Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Date 9/17/15

ROUTE FAP 311 (IL 71) **DESCRIPTION** Traffic Signals at the Intersection of IL 71 & IL 126 **LOGGED BY** Larry Myers

SECTION (1)R, I **LOCATION** SW 1/4, **SEC.** 3, **TWP.** 36N, **RNG.** 7E, 3rd **PM**, **Latitude** 41.62532, **Longitude** -88.42557

COUNTY Kendall **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** CME Automatic

STRUCT. NO. _____
Station _____

BORING NO. 03 (N.W. Quad.)
Station 571+10
Offset 89.0 ft Lt.
Ground Surface Elev. 718.67 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After _____ **Hrs.** _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
				Augered Black Silty Clay Loam Fill, Brown Sand & Gravel in Silty Loam Matrix
716.17				
	4			Brown Fine Sand to Coarse Gravel in Silty Loam / Silty Clay Matrix
	4		11	
	4			
-5				
	4			
	5		14	
712.17	7			
				Hard to Very Stiff Gray Silty Clay Loam Till
	5			
	6	4.2	13	
	7	S		
-10				
	3			
	4	3.2	12	
	4	B		
	4			
	5	4.0	13	
	5	B		
-15				
	4			
	4	3.4	12	
	4	B		
	4			
	5	3.4	13	
	5	B		
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
	4			Hard to Very Stiff Gray Silty Clay Loam Till *(continued)*
	5	3.9	13	
	7	B		
	5			
	6	4.2	13	
	7	B		
-25				
	7			
	8	4.1	13	
692.17	8	B		
				End of Boring
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

SOIL BORING IL 71 & IL 126.GPJ IL_DOT.GDT 10/23/15

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MODEL = Default
PLOT DRIVER = IDOT_PDF.plotcfg

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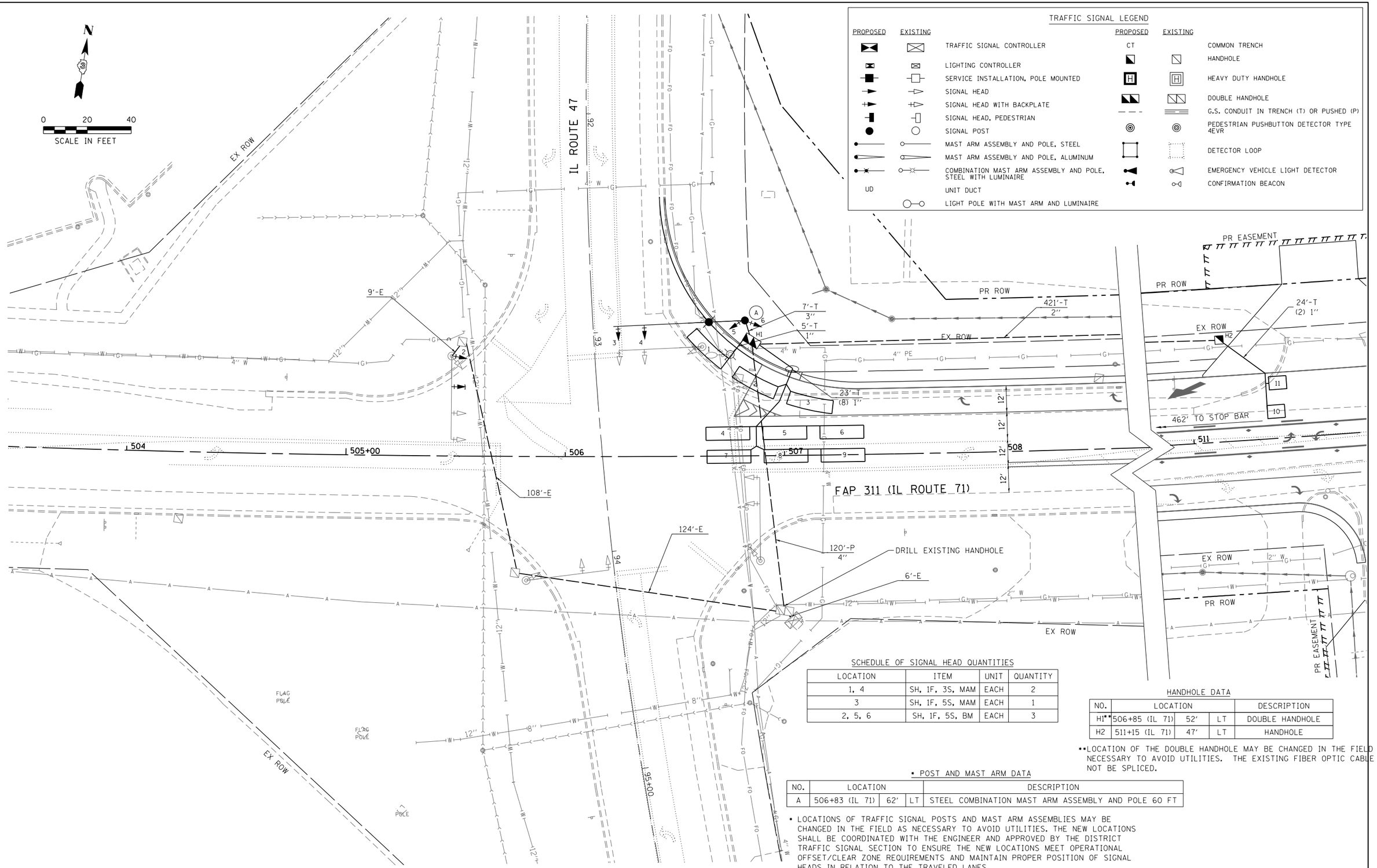
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
IL 71 AT IL 126

SCALE: | SHEET NO. 15 OF 24 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	401
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



SCHEDULE OF SIGNAL HEAD QUANTITIES

LOCATION	ITEM	UNIT	QUANTITY
1, 4	SH, 1F, 3S, MAM	EACH	2
3	SH, 1F, 5S, MAM	EACH	1
2, 5, 6	SH, 1F, 5S, BM	EACH	3

HANDHOLE DATA

NO.	LOCATION			DESCRIPTION
H1**	506+85 (IL 71)	52'	LT	DOUBLE HANDHOLE
H2	511+15 (IL 71)	47'	LT	HANDHOLE

**LOCATION OF THE DOUBLE HANDHOLE MAY BE CHANGED IN THE FIELD AS NECESSARY TO AVOID UTILITIES. THE EXISTING FIBER OPTIC CABLE MA NOT BE SPLICED.

• POST AND MAST ARM DATA

NO.	LOCATION			DESCRIPTION
A	506+83 (IL 71)	62'	LT	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 60 FT

• LOCATIONS OF TRAFFIC SIGNAL POSTS AND MAST ARM ASSEMBLIES MAY BE CHANGED IN THE FIELD AS NECESSARY TO AVOID UTILITIES. THE NEW LOCATIONS SHALL BE COORDINATED WITH THE ENGINEER AND APPROVED BY THE DISTRICT TRAFFIC SIGNAL SECTION TO ENSURE THE NEW LOCATIONS MEET OPERATIONAL OFFSET/CLEAR ZONE REQUIREMENTS AND MAINTAIN PROPER POSITION OF SIGNAL HEADS IN RELATION TO THE TRAVELED LANES.

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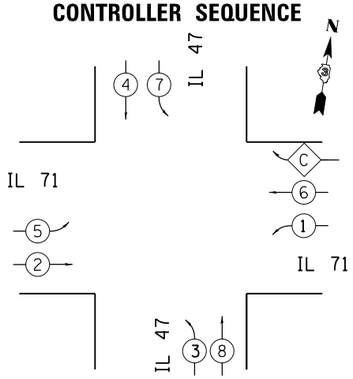
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL PLAN
IL 71 AT IL 47

SCALE: | SHEET NO. 16 OF 24 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(I)R, I	KENDALL	558	402
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

CONTROLLER SEQUENCE



		OVERLAP PHASE		PROTECTED PHASE
—⊙—	VEHICULAR PHASE			
—◇—	RIGHT TURN OVERLAP	C	=	7
--⊙--	PEDESTRIAN PHASE			
(•)	NUMBER REFERRING TO ASSOCIATED PHASE			

PHASE DESIGNATION DIAGRAM

IL 71 AT IL 47
ELECTRICAL LOAD CHART

IL 71 INDICATION	NUMBER	WATTAGE EACH	BURN TIME (%)
RED	9	12	50
YELLOW	9	32	25
GREEN	9	12	25
YELLOW ARROW	6	12	10
GREEN ARROW	6	11	10

IL 47 INDICATION	NUMBER	WATTAGE EACH	BURN TIME (%)
RED	6	12	50
YELLOW	6	32	25
GREEN	6	12	25
YELLOW ARROW	2	12	10
GREEN ARROW	2	11	10

TRAFFIC SIGNAL CABINET ITEM	NUMBER	WATTAGE EACH	BURN TIME (%)
CONTROLLER	1	6	100
LOOP DETECTORS	25	1.5	100
UNINTERRUPTABLE POWER SUPPLY	1	50	100
LUMINAIRE	1	400	45

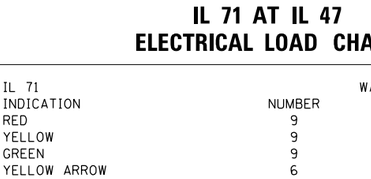
AGENCY RESPONSIBLE FOR ENERGY CHARGES: UNITED CITY OF YORKVILLE

CABLE DIAGRAM LEGEND

- TRAFFIC SIGNAL CONTROLLER CABINET
- LIGHTING CONTROLLER CABINET
- SERVICE INSTALLATION, POLE MOUNTED, 120V
- R Y G — TRAFFIC SIGNAL HEAD WITH BACKPLATE
- (2) — DENOTES NUMBER OF CONDUCTORS
- LUMINAIRE, SODIUM VAPOR, 400 WATT
- PEDESTRIAN SIGNAL HEAD
- PUSHBUTTON DETECTOR
- DETECTOR LOOP
- H/C — GROUND CABLE ROD AT HANDHOLE (H), DOUBLE HANDHOLE (H), CONTROLLER (C), OR LIGHTING CONTROLLER (L)
- P/MA — GROUND ROD AT POST (P) OR MAST ARM (MA)
- S — GROUND ROD AT ELECTRIC SERVICE INSTALLATION
- LIGHT DETECTOR
- CONFIRMATION BEACON
- (S) SERVICE CABLE

  ELECTRICAL CABLE IN CONDUIT, SERVICE, NO.6 2C
- (L) LIGHTING CABLE

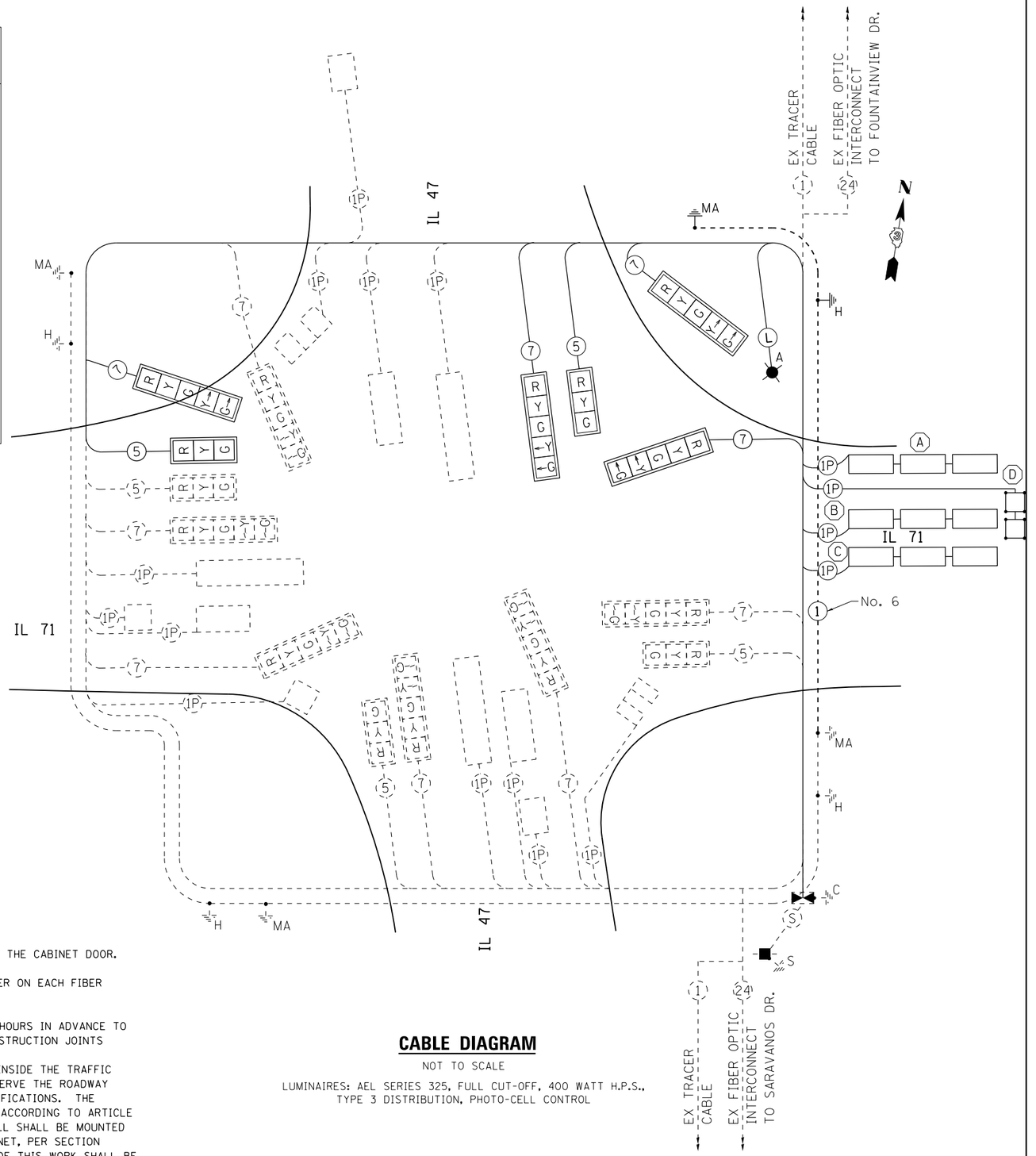
  600V (XLP-TYPE USE) 3-1/C NO.10



LIGHTING CIRCUIT DIAGRAM

NOTES:

1. A SELF ADHERING PHASING DIAGRAM SHALL BE PLACED INSIDE THE CABINET DOOR.
2. FIBER OPTIC CABLE NEEDS DIRECTION AND ASSIGNMENT NUMBER ON EACH FIBER CABLE.
3. NOTIFY THE TRAFFIC SIGNAL SECTION AT (815) 434-8506 72 HOURS IN ADVANCE TO REDESIGN THE DETECTOR LOOPS, IF POSSIBLE, TO AVOID CONSTRUCTION JOINTS
4. A 120 VOLT 20 AMP CIRCUIT BREAKER SHALL BE INSTALLED INSIDE THE TRAFFIC SIGNAL CONTROLLER CONNECTED TO THE MAIN BREAKER, TO SERVE THE ROADWAY LIGHTING, PER SECTION 1068.01(e)(3) OF THE STANDARD SPECIFICATIONS. THE CIRCUIT BREAKER SHALL BE CLEARLY LABELED FOR LIGHTING ACCORDING TO ARTICLE 1068.01(f) OF THE STANDARD SPECIFICATIONS. THE PHOTOCELL SHALL BE MOUNTED TO THE EXTERIOR OF THE TRAFFIC SIGNAL CONTROLLER CABINET, PER SECTION 1068.01(e)(2) OF THE STANDARD SPECIFICATIONS. THE COST OF THIS WORK SHALL BE INCLUDED IN THE ITEM "MODIFY EXISTING CONTROLLER."



CABLE DIAGRAM

NOT TO SCALE

LUMINAIRES: AEL SERIES 325, FULL CUT-OFF, 400 WATT H.P.S., TYPE 3 DISTRIBUTION, PHOTO-CELL CONTROL

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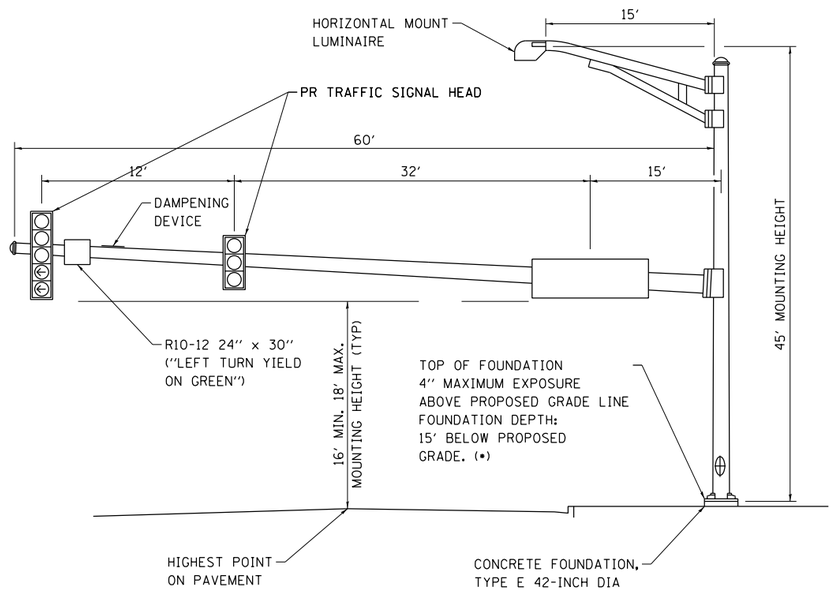
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL CABLE PLAN
IL 71 AT IL 47

SCALE: | SHEET NO. 17 OF 24 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	403
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		



IL 47 NB

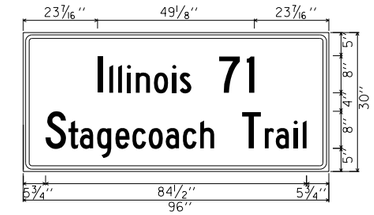
(•) FOUNDATION DEPTHS ARE BASED ON THE TABLE INCLUDED IN HIGHWAY STANDARD 878001 WHICH ARE DESIGNED FOR SOILS WITH AN AVERAGE UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 1.0 TSF. PRIOR TO FOUNDATION INSTALLATION, THE CONTRACTOR SHALL VERIFY THE SOIL STRENGTH TO THE DEPTH OF THE FOUNDATION AT EACH PROPOSED LOCATION

NOTES:

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. TOP OF FOUNDATION SHALL NOT BE EXPOSED MORE THAN 4 INCHES ABOVE THE SURROUNDING GRADE LINE IN ACCORDANCE WITH HIGHWAY STANDARD 878001.
3. TOP OF FOUNDATION SHOULD BE 2 INCHES ABOVE TOP OF CURB OR 1 FOOT ABOVE CENTERLINE OF ROADWAY, WHICHEVER IS HIGHER.

BILL OF MATERIALS – IL 71 AT IL 47

CODE NO.	ITEM	UNIT	QUANTITY
72000100	SIGN PANEL - TYPE 1	SQ FT	5
72000200	SIGN PANEL - TYPE 2	SQ FT	20
81028240	UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.	FOOT	122
81028350	UNDERGROUND CONDUIT, PVC, 2" DIA.	FOOT	621
81028370	UNDERGROUND CONDUIT, PVC, 3" DIA.	FOOT	10
81400700	HANDHOLE, PORTLAND CEMENT CONCRETE	EACH	1
81400720	DOUBLE HANDHOLE, PORTLAND CEMENT CONCRETE	EACH	1
81702450	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 3-1/C NO. 10	FOOT	165
82103400	LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, PHOTO-CELL CONTROL, 400 WATT	EACH	1
85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	569
87301255	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	925
87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	1063
87301900	ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C	FOOT	169
87703030	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 60 FT	EACH	1
87800420	CONCRETE FOUNDATION, TYPE E 42-INCH DIAMETER	FOOT	21
87900200	DRILL EXISTING HANDHOLE	EACH	1
88040090	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	2
88040150	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	3
88040160	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	1
88600100	DETECTOR LOOP, TYPE I	FOOT	829
89000100	TEMPORARY TRAFFIC SIGNAL INSTALLATION	EACH	1
89502200	MODIFY EXISTING CONTROLLER	EACH	1
89502300	REMOVE ELECTRIC CABLE FROM CONDUIT	FOOT	611
89502375	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1
89502380	REMOVE EXISTING HANDHOLE	EACH	3
89502385	REMOVE EXISTING CONCRETE FOUNDATION	EACH	1
X8410105	TEMPORARY LIGHTING SYSTEM	EACH	1
X8860100	LOOP DETECTOR TESTING	EACH	1
Z0033043	RE-OPTIMIZE TEMPORARY TRAFFIC SIGNAL SYSTEM	EACH	1
Z0033056	OPTIMIZE TRAFFIC SIGNAL SYSTEM	EACH	1
	TRAFFIC SIGNAL BACKPLATE, LOUVERED, FORMED PLASTIC, SPECIAL	EACH	6



20 SQ FT EACH (1) REQUIRED
DESIGN SERIES D
8" HIGH UPPER CASE/6" HIGH LOWER CASE LETTERING

STREET NAME SIGN DETAIL

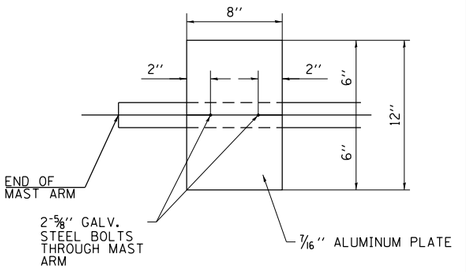
STREET NAME SIGNS SHALL BE PLACED ON THE MAST ARMS PARALLEL TO THE RESPECTIVE ROUTE AS DIRECTED BY THE ENGINEER.

STREET NAME SIGNS
1. TYPE ZZ SHEETING REQUIRED
2. WHITE LETTERING ON GREEN BACKGROUND
3. 3/4" WHITE BORDER

R10-12
TYPE AP SHEETING REQUIRED
5.0 SQ FT EACH (1) REQUIRED

LEFT TURN CONTROL SIGN DETAIL

THIS SIGN SHALL BE LOCATED 6 TO 12 INCHES TO THE RIGHT OF THE MAST ARM MOUNTED LEFT TURN SIGNAL HEAD.



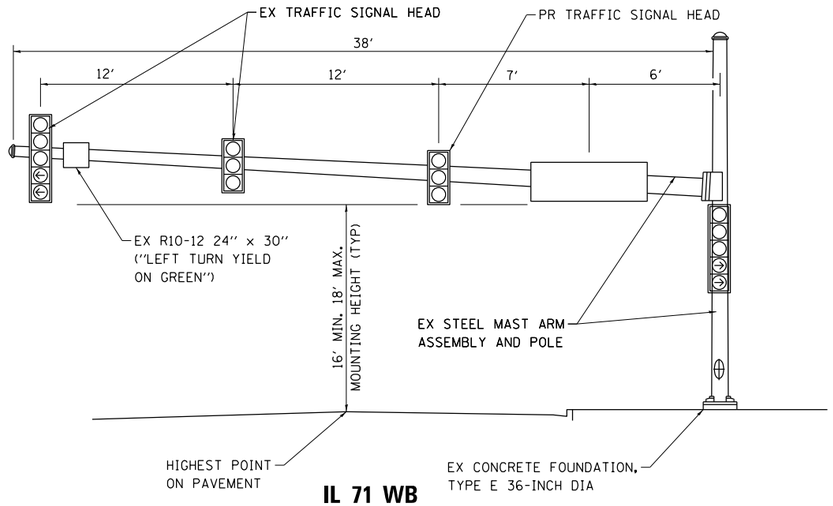
DAMPENING PLATE DETAIL

(TOP VIEW) INCIDENTAL TO MAST ARM QUANTITY

DAMPENING DEVICE SHALL CONSIST OF A 24" x 30" TYPE I, UNPAINTED ALUMINUM SIGN STOCK MOUNTED HORIZONTALLY ON TOP OF MAST ARM WITH THE 30" LENGTH PERPENDICULAR TO THE ARM. COST OF DAMPENING DEVICE SHALL BE INCLUDED IN THE MAST ARM PAY ITEM.

IL 71 AT IL 47
DETECTOR LOOP INDUCTANCE CHART

LOOP SYSTEM	NO. OF TURNS	INDUCTANCE (MICROHENRIES)	FREQUENCY (HERTZ)	J PIN STATUS
A	4	821	21296	ON
B	4	846	20984	ON
C	4	853	20902	ON
D	4	406	30288	ON



IL 71 WB

IL 71 AT IL 47
DETECTOR LOOP DETAILS

APPROACH	DETECTOR ID	TURNS	CODE NUMBER	CODED PAY ITEM	LOOP	LOOP TO EOP	LEAD IN WIRE EOP TO HANDHOLE	QUANTITY
WB	1	4	88600100	DETECTOR LOOP, TYPE I	6' X 20'	6'	5'	58'
	2	4	88600100	DETECTOR LOOP, TYPE I	6' X 20'	8'	23'	60'
	3	4	88600100	DETECTOR LOOP, TYPE I	6' X 20'	8'	23'	60'
	4	4	88600100	DETECTOR LOOP, TYPE I	6' X 20'	30'	23'	82'
	5	4	88600100	DETECTOR LOOP, TYPE I	6' X 20'	30'	23'	82'
	6	4	88600100	DETECTOR LOOP, TYPE I	6' X 20'	56'	23'	108'
	7	4	88600100	DETECTOR LOOP, TYPE I	6' X 20'	40'	23'	92'
	8	4	88600100	DETECTOR LOOP, TYPE I	6' X 20'	40'	23'	92'
	9	4	88600100	DETECTOR LOOP, TYPE I	6' X 20'	66'	23'	118'
	10	4	88600100	DETECTOR LOOP, TYPE I	6' X 8'	15'	24'	43'
	11	4	88600100	DETECTOR LOOP, TYPE I	6' X 8'	6'	24'	34'

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAST ARM LOADING DIAGRAM, TRAFFIC SIGNAL DETAILS AND BILL OF MATERIALS – IL 71 AT IL 47

SCALE: | SHEET NO. 18 OF 24 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	404
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

TEMPORARY TRAFFIC SIGNAL LEGEND

- TEMPORARY TRAFFIC SIGNAL CONTROLLER
- TEMPORARY SERVICE INSTALLATION
- LIGHTING CONTROLLER
- TEMPORARY SIGNAL HEAD
- TEMPORARY SIGNAL HEAD, PEDESTRIAN, BRACKET MOUNTED
- TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT MINIMUM
- TEMPORARY SPAN WIRE, TETHER WIRE AND CABLE
- TEMPORARY PEDESTRIAN PUSHBUTTON DETECTOR
- TEMPORARY VIDEO DETECTION CAMERA
- TEMPORARY LUMINAIRE

NOTES:

1) WHERE POSSIBLE, TEMPORARY SPAN WIRES SHALL BE PLACED IN FRONT OF PERMANENT TRAFFIC SIGNALS. ALL WOOD POLE LOCATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.

2) THE LOCATION OF THE SIGNAL HEADS ON THE SPAN WIRE ARE SHOWN HERE FOR REFERENCE ONLY. THE LOCATION OF THE TEMPORARY SIGNALS WILL CHANGE DURING DIFFERENT MAINTENANCE OF TRAFFIC PHASES. THE SHIFTING OF THESE SIGNAL HEADS SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE PAY ITEM "TEMPORARY TRAFFIC SIGNAL INSTALLATION". THE CONTRACTOR SHALL ALIGN THE SIGNAL HEADS WITH THE CENTER OF EACH TEMPORARY LANE DETAILED IN THE MAINTENANCE OF TRAFFIC PLANS.

N

0 20 40

SCALE IN FEET

REMOVE TS HEADS
REMOVE MAST ARM AND POLE
REMOVE EMERGENCY VEHICLE LIGHT DETECTOR
REMOVE FOUNDATION

IL ROUTE 47

EX ROW

PR ROW

PR TIE ANCHOR (TYP.)

REMOVE LUMINAIRE POLE
REMOVE LUMINAIRE

REMOVE HANDHOLE

REMOVE HANDHOLE

REMOVE HANDHOLE

505+00 506 507 508 509 510+00

FAP 311 (IL ROUTE 71)

494+00

FLAG POLE

FLAG POLE

POLE

EX ROW

EX ROW

PR ROW

EXISTING EQUIPMENT TO BE REMOVED LEGEND

- EXISTING TRAFFIC SIGNAL CONTROLLER AND FOUNDATION
- EXISTING SERVICE INSTALLATION
- EXISTING SIGNAL HEAD WITH BACKPLATE
- EXISTING SIGNAL HEAD, PEDESTRIAN
- EXISTING SIGNAL POST
- EXISTING MAST ARM ASSEMBLY AND POLE, STEEL
- EXISTING HANDHOLE
- EXISTING HEAVY DUTY HANDHOLE
- EXISTING DOUBLE HANDHOLE
- EXISTING PEDESTRIAN PUSHBUTTON DETECTOR
- EXISTING WOOD POLE
- EXISTING LUMINAIRE
- EXISTING LIGHTING CONTROLLER
- EXISTING EMERGENCY VEHICLE LIGHT DETECTOR
- EXISTING CONFIRMATION BEACON

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL AND EXISTING REMOVAL PLAN
IL 71 AT IL 47

SCALE: | SHEET NO. 19 OF 24 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	405
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

TEMPORARY CABLE DIAGRAM LEGEND

- TEMPORARY CONTROL ER CABINET
- TEMPORARY SERVICE INSTALLATION
- TEMPORARY TRAFFIC SIGNAL HEAD WITH BACKPLATE
- (2) DENOTES NUMBER OF CONDUCTORS
- (V) TEMPORARY VIDEO DETECTION SYSTEM
- TEMPORARY PEDESTRIAN SIGNAL HEAD
- TEMPORARY PEDESTRIAN PUSHBUTTON DETECTOR
- LIGHT DETECTOR
- CONFIRMATION BEACON
- TEMPORARY LUMINAIRE
- (V) VIDEO CAMERA CABLE

  6 PAIRS, TWISTED REQUIRED

  3 PAIRS CONDUCTOR FOR POWER
  - 24V AC (AC+, AC-, GND)
  1 PAIR DATA
  1 PAIR COMPOSITE VIDEO
  1 PAIR DETECTOR DATA

  OVERALL SHIELD
  MINIMUM 16 AWG (PAIRS)

- (S) SERVICE CABLE

  ELECTRICAL CABLE IN CONDUIT,

  SERVICE, NO.6 2C

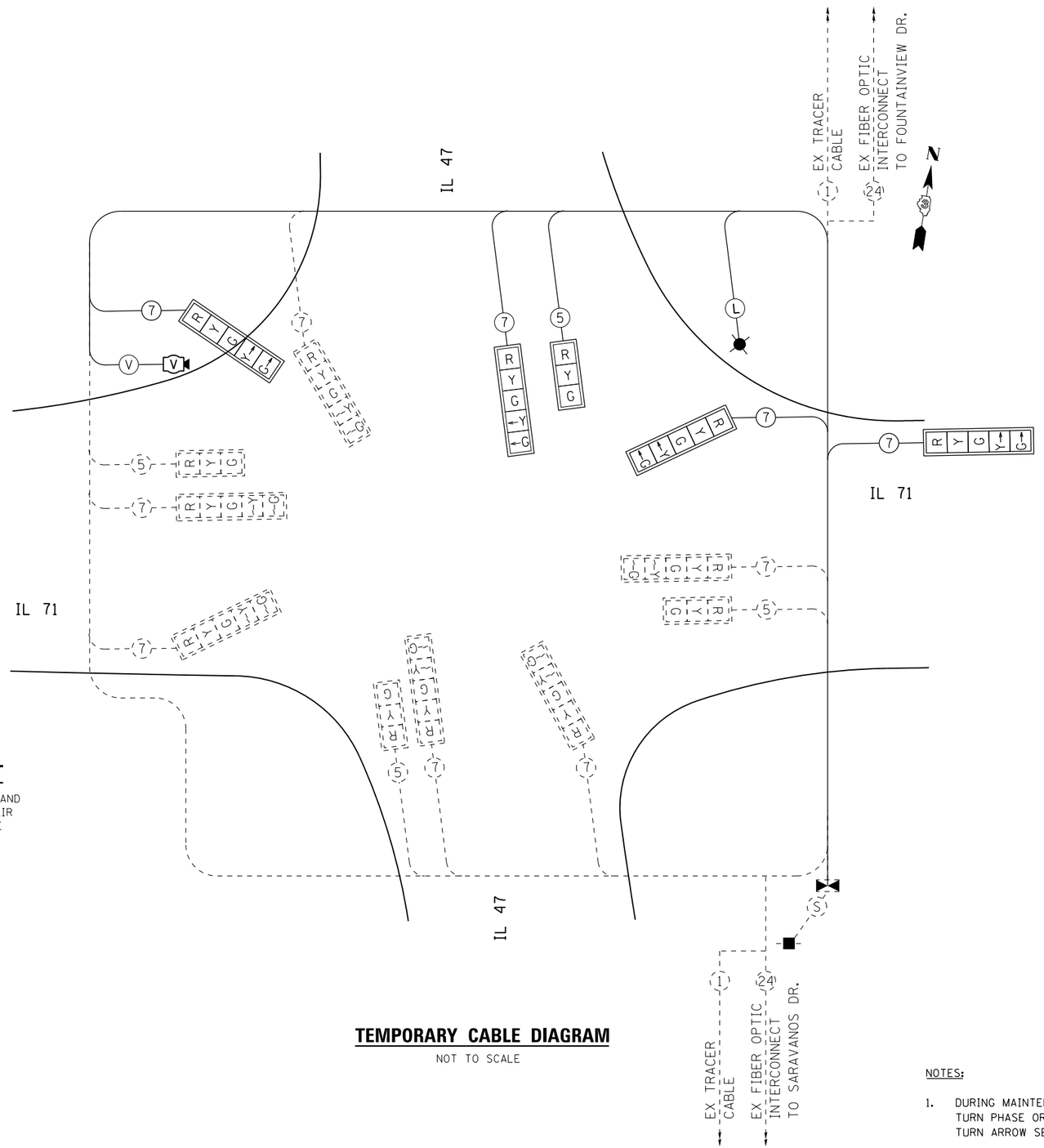
- (L) LIGHTING CABLE

  600V (XLP-TYPE USE) 3-1/C NO.10

REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT

THE FOLLOWING EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

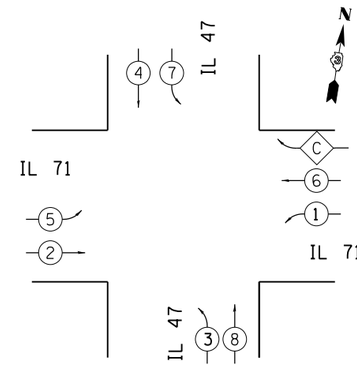
1	EACH	SIGNAL HEAD, 1-FACE, 3-SECTION, MAST ARM MOUNTED
1	EACH	SIGNAL HEAD, 1-FACE, 5-SECTION, MAST ARM MOUNTED
1	EACH	SIGNAL HEAD, 1-FACE, 5-SECTION, BRACKET MOUNTED
1	EACH	STEEL MAST ARM ASSEMBLY AND POLE
1	EACH	LUMINAIRE
1	EACH	LUMINAIRE WOOD POLE
3	EACH	HANDHOLE
1	EACH	CONCRETE FOUNDATION
ALL WIRES		



TEMPORARY CABLE DIAGRAM

NOT TO SCALE

CONTROLLER SEQUENCE



- VEHICULAR PHASE
- RIGHT TURN OVERLAP
- PEDESTRIAN PHASE
- (•) NUMBER REFERRING TO ASSOCIATED PHASE

OVERLAP PHASE		PROTECTED PHASE
C	=	7

PHASE DESIGNATION DIAGRAM

NOTES:

1. DURING MAINTENANCE OF TRAFFIC STAGES THAT DO NOT REQUIRE A PROTECTED LEFT TURN PHASE OR PROTECTED RIGHT TURN PHASE, THE ASSOCIATED LEFT TURN OR RIGHT TURN ARROW SECTIONS SHALL BE DISABLED AND APPROPRIATELY BAGGED.
2. SPLIT PHASE TIMING ON SIDE ROADS THE YELLOW ARROW TIME SHALL BE THE SAME LENGTH OF TIME AS THE YELLOW BALL TIME.

QUIGG ENGINEERING INC

USER NAME = nsullivan	DESIGNED LSM	REVISED -
FILE NAME = D366024-sht-Temp_Cable Plan_IL71-IL47.dgn	DRAWN LSM	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED JJC	REVISED -
PLOT DATE = 1/19/2018	DATE 01/18/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL CABLE PLAN
IL 71 AT IL 47

SCALE: | SHEET NO. 20 OF 24 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	406
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

FILE NAME = S:\Projects\2013 JOBS\13-69 BFW PTB 153 Item 38 IL 71 03 PH II\CADD\CADD Sheets\D366024-sht-Temp_Cable Plan_IL71-IL47.dgn
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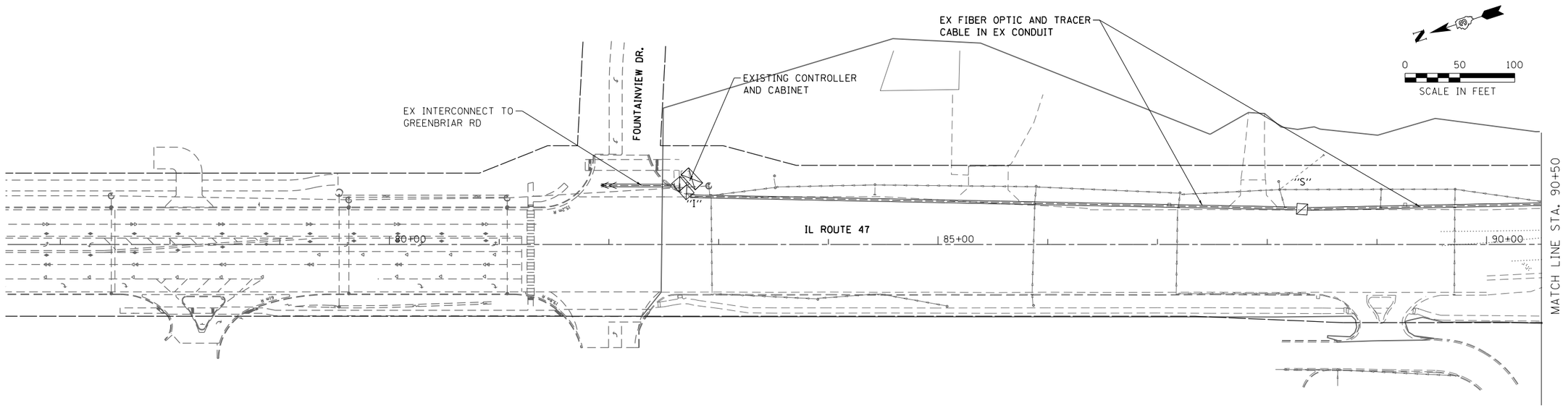

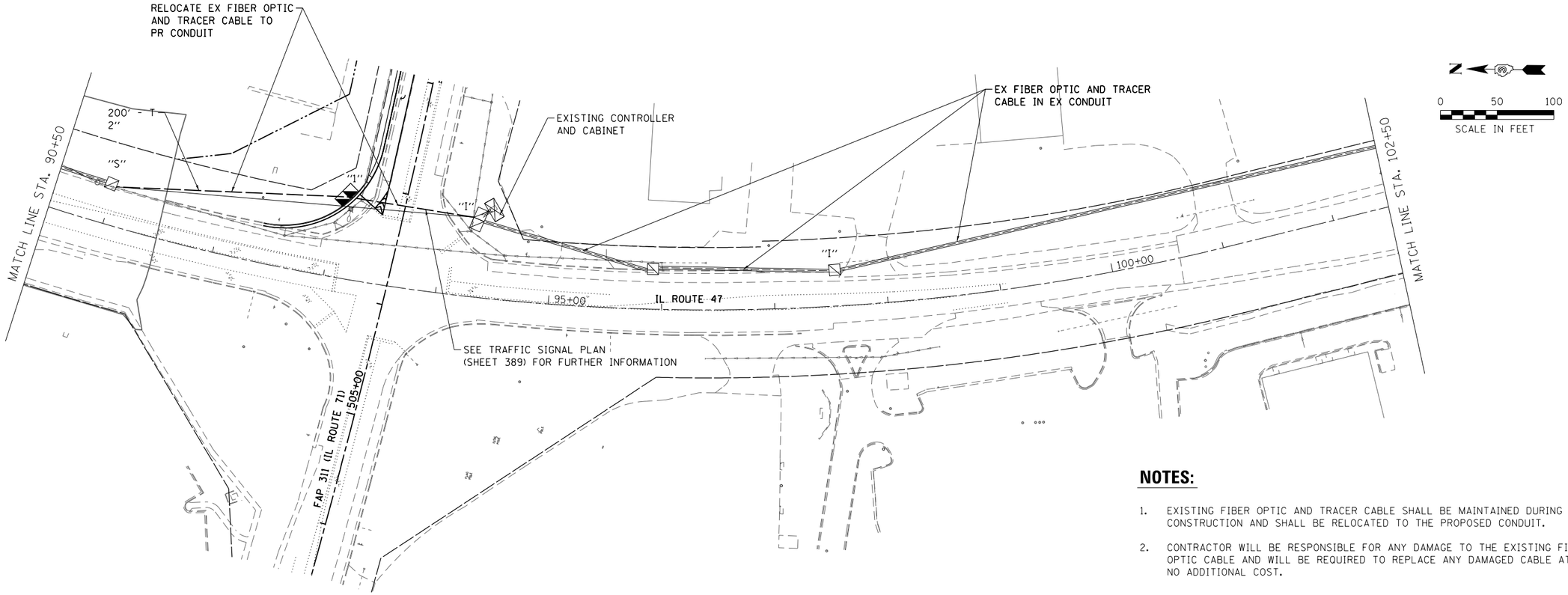

NOTES:

1. EXISTING FIBER OPTIC AND TRACER CABLE SHALL BE MAINTAINED DURING CONSTRUCTION AND SHALL BE RELOCATED TO THE PROPOSED CONDUIT.
2. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING FIBER OPTIC CABLE AND WILL BE REQUIRED TO REPLACE ANY DAMAGED CABLE AT NO ADDITIONAL COST.

QUIGG ENGINEERING INC

USER NAME = nsullivan	DESIGNED LSM	REVISED -
FILE NAME = D366D24-sht-IL 47 Interconnect plan	DRAWN LSM	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED JJC	REVISED -
PLOT DATE = 1/19/2018	DATE 01/18/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INTERCONNECT PLAN
IL 47 FROM FOUNTAINVIEW DR. TO SARAVANOS DR.

SCALE: | SHEET NO. 21 OF 24 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	407
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

FILE NAME = S:\Projects\2013 JOBS\13-69 BFW PTB 153 Item 38 IL 71\03 PH II\CADD\CADD Sheets\D366D24-sht-IL 47 Interconnect plan.dgn
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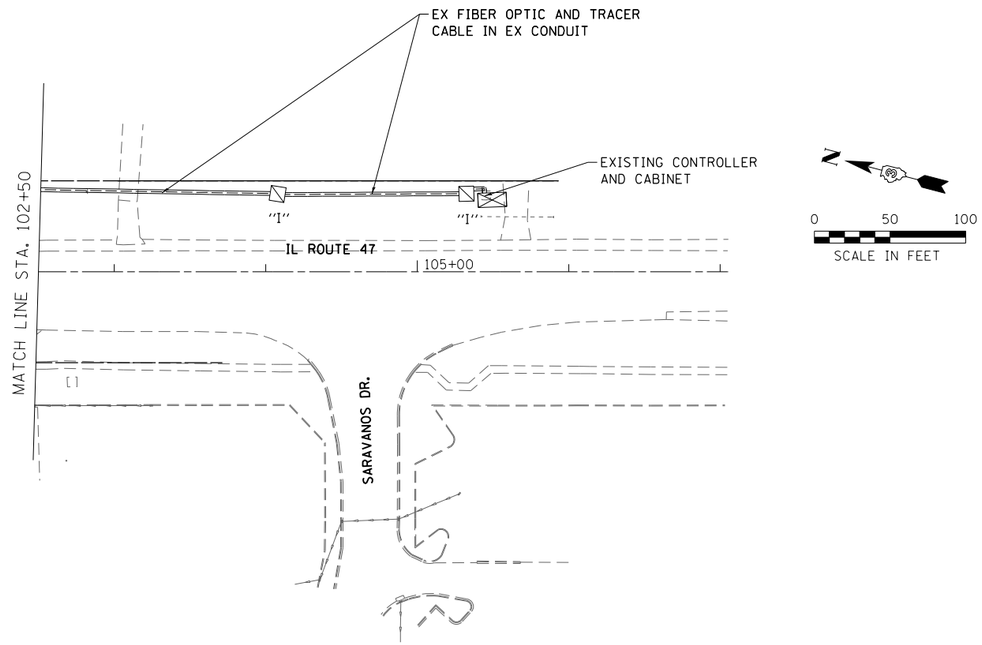

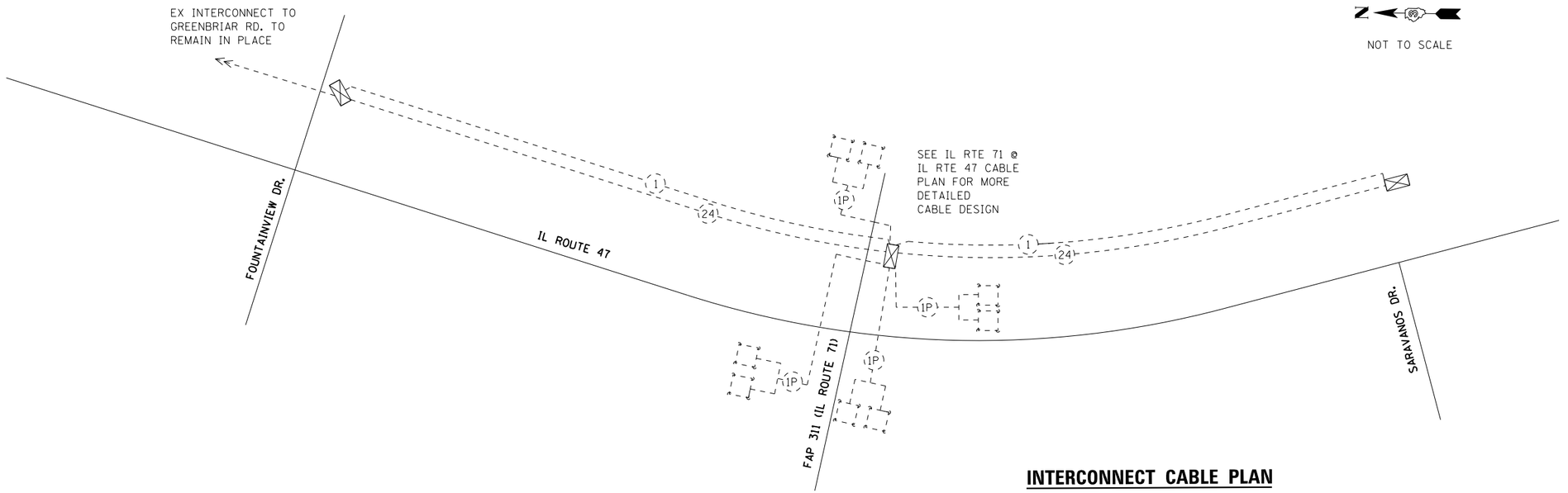

N

NOT TO SCALE

INTERCONNECT CABLE PLAN

NOT TO SCALE

FILE NAME = S:\Projects\2013 JOBS\13-69 BFW PTB 153 Item 38 IL 71 03 PH II\CADD\CADD Sheets\D366D24-sht-IL 47 Interconnect plan.dgn
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PLOT SCALE = 100.0000 ' / in.	CHECKED JJC	REVISED -
PLOT DATE = 1/19/2018	DATE 01/18/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INTERCONNECT PLAN
IL 47 FROM FOUNTAINVIEW DR. TO SARAVANOS DR.

SCALE: | SHEET NO. 22 OF 24 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	408
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Date 9/16/15

ROUTE FAP 311 (IL 71) **DESCRIPTION** Traffic Signals at Intersection of IL 71 & IL 47 **LOGGED BY** Larry Myers

SECTION (1)N&TS **LOCATION** SE 1/4, **SEC.** 5, **TWP.** 36N, **RNG.** 7E, 3rd **PM**,
Latitude 41.6197, **Longitude** -88.44771

COUNTY Kendall **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** CME Automatic

STRUCT. NO. _____
Station _____

BORING NO. 01 (N.E. Quad.)
Station 506+88
Offset 85.0 ft Lt.
Ground Surface Elev. 732.18 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After _____ **Hrs.** _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered Black Silty Clay Loam Fill & Brown Very Loamy Sand & Gravel, Brown Silty Loam Till			
729.68			
Hard Brown Silty Loam Till	11		
	11	>4.5	11
	11	P	
727.68			
Very Stiff to Hard Brown & Gray Silty Clay Loam Till	-5		
	7		
	6	3.9	14
	8	S	
	8		
	11	4.2	13
	14	S	
722.68			
Hard to Very Stiff Gray Silty Clay Loam Till with Minor Silt Pockets	-10		
	5		
	6	4.7	10
	9	S	
	5		
	6	4.1	12
	7	S	
	-15		
	4		
	6	3.4	11
	6	B	
	3		
	5	3.4	12
	7	B	
	-20		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard to Very Stiff Gray Silty Clay Loam Till with Minor Silt Pockets *(continued)*	5		
	7	4.3	12
	11	S	
	4		
	5	3.8	13
	7	B	
-25			
	4		
	5	3.6	11
	7	S	
	5		
	7	3.6	11
	7	S	
-30			
	8		
	8	3.8	10
	11	B	
700.68			
End of Boring			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Date 9/16/15

ROUTE FAP 311 (IL 71) **DESCRIPTION** Traffic Signals at Intersection of IL 71 & IL 47 **LOGGED BY** Larry Myers

SECTION (1)N&TS **LOCATION** SE 1/4, **SEC.** 5, **TWP.** 36N, **RNG.** 7E, 3rd **PM**,
Latitude 41.61937, **Longitude** -88.44747

COUNTY Kendall **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** CME Automatic

STRUCT. NO. _____
Station _____

BORING NO. 02 (S.E. Quad.)
Station 507+35
Offset 70.0 ft Rt.
Ground Surface Elev. 732.24 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After _____ **Hrs.** _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered Silt / Gravel Fill, Brown Silty Clay Loam Till			
729.74			
Hard Brown Silty Clay Loam Till	8		
	9	6.4	11
	14	S	
-5			
	4		
	6	4.5	11
	8	S	
725.24			
Hard to Very Stiff Gray Silty Clay Loam Till	5		
	6	4.2	11
	8	B	
-10			
	5		
	5	3.8	12
	6	B	
	4		
	6	4.3	12
	8	B	
-15			
	4		
	6	4.1	12
	8	B	
	5		
	5	3.9	12
	7	B	
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard to Very Stiff Gray Silty Clay Loam Till *(continued)*	4		
	5	4.2	12
	7	B	
	4		
	6	4.4	12
	9	B	
-25			
	4		
	8	4.4	13
705.74	9	B	
End of Boring			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

SOIL BORING IL 71 & IL 47.GPJ IL_DOT.GDT 10/23/15

FILE NAME = S:\Projects\2013 JOBS\13-69 BFW PTB 153 Item 38 IL 71 03 PH 1\CADD\CADD Sheets\D366024-sht-TS Soil Borings IL 71-IL47.dgn
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PLOT DRIVER = IDOT_PDF.plotcfg

QUIGG ENGINEERING INC

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FILE NAME = D366024-sht-TS Soil Borings IL 71-IL47.dgn	DRAWN LSM	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED JJC	REVISED -
PLOT DATE = 1/19/2018	DATE 01/18/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
IL 71 AT IL 47

SCALE: | SHEET NO. 23 OF 24 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	409
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Date 9/16/15

ROUTE FAP 311 (IL 71) **DESCRIPTION** Traffic Signals at Intersection of IL 71 & IL 47 **LOGGED BY** Larry Myers

SECTION (1)N&TS **LOCATION** SE 1/4, **SEC.** 5, **TWP.** 36N, **RNG.** 7E, 3rd **PM**,
Latitude 41.61956, **Longitude** -88.44841

COUNTY Kendall **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** CME Automatic

STRUCT. NO.
Station

BORING NO. 03 (N.W. Quad.)
Station 504+92
Offset 63.0 ft Lt.
Ground Surface Elev. 727.59 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered Black Silty Clay Loam Fill, Brown Very Loamy Sand & Gravel, Brown Silty Loam Till			
725.09			
Hard Brown Silty Loam Till - Brittle	11		
	13 13	>4.5 P	9
-5			
	8		
	10 10	>4.5 P	10
720.59			
Hard Brown Silty Clay Loam Till	4		
	5 7	4.0 B	13
-10			
	6		
	8 11	7.4 S	13
715.59			
Hard to Very Stiff Gray Silty Clay Loam Till	6		
	8 10	5.7 S	11
-15			
	5		
	5 6	4.0 B	12
	4		
	5 7	3.8 B	15
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard to Very Stiff Gray Silty Clay Loam Till *(continued)*	4		
	5 6	3.4 B	12
	5		
	6 7	4.1 B	10
-25			
	7		
	9 7	4.1 B	12
701.09			
End of Boring			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

SOIL BORING IL 71 & IL 47.GPJ IL_DOT.GDT 10/23/15

FILE NAME = S:\Projects\2013 JOBS\13-69 BFW PTB 153 Item 38 IL 71 03 PH II\CADD\CADD Sheets\D366024-sht-TS Soil Borings IL 71-IL47.dgn
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QUIGG ENGINEERING INC

USER NAME = nsullivan	DESIGNED LSM	REVISED -
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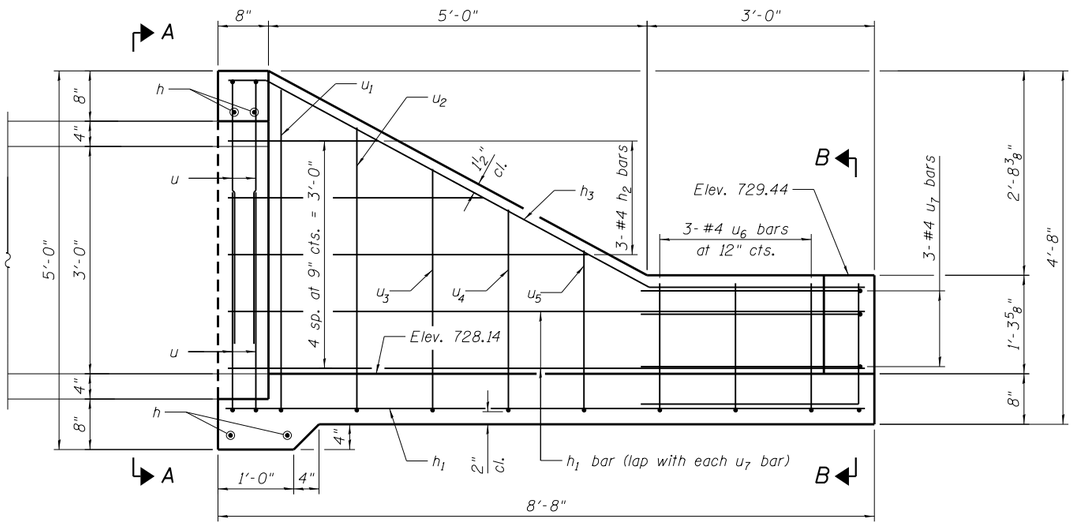
PLOT SCALE = 40.0000 ' / in.	CHECKED JJC	REVISED -
PLOT DATE = 1/19/2018	DATE 01/18/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

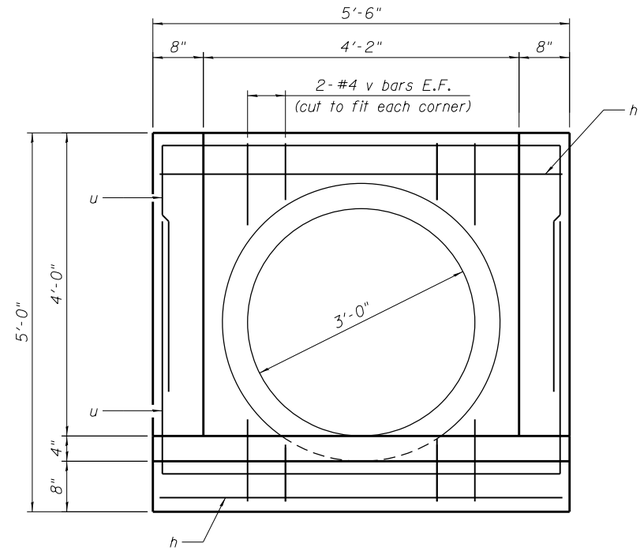
BORING LOGS
IL 71 AT IL 47

SCALE: | SHEET NO. 24 OF 24 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	410
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



SIDEWALLS



SECTION A-A

NOTES

This work shall be paid for at the contract unit price per Each for Culvert Drop Box.

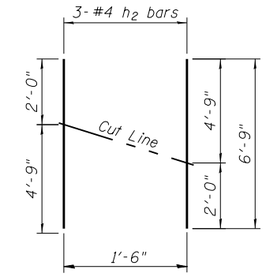
The work shall be done according to the applicable portion of 503, 508, and 542 of the Standard Specifications.

DESIGN STRESSES

fy = 60,000 psi
f'c = 3,500 psi

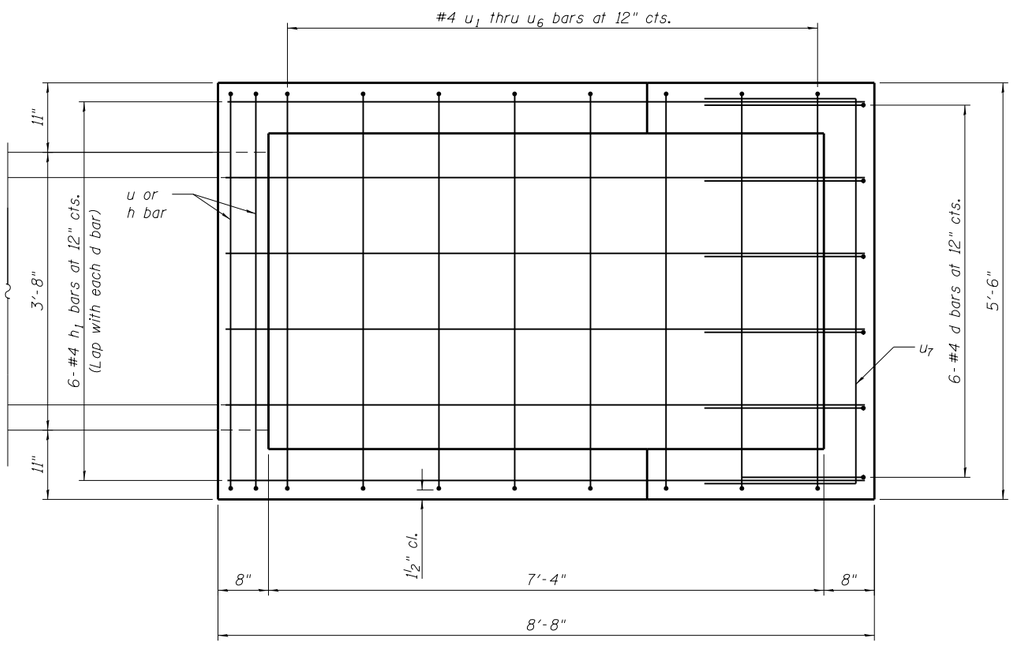
MINIMUM BAR LAP

#4 bar = 2'-3"

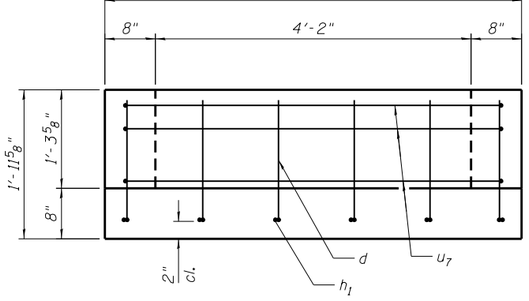


FIELD CUTTING DIAGRAM

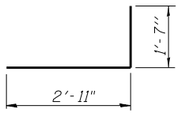
Order h_2 full length. Cut as shown and use remainder of bars in opposite wall.



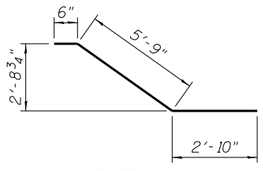
PLAN



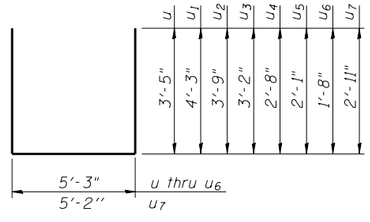
SECTION B-B



BAR d



BAR h_3



BAR u

BILL OF MATERIAL

(for information only)

Bar	No.	Size	Length	Shape
d	6	#4	4'-6"	
h	4	#4	5'-3"	
h_1	10	#4	8'-5"	
h_2	3	#4	6'-9"	
h_3	2	#4	9'-1"	
u	4	#4	12'-1"	
u_1	1	#4	13'-9"	
u_2	1	#4	12'-9"	
u_3	1	#4	11'-7"	
u_4	1	#4	10'-7"	
u_5	1	#4	9'-5"	
u_6	3	#4	8'-7"	
u_7	3	#4	11'-0"	
v	16	#4	1'-1"	
Concrete Box Culverts			Cu. Yd.	2.3
Reinforcement Bars			Pound	240

FILE NAME = Culvert Drop Box Details (STA 514+10).dgn	USER NAME =	DESIGNED - BWP	REVISED
BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.3190		CHECKED - RSB	REVISED
	PLOT SCALE =	DRAWN - BJV	REVISED
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

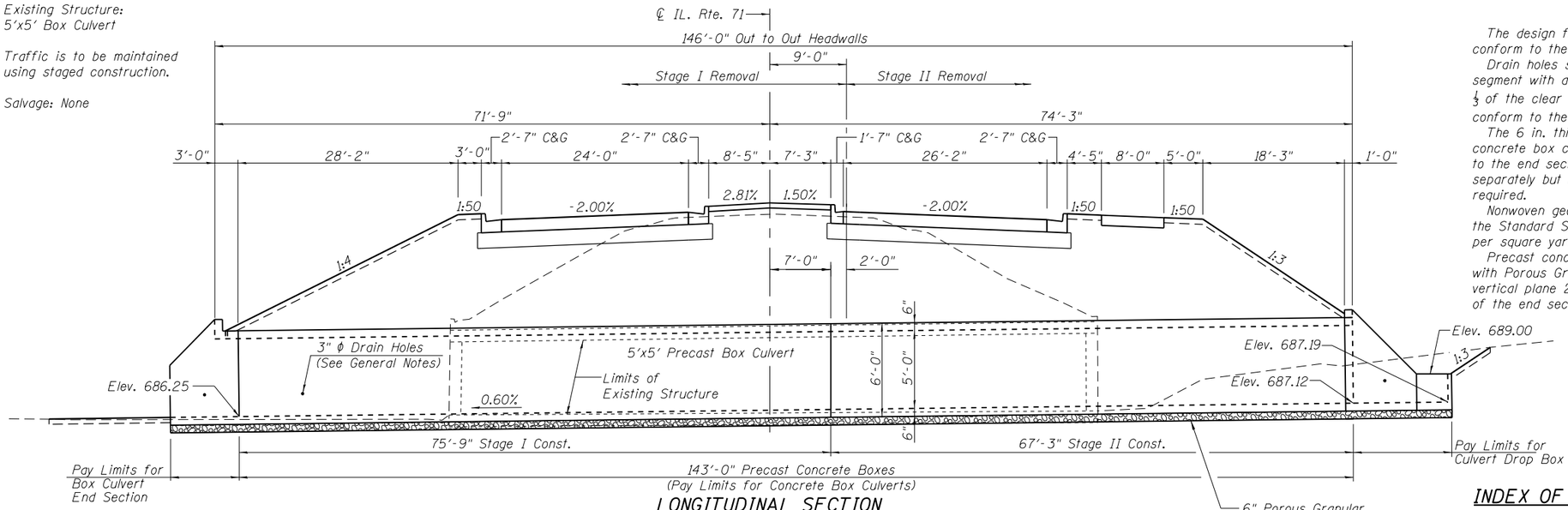
DROP STRUCTURE DETAILS
STA. 514+10.00
SHEET NO. 1 OF 1 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	411
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

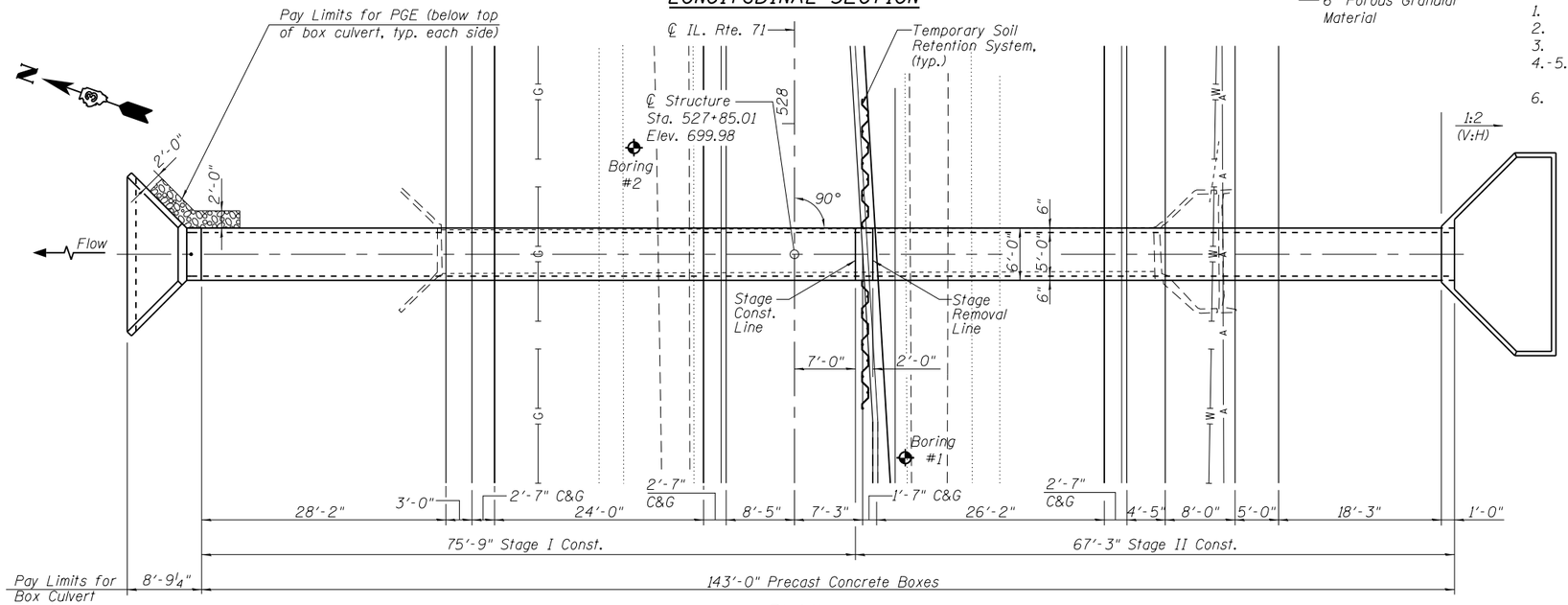
Existing Structure:
5'x5' Box Culvert

Traffic is to be maintained using staged construction.

Salvage: None



LONGITUDINAL SECTION



PLAN

GENERAL NOTES

The design fill height for this box is 8 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 ⅓ 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 box culvert end sections 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.

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications
6th Edition with 2013 interims

LOADING HL-93

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

INDEX OF SHEETS

1. General Plan and Elevation
2. Staging Plan
3. Drop Structure Details
4.-5. Precast Concrete Box Culvert Apron End Section Details
6. Soil Boring Logs

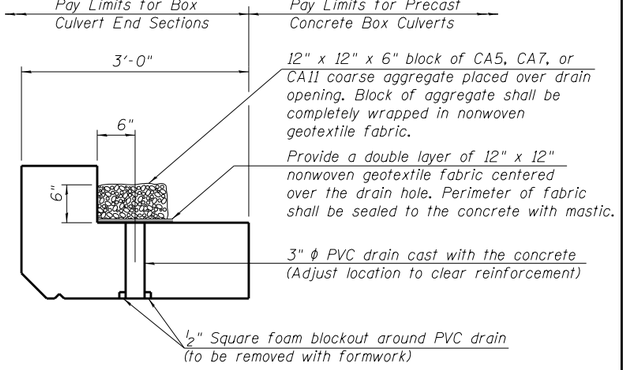
DESIGN STRESSES

PRECAST UNITS

f'c = 5,000 psi
fy = 65,000 psi (Welded Wire Reinforcement)

FIELD UNITS

f'c = 3,500 psi
fy = 65,000 psi (Welded Wire Reinforcement)
fy = 60,000 psi (Reinforcement)



WATERWAY INFORMATION

Drainage Area = 0.48 sq. mi.
Exist. Low Grade Elev. 698.76' @ Sta. 528+95
Prop. Low Grade Elev. 698.78' @ Sta. 528+95

Flood	Freq. Yr.	Discharge C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	149	12.0	9.0	688.9	2.8	5.1	691.7	694.0
Design	50	235	15.0	12.0	689.5	4.0	6.2	693.5	695.7
Base	100	270	15.0	12.0	689.6	4.8	6.7	694.4	696.3
OVT (E)	>500	381						698.76	
OVT (P)	>500	369							698.78
Max. Calc.	500	356	17.0	14.0	690.0	7.7	8.2	697.7	698.2

10 year velocity through Existing structure = 9.89 fps
10 year velocity through Proposed structure = 11.40 fps

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structure No. 1	Each	1
Porous Granular Embankment	Cu. Yd.	147
Precast Concrete Box Culverts 5'x5'	Foot	143
Box Culvert End Sections, Culvert No. 1	Each	1
Culvert Drop Box	Each	1
Temporary Soil Retention System	Sq. Ft.	277

DRAIN DETAIL

(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)

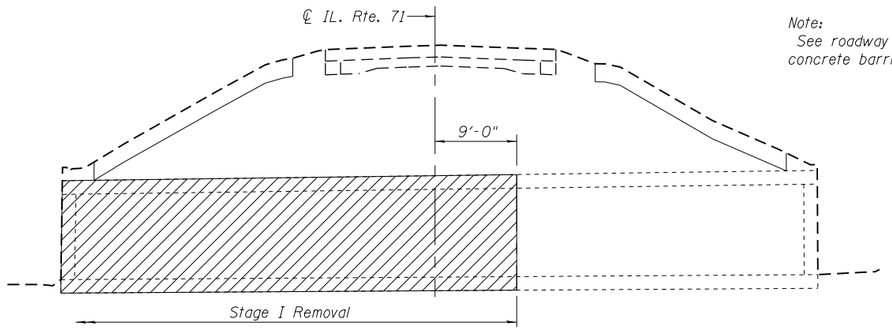
GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 71
F.A.P. RTE. 311 - SEC. (1)R, I
KENDALL COUNTY
STATION 527+85.01

FILE NAME = 527+85.01 GP&E.dgn	USER NAME =	DESIGNED - BWP	REVISED
BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9150		CHECKED - RSB	REVISED
	PLOT SCALE =	DRAWN - BJV	REVISED
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

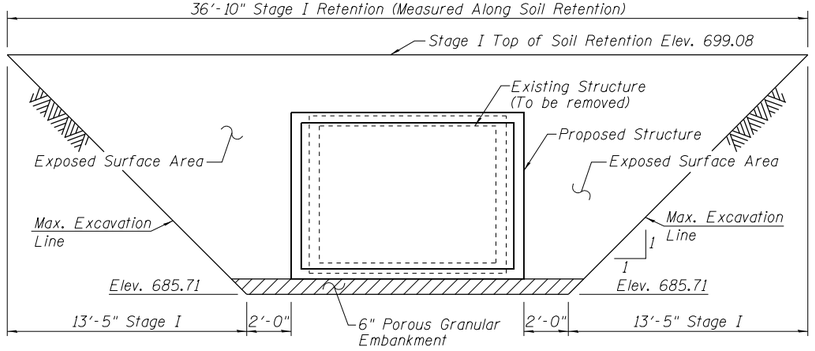
GENERAL PLAN AND ELEVATION
STA. 527 + 85.01
SHEET NO. 1 OF 6 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	412
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

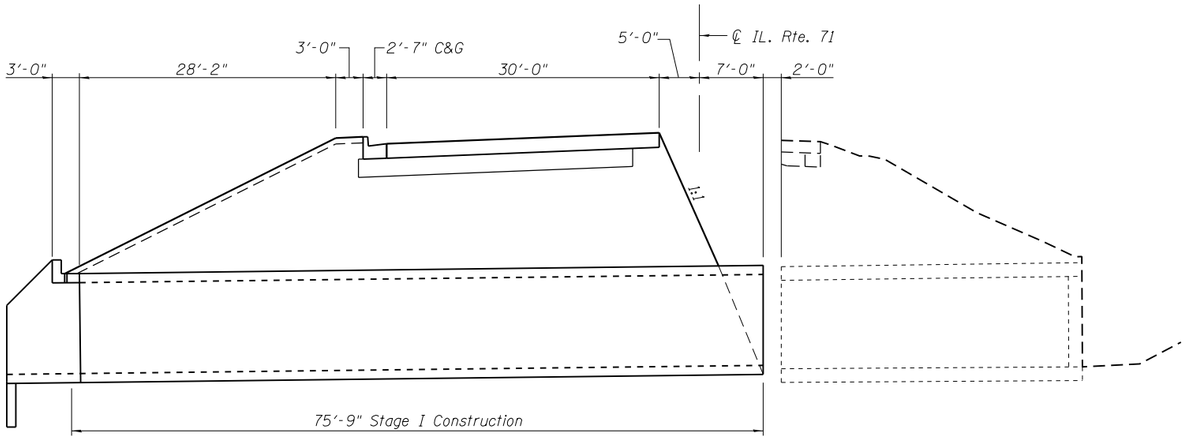


Note:
See roadway plans for temporary concrete barrier locations and stage traffic.

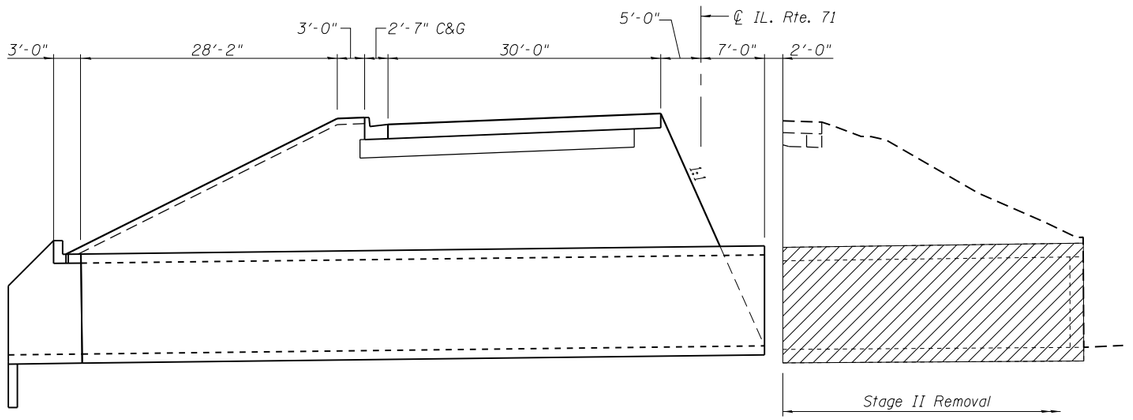
STAGE I REMOVAL
(Looking East)



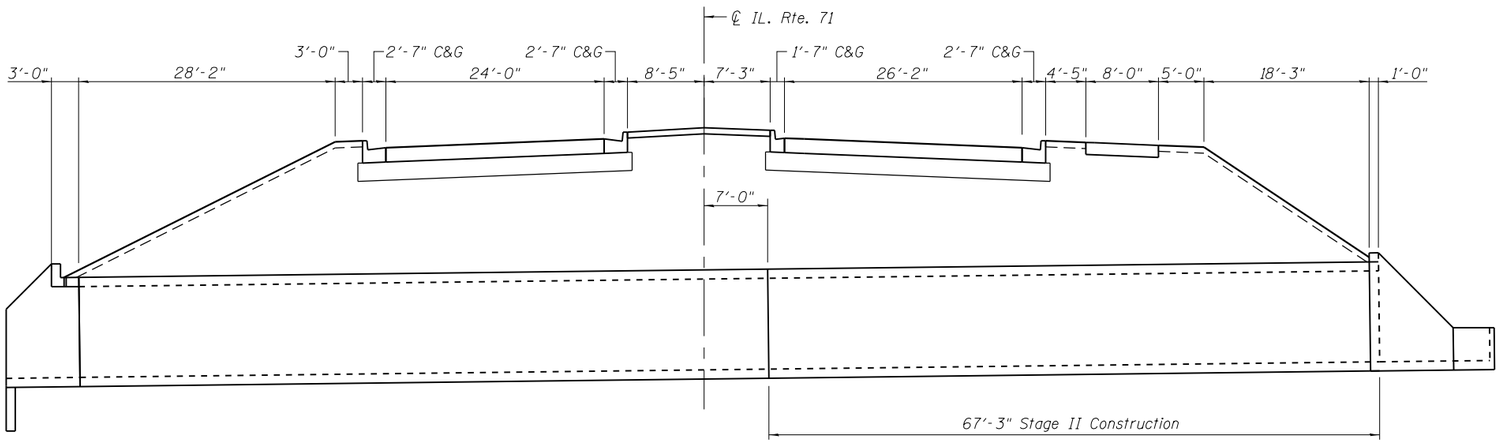
TEMPORARY SOIL RETENTION
A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.
Slopes shown are parallel to ℄ of Roadway unless noted otherwise.



STAGE I CONSTRUCTION
(Looking East)

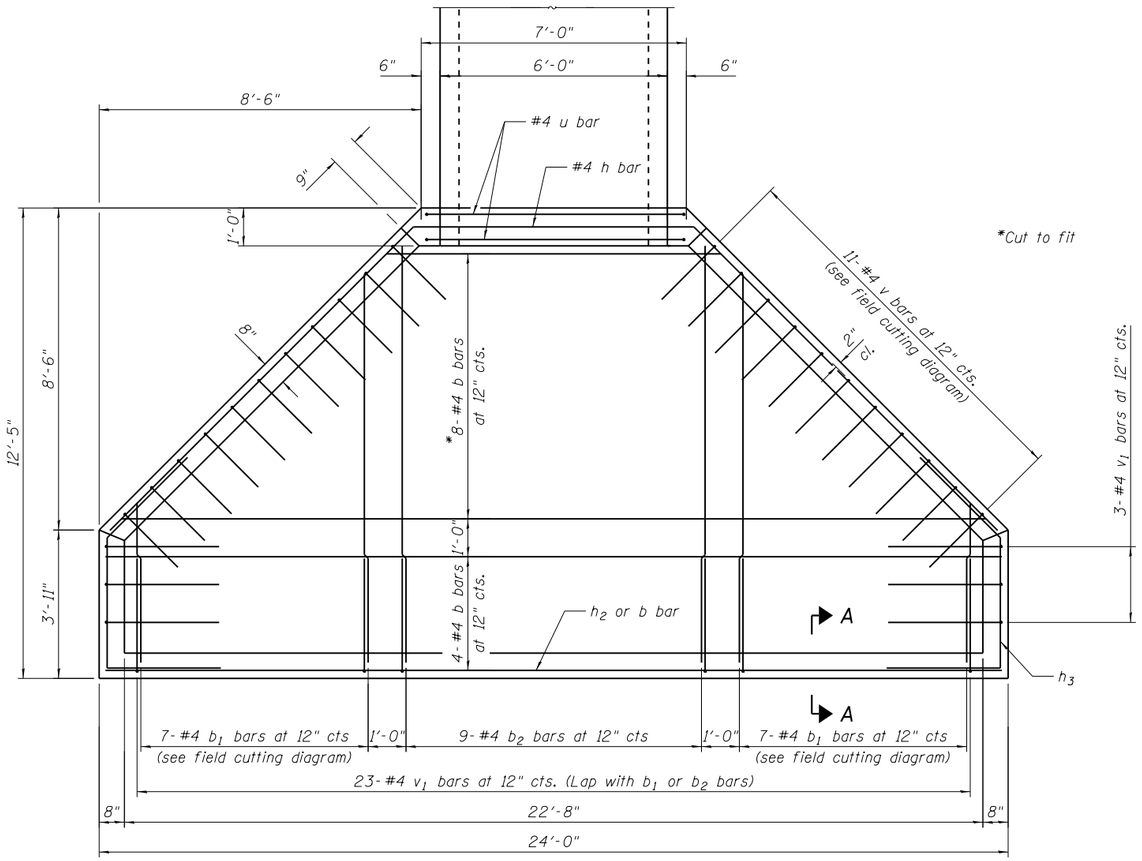


STAGE II REMOVAL
(Looking East)

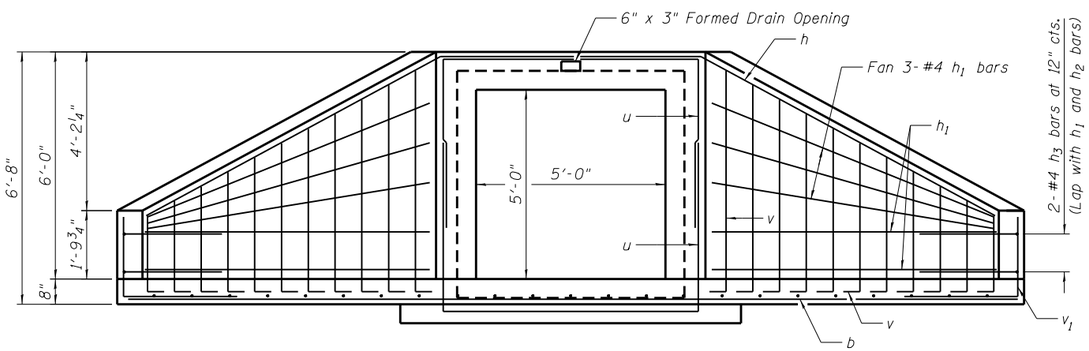


STAGE II CONSTRUCTION
(Looking East)

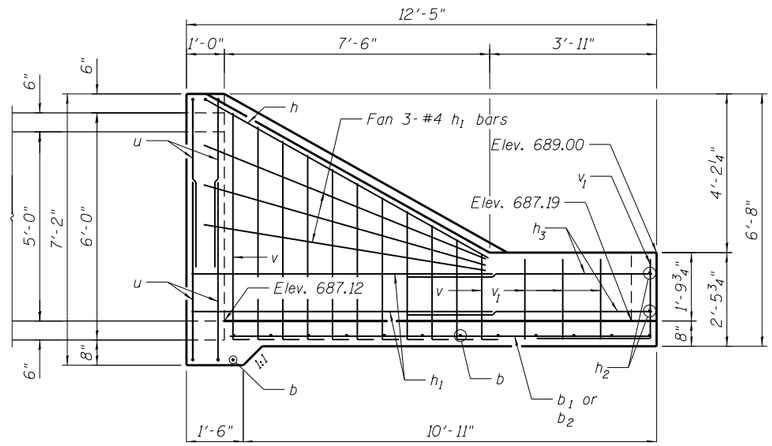
FILE NAME = 527+85.01 Staging.dgn	USER NAME =	DESIGNED - BWP	REVISED	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**STAGING PLAN STA. 527 + 85.01**	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9150		CHECKED - RSB	REVISED			311	(1)R, I	KENDALL	558	413
	PLOT SCALE =	DRAWN - BJV	REVISED		SHEET NO. 2 OF 6 SHEETS			CONTRACT NO. 66D24		
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED				ILLINOIS	FED. AID PROJECT		



PLAN



END ELEVATION

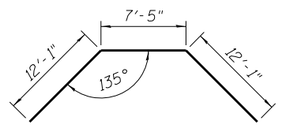


HALF SIDE ELEVATION

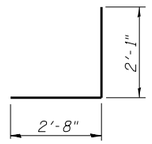
NOTES

This work shall be paid for at the contract unit price per Each for Culvert Drop Box.

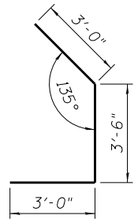
The work shall be done according to the applicable portion of 503, 508, and 542 of the Standard Specifications.



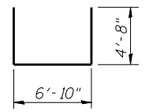
BAR h



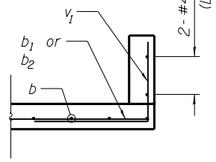
BAR v_1



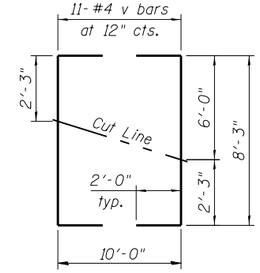
BAR h_3



BAR u

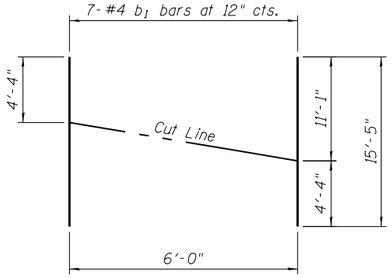


SECTION A-A



FIELD CUTTING DIAGRAM

Order v full length. Cut as shown and use remainder of bars in opposite wall.



FIELD CUTTING DIAGRAM

Order b_1 full length. Cut as shown and use remainder of bars in opposite end.

MINIMUM BAR LAP

#4 bar = 2'-3"

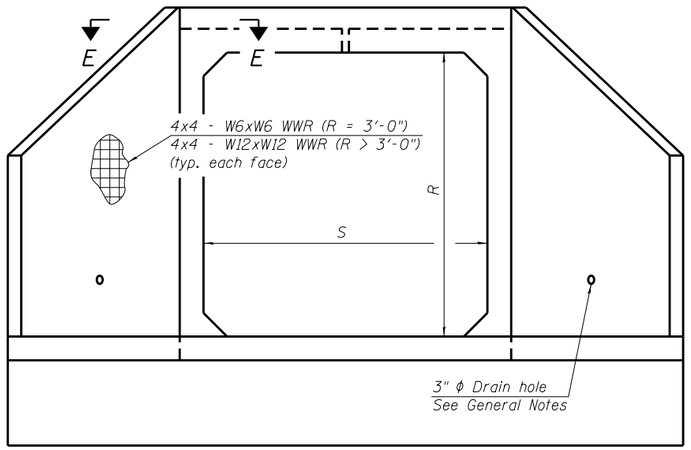
BILL OF MATERIAL

(for information only)

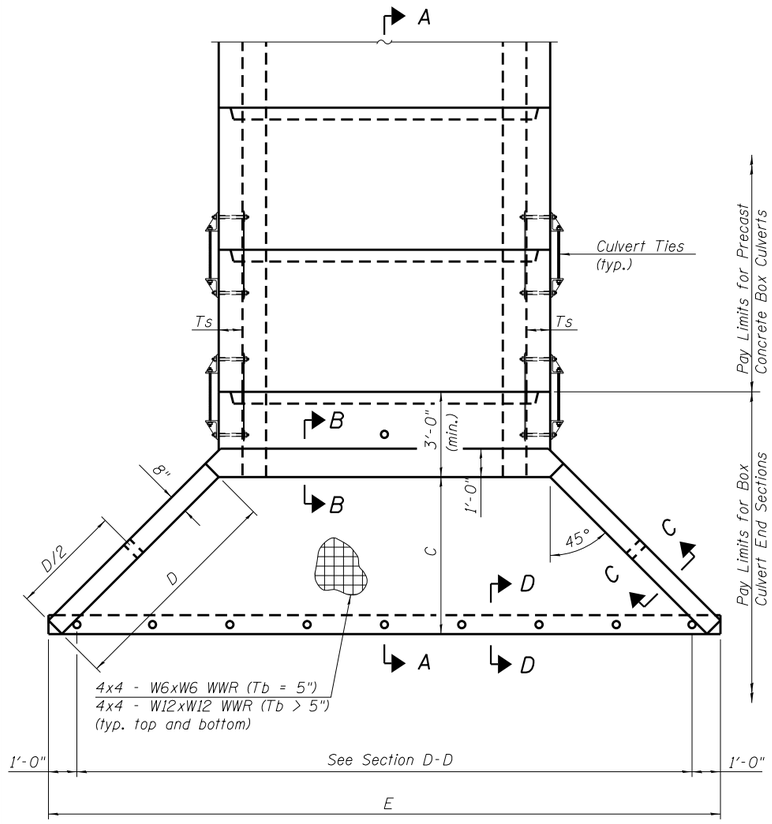
Bar	No.	Size	Length	Shape
b	12	#4	23'-8"	
b_1	7	#4	15'-5"	
b_2	9	#4	11'-1"	
h	1	#4	31'-7"	
h_1	10	#4	11'-9"	
h_2	2	#4	23'-8"	
h_3	4	#4	9'-6"	
u	4	#4	16'-2"	
v	11	#4	12'-3"	
v_1	29	#4	4'-9"	
Concrete Box Culverts			Cu. Yd.	9.8
Reinforcement Bars			Pound	710

FILE NAME = Culvert Drop Box Details (STA 527+85).dgn	USER NAME =	DESIGNED - BWP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DROP STRUCTURE DETAILS STA. 527 + 85.01
BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9760		CHECKED - RSB	REVISED -		SHEET NO. 3 OF 6 SHEETS
	PLOT SCALE =	DRAWN - BWP	REVISED -		
	PLOT DATE = 1/22/2018	CHECKED - RSB	REVISED -		

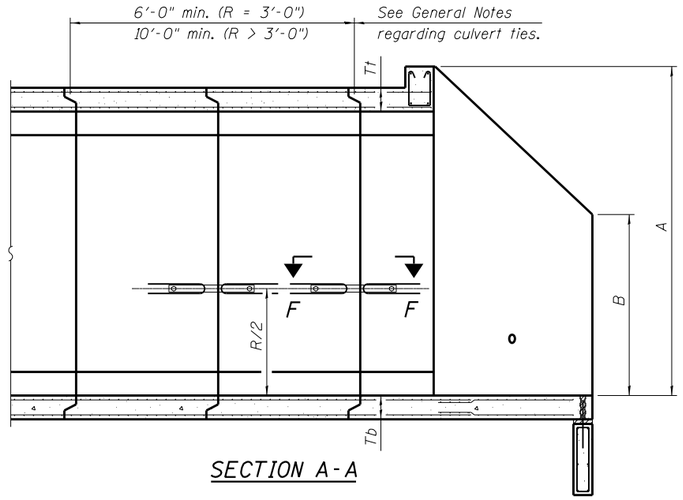
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	414
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



END VIEW



PLAN



SECTION A-A

GENERAL NOTES

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. End sections will be paid for at the contract unit price per each for Box Culvert End Sections.

The Contractor may furnish the end section as a single precast concrete piece or construct the end section in the field using cast-in-place (CIP) construction. For CIP construction, the bottom slab thickness shall be increased by 2" and the clear cover to the bottom mat of reinforcement shall be increased to 3".

Box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements for ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

The number of culvert ties shall be sufficient to engage the minimum length of culvert barrel shown within the pay limits for Precast Concrete Box Culverts and will be dependent upon the length of box culvert segments furnished by the Contractor. Culvert ties are not required for box culverts having a rise (R) less than or equal to 3 ft and a span (S) greater than or equal to 10 ft.

All costs associated with furnishing and installing or constructing the toewall and culvert ties will not be measured for payment but shall be included in the unit price for Box Culvert End Sections of the culvert number specified.

Shop drawings that detail slab thickness and reinforcement layout for the Box Culvert End Sections shall be provided to the Engineer for review and approval. Reinforcement bars not detailed herein shall be detailed with a clear distance at the end of the reinforcement not less than $\frac{1}{2}$" nor more than 2". For the precast option, it shall be the Contractor's responsibility for determining a method of handling and a construction procedure shall be included on the shop drawings. The Contractor shall determine and detail in the shop drawings any necessary strengthening or stiffening provisions necessary to handle the precast segment. Any required modifications shall be at no extra charge.

The Contractor may use reinforcement bars in lieu of welded wire reinforcement (WWR). Reinforcement bars shall be limited to the sizes of #3 through #5 bars, a maximum spacing of the lesser of 8" or the member thickness, and shall result in an area of reinforcement equal to or greater than that provided by the WWR. Minimum lap lengths detailed herein are applicable to WWR and reinforcement bars.

Reinforcement (circumferential and longitudinal) in the culvert barrel portion of the end section being lapped with reinforcement from the wingwalls or bottom slab of the end section shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end section, whichever is greater.

One drain hole shall be provided in each wingwall for end sections of box culverts having an opening with a clear rise greater than 3 ft. The drain hole shall be located within the lower $\frac{1}{3}$ of the clear rise of the box culvert and shall conform to the requirements of Article 503.11 of the Standard Specifications.

APRON END SECTION DIMENSIONS

Span (S)	Rise (R)	Tt	Tb	Ts	A	B	C	D	E	Concrete Cu. Yd.	Culvert Ties Required
3'-0"	2'-0"	7"	6"	4"	3'-4"	2'-2"	2'-10 5/8"	4'-1"	10'-4 5/8"	2.8	Yes
3'-0"	2'-0"	4"	4"	4"	3'-1"	2'-1"	2'-7 7/8"	3'-9"	9'-11"	2.3	Yes
3'-0"	3'-0"	7"	6"	4"	4'-4"	2'-8"	3'-10 5/8"	5'-6"	12-4 5/8"	3.7	Yes
3'-0"	3'-0"	4"	4"	4"	4'-1"	2'-7"	3'-7 7/8"	5'-2"	11'-11"	3.1	Yes
4'-0"	2'-0"	7.5"	6"	5"	3'-4 1/2"	2'-2 1/2"	2'-11 3/8"	4'-2"	11'-8"	3.3	Yes
4'-0"	2'-0"	5"	5"	5"	3'-2"	2'-1"	2'-8 1/2"	3'-10"	11'-2 3/8"	2.8	Yes
4'-0"	3'-0"	7.5"	6"	5"	4'-4 1/2"	2'-8 1/2"	3'-11 3/8"	5'-7"	13'-8 1/8"	4.2	Yes
4'-0"	3'-0"	5"	5"	5"	4'-2"	2'-7"	3'-8 1/2"	5'-3"	13'-2 3/8"	3.7	Yes
4'-0"	4'-0"	7.5"	6"	5"	5'-4 1/2"	3'-2 1/2"	4'-11 3/8"	7'-0"	15'-8 1/8"	5.3	Yes
4'-0"	4'-0"	5"	5"	5"	5'-2"	3'-1"	4'-8 5/8"	6'-8"	15'-2 1/2"	4.7	Yes
5'-0"	2'-0"	8"	7"	6"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	12'-10"	3.9	Yes
5'-0"	2'-0"	6"	6"	6"	3'-3"	2'-2"	2'-10"	4'-0"	12'-7 1/4"	3.5	Yes
5'-0"	3'-0"	8"	7"	6"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	14'-10 1/8"	4.9	Yes
5'-0"	3'-0"	6"	6"	6"	4'-3"	2'-8"	3'-10"	5'-5"	14'-7 1/4"	4.5	Yes
5'-0"	4'-0"	8"	7"	6"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	16'-10 1/8"	6.1	Yes
5'-0"	4'-0"	6"	6"	6"	5'-3"	3'-2"	4'-9 1/4"	6'-9"	16'-5 7/8"	5.5	Yes
5'-0"	5'-0"	8"	7"	6"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	18'-10 1/8"	7.4	Yes
5'-0"	5'-0"	6"	6"	6"	6'-3"	3'-8"	5'-9 1/4"	8'-2"	18'-5 7/8"	6.8	Yes
6'-0"	2'-0"	8"	7"	7"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	14'-0"	4.3	Yes
6'-0"	2'-0"	7"	7"	7"	3'-4"	2'-2"	2'-10 5/8"	4'-1"	13'-10 5/8"	4.2	Yes
6'-0"	3'-0"	8"	7"	7"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	16'-0 1/8"	5.4	Yes
6'-0"	3'-0"	7"	7"	7"	4'-4"	2'-8"	3'-10 5/8"	5'-6"	15'-10 5/8"	5.2	Yes
6'-0"	4'-0"	8"	7"	7"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	18'-0 1/8"	6.5	Yes
6'-0"	4'-0"	7"	7"	7"	5'-4"	3'-2"	4'-10 3/4"	6'-11"	17'-10 3/4"	6.5	Yes
6'-0"	5'-0"	8"	7"	7"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	20'-0 1/8"	8.0	Yes
6'-0"	5'-0"	7"	7"	7"	6'-4"	3'-8"	5'-10 3/4"	8'-4"	19'-10 3/4"	7.8	Yes
6'-0"	6'-0"	8"	7"	7"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	22'-0 1/4"	9.5	Yes
6'-0"	6'-0"	7"	7"	7"	7'-4"	4'-2"	6'-10 3/4"	9'-9"	21'-10 3/4"	9.3	Yes
7'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	15'-2"	4.9	Yes
7'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	17'-2 1/8"	6.1	Yes
7'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	19'-2 1/8"	7.4	Yes
7'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	21'-2 1/8"	8.9	Yes
7'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	23'-2 1/4"	10.6	Yes
8'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	16'-2"	5.3	Yes
8'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	18'-2 1/8"	6.5	Yes
8'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	20'-2 1/8"	7.8	Yes
8'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	22'-2 1/8"	9.3	Yes
8'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	24'-2 1/4"	11.0	Yes
9'-0"	2'-0"	9"	9"	9"	3'-6"	2'-3"	3'-0 3/4"	4'-4"	17'-6 7/8"	6.2	Yes
9'-0"	3'-0"	9"	9"	9"	4'-6"	2'-9"	4'-0 3/4"	5'-9"	19'-6 7/8"	7.5	Yes
9'-0"	4'-0"	9'	9"	9"	5'-6"	3'-3"	5'-0 3/4"	7'-2"	21'-6 7/8"	9.0	Yes
9'-0"	5'-0"	9"	9"	9"	6'-6"	3'-9"	6'-0 7/8"	8'-7"	23'-7"	10.6	Yes
9'-0"	6'-0"	9"	9"	9"	7'-6"	4'-3"	7'-0 5/8"	9'-11"	25'-5 5/8"	12.4	Yes
10'-0"	2'-0"	10"	10"	10"	3'-7"	2'-4"	3'-1 1/2"	4'-5"	18'-10 1/4"	7.1	No
10'-0"	3'-0"	10"	10"	10"	4'-7"	2'-10"	4'-1 1/2"	5'-10"	20'-10 1/4"	8.6	No
10'-0"	4'-0"	10"	10"	10"	5'-7"	3'-4"	5'-1 1/2"	7'-3"	22'-10 3/8"	10.2	Yes
10'-0"	5'-0"	10"	10"	10"	6'-7"	3'-10"	6'-1 1/2"	8'-8"	24'-10 3/8"	12.0	Yes
10'-0"	6'-0"	10"	10"	10"	7'-7"	4'-4"	7'-1 1/2"	10'-1"	26'-10 3/8"	13.9	Yes
11'-0"	2'-0"	11"	11"	11"	3'-8"	2'-4"	3'-2 7/8"	4'-7"	20'-3 1/8"	8.2	No
11'-0"	3'-0"	11"	11"	11"	4'-8"	2'-10"	4'-2 7/8"	6'-0"	22'-3 1/8"	9.8	No
11'-0"	4'-0"	11"	11"	11"	5'-8"	3'-4"	5'-2 1/4"	7'-4"	24'-1 3/4"	11.5	Yes
11'-0"	5'-0"	11"	11"	11"	6'-8"	3'-10"	6'-2 1/4"	8'-9"	26'-1 3/4"	13.3	Yes
11'-0"	6'-0"	11"	11"	11"	7'-8"	4'-4"	7'-2 1/4"	10'-2"	28'-1 7/8"	15.5	Yes
12'-0"	2'-0"	12"	12"	12"	3'-9"	2'-5"	3'-3 5/8"	4'-8"	21'-6 1/2"	9.3	No
12'-0"	3'-0"	12"	12"	12"	4'-9"	2'-11"	4'-3 5/8"	6'-1"	23'-6 1/2"	11.1	No
12'-0"	4'-0"	12"	12"	12"	5'-9"	3'-5"	5'-3 5/8"	7'-6"	25'-6 5/8"	13.0	Yes
12'-0"	5'-0"	12"	12"	12"	6'-9"	3'-11"	6'-3 5/8"	8'-11"	27'-6 5/8"	14.1	Yes
12'-0"	6'-0"	12"	12"	12"	7'-9"	4'-5"	7'-3 5/8"	10'-4"	29'-6 5/8"	17.4	Yes

Note:
Two sets of apron end section dimensions are shown above for some box culvert sizes due to the top and bottom slabs having different thicknesses per ASTM C 1577 for design fill heights less than 2 ft.

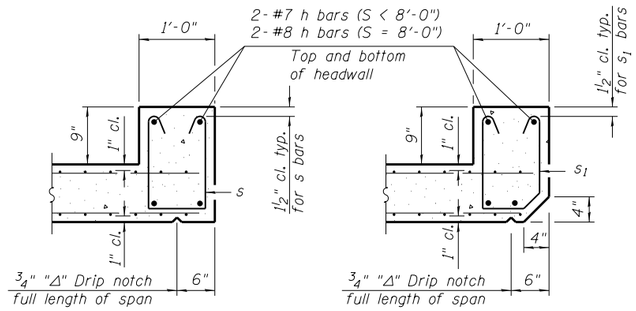
SCB-AES 2-17-2017

FILE NAME = $FILES$	USER NAME =	DESIGNED - BWP	REVISED	
BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9159		CHECKED - RSB	REVISED	
	PLOT SCALE =	DRAWN - BJV	REVISED	
	PLOT DATE = $DATE$	CHECKED - BWP	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

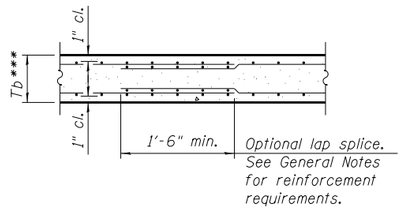
PRECAST CONCRETE BOX CULVERT APRON END
SECTION DETAILS – STA. 527+85.01
SHEET NO. 4 OF 6 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	415
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



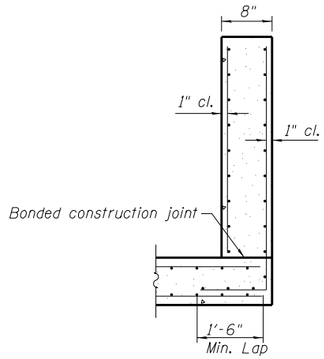
SECTION B-B
(Top slab at downstream end)

SECTION B-B
(Top slab at upstream end)

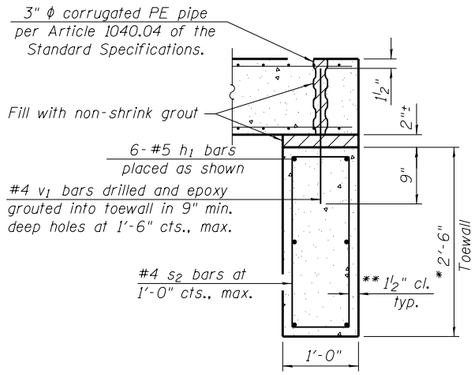


SECTION B-B
(Bottom Slab)

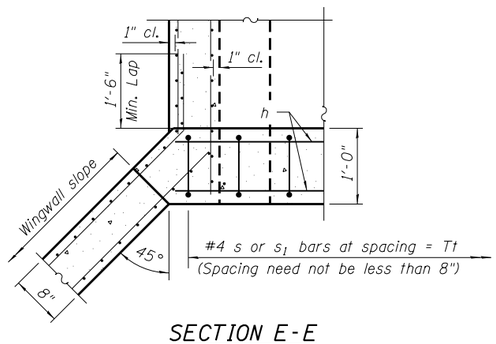
*** This dimension shall be increased by 2" for CIP construction.



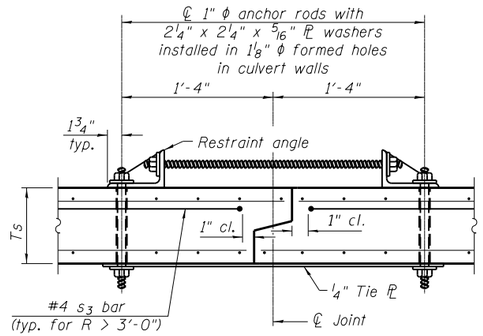
SECTION C-C



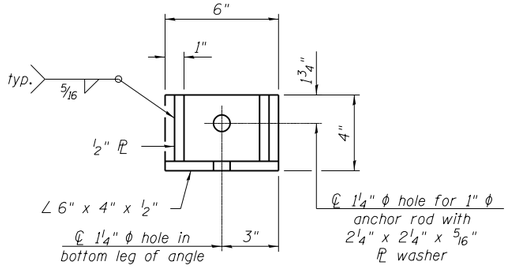
SECTION D-D

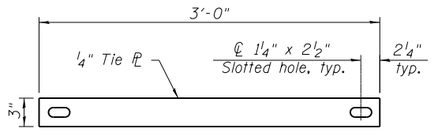


SECTION E-E

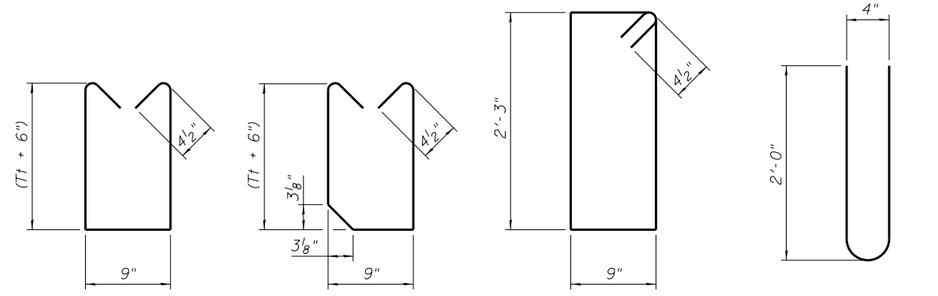


SECTION F-F
(Showing culvert tie details)





TIE PLATE DETAIL



BAR s | BAR s1 | BAR s2 | BAR s3

TOEWALL CONSTRUCTION SEQUENCE

1. Perform excavation and construct toewall.
2. Backfill accordingly and place bedding for precast box culvert end sections.
3. Set precast box culvert end section.
4. Drill and epoxy grout reinforcement in toewall in accordance with Section 584 of the Standard Specifications.
5. Pressure grout voids using non-shrink grout conforming to Section 1024 of the Standard Specifications.

* The Contractor may furnish a precast or cast-in-place toewall. The Contractor shall be responsible for the strength and stability of the precast toewall during handling. Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling method.

** If soil conditions permit, the sides of the toewall may be poured directly against the soil. The clear cover on the sides of the toewall shall be increased to 3" by increasing the thickness of the toewall.

Notes:

1" ϕ anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for the tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2¼"x2¼"x5/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional ½ turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.

SCB-AES 2-17-2017

FILE NAME = End Section Detail (2) 527+85.01.dgn	USER NAME =	DESIGNED - BWP	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PRECAST CONCRETE BOX CULVERT APRON END SECTION DETAILS – STA. 527+85.01
BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE • 618.997.5190		CHECKED - RSB	REVISED		SHEET NO. 5 OF 6 SHEETS
	PLOT SCALE =	DRAWN - BJV	REVISED		
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED		

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	416
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Date 10/24/13

ROUTE IL 71 (F.A.P. 311) DESCRIPTION Box Culvert on IL 71 at Station 527+85, 400 feet Southwest of Candleberry Lane LOGGED BY Larry Myers

SECTION (1, 1-1)R LOCATION SW 1/4, SEC. 4, TWP. 36N, RNG. 7E, 3rd PM, Latitude 41.621011, Longitude -88.440381

COUNTY Kendall DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO.
Station 527+85 (Prop.)

BORING NO. 01 (S.W. Quad.)
Station 527+62
Offset 12.0 ft Rt.
Ground Surface Elev. 698.70 ft

Surface Water Elev. Dry ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 675.7 ft ▼
Upon Completion 675.7 ft ▽
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Soil Description
				Augered Gray Shoulder Stone, Brown Sand & Gravel Fill
696.20				
	4			Hard to Very Stiff Brown & Gray Silty Clay Loam Till Fill
	5	>4.5	15	
	6	P		
-5				
	3			
	3	3.5	21	
	3	P		
691.70				
	2			Stiff Dark Brown Silty Clay/Silty Clay Loam/Silty Loam
	2	2.0	27	
	2	P		
-10				
	1			
	2	1.5	41	
	2	P		
686.20				
	2			Loose Brown Loamy Fine to Coarse Sand & Silt Layers
	3		16	
	4			
684.20				
-15				Loose Brown Fine to Coarse Sand with Fine/Coarse Gravel
	3			
	5		10	
	4			
	3			
	4		10	
	3			
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Soil Description
	2			Loose Brown Fine to Coarse Sand with Fine/Coarse Gravel *(continued)*
	4		8	
	4			
▽▼	2			
	3		23	
	5			
674.20				
-25				Medium Brown Loamy Fine Sand to Coarse Gravel with Free Water and Potential Cobbles/Boulders
	3			
	7		17	
	14			
669.20				
-30				Very Dense Brown Fine Sand to Coarse Gravel with Cobbles/Boulders and Free Water
	12			
	21		13	
	33			
-35				
	50			
	50		9	
662.20	61			
				End of Boring
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

SOIL BORING BOX CULVERT ON IL 71 AT STA 527+85.GPJ IL_DOT.GDT 8/25/15

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Date 10/24/13

ROUTE IL 71 (F.A.P. 311) DESCRIPTION Box Culvert on IL 71 at Station 527+85, 400 feet Southwest of Candleberry Lane LOGGED BY Larry Myers

SECTION (1, 1-1)R LOCATION SW 1/4, SEC. 4, TWP. 36N, RNG. 7E, 3rd PM, Latitude 41.621124, Longitude -88.440296

COUNTY Kendall DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO.
Station 527+85 (Prop.)

BORING NO. 02 (N.E. Quad.)
Station 527+97
Offset 19.0 ft Lt.
Ground Surface Elev. 698.38 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 675.4 ft ▼
Upon Completion 675.4 ft ▽
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Soil Description
				Augered Bituminous Shoulder, Brown Sand & Gravel Fill
695.88				
	6			Hard Brown Silty Clay Loam Till Fill
	5	4.5	16	
	5	P		
-5				
	4			
	4	4.0	17	
	5	P		
691.38				
	2			Stiff to Very Stiff Dark Brown Silty Clay/Silty Loam
	2	1.5	22	
	2	P		
-10				
	3			
	5	3.0	20	
	4	P		
686.88				
	3			Loose Brown Fine Sand with Minor Layers of Coarse Sand
	3		7	
	3			
-15				
	2			
	3		8	
	4			
	3			
	4		10	
	5			
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Soil Description
	4			Loose Brown Fine Sand with Minor Layers of Coarse Sand *(continued)*
	5		11	
	5			
675.88				
▽▼	4			Medium Brown Fine Sand to Coarse Gravel with Potential Cobbles/Boulders
	6		14	
	9			
-25				
	4			
	8		11	
	14			
	5			
	8		12	
668.88	10			
-30				Dense Brown Loamy Fine Sand to Coarse Gravel with Free Water and Cobbles/Boulders Present
	9			
	14		18	
	16			
-35				
	10			
	21		19	
661.88	22			
				End of Boring
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

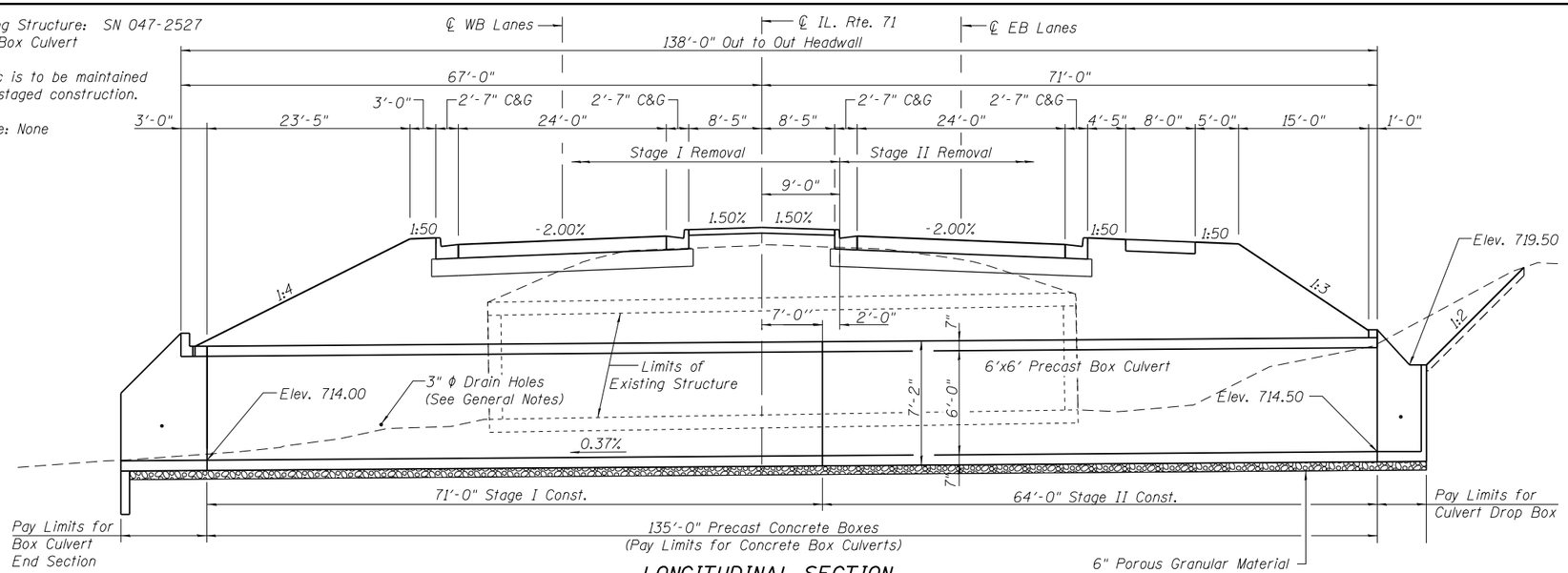
SOIL BORING BOX CULVERT ON IL 71 AT STA 527+85.GPJ IL_DOT.GDT 8/25/15

FILE NAME = 527+85.01 Borings.dgn	USER NAME =	DESIGNED - BWP	REVISED
BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9190		CHECKED - RSB	REVISED
	PLOT SCALE =	DRAWN - BJV	REVISED
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED

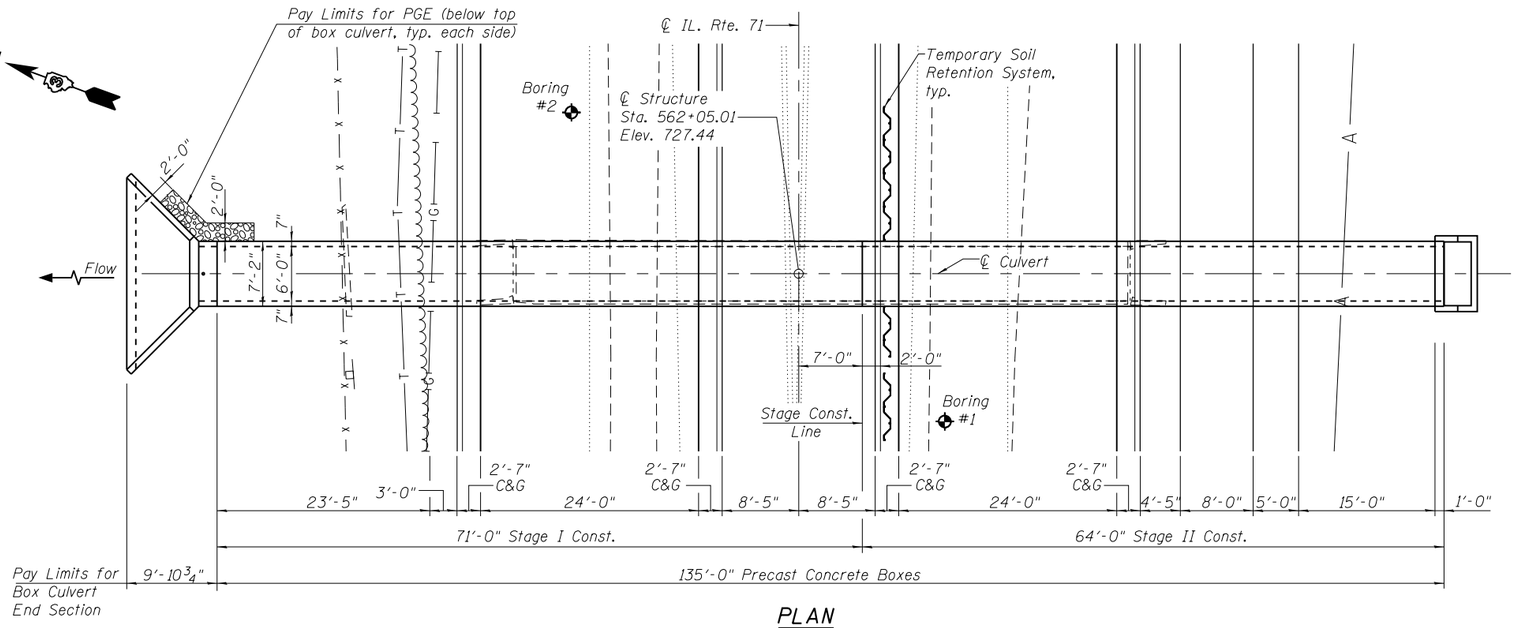
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STA. 527 + 85.01
SHEET NO. 6 OF 6 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	417
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		



LONGITUDINAL SECTION



PLAN

WATERWAY INFORMATION

Drainage Area = 0.08 sq. mi. — Exist. Low Grade Elev. 722.64 @ Sta. 559+00; Prop. Low Grade Elev. 724.98 @ Sta. 560+50

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	12	4.4	18.8	717.6	0.1	0.0	717.7	717.6
Design	50	24	5.5	19.9	717.8	0.4	0.0	718.2	717.8
Base	100	34	6.1	20.6	717.9	0.7	0.0	718.6	718.0
Overtopping	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Max. Calc.	500	46	6.7	21.2	718.0	0.9	0.0	719.0	718.0

10 year velocity through Existing structure = 5.9 fps
10 year velocity through Proposed structure = 4.0 fps

STATION
BUILT BY
STATE OF ILLINOIS
F.A.P. RT. 311 SEC. (1)R,I
LOADING HL-93
STR. NO. 047-2576

NAME PLATE

See Std. 515001

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structure No. 2	Each	1
Porous Granular Embankment	Cu. Yd.	165
Precast Concrete Box Culverts 6'x6'	Foot	135
Box Culvert End Sections, Culvert No. 2	Each	1
Culvert Drop Box	Each	1
Temporary Soil Retention System	Sq. Ft.	269
Name Plates	Each	1

GENERAL NOTES

The design fill height for this box is 7 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 ⅓ 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 box culvert end sections 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.

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications
6th Edition with 2013 interims

LOADING HL-93

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

INDEX OF SHEETS

1. General Plan and Elevation
2. Staging Plan
3. Drop Structure Details
4.-5. Precast Concrete Box Culvert Apron End Section Details
6. Soil Boring Logs

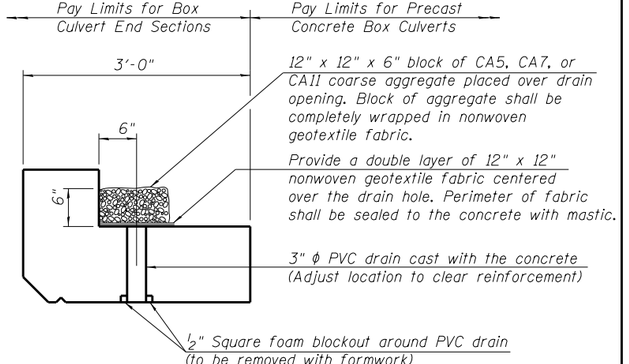
DESIGN STRESSES

PRECAST UNITS

f'c = 5,000 psi
fy = 65,000 psi (Welded Wire Reinforcement)

FIELD UNITS

f'c = 3,500 psi
fy = 65,000 psi (Welded Wire Reinforcement)
fy = 60,000 psi (Reinforcement)



DRAIN DETAIL

(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)

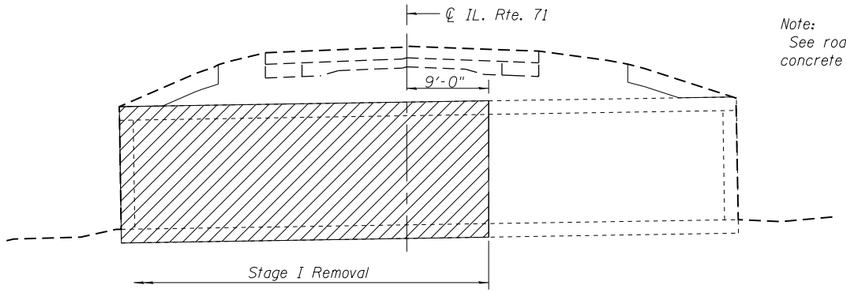
GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 71
F.A.P. RTE. 311 - SEC. (1)R, I
KENDALL COUNTY
STATION 562+05.01
STRUCTURE NO. 047-2576

FILE NAME = 562+05.01 GP&E.dgn	USER NAME =	DESIGNED - BWP	REVISED
BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9190		CHECKED - RSB	REVISED
	PLOT SCALE =	DRAWN - BJV	REVISED
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

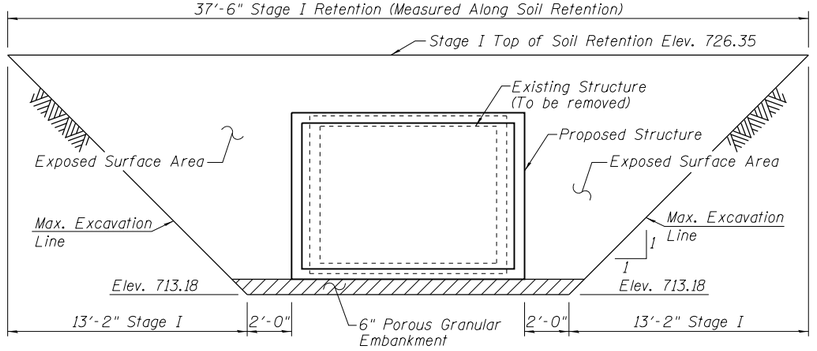
GENERAL PLAN AND ELEVATION
STRUCTURE NO. 047-2576
SHEET NO. 1 OF 6 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	418
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



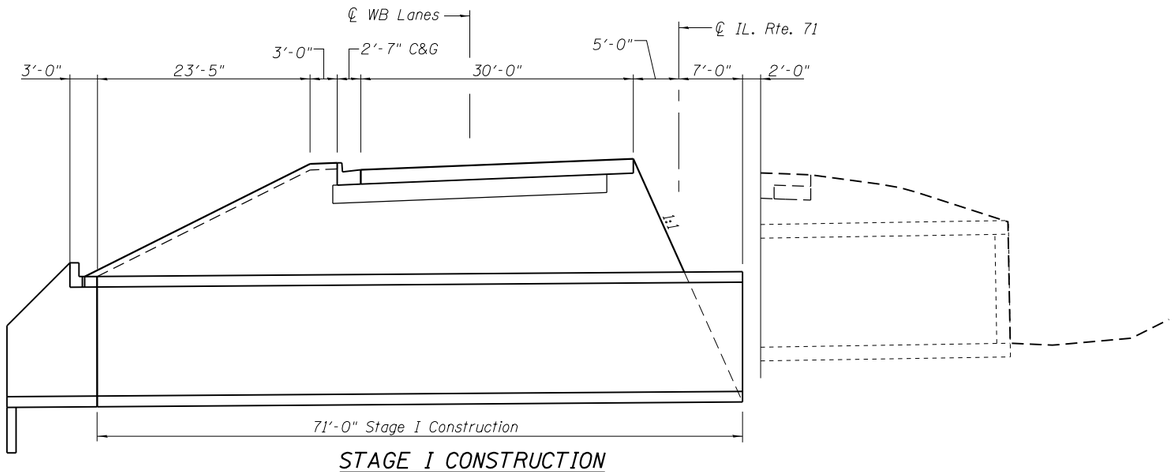
STAGE I REMOVAL
(Looking East)

Note:
See roadway plans for temporary concrete barrier locations and stage traffic.

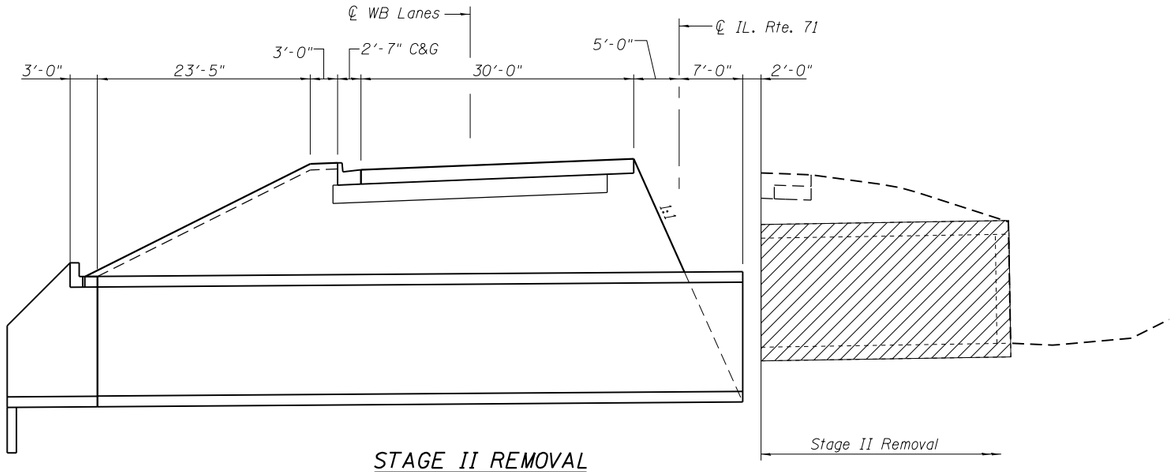


TEMPORARY SOIL RETENTION

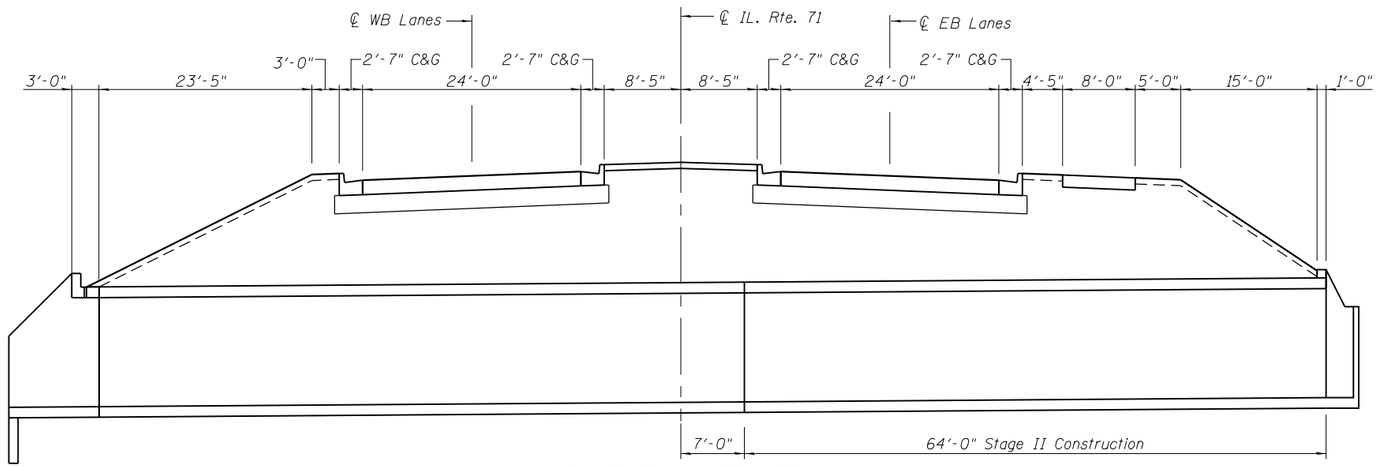
A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.
Slopes shown are parallel to ℄ of Roadway unless noted otherwise.



STAGE I CONSTRUCTION
(Looking East)

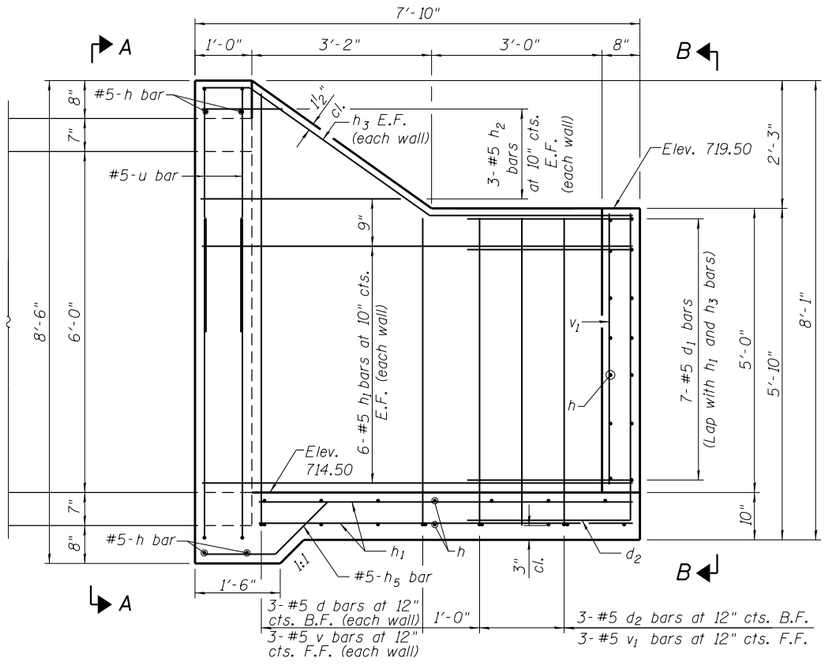


STAGE II REMOVAL
(Looking East)



STAGE II CONSTRUCTION
(Looking East)

FILE NAME = 562+05.01 Staging.dgn	USER NAME =	DESIGNED - BWP	REVISED	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**STAGING PLAN STRUCTURE NO. 047-2576**	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MAHON, ILLINOIS 61069 PHONE - 815.957.3780		CHECKED - RSB	REVISED			311	(1)R, I	KENDALL	558	419
	PLOT SCALE =	DRAWN - BJV	REVISED						CONTRACT NO. 66D24	
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED		SHEET NO. 2 OF 6 SHEETS			ILLINOIS	FED. AID PROJECT	



SIDEWALLS

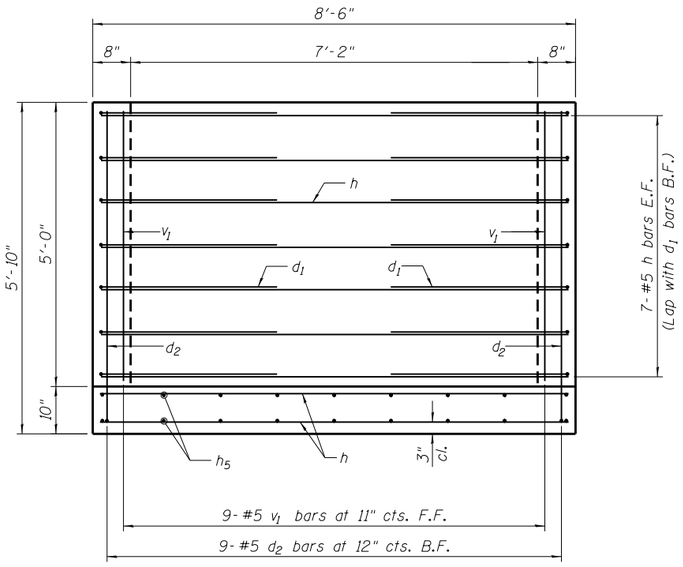
MINIMUM BAR LAP

#5 bar = 2'-9"

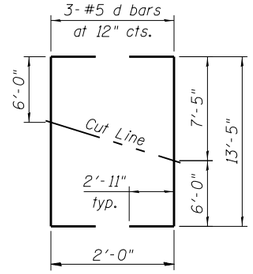
NOTES

This work shall be paid for at the contract unit price per Each for Culvert Drop Box.

The work shall be done according to the applicable portion of 503, 508, and 542 of the Standard Specifications.

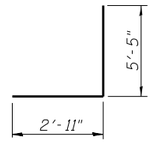


SECTION B-B

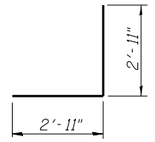


FIELD CUTTING DIAGRAM

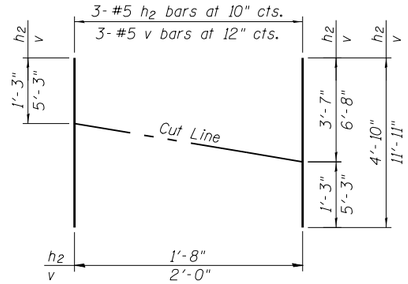
Order d full length. Cut as shown and use remainder of bars in opposite wall.



BAR d_2

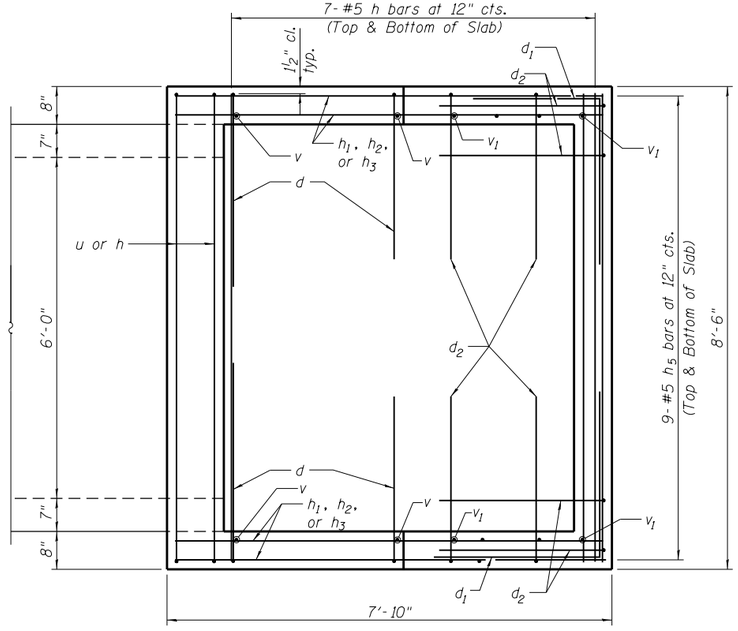


BAR d_1

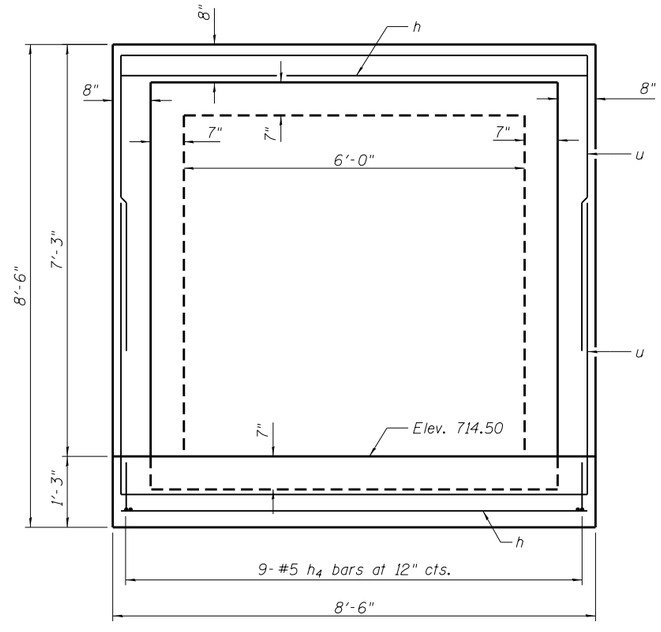


FIELD CUTTING DIAGRAM

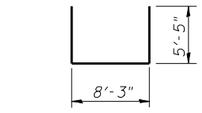
Order h_2 and v full length. Cut as shown and use remainder of bars in opposite face.



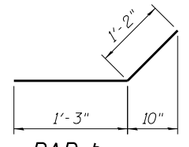
PLAN



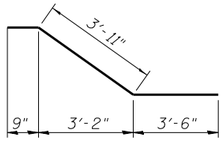
SECTION A-A



BAR u



BAR h_4



BAR h_3

BILL OF MATERIAL

(for information only)

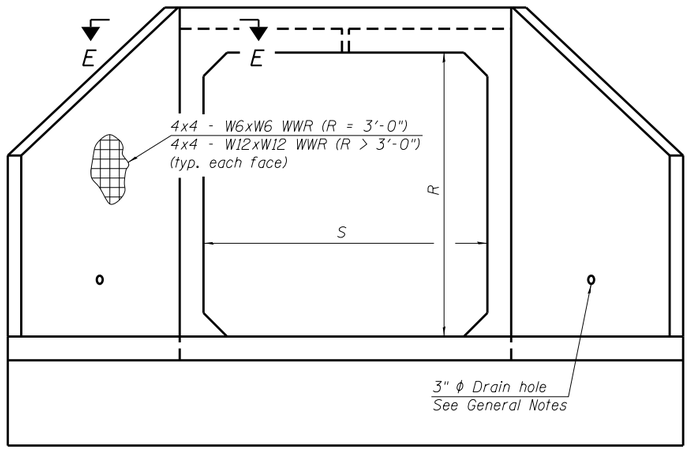
Bar	No.	Size	Length	Shape
d	3	#5	13'-5"	⌟
d_1	7	#5	5'-10"	⌟
d_2	15	#5	8'-4"	⌟
h	32	#5	8'-2"	—
h_1	24	#5	7'-6"	—
h_2	6	#5	4'-10"	—
h_3	4	#5	8'-2"	—
h_4	9	#5	2'-5"	—
h_5	18	#5	6'-6"	—
u	4	#5	19'-1"	⊔
v	6	#5	11'-11"	—
v_1	15	#5	4'-8"	—
Concrete Box Culverts			Cu. Yd.	5.5
Reinforcement Bars			Pound	1,110

FILE NAME =	USER NAME =	DESIGNED - BWP	REVISED -
BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.3180		CHECKED - RSB	REVISED -
	PLOT SCALE =	DRAWN - BJV	REVISED -
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED -

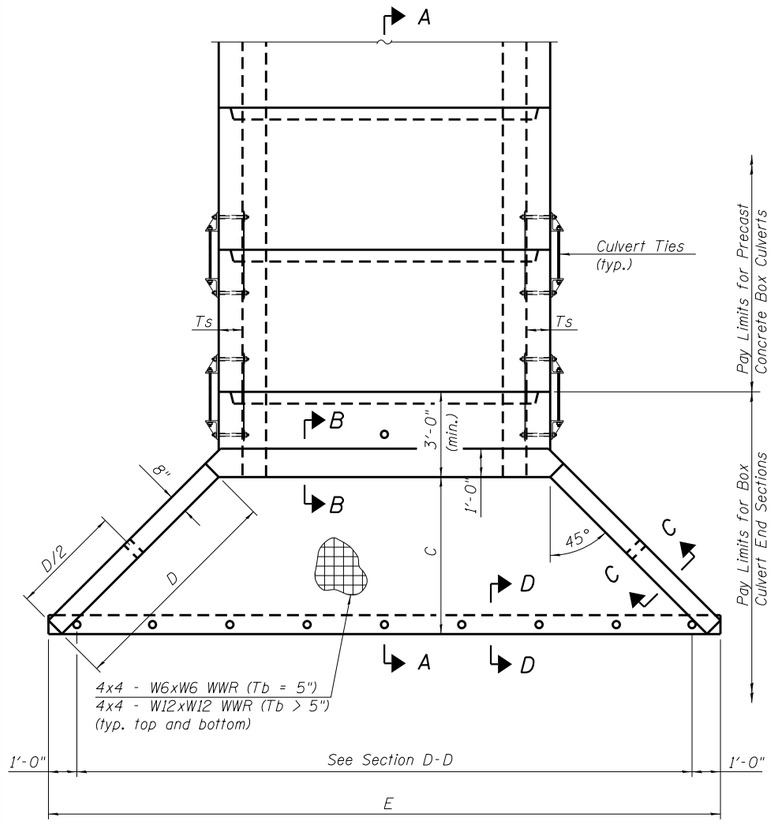
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DROP STRUCTURE DETAILS
STRUCTURE NO. 047-2576
SHEET NO. 3 OF 6 SHEETS

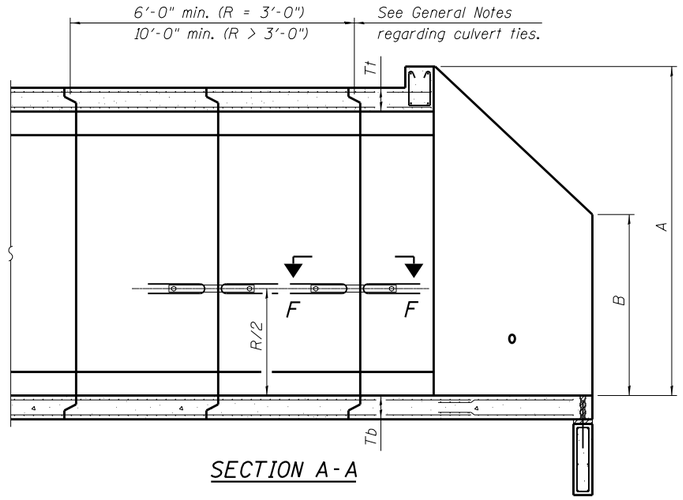
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	420
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		



END VIEW



PLAN



SECTION A-A

GENERAL NOTES

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. End sections will be paid for at the contract unit price per each for Box Culvert End Sections.

The Contractor may furnish the end section as a single precast concrete piece or construct the end section in the field using cast-in-place (CIP) construction. For CIP construction, the bottom slab thickness shall be increased by 2" and the clear cover to the bottom mat of reinforcement shall be increased to 3".

Box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements for ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

The number of culvert ties shall be sufficient to engage the minimum length of culvert barrel shown within the pay limits for Precast Concrete Box Culverts and will be dependent upon the length of box culvert segments furnished by the Contractor. Culvert ties are not required for box culverts having a rise (R) less than or equal to 3 ft and a span (S) greater than or equal to 10 ft.

All costs associated with furnishing and installing or constructing the toewall and culvert ties will not be measured for payment but shall be included in the unit price for Box Culvert End Sections of the culvert number specified.

Shop drawings that detail slab thickness and reinforcement layout for the Box Culvert End Sections shall be provided to the Engineer for review and approval. Reinforcement bars not detailed herein shall be detailed with a clear distance at the end of the reinforcement not less than $\frac{1}{2}$" nor more than 2". For the precast option, it shall be the Contractor's responsibility for determining a method of handling and a construction procedure shall be included on the shop drawings. The Contractor shall determine and detail in the shop drawings any necessary strengthening or stiffening provisions necessary to handle the precast segment. Any required modifications shall be at no extra charge.

The Contractor may use reinforcement bars in lieu of welded wire reinforcement (WWR). Reinforcement bars shall be limited to the sizes of #3 through #5 bars, a maximum spacing of the lesser of 8" or the member thickness, and shall result in an area of reinforcement equal to or greater than that provided by the WWR. Minimum lap lengths detailed herein are applicable to WWR and reinforcement bars.

Reinforcement (circumferential and longitudinal) in the culvert barrel portion of the end section being lapped with reinforcement from the wingwalls or bottom slab of the end section shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end section, whichever is greater.

One drain hole shall be provided in each wingwall for end sections of box culverts having an opening with a clear rise greater than 3 ft. The drain hole shall be located within the lower $\frac{1}{3}$ of the clear rise of the box culvert and shall conform to the requirements of Article 503.11 of the Standard Specifications.

APRON END SECTION DIMENSIONS

Span (S)	Rise (R)	Tt	Tb	Ts	A	B	C	D	E	Concrete Cu. Yd.	Culvert Ties Required
3'-0"	2'-0"	7"	6"	4"	3'-4"	2'-2"	2'-10 5/8"	4'-1"	10'-4 5/8"	2.8	Yes
3'-0"	2'-0"	4"	4"	4"	3'-1"	2'-1"	2'-7 7/8"	3'-9"	9'-11"	2.3	Yes
3'-0"	3'-0"	7"	6"	4"	4'-4"	2'-8"	3'-10 5/8"	5'-6"	12-4 5/8"	3.7	Yes
3'-0"	3'-0"	4"	4"	4"	4'-1"	2'-7"	3'-7 7/8"	5'-2"	11'-11"	3.1	Yes
4'-0"	2'-0"	7.5"	6"	5"	3'-4 1/2"	2'-2 1/2"	2'-11 3/8"	4'-2"	11'-8"	3.3	Yes
4'-0"	2'-0"	5"	5"	5"	3'-2"	2'-1"	2'-8 1/2"	3'-10"	11'-2 3/8"	2.8	Yes
4'-0"	3'-0"	7.5"	6"	5"	4'-4 1/2"	2'-8 1/2"	3'-11 3/8"	5'-7"	13'-8 1/8"	4.2	Yes
4'-0"	3'-0"	5"	5"	5"	4'-2"	2'-7"	3'-8 1/2"	5'-3"	13'-2 3/8"	3.7	Yes
4'-0"	4'-0"	7.5"	6"	5"	5'-4 1/2"	3'-2 1/2"	4'-11 3/8"	7'-0"	15'-8 1/8"	5.3	Yes
4'-0"	4'-0"	5"	5"	5"	5'-2"	3'-1"	4'-8 5/8"	6'-8"	15'-2 1/2"	4.7	Yes
5'-0"	2'-0"	8"	7"	6"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	12'-10"	3.9	Yes
5'-0"	2'-0"	6"	6"	6"	3'-3"	2'-2"	2'-10"	4'-0"	12'-7 1/4"	3.5	Yes
5'-0"	3'-0"	8"	7"	6"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	14'-10 1/8"	4.9	Yes
5'-0"	3'-0"	6"	6"	6"	4'-3"	2'-8"	3'-10"	5'-5"	14'-7 1/4"	4.5	Yes
5'-0"	4'-0"	8"	7"	6"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	16'-10 1/8"	6.1	Yes
5'-0"	4'-0"	6"	6"	6"	5'-3"	3'-2"	4'-9 1/4"	6'-9"	16'-5 7/8"	5.5	Yes
5'-0"	5'-0"	8"	7"	6"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	18'-10 1/8"	7.4	Yes
5'-0"	5'-0"	6"	6"	6"	6'-3"	3'-8"	5'-9 1/4"	8'-2"	18'-5 7/8"	6.8	Yes
6'-0"	2'-0"	8"	7"	7"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	14'-0"	4.3	Yes
6'-0"	2'-0"	7"	7"	7"	3'-4"	2'-2"	2'-10 5/8"	4'-1"	13'-10 5/8"	4.2	Yes
6'-0"	3'-0"	8"	7"	7"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	16'-0 1/8"	5.4	Yes
6'-0"	3'-0"	7"	7"	7"	4'-4"	2'-8"	3'-10 5/8"	5'-6"	15'-10 5/8"	5.2	Yes
6'-0"	4'-0"	8"	7"	7"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	18'-0 1/8"	6.5	Yes
6'-0"	4'-0"	7"	7"	7"	5'-4"	3'-2"	4'-10 3/4"	6'-11"	17'-10 3/4"	6.5	Yes
6'-0"	5'-0"	8"	7"	7"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	20'-0 1/8"	8.0	Yes
6'-0"	5'-0"	7"	7"	7"	6'-4"	3'-8"	5'-10 3/4"	8'-4"	19'-10 3/4"	7.8	Yes
6'-0"	6'-0"	8"	7"	7"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	22'-0 1/4"	9.5	Yes
6'-0"	6'-0"	7"	7"	7"	7'-4"	4'-2"	6'-10 3/4"	9'-9"	21'-10 3/4"	9.3	Yes
7'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	15'-2"	4.9	Yes
7'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	17'-2 1/8"	6.1	Yes
7'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	19'-2 1/8"	7.4	Yes
7'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	21'-2 1/8"	8.9	Yes
7'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	23'-2 1/4"	10.6	Yes
8'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	16'-2"	5.3	Yes
8'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	18'-2 1/8"	6.5	Yes
8'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	20'-2 1/8"	7.8	Yes
8'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	22'-2 1/8"	9.3	Yes
8'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	24'-2 1/4"	11.0	Yes
9'-0"	2'-0"	9"	9"	9"	3'-6"	2'-3"	3'-0 3/4"	4'-4"	17'-6 7/8"	6.2	Yes
9'-0"	3'-0"	9"	9"	9"	4'-6"	2'-9"	4'-0 3/4"	5'-9"	19'-6 7/8"	7.5	Yes
9'-0"	4'-0"	9'	9"	9"	5'-6"	3'-3"	5'-0 3/4"	7'-2"	21'-6 7/8"	9.0	Yes
9'-0"	5'-0"	9"	9"	9"	6'-6"	3'-9"	6'-0 7/8"	8'-7"	23'-7"	10.6	Yes
9'-0"	6'-0"	9"	9"	9"	7'-6"	4'-3"	7'-0 5/8"	9'-11"	25'-5 5/8"	12.4	Yes
10'-0"	2'-0"	10"	10"	10"	3'-7"	2'-4"	3'-1 1/2"	4'-5"	18'-10 1/4"	7.1	No
10'-0"	3'-0"	10"	10"	10"	4'-7"	2'-10"	4'-1 1/2"	5'-10"	20'-10 1/4"	8.6	No
10'-0"	4'-0"	10"	10"	10"	5'-7"	3'-4"	5'-1 1/2"	7'-3"	22'-10 3/8"	10.2	Yes
10'-0"	5'-0"	10"	10"	10"	6'-7"	3'-10"	6'-1 1/2"	8'-8"	24'-10 3/8"	12.0	Yes
10'-0"	6'-0"	10"	10"	10"	7'-7"	4'-4"	7'-1 1/2"	10'-1"	26'-10 3/8"	13.9	Yes
11'-0"	2'-0"	11"	11"	11"	3'-8"	2'-4"	3'-2 7/8"	4'-7"	20'-3 1/8"	8.2	No
11'-0"	3'-0"	11"	11"	11"	4'-8"	2'-10"	4'-2 7/8"	6'-0"	22'-3 1/8"	9.8	No
11'-0"	4'-0"	11"	11"	11"	5'-8"	3'-4"	5'-2 1/4"	7'-4"	24'-1 3/4"	11.5	Yes
11'-0"	5'-0"	11"	11"	11"	6'-8"	3'-10"	6'-2 1/4"	8'-9"	26'-1 3/4"	13.3	Yes
11'-0"	6'-0"	11"	11"	11"	7'-8"	4'-4"	7'-2 1/4"	10'-2"	28'-1 7/8"	15.5	Yes
12'-0"	2'-0"	12"	12"	12"	3'-9"	2'-5"	3'-3 5/8"	4'-8"	21'-6 1/2"	9.3	No
12'-0"	3'-0"	12"	12"	12"	4'-9"	2'-11"	4'-3 5/8"	6'-1"	23'-6 1/2"	11.1	No
12'-0"	4'-0"	12"	12"	12"	5'-9"	3'-5"	5'-3 5/8"	7'-6"	25'-6 5/8"	13.0	Yes
12'-0"	5'-0"	12"	12"	12"	6'-9"	3'-11"	6'-3 5/8"	8'-11"	27'-6 5/8"	14.1	Yes
12'-0"	6'-0"	12"	12"	12"	7'-9"	4'-5"	7'-3 5/8"	10'-4"	29'-6 5/8"	17.4	Yes

Note:
Two sets of apron end section dimensions are shown above for some box culvert sizes due to the top and bottom slabs having different thicknesses per ASTM C 1577 for design fill heights less than 2 ft.

SCB-AES 2-17-2017

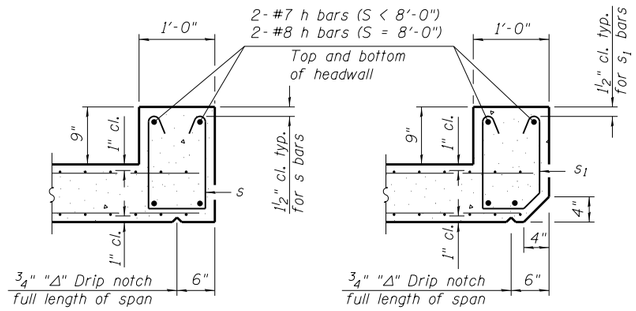
FILE NAME = $FILES$	USER NAME =	DESIGNED - BWP	REVISED	
BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.2790		CHECKED - RSB	REVISED	
	PLOT SCALE =	DRAWN - BJV	REVISED	
	PLOT DATE = $DATE$	CHECKED - BWP	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE BOX CULVERT APRON END SECTION DETAILS – STRUCTURE NO. 047-2576

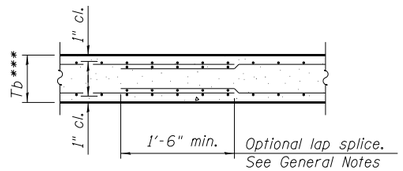
SHEET NO. 4 OF 6 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	421
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

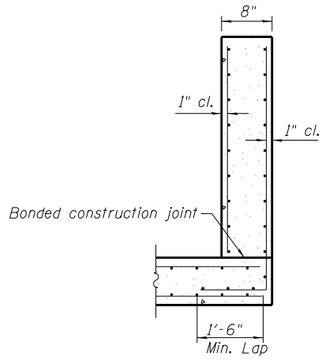


SECTION B-B
(Top slab at downstream end)

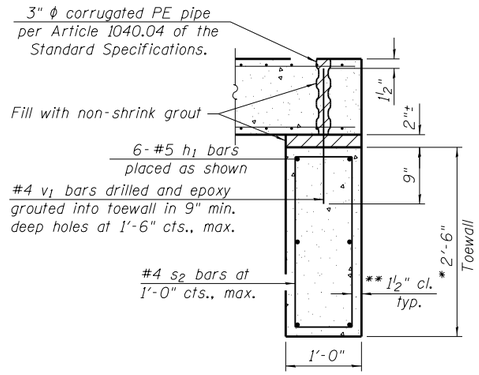
SECTION B-B
(Top slab at upstream end)



SECTION B-B
(Bottom Slab)

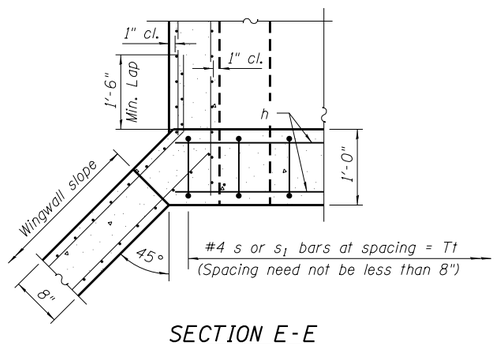


SECTION C-C

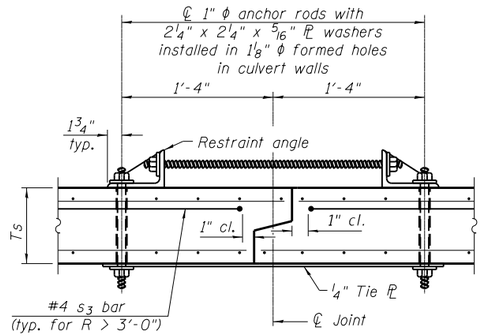


SECTION D-D

*** This dimension shall be increased by 2" for CIP construction.



SECTION E-E



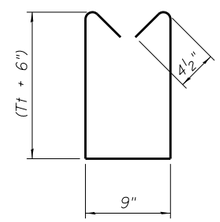
SECTION F-F
(Showing culvert tie details)

TOEWALL CONSTRUCTION SEQUENCE

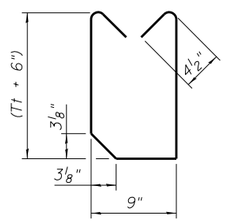
1. Perform excavation and construct toewall.
2. Backfill accordingly and place bedding for precast box culvert end sections.
3. Set precast box culvert end section.
4. Drill and epoxy grout reinforcement in toewall in accordance with Section 584 of the Standard Specifications.
5. Pressure grout voids using non-shrink grout conforming to Section 1024 of the Standard Specifications.

* The Contractor may furnish a precast or cast-in-place toewall. The Contractor shall be responsible for the strength and stability of the precast toewall during handling. Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling method.

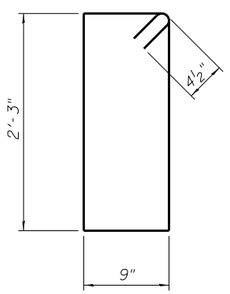
** If soil conditions permit, the sides of the toewall may be poured directly against the soil. The clear cover on the sides of the toewall shall be increased to 3" by increasing the thickness of the toewall.



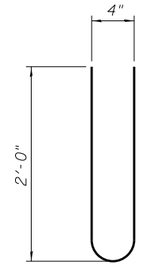
BAR s



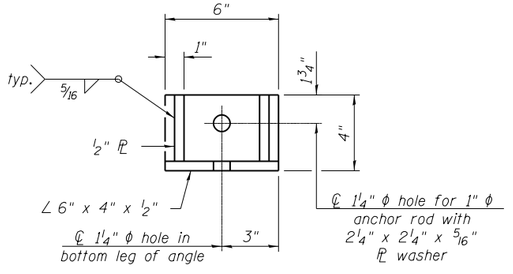
BAR s_1

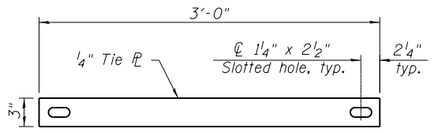


BAR s_2



BAR s_3





TIE PLATE DETAIL

Notes:

1" ϕ anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for the tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2¼"x2¼"x5/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional ½ turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.

SCB-AES 2-17-2017

FILE NAME = End Section Details (2) 562+85.01.dgn	USER NAME =	DESIGNED - BWP	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PRECAST CONCRETE BOX CULVERT APRON END SECTION DETAILS – STRUCTURE NO. 047-2576	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.5190		CHECKED - RSB	REVISED			311	(1)R, I	KENDALL	558	422
	PLOT SCALE =	DRAWN - BJV	REVISED					CONTRACT NO. 66D24		
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED		SHEET NO. 5 OF 6 SHEETS			ILLINOIS FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Date 10/25/13

ROUTE IL 71 (F.A.P. 311) **DESCRIPTION** IL 71 over a Stream, 1.0 miles Northeast of IL 47 **LOGGED BY** Larry Myers

SECTION (1, 1-1)R **LOCATION** SE 1/4, **SEC.** 4, **TWP.** 36N, **RNG.** 7E, 3rd **PM.**
Latitude 41.624171, **Longitude** -88.428576

COUNTY Kendall **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** CME Automatic

STRUCT. NO. 047-2527 (Exist.)
Station 562+05 (Prop.)

BORING NO. 01 (S.W. Quad.)
Station 561+88
Offset 16.0 ft Rt.
Ground Surface Elev. 725.74 ft

Surface Water Elev. Dry ft
Stream Bed Elev. 716.92 ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After ____ **Hrs.** ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered Shoulder Stone, Black Silty Clay Loam Fill			
723.24			
Very Stiff Brown & Gray Silty Clay Fill	5		
	5	3.0	27
	5	P	
-5			
	2		
	3	3.0	26
	4	P	
718.24			
Very Stiff Black Silty Clay Loam Topsoil	4		
	3	2.5	37
	4	P	
716.24			
Very Stiff to Hard Brown Silty Clay Loam Till -10	3		
	2	3.0	21
	3	P	
	3		
	4	4.1	17
	5	B	
-15	5		
	9	6.7	15
	10	S	
708.24			
Hard Gray Silty Clay Loam Till	6		
	9	6.9	13
	12	S	
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard Gray Silty Clay Loam Till *(continued)*	5		
	7	6.3	14
	9	S	
	5		
	7	6.4	13
	9	S	
-25	5		
	6	6.1	13
	8	S	
	5		
	7	5.7	12
	9	S	
-30	5		
	6	6.0	13
	8	S	
-35	5		
	5	5.4	12
689.24	7	S	
End of Boring			
-40			

SOIL BORING 047-2527.GPJ IL_DOT.GDT 8/25/15

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Date 10/25/13

ROUTE IL 71 (F.A.P. 311) **DESCRIPTION** IL 71 over a Stream, 1.0 miles Northeast of IL 47 **LOGGED BY** Larry Myers

SECTION (1, 1-1)R **LOCATION** SE 1/4, **SEC.** 4, **TWP.** 36N, **RNG.** 7E, 3rd **PM.**
Latitude 41.624309, **Longitude** -88.428511

COUNTY Kendall **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** CME Automatic

STRUCT. NO. 047-2527 (Exist.)
Station 562+05 (Prop.)

BORING NO. 02 (N.E. Quad.)
Station 562+22
Offset 25.0 ft Lt.
Ground Surface Elev. 725.54 ft

Surface Water Elev. Dry ft
Stream Bed Elev. 716.38 ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After ____ **Hrs.** ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered Shoulder Stone, Black & Brown Silty Clay Loam Fill			
723.04			
Very Stiff Brown & Gray Silty Clay Loam Fill	3		
	3	3.0	19
	3	P	
-5			
	2		
	2	2.0	27
	2	P	
718.04			
Stiff Black Silty Clay Loam Topsoil	2		
	2	1.5	34
	2	P	
-10			
	2		
	3	2.0	32
	4	P	
714.04			
Very Stiff Brown & Gray Silty Clay Loam Till with Large Gravel Pieces			
	2		
	2	3.0	20
	17	P	
711.04			
Hard Brown Silty Clay Loam Till -15	3		
	5	4.2	15
	7	S	
	5		
	8	5.7	15
	10	S	
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard Brown Silty Clay Loam Till *(continued)*	5		
	7	6.2	15
	12	S	
703.54			
Hard Gray Silty Clay Loam Till	6		
	8	6.4	12
	12	S	
-25			
	8		
	8	6.1	17
	10	S	
	7		
	9	6.7	16
	12	S	
-30			
	7		
	9	6.4	14
	10	S	
-35	6		
	9	5.4	13
689.04	10	S	
End of Boring			
-40			

SOIL BORING 047-2527.GPJ IL_DOT.GDT 8/25/15

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

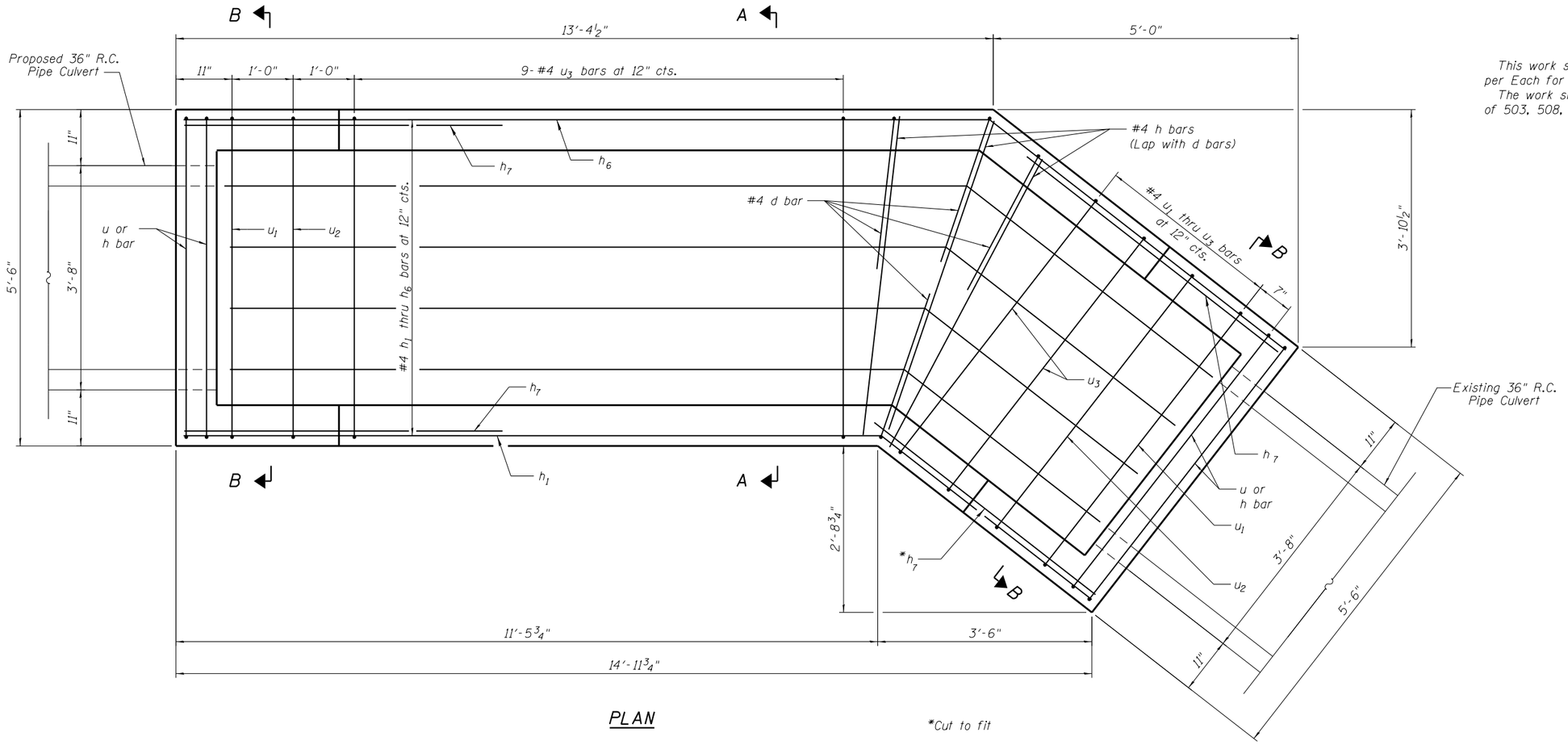
BBS, form 137 (Rev. 8-99)

FILE NAME = 562+05.01 Borings.dgn	USER NAME =	DESIGNED - BWP	REVISED
BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9190		CHECKED - RSB	REVISED
	PLOT SCALE =	DRAWN - BJV	REVISED
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

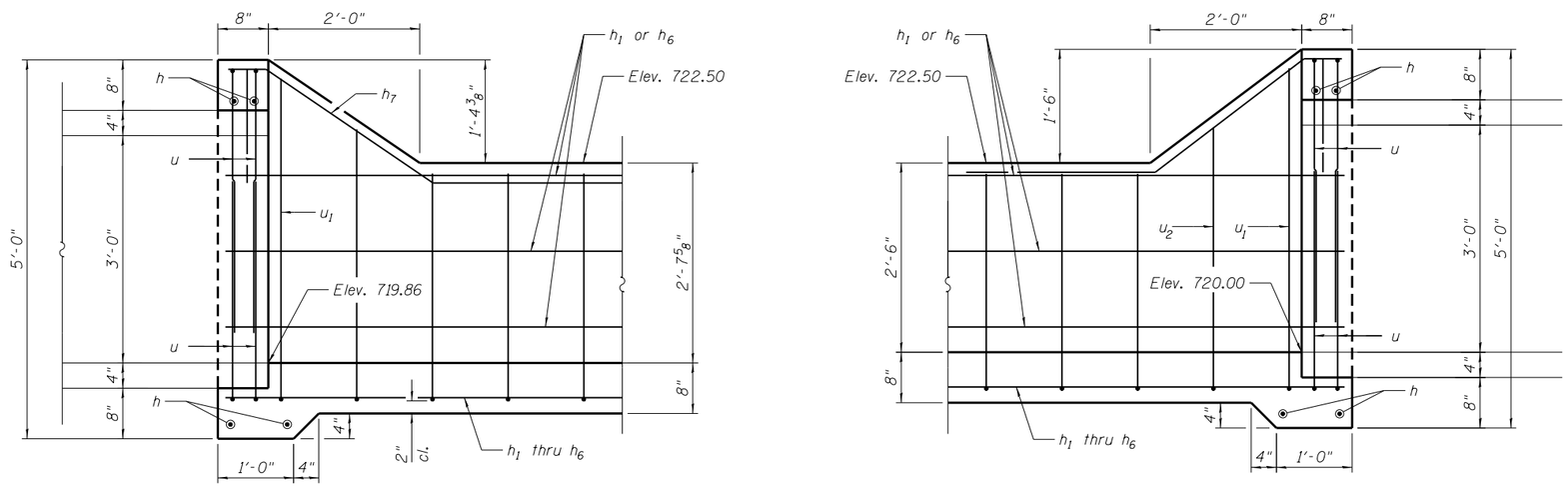
SOIL BORING LOGS
STRUCTURE NO. 047-2576
SHEET NO. 6 OF 6 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	423
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



*Cut to fit

PLAN



SIDEWALLS

NOTES

This work shall be paid for at the contract unit price per Each for Culvert Drop Box.

The work shall be done according to the applicable portion of 503, 508, and 542 of the Standard Specifications.

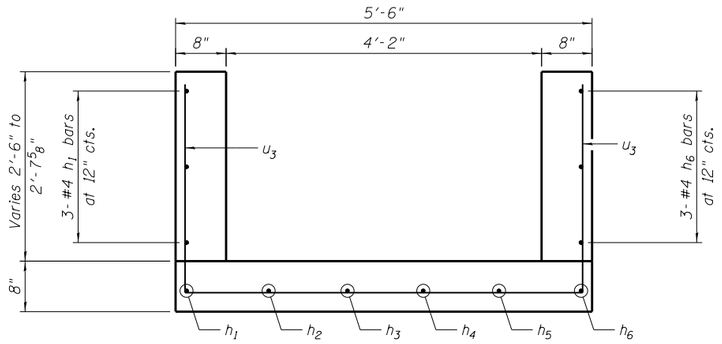
DESIGN STRESSES

fy = 60,000 psi
f'c = 3,500 psi

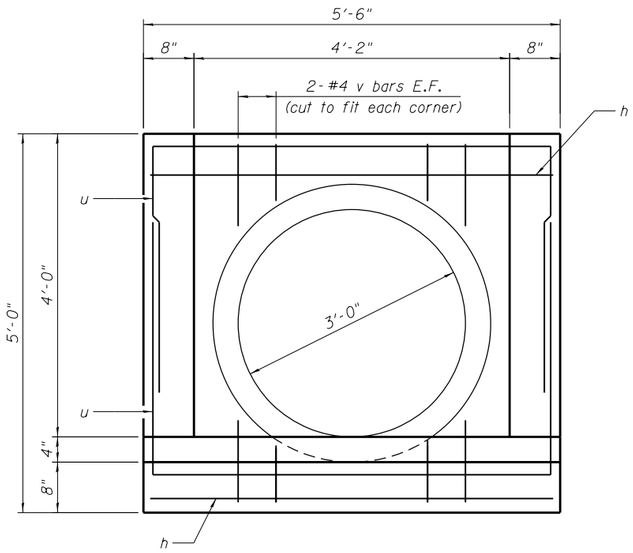
MINIMUM BAR LAP

#4 bar = 2'-3"

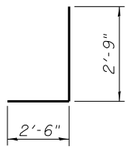
FILE NAME = Culvert Drop Box Details (STA 567+89).dgn	USER NAME =	DESIGNED - BWP	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DROP STRUCTURE DETAILS STA. 567 + 89.00	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9190		CHECKED - RSB	REVISED			311	(1)R. I	KENDALL	558	424
	PLOT SCALE =	DRAWN - BJV	REVISED		SHEET NO. 1 OF 2 SHEETS				CONTRACT NO. 66D24	
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED					ILLINOIS	FED. AID PROJECT	



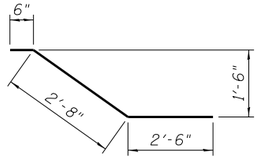
SECTION A-A



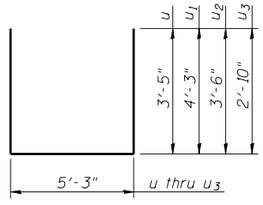
SECTION B-B



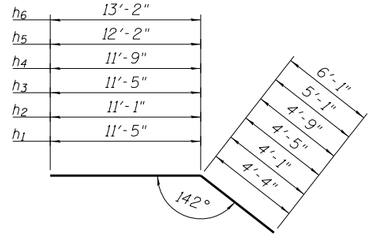
BAR d



BAR h_7



BAR u



BAR h_1 thru h_6

BILL OF MATERIAL

(for information only)

Bar	No.	Size	Length	Shape
d	4	#4	5'-3"	
h	11	#4	5'-3"	
h_1	1	#4	15'-9"	
h_2	1	#4	15'-2"	
h_3	1	#4	15'-10"	
h_4	1	#4	16'-6"	
h_5	1	#4	17'-3"	
h_6	4	#4	19'-3"	
h_7	2	#4	5'-8"	
u	8	#4	12'-1"	
u_1	2	#4	13'-9"	
u_2	2	#4	12'-3"	
u_3	11	#4	10'-11"	
v	32	#4	1'-2"	
Concrete Box Culverts			Cu. Yd.	5.2
Reinforcement Bars			Pound	370

FILE NAME = Culvert Drop Box Details (STA 567+89).dgn	USER NAME =	DESIGNED - BWP	REVISED
BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE: 618.997.3190		CHECKED - RSB	REVISED
	PLOT SCALE =	DRAWN - BJV	REVISED
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

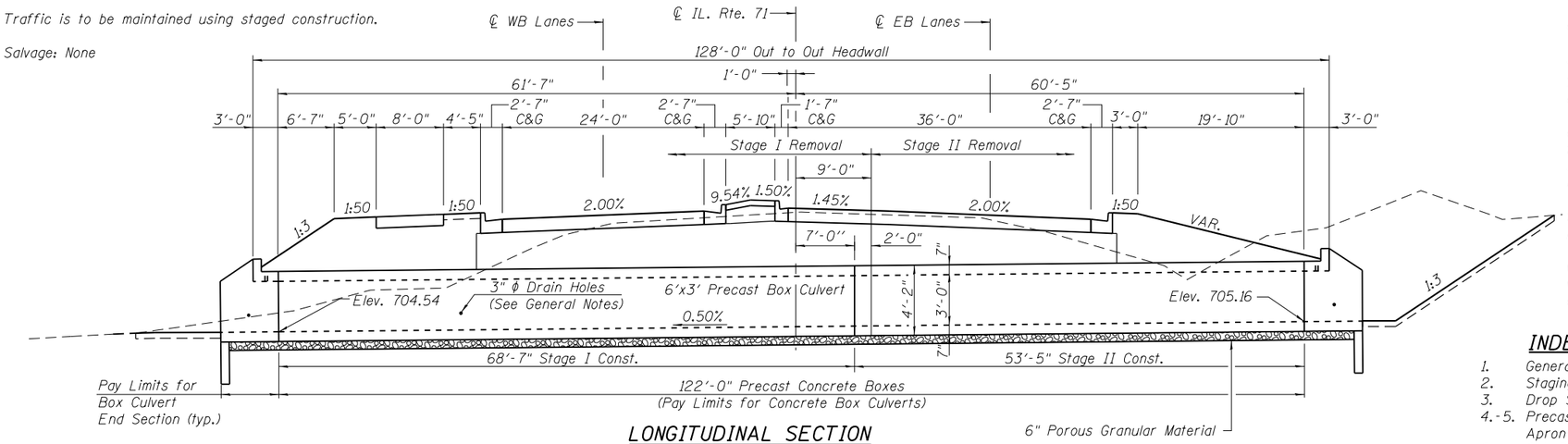
DROP STRUCTURE DETAILS
STA. 567 + 89.00
SHEET NO. 2 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	425
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

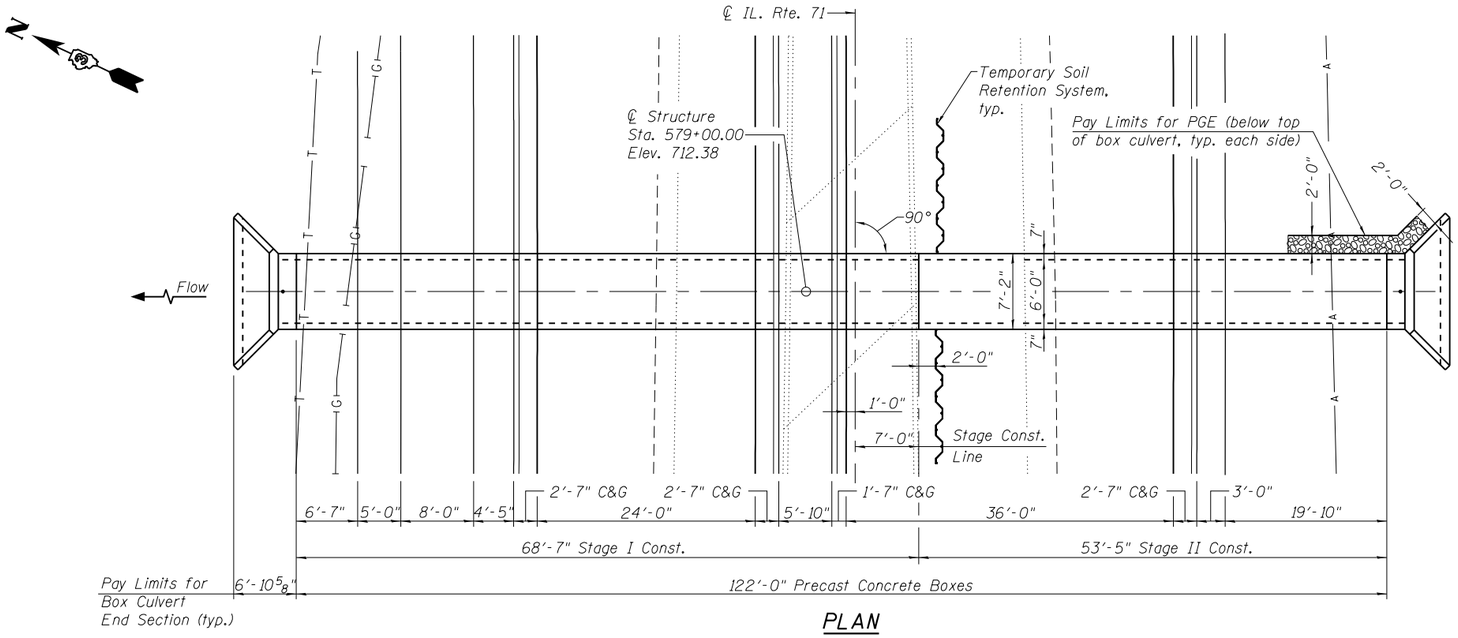
Existing Structure: None

Traffic is to be maintained using staged construction.

Salvage: None



LONGITUDINAL SECTION



PLAN

WATERWAY INFORMATION

Drainage Area = 0.12 sq. mi.

Exist. Low Grade Elev. 710.27' @ Sta. 580+50
Prop. Low Grade Elev. 710.15' @ Sta. 580+50

Flood	Freq. Yr.	Discharge C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	48	2.0	15.0	707.3	1.3	0.0	708.6	707.1
Design	50	78	3.0	16.0	707.5	2.2	0.3	709.7	707.8
Base	100	91	3.0	17.0	707.6	2.4	0.6	710.0	708.2
OVT (E)	500	116						710.9	
OVT (P)	>500	145							709.7
Max. Calc.	500	122	4.0	18.0	707.8	3.1	1.2	710.9	709.0

10 year velocity through Existing structure = 6.64 fps
10 year velocity through Proposed structure = 7.44 fps

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	85
Precast Concrete Box Culverts 6'x3'	Foot	122
Precast Culvert End Sections, Culvert No. 3	Each	2
Temporary Soil Retention System	Sq. Ft.	117
Membrane Waterproofing for Buried Structures	Sq. Yd.	128.3

GENERAL NOTES

The design fill height for this box is 3 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 box culvert end sections 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.

INDEX OF SHEETS

1. General Plan and Elevation
2. Staging Plan
3. Drop Structure Details
4.-5. Precast Concrete Box Culvert Apron End Section Details
6. Soil Boring Logs

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications
6th Edition with 2013 interims

LOADING HL-93

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

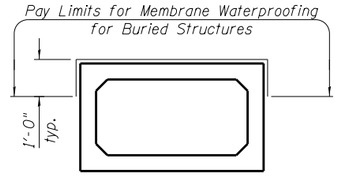
DESIGN STRESSES

PRECAST UNITS

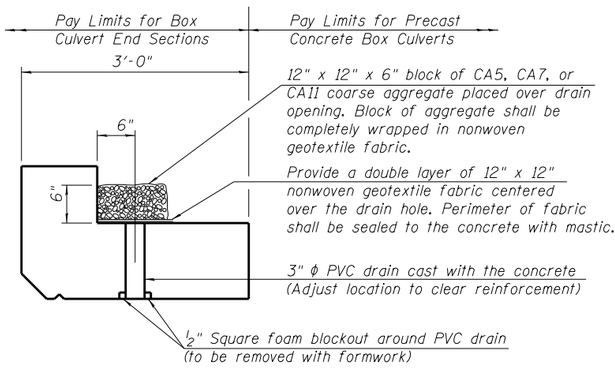
f'c = 5,000 psi
fy = 65,000 psi (Welded Wire Reinforcement)

FIELD UNITS

f'c = 3,500 psi
fy = 65,000 psi (Welded Wire Reinforcement)
fy = 60,000 psi (Reinforcement)



PRECAST CONCRETE BOX CULVERT



DRAIN DETAIL

(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)

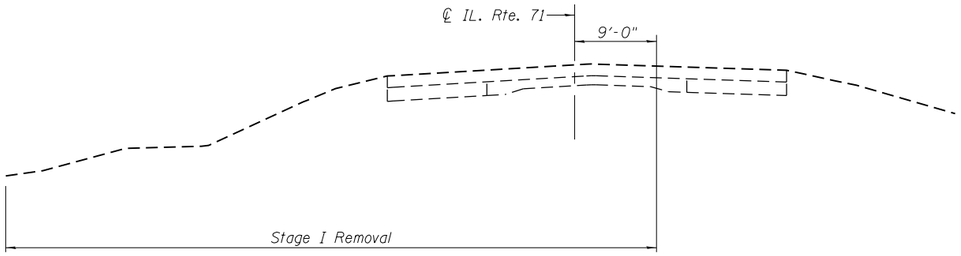
GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 71
F.A.P. RTE. 311 - SEC. (1)R, I
KENDALL COUNTY
STATION 579+00.00
STRUCTURE NO. 047-2577

FILE NAME = 579+00.00 GP&E.dgn	USER NAME =	DESIGNED - BWP	REVISED
BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9760		CHECKED - RSB	REVISED
	PLOT SCALE =	DRAWN - BJV	REVISED
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

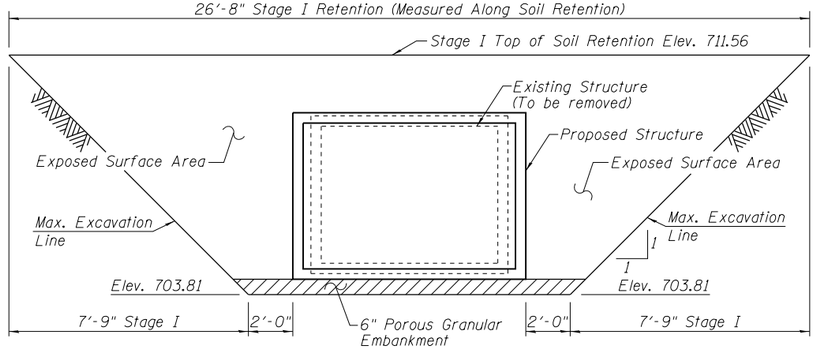
GENERAL PLAN AND ELEVATION
STRUCTURE NO. 047-2577
SHEET NO. 1 OF 5 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	426
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



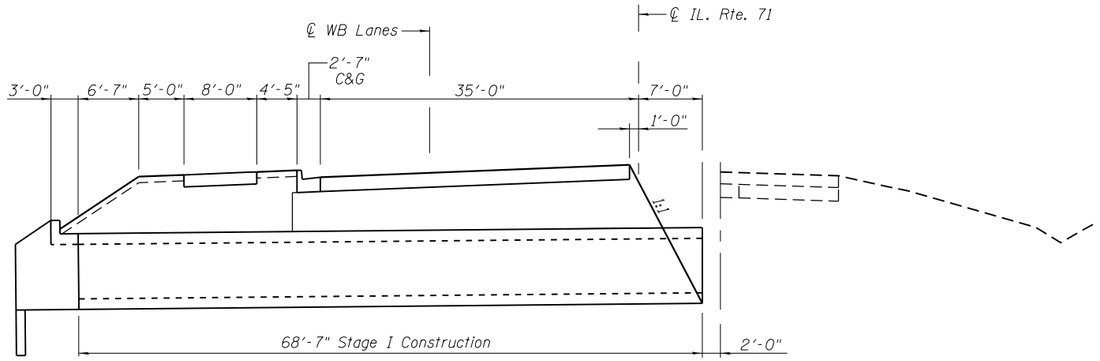
STAGE I REMOVAL
(Looking East)

Note:
See roadway plans for temporary concrete barrier locations and stage traffic.

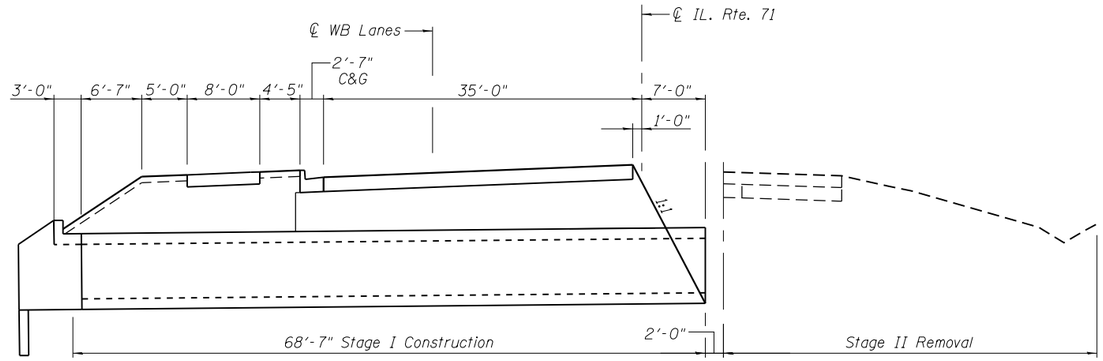


TEMPORARY SOIL RETENTION

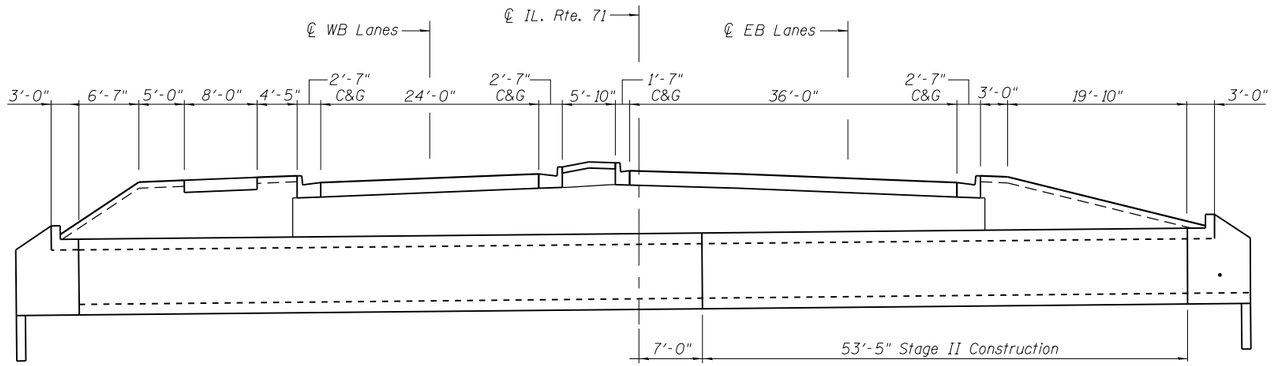
A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.
Slopes shown are parallel to ℄ of Roadway unless noted otherwise.



STAGE I CONSTRUCTION
(Looking East)

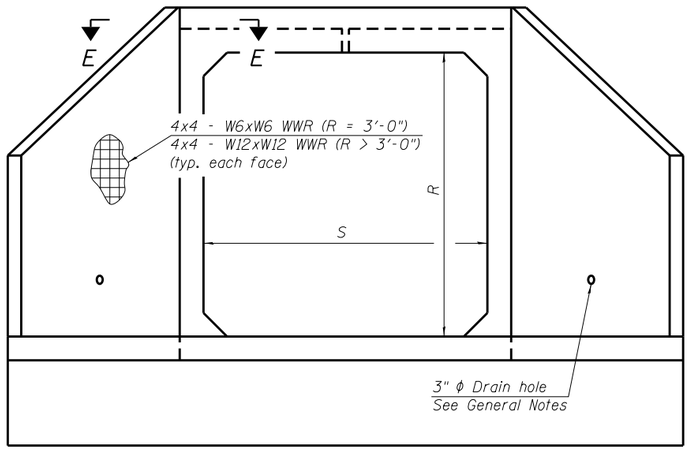


STAGE II REMOVAL
(Looking East)

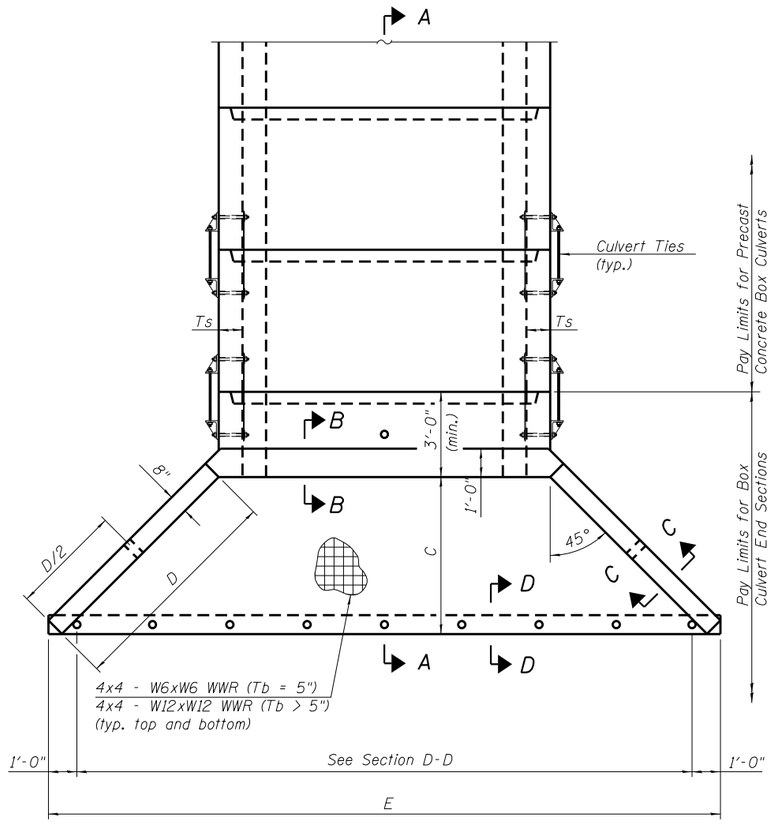


STAGE II CONSTRUCTION
(Looking East)

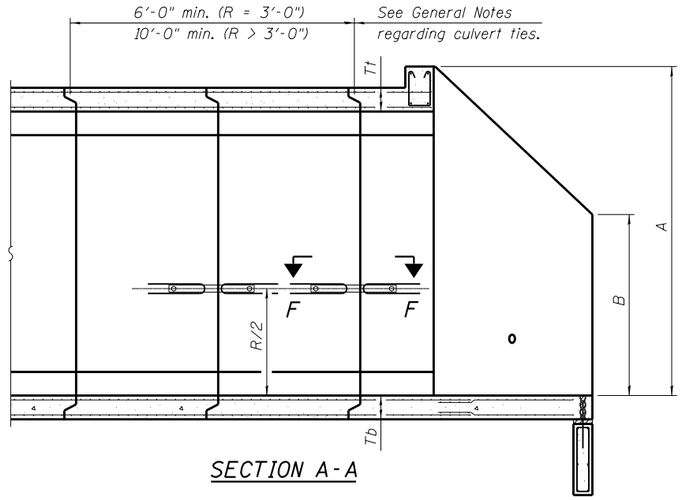
FILE NAME = 579+00.00 Staging.dgn	USER NAME =	DESIGNED - BWP	REVISED	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**STAGING PLAN STRUCTURE NO. 047-2577**	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9150		CHECKED - RSB	REVISED			311	(1)R, I	KENDALL	558	427
	PLOT SCALE =	DRAWN - BJV	REVISED		SHEET NO. 2 OF 5 SHEETS			CONTRACT NO. 66D24		
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED				ILLINOIS	FED. AID PROJECT		



END VIEW



PLAN



SECTION A-A

GENERAL NOTES

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. End sections will be paid for at the contract unit price per each for Box Culvert End Sections.

The Contractor may furnish the end section as a single precast concrete piece or construct the end section in the field using cast-in-place (CIP) construction. For CIP construction, the bottom slab thickness shall be increased by 2" and the clear cover to the bottom mat of reinforcement shall be increased to 3".

Box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements for ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

The number of culvert ties shall be sufficient to engage the minimum length of culvert barrel shown within the pay limits for Precast Concrete Box Culverts and will be dependent upon the length of box culvert segments furnished by the Contractor. Culvert ties are not required for box culverts having a rise (R) less than or equal to 3 ft and a span (S) greater than or equal to 10 ft.

All costs associated with furnishing and installing or constructing the toewall and culvert ties will not be measured for payment but shall be included in the unit price for Box Culvert End Sections of the culvert number specified.

Shop drawings that detail slab thickness and reinforcement layout for the Box Culvert End Sections shall be provided to the Engineer for review and approval. Reinforcement bars not detailed herein shall be detailed with a clear distance at the end of the reinforcement not less than $\frac{1}{2}$" nor more than 2". For the precast option, it shall be the Contractor's responsibility for determining a method of handling and a construction procedure shall be included on the shop drawings. The Contractor shall determine and detail in the shop drawings any necessary strengthening or stiffening provisions necessary to handle the precast segment. Any required modifications shall be at no extra charge.

The Contractor may use reinforcement bars in lieu of welded wire reinforcement (WWR). Reinforcement bars shall be limited to the sizes of #3 through #5 bars, a maximum spacing of the lesser of 8" or the member thickness, and shall result in an area of reinforcement equal to or greater than that provided by the WWR. Minimum lap lengths detailed herein are applicable to WWR and reinforcement bars.

Reinforcement (circumferential and longitudinal) in the culvert barrel portion of the end section being lapped with reinforcement from the wingwalls or bottom slab of the end section shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end section, whichever is greater.

One drain hole shall be provided in each wingwall for end sections of box culverts having an opening with a clear rise greater than 3 ft. The drain hole shall be located within the lower $\frac{1}{3}$ of the clear rise of the box culvert and shall conform to the requirements of Article 503.11 of the Standard Specifications.

APRON END SECTION DIMENSIONS

Span (S)	Rise (R)	Tt	Tb	Ts	A	B	C	D	E	Concrete Cu. Yd.	Culvert Ties Required
3'-0"	2'-0"	7"	6"	4"	3'-4"	2'-2"	2'-10 5/8"	4'-1"	10'-4 5/8"	2.8	Yes
3'-0"	2'-0"	4"	4"	4"	3'-1"	2'-1"	2'-7 7/8"	3'-9"	9'-11"	2.3	Yes
3'-0"	3'-0"	7"	6"	4"	4'-4"	2'-8"	3'-10 5/8"	5'-6"	12-4 5/8"	3.7	Yes
3'-0"	3'-0"	4"	4"	4"	4'-1"	2'-7"	3'-7 7/8"	5'-2"	11'-11"	3.1	Yes
4'-0"	2'-0"	7.5"	6"	5"	3'-4 1/2"	2'-2 1/2"	2'-11 3/8"	4'-2"	11'-8"	3.3	Yes
4'-0"	2'-0"	5"	5"	5"	3'-2"	2'-1"	2'-8 1/2"	3'-10"	11'-2 3/8"	2.8	Yes
4'-0"	3'-0"	7.5"	6"	5"	4'-4 1/2"	2'-8 1/2"	3'-11 3/8"	5'-7"	13'-8 1/8"	4.2	Yes
4'-0"	3'-0"	5"	5"	5"	4'-2"	2'-7"	3'-8 1/2"	5'-3"	13'-2 3/8"	3.7	Yes
4'-0"	4'-0"	7.5"	6"	5"	5'-4 1/2"	3'-2 1/2"	4'-11 3/8"	7'-0"	15'-8 1/8"	5.3	Yes
4'-0"	4'-0"	5"	5"	5"	5'-2"	3'-1"	4'-8 5/8"	6'-8"	15'-2 1/2"	4.7	Yes
5'-0"	2'-0"	8"	7"	6"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	12'-10"	3.9	Yes
5'-0"	2'-0"	6"	6"	6"	3'-3"	2'-2"	2'-10"	4'-0"	12'-7 1/4"	3.5	Yes
5'-0"	3'-0"	8"	7"	6"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	14'-10 1/8"	4.9	Yes
5'-0"	3'-0"	6"	6"	6"	4'-3"	2'-8"	3'-10"	5'-5"	14'-7 1/4"	4.5	Yes
5'-0"	4'-0"	8"	7"	6"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	16'-10 1/8"	6.1	Yes
5'-0"	4'-0"	6"	6"	6"	5'-3"	3'-2"	4'-9 1/4"	6'-9"	16'-5 7/8"	5.5	Yes
5'-0"	5'-0"	8"	7"	6"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	18'-10 1/8"	7.4	Yes
5'-0"	5'-0"	6"	6"	6"	6'-3"	3'-8"	5'-9 1/4"	8'-2"	18'-5 7/8"	6.8	Yes
6'-0"	2'-0"	8"	7"	7"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	14'-0"	4.3	Yes
6'-0"	2'-0"	7"	7"	7"	3'-4"	2'-2"	2'-10 5/8"	4'-1"	13'-10 5/8"	4.2	Yes
6'-0"	3'-0"	8"	7"	7"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	16'-0 1/8"	5.4	Yes
6'-0"	3'-0"	7"	7"	7"	4'-4"	2'-8"	3'-10 5/8"	5'-6"	15'-10 5/8"	5.2	Yes
6'-0"	4'-0"	8"	7"	7"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	18'-0 1/8"	6.5	Yes
6'-0"	4'-0"	7"	7"	7"	5'-4"	3'-2"	4'-10 3/4"	6'-11"	17'-10 3/4"	6.5	Yes
6'-0"	5'-0"	8"	7"	7"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	20'-0 1/8"	8.0	Yes
6'-0"	5'-0"	7"	7"	7"	6'-4"	3'-8"	5'-10 3/4"	8'-4"	19'-10 3/4"	7.8	Yes
6'-0"	6'-0"	8"	7"	7"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	22'-0 1/4"	9.5	Yes
6'-0"	6'-0"	7"	7"	7"	7'-4"	4'-2"	6'-10 3/4"	9'-9"	21'-10 3/4"	9.3	Yes
7'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	15'-2"	4.9	Yes
7'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	17'-2 1/8"	6.1	Yes
7'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	19'-2 1/8"	7.4	Yes
7'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	21'-2 1/8"	8.9	Yes
7'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	23'-2 1/4"	10.6	Yes
8'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11 3/8"	4'-2"	16'-2"	5.3	Yes
8'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11 3/8"	5'-7"	18'-2 1/8"	6.5	Yes
8'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11 3/8"	7'-0"	20'-2 1/8"	7.8	Yes
8'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	22'-2 1/8"	9.3	Yes
8'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11 1/2"	9'-10"	24'-2 1/4"	11.0	Yes
9'-0"	2'-0"	9"	9"	9"	3'-6"	2'-3"	3'-0 3/4"	4'-4"	17'-6 7/8"	6.2	Yes
9'-0"	3'-0"	9"	9"	9"	4'-6"	2'-9"	4'-0 3/4"	5'-9"	19'-6 7/8"	7.5	Yes
9'-0"	4'-0"	9'	9"	9"	5'-6"	3'-3"	5'-0 3/4"	7'-2"	21'-6 7/8"	9.0	Yes
9'-0"	5'-0"	9"	9"	9"	6'-6"	3'-9"	6'-0 7/8"	8'-7"	23'-7"	10.6	Yes
9'-0"	6'-0"	9"	9"	9"	7'-6"	4'-3"	7'-0 5/8"	9'-11"	25'-5 5/8"	12.4	Yes
10'-0"	2'-0"	10"	10"	10"	3'-7"	2'-4"	3'-1 1/2"	4'-5"	18'-10 1/4"	7.1	No
10'-0"	3'-0"	10"	10"	10"	4'-7"	2'-10"	4'-1 1/2"	5'-10"	20'-10 1/4"	8.6	No
10'-0"	4'-0"	10"	10"	10"	5'-7"	3'-4"	5'-1 1/2"	7'-3"	22'-10 3/8"	10.2	Yes
10'-0"	5'-0"	10"	10"	10"	6'-7"	3'-10"	6'-1 1/2"	8'-8"	24'-10 3/8"	12.0	Yes
10'-0"	6'-0"	10"	10"	10"	7'-7"	4'-4"	7'-1 1/2"	10'-1"	26'-10 3/8"	13.9	Yes
11'-0"	2'-0"	11"	11"	11"	3'-8"	2'-4"	3'-2 7/8"	4'-7"	20'-3 1/8"	8.2	No
11'-0"	3'-0"	11"	11"	11"	4'-8"	2'-10"	4'-2 7/8"	6'-0"	22'-3 1/8"	9.8	No
11'-0"	4'-0"	11"	11"	11"	5'-8"	3'-4"	5'-2 1/4"	7'-4"	24'-1 3/4"	11.5	Yes
11'-0"	5'-0"	11"	11"	11"	6'-8"	3'-10"	6'-2 1/4"	8'-9"	26'-1 3/4"	13.3	Yes
11'-0"	6'-0"	11"	11"	11"	7'-8"	4'-4"	7'-2 1/4"	10'-2"	28'-1 7/8"	15.5	Yes
12'-0"	2'-0"	12"	12"	12"	3'-9"	2'-5"	3'-3 5/8"	4'-8"	21'-6 1/2"	9.3	No
12'-0"	3'-0"	12"	12"	12"	4'-9"	2'-11"	4'-3 5/8"	6'-1"	23'-6 1/2"	11.1	No
12'-0"	4'-0"	12"	12"	12"	5'-9"	3'-5"	5'-3 5/8"	7'-6"	25'-6 5/8"	13.0	Yes
12'-0"	5'-0"	12"	12"	12"	6'-9"	3'-11"	6'-3 5/8"	8'-11"	27'-6 5/8"	14.1	Yes
12'-0"	6'-0"	12"	12"	12"	7'-9"	4'-5"	7'-3 5/8"	10'-4"	29'-6 5/8"	17.4	Yes

Note:
Two sets of apron end section dimensions are shown above for some box culvert sizes due to the top and bottom slabs having different thicknesses per ASTM C 1577 for design fill heights less than 2 ft.

SCB-AES 2-17-2017

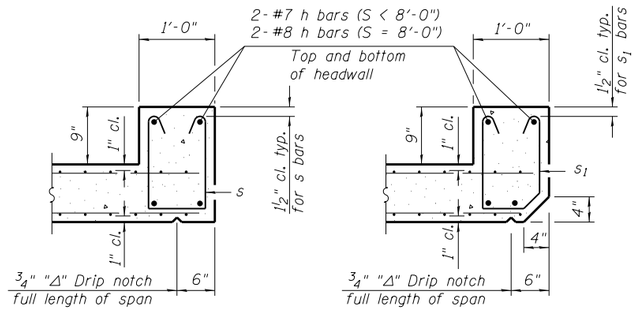
FILE NAME = $FILES$	USER NAME =	DESIGNED - BWP	REVISED	
BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.3190		CHECKED - RSB	REVISED	
	PLOT SCALE =	DRAWN - BJV	REVISED	
	PLOT DATE = $DATE$	CHECKED - BWP	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE BOX CULVERT APRON END SECTION DETAILS – STRUCTURE NO. 047-2577

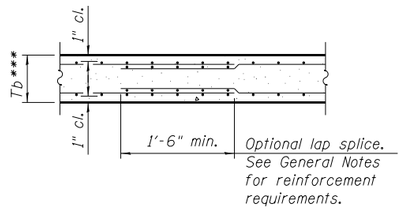
SHEET NO. 3 OF 5 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	428
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



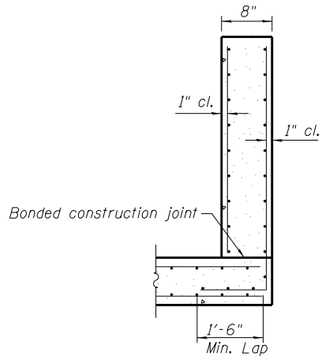
SECTION B-B
(Top slab at downstream end)

SECTION B-B
(Top slab at upstream end)

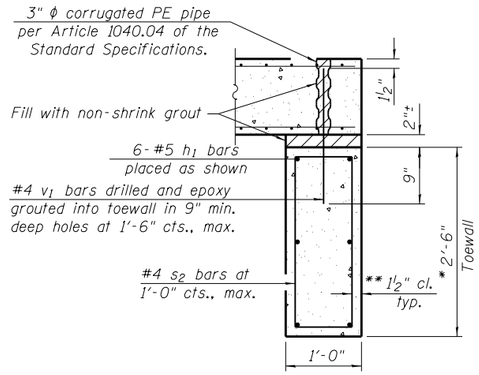


SECTION B-B
(Bottom Slab)

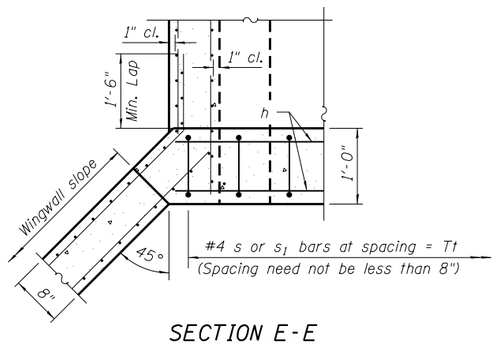
*** This dimension shall be increased by 2" for CIP construction.



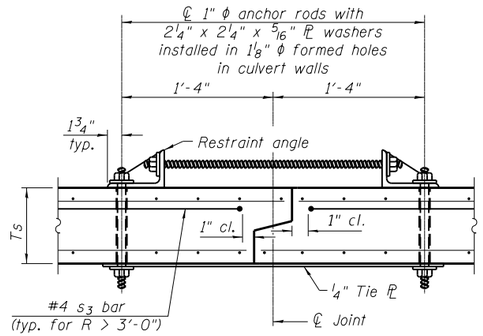
SECTION C-C



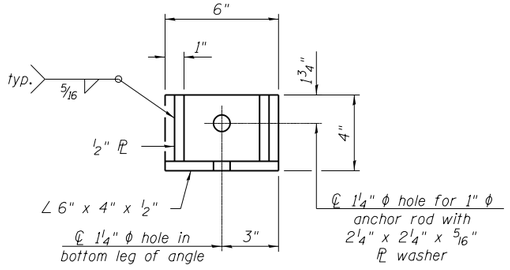
SECTION D-D

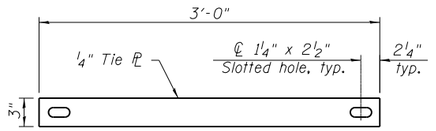


SECTION E-E



SECTION F-F
(Showing culvert tie details)





TIE PLATE DETAIL

TOEWALL CONSTRUCTION SEQUENCE

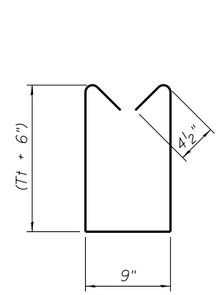
1. Perform excavation and construct toewall.
2. Backfill accordingly and place bedding for precast box culvert end sections.
3. Set precast box culvert end section.
4. Drill and epoxy grout reinforcement in toewall in accordance with Section 584 of the Standard Specifications.
5. Pressure grout voids using non-shrink grout conforming to Section 1024 of the Standard Specifications.

* The Contractor may furnish a precast or cast-in-place toewall. The Contractor shall be responsible for the strength and stability of the precast toewall during handling. Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling method.

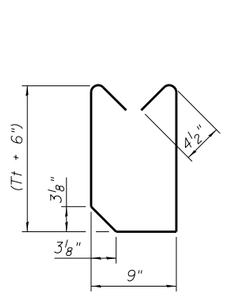
** If soil conditions permit, the sides of the toewall may be poured directly against the soil. The clear cover on the sides of the toewall shall be increased to 3" by increasing the thickness of the toewall.

Notes:

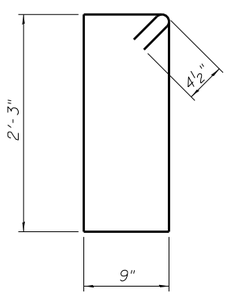
1" ϕ anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for the tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2¼"x2¼"x5/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional ½ turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.



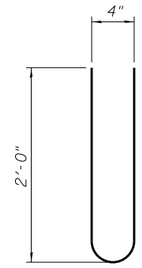
BAR s



BAR s1



BAR s2



BAR s3

SCB-AES 2-17-2017

FILE NAME = End Section Details (2) 579+00.00.dgn	USER NAME =	DESIGNED - BWP	REVISED
BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE • 618.997.5190		CHECKED - RSB	REVISED
	PLOT SCALE =	DRAWN - BJV	REVISED
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE BOX CULVERT APRON END
SECTION DETAILS – STRUCTURE NO. 047-2577
SHEET NO. 4 OF 5 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	429
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Date 10/29/13

ROUTE IL 71 (F.A.P. 311) DESCRIPTION Box Culvert on IL 71 at Station 579+00, approximately 630 feet North of IL 126 LOGGED BY Larry Myers

SECTION (1,1-1)R LOCATION SW 1/4, SEC. 3, TWP. 36N, RNG. 7E, 3rd PM, Latitude 41.625783, Longitude -88.423043

COUNTY Kendall DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO.
Station 579+00 (Prop.)

BORING NO. 01 (S.W. Quad.)
Station 578+10
Offset 23.0 ft Rt.
Ground Surface Elev. 711.95 ft

Surface Water Elev. Dry ft
Stream Bed Elev. 706.36 ft

Groundwater Elev.:
First Encounter 692.0 ft ▼
Upon Completion 694.0 ft ▽
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered Shoulder Stone, Asphalt Millings, Black Silty Clay Loam Fill			
709.45			
Very Stiff Black Silty Clay Loam Fill	3		
	4 4	3.5 P	18
-5	3		
	3 4	3.5 P	32
704.95			
Stiff Black Loam/Clay Loam	2		
	2 1	1.5 P	24
702.45			
Stiff Gray & Brown Silty Loam/Silty Clay Loam with Large Gravel Pieces -10	1		
	1 2	1.5 P	23
699.95			
Hard Brown Silty Clay Loam Till	6		
	9 8	4.2 S	18
-15	7		
	9 10	4.3 S	15
694.95			
Hard Gray Silty Clay Loam Till ▽	8		
	9 9	4.1 S	13
▼ -20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard Gray Silty Clay Loam Till *(continued)*	4		
	6 8	4.3 S	13
	6		
	8 10	5.1 S	14
-25	8		
	9 12	5.5 S	13
	9		
	10 11	5.6 S	13
-30	10		
	10 12	5.8 S	11
680.45			
End of Boring			
-40			

SOIL BORING BOX CULVERT ON IL 71 AT STA 579+00.GPJ IL_DOT.GDT 8/25/15

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
IDOT

SOIL BORING LOG

Date 10/29/13

ROUTE IL 71 (F.A.P. 311) DESCRIPTION Box Culvert on IL 71 at Station 579+00, approximately 630 feet North of IL 126 LOGGED BY Larry Myers

SECTION (1,1-1)R LOCATION SW 1/4, SEC. 3, TWP. 36N, RNG. 7E, 3rd PM, Latitude 41.625962, Longitude -88.423003

COUNTY Kendall DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO.
Station 579+00 (Prop.)

BORING NO. 02 (N.E. Quad.)
Station 578+47
Offset 31.0 ft Lt.
Ground Surface Elev. 710.80 ft

Surface Water Elev. Dry ft
Stream Bed Elev. 705.76 ft

Groundwater Elev.:
First Encounter 688.8 ft ▼
Upon Completion 691.8 ft ▽
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered Shoulder Stone, Black & Brown Silty Clay Loam Fill			
708.30			
Hard to Very Stiff Black & Brown Silty Clay Loam Fill	3		
	3 5	4.0 P	21
-5	3		
	3 5	3.5 P	36
704.30			
Stiff Brown & Gray Silty Loam/Silty Clay Loam	2		
	2 3	2.0 P	27
701.30			
Hard Brown Silty Clay Loam Till -10	2		
	4 6	4.1 S	17
	4		
	5 7	4.3 S	15
-15	4		
	5 7	4.1 S	14
693.80			
Hard Gray Silty Clay Loam Till	8		
▽	9 10	4.8 S	14
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard Gray Silty Clay Loam Till *(continued)*	7		
	11 12	5.1 S	13
▼			
	5		
	8 10	4.7 S	14
-25	6		
	9 11	4.9 S	14
	6		
	8 10	4.4 S	13
-30	5		
	8 9	4.1 S	14
679.30			
End of Boring			
-40			

SOIL BORING BOX CULVERT ON IL 71 AT STA 579+00.GPJ IL_DOT.GDT 8/25/15

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

FILE NAME = 579+00.00 Borings.dgn	USER NAME =	DESIGNED - BWP	REVISED
BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9190		CHECKED - RSB	REVISED
	PLOT SCALE =	DRAWN - BJV	REVISED
	PLOT DATE = 1/22/2018	CHECKED - BWP	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STRUCTURE NO. 047-2577
SHEET NO. 5 OF 5 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	430
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

WATER MAIN CONSTRUCTION

1. ALL WATER MAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS", LATEST EDITION, AND REVISIONS THERETO, THE NOTES AND ON THE PLANS, AND IN ACCORDANCE WITH CODES AND ORDINANCES OF THE UNITED CITY OF YORKVILLE, ILLINOIS.

2. ALL WATER MAIN SHALL BE DUCTILE IRON PIPE CLASS 52 WITH MECHANICAL OR PUSH-ON JOINTS AND SHALL CONFORM TO ANSI A21.51 (AWWA C151), ANSI A21.50 (AWWA C150) AND ANSI A21.11 (AWWA C111). PIPE SHALL BE MANUFACTURED IN THE UNITED STATES.

3. ALL FITTINGS SHALL BE DUCTILE IRON AND SHALL CONFORM TO ANSI A21.10 (AWWA C153). FITTINGS SHALL BE MANUFACTURED IN THE UNITED STATES.

4. ALL PIPE AND FITTINGS SHALL BE CEMENT LINED IN ACCORDANCE WITH ANSI A21.4 (AWWA C104).

5. ALL FITTINGS SHALL BE MECHANICAL JOINT AND INSTALLED WITH RETAINER GLANDS UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
6. ALL MECHANICAL JOINT FITTINGS, VALVES AND HYDRANTS SHALL BE RESTRAINED WITH RETAINER GLANDS. RETAINER GLANDS SHALL BE EBAA IRON MEGALUG SERIES 1100 OR APPROVED EQUAL.

7. ALL WATER MAIN AND FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE. POLYETHYLENE SHALL HAVE A THICKNESS OF 8-MIL IN ACCORDANCE WITH ANSI A21.5 (AWWA C105).

8. LONG RADIUS CURVES, EITHER HORIZONTAL OR VERTICAL, MAY BE LAID WITH STANDARD PIPE BY DEFLECTIONS AT THE JOINTS. MAXIMUM DEFLECTIONS AT PIPE JOINTS AND LAYING RADIUS FOR THE VARIOUS PIPE LENGTHS SHALL BE IN ACCORDANCE WITH AWWA C600. WHEN RUBBER GASKET PIPE IS LAID ON A CURVE, THE PIPE SHALL BE JOINTED IN A STRAIGHT ALIGNMENT AND THEN DEFLECTED TO THE CURVED ALIGNMENT. TRENCHES SHALL BE MADE WIDER ON CURVES FOR THIS PURPOSE.

9. ALL GATE VALVES SHALL BE RESILIENT WEDGE TYPE CONFORMING TO AWWA C509 AND HAVE A NON-RISING STEM, WITH A STANDARD OPERATING NUT AND SHALL OPEN IN A COUNTER-CLOCKWISE DIRECTION. GATE VALVES 10-INCHES OR LARGER SHALL BE IN VALVE VAULTS. GATE VALVES UNDER 10-INCHES SHALL BE INSTALLED WITH A TRENCH ADAPTOR VALVE BOX. VAULTS OR VALVE BOXES SHALL BE LOCATED OUTSIDE OF PAVEMENT OR SIDEWALK, IF AT ALL POSSIBLE.

10. ALL VALVES 16-INCHES OR LARGER SHALL BE BUTTERFLY VALVES WITH A NON-RISING STEM, SHALL HAVE A STANDARD OPERATING NUT AND SHALL OPEN IN A COUNTER-CLOCKWISE DIRECTION. BUTTERFLY VALVES SHALL BE CLOW OR AMERICAN FLOW CONTROL (WATEROUS) BUTTERFLY VALVES IN ACCORDANCE WITH AWWA C-504-00. BUTTERFLY VALVES SHALL BE IN VALVE VAULTS.

11. ALL VALVE BOXES SHALL BE TRENCH ADAPTER MODEL 6 BY AMERICAN FLOW CONTROL, OR CAST IRON TWO PIECE 5 1/4" SHAFTS SCREW TYPE TYLER MODEL 664-S, OR APPROVED EQUAL. LIDS TO BE MARKED "WATER" (VALVE BOX EXTENSIONS IF REQUIRED ARE CONSIDERED INCIDENTAL).

12. ALL HYDRANTS SHALL BE IN ACCORDANCE WITH AWWA C502 AND SHALL BE A CLOW F-2545 (MEDALLION) OR A AMERICAN FLOW CONTROL – WATEROUS WB-67-250 WITH ONE 4½" STEAMER NOZZLE AND TWO 2½" HOSE NOZZLES, WITH NATIONAL STANDARD TREADS, A NATIONAL STANDARD OPERATING NUT, AND ABOVE GROUND BREAK FLANGE. ALL HYDRANTS SHALL HAVE AN AUXILIARY GATE VALVE WITH A TRENCH ADAPTER MODEL 6 VALVE BOX OR C.I VALVE BOX WITH GRIPARMS BY BLR ENTERPRISES.

13. ALL TEES, BENDS, FIRE HYDRANTS AND VALVES SHALL BE ADEQUATELY SUPPORTED WITH A CONCRETE BASE, AND SUPPORTED LATERALLY WITH POURED IN PLACE THRUST BLOCKING AGAINST UNDISTURBED EARTH.

14. ALL WATER MAINS SHALL HAVE A MINIMUM DEPTH OF COVER OF 5'-6'.

15. ALL PRESSURE TAPS TO AN EXISTING CITY MAIN SHALL BE MADE WITH A CLOW OR AMERICAN FLOW CONTROL (WATEROUS) DUCTILE IRON MECHANICAL JOINT TAPPING SLEEVE FOR SAME SIZE TAPS WITH THE MAIN. DISSIMILAR SIZE TAPS AND MAINS SHALL BE MADE WITH STAINLESS STEEL TAPPING SLEEVES AND SHALL BE MUELLER H-304, SMITH BLAIR (ROCKWELL) 662-663 OR 664-665 OR ROMAC SST. A CLOW OR AMERICAN FLOW CONTROL (WATEROUS) RESILIENT TAPPING VALVE AND SHALL BE INSTALLED WITH THE TAPPING SLEEVE. THE TAPPING SLEEVE AND VALVE SHALL BE CONSTRUCTED IN A VALVE VAULT WITH ECCENTRIC CONE.

16. NO WATER SERVICE TAPS SHALL BE MADE PRIOR TO THE CITY RECEIVING THE IEPA OPERATING PERMIT.

17. WATER MAINS AND WATER SERVICE LINES SHALL BE PROTECTED FROM SANITARY SEWERS, STORM SEWERS, COMBINED SEWERS, HOUSE SEWER SERVICE CONNECTIONS AND DRAINS IN ACCORDANCE WITH TITLE 35: ENVIRONMENTAL PROTECTION AGENCY SUBTITLE F: PUBLIC WATER SUPPLIES, CHAPTER II: ENVIRONMENTAL PROTECTION AGENCY, PARTS 651-654 TECHNICAL POLICY STATEMENTS, SECTION 653.119.

18. WHENEVER POSSIBLE, A WATER MAIN MUST BE LAID AT LEAST TEN FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED DRAIN OR SEWER LINE. SHOULD LOCAL CONDITIONS EXIST WHICH WOULD PREVENT A LATERAL SEPARATION OF TEN FEET, A WATER MAIN MAY BE LAID CLOSER THAN TEN FEET TO A STORM OR SANITARY SEWER PROVIDED THAT THE WATER MAIN INVERT IS AT LEAST EIGHTEEN INCHES ABOVE THE CROWN OF THE SEWER, AND IS EITHER IN A SEPARATE TRENCH OR IN THE SAME TRENCH ON AN UNDISTURBED EARTH SHELF LOCATED TO ONE SIDE OF THE SEWER. IF IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL OR VERTICAL SEPARATION AS DESCRIBED ABOVE, THEN THE SEWER MUST ALSO BE CONSTRUCTED OF WATER MAIN TYPE MATERIAL (DUCTILE IRON PIPE WITH SLIP-ON OR MECHANICAL JOINTS, PRESTRESSED REINFORCED CONCRETE PIPE WITH ASTM C-443 JOINTS, ETC.) AND PRESSURE TESTED TO THE MAXIMUM EXPECTED SURCHARGE HEAD TO ASSURE WATER TIGHTNESS BEFORE BACKFILLING.

19. WHENEVER WATER MAINS MUST CROSS HOUSE SEWERS, STORM SEWERS OR SANITARY SEWERS, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE INVERT OF THE WATER MAIN IS EIGHTEEN INCHES ABOVE THE CROWN OF THE DRAIN OR SEWER. THIS VERTICAL SEPARATION MUST BE MAINTAINED FOR THAT PORTION OF THE WATER MAIN LOCATED WITHIN TEN FEET HORIZONTALLY OF ANY SEWER OR DRAIN CROSSED. THIS MUST BE MEASURED AS THE NORMAL DISTANCE FROM THE WATER MAIN TO THE DRAIN OR SEWER. IF IT IS IMPOSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION AS DESCRIBED ABOVE OR IF IT IS NECESSARY FOR THE WATER MAIN TO PASS UNDER A SEWER OR DRAIN, THEN THE SEWER MUST BE CONSTRUCTED OF WATER MAIN TYPE MATERIAL (AS NOTED IN ITEM 2). THIS CONSTRUCTION MUST EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE NORMAL DISTANCE FROM THE WATER MAIN TO THE SEWER OR DRAIN LINE IS AT LEAST TEN FEET. IN MAKING SUCH CROSSINGS, CENTER A LENGTH OF WATER MAIN PIPE OVER/UNDER THE SEWER TO BE CROSSED SO THAT THE JOINTS WILL BE EQUIDISTANT FROM THE SEWER AND AS REMOTE THEREFROM AS POSSIBLE. WHERE A WATER MAIN MUST CROSS UNDER A SEWER, A VERTICAL SEPARATION OF EIGHTEEN INCHES BETWEEN THE INVERT OF THE SEWER AND THE CROWN OF THE WATER MAIN SHALL BE MAINTAINED, ALONG WITH MEANS TO SUPPORT THE SEWER LINE TO PREVENT THEIR SETTLING AND BREAKING THE WATER MAIN.

20. VALVE VAULTS SHALL BE ADJUSTED WITH PRECAST CONCRETE ADJUSTING RINGS TO A MAXIMUM OF 0'-8".

21. HYDROSTATIC TESTS – THE CONTRACTOR SHALL PERFORM HYDROSTATIC TESTS IN ACCORDANCE WITH DIVISION IV, SECTION 41 OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION, AND APPLICABLE PROVISIONS OF AWWA C-600 AND C-605. THE WATER MAINS SHALL MAINTAIN A 150 PSI AVERAGE FOR UP TO 4 HOURS DURING THE TEST. ALLOWABLE LEAKAGE SHALL BE AS SET FOURTH IN STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION. THE CITY WATER OPERATOR IN CHARGE OR PERSON AUTHORIZED BY THE CITY WATER OPERATOR IN CHARGE SHALL BE PRESENT DURING ALL TESTING. THE CONTRACTOR SHALL USE A PRESSURE GAGE SUPPLIED BY THE CITY FOR THE TEST.

22. DISINFECTION OF THE WATER MAIN – UPON COMPLETION OF THE NEWLY LAID WATER MAINS, THE WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION, PROCEDURE DESIGNATION, AWWA C-651, LATEST EDITION. WATER SHALL BE TESTED TO ASSURE THAT 50MG/L OF CL2 IS IN DISINFECTED WATER. THE CITY OPERATOR IN CHARGE OR PERSON AUTHORIZED BY THE CITY SHALL PERFORM SAMPLING AND PROCESSING OF THE TEST SAMPLE AND TEST RESULTS. THE COST OF THE WATER SAMPLING AND TESTING SHALL BE BORNE BY THE CITY. WATER MUST PASS TWO CONSECUTIVE DAYS OF SAMPLING TESTS BY A STATE APPROVED LAB.

23. WATER VALVES AND FIRE HYDRANTS SHALL ONLY BE OPERATED BY UNITED CITY OF YORKVILLE WATER DEPARTMENT PERSONNEL. PLEASE CONTACT THE WATER DEPARTMENT AT 630-553-4372.

AWWA C651-99 SECTION 4.7: DISINFECTION PROCEDURES WHEN CUTTING INTO OR REPAIRING EXISTING MAINS

THE FOLLOWING PROCEDURES APPLY PRIMARILY WHEN MAINS ARE WHOLLY OR PARTIALLY DEWATERED. AFTER THE APPROPRIATE PROCEDURES HAVE BEEN COMPLETED, THE MAIN MAY BE RETURNED TO SERVICE PRIOR TO COMPLETION OF BACTERIOLOGICAL TESTING IN ORDER TO MINIMIZE THE TIME CUSTOMERS ARE OUT OF WATER. LEAKS OR BREAKS THAT ARE REPAIRED WITH CLAMPING DEVICES WHILE THE MAINS REMAIN FULL OF PRESSURIZED WATER PRESENT LITTLE DANGER OF CONTAMINATION AND REQUIRE NO DISINFECTION.

4.7.1 TRENCH TREATMENT

WHEN AN EXISTING MAIN IS OPENED, EITHER BY ACCIDENT OR BY DESIGN, THE EXCAVATION WILL LIKELY BE WET AND MAY BE BADLY CONTAMINATED FROM NEARBY SEWERS. LIBERAL QUANTITIES OF HYPOCHLORITE APPLIED TO OPEN TRENCH AREAS WILL LESSEN THE DANGER FROM SUCH POLLUTION. TABLETS HAVE THE ADVANTAGE IN SUCH A SITUATION BECAUSE THEY DISSOLVE SLOWLY AND CONTINUE TO RELEASE HYPOCHLORITE AS WATER IS PUMPED FROM THE EXCAVATION.

4.7.2 SWABBING WITH HYPOCHLORITE SOLUTION

THE INTERIORS OF ALL PIPE AND FITTINGS (PARTICULARLY COUPLINGS AND SLEEVES) USED IN MAKING THE REPAIR SHALL BE SWABBED OR SPRAYED WITH A 1% HYPOCHLORITE SOLUTION BEFORE THEY ARE INSTALLED.

4.7.3 FLUSHING

THOROUGH FLUSHING IS THE MOST PRACTICAL MEANS OF REMOVING CONTAMINATION INTRODUCED DURING REPAIRS. IF VALVE AND HYDRANT LOCATIONS PERMIT, FLUSHING TOWARD THE WORK LOCATION FROM BOTH DIRECTIONS IS RECOMMENDED. FLUSHING SHALL BE STARTED AS SOON AS THE REPAIRS ARE COMPLETED AND SHALL BE CONTINUED UNTIL DISCOLORED WATER IS ELIMINATED.

4.7.4 SLUG CHLORINATION

WHERE PRACTICAL, IN ADDITION TO THE PROCEDURES PREVIOUSLY DESCRIBED, A SECTION OF MAIN IN WHICH THE BREAK IS LOCATED SHALL BE ISOLATED, ALL SERVICE CONNECTIONS SHUT OFF, AND THE SECTION FLUSHED AND CHLORINATED AS DESCRIBED IN SEC. 4.4.4. THE DOSE MAY BE INCREASED TO AS MUCH AS 300 MG/L AND THE CT REDUCED TO AS LITTLE AS 15 MIN. AFTER CHLORINATION, FLUSHING SHALL BE RESUMED AND CONTINUED UNTIL DISCOLORED WATER IS ELIMINATED AND THE CHLORINE CONCENTRATION IN THE WATER EXITING THE MAIN IS NO HIGHER THAN THE PREVAILING WATER IN THE DISTRIBUTION SYSTEM OR THAT WHICH IS ACCEPTABLE FOR DOMESTIC USE.

4.7.5 BACTERIOLOGICAL SAMPLES

BACTERIOLOGICAL SAMPLES SHALL BE TAKEN AFTER REPAIRS ARE COMPLETED TO PROVIDE A RECORD FOR DETERMINING THE PROCEDURE'S EFFECTIVENESS. IF THE DIRECTION OF FLOW IS UNKNOWN, SAMPLES SHALL BE TAKEN ON EACH SIDE OF THE MAIN BREAK. IF POSITIVE BACTERIOLOGICAL SAMPLES ARE RECORDED, THEN THE SITUATION SHALL BE EVALUATED BY THE PURCHASER WHO CAN DETERMINE CORRECTIVE ACTION. DAILY SAMPLING SHALL BE CONTINUED UNTIL TWO CONSECUTIVE NEGATIVE SAMPLES ARE RECORDED.

DATE: _____

_____

LICENSE
EXPIRES: NOVEMBER 30, 2019

SHEETS: _____

SEAL

Engineering Enterprises, Inc.
CONSULTING ENGINEERS
52 Wheeler Road
Sugar Grove, Illinois 60554
Pone: (630) 466-6700

YORKVILLE - BRISTOL SANITARY DISTRICT
STANDARD SPECIFICATIONS FOR SANITARY SEWER CONSTRUCTION

SECTION 1: GENERAL REQUIREMENTS

1.1 The Yorkville-Bristol Sanitary District is referred herein as the 'District'.

1.2 Each sewer which is designed and is to be constructed so as to be an integral part of the sanitary sewer system within the boundaries of the District shall not be constructed without a permit issued by the District and the Illinois Environmental Protection Agency, where required, whether such construction is on private or public property. An Illinois Environmental Protection Agency permit, where required, must be on file at the District prior to starting construction of the sanitary sewer improvements.

1.3 No connection shall be made to the District's sanitary sewer system or to any sanitary sewer system tributary thereto and no additional use shall be made of an existing connection thereto until a permit for such connection or additional use has been issued by the District. Prior to the issuance of such permit by the District, an application for such permit shall be properly completed and filed with the District and all applicable fees and charges paid in full. In addition, the applicant shall, upon the request of the District, submit plans and specifications for the proposed construction in accordance with the provisions of Section 3 of these specifications.

1.4 Areas which lie outside the current limits of the Yorkville-Bristol Sanitary District shall be annexed into the District prior to issuance of any permit by the District. The appropriate annexation fees and infrastructure participation fees shall be paid as part of the completion of the annexation and permitting processes.

Said fees shall be calculated based on the gross contiguous acreage included as part of the development, including all lakes, ponds, wetlands, parks, schools and rights-of-way, excluding rights-of-way of roads which have existed for a period of five (5) years prior to the date of annexation or service. Any land area, whether contiguous to the development or not, required by the state, county or municipality to be dedicated as a condition of acceptance of the development, shall be included in the area used to determine the annexation or infrastructure participation fees.

1.5 No person shall discharge or cause to be discharged any storm water, surface water, ground water, roof runoff, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process waters, to any sanitary sewer both during and after construction of the sanitary sewer improvements.

1.6 Copies of the final District approved engineering plans and specifications must be kept on the job site.

1.7 Sanitary sewer contractors for all projects shall notify the District a minimum of two (2) working days prior to starting construction. Notification shall be done via telephone at (630) 553-7657, or fax at (630) 553-7554. A confirming fax shall be sent by the sanitary sewer contractors after all phone notifications.

1.8 To prevent any possible infiltration or inflow from entering the existing downstream sanitary sewer system, a factory-made plug shall be placed in the farthest downstream manhole of the proposed improvements by the contractor (providing the placement of the plug(s) does not interrupt the sanitary service of any existing user of the sewer system). This plug is to be removed only upon approval by the District and only after any accumulated water and/or construction drainage has been properly removed from the pipe. Under no circumstances will new construction be allowed to drain into the sanitary sewer system.

SECTION 2: APPLICABLE RULES AND REGULATIONS

2.1 All sanitary sewers, including sewer mains and services, constructed within the Yorkville-Bristol Sanitary District Facility Planning Area shall be designed and constructed in accordance with the following rules, regulations, ordinances and policies listed herein and issued by the authorities indicated.

a. Yorkville-Bristol Sewer User Ordinance as originally adopted on the 15th day of September, 1975 and as subsequently amended.

b. 'Standard Specifications for Sanitary Sewer Construction in the Yorkville-Bristol Sanitary District', latest edition.

c. 'Standard Specifications for Water and Sewer Main Construction in Illinois', latest edition.

d. Illinois Recommended Standards for Sewage Works', latest edition, Environmental Protection Act and other orders, technical releases, rules and regulations issued from time to time by the Illinois Environmental Protection Agency.

e. The Illinois Pollution Control Board including all orders, rules and regulations thereof.

f. Federal Water Pollution Control Act Amendment of 1972 as amended (33 USC 1251 ET SEQ).

g. 'Recommended Standards for Sewage Works', Great Lakes-Upper Mississippi River Board of State Sanitary Engineers (Ten State Standards).

h. '77 Illinois Administrative Code, part 890, Illinois Plumbing Code', latest edition.

2.2 In case of conflict between any part or parts of the above listed documents, the more stringent provision shall take precedence and govern.

SECTION 3: SUBMITTAL REQUIREMENTS

3.1 The applicant shall submit the documents necessary as listed in this section.

3.2 The vertical datum shall be indicated on all plans submitted to the District. The datum shall preferably be based on the North American Vertical Datum of 1988 (NAVD 88). If any other datum is used, a conversion equation shall be shown on the plans to relate the datum to that of the NAVD 88 datum.

3.3 Preliminary Study – when an extension of the District's sanitary sewer system is required to service a proposed development, the following shall be submitted by the applicant:

a. Preliminary Site Plans showing the details of the area to be served with contours at one foot intervals. The elevations of the beds of streams, ditches and culverts should be ascertained, and the maximum expected ordinary water surface elevations should be supplied, and any other features that may influence, or be influenced by the sanitary sewer system.

b. Engineering Plans and Documents – Plans drawn on sheets not exceeding twenty-four inches by thirty-six inches (24"x 36"), drawings and documents shall be submitted which include the following information:

1. Location at which the proposed connection into the existing sanitary sewer system will be made. Also, the type of connection (single or multiple dwelling, unit development, commercial or industrial).

2. Legal description of the proposed area or property, street location and/or street address of the property, a survey plat showing the property boundaries and acreage, and if annexed to the District.

3. Name, address and telephone number of the owner, developer and their representative and/or engineer.

4. Design calculations including population equivalents (P.E.), peak design flow, pipe slope, pipe capacity, minimum and maximum pipe cover, etc.

CONTINUED ON SHEET 3

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	SANITARY SEWER	
FM	SANITARY SEWER FORCEMAIN	FM
	STORM SEWER	
W	WATER MAIN	W
	WATER SERVICE & B-BOX	
	SEWER SERVICE	
896	CONTOUR	B96
X	FENCE	X
	GUARDRAIL	
G	GAS MAIN	G
T	TELEPHONE CABLE	T
FO	FIBER OPTIC	FO
A	OVERHEAD UTILITY	A
E	UNDERGROUND ELECTRIC	E
CATV	UNDERGROUND CABLE TV	CATV
	SILT FENCE	SF
	MANHOLE	
	CATCH BASIN	
	INLET	
	FLARED END SECTION	
	STORM SEWER CLEANOUT	CO
W	WELL	W
	FIRE HYDRANT	
	VALVE VAULT	V
	VALVE BOX	V
	REDUCER	
CO	SANITARY SEWER CLEANOUT	CO
	LIGHT POLE	
	BOLLARD	
G	GAS VALVE	
M	MAILBOX	
E	ELECTRIC MANHOLE	
EL	ELECTRIC PEDESTAL	
	CABLE TV PEDESTAL	
T	TELEPHONE PEDESTAL	
HH	HANDHOLE	
SV	SIGNAL VAULT	
TC	TRAFFIC CONTROL VAULT	
	TRAFFIC SIGNAL STANDARD	
	LIGHT POLE	
	SOIL BORING	
	SIREN	
X"Ø	DECIDUOUS TREE	
X"Ø	CONIFEROUS TREE	
	BUSH	
	TREE LINE	
+ XXX.X	SPOT GRADE	+ XXX.X
	TRENCH BACKFILL	
	SIGNS	
IF	FOUND IRON PIPE	
	GUY ANCHOR	
	FLAG POLE	
	UTILITY POLE	
	UTILITY PEDESTAL	
HH	HANDHOLE	
	STRUCTURE TO BE ADJUSTED	ADJ
	FILL & ABANDON WATER VALVE VAULT	F&A
XXX	HOME ADDRESS	

Engineering Enterprises, Inc.
CONSULTING ENGINEERS
52 Wheeler Road
Sugar Grove, Illinois 60554
630.466.6700 / www.eeiweb.com

UNITED CITY OF YORKVILLE
800 GAME FARM ROAD
YORKVILLE, IL 60560

NO.	DATE	REVISIONS

IL ROUTE 71 - IDOT CONTRACT 66D24
SANITARY SEWER AND
WATER MAIN REPLACEMENT

GENERAL NOTES
CONSTRUCTION SPECIFICATIONS
AND LEGEND

DATE: NOVEMBER 2017
PROJECT NO: Y01347
FILE: Y01347-66D24 CVR
SHEET 431 OF 558

Plotted: December 6, 2017 @ 1:33 PM By: Jim Schmidt – Tab: 02 Notes – 22x34

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YORKVILLE - BRISTOL SANITARY DISTRICT
STANDARD SPECIFICATIONS FOR SANITARY SEWER CONSTRUCTION
CONTINUED

3.4 Final Engineering Plans and Documents – a complete set of plans drawn on sheets not exceeding twenty–four inches by thirty–six inches (24" x 36"), sealed by a Professional Engineer registered in Illinois, showing the complete plan and profile of the proposed sanitary sewer. The plan and profile shall include all of the following:

a. The length, size and type of pipe, the horizontal location, the elevations of new and existing inverts, the distances and slopes between manholes shall be clearly indicated, the manhole types and locations shall be noted along with unique numbers assigned to each for identification.

b. All underground structures or facilities that may affect the location of the sewer lines or are in the general area of construction.

c. Elevation of the existing and proposed ground surfaces over the sewer centerline.

d. The scale of the plan and profile should be such as to be easily and clearly readable. Recommended are:

Horizontal: 1 inch = 50 feet
Vertical: 1 inch = 5 feet

e. Engineering specifications that may deviate from the District's Standard Specifications.

f. Design documents – including all preliminary flow data, minimum and maximum slopes, population density figures and sewer effluent water quality data for non–domestic liquid wastes, as defined by the Illinois Environmental Protection Agency.

g. Site location map which shows the project site in relation to the surrounding area

3.5 Illinois Environmental Protection Agency Documents:

a. The Illinois EPA requires that an application be submitted for issuance of an EPA construction permit in any of the following cases:

1. New structure plumbing systems exceeding 15 persons, or discharging more than 1500 gallons per day.
2. Extension of any public sewer system.
3. Structures which discharge industrial wastes.

b. EPA applications and documents may be obtained from the Illinois Environmental Protection Agency.

c. When, in the opinion of the owner, contractor or engineer, it is felt that there is no need for an IEPA permit to be filed, the applicant shall submit to the District an affidavit stating the anticipated average and maximum daily flow of wastewater from the new connection and such other information as the District requires.

d. The appropriate Illinois Environmental Protection Agency permit applications shall be prepared and submitted to the District for review and execution prior to submittal to the Illinois Environmental Protection Agency for all improvements within the Yorkville–Bristol Sanitary District Facility Planning Area. As a minimum, the following documents shall be required:

1. Application to Construct WPC–PS–1
2. Sewer Connection Schedule A
3. Sewer Extension Schedule B
4. Erosion Control Schedule P

3.6 The required documents shall first be submitted to the municipal government which has initial jurisdiction. The municipal government shall endorse said documents and the applicant shall then submit four (4) copies to the District for evaluation, review and counter–endorsement. The District shall retain two (2) sets, send one (1) set to the municipal government and return one (1) set to the applicant. The applicant shall then forward two (2) copies of the approved documents to the Springfield office of the Illinois EPA. If no municipality is involved, the applicant shall submit four (4) copies to the District for evaluation, review and endorsement.

3.7 The design engineer is encouraged to consult with the District in all instances to clarify any questions that he/she may have in connection with the permit and to insure adequacy and conformance of the drawings to the applicable requirements. In all cases, which involve the design of treatment facilities, and any project involving industrial waste, the design engineer should confer with the District prior to the preparation of the final plans. The transmittal letter submitting the plans must bear reference to prior consultations, if any.

3.8 The seal and signature referred to shall be those of the Professional Engineer responsible for the design. The seal shall be affixed on the title sheet and table of contents of the specifications, on the index sheet of the plans, and on the location map. Where no index sheet is provided, the seal and signature shall be affixed on each sheet.

3.9 No sewer main construction shall commence without an approved IEPA permit and an approved set of plans on file at the District.

SECTION 4: SANITARY MANHOLES

4.1 Sanitary manholes shall be a minimum of forty–eight inches (48") in diameter, watertight and constructed of precast reinforced concrete in accordance with A.S.T.M. C–478, these specifications and the details included at the end of these specifications.

4.2 Manholes shall be installed at all changes in sewer grade or direction. Maximum spacing shall be 500 feet for sewers eighteen inches (18") in diameter and larger and 400 feet for sewers sixteen inches (16") in diameter and smaller.

4.3 For all industrial connections and other connections deemed necessary by the District, a manhole shall be constructed at the connection of the building sewer and the sanitary sewer service. The manhole shall be located not less than three feet (3'), nor more than five feet (5') from the exterior wall of the building foundation. Said manhole shall be for the purpose of inspection, sampling, metering and service or other uses deemed necessary by the District in order to carry out its duties.

4.4 Pipe connections to the manholes shall be made using cast in place flexible watertight connectors in accordance with A.S.T.M. C–923. The annular space between the pipe and the interior wall surface, the space between the pipe and flow channel and all manhole section lift holes shall be plugged watertight with an approved non–shrink grout to provide a flush smooth surface.

4.5 When a new manhole is approved to be constructed on a District interceptor (30 inches in diameter or less only) only Cascade brand (CR style), or approved equal, stainless steel repair clamps shall be required. Only repair clamps conforming to ANSI/NSF–61 shall be allowed. This work shall be inspected by the District.

4.6 Joints of all manhole components, including cast iron frame, adjusting rings, cone and barrel sections shall be sealed watertight with a minimum of two (2) three–quarter inch (3/4") wide strips of butyl rope joint sealant meeting the requirements of A.S.T.M. C–990. Butyl rope joint sealant shall be CONSEAL™ CS–202 as manufactured by Concrete Sealants, Inc., EZ–STIK as manufactured by Press–Seal Gasket Corporation, or approved equal. The inside joints of manhole sections, adjusting rings and cast iron frame shall not be required to be mortared.

4.7 Each manhole cone and barrel section joint shall also be externally sealed with Type II external sealing bands meeting the requirements of A.S.T.M. C–877. External seals shall be a nine inch (9") wide strip of MAC WRAP with two (2) five–eighths inch (5/8") stainless steel straps as manufactured by Mar–Mac Construction Products Co., Inc., CretexWrap External Joint Seal as manufactured by Cretex Specialty Products, or approved equal.

4.8 All manhole adjustment of casting frames shall be made with reinforced precast concrete adjusting rings, having a minimum thickness of two inches (2"), in the manner as set forth on the detail sheet of the Plans. No more than two (2) adjusting rings for a total height of eight inches (8") will be permitted.

4.9 The outside joints of each manhole chimney (including cast iron frame, all adjusting rings and top of manhole structure) shall also be externally sealed. External chimney seals shall be INFI–SHIELD® as manufactured by Sealing Systems, Inc., WRAPID–SEAL™ as manufactured by Canusa–CPS, INTERNAL/EXTERNAL ADAPTOR SEAL as manufactured by Adaptor, Inc., Cretex External Manhole Chimney Seal as manufactured by Cretex Specialty Products, or approved equal with a vertical lap and horizontal lap as per the manufacturer.

4.10 Each manhole shall be furnished with a cast iron frame and heavy duty cover having a minimum total weight of three hundred and sixty pounds (360 lbs.). Manhole frames and covers shall be at such elevations and at such locations as to prevent surface water from entering. Frames and lids shall be R–1712 as manufactured by Neenah Foundry Company, 1050–Z as manufactured by East Jordan Iron Works, Inc., or approved equal. The cover shall be the concealed pickhole type with a machined bearing surface and watertight rubber gasket seal. Manhole frames and covers of all District owned sanitary manholes shall be a Bolt Down Cover providing a Watertite Assembly with 4 – 2" stainless steel hex cap bolts with flat washers. The word 'SANITARY' shall be cast into the lid of all District owned sanitary manholes. Wording on lids of all other sanitary manholes shall be per the requirements of the municipal government having jurisdiction. All manholes shall be set to finished grade such that the sides of the frame and all adjusting rings are below grade. For those instances where this is not possible, frames shall be anchored to the manhole cone section per the manufacturer's recommendations.

4.11 Polypropylene coated steel reinforced manhole steps shall be furnished and installed as shown in the details included at the end of these specifications. Steps shall be PS1–PF as manufactured by M.A. Industries, Inc., or approved equal.

4.12 The inverts of all pipes entering a manhole shall be set so as to match the eighty percent (80%) flow line of the pipe leaving the manhole. For example: An 8–inch diameter pipe is connected to a manhole with an existing 12–inch diameter outlet having an elevation of 100.00 feet. The 80% flow line of the 12–inch pipe is calculated to be 100.80 feet [100.00' + (1' dia. x 0.80)]. The invert of the 8–inch diameter pipe is then calculated to be 100.27 feet [100.80' – (0.67' dia. x 0.80)]. It is the intent of the District to minimize the use of drop manholes. In cases where the eighty percent (80%) flow lines cannot be met, the gradient and elevation of the pipes shall be adjusted, as necessary, to facilitate a drop manhole with an external drop pipe precast in concrete, meeting the District requirements and the details included at the end of these specifications.

4.13 External grease traps shall be required for all food service establishments in accordance with these specifications and the details included at the end of these specifications. Grease traps shall be Proceptor™ fiberglass reinforced plastic grease interceptors as manufactured by Green Turtle Technologies, or approved equal. Grease traps shall be sized on a case by case basis with a minimum capacity of 1500 gallons. Any building use changes for food preparation use or restaurant use must install an external grease trap. Any multi–tenant building, where food service establishments may be proposed, a second sanitary service line for grease waste should be provided. This 'grease line' is in addition to the domestic line and should be easy to locate to accommodate future connections.

SECTION 5: SANITARY SEWERS

5.1 Pipe and fittings used in sanitary sewer construction, unless otherwise specified and approved by the District, shall be of the following materials for the specified sizes and depths in Table 1. Pipe and fittings dated over one year old shall not be permitted for use.

a. Plastic sewer main (PSM) polyvinyl chloride (PVC) sewer pipe and fittings (A.S.T.M. – SDR series), conforming to A.S.T.M. D–1784, D–3034 for SDR 26, D–3212, F–412 and F–477.

b. Iron pipe sized (IPS) polyvinyl chloride (PVC) pressure rated pipe and fittings (A.S.T.M. – SDR series), conforming to A.S.T.M. D–1784, D–2241, D–3139, F–412 and F–477.

c. Ductile iron sized (DIS) polyvinyl chloride (PVC) pressure rated pipe and fittings (A.W.W.A. – DR series), conforming to A.W.W.A. C–900, C–905 and A.S.T.M. D–1784, D–2241, D–3139, F–412 and F–477.

d. Ductile iron pipe (DIP) (for pumping stations and force mains only), Class 52, conforming to A.N.S.I. A–21.5, A–21.11, A–21.50 and A–21.51 (A.W.W.A. C–105, C–111, C–150 and C–151) lined with Protecto 401 ceramic epoxy, as manufactured by Induron Coatings, Inc., or approved equal and installed in an eight mil (8 mil) polyethylene encasement.

e. Glass–Fiber–Reinforced Polymer pipe (GFRP) conforming to A.S.T.M. D–3754, D–4161, D–3517, F–477, A.W.W.A. C–950 and A.W.W.A. Fiberglass Pipe Design Manual M–45. Pipe shall be Pressure Class 50.

TABLE 1 – PIPE/FITTINGS

Type	Depth of Cover	Pipe Diameter	Min. Thickness	National Standards	Min. Pipe Stiffness
PSM PVC	0'–15'	6"–12"	SDR–26	A.S.T.M. D–3034	115
IPS PVC	0'–15'	6"–12"	SDR–26	A.S.T.M. D–2241	115
IPS PVC	0'–20'	6"–12"	SDR–21	A.S.T.M. D–2241	224
DIS PVC	0'–30'	6"–12"	DR–18	A.W.W.A. C–900	364
DIS PVC	0'–30'	14"–24"	DR–18	A.W.W.A. C–905	364
DIS PVC	0'–30'	30"–36"	DR–25	A.W.W.A. C–905	129
DIS PVC	0'–30'	42"–48"	DR–32.5	A.W.W.A. C–905	57
DIP	0'–30'	6"–48"	CL. 52	A.W.W.A. C–151	N.A.
GFRP	0'–30'	30"–36"	CL. 50	A.W.W.A. C–950	129
GFRP	0'–30'	42"–48"	CL. 50	A.W.W.A. C–950	72

5.2 All PVC plastic pipe and fittings shall have a cell classification of 12454–B or C, as defined in A.S.T.M. D–1784, and shall have a minimum pipe stiffness as shown in Table 1. The required Standard Dimension Ratio (SDR) or Dimension Ratio (DR) for PVC pipe and fittings shall be selected based upon the depth of cover (see Table 1).

5.3 PVC pipe fittings conforming to A.S.T.M. D–3034 and D–2241 shall have a minimum wall thickness of SDR–26 plastic pipe as defined in Table 1 of A.S.T.M. D–3034 or Table 2 of A.S.T.M. D–2241, and at least the same thickness of the main sewer line that they are installed in. Fittings in sizes eight inches (8") and smaller shall be molded in one piece with elastomeric joints and minimum socket depths as specified in each respective section. Fittings that are ten inches (10") and larger shall be molded or fabricated with elastomeric joints in accordance with A.S.T.M. standards D–1784 and D–3139 incorporating the manufacturer's standard pipe bells and gaskets. Gaskets shall conform to A.S.T.M. F–477 and F–913.

5.4 PVC joints shall meet the requirements of A.S.T.M. D–3212 or D–3139, whichever is applicable. Fittings with a gasket retention race formed by heating or crimping are not permitted throughout the District. Solvent cemented (welded) joints are not permitted, except when used in the fabrication of fittings prior to installation.

5.5 PVC pipe shall be constructed in full compliance with the A.S.T.M. Standard Specification D–2321 'Underground Installation of Flexible Thermoplastic Sewer Pipe'. Initial backfilling and bedding materials shall be Class IA crushed stone or crushed gravel, as outlined in A.S.T.M. D–2321 and shall have an I.D.O.T. Gradation of CA–7, unless otherwise specified by the District. Materials shall meet a plasticity index of zero to four percent (0% to 4%) as determined by the method given in A.A.S.H.T.O. T–90 and shall have a specific gravity (dry) of greater than 2.

5.6 DIP shall be used for sanitary sewer pumping station piping and force mains only. All DIP fittings deflecting eleven and one–quarter degrees (11¼°) or greater shall be thrust protected to prevent movement of lines under pressure. The blocking shall be Class SI concrete, a minimum of 12 inches thick, placed between solid ground and the fitting to be anchored and shall be so placed that pipe and fittings remain accessible for repairs. Upon completion of the newly laid force main, the main shall be flushed at a rate of not less than two and one–half feet per second (2.5 fps), to remove any foreign matter that might be in the main. Deflection tests, air tests, or T.V. tests will not be required on DIP sanitary sewer force mains. After the pipe has been laid and partially backfilled, the newly laid pipe shall be temporarily plugged and subjected to hydrostatic tests in accordance with Section 13 of A.W.W.A. Specification C–600. The duration of the test shall be a minimum of one hour at one–hundred and fifty pounds per square inch (150 psi). Upon completion of the pressure test, a leakage test shall be conducted. The duration of the test shall be a minimum of one hour at one–hundred and fifty pounds per square inch (150 psi) pressure. The allowable leakage shall be determined by the formula:

$$L = \frac{(S \times D \times \sqrt{P})}{133,200}$$

Where L = Allowable leakage in gallons per hour
S = Length of pipe line tested in feet.
D = Nominal Diameter of pipe in inches
P = Average test pressure in pounds per square inch.

Leakage is defined as the quantity of water to be supplied in the section under test which is necessary to maintain the test pressure after the pipe has been filled with water and the air expelled.

5.7 GFRP pipe shall be installed in accordance with the manufacturer's recommendations. NSF potable water rating and factory hydrotesting will be required, unless specified otherwise. Joints shall be fiberglass sleeve couplings sealed watertight using elastomeric sealing gaskets made of EDPM rubber compound meeting the performance requirements of A.S.T.M. D–4161. The Hoop–Tensile strength of the pipe shall meet the requirements of A.S.T.M. D–3517 for pressure Class 50. Glass reinforcement fibers used to manufacture the pipe and fittings shall be of the highest quality commercial grade of glass filaments suitably treated with binder and sizing compatible with impregnating resins. The manufacturer shall be required to provide the necessary coupling on one end of the pipe as part of the manufacturing process. Couplings shall be manufactured with a stop inside the coupling so as to assure that the coupling is centered over the joint.

5.8 The District reserves the right to approve all fittings and pipe on a case by case basis.

5.9 Pipe size shall be a minimum of eight inches (8") for sanitary sewer mains and six inches (6") for sanitary sewer services. All sanitary sewer mains and services shall be installed with a minimum of five feet (5') of cover over the top of pipe. Curvilinear sewers are not permitted.

5.10 The pipe shall be laid so that it will be uniformly supported for its entire length. No blocking of any kind shall be used to adjust the pipe to grade except when embedment concrete is used. Bedding shall be a minimum of six inches (6") in depth. The bedding material shall be placed and worked in around the pipe by hand to provide uniform support, the around and over the crown of the pipe by a minimum thickness of twelve inches (12") for flexible pipe, and four inches (4") for rigid pipe. The contractor shall be required to install PVC pipe in such a manner that the diametric deflection of the PVC pipe shall not exceed five percent (5%) and the materials surrounding the pipe shall be compacted to the required standard proctor densities outlined in A.S.T.M. D–2321. The contractor shall be required to install GFRP pipe in such a manner that the diametric deflection of the GRRP pipe shall not exceed 3% of the original pipe diameter within the first 24 hours after installation, backfilling and removal of the dewatering system. The diametric deflection of the GFRP pipe shall also not exceed 4% of the original pipe diameter after 30 days of the completed installation. All pipes exceeding the above deflection limits shall be corrected to the satisfaction of the District and/or municipal government having jurisdiction.

5.11 Non–shear Flex–Seal® adjustable repair couplings, as manufactured by Mission Rubber Company, or approved equal shall be used when joining pipes made of dissimilar material or where no 'hub' end exists. For all new construction, PVC transition fittings shall be used when joining PVC pipes of dissimilar material specifications (differing outside diameters) such as with storm sewer, water main or structure crossings where no 'hub' end exists. Repairs during construction are not permitted. If a pipe is damaged during construction, the damaged pipe shall be removed to the closest downstream joint and relaid.

5.12 The District reserves the right to require a contractor to submit certified copies of all reports of tests conducted by an independent laboratory before installation of the pipe. Tests for PVC pipe shall be conducted in accordance with standard method of test for 'External Loading Properties of Plastic Pipe by Parallel–Plate Loading'.

5.13 Sanitary Services:

a. All private sanitary sewer service connections shall be granted a District permit prior to performing the work. The installation of the sanitary service shall be inspected by the District for services connected to the District's interceptors and by the City of Yorkville for services connected to the City's sewer system. For services connected to the District's interceptors, the contractor shall notify the District a minimum of 24 hours prior to performing the work.

b. For sanitary sewers serving buildings with basements, the sewer shall be a minimum of ten feet (10') below the top of foundation or the building shall be constructed with overhead plumbing.

c. Service connections to new mains shall be with a tee/wye fitting with a six inch (6") branch. All fittings, riser pipe, and service line piping shall be of the same material as the main sewer.

d. When connecting to an existing sanitary main when a tee or wye is not provided, an INSERTA TEE® fitting, as manufactured by Inserta Fittings Co., must be installed. The minimum distance between fittings is four feet (4') center to center. Disruption of any existing sanitary main by breaking or cutting in a tee/wye is prohibited unless the existing main is cracked or broken at the point of connection with the INSERTA TEE®. A representative of the District or municipal government having jurisdiction shall determine the existing main repair or replacement required on a case by case basis prior to connection, construction or installation.

e. When connecting to an existing sanitary main when a tee or wye is not provided, an INSERTA TEE® fitting, as manufactured by Inserta Fittings Co., must be installed. The minimum distance between fittings is four feet (4') center to center. Disruption of any existing sanitary main by breaking or cutting in a tee/wye is prohibited unless the existing main is cracked or broken at the point of connection with the INSERTA TEE®. A representative of the District or municipal government having jurisdiction shall determine the existing main repair or replacement required on a case by case basis prior to connection, construction or installation

f. All newly constructed sanitary service lines must be secured with a factory–made plug to prevent unnecessary infiltration, inflow, dirt or debris from entering the downstream sewer system. Under no circumstances shall the sanitary sewer system be used to drain newly excavated basements.

g. Cast iron clean–out covers conforming to ASTM class 25 or higher shall be required for all sanitary sewer services located in any paved surface. Locations of said covers shall be constructed per the approved engineering plan. Cast iron clean–out covers shall meet the requirements of these specifications and the detail included at the end of these specifications.

SECTION 6: TESTING AND APPROVAL

6.1 All newly constructed sanitary sewers shall be cleaned of debris and flushed clean, as necessary, prior to conducting the required tests. All debris shall be removed from the sanitary sewer system. Under no circumstances shall debris be flushed into the downstream sanitary sewer system.

6.2 All newly constructed sanitary sewers are required to be tested for deflection and water tightness (air test only). Testing shall be performed in accordance with the 'Standard Specifications for Water and Sewer Main Construction in Illinois'. Results of all testing shall be sent to the District within thirty (30) days of completion of said testing.

6.3 All newly constructed sanitary sewer mains, and the interior of each new lateral from the point of connection with the main, shall be subject to closed circuit television inspection. The televising shall be performed from manhole to manhole with each lateral referenced by station from the upstream manhole. The television camera used for the inspection shall be one specifically designed and constructed for such inspection and shall be suitable to allow a clear picture of the entire periphery of the pipe. Picture quality and definition shall be to the satisfaction of the District and if unsatisfactory, shall be redone.

The inspection will be done one manhole section at a time under no flow conditions. Each manhole shall be identified by the manhole numbers shown on the approved engineering plans. The camera shall be moved through the line at a uniform rate, stopping when necessary to insure proper documentation of the sewer's condition. Manual winches, power winches, TV cable and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions may be used to move the camera through the sewer line. One (1) copy of the complete videotapes and written logs shall be sent to the District within thirty (30) days of completion of said testing.

6.4 Each new manhole shall be vacuum tested after final surface restoration has been completed. The manhole frame and adjusting rings shall be in place when testing. No grout will be placed in the horizontal joints before testing. All pipes entering the manhole shall be temporarily plugged, taking care to securely brace the plugs from being drawn into the manhole.

All work of vacuum testing shall be performed in accordance with A.S.T.M. C–1244 and the following requirements. A vacuum of ten inches (10") of mercury (Hg) shall be drawn and the vacuum pump shut off. With the valves closed, the time shall be measured for the vacuum to drop to nine inches (9") of mercury (Hg). The manhole shall pass if the vacuum does not drop below nine inches (9") of mercury (Hg) for the following time periods for each size of manhole:

48" Diameter – 60 seconds
60" Diameter – 75 seconds
72" Diameter – 90 seconds

Should the manhole fail the vacuum test, all leaks shall be sealed with an approved non–shrink grout and the test repeated until a satisfactory test is obtained. Results of all testing shall be sent to the District within thirty (30) days of completion of said testing.

6.5 All defects in material and/or workmanship noted during inspection shall be repaired by the contractor, to the satisfaction of the District, before release is granted and the sewer accepted. Upon completion of the repairs, the above tests shall be repeated until a satisfactory test is obtained.

6.6 Within sixty (60) days after final inspection and approval by the District and/or the appropriate municipal government, a set of 'Record Drawings' of the completed project shall be furnished to the District. Record drawings shall indicate any deviations from the approved plans based on the completed improvements as constructed. Conditions to be noted shall include, but not be limited to deviations in size, slope, materials, invert and rim elevations and horizontal locations of the sanitary pipe, connections, manholes or other appurtenant structures. Information relative to other existing features or as constructed which may impact the operation or maintenance of the sanitary sewer system shall also be noted on the record drawings. These shall include, but not be limited to, existing or proposed utilities and appurtenances, overland flow routes, structures, pavement or buildings. Record drawings shall be prepared under the direction of, and certified by, a Professional Engineer registered in the State of Illinois.

Engineering Enterprises, Inc.
CONSULTING ENGINEERS
52 Wheeler Road
Sugar Grove, Illinois 60554
630.466.6700 / www.eeiweb.com

UNITED CITY OF YORKVILLE
800 GAME FARM ROAD
YORKVILLE, IL 60560

NO.	DATE	REVISIONS

IL ROUTE 71 - IDOT CONTRACT 66D24
SANITARY SEWER AND
WATER MAIN REPLACEMENT

GENERAL NOTES AND
CONSTRUCTION SPECIFICATIONS

DATE: NOVEMBER 2017
PROJECT NO: Y01347
FILE: Y01347–66D24 CVR
SHEET 432 OF 558

BILL OF MATERIALS - CONTRACT 66D24			
ITEM NO.	ITEM	UNIT	QUANTITY
Z0057000	SANITARY SEWER 10"	FOOT	471
Z0058000	SANITARY SEWER, SPECIAL	FOOT	413
X6026055	SANITARY MANHOLE, SPECIAL	EACH	5
X0327725	ADDITIONAL DEPTH OF MANHOLES	FOOT	28
X0322464	ABANDON AND FILL EXISTING SANITARY MANHOLE	EACH	3
X6026054	SANITARY MANHOLES TO BE REMOVED	EACH	1
X03227876	SANITARY SEWER TESTING	LSUM	1
X0322789	TELEVISION INSPECTION OF NEW SANITARY SEWER	FOOT	884
56103000	DUCTILE IRON WATER MAIN 6"	FOOT	30
56103100	DUCTILE IRON WATER MAIN 8"	FOOT	218
Z0041900	POLYETHYLENE ENCASEMENT	FOOT	248
Z0044800	PRESSURE CONNECTION 8" X 8"	EACH	2
56105000	WATER VALVES 8"	EACH	2
60248900	VALVE VAULTS, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	2
X5640150	FIRE HYDRANT ASSEMBLY COMPLETE	EACH	3
X5610004	DUCTILE IRON WATER MAIN FITTINGS	POUND	1200
X5630008	CUT AND CAP EXISTING 8" WATER MAIN	EACH	4
X1200085	HYDROSTATIC TESTING AND DISINFECTING WATER MAINS	FOOT	248
X1200015	VALVE VAULTS TO BE ABANDONED	EACH	7
60265700	VALVE VAULTS TO BE ADJUSTED	EACH	3
56400500	FIRE HYDRANTS TO BE REMOVED	EACH	10
20800150	TRENCH BACKFILL	CUYD	565
X2130010	EXPLORATION TRENCH, SPECIAL	FOOT	30

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52 Wheeler Road
Sugar Grove, Illinois 60554
630.466.6700 / www.eeiweb.com

UNITED CITY OF YORKVILLE
800 GAME FARM ROAD
YORKVILLE, IL 60560

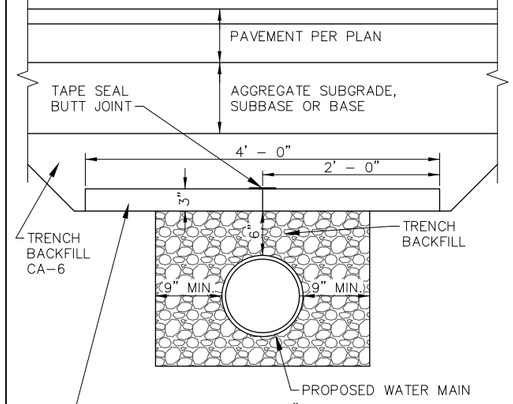
NO.	DATE	REVISIONS

IL ROUTE 71 - IDOT CONTRACT 66D24
SANITARY SEWER AND
WATER MAIN REPLACEMENT

SUMMARY OF QUANTITIES

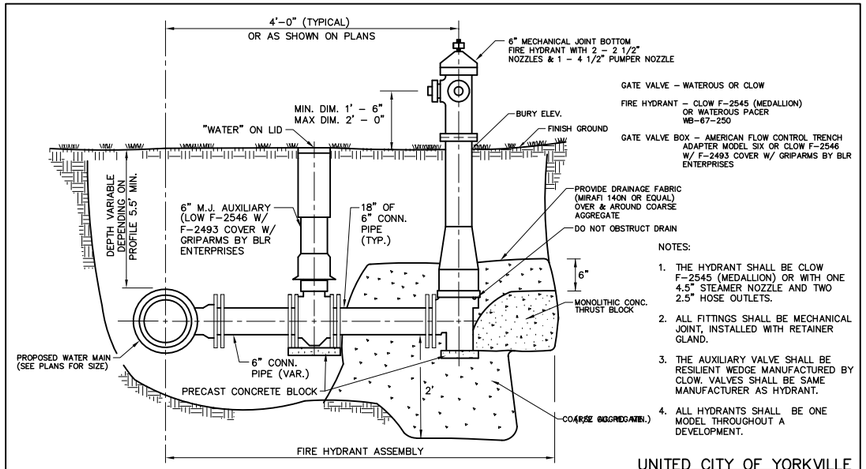
DATE: NOVEMBER 2017
PROJECT NO: Y01347
FILE: Y01347-66D24 CVR
SHEET 433 OF 558

NOTE:
HEAVY EQUIPMENT AND LOADED TRUCKS SHALL NOT BE ALLOWED TO CROSS INSULATION AREA UNTIL AFTER PLACEMENT OF AGGREGATE SUBGRADE, SUBBASE OR BASE.



WATER MAIN INSULATION DETAIL

Engineering Enterprises, Inc.	SCALE: N.T.S.	FOLDER:	DRAWING NUMBER:	DRAWN BY: XXX
52 Wheeler Road, Sugar Grove, Illinois 60554, Phone: (630) 466-9350	DATE: xx-xx-xx			REVISED:



NOTES:
1. THE HYDRANT SHALL BE CLOW F-2545 (MEDALLION) OR WITH ONE 4.5" STEAMER NOZZLE AND TWO 2.5" HOSE OUTLETS.
2. ALL FITTINGS SHALL BE MECHANICAL JOINT, INSTALLED WITH RETAINER GLAND.
3. THE AUXILIARY VALVE SHALL BE RESILIENT WEDGE MANUFACTURED BY CLOW. VALVES SHALL BE SAME MANUFACTURER AS HYDRANT.
4. ALL HYDRANTS SHALL BE ONE MODEL THROUGHOUT A DEVELOPMENT.

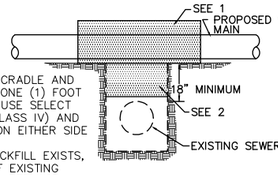
UNITED CITY OF YORKVILLE

FIRE HYDRANT ASSEMBLY INSTALLATION

Engineering Enterprises, Inc.	SCALE: N.T.S.	FOLDER: YO-WA	DRAWING NUMBER: HY-01	DRAWN BY: CLN
52 Wheeler Road, Sugar Grove, Illinois 60554, Phone: (630) 466-9350	DATE: 12/03/13			REVISED:

PROPOSED WATER MAIN ABOVE EXISTING SEWER LINE WITH 18" MINIMUM SEPARATION.

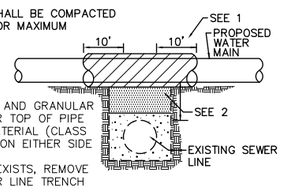
NOTE: CLASS IV MATERIAL SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DENSITY.



GUIDELINES
1. OMIT SELECT GRANULAR CRADLE AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF PIPE AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT FOR 10 FEET ON EITHER SIDE OF SEWER LINE.
2. IF SELECT GRANULAR BACKFILL EXISTS, REMOVE WITHIN WIDTH OF EXISTING SEWER LINE TRENCH AND REPLACE WITH SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT.

PROPOSED WATER MAIN ABOVE EXISTING SEWER LINE WITH LESS THAN 18" SEPARATION.

NOTE: CLASS IV MATERIAL SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DENSITY.



GUIDELINES
1. OMIT SELECT GRANULAR CRADLE AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF PIPE AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT FOR 10 FEET ON EITHER SIDE OF SEWER LINE.
2. IF SELECT GRANULAR BACKFILL EXISTS, REMOVE WITHIN WIDTH OF EXISTING SEWER LINE TRENCH AND REPLACE WITH SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT.
3. USE A CASING FOR PROPOSED WATER MAIN AND SEAL ENDS OF CASING.
4. POINT LOADS SHALL NOT BE ALLOWED BETWEEN WATER MAIN OR WATER MAIN CASING AND SEWER.

UNITED CITY OF YORKVILLE

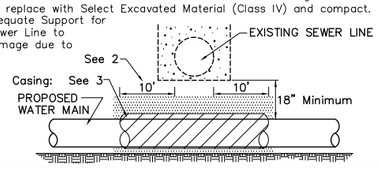
WATER & SEWER SEPARATION REQUIREMENTS (VERTICAL)

Engineering Enterprises, Inc.	SCALE: N.T.S.	FOLDER: YO-WA	DRAWING NUMBER: TR-02	DRAWN BY: CLN
52 Wheeler Road, Sugar Grove, Illinois 60554, Phone: (630) 466-9350	DATE: 12/03/13			REVISED:

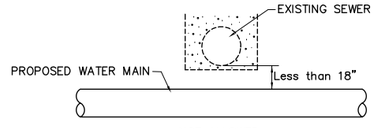
Proposed water main below existing sewer line with 18" minimum separation.

NOTE: CLASS IV MATERIAL SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DENSITY.

GUIDELINES
1. Omit Select Granular Cradle and Granular Backfill to one (1) foot over top of pipe and use Select Excavated Material (Class IV) and compact for 10 feet on either side of sewer line.
2. If Select Granular Backfill exists, remove within width of Existing Sewer Line trench and replace with Select Excavated Material (Class IV) and compact.
3. Provide adequate Support for Existing Sewer Line to prevent damage due to settlement.



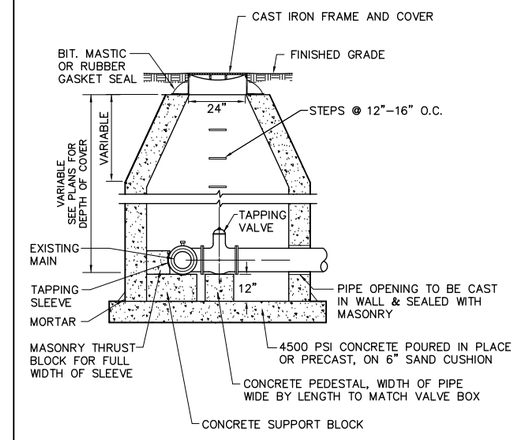
Proposed water main below existing sewer line with less than 18" minimum separation.



NOT ALLOWED*
Must Maintain 18" Vertical Separation

WATER & SEWER SEPARATION REQUIREMENTS (VERTICAL)

Engineering Enterprises, Inc.	SCALE: N.T.S.	FOLDER: EE-WA	DRAWING NUMBER: TR-03	DRAWN BY: WCP
52 Wheeler Road, Sugar Grove, Illinois 60554, Phone: (630) 466-9350	DATE: 9/24/07			REVISED:

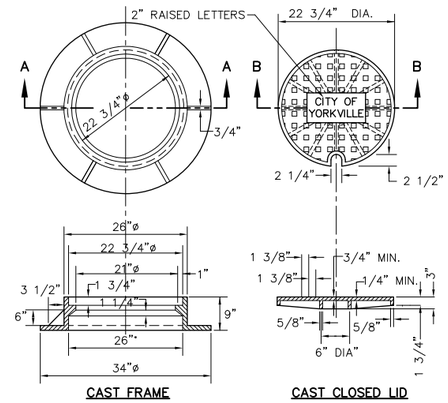


NOTES:
1. VALVE MANHOLE DIA. SHALL BE 48" FOR 6" AND SMALLER VALVES AND 60" FOR 8" AND LARGER VALVES.
2. MATERIAL WALL THICKNESS PRE-CAST CONC. – MIN. 1/12 "D" CAST IN PLACE CONC. MIN 6"

UNITED CITY OF YORKVILLE

WATER MAIN PRESSURE CONNECTION DETAIL

Engineering Enterprises, Inc.	SCALE: N.T.S.	FOLDER: YO-WA	DRAWING NUMBER: ST-01C	DRAWN BY: CLN
52 Wheeler Road, Sugar Grove, Illinois 60554, Phone: (630) 466-9350	DATE: 12/03/13			REVISED: 5/7/14



CAST FRAME | CAST CLOSED LID

1) CLOSED LIDS SHALL HAVE THE WORD "CITY OF YORKVILLE WATER" CAST IN AS APPLICABLE
2) SANITARY MANHOLE LIDS SHALL BE SELF-SEALING WITH CONCEALED PICKHOLES
3) DIMENSIONS ARE COMPARABLE TO NEENAH R-1713
4) STORM MANHOLE LIDS MAY BE OPEN OR CLOSED AS SPECIFIED ON PLANS (USE TYPE B CLOSED LIDS OR TYPE D GRATE FOR OPEN LIDS)

UNITED CITY OF YORKVILLE

TYPE 1 MANHOLE FRAME & COVER

Engineering Enterprises, Inc.	SCALE: N.T.S.	FOLDER: YO-WA	DRAWING NUMBER: ST-02	DRAWN BY: CLN
52 Wheeler Road, Sugar Grove, Illinois 60554, Phone: (630) 466-9350	DATE: 4/30/14			REVISED:

Engineering Enterprises, Inc. CONSULTING ENGINEERS 52 Wheeler Road Sugar Grove, Illinois 60554 630.466.6700 / www.eeiweb.com	UNITED CITY OF YORKVILLE 800 GAME FARM ROAD YORKVILLE, IL 60560

NO.	DATE	REVISIONS
△		

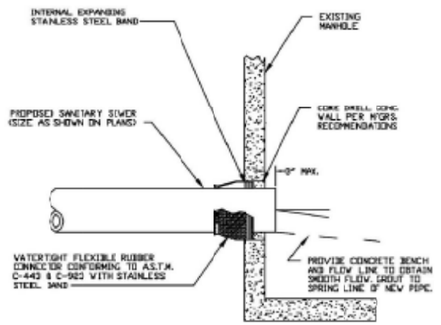
IL ROUTE 71 - IDOT CONTRACT 66D24
SANITARY SEWER AND
WATER MAIN REPLACEMENT

TYPICAL DETAILS

DATE: NOVEMBER 2017
PROJECT NO: Y01347
FILE: Y01347-66D24 CVR
SHEET 434 OF 558

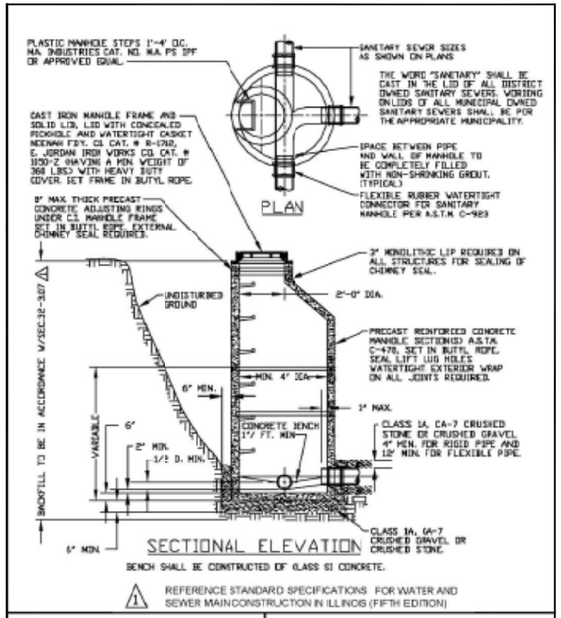
Plotted: December 6, 2017 @ 1:35 PM By: Jim Schmidt – Tab: 05 Details– 22x34

Path: H:\SDSKPROJ\Y01347\DWG\DWG FINAL ENG\Y01347-66D24 CVR



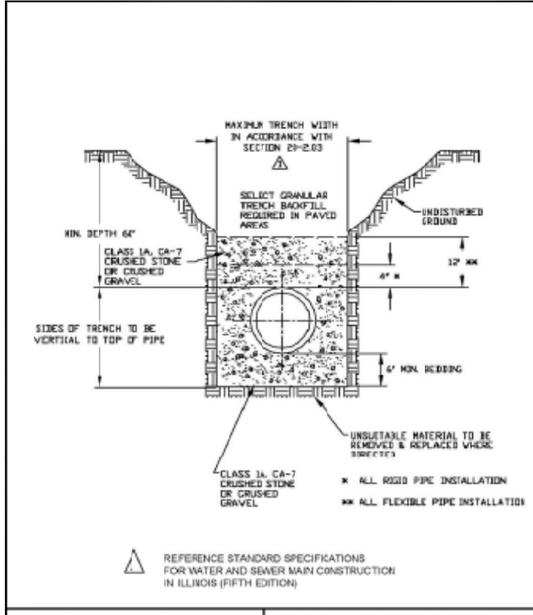
YORKVILLE–BRISTOL SANITARY DISTRICT | PIPE TO MANHOLE CONNECTOR

DESIGNED JWF	APPROVED PFW	SCALE NTS
DRAWN	DATE 10/9/06	STD-004



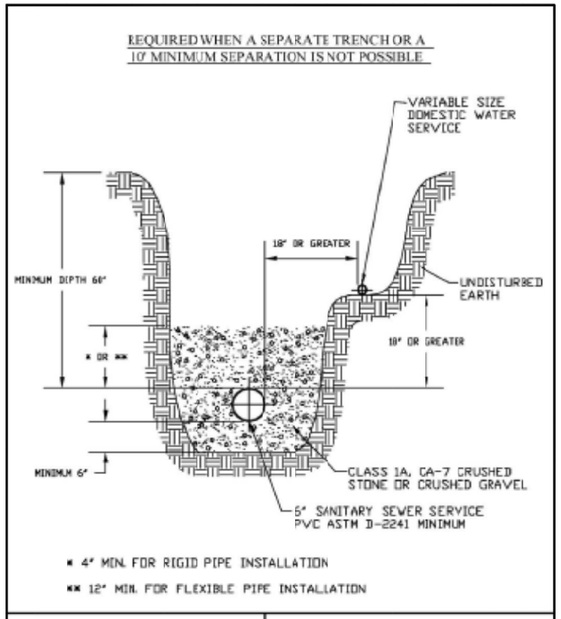
YORKVILLE–BRISTOL SANITARY DISTRICT | TYPE "A" MANHOLE

DESIGNED JWF	APPROVED PFW	SCALE NTS
DRAWN	DATE 10/9/06	STD-005



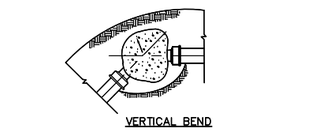
YORKVILLE–BRISTOL SANITARY DISTRICT | TYPICAL TRENCH DETAIL FOR SANITARY SERVICES & MAINS

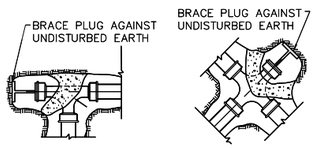
DESIGNED JWF	APPROVED PFW	SCALE NTS
DRAWN	DATE 10/9/06	STD-001



YORKVILLE–BRISTOL SANITARY DISTRICT | SANITARY SEWER SERVICE & POTABLE WATER SERVICE SEPARATION

DESIGNED JWF	APPROVED PFW	SCALE NTS
DRAWN	DATE 10/9/06	STD-010



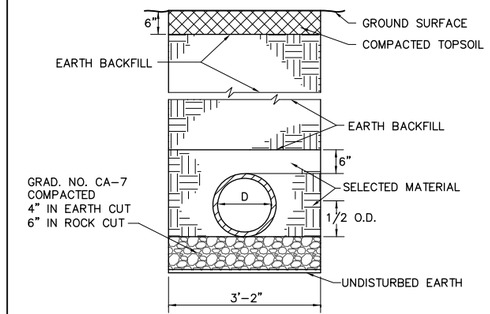


NOTES:
ALL BLOCKS BEAR AGAINST UNDISTURBED EARTH.
ARROWS INDICATE DIRECTION OF THRUST.
ALL BLOCKS TO BE 3000 P.S.I. CONCRETE.
ALL FITTINGS SHOWN IN PLAN EXCEPT VERTICAL BEND.

UNITED CITY OF YORKVILLE

TYPICAL THRUST BLOCK INSTALLATION

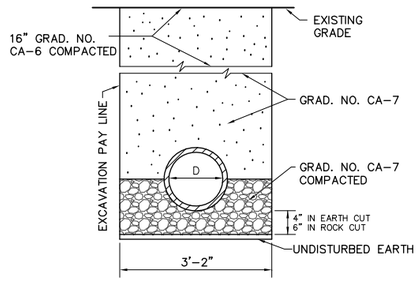
Engineering Enterprises, Inc. 52 Wheeler Road Sugar Grove, Illinois 60554 Phone: (630) 466-9350	SCALE: N.T.S.	DATE: 12/03/13	FOLDER: YO-WA	DRAWING NUMBER: MI-01	DRAWN BY: cln	REVISED:



UNITED CITY OF YORKVILLE

WATER MAIN TRENCH SECTION IN GRASSED AREAS

Engineering Enterprises, Inc. 52 Wheeler Road Sugar Grove, Illinois 60554 Phone: (630) 466-9350	SCALE: N.T.S.	DATE: 12/03/13	FOLDER: YO-WA	DRAWING NUMBER: TR-03	DRAWN BY: CLN	REVISED:



UNITED CITY OF YORKVILLE

WATER MAIN TRENCH SECTION FOR PAVED AREAS & DRIVEWAYS

Engineering Enterprises, Inc. 52 Wheeler Road Sugar Grove, Illinois 60554 Phone: (630) 466-9350	SCALE: N.T.S.	DATE: 12/03/13	FOLDER: YO-WA	DRAWING NUMBER: TR-04	DRAWN BY: CLN	REVISED:

Engineering Enterprises, Inc.
CONSULTING ENGINEERS
52 Wheeler Road
Sugar Grove, Illinois 60554
630.466.6700 / www.eeiweb.com

UNITED CITY OF YORKVILLE
800 GAME FARM ROAD
YORKVILLE, IL 60560

NO.	DATE	REVISIONS
△		

IL ROUTE 71 - IDOT CONTRACT 66D24
SANITARY SEWER AND WATER MAIN REPLACEMENT

TYPICAL DETAILS

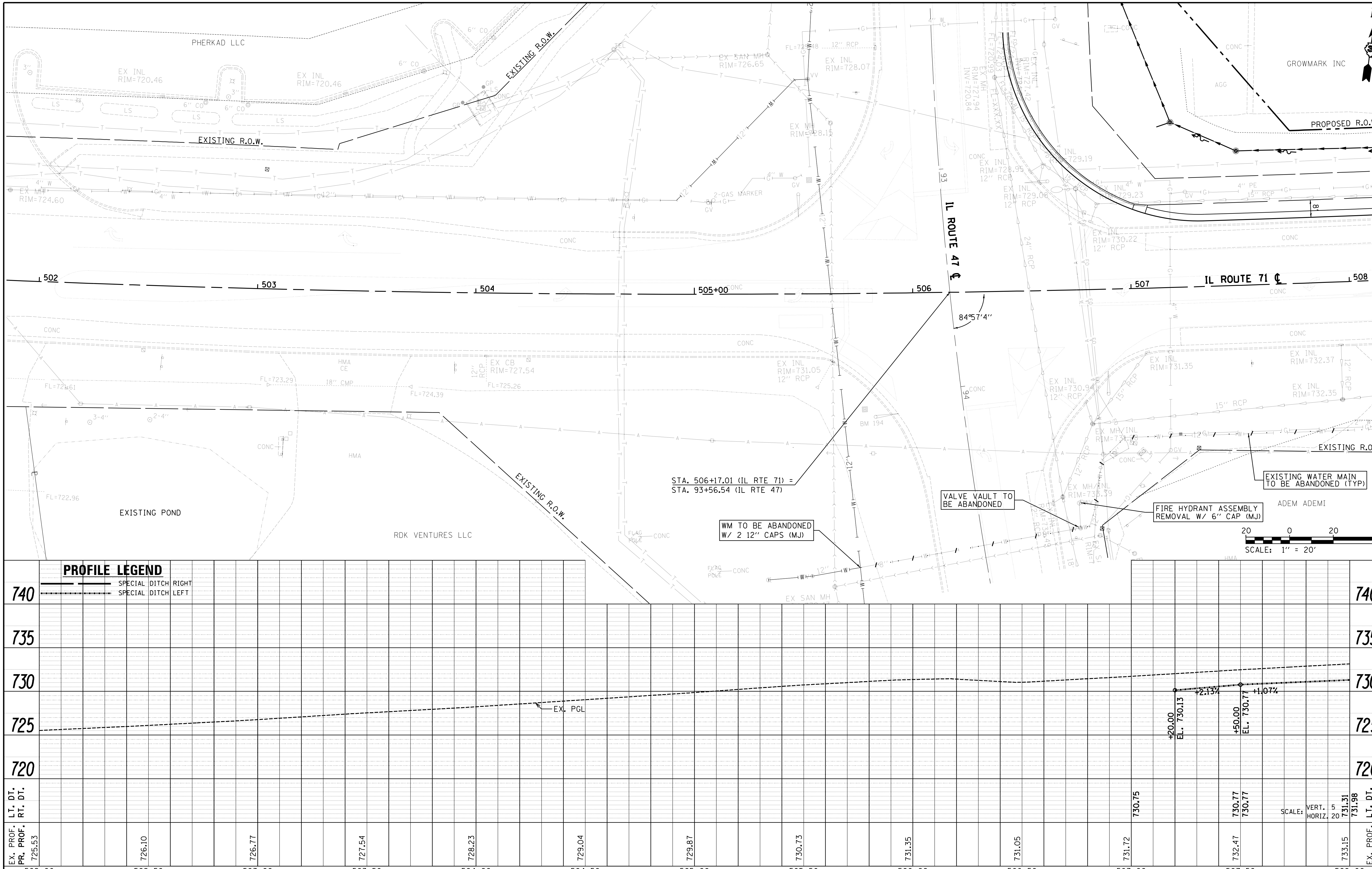
DATE: NOVEMBER 2017
PROJECT NO: Y01347
FILE: Y01347-66D24 CVR
SHEET 435 OF 558

Plotted: December 6, 2017 @ 1:36 PM By: Jim Schmidt – Tab: 06 Details– 22x34

Path: H:\SDSKPROJ\Y01347\DWG\DWG FINAL ENG\Y01347-66D24 CVR

PLAN	NOTE BOOK NO.	SURVEYED	PLOTTED	ALIGNMENT CHECKED	RT. OF WAY CHECKED	CADD FILE NAME
		BY				DATE

PROFILE	NOTE BOOK NO.	SURVEYED	PLOTTED	GRADES CHECKED	B.M. NOTED	STRUCTURE NOTAT'NS CHK'D
		BY				DATE



N
PHERKAD LLC
EXISTING R.O.W.
EX INL RIM=720.46
EX MH RIM=724.60
EX SAN MH RIM=726.65
EX INL RIM=728.07
12" RCP
2-GAS MARKER
GROWMARK INC
PROPOSED R.O.W.
IL ROUTE 47 ℄
IL ROUTE 71 ℄
502
503
504
505+00
506
507
508
84°57'4"
EX CB RIM=727.54
EX INL RIM=731.05 12" RCP
EX INL RIM=731.35
EX INL RIM=732.37
EX INL RIM=732.35
EX INL RIM=730.94 12" RCP
EX INL RIM=730.22 12" RCP
EX INL RIM=729.06 12" RCP
EX INL RIM=728.95 12" RCP
EX INL RIM=729.23
EX INL RIM=729.19
BM 194
STA. 506+17.01 (IL RTE 71) = STA. 93+56.54 (IL RTE 47)
WM TO BE ABANDONED W/ 2 12" CAPS (MJ)
VALVE VAULT TO BE ABANDONED
FIRE HYDRANT ASSEMBLY REMOVAL W/ 6" CAP (MJ)
EXISTING WATER MAIN TO BE ABANDONED (TYP)
ADEM ADEMI
EXISTING POND
RDK VENTURES LLC
SCALE: 1" = 20'
PROFILE LEGEND
SPECIAL DITCH RIGHT
SPECIAL DITCH LEFT
740
735
730
725
720
EX. PGL
+2.13%
+1.07%
+20.00 EL. 730.13
+50.00 EL. 730.77
LT. DT.
RT. DT.
730.75
730.77
730.77
731.31
731.98
SCALE: VERT. 5 HORIZ. 20
EX. PROF.
PR. PROF.
725.53
726.10
726.77
727.54
728.23
729.04
729.87
730.73
731.35
731.05
731.72
732.47
733.15
502+00
502+50
503+00
503+50
504+00
504+50
505+00
505+50
506+00
506+50
507+00
507+50
508+00

FILE NAME =	USER NAME = jschmidt	DESIGNED -	REVISED -
$FILES$		DRAWN -	REVISED -
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
$MODELNAME$	PLOT DATE = 12/6/2017	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

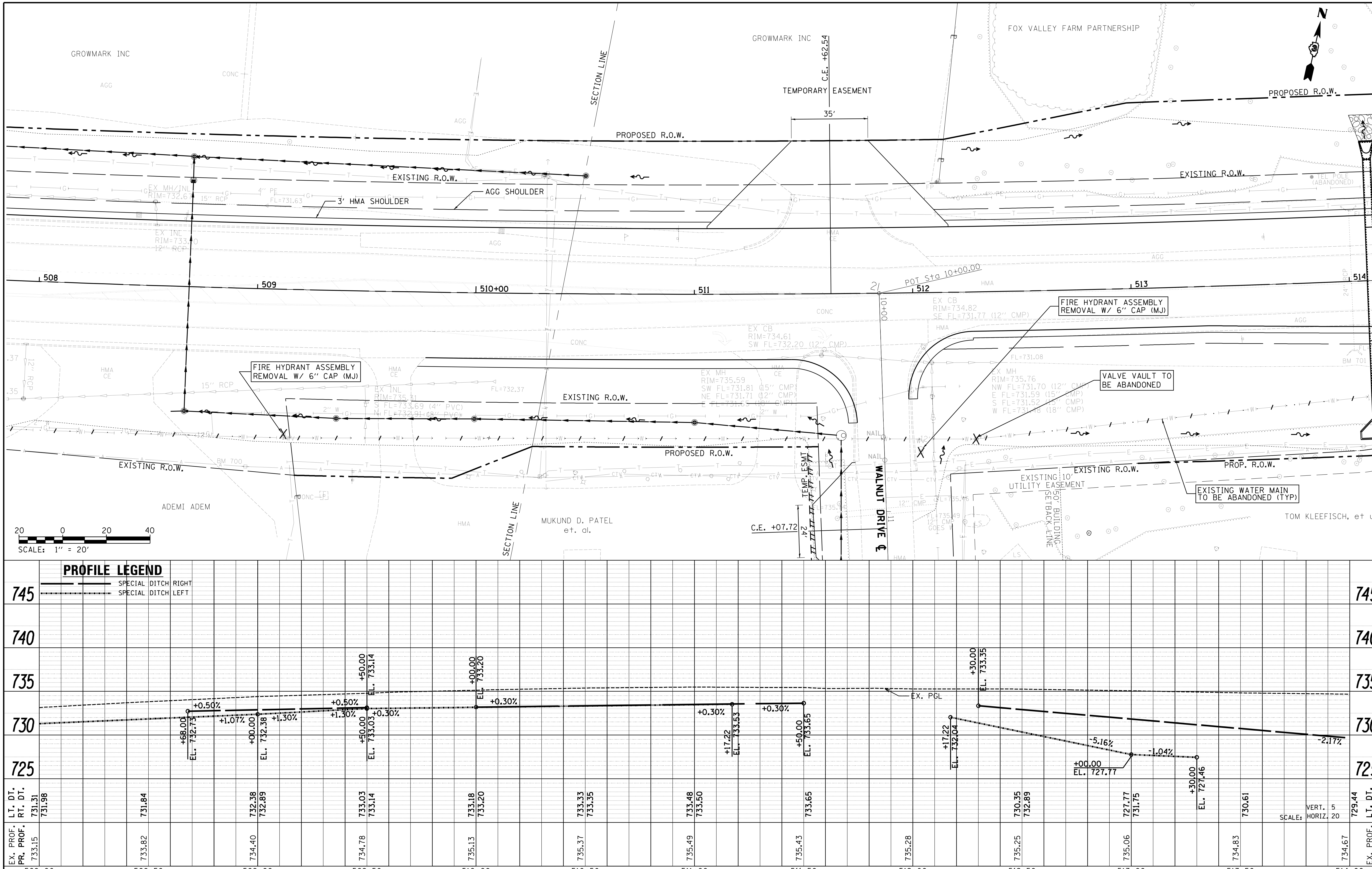
IL 71
PLAN & PROFILE

SCALE: 1" = 20' | SHEET OF SHEETS | STA. 502+00 TO STA. 508+00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	436

CONTRACT NO. 66D24

ILLINOIS FED. AID PROJECT



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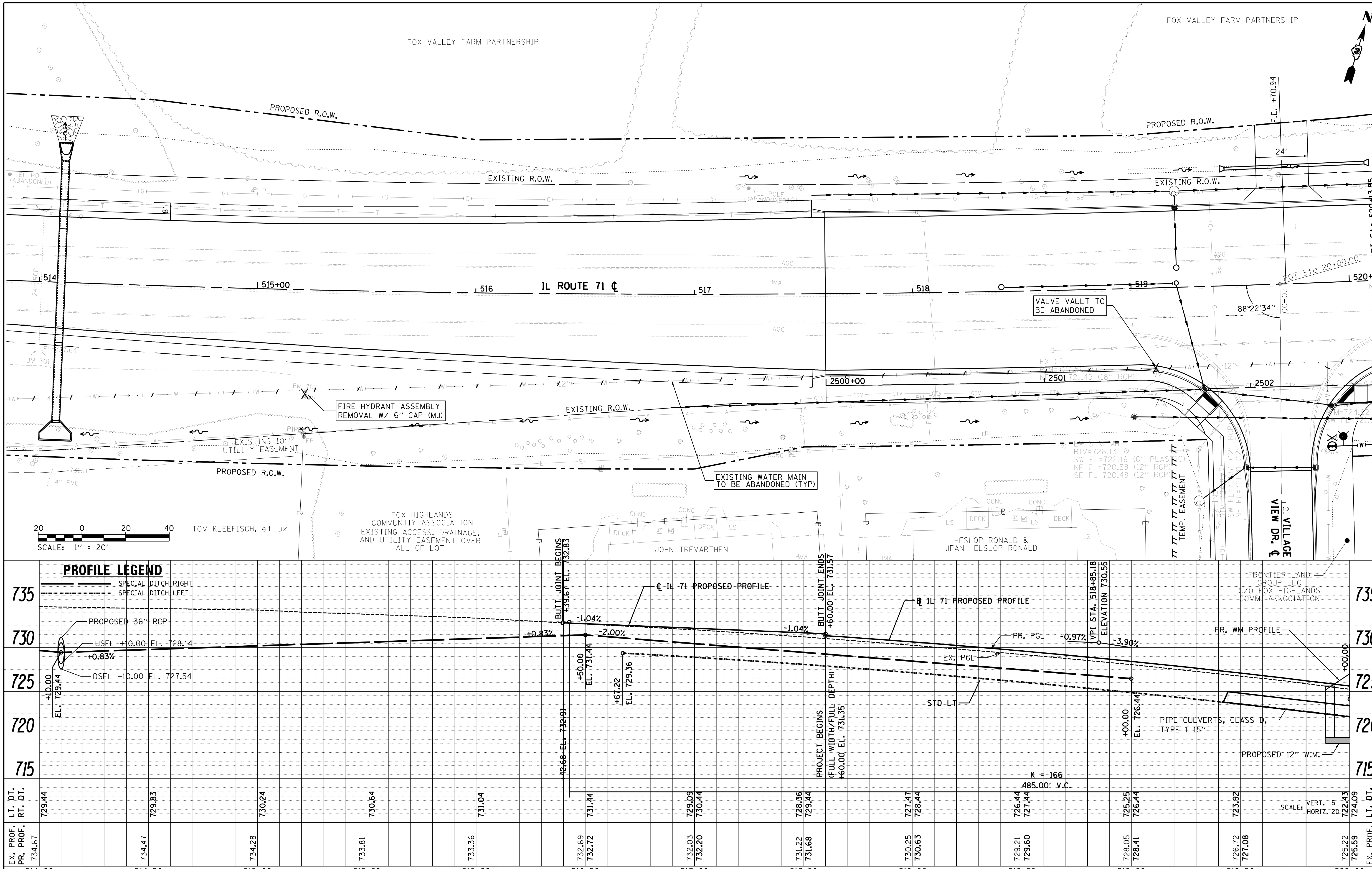
		DRAWN -	REVISED -			CONTRACT NO. 66D24
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -			
$MODELNAME$	PLOT DATE = 12/6/2017	DATE -	REVISED -		SCALE: 1" = 20' SHEET OF SHEETS STA. 508+00 TO STA. 514+00	ILLINOIS FED. AID PROJECT



FOX VALLEY FARM PARTNERSHIP
PROPOSED R.O.W.
EXISTING R.O.W.
IL ROUTE 71 ℄
515+00
516
517
518
519
520+00
VALVE VAULT TO BE ABANDONED
88°22'34"
PT Sta 520+13.55
POT Sta 20+00.00
F.E. +70.94
24'
2500+00
2501
2502
FIRE HYDRANT ASSEMBLY REMOVAL W/ 6" CAP (MJ)
EXISTING 10' UTILITY EASEMENT
EXISTING WATER MAIN TO BE ABANDONED (TYP)
TEMP. EASEMENT
VILLAGE VIEW DR. ℄
FOX HIGHLANDS COMMUNTIY ASSOCIATION EXISTING ACCESS, DRAINAGE, AND UTILITY EASEMENT OVER ALL OF LOT
TOM KLEEFISCH, et ux
JOHN TREVARTHEN
HESLOP RONALD & JEAN HELSLOP RONALD
FRONTIER LAND GROUP LLC C/O FOX HIGHLANDS COMM. ASSOCIATION
RIM=726.13
SW FL=722.16 (6" PLASTIC)
NE FL=720.58 (12" RCP)
SE FL=720.48 (12" RCP)
SCALE: 1" = 20'
PROFILE LEGEND
SPECIAL DITCH RIGHT
SPECIAL DITCH LEFT
PROPOSED 36" RCP
USFL +10.00 EL. 728.14
DSFL +10.00 EL. 727.54
+0.83%
+10.00 EL. 729.44
BUTT JOINT BEGINS +39.67 EL. 732.83
42.68 EL. 732.91
-1.04%
-2.00%
+50.00 EL. 731.44
+67.22 EL. 729.36
℄ IL 71 PROPOSED PROFILE
BUTT JOINT ENDS +60.00 EL. 731.57
PROJECT BEGINS (FULL WIDTH/FULL DEPTH) +60.00 EL. 731.35
℄ IL 71 PROPOSED PROFILE
PR. PGL
EX. PGL
STD LT
-0.97%
VPI STA. 518+85.18 ELEVATION 730.55
-3.90%
K = 166
485.00' V.C.
+00.00 EL. 726.44
PR. WM PROFILE
+00.00
PIPE CULVERTS, CLASS D, TYPE 1 15"
PROPOSED 12" W.M.
735
730
725
720
715
LT. DT.
RT. DT.
729.44
729.83
730.24
730.64
731.04
731.44
729.09
730.44
728.36
729.44
727.47
728.44
726.44
727.44
725.25
726.44
723.92
722.43
724.09
EX. PROF.
PR. PROF.
734.67
734.47
734.28
733.81
733.36
732.69
732.72
732.03
732.20
731.22
731.68
730.25
730.63
729.21
729.60
728.05
728.41
726.72
727.08
725.22
725.59
514+00
514+50
515+00
515+50
516+00
516+50
517+00
517+50
518+00
518+50
519+00
519+50
520+00
SCALE: VERT. 5 HORIZ. 20

FILE NAME = $FILES$	USER NAME = jschmidt	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN -	REVISED -	
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -	
$MODELNAME$	PLOT DATE = 12/6/2017	DATE -	REVISED -	

IL 71
PLAN & PROFILE

SCALE: 1" = 20' SHEET OF SHEETS STA. 514+00 TO STA. 520+00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	438

CONTRACT NO. 66D24

ILLINOIS FED. AID PROJECT

STA.	520+00	520+50	521+00	521+50	522+00	522+50	523+00	523+50	524+00	524+50	525+00	525+50	526+00
LT. DT.	722.43	720.14	716.26	711.49	708.64	707.54	707.17	706.97	705.73	703.96	702.18	700.40	698.62
RT. DT.	724.09	722.09		718.50	716.35	714.20	712.05	709.90	707.40	704.90	703.00	701.10	699.20
EX. PROF.	725.22	723.66	721.88	720.16	718.24	716.34	714.41	712.40	710.49	708.55	706.67	704.81	703.17
PR. PROF.	725.59	723.95	722.16	720.24	718.29	716.34	714.39	712.45	710.50	708.55	706.60	704.75	703.14

SCALE: VERT. 5 HORIZ. 20

FILE NAME =	USER NAME = jschmidt	DESIGNED -	REVISED -
$FILES$		DRAWN -	REVISED -
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
$MODELNAME$	PLOT DATE = 12/6/2017	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71
PLAN & PROFILE

SCALE: 1" = 20' SHEET OF SHEETS STA. 520+00 TO STA. 526+00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	439

CONTRACT NO. 66D24

ILLINOIS FED. AID PROJECT

FOX VALLEY FARM PARTNERSHIP

FOX VALLEY FARM PARTNERSHIP

COMMONWEALTH EDISON COMPANY

PERM. EASEMENT

PROPOSED R.O.W.

P.E. +01.15

12'

ROBERT F. DOHERTY et ux

BUILDING SETBACK LINE

EXISTING R.O.W.

SANITARY MANHOLE NO. 2
TYPE A, 4' DIA.
W/ TY / FR & C.L
STA 531+21.1, 63.1 LT
RIM= 702.0
INV (NE)= 688.63 10"
INV (W)= 688.73 10"

SANITARY MANHOLE NO. 1
TYPE A, 4' DIA.
W/ TY / FR & C.L
STA 531+46.6, 87.0' LT
RIM= 701.45
INV (N)= 687.57 10"
INV (SW)= 687.67 10"

CANDLEBERRY LANE ℄

SANITARY MANHOLE TO BE ABANDONED

34 LF 10" PVC SDR=26
ASTM D-3034 SANITARY
SEWER @ 2.82%
15' TBF= 39 CY

CONNECT TO NORTH SANITARY
INVERT W/ NON SHEAR COUPLING
INV = 691.36 10" PVC

IL ROUTE 71 ℄

526 527 528 529 530+00 531 532

UTILITY CROSSING
T/SAN=692.35
REMOVE TRENCH WIDTH OF
ABANDONED 12" WM (INCIDENTAL)
& CAP EACH END WITH A 12"
CAP (MJ) PRIOR TO SANITARY
INSTALL. T/WM=692.5

FIRE HYDRANT ASSEMBLY REMOVAL W/ 6" CAP (MJ)

EXISTING SANITARY SEWER TO BE ABANDONED (TYP)

SANITARY MANHOLE TO BE REMOVED

EXISTING WATER MAIN TO BE ABANDONED (TYP)

2509 2510+00 2511 2512 2513 2514

FOX HIGHLANDS COMMUNITY ASSOCIATION

EXISTING R.O.W.

FIRE HYDRANT ASSEMBLY REMOVAL W/ 6" CAP (MJ)

31 LF 10" PVC SDR-26
ASTM D-3034 SANITARY
SEWER @ 1.37%
18' TBF= 14 CY

SANITARY MANHOLE NO. 3
TYPE A, 4' DIA.
W/ TY / FR & C.L
STA 530+67.2, 66.6 RT
RIM= 695.9
INV (E)= 691.88 10"
INV (N)= 691.78 10"

UTILITY CROSSING
B/STM=693.4
T/SAN= 692.49
NO PROTECTION REQ'D

406 LF 10" PVC SDR-26
ASTM D-3034 SANITARY
SEWER @ 2.08%
49' TBF= 42 CY

JOHN R. GREENWALT, TRUSTEE

PROPOSED R.O.W.

JOHN R. GREENWALT, TRUSTEE

DRAINAGE CONTROL STRUCTURE
t=702.06
FL=695.54 (18" RCP)
FL=695.45 (18" RCP)

COMMONWEALTH EDISON COMPANY

PERM. EASEMENT

RAINTREE VILLAGE HOA

20 0 20 40
SCALE: 1" = 20'

PROFILE LEGEND

SPECIAL DITCH RIGHT
SPECIAL DITCH LEFT

K = 99
680.00' V.C.

PROPOSED 5 FT X 5 FT RCBC

+85.01 EL. 689.00

USFL +85.01 EL. 687.12

DSFL +85.01 EL. 686.25

PIPE CULVERTS, CLASS A, TYPE 1 24"

EX. PGL

PR. PGL

406 LF 10" PVC SDR-26 ASTM D-3034 SANITARY SEWER @ 2.08%

INV = 691.88

VPI STA. 528+47.51 ELEVATION 693.07

	526+00	526+50	527+00	527+50	528+00	528+50	529+00	529+50	530+00	530+50	531+00	531+50	532+00
LT. DT.	698.62	692.50	689.38	689.63	686.34	688.16	692.18	696.20	697.70	699.20	702.06	705.87
RT. DT.	699.20	698.70	700.68	699.82	699.22	698.78	698.90	699.30	699.99	699.90		705.87
EX. PROF.	703.17	701.72	700.65	699.66	699.09	698.76	698.90	699.34	700.04	700.98	702.33	703.62
PR. PROF.	703.14	701.78	700.68	699.82	699.22	698.78	698.93	699.34	699.99	700.90	702.06	703.47

SCALE: VERT. 5
HORIZ. 20

PLAN — SURVEYED / PLOTTED / ALIGNMENT CHECKED / RT. OF WAY CHECKED / CADD FILE NAME / NOTE BOOK / NO. / BY / DATE

PROFILE — SURVEYED / PLOTTED / GRADES CHECKED / BM. NOTED / STRUCTURE NOTATNS CHKD / NOTE BOOK / NO. / BY / DATE

FILE NAME = $FILES$	USER NAME = jschmidt	DESIGNED -	REVISED -
		DRAWN -	REVISED -
$MODELNAME$	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
	PLOT DATE = 12/6/2017	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71
PLAN & PROFILE

SCALE: 1" = 20' | SHEET OF SHEETS | STA. 526+00 | TO STA. 532+00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	440
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

GARY A. GOLDMAN et ux

KEITH A. FRISH et ux

EDWARD HEALTH VENTURES

BUILDING SETBACK LINE

VALVE VAULT TO BE ADJUSTED
EX RIM= 702.60
PR RIM= 702.00

PROPOSED R.O.W.

EXISTING R.O.W.

EXISTING WATER MAIN TO BE ABANDONED (TYP)

FIRE HYDRANT ASSEMBLY REMOVAL W/ 6" CAP (MJ)

VALVE VAULT TO BE ADJUSTED
EX RIM= 703.00
PR RIM= 704.65

EXISTING SANITARY SEWER TO BE ABANDONED (TYP)

SANITARY MANHOLE TO BE ABANDONED

413 LF 10" PVC SDR-21
ASTM D-2241 SANITARY
SEWER @ 0.28%
115' TBF= 218.2 CY

VALVE VAULT TO BE ADJUSTED
EX. RIM = 717.62
PR. RIM = 718.10

VALVE VAULT TO BE ABANDONED

WM TO BE ABANDONED
W/ 2 12" CAPS (MJ)

16'

EXISTING 10' PUBLIC UTILITY AND DRAINAGE EASEMENT

RAINTREE ROAD

RAINTREE VILLAGE HOA

SANITARY MANHOLE NO. 4
TYPE A, 4' DIA.
W/ TY / FR & C.L
STA 534+63.4, 68.0 RT
RIM= 713.80
INV (E)= 700.43 10"
INV (W)= 700.33 10"

FIRE HYDRANT NO. 2
AND 6" AUX VALVE
STA 536+14.2, 47.2 RT
BURY ELEV = 715.6

UTILITY CROSSING
B/WM=706.58
T/SAN= 701.97
NO PROTECTION REQ'D

REMOVE EX TEE AND INSTALL
2 - 12" 45° BENDS (MJ)
W/ 12" SOLID SLEEVE

JOHN R. GREENWALT, TRUSTEE

RAINTREE VILLAGE HOA
EXISTING PUBLIC UTILITY AND DRAINAGE EASEMENT OVER ALL OF LOT

SECTION LINE

SCALE: 1" = 20'

PROFILE LEGEND

SPECIAL DITCH RIGHT
SPECIAL DITCH LEFT

PR. PGL
EX. PGL

406 LF 10" PVC SDR-26 ASTM D-3034
SANITARY SEWER @ 2.08%

413 LF 10" PVC SDR-21 ASTM D-2241
SANITARY SEWER @ 0.28%

	532+00	532+50	533+00	533+50	534+00	534+50	535+00	535+50	536+00	536+50	537+00	537+50	538+00
LT. DT.	701.55	703.30	704.80	706.30	707.80	709.88	711.23	709.25	710.15	711.05	712.58	714.43	716.68
RT. DT.	701.55	702.87	704.60	706.10	707.60	709.10	708.98	712.10	713.60			715.81	716.06
EX. PROF.	703.62	705.03	706.53	707.97	709.41	710.90	712.30	713.80	715.27	716.73	718.18	719.64	721.17
PR. PROF.	703.47	704.94	706.42	707.89	709.37	710.84	712.32	713.80	715.27	716.75	718.22	719.70	721.17

SCALE: VERT. 5 HORIZ. 20

FILE NAME = $FILES$	USER NAME = jschmidt	DESIGNED -	REVISED -
$MODELNAME$		DRAWN -	REVISED -
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
	PLOT DATE = 12/6/2017	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71
PLAN & PROFILE

SCALE: 1" = 20' | SHEET OF SHEETS | STA. 532+00 | TO STA. 538+00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(I)R, I	KENDALL	558	441
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

EDWARD HEALTH VENTURES

PROPOSED R.O.W.

PROPOSED R.O.W.

EXISTING R.O.W.

SECTION LINE

PC Sta 539+44.55

EXISTING SANITARY SEWER TO BE ABANDONED (TYP)

FIRE HYDRANT ASSEMBLY REMOVAL W/ 6" CAP (MJ)

SANITARY MANHOLE TO BE ABANDONED

EX. SAN. MH
RIM=716.78
S FL=701.58 (10" PVC)
W FL=701.57 (10" PVC)

538 | 539 | 540+00 | 541 | 542 | 543 | 544

2521 | 2522 | 2523 | 2524 | 2525+00 | 2526

EXISTING R.O.W.

PROPOSED R.O.W.

EXISTING R.O.W.

EXISTING 40' LANDSCAPE EASEMENT

PROPOSED R.O.W.

FIRE HYDRANT NO. 3
AND 6" AUX VALVE
STA 538+47.2, 56.0 RT
BURY ELEV= 721.5

EXISTING PUBLIC UTILITY AND DRAINAGE EASEMENT

UTILITY CROSSING
B/WM=712.50
T/SAN= 702.40
NO PROTECTION REQ'D

SCOTT MUNSTERMAN
et ux.
EXISTING PUBLIC UTILITY
AND DRAINAGE EASEMENT

SANITARY MANHOLE NO. 5
TYPE A, 4' DIA.
W/ TY / FR & C.L
STA 538+80.5, 63.0 RT
RIM= 719.90
INV (S)= 701.67 10"
INV (W)= 701.55 10"

KEVIN J. STEDER
et al.
EXISTING PUBLIC UTILITY
AND DRAINAGE EASEMENT

MELISSA K. CARLSON
EXISTING PUBLIC UTILITY
AND DRAINAGE EASEMENT

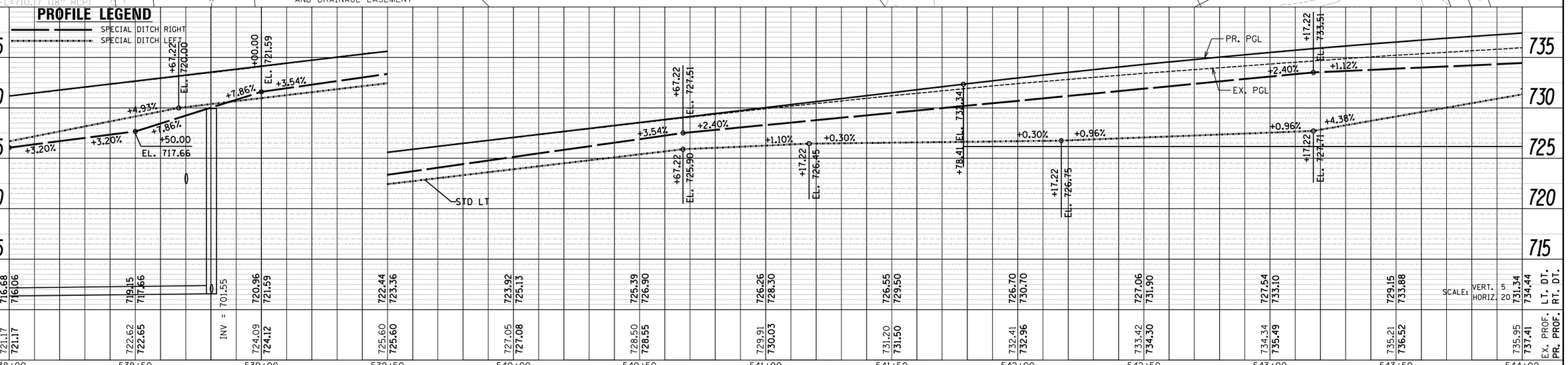
MICHAEL D. VANDERTIE
et ux
EXISTING PUBLIC UTILITY
AND DRAINAGE EASEMENT

SHAWN DUNNING
et al

SCALE: 1" = 20'

PROFILE LEGEND

SPECIAL DITCH RIGHT
SPECIAL DITCH LEFT



	538+00	538+50	539+00	539+50	540+00	540+50	541+00	541+50	542+00	542+50	543+00	543+50	544+00
LT. DT.	716.68	719.15	720.96	722.44	723.92	725.39	726.26	726.55	726.70	727.06	727.54	729.15	731.34
RT. DT.	716.06	717.66	721.59	723.36	725.13	726.90	728.30	729.50	730.70	731.90	733.10	733.88	734.44
EX. PROF.	721.17	722.62	724.09	725.60	727.05	728.50	729.91	731.20	732.41	733.42	734.34	735.21	735.95
PR. PROF.	721.17	722.65	724.12	725.60	727.08	728.55	730.03	731.50	732.96	734.30	735.49	736.52	737.41
			INV = 701.55										
	LT. DT. RT. DT.		EX. PROF. PR. PROF.										

SCALE: VERT. 5
HORIZ. 20

PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, RT. OF WAY CHECKED, CADD FILE NAME, NOTE BOOK, NO., BY, DATE

PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, BM. NOTED, STRUCTURE NOTATNS CHK'D, NOTE BOOK, NO., BY, DATE

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		DRAWN -	REVISED -
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
$MODELNAME$	PLOT DATE = 12/6/2017	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

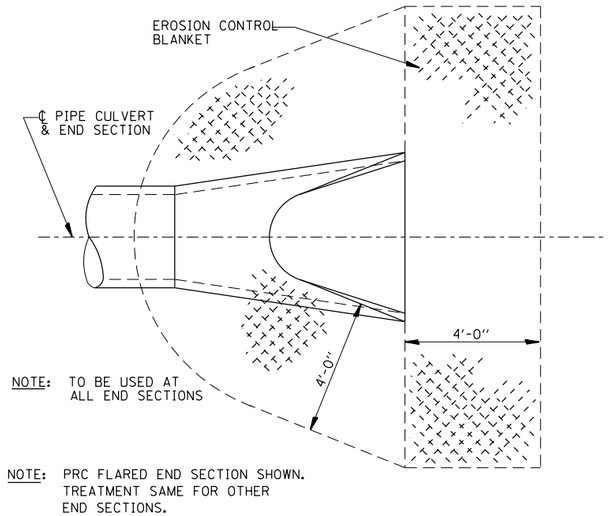
IL 71
PLAN & PROFILE

SCALE: 1" = 20' | SHEET OF SHEETS | STA. 538+00 | TO STA. 544+00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	442
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		

INDEX OF DETAILS

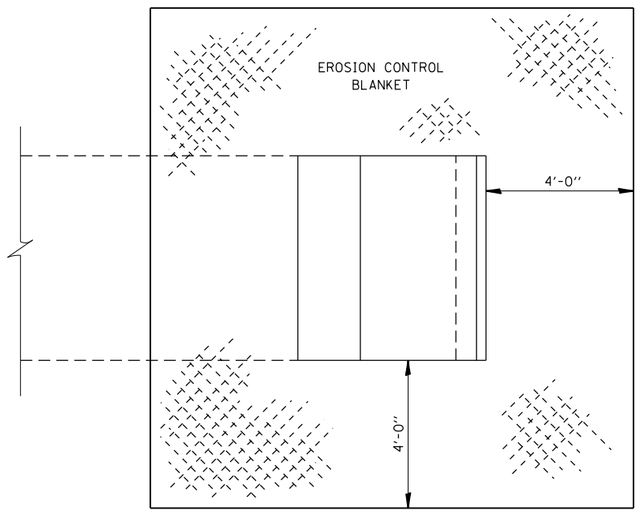
SHEET NO.	DETAILS
443	INDEX OF DETAIL SHEETS
444	EROSION CONTROL BLANKET DETAILS
	TYPICAL LANDSCAPING DETAILS
445	BICYLE PATH OR SHARED-USE TRAIL CROSS SECTION
	AGGREGATE DITCH FOR FLEXIBLE DITCH LINING
	EROSION CONTROL DETAILS FOR SILT FENCE
446	RURAL FIELD ENTRANCE DETAIL
	ENTRANCE CULVERT DETAIL
	MAILBOX TURNOUT WITH URBAN TYPICAL
447	BUTT JOINT DETAILS
448	PCC URBAN ENTRANCES
449	PCC ISLANDS AND MEDIANS ACCESSIBLE TO THE DISABLED
450	CURB & GUTTER OUTLET, SPECIAL
451	SHORT-TERM PAVEMENT MARKING FOR MEDIANS AND ARROWS
	ISLAND SIGN POST SPACING DETAIL
	TRAFFIC CONTROL DETAILS FOR TEMPORARY CONCRETE BARRIER
452	LARGE MERGE ARROWS
	BUSINESS ABUTTING WORK ZONE ENTRANCE SIGN
453 - 454	URBAN PAVEMENT MARKINGS
455	LONGITUDINAL PIPE UNDERDRAIN OUTLET DETAILS
	PIPE DRAINS & CONCRETE HEADWALLS
456	CULVERT EXTENSION DETAILS
457	PRECAST CONCRETE BOX SECTION
	PAY LENGTH FOR PRECAST CONCRETE BOX CULVERTS
458	PRECAST CONCRETE BOX CULVERT END SECTION
459 - 460	DETECTOR LOOP DETAILS
461	FIELD TILE REPLACEMENT
	FILED TILE JUNCTION VAULT
	CLASS SI CONCRETE HEADWALLS
462	TEMPORARY INFORMATION SIGNING
463	COMBINATION LIGHTING CONTROLLER WIRING DIAGRAM



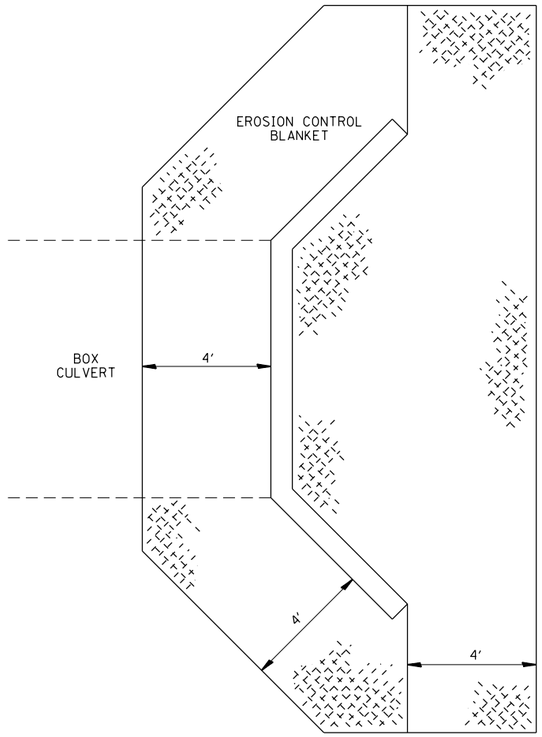
NOTE: TO BE USED AT ALL END SECTIONS

NOTE: PRC FLARED END SECTION SHOWN. TREATMENT SAME FOR OTHER END SECTIONS.

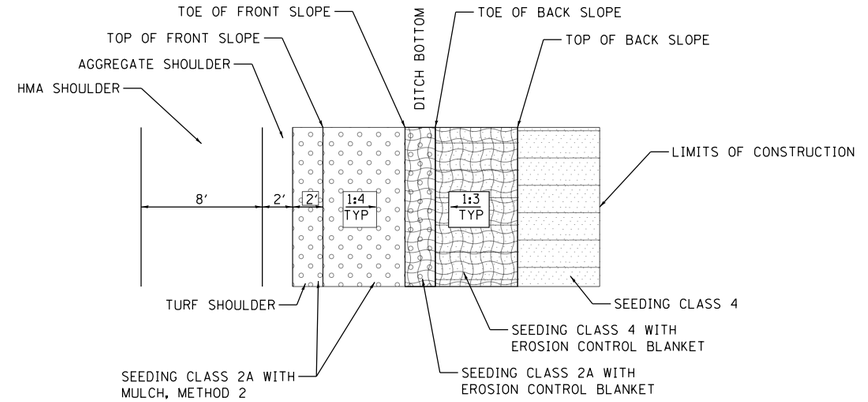
DETAIL OF EROSION CONTROL BLANKET LINING AROUND END SECTION



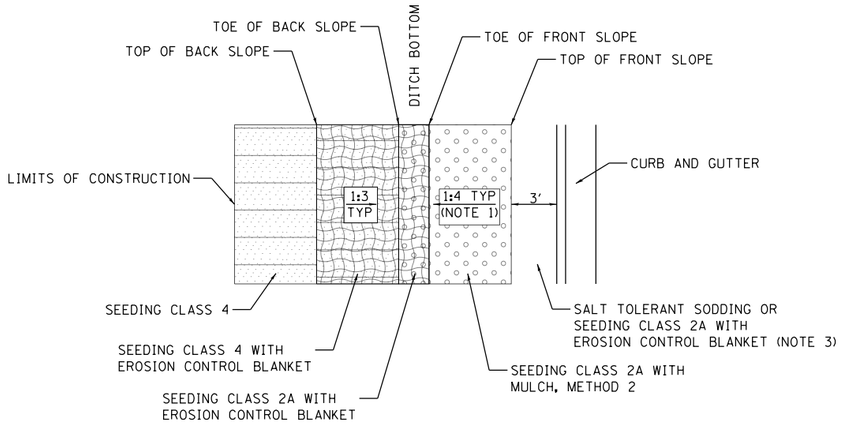
EROSION CONTROL BLANKET AT PRECAST BOX CULVERT END SECTIONS



EROSION CONTROL BLANKET AT BOX CULVERT END SECTIONS



IN SHOULDER AREAS



IN CURB AND GUTTER AREAS

NOTES:
1. IN LOCATIONS WITH FORE SLOPES 1:3 OR STEEPER USE EROSION CONTROL BLANKET INSTEAD OF MULCH.

2. SEE LANDSCAPING & EROSION CONTROL PLANS FOR EXACT LOCAITONS OF LANDSCAPING ITEMS.

3. SEE LANDSCAPING AND EROSION CONTROL SHEETS FOR LOCATIONS.

TYPICAL LANDSCAPING DETAILS

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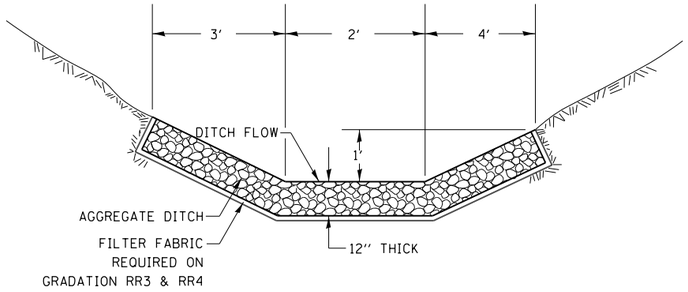
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS
IL 71

SCALE: N.T.S. | SHEET OF SHEETS | STA. | TO STA.

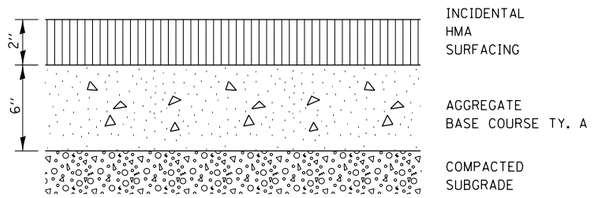
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	444
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		



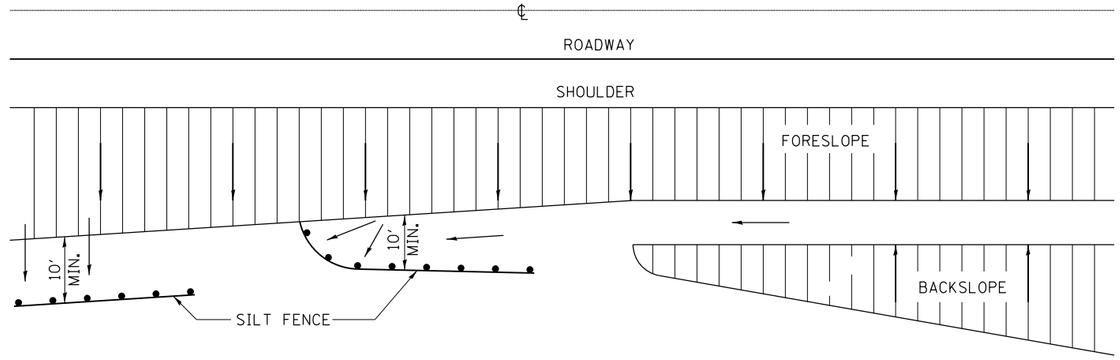
CLASS A3 WILL BE REQUIRED ON THIS PROJECT AT THE LOCATION SHOWN ON THE PLANS.

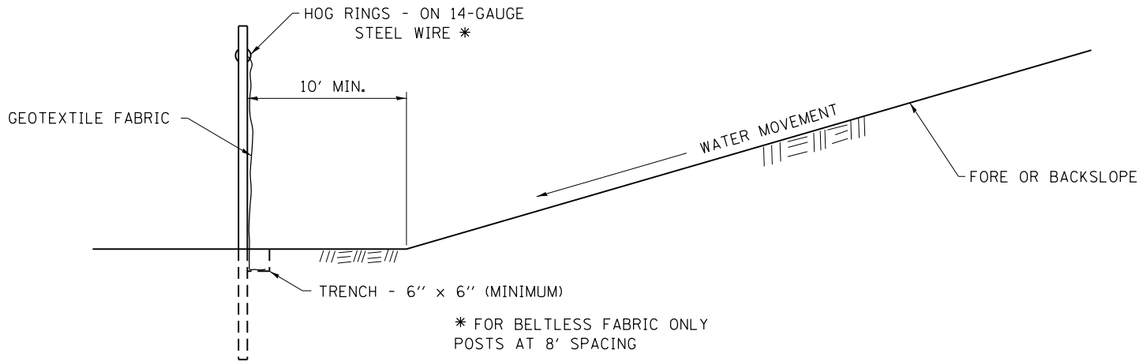
THIS WORK SHALL BE DONE ACCORDING TO SECTION 283 OF THE STANDARD SPECIFICATION. AGGREAGTE DITCH WILL BE MEASURED FOR PAYMENT IN TONS ACCORDING TO ARTICLE 311.08(b). AGGREGATE DITCH WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON FOR AGGREGATE DITCH.

AGGREGATE DITCH FOR FLEXIBLE DITCH LINING



BICYCLE PATH OR SHARED–USE TRAIL CROSS SECTION





DETAILS OF SILT FENCE

EROSION CONTROL DETAILS FOR SILT FENCE

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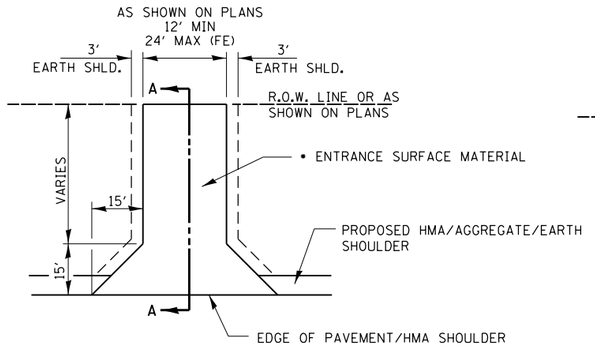
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ′ / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

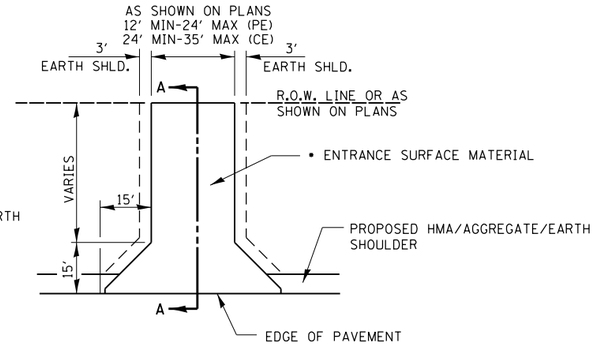
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

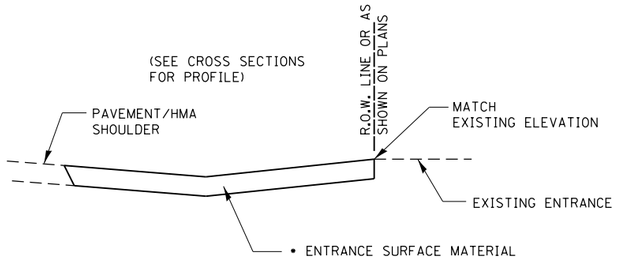
DETAILS
IL 71

SCALE: N.T.S. | SHEET OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	445
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		







SECTION A–A

• ENTRANCE SURFACE MATERIAL

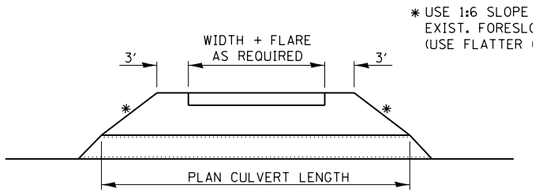
FIELD ENTRANCE SURFACE MATERIAL:
AGGREGATE SURFACE COURSE,
TYPE B 8''

PRIVATE ENTRANCE SURFACE MATERIAL:
INCIDENTAL HOT-MIX ASPHALT
SURFACING 2''; AGGREGATE
BASE COURSE, TYPE A 6''

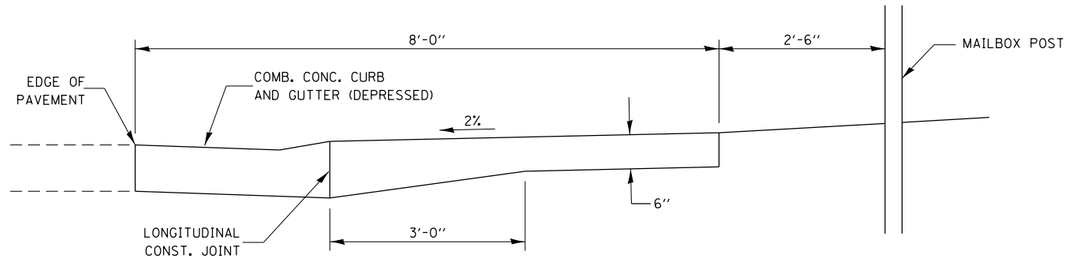
COMMERCIAL ENTRANCE SURFACE MATERIAL:
PORTLAND CEMENT CONCRETE DRIVEWAY
PAVEMENT, 8''

RURAL ENTRANCE DETAIL

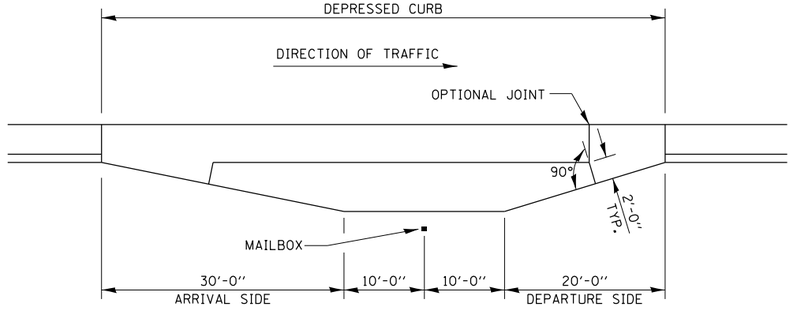
SEE DETAIL BELOW FOR CROSS SECTION VIEW

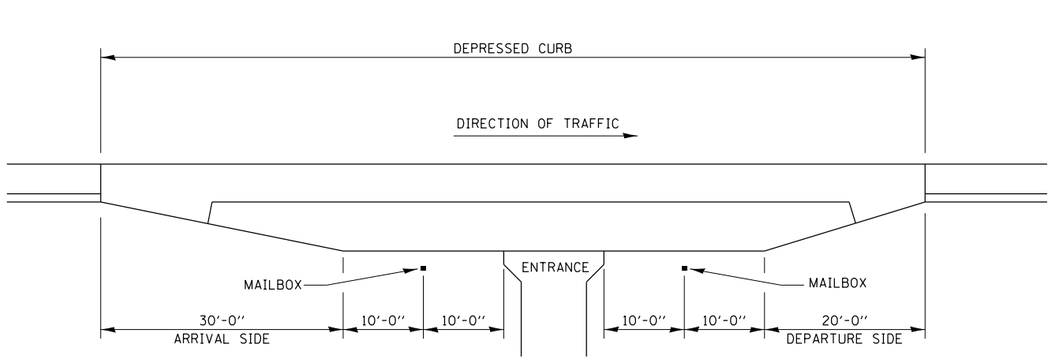


ENTRANCE CULVERT DETAIL



TYPICAL CROSS SECTION





DETAIL OF MAILBOX TURNOUT IN CURB AND GUTTER SECTION
TYPICAL INSTALLATION

GENERAL NOTES

1. THE LONGITUDINAL CONSTRUCTION JOINT SHALL CONFORM TO SECTION 420.05 OF THE STANDARD SPECIFICATIONS.

2. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD FOR P.C. CONCRETE DRIVEWAY PAVEMENT OF THE THICKNESS SPECIFIED ON THE PLANS WHICH PRICE SHALL INCLUDE THE LONGITUDINAL CONSTRUCTION JOINT, AND THE ADDITIONAL THICKNESS REQUIRED TO TRANSITION TO THE DEPRESSED COMBINATION CONCRETE CURB AND GUTTER.

3. MAINTAIN A MINIMUM 10' TANGENT SECTION FROM EACH SIDE OF MAILBOX.

MAILBOX TURNOUT WITH URBAN TYPICAL

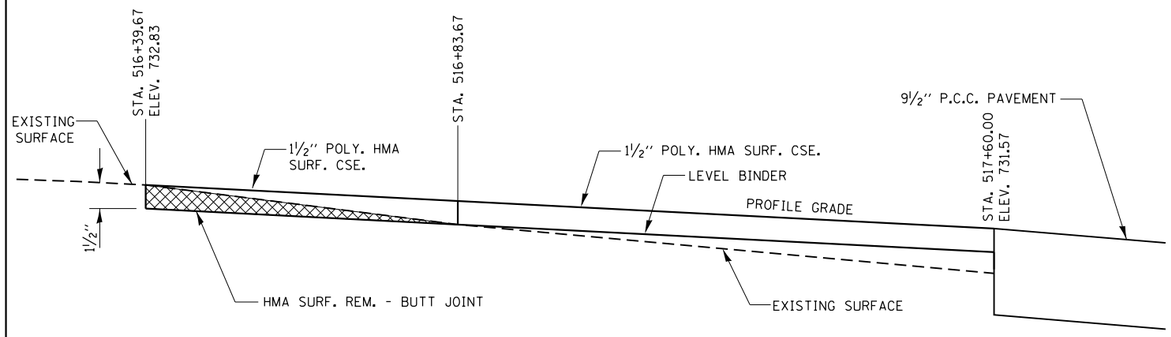
FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

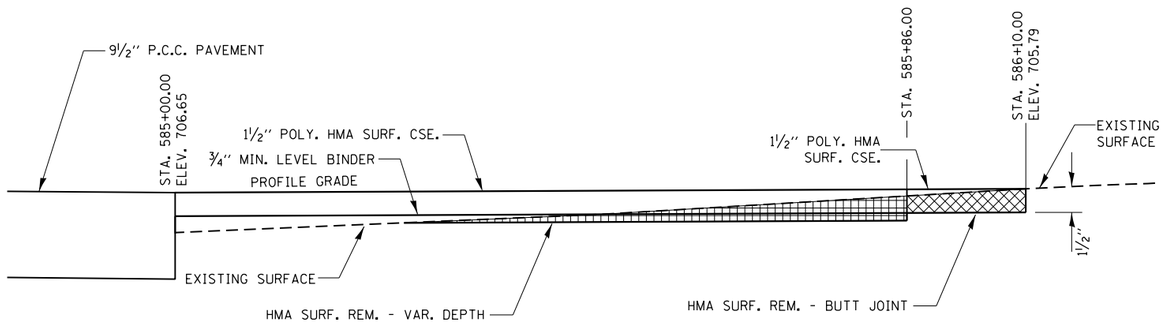
DETAILS
IL 71

SCALE: N.T.S. | SHEET OF SHEETS | STA. | TO STA.

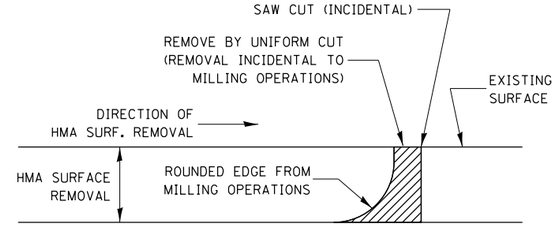
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	446
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



BUTT JOINT – SOUTH END



BUTT JOINT – NORTH END



NOTE:
WHEN MILLING OPERATIONS PRODUCE A ROUNDED EDGE, THEN A SAW CUT SHALL BE USED TO MANUFACTURE A PERPENDICULAR EDGE AS SHOWN IN THE DETAIL. THE ENGINEER SHALL BE THE SOLE JUDGE CONCERNING THE USE OF THIS DETAIL

HMA DETAIL AT BUTT JOINTS

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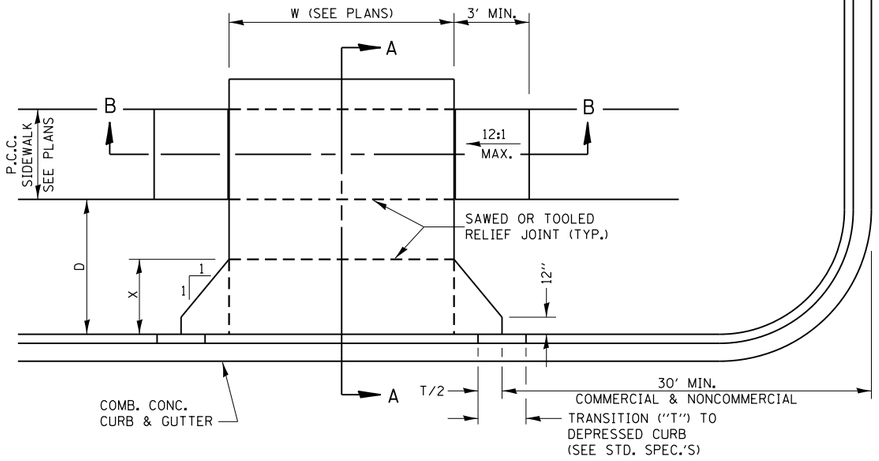
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

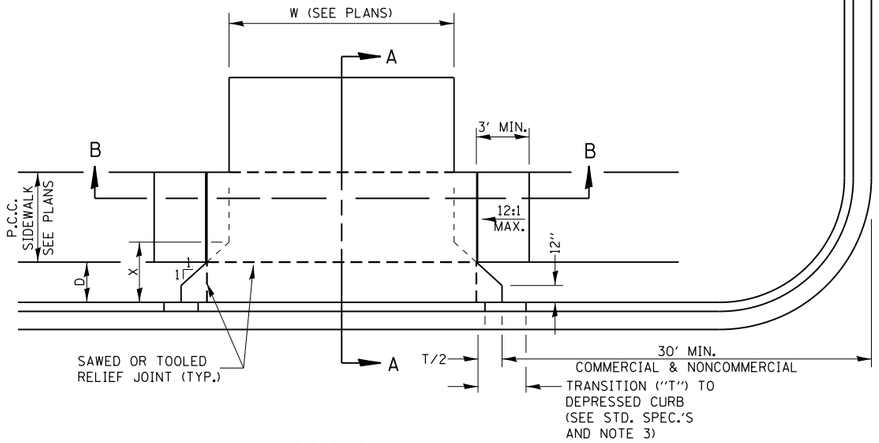
DETAILS
IL 71

SCALE: N.T.S. | SHEET OF SHEETS | STA. | TO STA.

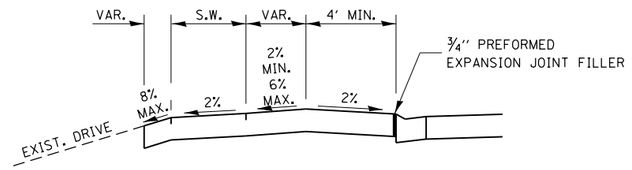
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	447
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



CASE I (D ≥ X)

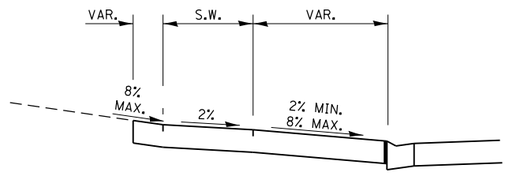


CASE I (D < X)

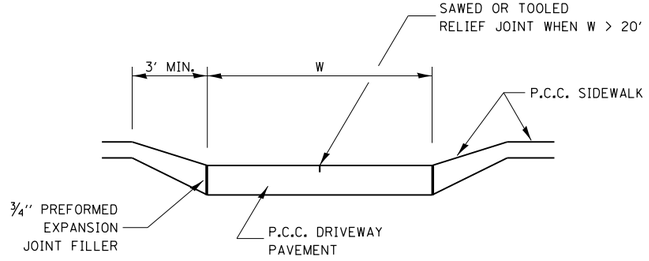


DEPRESSED ENTRANCE *
SECTION A–A

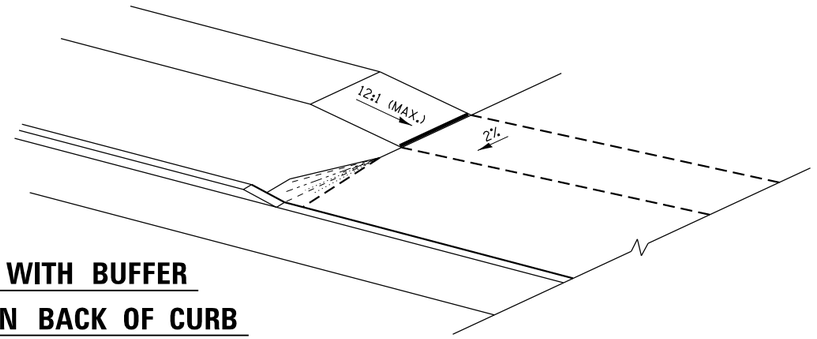
*(SEE X-SECTIONS FOR ENTRANCE PROFILE.)



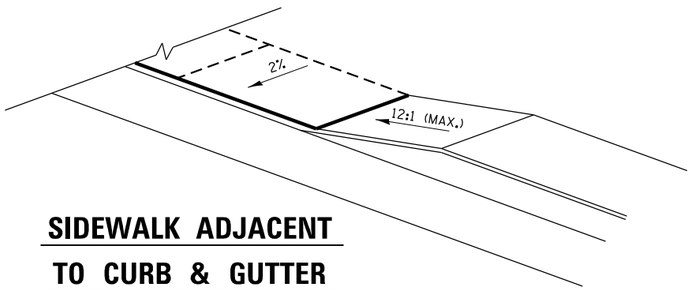
ELEVATED ENTRANCE *
SECTION A–A



SECTION B–B



SIDEWALK WITH BUFFER AREA BETWEEN BACK OF CURB



SIDEWALK ADJACENT TO CURB & GUTTER

GENERAL NOTES:

1. X = 7' (NON-COMMERCIAL) X = 15' (COMMERCIAL)

2. COST OF EXPANSION JOINTS AND RELIEF JOINTS SHALL BE INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT.

3. AS THE DIMENSION "D" APPROACHES ZERO, THE TRANSITION TO DEPRESSED CURB SHALL BE NO STEEPER THAN 12:1

PCC URBAN ENTRANCES

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		DRAWN -	REVISED -
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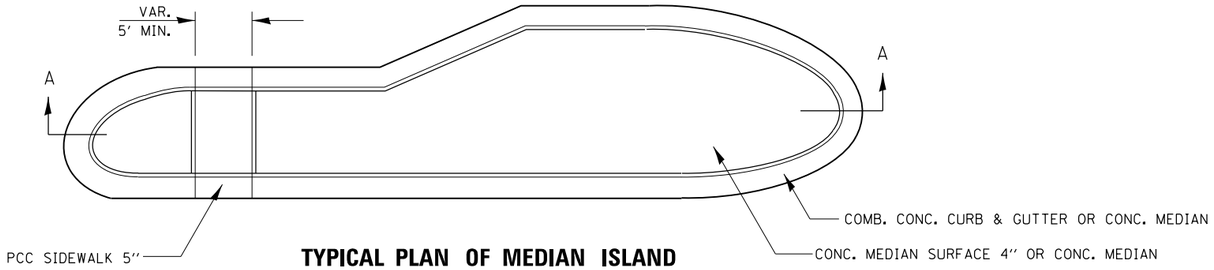
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

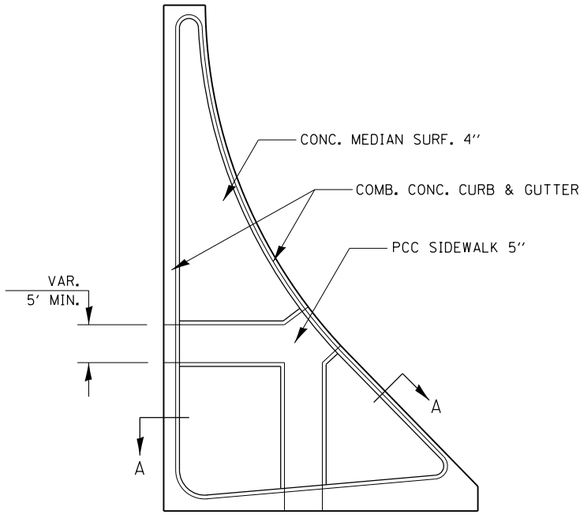
DETAILS
IL 71

SCALE: N.T.S. | SHEET OF SHEETS | STA. | TO STA.

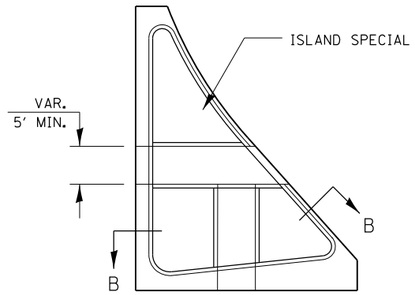
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	448
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



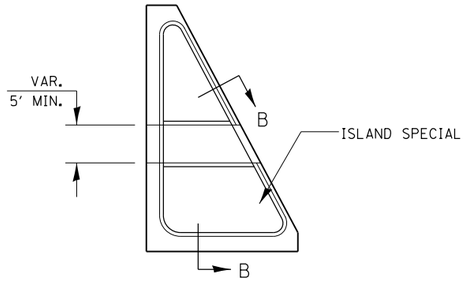
TYPICAL PLAN OF MEDIAN ISLAND



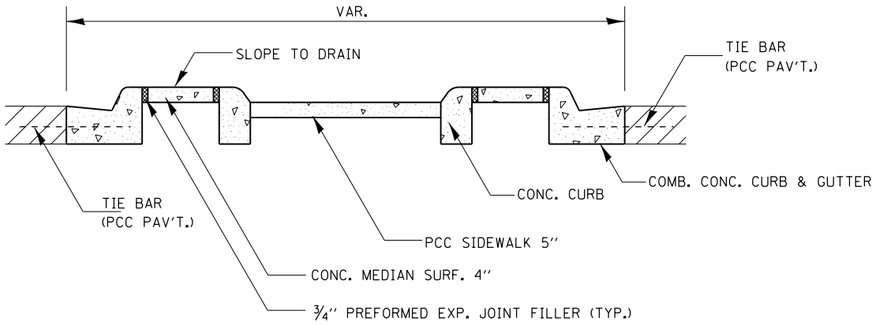
LARGE ISLAND
(FREE FLOW DESIGN)



INTERMEDIATE ISLAND
(FOR RIGHT TURN LANE DESIGN)

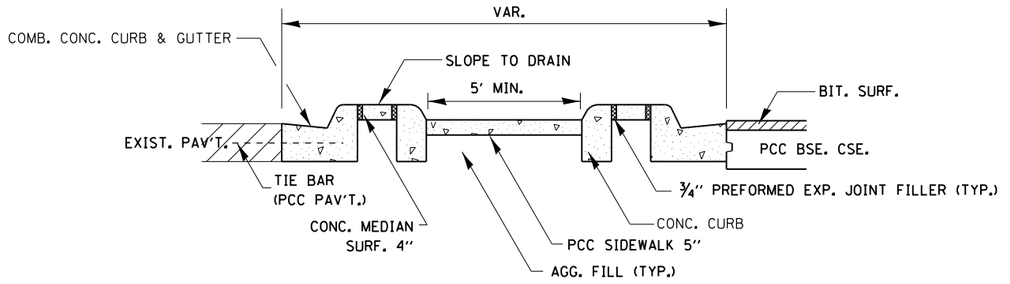


SMALL ISLAND
(FOR TYPICAL DESIGN)



SECTION A–A

OPTION 1



OPTION 2

SECTION B–B

PCC ISLANDS AND MEDIANS ACCESSIBLE TO THE DISABLED

GENERAL NOTES

SEE STANDARDS 606001, 606301, 424031, AND PLAN SHEETS FOR STATION, OFFSETS, RADII, DIMENSIONS, AND DETAILS NOT SHOWN.

THE SIDEWALK SHOULD DRAIN TO THE LOW SIDE OF THE ISLAND. IF NECESSARY THE SIDEWALK SHALL BE SLOPED TO DRAIN AT A MAXIMUM 2% GRADE.

SEE THE PLAN SHEETS FOR THE TYPE OF CURB & GUTTER TO BE USED ON ISLANDS.

THE SIDEWALK SHOULD NOT BE CLOSER THAN 3' FROM THE CORNER OF THE ISLAND.

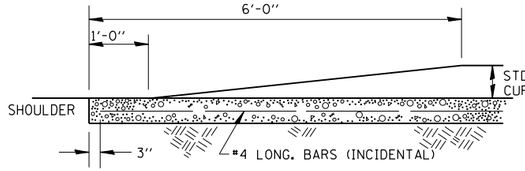
KEYED LONGITUDINAL CONSTRUCTION JOINTS SHALL BE CONSTRUCTED WITHOUT TIE BARS.

MEDIANS AND LARGE ISLANDS SHALL CONSIST OF PCC SIDEWALK 5'', CONCRETE MEDIANS SURFACE 4'', CONCRETE CURB, AND COMBINATION CONCRETE CURB & GUTTER, TYPE M OR B OR THE SIZE SPECIFIED. MEDIAN ISLAND CAN ALSO BE SOLID CONCRETE MEDIANS.

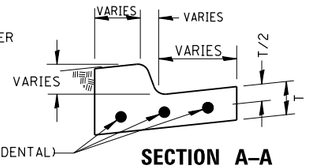
LOCATIONS, LAYOUTS, AND WIDTHS OF THE FLUSH SIDEWALK AREA, SHALL BE DETERMINED BY THE DESIGNER AND SHOWN ON THE PLANS.

THE INTERMEDIATE AND SMALL ISLANDS WILL BE MEASURED FOR PAYMENT FROM E.O.P. TO E.O.P. USING EITHER OPTION 1 OR OPTION 2, AS DIRECTED BY THE ENGINEER, AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQ. FT. FOR CONCRETE MEDIAN (SPECIAL), WHICH SHALL INCLUDE THE CURB, COMBINATION CURB & GUTTER, SIDEWALK, AGGREGATE FILL, CONCRETE MEDIAN SURFACE, AND SOLID CONCRETE MEDIAN.

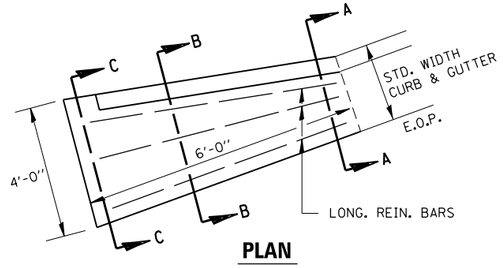
FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAILS IL 71			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -					311	(1)R, I	KENDALL	558	449
Default	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -							CONTRACT NO. 66D24		
	PLOT DATE = 1/18/2018	DATE -	REVISED -		SCALE: N.T.S.	SHEET OF SHEETS	STA. TO STA.			ILLINOIS FED. AID PROJECT		



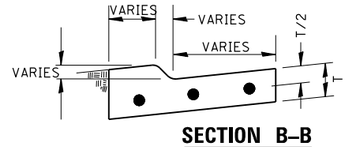
CURB DETAIL



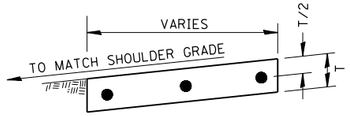
SECTION A–A



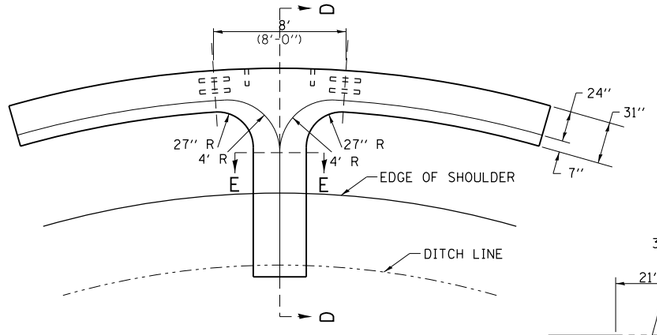
PLAN

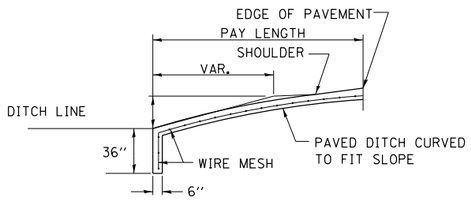


SECTION B–B

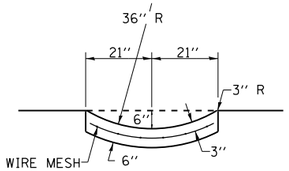


SECTION C–C





SECTION D–D



QUANTITY OF CONCRETE

SECTION A-A = 0.07 CU. YD./FT.
8' SECTION OF CURB & GUTTER UP TO
SECTION A-A = 0.75 CU.YD.

SECTION E–E

NOTE:

CLASS SI CONCRETE SHALL BE USED THROUGHOUT. CURB AND GUTTER OUTLET SHALL BE TIED TO PAVEMENT SLAB WITH 2 TIE BARS, 30" LONG - 30" CENTERS. OUTLET SHALL BE TIED TO CURB AND GUTTER AT CONTRACTION JOINTS AS SHOWN. GUTTER OUTLET AND PAVED DITCH SHALL BE REINFORCED WITH WIRE MESH HAVING A WEIGHT OF AT LEAST 58 LBS/SQ. FT. COST TO BE INCLUDED IN THE UNIT PRICE PER CU. YD. FOR CLASS SI CONCRETE (OUTLET).

CURB & GUTTER OUTLET, SPECIAL

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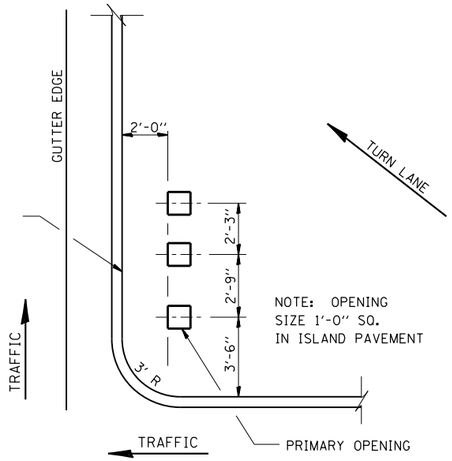
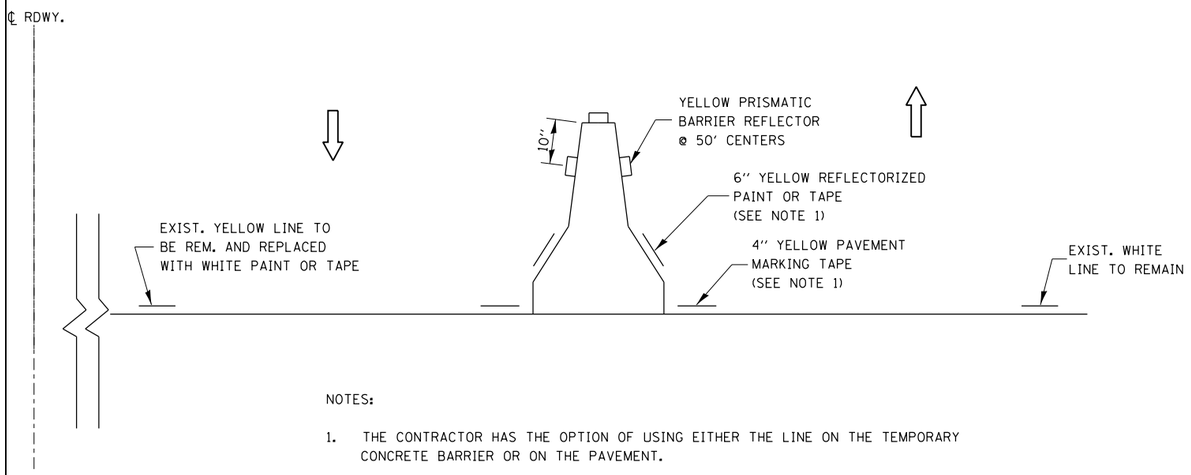
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -		SCALE: N.T.S.	SHEET OF SHEETS	STA.	TO STA.		ILLINOIS	FED. AID PROJECT		



ISLAND SIGN POST SPACING DETAIL

NOTE: THE ENGINEER SHALL DETERMINE THE NUMBER OF OPENINGS REQUIRED.

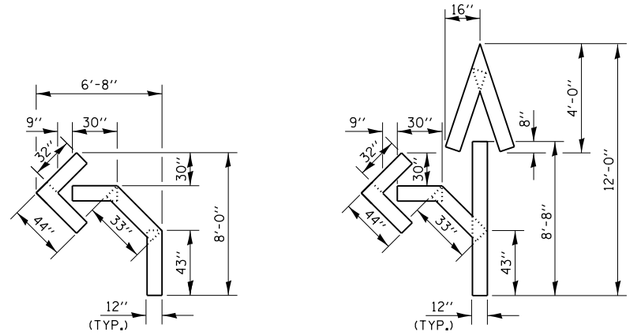


NOTES:

1. THE CONTRACTOR HAS THE OPTION OF USING EITHER THE LINE ON THE TEMPORARY CONCRETE BARRIER OR ON THE PAVEMENT.

2. THE COST OF THE REFLECTORS AND THE BARRIER/PAVEMENT MARKING LINE IS INCLUDED IN THE COST OF THE TEMPORARY CONCRETE BARRIER.

TRAFFIC CONTROL DETAIL
FOR TEMPORARY CONCRETE BARRIER

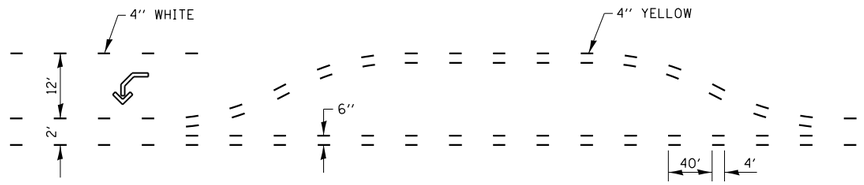


QUANTITY

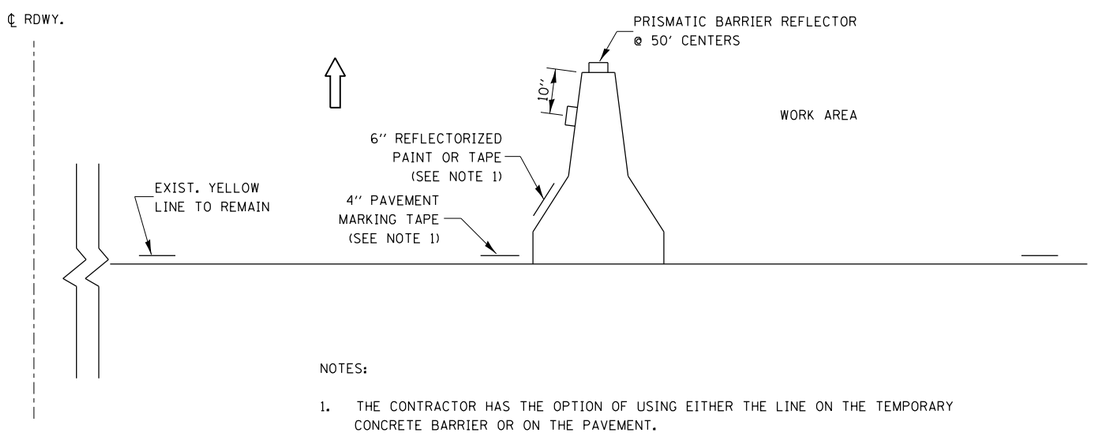
12" LINE = 16 LIN. FT.
OR 4" LINE = 48 LIN. FT.

QUANTITY

12" LINE = 29 LIN. FT.
OR 4" LINE = 87 LIN. FT.



SHORT-TERM PAVEMENT MARKING
FOR MEDIANS AND ARROWS



NOTES:

1. THE CONTRACTOR HAS THE OPTION OF USING EITHER THE LINE ON THE TEMPORARY CONCRETE BARRIER OR ON THE PAVEMENT.

2. THE COLOR OF THE REFLECTORS AND PAVEMENT/BARRIER MARKING LINE WILL VARY WITH STAGING AND SHALL MATCH THE EXISTING LINE IN THE WORK AREA.

3. THE COST OF THE REFLECTORS AND THE PAVEMENT/BARRIER MARKING LINE IS INCLUDED IN THE COST OF THE TEMPORARY CONCRETE BARRIER.

TRAFFIC CONTROL DETAIL
FOR TEMPORARY CONCRETE BARRIER

FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS
IL 71

SCALE: N.T.S. | SHEET OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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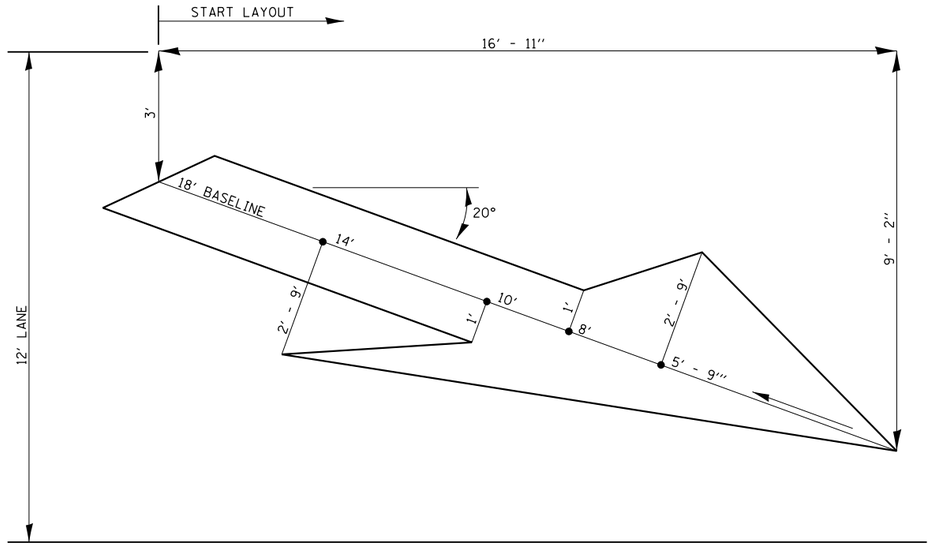
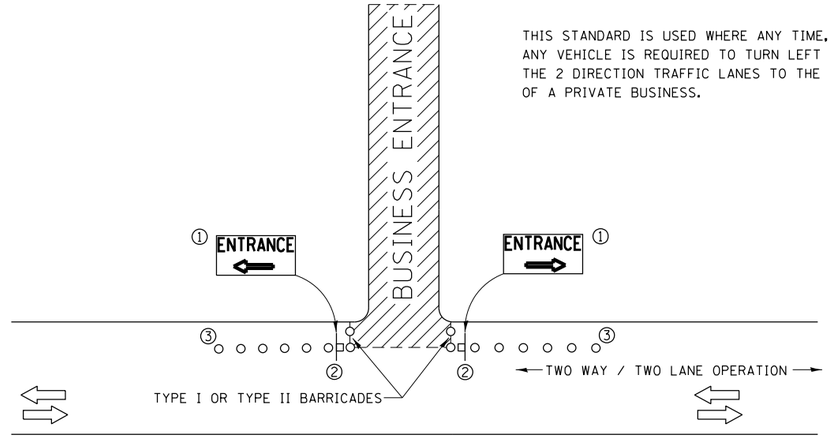
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



LARGE MERGE ARROWS
42 Sq. Ft.



THIS STANDARD IS USED WHERE ANY TIME, DAY OR NIGHT, ANY VEHICLE IS REQUIRED TO TURN LEFT OR RIGHT FROM THE 2 DIRECTION TRAFFIC LANES TO THE ENTRANCE ZONE OF A PRIVATE BUSINESS.

SYMBOLS

BUSINESS ENTRANCE ZONE

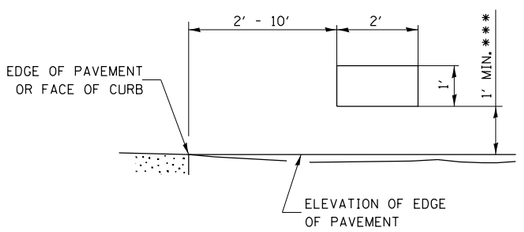
BARRICADE OR DRUM WITH FLASHING LIGHT

SIGN ON TEMPORARY SUPPORT

① REFER TO BUSINESS ENTRANCE SIGN TABLE FOR DIMENSIONS.

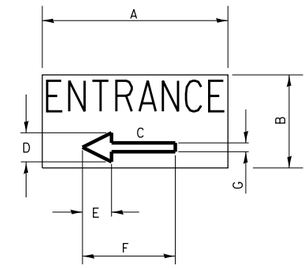
② SEE ''SIGNS ON TEMPORARY SUPPORTS'' DETAIL.

③ DRUMS



SIGNS ON TEMPORARY SUPPORTS

*** WHEN WORK OPERATIONS EXCEED FOUR DAYS, THIS DIMENSION SHALL BE 5′ MIN. IF LOCATED BEHIND OTHE DEVICES, THE HEIGHT SHALL BE SUFFICIENT TO BE SEEN BY MOTORISTS.



BUSINESS ENTRANCE SIGN

4'' BLUE LETTERING NON-REFLECTIVE WITH WHITE REFLECTIVE BACKGROUND

SIGN SIZE	DIMENSIONS						
	A	B	C	D	E	F	G
24 X 12	24	12	8.25	4.75	3.75	12	2.25

SIGNS FOR BUSINESSES ABUTTING THE WORK ZONE, DELINEATING THE WAY THROUGH THE BARRICADES TO RESPECTIVE ENTRANCES.

BUSINESS ABUTTING WORK ZONE ENTRANCE SIGN

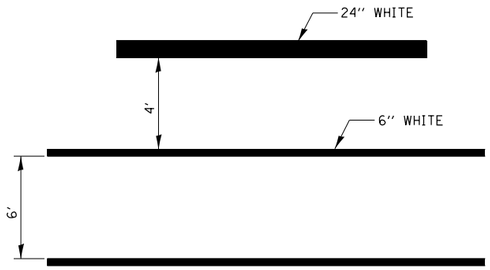
FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000 ′ / in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

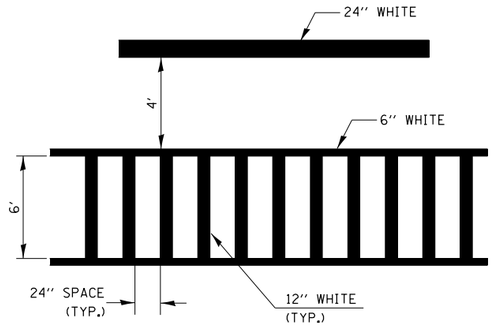
DETAILS
IL 71

SCALE: N.T.S. | SHEET OF SHEETS | STA. | TO STA.

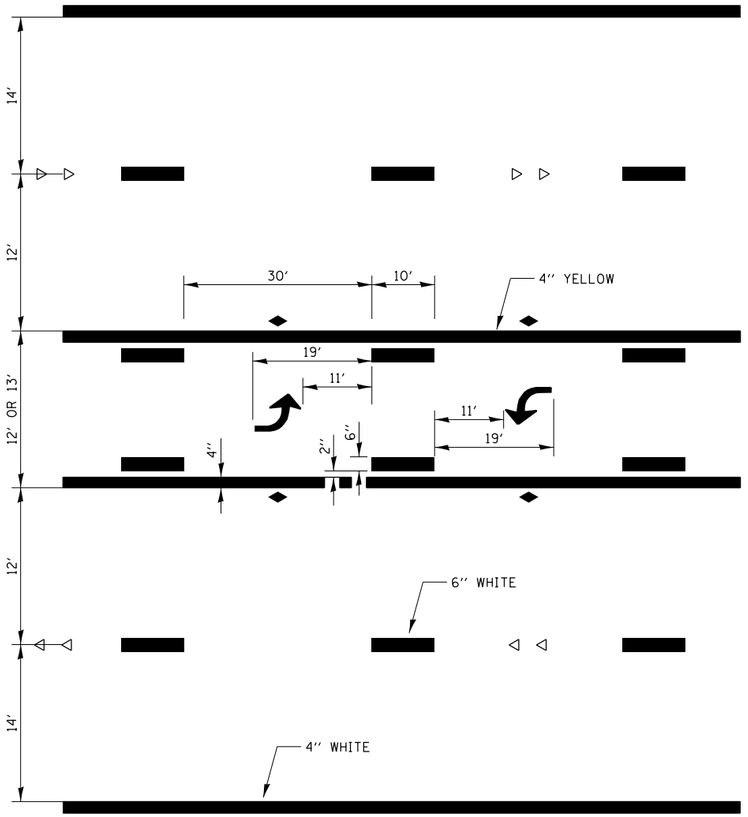
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	452
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		



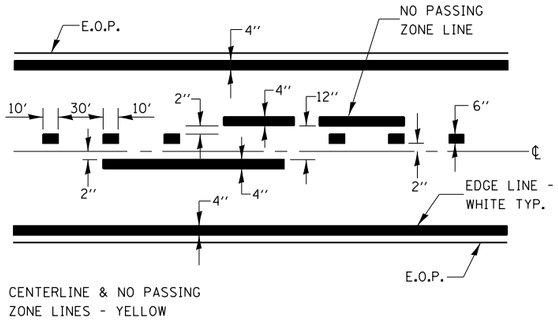
TYPICAL SPACING DETAIL FOR CROSSWALKS AND STOP BARS



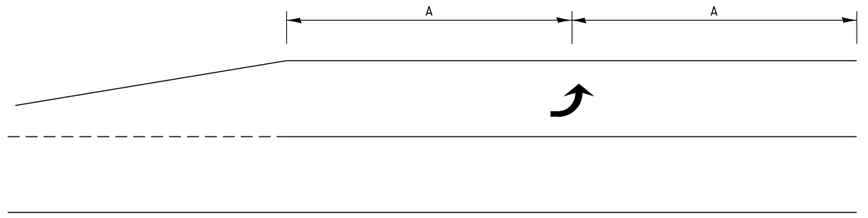
TYPICAL SPACING DETAIL FOR CROSSWALKS AND STOP BARS



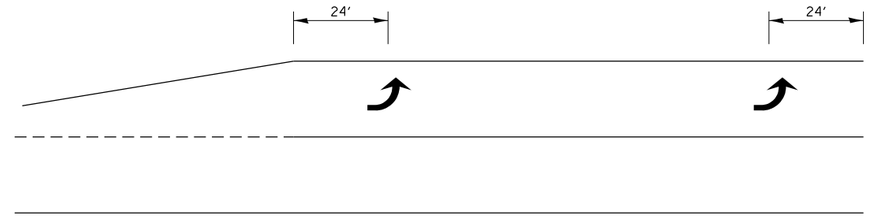
TYPICAL APPLICATION TWO WAY LEFT TURN LANE (TWLTL)



PAVEMENT MARKING



99' AND UNDER



100' TO 149'

150' AND LONGER

TYPICAL PLACEMENT OF ARROWS IN TURN LANES

URBAN PAVEMENT MARKING

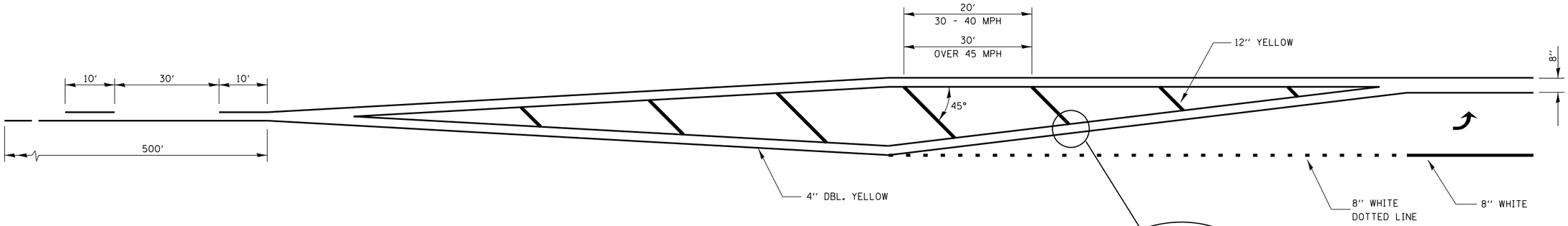
FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

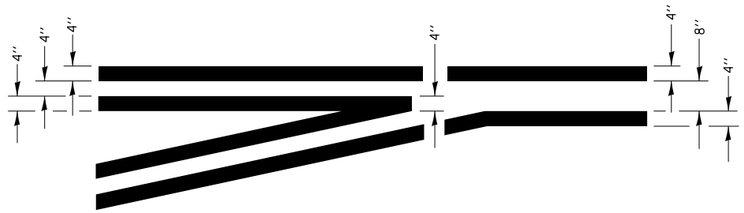
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS
IL 71

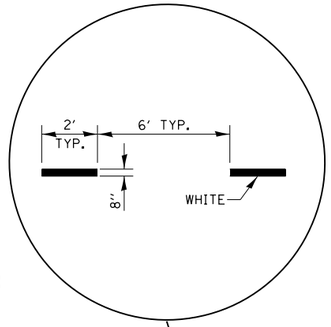
SCALE: N.T.S. | SHEET OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	453
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		



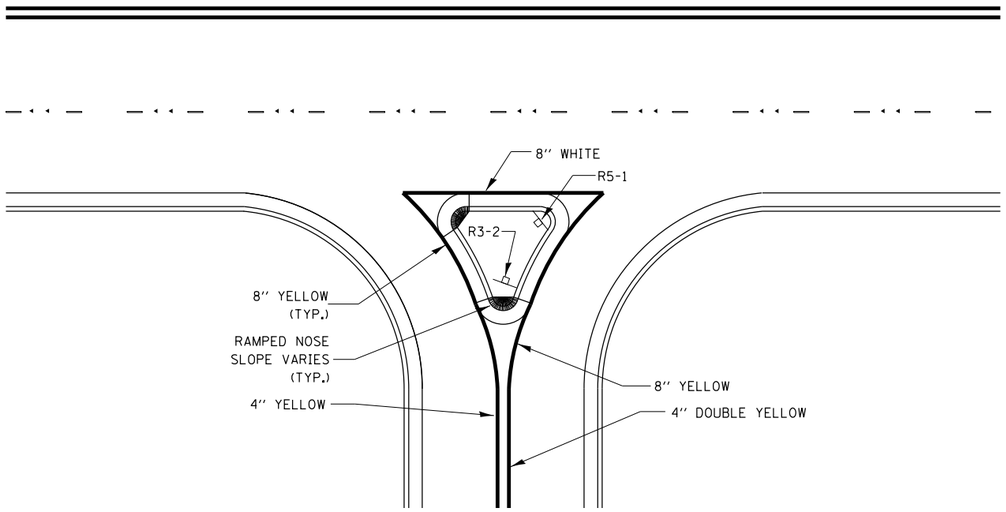


TYPICAL APPLICATION
LEFT TURN LANES

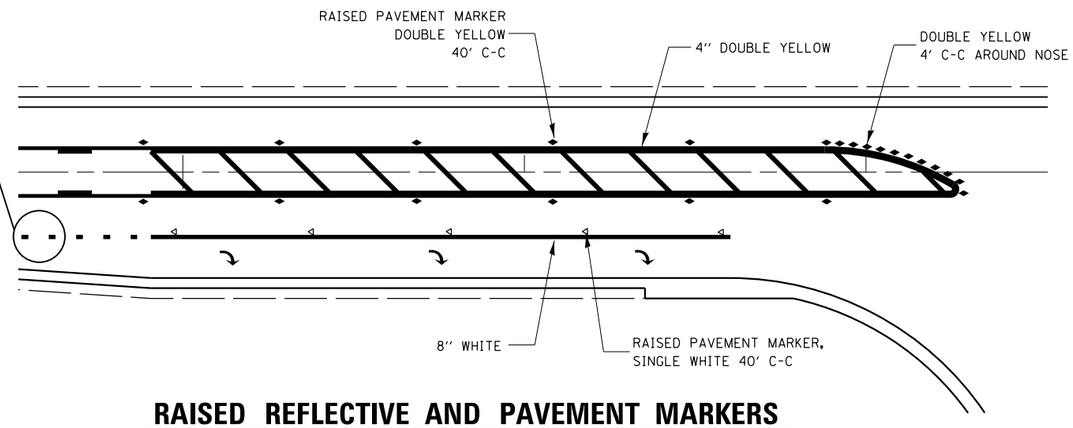


ADVANCE AND INTERSECTION LANE
DIVIDER LINES

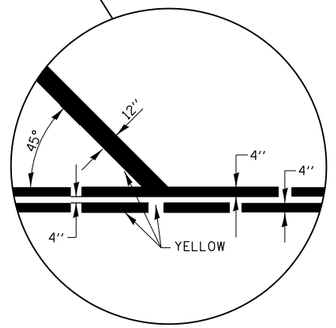
URBAN PAVEMENT MARKING



RIGHT IN RIGHT OUT ACCESS PAVEMENT MARKING



RAISED REFLECTIVE AND PAVEMENT MARKERS
RIGHT TURN LANE

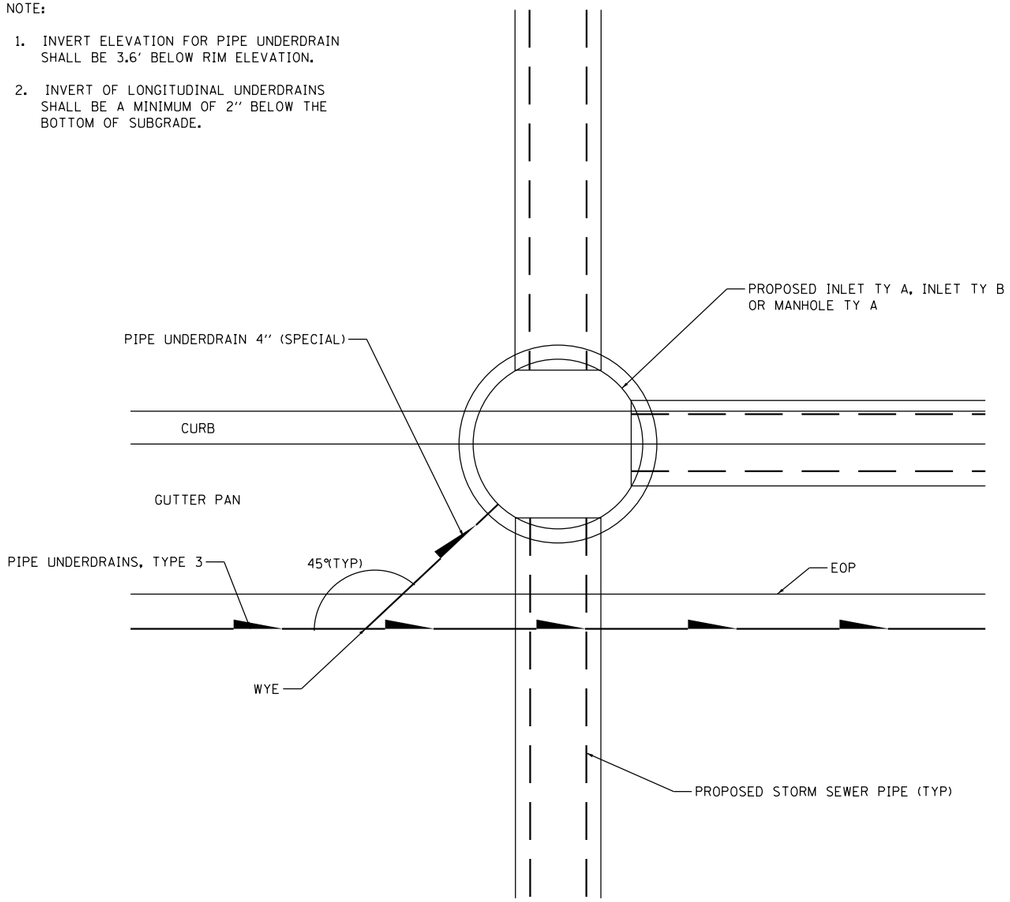


FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAILS IL 71	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			311	(1)R, I	KENDALL	558	454
Default	PLOT SCALE = 100.0000 ′ / in.	CHECKED -	REVISED -					CONTRACT NO. 66D24		
	PLOT DATE = 1/18/2018	DATE -	REVISED -		SCALE: N.T.S. SHEET OF SHEETS STA. TO STA.		ILLINOIS	FED. AID PROJECT		

NOTE:

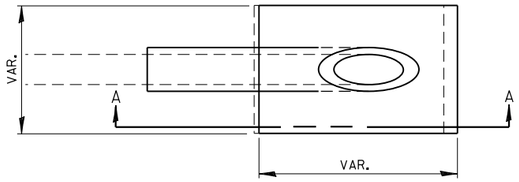
1. INVERT ELEVATION FOR PIPE UNDERDRAIN SHALL BE 3.6' BELOW RIM ELEVATION.

2. INVERT OF LONGITUDINAL UNDERDRAINS SHALL BE A MINIMUM OF 2'' BELOW THE BOTTOM OF SUBGRADE.

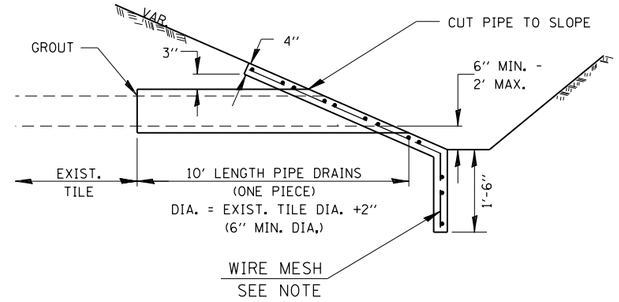


AT CURB INLET

LONGITUDINAL PIPE UNDERDRAIN OUTLET DETAILS



PLAN

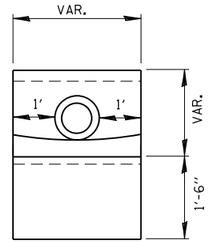


SECTION A–A

NOTES

1. ANY FIELD TILE OUTLET INTO A DITCH SHALL HAVE A HEADWALL BUILT IN ACCORDANCE WITH THIS DETAIL.

2. COST OF FURNISHING AND INSTALLING WIRE MESH SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR MISCELLANEOUS CONCRETE. WIRE MESH TO WEIGH NOT LESS THAN 58# PER 100 SQ. FT.



END VIEW

PIPE DRAINS & CONCRETE HEADWALLS

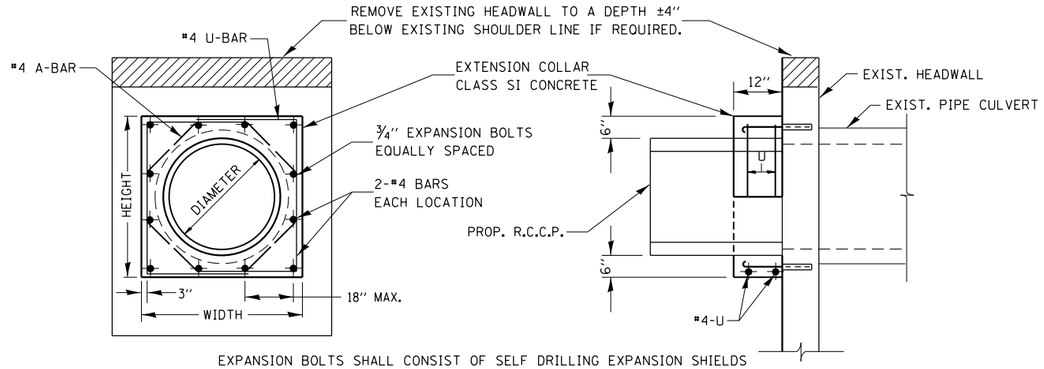
FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000 '/ in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

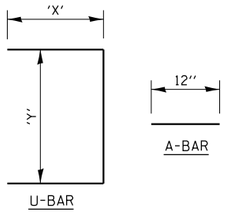
DETAILS
IL 71

SCALE: N.T.S. | SHEET OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	455
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		

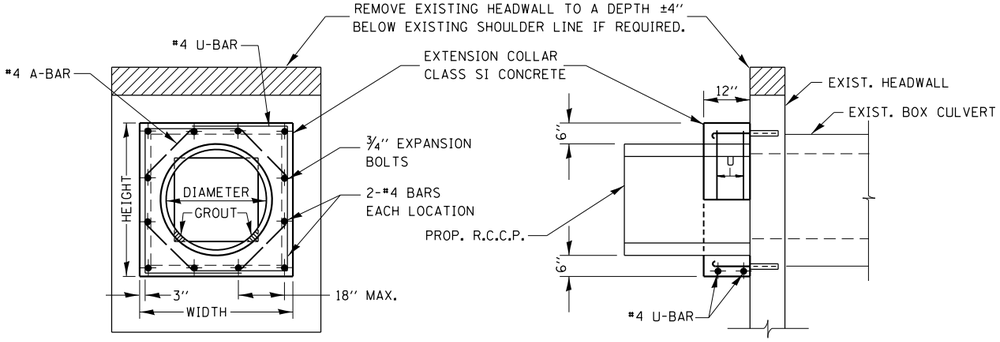


EXPANSION BOLTS SHALL CONSIST OF SELF DRILLING EXPANSION SHIELDS AND ¾'' DIA. HOOKED BOLTS. HOOKED BOLTS SHALL EXTEND A MINIMUM OF 9'' INTO NEW CONCRETE.
MINIMUM CERTIFIED PROOF LOAD = 4,080 LBS

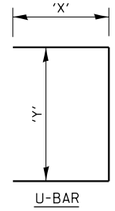


LOCATION	EXISTING CULVERT SIZE	PIPE DIMENSION	PIPE AREA	EXTENSION COLLAR		A-BAR	U-BAR		QUANTITIES ARE FOR ONE SIDE ONLY: CONC. COLLAR	REINFORCEMENT BARS	¾'' DIA. EXPANSION BOLTS
				WIDTH	HEIGHT	12	'X'	'Y'			
IL 71	DIA. IN.	DIA. IN.	SQ.FT.	IN.	IN.	IN.	IN.	IN.	CU. YD.	POUND	EACH
RT 578+26.08	36	36	7.07	48	48	12	28	42	0.3	30	12
RT 578+33.23	36	36	7.07	48	48	12	28	42	0.3	30	12
RT 584+23.24	36	36	7.07	48	48	12	28	42	0.3	30	12

COLLAR DETAIL (R.C.C.P. EXTENSION OF PIPE CULVERT)

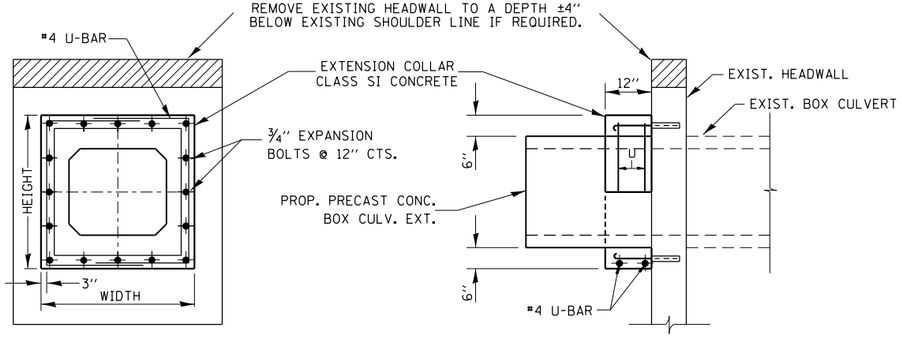


EXPANSION BOLTS SHALL CONSIST OF SELF DRILLING EXPANSION SHIELDS AND ¾'' DIA. HOOKED BOLTS. HOOKED BOLTS SHALL EXTEND A MINIMUM OF 9'' INTO NEW CONCRETE. BOLTS SHALL BE DRILLED IN THE CENTER OF THE EXISTING BOX CULVERT BARREL WALLS.
MINIMUM CERTIFIRED PROOF LOAD = 4,080 LBS.

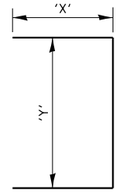


LOCATION	EXISTING CULVERT SIZE	PIPE DIMENSION	PIPE AREA	EXTENSION COLLAR		A-BAR	U-BAR		QUANTITIES ARE FOR ONE SIDE ONLY: CONC. COLLAR	REINFORCEMENT BARS	¾'' DIA. EXPANSION BOLTS
				WIDTH	HEIGHT	305	'X'	'Y'			
IL 71	FT. x FT.	DIA. IN.	SQ.FT.	IN.	IN.	IN.	IN.	IN.	CU. YD.	POUND	EACH
RT 527+85.01	5 X 5	60	19.63	84	84	12	36	78	1.1	40	12
RT 562+05.01	6 X 6	72	28.27	98	98	12	36	92	1.4	40	12
IL 126											
LT 82+00.00	3 X 2	24	3.14	56	44	12	33	38	0.5	30	12

COLLAR DETAIL (R.C.C.P. EXTENSION OF BOX CULVERT)

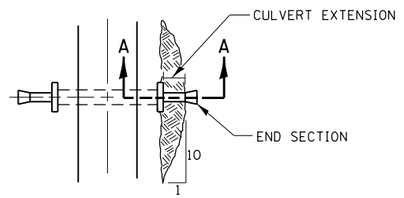


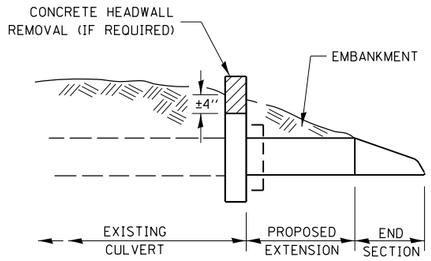
EXPANSION BOLTS SHALL CONSIST OF SELF DRILLING EXPANSION SHIELDS AND ¾'' DIA. HOOKED BOLTS. HOOKED BOLTS SHALL EXTEND A MINIMUM OF 9'' INTO NEW CONCRETE. BOLTS SHALL BE DRILLED IN THE CENTER OF THE EXISTING BOX CULVERT BARREL WALLS.
MINIMUM CERTIFIRED PROOF LOAD = 4,080 LBS.



LOCATION	EXISTING CULVERT SIZE	PRECAST CULVERT EXTENSION	EXTENSION COLLAR		U-BAR		QUANTITIES ARE FOR ONE SIDE ONLY: CONC. COLLAR	REINFORCEMENT BARS	¾'' DIA. EXPANSION BOLTS
			WIDTH	HEIGHT	'X'	'Y'			
IL 126	FT. x FT.	FT. x FT.	IN.	IN.	IN.	IN.	CU. YD.	POUND	EACH
LT 82+00.00	3 X 2	3 X 2	56	44	31	38	0.4	30	10
RT 82+00.00	3 X 2	3 X 2	56	44	31	38	0.4	30	10
LT 90+71.66	5 X 2	5 X 2	84	48	45	42	0.7	30	14

COLLAR DETAIL (PRECAST BOX CULVERT EXTENSION OF BOX CULVERT)





SECTION A-A

PLAN AT CULVERT EXTENSIONS

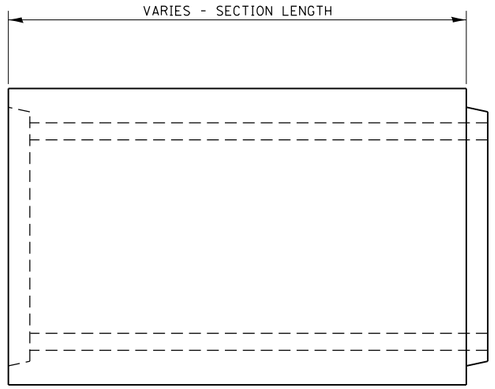
FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

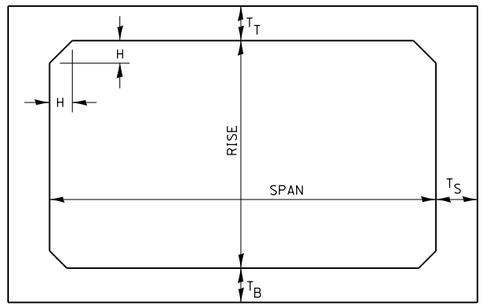
DETAILS
IL 71

SCALE: N.T.S. | SHEET OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	456
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



ELEVATION



NOTE: THE HAUNCH DIMENSION H, IS EQUAL TO THE WALL THICKNESS T_S.

TYPICAL BOX SECTION

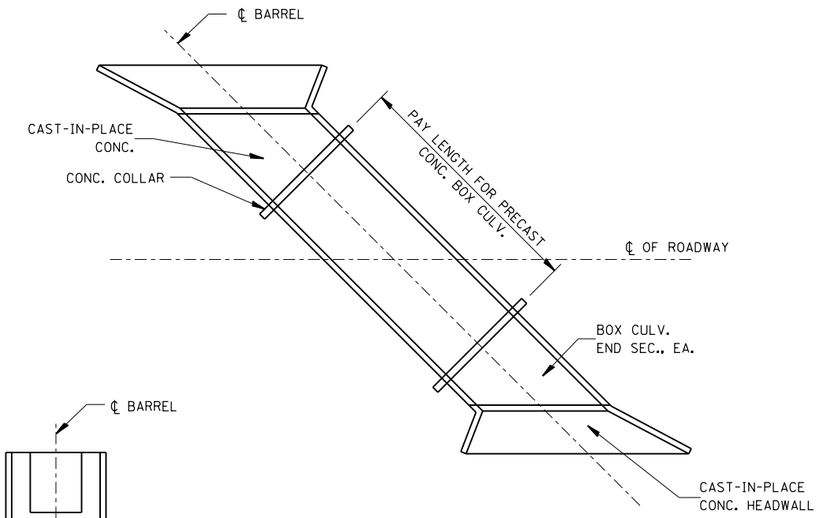
SPAN, FEET	T_T, INCHES		T_B, INCHES		T_S, INCHES	
	M 259	M 273	M 259	M 273	M 259	M 273
3	4	7	4	6	4	4
4	5	7½	5	6	5	5
5	6	8	6	7	6	6
6	7	8	7	7	7	7
7	8	8	8	8	8	8
8	8	8	8	8	8	8
9	9	9	9	9	9	9
10	10	10	10	10	10	10
11	11	11	11	11	11	11
12	12	12	12	12	12	12

TYPICAL THICKNESSES

GENERAL NOTES:

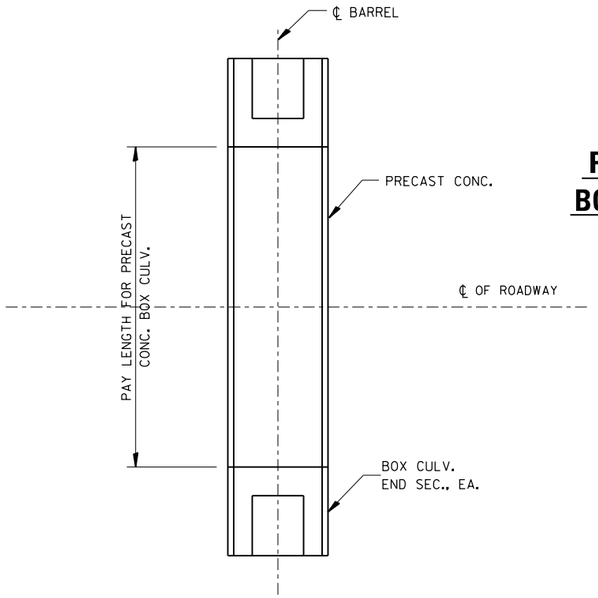
MINIMUM COVER FOR BOX CULVERTS SHALL BE 6".

PRECAST CONCRETE BOX SECTION



PAY LENGTH FOR PRECAST CONCRETE BOX CULVERT SKEWED WITH ROADWAY

N.T.S.



PAY LENGTH FOR PRECAST CONCRETE BOX CULVERT AT RIGHT ANGLES WITH ROADWAY

N.T.S.

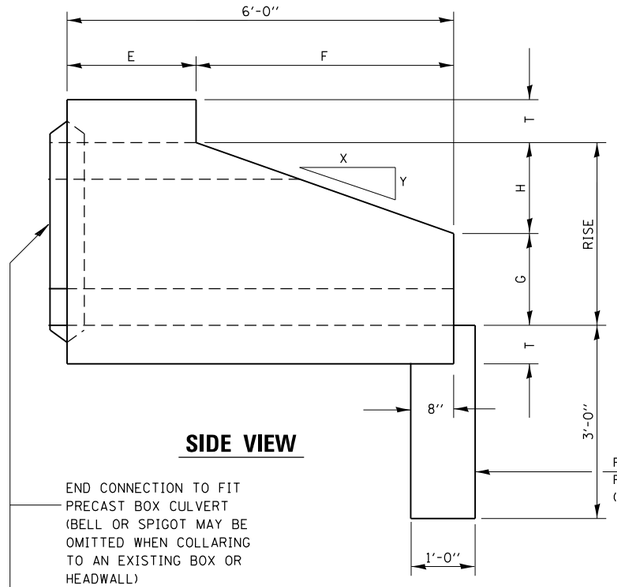
FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS
IL 71

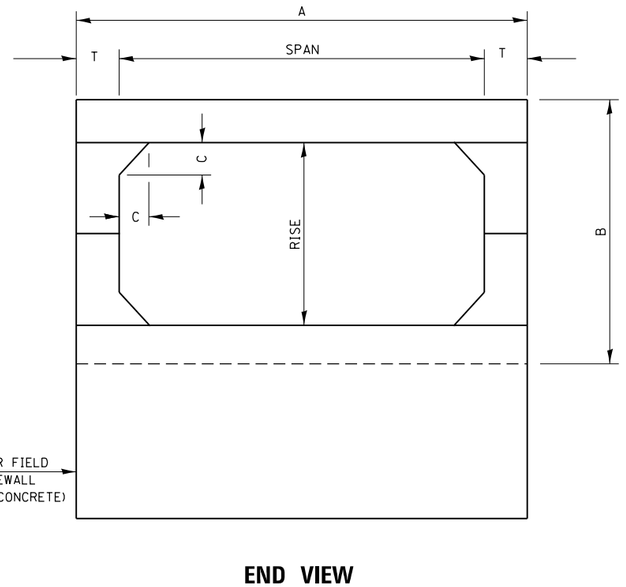
SCALE: N.T.S. | SHEET OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	457
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

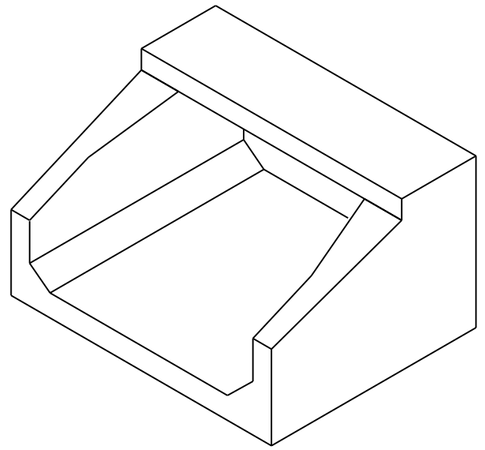


SIDE VIEW

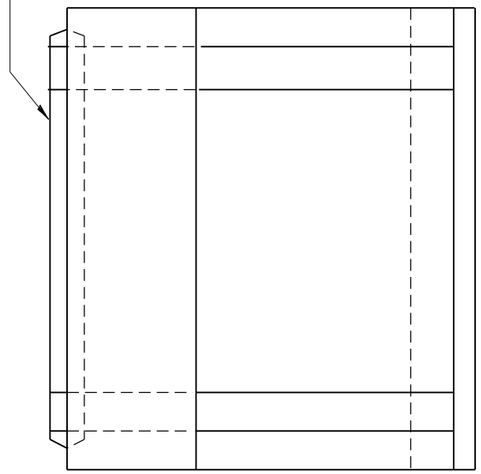
END CONNECTION TO FIT PRECAST BOX CULVERT (BELL OR SPIGOT MAY BE OMITTED WHEN COLLARING TO AN EXISTING BOX OR HEADWALL)



END VIEW



ISOMETRIC VIEW



PLAN

SPAN X RISE	T (INCHES)	A (FT.-IN.)	B (FT.-IN.)	C (INCHES)	E (FT.-IN.)	F (FT.-IN.)	G (FT.-IN.)	H (FT.-IN.)	SLOPE
2' X 2'	4	2 - 8	2 - 8	4	3 - 0	3 - 0	1 - 0	1 - 0	3 : 1
3' X 2'	4	3 - 8	2 - 8	4	3 - 0	3 - 0	1 - 0	1 - 0	3 : 1
3' X 3'	4	3 - 8	3 - 8	4	2 - 0	4 - 0	1 - 8	1 - 4	3 : 1
4' X 2'	5	4 - 10	2 - 10	5	3 - 0	3 - 0	1 - 0	1 - 0	3 : 1
4' X 3'	5	4 - 10	3 - 10	5	2 - 0	4 - 0	1 - 8	1 - 4	3 : 1
4' X 4'	5	4 - 10	4 - 10	5	2 - 0	4 - 0	2 - 0	2 - 0	2 : 1
5' X 2'	6	6 - 0	3 - 0	6	3 - 0	3 - 0	1 - 0	1 - 0	3 : 1
5' X 3'	6	6 - 0	4 - 0	6	2 - 0	4 - 0	1 - 8	1 - 4	3 : 1
5' X 4'	6	6 - 0	5 - 0	6	2 - 0	4 - 0	2 - 0	2 - 0	2 : 1
5' X 5'	6	6 - 0	6 - 0	6		4 - 0	3 - 0	2 - 0	2 : 1
6' X 2'	7	7 - 2	3 - 2	7	3 - 0	3 - 0	1 - 0	1 - 0	3 : 1
6' X 3'	7	7 - 2	4 - 2	7	2 - 0	4 - 0	1 - 8	1 - 4	3 : 1
6' X 4'	7	7 - 2	5 - 2	7	2 - 0	4 - 0	2 - 0	2 - 0	2 : 1
6' X 5'	7	7 - 2	6 - 2	7		4 - 0	3 - 0	2 - 0	2 : 1
7' X 3'	8	8 - 4	4 - 4	8		4 - 0	1 - 8	1 - 4	3 : 1
7' X 4'	8	8 - 4	5 - 4	8		4 - 0	2 - 0	2 - 0	2 : 1
7' X 5'	8	8 - 4	6 - 4	8		4 - 0	3 - 0	2 - 0	2 : 1
8' X 3'	8	9 - 4	4 - 4	8		4 - 0	1 - 8	1 - 4	3 : 1
8' X 4'	8	9 - 4	5 - 4	8		4 - 0	2 - 0	2 - 0	2 : 1
8' X 5'	8	9 - 4	6 - 4	8		4 - 0	3 - 0	2 - 0	2 : 1
9' X 3'	9	10 - 6	4 - 6	9		4 - 0	1 - 8	1 - 4	3 : 1
9' X 4'	9	10 - 6	5 - 6	9		4 - 0	2 - 0	2 - 0	2 : 1
9' X 5'	9	10 - 6	6 - 6	9		4 - 0	3 - 0	2 - 0	2 : 1
10' X 4'	10	11 - 8	5 - 9	10		4 - 0	2 - 0	2 - 0	2 : 1
10' X 5'	10	11 - 8	6 - 8	10		4 - 0	3 - 0	2 - 0	2 : 1

PRECAST CONCRETE BOX CULVERT END SECTION

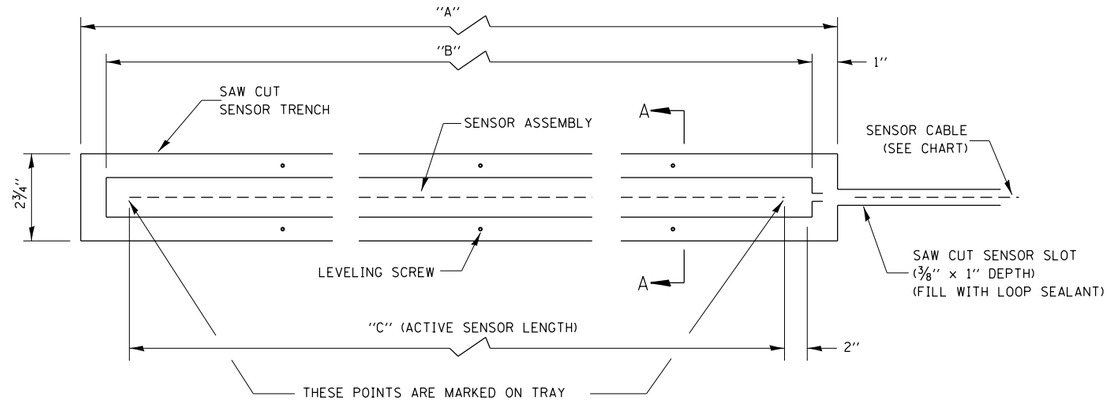
FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

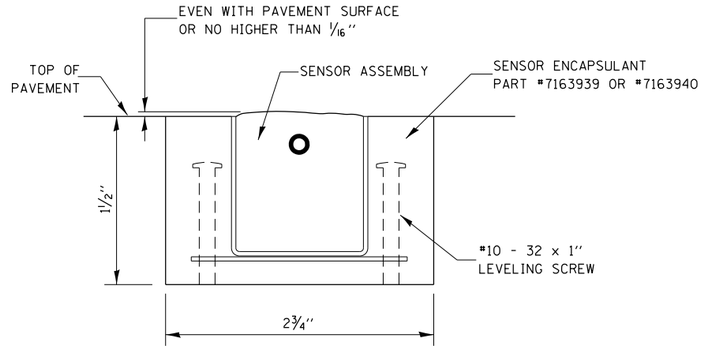
DETAILS
IL 71

SCALE: N.T.S. | SHEET OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	458
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		



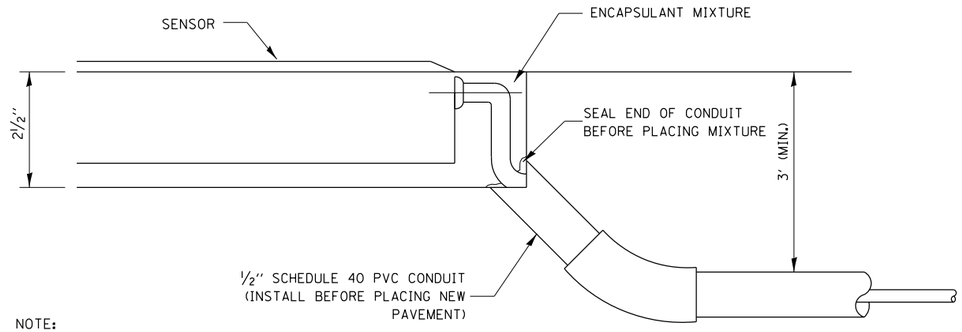
PLAN VIEW



SEC. A - A

GENERAL NOTE:

THIS WORK SHALL CONSIST OF THE REMOVAL AND REPLACEMENT OF DETECTOR LOOPS AND AXLE DETECTORS (PIEZOCABLE SENSOR).
THE DETECTOR LOOPS AND AXLE DETECTORS SHALL BE REMOVED WITH THEIR ELECTRIC CABLE ALL THE WAY TO THE EXISTING CABINET CONNECTION, AND REPLACED IN THE SAME MANNER USING THE EXISTING CONDUIT, HANDHOLE, AND GULFBOX JUNCTION.



NOTE:
THIS ARRANGEMENT CAN BE USED ONLY WITH NEW PAVEMENT CONSTRUCTION.

ALTERNATE SENSOR CABLE INSTALLATION

SENSOR ASSEMBLY INSTALLATION PROCEDURE:

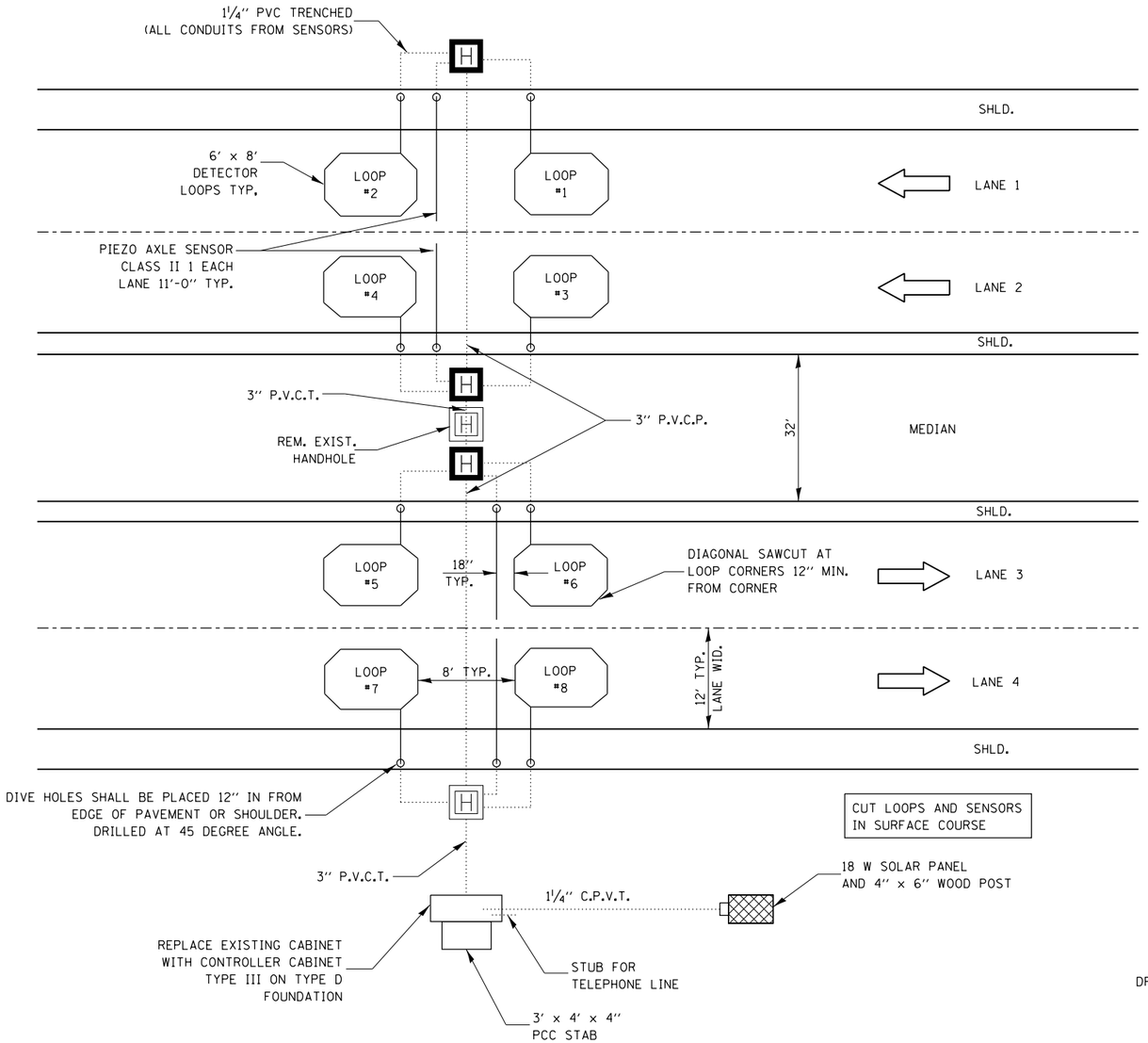
1. USING A CHALK LINE, MARK THE SENSOR TRENCH OUTLINE ON THE PAVEMENT. SEE SYSTEM LAYOUT DRAWING FOR SENSOR LOCATIONS.
2. SAW CUT AROUND THE TRENCH PERIMETER TO A DEPTH OF 1½".
3. SAW CUT THE ⅜" x 1" DEPTH. SENSOR CABLE SLOT THE THE EDGE OF THE PAVEMENT.
4. REMOBE EXISTING PAVEMENT TO A DEPTH OF 1½" WITHIN THE SAW CUT TRENCH PERIMETER.
5. THOROUGHLY CLEAN THE TRENCH OF ALL DEBRIS, DUST, ETC.
6. PLACE SENSOR ASSEMBLY IN THE TRENCH. ADJUST THE #10-32 LEVELING SCREWS UNTIL THE TOP OF THE SENSOR ASSEMBLY IS EVEN WITH THE PAVEMENT SURFACE. (NO HIGHER THAN 1/16")
7. THOROUGHLY MIX LARGE CAN OF ENCAPSULANT.
8. ADD HARDENER & MIX THOROUGHLY.
9. POUR ENCAPSULANT AROUND SENSOR TRYING NOT TO DISTURB SENSOR.
10. 3 TO 5 POUND WEIGHT MAY HAVE TO BE USED TO STOP FLOATING.
11. FILL TRENCH WITH MIXTURE UNTIL FLUSH WITH THE SURFACE OF PAVEMENT. TROWEL AS REQUIRED.
12. LET EPOXY CURE UNTIL HARD.
13. GRIND PERIMETERS IF NEEDED TO REMOVE HIGH OR ROUGH SPOTS.

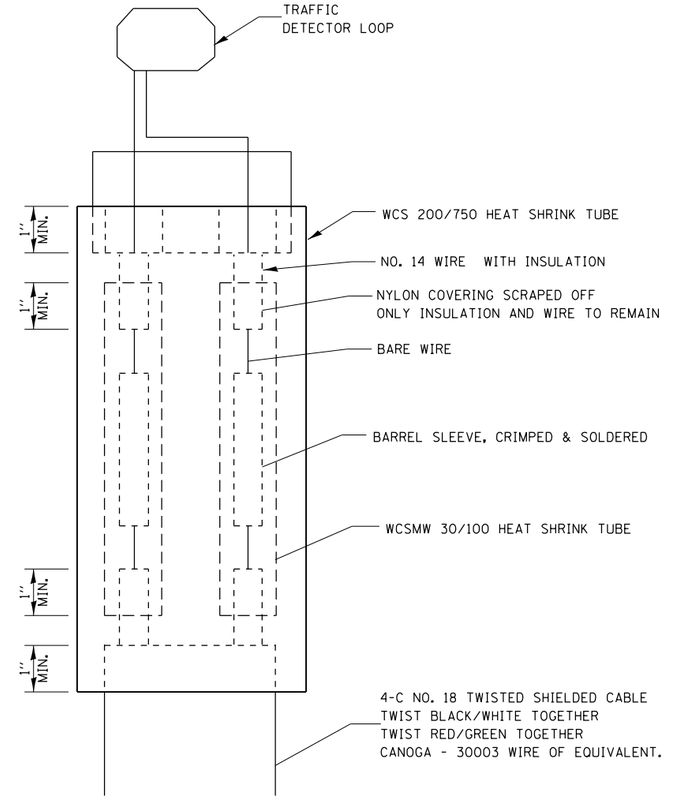
NOTE: SENSOR CAN BE BENT SLIGHTLY TO CONFORM TO ROADWAY.

REFERENCE: INSTALLATION MANUAL #1050527

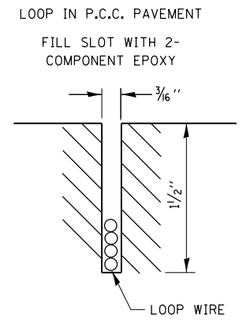
DETECTOR LOOP DETAILS

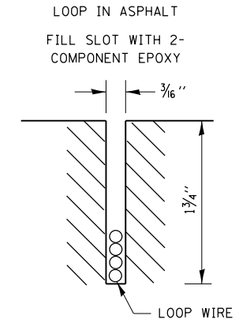
FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAILS IL 71			F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -					311	(1)R, I	KENDALL	558	459
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -							CONTRACT NO. 66D24		
	PLOT DATE = 1/18/2018	DATE -	REVISED -		SCALE: N.T.S.	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		





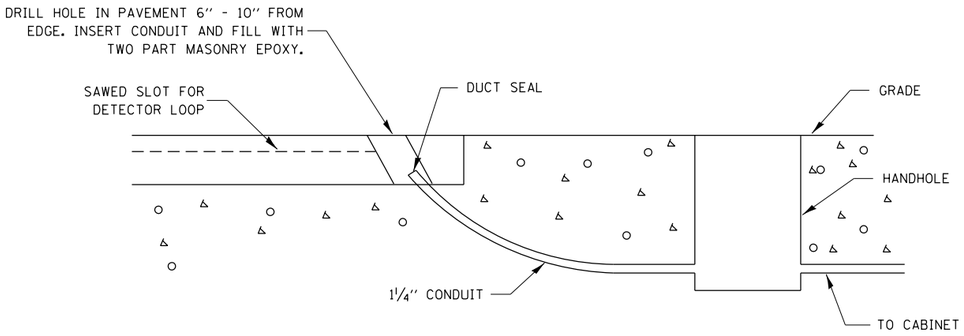
MINIMUM 1" HEAT SHRINK TUBE OVERLAP ON WIRE.
PVC & SHIELDED CABLE TO FORM WATER TIGHT SEAL.



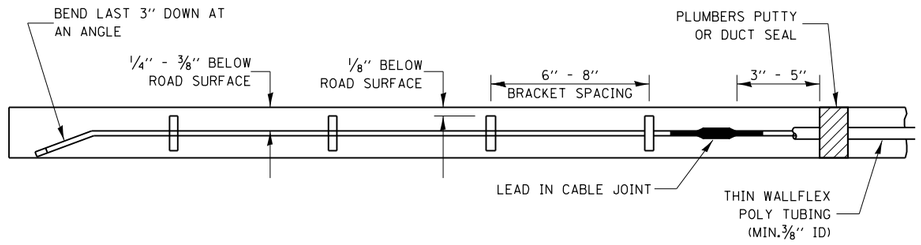


DETECTOR LOOP INSTALLATION

LOOP SPLICING REQUIREMENTS

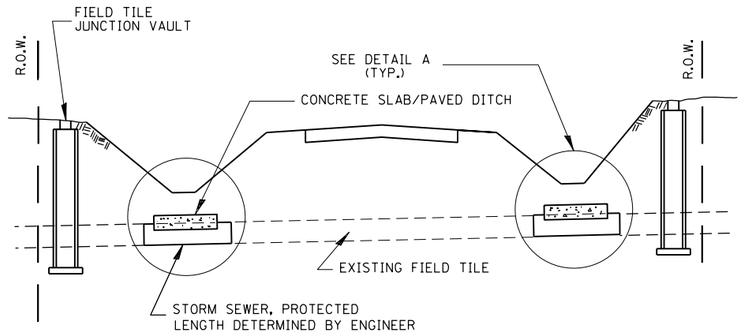


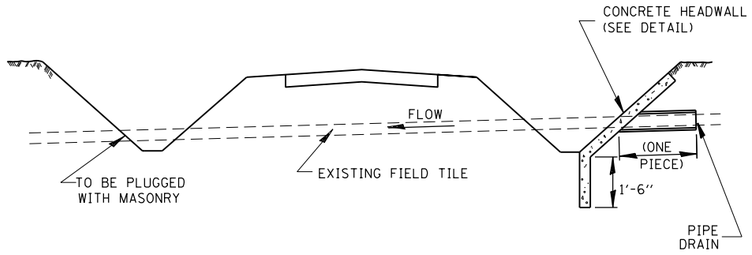
DETECTOR LOOP LEAD-IN DETAIL



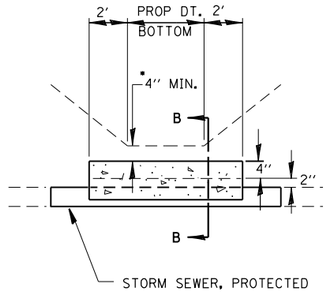
DETECTOR LOOP DETAILS

FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAILS IL 71	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			311	(1)R, I	KENDALL	558	460
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -					CONTRACT NO. 66D24		
	PLOT DATE = 1/18/2018	DATE -	REVISED -		SCALE: N.T.S. SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		





FIELD TILE REPLACEMENT



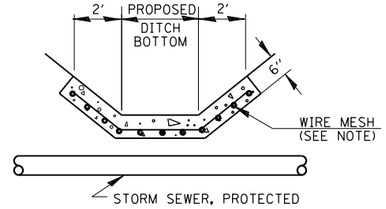
DETAIL A

NO SCALE

*IF A 4" COVER CAN NOT BE PROVIDED A PAVED DITCH SHALL BE CONSTRUCTED AS SHOWN IN DETAIL C.

NOTES

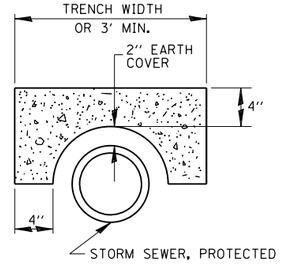
1. WIDTH OF CONCRETE SLAB SHALL BE THE SAME AS THE TRENCH WIDTH IN ACCORDANCE WITH SECTION 550 OF THE STD. SPECIFICATIONS, OR 3' MIN.
2. CONCRETE FOR SLAB, HEADWALL AND PAVED DITCH SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR "MISCELLANEOUS CONCRETE."
3. COST OF FURNISHING AND INSTALLING WIRE MESH SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR MISCELLANEOUS CONCRETE. WIRE MESH TO WEIGH NOT LESS THAN 58* PER 100 SQ. FT.



DETAIL C

NO SCALE

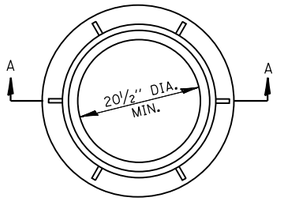
ALTERNATE MATERIALS FOR WALLS	T
PRECAST REINFORCED CONCRETE RISERS	4"
CONCRETE MASONRY UNIT	5"
MONOLITHIC CONCRETE	6"
BUILDING BRICK, GRADE SW FROM CLAY OR SHALE	8"
CONCRETE BUILDING BRICK, GRADE A	8"

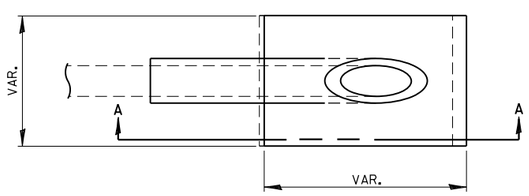


SECTION B–B

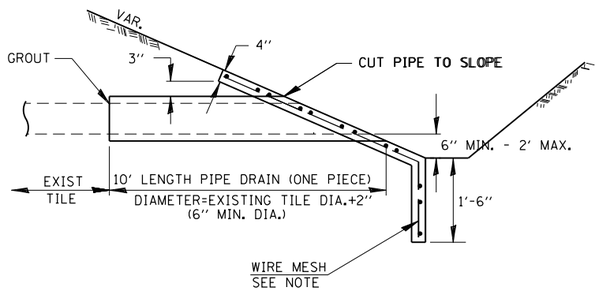
NOTES

1. THE CONTRACT UNIT PRICE FOR FIELD TILE JUNCTION VAULT SHALL INCLUDE THE COST OF FURNISHING AND PLACING THE FRAME AND GRATE OR PRECAST CONCRETE LID AND WHEN REQUIRED, THE SAND CUSHION.
2. ALL FIELD TILE JUNCTION VAULTS SHALL BE 2'-0" IN DIAMETER UNLESS OTHERWISE NOTED ON THE PLANS.





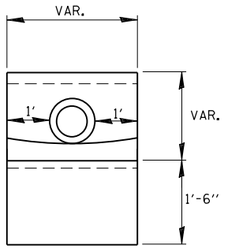
PLAN



SECTION A–A

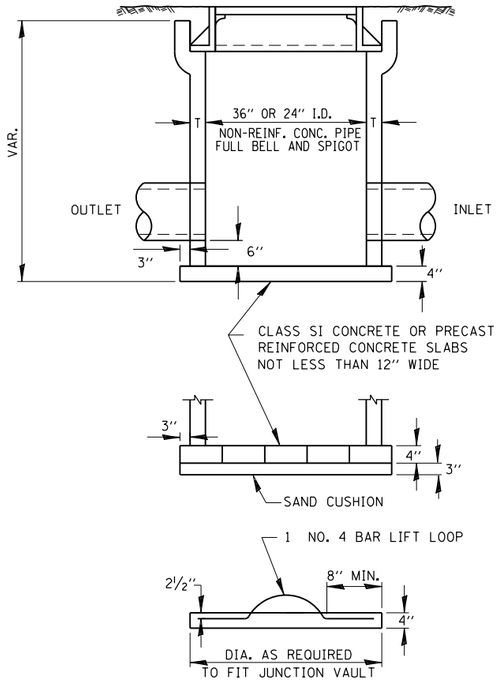
NOTES

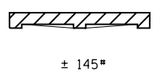
1. ANY STORM SEWER OR FIELD TILE OUTLET INTO A DITCH SHALL HAVE A HEADWALL BUILT IN ACCORDANCE WITH THIS DETAIL.
2. COST OF FURNISHING AND INSTALLING WIRE MESH SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR MISCELLANEOUS CONCRETE. WIRE MESH TO WEIGH NOT LESS THAN 58* PER 100 SQ. FT.

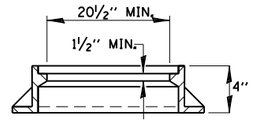


END VIEW

CLASS SI CONCRETE HEADWALLS



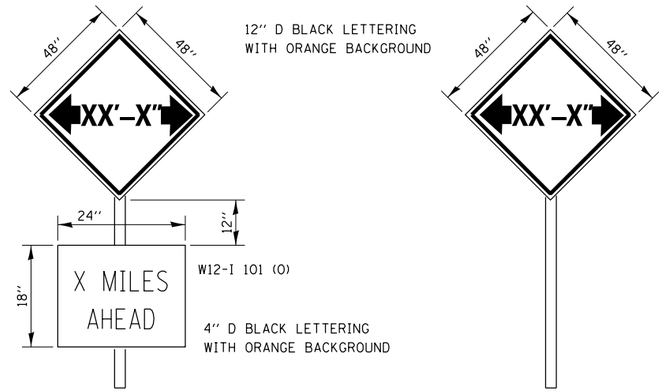




SECTION A–A

FIELD TILE JUNCTION VAULT

FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAILS IL 71	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			311	(1)R, I	KENDALL	558	461
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -					CONTRACT NO. 66D24		
	PLOT DATE = 1/18/2018	DATE -	REVISED -		SCALE: N.T.S. SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



TO BE POST MOUNTED AS SHOWN ELSEWHERE IN THE PLANS.

COST OF SUPPLYING, INSTALLING, MAINTAINING AND REMOVING WIDTH RESTRICTION SIGNS SHALL BE INCLUDED IN THE COST OF THE TRAFFIC CONTROL AND PROTECTION PAY ITEMS.

WIDTH RESTRICTION SIGNING DETAILS

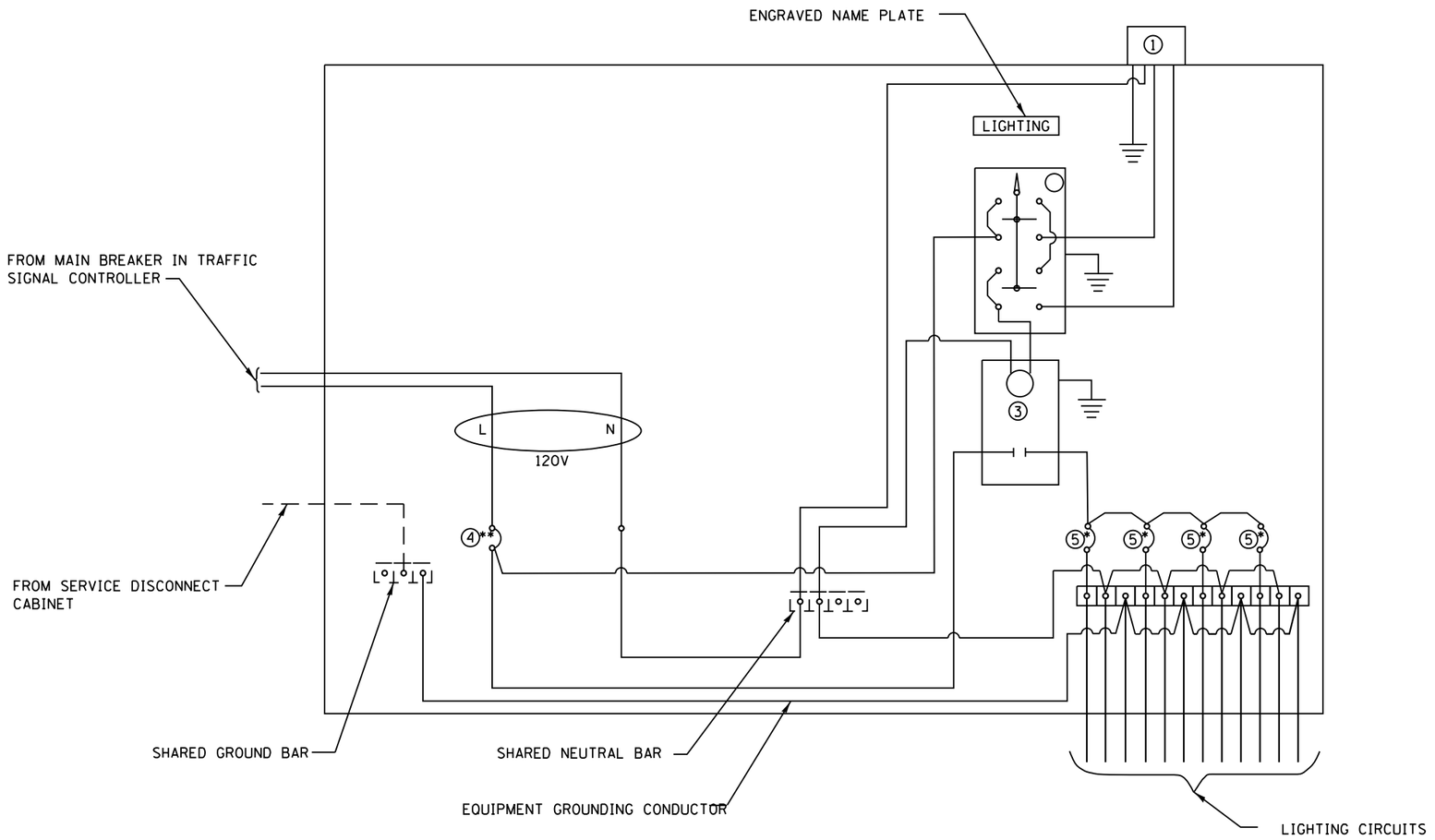
FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS
IL 71

SCALE: N.T.S. | SHEET NO. OF SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	462
		CONTRACT NO. 66D24		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



LEGEND

- GROUND CONNECTED TO SHARED GROUND BAR.
- INDICATES SHARED WITH TRAFFIC SIGNAL CONTROLLER EQUIPMENT.
- (1) PHOTOCELL WITH INTEGRAL SURGE ARRESTER.
- (2) HAND-OFF-AUTO SELECTOR SWITCH.
- (3) 30 AMP, 1 POLE ELECTRICALLY HELD CONTRACTOR
- (4) 20 AMP, 1 POLE, CIRCUIT BREAKER
- (5) 15 AMP, 1 POLE, BRANCH BREAKER
- * QUANTITY OF BRANCH BEAKERS SHALL DEPEND ON THE COMBINATION LIGHTING CIRCUIT DIAGRAM OR AS DIRECTED BY THE ENGINEER.
- ** SIZE LARGER AS NEEDED.

COMBINATION LIGHTING CONTROLLER WIRING DIAGRAM

GENERAL NOTES

ALL CONTROL INSTALLATION COMPONENTS SHALL BE U.L. LISTED.

ALL WIRING SHALL BE NEATLY DRESSED, IDENTIFIED BY TAGS, AND SUPPORTED.

THE CIRCUIT BREAKER SHALL BE CLEARLY LABELED FOR LIGHTING ACCORDING TO ARTICLE 1068.01 (f) OF THE STANDARD SPECIFICATIONS.

INSTALL UNDER EAVE PHOTOCELL ON TRAFFIC SIGNAL CONTROLLER CABINET PER ARTICLE 1068.01(e)(2) OF THE STANDARD SPECIFICATIONS.

ALL LIGHTING EQUIPMENT SHALL BE INSTALLED ON A SIDE MOUNTED INSULATED SUBPANEL PER ARTICLE 1068.01(e)(9) OF THE STANDARD SPECIFICATIONS ON THE LOWER RIGHT HAND SIDE OF THE TRAFFIC SIGNAL CONTROLLER OR AS DIRECTED BY THE ENGINEER.

PROVIDE AN ENGRAVED STAINLESS STEEL NAMEPLATE ON THE SUB PANEL READING "LIGHTING".

FILE NAME = D366D24-sht-details.dgn	USER NAME = bemery	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAILS IL 71			F.A.P RTE.	SECTION	COUNTY / TOTAL SHEETS / SHEET NO.
		DRAWN -	REVISED -					311	(1)R, I	KENDALL / 558 / 463
	PLOT SCALE = 100.0000 '/ in.	CHECKED -	REVISED -							CONTRACT NO. 66D24
	PLOT DATE = 1/18/2018	DATE -	REVISED -		SCALE: N.T.S.	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT

FINAL SURVEY	NOTE BOOK	SURVEYED	BY	DATE
		PLOTTED		
		TEMPLATE		
		AREAS		
NO.		AREAS CHECKED		

ORIGINAL SURVEY	NOTE BOOK	SURVEYED	BY	DATE
		PLOTTED		
		TEMPLATE		
		AREAS		
NO.		AREAS CHECKED		

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

740 735 730 725

PR ROW

EX ROW

1:3 1:4 1:50

Spl.D. 730.77

PR 30" SS

EX TEL

EX 4" GAS

EX 15" SS

731.78 731.95 732.47 731.94

VAR. 1.00'

CUT STAGE 2A: 73.5 SF

TSE STAGE 2A: 10 SF

EX 12" WM

EX 2" GAS

EX 15" SS

EX ROW

507 + 50.00

EX ROW

730.53 730.89 731.72 731.56

VAR. 1.00'

EX TEL

EX 4" GAS

EX 15" SS

CUT STAGE 2A: 17 SF

FILL STAGE 2A: 1 SF

TSE STAGE 2A: 12.5 SF

EX 15" SS

EX 12" WM

EX 4" GAS

EX ROW

507 + 00.00

MATCHLINE

731.03

EX 4" GAS

EX FO

EX 15" SS

EX TEL

EX 24" SS

EX 8" WM

506 + 50.00

MATCHLINE

731.35

EX 4" GAS

EX TEL

EX 8" WM

506 + 00.00

PAVEMENT REMOVAL

TOPSOIL STRIPPING & EARTH EXCAVATION = TSE

UNDERCUT

SCALE: 1" = 10' H
1" = 5' V

FILE NAME = D366D24-sht-xssht-IL71.dgn Default	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 506+00.00 TO STA. 507+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	464
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

740
735
730

PR ROW
EX ROW
1:3
1:4
1:50
4.00%
733.56
733.77
734.40
733.80
WAR.
1:6
1:3
EX ROW
Spl.D. 732.38
EX TEL
EX 4" GAS
EX 15" RCP
STAGE 2A: 55.5 SF
STAGE 3A: 71 SF
CUT
STAGE 2A: 0.5 SF
FILL
STAGE 2A: 9.5 SF
STAGE 3A: 19 SF
TSE
EX 15" SS
EX 2" GAS
EX 12" WM
Spl.D. 732.89
PR 12" SS
PR 18" SS
509 + 00.00

740
735
730

PR ROW
EX ROW
1:3
1:4
1:50
4.00%
733.20
733.34
733.82
733.24
COMMERCIAL ENTRANCE
EX ROW
Spl.D. 731.84
EX TEL
EX 4" GAS
EX 15" SS
STAGE 2A: 54.5 SF
CUT
STAGE 2A: 3.5 SF
FILL
STAGE 2A: 10 SF
TSE
EX 15" SS
EX 12" WM
EX 2" GAS
508 + 50.00

PR 30" SS

740
735
730

PR ROW
EX ROW
1:3
1:4
1:50
4.00%
732.99
733.12
733.59
733.05
COMMERCIAL ENTRANCE
EX ROW
Spl.D. 731.65
EX TEL
EX 4" GAS
EX 15" SS
EX 15" SS
EX 12" WM
EX 2" GAS
508 + 32.45

PR 30" SS

740
735
730

PR ROW
EX ROW
1:3
1:4
1:50
4.00%
732.60
732.72
733.15
732.60
EX ROW
Spl.D. 731.31
EX TEL
EX 4" GAS
EX 15" SS
CUT
STAGE 2A: 60.5 SF
TSE
STAGE 2A: 10 SF
EX 15" SS
EX 12" WM
EX 2" GAS
508 + 00.00

PAVEMENT REMOVAL
TOPSOIL STRIPPING & EARTH EXCAVATION = TSE
UNDERCUT

PR 30" SS

SCALE: 1" = 10' H
1" = 5' V

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FINAL SURVEY — ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
Default	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

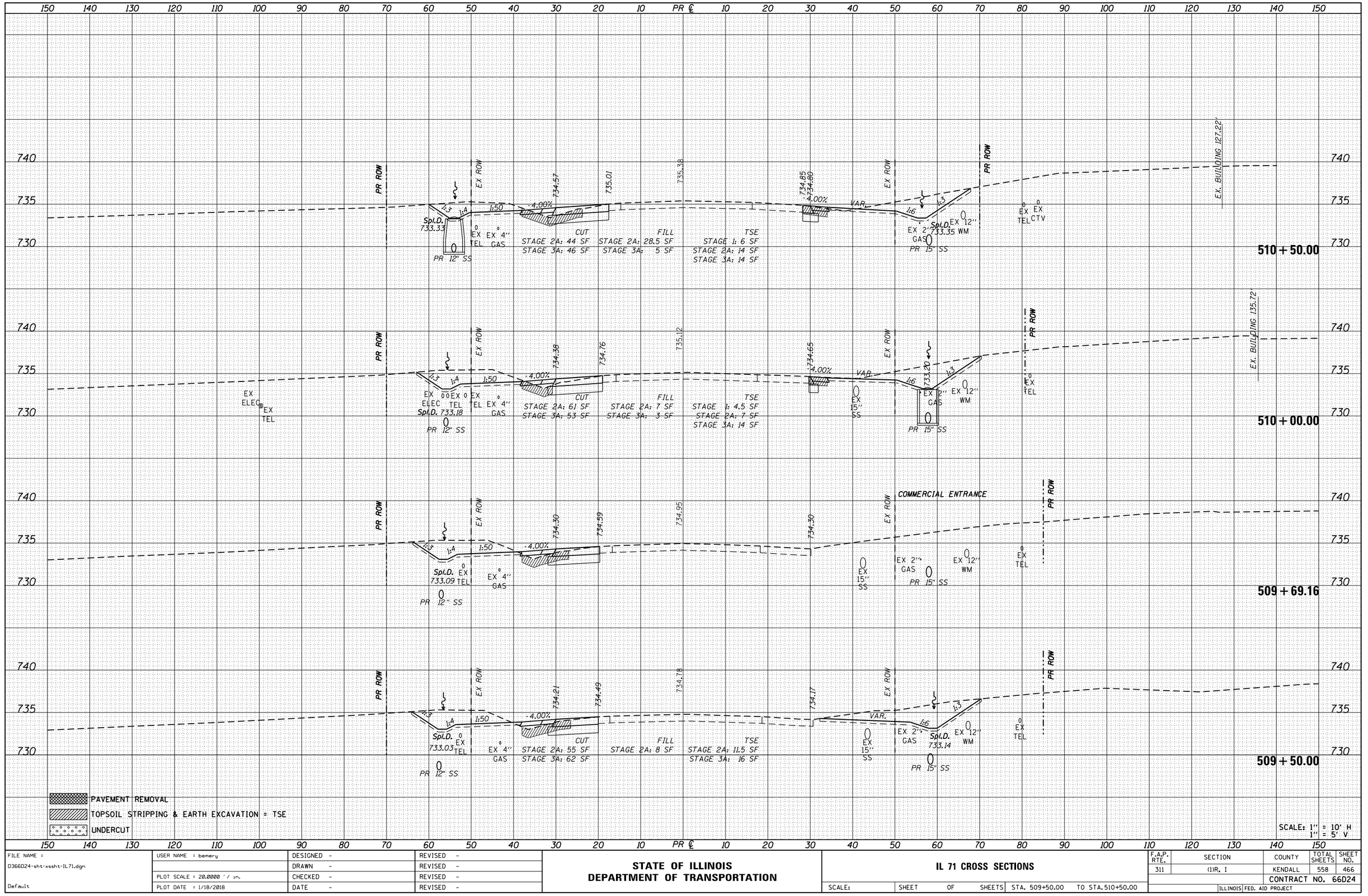
SCALE: | SHEET OF SHEETS | STA. 508+00.00 TO STA.509+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	465
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY

NO.	NOTE BOOK	ORIGINAL SURVEY
	AREAS	SURVEYED
	AREAS	PLOTTED
		TEMPLATE
	AREAS CHECKED	AREAS

NO.	BY	DATE



ORIGINAL SURVEY	SURVEYED	
	PLOTTED	
NOTE BOOK	TEMPLATE	
	AREAS	
NO.	AREAS CHECKED	

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 509+50.00 TO STA.510+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	466
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

740 735 730

PR ROW
EX ROW
VAR.
-2.03%
-4.00%
734.79
735.08
735.28
735.28
735.01
-4.00%
EX 4" GAS
EX TEL
CUT
STAGE 2A: 14.5 SF
FILL
STAGE 2A: 11.5 SF
TSE
STAGE 1: 18 SF
STAGE 2A: 26 SF
EX 12" SS
EX 2" GAS
EX 12" WM
EX TEL
EX CTV
EX 12" CMP
EX 2" CMP
ELEC

512 + 00.00

COMMERCIAL ENTRANCE
PR ROW
EX ROW
-2.07%
-4.00%
734.87
735.14
735.32
734.92
MATCHLINE
EX 4" GAS
EX TEL
EX 12" SS
EX 2" GAS
EX 12" WM
EX TEL
EX CTV
PR 15" SS

511 + 62.54

COMMERCIAL ENTRANCE
PR ROW
EX ROW
-1.74%
-4.00%
734.79
735.18
735.44
734.82
734.66
-4.00%
VAR.
EX 2" GAS
EX 12" WM
Spl.D. 733.65
EX TEL
EX CTV
EX 4" GAS
EX TEL
EX 15" SS
PR 15" SS
CUT
STAGE 2A: 32 SF
STAGE 3A: 84 SF
TSE
STAGE 1: 9 SF
STAGE 3A: 13 SF

511 + 50.00

PR ROW
EX ROW
1:3
1:4
1:50
4.00%
734.46
735.05
735.50
735.02
734.95
4.00%
VAR.
733.50
EX. BUILDING 134.89
Spl.D. 733.48
EX 4" GAS
EX TEL
EX 2" GAS
EX 12" WM
EX TEL
EX CTV
PR 15" SS
CUT
STAGE 2A: 37.5 SF
STAGE 3A: 54 SF
FILL
STAGE 2A: 2.5 SF
STAGE 3A: 4 SF
TSE
STAGE 1: 7 SF
STAGE 2A: 17 SF
STAGE 3A: 14 SF

511 + 00.00

PAVEMENT REMOVAL
TOPSOIL STRIPPING & EARTH EXCAVATION = TSE
UNDERCUT

SCALE: 1" = 10' H
1" = 5' V

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

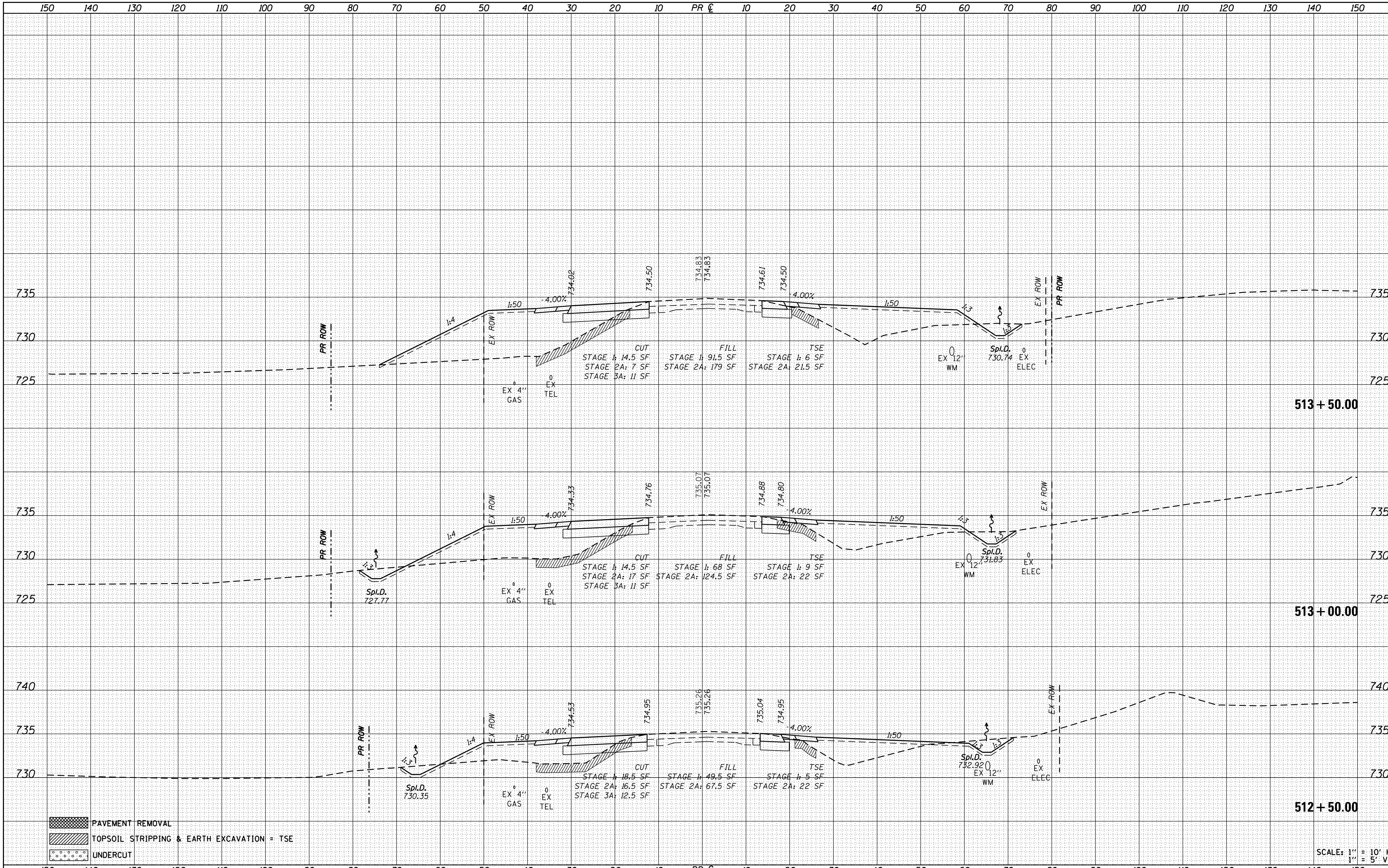
FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 511+00.00 | TO STA. 512+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	467
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		



FILE NAME =	USER NAME = bemery	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IL 71 CROSS SECTIONS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
D366D24-sht-xssht-IL71.dgn		DRAWN -	REVISED -			311	(1)R, I	KENDALL	558	468
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -					CONTRACT NO. 66D24		
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -		SCALE: SHEET OF SHEETS STA. 512+50.00 TO STA. 513+50.00		ILLINOIS FED. AID PROJECT			

FINAL SURVEY: SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED / NOTE BOOK / NO. / BY / DATE

ORIGINAL SURVEY: SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED / NOTE BOOK / NO. / BY / DATE

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

735
730
725

PR ROW
EX ROW
1:4
1:50
-4.00%
733.69
734.15
734.47
734.47
734.26
734.09
4.00%
1:50
1:3
1:3
EX ROW
PR ROW

CUT
STAGE 1: 18.5 SF
STAGE 2A: 7.5 SF
STAGE 3A: 16 SF

FILL
STAGE 1: 77.5 SF
STAGE 2A: 145.5 SF
STAGE 3A: 16 SF

TSE
STAGE 1: 9 SF
STAGE 2A: 21 SF

EX 4" GAS
EX TEL
EX 12" WM
Spl.D. 729.77

514 + 50.00

735
730
725

PR ROW
EX ROW
1:4
1:50
-4.00%
733.79
734.29
734.63
734.63
734.44
734.30
4.00%
1:50
1:3
729.44
1:3
EX ROW
PR ROW

36" RCP
32 FT
SLOPE=0.50%

PIPE CULVERTS, CLASS A 36" (JACKED)
52 FT
SLOPE=0.50%

36" RCP
36 FT
SLOPE=0.50%

200
727.50
DSFL=727.54

EX 4" GAS
EX TEL
EX 12" WM
EX ELEC
USFL=728.14

514 + 10.00

735
730
725

PR ROW
EX ROW
1:4
1:50
-4.00%
733.82
734.32
734.67
734.67
734.48
734.35
4.00%
1:50
1:3
1:3
EX ROW
PR ROW

CUT
STAGE 1: 19 SF
STAGE 2A: 6.5 SF
STAGE 3A: 13.5 SF

FILL
STAGE 1: 145.5 SF
STAGE 2A: 159.5 SF

TSE
STAGE 1: 8.5 SF
STAGE 2A: 15 SF

Spl.D. 729.66

EX 4" GAS
EX TEL
EX 12" WM
EX ELEC

514 + 00.00

PAVEMENT REMOVAL
TOPSOIL STRIPPING & EARTH EXCAVATION = TSE
UNDERCUT

SCALE: 1" = 10' H
1" = 5' V

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

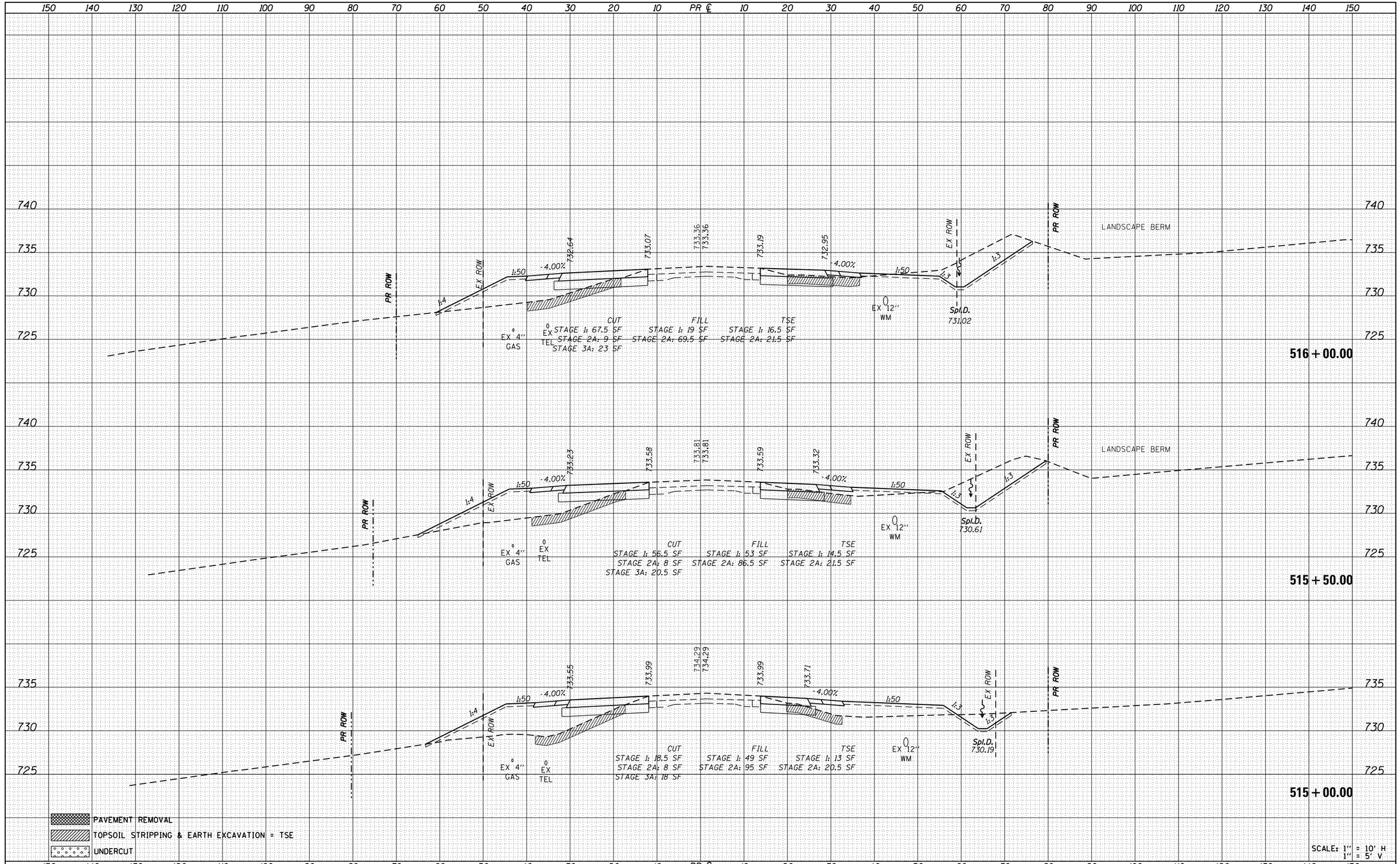
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 514+00.00 TO STA. 514+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	469
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	



ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

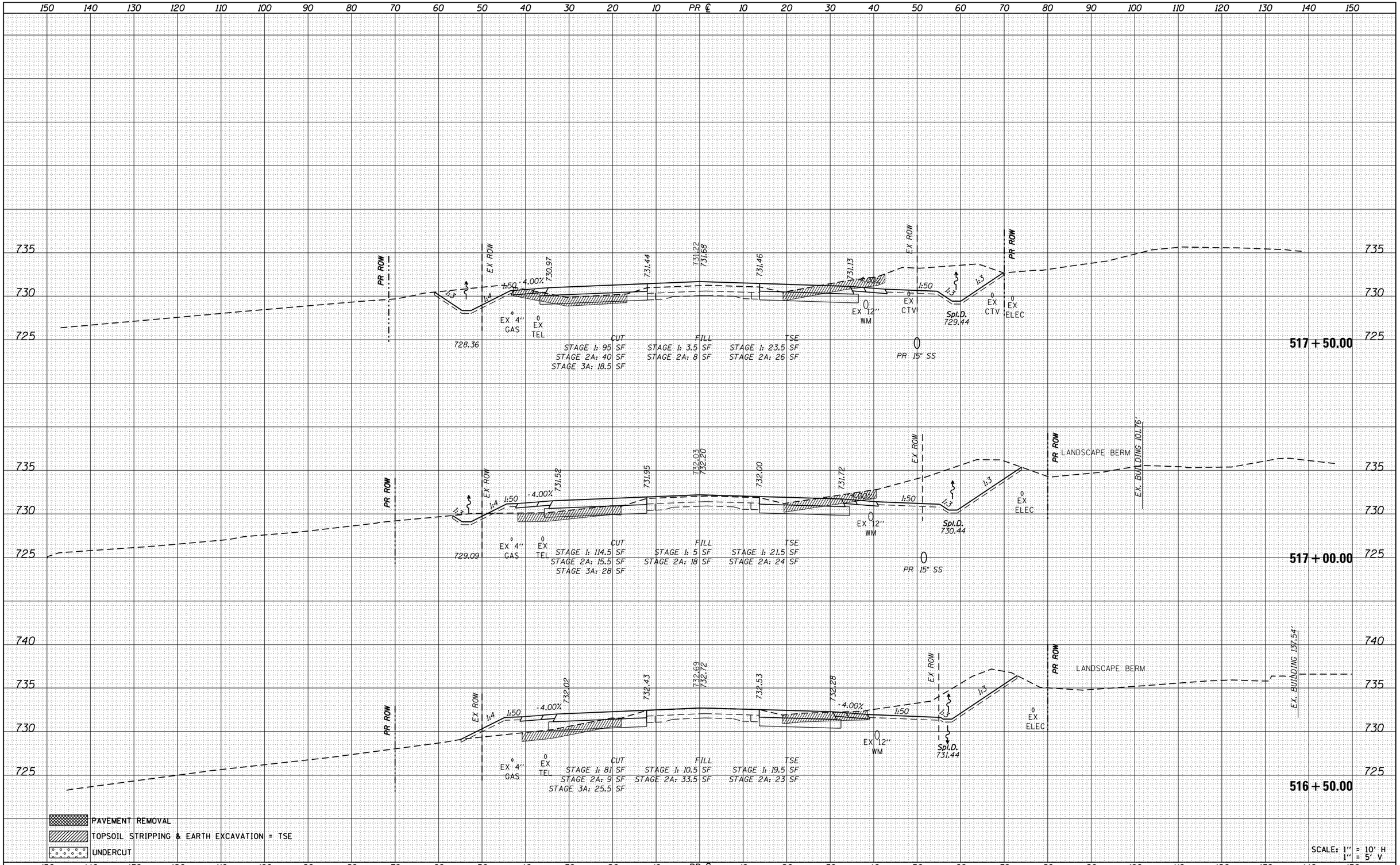
IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 515+00.00 TO STA. 516+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	470
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE



ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 516+50.00 TO STA. 517+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	471
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

730 725 720

PR ROW — EX ROW — VAR. — 1:50 — 726.60 — 2.00 % — 727.08 — 1.00 % — 726.72 — 727.19 — 1.00 % — 727.08 — 2.00 % — 726.60 — MAT'L LINE

723.92 — EX 4" GAS — PR 15" SS — EX 12" WM — EX CTV — PR 15" SS — EX 12" SS — EX 18" SS

CUT STAGE 2A: 63 SF — TSE STAGE 2A: 20.5 SF — UNDERCUT STAGE 2A: 92 SF STAGE 3A: 84 SF

519 + 50.00

730 725

PR ROW — EX ROW — 1:50 — 727.93 — 2.00 % — 728.41 — 1.35% — 728.05 — 728.55 — 1.13 % — 728.41 — 2.00 % — 727.93 — 1:50 — EX ROW — PR ROW — PR 24" SS

1:3 — 1:4 — 725.25 — EX 4" GAS — PR 15" SS — PR 12" SS — EX 12" WM — EX CTV — PR 15" SS — Spl.D. 726.44 — PR 24" SS

CUT STAGE 1: 55.5 SF STAGE 2A: 37 SF STAGE 3A: 0.5 SF — FILL STAGE 2A: 0.5 SF STAGE 3A: 12 SF — TSE STAGE 1: 19.5 SF STAGE 2A: 20.5 SF — UNDERCUT STAGE 1: 66 SF STAGE 2A: 92 SF STAGE 3A: 19.5 SF — EX 18" SS

519 + 00.00

735 730 725

PR ROW — EX ROW — 1:50 — 729.12 — 2.00 % — 729.60 — 1.71% — 729.21 — 729.77 — 1.43 % — 729.60 — 2.00 % — 729.12 — EX ROW — 1:50 — PR ROW — EX. BUILDING 108.64'

1:3 — 1:4 — 726.44 — EX 4" GAS — PR 15" SS — PR 12" SS — EX 12" WM — EX CTV — Spl.D. 727.44 — PR 15" SS

CUT STAGE 1: 83 SF STAGE 2A: 71 SF STAGE 3A: 16.5 SF — FILL STAGE 1: 6.5 SF STAGE 2A: 3.5 SF STAGE 3A: 12 SF — TSE STAGE 1: 21.5 SF STAGE 2A: 22.5 SF

518 + 50.00

735 730 725

PR ROW — EX ROW — 1:50 — 730.15 — 2.00 % — 730.63 — 2.07% — 730.25 — 730.84 — 1.73 % — 730.63 — 2.00 % — 730.15 — EX ROW — 1:50 — PR ROW — EX. BUILDING 108.79'

1:3 — 1:4 — 727.47 — EX 4" GAS — EX TEL — PR 15" SS — EX 12" WM — EX CTV — Spl.D. 728.44 — EX ELEC — PR 15" SS

CUT STAGE 1: 85 SF STAGE 2A: 63 SF STAGE 3A: 18 SF — FILL STAGE 1: 5 SF STAGE 2A: 6 SF STAGE 3A: 11 SF — TSE STAGE 1: 20 SF STAGE 2A: 20 SF

518 + 00.00

PAVEMENT REMOVAL

TOPSOIL STRIPPING & EARTH EXCAVATION = TSE

UNDERCUT

SCALE: 1" = 10' H
1" = 5' V

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 518+00.00 | TO STA. 519+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(I)R, I	KENDALL	558	472
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE
NO.								

ORIGINAL SURVEY	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE
NO.								

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

730 725 720

PR ROW | EX ROW | 1:3 | 1:4 | 1:50 | EX 4" GAS | PR 15" SS | Spl.D. 720.14 | 723.47 | -2.00 % | 723.95 | 1.19 % | 723.66 | 724.09 | 1.43% | 723.95 | 2.00 % | 723.47 | EX 12" WM | EX 18" SS | EX CTV | PR 15" SS | Spl.D. 722.09 | EX. BUILDING 116.03'

CUT
STAGE 1: 138 SF
STAGE 2A: 111.5 SF

FILL
STAGE 3A: 14 SF

TSE
STAGE 1: 17 SF
STAGE 2A: 21.5 SF

UNDERCUT
STAGE 1: 68.5 SF
STAGE 2A: 96 SF
STAGE 3A: 20.5 SF

520 + 50.00

PR 24" SS

730 725 720

PR ROW | EX ROW | VAR. | 1:50 | EX 4" GAS | PR 15" SS | 722.43 | 725.11 | -2.00 % | 725.59 | 1.00 % | 725.21 | 725.70 | 0.96 | 725.65 | 725.63 | 1.00 | 725.59 | 2.00 % | 725.11 | MATCHLINE | EX 12" WM | EX 18" SS | EX CTV | PR 15" SS

CUT
STAGE 2A: 97 SF

TSE
STAGE 2A: 20 SF

UNDERCUT
STAGE 1: 68.5 SF
STAGE 2A: 99 SF
STAGE 3A: 77 SF

520 + 00.00

PR 24" SS

730 725

PR ROW | FIELD ENTRANCE | EX ROW | 6.69% | 2.00% | EX 4" GAS | PR 15" SS | 725.99 | -2.00 % | 726.47 | 1.00 % | 726.19 | 726.58 | 1.00 % | 726.47 | 2.00 % | 725.99 | MATCHLINE | EX 12" WM | EX 18" SS | EX CTV | PR 15" SS | EX 12" SS

519 + 70.94

PR 24" SS

PAVEMENT REMOVAL
TOPSOIL STRIPPING & EARTH EXCAVATION = TSE
UNDERCUT

SCALE: 1" = 10' H
1" = 5' V

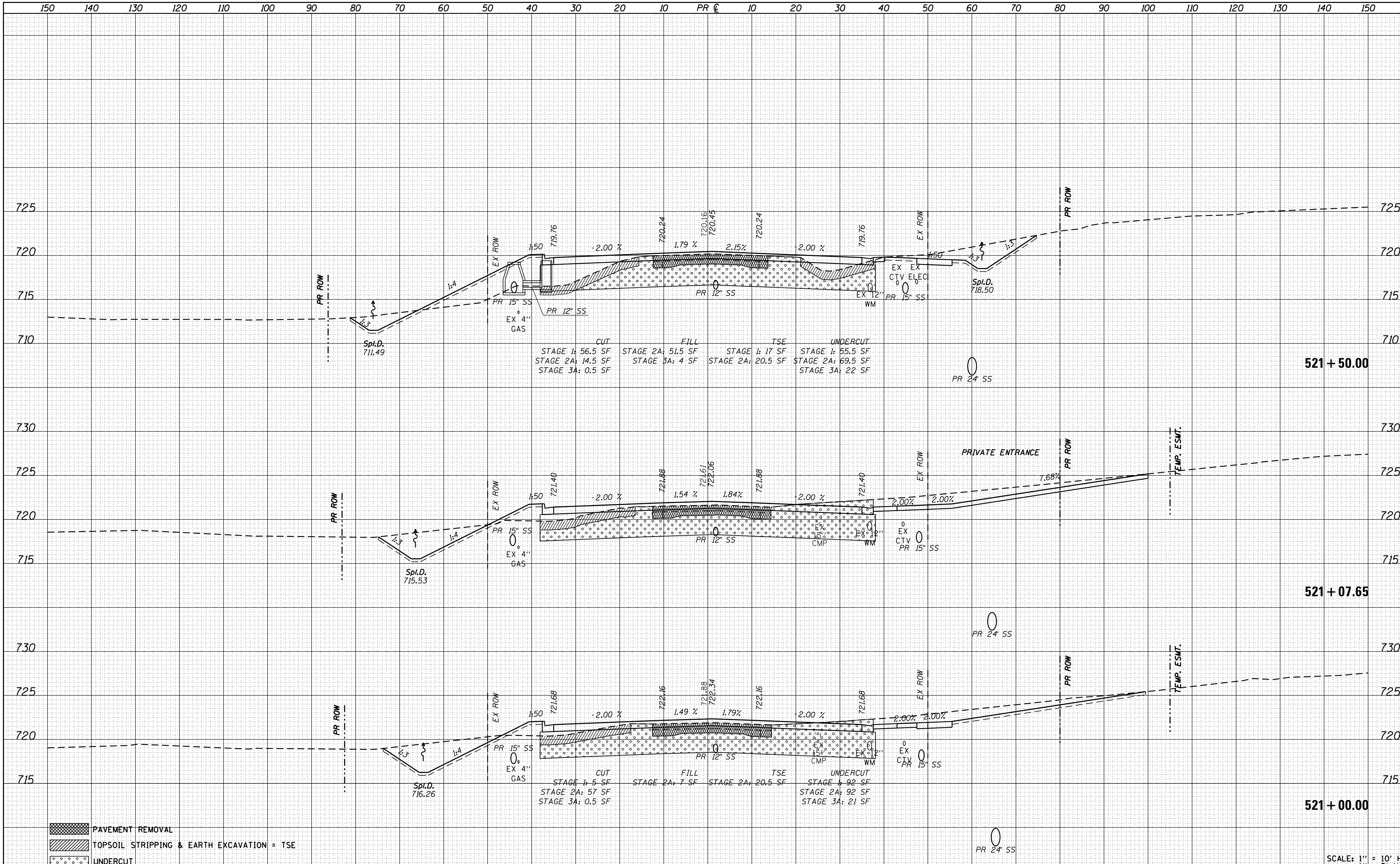
FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 519+70.94 | TO STA. 520+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	473
		CONTRACT NO. 66D24		
		ILLINOIS	FED. AID PROJECT	



FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	PLOT SCALE = 20.0000 ' / in.	DRAWN -	REVISED -	
Default	PLOT DATE = 1/18/2018	CHECKED -	REVISED -	
		DATE -	REVISED -	

IL 71 CROSS SECTIONS

SCALE: SHEET OF SHEETS STA. 521+00.00 TO STA.521+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	474

CONTRACT NO. 66D24

ILLINOIS FED. AID PROJECT

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

715
710
705

PR ROW
EX ROW
1:4
1:3
1:50
2.00 %
2.06%
PR 15" SS
PR 12" SS
PR 18" SS
PR 24" SS
EX 4" GAS
EX 12" WM
EX CTV
EX ELEC
Spl.D.
707.17
713.91
714.39
714.41
714.61

CUT
STAGE 1: 15 SF
STAGE 2A: 23.5 SF
STAGE 3A: 0.5 SF

FILL
STAGE 1: 6 SF
STAGE 2A: 29 SF
STAGE 3A: 8 SF

TSE
STAGE 1: 20.5 SF
STAGE 2A: 22 SF

UNDERCUT
STAGE 1: 43 SF
STAGE 2A: 71 SF
STAGE 3A: 22 SF

523 + 00.00

720
715
710
705

PR ROW
EX ROW
1:4
1:3
1:50
2.00 %
PR 15" SS
PR 12" SS
PR 18" SS
PR 24" SS
EX 4" GAS
EX 12" WM
EX CTV
Spl.D.
707.54
714.20
715.86
716.34
716.56

CUT
STAGE 1: 25.5 SF
STAGE 2A: 20.5 SF

FILL
STAGE 1: 2 SF
STAGE 2A: 55.5 SF
STAGE 3A: 9.5 SF

TSE
STAGE 1: 21 SF
STAGE 2A: 23 SF

UNDERCUT
STAGE 1: 46.5 SF
STAGE 2A: 65.5 SF
STAGE 3A: 22.5 SF

522 + 50.00

720
715
710
705

PR ROW
EX ROW
1:4
1:3
1:50
2.00 %
2.06%
PR 15" SS
PR 12" SS
PR 18" SS
PR 24" SS
EX 4" GAS
EX 12" WM
EX CTV
EX ELEC
Spl.D.
708.64
716.35
717.81
718.24
718.29
718.51

CUT
STAGE 1: 23.5 SF
STAGE 2A: 14.5 SF

FILL
STAGE 1: 2.5 SF
STAGE 2A: 64 SF
STAGE 3A: 10 SF

TSE
STAGE 1: 21 SF
STAGE 2A: 22.5 SF

UNDERCUT
STAGE 1: 44 SF
STAGE 2A: 64.5 SF
STAGE 3A: 22.5 SF

522 + 00.00

PAVEMENT REMOVAL
TOPSOIL STRIPPING & EARTH EXCAVATION = TSE
UNDERCUT

SCALE: 1" = 10' H
1" = 5' V

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FINAL SURVEY / ORIGINAL SURVEY

NO.	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE

FILE NAME = D366D24-sht-xssht-IL71.dgn
Default

USER NAME = bemery
PLOT SCALE = 20.0000 ' / in.
PLOT DATE = 1/18/2018

DESIGNED -
DRAWN -
CHECKED -
DATE -

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

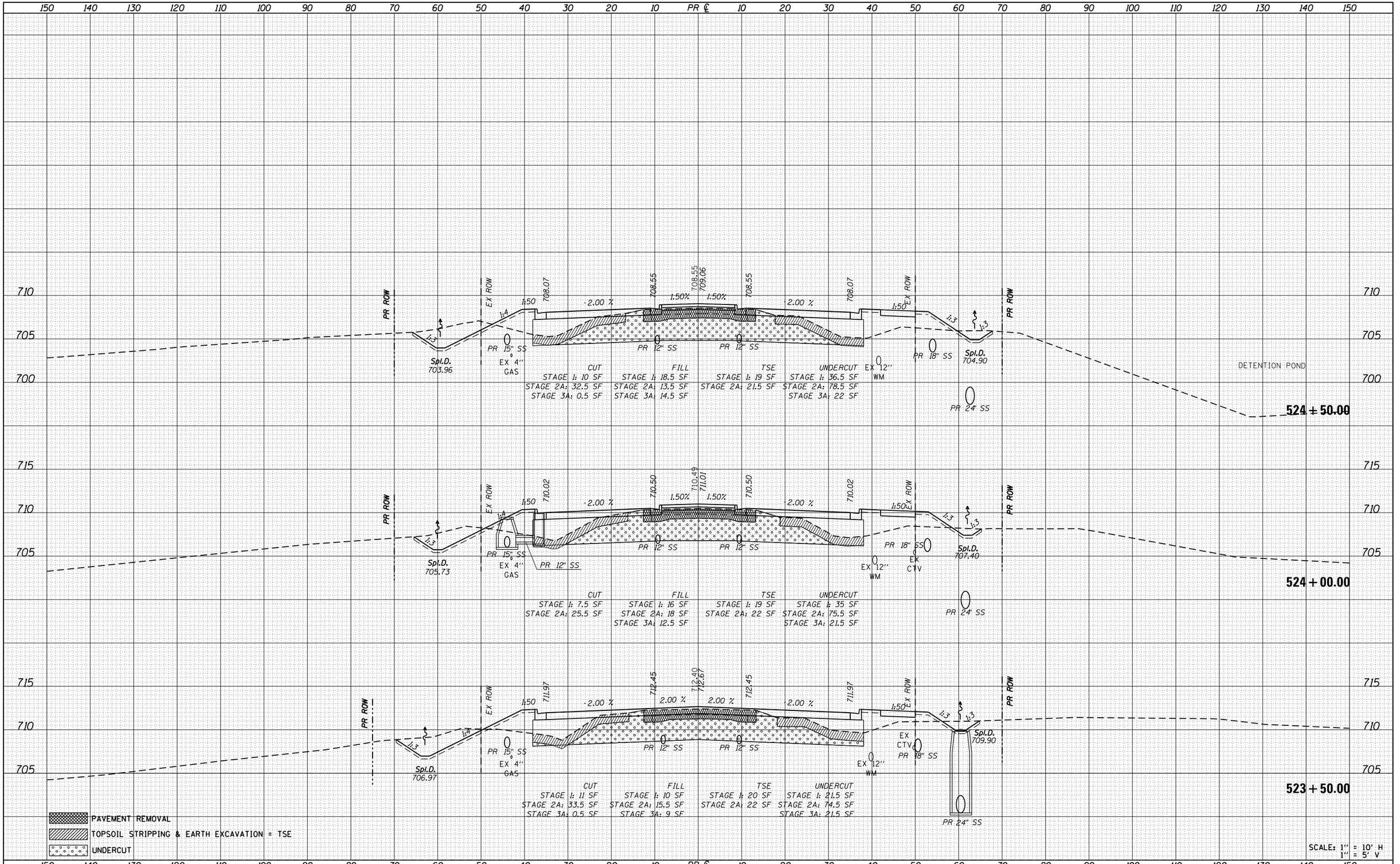
IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 522+00.00 | TO STA. 523+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	475
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE



ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

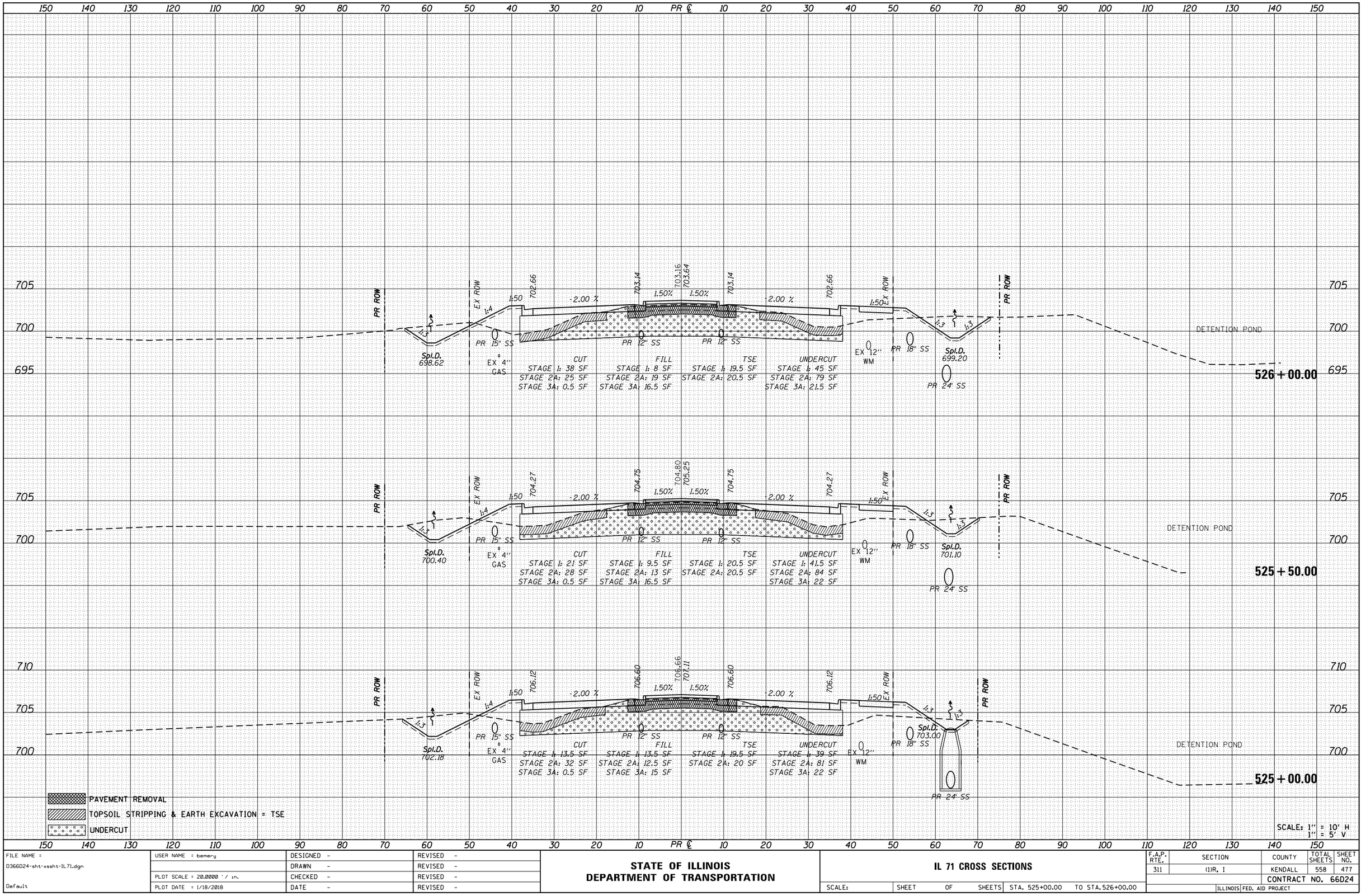
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 523+50.00 | TO STA. 524+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	476
		CONTRACT NO. 66D24		
		ILLINOIS	FED. AID PROJECT	

FINAL SURVEY	NO.	NOTE BOOK	BY	DATE
SURVEYED				
PLOTTED				
TEMPLATE				
AREAS				
AREAS CHECKED				



ORIGINAL SURVEY	NO.	NOTE BOOK	BY	DATE
SURVEYED				
PLOTTED				
TEMPLATE				
AREAS				
AREAS CHECKED				

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

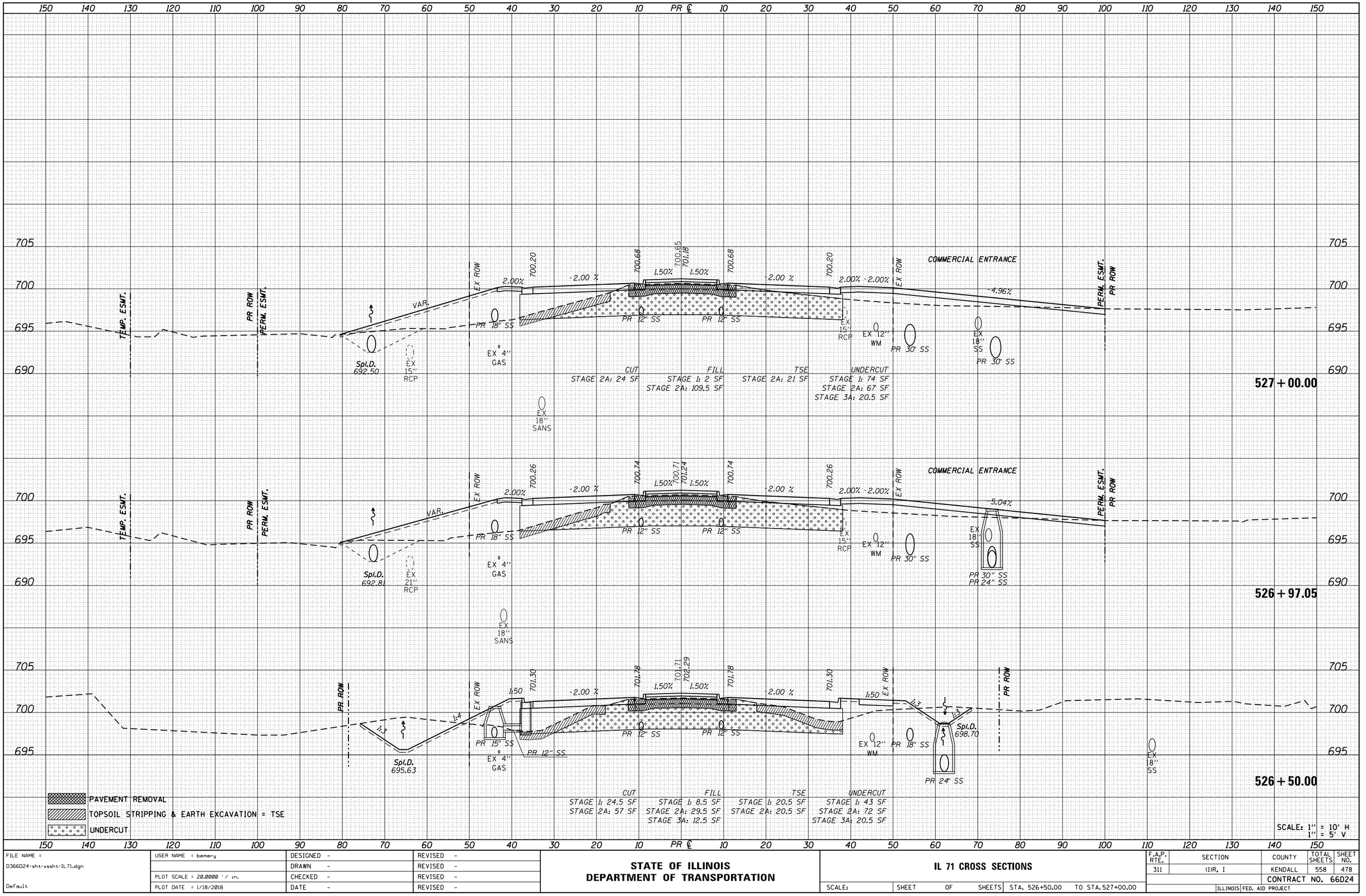
IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 525+00.00 TO STA.526+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	477
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE



ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 526+50.00 TO STA. 527+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	()R, I	KENDALL	558	478
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
ANGLES		
AREAS		
AREAS CHECKED	DATE	

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
ANGLES		
AREAS		
AREAS CHECKED	DATE	

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

700 695 690 685

698.90 699.38 699.25 699.98 699.42 699.38 698.90

1:50 2.00 % 2.81% 1.50% 2.00 % 2.00 % 1:50

1:4 1:3 1:3

EX 4" GAS

5 FT X 5 FT RCBC
143 FT
SLOPE=0.60%

PR ROW EX ROW EX ROW PR ROW

686.21 DSFL=686.25 USFL=687.12 689.00

EX 12" WM

527 + 85.01

699.34 699.82 699.65 700.33 699.82 699.34

1:50 2.00 % 1.50% 1.50% 2.00 % 1:50

VAR. 1:3 1:3

PR 18" SS PR 12" SS PR 12" SS

EX 4" GAS

30"

PR 15" SS
PR 30" SS

EX 12" WM

Spl.D. 689.38

Spl.D. 690.63

CUT	FILL	TSE
STAGE 1: 40.5 SF	STAGE 1: 205.5 SF	STAGE 1: 20.5 SF
STAGE 2A: 38.5 SF	STAGE 2A: 322.5 SF	STAGE 2A: 22.5 SF
STAGE 3A: 20.5 SF	STAGE 3A: 6 SF	
STAGE 4: 3.5 SF	STAGE 4: 9.5 SF	

527 + 50.00

700.06 700.54 700.50 701.05 700.54 700.06

PRIVATE ENTRANCE COMMERCIAL ENTRANCE

2.00% 2.00 % 1.50% 1.50% 2.00 % 2.00% 2.00%

-7.65% -5.55%

TEMP. ESMT. PR ROW PERM. ESMT. EX ROW EX ROW EX ROW PERM. ESMT. PR ROW

692.06

EX 21" RCP

PR 18" SS PR 12" SS PR 12" SS

EX 4" GAS

EX 18" SANS

EX 15" RCP EX 12" WM PR 30" SS EX 18" SS PR 30" SS

527 + 07.15

PAVEMENT REMOVAL
TOPSOIL STRIPPING & EARTH EXCAVATION = TSE
UNDERCUT

SCALE: 1" = 10' H
1" = 5' V

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

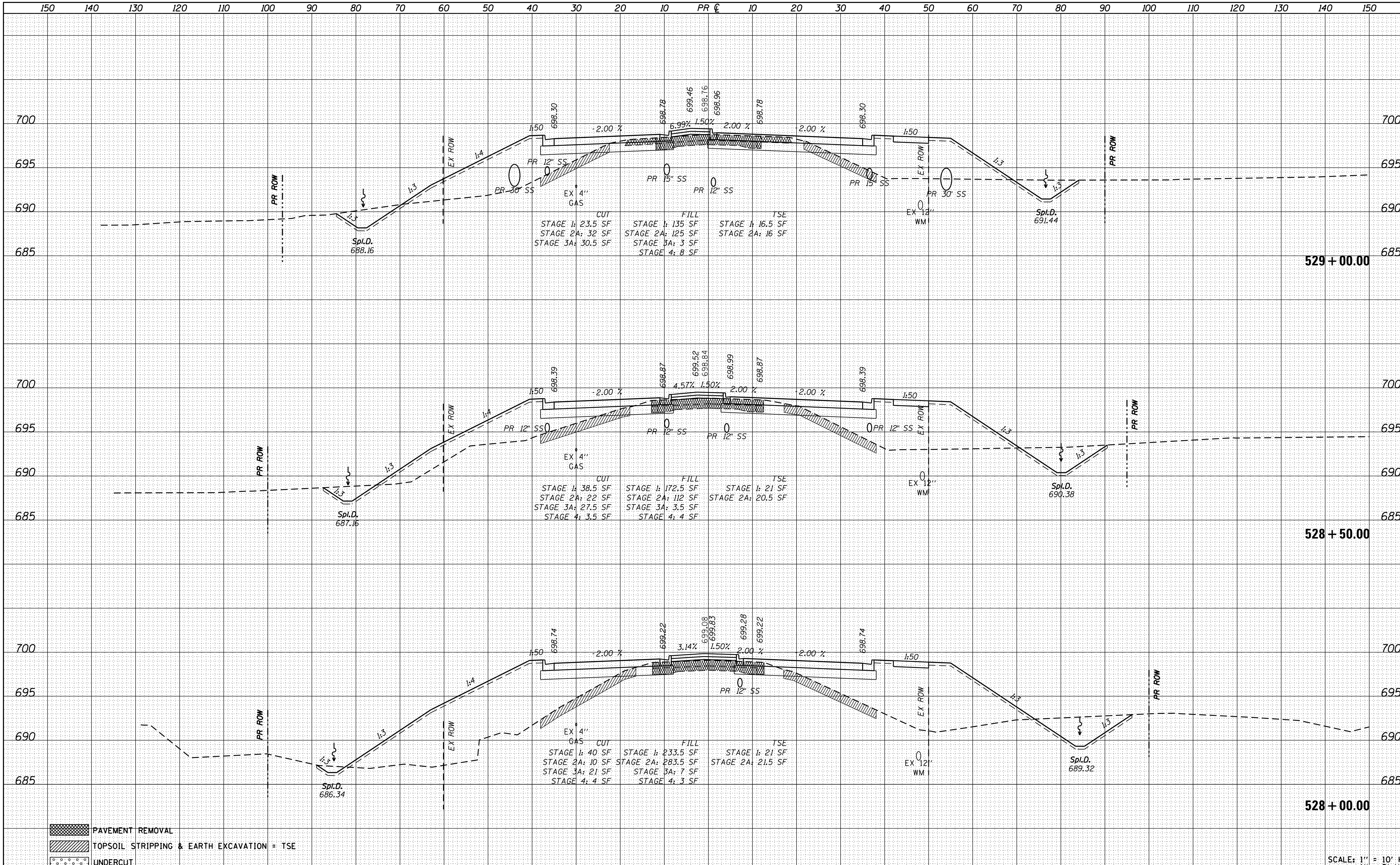
FILE NAME = D366D24-sht-xssht-IL71.dgn Default	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 527+07.15 | TO STA. 527+85.01

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	479
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
700
695
690
685
1:50
698.30
-2.00 %
698.78
699.46
698.76
698.96
6.99%
1.50%
2.00 %
698.78
2.00 %
698.30
1:50
1:4
EX ROW
PR 12" SS
PR 30" SS
PR 15" SS
PR 12" SS
PR 15" SS
PR 30" SS
EX ROW
PR ROW
1:3
PR ROW
1:3
1:3
EX 4"
GAS
EX 12"
WM
Spl.D.
691.44
Spl.D.
688.16
CUT
STAGE 1: 23.5 SF
STAGE 2A: 32 SF
STAGE 3A: 30.5 SF
FILL
STAGE 1: 135 SF
STAGE 2A: 125 SF
STAGE 3A: 3 SF
STAGE 4: 8 SF
TSE
STAGE 1: 16.5 SF
STAGE 2A: 16 SF
529 + 00.00
700
695
690
685
1:50
698.39
-2.00 %
698.87
699.52
698.84
698.99
698.87
4.57%
1.50%
2.00 %
2.00 %
698.39
1:50
1:4
EX ROW
PR 12" SS
PR 12" SS
PR 12" SS
PR 12" SS
EX ROW
PR ROW
1:3
PR ROW
1:3
1:3
EX 4"
GAS
EX 12"
WM
Spl.D.
690.38
Spl.D.
687.16
CUT
STAGE 1: 38.5 SF
STAGE 2A: 22 SF
STAGE 3A: 27.5 SF
STAGE 4: 3.5 SF
FILL
STAGE 1: 172.5 SF
STAGE 2A: 112 SF
STAGE 3A: 3.5 SF
STAGE 4: 4 SF
TSE
STAGE 1: 21 SF
STAGE 2A: 20.5 SF
528 + 50.00
700
695
690
685
1:50
698.74
-2.00 %
699.22
699.08
699.83
699.28
699.22
3.14%
1.50%
2.00 %
2.00 %
698.74
1:50
1:4
PR 12" SS
EX ROW
EX ROW
PR ROW
PR ROW
1:3
1:3
1:3
EX 4"
GAS
EX 12"
WM
Spl.D.
689.32
Spl.D.
686.34
CUT
STAGE 1: 40 SF
STAGE 2A: 10 SF
STAGE 3A: 21 SF
STAGE 4: 4 SF
FILL
STAGE 1: 233.5 SF
STAGE 2A: 283.5 SF
STAGE 3A: 7 SF
STAGE 4: 3 SF
TSE
STAGE 1: 21 SF
STAGE 2A: 21.5 SF
528 + 00.00
PAVEMENT REMOVAL
TOPSOIL STRIPPING & EARTH EXCAVATION = TSE
UNDERCUT
SCALE: 1" = 10' H
1" = 5' V

FINAL SURVEY		
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	
	BY	DATE

ORIGINAL SURVEY		
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	
	BY	DATE

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IL 71 CROSS SECTIONS	F.A.P. RTE. 311	SECTION (1)R, I
Default	PLOT SCALE = 20.0000 ' / in.	DRAWN -	REVISED -			COUNTY KENDALL	TOTAL SHEETS 558
	PLOT DATE = 1/18/2018	CHECKED -	REVISED -		SCALE: SHEET OF SHEETS STA. 528+00.00 TO STA.529+00.00	SHEET NO. 480	CONTRACT NO. 66D24
		DATE -	REVISED -			ILLINOIS FED. AID PROJECT	

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

700
695

EX ROW
1:3
1:4
1:50
699.51
2.00 %
699.99
700.65
700.16
700.04
9.36% 1.50%
1.41 %
699.99
2.00 %
699.51
1:50
EX ROW
1:3
1:3
PR ROW

Spl.D.
697.70
PR 30" SS
PR 12" SS
EX 4" GAS
PR 12" SS
EX 12" WM
PR 30" SS
Spl.D.
695.40

CUT	FILL	TSE
STAGE 1: 30.5 SF	STAGE 1: 40.5 SF	STAGE 1: 15.5 SF
STAGE 2A: 14.5 SF	STAGE 2A: 46.5 SF	STAGE 2A: 14 SF
STAGE 3A: 33 SF	STAGE 3A: 1.5 SF	
	STAGE 4: 5 SF	

530 + 50.00

700
695
690

PR ROW
EX ROW
1:4
1:50
698.86
2.00 %
699.34
700.02
699.54
699.34
10.56% 1.50%
1.70 %
699.34
2.00 %
698.86
1:50
EX ROW
1:3
PR ROW

LANDSCAPE BERM

Spl.D.
696.20
PR 30" SS
PR 12" SS
EX 4" GAS
PR 12" SS
EX 12" WM
PR 30" SS
Spl.D.
694.30

CUT	FILL	TSE
STAGE 1: 10.5 SF	STAGE 1: 76.5 SF	STAGE 1: 16 SF
STAGE 2A: 15.5 SF	STAGE 2A: 43 SF	STAGE 2A: 15 SF
STAGE 3A: 32 SF	STAGE 3A: 2.5 SF	
	STAGE 4: 5 SF	

530 + 00.00

700
695
690

PR ROW
1:3
EX ROW
1:4
1:50
698.45
2.00 %
698.93
699.65
699.17
698.90
11.77% 1.50%
2.00 %
698.93
2.00 %
698.45
1:50
EX ROW
1:3
PR ROW

LANDSCAPE BERM

Spl.D.
692.18
PR 30" SS
PR 15" SS
PR 12" SS
EX 4" GAS
EX 12" WM
PR 30" SS
Spl.D.
692.50

CUT	FILL	TSE
STAGE 1: 12 SF	STAGE 1: 122 SF	STAGE 1: 16.5 SF
STAGE 2A: 30.5 SF	STAGE 2A: 92 SF	STAGE 2A: 15.5 SF
STAGE 3A: 31.5 SF	STAGE 3A: 3.5 SF	
	STAGE 4: 5.5 SF	

529 + 50.00

PAVEMENT REMOVAL
TOPSOIL STRIPPING & EARTH EXCAVATION = TSE
UNDERCUT

SCALE: 1" = 10' H
1" = 5' V

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FINAL SURVEY / ORIGINAL SURVEY

NO.	NOTE BOOK	SURVEYED	BY	DATE
		PLOTTED		
		TEMPLATE		
		AREAS		
		AREAS CHECKED		

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 529+50.00 | TO STA. 530+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	481
		CONTRACT NO. 66D24		
		ILLINOIS	FED. AID PROJECT	

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

705
700

EX ELEC
EX 12" WM
EX 24" RCP
PR 30" SS
MATCHLINE
702.99
-2.00 %
703.47
1.00 %
703.62
703.55
-0.86 %
703.51
1.00 %
703.47
-2.00 %
702.99
EX ROW
150
PR ROW
Spl.D.
701.55
EX 12" WM
PR 30" SS
694.50
EX 4" GAS
EX 10" SANS

CUT
STAGE 1: 14 SF
STAGE 2A: 20.5 SF
STAGE 3A: 22.5 SF

FILL
STAGE 1: 25.5 SF
STAGE 3A: 3 SF

TSE
STAGE 1: 13.5 SF

532+00.00

705
700
695

EX ELEC
EX 24" RCP
PR 30" SS
MATCHLINE
701.96
-2.00 %
702.44
1.00 %
702.71
702.55
1.00 %
702.44
2.00 %
701.96
EX ROW
COMMERCIAL ENTRANCE
2.00%
2.00%
-3.96%
PR ROW
TEMP. ESMT.
EX 4" GAS
15" CMP
EX 12" WM
PR 30" SS
EX 10" SANS

531+64.17

705
700

EX ELEC
PR 30" SS
MATCHLINE
701.58
-2.00 %
702.06
1.00 %
702.34
702.17
1.00 %
702.06
2.00 %
701.58
EX ROW
COMMERCIAL ENTRANCE
2.00%
2.00%
-2.98%
PR ROW
TEMP. ESMT.
EX 4" GAS
EX 15" CMP
EX 12" WM
PR 30" SS
EX 10" SANS

CUT
STAGE 2B: 31.5 SF
STAGE 3A: 44.5 SF

531+50.00

705
700
695

EX. BUILDING - 101.52'
EX ROW
1:4
1:50
700.42
-2.00 %
700.90
701.52
701.04
700.97
8.16%
1.50%
1.12 %
700.90
2.00 %
700.42
EX ROW
1:50
PR ROW
Spl.D.
699.20
PR 30" SS
EX 4" GAS
EX CTV
EX ELEC
EX 12" WM
1:3
1:3
Spl.D.
696.50
PR 30" SS
EX 10" SANS

CUT
STAGE 1: 24 SF
STAGE 2A: 16.5 SF
STAGE 3A: 40.5 SF
STAGE 4: 5 SF

FILL
STAGE 1: 31.5 SF
STAGE 2A: 29 SF
STAGE 3A: 1.5 SF
STAGE 4: 4.5 SF

TSE
STAGE 1: 14.5 SF
STAGE 2A: 13 SF

531+00.00

EX 10" SANS

PAVEMENT REMOVAL
TOPSOIL STRIPPING & EARTH EXCAVATION = TSE
UNDERCUT

SCALE: 1" = 10' H
1" = 5' V

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

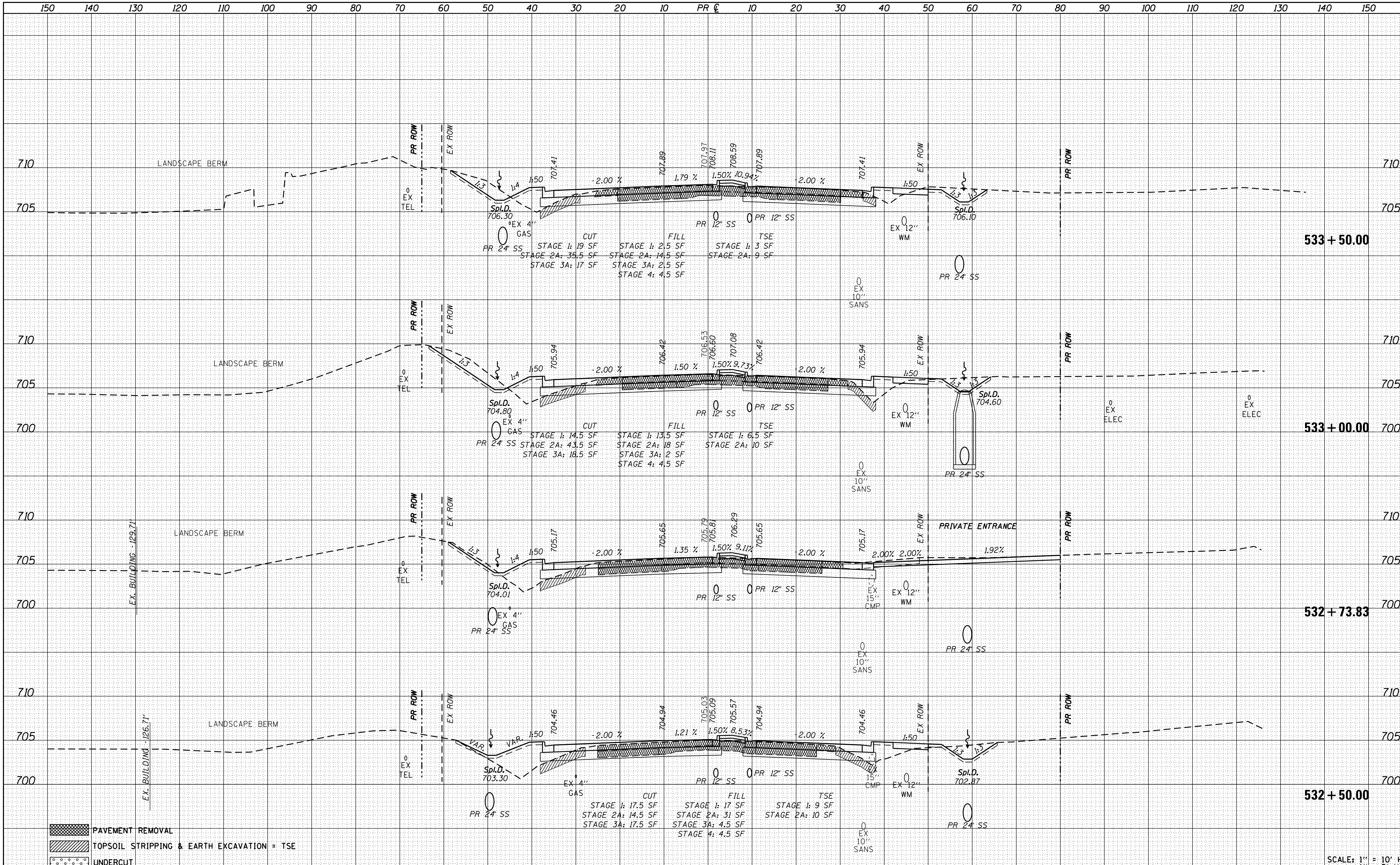
FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
Default	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 531+00.00 | TO STA. 532+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(I)R. I	KENDALL	558	482
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		



FILE NAME =	USER NAME = bemery	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IL 71 CROSS SECTIONS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
D366D24-sht-xssht-IL71.dgn		DRAWN -	REVISED -			311	(1)R, I	KENDALL	558	483
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -			CONTRACT NO. 66D24				
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -		SCALE: SHEET OF SHEETS STA. 532+50.00 TO STA. 533+50.00	ILLINOIS FED. AID PROJECT				

FINAL SURVEY	NO.	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE
ORIGINAL SURVEY									

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

720 715 710 705

PR ROW

LANDSCAPE BERM

VAR. Spl.D. 711.23 EX ROW EX VAR. 1:50 711.84 -2.00 % 712.32 712.42 2.00 % 1.50% 4.05% 712.29 712.96 712.32 2.00 % 711.84 1:50 EX ROW 1:3 1:3 Spl.D. 710.60 PR ROW

PR 18" SS PR 15" SS EX 8" EX 4" TEL GAS PR 12" SS PR 12" SS EX 12" WM PR 24" SS EX 21" SS

CUT
STAGE 1: 42 SF
STAGE 2A: 14 SF
STAGE 3A: 12.5 SF

FILL
STAGE 1: 9 SF
STAGE 2A: 67.5 SF
STAGE 3A: 3 SF
STAGE 4: 11.5 SF

TSE
STAGE 1: 1.5 SF
STAGE 2A: 8 SF

535 + 00.00

PR ROW EX ROW VAR. VAR. 1:50 710.36 -2.00 % 710.84 711.01 710.90 711.52 2.00 % 1.50% 6.08% 710.84 2.00 % 710.36 1:50 EX ROW 1:3 1:3 PR ROW

Spl.D. 709.88 PR 18" SS PR 15" SS EX 4" GAS PR 12" SS PR 12" SS EX 12" WM PR 24" SS EX 10" SANS EX TEL

CUT
STAGE 1: 6 SF
STAGE 2A: 14 SF
STAGE 3A: 13.5 SF

FILL
STAGE 1: 19.5 SF
STAGE 2A: 26 SF
STAGE 3A: 3 SF
STAGE 4: 8 SF

TSE
STAGE 1: 2 SF
STAGE 2A: 8.5 SF

534 + 50.00

PR ROW EX ROW 1:3 1:4 1:50 708.89 -2.00 % 709.37 709.41 709.59 710.08 2.00 % 1.50% 9.91% 709.37 2.00 % 708.89 1:50 EX ROW 1:3 1:3 PR ROW

Spl.D. 707.80 EX 4" GAS PR 24" SS PR 12" SS PR 12" SS EX 12" WM PR 24" SS EX 10" SANS EX TEL Spl.D. 707.60

CUT
STAGE 1: 11 SF
STAGE 2A: 41 SF
STAGE 3A: 13.5 SF

FILL
STAGE 1: 2.5 SF
STAGE 2A: 15 SF
STAGE 3A: 3 SF
STAGE 4: 5.5 SF

TSE
STAGE 1: 2 SF
STAGE 2A: 8.5 SF

534 + 00.00

LANDSCAPE BERM

PAVEMENT REMOVAL

TOPSOIL STRIPPING & EARTH EXCAVATION = TSE

UNDERCUT

SCALE: 1" = 10' H
1" = 5' V

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

ORIGINAL SURVEY	NO.	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE

FILE NAME =	USER NAME = bemery	DESIGNED -	REVISED -
D366D24-sht-xssht-IL71.dgn		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 534+00.00 | TO STA. 535+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	()R, I	KENDALL	558	484
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		DATE

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

720 715 710

PR ROW

LANDSCAPE BERM

1:3

Spl.D. 711.05

EX ROW

1:4

1:50

716.21

-2.00 %

716.75

1.00 %

716.74 716.86

1.00 %

716.75

2.00 %

716.27

MATCH LINE

PR 15" SS

EX 4" GAS

EX TEL

CUT
STAGE 2A: 37.5 SF
STAGE 3A: 27 SF

FILL
STAGE 2A: 41.5 SF

TSE
STAGE 2A: 8 SF

EX 24" SS

EX 12" WM

PR 24" SS

EX 21" SS

536 + 50.00

720 715 710

PR ROW

LANDSCAPE BERM

1:3

Spl.D. 710.15

EX ROW

1:4

1:50

714.79

-2.00 %

715.27

1.00 %

715.27

1.50%

715.78 715.27

1.50%

715.27

2.00 %

714.77

EX 10" SANS

1:50

1:3

1:3

EX ROW

PR ROW

Spl.D. 713.60

PR 15" SS

EX 4" GAS

EX TEL

EX 24" SS

EX 12" WM

PR 24" SS

CUT
STAGE 1: 11.5 SF
STAGE 2A: 52 SF
STAGE 3A: 10 SF

FILL
STAGE 1: 4 SF
STAGE 2A: 28 SF
STAGE 3A: 11.5 SF
STAGE 4: 13 SF

TSE
STAGE 1: 1 SF
STAGE 2A: 8.5 SF

EX 21" SS

536 + 00.00

EX 10" SANS

720 715 710 705

PR ROW

LANDSCAPE BERM

1:3

Spl.D. 709.25

EX ROW

1:4

1:50

713.32

-2.00 %

713.80 713.84

2.00 %

713.80

1.50%

714.40

2.80%

713.80

2.00 %

713.32

1:50

EX ROW

PR ROW

1:3

1:3

Spl.D. 712.10

PR 15" SS

EX 4" GAS

EX TEL

PR 12" SS

EX 12" WM

PR 24" SS

CUT
STAGE 1: 24.5 SF
STAGE 2A: 24.5 SF
STAGE 3A: 7.5 SF

FILL
STAGE 1: 8.5 SF
STAGE 2A: 40.5 SF
STAGE 3A: 7.5 SF
STAGE 4: 13.5 SF

TSE
STAGE 1: 0.5 SF
STAGE 2A: 8.5 SF

EX 21" SS

535 + 50.00

EX 10" SANS

PAVEMENT REMOVAL

TOPSOIL STRIPPING & EARTH EXCAVATION = TSE

UNDERCUT

SCALE: 1" = 10' H
1" = 5' V

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		DATE

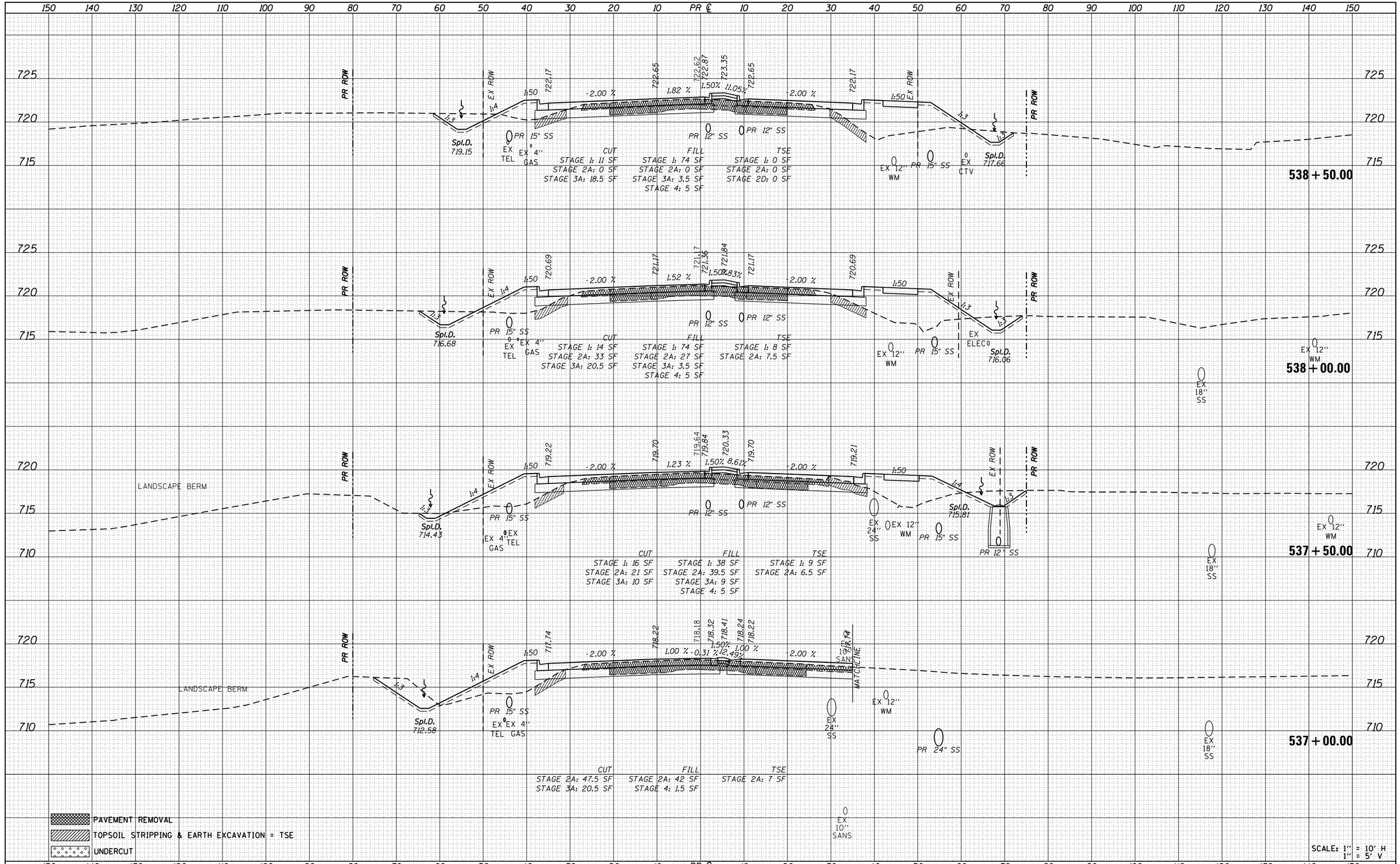
FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 535+50.00 TO STA. 536+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	485
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		



FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

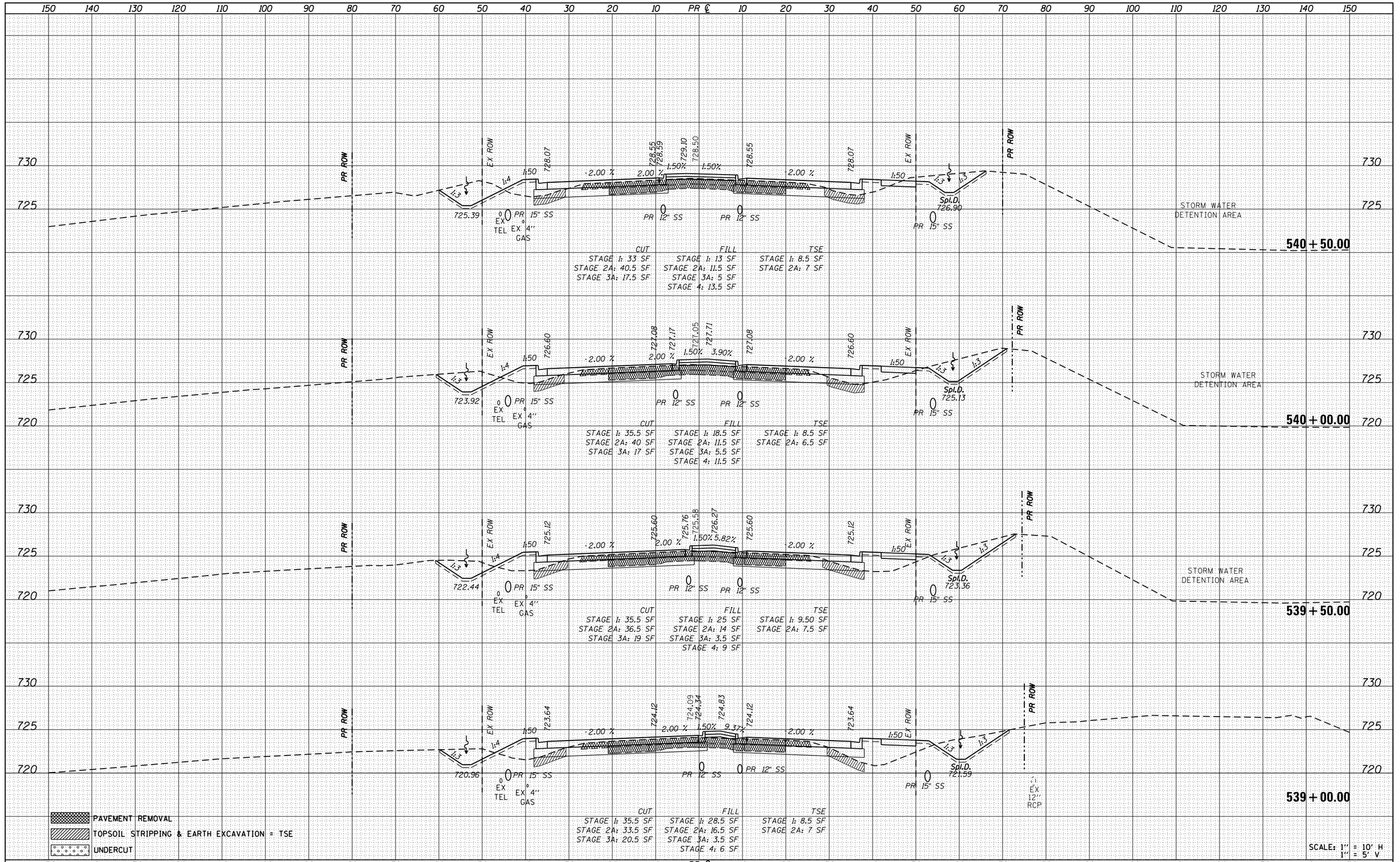
FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 537+00.00 TO STA. 538+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	486
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		



FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

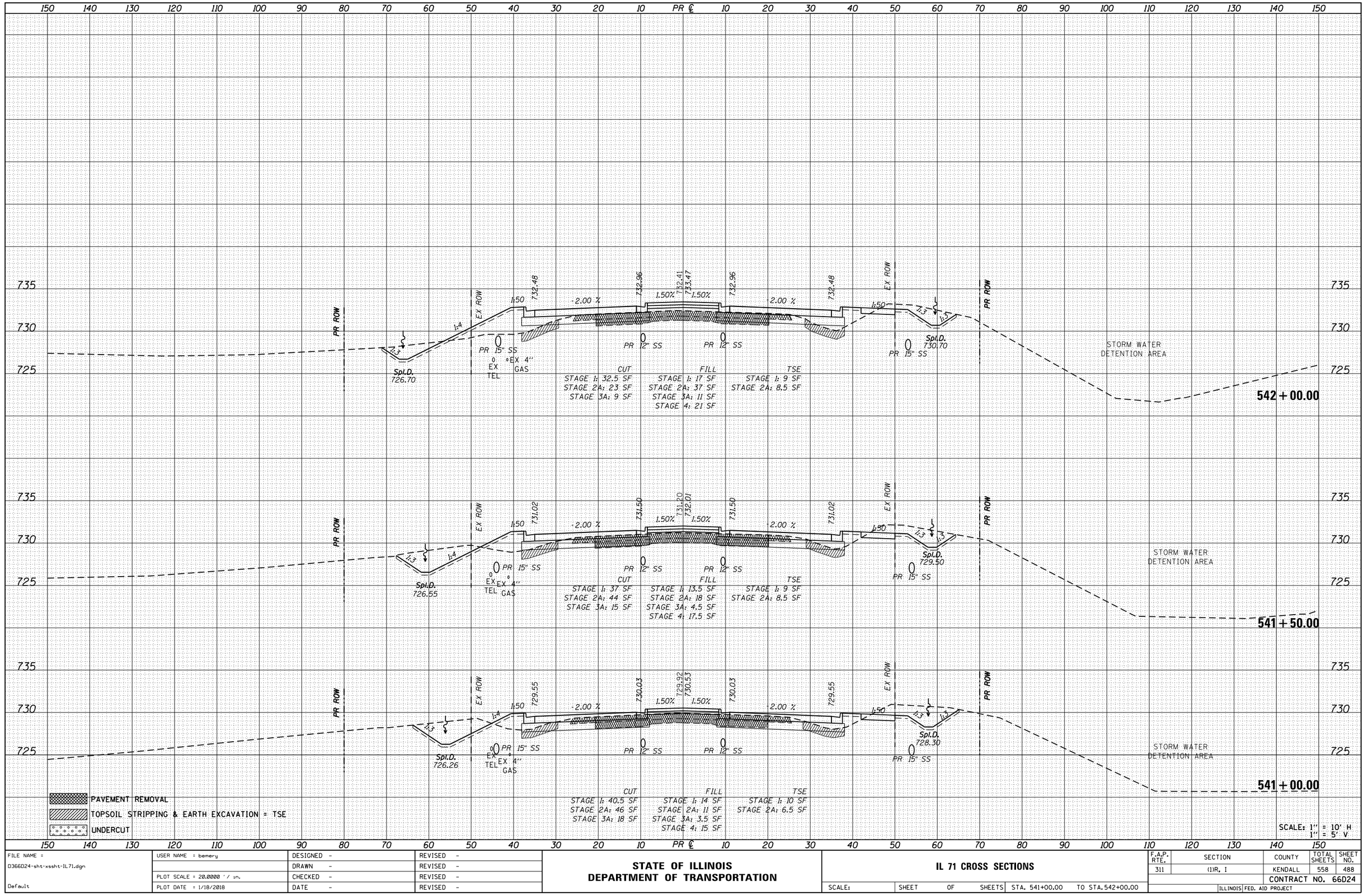
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 539+00.00 TO STA. 540+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	()R, I	KENDALL	558	487
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		



ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

FILE NAME =	USER NAME = bemery	DESIGNED -	REVISED -
D366D24-sht-xssht-IL71.dgn		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

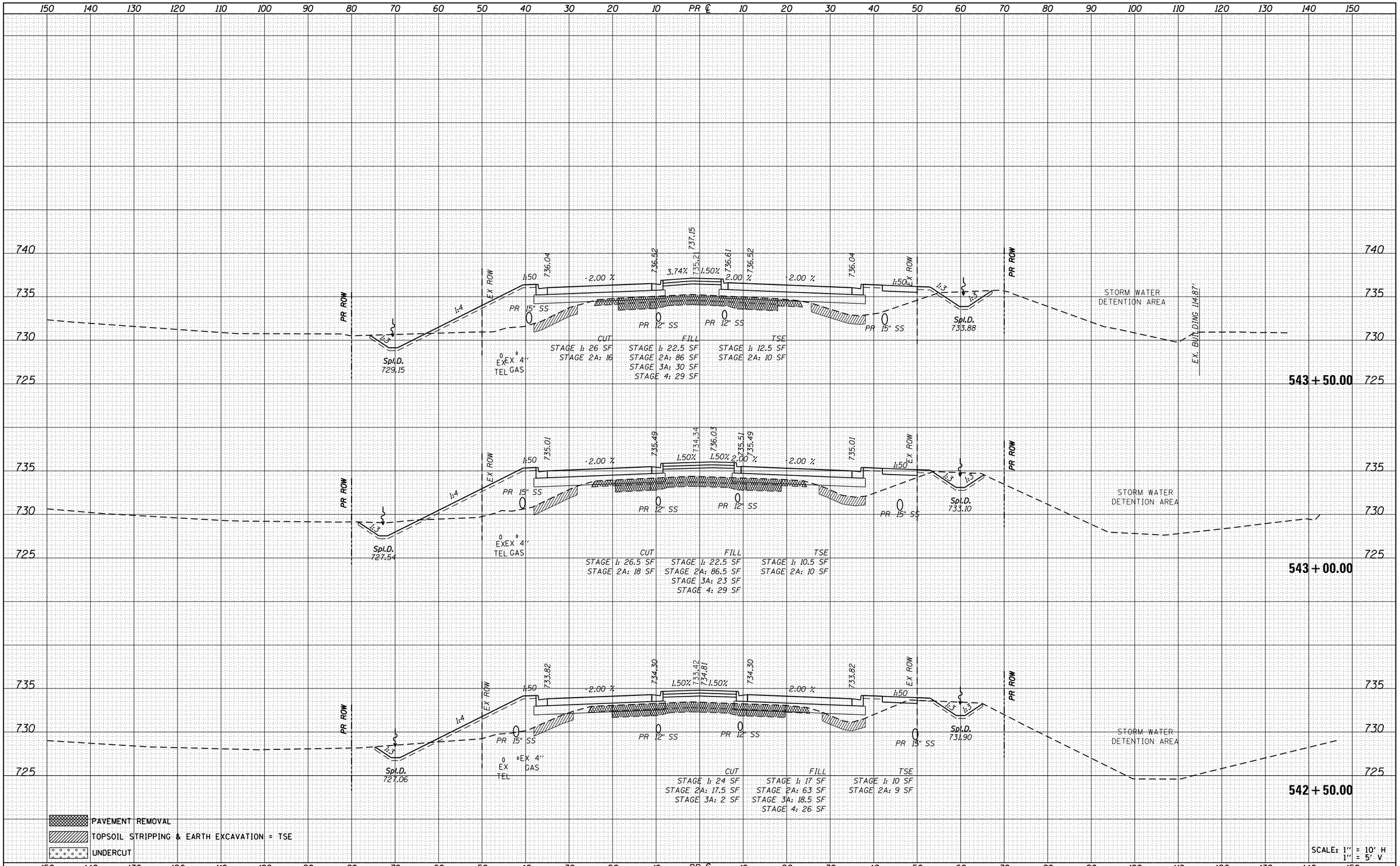
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 541+00.00 | TO STA. 542+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	488
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		DATE



ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		DATE

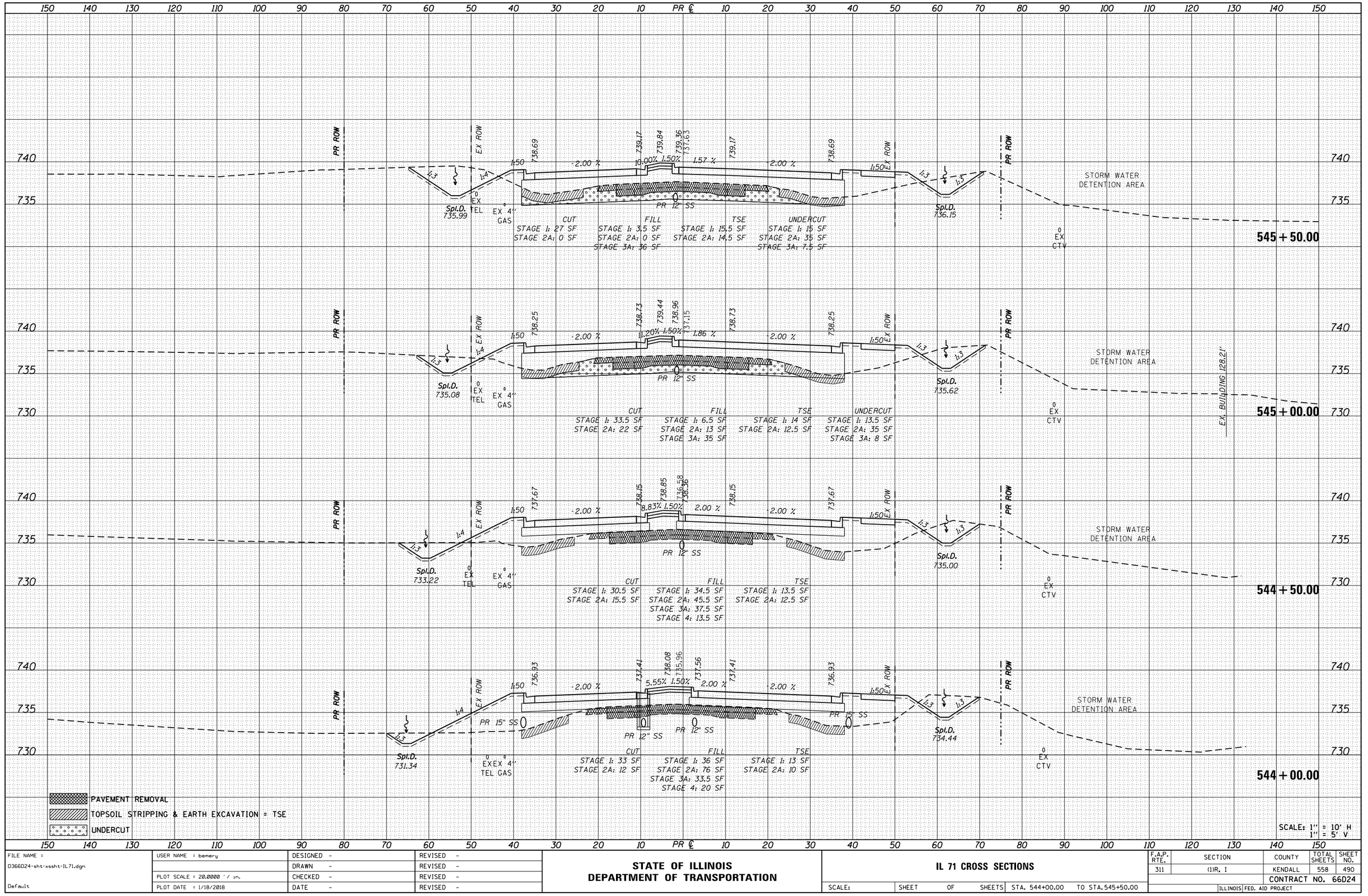
FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 542+50.00 | TO STA. 543+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	489
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			



FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

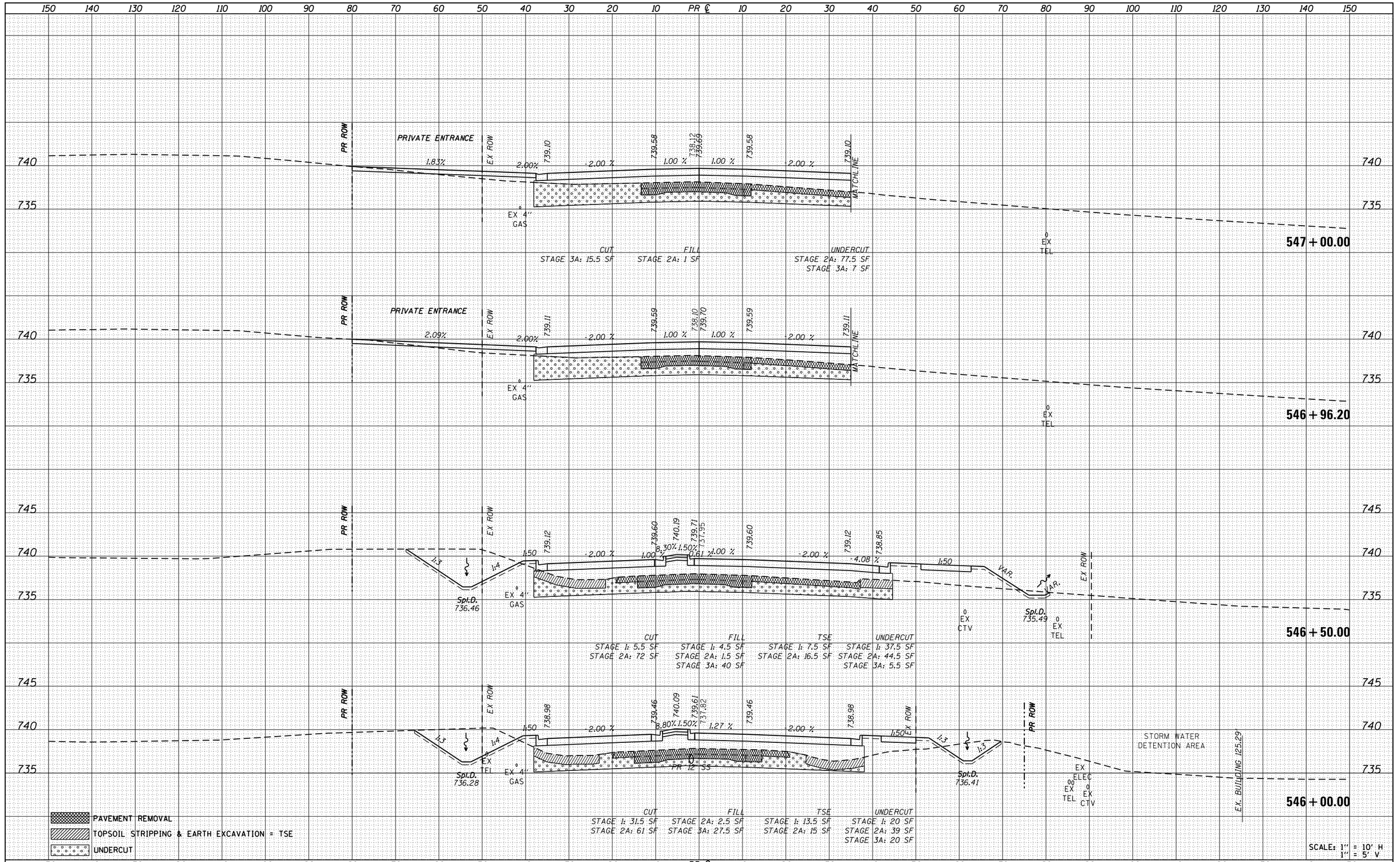
FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
Default	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 544+00.00 TO STA.545+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	490
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		



FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

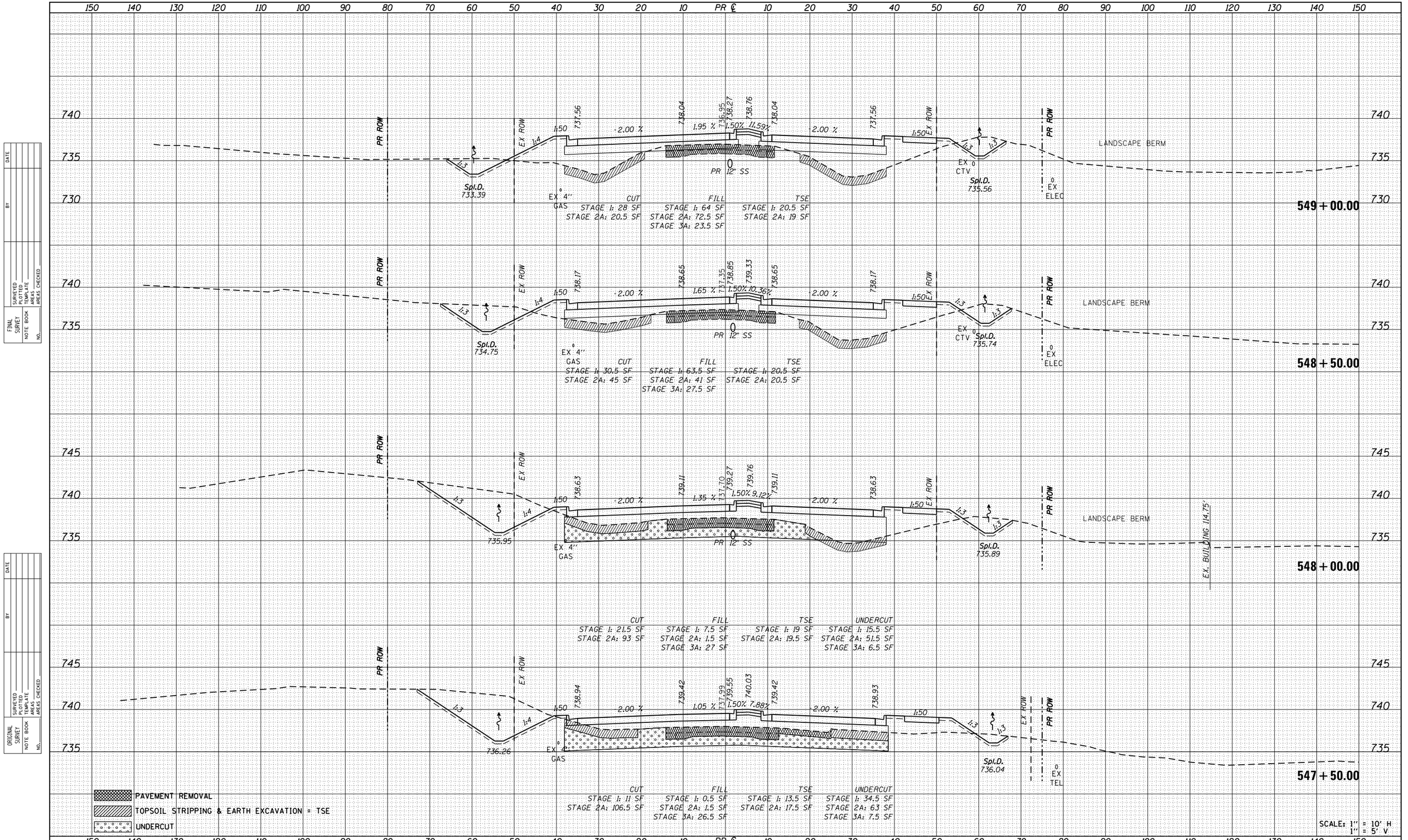
FILE NAME = D366D24-sht-xssht-IL71.dgn Default	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 546+00.00 TO STA. 547+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	491
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		



FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

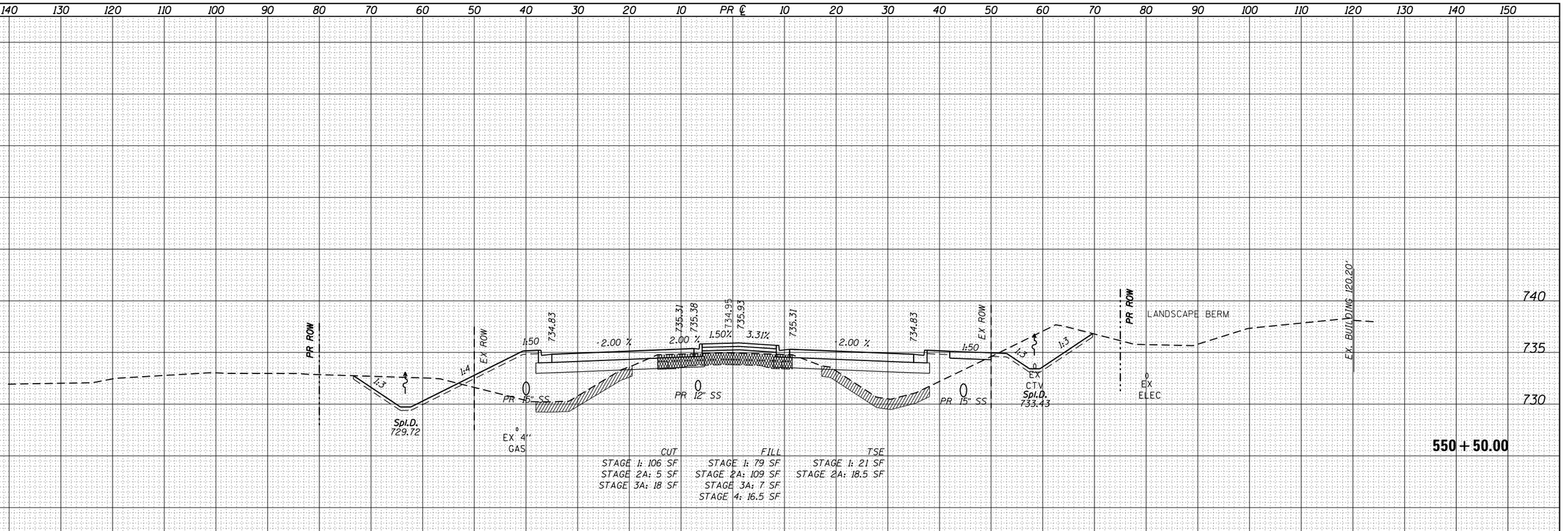
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 547+50.00 | TO STA. 549+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	492
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		BY
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		DATE



ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		BY
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		DATE

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
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Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

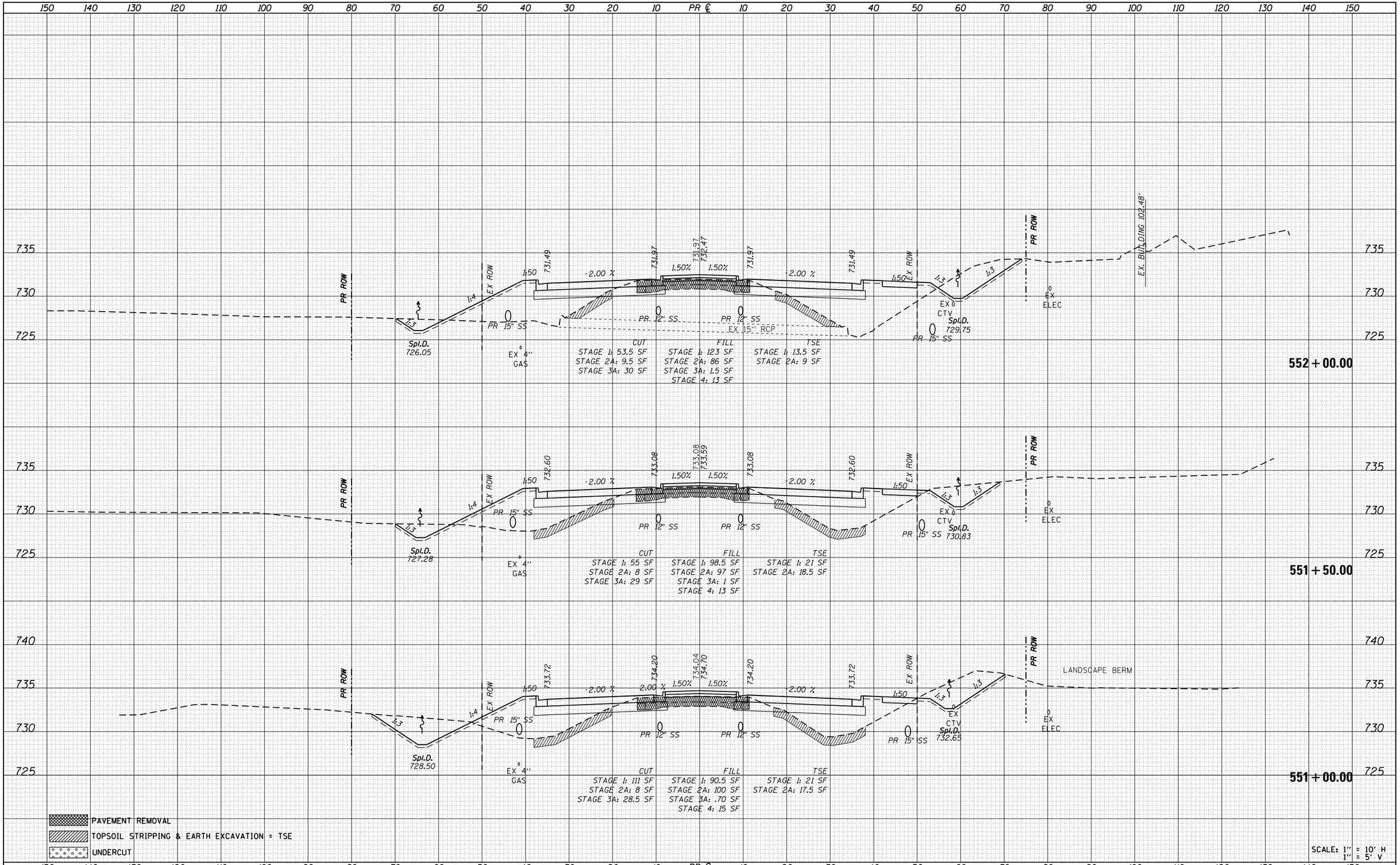
IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 549+50.00 | TO STA. 550+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	493
		CONTRACT NO. 66D24		
		ILLINOIS	FED. AID PROJECT	

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE



ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 551+00.00 | TO STA. 552+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	494
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.

BY	DATE
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
AREAS CHECKED	

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

735
730
725

PR ROW
EX ROW
1:3
1:4
1:50
Spl.D. 725.23
EX 4" GAS
PR 15" SS
728.14
2.00 %
728.62
729.29
728.98
5.80% 1.50%
728.78
2.00 %
728.62
2.00 %
728.14
1:50
EX ROW
Spl.D. 727.21
PR 15" SS
PR ROW
EX ELEC
EX CTV
EX. BUILDING 89.18'

PR 12" SS
PR 12" SS

CUT
STAGE 1: 201.5 SF
STAGE 2A: 24.5 SF
STAGE 3A: 46.5 SF

FILL
STAGE 1: 81.5 SF
STAGE 2A: 2.5 SF
STAGE 4: 5.5 SF

TSE
STAGE 1: 21 SF
STAGE 2A: 15.5 SF

553 + 50.00

PR ROW
EX ROW
1:3
1:4
1:50
Spl.D. 725.38
EX 4" GAS
PR 15" SS
729.26
2.00 %
729.74
730.37
729.92
3.89% 1.50%
729.83
2.00 %
729.74
2.00 %
729.26
1:50
EX ROW
Spl.D. 728.09
PR 15" SS
PR ROW
EX ELEC
EX CTV
EX. BUILDING 88.68'

PR 12" SS
PR 12" SS

CUT
STAGE 1: 98.5 SF
STAGE 2A: 11.5 SF
STAGE 3A: 37.5 SF

FILL
STAGE 1: 93 SF
STAGE 2A: 13.5 SF
STAGE 3A: 0.5 SF
STAGE 4: 9 SF

TSE
STAGE 1: 21.5 SF
STAGE 2A: 18.5 SF

553 + 00.00

PR ROW
EX ROW
1:3
1:4
1:50
Spl.D. 725.53
EX 4" GAS
PR 15" SS
730.37
2.00 %
730.85
730.98
1.50%
731.40
1.50%
730.89
2.00 %
730.85
2.00 %
730.37
1:50
EX ROW
Spl.D. 728.99
PR 15" SS
PR ROW
EX ELEC
EX CTV

PR 12" SS
PR 12" SS

CUT
STAGE 1: 52 SF
STAGE 2A: 10.5 SF
STAGE 3A: 38 SF

FILL
STAGE 1: 126 SF
STAGE 2A: 47.5 SF
STAGE 4: 11 SF

TSE
STAGE 1: 20.5 SF
STAGE 2A: 18.5 SF

552 + 50.00

PAVEMENT REMOVAL
TOPSOIL STRIPPING & EARTH EXCAVATION = TSE
UNDERCUT

SCALE: 1" = 10' H
1" = 5' V

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 PR ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

ORIGINAL SURVEY	NOTE BOOK	NO.

BY	DATE
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
AREAS CHECKED	

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
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	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

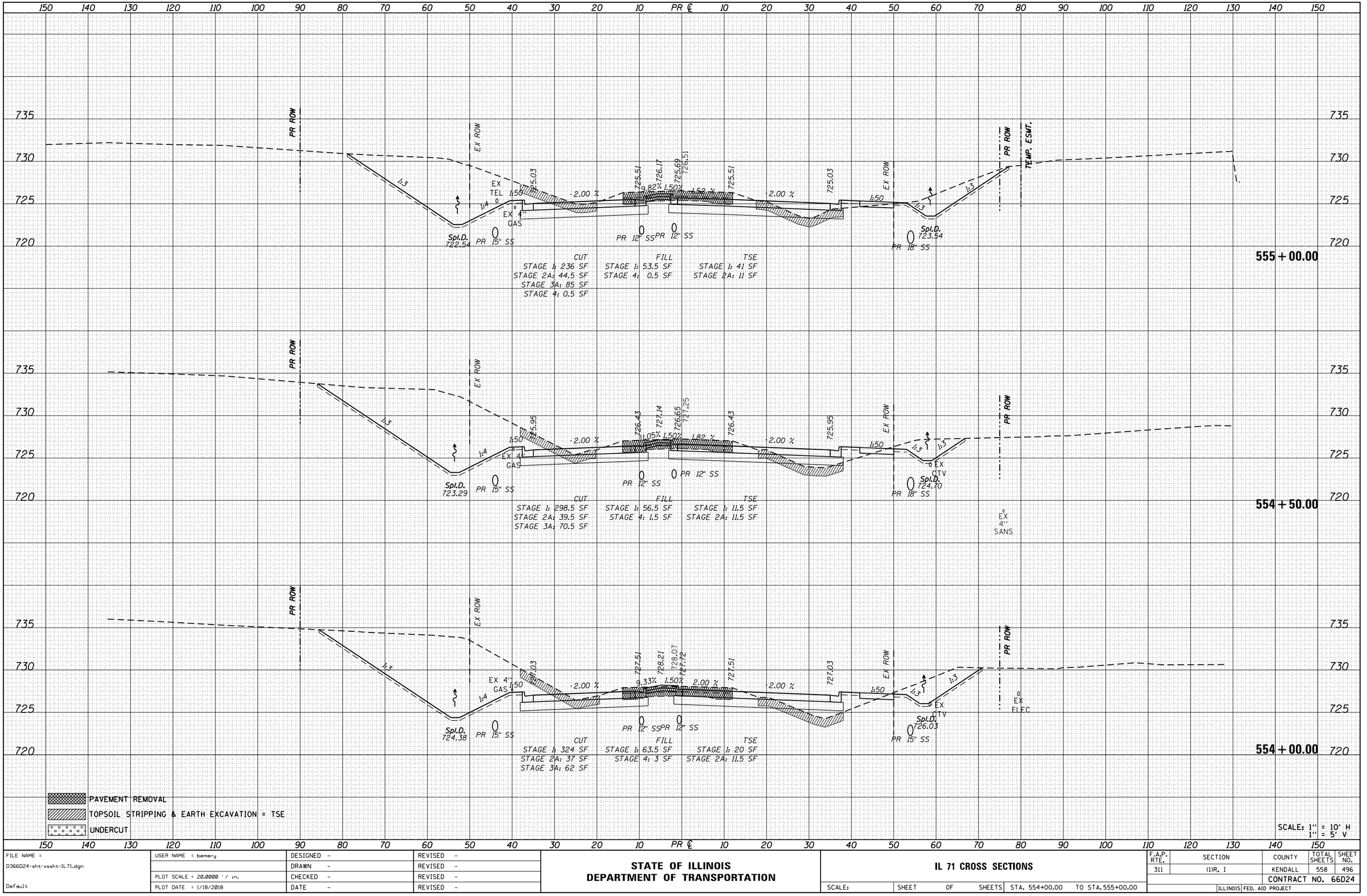
IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 552+50.00 | TO STA. 553+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	495
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED
NO.		BY				
		DATE				

ORIGINAL SURVEY	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED
NO.		BY				
		DATE				



FILE NAME =	USER NAME = bemery	DESIGNED -	REVISED -
D366D24-sht-xssht-IL71.dgn		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

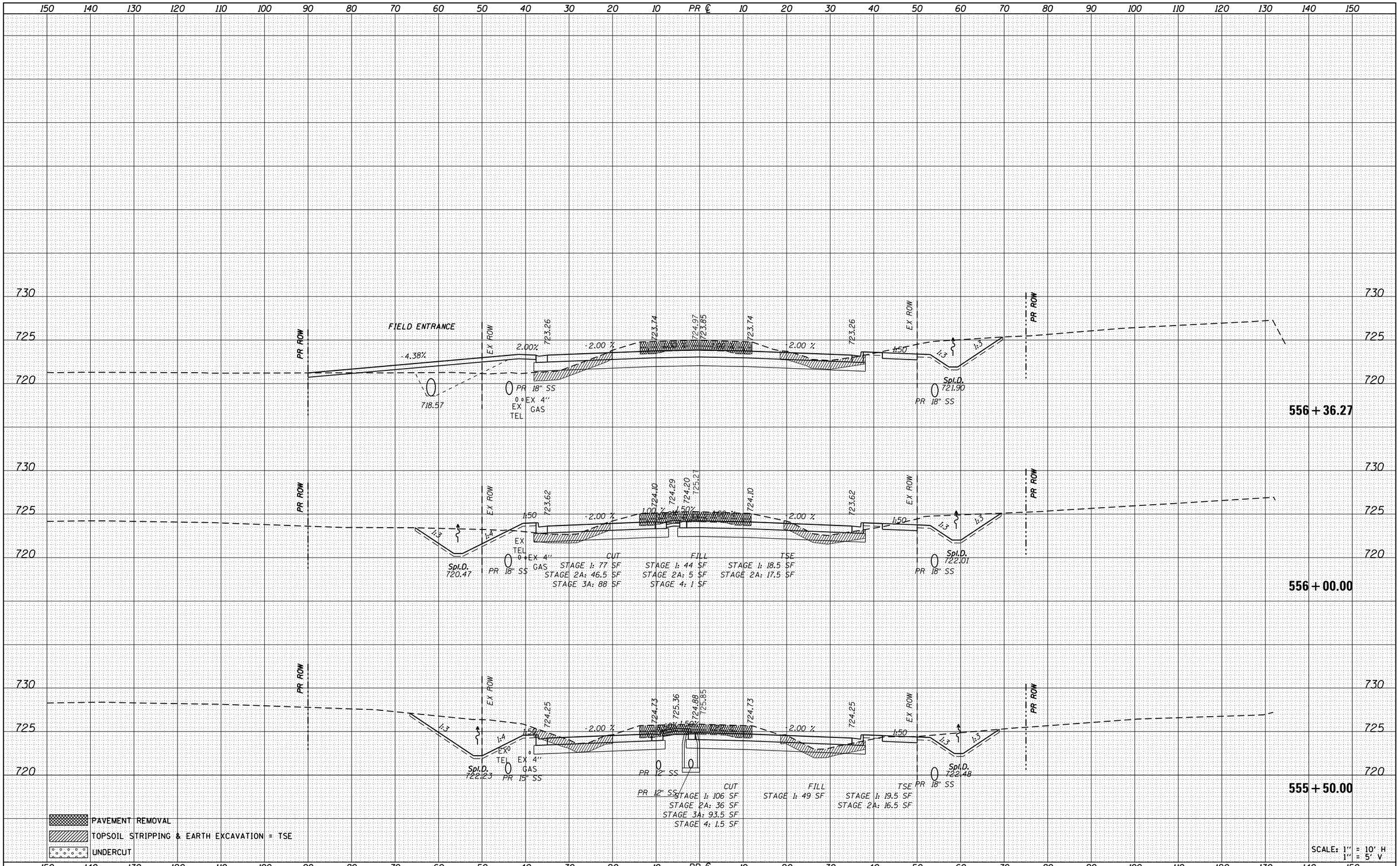
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 554+00.00 | TO STA. 555+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	496
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	



ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

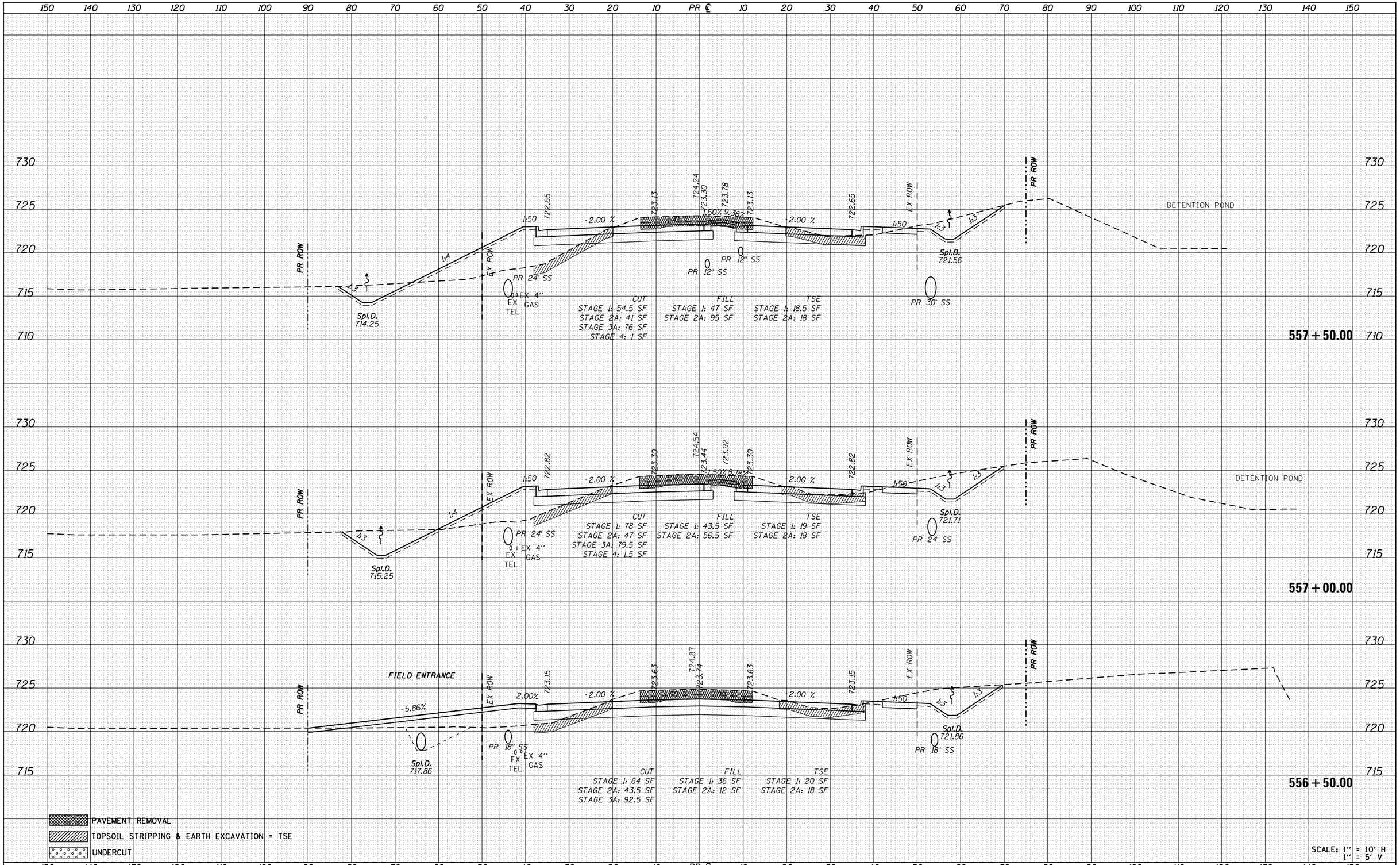
IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 555+50.00 | TO STA. 556+36.27

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	497
		CONTRACT NO. 66D24		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
ORIGINAL SURVEY		

BY	DATE
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
AREAS CHECKED	



FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
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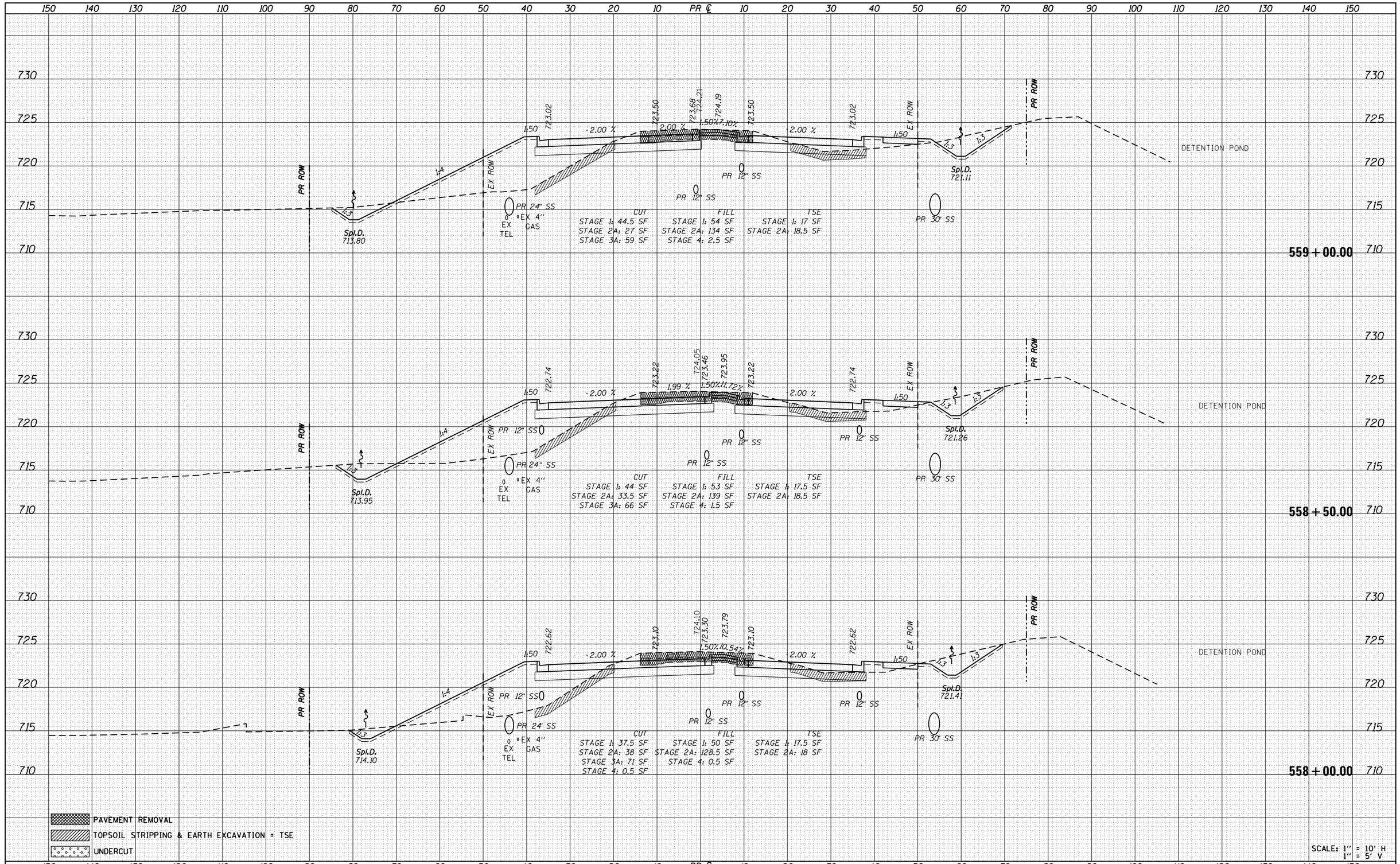
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 556+50.00 | TO STA. 557+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	498
		CONTRACT NO. 66D24		
		ILLINOIS FED. AID PROJECT		



FINAL SURVEY — NOTE BOOK — NO.

BY	DATE
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
AREAS CHECKED	

ORIGINAL SURVEY — NOTE BOOK — NO.

BY	DATE
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
AREAS CHECKED	

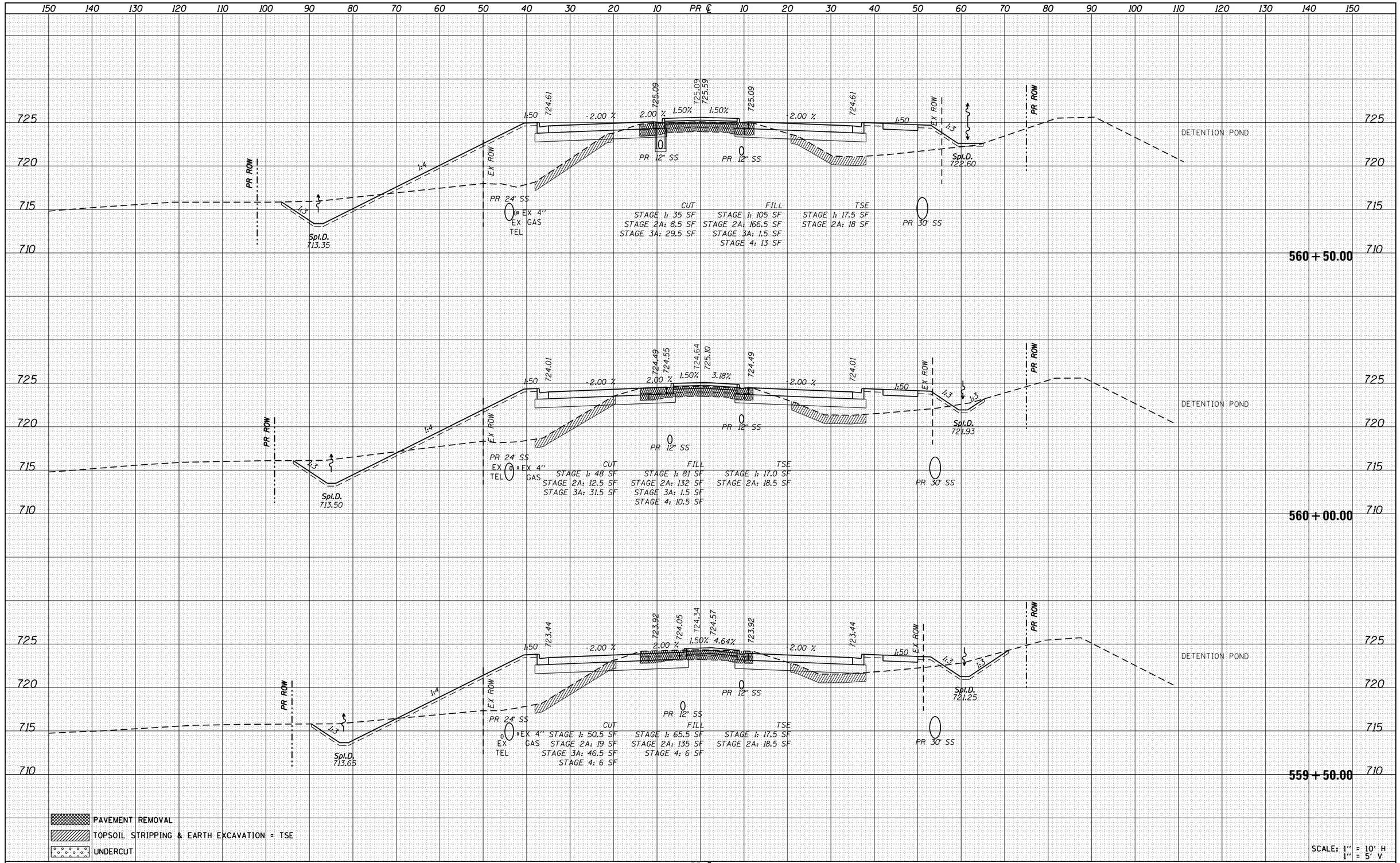
FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 558+00.00 | TO STA. 559+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	499
		CONTRACT NO. 66D24		
		ILLINOIS	FED. AID PROJECT	



FINAL SURVEY

NO.	NOTE BOOK	SURVEYED	BY	DATE
		PLOTTED		
		TEMPLATE		
		AREAS		
		AREAS CHECKED		

ORIGINAL SURVEY

NO.	NOTE BOOK	SURVEYED	BY	DATE
		PLOTTED		
		TEMPLATE		
		AREAS		
		AREAS CHECKED		

FILE NAME = D366D24-sht-xssht-IL71.dgn	USER NAME = bemery	DESIGNED -	REVISED -
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	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/18/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL 71 CROSS SECTIONS

SCALE: | SHEET OF SHEETS | STA. 559+50.00 | TO STA. 560+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(1)R, I	KENDALL	558	500
		CONTRACT NO. 66D24		
	ILLINOIS FED. AID PROJECT			