

Chapter 3 - Document Introduction



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Document Introduction

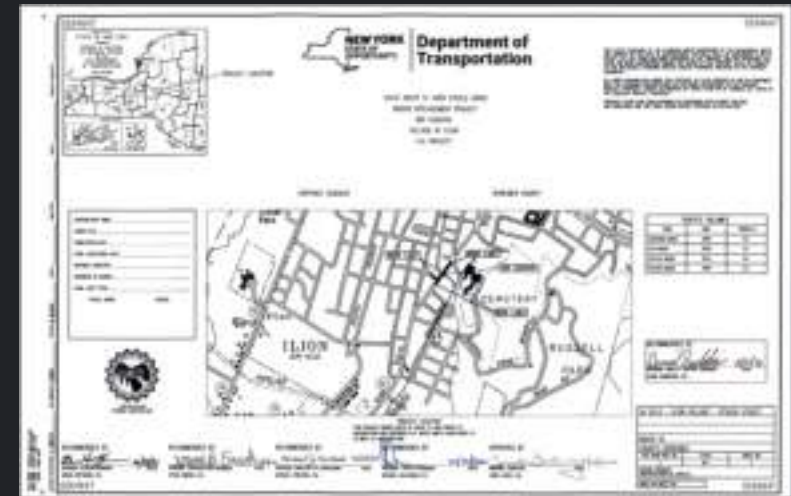
Route 51 over Steele Creek

Reference Documents

1. Construction Document Package for State Route 51 over Steel Creek Bridge Replacement Project (BIN 1026490), Contract D2646487
2. New York State Department of Transportation Standard Specifications and Standard Sheets (US Customary) – Year 2022

<https://www.dot.ny.gov/main/business-center/engineering/specifications/>

See “Lesson 0” for Extended Discussion on Standard Specifications



Construction Documents

Route 51 over Steele Creek

ExPr

- 94 Pages, PDF
- Paper Size: 11 inches by 17 inches
- Generally Black and White, with Some Color Sheets

Rough Categories

- | <u>Rough Categories</u> | <u>PDF Page #</u> |
|------------------------------------|-------------------|
| 1. Introduction & Typical Sections | (1-6) |
| 2. Surveys & Boundaries | (7-10) |
| 3. Work Zone Traffic Control | (11-16) |
| 4. General Civil and Utilities | (17-59) |
| 5. Bridge Plans | (60-94) |

INDEX		TOTAL NUMBER OF SHEETS
SHEET NUMBER	DESCRIPTION	DRAWING NUMBER
1	TITLE SHEET	COVER
2	INDEX AND ABBREVIATIONS	INDEX
3-4	LEGEND, LINE AND POINT SYMBOLS	LEG-1 TO LEG-2
5-6	TYPICAL SECTIONS	TYP-1 TO TYP-2
7	BASELINE TIES & BENCHMARKS	BLT-1
8	RIGHT OF WAY TABLES	RWT-1
9-10	RIGHT OF WAY PLANS	RWP-1 TO RWP-2
11	WORK ZONE TRAFFIC CONTROL NOTES	WZN
12-15	WORK ZONE TRAFFIC CONTROL PLANS	WZTC-1 TO WZTC-4
16	MAINTENANCE JURISDICTION PLAN	MJP
17-23	MISCELLANEOUS TABLES	MST-1 TO MST-7
24-30	MISCELLANEOUS DETAILS	MSD-1 TO MSD-7
31	EARTHWORK SUMMARY SHEET	ESS
32-36	GENERAL PLANS	GNP-1 TO GNP-5
37-38	PROFILE	PRD-1 TO PRD-2
39	DRAINAGE PROFILE	DP-1
40	SANITARY PROFILE	SP-1
41	WATERMAIN PROFILE	WP-1
42	DISPOSITION TABLE	UTT
43-45	UTILITY PLANS	UT-1 TO UT-3
46-50	SIGN, STRIPING, AND LANDSCAPE PLANS	SSL-1 TO SSL-5
51	TRAFFIC SIGNAL PLAN AND NOTES	TSP-1
52	LANDSCAPE NOTES	LAN-1
53-54	LANDSCAPE TABLES	LAT-1 TO LAT-2
55-59	LANDSCAPE DETAILS	LSD-1 TO LSD-5
60-94	BRIDGE PLANS	ST-1 TO ST-35

Construction Documents

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- Typical Abbreviations, Symbols, and Linetypes are defined in the front of the package and apply throughout all of the sheets.

STANDARD SYMBOL (PLANS)	ITEM PAYMENT (NET) ESTIMATE OF QUANTITIES SHEET	EQUIVALENT NOMENCLATURE (SPEC./PROPOSAL)
EL		INCHES
SF		LINEAR FEET
UC		SQUARE FEET
UCG		ROCK
UCH		CURB CURB
UCO		SHALL
UE		FOAM
UEO		TOP

Example

1. Elevation
2. Square Feet
3. Overhead Electric Line
4. Underground Gas Line
5. Overhead Gas Line

PDF Page

- EL or ELEV
SF
--- OE ---
--- G ---
--- OG ---

UTILITIES		
STYLE	NAME	DESCRIPTION
	UC	CONDUIT, UNDERGROUND
	UCH	CONDUIT, HANGING
	UCO	CONDUIT, OVERHEAD
	UE	ELECTRIC LINE, UNDERGROUND
	UEH	ELECTRIC LINE, HANGING
	UEO	ELECTRIC LINE, OVERHEAD
	UETO	ELECTRIC TRANSMISSION, OVERHEAD
	UESS	ELECTRIC, SUBSTATIONS
	UFOD	FIBER OPTIC, UNDERGROUND
	UFON	FIBER OPTIC, HANGING
	UFOD	FIBER OPTIC, OVERHEAD
	UG	GAS, UNDERGROUND
	UGH	GAS, HANGING
	UGO	GAS, OVERHEAD

Construction Documents

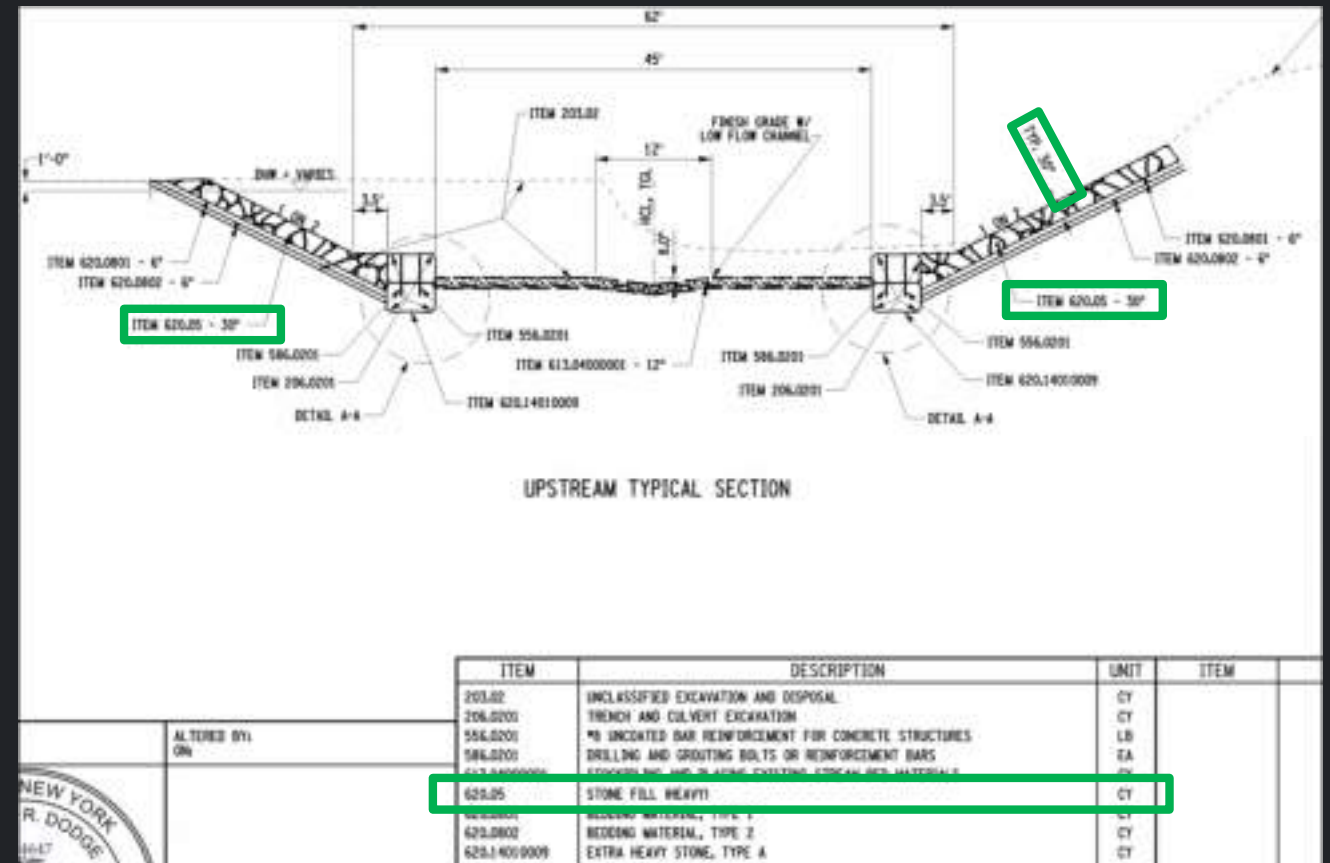
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- Materials and work are often referenced as “Items”.
- Items are described in more detail in the “Standard Specifications” and require cross-referencing

Example

Each side of the stream requires a 30” thick layer of Item 620.05, which is called “Stone Fill (Heavy).

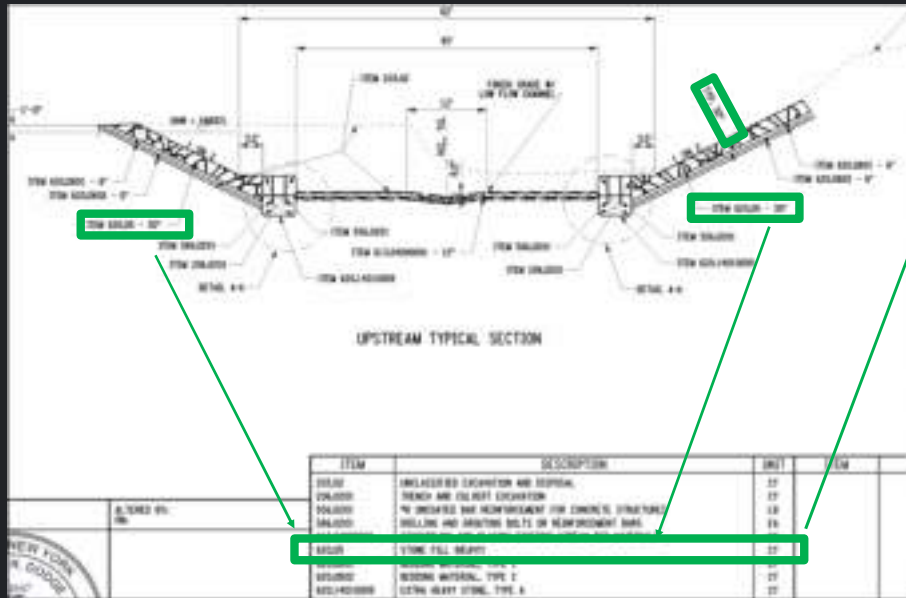
Specification 620.05 then refers to 733-21 “Stone Filling”, which calls heavy stones to be at least 600 pounds and meet other size and gradation blend requirements.



Construction Documents

Route 51 over Steele Creek

Construction Document Package



Real World



Series #1, Lesson #1
Route 51 over Steele Creek

Standard Specifications

SECTION 620 - BANK AND CHANNEL PROTECTION
(Last Revised May 1, 2019)

620-1 DESCRIPTION. This work shall consist of furnishing all labor, equipment, and materials to place a protective covering of erosion-resistant material in the locations indicated in the contract documents or as directed by the Engineer. The work shall be done in accordance with these specifications and in conformity with the lines, grades, thicknesses, and typical sections shown in the contract documents or established by the Engineer.

620-1.01 Vacant.

620-1.02 Stone Filling. Stone filling shall consist of a layer of well-graded stone.

620-1.03 Dry Rip-Rap. Dry rip-rap shall consist of a fitted layer of shaped and graded stone.

620-1.04 Grouted Rip-Rap. Grouted rip-rap shall consist of a layer of stone, similar to dry rip-rap, with the spaces between the stones filled with cement grout.

620-1.05 Bedding Material. Bedding material shall consist of a layer of granular material placed to prevent underlying finer material from passing into and through the stone filling or rip-rap.

620-1.06 Concrete Block Paving. Concrete block paving shall consist of concrete blocks placed on embankment slopes under structures as protection against erosion.

620-1.07 Gabions. Gabions shall consist of open wire mesh baskets, filled with stones.

New York State Department of Transportation
STANDARD SPECIFICATIONS (JSC) January 1, 2022
Section 600
Volume 3

620-2 MATERIALS

620-2.01 General. The requirements for bank and channel protection materials are described below. The procedures for acceptance or rejection of stone filling and rip-rap materials shall be in conformance with the procedures contained in the geotechnical control procedure: "Procedure for the Control of Stone Filling and Rip-Rap Items".

620-2.02 Stone Filling. Provide material meeting the requirements of [733-21 Stone Filling for the type of stone filling specified in the contract documents.

Individuals who operate these approval workflows will be alerted upon successful completion of the Quality Assessment of the program following the general conditions of the specifications. If the QA program is not completed, individuals who are alerted will be alerted upon the basis of the contract.

620-2.02 Stone Filling:

620-2.02.1 Stone Filling, Fine
620-2.02.2 Stone Filling, Light
620-2.02.3 Stone Filling, Medium
620-2.02.4 Stone Filling, Heavy

Stone filling types are based on the gradation of the material as outlined in Table 733-21.01a Stone Filling Gradation and Table 733-21.01b Stone Filling Approximate Weights.

EXAMPLE: Provide material meeting the requirements of [733-21 Stone Filling] in conformance with the procedures contained in the Geotechnical Control Procedure "Procedure for the Control of Stone Filling and Rip-Rap Items".

MATERIAL REQUIREMENTS:

- STONE FILL:** Provide stone filling in accordance with the New York State Department of Transportation (NYSDOT) "Procedure for the Control of Stone Filling and Rip-Rap Items" except as noted herein.
- COMPOSITION:** Provide material meeting the requirements of [733-21 Stone Filling] in conformance with the procedures contained in the Geotechnical Control Procedure "Procedure for the Control of Stone Filling and Rip-Rap Items".
- GRADATION:** Provide stone filling material having a gradation in accordance with TABLE 733-21.01a Stone Filling Gradation and Table 733-21.01b Stone Filling Approximate Weights.

Stone Filling Type	Top Layer	Stone Size	Percent of Total by Weight
Fine	2.5 - 1.0	1.0 - 0.75	100%
		0.75 - 0.5	100%
Light	2.5 - 1.0	1.0 - 0.75	100%
		0.75 - 0.5	100%
Medium	2.5 - 1.0	1.0 - 0.75	100%
		0.75 - 0.5	100%
Heavy	2.5 - 1.0	1.0 - 0.75	100%
		0.75 - 0.5	100%

Notes:

- Stone sizes other than weights shall be the average of the maximum and minimum dimensions.
- Materials shall contain less than 30% of stones with a ratio of maximum to minimum dimension greater than three.
- Reinforced material, including any grout filling, in stone used for rip-rap shall be in conformance with the requirements of the contract documents.
- Materials shall contain a sufficient amount of coarse material that the average stone size will be in the specified maximum size range.
- Reinforced grouting of this type may be required in some projects, in which case the requirements will be stated in the contract documents.

Construction Documents

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Bridge Plans (60-94)

- Describes the work required for the construction of the bridge structure itself.
- See “Page Turn” Video for Additional Information and Discussion.
- Let’s first focus on the Drawing Numbers “ST-1 (60) and ST-2 (61)”

INDEX OF DRAWINGS		TOTAL NUMBER OF SHEETS
SHEET NUMBER	DESCRIPTION	DRAWING NUMBER
60	GENERAL PLAN BRIDGE	ST-1
61	BRIDGE TYPICALS	ST-2
62	BRIDGE PROFILE 1:5	ST-3
63	ESTIMATE OF QUANTITY & INDEX BRIDGE	ST-4
64	GENERAL NOTES	ST-5
65	BORING LOCATION PLAN	ST-6
66	GENERAL SUBSURFACE PROFILE	ST-7
67	EARTHWORK PLAN	ST-8
68	EARTHWORK SECTION	ST-9
69-71	BEGIN ABUTMENT, PILE LAYOUT, PLAN, ELEVATION	ST-10 TO ST-12
72-74	END ABUTMENT, PILE LAYOUT, PLAN, ELEVATION VIEW	ST-13 TO ST-15
75	INTEGRAL ABUTMENTS	ST-16
76	TRANSVERSE SECTION	ST-17
77	FRAMING PLAN	ST-18
78	GIRDER DETAILS	ST-19
79	DIAPHRAGM DETAILS	ST-20
80	MOMENT, SHEAR, CAMBER, AND DESIGN LOAD TABLES	ST-21
81	HAUNCH TABLES	ST-22
82	SUPERSTRUCTURE SLAB DETAILS	ST-23
83	APPROACH SLAB DETAILS	ST-24
84	VERTICAL CONCRETE BARRIER LAYOUT	ST-25
85	BARRIER REINFORCEMENT PLAN	ST-26
86	BARRIER DETAILS	ST-27
87	TRANSITION RAILING DETAILS	ST-28
88	SPLICE DETAILS	ST-29
89-90	MISCELLANEOUS DETAILS	ST-30 TO ST-31
91-94	BAR LIST	ST-32 TO ST-35

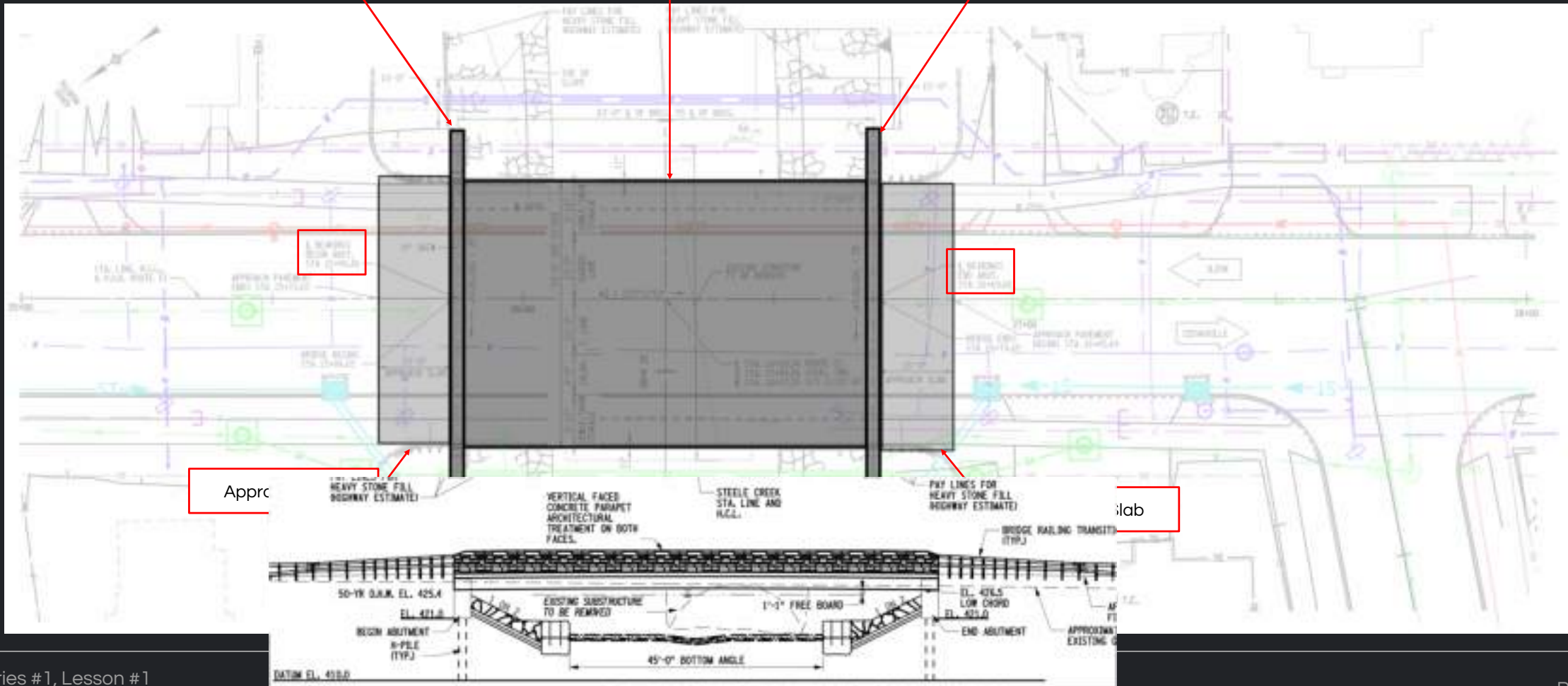
Construction Documents

Route 51 over Steele Creek

Begin Abutment (Foundation System)

Superstructure (Steel Girders and Concrete Slab)

End Abutment (Foundation System)



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