CONTRACT NO. 91566

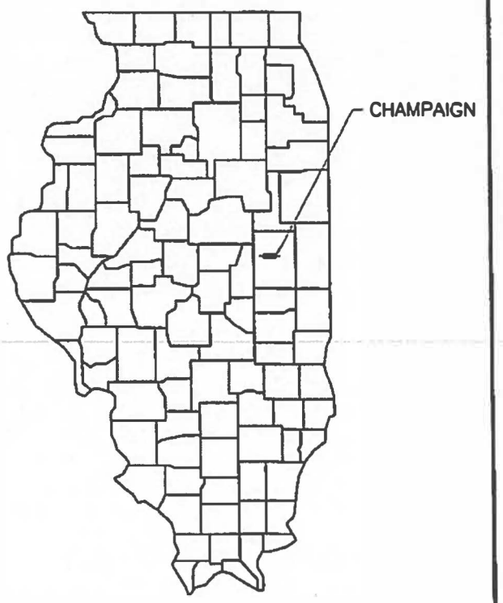
STATE OF ILLINOIS
ILLINOIS DEPARTMENT OF TRANSPORTATION

BRIDGE REPLACEMENT

FOR

CHAMPAIGN COUNTY HIGHWAY DEPARTMENT CH 16 (FAS 527)

C-95-003-18
FEDERAL PROJECT NO. QL68(828)
SECTION NO: 15-00028-00-BR
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
FUNDING: IL MAJOR BRIDGE PROGRAM



INDEX OF SHEETS

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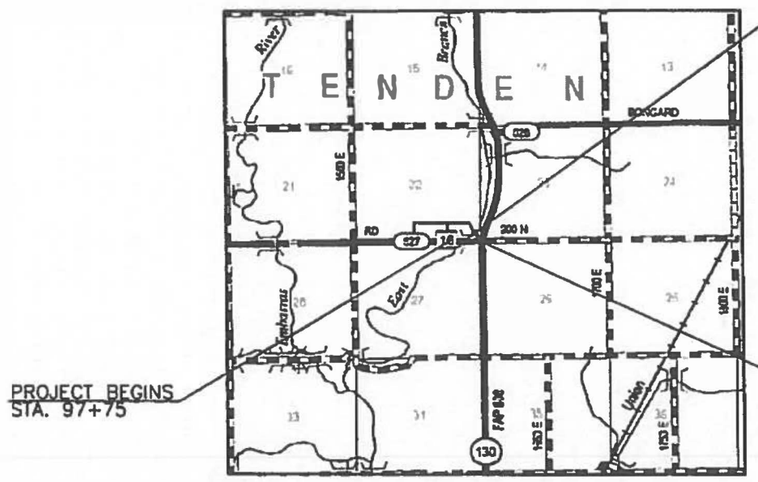
ILLINOIS DEPT. OF TRANSPORTATION STANDARD DRAWINGS

STANDARD NO.	DESCRIPTION
000001-06	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
515001-03	NAME PLATE FOR BRIDGES
630001-12	STEEL PLATE BEAM GUARDRAIL
631031-15	TRAFFIC BARRIER TERMINAL, TYPE 6
701901-07	TRAFFIC CONTROL DEVICES
B.L.R. 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

CURRENT ADT = 800
FUNCTIONAL CLASSIFICATION = MAJOR COLLECTOR

J.U.L.I.E. 811 Know what's below. Call before you dig. OR CALL (800) 892-0123



LOCATION MAP
NET LENGTH OF SECTION = 475 FEET = 0.09 MILES

KEITH E. BRANDAU 062-044096 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED 12-1-17
J Blue
CHAMPAIGN COUNTY ENGINEER

PASSED DECEMBER 19, 2017
DISTRICT FIVE ENGINEER OF LOCAL ROADS & STREETS

RELEASED FOR BID BASED ON LIMITED REVIEW

12/19/17
REGION THREE ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS IOWA WISCONSIN
ILLINOIS PROFESSIONAL DESIGN FIRM NUMBER: 184003525

Jack E Brandau 11/30/17
KEITH E. BRANDAU DATE
ILLINOIS LICENSED
PROFESSIONAL ENGINEER NO. 062-044096
LICENSE EXPIRES 11-30-19

ORIGINAL SET FOR PROJECT: 16-036 DATE CREATED: XX/XX/XX

REVISIONS

REV. NO.	DESCRIPTION	DATE

C:\Microstation\16\16-036\Plans\16-036-S-Cover.dgn
PLOT DATE: 11/30/2017

GENERAL NOTES

IN THESE CONTRACT DOCUMENTS MENTION IS MADE OF THE "ENGINEER", WHICH SHALL MEAN FEHR GRAHAM OR THE CHAMPAIGN COUNTY HIGHWAY DEPARTMENT AGENT. IN THESE CONTRACT DOCUMENTS MENTION IS MADE OF THE "OWNER", WHICH SHALL MEAN CHAMPAIGN COUNTY HIGHWAY DEPARTMENT, OR THEIR DULY AWARDED AGENT.

IN THE FOLLOWING, THE ILLINOIS DEPARTMENT OF TRANSPORTATION WILL BE REFERRED TO AS IDOT.

AS PART OF THE BIDDING PROCEDURE, THE CONTRACTOR SHALL VERIFY THAT THE QUANTITIES FOR PAY ITEMS, AS PRESENTED IN THESE PLAN DOCUMENTS, ARE SUBSTANTIALLY CORRECT. IF DISCREPANCIES ARE DETECTED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE DISCREPANCY PRIOR TO THE BID DATE.

QUANTITIES SHOWN ARE ESTIMATES FOR INFORMATION ONLY. PAYMENT WILL BE BASED ON ACTUAL QUANTITIES MEASURED IN THE FIELD OR ON PAYMENT LIMIT DETAILS.

THE CONTRACTOR SHALL BE PAID FOR MATERIALS AND EQUIPMENT SUCCESSFULLY INSTALLED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AS MEASURED OR VERIFIED IN PLACE BY THE ENGINEER OR HIS AGENT.

THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH COUNTY REGULATIONS, THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" PREPARED BY IDOT, ADOPTED APRIL 1, 2016, "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS," APPLICABLE EDITIONS, SPECIAL PROVISIONS AND THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS", FIFTH EDITION. SIGN CONSTRUCTION AND PAVEMENT MARKINGS SHALL CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", CURRENT EDITION.

IN CASE OF CONFLICT BETWEEN THE ABOVE MENTIONED SPECIFICATIONS, THE ENGINEER SHALL DETERMINE WHICH OF THE SPECIFICATIONS SHALL GOVERN. THE ENGINEER'S DECISION SHALL BE FINAL AND NO ADDITIONAL COMPENSATION SHALL BE AWARDED UNLESS APPROVED BY THE ENGINEER.

THE PROPOSED IMPROVEMENTS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERING PLANS AS APPROVED BY THE COUNTY. THE CONSTRUCTION DETAILS, AS PRESENTED ON THESE PLANS MUST BE FOLLOWED BY THE CONTRACTOR. IMPROVEMENT REPRESENTATIONS AS SHOWN ON THESE PLANS, ARE AS ACCURATE AS POSSIBLE FROM THE INFORMATION AVAILABLE. HOWEVER SOME FIELD REVISIONS MAY BE REQUIRED TO ACCOMMODATE UNFORESEEN CIRCUMSTANCES – THE ENGINEER SHALL BE ADVISED OF ANY NECESSARY REVISIONS WITH SUFFICIENT LEAD TIME ALLOWED TO PROPERLY CONSIDER AND ACT UPON SAID REQUESTS. PROPER CONSTRUCTION TECHNIQUES MUST BE FOLLOWED IN CONSTRUCTING THOSE IMPROVEMENTS AS DETAILED IN THIS ENGINEERING PLAN. EXTREME CAUTION MUST BE EXERCISED REGARDING THE COMPACTION OF ALL UTILITY TRENCHES. CONTRACTORS ARE ADVISED THAT ALL MUD AND DEBRIS MUST BE CLEARED FROM ROADWAYS PER THE REQUIREMENTS OF THE COUNTY.

THE ENGINEER SHALL HAVE THE AUTHORITY TO INSPECT, APPROVE OR REJECT THE WORKMANSHIP AND/OR MATERIALS WHICH GO TO MAKE UP IMPROVEMENTS AS DETAILED IN THESE PLANS AND SPECIFICATIONS.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO PERFORMING ANY OF THE REQUIRED TESTS OR MATERIAL PLACEMENT, SO THAT A REPRESENTATIVE MAY BE PRESENT DURING ANY TESTING PROCEDURE OR MATERIAL PLACEMENT.

THE CONTRACTOR IS REQUIRED TO STAY WITHIN THE NOTED RIGHT-OF-WAY AND EASEMENTS AS SHOWN IN THE PLANS. ANY ADDITIONAL EASEMENTS SHALL BE SECURED BY THE CONTRACTOR AT NO EXTRA COST.

ANY AREAS DAMAGED OR DESTROYED DURING THE PROJECT AS A DIRECT OR INDIRECT RESULT OF CONTRACTOR OPERATIONS, SHALL BE RESTORED TO THAT CONDITION OR BETTER WHICH EXISTED PRIOR TO STARTING CONSTRUCTION. THE COST OF SAID RESTORATION OR REPAIR SHALL BE BORNE TOTALLY BY THE CONTRACTOR, WITH NO EXTRA COMPENSATION BEING AWARDED UNDER THIS CONTRACT. THE RESPONSIBILITY FOR THE REPAIR OR REPLACEMENT OF ANY UTILITY, STRUCTURE, LANDSCAPING, ETC. DAMAGED OR DESTROYED BY THE CONTRACTOR DURING MOBILIZATION OR CONSTRUCTION SHALL BE BORNE SOLELY BY THE CONTRACTOR, WITH NO EXPENSE BEING CHARGED TO THE ENGINEER OR OWNER. PRIOR TO ACCEPTANCE OF THIS REPAIR OR REPLACEMENT, THE CONTRACTOR SHALL PRESENT THE OWNER WITH A "SIGNOFF LETTER", SIGNED BY A RESPONSIBLE OFFICIAL OF THE OWNER OF THE DAMAGED UTILITY STATING THAT THE REPAIR OR REPLACEMENT IS ACCEPTABLE.

GENERAL SAFETY PROVISION: TO PROVIDE DRIVERS WITH SAFE TRAVEL CONDITIONS DURING THE CONSTRUCTION PROJECT, AND TO PROVIDE SAFE WORKING CONDITIONS FOR ALL EMPLOYEES, THE RULES, REGULATIONS, AND CONDITIONS STATED BELOW WILL PREVAIL FOR THE DURATION OF THIS CONTRACT. ANY EMPLOYEE OF THE CONTRACTOR OR HIS SUBCONTRACTORS WHO REFUSES TO COMPLY WITH THESE GENERAL SAFETY PROVISIONS SHALL BE REMOVED FROM THE JOB SITE IN ACCORDANCE WITH THE IDOT STANDARD SPECIFICATIONS. THE CONTRACTOR AND ANY SUBCONTRACTORS RETAINED BY HIM SHALL COMPLY WITH THE STATE AND FEDERAL REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (OSHA), AS IT RELATES TO HIS OPERATIONS, REVISED AS OF JULY 1, 1987.

THE CONTRACTOR WILL BE REQUIRED TO COMPLY WITH ALL STATE REGULATIONS REGARDING AIR, WATER, AND NOISE POLLUTION. HE WILL NOT BE ALLOWED TO BUILD FIRES ON THE SITE.

THE SCALE SHOWN ON THE DRAWINGS APPLIES ONLY TO THE FULL SIZE PLANS AND NOT REDUCED SIZE PLANS. DO NOT SCALE PLANS FOR CONSTRUCTION DIMENSIONS.

THE ELEVATIONS SHOWN ON THE PLANS ARE FINISHED GRADES OF PROPOSED PAVEMENT, SURFACE COURSE, TOP BACK OF CURB OR DITCHES, UNLESS OTHERWISE INDICATED.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN DRAINAGE FLOWS AT ALL TIMES DURING THE PERFORMANCE OF THE WORK. METHODS USED BY THE CONTRACTOR SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. COST OF MAINTAINING DRAINAGE FLOWS SHALL BE INCIDENTAL TO THE CONTRACT.

WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED OR DISTURBED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS, MONUMENTS AND RIGHT-OF-WAY PINS UNTIL THE OWNER, AND AUTHORIZED SURVEYOR, OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING AN AUTHORIZED SURVEYOR RE-ESTABLISH ANY SECTION OR SUBSECTION MONUMENTS DESTROYED BY HIS OPERATIONS. REPLACEMENT OF MONUMENTS WILL BE DETERMINED BY THE ENGINEER.

THE CONTRACTOR SHALL FIELD VERIFY LOCATION, ELEVATION AND SIZE OF EXISTING UTILITIES, AND VERIFY PAVEMENT ELEVATIONS WHERE MATCHING INTO EXISTING WORK. NOTIFY ENGINEER OF DISCREPANCIES PRIOR TO PROCEEDING WITH WORK.

THE CONTRACTOR SHALL REMOVE, STORE, AND RELOCATE TO THE SATISFACTION OF THE ENGINEER ALL EXISTING SIGNAGE IN ACCORDANCE WITH ARTICLE 107.25 OF THE IDOT STANDARD SPECIFICATIONS, AND CONSIDER THIS AS INCIDENTAL TO THE CONTRACT.

OUTSIDE THE EXISTING RIGHT-OF-WAY, THE CONTRACTOR SHALL USE CARE IN GRADING OR EXCAVATION NEAR ANY AND ALL EXISTING SIGNS OUTSIDE THE RIGHT-OF-WAY. ANY SIGNS REMOVED FOR CONSTRUCTION PURPOSES SHALL BE CAREFULLY REMOVED AND RE-ERECTED BY THE CONTRACTOR AT A LOCATION NEAREST TO THE ORIGINAL LOCATION, OR AT A LOCATION DETERMINED BY THE ENGINEER IN THE FIELD. REMOVAL AND RE-ERECTED SIGNS AND ANY DAMAGE DONE TO EXISTING SIGNS BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL EXPENSE TO THE OWNER.

ALL ITEMS SHALL INCLUDE ALL THE NECESSARY MATERIALS AND LABOR TO COMPLETE THE ITEM IN PLACE. MATERIALS AND LABOR NOT SPECIFICALLY IDENTIFIED SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

ALL ITEMS TO BE REMOVED AND NOT DEFINED AS A PAY ITEM SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

TRAFFIC CONTROL AND PROTECTION

THE CONTRACTOR SHALL AT ALL TIMES PROVIDE PROTECTION FOR THE TRAFFIC AS DIRECTED BY THE ENGINEER. ANY DROP-OFF GREATER THAN 3 INCHES ADJACENT TO THE EDGE OF PAVEMENT SHALL BE PROTECTED WITH BARRICADES, AND SHALL BE INCIDENTAL TO THE PROJECT.

ALL TRAFFIC CONTROL DEVICES USED FOR THE MAINTENANCE OF TRAFFIC SHALL BE REFLECTORIZED PRIOR TO INSTALLATION AND CLEANED AS NECESSARY THROUGHOUT THE DURATION OF THE CONTRACT. ALL SIGNS SHALL BE FURNISHED, INSTALLED AND MAINTAINED BY THE CONTRACTOR. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

TRAFFIC CONDITIONS, ACCIDENTS, AND OTHER UNFORESEEN CONDITIONS MAY REQUIRE THE ENGINEER TO MODIFY THE LOCATION OF THE TRAFFIC CONTROL DEVICES. THE CONTRACTOR SHALL MAKE THE NECESSARY ADJUSTMENTS AS DIRECTED BY THE ENGINEER WITHOUT DELAY. THE CONTRACTOR SHALL RESPOND WITHIN 30 MINUTES FROM THE TIME OF NOTIFICATION BY THE ENGINEER TO ANY REQUEST MADE BY THE ENGINEER FOR CORRECTION, IMPROVEMENT OR MODIFICATION OF THE MAINTENANCE OF TRAFFIC CONTROL DEVICES.

THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL TRAFFIC CONTROL ITEMS NECESSARY FOR THE CONSTRUCTION OF ITEMS WITHIN THE ROAD RIGHT-OF-WAY. ALL WORK PERFORMED SHALL HAVE TRAFFIC CONTROL IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS" (LATEST EDITION).

TRAFFIC CONTROL DEVICES, STREET NAME SIGNS, AND PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH COUNTY ORDINANCES AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". LOCATIONS OF SIGNS AND MARKINGS SHALL BE SPECIFIED BY THE PLANS, AND/OR AS DIRECTED BY THE ENGINEER.

PROVIDE TO THE ENGINEER AND OWNER THE NAME AND PHONE NUMBER OF INDIVIDUALS RESPONSIBLE FOR MAINTAINING TRAFFIC CONTROL MEASURES DURING CONSTRUCTION. THIS INDIVIDUAL SHALL BE AVAILABLE TO CORRECT TRAFFIC CONTROL PROBLEMS 24 HOURS PER DAY.

SEEDING OF DISTURBED AREA

DISTURBED AREAS ARE LOCATIONS WHERE THE CONTRACTOR'S OPERATIONS HAVE DAMAGED EXISTING GROUND COVER AND/OR TOPSOIL OUTSIDE OF THE LIMITS OF THE TOPSOIL EXCAVATION AND PLACE.

THE FINAL TOP 4 INCHES OF SOIL IN ANY DISTURBANCE AREA MUST BE A COHESIVE SOIL CAPABLE OF SUPPORTING VEGETATION.

FERTILIZER HAVING AN ANALYSIS OF 10-10-10 SHALL BE APPLIED AT A RATE OF 90 LBS/ACRE TO ALL DISTURBED AREAS AND INCORPORATED INTO THE SEEDBED PRIOR TO SOWING THE SEED.

THE CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS ADJACENT TO IMPROVEMENTS WITH SEEDING, CLASS 2A AND NAG DS75 EROSION CONTROL BLANKETS OR APPROVED EQUAL IN ACCORDANCE WITH IDOT STANDARD SPECIFICATION OR AS APPROVED BY THE ENGINEER.

TEMPORARY SEEDING SHALL BE INSTALLED IN ALL DISTURBED AREAS AS REQUIRED.

SUBGRADES, SUBBASES, AND BASE COURSES

PRIOR TO ANY EMBANKMENT OR ROAD BASE BEING PLACED, SHOULD IT BE DETERMINED BY THE ENGINEER THAT THE SUBGRADE MATERIAL IS UNSUITABLE ON WHICH TO CONSTRUCT THE ROADWAY STRUCTURE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE UNSUITABLE MATERIAL TO THE SATISFACTION OF THE ENGINEER AND REPLACING SAME WITH STABILIZING SUBBASE CONSISTING OF SUBBASE GRANULAR MATERIAL, TYPE B IN ACCORDANCE WITH I.D.O.T STANDARDS AND SPECIFICATIONS. TO HELP MINIMIZE THE AMOUNT OF SUBBASE MATERIAL INSTALLED FOR GROUND STABILIZATION, GEOTECHNICAL FABRIC MAY BE INSTALLED AS APPROVED BY THE ENGINEER. FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH ARTICLE 210 OF THE IDOT STANDARD SPECIFICATIONS. THE COARSE AGGREGATE SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR SUBBASE GRANULAR MATERIAL, TYPE B. THE EXCAVATION AND DISPOSAL OF THE UNSUITABLE MATERIAL SHALL BE CONSIDERED INCIDENTAL TO SUBBASE GRANULAR MATERIAL, TYPE B. STABILIZING FABRIC SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD FOR GEOTECHNICAL FABRIC FOR GROUND STABILIZATION.

THE CONTRACTOR WILL BE REQUIRED TO SUBSTANTIATE BASE COURSE THICKNESSES AND FINISH PAVEMENT THICKNESSES. THE ENGINEER SHALL INSPECT BASE COURSE COREOUT PRIOR TO PLACING BASE COURSE TO ENSURE REQUIRED BASE COURSE DEPTH IS PRESENT. IN ADDITION, THE ENGINEER SHALL WITNESS THE PLACEMENT OF BITUMINOUS BINDER AND SURFACE COURSE. CORE DRILLING MAY BE REQUIRED TO DEMONSTRATE THAT BASE COURSE AND PAVEMENT THICKNESSES CONFORM TO THE SPECIFICATIONS. PRIOR TO PLACING BASE COURSE MATERIAL, THE CONTRACTOR SHALL TEST ROLL THE SUBGRADE, IN THE PRESENCE OF THE ENGINEER OR HIS AGENT TO DEMONSTRATE THAT SAID SUBGRADE IS READY FOR BASE. PRIOR TO PLACEMENT OF THE BITUMINOUS SURFACE, THE SAME VERIFICATION PROCEDURE SHALL BE PERFORMED ON THE BASE COURSE MATERIAL. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO PERFORMING ANY OF THE REQUIRED TESTS SO THAT A REPRESENTATIVE MAY BE PRESENT.

EXCAVATION/EARTHWORK/REMOVAL

THE CONTRACTOR SHALL USE CARE IN GRADING OR EXCAVATION NEAR ANY AND ALL EXISTING ITEMS WHICH ARE NOT INDICATED TO BE REMOVED. ANY DAMAGE DONE TO EXISTING ITEMS BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER.

TOPSOIL IS TO BE PLACED AND COMPACTED IN ACCORDANCE WITH SECTION 211 OF IDOT STANDARD SPECIFICATIONS.

ALL ROADWAY REMOVAL ITEMS SHALL CONFORM TO SECTION 440 OF THE IDOT STANDARD SPECIFICATIONS. ALL JOINTS BETWEEN THE PORTION REMOVED AND THAT LEFT IN PLACE SHALL BE SAWED TO SUCH A DEPTH THAT A CLEAN, NEAT EDGE WILL RESULT WITH NO SPALLING TO THE REMAINING PORTION. THE COST OF SAWING SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. ADDITIONAL SAWING OR RE-SAWING MAY BE REQUIRED AS DIRECTED BY THE ENGINEER WITH NO ADDITIONAL COMPENSATION BEING ALLOWED. THE COST OF SAWCUTTING THE EXISTING PAVEMENT SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE SPECIFIC REMOVAL ITEMS.

ALL ITEMS NOTED FOR REMOVAL SHALL BE DISPOSED OF OFF SITE AT NO EXTRA COST.

EMBANKMENT WORK SHALL CONSIST OF THE CONSTRUCTION OF EMBANKMENTS BY DEPOSITING, PLACING AND COMPACTING EARTH, STONE, GRAVEL OR OTHER MATERIALS OF ACCEPTABLE QUALITY ABOVE THE NATURAL GROUND OR OTHER SURFACE IN ACCORDANCE WITH SECTIONS 202 AND 205 OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

PRIOR TO STARTING EARTHWORK OR UTILITY TRENCHING, THE CONTRACTOR SHALL STRIP THE RIGHT-OF-WAY OF TOPSOIL TO A DEPTH AND TO THE LIMITS APPROVED BY THE ENGINEER. THIS MATERIAL SHALL BE STOCKPILED IN A REMOTE LOCATION OF THE SITE (APPROVED BY THE ENGINEER) UNTIL THE PLAN IMPROVEMENTS ARE COMPLETED AND THE EXCESS MATERIAL SPREAD AS DIRECTED. THEN IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SPREAD THIS TOPSOIL MATERIAL IN AREAS OF THE RIGHT-OF-WAY, OVER AREAS WHERE EXCESS EXCAVATED MATERIAL, SAND, GRAVEL HAS BEEN SPREAD OR IN OTHER AREAS AS DESIGNATED BY THE ENGINEER. THE MATERIAL SHALL THEN BE COMPACTED TO A MINIMAL DEPTH OF 4" AND FINE GRADED IN A MANNER ACCEPTABLE TO THE ENGINEER.

IN PROPOSED FILL AREAS FOR PAVEMENT AND EMBANKMENT, TOPSOIL AND TURF SHALL BE SCARIFIED AND REMOVED PRIOR TO CONSTRUCTING THE EMBANKMENT.

ALL EXCAVATIONS FOR STRUCTURES AND PIPE SHALL BE KEPT DEWATERED DURING CONSTRUCTION UNTIL BACKFILL IS IN PLACE. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO SEDIMENT BASINS OR SILT TRAPS. (COST INCIDENTAL)

CLEAN CONSTRUCTION OR DEMOLITION DEBRIS (CCDD) REQUIREMENTS-"THE CONTRACTOR IS RESPONSIBLE FOR THE ASSESSMENT AND PROPER DISPOSAL OF ALL EXCESS SOIL AND SUBSURFACE MATERIALS THAT ARE NOT ABLE TO BE RE-USED ON THE PROJECT SITE AS SUITABLE CLEAN FILL. CONTRACTOR RESPONSIBILITIES SHALL INCLUDE ALL REQUIRED SOIL SAMPLING, LABORATORY ANALYSIS, DISPOSAL PROFILING FEES, TRANSPORTATION, AND DISPOSAL TIPPING FEES AND SURCHARGES."

UTILITIES

ABANDONED UNDERGROUND UTILITIES THAT CONFLICT WITH CONSTRUCTION OR HAVE THE POTENTIAL FOR CREATING FUTURE PROBLEMS SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT-OF-WAY AT AN APPROVED LOCATION OBTAINED BY THE CONTRACTOR, ACCORDING TO ARTICLE 202.03 OF THE IDOT STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

UTILITIES SHOWN ON THE PLANS ARE FOR ILLUSTRATIVE PURPOSES ONLY AND NO GUARANTEE OF THEIR ACCURACY IS MADE OR INFERRED. THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THE DRAWINGS REPRESENT DATA RECEIVED FROM VARIOUS SOURCES. IT IS NOT GUARANTEED TO BE CORRECT OR ALL-INCLUSIVE. THE CONTRACTOR SHALL CONDUCT HIS OWN INVESTIGATION INTO THE LOCATION, SIZE, DEPTH AND NATURE OF ANY AND ALL EXISTING UTILITIES THAT MAY INTERFERE WITH THE WORK UNDER THIS CONTRACT. ANY EXISTING UTILITIES THAT ARE TO REMAIN IN SERVICE SHALL BE FULLY PROTECTED BY THE CONTRACTOR AND ANY DAMAGE CAUSED BY THE CONSTRUCTION OPERATIONS SHALL BE IMMEDIATELY REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER OR THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ANY AND ALL UTILITY COMPANIES REGARDING ADJUSTMENTS NECESSARY. THIS WORK SHALL BE AT THE CONTRACTOR'S EXPENSE AND CONSIDERED INCIDENTAL TO THE PROJECT COST. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND, OVERHEAD, OR SURFACE UTILITIES EVEN THOUGH THEY MAY NOT BE SHOWN ON THE PLANS. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER OR THE OWNER OR REPLACED. THIS WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.

UNLESS OTHERWISE INDICATED, SHOULD EXISTING UTILITIES OR STRUCTURES INTERFERE WITH THE PROPOSED CONSTRUCTION, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR RELOCATING THESE FACILITIES AT HIS EXPENSE TO ACCOMMODATE SAID NEW CONSTRUCTION; "SIGNOFF LETTER" WILL BE REQUIRED.

ANY DAMAGE, DIRECT OR INDIRECT, TO EXISTING AREA STRUCTURES, UTILITIES, PAVEMENTS, ETC. AND NOT CALLED OUT SPECIFICALLY IN THE PLANS SHALL BE REPAIRED OR REPLACED WITH EQUALS BY CONTRACTOR WITHOUT COST TO THE OWNER, "SIGNOFF LETTER" WILL BE REQUIRED.

ANY AND ALL FIELD TILES AND OR STORM SEWERS DAMAGED OR ENCOUNTERED DURING THE CONSTRUCTION ACTIVITIES SHALL BE REPAIRED, REPLACED AND/OR CONNECTED IMMEDIATELY BY THE CONTRACTOR. COST FOR SAID REPAIRS, REPLACEMENT, AND/OR CONNECTION SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. COST FOR REPAIRS, REPLACEMENT, AND/OR CONNECTION SHALL BE INCIDENTAL TO THE VARIOUS CONTRACT ITEMS.

ALL STORM SEWER METHODS AND MATERIALS SHALL CONFORM TO THE LATEST EDITIONS OF THE "STANDARDS SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS" AND THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS" AND THE REQUIREMENTS OF THE COUNTY.

SHEETING AND SHORING, IF REQUIRED, SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

STRUCTURAL FILL AROUND MANHOLE STRUCTURES SHALL BE AGGREGATE TYPE CA-6 AND SHALL BE MECHANICALLY COMPACTED IN 12 INCH LIFTS. COST SHALL BE INCIDENTAL TO THE MANHOLE.

THE CONTRACTOR SHALL CALL J.U.L.I.E. AT 1-800-892-0123 48 HOURS PRIOR TO CONSTRUCTION FOR CONFIRMATION OF CURRENT UTILITY LOCATIONS AND FOR ALL NON-EMERGENCY WORK.

CONTRACTOR COORDINATION WITH UTILITY COMPANIES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

GN 406H MIXTURE REQUIREMENTS

LOCATION	CH 16	CH 16
MIXTURE USE	* FG LEVEL BINDER	**SURFACE & HMA SHOULDERS
AC/PG	PG 64-22	PG 64-22
DESIGN AIR VOIDS	4.0% @ Ndes=50	4.0% @ Ndes=50
MIX COMP (GRADATION)	IL 9.5 FG	IL 9.5
FRICTION AGGREGATE	MIX C	MIX C
MIXTURE WEIGHT	112	112
QUALITY MANAGEMENT PROGRAM	QC/QA	QC/QA
SUBLOT SIZE	N.A.	N.A.

* SURFACE MIX MAY BE SUBSTITUTED FOR FG LEVEL BINDER AT THE CONTRACTOR'S OPTION.

** SURFACE MIX PLACED AS HMA SHOULDERS WILL HAVE A MAXIMUM LIFT THICKNESS OF 3".

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

REV. NO.	DESCRIPTION	DATE

DRAWING:
GENERAL NOTES

JOB NUMBER: 16-656

SHEET NUMBER: 02 of 29

CADD NAME: 16-656-S-Design General Notes.dgn
PRINT DRIVER: $PLTDRV$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$

SUMMARY OF QUANTITIES

	CODE #	ITEM NAME	UNIT	QUANTITY
	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNITS	140.0
	20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNITS	33.0
	20200100	EARTH EXCAVATION	CU YD	28.0
	20400800	FURNISHED EXCAVATION	CU YD	245.0
*	25000314	SEEDING, CLASS 4B	ACRE	0.50
	25000400	NITROGEN FERTILIZER NUTRIENT	POUND	50
	25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	50
	25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	50
	25100115	MULCH METHOD 2	ACRE	0.50
	28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	50
	28000300	TEMPORARY DITCH CHECKS	FOOT	60
	28000400	PERIMETER EROSION BARRIER	FOOT	568
	40600290	BITUMINOUS MATERIALS (TACK COAT)	LBS	285
	40600627	LEVELING BINDER (MACHINE METHOD), IL 9.5 FG N50	TON	73.0
	40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	75.0
	44000100	PAVEMENT REMOVAL	SQ YD	219
	44000157	HOT-MIX ASPHALT SURFACE REMOVAL, 2"	SQ YD	633
	48203021	HOT-MIX ASPHALT SHOULDERS, 6"	SQ YD	166
	50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
	50200100	STRUCTURE EXCAVATION	CU YD	275.0
	50201101	COFFERDAM (TYPE 1) (LOCATION 1)	EACH	1
	50201102	COFFERDAM (TYPE 1) (LOCATION 2)	EACH	1
	50300100	FLOOR DRAINS	EACH	28
	50300225	CONCRETE STRUCTURES	CU YD	146.2
	50300255	CONCRETE SUPERSTRUCTURE	CU YD	234.6
	50300260	BRIDGE DECK GROOVING	SQ YD	795
	50300300	PROTECTIVE COAT	SQ YD	1,029
	50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	98.0
	50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
	50500505	STUD SHEAR CONNECTORS	EACH	4,698
	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	102,440
	51201400	FURNISHING STEEL PILES HP10X42	FOOT	1,475
	51202305	DRIVING PILES	FOOT	1,475
	51203400	TEST PILE STEEL HP10X42	EACH	4
	51204650	PILE SHOES	EACH	30
	51500100	NAME PLATES	EACH	1
	52100520	ANCHOR BOLTS, 1"	EACH	48
	59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	76
Δ	63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	187.5
Δ	63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4
Δ	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
Δ	63200310	GUARDRAIL REMOVAL	FOOT	472
	67100100	MOBILIZATION	L SUM	1
Δ	78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1,069
*	X2070304	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	146.0
*	X7011830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	EACH	1
*	XX004565	GROUTED RIPRAP	SQ YD	445
	XX004566	CONCRETE CUT-OFF WALL	CU YD	6.9
*	Z0013798	CONSTRUCTION LAYOUT	L SUM	1
*	Z0029090	DIAMOND GRINDING (BRIDGE SECTION)	SQ YD	742
*	Z0046304	PIPE UNDERDRAINS FOR STRUCTURES, 4"	FOOT	140

*SEE SPECIAL PROVISIONS Δ SPECIALTY ITEMS

EARTHWORK SCHEDULE	WEST APPROACH CU YD	EAST APPROACH CU YD	TOTAL CU YD
EARTH EXCAVATION	14.6	13.6	28.2
TOTAL CUT	15.0	14.0	**28.0**
EMBANKMENT	120.1	98.4	218.5
TOTAL FILL	120.0	98.0	**218.0**
BORROW = [FILL - (Excavation/1.25)] *1.25	135.0	109.0	245.0
BORROW = **FURNISHED EXCAVATION**			**245.0**
1.25 REPRESENTS 25% SHRINKAGE FACTOR			

SCHEDULE OF QUANTITIES

44000157 HOT-MIX ASPHALT SURFACE REMOVAL, 2"

LOCATION TO LOCATION		SQ YD
97+75	98+81	259
101+19	102+50	374
	TOTAL	633

63200310 GUARDRAIL REMOVAL

LOCATION TO LOCATION			FOOT
LT	98+88	101+24	236.0
RT	98+76	101+12	236.0
		TOTAL	472.0

44000100 PAVEMENT REMOVAL

LOCATION TO LOCATION		SQ YD
98+81	99+22	97
100+78	101+19	121
	TOTAL	219

63000003 STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS

STATION TO STATION			FOOT
LT	98+27.60	98+65.10	37.5
RT	97+89.62	98+52.12	62.5
LT	101+48.86	102+11.36	62.5
RT	101+35.85	101+60.85	25.0
		TOTAL	187.5

63100085 TRAFFIC BARRIER TERMINAL, TYPE 6

STATION TO STATION			EACH
LT	98+65.10	99+02.00	1
RT	98+52.12	98+89.02	1
LT	101+11.96	101+48.86	1
RT	100+98.95	101+35.85	1
		TOTAL	4

63100167 TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT

STATION TO STATION			EACH
LT	98+02.60	98+27.60	1
RT	97+64.62	97+89.62	1
LT	102+11.36	102+36.36	1
RT	101+60.85	101+85.85	1
		TOTAL	4

28000300 TEMPORARY DITCH CHECKS

STATION		FOOT
98+00	LT	6.0
98+00	LT	6.0
98+50	RT	6.0
98+50	RT	6.0
99+00	LT	6.0
101+00	RT	6.0
101+50	RT	6.0
102+00	RT	6.0
101+50	LT	6.0
102+00	LT	6.0
	TOTAL	60.0

48203021 HOT-MIX ASPHALT SHOULDERS, 6"

LOCATION TO LOCATION			SQ YD
RT	97+75	98+75	44.0
LT	97+75	98+87	49.0
RT	101+13	102+00	39.0
LT	101+24	102+00	34.0
		TOTAL	166.0

25000314 SEEDING CLASS 4B AND 25100115 MULCH METHOD 2 / 28000250 TEMPORARY EROSION CONTROL SEEDING

LOCATION TO LOCATION			ACRE	POUND
97+75	99+14	LT	0.13	13.0
97+75	98+95	RT	0.12	12.0
101+05	102+50	LT	0.13	13.0
100+86	102+50	RT	0.12	12.0
		TOTAL	0.50	50.0

NOTE: TEMPORARY EROSION CONTROL SEEDING IS APPLIED AT A RATE OF 100 LB / ACRE.
NOTE: NITROGEN, PHOSPHOROUS & POTASSIUM FERTILIZER NUTRIENTS ARE APPLIED AT A RATE OF 90 LB / ACRE.

28000400 PERIMETER EROSION BARRIER

LOCATION TO LOCATION				FOOT
97+75	48' RT.	98+95	48' RT.	120.0
97+75	48' LT.	99+14	48' LT.	139.0
100+86	48' RT.	102+50	48' RT.	164.0
101+05	48' LT.	102+50	48' LT.	145.0
			TOTAL	568.0

20100110 TREE REMOVAL (6 TO 15 UNITS DIAMETER)

LOCATION TO LOCATION		UNITS
40' RT.	99+35	6.0
40' RT.	99+35	8.0
40' RT.	99+35	6.0
49' RT.	100+07	15.0
41' RT.	100+27	6.0
41' RT.	100+27	6.0
41' RT.	100+27	10.0
41' RT.	100+27	8.0
41' RT.	100+27	6.0
41' RT.	100+27	6.0
41' RT.	100+27	12.0
41' RT.	100+27	7.0
43' RT.	100+73	10.0
42' RT.	100+77	10.0
42' RT.	101+05	12.0
42' RT.	101+20	12.0
	TOTAL	140.0

20100210 TREE REMOVAL (OVER 15 UNITS DIAMETER)

LOCATION TO LOCATION		UNITS
45' RT.	100+34	16.0
46' RT.	100+63	17.0
	TOTAL	33.0

40600627 LEVELING BINDER (MACHINE METHOD), IL 9.5 FG N50

STATION TO STATION		AREA SF	THICK INCHES	TON
97+75	98+81	2480	VAR. 0" TO 4 1/8"	33.8
101+19	102+02	1963	VAR.1 1/2" TO 2 5/8"	24.2
102+02	102+50	1520	VAR. 2 5/8" TO 0"	11.7
			CONTINGENCY	2.7
			TOTAL	73.0

NOTE: CALCULATIONS USED 112 LB/SY/INCH

40603310 HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50

STATION TO STATION		AREA SF	THICK INCHES	TON
97+75	98+81	2333	2	29.0
101+19	102+50	3364	2	41.9
			CONTINGENCY	3.5
			TOTAL	75.0

NOTE: CALCULATIONS USED 112 LB/SY/INCH

406000290 BITUMINOUS MATERIALS (TACK COAT)

STATION TO STATION		AREA SF	LBS
97+75	98+81	2333	117
101+19	102+50	3364	168
		TOTAL	285

78001110 PAINT PAVEMENT MARKING - LINE 4"

		LINE 4" WHITE EDGE SOLID	LINE 4" YELLOW C/L SKIP
STATION TO STATION		FOOT	FOOT
97+75.00	102+50.00	950	118.75
	TOTAL	950	119

Z0029090 DIAMOND GRINDING (BRIDGE SECTION)

LOCATION TO LOCATION			SQ YD
	98+80.83	101+19.17	742.0
		TOTAL	742.0

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

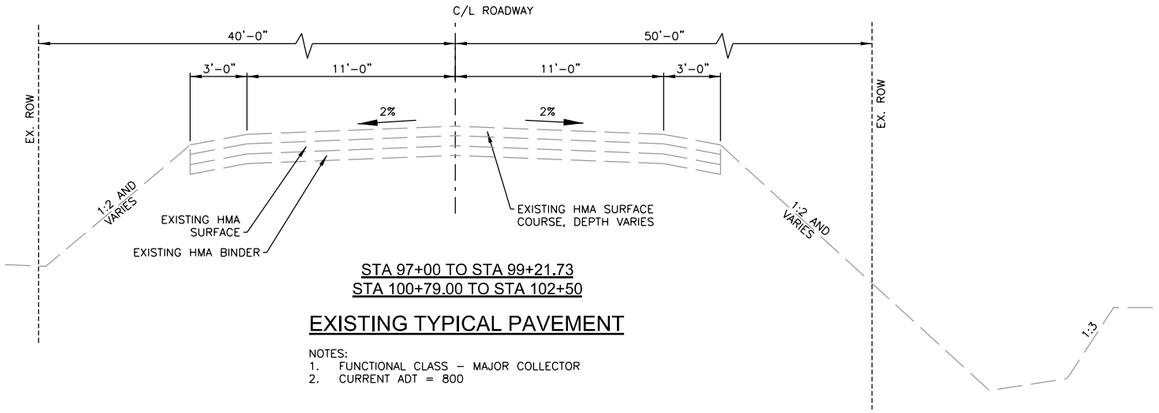
REVISIONS

REV. NO.	DESCRIPTION	DATE

DRAWING: SUMMARY AND SCHEDULE OF QUANTITIES

JOB NUMBER: 16-656
SHEET NUMBER: 03 of 29

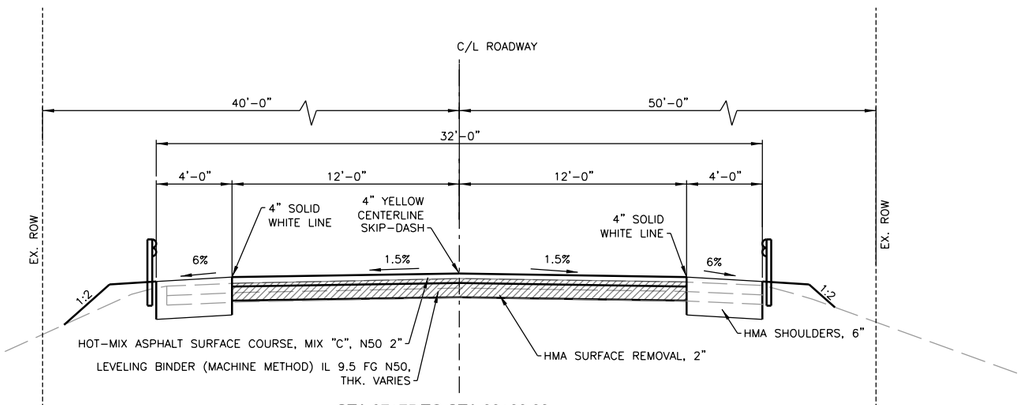
CADD NAME: 16-656-S-Summary of quantities.dgn
PRINT DRIVER: $PLTDRV$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$



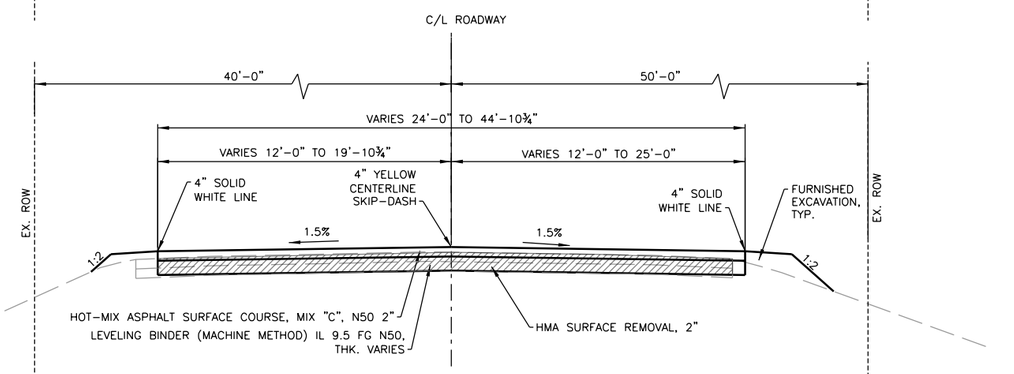
STA 97+00 TO STA 99+21.73
STA 100+79.00 TO STA 102+50

EXISTING TYPICAL PAVEMENT

NOTES:
1. FUNCTIONAL CLASS – MAJOR COLLECTOR
2. CURRENT ADT = 800

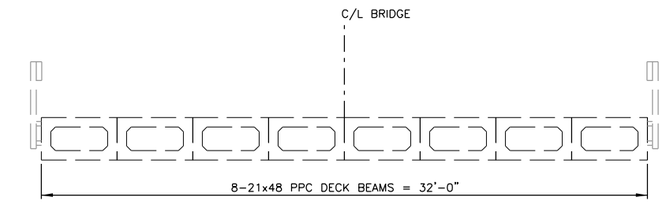


STA 97+75 TO STA 98+80.83
STA 101+19.17 TO STA 102+01.61



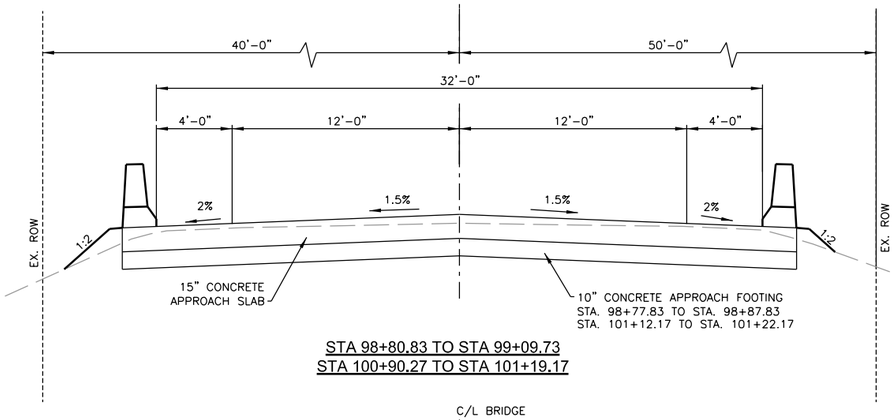
STA 102+01.61 TO STA 102+50

PROPOSED TYPICAL PAVEMENT

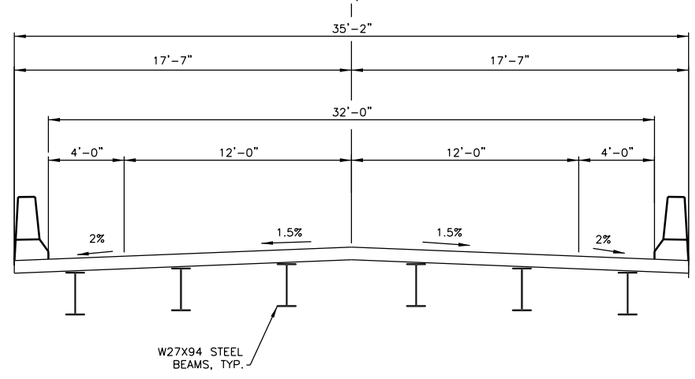


STA 99+21.73 TO STA 100+79.00

EXISTING BRIDGE SECTION



STA 98+80.83 TO STA 99+09.73
STA 100+90.27 TO STA 101+19.17



STA 99+09.73 TO STA 100+90.27

PROPOSED BRIDGE SECTION

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: ¼"=1'-0"

REVISIONS

REV. NO.	DESCRIPTION	DATE

DRAWING:
TYPICAL SECTIONS

CADD NAME: 16-656-S-Design Typ Sec.dgn
PRINT DRIVER: $PLTDRVS$

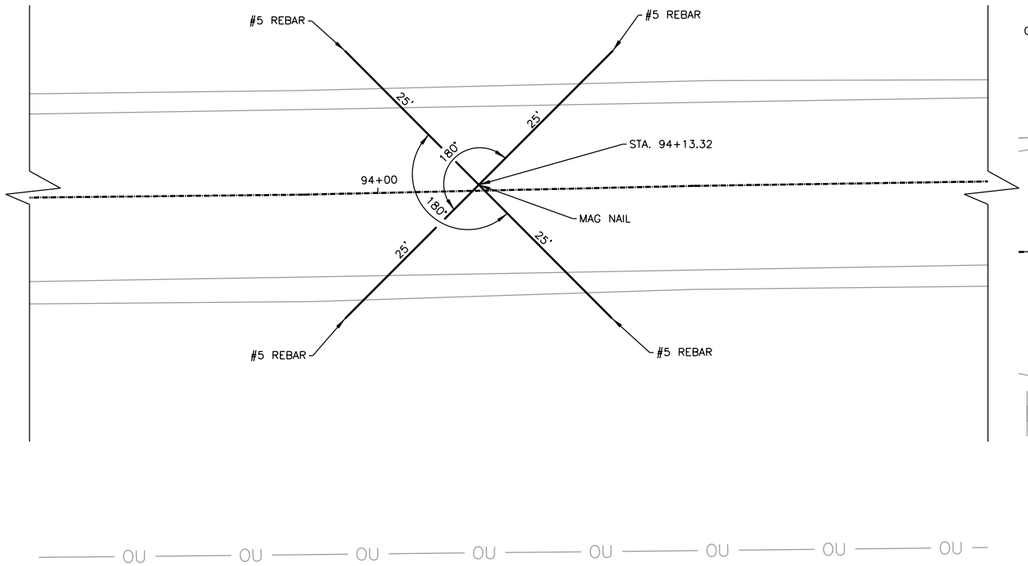
JOB NUMBER:
16-656

SHEET NUMBER:
04 of 29

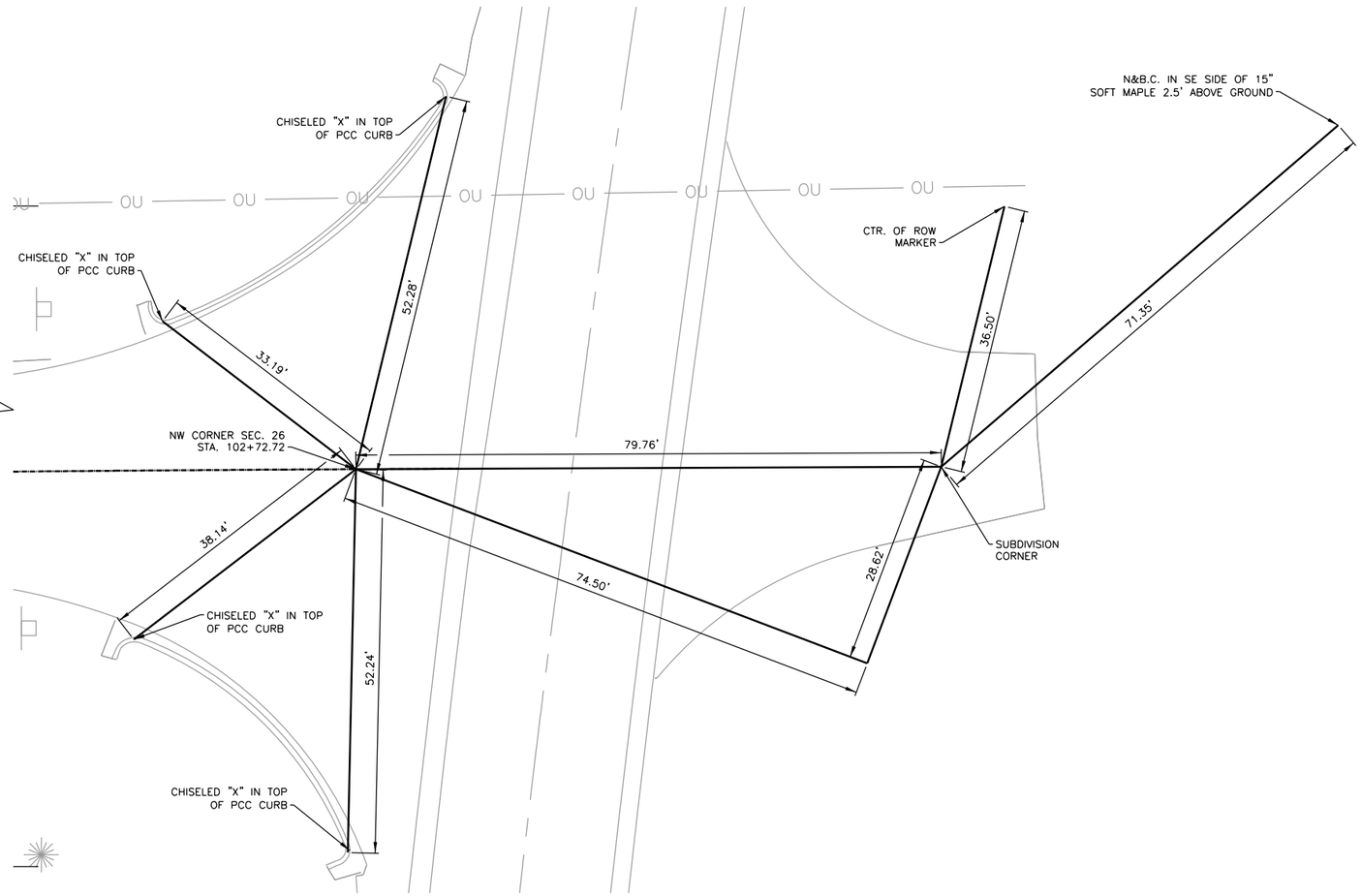
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$

N
W E
S

SCALE HOR 10 0 10 20



STATION 94+13.32



STATION 102+72.72

TIE POINTS

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: AS SHOWN

REVISIONS

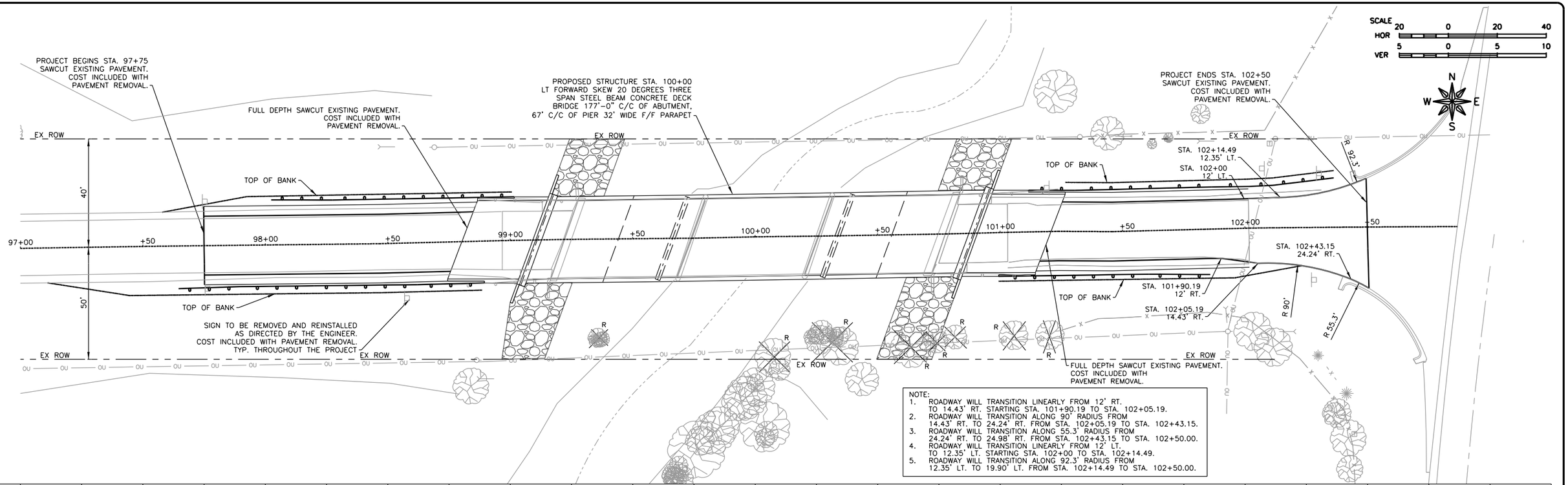
REV. NO.	DESCRIPTION	DATE

DRAWING: TIE POINTS

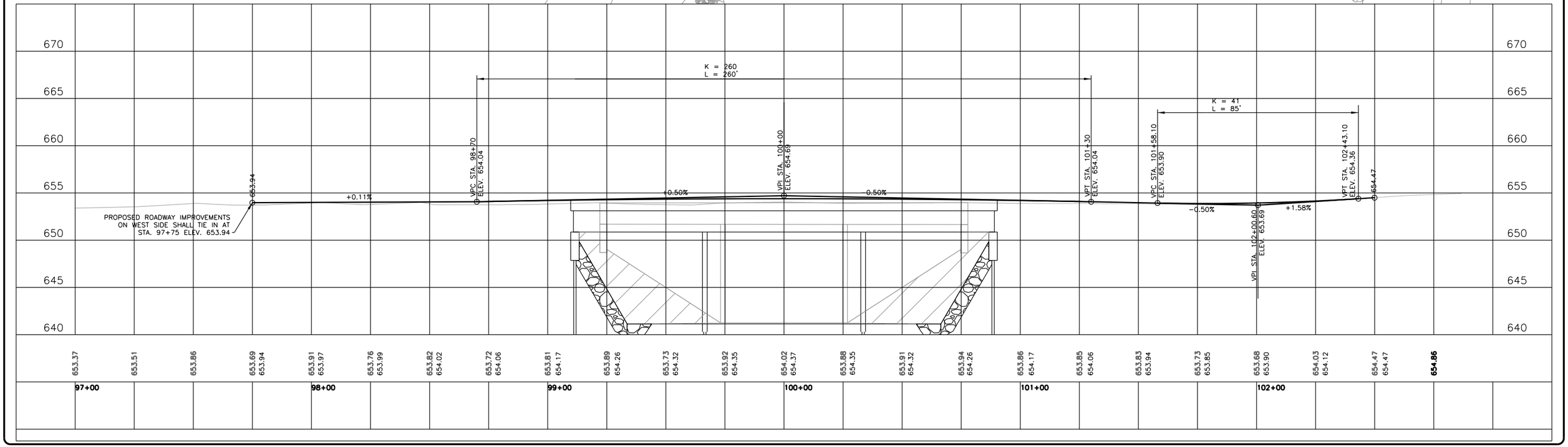
JOB NUMBER: 16-656

SHEET NUMBER: 05 of 29

CADD NAME: 16-656-S-Design EX Tie Points.dgn
PRINT DRIVER: $PLTDRVS$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$



NOTE:
1. ROADWAY WILL TRANSITION LINEARLY FROM 12' RT. TO 14.43' RT. STARTING STA. 101+90.19 TO STA. 102+05.19.
2. ROADWAY WILL TRANSITION ALONG 90' RADIUS FROM 14.43' RT. TO 24.24' RT. FROM STA. 102+05.19 TO STA. 102+43.15.
3. ROADWAY WILL TRANSITION ALONG 55.3' RADIUS FROM 24.24' RT. TO 24.98' RT. FROM STA. 102+43.15 TO STA. 102+50.00.
4. ROADWAY WILL TRANSITION LINEARLY FROM 12' LT. TO 12.35' LT. STARTING STA. 102+00 TO STA. 102+14.49.
5. ROADWAY WILL TRANSITION ALONG 92.3' RADIUS FROM 12.35' LT. TO 19.90' LT. FROM STA. 102+14.49 TO STA. 102+50.00.



FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
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ILLINOIS
IOWA
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OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: AS SHOWN

REVISIONS

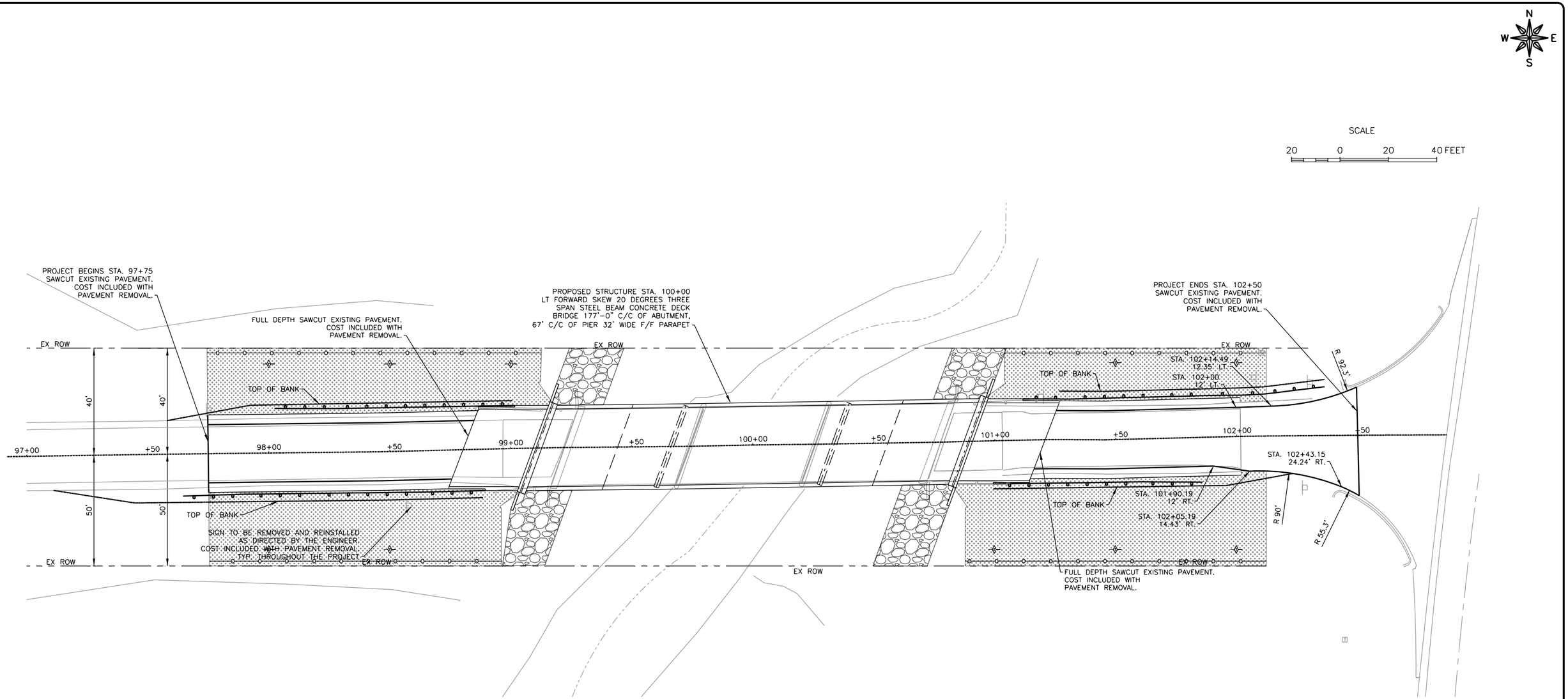
REV. NO.	DESCRIPTION	DATE

DRAWING:
PLAN AND PROFILE SHEET

JOB NUMBER:
16-656

SHEET NUMBER:
06 of 29

CADD NAME: 16-656-S-Design P&P.dgn
PRINT DRIVER: $PLTDRVS$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$



FEHR GRAHAM
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ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: AS SHOWN

REVISIONS

REV. NO.	DESCRIPTION	DATE

DRAWING:
SEEDING AND EROSION CONTROL PLAN

JOB NUMBER: 16-656

SHEET NUMBER: 07 of 29

CADD NAME: 16-656-S-Design Erosion Control plan.dgn
PRINT DRIVER: $PLTDRVS$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$

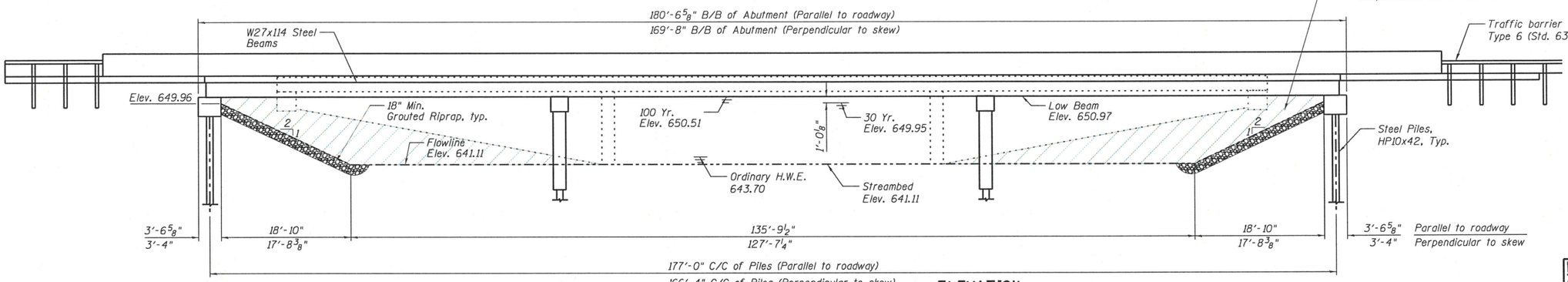
Existing Structure:

No. 010-0251, three span 159'-0" long, back to back abutments, with a 30'-0" roadway width and 20° skew. Existing structure has precast concrete deck beams supported on concrete abutments supported by Steel piles. Built Sta. 336+87 in 1984. The contractor shall remove the existing structure as required. The existing structure shall be replaced with a three-span 177'-0" C/C Abutment steel stringers with concrete deck at 20° Skew.

All excavation for the new structure, back to back of abutment as shown, from ROW to ROW, will not be paid for separately, and the cost of excavation, hauling excess material, and disposal of excess material, shall be included in the cost of Removal of Existing Structures. No additional compensation will be allowed.

STRUCTURE NO. 010-4575
SEC. 15-00028-00-BR BUILT 201X
CRITTENDEN ROAD DISTRICT
CHAMPAIGN COUNTY
LOADING HL-93

NAME PLATE
See Standard 515001



ELEVATION

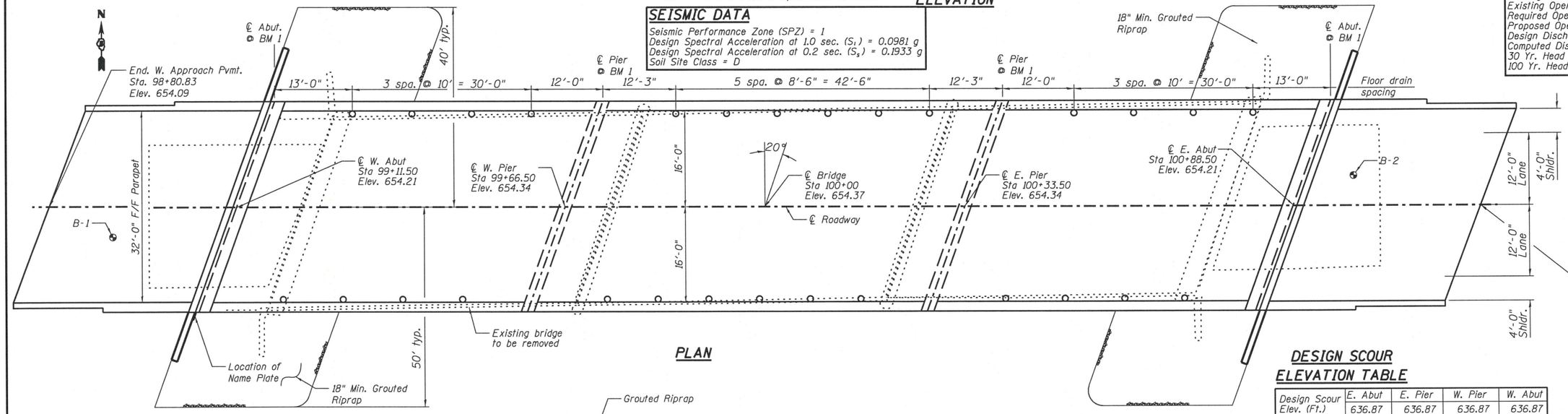
DESIGN SPECIFICATIONS
2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 and 2016 interims.

DESIGN LOADING
HL-93
25 P.S.F. Future Wearing Surface

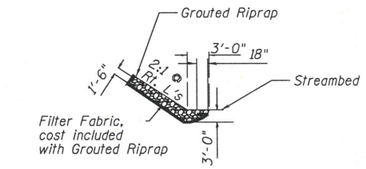
DESIGN STRESSES
f'c	=	3,500 psi (Cast-in-Place Concrete)
fy	=	50,000 psi (Structural Steel)
fy	=	60,000 psi (Reinforcement)
f'c	=	4,000 psi (Superstructure Concrete)

SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_1) = 0.0981 g
Design Spectral Acceleration at 0.2 sec. (S_s) = 0.1933 g
Soil Site Class = D

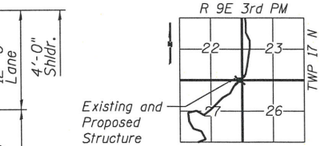
WATERWAY DATA
Drainage Area	53.3 Sq. Mi.
Existing Opening (30 Yr.)	756 Sq. Ft.
Required Opening (30 Yr.)	1119 Sq. Ft.
Proposed Opening (30 Yr.)	1249 Sq. Ft.
Design Discharge (30 Yr.)	3098 C.F.S.
Computed Discharge (100 Yr.)	4070 C.F.S.
30 Yr. Head	0.00 Ft.
100 Yr. Head	0.00 Ft.



PLAN

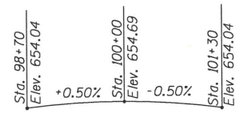


SECTION A-A THRU TOE OF RIPRAP
R-O-W TO R-O-W



LOCATION MAP

DESIGN SCOUR ELEVATION TABLE
Design Scour Elev. (Ft.)	E. Abut	E. Pier	W. Pier	W. Abut
	636.87	636.87	636.87	636.87



PROFILE GRADE

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with the requirements of the current "AASHTO Standard Specifications for Highway Bridges."

1/8/18
KEITH E. BRANDAU
Illinois Licensed Structural Engineer Number 4905
License Expires 11/30/18

GENERAL PLAN & ELEVATION
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS IOWA WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS
REV. NO.	DESCRIPTION	DATE

DRAWING: GENERAL PLAN AND ELEVATION

JOB NUMBER: 16-656

SHEET NUMBER: 08 of 29

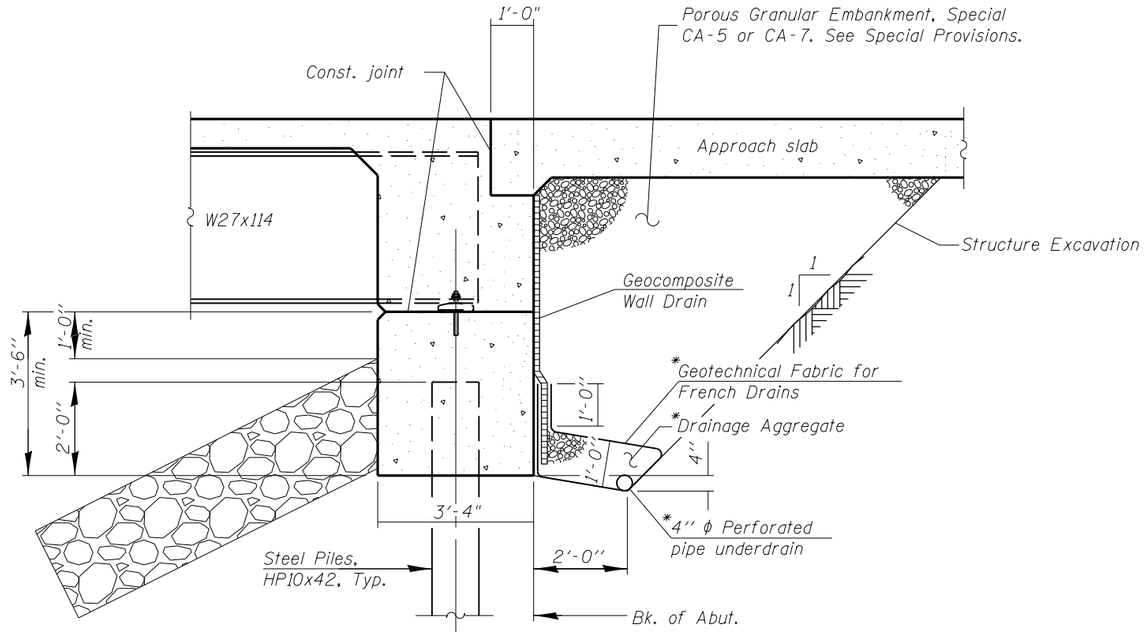
CADD NAME: 16-656-S-Design GP&E-1.dgn
PRINT DRIVER: $PLTDRVS$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$

GENERAL NOTES

1. The contractor shall drive 1 steel test pile in a permanent location at each abutment and pier as directed by the engineer before ordering the remainder of piles.
2. Boring data is shown only as as guide to bidders in estimating soil conditions which may be encountered during construction.
3. Class SI or MS concrete shall be used in the abutments.
4. Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60.
5. Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
6. Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts in painted areas and ASTM A325 Type 3 in unpainted areas. Bolts $\frac{7}{8}$" dia., holes $\frac{15}{16}$" dia., unless otherwise noted.
7. Calculated weight of Structural Steel = 137,674 pounds.
8. All structural steel shall be AASHTO M270 Grade 50W.
9. No field welding is permitted except as specified in the contract documents.
10. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.
11. Reinforcement bars designated (E) shall be epoxy coated.
12. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
13. Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 18 in. Painted areas shall be primed in the shop with a Department approved zinc rich primer. Field painting will not be required.
14. Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
15. The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
16. If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations. The finishing machine rails shall be placed on the top flange of the exterior beams.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structures	Each	1		1
Bridge Deck Grooving	Sq Yd	795		795
Concrete Superstructures	Cu yd	234.6		234.6
Concrete Structures	Cu yd		146.2	146.2
Concrete Superstructures (Approach Slabs)	Cu yd	98.0		98.0
Reinforcement Bars, Epoxy Coated	Lbs	91,820	10,620	102,440
Protective Coat	Sq Yd.	1,029		1,029
Name Plates	Each	1		1
Structure Excavation	Cu yd		275	275
Porous Granular Embankment (Special)	Cu yd		146	146
Stud Shear Connectors	Each	4,698		4,698
Furnishing and Erecting Structural Steel	L. Sum	1		1
Furnishing Steel Piles HP 10x42	Foot		1,475	1,475
Driving Piles	Foot		1,475	1,475
Pile Shoes	Each		30	30
Test Pile Steel HP 10x42	Each		4	4
Grouted Riprap	Sq Yd		445	445
Concrete Cut-Off Wall	Cu yd		6.9	6.9
Floor Drains	Each	28		28
Cofferdam (Type 1) (Location-1)	Each		1	1
Cofferdam (Type 1) (Location-2)	Each		1	1
Anchor Bolts, 1"	Each	48		48
Geocomposite Wall Drain	Sq yd		76	76
Pipe Underdrains for Structures 4"	Foot		140	140
Diamond Grinding (Bridge Section)	Sq yd	742		742



SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. L's)

* Included in the cost of Pipe Underdrains for Structures 4".

Note:
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

GENERAL PLAN & ELEVATION
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

REV. NO.	DESCRIPTION	DATE

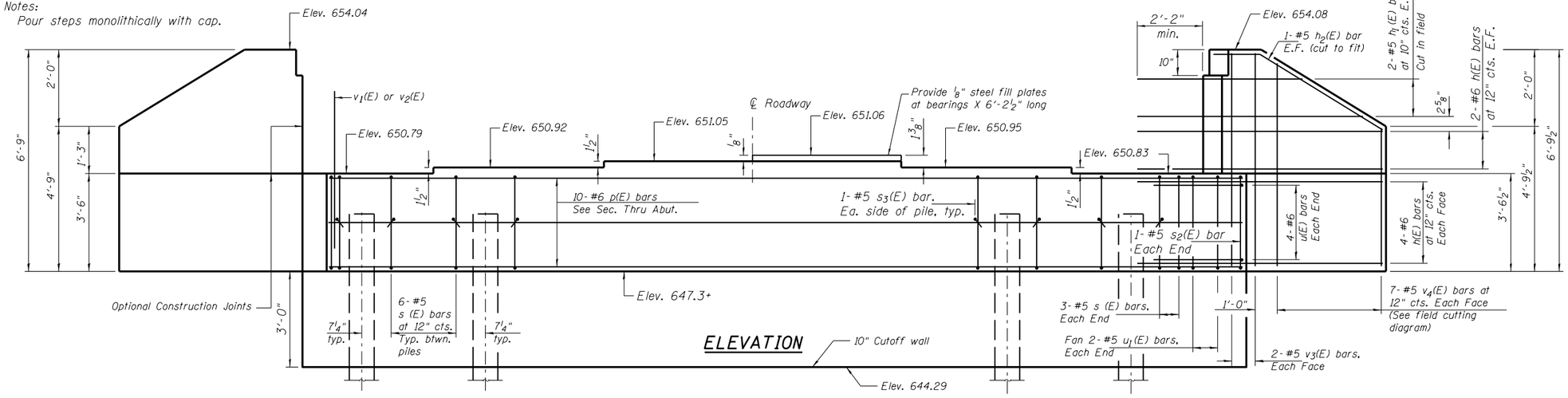
DRAWING:
GENERAL PLAN AND ELEVATION

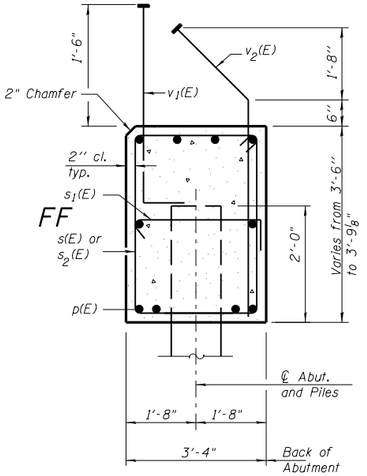
JOB NUMBER:
16-656

SHEET NUMBER:
09 of 29

CADD NAME: 16-656-S-Design GP&E-2.dgn
PRINT DRIVER: $PLTDRV$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$

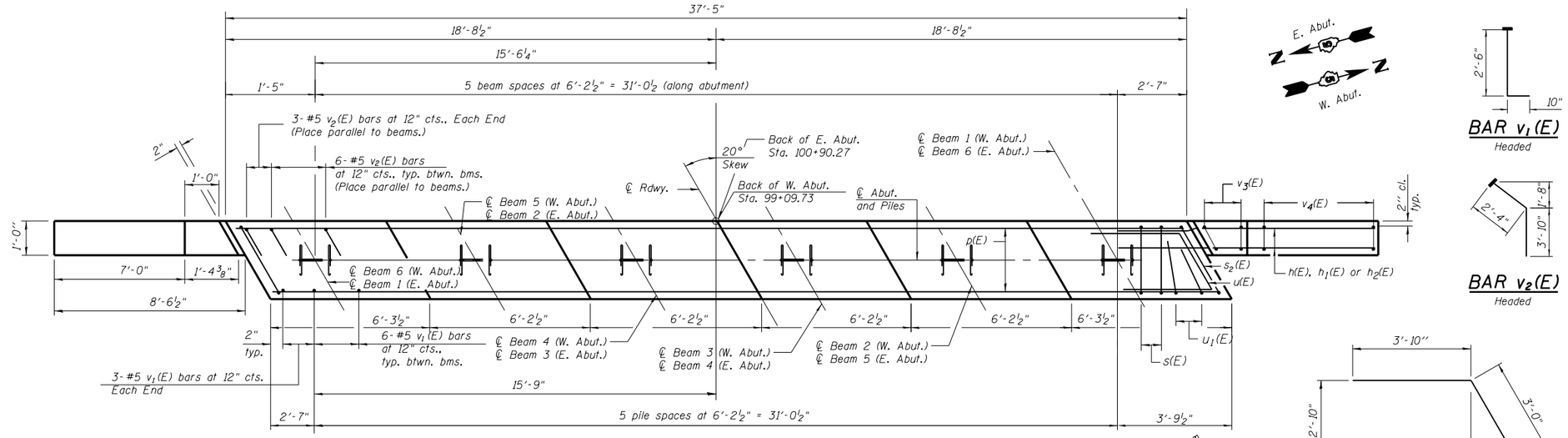
Notes:
Pour steps monolithically with cap.





SEC. THRU ABUT.

Dimensions at right angles to abutment.



PLAN

BAR v1(E)

Headed

BAR v2(E)

Headed

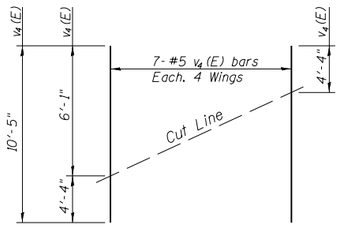
BILL OF MATERIAL - 2 ABUT.

Bar	No.	Size	Length	Shape
h(E)	48	#6	10'-6"	
h1(E)	16	#5	10'-0"	
h2(E)	8	#5	8'-0"	
p(E)	20	#6	37'-1"	
s (E)	72	#5	13'-3"	
s1(E)	24	#5	3'-11"	
s2(E)	4	#5	13'-7"	
u(E)	16	#6	10'-8"	
u1(E)	8	#5	9'-2"	
v1(E)	72	#5	3'-4"	
v2(E)	72	#5	6'-2"	
v3(E)	16	#5	6'-4"	
v4(E)	28	#5	10'-5"	
Structure Excavation		Cu. Yd.	203	
Concrete Structures		Cu. Yd.	41.1	
Reinforcement Bars, Epoxy Coated		Pound	4,710	
Furnishing and Driving Steel Piles HP 10x42		Foot	555	
Test Pile HP 10x42		Each	2	
Pile Shoes		Each	12	
Concrete Cutoff Wall		Cu. Yd.	6.9	

For details of piles see sheet 12 of 29

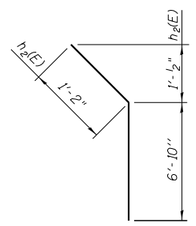
PILE DATA

Type: Steel HP 10x42
Nominal Required Bearing: 280 kips
Factored Resistance Available: 154 kips
Est. Length: 50' (W. Abut.)
61' (E. Abut.)
No. Production Piles: 10
No. Test Piles: 2 (1 at each abutment)

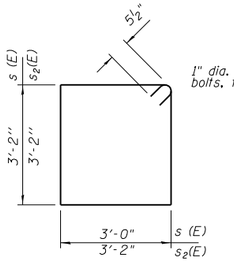


FIELD CUTTING DIAGRAM

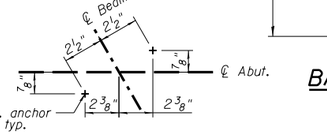
Order $v_4(E)$ full length. Cut as shown and use remainder of bars in opposite face.



BAR h2(E)



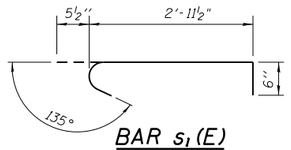
BAR s (E) & s2(E)



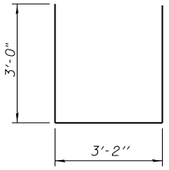
ANCHOR BOLT LAYOUT

Typical @ all Beams

BAR u(E)



BAR s1(E)



BAR u1(E)

2 ABUTMENTS
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

AI-2440-L 8-31-12

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

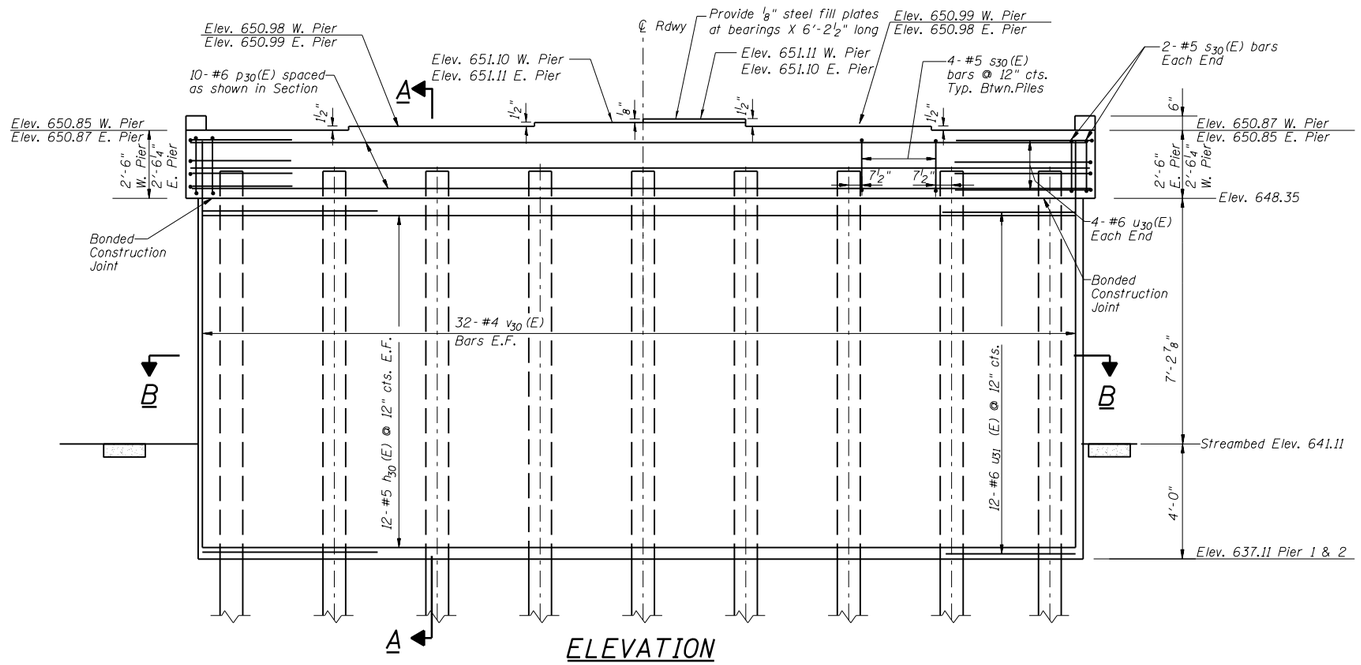
REV. NO.	DESCRIPTION	DATE

DRAWING: ABUTMENT

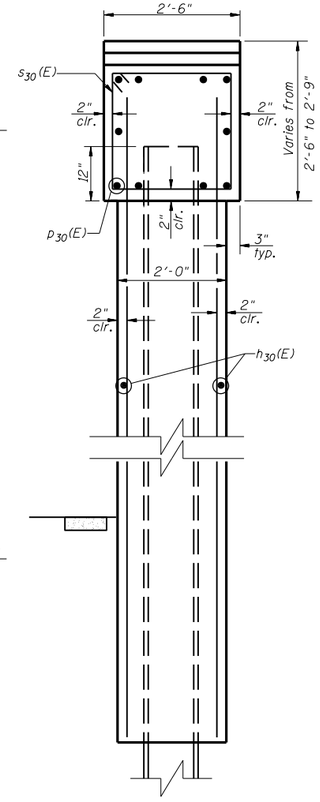
JOB NUMBER: 16-656

SHEET NUMBER: 10 of 29

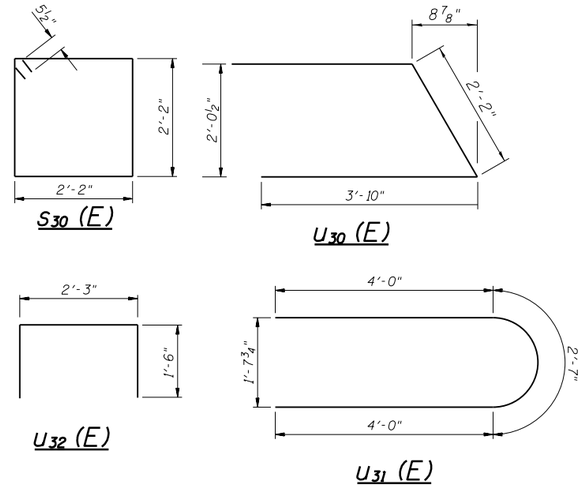
CADD NAME: 16-656-S-Design Abutment 01.dgn
PRINT DRIVER: $PLTDRVS$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$



ELEVATION
(Looking West)

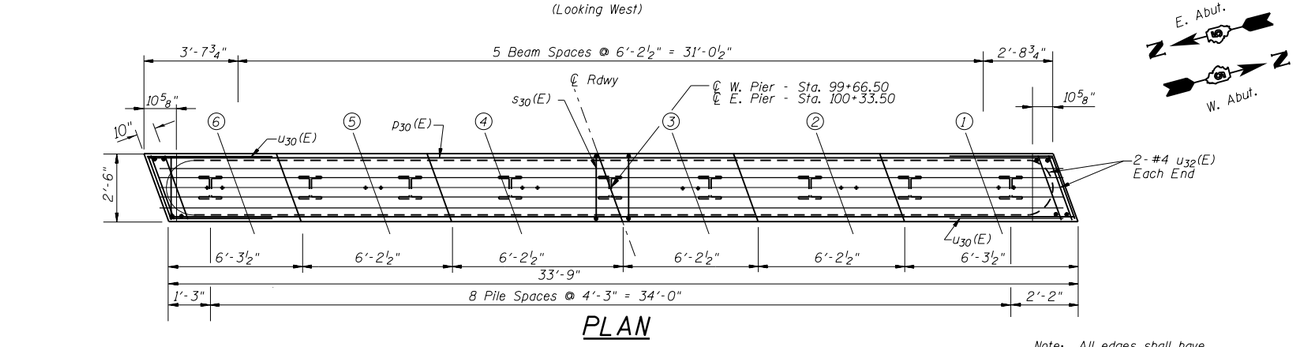


SEC. A-A



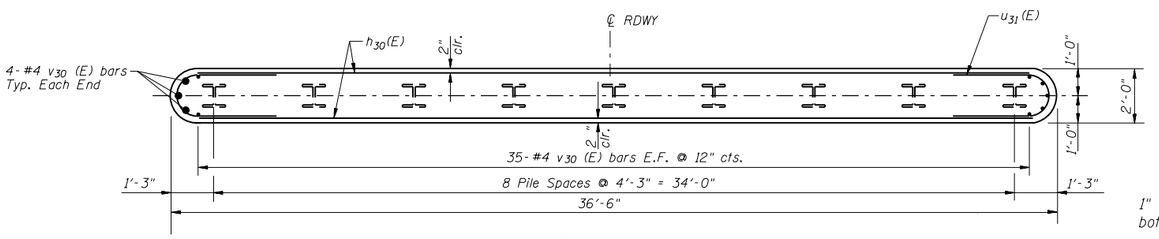
BILL OF MATERIAL (2 PIERS)

Bar	No.	Size	Length	Shape
h_{30}(E)	48	#5	34'-0"	——
p_{30}(E)	20	#6	36'-8"	——
s_{30}(E)	72	#5	9'-7"	□
u_{30}(E)	16	#6	9'-10"	⌐¬
u_{31}(E)	48	#6	10'-7"	⊐
u_{32}(E)	8	#4	5'-3"	⊓
v_{30}(E)	156	#4	13'-0"	——
Concrete Structures		Cu. Yd.	78.6	
Reinforcement Bars Epoxy Coated		Pound	5,910	
Furnishing and Driving Steel Piles HP 10x42		Foot	920	
Pile Shoes		Each	18	
Structure Excavation		Cu. Yd.	72	
Test Pile HP 10x42		Each	2	
Cofferdam (Type 1) (Location-1)		Each	1	
Cofferdam (Type 1) (Location-2)		Each	1	

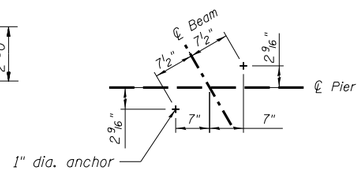


PLAN

Note: All edges shall have a standard 3/4" chamfer except as noted.



SEC B-B



ANCHOR BOLT LAYOUT
Typical @ all Beams

PILE DATA

Type: Steel HP 10x42
Nominal Required Bearing: 255 kips
Factored Resistance Available: 140 kips
Est. Length: 51' (W. Pier)
64' (E. Pier)
No. Production Piles: 16
No. Test Piles: 2 (1 at each Pier)

PIER DETAILS
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

REV. NO.	DESCRIPTION	DATE

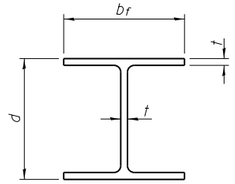
DRAWING: PIER DETAILS

JOB NUMBER: 16-656

SHEET NUMBER: 11 of 29

CADD NAME: 16-656-S-Design Pier Details.dgn
PRINT DRIVER: $PLTDRV$

PRINT DATE: 1/5/2018
PRINT TIME: $TIME$



STEEL PILE TABLE

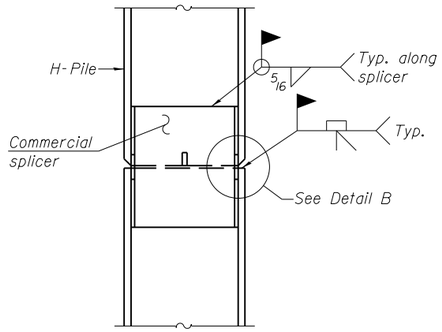
Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

ELEVATION

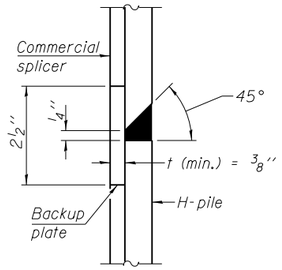
DETAIL A

H-PILE SHOE ATTACHMENT

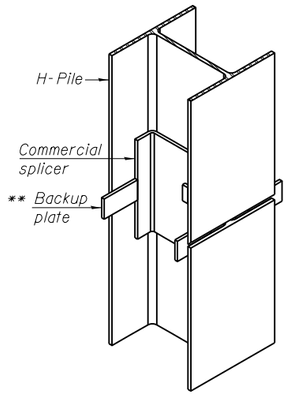
F-HP 1-27-12



ELEVATION

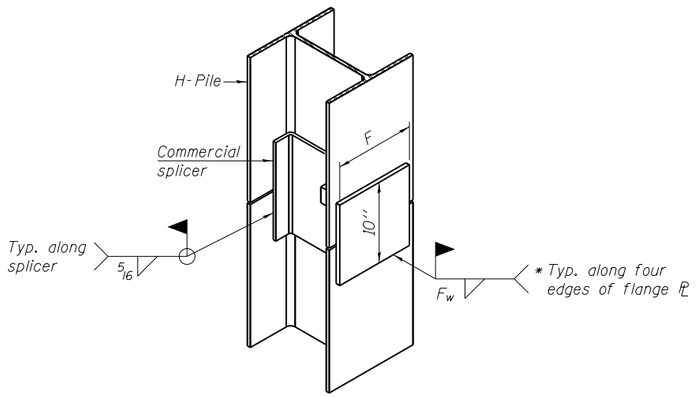


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



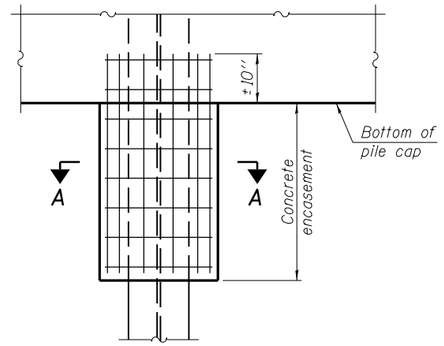
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

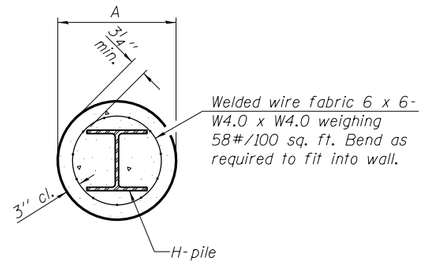
* Interrupt welds 1/4" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



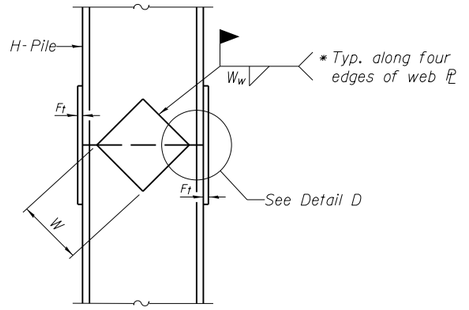
ELEVATION



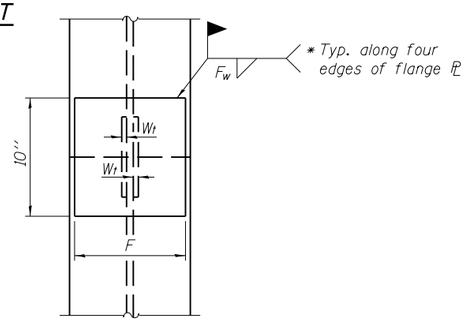
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

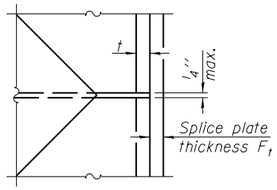
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

STEEL H PILES
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
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OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

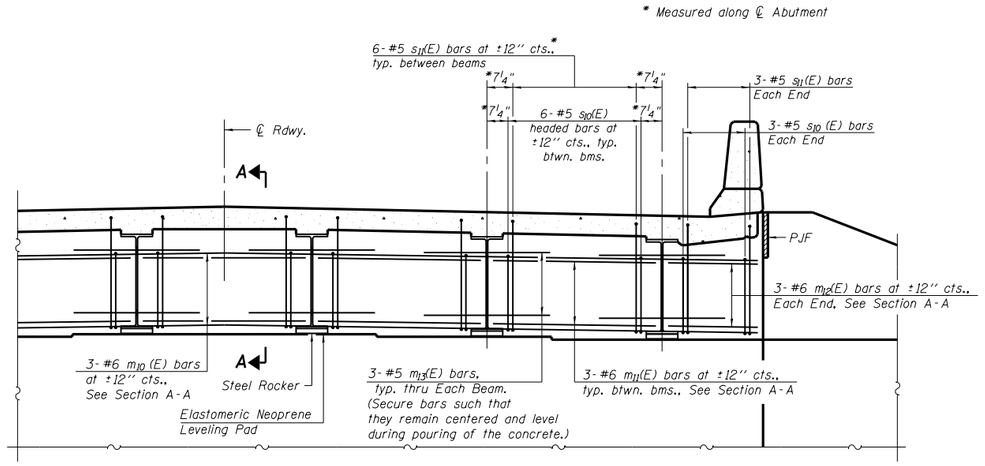
REV. NO.	DESCRIPTION	DATE

DRAWING: STEEL H-PILES

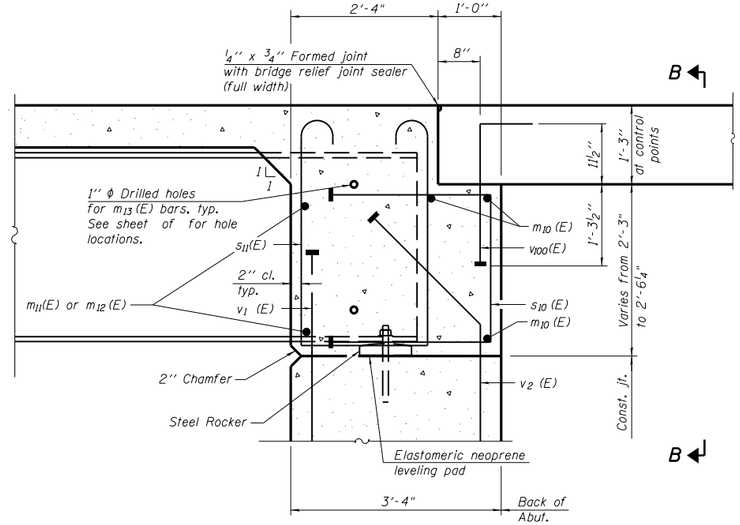
JOB NUMBER: 16-656

SHEET NUMBER: 12 of 29

CADD NAME: 16-656-S-Design Steel H Piles.dgn
PRINT DRIVER: $PLTDRVS$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$



DIAPHRAGM AT ABUTMENT



SECTION A-A
(at Rt. L's)

Notes:

Reinforcement bars in diaphragm are billed with superstructure on sheet 17 of 29.

Concrete in diaphragm is included with Concrete Superstructure on sheet 17 of 29.

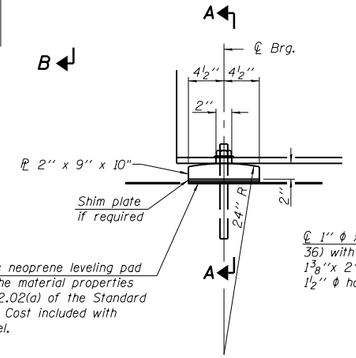
For details of bars s_{10}(E), s_{11}(E) and v_{100}(E) see sheet 17 of 29.

The s_{10}(E) and s_{11}(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

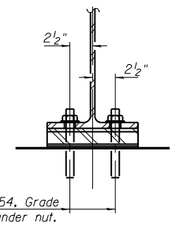
The approach slab seat shall have a constant slope determined from the control points shown.

For bearing details see sheets 13 and 15 of29 .

Beams shall be braced for stability during erection and remain braced until deck is poured and cured.



⅛" elastomeric neoprene leveling pad according to the material properties of Article 1052.02(a) of the Standard Specifications. Cost included with Structural Steel.



℄ 1" ϕ x 12" anchor bolts (ASTM F1554, Grade 36) with 2¼"x 2¼"x ⅝" ℄ washer under nut.
1⅜"x 2" slotted hole in flange.
1½" ϕ holes in bearing plate.

SECTION A-A

ELEVATION AT ABUTMENT

SECTION B-B

PLAN AT ABUTMENT
(Showing bottom flange of beam)

FIXED BEARING
(12 Required)

Notes:

1. Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
2. Rocker Plates shall be AASHTO M270 Gr. 50W.
3. Two ⅛" adjusting shims shall be provided for each bearing in addition to all other plates or shims as placed as shown on the bearing details.
4. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
5. Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

DIA-SB2448-L 11-22-2016

DIAPHRAGM DETAILS
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

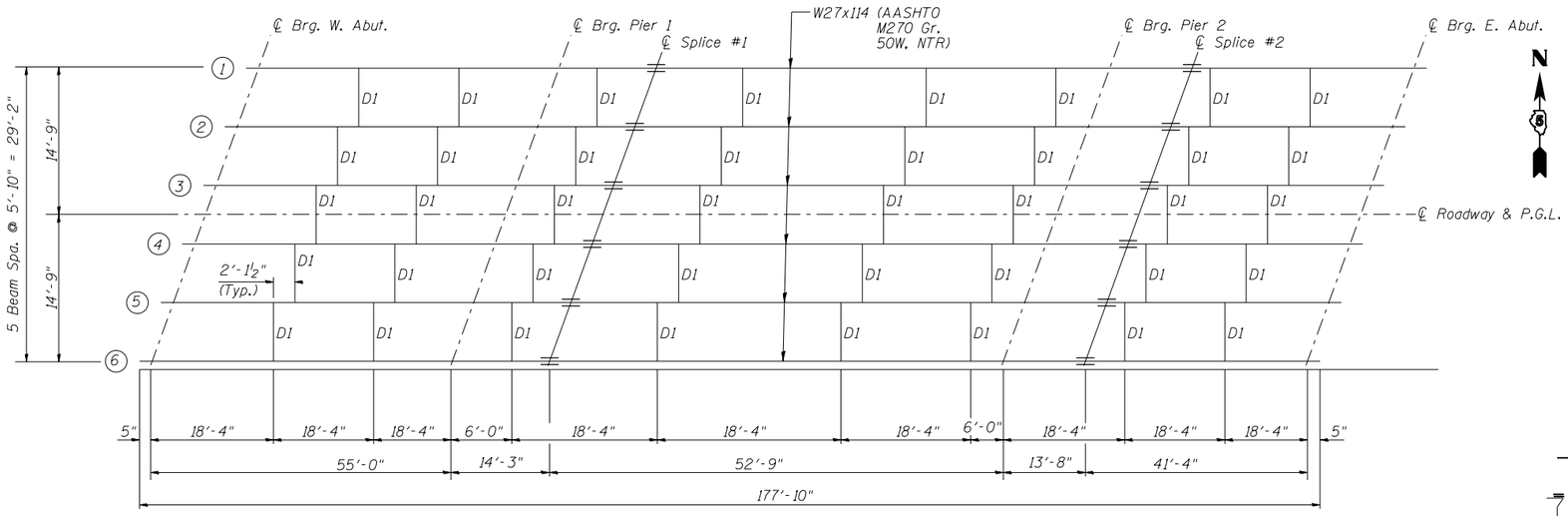
REV. NO.	DESCRIPTION	DATE

DRAWING: DIAPHRAGM DETAILS

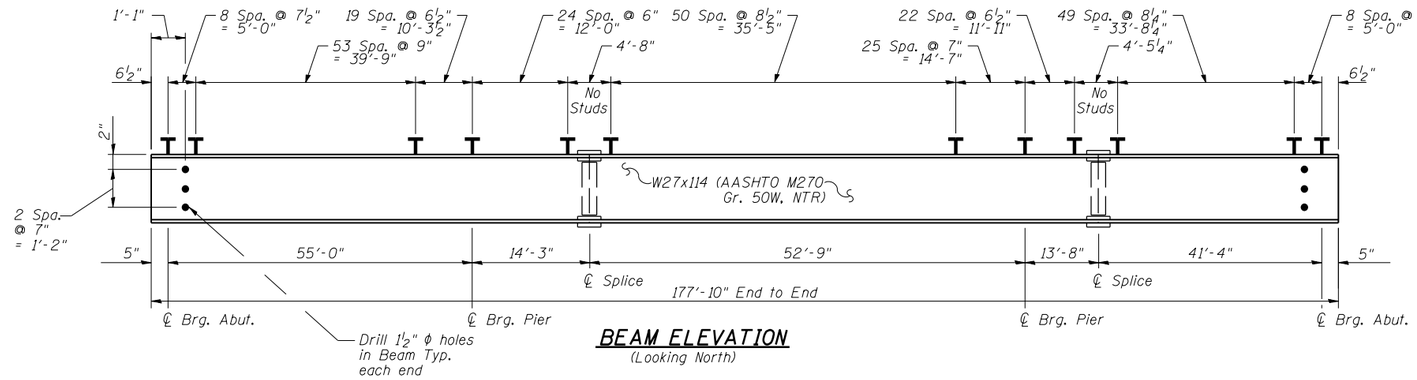
JOB NUMBER: 16-656

SHEET NUMBER: 13 of 29

CADD NAME: 16-656-S-Design Diaphragm Details.dgn
PRINT DRIVER: $PLTDRVS$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$

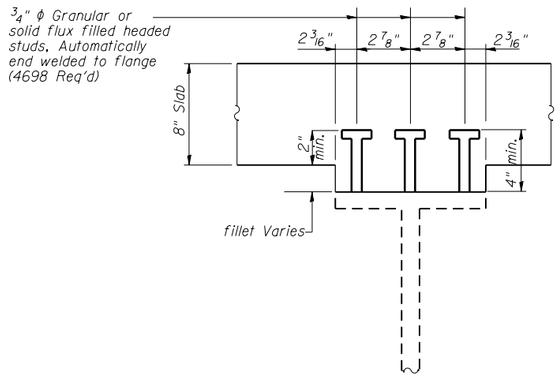


FRAMING PLAN



BEAM ELEVATION

(Looking North)

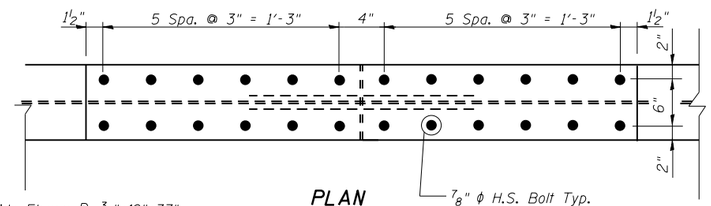


SECTION A-A

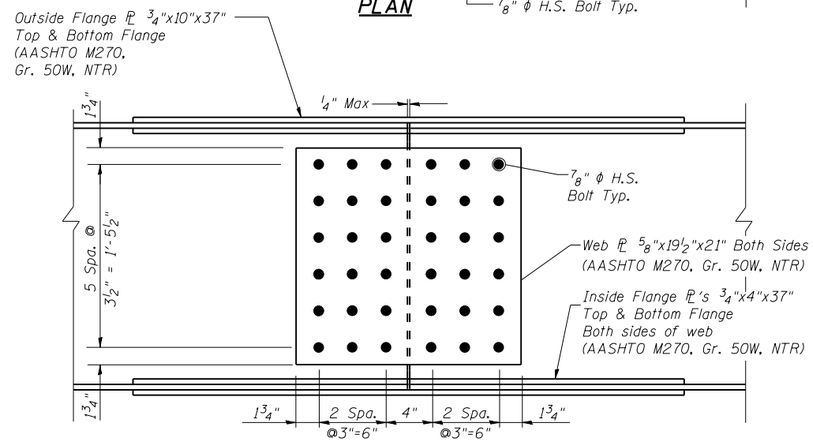
TOP OF BEAM ELEVATIONS *

Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6
℄ Brg. West Abut.	653.28	653.40	653.51	653.50	653.38	653.25
℄ Brg. Pier 1	653.40	653.52	653.64	653.64	653.50	653.39
℄ Splice 1	653.40	653.52	653.64	653.64	653.50	653.39
℄ Brg. Pier 2	653.39	653.51	653.64	653.64	653.52	653.40
℄ Splice 2	653.35	653.48	653.61	653.61	653.49	653.37
℄ Brg. East Abut	653.24	653.37	653.50	653.51	653.40	653.28

*For Fabrication Only



PLAN



ELEVATION

SPLICE

Notes:

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

FRAMING DETAILS
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

REV. NO.	DESCRIPTION	DATE

DRAWING: FRAMING DETAILS

JOB NUMBER: 16-656

SHEET NUMBER: 14 of 29

CADD NAME: 16-656-S-Design Framing Details 01.dgn
PRINT DRIVER: $PLTDRV$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s(Total-Strength I, and Service II) due to non-composite dead loads (in.^{4} and in.^{3}).

$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s(Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in.^{4} and in.^{3}).

$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s(Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in.^{4} and in.^{3}).

$I_c(cr)$, $S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.^{4} and in.^{3}).

DC1: Un-factored non-composite dead load (kips/ft.).

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft).

f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
M_{DC1} / S_{nc}

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
$M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
$M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.

f_s (L+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
$M_{L+IM} / S_c(n)$ or $M_{DW} / S_c(cr)$ as applicable.

f_s (Service II): Sum of stresses as computed below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3\ f_s(L+IM)$

$0.95R_hF_yf$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

f_s (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
$1.25\ (f_{sDC1} + f_{sDC2}) + 1.5\ f_{sDW} + 1.75\ f_s(L+IM)$

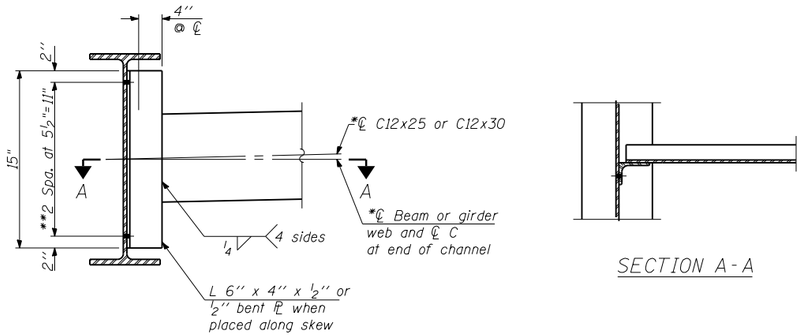
$\phi_f F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

V_f: Maximum factored shear range in span computed according to Article 6.10.10.

Note:
M_L and R_L include the effects of centrifugal force and superelevation.

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Pier	0.5 Span 2
I_s	(in^4)	4,090	4,090	4,090
$I_c(n)$	(in^4)	11,594	11,594	11,594
$I_c(3n)$	(in^4)	8,427	8,427	8,427
$I_c(cr)$	(in^4)	-	5,759	-
S_s	(in^3)	299	299	299
$S_c(n)$	(in^3)	455.5	455.5	455.5
$S_c(3n)$	(in^3)	408.9	408.9	408.9
$S_c(cr)$	(in^3)	-	356.3	-
DC1	(k/')	0.725	0.725	0.725
M_{DC1}	('k)	154.99	272.39	134.64
DC2	(k/')	0.150	0.150	0.150
M_{DC2}	('k)	32.05	56.33	27.84
DW	(k/')	0.292	0.292	0.292
M_{DW}	('k)	62.32	109.52	54.14
M_{L+IM}	('k)	542.09	435.87	543.00
M_u (Strength I)	('k)	1,275.94	1,337.95	1,234.55
$\phi_f M_n$	('k)	2,273.31	2,273.31	2,273.31
f_s DC1	(ksi)	6.22	10.93	5.40
f_s DC2	(ksi)	0.94	1.90	0.82
f_s DW	(ksi)	1.83	3.21	1.59
f_s (L+IM)	(ksi)	14.28	14.68	14.30
f_s (Service II)	(ksi)	27.55	35.13	26.41
$0.95R_hF_{yf}$	(ksi)	47.50	47.50	47.50
f_s (Total)(Strength I)	(ksi)	36.69	46.55	35.19
$\phi_f F_n$	(ksi)	50.00	50.00	50.00
V_f	(k)	33.57	48.52	34.20

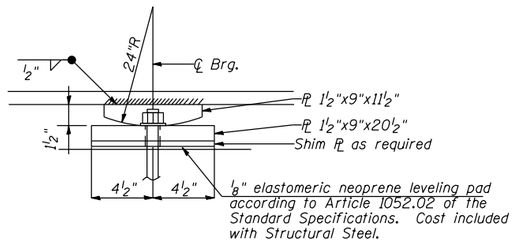
INTERIOR GIRDER REACTION TABLE			
		Abut.	Pier
R_{DC1}	(k)	15.00	49.20
R_{DC2}	(k)	3.10	10.17
R_{DW}	(k)	6.04	19.81
R_{L+IM}	(k)	51.67	61.07
R_{Total}	(k)	75.81	140.25



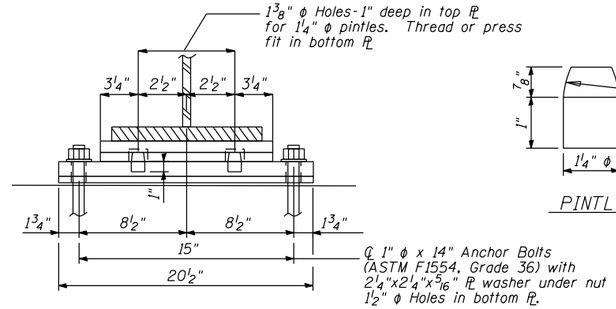
SECTION A-A

INTERIOR DIAPHRAGM
(40 Required)

Note:
Two hardened washers required for each set of oversized holes.
*Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.
**¾" ϕ HS bolts, 15/16" ϕ holes



ELEVATION AT PIER



SECTION B-B

PINTLE

FIXED BEARING

Notes:

1. Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
2. Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
3. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
4. Two ⅛" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
5. The structural steel plates of the bearing assembly shall conform to the requirements of AASHTO M270, Grade 50W.

FRAMING DETAILS
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
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IOWA
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OWNER/DEVELOPER:
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1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

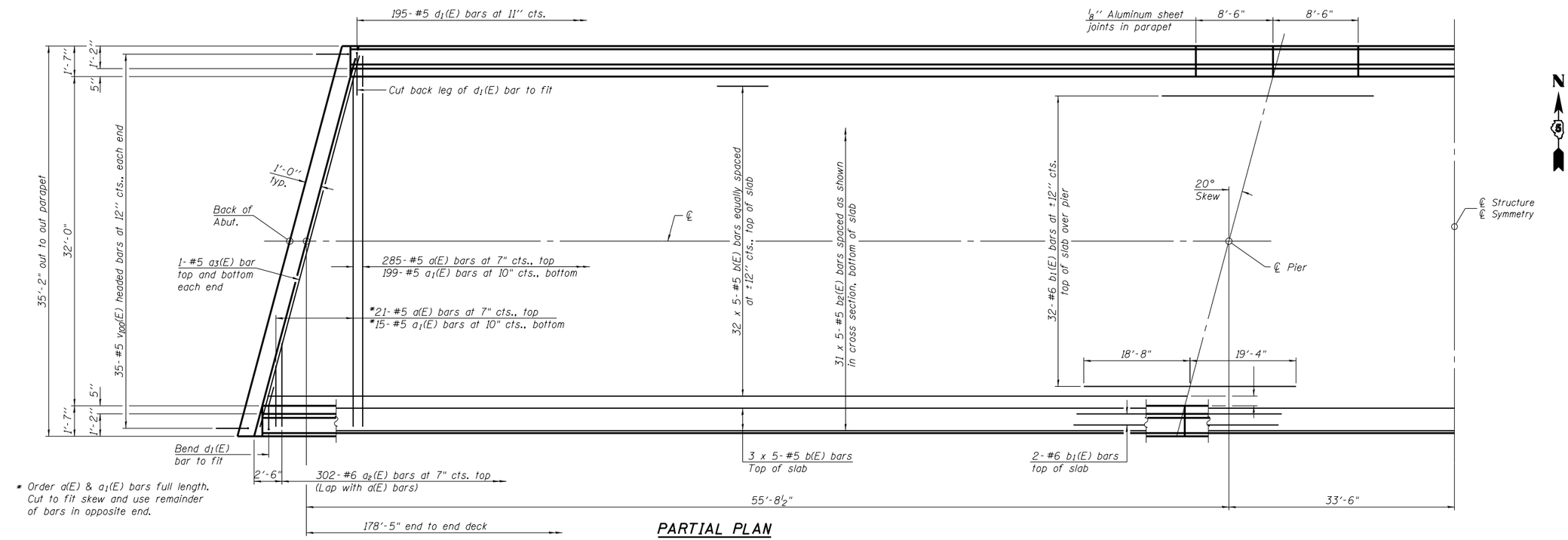
REVISIONS		
REV. NO.	DESCRIPTION	DATE

DRAWING: FRAMING DETAILS

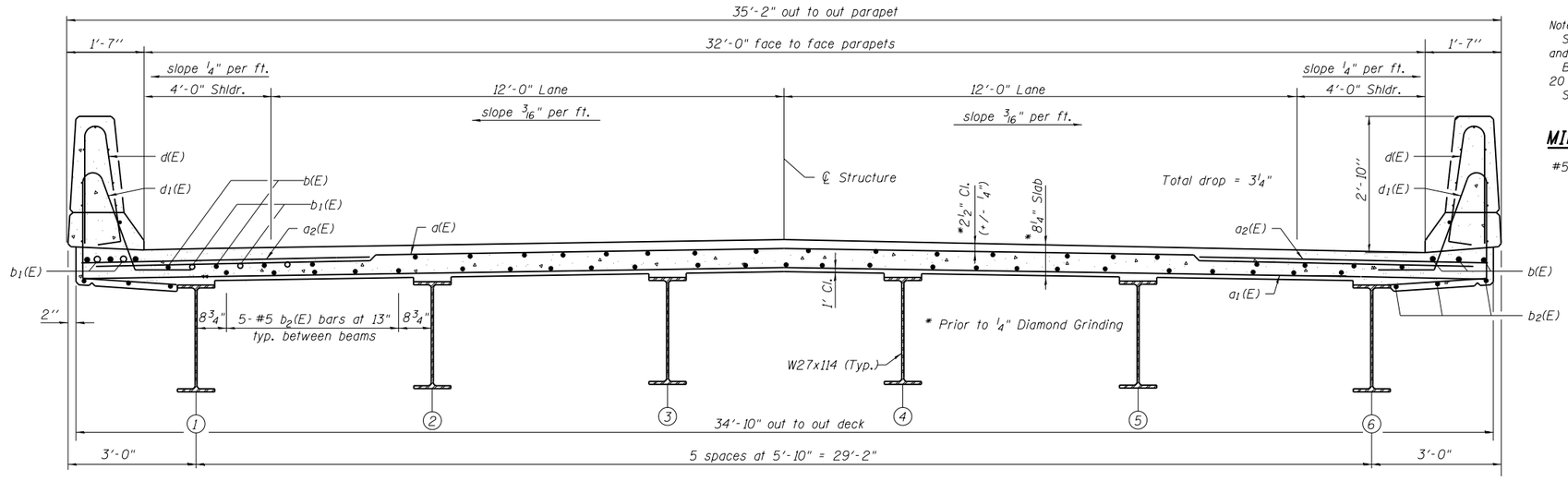
JOB NUMBER: 16-656

SHEET NUMBER: 15 of 29

CADD NAME: 16-656-S-Design Framing Details 02.dgn
PRINT DRIVER: $PLTDRVS$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$



PARTIAL PLAN



Notes:
See Sheet 17 of 29 for superstructure details and Bill of Material.
Bars indicated thus 20 x 3- #5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 17 of 29 for parapet reinforcement.

MINIMUM BAR LAP

#5 bar - 2'-7"

SI-2-0 1-27-12

NEAR PIER — NEAR MIDSPAN

CROSS SECTION

(Looking East)

SUPERSTRUCTURE
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

FEHR GRAHAM
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C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

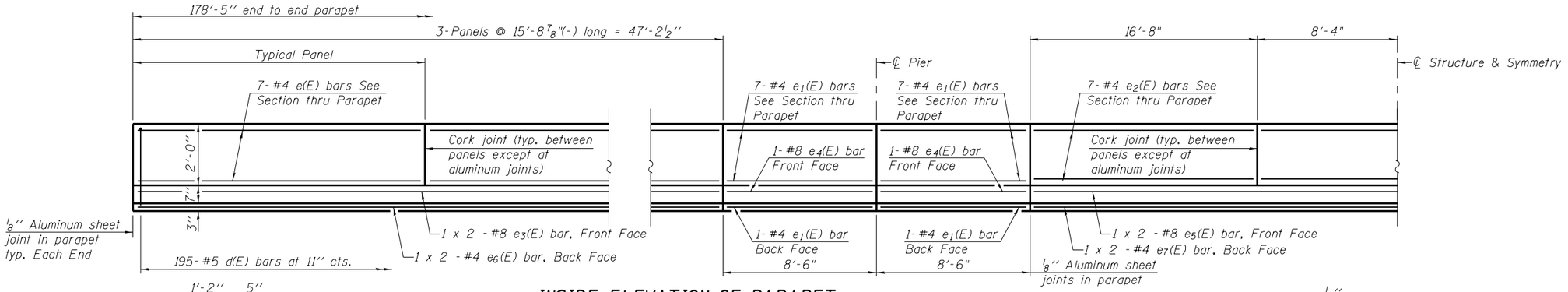
REV. NO.	DESCRIPTION	DATE

DRAWING: SUPERSTRUCTURE

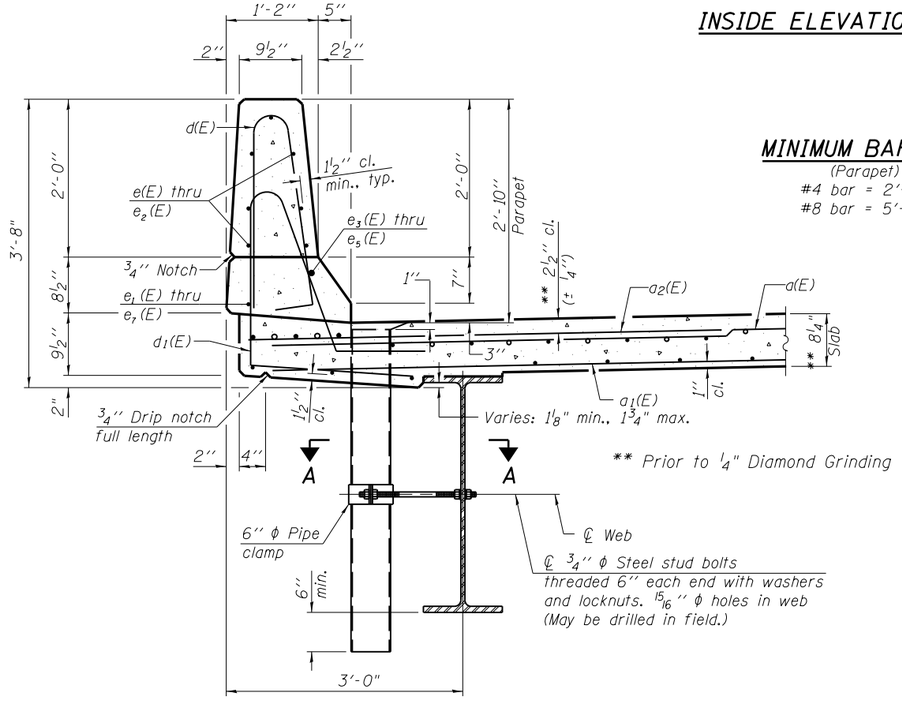
JOB NUMBER: 16-656

SHEET NUMBER: 16 of 29

CADD NAME: 16-656-S-Design Superstructure 01.dgn
PRINT DRIVER: $PLTDRV$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$



INSIDE ELEVATION OF PARAPET

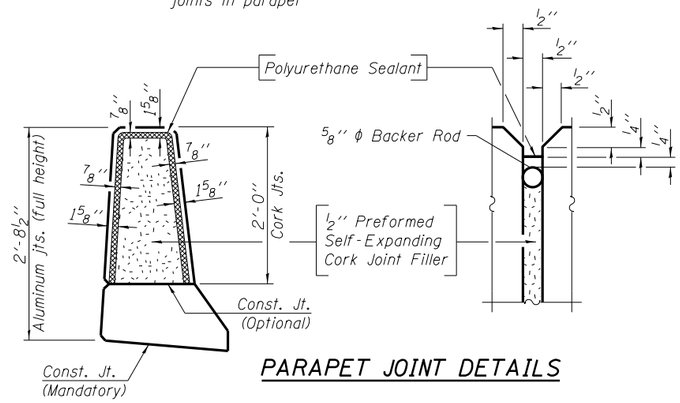


SECTION THRU PARAPET

** Prior to 1/4" Diamond Grinding

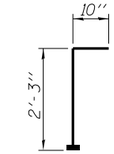
MINIMUM BAR LAP

(Parapet)
#4 bar = 2'-8"
#8 bar = 5'-11"



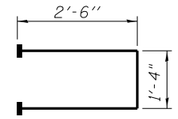
PARAPET JOINT DETAILS

Notes:
Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.
The exterior surfaces of the floor drains shall be painted according to Article 506 with the finish coat as specified. The exterior surfaces of the drains shall be cleaned according to the Society of Protective Coating's Spec. SSPC-SP1 prior to painting.
The top portion of aluminum floor drains shall be coated to minimize reaction with wet concrete.
The clamping device shall be galvanized according to AASHTO M 232. Cost of clamping device included with Floor Drains.
The 1/8" Aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.
The Polyurethane Sealant shall be non-staining gray one component non-sag elastomeric gun grade meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25. Use T with a 5/8" backer rod.
The 1/2" Preformed Self-Expanding Cork Joint Filler shall be according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.
Headed bars shall conform to ASTM A970 Class HA. Cost included with Reinforcement Bars, Epoxy Coated.
Drains shall be located clear of all diaphragms and splices.



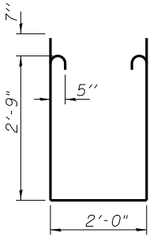
BAR v100(E)

(Headed)



BAR s10 (E)

(Headed)

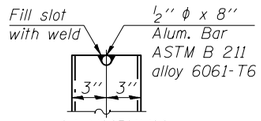


BAR s11 (E)

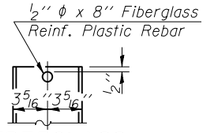
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	306	#5	34'-6"	
d1(E)	214	#5	34'-6"	
d2(E)	604	#6	6'-6"	
b(E)	190	#5	38'-0"	
b1(E)	64	#6	38'-0"	
b2(E)	155	#5	38'-0"	
d(E)	390	#5	5'-7"	
d1(E)	390	#5	7'-7"	
e(E)	84	#4	15'-4"	
e1(E)	64	#4	8'-2"	
e2(E)	42	#4	16'-4"	
e3(E)	8	#8	26'-5"	
e4(E)	8	#8	8'-2"	
e5(E)	4	#8	27'-10"	
e6(E)	8	#4	24'-9"	
e7(E)	4	#4	26'-2"	
m10 (E)	6	#6	36'-10"	
m11 (E)	30	#6	5'-10"	
m12 (E)	12	#6	2'-7"	
m13 (E)	36	#5	5'-0"	
s10 (E)	72	#5	6'-4"	
s11 (E)	72	#5	8'-8"	
v100(E)	70	#5	3'-1"	
Reinforcement Bars, Epoxy Coated			Lbs.	52,380
Concrete Superstructure			Cu. Yds.	223.1

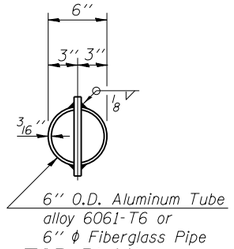
Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.



ALUMINUM TUBE

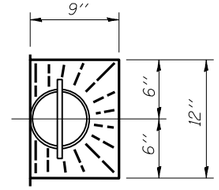


FIBERGLASS PIPE

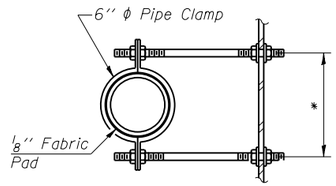


TOP PLAN

(Showing Aluminum Tube)

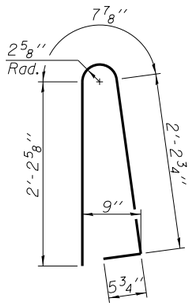


TOP PLAN

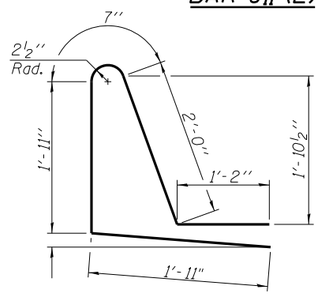


SECTION A-A

* Dimension as required by Pipe Clamp



BAR d(E)



BAR d1(E)

SUPERSTRUCTURE
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

SDI-SB-2 11-22-2016

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

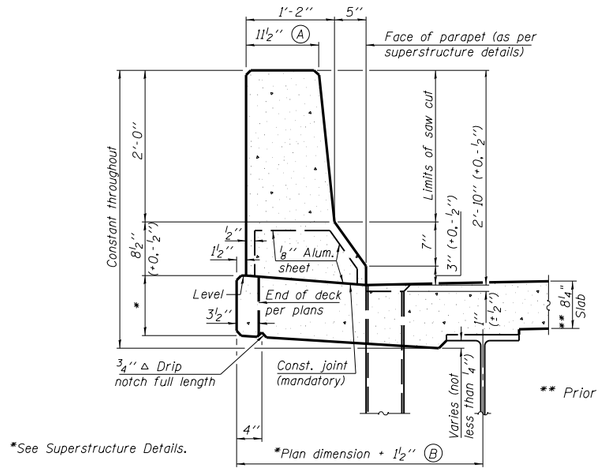
REVISIONS		
REV. NO.	DESCRIPTION	DATE

DRAWING: SUPERSTRUCTURE

JOB NUMBER: 16-656

SHEET NUMBER: 17 of 29

CADD NAME: 16-656-S-Design Superstructure 02.dgn
PRINT DRIVER: $PLTDRVS$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$

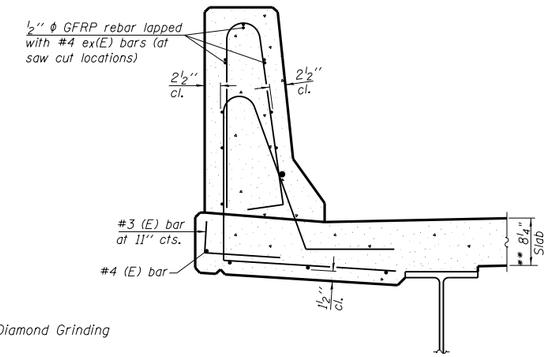


*See Superstructure Details.

** Prior to ¼" Diameter Grinding

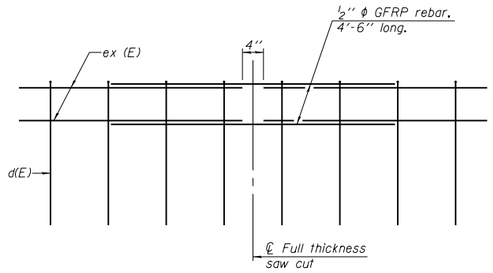
34" F SHAPE PARAPET SECTION

(Showing dimensions)



SECTION

(34" parapet shown - 42" parapet similar)
(Showing reinforcement clearances for slip forming and additional reinforcement bars)



GFRP REBAR STIFFENING DETAIL

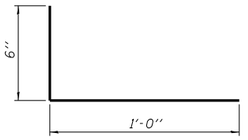
(Place as shown in parapet section at each parapet joint location.)

GENERAL NOTES

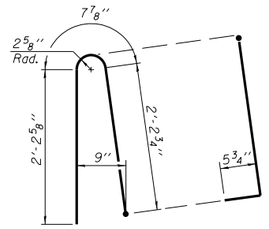
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or = 0.0223 cu. yds./ft. for 42" parapet.

Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler.

Steel superstructure shown. Other superstructure types similar.

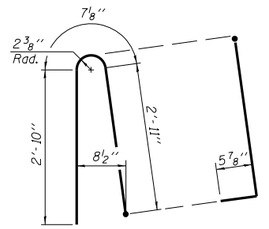


#3 (E) BAR



ALTERNATE BAR d(E)

(For 34" parapet when conduit is present)



ALTERNATE BAR d(E)

(For 42" parapet when conduit is present)

SUPERSTRUCTURE
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

SFP 34-42 8-16-12

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

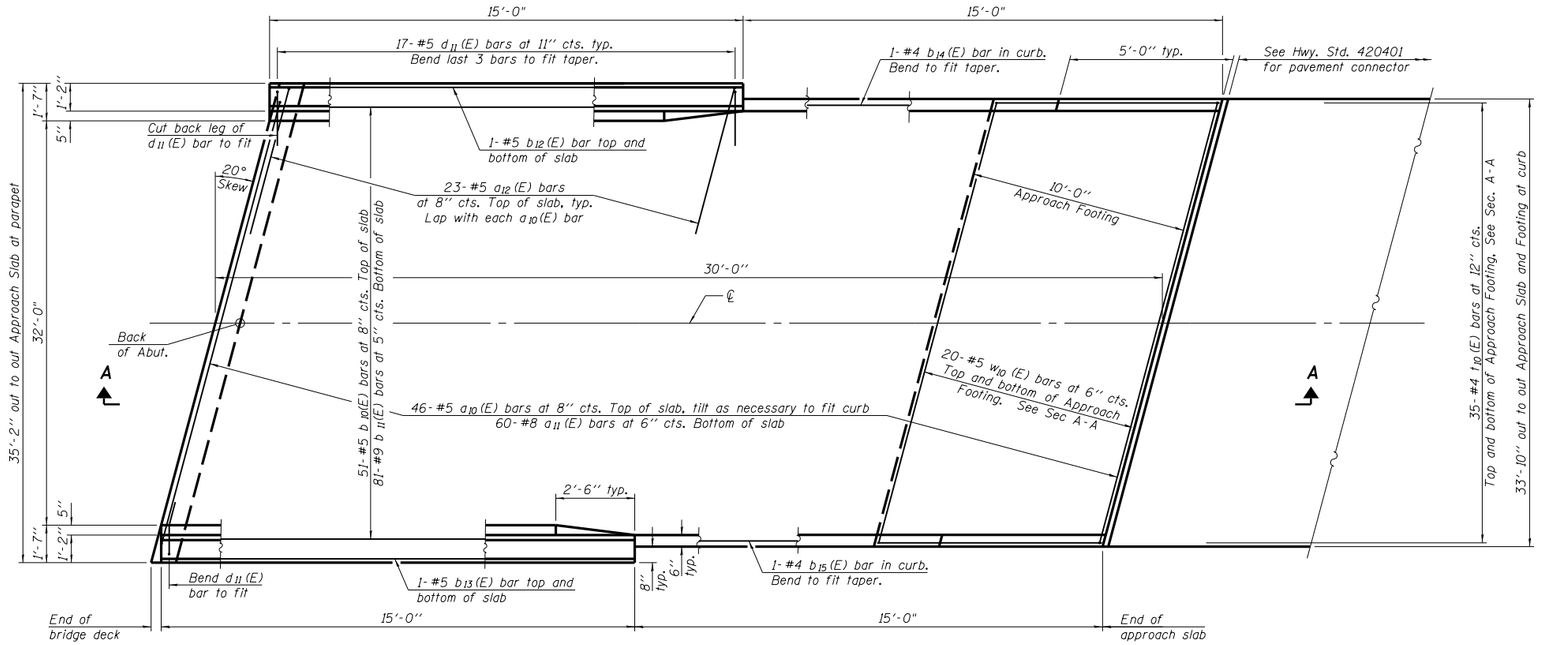
REV. NO.	DESCRIPTION	DATE

DRAWING:
SUPERSTRUCTURE
SLIPFORM OPTION

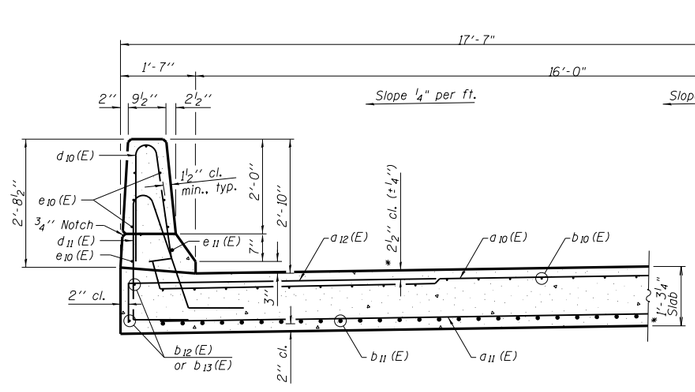
JOB NUMBER: 16-656

SHEET NUMBER: 18 of 29

CADD NAME: 16-656-S-Design Superstructure 03.dgn
PRINT DRIVER: $PLTDRVS$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$

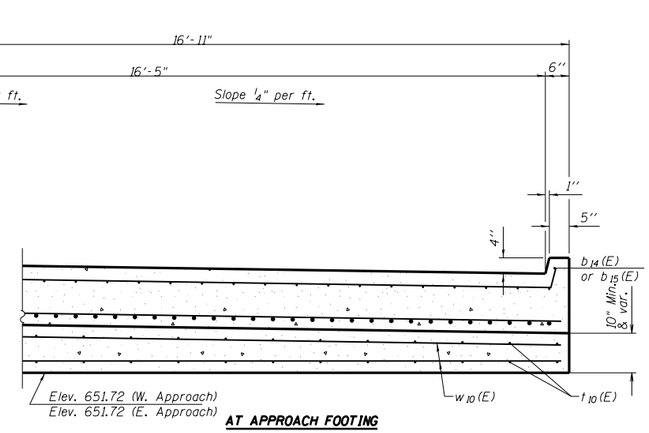


PLAN



NEAR ABUTMENT

CROSS SECTION
(Looking East)



AT APPROACH FOOTING

* Prior to 1/4" Diamond Grinding

BAIA-CIP-34FS-L(≤30°) 11-22-2016

BRIDGE APPROACH SLAB DETAILS
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

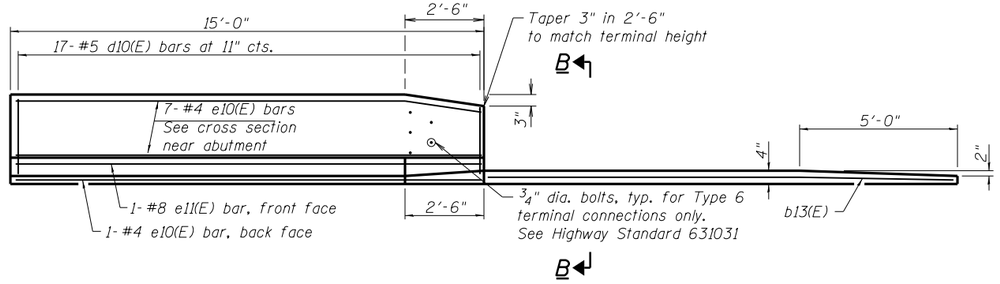
REV. NO.	DESCRIPTION	DATE

DRAWING: BRIDGE APPROACH SLAB DETAILS

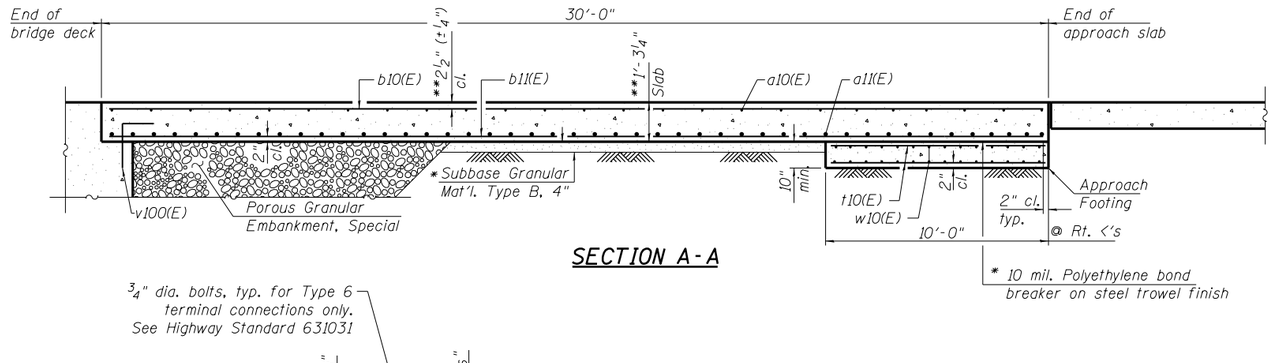
JOB NUMBER: 16-656

SHEET NUMBER: 19 of 29

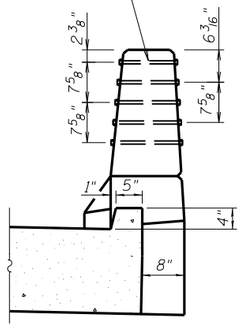
CADD NAME: 16-656-S-Design Bridge Approach Slab Details 01.dgn
PRINT DRIVER: $PLTDRVS$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$



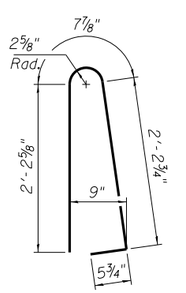
INSIDE ELEVATION OF PARAPET AND CURB



SECTION A-A

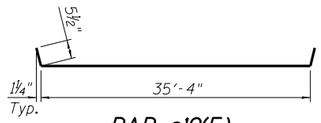


VIEW B-B

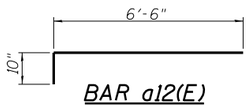


BAR d10(E)

BAR d11(E)



BAR a10(E)



BAR a12(E)

Notes:
The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.
Parapet concrete shall be paid for as Concrete Superstructure.
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
Approach footing concrete shall be paid for as Concrete Structures.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
Cost of excavation for approach footing included with Concrete Structures.
For Granular Backfill for Structures and drainage treatment details, see sheet 09 of 29.

TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{10}(E)	92	#5	36'-3"	
a_{11}(E)	120	#8	35'-4"	
a_{12}(E)	92	#5	7'-4"	
b_{10}(E)	102	#5	29'-8"	
b_{11}(E)	162	#9	29'-8"	
b_{12}(E)	4	#5	14'-8"	
b_{13}(E)	4	#5	14'-8"	
b_{14}(E)	2	#4	14'-8"	
b_{15}(E)	2	#4	14'-8"	
d_{10}(E)	68	#5	5'-7"	
d_{11}(E)	68	#5	7'-8"	
e_{10}(E)	32	#4	14'-8"	
e_{11}(E)	4	#8	14'-8"	
t_{10}(E)	140	#4	10'-3"	
w_{10}(E)	80	#5	35'-7"	
Concrete Superstructure		Cu. Yd.	6.7	
Concrete Superstructure (Approach Slab)		Cu. Yd.	96.4	
Concrete Structures		Cu. Yd.	26.5	
Reinforcement Bars, Epoxy Coated		Pound	39,440	

* Cost included with Concrete Superstructure (Approach Slab).

** Prior to ¼" Diamond Grinding

BAIA-CIP-34FS-L(=30°) 2-17-2017

BRIDGE APPROACH SLAB DETAILS
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

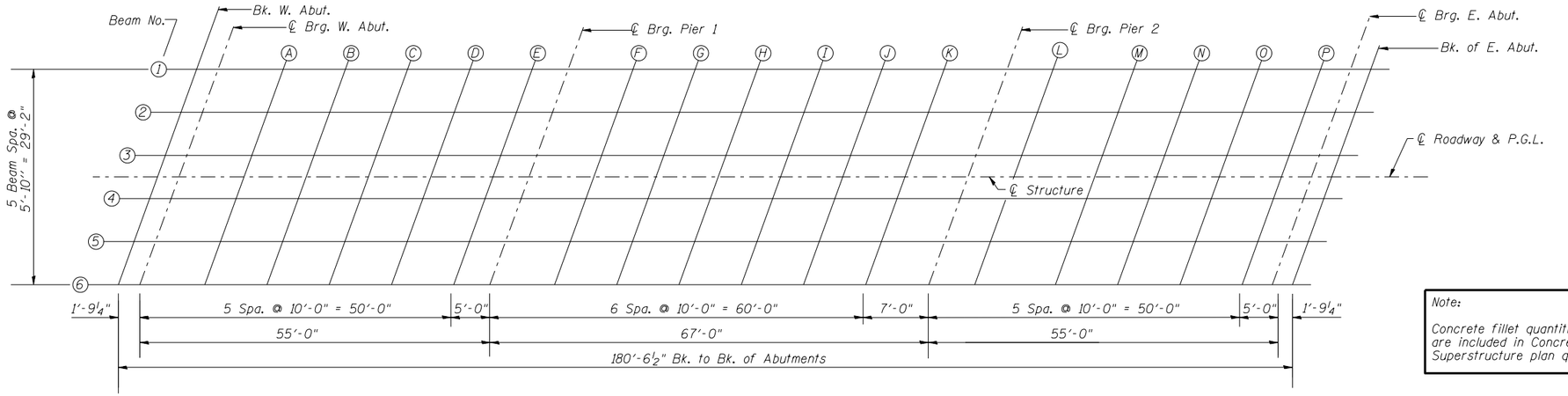
REV. NO.	DESCRIPTION	DATE

DRAWING: BRIDGE APPROACH SLAB DETAILS

JOB NUMBER: 16-656

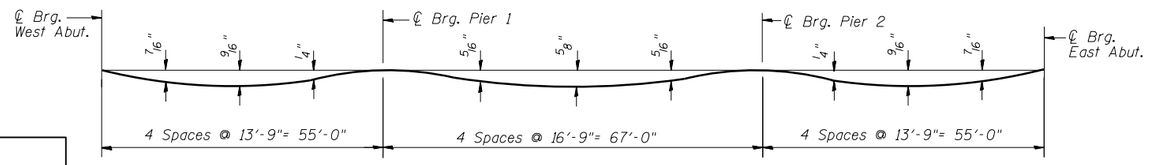
SHEET NUMBER: 20 of 29

CADD NAME: 16-656-S-Design Bridge Approach Slab Details 02.dgn
PRINT DRIVER: $PLTDRV$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$



Note:

Concrete fillet quantities are included in Concrete Superstructure plan quantities



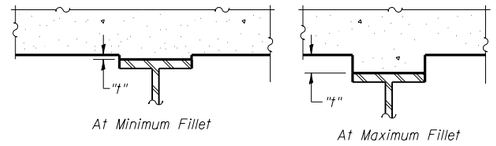
Note:

The elevations shown on the tables on sheets 22 & 23 of 30 are for an 8" slab thickness after ¼" diamond grinding. Add 0.02' to the theoretical grade elevations for top of slab elevations prior to Diamond Grinding.

DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for Dead Load deflections as shown on sheets 22 & 23 of 29.



At Minimum Fillet

At Maximum Fillet

To determine "f": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheets 22 & 23 of 29. These elevations subtracted from the "Theoretical Grade Elevations Ajusted for Dead Load Deflection" shown below, minus slab Thickness, equals the fillet heights "f" above top flange of Beams.

FILLET HEIGHTS

BEAM 1

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. Of W. Abut	99+15.03	14'-7"	Lt.	653.98	653.98
Cl. W. Abut	99+16.81	14'-7"	Lt.	653.99	653.99
A	99+26.81	14'-7"	Lt.	654.02	654.05
B	99+36.81	14'-7"	Lt.	654.05	654.09
C	99+46.81	14'-7"	Lt.	654.07	654.11
D	99+56.81	14'-7"	Lt.	654.09	654.11
E	99+66.81	14'-7"	Lt.	654.10	654.11
Cl. Pier 1	99+71.81	14'-7"	Lt.	654.11	654.11
F	99+81.81	14'-7"	Lt.	654.12	654.13
G	99+91.81	14'-7"	Lt.	654.12	654.16
H	100+01.81	14'-7"	Lt.	654.12	654.17
I	100+11.81	14'-7"	Lt.	654.12	654.17
J	100+21.81	14'-7"	Lt.	654.11	654.14
K	100+31.81	14'-7"	Lt.	654.10	654.11
Cl. Pier 2	100+38.81	14'-7"	Lt.	654.09	654.09
L	100+48.81	14'-7"	Lt.	654.08	654.09
M	100+58.81	14'-7"	Lt.	654.06	654.09
N	100+68.81	14'-7"	Lt.	654.03	654.08
O	100+78.81	14'-7"	Lt.	654.00	654.04
P	100+88.81	14'-7"	Lt.	653.97	653.99
Cl. E. Abut	100+93.81	14'-7"	Lt.	653.95	653.95
Bk. Of E. Abut	100+95.58	14'-7"	Lt.	653.95	653.95

BEAM 2

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. Of W. Abut	99+12.91	8'-9"	Lt.	654.10	654.10
Cl. W. Abut	99+14.68	8'-9"	Lt.	654.11	654.11
A	99+24.68	8'-9"	Lt.	654.14	654.17
B	99+34.68	8'-9"	Lt.	654.16	654.21
C	99+44.68	8'-9"	Lt.	654.19	654.23
D	99+54.68	8'-9"	Lt.	654.21	654.23
E	99+64.68	8'-9"	Lt.	654.22	654.22
Cl. Pier 1	99+69.68	8'-9"	Lt.	654.23	654.23
F	99+79.68	8'-9"	Lt.	654.24	654.25
G	99+89.68	8'-9"	Lt.	654.24	654.28
H	99+99.68	8'-9"	Lt.	654.25	654.29
I	100+09.68	8'-9"	Lt.	654.24	654.29
J	100+19.68	8'-9"	Lt.	654.24	654.27
K	100+29.68	8'-9"	Lt.	654.23	654.23
Cl. Pier 2	100+36.68	8'-9"	Lt.	654.22	654.22
L	100+46.68	8'-9"	Lt.	654.20	654.22
M	100+56.68	8'-9"	Lt.	654.18	654.22
N	100+66.68	8'-9"	Lt.	654.16	654.21
O	100+76.68	8'-9"	Lt.	654.13	654.17
P	100+86.68	8'-9"	Lt.	654.10	654.12
Cl. E. Abut	100+91.68	8'-9"	Lt.	654.08	654.08
Bk. Of E. Abut	100+93.46	8'-9"	Lt.	654.08	654.08

BEAM 3

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. Of W. Abut	99+10.79	2'-11"	Lt.	654.21	654.21
Cl. W. Abut	99+12.56	2'-11"	Lt.	654.22	654.22
A	99+22.56	2'-11"	Lt.	654.25	654.28
B	99+32.56	2'-11"	Lt.	654.28	654.33
C	99+42.56	2'-11"	Lt.	654.30	654.35
D	99+52.56	2'-11"	Lt.	654.32	654.35
E	99+62.56	2'-11"	Lt.	654.34	654.34
Cl. Pier 1	99+67.56	2'-11"	Lt.	654.35	654.35
F	99+77.56	2'-11"	Lt.	654.36	654.37
G	99+87.56	2'-11"	Lt.	654.36	654.40
H	99+97.56	2'-11"	Lt.	654.37	654.41
I	100+07.56	2'-11"	Lt.	654.37	654.41
J	100+17.56	2'-11"	Lt.	654.36	654.39
K	100+27.56	2'-11"	Lt.	654.35	654.36
Cl. Pier 2	100+34.56	2'-11"	Lt.	654.34	654.34
L	100+44.56	2'-11"	Lt.	654.33	654.34
M	100+54.56	2'-11"	Lt.	654.31	654.34
N	100+64.56	2'-11"	Lt.	654.29	654.33
O	100+74.56	2'-11"	Lt.	654.26	654.30
P	100+84.56	2'-11"	Lt.	654.23	654.25
Cl. E. Abut	100+89.56	2'-11"	Lt.	654.21	654.21
Bk. Of E. Abut	100+91.34	2'-11"	Lt.	654.21	654.21

TOP OF SLAB ELEVATIONS
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

REV. NO.	DESCRIPTION	DATE

DRAWING: TOP OF SLAB ELEVATIONS

JOB NUMBER: 16-656

SHEET NUMBER: 21 of 29

CADD NAME: 16-656-S-Design Top of Slab Elevations 01.dgn
PRINT DRIVER: $PLTDRV$

PRINT DATE: 1/5/2018
PRINT TIME: $TIME$

℄ ROADWAY AND PGL

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. Of W. Abut	99+09.73	0	654.21	654.21
Cl. W. Abut	99+11.50	0	654.21	654.21
A	99+21.50	0	654.25	654.28
B	99+31.50	0	654.27	654.32
C	99+41.50	0	654.30	654.34
D	99+51.50	0	654.32	654.34
E	99+61.50	0	654.34	654.34
Cl. Pier 1	99+66.50	0	654.34	654.34
F	99+76.50	0	654.35	654.37
G	99+86.50	0	654.36	654.40
H	99+96.50	0	654.36	654.41
I	100+06.50	0	654.36	654.41
J	100+16.50	0	654.36	654.39
K	100+26.50	0	654.35	654.36
Cl. Pier 2	100+33.50	0	654.34	654.34
L	100+43.50	0	654.33	654.34
M	100+53.50	0	654.31	654.34
N	100+63.50	0	654.29	654.33
O	100+73.50	0	654.26	654.30
P	100+83.50	0	654.23	654.25
Cl. E. Abut	100+88.50	0	654.21	654.21
Bk. Of E. Abut	100+90.27	0	654.21	654.21

BEAM 4

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. Of W. Abut	99+08.66	2'-11"	Rt.	654.21	654.21
Cl. W. Abut	99+10.44	2'-11"	Rt.	654.21	654.21
A	99+20.44	2'-11"	Rt.	654.25	654.28
B	99+30.44	2'-11"	Rt.	654.27	654.32
C	99+40.44	2'-11"	Rt.	654.30	654.34
D	99+50.44	2'-11"	Rt.	654.32	654.34
E	99+60.44	2'-11"	Rt.	654.34	654.34
Cl. Pier 1	99+65.44	2'-11"	Rt.	654.34	654.34
F	99+75.44	2'-11"	Rt.	654.36	654.37
G	99+85.44	2'-11"	Rt.	654.36	654.40
H	99+95.44	2'-11"	Rt.	654.37	654.41
I	100+05.44	2'-11"	Rt.	654.37	654.41
J	100+15.44	2'-11"	Rt.	654.36	654.39
K	100+25.44	2'-11"	Rt.	654.35	654.36
Cl. Pier 2	100+32.44	2'-11"	Rt.	654.35	654.35
L	100+42.44	2'-11"	Rt.	654.33	654.35
M	100+52.44	2'-11"	Rt.	654.31	654.35
N	100+62.44	2'-11"	Rt.	654.29	654.34
O	100+72.44	2'-11"	Rt.	654.27	654.31
P	100+82.44	2'-11"	Rt.	654.24	654.25
Cl. E. Abut	100+87.44	2'-11"	Rt.	654.22	654.22
Bk. Of E. Abut	100+89.21	2'-11"	Rt.	654.21	654.21

Note:

The elevations shown on the tables on sheets 22 & 23 of 30 are for an 8" slab thickness after ¼" diamond grinding. Add 0.02' to the theoretical grade elevations for top of slab elevations prior to Diamond Grinding.

BEAM 5

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. Of W. Abut	99+06.54	8'-9"	Rt.	654.08	654.08
Cl. W. Abut	99+08.32	8'-9"	Rt.	654.08	654.08
A	99+18.32	8'-9"	Rt.	654.12	654.15
B	99+28.32	8'-9"	Rt.	654.15	654.19
C	99+38.32	8'-9"	Rt.	654.17	654.22
D	99+48.32	8'-9"	Rt.	654.19	654.22
E	99+58.32	8'-9"	Rt.	654.21	654.22
Cl. Pier 1	99+63.32	8'-9"	Rt.	654.22	654.22
F	99+73.32	8'-9"	Rt.	654.23	654.24
G	99+83.32	8'-9"	Rt.	654.24	654.27
H	99+93.32	8'-9"	Rt.	654.24	654.29
I	100+03.32	8'-9"	Rt.	654.24	654.29
J	100+13.32	8'-9"	Rt.	654.24	654.27
K	100+23.32	8'-9"	Rt.	654.23	654.24
Cl. Pier 2	100+30.32	8'-9"	Rt.	654.23	654.23
L	100+40.32	8'-9"	Rt.	654.21	654.23
M	100+50.32	8'-9"	Rt.	654.20	654.23
N	100+60.32	8'-9"	Rt.	654.18	654.22
O	100+70.32	8'-9"	Rt.	654.15	654.19
P	100+80.32	8'-9"	Rt.	654.12	654.14
Cl. E. Abut	100+85.32	8'-9"	Rt.	654.11	654.11
Bk. Of E. Abut	100+87.09	8'-9"	Rt.	654.10	654.10

BEAM 6

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. Of W. Abut	99+04.42	14'-7"	Rt.	653.95	653.95
Cl. W. Abut	99+06.19	14'-7"	Rt.	653.95	653.95
A	99+16.19	14'-7"	Rt.	653.99	654.02
B	99+26.19	14'-7"	Rt.	654.02	654.07
C	99+36.19	14'-7"	Rt.	654.05	654.09
D	99+46.19	14'-7"	Rt.	654.07	654.09
E	99+56.19	14'-7"	Rt.	654.09	654.09
Cl. Pier 1	99+61.19	14'-7"	Rt.	654.09	654.09
F	99+71.19	14'-7"	Rt.	654.11	654.12
G	99+81.19	14'-7"	Rt.	654.12	654.15
H	99+91.19	14'-7"	Rt.	654.12	654.17
I	100+01.19	14'-7"	Rt.	654.12	654.17
J	100+11.19	14'-7"	Rt.	654.12	654.15
K	100+21.19	14'-7"	Rt.	654.12	654.12
Cl. Pier 2	100+28.19	14'-7"	Rt.	654.11	654.11
L	100+38.19	14'-7"	Rt.	654.10	654.11
M	100+48.19	14'-7"	Rt.	654.08	654.11
N	100+58.19	14'-7"	Rt.	654.06	654.11
O	100+68.19	14'-7"	Rt.	654.03	654.07
P	100+78.19	14'-7"	Rt.	654.01	654.02
Cl. E. Abut	100+83.19	14'-7"	Rt.	653.99	653.99
Bk. Of E. Abut	100+84.97	14'-7"	Rt.	653.98	653.98

TOP OF SLAB ELEVATIONS
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

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PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

REV. NO.	DESCRIPTION	DATE

DRAWING: TOP OF SLAB ELEVATIONS

JOB NUMBER: 16-656

SHEET NUMBER: 22 of 29

CADD NAME: 16-656-S-Design Top of Slab Elevations 02.dgn
PRINT DRIVER: $PLTDRV$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$

NORTH CURB LINE

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS
End W. Appr. Pavt.	98+87.32	16'-0"	Lt.	653.85
A	98+97.32	16'-0"	Lt.	653.89
B	99+07.32	16'-0"	Lt.	653.93
End W. Appr. Pavt.	99+17.32	16'-0"	Lt.	653.96

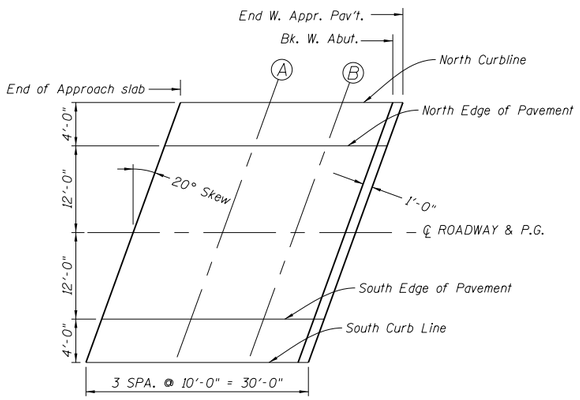
NORTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS
End W. Appr. Pavt.	98+85.87	12'-0"	Lt.	653.93
A	98+95.87	12'-0"	Lt.	953.97
B	99+05.87	12'-0"	Lt.	654.01
End W. Appr. Pavt.	99+15.87	12'-0"	Lt.	654.04

℄ ROADWAY & P.G.L.

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS
End W. Appr. Pavt.	98+81.50	0	654.09
A	98+91.50	0	654.14
B	99+01.50	0	654.18
End W. Appr. Pavt.	99+11.50	0	654.21

N



PLAN

SOUTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS
End W. Appr. Pavt.	98+77.13	12'-0"	Rt.	653.89
A	98+87.13	12'-0"	Rt.	653.93
B	98+97.13	12'-0"	Rt.	653.97
End W. Appr. Pavt.	99+07.13	12'-0"	Rt.	654.01

Note:

Top of slab elevations are after the Diamond Grinding of the Approach Slabs. Add 0.02' to the theoretical grade elevations for top of slab elevations prior to Diamond Grinding.

SOUTH CURB LINE

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS
End W. Appr. Pavt.	98+75.68	16'-0"	Rt.	653.80
A	98+85.68	16'-0"	Rt.	653.84
B	98+95.68	16'-0"	Rt.	653.88
End W. Appr. Pavt.	99+05.68	16'-0"	Rt.	653.92

TOP OF SLAB ELEVATIONS
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DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

REV. NO.	DESCRIPTION	DATE

DRAWING: TOP OF SLAB ELEVATIONS

JOB NUMBER: 16-656

SHEET NUMBER: 23 of 29

CADD NAME: 16-656-S-Design Top of Slab Elevations 03.dgn
PRINT DRIVER: $PLTDRVS$

PRINT DATE: 1/5/2018
PRINT TIME: $TIME$

NORTH CURB LINE

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS
End E. Appr. Pavt.	100+94.32	16'-0"	Lt.	653.92
A	101+04.32	16'-0"	Lt.	653.88
B	101+14.32	16'-0"	Lt.	653.84
End E. Appr. Pavt.	101+24.32	16'-0"	Lt.	653.80

NORTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS
End E. Appr. Pavt.	100+92.87	12'-0"	Lt.	654.01
A	101+02.87	12'-0"	Lt.	653.97
B	101+12.87	12'-0"	Lt.	653.93
End E. Appr. Pavt.	101+22.87	12'-0"	Lt.	653.89

℄ ROADWAY & P.G.L.

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS
End E. Appr. Pavt.	100+88.5	0	654.21
A	100+98.5	0	654.18
B	101+08.5	0	654.14
End E. Appr. Pavt.	101+18.5	0	654.09

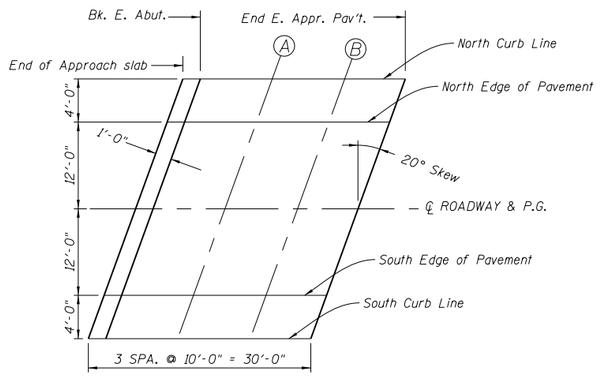
SOUTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS
End E. Appr. Pavt.	100+84.13	12'-0"	Rt.	654.04
A	100+94.13	12'-0"	Rt.	654.01
B	101+04.13	12'-0"	Rt.	653.97
End E. Appr. Pavt.	101+14.13	12'-0"	Rt.	653.93

SOUTH CURB LINE

LOCATION	STATION	OFFSET		THEORETICAL GRADE ELEVATIONS
End E. Appr. Pavt.	100+82.68	16'-0"	Rt.	653.96
A	100+92.68	16'-0"	Rt.	653.93
B	101+02.68	16'-0"	Rt.	653.89
End E. Appr. Pavt.	101+12.68	16'-0"	Rt.	653.85

N



PLAN

Note:

Top of slab elevations are after the Diamond Grinding of the Approach Slabs. Add 0.02' to the theoretical grade elevations for top of slab elevations prior to Diamond Grinding.

TOP OF SLAB ELEVATIONS
CH 16 (FAS 527)
SECTION 15-00028-00-BR
CRITTENDEN TOWNSHIP
STATION 100+00
S.N. 010-4575

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APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

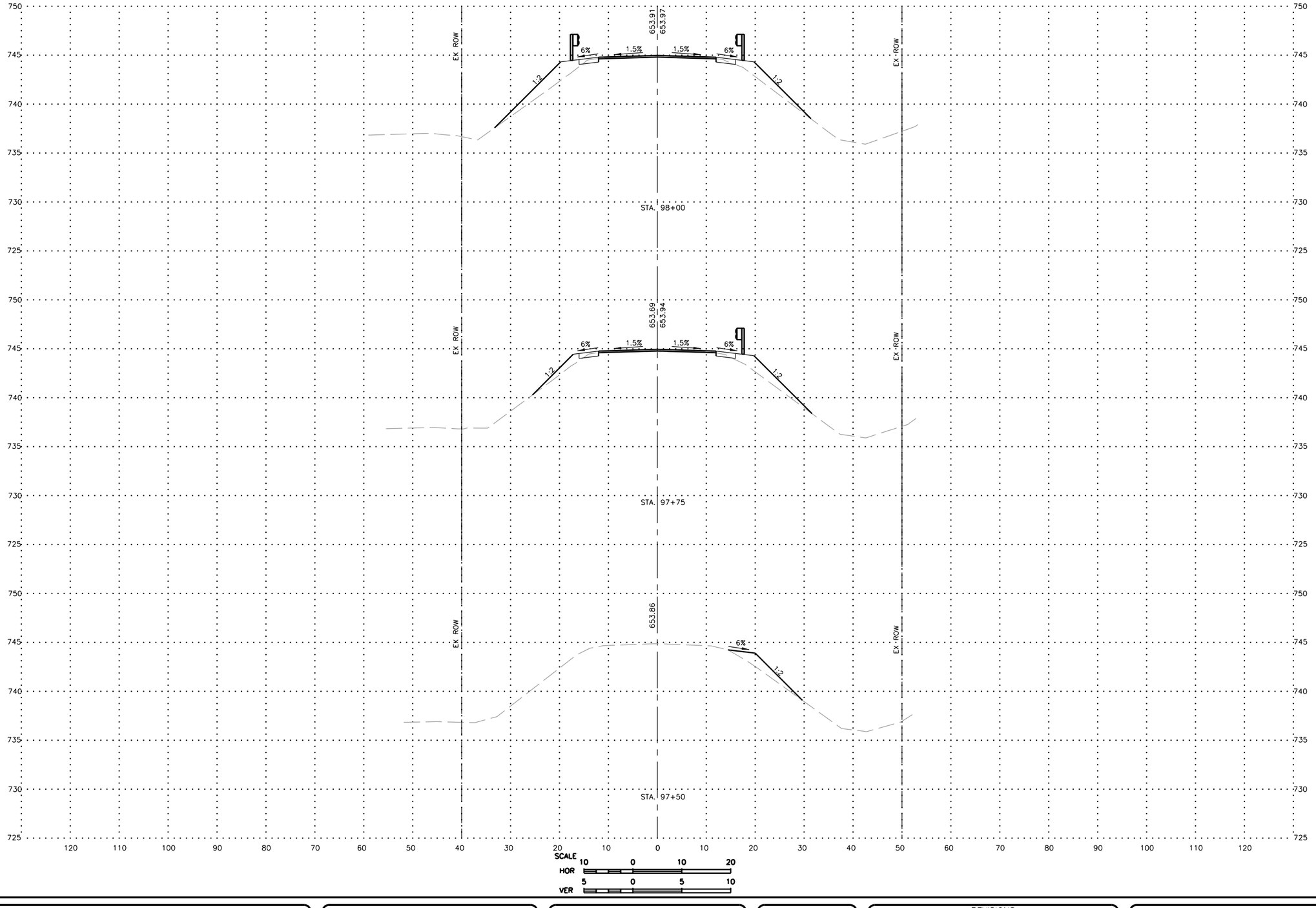
REV. NO.	DESCRIPTION	DATE

DRAWING: TOP OF SLAB ELEVATIONS

JOB NUMBER: 16-656

SHEET NUMBER: 24 of 29

CADD NAME: 16-656-S-Design Top of Slab Elevations 04.dgn
PRINT DRIVER: $PLTDRVS$
PRINT DATE: 1/5/2018
PRINT TIME: $TIME$



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APPROVED BY: RTM
DATE: 1/5/2018
SCALE: AS SHOWN

REVISIONS

REV. NO.	DESCRIPTION	DATE

DRAWING:
CROSS SECTIONS

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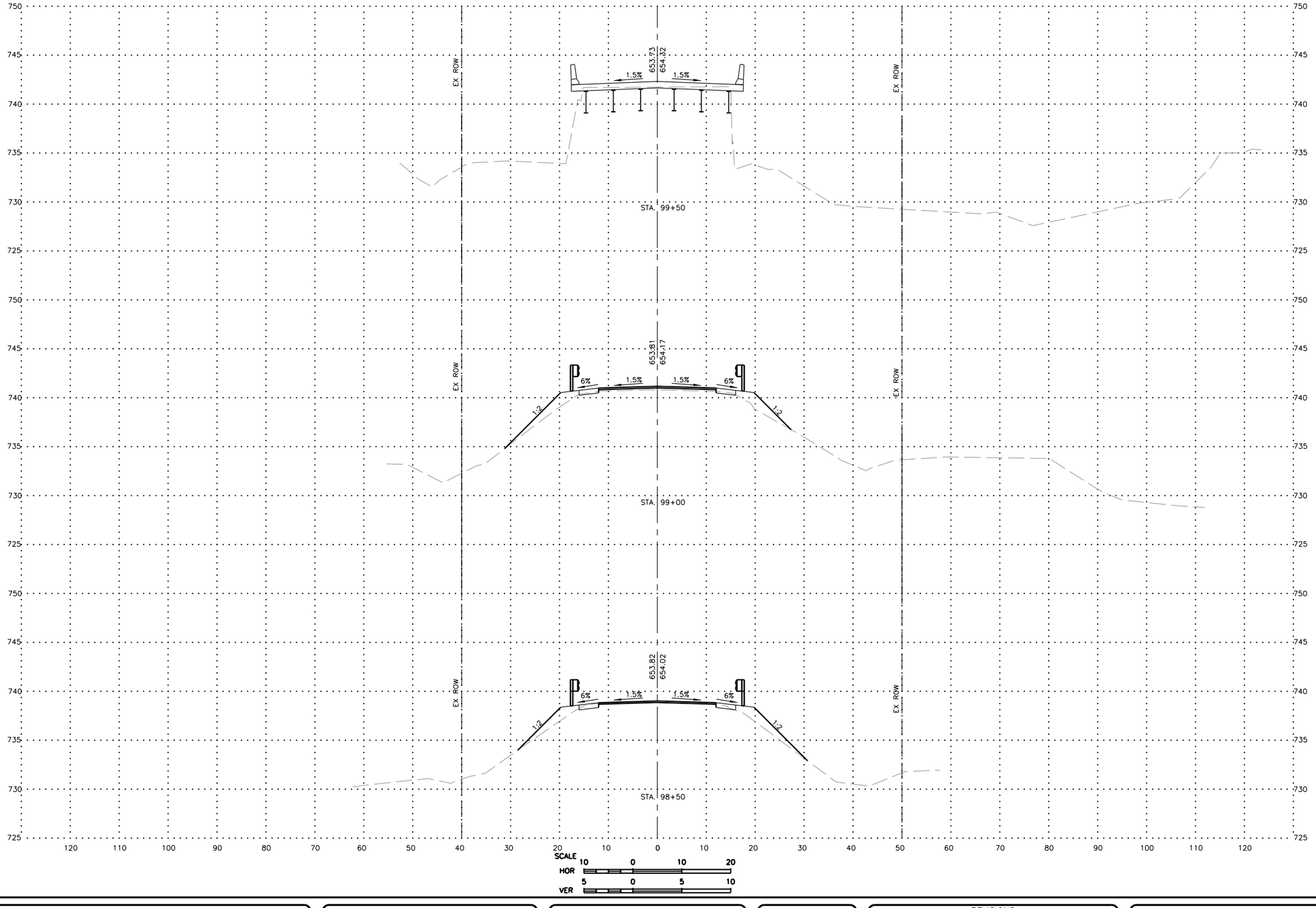
JOB NUMBER:
16-656

SHEET NUMBER:
25 of 29

PLOT DATE: 1/5/2018



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SCALE: AS SHOWN

REVISIONS

REV. NO.	DESCRIPTION	DATE

DRAWING:
CROSS SECTIONS

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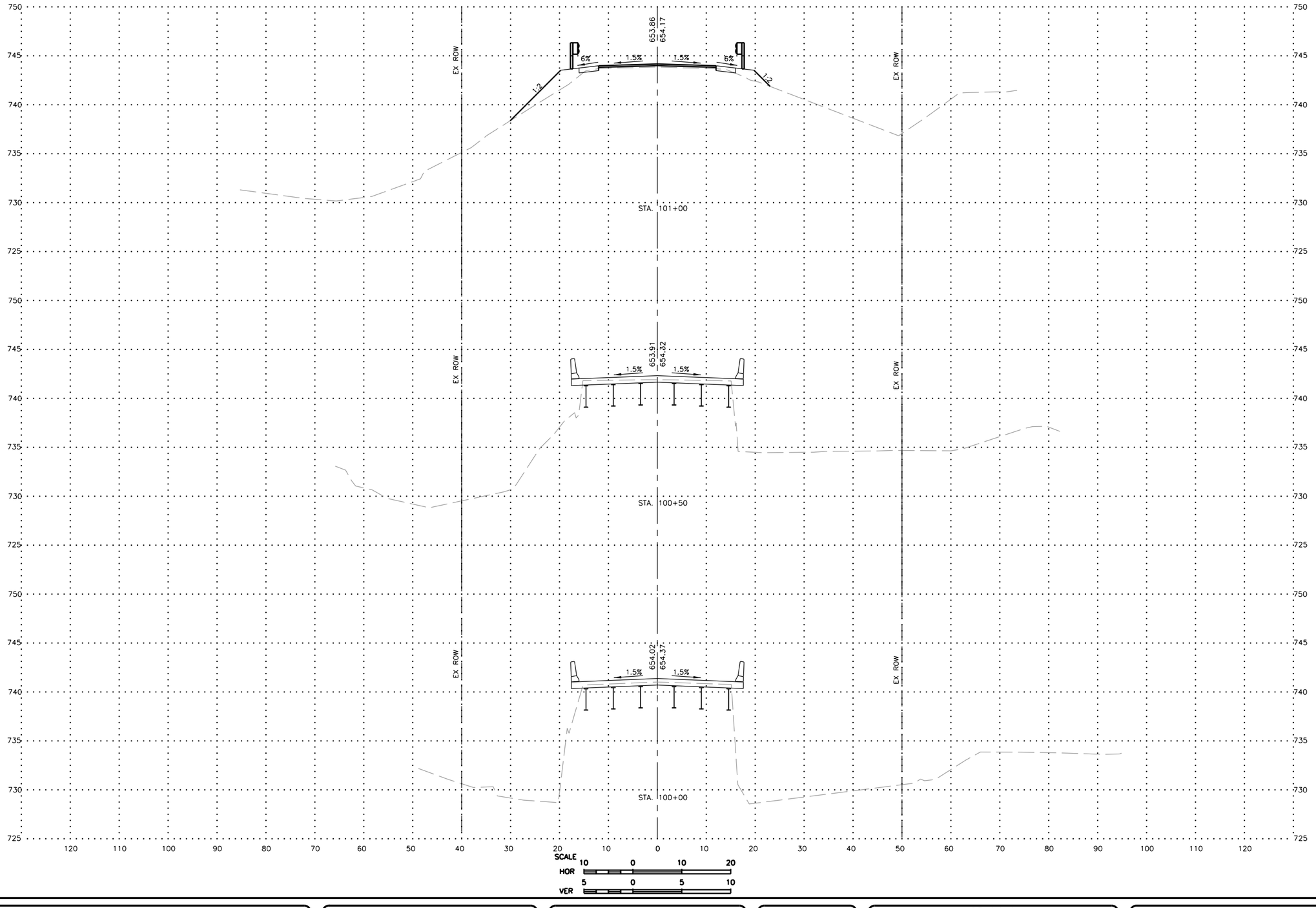
JOB NUMBER:
16-656

SHEET NUMBER:
26 of 29



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CROSS SECTIONS

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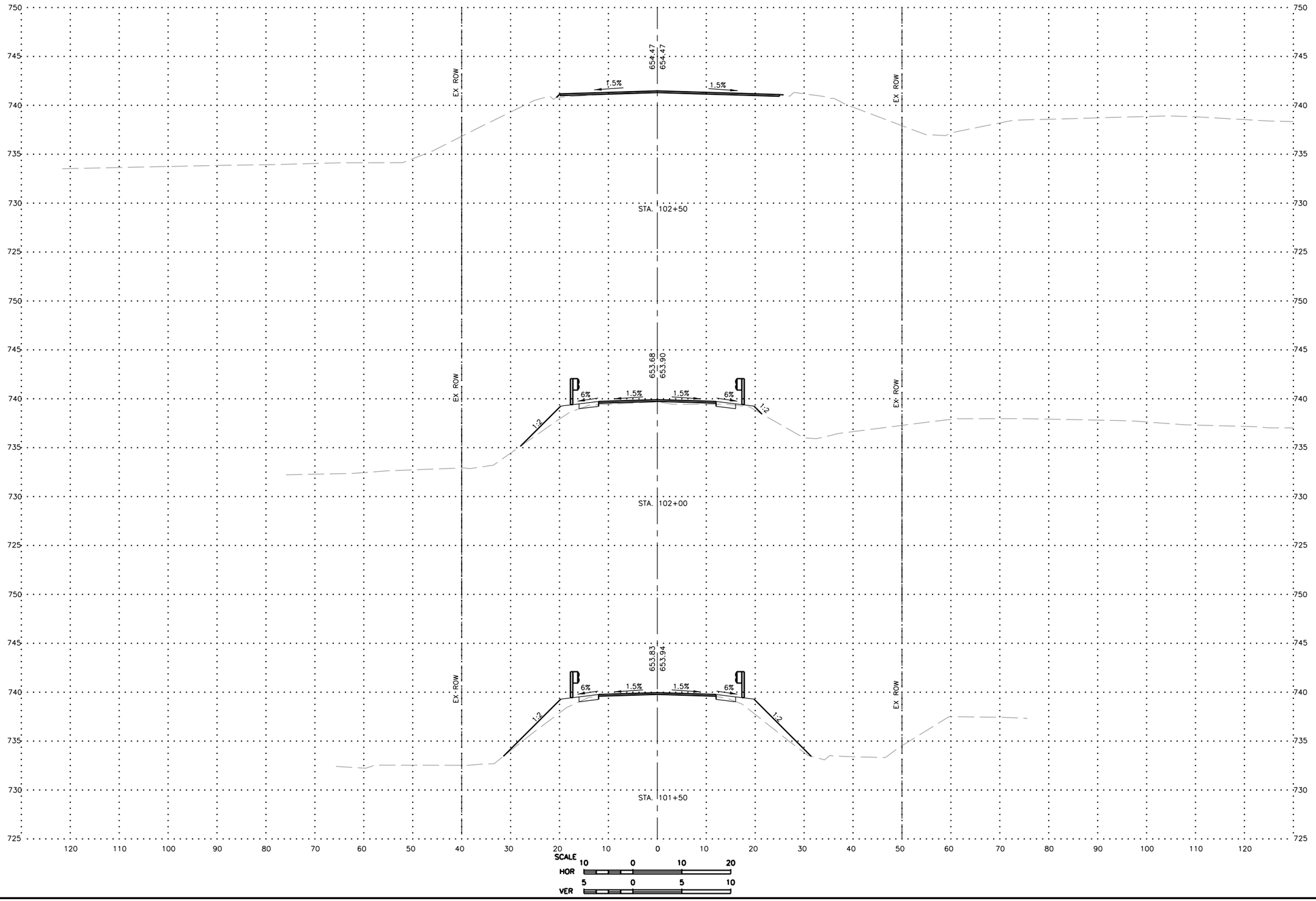
JOB NUMBER:
16-656

SHEET NUMBER:
27 of 29

PLOT DATE: 1/5/2018



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CROSS SECTIONS

G:\Microstation\16\16-656\Plans\16-656-S-Design XS 4.dgn

JOB NUMBER:
16-656

SHEET NUMBER:
28 of 29

BRIDGE FOUNDATION SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Route: County Highway 16 (CR 200 N)
Section: 15-00028-00-BR
County: Champaign County
Structure No. 010-4575 (Existing SN: 010-0251)
Station: 98+96
Offset: 6' RT

Boring: B-1
Page: Page 1 of **1**
Date of Boring: January 3, 2017
Drilled By: Zach Wilcoxen
Checked By: Daniel E. Tappendorf, PE
MET Project No: 63122

Surface Water Elevation: 89.8 ft.
Ground Water Elevation:
when drilling: 83.8 ft.
at completion: 85.8 ft.
Ground Surface Elevation: 99.8 ft.

Center of Bridge: STA 100+00,
Elevation: 100.00 ft = 654.02

DEPTH (ft.)	BLOWS (6")	Q_u (tsf)	MC (%)	
	-	-	9	4.5" Asphalt over 14" Crushed Stone
	4 50/5" -	-	15	Dark brown silty CLAY (CL) with asphalt fragments - Fill
				Elev: 95.3 ft.
5				TOP OF PILE ELEV. 95.28
	2 3 3	-	20	Dark brown silty CLAY (CL) with sand - Fill
	2 3 4	0.8B	21	
				Elev: 90.3 ft.
10				
	2 2 3	1.2B	24	Dark gray silty CLAY (CL) - Fill
				Elev: 87.8 ft.
	1 2 2	0.8B	28	Gray mottled brown silty CLAY (CL) with sand
				Elev: 85.3 ft.
15				
	1 3 5	-	20	Gray clayey SAND (SC) with gravel
				Elev: 82.8 ft.
	4 5 7	-	11	Gray coarse SAND (SP)
20				
	5 9 7	-	13	
				Elev: 77.8 ft.
	4 7 8	0.4B	26	Gray clayey SILT (ML)
				Elev: 75.3 ft.
25				
	3 6 7	2.0B	15	Gray clayey SILT (ML) with clayey sand seams

DEPTH (ft.)	BLOWS (6")	Q_u (tsf)	MC (%)	
				Gray silty CLAY (CL) with sand and small gravel - Till
	3 5 9	2.2B	14	
30				
	9 12 16	7.6B	10	
35				
	10 16 28	6.4B	12	
				Elev: 71.8 ft.
40				
	50/5" - -	4.5P	11	Brown silty CLAY (CL) with sand and small gravel - Till
45				
	29 46 50/5"	4.8S	9	
50				
	35 47 50/5"	8.0S	10	
				Elev: 48.3 ft.
				End of Boring 51.5 ft. depth

BOTTOM OF PILE @ ELEV. 45.28 (3.02' PAST BORING)

N - Standard Penetration Test (SPT) = Sum of last two blow values in sample
MC- Moisture Content - Percent of dry weight
Qu- Unconfined Compressive Strength- tons per square foot (tsf)

Type Failure
Qu test
B-Bulge
S-Shear
P-Penetrometer

		W. ABUT	ACTUAL ELEV.	ASSUMED ELEV.
50' PILE	TOP PILE		649.3	95.28
	BOT. PILE		599.3	45.28

BRIDGE FOUNDATION SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Route: County Highway 16 (CR 200 N)
Section: 15-00028-00-BR
County: Champaign County
Structure No. 010-4575 (Existing SN: 010-0251)
Station: 101+14
Offset: 5' LT

Boring: B-2
Page: Page 1 of **1**
Date of Boring: January 4, 2017
Drilled By: Zach Wilcoxen
Checked By: Daniel E. Tappendorf, PE
MET Project No: 63122

Surface Water Elevation: 89.8 ft
Ground Water Elevation:
when drilling: 86.8 ft.
at completion: 87.8 ft.
Ground Surface Elevation: 99.7 ft.

Center of Bridge: STA 100+00,
Elevation: 100.00 ft. = 654.02

DEPTH (ft.)	BLOWS (6")	Q_u (tsf)	MC (%)	
	-	-	3	3" Asphalt over 27" Crushed Stone over 6" Concrete
	- - -	-	5	TOP OF PILE ELEV. 95.28
				Black silty CLAY (OH) - Fill
5				
	2 2 2	-	18	
				Elev: 92.7 ft.
	3 3 4	2.0B	18	Dark gray silty CLAY (CL) - Fill
				Elev: 90.2 ft.
10				
	1 1 2	0.8B	25	Dark gray silty CLAY (CL) with sand - Fill
	1 1 1	0.4B	23	
				Elev: 85.2 ft.
15				
	2 3 4	2.0B	14	Gray silty CLAY (CL) with sand and small gravel - Till
	3 4 5	1.4B	15	
20				
	3 4 5	1.2B	25	
				Elev: 77.7 ft.
	4 4 5	1.6B	19	Gray clayey SILT (ML)
				Elev: 75.2 ft.
25				
	3 5 7	1.6B	15	Gray silty CLAY (CL) with sand and small gravel - Till

DEPTH (ft.)	BLOWS (6")	Q_u (tsf)	MC (%)	
	3 4 6	1.2B	15	
30				Gray silty CLAY (CL) with sand and small gravel - Till
	9 15 28	8.0B	11	
				Elev: 66.7 ft.
35				
	15 29 42	6.4B	9	
40				
	20 32 40	6.4B	9	
				Brown silty CLAY (CL) with sand and small gravel - Till
45				
	22 31 35	4.5P	9	
50				
	25 39 45	2.0B	14	
				Elev: 48.7 ft.
				End of Boring @ 51.5 ft. depth

BOTTOM OF PILE @ ELEV. 34.28 (14.42' PAST BORING)

N - Standard Penetration Test (SPT) = Sum of last two blow values in sample
MC- Moisture Content - Percent of dry weight
Qu- Unconfined Compressive Strength- tons per square foot (tsf)

Type Failure
Qu test
B-Bulge
S-Shear
P-Penetrometer

		E. ABUT	ACTUAL ELEV.	ASSUMED ELEV.
61' PILE	TOP PILE		649.3	95.28
	BOT. PILE		588.3	34.28

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

ILLINOIS
IOWA
WISCONSIN

OWNER/DEVELOPER:
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, IL 61802

PROJECT AND LOCATION:
CHAMPAIGN COUNTY BRIDGE REPLACEMENT
C.H. 16 (FAS 527)
EXISTING S.N. 010-0251
PROPOSED S.N. 010-4575
SECTION NO: 15-00028-00-BR

DRAWN BY: MG
APPROVED BY: RTM
DATE: 1/5/2018
SCALE: N/A

REVISIONS

REV. NO.	DESCRIPTION	DATE

DRAWING:
SOIL BORING LOGS

JOB NUMBER:
16-656

SHEET NUMBER:
29 of 29