical difficulties or unnecessary hardships, as applicable;
iii. such Variance is in the spirit of the general purposes and intent of this Article as stated in Division 1; and
iv. such Variance is so designed as to provide reasonable consideration to, among other things, the character of the neighborhood, District, or Civic Zone, the conservation of property values in the vicinity, and the guidance of Development in accordance with the Comprehensive Plan.

h. Specific to Development standards Variances:
A Variance from Development Standards may be approved or approved with conditions only if:

i. it will not be injurious to the public health, safety, morals, and general welfare of the community;
ii. the use and value of the area Adjacent to the property included in the Variance will not be affected in a substantially adverse manner; and
iii. the strict application of the Development standards will result in practical difficulties in the use of the property.

The applicant has addressed these criteria in the attached application.

RECOMMENDATION

The Board of Zoning Appeals shall determine whether the criteria for the granting of a variance have been met.

Petition BZA 21 -002
Date: 02-22-21
Application Fee: $450 ck
Sign Fee: $ 25 ck
475 UC

Town of Munster Board of Zoning Appeals Petition Application

OWNER INFORMATION:

Vincent Cryns
Name of Owner

815 - 274 - 6939
Phone Number

9481 Golfview Dr., Frankfort, IL 60423
Street address, City, ST, ZIP Code

Acryns@yahoo.com
Email address

APPLICANT OR PETITIONER INFORMATION (if different than above):

Guy M. Costanza
Name of Applicant/Petitioner

219-682-7610
Phone Number

1001 Perthshire Ln, Dyer, IN 46311
Street address, City, ST, ZIP Code

Email address

PROPERTY INFORMATION:

Ridge Cafe Addition
Business or Development Name (if applicable)

407-411 Ridge Road
Address of Property or Legal Description

CD-5 Urban Center
Current Zoning

APPLICATION INFORMATION:

Please select what this Application is for:

☒ **Variance** If yes, select one of the following: ☐ **Use** ☒ **Developmental Standards**

☐ **Conditional Use**

☐ **Administrative Appeal**

Brief Description of Project and List of Variances or Conditional Uses Being Requested (if applicable):

The project involves the construction of one commercial building with parking lot and utilities. The variance requested is for the maximum side-yard setback to be either disregarded or increased to allow the proposed location and size of the proposed building as seen on Engineering plans.

Donald C. Torrenga
Name of Registered Engineer, Architect or Land Surveyor

219-836-8918
Phone Number

907 Ridge Rd, Munster, IN 46321
Street address, City, ST, ZIP Code

Don.Torrenga@Torrenga.com
Email address

Torrenga Engineering, Inc.

REGISTERED PROFESSIONAL ENGINEERS
907 RIDGE ROAD
MUNSTER, INDIANA 46321

www.torrenga.com **Office (219) 836-8918** **Fax (219) 836-1138**

February 22, 2021

Mr. Thomas Vander Woude, AICP
Planning Director
Town of Munster
1005 Ridge Road
Munster, Indiana 46321

Mr. Vander Woude,

The owner of the property located at 407-411 Ridge Road, Vincent Cryns, is requesting the Board of Zoning Appeals to grant a variance on his property in regards to the maximum side-yard setback. This variance will allow for the proposed plans containing the construction of a single 2500 sq. ft. building on his property. Construction will also include a parking lot area as well as sanitary service and water service for the building. A storm water detention area will also be constructed in order to manage runoff from the site. The purpose of the building is to house a commercial building that will service current and future residents of the area.

Sincerely,

Donald C. Torrenga

Donald C. Torrenga, PE
Torrenga Engineering, Inc.

DEVELOPMENTAL VARIANCE CONDITIONS OF APPROVAL

The Munster Board of Zoning Appeals is authorized to hear petitions for developmental standards variances and to approve or deny. The Board of Zoning Appeals may also impose reasonable conditions and restrictions. Indiana Code 36-7-4-918.5 lists the legal criteria for a developmental standards variance:

1. The approval will not be injurious to the public health, safety, morals, and general welfare of the community. Explain why this statement is true in this case:

The variance requested will allow a smaller building to be constructed than what the development codes call for. This smaller building will not in any way be injurious to the public health, safety, morals, or general welfare of the community.

2. The use and value of the area adjacent to the property included in the variance will not be affected in a substantially adverse manner. Explain why this statement is true in this case:

The variance will allow a smaller building to be constructed. The size of the building has no affect on surrounding area besides increasing the visibility into and through the property. Landscaping following town codes will compensate this increased visibility by creating a visual barrier.

3. The strict application of the terms of the zoning ordinance will result in practical difficulties in the use of the property. Explain why this statement is true in this case:

To follow the current ordinance, a larger building would need to be constructed which would both increase parking requirements and decrease available parking area. This decreased parking area would cause practical difficulties in the use of the property.

Attach additional pages if necessary

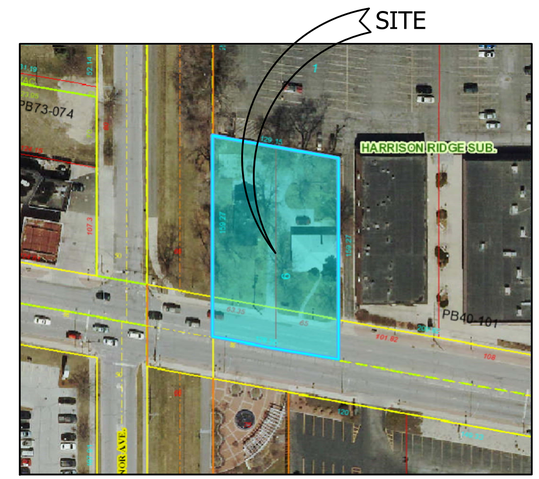
RIDGE CAFE ADDITION

TO THE TOWN OF MUNSTER, LAKE COUNTY, INDIANA

INDEX	
PAGE	DESCRIPTION
COVER	TITLE PAGE
C-1.0	EXISTING TOPOGRAPHY & UTILITIES
C-2.0	SITE PLAN
C-3.0	GRADING & UTILITIES PLAN
C-4.0 TO C-4.1	DETAILS & SPECIFICATIONS
C-5.0	STORM WATER POLLUTION PREVENTION PLAN
C-6.0 TO C-6.1	SWPPP DETAILS & SPECIFICATIONS

LEGAL DESCRIPTION:
PARCEL 1:
Lot 6, except all that part of said Lot 6, lying North of the South line of the North 480.5 feet, by parallel lines of said Lot 6, and also except the Easterly 65 feet, as measured along Ridge Road, of the remaining portion of said Lot 6, in Peter Jabaay's Subdivision of part of Section 13 and 24, Township 36 North, Range 10 West of the 2nd P.M. in Lake County, Indiana, as same appears of record in Plat Book 4, Page 28 in the Recorder's Office of Lake County, Indiana,

PARCEL 2:
The Easterly 65 feet as measured along Ridge Road of the Southerly 200 feet of Lot 6, as marked and laid down on the recorded plat of Peter Jabaay's Subdivision in Section 13 and 24, Township 36 North, Range 10 West of the Second Principal Meridian, in the Town of Munster, Lake County, Indiana, as the same appears of record in Plat Book 4, Page 28, in the Recorder's Office of Lake County, Indiana.



VICINITY MAP
NOT TO SCALE

NORTH

NOTE: THESE PLANS ARE GOVERNED BY THE MOST CURRENT INDIANA DEPARTMENT OF TRANSPORTATION SPEFICATIONS.

Indiana 811
Know what's **below.**
Call before you dig.

"IT'S THE LAW"
CALL 2 WORKING DAYS BEFORE YOU DIG
811 or 1-800-382-5544
CALL TOLL FREE
PER INDIANA STATE LAW IC8-1-26.
IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

County: *Lake*

NW ***Qtr., Sec.*** *24* **, T.** *36* **N, R** *10* **W.**

Township: *NORTH*

CLIENT/DEVELOPER:
G.M. Contracting
1001 Perthshire Lane
Dyer, Indiana 46311
Ph: 219-682-7610

ENGINEER:
Torrenga Engineering, Inc.
907 Ridge Road
Munster, Indiana 46321
Ph.: (219) 836-8918
Fax: (219) 836-1138

Job No.: 2019-5034

DRAWING SET PROGRESS:

- [x] ENGINEERING PLAN - FOR REVIEW / APPROVAL
- [ ] FINAL ENGINEERING - FOR CONSTRUCTION

CERTIFIED BY: DONALD C. TORRENGA
P.E. # 19868

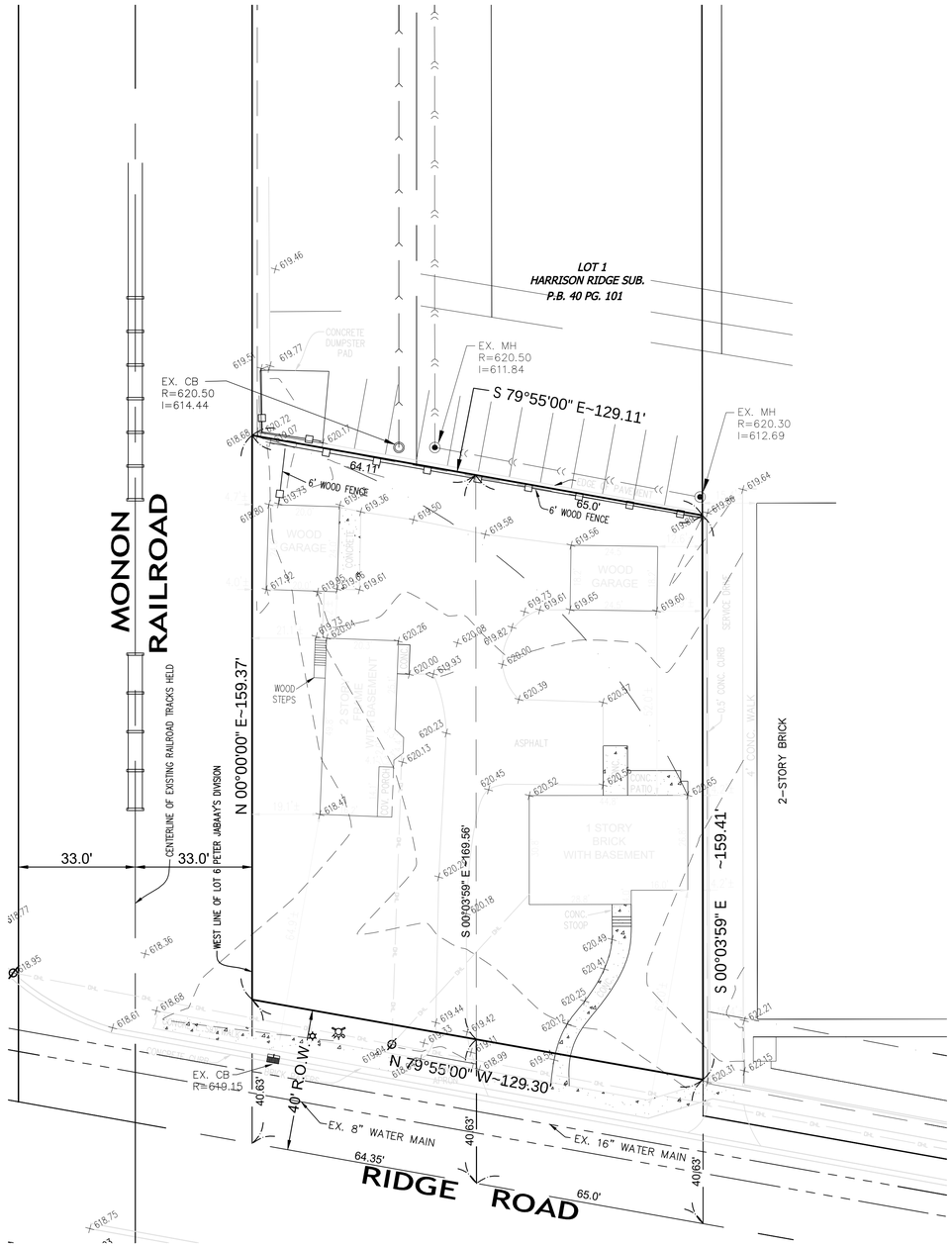
DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

Date and Revisions:

NO.	DATE	DESCRIPTION	BY
7	06-15-2021	UNDERGROUND DETENTION REVISIONS	RAT/DCT
6	01-26-2021	SITE PLAN REVISIONS	RAT/DCT
5	01-06-2021	STORM SEWER REVISIONS	RAT/DCT
4	11-25-2020	DETENTION REVISIONS	RAT/DCT
3	04-10-2020	DRAINAGE REVISIONS	RAT/DCT
2	12-31-2019	DRAINAGE REVISIONS	RAT/DCT
1	11-27-2019	PRELIMINARY SUBMITTAL	RAT/DCT

Z:\2019-5034 407-411 Ridge Rd Munster\dwg\2019-5034 407-411 Ridge Rd Munster.dwg 11/18/2019 10:04:27 AM CST

JOB NO. 2018-5077 | NEW SUPPLIES COMPANY



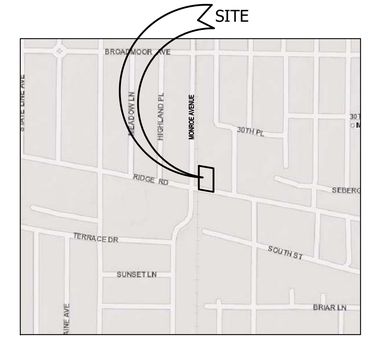
NOTES:

1. TOTAL SITE AREA = 0.495± ACRES (21,579± S.F.)
2. THIS PROPERTY IS LOCATED IN FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS TAKEN FROM THE FLOOD INSURANCE RATE MAP (FIRM) FOR MUNSTER, LAKE COUNTY, INDIANA, MAP NUMBER 18089C0109E, EFFECTIVE DATE JANUARY 18, 2012.
3. DEVELOPER:
   G.M. CONTRACTING
   1001 PERTHSHIRE LANE
   DYER, IN 46311
4. ALL VERTICAL DATUM IS BASED ON NAVD88.
5. HYDROLOGIC UNIT CODES: 07120003030060 – LITTLE CALUMET RIVER – INDIANA/ILLINOIS LINE
6. LOCATION:
   LATITUDE – 41°33'46" N
   LONGITUDE – 87°31'05" W
7. CURRENT ZONING: CD–5 URBAN CENTER

LEGEND:

EXISTING

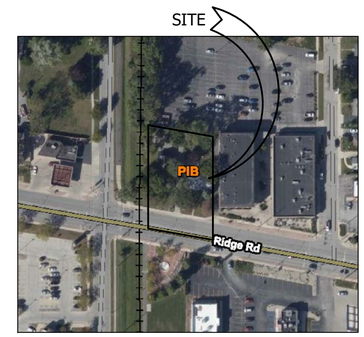
- WATER MAIN SHUT OFF
- WATER HYDRANT
- CATCH BASIN
- MANHOLE
- + 000.00 EXISTING ELEVATION
- BARRIER CURB
- BUILDING LINE
- EASEMENT LINE
- BOUNDARY PROPERTY LINE
- SANITARY SEWER
- WATER MAIN
- STORM SEWER
- XXX CONTOUR



WETLAND MAP

NOT TO SCALE

Source: National Wetlands Inventory



SOIL MAP

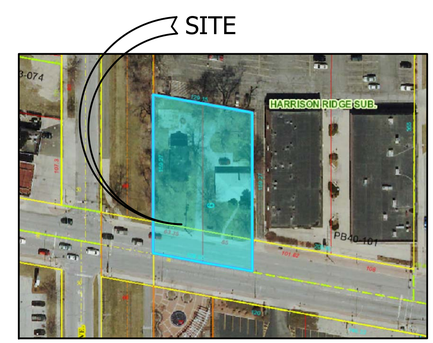
NOT TO SCALE

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Soil Survey Area: Lake County, Indiana
Survey Area Data: Version 22, Sep. 16, 2019

Date aerial images were photographed: Aug 28, 2019 –Oct 9, 2019

SOIL TYPE LEGEND
PIB – Plainfield fine sand, 0 to 6 percent slopes



VICINITY MAP

NOT TO SCALE

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918 website: www.torrenga.com

RIDGE CAFE ADDITION
MUNSTER, INDIANA

EXISTING TOPOGRAPHY AND UTILITES

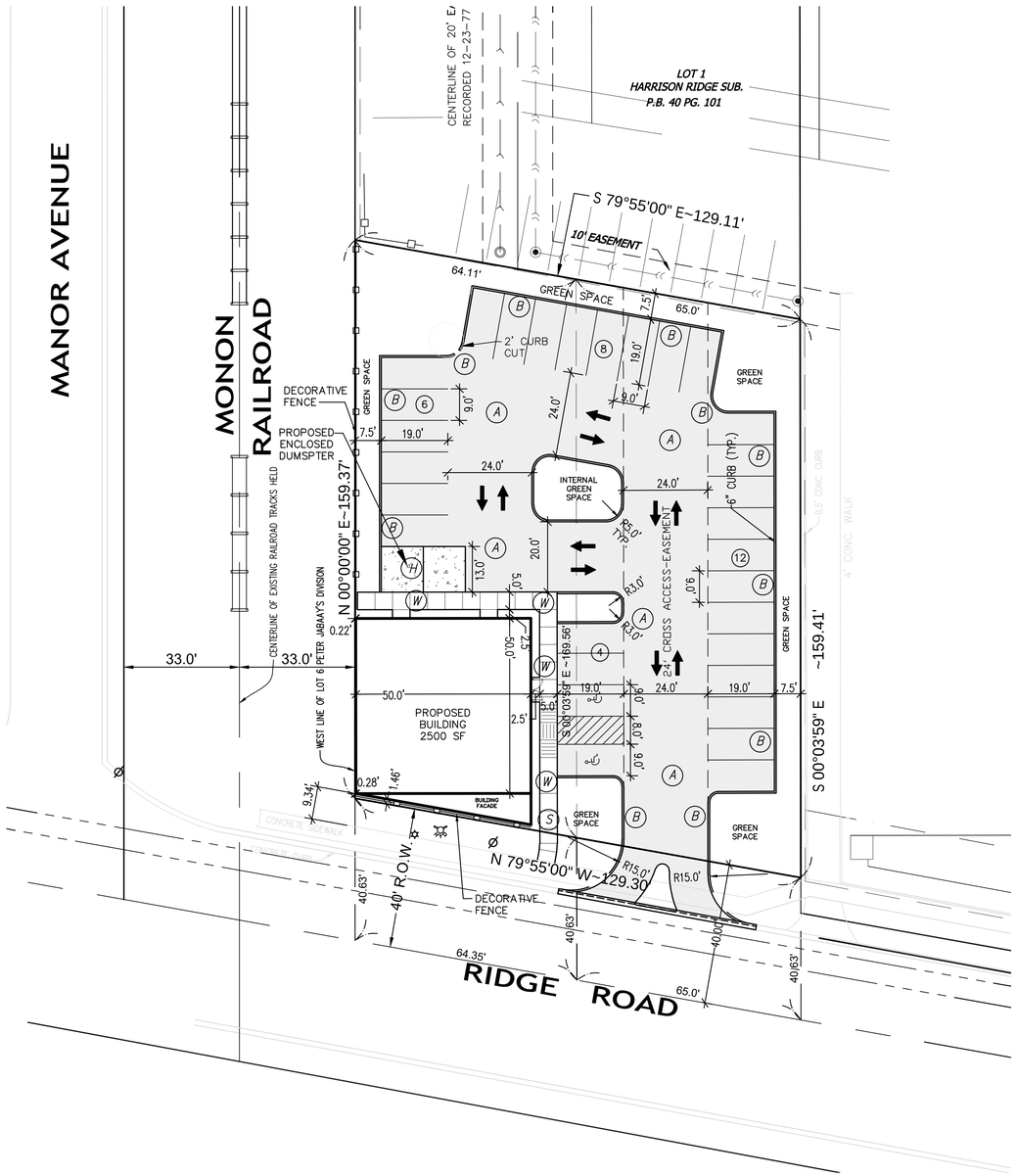
11-25-2020
REVISIONS:
DATE: 11-27-2019

CLIENT:
G.M. Contracting
1001 Perthshire Lane
Dyer, IN 46311

JOB NO: 2019-5034
SCALE: 1=20'

SHEET
C-1.0

FILE NO:Z:\2019-5034 407-411 Ridge Rd Munster\dwg\2019-5034 407-411 Ridge Rd Munster.dwg 11/18/2019 10:04:27 AM CST



LEGEND:

PROPOSED

- (#) NUMBER OF PARKING SPACES
- (A) ASPHALT PAVEMENT
- (B) BARRIER CURB
- (H) HEAVY DUTY CONCRETE
- (S) TYPICAL CONC. SIDEWALK (See Details)
- (W) CURB–WALK (See Details)
- TRAFFIC FLOW ARROWS

NOTES:

1. TOTAL SITE AREA = 0.495± ACRES (21,579± S.F.)
2. CURRENT ZONING: CD-5 URBAN CENTER
3. **PARKING**

   PARKING REQUIRED = 5 SPACES PER 300 SF
   2500 SF / 300 SF = 8.3
   8.3 * 5 = 41.5 SPACES = 42 SPACES

   PARKING SPACES PROVIDED = 31 SPACES*

   * VARIANCE HAS BEEN AQUIRED
4. PARKING LOT AREA = 12,000 SQ FT

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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RIDGE CAFE ADDITION
MUNSTER, INDIANA

SITE PLAN

REVISIONS:
06-15-2021
01-26-2021
01-06-2021
11-25-2020
04-10-2020
03-17-2020

DATE: 02-18-2020

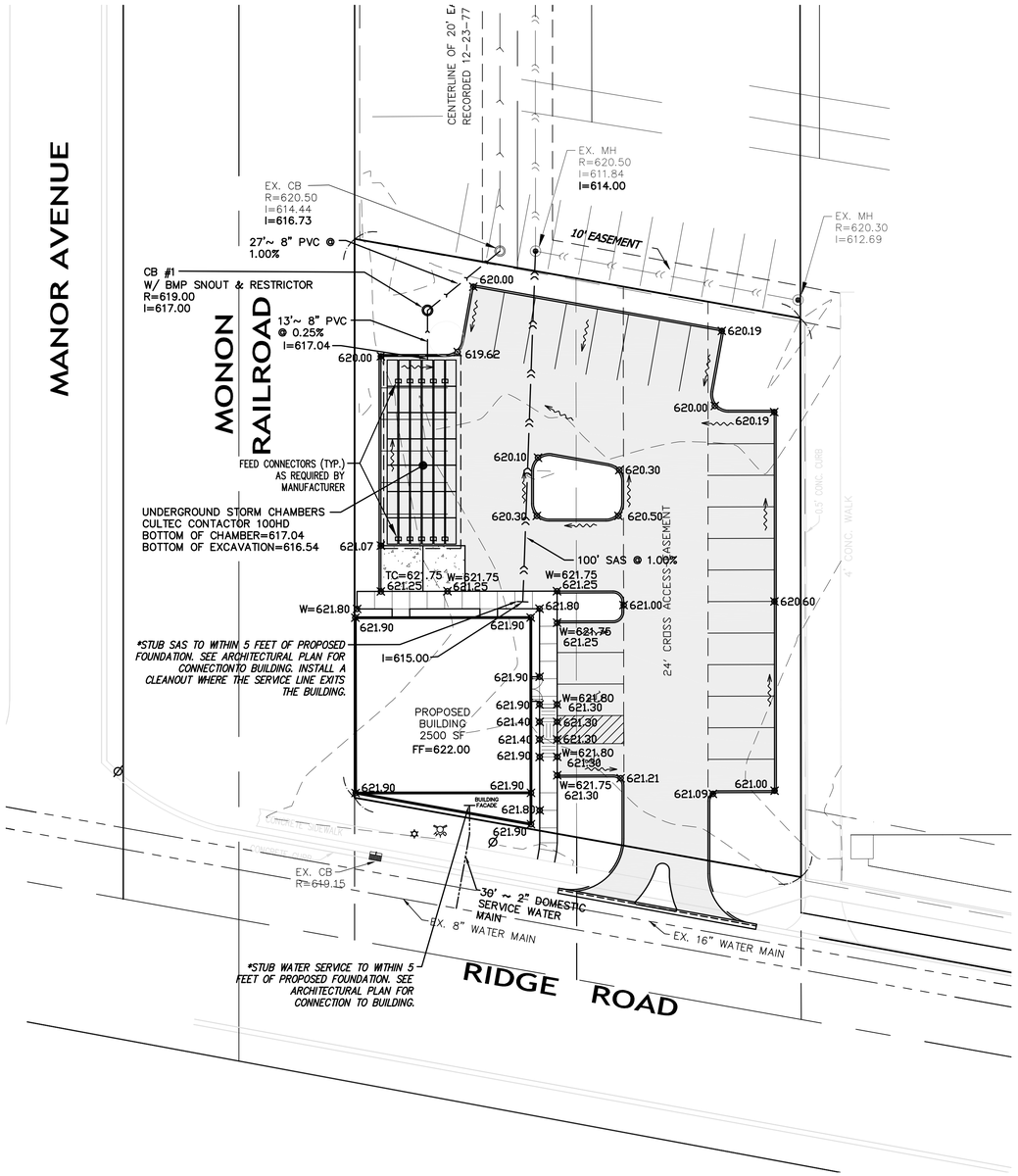
CLIENT:
G.M. Contracting
1001 Perthshire Lane
Dyer, IN 46311

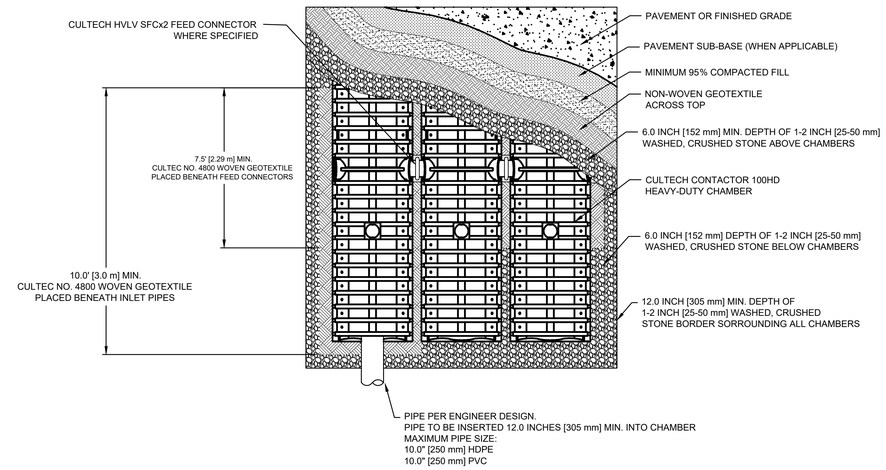
JOB NO: 2019-5034

SCALE: 1"=20'

SHEET
C-2.0

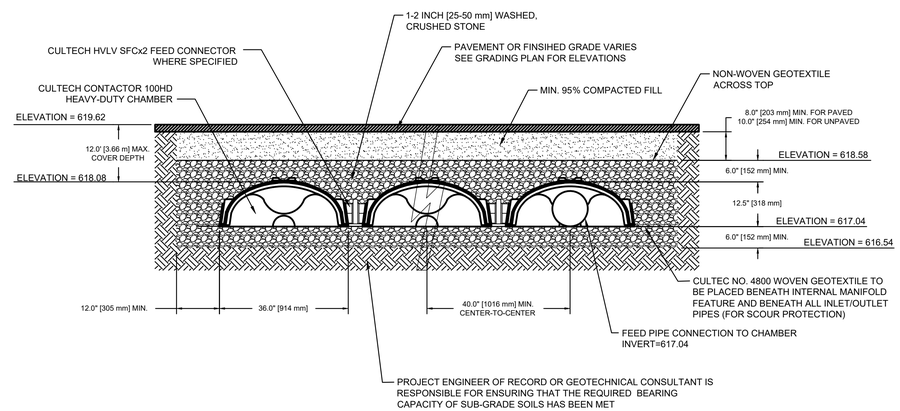
FILE NO: Z:\2019-5034 407-411 Ridge Rd Munster (Alternate)\dwg\2019-5034 407-411 Ridge Rd Munster (Alternate) 2.dwg 3/17/2020 1:41:38 PM CDT





PLAN VIEW DRAWING

NOT TO SCALE



NOTE: DESIGN IS BASED ON CULTEC CONTACTOR 100HD

TYPICAL CROSS SECTION

NOT TO SCALE

1. PAVEMENT ELEVATIONS ARE SUBJECT TO CHANGE BASED ON GRADING PLAN.
2. REFER TO PAVEMENT DETAIL (C-5.1) FOR SIZING OF PAVEMENT AND COMPACTED FILL.
3. ELEVATION OF NON-WOVEN GEOTEXTILE PLACED ACROSS TOP OF SYSTEM SHALL BE CONSISTENT THROUGHOUT. EXTRA COMPACTED FILL SHALL BE USED TO RAISE ELEVATION IN AREAS WHERE PAVEMENT IS HIGHER THAN THE MINIMUM ELEVATION OVER SYSTEM THAT IS SHOWN.

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE TO VERIFY ALL EXISTING SITE CONDITIONS AND SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND ALL PROPOSED IMPROVEMENTS IN THE CONSTRUCTION DRAWINGS.

2. A MINUMUM 8-ft SEPARATION MUST BE MAINTAINED BETWEEN THE WATER MAIN, HYDRANTS, AND ANY SEWER MANHOLE AND/OR CATCH BASIN STRUCTURE.

3. ALL PROPOSED ELEVATIONS REPRESENT THE ASPHALT PAVEMENT OR GROUND ELEVATION GRADE UNLESS OTHERWISE NOTED AS W FOR SIDEWALK.

LEGEND:

PROPOSED

- XXX.XX — GRADE
- DRAINAGE FLOW
- B-BOX
- SANITARY SEWER
- W — WATER MAIN
- STORM SEWER
- W — TOP OF SIDEWALK

DONALD C. TORRENGA
REGISTERED
No. 19868
STATE OF
INDIANA
PROFESSIONAL ENGINEER

NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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RIDGE CAFE ADDITION
MUNSTER, INDIANA

GRADING AND UTILITIES

06-15-2021
01-26-2021
01-06-2021
11-25-2020
04-10-2020
03-17-2020

REVISIONS:

DATE: 02-18-2020

CLIENT:
G.M. Contracting
1001 Perthshire Lane
Dyer, IN 46311

JOB NO: 2019-5034

SCALE: 1"=20'

SHEET
C-3.0

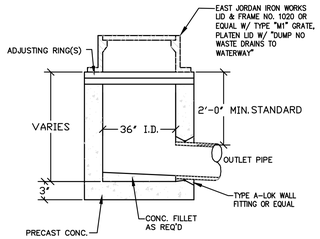
FILE NO: Z:\2019-5034 407-411 Ridge Rd Munster (Alternate)\dwg\2019-5034 407-411 Ridge Rd Munster (Alternate) 2.dwg 3/17/2020 1:41:38 PM CDT

Figure 43a
INTERNATIONAL SYMBOL OF ACCESSIBILITY PROPORTIONS

NOT TO SCALE

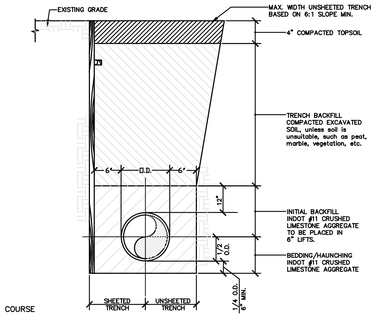
ACCESSIBILITY SIGNAGE

NOT TO SCALE



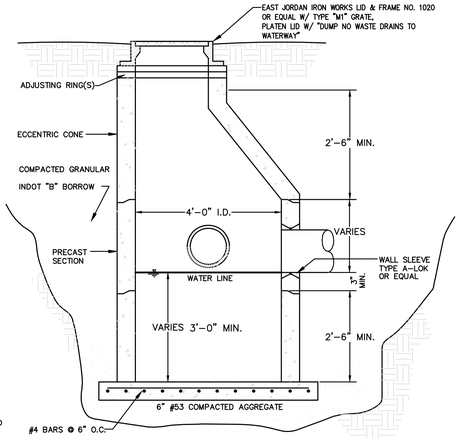
STANDARD INLET

NOT TO SCALE



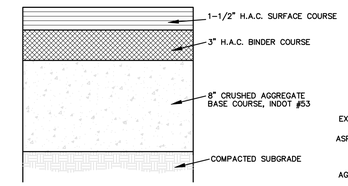
PIPE BEDDING DETAIL
FOR TRENCH IN GRASS AREAS

NOT TO SCALE



TYPE "A" CATCH BASIN

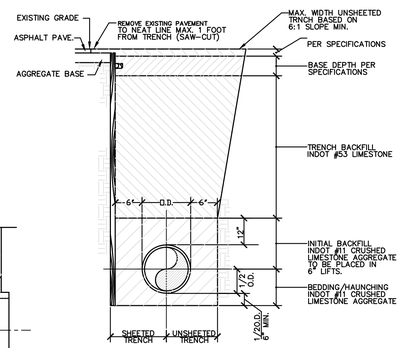
NOT TO SCALE



NOTES:
1. PAVEMENT & AGGREGATE THICKNESS MAY VARY DEPENDING ON CBR SOIL TESTING RESULTS.
2. WHERE FILL IS REQUIRED, SUBGRADE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 METHOD OF TESTING.

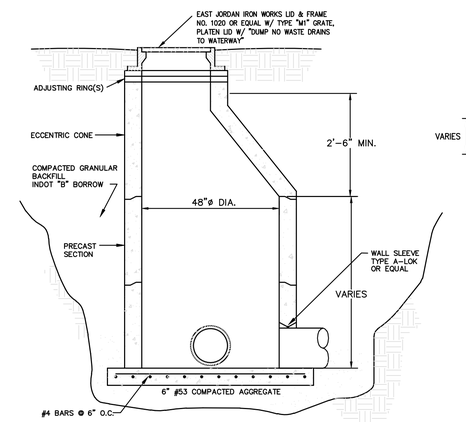
TYPICAL PAVEMENT SECTION

NOT TO SCALE



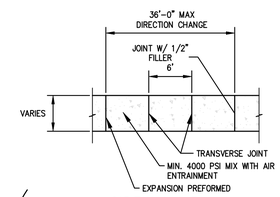
PIPE BEDDING DETAIL
FOR TRENCH IN PAVED AREAS

NOT TO SCALE

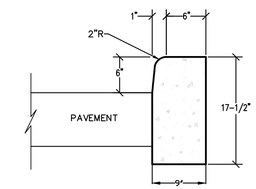


STORM TYPE "B" MANHOLE

NOT TO SCALE



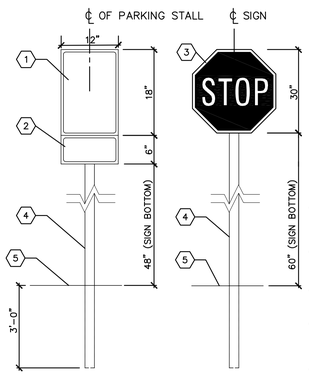
SIDEWALK PLAN



BARRIER CURB DETAIL

NOT TO SCALE

SIDEWALK SECTION

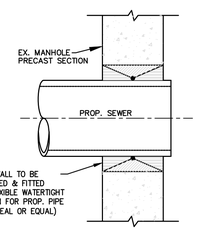


KEYED NOTES

1. STANDARD USDOT R7 SIGN (BOTH SIDES-WHERE APPLICABLE).
2. SUPPLEMENTAL SIGNS, $-FINE AS APPLICABLE.
3. STANDARD USDOT R1-1 STOP SIGN
4. 2"x2" STEEL TUBE EXTENDED INTO GROUND, 3'-0"
5. FINISH GRADE.

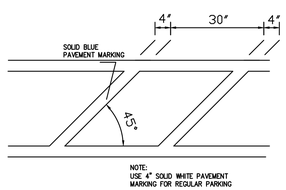
SIGN AND POST (FREE STANDING)

NOT TO SCALE



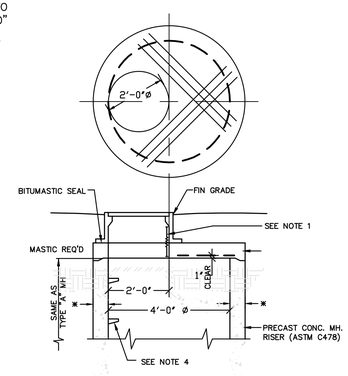
PIPE CONNECTION DETAIL
TO EXISTING MANHOLE

NOT TO SCALE



ACCESSIBILITY AND PARKING
STRIPING DETAIL

NOT TO SCALE

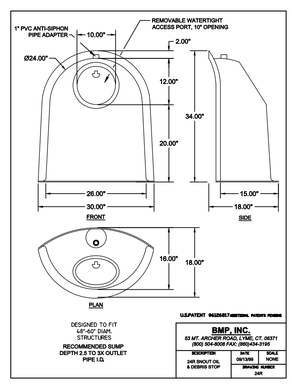


TYPE "C" (FLAT TOP) MANHOLE

NOT TO SCALE

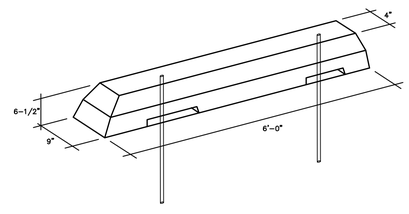
USED WHERE RESTRICTED HEAD ROOM WILL NOT ALLOW FOR TAPERED WALLS

REINF. CONC. TOP DESIGNED FOR HIGHWAY LOADINGS



BMP SNOUT

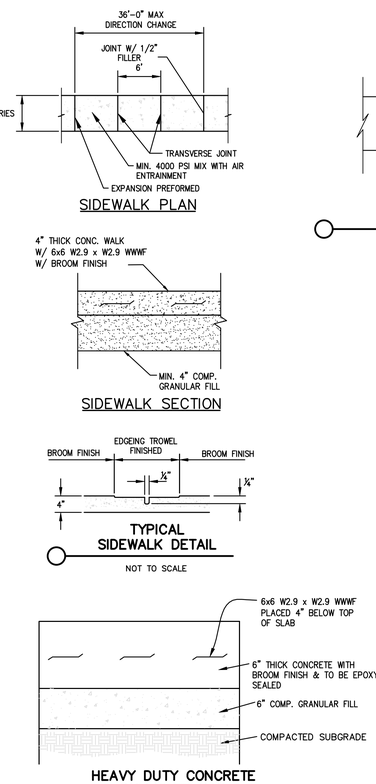
NOT TO SCALE



PRECAST CONCRETE PARKING
CHOCKS/WHEEL STOPS

NOT TO SCALE

ALL PARKING STOPS SHALL BE PINNED TO THE ASPHALT WITH #4 REBAR ANCHORED 18" INTO THE GROUND. PARKING STOPS PLACED OVER THE PAVERS SHALL BE UNPINNED.

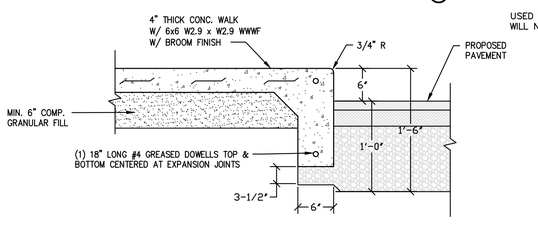


TYPICAL
SIDEWALK DETAIL

NOT TO SCALE

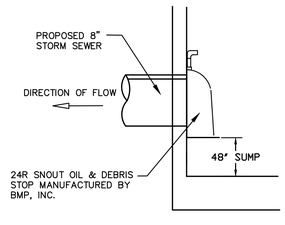
HEAVY DUTY CONCRETE
DUMPSTER PAD

SECTION VIEW
NOT TO SCALE



CURB-WALK SECTION

NOT TO SCALE



SNOUT CONNECTION DETAIL

NOT TO SCALE

SPECIFICATIONS FOR STORM SEWERS

1. All work shall be performed in accordance with the Codes, Ordinances and Standards of the Town of Munster, Lake County, Indiana.

2. All storm sewer pipe, branches and fittings shall conform to either of the following: (A) Poly-vinyl chloride SDR 35 (ASTM D-3034) with push on rubber gasket joints (ASTM C-3212 for pipe 15" in diameter or under or: (B) Extra strength vitrified clay pipe (ASTM C-700) with bell and spigot push-on rubber gasket joints (ASTM C-425) or: (C) Reinforced concrete pipe (ASTM C-76) with bell and spigot or tongue and groove push on mastic joints. Class V reinforced concrete pipe shall be used for lines 15" diameter or under and Class III shall be used for lines 18" and over.

3. Gasketed joints shall be used on all storm sewers.

4. Storm sewers 18" to 27" with less than 3' cover shall be Class IV pipe.

5. All storm sewer manholes shall be standard precast concrete units (ASTM C-478) conforming to the standard detail sheet of these plans.

6. All improvements installed across paved or future paved areas shall backfilled with sand or graded stone aggregate to the subgrade.

7. All sewers shall be laid at least 10 feet (3.0m) horizontally from any existing or proposed water main. The distance shall be measured edge to edge. All sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches (46 cm) between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to prevent damage to the water main. When it is impossible to obtain proper horizontal and vertical separation as stipulated above, the sewer shall be designed and constructed equal to water pipe.

8. The Contractor is responsible for the preparation of "As Built" construction drawings showing actual sizes and lengths of pipe installed (i.e. from manhole to manhole or tee to valve, etc.), location of service taps and any structures added or omitted in comparison with these engineering plans. The Contractor shall supply the Developer (through the Project Engineer) with one set of reproducible original "As-Built" and shall supply the Town of Munster with 2 copies thereof prior to and as a condition of final acceptance.

9. All infrastructure being constructed shall be in accordance with the Town of Munster Proposed Infrastructure Specifications. Any difference between Munster's Specification and these engineering drawings shall be brought to the attention of the Engineer immediately for review.

10. Dumped Rip-Rap will be provided at all end sections, to produce a surface of approximate regularity. The finished surface shall not vary by more than 9 inches and the depth of Rip-Rap shall not be less than 12 inches nor more than 24 inches.

11. No storm sewer manhole, catch basin and inlet shall be within eight (8) feet of a water main as measured from the outside edge of the storm sewer manhole, catch basin and inlet to the outside edge of the water main.

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CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918 website: www.torrenga.com

RIDGE CAFE ADDITION
MUNSTER, INDIANA

DETAILS AND SPECIFICATIONS

06-15-2021
01-06-2020
11-25-2020
REVISIONS:
DATE: 11-27-2019

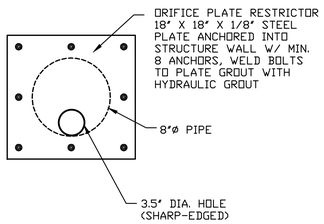
CLIENT:
G.M. Contracting
1001 Perthshire Lane
Dyer, IN 46311

JOB NO: 2019-5034
SCALE: NONE

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

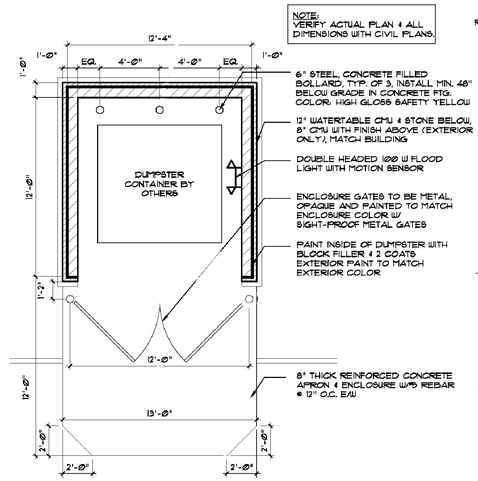
SHEET
C-4.0

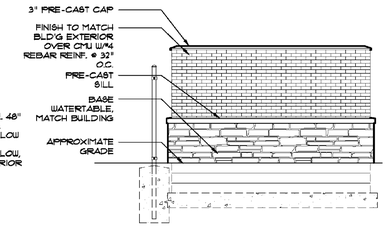
FILE NO: Z:\2019-5034 407-411 Ridge Rd Munster\dwg\2019-5034 Details.dwg 11/27/2019 2:31:10 PM CST



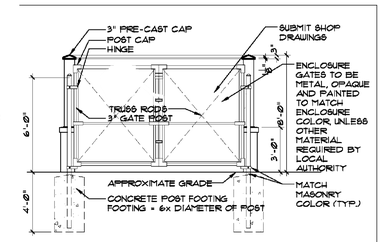
ORIFICE PLATE RESTRICTOR

NOT TO SCALE





NOTE:
1. SEE STRUCTURAL DRAWINGS FOR STRUCTURAL DETAILS
2. ALL DUMPSTER ENCLOSERE EXTERIOR MATERIALS TO MATCH BUILDING EXTERIOR MATERIALS.



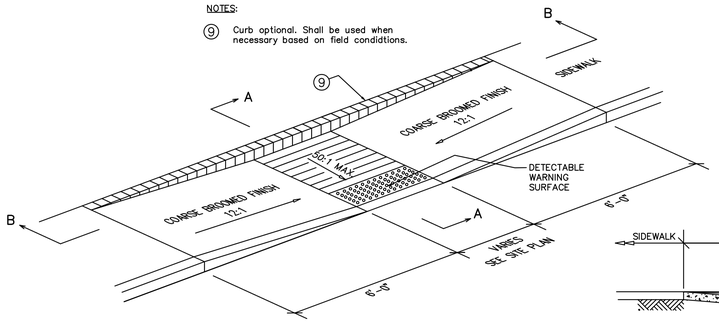
NOTES:
1. ALL FOOTINGS SHALL BE 3000 P.S.I. CONCRETE.
2. ENCLOSURE GATES TO BE METAL, OPAQUE AND PAINTED TO MATCH ENCLOSURE COLOR.
3. INTERMEDIATE RAIL REQUIRED FOR GATE.
4. GATE & ALL HARDWARE TO BE PROVIDE PER CIVIL DRAWINGS, SEE APPROVED CIVIL PLANS.
5. CONTRACTOR TO VERIFY & OBTAIN APPROVAL OF ALL MATERIALS WITH DEVELOPER & BUILDING DEPARTMENT PRIOR TO CONSTRUCTION.

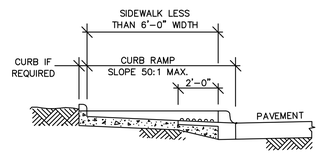
DUMPSTER ENCLOSURE

NOT TO SCALE

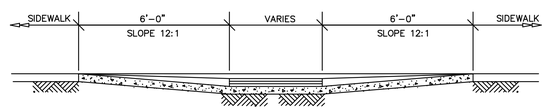
NOTES:

(9) Curb optional. Shall be used when necessary based on field conditions.





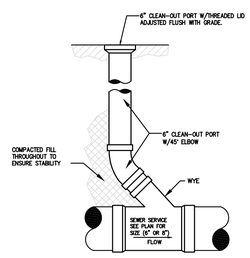
SECTION A–A



SECTION B–B

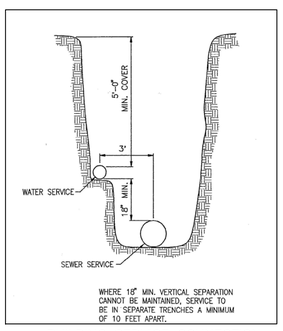
HANDICAP RAMP

NOT TO SCALE



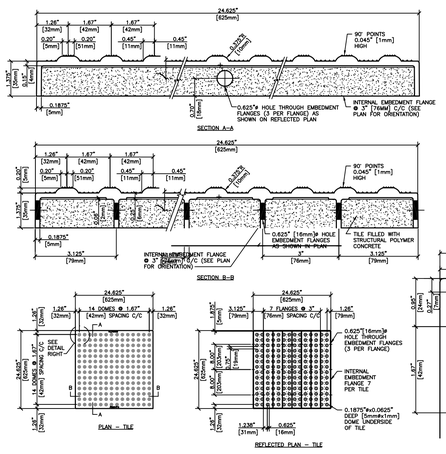
CLEAN–OUT

NOT TO SCALE



BUILDING SERVICE CONNECTION (COMMON TRENCH SECTION)

NOT TO SCALE



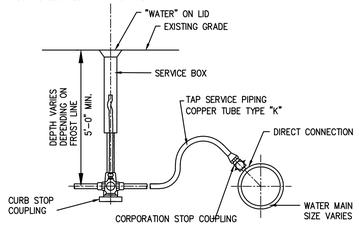
DETECTABLE WARNING NOTES:
THE DETECTABLE WARNING STRIP MUST COVER THE ENTIRE WIDTH OF THE RAMP OPENING, EXCLUDING THE WINGS. ALL DOMES MUST BE ALIGNED IN THE DIRECTION OF TRAVEL. ONE DETECTABLE WARNING STRIP PER RAMP. DETECTABLE WARNING MAY BE MORE THAN 5 FEET FROM THE BACK OF THE CURB, WHEN LOCATED ALONG A CURB RETURN. THE LEADING EDGE OF THE DETECTABLE WARNING MAY BE DEFINED BY THE CHORD DRAWN BETWEEN THE LEADING EDGES OF THE RAMP OPENING.

THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.

TRUNCATED DOME TACTILE – WARNING STRIP

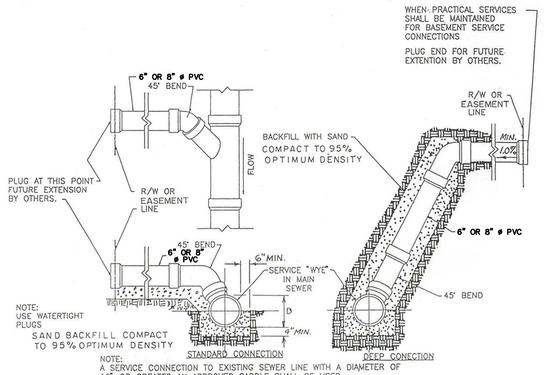
NOT TO SCALE

NOTE: PROVIDE CONCRETE COLLAR IF THE BUFFALO BOX IS LOCATED IN AN ASPHALT



TYPICAL WATER TAP SERVICE PIPING

NOT TO SCALE



NOTE:
A SERVICE CONNECTION TO EXISTING SEWER LINE WITH A DIAMETER OF 10" OR GREATER AN APPROVED SADDLE SHALL BE USED.

SERVICE CONNECTION DETAILS

NOT TO SCALE

GENERAL SPECIFICATIONS FOR WATER MAINS

1. All work shall be performed in accordance with the Codes, Ordinances and Standards of the Town of Munster, and the State of Indiana.

2. All water main pipe shall be (A) Ductile Iron Pipe (ANSI A 21.51/AWWA C 151, Class 52) with bell and spigot push-on rubber gasket joints (AWWA C111). All water main shall be wrapped with Polyethylene Bags. All water main pipe shall be installed with a minimum cover of 5.0 feet from the top of the curb to the top of the pipe. All fire hydrants, tees, bends, fittings, and necessary restrained joints lengths shall be suitable harnessed with Meg-a-Lug field lock gaskets, or equal. All bolts and nuts on water main structures shall be stainless steel. Pressure test at 150 psi for 2 hours. Other materials may be used only with the express written permission of the Town of Munster.

3. All water mains shall be laid at least 10 feet (3.0m) horizontally from any existing or proposed sewer. The distance shall be measured from outside of pipe to outside of pipe. All sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches (46 cm) between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to prevent damage to the water main. When it is impossible to obtain proper horizontal and vertical separation as stipulated above, the sewer shall be designed and constructed equal to water pipe.

4. Care should be taken in parkway areas to assure compaction acceptable for the future stability of driveways and sidewalks. While special backfill material is not required, it shall be the responsibility of the Contractor to protect against substantial future settlement of backfilled areas. The Contractor shall provide special backfill material across driveways and sidewalks in the event that a water main is installed underneath.

5. The Buffalo Boxes shall be arch pattern box style and shall be located in parkways, if possible. No Buffalo Boxes shall be located in concrete areas, and they shall have AWWA approved shut offs and corporation valves.

6. All water main pipe shall be disinfected by the use of liquid chlorine. The Contractor shall notify the town of Munster when the water main system (or portion thereof) is ready for testing.

7. The Contractor is responsible for water quality tests done by a State Certified Laboratory. The Town of Munster Water Department staff shall be notified and be present while tests are being performed. The approved water system shall be turned on by the Water Department Staff, only after the water quality reports have been approved.

8. The newly installed water main (or portions thereof) shall be subjected to a pressure and leakage test, using hydrostatic testing. Test pressure shall not be less than 1.5 times the working pressure or exceed pipe design pressure. Pressure shall not vary by more than ± 5 PSI for a minimum of a 2 hour duration test. The exposed pipe and joints shall be examined carefully during the test and any damaged or defective pipe or joints shall be replaced, and the test shall be repeated. The allowable leakage shall not exceed 11.65 gpd/mi/in of nominal pipe diameter at a pressure of 150 PSI.
All visible leaks are to be repaired regardless of the amount of leakage. The contractor shall be responsible for supplying all testing materials and appurtenances. The Town of Munster shall be notified when the water main (or portion thereof) is ready for testing.

9. The contractor is responsible for the preparation of "As Built" construction drawings showing actual sizes and lengths of pipe installed (i.e. from manhole to manhole or tee to valve, etc.), location of service taps and any structures added or omitted in comparison with these engineering plans. The Contractor shall supply the Developer (through the Project Engineer) with one set of reproducible original "As-Built" Plans and shall supply the Town of Munster with 2 copies thereof prior to and as a condition of the final acceptance.

10. All watermain shall be polywrapped.

11. Fire protection service lines and domestic use service lines shall be tapped separately from the water main to allow for shutdown of the domestic service only for non-payment.

GENERAL SPECIFICATIONS FOR SANITARY SEWER

1. All work shall be performed in accordance with the Codes, Ordinances and Standards of the Town of Munster, Lake County, and the State of Indiana.

2. All sanitary sewer pipe, branches and fittings shall conform to one of the following: (a) Extra strength vitrified clay pipe (ASTM C-700) with push on rubber gasket joints (ASTM C-425). (b) Poly-vinyl chloride (PVC), SDR 26 (ASTM D-3034), with push-on rubber gasket joints (ASTM C-3212). Six inch service pipes shall be in accordance with the infrastructure improvement codes of the Town of Munster.

3. All improvements installed across paved or future paved areas shall be backfilled with sand or graded stone aggregate to the subgrade.

4. The competed sanitary sewer system shall be air tested for infiltration and shall have a maximum infiltration of 100 GPD/inch/diameter/mile of sewer pipe. The completed sanitary sewer system shall be air pressure tested for infiltration/exfiltration with 4 lbs. of pressure for 4 minutes. The testing shall conform to the procedure described in ASTM C-838-86 for clay pipe, ASTM C 924 for concrete pipe, ASTM F-1417 for poly-vinyl chloride pipe, and for other materials test procedures approved by the regulatory agency. The Contractor shall be responsible for supplying all testing materials and appurtenances. The Town of Munster shall be notified when the system (or portion thereof) is ready for testing.

5. Deflection tests shall be performed on all flexible pipe materials placed. The contractor shall be responsible for supplying testing materials and appurtenances. The tests shall be conducted after the final backfill has been in place at least 30 days. No pipe shall exceed a deflection of 5%. If the deflection test is to be run using a rigid ball or mandrel, it shall have a diameter equal to 95% of the inside diameter of the pipe. The test shall be performed without mechanical pulling devices. The Town of Munster shall be notified when the system (or portion thereof) is ready for testing.

6. Care should be taken in parkway areas to assure compaction acceptable for the future stability of driveways and sidewalks. While special backfill material is not required, it shall be the responsibility of the Contractor to protect against substantial future settlement of backfilled areas. The contractor shall provide special backfill material across driveways and sidewalks in the event that a sewer or main is installed underneath.

7. All sewers shall be laid at least 10 feet (3.0m) horizontally from any existing or proposed water main. The distance shall be measured edge to edge. All sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches (46 cm) between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to prevent damage to the water main. When it is impossible to obtain proper horizontal and vertical separation as stipulated above, the sewer shall be designed and constructed equal to water pipe.

8. The Contractor is responsible for the preparation of "As Built" construction drawings showing actual sizes and lengths of pipe installed (i.e. from manhole to manhole or tee to valve, etc.), location of service taps and any structures added or omitted in comparison with these engineering plans. The Contractor shall supply the Developer (through the Project Engineer) with one set of reproducible original "As-Built" Plans and shall supply the Town of Munster with 2 copies thereof prior to and as a condition of the final acceptance.

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907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918 website: www.torrenga.com

RIDGE CAFE ADDITION
MUNSTER, INDIANA

DETAILS AND SPECIFICATIONS

06-15-2021
01-26-2021
11-25-2020
04-10-2020

REVISIONS:

DATE: 11-27-2019

CLIENT:
G.M. Contracting
1001 Perthishire Lane
Dyer, IN 46311

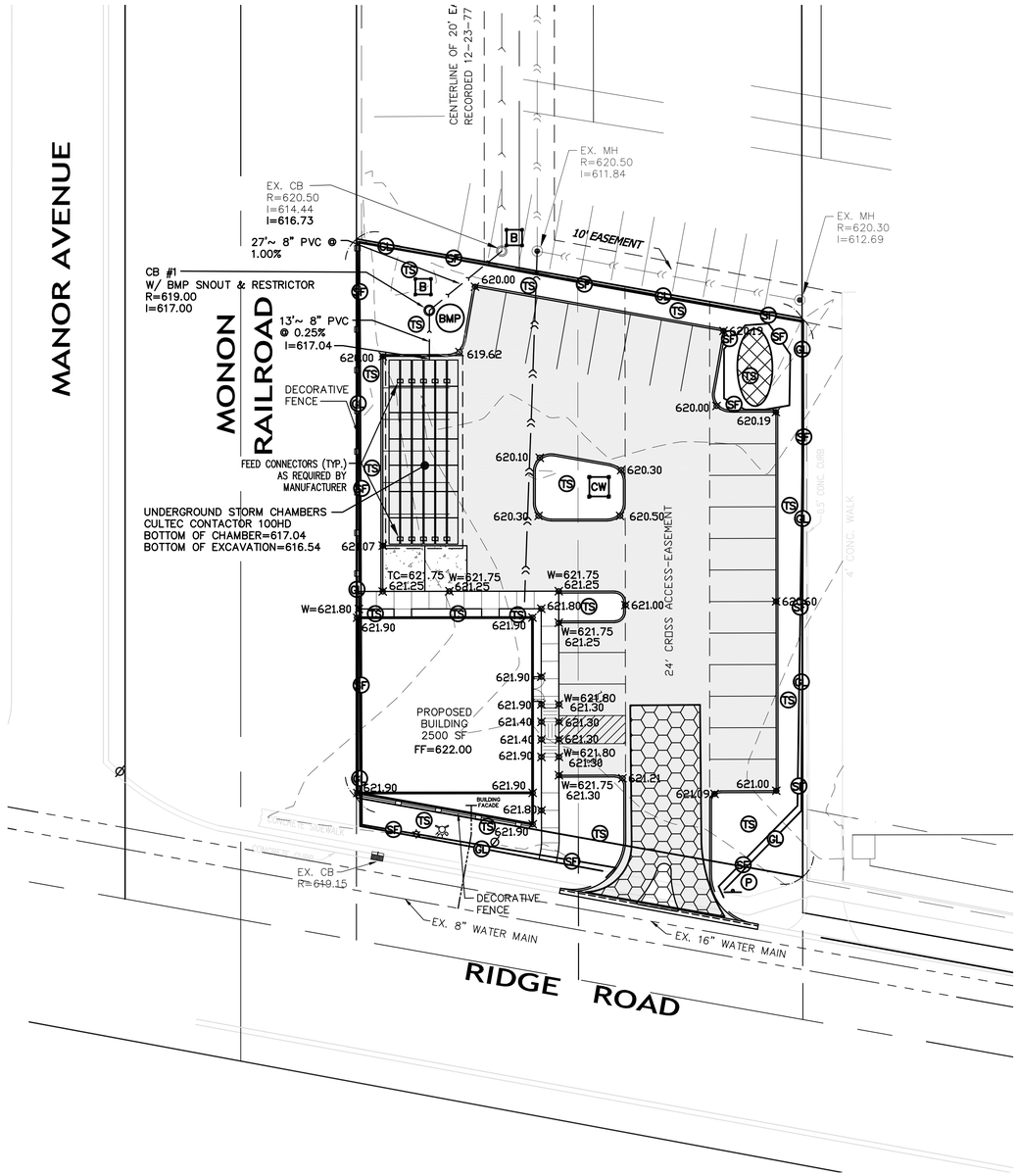
JOB NO: 2019-5034

SCALE: NONE

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

SHEET
C-4.1

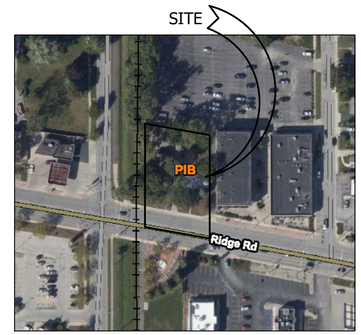
FILE NO: Z:\2019-5034 407-411 Ridge Rd Munster\dwg\2019-5034 Details.dwg 11/27/2019 2:31:10 PM CST



WETLAND MAP

NOT TO SCALE

Source: National Wetlands Inventory



SOIL MAP

NOT TO SCALE

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Soil Survey Area: Lake County, Indiana
Survey Area Data: Version 22, Sep. 16, 2019

Date aerial images were photographed: Aug 28, 2019 –Oct 9, 2019

SOIL TYPE LEGEND
PIB – Plainfield fine sand, 0 to 6 percent slopes

VICINITY MAP

NOT TO SCALE

GENERAL NOTES:

1. THIS PROPERTY IS LOCATED IN FLOOD ZONE "X" (SHADED) AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS TAKEN FROM THE FLOOD INSURANCE RATE MAP (FIRM) FOR MUNSTER, LAKE COUNTY, INDIANA, MAP NUMBER 18089C0109E, EFFECTIVE DATE JAN. 18, 2012. NO FLOODWAYS OR FLOODPLAINS FRINGES EXIST ON THIS PROPERTY.

2. HYDROLOGIC UNIT CODES: 07120003030060 LITTLE CALUMET RIVER - INDIANA/ILLINOIS LINE

3. STATE OR FEDERAL WATER QUALITY PERMITS ARE REQUIRED FOR THE PROJECT, A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) IDEM RULE 5 WATER QUALITY PERMIT IS REQUIRED.

4. THE SITE CONSISTS OF EXISTING HOUSES, PAVED DRIVEWAYS, AND TYPICAL LANDSCAPING FOR RESIDENTIAL AREAS.

5. THERE IS NO PRESENCE OF HYDRIC SOILS ON THIS PROPERTY.

6. THERE ARE NO EXISTING WETLAND AREAS ON THIS PROPERTY, OR ITS SURROUNDING AREAS AS CLASSIFIED BY THE U.S. FISH AND WILDLIFE SERVICE, NATIONAL WETLANDS INVENTORY, AND THE UNITED STATES DEPARTMENT OF THE INTERIOR. THERE ARE NO LAKES, PONDS OR WATER COURSES ON THE PROJECT SITE OR ON ADJACENT PROPERTY. HART DITCH (PLUM CREEK) IS THE WATER COURSE WHICH THE STORMWATER FROM THE PROPOSED SITE WILL ULTIMATELY DISCHARGE INTO, ITS LOCATED APPROXIMATELY ½ MILE EAST OF THE PROJECT SITE, AND IS CLASSIFIED AS A WATER OF THE U.S., WITH A NWL = 608±.

7. POTENTIAL SOURCE OF STORM WATER DISCHARGE ENTERING THE GROUNDWATER FROM THIS DEVELOPMENT WILL BE THROUGH NATURAL GROUND ABSORPTION ONLY. THERE ARE NO ABANDONED WELLS OR SINKHOLES ON THE PROPERTY.

8. THERE ARE NO SENSITIVE AREAS ASSOCIATED WITH THIS PROPERTY, OR ITS SURROUNDING AREAS.

9. THERE ARE NO REGULATED DRAINS WITHIN THIS PROPERTY, OR ON ADJACENT PROPERTIES. THERE IS NO RECORD OR KNOWLEDGE OF EXISTING FARM DRAINS OR FIELD TILE, INLETS AND OUTFALLS LOCATED WITHIN THE EXISTING PROPERTY LIMITS.

10. SOIL STOCKPILES, BORROW AND DISPOSAL AREAS ARE LOCATED WITHIN THE PROJECT SITE. SOIL STOCKPILES SHALL BE SURROUNDED WITH SILT FENCING AT ALL TIMES TO PREVENT EXCESSIVE EROSION, AND IF LEFT UNDISTURBED FOR A PERIOD OF MORE THAN 14 DAYS, IT SHALL BE TEMPORARY SEEDED.

11. AREA WHERE THE PROPOSED BUILDINGS, PARKING LOTS, AND DRIVES AS WELL AS AREAS WHERE PROPOSED UTILITIES ARE LOCATED WILL BE DISTURBED DURING CONSTRUCTION. IN ALL OTHER AREAS, EXISTING VEGETATIVE COVER WILL BE PRESERVED.

12. FUEL STORAGE AREA IF REQUIRED SHALL BE WITHIN THE CONSTRUCTION STAGING AREA, FUEL SHALL BE STORED IN APPROVED MOBILE REFUELING TANK LOCATED AWAY FROM DRAINAGE STRUCTURES AND CHANNELS. FIRE EXTINGUISHERS SHALL BE LOCATED NEAR FUEL STORAGE AREA AND BE OF SUITABLE TYPE, POSTED, AND BE MAINTAINED IN GOOD CONDITION.

13. TEMPORARY SEED ALL AREAS OF BARE SOIL (WITH THE ADDITION OF A BLANKET WHERE SLOPES ARE GRATER THAN 3:1) THAT WILL REMAIN UNDISTURBED FOR A PERIOD OF MORE THAN 14 DAYS. SEEDING: OPTIMUM SEEDING DATED ARE MARCH 1 - MAY 10 AND AUGUST 10 - SEPTEMBER 30. SEEDING DATES BETWEEN MAY 10 AND AUGUST 10, MAY NEED TO BE IRRIGATED. FOR SEEDING RECOMMENDATIONS SEE PRACTICE 3.12, INDIANA STORM WATER QUALITY MANUAL.

14. ALL SOIL STOCKPILES, AREAS THAT ARE DISTURBED DURING CONSTRUCTION, AND DRAINAGE SWALES WHICH ARE SCHEDULED OR LIKELY TO BE LEFT INACTIVE FOR FOURTEEN (14) CALENDAR DAYS OR MORE MUST BE TEMPORARILY OR PERMANENTLY SEEDED WITH MEASURES APPROPRIATE FOR THE SEASON.

15. LOCATION OF ON-SITE POSTING, OF THE COMPLETE RULE 5 NOI AND NOS LETTERS, SHALL BE AVAILABLE AT THE ENTRANCE TO THE SITE AND VISIBLE TO THE PUBLIC.

16. SITE ELEVATIONS ARE BASED ON NAVD 88, AND HORIZONTAL DATUM IS BASED ON INDIANA STATE PLANE COORDINATES NAD 83.

Temporary stabilization plans and sequence of implementation.

a. On site posting of the complete Rule 5 NOI and NOS Letters. Location of the posting and plans shall be made available by the owner contractor.
b. Installation of all erosion/sedimentation controls including stabilized construction entrance, silt fences, etc... per the engineering plans.
c. Clearing and grubbing.
d. Topsoil stockpile surrounded with silt fencing.
e. Rough cut and fill of all proposed parking lot, Building pad, and other major grading per the engineering plans shall be done to rough grades at start of construction to prevent excessive soil erosion due to construction.
f. Construction of storm sewers, sanitary sewers, water mains, and other utility, and implementation of storm sewer inlet protection at each open-grate structure (fabric drop inlet protection, basket inlet protection, etc., as per engineering plans).
g. Regrade and construct parking lot, building pad, and sidewalks.
h. Finish grading of all disturbed areas with permanent seeded, mulched, and landscaping, when no additional disturbance is anticipated.
i. Complete permanent erosion control and restoration of site vegetation. Erosion control measures are to be removed upon permanent vegetative cover being established.

RESPONSIBLE INDIVIDUAL FOR SWPPP

NAME:	**Guy Costanza**
COMPANY:	**G.M. Contracting**
ADDRESS:	**1001 Perthshire Lane**
	Dyer, IN 46311
PHONE NO.:	**(219) 682-7610**

SWPPP LEGEND:

- TEMPORARY ENTRANCE/EXIT (GRAVEL OR MAT)
- SOIL STOCK PILE
- B – BASKET INLET/CATCH BASIN PROTECTION
- GL – GRADE LIMITS
- SF – SILT FENCE (SEDIMENT FENCE)
- CW – CONCRETE WASH OUT AREA
- TS – TEMPORARY SEEDING
- P – POSTING (RULE 5 NOI & NOS LETTER AND LOCAL SWPPP PERMIT)
- + XXX.XX – GRADES (PROPOSED)
- BMP – BMP SNOUT

NOTES:
1. FOR POST CONSTRUCTION STORM WATER POLLUTION PREVENTION:
   – ALL TEMPORARY SEEDED AREAS ARE TO BE PERMANANTLY SEEDED.

DONALD C. TORRENGA REGISTERED No. 19868 STATE OF INDIANA PROFESSIONAL ENGINEER

NORTH
GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

TORRENGA ENGINEERING, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
907 RIDGE ROAD, MUNSTER, INDIANA 46321
Tel. No.: (219) 836-8918 website: www.torrenga.com

RIDGE CAFE ADDITION
MUNSTER, INDIANA
STORMWATER POLLUTION PREVENTION PLAN

REVISIONS:
01-06-2020
11-25-2020
04-10-2020
03-17-2020

DATE: 02-18-2020

CLIENT:
G.M. Contracting
1001 Perthshire Lane
Dyer, IN 46311

JOB NO: 2019-5034
SCALE: 1"=20'

SHEET
C-5.0

FILE NO: Z:\2019-5034 407-411 Ridge Rd Munster (Alternate)\dwg\2019-5034 407-411 Ridge Rd Munster (Alternate) 2.dwg 3/17/2020 1:41:38 PM CDT

TEMPORARY CONSTRUCTION ENTRANCE/EXIT

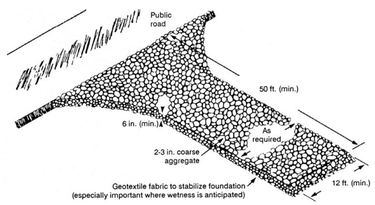
Purpose: To provide a stable entrance/exit condition from the construction site, and to keep mud and sediment off public roads.

"GRAVEL"

Requirements:
Width: 12 feet minimum or full width of entrance
Length: 50 feet minimum
Material: 2-3 inch diameter washed stone (INDOT CA No. 2), with Geotextile Fabric Underliner.
Thickness: 6 inch minimum

Installation:
1. Remove all vegetation and other objectionable material from the foundation area.
2. Install pipe under the stone if needed to provide proper public road drainage.
3. Install Geotextile fabric on the graded foundation area prior to stone placement.
4. Divert all surface runoff and drainage from the stone to sediment trap.

Maintenance:
1. Inspect entrance pad for sediment deposits weekly and after storm events or heavy use.
2. Reshape pad as needed for drainage and runoff control.
3. Topdress with clean stone as needed.
4. Remove mud and sediment tracked or washed onto public road by brushing or sweeping. No flushing of sediment off the street
5. Repair any broken road pavement immediately.



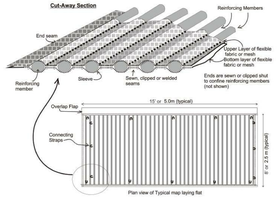
Plans of a temporary gravel construction entrance/exit pad.

"MAT"

Requirements:
Width: 12 feet minimum or full width of entrance
Length: 50 feet minimum
Material: Geotextile-Type mats, **AGES Mud Mat** or approved equal

Installation:
1. Install pipe under mat if needed to provide proper site drainage.
2. Install Geotextile-Type mat on the graded foundation area.
3. Divert all surface runoff and drainage from the mat to sediment trap.

Maintenance:
1. Inspect entrance mat for sediment deposits weekly and after storm of a minimum of 1/2 inch rainfall events or heavy use.
2. Reshape pad as needed for drainage and runoff control.
3. Repair or replace mats as needed.
4. Remove mud and sediment tracked or washed onto public road by brushing or sweeping. No flushing of sediment off the street.



PLANS OF TEMPORARY CONSTRUCTION INGRESS/EGRESS PAD

TEMPORARY SEEDING

Purpose: To stabilize disturbed areas especially along both sides of the streets and courts after final grading work is completed and where additional work is not scheduled.

Requirements:
Site and seedbed preparation: Graded, and lime and fertilizer applied

Seed Selected:
Selected on the basis of quick germination, growth, and time of year, see Table for temporary seeding recommendations.

Fertilize: According to soil test or use 600 lbs/acre 12-12-12 analysis or equivalent.

Mulch: 1.5 - 2 tons/acre straw. Straw must be dry, unchopped and free of undesirable seeds.

Application:
1. Fertilize and lime as recommended by the soil test.
2. Till the soil to obtain a uniform seedbed, working the fertilizer and lime into the soil 2-4" deep with a disk or rake operated across the slope.
3. Apply seed uniformly with a drill or cultipacker-seeder, or by broadcasting, and cover to a depth as shown on Table for temporary seeding recommendations.
4. If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
5. Mulch all seeded areas. (Note: If seeding is done with a hydroseeder, fertilizer and mulch can be applied with the seed in a slurry mixture.)

Maintenance:
1. Inspect periodically after planting to see that vegetative stands are adequately established; re-seed if necessary.
2. Check for erosion damage after storm events and repair; re-seed and mulch if necessary.

Notes:
1. Vegetative Filter Strip: permanent or temporary, shall be done on all disturbed areas along both sides of the streets and courts to reduce erosion where additional work is not scheduled.
2. Permanent Seeding: or sodding shall be done at the time of final landscaping.

Exhibit 3.11-B. Temporary Seeding Recommendations.

Seed species*	Rate/acre	Planting depth	Optimum dates**
Wheat or rye	150 lbs.	1 to 1½ in.	9/15 to 10/30
Spring oats	100 lbs.	1 in.	3/1 to 4/15
Annual ryegrass	40 lbs.	1/4 in.	3/1 to 5/1 8/1 to 9/1
German millet	40 lbs.	1 to 2 in.	5/1 to 6/1
Sudangrass	35 lbs.	1 to 2 in.	5/1 to 7/30

* Perennial species may be used as a temporary cover, especially if the area to be seeded will remain idle for more than a year.(PERMANENT SEEDING)
** Seeding done outside the optimum dates increases the chances of seeding failure.

PERMANENT SEEDING

Purpose: To stabilize disturbed areas especially along both sided of the streets and courts after final grading work is completed and where additional work is not scheduled.

Requirements:
Site and seedbed preparation: Graded, and lime and fertilizer applied.

Seed Selected:
Selected on the basis of Site Conditions, Soil PH, intended land use, and expected level of maintenance see Table for permanent seeding recommendations.

Fertilize: According to soil test or use 600 lbs/acre 12-12-12 analysis or equivalent.

Mulch: 1.5 - 2 tons/acre straw. Straw must be dry, unchopped and free of undesirable seeds.

Application:
1. Fertilize and line as recommended by soil test.
2. Till the soil to obtain a uniform seedbed, working the fertilizer and lime into the soil 2–4" deep with a disk or rake operated across the slope.
3. Apply seed uniformly with a drill or cultipacker-seeder, or broadcasting, and cover to a depth of ¼ to ½ inch.
4. If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
5. Mulch all seeded areas. (Note: If seeding is done with a hydroseeder, fertilizer and mulch can be applied with the seed in a slurry mixture.)

Maintenance:
1. Inspect periodically, especially after storm events, until the stand is successfully established. (Characteristics of a successful stand include: vigorous dark green or bluish-green seedling; uniform density with nurse plants, legumes, and grasses well intermixed; green leaves; and the perennials remaining green throughout the summer, at least at the plant base.)
2. Plan to add fertilizer the following seasons according to soil test recommendations.
3. Repair damaged, bare or sparse areas by filling any gullies, refertilizing, over- or re-seeding, and mulching.
4. If plant cover is sparse or patchy, review the plant materials chosen, soil fertility, moisture condition, and mulching; then repair the affected area either by over-seeding or by re-seeding, and mulching.
5. If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems. (Contact your SWCD or Cooperative Extension office for assistance.)
6. If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.

Notes:
1. Permanent seeding optimum dates are March 1 to May 10 and August 10 to September 30, seeding done between May 10 to August 10 may require irrigation. Temporary seeding may be used as an alternative until preferred date for Permanent Seeding.
2. Retention/Detention area walls and base will be seeded as soon as possible using permanent seeding when possible, mulch or erosion control blankets are to be used on seeded areas to protect the soil from wind and water impact. Install silt fences around Retention/Detention area until seed is established.

Seeding Recommendations.
This table provides several seeding options. Additional seed species and mixtures are available commercially. When selecting a mixture, consider site conditions, including soil properties (e.g., soil pH and drainage), slope aspect and the tolerance of each species to shade and droughtiness.

Seed species and mixtures	Rate per acre: Permanent	Rate per acre: Dormont or frost	Optimum soil pH
OPEN AND DISTURBED AREAS (REMAINING IDLE MORE THAN 1 YR.)			
1. Perennial ryegrass	35 to 50 lbs.	50 to 75 lbs.	5.6 to 7.0
+ white or ladino clover*	1 to 2 lbs.	1 ½ to 3 lbs.	
2. Kentucky bluegrass	20 lbs.	30 lbs.	5.5 to 7.5
+ smooth bromegrass	10 lbs.	15 lbs.	
+ switchgrass	3 lbs.	5 lbs.	
+ timothy	4 lbs.	6 lbs.	
+ perennial ryegrass	10 lbs.	15 lbs.	
+ white or ladino clover*	1 to 2 lbs.	1 ½ to 3 lbs.	
3. Perennial ryegrass	15 to 30 lbs.	22 to 45 lbs.	5.6 to 7.0
+ tall fescue**	15 to 30 lbs.	22 to 45 lbs.	
4. Tall fescue**	35 to 50 lbs.	50 to 75 lbs.	5.5 to 7.5
+ ladino or white clover*	1 to 2 lbs.	1 ½ to 3 lbs.	
STEEP BANKS AND CUTS, LOW MAINTENANCE AREAS (NOT MOWED)			
1. Smooth bromegrass	25 to 35 lbs.	35 to 50 lbs.	5.5 to 7.5
+ red clover*	10 to 20 lbs.	15 to 30 lbs.	
2. Tall fescue**	35 to 50 lbs.	50 to 75 lbs.	5.5 to 7.5
+ white or ladino clover*	1 to 2 lbs.	1 ½ to 3 lbs.	
3. Tall fescue**	35 to 50 lbs.	50 to 75 lbs.	5.5 to 7.5
+ red clover*	10 to 20 lbs.	15 to 30 lbs.	
(Recommended north of US 40)			
4. Orchardgrass	^^ to 30 lbs.	30 to 45 lbs.	5.6 to 7.0
+ red clover*	10 to 20 lbs.	15 to 30 lbs.	
+ ladino clover*	1 to 2 lbs.	1 ½ to 3 lbs.	
5. Crownvetch*	10 to 12 lbs.	15 to 18 lbs.	5.6 to 7.0
+ tall fescue**	20 to 30 lbs.	30 to 45 lbs.	
(Recommended south of US 40)			
LAWNS AND HIGH MAINTENANCE AREAS			
1. Bluegrass	105 to 140 lbs.	160 to 210 lbs.	5.5 to 7.0
2. Perennial ryegrass (turf-type)	45 to 60 lbs.	70 to 90 lbs.	5.6 to 7.0
+ bluegrass	70 to 90 lbs.	105 to 135 lbs.	
3. Tall fescue (turf-type)**	130 to 170 lbs.	195 to 250 lbs.	5.6 to 7.5
+ bluegrass	20 to 30 lbs.	30 to 45 lbs.	
CHANNELS AND AREAS OF CONCENTRATED FLOW			
1. Perennial ryegrass	30 to 150 lbs.	150 to 225 lbs.	5.6 to 7.0
+ white or ladino clover*	1 to 2 lbs.	1 ½ to 3 lbs.	
2. Kentucky bluegrass	20 lbs.	30 lbs.	5.5 to 7.5
+ smooth bromegrass	10 lbs.	15 lbs.	
+ switchgrass	3 lbs.	5 lbs.	
+ timothy	4 lbs.	6 lbs.	
+ perennial ryegrass	10 lbs.	15 lbs.	
+ white or ladino clover*	1 to 2 lbs.	1 ½ to 3 lbs.	
3. Tall fescue**	100 to 150 lbs.	150 to 225 lbs.	5.5 to 7.5
+ ladino or white clover*	1 to 2 lbs.	1 ½ to 3 lbs.	
4. Tall fescue**	100 to 150 lbs.	150 to 225 lbs.	5.5 to 7.5
+ Perennial ryegrass	15 to 20 lbs.	22 to 30 lbs.	
+ Kentucky bluegrass	15 to 20 lbs.	22 to 30 lbs.	

* For best results: (a) legume seed should be inoculated; (b) seeding mixtures containing legumes should preferably be spring-seeded, although the grass may be fall-seeded and the legume frost-seeded; and (c) if legumes are fall-seeded, do so in early fall.
** Tall fescue provides little cover for, and may be toxic to, some species of wildlife. The IDNR recognizes the need for additional research on alternatives to tall fescue, such as buffalograss, orchardgrass, smooth bromegrass, and switch-grass. This research, in conjunction with demonstration areas, should focus on erosion control characteristics, wildlife toxicity, turf durability, and drought resistance.

DORMANT AND FROST SEEDING

Purpose:
1. To provide early germination and soil stabilization in the spring.
2. To reduce sediment runoff to downstream areas.
3. To repair previous seedings.

Requirements:
Site and seedbed preparation: Graded, lime and fertilizer applied.

Seed Selected:
Selected on the basis of Site Conditions, Soil PH, intended land use, and expected level of maintenance. See Table for dormant or frost seeding recommendations.

Fertilize: According to soil test or use 400-600 lbs/acre 12-12-12 analysis or equivalent.

Application:
Dormant seeding is a temporary or permanent seeding application at a time when soil temperatures are too low for germination to occur (less than 50 °F) Frost seeding is a temporary or permanent seeding application in early spring when soils are in the freeze-thaw stage.

For Dormant Seeding: (Seeding dates: Dec. 1-Feb. 28)
1. Site preparation and mulching can be done months ahead of actual seeding, apply mulch upon completion of grading (Practice 3.15)
2. Broadcast fertilizer as recommended by soil test.
3. Broadcast seeding on top of the mulch and/or into existing ground cover at the rate shown on table. (if site preparation occurs within the recommended dates, fertilize and lime, seed, and mulch at the time.)

For Frost Seeding: (Seeding dates: Feb. 28 - Mar. 28)
1. Broadcast fertilizer as recommended by a soil test.
2. Select an appropriate seed species or mixture from table for temporary seeding or table for permanent seeding, and broadcast on to the seedbed or into the existing ground cover at the rate shown. (Do not work the seed into the soil.)

Maintenance:
1. Apply 200-300 lbs./acre of 12-12-12 or equivalent fertilizer between Apr. 15 and May 10 or during periods of vigorous growth.
2. Re-seed and mulch any areas that have inadequate cover by mid- to late April. For best results, re-seed within the recommended dates shown for temporary seeding or for permanent seeding.

Temporary Dormant or Frost Seeding Recommendations.

Seed species*	Rate per acre
Wheat or rye	150 lbs.
Spring oats	150 lbs.
Annual ryegrass	60 lbs.

*Perennial species may be used as temporary cover, especially if the area to be seeded will remain idle for more than a year.

MULCHING

Purpose: To promote seed germination and seedling growth, a temporary surface stabilization, and protecting the soil from wind and water impact.

Requirements:
Material: Straw, hay, wood fiber or excelsior, see table for Mulch Materials, Rates, and comments.
Comments:
Coverage: 75% of the soil surface
Anchoring: Required to prevent displacement by wind or water, see table for Mulch Anchoring Methods.

Application:
1. Apply mulch at the recommended rate.
2. Spread uniformly by hand, hay fork, mulch blower, or hydromulcher with no more than 25% of the surface visible.
3. Anchor immediately if using straw or hay, using one of the folliwing methods:
   - Crimp with mulch anchoring tool.
   - Hydromulch with short cellulose fibers.
   - Apply liquid tackifier.
   - Cover with netting secured with metal staples..

Maintenance:
1. Inspect after storm events to check for movement of mulch or for erosion.
2. If washout, breakage, or erosion is present, repair the surface, then re-seed, re-mulch.
3. Continue inspections until vegetation is firmly established.

Exhibit 3.15-B. Mulch Materials, Rates, and Comments.

Material	Rate	Comments
Straw or hay	1½-2 tons/acre	Should be dry, unchopped, free of undesirable seeds. Spread by hand or machine. Must be crimped or anchored (see *Exhibit 3.15-D*).
Wood fiber or cellulose	1 ton /acre	Apply with a hydromulcher and use with tacking agent.
Long fiber wood (excelsior)	1/2-3/4 ton/acre	Anchor in areas subject to wind.

Exhibit 3.15-D. Mulch Anchoring Methods.

Anchoring method	How to apply
Mulch anchoring tool OR Farm disk (dull, serrated, and set straight)	Crimp or punch the straw or hay into the soil 2-4 in. Operate machinery on the contour of the slope.
Cleating with dozer tracks	Operate dozer up and down slope, not across, or else the tracks will form rills.
Wood hydromulch fibers	Apply 1-2 tons/acre using a hydromulcher at a rate of 750 lbs./acre with a tacking agent (or according to contractor specifications). Do not use in areas of concentrated flow.
Asphalt emulsion	Emulsified asphalt should conform to the requirements of ASTM Spec. #977. Apply with suitable equipment at a rate of 0.05 gal./sq. yd. Do not use in areas of concentrated flow.
Synthetic tackifier, binder or soil stabilizer	Apply according to manufacturer's recommendation.
Biodegradable netting (polypropylene or similar material)*	Apply over mulch and staple with 6-8 in. wire staples. Follow manufacturer's recommendations for installation. Best suited to slope application.

* Install the netting immediately after applying the mulch. In areas of concentrated water flow, lay it parallel to the direction of flow; on other slopes, lay it either parallel or perpendicular to direction of flow. Edges of adjacent netting strips should overlap 4-6 in., with the strip on the upgrade side of any lateral water flow on top. Installation details are site specific, so follow manufacturer's directions.

SELF-MONITORING PROGRAM

A self-monitoring program that includes the following must be implemented at all permitted project sites:

1. A trained individual shall perform a written evaluation of the project site a minimum of one (1) time per week and by the end of the next business day following each measurable storm event.
2. The evaluation must address the maintenance of existing storm water quality measures to ensure they are functioning properly and identify additional measures necessary to remain in compliance with all applicable statutes and rules.
3. Written evaluation reports must include:
   a. the name of individual performing the evaluation;
   b. the date of evaluation;
   c. problems identified at the project site; and
   d. details of corrective actions recommended and completed.
4. All evaluation reports for the project site must be made available to the MS4 Operator or other designated entity within forty-eight (48) hours of a request.
5. Evaluation reports must be maintained for a period of two (2) years from date of NOT.
6. All evaluation reports will be submitted to the Town of Munster when requested.

Date: _____
Project: _____
Inspected by: _____
Type of Inspection: Scheduled Weekly Rain Event

CONSTRUCTION SITE INSPECTION AND MAINTENANCE LOG
(To be Completed by Property Owner or Agent)

All stormwater pollution prevention BMPs shall be inspected and maintained as needed to ensure continued performance of their intended function during construction and shall continue until the entire site has been stabilized and a Notice of Termination has been issued. An inspection of the project site must be completed by the end of the next business day following each measurable storm event. If there are no measurable storm events within a given week, the site should be monitored at least once in that week. Maintenance and repair shall be conducted in accordance with the accepted site plans. This log shall be kept as a permanent record and must be made available to **the Town of Munster Town** Engineer, in an organized fashion, within forty-eight (48) hours upon request.

Yes	No	N/A	
			1. Are all sediment control barriers, inlet protection and silt fences in place and functioning properly?
			2. Are all erodible slopes protected from erosion through the implementation of acceptable soil stabilization practices?
			3. Are all dewatering structures functioning properly?
			4. Are all discharge points free of any noticeable pollutant discharges?
			5. Are all discharge points free of any noticeable erosion or sediment transport?
			6. Are designated equipment washout areas properly sited, clearly marked, and being utilized?
			7. Are construction staging and parking areas restricted to areas designated as such on the plans?
			8. Are temporary soil stockpiles in approved areas and properly protected?
			9. Are construction entrances properly installed and being used and maintained?
			10. Are "Do Not Disturb" areas designated on plan sheets clearly marked on-site and avoided?
			11. Are public roads at intersections with site access roads being kept clear of sediment, debris and mud?
			12. Is spill response equipment on-site; logically located; and easily accessed in an emergency?
			13. Are emergency response procedures and contact information clearly posted?
			14. Is solid waste properly contained?
			15. Is a stable access provided to the solid waste storage and pick-up area?
			16. Are hazardous materials, waste or otherwise, being properly handled and stored?
			17. Have previously recommended corrective actions been implemented?

If you answered "no" to any of the above questions, describe any corrective action which must be taken to remedy the problem and when the corrective actions are to be completed.

REPORT SAMPLE

SPILL PREVENTION AND RESPONSE

Purpose: Procedures and practices to prevent and control spills in a manner that minimizes or eliminates the discharge of spilled material to the drainage system or watercourses.

Hazardous Waste Products:
- Petroleum Products,
- Asphalt Products,
- Concrete Curing Compounds,
- Pesticides,
- Acids,
- Paints,
- Stains,
- Solvents,
- Wood Preservatives,
- Roofing Tar, or

Other Waste Products:
- Soil stabilizers/binders
- Dust palliatives
- Herbicides
- Growth inhibitors
- Fertilizers
- Deicing/anti-icing chemicals
- Fuels
- Lubricants
- Other petroleum distillates

Any materials deemed a hazardous waste in 40 CFR Parts 110, 117, 261, or 302

Spill Prevention Practices:
The following are management practices used for reduction of spills and other accidental exposure of materials and substances to storm water runoff:
a. The contractors and subcontractors shall refer to the Material Safety Data Sheet (MSDS) for information on the proper storage, use, and clean-up methods for all materials anticipated being on the project site.
b. All required materials for spill clean up and disposal of all onsite materials shall be kept on site in a project trailer with easy access for all users of associated materials.
c. All disposals of spilled materials shall be done in accordance with Federal, State and Local waste disposal regulations. All contractors and subcontractors shall be responsible for any and all spills associated with their work.
d. Prompt cleanup of any spills that may occur of liquid or dry materials.
e. Cleanup of sediments that have been tracked by vehicles or have been transported by wind or storm water about the site or onto nearby roadways.

Response Practices:
In the event that a large spill occurs (that which requires extensive cleanup actions, refer to MSD sheets for information), the following procedures shall be followed to minimize exposure of the material.

a. Immediate action shall be taken to control and contain the spill to prevent it from entering any nearby storm sewer structures or open waters.
b. Notify the Town of Munster Fire Department at 911 for all combustible and flammable materials.
c. Notify the Federal Emergency Spill Hotline at 1-800-424-8802 within 2 hours for spills above the reported allowable quantity, or if the material enters any nearby storm sewer structures or open waters.
d. Notify the Indiana Emergency Response Hotline at 1-888-233-7745.
e. The spill area shall be isolated from all surrounding areas with absorbent pads, booms, and pillows designed for the use of spill containment and absorption.
f. The spill kits that are required to be on site shall be utilized.
g. Emergency Response teams shall be contacted for extensive spills above and beyond the containment by available methods.

Waste Disposal Management Practices:
All solid waste associated with the construction and development of this project shall be removed and disposed of properly with in all applicable state and federal laws associated with the waste generated. Developer and/or contractor are to provide on-site dumpsters, rented from a licensed solid waste management company, to ensure waste is collected and disposed of properly. All trash and construction debris from the site will be deposited in a dumpster. No construction waste will be buried onsite. All personnel will be instructed regarding the correct procedure for waste disposal.

a. Select a designated waste collection area onsite.
b. Provide an adequate number of containers with lids or covers throughout the site, and frequent pickups
c. Provide immediate cleanup of any container spills.
d. Make sure that construction waste is collected, removed, and disposed of only at authorized areas.

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RIDGE CAFE ADDITION
MUNSTER, INDIANA

SWPPP DETAILS & SPECIFICATIONS

11-25-2020
REVISIONS:
DATE: 11-27-2019

CLIENT:
G.M. Contracting
1001 Perthshire Lane
Dyer, IN 46311

JOB NO: 2019-5034
SCALE: NA

SHEET
C-6.0

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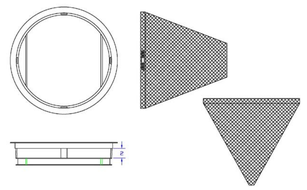
BASKET INLET / CATCH BASIN PROTECTION

Purpose: To prevent excessive sediment from entering storm sewers at inlet/catch basin, allowing full use of the storm drain system during the construction period.

Requirements: Steel Frame with top width-length dimensions such that the basket fits into the inlet and/or catch basin (circular and/or rectangular), and a replaceable Geotextile fabric bag attached with a steel band locking cap that is suspended from the frame, **Catch -all Inlet Protector Hancor Flo-Gard bt Nyloplast** or approved equal.

Installation:
1. Install protection to existing and newly installed inlet/catch basin in a new development before land disturbing activities begin in a stabilized area.
2. Remove the grate, and place the basket assembly under the grate on the lip of the structure frame.
3. Replace the inlet/catch basin grate.

Maintenance:
1. Inspect weekly during construction and after each storm event of a minimum of 1/2 inch rainfall, and remove built-up sediment.
2. Replace bag every six (6) months.
3. Replace the Geotextile fabric bag if there is a hole and/or won't pass water.
4. Replace the Geotextile fabric bag after any oil, gasoline or solvent spill.



GENERAL NOTES:
FRAME: Top flange fabricated from 1¼"x1¼"x¼" angle. Base rim fabricated from 1½"x½"x¼" channel. Handles and suspension brackets fabricated from 1¼"x¼" flat stock. All steel conforming to ASTM-A36.
SEDIMENT BAG: Bag fabricated from 4 oz./sq.yd. non-woven polypropylene geotextile reinforced with polyester mesh. Bag secured to base rim with a stainless steel band and lock.

TYPICAL INLET/CATCH BASIN PROTECTION
INSERT DETAIL

STREET AND PARKING LOT SWEEPING

Purpose: To reduce the amount of pollutants that get washed into the storm drain and ultimately transported and deposited in waterbodies.

Application:
1. Sweeping at points of egress where sediment is tracked from project site onto public or private streets and roads.

Limitations:
1. Sweeping may be ineffective if soil is wet or heavy accumulation of mud.
2. May require repeat cleanings.

Maintenance:
1. Inspect potential sediment tracking ingress and egress points locations daily, and after rain events.
2. Visible sediment observed outside the construction limits shall be swept and removed daily.
3. Do not use kick brooms or sweeper attachments. These tend to spread the dirt rather than remove it.
4. If not mixed with debris or trash, consider incorporating the removed sediment back into the project.
5. Be careful not to sweep up any unknown substance or any object that may be potentially hazardous.
6. Adjust brooms frequently; maximize efficiency of sweeping operations.
7. After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite.

SILT FENCE

Purpose: To retain sediment from small sloping disturbed areas by reducing the velocity of sheet flow.

Requirements:
Trench: 6" minimum depth, flat bottom , filled with compacted soil to bury lower portion of fence fabric.

Support : 2" x 2" hardwood stakes set at least 8-inches to 12-inches deep.

Spacing of Support: 6-foot maximum on center.

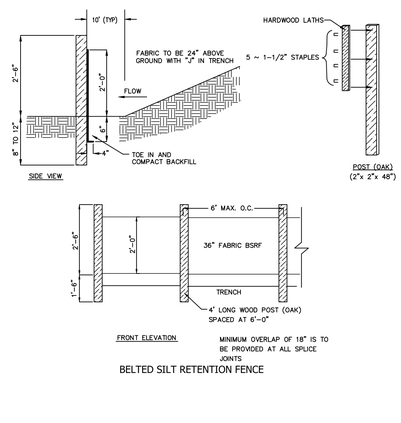
Fence height: A 2-ft. minimum or high enough so depth of impounded water does not exceed one-half the height of the fence at any point along the line.

Attachement: Hardwood laths secured to stakes with five (5) 1-1/2 inch staples.

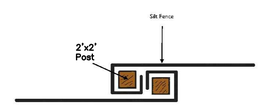
Fence Fabric: Spunbound polyester material with a fiberglass scrim or net sandwiched in between the layers, **SS-700 SiltSaver** or approved equal.

Installation:
1. Along the entire intended fence line, maintain contour as much as possible, dig a 6" deep flat bottom trench.
2. On the downslope side of the trench, drive the post 8" to 12" into the ground.
3. Run a continuous length of fence fabric along upslope side of posts.
4. Fasten fence fabric to the upslope side of the stakes, extending it into the trench, and securing it with hardwood laths secured with five (5) 1-1/2 staples. The bottom 12" of the fence fabric shall be left unsecured to allow for entrenchment.
5. If a joint is necessary, staple the overlap to the nearest post with a wood lath.
6. Place the bottom 1' of fabric in the 6" deep trench, extending the remaining 4" of fabric toward the upslope side.
7. Backfill the trench with compacted earth.

Maintenance:
1. Inspect silt fence once every seven calendar days and 24 hours after each storm event of minimum of 1/2 inch rainfall.
2. If fence fabric tears, starts to decompose, or becomes ineffective, replace the affected portion, as outlined by the manufacturer.
3. Remove deposited sediment when it reaches one-half the height of the fence at its lowest point or is causing the fabric to bulge.
4. Take care to avoid undermining the fence during clean out.
5. After watershed has been stabilized, remove fence and sediment deposits, bring the disturbed area to grade and stabilize.



BELTED SILT RETENTION FENCE



Silt Fence Wrap Joint Detail

TOPSOIL SALVAGE & UTILIZATION

Purpose: To provide a method of preserving topsoil for use in establishing vegetation to achieve final site stabilization.

Specifications:
Material
Typically the darker, friable, loamy surface layer of soil found immediately below vegetation.

Storage Area
1. Free of stumps, rock, and construction debris.
2. Stockpile covered with vegetation or a tarp.
3. Surrounded by a sediment barrier or sediment filter.
4. Stockpile outside rooting zone of trees to be protected.

Application:
Salvaging and Stockpiling Topsoil
1. Determine depth and suitability of topsoil at site.
2. Prior to stripping topsoil, install any site-specific down slope measures needed to control storm water runoff and sedimentation.
3. Remove soil material no deeper than the "surface soil".
4. Stockpile the material in accessible locations that will not interfere with other construction activities or block drainage.
5. Stockpiled soil should be temporarily seeded and surrounded by a sediment control measure.

Spreading Topsoil
1. Prior to applying topsoil, grade the subsoil and roughen the top three to four inches by disking.
2. Apply topsoil evenly to a depth of a minimum of four inches, then compact slightly to improve contact with the subsoil.
3. Do not apply topsoil when the site is wet, muddy, or frozen.
4. After spreading the topsoil, grade and stabilize the site.

Maintenance:
1. Inspect daily.
2. Check for damage to perimeter barrier; repair immediately.
3. Check for erosion or damage to newly spread topsoil; repair immediately and revegetate.

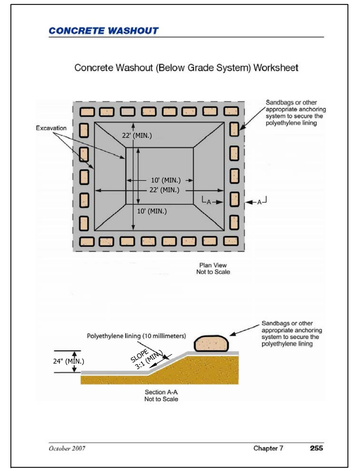
CONCRETE WASHOUT

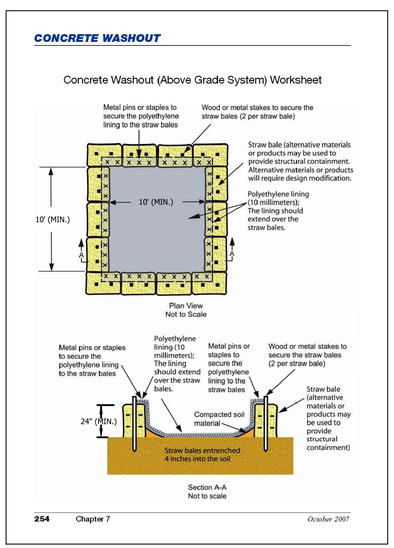
Purpose: To reduce the discharge of pollutants associated with concrete waste through consolidation of solids and retention of liquids.

Requirements:
1.) Locate concrete washout systems at least 50 feet from any creeks, wetlands, ditches, karst features, or storm drains/manmade conveyance systems.
2.) Locate concrete washout systems in relatively flat areas with established vegetative cover and do not receive runoff from adjacent land areas.
3.) Locate in areas that provide easy access for concrete trucks and other construction equipment.
4.) Locate away from other construction traffic to reduce the potential for damage to the system.
5.) Minimum of ten millimeter polyethylene sheeting that is free of holes, tears, and other defects. The sheeting selected should be of an appropriate size to fit the washout system without seams or overlap of the lining.
6.) Signage.
7.) Orange safety fencing or equivalent.
8.) Straw bales, sandbags (bags should be ultraviolet-stabilized geotextile fabric), soil material, or other appropriate materials that can be used to construct a containment system (above grade systems).

Installation:
1.) Dependent upon the type of system, either excavate the pit or install the containment system.
2.) A base shall be constructed and prepared that is free of rocks and other debris that may cause tears or punctures in the polyethylene lining.
3.) Install the polyethylene lining. For excavated systems, the lining should extend over the entire excavation. The lining for bermed systems should be installed over the pooling area with enough material to extend the lining over the berm or containment system. The lining should be secured with pins, staples, or other fasteners.
4.) Place flags, safety fencing, or equivalent to provide a barrier to construction equipment and other traffic.
5.) Place a non-collapsing, non-water holding cover over the washout facility prior to a predicted rainfall event to prevent accumulation of water and possible overflow of the system (optional).
6.) Install signage that identifies concrete washout areas.
7.) Post signs directing contractors and suppliers to designated locations.

Maintenance:
1.) Inspect daily and after each storm event.
2.) Inspect the integrity of the overall structure including, where applicable, the containment system.
3.) Inspect the system for leaks, spills, and tracking of soil by equipment.
4.) Inspect the polyethylene lining for failure, including tears and punctures.
5.) Once concrete wastes harden, remove and dispose of the material.
6.) Excess concrete should be removed when the washout system reaches 50 percent of the design capacity. Use of the system should be discontinued until appropriate measures can be initiated to clean the structure. Prefabricated systems should also utilize this criterion, unless the manufacturer has alternate specifications.
7.) Upon removal of the solids, inspect the structure. Repair the structure as needed or construct a new system.
8.) Dispose of all concrete in a legal manner. Reuse the material on site, recycle, or haul the material to an approved construction/demolition landfill site. Recycling of material is encouraged. The waste material can be used for multiple applications including but not limited to roadbeds and building. The availability for recycling should be checked locally.
9.) The plastic liner should be replaced after every cleaning; the removal of material will usually damage the lining.
10.) The concrete washout system should be repaired or enlarged as necessary to maintain capacity for concrete waste.
11.) Concrete washout systems are designed to promote evaporation. However, if the liquids do not evaporate and the system is near capacity it may be necessary to vacuum or remove the liquids and dispose of them in an acceptable method. Disposal may be allowed at the local sanitary sewer authority provided their National Pollutant Discharge Elimination System permits allow for acceptance of this material. Another option would be to utilize a secondary containment system or basin for further dewatering.
12.) Prefabricated units are often pumped and the company supplying the unit provides this service.
13.) Inspect construction activities on a regular basis to ensure suppliers, contractors, and others are utilizing designated washout areas. If concrete waste is being disposed of improperly, identify the violators and take appropriate action.
14.) When concrete washout systems are no longer required, the concrete washout systems shall be closed. Dispose of all hardened concrete and other materials used to construct the system.
15.) Holes, depressions and other land disturbances associated with the system should be backfilled, graded, and stabilized.





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