# STANDARD CONSTRUCTION DETAILS

AMENDED 11/24, 2025

## DIRECTIONS FOR USE

1) All sheets from the Standard Construction Details shall be attached to the construction drawings and shall be considered part thereto. Individual details that do not apply may be crossed out by design engineer by placing a single large X over the detail. Minor reference notations may be placed adjacent to individual standard titles for coordination. However, the details themselves shall not be modified in any way.

2) Details prepared by outside sources shall not be included in the construction drawings when said details are covered by Standard Construction Details.

3) Details prepared by outside sources covering work which is not covered by Standard Construction Details are the sole responsibility of the design engineer and shall be placed on sheets other than the Standard Construction Details sheets.

4) Failure to properly execute the above directions for use will not affect the applicability nor the enforcement of the Standard Construction Details.

5) Any deviations from Standard Construction Details will require written approval from the Town Manager.

6) Standard Construction Details shall be used in conjunction with the Transportation Plan and Construction Specifications.

7) The use of INDOT refers to Indiana Department of Transportation Standard Drawings and Specifications (Current Version).

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| | TOWN OF INGALLS, INDIANA<br>STANDARD CONSTRUCTION DETAILS | | SHEET |
|---|---|---|---|
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Notes:

1) Asphalt pavement shall be in accordance with the most current INDOT Standard Specifications Section 401. For all local (non-Federal Aid) projects, all HMA acceptance and testing requirements shall be in accordance with Section 402. Patching and Widening shall be in accordance with Section 304.
2) PCCP pavement shall be in accordance with the most current INDOT Standard Specifications Section 502. and will need Town Manager approval.
3) Any other pavement design will need Town Manager approval.
4) Where existing roads have SMA surface pavement, material is to be matched.
5) Mix design for IBC must follow Section 215 and be approved by the Town Manager.
6) Any deviation from the typical roadway sections must be approved by the Town Manager.

## ARTERIAL

HMA Pavement

D = 1.5" - 165lb/syd QC/QA-HMA, 2, 58H, Surface, 9.5mm, on
2.5" - 275lb/syd QC/QA-HMA, 2, 58H, Intermediate, 19.0 mm, on
7.0" - 770lb/syd QC/QA-HMA, 2, 58S, Base, 25.0mm, on
12" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

## COLLECTOR

HMA Pavement

D = 1.5" - 165lb/syd QC/QA-HMA, 2, 58S, Surface, 9.5mm, on
2.5" - 275lb/syd QC/QA-HMA, 2, 58S, Intermediate, 19.0 mm, on
4.0" - 440lb/syd QC/QA-HMA, 2, 58S, Base, 25.0mm, on
6" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

**PCCP Option (Commercial/Industrial Only)

D = 9" - PCCP, on
3" - Compacted Aggregate, No. 8, on
3" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

Roundabout

D = 1.5" - 165lb/syd QC/QA-HMA, 2, 58S, Surface, 9.5mm, on
2.5" - 275lb/syd QC/QA-HMA, 2, 58S, Intermediate, 19.0 mm, on
4.0" - 440lb/syd QC/QA-HMA, 2, 58S, Base, 25.0mm, on
6" - Compacted Aggregate, No. 53, on
14" - INDOT Subgrade Treatment, Type IBC

## LOCAL STREET

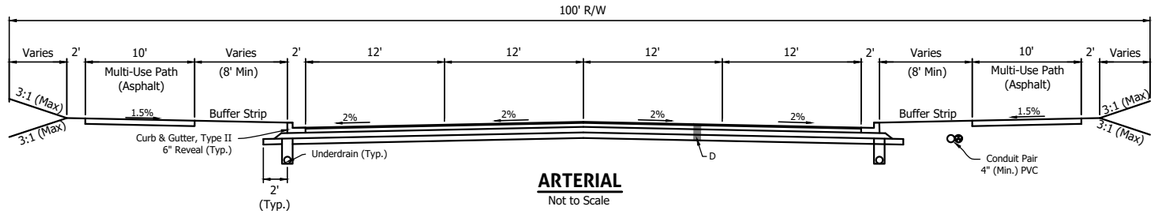
HMA Pavement

D = 1.5" - 165lb/syd QC/QA-HMA, 2, 58S, Surface, 9.5mm, on
2.5" - 275lb/syd QC/QA-HMA, 2, 58S, Intermediate, 19.0 mm, on
4.0" - 440lb/syd QC/QA-HMA, 2, 58S, Base, 25.0mm, on
3" - Compacted Aggregate, No. 53
14" - INDOT Subgrade Treatment, Type IBC

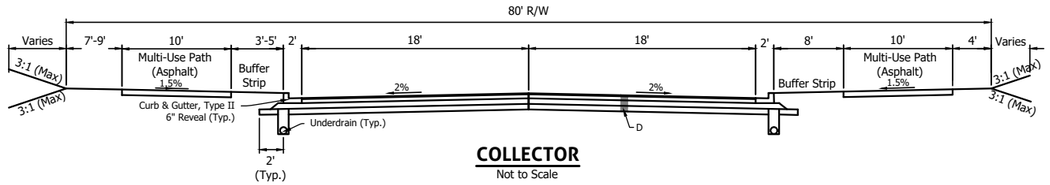
## MULTI-USE PATH

HMA Pavement

D = 3.5" - 385lb/syd QC/QA-HMA, 2, 58S, Surface, 12.5mm, on
6" - Compacted Aggregate, No. 53, on
Geogrid, IB (As directed by the Engineer), on
INDOT Subgrade Treatment, Type III

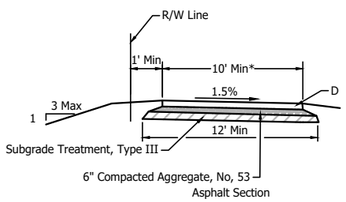



**ARTERIAL**
Not to Scale

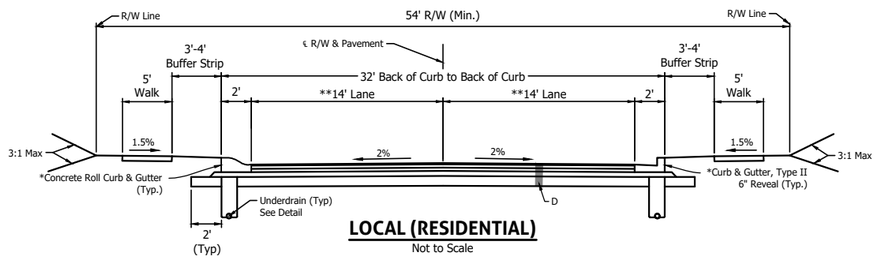



**COLLECTOR**
Not to Scale

NOTE:
If no on-street parking, then 12' lanes are required

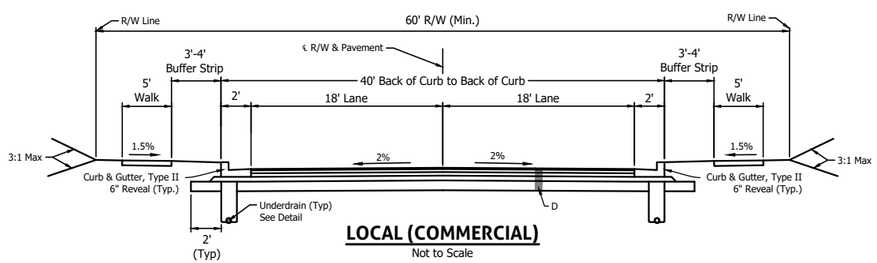



**MULTI-USE PATH**
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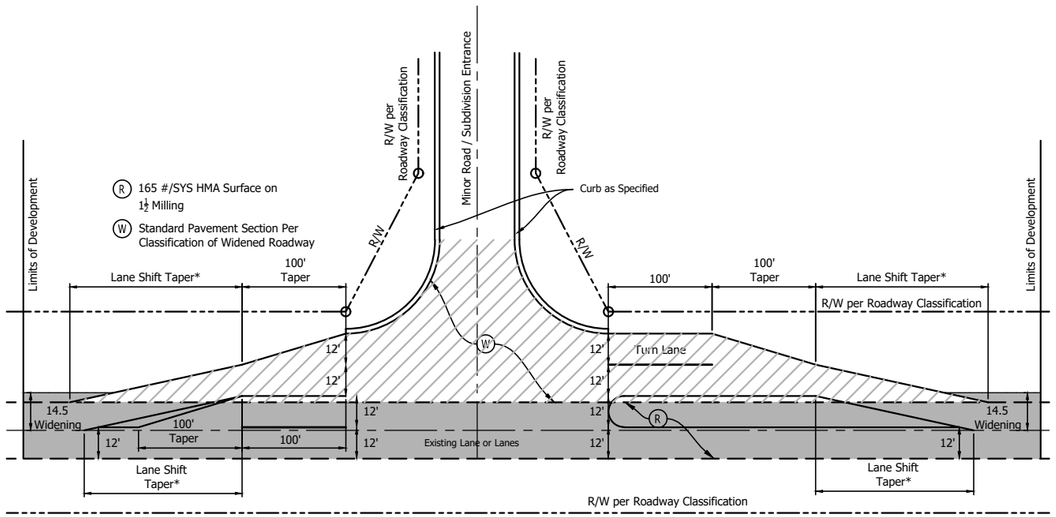

**LOCAL (RESIDENTIAL)**
Not to Scale

*Use one curb type or the other
**15' with approval from Town Manager

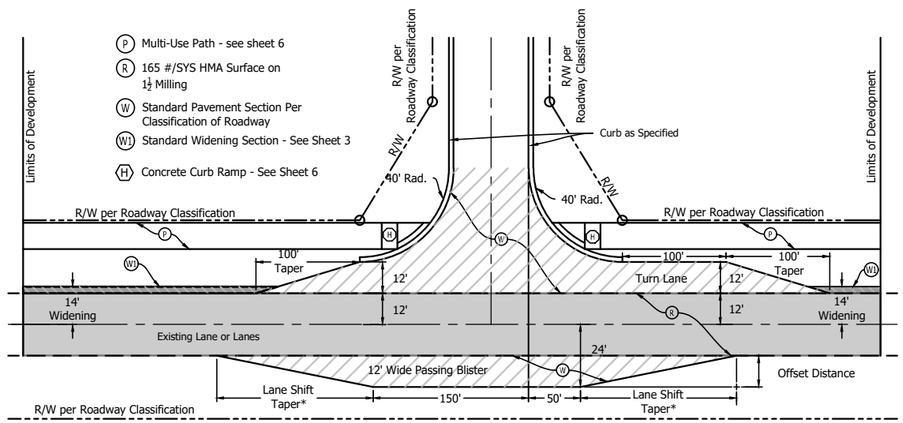



**LOCAL (COMMERCIAL)**
Not to Scale

| | | |
|---|---|---|
| | **TOWN OF INGALLS, INDIANA**<br>**STANDARD CONSTRUCTION DETAILS** | **SHEET** |
| | TYPICAL PAVEMENT AND ROADWAY SECTIONS | **2 of 10** |

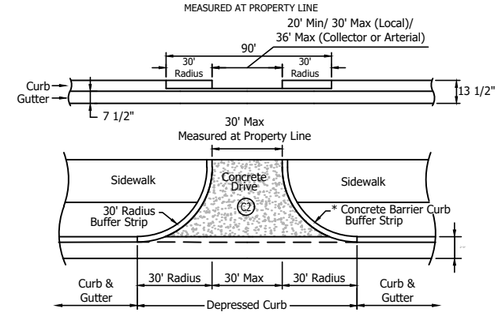



**PREFERRED OFFSET TO DEVELOPMENT LANES <12'**
Not to scale




**MINIMUM ENTRANCE/TURN LANE STANDARD**
Not to scale

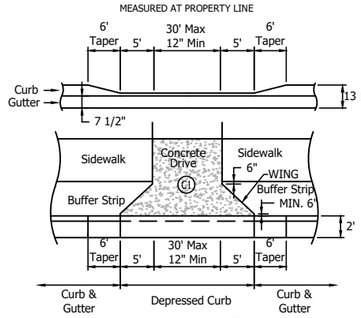
| *Lane Shift Taper* | |
|---|---|
| Posted Speed Limit (mph) | Merging Taper Rate |
| 20 | 10:1 |
| 25 | 10:1 |
| 30 | 15:1 |
| 35 | 20:1 |
| 40 | 30:1 |
| 45 | 45:1 |
| 50 | 50:1 |
| Lane-Shift Taper = L (See Example Calculation Below) | |
| L = Merging-Taper Rate x Offset Distance | |




**COMMERCIAL DRIVEWAYS**
Not to scale

Legend
C2 PCCP for Approaches, 9 in, on Dense Graded Subbase, 6 in, on Subgrade Treatment, Type II

Notes:
Any existing curb, shall be sawcut at the nearest joint to the removal limits and the existing curb removed.




**RESIDENTIAL DRIVEWAYS**
Not to scale

Legend
C1 PCCP for Approaches, 6 in., on Dense Graded Subbase, 6 in., on 6" - INDOT Subgrade Treatment, Type II

or

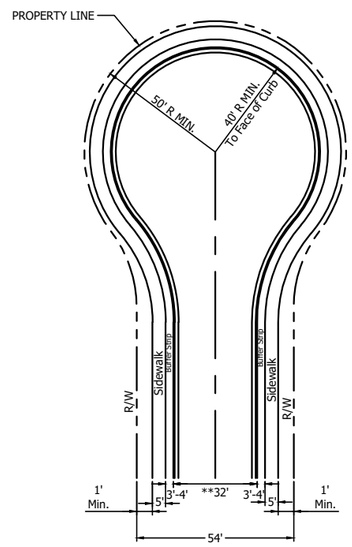
HMA for Approaches, Type B
1.5" - 165lb/syd HMA Surface, Type B on
2.5" - 275lb/syd HMA Intermediate, Type B on
6" - Compacted Aggregate, No. 53, on
6" - INDOT Subgrade Treatment, Type II

| Drive Width at R/W Line Table | | |
|---|---|---|
| Min. | Max. | Scenario |
| 12'-0" | 24'-0" | Single-car garage or building setback 40' (min.) feet from R/W |
| 16'-0" | 24'-0" | Two- or three-car garage with lot width less than 80' |
| 24'-0" | 30'-0" | Three-car garage with a lot width of 80' (min.) |

NOTES:

Depressed curb used for all aplications except roll curb.
Any existing curb, shall be sawcut at the nearest joint to the removal limits and the existing curb removed.
Wings shall be sized as noted regardless of existence or location of sidewalk.

1. Driveways shall be in accordance with the most current INDOT Standard Specifications Section 610.
2. The maximum algebraic difference in grades for any 10 foot interval shall not exceed 8% for crest vertical curves, and 12% for sag vertical curves for all drives. The maximum grades for any drive shall be 15% up and 14% down.
3. Control joints are required at a maximum of 10 feet each direction for all concrete drives and shall be laid out in the field by the contractor.
4. 1/2" preformed joint filler is required between drive and existing sidewalk, curb, and other concrete.
5. A drive cut permit shall be obtained from the Town of Ingalls for approval of a new residential or commercial drive, any entrance to a public Right of Way, or the relocation of an existing drive.
6. Alternate custom drives within Town of Ingalls Right-of-Way may be used upon receiving expressed written permission from the Town of Ingalls. Custom drives shall be the financial responsibility of the property owner. In the event that the Town of Ingalls must replace a custom drive approach, the Town reserves the right to install its standard drive.
7. All drives shall provide positive drainage towards the roadway. Slope between the curb and sidewalk shall be between 1% and 8.3%. Sidewalk cross slope shall be 1.5%. Slope behind the sidewalk shall be between 1% and 12%. The frontage of all lots shall drain to adjacent streets except with the prior written approval of Ingalls Department of Planning & Development.
8. A maximum residential driveway width of 30 feet at Right-of-Way line may be used if the following criteria are met:
   a. The residence has a three car garage
   b. The lot frontage is 80 feet or greater.
9. Driveways shall be poured independently of sidewalks and sidewalk transitions.
10. 45 degree tapers on commercial drive approaches are permitted in lieu of 30 ft. radii, if approved by the Town Manager.



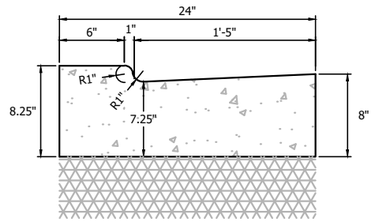

**TYPE 1 CUL-DE-SAC**

Note: See residential roadway section
**34' with approval of Town Manager

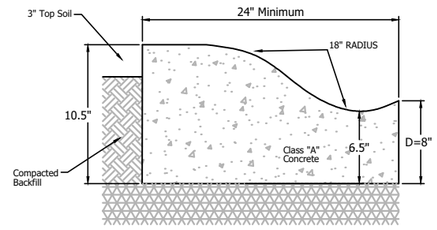
| | TOWN OF INGALLS, INDIANA STANDARD CONSTRUCTION DETAILS | SHEET |
|---|---|---|
| | MISC. TRANSPORTATION DETAILS | 3 of 10 |

## CURB NOTES

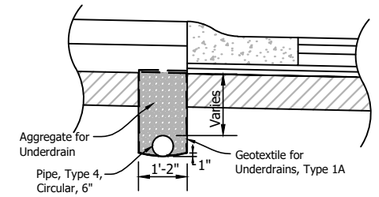
1) Curbing shall be in accordance with the most current INDOT standard specifications Section 605
2) No backfilling or compaction may occur 12 feet from curb within 5 full days of placing concrete.
3) Dampen subgrade before placing concrete.
4) Control joints shall be saw cut every 5 feet (MAX) along radii otherwise every 10 feet (MAX). Preformed expansion joints shall be placed every 50 feet (MAX).
5) Contraction joints shall be sawed in continuously poured curbs to a minimum depth of 2.5".



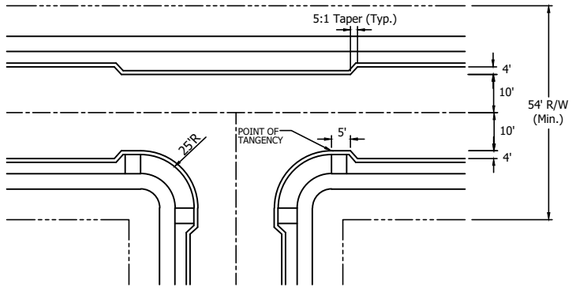

**CONCRETE COMBINED CURB & GUTTER - DEPRESSED**
Not to Scale



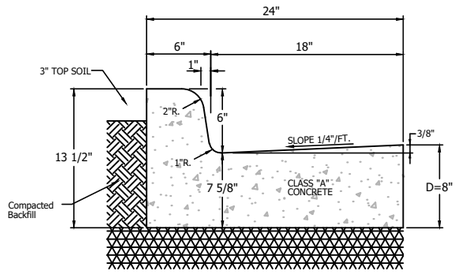

**CONCRETE ROLL CURB & GUTTER**
Not to Scale



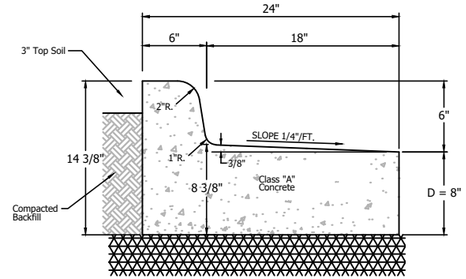

**UNDERDRAIN AT ROUNDABOUTS (AS NEEDED)**
Not to Scale



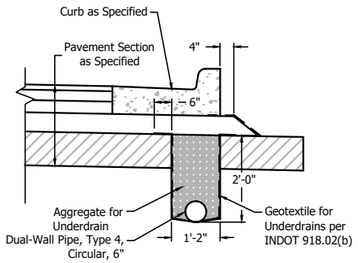

**CURB BUMPOUT (3-WAY INTERSECTION)**
Not to Scale




**CURB & GUTTER, CONCRETE , TYPE II**
Not to Scale

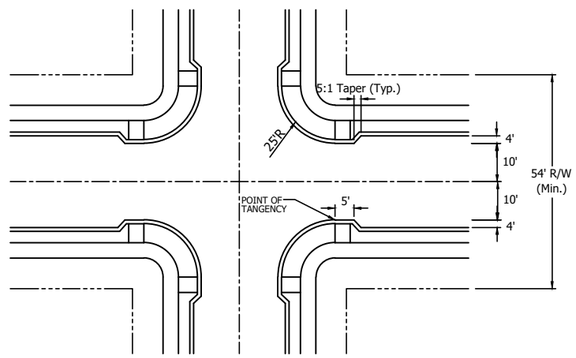



**CURB & GUTTER, CONCRETE , TYPE III**
Not to Scale

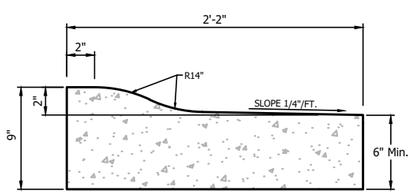



Note:
1) No connections shall be made to curb underdrain (downspouts, sump pumps, yard drains, etc).

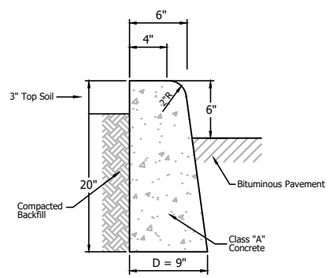
**CURB UNDERDRAIN**
Not to Scale




**CURB BUMPOUT (4-WAY INTERSECTION)**
Not to Scale




**ROUNDABOUT CURB APRON**
Not to Scale

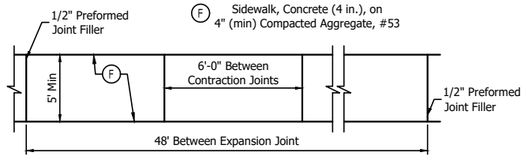


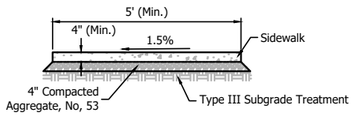

**CONCRETE BARRIER CURB**
Not to Scale

| | TOWN OF INGALLS, INDIANA STANDARD CONSTRUCTION DETAILS | SHEET |
|---|---|---|
| | CURB AND UNDERDRAIN DETAILS | 4 of 10 |

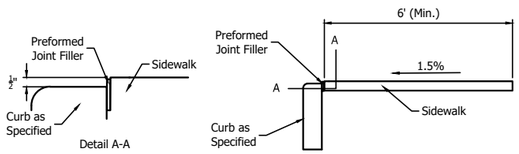
## SIDEWALK NOTES

1) Sidewalks shall be constructed in accordance with INDOT Standard Specifications, Section 604.
2) All sidewalks within Ingalls Right-of-Way shall be ADA compliant.
3) Transverse joints shall be cut with a jointer having a radius of 1/2-inch of spacing.
4) Decorative sidewalks are not permitted unless prior approval has been given by the Town Manager.
5) When sidewalk is built in conjunction with concrete pavement, expansion and contraction joints should be placed at the same location as the pavement slab. The curb and gutter shall be tied to the pavement by 1/2-in round preformed epoxy coated bars at approximate 3-foot intervals. If concrete pavement is not being built at the same time the curb is constructed, expansion joints should be placed at the ends of all returns and at intervals not to exceed 100 feet. Contraction joints should be installed at 20-foot intervals.

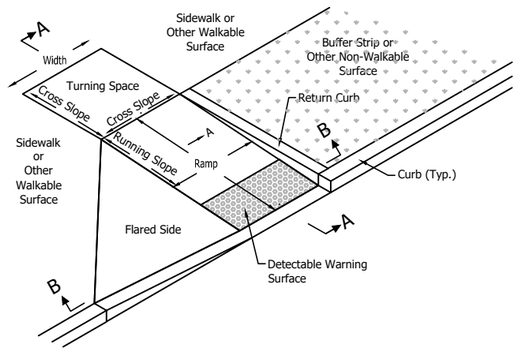


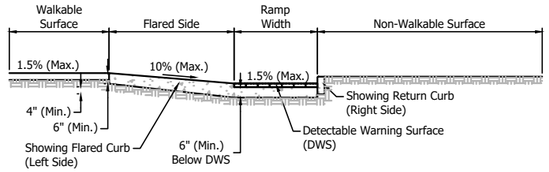

### SIDEWALK DETAIL
Not to Scale



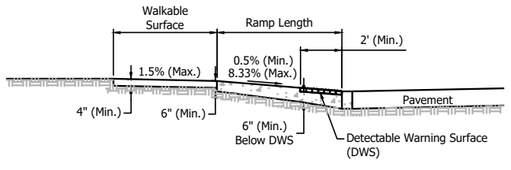

### SIDEWALK ADJACENT TO CURB
Not to Scale



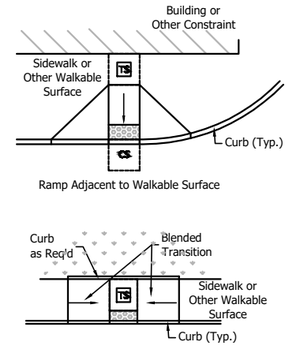

### TYPICAL CURB RAMP COMPONENTS
Not to Scale



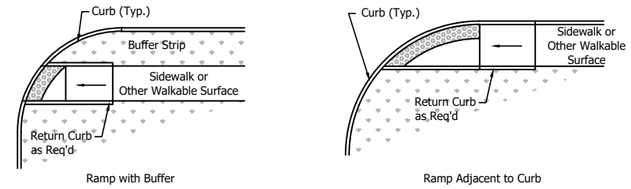

### TYPICAL CURB RAMP CROSS SLOPE SECTION (B-B)
Not to Scale



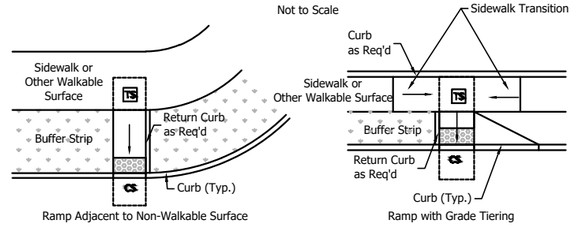

### TYPICAL CURB RAMP RUNNING SLOPE SECTION (A-A)
Not to Scale



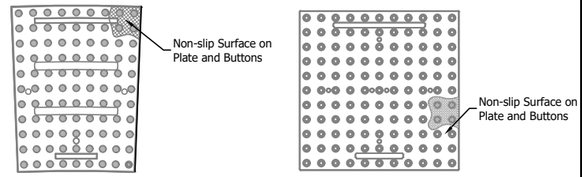

### PARALLEL CURB RAMP EXAMPLE
Not to Scale




### ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP EXAMPLES
Not to Scale




### PERPENDICULAR CURB RAMP EXAMPLES
Not to Scale




Note:
1) Detectable warning surfaces by East Jordan Iron Works, Neenah, or approved equal shall be cast iron, have a heavy duty load rating.
2) Detectable Warning Surfaces shall be powder coated black.
3) Detectable warning surfaces shall be ADA compliant.
4) Brick shall not be allowed for detectable warning surfaces.

### DETECTABLE WARNING SURFACE
Not to Scale

## CURB RAMP NOTES

1) Curb ramps shall be constructed in accordance with INDOT Standard Specifications, Section 604, as well as INDOT Standard Drawings E 604-SWCR series.
2) All curb ramps within Ingalls Right-of-Way shall be ADA compliant.
3) Detectable Warning Surfaces shall be cast iron type and shall be powder coated black.
4) Detectable Warning Surfaces shall not be installed at commercial or private driveways unless traffic warrants or approved by the Town Engineer.
5) All curb ramps shall be detailed in the construction plans using a detail drawing, table, or a combination of the two. The detail drawing or table should include the curb ramp location, and required curb ramp components and design element criteria, e.g. width, length, cross slope, running slope and flared side slope.
6) All slopes are absolute rather than relative to the sidewalk or roadway grade. Slopes at least 0.50% less than the maximum are preferred.
7) Turning Space. A turning space shall have a minimum clear dimension of 4 ft x 4 ft and be provided at the top of a perpendicular ramp, bottom of a parallel ramp, or where the pedestrian travel requires a change in direction.
8) Clear Space. A clear space shall be provided beyond the bottom grade break of a curb ramp wholly contained within the crosswalk and wholly outside the parallel vehicular travel path. The clear space shall have a minimum clear dimension of 4 ft x 4 ft.
9) Curb inlets shall not be allowed within 2 feet of curb ramps or at the apex of corner radii.

| | TOWN OF INGALLS, INDIANA<br>STANDARD CONSTRUCTION DETAILS | SHEET |
|---|---|---|
| | SIDEWALK, CURB RAMP, AND PERIMETER PATH DETAILS | 5 of 10 |

## PRINCIPLES AND OBJECTIVES

Several overarching principles should guide the development of all roundabout designs. Achieving these principles should be the goal of any roundabout design:

- Provide slow entry speeds and consistent speeds through the roundabout by using deflection.
- Provide the appropriate number of lanes and lane assignment to achieve adequate capacity, lane volume balance, and lane continuity.
- Provide smooth channelization that is intuitive to drivers and results in vehicles naturally using the intended lanes.
- Provide adequate accommodation for the design vehicles.
- Design to meet the needs of pedestrians and cyclists.
- Provide appropriate sight distance and visibility for driver recognition of the intersection and conflicting users.

Note that some features of multi-lane roundabout design are significantly different from single-lane roundabout design, and some techniques used in single-lane roundabout design may not directly transfer to multi-lane design. Each of the principles described above affects the safety and operations of the roundabout. When developing a design, the trade-offs of safety, capacity, cost, and so on must be recognized and assessed throughout the design process.

## DESIGN GUIDELINES

Submittals

All roundabout designs shall be submitted for review at the following stages of development:

1) Conceptual
   1)1) Preliminary layout
   1)2) Planned roundabout capacity analysis for construction year, 10-year, and 20-year traffic review

2) Stage 1 or 25% plans
   2)1) Refined geometrics
   2)2) Turning movement and design vehicle selection review
   2)3) Striping review

3) Stage 2 or 50% plans
   3)1) Drainage and grade review
   3)2) Roundabout sight distance review

4) Stage 3 or 75% plans
   4)1) Landscaping review
   4)2) Lighting review
   4)3) Signage review

Speed Management

The maximum allowable fastest path entry speeds shall be as indicated below unless prior approval has been given by the Department.

1) Single-lane roundabouts - 25 mph
2) Multi-lane roundabouts - 30 mph

Design Vehicle Selection

1) The WB-62 shall be the minimum design vehicle for sizing the roundabout unless prior approval has been given by the Department.
   1)1) At multi-lane approaches it shall be assumed that the WB-62 will straddle the lane line to make a through and right-turn movement.
2) At a minimum, the WB-62 shall be able to travel through a roundabout without over-tracking any curb with the exception of the truck apron roll curb unless prior approval has been given by the Department.
3) The circulatory roadway and all lanes within a multi-lane roundabout shall accommodate a city-bus, fire truck, and school bus unless prior approval has been given by the Department.

Inscribed Circle Diameter (ICD)

Unless prior approval is given by the Department, the smallest ICD used for design shall be 110 ft.

Entry Geometry and Path Alignment

1) If horizontal deflection is utilized on an approach to a roundabout it should be a 6 ft offset minimum and, ideally, 10 to 12 ft to ensure drive path is influenced.
2) Entries shall be designed such that path overlap is eliminated.

Profiles and Grades

Vertical profiles and roundabout grading should take into consideration low clearance vehicles especially on heavy truck routes.

Splitter Islands

1) Splitter islands for single-lane roundabouts should be 50 feet or greater in length and 100 feet or greater in length for multi-lane roundabouts measured from the circulatory roadway.
2) On high speed approaches (design speed of approaching roadways above 45 mph) consideration should be given for the splitter island length to be the SSD of that design speed.

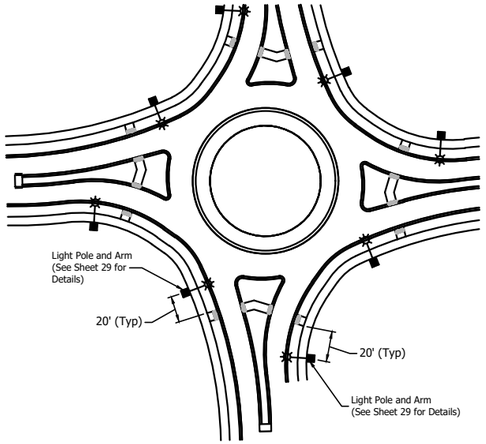
Drainage

No drainage structures shall be located within the circulatory roadway unless prior approval has been given by the Department.

Landscape

Any landscaping or object located within the center island shall be approved by the Town of Ingalls.

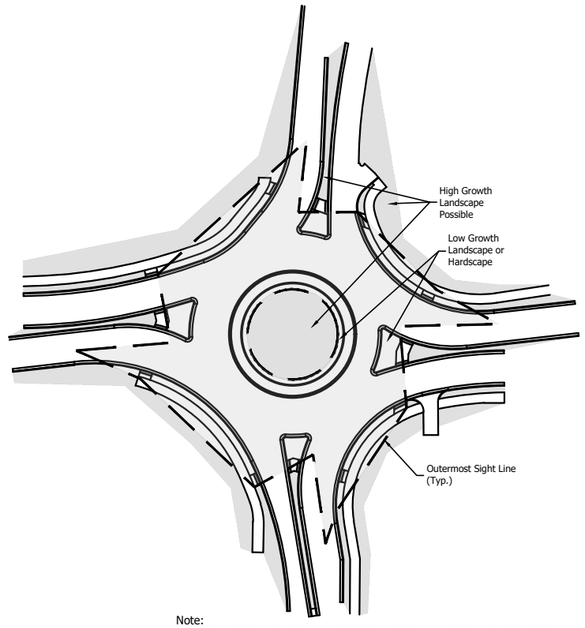
1) If no landscaping is proposed in the center island, fill should be placed at a 6:1 slope in order to provide a sight obstruction mound.
2) All splitter islands less than 8 ft in width and between the pedestrian crosswalk and circulatory roadway shall not be landscaped and shall be in stamped concrete unless prior approval has been given by the Ingalls Department of Planning & Development.
3) The minimum median width shall be 52 inches. If 52 inches cannot be achieved, then median must be stamped concrete or landscaped with typical Ingalls narrow median landscape plan as provided by Town during plan review.




Notes:
1) Lighting design shall be in conformance with the IES Design Guide (IES DG-19-08) and Town of Ingalls standards.
2) Luminaire, pole, and placement shall be coordinated for installation by Duke Energy.
3) Do not backlight pedestrians.
4) The full length of splitter islands shall be illuminated unless prior approval has been given by the Department.
5) Additional poles should be provided as required to meet appropriate photometeric results for complex geometry.

### TYPICAL LIGHTING PLACEMENT

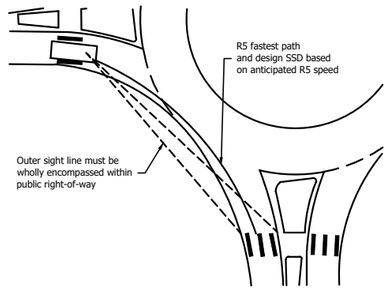
Not to Scale




Note:
1) A scalable plan sheet and CAD file shall be provided to the Ingalls Department of Planning & Development upon completion of final plans.

### EXAMPLE LANDSCAPE AREAS DIAGRAM

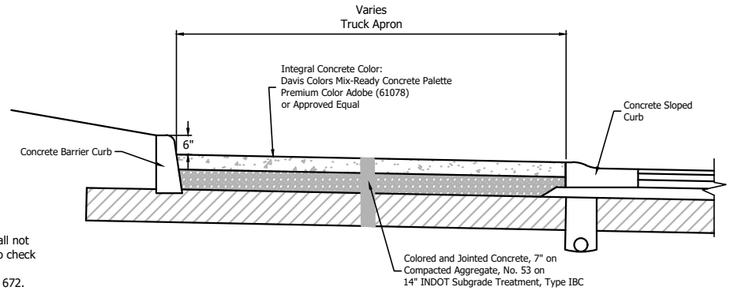
Not to Scale




Notes:
1) This detail is to provide additional guidance to designers. Designer shall not arbitrarily place vehicle at yield line or circulatory roadway edge line to check visibility.
2) All roundabout sight lines shall be checked in accordance with NCHRP 672.

### STOPPING SIGHT DISTANCE (SSD) TO CROSSWALK

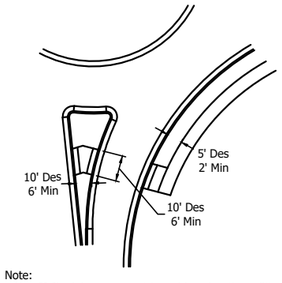
Not to Scale




Note:
1) Type D-1 Contraction Joints not required unless otherwise directed by Ingalls Department of Planning & Development

### CONCRETE TRUCK APRON DETAIL

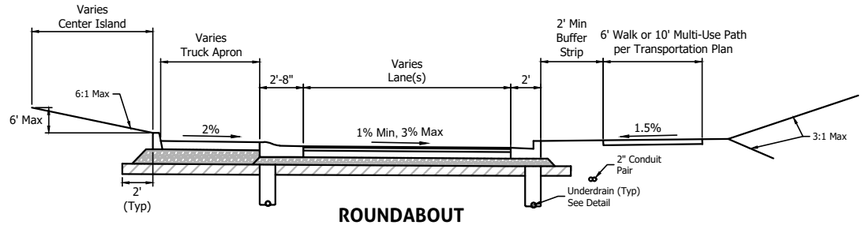
Not to Scale




Note:
1) If 6' minimum cannot be achieved at the splitter island, crosswalk shall be of passthrough type without angular deflection.

### ROUNDABOUT SIDEWALK AND CURB RAMP PLACEMENT

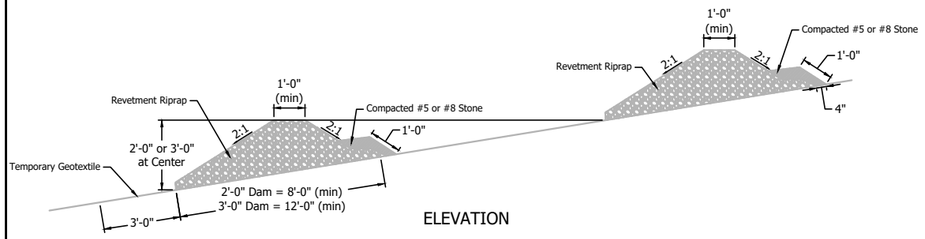
Not to Scale



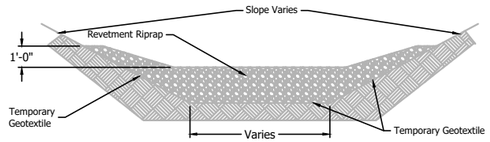

### ROUNDABOUT

Not to Scale

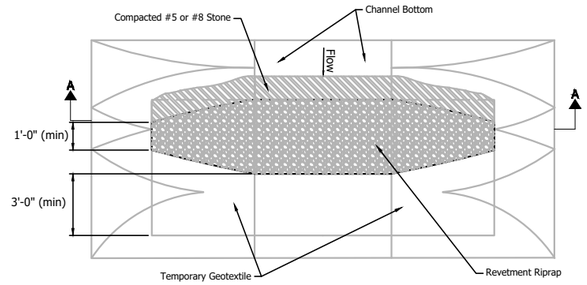
| | TOWN OF INGALLS, INDIANA<br>STANDARD CONSTRUCTION DETAILS | SHEET |
|---|---|---|
| | ROUNDABOUT DESIGN STANDARDS | 6<br>of<br>10 |



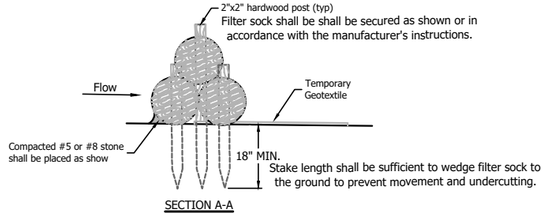

ELEVATION



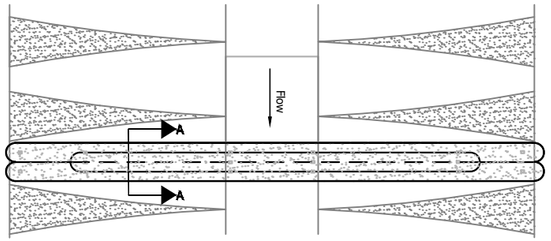

SECTION A-A



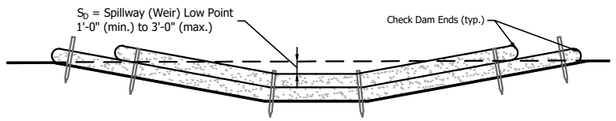

PLAN




SECTION A-A




PLAN VIEW

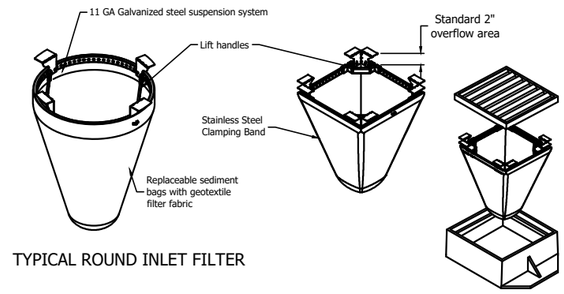



ELEVATION

**TRAVERSABLE CHECK DAM**

Not to Scale

Notes:
* Traversable Check Dam to be used for areas with low to moderate flow rates, such as rear yard swales and at storm drain inlets.
* Rock Check Dam to be used for areas with moderate to high flow rates, such as larger ditches, channels, and outlets. They are also suitable for longer-term applications.




TYPICAL ROUND INLET FILTER

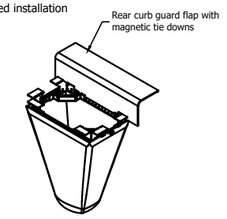
TYPICAL RECTANGULAR INLET FILTER

Notes:
* Measures that require appurtenances (rebar, straps, fabric) in the street to trap sediment or hold basket into place will not be permitted.

* Measure to be used in accordance with manufacturer's stated installation and maintenance specifications, and limitations



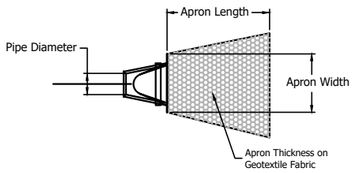
STAINLESS STEEL ROUND INLET FILTERS

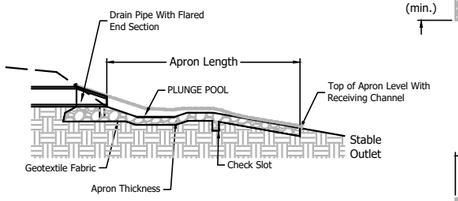



COMBINATION INLET FILTER FOR CURB HOODS

**BASKET INLET PROTECTION**

NOT TO SCALE



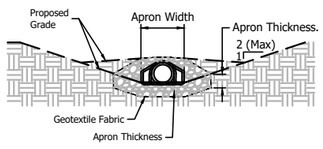




Table 1. Sizing for Flow Dissipaters at end Sections[1]

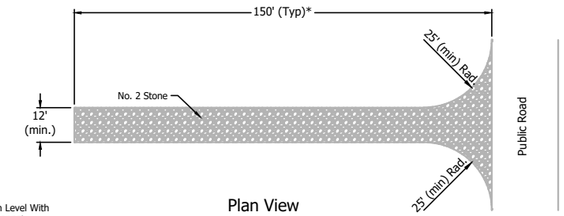
| PIPE SIZE | AVG. RIPRAP DIAMETER | APRON[2] WIDTH | APRON[3] LENGTH |
|---|---|---|---|
| 8 in. | 3 in. | 2 to 3 ft. | 5 to 7 ft. |
| 12 in | 5 in. | 3 to 4 ft. | 6 to 12 ft. |
| 18 in. | 8 in. | 4 to 6 ft. | 8 to 18 ft. |
| 24 in. | 10 in. | 6 to 8 ft. | 12 to 22 ft. |
| 30 in. | 12 in. | 8 to 10 ft. | 14 to 28 ft. |
| 36 in. | 14 in. | 10 to 12 ft. | 16 to 32 ft. |

1-For Larger or Higher Flows Consult a Registered Engineer
2-Apron Width at the Narrow End of Apron (Pipe or Channel Outlet)
3-Select Length Taking Into Consideration the Low Flow (Nor Pressure Head) or High Flow (Pressure Head) Conditions of the Culvert Pipe.

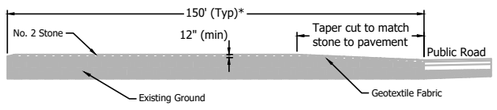
Apron Thickness = 1.2 Times the Max Stone Diameter for a D50 Stone Size of 15 Inches or Larger
Apron Thickness = 1.5 Times the Max Stone Diameter for a D50 Stone Size of 15 Inches or Less

**ENERGY DISSIPATER (OUTLET PROTECTION)**

Not to Scale




Plan View

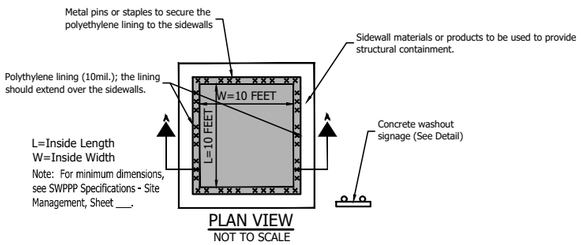



Profile View

* May be reduced as justified by site conditions, but shall not be less than 50'.

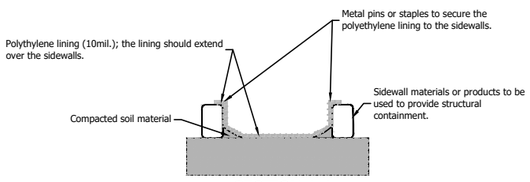
**TEMPORARY CONSTRUCTION ENTRANCE**

NOT TO SCALE



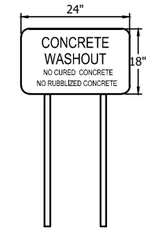

PLAN VIEW

NOT TO SCALE




SECTION A-A

NOT TO SCALE



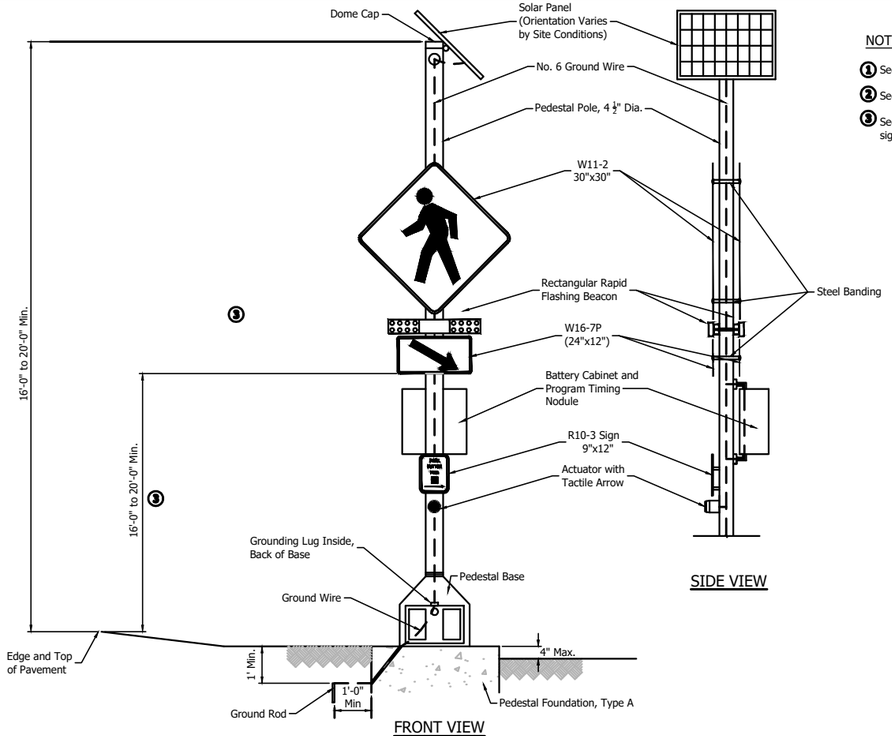

SIGNAGE DETAIL

NOT TO SCALE

* Measure to be used in accordance with manufacturer's stated installation and maintenance specifications, and limitations

**CONCRETE WASHOUT DETAIL (ABOVE GRADE)**

| | TOWN OF INGALLS, INDIANA STANDARD CONSTRUCTION DETAILS | SHEET |
|---|---|---|
| | EROSION CONTROL DETAILS | 7 of 10 |




FRONT VIEW

SIDE VIEW

## RECTANGULAR RAPID FLASHING BEACON DETAIL

NOT TO SCALE

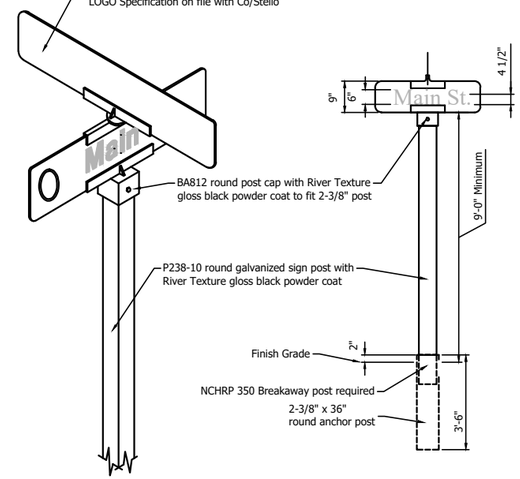
NOTES:

1. See Standard Drawing E 805-SGGR-03 for grounding lug details.
2. See Standard Drawing E 805-SGCF-03 for Foundation Type A.
3. See Standard Drawing E 802-SNPL-02 for edge of pavement offset and sign height.

SIGN MATERIALS:

Materials: FL9 Flat aluminum surface 0.080-gauge virgin aluminum for signs under 36" in length. FL9 signs 36" or longer shall be flat aluminum surface 0.10-gauge virgin aluminum.

BACKGROUND: 3M white sheeting HIP reflective Legend to include: Black copy, border and Logo Series B letters, Logo 6" Circle, initial letter shall be upper-case, 6" in height, followed by 4.5" lower-case lettering AS DEPICTED ALL CENTERED. LOGO Specification on file with Co/Stello



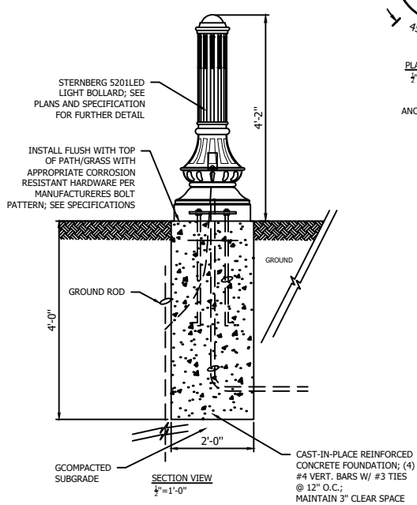

Height Requirements:
Y3556 anchor driven 3 feet below finished grade.
10-foot or 12-foot post inserted and bolted into the anchor to leave a height of 9 feet from the finish grade to the post cap.

## STREET SIGN DETAIL

NOT TO SCALE

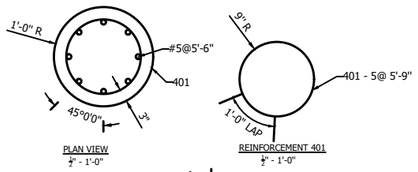
Notes:

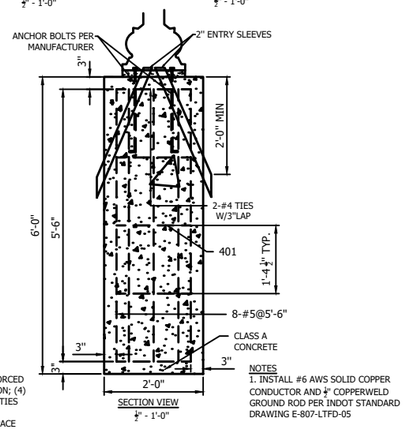
1. All signs shall be in accordance with the latest Manual on Uniform Traffic Control Devices and Standard Highway Signs and Markings.
2. Shop drawings shall be submitted for all non-standard signs and all street name signs.
3. All sign posts shall be 2-3/8" (Type 2) round posts.
4. All signs shall be placed within five days of placement of traversable pavement, such as HMA Intermediate, HMA Base, or concrete pavement.
5. All signs shall be attached to posts with two bolts per sign per post (min.). For signs over 6" in height, galvanized or aluminum bolts are acceptable.
6. Signs shall be tagged on the rear of the sign with an adhesive label with the month and year that the signs were installed. Remaining required traffic control shall be in place prior to the release of the first occupancy permit.
7. Streets shall be signed at all intersections with two street name sign assemblies on opposite corners.
8. Street name signs shall be mounted on post top with a cast aluminum BA812 bracket with all hex bolts required. All double/cross mounted street name signs shall be mounted using a cast aluminum BA8A12 bracket and secured with all hex bolts required per sign.
9. Stop sign shall be 36" in size for roads classified as Arterials or Collectors and 30" in size for roads classified as local.
9. An all way stop intersection requires an "ALL WAY" supplementary sign. A two way stop controlled intersection requires a "CROSS TRAFFIC DOES NOT STOP" supplementary sign.
10. 25 mph signs shall be located at each subdivision entrance. A "FOR ALL STREETS" supplementary sign shall be located below each.
11. Alternate custom posts may be used upon receiving expressed written permission from the Town of Ingalls. Custom posts shall be the financial responsibility of subdivision's homeowner's association. In the event that the Town of Ingalls must replace custom sign posts, the Town reserves the right to install its standard steel post.




SECTION VIEW
¾"=1'-0"

BOLLARD FOUNDATION




SECTION VIEW
¾" - 1'-0"

STREET LIGHT FOUNDATION
FOR 16' LIGHT POLE

NOTES
1. INSTALL #6 AWS SOLID COPPER CONDUCTOR AND ¾" COPPERWELD GROUND ROD PER INDOT STANDARD DRAWING E-807-LTFD-05

Description
This work shall involve the installation of decorative lighted bollards. All work for Ornamental Lighted Bollard shall be in accordance with all applicable Standard, Recurring, and Supplemental Specifications. Work shall also be in accordance with the contract drawings.

Materials
Materials to be used with this work shall be Sternberg Model #5201LED Type BL in accordance with Appendix A - Decorative Lighting and Bollard Specification.

Construction Requirements
Construction and installation requirements of decorative lighted bollards shall be in accordance with 807, the plans and Appendix A - Decorative Lighting and Bollard Specification.

Method of Measurements
The foundation and bollard will be measured as a single item. This work shall be measured for on a per item basis (each) in accordance with 720. Conduit and wire to be measured by the linear foot as indicated in the plans.

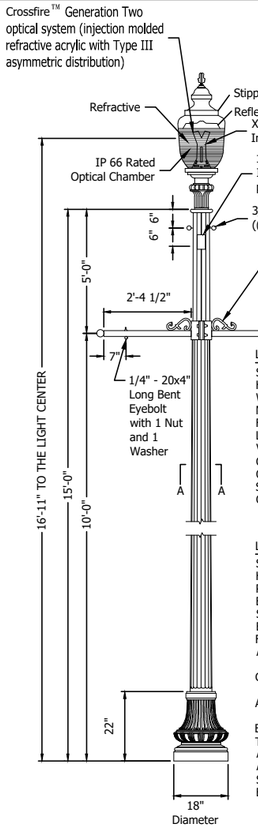
Basis of Payment
This work shall be paid for on per item basis.

Payment will be made under:

| Pay Item | Pay Unit Symbol |
|---|---|
| Ornamental Lighted Bollard, Type BL | Each |

All excavation, materials, labor, delivery, equipment and any necessary work and incidentals to install the Ornamental Lighted Bollards shall be included in the cost of the Ornamental Lighted Bollard, Type BL excluding wire which will have a separate pay item. Any cost fort the foundations for the bollards as shown in the plan details shall be included in the cost of the Ornamental Lighted Bollard, Type BL and will not have separate pay item.

| | TOWN OF INGALLS, INDIANA<br>STANDARD CONSTRUCTION DETAILS | SHEET |
|---|---|---|
| | SIGN DETAILS | 8 of 10 |




**Note**: Aluminum May Be Considered An Acceptable Alternate Material For Lamp Posts. Coordinate With Town Of Ingalls For Approval.

LUMINAIRE SPECIFICATIONS

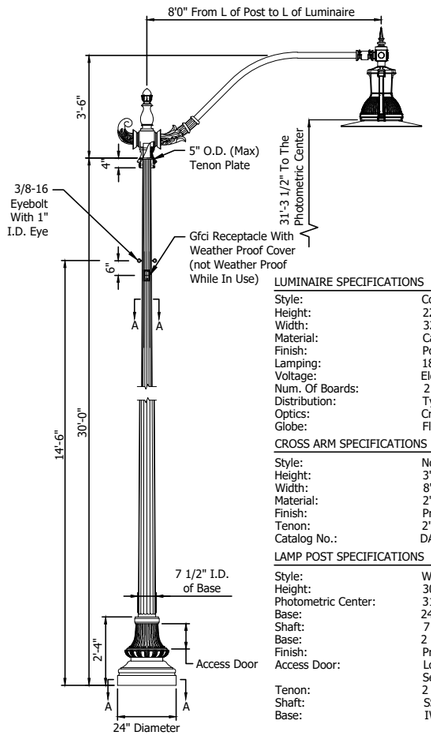
| | |
|---|---|
| Style: | Washington With The X-series Led Module, 118 |
| Height: | Refractive Globe And Finial |
| Width: | 44 3/8" |
| MATERIAL: | 15 7/8" Cast Aluminum Alloy ANSI 356, Per A.S.T.M. B26-95 |
| Finish: | Powder Coat - River Texture Gloss Black |
| Lamping: | 70 Watt Led |
| Voltage: | Electronic Wired At 120-277 Volts |
| Color Temp.: | 4000K (Medium White) |
| Optical System: | Type III Crossfire Refractive Optics (Asymmetric Distribution) |
| Surge: | 10 kV |
| Catalog No.: | ALMWSH-LE070/EVX/L18-40-CR3-PF83-FPP-CU |

LAMP POST SPECIFICATIONS

| | |
|---|---|
| Style: | Washington Steel |
| Height: | 15'-0" |
| Photometric Center: | 16'-11" |
| Base: | 18" Diameter |
| Shaft: | 11 Gauge Min. 12 Flat Flute, Steel Monotube Construction |
| Base: | 2 Piece, (Wrap Around) Heavy Wall Cast Iron Per A.S.T.M. A 48-83 Class 30 |
| Finish: | Prime Paint Then Finish Paint Sherwin Williams Acrolon Classic Black |
| Access Door: | Located In Base To Coincide With Hand Hole In Steel Shaft Secured With Tamper Proof Hex Socket Security Machine Screws |
| Ground Stud Provisions: | 1/4"-20 Square Nut Welded To Inside Wall Of Pole Opposite Handhole For Ground Stud (stud Provided By Others) |
| Anchor Bolts: | (4) 3/4"x24"+3" Hook (fully Galvanized With 2 Galvanized Nut And 2 Galvanized Washer Per Bolt) - See Quantity When Req'd |
| Bolt Projection: | 5" Required |
| Tenon: | 3 1/2" Dia. X 3" High (above Donut) To Accept Luminare |
| Arm: | ABNUBA-MI-2S-1.50-28.50-6.25-FFR-XX-CB |
| Anchor Bolts: | 323/2NW |
| Shaft: | SSH2F-G11-07.50-15.00-TN3.50/3.00-GFWN-C8 |
| Base: | ISBWSH-18-C8 |

## 15' LIGHT POLE DETAIL

NOT TO SCALE




**Note**: Aluminum May Be Considered An Acceptable Alternate Material For Lamp Posts And Cross Arms. Coordinate With City Of Carmel For Approval.

LUMINAIRE SPECIFICATIONS

| | |
|---|---|
| Style: | Columbia With Edgewater Finial |
| Height: | 22 1/2" |
| Width: | 32" Diameter |
| Material: | Cast Aluminum Alloy ANSI 356, Per A.S.T.M. B26-95 |
| Finish: | Powder Coat - River Texture Gloss Black |
| Lamping: | 185 Watt Led |
| Voltage: | Electronic Wired At 120-277 Volts |
| Num. Of Boards: | 2 |
| Distribution: | Type II (Asymmetric Distribution) |
| Optics: | Crossfire Refractive |
| Globe: | Flat Tempered Glass |

CROSS ARM SPECIFICATIONS

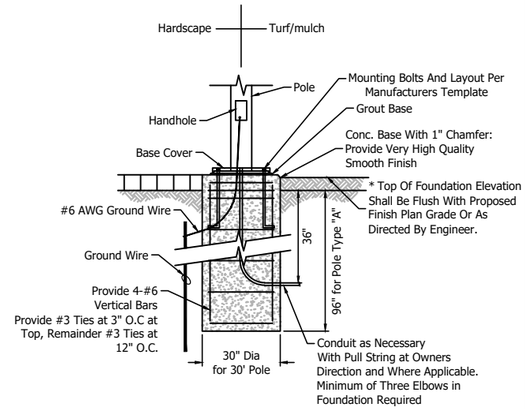
| | |
|---|---|
| Style: | Northampton |
| Height: | 3'-6" |
| Width: | 8'-0" From ℄ Of Post To ℄ Of Luminaire |
| Material: | 2" Sch. 40 Steel Pipe With Cast Ductile Iron Ornamentation |
| Finish: | Prime Paint Then Finish Sherwin Williams Acrolon Classic Black |
| Tenon: | 2" Npt Pipe Nipple |
| Catalog No.: | DARNRT-1S-96-42-CB |

LAMP POST SPECIFICATIONS

| | |
|---|---|
| Style: | Washington Steel |
| Height: | 30'-0" |
| Photometric Center: | 31'-3 3/4" |
| Base: | 24" Diameter Wrap Base |
| Shaft: | 7 Gauge, 12 Flat Flute, Steel Monotube Construction |
| Base: | 2 Piece (Wrap Around) Cast Irom Per A.S.T.M. A48-83 Class 30 |
| Finish: | Prime Paint Then Finish Sherwin Williams Acrolon Classic Black |
| Access Door: | Located In Base, To Coincide With Hand Hole In Steel Shaft, Secured With Tamper Proof Hex Socket Security Machine Screws |
| Tenon: | 2 7/8" Dia. X 6" High (to Accept Cross Arm) |
| Shaft: | SSH2F-G17-07.60-30.00-TN2.88/6.00-GFWN-(2)EB-CB |
| Base: | IWBSH-24-CB |

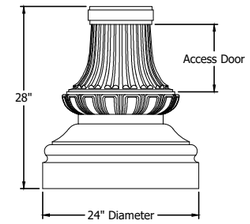
## 30' LIGHT POLE DETAIL

NOT TO SCALE




## 30' LIGHT POLE FOUNDATION DETAIL

NOT TO SCALE

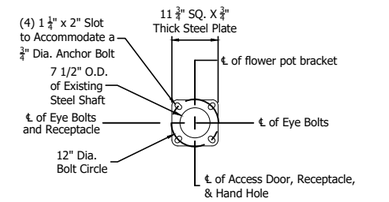



CAST BASE SPECIFICATIONS

| | |
|---|---|
| Style: | Washington |
| Height: | 28" |
| Base: | 24" Diameter ☒ Wrap Base |
| Material: | ☒ Cast Iron per A.S.T.M. a 48-83 Class 30 - Classic Black |
| Finish: | Prime Paint Then Finish Sherwin Williams Acrolon - Acrolon Classic Black |
| Access Door: | Located in the base to coincide with handhole in steel shaft, secured with tamper proof hex socket security machine screws |

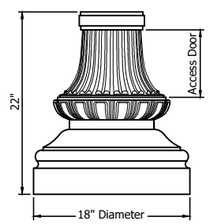
## 30' POLE-DECO WRAP BASE

NOT TO SCALE




## MISCELLANEOUS 15' LIGHT POLE DETAILS

NOT TO SCALE

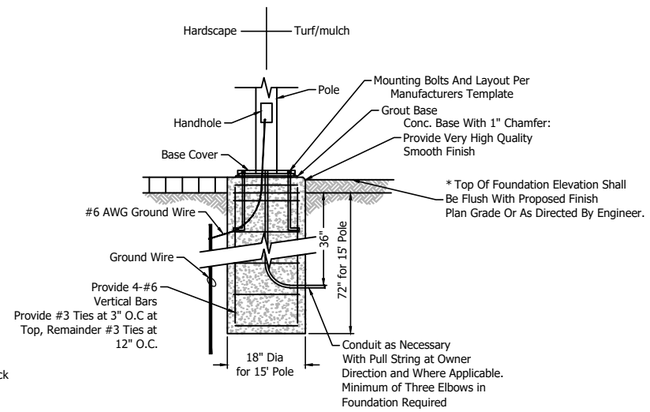



CAST BASE SPECIFICATIONS

| | |
|---|---|
| Style: | Washington |
| Height: | 22" |
| Base: | 18" Diameter ☒ Wrap Base |
| Material: | ☒ Cast iron per A.S.T.M. a 48-83 class 30 - Classic Black |
| Finish: | Prime paint then finish Sherwin Williams Acrolon - Acrolon Classic Black |
| Access Door: | Located in the base to coincide with handhole in steel shaft, secured with tamper proof hex socket security machine screws |

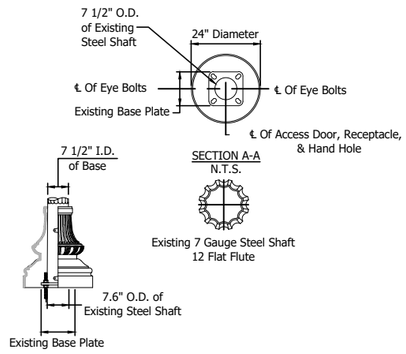
## 15' POLE-DECO WRAP BASE

NOT TO SCALE




## 15' LIGHT POLE FOUNDATION DETAIL

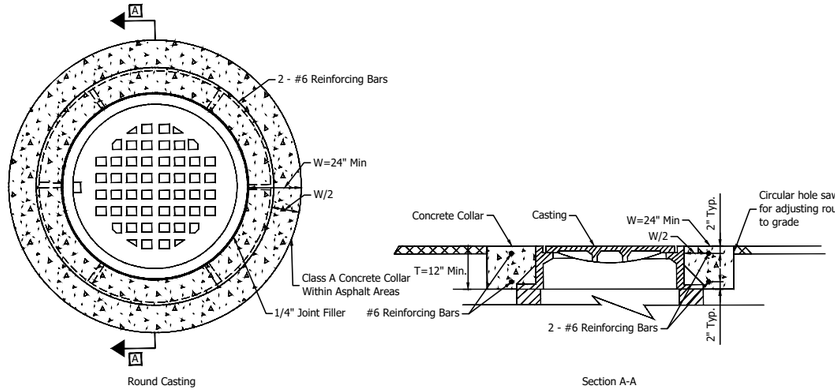
NOT TO SCALE




## MISCELLANEOUS 30' LIGHT POLE DETAILS

NOT TO SCALE

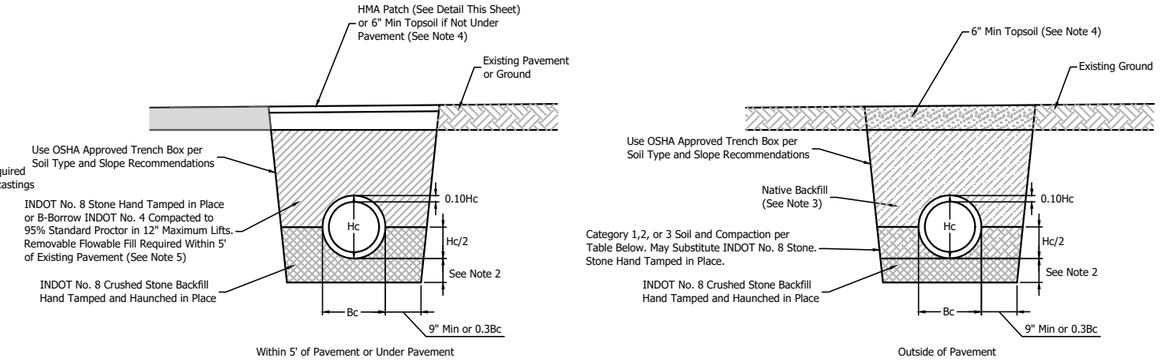
| | | |
|---|---|---|
| | TOWN OF INGALLS, INDIANA<br>STANDARD CONSTRUCTION DETAILS | SHEET |
| | LIGHTING DETAILS | 9 of 10 |




Round Casting — Section A-A

## CONCRETE COLLAR FOR ROUND CASTINGS DETAIL

Not to Scale




Within 5' of Pavement or Under Pavement — Outside of Pavement

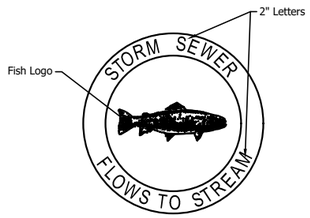
| SOIL CATEGORY | SOIL NAME | USCS SOIL TYPE | AASHTO SOIL TYPE | STANDARD PROCTOR | MODIFIED PROCTOR |
|---|---|---|---|---|---|
| CATEGORY 1 | CLEAN GRAVEL OR SAND | SW, SP, GW, GP | A1, A3 | 85 | 80 |
| CATEGORY 2 | SILTY GRAVEL OR SAND | GM, SM, ML & GC/SC W/LESS THAN 20% PASSING #200 SIEVE | A2, A4 | 90 | 85 |
| CATEGORY 3 | SILTY CLAY | CL, MH, GC, SC | A5, A6 | 95 | 85 |

Reference: American Concrete Pipe Association Standard Installation Manual

Notes:
1) For backfill purposes, paved shoulders and curbs are considered pavement. If paving is to occur within 30 days of placement of INDOT No.#4 B-Borrow, contractor shall provide Town of Ingalls with Professional Engineer certified compaction results.
2) Depth of bedding material below pipe shall be minimum of 3" or hc/24, whichever is greater.
3) Native backfill material must be free of aggregate greater than 6" diameter.
4) Topsoil material shall be mounded to accommodate settlement.
5) Removable flowable backfill shall be required for all open cuts across existing pavement and will also be allowed as a substitute for other backfill requirements.
6) Pipe and fittings used in storm sewer construction shall be RCP (AASHTO M170) and meet the fill height and load requirements according to the latest fill height tables of INDOT. Refer to Chapter 4.J of the Stormwater Technical Standards Manual for other approved pipe materials that may be used in commercial parking lots or private, non-paved areas. Any alternative pipe materials shall be in accordance with the requirements of Chapter 4.J, and shall be installed in accordance with manufacturer's specifications.
7) A minimum of Class III RCP (D-load 1350 lb/ft/ft) is required for all pipe within the Right-of-Way, or areas subject to loading. An alternate pipe class (Class IV or V) may be required by the design engineer or Town Manager for special pavement loading circumstances.
8) For pavement bores, alternative materials will be considered.
9) For elliptical or arch pipe installations, see installation specifications from the American Concrete Pipe Association.
10) For all excavation work, OSHA approved safety standards shall be followed.

## TRENCH BACKFILL DETAILS

Not to Scale

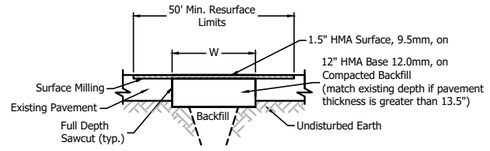



## MANHOLE LID CASTING DETAIL

Not to Scale

| PAVEMENT RESTORATION TABLE | |
|---|---|
| UTILITY DEPTH RANGE (FEET) | MAXIMUM TRENCH WIDTH AT FINISHED GRADE, W (FEET) |
| 0 to 5 | I.D. +5 |
| 5 to 8 | I.D. +8 |
| 8 to 10 | I.D. +10 |
| 10 to 12 | I.D. +12 |
| 12 to 14 | I.D. +14 |
| 14 to 16 | I.D. +16 |
| 16 to 18 | I.D. +18 |
| 18 to 20 | I.D. +20 |

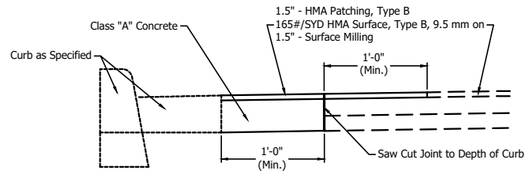
I.D. = Pipe or Conduit Inside Diameter




Notes:
1) Sawcuts shall provide a vertical, neat, and uniform edge.
2) All materials shall comply with specifications as required by the Town of Ingalls.
3) Contractor shall surface mill (1.5") existing pavement 25 ft. in each direction from trench centerline from face-of-curb to face-of-curb or edge-of-roadway, replace with 1.5" HMA Surface, 9.5mm, and appropriate pavement markings.
4) The existing milled surface and HMA Base layer is to be tack coated prior to the placement of new asphalt. The new surface pavement grade shall match the existing surface pavement grade.
5) A two (2) inch wide band of crack sealant is to be applied along the joint between the existing and new asphalt surface. Sealant is to be applied in accordance with INDOT Standard Specifications, Section 305.
6) Refer to Pavement Restoration Table for W.

## HMA PATCH DETAIL

Not to Scale




Notes:
1. Saw cuts shall provide a vertical, neat, and uniform edge. Pavement shall be clean of debris and loose asphalt before installing curb.
2. Existing underdrain, filter fabric, and stone drainage envelope shall be preserved.

## NEW CURB ADJACENT TO EXISTING ASPHALT PAVEMENT

Not to Scale

## NOTES

1) A Permit is required for all work within the public right-of-way.
2) Utility work within existing public right-of-way or within 5 feet of existing right-of-way pavement requires removable flowable fill as backfill.

| | TOWN OF INGALLS, INDIANA STANDARD CONSTRUCTION DETAILS | SHEET |
|---|---|---|
| | MISCELLANEOUS DETAILS | 10 of 10 |