

BRIDGE - REPLACEMENT

PROJECT NO. TBNR-24(1)--8E-24

CRAWFORD COUNTY
LETTING DATE : JANUARY 13, 1998
T-83N

PROJECT NO. TBNR-24(1)--8E-24
FHWA NO. 127370

INDEX OF SHEETS

1. TITLE SHEET
2. SITUATION PLAN
3. GENERAL PLAN AND GENERAL NOTES
4. ABUTMENT DETAILS
5. PIER DETAILS
6. SUPERSTRUCTURE DETAILS
7. SUPERSTRUCTURE DETAILS
8. SUPERSTRUCTURE DETAILS
9. BRIDGE RAIL DETAILS
10. BRIDGE RAIL DETAILS
11. TABULATIONS

STANDARD ROAD PLANS					
THE FOLLOWING STANDARD ROAD PLANS SHALL BE CONSIDERED APPLICABLE TO CONSTRUCTION WORK ON THIS PROJECT.					
IDENT.	DATE	IDENT.	DATE	IDENT.	DATE
RE 2B	10-22-93				
RE-7	10-28-97				
RE 12B	12-3-96				
RE-47	10-28-97				
RE 48A	12-8-95				
RS-27	10-28-97				

IOWA
DEPARTMENT OF TRANSPORTATION
Project Development Division
PLANS OF PROPOSED IMPROVEMENT ON THE
LOCAL SYSTEM
CRAWFORD COUNTY
BRIDGE - REPLACEMENT

PROJECT TRAFFIC CONTROL PLAN

THIS ROAD WILL BE CLOSED TO THROUGH TRAFFIC DURING CONSTRUCTION. LOCAL TRAFFIC TO ADJACENT PROPERTIES WILL BE MAINTAINED AS PROVIDED FOR IN ARTICLE 1107.0B OF THE CURRENT STANDARD SPECIFICATIONS. TRAFFIC CONTROL DEVICES, PROCEDURES, AND LAYOUTS SHALL BE AS PER PART VI OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REVISION 3, DATED SEPTEMBER 3, 1993.

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES OF 1997, PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

THIS PROJECT (COE #343690) IS COVERED BY THE CORPS OF ENGINEERS NATIONWIDE 404 PERMIT #26.

TOTAL ESTIMATED QUANTITIES

REF. NO.	CODE NO.	ITEM	UNIT	ABUTS.	PIERS	SUPERST.	TOTAL
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CU.YDS.	-	-	-	963
2	2401-6745650	REMOVAL OF EXISTING STRUCTURES	L.S.	-	-	-	LUMP SUM
3	2402-2720000	EXCAVATION, CLASS 20	CU.YDS.	60	-	-	60
4	2408-7800000	STEEL, STRUCTURAL	LBS.	590	1,182	-	1,772
5	2409-4200000	GALVANIZED HARDWARE	LBS.	108	180	1,222	1,510
6	2409-4575010	CREOSOTED LUMBER	M-F.B.M.	2,568	0,936	13,157	16,661
7	2410-4570000	PLANK FLOOR LUMBER	M-F.B.M.	-	-	5,460	5,460
8	2501-5400030	PILING, DRIVE, CREOSOTED WOOD, TRESTLE	LN.FT.	600	600	-	1,200
9	2501-5500030	PILING, FURNISH, CREOSOTED WOOD, TRESTLE	LN.FT.	600	600	-	1,200
10	2505-4020251	GUARDRAIL, FORMED STEEL THRIE BEAM	LN.FT.	-	-	-	152
11	2505-4020400	GUARDRAIL, POSTS, BEAM	EACH	-	-	-	4
12	2507-3250005	FABRIC, ENGINEERING	SQ.YDS.	-	-	-	378
13	2507-6800060	REVEMENT, CLASS 'E', RIPRAP	TONS	-	-	-	336
14	2518-6910000	SAFETY CLOSURE	EACH	-	-	-	2
15	2524-9220020	OBJECT MARKERS, TYPE 2	EACH	-	-	-	8
16	2524-9220030	OBJECT MARKERS, TYPE 3	EACH	-	-	-	4
17	2528-8445110	TRAFFIC CONTROL	L.S.	-	-	-	LUMP SUM
18	2533-4980005	MOBILIZATION	L.S.	-	-	-	LUMP SUM

ESTIMATE REFERENCE INFORMATION

1. & 2. SEE GENERAL NOTES, SHEET 3 AND SITUATION PLAN, SHEET 2. EXCAVATED SOIL SHALL BE STOCKPILED ON SITE.
4. INCLUDES COST OF 1-5"x3"x1/2" AND 3"x1'-3"x1/2" PLATES AND PAINTING. SEE SHEETS 4 & 5, AND GENERAL NOTES.
5. INCLUDES ALL BOLTS, PLATE WASHERS, LAG SCREWS, SPLI' RINGS DRIFT PINS, TIMBER CONNECTORS, & DRIVE SPIKES. DOES NOT INCLUDE 60D AND 70D NAILS.
6. SEE SHEETS 4, 5 AND 8. INCLUDES 14,545 M-F.B.M. OF DOUGLAS FIR SELECT STRUCTURAL AND 2,112 M-F.B.M. OF DOUGLAS FIR NO.1. TIMBER STRINGERS AND CAPS SHALL BE CUT FULL SIZE. INCLUDES COST OF ALL NAILS. INCLUDES BRIDGE RAIL POSTS.
7. SEE SHEETS 7 & 8. SHALL BE TREATED DOUGLAS FIR SELECT STRUCTURAL. INCLUDES COST OF ALL NAILS FOR FASTENING TO STRINGERS.
9. INCLUDE COST OF 26 20"x23" ZINC SHEETS AND ALL SHIMS REQUIRED TO INSTALL 3"x1'-3"x1/2" PLATES.
10. INCLUDE FOUR (4) RE-2B TYPE "C" TERMINAL SECTIONS. SEE SHEET 8. INCLUDES ALL CONNECTION HARDWARE.
11. INCLUDES FOUR(4) 8"x8"x6" 0 POSTS WITH 8"x8" SPACER BLOCKS. SEE SHEET 5.
- 14.-15. SEE TABULATIONS ON SHEET 11.

MILEAGE SUMMARY :
BRIDGE AT STATION 12+60, 64.55 LIN.FT. = 0.0122 MILES
1988, TRAFFIC COUNT = 20 V.P.D.

PROFESSIONAL ENGINEER
ANTHONY C. PETERSON
13431

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

Anthony C. Peterson DATE: 10/16/97

ANTHONY C. PETERSON, P.E.

MY LICENSE RENEWAL DATE IS DECEMBER 31, 1998.

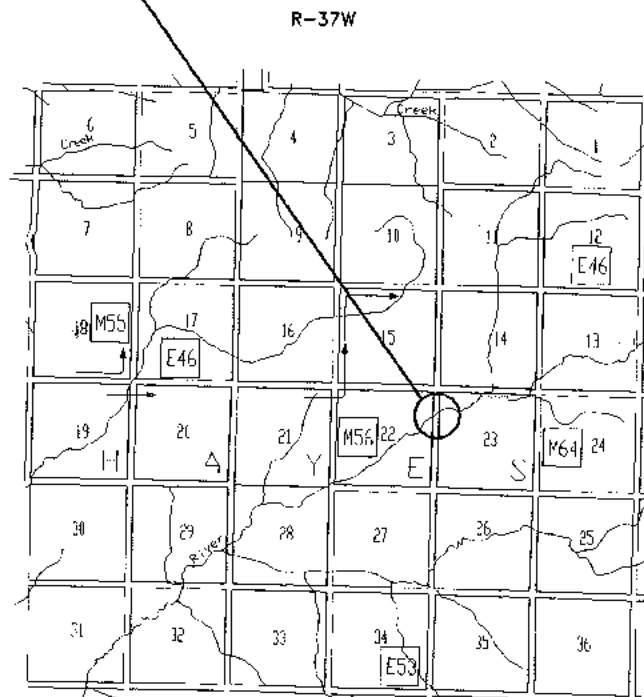
PAGES OR SHEETS COVERED BY THIS SEAL:
SHEETS 1 THROUGH 11

APPROVED
H. Dale Wright 10-9-97
CRAWFORD COUNTY ENGINEER DATE

Robert D. Johnson
Mark J. Jordan
G. Dean Morgan
John P. Rawlson
Mark Seibert
BOARD OF SUPERVISORS DATE

Iowa Department of Transportation
Project Development Division
ACCEPTED FOR LETTING
[Signature] 10/20/97
SECONDARY ROADS ENGINEER DATE

DESIGN NO. 5198
STATION 12+60
PROPOSED 63'-0" x 24'-0" TIMBER STRINGER BRIDGE



PROJECT LOCATION

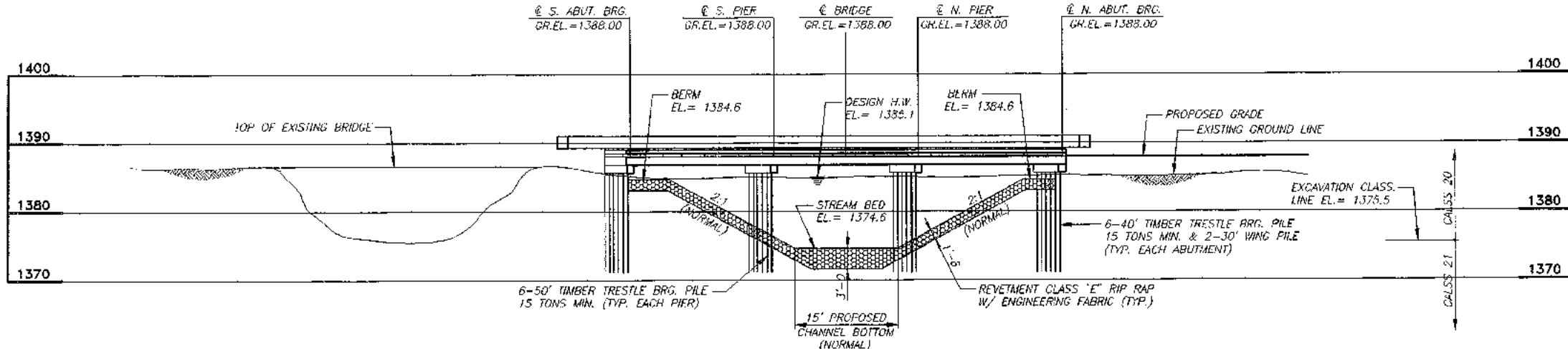


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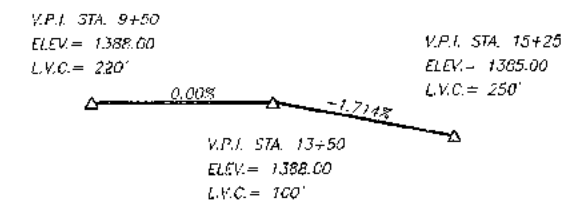
-150-

WJK
10/18/97

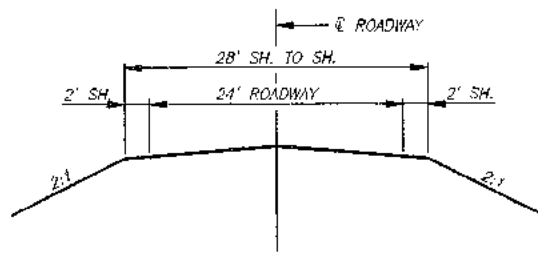
BENCH MARK : SPIKE IN GATE POST, STA 15+94, 56' RT., ELEV. = 1388.65



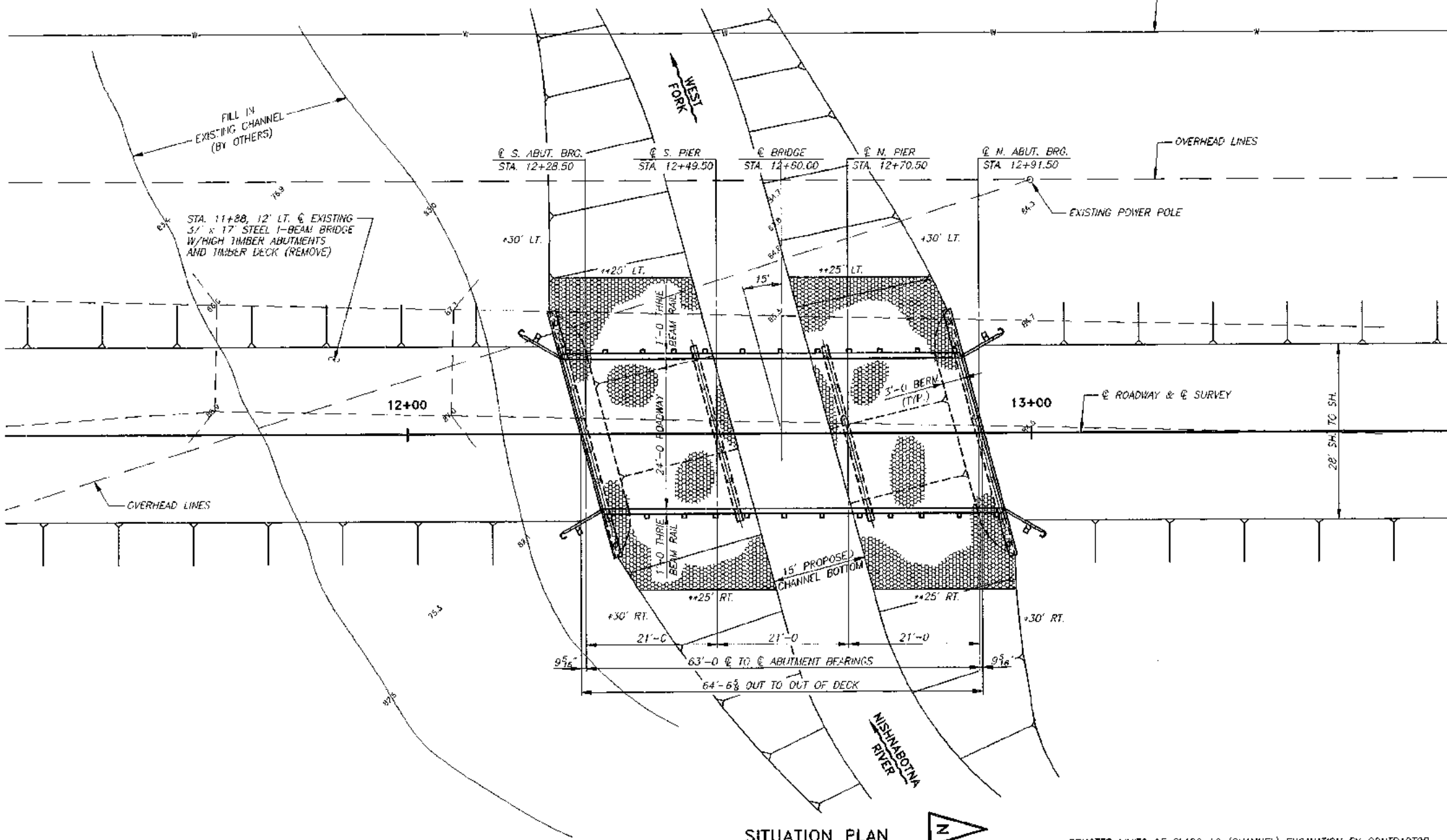
LONGITUDINAL SECTION ALONG C ROADWAY



PROPOSED GRADE



TYPICAL APPROACH SECTION



SITUATION PLAN

LOCATION

CRAWFORD COUNTY
T-83N, R-37W
SECTION 22 & 23
HAYES TOWNSHIP
OVER SMALL CREEK

HYDRAULIC DATA

DRAINAGE AREA = 6.85 SQ. MI.
MANNING SLOPE = 0.002 FT./FT.
BRIDGE WATERWAY AREA = 362 SQ. FT.
DESIGN VELOCITY = 6.2 F.P.S.
Q10 = 2,239 C.F.S. STAGE EL. = 1385.1 (DESIGN)
Q25 = 3,186 C.F.S. STAGE EL. = 1385.8
Q50 = 3,910 C.F.S. STAGE EL. = 1386.1
Q100 = 4,715 C.F.S. STAGE EL. = 1386.6
EXT. H.W. EL. = 1388.2 (DATE UNKNOWN)

63'-0 X 24' TIMBER STRINGER BRIDGE

TREATED TIMBER 3 - 21'-0 SPANS
ABUTMENTS AND PIERS

SITUATION PLAN

STATION 12+60 15' SKEW, RT. AHEAD
CRAWFORD COUNTY, IOWA

SHEET 2 OF 11

SPECIFICATIONS

DESIGN: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 1996.
 NATIONAL FOREST PRODUCTS ASSOCIATION "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION", 1991 EDITION, AND 1991 SUPPLEMENT.
 CONSTRUCTION: STANDARD SPECIFICATIONS OF THE IOWA DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION, SERIES OF 1997, PLUS CURRENT SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS.

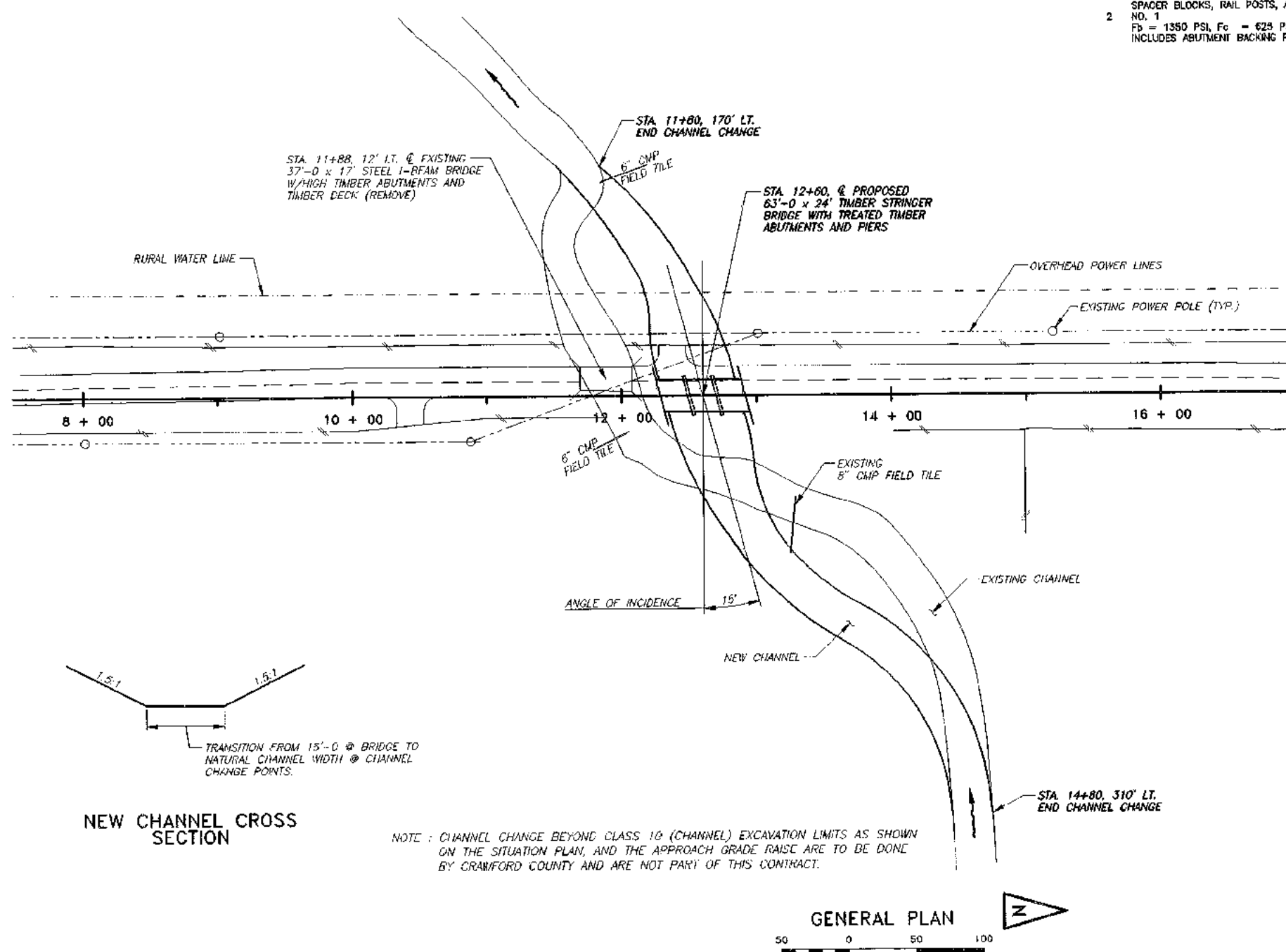
DESIGN STRESSES

DESIGN STRESSES FOR THE FOLLOWING MATERIAL ARE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 1996.

STRUCTURAL STEEL ASTM A709, GRADE 36	SECTION 10
GALVANIZED STEEL HARDWARE A307 A325	SECTION 10 (SEE TABLE 10.32.3A) (SEE TABLE 10.32.3B)
DOUGLAS FIR TIMBER 1 SELECT STRUCTURAL	SECTION 13
F _b = 1600 PSI, F _c = 625 PSI, E = 1,600,000 PSI INCLUDES STRINGERS, DECK PLANKS, DIAPHRAGMS, CURBS, SCUPPERS, RAIL SPACER BLOCKS, RAIL POSTS, ABUTMENT CAPS, AND PIER CAPS.	
2 NO. 1	
F _b = 1350 PSI, F _c = 625 PSI, E = 1,600,000 PSI INCLUDES ABUTMENT BACKING PLANK, WING PLANK, AND WING CAPS.	

GENERAL NOTES

THIS DESIGN IS FOR A 63'-0" X 24" TIMBER STRINGER BRIDGE OVER A SMALL CREEK. THIS BRIDGE IS DESIGNED FOR HS20-44 LIVE LOAD.
 ALL LUMBER FOR THIS BRIDGE SHALL BE TREATED WITH CREOSOTE IN ACCORDANCE WITH CURRENT I.D.O.T. SPECIFICATIONS. ALL LUMBER SHALL BE CUT TO EXACT LENGTH AND ALL HOLES SHALL BE BORED, TO THE EXTENT PRACTICABLE, BEFORE PRESSURE TREATING. ALL CUTS OR HOLES MADE IN THE FIELD SHALL BE TREATED WITH THREE (3) COATS OF HOT CREOSOTE BRUSHING OIL.
 ALL STEEL HARDWARE (NAILS, LAG SCREWS, DRIFT PINS, PLATES, ETC.) ARE TO BE GALVANIZED IN ACCORDANCE WITH CURRENT I.D.O.T. SPECIFICATIONS.
 PAINTING OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION #97010 (PAINTING STRUCTURAL STEEL WITH SOLVENT BORNE INORGANIC ZINC SILICATE PAINT). THE ACRYLIC TOPCOAT PAINT SHALL BE USED, AND THE COLOR SHALL BE FEDERAL COLOR STANDARD NO. 30045 (BROWN). ALL PAINTING SHALL BE CONSIDERED INCIDENTAL TO THE FABRICATION AND ERECTION OF STRUCTURAL STEEL AND BE INCLUDED IN THE UNIT PRICE BID FOR STRUCTURAL STEEL.
 THE APPROACH ROADWAY FILLS AND CHANNEL CHANGE (BEYOND CLASS 10 CHANNEL EXCAVATION LIMITS) AS SHOWN ARE NOT PART OF THIS CONTRACT. THE APPROACH GRADING AND CHANNEL CHANGE WILL BE DONE BY CRAWFORD COUNTY AFTER THE BRIDGE CONSTRUCTION IS COMPLETE.
 THE CONTRACTOR SHALL COMPLETE CLASS 10 CHANNEL EXCAVATION TO LIMITS SHOWN ON SHEET 2 PRIOR TO DRIVING PILING AND TO FACILITATE CONSTRUCTION OF BRIDGE AND RIPRAP. THE CONTRACTOR SHALL STOCKPILE ALL EXCAVATED SOIL ON SITE, AS DIRECTED BY THE COUNTY ENGINEER.
 THE CONTRACTOR SHALL MAINTAIN FLOW IN THE EXISTING CHANNEL THROUGHOUT THE DURATION OF THE PROJECT.
 THE CONTRACTOR WILL BE REQUIRED TO COORDINATE HIS OPERATIONS WITH THOSE OF THE COUNTY WORKING WITHIN THE SAME AREA. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A SCHEDULE FOR PERFORMANCE OF WORK ITEMS. THE COMPLETION OF WHICH IS DEPENDENT ON COMPLETION OF PRIOR WORK BY THE COUNTY, AT THE TIME WORK BEGINS. THIS SCHEDULE WILL BE COORDINATED WITH THE SCHEDULES OF OTHERS BY THE ENGINEER TO OBTAIN A SCHEDULE THAT IS MUTUALLY ACCEPTABLE. THE CONTRACTOR SHALL THEN PERFORM THE WORK AS TO CONFORM TO THE ACCEPTED SCHEDULE.
 THE LUMP SUM BID FOR "REMOVAL OF EXISTING STRUCTURES" IS TO INCLUDE THE COST TO REMOVE THE EXISTING 37'-0" X 17" STEEL I-BEAM BRIDGE WITH HIGH TIMBER ABUTMENTS AND TIMBER DECK. EXISTING PILING ARE TO BE REMOVED TO AN ELEVATION AT LEAST 1' BELOW PROPOSED GROUNDLINE ELEVATION AND TO THE EXTENT THAT THEY IN NO WAY INTERFERE WITH THE CONSTRUCTION OF THE PROPOSED BRIDGE AND GRADING. REMOVAL SHALL BE AS PER SECTION 2401 OF THE STANDARD SPECIFICATIONS. ALL SALVAGEABLE MATERIAL, AS DETERMINED BY THE ENGINEER, SHALL REMAIN THE PROPERTY OF CRAWFORD COUNTY. ALL SALVAGEABLE MATERIAL SHALL BE CAREFULLY REMOVED AND STACKED NEATLY WITH THE HIGHWAY RIGHT-OF-WAY FOR REMOVAL FROM THE SITE BY CRAWFORD COUNTY. ALL REMAINING MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.
 ALL UNSALVAGEABLE MATERIAL AND RUBBLE FROM THIS PROJECT SHALL BE REMOVED FROM THE HIGHWAY RIGHT-OF-WAY TO A WASTE AREA PROVIDED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER, OR BURNED IN ACCORDANCE WITH CURRENT LAWS AND RESTRICTIONS. THE WASTED OR BURNED MATERIAL MUST NOT CREATE AN UNSIGHTLY CONDITION WHEN VIEWED FROM PUBLIC HIGHWAYS. THE COST OF WASTING OR BURNING THIS MATERIAL IS TO BE INCLUDED IN THE LUMP SUM BID FOR "REMOVAL OF EXISTING STRUCTURES". NO PAYMENT WILL BE MADE FOR OVERHAUL.
 SCRAPE SAMPLES FROM THIS BRIDGE WERE TAKEN TO GET AN INDICATION OF THE EXISTENCE OF AND LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. THE ANALYSIS OF TOTAL CHROMIUM IN THESE SAMPLES WAS 30 PARTS PER MILLION (PPM). THE ANALYSIS OF TOTAL LEAD IN THESE SAMPLES WAS 10,600 PPM. THE ANALYSES SHOW THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. THE LEVELS INDICATED BY THESE TESTS COULD CREATE CONDITIONS ABOVE REGULATORY LIMITS FOR HEALTH AND SAFETY REQUIREMENTS. NO OTHER SUBSTANCES WERE ANALYZED. THE BIDDER SHOULD NOT RELY ON THE CONTRACTING AUTHORITY'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.
 CLASS 20 EXCAVATION FOR THE ABUTMENTS IS BASED ON THE ASSUMPTION THAT THE APPROACH GRADING AND CHANNEL EXCAVATION HAVING BEEN COMPLETED.
 UTILITY COMPANIES WHOSE FACILITIES ARE KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.
 THE CONTRACTOR SHALL VISIT THE CONSTRUCTION SITE TO ENSURE THAT HE IS FAMILIAR WITH THE EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. SHOULD ANY UNDERGROUND UTILITIES BE FOUND, THEY SHALL BE PROTECTED IN PLACE AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
 UNDERGROUND FACILITIES, STRUCTURE, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS. THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO.
 IF ARCHAEOLOGICAL MATERIALS ARE ENCOUNTERED DURING THE CONSTRUCTION PHASE OF THIS PROJECT, THE OFFICE OF PROJECT PLANNING AND/OR THE OFFICE OF LOCAL SYSTEMS (IOWA DOT) MUST BE CONTACTED IMMEDIATELY SO THE PROPER AUTHORITIES CAN BE NOTIFIED ACCORDING TO THE EXISTING FEDERAL REGULATIONS AND STATE PROCEDURES. ADDITIONALLY, IT SHOULD BE NOTED THAT FINDINGS AND RECOMMENDATIONS FOR CLEARANCE OR FURTHER TESTING CANNOT BE CONSIDERED FINAL UNTIL CONCURRENCE IS RECEIVED FROM THE STATE HISTORIC PRESERVATION OFFICER. PHONE: OFFICE OF PROJECT PLANNING - 515/238-1225; OFFICE OF LOCAL SYSTEMS - 515/238-1528.
 THE CONTRACTOR'S WORK AND MATERIAL STORAGE AREA SHALL BE LOCATED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL SHAPE, FERTILIZE AND SEED THE CONTRACTOR'S AREA IN ORDER TO RETURN IT TO ITS ORIGINAL CONDITION. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR "REMOVALS, AS PER PLAN" BID ITEM. AREAS OUTSIDE THE CONTRACTOR'S AREA DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION AS DETERMINED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE AUTHORIZED FOR THIS WORK.
 SEEDING, FERTILIZING, AND MULCHING OF ALL DISTURBED AREAS FOLLOWING THE COMPLETION OF WORK ON THIS PROJECT SHALL BE DONE AS DIRECTED BY THE ENGINEER.
 SEED MIXTURE FESCUE, KY. 31 @ 75% REED CANARYGRASS @ 25%
 SEEDING RATE 3 LBS. PER 1,000 SQ. FT.
 FERTILIZER 15-15-15 OR EQUIVALENT COMBINED COMMERCIAL FERTILIZER
 FERTILIZER RATE 15 LBS. PER 1,000 SQ. FT.
 THE PREPARATION OF THE SEED AND THE FURNISHING AND APPLICATION OF SEED AND FERTILIZER TO ALL DISTURBED AREAS ON THE PROJECT SHALL BE CONSIDERED INCIDENTAL TO WORK ON THIS PROJECT, AND NO EXTRA COMPENSATION WILL BE ALLOWED.



NOTE: CHANNEL CHANGE BEYOND CLASS 10 (CHANNEL) EXCAVATION LIMITS AS SHOWN ON THE SITUATION PLAN, AND THE APPROACH GRADE RAISE ARE TO BE DONE BY CRAWFORD COUNTY AND ARE NOT PART OF THIS CONTRACT.

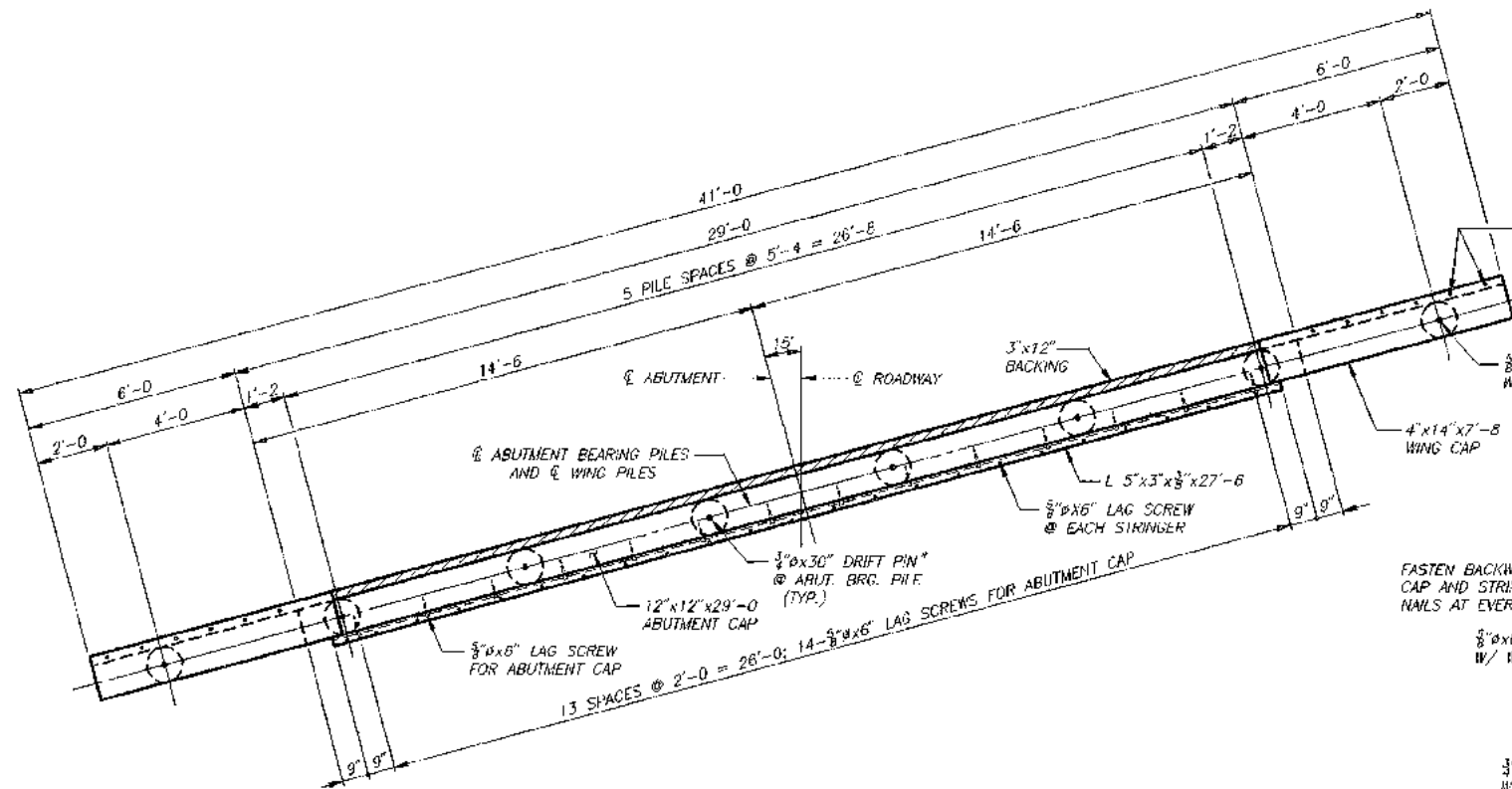
63'-0" X 24" TIMBER STRINGER BRIDGE
 TREATED TIMBER 3 - 21'-0" SPANS
 ABUTMENTS AND PIERS
GENERAL PLAN AND GENERAL NOTES
 STATION 12+60 15' SKEW, RT. AHEAD
 CRAWFORD COUNTY, IOWA
 SHEET 3 OF 11

TREATED LUMBER QUANTITIES-ONE ABUTMENT			
ITEM	NO.	LENGTH	F.B.M.
12"x12" ABUTMENT CAP	(1)	7	29'-0" 348
3"x12" BACKING PLANK	(2)	7	41'-0" 591
4"x14" WING CAP	(2)	2	8'-0" 75
(1) DOUGLAS FIR SELECT STRUCTURAL			TOTAL 348
(2) DOUGLAS FIR NO.1			TOTAL 936

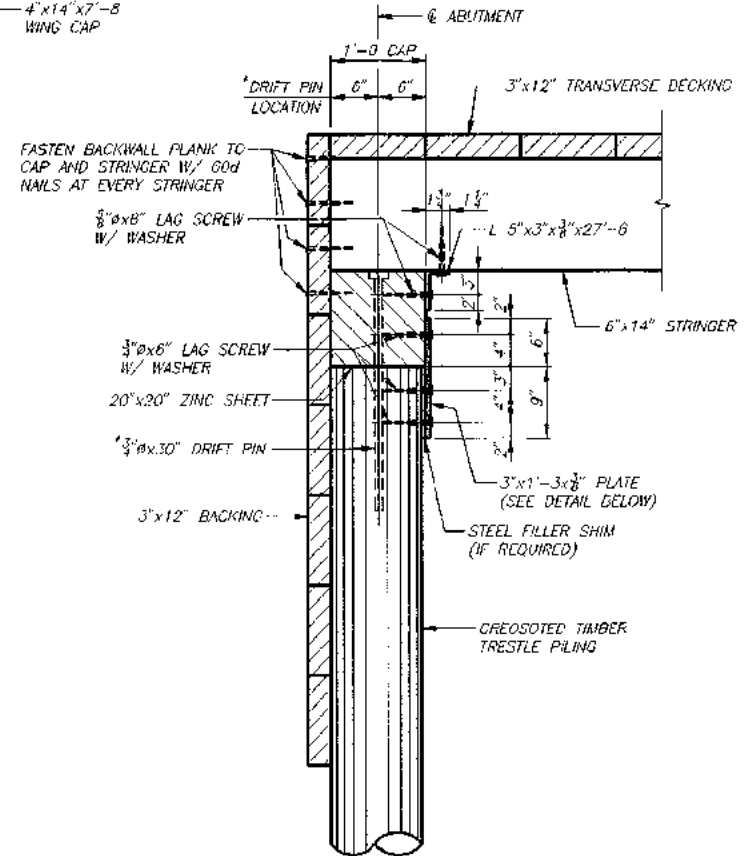
ESTIMATED QUANTITIES-TWO ABUTMENTS			
ITEM	UNITS	QUANTITY	
CREOSOTED TIMBER	FURISH	LIN.FT.	600
TRESTLE PILES	DRIVE	LIN.FT.	600
HARDWARE, GALVANIZED		LBS.	108
EXCAVATION, CLASS 20		CU.YDS.	60
CREOSOTED LUMBER	M-F.B.M.		2,568
STRUCTURAL STEEL		LBS.	590

ABUTMENT NOTES

ABUTMENT DETAILS SHOWN ON THIS SHEET ARE FOR BOTH THE NORTH AND SOUTH ABUTMENTS.
 ALL LUMBER SHALL BE TREATED IN ACCORDANCE WITH CURRENT I.D.O.T. SPECIFICATIONS. BACKWALL PLANK MAY BE BUTT SPICED AT INTERIOR BEARING PILES ONLY BUT JOINTS ARE TO BE CENTERED ON PILES WITH JOINTS FOR ADJACENT PLANK STAGGED A MINIMUM OF TWO PILE SPACES. ONLY ONE SPLICE IS ALLOWED IN EACH 41'-0" LENGTH.
 THE 12" x 12" ABUTMENT CAPS SHALL BE FULL SAWN.
 ALL LUMBER FOR ABUTMENTS SHALL BE ROUGH SAWN UNLESS NOTED OTHERWISE.
 ALL PILING SHALL BE TREATED AND SHALL MEET THE REQUIREMENTS FOR TREATED TRESTLE PILES.
 ALL STEEL HARDWARE (LAG SCREWS, DRIFT PINS, ETC.) AND NAILS SHALL BE GALVANIZED IN ACCORDANCE WITH CURRENT SPECIFICATIONS.
 THE ABUTMENT EXCAVATION IS TO BE BACKFILLED WITH SOIL. THE ABUTMENTS ARE NOT TO BE BACKFILLED UNTIL THE SUPERSTRUCTURE HAS BEEN ANCHORED TO THE SUBSTRUCTURE AND THE DECK PLANKING COMPLETELY INSTALLED.
 ALL PILING SHALL BE DRIVEN TO FULL PENETRATION IF PRACTICABLE, AND ABUTMENT BEARING PILING SHALL BE DRIVEN TO NOT LESS THAN 15 TONS NOR MORE THAN 40 TONS BEARING VALUE.
 PILOT HOLES SHALL BE USED FOR ALL LAG SCREW CONNECTIONS.



ABUTMENT PLAN

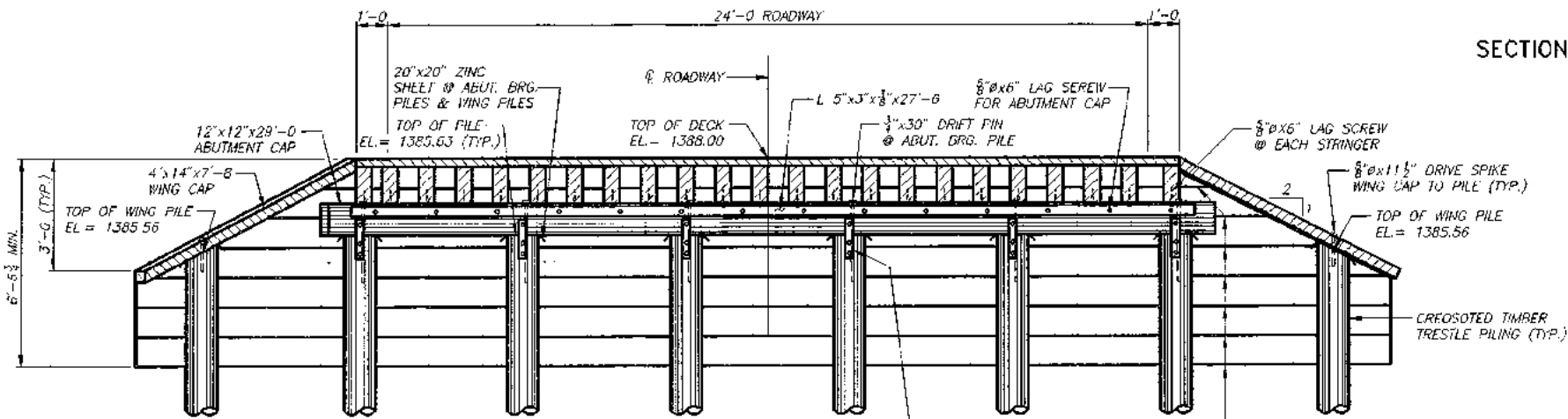


SECTION THRU ABUTMENT

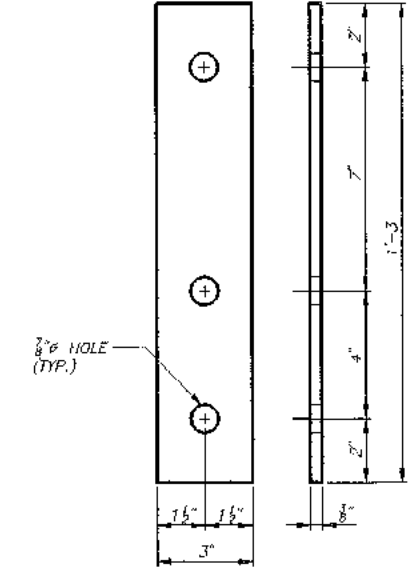
PILE NOTES

12 - CREOSOTED ABUT. BRG. PILES @ 40' EA.
 4 - CREOSOTED WING PILES @ 30' EA.
 TOTAL = 600 LIN.FT.

* OFFSET LOCATION SLIGHTLY, AS REQUIRED, TO AVOID INTERFERENCE WITH LAG SCREWS.



ABUTMENT ELEVATION



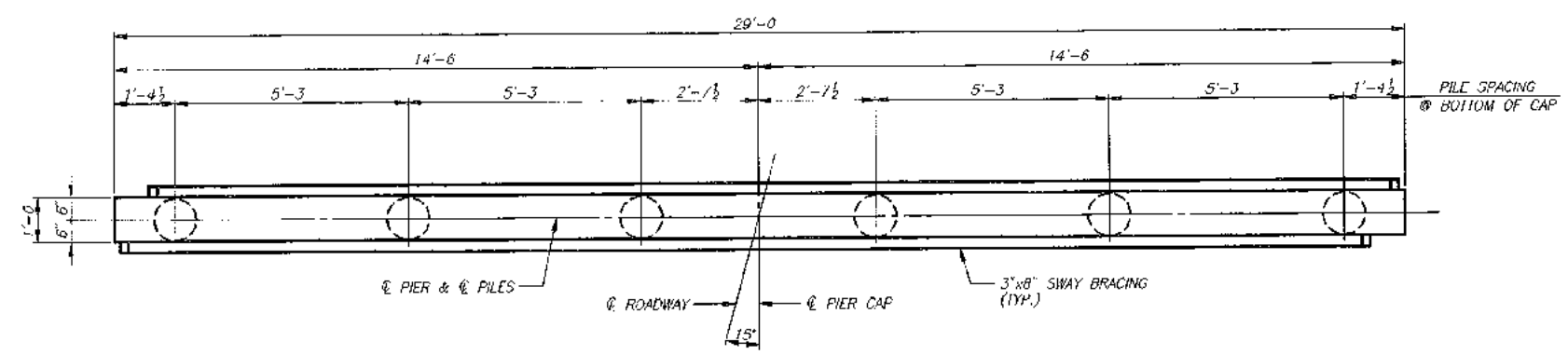
PILE TO CAP PLATE
 (3" x 1" - 3/8" A36 STEEL)

63'-0" X 24" TIMBER STRINGER BRIDGE

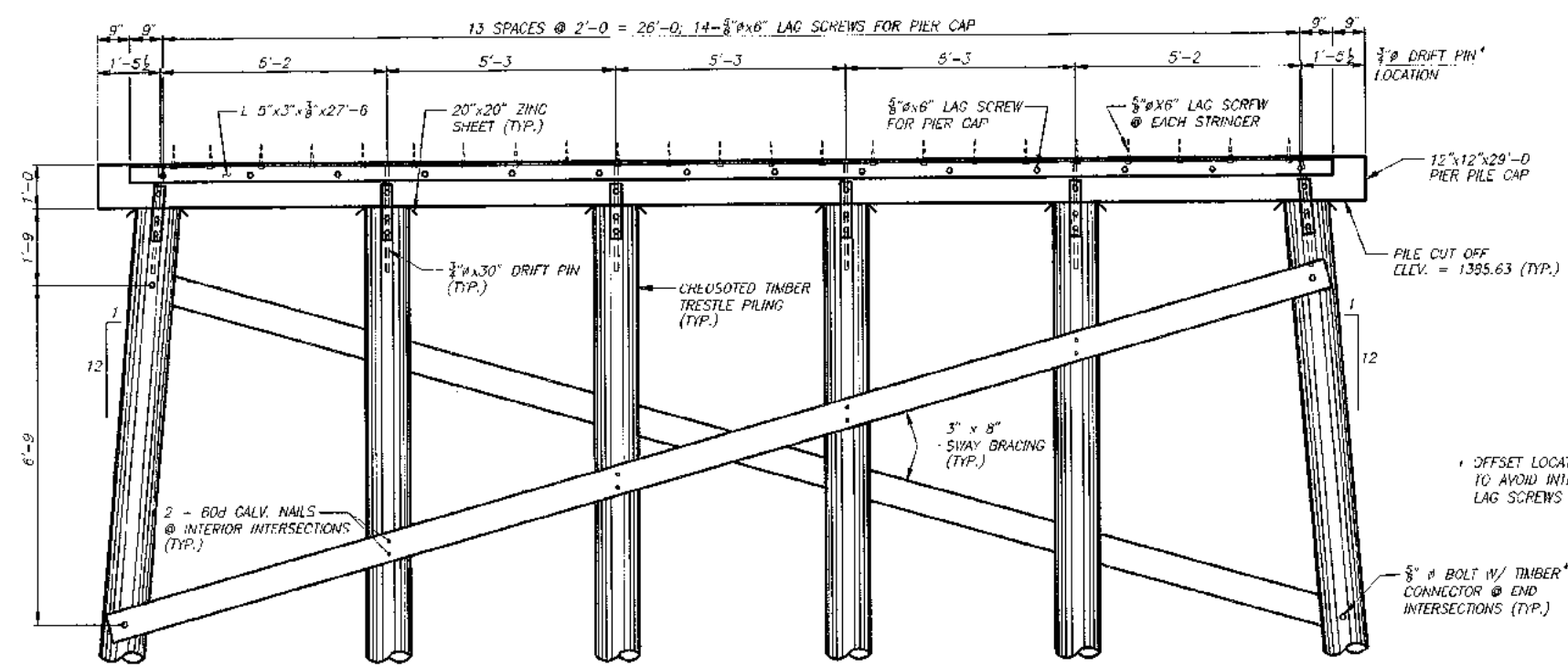
TREATED TIMBER ABUTMENTS AND PIERS 3 - 21'-0" SPANS

ABUTMENT DETAILS

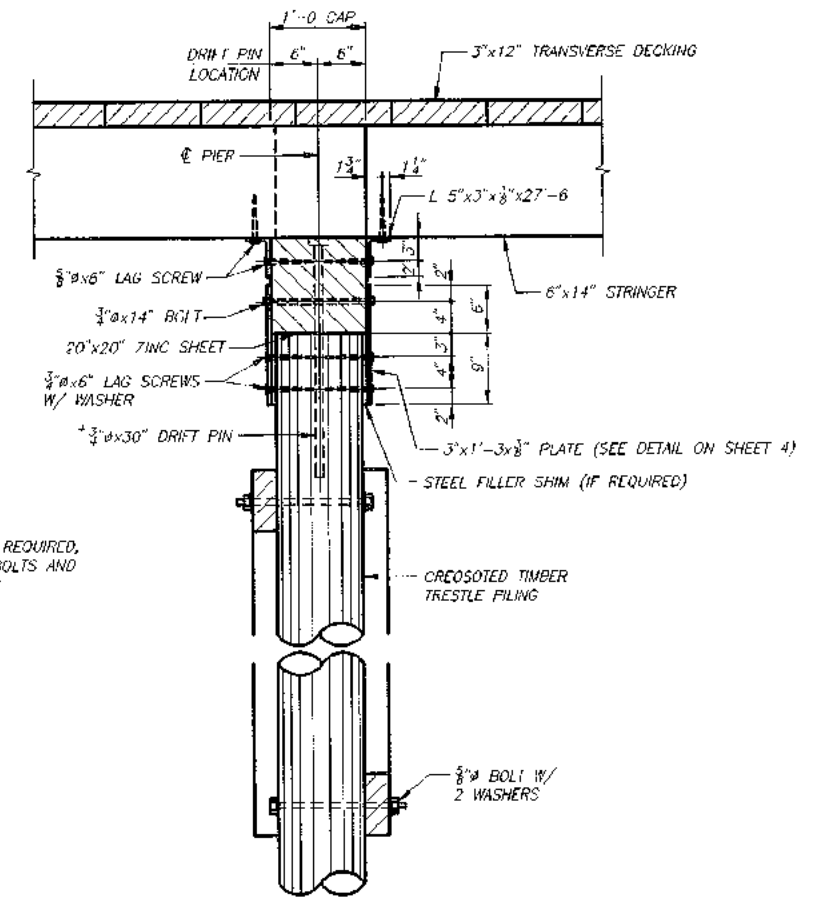
STATION 12+60 15' SKEW, RT. AHEAD
 CRAWFORD COUNTY, IOWA



PLAN
(L 5"x3"x $\frac{3}{8}$ "x27'-6" & LAG SCREWS NOT SHOWN)



ELEVATION



END ELEVATION

TREATED LUMBER QUANTITIES - ONE PIER			
ITEM	NO.	LENGTH	F.B.M.
12" x 12" TIMBER CAP (1)	1	29'-0"	348
3" x 8" SWAY BRACING (2)	2	30'-0"	120
(1) DOUGLAS FIR SELECT STRUCTURAL	TOTAL		348
(2) DOUGLAS FIR NO.1	TOTAL		120

ESTIMATED QUANTITIES - TWO PIER			
ITEM	UNIT	QUANTITY	
CREOSOTED TIMBER	FURNISH 12 @ 50'	LIN. FT.	600
TRESTLE PILING	DRIVE 12 @ 50'	LIN. FT.	600
STEEL, STRUCTURAL		LBS.	1,182
CREOSOTED LUMBER		M-F.B.M.	0.936
HARDWARE, GALVANIZED		LBS.	180

* TIMBER CONNECTOR
 4" x 16 GA. BULLDOG OK
 3/8" x 16 GA. TOOTHED RING OR
 4" x 16 GA. SPIKE GRID

PIER NOTES

PIER DETAILS SHOWN ON THIS SHEET ARE FOR BOTH THE NORTH AND SOUTH PIERS.
 ALL LUMBER SHALL BE TREATED IN ACCORDANCE WITH CURRENT I.D.O.T. SPECIFICATIONS.
 THE 12" x 12" PIER PILE CAPS SHALL BE FULL SAWN.
 ALL LUMBER FOR PIERS SHALL BE ROUGH SAWN UNLESS NOTED OTHERWISE.
 ALL PILING SHALL BE TREATED AND SHALL MEET THE REQUIREMENTS FOR IMHAILED TRESTLE PILES.
 ALL HARDWARE (LAG SCREWS, DRIFT PINS, ETC.) AND NAILS SHALL BE GALVANIZED IN ACCORDANCE WITH CURRENT SPECIFICATIONS.
 ALL PILING SHALL BE DRIVEN TO FULL PENETRATION IF PRACTICABLE, BUT TO NOT LESS THAN 18 TONS NOR MORE THAN 40 TONS BEARING VALUE.
 PILOT HOLES SHALL BE USED FOR ALL LAG SCREW CONNECTIONS.

63'-0" X 24' TIMBER STRINGER BRIDGE

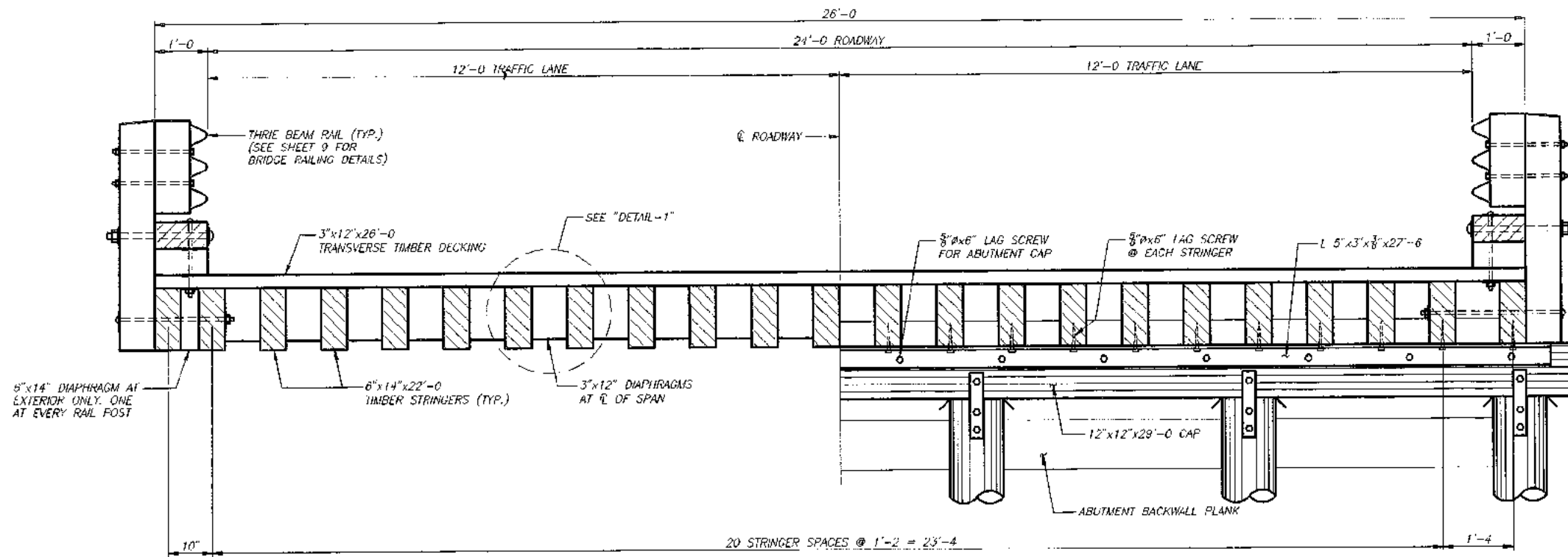
TREATED TIMBER
 ABUTMENTS AND PIERS

PIER DETAILS

3 - 21'-0" SPANS
 STATION 12+60
 CRAWFORD COUNTY, IOWA

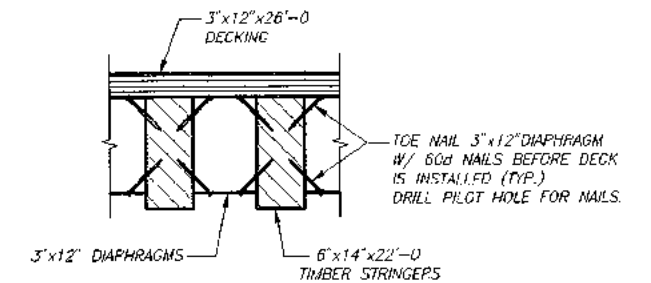
SUPERSTRUCTURE NOTES

THIS BRIDGE IS DESIGNED FOR HS20-44 LIVE LOAD.
 ALL HARDWARE, NAILS, AND PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH CURRENT I.D.O.T. SPECIFICATIONS.
 FASTENERS (BOLTS, NUTS, AND WASHERS) SHALL MEET THE REQUIREMENTS OF ARTICLE 4153.06. ALL FASTENERS SHALL BE ASTM A307 UNLESS NOTED OTHERWISE.
 THE 6" x 14" STRINGERS SHALL BE FULL SAWN. ALL LUMBER FOR THE STRINGERS AND DECK PLANKING SHALL BE ROUGH SAWN.
 PILOT HOLES SHALL BE USED FOR ALL LAG SCREW CONNECTIONS TO THE STRINGERS.

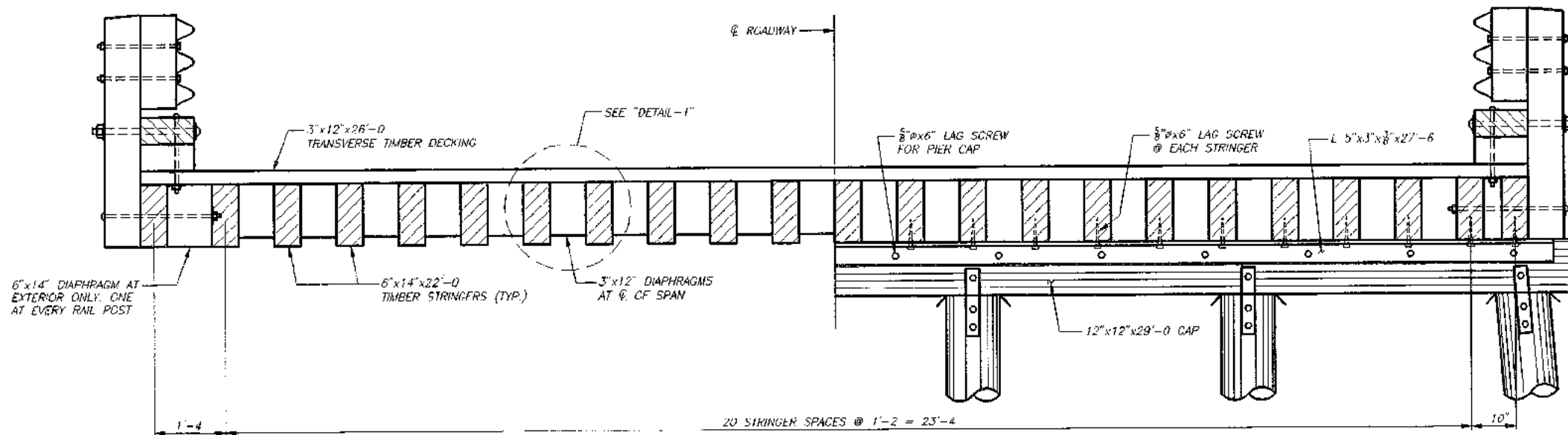


HALF SECTION NEAR MID SPAN OF END SPANS
 (LOOKING NORTH)

HALF SECTION NEAR ABUTMENT
 (LOOKING NORTH)



DETAIL-1



HALF SECTION NEAR MID SPAN OF CENTER SPAN
 (LOOKING NORTH)

HALF SECTION NEAR PIER
 (LOOKING NORTH)

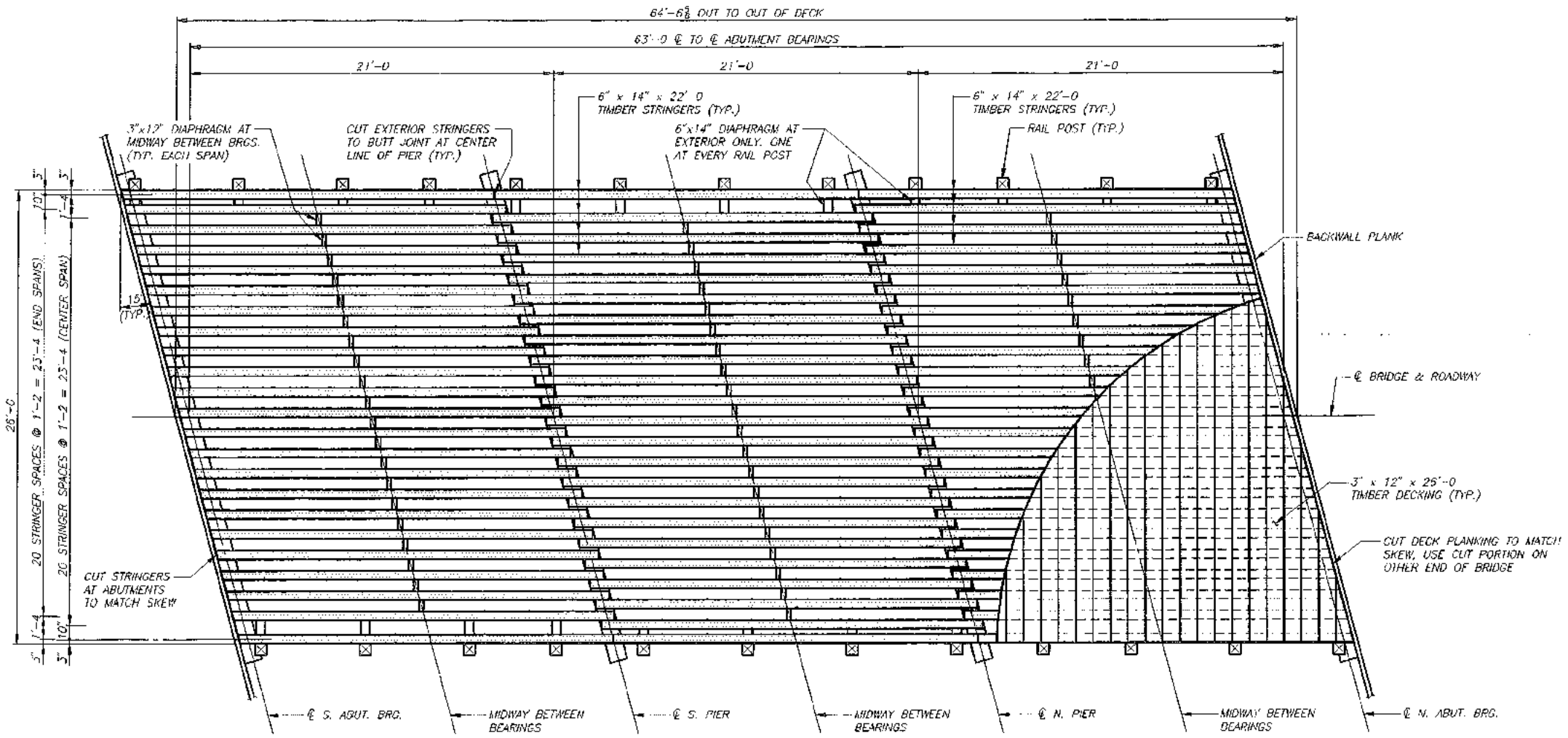
63'-0" X 24' TIMBER STRINGER BRIDGE

TREATED TIMBER 3 - 21'-0" SPANS
 ABUTMENTS AND PIERS

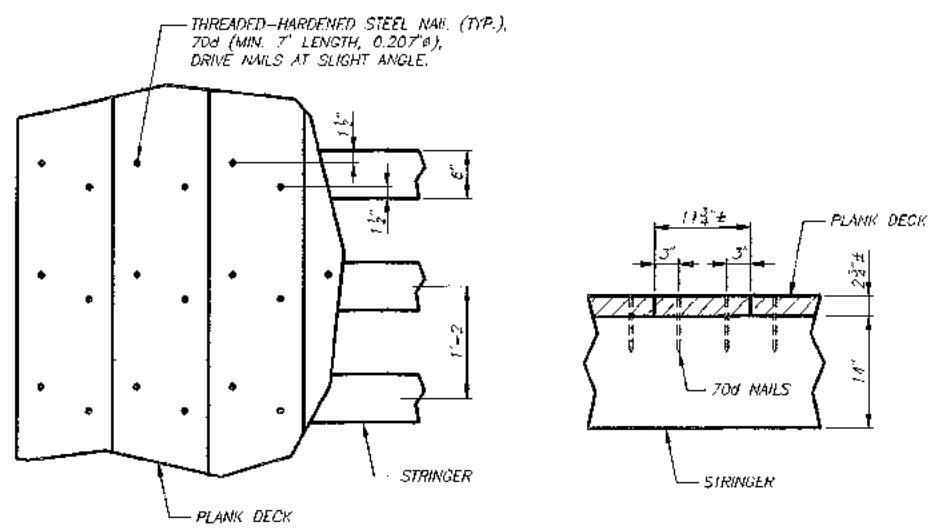
SUPERSTRUCTURE DETAILS

STATION 12+60 15' SKEW, RT. AHEAD
 CRAWFORD COUNTY, IOWA

SHEET 6 OF 11

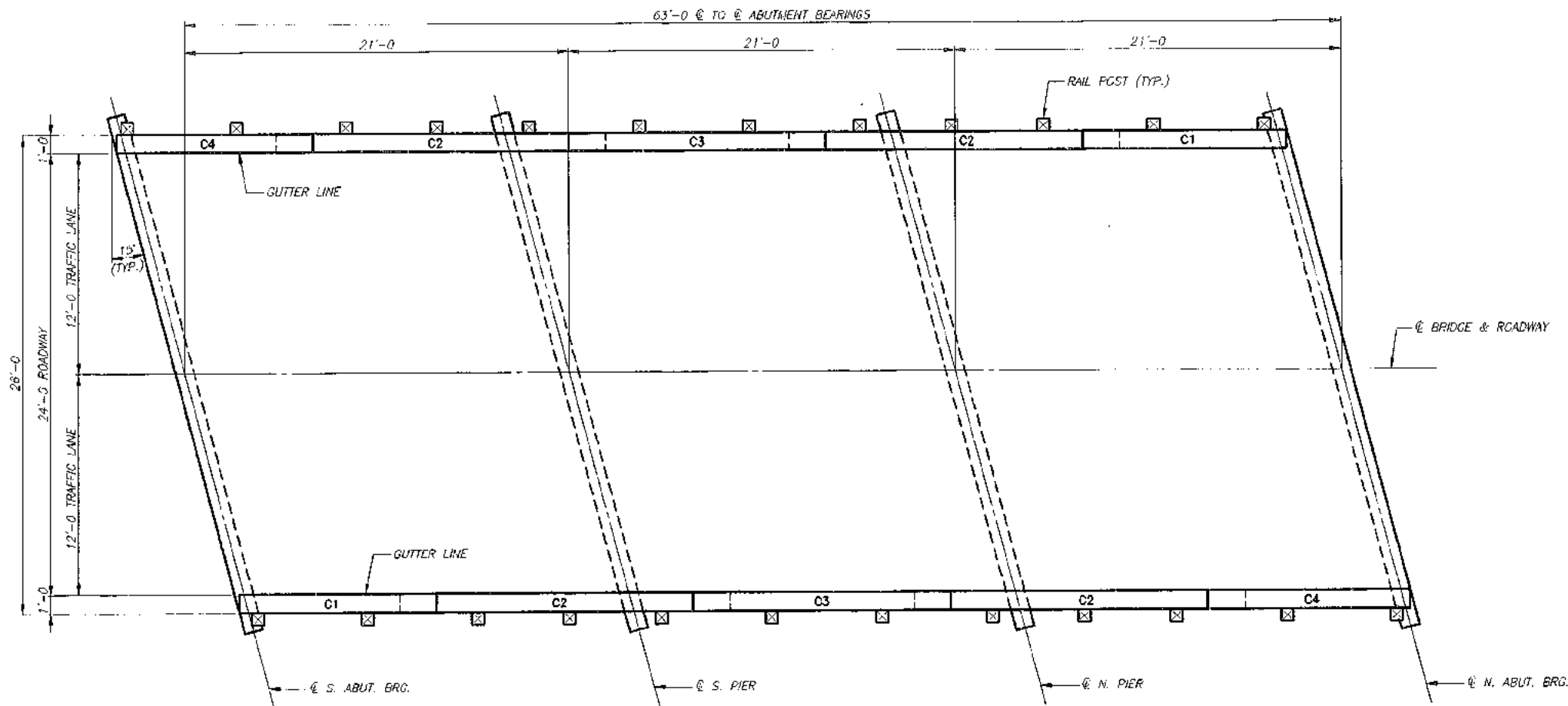


DECK PLAN

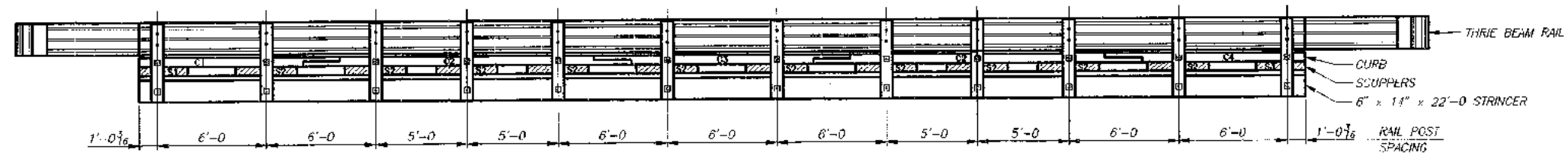


PLANK DECK ATTACHMENT
 ALL DECK PLANKING SHALL BE FURNISHED IN 26' 0" LENGTHS,
 NO SPLICES WILL BE ALLOWED.

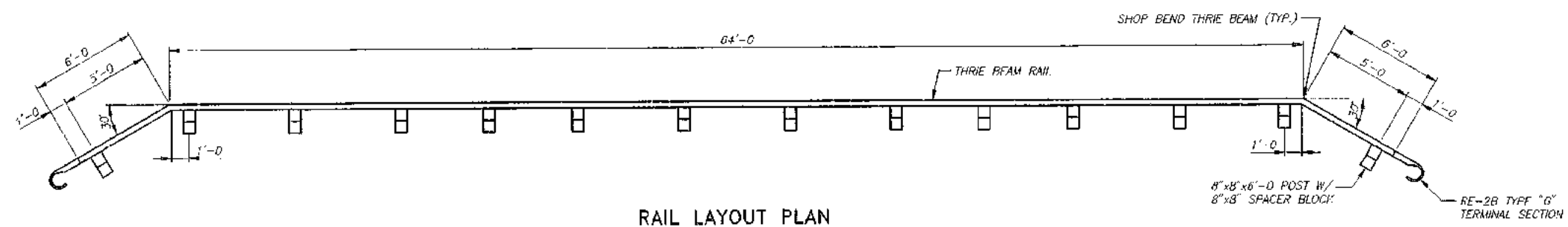
63'-0" X 24' TIMBER STRINGER BRIDGE
 TREATED TIMBER
 ABUTMENTS AND PIERS
 3 - 21'-0" SPANS
 SUPERSTRUCTURE DETAILS
 STATION 12+60
 CRAWFORD COUNTY, IOWA
 15' SKEW, RT. AHEAD
 SHEET 7 OF 11



CURB LAYOUT
 (SEE SHEET 10 FOR DETAILS OF CURB SECTIONS)



ELEVATION
 (LOOKING EAST AT WEST RAIL)
 (LOOKING WEST AT EAST RAIL)

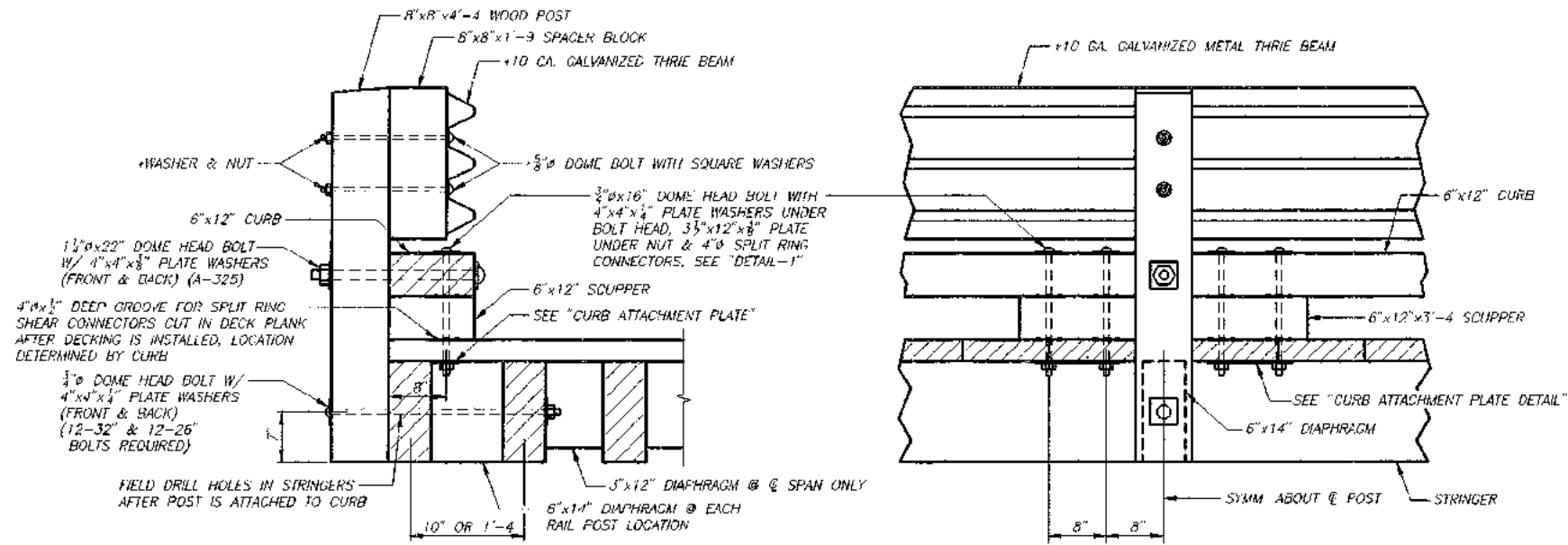


RAIL LAYOUT PLAN

TREATED LUMBER QUANTITIES-SUPERSTRUCTURE				
ITEM	MARK	NO.	F.B.M.	
8" x 8" x 4'-4" BRIDGE RAIL POST	(1)	P1	24	640
8" x 8" x 1'-9" RAIL SPACER BLOCK	(1)	P2	24	256
6" x 12" x 11'-0" CURB	(1)	C1	2	132
6" x 12" x 18'-0" CURB	(1)	C2	4	432
6" x 12" x 14'-0" CURB	(1)	C3	2	168
6" x 12" x 11'-0" CURB	(1)	C4	2	132
6" x 12" x 2'-8" SCUPPLER	(1)	S1	2	36
6" x 12" x 3'-4" SCUPPLER	(1)	S2	20	480
6" x 12" x 2'-8" SCUPPLER	(1)	S3	2	36
6" x 14" x 22'-0" STRINGER	(1)	-	69	10,626
3" x 12" x 26'-0" DECK PLANK	(1)	-	70	5,460
3" x 12" x 0'-8" INTERIOR DIAPHRAGM	(1)	-	60	121
6" x 14" x 0'-10" EXTERIOR DIAPHRAGM	(1)	-	12	70
6" x 14" x 0'-4" EXTERIOR DIAPHRAGM	(1)	-	12	28
(1) DOUGLAS FIR SELECT STRUCTURAL			TOTAL	18,617

ESTIMATED QUANTITIES-SUPERSTRUCTURE		
ITEM	UNITS	QUANTITY
PLANK FLOOR LUMBER	M-F.B.M.	5,460
CREOSOTED LUMBER	M-F.B.M.	13,157
HARDWARE, GALVANIZED	LBS.	1,222

63'-0" X 24' TIMBER STRINGER BRIDGE
 TREATED TIMBER
 ABUTMENTS AND PIERS
 3 - 21'-0" SPANS
SUPERSTRUCTURE DETAILS
 STATION 12+60
 CRAWFORD COUNTY, IOWA
 15' SKEW, RT. AHEAD
 SHEET 8 OF 11

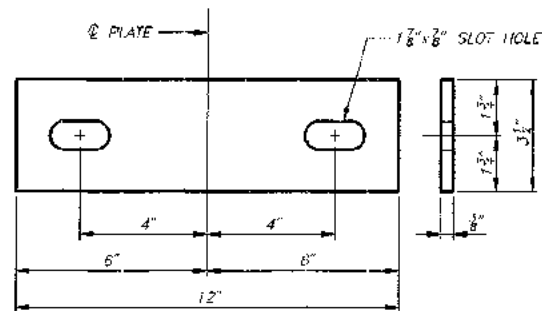


THRIE BEAM RAIL NOTES

1. THRIE BEAM MATERIAL AND HARDWARE ARE SPECIFIED IN AASHTO M-180-78.
2. UNLESS OTHERWISE NOTED BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS TO THE REQUIREMENTS OF ASTM A563, GRADE A OR BETTER. ALTERNATIVELY BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 AND NUTS TO THE REQUIREMENTS OF ASTM A563, GRADE C OR BETTER. ALL NUTS, BOLTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.
3. REFERENCE STANDARDS RE-2B & 12B.
4. ALL HARDWARE TO CONNECT THRIE BEAM RAIL TO THE POSTS SHALL BE INCIDENTAL TO COST OF THRIE BEAM RAIL.
5. HOLES REQUIRED FOR ATTACHMENT OF THRIE BEAM TO POSTS SHALL BE PUNCHED PRIOR TO GALVANIZING, AND AT THE RAIL POST SPACING SHOWN ON SHEET 8.

CURB AND RAIL DETAIL

NOTE: RAIL DESIGN IS NOT CRASH TESTED.
 * COMPONENTS CAN BE FOUND IN THE LATEST GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE, PUBLISHED BY THE AMERICAN ROAD AND TRANSPORTATION BUILDERS ASSOCIATION, 525 SCHOOL STREET S.W., WASHINGTON, D.C.



CURB ATTACHMENT PLATE
 (3 1/2" x 12" x 3/8", A36 STEEL; 44 REQUIRED)

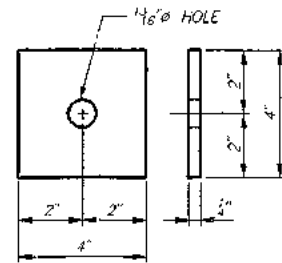


PLATE WASHER
 (4" x 4" x 1/2", A36 STEEL; 140 REQUIRED)

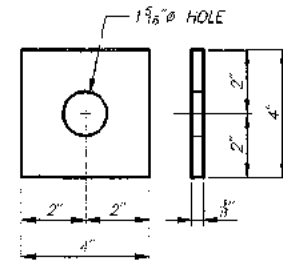
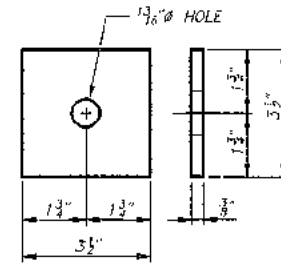
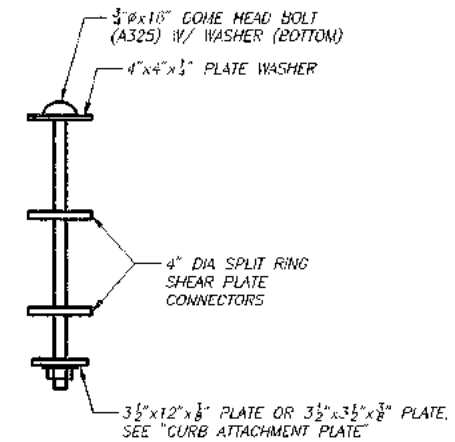


PLATE WASHER
 (4" x 4" x 3/8", A36 STEEL; 48 REQUIRED)



CURB ATTACHMENT PLATE
 (3 1/2" x 3 1/2" x 3/8", A36 STEEL; 4 REQUIRED)



DETAIL-1

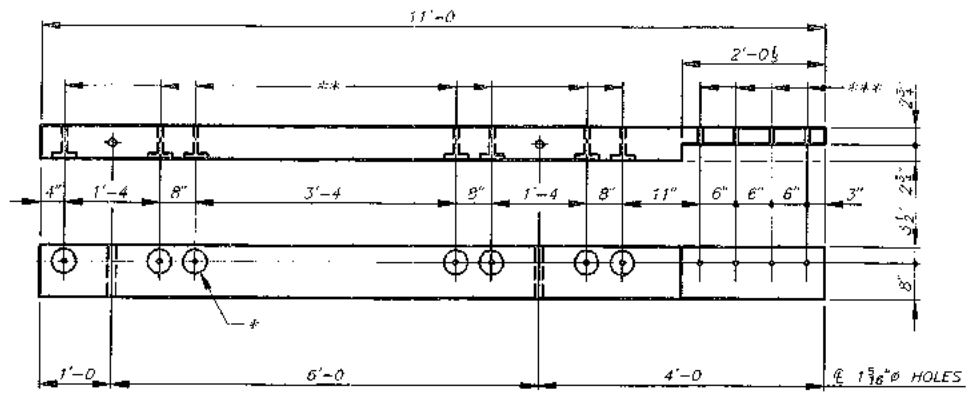
63'-0" X 24' TIMBER STRINGER BRIDGE

TREATED TIMBER 3 - 21'-0" SPANS
 ABUTMENTS AND PIERS

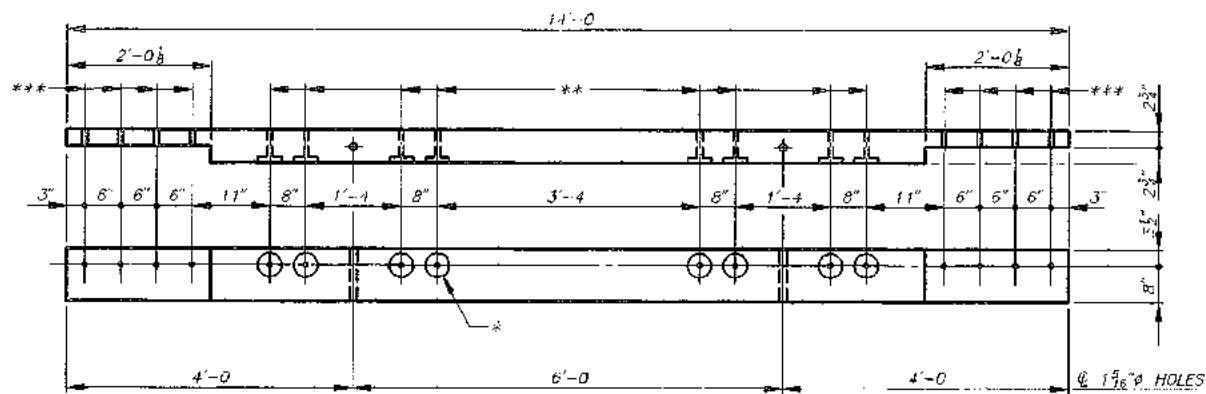
BRIDGE RAIL DETAILS

STATION 12+60 15' SKEW, RT. AHEAD
 CRAWFORD COUNTY, IOWA

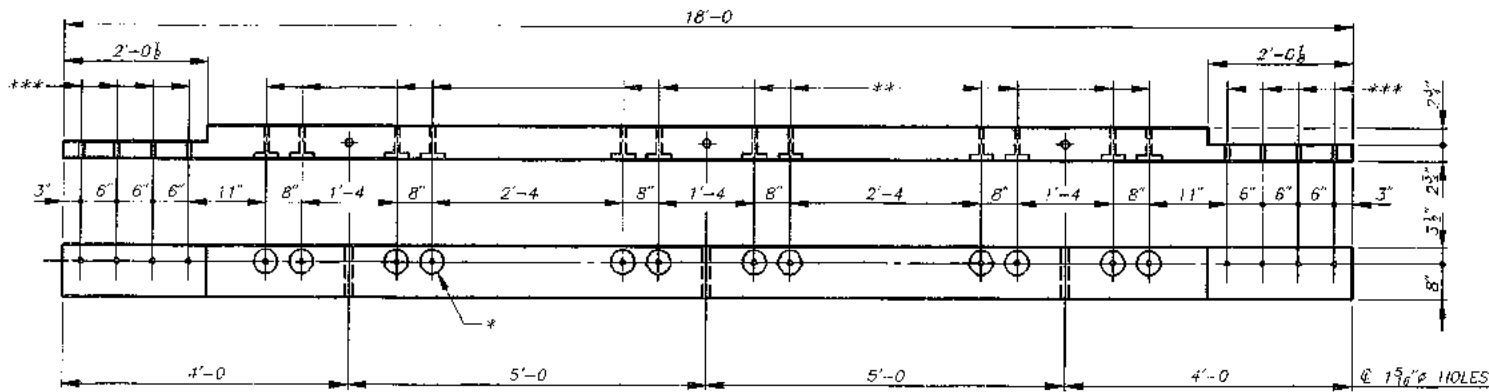
SHEET 9 OF 11



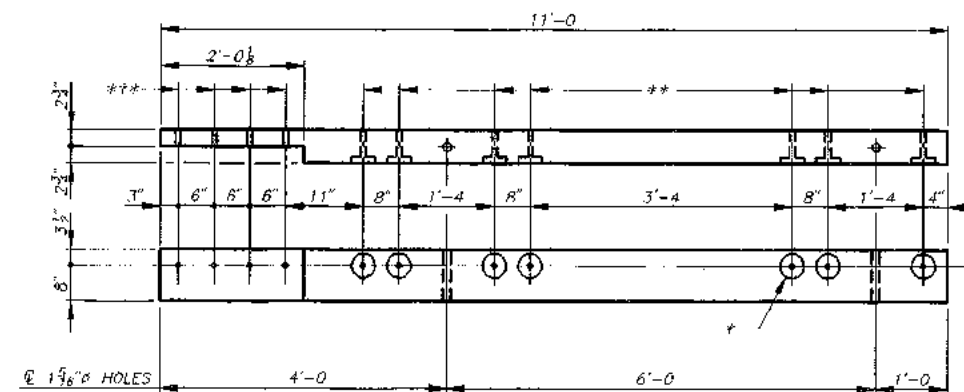
6" x 12" x 11'-0 CURB (C1)
(S4S)



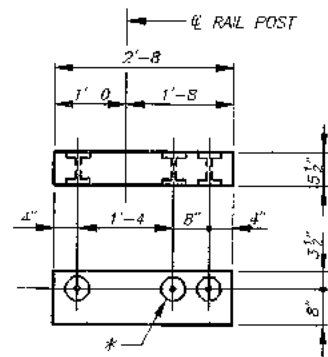
6" x 12" x 14'-0 CURB (C3)
(S4S)



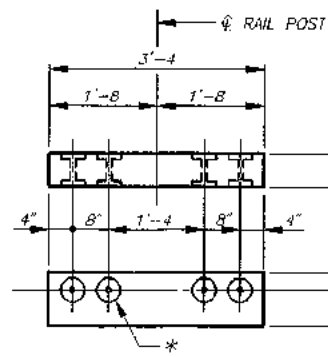
6" x 12" x 18'-0 CURB (C2)
(S4S)



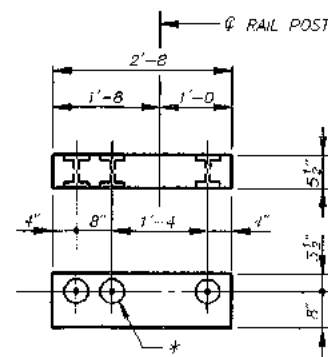
6" x 12" x 11'-0 CURB (C4)
(S4S)



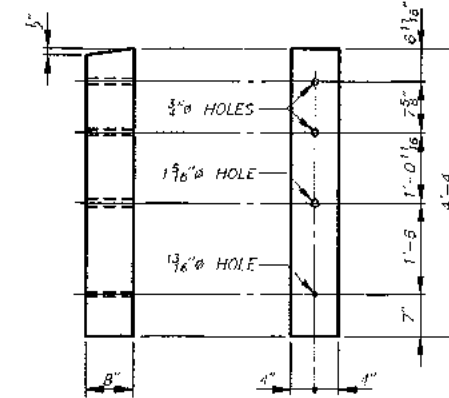
6" x 12" x 2'-8 SCUPPER (S1)
(S4S)



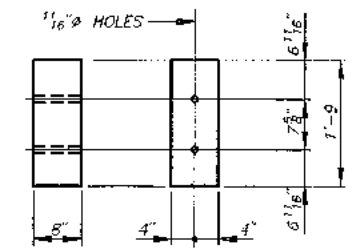
6" x 12" x 3'-4 SCUPPER (S2)
(S4S)



6" x 12" x 2'-8 SCUPPER (S3)
(S4S)



8" x 8" x 4'-4 RAIL POST (P1)
(ROUGH SAWN)



8" x 8" x 1'-9 SPACER BLOCK (P2)
(ROUGH SAWN)

NOTES:

ALL HOLES ARE TO BE DRILLED 1/4" UNLESS OTHERWISE NOTED.
ALL CURB AND SCUPPER TIMBER SHALL BE S4S.
ALL RAIL POSTS AND SPACER BLOCKS TO BE ROUGH SAWN.
SEE SHEET 8 FOR CURB LAYOUT.

* 4" x 1/2" DEEP GROOVE FOR SPLIT RING SHEAR CONNECTORS (TYP. ALL CURBS AND SCUPPERS)
** HOLE FOR 3/4" x 16" DOME HEAD BOLT (A-325) SEE "DETAIL-1", SHEET 9.
*** HOLE FOR 3/4" x 7" DOME HEAD BOLT (A-307) WITH M.I. WASHER AND NUT ON UNDERSIDE.

63'-0 X 24' TIMBER STRINGER BRIDGE

TREATED TIMBER 3 - 21'-0 SPANS
ABUTMENTS AND PIERS

BRIDGE RAIL DETAILS

STATION 12+60 15' SKEW, RT. AHEAD
CRAWFORD COUNTY, IOWA

SHEET 10 OF 11

TRAFFIC CONTROL PLAN

THE PROJECT ROUTE WILL BE CLOSED TO TRAFFIC. TRAFFIC CONTROL DEVICES, PROCEDURES, AND LAYOUTS SHALL BE AS PER PART VI OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REVISION 3, DATED SEPTEMBER 3, 1993.

PLASTIC SAFETY FENCE SHALL BE PLACED ON BOTH SIDES OF THE BRIDGE SITES. IN ADDITION, A TYPE III BARRICADE SHALL BE PLACED IN ADVANCE OF THE PLASTIC SAFETY FENCE, A "ROAD CLOSED" SIGN (R-11-2, 48" x 30") SHALL BE PLACED ON EACH TYPE II BARRICADE ALONG WITH TWO TYPE "A" LOW INTENSITY FLASHING WARNING LIGHTS.

THE CRAWFORD COUNTY MAINTENANCE SHALL SALVAGE ALL ROAD MARKERS AFTER ROAD IS CLOSED.

THE BID ITEM "TRAFFIC CONTROL" SHALL INCLUDE THE COST FOR ALL TRAFFIC CONTROL MEASURES REQUIRED OF THE CONTRACTOR EXCEPT FOR THOSE WHICH ARE SEPARATE BID ITEMS OR ARE INCIDENTAL TO OTHER BID ITEMS.

THE GLANDORAIL INSTALLATION AT BRIDGE ENDS MUST BE COMPLETED BEFORE THE ROAD IS OPENED TO TRAFFIC.

ALL CONTRACTOR FURNISHED TRAFFIC CONTROL SIGNS USED ON THIS PROJECT SHALL BE SHEETED WITH ENCAPSULATED LENS SHEETING.

TYPE "C" STEADY BURN WARNING LIGHTS ARE NOT REQUIRED FOR VERTICAL PANELS, BARRICADES, AND DRUMS WHEN THESE TRAFFIC CONTROL DEVICES ARE SHEETED WITH ENCAPSULATED LENS SHEETING.

TABULATION OF DELINEATORS AND OBJECT MARKERS

Refer to Standard Road Plan RE-48A-B* and RE-29C **Not a Bid Item

108-17

04-28-92

STATION	TYPE*	DELINEATOR SINGLE WHITE D-1W Number	TYPE 2 OM2-3YV Number	OBJECT MARKER		OFFSET BRACKETS ** Number	REMARKS
				TYPE 3			
				OM-3L Number	OM-3R Number		
12+60	1	-	4	1	1	-	S. END
12+60	1	-	4	1	1	-	N. END

TABULATION OF SAFETY CLOSURES

NO.	STATION	REMARKS
1	11+00	"ROAD CLOSURE", S. END
1	14+00	"ROAD CLOSURE", N. END

63'-0 X 24' TIMBER STRINGER BRIDGE
TREATED TIMBER 3 - 21'-0 SPANS
ABUTMENTS AND PIERS

TABULATIONS

STATION 12+60 15' SKEW, RT. AHEAD
CRAWFORD COUNTY, IOWA

SHEET 11 OF 11