

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE
				80% FED 20% STATE
			URBAN	BOX CULVERT
				0010
				S.N. 016-2272
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	113	113
28000305	TEMPORARY DITCH CHECKS	FOOT	240	240
28000400	PERIMETER EROSION BARRIER	FOOT	110	110
28000510	INLET FILTERS	EACH	1	1
* 30300112	AGGREGATE SUBGRADE IMPROVEMENT 12"	SQ YD	64	64
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	144	144
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	86	86
40603085	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	TON	65	65
40604062	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N70	TON	9	9
44000100	PAVEMENT REMOVAL	SQ YD	80	80
48101600	AGGREGATE SHOULDERS, TYPE B 8"	SQ YD	302	302
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	1
50104400	CONCRETE HEADWALL REMOVAL	EACH	1	1

* DENOTES SPECIAL PROVISION REQUIRED
 ** DENOTES SPECIALTY ITEM

REV-SEP

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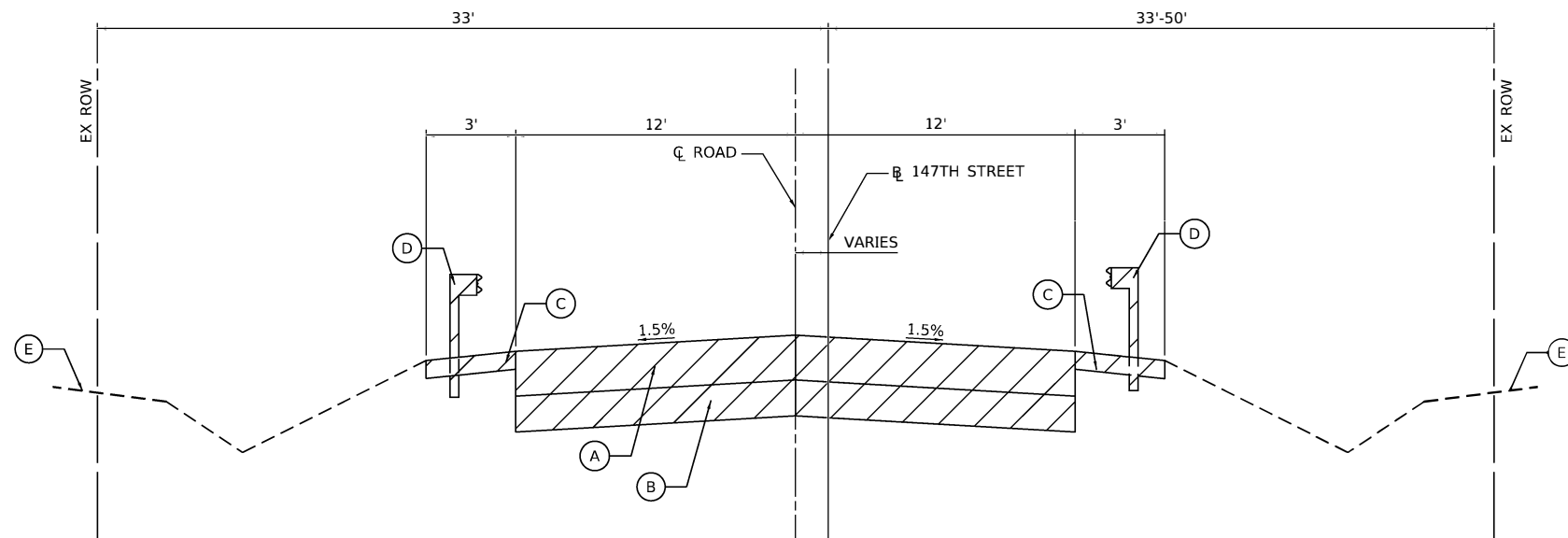
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PLOT DATE = 3/17/2020	DATE - 11/8/19	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

147TH ST OVER TRIBUTARY C TO CAL-SAG CHANNEL
 SUMMARY OF QUANTITIES

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1602	2019-051-T	COOK	45	4
			CONTRACT NO. 62J28	
ILLINOIS FED. AID PROJECT				



EXISTING TYPICAL SECTION
147TH STREET
 STA. 520+60.00 TO STA. 520+90.00

EXISTING LEGEND

- (A) EXISTING HMA PAVEMENT, 8 1/2" *
 - (B) EXISTING CONCRETE BASE COURSE, 4" *
 - (C) EXISTING AGGREGATE SHOULDER
 - (D) EXISTING GUARDRAIL
 - (E) EXISTING GROUND
- DENOTES REMOVAL ITEM

PROPOSED LEGEND

- (1) HOT-MIX ASPHALT SURFACE COURSE, MIX "D", IL-9.5, N70, 2"
- (2) HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70 **
- (3) AGGREGATE SUBGRADE IMPROVEMENT 12" ***
- (4) AGGREGATE SHOULDERS TYPE B, 8"
- (5) THERMOPLASTIC PAVEMENT MARKING - LINE 4"
- (6) PROPOSED HEADWALL (SEE STRUCTURAL PLANS FOR CULVERT)
- (7) PROPOSED CULVERT (SEE STRUCTURAL PLANS FOR CULVERT)
- (8) EROSION CONTROL BLANKET (SPECIAL)
- (9) SEEDING CLASS 2A
- (10) TOPSOIL FURNISH AND PLACE, 4"
- (11) SEEDING CLASS 4B
- (12) SEEDING CLASS 5B

MIXTURE REQUIREMENTS

MIXTURE TYPE	AIR VOIDS @ NDES	QMP
PROPOSED PAVEMENT		
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", IL-9.5, N70, 2"	4% @ 70 GYR	QC/QA
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70, 16 1/4" (VARIES) **	4% @ 70 GYR	QC/QA
QMP DESIGNATION: QUALITY CONTROL/QUALITY ASSURANCE (QC/QA); QUALITY CONTROL FOR PERFORMANCE (QCP); PAY FOR PERFORMANCE (PFP)		

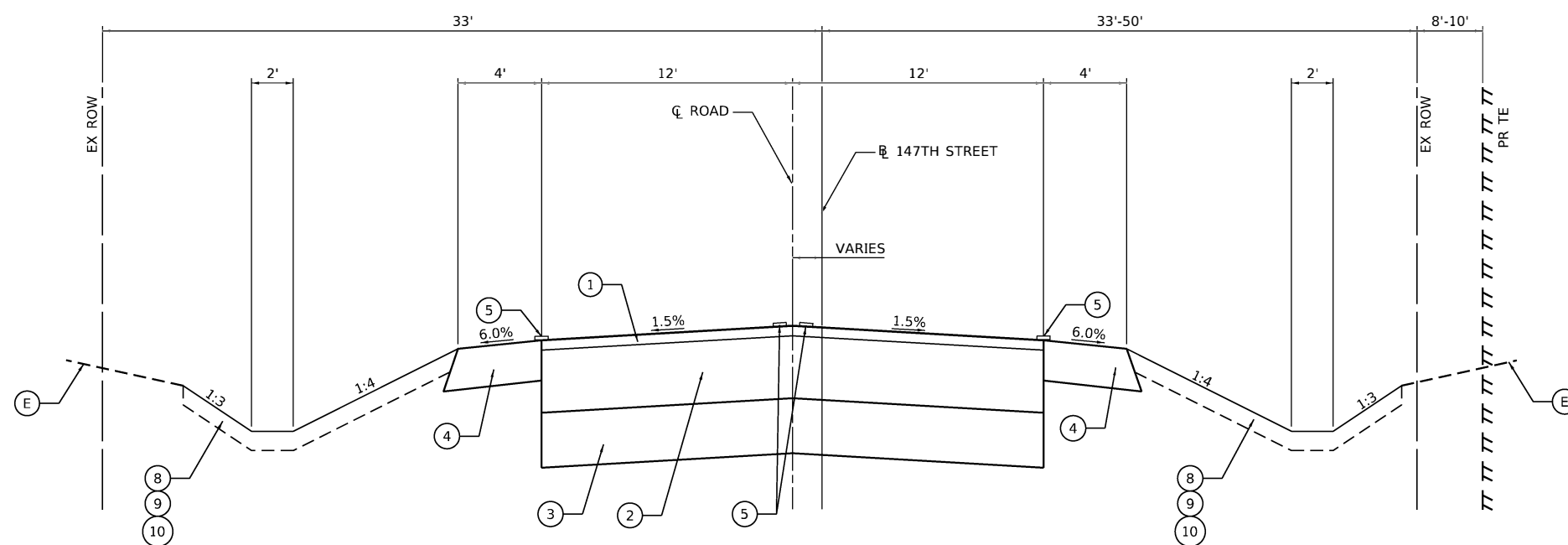
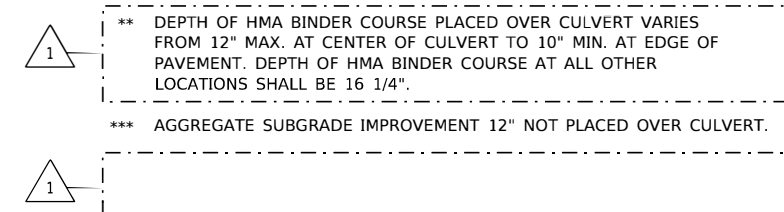
NOTES

1. THE UNIT WEIGHT USED TO CALCULATE ALL HOT-MIX ASPHALT SURFACE MIXTURE QUANTITIES IS 112 LB/SY/IN.
2. THE "AC TYPE" FOR POLYMERIZED HMA MIXES SHALL BE "SBS/SBR PG 76-22" AND FOR NON-POLYMERIZED HMA THE "AC TYPE" SHALL BE "PG 64-22" UNLESS MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS.
3. FOR USE OF RECYCLED MATERIALS SEE SPECIAL PROVISIONS.
4. QUALITY MANAGEMENT PROGRAM (QMP) IDENTIFIES THE PARTICULAR QUALITY CONTROL SPECIFICATION THAT APPLIES TO THE HMA MIXTURE.

* SEE SOIL BORING LOGS FOR EXISTING PAVEMENT THICKNESS.

** DEPTH OF HMA BINDER COURSE PLACED OVER CULVERT VARIES FROM 12" MAX. AT CENTER OF CULVERT TO 10" MIN. AT EDGE OF PAVEMENT. DEPTH OF HMA BINDER COURSE AT ALL OTHER LOCATIONS SHALL BE 16 1/4".

*** AGGREGATE SUBGRADE IMPROVEMENT 12" NOT PLACED OVER CULVERT.



PROPOSED TYPICAL SECTION
147TH STREET
 STA. 520+60.00 TO STA. 520+71.42
 STA. 520+78.58 TO STA. 520+90.00

REV 5/19/2020

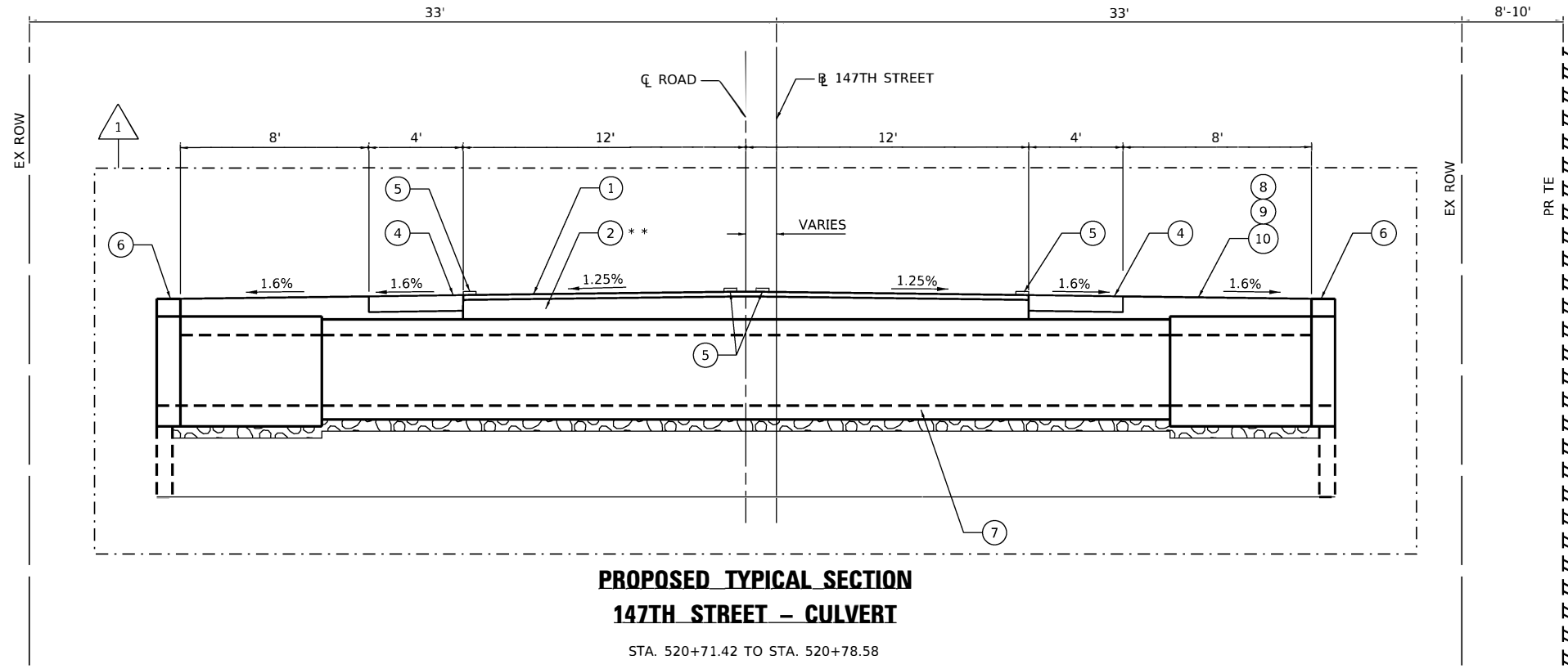
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DRAWN - CS	REVISIONS -	
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PLOT DATE = 5/14/2020	DATE - 11/8/19	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

147TH ST OVER TRIBUTARY C TO CAL-SAG CHANNEL
TYPICAL SECTIONS

SCALE:	SHEET	OF	SHEETS	STA.	TO	STA.	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
							1602	2019-051-T	COOK	45	8
											CONTRACT NO. 62J28
											ILLINOIS FED. AID PROJECT



**PROPOSED TYPICAL SECTION
147TH STREET - CULVERT**

STA. 520+71.42 TO STA. 520+78.58

EXISTING LEGEND

- (A) EXISTING HMA PAVEMENT, 8 1/2" *
 - (B) EXISTING CONCRETE BASE COURSE, 4" *
 - (C) EXISTING AGGREGATE SHOULDER
 - (D) EXISTING GUARDRAIL
 - (E) EXISTING GROUND
- ▨ DENOTES REMOVAL ITEM

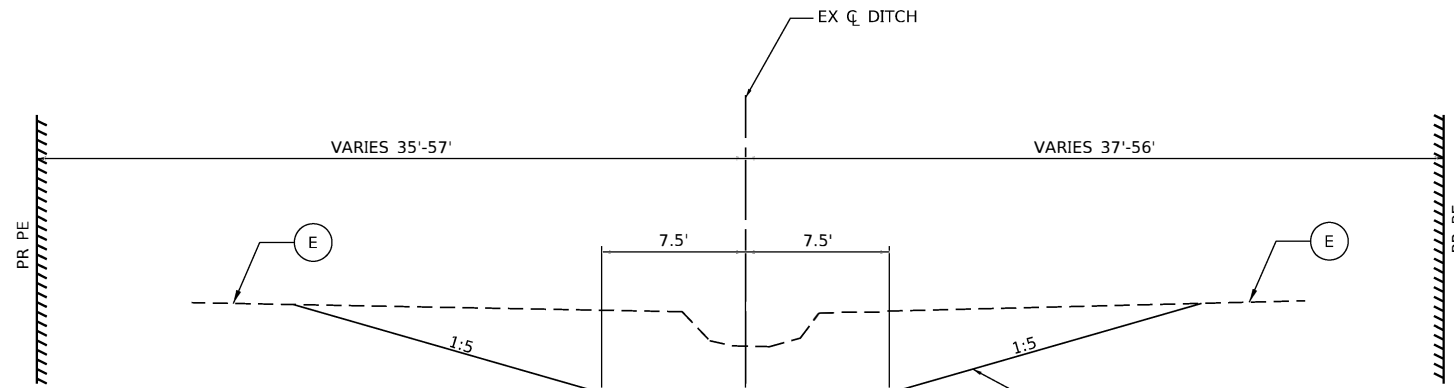
PROPOSED LEGEND

- (1) HOT-MIX ASPHALT SURFACE COURSE, MIX "D", IL-9.5, N70, 2"
- (2) HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70 **
- (3) AGGREGATE SUBGRADE IMPROVEMENT 12" ***
- (4) AGGREGATE SHOULDERS TYPE B, 8"
- (5) THERMOPLASTIC PAVEMENT MARKING - LINE 4"
- (6) PROPOSED HEADWALL (SEE STRUCTURAL PLANS FOR CULVERT)
- (7) PROPOSED CULVERT (SEE STRUCTURAL PLANS FOR CULVERT)
- (8) EROSION CONTROL BLANKET (SPECIAL)
- (9) SEEDING CLASS 2A
- (10) TOPSOIL FURNISH AND PLACE, 4"
- (11) SEEDING CLASS 4B
- (12) SEEDING CLASS 5B

* SEE SOIL BORING LOGS FOR EXISTING PAVEMENT THICKNESS.

** DEPTH OF HMA BINDER COURSE PLACED OVER CULVERT VARIES FROM 12" MAX. AT CENTER OF CULVERT TO 10" MIN. AT EDGE OF PAVEMENT. DEPTH OF HMA BINDER COURSE AT ALL OTHER LOCATIONS SHALL BE 16 1/4".

*** AGGREGATE SUBGRADE IMPROVEMENT 12" NOT PLACED OVER CULVERT.



**PROPOSED TYPICAL SECTION
147TH STREET - STREAM**

(LOOKING NORTH)
STA. 10+26.50 TO STA. 12+02.79

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PLOT DATE = 5/14/2020	DATE - 11/8/19	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**147TH ST OVER TRIBUTARY C TO CAL-SAG CHANNEL
TYPICAL SECTIONS**

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 62J28				
ILLINOIS FED. AID PROJECT				

REV 5/19/2020

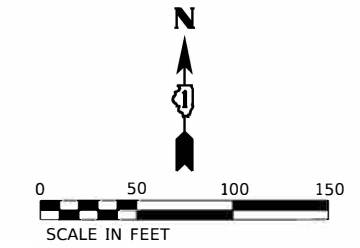
NOTES:

1. SEE STRUCTURE PLANS FOR CULVERT DETAILS.
2. SEE GRADING AND DRAINAGE PLAN FOR DRAINAGE DETAILS.

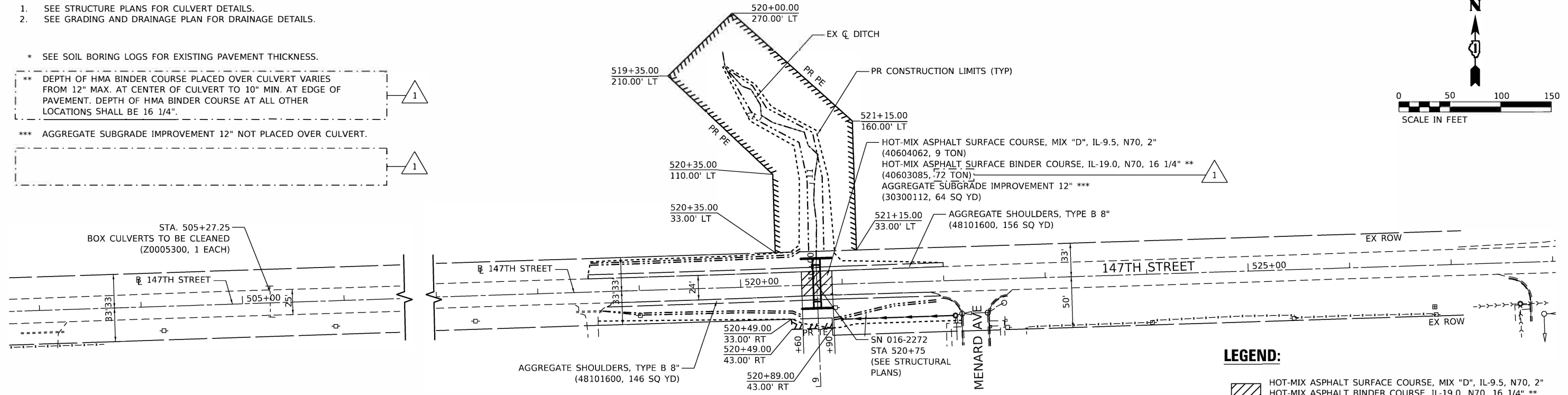
* SEE SOIL BORING LOGS FOR EXISTING PAVEMENT THICKNESS.

** DEPTH OF HMA BINDER COURSE PLACED OVER CULVERT VARIES FROM 12" MAX. AT CENTER OF CULVERT TO 10" MIN. AT EDGE OF PAVEMENT. DEPTH OF HMA BINDER COURSE AT ALL OTHER LOCATIONS SHALL BE 16 1/4".

*** AGGREGATE SUBGRADE IMPROVEMENT 12" NOT PLACED OVER CULVERT.



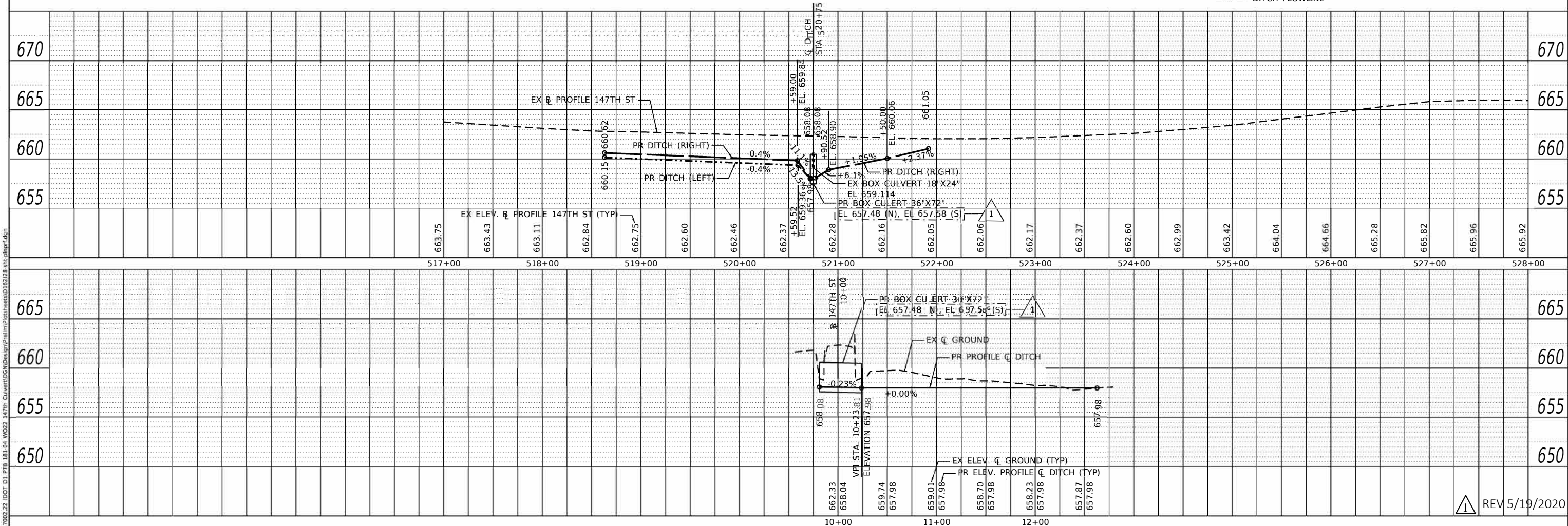
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	PLOTTED	
	ALIGNED	
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	FILED	
	NO.	



LEGEND:

	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", IL-9.5, N70, 2"
	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70, 16 1/4" **
	AGGREGATE SUBGRADE IMPROVEMENT, 12" ***
	DITCH FLOWLINE

PROFILE	SURVISED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	NO.	



REV 5/19/2020

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PLOT DATE = 5/14/2020	DATE - 11/8/19	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

147TH ST OVER TRIBUTARY C TO CAL-SAG CHANNEL			
PLAN AND PROFILE			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1602	2019-051-T	COOK	45	13
CONTRACT NO. 62J28				
ILLINOIS FED. AID PROJECT				

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Benchmark: None

Existing Structure: Culvert with no S.N. built on an unknown date, is 18"x24" and approximately 31'-10" long. Traffic is to be detoured.

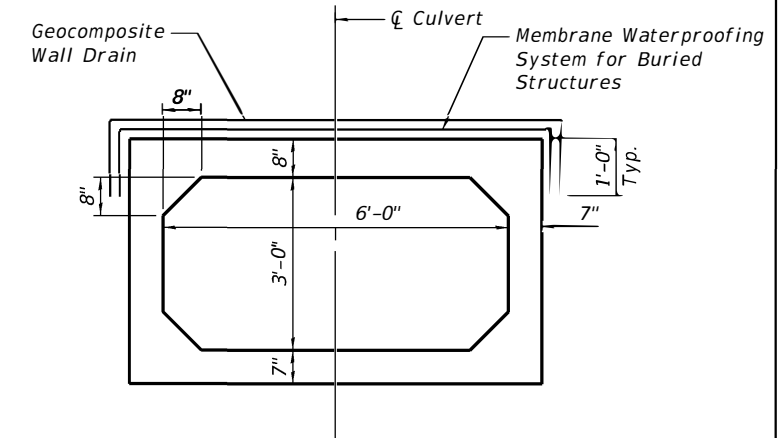
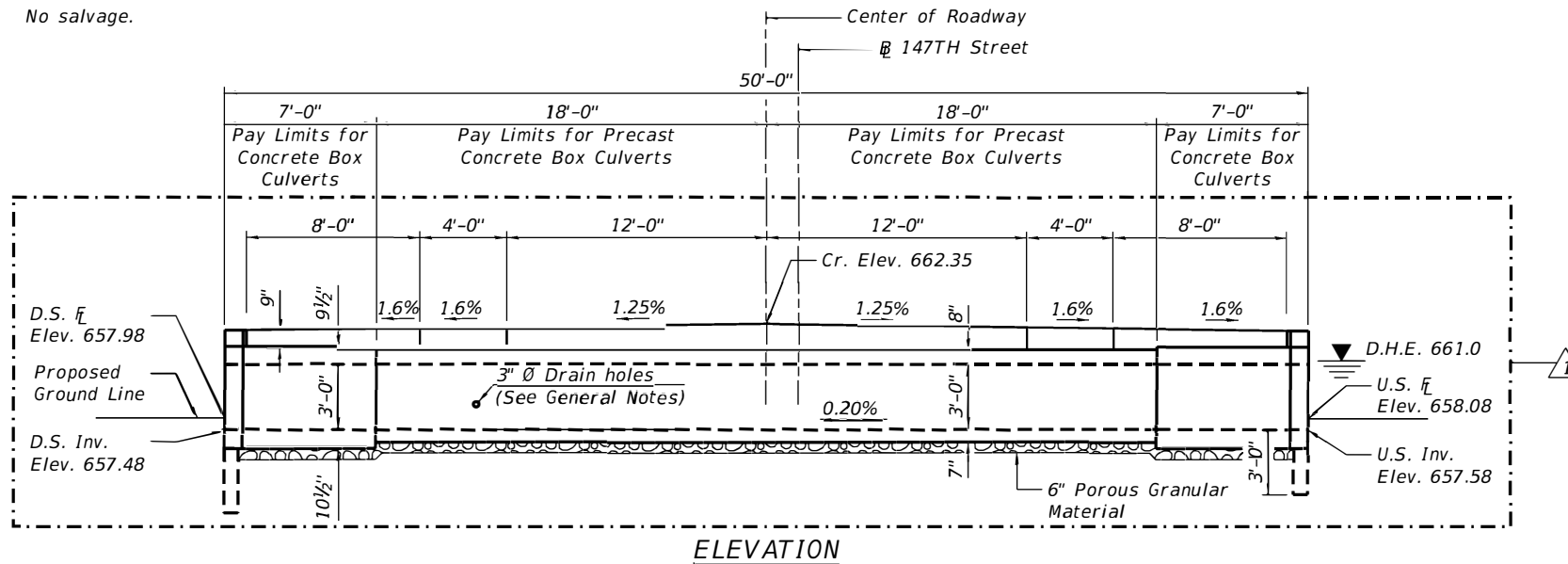
No salvage.

INDEX OF SHEETS

1. General Plan and Elevation
- 2.-3. Culvert Details
4. Soil Boring Logs

GENERAL NOTES

The design fill height for this box is 1.0 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577.
 Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.
 The 6 in. thick layer of porous granular material required for the precast concrete box culvert per Art. 540.06 of the Standard Specifications shall also apply to the end sections. Cost of the porous granular material will not be paid for separately but shall be included in the unit price of the work for which it is required.
 Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.
 Precast concrete box culverts and concrete box culverts shall be backfilled with Porous Granular Embankment below the top of the box culvert extending to a vertical plane 2 ft from the exterior sides of the culvert, 2 ft from the back face of the end sections, and not closer than 2 ft from the face of embankment.

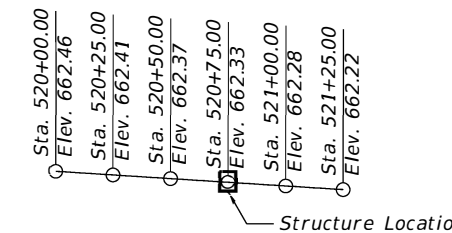
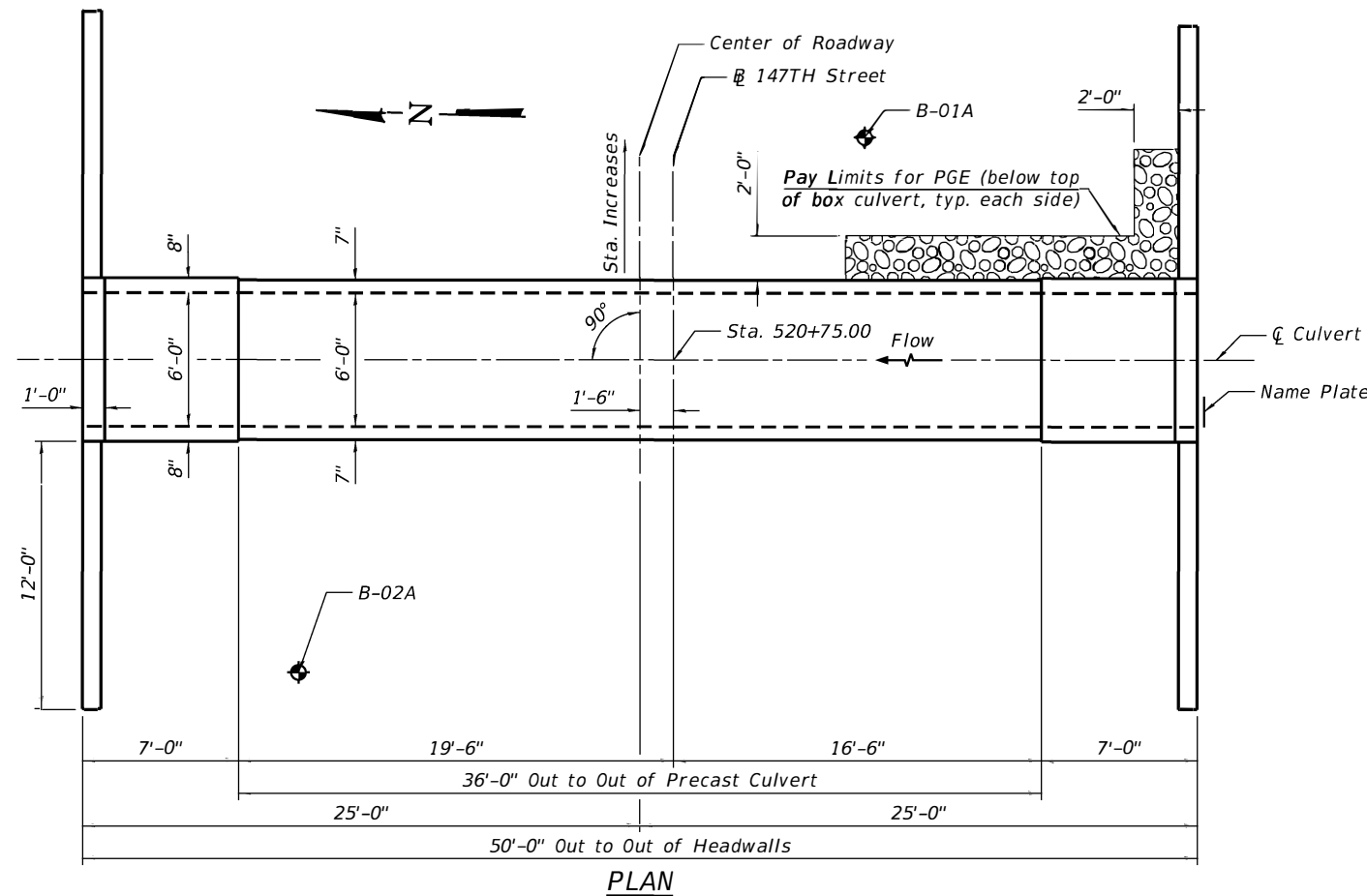


WATERWAY INFORMATION

Drainage Area = 0.08 sq. mi. Low Grade Elev. = 662.05 ft @ Sta. 522+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
10	15.4	3.0	3.0	17.5		0.8	0.5	661.5	659.6
Design	50	62.7	3.0	17.5		1.2	1.0	662.3	660.9
Base	100	129.7	3.0	17.5		1.2	1.2	662.3	661.3
Overtopping		20.0	3.0	17.5		0.9	0.5	662.2	659.7
Max. Calc.	500								

10 year existing velocity = 5.1 fps
 10 year proposed velocity = 3.2 fps
 2-year peak flow = 8.6 c.f.s.
 2-year peak elevation = 658.9 ft
 2-year peak bypass opening = 3 sq. ft.



DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES

PRECAST UNITS

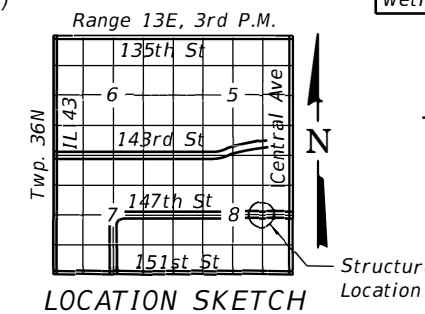
f'_c = 5,000 psi
 f_y = 65,000 psi (Welded Wire Reinforcement)

FIELD UNITS

f'_c = 3,500 psi
 f_y = 60,000 psi (Reinforcement)

STATION 520+75
 BUILT BY
 STATE OF ILLINOIS
 F.A.U. RT. 1602
 SEC. 2019-051-T
 LOADING HL-93
 STR. NO. 016-2272

NAME PLATE
 See Std. 515001



GENERAL PLAN AND ELEVATION
147TH STREET OVER TRIBUTARY C
OF THE CAL-SAG CHANNEL
F.A.U. RTE. 1602 SEC. 2019-051-T
COOK COUNTY
STATION 520+75
S.N. 016-2272

REV 5/19/2020

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EFK Moen
 Civil Engineering Design

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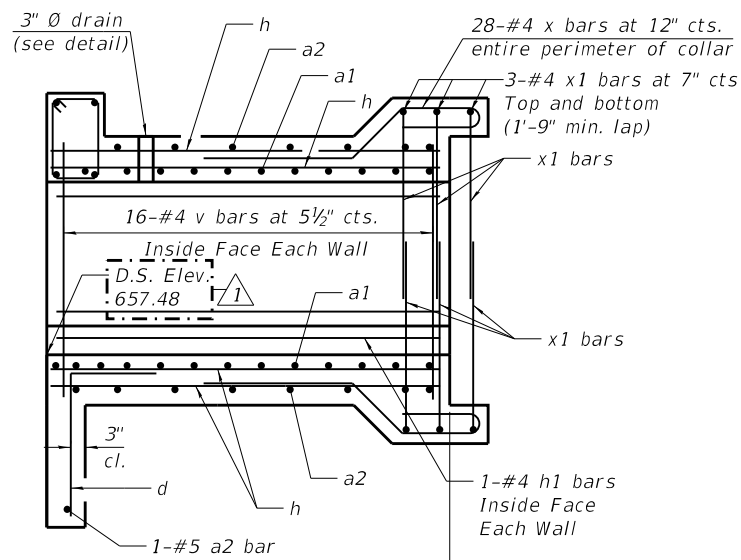
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 016-2272

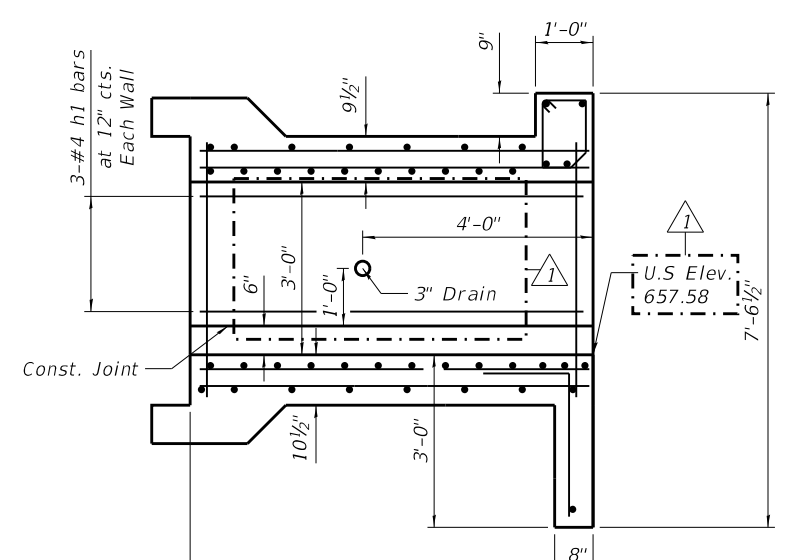
SHEET 1 OF 4 SHEETS

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 62J28				

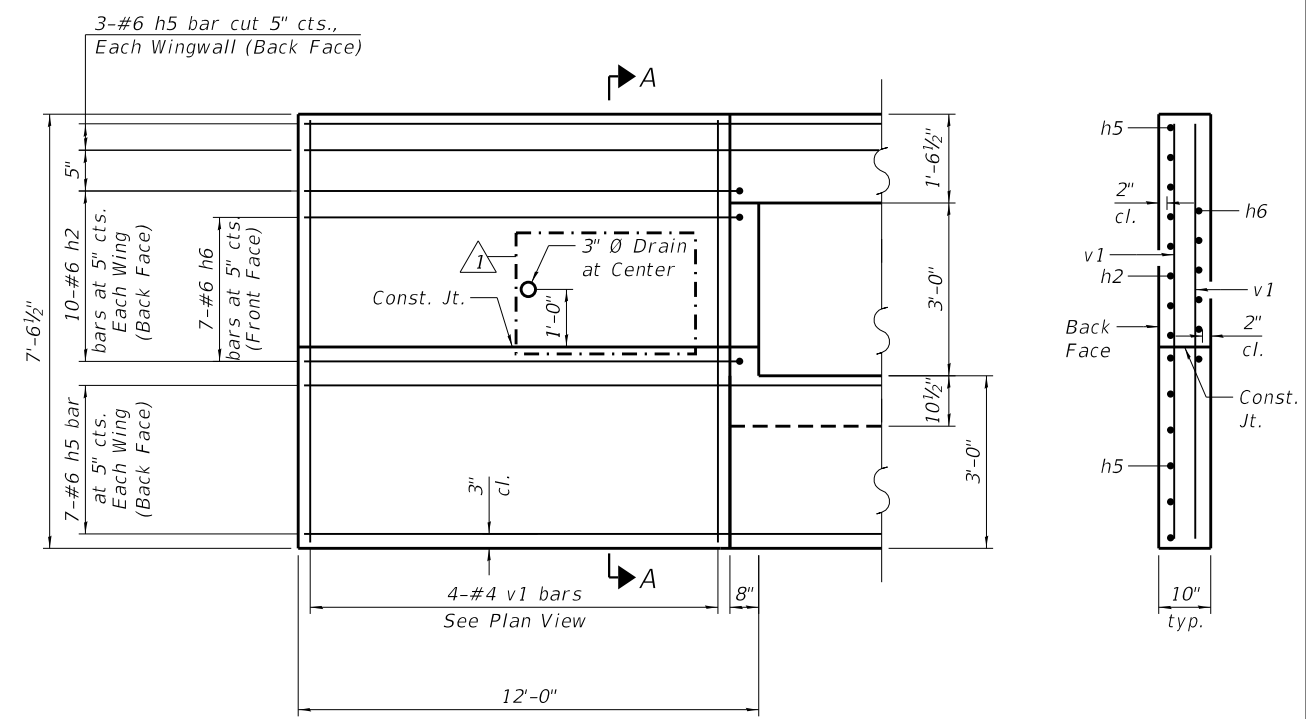
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HALF LONG. SECTION

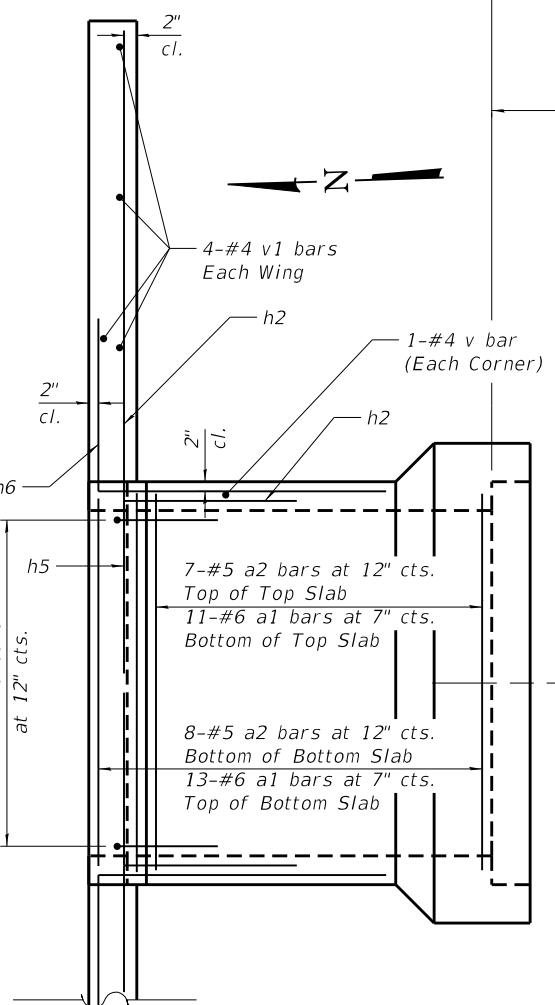


HALF ELEVATION

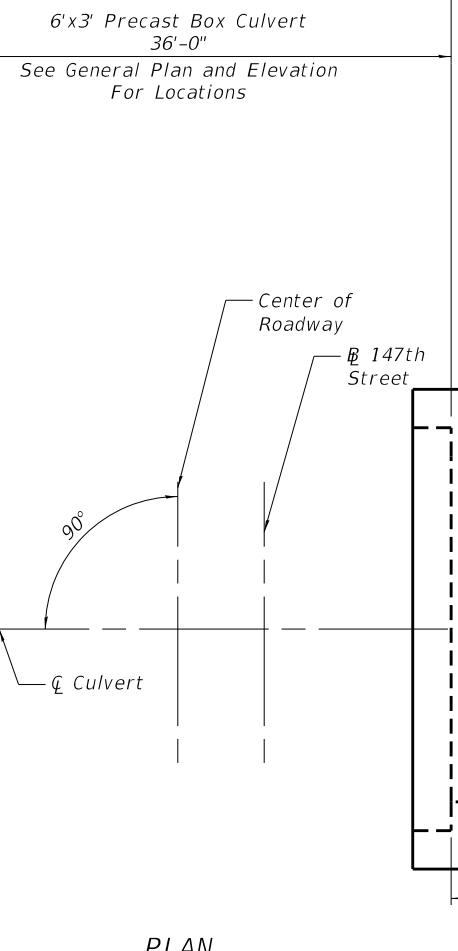


ELEVATION OF WINGWALLS

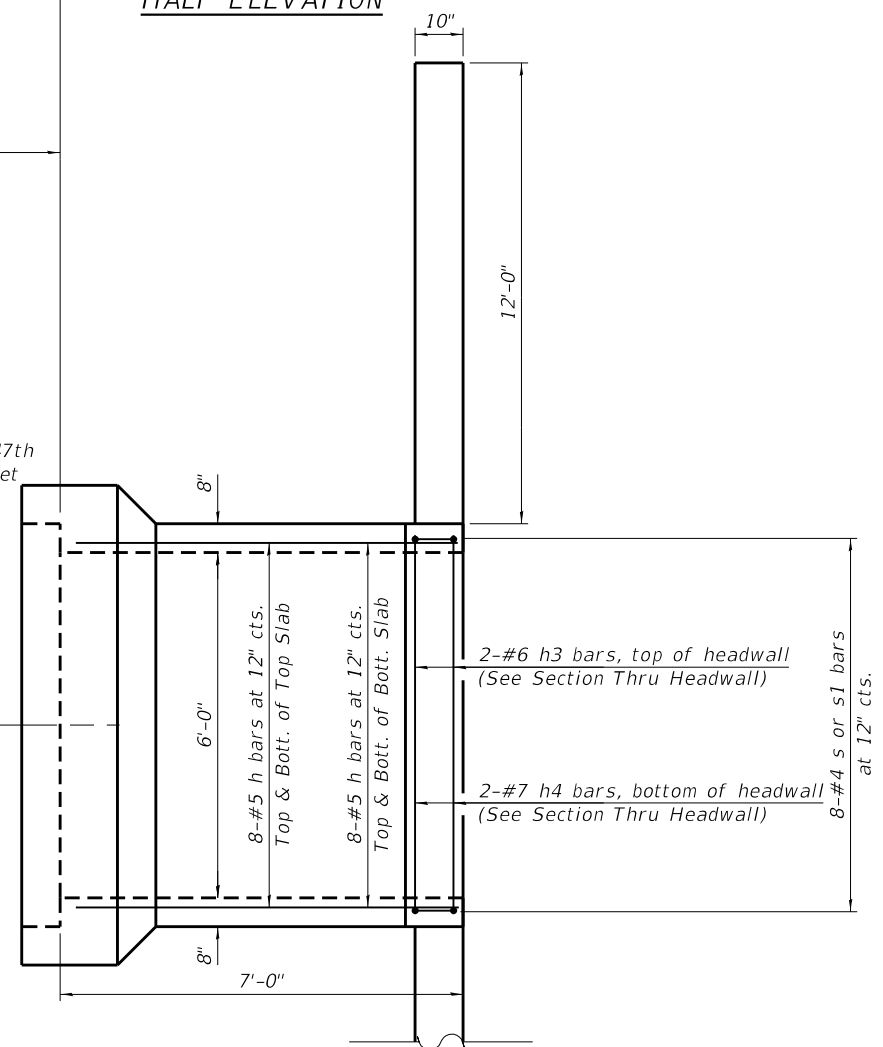
SECTION A-A



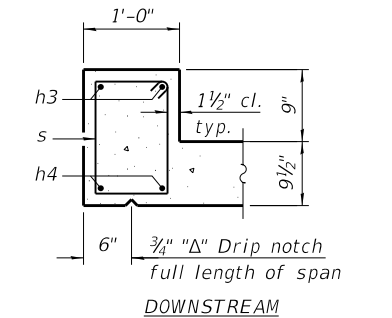
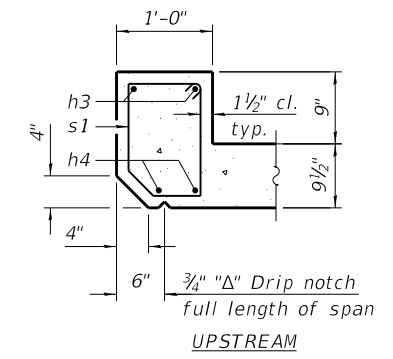
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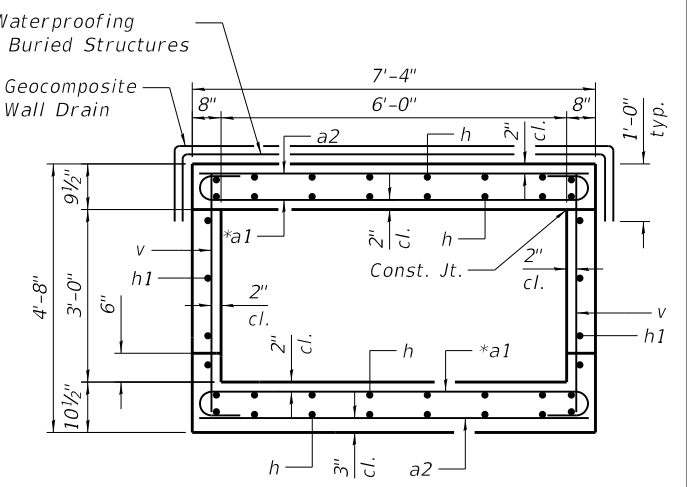
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SHOWING OUTLINES

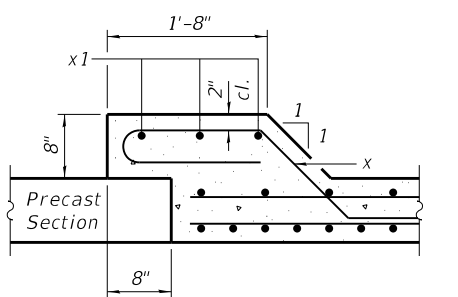


SECTION THRU HEADWALL



SECTION THRU BARREL

*Tilt hook of a1 bar if necessary for 2" min. cl.



SECTION THRU CONNECTION COLLAR

Note:
 A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.

EFK Moen
 Civil Engineering Design

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PLOT DATE = 5/14/2020	DRAWN - KAB	REVISED -
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
 STRUCTURE NO. 016-2272

SHEET 2 OF 4 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1602	2019-051-T	COOK	45	34
CONTRACT NO. 62J28				

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