

9/2/2014
8:54:21 AM

Grading Summary.dgn
Plotted By: stewartwillis

PROJECT MANAGER _____
SURVEYED BY _____
DESIGN SUPERVISED BY _____
DESIGNED BY _____

GRADING DIAGRAM AND SUMMARY

REVISED	STATE		SHEET NO.
	ROUTE	PROJECT	
	VA.	XXX XXXX-XXX-XXX, C-50X	2G

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

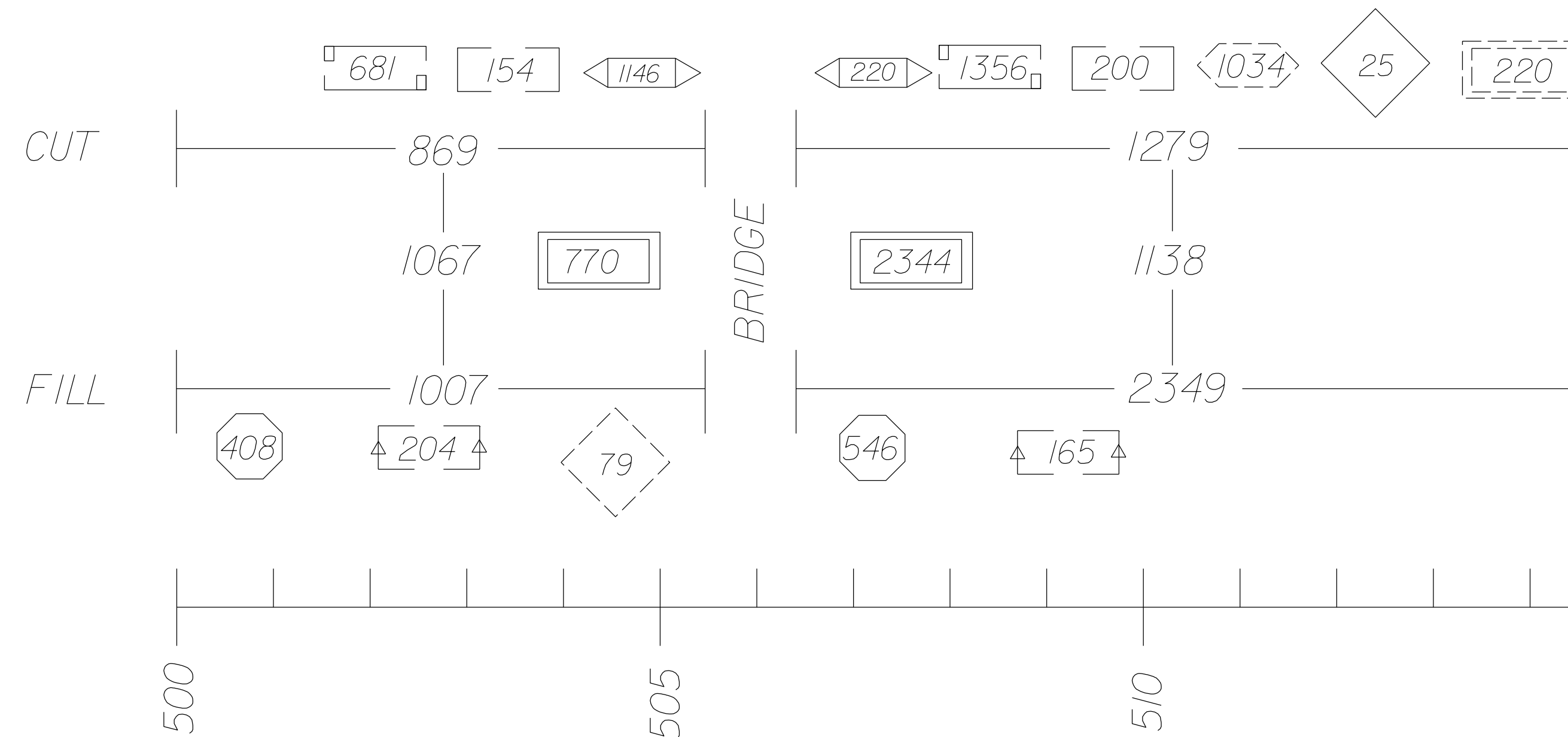
- ┌-130┐ Fill Denotes fill quantity from computer listings and/or manual cross-sections.
- ┌-130┐ Cut Denotes cut quantity from computer listings and/or manual cross-sections. Quantity adjusted for demolition of pavement.
- ┌┐ Denotes C.Y. root mat material in cut areas which is included in Regular Excavation quantities.
- Denotes C.Y. root mat material removed from fill sections and backfilled with Regular Excavation and/or Borrow Excavation
- ◇ Denotes C.Y. Regular Excavation from private entrances.

- ◊ Denotes C.Y. fill for private entrances.
- ▭ Denotes C.Y. unsuitable material above subgrade which is included in Regular Excavation.
- ◀▶ Denotes C.Y. of excavation under the bridge (includes excavation of stream beyond the limits of the bridge).
- ◊ Denotes C.Y. Excavation from Relocated Stream Channel (not Reg. Ex. see Sh. 21) Not Included in CUT quantity.
- ▭ Denotes C.Y. Minor Structure Excavation.

- ┌┐ Denotes C.Y. existing pavement to be removed as "Demolition of Pavement" from fill sections and backfilled with Regular Excavation or Borrow
- ┌┐ Denotes C.Y. existing pavement to be removed as Demolition of Pavement in cut sections within construction limits and is not included in the Regular Excavation or CUT quantities.
- ←┐ Denotes C.Y. Haul. (Haul Material shown will be C.Y. of mat'l. not compacted.)
- Denotes C.Y. fill for S.W. M. (Stormwater Management Basin)
- Denotes C.Y. cut from S.W. M. (Stormwater Management Basin)
- ▭ Denotes Borrow Material (Min. CBR, 3.6)
- Denotes Surplus Material.
- ◊ Denotes C.Y. fill for drainage ditches.

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- ⊗ Denotes items to be paid for on a basis of plan quantities in accordance with current VDOT Road and Bridge Specifications.
- ① Cut quantity shown does not include the material removed as Demolition of Pavement.
- ② Quantity shown for use in Grading Diagram only. See other Summaries for pay item(s).
- ③ Included in Total Regular Excavation.
- ④ Included in Roadway Cut quantity.
- ⑤ Quantities for Temporary Sediment Basins and Temporary Sediment Traps are included with the Stormwater Management Basin quantities.
- ⑥ Denotes pay item.
- ⑦ Included in total fill quantity.
- ⑧ This quantity comes from the computer listings and/or manual cross-sections and may be adjusted for other quantities.
- ⑨ Volumes obtained for Cut Ditches and Fill Ditches not included in computer listings.
- ⑩ Includes settlement of in-place soil.



Location	⊗ Roadway Cut		Root Mat In Cut Sections	Root Mat In Fill Sections	⊗ Excavation Under Bridge		⑨ Exc. - Reloc. Channel		Unsuitable Material		⑩ Roadway Fill	Entrances		Total Regular Excavation	Total Fill	② Demolition of Pavement		⑤ Stormwater Management Basins	⑥ Borrow (Min. CBR-3.6)
	①	②			Below Subgrade	Above Subgrade	Cut	Fill	Cut	Fill		③	④			⑦	⑧		
	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.
BEFORE BRIDGE	869	681	408	1146							1211		79	2423	1698	358			770
AFTER BRIDGE	1279	1356	546	220	1034						2514	25		2070	3060	365	220		2344
FORMULAS	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S		
TOTALS	③ 2148	④ 2037	⑤ 954	⑥ 1366	⑦ 1034	⑧ ③ ⑦	④	⑦	③ ⑦	⑦	3725	25	79	4493	4758	723	220	⑦	3114

FORMULAS

Roadway Cut (C) = Unadjusted Cut from Computer Listings or Manual Cross-Sections minus (-) Demolition of Pavement.

Roadway Fill (J) = Fill Required plus (+) Material for Backfill of Demolition of Pavement Areas in Fill (for heights of fill < 3 feet below subgrade)

Total Reg. Excav. (M) = C + E + F + H + K

Total Fill (N) = J + E + H + L + R

Borrow (S) = [N - (C + F + G + K + P + Q - D - I) x Compaction Factor] ÷ Compaction Factor for Borrow Site

(Embankment) (S) = N - (C + F + K + P + Q - D - I) (Embankment = Total Fill - Usable Cut) Estimated Material to be obtained off-site.

The borrow quantity shown was computed on the basis of the average shrinkage or swell factor for the general vicinity of the project. The contractor will be responsible for determining the actual factor for the site(s) from which he proposes to secure borrow material needed to complete this project.

The embankment quantity shown has not been adjusted for shrinkage or swell factors. The contractor will be responsible for determining the effect of the shrinkage or swell factor of the embankment material, and no adjustment will be made in pay quantities for this factor. The contractor shall determine the actual quantity of embankment material needed to complete this project.

PROJECT	XXXX-XXX-XXX	SHEET NO.	2G
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FIGURE 2H - 25 SAMPLE GRADING DIAGRAM AND SUMMARY SHEET