

OHIO DEPARTMENT OF TRANSPORTATION

C	Interchange Operations Study	Contractual
D	Utility Plans	Reference
E	<u>Special Provisions</u>	<u>Contractual</u>
F	Utility Conflict Example	Reference
G	Existing Survey Data	Contractual
H	Preliminary Layout	Reference
I	Interchange Diagrams	Reference
J	Right-of-Way Plan	Contractual
K	Right-of-Way Status Matrix	Contractual
L	Roundabout Lane Arrangement	Contractual
M	Detour Determination Report	Contractual
N	Proposed Transverse Section FAY-435-0229	Reference
O	Approved Design Exceptions	Contractual
P	Supplemental Signal Requirements	Contractual
Q	<u>Utility Correspondence and Existing Utility Plans</u>	<u>Reference</u>
R	<u>Roundabout Check Vehicles</u>	<u>Contractual</u>

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1.3 Railroad Coordination

Not applicable.

1.4 Airway/Highway Clearance

The DBT shall prepare and submit the Airway/Highway Clearance Analysis in accordance with Location and Design Manual Volume 3, Section 1407.1. In addition to the requirements set forth in Location and Design Manual Volume 3, Section 1407.1 for public use facilities, the DBT shall also perform analysis on the MedFlight helipad (private use) located just northeast of the SR-435/SR-729/Bluegrass Blvd intersection at 11280 SR 435.

The DBT shall convey all relevant documentation to ODOT and coordinate with the ODOT Project Manager to obtain all necessary approvals. The DBT shall account for the required time to obtain approvals in their schedule and will not be able to start work until the approvals and documentation are received by the ODOT Project Manager.

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No additional compensation will be made to the DBT for delays, inconveniences, or damages sustained by the DBT due to interference from the utilities or utility work.

The DBT shall be responsible to verify all utility relocation to ensure that the relocation work does not interfere with other proposed construction activities, including relocations of other utilities.

All new utility installation requests within limited access right of way shall be subject to the ODOT permitting process.

10.3 Water and Sanitary Relocations

The Fayette County Engineer’s Office (Water & Sewer Department) owns both a water line facility and a sanitary facility along SR-435 (to the North). The existing plan for these facilities has been provided in Appendix D (Bluegrass Blvd Phase 1).

The DBT shall Design and Construct the relocation of the existing water line from approximately SR-435 CL STA. 93+75 to STA. 109+55 (existing termination). The DBT shall provide a new alignment of the water line so that the water line is located outside of the proposed pavement (including shoulders and splitter islands). The DBT shall terminate the new alignment at the NE quadrant of the intersection (outside of the pavement) similarly to the existing termination. The proposed alignment will reestablish a connection to the existing 12” running along SB Bluegrass Blvd. The proposed water line alignment will cross Bluegrass Blvd north of the proposed roundabout approximately at Bluegrass Blvd CL STA. 186+00. The alignment then will run longitudinally to the south along Bluegrass Blvd (outside of the pavement) and terminate at approximately Bluegrass Blvd CL STA. 183+25 outside of the pavement in the NE quadrant of the intersection. The DBT may reuse existing hydrants and valves. The DBT shall NOT reuse any existing water line conduit. The existing water main shall be removed (not abandoned). The proposed water line shall be designed in accordance with City of Columbus Standards (Applicable sections of the City of Columbus CMS and applicable SCDs) and shall be the same size as existing (12”). The DBT can replace the water main with in-kind material (PVC AWWA C-900).

The DBT shall Design and Construct the relocation of the existing 6” and 12” sanitary force mains from approximately SR-435 CL STA. 93+85 to 112+85. The DBT shall provide a new alignment of the force mains so that they are located outside of the proposed pavement (including shoulders and splitter islands), except for a maximum of three roadway crossings. The three (or fewer) roadway crossings are permitted at any of the four legs of the SR-435/SR-729/Bluegrass Blvd intersection and shall be designed to minimize the length of the facility under each respective roadway (perpendicular crossings). The crossings shall NOT be within the influence of the circulatory roadway or central island. All air release valve vaults and other required sanitary structures shall be located outside of the proposed pavement (including shoulders and splitter islands). The proposed force mains shall be designed in accordance with City of Columbus Standards (Applicable sections of the City of Columbus CMS and applicable SCDs) and shall be the same size as existing (6” & 12”). The existing sanitary conduit and structures shall NOT be reused. The existing sanitary mains shall be removed (not abandoned). The DBT can replace the sanitary mains with in-kind material (SDR 21). The DBT will be required to obtain the PTI from the OEPA.

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Proposed Roundabout and Approaches

The DBT is permitted to use either the rigid option or flexible option provided below.

- **Rigid Option**

Item 452 - 8" Non-Reinforced Concrete Pavement, Class QC 1P

Item 304 - 6" Aggregate Base

- **Flexible Option**

Item 442 - 1.5" Asphalt Concrete Surface Course, 12.5mm, Type A (446)

Item 442 - 1.75" Asphalt Concrete Intermediate Course, 12.5mm, Type A (449)

Item 301 - 9" Asphalt Concrete Base, PG64-22, (449) (2 lifts required)

Item 407 - Non-Tracking Tack Coat (Rate per CMS Table 407.06-1)

Item 304 - 6" Aggregate Base

I-71/SR-435 Ramps (Ramp NW, Ramp EN, Ramp WS)

- **Lanes**

Item 451 - 9" Reinforced Concrete Pavement, Class QC 1P

Item 304 - 6" Aggregate Base

- **Shoulders**

Item 452 - 9" Non-Reinforced Concrete Pavement, Class QC 1P

Item 304 - 6" Aggregate Base

*The existing right shoulder on Ramp EN & Ramp NW is composed of concrete and asphalt.

14 ROADWAY

14.1 General

DBT shall provide cross sections in the plans at 50' and any abrupt changes.

DBT shall replace any mailboxes that are impacted by construction.

The DBT shall evaluate the need for guardrail, design and construct MGS guardrail within project limits. The DBT shall replace existing guardrail impacted by the project with MGS guardrail. The existing Type 5 guardrail can remain if it is not being disturbed by the project. If a guardrail run is being impacted by the project, the DBT shall only replace what is necessary for the project, unless less than 150' (including length of the end anchor) of the old

Moved down [3]: Minimum paved shoulder width for mainline SR-435:¶
Widening for turn lane at SR-435 WB to I-71 NB - 4.00' per L&D¶
STA. 63+21 (Concrete/Asphalt Break) to STA. 78+75 (End Approach Slab) - 6.00'¶
STA. 78+75 (End Approach Slab) to Curbed Roundabout Approach - 8.00'¶

Moved down [1]: DBT shall provide cross sections in the plans at 50' and any abrupt changes.¶
DBT shall replace any mailboxes that are impacted by construction.¶
The DBT shall evaluate the need for guardrail, design and construct to current ODOT standards within project limits. This includes evaluating existing guardrail within the project limits and updating to current ODOT standards. ¶
The DBT shall determine whether the lateral clearance of the existing transformer located behind the guardrail coming off the SE quadrant of FAY-435-0229 is sufficient for the existing standard post spacing. If the DBT finds it is not, the DBT shall remove and replace the guardrail with half or quarter post spacing as applicable. If half or quarter post spacing requirements cannot be met, then the DBT shall have the transformer and associated hardware relocated by the utility owner. ¶
Special Benching is required per Section 800 of the Geotechnical Design Manual when sidehill fills are planned on the face of an existing slope steeper than 4H:1V.¶

Deleted: Minimum lane width for mainline SR-435 = 12'-0"¶

Deleted: The crown on SR-435 shall be located along the striped centerline, and the proposed four lane section shall have two lanes sloped in each direction as per L&D1 301.1.5.¶

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Ramp WS lane assignment: LT, RT-T, RT¶
Ramp D lane assignment is: LT, RT¶
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run would remain. In that scenario, where less than 150' old guardrail would remain, the DBT shall replace the entire run.

Deleted: This includes evaluating existing guardrail within the project limits and updating to current ODOT standards.

The DBT shall determine whether the lateral clearance of the existing transformer located behind the guardrail coming off the SE quadrant of FAY-435-0229 is sufficient for the existing standard post spacing. If the DBT finds it is not, the DBT shall remove and replace the guardrail with half or quarter post spacing as applicable. If half or quarter post spacing requirements cannot be met, then the DBT shall have the transformer and associated hardware relocated by the utility owner.

Special Benching is required per Section 800 of the Geotechnical Design Manual when sidehill fills are planned on the face of an existing slope steeper than 4H:1V.

Proposed turn lane lengths shall be per the IOS (Appendix C) unless otherwise noted; the preliminary layout is for reference and was developed prior to the completion of the IOS - disregard discrepancies within the preliminary layout and associated CADD files. The turn lane lengths listed in the SOS (taken directly from the IOS) are total turn lane length, including storage and a 50' taper.

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14.1.1 SR-435

Minimum lane width for mainline SR-435 = 12'-0"

The existing SR-435 WB to I-71 SB left-turn lane shall remain at 480' even though the IOS recommends 500'. Remove the existing concrete median west of I-71, design and construct an additional 230' inside left turn lane for SR-435 WB to I-71 SB.

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Deleted: left turn lane to increase the turn lane length to 500'

Design and construct a right turn lane for the SR-435 WB to I-71 NB movement that extends back to Allen Rd. Design and widen SR-435 WB to three (3) continuous lanes from County Road 308 to Allen Rd. Initiate widening just west of the intersection with County Road 308; this exceeds the requirements of the IOS. Redesign and reconstruct the four westbound commercial driveways between County Road 308 and Allen Rd. Redesign and reconstruct with the intersection of SR-435 & Allen Rd.

Design and construct SR-435 to 4-lane section (two-WB & two-EB) east of County Road 308. Design and construct asphalt resurfacing from approximately STA. 63+21 (Concrete/Asphalt Break) to the proposed roundabout. This will include realigning the existing drop right turn lane (345' storage length per IOS) to US-35 EB entrance ramp so that two lanes are carried EB (and WB) to the bridge over US-35, and a dedicated right turn lane to US-35 EB ramp is provided.

Redesign and construct SR-435 to carry four lanes (two-WB & two-EB) east of the Ramp D/SR-435 terminal. The intersection at Davidson-Sollars Rd NW and all existing driveways will be reconstructed to accommodate the widening. The 4-lane section will be carried to the proposed roundabout intersection at SR-435/Bluegrass Blvd/SR-729.

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Minimum paved shoulder width for mainline SR-435:

- Widening for turn lane at SR-435 WB to I-71 NB - 4.00' per L&D
- STA. 63+21 (Concrete/Asphalt Break) to STA. 78+75 (End Approach Slab) - 6.00'
- STA. 78+75 (End Approach Slab) to Curbed Roundabout Approach - 8.00'

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The crown on SR-435 shall be designed and constructed along the striped centerline. The proposed four lane section shall have two lanes sloped in each direction as per L&D1 301.1.5.

14.1.2 SR-435/I-71 Ramps

14.1.2.1 Ramp NW

Design and widen the SR-435 to I-71 SB entrance ramp (Ramp NW) to two lanes, receiving the dual left turn from 435 WB. Ramp NW shall be subsequently reduced to one lane prior to the merge with Mainline I-71.

14.1.2.2 Ramp EN

Design and construct dual left turn lanes with 500' of storage length at the I-71 SB exit ramp (Ramp EN) to SR-435. Design and construct the right turn lane to have 500' of storage length too, so that all three turn lanes develop at once. Remove, redesign, and replace the existing traffic signal at the ramp terminal.

Ramp EN lane assignment: LT, LT-T, RT

14.1.2.3 Ramp WS

Design and construct an additional right turn lane with 600' of storage length at the I-71 NB exit ramp (Ramp WS) to SR-435 so that there are dual 600' right turn lanes and a 600' left turn lane. Remove, redesign, and replace the existing traffic signal at the ramp terminal.

Ramp WS lane assignment: LT, RT-T, RT

14.1.3 SR-435/US-35 Ramps

14.1.3.1 Ramp D

Redesign and reconstruct the pavement of the US-35 exit ramp to SR-435 "Ramp D" from the physical gore to SR-435. Redesign and widen to accommodate a 550' right turn lane. Design and construct the Ramp D terminal at SR-435 to a signalized intersection.

Ramp D lane assignment is: LT, RT

14.2 Roundabout Requirements

14.2.1 Roundabout - General

The design vehicle for two-lane portions of the roundabout shall be WB-67 and Passenger Vehicle simultaneously with 3' max. encroachment of WB-67 into adjacent lane.

The design vehicle for the one-lane portions of the roundabout shall be a WB-67.

For the check vehicle, the DBT shall develop custom vehicle templates for a combine, farm tractor pulling cultivator and rolling harrow, and tractor pulling auger per the specification sheets provided in Appendix R - to verify the swept path movements utilizing vehicle tracking software.

The swept path for wider equipment such as a farm combine may come into conflict with vertical elements such as light poles and signs. The design for the roundabout should locate

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The design vehicle for the one-lane portions of the roundabout shall be a WB-67.¶ For the check vehicle, the DBT shall develop custom vehicle templates for a combine, tractor and planter, tractor and auger, and tractor, field cultivator, rolling basket - to verify the swept path movements utilizing vehicle tracking software.¶

The swept path for wider equipment such as a farm combine may come into conflict with vertical elements such as light poles and signs. The design for the roundabout should locate vertical elements such as barrier, light poles and signs outside of the swept path of the farm equipment to prevent snagging. Per SCD TC-42.20 the signs should be placed 12' from the edge of the paved shoulder. ¶ Roundabout cross slope shall be 2% away from the central island.¶

The inscribed circle diameter shall be a minimum of 220'.¶ The truck apron width shall be a minimum of 12' wide.¶ Pedestrian curb cuts shall be installed to accommodate pedestrian crossings. No installation of sidewalk or curb ramps will be required. ¶

All splitter islands shall be concrete. ¶ Each design submission (interim, final, released for construction) shall include a completed and updated copy of the Roundabout Critical Design Parameters Checklist (L&D Vol. 1 403-2) for the proposed roundabout.¶ The traffic control for the roundabout should be installed to fulfill opening year requirements per the IOS.¶

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The DBT shall perform Work related to lighting in accordance with Section 7.1 and the following sections.

The DBT shall provide lighting for the proposed roundabout (including bypass lanes) in accordance with TEM 1140-4.6.10. The roundabout intersection shall be classified as Collector/Collector, with Low Pedestrian Area Classification.

The DBT shall [redesign and](#) reconstruct the lighting control center and power service at the following locations:

- Pole mounted control center at NE quadrant of I-71 Ramps & SR-435 intersection
- Pole mounted control center just west of Ramp D terminal at SR-435

Reconstruction of control center and power service shall include removal of all existing equipment and installation of all new equipment. No existing materials shall be reused by the DBT. The existing control centers shall be salvaged and delivered to the district headquarters, and all other equipment shall be disposed of by the DBT. The proposed control centers shall be ground mounted.

The DBT shall relocate existing high mast poles on new foundations for any poles that are impacted by the final design.

18.3.1 Temporary Lighting

[Temporary lighting is required at the SR-435/Bluegrass/SR-729 intersection once any portion of the roundabout is open to traffic; this could be within a MOT phase prior to the roundabout being fully functional. A contingency lump sum item "625E39000, TEMPORARY LIGHTING" has been provided.](#)

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18.4 Traffic Signals

The DBT shall perform Work related to lighting in accordance with Section 7.1 and the following sections.

The contact information for the District Traffic Engineer is provided below:

David Carlin
Traffic Operations Engineer
David.Carlin@dot.ohio.gov
740-833-8198 (office)
740-815-6015 (cell)

18.4.1 General Requirements

18.4.1.1 Vehicular Signal Heads

In addition to the requirements of CMS 632 and 732, the following shall apply to all signal heads:

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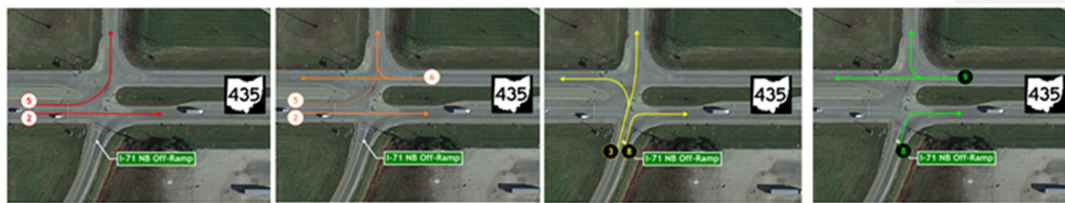
The DBT shall completely remove the existing signal infrastructure at each intersection. Complete removal includes but is not limited to poles, signal heads, pull boxes, cabinet, wires, cables, and conduits. No existing signal infrastructure shall be reused by the DBT unless otherwise noted in this section. Prior to removal the DBT shall coordinate with the Project Engineer and the District Traffic Engineer to determine which materials at each location shall be salvaged for delivery to the district headquarters at 400 E William Street, Delaware, Ohio 43015 (5 working days minimum). It is anticipated that the cabinets and radar detection units will be salvageable and the DBT shall plan to deliver them to district headquarters; the salvageability of all other materials will be determined on a case-by-case basis by the District Traffic Engineer. Any materials that are not deemed salvageable are to be disposed of by the DBT.

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The existing conduit housing the ethernet cable(s) between the existing signals may be reused by the DBT, but new ethernet cable(s) shall be provided. The existing modem located at the strain pole on the NE quadrant of the I-71 SB Ramps/SR-435 intersection may be reused by the DBT. The existing (Ubiquity) ethernet radios may be reused by the DBT.

If the DBT is unable to procure and install the proposed signals at SR-435/I-71 NB Ramps, SR-435/I-71 SB Ramps, and SR-435/Allen Rd prior to 11/1/24, the DBT shall provide temporary signalization to accommodate the opening of the roadway.

The DBT shall design the SR-435/I-71 NB Ramps signal to be ran with the phasing shown in the below graphic:



18.4.5 Existing Signal at SR-435/County Road 308/Factory Shops Blvd

No work is anticipated at this existing signal. The existing (Ubiquity) ethernet radio may be reused by the DBT.

18.5 Intelligent Transportation Systems (ITS)

The DBT shall maintain power/functionality to the ITS Camera Pole located in the median of I-71 at the SR-435 interchange throughout construction. The existing plan for this location is provided in Appendix A - see sheet 26/37 of D06 STTW CCTV FY17.

The allowable downtime is 72 hours for the camera pole & fiber serving it.

19 PROJECT SCHEDULE REQUIREMENTS

The DBT shall develop and maintain a project schedule in accordance with the selected note:

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