

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	G-R-I-4	WILL	10	1

CONTRACT 62859
D-91-036-05

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

FAP ROUTE 607: US 30 /US 52 (CASS STREET)
OVER DES PLAINES RIVER
SECTION G-R-I-4
PINION GEAR AND RACK REPLACEMENT
WILL COUNTY
C-91-036-05

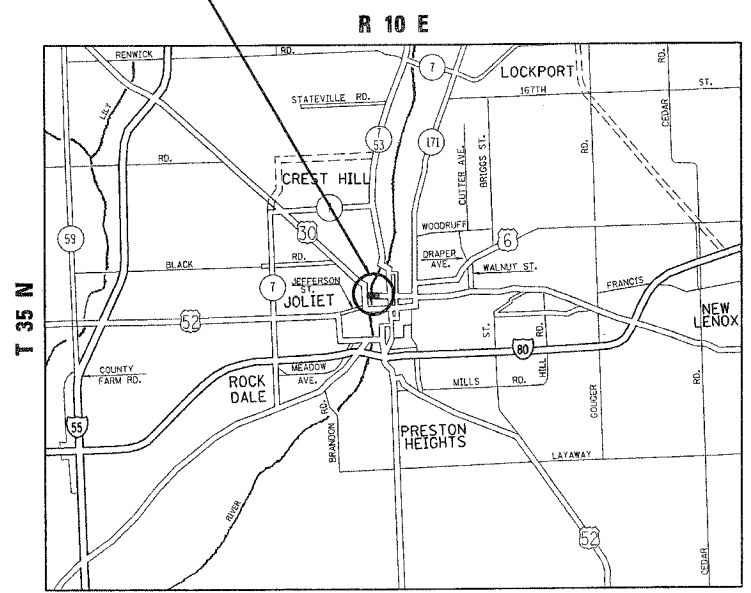
FOR INDEX OF SHEETS, SEE SHEET NO. 2

IMPROVEMENT LOCATED IN
THE CITY OF JOLIET



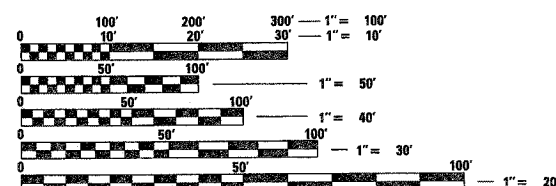
LOCATION OF SECTION INDICATED THUS: - [shaded box] -

IMPROVEMENT
LOCATION
SN 099-0101



JOLIET TOWNSHIP

TRAFFIC DATA
2003 ADT = 19,300
SPEED LIMIT = 30 MPH



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.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123

CONTRACT NO. 62859

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED March 25, 20 05
Dina Okada
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

May 13, 20 05
Mike Nune
ENGINEER OF DESIGN AND ENVIRONMENT

May 13, 20 05
Victor Mader
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

DISTRICT ONE - DESIGN & PLAN PREPARATION ENGINEER - KEN ENG/ROBERT BORO (847) 705-4178

15-15-07 03/22/2005

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	G-R-1-4	WILL	10	2
STA.			TO STA.	
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

INDEX OF SHEETS

SHEET NO	DESCRIPTION
1	TITLE SHEET
2	INDEX OF SHEETS, STATE STANDARDS, GENERAL NOTES & SUMMARY OF QUANTITIES
3-9	BRIDGE PLANS
10	DETOUR

STATE STANDARDS

STANDARD NO	DESCRIPTION
701301-02	LANE CLOSURE, 2L 2W, SHORT TIME OPERATIONS
702001-05	TRAFFIC CONTROL DEVICES

GENERAL NOTES

BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "JULIE" (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION) AT 800-892-0123 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE & GAS FACILITIES. (48 HOURS NOTIFICATION IS REQUIRED.)

THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT WRITTEN PERMISSION FROM THE DEPARTMENT.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS & CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION & ORDERING OF MATERIAL.

THE CONTRACTOR SHALL CONTACT THE DISTRICT ONE TRAFFIC CONTROL SUPERVISOR AT (847) 705-4470 A MINIMUM OF 72 HOURS IN ADVANCE OF BEGINING WORK.

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ACCESS TO ABUTTING PROPERTY AT ALL TIMES DURING THE CONSTRUCTION OF THIS PROJECT.

ALL DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO THE FABRICATION OF ANY STEEL.

WORK ON THE STRUCTURE SHALL BE DONE IN SUCH A MANNER THAT CLOSURE OF THE BRIDGE TO RIVER TRAFFIC (PERIODS WHERE THE BRIDGE IS RESTRICTED TO THE DOWN POSITION) IS KEPT TO A MINIMUM (4 HOURS MAXIMUM) AND COORDINATED WITH THE COAST GUARD.

RIVER TRAFFIC IS TO RE MAINTAINED AT ALL TIMES.

WORK THAT REQUIRES THE BRIDGE TO BE IMMOBILIZED SHALL BE DONE WITH THE BRIDGE REQUIREMENTS SHOWN ON THE DRAWINGS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION OF ALL EMERGENCY SERVICES, SCHOOL DISTRICTS, I.D.O.T.'S COMMUNICATION CENTER, SPRINGFIELD TRUCK PERMIT SECTION AND OTHER AGENCIES AFFECTED BY THE CLOSURE. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR POSTING SIGNS THAT WILL INDICATE THE DATES THE CLOSURE WILL BE IN PLACE.

THE CONTRACTOR SHALL CONTACT THE BUREAU OF TRAFFIC, SIGNALS UNIT AT (847) 705-4139 A MINIMUM OF 48 HOURS PRIOR TO CLOSURE SO THE DETOUR ROUTE TRAFFIC SIGNALS MAY BE ADJUSTED AS NECESSARY.

THE COST OF THE WORK INVOLVED IN "CLEANING AND PAINTING ADJACENT AREAS OF EXISTING STEEL STRUCTURES" AND "CLEANING AND PAINTING NEW METAL STRUCTURES" SHALL BE CONSIDERED INCLUDED IN THE COST OF "MECHANICAL WORK - LUMP SUM".

URBAN

LOCATION OF WORK: US 30 (WB)/CASS STREET OVER DES PLAINES RIVER				
				CONSTRUCTION TYPE CODE
SUMMARY OF QUANTITIES				SFTY - 2A
CODE NO.	ITEM	UNIT	TOTAL QUANTITIES	SN: 099-0101
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	3	3
67100100	MOBILIZATION	L SUM	1	1
70102550	TRAFFIC CONTROL AND PROTECTION FOR TEMPORARY DETOUR	EACH	1	1
X0322467	TEMPORARY INFORMATION SIGNING FOR LANE CLOSURES	SQ FT	48	48
X0323343	MECHANICAL WORK	L SUM	1	1

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
INDEX OF SHEETS
STATE STANDARDS
GENERAL NOTES
SUMMARY OF QUANTITIES

SCALE: VERT.
 DATE: HORIZ.

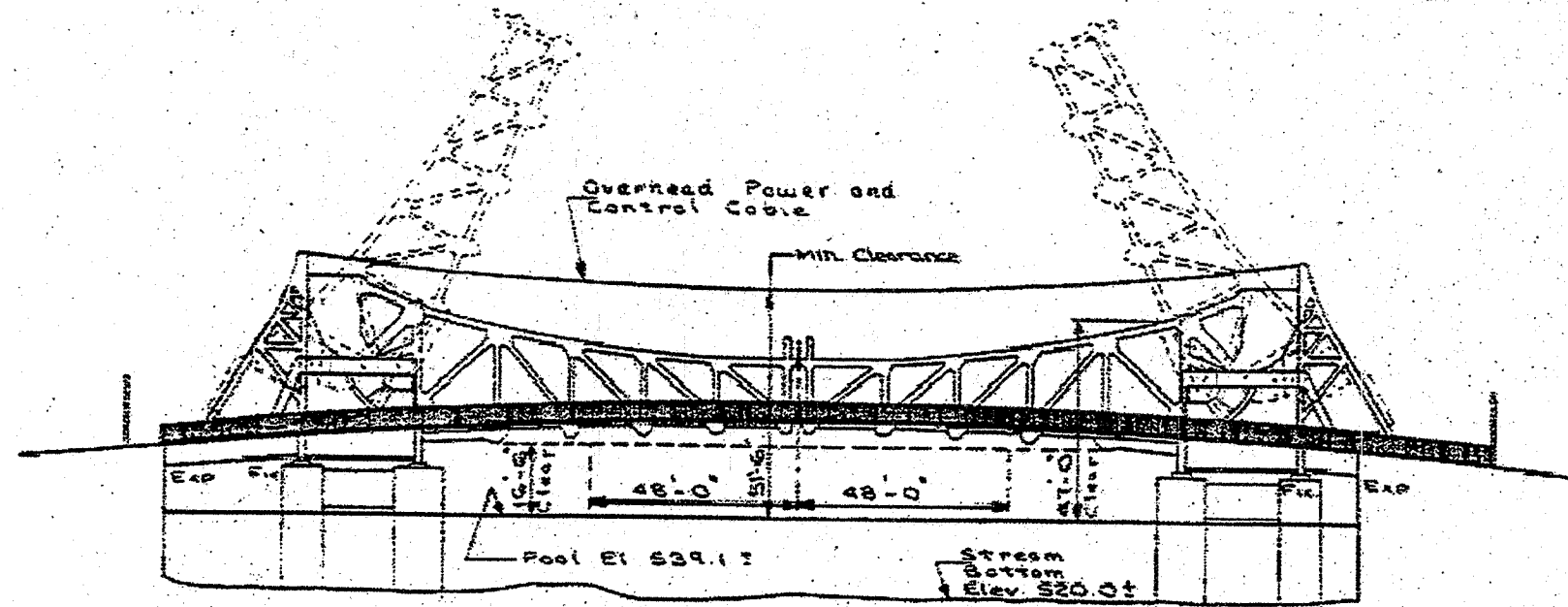
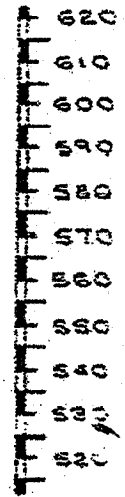
DRAWN BY
 CHECKED BY

BENCH MARK:
BRASS DISC IN CONCRETE WALL AT STA. 9+42 LEFT 316'
ILL. WATERWAY B.M. #288.2. MSL '12 ELEVATION 544.578.

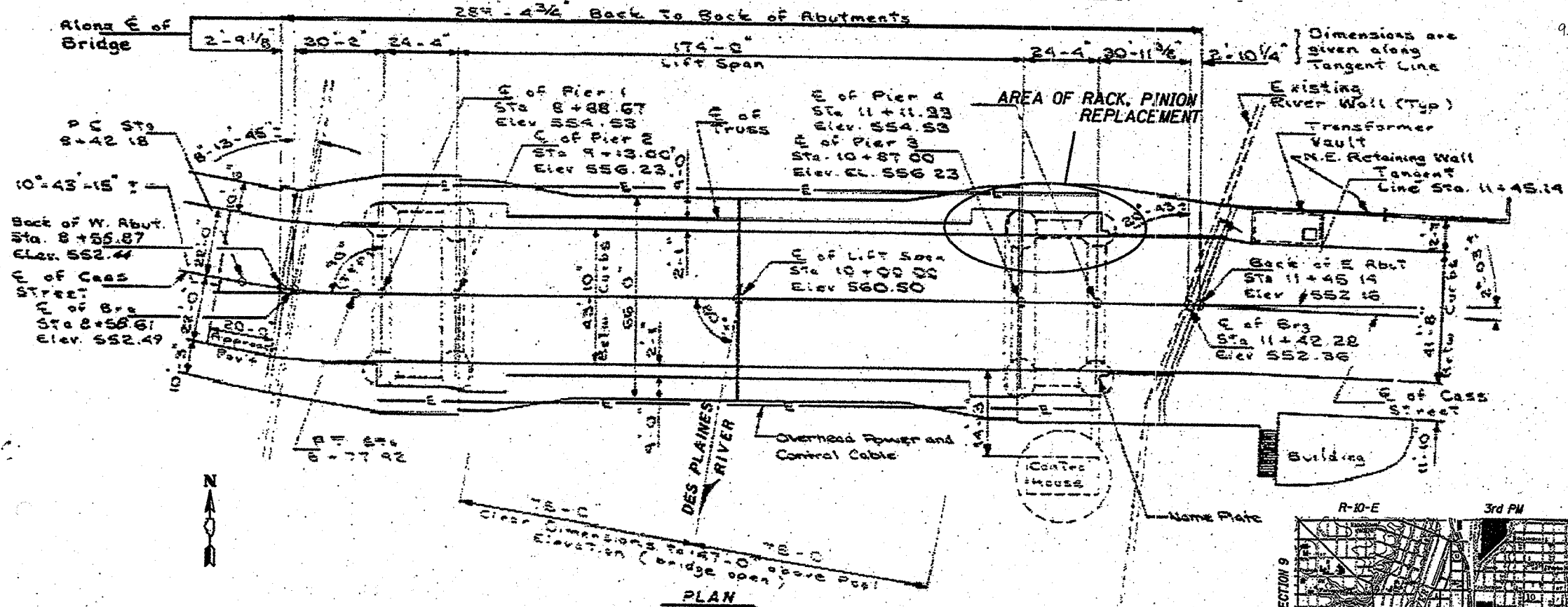
DESCRIPTION OF IMPROVEMENT:
REMOVAL AND REPLACEMENT OF THE COMPONENTS FOR
THE NORTHEAST RACK, PINION AND PINION SHAFT.

ROUTE NO.	SECT.	COUNTY	SHEET NO.	TOTAL SHEETS
FAP 607	*	WILL	3	10
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

* G-R-I-4



ELEVATION



PLAN

GENERAL NOTES:

- DESIGN OF MACHINERY CONFORMS TO THE 1988 STANDARD SPECIFICATIONS FOR MOVABLE HIGHWAY BRIDGES PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992 AND 1993 REVISIONS, UNLESS OTHERWISE SHOWN ON THE PLANS OR PROVIDED FOR IN THE SPECIFICATIONS.
- ALL HIGH STRENGTH FASTENERS SHALL CONFORM TO ASTM A449, AND UNLESS OTHERWISE SPECIFIED, SHALL HAVE A HARDENED PLAIN WASHER UNDER THE HEAD AND THE NUT.
- MACHINERY DIMENSIONS SHOWN ON DRAWINGS ARE DIMENSIONS AFTER MACHINING.
- ALL BOLT HOLES IN CASTINGS SHALL BE SPOTFACED.
- MANUFACTURED COMPONENTS AND MACHINERY SURFACES IN CONTACT WITH MANUFACTURED COMPONENTS SHALL BE DIMENSIONED, TOLERANCED, FINISHED, AND INSTALLED PER THE INSTRUCTIONS OF THE MANUFACTURER.
- MACHINERY SHALL BE ERECTED BY MILLWRIGHTS WITH DEMONSTRATED COMPETENCE IN MACHINERY ERECTION WORK.
- PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM THE EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.
- THE EXISTING STRUCTURAL STEEL COATINGS CONTAIN LEAD. THE CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO PROTECT ALL PERSONNEL AND THE PUBLIC FROM THE LEAD ON THIS PROJECT.
- THE INORGANIC ZINC RICH PRIMER/ACRYLIC/ACRYLIC PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF NEW STRUCTURAL STEEL, EXCEPT WHERE OTHERWISE NOTED. THE COLOR OF THE ACRYLIC FINISH COAT SHALL BE INTERSTATE GREEN, MUNSSELL NO. 7.5 G 4/8. SEE SPECIAL PROVISION "CLEANING AND PAINTING NEW METAL STRUCTURES."

INDEX OF DRAWINGS:

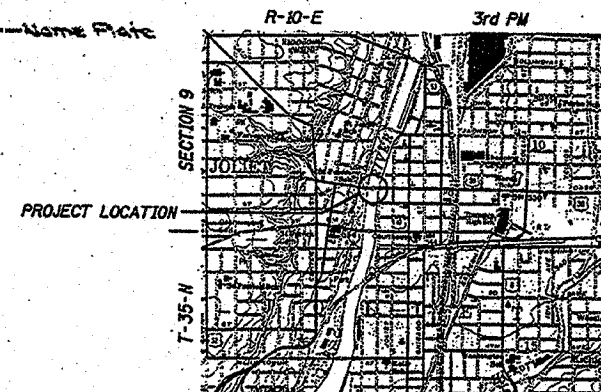
- C-01 GENERAL PLAN AND ELEVATION
- C-02 RACK AND PINION DETAILS
- C-03 SHAFT AND BEARING DETAILS
- C-04 MACHINERY PLAN
- C-05 SHIM DETAILS
- C-06 NEW PINION ASSEMBLY
- C-07 NEW PINION BEARING HOUSING

ITEM	UNIT	TOTAL
MECHANICAL WORK	L SUM	1

*SEE SPECIAL PROVISIONS

REVISION	DATE	DESCRIPTION
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		
GENERAL PLAN & ELEVATION		
CASS STREET BRIDGE OVER DESPLAINES RIVER U.S. 30 (WESTBOUND) CITY OF JOLIET, WILL COUNTY STRUCTURE NUMBER 099-0101		
DRAWING NO. C-01	SCALE	DATE 2-05-2001
		SHEET NO. 1 OF 7

Designed by: ED
Checked by: JDR
Drafted by: SA
Checked by: ED

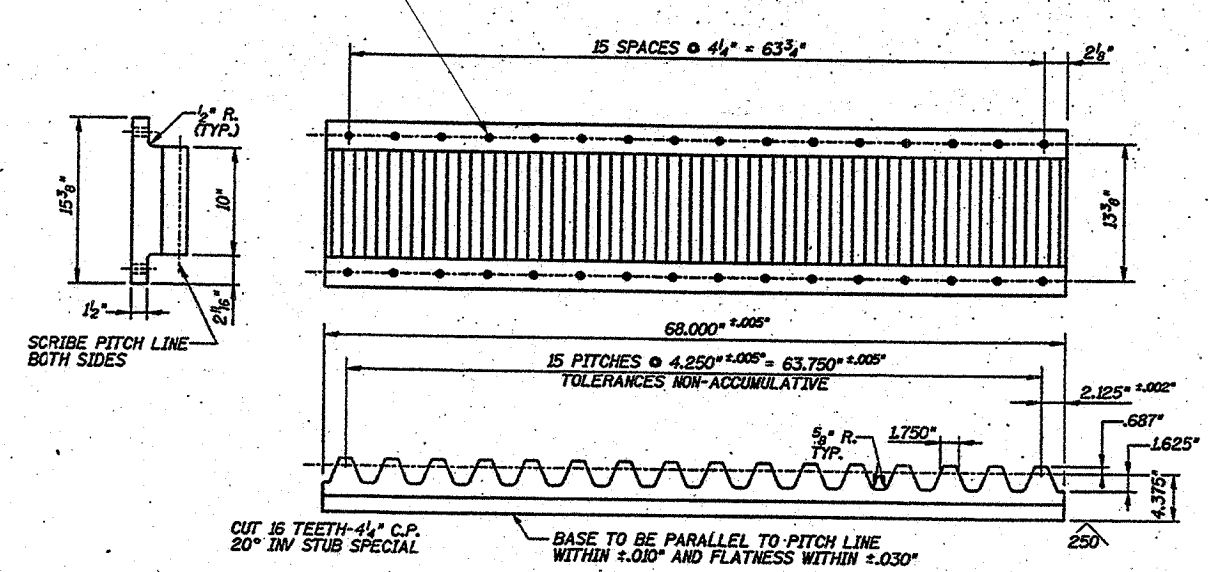
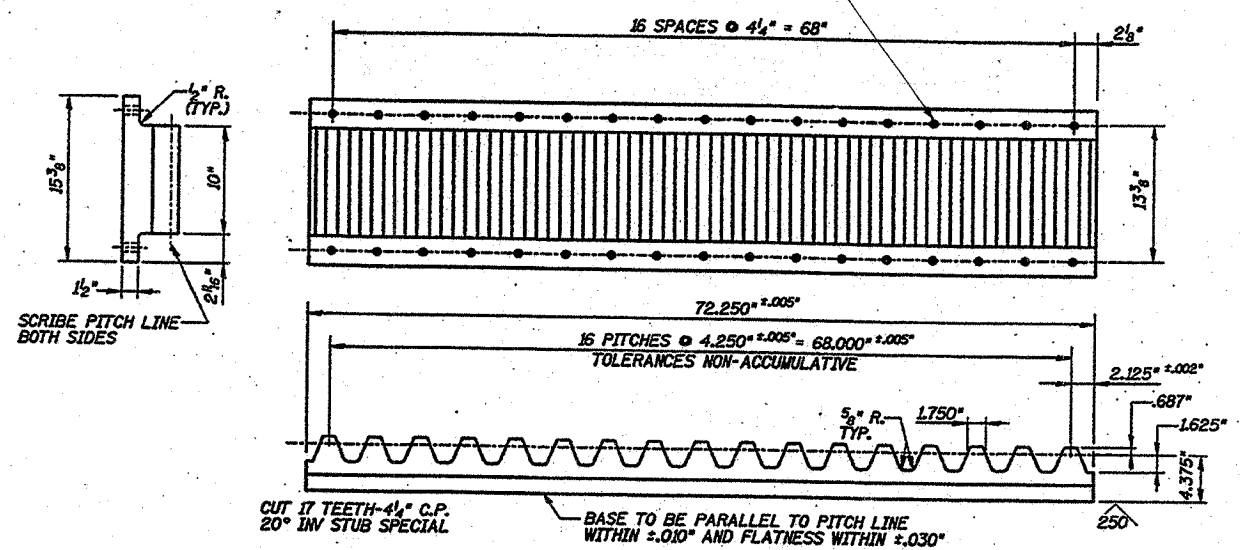


62859

ROUTE NO.	SECT.	COUNTY	SHEET NO.	TOTAL SHEETS
FAP607	*	WILL	4	10
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

*G-R-I-4

SHOP DRILL 13/16" DIAMETER HOLES FOR TEMPORARY 3/4" DIAMETER BOLTS; DRILL AND REAM AFTER FINAL ALIGNMENT FOR 7/8" DIAMETER ASTM A449 TYPE 2 OR ASTM A325 TYPE 3 TURNED BOLTS (TURNED BOTH SIDES). BOLTS SHALL HAVE MACHINE CUT THREADS, AND BE WELL OILED. BOLT TORQUE SHALL BE DETERMINED BY TORQUING 7/8" BOLT TO 70% OF PROOF LOAD, WHICH IS 39,000 LBS FOR ASTM A449 BOLTS AND 27,500 LBS FOR ASTM A325 BOLTS, IN AN APPROVED TORQUE-TESTING MACHINE. IF TAPERED SHIMS ARE USED TO OBTAIN PROPER ALIGNMENT OF THE RACK, SELF-ALIGNING SPHERICAL WASHERS AND NUTS MUST BE USED FOR ALL RACK ATTACHMENT TURNED BOLTS.

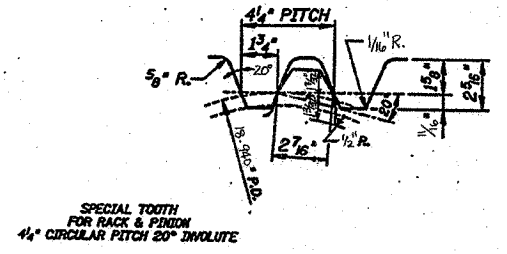


NEW RACK
 2 REQ'D MATERIAL STEEL ASTM A516 GRADE 70
 149-180 BHN, 25 FT-LBS @ 40°F MIN. AVG. CVN TOUGHNESS REQUIRED.

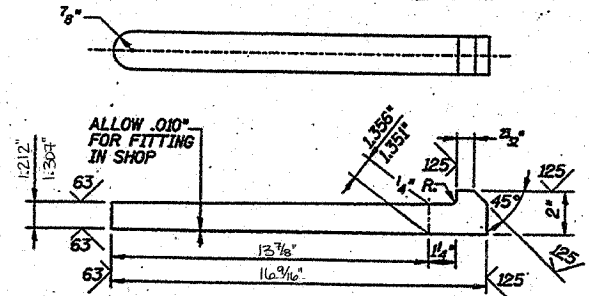
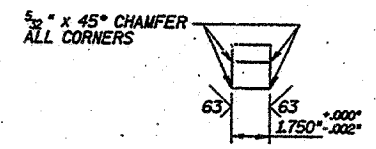
NEW RACK
 2 REQ'D MATERIAL STEEL ASTM A516 GRADE 70
 149-180 BHN, 25 FT-LBS @ 40°F MIN. AVG. CVN TOUGHNESS REQUIRED.

NOTE: RACK HEIGHT SHALL BE ADJUSTED WITH USE OF TAPERED AND/OR FLAT SHIMS SO THAT PINION MESHES PROPERLY WITH RACK AT ALL POSITION ANGLES OF THE BASCULE LEAF.

NOTE: RACK HEIGHT SHALL BE ADJUSTED WITH USE OF TAPERED AND/OR FLAT SHIMS SO THAT PINION MESHES PROPERLY WITH RACK AT ALL POSITION ANGLES OF THE BASCULE LEAF.

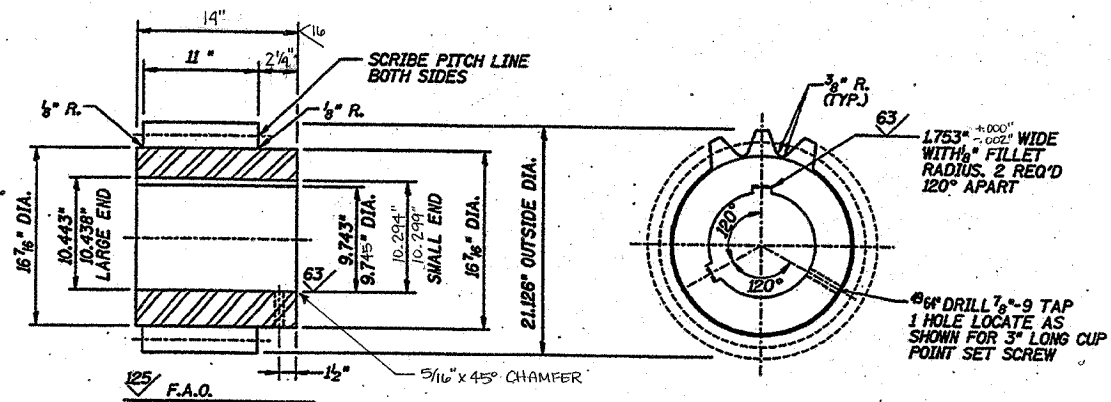


*RACK AND PINION TOOTH DETAIL



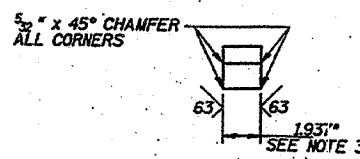
NEW GIB KEY FOR PINION
 2 REQ'D MATERIAL STEEL ASTM A29 GRADE 8620
 80 KSI TENSILE AND 50 KSI YIELD STRENGTH, 24% ELONGATION MIN; 15 FT-LBS @ 40°F MIN. AVG. CVN TOUGHNESS REQUIRED.

- NOTES:**
1. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH DETAILED DRAWINGS OF THE PROPOSED TURNED BOLTS USED TO BOLT THE RACK SECTIONS TO THE EXISTING STRUCTURAL STEEL FOR APPROVAL PRIOR TO FINAL ASSEMBLY.
 2. FIELD VERIFY EXISTING HOLE DIMENSION BEFORE MACHINING O.D. OF BEARING.
 3. KEY WIDTH TO PROVIDE LC-4 FIT WITH EXISTING KEYWAY IN GEAR AND WITH NEW KEYWAY IN SHAFT



*** NEW PINION**
 1 REQ'D ASTM A668 CLASS H
 25 FT-LBS @ 40°F MIN. AVG. CVN TOUGHNESS REQUIRED AT 1/4 RADIUS POSITION OF PROLONGATION TEST SAMPLES.

GEAR DATA	
NO. TEETH	14
PITCH DIA.	18.939"
PITCH	4 1/4" C.P.
P.A.	20° INV. STUB SPEC.
ADD.	1.0937"
CHORD THK.	2.4375"
FULL DEPTH	2.3125"

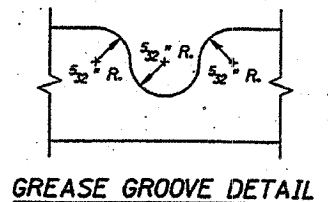


NEW GIB KEY FOR EXISTING GEAR
 2 REQ'D MATERIAL STEEL ASTM A29 GRADE 8620
 80 KSI TENSILE AND 50 KSI YIELD STRENGTH, 24% ELONGATION MIN; 15 FT-LBS @ 40°F MIN. AVG. CVN TOUGHNESS REQUIRED.

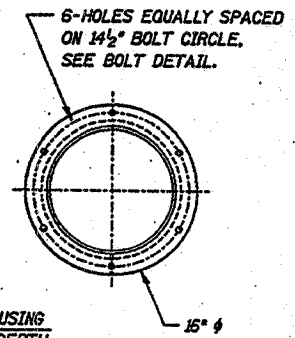
Designed by: ED
 Checked by: JOK
 Drafted by: SA
 Checked by: ED

REVISION	DATE	DESCRIPTION
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		
RACK AND PINION DETAILS		
CASS STREET BRIDGE OVER DESPLAINES RIVER U.S. 30 (WESTBOUND) CITY OF JOLIET, WILL COUNTY STRUCTURE NUMBER 099-0101		
DRAWING NO. C-02	SCALE	DATE 2-05-2001
		SHEET NO. 2 OF 7

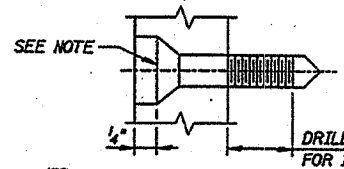
ROUTE NO.	SECT.	COUNTY	SHEET NO.	TOTAL SHEETS
FAP 607	*	WILL	5	10
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



GREASE GROOVE DETAIL

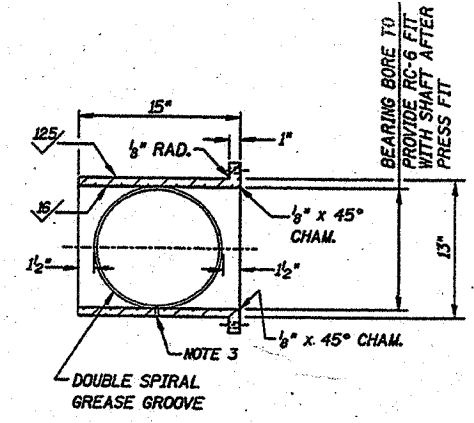


6-HOLES EQUALLY SPACED ON 1 1/2" BOLT CIRCLE. SEE BOLT DETAIL.

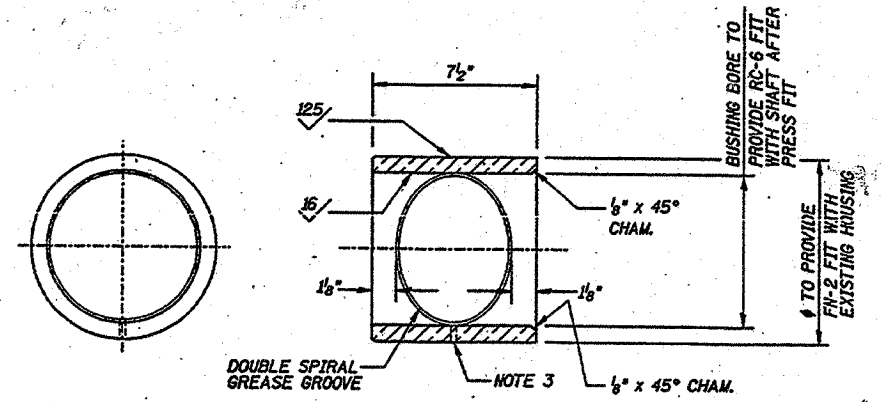


BOLT DETAIL

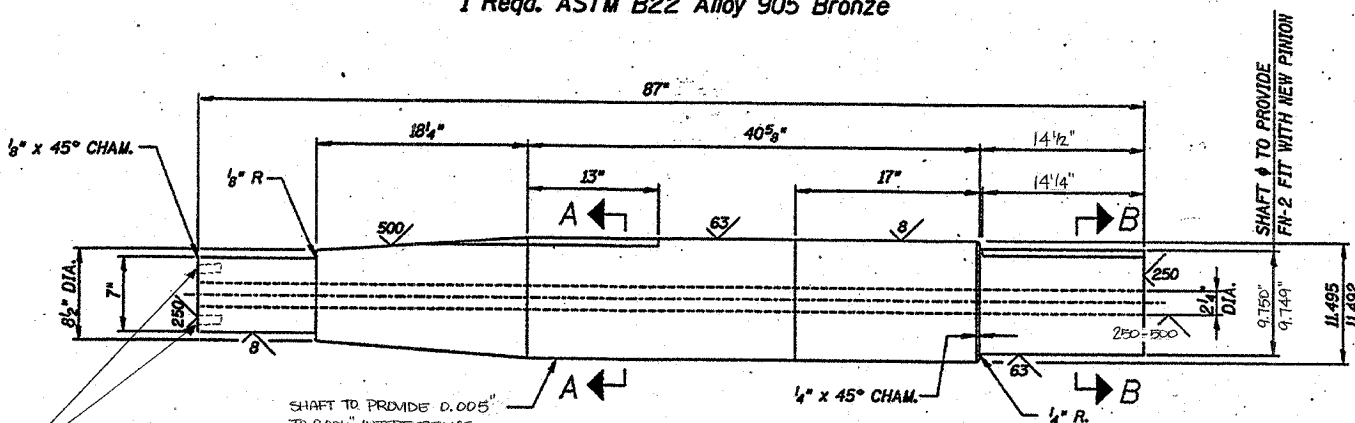
NOTE: COUNTERSUNK 1/2" x 1/2"-13 A449 SOCKETHEAD BOLT COUNTERBORED 1/4"



NEW BUSHING FOR PINION SHAFT
1 Req. ASTM B22 Alloy 905 Bronze

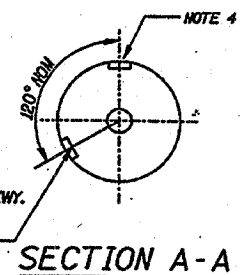


NEW BUSHING FOR SMALL END OF PINION SHAFT
1 Req. ASTM B22 Alloy 905 Bronze

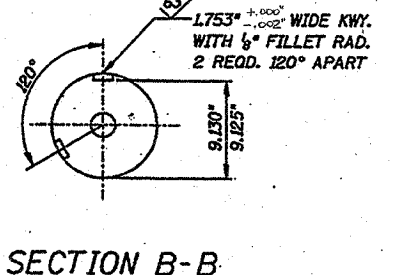


NEW PINION SHAFT

1 Req. ASTM A668 Class G FORGING, 180-207 BHN; 25 FT-LBS @ 40°F MIN. AVG CVN TOUGHNESS REQUIRED AT 1/4 RADIUS POSITION OF TEST PROLONGATION SAMPLES.



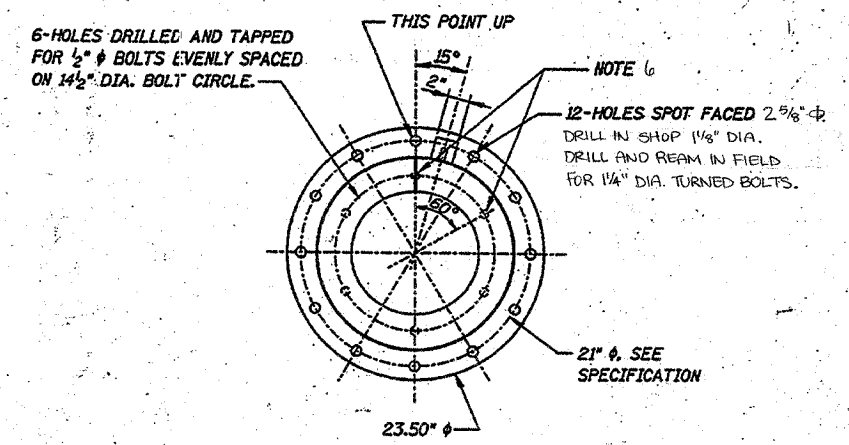
SECTION A-A



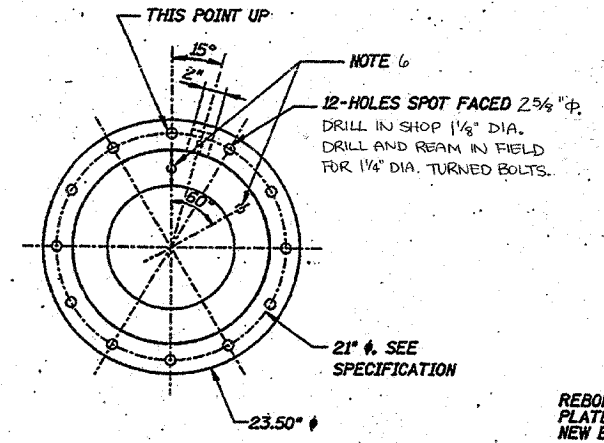
SECTION B-B

NOTES:

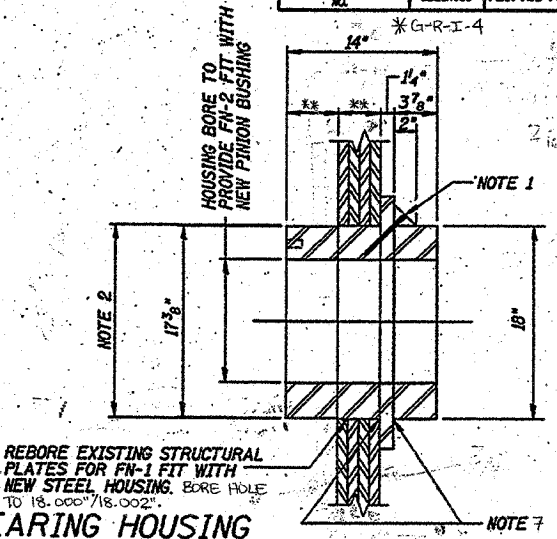
- TAP FOR 1/4" NPT ALEMITE GIANT BUTTON HEAD GREASE CUP.
- HOUSING OUTER DIAMETER TO PROVIDE FN-1 FIT WITH NEW HOLE BORED ON SPAN CENTER OF ROTATION BY THE CONTRACTOR IN NEW STRUCTURAL PLATES. CONTRACTOR SHALL LINE BORE, THEN MEASURE THE DIAMETER OF THE HOLE FOR FINAL MACHINING OF THE BEARING HOUSING. (BEARING O.D. TO BE 18.007" (18.006").)
- DRILL THROUGH BUSHING FROM BEARING HOUSING AT ASSEMBLY IN SHOP TO CONNECT TO SPIRAL GREASE GROOVE.
- LOCATE SECOND KEYWAY FROM EXISTING GEAR IN SHOP, INSTALL GEAR ON SHAFT AT ASSEMBLY IN FIELD. MATCH KEYWAYS ON SHAFT TO EXISTING KEYWAYS ON GEAR FOR LC-6 FIT WITH NEW KEY
- THE CONTRACTOR MAY PROVIDE EITHER THE ONE PIECE MAIN PINION BEARING OR THE BUSHING FOR PINION SHAFT AND MAIN PINION BEARING HOUSING ASSEMBLED TOGETHER IN THE SHOP.
- HOLES FOR 3/4" UNC BOLT, 1/2" THREAD DEPTH, 60° APART ON 1 1/2" BOLT CIRCLE. ON INBOARD FACE OF STEEL HOUSING ONLY, ON INBOARD AND OUTBOARD FACE OF BRONZE HOUSING. BOLT HOLES ARE FOR ATTACHMENT OF EYE BOLTS OR OTHER CONTRACTOR DESIGNED INSTALLATION FIXTURE.
- EDGE OF STRUCTURAL PLATES TO HAVE 1/4" CHAMFER ON OUTBOARD. BEARING OR HOUSING FLANGE TO HAVE 3/16" RADIUS WHERE IT MEETS THE CYLINDER. MATING SURFACES BETWEEN STRUCTURAL PLATES AND BEARING FLANGE TO BE FINISHED TO 125 MICRO-INCHES.



NEW MAIN PINION BEARING HOUSING
1 Req. Steel Casting ASTM A148 GRADE 80-50



NEW ONE PIECE MAIN PINION BEARING
1 REQUIRED ASTM B271 GRADE 92200 LEADED (1% MAX) TIN BRONZE CENTRIFUGAL CASTING



REBORE EXISTING STRUCTURAL PLATES FOR FN-1 FIT WITH NEW STEEL HOUSING. BORE HOLE TO 18.000" (18.002").

REBORE EXISTING STRUCTURAL PLATES FOR FN-1 FIT WITH NEW BRONZE BEARING. BORE HOLE TO 18.000" (18.002").

REVISION	DATE	DESCRIPTION

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHAFT AND BEARING DETAILS

CASS STREET BRIDGE OVER DESPLAINES RIVER
U.S. 30 (WESTBOUND)
CITY OF JOLIET, WILL COUNTY
STRUCTURE NUMBER 099-0101

DRAWING NO. C-03	SCALE	DATE 2-05-2001	SHEET NO. 3 OF 7
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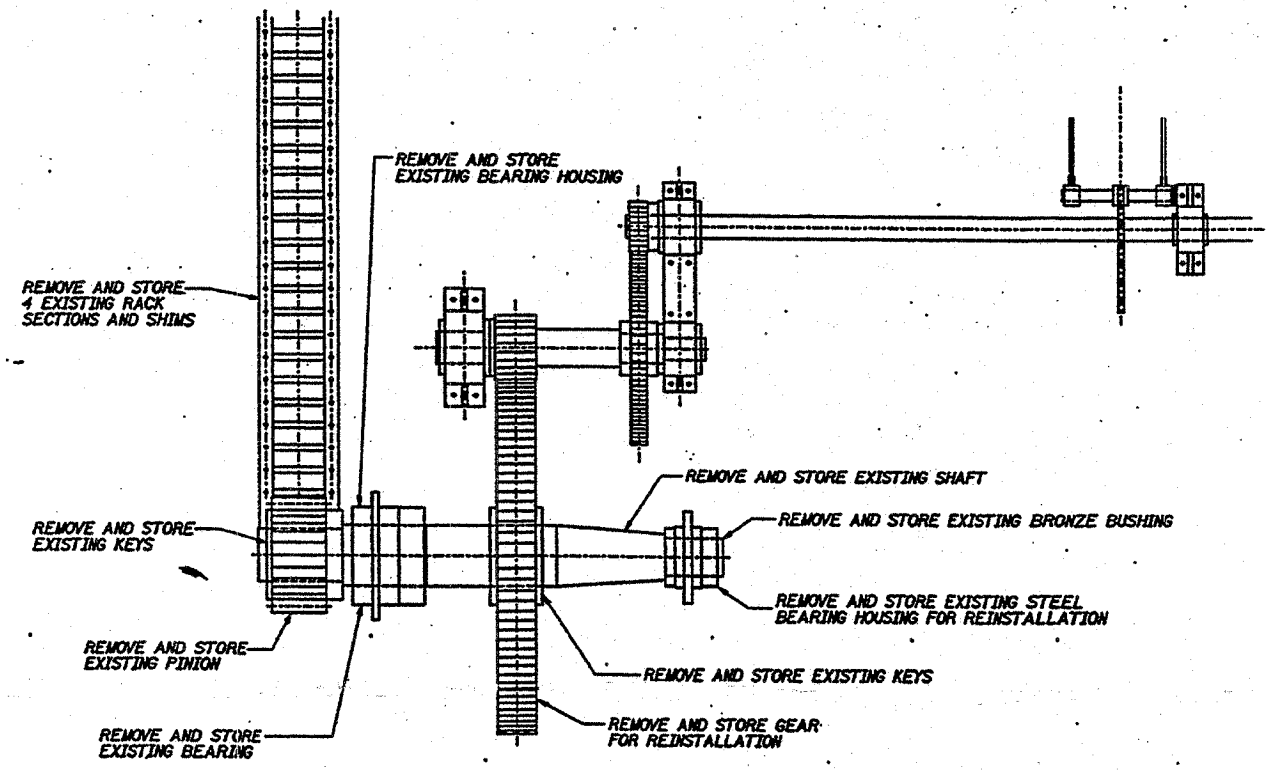
Designed by: ED
Checked by: JDX
Drafted by: SA
Checked by: ED

** SEE DWG C-07 FOR DETAILS.

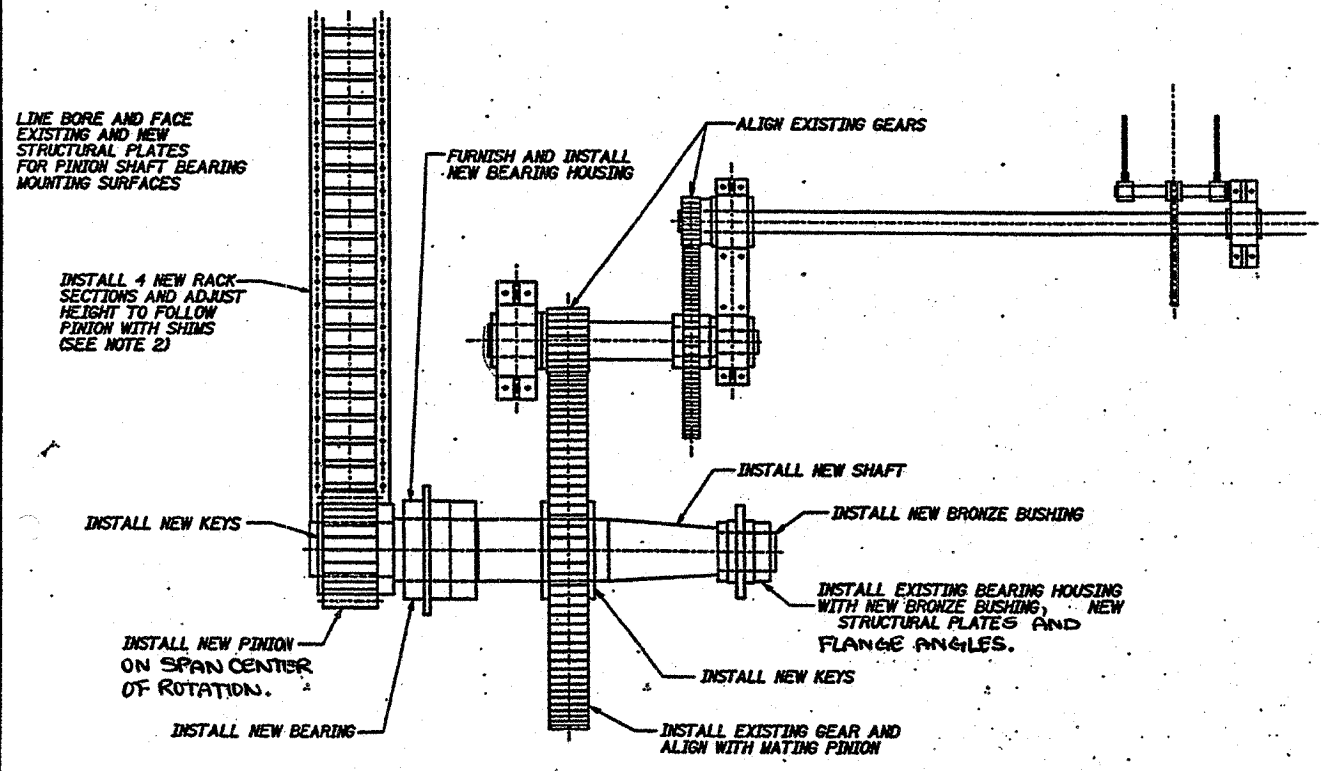
62859

ROUTE NO.	SECT.	COUNTY	SHEET NO.	TOTAL SHEETS
FAP 607	*	WILL	6	10
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* G-R-I-4



DEMOLITION PLAN
SCALE: 3/4" = 1'-0"



CONSTRUCTION PLAN
SCALE: 3/4" = 1'-0"

Designed by: ED
Checked by: JOK
Drafted by: SA
Checked by: ED

NOTES:

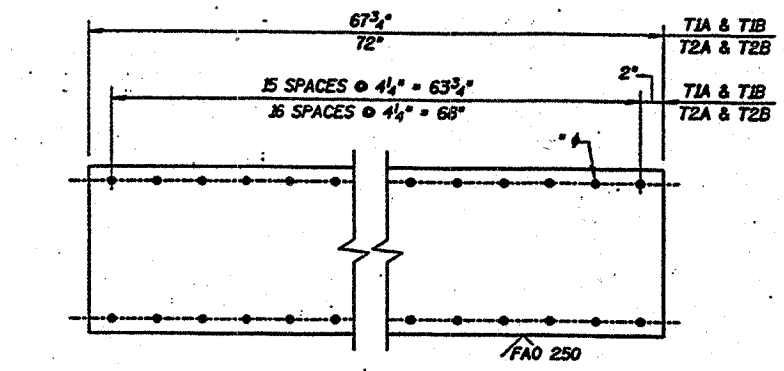
1. REMOVED RACK SECTIONS, PINION SHAFT, KEYS & BEARINGS ARE TO BE SALVAGED & DELIVERED TO IDOT AS DIRECTED BY THE ENGINEER.
2. REPLACE EXISTING RACKS WITH NEW RACK OF SAME LENGTH. MATCH SHIM LENGTH TO RACKS.

REVISION	DATE	DESCRIPTION
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		
MACHINERY PLAN		
CASS STREET BRIDGE OVER DESPLAINES RIVER U.S. 30 (WESTBOUND) CITY OF JULIET, WILL COUNTY STRUCTURE NUMBER 099-0101		
DRAWING NO. C-04	SCALE	DATE 2-05-2001
		SHEET NO. 4 OF 7

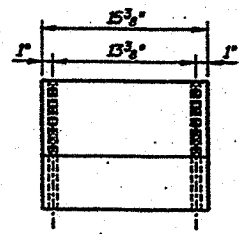
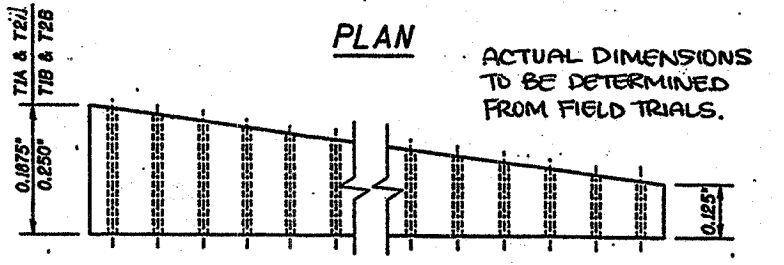
62859

ROUTE NO.	SECT.	COUNTY	SHEET NO.	TOTAL SHEETS
FAP 607	*	WILL	7	10
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

*G-R-I-4



SHIMS TO BE MARKED AS TO DIMENSIONS AND IDENTITY PER FIELD REQUIREMENTS.



PLAN

ACTUAL DIMENSIONS TO BE DETERMINED FROM FIELD TRIALS.

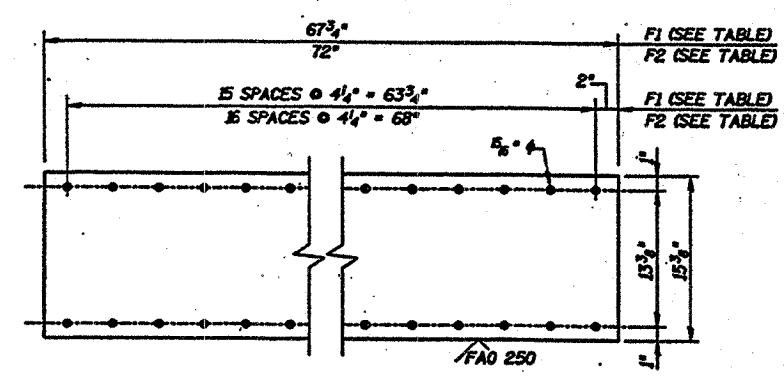
ELEVATION

END VIEW

TAPERED RACK SHIMS T1 & T2

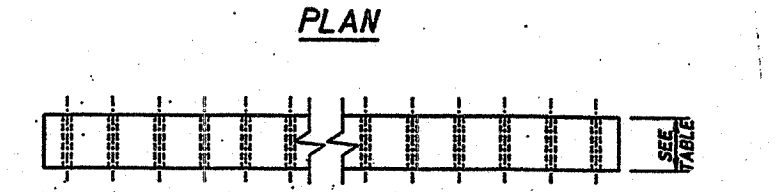
T1A, T1B, T2A, T2B - QUANTITIES AS REQUIRED FROM FIELD TRIALS.

ASTM A36 HOT ROLLED PLATE; SAW OR PLASMA CUT SQUARE EDGE; 15 FT-LBS @ 40°F MIN. AVG. CVN TOUGHNESS REQUIRED.



ACTUAL NUMBER TO BE DETERMINED BY FIELD REQUIREMENTS.

- F1A 0.0151 (28 GAGE)
- F1B 0.0293 (22 GAGE)
- F1C 0.0595 (16 GAGE)
- F1D 0.1200 (11 GAGE)
- F2A 0.0151 (28 GAGE)
- F2B 0.0293 (22 GAGE)
- F2C 0.0595 (16 GAGE)
- F2D 0.1200 (11 GAGE)



PLAN

ELEVATION

FLAT RACK SHIMS F1 & F2

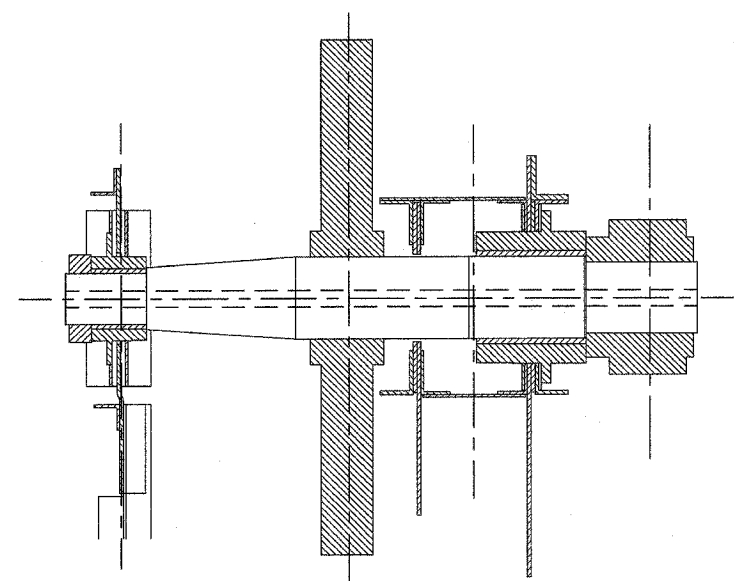
ASTM A240, TYPE 304 STAINLESS STEEL SHEET

Designed by: ED
 Checked by: JK
 Drafted by: SA
 Checked by: ED

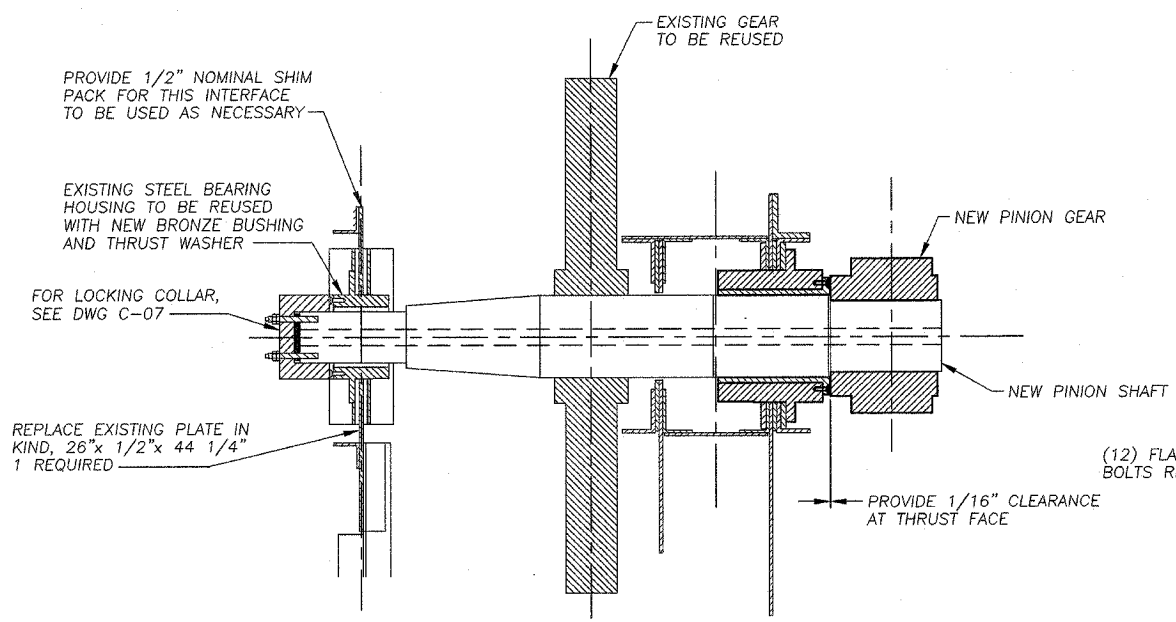
REVISION	DATE	DESCRIPTION
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		
SHIM DETAILS		
CASS STREET BRIDGE OVER DESPLAINES RIVER U.S. 30 (WESTBOUND) CITY OF JOLIET, WILL COUNTY STRUCTURE NUMBER 099-0101		
DRAWING NO. C-05	SCALE	DATE 2-05-2001
		SHEET NO. 5 OF 7

62859

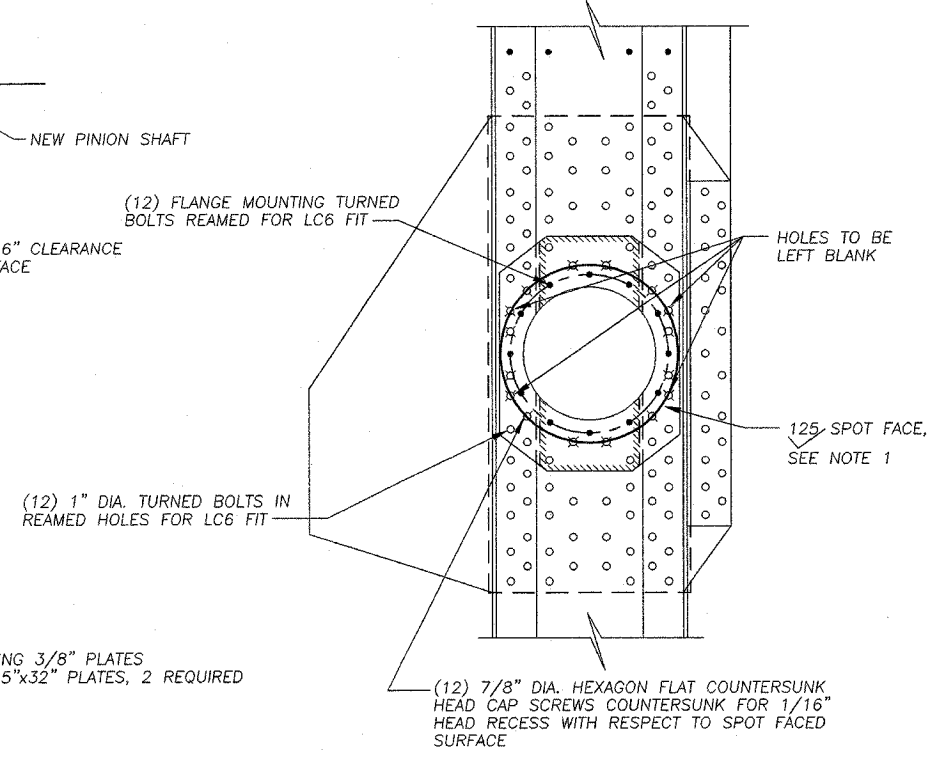
ROUTE NO.	SECT.	COUNTY	SHEET NO.	TOTAL SHEETS
FAP 607	G-R-1-4	WILL	8	10
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	



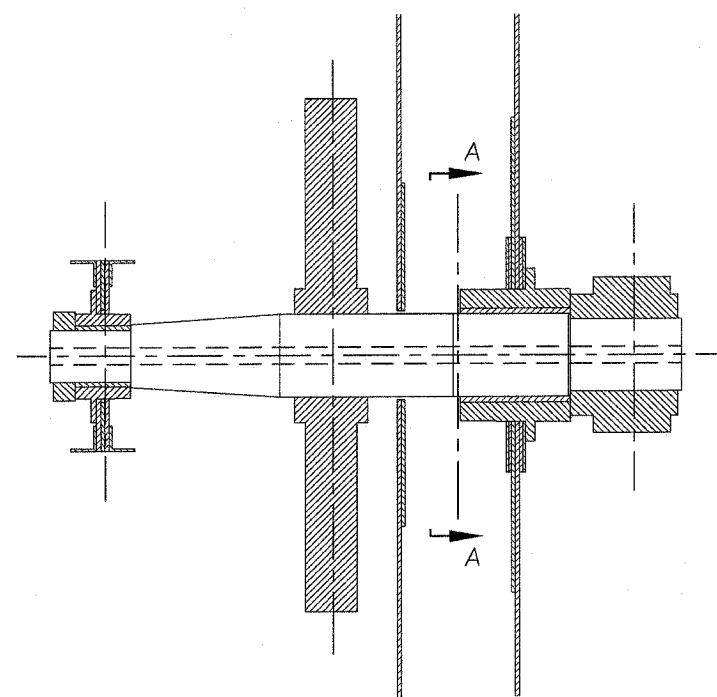
EXISTING PINION ASSEMBLY - PLAN
SCALE: 1" = 1'-0"



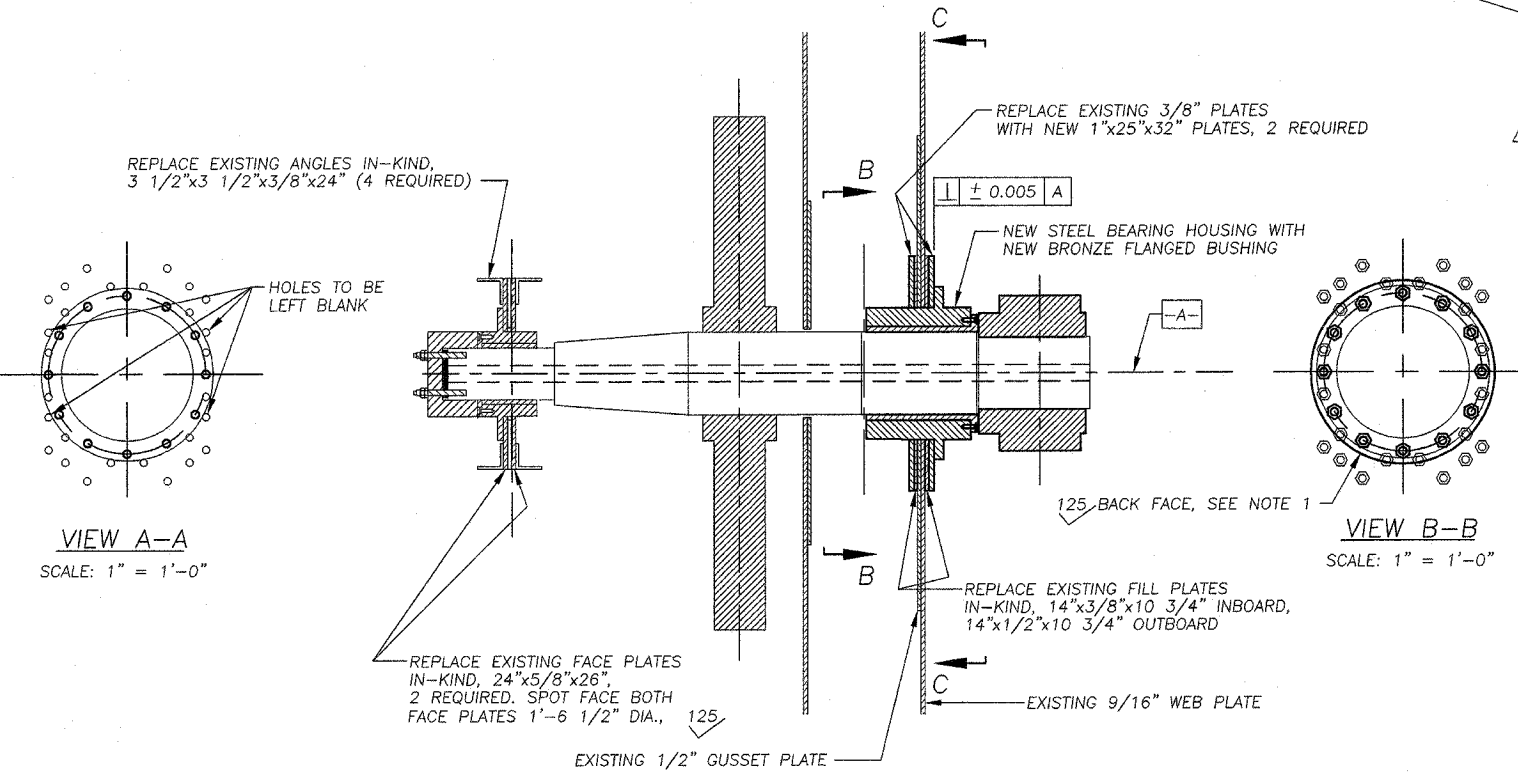
NEW PINION ASSEMBLY - PLAN
SCALE: 1" = 1'-0"



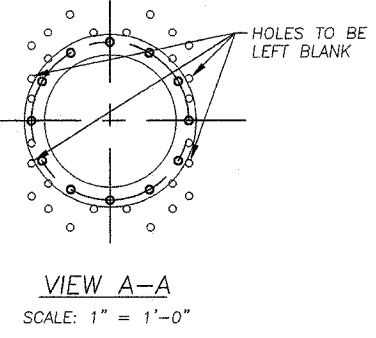
VIEW C-C
SCALE: 1" = 1'-0"



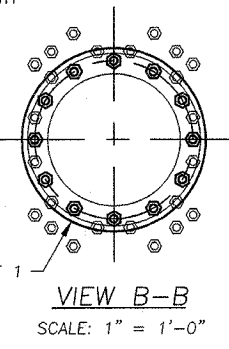
EXISTING PINION ASSEMBLY - ELEVATION
SCALE: 1" = 1'-0"



NEW PINION ASSEMBLY - ELEVATION
(ANGLES NOT SHOWN FOR CLARITY)
SCALE: 1" = 1'-0"



VIEW A-A
SCALE: 1" = 1'-0"



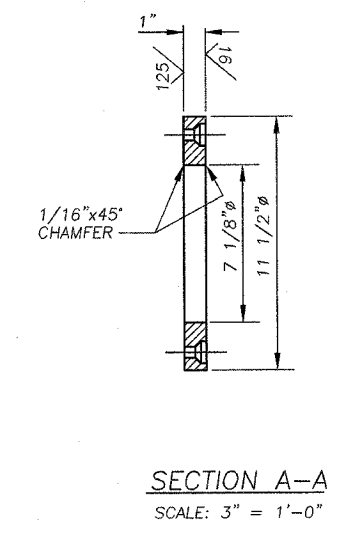
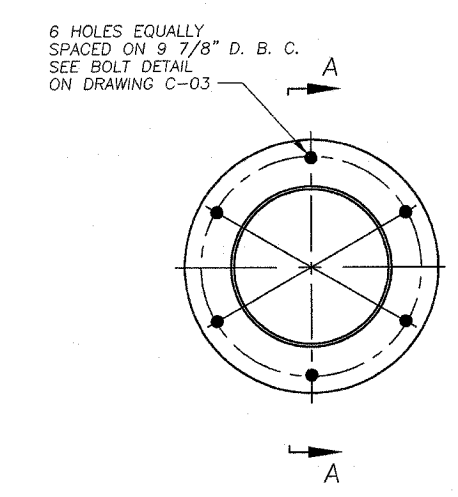
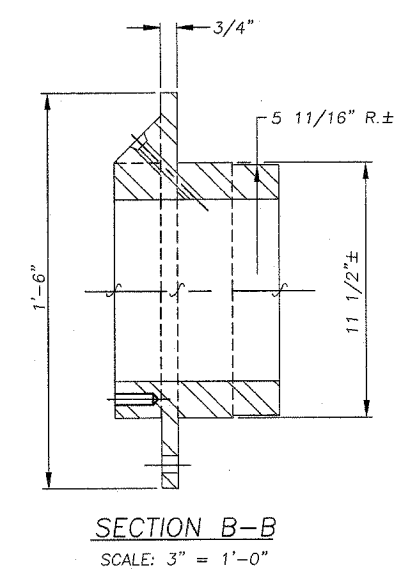
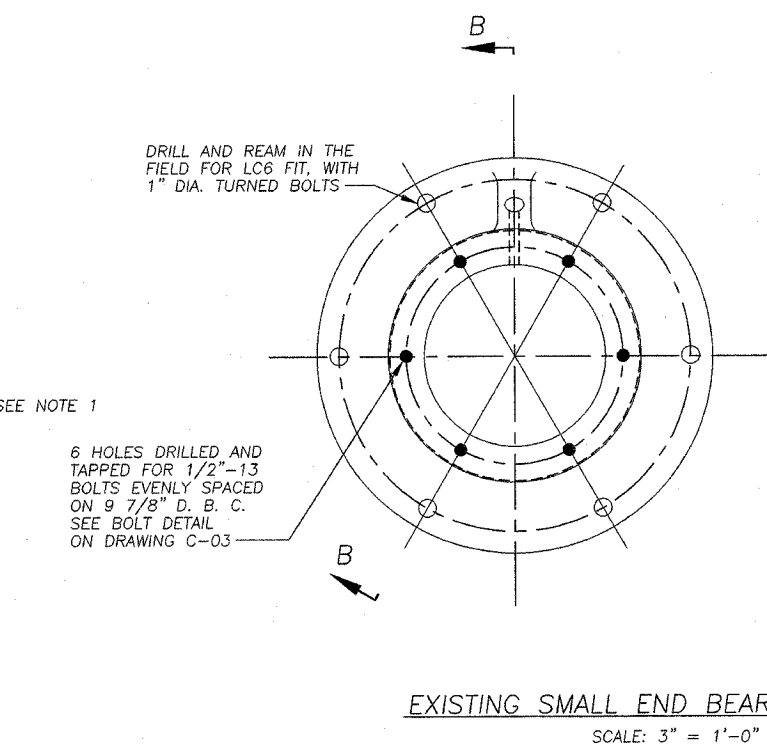
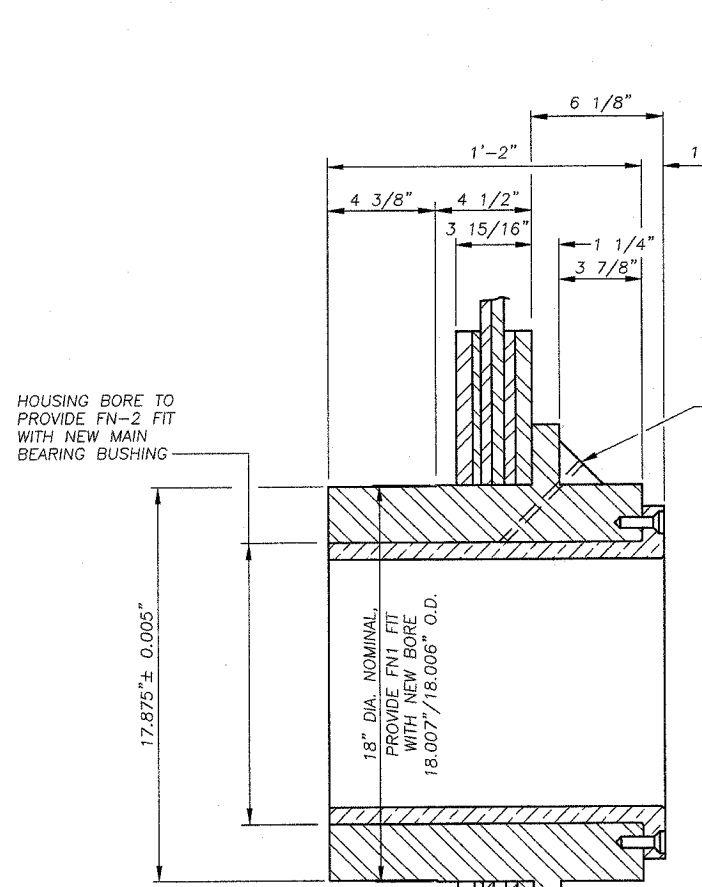
VIEW B-B
SCALE: 1" = 1'-0"

- NOTES:
- CONTRACTOR SHALL SPOT AND BACK FACE NEW 1" STRUCTURAL PLATES FOR THE MAXIMUM DIAMETER CENTERED ON THE NEW LINE BORE WHICH CLEARS THE EXISTING ADJACENT ANGLES.
 - SOLID BRONZE BEARING OPTION SHOWN ON DRAWING C-07.

REVISION	DATE	DESCRIPTION
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		
NEW PINION ASSEMBLY		
CASS STREET BRIDGE OVER DESPLAINES RIVER U.S. 30 (WESTBOUND) CITY OF JOLIET, WILL COUNTY STRUCTURE NUMBER 099-0101		
MODJESKI AND MASTERS, INC. HARRISBURG, PENNSYLVANIA		
DRAWING NO. C-06	SCALE	DATE 7-10-2002
		SHEET NO. 6 OF 7

Designed by: JWN
Checked by: LRL
Drafted by: TD,ES
Checked by: JWN

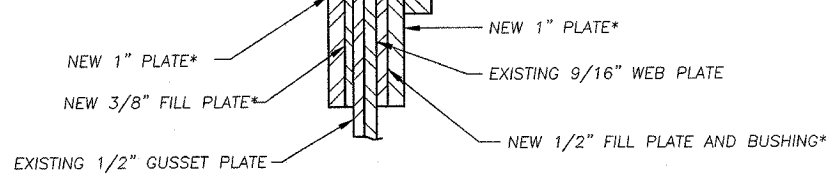
ROUTE NO.	SECT.	COUNTY	SHEET NO.	TOTAL SHEETS
FAP 607	G-R-1-4	WILL	9	10
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



EXISTING SMALL END BEARING HOUSING
SCALE: 3" = 1'-0"

NEW BRONZE THRUST WASHER FOR SMALL END PINION SHAFT
SCALE: 3" = 1'-0"
MAT'L: ASTM B22 ALLOY, 905 BRONZE (1 REQUIRED)

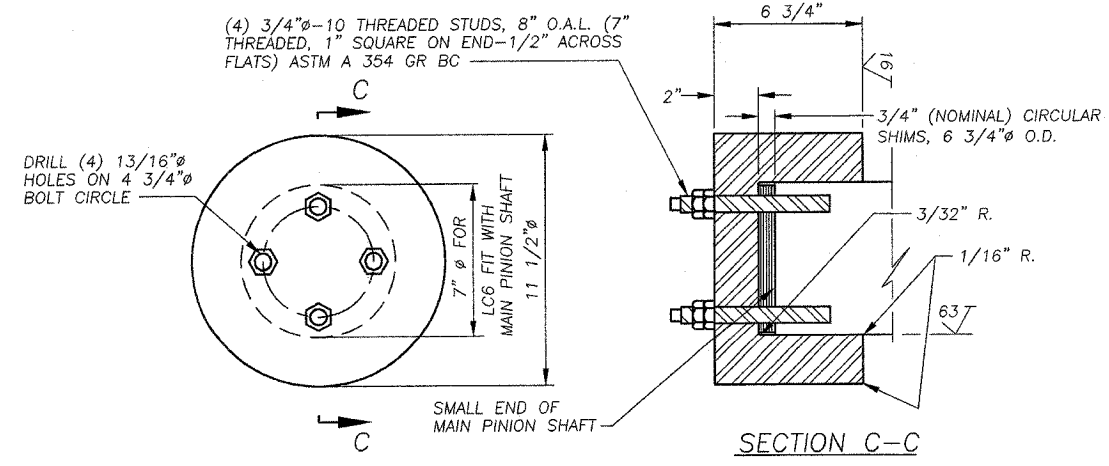
* BORE NEW PLATES TO 18.002"/18.000" Ø IN THE FIELD



NEW MAIN PINION BEARING HOUSING AND BUSHING
SCALE: 3" = 1'-0"

FOR FINISH AND FIT REQUIREMENTS, SEE SPECIFICATIONS AND SOLID BRONZE BEARING DETAIL BELOW.
1 ASSEMBLY REQUIRED (IF THIS OPTION CHOSEN)

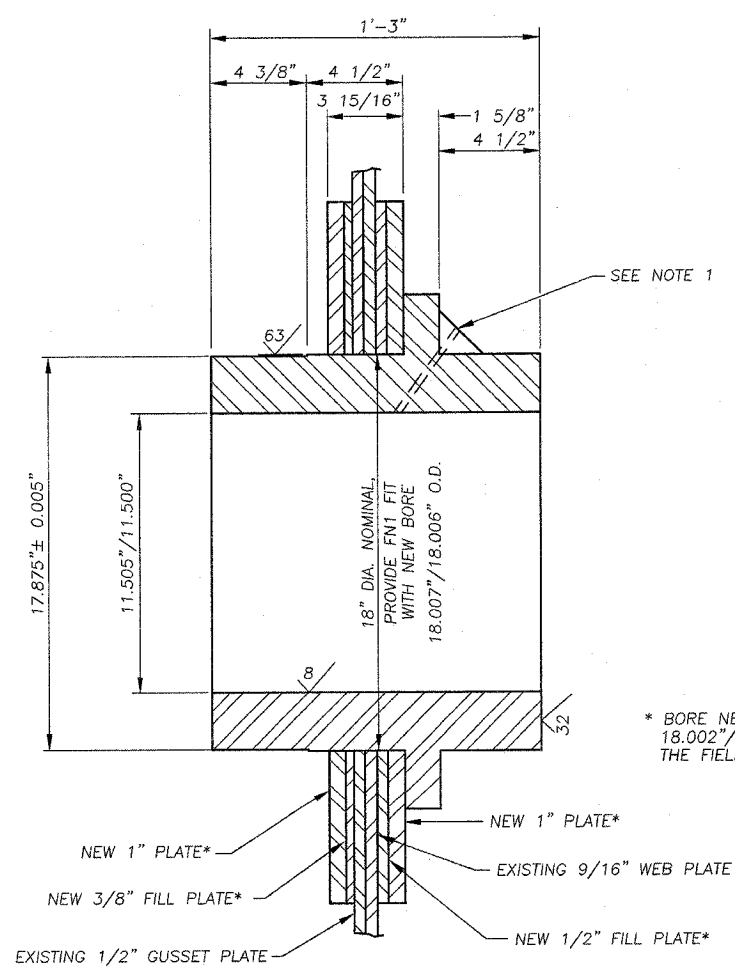
(4) 3/4" Ø-10 THREADED STUDS, 8" O.A.L. (7" THREADED, 1" SQUARE ON END-1/2" ACROSS FLATS) ASTM A 354 GR BC



NEW LOCKING COLLAR FOR SMALL END OF PINION SHAFT
SCALE: 3" = 1'-0"

ASTM A668 CLASS G FORGING, 180-207 BHN; 25 FT-LBS @ 40°F MIN. AVG. CVN TOUGHNESS REQUIRED AT 1/4" RADIUS
POSITION OF TEST PROLONGATION SAMPLES (SAME MATERIAL AS NEW PINION SHAFT)

Designed by: JWN
Checked by: LRL
Drafted by: TDES
Checked by: JWN



* BORE NEW PLATES TO 18.002"/18.000" Ø IN THE FIELD

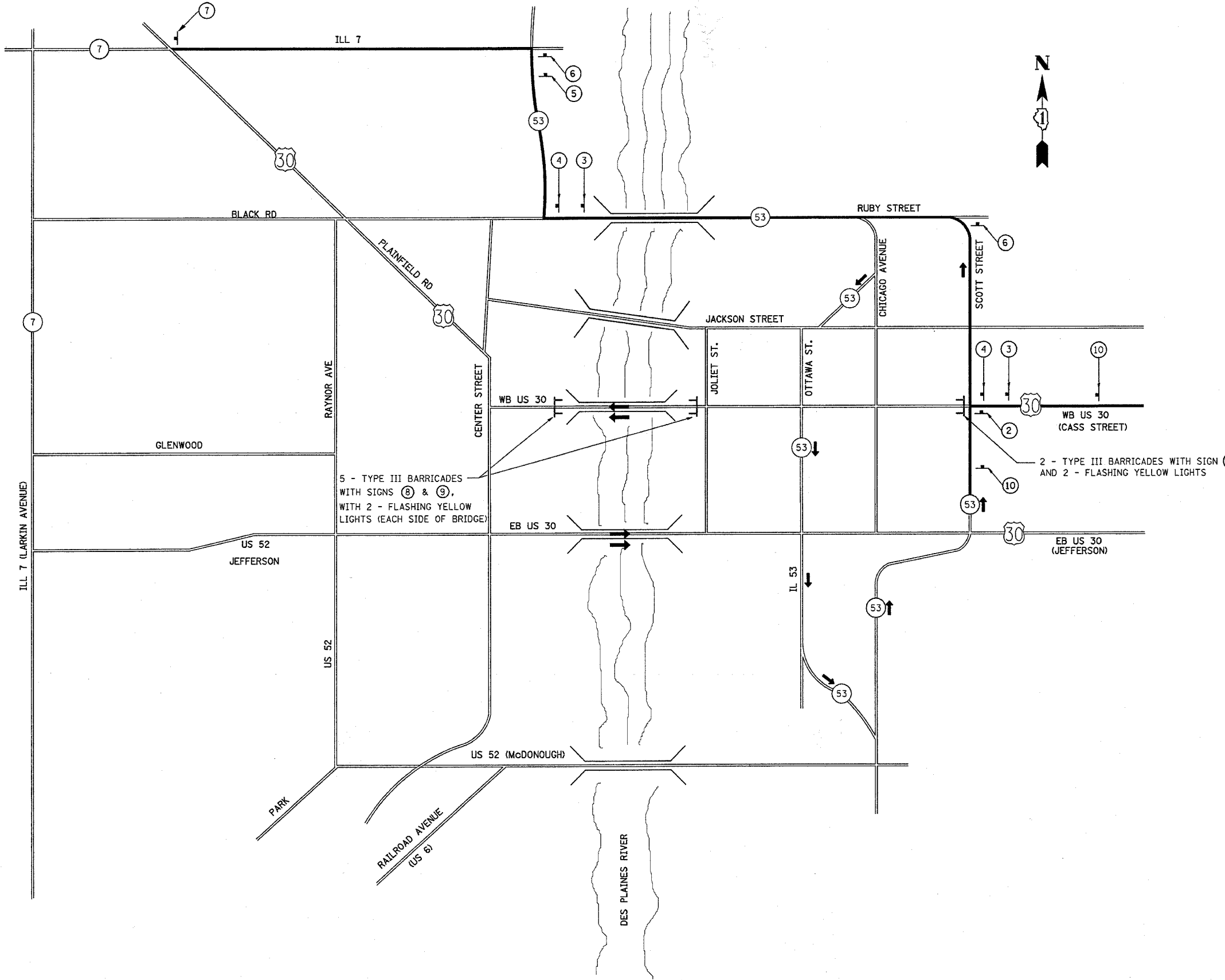
NEW SOLID BRONZE PINION BEARING HOUSING
SCALE: 3" = 1'-0"

ASTM B271 GRADE 92200, LEADED (1% MAX.) TIN BRONZE
CENTRIFUGAL CASTING; 15ft-lbs @ 40°F MIN. AVERAGE CVN TOUGHNESS REQUIRED.
1 REQUIRED (IF THIS OPTION CHOSEN)

- NOTES:
1. TAP FOR 1/4" NPTF ALEMITE GIANT BUTTON HEAD GREASE CUP.
 2. DETAILS SHOWN SHALL BE CONSIDERED SUPPLEMENTAL TO ATTACHED REVISED VERSIONS OF DRAWING NUMBERS C-02, C-03, AND C-04.

REVISION	DATE	DESCRIPTION
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		
NEW PINION BEARING HOUSING		
CASS STREET BRIDGE OVER DESPLAINES RIVER U.S. 30 (WESTBOUND) CITY OF JOLIET, WILL COUNTY STRUCTURE NUMBER 099-0101		
MODJESKI AND MASTERS, INC. HARRISBURG, PENNSYLVANIA		
DRAWING NO. C-07	SCALE	DATE 7-10-2002
		SHEET NO. 7 OF 7

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	G-R-I-4	WILL	10	10
STA. TO STA.				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



- ① ROAD CLOSED TO THRU TRAFFIC (R11-4-4830) (M4-1L-4818)
- ② DETOUR WEST (M1-7-219) (M3-4-219) (M1-40-2424) (M6-3-2115)
- ③ DETOUR WEST (M1-7-219) (M3-4-219) (M1-40-2424) (M5-1R-2115)
- ④ DETOUR WEST (M1-7-219) (M3-4-219) (M1-40-2424) (M6-1R-2115)
- ⑤ DETOUR WEST (M1-7-219) (M3-4-219) (M1-40-2424) (M5-1L-2115)
- ⑥ DETOUR WEST (M1-7-219) (M3-4-219) (M1-40-2424) (M6-1L-2115)
- ⑦ END DETOUR WEST (M4-8a) (M3-4-219) (M1-40-2424)
- ⑧ BRIDGE CLOSED (R11-2B-4830)
- ⑨ SIDEWALK CLOSED (R11-1101)
- ⑩ DETOUR AHEAD (W 20-2) WEST (M3-4-219) (M1-40-2424)

PLOT DATE = 3/31/2005
 FILE NAME = c:\projects\ill63859\ill63859.dwg
 USER NAME = mrcamb

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE		

**TRAFFIC CONTROL
 DETOUR PLAN DETAIL
 US 30/US 52 (CASS STREET)**

SCALE: VERT. NO SCALE DRAWN BY
 DATE HORIZ. CHECKED BY