

**TOWN OF MUNSTER
PLAN COMMISSION
STAFF REPORT
TUESDAY, MARCH 14, 2017, 7:30 PM**

1. **Petition PC 17-003**— Centennial Village LLC, c/o Jeff Ban, DVG, Inc., 11065 Broadway, Suite D, Crown Point, IN – requesting developmental site plan approval for Building D, Lot 3 in Centennial Village PUD.

BACKGROUND

Current Zoning is PUD.

The Petitioner has provided site plans, elevations, and landscaping plans.

Staff has requested the Petitioner to revise the utility plan to relocate the grease traps into the parking lot rather than the public sidewalk. Staff has also requested the Petitioner amend the water service to separate the water service from the fire service. This will allow for shut-off for non-payment without shutting off the fire service, potentially placing the building in jeopardy in the case of a fire.

The landscaping plan is lacking the planting schedule and a note about providing irrigation. Staff is requesting the Petitioner submit a revised landscaping plan including a planting schedule listing both the common and botanical names and the number of plants proposed. Also, Petitioner should include a note requiring irrigation.

RECOMMENDATION

In previous meetings the Commission discussed the sequence of development with the developer. The Commission expressed that the Petitioner not develop all lots along Calumet Avenue without developing lots within the development. The Petitioner is proposing developing Lot 3/Building C without developing internal lots. The Commission should consider past discussions when determining whether or not to approve the Petition. See attached discussion between Staff and Petitioner regarding development sequence.

Assuming the Commission is comfortable with the sequence of development; Staff recommends approval with the Petitioner's acceptance of the sanitary, water and landscaping revisions requested by Staff.

From: [Jeffrey Ban](#)
To: [Craig Hendrix](#)
Cc: [Dustin Anderson](#); [Michael Matthys](#); [Russ Pozen](#)
Subject: RE: Centennial Village - Building C
Date: 02/21/2017 05:31 PM

There has been a lot of demand for retail on Calumet Avenue. Building C is a small building, only 2 tenant spaces and conforms to the Master Plan. Building C will take very little time to design. CV, LLC is wanting to get Building C started ASAP together with Building D to frame the entry to Centennial Village to create visual interest to the entire project from Calumet Avenue. We are hoping to have local and state approvals for Building C by mid April if all goes well.

Both Building G & H are in the preliminary design phases and are complicated aesthetic and structural buildings. As you are well aware, there are tremendous unsuitable soil conditions to deal with under both buildings....ie garbage. Building H has the worst subsurface soil conditions. Additionally, we are still waiting for confirmation from Century Link on their schedule to move the Fiber Optic line that runs through the middle of Building G. These conditions have slowed the design just like the Springhill Hotel because more design work was required to assure proper building performance.

As the building G & H have gone through the preliminary design phases, their project cost models have been updated and compared to market sales rates for the units. CV, LLC does want to get these 2 buildings going this spring but it has taken longer than expected through the preliminary design and budgeting/costing phases. CV, LLC will be finalizing the approvals for Building G & H in late spring or early summer. I will double check with Matt tomorrow and confirm.

Jeff

Jeffrey R. Ban
Principal



1155 Troutwine Road
Crown Point, IN 46307

Office 219-662-7710
Direct 219-281-4080
Email jrban@dvgtteam.com

From: Craig Hendrix [mailto:chendrix@sehinc.com]
Sent: Tuesday, February 21, 2017 5:11 PM
To: Jeffrey Ban <jrban@dvgtteam.com>
Cc: Dustin Anderson <danderson@munster.org>; Michael Matthys

<mmatthys@lindengroupinc.com>; Russ Pozen <rpozen@dvgtteam.com>

Subject: Re: Centennial Village - Building C

Jeff:

Am I wrong in recalling that building H would be the next one to approve? Seems as though the PC had concerns about developing all of the sites along Calumet Ave, leaving less interest inside the development. Truthfully, I subscribe to the same logic.

What is the schedule for Building H?

Craig Hendrix, PE | Associate
Senior Project Manager
SEH of Indiana, LLC | 9200 Calumet Avenue, Suite N300 | Munster, IN 46321
219.513.2529 direct | 219.406.5496 cell | 219.595.0935 fax
www.sehinc.com
SEH—Building a Better World for All of Us™

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From: Jeffrey Ban <jrb@dvgtteam.com>
To: Dustin Anderson <danderson@munster.org>, 'Craig Hendrix' <chendrix@sehinc.com>
Cc: Michael Matthys <mmatthys@lindengroupinc.com>, Russ Pozen <rpozen@dvgtteam.com>
Date: 02/21/2017 04:48 PM
Subject: Centennial Village - Building C

Dustin and Craig,

Attached is the proposed preliminary architectural renderings/elevations and architectural site plan for Building C at the northeast corner of Village Parkway and Calumet Avenue. We would like you to review these plans and receive your thoughts as we begin to detail the submittal for Building C for the March Plan Commission meeting.

If you would like to meet later this week to discuss, please let me know. Thanks for your help!

Jeff

Jeffrey R. Ban

Principal



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Email jrbn@dvgtteam.com

[attachment "2017_0027_2-17-17_Boards2.pdf" deleted by Craig Hendrix/seh]



Town of Munster
Plan Commission Petition Application

Petition PC 17-002
Date: 03-03-17
Application Fee: \$350
Sign Fee: \$25

OWNER INFORMATION:

Centennial Village, LLC
Name of Owner
9615 Boulevard Drive Highland, IN 46322
Street address, City, ST, ZIP Code
312-907-0151
Phone Number
mkimmel@deloitte.com
Email address

APPLICANT OR PETITIONER INFORMATION (if different than above):

Same as above
Name of Applicant/Petitioner
Street address, City, ST, ZIP Code
Phone Number
Email address

PARCEL INFORMATION:

Centennial Village
Business or Development Name (if applicable)
9505 CAHOMET BUILDING C
Address of Property or Legal Description
Planned Unit Development
Current Zoning

APPLICATION INFORMATION:

Please select what this Application is for:
Subdivision Preliminary Plat Final Plat
Developmental (Site) Plan Review
Rezoning If selected, what is the requested zoning and why?:

Proposed Use: Building C of the Centennial Village P.U.D

DVG Team, Inc. Russ Pozen, PE PE#10910667 219-281-4068
Name of Registered Engineer, Architect or Land Surveyor
1155 Troutwine Road Crown Point, IN 46307
Street address, City, ST, ZIP Code
rpozen@dvgtteam.com
Email address

I hereby authorize, DVG Team, Inc to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this petition application.

Signature of Owner Date 3-3-17
Signature of Applicant or Petitioner Date 3-3-17



Town of Munster Pre-Application Meeting

The Town of Munster is now requiring a pre-application meeting to help the Petitioners get through the Plan Commission process smoothly and more efficiently. All applicants, even those that have been through the Plan Commission process previously, are required to participate in the pre-application meeting before being allowed to apply for a Plan Commission Petition number.

During the pre-application meeting, a member of the Town of Munster Staff will meet with the owner and any designated representative, and will help to determine if a Plan Commission meeting will be necessary for the request or not. If it will be unnecessary for you to attend Plan Commission, you will be directed in the proper measures to accomplish your request.

If it is determined that your request will require Plan Commission, then you will be directed in the process of how to proceed. *If the following items are available, please bring them to the pre-application meeting:*

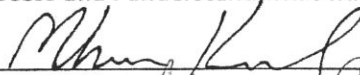
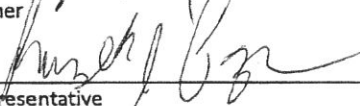
- Information about the site (i.e. address, legal description, etc.)
- Explanation of what you would like to do with the site.
- Any prepared documents that are available.

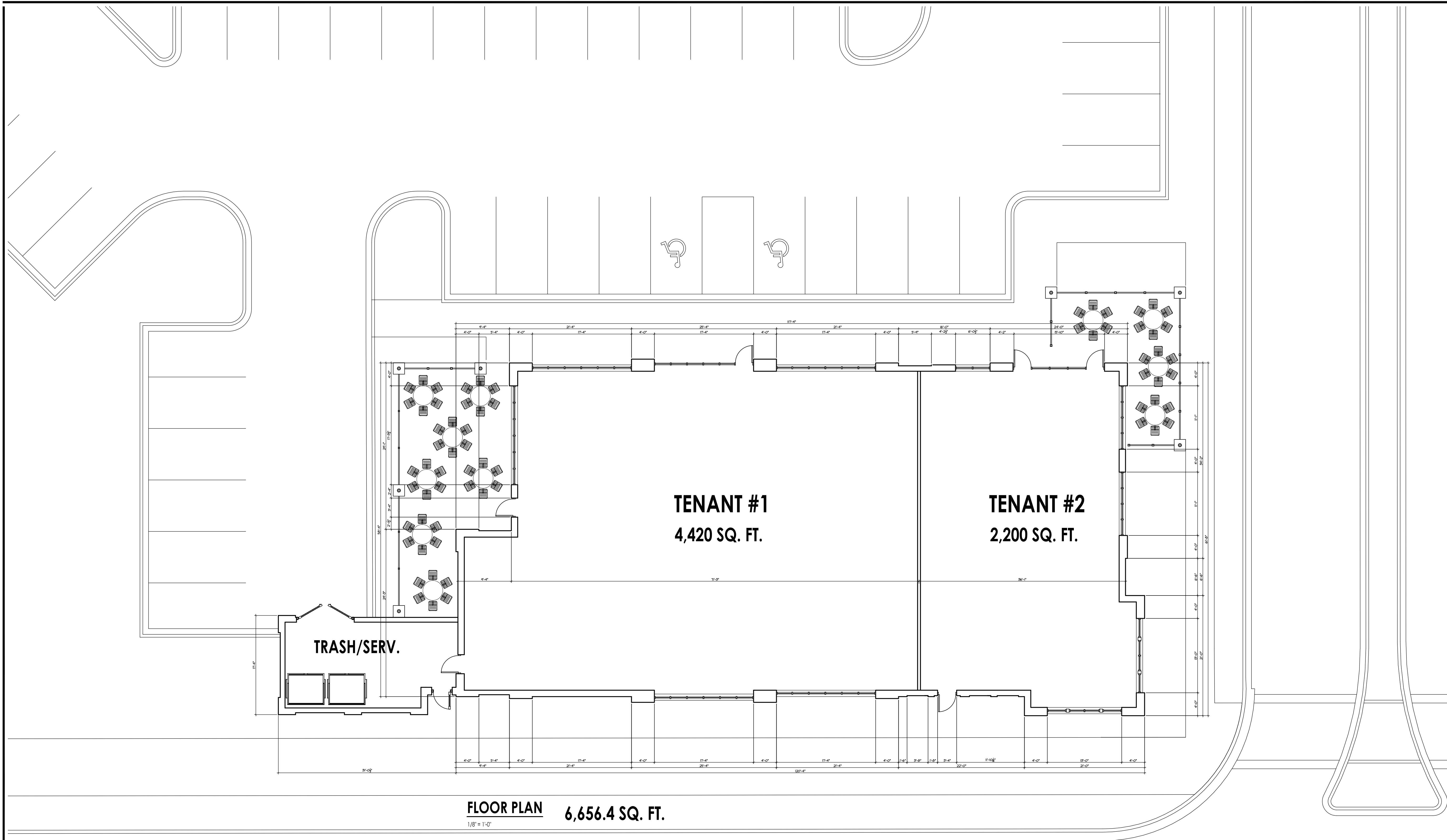
Petitioners should be aware that it may take longer than one meeting to get through Plan Commission and should plan accordingly.

Petitioners must provide a complete Plan Commission submission packet before the appointed date or the Petition will not be heard until the following meeting or until the packet has been completed. Please see the *Developmental Plan Review Checklist* for all items that need to be included in the packet.

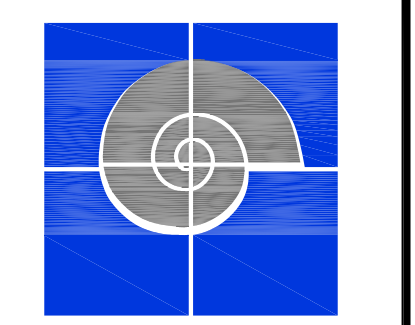
Following the pre-application meeting, you will receive the application packet and further instruction on how to proceed.

By signing below, I acknowledge that I have received, read, and understand the Plan Commission application process and I understand what will be expected of the owner and/or the owner's representative.

	<u>3-3-17</u>
Signature of Owner	Date
	<u>3-3-17</u>
Signature of Representative	Date
_____ Signature of Town of Munster Staff	_____ Date



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Crown Point, IN 46307
(219) 662-7710 Fax (219) 662-2740

Centennial Village
Munster, Indiana
DEVELOPMENT PLAN
AMENDMENT / BUILDING "C"

DATE	DRAWN	DESCRIPTION
10-19-2016	AM	PLAN COMMISSION SUBMITTAL

2016-0095
PROJECT NUMBER

FILE NUMBER
2-21-2017
DATE

TMH
DRAWN BY

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LINDEN GROUP INC.

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 The drawings, specifications, design ideas, and other information contained herein as prepared by the Landscape Architect/Planner for this project are instruments of the Landscape Architect/Planner's service for use solely with respect to this project and, unless otherwise provided, the Landscape Architect/Planner shall be deemed the author of these documents and shall retain all common law, statutory, and other rights, including copyright. This drawing is not to be reproduced without the expressed written consent of IVES/RYAN GROUP, INC.

GENERAL NOTES:

Plant material shall be nursery grown and be either balled and bur-lapped or container grown. Sizes and spreads on plant list represent minimum requirements.

The requirements for measurement, branching and ball size shall conform to the latest addition of ANSI Z60.1, AMERICAN STANDARD OF NURSERY STOCK by the American Nursery & Landscape Association.

Any materials with damaged or crooked/disfigured leaders, bark abrasion, sunscald, insect damage, etc. are not acceptable and will be rejected. Trees with multiple leaders will be rejected unless called for in the plant list as multi-stem or clump (cl.).

If any mistakes, omissions, or discrepancies are found to exist with the work product, the Landscape Architect shall be promptly notified so that they have the opportunity to take any steps necessary to resolve the issue. Failure to promptly notify the Landscape Architect and the Owner of such conditions shall absolve them from any responsibility for the consequences of such failure.

Quantity lists are supplied as a convenience. However, Bidders and the Installing Contractor should verify all quantities. The drawings shall take precedence over the lists. Any discrepancies shall be reported to the Landscape Architect.

Actions taken without the knowledge and consent of the Owner and the Landscape Architect or in contradiction to the Owner and the Landscape Architect's work product or recommendations, shall become the responsibility not of the Owner and the Landscape Architect, but for the parties responsible for the taking of such action.

Civil Engineering or Architectural base information has been provided by others. The location of various site improvements on this set of drawings is only illustrative and should not be relied upon for construction purposes.

Refer to Civil Engineering documents for detailed information regarding size, location, depth and type of utilities, as well as locations of other site improvements, other than landscape improvements.

Plant symbols illustrated on this plan are a graphic representation of proposed plant material types and are intended to provide for visual clarity. However, the symbols do not necessarily represent actual plant spread at the time of installation.

All plant species specified are subject to availability. Material shortages in the landscape industry may require substitutions. All substitutions must be approved by the Village, Landscape Architect and Owner.

Contractor shall verify location of all underground utilities prior to digging.

All perennial, ornamental grass, groundcover and annual beds shall be top dressed with a minimum of three inches (3") of mushroom compost. The top dressing shall be worked into the soil to a minimum depth of nine inches (9") by the use of a cultivating mechanism. Upon completion perennials & ornamental grasses shall be mulched with an additional two inch (2") layer of shredded wood mulch; Annuals & groundcovers shall be covered with an additional two inch (2") layer of mushroom compost.

All other planting beds and tree saucers shall be mulched with a minimum of three inches (3") of shredded wood mulch.

Planting beds adjacent to building shall be mulched in their entirety to the building foundation. Plant materials shall not be installed under building overhangs and other such areas which do not receive natural rainfall.

All bed lines and tree saucers shall require a hand spaded edge between lawn and mulched areas.

Grading shall provide slopes which are smooth and continuous. Positive drainage shall be provided in all areas.

Sod shall be mineral base only.

Seed mixes shall be applied mechanically so that the seed is incorporated into the top one-half inch (1/2") of the seed bed. The seed shall then be covered with the specified blanket (installed per manufacturer's specs) or Hydro-mulch.

All plant material shall be guaranteed for one (1) year from the date of acceptance.




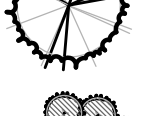
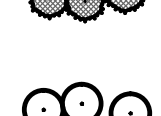

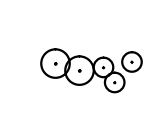

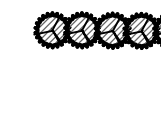



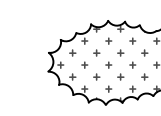



REVISIONS

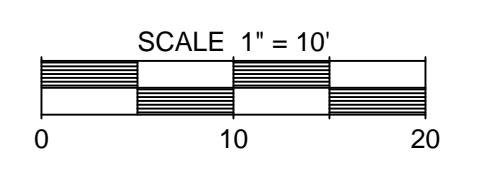
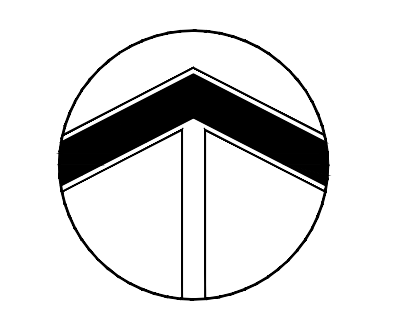
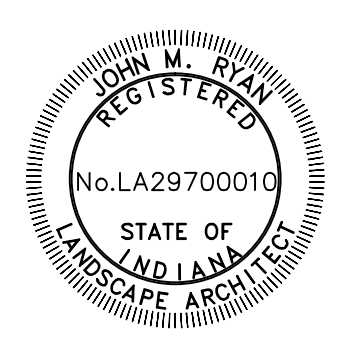
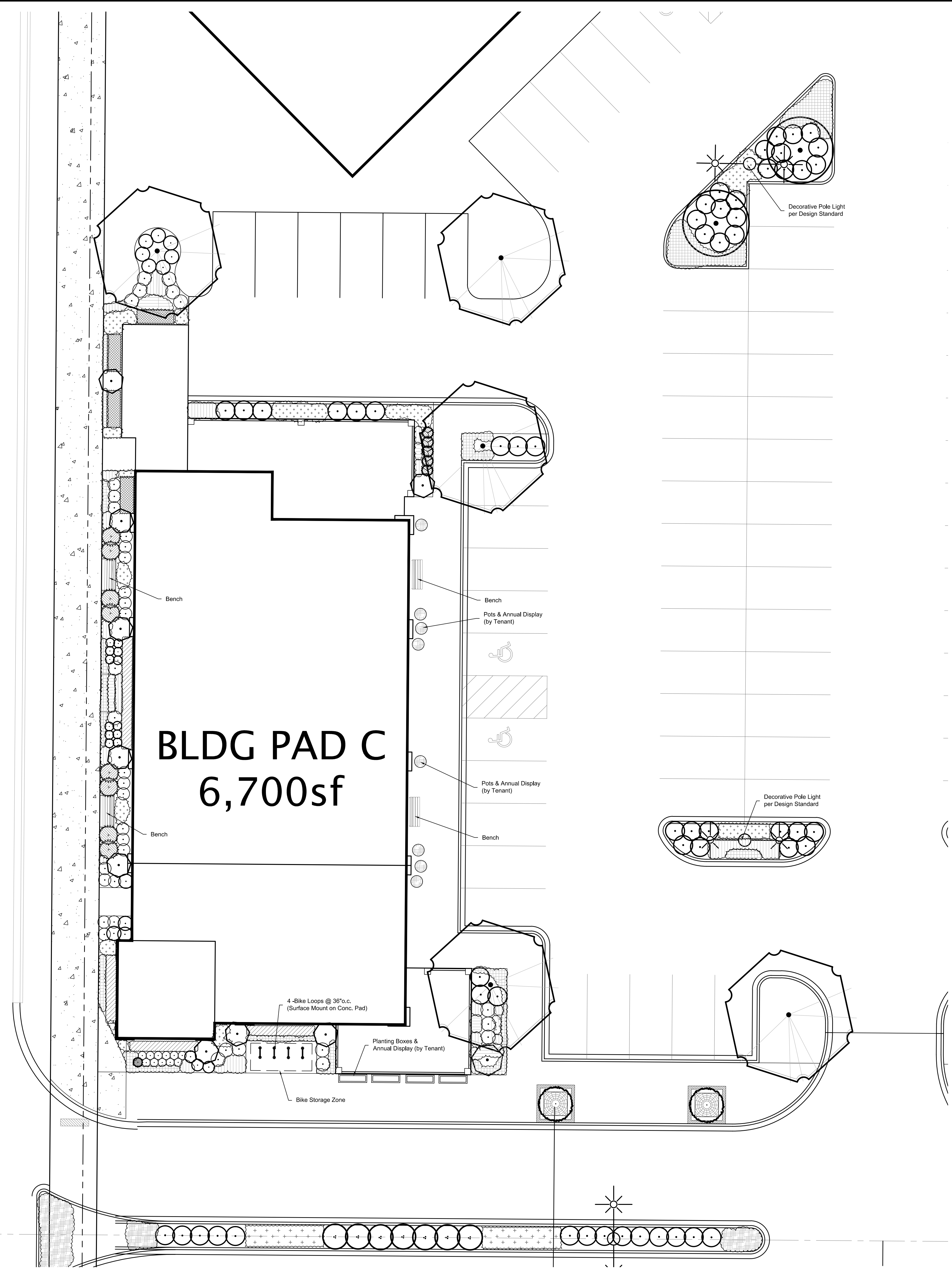
NO.	DATE	DESCRIPTION

CENTENNIAL VILLAGE

BUILDING 'C'

LEGEND

-  DECIDUOUS SHADE TREE - 2.5"
-  COLUMNAR DECIDUOUS TREE - 2.5"
-  DECIDUOUS ORNAMENTAL TREE
-  EVERGREEN TREE
-  DWARF EVERGREEN SHRUB
-  DWARF SHRUB
-  DWARF FLOWERING SHRUB
-  DWARF SHRUB ROSE
-  MEDIUM FLOWERING SHRUB - #5
-  DWARF UPRIGHT EVERGREEN - 4/5'
-  EVERGREEN HEDGE - 36" @ 30"o.c.
-  BROADLEAF EVERGREEN HEDGE - #3 @ 18"o.c.
-  PERENNIALS
-  GROUNDCOVERS
-  ORNAMENTAL GRASSES
-  ANNUAL FLOWERS



IRG Ives/Ryan Group, Inc.
 324 EISENHOWER LANE N.
 LOMBARD, IL 60148
 PHONE: 630.717.0726

Landscape Architecture
 Park & Recreation Design
 Site & Community Planning

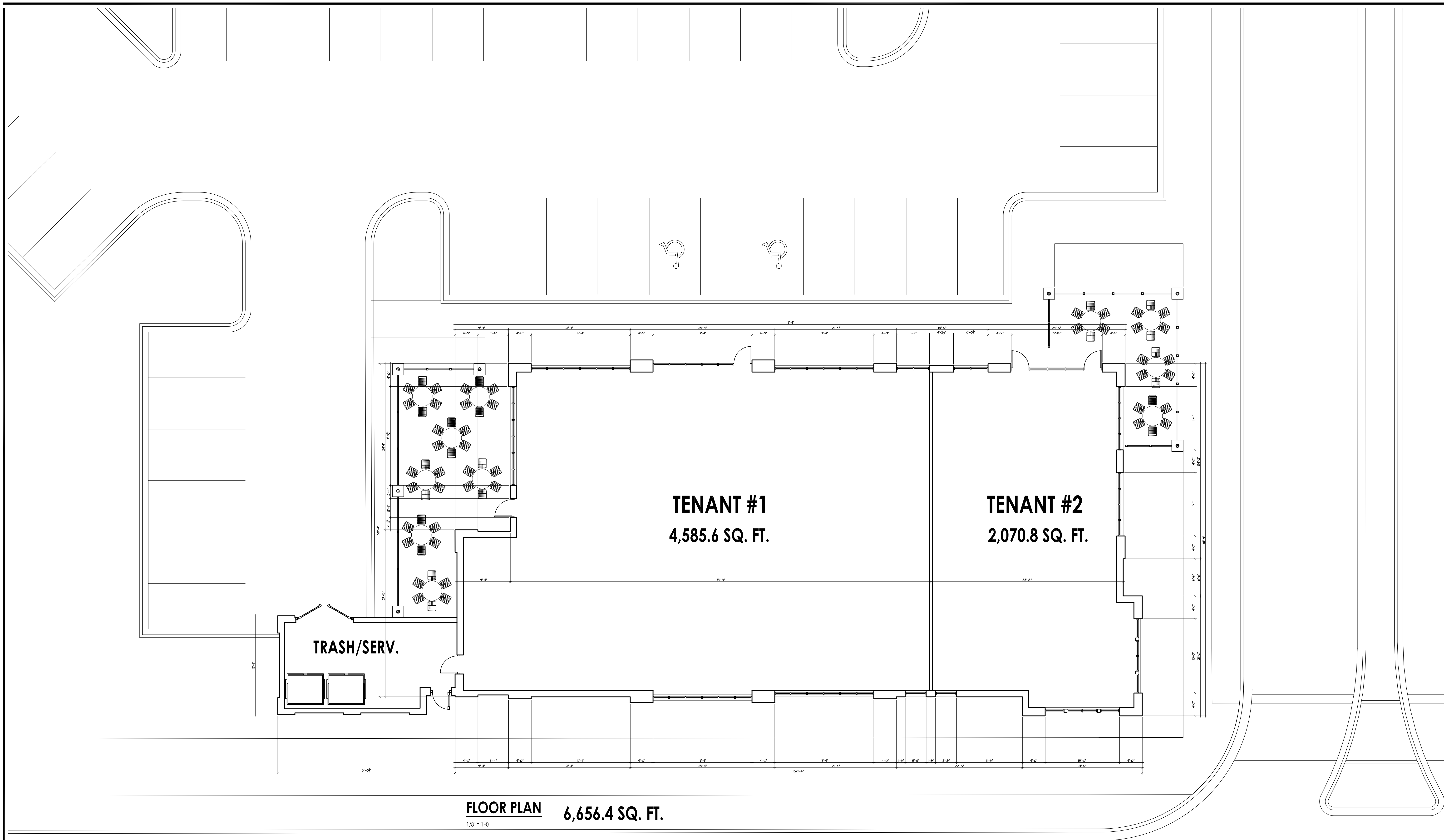
www.ivesryangroup.com

PRELIMINARY LANDSCAPE & AMENITIES PLAN

PROJECT NO.: JOB NO.:
 L215 8944

DATE: 2/20/17
 SCALE: 1"=10'
 PLANNER: JMR
 DRAWN BY: RM
 CHECKED: _____

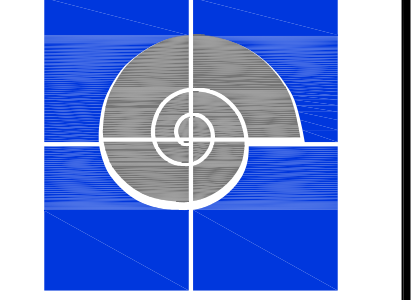
SHEET
L-1



FLOOR PLAN 6,656.4 SQ. FT.
1/8" = 1'-0"



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Centennial Village
Munster, Indiana
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10-19-2016	AM	PLAN COMMISSION SUBMITTAL

2016-0095
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DATE

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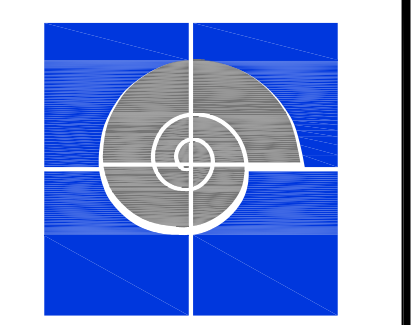
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Centennial Village
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SHEET OF

ELEVATION TAG KEY

- 1 BRICK 1
- 2 BRICK 2
- 3 BRICK 3
- 4 BRICK 4
- 5 STONE 1
- 6 STONE 2
- 7 CANVAS AWNING
- 8 STEEL AWNING
- 9 EIFS CORNICE
- 10 DECORATIVE PRECAST STONE ORNAMENT
- 11 TENANT SIGNAGE
- 12 THERMALLY BROKEN ALUMINUM STORE FRONT
- 13 DECORATIVE LIGHT
- 14 DECORATIVE APPLIED BREAK METAL PANELS
- 15 DECORATIVE RECESSED BREAK METAL PANELS
- 16 PRECAST STONE SILL
- 17 PRECAST STONE CAP
- 18 PRECAST STONE BAND
- 19 INSULATED METAL SERVICE DOOR
- 20 VINYL SLAT GATE COLOR TO MATCH BUILDING STOREFRONT
- 21 WROUGHT IRON FENCE



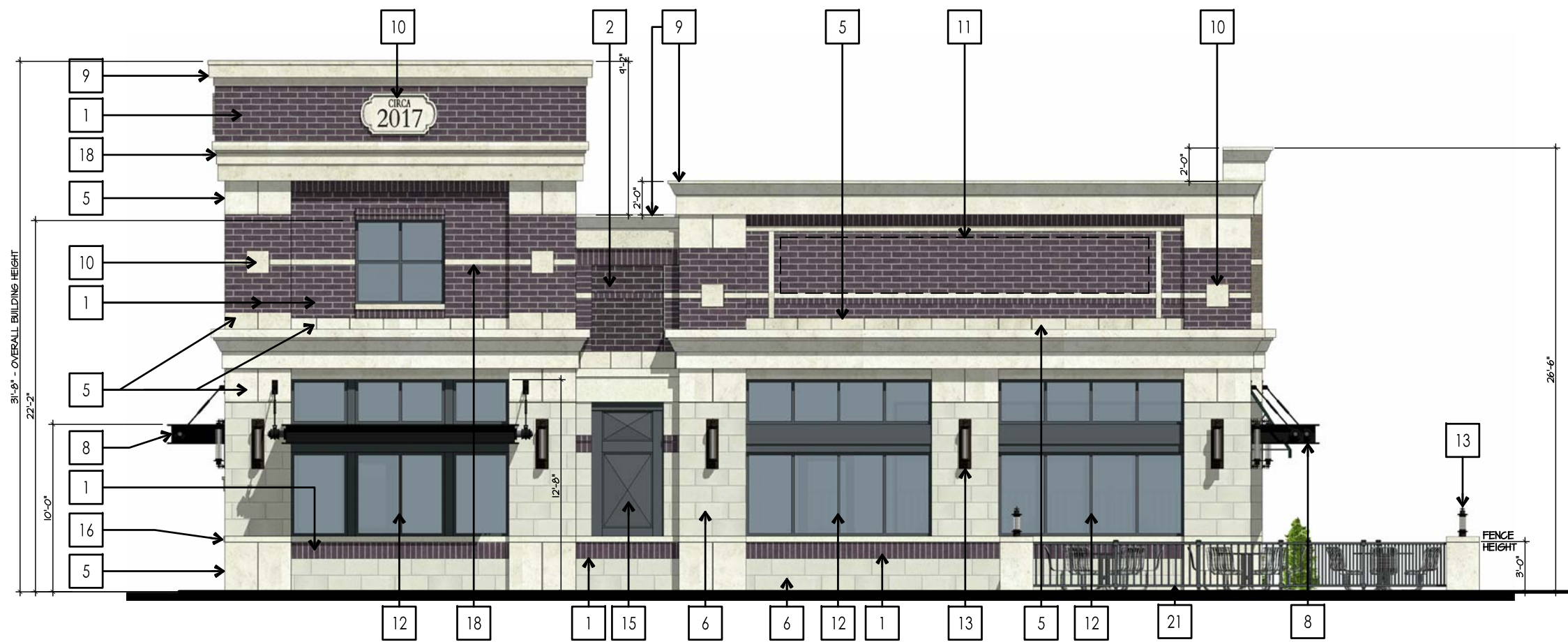
WEST ELEVATION CALUMET AVENUE

1/8" = 1'-0"



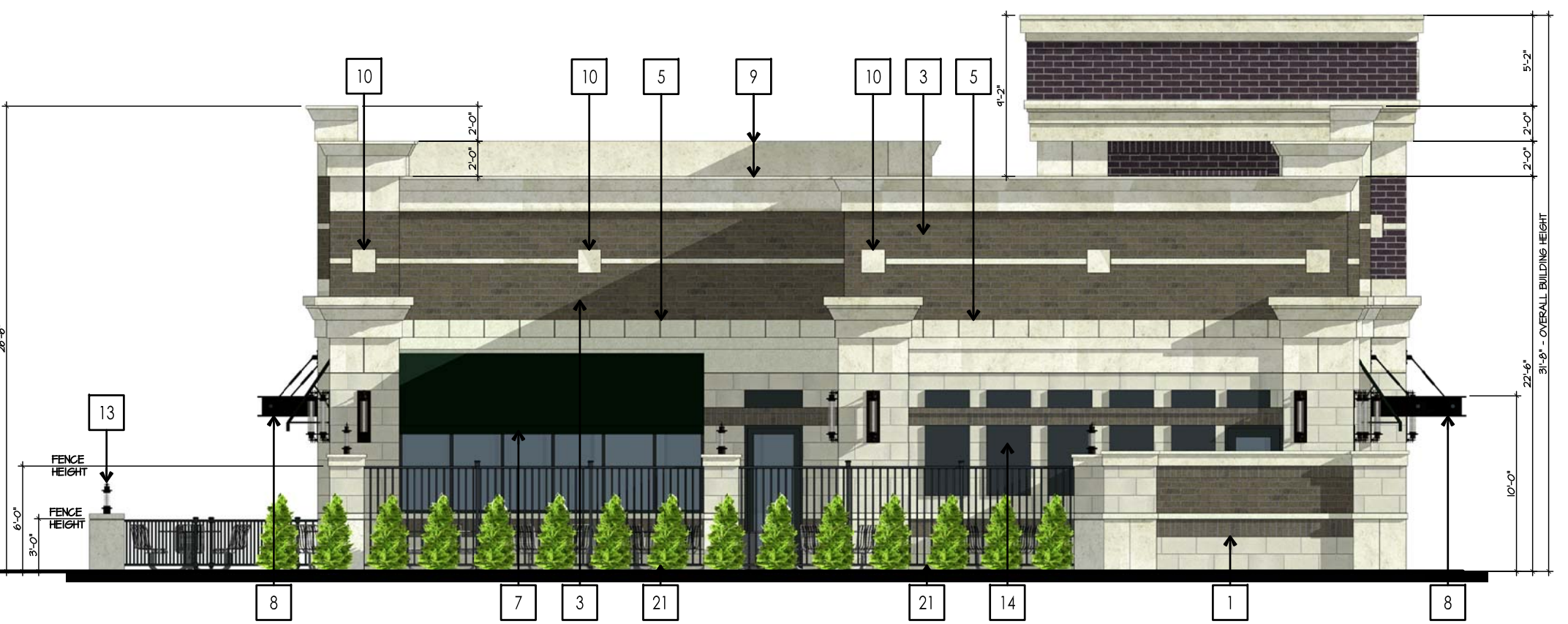
EAST ELEVATION

1/8" = 1'-0"



SOUTH ELEVATION

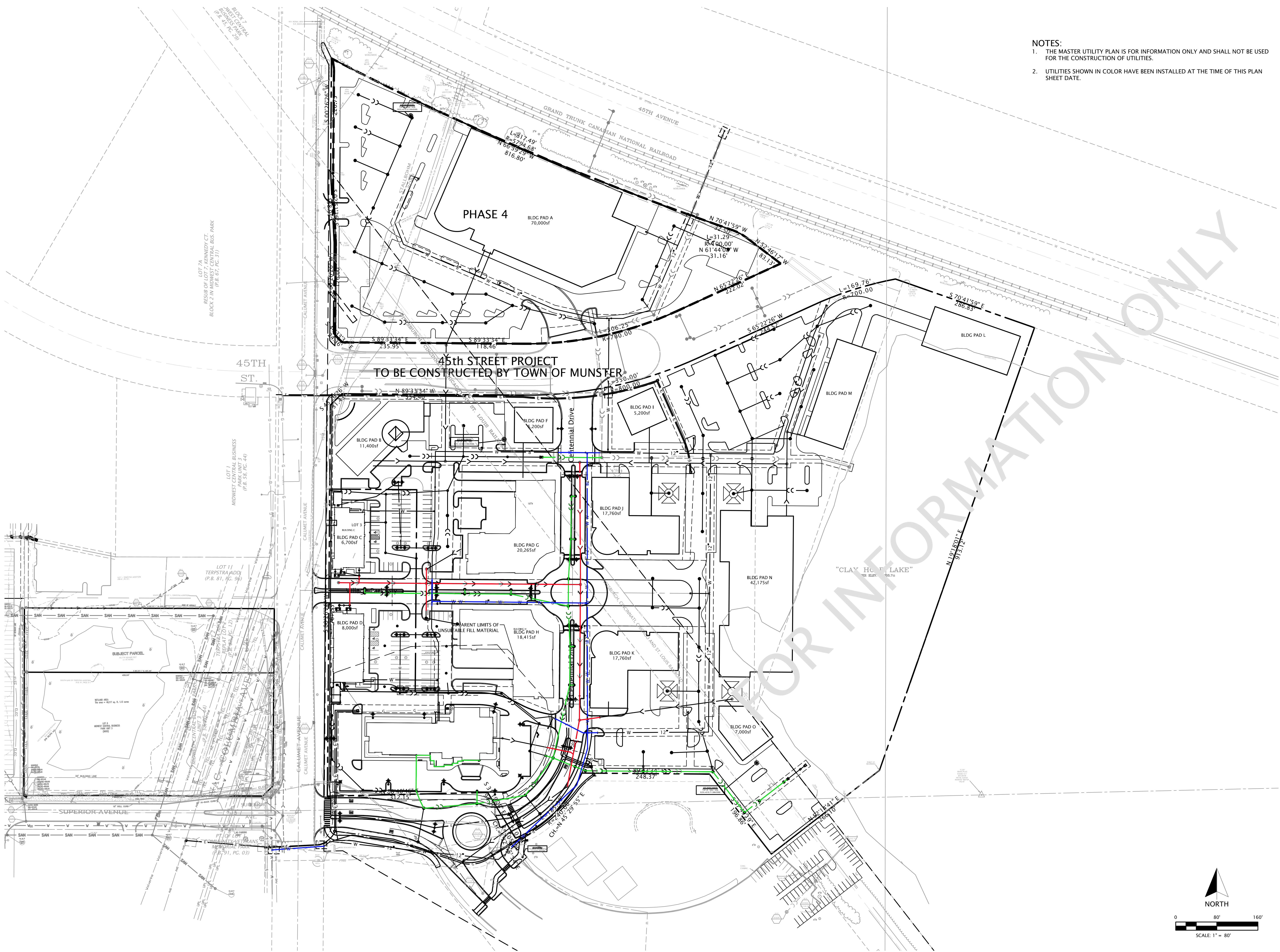
1/8" = 1'-0"



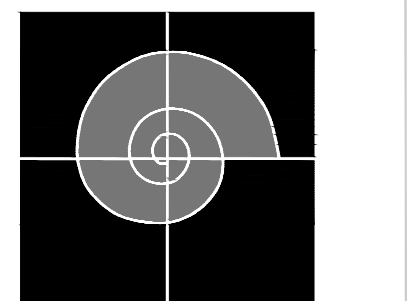
NORTH ELEVATION

1/8" = 1'-0"

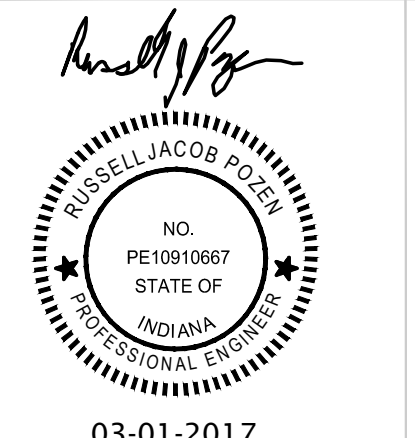
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NOTES:
 1. THE MASTER UTILITY PLAN IS FOR INFORMATION ONLY AND SHALL NOT BE USED FOR THE CONSTRUCTION OF UTILITIES.
 2. UTILITIES SHOWN IN COLOR HAVE BEEN INSTALLED AT THE TIME OF THIS PLAN SHEET DATE.



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 Crown Point, IN 46307
 (219) 662-7710 Fax (219) 662-2740



**Centennial Village
 L.L.C.**
 9615 Boulevard Drive
 Highland, Indiana 46322

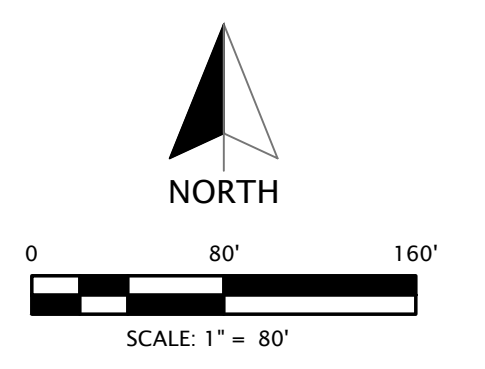
DWG # 14-C-1011	DATE:
REVISIONS AND NOTES:	10-18-16
ADDENDUM 04	
REVISED PER NEW SITE PLANS	03-01-2017

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**Centennial Village
 Infrastructure Plans**
Overall Master Utility Plan

SCALE: 1"=80'
 DESIGN BY: RJP
 DRAWN BY: RJP
 DATE: 10-10-16

C102A



Building C Site Engineering Plans

Centennial Village - Lot 3

Munster, Indiana

ISSUE FOR REVIEW - 02-28-2016



NOT FOR CONSTRUCTION

Centennial Village
L.L.C.
9615 Boulevard Drive
Highland, Indiana 46322

DWG # 14-C-1011	DATE:
REVISIONS AND NOTES:	12-20-16
ISSUE FOR REVIEW	

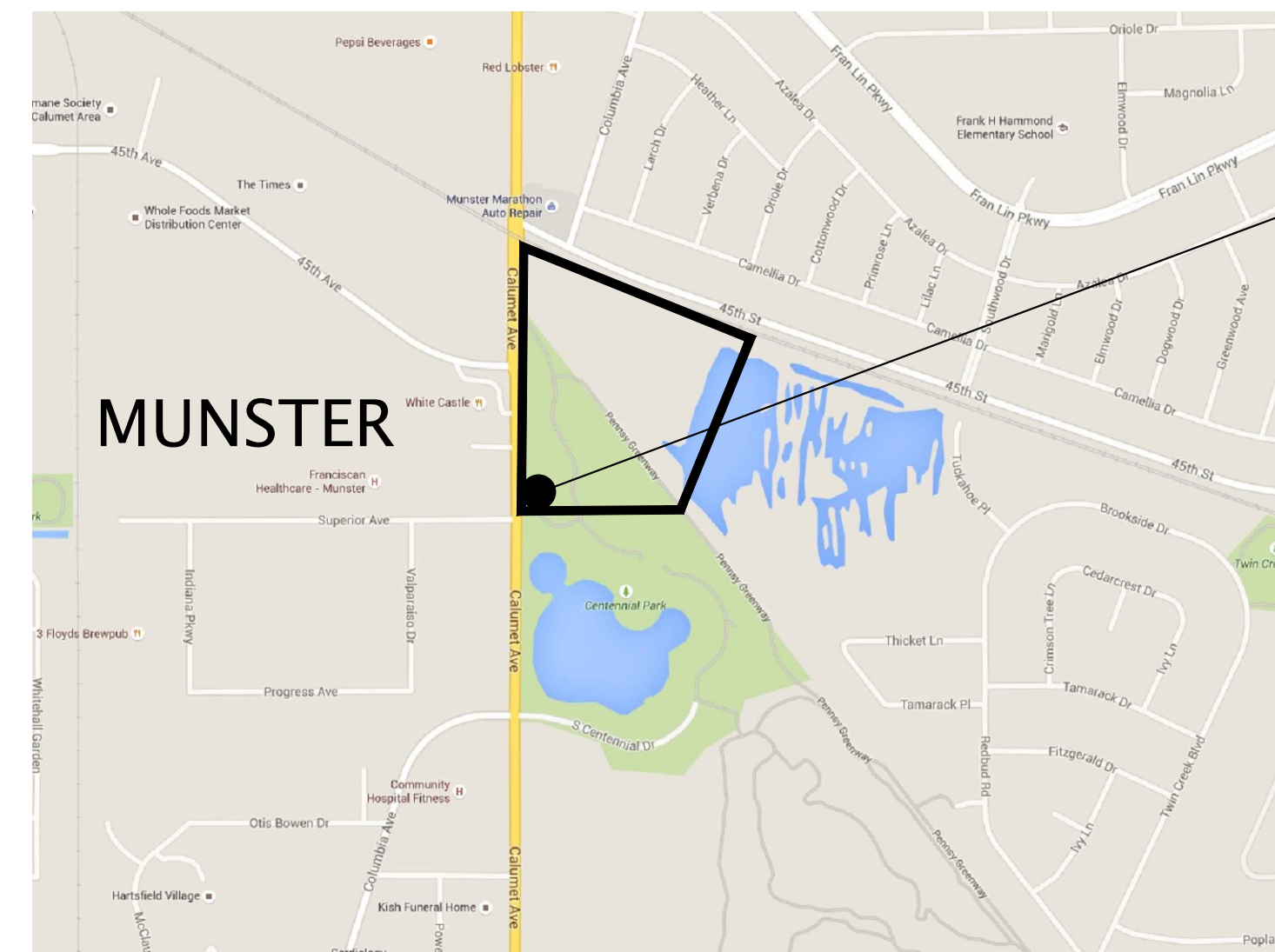
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Centennial Village - Lot 3
Munster, Indiana

Cover Sheet

SCALE: NONE
DESIGN BY: DVG
DRAWN BY: JEJH
DATE: 02-28-17

C001



Location Map
(No Scale)

PROJECT LOCATION

INDEX OF SHEETS

C001	Cover Sheet
C101	Existing Conditions
C102	Demolition Plan
C103	Site Plan
C104	Grading Plan
C105	Utility Plan
C106	Stormwater Pollution Prevention Plan (SWPPP)
C201-C204	Construction Details
C301-C304	SWPPP Details
E101	Lighting, Power, & Telecom Plan

BENCHMARKS

MAG NAIL IN BIKE PATH PAVEMENT NORTH OF PARKING LOT CURB APPROXIMATELY 381 FT. EAST OF CALUMET AVENUE RIGHT-OF-WAY & 100 FT. SOUTH OF SOUTH LINE OF SOUTHWEST QUARTER OF SECTION 30-36-9
ELEVATION=618.87 (NAVD88)

SCHOOL DISTRICT
SCHOOL TOWN OF MUNSTER
8616 COLUMBIA AVENUE
MUNSTER, IN 46321

CABLE UTILITY
COMCAST
844 169TH STREET
HAMMOND, IN 46324
866-594-1234

WATER UTILITY
MUNSTER PUBLIC WORKS
508 FISHER STREET
MUNSTER, IN 46321
219-836-6971

SANITARY SEWER UTILITY
MUNSTER PUBLIC WORKS
508 FISHER STREET
MUNSTER, IN 46321
219-836-6971

ELECTRIC & GAS UTILITY
NIPSCO
801 E. 86th Ave.
Merrillville, IN 46410
800-464-7726

TELEPHONE UTILITY
AT&T
302 S. East Street
Crown Point, IN 46307

DEVELOPER
CENTENNIAL VILLAGE, LLC.
9615 BOULEVARD DRIVE
HIGHLAND, IN 46322

NOTE:

THESE PLANS HAVE BEEN DEVELOPED IN CONJUNCTION WITH SUBSURFACE GEOTECHNICAL REPORTS BY BOTH ALT WITZIG & ATC, DATED FEBRUARY 25, 2016 & JULY 8, 2015 RESPECTIVELY. THESE DOCUMENTS ARE PART OF THE CONTRACT DOCUMENTS FOR THIS PROJECT. THE LOT 1 AREA IS KNOWN TO HAVE AREAS OF UN-SUITABLE FILL MATERIAL CONTAINED WITHIN THE SITE. THE UNSUITABLE FILL MATERIAL IS KNOWN TO CONTAIN MUNICIPAL SOLID WASTE, GRAVEL AND BRICK WASTE RUBBLE. ANY SUCH UNSUITABLE MATERIAL ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER (DVG). ALL EXCAVATION AND UNDERGROUND UTILITY CONSTRUCTION SHALL BE INSTALLED ON SUITABLE TRENCH SUBGRADE OR ON OTHER MEANS TO STRUCTURALLY STABILIZE THE TRENCH AS DEFINED IN THESE PLANS. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND/OR PLANS CERTIFIED BY AN INDIANA PROFESSIONAL ENGINEER TO BE APPROVED BY DVG PRIOR TO IMPLEMENTING THE STABILIZATION METHOD.

OWNER ACKNOWLEDGEMENT OF SITE SUBSURFACE SOIL CONDITIONS

CENTENNIAL VILLAGE, LLC ACKNOWLEDGES THAT THE EXISTING SITE SUBSURFACE SOIL CONDITIONS CONTAIN A VARIETY OF UNSUITABLE FILL MATERIAL INCLUDING MUNICIPAL SOLID WASTE, GRAVEL AND BRICK RUBBLE, AND ORGANIC MATERIAL. CENTENNIAL VILLAGE, LLC UNDERSTANDS THE POTENTIAL OF THE SITE FOR LONG TERM SETTLEMENT & CONSOLIDATION DUE TO THE UNPREDICTABILITY OF THE UNSUITABLE FILL MATERIAL AND ACCEPTS THE RESPONSIBILITY FOR POTENTIAL FUTURE SETTLEMENT & CONSOLIDATION OF THE SITE. CENTENNIAL VILLAGE, LLC HOLDS HARMLESS DVG, INC FOR POTENTIAL FUTURE SETTLEMENT, CONSOLIDATION & THE RESULTING IMPACT TO SITE INFRASTRUCTURE & PAVEMENT SURFACES.

ACKNOWLEDGEMENT

CENTENNIAL VILLAGE, LLC
GENE KIMMEL, MANAGING PARTNER

LEGEND

EXISTING DRAINAGE STRUCTURE	EXISTING CONTOURS
EXISTING END SECTION	PROPOSED CONTOURS
EXISTING SANITARY STRUCTURE	BOUNDARY LINES
EXISTING FIRE HYDRANT	RIGHT-OF-WAY LINES
EXISTING VALVE VAULT	PROPOSED LOT LINES
EXISTING B-BOX	UNDERLYING LOT LINE
EXISTING STREET LIGHT	EASEMENT LINES
POWER POLE	BUILDING LINES
SBC PEDESTAL	CHAINLINK FENCE
MAIL BOX	ORNAMENTAL FENCE
PROPOSED DRAINAGE STRUCTURE	OVERHEAD POWER LINES
PROPOSED END SECTION	TELEPHONE ROUTE
PROPOSED SANITARY STRUCTURE	ELECTRIC ROUTE
PROPOSED FIRE HYDRANT	GAS ROUTE
PROPOSED VALVE VAULT	EXISTING WATER
PROPOSED VALVE BOX	EXISTING STORM
PROPOSED B-BOX	EXISTING SANITARY
PROPOSED STREET LIGHT	PROPOSED WATER
DIRECTION OF FLOW	PROPOSED STORM
OVERLAND FLOOD ROUTE	PROPOSED SANITARY

PROPOSED	
STORM SEWER	CR #1 / 48" Ø R: 2502 TY, D R: 100.00 I: 95.00 (W) I: 94.00 (E)
SANITARY SEWER	SAN MH A / 48" Ø R: 1772 R: 100.00 I: 94.00 (W) I: 93.90 (E)
WATER	FH #1 G: 100.00
	V.B. #1 W/ 6" GATE VALVE G: 100.00 T.P.: 95.0



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Call 811 or 800-382-5544
www.Indiana811.org

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Centennial Village
L.L.C.
9615 Boulevard Drive
Highland, Indiana 46322

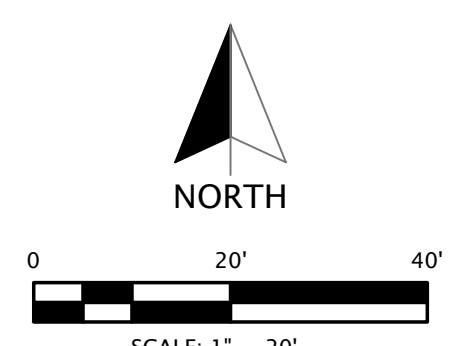
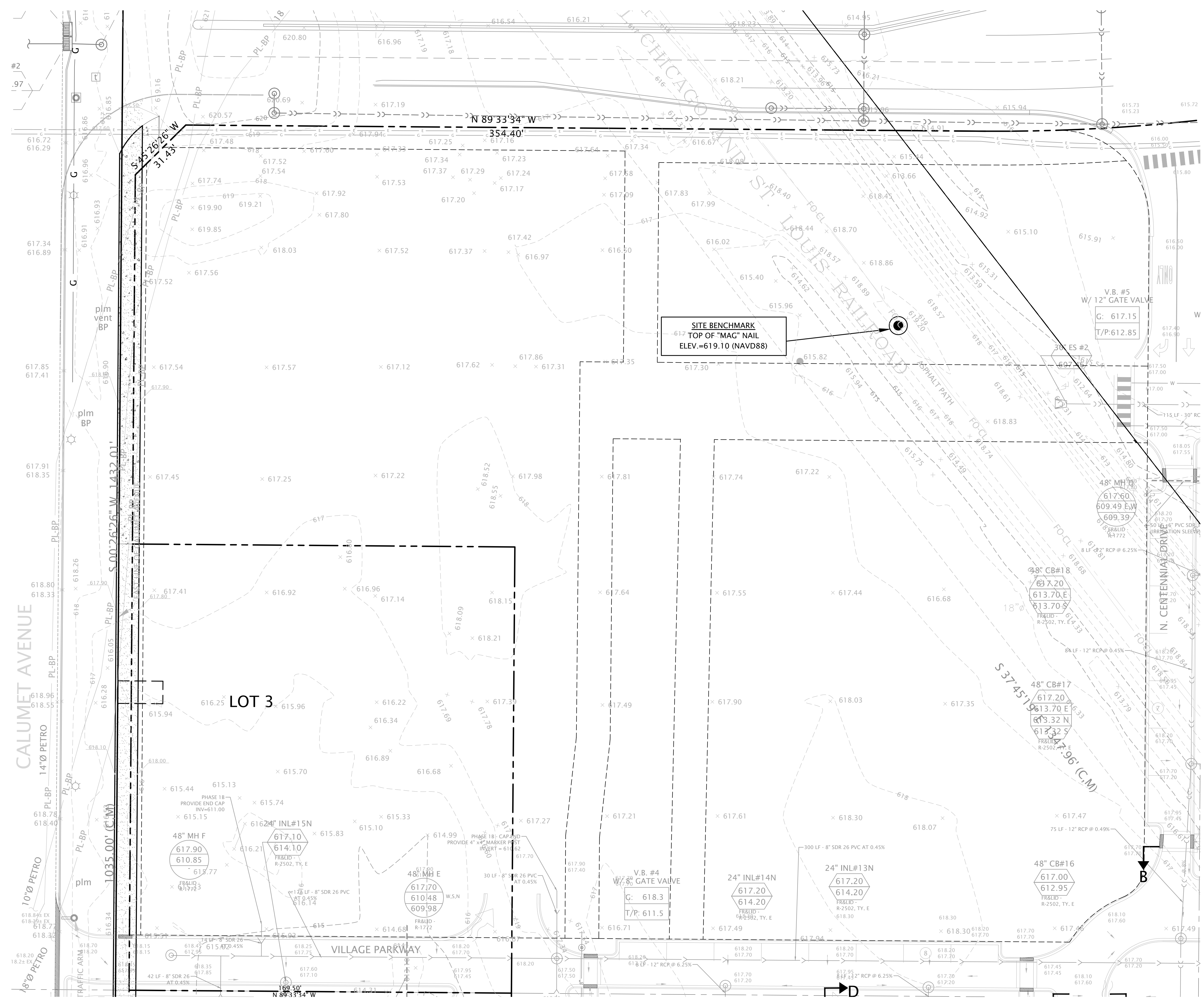
DVG # 14-C-1011	DATE:
REVISIONS AND NOTES:	

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Centennial Village - Lot 3
Munster, Indiana
Existing Conditions

SCALE: 1"=20'
DESIGN BY: RJP
DRAWN BY: RJP
DATE: 10-18-16

C101



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1155 E. Troutwine Road
Crown Point, IN 46307
(219) 662-7710

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Centennial Village
L.L.C.
9615 Boulevard Drive
Highland, Indiana 46322

DVG # 14-C-1011	DATE:
REVISIONS AND NOTES:	

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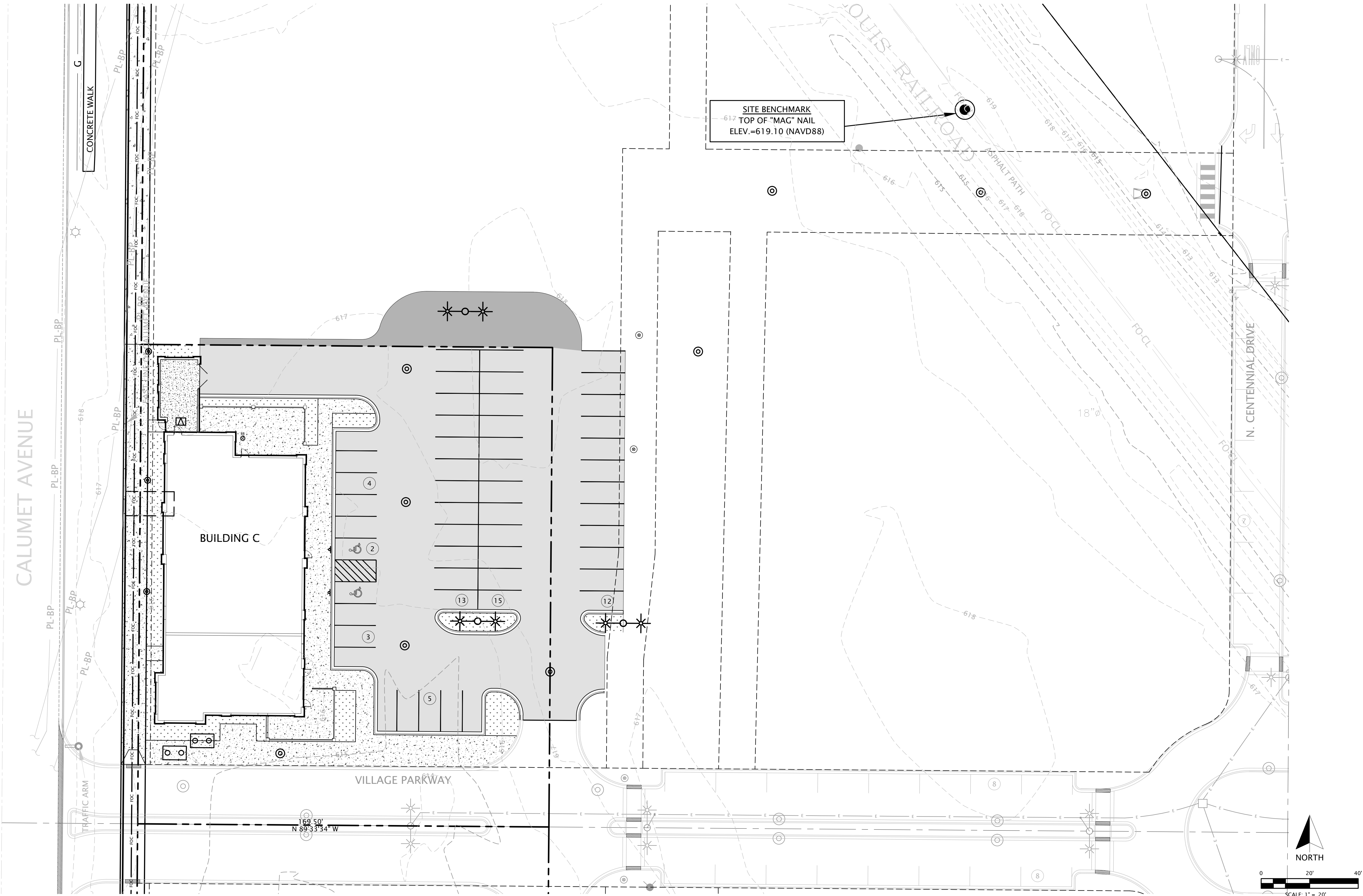
Centennial Village - Lot 3
Munster, Indiana
Site Plan

SCALE: 1"=20'
DESIGN BY: RJP
DRAWN BY: RJP
DATE: 10-18-16

C103

- NOTES**
- CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH ADJACENT CENTENNIAL VILLAGE DEVELOPMENT - PHASE 1A, 1B AND SPRINGHILL SUITES HOTEL.
 - 59 SPACES PROVIDED, 3 ADA SPACES = 62 TOTAL PARKING SPACES ON BLDG D SITE.
 - DIMENSIONS SHALL BE TO FACE OF CURB, UNLESS OTHERWISE NOTED.

- LEGEND**
- NEW CONCRETE SIDEWALK
 - NEW CONCRETE PAD
 - NEW ASPHALT PAVEMENT
 - SEE L101 FOR LANDSCAPE WORK
 - TEMPORARY ASPHALT PAVEMENT
 - BARRIER CURB & GUTTER
 - 4" WIDE PAINTED WHITE SOLID LINE
 - EXPANSION JOINT
 - TOOLED CONSTRUCTION JOINT
 - DEPRESSED CURB & GUTTER



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Centennial Village
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Highland, Indiana 46322

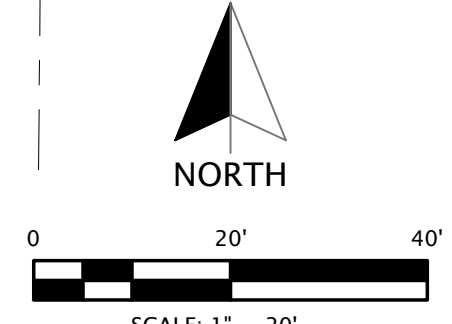
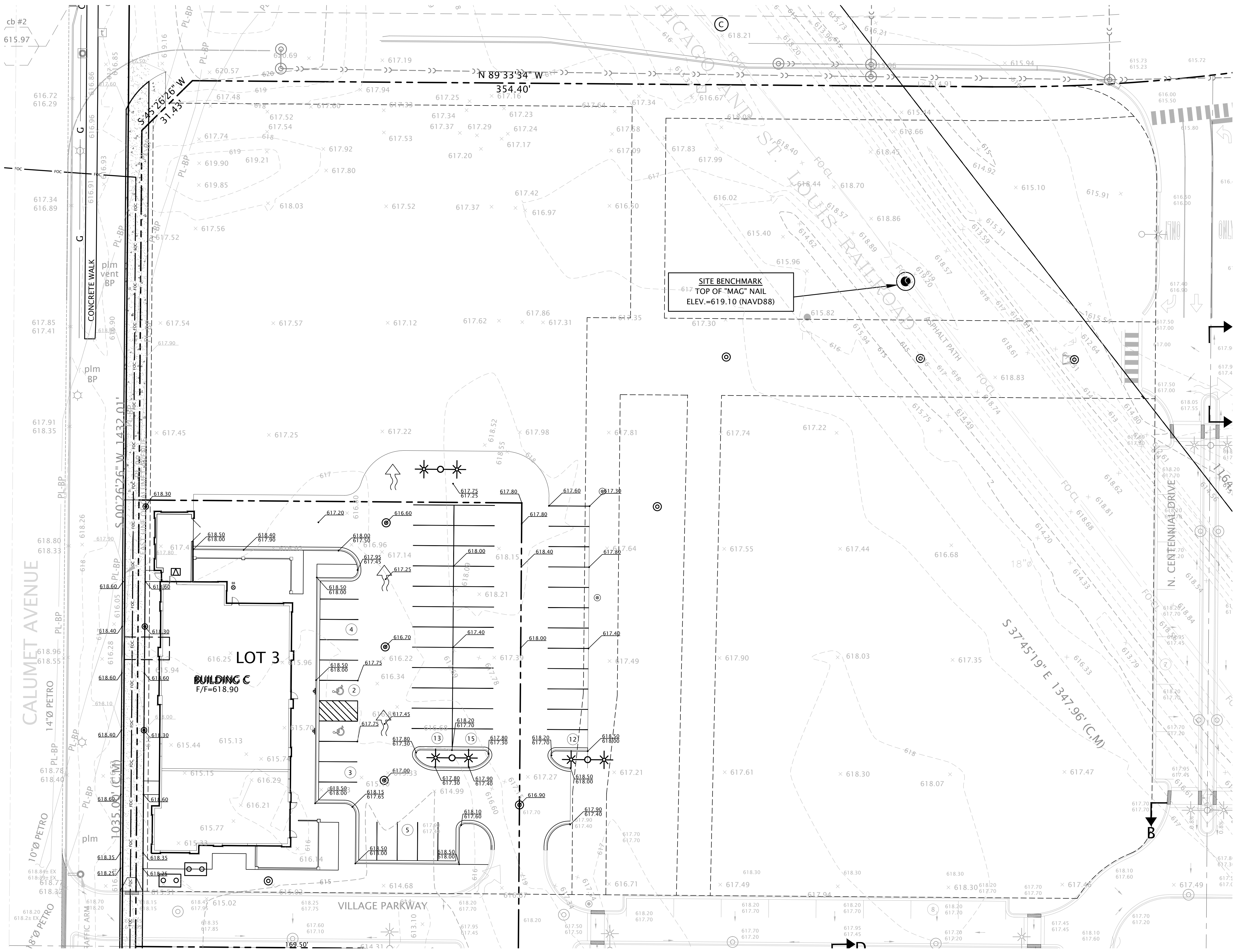
DVG # 14-C-1011	DATE:
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Centennial Village - Lot 3
Munster, Indiana
Grading Plan

SCALE: 1"=20'
DESIGN BY: RJP
DRAWN BY: RJP
DATE: 10-18-16

C104



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Centennial Village
L.L.C.
9615 Boulevard Drive
Highland, Indiana 46322

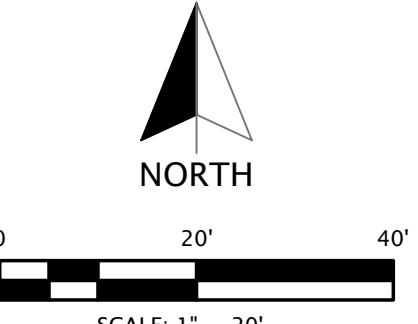
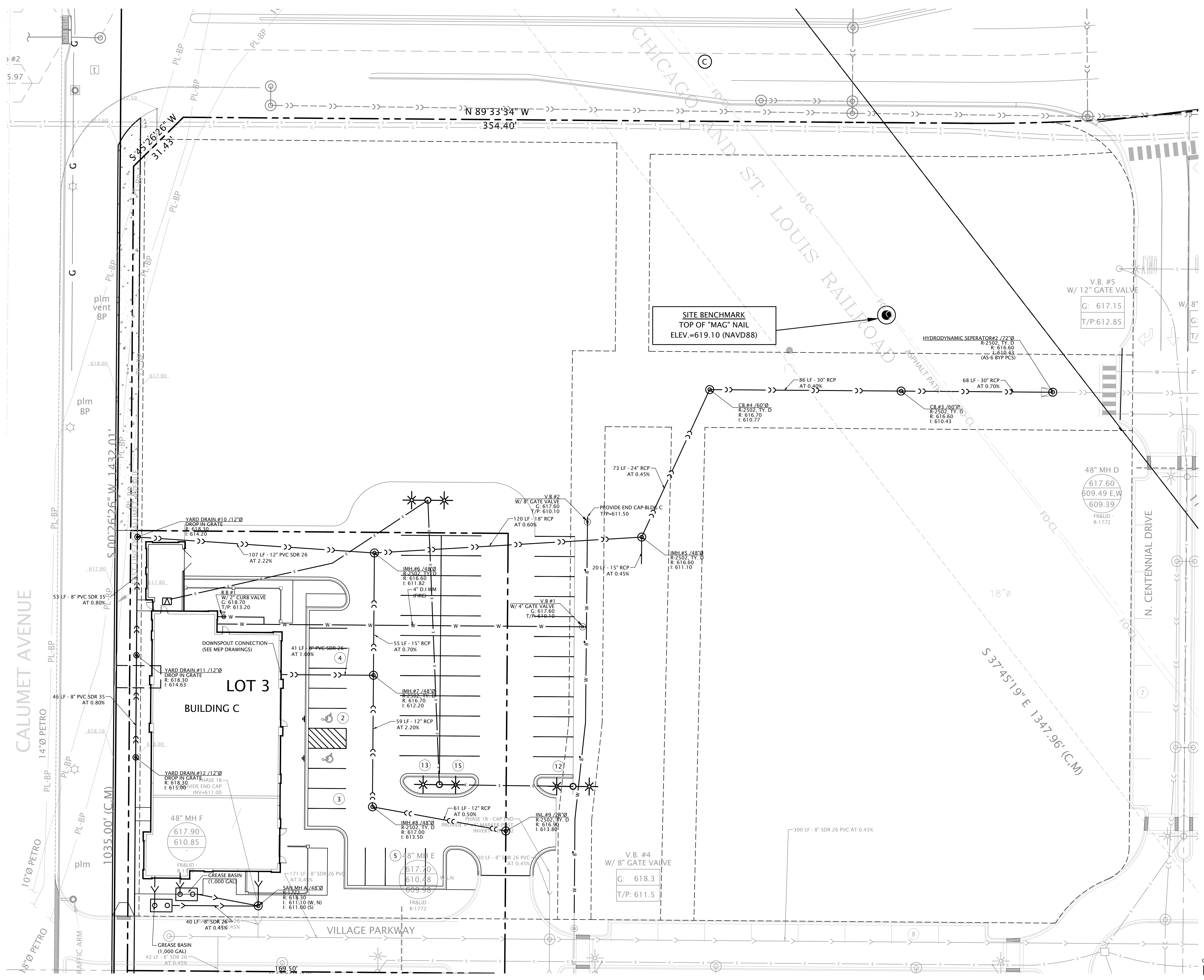
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Centennial Village - Lot 3
Munster, Indiana
Utility Plan

SCALE: 1"=20'
DESIGN BY: RJP
DRAWN BY: RJP
DATE: 10-18-16

C105



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L.L.C.
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DVG # 14-C-1011	DATE:
REVISIONS AND NOTES:	

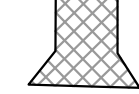

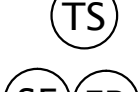



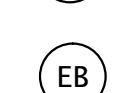
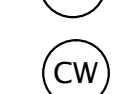



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Centennial Village - Lot 3
Munster, Indiana
Stormwater Pollution
Prevention Plan

SCALE: 1"=20'
DESIGN BY: RJP
DRAWN BY: RJP
DATE: 10-18-16

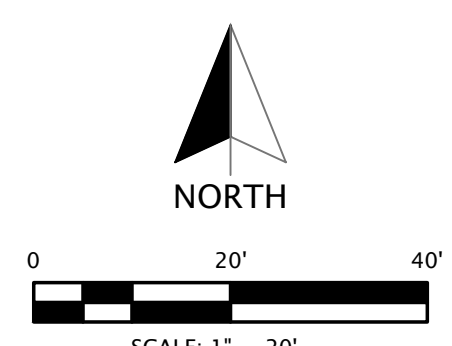
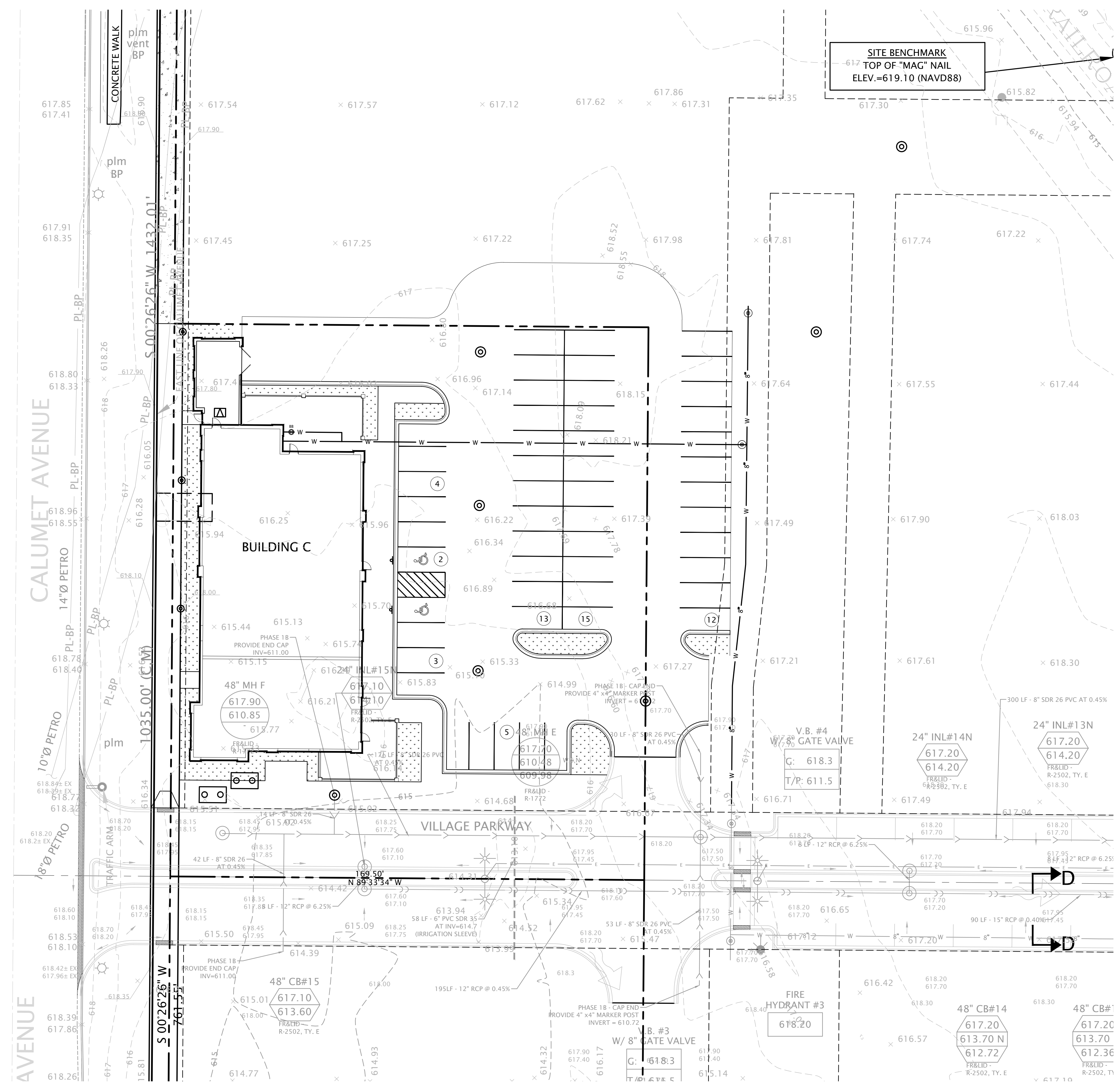
C106

LEGEND

-  CE TEMPORARY CONSTRUCTION ENTRANCE
-  IP INLET BARRIER PROTECTION
-  TS TEMPORARY/PERMANENT SEEDING
-  SF/FR SILT FENCE/FIBER ROLLS (MAY BE USED INTERCHANGEABLY WHERE REQUIRED)
-  SW STREET SWEEPING SHALL BE PERFORMED WHENEVER TRACKING OF MUD, DIRT, CONSTRUCTION DEBRIS OCCURS ON THE PUBLIC ROAD
-  R5 POSTED IDEM RULE 5 NOS, IDEM PERMIT NUMBER, AND LOCAL SWPPP PLAN APPROVAL
-  EB EROSION CONTROL BLANKET
-  CW CONCRETE WASHOUT
-  SP STOCKPILE
-  RR RIP RAP
-  SD SILT DIKE (OR GEO RIDGE)

NOTES

1. THE SITE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN DURING DEMOLITION AND CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE AND/OR CLEANING TO THE STRUCTURE OR FEATURE. CORRECTIVE WORK INCURRED BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THE S.W.P.P.P. ANY FINES OR PUNITIVE MEASURES INCURRED BY THE PROJECT DUE TO FAILURE TO COMPLY WITH THE S.W.P.P.P. ARE THE RESPONSIBILITY OF THE CONTRACTOR. THESE COSTS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND SHALL NOT BE CONSIDERED AN EXTRA.
4. DURING THE COURSE OF CONSTRUCTION, THE LOCAL ENFORCEMENT OF THE S.W.P.P.P. MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES TO BE INSTALLED TO ADDRESS SITE-SPECIFIC ITEMS NOT ANTICIPATED BY THIS PLAN. THESE ITEMS ARE CONSIDERED AN EXTRA TO THE CONTRACT, BUT ONLY TO THE EXTENT OF INITIAL INSTALLATION. CORRECTIVE WORK AND MAINTENANCE SHALL BE CONSIDERED INCIDENTAL AND SHALL NOT BE CONSIDERED AN EXTRA.
5. THE SITE CONTRACTOR SHALL INSTALL THE CONSTRUCTION ENTRANCE, POST THE RULE 5 AND PLACE PERIMETER SILT FENCING PRIOR TO COMMENCING ANY SOIL DISTURBANCE. SEE SITE PLAN FOR LOCATIONS.
6. DURING SOIL-DISTURBING ACTIVITIES, THE CONTRACTOR SHALL CREATE DIVERSION SWALES AND INSTALL DITCH CHECKS SO THAT ALL SITE RUNOFF PASSES THROUGH AN EROSION CONTROL MEASURE PRIOR TO BEING DISCHARGED OFF-SITE.
7. UPON COMPLETION OF THE ROUGH GRADING, ALL AREAS AFFECTED BY CONSTRUCTION SHALL BE TEMPORARILY SEEDED WITHIN 14 DAYS AND EROSION CONTROL BLANKETS INSTALLED ON SIDE SLOPES AS SHOWN ON THE PLANS.
8. UPON COMPLETION OF THE STORM SEWER SYSTEM, INLET PROTECTION SHALL BE INSTALLED, CHECK DAMS INSTALLED IN THE SWALES, AND TEMPORARY RIP-RAP WITH SETTLING BASINS PLACED AT THE OUTFALLS OF ALL PIPE.
9. CONTRACTOR SHALL PERFORM STREET SWEEPING WHENEVER TRACKING OF MUD, DIRT, AND CONSTRUCTION DEBRIS OCCURS ON THE PUBLIC ROAD.
10. CONTRACTOR SHALL COORDINATE PLACEMENT OF SILT FENCE WITH ADJACENT CENTENNIAL VILLAGE DEVELOPMENT.



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SITE DEVELOPMENT COMMON EXCAVATION AND EARTHWORK GENERAL SPECIFICATIONS

The Geological Investigation report by Cardno dated July 8, 2016 and Alt & Witzig Engineering, Inc. dated February 25, 2015 shall be considered a part of this plan set.

1.0 Quality Assurance:

1. Contractor shall notify the Construction Manager, Architect, Engineer and testing laboratory inspector when common excavation and earthwork is scheduled. Earthwork operations which require inspecting and testing by testing laboratory inspector shall not be performed unless testing laboratory inspector is present.
2. Contractor shall provide a 1-year warranty against settlement and damage caused by settlement for common excavation and earthwork.
3. If settlement occurs within 1 year after the date of Substantial Completion, the Contractor shall remove the affected surface feature, provide additional suitable fill, thoroughly compact and restore the surface feature to its original undisturbed condition.

2.0 Testing:

1. An inspector from the Owner's soils testing laboratory shall, during the common excavation work operations, provide the following services:
 - a. Test & Classify on-site excavated soils for reuse as topsoil, common site fill, embankment fill and structural fill.
 - b. Test materials furnished from any off-site sources to verify compliance with specified requirements.
 - c. Observe proofing rolling of exposed subsoil in areas where grades will be raised and provide recommendations for soil correction to ensure that unstable materials have been removed.
 - d. Inspect placement and compaction of common site fill, embankment fill and structural fill to ensure the material being compacted is in accordance with specified requirements. For each lift, a minimum of 1 density test for every 10,000 square feet of lawn surface area, and 5,000 square feet of paved surface area, and 500 square feet of proposed building area is required.
 - e. Density tests are required for all subgrade/subsoil in areas that have been cut to rough grade elevations, after soils have been compacted to ensure soil compaction density is in accordance with the specified requirements. Test frequency shall be as described above in sub-paragraph 1.d.
2. Tests and analysis of fill materials shall be performed in the laboratory in accordance with ASTM D1557.
3. Testing shall be performed as directed by the Soils Report Engineer. Compaction Testing shall be performed in accordance with ASTM D2922 and D3017.

3.0 Special Weather Protection:

1. Construction shall be limited during cold weather to prevent the formation of frost and snow accumulation to occur in materials used for site fill or in soils where site excavation is taking place. All areas that are scheduled for excavation activity shall be protected from freezing and snow accumulation. Any frozen material shall be removed and disposed of off site.

4.0 Clearing & Grubbing:

1. Contractor shall provide all clearing, grubbing, removal and disposal of all vegetation and debris related to the existing site conditions.
2. Vegetation debris shall be removed from site and transported to a local and state authorized disposal sites.

5.0 Top Soil Stripping:

1. The project has a depth of topsoil variation throughout the site. The geotechnical report shows the topsoil depths at several locations throughout the project site. The Contractor shall strip and stockpile all topsoil at the location designated in the Site Development Drawings or as directed by the owner.
2. Topsoil removal material shall consist of fertile, friable, organic surface soil stripped from the site and shall be free of subsoil, brush, turf grasses, weeds, roots, stumps, stones larger than 1-inch in diameter and other contaminated matter.
3. Topsoil shall be stockpiled so that it may be reused and re-spread on site over Lawn and Landscaped areas.
4. The topsoil stockpile area shall be properly protected against soil erosion into the adjacent drainage system.

6.0 Borrow Material/Embankment & Structural Fill Material:

1. Borrow material for structural fill shall be first excavated from on site source locations as defined by the Soils Report Engineer.
2. Structural fill material shall be placed under all utility trench corridors, building pad locations, paved parking, driveway, sidewalk and roadway areas.
3. Common site and embankment fill shall be placed under lawn, landscape and detention pond areas.
4. Maintain moisture content of structural fill within plus or minus 3 percent of the optimum moisture content as determined by the Modified Proctor Test.
5. Contractor shall provide subgrade conditions meeting the design grades for pavements, exterior walks, curbs and building pads.
6. Contractor shall only place approved fill material under proposed building pads and parking areas
7. Contractor shall undercut any areas that do not meet the requirements for structural fill and shall replace with structural fill.

7.0 Excavation:

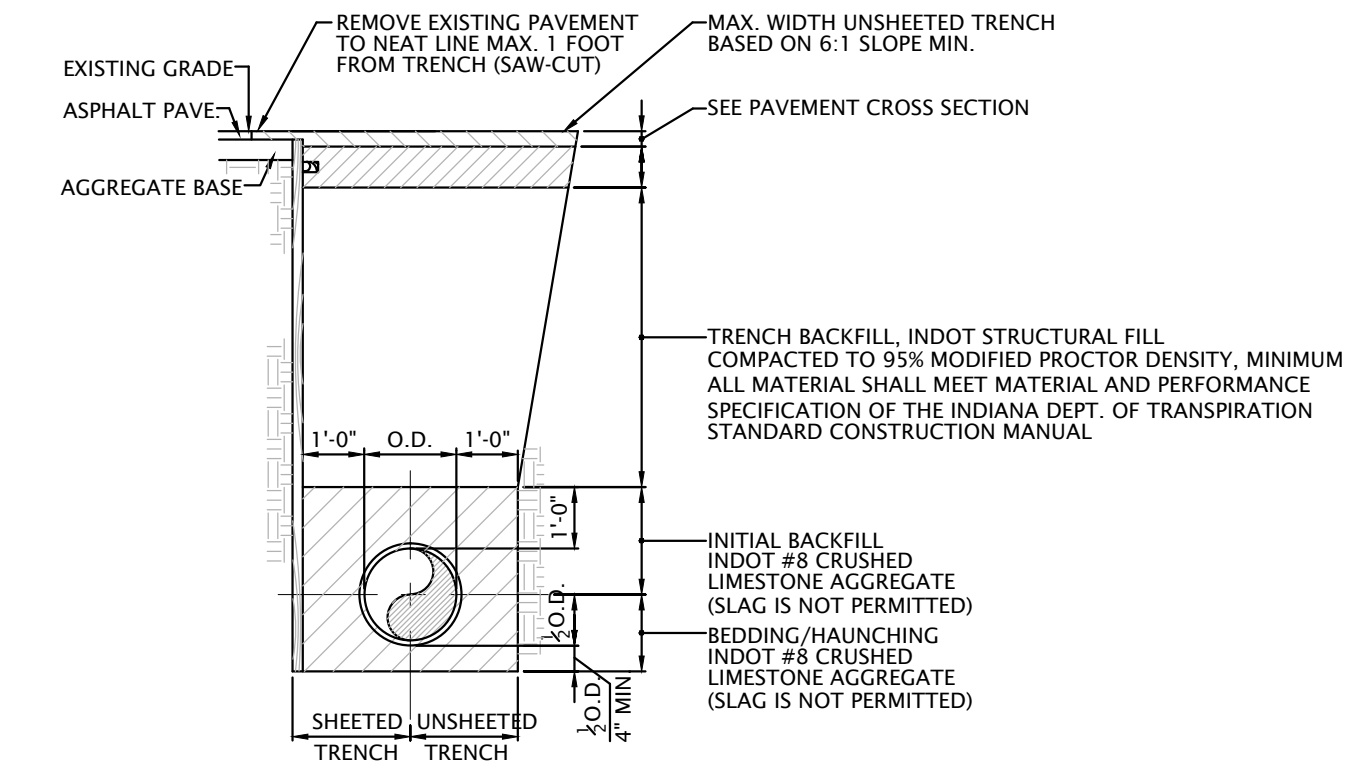
1. Protect all existing natural features on site.
2. Install soil erosion prevention measures in accordance with local and state ordinances and in accordance with the soil erosion control project drawings.
3. All proposed contours shown on this set of plans are proposed surface elevation. All fill shall be placed as structural fill for buildings and parking lots.
4. Prior to excavation an on-site Pre-construction Meeting shall be held between the Engineer, Owner/Owner's Representative and General Contractor to discuss earthwork protocol.
5. During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if ordinarily encountered at the site, the party discovering such conditions shall promptly notify the Owner/Owner's Representative/General Contractor and the Engineer in writing of the specific differing conditions. Upon written notification, the Engineer and Owner/Owner's Representative/General Contractor will investigate the conditions, and determine if adjustments to the Construction Documents and/or to the Contract are warranted. No contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice of a changed condition.

8.0 Compaction:

1. Exercise care when compacting exposed soils relative to water table, rain or other moisture conditions.
2. Maintain moisture content of embankment material and structural fill material near optimum as recommended by the soils testing laboratory and Soil Boring Engineer. Maintain optimum moisture content of backfill and fill material to attain the required compaction density.
3. Backfill common site fill, embankment fill, structural fill and utility trenches to contours and elevations defined on the project site development plans.
4. Systematically backfill to allow maximum time for optimum compaction and do not backfill over porous, wet or spongy subgrade surfaces.
5. Employ a soils placement and compaction method that does not disturb or damage work performed and that maximizes soil compaction.
6. All common site, embankment and structural fill shall be place and compacted in continuous layers/lifts not exceeding 8-inches loose depth.
7. Compact subsoil for structural fill to 95% of the Modified Proctor Maximum Dry Density (ASTM D1557) beneath all building pad locations.
8. Compact subsoil for structural fill to 95% of Modified Proctor Maximum Dry Density (ASTM D1557) beneath all pavement areas and utility corridor trenches.
9. Compact subsoil for common site fill and embankment fill to 90% of the Modified Proctor Maximum Dry Density (ASTM D1557) beneath all lawn, landscape and detention pond areas.
10. Compact subsoil under building pad area to achieve soil-bearing capacities of 3,000 psf at a distance of 4-feet below the proposed finish floor elevations of all building ads.
11. If tests indicated work does not meet specified requirements, all sub-standard work shall be immediately removed, replaced and retested at no expense to the Owner.

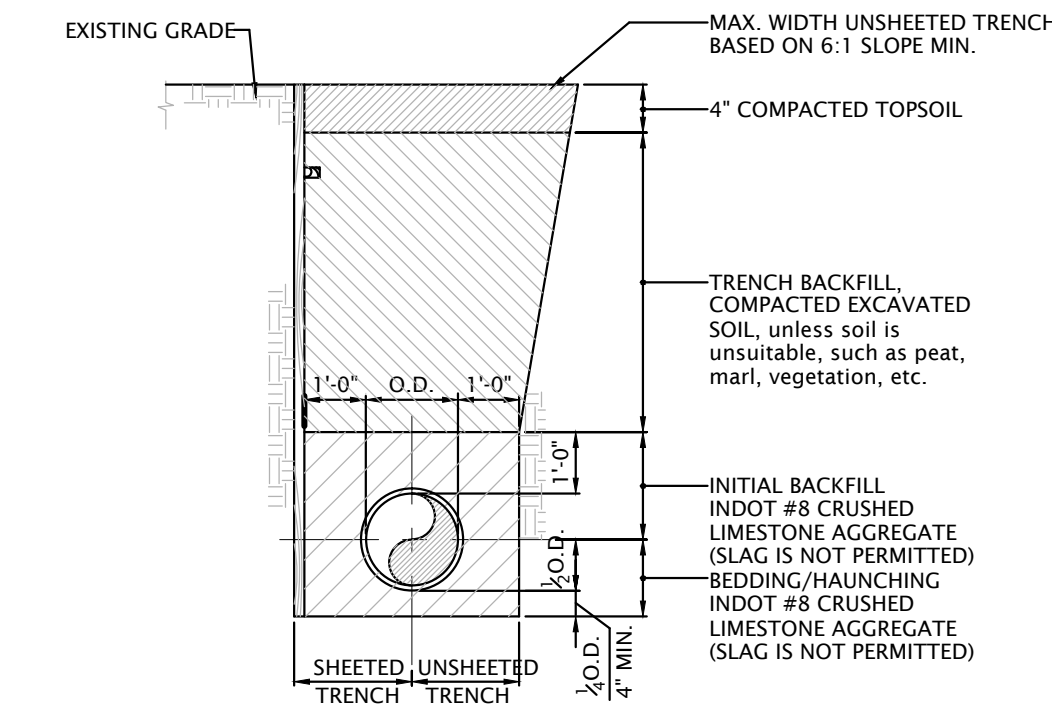
GENERAL NOTES:

1. The Town of Munster, Development Visions Group (Engineer) and any Utility Company affected must be notified at least two working days prior to commencement of work. Prior to construction the contractor is to call INDIANA 811.
2. Elevation Datum is U.S.G.S.
3. The locations of existing underground utilities, such as water mains, sewer, gas lines, etc., as shown on the plans have been determined from the best available information and is given for the convenience of the contractor. However, the engineer and the owner do not assume responsibility for the accuracy of the locations shown. It shall be the responsibility of the contractor to contact all utility companies and their facilities shall be located prior to commencement of any work.
4. Wherever obstructions not shown on the plans are encountered during the progress of the work and interfere to such an extent that alteration in the plans is required, the engineer shall be notified prior to any changes and any changes shall only be as approved via written instruction by the Engineer and also the Town Engineer.
5. As-built drawings shall be prepared by the contractor and submitted to the engineer as soon as the project is completed. Any change in the length, location or alignment shall be shown in red. "AS BUILT" drawings shall be forwarded to the appropriate utility organizations. Four (4) copies shall be submitted to the Town Engineer.
6. All proposed sanitary sewer, storm sewer, water main and service lines under and within 5' of pavement, curbs, and sidewalk shall be backfilled with crushed limestone (gradation #53) or material consistent with Class I or II material as described in ASTM D2231 placed in 8" maximum layers and mechanically compacted to 95% modified proctor density slag is not permitted.
7. Materials used for water, sanitary sewer, storm sewer and streets shall conform to the Town of Munster standards and specifications.
8. Any existing public improvements (sidewalks, curb and gutter, etc.), disturbed during construction shall be replaced in kind, or per current Town of Munster specifications as directed by the Town engineer.
9. All public street construction shall meet performance standards of the current edition of the Indiana Department of Transportation Standard Specifications.
10. Street signage shall be included in accordance with the MUCTD requirements applicable at the time of construction.



PIPE BEDDING/TRENCH BACKFILL DETAIL

FOR TRENCH IN PAVED AREAS



PIPE BEDDING/TRENCH BACKFILL DETAIL

FOR TRENCH IN GRASS AREAS

NOT FOR CONSTRUCTION



1155 E. Troutwine Road
Crown Point, IN 46307
(219) 662-7710

NOT FOR CONSTRUCTION

Centennial Village
L.L.C.
9615 Boulevard Drive
Highland, Indiana 46322

DVG # 14-C-1011

REVISIONS AND NOTES: DATE:

REVISIONS AND NOTES:	DATE:

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Centennial Village - Lot 3
Munster, Indiana

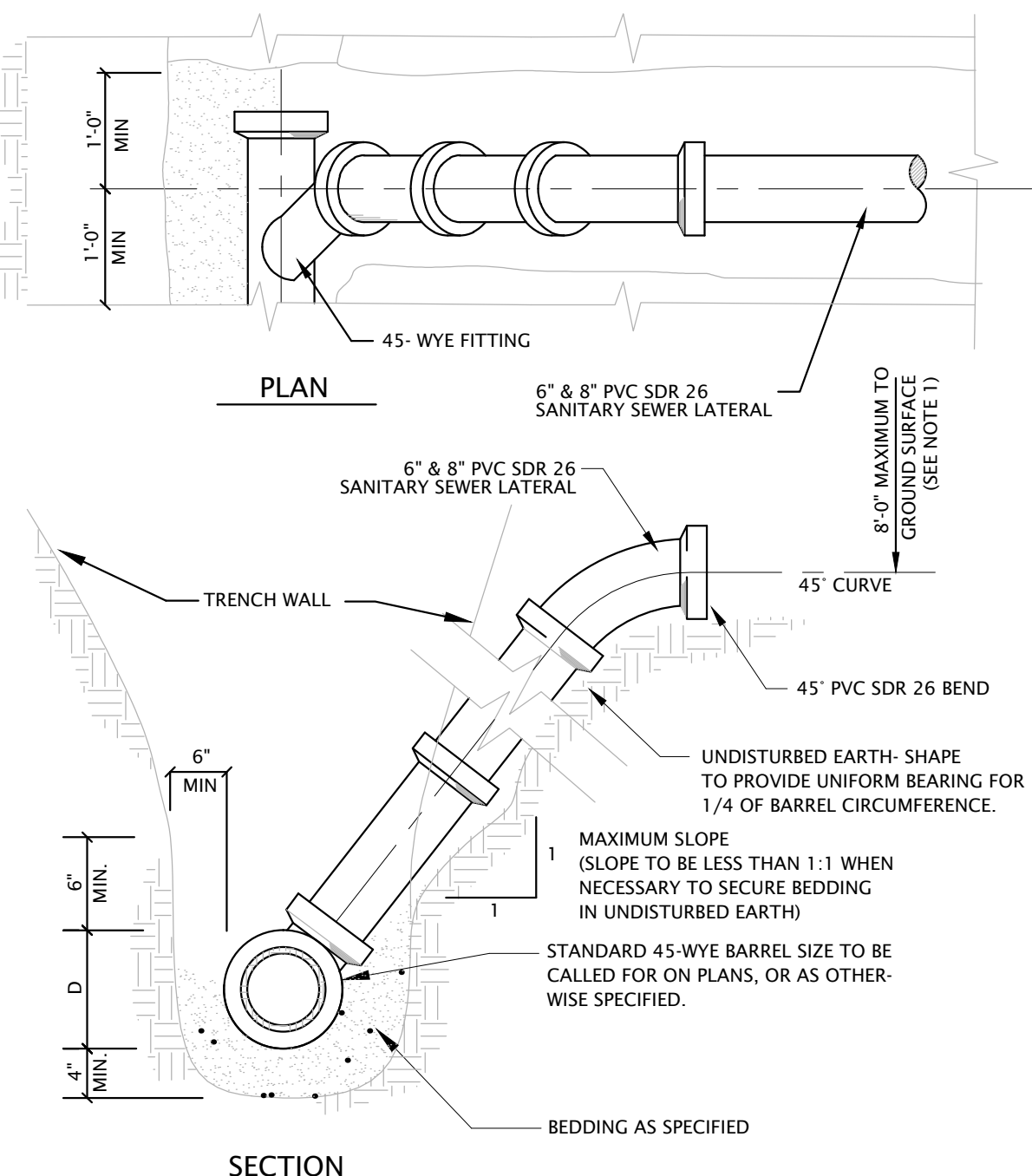
Construction Details

SCALE: NONE
DESIGN BY: DVG
DRAWN BY: JEJH
DATE: 02-28-17

C201

SANITARY SEWER GENERAL NOTES:

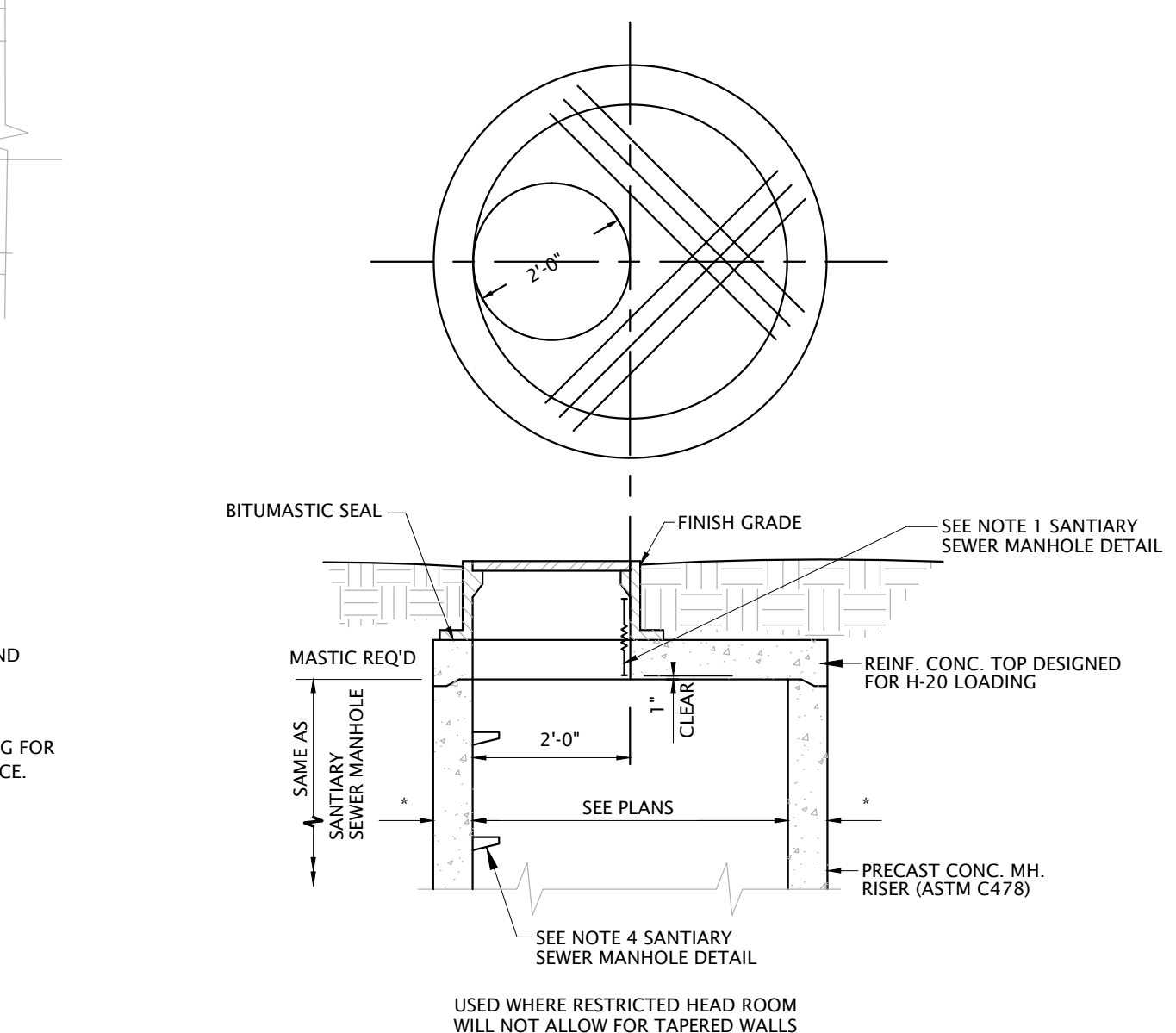
- All Floor Drains shall discharge to the sanitary sewer.
- Sanitary sewer pipe shall be PVC (SDR 26) ASTM D-3034 with push-on rubber gasket joints and shall be in accordance with ASTM C-3212, unless otherwise noted on the plans for portions to be PVC (SDR 21).
- All sanitary sewer manholes shall be air tested for leaks in accordance with ASTM C1244-93 and Standard Test Method for Concrete Sewer Manholes by Negative Air Pressure (Vacuum) Test.
- Where ductile iron pipe is used for sanitary sewer, the pipe shall be in accordance with ANSI A-21.51 and the joints in accordance with ANSI A-21.11.
- A deflection test shall be performed on each flexible pipe following the elapse of thirty (30) days after the placement of the final backfill. No pipe shall exceed a deflection of five percent (5%) or greater. The diameter of the rigid ball or mandrel used for a deflection test shall be no less than ninety-five percent (95%) of the base inside diameter of the pipe to be tested dependent on what is specified in the corresponding ASTM standard. The test shall not be performed with the aid of a mechanical pulling device.
- A leakage test shall be performed using one of the following leakage test types.
 - A hydrostatic test shall be performed with a minimum of two (2) feet of positive head. The rate of exfiltration or infiltration shall not exceed two hundred (200) gallons per inch of pipe diameter per linear mile per day.
 - An air test shall conform to ASTM F1417-92, Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air, for plastic pipe.
- All sanitary sewer shall be inspected by the Town of Munster.



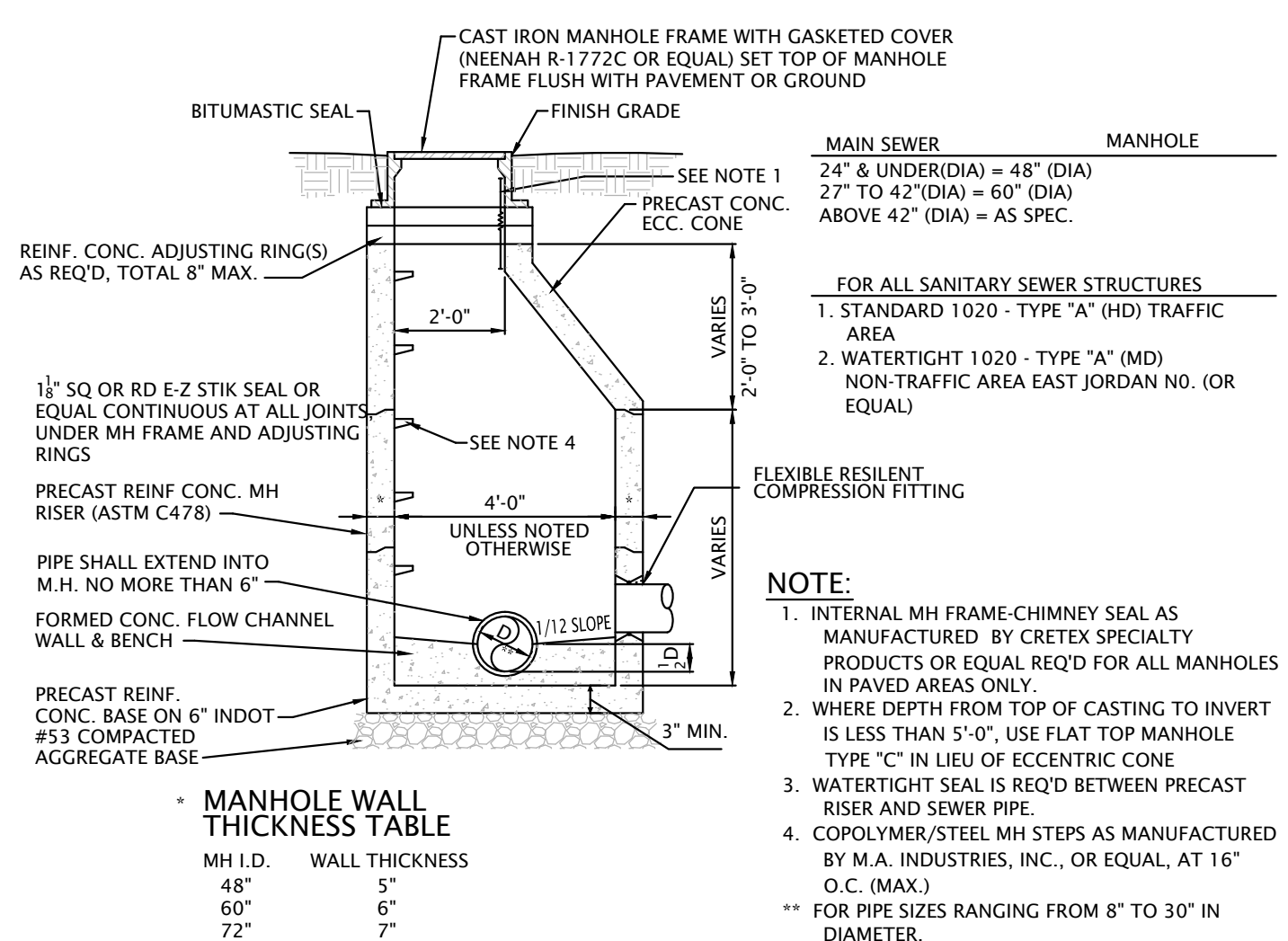
- NOTES:
- RISERS TO BE CONSTRUCTED IN LIEU OF WYES WHERE SEWER DEPTH EXCEEDS 10'-0". FOR PIPE MATERIAL AND CONCRETE SEE SPECIFICATIONS.
 - ALL SANITARY SEWER SERVICE LATERALS SHALL BE PLUGGED WITH A WATERTIGHT CAP & SHALL BE LOCATED WITH 4"x4" WOOD MARKERS TO IDENTIFY THE LATERAL END

SANITARY SEWER SERVICE DETAIL

SEE PLANS FOR SERVICE SIZE
NOT INCLUDED IN WORK (CONTRACTOR TO CONNECT TO SERVICE ALREADY PROVIDED)



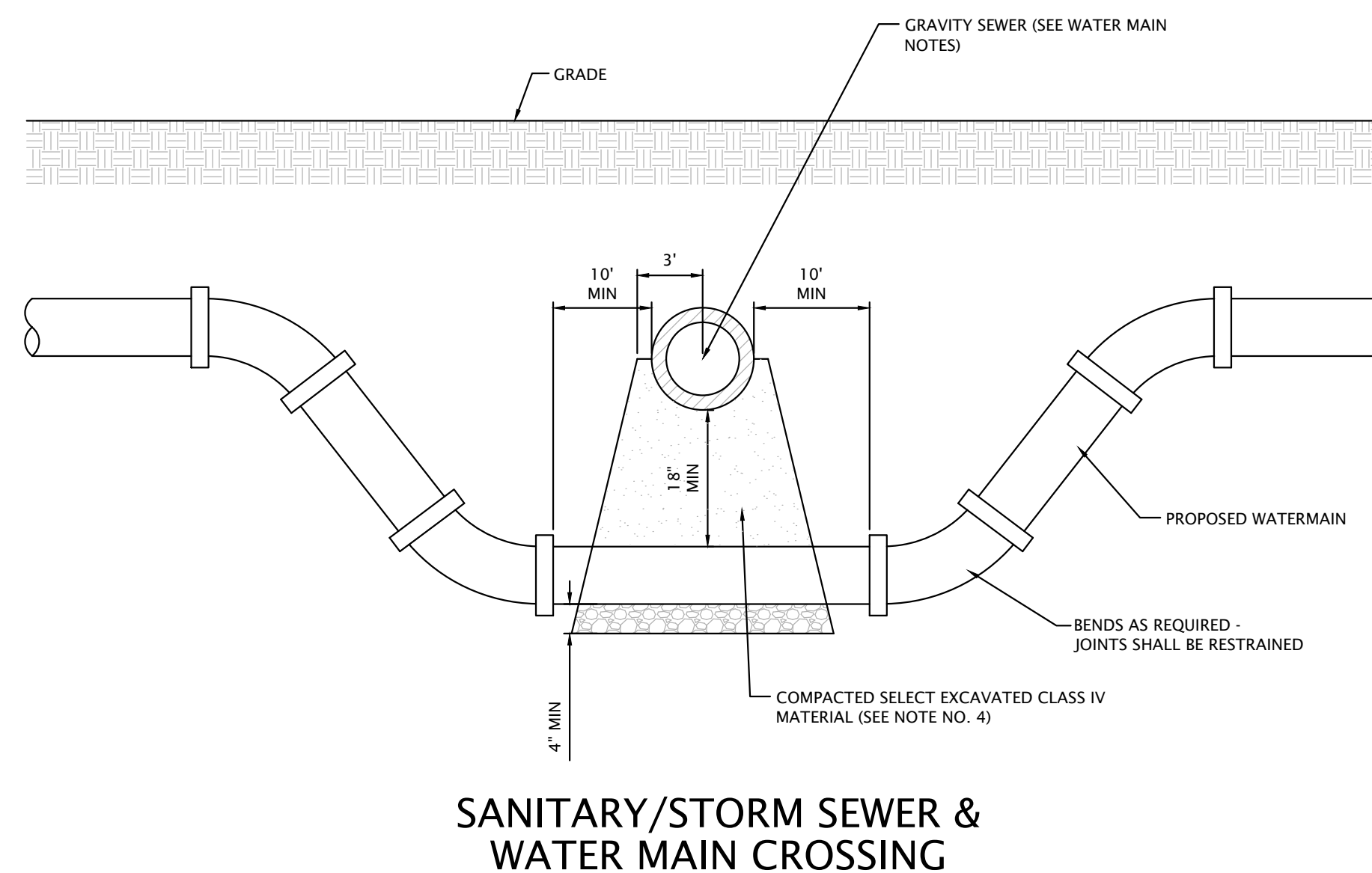
MANHOLE TOP (FLAT TOP)



SANITARY SEWER MANHOLE

WATERMAIN GENERAL NOTES:

- All water mains, fittings, and valves shall be ductile iron cement lined pressure class 350 with rubber gasket push-on joints in accordance with ANSI A-21.51 & AWWA C 151. Water main joints shall conform to the requirements of AWWA C 111. Mechanical joints shall be restrained and shall use Meg-A-Lug as manufactured by EBAA Iron Sales (or equal).
- Water mains shall be laid at least 10' horizontally from any existing or proposed sanitary sewer, storm sewer, sewer manhole, drain or service connection as measured from outside edge of the water main to outside edge of the sewers or manhole. If local conditions prevent horizontal separation of 10 feet, then the SEWER SHALL BE CONSTRUCTED OF WATER MAIN QUALITY REQUIREMENTS as specified in the IAC 8-3.2 Sections 8, 9 and 17(a).
- When water mains cross any existing or proposed sanitary or storm sewers (sewers), there shall be at least 18 inches vertical separation between the outside edge of the water main and the outside edge of the sewer. This shall be the case where water mains cross above or below sewers. This crossing must be at a minimum angle of forty-five (45) degrees measured from the centerline of each. All these conditions specified shall be maintained for a minimum distance of ten (10) feet from either side of the water main. If vertical separation specified herein cannot be met, then the SEWER SHALL BE CONSTRUCTED OF WATER MAIN QUALITY REQUIREMENTS as specified in the IAC 8-3.2 Sections 8, 9 and 17(a).
- For additional separation requirements between water mains and sewers, the Contractor shall refer to the Indiana Administrative Code 327 IAC 8 and IAC 3.
- All water main shall be installed in accordance with IAC 8-3.2-17. The contractor shall provide pressure and leak testing results conforming to IAC 8-3.2-17(a).
- All water main shall be disinfected in accordance with IAC 8-3.2-18.



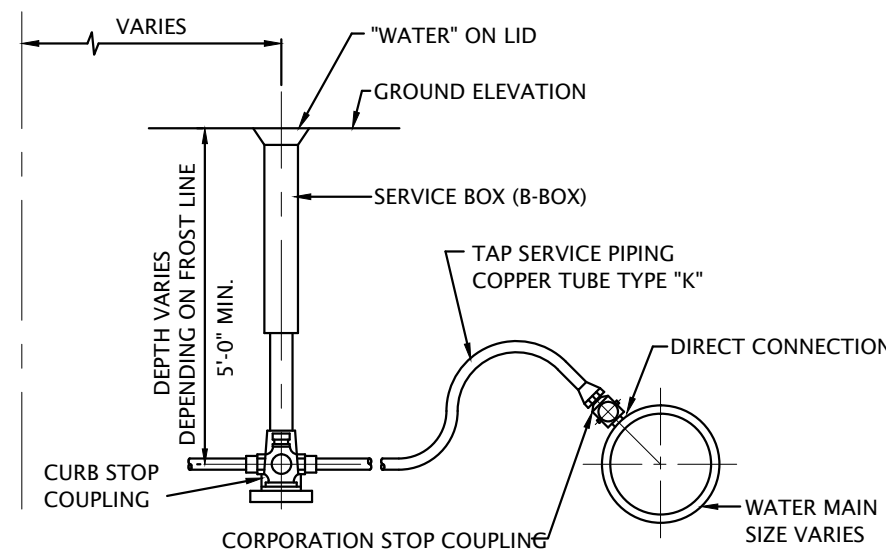
SANITARY/STORM SEWER & WATER MAIN CROSSING

RESTRAINED PIPE LENGTH (FEET)

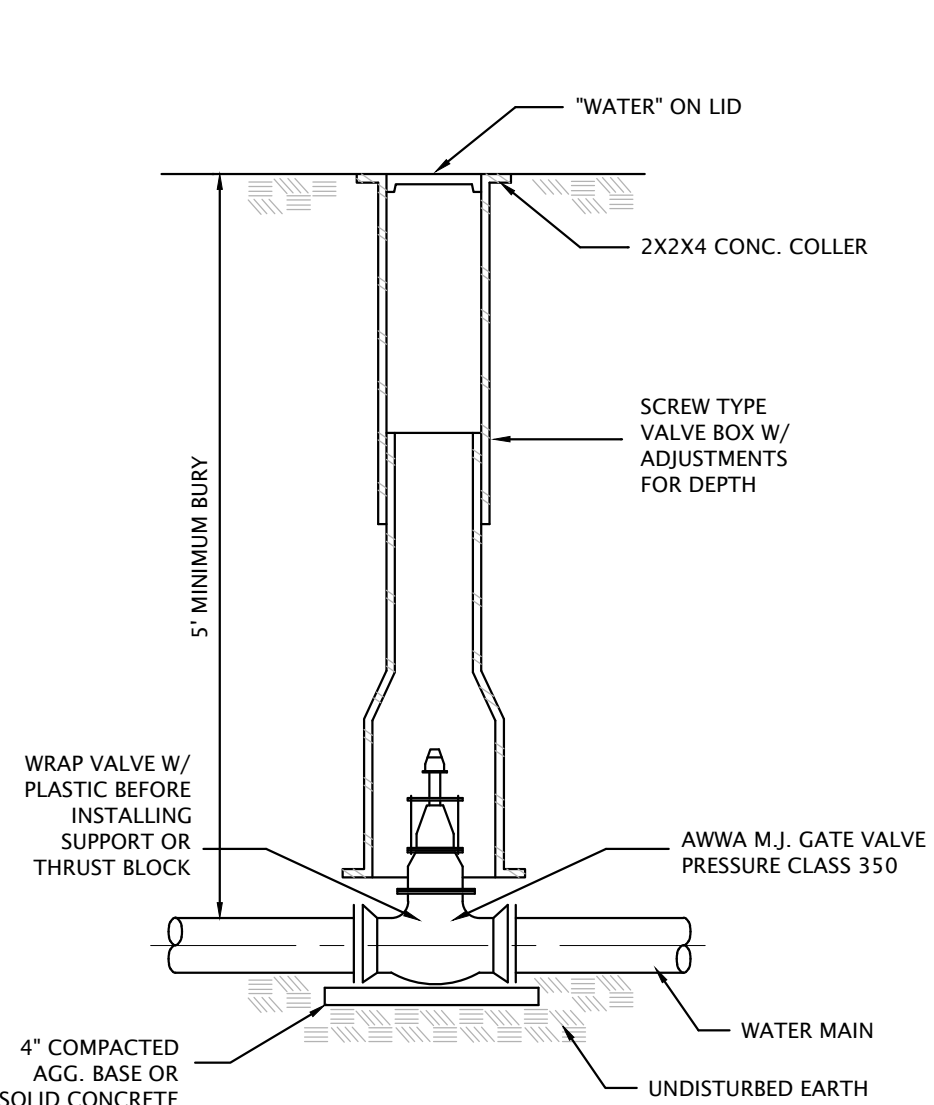
PIPE SIZE (INCHES)	TEE* BRANCH	90° ELBOW	45° ELBOW	22 1/2° ELBOW	11 1/4° ELBOW	DEAD ENDS
4	0	15	6	3	2	20
6	9	22	9	4	2	28
8	18	27	11	5	3	37
10	25	33	14	7	3	44
12	33	39	16	8	4	52
14	41	44	18	9	4	60
16	48	50	21	10	5	68
18	56	55	23	11	5	75
20	63	61	25	12	6	82
24	77	71	29	14	7	96
30	97	86	36	17	8	116
36	116	100	41	20	10	135

* ONE FULL LENGTH (18') OF PIPE ON BOTH SIDES OF BRANCH TO BE RESTRAINED.
INCREASE ALL LENGTHS IN TABLE BY 75% FOR USE ON POLYETHYLENE WRAPPED DUCTILE IRON PIPE OR PVC PIPE.
TEST PRESSURE BASED ON 150 PSI.

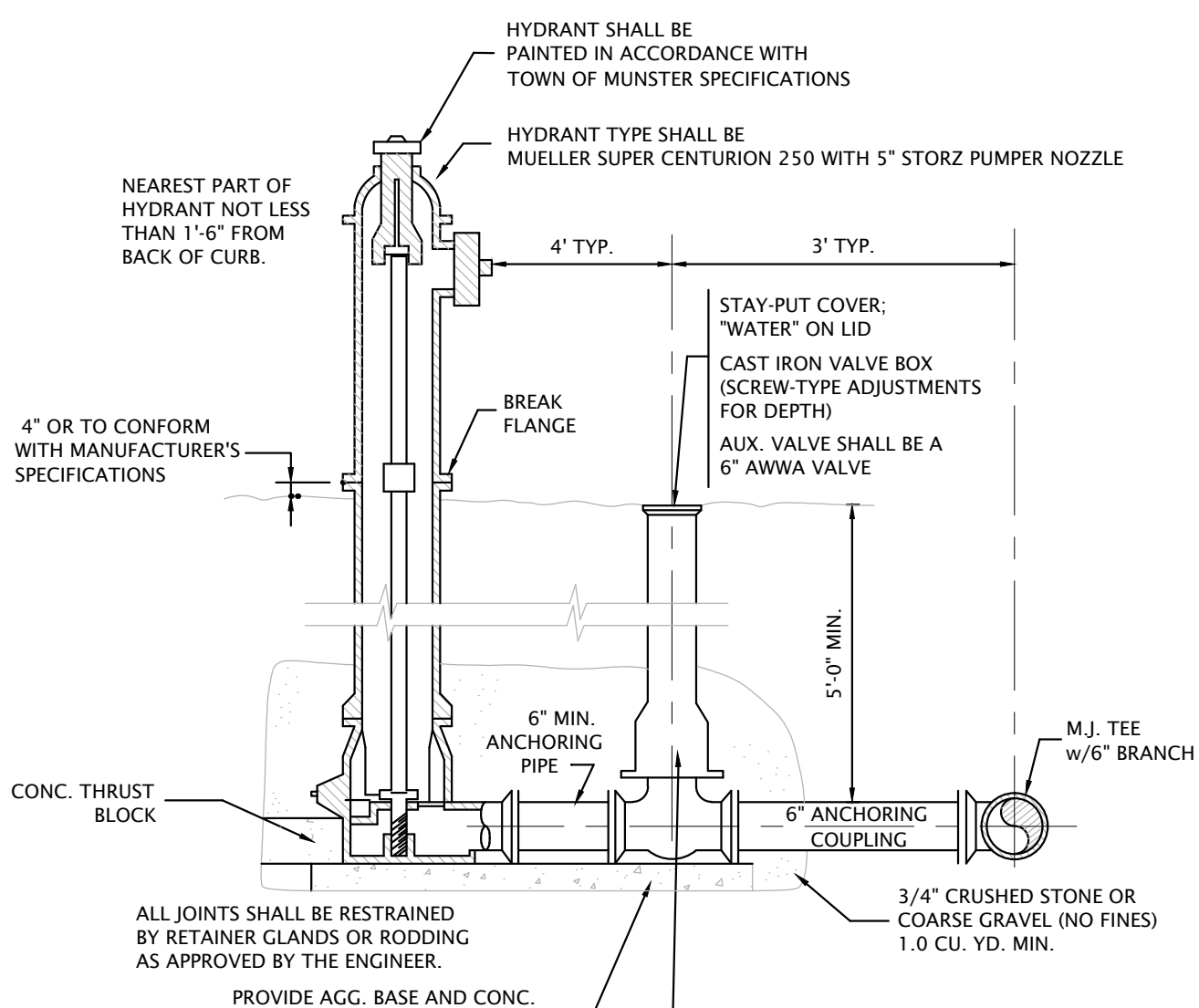
RESTRAINED PIPE LENGTH TABLE



TYPICAL B-BOX & TAP SERVICE PIPING



MAIN LINE WATER VALVE, 12" OR SMALLER



FIRE HYDRANT ASSEMBLY (TYPE "A")



NOT FOR CONSTRUCTION

Centennial Village
L.L.C.
9615 Boulevard Drive
Highland, Indiana 46322

DWG # 14-C-1011

REVISIONS AND NOTES:	DATE:

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Centennial Village - Lot 3
Munster, Indiana
Construction Details

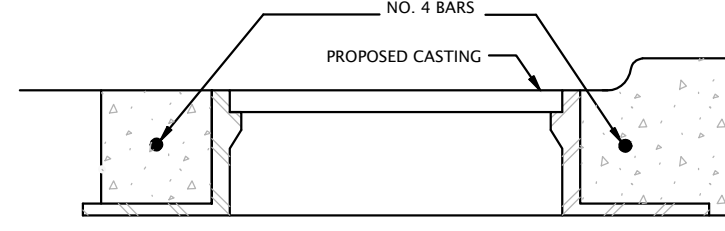
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DRAWN BY: JEH
DATE: 02-28-17

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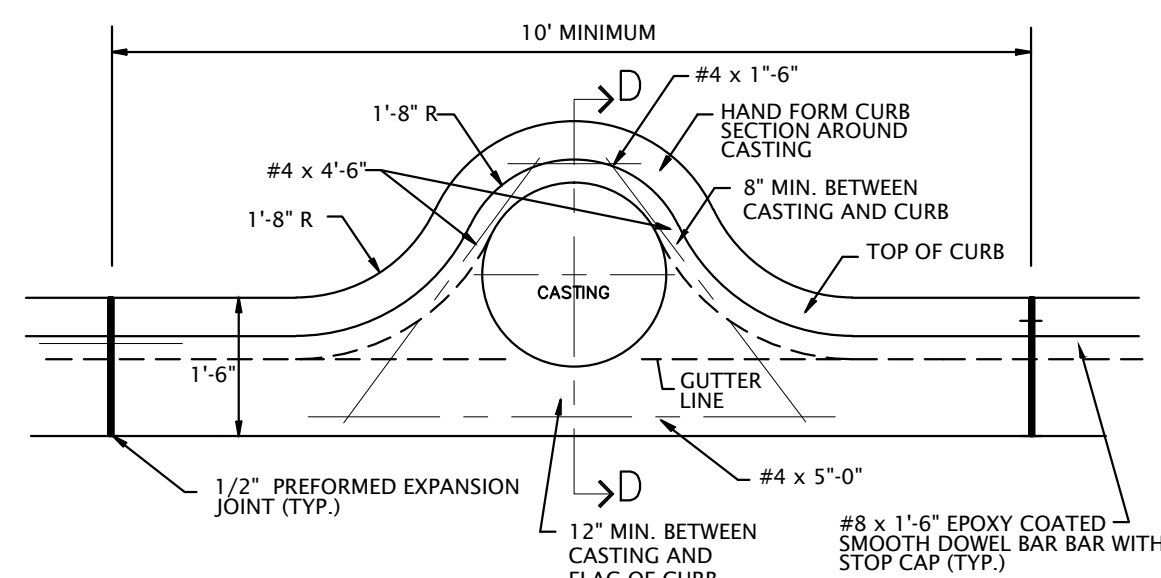
NOT FOR CONSTRUCTION

STORM SEWER GENERAL NOTES:

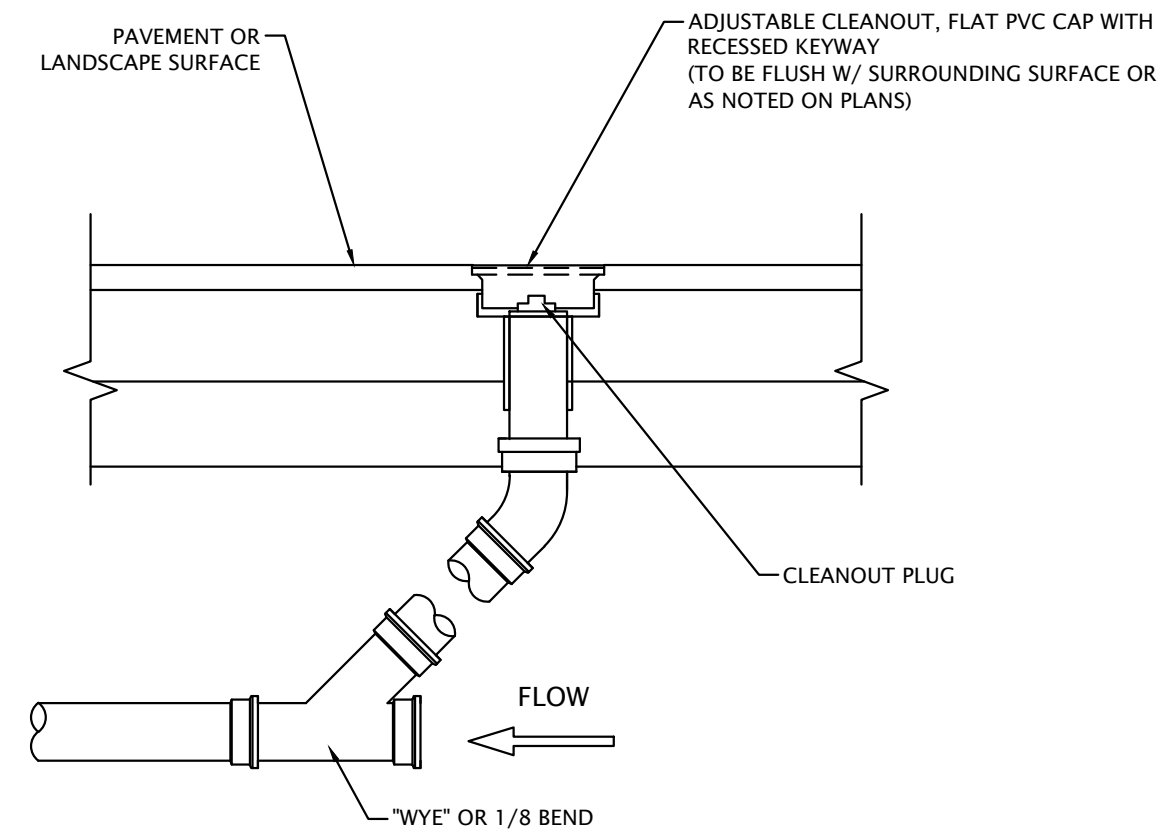
1. Footing drains, sump pump drains and outside drains shall discharge to the storm sewer where storm sewer is provided.
2. The maximum allowable rate of infiltration or exfiltration shall not exceed 100 gallons, per 24 hours per inch-diameter per mile of sewer pipe.
3. Storm sewer pipe 12" and larger shall be reinforced concrete minimum Class III, wall 8 conforming to ASTM C-76. The Contractor may use, as an alternative to reinforced concrete (Class III) storm sewer, corrugated high-density polyethylene pipe with smooth interior (ADS N-12) conforming to AASHTO M-294, if approved by the local Public Works and Engineering Departments.
4. All HDPE storm sewer pipe shall be tested with a mandrel. Maximum deflection shall not ASTM C1244-93 and Standard Test Method for Concrete Sewer Manholes by of 30 days after backfill, and should be performed without the aid of a mechanical pulling device. The deflection testing shall meet all requirements of IDEM section 327 IAC 3-6-19(a) (b) (c).



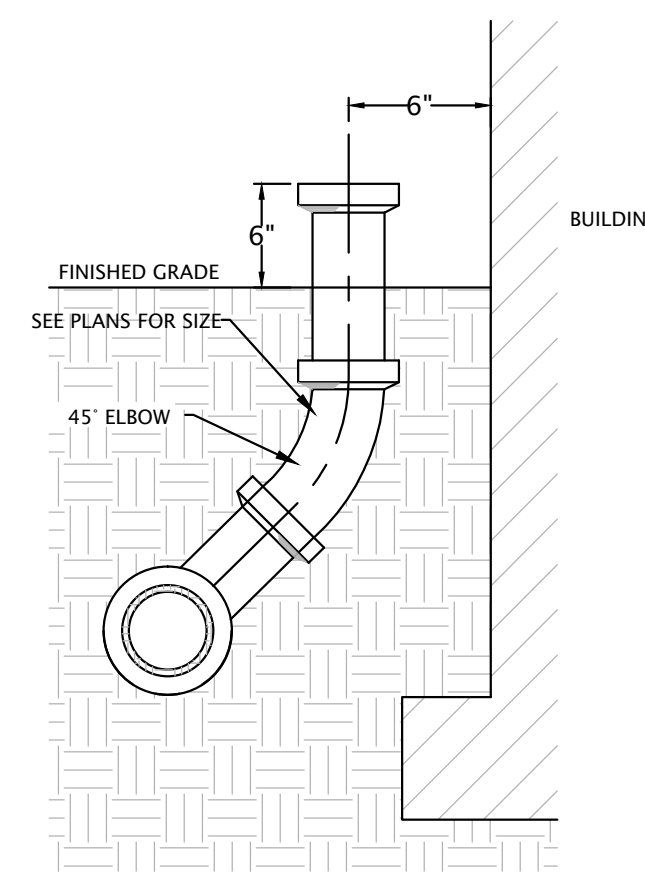
SECTION D-D



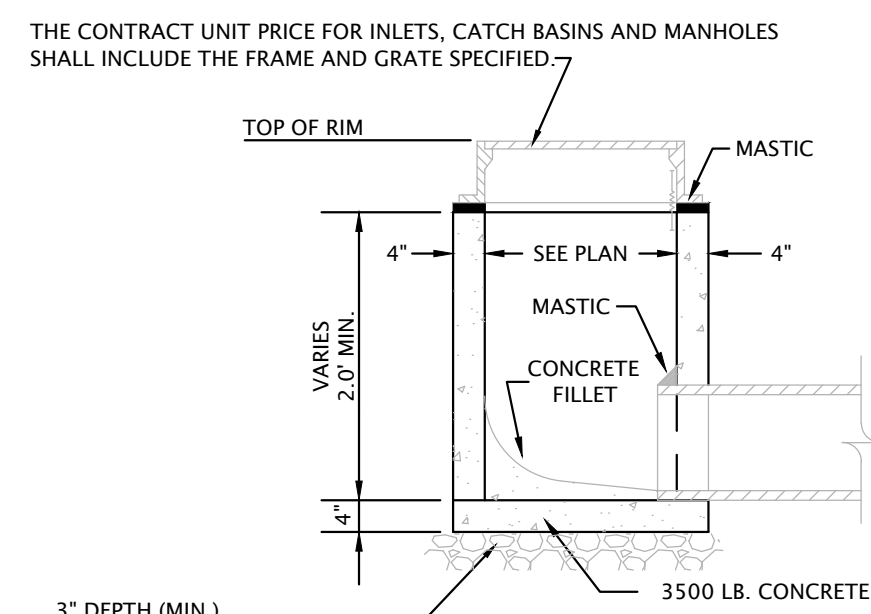
CURB AND GUTTER AT STRUCTURE



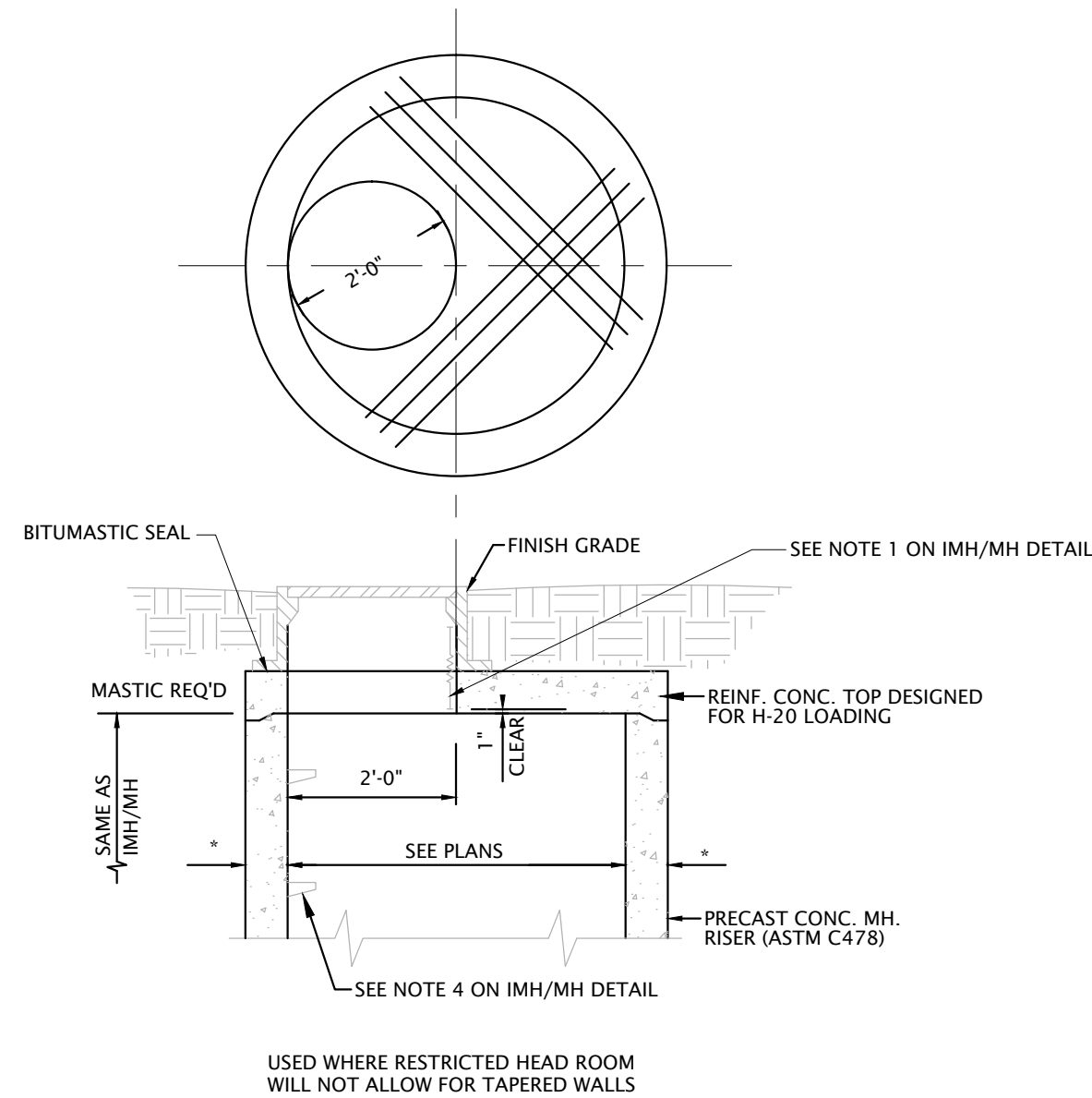
TYPICAL CLEANOUT



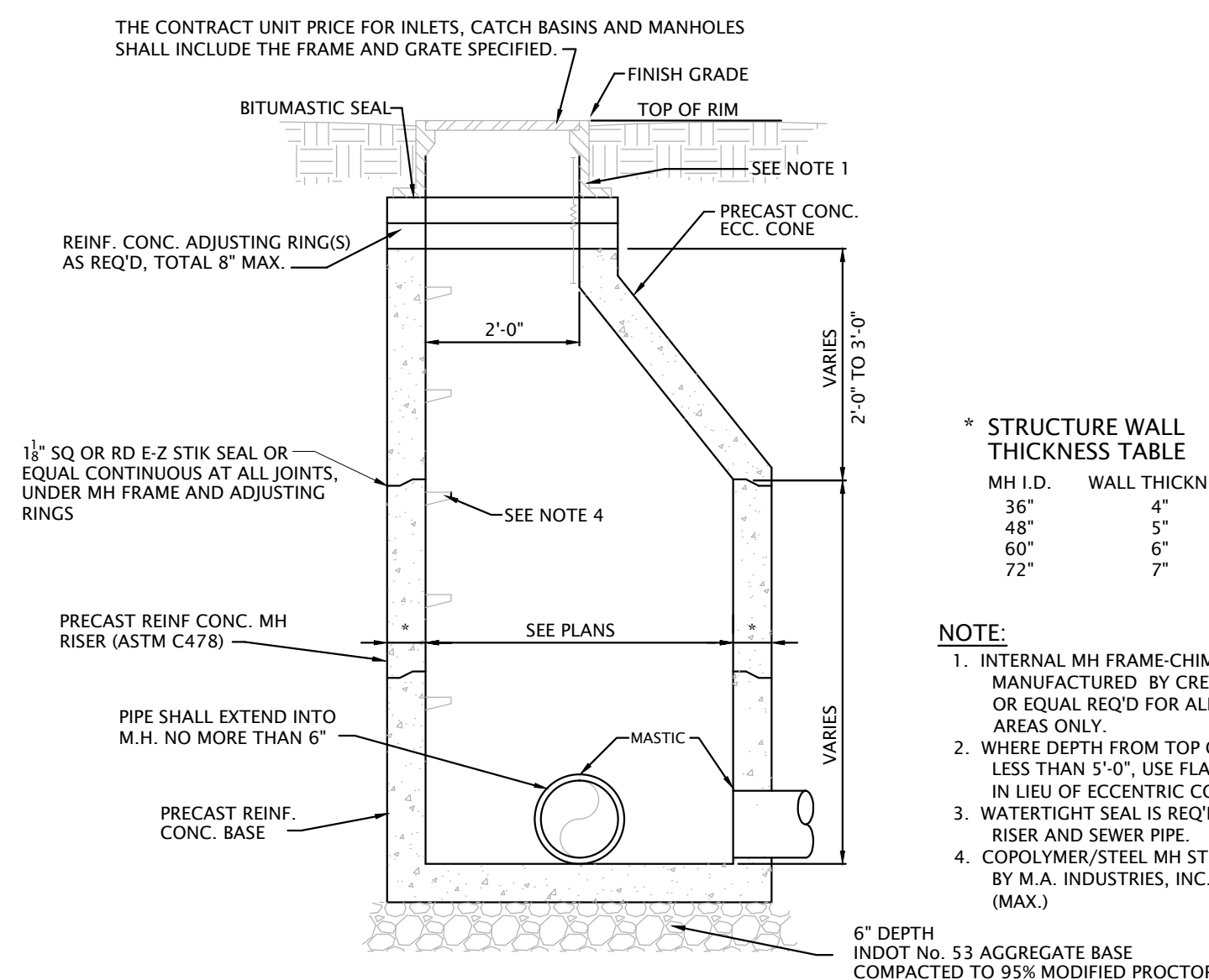
DOWNSPOUT CONNECTION TYPICAL SECTION



INLET DETAIL



MANHOLE TOP (FLAT TOP)

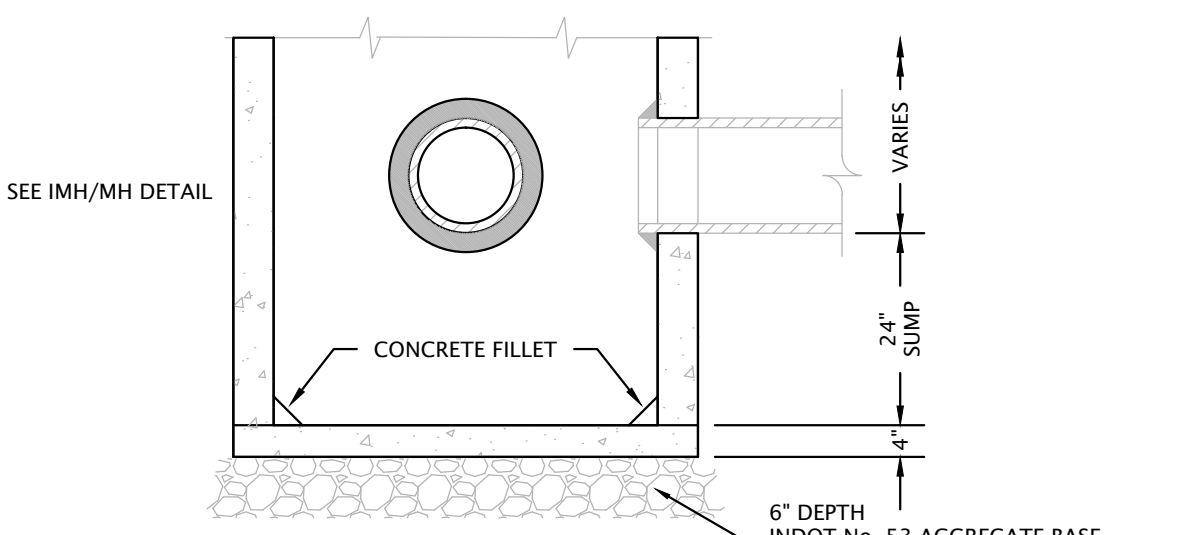


INLET MANHOLE/MANHOLE DETAIL

*** STRUCTURE WALL THICKNESS TABLE**

MH I.D.	WALL THICKNESS
36"	4"
48"	5"
60"	6"
72"	7"

- NOTE:**
1. INTERNAL MH FRAME-CHIMNEY SEAL AS MANUFACTURED BY CRETEX SPECIALTY PRODUCTS OR EQUAL REQ'D FOR ALL MANHOLES IN PAVED AREAS ONLY.
 2. WHERE DEPTH FROM TOP OF CASTING TO INVERT IS LESS THAN 5'-0", USE FLAT TOP MANHOLE TYPE "C" IN LIEU OF ECCENTRIC CONE
 3. WATERTIGHT SEAL IS REQ'D BETWEEN PRECAST RISER AND SEWER PIPE.
 4. COPOLYMER/STEEL MH STEPS AS MANUFACTURED BY M.A. INDUSTRIES, INC., OR EQUAL, AT 16" O.C. (MAX.)



CATCH BASIN DETAIL

CATCH BASIN USES EITHER CLOSED OR OPEN LIDS - SEE STORM STRUCTURE TABLE NOTED AS CB IN STORM TAGS

NYLOPLAST 12" DRAIN BASIN: 2812AG _ _ X

(1, 2) INTEGRATED DUCTILE IRON FRAME & GRATE TO MATCH BASIN O.D.

(5) ADAPTER ANGLES VARIABLE 0° - 360° ACCORDING TO PLANS

MINIMUM PIPE BURIAL DEPTH PER PIPE MANUFACTURER RECOMMENDATION (MIN. COMPACTED TO MIN. SLUMP) REQ. SAME AS MIN. SLUMP

18" MIN. WIDTH GUIDELINE

6" MIN. SLUMP

WATERTIGHT JOINT (CORRUGATED HDPE SHOWN)

8" SDR 35 PIPE CONNECTION

SEE PLANS (CONCRETE SURFACE NOT ALWAYS REQUIRED)

THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS II MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

- 1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, WITH THE EXCEPTION OF THE BRONZE GRATE.
- 2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
- 3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065
- 4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP & PVC SEWER.
- 5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTAL	MEETS H-10	1296CSP	7001-110-202
STANDARD	MEETS H-20	1296CS	7001-110-203
SOLID COVER	MEETS H-20	1296CSC	7001-110-204
PEDESTAL BRONZE	N/A	1296CSPB	7001-110-205
DOME	N/A	1296CSD	7001-110-206
DROP IN GRATE	LIGHT DUTY	1201DI	7001-110-021

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02810 NYLOPLAST

DRAWN BY	DATE	REVISIONS	PROJECT NO./NAME	TITLE
EBG	3-29-06			12 IN DRAIN BASIN QUICK SPEC INSTALLATION DETAIL
EBG	3-16-10			

DWG SIZE: A SCALE: 1:20 SHEET: 1 OF 1 DWG NO.: 7001-110-189 REV: C

3130 VIRGINIA AVE
BURLINGAME, CA 94918
PHN (770) 932-2443
FAX (770) 932-2499
www.nyloplast-usa.com

YARD DRAIN



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**Centennial Village
L.L.C.
9615 Boulevard Drive
Highland, Indiana 46322**

DWG # 14-C-1011

REVISIONS AND NOTES:	DATE:

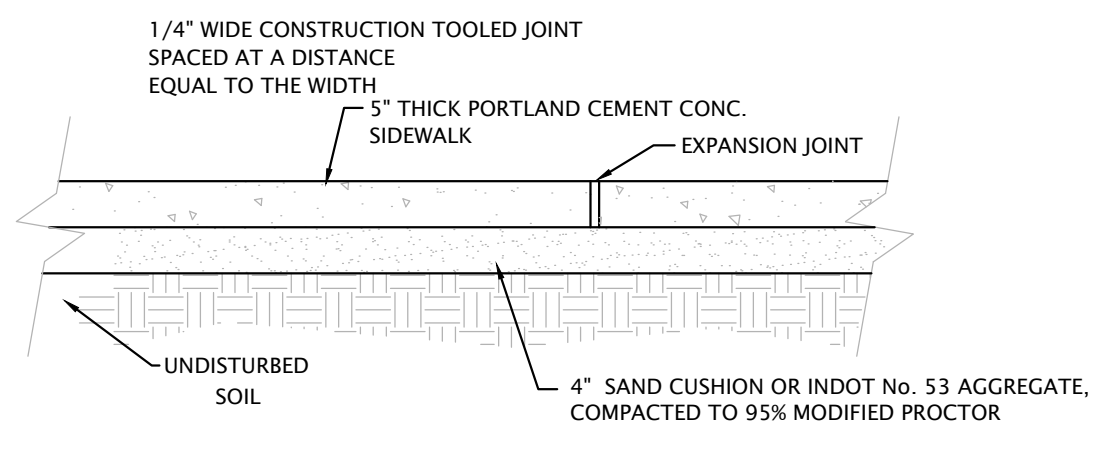
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**Centennial Village - Lot 3
Munster, Indiana
Construction Details**

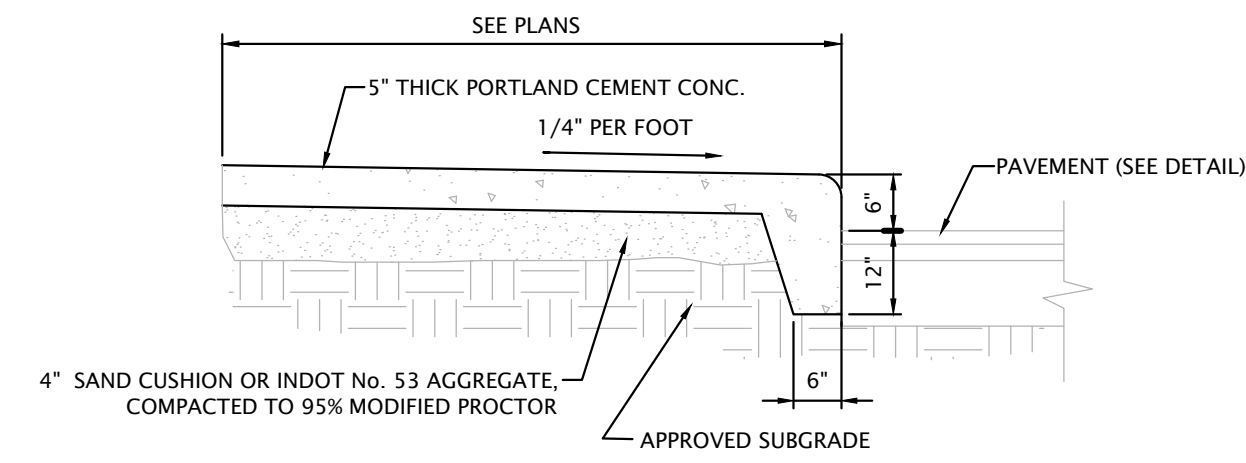
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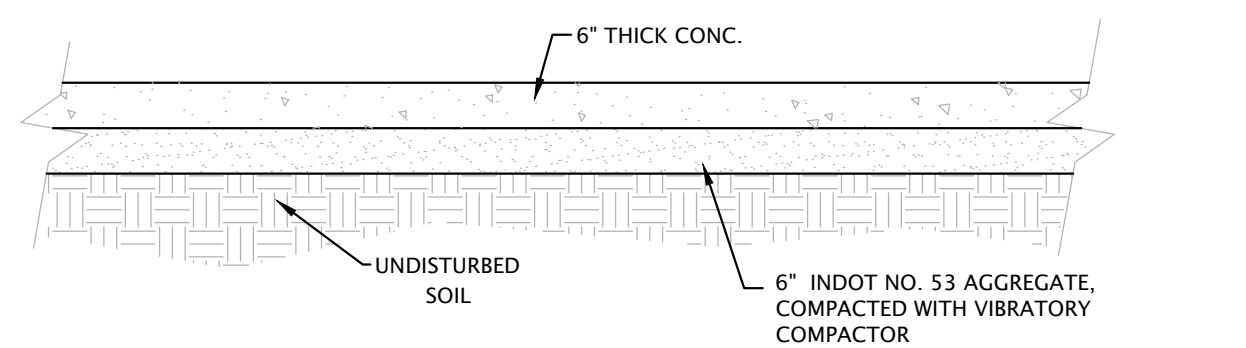
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SIDEWALK DETAIL



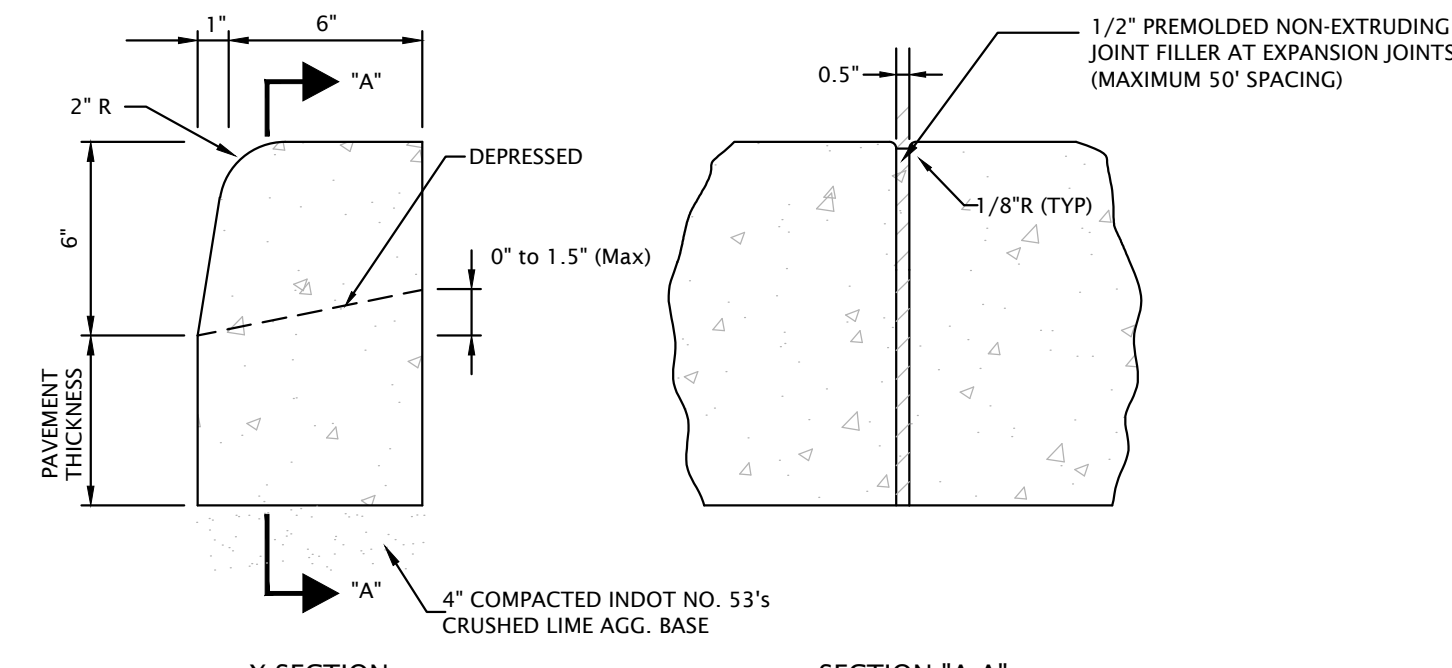
MONOLITHIC CURB AND SIDEWALK



CONCRETE PAD DETAIL

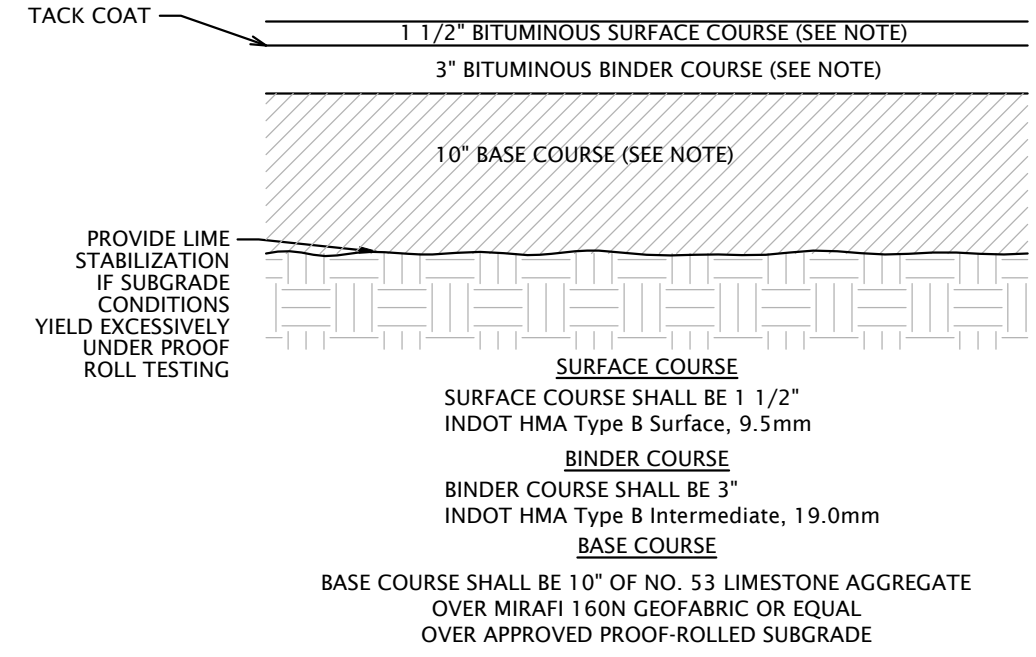
CONCRETE FLAT WORK NOTES

1. PROVIDE 3/4-INCH EXPANSION JOINT CONFORMING TO ASTM D 1751 ALONG BACK OF CURBS, DRIVEWAYS, STEPS, WALLS AND ACROSS THE SIDEWALK AT INTERVALS NOT TO EXCEED 40 FEET.
2. EXTEND EXPANSION JOINT MATERIAL FULL DEPTH OF THE SLAB.
3. PROVIDE TOOLED "V-GROOVE" CONTROL JOINT SPACED AT A DISTANCE EQUAL TO THE WIDTH OF THE WALK BUT NOT OVER 10 FEET APART, OR AS SPECIFIED ON THE SITE PLAN.
4. CONCRETE SHALL BE CLASS "A" & 4,000 PSI IN 28 DAYS, MEETING THE REQUIREMENTS OF THE MOST RECENT INDOT STANDARD SPECIFICATIONS MANUAL.
5. ALL CONCRETE FLAT WORK SHALL BE REINFORCED WIRE MESH 6"x6" x 10/10 GAUGE, OR BE FIBER MESH REINFORCED CONCRETE.

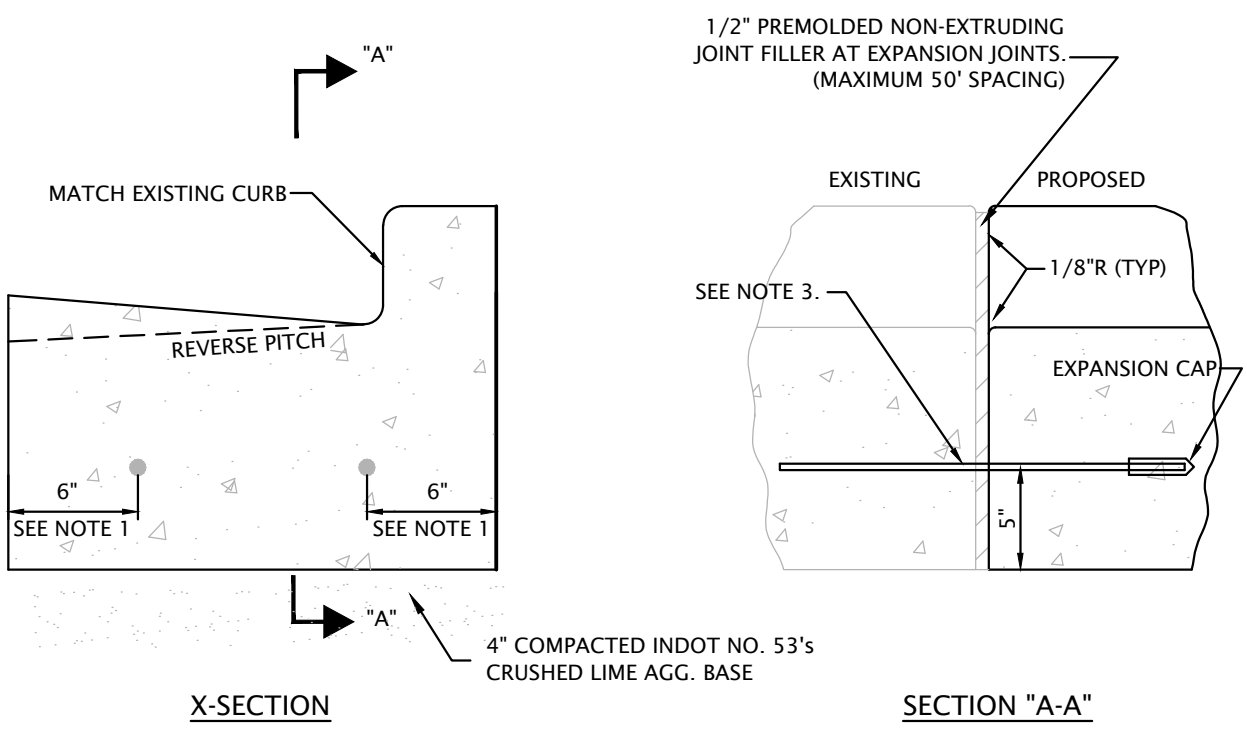


BARRIER CURB

- NOTE:**
1. CONTRACTION JOINTS - CONTRACTION JOINTS SHALL BE PLACED AT EQUAL SPACES BETWEEN NORMAL EXPANSION JOINTS. CONTRACTION JOINTS SHALL BE SAW CUT IN THE UPPER 1/3 OF CURB AND GUTTERS WITHIN 7 DAYS OF PLACEMENT.
 2. 1/2" EXPANSION JOINTS AT MAXIMUM 50 FEET.
 3. CONTRACTION JOINTS AT MAXIMUM 20 FEET.

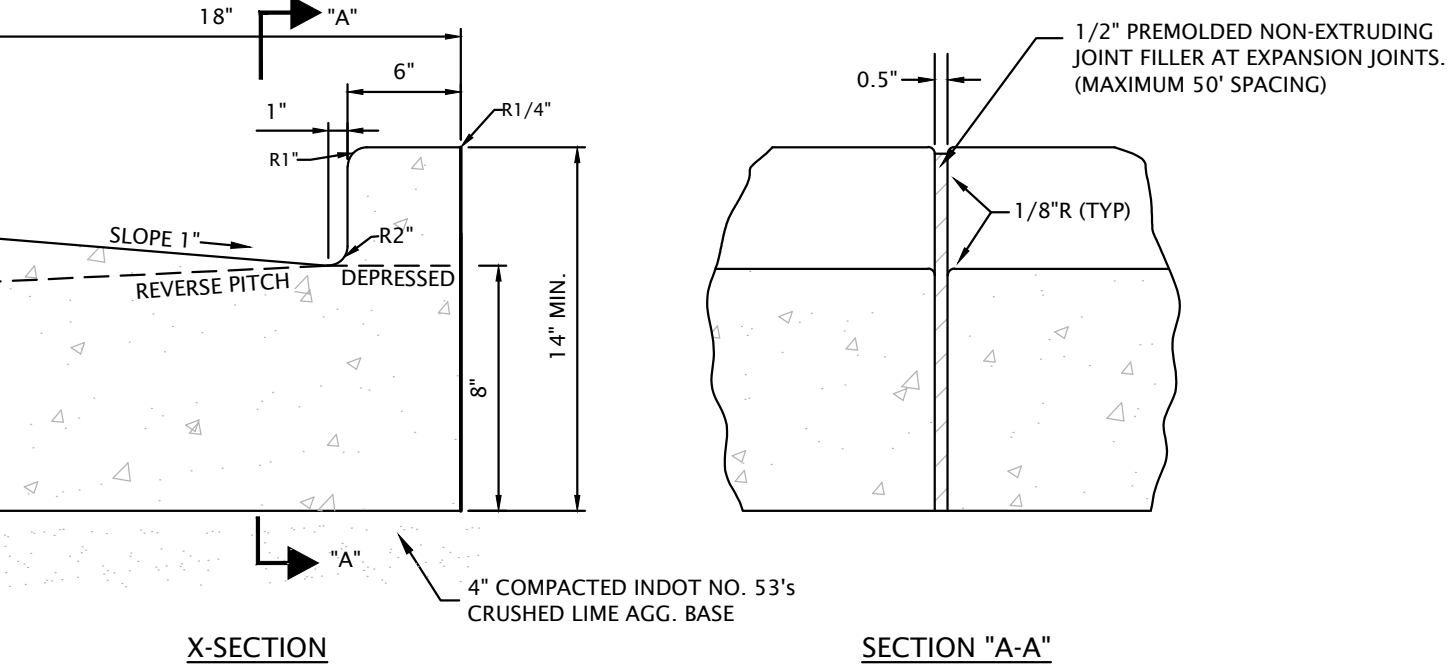


PARKING LOT PAVEMENT CROSS SECTION



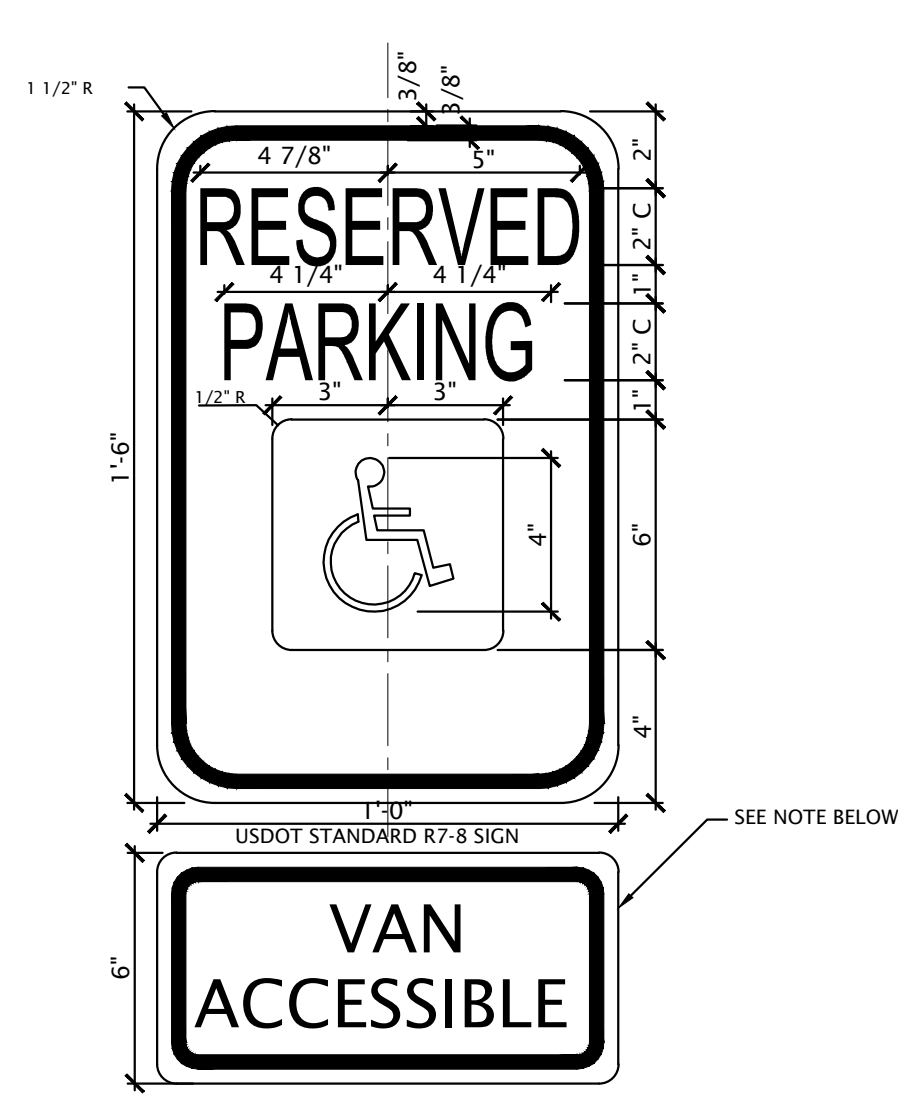
CURB & GUTTER REPAIR AT UTILITY TRENCH CUT

- NOTE:**
1. PROVIDE 2-#4 BARS (10' LONG) CENTERED IN EACH UTILITY TRENCH.
 2. COST OF BARS SHALL BE INCLUDED IN THE UNIT PRICE (PER LINEAL FOOT) FOR CURB AND GUTTER.
 3. PROVIDE 2-#6 SMOOTH BARS W/EXPANSION CAPS AT EACH EXPANSION JOINT.
 4. SAW CUT EXISTING CURB PRIOR TO REMOVAL. PROVIDE NEAT AND CLEAN FACE TO ADJUT NEW CURB.



BARRIER CURB & GUTTER

- NOTE:**
1. CONTRACTION JOINTS - CONTRACTION JOINTS SHALL BE PLACED AT EQUAL SPACES BETWEEN NORMAL EXPANSION JOINTS. CONTRACTION JOINTS SHALL BE SAW CUT IN THE UPPER 1/3 OF CURB AND GUTTERS WITHIN 7 DAYS OF PLACEMENT.
 2. 1/2" EXPANSION JOINTS AT MAXIMUM 50 FEET.
 3. CONTRACTION JOINTS AT MAXIMUM 20 FEET.



NOTE (R-7-8 SIGN): THIS IS A STANDARD SIGN AND MAY BE ORDERED FROM ANY TRAFFIC SIGN SUPPLIER BY NUMBER. THE SIGN MUST BE SUPPLEMENTED WITH A "VAN ACCESSIBLE" SIGN AS APPLICABLE AND/OR AMOUNT OF THE FINE FOR ILLEGALLY PARKING IN THE RESERVED SPACES) A MUNICIPALITY MAY IMPOSE. CONFIRM WITH LOCAL REGULATIONS.

ADA SIGNAGE

ADA NOTES

NOTES: A CURB (RAMP)S MUST BE PROVIDED ALONG AN ACCESSIBLE PATH FROM THE PARKING LOT TO OWNERS CURBED SIDEWALK.

A CURB (RAMP)S MUST ALSO BE PROVIDED IN THE PARKING LOT AT ALL INTERMEDIATE AND PERIMETER CURBS ALONG THE ACCESSIBLE ROUTE CONNECTING TO PUBLIC SIDEWALKS.

A RAMP IS ANY SLOPE GREATER THAN 1:20 (5%) AND SHALL HAVE A MAXIMUM SLOPE OF 1:12 (8.33%). THE MAXIMUM SLOPE IS 1" OF RISE PER FOOT OF DISTANCE TRAVELED.

A RAMP SHALL HAVE A DETECTABLE SURFACE IDENTIFYING THE AREA OF THE RAMP. THIS IS MOST COMMONLY DONE WITH PERPENDICULAR LINES SPACED 2" ON CENTER SCORED INTO THE SURFACE OF THE CONCRETE RAMP, A MINIMUM OF 3" DEEP.

CURB RAMP OR SIDEWALK RAMP LEADING DOWN INTO A PATH OF VEHICLE TRAFFIC MUST HAVE A DETECTABLE WARNING FEATURE EXTENDING THE FULL WIDTH AND DEPTH OF THE RAMP (MID-WALK "IN-LINE" RAMP ONLY NEED DETECTABLE WARNINGS AT WALK/PARKING TRANSITION). THE DETECTABLE SURFACE MUST CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 INCHES, A HEIGHT OF NOMINAL 0.2 INCHES AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES. THE TEXTURE OF THE DETECTABLE WARNING FEATURE MUST CONTRAST WITH THE SURROUNDING SURFACES (EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT).

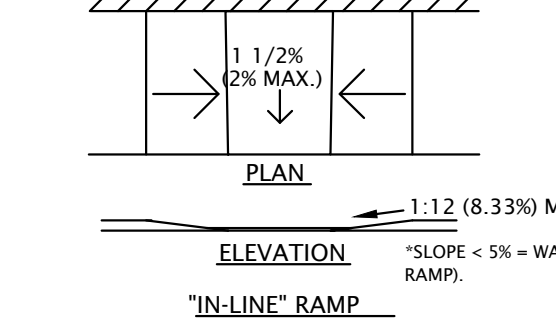
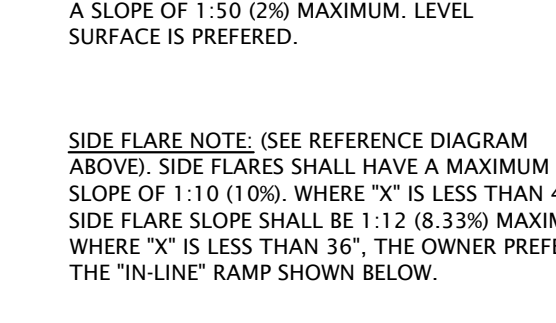
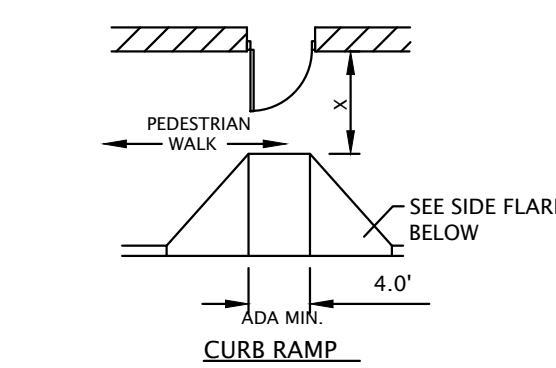
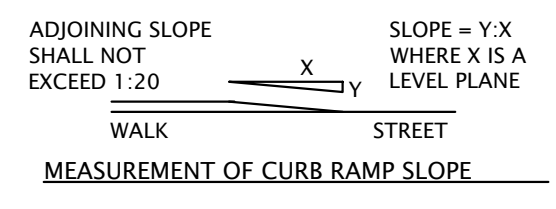
ADA DETECTABLE WARNING STRIPS SHALL BE A CAST IN PLACE DETECTABLE/TACTILE WARNING TILE. THE TILE MUST MEET ALL ADA REQUIREMENTS, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. A 5-YEAR WARRANTY SHALL BE PROVIDED BY THE MANUFACTURER FOR THE INSTALLED TILE FOR COLORFASTNESS AND DURABILITY. DETECTABLE/TACTILE WARNING TILE SHALL BE ARMOR-TILE, ACCESS-TILE OR AN APPROVED VENDOR.

ADA DETECTABLE WARNING TILE SHALL BE ORIENTATED PERPENDICULAR TO THE PEDESTRIAN TRAVEL DIRECTION. SKEWED PLACEMENT TO MATCH A RADIUS IS NOT ALLOWED.

THE LEADING EDGE OF THE DETECTABLE WARNING TILE MUST BE CLOSER THAN 5' FROM THE VEHICLE SURFACE, AND HAVE A MINIMUM OF 24" LENGTH ALONG THE PEDESTRIAN TRAVEL DIRECTION. THE TILE MAY BE CUT TO MATCH A RADIUS AT THE CURB IF ONE END OF THE RAMP EXCEEDS THE 5' MINIMUM.

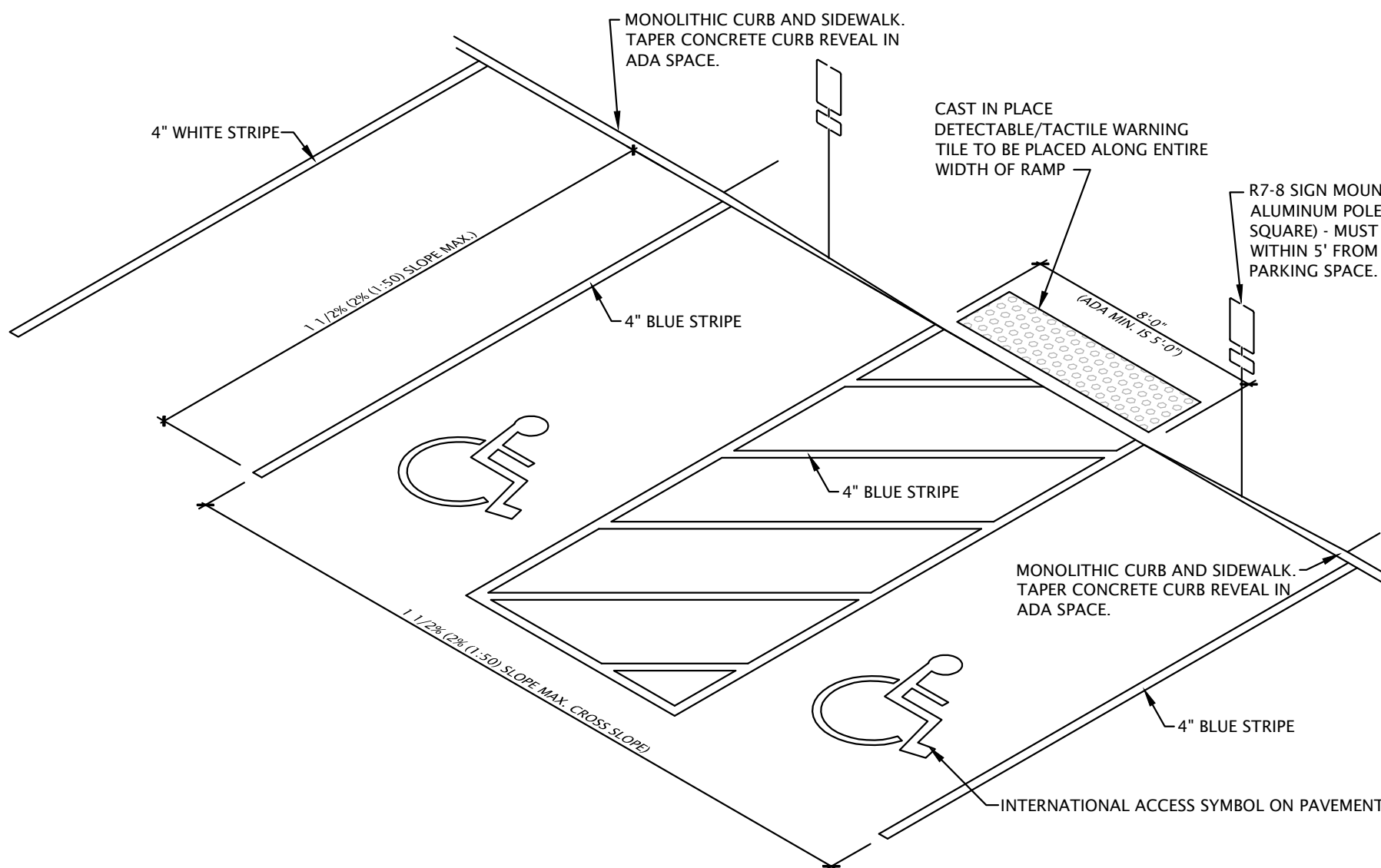
THE CLEAR WIDTH OF ANY RAMP MEASURED PERPENDICULAR TO THE PEDESTRIAN TRAVEL DIRECTION IS A MINIMUM OF 36".

THERE ARE LOCAL JURISDICTIONS THAT SPECIFICALLY REQUIRE DETECTABLE WARNINGS ON THE SIDE FLARES OR TOP OF RAMP (CA). THERE ARE LOCAL JURISDICTIONS THAT HAVE REDEFINED DETECTABLE WARNINGS (e.g. EXPOSED CONTRASTING COLOR AGGREGATE, GROOVES IN A PARALLEL OR DIAMOND PATTERN ETC.). ACCESSIBILITY GUIDELINES DEFINED BY LOCAL ORDINANCE SHOULD SUPERSEDE WHEN MORE STRINGENT THAN ADAAG. IN THE ABSENCE OF A DEFINITION, FOLLOW ADAAG.



ADA RAMPS

NOTE: ACCESSIBLE RAMPS AND CURB RAMPS WHERE POURING OF A SEPARATE INTEGRALLY COLORED CONCRETE IS REQUIRED, INSTALL SHEAR DOWELS 2'-0" O.C. AND KEYWAYS TO PREVENT HEAVING OF RAMPS W/ ADJACENT SIDEWALK OR CONC. SURFACE.



TYPICAL ADA PARKING SPACE PLAN

A U.S. DEPARTMENT OF TRANSPORTATION R-7-8 (RESERVED PARKING) AND SUPPLEMENTAL SIGNS AS NOTED ABOVE MUST BE MOUNTED ON A PERMANENT POST NO LOWER THAN FOUR FEET FROM THE PAVEMENT. THE POST MUST BE MOUNTED IN THE CENTER OF THE 8 FOOT WIDE ACCESSIBLE PARKING SPACE, NO MORE THAN 5 FEET FROM THE FRONT OF THE PARKING SPACE. SEE ILLUSTRATION ABOVE.

NOTES:
EACH ACCESSIBLE PARKING SPACE IS TO BE A MINIMUM OF 8 FEET WIDE AND HAVE A 96" MINIMUM ACCESS AISLE FOR VANS OR 60" ACCESS AISLE FOR CARS ADJACENT TO THE SPACE. THE ACCESS AISLE MAY BE ON EITHER THE DRIVER'S SIDE OR THE PASSENGER'S SIDE OF THE ACCESSIBLE SPACE. THIS APPLIES TO 45, 60, AND 90 PARKING.

ACCESSIBLE PARKING SPACES ARE TO BE LOCATED AS CLOSE TO THE BUILDING ENTRANCE AS POSSIBLE AND SHALL BE IDENTIFIED WITH A SIGN.

EACH PARKING SPACE ACCESS AISLE MUST CONNECT TO A COMMON LEVEL WITH AN ACCESSIBLE ROUTE, I.E., EACH ACCESS AISLE NEXT TO A PARKING SPACE MUST HAVE A CURB RAMP AT SIDEWALK OR BLEND TO A LEVEL WALKWAY LEADING TO THE ENTRANCE.

ACCESSIBLE PARKING ACCESS AISLES SHALL BE PART OF AN ACCESSIBLE ROUTE TO THE BUILDING ENTRANCE.

THE ACCESS AISLE SHALL BE DESIGNATED WITH HIGH QUALITY YELLOW DIAGONAL SURFACE PAINT STRIPING.

RAMPS MUST NOT EXTEND OUT FROM THE CURB INTO THE ACCESS AISLE OF ANY ACCESS PARKING SPACE.

ADA ALLOWS TWO PARKING SPACES TO SHARE AN ACCESS AISLE.

ACCESSIBLE SPACE REQUIREMENTS

TOTAL OFF STREET PARKING SPACES PROVIDED	NUMBER OF ACCESSIBLE PARKING SPACES REQUIRED
1 TO 25.....	1
26 TO 50.....	2
51 TO 75.....	3
76 TO 100.....	4
101 TO 150.....	5
151 TO 200.....	6
201 TO 300.....	7
301 TO 400.....	8
401 TO 500.....	9
501 TO 1000.....	.2% OF TOTAL
OVER 1000.....	.2% PLUS 1 FOR EACH 100 OVER 1000

THE ADA REQUIRES ONE VAN ACCESSIBLE PARKING SPACE WITH 96" ACCESS AISLE FOR ONE IN EVERY EIGHT ACCESSIBLE SPACES, BUT NOT LESS THAN ONE.

ACCESSIBLE PARKING-SIZE AND MARKINGS

- NOTES:**
1. PAINTED CROSSWALKS SHALL BE WHITE 18" WIDE STRIPES 6' LONG, SPACED 36" ON CENTER ACROSS THE ENTIRE LENGTH OF THE CROSSING.
 2. PAINT 2" BLACK OUTLINE AROUND ARROWS AND LETTERS IN AREAS OF CONCRETE SURFACE.
 3. PARKING SPACES ARE TO BE "WHITE" - 4" WIDE STRIPES
 4. ADA SPACES, ADA MARKING, AND ADA ACCESS SPACE ARE TO BE "BLUE" - 4" WIDE STROKES.

PAVEMENT MARKINGS



NOT FOR CONSTRUCTION

Centennial Village
L.L.C.
9615 Boulevard Drive
Highland, Indiana 46322

DVG # 14-C-1011	REVISIONS AND NOTES:	DATE:

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Centennial Village - Lot 3
Munster, Indiana
Construction Details

SCALE: NONE
DESIGN BY: DVG
DRAWN BY: JEJH
DATE: 02-28-17

C204

NOT FOR CONSTRUCTION

EROSION CONTROL MEASURES

CHEMICAL STABILIZATION

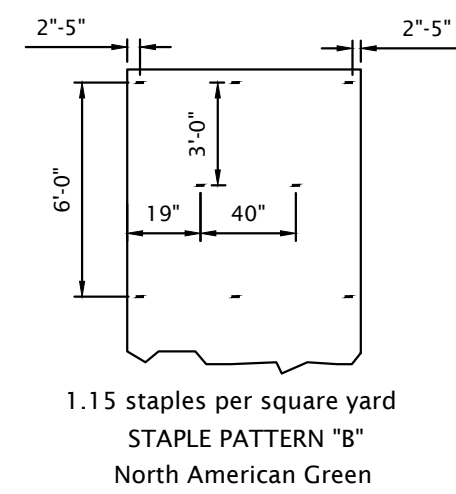
- MATERIAL:** Soft pliable matting such as jute, coir or burlap, Applied Polymer Systems, "Silt Stop" dry powder (or Approved Equal)
- COVERAGE:** "Silt Stop" dry powder is a soil specific material, a soil sample must be submitted to the manufacturer to determine proper application rates.
- INSTALLATION**
1. Prepare the site by filling in gullies, rills, low spots.
 2. Apply Silt Stop powder dry over dry ground with a seed/fertilizer spreader
 3. Select the type and weight of erosion control blanket to fit the site conditions (e.g., slope, channel, flow velocity).
- MAINTENANCE**
1. During vegetative establishment, inspect after storm events for any erosion.
 2. If any area shows erosion, repair the grade and reapply Silt Stop powder and re-lay and staple the blanket
 3. After vegetative establishment, check the treated area periodically.

GEOTEXTILES

- MATERIAL:** North American Green - S 150 or DS 150 Blanket
S 150 when placement occurs in the fall, and winter durability is required
DS 150 degrades more rapidly allowing for sooner mowing of the stabilized area.

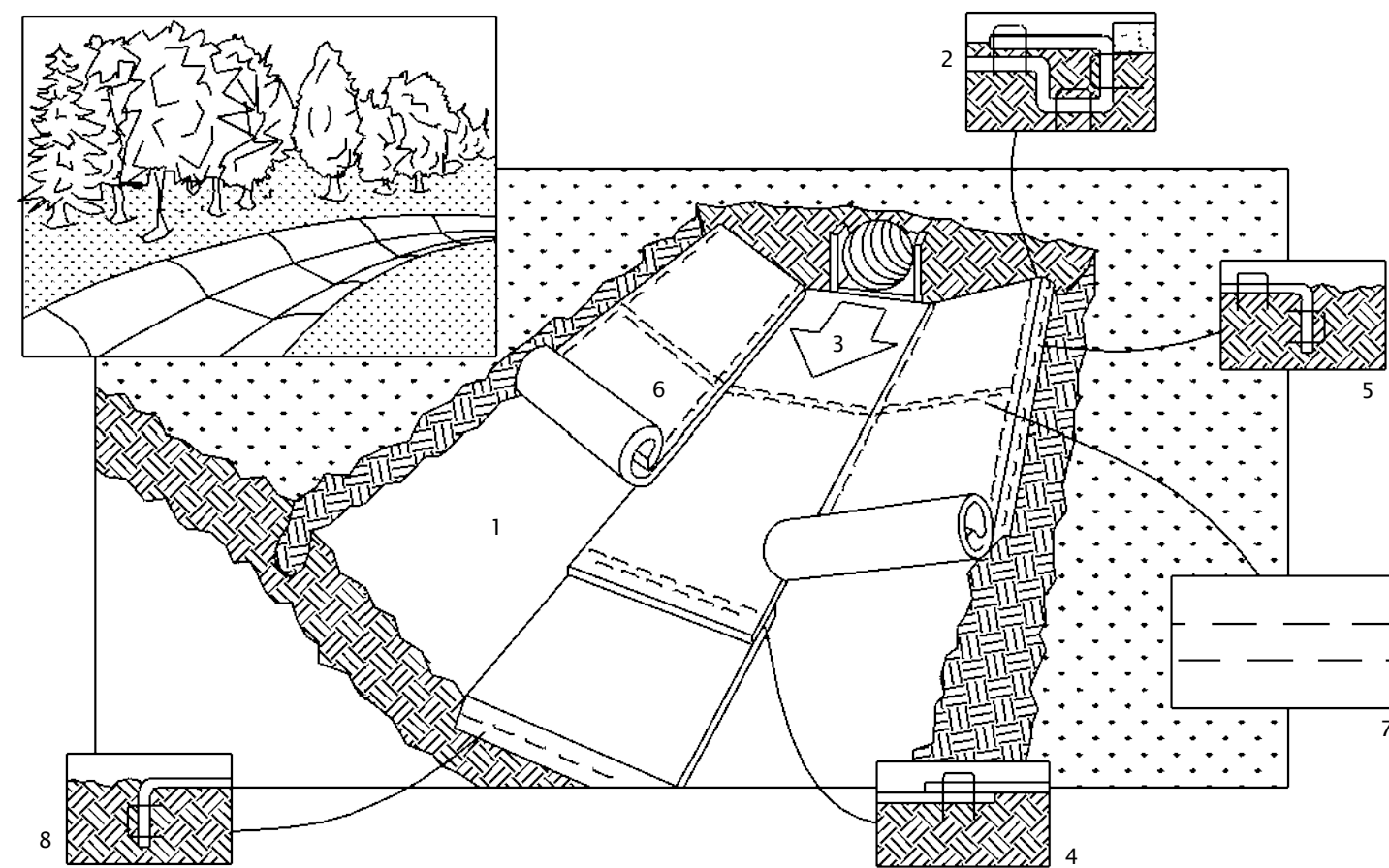
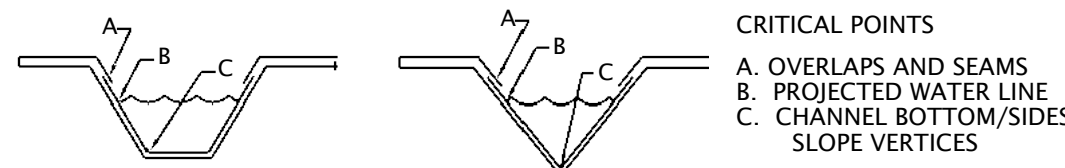
EROSION CONTROL BLANKET (SURFACE-APPLIED)

- ANCHORING:** Staples as recommended by the manufacturer. For North American Green use Staple pattern "B" - see chart below.
- INSTALLATION**
1. Select the type and weight of erosion control blanket to fit the site conditions (e.g., slope, channel, flow velocity).
 2. Install any practices needed to control erosion and runoff, such as temporary or permanent diversion, sediment basin or trap, silt fence, and straw bale dam.
 3. Grade the site as specified in the construction plan.
 4. Add topsoil where appropriate.
 5. Prepare the seedbed, fertilize (and lime, if needed), and seed the area immediately after grading.
 6. Follow manufacturer's directions, lay the blankets on the seeded area such that they are in continuous contact with the soil and that the upslope or upstream ones overlap the lower ones by at least 8 in.
 7. Tuck the uppermost edge of the upper blankets into a check slot (slit trench), backfill with soil, and tamp down.
 8. Anchor the blankets as specified by the manufacturer.
- MAINTENANCE**
1. During vegetative establishment, inspect after storm events for any erosion below the blanket.
 2. If any area shows erosion, pull back that portion of the blanket covering it, add soil, re-seed the area, and re-lay and staple the blanket.
 3. After vegetative establishment, check the treated area periodically.



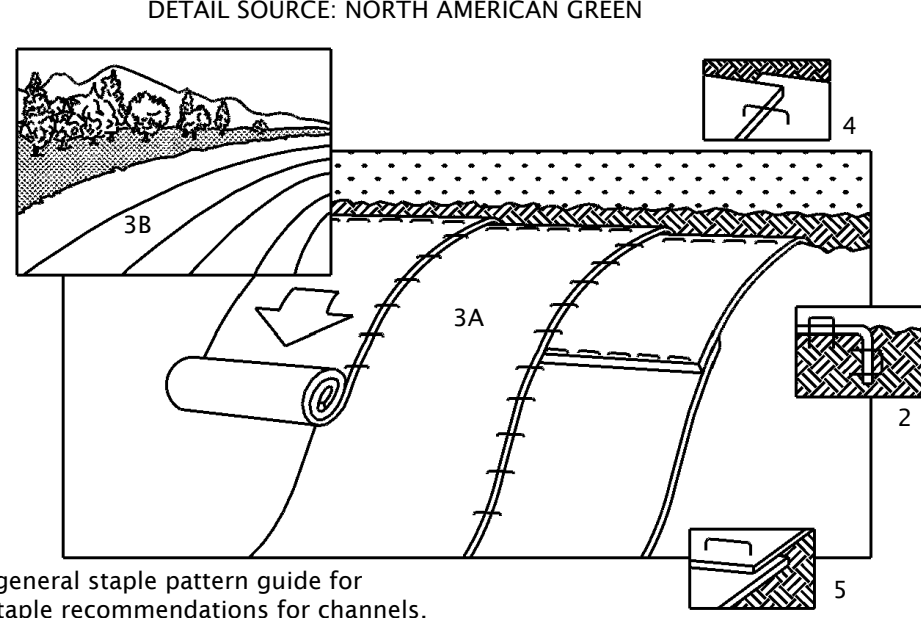
EROSION CONTROL BLANKET (CHANNEL APPLICATION)

- NOTE:** Horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.
Refer to general staple pattern guide for correct staple recommendations for channels.



1. PREPARE SOIL BEFORE INSTALLING BLANKETS. INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH, BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW ON BOTTOM OF CHANNEL.
4. PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH A 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT THE TOP OF SIDE SLOPES MUST BE ANCHORED IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. BLANKETS ON SIDE SLOPES MUST BE OVERLAPPED 4" OVER THE CENTER OF BLANKET AND STAPLED (2" FOR C350 MATTING).
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

EROSION CONTROL BLANKET (SIDE SLOPE APPLICATION)



- NOTE:** Refer to general staple pattern guide for correct staple recommendations for channels.
1. PREPARE SOIL BEFORE INSTALLING BLANKETS. INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED. **NOTE:** WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
 2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
 3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
 4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
 5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE. PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.

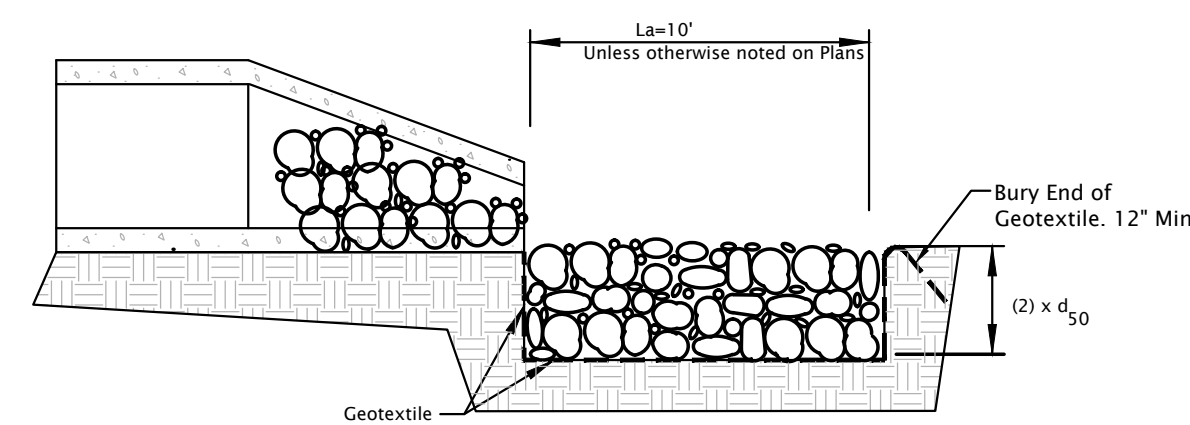
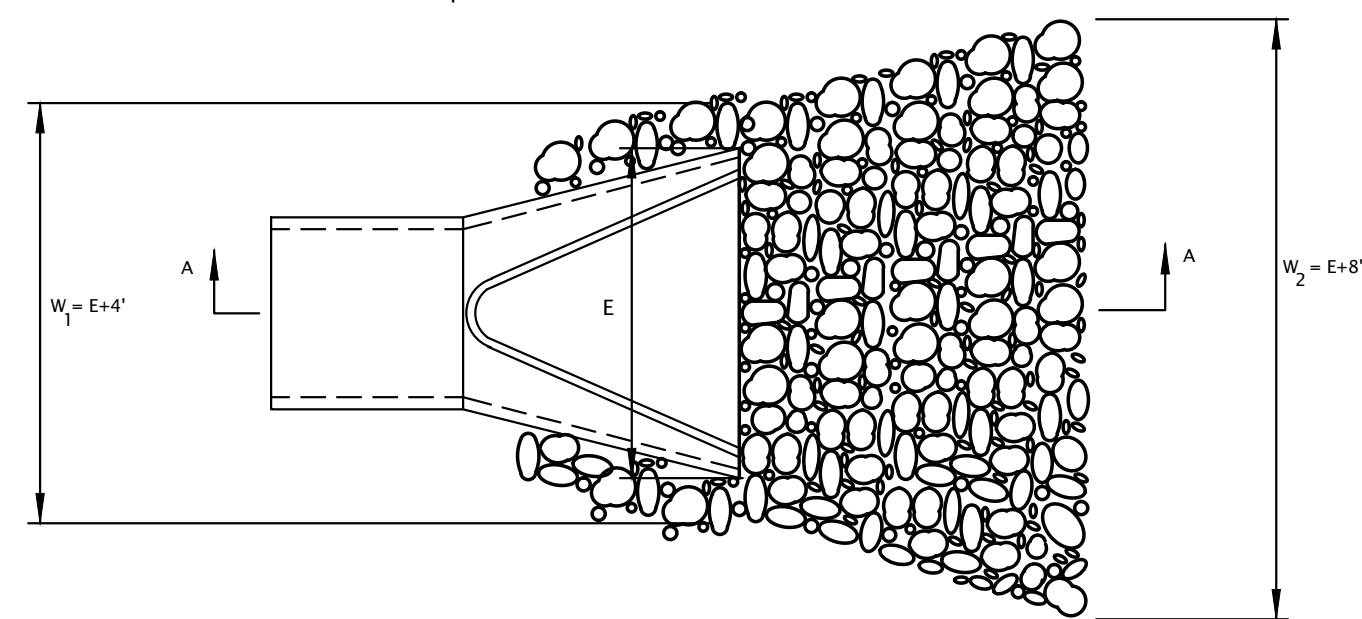
RIP RAP AT PIPE OUTLET

- MATERIAL:** Hard, angular, and weather-resistant, having a specific gravity of at least 2.5
- GRADATION:** Well-graded stone, 50% (by weight larger than the specified d_{50}); however, the largest pieces should not exceed two times the specified d_{50} , and no more than 15% of the pieces (by weight) should be less than 3 in.
- FILTER:** Use geotextile fabric for stabilization and filtration or sand/gravel layer placed under all permanent riprap installations.
- SLOPE:** 2:1 or flatter, unless approved in the erosion and sediment control plan.

- SUBGRADE PREPARATION**
1. Remove brush, trees, stumps, and other debris.
 2. Excavate only deep enough for both filter and riprap. Over-excavation increases the amount of spoil considerably.
 3. Compact any fill material to the density of the surrounding undisturbed soil.
 4. Smooth the graded foundation.

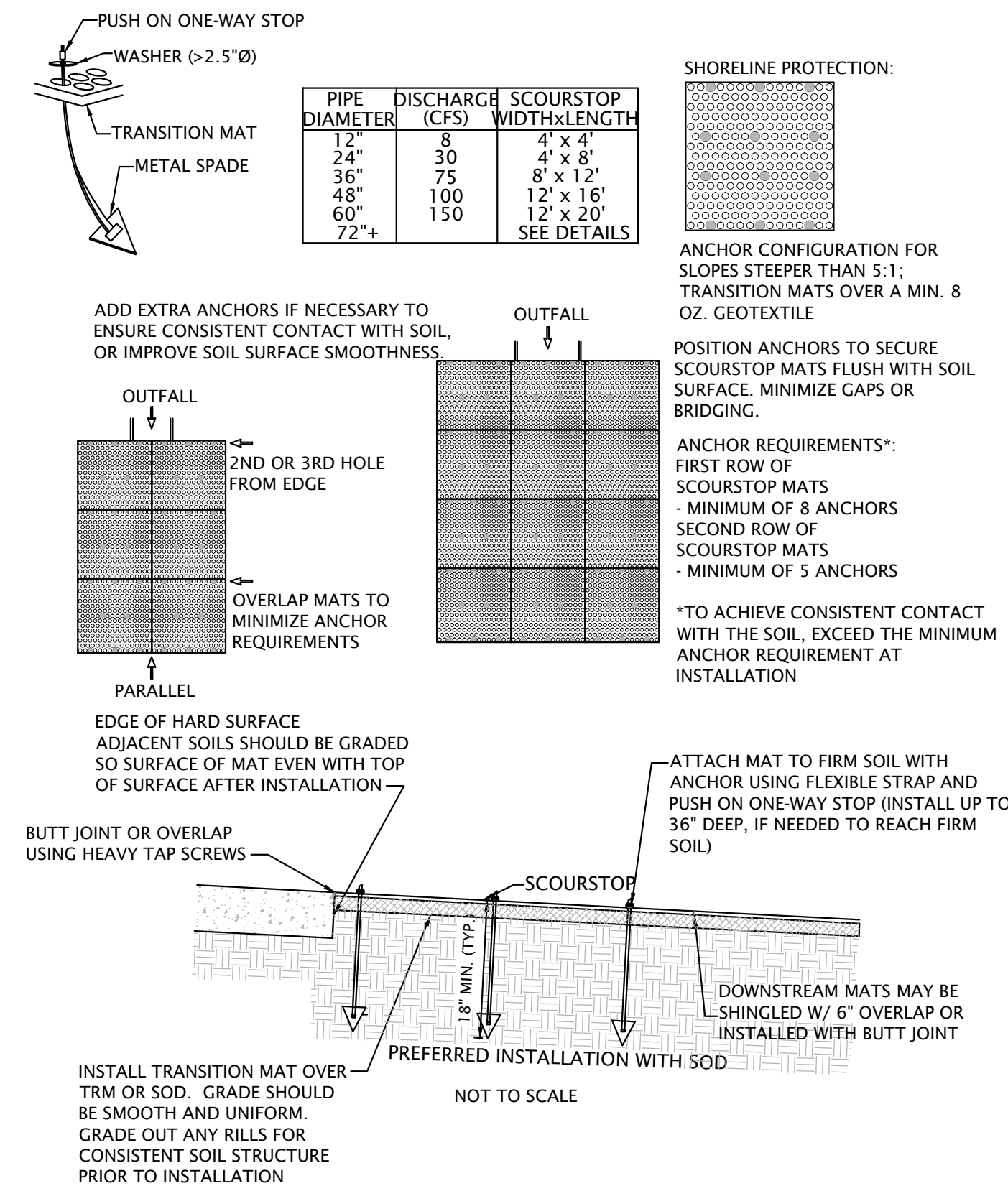
- FILTER PLACEMENT**
1. If using geotextile fabric, place it on the smoothed foundation, overlap the edges at least 12 in., and secure with anchor pins spaced every 3 ft. along the overlap.
 2. If using a sand/gravel filter, spread the well-graded aggregate in a uniform layer to the required thickness (6 in. min.); if two or more layers are specified, place the layer of smaller gradation first, and avoid mixing the layers.

- RIPRAP PLACEMENT**
1. Immediately after installing the filter, add the riprap to full thickness in one operation. (Do not dump through chutes or use any method that causes segregation of rock sizes or that will dislodge or damage the underlying filter material.)
 2. If fabric is damaged, remove the riprap and repair by adding another layer of fabric, overlapping the damaged area by 12 in.
 3. Place smaller rock in voids to form a dense, uniform, well-graded mass. (Selective loading at the quarry and some hand placement may be needed to ensure an even distribution of rock material.)
 4. Blend the rock surface smoothly with the surrounding area to eliminate protrusions or over-falls.
- MAINTENANCE**
1. Inspect periodically for displaced rock material, slumping, and erosion at edges, especially down-stream or down-slope.



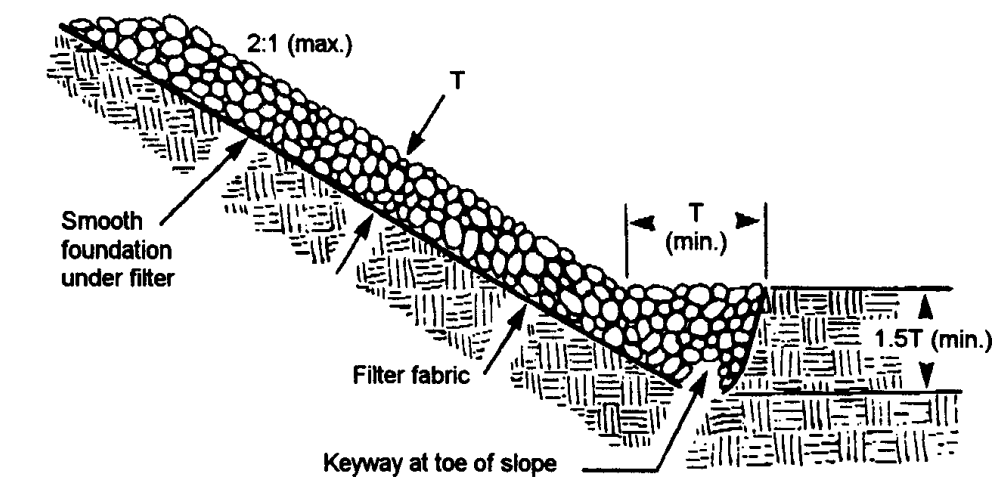
SCOURSTOP TRANSITION MAT - Scour Protection

- MATERIAL:** ScourSTOP semi-rigid, highdensity polyethylene plastic mat.
Erosion Tech LLC
2501 SE Tones Drive, Suite 500
Ankeny, Iowa - 50021
877-99-SCOUR
www.scourstop.com



RIP-RAP - Scour Protection

- MATERIAL:** Hard, angular, and weather-resistant, having a specific gravity of at least 2.5
- GRADATION:** Well-graded stone, 50% (by weight larger than the specified d_{50}); however, the largest pieces should not exceed two times the specified d_{50} , and no more than 15% of the pieces (by weight) should be less than 3 in.
- FILTER:** Use geotextile fabric for stabilization and filtration or sand/gravel layer placed under all permanent riprap installations.
- SLOPE:** 2:1 or flatter, unless approved in the erosion and sediment control plan.
- SUBGRADE PREPARATION**
1. Remove brush, trees, stumps, and other debris.
 2. Excavate only deep enough for both filter and riprap. Over-excavation increases the amount of spoil considerably.
 3. Compact any fill material to the density of the surrounding undisturbed soil.



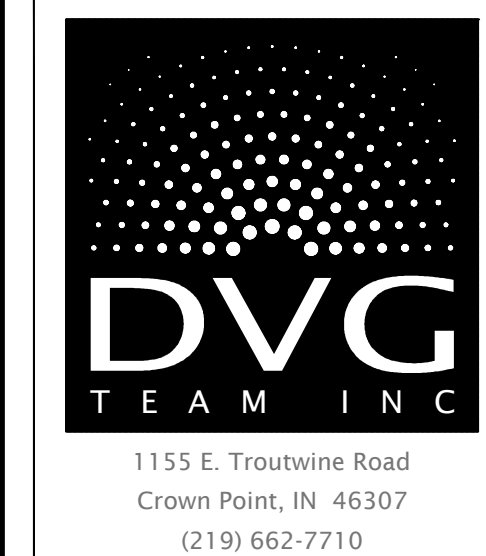
4. Cut keyway in stable material at the base of the slope to reinforce the toe. Keyway depth should be 1 1/2 times the design thickness of the riprap and should extend a horizontal distance equal to the design thickness.
5. Smooth the graded foundation.

- FILTER PLACEMENT**
1. If using geotextile fabric, place it on the smoothed foundation, overlap the edges at least 12 in., and secure with anchor pins spaced every 3 ft. along the overlap.
 2. If using a sand/gravel filter, spread the well-graded aggregate in a uniform layer to the required thickness (6 in. min.); if two or more layers are specified, place the layer of smaller gradation first, and avoid mixing the layers.

- RIPRAP PLACEMENT**
1. Immediately after installing the filter, add the riprap to full thickness in one operation. (Do not dump through chutes or use any method that causes segregation of rock sizes or that will dislodge or damage the underlying filter material.)
 2. If fabric is damaged, remove the riprap and repair by adding another layer of fabric, overlapping the damaged area by 12 in.
 3. Place smaller rock in voids to form a dense, uniform, well-graded mass. (Selective loading at the quarry and some hand placement may be needed to ensure an even distribution of rock material.)
 4. Blend the rock surface smoothly with the surrounding area to eliminate protrusions or over-falls.

- MAINTENANCE**
1. Inspect periodically for displaced rock material, slumping, and erosion at edges, especially down-stream or down-slope.

NOT FOR CONSTRUCTION



1155 E. Troutwine Road
Crown Point, IN 46307
(219) 662-7710

NOT FOR CONSTRUCTION

Centennial Village
L.L.C.
9615 Boulevard Drive
Highland, Indiana 46322

DWG # 14-C-1011	DATE:
REVISIONS AND NOTES:	

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Centennial Village - Lot 3
Munster, Indiana
Storm Water Pollution
Prevention Plan Details

SCALE: NONE
DESIGN BY: DVG
DRAWN BY: JEH
DATE: 02-28-17

C302

EROSION CONTROL MEASURES (continued)

MULCHING

MATERIAL: Straw, hay, wood fiber, cellulose, or excelsior, or erosion control blankets or turf reinforcement mats, as specified in the erosion and sediment control plan.
COVERAGE: At least 75% of the soil surface.
ANCHORING: Required for straw or hay mulch, and sometimes excelsior to prevent displacement by wind and/or water.

MATERIAL	RATE	COMMENTS
Straw or hay	1 1/2 to 2 tons/acre	Should be dry, unchopped, free of undesirable seeds. Spread by hand or anchored. Must be crimped or anchored.
Wood fiber or cellulose	1 ton/acre	Apply with a hydromulcher and use with tacking agent.
Long fiber wood (excelsior)	1/2 to 3/4 ton/acre	Anchor in areas subject to wind.

INSTALLATION

- Apply mulch at the recommended rate.
- Spread uniformly by hand, hay fork, mulch blower, or hydromulcher. After spreading, no more than 25% of the ground surface should be visible.
- If straw or hay is used, anchor it immediately in one of the following ways.

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/sy. Do not use in areas of concentrated flow.
Synthetic tackifier, binder or soil stabilizer	Apply according to manufacturer's recommendations.
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.

MAINTENANCE

- Inspect after storm events to check for movement of mulch or for erosion.
- If washout, breakage, or erosion is present, repair the surface, then re-seed, re-mulch and, if applicable, install new netting.
- Continue inspections until vegetation is firmly established.

SOIL ROUGHENING

DESCRIPTION

Soil roughening is a temporary erosion control practice often used in conjunction with grading. Soil roughening involves increasing the relief of a bare soil surface with horizontal grooves by either stair-stepping (running parallel to the contour of the land) or using construction equipment to track the surface. Slopes that are not fine graded and left in a roughened condition can also reduce erosion. Soil roughening reduces runoff velocity, increases infiltration, reduces erosion, traps sediment, and prepares the soil for seeding and planting by giving seed an opportunity to take hold and grow.

APPLICABILITY

Soil roughening is appropriate for all slopes, but works especially well on slopes greater than 3:1, on piles of excavated soil, and in areas with highly erodible soils. This technique is especially appropriate for soils that are frequently disturbed, because roughening is relatively easy. To slow erosion, roughen the soil as soon as possible after the vegetation has been removed from the slope or immediately after grading activities have ceased (temporarily or permanently). Use this practice in conjunction with seeding, planting, and temporary mulching to stabilize an area. A combination of surface roughening and vegetation is appropriate for steeper slopes and slopes that will be left bare for longer periods of time.

SITING AND DESIGN CONSIDERATIONS

Roughened slope surfaces help establish vegetation, improve infiltration, and decrease runoff velocity. A rough soil surface allows surface ponding that protects lime, fertilizer, and seed and decreases erosion potential. Grooves in the soil are cooler and provide more favorable moisture conditions than hard, smooth surfaces. These conditions promote seed germination and vegetative growth.

Avoid excessive soil compacting, because this inhibits vegetation growth and causes higher runoff velocity. Limit roughening with tracked machinery to sandy soils that do not compact easily, also, avoid tracking on heavy clay soils, especially when wet. Seed roughened areas as quickly as possible, and follow proper procedures.

Depending on the type of slope and the available equipment, use different methods for roughening soil on a slope. These include stair-step grading, grooving, and tracking. When choosing a method, consider factors such as slope steepness, mowing requirements, whether the slope is formed by cutting or filling, and available equipment. Choose from the following methods for surface roughening:

- Cut slope roughening for areas that will not be mowed.** Use stair-step grades or groove-cut slopes for gradients steeper than 3:1. Use stair-step grading on any erodible material that is soft enough to be ripped with a bulldozer. Also, it is well suited for slopes consisting of soft rock with some subsoil. Make the vertical cut distance less than the horizontal distance, and slope the horizontal portion of the step slightly toward the vertical wall. Keep individual vertical cuts less than 2 feet deep in soft materials and less than 3 feet deep in rocky materials.
- Grooving.** This technique uses machinery to create a series of ridges and depressions that run across the slope along the contour. Make grooves using any appropriate implement that can be safely operated on the slope, such as disks, tillers, spring harrows, or the teeth on a front-end loader bucket. Make the grooves less than 3 inches deep and less than 15 inches apart.
- Fill slope roughening for areas that will not be mowed.** Fill slopes with a gradient steeper than 3:1 should be placed in lifts less than 9 inches, and properly compact each lift. The face of the slope should consist of loose, uncompacted fill 4 to 6 inches deep. If necessary, roughen the face of the slopes by grooving the surface as described above. Do not blade or scrape the final slope face.
- Cuts, fills, and graded areas that will be mowed.** Make mowed slopes no steeper than 3:1. Roughen these areas with shallow grooves less than 10 inches apart and deeper than 1 inch using normal tilling, disking, or harrowing equipment (a cultipacker-seeder can also be used). Excessive roughness is undesirable where mowing is planned.
- Roughening with tracked machinery.** To avoid undue compaction of the soil surface, limit roughening with tracked machinery only to sandy soils. Operate tracked machinery perpendicularly to the slope to leave horizontal depressions in the soil. Tracking is generally not as effective as other roughening methods.

LIMITATIONS

Soil roughening is not appropriate for rocky slopes. Tracked machinery can excessively compact the soil. Typically, soil roughening is effective only for gentle or shallow depth rains. If roughening is washed away in a heavy storm, re-roughen the surface and reseed.

MAINTENANCE CONSIDERATIONS

Inspect roughened areas after storms to see if re-roughening is needed. Regular inspection should indicate where additional erosion and sediment control measures are needed. If rills (small watercourses that have steep sides and are usually only a few inches deep) appear, fill, regrade, and reseed them immediately. Use proper methods.

EFFECTIVENESS

Soil roughening provides moderate erosion protection for bare soils while vegetative cover is being established. It is inexpensive and simple for short-term erosion control when used with other erosion and sediment controls.

TOPSOIL (SALVAGE AND UTILIZATION)

SALVAGING AND STOCKPILING

- Determine depth and suitability of topsoil at the site.
- Prior to stripping topsoil, install any site-specific downslope practices needed to control runoff and sedimentation.
- Remove the soil material no deeper than what the county soil survey describes as "surface soil" (i.e., A or Ap horizon).
- Stockpile the material in accessible locations that neither interfere with other construction activities nor block natural drainage, and install silt fences, straw bales, or other barriers to trap sediment. (Several smaller piles around the construction site are usually more efficient and easier to contain than one large pile.)
- If soil is stockpiled for more than 6 mos., it should be temporarily seeded or covered with a tarp or surrounded by a sediment barrier.

SPREADING TOPSOIL

- Prior to applying topsoil, grade the subsoil and roughen the top 3-4 in. by disking. This helps the topsoil bond with the subsoil.
- Do not apply topsoil when the site is wet, muddy or frozen, because it makes spreading difficult, inhibits bonding, and can cause compaction problems.
- Apply topsoil evenly to a depth of at least 4 in. (8-12 in. if the underlying material is bedrock, loose sand, rock fragments, gravel or other unsuitable soil material) Compact slightly to improve contact with the subsoil.
- After spreading, grade and stabilize.

MAINTENANCE

- Inspect newly topsoiled areas frequently until vegetation is established.
- Repair eroded or damaged areas and replant.

TEMPORARY SEEDING

SITE PREPARATION

- These installation practices are needed to control erosion, sedimentation, and water runoff, such as temporary and permanent diversions, sediment traps or basins, silt fences, and triangular silt dikes.
- Grade the site as specified in the construction plan.

SEEDBED PREPARATION

- Fertilize as required.
- Work the fertilizer into the soil 2-4 in. deep with a disk or rake operated across the slope.

SEEDING

- Select a seeding mixture and rate from the table and plant at depth and on dates shown.
- Apply seed uniformly with a drill or cultipacker-seeder or by broadcasting, and cover to the depth shown.
- If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
- Mulch seeded areas to increase seeding success.

MAINTENANCE

- Inspect periodically after planting to see that vegetative stands are adequately established, re-seed if necessary.
- Check for erosion damage after storm events and repair, reseed and mulch if necessary.
- Topsoil fall seeded wheat or rye seeding with 50 lbs./acre of nitrogen in February or March if nitrogen deficiency is apparent.

TEMPORARY SEEDING RECOMMENDATIONS

SEED SPECIES*	RATE/ACRE	PLANTING DEPTH	OPTIMUM DATES**
Wheat or rye	150 lbs.	1 to 1 1/2 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.
 ** Seeding done outside the optimum dates increases the chance of seeding failure.

PERMANENT SEEDING

PERMANENTLY SEED ALL FINAL GRADE AREAS (e.g., landscape berms, drainage swales, erosion control structures, etc.) AS EACH IS COMPLETED AND ALL AREAS WHERE ADDITIONAL WORK IS NOT SCHEDULED FOR A PERIOD OF MORE THAN A YEAR.

SITE PREPARATION

- These installation practices are needed to control erosion, sedimentation, and water runoff, such as temporary and permanent diversions, sediment traps or basins, silt fences, and triangular silt dikes.
- Grade the site as specified in the construction plan and fill in depressions that can collect water.
- Add topsoil to achieve needed depth for establishment of vegetation.

SEEDBED PREPARATION

- Fertilize as required.
- Till the soil to obtain a uniform seedbed, working the fertilizer into the soil 2-4 in. deep with a disk or rake operated across the slope.

SEEDING

Optimum seeding dates are March 1-May 10 and August 10-September 30. Permanent seeding done between May 10 and August 10 may need to be irrigated. As an alternative, use temporary seeding until the preferred date for permanent seeding.

- Select a seeding mixture and rate from the table and plant at depth and on dates shown.
- Apply seed uniformly with a drill or cultipacker-seeder or by broadcasting, and cover to the depth shown.
- If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
- Mulch seeded areas. Use erosion control blankets on sloping areas. If seeding is done with a hydroseeder, fertilizer and mulch can be applied with the seed in a slurry mixture.

MAINTENANCE

- Inspect periodically after planting to see that vegetative stands are adequately established, re-seed if necessary.
- Check for erosion damage after storm events and repair, reseed and mulch if necessary.

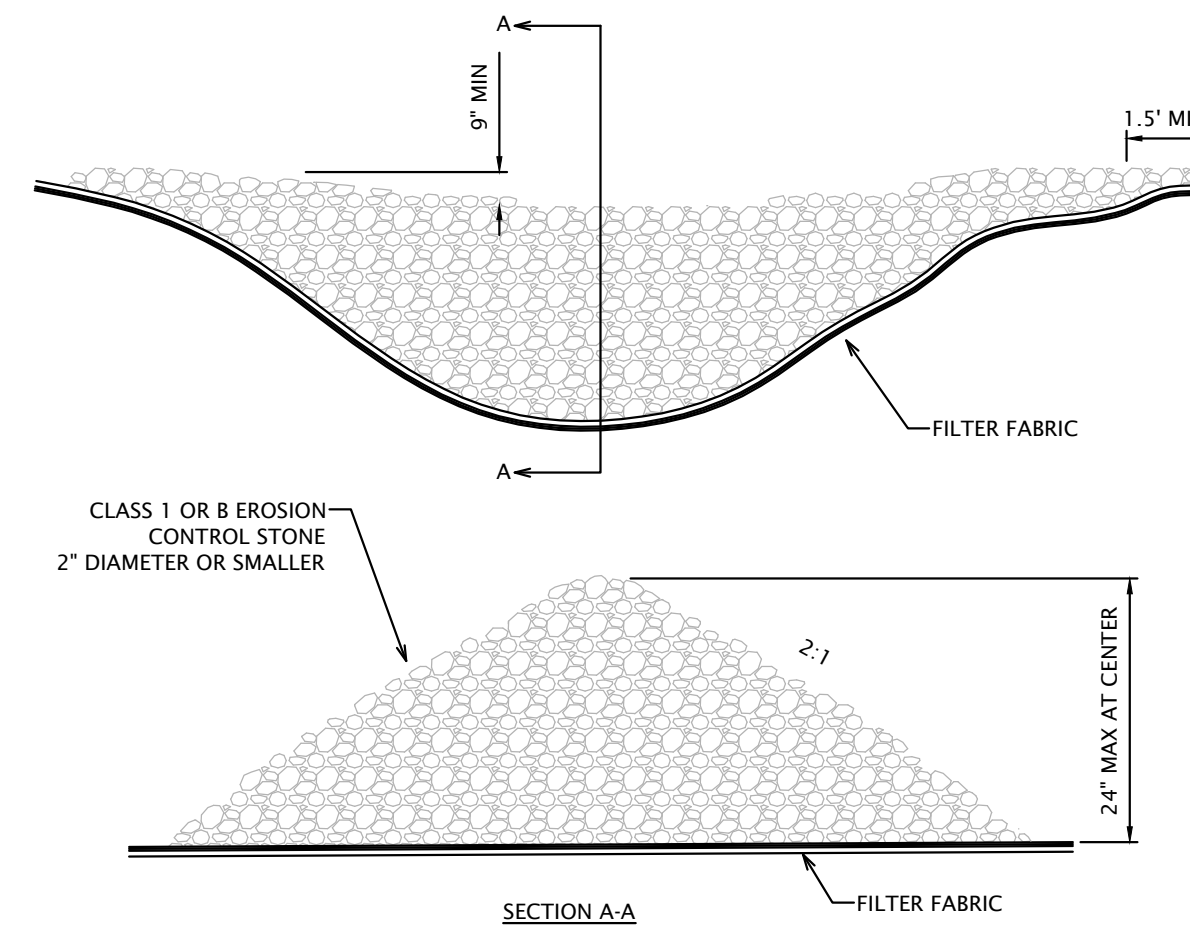
PERMANENT SEEDING RECOMMENDATIONS

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 drought.

SEED SPECIES AND MIXTURES	RATE/ACRE	OPTIMUM SOIL pH
OPEN AND DISTURBED AREAS (REMAINING IDLE FOR MORE THAN ONE YEAR.)		
1. Perennial ryegrass	35-50 lbs.	5.6 to 7.0
+ white or ladino clover	1 to 2 lbs.	
1. Kentucky bluegrass	20 lbs.	5.5 to 7.5
+ smooth bromegrass	10 lbs.	
+ switchgrass	3 lbs.	
+ timothy	4 lbs.	
+ perennial ryegrass	10 lbs.	
+ white or ladino clover	1 to 2 lbs.	

RUNOFF CONTROL MEASURES

RIP-RAP CHECK DAMS



MAINTENANCE

- Inspect after each storm event.
- Remove built-up sediment and repair/replace the check dams as needed.

TRIANGULAR SILT FENCE DIKE - CHECK DAMS

MATERIAL:

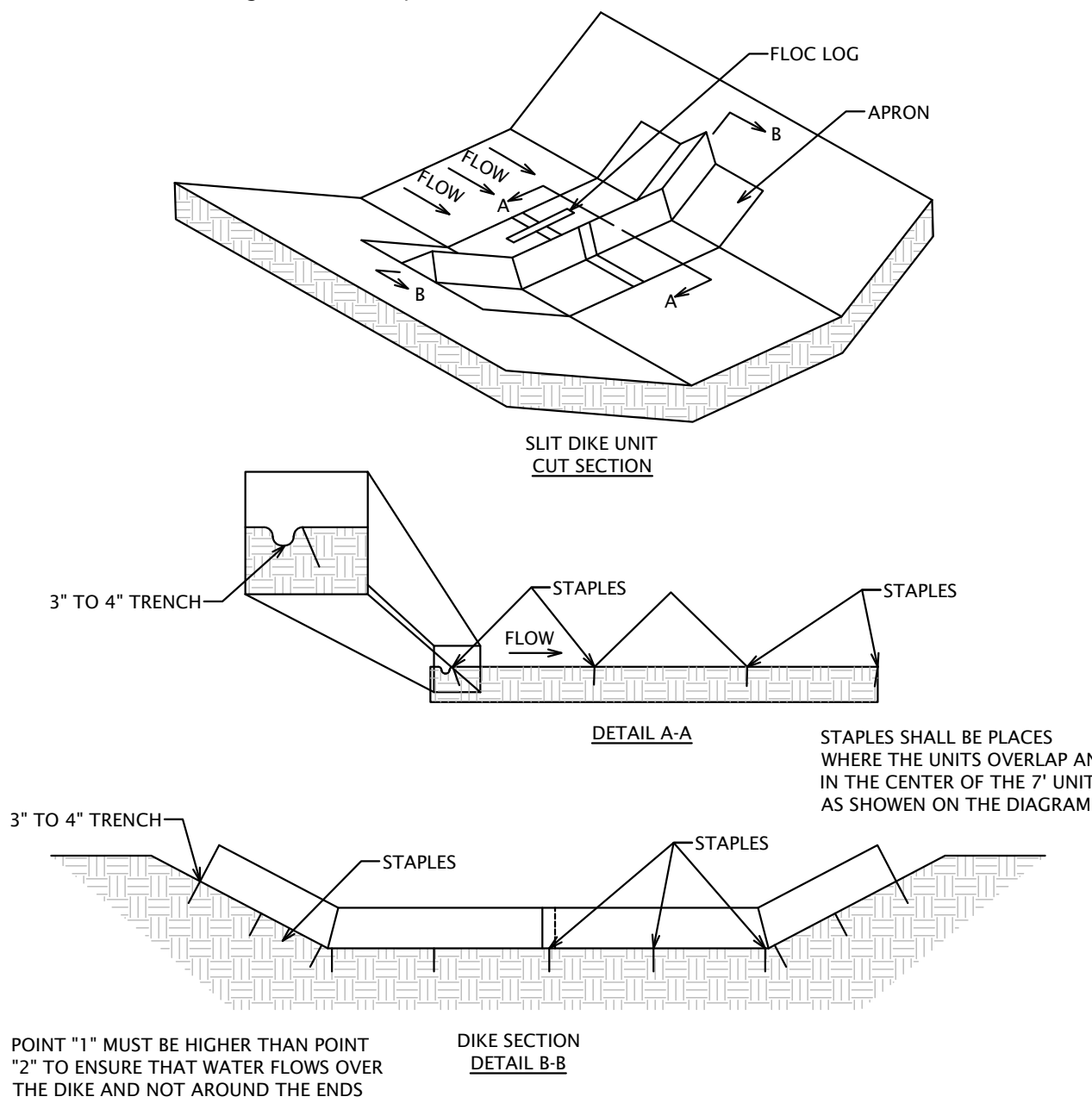
The triangular-shaped inner material shall be urethane foam. The outer cover shall be a woven geotextile fabric placed around the inner material and allowed to extend beyond both sides of the triangle two to three (2' - 3') feet.

ANCHORING:

The Dikes shall be attached to the ground with Wire Staples. The Staples shall be No. 11 gauge wire and be at least six to eight (6" - 8") inches long. Staples shall be placed as indicated on the installation detail.

INSTALLATION

- Place triangular silt fence dike as required.
- Attach dikes to the ground with staples as indicated on the detail.



POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS

MAINTENANCE

- Inspect after each storm event.
- Remove built-up sediment and repair/replace the silt dikes as needed.

GEORIDGE DITCH BERM - CHECK DAMS

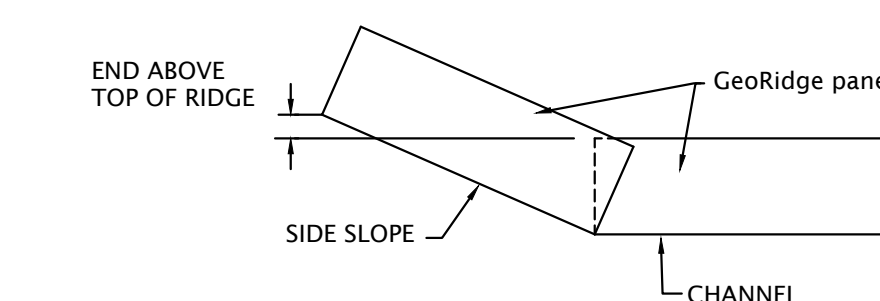
MATERIAL:

GeoRidge or GeoRidge Bio by Nilex Products a HDPE product that serves to dissipate water energy within a ditch or channel.

GeoRidge is to be used in applications where the measure will be removed after the channel is stabilized. GeoRidge Bio can be used when the measure can be left to decompose in lieu of being removed.

INSTALLATION

- Place an erosion control blanket (ECB), laid parallel with the channel direction, in the area where the GeoRidge is to be placed. ECB shall be appropriate for the channel slope, volume and velocity. ECB shall be secured with a 4" trench at the upstream edge, with min. 6" staples placed 21" o.c. along the upstream and downstream edges.
- Place GeoRidge berm in the middle of the ECB, perpendicular to the channel flow direction, and anchor with 10" spiral spikes. A minimum of 3 anchors shall be used on the upstream side and 2 anchors on the downstream side. If more than one GeoRidge berm panel is required to span the channel, line up the anchoring holes for installation of the anchors.
- When placing the GeoRidge panel on the side slope of the channel, the bottom of the panels should meet with the ridge being overlapped. This will prevent water from passing through the berm. Additionally the outside edge of the panel on the side slope should be installed so that it is higher than the top of the panel in the channel bottom.



4. SPACING:

The spacing is calculated by dividing the height of the GeoRidge by the gradient of the channel slope.
 9"/.02 gradient = 450" or 37.5'

MAINTENANCE

- Inspect after each storm event.
- Remove built-up sediment when it reaches 1/2 the height of the GeoRidge.
- Repair/replace the GeoRidge and the ECM as needed.

SEDIMENT CONTROL MEASURES

POLYMER SYSTEMS

MATERIAL: APS 700 Series Floc Log

INSTALLATION:

- The Floc Log vendor shall sample the water that is to be treated with the system. This sample shall be used to determine the site-specific polymer mix that should be used.
- In applications where the objective of this measure is to meet the Total Suspended Solids requirements prior to completion of the detention pond; i.e. the side slopes are not fully stabilized, dewatering the pond for further expansion, etc., the Floc Log should be installed at the end of the outfall pipe and a temporary material such as Geolute should be placed downstream of the Floc Log providing a sediment settling area. (See plans for specific installation locations)
- In applications where the objective of this measure is to meet the Total Suspended Solids requirements after the detention pond is completed, the Floc Log should be installed at the end of the inlet pipes into the detention pond. This will cause the sediment to settle more quickly in the wet detention pond, providing a cleaner discharge. (See plans for specific installation locations)
- Following the use of the Floc Log, the settled sediment will need to be removed. This temporary settling media removed, or the detention pond might need to be cleaned if sediment settling has significantly reduced the pond volume.

MAINTENANCE

- Inspect after storm events to check for movement of mulch or for erosion.
- If washout, breakage, or erosion is present in the sediment settling media, repair the media.
- Be sure the Floc Log is secure attached at the installed location, verify that storm water is having contact with the Floc Log.

FIBER ROLLS

MATERIAL: Tube shaped fiber rolls filled with straw, flax, rice, coconut fiber material, mulch, or composted material. Each roll is wrapped with UV-degradable polypropylene netting for longevity or with 100 percent biodegradable materials like burlap, jute, or coir.

INSTALLATION:

- Install rolls parallel with the slope contour, with the ends slightly lower than the mid-section, to prevent water ponding at the mid-section. Turn the ends slightly upslope to prevent water from bypassing the measure.
- Excavate a trench with a width and depth equal to one-fourth the diameter of the log.
- Where applicable install the measure upslope of a curb or sidewalk. Placing the measure against the curb will provide additional stability and resistance to surface flow.
- Place rolls end to end to form a continuous barrier.
- Hardwood stakes shall be driven through the rolls, spaced no greater than 5' to a depth of 18".
- The fiber rolls should be fastened to the hardwood stakes with rope.
- Backfill the trench with excavated soil to ground level on the down-slope side and 2" above ground level on the up-slope side of the roll.

MAINTENANCE:

- The rolls should be inspected weekly and after each rainfall event. Inspection should include if the material's diameter is less than specification and if the outer netting has been degraded or broken.
- Remove accumulated sediment when it reaches one-quarter of the height of the roll.
- Repair eroded and damaged areas.
- If ponding becomes excessive, rolls should be removed and either reconstructed or new product installed.

SEDIMENT BASINS

MATERIAL: Depressional areas constructed at the outfall of pipes, end of channels, or end of surface sheet flow, which serves to settle out the suspended solids.

INSTALLATION:

- At locations shown on the plans, the contractor shall excavate a small basin. The basin size shall be shown on the plans and is determined by the volume of water tributary to the basin. The basin overflow elevation shall be lower than the incoming water, by a minimum of 12 inches.
- The basin shall be lined with a geotextile fabric, 9" of 4" riprap shall be placed all around the inside of the basin.

MAINTENANCE:

- The basins should be inspected weekly and after each rainfall event.
- Replace and restore any basin bank erosion.
- Repair or replace any displaced riprap.
- Reexcavate and replace the basin when it becomes more than 50% full of sediment.

DEWATERING BAGS

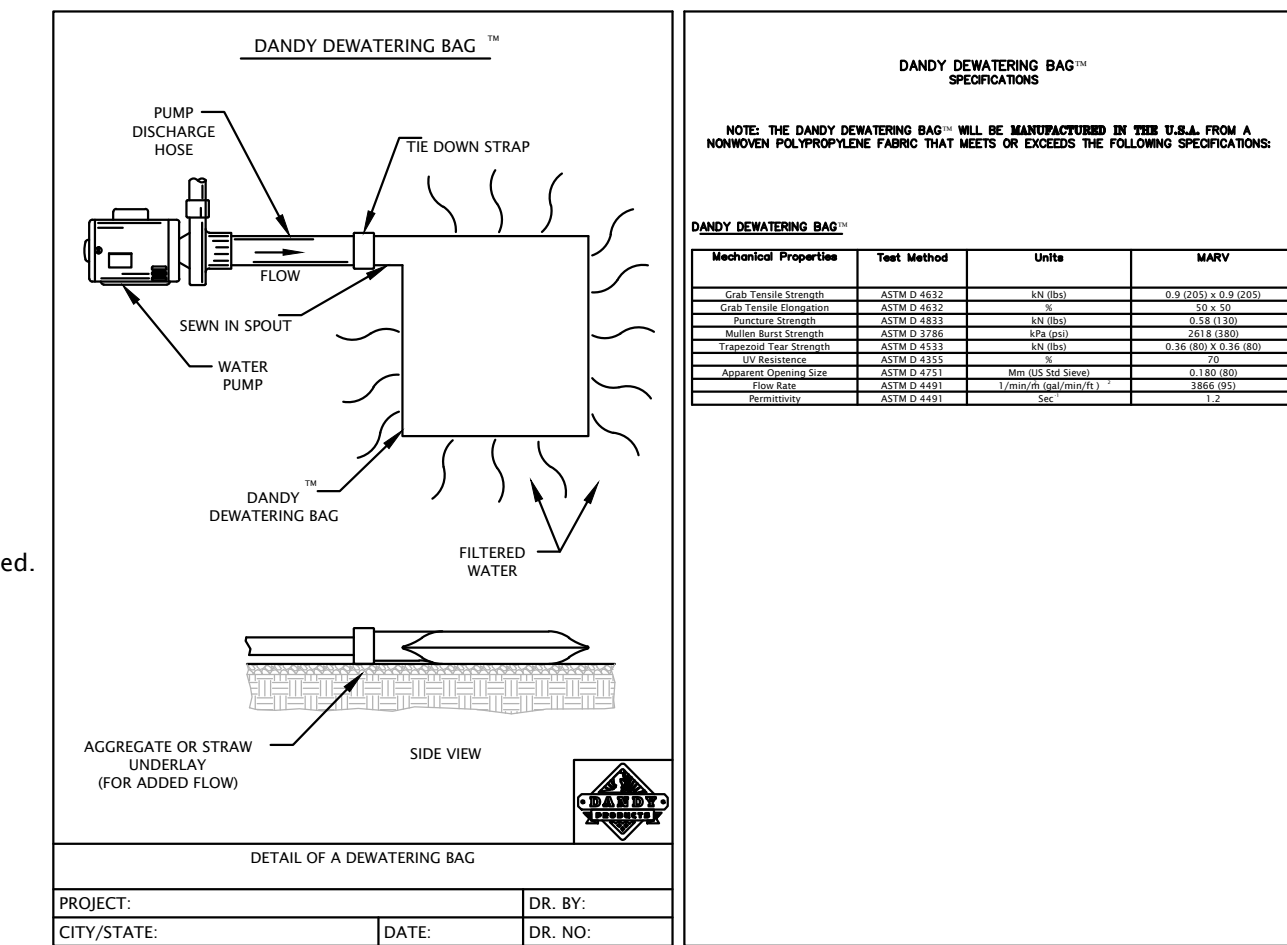
MATERIAL: "Dandy" Dewatering Bag or "Pump-it" Dewatering Bag

INSTALLATION:

- At location of the dewatering pump outfall.
- Size the bag to the discharge rate, the maximum bag size may limit the discharge rate of the pump.
- Connect bag to pump outfall per manufacturer's instructions.
- Install bag upstream of the receiving structure location.
- Outlet to grass area if possible.

MAINTENANCE:

- The basins should be inspected prior to each use.
- Replace bag when it is half full.



DETAIL OF A DEWATERING BAG

PROJECT: _____ DATE: _____ DR. BY: _____
 CITY/STATE: _____ DR. NO: _____

NOT FOR CONSTRUCTION



NOT FOR CONSTRUCTION

Centennial Village
L.L.C.
9615 Boulevard Drive
Highland, Indiana 46322

REVISIONS AND NOTES:	DATE:

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Centennial Village - Lot 3
Munster, Indiana
Storm Water Pollution
Prevention Plan Details

SCALE: NONE
DESIGN BY: DVG
DRAWN BY: JEH
DATE: 02-28-17

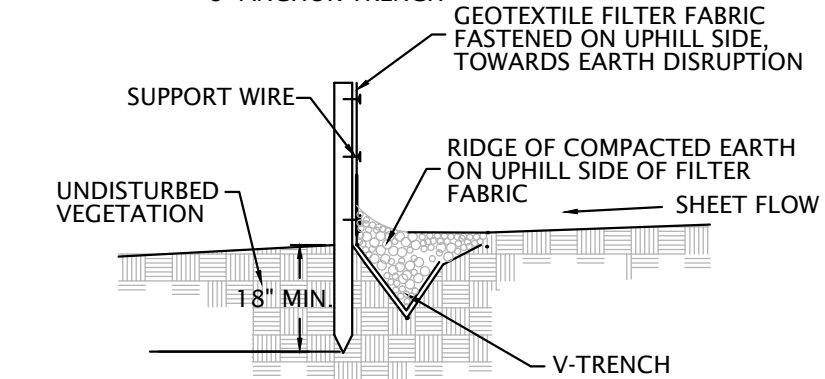
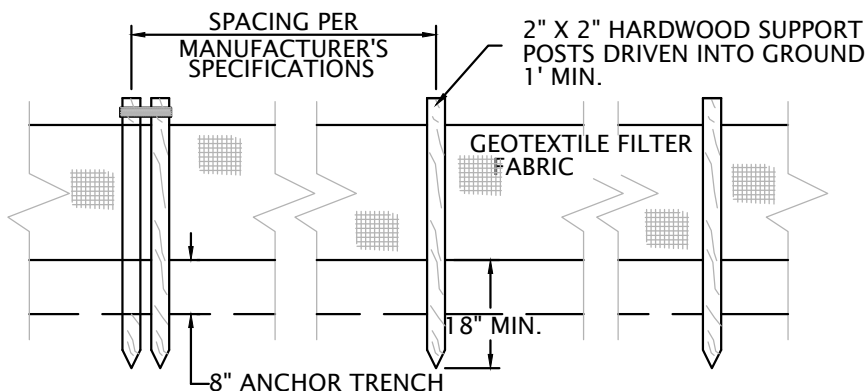
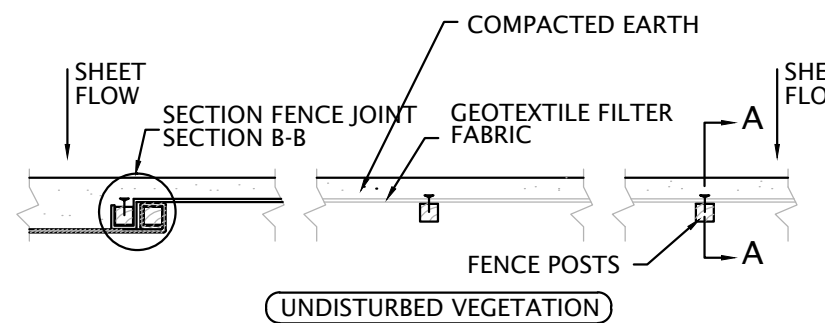
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SEDIMENT CONTROL MEASURES (continued)

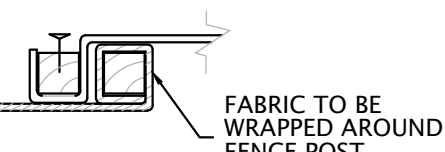
SILT FENCE

- APPROACH:** Pool area flat (less than 1% slope), with sediment storage of 945 cu ft./acre disturbed.
MATERIAL: Ameco No. 2130 silt stop with posts, manufactured by Mid-West Construction Products at 1-800-426-9647 or 1-317-781-2380, or approved equal.
 - When construction will be on going for more than 90 days, SS-700 SiltSaver Belted fence, or approved equal should be considered for longevity.
ANCHORING: 2 x 2 in. hardwood stakes with a length equal to the height of the silt fence plus 1 ft.

- INSTALLATION**
1. Drive stakes 1 ft. min. into ground and attach fabric to stakes with stapler.
 2. Bottom of fabric shall be placed under 6 inches of compacted soil to prevent sediment flow underneath the fence.
 3. Ensure that all supporting posts are on the down slope side of the fencing.



SECTION A-A



SECTION B-B

MAINTENANCE

1. Inspect after each storm event.
2. Remove built-up sediment and repair/replace the silt fence as needed.

ADDITIONAL CONSIDERATIONS

1. When protecting slopes, fences should be installed parallel to the slope contour.
2. On slopes the steepness of grade will determine the maximum distance between parallel fences.

less than 2%	100ft maximum
between 2% and 5%	75ft maximum
greater than 5%	additional surface stabilization shall be provided.

BASKET CURB INLET PROTECTION

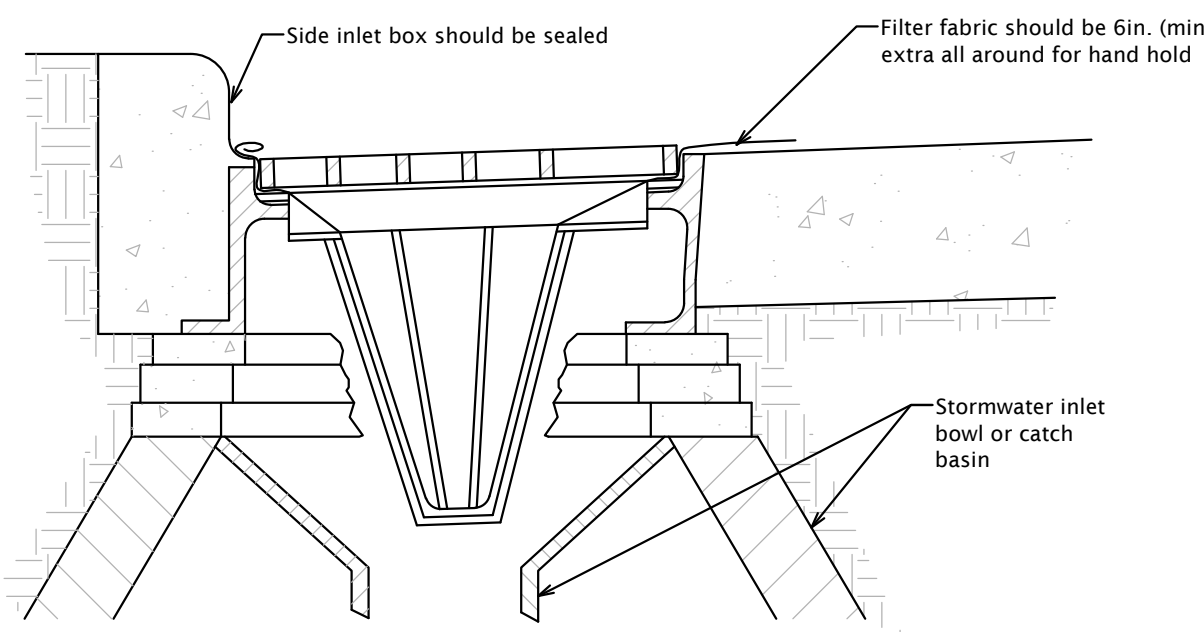
- CONTRIBUTING DRAINAGE AREA:** 1/4 acre maximum.
LOCATION: At curb inlets where barriers surrounding them would be impractical or unsafe.
MATERIAL: CATCH-ALL STORMWATER INLET PROTECTOR or approved equal.
 Marathon Materials, Inc. 1-800-983-9493 or www.marathonmaterials.com

- CAPACITY:** Runoff from a 2-yr frequency, 24-hr duration storm event entering a storm drain without by-pass flow.
BASKET: Fabricated metal with top width-length dimensions such that the basket fits into the inlet without gaps.

- GEOTEXTILE FABRIC:** for filtration.

INSTALLATION

1. Install basket curb inlet protections as soon as inlet boxes are installed in the new development or before land disturbing activities begin in a stabilized area.
2. If necessary, adapt basket dimensions to fit inlet box dimensions, which vary according to the manufacturer and/or model.
3. Seal the side inlets on those types of inlet boxes that have them.
4. Remove the grate and place the basket in the inlet.
5. Cut and install a piece of filter fabric large enough to line the inside of the basket and extend at least 6 inches beyond the frame.
6. Replace the inlet grate, which also serves to anchor the fabric.



MAINTENANCE

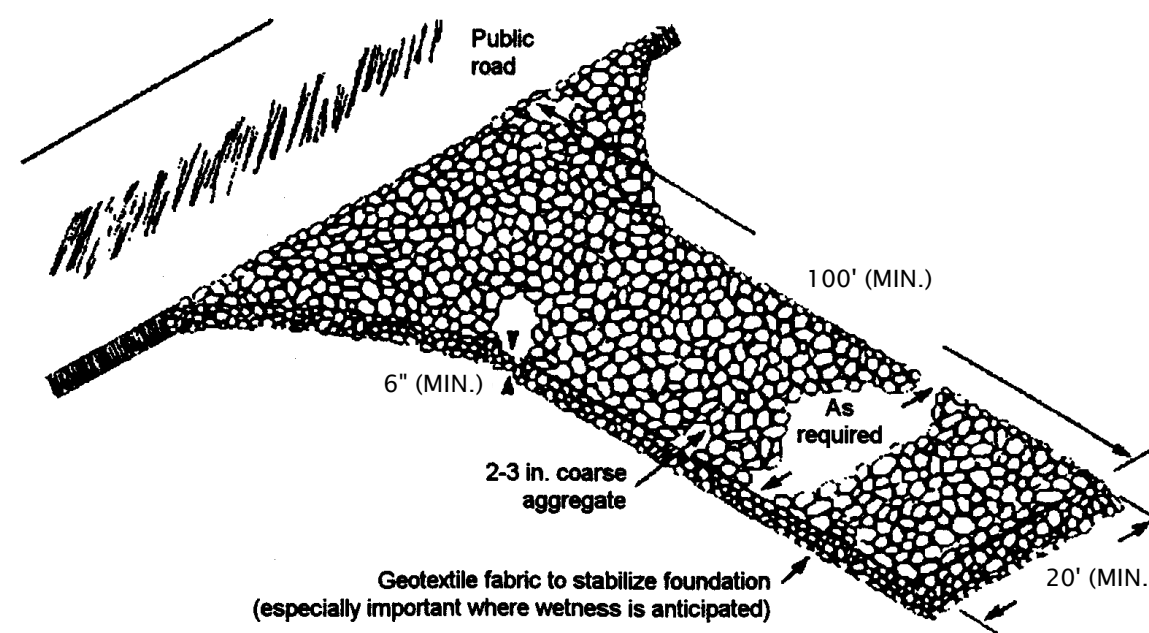
1. Inspect after each storm event.
2. Remove built-up sediment and replace the geotextile fabric after each storm event.
3. Periodically remove sediment and tracked-on soil from the street (but not by flushing with water) to reduce the sediment load on this curb inlet practice.

COMMON CONCERNS

1. Sediment not removed and geotextile fabric not replaced following a storm event - results in increased sediment, tracking, traffic hazard, and excessive ponding.
2. Geotextile fabric permittivity too low - results in rapid clogging, thus severe ponding, sediment enters the drain if the fabric breaks.
3. Drainage area too large - results in sediment overload and severe ponding; sediment enters the drain if the fabric breaks.

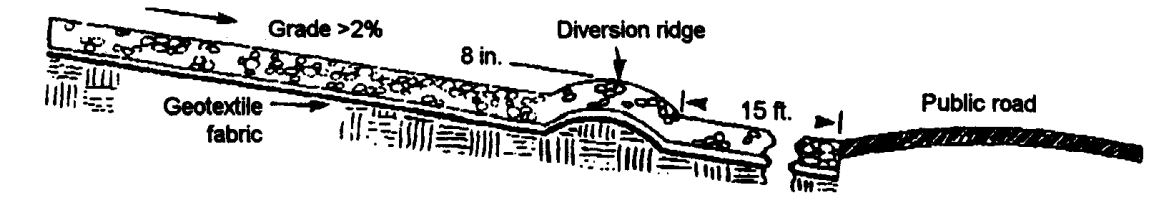
TEMPORARY CONSTRUCTION ENTRANCE/EXIT PAD

- MATERIAL:** 2-3 in. washed stone (INDOT CA No. 2) over a stable foundation.
THICKNESS: 6 in. minimum.
WIDTH: 12 ft. minimum or full width of entrance/exit roadway, whichever is greater.
LENGTH: 50 ft. minimum. The length can be shorter for small sites such as for an individual home.
WASHING FACILITY (optional): Level area with 3 in. washed stone minimum or a commercial rack, an waste water diverted to a sediment trap or basin (Practice 3.72).
GEOTEXTILE FABRIC UNDERLINER: May be used under wet conditions or for soils within a high seasonal water table to provide greater bearing strength.



INSTALLATION

1. Avoid locating on steep slopes or at curves in public roads.
2. Remove all vegetation and other objectionable material from the foundation area, and grade and crown for positive drainage.
3. If slope towards the road exceeds 2%, construct a 6-8 in. high water bar (ridge) with 3:1 side slopes across the foundation area about 15 ft. from the entrance to divert runoff away from the road (Practice 3.24) see exhibit.
4. Install pipe under the pad if needed to maintain proper public road drainage.
5. If wet conditions are anticipated, place geotextile fabric on the graded foundation to improve stability.
6. Place stone to dimensions and grade shown in the erosion/sediment control plan, leaving the surface smooth and sloped for drainage.
7. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.

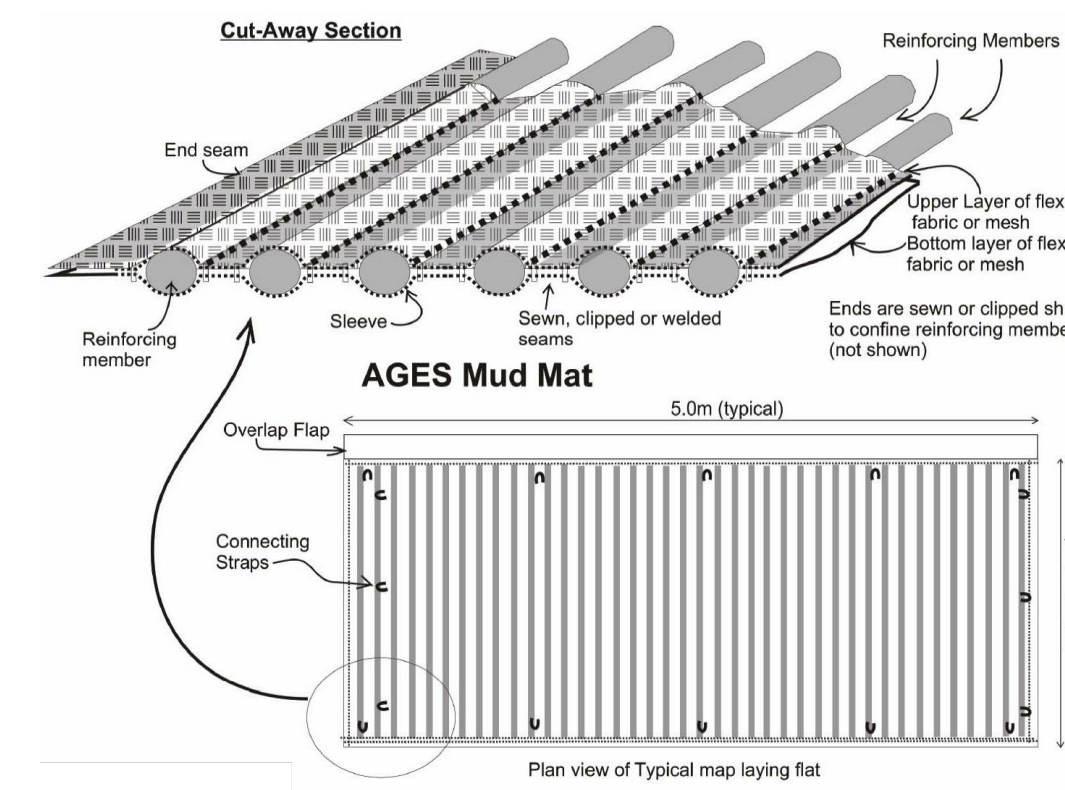


MAINTENANCE

1. Inspect entrance pad and sediment disposal area 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. Immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping. Flushing should only be used if the water is conveyed into a sediment trap or basin.
5. Repair any broken road pavement immediately.

MUD MATS - ENTRANCE STABILIZATION

- MATERIAL:** MUD MAT BY AGES, REUSEABLE SOIL STABILIZATION SYSTEM



INSTALLATION

1. Avoid locating on steep slopes or at curves in public roads.
2. Remove all vegetation and other objectionable material from the foundation area, and grade and crown for positive drainage.
3. Install per manufacturer's recommendations. Unroll, connect mats together to form area of protection and properly anchor to ground.
4. Divert all surface runoff and drainage from the mud mat to a sediment trap or basin.
5. Minimum size of the mat is 12' wide and 50' long.

MAINTENANCE

1. Inspect entrance pad daily and remove built-up debris as necessary.
2. Inspect entrance pad for breaks and tears in the material. Repair or replace as necessary.
3. Immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping. Flushing should only be used if the water is conveyed into a sediment trap or basin.
4. Repair any broken road pavement immediately.

MATERIAL MANAGEMENT MEASURES (HOUSEKEEPING)

CONCRETE WASHOUT

LOCATION

- Locate concrete washout systems at least 50 feet from any creeks, wetlands, ditches, karst features, or storm drains/manmade conveyance systems.
- Locate concrete washout systems in relatively flat areas that have established vegetative cover and do not receive runoff from adjacent land areas.
- Locate away from other construction traffic in areas that provide easy access for concrete trucks.

MATERIALS

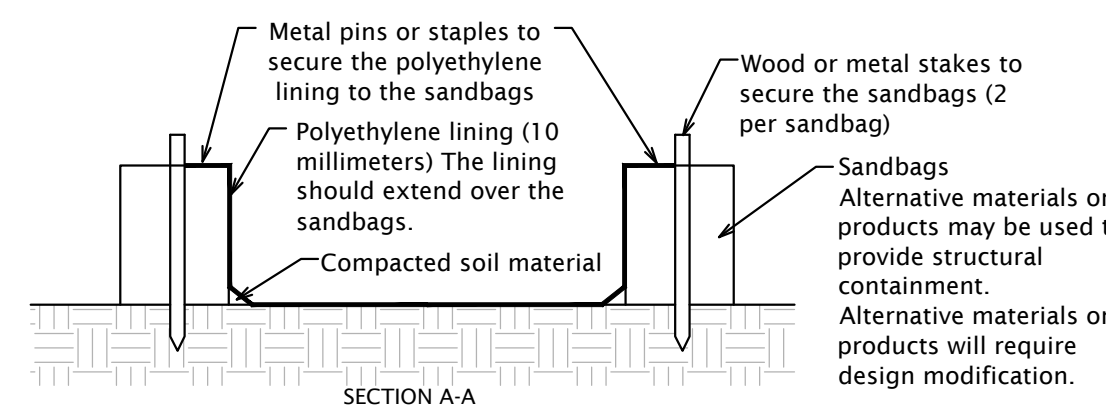
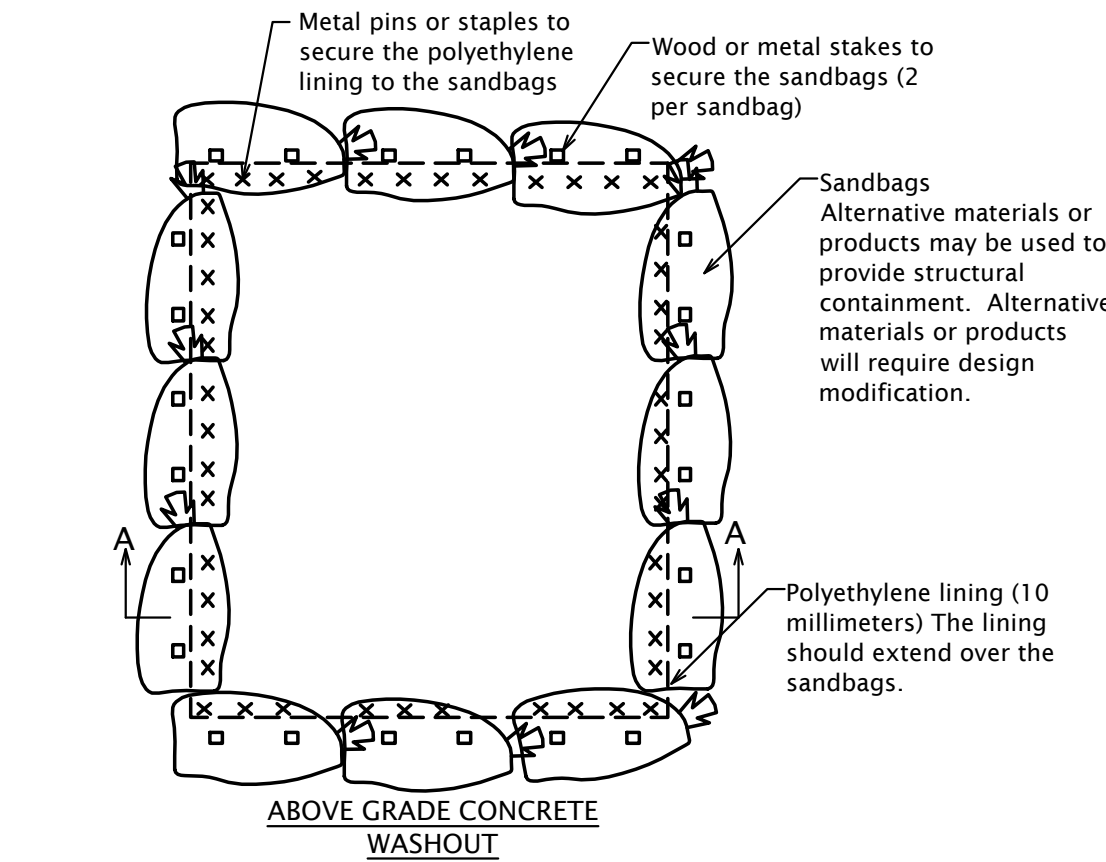
- Minimum of ten mil polyethylene sheeting, free of holes, tears, and other defects.
- Orange safety fencing or equivalent.
- Sandbags
- Metal pins or staples six inches in length minimum.

INSTALLATION

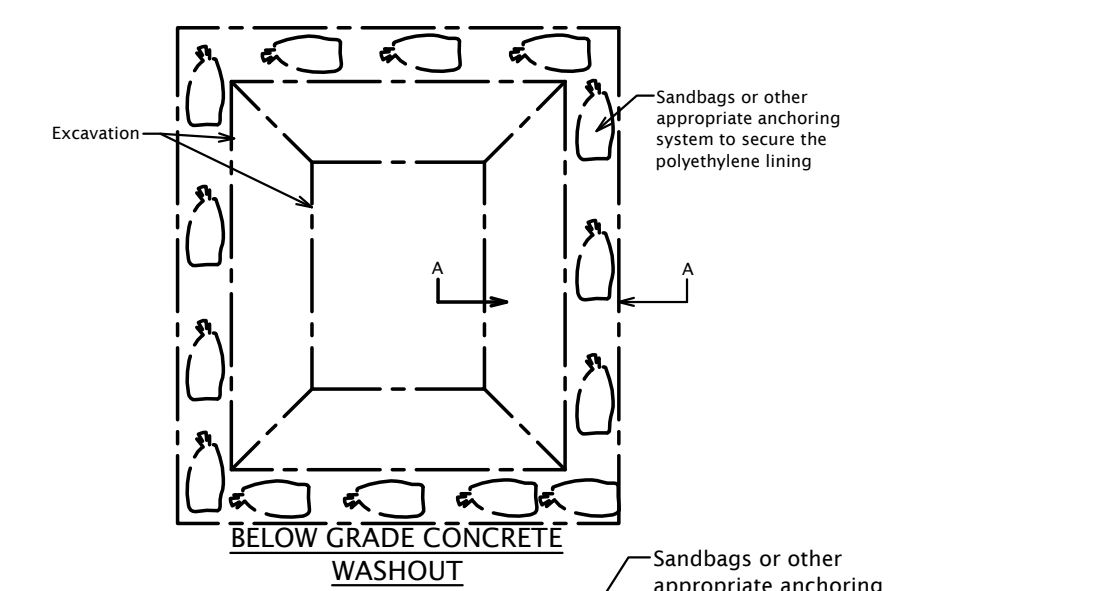
- A base shall be constructed and prepared that is free of rocks and other debris that may cause tears or punctures in the polyethylene lining.
- Install the polyethylene lining. For excavated systems, the lining should extend over the entire excavation. The lining for bermed systems should be installed 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.
- Place flags, safety fencing, or equivalent to provide a barrier to construction equipment and other traffic.
- Install signage that identifies concrete washout areas.
- Where necessary, provide stable ingress and egress or alternative approach pad.

MAINTENANCE

- Inspect daily and after each storm event.
- Inspect the system for leaks, spills, and tracking of soil by equipment.
- Inspect the polyethylene lining for failure, including tears and punctures.
- Once concrete wastes harden, remove and dispose of the material.
- 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.
- Upon removal of the solids, inspect the structure. Repair the structure as needed or construct a new system.
- 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.
- The plastic liner should be replaced after every cleaning; the removal of material will usually damage the lining.
- The concrete washout system should be repaired or enlarged as necessary to maintain capacity for concrete waste.
- 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.
- 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.
- 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. Holes, depressions, and other land disturbances associated with the system should be backfilled, graded, and stabilized.



SECTION A-A



SECTION A-A

COMMON CONCERNS

- Complete construction/installation of the system and have washout locations operational prior to concrete delivery.
- It is recommended that washout systems be restricted to washing concrete from mixer and pump trucks and not used to dispose of excess concrete or residual loads due to potential to exceed the design capacity of the washout system.
- Install systems at strategic locations that are convenient and in close proximity to work areas and in sufficient number to accommodate the demand for disposal.
- Install signage identifying the location of concrete washout systems.

FRYEFLOW FILTRATION SYSTEMS WASHOUT

MATERIALS

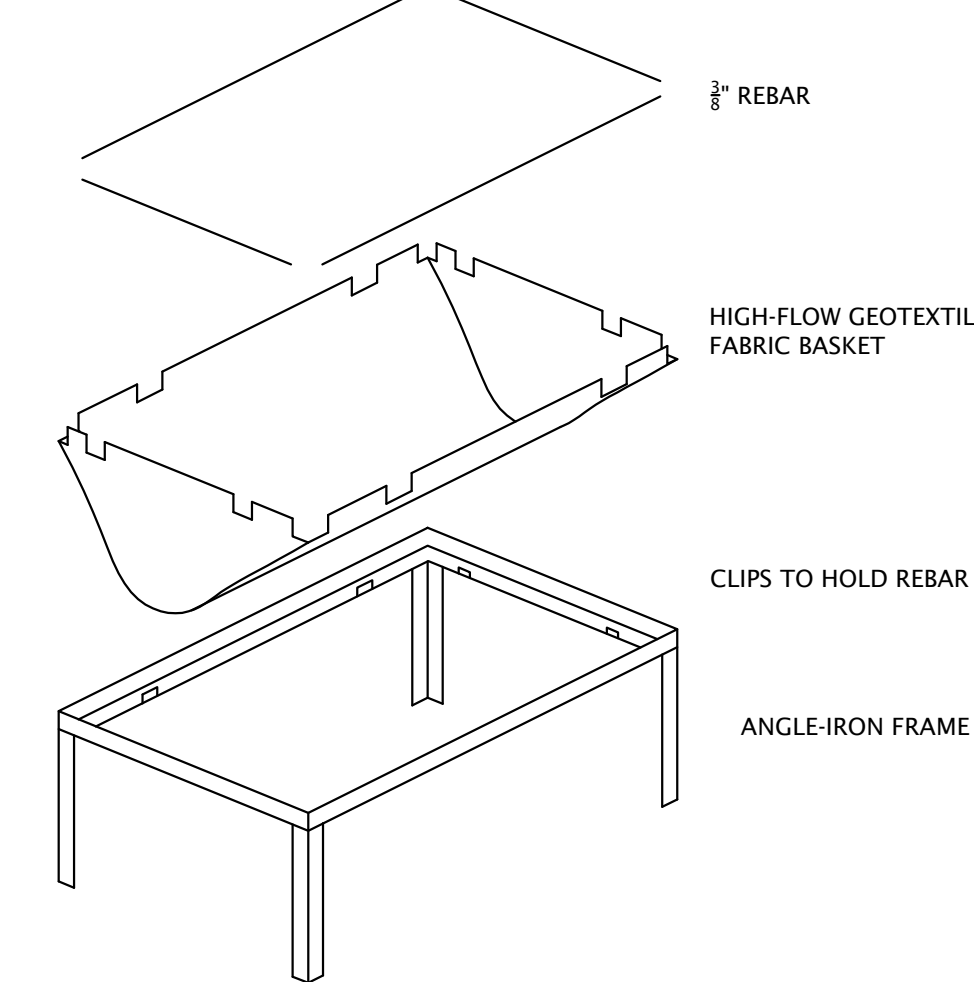
- FryeFlow Filtration Systems concrete washout device.

INSTALLATION

- Insert Rebar into pockets of Debris Bag.
- Install FryeFlow Systems Debris Bag into Angle Iron Frame.
- Make sure rebar sets behind rebar brackets.
- Make sure frame and bag is set on flat surface
- Install signage that identifies concrete washout areas.
- Where necessary, provide stable ingress and egress or alternative approach pad.

MAINTENANCE

- Once Debris Bag is full, use handles provided to lift out of frame.
- Remove rebar from side pockets.
- Insert new Debris Bag.



SPILL PREVENTION AND CONTROL PLAN

- Only approved fuel storage tank shall be allowed on site.
- Spill Kits must be located on-site in the vicinity of the fuel storage sink.
- Mobile Fueling shall be used whenever possible.
- Fueling should take place in a central location.
- Equipment should be kept in good working order, well maintained so that breakdowns, and equipment failures are reduced.

FUEL STORAGE

- All fuel tanks on site shall have secondary containment approved by IDEM.
- No fuel tanks are to be located within 100 feet of a storm sewer inlet.
- Fuel storage system shall be kept in good working order and shall be subject to periodic IDEM inspections.
- Spill Kits must be located on-site in the vicinity of the fuel storage sink.
- Fuel tanks shall have a safety gauge.

STOCKPILES

The contractor shall locate topsoil stockpiles on-site as noted on the S.W.P.P.P. and shall encompass each with sediment ditch and silt fence.

In cases where the stockpile is small and will be removed from the site within 15 days, the contractor can cover the stockpile with a waterproof tarpauline type cover.

No off-site stockpiles are being proposed. Any off-site stockpiles that the contractor utilizes shall follow the same requirements as on-site stockpiles. The contractor shall identify to the local S.W.P.P.P. enforcement agency the locations of any off-site stockpiles.

TEMPORARY FACILITIES

The contractor shall follow the procedures delineated on the plan in order to construct and maintain the facilities shown on the drawings to control water and wind erosion during construction of the project.

All disturbed surface areas (including utility trenches) shall be temporarily graded and/or ditched to direct water runoff from such areas to sedimentation control devices which will prevent disturbing eroded water carrying soil from entering a watercourse, sewer, or adjacent lands. Such sedimentation control devices shall include but not be limited to protective ditches, sediment traps, sediment filters, ditch traps, pipe barriers, silt dikes, check dams, chemical settling filters.

Upon completion of the rough grading all areas not effected by construction traffic shall be permanently seeded, and erosion control blankets installed on side slopes that exceed 5:1.

Upon completion of the storm sewer system, inlet protection shall be installed, check dams installed in the swales, and temporary riprap with settling basins placed at the outfalls of all pipe.

In roadway areas temporary aggregate surfacing shall be placed immediately after the backfilling has been completed. Positive dust control measures shall be taken at all times.

Within 14 days from the date a project improvement is installed the contractor shall proceed with final cleanup and restoration of the project area disturbed including spoil areas, and complete such operations within the next 15 days. If seasonal conditions prevent final cleaning and restoration, the contractor shall proceed with temporary stabilization of the disturbed areas. Final cleanup and restoration will consist of final grading, applying topsoil, seeding and mulching and/or sodding of all disturbed areas of the project. Temporary stabilization shall consist of rough grading the disturbed areas to a condition ready to receive topsoil, seeding, and mulching in accordance with the temporary seeding schedule. Temporary stabilization materials shall be removed, disposed of, and final cleanup and restoration shall be completed not later than 60 days after seasonal conditions allow performance of the required work.

MATERIAL HANDLING AND STORAGE

The contractor shall minimize the disturbance of excavated soils by minimizing the number of times the soil is handled. On-site handling of soils will occur during excavation, loading, and spreading activities. Fuel for heavy equipment and vehicles will not be stored on the site during construction operations. Mobile fuel tanks will fuel heavy equipment. In the event of a spill or leak the contractor shall follow proper procedures to minimize concern. The contractor shall:

- Take immediate measures to control and contain the spill to prevent release into sewers or surface waters.
- Notify the Local Fire Department immediately at 9-1-1.
- Notify the Federal Emergency Spill Hotline at 1-800-424-8802 within 2 hours if the amount is above a reportable quantity or any amount enters a waterway or storm sewer.
- Notify the Indiana Emergency Response Hotline at 1-888-233-7745.
- Follow the guidelines for handling the spill as outlined in the included Material Safety Data Sheets.



1155 E. Troutwine Road
 Crown Point, IN 46307
 (219) 662-7710

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Centennial Village
 L.L.C.
 9615 Boulevard Drive
 Highland, Indiana 46322

DVG # 14-C-1011

REVISIONS AND NOTES:

DATE:

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Centennial Village - Lot 3
 Munster, Indiana

Storm Water Pollution
 Prevention Plan Details

SCALE: NONE

DESIGN BY: DVG

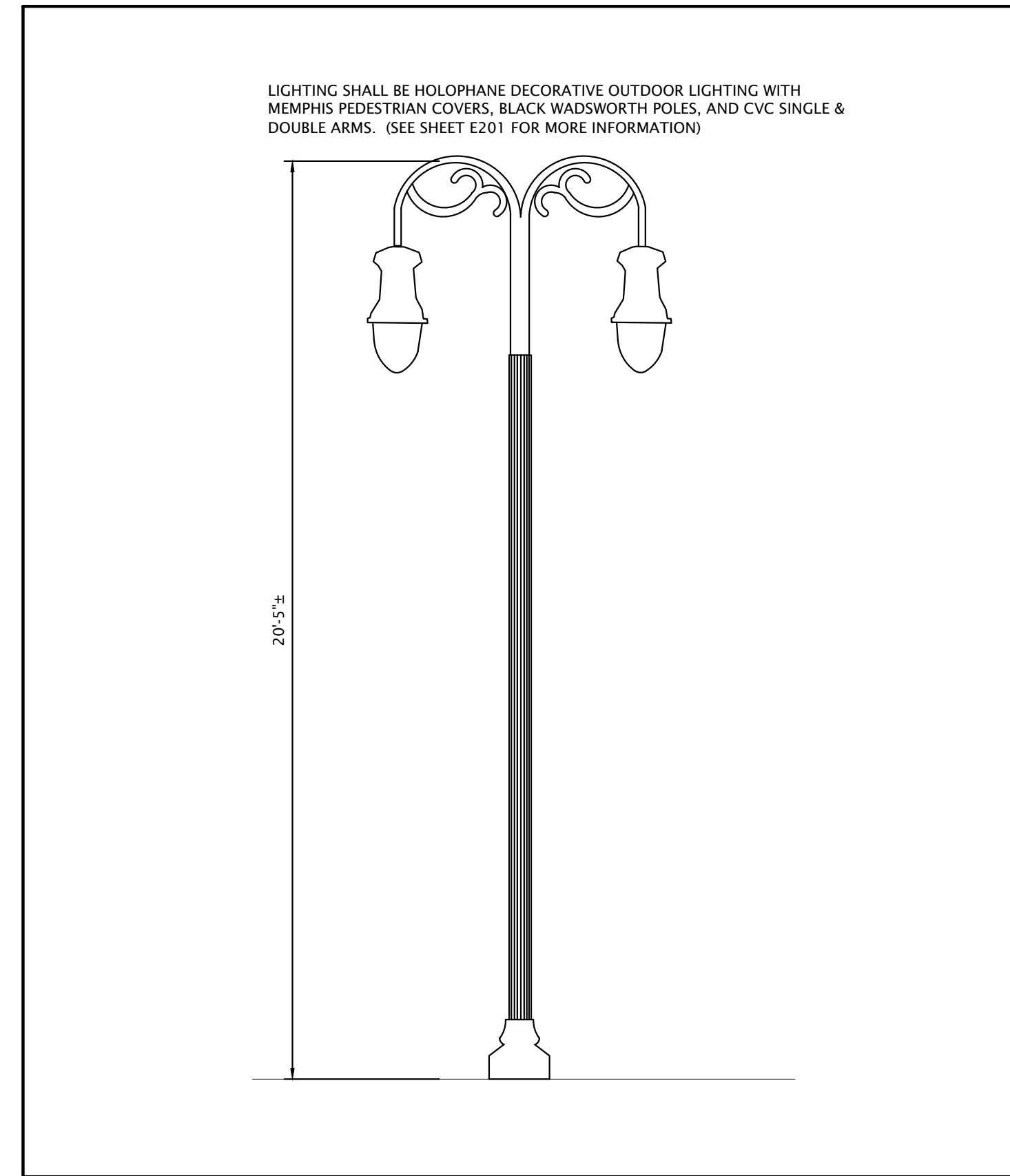
DRAWN BY: JEJH

DATE: 02-28-17

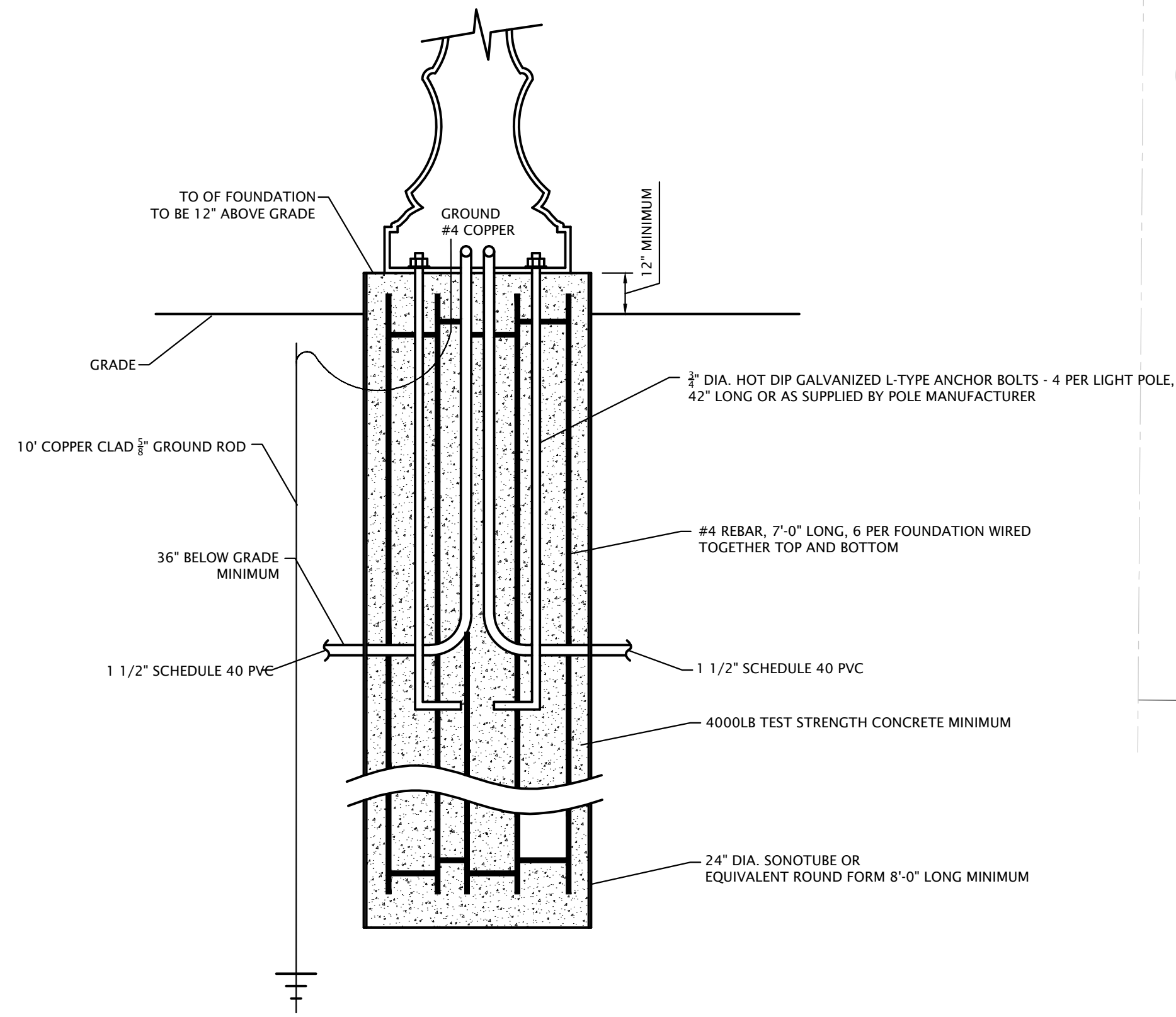
C304

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LIGHTING DETAILS



LIGHTING SHALL BE HOLOPHANE DECORATIVE OUTDOOR LIGHTING WITH MEMPHIS PEDESTRIAN COVERS, BLACK WADSWORTH POLES, AND CVC SINGLE & DOUBLE ARMS. (SEE SHEET E201 FOR MORE INFORMATION)

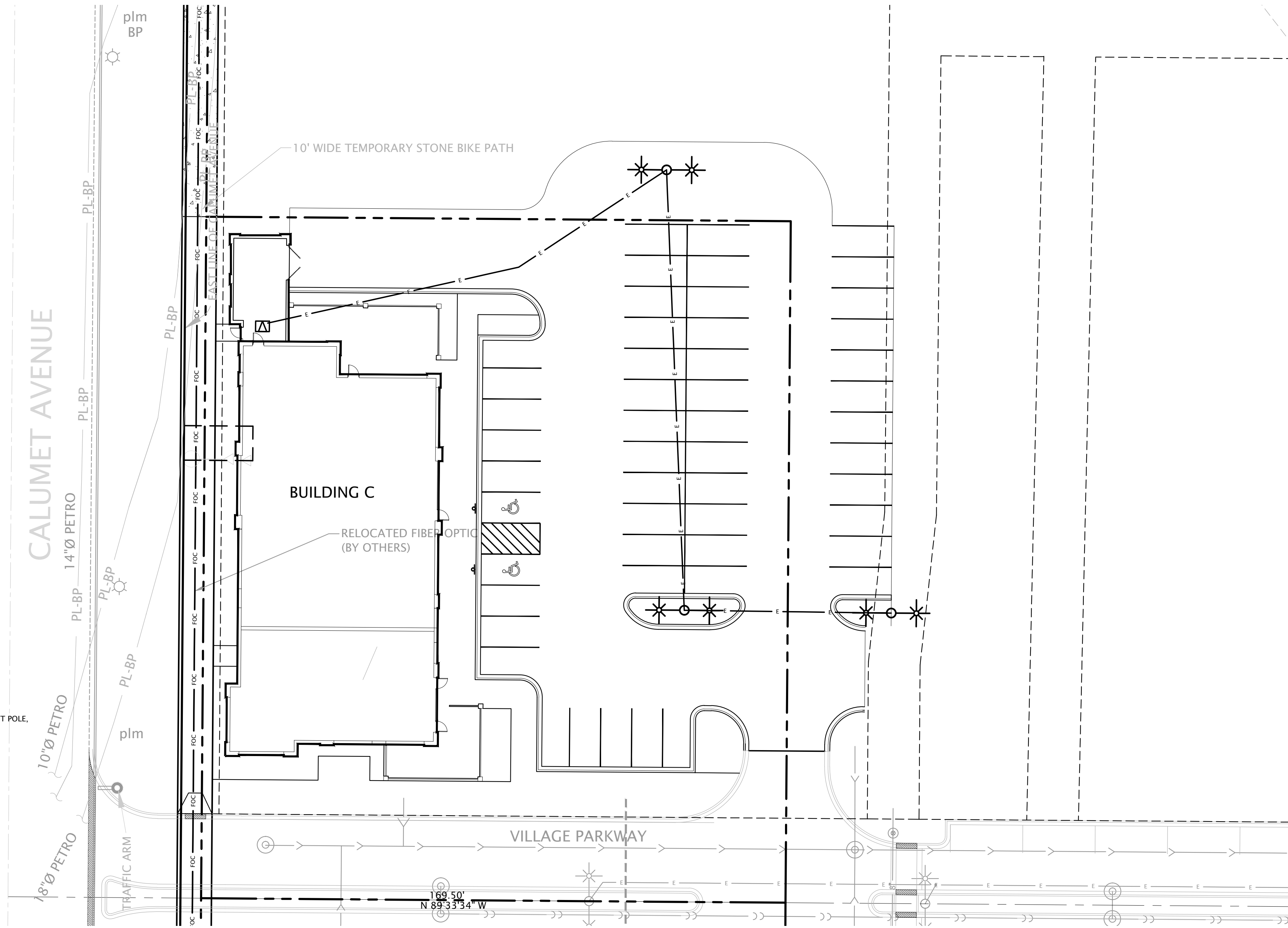


ORNAMENTAL LIGHT POLE FOUNDATION DETAIL

- NOTE:
- IF SOIL IS STABLE, 3 FT. SONOTUBES MAY BE USED IN THE TOP OF THE FOUNDATION AND THE CLAY SIDES OF THE AUGURED HOLE WILL FORM THE REMAINDER.
 - DEPTH OF FOUNDATION PER POLE MANUFACTURER'S SPECIFICATIONS.
 - ALL CONDUCTORS IN CONDUITS TO BE THWN OR XLP-XHHW COPPER.
 - ALL CONDUITS TRENCHED 36" BELOW GRADE MINIMUM.
 - ALL IRRIGATION CONTROLS AND VALVES BY IRRIGATION CONTRACTOR. ONE 120 VOLT, 20 AMPS CIRCUIT TO BE DEDICATED TO IRRIGATION CONTROLS.

LEGEND

- L12C4 LIGHT FIXTURE AND CIRCUIT NUMBER
- (1) CONDUIT & CONDUCTORS
- PP PRIMARY PEDESTAL
- PT PRIMARY TRANSFORMER
- T AT&T OR COMCAST PEDESTAL
- T AT GRADE AT&T OR COMCAST CONNECTION VAULT
- 10 LF - 1" DIA., SCH. 40 LENGTH & SIZE OF CONDUIT



LIGHTING EQUIPMENT SCHEDULE						
ITEM	QUANT.	BRAND	SIZE	VOLTS	DESCRIPTION	TYPE
LP1-LP4	8	HOLOPHANE	115 WATT	208	MEMPHIS MSP-115-4K-AS-S-B-5	LED
LP1-LP4	4	HOLOPHANE	N/A	N/A	ORNAMENTAL DOUBLE ARM CVC-144-CA-BK	ALUMINUM
LP1-LP4	4	HOLOPHANE	N/A	N/A	WADSWORTH POLE WD-A-16-F5J-17-P12-ABC-BK	ALUMINUM
LP1-LP4	4	HOLOPHANE	N/A	120	POLE RECEPTACLE, R60A, 60 INCHES ABOVE BASE	ALUMINUM

POWER, COMMUNICATIONS, AND LIGHTING CONDUIT AND CIRCUITING					
LABEL	SIZE	ORIGIN	DESTINATION	CONDUCTORS	CIRCUIT NOTES
1	2"	BLDG. PANEL	LP4	4C10, 1C8G	CIR. #1 LIGHTING (208V), CIR. #1R RECEPT.
2	1 1/2"	LP4	LP2	4C10, 1C8G	CIR. #1 LIGHTING, CIR. #1R RECEPT.
3	1 1/2"	LP4	LP3	4C10, 1C8G	CIR. #1 LIGHTING, CIR. #1R RECEPT.
4	1 1/2"	LP2	LP1	4C10, 1C8G	CIR. #1 LIGHTING, CIR. #1R RECEPT.
5	4"	PEDESTAL	BLDG D TRANSFRMR.	BY NIPSCO	PEDESTAL & BLDG D TRANSFRMR. BY NIPSCO
6	2"	AT&T PEDESTAL	UTIL. RM.	BY AT&T	TELECOM
7	2"	COMCAST PEDESTAL	UTIL. RM.	BY COMCAST	ALTERNATE TELECOM
8	1"	UTIL. RM.	IRR. VALVES	BY IRRIGATION CONTRACTOR	TO PWR. ELECTRIC VALVES
9		HOTEL GAS LINE	BLDG D GAS	BY NIPSCO	



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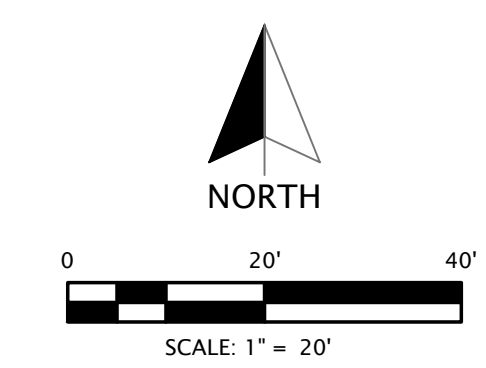
DVG # 14-C-1011	DATE:
REVISIONS AND NOTES:	

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Centennial Village - Lot 3
Munster, Indiana
Lighting, Power, & Telecom Plan

SCALE: 1"=20'
DESIGN BY: RJP
DRAWN BY: RJP
DATE: 10-18-16

E101



NOT FOR CONSTRUCTION