MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	1
FED. ROAD DIST. NO. 1	ILLINOIS	CONTRACT NO. 61E28		

1/19/2018 LETTING ITEM 102

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

MUN 1090 (FOREST AVE)
RAVINE DR TO HAZEL AVE
BRIDGE REPLACEMENT
SECTION 13-00121-00-BR
PROJECT NO. VU34(681)
CITY OF HIGHLAND PARK
LAKE COUNTY
C-91-394-14

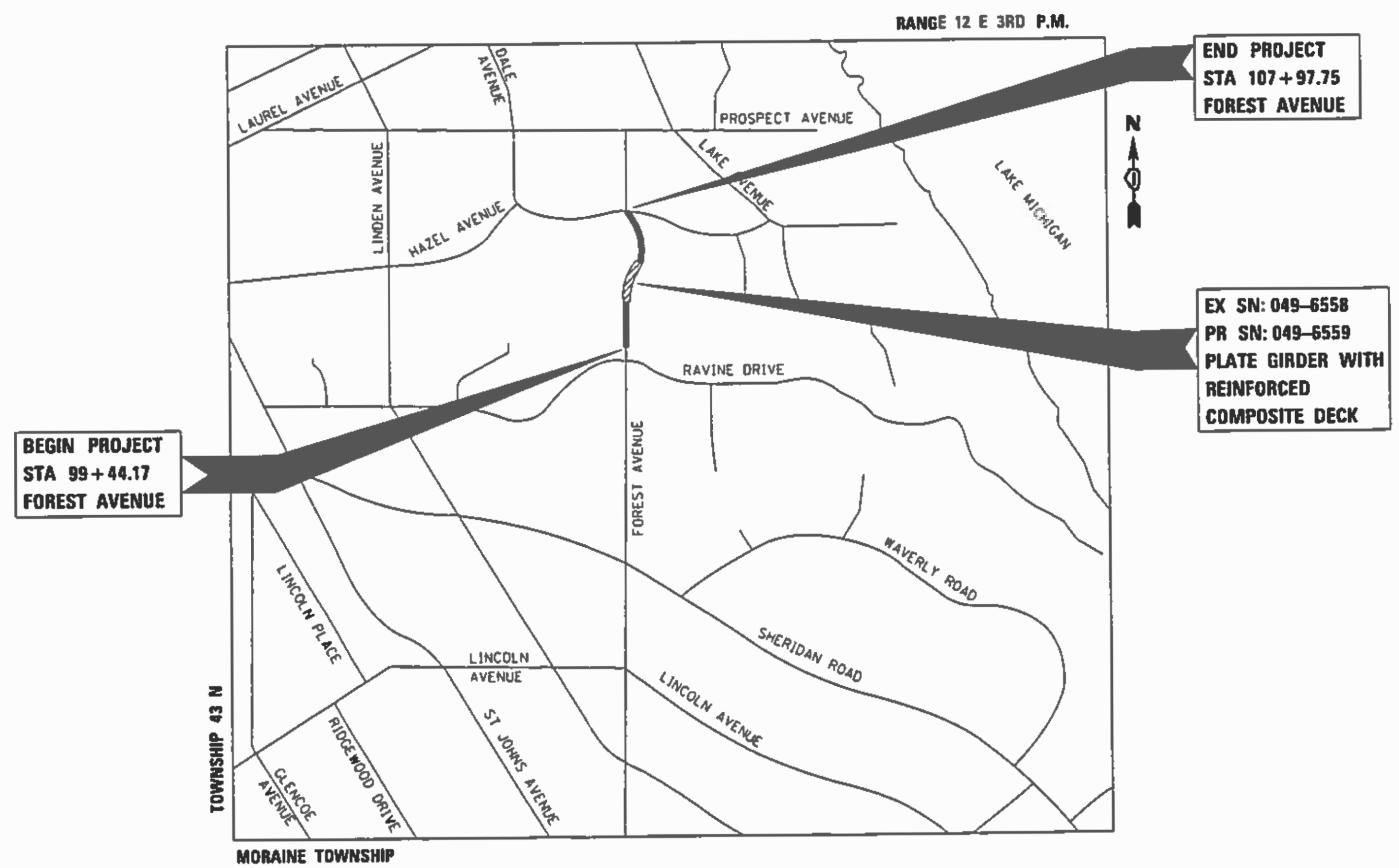
INDEX OF SHEETS
SEE SHEET 2 FOR INDEX OF SHEETS

HIGHWAY STANDARDS
SEE SHEET 2 FOR LIST OF HIGHWAY STANDARDS

DISTRICT 1 DETAILS
SEE SHEET 2 FOR LIST OF DISTRICT 1 DETAILS

DESIGN DESIGNATION
FOREST AVENUE
FUNCTIONAL CLASS = LOCAL ROAD
POSTED SPEED = 25 MPH
DESIGN SPEED = 30 MPH

TRAFFIC DATA
FOREST AVENUE
ADT = 300 VPD



LOCATION MAP
(NOT TO SCALE)

▬ = INDICATES PROPOSED RECONSTRUCTION
▨ = INDICATES PROPOSED BRIDGE REPLACEMENT

GROSS LENGTH = 853.58 FEET (0.162 MILES)
NET LENGTH = 853.58 FEET (0.162 MILES)

LOCATION OF SECTION INDICATED THUS: -

Ciorba Group, Inc.
DESIGN FIRM
REGISTRATION NUMBER
184-001016
CONSULTING ENGINEERS
SUITE 402, 5507 NORTH CUMBERLAND AVE
CHICAGO, ILLINOIS 60656 :: (773) 775-4009

1" = 100' / 1" = 10'; 1" = 50'; 1" = 40'; 1" = 30'; 1" = 20'

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

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

PROGRAM AND OFFICE ENGINEER: CHARLES F. RIDDLE, PE 847-705-4406 SCHAUMBURG, IL

CONTRACT NO. 61E28

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Approved October 6, 2017 DATE
City of Highland Park City Engineer

Passed OCTOBER 27, 2017 DATE
CHRISTOPHER HOLT
District 1 Engineer of Local Roads & Streets

Releasing for Bid Based on Limited Review OCTOBER 30, 2017 DATE
Regional Engineer

STATE OF ILLINOIS LICENSED STRUCTURAL ENGINEER BRETT W. SAUTER 081-006844
DATE: 10/6/2017
SEAL EXPIRES: 11/30/2018

DUANE O'LAUGHLIN 062-252501 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS
DATE: 10/6/2017
SEAL EXPIRES: 11/30/2017

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

INDEX OF SHEETS

LIST OF IDOT STANDARD DRAWINGS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420406	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB
424001-10	PERPENDICULAR CURB RAMPS FOR SIDEWALKS
515001-03	NAME PLATE FOR BRIDGES
601101-02	CONCRETE HEADWALL FOR PIPE UNDERDRAINS
602001-02	CATCH BASIN TYPE A
602401-04	MANHOLE, TYPE A
602601-05	PRECAST REINFORCED CONCRETE FLAT TOP SLAB
604001-04	FRAME AND LIDS TYPE 1
604051-04	FRAME AND GRATE TYPE 11
606001-07	CONCRETE CURB AND COMBINATION CONCRETE CURB AND GUTTER
701006-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' TO 24' FROM PAVEMENT EDGE
701301-04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701311-03	LANE CLOSURE, 2L, 2W, MOVING OPERATIONS - DAY ONLY
701501-06	URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
701801-06	SIDEWALK, CORNER OR CROSSWALK CLOSURE
701901-07	TRAFFIC CONTROL DEVICES

IDOT DISTRICT 1 STANDARDS

STANDARD NO.	LIST OF DESCRIPTION
TC-10	TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

GENERAL NOTES

1. ANY REFERENCE TO THE STANDARD SPECIFICATIONS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED TO BE THE ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISONS, ADOPTED APRIL 1, 2016.

2. ITEMS OF WORK LISTED IN THE SUMMARY OF QUANTITIES WHICH ARE NOT SPECIFICALLY INDICATED IN THE PLANS SHALL BE PERFORMED AT LOCATIONS AS DIRECTED BY THE ENGINEER.

3. DRAINAGE STRUCTURE ELEVATIONS: GRADES OF SEWER LINES WERE DETERMINED FROM AVAILABLE PLANS AND SURVEYS. ACCORDINGLY, AS DIRECTED BY THE ENGINEER, THE INVERTS OF THE PROPOSED DRAINAGE WILL BE REVISED TO MEET EXISTING FIELD CONDITIONS.

4. THE TOP OF ALL STRUCTURES SHALL BE FLUSH WITH THE ADJACENT SURFACE OR AT THE INDICATED ELEVATIONS SHOWN ON THE PLANS.

5. FRAME ELEVATIONS ARE GIVEN ONLY TO ASSIST IN DETERMINING THE APPROXIMATE OVERALL HEIGHT OF THE STRUCTURE. FRAMES ON ALL NEW STRUCTURES WILL BE ADJUSTED TO THE FINAL ELEVATION OF THE AREA IN WHICH THEY ARE LOCATED.

6. THE CAST IRON FRAMES AND COVERS OF FILLED, ABANDONED OR REMOVED MANHOLES, INLETS AND CATCH BASINS OR THOSE FRAMES AND COVERS UPON STRUCTURES RECEIVING NEW FRAMES AND COVERS SHALL BE STOCKPILED WITHIN THE RIGHT-OF-WAY, AS DIRECTED BY THE ENGINEER, AND DELIVERED TO CITY PUBLIC WORKS FACILITY, 1150 HALF DAY ROAD, HIGHLAND PARK, IL 60035.

7. THE APPROXIMATE LOCATION OF KNOWN PUBLIC UTILITIES ARE SHOWN ON THE PLANS. HOWEVER, THE CITY DOES NOT GUARANTEE ITS ACCURACY. PRIOR TO COMMENCING OPERATIONS ON THE PROJECT WHICH MAY IN ANY WAY CREATE THE POSSIBILITY OF INVOLVEMENT WITH EXISTING UTILITIES, THE CONTRACTOR SHALL CONTACT THE UTILITY INVOLVED. ADJUSTMENT OF ALL PUBLIC UTILITIES WITHIN THE LIMITS OF IMPROVEMENT WILL BE DONE BY THE RESPECTIVE OWNERS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO DELAYS OR INCONVENIENCE CAUSED BY THESE ADJUSTMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF UNDERGROUND INSTALLATION BEFORE STARTING CONSTRUCTION OPERATIONS.

8. BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "JULIE" AT 800-892-0123 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE AND GAS FACILITIES. (48 HOUR NOTIFICATION IS REQUIRED).

9. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES.

10. COMBINATION CONCRETE CURB AND GUTTER SHALL BE CONSTRUCTED WITH A FLAG THICKNESS EQUAL TO NINE INCHES.

11. THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON CITY PROPERTY WITHOUT WRITTEN PERMISSION FROM THE CITY AND ENGINEER.
12. ALL HMA PAVING SHALL FOLLOW DESIGNATED DRIVING LANES. NO LONGITUDINAL PAVING JOINT OR SEAMS ARE ALLOWED WITHIN THE DRIVING LANES. ALL LONGITUDINAL PAVING JOINTS OR SEAMS WILL BE BETWEEN THE DRIVING LANES.

13. CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES FOR TRAFFIC CONTROL AND PROTECTION IN ACCORDANCE WITH THE IDOT STANDARD SPECIFICATIONS ADOPTED JANUARY 1, 2017, THE LATEST EDITION OF THE ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, THE STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ITEMS.

14. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS THROUGHOUT THE RECONSTRUCTION LIMITS AT ALL TIMES. IF DRIVEWAY ACCESS MUST BE RESTRICTED, THE CONTRACTOR SHALL NOTIFY THE RESIDENT IN WRITING 24 HOURS IN ADVANCE.

15. TRENCH SOIL SHALL BE LOADED DIRECTLY INTO TRUCKS AS IT IS EXCAVATED AND HAULED OFF SITE. PLACING EXCAVATED TRENCH SOIL ON STREET PAVEMENT OR PARKWAYS IS PROHIBITED.

16. WORK IN THE WATERWAY SHALL BE TIMED TO TAKE PLACE DURING LOW OR NO-FLOW CONDITIONS.

17. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO COMMENCING CONSTRUCTION.

18. NO WORK SHALL BE PERFORMED WITHIN THE WETLAND LIMITS PRIOR TO OBTAINING A PERMIT AND APPROVAL OF AN IN-STREAM WORK PLAN FROM THE U.S. ARMY CORPS OF ENGINEERS.

19. AGGREGATE SUBGRADE IMPROVEMENT (CU YD) HAS BEEN PROVIDED FOR USE AT THE LOCATIONS INDICATED FOR SOILS THAT TEND TO BE UNSTABLE AND/OR UNSUITABLE. THE ACTUAL NEED FOR REMOVAL AND REPLACEMENT WITH AGGREGATE SUBGRADE IMPROVEMENT WILL BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION BY THE GEOTECHNICAL ENGINEER. ALL POTENTIALLY UNSTABLE SOILS SHALL BE TESTED WITH A STATIC OR DYNAMIC CONE PENETROMETER AND TREATED IN ACCORDANCE WITH ARTICLE 301.40 OF THE STANDARD SPECIFICATIONS AND IDOT SUBGRADE STABILTIY MANUAL. IF UNSTABLE AND/OR UNSUITABLE SOILS ARE NOT ENCOUNTERED, THEN THE QUANTITY SHALL BE DEDUCTED AND NO ADDITIONAL COMPENSATION WILL BE DUE TO THE CONTRACTOR.

LAKE COUNTY SMC EROSION CONTROL NOTES

A. SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF HYDROLOGIC DISTURBANCE OF UPLAND AREAS.

B. FOR THOSE DEVELOPMENTS THAT REQUIRE A DESIGNATED EROSION CONTROL INSPECTOR (DECI), INSPECTIONS AND DOCUMENTATION SHALL BE PERFORMED, AT A MINIMUM: UPON COMPLETION OF SEDIMENT AND RUNOFF CONTROL MEASURES (INCLUDING PERIMETER CONTROLS AND DIVERSIONS),PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. AFTER EVERY SEVEN (7) CALENDAR DAYS OR STORM EVENT WITH GREATER THAN 0.5 INCH OF RAINFALL OR LIQUID EQUIVALENT PRECIPITATION.

C. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. IF STRIPPING, CLEARING, GRADING, OR LANDSCAPING ARE TO BE DONE IN PHASES, THE PERMITTEE SHALL PLAN FOR APPROPRIATE SOIL EROSION AND SEDIMENT CONTROL MEASURES.

D. A STABILIZED MAT OF CRUSHED STONE MEETING IDOT GRADATION CA-1 UNDERLAIN WITH FILTER FABRIC AND IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL, OR OTHER APPROPRIATE MEASURE(S) AS APPROVED BY THE ENFORCEMENT OFFICER, SHALL BE INSTALLED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE. SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.

E. TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED AS NECESSARY TO DIRECT ALL RUNOFF FROM HYDROLOGICALLY DISTURBED AREAS TO AN APPROPRIATE SEDIMENT TRAP OR BASIN.

F. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE END OF ACTIVE HYDROLOGIC DISTURBANCE OR REDISTURBANCE.

G. ALL STOCKPILES SHALL HAVE APPROPRIATE MEASURES TO PREVENT EROSION. STOCKPILES SHALL NOT BE PLACED IN FLOOD PRONE AREAS OR WETLANDS AND DESIGNATED BUFFERS.

H. SLOPES STEEPER THAN 3H:1V SHALL BE STABILIZED WITH APPROPRIATE MEASURES AS APPROVED BY THE ENFORCEMENT OFFICER.

I. APPROPRIATE EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL INTERIOR DETENTION BASIN SIDE SLOPES BETWEEN THE NORMAL WATER LEVEL AND HIGH WATER LEVEL.

J. STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.

K. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. DISCHARGES SHALL BE ROUTED THROUGH AN APPROVED ANIONIC POLYMER DEWATERING SYSTEM OR A SIMILAR MEASURE AS APPROVED BY THE ENFORCEMENT OFFICER. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS. THE ENFORCEMENT OFFICER, OR APPROVED REPRESENTATIVE, MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES. THE LAKE COUNTY STORMWATER MANAGEMENT COMMISSION INSPECTOR MUST BE NOTIFIED PRIOR TO THE START OF ANY DEWATERING ACTIVITIES.

L. IF INSTALLED SOIL EROSION AND SEDIMENT CONTROL MEASURES DO NOT MINIMIZE SEDIMENT LEAVING THE DEVELOPMENT SITE, ADDITIONAL MEASURES SUCH AS ANIONIC POLYMERS OR FILTRATION SYSTEMS MAY BE REQUIRED BY THE ENFORCEMENT OFFICER.

M. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE PROPERTY OWNER SHALL BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE AND REPAIR.

N. ALL TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.

O. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, ENFORCEMENT OFFICER, OR OTHER GOVERNING AGENCY.

COMMITMENTS

1. THE CITY OF HIGHLAND PARK WILL MAINTAIN COORDINATION WITH IMPACTED RESIDENTS THROUGHOUT THE CONSTRUCTION PROCESS. ONE-ON-ONE MEETINGS WILL BE HELD AS NECESSARY TO ENSURE MINIMAL IMPACT TO THE ADJACENT PROPERTIES.

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ENGINEERING CONSULTANT
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FOREST AVENUE BRIDGE REPLACEMENT
INDEX, STANDARDS, AND GENERAL NOTES

SCALE: N.T.S.	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	2
		CONTRACT NO. 61E28		
	ILLINOIS	FED. AID PROJECT		$FEDPRJ

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
•	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	156
•	20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	58
	20101000	TEMPORARY FENCE	FOOT	1,320
△	20101200	TREE ROOT PRUNING	EACH	15
	20200100	EARTH EXCAVATION	CU YD	846
	20800150	TRENCH BACKFILL	CU YD	729
	21001000	GEOTEHCNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	205
	21101625	TOPSOIL FURNISH AND PLACE, 6"	SQ YD	1,669
•	25100900	TURF REINFORCEMENT MAT	SQ YD	1,006
•	25200200	SUPPLEMENTAL WATERING	UNIT	34
	28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	26
	28000305	TEMPORARY DITCH CHECKS	FOOT	72
△ •	28000400	PERIMETER EROSION BARRIER	FOOT	672
△	28000510	INLET FILTERS	EACH	21

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
	28001100	TEMPORARY EROSION CONTROL BLANKET	SQ YD	300
	28100107	STONE RIPRAP, CLASS A4	SQ YD	217
	28200200	FILTER FABRIC	SQ YD	564
△	28400100	GABIONS	CU YD	250
△	30300001	AGGREGATE SUBGRADE IMPROVEMENT	CU YD	70
△	30300112	AGGREGATE SUBGRADE IMPROVEMENT 12"	SQ YD	979
	35101600	AGGREGATE BASE COURSE, TYPE B 4"	SQ YD	337
	40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	543
	40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	181
	40603335	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50	TON	113
	42000070	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB	SQ YD	74
	42300200	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 6 INCH	SQ YD	37
	42400200	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	1,534
△	42400800	DETECTABLE WARNINGS	SQ FT	10

• DENOTES SPECIALTY ITEM

△ DENOTES SPECIAL PROVISIONS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
SUMMARY OF QUANTITIES

SCALE: | SHEET NO. 1 OF 4 SHEETS | STA. | TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	3

CONTRACT NO. 61E28

ILLINOIS | FED. AID PROJECT | #FEDPRJ

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
44000100	PAVEMENT REMOVAL	SQ YD	845
44000200	DRIVEWAY PAVEMENT REMOVAL	SQ YD	155
44000500	COMBINATION CURB AND GUTTER REMOVAL	FOOT	748
44000600	SIDEWALK REMOVAL	SQ FT	1,480
44201709	CLASS D PATCHES, TYPE III, 5 INCH	SQ YD	14
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	1,310
50300225	CONCRETE STRUCTURES	CU YD	369.5
50300255	CONCRETE SUPERSTRUCTURE	CU YD	253.3
50300260	BRIDGE DECK GROOVING	SQ YD	576
50300300	PROTECTIVE COAT	SQ YD	971
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	71.0
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	3,363

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	148,100
50800515	BAR SPLICERS	EACH	50
50900105	ALUMINUM RAILING, TYPE L	FOOT	421
51500100	NAME PLATES	EACH	1
52000110	PREFORMED JOINT STRIP SEAL	FOOT	68
52100510	ANCHOR BOLTS, 3/4"	EACH	80
550A0340	STORM SEWERS, CLASS A, TYPE 2 12"	FOOT	209
550A0360	STORM SEWERS, CLASS A, TYPE 2 15"	FOOT	18
55100500	STORM SEWER REMOVAL 12"	FOOT	403
55101400	STORM SEWER REMOVAL 30"	FOOT	88
△ • 56103500	DUCTILE IRON WATER MAIN 18"	FOOT	971
△ • 56400700	FIRE HYDRANTS (SPECIAL)	EACH	1
58700300	CONCRETE SEALER	SQ FT	405
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	165

• DENOTES SPECIALTY ITEM

△ DENOTES SPECIAL PROVISIONS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
SUMMARY OF QUANTITIES

SCALE: | SHEET NO. 2 OF 4 SHEETS | STA. | TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	4

CONTRACT NO. 61E28

ILLINOIS | FED. AID PROJECT | #FEDPRJ

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
	60100060	CONCRETE HEADWALLS FOR PIPE DRAINS	EACH	1
	60108206	PIPE UNDERDRAINS, TYPE 2, 6"	FOOT	625
	60201110	CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE 11V FRAME AND GRATE	EACH	6
	60204825	CATCH BASINS, TYPE A, 5'-DIAMETER, TYPE 11V FRAME AND GRATE	EACH	1
	60218400	MANHOLES, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	2
	60221100	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	2
	60255800	MANHOLES TO BE ADJUSTED WITH NEW TYPE 1 FRAME, CLOSED LID	EACH	1
	60500040	REMOVING MANHOLES	EACH	3
	60500060	REMOVING INLETS	EACH	6
	60603800	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	697
	67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	10
	67100100	MOBILIZATION	LSUM	1
	72400310	REMOVE SIGN PANEL - TYPE 1	SQ FT	10
•	A2003120	TREE, CELTIS OCCIDENTALIS WINDY CITY (WINDY CITY HACKBERRY), 2-1/2" CALIPER, BALLED AND BURLAPPED	EACH	3

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
•	A2005020	TREE, GYMNOCLADUS DIOICUS (KENTUCKY COFFEETREE), 2-1/2" CALIPER, BALLED AND BURLAPPED	EACH	3
•	A2005420	TREE, LIRIODENDRON TULIPIFERA (TULIP TREE), 2-1/2" CALIPER, BALLED AND BURLAPPED	EACH	3
•	A2007620	TREE, TAXODIUM DISTICHUM (COMMON BALD CYPRESS), 2-1/2" CALIPER, BALLED AND BURLAPPED	EACH	4
•	B2002220	TREE, CRATAEGUS VIRDIS WINTER KING (WINTER KING GREEN HAWTHORN), 2-1/2" CALIPER, TREE FORM, BALLED AND BURLAPPED	EACH	4
•	B2006220	TREE, SYRINGA RETICULATA (JAPANESE TREE LILAC), 2-1/2" CALIPER, TREE FORM, BALLED AND BURLAPPED	EACH	4
△ •	K1005421	SEEDING (SPECIAL)	ACRE	0.25
△	X0322917	PROPOSED STORM SEWER CONNECTION TO EXISTING MANHOLE	EACH	2
△ *	X0487800	SANITARY SEWER REMOVAL 12"	FOOT	61
△ •	X2520700	SODDING, SPECIAL	SQ YD	663
△	X2840105	GABION REMOVAL	CU YD	110
△	X4021000	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EACH	5
△	X4023000	TEMPORARY ACCESS (ROAD)	EACH	1
△	X5210090	HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION, 100K	EACH	10
△	X5210110	HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION, 200K	EACH	5

• DENOTES SPECIALTY ITEM

△ DENOTES SPECIAL PROVISIONS

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
△	X5210315	HIGH LOAD MULTI-ROTATIONAL BEARINGS, FIXED - 250K	EACH	5
△	X5509900	ABANDON AND FILL EXISTING STORM SEWER	FOOT	103
△	X5610651	ABANDON EXISTING WATER MAIN, FILL WITH CLSM	FOOT	700
△	X5610700	WATER MAIN REMOVAL	FOOT	156
△	X5860110	GRANULAR BACKFILL FOR STRUCTURES	CU YD	315
△	X6020090	MANHOLES, WITH RESTRICTOR PLATE	EACH	2
△	X6022040	MANHOLES, TYPE A, 4'-DIAMETER, TYPE 11V FRAME AND GRATE	EACH	4
△ •	X6022050	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 11V FRAME AND GRATE	EACH	1
△ •	X6026054	SANITARY MANHOLES TO BE REMOVED	EACH	1
△	X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	LSUM	1
△ •	XX003536	CONNECTION TO EXISTING WATER MAIN (NON PRESSURE)	EACH	2
△ -	XX003668	PRECONSTRUCTION VIDEO TAPING	LSUM	1
△ •	XX006253	SANITARY MANHOLE, 4'-DIAMETER	EACH	2
△ •	XX006586	PVC CASING PIPE 30"	FOOT	44

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
△	XX007061	OUTFALL STRUCTURE	EACH	2
△ •	XX008959	DUCTILE IRON WATER MAIN (SPECIAL)	FOOT	40
△	Z0013797	STABILIZED CONSTRUCTION ENTRANCE	SQ YD	170
△	Z0013798	CONSTRUCTION LAYOUT	LSUM	1
△	Z0018002	DRAINAGE SCUPPERS, DS-11	EACH	6
△	Z0018800	DRAINAGE SYSTEM	L SUM	1
	Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	166
△	Z0056608	STORM SEWER (WATER MAIN REQUIREMENTS) 12 INCH	FOOT	84
△	Z0056611	STORM SEWER (WATER MAIN REQUIREMENTS) 16 INCH	FOOT	216
△	Z0056620	STORM SEWER (WATER MAIN REQUIREMENTS) 30 INCH	FOOT	90
△	Z0056668	STORM SEWERS, TYPE 2, WATER MAIN QUALITY PIPE, 12"	FOOT	25
△	Z0057100	SANITARY SEWER 12"	FOOT	53
△	Z0076600	TRAINEES	HOUR	500
△	Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	500

• DENOTES SPECIALTY ITEM

△ DENOTES SPECIAL PROVISIONS

- PRECONSTRUCTION VIDEO TAPING SHALL BE 100% LOCAL

#0042

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DATE - 10/6/2017

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

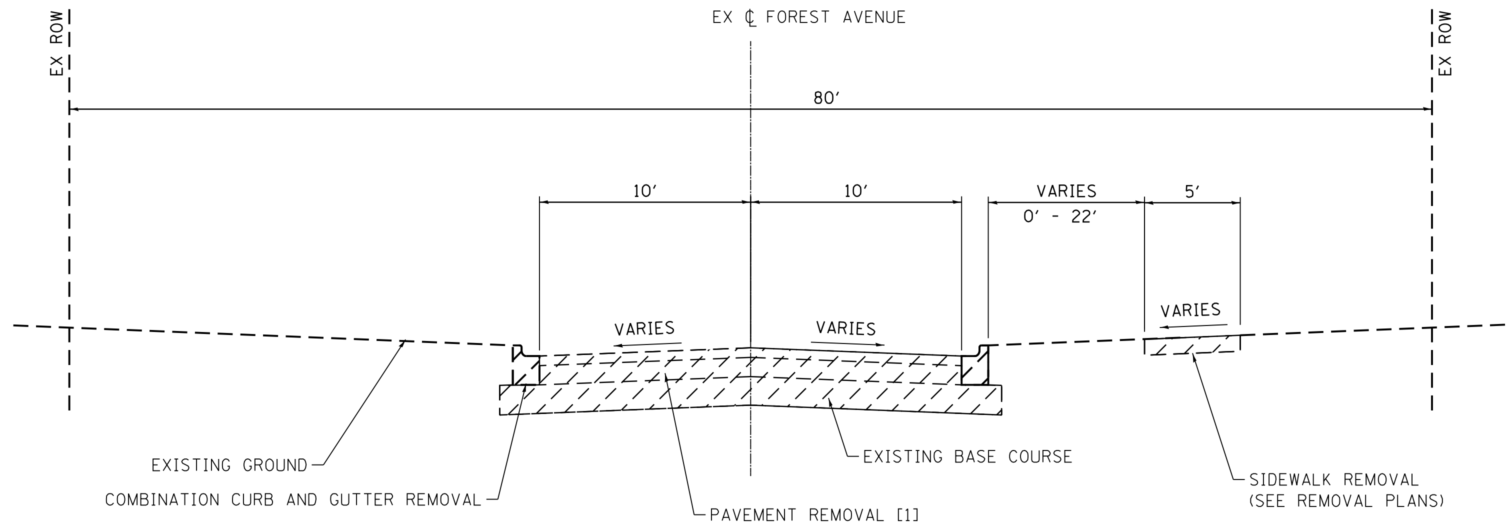
FOREST AVENUE BRIDGE REPLACEMENT
SUMMARY OF QUANTITIES

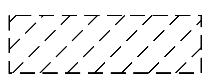
SCALE: | SHEET NO. 4 OF 4 SHEETS | STA. TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	6

CONTRACT NO. 61E28

ILLINOIS | FED. AID PROJECT | #FEDPRJ

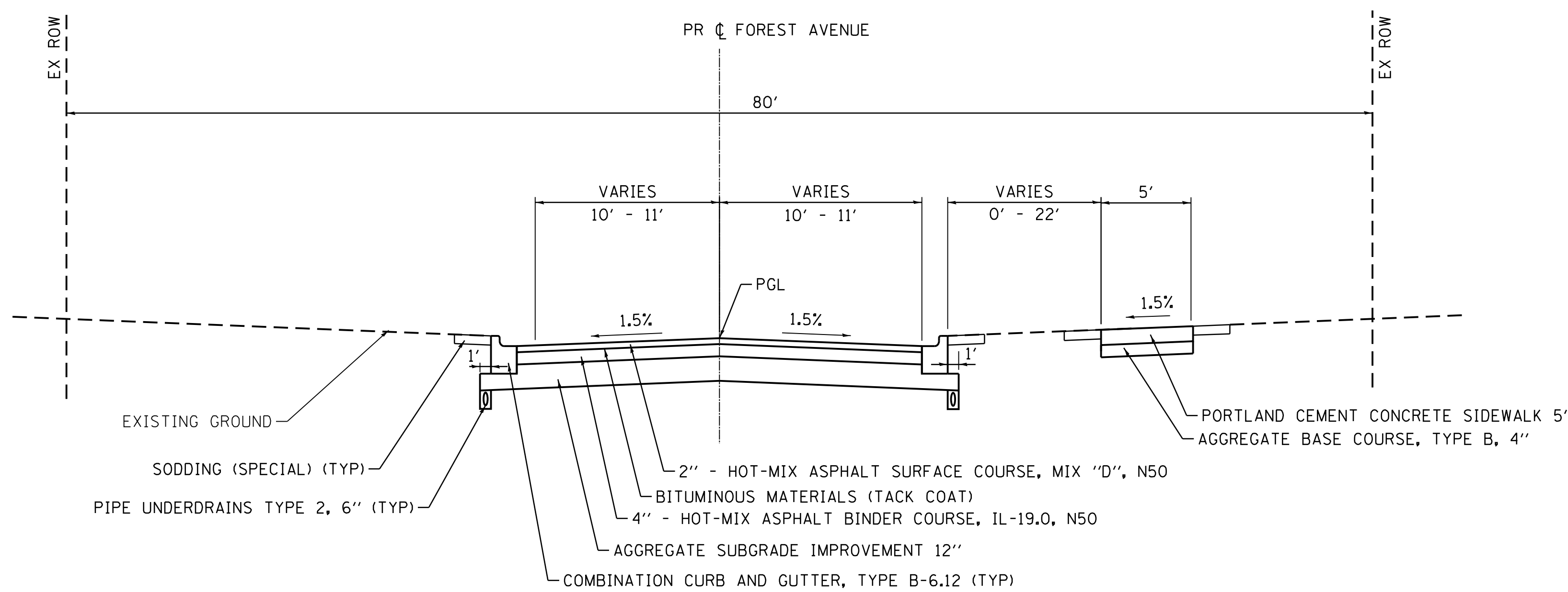



REMOVAL ITEM

EXISTING TYPICAL SECTION

STA 99+44.17 TO STA 103+13.62, FOREST AVE
STA 104+73.62 TO STA 107+97.75, FOREST AVE

[1] PAVEMENT REMOVAL FROM
STA 101+50 TO STA 107+21.24



PROPOSED TYPICAL SECTION

STA 101+50.00 - STA 102+72.35, FOREST AVE
STA 102+72.35 - STA 103+02.35 (APPROACH SLAB - SEE BRIDGE PLANS)
STA 103+02.35 - STA 104+83.85 (BRIDGE OMISSION)
STA 104+86.60 - STA 105+10.85 (APPROACH SLAB - SEE BRIDGE PLANS)
STA 105+10.85 - STA 107+21.24, FOREST AVE

STRUCTURAL DESIGN TRAFFIC: YEAR 2040

PV = 100% SU = 0% MU = 0%

ROAD/STREET CLASSIFICATION: LOCAL STREET

PERCENT OF STRUCTURAL TRAFFIC IN DESIGN LANE:

P = 100 S = 0 M = 0

TRAFFIC FACTOR: ACTUAL TF = 0.01 AC TYPE = 64-22

MINIMUM TF = 6.34

PG GRADE: BINDER = 64-22 SURFACE = 64-22

SUBGRADE SUPPORT RATING:

SSR = POOR (STA. 101+50.00 TO STA. 102+89.69)

SSR = POOR (STA. 104+97.60 TO STA. 106+80.00)

HOT-MIX ASPHALT MIXTURE REQUIREMENTS - FOREST AVENUE	
MIXTURE TYPE	AIR VOIDS @ NDES
PAVEMENT	
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50; (IL-9.5mm) 2"	4% @ 50 GYR.
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50; 4"	4% @ 50 GYR.
DRIVEWAY	
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50; (IL-9.5mm) 3"	4% @ 50 GYR.
PATCHING	
CLASS D PATCHES, TYPE III, 5 INCH	4% @ 70 GYR.

1. THE UNIT WEIGHT USED TO CALCULATE ALL HMA SURFACE MIXTURE QUANTITIES IS 112 LBS/SQ YD/IN.
2. THE "AC TYPE" FOR POLYMERIZED HMA MIXES SHALL BE "SBS/SBR PG 76-22" AND FOR NON POLYMERIZED HMA THE "AC TYPE" SHALL BE "PG 64-22" UNLESS MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS.
3. FOR USE OF RECYCLED MATERIALS SEE SPECIAL PROVISIONS.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
TYPICAL SECTIONS

SCALE: N.T.S. | SHEET NO. 1 OF 1 SHEETS | STA. TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	7

CONTRACT NO. 61E28

ILLINOIS FED. AID PROJECT

STATION	LENGTH	CUT	FILL	EARTH EXCAVATION	EARTH EXCAVATION FOR EMBANKMENT ADJUSTED FOR SHRINKAGE (15%)	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	(FT)	(SF)	(SF)	(CU YD)	(CU YD)	(CU YD)	(CU YD)
101+50.00		39.33	0.03				
102+00.00	50.00	61.47	0.00	93.3	79.3	0.0	79.3
102+06.36	6.36	68.66	0.00	15.3	13.0	0.0	13.0
102+11.72	5.36	69.26	0.00	13.7	11.6	0.0	11.6
102+50.00	38.28	39.86	3.12	77.4	65.8	2.2	63.5
102+72.85	22.85	34.98	2.37	31.7	26.9	2.3	24.6
Ahead/Back only							
102+72.85		31.59	32.19				
103+02.35	29.5	31.59	32.19	34.5	29.3	35.2	-5.8
103+23.45	21.1	0.00	0.00	12.3	10.5	12.6	-2.1
BRIDGE OMISSION - ahead/back only							
104+60.05		0.00	0.00				
104+80.85	20.80	24.50	20.11	9.4	8.0	7.7	0.3
105+00.00	19.15	17.86	10.36	15.0	12.8	10.8	2.0
105+10.35	10.35	17.86	10.36	6.8	5.8	4.0	1.8
Ahead/Back only							
105+10.35		17.86	10.36	0.0	0.0	0.0	0.0
105+50.00	39.65	35.54	14.49	39.2	33.3	18.2	15.1
105+77.96	27.96	54.77	0.00	46.8	39.7	7.5	32.2
106+00.00	22.04	42.13	1.00	39.5	33.6	0.4	33.2
106+50.00	50.00	50.75	0.29	86.0	73.1	1.2	71.9
107+00.00	50.00	39.72	0.00	83.8	71.2	0.3	70.9
107+21.24	21.24	38.21	0.02	30.7	26.1	0.0	26.0
			TOTAL	635.5	540.1	102.5	437.7
	FROM GABION WALL			210.0	178.5	0.0	178.5
			ROUNDUP	846.0	719.0	103.0	617.0

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
SCHEDULES

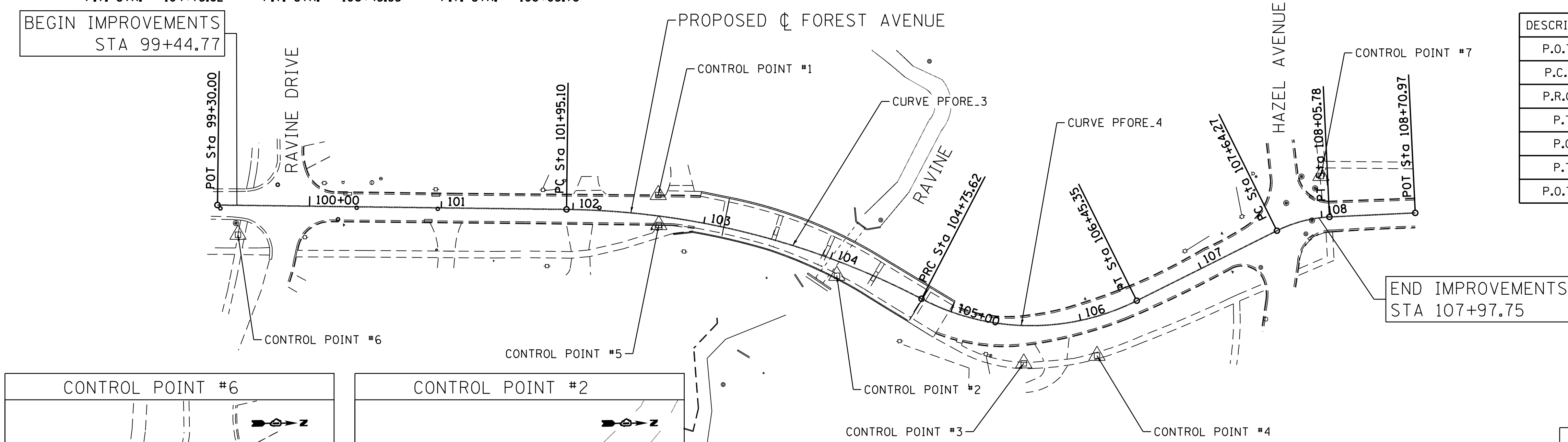
SCALE: N.T.S. | SHEET NO. 1 OF 1 SHEETS | STA. TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	8

CONTRACT NO. 61E28

ILLINOIS FED. AID PROJECT $FEDPRJ

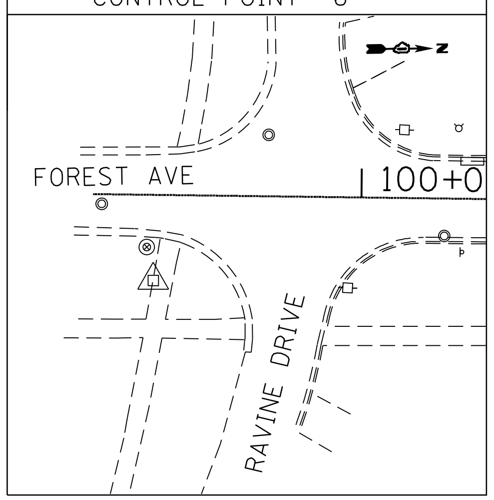
PROP. CURVE PRFORE_3	PROP. CURVE PRFORE_4	PROP. CURVE PRFORE_7
PI STA. = 103+37.97	PI STA. = 105+67.39	PI STA. = 107+85.33
Δ = 26° 47′ 18″ (RT)	Δ = 54° 01′ 27″ (LT)	Δ = 23° 46′ 58″ (RT)
D = 9° 32′ 57″	D = 31° 49′ 52″	D = 57° 17′ 45″
R = 600.00′	R = 180.00′	R = 100.00′
T = 142.88′	T = 91.76′	T = 21.06′
L = 280.53′	L = 169.72′	L = 41.51′
E = 16.78′	E = 22.04′	E = 2.19′
P.C. STA. = 101+95.10	P.C. STA. = 104+75.62	P.C. STA. = 107+64.27
P.T. STA. = 104+75.62	P.T. STA. = 106+45.35	P.T. STA. = 108+05.78



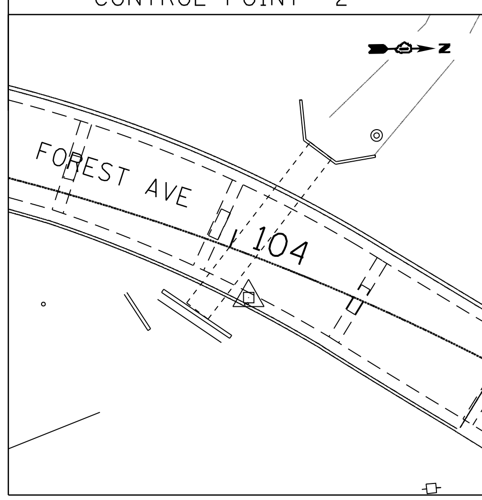
PROJECT COORDINATES

DESCRIPTION	STATION	NORTHING	EASTING
P.O.T.	99+30.00	2,009,355.79	1,131,785.62
P.C.	101+95.10	2,009,620.87	1,131,788.96
P.R.C.	104+75.62	2,009,890.45	1,131,856.76
P.T.	106+45.35	2,010,053.95	1,131,858.18
P.C.	107+64.27	2,010,160.37	1,131,805.09
P.T.	108+05.78	2,010,200.25	1,131,794.68
P.O.T.	108+70.97	2,010,265.36	1,131,791.58

CONTROL POINT #6



CONTROL POINT #2



CONTROL POINTS TABLE

POINT #	NORTHING	EASTING	ELEVATION
1	2,009,690.48	1,131,777.98	657.58
2	2,009,826.20	1,131,839.21	660.87
3	2,009,968.08	1,131,905.69	666.61
4	2,010,023.73	1,131,899.88	669.64
5	2,009,690.91	1,131,800.80	657.44
6	2,009,371.47	1,131,808.11	667.34
7	2,010,193.80	1,131,763.54	674.43

SITE BENCKMARK

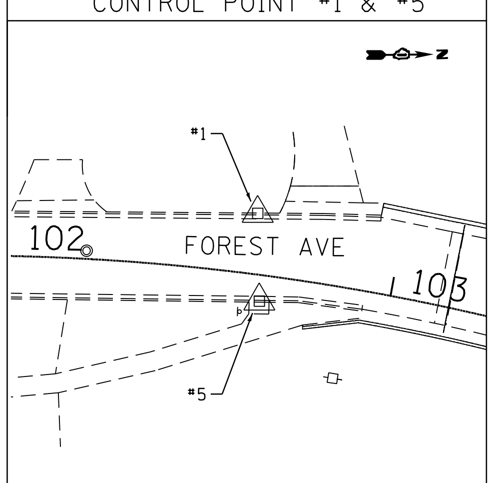
ELEVATION

BM 33 CITY OF HIGHLAND PARK MONUMENT 6″x6″x42″ CONCRETE BLOCK WITH BRASS CAP — 674.50

DATUM

USC & GS
ILLINOIS STATE PLANE EAST ZONE (1976)

CONTROL POINT #1 & #5



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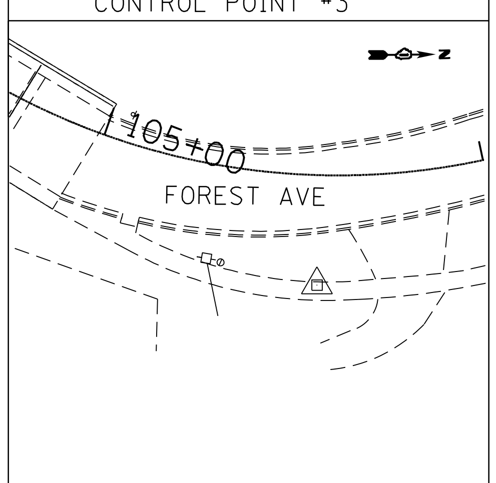

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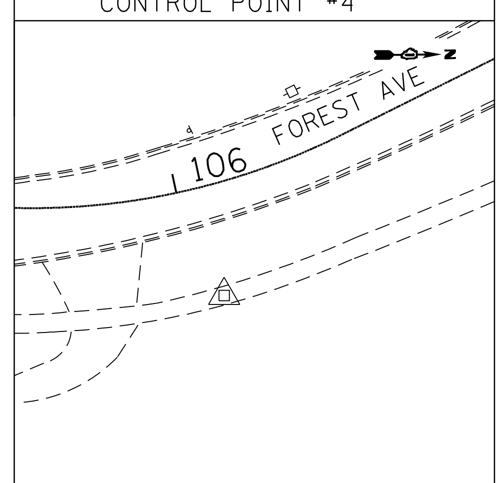

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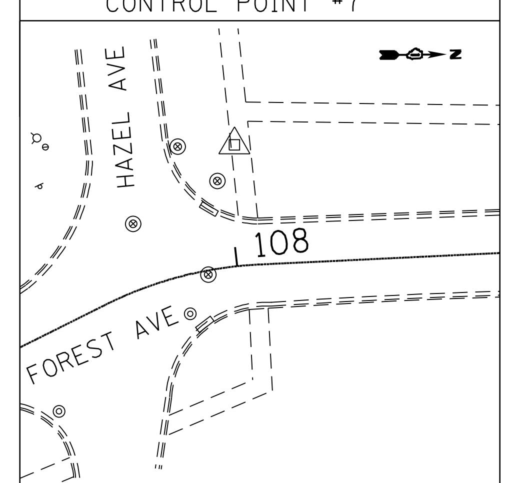

NOTE:

CONTROL POINTS AND
BENCHMARK INFORMATION
PROVIDED BY PHASE 1
CONSULTANT

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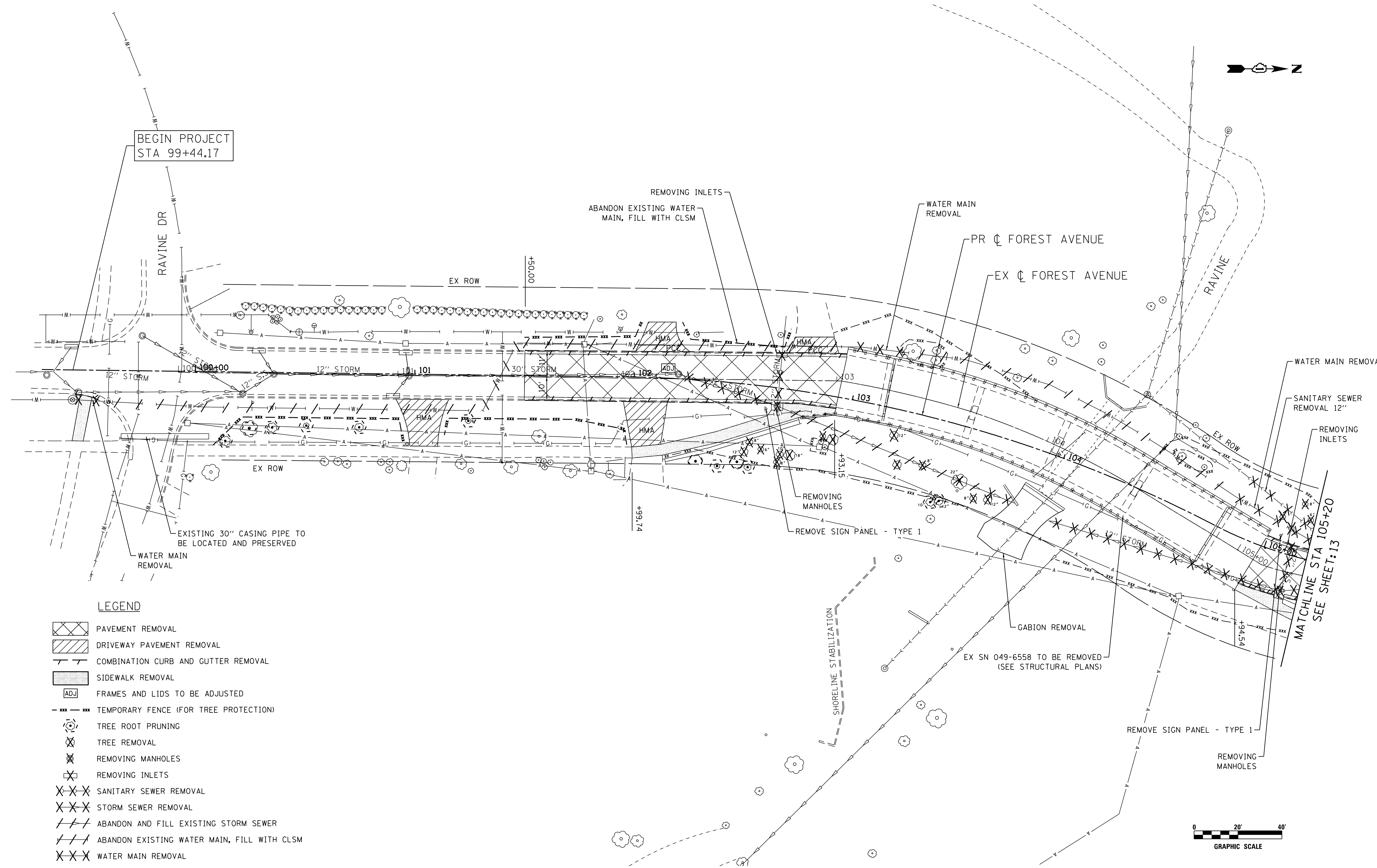
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
ALIGNMENT, TIES, AND BENCHMARKS

SCALE: 1″ = 50′ | SHEET NO. 1 OF 1 SHEETS | STA. 101+50 TO STA. 106+80

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	9
		CONTRACT NO. 61E28		
	ILLINOIS	FED. AID PROJECT		$FEDPRJ



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

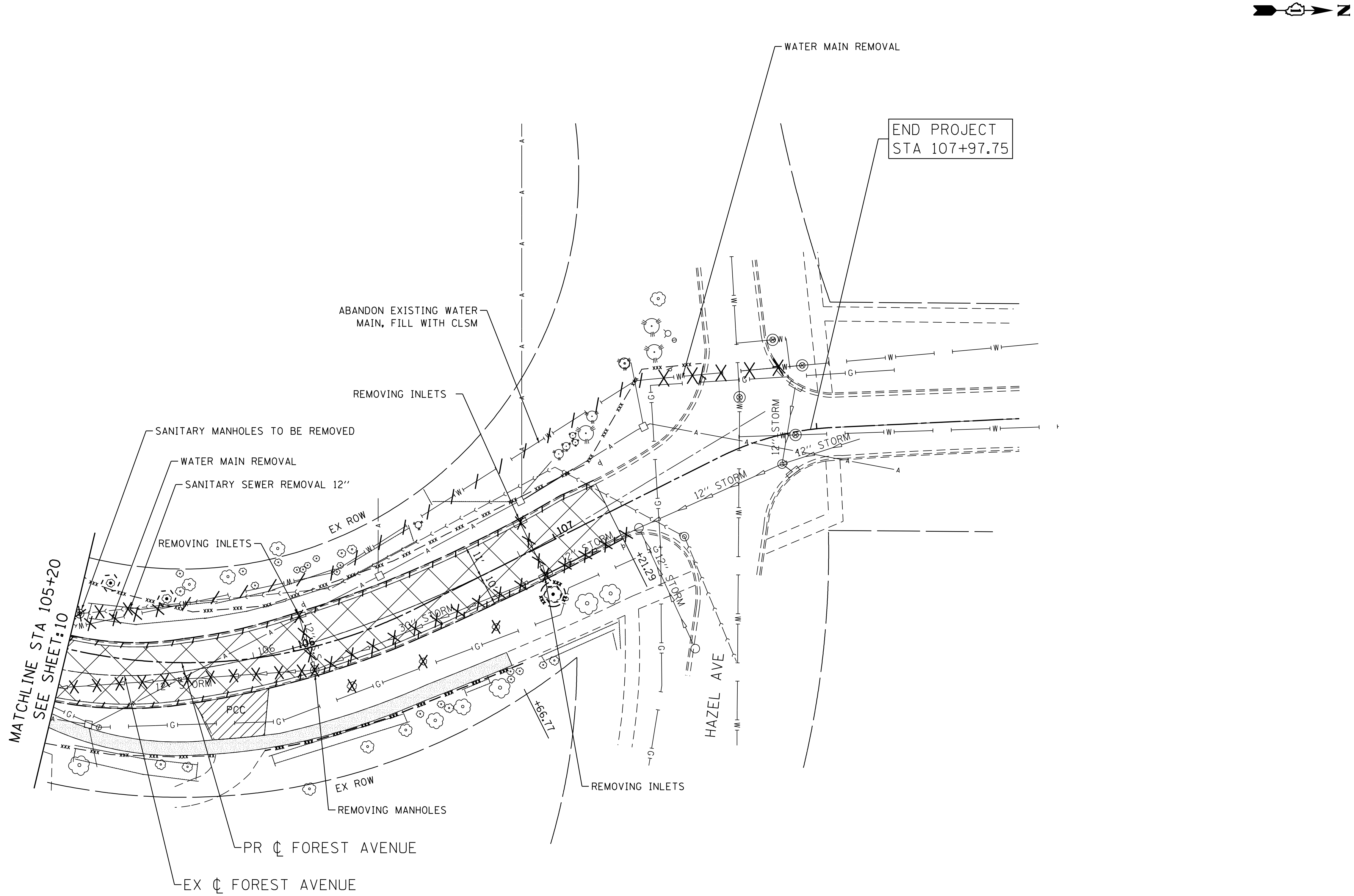
FOREST AVENUE BRIDGE REPLACEMENT
EXISTING CONDITION AND REMOVAL PLAN

SCALE: 1" = 20' | SHEET NO. 1 OF 2 SHEETS | STA. 99+44.17 TO STA. 105+20

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	10

CONTRACT NO. 61E28

ILLINOIS FED. AID PROJECT $FEDPRJ



LEGEND

- PAVEMENT REMOVAL
- DRIVEWAY PAVEMENT REMOVAL
- COMBINATION CURB AND GUTTER REMOVAL
- SIDEWALK REMOVAL
- ADJ — FRAMES AND LIDS TO BE ADJUSTED
- TEMPORARY FENCE (FOR TREE PROTECTION)
- TREE ROOT PRUNING
- TREE REMOVAL
- REMOVING MANHOLES
- REMOVING INLETS
- SANITARY SEWER REMOVAL
- STORM SEWER REMOVAL
- ABANDON AND FILL EXISTING STORM SEWER
- ABANDON EXISTING WATER MAIN, FILL WITH CLSM
- WATER MAIN REMOVAL

0 20' 40'
GRAPHIC SCALE

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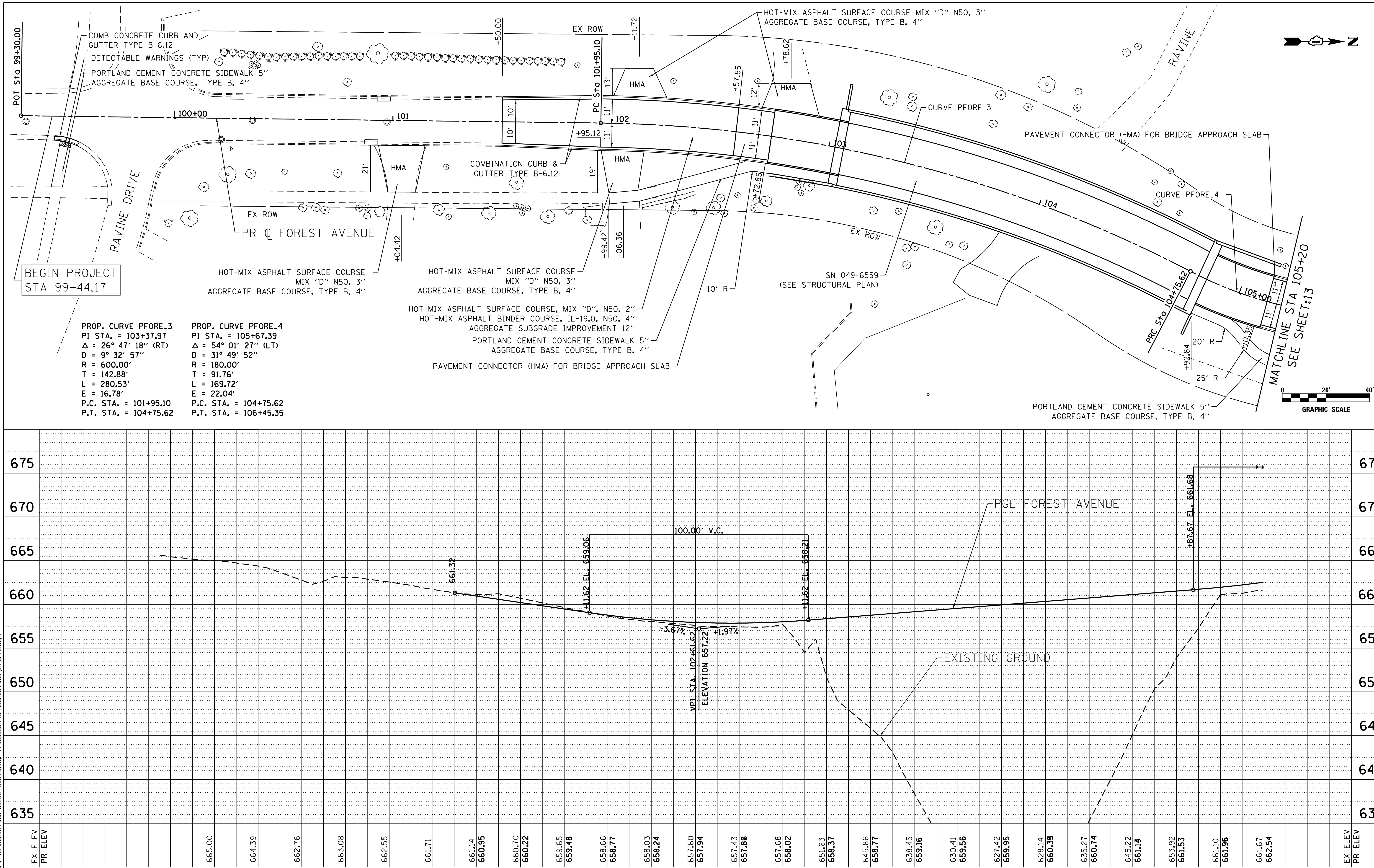
5507 North Cumberland Avenue, Suite 402, Chicago, Illinois 60656	PLOT SCALE = 40.0000 ' / in.	CHECKED - JPA	REVISED -
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com	PLOT DATE = 8/11/2017	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
EXISTING CONDITION AND REMOVAL PLAN

SCALE: 1'' = 20' | SHEET NO. 2 OF 2 SHEETS | STA. 105+20 TO STA. 107+97.75

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	11
		CONTRACT NO. 61E28		
	ILLINOIS	FED. AID PROJECT		$FEDPRJ



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PROFILE | NOTE BOOK | NO. | SURVEYED | PLOTTED | GRADES CHECKED | STA. NOTED | STRUCTURE NOTATIONS CHKD | BY | DATE

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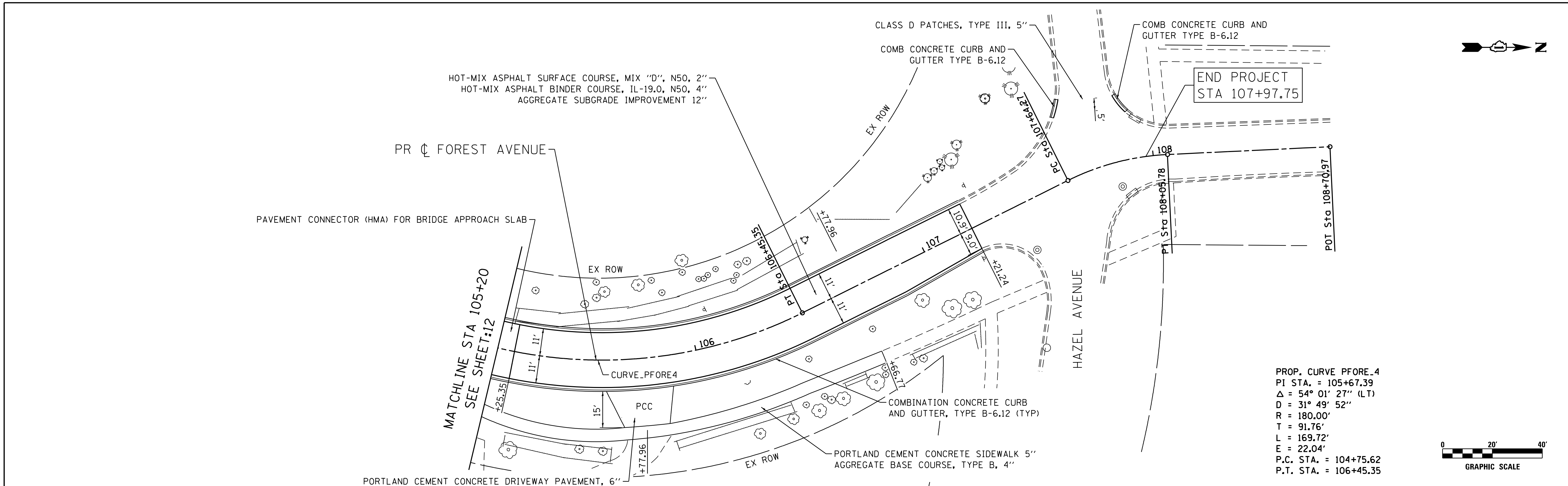
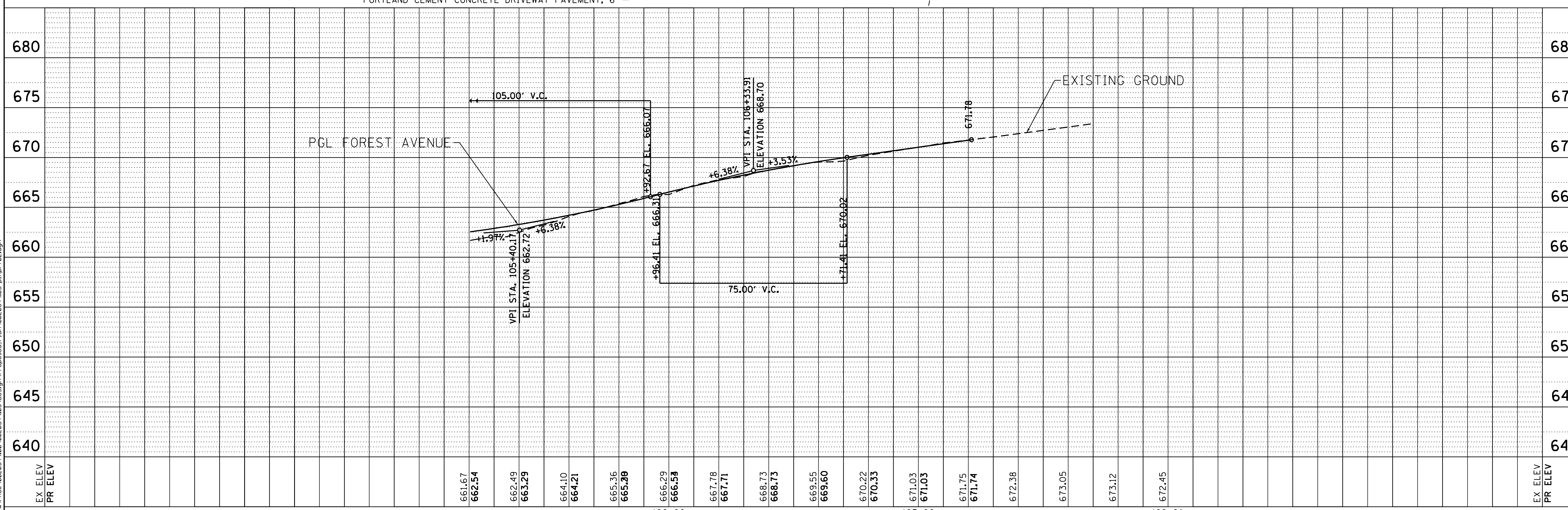
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
PLAN AND PROFILE

SCALE: 1" = 20' | SHEET NO. 1 OF 2 SHEETS | STA. 99+44.17 TO STA. 105+20

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	12
		CONTRACT NO. 61E28		
		ILLINOIS FED. AID PROJECT		#FEDPRJ





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Ciorba Group, Inc. CONSULTING ENGINEERS 5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656 Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com		DRAWN - DJW	REVISED -	
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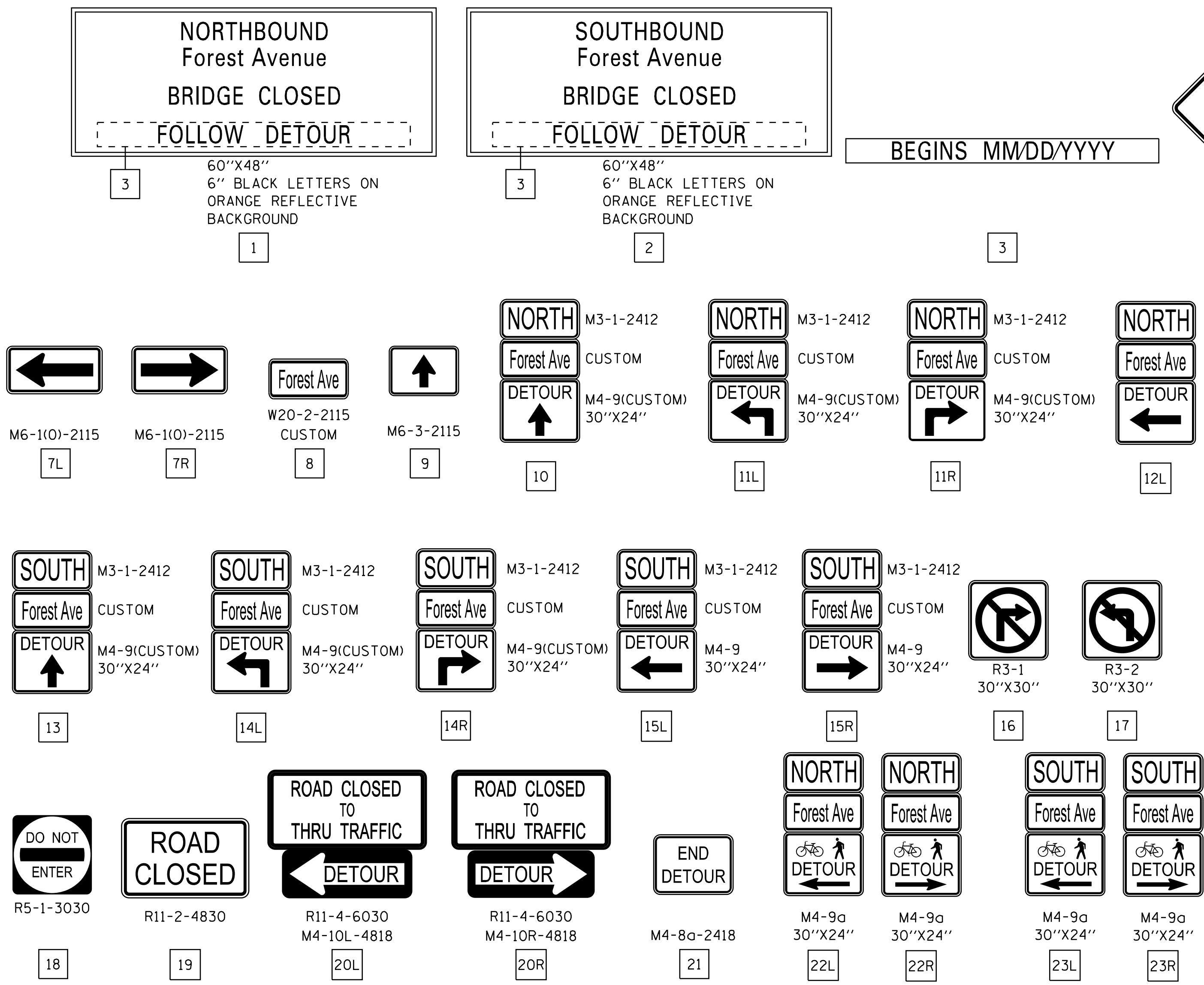
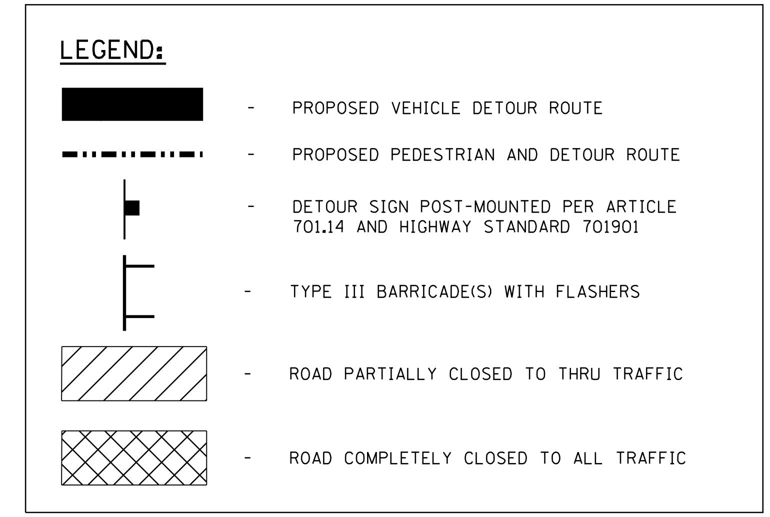
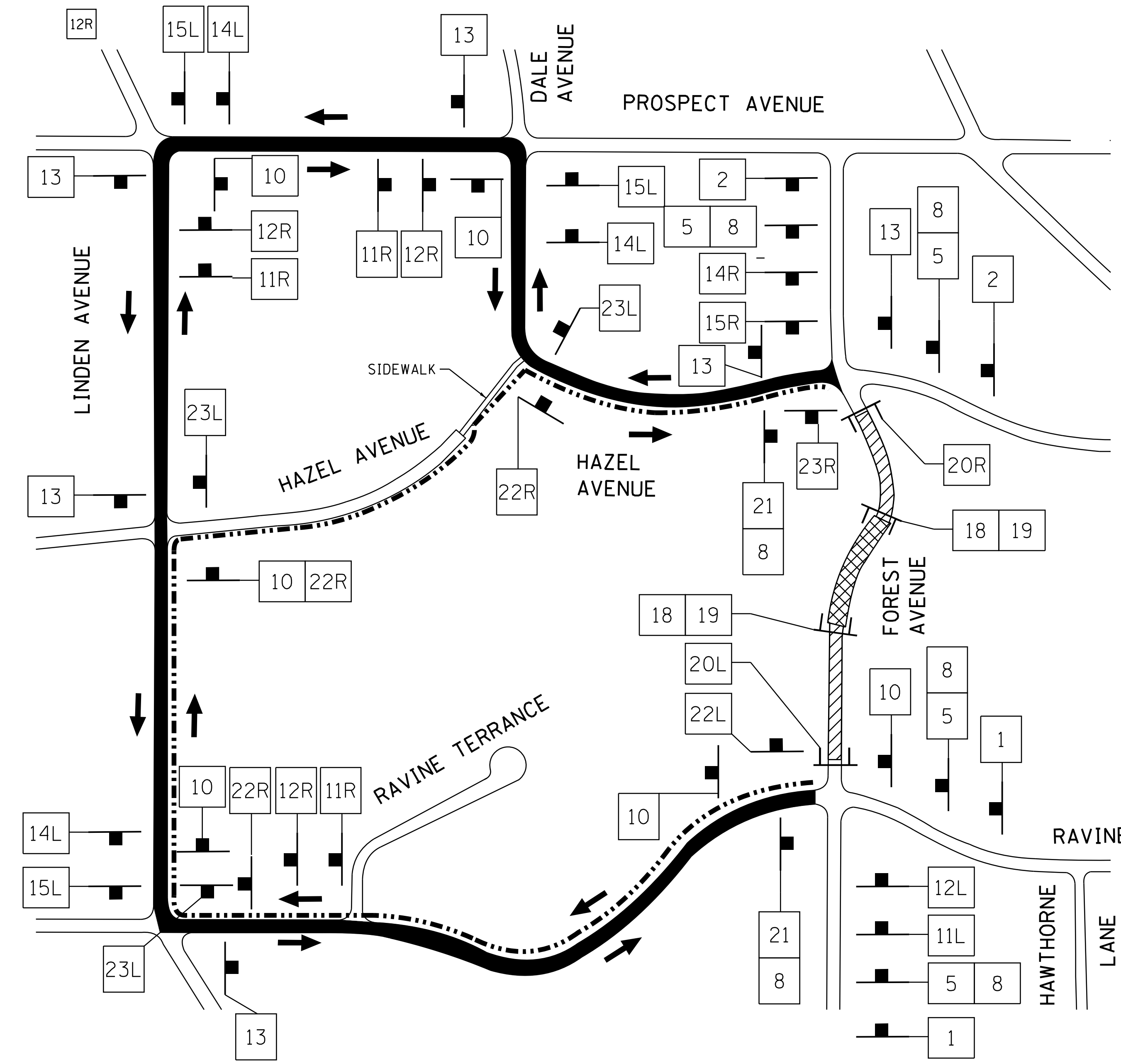
FOREST AVENUE BRIDGE REPLACEMENT
PLAN AND PROFILE

SCALE: 1" = 20' | SHEET NO. 1 OF 1 SHEETS | STA. 105+20 TO STA.107+97.75

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	13
		CONTRACT NO. 61E28		
		ILLINOIS FED. AID PROJECT		







NOTES:

1. SIGN 1 WITH SIGN 3 COVERING SHALL BE PLACED ONE (1) WEEK PRIOR TO CLOSURE. REMOVE SIGN 3 ONCE DETOUR BEGINS.
2. THE CONTRACTOR SHALL CALL J.U.L.I.E BEFORE INSTALLING SIGNS.
3. ROAD CLOSURE SIGNAGE SHALL NOT BE INSTALLED ON ANY STREET LIGHT POLES OR SIGNAL POLES.
4. ROAD CLOSURE SIGNAGE SHALL NOT BLOCK ANY EXISTING SIGNS AND CANNOT USE THE EXISTING SIGN POSTS.
5. TYPE III BARRICADE PLACEMENT SHALL FOLLOW HIGHWAY STANDARD 701901.
6. SIGN SPACING SHALL FOLLOW DISTRICT 1 DETAIL TC-21 UNLESS NOTED ON PLAN.
7. PLAN NOT TO SCALE.
8. PEDESTRIAN DETOUR SIGNS SHALL BE MOUNTED ONE ON EACH SIDE OF A SUPPORT TO FACE THE DIRECTION OF ONCOMMING PEDESTRIANS. SIGN SYMBOLS OMITTED IN PLAN VIEW FOR CLARITY.

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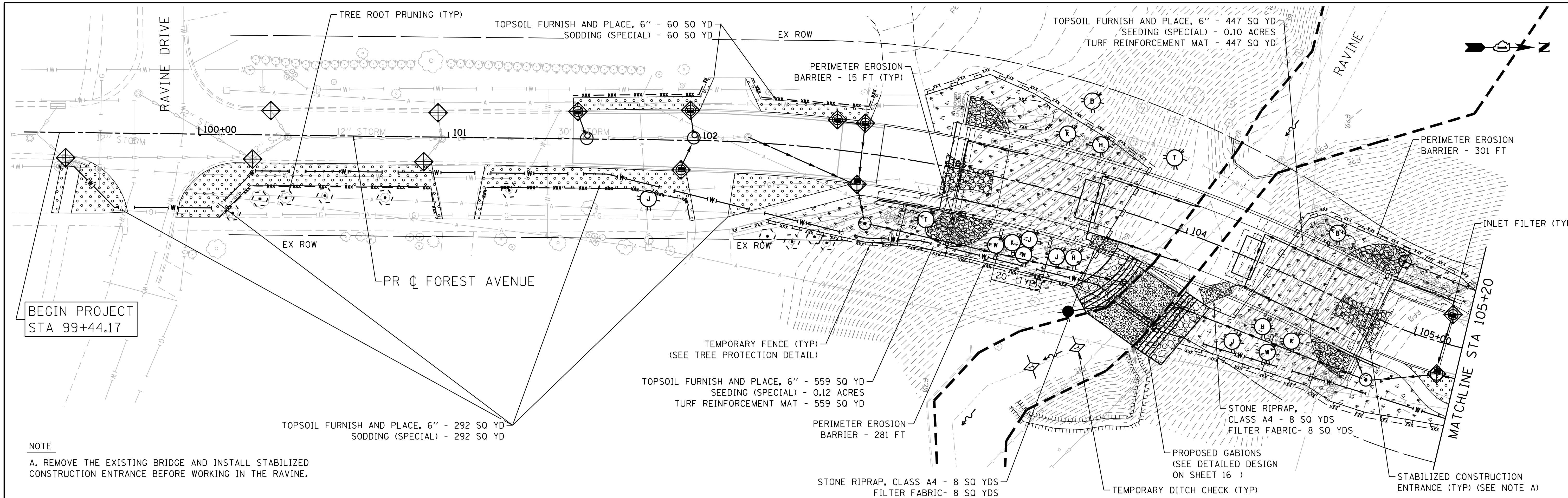
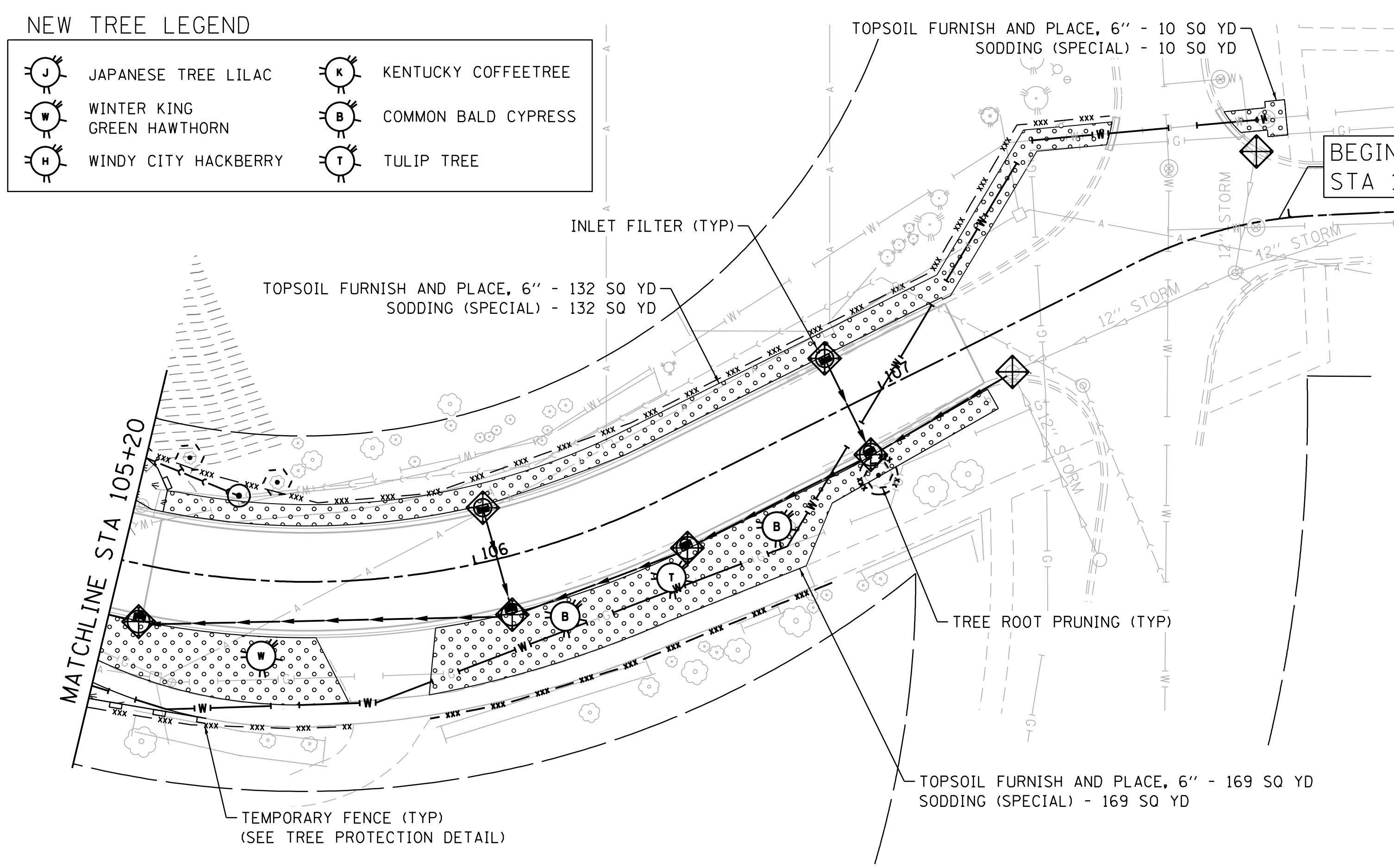
ENGINEERING CONSULTANT: Ciorba Group, Inc. CONSULTING ENGINEERS, 5507 North Cumberland Avenue, Suite 402, Chicago, Illinois 60656, Tel. 773.775.4009 Fax 773.775.4014, Email chicago@ciorba.com	USER NAME = espina	DESIGNED - JPA	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FOREST AVENUE BRIDGE REPLACEMENT DETOUR PLAN
	PLOT SCALE = 200.0000 ' / in.	DRAWN - DJW	REVISED -		
		CHECKED - JPA	REVISED -		SCALE: SHEET NO. 1 OF 1 SHEETS STA. TO STA.
	PLOT DATE = 11/17/2017	DATE - 10/6/2017	REVISED -		

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	14
		CONTRACT NO. 61E28		
		ILLINOIS FED. AID PROJECT		



NOTE

A. REMOVE THE EXISTING BRIDGE AND INSTALL STABILIZED CONSTRUCTION ENTRANCE BEFORE WORKING IN THE RAVINE.



TREE REPLACEMENT SCHEDULE

STA	OFFSET	COMMON TREE NAME
101+80	23.6 RT	JAPANESE TREE LILAC
102+96	22.5 RT	TULIP TREE
103+27	26.8 RT	WINTER KING GREEN HAWTHORN
103+33	24.2 RT	KENTUCKY COFFEETREE
103+39	27.9 RT	WINTER KING GREEN HAWTHORN
103+40	21.3 RT	JAPANESE TREE LILAC
103+53	25.1 RT	JAPANESE TREE LILAC
103+60	23.6 RT	WINDY CITY HACKBERRY
103+44	23.5 LT	KENTUCKY COFFEETREE
103+50	38.8 LT	COMMON BALD CYPRESS
103+57	22.9 LT	WINDY CITY HACKBERRY
103+86	26.8 LT	TULIP TREE
104+34	33.4 RT	JAPANESE TREE LILAC
104+44	23.1 RT	WINDY CITY HACKBERRY
104+49	31.6 RT	WINTER KING GREEN HAWTHORN
104+57	23.4 RT	KENTUCKY COFFEETREE
104+55	23.5 LT	COMMON BALD CYPRESS
105+52	17.0 RT	WINTER KING GREEN HAWTHORN
106+16	16.5 RT	COMMON BALD CYPRESS
106+39	16.9 RT	TULIP TREE
106+65	17.1 RT	COMMON BALD CYPRESS

TYPICAL CONSTRUCTION SEQUENCING

1.) INSTALLATION OF SOIL EROSION AND SEDIMENT CONTROL SE/SC MEASURES
  A.) SELECTIVE VEGETATION REMOVAL FOR SILT FENCE INSTALLATION
  B.) SILT FENCE INSTALLATION
  C.) CONSTRUCTION FENCING AROUND AREAS NOT TO BE DISTURBED
  D.) STABILIZED CONSTRUCTION ENTRANCE

2.) TREE REMOVAL WHERE NECESSARY (CLEAR & GRUB)

3.) CONSTRUCT SEDIMENT TRAPPING DEVICES (SEDIMENT TRAPS, BASINS, ETC.)

4.) CONSTRUCT DETENTION FACILITIES AND OUTLET CONTROL STRUCTURE WITH RESTRICTOR & TEMPORARY PERFORATED RISER

5.) STRIP TOPSOIL, STOCKPILE TOPSOIL AND GRADE SITE

6.) TEMPORARILY STABILIZE TOPSOIL STOCKPILES (SEED AND SILT FENCE AROUND TOE OF SLOPE)

7.) INSTALL STORM SEWER, SANITARY SEWER, WATER AND ASSOCIATED INLET & OUTLET PROTECTION

8.) TEMPORARILY STABILIZE ALL AREAS INCLUDING AREAS THAT HAVE REACHED TEMPORARY GRADE

9.) INSTALL ROADWAYS

10.) PERMANENTLY STABILIZE ALL OUTLET AREAS

11.) INSTALL STRUCTURES AND GRADE REMAINING AREAS

12.) PERMANENTLY STABILIZE PROJECT SITE

13.) REMOVE ALL TEMPORARY SE/SC MEASURES AFTER THE SITE IS STABILIZED WITH VEGETATION

• SOIL EROSION AND SEDIMENT CONTROL MAINTENANCE MUST OCCUR EVERY TWO WEEKS AND AFTER EVERY 1/2 INCH OR GREATER RAINFALL EVENT

0 20' 40'
GRAPHIC SCALE

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ENGINEERING CONSULTANT

Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402
Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014
Email chicago@ciorba.com

USER NAME = espina	DESIGNED - JXI	REVISED - 9/19/2017
	DRAWN - AMD	REVISED -
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PLOT DATE = 8/11/2017	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
EROSION CONTROL AND LANDSCAPING PLAN

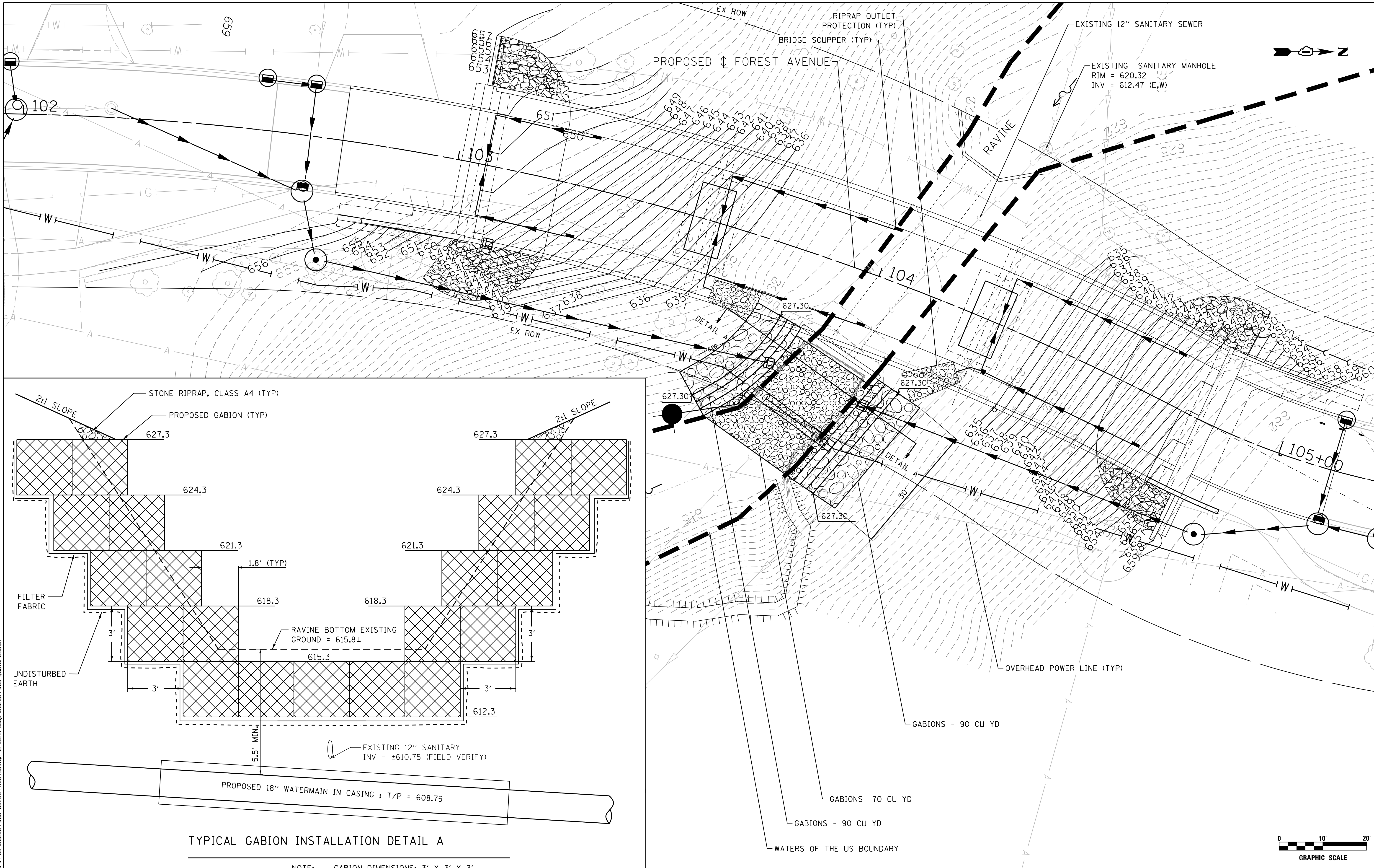
SCALE: 1" = 20' | SHEET NO. 1 OF 1 SHEETS | STA. 99+44.17 TO STA. 107+97.75

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	15

CONTRACT NO. 61E28

ILLINOIS FED. AID PROJECT

#FEDPRJ



TYPICAL GABION INSTALLATION DETAIL A

NOTE: GABION DIMENSIONS: 3' X 3' X 3'

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ENGINEERING CONSULTANT

Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402
Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014
Email chicago@ciorba.com

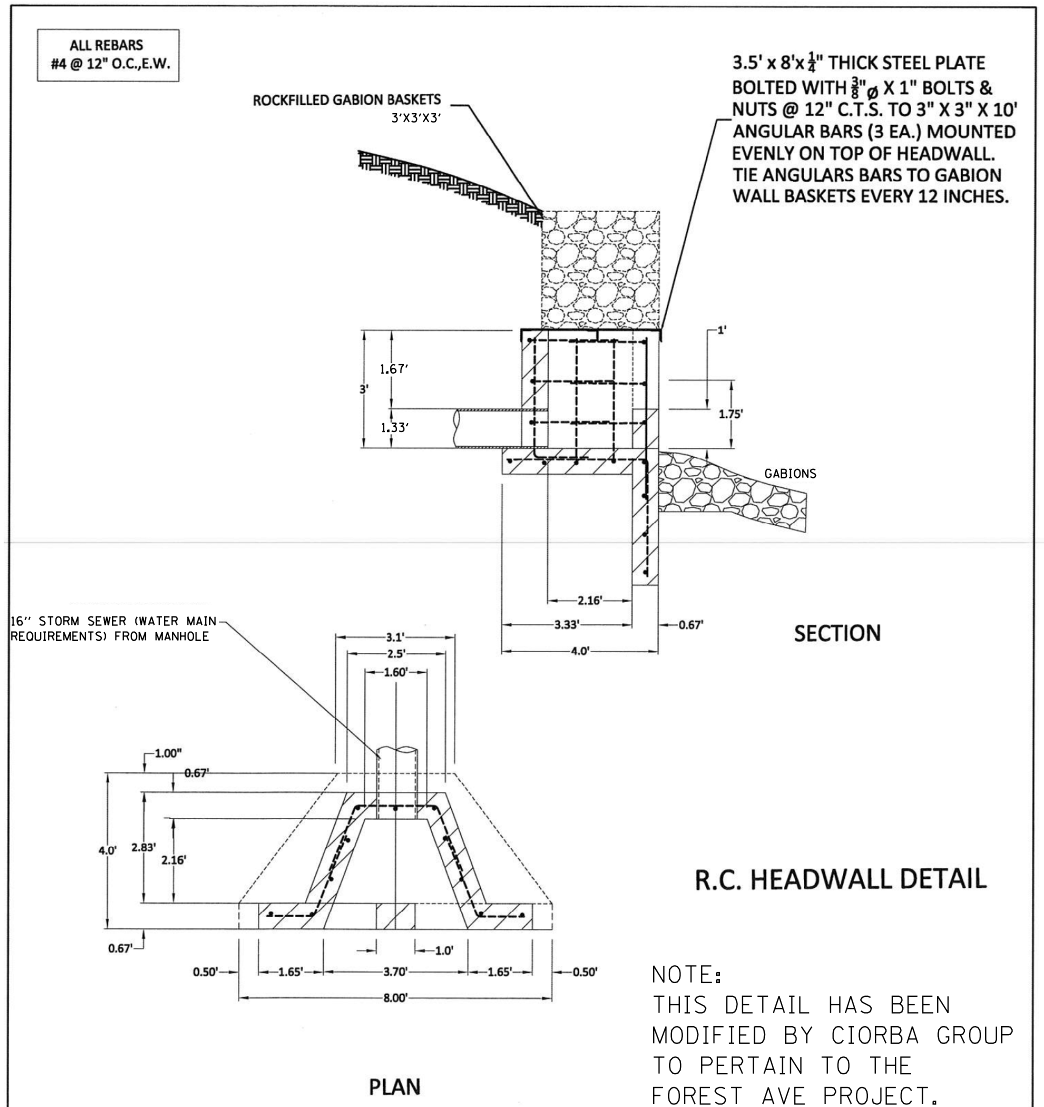
USER NAME = espina	DESIGNED - JXI	REVISED -
	DRAWN - AMD	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED - TW	REVISED -
PLOT DATE = 8/11/2017	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
RAVINE BANK GRADING AND GABION PLAN

SCALE: 1" = 20' | SHEET NO. 1 OF 1 SHEETS | STA. 101+50 TO STA. 106+80

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	16
		CONTRACT NO. 61E28		
	ILLINOIS	FED. AID PROJECT		#FEDPRJ



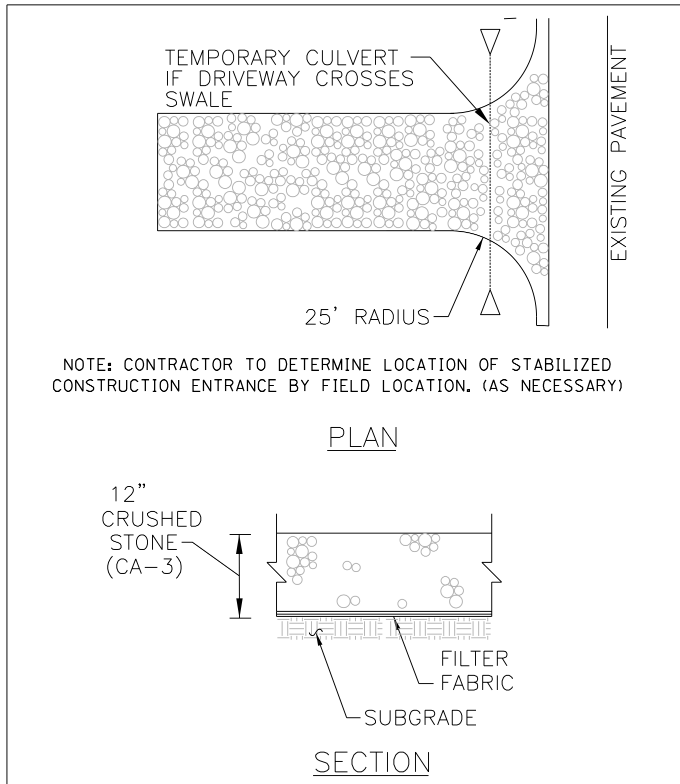
NOTE:
THIS DETAIL HAS BEEN MODIFIED BY CIORBA GROUP TO PERTAIN TO THE FOREST AVE PROJECT.

OUTFALL STRUCTURE
R.C. HEADWALL DETAIL
(FOR 16" DIAMETER OUTFALL)

City of Highland Park
Department of Public Works
1150 Half Day Rd, Highland Park, IL 60035

H.P. DWG. No. STR-1019
Drawn By: E.J.
Revised By:

DATE: 27th Sept. 2013
Approved By: J.M.W



NOTE: CONTRACTOR TO DETERMINE LOCATION OF STABILIZED CONSTRUCTION ENTRANCE BY FIELD LOCATION. (AS NECESSARY)

PLAN

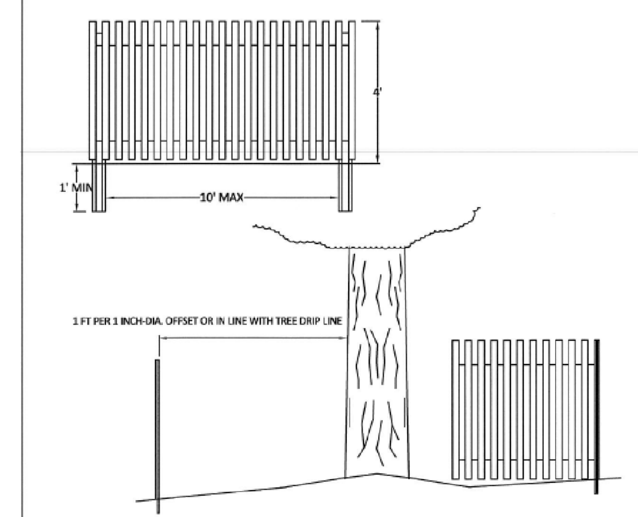
SECTION

STABILIZED CONSTRUCTION ENTRANCE

Install & maintain 4' tall wooden slat fence secured to metal posts spaced a maximum of 10' apart. The tree fence shall be 1 foot from the tree trunk for each inch of diameter measured 4.5' from ground level. The fence must be secured to the metal post with a minimum of 4 ties.

Installation shall be approved by the CITY FORESTER before the start of the project.

Failure to install and maintain protective tree fencing in accordance with City Standards will result in a ticket or a "STOP WORK ORDER" on the project.



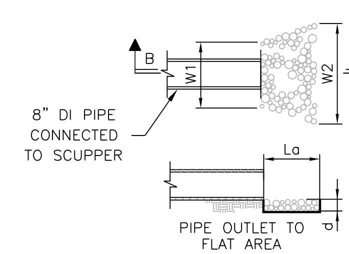
TREE PROTECTION DETAIL

City of Highland Park
Department of Public Works
1150 Half Day Rd, Highland Park, IL 60035

H.P. DWG. No. FOR-1041
Drawn By: M.B.
Revised By: E.J.

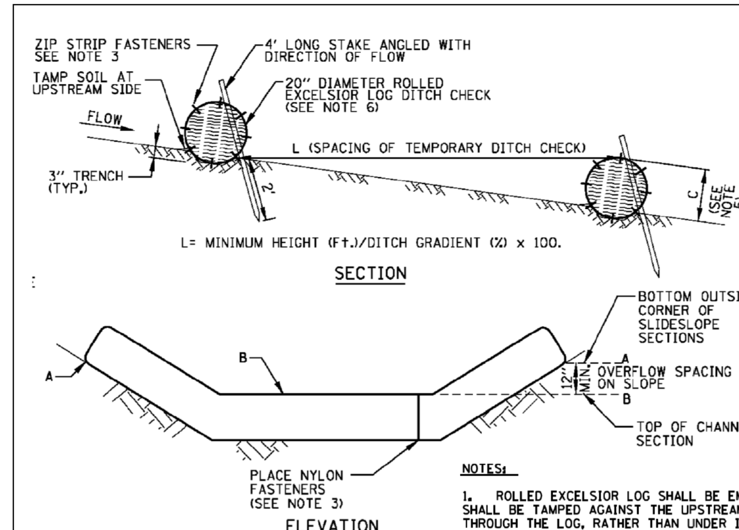
DATE: 27th Sept. 2013
Approved By: J.M.W.

OUTLET PROTECTION DETAIL
RIPRAP APRON



- d=1.5 TIMES MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6 INCHES.
- STONES SHALL BE ANCHORED IN PLACE USING FABRIC OR APPROVED EQUAL.

STR. #	PIPE SIZE	TYPE	La	W1	W2	b
	8"	RR4	12'	5'	7'	16"



NOTES:

1. ROLLED EXCELSIOR LOG SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 3" AND SOIL SHALL BE TAMPED AGAINST THE UPSTREAM SIDE TO ASSURE THAT STORM WATER IS FORCED THROUGH THE LOG, RATHER THAN UNDER IT.

2. STAKES SHALL BE 4' LONG, DRIVEN AT A SPACING OF 2' ON CENTER, 2' INTO THE GROUND. STAKES SHALL BE ENTWINED WITH THE MESH COVERING OF THE ROLL ON THE DOWNSTREAM SIDE AND ANGLED WITH THE DIRECTION OF FLOW. WOOD STAKES TO BE A MINIMUM OF 1" SQUARE. METAL STAKES SHALL BE A MINIMUM OF 1" DIAMETER.

3. WHEN MORE THAN ONE LOG IS REQUIRED TO SPAN THE DITCH, BUTT LOGS TIGHTLY TOGETHER END TO END AND FASTEN TOGETHER WITH A MINIMUM OF EIGHT EQUALLY SPACED ZIP STRIP NYLON FASTENERS.

4. ROLLED EXCELSIOR LOG DITCH CHECKS ARE SUPPLIED IN STANDARD 10 FOOT LENGTHS AND SHOULD NOT BE CUT.

5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT SHALL BE REMOVED WHEN IT REACHES 50% OF ROLL HEIGHT. WHEN EXCELSIOR LOG HEIGHT BECOMES LESS THAN 10", IT SHALL BE REPLACED.

6. TEMPORARY DITCH CHECK TO BE USED TO CONTROL FLOW IN DITCHES. THE DITCH CHECK IS NOT A SUBSTITUTE FOR SEDIMENT TRAPS OR BASINS. PLACE UPSTREAM OF TRAPS OR BASINS AND MAINTAIN IN PLACE UNTIL SEEDING IS ESTABLISHED.

TEMPORARY DITCH CHECK

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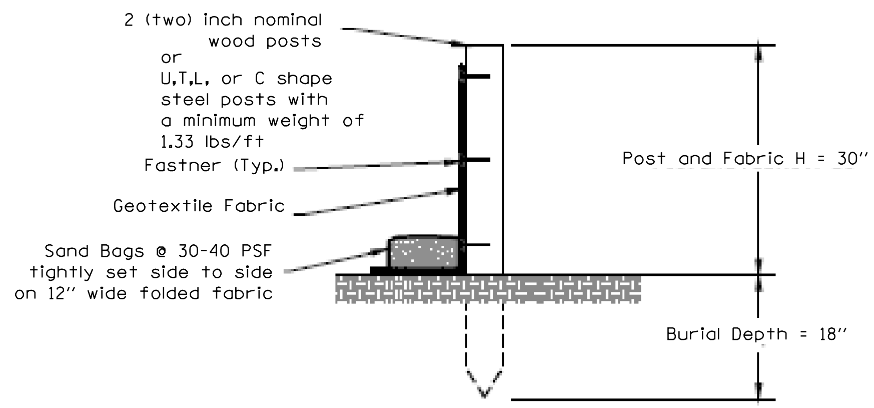
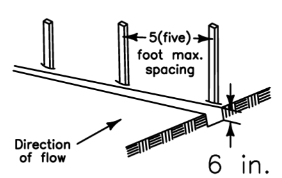
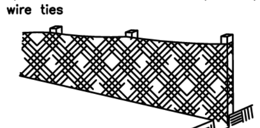


ALTERNATE TO FABRIC TRENCH
(WITH SAND BAGS)

1. Set posts and excavate or slit-trench a 6-inch deep trench upslope along the line of the post



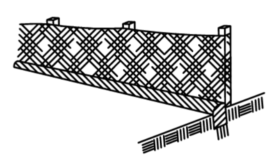
2. Attach the geotextile filter fabric to each post with a minimum of 3 (three) fasteners per post and extend to the bottom of the trench. Acceptable fasteners include staples, zip ties, or wire ties

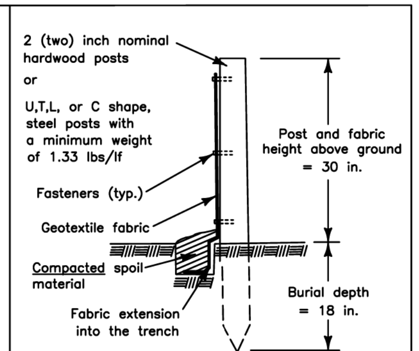


Geotextile Requirement	Test Method	MARV
Grab strength	ASTM D 4632	
- Machine direction		550 N
- X-machine direction		450 N
Permittivity	ASTM D 4491	0.05 sec-1
Apparent opening size*	ASTM D 4751	0.60 mm
Ultraviolet stability (retained strength)	ASTM D 4355	70% after 500 hours

Note:
Value for apparent opening size represents maximum average roll value.

3. Backfill and compact the excavated spoil materials





LAKE COUNTY
STORMWATER MANAGEMENT COMMISSION

SILT FENCE DETAIL

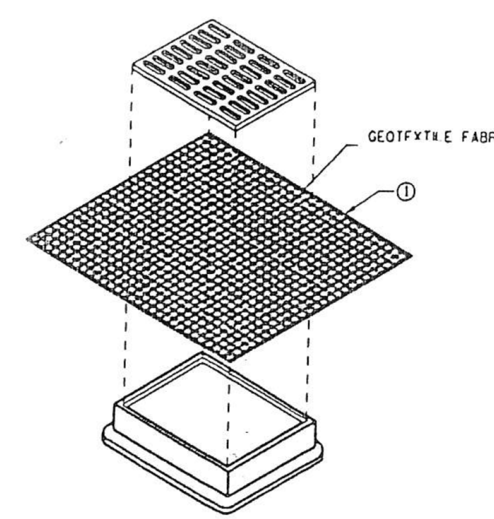
DATE: 4/21/08 BY: KAW
REVISED: BY:

SILT FENCE DETAIL & Alternate Detail
(USE L.C.S.M.C STD. DETAIL)

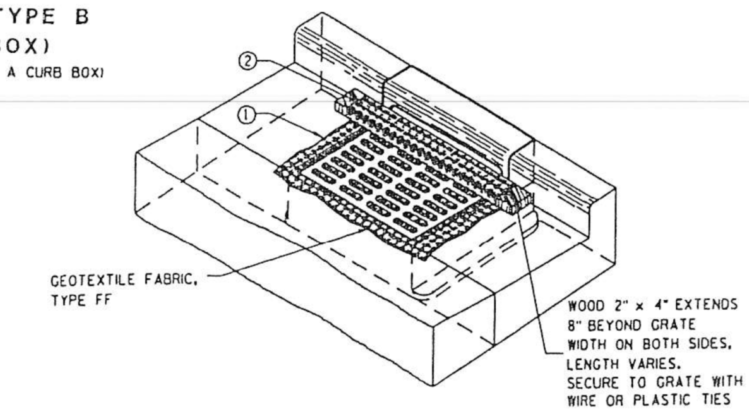
City of Highland Park
Department of Public Works
1150 Half Day Rd, Highland Park, IL 60035

H.P. DWG. No. FOR-1042A, Silt Fence-Alternate
Drawn By: M.B.
Revised By: E.J.

DATE: 14 Feb 2017
Approved By: E.Gomez



INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES:

1. TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE. THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.
2. TYPE C SHALL BE UTILIZED WITH CURB HEADS, A $1\frac{1}{2}$" X $3\frac{1}{2}$" MINIMUM, PIECE OF LUMBER SHALL BE WRAPPED AND SECURED IN THE FABRIC AND PLACED IN FRONT OF THE CURB HEAD AS SHOWN ON THE PLAN. THE LUMBER SHALL NOT BLOCK THE ENTIRE OPENING OF THE CURB BOX AND BE SECURED TO THE GRATE WITH WIRE OR PLASTIC TIES.

3. ALL FABRICS USED AS PART OF AN INLET PROTECTION DEVICE MUST BE SELECTED FROM THE LIST OF APPROVED FABRICS CERTIFIED FOR INLET PROTECTION, GEO-TEXTILE FABRIC, IN ACCORDANCE WITH STATE STANDARD SPECS FOR ROAD AND BRIDGES CONSTRUCTION - JANUARY 1, 2012, ARTICLE 1080.05 ON PAGE 971.

INLET PROTECTION (TYPE B - W/O CURB BOX; TYPE C - W/ CURB BOX)

City of Highland Park
Department of Public Works
1150 Half Day Rd, Highland Park, IL 60035

H.P. DWG. No. STR-1037
Drawn By: M.B.
Revised By: E.J.

DATE: 27th Sept. 2013
Approved By: J.M.W.

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ENGINEERING CONSULTANT	USER NAME = espina	DESIGNED - JXI	REVISED -
Ciorba Group, Inc. CONSULTING ENGINEERS 5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656 Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com		DRAWN - AMD	REVISED -
	PLOT SCALE = 40.0000 ' / in.	CHECKED - TW	REVISED -
	PLOT DATE = 10/6/2017	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
EROSION AND SEDIMENT CONTROL DETAILS

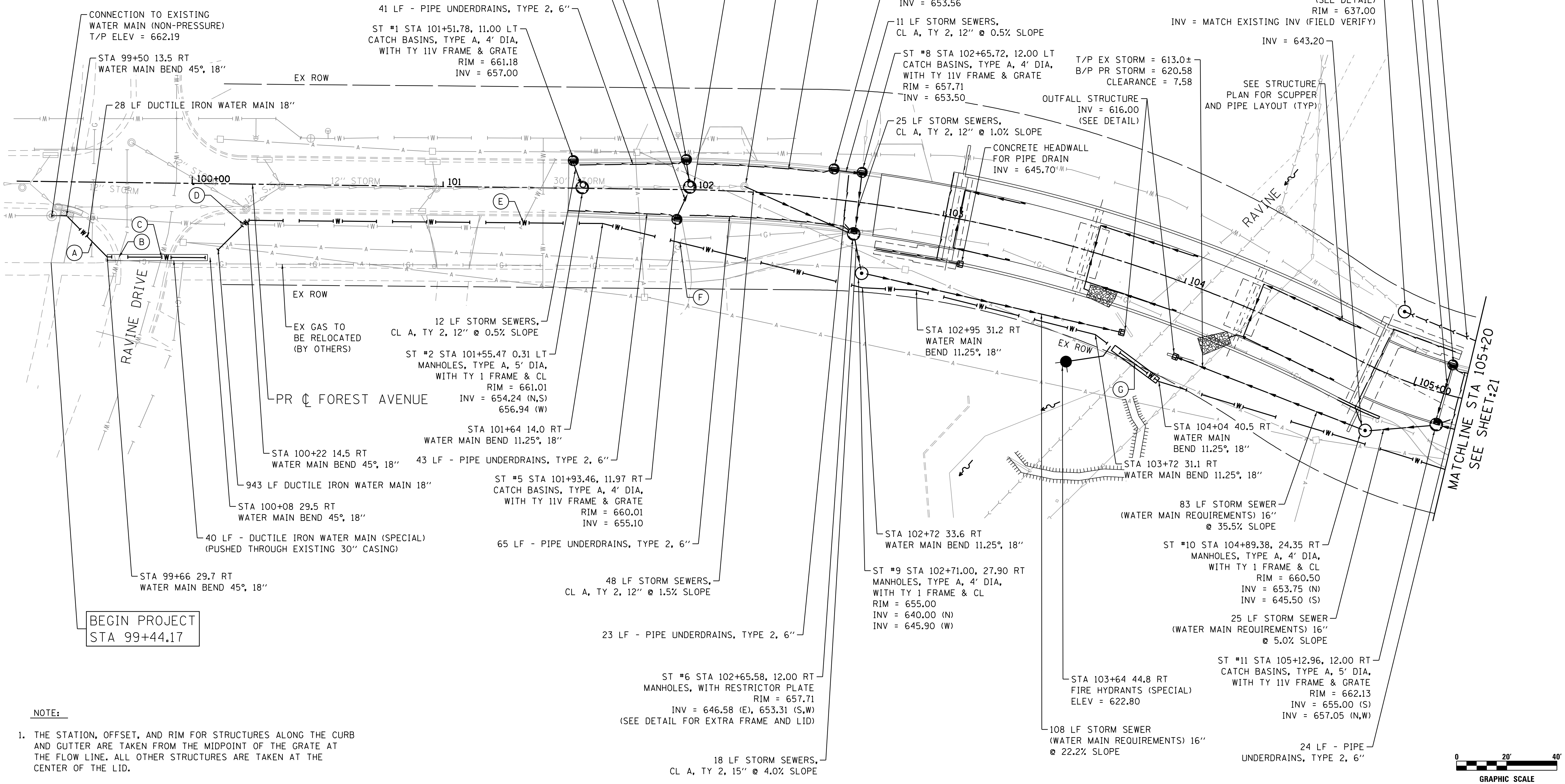
SCALE: N.T.S. | SHEET NO. 2 OF 2 SHEETS | STA. TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	18

CONTRACT NO. 61E28
ILLINOIS FED. AID PROJECT

WATERMAIN CROSSING TABLE

CROSSING	WM ELEV	UTILITY ELEV	CLEARANCE
A	T/P = 661.40	B/P = 664.36	2.96'
B	T/P = 661.00	ABANDONED	N/A
C	B/P = 659.95	T/P = 658.50	1.45'
D	T/P = 656.92	B/P = 658.42	1.50'
E	T/P = 655.64	B/P = 657.14	1.50'
F	T/P = 662.00	B/P = 656.50	4.50'
G	T/P = 608.75	B/P = 610.75	2.00'



NOTE:

1. THE STATION, OFFSET, AND RIM FOR STRUCTURES ALONG THE CURB AND GUTTER ARE TAKEN FROM THE MIDPOINT OF THE GRATE AT THE FLOW LINE. ALL OTHER STRUCTURES ARE TAKEN AT THE CENTER OF THE LID.
2. BENDS ARE SHOWN FOR INFORMATION ONLY.

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Ciorba Group, Inc. CONSULTING ENGINEERS 5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656 Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com		DRAWN - AMD	REVISED -
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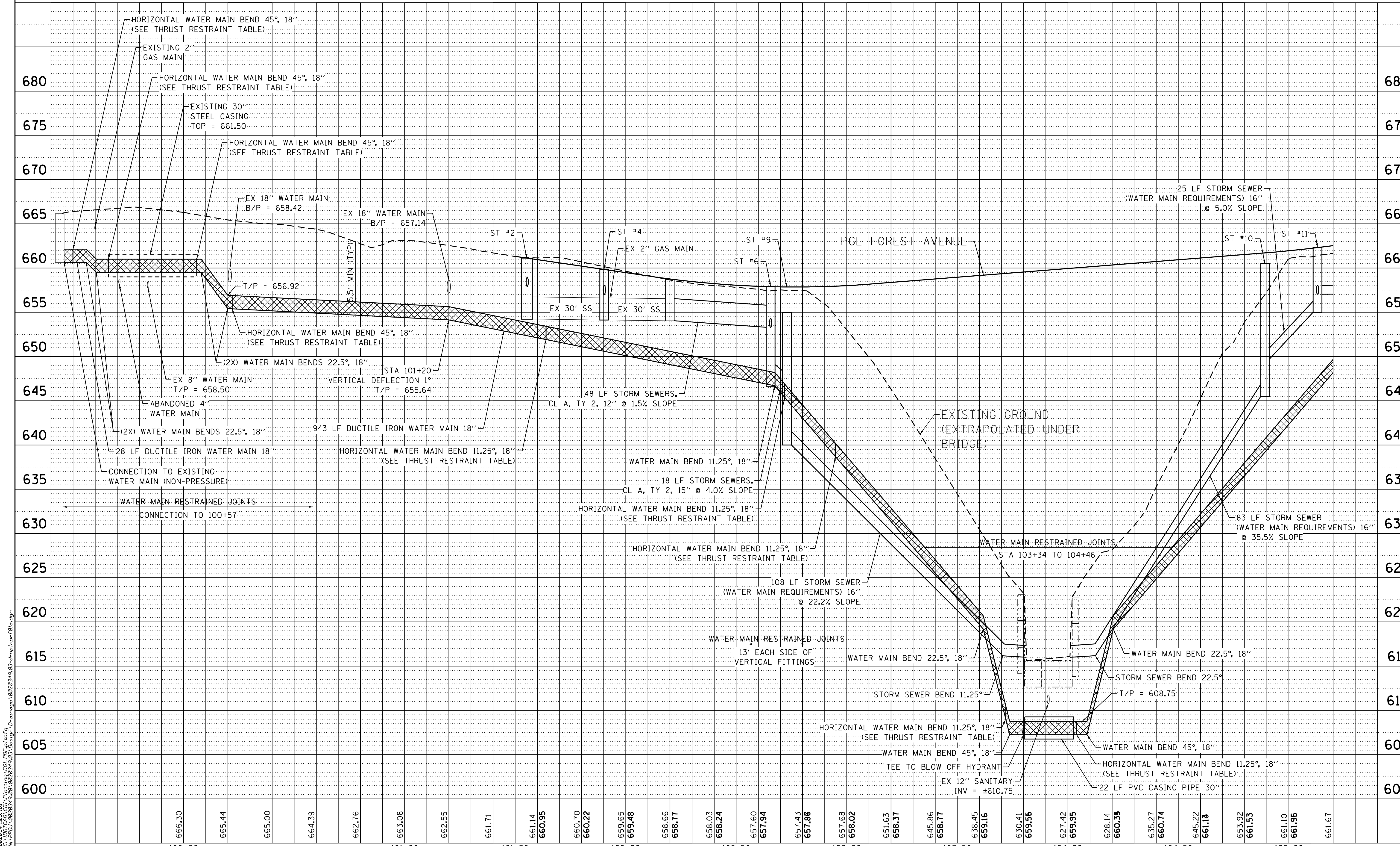
	PLOT DATE = 11/7/2017	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
DRAINAGE PLAN AND PROFILE

SCALE: 1" = 20' | SHEET NO. 1 OF 3 SHEETS | STA. 99+44.17 TO STA. 105+20

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	19
		CONTRACT NO. 61E28		
		ILLINOIS FED. AID PROJECT		#FEDPRJ



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Ciorba Group, Inc. CONSULTING ENGINEERS		DRAWN - AMD	REVISED -
5507 North Cumberland Avenue, Suite 402, Chicago, Illinois 60656	PLOT SCALE = 40.0000 ' / in.	CHECKED - TW	REVISED -
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com	PLOT DATE = 8/11/2017	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
DRAINAGE PLAN AND PROFILE

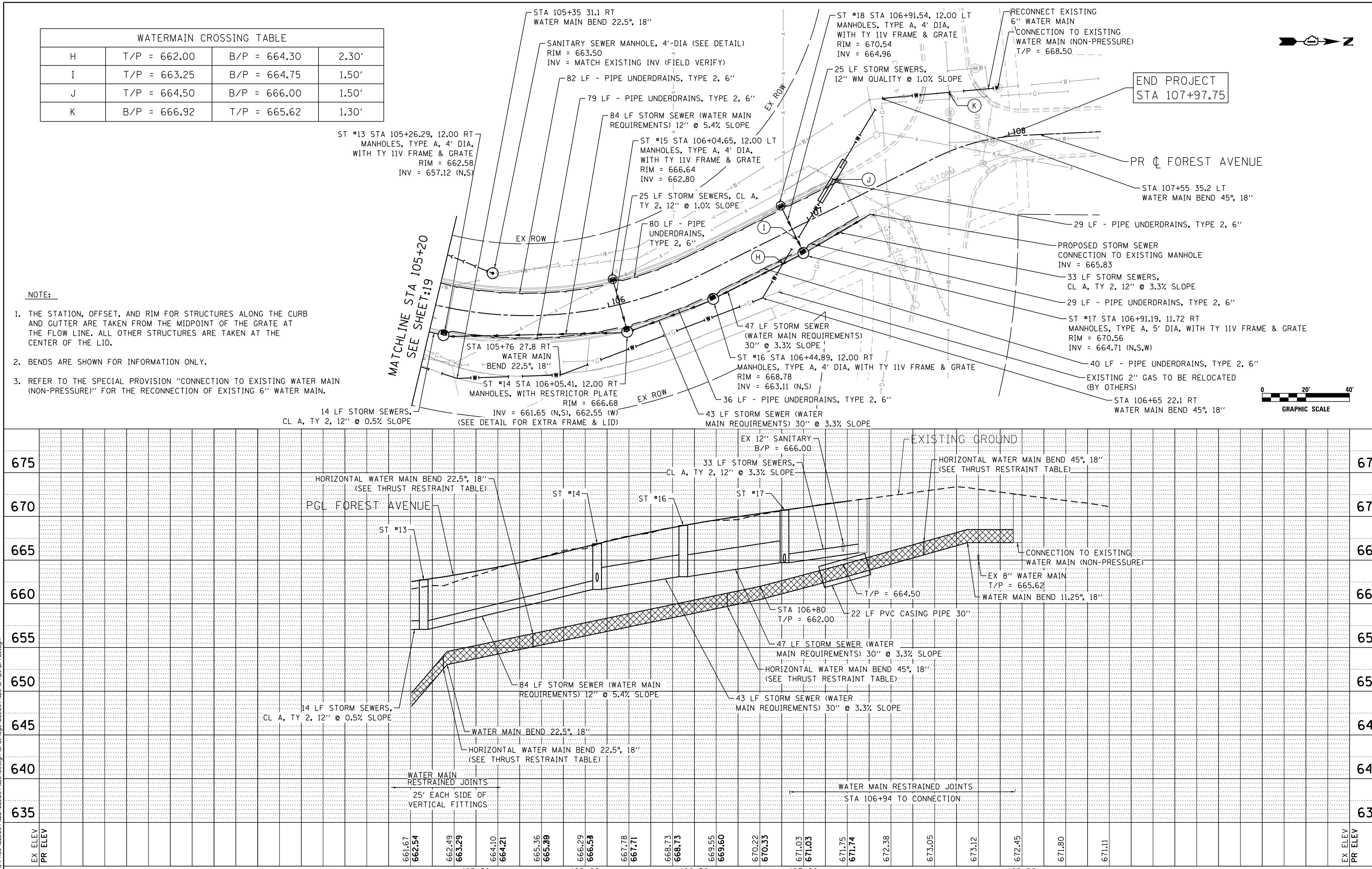
SCALE: | SHEET NO. 2 OF 3 SHEETS | STA. 99+44.17 TO STA. 105+20

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	20
		CONTRACT NO. 61E28		
	ILLINOIS	FED. AID PROJECT		$FEDPRJ

WATERMAIN CROSSING TABLE			
H	T/P = 662.00	B/P = 664.30	2.30'
I	T/P = 663.25	B/P = 664.75	1.50'
J	T/P = 664.50	B/P = 666.00	1.50'
K	B/P = 666.92	T/P = 665.62	1.30'

NOTE:

1. THE STATION, OFFSET, AND RIM FOR STRUCTURES ALONG THE CURB AND GUTTER ARE TAKEN FROM THE MIDPOINT OF THE GRATE AT THE FLOW LINE. ALL OTHER STRUCTURES ARE TAKEN AT THE CENTER OF THE LID.
2. BENDS ARE SHOWN FOR INFORMATION ONLY.
3. REFER TO THE SPECIAL PROVISION "CONNECTION TO EXISTING WATER MAIN (NON-PRESSURE)" FOR THE RECONNECTION OF EXISTING 6" WATER MAIN.



ENGINEERING CONSULTANT	USER NAME = jxi	DESIGNED - JXI	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FOREST AVENUE BRIDGE REPLACEMENT DRAINAGE PLAN AND PROFILE	MUN RTE. 1090	SECTION 13-00121-00-BR	COUNTY LAKE	TOTAL SHEETS 59	SHEET NO. 21
Ciorba Group, Inc. CONSULTING ENGINEERS 5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656 Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com	PLOT SCALE = 40.0000 ' / in.	DRAWN - AMD	REVISED -		SCALE: 1" = 20'	SHEET NO. 3 OF 3 SHEETS	STA. 105+20 TO STA.107+97.75	CONTRACT NO. 61E28		
	PLOT DATE = 11/7/2017	CHECKED - TW	REVISED -				ILLINOIS FED. AID PROJECT			
		DATE - 10/6/2017	REVISED -							

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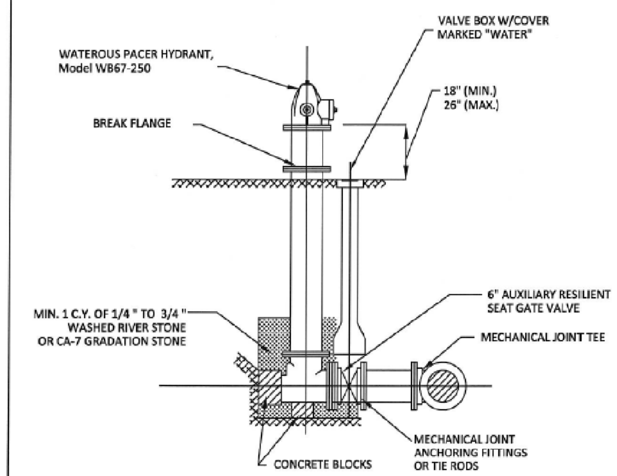
PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, R.O.W. CHECKED, CADD FILE NAME, NOTE BOOK NO.
PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, B.M. NOTED, STRUCTURE NOTATIONS CHECKED, NOTE BOOK NO.



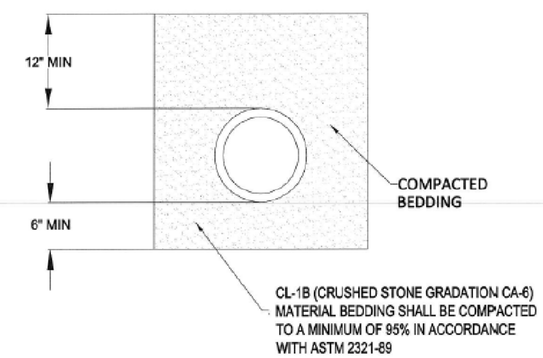
ALL HARDWARE BELOW GRADE TO BE STAINLESS STEEL

FIRE HYDRANT INSTALLATION DETAIL

City of Highland Park
Department of Public Works
1150 Half Day Rd, Highland Park, IL 60035

H.P. DWG. No. WD-1006
Drawn By: M.B.
Revised By: E.J.

DATE: 28th Feb. 2014
Approved By: J.M.W



N.S.S.D. SANITARY SEWER PIPE BEDDING DETAIL

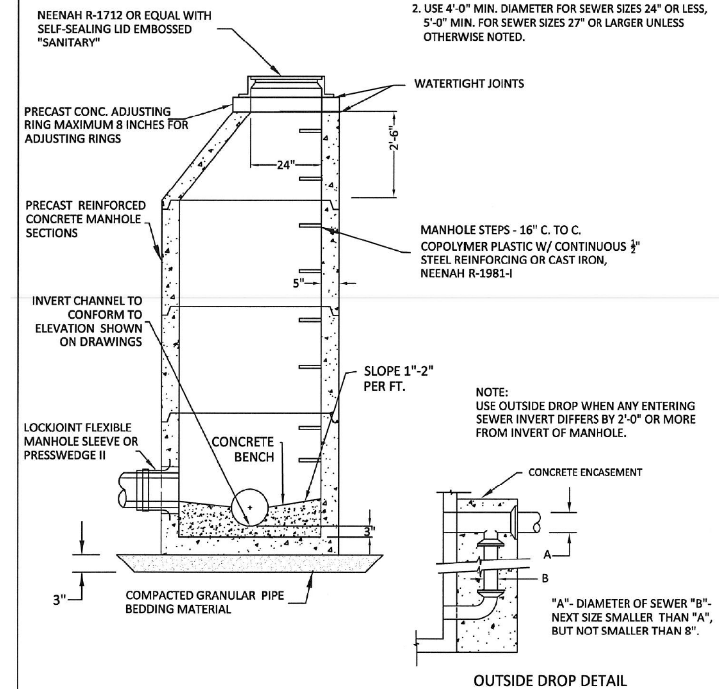
STANDARD PIPE BEDDING (FOR SANITARY SEWER)

City of Highland Park
Department of Public Works
1150 Half Day Rd, Highland Park, IL 60035

H.P. Engg. No. SAN-1014
Drawn By: E.J.
Revised By: E.J.

DATE: 27th Sept. 2013
Approved By: J.M.W.

NOTES:
1. ECCENTRIC CONES REQUIRED.
2. USE 4'-0" MIN. DIAMETER FOR SEWER SIZES 24" OR LESS, 5'-0" MIN. FOR SEWER SIZES 27" OR LARGER UNLESS OTHERWISE NOTED.



SANITARY SEWER MANHOLE DETAIL

City of Highland Park
Department of Public Works
1150 Half Day Rd, Highland Park, IL 60035

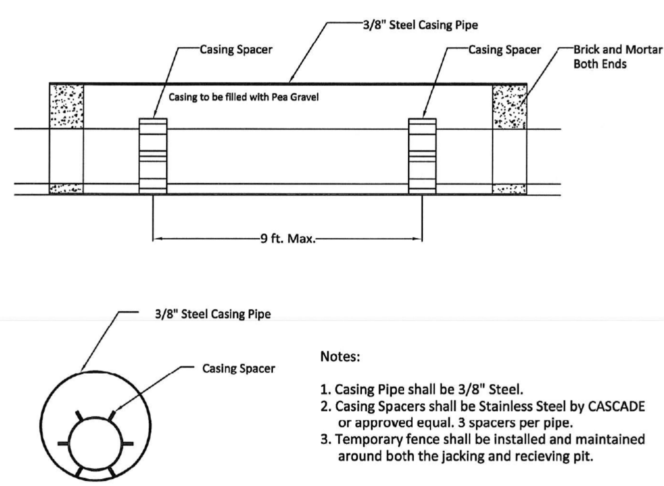
H.P. DWG. No. SAN-1012
Drawn By: M.B.
Revised By: E.J.

DATE: 27th Sept. 2013
Approved By: J.M.W.

TYPE	18"
Horizontal Bend, 11.25°	4
Horizontal Bend, 22.5°	7
Horizontal Bend, 45°	14
Horizontal Bend, 90°	34
Vertical Up Bend, 11.25°	3
Vertical Up Bend, 22.5°	6
Vertical Up Bend, 45°	12
Vertical Down Bend, 11.25°	13
Vertical Down Bend, 22.5°	25
Vertical Down Bend, 45°	52
Valve / Dead End	126

Notes:
1. Lengths in feet per DIPRA thrust restraint design (Soil = Clay 1, Lay Condition = 4, Test Pressure = 150 psi, SF = 1.5).
2. Bend lengths required on both sides of fitting.
3. Tee lengths required on tee branch.
4. Reducer lengths required on larger pipe.

THRUST RESTRAINT TABLE



Notes:
1. Casing Pipe shall be 3/8" Steel.
2. Casing Spacers shall be Stainless Steel by CASCADE or approved equal. 3 spacers per pipe.
3. Temporary fence shall be installed and maintained around both the jacking and recieving pit.

Pipe Size	Casing Size
8"	16"
10"	20"
12"	20"
18"	30"

CASING PIPE DETAIL

City of Highland Park
Department of Public Works
1150 Half Day Rd, Highland Park, IL 60035

H.P. DWG. No. WD-1009
Drawn By: M.B.
Revised By: E.J.

DATE: 27th Sept. 2013
Approved By: J.M.W

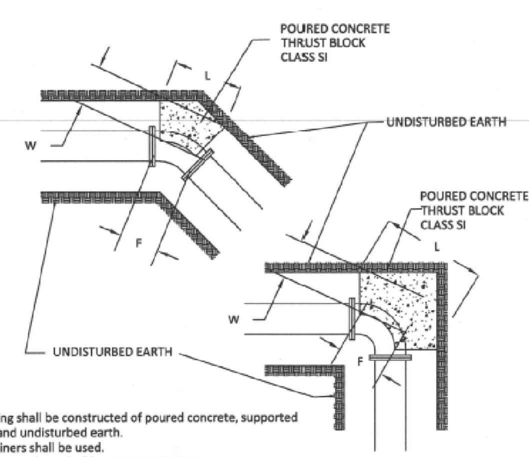
THRUST BLOCK SCHEDULE:

All Thrust Blocking Incidental to Water Main Construction.

Thrust Blocking for all fittings under 10 inches shall have a minimum dimension of 1'x1' at the point of contact with undistrubed earth.

Plugged Ends shall be thrust blocked the same as Tee.

Tabulated Thrust Blocking is figured on Allowable Bearing Pressure of Soil at 4,000 PSF. If Allowable Bearing Pressure of Soil is 2,000 PSF, the tabulated bearing area of contact to the undisturbed earth shall be doubled.



Notes:
1. All Thrust Blocking shall be constructed of poured concrete, supported with wood forms and undisturbed earth.
2. MEGA-LUG retainers shall be used.
3. All nuts, bolts and washers shall be STAINLESS STEEL.

SHEET 1 OF 2

THRUST BLOCK DETAIL

City of Highland Park
Department of Public Works
1150 Half Day Rd, Highland Park, IL 60035

H.P. DWG. No. WD-1008 SHEET 1 OF 2
Drawn By: M.B.
Revised By: E.J.

DATE: 27th Sept. 2013
Approved By: J.M.W.

THRUST BLOCK SCHEDULE:

FIITTINGS	DIMENSIONS (FT.)			
	H	L	W	F
TEE: 16" X 16" X 16"	2.5'	3.0'	2.0'	2.0'
16" - 90°	3.0'	3.5'	2.0'	2.0'
16" - 45°	3.0'	2.0'	2.0'	2.0'
16" - 22 1/2°	2.0'	2.0'	1.5'	1.0'
TEE: 14" X 14" X 10"	2.0'	2.5'	1.5'	2.0'
14" - 90°	2.5'	3.0'	1.5'	2.0'
14" - 45°	2.0'	2.5'	1.5'	1.5'
TEE: 12" X 12" X 12"	2.0'	2.5'	1.5'	2.0'
TEE: 12" X 12" X 8"	1.5'	2.0'	1.5'	1.5'
TEE: 12" X 12" X 6"	1.0'	1.5'	1.5'	1.0'
12" - 90°	2.0'	3.0'	1.5'	2.0'
12" - 45°	1.5'	2.0'	1.5'	1.0'
12" - 22 1/2°	1.0'	1.5'	1.5'	1.0'
TEE: 10" X 10" X 10"	1.5'	2.0'	1.5'	1.5'
10" - 90°	2.0'	3.0'	1.5'	1.5'
10" - 45°	1.5'	1.5'	1.5'	1.0'

THRUST BLOCK LEGEND:
- H THICKNESS
- L LENGTH FROM UNEXCAVATED SOIL
- W SPACE BETWEEN FITTINGS AND SOIL
- F WIDTH AT FITTINGS

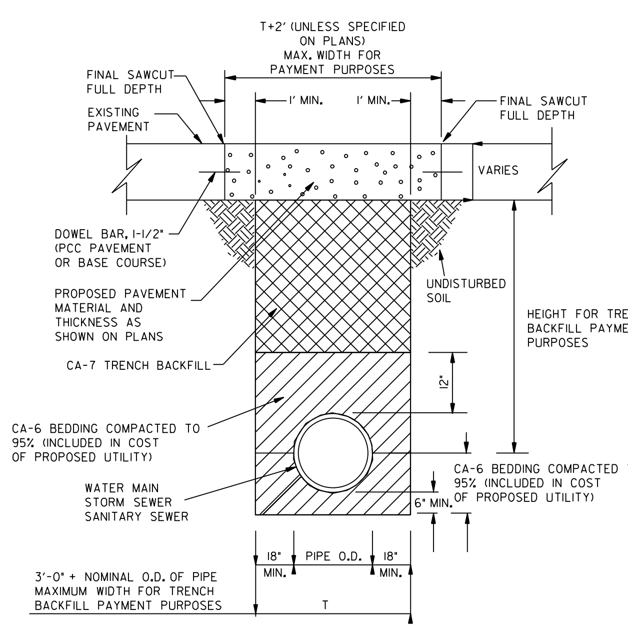
SHEET 2 OF 2

THRUST BLOCK DETAIL

City of Highland Park
Department of Public Works
1150 Half Day Rd, Highland Park, IL 60035

H.P. DWG. No. WD-1008 SHEET 2 OF 2
Drawn By: M.B.
Revised By: E.J.

DATE: 27th Sept. 2013
Approved By: J.M.W.



TRENCH IN PAVEMENT AREA

NOTES:
1. CONTRACTOR IS TO DISPOSE OF ALL UNUSED EXCAVATED MATERIAL OFF-SITE.
2. TRENCH IS TO BE EXCAVATED TO FIRM, UNDISTURBED SOIL. IF OVER EXCAVATION IS REQUIRED TO REACH A FIRM TRENCH BOTTOM, THE CONTRACTOR SHALL FILL THE VOID WITH CA-6 AND COMPACT TO OBTAIN PROPER DENSITY AND GRADE.

UTILITY TRENCH /BEDDING

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ENGINEERING CONSULTANT
Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402
Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014
Email chicago@ciorba.com

USER NAME = espina	DESIGNED - JXI	REVISED -	
	DRAWN - AMD	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED - TW	REVISED -	
PLOT DATE = 8/11/2017	DATE - 10/6/2017	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
WATERMAIN AND DRAINAGE DETAILS

SCALE: N.T.S. | SHEET NO. 1 OF 2 SHEETS | STA. TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	22

CONTRACT NO. 61E28

ILLINOIS FED. AID PROJECT #FEDPRJ

GENERAL NOTES - DRAINAGE GENERAL NOTES

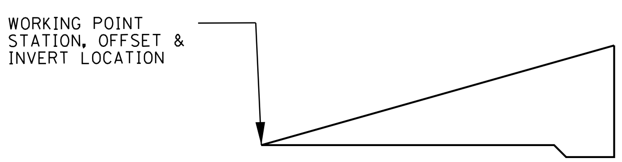
1. DRAINAGE STRUCTURE ELEVATIONS: DRAINAGE STRUCTURE GRADES SHALL BE VERIFIED IN THE FIELD PRIOR TO FABRICATION AND INSTALLATION OF DRAINAGE ITEMS. GRADES OR SEWER LINES WERE DETERMINED FROM BEST AVAILABLE PLANS AND SURVEY INFORMATION. THE INVERTS OF THE PROPOSED SEWERS CONNECTION TO EXISTING DRAINAGE STRUCTURES MAY REQUIRE REVISIONS TO MEET EXISTING FIELD CONDITIONS. ANY ADJUSTMENTS SHALL BE AS DIRECTED BY THE ENGINEER.

2. LENGTHS AND SIZES OF EXISTING STORM SEWERS AS SHOWN ON THE PLANS SHALL BE VERIFIED IN THE FIELD PRIOR TO INSTALLATION OF PROPOSED DRAINAGE ITEMS. INVERTS AND GRADES OF EXISTING SEWER LINES WERE SURVEYED OR EXTRACTED FROM AVAILABLE PLANS. DRAINAGE ITEMS CONNECTING TO EXISTING SEWERS OR STRUCTURES MAY REQUIRE REVISIONS TO MEET EXISTING FIELD CONDITIONS. ANY ADJUSTMENTS SHALL BE AS DIRECTED BY THE ENGINEER.

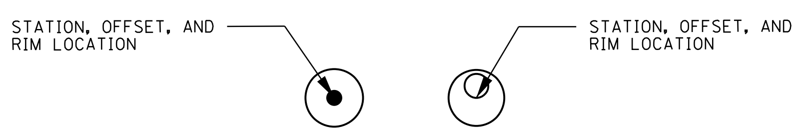
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN DRAINAGE FLOWS AT ALL TIMES DURING THE PERFORMANCE OF THE WORK. METHODS USED BY THE CONTRACTOR SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

4. THE DEPTH OF SOME OF THE PROPOSED STORM SEWER AND CULVERTS MAY REQUIRE TEMPORARY SHORING. THIS HALL BE INCLUDED IN THE UNIT PRICE OF THE STORM SEWER OR CULVERTS.

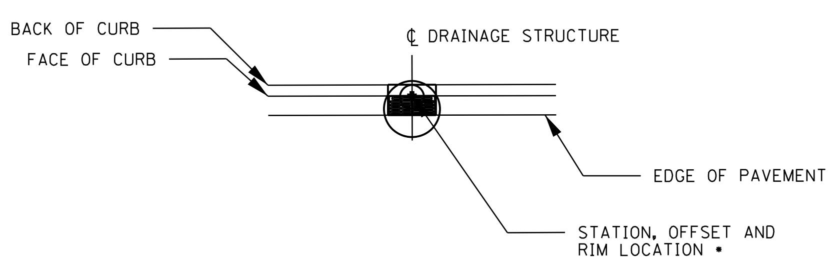
5. THE EXISTING UTILITY LOCATION AND DEPTH SHOWN ON THE PLAN ARE BASED ON "THE BEST AVAILABLE INFORMATION." PRIOR TO CONSTRUCTION, CONTRACTOR NEEDS TO INVESTIGATE THE ACTUAL LOCATION AND DEPTH OF EXISTING UTILITY AT THE EXISTING AND PROPOSED UTILITY CROSSING LOCATIONS.



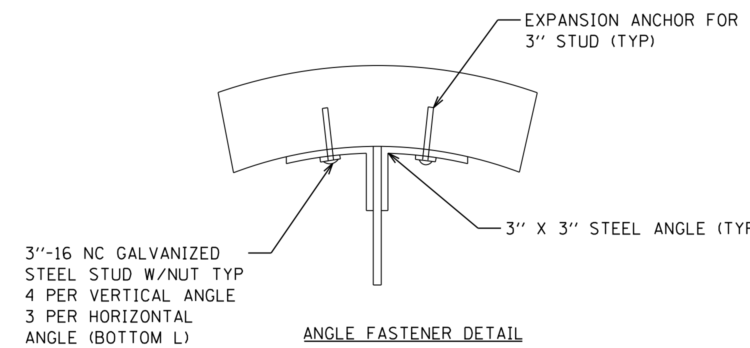
HEADWALLS



MANHOLE/CATCH BASIN

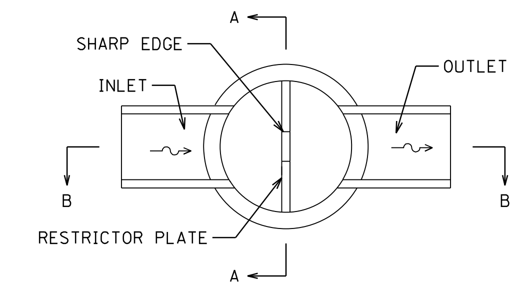


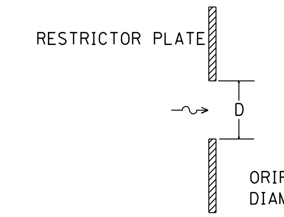
MANHOLE/CATCH BASIN AT CURB AND GUTTER



ANGLE FASTENER DETAIL

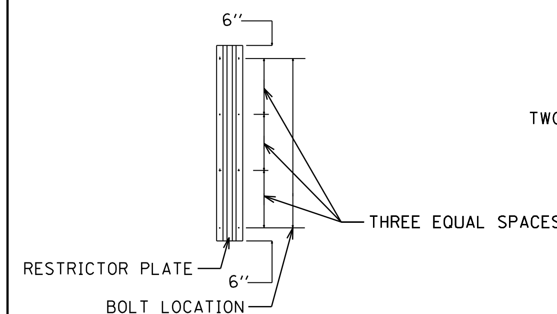
ALL STEEL ANGLES TO BE GALVANIZED AFTER FABRICATION.

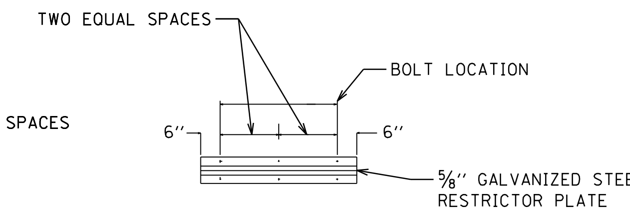




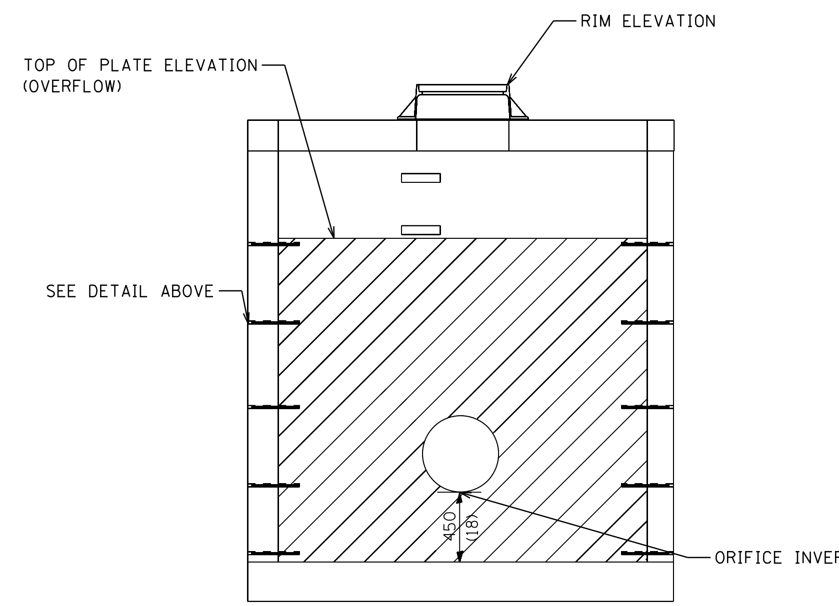
SHARP EDGE ORIFICE

C=.60

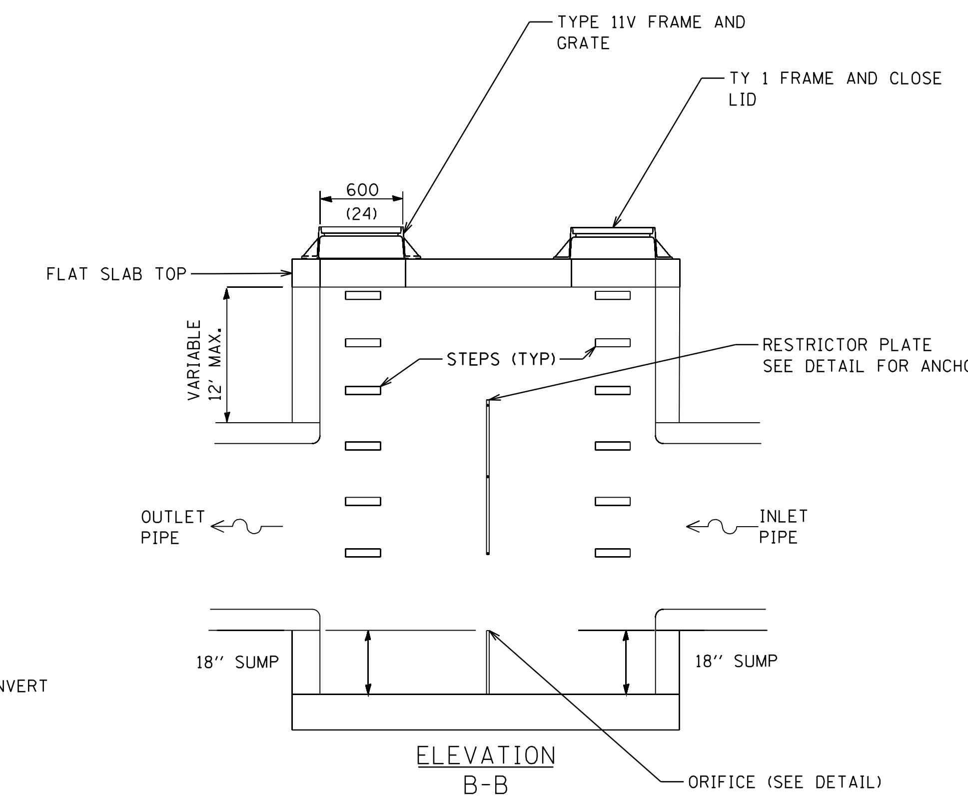




TYPICAL HORIZONTAL ANGLES LOOKING TOWARD BOTTOM OF MANHOLE



ELEVATION
A-A



ELEVATION
B-B

RESTRICTOR MANHOLE

	STRUCTURE DIA.	RESTRICTOR TYPE	INLET PIPE DIAM (IN)	OUTLET PIPE DIAM (IN)	RESTRICTOR ORIFICE DIA. (in)	WEIR LENGTH (FT)	INVERT OF RESTRICTOR (FT)	ELEVATION OF TOP OF PLATE OVERFLOW WEIR	RIM ELEVATION
ST #6	6'	SHARP EDGE	(2X) 12	15	8	6	646.58	654.71	657.71
ST #14	6'	SHARP EDGE	30	12	8	6	661.65	663.68	666.68

DATE PLOTTED = 11/6/2017 9:42:23 AM
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PLOT CONFIG = ...
FILE NAME = ...

ENGINEERING CONSULTANT	USER NAME = jxi	DESIGNED - JXI	REVISED -
Ciorba Group, Inc. CONSULTING ENGINEERS		DRAWN - AMD	REVISED -
5507 North Cumberland Avenue, Suite 402, Chicago, Illinois 60656	PLOT SCALE = 40.0000 ' / in.	CHECKED - TW	REVISED -
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com	PLOT DATE = 11/6/2017	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
WATERMAIN AND DRAINAGE DETAILS

SCALE: N.T.S. | SHEET NO. 2 OF 2 SHEETS | STA. TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	23

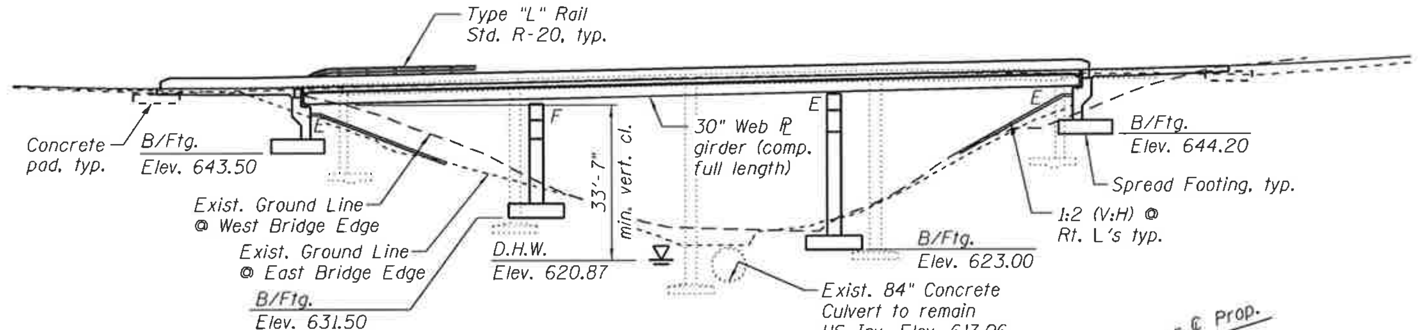
CONTRACT NO. 61E28

ILLINOIS FED. AID PROJECT

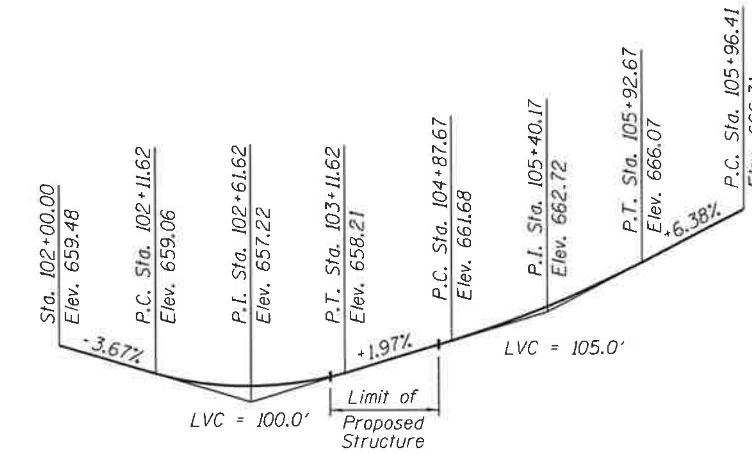
Bench Mark: City of Highland Park Benchmark # 33: A Brass Monument in the parkway opposite 1610 Forest Drive.
Elev. = 674.497

Existing Structure: S.N. 049-6558 Built in 1958 and repaired in 2002, consists of 4 simple spans (40' each) of 17" concrete deck beams, existing substructure consists of vaulted abutments and hammerhead piers on spread footings, 165'-11¼" Bk. to Bk. abutments and 31'-8" Out to Out of deck. Structure to be removed and replaced. Forest Ave to be closed during bridge construction and traffic to be detoured.

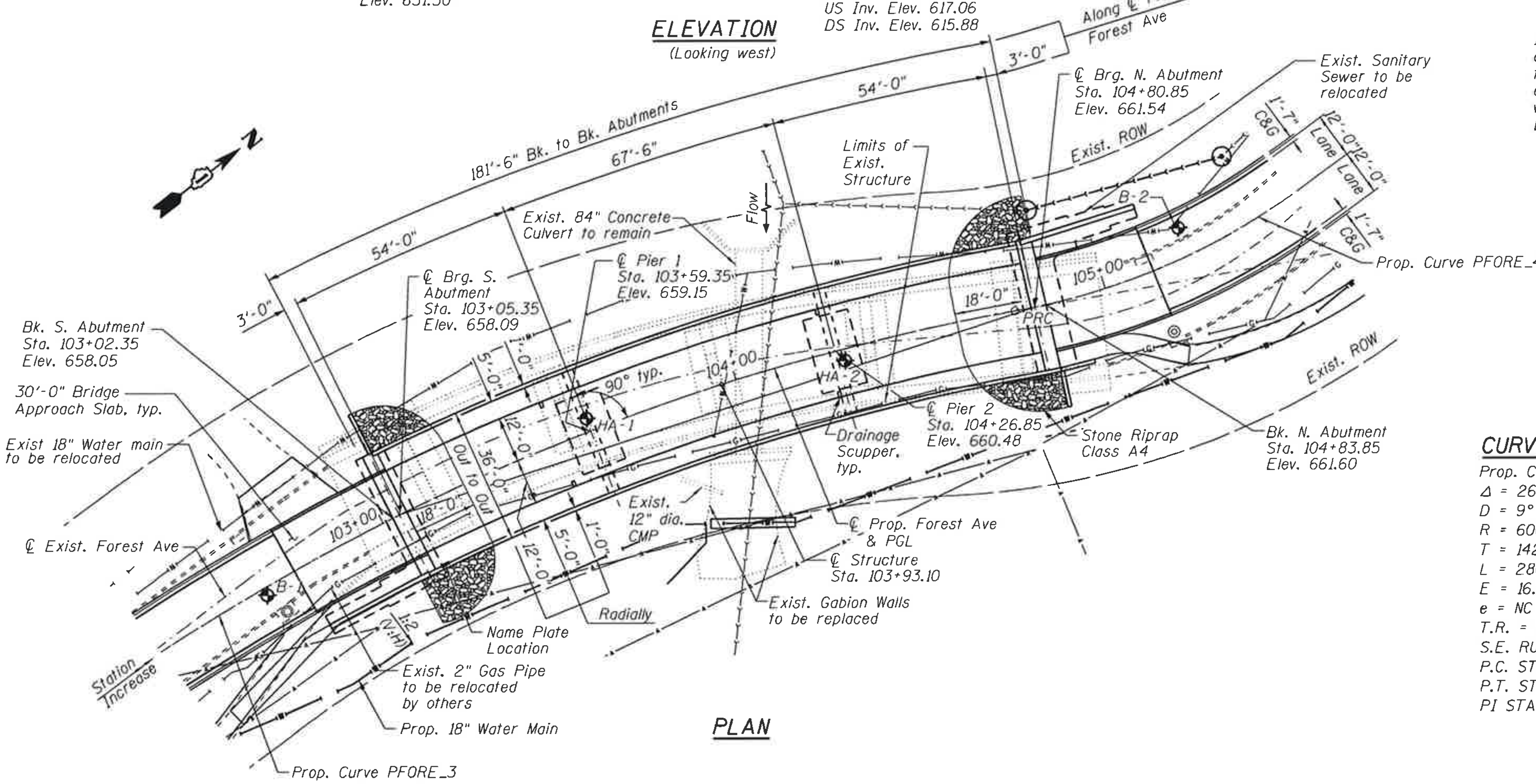
No salvage.



ELEVATION
(Looking west)

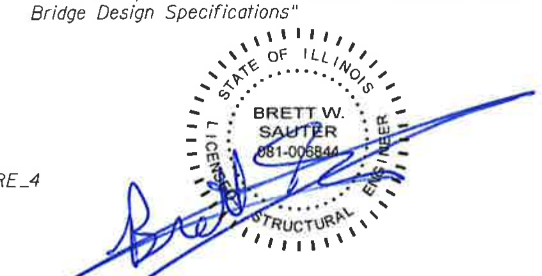


PROFILE GRADE
(along ℄ Prop. Forest Ave)



PLAN

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 LRFD Bridge Design Specifications"



DATE: 10/6/2017
SEAL EXPIRES: 11/30/2018

DESIGN STRESSES
FIELD UNITS

f'c = 3,500 psi
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50W)

CURVE DATA
Prop. Curve PFORE_3
Δ = 26° 47' 18" (RT)
D = 9° 32' 57"
R = 600.00'
T = 142.88'
L = 280.53'
E = 16.78'
e = NC
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 101+95.10
P.T. STA. = 104+75.62
PI STA. = 103+37.97

CURVE DATA
Prop. Curve PFORE_4
Δ = 54° 01' 27" (LT)
D = 31° 49' 52"
R = 180.00'
T = 91.76'
L = 169.72'
E = 22.04'
e = NC
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 104+75.62
P.T. STA. = 106+45.35
PI STA. = 105+67.39

SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.07g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.13g
Soil Site Class = D

LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS
AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 and 2016 Interim Revisions

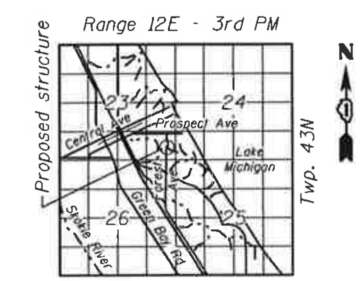
WATERWAY INFORMATION

Drainage Area = 0.31 sq. mi. Low Grade Elev. 657.57 @ Sta. 102+60.5

Flood Event	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
USACE ISWP	2	159	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Design	50	387	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Base	100	425	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scour Check	200	463	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Max. Calc.	500	505	N/A	N/A	621.26	6.82	6.82	628.08	628.08

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)				Item 113
	S. Abut.	Pier 1	Pier 2	N. Abut.	
Q100	N/A	N/A	N/A	N/A	8
Q200	N/A	N/A	N/A	N/A	
Q500	0	633.00	626.04	0	
Design	N/A	N/A	N/A	N/A	
Check	N/A	N/A	N/A	N/A	



LOCATION SKETCH

GENERAL PLAN & ELEVATION
FOREST AVE OVER RAVINE NO. 7
RTE 1090 - SEC. 13-00121-00-BR
LAKE COUNTY
STATION 103+93.10
STRUCTURE NO. 049-6559

N:\PROJ\0020349.00\0020349.03\Design\Structural\CAD\0020349.01_General Plan and Elev.dgn

Ciorba Group, Inc.
CONSULTING ENGINEERS

USER NAME = sellgood	DESIGNED - SSM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - BWS	REVISED -	
PLOT SCALE = 0.1667 ' / in.	DRAWN - SBA	REVISED -	
PLOT DATE = 10/6/2017	CHECKED - BWS	REVISED -	

SHEET NO. S-1 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	24
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

GENERAL NOTES

1. Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts (in painted areas and ASTM A325 Type 3 in unpainted areas). Bolts $\frac{7}{8}$" ϕ, holes $\frac{15}{16}$" ϕ, unless otherwise noted.

2. Calculated weight of Structural Steel =132,080 lbs.

3. All structure steel shall be AASHTO M 270 Grade 50W (except expansion joints which shall be AASHTO M 270 Grade 60).

4. No field welding is permitted except as specified in the contract documents.

5. Reinforcement bars designated (E) shall be epoxy coated.

6. The Contractor shall cover all exposed faces of the piers and abutments with polyethylene sheeting prior to the erection of the girders to prevent staining of the concrete due to the weathering steel. The sheeting should be secured to the substructure. The sheeting shall be removed after the deck has been placed. Cost included with Concrete Structures.

7. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

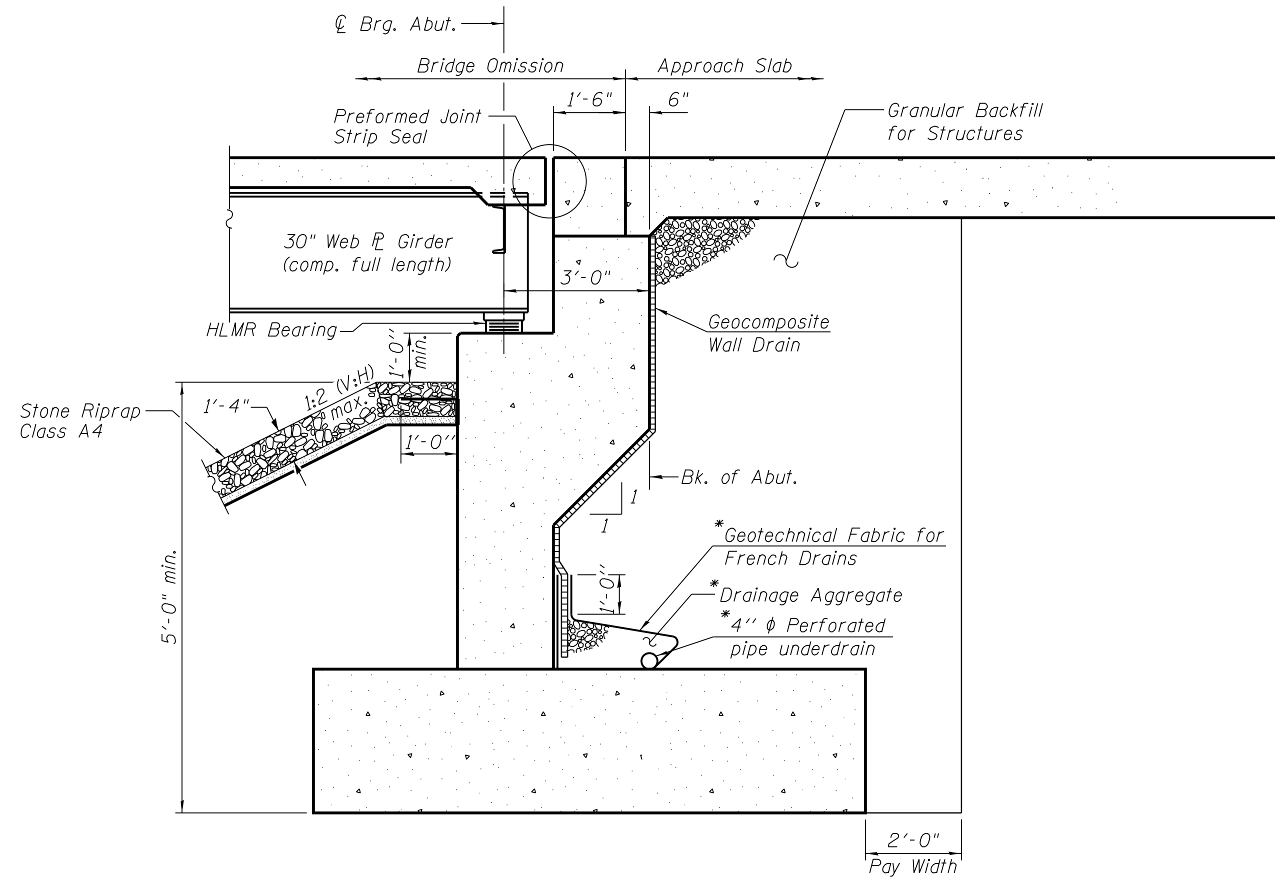
8. Concrete Sealer shall be applied to the designated areas of the Abutments.

9. All structural steel and exposed surfaces of bearings within a distance of 8 ft. each way from the deck joints shall be painted as specified in Section 506 of the Standard Specifications.

10. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

11. The ground at proposed substructure locations shall be excavated to 6" below proposed footing elevations and backfilled and compacted with 6" of granular backfill for structures.

INDEX OF SHEETS



SECTION THROUGH ABUTMENT

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

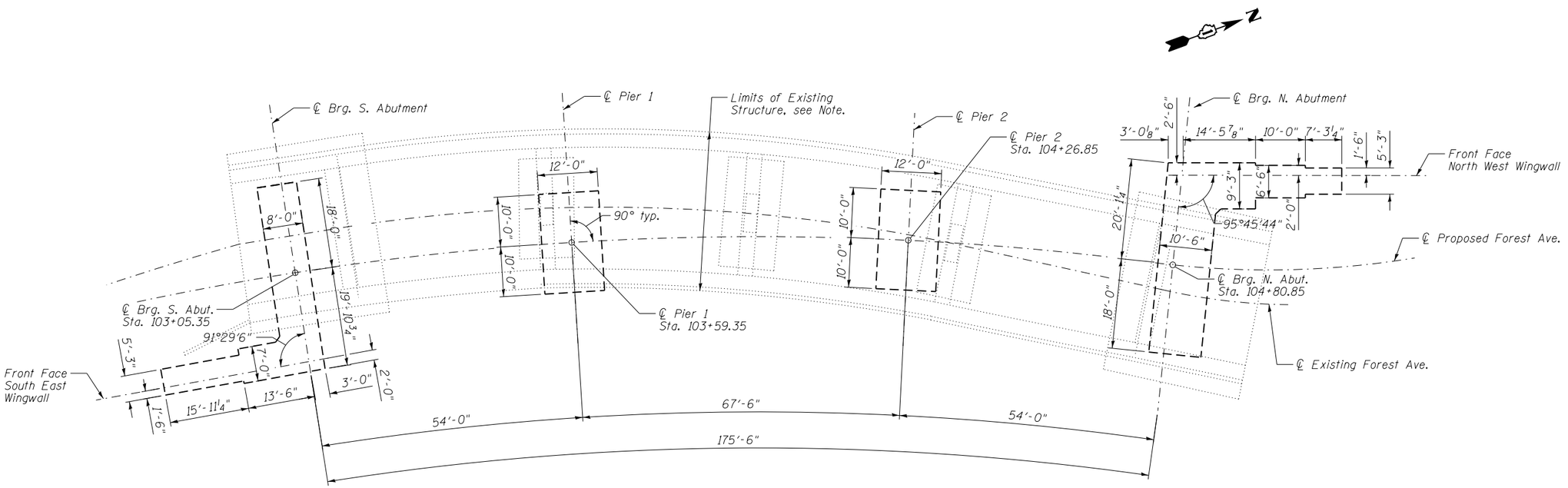
BUILT 201_ BY
CITY OF HIGHLAND PARK
SECTION 13-00121-00-BR
STA. 103+93.10
STR. NO. 049-6559
LOADING HL93

NAME PLATE

See Std. 515001

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Sq Yd		201	201
Filter Fabric	Sq Yd		201	201
Removal Of Existing Structures	Each			1
Structure Excavation	Cu Yd		1310	1,310
Concrete Structures	Cu Yd		369.5	369.5
Concrete Superstructure	Cu Yd	244.3	9.0	253.3
Bridge Deck Grooving	Sq Yd	576		576
Protective Coat	Sq Yd	971		971
Concrete Superstructure (Approach Slab)	Cu Yd	71.0		71.0
Furnishing And Erecting Structural Steel	L Sum	1		1
Stud Shear Connectors	Each	3,363		3,363
Reinforcement Bars, Epoxy Coated	Pound	105,380	42,720	148,100
Bar Splicers	Each		50	50
Aluminum Railing, Type L	Foot	421		421
Name Plates	Each	1		1
Preformed Joint Strip Seal	Foot	68		68
Anchor Bolts, 3/4"	Each	80		80
Concrete Sealer	Sq Ft		405	405
Geocomposite Wall Drain	Sq Yd		165	165
High Load Multi-Rotational Bearings, Guided Expansion, 100K	Each	10		10
High Load Multi-Rotational Bearings, Guided Expansion, 200K	Each	5		5
High Load Multi-Rotational Bearings, Fixed - 250K	Each	5		5
Granular Backfill For Structures	Cu Yd		315	315
Drainage Scuppers, DS-11	Each	6		6
Drainage System	L Sum	1		1
Pipe Underdrains For Structures 4"	Foot		166	166



FOOTING LAYOUT

NOTE:
For Limits of Removal of Existing Structure, see Sheet S-04.

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USER NAME = sallgood	DESIGNED - SSM	REVISED -
	CHECKED - BWS	REVISED -
PLOT SCALE = 23±4.0000 '±' / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOOTING LAYOUT
STRUCTURE NO. 049-6559
SHEET NO. S-3 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	26
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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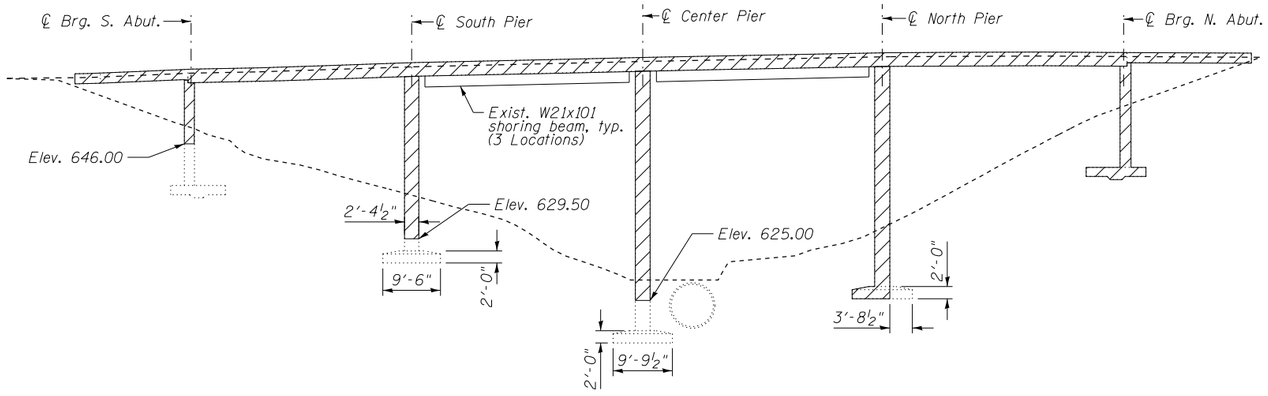
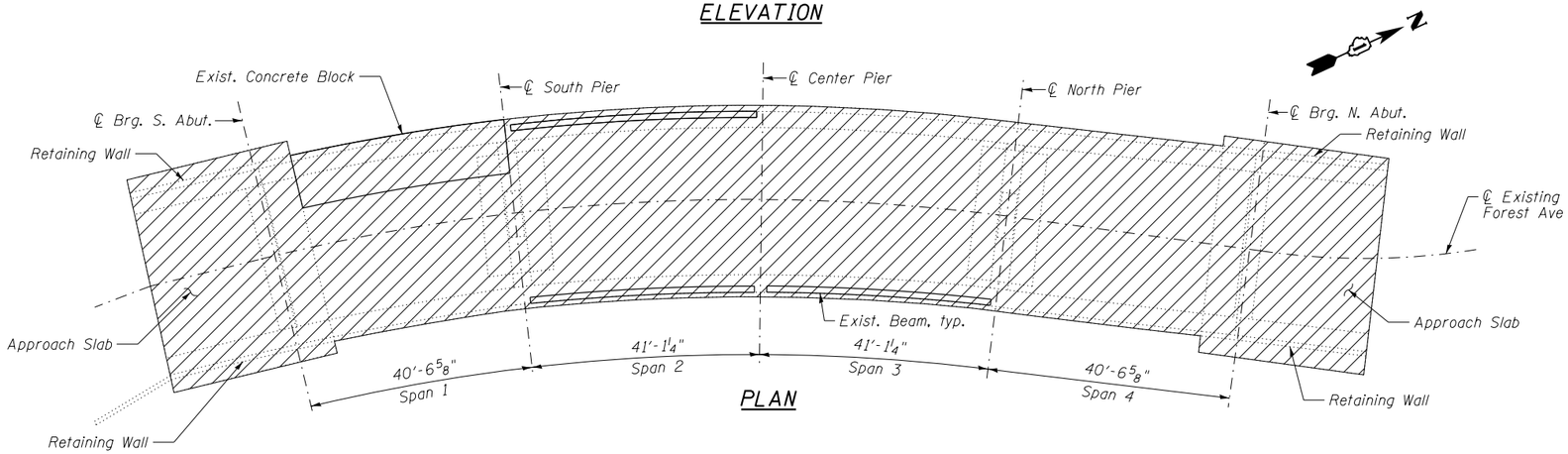
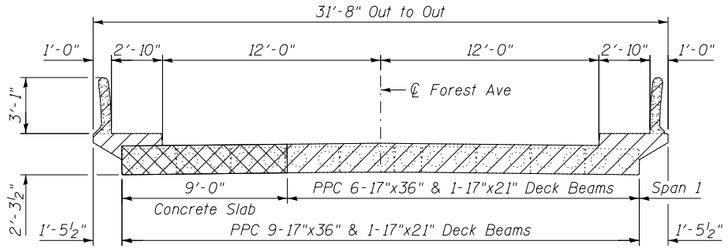


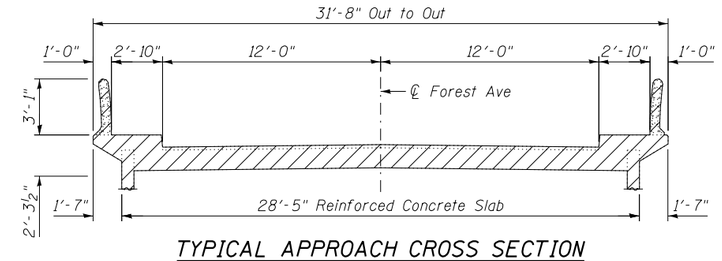
ELEVATION



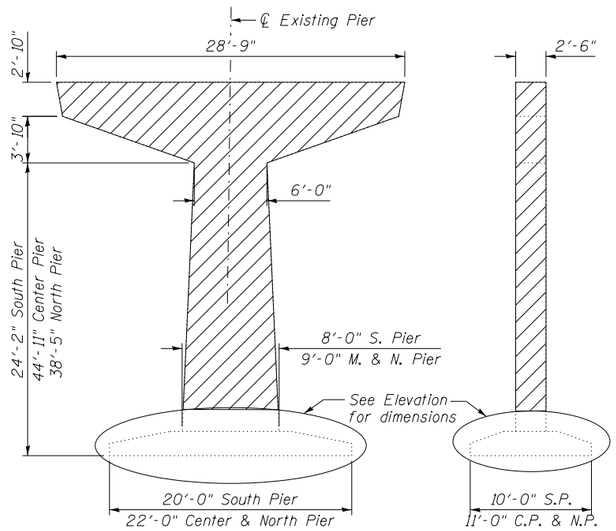
PLAN



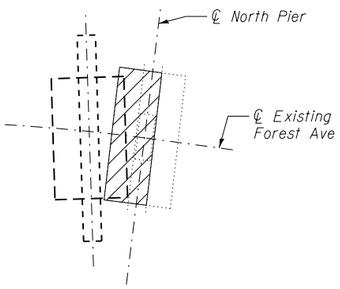
TYPICAL BRIDGE CROSS SECTION



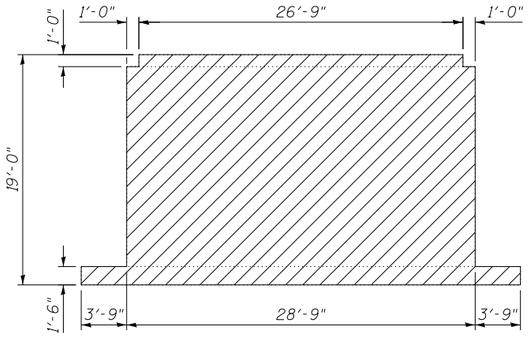
TYPICAL APPROACH CROSS SECTION



TYPICAL PIER REMOVAL

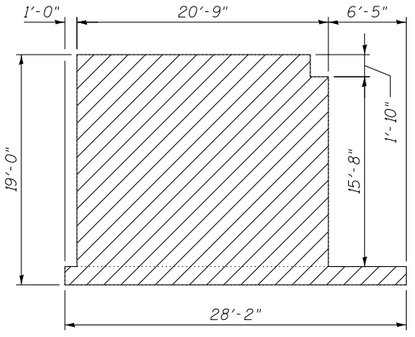


NORTH PIER REMOVAL DETAIL



ELEVATION OF ABUTMENT WALLS

(North & South Abutments)



ELEVATION OF RETAINING WALLS

(North & South Abutments)

NOTE:

1. Existing PPC Deck beams are in a deteriorated condition with reduced load carrying capacity. It is a Contractor's responsibility to account for the condition of the beams when developing removal procedures.

LEGEND

Indicates limits of Removal

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	CHECKED - BWS	REVISED -
PLOT SCALE = 25.0000 ' / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REMOVAL PLAN
STRUCTURE NO. 049-6559
SHEET NO. S-4 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	27
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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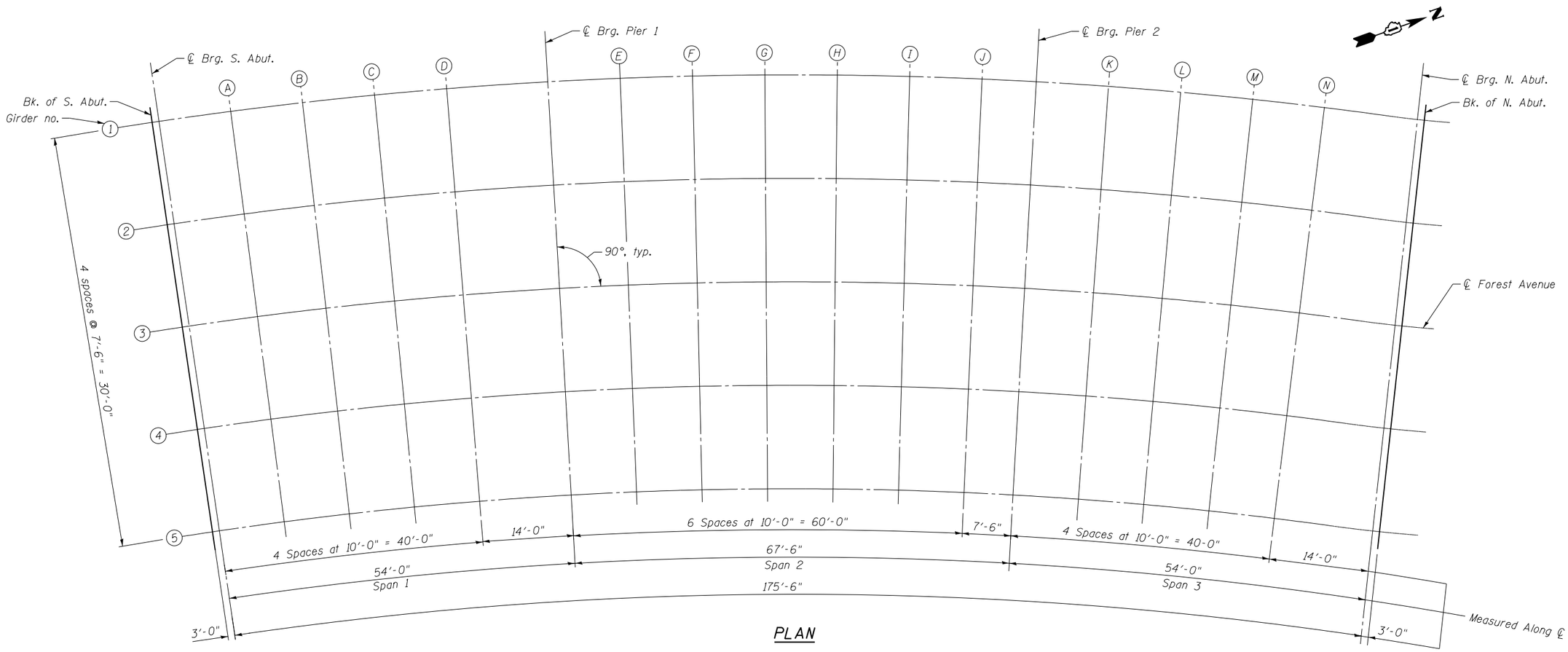
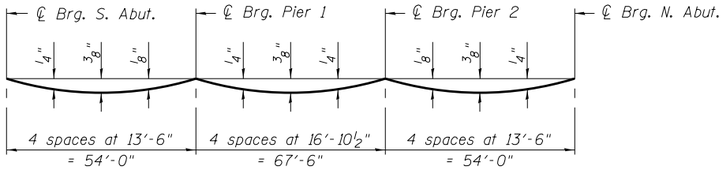


PLAN

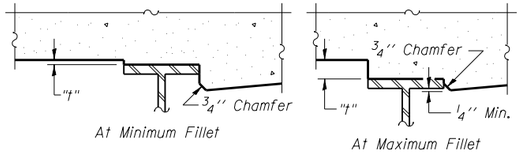


DEAD LOAD DEFLECTION DIAGRAM

(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 sheet S-6.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet S-6, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

N:\PROJ\0020349.00\0020349.03\Design\Structural\CAD\0020349_05_Top of Slab Elevation 1.dgn

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	CHECKED - BWS	REVISED -
PLOT SCALE = 16.0000 ' / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS 1
STRUCTURE NO. 049-6559
SHEET NO. S-5 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	28
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	103+02.35	- 15.00	657.81	657.81
℄ Brg. S. Abut.	103+05.35	- 15.00	657.86	657.86
A	103+15.35	- 15.00	658.04	658.07
B	103+25.35	- 15.00	658.24	658.28
C	103+35.35	- 15.00	658.44	658.48
D	103+45.35	- 15.00	658.64	658.66
℄ Pier 1	103+59.35	- 15.00	658.91	658.91
E	103+69.35	- 15.00	659.11	659.12
F	103+79.35	- 15.00	659.30	659.34
G	103+89.35	- 15.00	659.50	659.55
H	103+99.35	- 15.00	659.70	659.74
I	104+09.35	- 15.00	659.90	659.92
J	104+19.35	- 15.00	660.09	660.10
℄ Pier 2	104+26.85	- 15.00	660.24	660.24
K	104+36.85	- 15.00	660.44	660.45
L	104+46.85	- 15.00	660.63	660.67
M	104+56.85	- 15.00	660.83	660.87
N	104+66.85	- 15.00	661.03	661.06
℄ Brg. N. Abut.	104+80.85	- 15.00	661.30	661.30
Bk. N. Abut.	104+83.85	- 15.00	661.36	661.36

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	103+02.35	- 7.50	657.93	657.93
℄ Brg. S. Abut.	103+05.35	- 7.50	657.98	657.98
A	103+15.35	- 7.50	658.16	658.19
B	103+25.35	- 7.50	658.36	658.39
C	103+35.35	- 7.50	658.56	658.59
D	103+45.35	- 7.50	658.75	658.77
℄ Pier 1	103+59.35	- 7.50	659.03	659.03
E	103+69.35	- 7.50	659.23	659.24
F	103+79.35	- 7.50	659.42	659.45
G	103+89.35	- 7.50	659.62	659.66
H	103+99.35	- 7.50	659.82	659.85
I	104+09.35	- 7.50	660.01	660.04
J	104+19.35	- 7.50	660.21	660.22
℄ Pier 2	104+26.85	- 7.50	660.36	660.36
K	104+36.85	- 7.50	660.55	660.56
L	104+46.85	- 7.50	660.75	660.78
M	104+56.85	- 7.50	660.95	660.98
N	104+66.85	- 7.50	661.15	661.17
℄ Brg. N. Abut.	104+80.85	- 7.50	661.42	661.42
Bk. N. Abut.	104+83.85	- 7.50	661.48	661.48

GIRDER 3 & PGL

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	103+02.35	0.00	658.05	658.05
℄ Brg. S. Abut.	103+05.35	0.00	658.09	658.09
A	103+15.35	0.00	658.28	658.30
B	103+25.35	0.00	658.48	658.51
C	103+35.35	0.00	658.67	658.70
D	103+45.35	0.00	658.87	658.88
℄ Pier 1	103+59.35	0.00	659.15	659.15
E	103+69.35	0.00	659.34	659.35
F	103+79.35	0.00	659.54	659.56
G	103+89.35	0.00	659.74	659.77
H	103+99.35	0.00	659.93	659.97
I	104+09.35	0.00	660.13	660.15
J	104+19.35	0.00	660.33	660.33
℄ Pier 2	104+26.85	0.00	660.48	660.48
K	104+36.85	0.00	660.67	660.68
L	104+46.85	0.00	660.87	660.89
M	104+56.85	0.00	661.07	661.10
N	104+66.85	0.00	661.26	661.29
℄ Brg. N. Abut.	104+80.85	0.00	661.54	661.54
Bk. N. Abut.	104+83.85	0.00	661.60	661.60

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	103+02.35	7.50	657.93	657.93
℄ Brg. S. Abut.	103+05.35	7.50	657.98	657.98
A	103+15.35	7.50	658.16	658.18
B	103+25.35	7.50	658.36	658.39
C	103+35.35	7.50	658.56	658.58
D	103+45.35	7.50	658.75	658.77
℄ Pier 1	103+59.35	7.50	659.03	659.03
E	103+69.35	7.50	659.23	659.23
F	103+79.35	7.50	659.42	659.45
G	103+89.35	7.50	659.62	659.65
H	103+99.35	7.50	659.82	659.85
I	104+09.35	7.50	660.01	660.03
J	104+19.35	7.50	660.21	660.22
℄ Pier 2	104+26.85	7.50	660.36	660.36
K	104+36.85	7.50	660.55	660.56
L	104+46.85	7.50	660.75	660.78
M	104+56.85	7.50	660.95	660.98
N	104+66.85	7.50	661.15	661.17
℄ Brg. N. Abut.	104+80.85	7.50	661.42	661.42
Bk. N. Abut.	104+83.85	7.50	661.48	661.48

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	103+02.35	15.00	657.81	657.81
℄ Brg. S. Abut.	103+05.35	15.00	657.86	657.86
A	103+15.35	15.00	658.04	658.07
B	103+25.35	15.00	658.24	658.28
C	103+35.35	15.00	658.44	658.47
D	103+45.35	15.00	658.64	658.65
℄ Pier 1	103+59.35	15.00	658.91	658.91
E	103+69.35	15.00	659.11	659.12
F	103+79.35	15.00	659.30	659.33
G	103+89.35	15.00	659.50	659.54
H	103+99.35	15.00	659.70	659.73
I	104+09.35	15.00	659.90	659.92
J	104+19.35	15.00	660.09	660.10
℄ Pier 2	104+26.85	15.00	660.24	660.24
K	104+36.85	15.00	660.44	660.45
L	104+46.85	15.00	660.63	660.66
M	104+56.85	15.00	660.83	660.87
N	104+66.85	15.00	661.03	661.06
℄ Brg. N. Abut.	104+80.85	15.00	661.30	661.30
Bk. N. Abut.	104+83.85	15.00	661.36	661.36

N:\PROJ\0020349.00\0020349.03\Design\Structural\CAD\0020349_06_Top of Slab Elevation 2.dgn

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USER NAME = sallgood	DESIGNED - SSM	REVISED -
	CHECKED - BWS	REVISED -
PLOT SCALE = 16.0000 ' / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS 2
STRUCTURE NO. 049-6559
SHEET NO. S-6 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	29
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

WEST CURB LINE

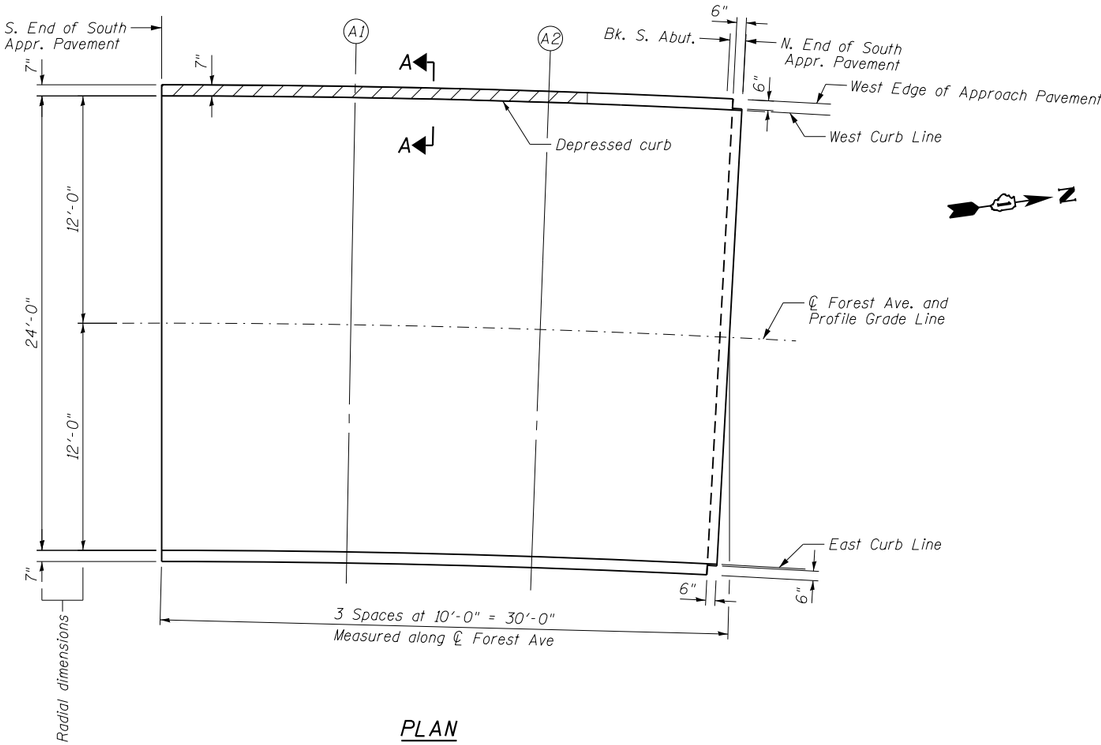
Location	Station	Offset	Theoretical Grade Elevations
S. End of South Appr. Pavement	102+72.85	-12.00	657.69
A1	102+82.85	-12.00	657.69
A2	102+92.85	-12.00	657.75
N. End of South Appr. Pavement	103+02.85	-12.00	657.87

℄ ROADWAY AND PGL

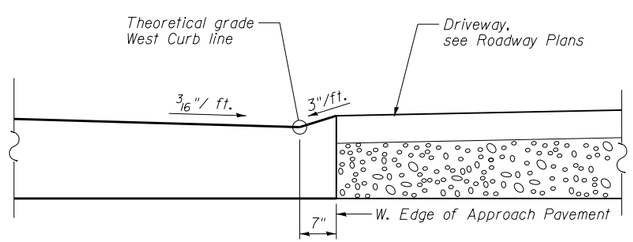
Location	Station	Offset	Theoretical Grade Elevations
S. End of South Appr. Pavement	102+72.85	0.00	657.88
A1	102+82.85	0.00	657.88
A2	102+92.85	0.00	657.94
N. End of South Appr. Pavement	103+02.85	0.00	658.06

EAST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Appr. Pavement	102+72.85	12.00	657.69
A1	102+82.85	12.00	657.69
A2	102+92.85	12.00	657.75
N. End of South Appr. Pavement	103+02.85	12.00	657.87



PLAN



SECTION A-A
DEPRESSED CURB DETAIL

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	CHECKED - SSM	REVISED -
PLOT SCALE = 8.0000 sf / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF S. APPROACH SLAB ELEVATIONS
STRUCTURE NO. 049-6559
SHEET NO. S-7 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	30
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

WEST CURB LINE

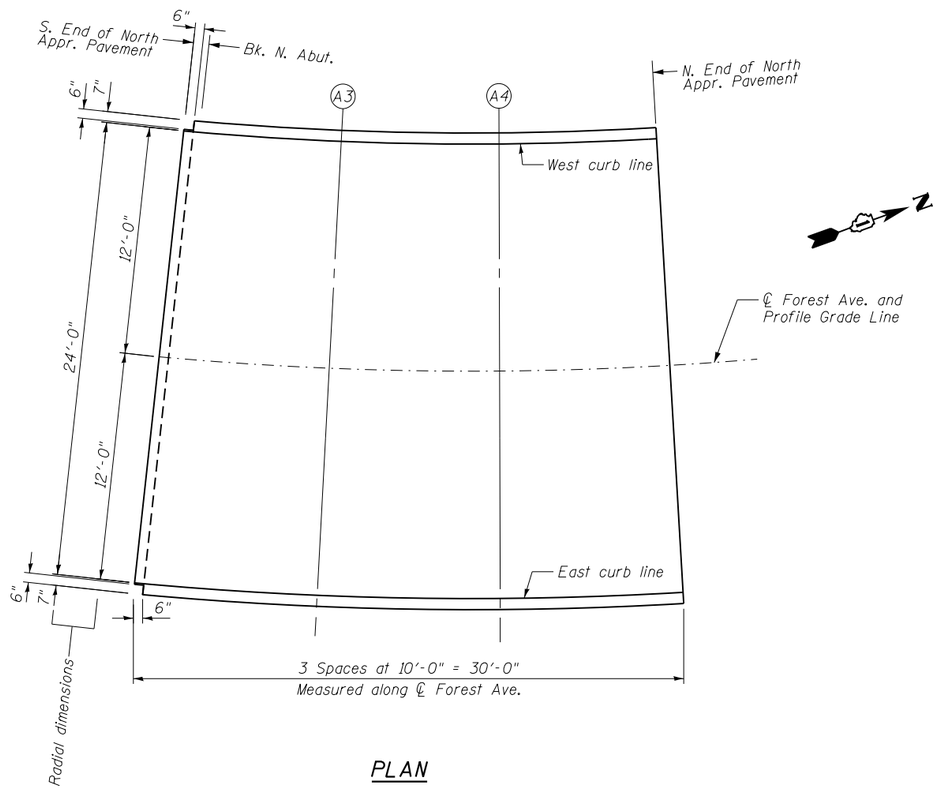
Location	Station	Offset	Theoretical Grade Elevations
S. End of North Appr. Pavement	104+83.35	-12.00	661.40
A3	104+93.35	-12.00	661.60
A4	105+03.35	-12.00	661.79
N. End of North Appr. Pavement	105+13.35	-12.00	661.99

℄ ROADWAY AND PGL

Location	Station	Offset	Theoretical Grade Elevations
S. End of North Appr. Pavement	104+83.35	0.00	661.59
A3	104+93.35	0.00	661.79
A4	105+03.35	0.00	661.98
N. End of North Appr. Pavement	105+13.35	0.00	662.18

EAST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of North Appr. Pavement	104+83.35	12.00	661.40
A3	104+93.35	12.00	661.60
A4	105+03.35	12.00	661.79
N. End of North Appr. Pavement	105+13.35	12.00	661.99



PLAN

N:\PROJ\0020349.00\0020349.03\Design\Structural\CAD\0020349_08_Top North App Slab Elevation.dgn

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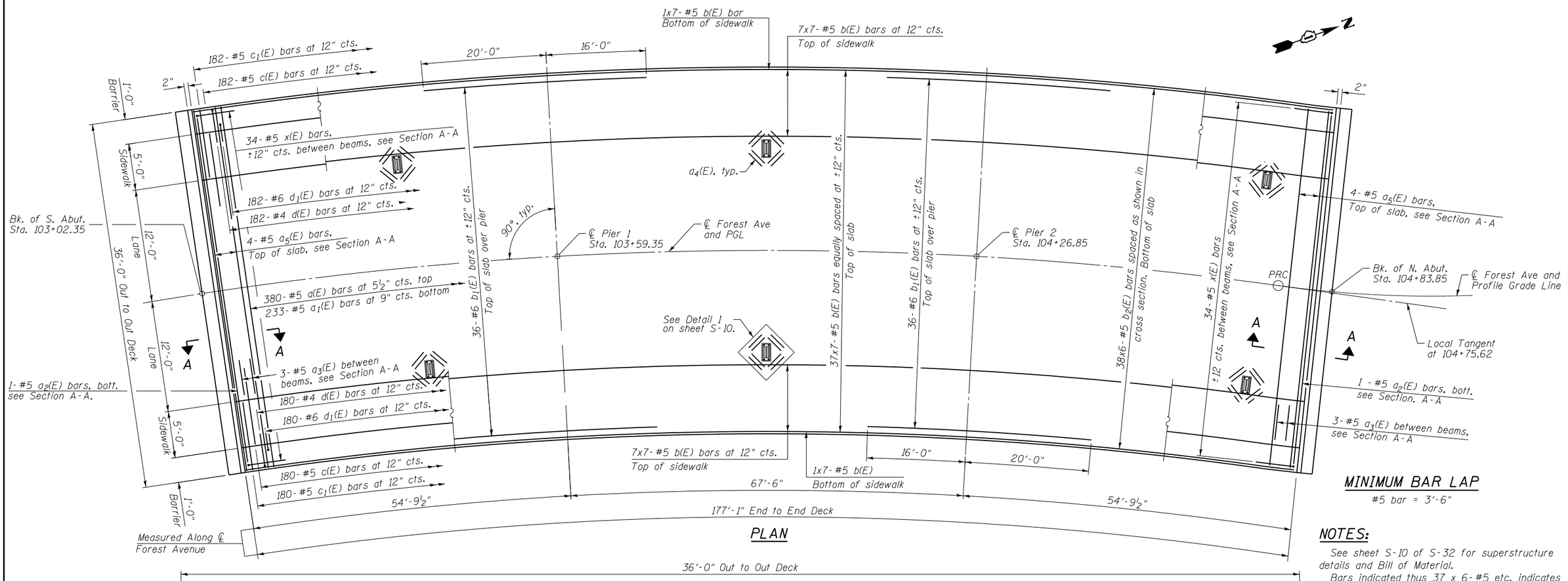
PLOT SCALE = 8.0000 sf / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF N. APPROACH SLAB ELEVATIONS
STRUCTURE NO. 049-6559
SHEET NO. S-8 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	31
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	



PLAN

MINIMUM BAR LAP

#5 bar = 3'-6"

NOTES:

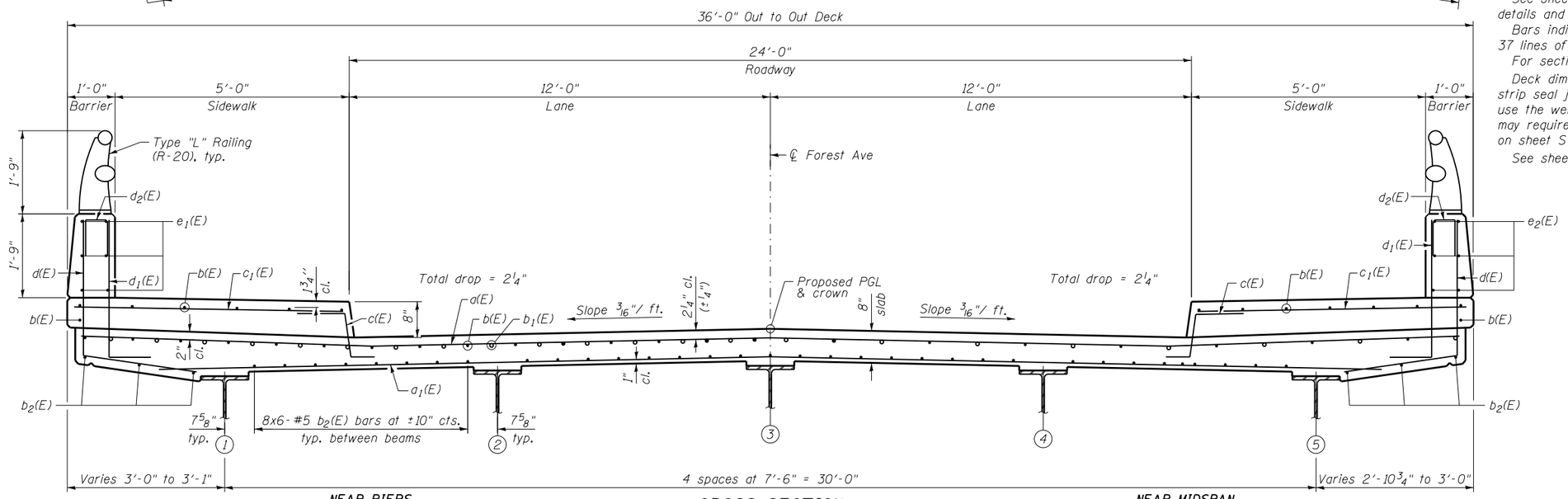
See sheet S-10 of S-32 for superstructure details and Bill of Material.

Bars indicated thus 37 x 6-#5 etc. indicates 37 lines of bars with 6 lengths per line.

For section A-A, see sheet S-10.

Deck dimensions are based on a rolled rail strip seal joint. If the Contractor elects to use the welded Rail Seal Joint, deck dimensions may require adjustment to satisfy the details on sheet S-16.

See sheet S-12 for locations of scuppers..



NEAR PIERS — NEAR MIDSPAN

CROSS SECTION

(Looking North)

Horizontal dimensions are radial

Clorba Group, Inc. CONSULTING ENGINEERS 5507 North Cumberland Avenue Suite 402 Chicago, Illinois 60656 Tel. 773.775.4069 Fax 773.775.4014 Email chicago@clorba.com	USER NAME = sallgood	DESIGNED - SSM	REVISED -
		CHECKED - BWS	REVISED -
	PLOT SCALE = 16.0000 ' / in.	DRAWN - SBA	REVISED -
	PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

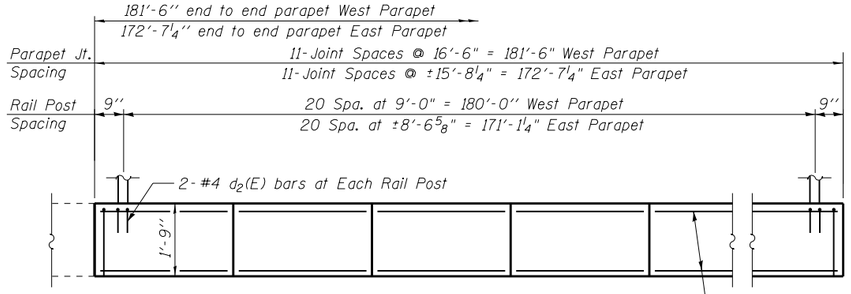
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN AND CROSS SECTION
STRUCTURE NO. 049-6559

SHEET NO. S-9 OF S-32 SHEETS

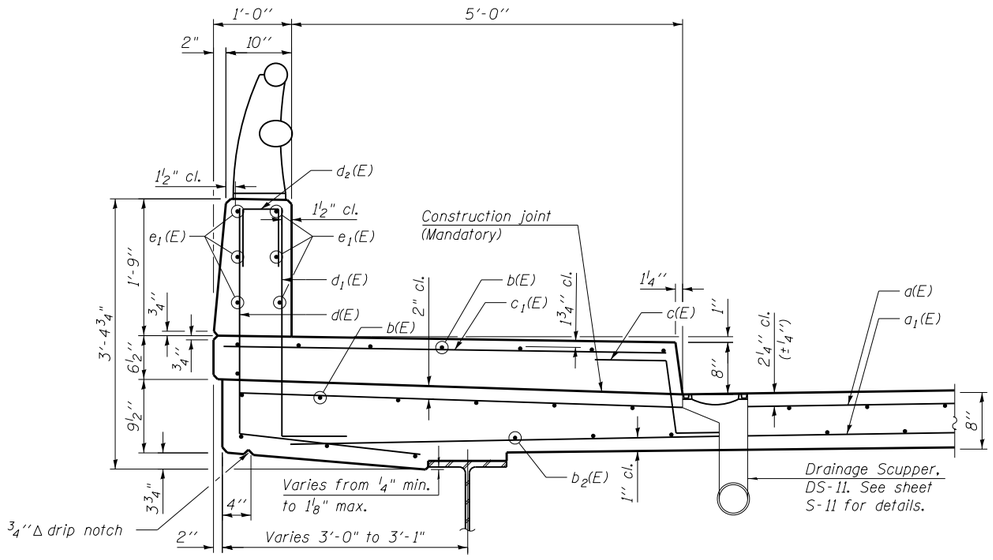
MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	32
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

N:\PROJ\0020349.00\0020349.03\Design\Structural\CAD\0020349_09.Deck Plan and Cross Section.dgn



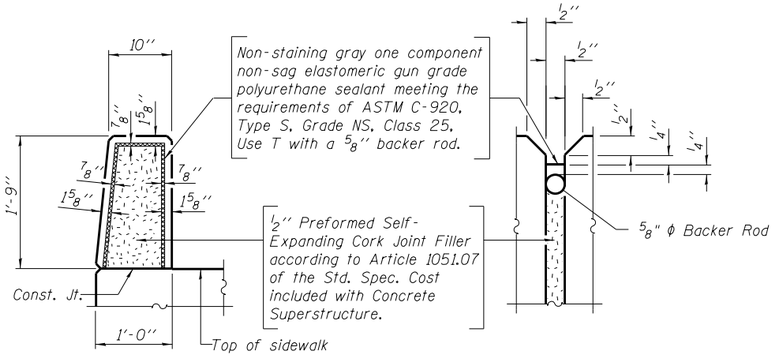
INSIDE ELEVATION OF PARAPET

6-#4 $e_1(E)$ bars West Parapet
6-#4 $e_2(E)$ bars East Parapet
See Section thru Sidewalk
(typ. 11 Panels)

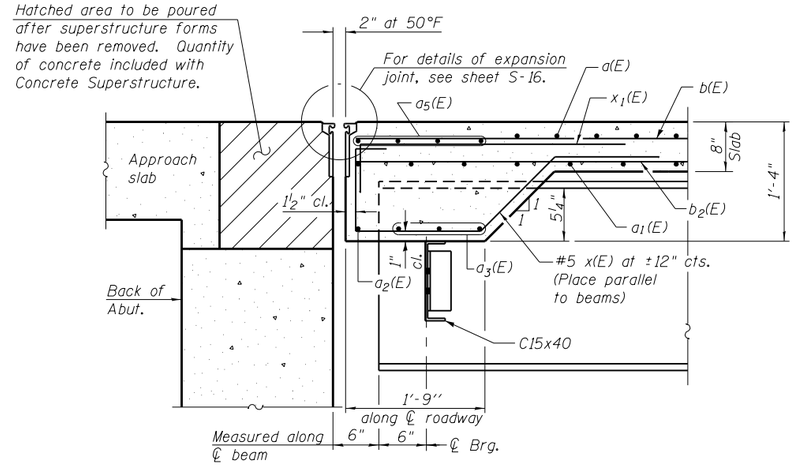


SECTION THRU WEST SIDEWALK

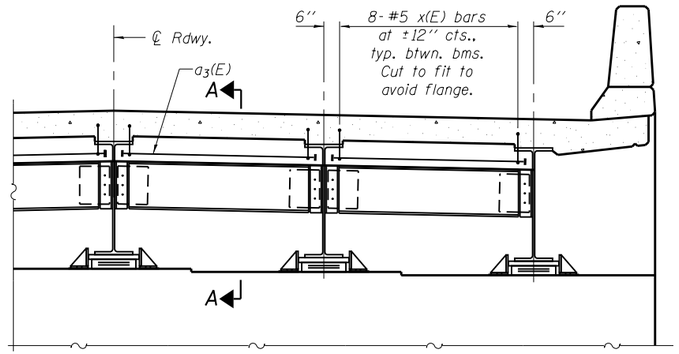
(East Sidewalk Similar)



PARAPET JOINT DETAILS



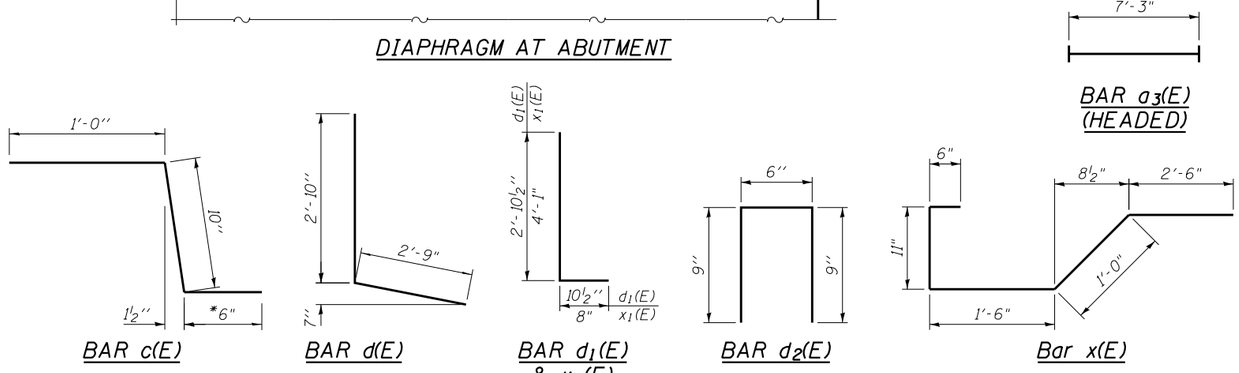
SECTION A-A



DIAPHRAGM AT ABUTMENT

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	380	#5	35'-4"	
$a_1(E)$	233	#5	35'-4"	
$a_2(E)$	2	#6	35'-4"	
$a_3(E)$	24	#5	7'-3"	
$a_4(E)$	48	#5	1'-6"	
$a_5(E)$	8	#5	35'-4"	
b(E)	357	#5	33'-6"	
$b_1(E)$	72	#6	36'-0"	
$b_2(E)$	228	#5	28'-6"	
c(E)	362	#5	2'-4"	
$c_1(E)$	362	#5	5'-8"	
d(E)	362	#4	5'-7"	
$d_1(E)$	362	#6	3'-9"	
$d_2(E)$	84	#4	2'-0"	
$e_1(E)$	66	#4	16'-2"	
$e_2(E)$	66	#4	15'-4"	
x(E)	64	#5	6'-5"	
$x_1(E)$	64	#4	4'-9"	
Concrete Superstructure			Cu Yd	244.3
Bridge Deck Grooving			Sq Yd	429
Protective Coat			Sq Yd	797
Reinforcement Bars, Epoxy Coated			Pound	76,510



BAR c(E)

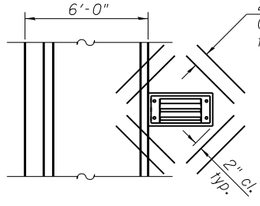
BAR d(E)

BAR $d_1(E)$ & $x_1(E)$

BAR $d_2(E)$

Bar x(E)

BAR $a_3(E)$ (HEADED)



DETAIL 1

* In lieu of bottom leg, c(E) bars may be cored and set according to Article 509.06 of the Standard Specifications. Cored holes shall be roughened or scored per manufacturer's recommendations. Maximum depth of cored hole shall not exceed 6".

NOTES:

Headed bars shall conform to ASTM A970 Class HA. Cost included with Reinforcement Bars, Epoxy Coated.

For diaphragm details see sheet S-19 of S-32.

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

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Email chicago@ciorba.com

USER NAME = sallgood	DESIGNED - SSM	REVISED -	
	CHECKED - BWS	REVISED -	
PLOT SCALE = 0ø2.0000 '' / in.	DRAWN - SBA	REVISED -	
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 049-6559
SHEET NO. S-10 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	33
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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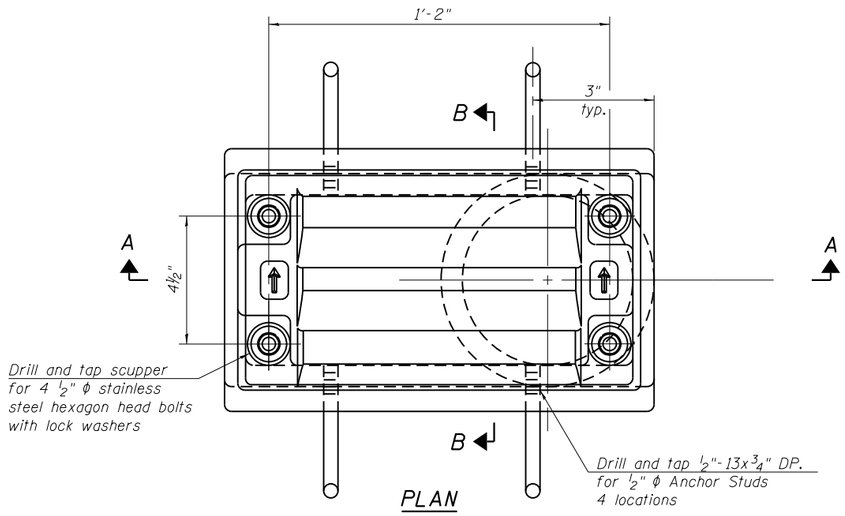
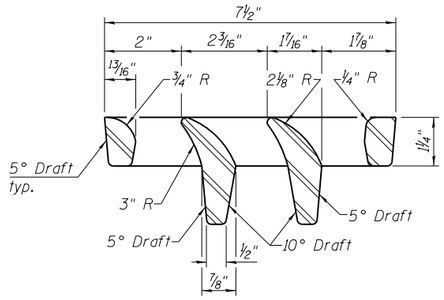
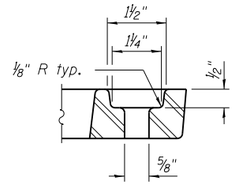


PLAN



VANE GRATE DETAIL



BOLT HOLE DETAIL

NOTES:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

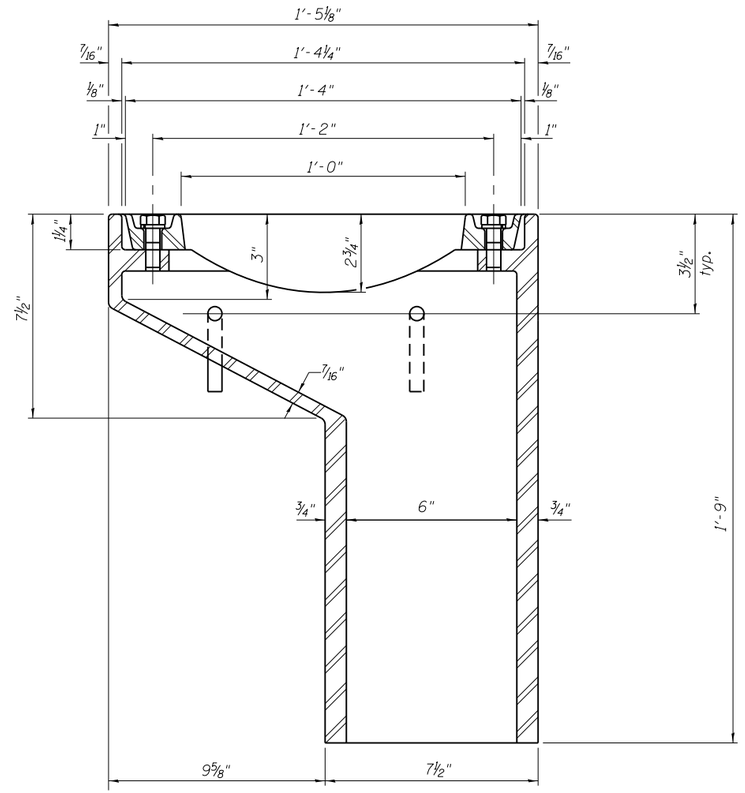
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

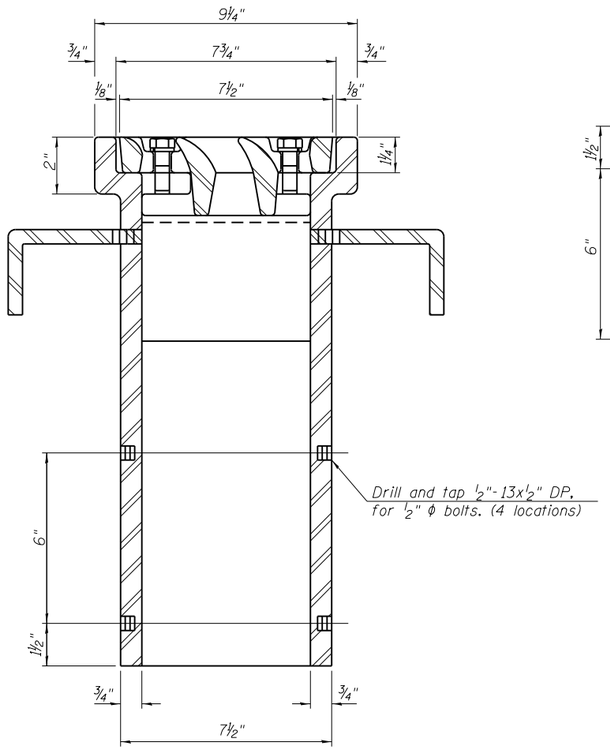
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

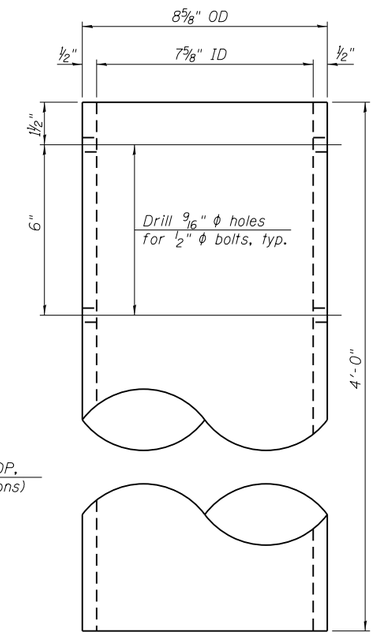


SECTION A-A

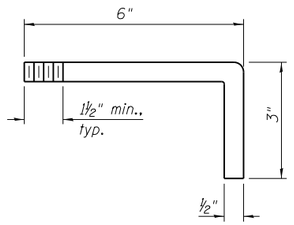
See sheet S-9 of S-32 for scupper location relative to parapet.



SECTION B-B



DOWNSPOUT



ANCHOR STUD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	6

DS-11

2-17-2017

USER NAME = sallgood	DESIGNED -		REVISED -
	CHECKED - BWS		REVISED -
PLOT SCALE = 0.2.0000 '' / in.	DRAWN - SBA		REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS		REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DS-11 SCUPPER DETAILS
STRUCTURE NO. 049-6559
SHEET NO. S-11 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	34
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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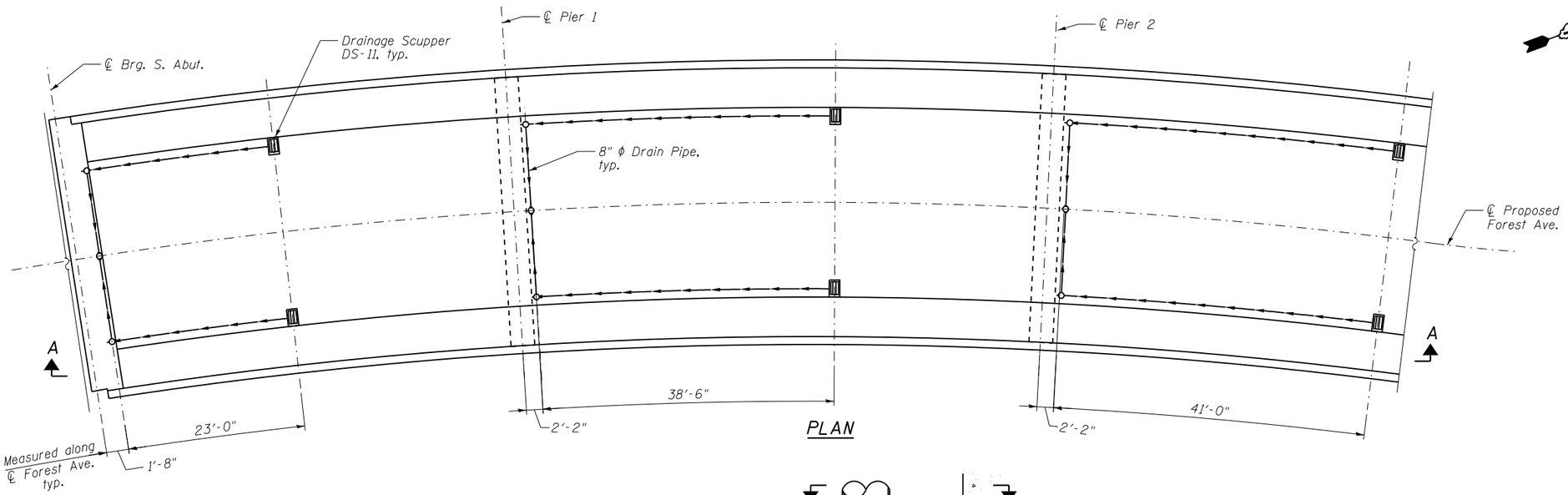
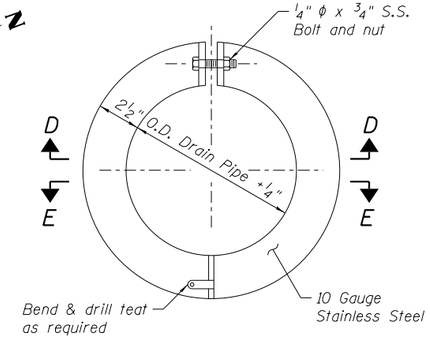
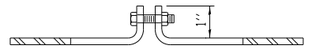


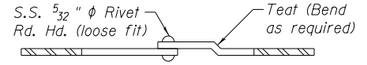
PLAN



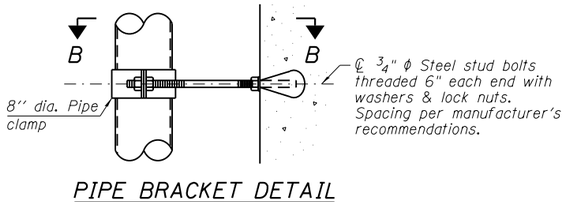
DETAIL OF EXPANSION COLLAR



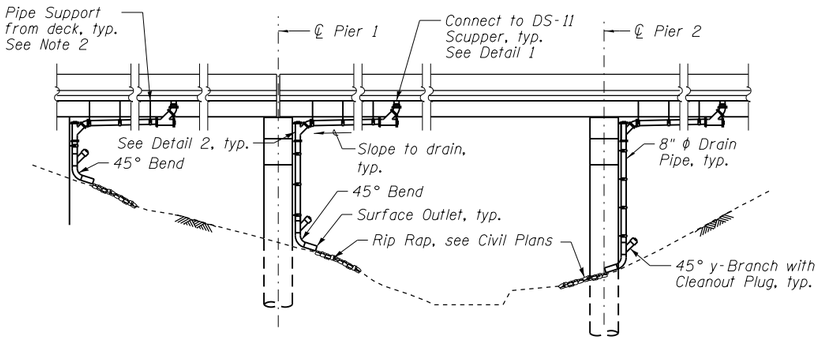
SECTION D-D



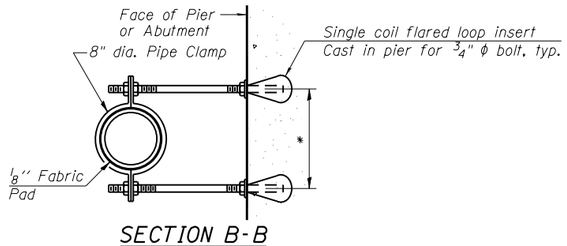
SECTION E-E



PIPE BRACKET DETAIL

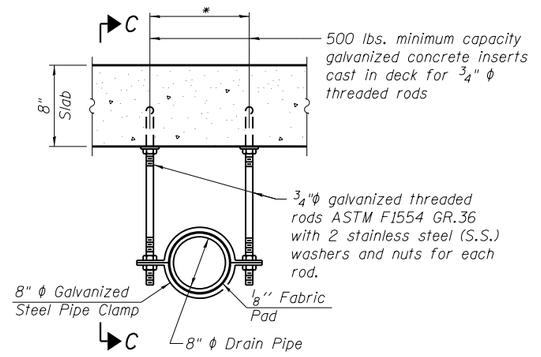


VIEW A-A



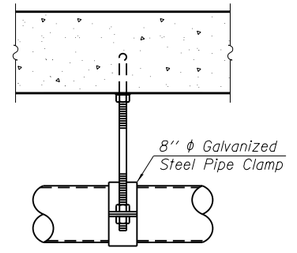
SECTION B-B

* Dimension as required by Pipe Clamp

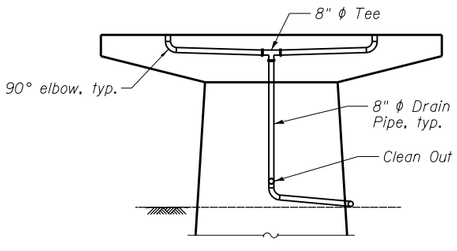


COLLECTOR PIPE HANGER DETAIL

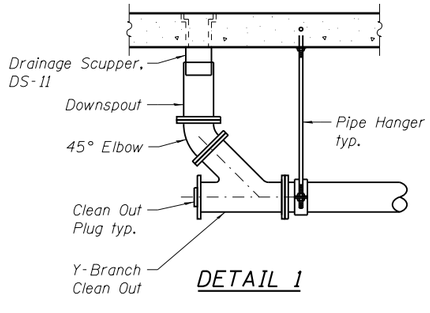
* Dimension as required by Pipe Clamp



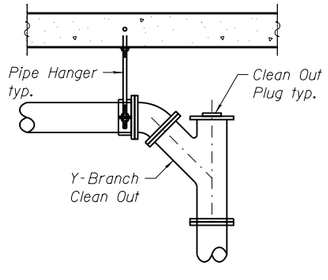
VIEW C-C



TYPICAL PIER ELEVATION



DETAIL 1



DETAIL 2

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Drainage System	L. Sum	1.0

LEGEND

Indicates Direction of Flow

NOTES:

1. Drain pipes and fittings shall be DI Pipe, CL. 5.2.
2. Provide structural support from proposed deck slab for drain pipe per manufacturer's recommendation, not to exceed 5' cts. Cost included with "Drainage System".
3. Steel straps, bars and plates shall meet the requirements of AASHTO M270, Grade 36 or 50.
4. All pipes, pipe fittings and brackets needed shall be included with cost of "Drainage System".
5. Color of fiberglass pipe shall be brown.

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USER NAME = sallgood	DESIGNED - SSM	REVISED -
	CHECKED - BWS	REVISED -
PLOT SCALE = 16:0.0000 '1' / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CLOSED DRAINAGE SYSTEM DETAILS
STRUCTURE NO. 049-6559
SHEET NO. S-12 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	35
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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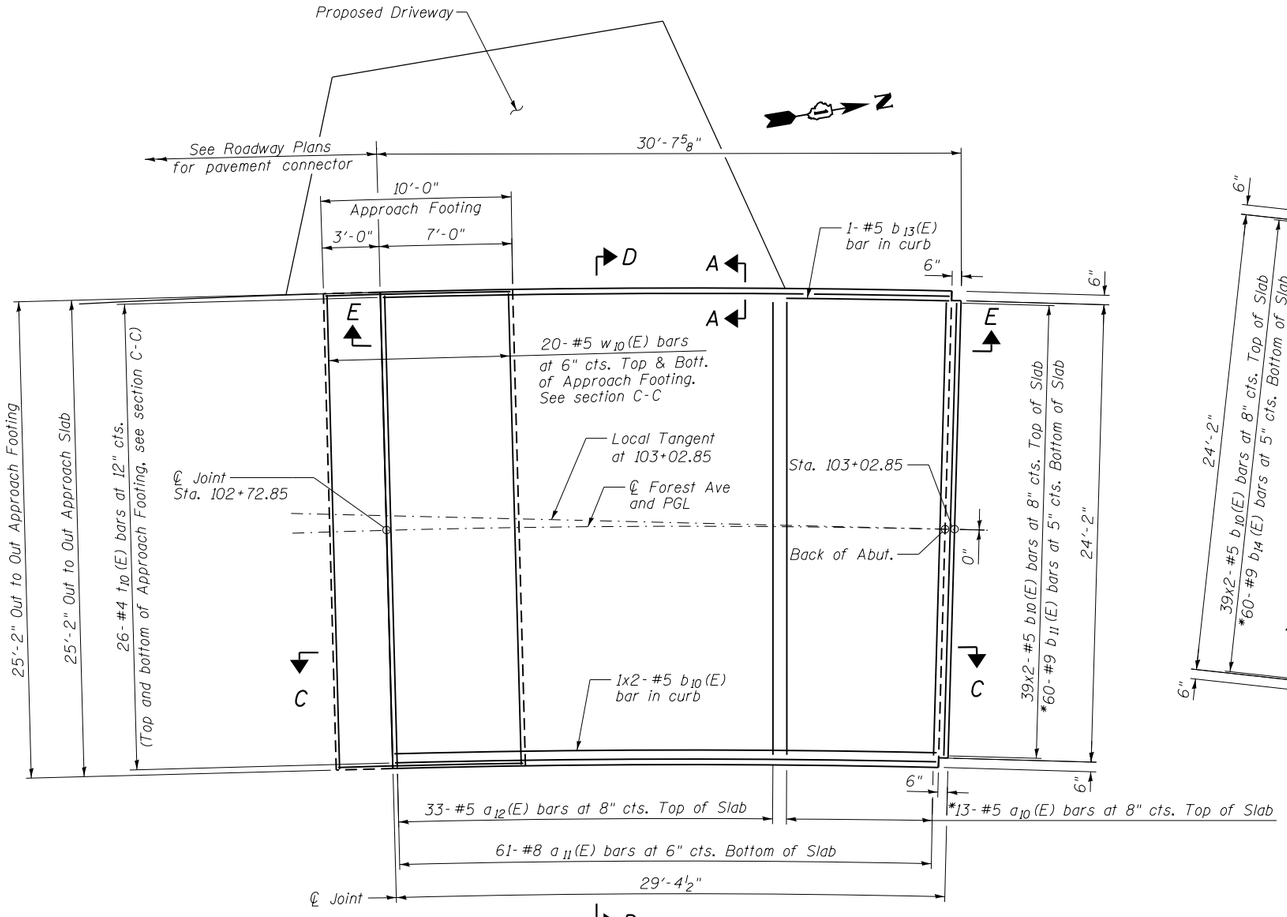
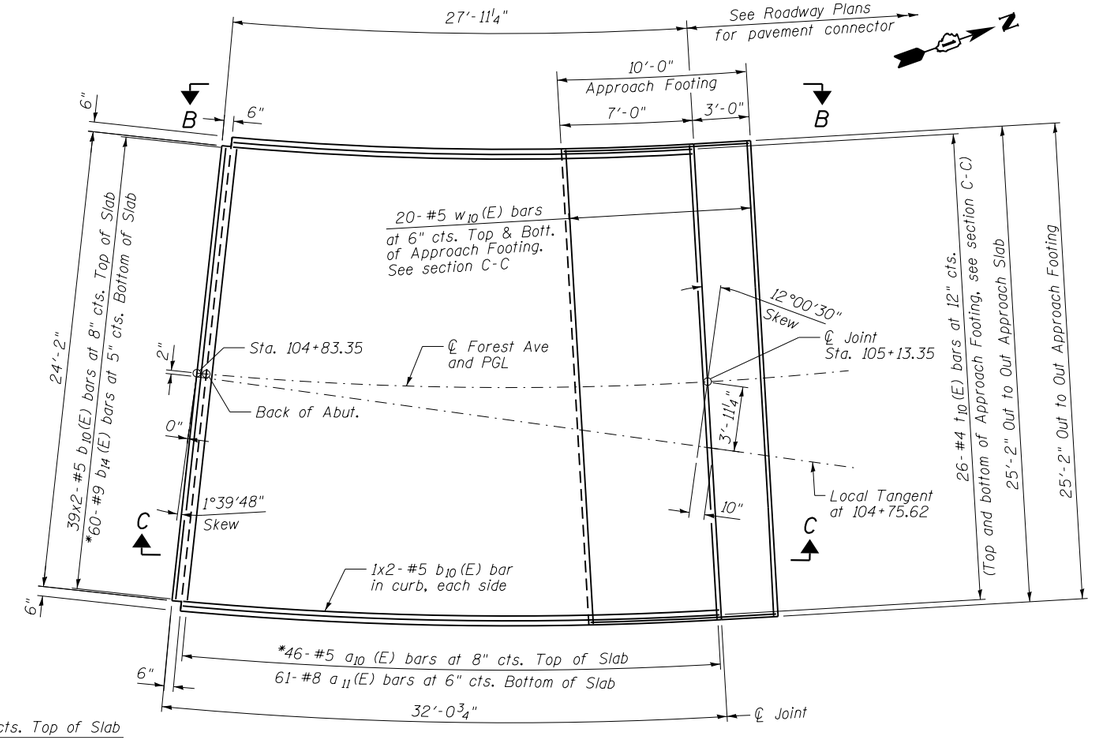
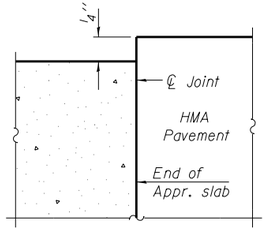


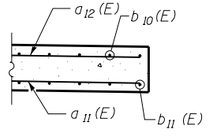
PLAN
SOUTH APPROACH



PLAN
NORTH APPROACH



FLEXIBLE PAVEMENT



SECTION A-A

MINIMUM BAR LAP

#5 bar = 3'-4"

NOTES:

For View B-B, Section C-C, Section D-D, and View E-E, see sheet S-14.

*Trim $a_{10}(E)$, $b_{10}(E)$, and $b_{14}(E)$ bars in the field to fit approach slab.

Bars indicated thus 37x6-#5 etc., indicates 37 lines of bars with 6 lengths per line.

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USER NAME = sallgood	DESIGNED - SSM	REVISED -
	CHECKED - BWS	REVISED -
PLOT SCALE = 8.0000 ' / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS 1
STRUCTURE NO. 049-6559
SHEET NO. S-13 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	36
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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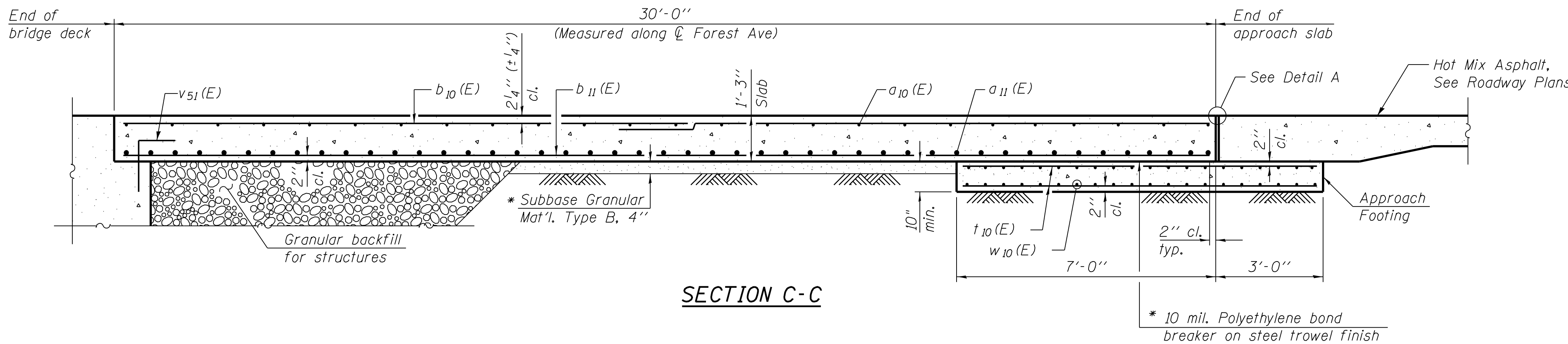
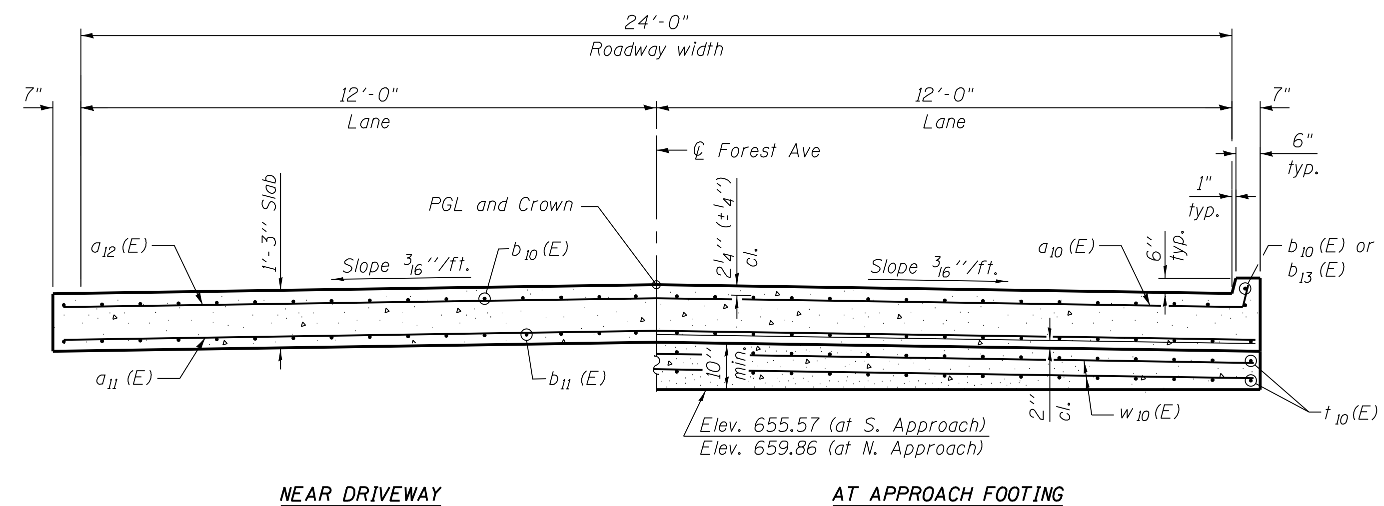
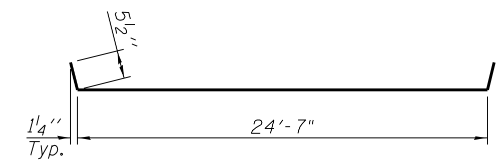


SECTION C-C

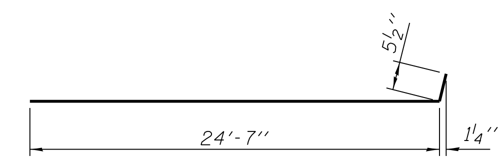


SECTION D-D

(See Plan for dimensions not shown)
(Horizontal dimensions are radial)



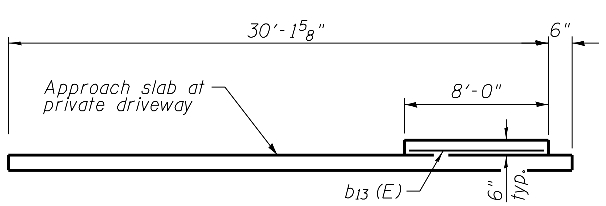
BAR a_{10}(E)



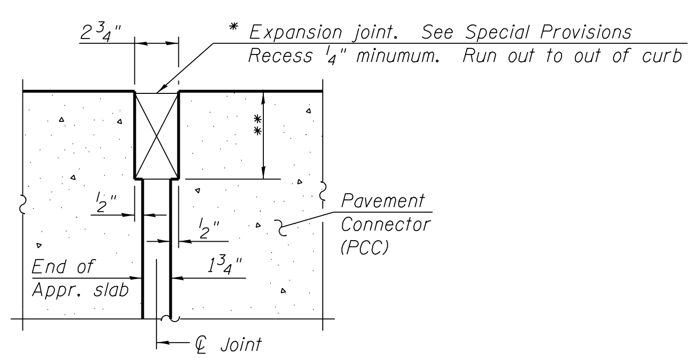
BAR a_{12}(E)

TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{10}(E)	59	# 5	25'-6"	
a_{11}(E)	122	# 8	24'-10"	
a_{12}(E)	33	# 5	25'-1"	
b_{10}(E)	162	# 5	17'-6"	
b_{11}(E)	60	# 9	30'-3"	
b_{13}(E)	1	# 5	7'-8"	
b_{14}(E)	60	# 9	31'-8"	
t_{10}(E)	104	# 4	9'-8"	
w_{10}(E)	80	# 5	24'-10"	
Bridge Deck Grooving		Sq Yd	147	
Protective Coat		Sq Yd	174	
Concrete Structures		Cu Yd	16.8	
Concrete Superstructure (Approach Slab)		Cu Yd	71.0	
Reinforcement Bars, Epoxy Coated		Pound	28,870	



VIEW E-E

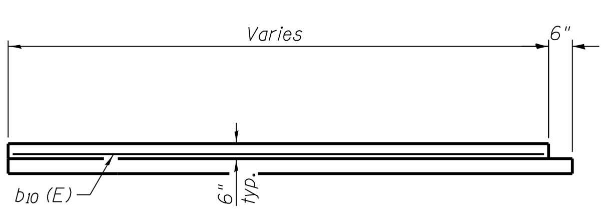


DETAIL A

(Detail A shown, applies to Highway Standard 420401 only. Detail A for pavement connector (HMA) may be found on Highway Standard 420406.)

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations

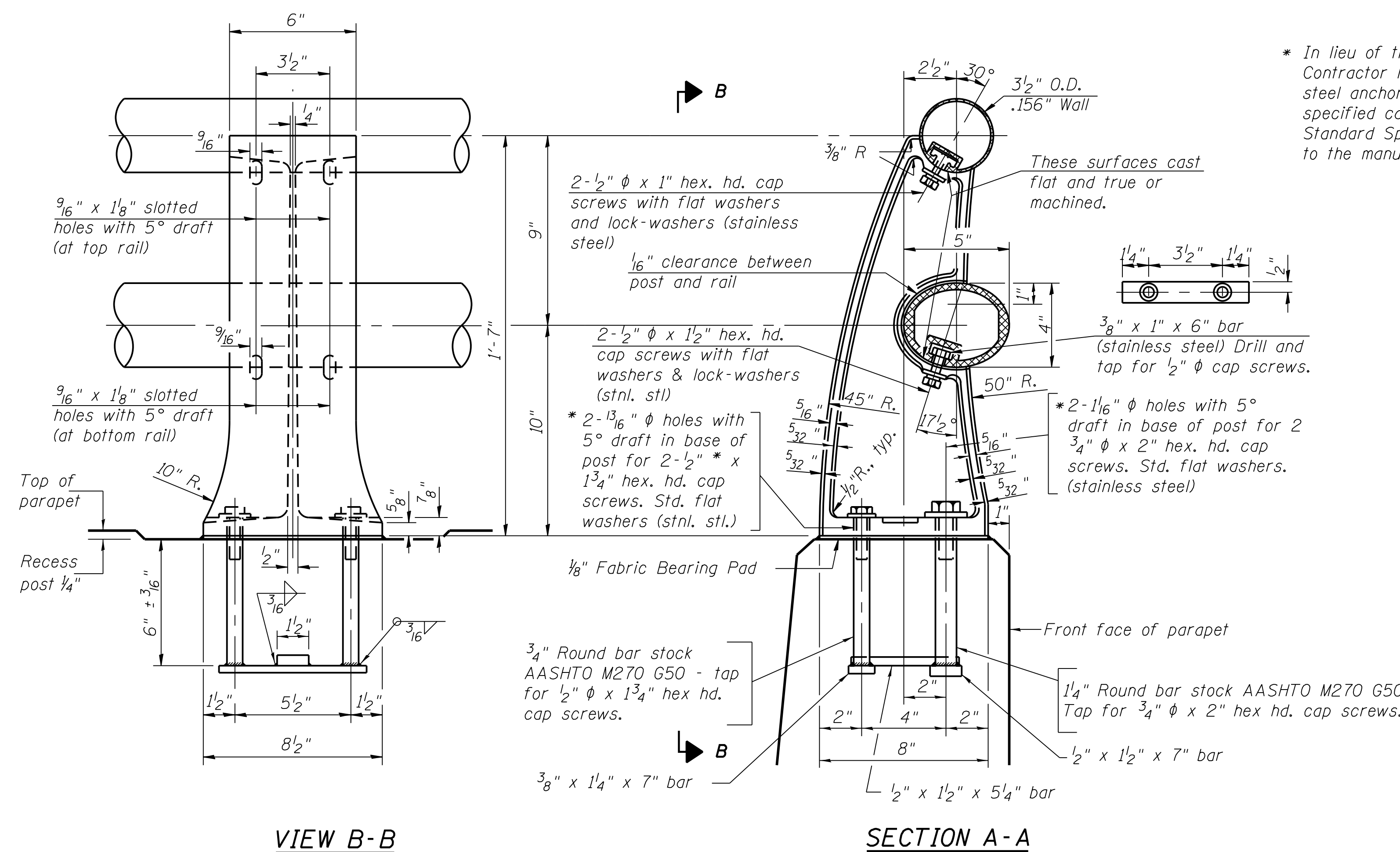


VIEW B-B

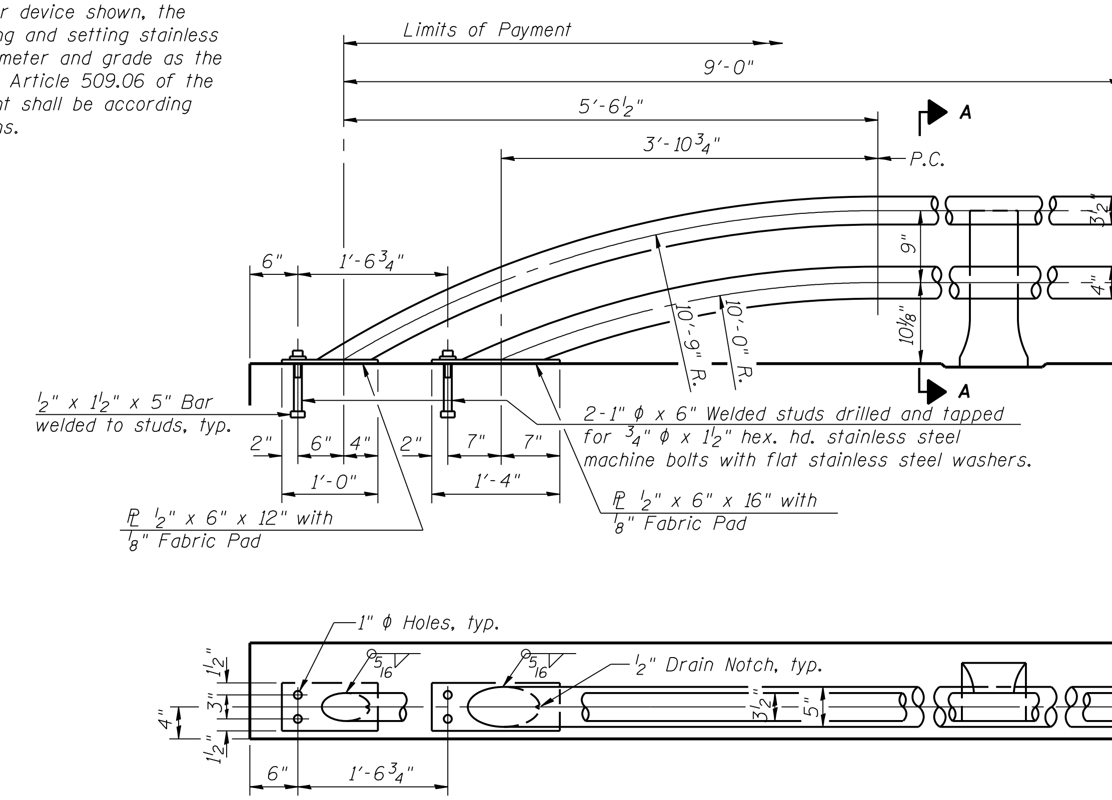
NOTES:

1. For v_{51}(E) bar details, see sheet S-23 and S-24 of S-32.
2. Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
3. Approach footing concrete shall be paid for as Concrete Structures.
4. Cost of excavation for approach footing included with Concrete Structures.
5. For Granular Backfill for Structures and drainage treatment details, see sheet S-2 of S-32.
6. The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

* In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

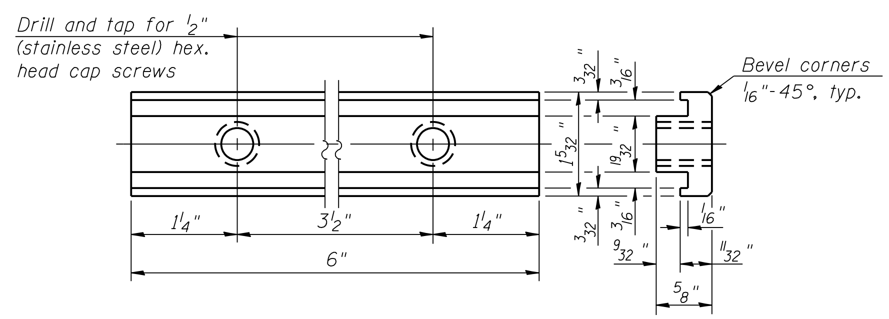


RAIL POST DETAILS

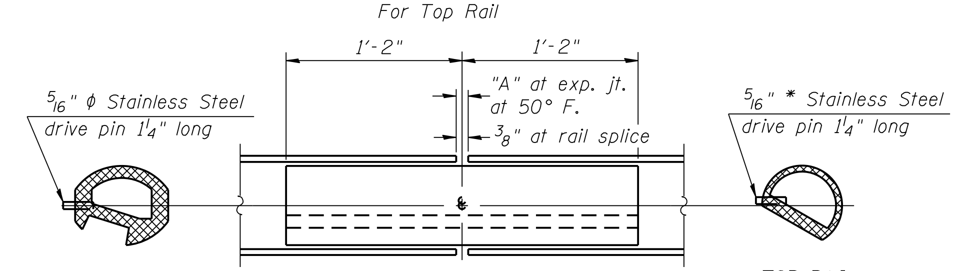


RAIL TERMINAL SECTION

Note: The end rail post shall be set back as required for the terminal rail section.



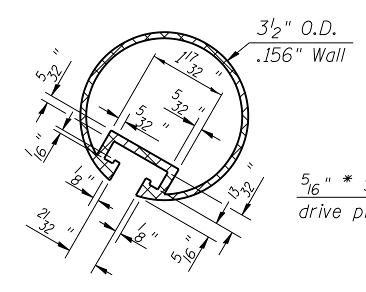
RAIL POST CLAMP BAR
For Top Rail



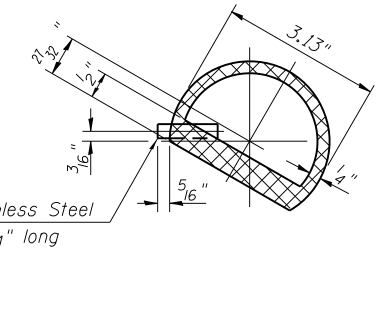
RAIL SPLICE

T	"A"
= 4"	2½"
> 4" = 6½"	3¾"
> 6½" = 9"	5"
> 9" = 13"	7"

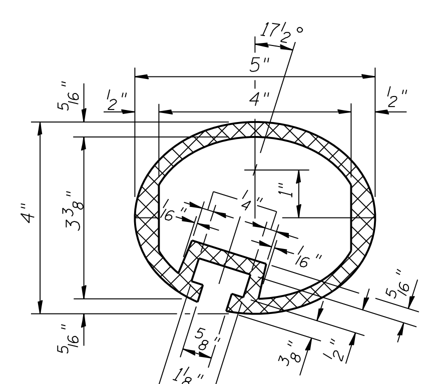
T = Total movement at expansion joint as shown on the design plans.



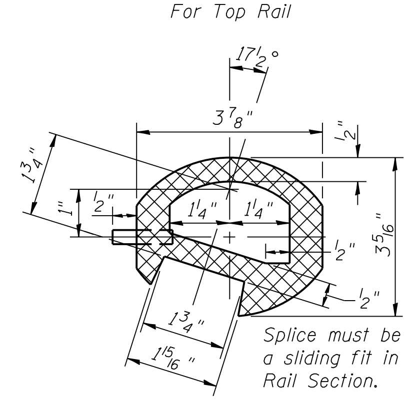
SECTION THRU TOP RAIL



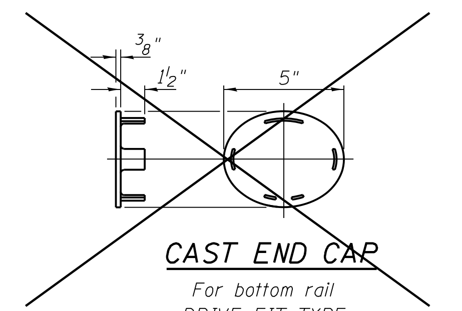
SECTION THRU SPLICE
For Top Rail



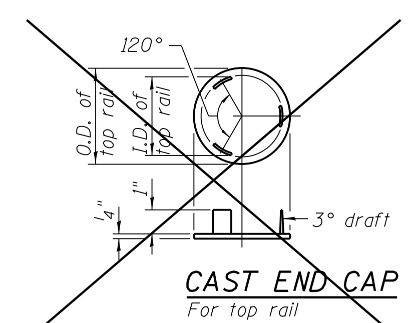
SEC. THRU ELLIPTICAL RAIL SECTION



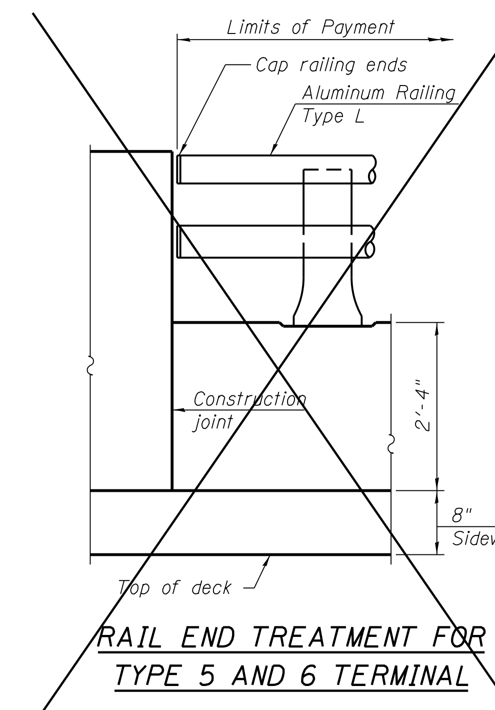
SEC. THRU SPLICE



CAST END CAP
For bottom rail
DRIVE FIT TYPE



CAST END CAP
For top rail



RAIL END TREATMENT FOR TYPE 5 AND 6 TERMINAL

Notes:
All Posts shall be normal to parapet.
All joints in rail shall be spliced per detail.
All exposed rail ends shall be capped per detail.
Provide 1-⅛" and 2-1/16" Aluminum Shims for 25% of the Posts. Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.
See sheet of for rail post spacing.

BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Railing, Type L	Foot	421

R-20 8-11-2017 (7'-0" to 10'-0" Post spacing)

N:\PROJ\0020349.00\0020349.03\Design\Structural\CAD\0020349_15.Bridge Railing Details 1.dgn

Clorba Group, Inc. CONSULTING ENGINEERS

USER NAME = sallgood	DESIGNED -	REVISED -
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PLOT SCALE = 0:2.0000 ':' / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

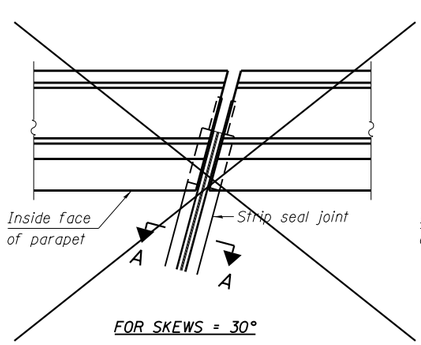
BRIDGE RAILING (PARAPET MOUNTED)
STRUCTURE NO. 049-6559

SHEET NO. S-15 OF S-32 SHEETS

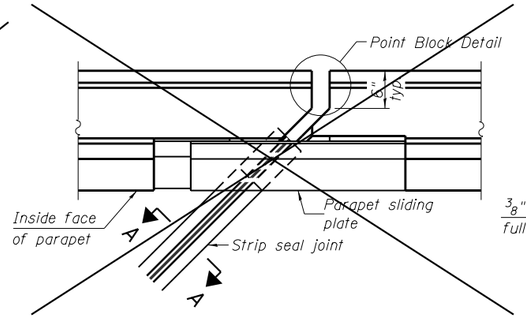
MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	38

CONTRACT NO. 61E28

FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT M-BRM-4003(391)

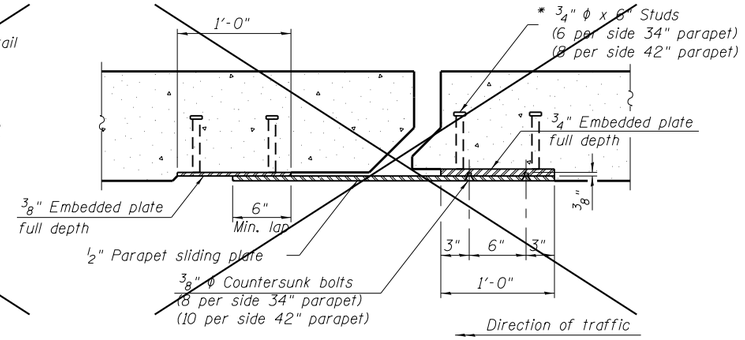


FOR SKEWS = 30°

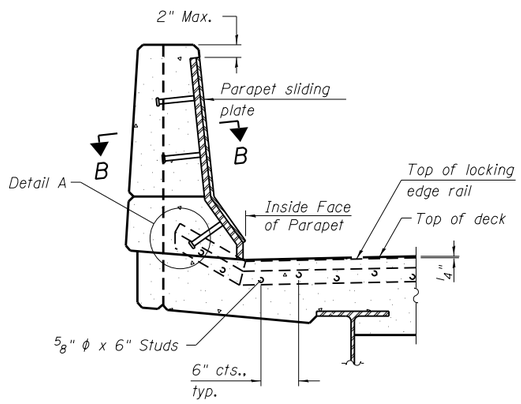


FOR SKEWS > 30°

PLAN AT PARAPET

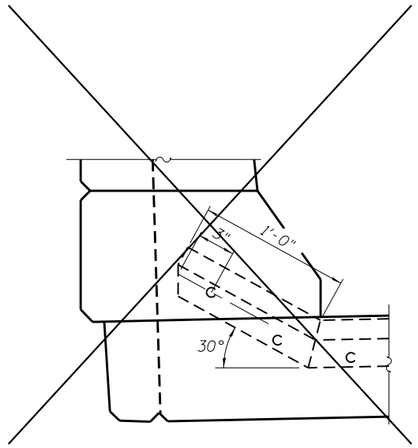


SECTION B-B

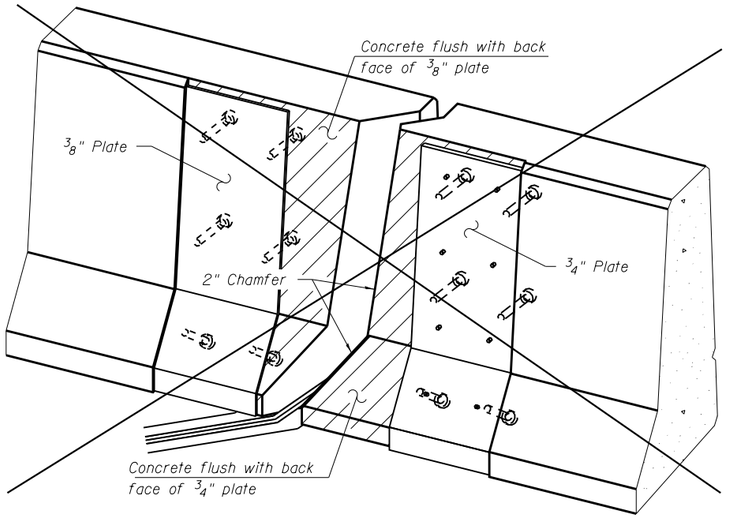


ELEVATION AT PARAPET

(Skews > 30° shown. Skews = 30° similar except as shown in plan view.)



DETAIL A



TRIMETRIC VIEW

(Showing embedded plates only)

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4 1/2" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

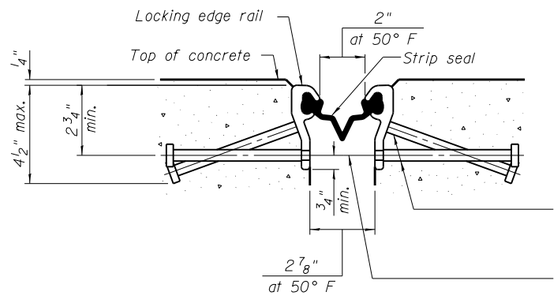
The Maximum space between locking edge rail segments shall be 1/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

The top surface of sidewalk sliding plates shall have a raised pattern according to ASTM A786.

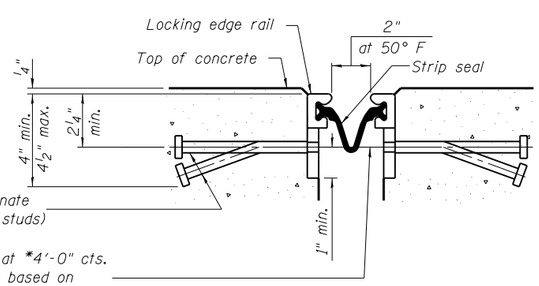
Cost of parapet sliding plates, sidewalk sliding plates, embedded plates, anchorage studs, and expansion anchors included with Preformed Joint Strip Seal.

34" F-shape barrier shown, 42" F-shape similar as noted.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.



SHOWING ROLLED RAIL JOINT



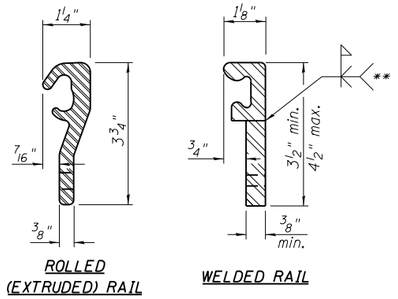
SHOWING WELDED RAIL JOINT

* 5/8" * x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

1/16" threaded rods in 1/16" holes at *4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

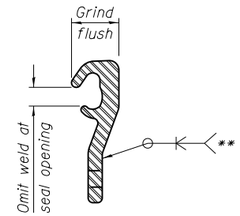


ROLLED (EXTRUDED) RAIL

WELDED RAIL

LOCKING EDGE RAILS

** Back gouge not required if complete joint penetration is verified by mock-up.



LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	68

EJ-SS-S

8-11-17

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USER NAME = sallgood	DESIGNED -		REVISED -
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PLOT DATE = 8/11/2017	CHECKED -	BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXPANSION JOINT DETAILS 1
STRUCTURE NO. 049-6559

SHEET NO. S-16 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	39
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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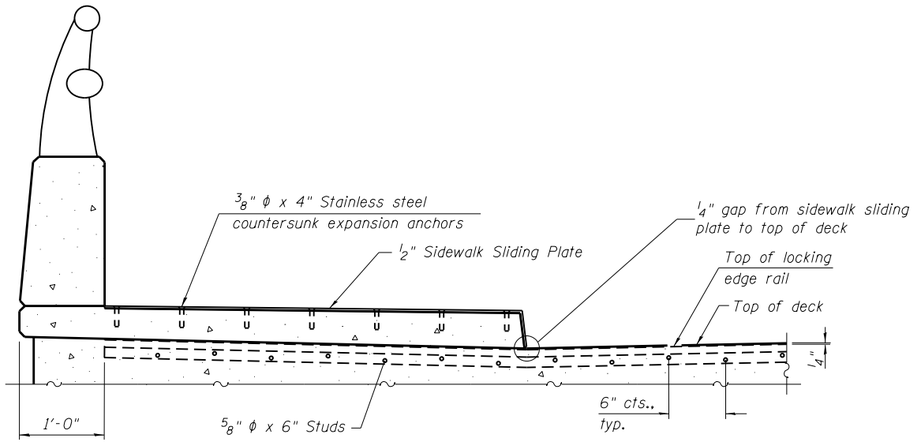
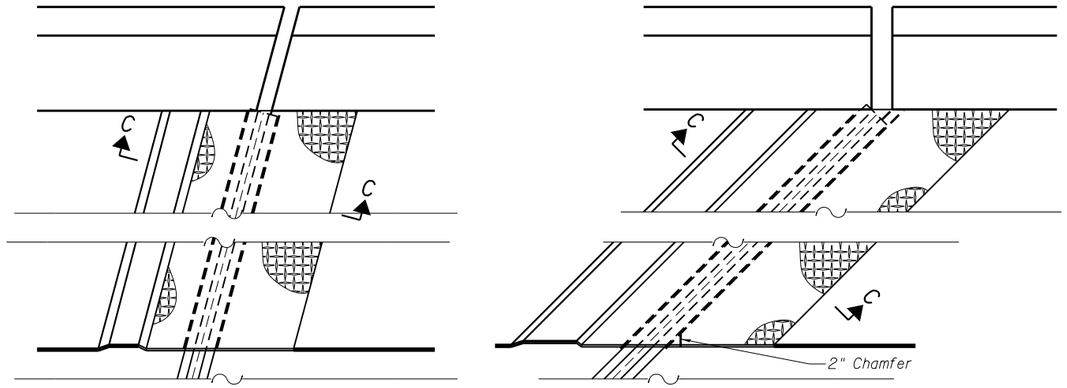


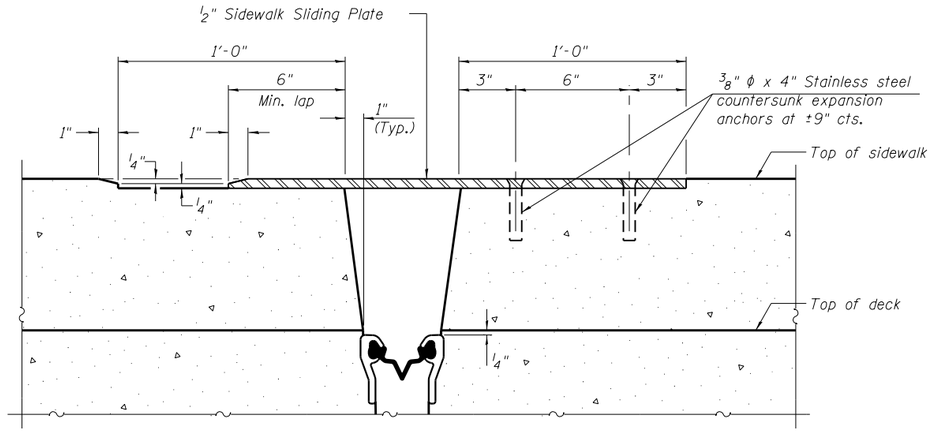
ELEVATION AT RAISED SIDEWALK



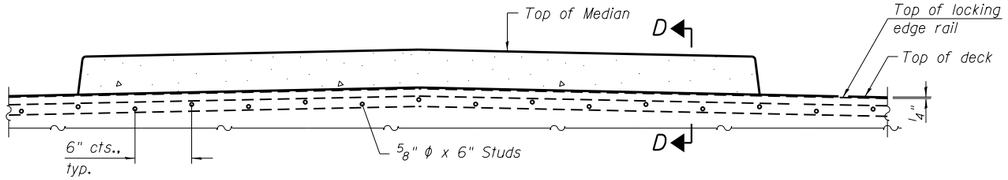
(FOR SKEWS = 30°)

(FOR SKEWS > 30°)

PLAN AT RAISED SIDEWALK

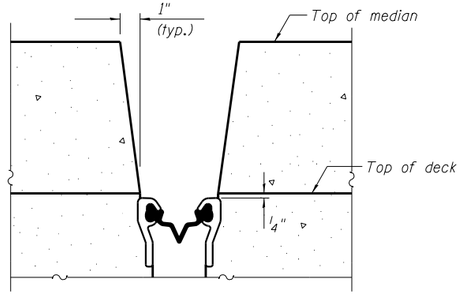


SECTION C-C



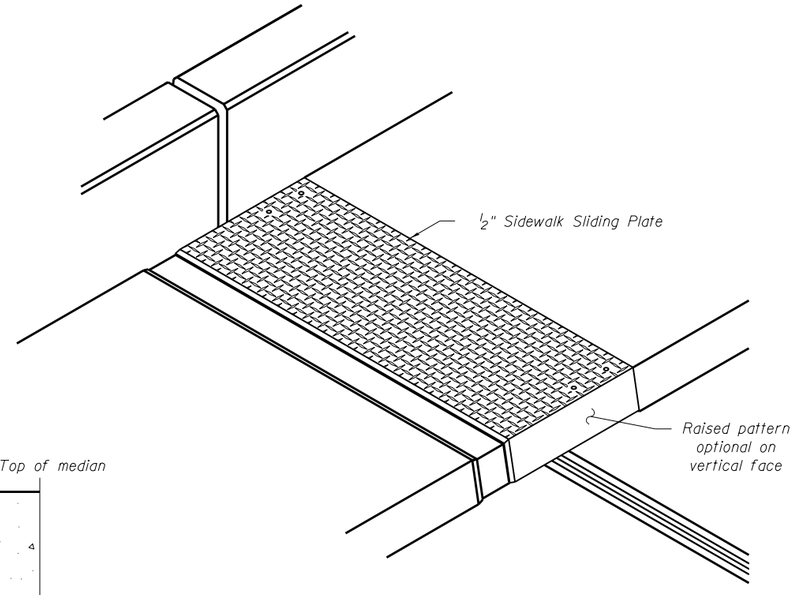
ELEVATION AT MEDIAN

For skews > 30°, chamfer acute corners 2" similar to sidewalk.



SECTION D-D

(at Rt. □'s)



TRIMETRIC VIEW

EJ-SS-S 8-11-17

Ciorba Group, Inc.
CONSULTING ENGINEERS
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USER NAME = sallgood	DESIGNED -	REVISED -
	CHECKED - BWS	REVISED -
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PLOT DATE = 10/6/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXPANSION JOINT DETAILS 2
STRUCTURE NO. 049-6559
SHEET NO. S-17 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	39A
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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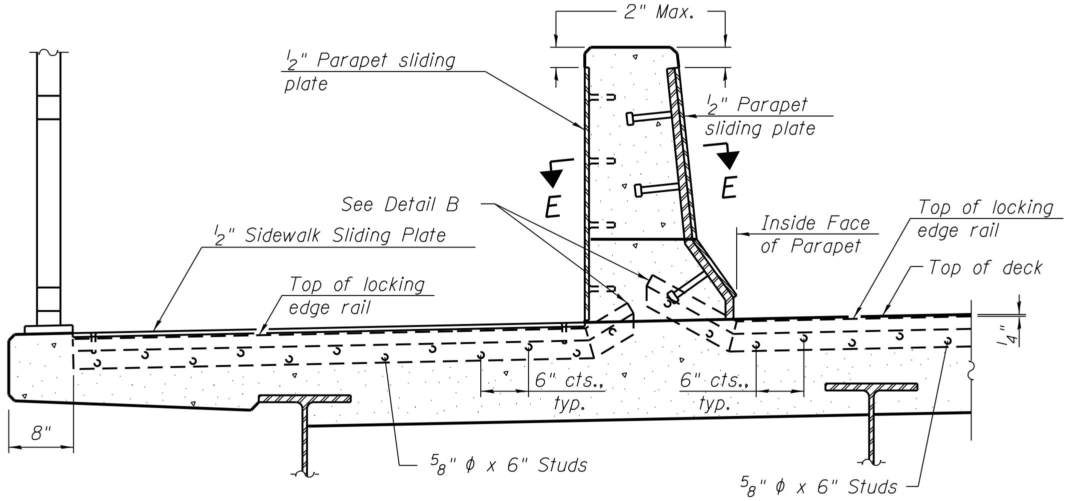
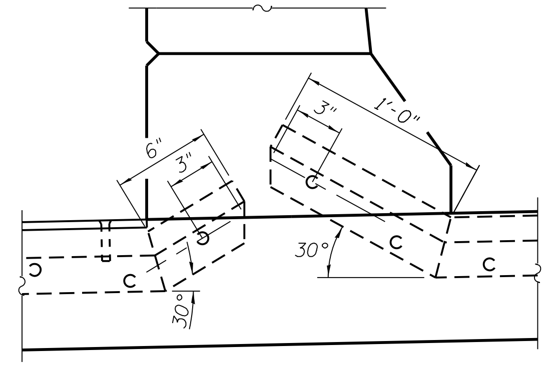
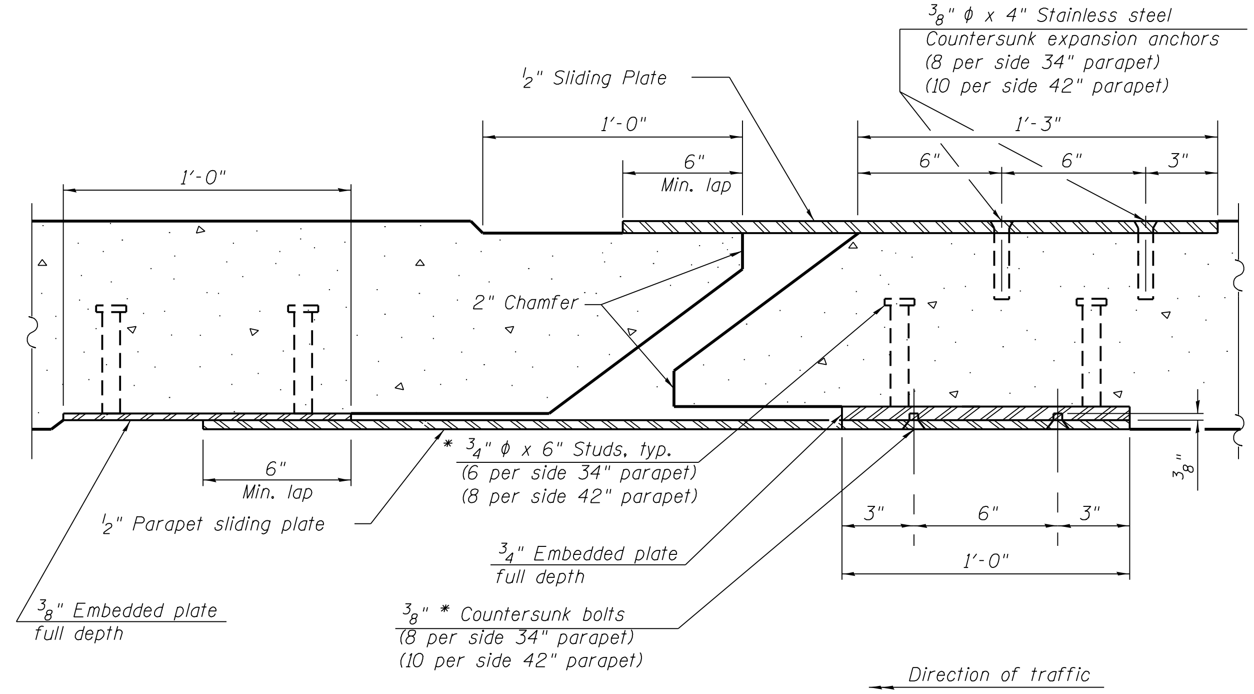


ELEVATION AT DECK LEVEL SIDEWALK

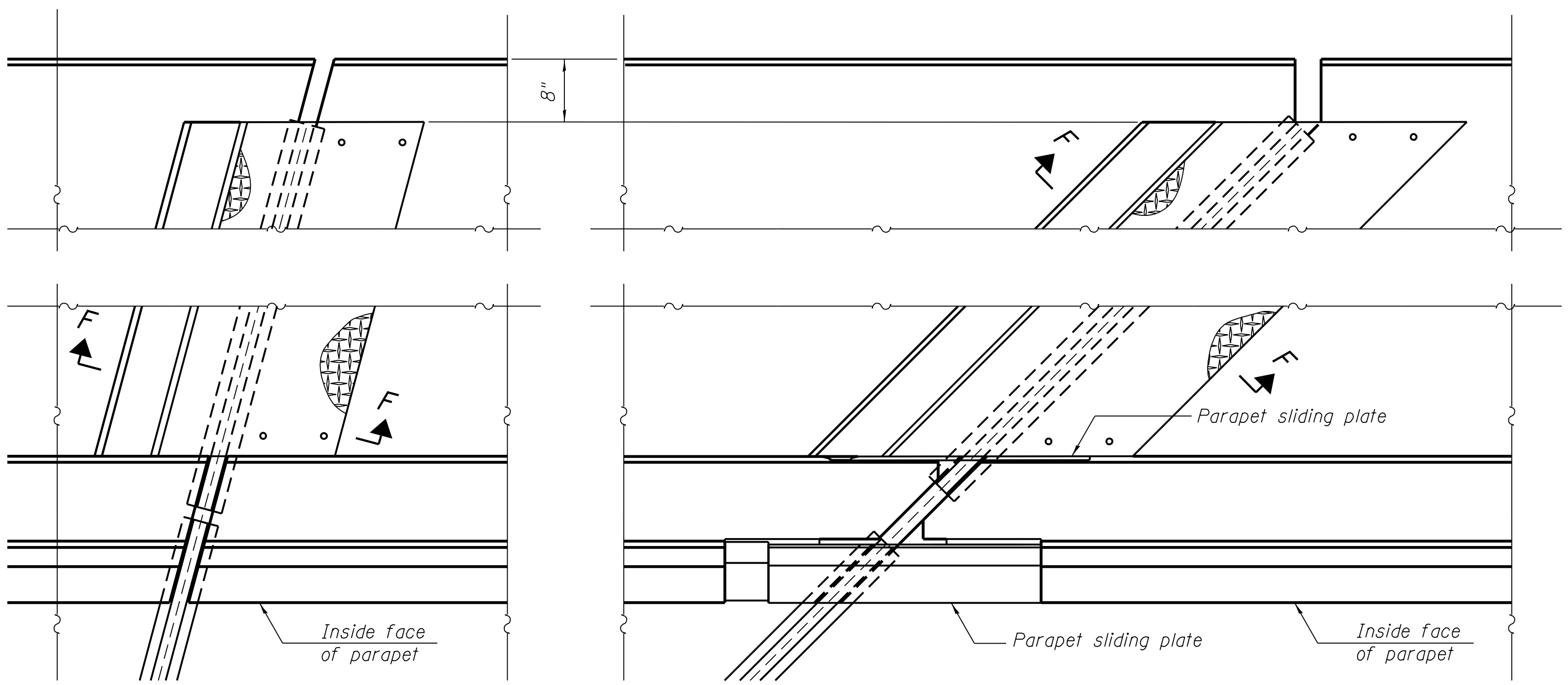
(Skews > 30° shown. Skews = 30° similar except as shown in plan view.)



DETAIL B



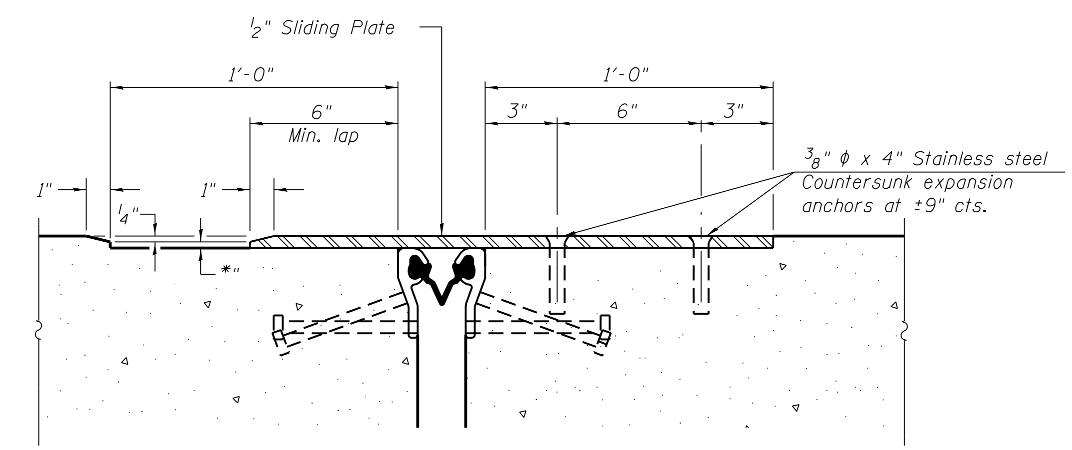
SECTION E-E



(FOR SKEWS = 30°)

(FOR SKEWS > 30°)

PLAN AT DECK LEVEL SIDEWALK



SECTION F-F

EJ-SS-S

8-11-17

(Sheet 3 of 3)

Ciorba Group, Inc. CONSULTING ENGINEERS	USER NAME = sallgood	DESIGNED -	REVISED -
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	PLOT DATE = 10/6/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXPANSION JOINT DETAILS 3
STRUCTURE NO. 049-6559

SHEET NO. S-18 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	39B
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS FED. AID PROJECT	M-BRM-4003(391)		

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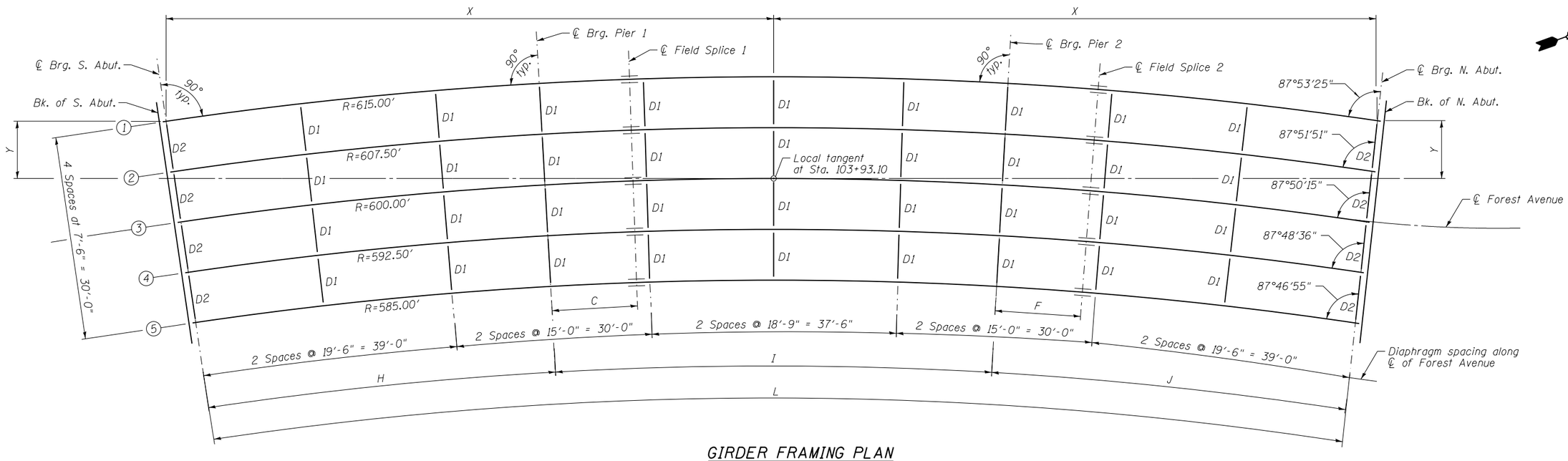
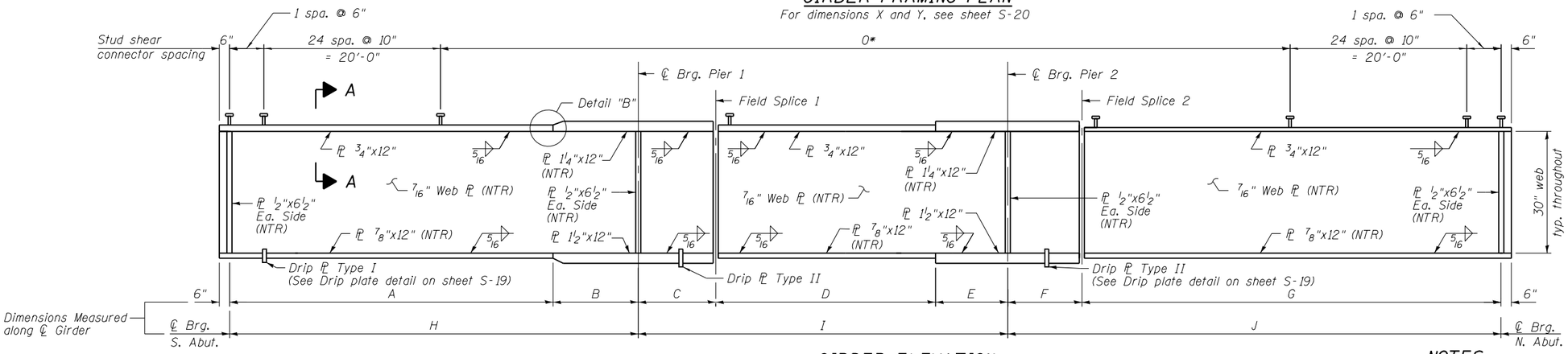


GIRDER FRAMING PLAN

For dimensions X and Y, see sheet S-20



GIRDER ELEVATION

"NTR" denotes plates to which notch toughness requirements are applicable.

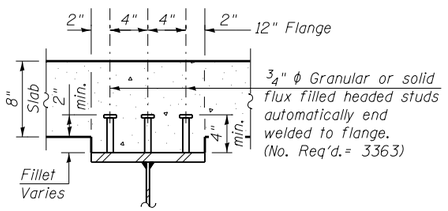
*CONTRACTOR shall adjust shear stud spacing at Field Splice to provide 3" minimum clearance from shear stud to splice plate.

SHEAR CONNECTOR SPACING TABLE

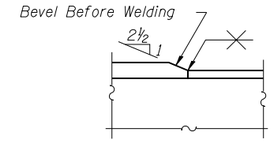
GIRDER	O
1	178 spa. @ 9" = 138'-3 7/8"
2	176 spa. @ 9" = 136'-5"
3	173 spa. @ 9" = 134'-6"
4	171 spa. @ 9" = 132'-7"
5	168 spa. @ 9" = 130'-8 1/8"

GIRDER DIMENSIONS

GIRDER	RADIUS	A	B	C	D	E	F	G	H	I	J	L
1	615.00	39'-11 3/4"	15'-4 1/2"	13'-3 7/8"	40'-5 7/8"	15'-4 1/2"	13'-3 7/8"	41'-5 1/2"	55'-4 1/4"	69'-2 1/4"	54-9 3/8"	179'-3 7/8"
2	607.50	39'-5 7/8"	15'-2 1/4"	13'-2"	39'-11 7/8"	15'-2 1/4"	13'-2"	41'-2 3/4"	54'-8 1/8"	68'-4 1/8"	54'-4 3/4"	177'-5"
3	600.00	39'-0"	15'-0"	13'-0"	39'-6"	15'-0"	13'-0"	41'-0"	54'-0"	67'-6"	54'-0"	175'-6"
4	592.50	38'-6 1/8"	14'-9 3/4"	12'-10"	39'-0 1/8"	14'-9 3/4"	12'-10"	40'-9 1/4"	53'-3 7/8"	66'-7 7/8"	53'-7 1/4"	173'-7"
5	585.00	38'-0 1/4"	14'-7 1/2"	12'-8 1/8"	38'-6 1/8"	14'-7 1/2"	12'-8 1/8"	40'-6 1/2"	52'-7 3/4"	65'-9 3/4"	53'-2 5/8"	171'-8 1/8"



SECTION A-A



DETAIL "B"

NOTES:

1. All plates of the girder, including splice plates and fill plates, shall be AASHTO M270, Grade 50W.
2. All diaphragms, bearing stiffeners, angles and connecting plates, shall be AASHTO M270, Grade 50W.
3. Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.
4. All cross frames or diaphragms between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the ENGINEER. Individual cross frames or diaphragms at support may be temporarily disconnected to install bearing anchor bolts.
5. All interior cross frames shall be oriented radial to the girders except at the end diaphragms.
6. The calculated deflections of the primary girders/beams under steel self-weight shall be used to detail the diaphragm, cross frame and lateral bracing connections, and to erect the structural steel such that the girders/beams will be plumb within a tolerance of ±1/8 in. per vertical ft. throughout when supporting their own weight.
7. Drip plates shall be provided on exterior faces of Girders 1 and 5.

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USER NAME = sallgood	DESIGNED - SSM	REVISED -	
	CHECKED - BWS	REVISED -	
PLOT SCALE = 16.0000 ' / in.	DRAWN - SBA	REVISED -	
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 049-6559
SHEET NO. S-19 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	40
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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INTERIOR GIRDER MOMENT TABLE						
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3
I_s	(in^4)	5598	9065	5598	9065	5598
$I_{c(n)}$	(in^4)	16386	23840	16386	23840	16386
$I_{c(3n)}$	(in^4)	12619	17931	12619	17931	12619
$I_{c(cr)}$	(in^4)	7234	12088	7234	12088	7234
S_s	(in^3)	370	587	370	587	370
$S_{c(n)}$	(in^3)	537	-	537	-	537
$S_{c(3n)}$	(in^3)	497	-	497	-	497
$S_{c(cr)}$	(in^3)	-	652	-	652	-
S_{xc}	(in^3)	340	-	340	-	340
DC1	(k/')	0.88	0.92	0.88	0.92	0.88
M_{DC1}	('k)	164	368	136	368	165
DC2	(k/')	0.21	0.21	0.21	0.21	0.21
M_{DC2}	('k)	39	60	39	60	39
DW	(k/')	0.38	0.38	0.38	0.38	0.38
M_{DW}	('k)	56	127	47	127	56
M_{L+IM}	('k)	439	586	428	570	436
f_f (Strength I)	('k)	17.51	12.96	15.16	12.45	18.06
$M_u + 1/3\ f_f S_{xc}$	('k)	1402	2137	1298	2082	1446
$\phi_r M_n$	('k)	2927	2552	2927	2552	2927
f_s DC1	(ksi)	5.3	7.5	4.4	7.5	5.4
f_s DC2	(ksi)	0.94	1.10	0.94	1.10	0.94
f_s DW	(ksi)	1.35	2.34	1.14	2.34	1.35
f_s (L+IM)	(ksi)	9.81	10.79	9.56	10.49	9.74
f_f (Service II)	(ksi)	3.75	2.77	2.98	2.77	3.77
$f_s + f_f/2$ (Strength II)	(ksi)	22.25	26.37	20.41	25.98	22.19
$0.95R_hF_{yf}$	(ksi)	47.5	47.5	47.5	47.5	47.5
$f_s + f_f/3$ (Total)(Strength I)	(ksi)	32.9	37.5	30.2	36.8	33.0
$\phi_f F_n$	(ksi)	50	43.3	50.0	43.3	50
V_f	(k)	20	31	16	32	26

INTERIOR GIRDER REACTION TABLE					
		S. Abut.	Pier 1	Pier 2	N. Abut.
R_{DC1}	(k)	17.2	61.7	61.6	17.2
R_{DC2}	(k)	0.2	4.1	4.1	0.2
R_{DW}	(k)	6.9	23.3	23.3	6.9
R_{L+IM}	(k)	62.8	95.2	95.2	62.2
R_{Total}	(k)	87.2	184.3	184.2	86.6

TOP OF WEB ELEVATIONS

(For Fabrication Only)

Top Of Web						
	℄ Brg. S. Abut.	℄ Pier 1	℄ Field Splice 1	℄ Pier 2	℄ Field Splice 2	℄ Brg. N. Abut.
Girder 1	657.03	658.04	658.28	659.36	659.61	660.47
Girder 2	657.14	658.16	658.40	659.48	659.73	660.59
Girder 3	657.26	658.28	658.52	659.60	659.85	660.71
Girder 4	657.14	658.16	658.40	659.48	659.73	660.59
Girder 5	657.03	658.04	658.28	659.36	659.61	660.47

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing fs (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 fs (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 fs (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 fs (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.).

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

f_f: Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending, Strength I or or Strength II as applicable (kip-ft.)

$\phi_r M_n$: Factored resistance available according to A6.1.1 (kips).

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 plus impact loads as calculated below (ksi).
$M_{L+IM} / S_{c(n)}$ or $M_{L+IM} / S_{c(cr)}$ as applicable.

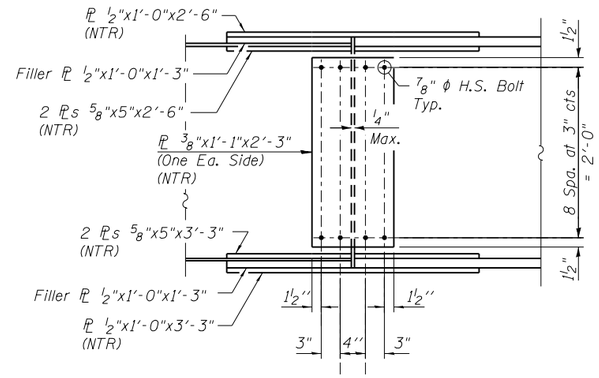
$f_s + f_f/2$ (Service II): Sum of stresses as computed below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3\ f_s(L+IM) + f_f/2$

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

$f_s + f_f/3$ (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
$1.25\ (f_{sDC1} + f_{sDC2}) + 1.5\ f_{sDW} + 1.75\ f_{sL+IM} + f_f$

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

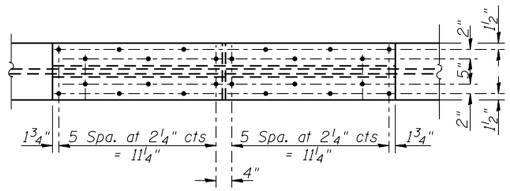
V_f: Maximum factored shear range in span computed according to Article 6.10.10.



ELEVATION

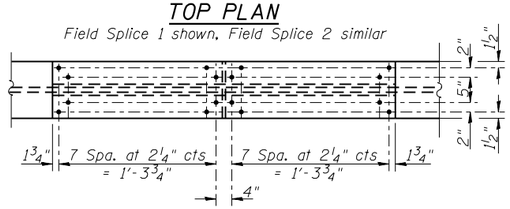
FIELD SPLICE DETAIL

(Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.)



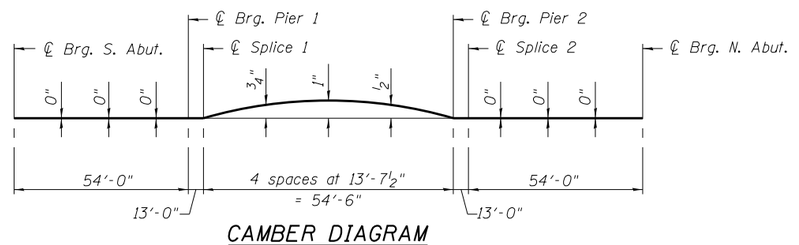
TOP PLAN

Field Splice 1 shown, Field Splice 2 similar

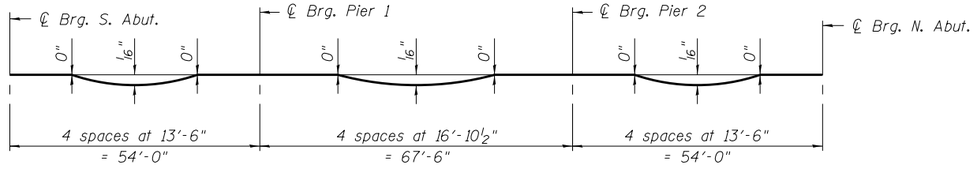


BOTTOM PLAN

Field Splice 1 shown, Field Splice 2 similar



CAMBER DIAGRAM



STEEL DEFLECTION DIAGRAM

TABLE OF LAYOUT DIMENSIONS

BEAM	℄ Brg. S. Abut.		℄ Pier 1		℄ Field Splice 1		℄ Pier 2		℄ Field Splice 2		℄ Brg. N. Abut.	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1	-89'-7½"	8'-5⅛"	-34'-7"	14'-0¼"	-21'-3¼"	14'-7½"	34'-6⅞"	14'-⅜"	47'-10⅜"	13'-1¾"	89'-¾"	8'-6⅜"
2	-88'-6⅜"	1'-0"	-34'-1⅞"	6'-6⅜"	-21'-⅛"	7'-1⅝"	34'-1⅞"	6'-6½"	47'-3⅜"	5'-8"	88'-3"	1'-⅞"
3	-87'-5¼"	-6'-5"	-33'-8¾"	-0'-11 7/16"	-20'-9"	-0'-4 5/16"	33'-8¾"	-0'-11 5/16"	46'-8⅜"	-1'-9¾"	87'-5¼"	-6'-4¾"
4	-86'-4⅛"	-13'-10"	-33'-3¾"	-8'-5¼"	-20'-5⅞"	-7'-10¼"	33'-3¾"	-8-5⅛"	46'-1⅜"	-9-3½"	86'-7½"	-13'-10¼"
5	-85'-3"	-21'-3⅛"	-32'-10⅝"	-15'-11⅛"	-20'-2¾"	-15'-4¼"	32'-10⅝"	-15'-11"	45'-6⅜"	-16'-9¼"	85'-9¾"	-21'-3¾"

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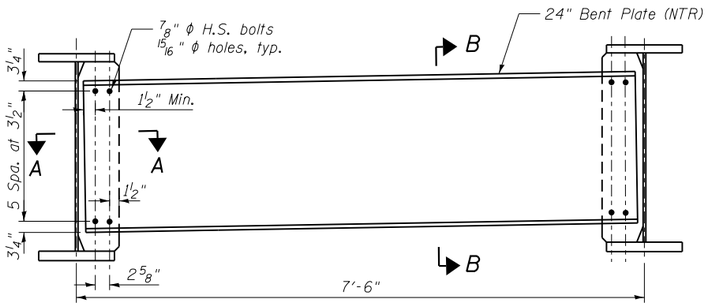
USER NAME = sallgood	DESIGNED -		REVISED -
	CHECKED - BWS		REVISED -
PLOT SCALE = 0.2.0000 '' / in.	DRAWN - SBA		REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS		REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL BEAM DETAILS 1
STRUCTURE NO. 049-6559
SHEET NO. S-20 OF S-32 SHEETS

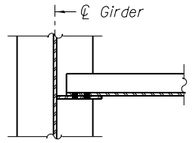
MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	41
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	



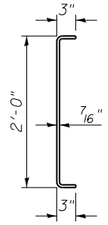
INTERIOR DIAPHRAGM-D1

(36 thus)

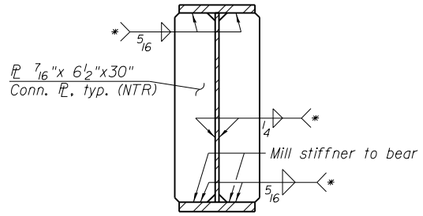
"NTR" denotes plates to which notch toughness requirements are applicable



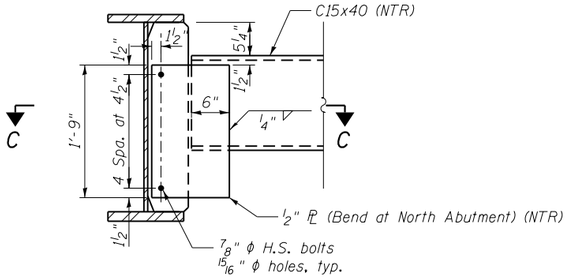
SECTION A-A



SECTION B-B

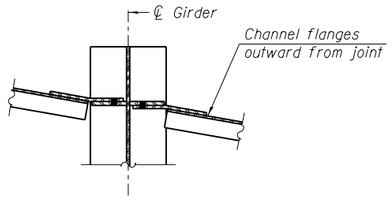


SECTION AT INTERIOR DIAPHRAGM



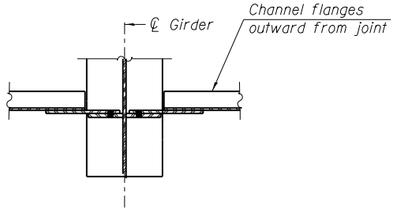
END DIAPHRAGM-D2

(8 thus)



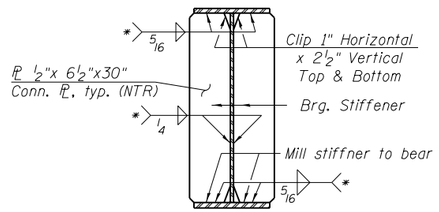
SECTION C-C

N. Abut.



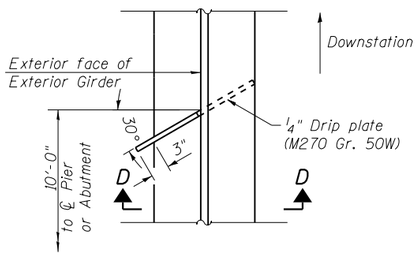
SECTION C-C

S. Abut.



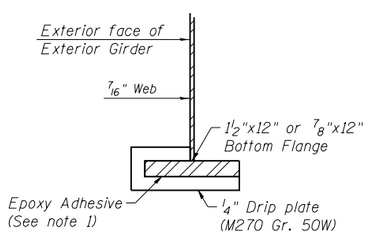
SECTION AT PIERS AND ABUTMENTS

*Terminate 1/4" (±1/8") from the end of plate intersects

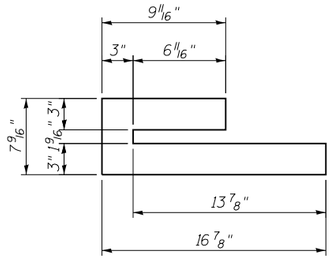


PLAN OF DRIP PLATE

Girder 1 shown, mirror for girder 5

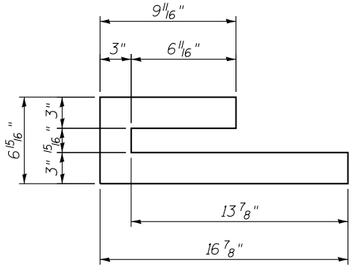


SECTION D-D



DRIP PLATE TYPE I

(2 Locations)



DRIP PLATE TYPE II

(4 Locations)

NOTES:

1. Drip plates shall be installed on suitably prepared surfaces after shop priming, using a two component epoxy suitable for structural steel under prolonged exposure. Cost of epoxy to be included in cost of "Furnishing and Erecting Structural Steel."
2. Two hardened washers required for each set of oversized holes.
3. The Contractor shall either:
   A. Ream diaphragm and/or cross frame connection holes during shop assembly, or
   B. Provide detailing and fabrication controls acceptable to the Engineer which ensures accuracy such that field reaming will not exceed the amount permitted in Article 505.08(I) of the Standard Specifications.

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USER NAME = sallgood	DESIGNED -		REVISED -
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PLOT SCALE = 0:2.0000 '' / in.	DRAWN - SBA		REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS		REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL BEAM DETAILS 2
STRUCTURE NO. 049-6559
SHEET NO. S-21 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	42
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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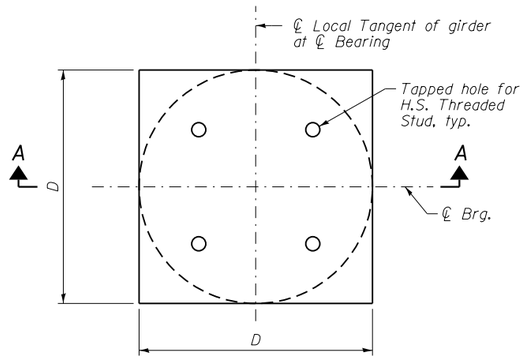
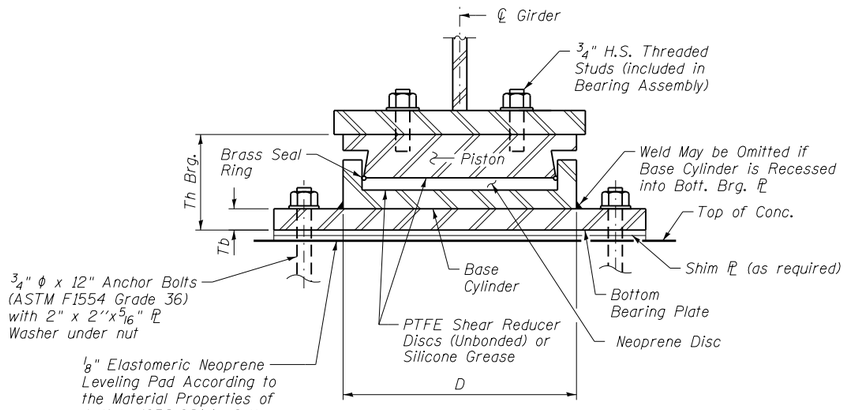
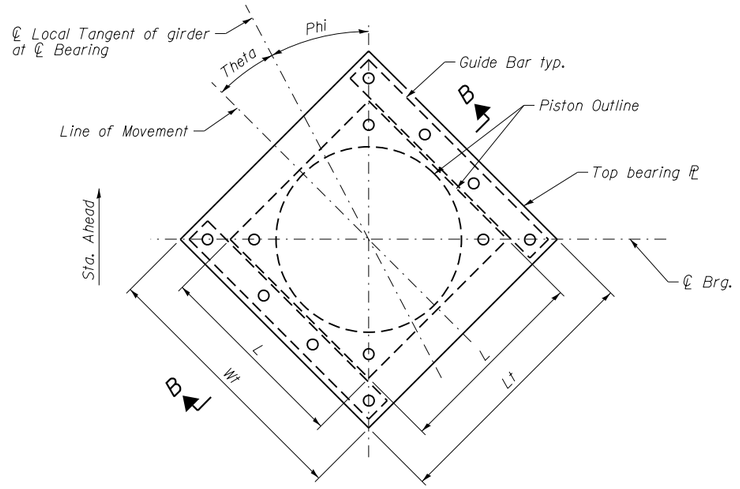


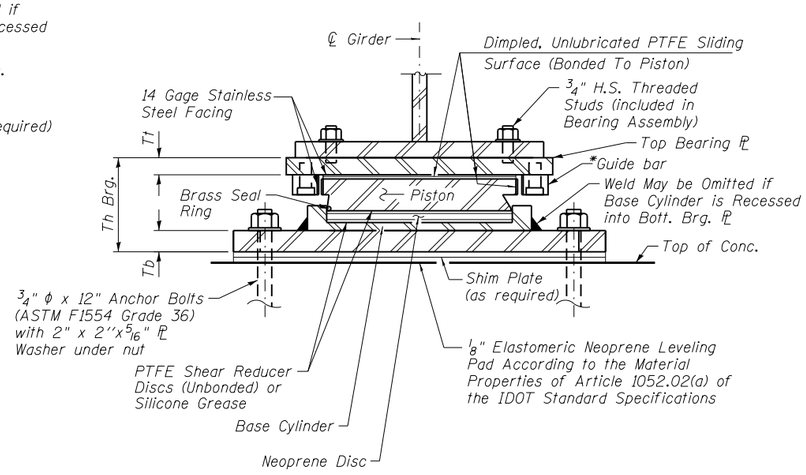
PISTON PLAN - FIXED BEARING



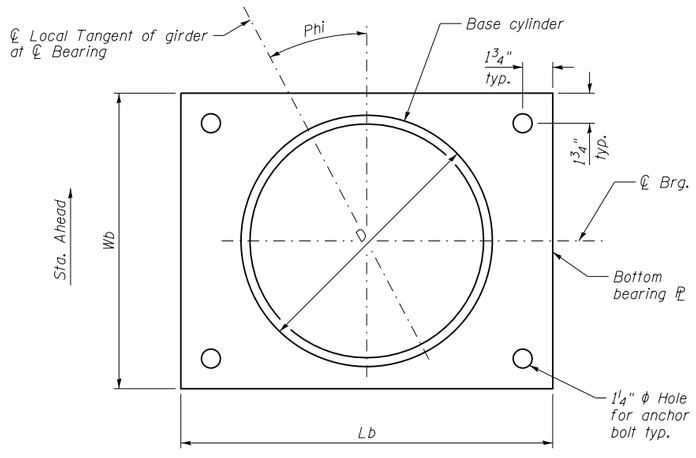
SECTION A-A



TOP ℄ AND PISTON PLAN - GUIDED EXPANSION BEARING



SECTION B-B



BOTTOM BEARING ℄ AND BASE CYLINDER PLAN FIXED AND GUIDED EXPANSION BEARINGS

LINE OF MOVEMENT & SKEW

Location		Phi	Theta
S. Abut.		0°	-2°32'18"
Pier 2		0°	0°37'36"
N. Abut.	Girder 1	-2°6'35"	3°37'16"
	Girder 2	-2°8'9"	3°37'16"
	Girder 3	-2°9'45"	3°37'16"
	Girder 4	-2°11'24"	3°37'16"
	Girder 5	-2°13'5"	3°37'16"

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
High Load Multi-Rotational Bearings, Guided Expansion, 100k	Ea.	10
High Load Multi-Rotational Bearings, Guided Expansion, 200k	Ea.	5
High Load Multi-Rotational Bearings, Fixed, 250k	Ea.	5
Anchor Bolts, 3/4"	Ea.	80

Notes:

All steel for bearings shall conform to the requirements of AASHTO M270 Grade 50, unless otherwise noted.

Anchor bolts shall be ASTM F1554 all-thread (or an ENGINEER-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Total bearing height (Th) is estimated based on manufacturer data. Actual bearing height may differ ℄ from contract plans. The CONTRACTOR shall be responsible for verifying bearing heights and adjusting seat elevations with approval of ENGINEER, if required, prior to placing pier concrete. Total bearing height is taken at the ℄ of bearing for beveled top plates.

Two 1/8in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

BEARING DIMENSIONS

Location	Type	Pay Item Designation (kips)	Vert. Design Loads** (kips)	Hu** (kips)	θu*** (radians)	Max. Theor. Thermal Mvmt. ****	Top Plate				Bearing Assembly		Bottom Plate			Total Ht.
							Wt	Lt	Tt (min.)	Max. Slope	L	D	Wb	Lb	Tb	Th
S. Abut.	Guided Expansion	100	88	18	0.008	3/8	10"	12 1/2"	1 1/2"	1.45%	6"	7 1/2"	9 1/2"	13"	1"	6 1/4"
Pier 1	Fixed	250	200	40	0.001	N/A	N/A	N/A	N/A	1.97%	N/A	10"	12"	15 1/2"	1"	5"
Pier 2	Guided Expansion	200	200	40	0.003	1/2	12 1/4"	15 1/2"	1 1/2"	1.97%	10 1/2"	10"	12"	15 1/2"	1"	6 1/2"
N. Abut.	Guided Expansion	100	88	18	0.007	7/8	10"	15 1/2"	1 1/2"	1.97%	6"	7 1/2"	9 1/2"	13"	1"	6 1/4"

* As an alternate to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.

** Design loads are the governing service loads with no dynamic load allowance.

*** Rotation allowances for fabrication tolerances (0.005 radians), installation uncertainties (0.005 radians) are excluded.

**** Total required movement is based on the total combined expansion and contraction of the superstructure parallel to the line of movement. Bearing movement tolerances are excluded.

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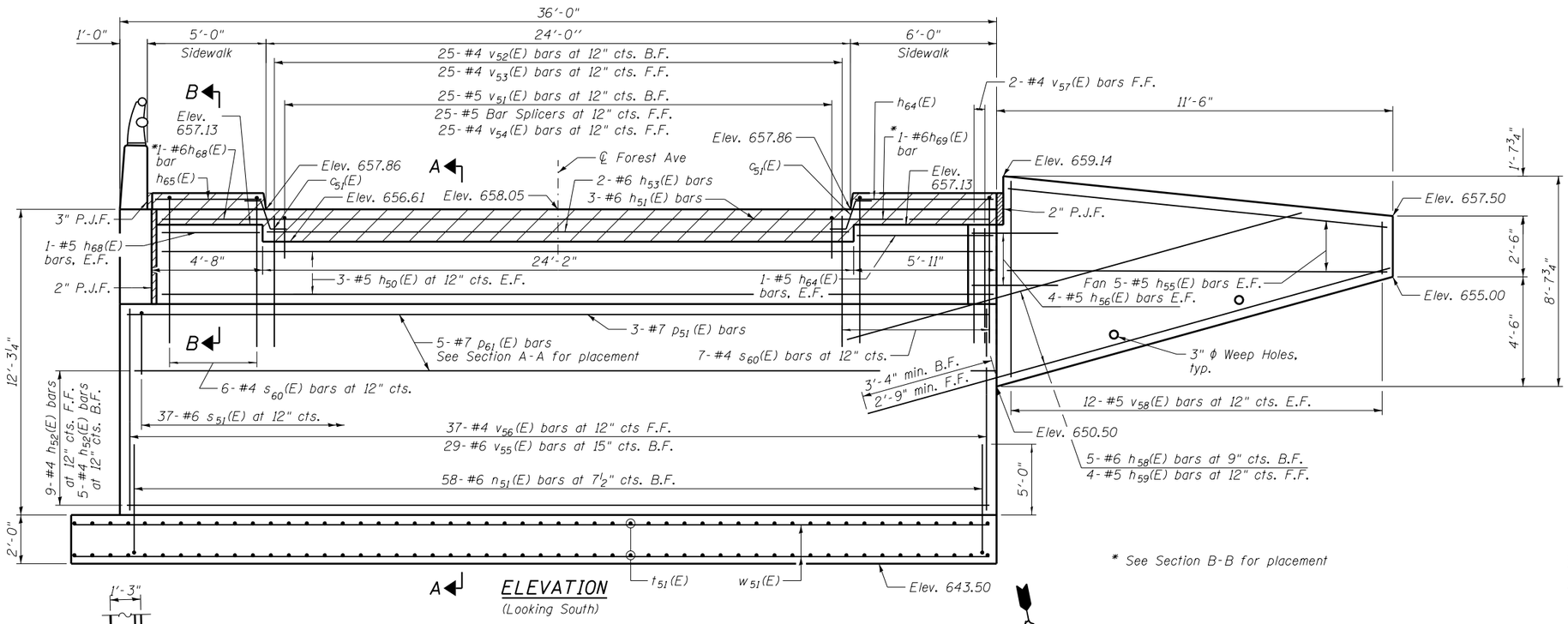
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 049-6559
SHEET NO. S-22 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	43
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

N:\PROJ\0020349.00\0020349.03\Design\Structural\CAD\0020349.22 Bearing Details.dgn



①	②	③	④	⑤
653.93	654.05	654.16	654.05	653.93

NOTES:

1. Pour steps monolithically with bearing seat.
2. For details of Bar Splicers, see sheet S-30.
3. Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
4. Space reinforcement in bearing seat to miss anchor bolts.
5. Concrete Sealer to be applied to all exposed surfaces of backwall, bearing seats, and front face of bearing seats.
6. For Bill of Material and bar bending details, see Sheet S-25.
7. For drainage details see sheet S-2.

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PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT
STRUCTURE NO. 049-6559
SHEET NO. S-23 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	44
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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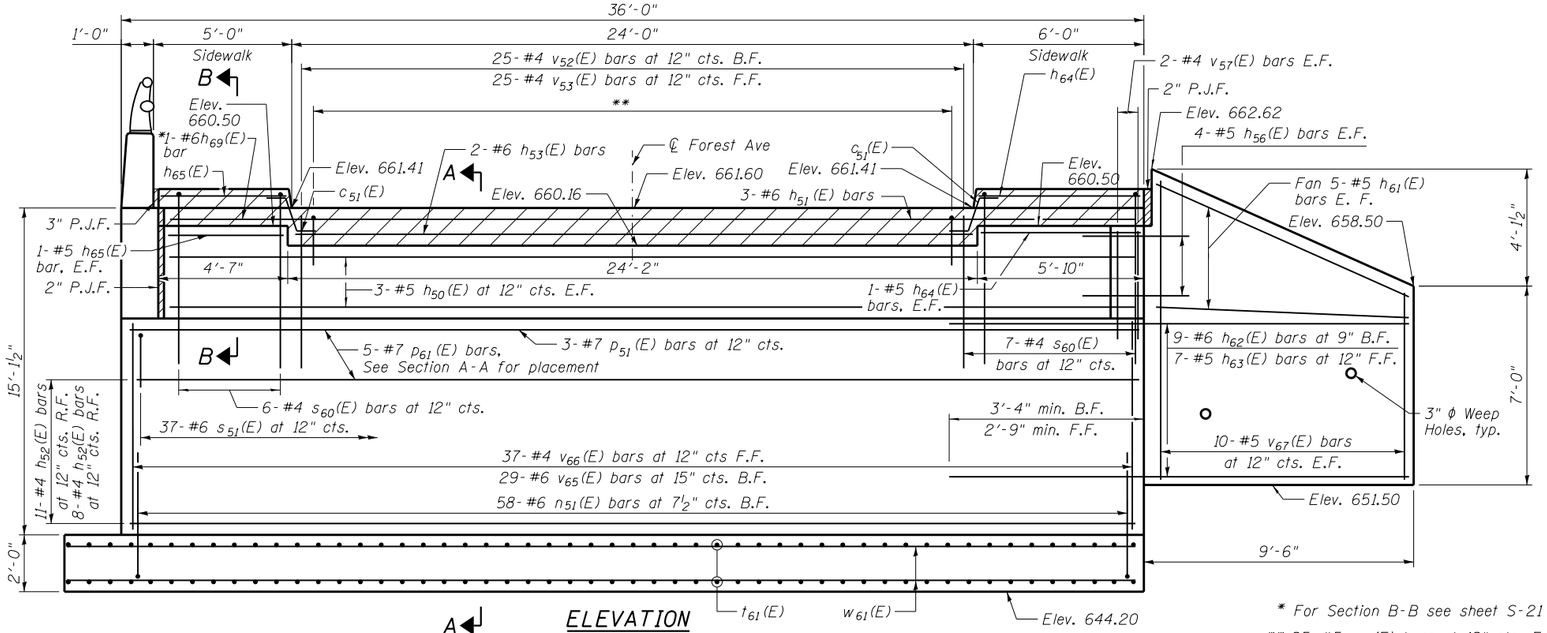
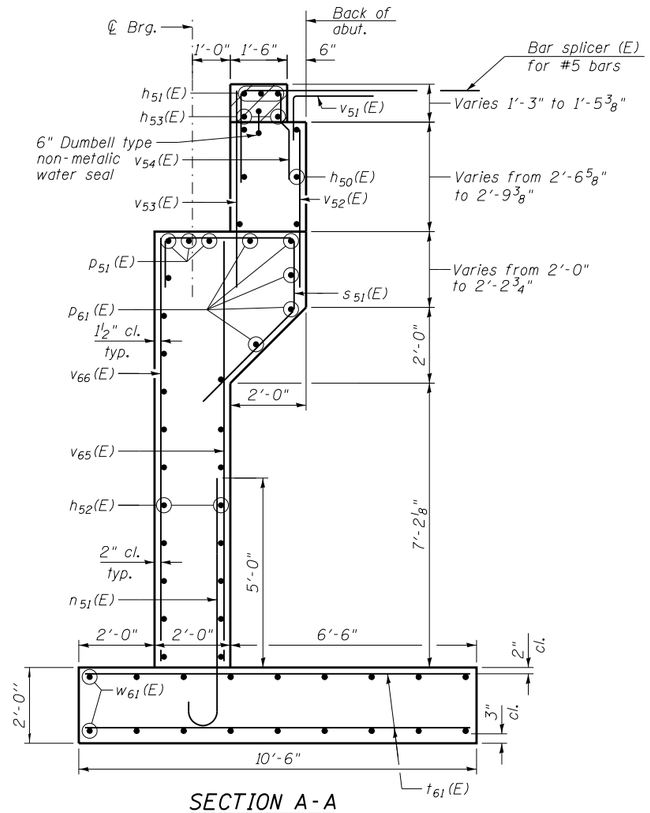


ELEVATION
(Looking North)

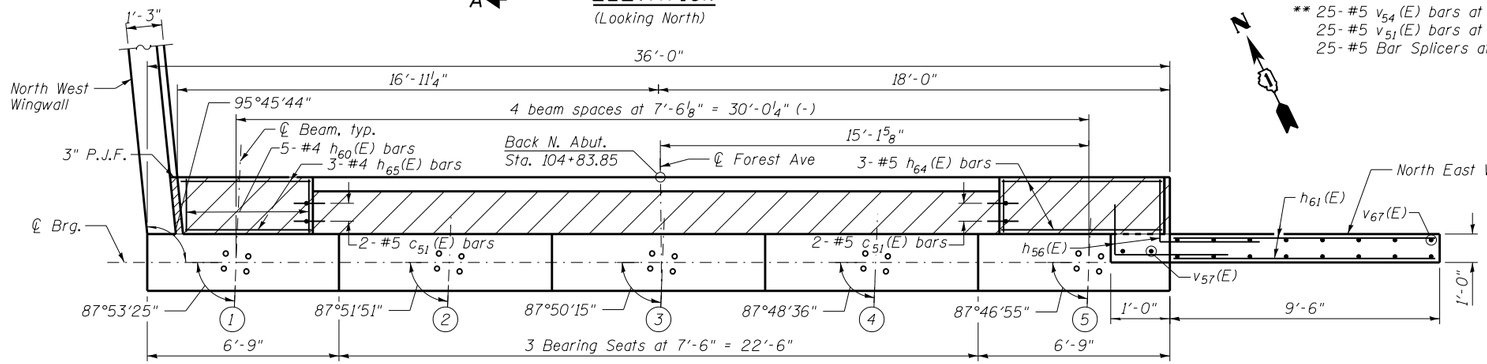
* For Section B-B see sheet S-21

** 25- #5 v_{54}(E) bars at 12" cts. F.F.
25- #5 v_{51}(E) bars at 12" cts. B.F.
25- #5 Bar Splicers at 12" cts. F.F.

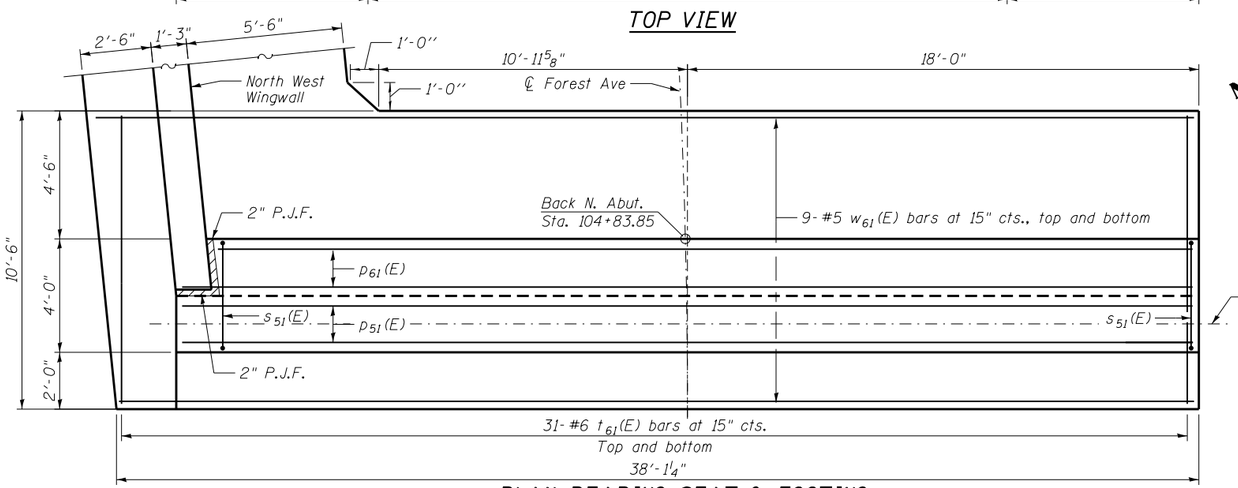


SECTION A-A

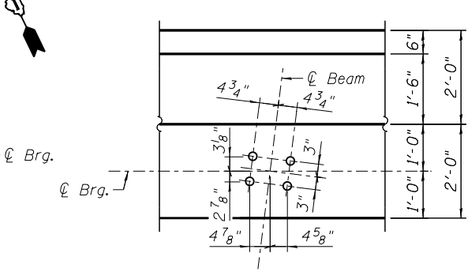
Maximum applied factored bearing pressure: q_u= 7190 psf



TOP VIEW



PLAN-BEARING SEAT & FOOTING



ANCHOR BOLT LOCATION DETAIL

ABUTMENT BEARING SEAT ELEVATION

①	②	③	④	⑤
657.38	657.50	657.61	657.50	657.38

NOTES:

1. Pour steps monolithically with bearing seat.
2. For details of Bar Splicers, see sheet S-30.
3. Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
4. Space reinforcement in bearing seat to miss anchor bolts.
5. Concrete Sealer to be applied to all exposed surfaces of backwall, bearing seats, and front face of bearing seats.
6. For Bill of Material and bar bending details, see Sheet S-25.
7. For drainage details see sheet S-2.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT
STRUCTURE NO. 049-6559
SHEET NO. S-24 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	45
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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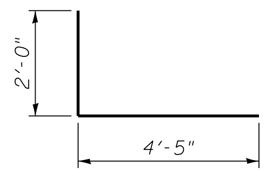
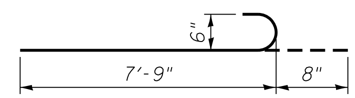
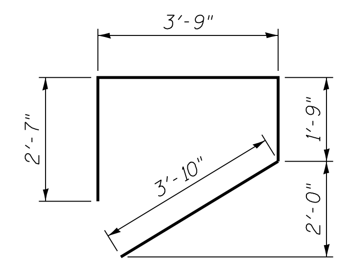


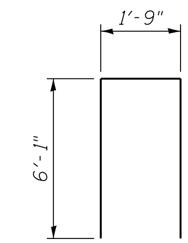
BAR h_{56}(E)



BAR n_{51}(E)



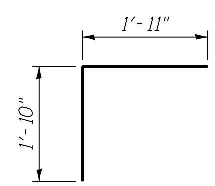
BAR s_{51}(E)



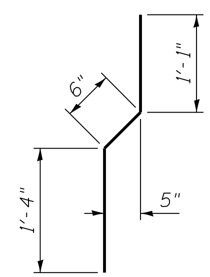
s_{60}(E)

BILL OF MATERIAL

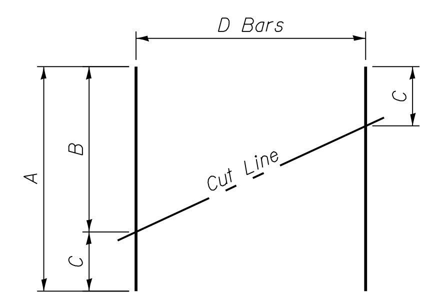
Bar	No.	Size	Length	Shape
c_{51}(E)	8	# 5	2'-4"	
h_{50}(E)	12	# 5	34'-3"	
h_{51}(E)	6	# 6	34'-3"	
h_{52}(E)	33	# 4	35'-8"	
h_{53}(E)	4	# 6	23'-8"	
h_{55}(E)	20	# 5	11'-0"	
h_{56}(E)	16	# 5	7'-5"	
h_{58}(E)	10	# 6	15'-7"	
h_{59}(E)	8	# 5	15'-0"	
h_{64}(E)	10	# 5	5'-7"	
h_{65}(E)	10	# 5	4'-4"	
h_{68}(E)	2	# 6	5'-7"	
h_{69}(E)	2	# 6	4'-4"	
n_{51}(E)	118	# 6	7'-6"	
p_{51}(E)	6	# 7	35'-8"	
p_{61}(E)	10	# 7	34'-3"	
s_{51}(E)	74	# 6	11'-11"	
s_{60}(E)	26	# 4	13'-11"	
t_{51}(E)	31	# 6	7'-8"	
t_{61}(E)	31	# 6	10'-2"	
v_{51}(E)	50	# 5	3'-9"	
v_{52}(E)	50	# 4	4'-2"	
v_{53}(E)	50	# 4	5'-6"	
v_{54}(E)	50	# 4	2'-11"	
v_{55}(E)	29	# 6	8'-3"	
v_{56}(E)	37	# 4	8'-3"	
v_{57}(E)	4	# 4	4'-0"	
v_{58}(E)	24	# 5	10'-5"	
v_{65}(E)	29	# 4	11'-0"	
v_{66}(E)	37	# 6	10'-8"	
v_{67}(E)	20	# 4	10'-8"	
w_{51}(E)	14	# 5	37'-6"	
w_{61}(E)	14	# 5	37'-9"	
Structure Excavation		Cu Yd	884.0	
Concrete Structures		Cu Yd	137.9	
Concrete Superstructure		Cu Yd	5.9	
Reinforcement Bars, Epoxy Coated		Pound	10650	
Concrete Sealer		Sq Ft	405	
Geocomposite Wall Drain		Sq Yd	103	
Pipe Underdrains for Structures, 4"		Foot	106	
Granular Backfill For Structures		Cu Yd	253	



BAR v_{51}(E)



BAR v_{54}(E)



FIELD CUTTING DIAGRAM

Order v_{58}(E) & v_{67}(E) bars full length. Cut as shown and use remainder of bars in opposite face.

FIELD CUTTING DIAGRAM TABLE

Bar	A	B	C	D
v_{58}(E)	10'-5"	8'-3"	2'-2"	12
v_{67}(E)	17'-6"	10'-10"	6'-8"	10

N:\PROJ\0020349.00\0020349.03\Design\Structural\CAD\0020349_25_Abutment Bill of Material.dgn

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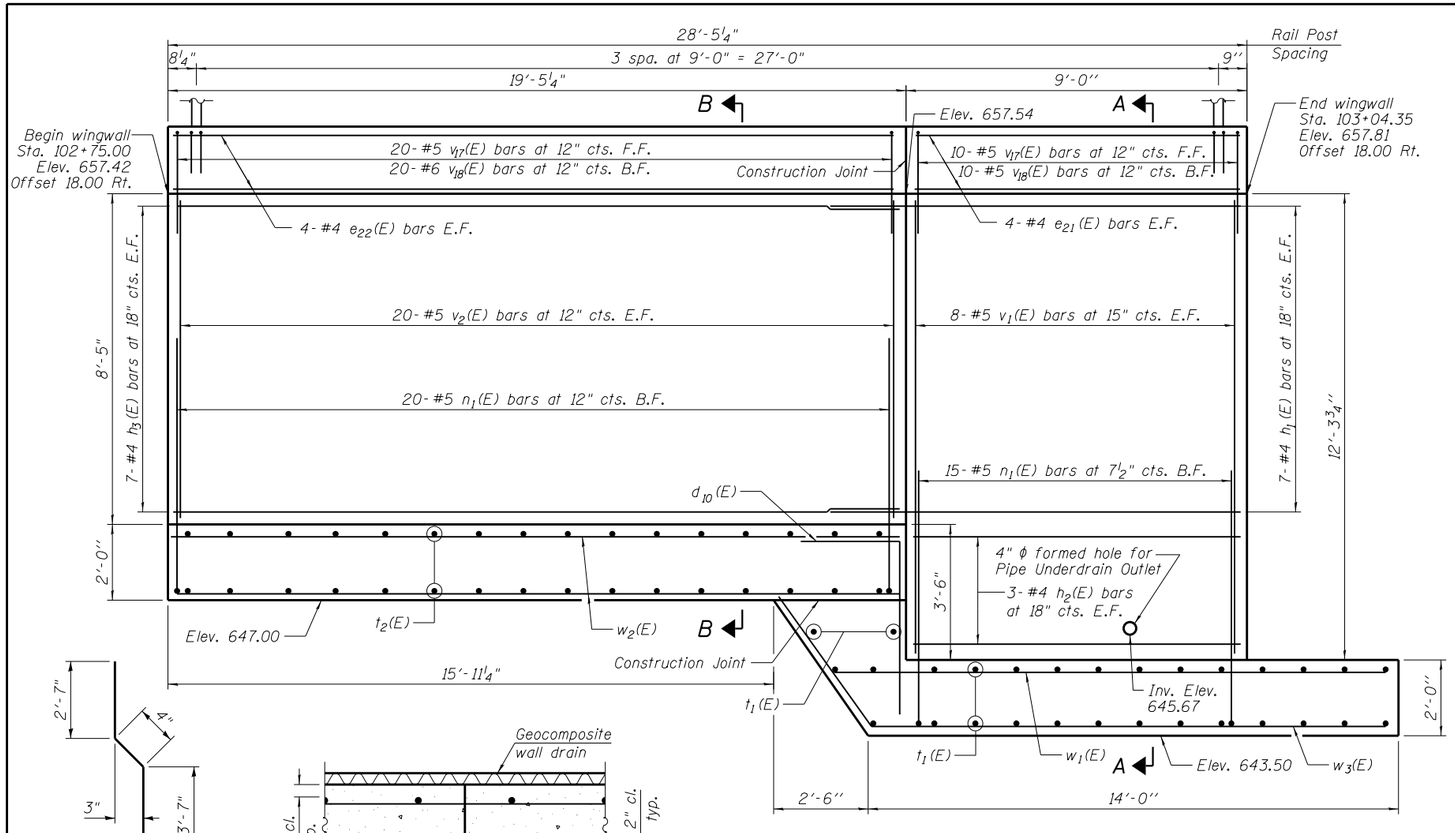
ABUTMENT BILL OF MATERIALS
STRUCTURE NO. 049-6559

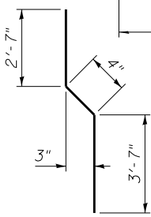
SHEET NO. S-25 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	46
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

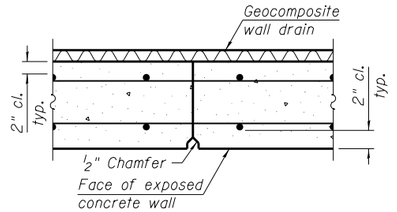


SOUTH EAST WINGWALL ELEVATION

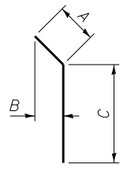
(Offsets and horizontal distances measured at Front Face of Wall)



BAR v18(E)

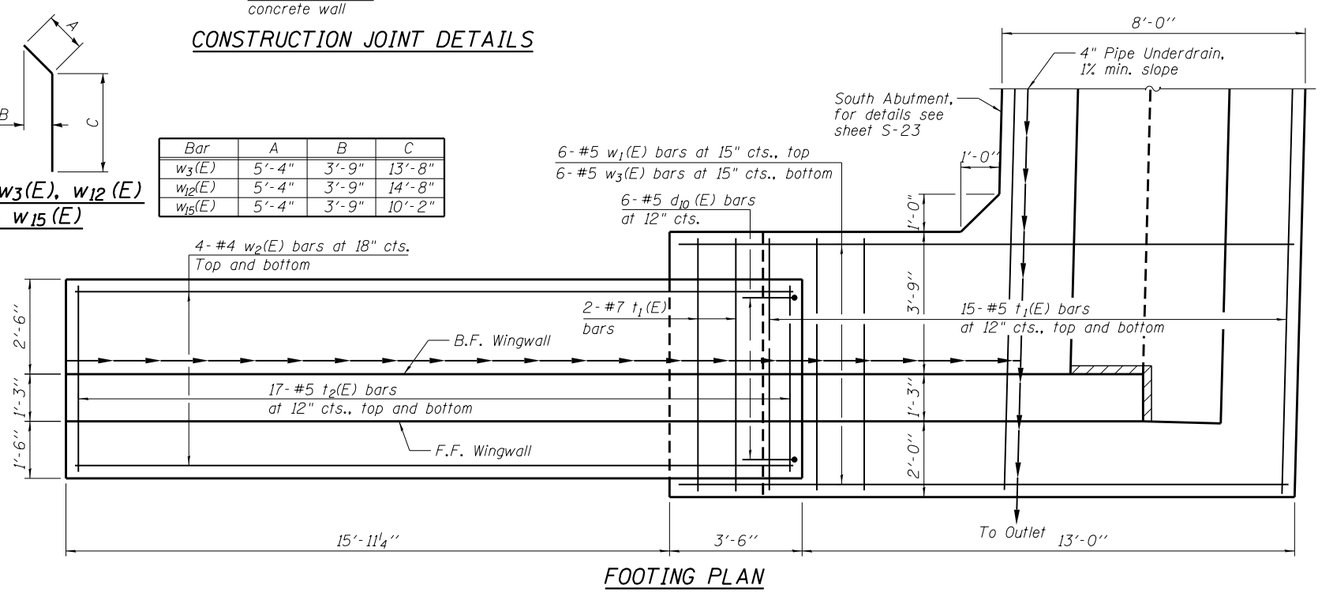


CONSTRUCTION JOINT DETAILS

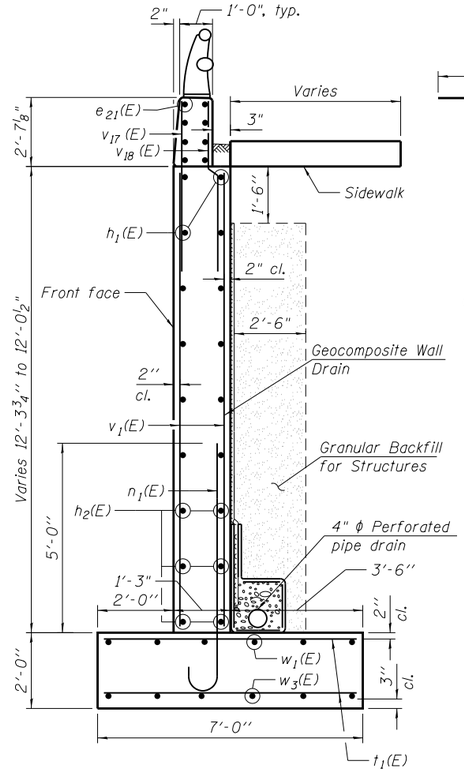


BARS w3(E), w12(E) & w15(E)

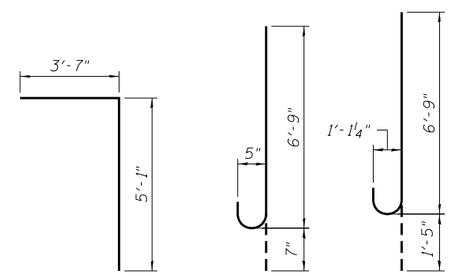
Bar	A	B	C
w3(E)	5'-4"	3'-9"	13'-8"
w12(E)	5'-4"	3'-9"	14'-8"
w15(E)	5'-4"	3'-9"	10'-2"



FOOTING PLAN

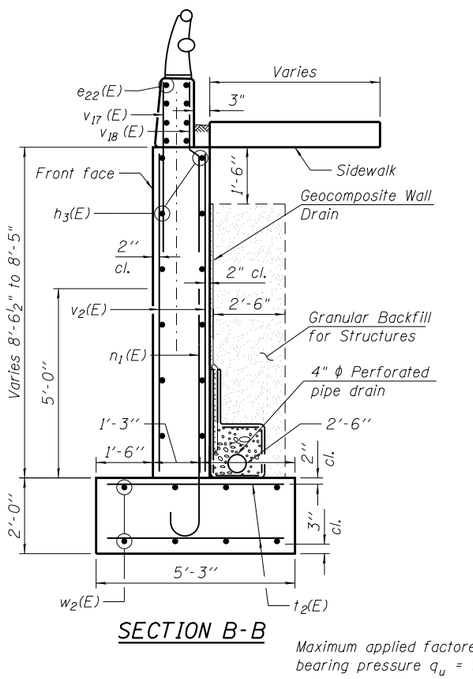


SECTION A-A



NORTH WEST & SOUTH EAST WINGWALL BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d10(E)	19	#4	8'-8"	
e11(E)	16	#4	9'-8"	
e12(E)	8	#4	10'-5"	
e21(E)	8	#4	8'-8"	
e22(E)	8	#4	19'-1"	
h1(E)	14	#4	11'-8"	
h2(E)	6	#4	8'-8"	
h3(E)	14	#4	19'-1"	
h11(E)	26	#4	9'-8"	
h12(E)	18	#4	12'-8"	
h13(E)	14	#4	13'-5"	
n1(E)	62	#5	7'-4"	J
n3(E)	17	#7	7'-6"	J
t1(E)	30	#5	6'-8"	
t2(E)	34	#5	4'-11"	
t11(E)	34	#7	8'-11"	
t12(E)	24	#5	6'-2"	
t13(E)	24	#5	4'-11"	
v1(E)	16	#5	11'-8"	
v2(E)	40	#5	8'-1"	
v11(E)	9	#7	14'-9"	
v12(E)	9	#5	11'-3"	
v13(E)	10	#5	8'-0"	
v14(E)	11	#4	14'-9"	
v15(E)	11	#4	11'-3"	
v16(E)	12	#4	8'-0"	
v17(E)	63	#4	5'-7"	
v18(E)	63	#4	6'-6"	
w1(E)	6	#5	13'-8"	
w2(E)	6	#5	19'-0"	
w3(E)	8	#5	18'-1"	
w11(E)	8	#5	16'-0"	
w12(E)	8	#5	20'-0"	
w13(E)	8	#5	10'-5"	
w14(E)	5	#5	13'-2"	
w15(E)	5	#5	15'-6"	
Structure Excavation			Cu Yd	180
Concrete Structures			Cu Yd	69.5
Concrete Superstructure			Cu Yd	3.1
Reinforcement Bars, Epoxy Coated			Pound	6350
Geocomposite Wall Drain			Sq Yd	62
Pipe Underdrains for Structures, 4"			Foot	60
Granular Backfill For Structures			Cu Yd	62



SECTION B-B

Maximum applied factored bearing pressure q_u = 5,350 psf

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PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH EAST WINGWALL
STRUCTURE NO. 049-6559
SHEET NO. S-26 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	47
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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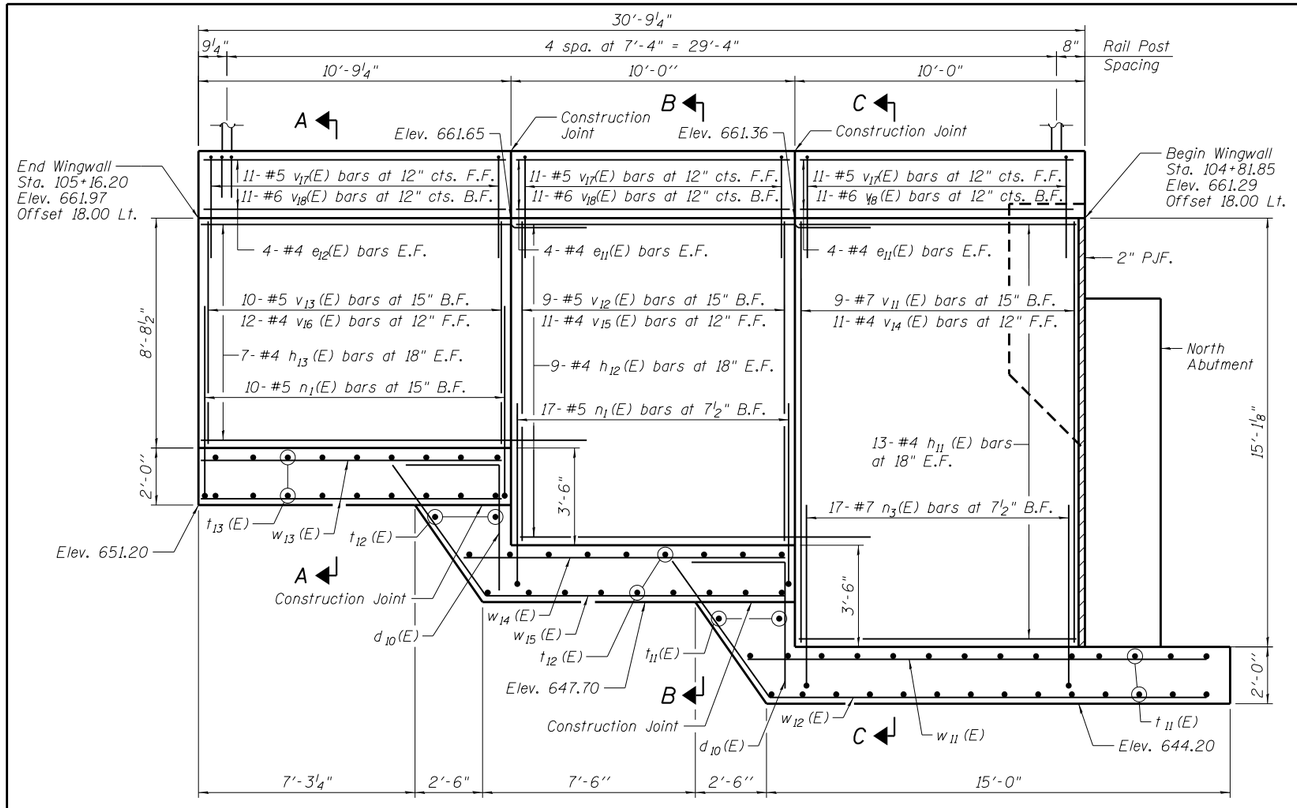
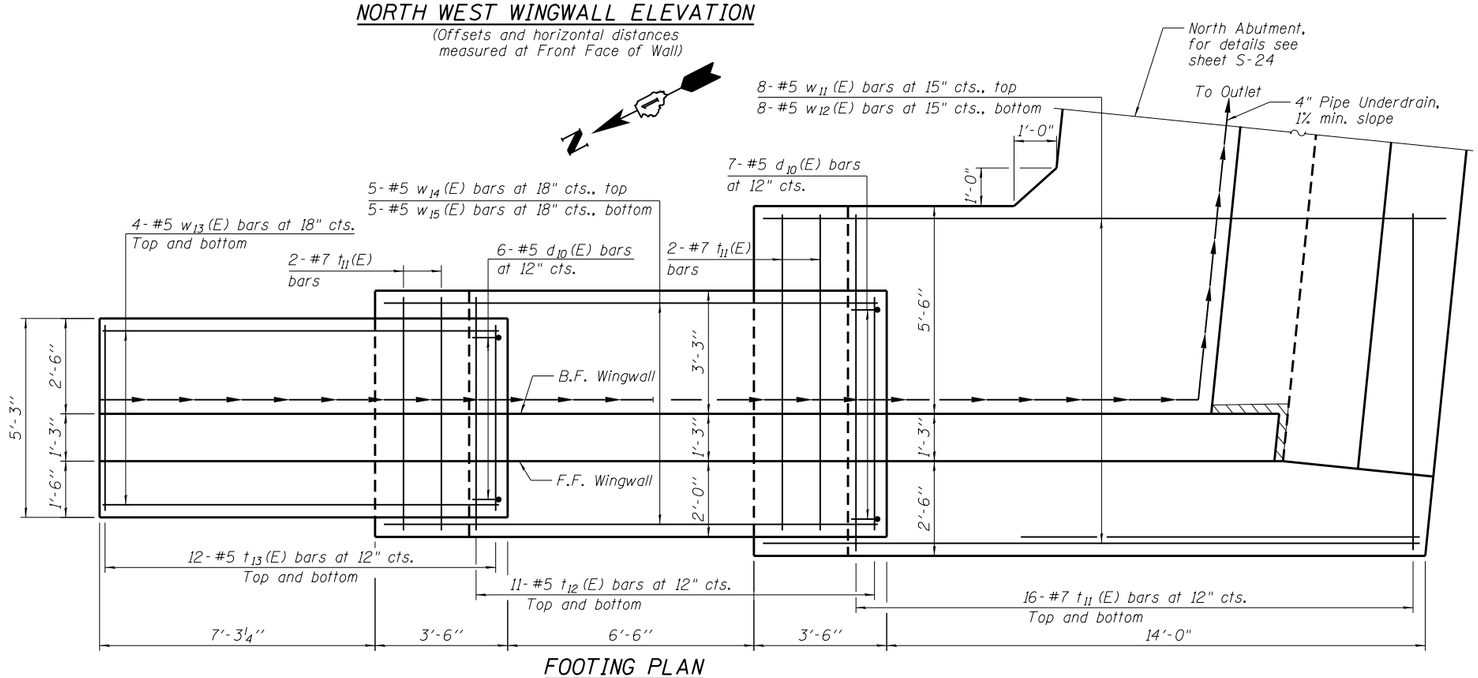
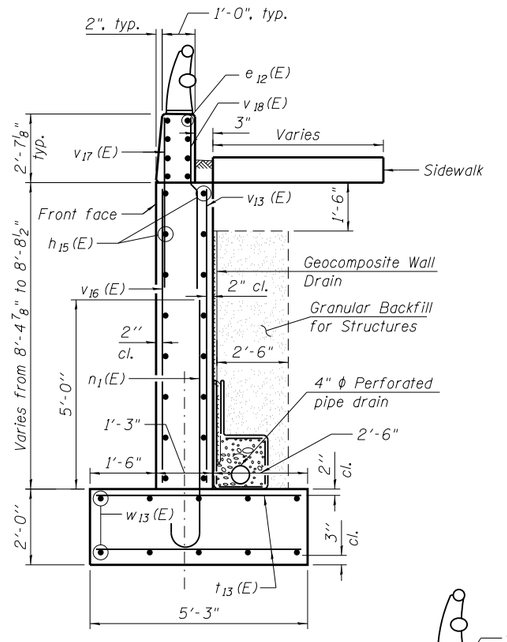


NORTH WEST WINGWALL ELEVATION

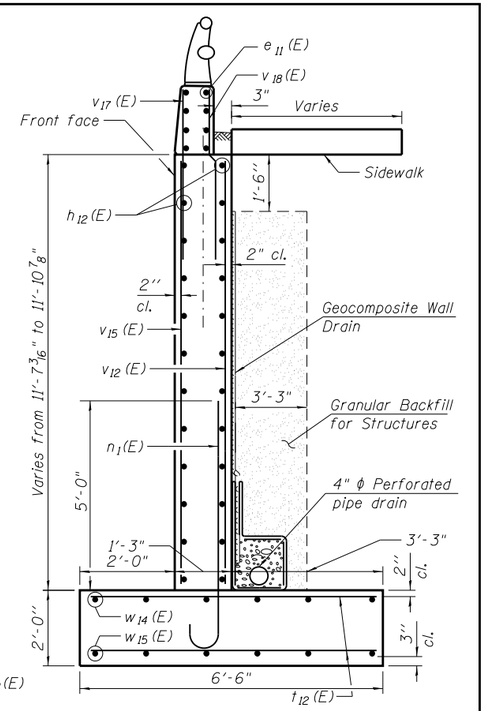
(Offsets and horizontal distances measured at Front Face of Wall)



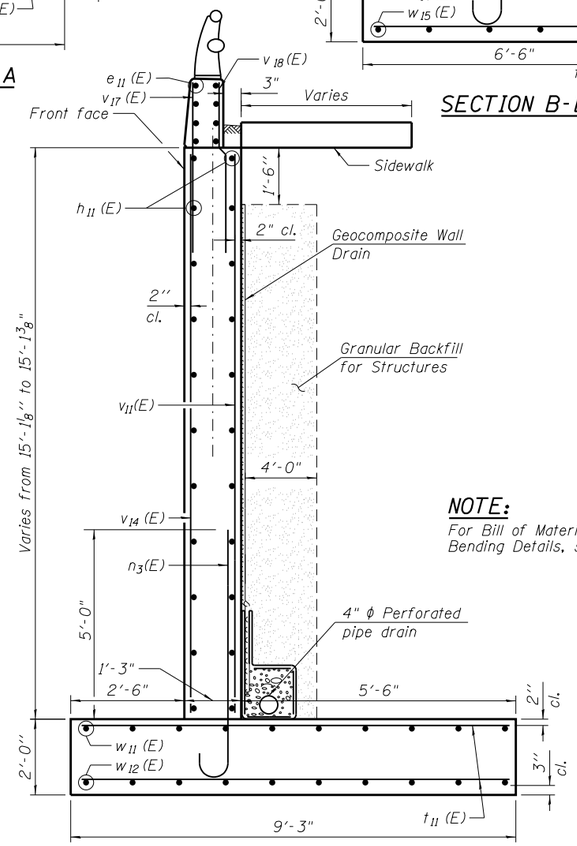
FOOTING PLAN



SECTION A-A



SECTION B-B



SECTION C-C

NOTE:
For Bill of Material and Bar Bending Details, see sheet S-26.

Maximum applied factored bearing pressure q_u = 3,650 psf

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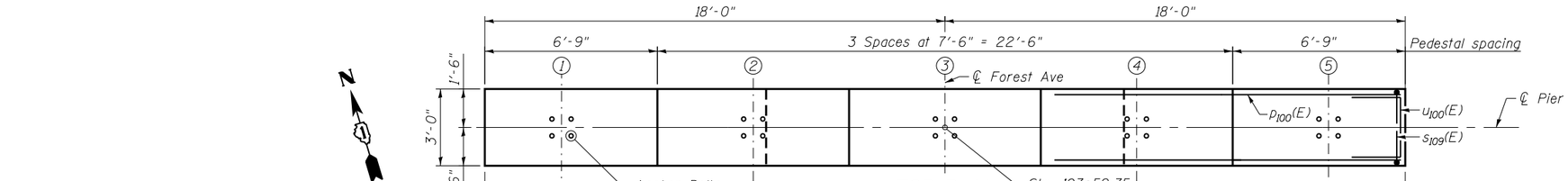
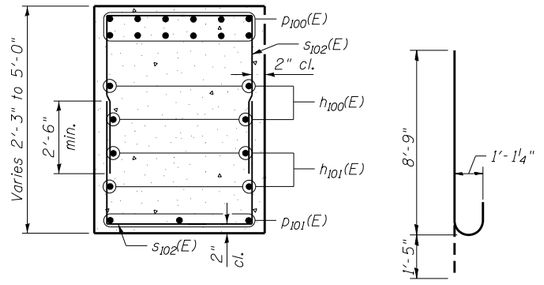
USER NAME = sallgood	DESIGNED - SSM	REVISED -	
	CHECKED - BWS	REVISED -	
PLOT SCALE = 4:0.0000 '' / in.	DRAWN - SBA	REVISED -	
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH WEST WINGWALL
STRUCTURE NO. 049-6559
SHEET NO. S-27 OF S-32 SHEETS

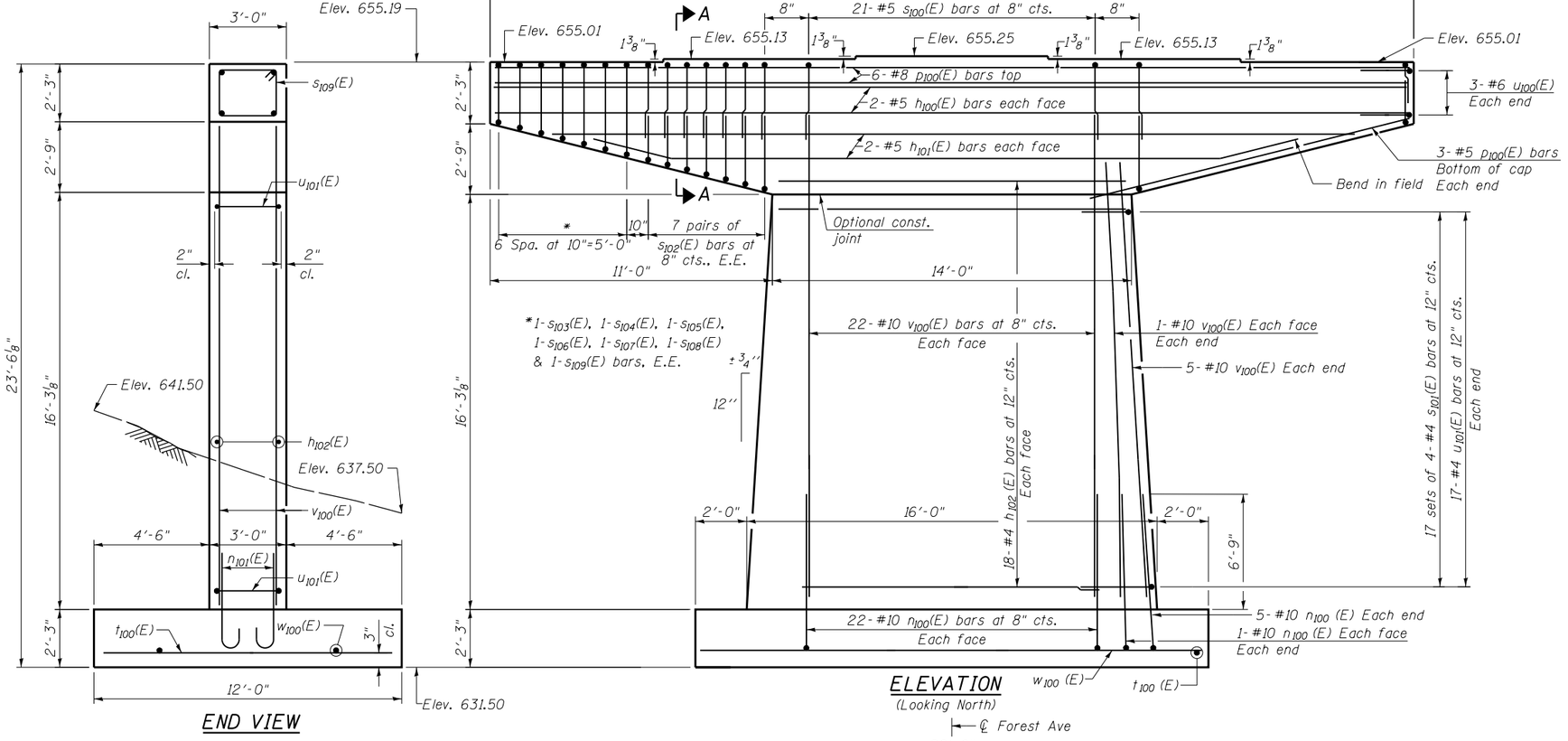
MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	48
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	





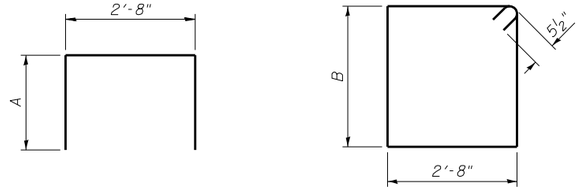
SECTION A-A

BAR $n_{100}(E)$



END VIEW

ELEVATION
(Looking North)



BARS $s_{100}(E)$, $s_{102}(E)$, $u_{100}(E)$ & $u_{101}(E)$

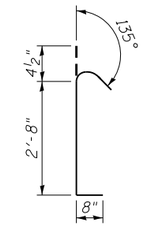
BARS $s_{103}(E)$ thru $s_{109}(E)$

A DIMENSIONS

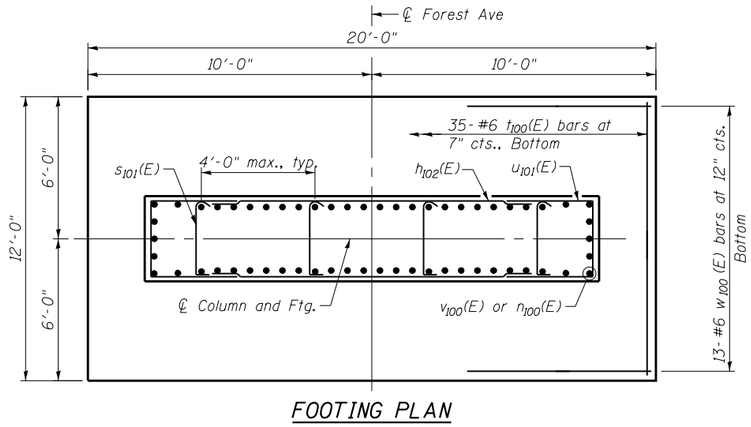
Bar	A
$s_{100}(E)$	4'-8"
$s_{102}(E)$	3'-6"
$u_{100}(E)$	4'-4"
$u_{101}(E)$	3'-7"

B DIMENSIONS

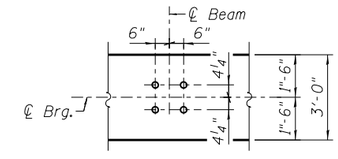
Bar	B
$s_{103}(E)$	3'-3"
$s_{104}(E)$	3'-1"
$s_{105}(E)$	2'-10"
$s_{106}(E)$	2'-8"
$s_{107}(E)$	2'-5"
$s_{108}(E)$	2'-3"
$s_{109}(E)$	2'-0"



BAR $s_{101}(E)$



FOOTING PLAN



ANCHOR BOLT LOCATION DETAIL

NOTES:

Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For Bill of Materials see sheet S-29.
E.E. = Each End
Maximum applied factored bearing pressure q_u =7.000 pst.

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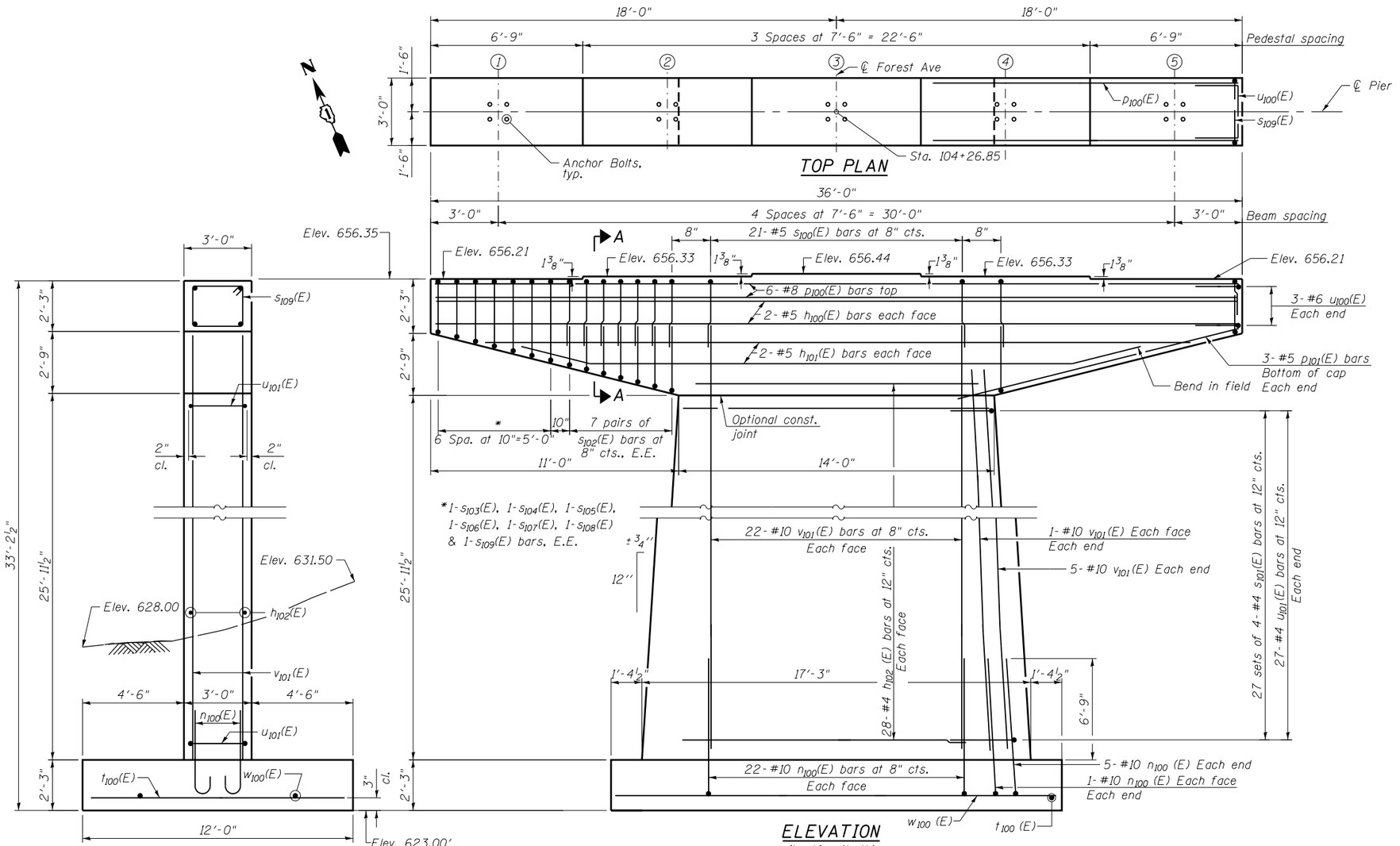
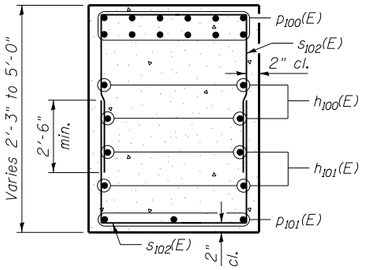
USER NAME = sallgood	DESIGNED -		REVISED -
	CHECKED - BWS		REVISED -
PLOT SCALE = 5.3333 ' / in.	DRAWN - SBA		REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS		REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1
STRUCTURE NO. 049-6559
SHEET NO. S-28 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	49
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	





SECTION A-A

BILL OF MATERIAL
TWO PIERS

Bar	No.	Size	Length	Shape
$h_{100}(E)$	8	#5	35'-8"	
$h_{101}(E)$	8	#5	28'-0"	
$h_{102}(E)$	92	#4	13'-8"	
$n_{100}(E)$	116	#10	10'-2"	
$p_{100}(E)$	24	#8	35'-8"	
$p_{101}(E)$	12	#5	12'-3"	
$s_{100}(E)$	42	#5	12'-0"	
$s_{101}(E)$	176	#4	3'-9"	
$s_{102}(E)$	56	#5	9'-8"	
$s_{103}(E)$	4	#5	12'-9"	
$s_{104}(E)$	4	#5	12'-5"	
$s_{105}(E)$	4	#5	11'-11"	
$s_{106}(E)$	4	#5	11'-7"	
$s_{107}(E)$	4	#5	11'-1"	
$s_{108}(E)$	4	#5	10'-9"	
$s_{109}(E)$	4	#5	10'-3"	
$t_{100}(E)$	70	#6	11'-8"	
$u_{100}(E)$	12	#6	11'-4"	
$u_{101}(E)$	88	#4	9'-10"	
$v_{100}(E)$	58	#10	19'-5"	
$v_{101}(E)$	58	#10	29'-5"	
$w_{100}(E)$	26	#6	19'-8"	
Structure Excavation		Cu Yd	246	
Concrete Structures		Cu Yd	145.3	
Reinforcement Bars, Epoxy Coated		Pound	25720	

NOTES:

Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For Bill of Materials see sheet S-28.
E.E. = Each End
Maximum applied factored bearing pressure q_u =7,260 pst.

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USER NAME = sallgood	DESIGNED -	REVISED -
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PLOT SCALE = 5.3333 ' / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2
STRUCTURE NO. 049-6559
SHEET NO. S-29 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	50
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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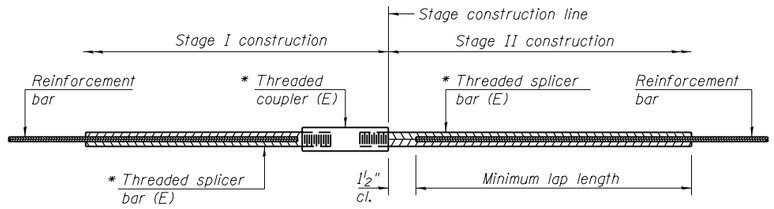
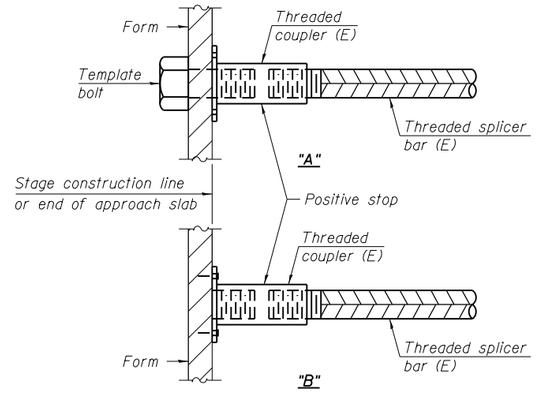


STANDARD BAR SPLICER ASSEMBLY

Threaded splicer bar length = min. lap length + 1½" + thread length

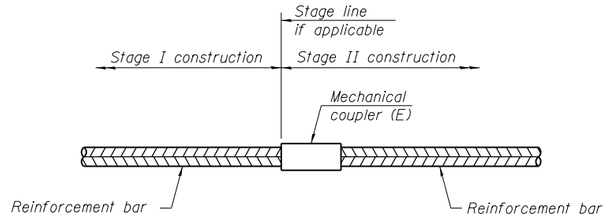
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length



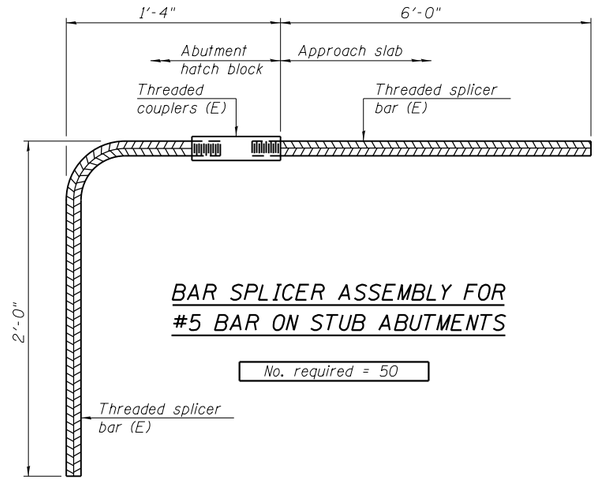
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 50

NOTES:

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1

2-17-2017

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PLOT SCALE = 0.2.0000 '' / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 049-6559
SHEET NO. S-30 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	51
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

N:\PROJ\0020349.00\0020349.03\Design\Structural\CAD\0020349.30 Bar Splicer Assembly Details.dgn

ILLINOIS DEPARTMENT OF TRANSPORTATION

SOIL BORING LOG

Page 1 Of 1

ROUTE FAU 1431 DESCRIPTION Proposed Bridge Replacement Date 4/22/15 Logged By VM

SECTION 13-00121-00-BR LOCATION Forest Avenue in Highland Park, Illinois SEC 23 TWP .43 RNG .12 PM 3rd

COUNTY Lake STRUCTURE NO. (Exist.) (Prop.)

Drilling Method AASHTO T 206-09 Hammer Type Automatic Hammer

Boring No. B-1
Station 102+61.58
Offset 5.14' E
Ground Surface El. +657.54+/- M.S.L.

Surf. Wat. El.
Groundwater Elev.:
When Drilling Dry
at Completion Dry
After Hrs

	ELEV. (M.S.L.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (TSF)	MOIST. (%)
11.5" BITUMINOUS CONCRETE PAVEMENT	656.6				
FILL: CLAY, Brown and Dark Brown, Some Sand and Gravel, Contains Pieces of Brick, Stiff, Moist	654.0	1.0	3		
		2.0	3 4	1.67 B/S	17.4
		3.0			
FILL: CLAY, Brown, Gray and Trace Dark Brown, Little Sand, Trace Gravel, Stiff, Moist to Wet (A-6)		4.0	3		
		5.0	4	1.21 B/S	22.6
		6.0			
		7.0	3 5 5	1.58 B/S	30.9
	649.0	8.0			
CLAY, Brown and Gray, Trace Sand and Gravel, Hard to Very Stiff, Moist (A-6)		9.0	3		
		10.0	5 8	4.57 B	15.2
		11.0			
		12.0	3 6 8	4.32 B	16.6
		13.0			
		14.0	3		
		15.0	9 11	4.67 B	15.6
		16.0			
		17.0	3 5 8	2.70 B	15.3
	639.0	18.0			
CLAY, Gray, Trace Sand and Gravel, Very Stiff, Moist (A-6)		19.0	3		
		20.0	7	2.11 B	16.4
		21.0			
		22.0	4 6 6	2.63 B	16.5
		23.0			
		24.0	3		
		25.0	6 7	2.91 B/S	16.6
	597.5	26.0			
End of Boring @ 60 Feet		27.0	5 7 8	3.24 B	15.7
		28.0			
		29.0	5		
		30.0	8 11	2.66 B/S	16.3
		31.0			
		32.0			
		33.0			
		34.0	4		
		35.0	6 8	2.37 B	16.0

	ELEV. (M.S.L.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (TSF)	MOIST. (%)
		36.0			
		37.0			
		38.0			
		39.0	4 7 8	2.33 B/S	16.0
		40.0			
		41.0			
		42.0			
		43.0			
		44.0	5 8 8	2.96 B	15.4
		45.0			
		46.0			
		47.0			
		48.0			
		49.0	7 9 9	3.33 B	15.1
		50.0			
		51.0			
		52.0			
		53.0			
		54.0	4 7 9	3.53 B/S	15.4
		55.0			
		56.0			
		57.0			
		58.0			
		59.0	5		
		60.0	5 6	2.33 B	16.3
		61.0			
		62.0			
		63.0			
		64.0			
		65.0			
		66.0			
		67.0			
		68.0			
		69.0			
		70.0			

N=Standard Penetration Test-Blows per six inches to drive 2" O.D. (QU)B=Bulge S=Shear P=Penetrometer Test

Split Spoon Sampler 24" with 140lb hammer falling 30"

4.25" Diameter Hollow Stem Augers used between Split Spoon Sample intervals unless noted otherwise.

SEECO Job No. 11130G

ILLINOIS DEPARTMENT OF TRANSPORTATION

SOIL BORING LOG

Page 1 Of 1

ROUTE FAU 1431 DESCRIPTION Proposed Bridge Replacement Date 4/22/15 Logged By VM

SECTION 13-00121-00-BR LOCATION Forest Avenue in Highland Park, Illinois SEC 23 TWP .43 RNG .12 PM 3rd

COUNTY Lake STRUCTURE NO. (Exist.) (Prop.)

Drilling Method AASHTO T 206-09 Hammer Type Automatic Hammer

Boring No. B-2
Station 105+03.72
Offset 9.10' W
Ground Surface El. +661.70+/- M.S.L.

Surf. Wat. El.
Groundwater Elev.:
When Drilling Dry
at Completion Dry
After Hrs

	ELEV. (M.S.L.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (TSF)	MOIST. (%)
9.75" BITUMINOUS CONCRETE PAVEMENT	660.9				
6" CRUSHED STONE BASE COURSE	660.4	1.0			
FILL: SAND, Brown, Gray and Black, Some Gravel, Medium Dense to Loose to Medium Dense, Dry to Moist to Dry (A-1-b)		2.0	7 9 10		9.3
		3.0			
		4.0	5		
		5.0	7 7		11.5
		6.0			
		7.0	3 4 3		10.6
		8.0			
		9.0	4		
		10.0	6 6		9.7
	651.2	11.0			
CLAY, Brown, Trace Sand and Gravel, Hard, Moist (A-6)		12.0	4 7 9	4.25 P	15.9
		13.0			
		14.0	5		
		15.0	9 11	4.38 B/S	15.5
	646.2	16.0			
CLAY, Gray, Trace Sand and Gravel, Stiff to Very Stiff, Moist (A-6)		17.0	3 6 9	1.83 B	15.8
		18.0			
		19.0	4		
		20.0	6 6	2.82 B	14.4
		21.0			
(Dry Unit Weight = 122.1 pcf)		22.0	4 6 9	2.74 B	15.9
		23.0			
		24.0	5		
(Atterberg limits test was performed. LL = 27.7, PL = 15.2, PI = 12.5)		25.0	9 9	2.58 B	15.5
	601.7	26.0			
End of Boring @ 60 Feet		27.0	5 8 10	3.13 B	15.6
(Dry Unit Weight = 121.9 pcf)		28.0			
		29.0	4		
		30.0	8 12	2.82 B	15.7
		31.0			
		32.0			
		33.0			
		34.0	6		
		35.0	9 10	3.32 B	15.4

	ELEV. (M.S.L.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (TSF)	MOIST. (%)
		36.0			
		37.0			
		38.0			
		39.0	5		
		40.0	8 8	3.74 B	15.7
		41.0			
		42.0			
		43.0			
		44.0	5		
		45.0	9 9	3.54 B	15.4
		46.0			
		47.0			
		48.0			
		49.0	6		
		50.0	8 10	3.58 B	15.0
		51.0			
		52.0			
		53.0			
		54.0	4		
		55.0	7 8	3.33 B/S	15.0
		56.0			
		57.0			
		58.0			
		59.0	5		
		60.0	9 10	3.63 B	14.7
		61.0			
		62.0			
		63.0			
		64.0			
		65.0			
		66.0			
		67.0			
		68.0			
		69.0			
		70.0			

N=Standard Penetration Test-Blows per six inches to drive 2" O.D. (QU)B=Bulge S=Shear P=Penetrometer Test

Split Spoon Sampler 24" with 140lb hammer falling 30"

4.25" Diameter Hollow Stem Augers used between Split Spoon Sample intervals unless noted otherwise.

SEECO Job No. 11130G

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USER NAME = sallgood	DESIGNED -	REVISED -
	CHECKED - BWS	REVISED -
PLOT SCALE = 0.2.0000 ' / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOG 1
STRUCTURE NO. 049-6559
SHEET NO. S-31 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	52
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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ILLINOIS DEPARTMENT OF TRANSPORTATION — SOIL BORING LOG

Page 1 Of 1

ROUTE FAU 1431 DESCRIPTION Proposed Bridge Replacement Date 4/23/15 Logged By DM

SECTION 13-00121-00-BR LOCATION Forest Avenue in Highland Park, Illinois SEC 23 TWP .43 RNG .12 PM 3rd

COUNTY Lake STRUCTURE NO. (Exist.) (Prop.)

Drilling Method AASHTO T 206-09 Hammer Type Automatic Hammer

Boring No. HA-1
Station 103+57.68
Offset 1.69' W
Ground Surface El. +638.43+/- M.S.L.

Surf. Wat. El.
Groundwater Elev.:
When Drilling Dry
at Completion Dry
After Hrs

	ELEV. (M.S.L.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (TSF)	MOIST. (%)
FILL: CLAY, Dark Brown and Brown, Some Sand and Gravel	637.4	1.0			
FILL: CLAY, Brown, Gray and Some Black, Trace Sand and Gravel, Medium, Moist (A-6)	635.9	2.0	3 3 4	0.50 P	21.3
		3.0			
CLAY, Brown and Gray, Trace Sand and Gravel, Very Stiff to Hard, Moist (A-6)		4.0	4 5 8	2.25 P	18.0
		5.0			
		6.0			
		7.0	5 12 17	4.83 B/S	15.3
		8.0			
		9.0	5 13 16	4.25 P	14.5
		10.0			
		11.0			
		12.0	6 13 15	4.25 P	16.6
	625.4	13.0			
CLAY, Gray, Trace Sand and Gravel, Very Stiff to Hard, Moist (A-6) (Dry Unit Weight = 121.4 pcf)		14.0	4 6 9	2.57 B	16.0
		15.0			
(Atterberg limits test was performed. LL = 27.8, PL = 14.1, PI = 13.7)		16.0			
		17.0	5 8 11	2.27 B	15.7
		18.0			
		19.0	5 10 9	3.18 B	13.4
		20.0			
		21.0			
		22.0	6 11 14	3.93 B/S	15.5
		23.0			
		24.0	6 14 15	4.37 B/S	13.2
	613.4	25.0			
End of Boring @ 25 Feet		26.0			
		27.0			
Note:		28.0			
		29.0			
The borehole was drilled and sampled using a 4" diameter open tubular hand auger in conjunction with a portable 35-pound hammer dropped 30 inches onto the split spoon sampler with the resulting blow counts converted to an equivalent SPT ("N") value utilizing the potential energy equation.		30.0			
		31.0			
		32.0			
		33.0			
		34.0			
		35.0			

	ELEV. M.S.L.	DEPTH (ft.)	SPT N (blows)	UCS Qu (TSF)	MOIST. (%)

N=Standard Penetration Test-Blows per six inches to drive 2" O.D. (QU)B=Bulge S=Shear P=Penetrometer Test

Split Spoon Sampler 24" with 140lb hammer falling 30"
4.25" Diameter Hollow Stem Augers used between Split Spoon Sample intervals unless noted otherwise.

SEECO Job No. 11130G

ILLINOIS DEPARTMENT OF TRANSPORTATION — SOIL BORING LOG

Page 1 Of 1

ROUTE FAU 1431 DESCRIPTION Proposed Bridge Replacement Date 4/23/15 Logged By DM

SECTION 13-00121-00-BR LOCATION Forest Avenue in Highland Park, Illinois SEC 23 TWP .43 RNG .12 PM 3rd

COUNTY Lake STRUCTURE NO. (Exist.) (Prop.)

Drilling Method AASHTO T 206-09 Hammer Type Automatic Hammer

Boring No. HA-2
Station 104+30.86
Offset 1.26' W
Ground Surface El. +634.47+/- M.S.L.

Surf. Wat. El.
Groundwater Elev.:
When Drilling Dry
at Completion Dry
After Hrs

	ELEV. (M.S.L.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (TSF)	MOIST. (%)
FILL: CLAY, Dark Brown and Brown, Some Sand and Gravel	633.5	1.0			
CLAY, Brown and Gray, Trace Sand and Gravel, Very Stiff to Stiff to Very Stiff, Moist (A-6)		2.0	4 8 10	2.76 B/S	21.5
		3.0			
		4.0	3 6 8	1.75 P	19.7
		5.0			
		6.0			
		7.0	4 9 10	2.75 P	12.0
	626.0	8.0			
CLAY, Brown, Trace Sand and Gravel, Hard, Moist (A-6)		9.0	7 12 15	4.25 P	14.8
		10.0			
	623.5	11.0			
CLAY, Gray, Trace Sand and Gravel, Very Stiff, Moist (A-6)		12.0	5 7 8	2.82 B	15.8
		13.0			
(Dry Unit Weight = 121.0 pcf)		14.0	4 8 8	2.88 S	15.3
		15.0			
		16.0			
		17.0	6 11 12	3.74 B/S	15.1
		18.0			
		19.0	5 7 9	2.10 B/S	16.3
		20.0			
		21.0			
		22.0	4 7 10	2.90 B	15.7
		23.0			
		24.0	5 9 9	2.97 B/S	14.8
	609.5	25.0			
End of Boring @ 25 Feet		26.0			
		27.0			
Note:		28.0			
		29.0			
The borehole was drilled and sampled using a 4" diameter open tubular hand auger in conjunction with a portable 35-pound hammer dropped 30 inches onto the split spoon sampler with the resulting blow counts converted to an equivalent SPT ("N") value utilizing the potential energy equation.		30.0			
		31.0			
		32.0			
		33.0			
		34.0			
		35.0			

	ELEV. M.S.L.	DEPTH (ft.)	SPT N (blows)	UCS Qu (TSF)	MOIST. (%)

N=Standard Penetration Test-Blows per six inches to drive 2" O.D. (QU)B=Bulge S=Shear P=Penetrometer Test

Split Spoon Sampler 24" with 140lb hammer falling 30"
4.25" Diameter Hollow Stem Augers used between Split Spoon Sample intervals unless noted otherwise.

SEECO Job No. 11130G

Ciorba Group, Inc.
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5007 North Cumberland Avenue
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E-mail chicago@ciorba.com

USER NAME = sallgood	DESIGNED -	REVISED -
	CHECKED - BWS	REVISED -
PLOT SCALE = 0.2.0000 '' / in.	DRAWN - SBA	REVISED -
PLOT DATE = 8/11/2017	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOG 2
STRUCTURE NO. 049-6559
SHEET NO. S-32 OF S-32 SHEETS

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	53
		CONTRACT NO. 61E28		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	M-BRM-4003(391)	

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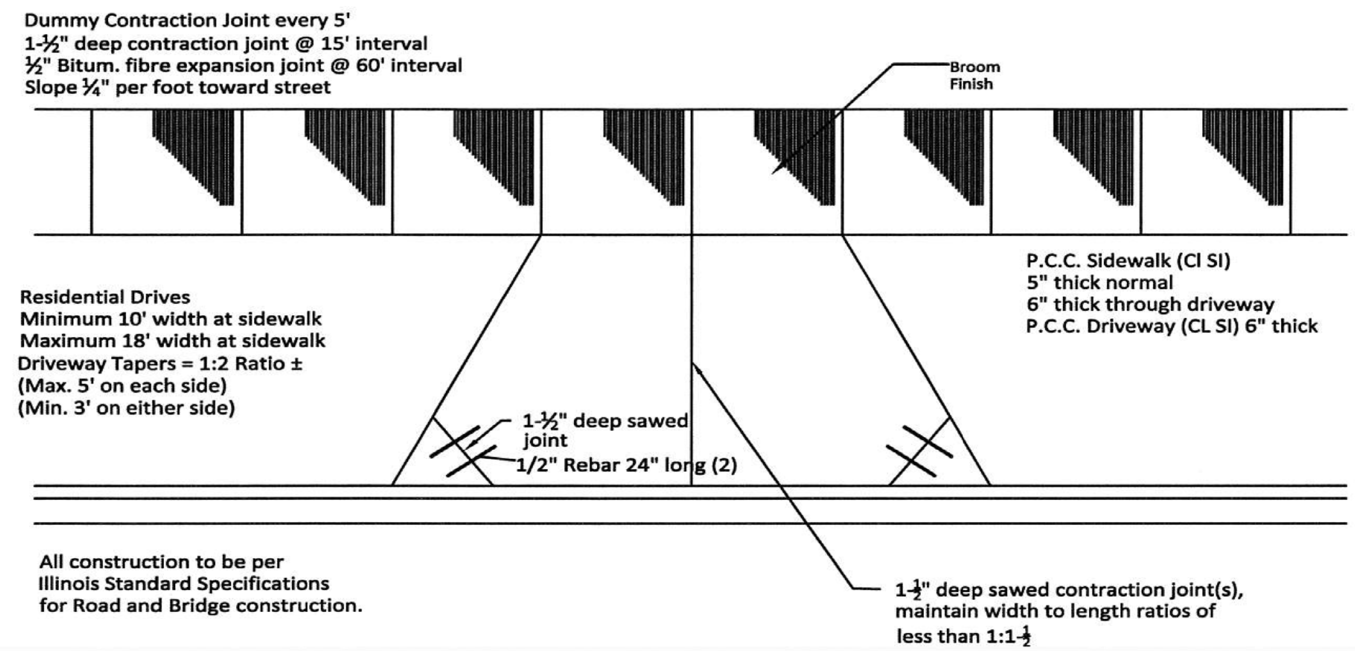
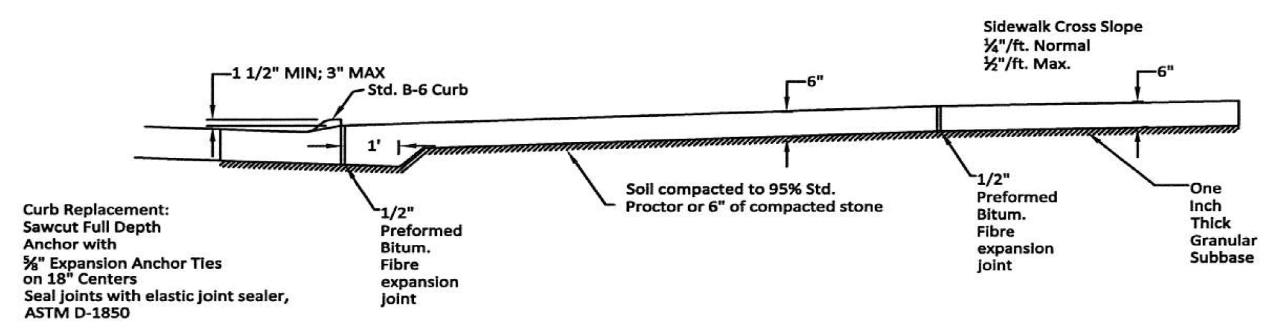


Plan View



Cross Section View

TYPICAL DRIVEWAY & SIDEWALK DETAIL

City of Highland Park
Department of Public Works
1150 Half Day Rd, Highland Park, IL 60035

H.P. DWG. No. STR-1031
Drawn By: M.B.
Revised By: E.J.

DATE: 27th Sept. 2013
Approved By: J.M.W.

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ENGINEERING CONSULTANT	USER NAME = espina	DESIGNED - JPA	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FOREST AVENUE BRIDGE REPLACEMENT HIGHLAND PARK DETAILS
Ciorba Group, Inc. CONSULTING ENGINEERS		DRAWN - DJW	REVISED -		
5507 North Cumberland Avenue, Suite 402, Chicago, Illinois 60656, Tel. 773.775.4009 Fax 773.775.4014, Email chicago@ciorba.com	PLOT SCALE = 2.0000 ' / in.	CHECKED - JPA	REVISED -		
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MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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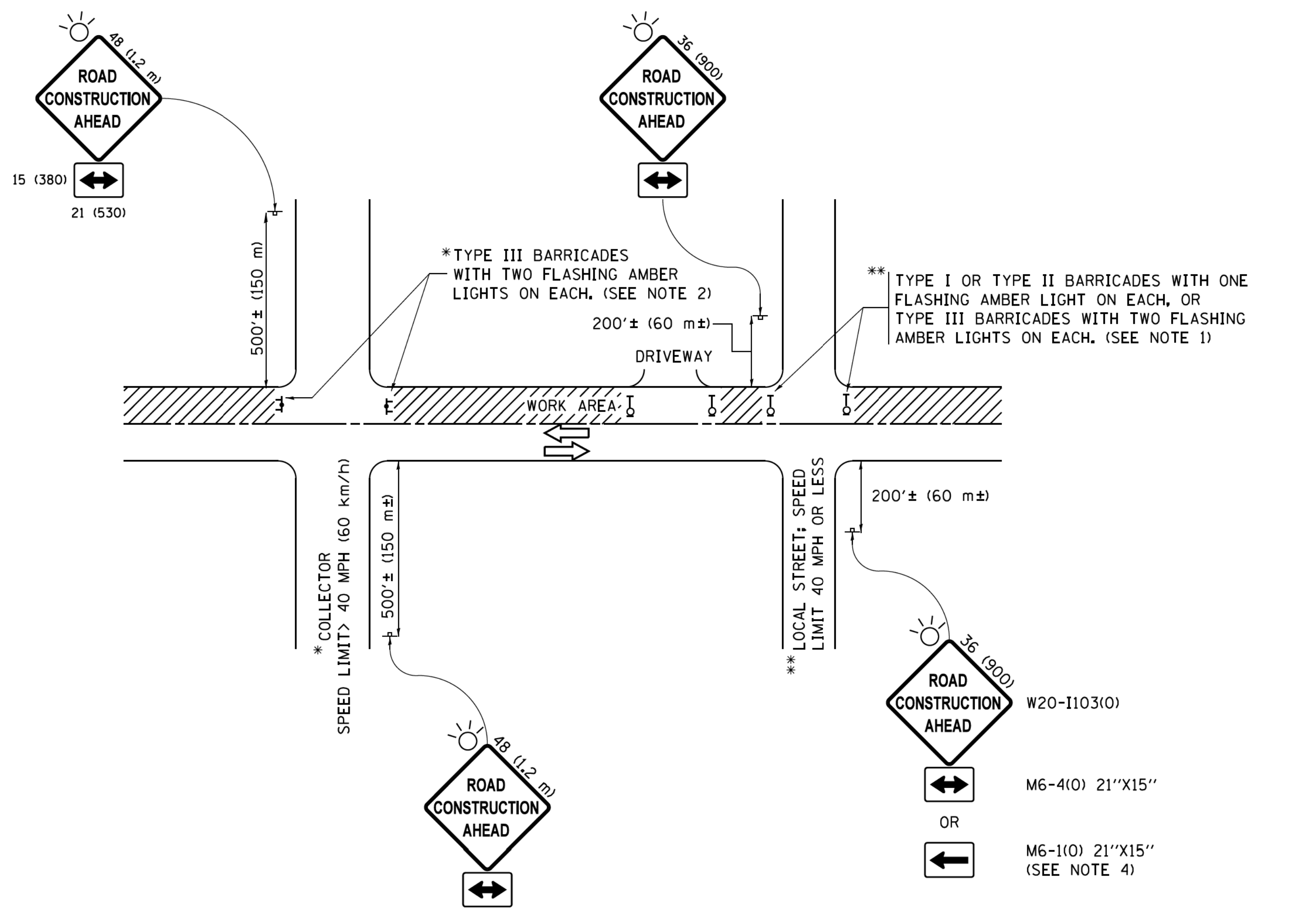
		CONTRACT NO. 61E28		
		ILLINOIS FED. AID PROJECT		



NOTES:

1. SIDE ROAD WITH A SPEED LIMIT OF 40 MPH (60 km/h) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:

   a) ONE "ROAD CONSTRUCTION AHEAD" SIGN 36 x 36 (900x900) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 200' (60 m) IN ADVANCE OF THE MAIN ROUTE.

   b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.

2. SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:

   a) ONE "ROAD CONSTRUCTION AHEAD" SIGN 48 x 48 (1.2 m x 1.2 m) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 500' (150 m) IN ADVANCE OF THE MAIN ROUTE.

   b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.

3. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (710) IN HEIGHT.

4. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).

5. WHEN WORK IS BEING PERFORMED ON A SIDE ROAD OR DRIVEWAY, FOLLOW THE APPLICABLE STANDARD(S). THE DIRECTIONAL ARROW (M6-1 OR M6-4) SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE TRAFFIC CONTROL SET-UP.

6. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAYS UNLESS OTHERWISE SPECIFIED IN THE PLANS OR BY THE ENGINEER.

7. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCLUDED IN THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

All dimensions are in inches (millimeters) unless otherwise shown.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	TC–10	CONTRACT NO. 61E28		
	ILLINOIS FED. AID PROJECT	$FEDPRJ		

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	TEMPLATE	
	AREAS	
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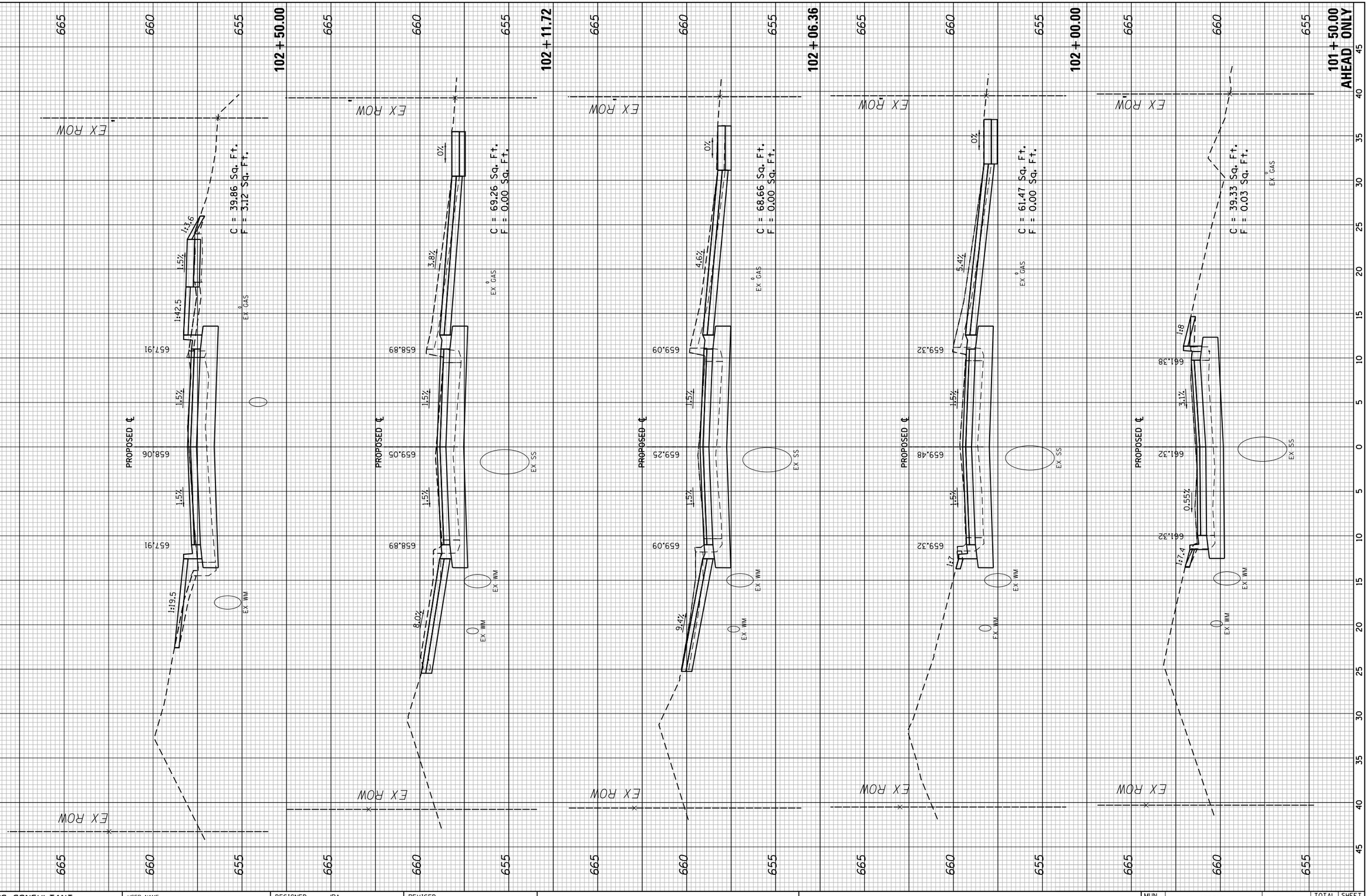

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ENGINEERING CONSULTANT	USER NAME = espina	DESIGNED - JPA	REVISED -
Ciorba Group, Inc. CONSULTING ENGINEERS 5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656 Tel: 773.775.4008 Fax 773.775.4014 E-mail: chicago@ciorba.com		DRAWN - DJW	REVISED -
	PLOT SCALE = 10.0000 ' / in.	CHECKED - JPA	REVISED -
	PLOT DATE = 11/17/2017	DATE - 11/17/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
CROSS SECTIONS

SCALE: 1" = 5' | SHEET NO. 1 OF 4 SHEETS | STA. | TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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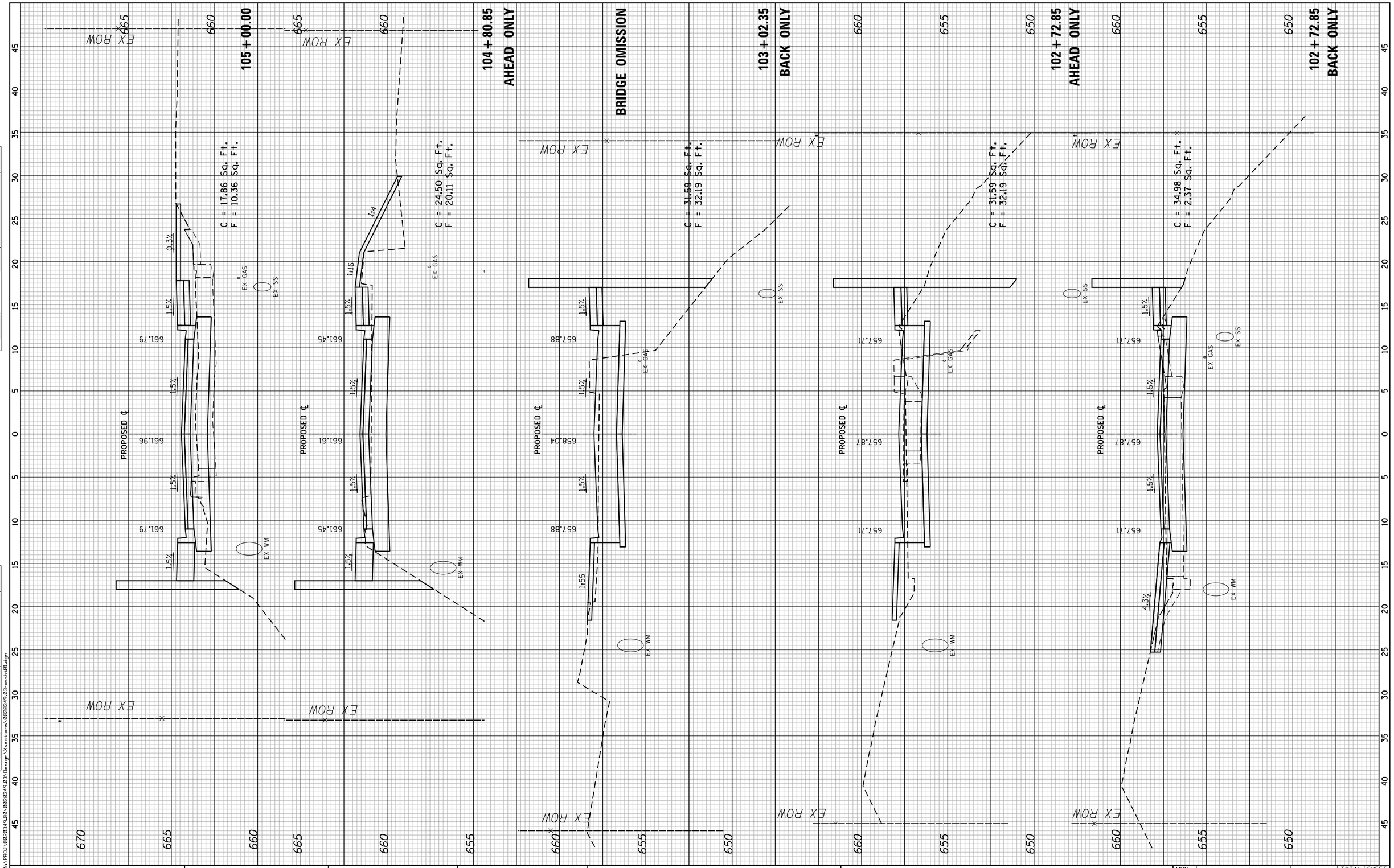
		CONTRACT NO. 61E28		
		ILLINOIS FED. AID PROJECT		



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SURVEYED — BY — DATE
PLOTTED
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SURVEYED — BY — DATE
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
CROSS SECTIONS

SCALE: 1" = 5' | SHEET NO. 2 OF 4 SHEETS | STA. | TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	57
		CONTRACT NO. 61E28		
	ILLINOIS FED. AID PROJECT			

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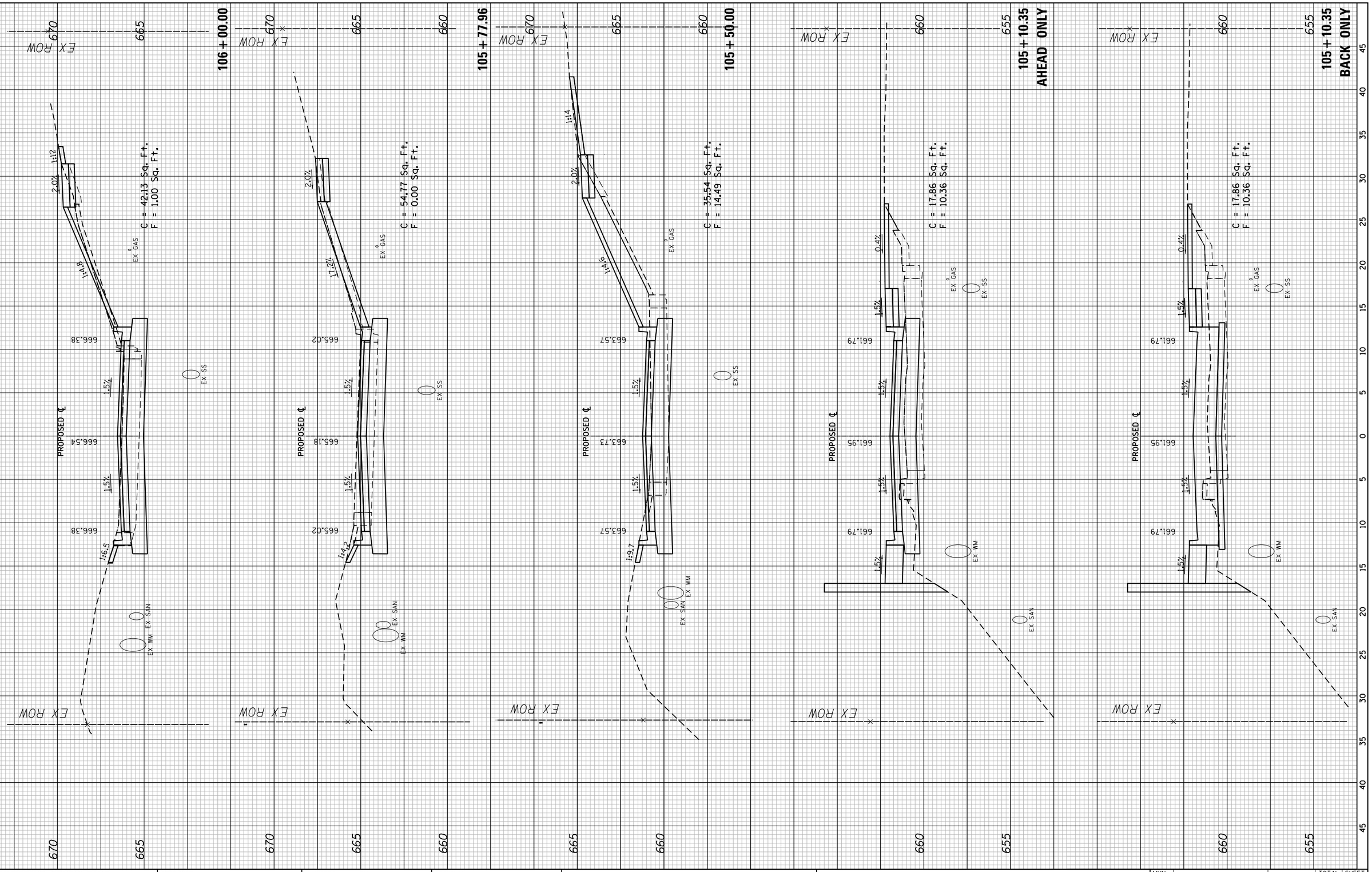

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	PLOT DATE = 11/17/2017	DATE - 11/17/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
CROSS SECTIONS

SCALE: 1" = 5' | SHEET NO. 3 OF 4 SHEETS | STA. | TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	58
		CONTRACT NO. 61E28		
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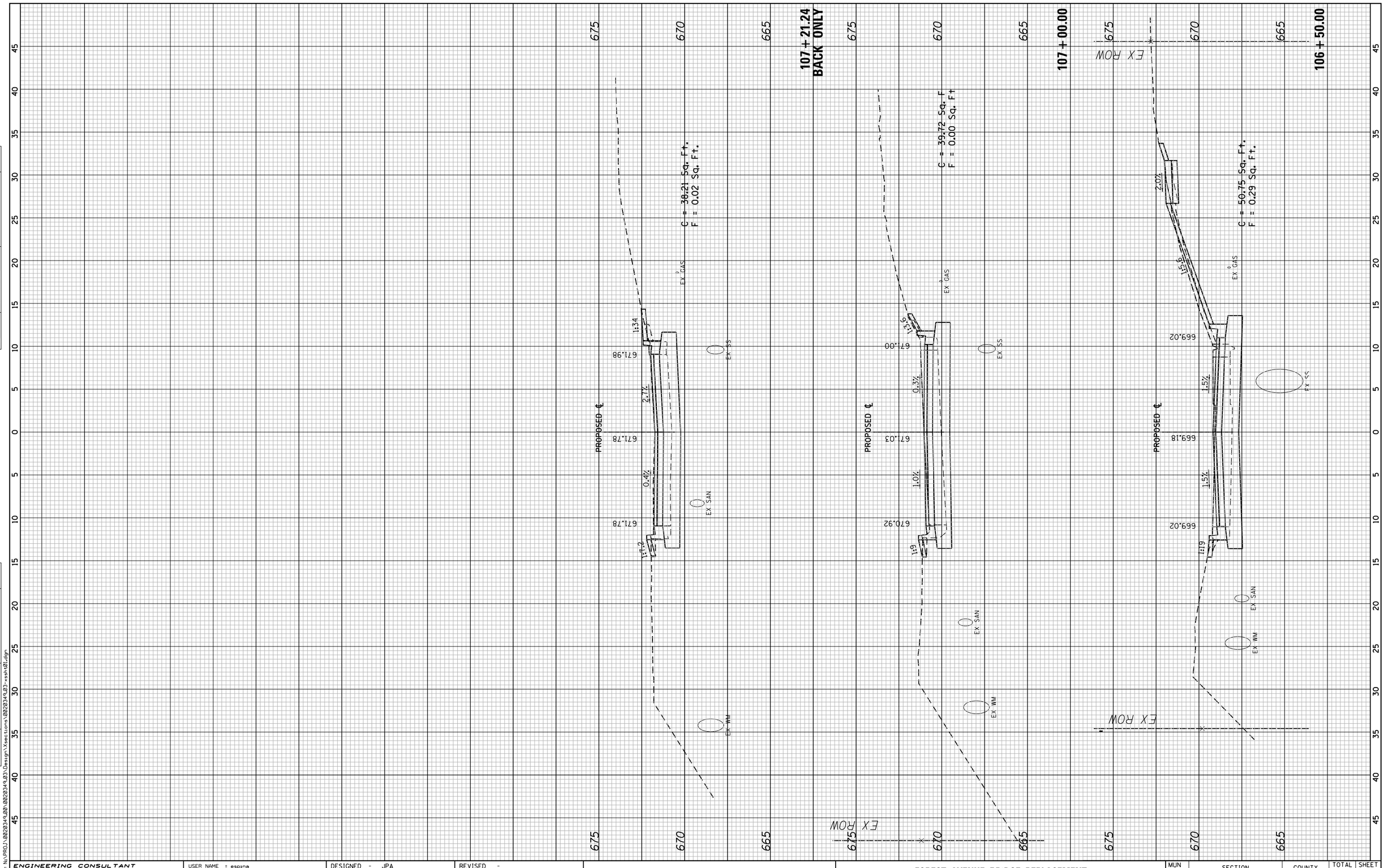

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BY
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOREST AVENUE BRIDGE REPLACEMENT
CROSS SECTIONS

SCALE: 1" = 5' | SHEET NO. 4 OF 4 SHEETS | STA. | TO STA.

MUN RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1090	13-00121-00-BR	LAKE	59	59
		CONTRACT NO. 61E28		
	ILLINOIS FED. AID PROJECT			