



PLAN COMMISSION STAFF REPORT

To: Members of the Plan Commission

From: Tom Vander Woude, Planning Director

Meeting Date: September 13, 2022

Agenda Item: PC Docket No. 22-016

Application: **Development Plan**

Hearing: **PUBLIC HEARING**

Summary: Centennial Village LLC requesting approval of a development plan for Building F of the Centennial Village Planned Unit Development at 9600 North Centennial Drive.

Applicant: Matt Kimmel of Centennial Village LLC

Property Address: 9600 North Centennial Drive

Current Zoning: Planned Unit Development

Adjacent Zoning: North: PUD
South: PUD
East: PUD
West: PUD

Action Requested: Public Hearing

Additional Actions Required: Findings of Fact

Staff Recommendation: **Approve with conditions**

Attachments:

1. Centennial Village Building F Site Engineering Plans Bldg F - Lot 7 (9600 N. Centennial Drive) prepared by CAHST Munster, LLC dated 07.18.2022 revised 09.09.2022
2. Centennial Village Building F floor plan prepared by Rohn Associates Architects & Planners dated 08.30.2022
3. Centennial Village Building F architectural renderings prepared by Rohn Associates Architects & Planners dated 08.30.2022
4. Centennial Village Building F renderings undated
5. Centennial Village Building F landscape plan prepared by Hubinger Landscaping Corp. dated 08.15.2022

1005 Ridge Road • Munster, IN 46321 • (219) 836-8810 • Police/Fire Emergencies 911

Police Non-Emergency (219) 836-6600 • Fire Non-Emergency (219) 836-6960

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Centennial Village LLC has presented plans for the construction of the building, sidewalks, and landscaping. A portion of the parking areas, landscaping, sidewalks, and lighting for Lot 7 have already been completed with the construction of buildings B (located directly west) and G (located directly south).



Figure 2 Centennial Village Master Plan with buildings labeled

Discussion

Building F, like all buildings in Centennial Village, is governed by the Centennial Village Design Standards, which have been recorded along with the final plat of the entire development. In general, the proposed development adheres to those standards.

1. Building Materials and Construction

The proposed building style and materials are similar to that of Buildings B, C, and D. The height of the tallest portion of the building is 25'-8" whereas the height of buildings C and D are 31'-8". The face materials are primarily brick and stone veneer. The street-facing elevations match the elevations facing the parking lot and include storefronts with windows and entry doors, rather than service doors (with the exception of a service door to the mechanical room on the south elevation). The cornice is constructed of EIFS similar to the existing buildings in Centennial Village.

2. Dumpsters

Dumpsters will be stored in an enclosure shared with Building B. The brick enclosure has already been constructed at the northeast corner of Building B.

3. Landscaping

A landscaping plan is provided, but it is based on a previous version of the site plan. The plan includes foundation plantings on the street facing sides of the building. Staff recommends the following revisions:

- Add street trees along street frontages on the north and east, planted at 30' spacing, in keeping with the Munster Landscaping Ordinance.
- Provide irrigation for all landscaping areas.

4. Pedestrian Access

Sidewalks are provided around the building. An 8' sidewalk is provided along 45th Street. A 10' sidewalk is provided along North Centennial Drive – the curb radius at 45th Street and North Centennial Drive is proposed to be reduced to accommodate the required walkway. Walkways around the building on the south and west are 8' wide. Staff recommends planting street trees between the sidewalk and the street or within tree grates along both 45th Street and North Centennial Drive.

5. Lighting

A photometric plan and details of the light fixtures have been provided for review. The Lighting, Power, & Telecom Plan specifies that 20-5" tall streetlights will be installed throughout the parking lot. The building renderings indicate that sconces will be installed on the building, but we have not been provided the cut sheets.

The approved design standards require a minimum illumination of 0.5 foot candles at the lot line and the illumination of all other areas to be between 3 and 10 foot candles. An updated photometric plan has not been submitted.

Staff recommends any approvals be made contingent upon staff approval of a photometric plan that meets the approved design standards.

6. Parking

Automobile parking is provided in a surface lot that is shared with Building B and Building G.

The development standards call for 3.25 spaces per 1,000 sf of gross building floor area. 44 parking spaces are required for Building B. 48 spaces are provided on the Building B lot. An additional 43 spaces will be constructed on the Building G site.

For reference, Building C has 34 parking spaces, not including on-street spaces. The number of spaces required for the restaurant uses in Building C is 52.

Building G requires 124 spaces and has been provided with 125.

Bike parking loops have not been provided on site at Building B. Staff recommends that additional bike parking loops be added to the plan.

7. Miscellaneous

Building F encroaches 1.3' into a 15' utility easement that runs along the north edge of the property. The applicant is in discussion with NIPSCO either to reduce the width of the easement or to permit the encroachment, but that approval has not been made at this time.

In addition to the site work, the curb radius will be adjusted at the southeast corner of 45th and North Centennial Drive to allow for the required 10' sidewalk to the east of Building F.

MOTION

The Plan Commission may wish to consider the following motion:

Motion to approve PC Docket No. 22-016 to granting approval of a development plan for Building F of the Centennial Village Planned Unit Development at 9600 North Centennial Drive.

With the following conditions:

1. The applicant receive approval from NIPSCO to reduce the width of the 15' easement that runs along the north side of the subject property or to encroach onto the easement.
2. A revised landscaping plan be submitted using the approved site plan and including the required parkway trees.
3. Final engineering review.

Centennial Village Building F Site Engineering Plans

Bldg F - Lot 7 (9600 N. Centennial Drive)

Munster, Indiana

ISSUE FOR PERMIT - 09/09/2022



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
E201	Site Electrical Details
E202	Site Electrical Details

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

WATER 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

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

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

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

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

LEGEND	
	EXISTING DRAINAGE STRUCTURE
	EXISTING END SECTION
	EXISTING SANITARY STRUCTURE
	EXISTING FIRE HYDRANT
	EXISTING VALVE VAULT
	EXISTING B-BOX
	EXISTING STREET LIGHT
	POWER POLE
	SBC PEDESTAL
	MAIL BOX
	PROPOSED DRAINAGE STRUCTURE
	PROPOSED END SECTION
	PROPOSED SANITARY STRUCTURE
	PROPOSED FIRE HYDRANT
	PROPOSED VALVE VAULT
	PROPOSED VALVE BOX
	PROPOSED B-BOX
	PROPOSED STREET LIGHT
	DIRECTION OF FLOW
	OVERLAND FLOOD ROUTE
	PROPOSED TOP OF CURB ELEVATION
	PROPOSED GUTTER FLOWLINE ELEVATION
	PROPOSED SURFACE ELEVATION
	PROPOSED TOP ELEVATION OF RETAINING WALL
	PROPOSED EDGE OF PAVEMENT ELEVATION
	EXISTING CONTOURS
	PROPOSED CONTOURS
	BOUNDARY LINES
	RIGHT-OF-WAY LINES
	PROPOSED LOT LINES
	UNDERLYING LOT LINE
	EASEMENT LINES
	BUILDING LINES
	CHAINLINK FENCE
	OVERHEAD POWER LINES
	TELEPHONE ROUTE
	ELECTRIC ROUTE
	GAS ROUTE
	EXISTING WATER
	EXISTING SANITARY
	PROPOSED WATER
	PROPOSED STORM
	PROPOSED SANITARY

PROPOSED	
	STORM SEWER
	SANITARY SEWER
	WATER
	FIRE HYDRANT
	VALVE BOX
	GATE VALVE
	TAPPING SLEEVE

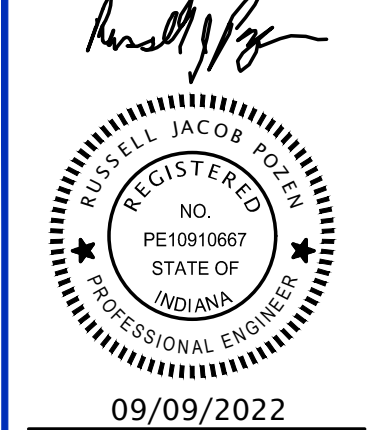


Know what's below. Call before you dig.

To Submit a Locate Request
24 Hours a Day, Seven Days a Week:
Call 811 or 800-382-5544
www.Indiana811.org



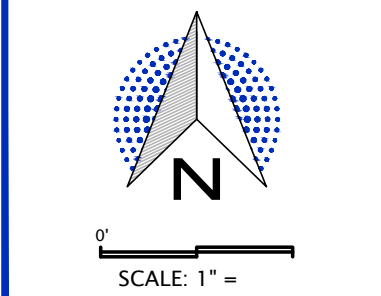
1155 Troutwine Road
Crown Point, IN 46307
P: (219) 662-7710
F: (219) 662-2740
www.dvgteam.com



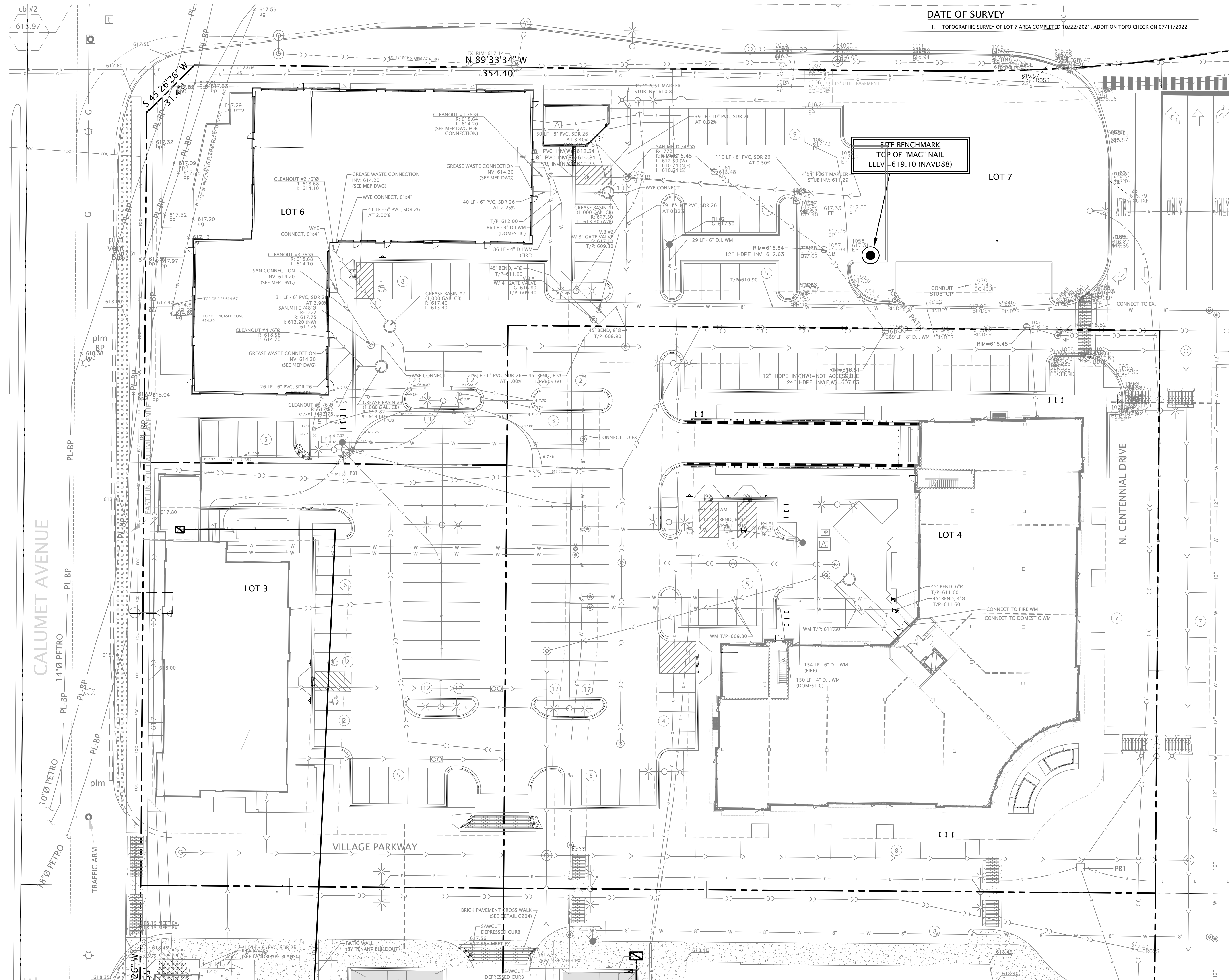
Centennial Village LLC.
9615 Boulevard Drive
Highland, Indiana 46322

DATE:	REVISIONS AND NOTES:
09/09/22	BLDG F SHIFED NORTH

Centennial Village Bldg. F
Munster, Indiana
Cover Sheet



© COPYRIGHT 2017 DVG TEAM, INC.	
DESIGN BY RJP	DATE 07/18/22
PROJECT NO. 14-C-1011	
C001	

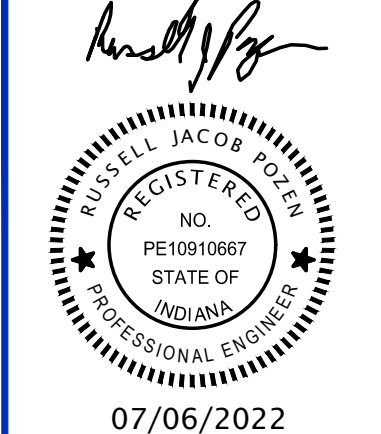


DATE OF SURVEY

1. TOPOGRAPHIC SURVEY OF LOT 7 AREA COMPLETED 10/22/2021. ADDITION TOPO CHECK ON 07/11/2022.



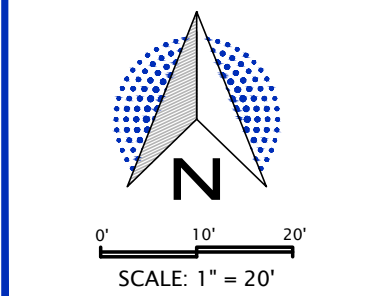
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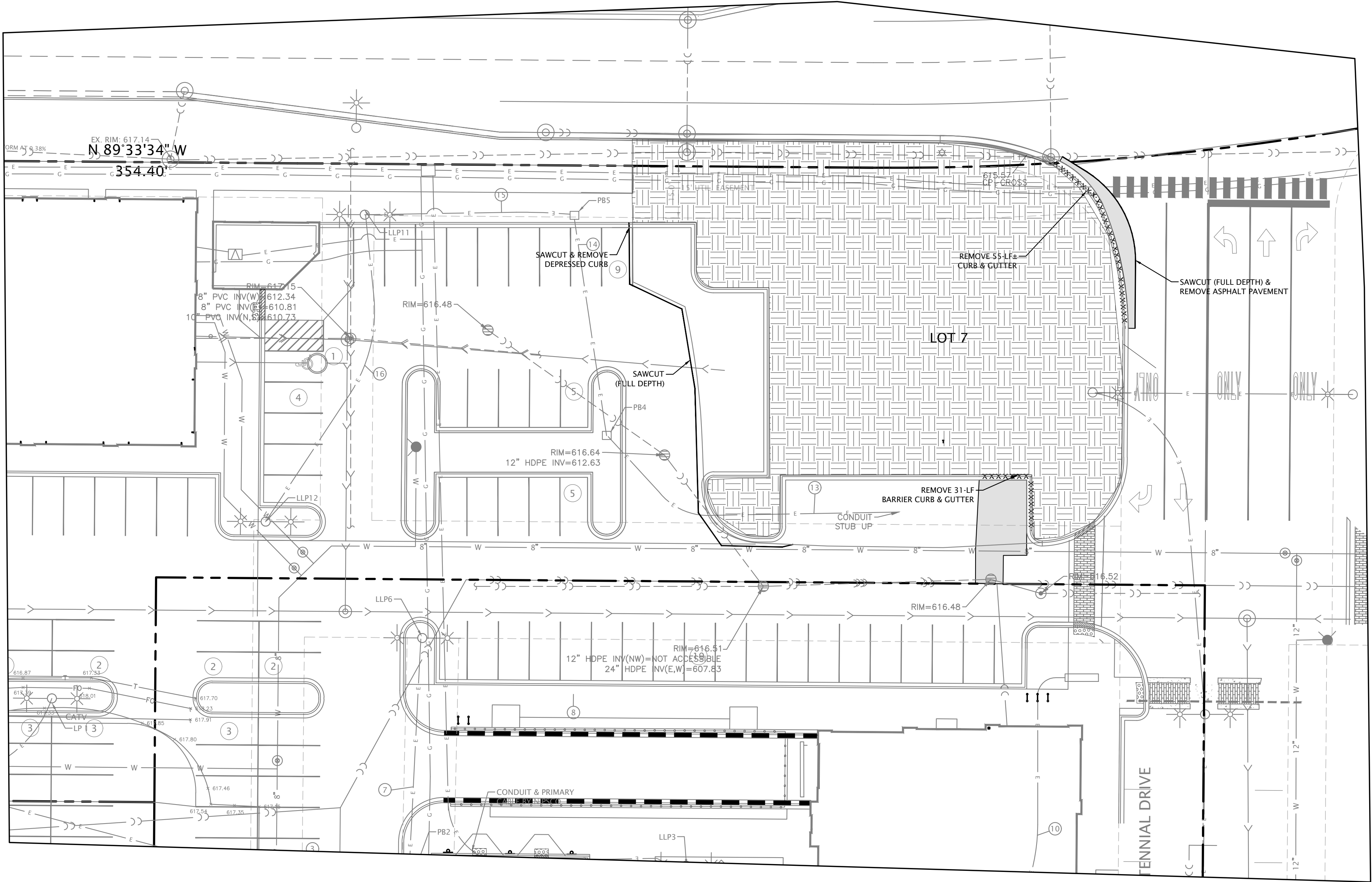
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9615 Boulevard Drive
Highland, Indiana 46322

DATE:	REVISIONS AND NOTES:

Centennial Village Bldg. F
Munster, Indiana
EXISTING CONDITIONS



DESIGN BY RJP	DATE 07/06/22
PROJECT NO. 14-C-1011	
C101	



- NOTES
1. NO DEMOLITION SHALL TAKE PLACE UNTIL ALL REQUIRED PERMITS HAVE BEEN OBTAINED BY THE CONTRACTOR.
 2. CONTRACTOR SHALL FIELD-VERIFY SITE CONDITIONS AND INFORMATION ON DRAWINGS. PROMPTLY REPORT ANY CONCEALED CONDITIONS, MISTAKES, DISCREPANCIES OR DEVIATIONS FROM THE INFORMATION SHOWN IN THE CONTRACT DOCUMENTS. THE OWNER IS NOT RESPONSIBLE FOR UNAUTHORIZED CHANGES OR EXTRA WORK REQUIRED TO CORRECT UNREPORTED DISCREPANCIES.
 3. WHERE TREES OR STUMPS ARE TO BE REMOVED, GRIND OUT STUMP TO A DEPTH OF 18 INCHES.
 4. "REMOVAL" MEANS REMOVAL OF AN ITEM ABOVE GRADE AND REMOVAL OF ALL ELEMENTS BELOW GRADING INCLUDING, BUT NOT LIMITED TO, FOOTINGS, WIRINGS, AND PIPING THAT ARE IMMEDIATELY ADJACENT TO THE ITEM BEING REMOVED.
 5. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION RELATING TO SUBSURFACE CONDITIONS.

- LEGEND
- REMOVE BITUMINOUS PAVEMENT AND SUB-BASE MATERIAL.
 - CONTRACTOR TO STRIP AND REMOVE SOD FROM ALL AREAS TO BE REGRADED AND PROPERLY DISPOSE. REMOVE SUBGRADE MATERIAL OR TOPSOIL AS NEEDED
 - ITEM TO BE REMOVED
 - LINEAR REMOVAL ITEM
 - REMOVE SEWER

1155 Troutwine Road
Crown Point, IN 46307
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F: (219) 662-2740
www.dvgteam.com

Handwritten signature

REGISTERED PROFESSIONAL ENGINEER
NO. PE10910087
STATE OF INDIANA
09/09/2022

Centennial Village LLC.
9615 Boulevard Drive
Highland, Indiana 46322

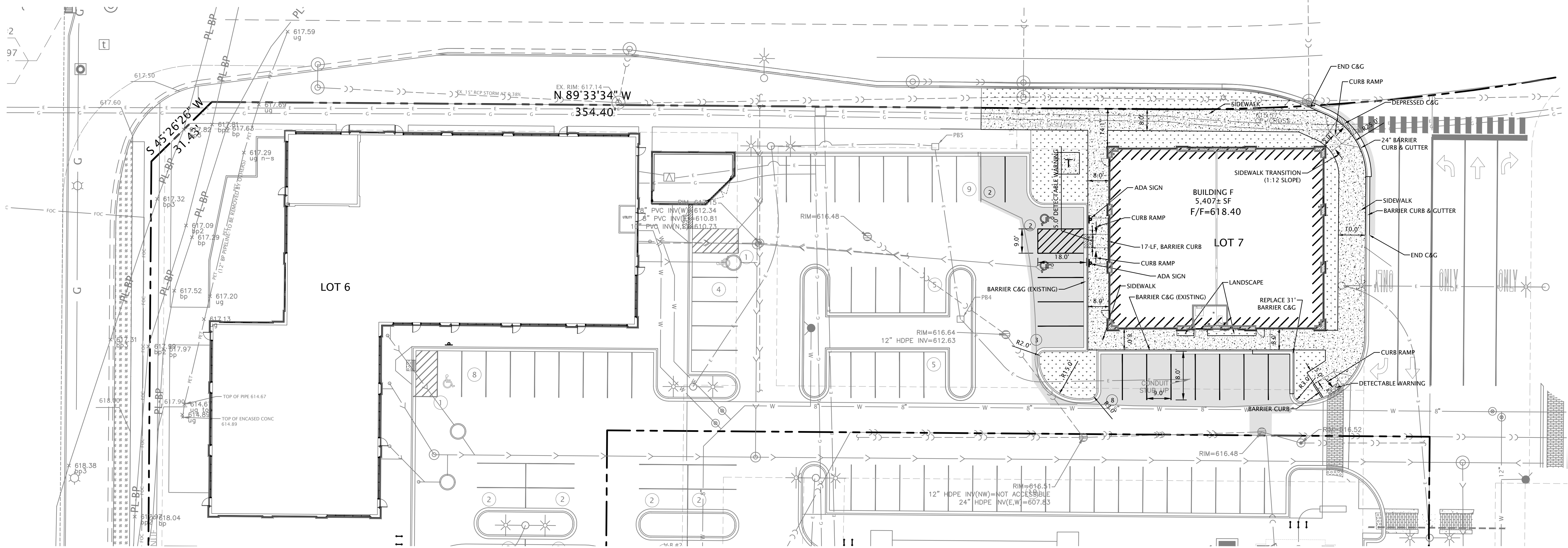
DATE:	09/09/22	REVISIONS AND NOTES:	BLDG SHIFTED NORTH

Centennial Village Bldg. F
Munster, Indiana
DEMOLITION PLAN

SCALE: 1" = 20'

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DESIGN BY	RJP	DATE	07/06/22
PROJECT NO.	14-C-1011		
C102			



LEGEND

	NEW CONCRETE SIDEWALK		BARRIER CURB & GUTTER
	NEW ASPHALT PAVEMENT		4" WIDE PAINTED WHITE SOLID LINE
	SEE LANDSCAPE PLAN		EXPANSION JOINT
			TOOLED CONSTRUCTION JOINT
			DEPRESSED CURB & GUTTER

NOTES

1. BUILDING "F" LOCATION IN RELATION TO PROPERTY LINES SHALL ONLY BE CONSTRUCTED UPON APPROVAL OF EASEMENT REDUCTION FROM PUBLIC UTILITIES.



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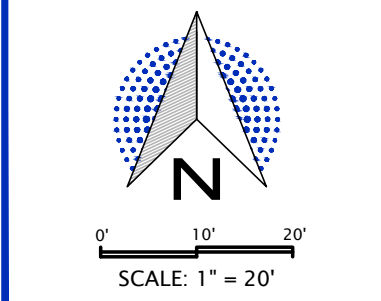
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REVISIONS AND NOTES:	
DATE:	9/09/22
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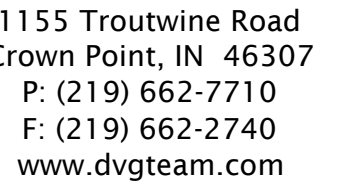
Centennial Village Bldg. F
Munster, Indiana
SITE PLAN



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DESIGN BY RJP	DATE 07/18/22
PROJECT NO. 14-C-1011	
C103	

1. BUILDING "F" LOCATION IN RELATION TO PROPERTY LINES SHALL ONLY BE CONSTRUCTED UPON APPROVAL OF EASEMENT REDUCTION FROM PUBLIC UTILITIES





A circular professional engineer seal for the State of Indiana. The outer ring contains the text "RUSSELL JACOB POZEN" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. The inner circle contains the text "REGISTERED" at the top, "NO. PE10910667" in the center, and "STATE OF INDIANA" at the bottom.

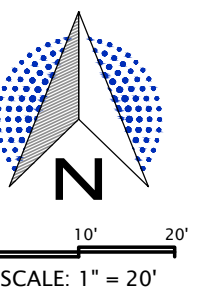
08/31/2022

Centennial Village LLC.
9615 Boulevard Drive
Highland, Indiana 46322

DATE.	REVISIONS AND NOTES.

Centennial Village Bldg. F Munster, Indiana

UTILITY PLAN

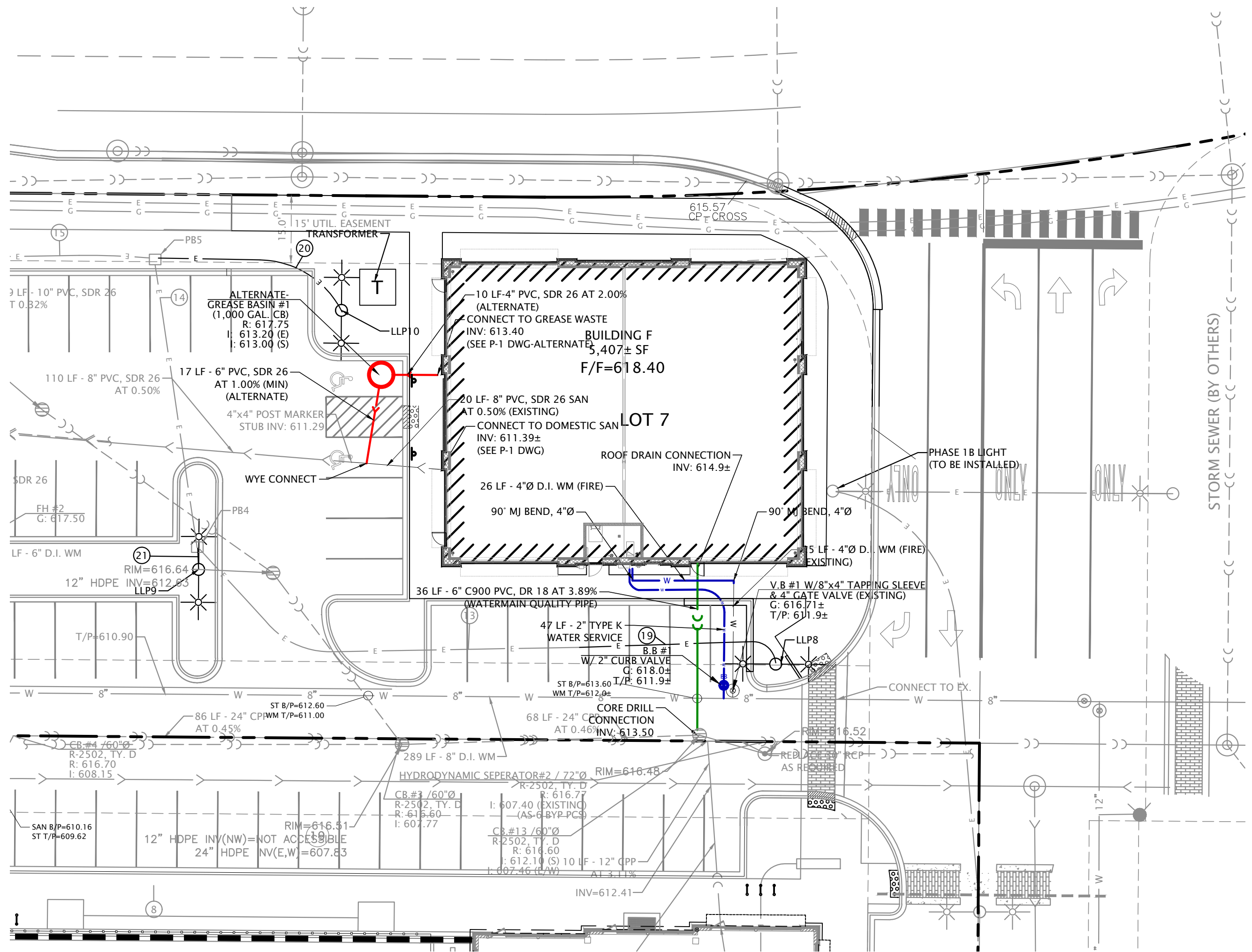


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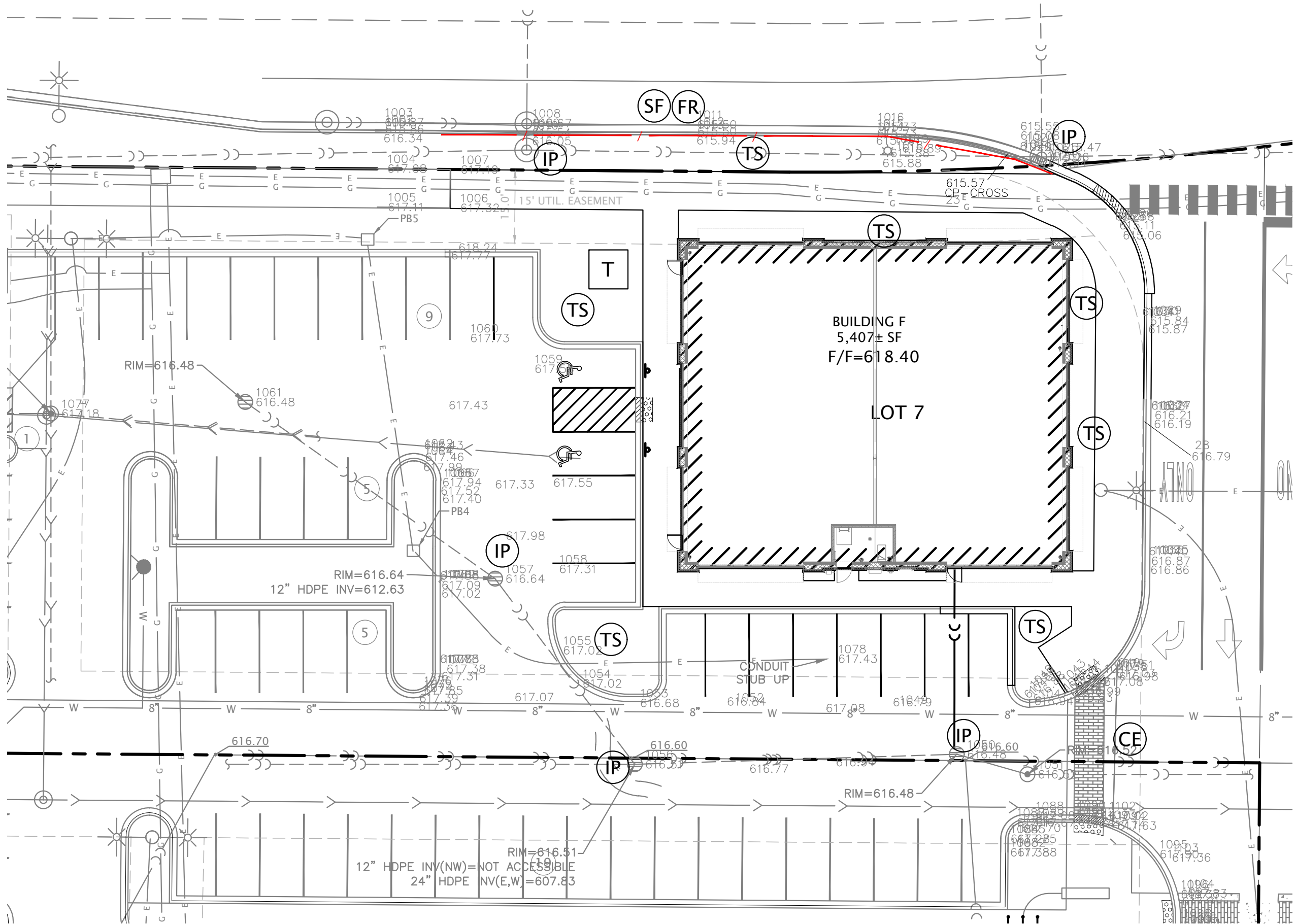
SIGN BY RJP	DATE 07/18/22
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14-C-1011

C105



TOTAL DISTURBANCE
AREA = 0.33 ac



LEGEND

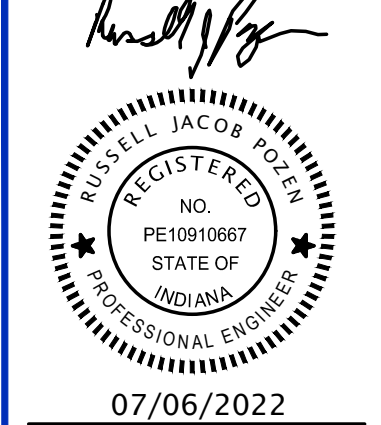
- CE TEMPORARY CONSTRUCTION ENTRANCE
- IP INLET BARRIER PROTECTION
- TS TEMPORARY/PERMANENT SEEDING
- SF/FR SILT FENCE/FIBER ROLLS
(MAY BE USED INTERCHANGEABLY WHERE REQUIRED)
- SW STREET SWEEPING SHALL BE PERFORMED WHENEVER TRACKING OF MUD, DIRT, CONSTRUCTION DEBRIS OCCURS ON THE PUBLIC ROAD
- R5 POSTED 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

- THE SITE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN DURING DEMOLITION AND CONSTRUCTION ACTIVITIES.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL PERFORM STREET SWEEPING WHENEVER TRACKING OF MUD, DIRT, AND CONSTRUCTION DEBRIS OCCURS ON THE PUBLIC ROAD.
- CONTRACTOR SHALL COORDINATE PLACEMENT OF SILT FENCE WITH ADJACENT CENTENNIAL VILLAGE DEVELOPMENT.



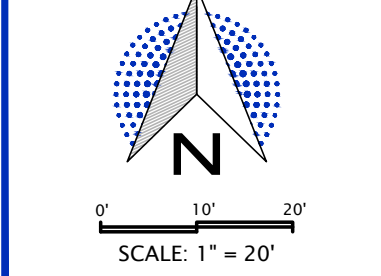
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Centennial Village LLC.
9615 Boulevard Drive
Highland, Indiana 46322

DATE:	REVISIONS AND NOTES:

Centennial Village Bldg. F
Munster, Indiana
STORMWATER POLLUTION PREVENTION PLAN



DESIGN BY RJP	DATE 07/06/22
PROJECT NO. 14-C-1011	
C106	

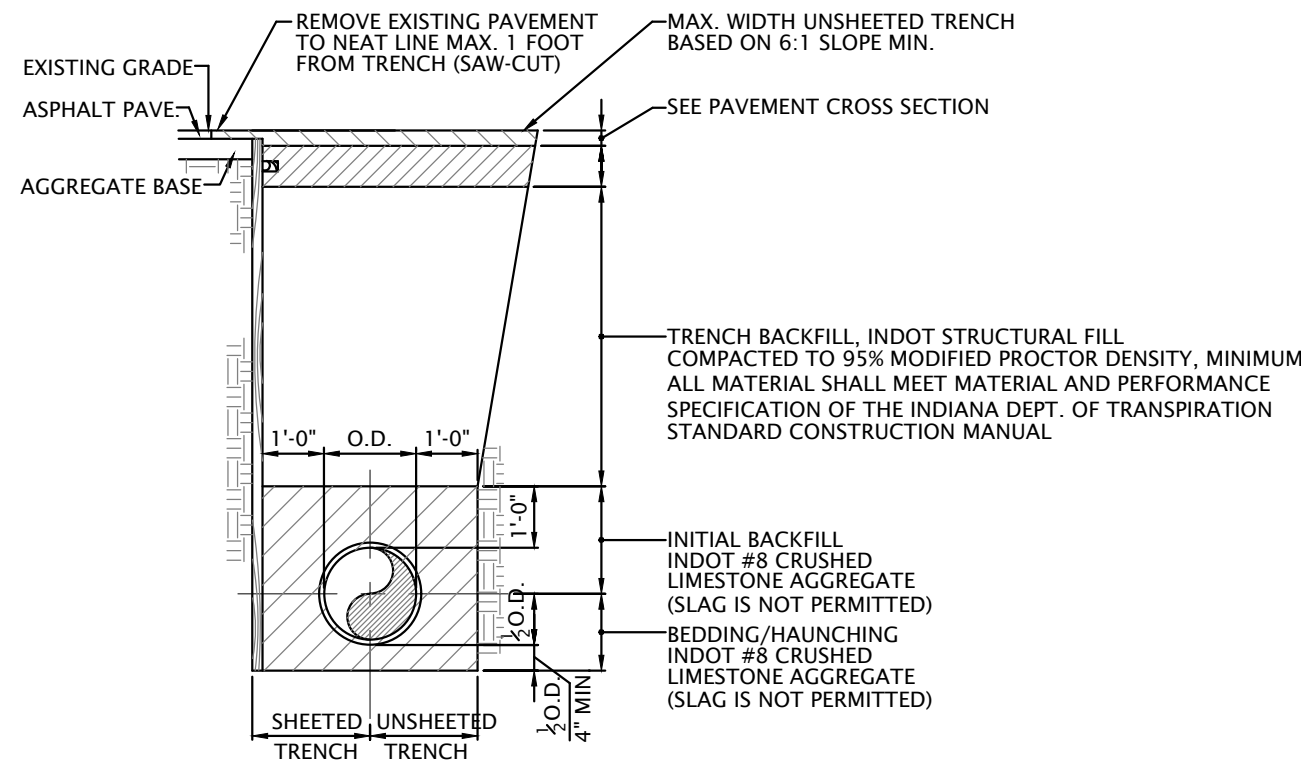
SITE DEVELOPMENT
COMMON EXCAVATION AND EARTHWORK
GENERAL SPECIFICATIONS

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:
- 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.
 - Contractor shall provide a 1-year warranty against settlement and damage caused by settlement for common excavation and earthwork.
 - 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:
- An inspector from the Owner's soils testing laboratory shall, during the common excavation work operations, provide the following services:
 - Test & Classify on-site excavated soils for reuse as topsoil, common site fill, embankment fill and structural fill.
 - Test materials furnished from any off-site sources to verify compliance with specified requirements.
 - 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.
 - 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.
 - 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..
 - Tests and analysis of fill materials shall be performed in the laboratory in accordance with ASTM D1557.
 - 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:
- 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:
- Contractor shall provide all clearing, grubbing, removal and disposal of all vegetation and debris related to the existing site conditions.
 - Vegetation debris shall be removed from site and transported to a local and state authorized disposal sites.
- 5.0 Top Soil Stripping:
- 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.
 - 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."
 - Topsoil shall be stockpiled so that it may be reused and re-spread on site over Lawn and Landscaped areas.
 - The topsoil stockpile area shall be properly protected against soil erosion into the adjacent drainage system.
- 6.0 Borrow Material/Embankment & Structural Fill Material:
- Borrow material for structural fill shall be first excavated from on site source locations as defined by the Soils Report Engineer.
 - Structural fill material shall be placed under all utility trench corridors, building pad locations, paved parking, driveway, sidewalk and roadway areas.
 - Common site and embankment fill shall be placed under lawn, landscape and detention pond areas.
 - Maintain moisture content of structural fill within plus or minus 3 percent of the optimum moisture content as determined by the Modified Proctor Test.
 - Contractor shall provide subgrade conditions meeting the design grades for pavements, exterior walks, curbs and building pads.
 - Contractor shall only place approved fill material under proposed building pads and parking areas
 - Contractor shall undercut any areas that do not meet the requirements for structural fill and shall replace with structural fill.
- 7.0 Excavation:
- Protect all existing natural features on site.
 - Install soil erosion prevention measures in accordance with local and state ordinances and in accordance with the soil erosion control project drawings.
 - 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.
 - 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.
 - 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:
- Exercise care when compacting exposed soils relative to water table, rain or other moisture conditions.
 - 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.
 - Backfill common site fill, embankment fill, structural fill and utility trenches to contours and elevations defined on the project site development plans.
 - Systematically backfill to allow maximum time for optimum compaction and do not backfill over porous, wet or spongy subgrade surfaces.
 - Employ a soils placement and compaction method that does not disturb or damage work performed and that maximizes soil compaction.
 - All common site, embankment and structural fill shall be place and compacted in continuous layers/lifts not exceeding 8-inches loose depth.
 - Compact subsoil for structural fill to 95% of the Modified Proctor Maximum Dry Density (ASTM D1557) beneath all building pad locations.
 - Compact subsoil for structural fill to 95% of Modified Proctor Maximum Dry Density (ASTM D1557) beneath all pavement areas and utility corridor trenches.
 - 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.
 - 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.
 - 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.

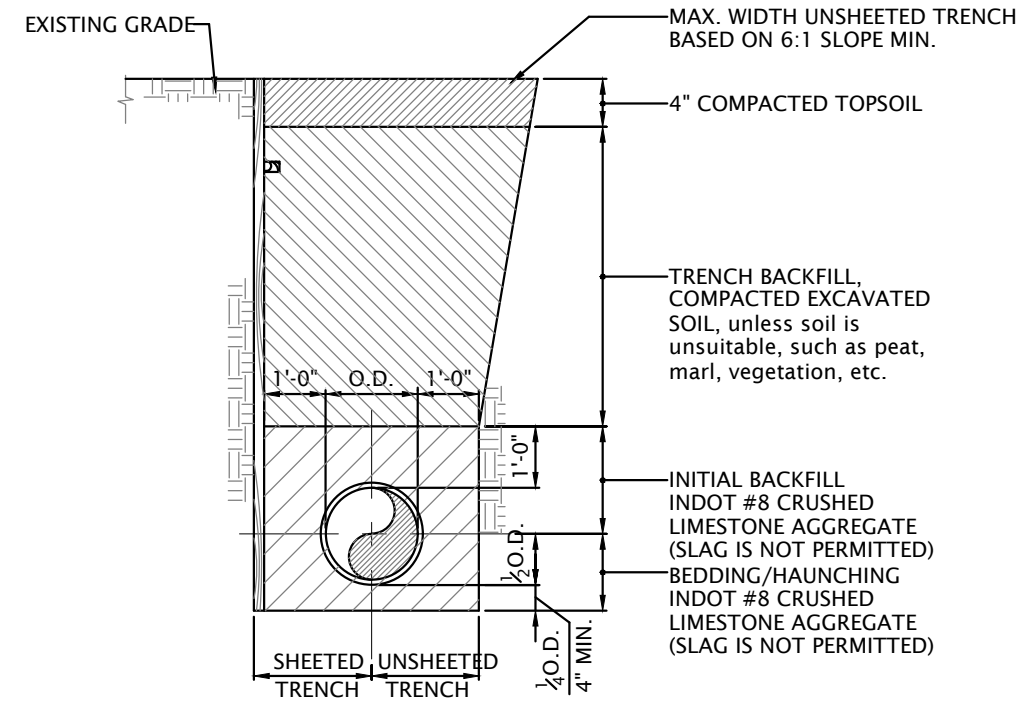
GENERAL NOTES:

- 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.
- Elevation Datum is U.S.G.S.
- 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.
- 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.
- 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.
- 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.
- Materials used for water, sanitary sewer, storm sewer and streets shall conform to the Town of Munster standards and specifications.
- 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.
- All public street construction shall meet performance standards of the current edition of the Indiana Department of Transportation Standard Specifications.
- 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



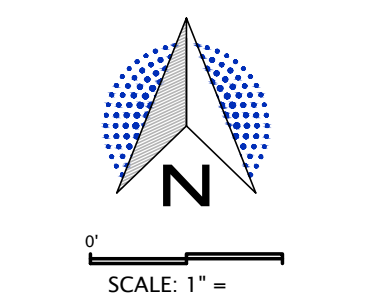
1155 Troutwine Road
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F: (219) 662-2740
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9615 Boulevard Drive
Highland, Indiana 46322

DATE:	REVISIONS AND NOTES:

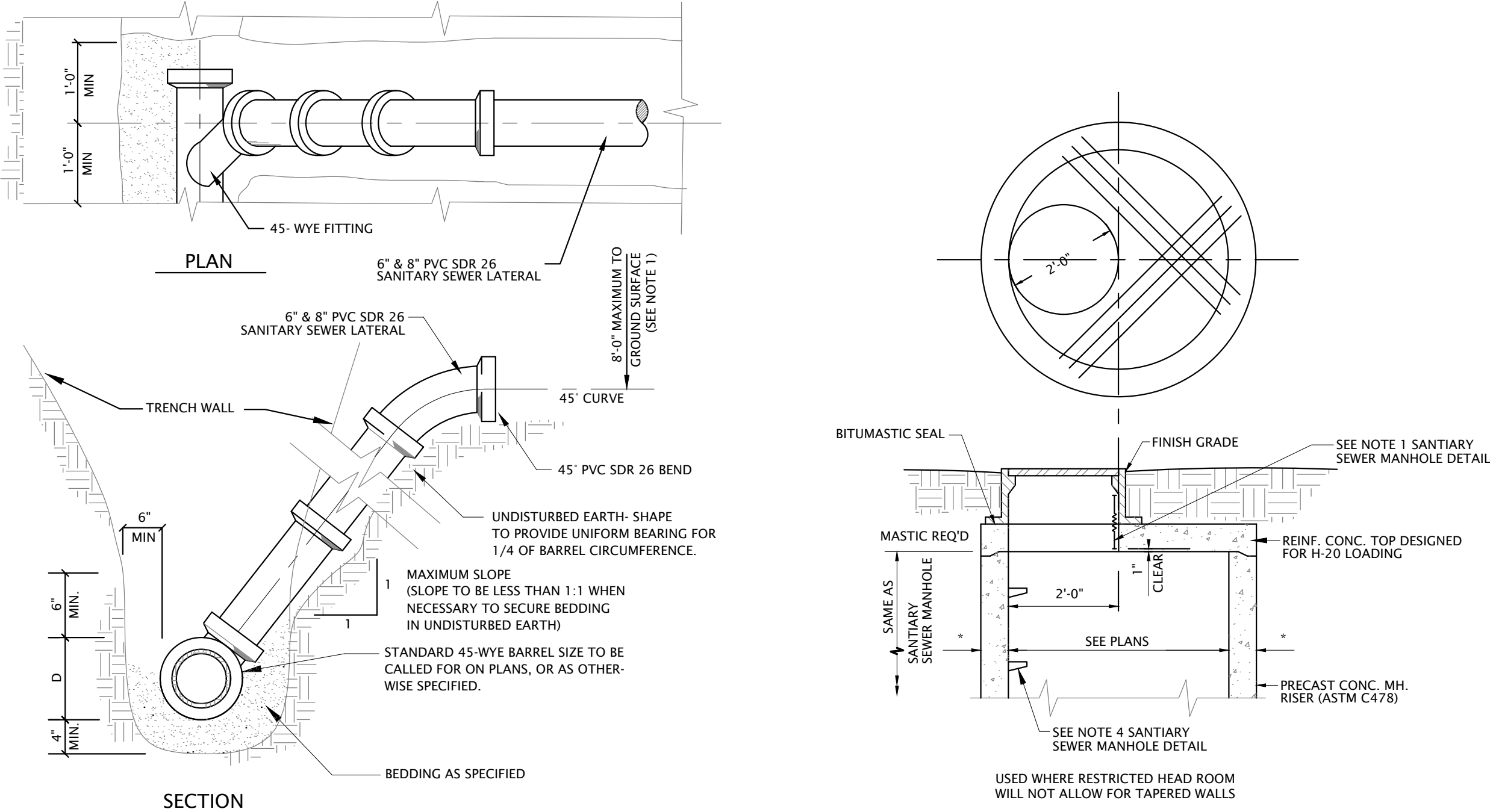
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Munster, Indiana
Construction Details



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DESIGN BY RJP	DATE 06/29/18
PROJECT NO. 14-C-1011	
C201	

SANITARY SEWER GENERAL NOTES:

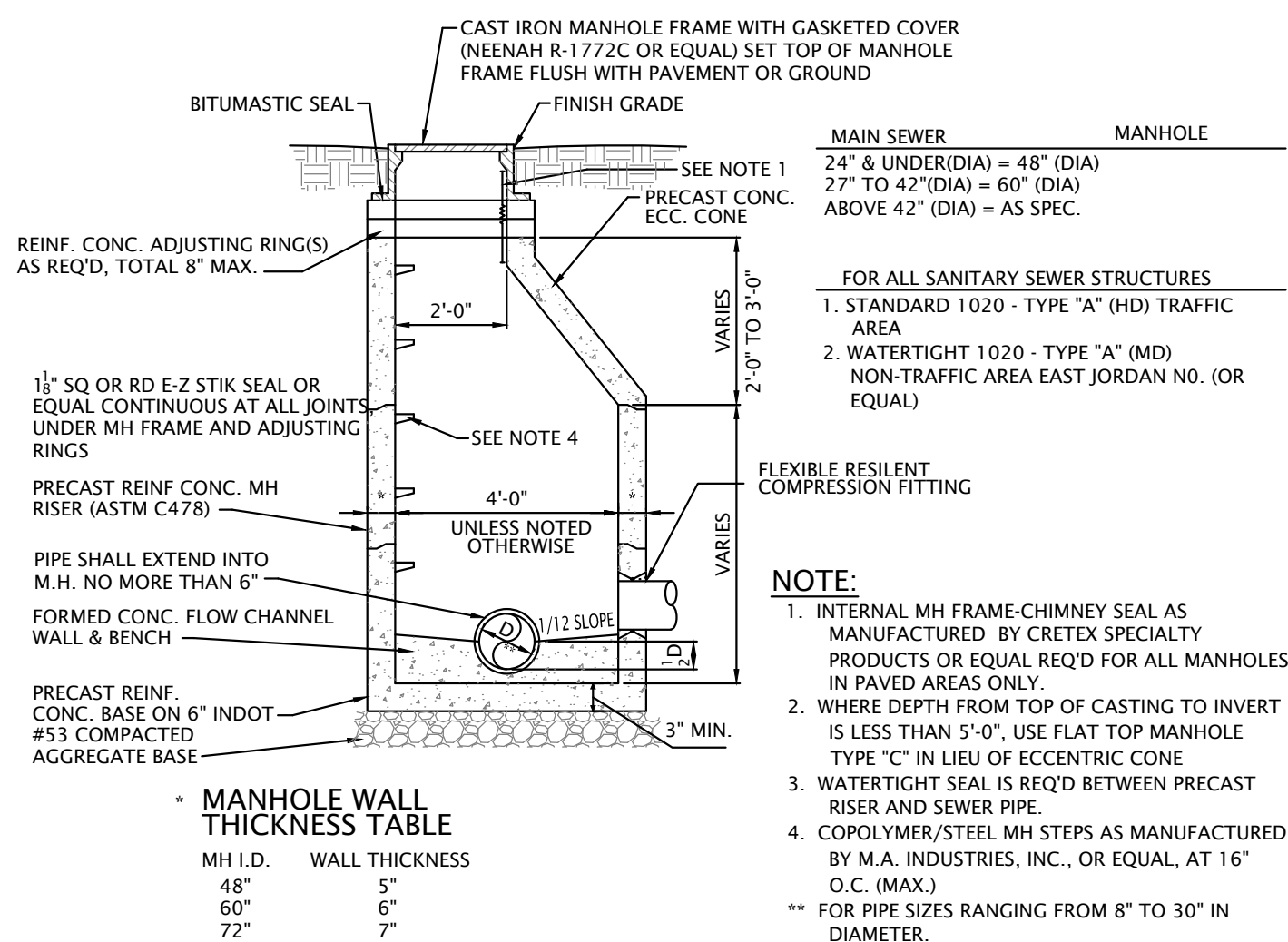
- All Floor Drains shall discharge to the sanitary sewer.
- Sanitary sewer pipe shall be PVC (SDR 26) ASTM D-3034 with push-on rubber gasket joints and shall be in accordance with ASTM C-3212, unless otherwise noted on the plans for portions to be PVC (SDR 21).
- All sanitary sewer manholes shall be 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

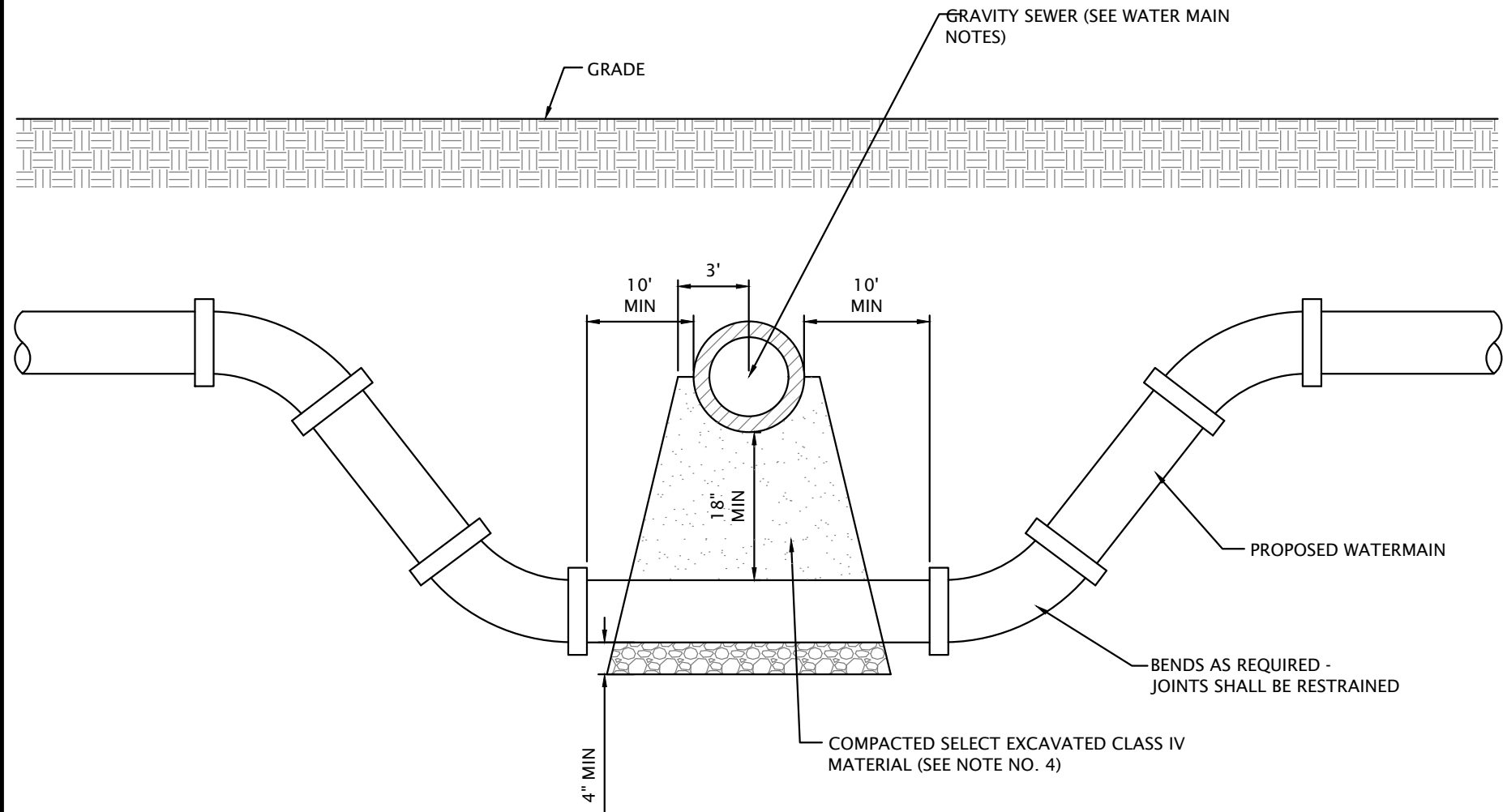
SEE PLANS FOR SERVICE SIZE
NOT INCLUDED IN WORK (CONTRACTOR TO CONNECT TO SERVICE ALREADY PROVIDED)



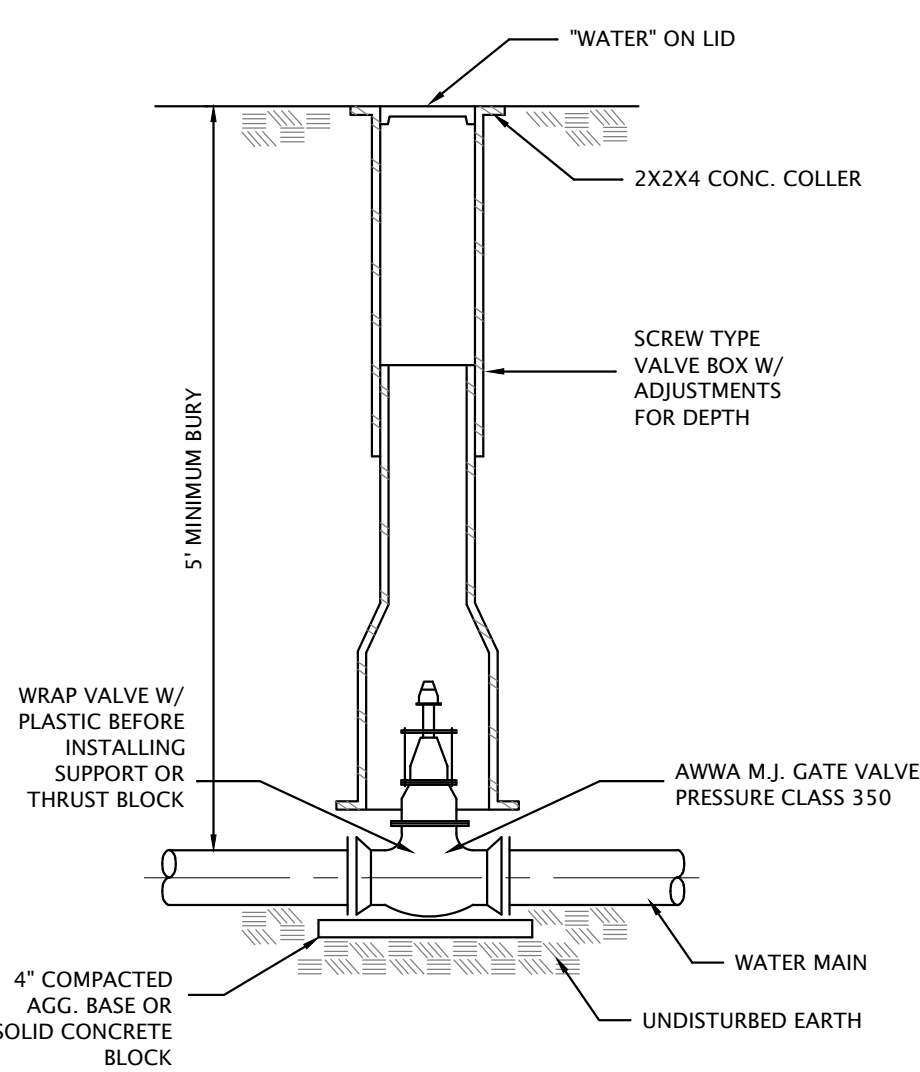
SANITARY SEWER MANHOLE

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



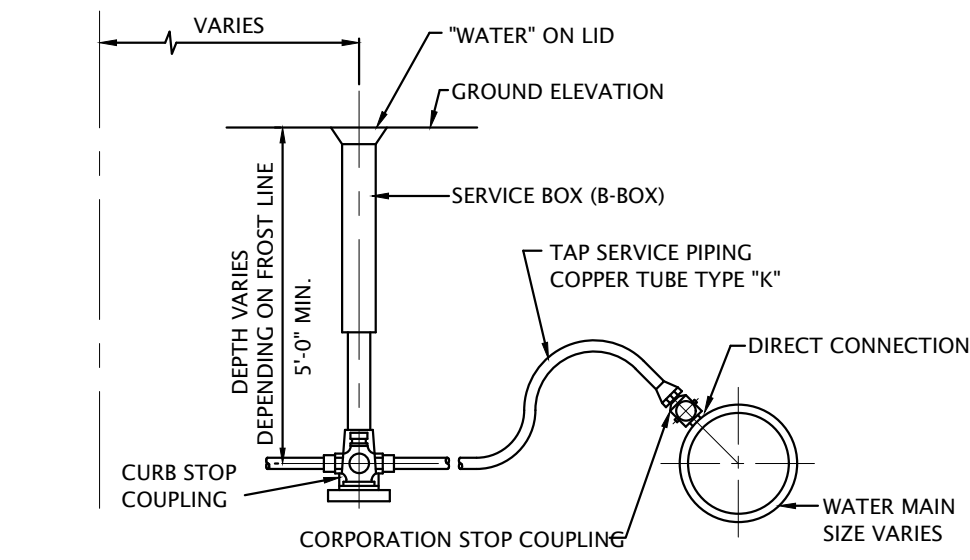
MAIN LINE WATER VALVE, 12" OR SMALLER

RESTRAINED PIPE LENGTH (FEET)

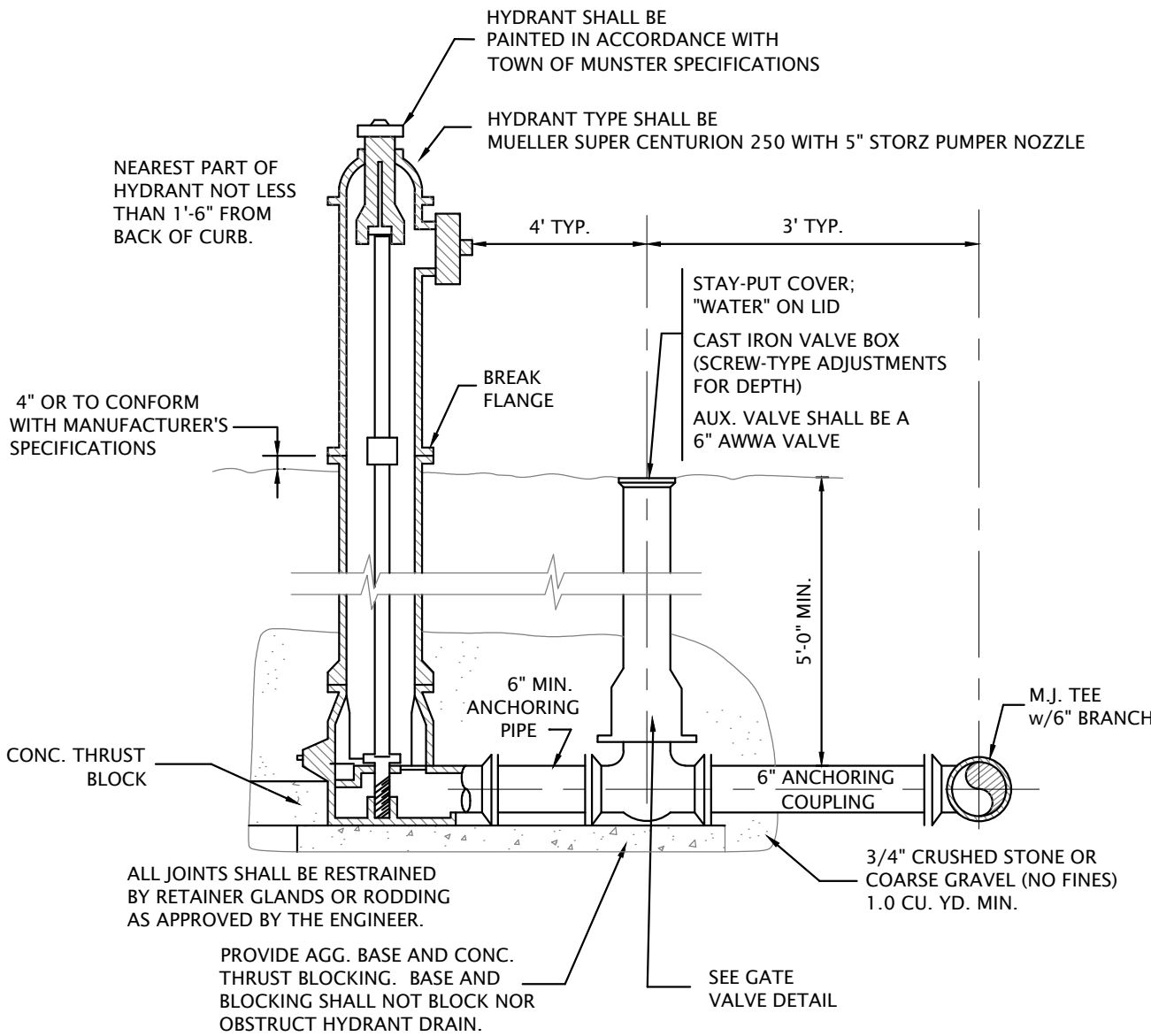
PIPE SIZE (INCHES)	TEE* BRANCH	90° ELBOW	45° ELBOW	22 1/2° ELBOW	11 1/4° ELBOW	DEAD ENDS
4	0	15	6	3	2	20
6	9	22	9	4	2	28
8	18	27	11	5	3	37
10	25	33	14	7	3	44
12	33	39	16	8	4	52
14	41	44	18	9	4	60
16	48	50	21	10	5	68
18	56	55	23	11	5	75
20	63	61	25	12	6	82
24	77	71	29	14	7	96
30	97	86	36	17	8	116
36	116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



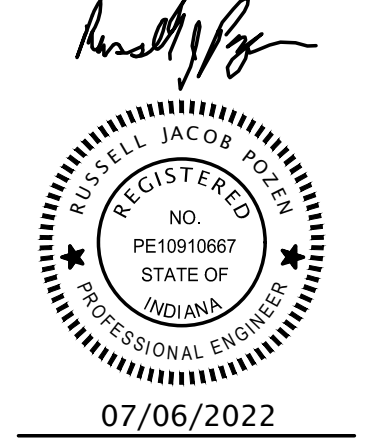
TYPICAL B-BOX & TAP SERVICE PIPING



FIRE HYDRANT ASSEMBLY (TYPE "A")



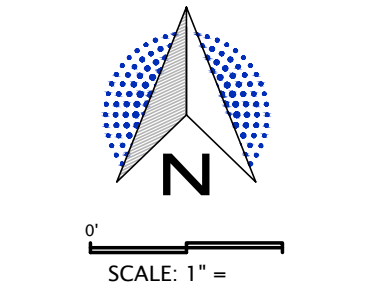
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Crown Point, IN 46307
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F: (219) 662-2740
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9615 Boulevard Drive
Highland, Indiana 46322

DATE:	REVISIONS AND NOTES:

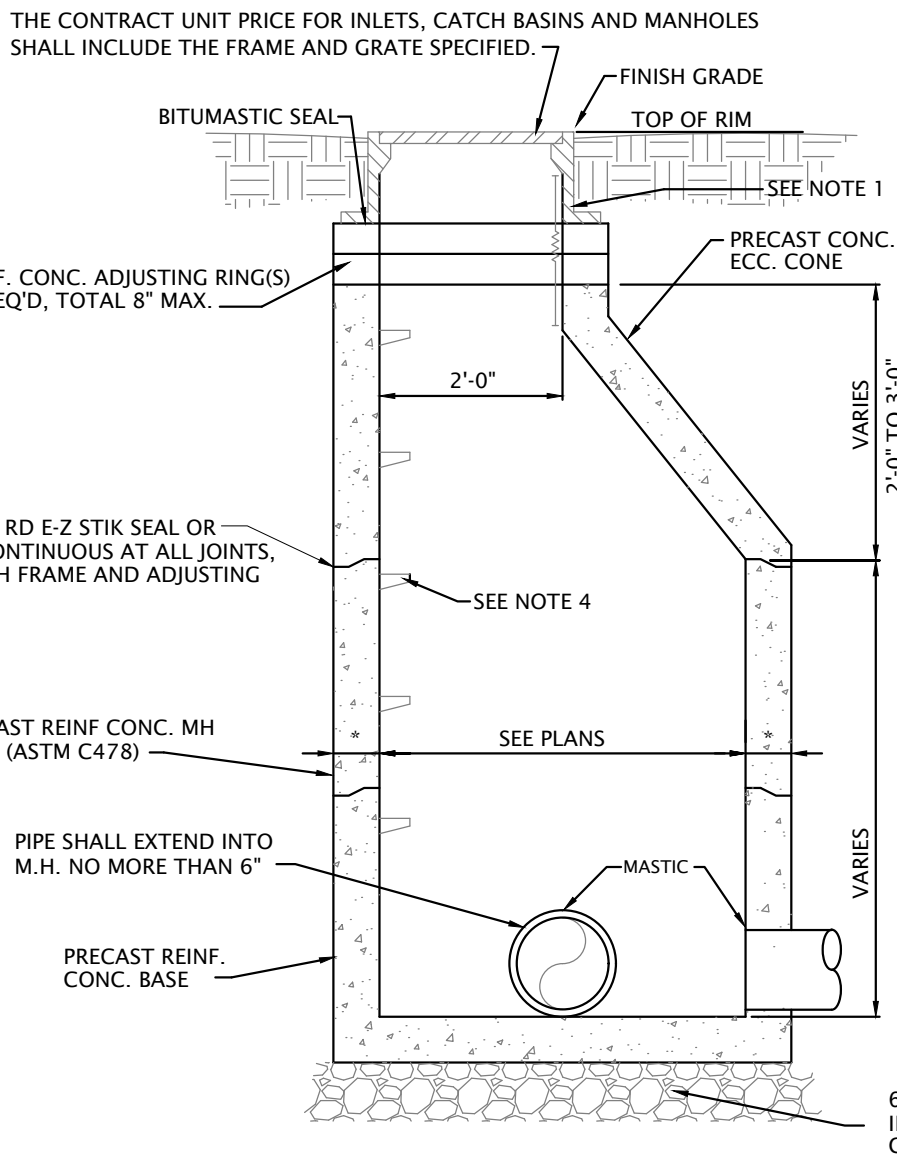
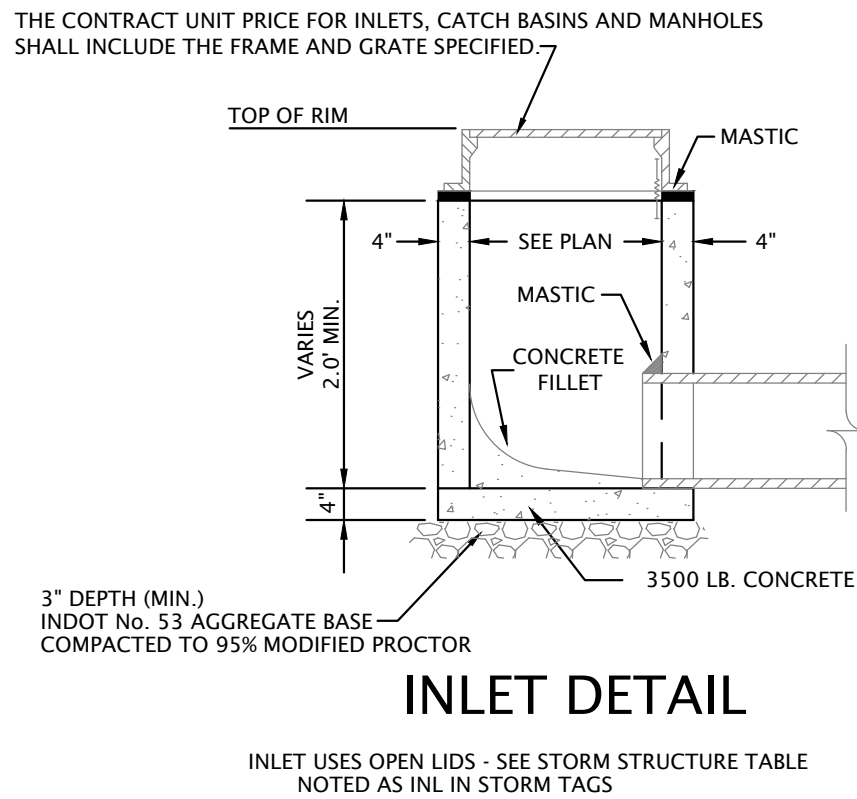
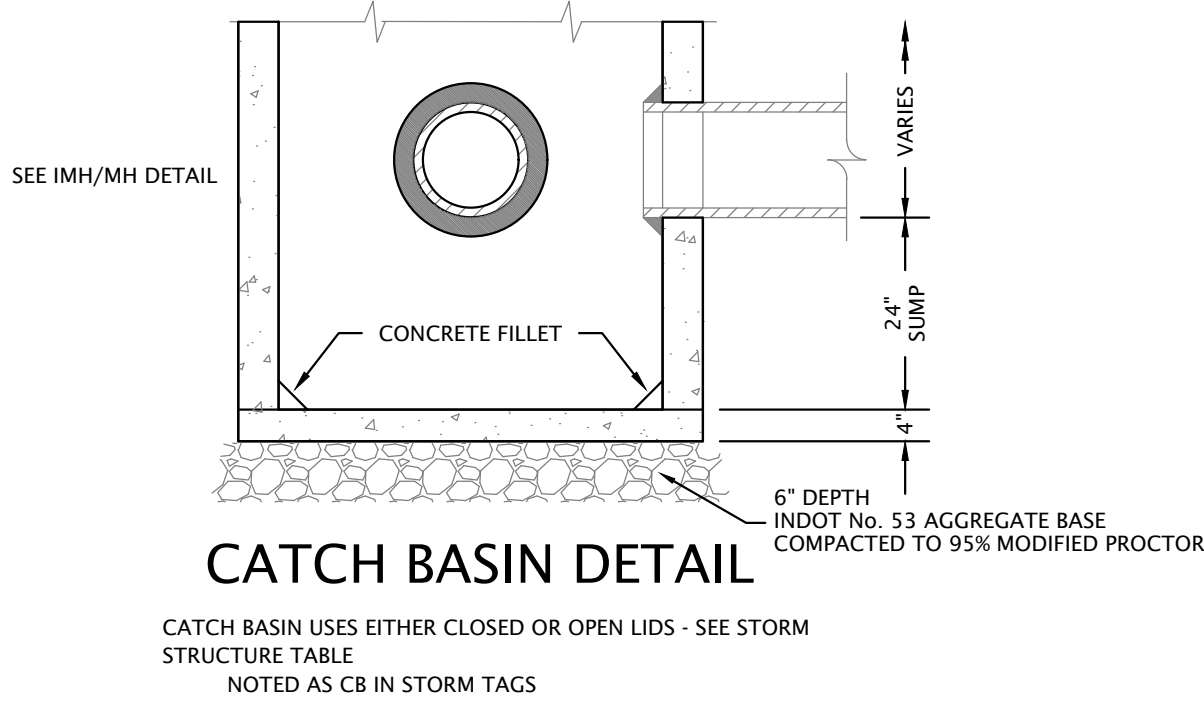
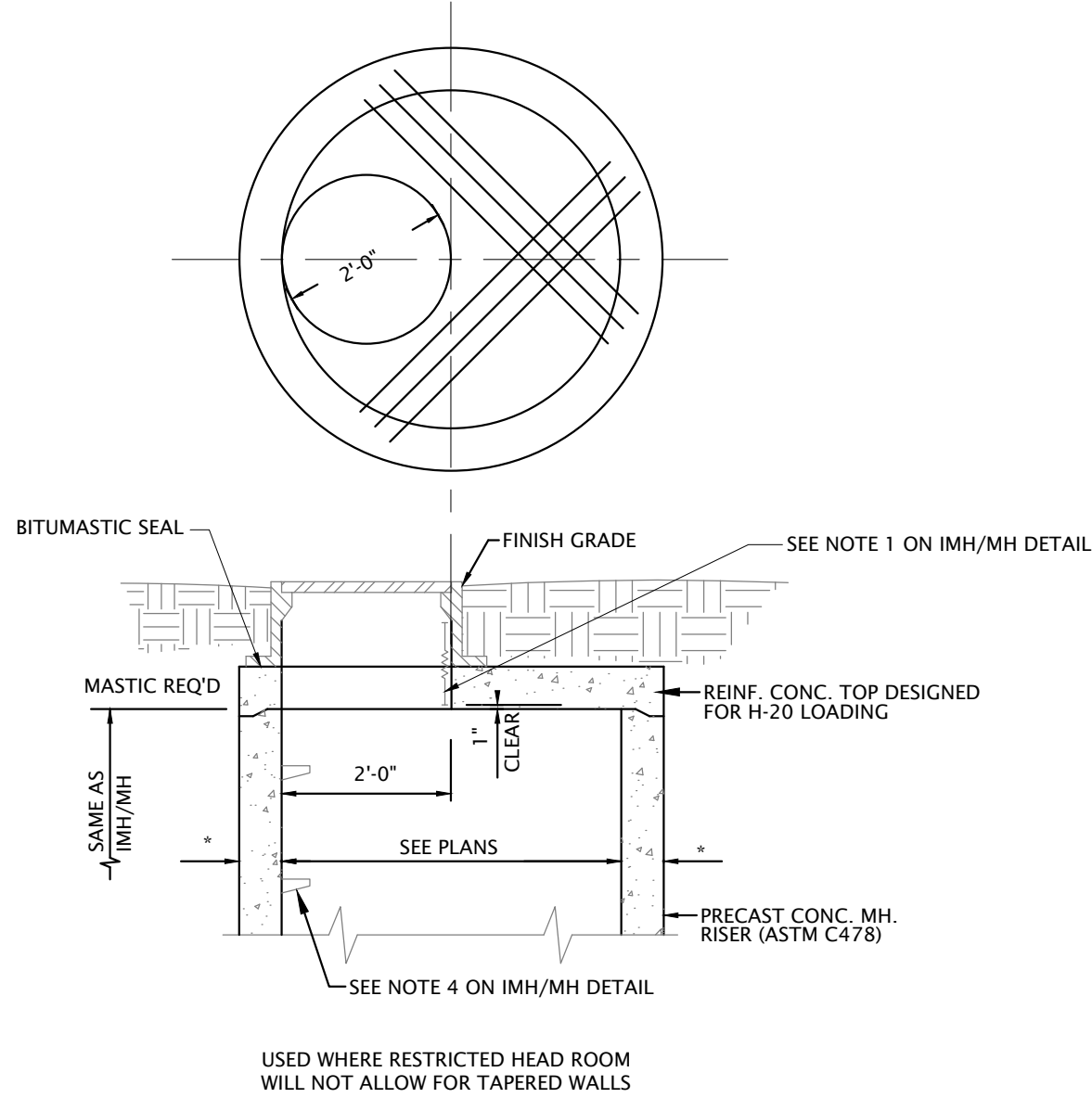
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Munster, Indiana
Construction Details



DESIGN BY	DATE
RJP	06/29/18
PROJECT NO.	14-C-1011
C202	

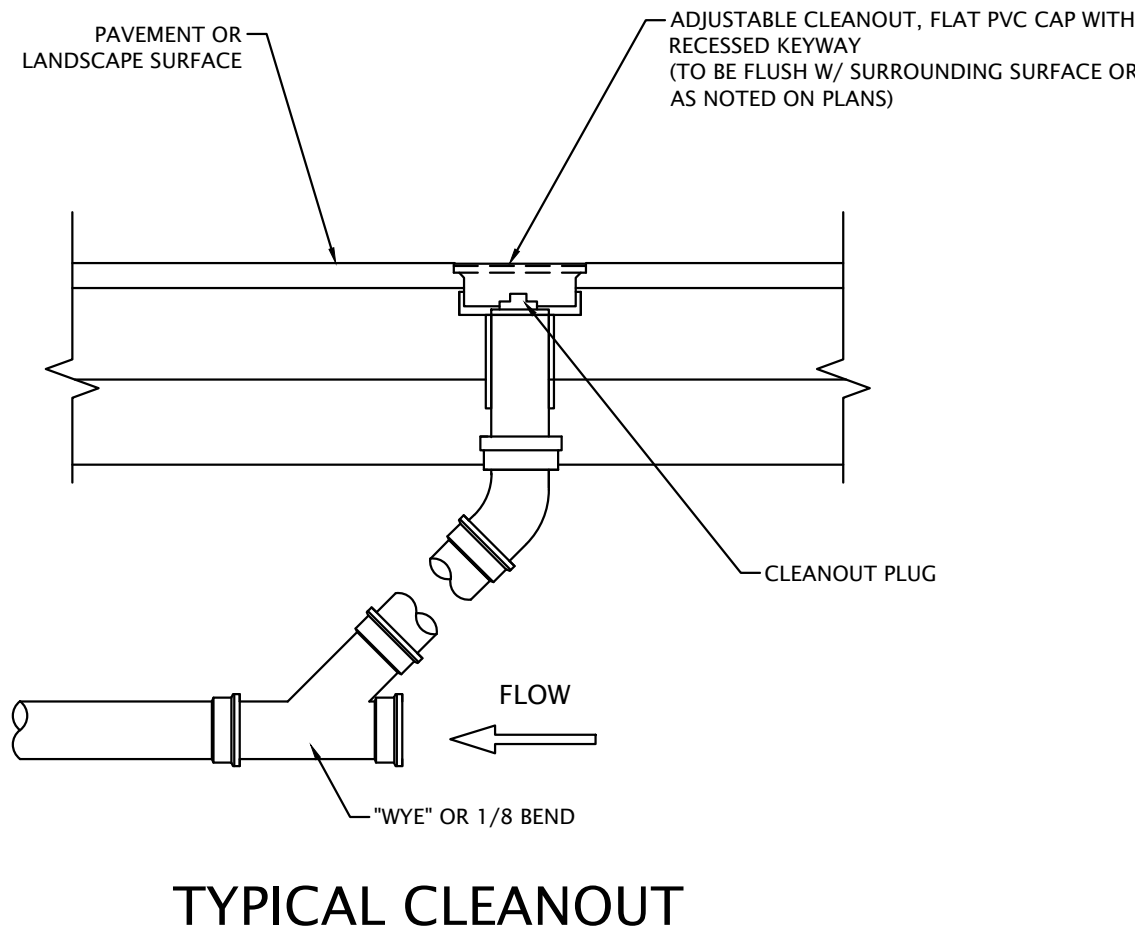
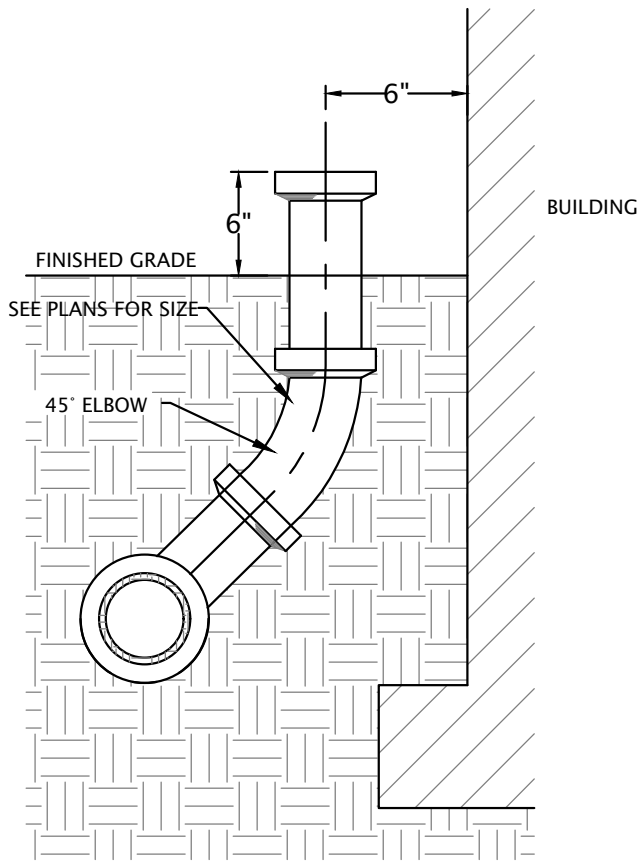
STORM SEWER GENERAL NOTES:

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).



* 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.)



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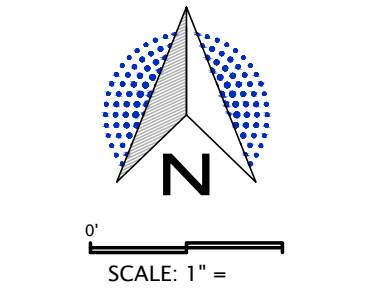


07/06/2022

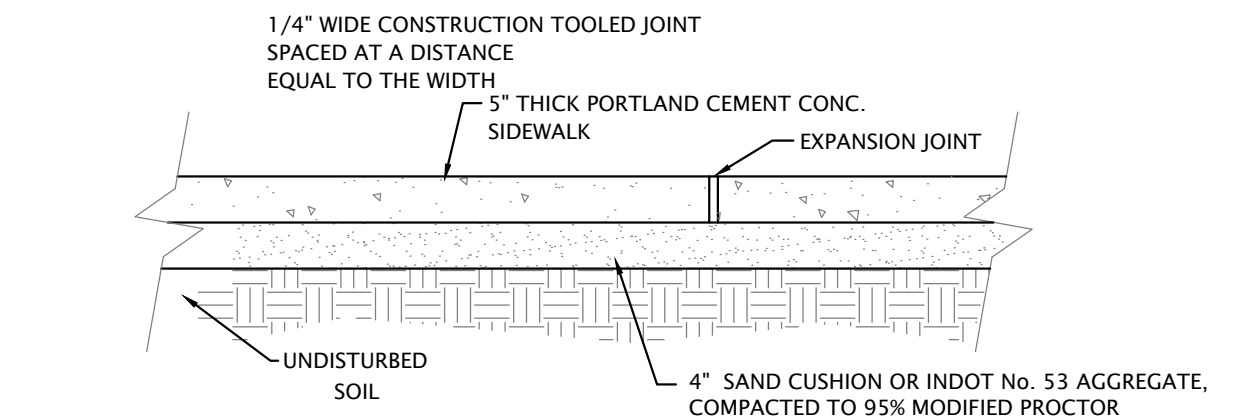
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9615 Boulevard Drive
Highland, Indiana 46322

DATE:	REVISIONS AND NOTES:
07/25/21	REVISED IFC - BLDG C

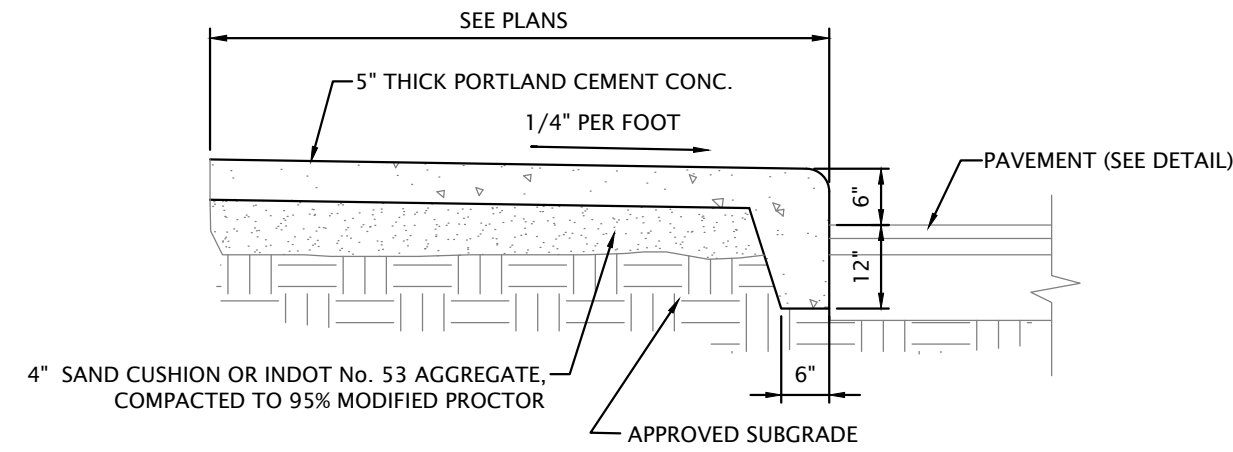
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Munster, Indiana
Construction Details



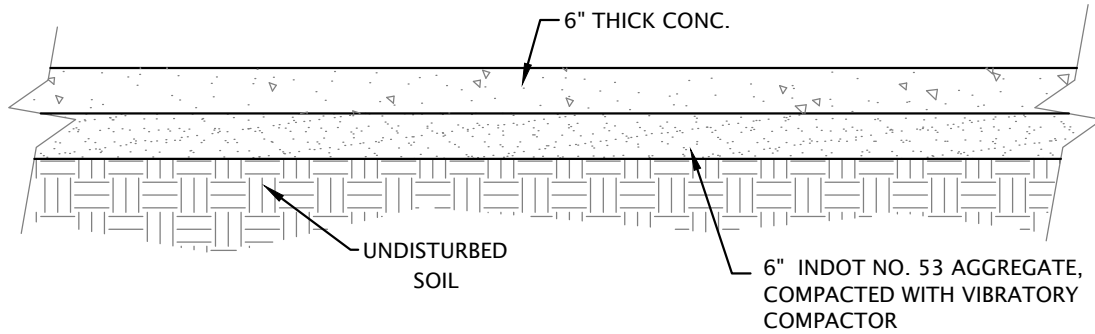
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PROJECT NO. 14-C-1011	
C203	



SIDEWALK DETAIL



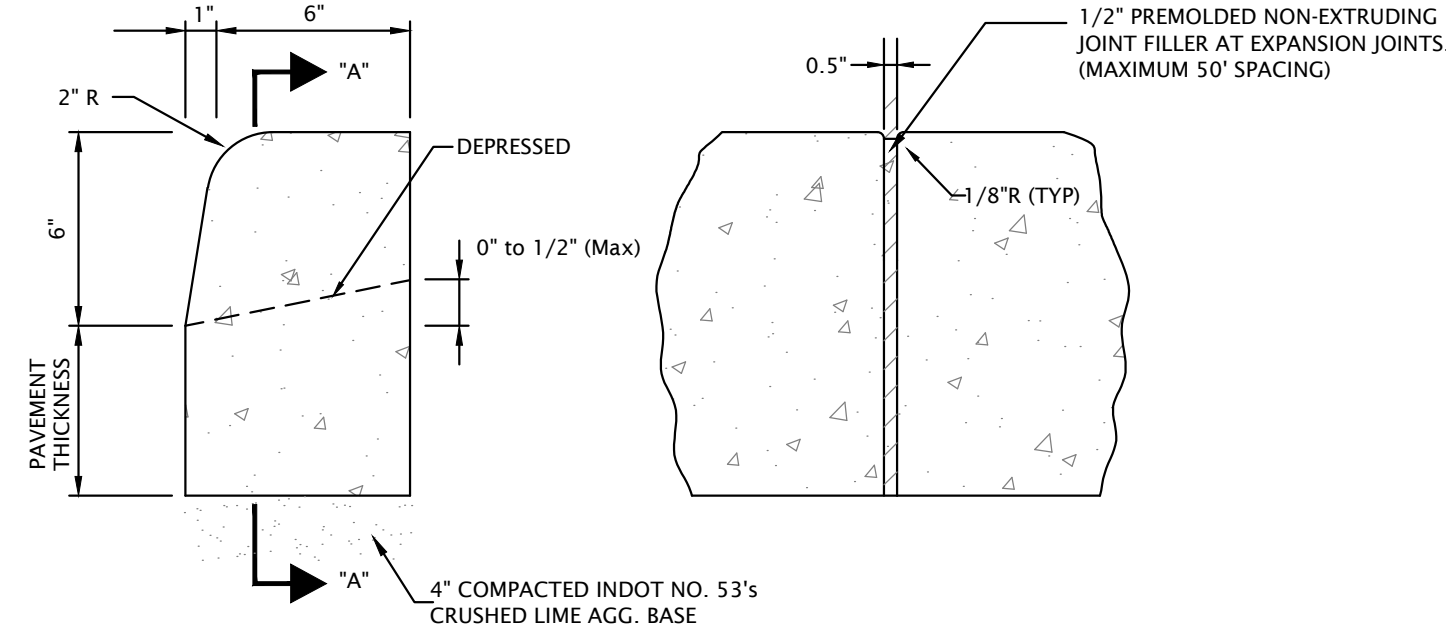
MONOLITHIC CURB AND SIDEWALK
N.T.S.



CONCRETE PAD DETAIL

CONCRETE FLAT WORK NOTES

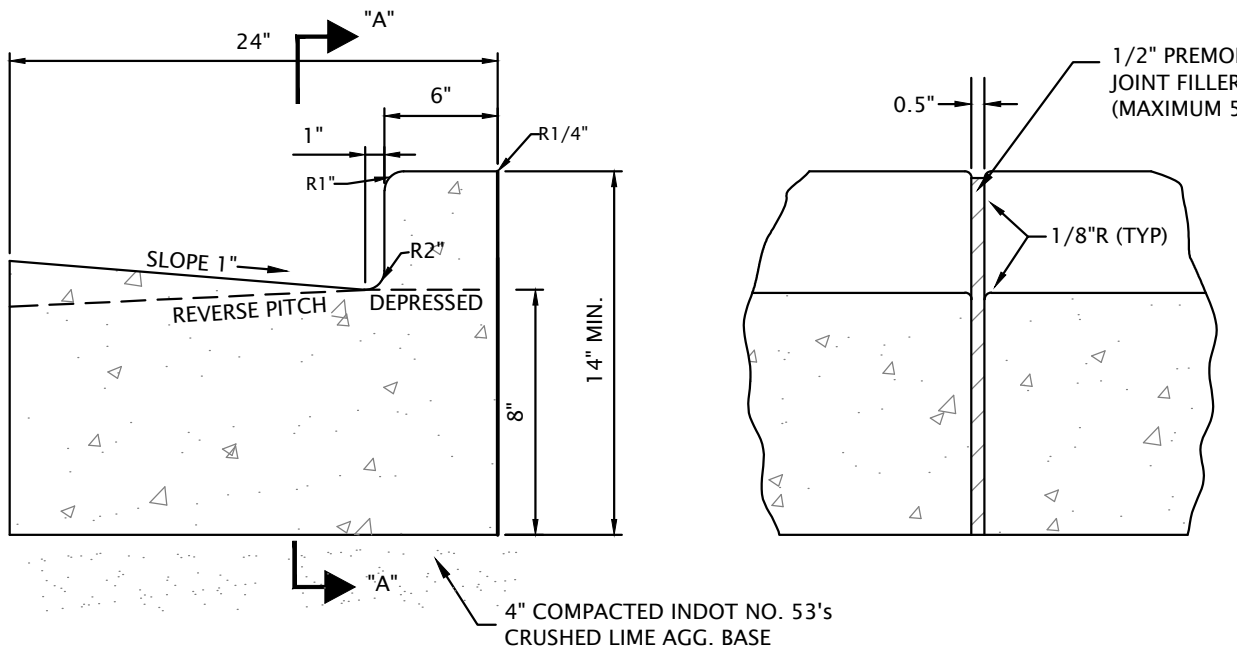
1. PROVIDE 3/4-INCH EXPANSION JOINT CONFORMING TO ASTM D 1751 ALONG BACK OF CURBS, DRIVEWAYS, STEPS, WALLS AND ACROSS THE SIDEWALK AT INTERVALS NOT TO EXCEED 40 FEET.
2. EXTEND EXPANSION JOINT MATERIAL FULL DEPTH OF THE SLAB.
3. PROVIDE TOOLED "V-GROOVE" CONTROL JOINT SPACED AT A DISTANCE EQUAL TO THE 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.



X-SECTION SECTION "A-A"

BARRIER CURB

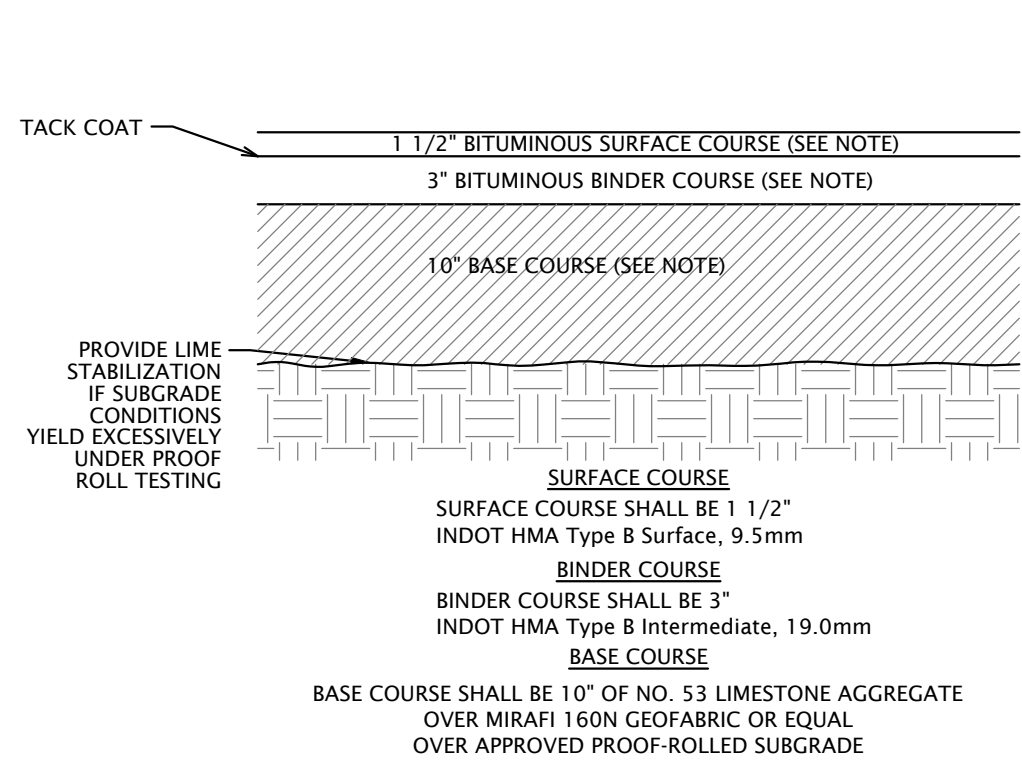
- NOTE:
1. CONTRACTION JOINTS - CONTRACTION JOINTS SHALL BE PLACED AT EQUAL SPACES BETWEEN NORMAL EXPANSION JOINTS. CONTRACTION JOINTS SHALL BE SAW CUT IN THE UPPER 1/3 OF CURB AND GUTTERS WITHIN 7 DAYS OF PLACEMENT.
 2. 1/2" EXPANSION JOINTS AT MAXIMUM 50 FEET.
 3. CONTRACTION JOINTS AT MAXIMUM 20 FEET.



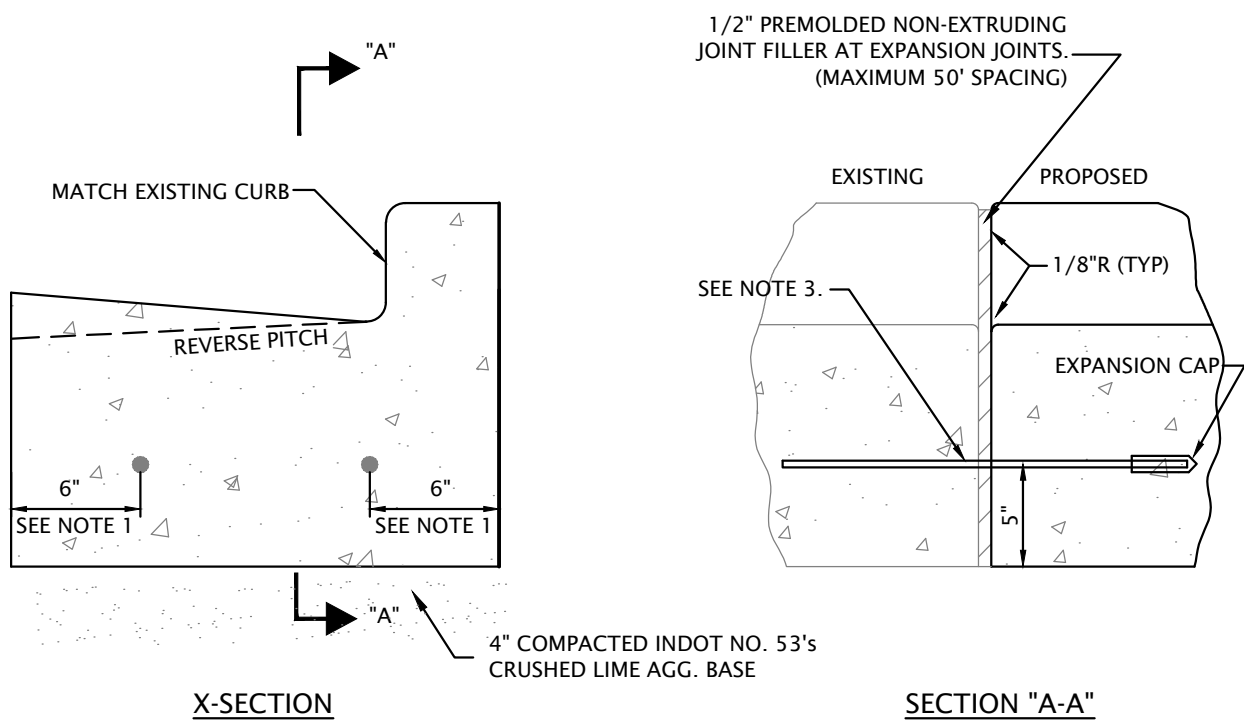
X-SECTION SECTION "A-A"

24" 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.
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 3. CONTRACTION JOINTS AT MAXIMUM 20 FEET.

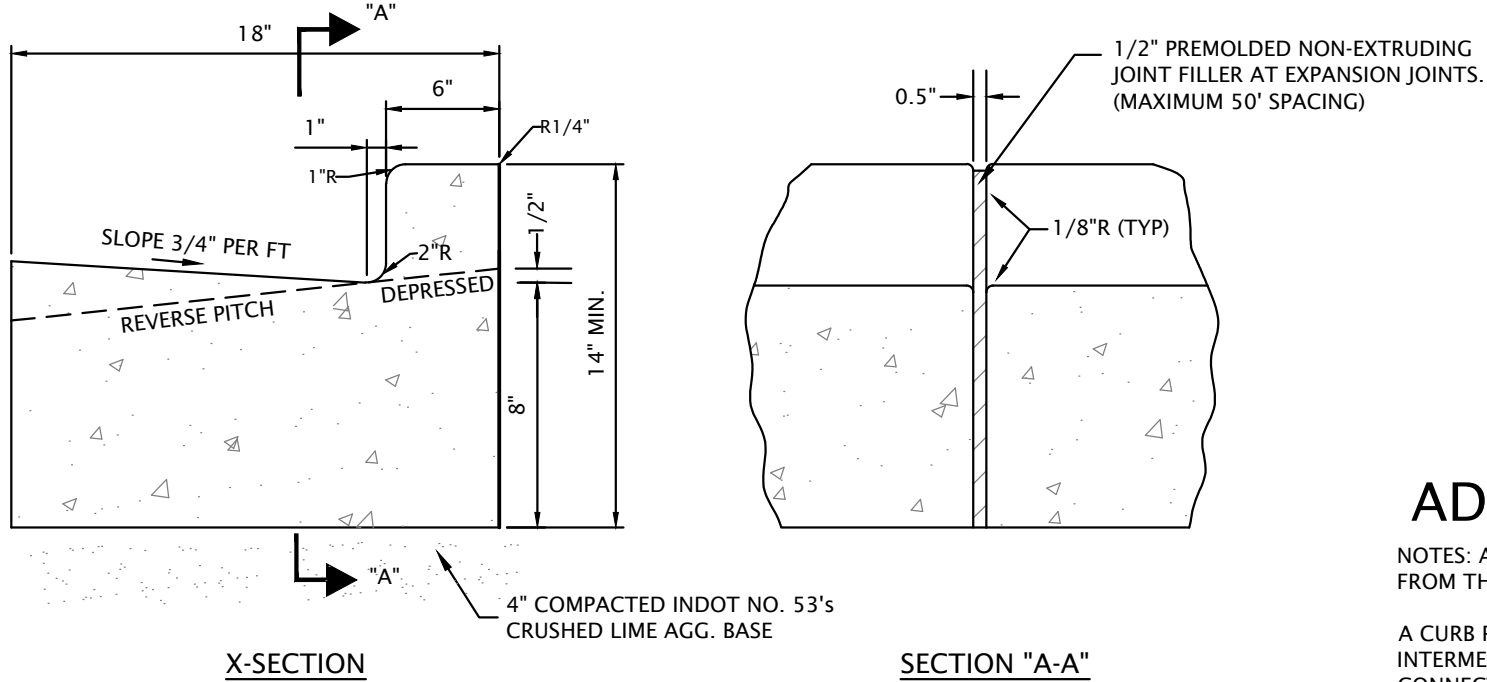


PARKING LOT
PAVEMENT CROSS SECTION



CURB & GUTTER REPAIR AT UTILITY TRENCH CUT

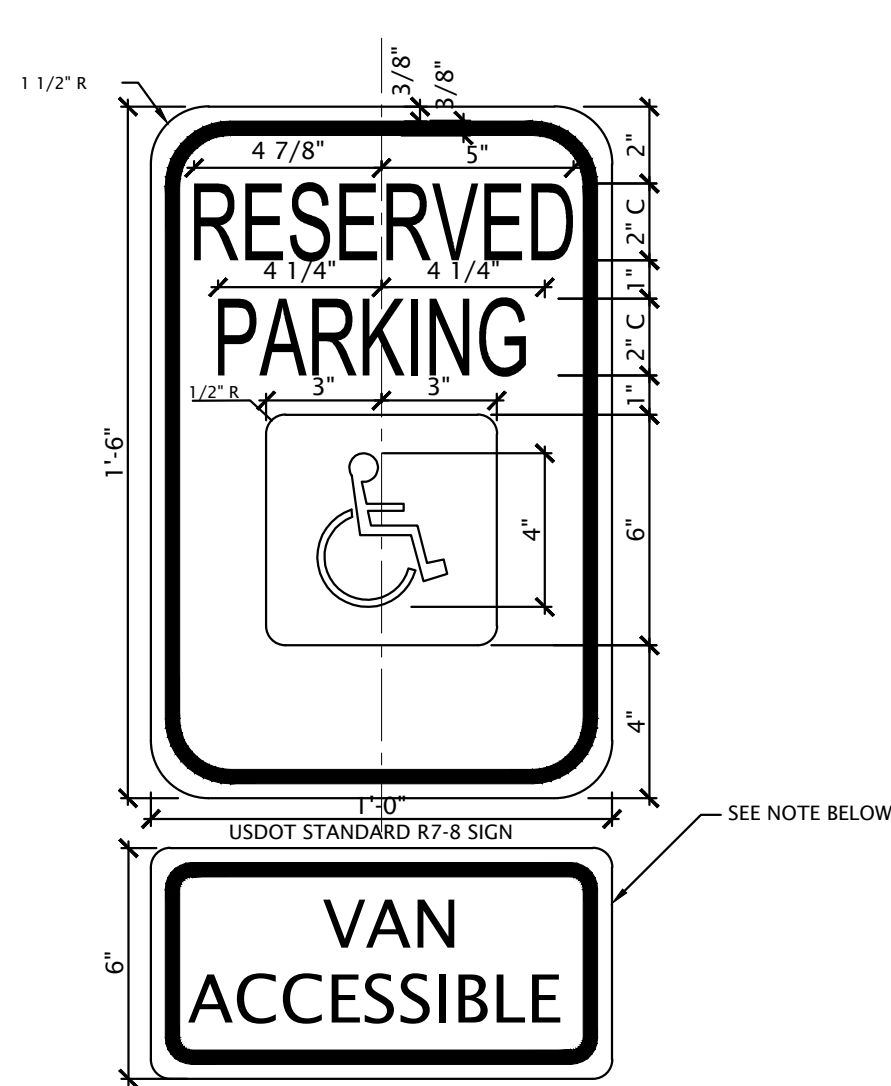
- NOTE:
1. PROVIDE 2-#4 BARS (10' LONG) CENTERED IN EACH UTILITY TRENCH.
 2. COST OF BARS SHALL BE INCLUDED IN THE UNIT PRICE (PER LINEAL FOOT) FOR CURB AND GUTTER.
 3. PROVIDE 2-#6 SMOOTH BARS W/EXPANSION CAPS AT EACH EXPANSION JOINT.
 4. SAW CUT EXISTING CURB PRIOR TO REMOVAL. PROVIDE NEAT AND CLEAN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



X-SECTION SECTION "A-A"

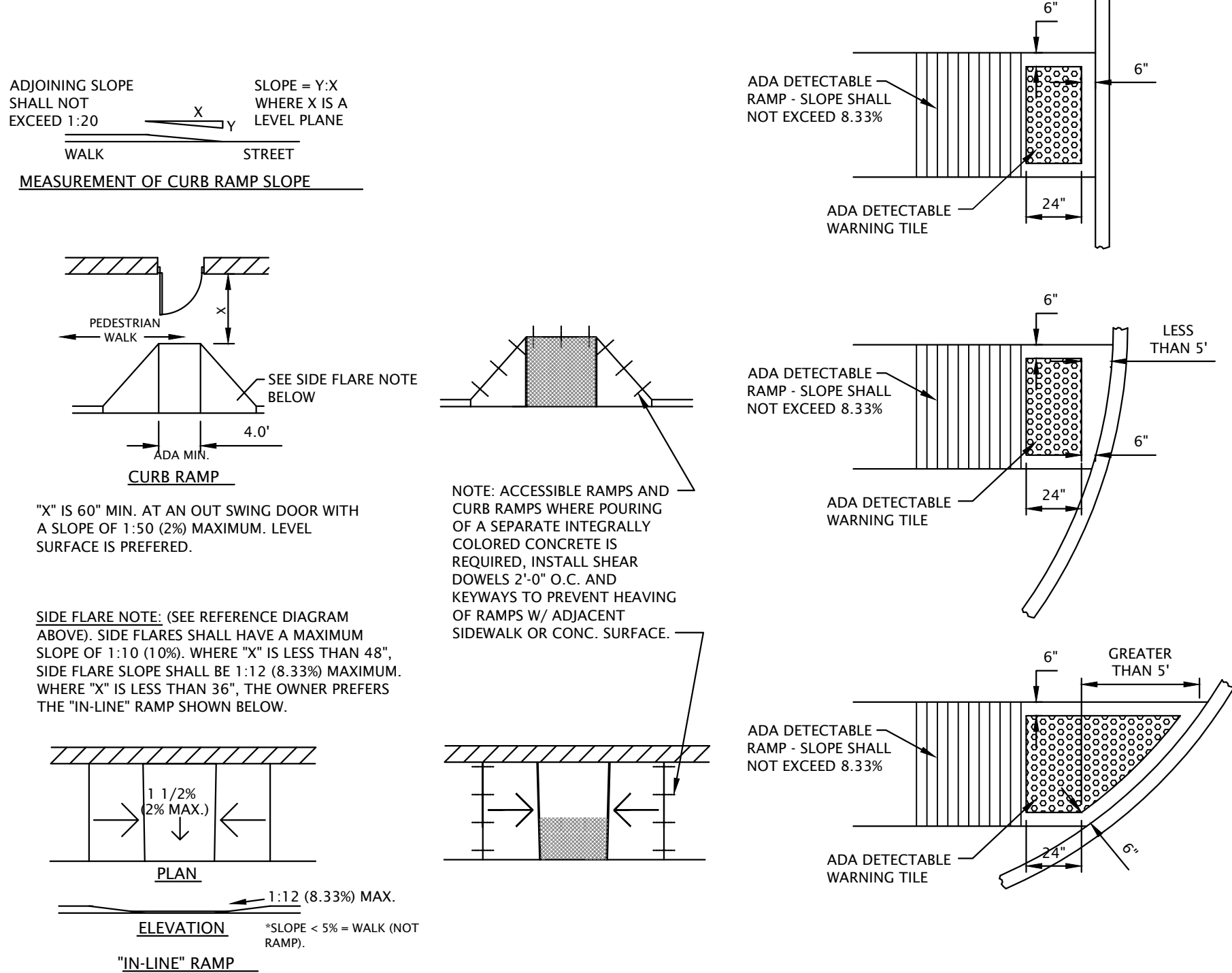
BARRIER CURB & GUTTER

- 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.

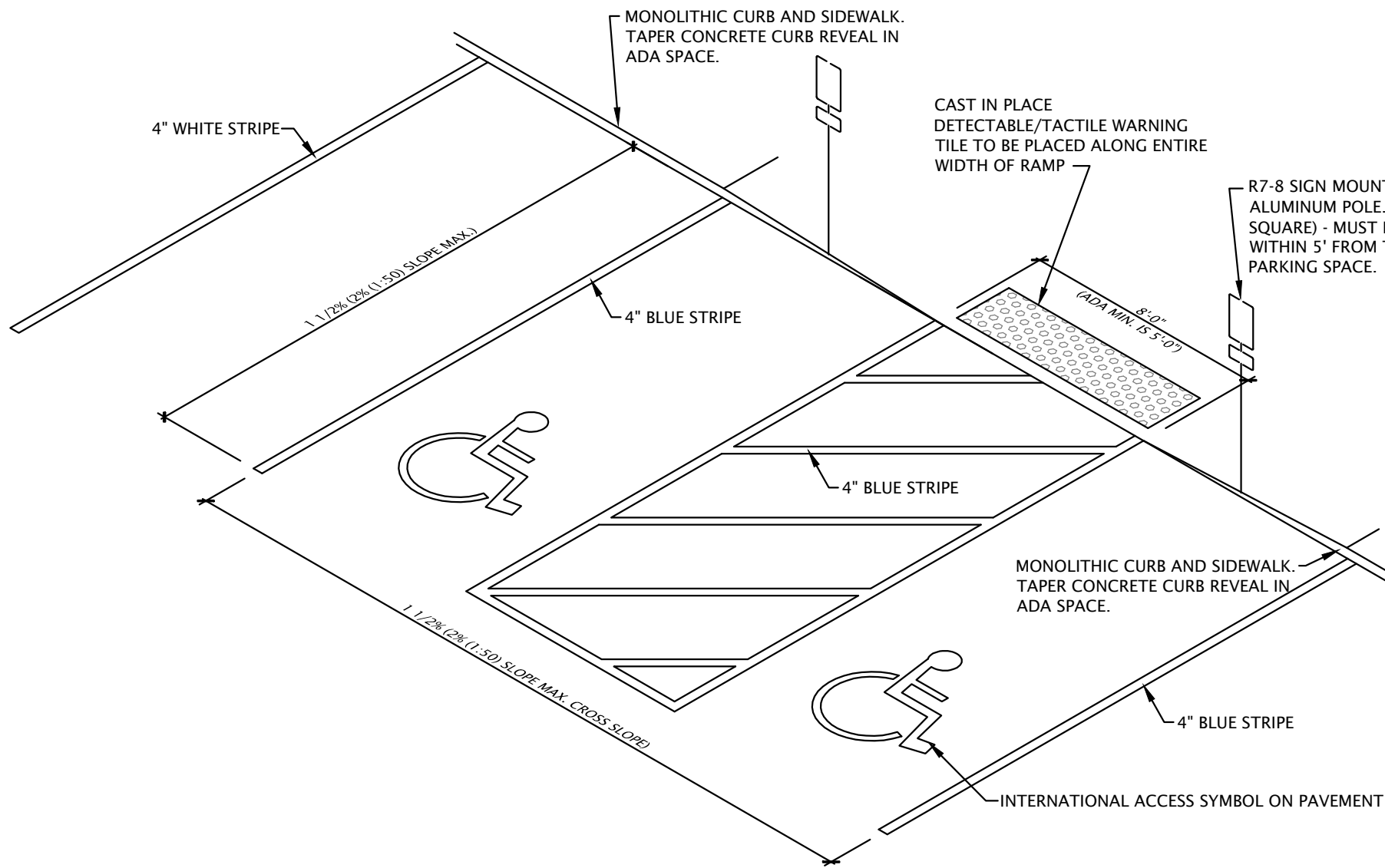


NOTE (R-7-8 SIGN): THIS IS A STANDARD SIGN AND MAY BE ORDERED FROM ANY TRAFFIC SIGN SUPPLIER BY NUMBER. THE SIGN MUST BE SUPPLEMENTED WITH A "VAN ACCESSIBLE" SIGN AS APPLICABLE AND/OR AMOUNT OF THE FINE FOR ILLEGALLY PARKING IN THE RESERVED SPACE(S) A MUNICIPALITY MAY IMPOSE. CONFIRM WITH LOCAL REGULATIONS.

ADA SIGNAGE



ADA RAMPS



TYPICAL ADA PARKING SPACE PLAN

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 RAMPS OR SIDEWALK RAMPS 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" RAMPS 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.

ACCESSIBLE PARKING-SIZE AND MARKINGS

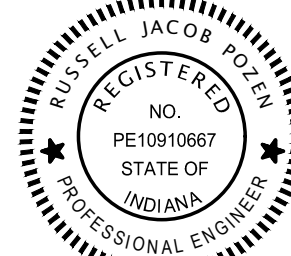
- NOTES:
1. PAINTED CROSSWALKS SHALL BE WHITE 18" WIDE STRIPES 6' LONG, SPACED 36" ON CENTER ACROSS THE ENTIRE LENGTH OF THE CROSSING.
 2. PAINT 2" BLACK OUTLINE AROUND ARROWS AND LETTERS IN AREAS OF CONCRETE SURFACE.
 3. PARKING SPACES ARE TO BE "WHITE" - 4" WIDE STRIPES
 4. ADA SPACES, ADA MARKING,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

PAVEMENT MARKINGS



1155 Troutwine Road
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www.dvgteam.com

Handwritten signature



08/31/2022

Centennial Village LLC.

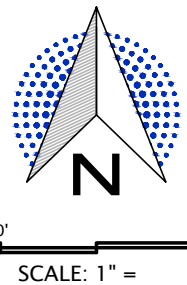
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DATE:	REVISIONS AND NOTES:

Centennial Village Bldg. F

Munster, Indiana

Construction Details



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DESIGN BY: RJP DATE: 07/06/22

PROJECT NO. 14-C-1011

C204

C301

EROSION CONTROL MEASURES

CHEMICAL STABILIZATION

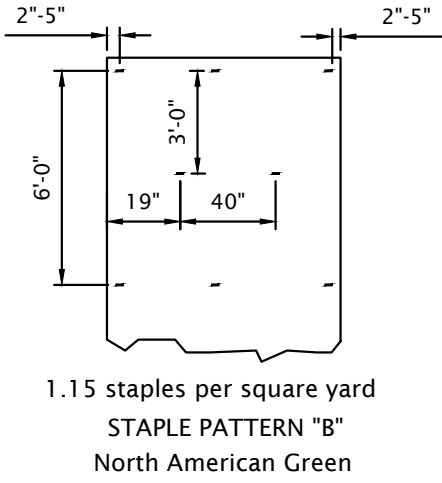
- MATERIAL: Soft pliable matting such as jute, coir or burlap, Applied Polymer Systems, "Silt Stop" dry powder (or Approved Equal)
- COVERAGE: "Silt Stop" dry powder is a soil specific material, a soil sample must be submitted to the manufacturer to determine proper application rates.
- INSTALLATION
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.

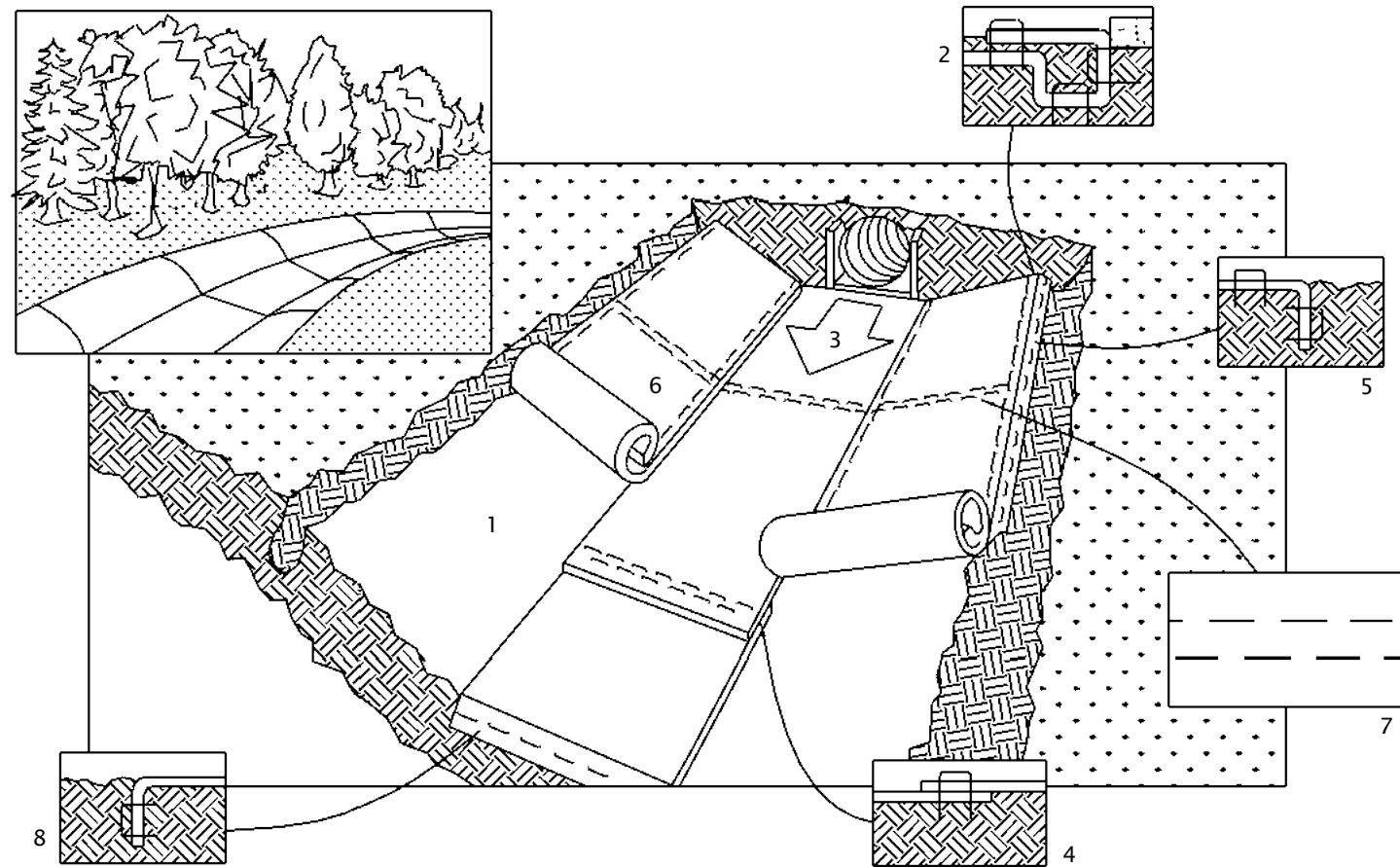
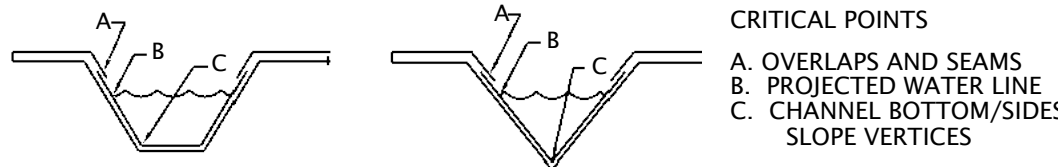


EROSION CONTROL BLANKET (CHANNEL APPLICATION)

DETAIL SOURCE: NORTH AMERICAN GREEN

NOTE: Horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.

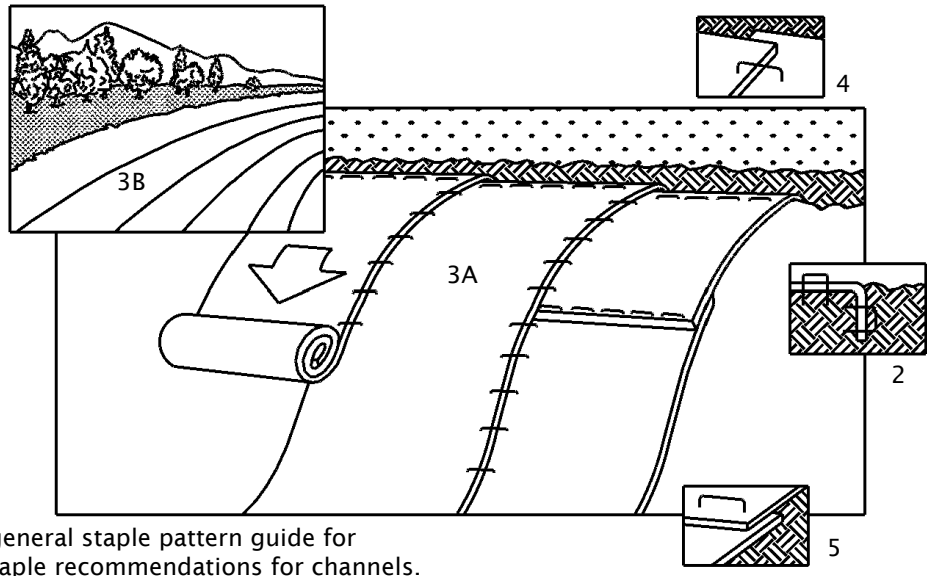
Refer to general staple pattern guide for correct staple recommendations for channels.



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)

DETAIL SOURCE: NORTH AMERICAN GREEN



- 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 SPICED 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

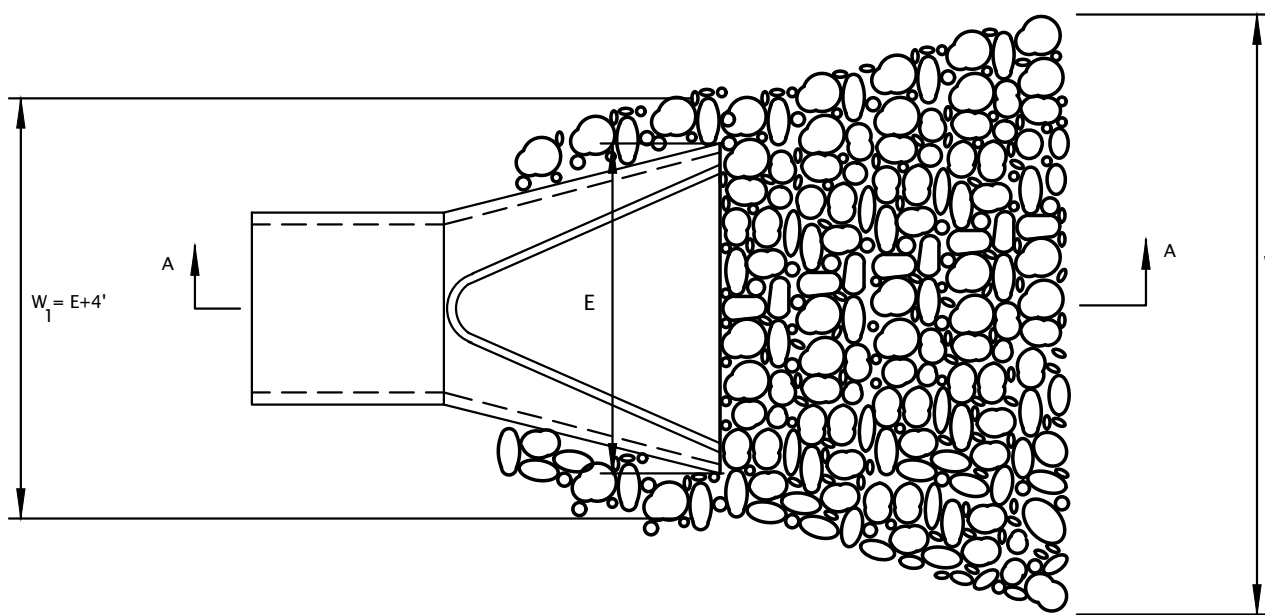
1. If using geotextile fabric, place it on the smoothed foundation, overlap the edges at least 12 in., and secure with anchor pins spaced every 3 ft. along the overlap.
2. If using a sand/gravel filter, spread the well-graded aggregate in a uniform layer to the required thickness (6 in. min.); if two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

RIPRAP PLACEMENT

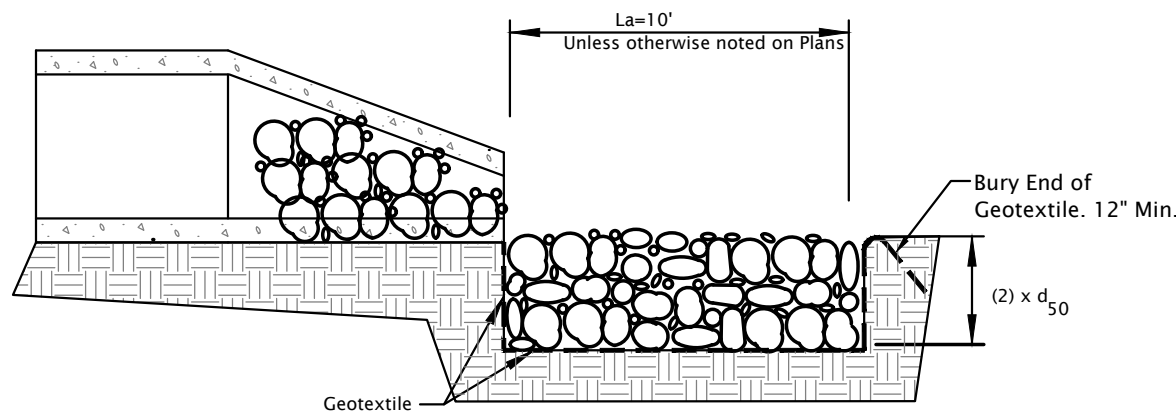
1. Immediately after installing the filter, add the riprap to full thickness in one operation. (Do not dump through chutes or use any method that causes segregation of rock sizes or that will dislodge or damage the underlying filter material.)
2. If fabric is damaged, remove the riprap and repair by 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.



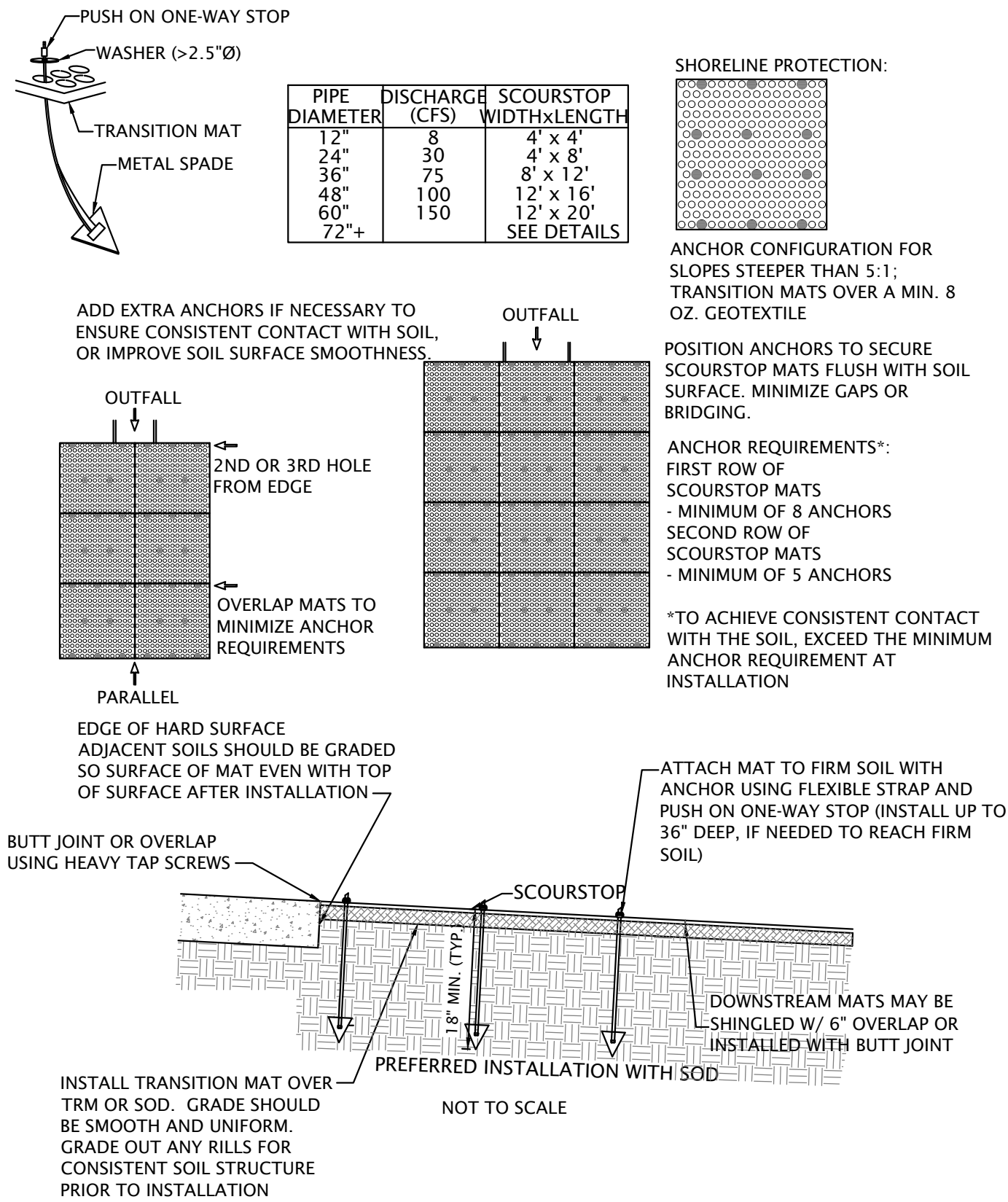
PLAN



SECTION A-A

SCOURSTOP TRANSITION MAT - Scour Protection

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



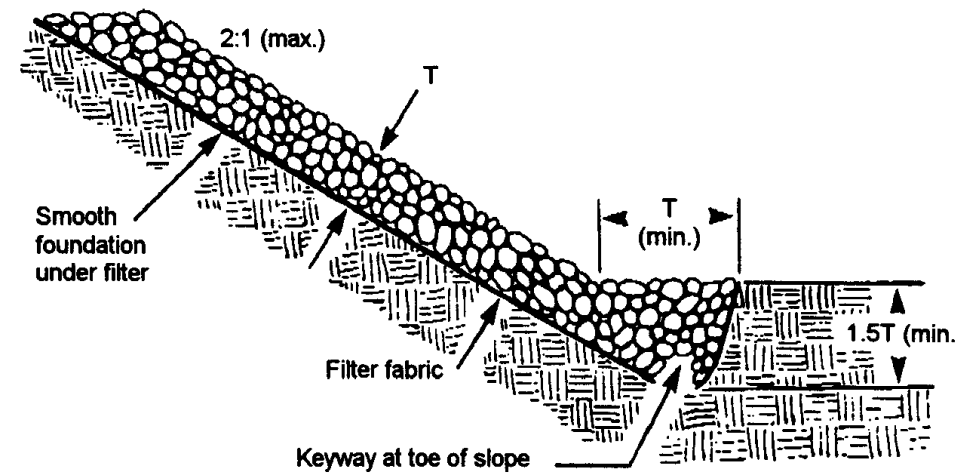
- NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
 2. DO NOT SCALE DRAWINGS.

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.
- MINIMUM THICKNESS: Two times the specified d_{50} stone diameter.

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.

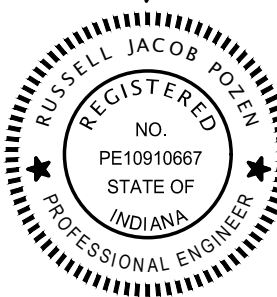
MAINTENANCE

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



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Crown Point, IN 46307
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www.dvgteam.com

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06-29-2018

Centennial Village LLC.
9615 Boulevard Drive
Highland, Indiana 46322

DATE:	REVISIONS AND NOTES:

Centennial Village Bldg. F
Munster, Indiana

Storm Water Pollution Prevention Plan Details



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DESIGN BY	DATE
RJP	06/29/18

PROJECT NO.
14-C-1011

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	
1. Apply mulch at the recommended rate.	
2. Spread uniformly by hand, hay fork, mulch blower, or hydromulcher. After spreading, no more than 25% of the ground surface should be visible.	
3. If straw or hay is used, anchor it immediately in one of the following ways.	
ACNHORING 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-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.	
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MAINTENANCE	
1. Inspect after storm events to check for movement of mulch or for erosion.	
2. If washout, breakage, or erosion is present, repair the surface, then re-seed, re-mulch and, if applicable, install new netting.	
3. 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 compaction, 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:	
• <i>Cut slope roughening for areas that will not be mowed.</i> 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.	
• <i>Grooving.</i> 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.	
• <i>Fill slope roughening for areas that will not be mowed.</i> 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.	
• <i>Cuts, fills, and graded areas that will be mowed.</i> 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.	
• <i>Roughening with tracked machinery.</i> 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	
1. Determine depth and suitability of topsoil at the site.	
2. Prior to stripping topsoil, install any site-specific downslope practices needed to control runoff and sedimentation.	
3. Remove the soil material no deeper than what the county soil survey describes as "surface soil" (i.e., A or Ap horizon).	
4. 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.)	
5. 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	
1. Prior to applying topsoil, grade the subsoil and roughen the top 3-4 in. by disking. This helps the topsoil bond with the subsoil.	
2. Do not apply topsoil when the site is wet, muddy or frozen, because it makes spreading difficult, inhibits bonding, and can cause compaction problems.	
3. 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.	
4. After spreading, grade and stabilize.	
MAINTENANCE	
1. Inspect newly topsoiled areas frequently until vegetation is established.	
2. Repair eroded or damaged areas and replant.	

TEMPORARY SEEDING

SITE PREPARATION	
1. 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.	
2. Grade the site as specified in the construction plan.	
SEEDBED PREPARATION	
1. Fertilize as required.	
2. Work the fertilizer into the soil 2-4 in. deep with a disk or rake operated across the slope.	
SEEDING	
1. Select a seeding mixture and rate from the table and plant at depth and on dates shown.	
2. Apply seed uniformly with a drill or cultipacker-seeder or by broadcasting, and cover to the depth shown.	
3. If drilling or broadcasting, firm the seedbed with a roller or cultipacker.	
4. Mulch seeded areas to increase seeding success.	
MAINTENANCE	
1. Inspect periodically after planting to see that vegetative stands are adequately established, re-seed if necessary.	
2. Check for erosion damage after storm events and repair, reseed and mulch if necessary.	
3. Topdress fall seeded wheat or rye seeding with 50 lbs./acre of nitrogen in February or March if nitrogen deficiency is apparent.	

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

SEEDING

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2. Check for erosion damage after storm events and repair, reseed and mulch if necessary.
3. Topdress 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

1. 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.
2. Grade the site as specified in the construction plan and fill in depressions that can collect water.
3. Add topsoil to achieve needed depth for establishment of vegetation.

SEEDBED PREPARATION

1. Fertilize as required.
2. 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.

1. Select a seeding mixture and rate from the table and plant at depth and on dates shown.
2. Apply seed uniformly with a drill or cultipacker-seeder or by broadcasting, and cover to the depth shown.
3. If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
4. 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.

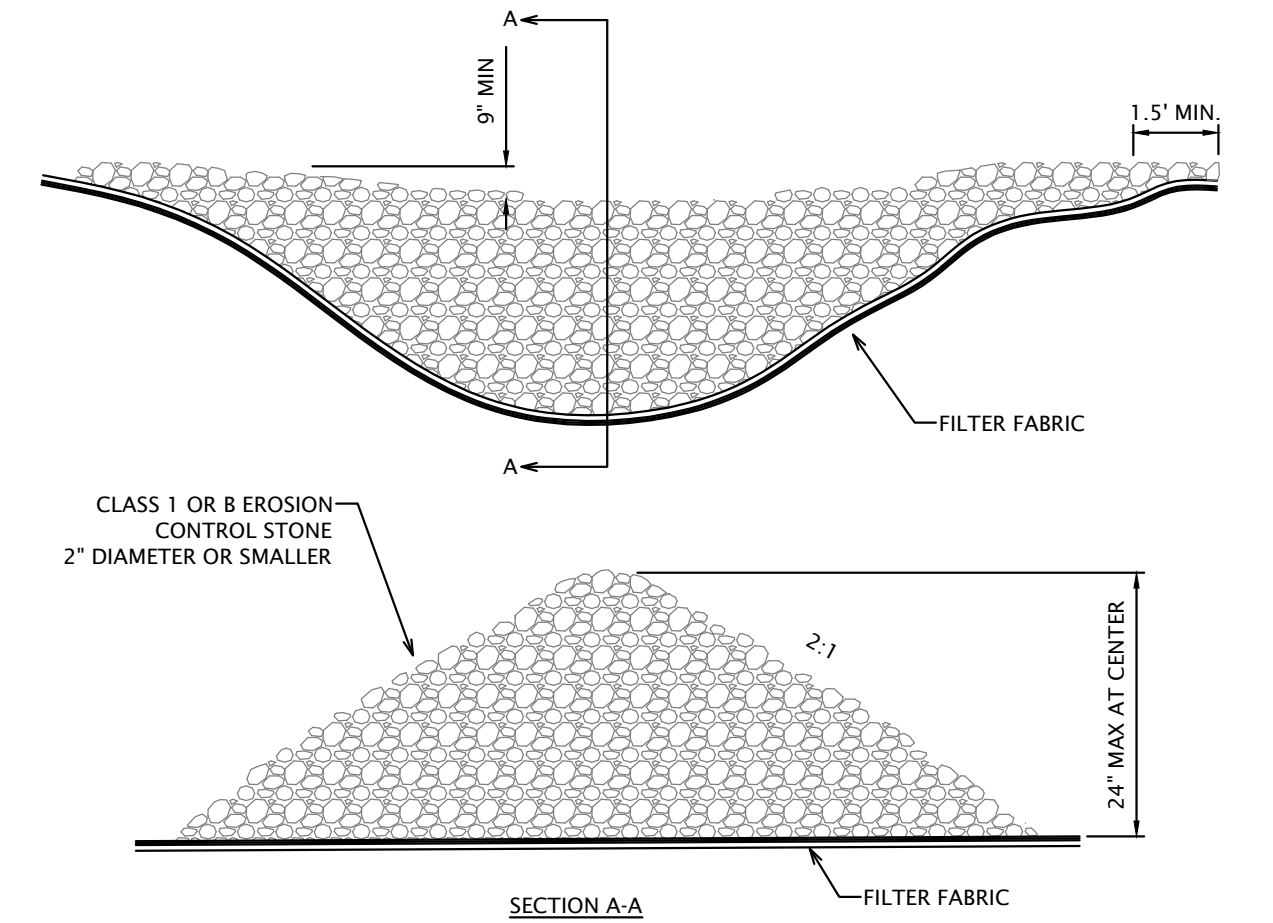
MAINTENANCE

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

PERMANENT SEEDING RECOMMENDATIONS

RUNOFF CONTROL MEASURES

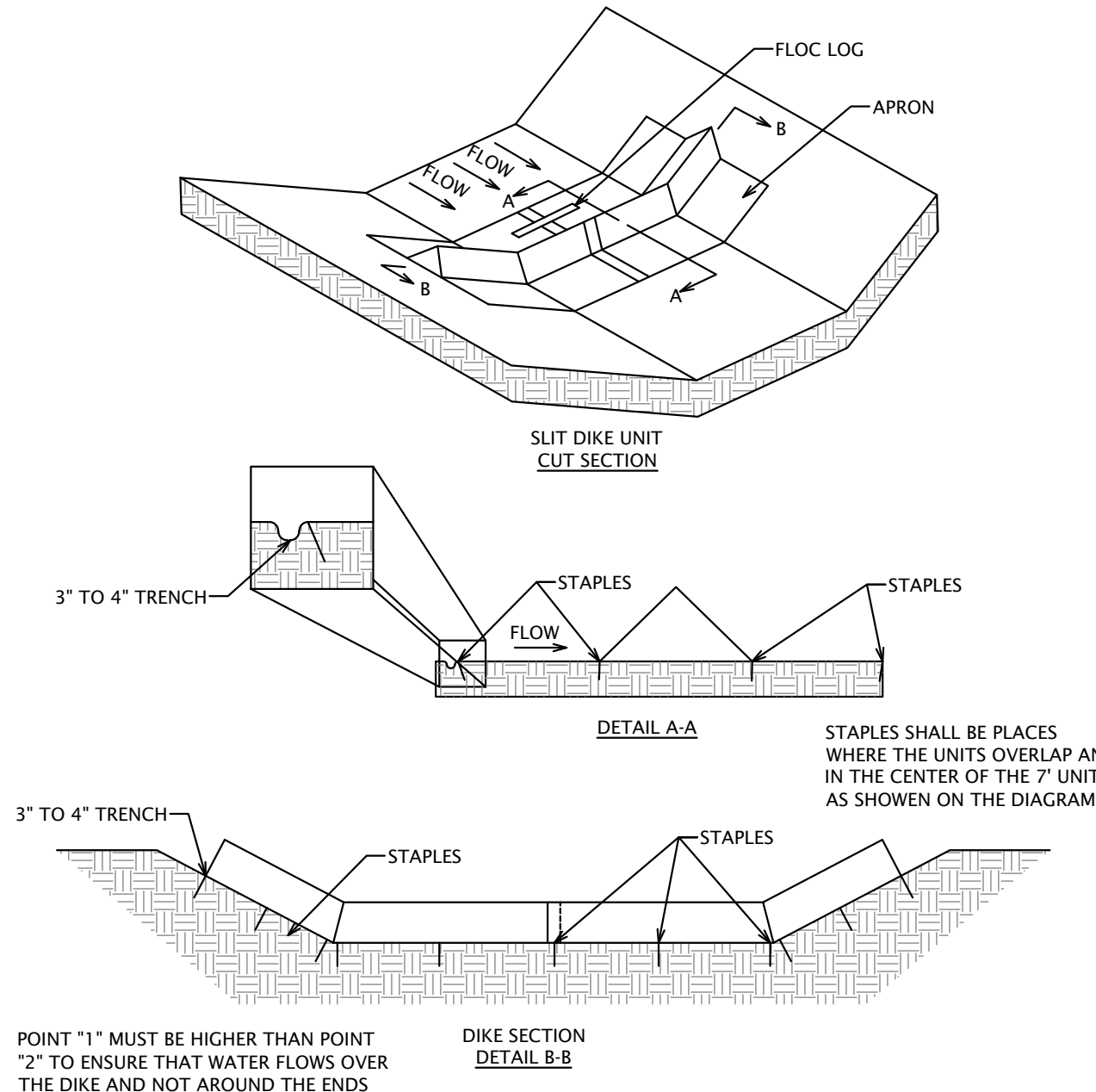
RIP-RAP CHECK DAMS



MAINTENANCE	
1. Inspect after each storm event.	
2. 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	
1. Place triangular silt fence dike as required.	
2. Attach dikes to the ground with staples as indicated on the detail.	

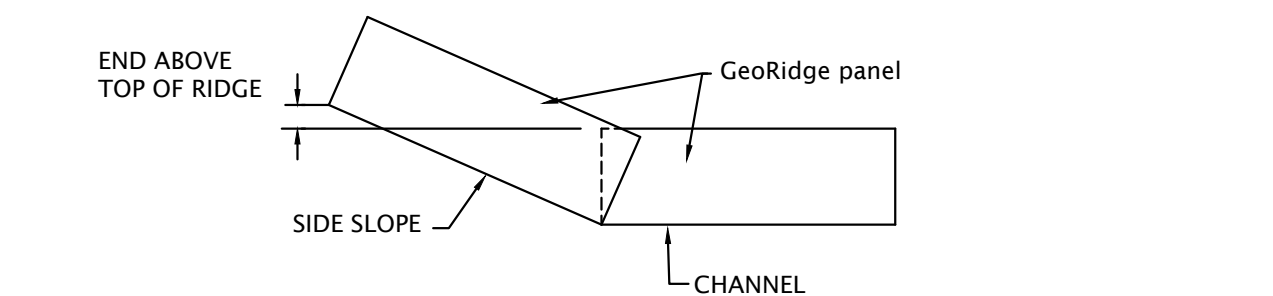


MAINTENANCE	
1. Inspect after each storm event.	
2. Remove built-up sediment and repair/replace the silt dikes as needed.	

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	
1. 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.	
2. 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.	
3. 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	
1. Inspect after each storm event.	
2. Remove built-up sediment when it reaches 1/2 the height of the GeoRidge.	
3. Repair/replace the GeoRidge and the ECM as needed.	

SEDIMENT CONTROL MEASURES

POLYMER SYSTEMS

MATERIAL:	APS 700 Series Floc Log
INSTALLATION:	
1. 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.	
2. In applications where the 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 Geojute should be placed downstream of the Floc Log providing a sediment settling area. (See plans for specific installation locations)	
3. In applications where the 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)	
4. 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	
1. Inspect after storm events to check for movement of mulch or for erosion.	
2. If washout, breakage, or erosion is present in the sediment setting media, repair the media.	
3. 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:	
1. 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.	
2. Excavate a trench with a width and depth equal to one-fourth the diameter of the log.	
3. 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.	
4. Place rolls end to end to form a continuous barrier.	
5. Hardwood stakes shall be driven through the rolls, spaced no greater than 5' to a depth of 18".	
6. The fiber rolls should be fastened to the hardwood stakes with rope.	
7. 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:	
1. 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.	
2. Remove accumulated sediment when it reaches one-quarter of the height of the roll.	
3. Repair eroded and damaged areas.	
4. If ponding becomes excessive, rolls should be removed and either reconstructed or new product installed.	

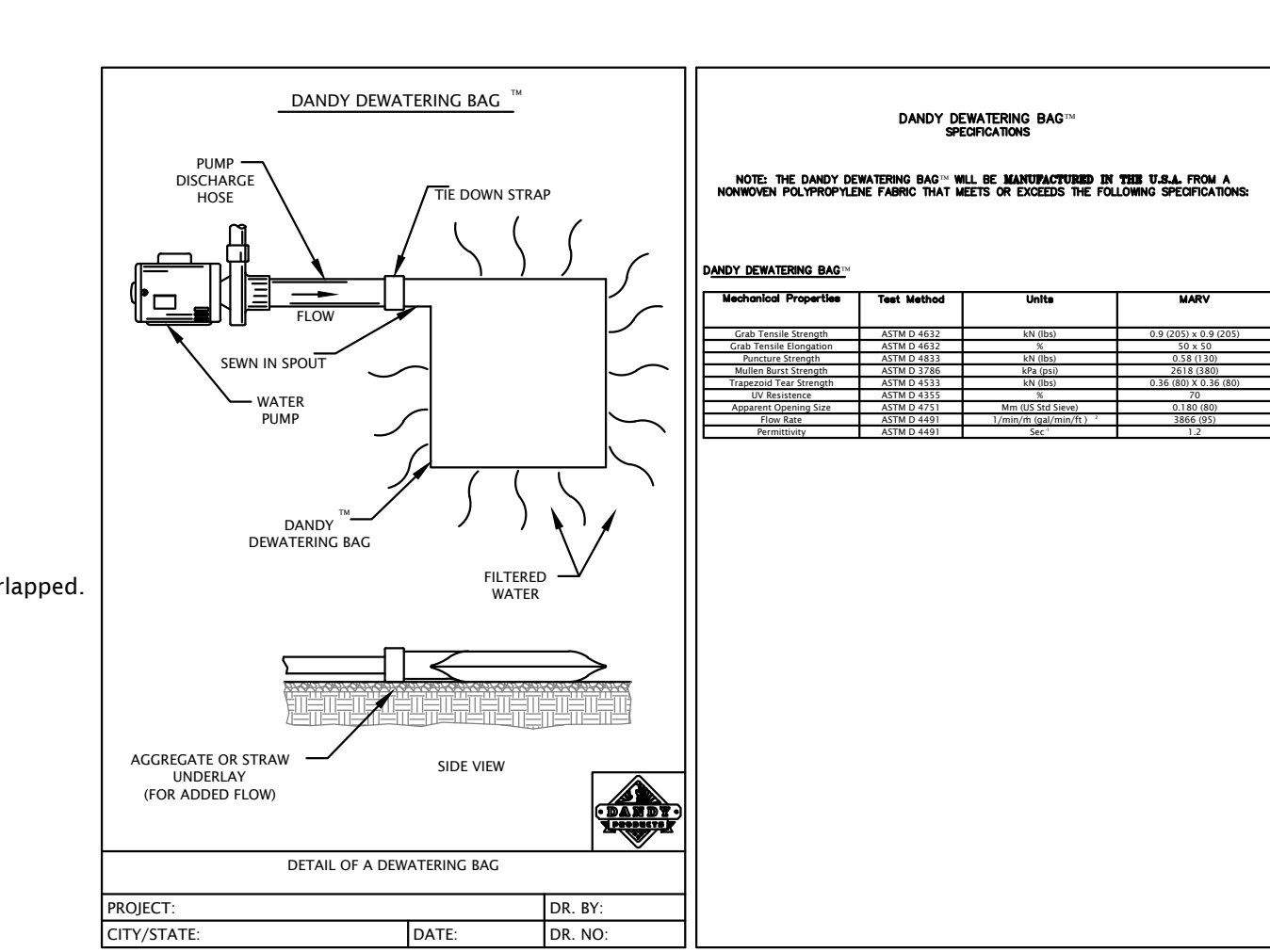
SEDIMENT BASINS

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:	
1. 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.	
2. The basin shall be lined with a geotextile fabric. 9" of 4" riprap shall be placed all around the inside of the basin.	

MAINTENANCE:	
1. The basins should be inspected weekly and after each rainfall event.	
2. Replace and restore any basin bank erosion.	
3. Repair or replace any displaced riprap.	
4. 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:	
1. At location of the dewatering pump outfall.	
2. Size the bag to the discharge rate, the maximum bag size may limit the discharge rate of the pump.	
3. Connect bag to pump outfall per manufacturer's instructions.	
4. Install bag upstream of the receiving structure location.	
5. Outlet to grass area if possible.	
MAINTENANCE:	
1. The basins should be inspected prior to each use.	
2. Replace bag when it is half full.	



PROJECT:	CITY/STATE:	DATE:	DR. BY:	DR. NO.:
SCALE: 1" =				



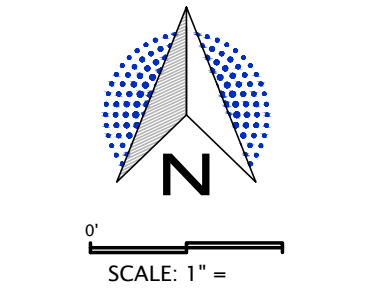
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F: (219) 662-2740
www.dvgteam.com



Centennial Village LLC.
9615 Boulevard Drive
Highland, Indiana 46322

DATE:	REVISIONS AND NOTES:

Centennial Village Bldg. F
Munster, Indiana
Storm Water Pollution Prevention Plan Details

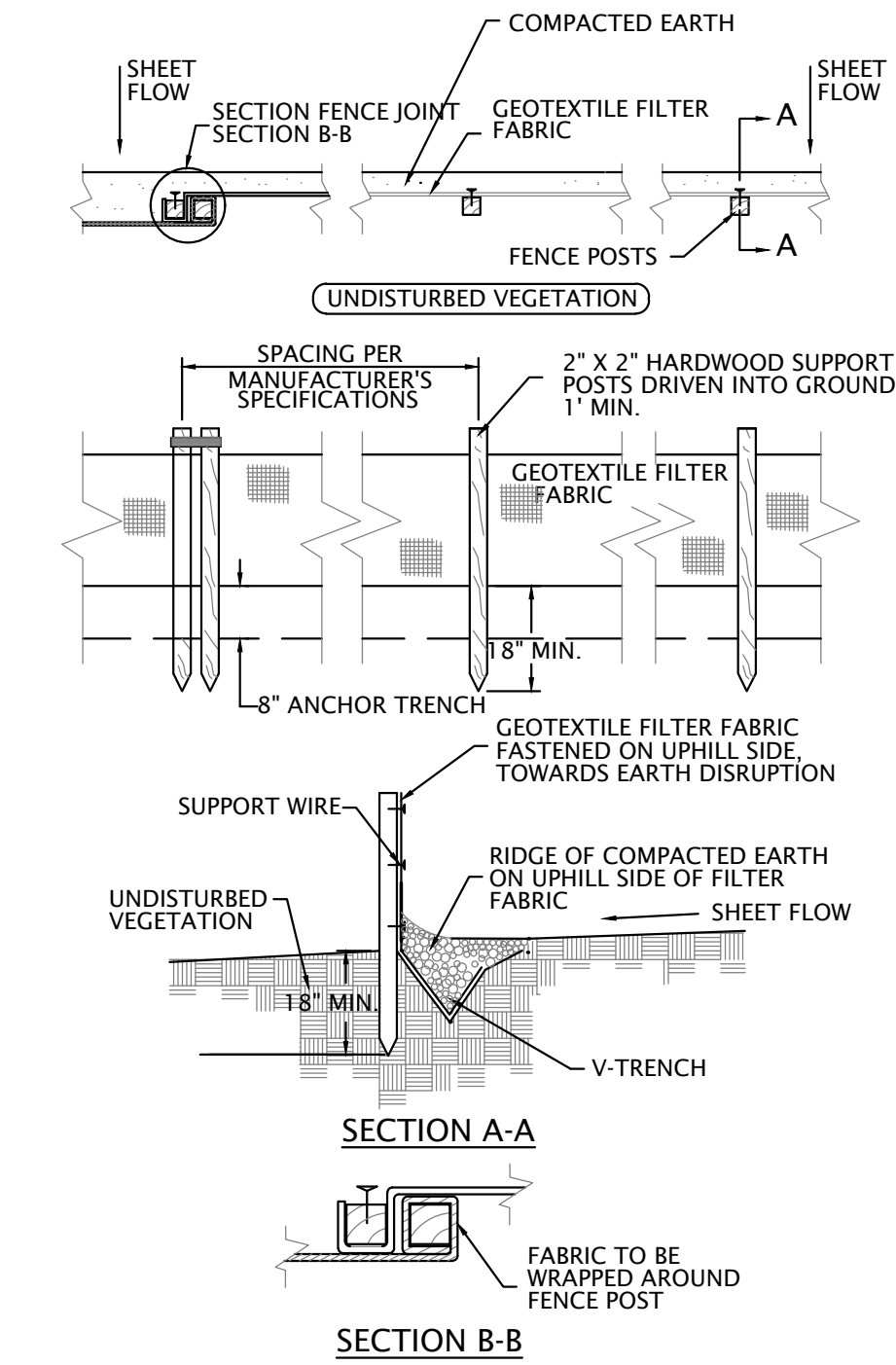


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DESIGN BY RJP	DATE 06/29/18
PROJECT NO. 14-C-1011	
C303	

SEDIMENT CONTROL MEASURES (continued)

SILT FENCE

- APPROACH: Pool area flat (less than 1% slope), with sediment storage of 945 cu.ft./acre disturbed.
- MATERIAL: Amco 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.



- 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. |

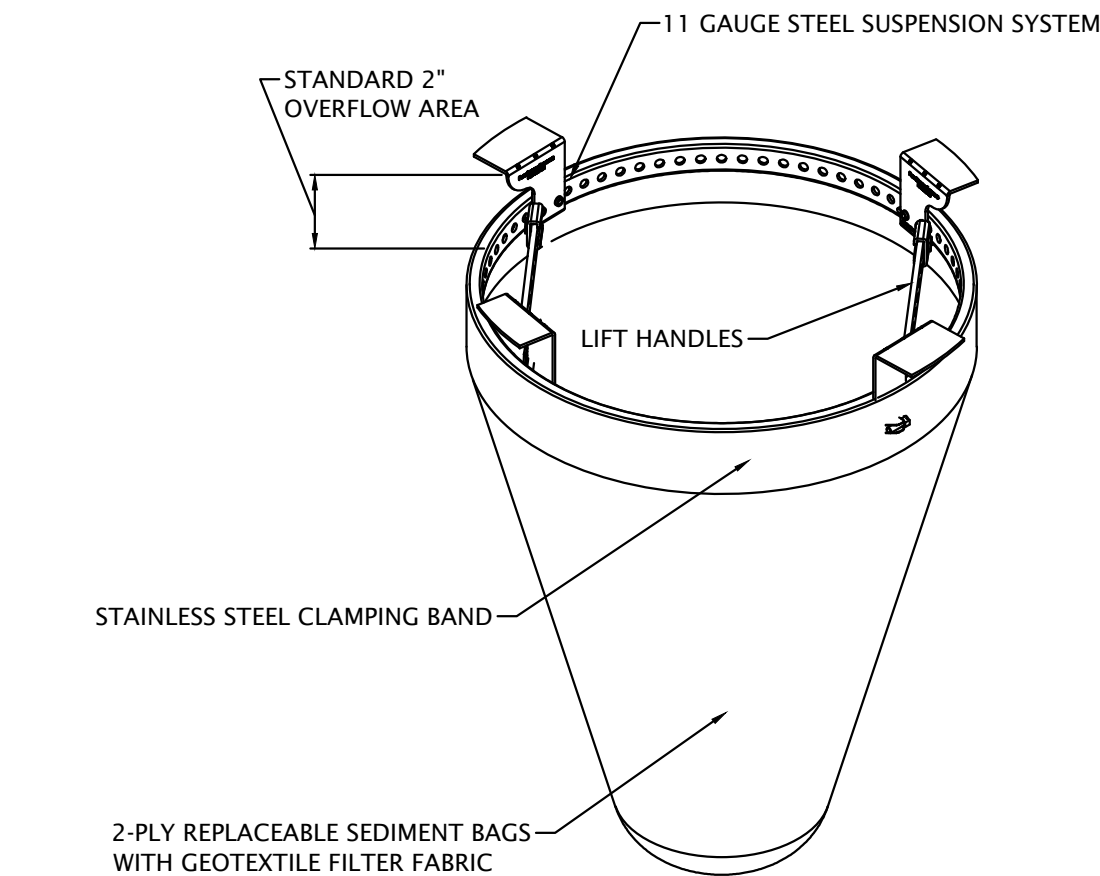
INLET PROTECTION

MATERIAL: Flexstorm Catch-It by ADS, Inc. 1-(866) 287-8655 or approved equal.

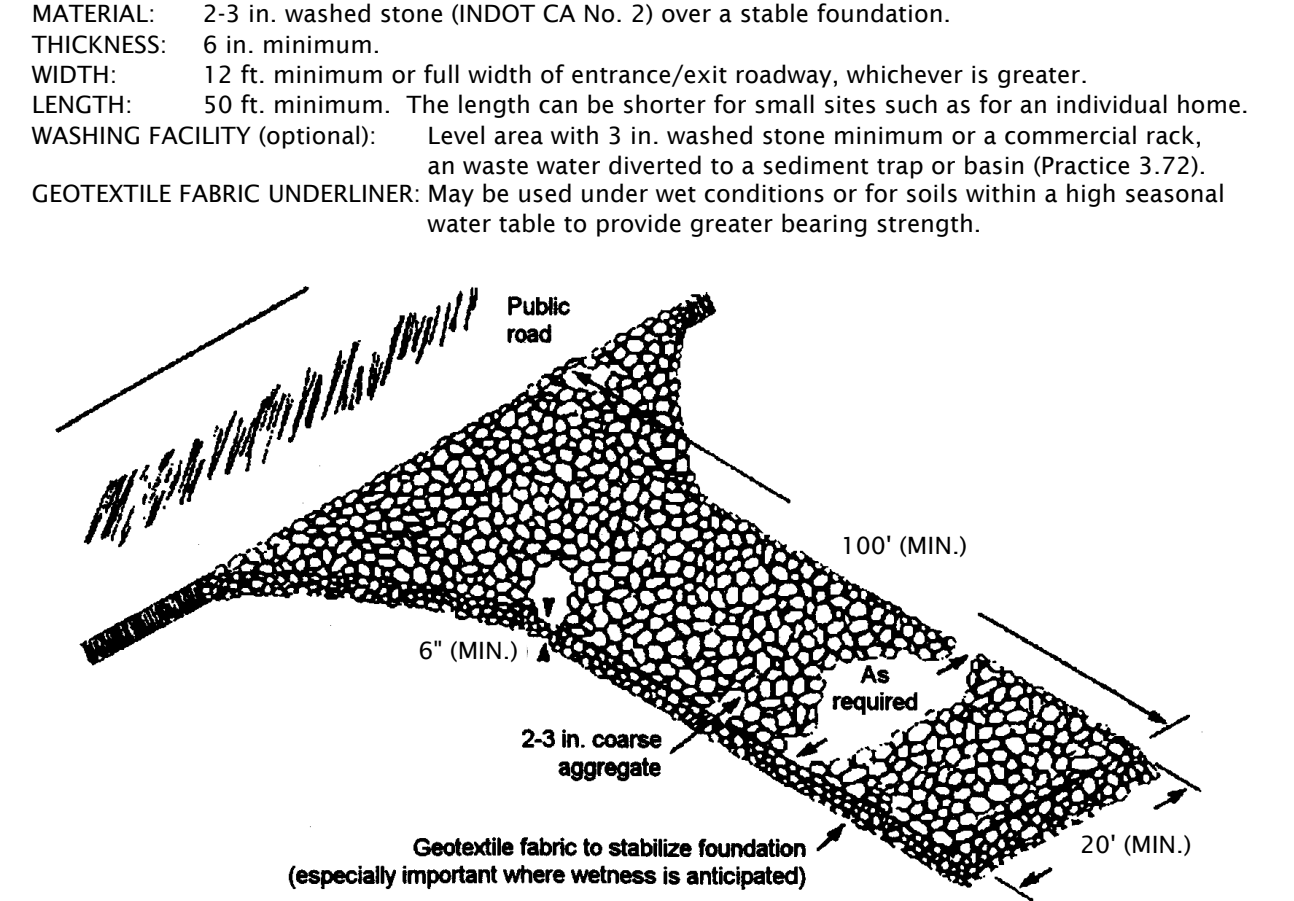
CAPACITY:

	SPECIFICATIONS FOR STANDARD BAGS BY NOMINAL SIZE			
Nominal Bag Size	Solid Storage (CuFt)	FX (Woven)	IL (NonWoven)	
Small	1.6	1.2	0.9	
Medium	2.1	1.7	1.3	
Large	3.8	2.7	1.9	
XL	4.2	3.6	2.6	

- INSTALLATION
1. REMOVE GRATE
NOTE: INSTALL PRIOR TO LAND DISTURBING ACTIVITIES AND/OR IMMEDIATELY AFTER DRAINAGE STRUCTURES HAVE BEEN INSTALLED
 2. DROP INLET PROTECTION ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
 3. REPLACE GRATE

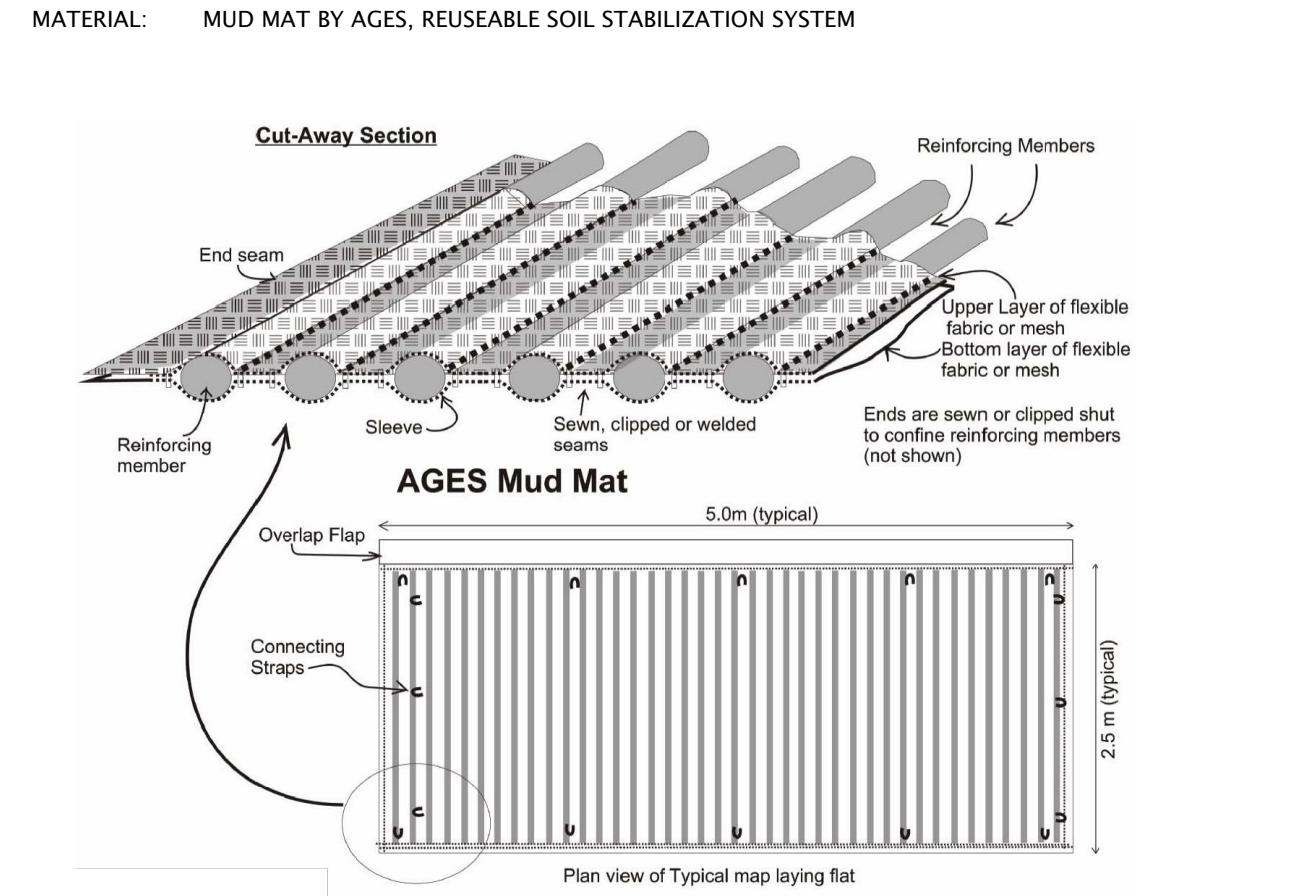


TEMPORARY CONSTRUCTION ENTRANCE/EXIT PAD



- 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

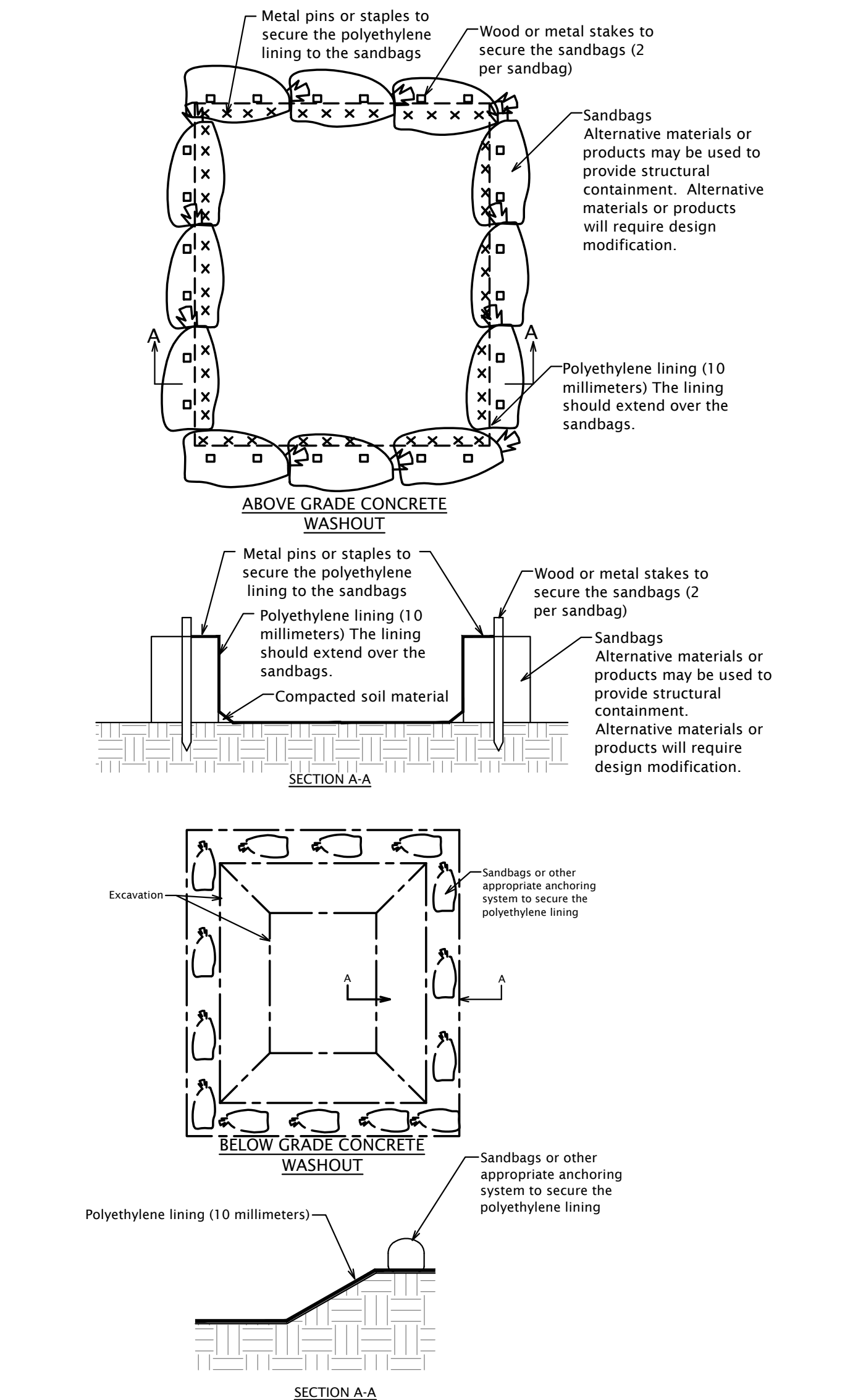


- INSTALLATION
1. Avoid locating on steep slopes or at curves in public roads.
 2. Remove all vegetation and other objectionable material from the foundation area, and grade and crown for positive drainage.
 3. Install per manufacturer's recommendations. Unroll, connect mats together to form area of 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

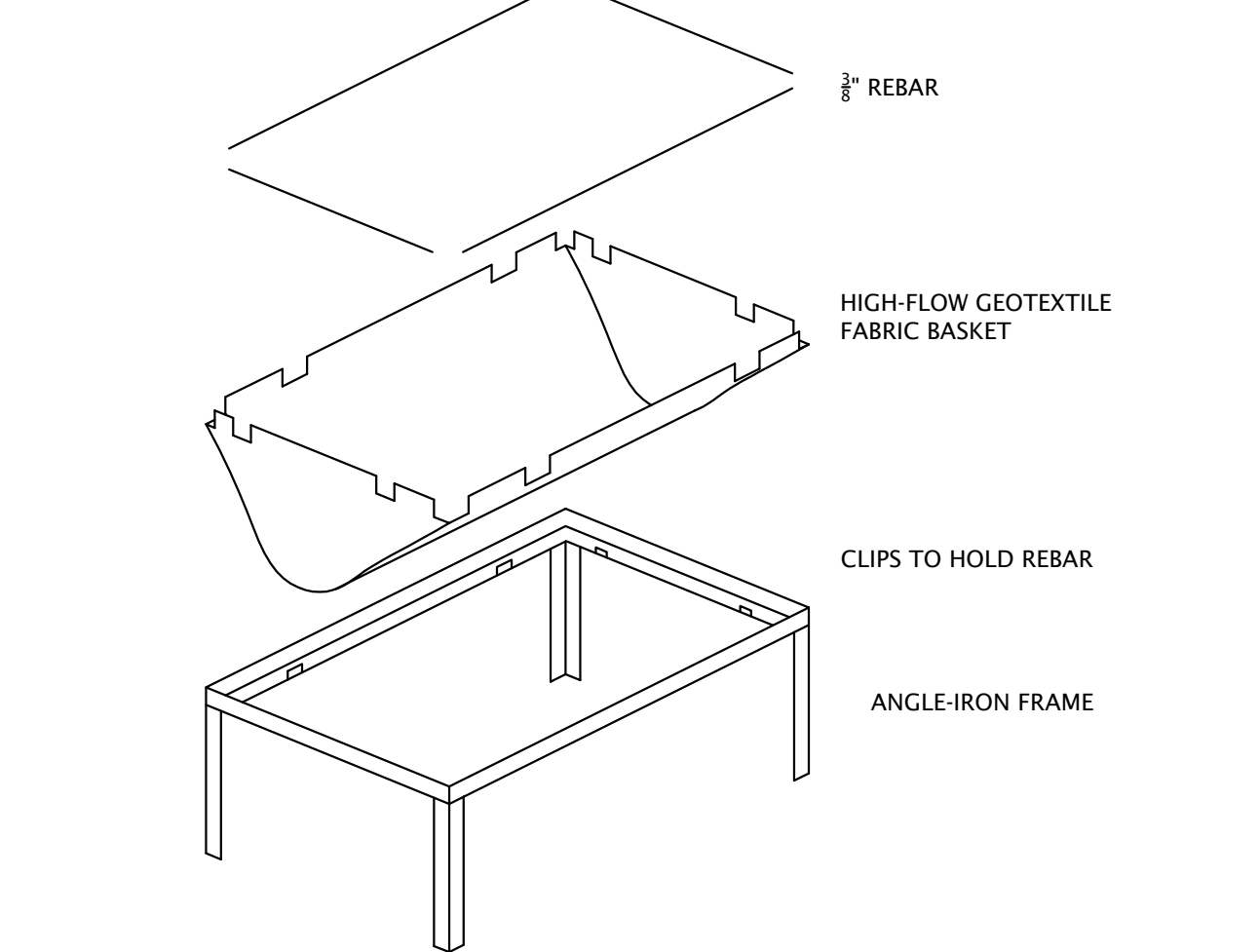
- LOCATION
- Locate concrete washout systems at least 50 feet from any creeks, wetlands, ditches, karst features, or storm drains/manmade conveyance systems.
 - Locate concrete washout systems in relatively flat areas that have established vegetative cover and do not receive runoff from adjacent land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



- 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 Bad 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, sike 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.

DVG

TEAM INC

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Crown Point, IN 46307
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www.dvgteam.com

Russell Jacob Popen

REGISTERED
NO. PE10910667
STATE OF INDIANA
PROFESSIONAL ENGINEER

06-29-2018

Centennial Village LLC.

9615 Boulevard Drive
Highland, Indiana 46322

DATE: REVISIONS AND NOTES:

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Centennial Village Bldg. F
Munster, Indiana

Storm Water Pollution Prevention Plan Details

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SCALE: 1" =

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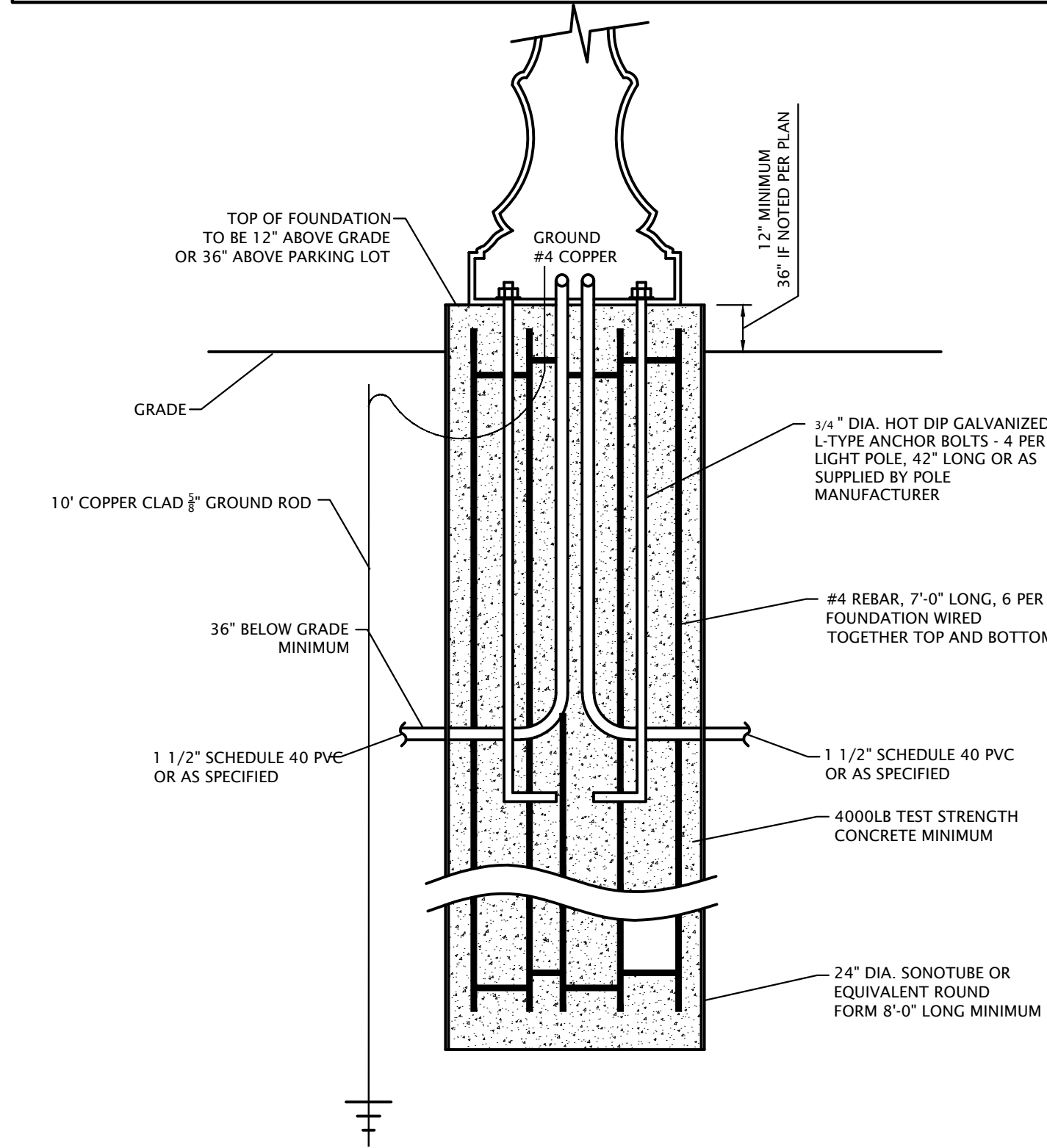
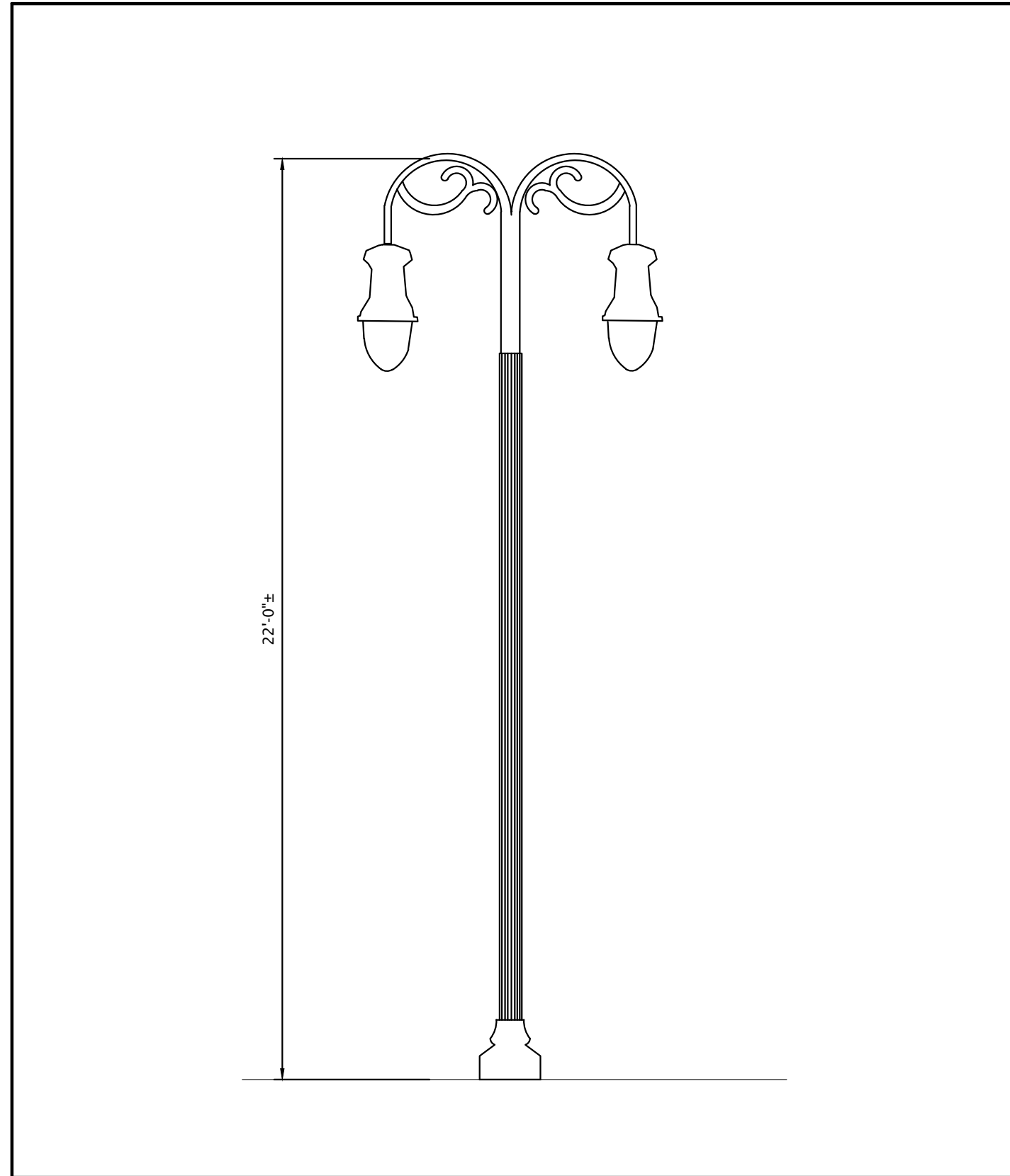
DESIGN BY: RJP

DATE: 06/29/18

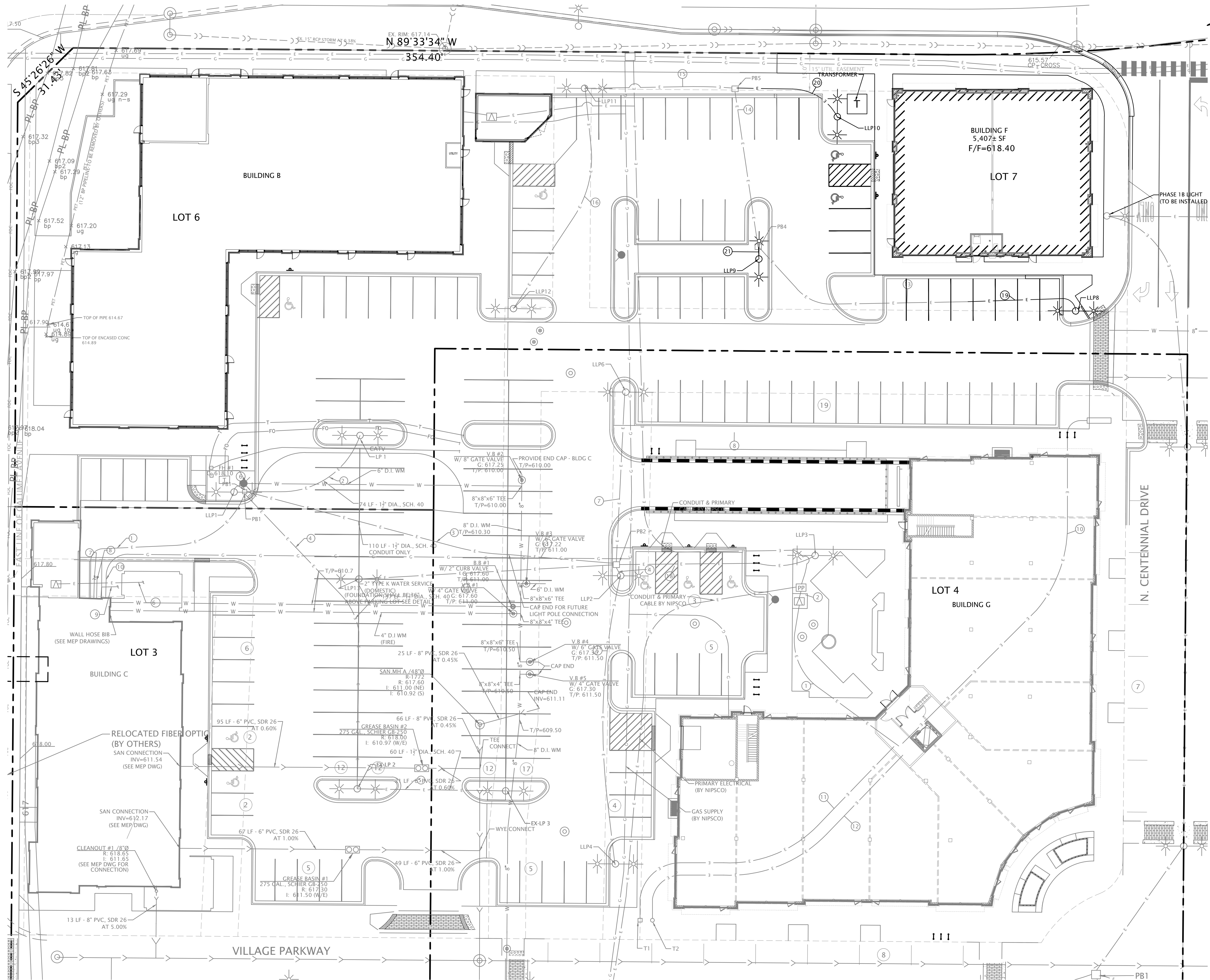
PROJECT NO. 14-C-1011

C304

LIGHTING ELEVATION - SEE EQUIPMENT SCHEDULE



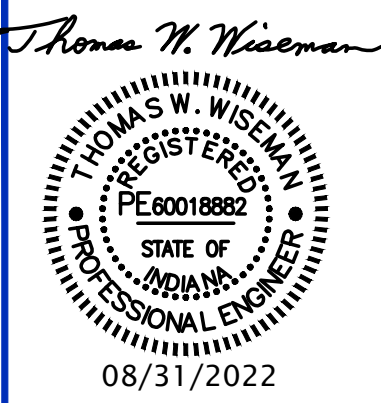
- ORNAMENTAL LIGHT POLE FOUNDATION DETAIL
SCALE: NTS
- NOTE:
- IF SOIL IS STABLE, 3 FT. SONOTUBES MAY BE USED IN THE TOP OF THE FOUNDATION AND THE CLAY SIDES OF THE AUGURED HOLE WILL FORM THE REMAINDER.
 - DEPTH OF FOUNDATION PER POLE MANUFACTURER'S SPECIFICATIONS, BUT NOT LESS THAN 7' BELOW GRADE.
 - ALL CONDUCTORS IN CONDUITS TO BE THWN OR XLP-XHHW COPPER.
 - ALL CONDUITS TRENCHED 36" BELOW GRADE MINIMUM.
 - LIGHT POLES RECEPTACLES CONNECT DIRECTLY TO ELECTRICAL PANEL 20A BREAKERS.



- LEGEND
- LP LIGHT POLE
 - CONDUIT & CONDUCTORS
 - PULL BOX
 - AT&T OR COMCAST PEDESTAL
 - AT GRADE AT&T OR COMCAST CONNECTION VAULT



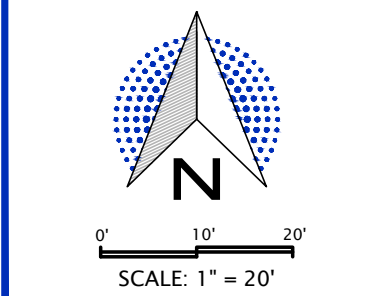
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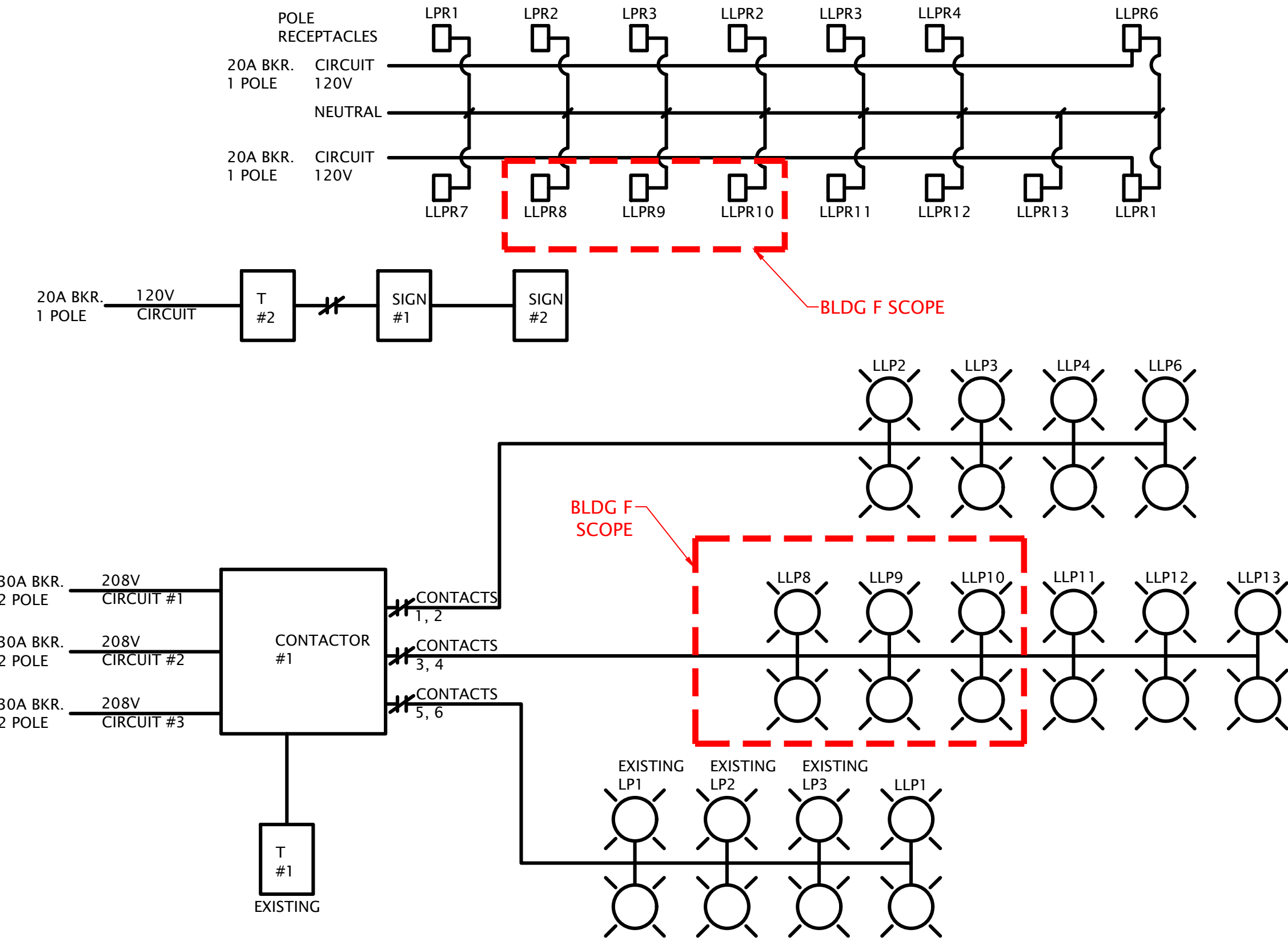
Centennial Village LLC.
9615 Boulevard Drive
Highland, Indiana 46322

DATE:	REVISIONS AND NOTES:

Centennial Village Bldg. F
Munster, Indiana
LIGHTING, POWER & TELECOM PLAN



DESIGN BY RJP	DATE 07/18/22
PROJECT NO. 14-C-1011	
E101	



- NOTES:
- All work shall conform to National, State, and Munster electrical codes.
 - Lighting pole foundation design shown assumes hard pack clay soil. Foundations may need to be deeper, if soil type and compaction is different.
 - All other lighting pole foundations to extend 12-inches above grade.
 - Timers, contactors, and other equipment shown in the Electrical Equipment Schedule shall be installed in the Common Area Utility Rooms near to main power panel.
 - Underground conduit shall be PVC Schedule 40
 - Ground conductor shall be connected to ground rod at each pole, the pole, and the lighting fixture. Ground conductors from all poles shall be bonded together at their first point of junction.
 - Provide 5 amp, in-line fuses on each lighting pole circuit riser leg accessible from the hand hole at the base of each pole.

Centennial Village, Building "F" Outdoor - Electrical Equipment Schedule						
Item	Quantity	Brand	Size	Volts	Description	Type
LLP8-10	3	Holophane	P50S	208	Memphis MPL3P50S40KMVOLTGTG4QSMBK	LED
LLP8-10	3	Holophane	18 ft	N/A	Wadsworth WDA18L5JL17P12ABGBKR60A	Alum. Pole
LLP8-10	3	Holophane	54 inches	N/A	Double Arm CVC542-CA/BK	Aluminum
LLP8-10	3	Holophane	Duplex	120	Pole Recept., R60A, w/cover FGIUS-S60H	Aluminum

Centennial Village, Bldgs "F" - Sign, Power, Tele-com, Ltg Conduit Routing and Wiring Schedule					
Conduit	Dia.Inches	From	To	Conductors/Size/Description/Notes	Est.Length Ft.
19	1.5	PB4	LLP8	2c8,2c6,1c6g Lighting(2c#8) & Receptacle(2c#6)	41
20	1.5	PB5	LLP10	2c8,2c6,1c6g Lighting(2c#8) & Receptacle(2c#6)	45
21	1.5	PB4	LLP9	2c8,2c6,1c6g Lighting(2c#8) & Receptacle(2c#6)	5

Diagram showing the Memphis Utility Tear Drop LED 2 luminaire. The diagram includes a table of dimensions and a table of specifications. The table of dimensions shows the luminaire's size in inches and feet. The table of specifications shows the luminaire's voltage, color, and other details. The diagram also includes a table of accessories and a table of options.

Diagram showing the Wadsworth Series Pole luminaire. The diagram includes a table of dimensions and a table of specifications. The table of dimensions shows the luminaire's size in inches and feet. The table of specifications shows the luminaire's voltage, color, and other details. The diagram also includes a table of accessories and a table of options.

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Centennial Village Bldg. F
Munster, Indiana
Site Electrical Details

Centennial Village LLC.
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Highland, Indiana 46322

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Crown Point, IN 46307
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www.dvgteam.com

DESIGN BY
RJP

DATE
07/18/22

PROJECT NO.
14-C-1011

E201

WADSWORTHTM Aluminum Pole

Architectural Outdoor

HOLOPHANE[®]
An Acuity Brands Company

ORDER #:
TYPE: LUM
SIZE: 100/13
DATE: 10/11/2018
DWG #: POL-WDA

Performance Data. For skirt and house side shield options, consult factory or website.

LED Package	Glass Distribution	Watts	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	
P10S	TG3	TSS	57	6,947	122	1	3	3	7,101	125	1	3	3	7,451	131	1	3	3	7,400	130	1	3	3
TG4	TAM	57	6,946	117	3	3	3	6,793	119	3	3	3	7,128	125	3	3	3	7,079	124	3	3	3	
BG3	TAM	57	6,731	118	2	3	3	6,880	121	2	3	3	7,240	127	2	3	3	7,170	126	2	3	3	
BG5	TSS	57	7,087	124	3	3	3	7,244	127	3	3	3	7,601	133	3	3	3	7,549	132	3	3	3	
SG3	TSS	57	6,822	120	1	3	3	6,973	122	1	3	3	7,317	128	1	3	3	7,266	127	1	3	3	
SG5	TSS	57	7,164	126	3	2	1	7,322	129	3	2	1	7,683	135	3	2	1	7,631	134	3	2	1	
TG3	TSS	75	8,651	115	1	5	3	8,843	118	1	5	3	9,279	124	1	5	3	9,215	123	1	5	3	
BG3	TAM	75	8,372	112	2	5	3	8,558	114	2	5	3	8,980	120	2	5	3	8,918	119	2	5	3	
BG5	TSS	75	8,838	118	3	5	2	9,034	120	3	5	2	9,460	126	3	5	2	9,415	125	3	5	2	
SG3	TSS	75	8,422	112	1	5	2	8,609	115	1	5	2	9,033	120	1	5	2	8,972	120	1	5	2	
BG5	TSS	75	8,647	115	2	5	3	8,839	118	2	5	3	9,275	124	2	5	3	9,211	123	2	5	3	
TG3	TSS	83	9,610	116	2	3	3	9,823	118	2	3	3	10,308	124	2	3	3	10,237	123	2	3	3	
TG4	TAM	83	9,193	111	3	3	3	9,397	113	3	3	3	9,861	119	3	3	9,793	118	3	3	3		
BG3	TAM	83	9,312	112	2	3	4	9,519	115	2	3	4	9,988	120	2	3	4	9,919	120	2	3	4	
BG5	TSS	83	9,804	118	3	3	3	10,021	121	3	3	3	10,515	127	3	3	10,443	126	3	3	3		
SG3	TSS	83	9,437	114	1	3	3	9,646	116	1	3	3	10,122	122	1	3	3	10,053	121	1	3	3	
SG5	TSS	83	9,910	119	3	3	2	10,130	122	3	3	2	10,630	128	3	3	2	10,557	127	3	3	2	
TG3	TSS	109	11,551	106	2	5	3	11,807	108	2	5	3	12,389	114	2	5	3	12,304	113	2	5	3	
BG3	TAM	109	11,179	103	2	5	4	11,427	105	2	5	4	11,990	110	2	5	4	11,908	109	2	5	4	
BG5	TSS	109	11,601	108	3	5	3	12,063	111	3	5	3	12,657	116	3	5	3	12,571	115	3	5	3	
SG3	TSS	109	11,245	103	2	5	3	11,495	105	2	5	3	12,061	111	2	5	3	11,979	110	2	5	3	
SG5	TSS	109	11,546	106	2	5	3	11,802	108	2	5	3	12,384	114	2	5	3	12,299	113	2	5	3	
TG3	TSS	118	12,634	107	2	3	3	12,914	109	2	3	3	13,551	115	2	3	3	13,458	114	2	3	3	
TG4	TAM	118	12,086	102	3	3	3	12,354	105	3	3	3	12,984	110	3	3	12,874	109	3	3	3		
BG3	TAM	118	12,242	104	2	3	4	12,513	106	2	3	4	13,130	111	2	3	4	13,041	111	2	3	4	
BG5	TSS	118	12,888	109	4	3	3	13,174	112	4	3	3	13,823	117	4	3	3	13,729	116	4	3	3	
SG3	TSS	118	12,406	105	2	3	3	12,681	107	2	3	3	13,307	112	2	3	3	13,215	112	2	3	3	
SG5	TSS	118	13,028	110	3	3	2	13,317	113	3	3	2	13,974	118	3	3	2	13,879	118	3	3	2	
TG3	TSS	144	14,335	100	2	3	4	14,683	102	2	3	4	15,375	107	2	3	4	15,270	106	2	3	4	
TG4	TAM	144	13,715	91	4	3	4	14,018	97	4	3	4	14,719	102	4	3	4	14,607	101	4	3	4	
BG3	TAM	144	13,890	96	3	3	5	14,198	92	3	3	5	14,898	103	3	3	5	14,796	103	3	3	5	
BG5	TSS	144	14,623	102	4	3	3	14,948	104	4	3	3	15,685	109	4	3	3	15,577	108	4	3	3	
SG3	TSS	144	14,077	98	2	3	3	14,389	100	2	3	3	15,088	105	2	3	3	14,995	104	2	3	3	
SG5	TSS	144	14,782	103	4	3	2	15,110	105	4	3	2	15,855	110	4	3	2	15,747	109	4	3	2	
TG3	TSS	140	15,649	112	3	3	4	15,986	114	3	3	4	16,785	120	3	3	4	16,670	119	3	3	4	
TG4	TAM	140	14,970	107	4	3	4	15,303	109	4	3	4	16,057	115	4	3	4	15,946	114	4	3	4	
BG3	TAM	140	14,745	105	3	4	5	15,073	108	3	4	5	15,816	113	3	4	5	15,707	112	3	4	5	
BG5	TSS	140	15,484	111	4	3	4	15,827	113	4	3	4	16,608	119	4	3	4	16,494	118	4	3	4	
SG3	TSS	140	14,937	107	2	3	4	15,268	109	2	3	4	16,021	114	2	3	4	15,911	114	2	3	4	
SG5	TSS	140	16,071	115	4	3	3	16,427	117	4	3	3	17,237	123	4	3	3	17,119	122	4	3	3	
TG3	TSS	174	18,715	108	3	3	4	19,100	110	3	3	4	20,079	116	3	3	4	19,955	115	3	3	4	
TG4	TAM	174	17,903	103	4	3	4	18,301	105	4	3	4	19,203	110	4	3	4	19,071	110	4	3	4	
BG3	TAM	174	17,634	101	3	4	5	18,025	104	3	4	5	18,914	109	3	4	5	18,794	108	3	4	5	
BG5	TSS	174	18,617	106	4	4	3	19,028	109	4	4	3	19,951	114	4	4	3	19,825	113	4	4	3	
SG3	TSS	174	17,863	103	2	3	4	18,259	105	2	3	4	19,160	110	2	3	4	19,028	109	2	3	4	
SG5	TSS	174	19,219	110	4	3	3	19,645	113	4	3	3	20,614	118	4	3	3	20,472	118	4	3	3	
TG3	TSS	242	22,867	95	3	5	5	23,468	97	3	5	5	24,467	102	3	5	5	24,347	101	3	5	5	
TG4	TAM	242	21,999	91	4	3	4	22,448	93	4	3	4	23,597	98	4	3	4	23,434	97	4	3	4	
BG3	TAM	242	21,670	90	3	4	5	22,190	92	3	4	5	23,244	96	3	4	5	23,083	95	3	4	5	
BG5	TSS	242	22,755	94	5	4	5	23,259	96	5	4	5	24,409	101	5	4	5	24,239	100	5	4	5	
SG3	TSS	242	21,651	91	3	5	5	22,438	93	3	5	5	23,645	97	3	5	5	23,503	97	3	5	5	
SG5	TSS	242	23,617	98	4	3	3	24,141	100	4	3	3	25,331	105	4	3	3	25,197	104	4	3	3	

Lumen Ambient Temperature Data

°C	P10S	P10S	P10S	P10S	P10S	P10S	P10S	P10S
10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
30	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
40	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97

Lumen Maintenance Data

Hours	Factor	1	0.9	0.84	0.75
25,000					
50,000					

Memphis[®] Utility Tree Drop LED 2

ORDER #:
TYPE: LUM
DRAWN: RAF
DATE: 10/11/2018
DWG NO: LUM MPL2

MEMPHIS[®] UTILITY TREE DROP LED 2

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LITHONIA LIGHTING

FEATURES & SPECIFICATIONS

INTENDED USE:
Provides maintenance-free general illumination for outdoor use in residential and commercial applications such as retail, education, multi-unit housing and storage, ideal for lighting building facades, parking areas, walkways, garages, loading areas and any other outdoor space requiring reliable safety and security.

CONSTRUCTION:
Sturdy weather-resistant aluminum housing with a bronze finish. A clear polycarbonate lens protects the optics from moisture, dirt and other contaminants.

100lm performance 5000K LEDs are powered by a LED-wireless that uses 35 input watts and provides 2,300 delivered lumens, 50,000 hour average LED life means no lamp replacement. Failure is maintenance-free.

Operating temperature -49°C to 49°C.

Adjustable. Push-to-down, photocell standard automatically turns light on at dusk and off at dawn for convenience and energy savings.

Photocell can be disabled by rotating the photocell cover.

INSTALLATION:
Wall or arm mount (mounting arm sold separately).

All mounting hardware included.

LISTINGS:
UL Certified to US safety standards. Wall location listed.

Tested in accordance with ENEC LM-79 and LM-80 standards.

WARRANTY:
Five-year limited warranty.

Full warranty terms located at: www.lithonia.com/AboutUs/OurProducts/LED%20Outdoor%20Lighting

Note: Specifications subject to change without notice.

Outdoor General Purpose OLAW23
LED AREA / WALL LIGHT

Specifications:
All dimensions are in inches (millimeters).

ORDERING INFORMATION: For shortest lead times, configure products using bolded options.

Example: OLAW23 53K 120 PE BZ

Series	LED Area / Wall Light	Color temperature	Voltage	Features	Photocell Included	Finish
OLAW23	53K	120	PE	BZ		BZ
OLAW23	53K	120	PE	BZ		BZ

Accessories: Order as separate catalog number.

OLAW23 14" Steel mounting arm.

DECORATIVE INDOOR & OUTDOOR

CVC Series Aluminum Roadway Arms

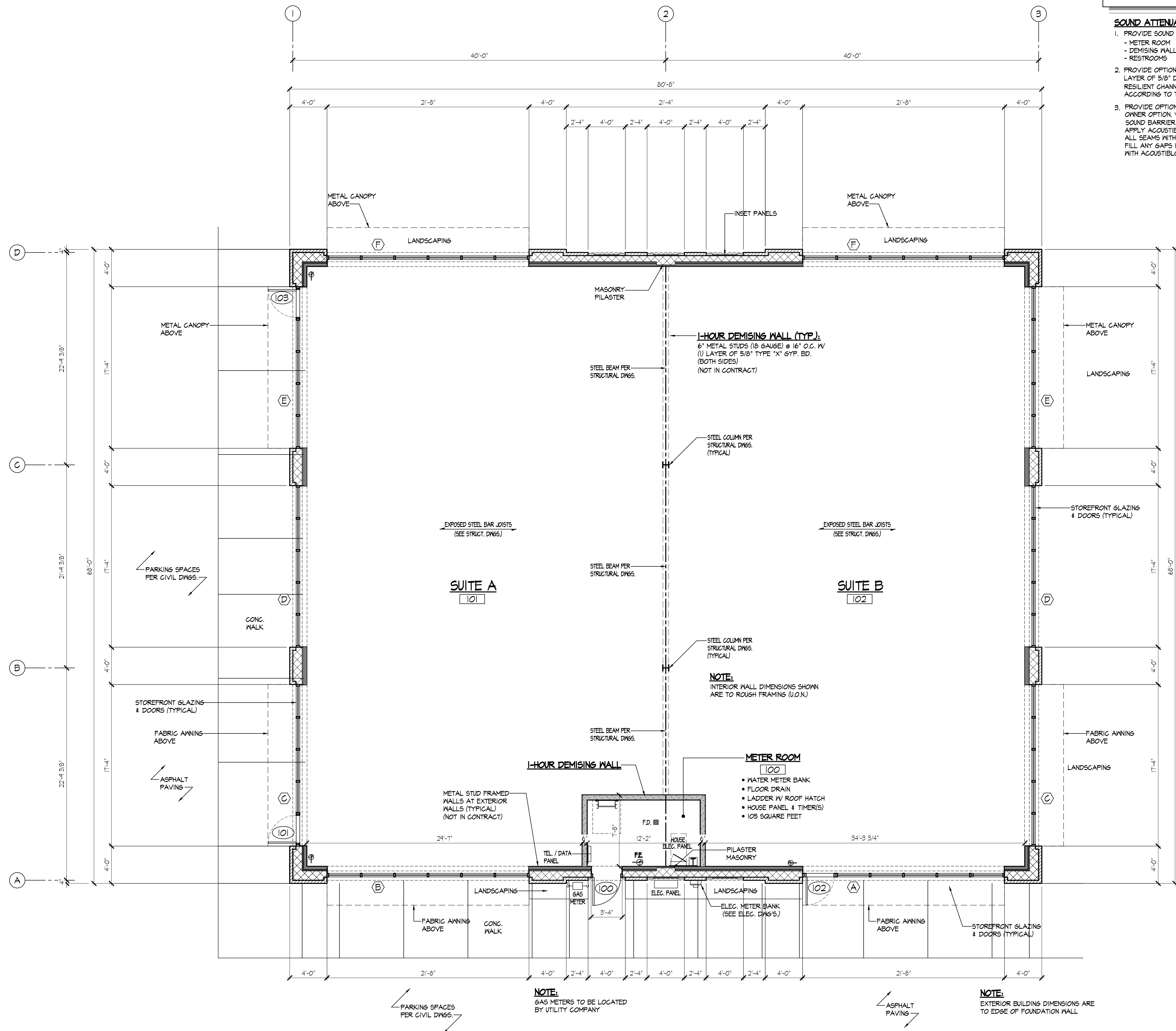
orientation

CVC27/1 (one way arm)

orientation

CVC54/2 (two way 180°)

orientation



FLOOR PLAN
TOTAL BUILDING SQUARE FEET: 5,407

SCALE: 3/16" = 1'-0"



EXTERIOR WALL:

- BRICK VENEER
- MASONRY UNITS
- 2" RIGID INSULATION (R-10)
- NEW 3-5/8" METAL STUDS @ 16" O.C.
- R-15 BATT INSULATION
- (1) LAYER 5/8" GYPSUM BOARD

NEW FRAME WALL:

- 3 5/8" OR 6" METAL STUDS @ 16" O.C.
- WALL BRACINGS ABOVE CEILING
- PROVIDE SOUND ATTENUATION BATTS AS NOTED BELOW

1 HOUR FIRE-RATED DEMISING WALL CONSTRUCTION:
UL DESIGNATION U4H

NON LOAD-BEARING WALL

- (1) LAYERS 5/8" TYPE "X" GYPSUM BOARD ON BOTH SIDES OF
- 6" METAL STUDS @ 16" O.C.
- EXTENDED TO UNDERSIDE OF EXISTING ROOF DECK
- PROVIDE SOUND ATTENUATION BATTS
- SEE SOUND ATTENUATION NOTE 2 & 3 BELOW

SOUND ATTENUATION NOTES:

- PROVIDE SOUND ATTENUATION BATT INSULATION AT THE FOLLOWING ROOM TYPES:
 - METER ROOM
 - DEMISING WALLS
 - RESTROOMS
- PROVIDE OPTIONAL HORIZONTAL RESILIENT METAL CHANNELS WITH ADDITIONAL LAYER OF 5/8" DRYWALL AS APPROVED BY OWNER. RESILIENT CHANNELS TO BE RCI-1 DELUX BY "DIETRICH" AND INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
- PROVIDE OPTIONAL SOUND BARRIER MATERIAL AT DEMISING WALLS (ONE SIDE) AS AN OWNER OPTION. VERIFY WITH OWNER. SOUND BARRIER MATERIALS TO BE ACoustiBLOK. APPLY ACoustiBLOK SOUND SEALANT WITHIN OVERLAP AREA AND SEAL ALL SEAMS WITH ACoustiBLOK TAPE. FILL ANY GAPS IN THE ANNULAR SPACE AROUND PIPES AT FLOORS AND WALLS WITH ACoustiBLOK SOUND SEALANT. PROVIDE NEOPRENE STRIPS AS REQUIRED.

GENERAL NOTES

- ALL DIMENSIONS FOR NEW WALLS ARE TO ROUGH (U.O.N.).
- DIMENSIONS FROM EXISTING EXTERIOR WALLS ARE TO EXISTING MASONRY OR NEW FRAMING.
- ALL INTERIOR WALLS ARE 3 5/8" METAL STUDS @ 16" O.C. UNLESS OTHERWISE NOTED.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.
- ALL TRADES SHALL COMPLY WITH OSHA STANDARDS.
- CARPENTERS TO VERIFY ALL DIMENSIONS & CONDITIONS BEFORE EXECUTING ANY WORK & REPORT ANY DISCREPANCIES AT ONCE.
- ALL FRAMING SHALL MEET APPLICABLE LOADS & SPANS, INCLUDING FINISH FLOORING.
- ENGINEERED LUMBER SHALL NOT BE CUT, DRILLED OR NOTCHED UNLESS SPECIFICALLY INCLUDED IN THE DESIGN.
- NEW INTERIOR PARTITIONS LOCATED UNDER HVAC DROPS TO BE CONSTRUCTED TO THE UNDERSIDE OF SUSPENDED ACOUSTIC CEILING.
- MAINTAIN A MINIMUM OF 2" CLEARANCE BETWEEN FLUES & WOOD FRAMING MEMBERS.
- PROVIDE FIRE-RATED WOOD BLOCKING FOR WALL-MOUNTED GRAB BARS, ACCESSORIES & FIXTURES AS REQUIRED PER CABINET & EQUIPMENT DRAWINGS.
- HANDICAPPED ACCESSIBLE SIGNAGE TO COMPLY WITH STATE AND LOCAL CODES.

GENERAL ROOF NOTES

- ALL ROOFING WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA) ROOFING AND WATERPROOFING MANUAL, LATEST EDITION.
- FLASH ALL DRAINS, CURBS, VENTS AND STACKS AS SHOWN ON PLANS. REFER TO MANUFACTURER'S STANDARD DETAILS AND RECOMMENDATIONS FOR ANY MISCELLANEOUS DETAILS NOT SHOWN IN THE PLANS.
- INSTALLED TAPERED CRICKETS ON UP-SLOPE SIDE OF CURBS 24" OR MORE WIDE. CRICKETS SHALL HAVE A 1/4" PER FOOT MINIMUM FINISHED SLOPE AWAY FROM CURB AND VALLEYS DIRECTING WATER TO THE CURB'S SIDES.
- ARROWS ON THE PLAN INDICATE DIRECTION OF DRAINAGE FOR MEMBRANE ROOF OR TAPERED INSULATION SYSTEM. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS OF BUILDING AND DRAIN LOCATIONS PRIOR TO ORDERING TAPERED INSULATION MATERIALS.
- ROOF TOP HVAC UNITS TO BE SET ON MINIMUM 12" HIGH ROOF CURB. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. EXACT SIZE AND LOCATION OF UNITS WILL BE DETERMINED BY TENANT.
- PROVIDE VENT THROUGH ROOF WITH INSECT SCREEN FOR FUTURE EXHAUST FAN OR SANITARY VENT PIPE. EXACT LOCATIONS WILL BE DETERMINED BY TENANT. REFER TO PLUMBING DRAWINGS.
- PROVIDE PREINSULATED GALVANIZED STEEL ROOF DRAIN PANS (6" DIA. ROOF DRAINS WITH SLOPING 2X2" SUMP PANS AND INTERIOR DOWNSPOUT).
- PROVIDE 6" DIA SCREENED OVERFLOW STANDPIPE 3" ABOVE ROOF DRAIN SUMP WITH OUTLET THROUGH REAR EXTERIOR WALL, TYPICAL AT EACH OVERFLOW DRAIN.
- PROVIDE GUT FLASHING AND COUNTERFLASHING AT PERIMETER AS REQUIRED BY MANUFACTURER. DOWNSPOUTS TO CONNECT TO STORM WATER DRAINAGE SYSTEM OUTSIDE OF BUILDING. REFER TO CIVIL DRAWINGS FOR THE LOCATIONS OF STORM WATER COLLECTION PIPES.

ROOF CONSTRUCTION

- FULLY ADHERED MEMBRANE ROOFING MATL ON 2 LAYERS OF 4" (MIN) STAGGERED RIGID INSUL. (R-20) ON FULLY ADHERED MEMBRANE AIR BARRIER OVER EXISTING RIBBED METAL DECKING OVER EXISTING OPEN-WEB STEEL BAR JOISTS
- PROVIDE EXPANSION JOINTS IN MEMBRANE WHERE REQUIRED.
- PROVIDE SADDLES AT ROOF TOP UNITS AS REQUIRED (TYP).

GENERAL NOTES

- PROVIDE FIRE-TREATED WOOD BLOCKING FOR WALL-MOUNTED FIXTURES & ACCESSORIES AS REQUIRED.
- VERIFY ALL FIXTURE & ACCESSORY LOCATIONS W/ LANDLORD.
- ALSO SEE REFLECTED CEILING PLAN & POWER PLAN.

GENERAL STRUCTURAL NOTES

- SEE STRUCTURAL DRAWINGS FOR SIZE & LOCATION OF:
 - STEEL COLUMNS, BEAMS, JOISTS, ANGLES, PLATES, LINTELS & BEARING REQUIREMENTS.
 - EXTERIOR WALL / PARAPET BACK BRACING.
 - FOOTINGS, FOUNDATION WALLS, SLABS & REINFORCING REQUIREMENTS.
- COORDINATE ARCHITECTURAL DRAWINGS WITH STRUCTURAL DRAWINGS.

CENTENNIAL VILLAGE
BUILDING F
9600 NORTH CENTENNIAL DRIVE
MUNSTER, INDIANA 46321

ROHN ASSOCIATES
ARCHITECTS & PLANNERS
13477 RHODE STREET
CEDAR LAKE, IN 46303
PHONE: (708) 906-4670

PRELIMINARY
NOT FOR CONSTRUCTION
REVISIONS REQUIRED
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ARCHITECT'S SEAL

ISSUE FOR:	
5/14/22	DESIGN
5/20/22	DESIGN
5/23/22	DESIGN
5/25/22	DESIGN
6/17/22	BID/PERMIT
8/30/22	REVISIONS

FLOOR
PLAN

SCALE: AS NOTED
PROJECT NO.: 22-600

A2

MASONRY

[illegible]

Type

LOCATION / I.D.	TYPE	FINISH	COLOR
STOERENANT & MINION PLANNING	KAMMER, EFCO OR EQUIVALENT	PRE-FINISHED	BLACK
PARADEY COPIING	PAC-LAD PETROBRON OR EQUAL	PRE-FINISHED	T.B.D.
HOLLOW METAL DOORS & PANELS	T.B.D.	T.B.D.	T.B.D.
VERTICAL CANNOPY	PAC-LAD PETROBRON OR EQUAL	KNURR BOO	T.B.D.

ZIN

LOCATION / I.D.	MANUFACTURER	TYPE / DESCRIPTION
STOREFRONT & WINDOW FRAMING	KAWNEER EFCO OR EQUIVALENT	1" CLEAR INSULATED

OFFICE

LOCATION / I.D.	MANUFACTURER	SERIES	COLOR
MAIN ROOF	EPDM MEMBRANE	20 YEAR	WHITE

MAY

LOCATION / I.D.	MANUFACTURER	SERIES	COLOR
NORTH/SOUTH ELEVATIONS	T.B.D.	T.B.D.	MATCH EXISTING

NOTES

2. TYPE "S" MORTAR TO BE USED AT LOCATIONS WHERE MASONRY IS IN CONTACT WITH THE GROUND OR AT TOP OF FOUNDATION WALL.





- ## GENERAL STRUCTURAL NOTES
1. SEE STRUCTURAL DRAWINGS FOR SIZE & LOCATION OF:
 - STEEL COLUMNS BEAMS JOISTS ANGLES PLATES LINTELS
 - BEARING REQUIREMENTS
 - EXTERIOR WALL / PARAPET BACK BRACING
 - FOOTINGS FOUNDATION WALLS, SLABS & REINFORCING REQUIREMENTS.
 2. COORDINATE ARCHITECTURAL DRAWINGS WITH STRUCTURAL DRAWINGS.

EXTERIOR FINISH NOTES

NEUTER BLANKET, TYPKOR BLANKET
D/P/N/T: (800) 448-8935
RESISTED SHEET PLYSING, BTZO & BUILDING TAPE
PROTECTOR AND CO. (877) 271-6661
LEAGUE, RESISTED PLYSING
D/P/N/T: (800) 448-8935
EXTRUD METALS AND PLYSING
SHEET METAL PLYSING, PRE-FINISHED METALLIC-COATED STEEL SHEET & FORCED METAL
PHYSICAL PROPERTIES AND COATING PERFORMANCE REQUIREMENTS OF AIAA 2025 COLOR
SELECTED NON STANDARD RANGE.

SOFFITS AND UNDERSIDES OF EXTERIOR CEILINGS, PRE-FORMED VENTED ALUMINUM PANELS AS SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE

PAVILION FOR PETERSEN ALUMINUM (OR EQUIVALENT), (800) 722-2929

QUINCY AND PETERSEN, PRE-FINISHED ALUMINUM, COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE

COLONY BY REYNOLDS AND BUILDING PRODUCTS (OR EQUIVALENT), (201) 922-5500

- BASED FLASHING:	26 GA.
- COUNTER FLASHING:	24 GA.
- FLASHING RECEIVERS:	26 GA.
- CRIP DICES:	24 GA.

ISSUE FOR:	
5/4/22	DESIGN
5/20/22	DESIGN
5/23/22	DESIGN
5/25/22	DESIGN
6/17/22	BID/PERMIT
8/30/22	REVISIONS



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CENTENNIAL VILLAGE
BUILDING F
9600 NORTH CENTENNIAL DRIVE
MUNSTER, INDIANA 46321

Al

SCALE: AS NOTED
PROJECT NO.: 22-600

Centennial Village Building F renderings



1 Perspective from northwest

Centennial Village Building F renderings



2 Perspective from southeast

