

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY

November 14, 2019

DESIGN BULLETIN No. 19-02

SUBJECT: Environmental Soil Classification Schedule

The 2019 Illinois Tollway base sheet M-RDY-407 and the 2019 Design Section Engineer's Manual have been updated to incorporate the changes from Design Bulletin 19-01. These changes are required in response to new earthwork guidelines outlined in the Illinois Tollway Environmental Studies Manual and new or revised standard special provisions.

The changes in sections 6.6.7 and 6.6.8 of the Illinois Tollway Environmental Studies Manual outlined soil sampling plans and the timing in relationship to the milestone submittal schedule. The implementation of the analytical results from the soil sampling are being handled with this design bulletin. More information on the location and soil type was needed within the earthwork table to provide the contractor with the necessary information to more accurately bid earthwork



Paul D. Kovacs, P.E.
Chief Engineering Officer

11/15/19

Date

M-RDY-407

The revised base sheet is attached with key additions to the base sheet noted below:

- Columns for Soil Types 1-4 and Hazardous Waste locations so the contractor can identify what soil can be disposed of at a CCDD facility and the associated cost.
- Columns for incidental earthwork quantities and earthwork quantities for performance-based walls. The disposal of this earthwork will now be paid for and this extra information is required due to CCDD facility acceptance based on soil classification types.
- Columns for the various Maintenance of Traffic sub-stages so the earthwork quantities can be isolated by stage and by Soil classification type to enable all parties to better manage earthwork on-site.
- Columns were added for soils approved for re-use, soils not approved, and soils approved with restrictions.
- Notes to the designer and general notes were updated to add clarification.

Design Section Engineer's Manual

The Design Section Engineer's Manual has been revised to align with the new submittal schedule and requirements outlined in the Illinois Tollway Environmental Studies Manual.

Section 4.5.15: Added bullet "Based on the findings of the Phase I ESA or Transaction Screen, locations of planned earth excavation and volume of excavated soil expected, a sampling plan shall be prepared and submitted as part of the 60% design submittal."

Section 4.6.18: Added bullet "At the 95% design submittal, the DSE shall include a copy of the Phase II ESA, the LPC-662 and /or LPC-663 form with supporting information."

Section 4.6.18: Added bullet "Include an Environmental Soil Classification Plan and include an earthwork schedule showing waste disposal type, reuse options and construction worker precaution areas."

EARTHWORK SCHEDULE OF QUANTITIES

LOCATION		EARTHWORK VOLUMES (CY)					HAZARDOUS WASTE	CLASSIFICATION OF SOILS TYPE 1 APPROVED	CLASSIFICATION OF SOILS TYPE 2 APPROVED	CLASSIFICATION OF SOILS TYPE 3 APPROVED	CLASSIFICATION OF SOILS TYPE 4 APPROVED	SOILS NOT APPROVED (TYPE 1)	SOILS NOT APPROVED (TYPE 2)	SOILS APPROVED WITH RESTRICTION (TYPE 1)	SOILS APPROVED WITH RESTRICTION (TYPE 2)
		EARTH EXCAVATION 20200100	ROCK EXCAVATION 20200200	UNSUITABLE MATERIAL 20201200	STRUCTURE EXCAVATION 50200100										
		A	B	C	D	E									
		STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1
400+00	500+00														
500+50	900+00														
RAMP A															
RAMP B															
RAMP C															
RAMP D															
900+00	1500+00														
TOTAL															

LOCATION		EXCAVATION ADJUSTMENT FOR SHRINKAGE (**%)	EMBANKMENT	EARTHWORK BALANCE [EXCESS (+) /SHORTAGE (-)]
		(SEE NOTE 3)		
		$N=(A+D-J-K-L-M) \times SS$	P	Q=B+N-P
		STAGE 1	STAGE 1	STAGE 1
400+00	500+00			
500+50	900+00			
RAMP A				
RAMP B				
RAMP C				
RAMP D				
900+00	1500+00			
TOTAL				

NOTE TO DESIGNER

- ADJUSTMENT PERCENT (SHRINKAGE FACTOR) SHALL BE DETERMINED BY DESIGNER THROUGH INVESTIGATION.
- SS IS THE SHRINKAGE MULTIPLIER $SS=(1-**)$
- SOILS CLASSIFIED AS TYPE 2-4 THAT ARE NOT REUSED WITHIN THE PROJECT ARE DISPOSED OF AND PAID FOR AS EARTH EXCAVATION, UNSUITABLE MATERIAL, STRUCTURE EXCAVATION OR INCIDENTAL.
- DESIGNER SHALL DETERMINE VOLUMETRIC CONVERSION OF NON-SPECIAL WASTE, TYPE 1 TO TONS.
- COLUMN E THROUGH M SHOULD EQUAL A+C+D
- ANY UNSUITABLE MATERIAL CLASSIFIED AS TYPE 1 IS DISPOSED OF AS TYPE 1. ADJUST CALCULATION NOTES AS NECESSARY.

NOTES:

- "SOILS NOT APPROVED" SHALL NOT BE REUSED ON THE ILLINOIS TOLLWAY ROW AND SHALL BE DISPOSED OF AS EARTH EXCAVATION OR NON-SPECIAL WASTE DEPENDING ON THE SOILS CLASSIFICATION.
- SOILS APPROVED WITH RESTRICTION CAN BE REUSED IN MUNICIPALITIES WITH IEPA APPROVED GROUNDWATER ORDINANCES.
- SOILS NOT APPROVED OR APPROVED WITH RESTRICTION J, K, L & M, SHALL BE SUBTRACTED FROM THE CALCULATION OF AVAILABLE SOILS N, DEPENDING ON LOCATION. SOILS NOT APPROVED OR SOILS APPROVED WITH RESTRICTION THAT CANNOT BE REUSED WITHIN THE PROJECT MUST BE REMOVED AS EITHER NON-SPECIAL WASTE, (TYPE 1) OR THROUGH AN EXCAVATION PAY ITEM.
- INCIDENTAL EXCAVATION IS OUTLINED IN SEPARATE TABLE WITH IDENTIFYING SOIL CLASSIFICATION AND IS NOT CONSIDERED IN CALCULATIONS AND IS FOR INFORMATION ONLY EXCEPT TYPE 1 SOILS. PERFORMANCE BASED RETAINING WALLS EXCAVATION IS INCLUDED AS INCIDENTAL TO THE RETAINING WALL AND ASSUMED AS MSE UNLESS OTHERWISE STATED BY DESIGNER. QUANTITIES MAY BE ADJUSTED BASED ON WALL DESIGN.
- WHEN THERE IS EXCESS SOIL APPROVED FOR REUSE, THE CONTRACTOR SHALL FIRST REUSE SOIL CLASSIFIED AS NON-SPECIAL WASTE TO MAXIMIZE THE VOLUME OF MATERIAL DISPOSED AT CCDD FACILITIES.
- CONVERSION OF CUYD NON-SPECIAL WASTE, (TYPE 1) TO TONS WAS ASSUMED AT 1.5525 TONS/CUYD.

LOCATION		TOPSOIL STRIPPING	TOPSOIL PLACEMENT	TOPSOIL BALANCE [EXCESS (+) /SHORTAGE (-)]	HAZARDOUS WASTE	CLASSIFICATION OF SOILS TYPE 1 APPROVED	CLASSIFICATION OF SOILS TYPE 2 APPROVED	CLASSIFICATION OF SOILS TYPE 3 APPROVED	CLASSIFICATION OF SOILS TYPE 4 APPROVED
		R	S	R-S	T	U	V	W	X
		STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1
400+00	500+00								
500+50	900+00								
RAMP A									
RAMP B									
RAMP C									
RAMP D									
900+00	1500+00								
TOTAL									

PAY ITEM NO.	DESIGNATION	STAGE 1	STAGE 2	STAGE 3	TOTAL	CALCULATION NOTES:
20200100	EARTH EXCAVATION					A
20200200	ROCK EXCAVATION					B
20400800	FURNISHED EXCAVATION					WHEN Q<0, THEN Q
20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL					C
50200100	STRUCTURE EXCAVATION					D
J1211110	TOPSOIL EXCAVATION AND PLACEMENT					WHEN S<R, THEN S OR WHEN S>R, THEN R
J1211112	TOPSOIL EXCAVATION AND DISPOSAL					R-S
J1211124	TOPSOIL FURNISH AND PLACE, 4"					WHEN S>R, THEN (S-R)/THICKNESS IN YARDS
JT202008	NON-SPECIAL WASTE DISPOSAL, TYPE 1					IF, (((F+J+L+Z+AA+BB)*SS)-P)/SS>0 + IF, (((U*SS)-S)/SS)>0
JT669020	HAZARDOUS WASTE DISPOSAL					E+T+Y

NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.



EARTHWORK SCHEDULE

DATE
11-11-2019

EARTHWORK SCHEDULE OF INCIDENTAL QUANTITIES

LOCATION		EARTHWORK VOLUMES (CY)		INCIDENTAL EXCAVATION	INCIDENTAL EXCAVATION	HAZARDOUS WASTE JT669020	CLASSIFICATION OF SOILS TYPE 1 APPROVED	CLASSIFICATION OF SOILS TYPE 2 APPROVED *	CLASSIFICATION OF SOILS TYPE 3 APPROVED*	CLASSIFICATION OF SOILS TYPE 4 APPROVED*	SOILS NOT APPROVED (TYPE 1)	SOILS NOT APPROVED (TYPE 2)*	SOILS APPROVED WITH RESTRICTION (TYPE 1)	SOILS APPROVED WITH RESTRICTION (TYPE 2)*
		STORM SEWER TRENCH	ITS EXCAVATION											
		STAGE 1	STAGE 1	STAGE 1	STAGE 1	Y	Z	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	AA	BB
400+00	500+00					STAGE 1	STAGE 1						STAGE 1	STAGE 1
500+50	900+00													
RAMP A														
RAMP B														
RAMP C														
RAMP D														
900+00	1500+00													
TOTAL														

EARTHWORK SCHEDULE OF PERFORMANCE BASED RETAINING WALLS QUANTITIES

LOCATION		RETAINING WALL EXCAVATION***	HAZARDOUS WASTE	CLASSIFICATION OF SOILS TYPE 1 APPROVED	CLASSIFICATION OF SOILS TYPE 2 APPROVED	CLASSIFICATION OF SOILS TYPE 3 APPROVED	CLASSIFICATION OF SOILS TYPE 4 APPROVED	SOILS NOT APPROVED	SOILS APPROVED WITH RESTRICTION
		STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1	STAGE 1
400+00	500+00								
500+50	900+00								
RAMP A									
RAMP B									
RAMP C									
RAMP D									
900+00	1500+00								
TOTAL									

•THIS EXCAVATION IS NOT PAID FOR SEPARATELY BUT INCLUDED IN THE COST OF THE ASSOCIATED WORK ITEM.

•••EXCAVATION FOR PERFORMANCE BASE RETAINING WALL IS NOT PAID FOR SEPARATELY BUT INCLUDED IN THE COST OF THE WALL.
(SEE STRUCTURAL EX FOR OTHER WALLS UNLESS OTHERWISE SPECIFIED.)

NOTE TO DESIGNER

1. DESIGNER SHALL DOCUMENT IN A NOTE(S) THEIR BASIS FOR CALCULATING VOLUMETRIC EXCAVATION LIMITS. THESE LIMITS SHOULD COINCIDE WITH LIMITS IN SPECIAL PROVISIONS FOR INCIDENTAL ITEMS. BASIS SHOULD INCLUDE ASSUMPTIONS OF TRENCHING, BORING OR WHAT IS CALCULATED BY THE DESIGNER.

2. INCIDENTAL EARTHWORK SHOULD BE SHOWN WHEN QUANTITIES ARE OVER 5,000 CU YD OR WHEN THE DESIGNER DETERMINES OTHERWISE.

