

REQUIREMENTS FOR ELECTRONIC DATA TO BE SUPPLIED TO CONSTRUCTION

Areas of Project Work Requiring 3D Models of Proposed Design

3D models detailing a project's proposed design shall be developed for work on projects which: 1) significantly change the terrain surface, 2) could impact the determination of the need to acquire right of way, 3) involves the construction of new bridge substructures, 4) could visually confirm sufficient safe clearance for the traveling public during construction phases, or 5) could verify that required clearances for construction operations and installations are achievable.

At a minimum, 3D models of the proposed finished surface shall be provided for all **work areas** of projects which involve the following types of construction changes and proposed improvements. Surface models shall also be provided for top of roadway subgrade in all areas of new construction or full reconstruction.

I. Highways:

- a. *Pavement Area* (out to limits needed to complete the work)
 1. Highway or street pavements which involve full depth reconstruction or pavement material treatments (example: rubbleization).
 2. New highway construction.
 3. Highway sections where the horizontal alignment is shifted/changed by more than two feet.
 4. Widening of a highway section by more than two feet, including bus turnouts, parking or bike lanes, adding or widening travel lanes.
 5. Raising or lowering the highway's vertical profile by more than 6 inches.
 6. All new or reconstructed roundabouts, and single point interchanges.
 7. New or realigned interchanges should be fully modeled.
 8. Multi-lane intersections with flat grades and/or poor drainage.
- b. *Roadway Area* (outside pavement to limits needed to complete the work)
 1. New curb section (on existing section without curbs).
 2. New or replacement closed drainage system or sanitary sewer system.
 3. New or replacement waterline.
 4. Proposed utility relocations in areas of potential critical conflicts.
 5. New sidewalks which are within 2 feet of the ROW limits.
 6. Realigned sections of sidewalk within 2 feet of the ROW limits.
 7. Regraded lawn or other open improved areas which by being regraded will change the grade vertically by more than 2 feet.
 8. New or reconstructed commercial or residential driveways which are being altered from their existing horizontal alignment by more than two feet in any area outside of the existing ROW limit.

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9. New or reconstructed commercial or residential driveways which are being altered from their existing vertical profile by more than 12 inches in any area outside of the existing ROW limit.
10. All commercial or residential driveways which by being reconstructed and necessitate the acquisition of a new Fee or PE appropriation.
11. New sidewalk curb ramps at intersections to verify constructability.
12. Roadside ditches for which their horizontal alignment is to be changed by more the 5 feet or the vertical alignment is to be changed by 3 feet.
13. Any new roadside or other drainage ditch which has a profile slope of less than 2%.

II. Structures:

a. Bridge Substructures

1. 3D solid shape of new abutments, wingwalls and piers, as described in NYS Bridge Manual, Section 14.2, "Bridge Plan Standards and Organization".
2. 3D surface of all excavated and backfilled areas around new substructures to the limits of disturbance.
3. Potential utility conflicts areas in or around the substructures.
4. Proposed finished grade for areas around removed bridge substructures to the limits of disturbance.

b. Bridge Superstructures

1. 3D surface of top surface of new bridge deck on bridge replacements.
2. 3D surface of outside fascias of new bridge deck for bridge replacements on adjacent alignments to existing or temporary bridges.

c. Retaining Walls

1. 3D solid shape of new retaining wall.
2. 3D surface of all excavated and backfilled areas around new wall to the limits of disturbance.

III. Outside Roadways: (modeled to the limits of disturbance)

- a. Retention/detention/recharge basins.
- b. All wetland mitigation areas which involve modifications to terrain surface.
- c. All proposed areas for contaminated soil removal.
- d. All realignments of or modifications to pond, lake, stream, or river banks shall be modeled to the limits of disturbance.
- e. New construction or major reconstruction of commercial or municipal parking lots.
- f. New construction or major reconstruction of multimodal rest areas.
- g. New construction of a noise barrier.
- h. Proposed finished grade after removal of a building or abandoned structure.