

62648

03-08-2019 LETTING ITEM 018

MCHENRY
STATE OF ILLINOIS

* 71 + 1 = 72 TOTAL SHEETS

F.A.P. SHEET	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	2018-056-DR-1	MCHENRY	71	1
CONTRACT NO. 62G48				

DEPARTMENT OF TRANSPORTATION

PROPOSED HIGHWAY PLANS

FAP 336A /ILL 31 (FRONT STREET) OVER
UNNAMED TRIBUTARY TO FOX RIVER
SECTION 2018-056-DR-1
PROJECT NHPP-3FRR(402)
CULVERT REPLACEMENT
MCHENRY COUNTY
C-91-225-18

FOR INDEX OF SHEETS, SEE SHEET NO. 2

TRAFFIC DATA:

IL 31 (FRONT STREET)

EXISTING ADT = 18800 (2017)
POSTED SPEED = 35 MPH

FUNCTIONAL CLASSIFICATION

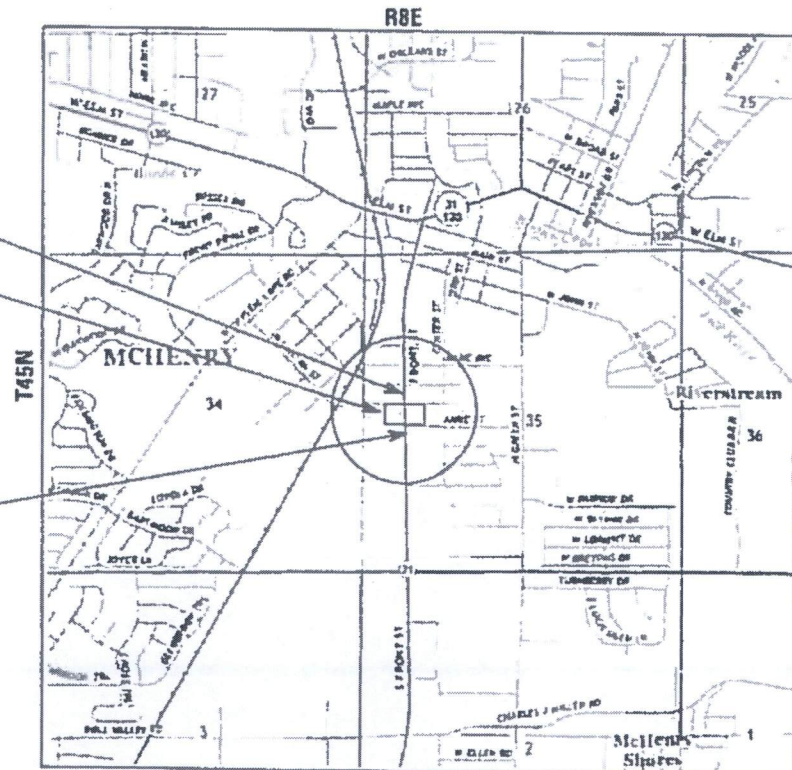
OTHER PRINCIPAL ARTERIAL

PROJECT IS LOCATED IN THE
CITY OF MCHENRY

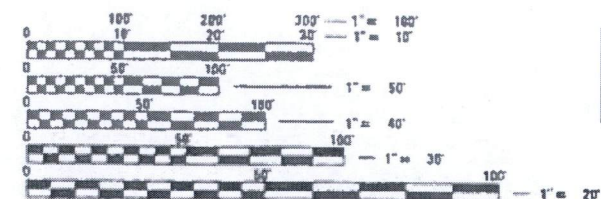
PROJECT LOCATION
IL 31 OVER UNNAMED
TRIBUTARY FOX RIVER
EXISTING S.N. 056-0227
PROPOSED S.N. 056-0105

IMPROVEMENT ENDS
STA. 446 + 32.00

IMPROVEMENT BEGINS
STA. 442 + 65.00



MCHENRY TOWNSHIP



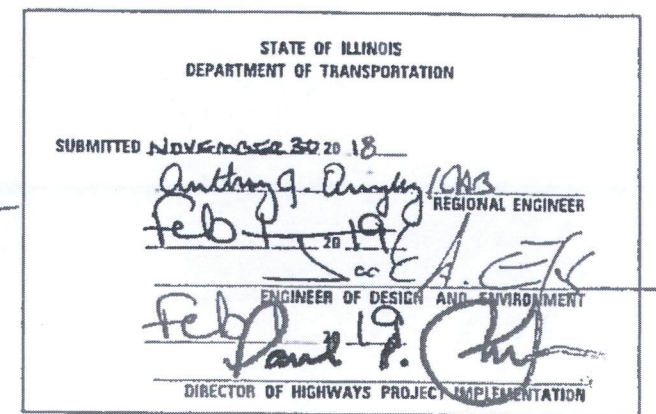
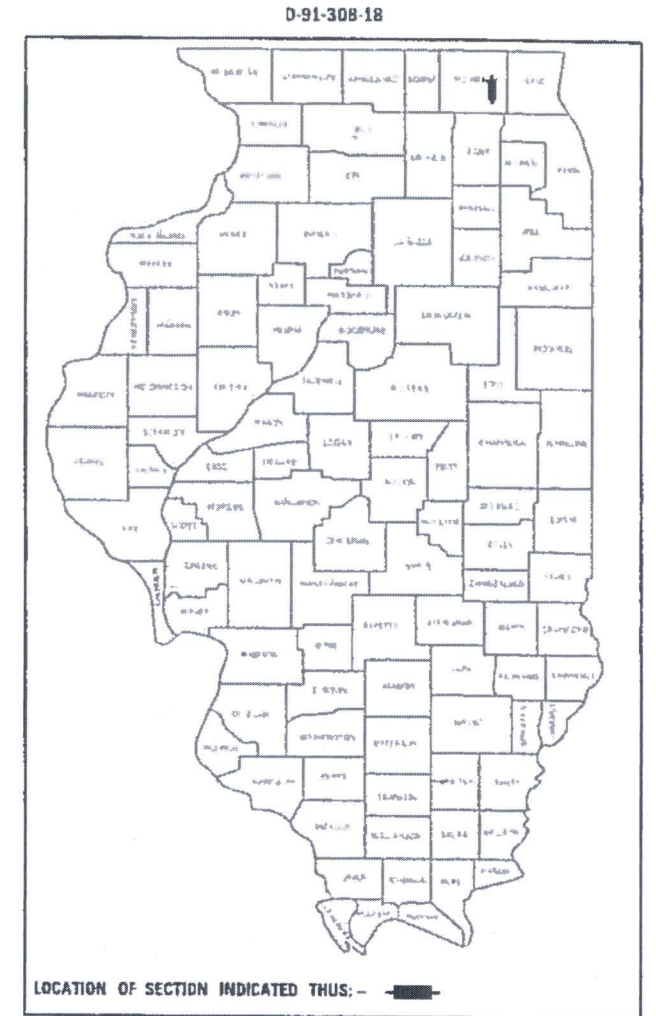
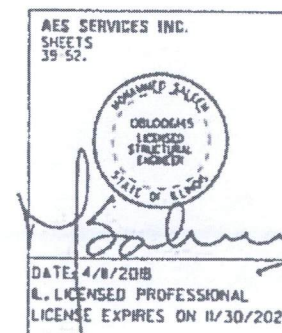
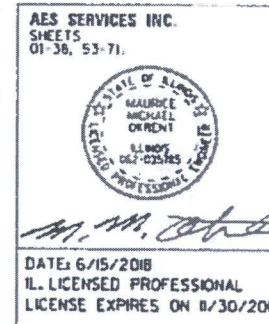
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD
ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT MANAGER: FAWAD AQUEEL, PE, PTOE (847) 705-4247

CONTRACT NO. 62G48

GROSS LENGTH OF PROJECT = 367 FEET = 0.07 MILE
NET LENGTH OF PROJECT = 367 FEET = 0.07 MILE



PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

REV. - MS

1	COVER SHEET
2	INDEX OF SHEETS, STATE STANDARDS, GENERAL NOTES AND COMMITMENTS
3-9, 9A	SUMMARY OF QUANTITIES
10	EXISTING TYPICAL SECTIONS
11	PROPOSED TYPICAL SECTIONS
12-15	SCHEDULE OF QUANTITIES
16	ALIGNMENT TIES AND BENCHMARKS
17	EXISTING CONDITION AND REMOVAL PLAN
18	PLAN AND PROFILE
19	TRAFFIC CONTROL & PROTECTION GENERAL NOTES
20-21	SUGGESTED TRAFFIC CONTROL TYPICAL SECTIONS
22-31	SUGGESTED TRAFFIC CONTROL PLANS
32-36	TEMPORARY TRAFFIC SIGNAL PLANS
37	PAVEMENT MARKING PLAN
38	EROSION CONTROL PLAN
39-52	SN 056-0105 - CULVERT PLANS
53	BD-1 DISTRICT ONE - DRIVEWAY DETAILS - DISTANCE BETWEEN ROW AND FACE OF CURB AND EDGE OF SHOULDER $\geq 15'$
54	BD-03 DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING
55	BD-34 DETAILS FOR DEPRESSED CURB AND GUTTER AND SHOULDER TREATMENT AT TBT TY.1 SPL.
56	TC-10 TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS AND DRIVEWAYS
57	TC-11 RAISED REFLECTIVE PAVEMENT MARKERS (SNOW PLOW RESISTANT)
58	TC-13 DISTRICT ONE - TYPICAL PAVEMENT MARKINGS
59	TC-14 TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC)
60	TC-16 SHORT-TERM PAVEMENT MARKING LETTERS & SYMBOLS
61	TC-22 DISTRICT ONE - ARTERIAL ROAD INFORMATION SIGN
62	TC-26 DRIVEWAY ENTRANCE SIGNING
63-66	STAGE 1 & 2 CROSS SECTIONS
67-70	STAGE 3 & 4 CROSS SECTIONS
71	STREAM CROSS SECTIONS

000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420406	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH PAVEMENT
424001-11	PERPENDICULAR CURB RAMPS FOR SIDEWALKS
424026-03	ENTRANCE/ALLEY PEDESTRIAN CROSSINGS
515001-03	NAME PLATE FOR BRIDGES
606001-07	CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
630001-12	STEEL PLATE BEAM GUARDRAIL
630101-10	STRONG POST GUARDRAIL ATTACHED TO CULVERT
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631011-10	TRAFFIC BARRIER TERMINAL, TYPE 2
701006-05	OFF-RD OPERATIONS, 2L, 2W, 15" (4.5M) TO 24"(600MM) FROM PAVEMENT EDGE
701301-04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701311-03	LANE CLOSURE 2L, 2W MOVING OPERATIONS DAY ONLY
701502-09	URBAN LANE CLOSURE, 2L, 2W, WITH BIDIRECTIONAL LEFT TURN LANE
701801-06	SIDEWALK CORNER OR CROSSWALK CLOSURE
701901-08	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
725001-01	OBJECT AND TERMINAL MARKERS
780001-05	TYPICAL PAVEMENT MARKINGS
781001-04	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS
782006	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS

NONE

THE TRAFFIC BARRIER TERMINAL TYPE 1 (SPECIAL) AT APPROX. 45+00 WILL TAPER NEAR THE SANITARY SEWER. THE CONTRACTOR SHALL VERIFY THE LOCATION, WATCH AND PROTECT THE SEWER. ADJUSTMENT TO THE TAPER CAN BE MADE IF NECESSARY.

WHEN DRIVING SHEET PILE FOR THE CULVERT CONSTRUCTION THE CONTRACTOR SHALL WATCH AND PROTECT THE SANITARY SEWER. GAPPING OF THE SHEET PILE AS NECESSARY TO AVOID DAMAGE.

1. THESE PLANS HAVE BEEN PREPARED FROM INFORMATION ACQUIRED FROM EXISTING PLANS AND NOTES RECEIVED FROM IDOT FIELD MAINTENANCE ENGINEERS.
2. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING PLANS ARE SUBJECT TO VARIATIONS FOUND IN THE FIELD. THE CONTRACTOR SHALL FIELD VERIFY EXISTING DIMENSIONS AND DETAILS AFFECTING NEW CONSTRUCTION AND MAKE NECESSARY ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING MATERIALS. ANY ADJUSTMENTS PROPOSED BY THE CONTRACTOR MUST BE APPROVED BY THE ENGINEER. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED BASED UPON THE UNIT PRICE.
3. FORTY-EIGHT HOURS BEFORE STARTING EXCAVATION, THE CONTRACTOR WILL CALL J.U.L.I.E. (1-800-892-0123) OR 811 FOR LOCATIONS OF THE EXISTING UTILITIES.
4. THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT WRITTEN PERMISSION FROM THE DEPARTMENT.
5. SAW CUTTING PRIOR TO ANY REMOVAL ITEMS NOTED ON THE PLANS OR DIRECTED BY THE ENGINEER SHALL BE CONSIDERED INCLUDED IN THE COST OF THE ITEMS BEING REMOVED.
6. DO NOT SCALE PLANS FOR CONSTRUCTION DIMENSIONS.
7. THE CONTRACTOR SHALL USE CARE IN REMOVING OR EXCAVATING NEAR ALL EXISTING ITEMS WHICH WILL REMAIN. ANY DAMAGE DONE TO EXISTING ITEMS BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, AS REQUIRED, PRIOR TO COMMENCING CONSTRUCTION.
9. THE CONTRACTOR SHALL CONTACT THE DISTRICT ONE TRAFFIC CONTROL SUPERVISOR AT (847) 705-4470 FOR ARTERIALS A MINIMUM OF 72 HOURS PRIOR TO BEGINNING WORK.
10. THE RESIDENT ENGINEER SHALL CONTACT WALTER CZARNY, IDOT'S AREA TRAFFIC FIELD ENGINEER, VIA E-MAIL AT WALTER.CZARNY@ILLINOIS.GOV A MINIMUM OF TWO (2) WEEKS PRIOR TO THE PLACEMENT OF PERMANENT PAVEMENT MARKINGS.
11. ALL DAMAGE TO EXISTING PAVEMENT MARKINGS OUTSIDE THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
12. ACCESS SHALL BE PROVIDED AT ALL TIMES TO PROPERTIES ABUTTING THE PROPOSED IMPROVEMENT.
13. BEFORE BEGINNING ANY WORK, THE CONTRACTOR SHALL RETAIN AND RECORD FOR FUTURE REFERENCE, ALL EXISTING PAVEMENT MARKING LINES (AND RAISED REFLECTIVE MARKERS) IN ORDER THAT THESE LOCATIONS CAN BE RE-ESTABLISHED FOR STRIPING. EXACT LOCATIONS OF ALL PAVEMENT MARKINGS SHALL BE AS DIRECTED BY THE ENGINEER.
14. CONTRACTOR SHALL NOTIFY PACE 10 DAYS PRIOR TO STARTING CONSTRUCTION. CONTACT IS RICHARD WILLMAN AT (847) 228-3584.
15. ANY AGGREGATE SUBGRADE IMPROVEMENT CONTAMINATED AND/OR DAMAGED BY THE CONTRACTOR'S VEHICLES AND/OR EQUIPMENT IS TO BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER AT CONTRACTOR EXPENSE.
16. THIS PROJECT REQUIRES A US ARMY CORPS OF ENGINEERS (USACE) PERMIT THAT WILL BE SECURED BY THE DEPARTMENT FOR APPROVAL. GUIDELINES ON ACCEPTABLE IN-STREAM WORK TECHNIQUES CAN BE FOUND ON THE USACE WEBSITE. THE USACE DEFINES AND DETERMINES IN-STREAM WORK. THE COST OF ALL MATERIALS AND LABOR NECESSARY TO COMPLY WITH THE ABOVE PROVISIONS TO PREPARE AND IMPLEMENT IN-STREAM WILR PLAN WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED AS INCLUDED IN THE UNIT BID PRICES OF THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED WITH THE EXCEPTION OF COFFERDAMS WHICH WILL BE PAID FOR AS COFFERDAM (TYPE 1) (IN-STREAM/WETLAND WORK) WITH A BASIS OF PAYMENT OF EACH.
17. THE CONTRACTOR SHALL REMOVE THE "WEIGHT LIMIT" SIGNS (2) AFTER CONSTRUCTION IS COMPLETE AND APPROVAL IS RECEIVED BY THE RESIDENT ENGINEER. THE RESIDENT ENGINEER SHALL CONTACT BRIDGE MAINTENANCE ENGINEER AT (847) 705-4180 A MINIMUM OF 2 WEEKS PRIOR TO REMOVAL OF THE SIGN.

USER NAME = makrent	DESIGNED - TOM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IL 31 OVER UNNAMED TRIBUTARY TO FOX RIVER INDEX OF SHEETS, STATE STANDARDS AND GENERAL NOTES AND COMMITMENTS	F.A.U RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	DRAWN - TOM	REVISED -			336A	2018-056-DR-7	MCHENRY	71	02	
PLOT SCALE = 2.0000' / in.	CHECKED - MO	REVISED -			CONTRACT NO. 62G48					
PLOT DATE = 1/11/2019	DATE - 11/19/2018	REVISED -			SCALE: N/A	SHEET 1 OF 1 SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT		

Benchmark: "1" in SE corner of concrete base of traffic signal in NW corner of IL 31 and Lillian St.
Northing: 2065120.91
Easting: 1000120.36
Elevation NGVD 88: 754.47

Existing Structure: S. No. 056-0227 consists of two single cell reinforced concrete box culverts of size 10'x4' and 4'x1.5' separated by 9'-3" with shared wingwalls and headwalls between them.

It is unknown when the original box culverts were constructed. In 1985 the culverts were lengthened by 10 feet on each end. The box culvert has an end to end length of 66 feet.

The existing 10'x4' cell be removed and replaced with a 12.5'x5' cell. The 4'x1.5' cell will remain in place. Construction will be performed in stages while maintaining two lanes of traffic, one in each direction and a sidewalk.

No Salvage.

Precast option is not allowed.

LOADING HL-93

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

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 Interims

DESIGN STRESSES

FIELD UNITS

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

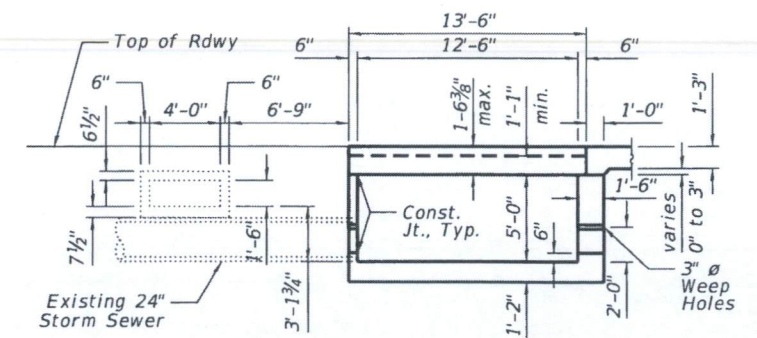
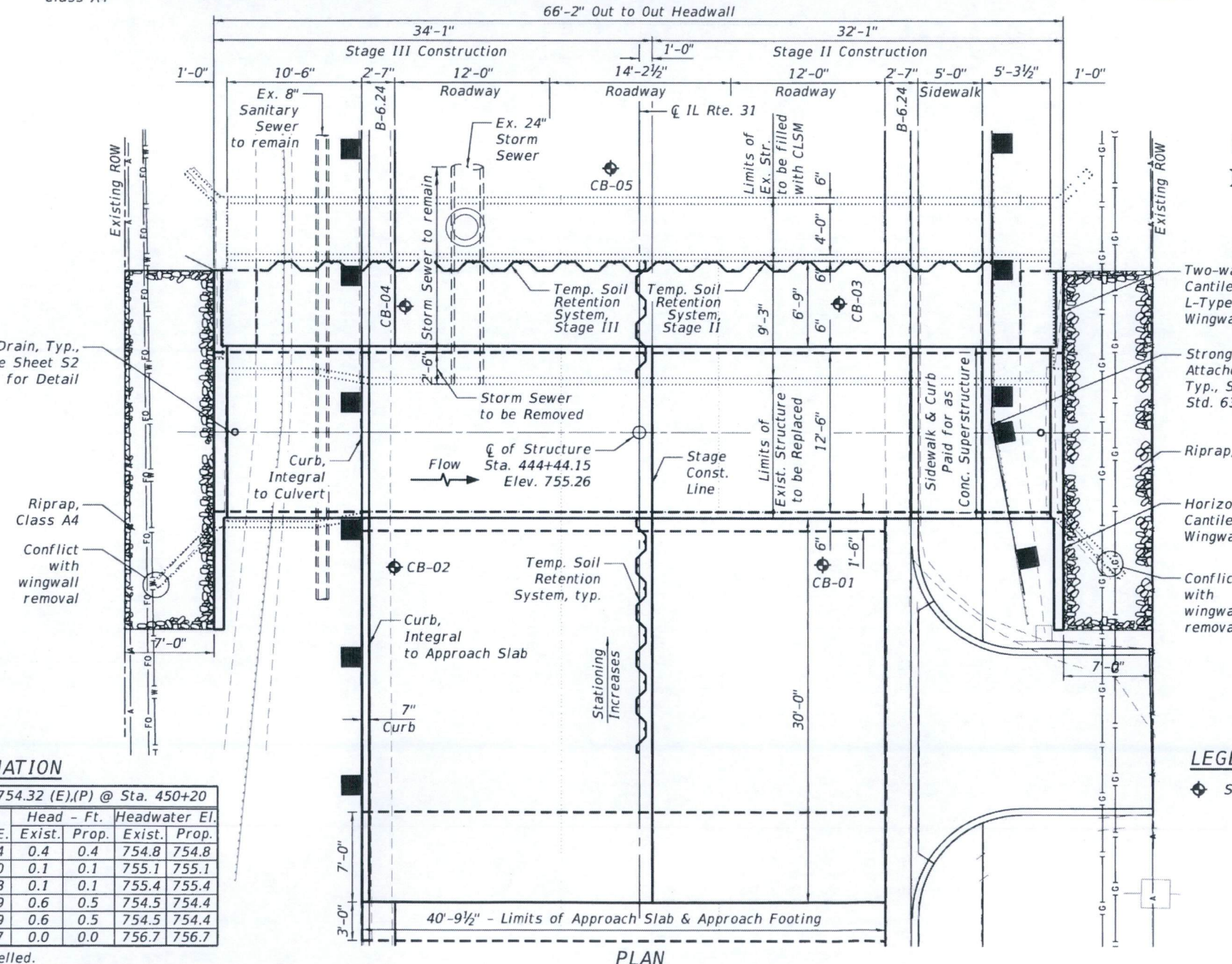
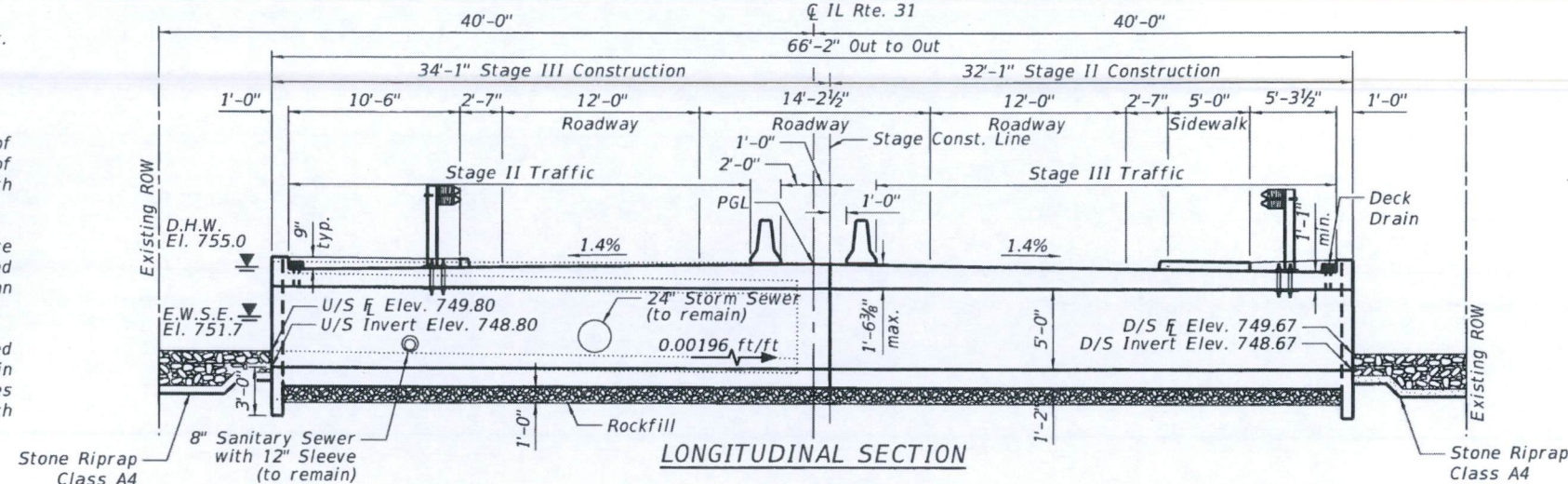
PROFILE GRADE

(along $\bar{C}$ roadway)

WATERWAY INFORMATION

Drainage Area = 2.82 sq. mi. Low Grade Elev. 754.32 (E),(P) @ Sta. 450+20									
Flood	Freq. Yr.	Q C.F.S.	Opening Ft ²		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.*	Prop.*		Exist.	Prop.	Exist.	Prop.
Design	10	432	36.0	37.5	754.4	0.4	0.4	754.8	754.8
Base	50	840	36.0	37.5	755.0	0.1	0.1	755.1	755.1
Ex. Overtop	100	1151	36.0	37.5	755.3	0.1	0.1	755.4	755.4
Pr. Overtop	2	235	36.0	37.5	753.9	0.6	0.5	754.5	754.4
Max. Calc.	2	235	36.0	37.5	753.9	0.6	0.5	754.5	754.4
	500	2300	36.0	37.5	756.7	0.0	0.0	756.7	756.7

* Effectively as modelled.

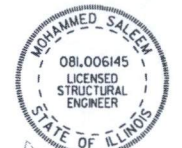


SECTION THRU BARREL
(At $\bar{C}$ IL Rte 31, Looking Downstream)

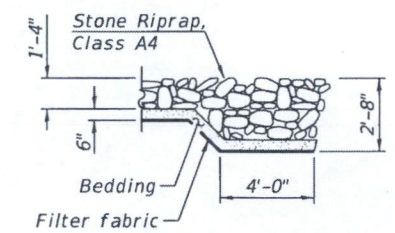
APPROVED

FOR STRUCTURAL ADEQUACY ONLY

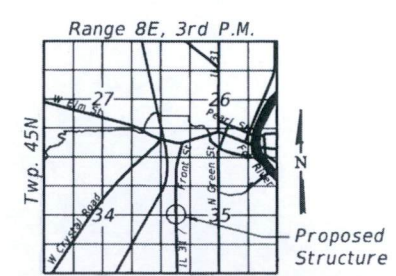
Dr. Carl R. Ruyter
ENGINEER OF BRIDGES AND STRUCTURES



DATE: 12/07/2018
IL. LICENSED PROFESSIONAL
LICENSE EXPIRES ON 11/30/2020



RIPRAP CLASS A4



LOCATION SKETCH

LEGEND

Soil Boring Locations

GENERAL PLAN AND ELEVATION
IL ROUTE 31 OVER UNNAMED
TRIBUTARY TO FOX RIVER
F.A.P. ROUTE 336A
SECTION 2018-056-DR-1
MCHENRY COUNTY
STATION 444+44.15
STRUCTURE NO. 056-0105

INDEX OF SHEETS

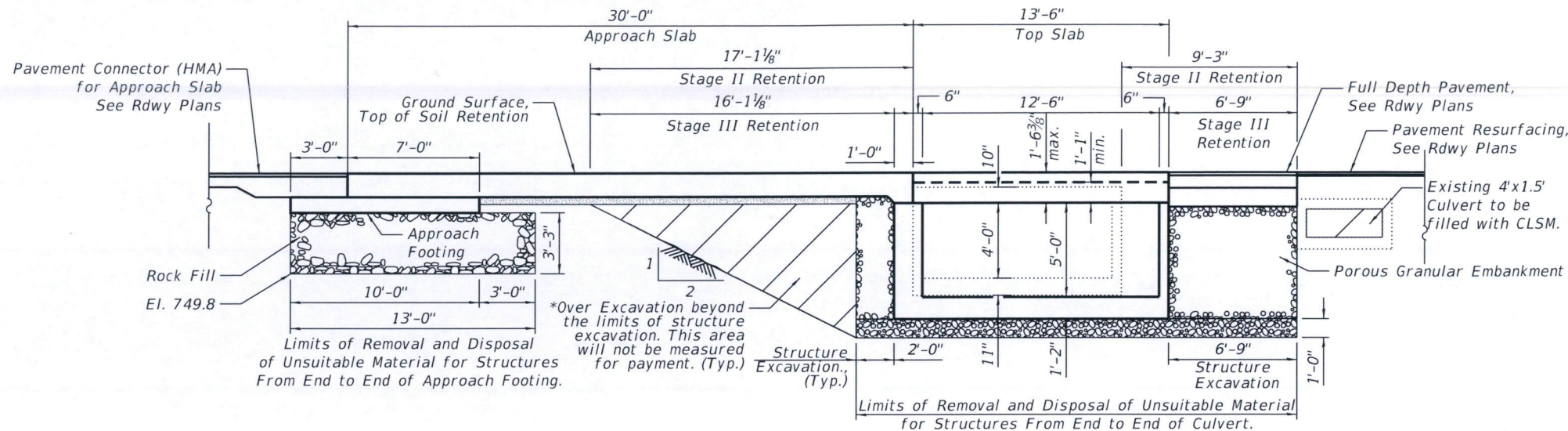
- S1 - General Plan and Elevation
- S2 - General Notes, Index of Sheets & Total Bill of Material
- S3 - Stage Construction Details I/II
- S4 - Stage Construction Details II/II
- S5 - Temporary Concrete Barrier for Stage Construction
- S6 - Culvert Details I/II
- S7 - Culvert Details II/II
- S8 - Approach Slab Details I/II
- S9 - Approach Slab Details II/II
- S10 - Bar Splicer and Mechanical Splicer Details
- S11 - Soil Boring Logs I/II
- S12 - Soil Boring Logs II/II
- S13 - Existing Plan I/II
- S14 - Existing Plan II/II

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
3. The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR 3704 Floodway Construction permit number allowing permanent construction as shown in the contract plans.
4. The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection. Forms for deck slab shall be removed prior to placement of bridge approach slab.
5. 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.
6. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
7. The limits and quantities of removal and replacement shown are based on the boring data and may be modified by the District Geotechnical and Field Engineers for variable subsurface conditions encountered in the field.
8. Protective coat shall be applied to the top of culvert slab, approach slab, top and inside face of wingwalls.

TOTAL BILL OF MATERIAL

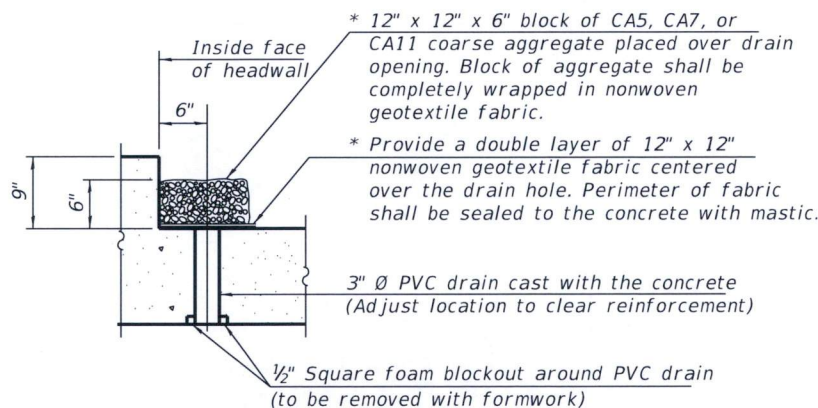
ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu Yd	186
Stone Riprap Class A4	Sq Yd	44
Filter Fabric	Sq Yd	44
Subbase Granular Material, Type B, 4 Inches	Sq Yd	123
Removal of Existing Structures	Each	1
Structure Excavation	Cu Yd	225
Removal and Disposal of Unsuitable Material for Structures	Cu Yd	120
Concrete Structures	Cu Yd	13
Concrete Superstructure	Cu Yd	46
Bridge Deck Grooving	Sq Yd	236
Protective Coat	Sq Yd	266
Concrete Superstructure (Approach Slab)	Cu Yd	57
Reinforcement Bars, Epoxy Coated	Pound	46,520
Bar Splicers	Each	257
Steel Railing (Temporary)	Foot	70
Temporary Soil Retention System	Sq Ft	657
Concrete Box Culverts	Cu Yd	64
Storm Sewer Removal 24"	Foot	3
Geocomposite Wall Drain	Sq Yd	20
Controlled Low-Strength Material	Cu Yd	15
Temporary Support System	Each	1
Rock Fill	Cu Yd	64



CULVERT EXCAVATION DETAILS

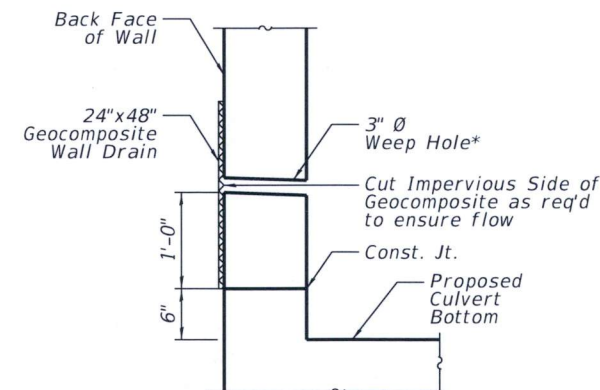
*Backfill the over excavation beyond the limits of structure excavation with material specified for roadway embankment per Section 205 of Standard Specifications.

- * Nonwoven geotextile fabric shall conform to the requirements of Article 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.



DRAIN DETAIL

(All costs associated with furnishing and constructing the above drain detail shall be included in the contract unit price for Concrete Box Culverts)



WEEP HOLE DRAIN DETAIL

*Cost Included in Concrete Box Culvert

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

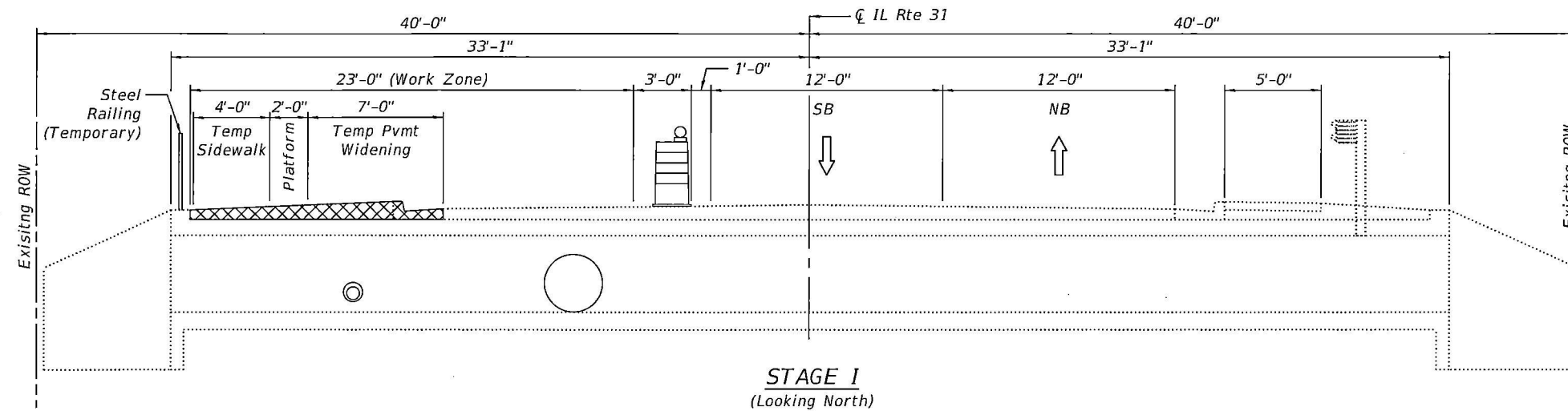
GENERAL NOTES, INDEX OF SHEETS AND TOTAL BILL OF MATERIAL
STRUCTURE NO. 056-0105

SHEET S2 OF S14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	2018-056-DR-1	MCHENRY	71	40
CONTRACT NO. 62G48				
ILLINOIS FED. AID PROJECT				

AES 111 S. Wacker Drive, Suite 3910 Chicago, IL 60606
ENGINEERS & SURVEYORS Ph: 312-235-6783

USER NAME =	DESIGNED - AWM	REVISED -
PLOT SCALE =	CHECKED - MS	REVISED -
PLOT DATE =	DRAWN - AWM	REVISED -
	CHECKED - MS	REVISED -

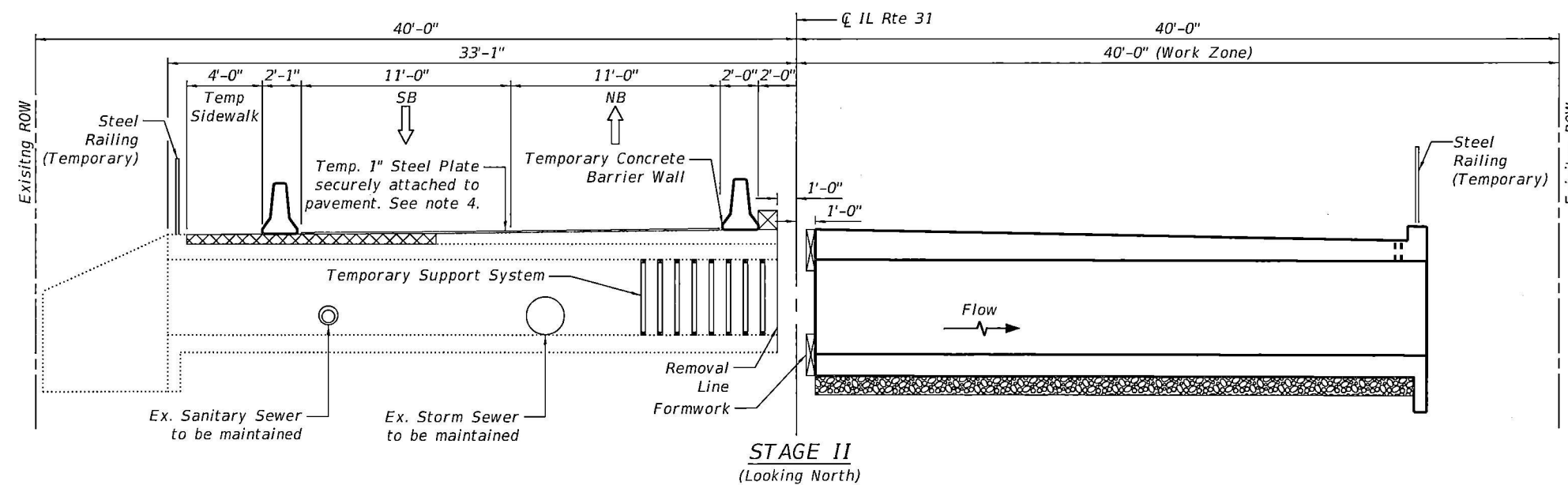


Note:

1. The Temporary Support System shown is a suggested minimum for bidding purposes. The Contractor shall submit bracing design including details and calculations, sealed by an IL Licensed Structural Engineer, for review and acceptance by the Engineer.
2. The Temporary Support System shall be installed in Stage I before the traffic is rerouted and the cut at the stage line is made.
3. Timber members shall be southern pine or douglas fir No. 2 or better.
4. Furnishing, installing and removing the temporary support system and roadway plate will not be paid for separately, but will be included in the unit price bid for "Temporary Support System"

LEGEND

 Temporary Pavement Widening (See Roadway Plans)



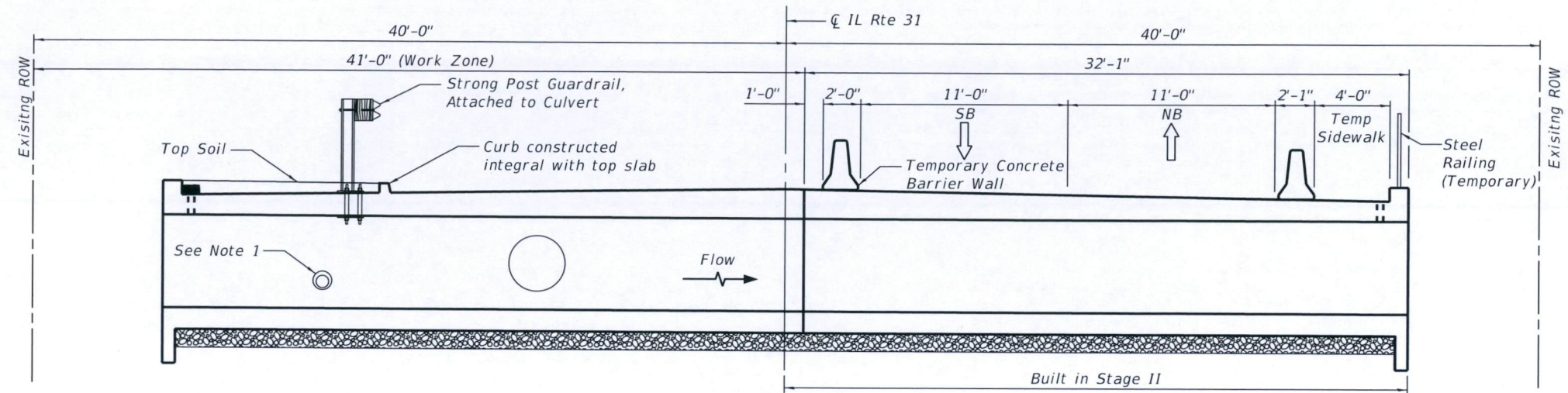
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS I / II
STRUCTURE NO. 056-0105

SHEET S3 OF S14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	2018-056-DR-1	MCHEENRY	71	41
CONTRACT NO. 62G48				
ILLINOIS FED. AID PROJECT				

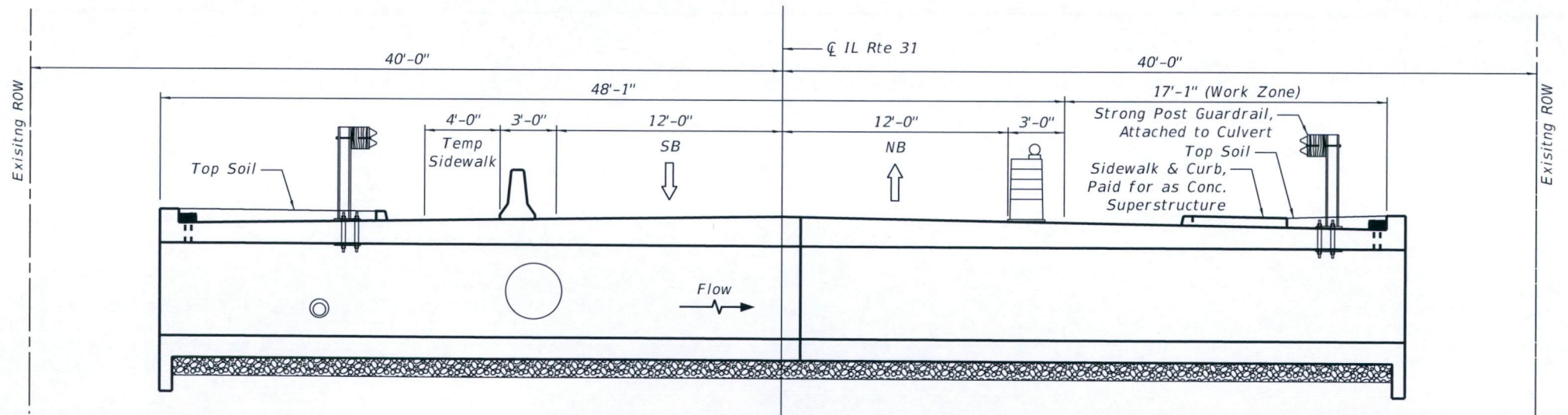
USER NAME =	DESIGNED - AWM	REVISED -
PLOT SCALE =	CHECKED - MS	REVISED -
PLOT DATE =	DRAWN - AWM	REVISED -
	CHECKED - MS	REVISED -



STAGE III
(Looking North)

Note:

1. The Contractor shall be responsible to temporarily support existing sanitary sewer and storm sewer during construction. Cost included with Concrete Box Culverts.
2. The Contractor shall take precaution to provide a clean cut for the removal of existing storm sewer at the face of the box culvert. Contractor shall be responsible for any damage to the storm sewer to remain.



STAGE IV
(Looking North)

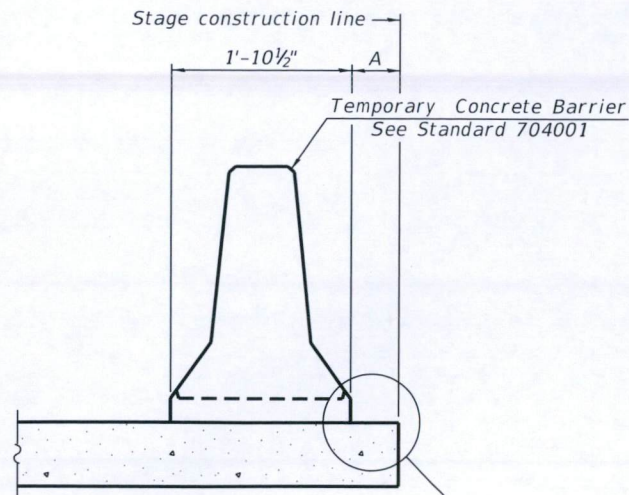
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS II / II
STRUCTURE NO. 056-0105

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	2018-056-DR-1	MCHENRY	71	42
CONTRACT NO. 62G48				
ILLINOIS FED. AID PROJECT				

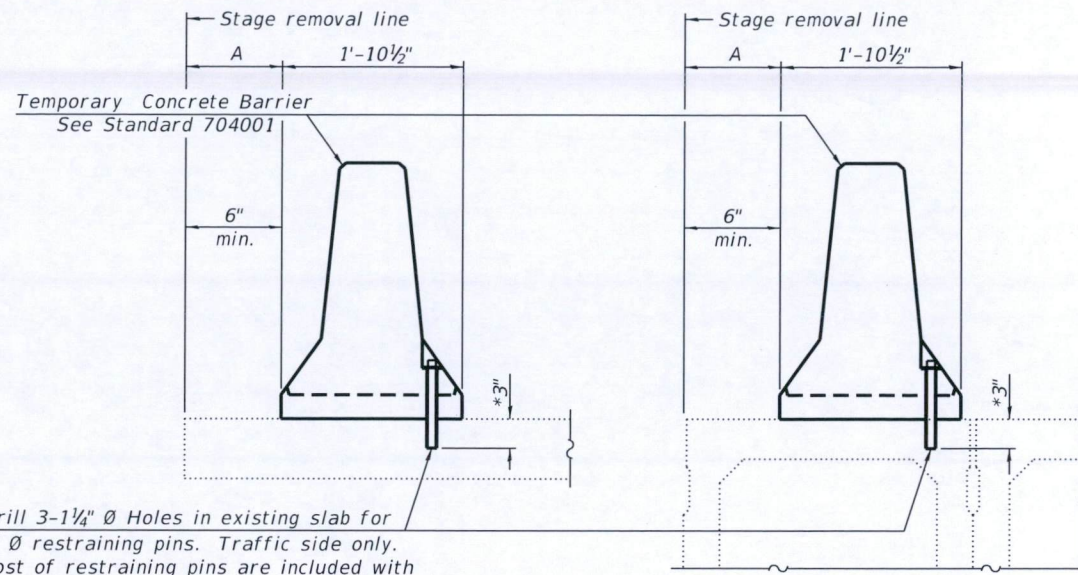
AES 111 S. Wacker Drive,
Suite 3910
Chicago, IL 60606
Ph: 312-235-6783

USER NAME =	DESIGNED - AWM	REVISED -
PLOT SCALE =	CHECKED - MS	REVISED -
PLOT DATE =	DRAWN - AWM	REVISED -
	CHECKED - MS	REVISED -



When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM

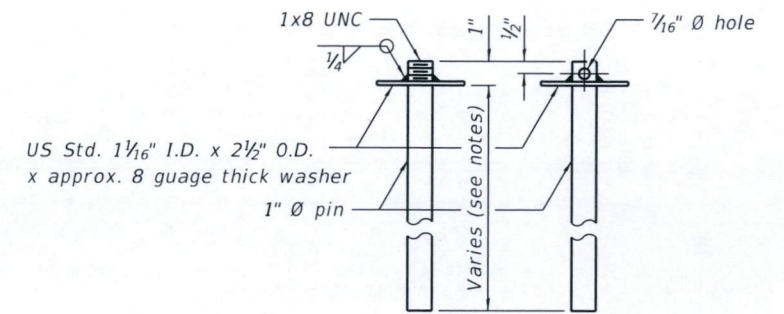


Drill 3-1 1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

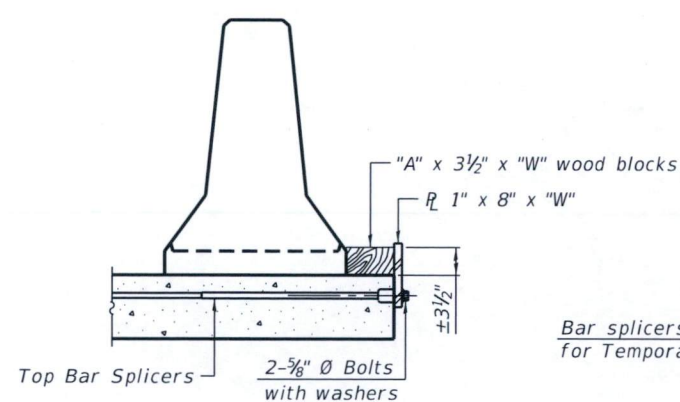
EXISTING DECK BEAM

SECTIONS THRU SLAB OR DECK BEAM

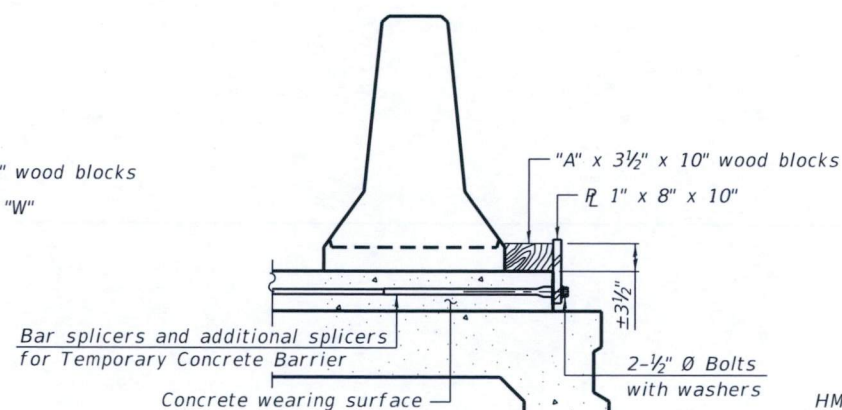


RESTRAINING PIN

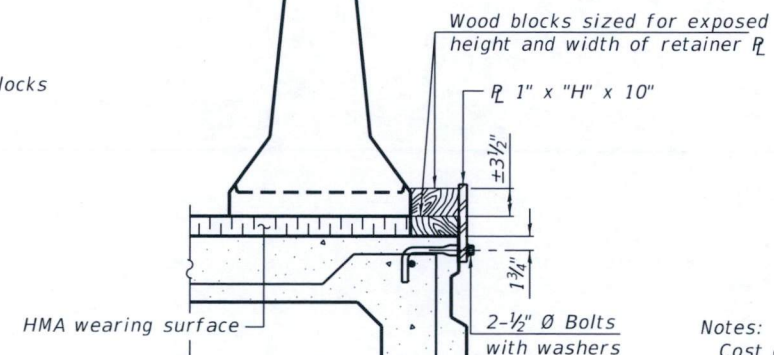
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.



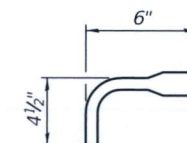
DETAIL I



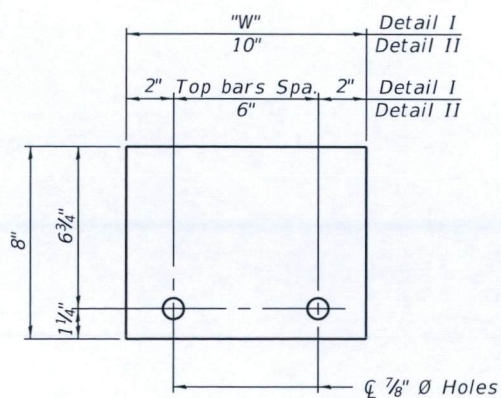
DETAIL II



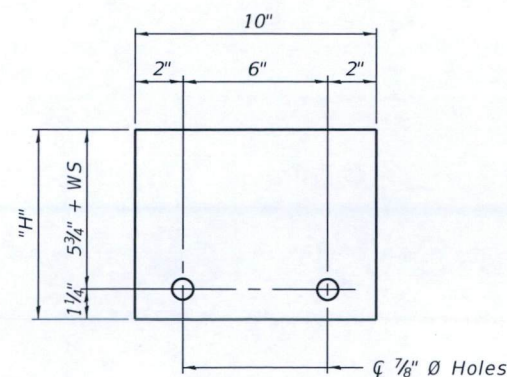
DETAIL III



BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER R_L 1" x 8" x "W"
(Detail I and II)



STEEL RETAINER R_L 1" x "H" x 10"
(Detail III)

Notes:

- Cost of retainer assembly is included with Temporary Concrete Barrier.
- A retainer assembly shall be located at the approximate $\bar{C}$ of each temporary concrete barrier.
- The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.
- When the 'A' dimension is less than 1 1/2', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate.
- For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.

Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.

Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

R-27

8-11-2017



111 S. Wacker Drive,
Suite 3910
Chicago, IL 60606
Ph: 312-235-6783

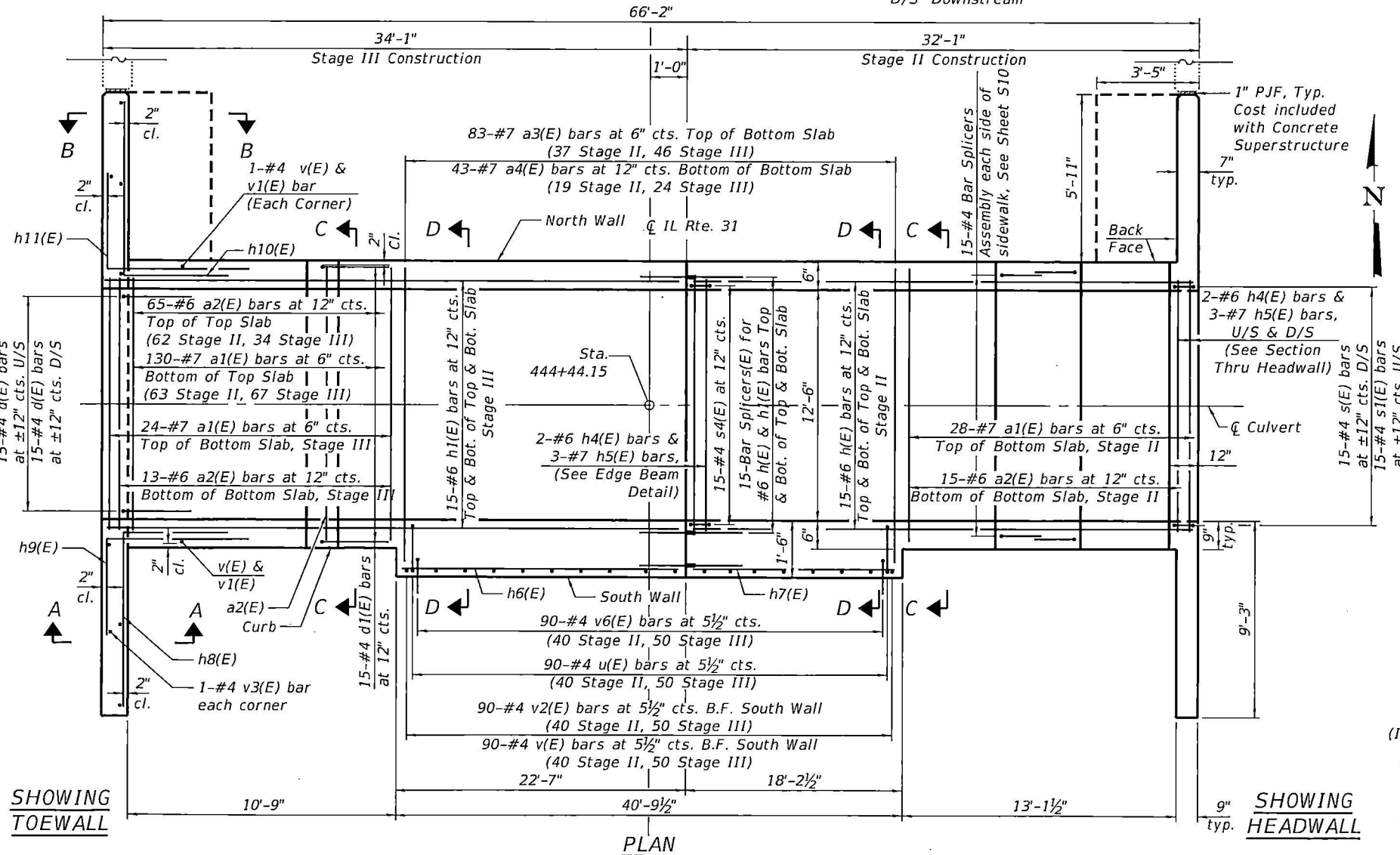
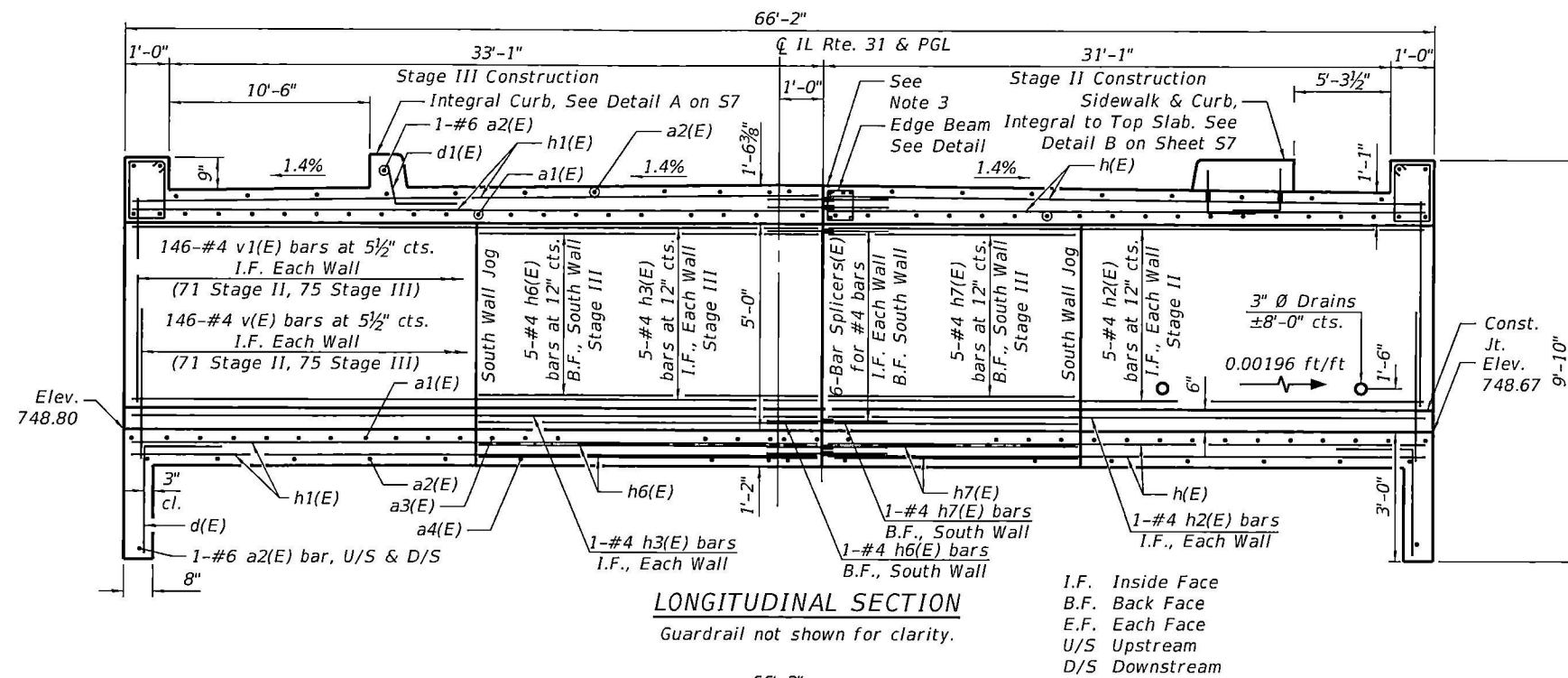
USER NAME =	DESIGNED - AWM	REVISED -
CHECKED - MS	CHECKED - MS	REVISED -
PLOT SCALE =	DRAWN - AWM	REVISED -
PLOT DATE =	CHECKED - MS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 056-0105

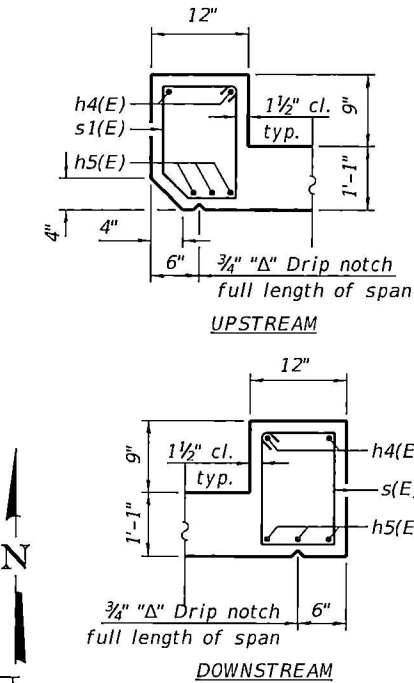
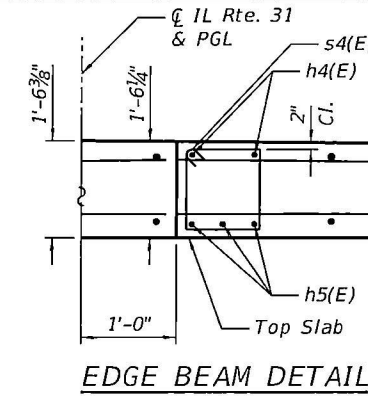
SHEET S5 OF S14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	2018-056-DR-1	MCHENRY	71	43
CONTRACT NO. 62G48				
ILLINOIS FED. AID PROJECT				

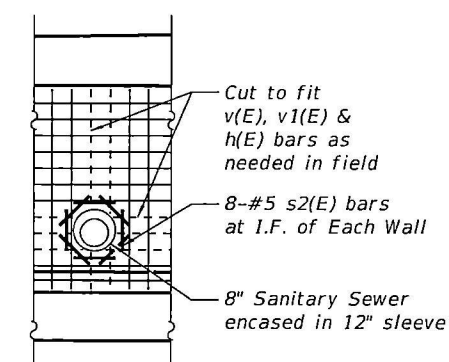


SHOWING
TOEWALL

SHOWING
HEADWALL

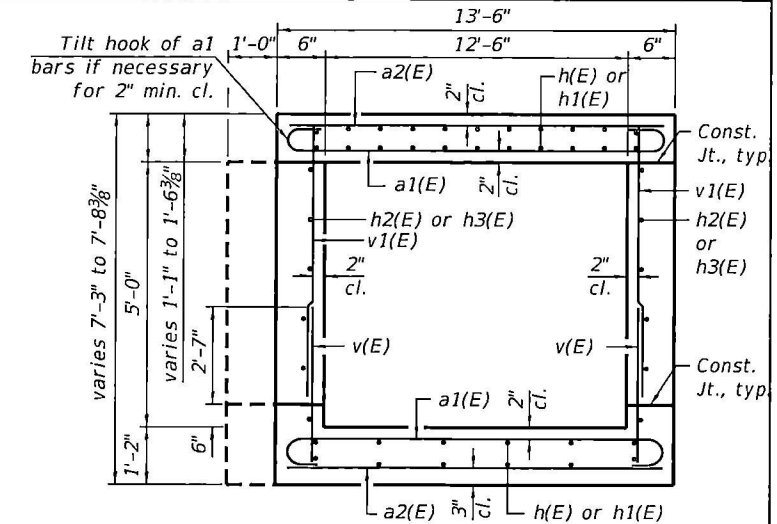


SECTION THRU HEADWALL

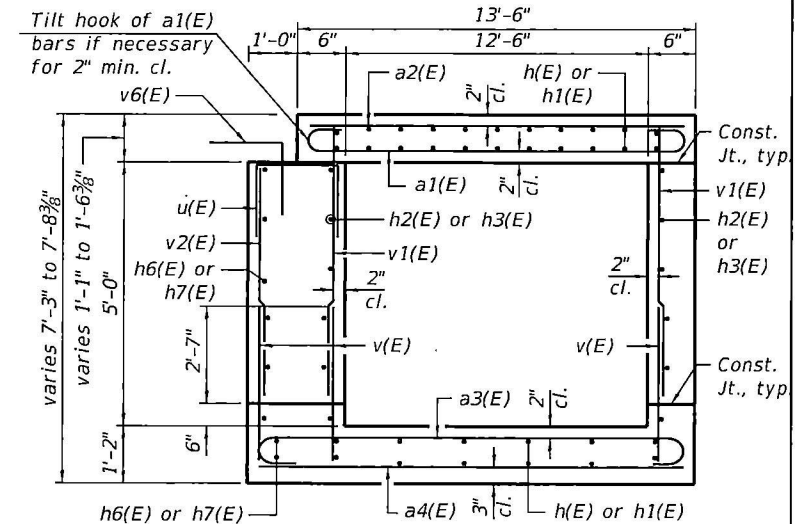


SANITARY SEWER
NORTH & SOUTH WALL

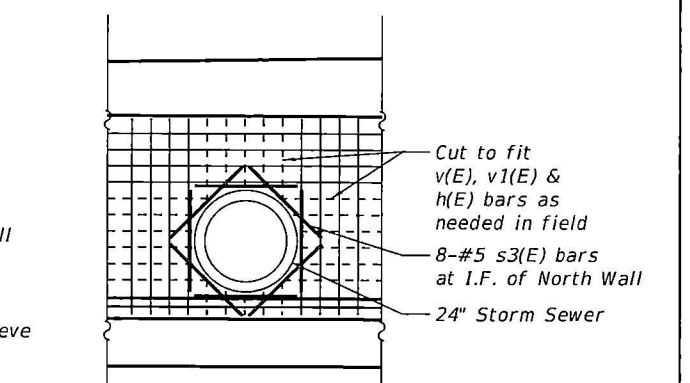
(Interior Face - Looking North & South)



SECTION C-C THRU BARREL



SECTION D-D THRU BARREL



STORM SEWER - NORTH WALL

(Interior Face - Looking North)
Contractor responsible for cutting and making
the pipe flush with interior face of wall

Notes:

1. A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
2. At the Contractor's option, a longer v1(E) bar may be ordered to replace the v(E) bar. No reduction in quantities shall be made for this substitution.
3. Top slab of culvert, headwalls and curb and sidewalk over the culvert top slab shall be paid for as Concrete Superstructure.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS I / II
STRUCTURE NO. 056-0105

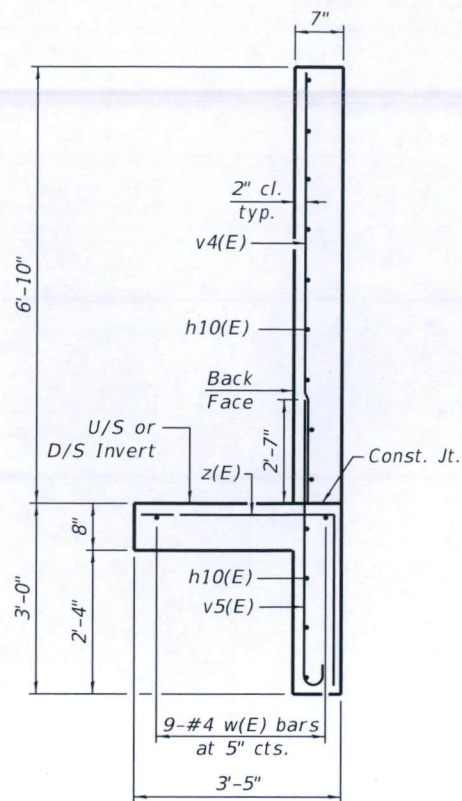
SHEET S6 OF S14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	2018-056-DR-1	MCHENRY	71	44
CONTRACT NO. 62G48				

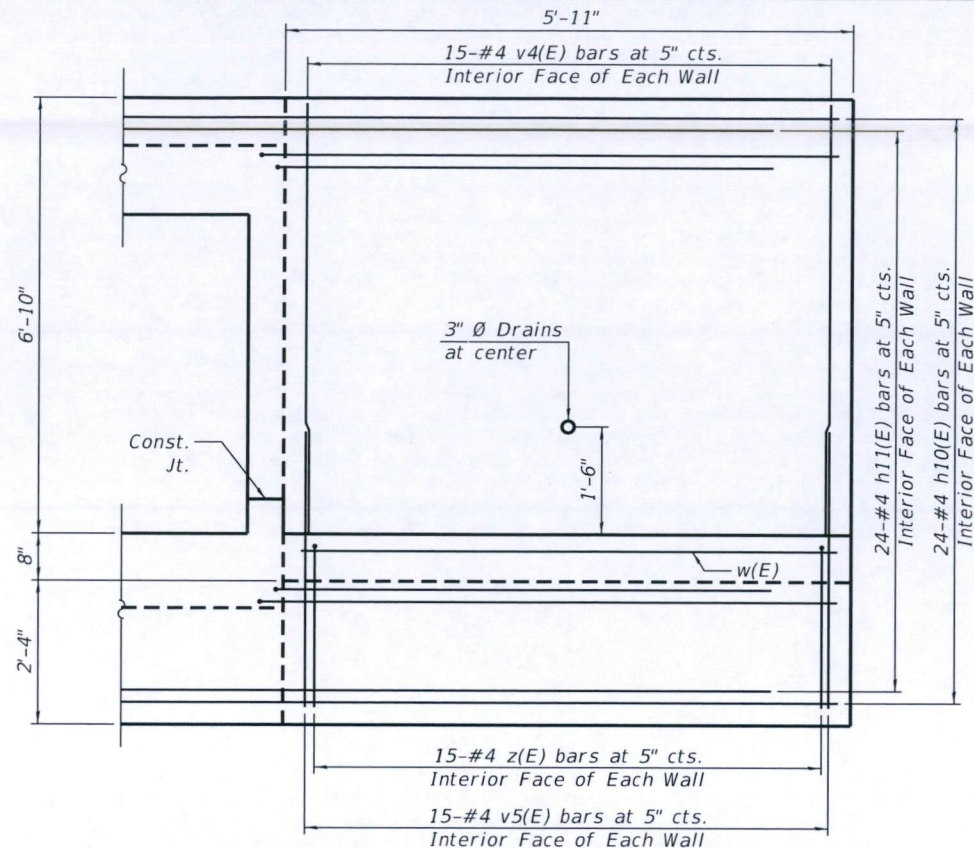
ILLINOIS FED. AID PROJECT

USER NAME	DESIGNED	CHECKED	DRAWN	PLOT DATE
AWM	MS	AWM	MS	
REVISION	REVISION	REVISION	REVISION	REVISION

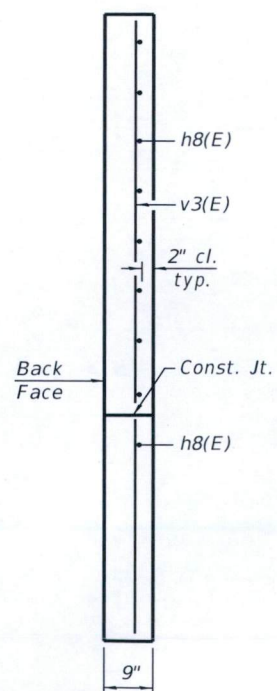
MODEL: Default
FILE NAME: V:\00DOT\60618002.07_PTB185_002_W07_62G48_IL_31_Bridge\01CADD\00SheetV5_62G48_sht-S7-Culvert Details IL.dgn
1/17/2019 6:53:19 PM



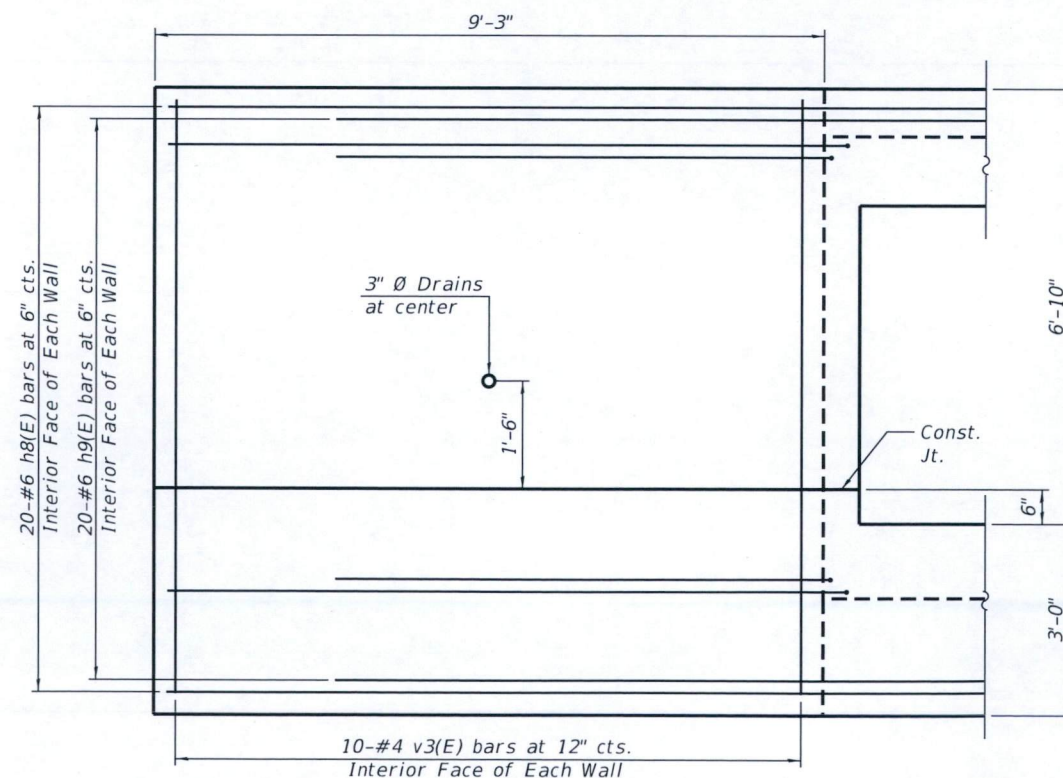
SECTION B-B



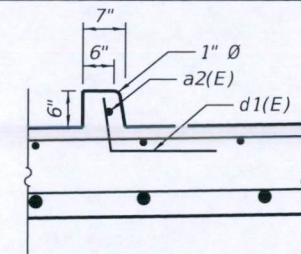
L-TYPE CANTILEVER WINGWALL ELEVATION D/S
(Similar U/S)



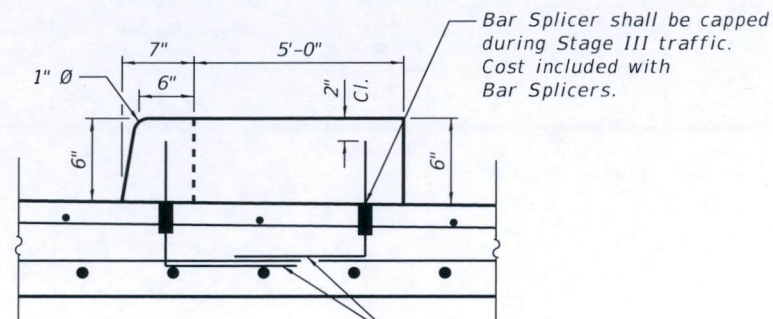
SECTION A-A



HORIZONTAL CANTILEVER WINGWALL ELEVATION D/S
(Similar U/S)



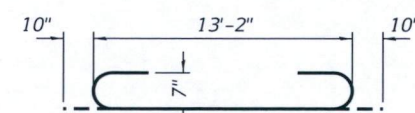
CURB DETAIL A
Integral to Culvert Top Slab.
Paid for as Concrete Superstructures



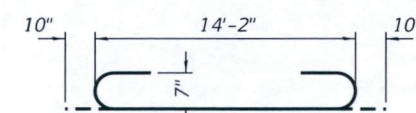
DETAIL B
Integral to Culvert Top Slab.
Paid for as Concrete Superstructures

BILL OF MATERIAL

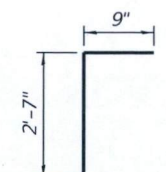
Bar	No.	Size	Length	Shape
a1(E)	182	#7	14'-10"	U
a2(E)	97	#6	13'-2"	U
a3(E)	83	#7	15'-10"	U
a4(E)	43	#6	14'-2"	U
d(E)	30	#4	4'-5"	U
d1(E)	15	#4	3'-4"	U
h(E)	60	#6	31'-9"	U
h1(E)	60	#6	33'-9"	U
h2(E)	12	#4	31'-9"	U
h3(E)	12	#4	33'-9"	U
h4(E)	6	#6	13'-2"	U
h5(E)	9	#7	13'-2"	U
h6(E)	8	#4	22'-3"	U
h7(E)	8	#4	17'-10"	U
h8(E)	40	#6	11'-11"	U
h9(E)	40	#6	8'-0"	U
h10(E)	48	#4	9'-1"	U
h11(E)	48	#4	8'-0"	U
s(E)	15	#4	5'-5"	U
s1(E)	15	#4	5'-3"	U
s2(E)	16	#5	1'-3"	U
s3(E)	8	#5	2'-6"	U
s4(E)	15	#4	5'-1"	U
u(E)	90	#4	3'-2"	U
v(E)	386	#4	4'-0"	U
v1(E)	296	#4	5'-5"	U
v2(E)	90	#4	4'-4"	U
v3(E)	24	#4	9'-5"	U
v4(E)	30	#4	6'-8"	U
v5(E)	30	#4	5'-11"	U
v6(E)	90	#4	5'-6"	U
w(E)	18	#4	5'-7"	U
z(E)	30	#4	5'-8"	U
Concrete Superstructure			Cu. Yd.	46
Concrete Box Culverts			Cu. Yd.	64
Reinforcement Bars, Epoxy Coated			Pound	23580



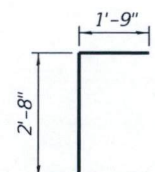
BAR a1(E)



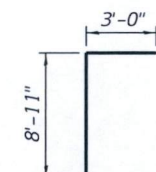
BAR a3(E)



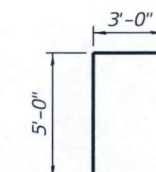
BAR d1(E)



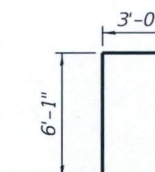
BAR d(E)



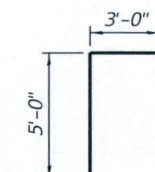
BAR h8(E)*



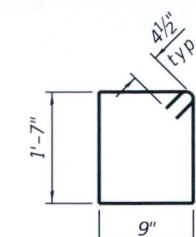
BAR h9(E)*



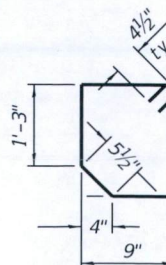
BAR h10(E)*



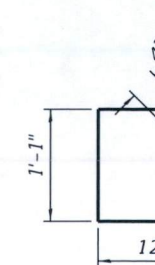
BAR h11(E)*



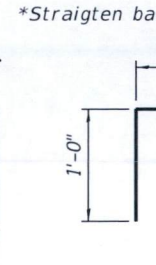
BAR s(E)



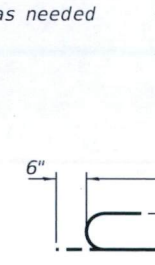
BAR s1(E)



BAR s4(E)



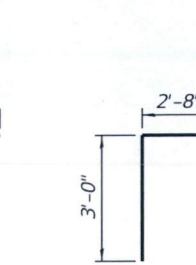
BAR u(E)



BAR v5(E)



BAR v6(E)



BAR z(E)



111 S. Wacker Drive,
Suite 3910
Chicago, IL 60606
Ph: 312-235-6783

USER NAME =	DESIGNED - AWM	REVISED -
CHECKED - MS	CHECKED - MS	REVISED -
DRAWN - AWM	DRAWN - AWM	REVISED -
PLLOT SCALE =	CHECKED - MS	REVISED -
PLLOT DATE =		

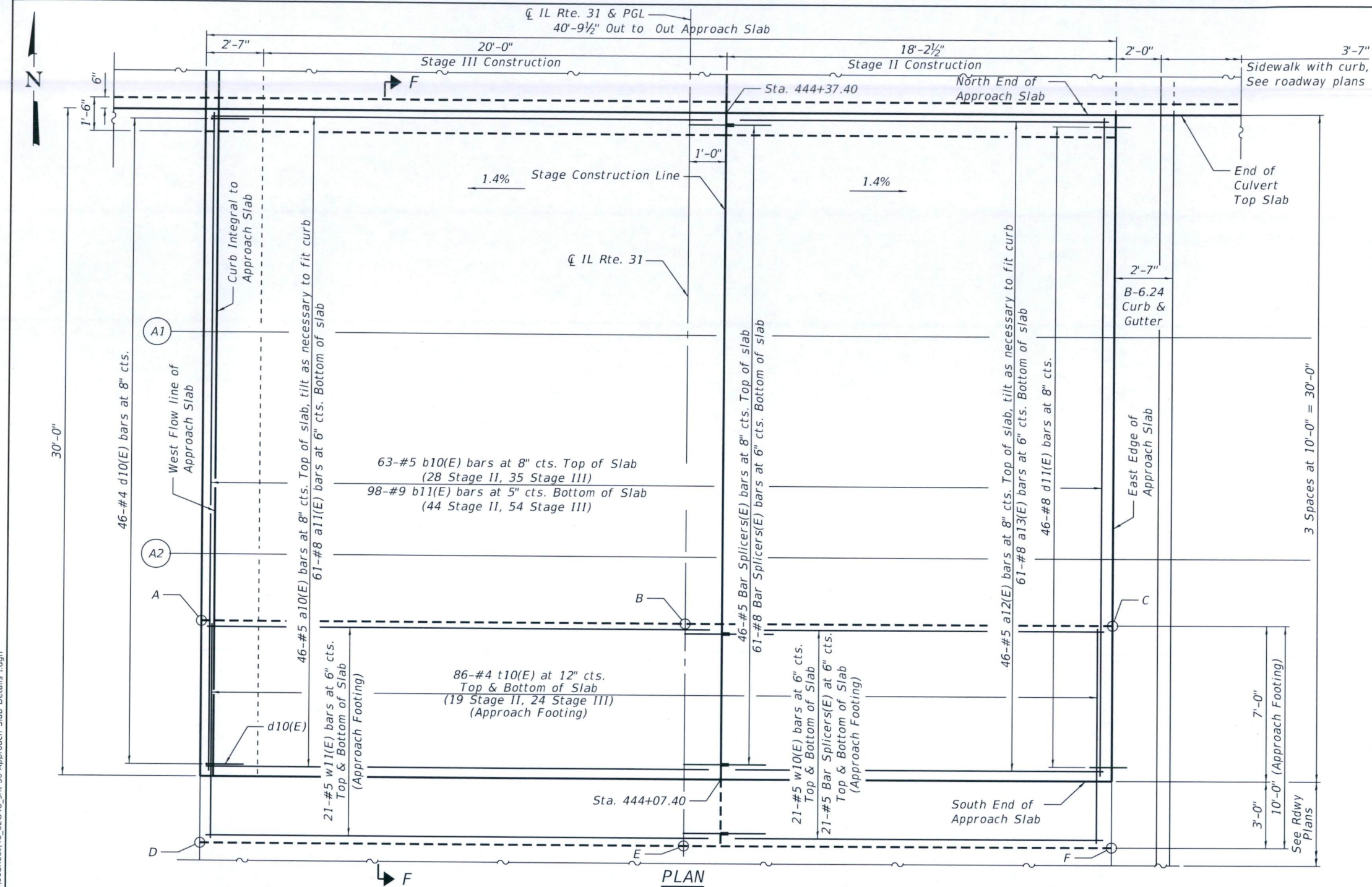
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS II / II
STRUCTURE NO. 056-0105

SHEET S7 OF S14 SHEETS

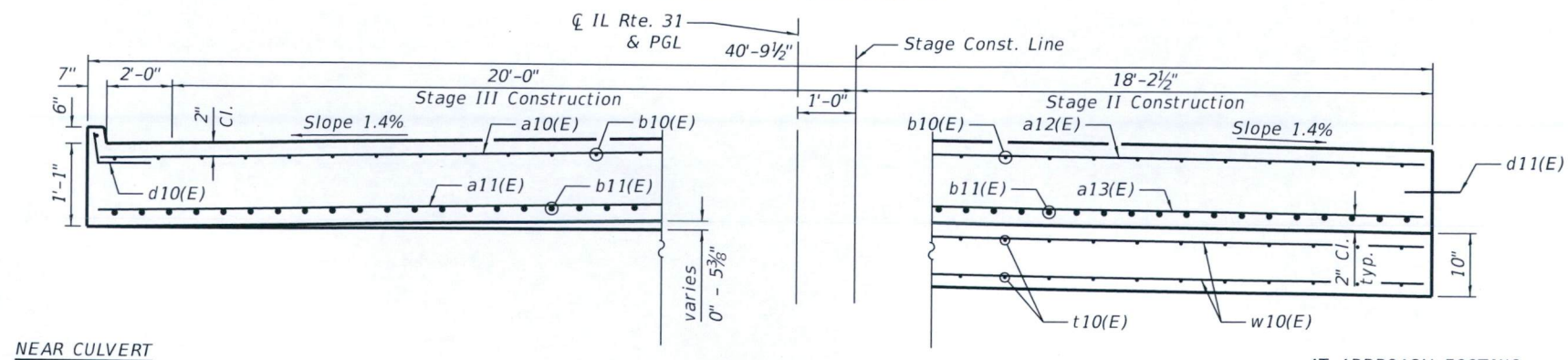
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	2018-056-DR-1	MCHENRY	71	45
CONTRACT NO. 62G48				
ILLINOIS FED. AID PROJECT				

MODEL: Default
FILE NAME: V:\000IDOT\60618002.07_PTB185_002_W07_62G48_IL 31 Bridge\01\CADD\005Sheet\46_62G48_sht-SB-Approach Slab Details I.dgn
12/11/2018 12:36:15 PM



PLAN

For Section F-F, see Sheet S9



CROSS SECTION
(Looking North)

AT APPROACH FOOTING

WEST FLOW LINE OF APPROACH SLAB

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Aprpr. Slab	444+37.40	21'-0"	754.98
A1	444+27.40	21'-0"	755.00
A2	444+17.40	21'-0"	755.02
S. End of S. Aprpr. Slab	444+07.40	21'-0"	755.04

CENTERLINE IL RTE 31 & PGL

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Aprpr. Slab	444+37.40	0.00'	755.27
A1	444+27.40	0.00'	755.29
A2	444+17.40	0.00'	755.31
S. End of S. Aprpr. Slab	444+07.40	0.00'	755.33

EAST EDGE OF APPROACH SLAB

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Aprpr. Slab	444+37.40	19.21'	755.00
A1	444+27.40	19.21'	755.02
A2	444+17.40	19.21'	755.04
S. End of S. Aprpr. Slab	444+07.40	19.21'	755.06

TOP AND BOTTOM ELEVATIONS
FOR APPROACH FOOTING

Point	Approach	
	Top	Bottom
A	753.94	753.11
B	754.24	753.41
C	753.97	753.14
D	753.96	753.13
E	754.26	753.43
F	753.99	753.16



111 S. Wacker Drive,
Suite 3910
Chicago, IL 60606
Ph: 312-235-6783

USER NAME	DESIGNED - AWM	REVISED -
PLOT SCALE	CHECKED - MS	REVISED -
PLOT DATE	DRAWN - AWM	REVISED -
	CHECKED - MS	REVISED -

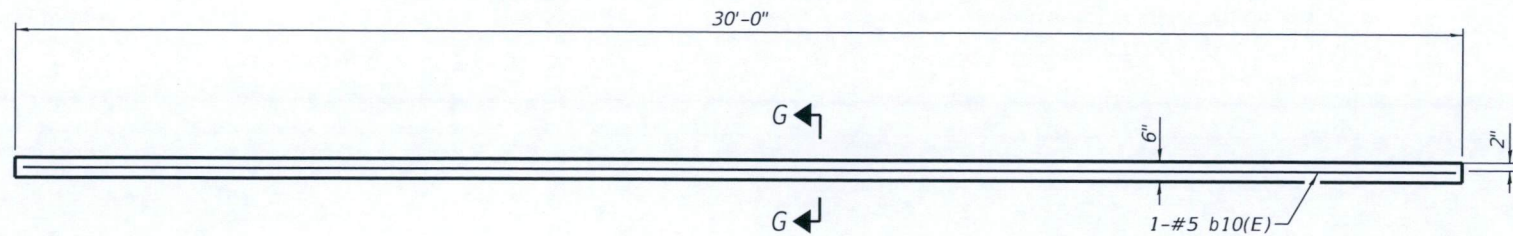
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS I / II
STRUCTURE NO. 056-0105

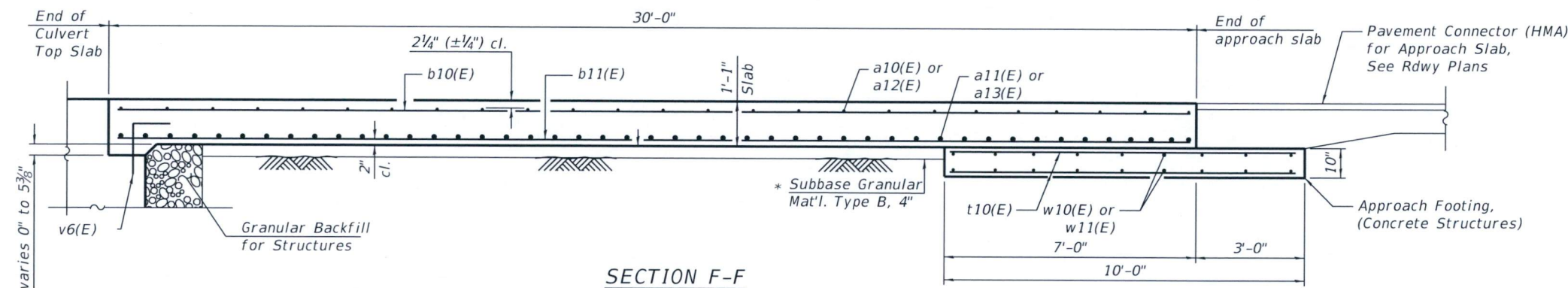
SHEET S8 OF S14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	2018-056-DR-1	MCHENRY	71	46
CONTRACT NO. 62G48				
ILLINOIS FED. AID PROJECT				

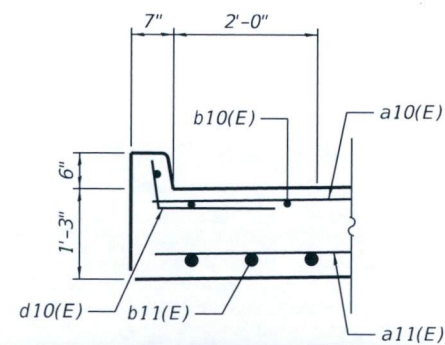
MODEL: Default
FILE NAME: V:\00IDOT\606\8002.07_PTB185_002_W07_62G48_IL_31 Bridge\01CADD\00Sheet\47_62G48_sht-S9-Approach Slab Details II.dgn
1/17/2019 6:53:19 PM



INSIDE ELEVATION OF CURB



SECTION F-F



VIEW G-G

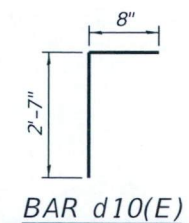
To match with Roadway
B-6.24 Curb & Gutter

Notes:

1. Curb concrete over approach slab shall be paid for as Concrete Superstructure (approach Slab).
2. Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
3. Approach footing shall be paid for as Concrete Structures.
4. The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
5. Cost of excavation for approach footing included with Concrete Structures.
6. For Granular Backfill for Structures and drainage treatment details, see sheet S2 of S14.
7. See Sheet S6 of S14 for v100(E) bar details.

SOUTH APPROACH
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	46	#5	22'-3"	—
a11(E)	61	#8	22'-3"	—
a12(E)	46	#5	17'-10"	—
a13(E)	61	#8	17'-10"	—
b10(E)	63	#5	29'-8"	—
b11(E)	98	#9	29'-8"	—
d10(E)	46	#4	3'-3"	┐
d11(E)	46	#8	2'-0"	—
t10(E)	86	#4	9'-8"	—
w10(E)	42	#5	17'-10"	—
w11(E)	42	#5	22'-3"	—
Concrete Superstructure (Approach Slab)			Cu. Yd.	57
Concrete Structures			Cu. Yd.	13
Reinforcement Bars, Epoxy Coated			Pound	22,940



111 S. Wacker Drive,
Suite 3910
Chicago, IL 60606
Ph: 312-235-6783

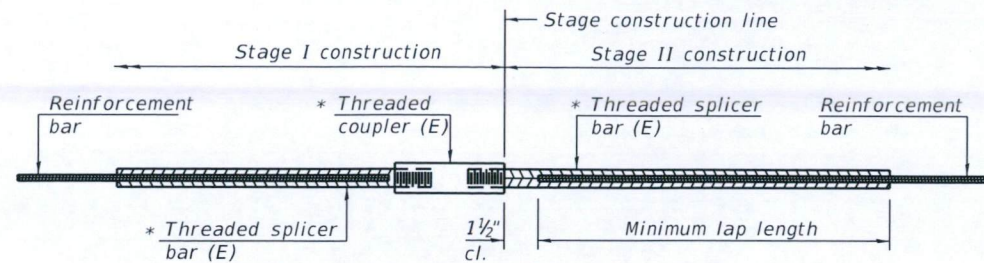
USER NAME =	DESIGNED - AWM	REVISED -
CHECKED - MS	REVIS	
PLOT SCALE =	DRAWN - AWM	REVISED -
PLOT DATE =	CHECKED - MS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS II/II
STRUCTURE NO. 056-0105

SHEET S9 OF S14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	2018-056-DR-1	MCHENRY	71	47
CONTRACT NO. 62G48				
ILLINOIS FED. AID PROJECT				

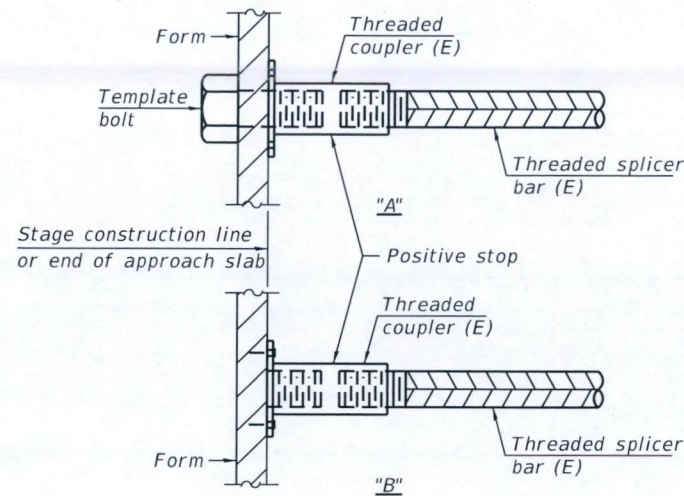


STANDARD BAR SPLICER ASSEMBLY

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

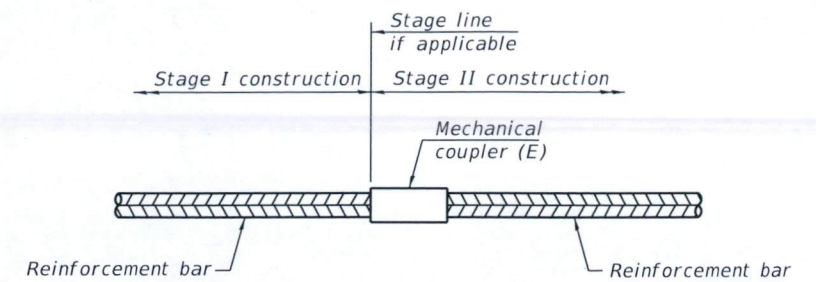
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Culvert Top Slab, h(E), h1(E)	#6	30	3'-10"
Culvert Bot. Slab, h(E), h1(E)	#6	30	3'-10"
Culvert N & S Walls, h2(E), h3(E)	#4	12	2'-11"
Culvert S Wall, h6(E), h7(E)	#4	6	2'-11"
Approach Slab, a10(E), a12(E)	#5	46	3'-2"
Approach Slab, a11(E), a13(E)	#8	61	5'-1"
Approach Footing, w10(E), w11(E)	#5	42	3'-2"



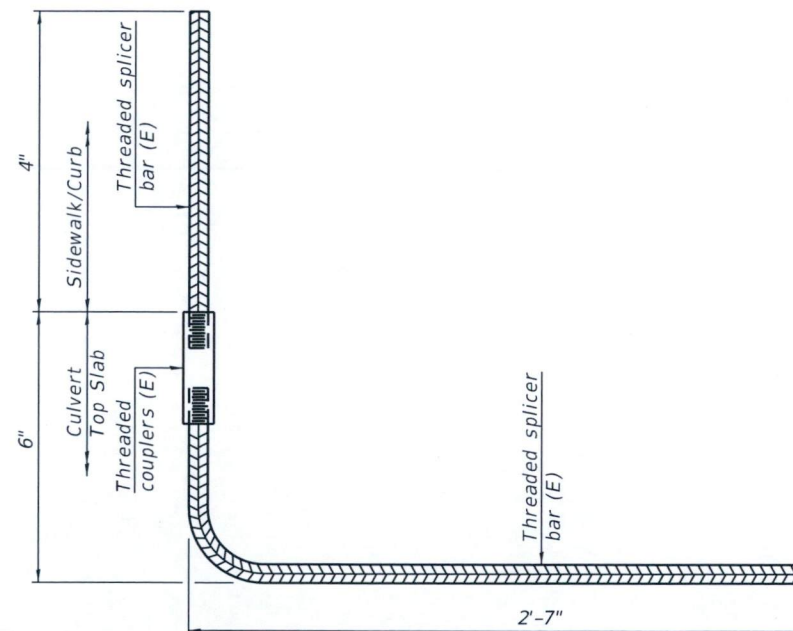
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR
#4 BAR AT SIDEWALK ON CULVERT

No. required = 30

NOTES

- Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
- All reinforcement shall be lapped and tied to the splicer bars.
- Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
- See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1

2-17-2017



111 S. Wacker Drive,
Suite 3910
Chicago, IL 60606
Ph: 312-235-6783

USER NAME =	DESIGNED - AWM	REVISED -
	CHECKED - MS	REVISED -
PLOT SCALE =	DRAWN - AWM	REVISED -
PLOT DATE =	CHECKED - MS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 056-0105

SHEET S10 OF S14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	2018-056-DR-1	MCHENRY	71	48
CONTRACT NO. 62G48				
ILLINOIS FED. AID PROJECT				

WANGENGINC 19902030 GPJ WANGENG GDT 9/19/18

SOIL BORING CB-01

WANGENGING 1990204.GPJ WANGENG.GDT 9/24/18

SOIL BORING CB-02

SOIL BORING CB-03

SOIL BORING CB-04

SOIL BORING CB-05



AES
ENGINEERS & SURVEYORS