November 19, 1956

901

COLORADO DEPARTMENT OF HIGHWAYS
SPECIAL PROVISIONS
FOR
COLORADO PROJECT NO. F 005-3(9) UNIT 1
IDAHO SPRINGS - EAST & WEST

As Constructed

The following special provisions take precedence over all conflicting details in Specifications or on plans, and supplement the Standard Specifications adopted by the Department on June 1, 1952, together with Standard Special Provisions "Application (October 12, 1954)," "Employment Lists; Labor Selection; Nondiscrimination (October 12, 1954)," "Classification of Employees (October 12, 1954)," "Payment of Predetermined Minimum Wages (October 12, 1954)," "Affidavits and Payrolls (October 12, 1954)," "Record of Materials and Supplies (October 12, 1954)," "Subletting or Assigning the Contract (October 12, 1954)," "Adjustments for Changes in Common Carrier Rates (July 22, 1948)," "Statement of Materials and Employment, PR 47 (October 12, 1954)," "Instructions for Preparing Revised Form PR 47 (October 12, 1954)," "General (March 28, 1947)," "Compensation Insurance (March 28, 1947)," "3% Transportation Tax Exemption (June 17, 1952)," and "Emergency Cancellation of Contract (June 17, 1952)."

I N D E X

MINIMUM WAGES

(Third District)

The minimum wage paid to all Skilled Labor employed on this contract shall be One Dollar and Ten Cents ($1.10) per hour.

The minimum wage paid to all Intermediate Labor employed on this contract shall be Seventy Cents ($0.70) per hour.

The minimum wage paid to all Unskilled Labor employed on this contract shall be Fifty Cents ($0.50) per hour.

March 28, 1947

RENTAL OF TEAMS AND TRUCKS

The minimum rental for hired teams employed on this contract shall be twenty (20) cents per hour per head. The minimum rental shall include harness and double-trees, but shall be exclusive of all other equipment furnished for the work.

The minimum rental for hired trucks of not more than one and one-half (1½) tons rated capacity, trucks to be in good condition and equipped with dump bodies, shall be seventy-five (75) cents per hour. The proposed minimum rental rate for hired trucks of more than one and one-half (1½) tons rated capacity must be submitted by the Contractor to the Department for consideration at the time contract is awarded.

Suitable local teams shall be used insofar as available.

November 19, 1956

12 11

COMMENCEMENT AND COMPLETION OF WORK

AND LIQUIDATED DAMAGES FOR

COLORADO PROJECT NO. F 005-3(9) UNIT 1

The Contractor on this project shall commence work under his contract on or before the tenth (10th) day following the date of the contract unless such time for beginning the work shall be changed by the Chief Engineer, and shall fully complete all work thereunder within One Hundred Eighty (180) calendar days from and including the date of contract, or from and including such later date as may be designated in writing by the Engineer.

The amount of liquidated damages to be paid as provided in Paragraph 8.7, "Failure to Complete Work on Time" of the Specifications shall be $50.00 per day.

August 26, 1948

REV. OF ITEM 11
REMOVAL OF BRIDGES

This item shall conform to the requiments of Item 11 of the Standard Specifications except for the following modifications:

Steel trusses shall be dismantled at original field connections where possible. In no case shall the removed sections consist of more than two (2) panels of any one truss.

All costs incidental to the foregoing requirements shall be included in the original contract prices for the project.

November 19, 1956 14a

ITEM 11f

RELOCATE GRANDSTANDS

COLORADO PROJECT NO. F 005-3(9) UNIT 1

DESCRIPTION AND REQUIREMENTS:

The grandstands noted on the plans, Sta. 116+, to be relocated shall be carefully removed and restored for service at new location as shown on plans and as staked by the Engineer. This work shall be done carefully and all damage, due to removing operations, shall be repaired by the Contractor at his expense.

Unserviceable material shall be replaced with new material of similar dimensions and quality as in the present structure.

BASIS OF PAYMENT:

This item completed in accordance with the foregoing, will be paid for at the contract lump sum price for "Relocate Grandstands," complete in place, which price and payment shall be full compensation for all repairs, new materials, hauling, labor, tools, equipment, supplies, and work incidental thereto.

ITEM 14

EXCAVATION FOR STRUCTURES

14.1 DESCRIPTION:

14.1.1 Excavation for structures shall consist of the excavation and removal of all material of whatever nature encountered, necessary for the construction of foundations and substructures of the structures listed on the Plans. It shall include the construction complete in place of all temporary cribs, cofferdams, caissons, etc., which may be necessary for the execution of the work. It shall also include the subsequent removal of the cofferdams and cribs and the disposal of the surplus excavation materials in the roadway embankments or as directed by the Engineer.

14.1.2 The removal of old structures is not included herein, but is covered by Item 11 of these Specifications.

14.1.3 The elevation of the bottom of footings as shown on the Plans shall be considered as approximate only and the Engineer may order in writing such changes in dimensions or elevations of footings as may be necessary to secure a satisfactory foundation.

14.2 CLASSIFICATION:

14.2.1 Excavation for structures shall be classified as "Rock Excavation (Str.)," "Common Excavation (Str.)" and "Unclassified Structural Excavation." The distinction between "Rock" and "Common" shall be as prescribed in classification for "Roadway and Drainage Excavation," Paragraph 13.2. All excavation classified as "Unclassified Structural Excavation," on the Plans, will remain under that classification in all cases.

14.2.2 Excavation for culverts shall be as required under Item 45 of these Specifications. Where portions of culverts are not bedded in the original ground, excavation for structures shall be measured and paid for in embankment material. Embankments shall be built up and thoroughly compacted to a point one-half (1/2) the diameter above the proposed flow line of the pipe and the trench for the pipe shall then be excavated through the constructed embankment. The embankment shall be constructed in accordance with Item 15 of the Specifications.

14.3 CONSTRUCTION METHODS:

14.3.1 Foundations shall be excavated according to the outline of the footings as shown on the Plans or as established by the Engineer and shall be of sufficient size to permit the placing of the footings with full horizontal bed.

14.3.2 Excavation in rock or other hard foundation material shall be cut to a firm surface, either level, stepped, or serrated, cleaned of all loose material, and all seams shall be cleaned out and filled with concrete, mortar or grout, as directed by the Engineer.

(Continued)

ITEM 14
EXCAVATION FOR STRUCTURES

14.3.3 When a structure is to rest on an excavated surface other than rock, special care shall be taken not to disturb the bottom of the excavation and the final removal of the foundation material to grade shall be made just before the structure or concrete is to be placed. The final six (6) inches in depth shall be done by hand labor methods. The natural ground adjacent to the footings shall not be disturbed without the permission of the Engineer.

14.3.4 Cofferdams or cribs for foundation construction shall, in general, be carried well below the bottom of the footings and shall be well braced and as watertight as practicable. The interior dimensions of cofferdams shall be such as to give sufficient clearance for the construction of forms, thorough inspection, and to permit pumping outside of the forms. Cofferdams or cribs which become tilted or moved out of line during the process of sinking, shall be righted or enlarged so as to provide the necessary clearance.

14.3.5 When conditions are encountered, which, in the opinion of the Engineer, render it impracticable to unwater the foundation before placing concrete, he may require a concrete foundation seal of such dimensions as may be necessary to be constructed below the designed footing depth and poured under still water by tremie or other approved method. Such concrete shall be proportioned as specified under Item 46 for Class "A" Concrete with the addition of ten (10) per cent of cement above that normally used. When ordered by the Engineer, after the concrete has set sufficiently, the cofferdam shall be pumped out for purposes of inspection. When weighted cribs are employed and the weight is utilized to partially overcome the hydrostatic pressure acting against the bottom of the foundation seal, special anchorage, such as dowels or keys, shall be provided to transfer the entire weight of the crib into the foundation seal. When a foundation seal is placed under water, the cofferdam shall be vented or ported at low water level.

14.3.6 Cofferdams shall be constructed so as to protect green concrete against damage from a sudden rising of the stream and to prevent damage to the foundation by erosion. No timber or bracing shall be left in the cofferdams or cribs in such a way as to extend into the substructure without written permission from the Engineer.

14.3.7 Unless otherwise provided, cofferdams and cribs, with all sheeting and bracing, shall be removed by the Contractor after the completion of the substructure, in such a manner as not to disturb or mar the finished structure.

14.3.8 Pumping from the interior of any foundation enclosure shall be done in such manner as to preclude the possibility of any portion of the concrete materials being carried away. No pumping will be permitted during the placing of concrete, or for a period of at least twenty-four (24) hours thereafter, unless it be done from a suitable sump separated from the concrete work by a watertight wall.

14.3.9 After each excavation is completed, the Contractor shall notify the Engineer, and no concrete or other materials shall be placed until after the Engineer has approved the depth of the excavation and the character of the foundation material.

(Continued)

ITEM 14
EXCAVATION FOR STRUCTURES

14.3.10 When unsatisfactory foundation material is encountered in the excavation for culvert pipes, siphons, concrete box or slab culverts, the foundation material shall be excavated a minimum of six (6) inches below grade and backfilled with "Structure Backfill" material, as described under Item 16 and as designated on Plans or as directed by the Engineer.

14.3.11 Where the Contractor, for his own convenience, excavates beyond the limits required for structural excavation, the excess excavation and the backfill thereof shall be at the Contractor's expense.

14.3.12 Backfilling around culverts, siphons, abutments, wing walls, piers and areas inaccessible to rollers shall be compacted by mechanical tamping devices or other approved means as provided under Item 16 of the Specifications. Fill around structures shall be deposited on both sides to approximately the same elevation at the same time and compacted to a density satisfactory to the Engineer.

14.3.13 Special precautions shall be taken to prevent any wedging action against a structure and the slope bounding the excavation for bridge abutments and wing walls shall be destroyed by stepping or serrating to prevent wedge action.

14.3.14 "Structure Backfill" material and placement thereof, together with any required mechanical tamping shall be as described under Item 16.

14.4 METHOD OF MEASUREMENT:

14.4.1 The total yardage of structural excavation to be paid for under this item shall be the volume in cubic yards as calculated in accordance with the following:

1. Circular and box culverts, siphons, side drains and other pipes.

A profile will be made along center line of the structure to extend one (1) foot beyond either end of structure. End of structure, as used, is defined to include wing walls, metal aprons, concrete end sections and headwalls. The area between original ground and the bottom of trench as excavated between limits of this profile will then be determined. The volume of structural excavation will then be calculated by multiplying this area by the dimension of the outside diameter of circular structures or the outside width of box structures, measured in feet, plus two (2) feet.

Division boxes, diversion boxes, and other miscellaneous structures shall be handled in the manner proposed for box culverts by establishing the center line through the long axis of the structure and running the profile to a point one (1) foot outside the neat line of the structure. The balance of the computation would then be handled as prescribed for a box culvert.

(Continued)

ITEM 14
EXCAVATION FOR STRUCTURES

2. Bridges.

The quantity of structural excavation for bridges will not be measured, but will be the quantities shown on Plans. Exception will be when changes are ordered in accordance with Paragraph 14.1.3. When changes are ordered by the Engineer, volume will be measured and added to or subtracted from plan quantities.

14.4.2 The depth of excavation for structures, where roadway cross-section is in fill, shall be between the bottom of the footings as excavated and the original ground surfaced as profiled by the Engineer. The depth of excavation for structures where the roadway cross-section is in cut, or where channel changes or channel improvements are indicated, shall be between the bottom of the footings as excavated, and the typical cross-section of the cut, channel change or channel improvement, as though the excavation for the cut, channel change or channel improvement had been completed. The volume of yardage included within the roadway cross-section and cross-sections of channel changes or channel improvements shall be measured and paid for as provided under Item 13, "Roadway and Drainage Excavation."

14.4.3 Trenches for underdrains of all types, and trenches required for installation of multiple plate culverts shall be measured to neat lines indicated by details on Plans or required by Specifications for the respective items.

14.4.4 In case portions of old bridge substructures coincide with structural excavation prisms as outlined herein, the substructure material removed within this prism to a point three (3) feet below the ground line or stream bed at that point shall be paid for as provided under Item 11, "Removal of Bridges, Structures and Obstructions" of the Specifications. Substructure material occurring within the said structural excavation prisms below this three (3) foot depth, shall be paid for as structural excavation. The yardage of structural excavation so calculated, completed and accepted, will be included in the measurement and no other allowance for measurement of removed structures nor of cofferdams or caissons shall be included.

14.4.5 In the event that it is found necessary to carry any of the footings more than three (3) feet below the depths shown on the Plans, the excavation down to an elevation three (3) feet below that shown on the original Plans shall be performed at the original prices bid, as provided above; material excavated more than three (3) feet below the original elevation shown on the Plans, shall be paid for under supplemental agreement as Extra Work as provided in Paragraph 4.5.

(Continued)

ITEM 14
EXCAVATION FOR STRUCTURES

14.5 BASIS OF PAYMENT:

The yardage of excavation for structures determined and classified as provided above shall be paid for at the contract unit prices per cubic yard for "Rock Excavation (Str.)," "Common Excavation (Str.)" or "Unclassified Structural Excavation," as the case may be, which prices and payments shall be full compensation for the excavation, removal and disposal of all materials and obstructions encountered, for the construction of cribs, cofferdams, and caissons, for pumping, for all grout and mortar used in filling seams in foundations, and for the removal of cofferdams and temporary cribs, except bridge substructures above three (3) foot depth which will be paid for under Item 11 of the Specifications, and for all labor, equipment, tools and incidentals necessary to complete the item. Concrete used in concrete seals as ordered in writing by the Engineer shall be paid for as specified under Item 46. Structure Backfill together with incidental mechanical tamping will be paid for in accordance with Item 16 of the Specifications.

November 19, 1956

SOURCE OF MATERIALS

COLORADO PROJECT NO. F 005-3(9) UNIT 1

The Department estimates that Structure Backfill for this project is available from the channel changes located within the Right of Way.

The material is available at no cost to the Contractor.

The amount of materials required is subject to change by the Engineer to meet requirements encountered during construction.

If other agreements are reached for material, the Contractor shall make his own arrangements with the property owners for the use of such material and payment therefor, all such payments being made by the Contractor directly to the owner.

All sources are to be excavated and backsloped uniformly and left in a neat, leveled condition.

All material taken from roadway cuts and paid for as Structure Backfill will be excluded from payment as "Unclassified Excavation."

Written approval based on tests by the Materials Engineer must be secured from the Engineer before materials may be used from sources other than those designated on plans.

Any temporary bridges or approach roads required to haul material from channel changes to the roadway shall be constructed by the Contractor at his expense.

The cost of the foregoing requirements shall be included in the original contract unit prices for the project.

September 10, 1954

REVISION OF ITEM 42
TIMBER BRIDGES

This Item shall conform to the requirements of Item 42 of the Standard Specifications except for the following:

Paragraph 42.2.9 is revised to the following:

42.2.9 All timber furnished under these specifications, except when inspection is arranged for by the Engineer, shall be covered by a certificate of inspection issued by the West Coast Lumbermen's Association, Pacific Lumbermen's Inspection Bureau, Southern Pine Association, or by any other inspection agency approved by the Engineer. Each piece so inspected shall be marked with a mark indicating such inspection, and the destination of material or job for which it is intended shall be clearly shown on said certificate.

All costs incidental to the above requirements shall be included in the contract unit price bid for Item 42.

ITEM 46 - CONCRETE

This item shall conform to the requirements of Item 46 of Standard Specifications and shall include the following:

46.2.7 Air-entrained Concrete:

46.2.7.2 When the Contractor plans to furnish air-entraining admixtures which have been previously approved by the Department, he will be required to furnish two (2) copies of a certificate to the Engineer stating the material proposed for use on the project is identical to that previously furnished.

46.2.7.3 For air-entraining admixtures which have not been previously approved by the Department, the Contractor will be required to furnish two (2) copies of a certificate to the Engineer from a recognized laboratory stating that the material proposed for use on the project is in conformity with the requirements of A.A.S.H.O. Specification M-154.

46.2.7.4 A "recognized" laboratory is any State Highway, Bureau of Public Roads, or cement and concrete laboratory regularly inspected by the Cement Reference Laboratory of the National Bureau of Standards.

46.2.10 Retarding Agent:

46.2.10.1 The Contractor will be permitted to use an approved retarding agent in bridge deck concrete. Purpose of retarding agent is to retain workability of concrete for a longer period of time, which may aid finishing operations.

46.3.10.6 The following shall be added to Paragraph 46.3.10.6:

"Unless otherwise specified on plans, ordinary surface finish shall be applied to all exposed surfaces of concrete arch and box culverts, headwalls, inlet boxes, paving drains and irrigation structures."

All costs incidental to the foregoing requirements shall be included in the original contract unit price for Item 46.

DELETED

DELETED

DELETED

June 7, 1955

AFFIDAVIT RELATIVE TO COLLUSION

The Contractor on this project will be required to conform with the requirements of Section 17(b) of the 1954 Federal Highway Act regarding contracts and as described in the paragraph below.

> "Section 17(b) of the Federal-Aid Highway Act of 1954 requires as a condition precedent to approval by the Commissioner of Public Roads of the contract for this work that the Contractor file a sworn statement executed by, or on behalf of, the person, firm, association, or corporation to whom such contract is to be awarded, certifying that such person, firm, association or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such contract. This sworn statement shall be in the form of an affidavit executed and sworn to by the successful bidder before such persons as are authorized by the laws of the State to administer oaths. The original of such sworn statement shall be filed with the State Highway Department prior to the award of the contract."

Affidavit forms are available from this Department.

September 2, 1948

COOPERATION OF CONTRACTORS

The attention of the Contractor is invited to the fact that the Department anticipates construction activities adjacent to and within the limits of this project in addition to the work under this contract. The Contractor for this project will be required to arrange his work so that no delay to other construction work within the limits of the project will result. The Contractor will at all times be required to cooperate with other construction agencies in the moving of their equipment over or around this project.

All cost incidental to these conditions shall be included in the original contract unit prices for this project.

April 26, 1955

EXEMPTION FROM TON-MILE TAXES

Publicly owned vehicles and Contractor's vehicles operating within the confines of construction projects are exempted from the payment of ton-mile taxes under Senate Bill 213 of the Fortieth General Assembly in its First Regular Session.

The confines of this project as exempted under Senate Bill 213 are defined as including all sources of earthen or mineral aggregates and water for use on this project, and the connecting roads or areas between the project and such sources.

PROTECTION OF UTILITIES

The Contractor's attention is directed to the fact that utilities encroach on the construction of this project, and also to the importance of protecting all public utilities encountered on this project. These may include telephone, telegraph and power lines, water line, sewer lines, gas lines, railroad tracks, and other overhead and underground utilities.

Before any excavation is begun in the vicinity of water lines, railroad tracks or structures, sewer lines, gas lines or telephone conduits, each utility company concerned must be notified in advance of such excavation, and such excavation shall not be made until an authorized representative of the utility company concerned is on the ground.

The Contractor shall be held liable for all damages to any and all public utilities encountered on the project, which damages are due to the Contractor's operations. Such damages shall include all physical damages to utilities and also all damages due to interruption of service of such utilities, when such damages and interruptions are caused by Contractor's operations.

Where alterations or moving of utilities is not required to permit construction of new highway improvement, the Contractor shall take such measure as the Engineer may direct in properly protecting these utilities throughout his construction operations and shall cooperate at all times with the proper authorities and/or owners in maintaining service of railroads, conduits, pole lines, transmission lines, pipe lines, sewers, etc., affected by this project.

The cost of damages due to Contractor's operation or cost of protecting utilities where alteration or moving is not required to permit construction of highway improvement shall be included in the original contract prices for the project.

Should any pipe line, water lines or gas mains, electrical conduits, sewer pipes, overhead wiring, telephone lines, telegraph lines, power lines, or any other such utilities, not specifically mentioned and provided for elsewhere as a part of this contract, have to be moved, repaired, reconditioned or revised due to the road construction or moved temporarily to permit construction of project, the party or parties owning or operating such utilities shall perform the actual work of moving, repairing, reconditioning, or revising such utilities. The cost of this work shall be borne by the utility companies involved, unless other agreements are reached with the Department.

July 17, 1950

PROVISIONS FOR TRAFFIC DURING CONSTRUCTION

The detour for this project lies along the present traveled road except where detours are designated on plans. At all places on the project where the new work lies along the present traveled road, the Contractor shall, at his own expense, prosecute construction in such manner that traffic may readily pass over the road. Also, the Contractor shall maintain in safe condition and at his own expense all temporary approaches to and crossings of intersecting roads.

Where designated on plans, traffic will be served by detour roadways in accordance with plan details. Through traffic will be required to use these detours throughout construction. The Contractor will be required to cooperate with the Department in order that the highway will not be closed to local traffic. Local traffic shall be adequately provided for at the Contractor's expense.

During and after surfacing operations, weather conditions and traffic may require wetting and rolling to conserve the fine material, preserve the evenness of the surface and abate the dust nuisance and traffic hazard. The Contractor will be required to do this wetting and rolling as ordered by the Engineer, all such work being paid for at the contract prices for the items involved.

Before proceeding with construction, the Contractor must obtain from the Engineer written approval of the proposed methods of handling traffic during Construction.

CONSTRUCTION ACROSS NATIONAL FOREST LAND (REQUIREMENTS OF FOREST USE PERMIT)

In all places where this project traverses National Forest Land, the Contractor shall do his work in accordance with the following requirements:

1. Trees or shrubbery on National Forest Land may be removed or destroyed only after the forest officer in charge has approved, and had marked or otherwise designated that which may be removed or destroyed. Merchantable timber cut must be paid for by the Contractor. Trees, shrubs and other plants may be planted in such manner and in such places about the premises as may be approved by the forest officer in charge.

2. The Contractor shall maintain the improvements and premises to standard of repair, orderliness, neatness, sanitation and safety acceptable to the forest officer in charge.

3. The Contractor shall comply with the regulations of the Department of Agriculture and all Federal, State, County, and municipal laws, ordinances, or regulations which are applicable to the area.

4. The Contractor shall take all reasonable precautions to prevent and suppress forest fires. No material shall be disposed of by burning in open fires during the closed season established by law or regulation without a written permit from the forest officer in charge or his authorized agent.

5. The Contractor shall fully repair all damage, other than ordinary wear and tear, to national forest roads and trails caused by construction operations in the exercise of the privilege granted by Forest Use Permit.

6. The Contractor shall take all reasonable precautions to avoid damage to property and resources of the United States, and diligently to undertake suppression action in the event of fire resulting from the exercies of the privileges herein granted.

7. Any Forest Service improvements, such as entrance portals, fences, camp ground or picnic units, barriers, etc., if disturbed, will be replaced at no expense to the Forest Service.

8. The Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, or national origin, and shall include in all subcontracts a provision imposing a like obligation on subcontractors.

9. All use of construction equipment will be confined to the clearing or right of way, unless otherwise agreed to by the Forest Supervisor or his representative.

10. All material pits will have the top soil stripped off at the beginning of the work, and replaced and spread over the bared area at its conclusion.

11. The temporary use and occupancy of the premises and improvements herein described may not be sublet by the Contractor to third parties without the prior written approval of the forest supervisor and the Contractor shall continue to be responsible for compliance with all conditions of Forest Use Permit by persons to whom such premises may be sublet.

12. None of the conditions of Forest Use Permit as set forth herein can be varied or modified, except with the written consent of the Forest Supervisor.

13. All costs incidental to the foregoing requirements shall be included in the original contract unit prices for the project.

June 25, 1956

SALES TAX REFUND ON CONSTRUCTION MATERIALS

Pursuant to the law and regulations of the Department of Revenue, it is the policy of the Department of Highways to make claim for refund of all State sales and use taxes paid on materials purchased for and incorporated in highways and structures constructed under this contract.

Claim will be made for sales and use taxes paid on the following materials which are incorporated in this project:

Structural and Reinforcing Steel
Bituminous Materials
Cement
Premixed Concrete
Culvert and Underdrain Pipe
Lumber
Piling
Fencing
Commercial Aggregates
Cribbing
Guard Fence
Manholes (Rings, Covers, Etc.)
Gratings and Frames
All other materials not listed above, actually incorporated in the completed work.

The Contractor or his sub-contractors will be required to file with the Engineer upon completion of this project, if completion time allowed under this contract is 300 calendar days or less, a certificate (Form DR-513), as attached hereto, stating that he has paid State sales and use taxes on tangible property built into the road and structures under this contract. If the completion time allowed under this contract is in excess of 300 calendar days, the Contractor or his sub-contractors will be required to file appropriate DR-513 Forms with the Engineer at nine (9) month intervals during the course of the contract.

Additional copies of Form DR-513 are available from the Resident Engineer, District Offices and the Denver Headquarters Office.

DR-513
(Colorado Department
of Highways)

CONTRACTOR'S CERTIFICATE

STATE OF COLORADO)
) ss
COUNTY OF _____)

I, _____, of lawful age, being first duly sworn, depose and state: That I am the _____ (Title) of the _____, contractor for the construction of a Highway, Structures, Tunnel, Buildings, Etc., for Colorado Department of Highways, in the County of _____, State of Colorado; Project No._____, located between _____ and _____.

That sales and use tax in the amount of $_____, which said Department of Highways seeks to have refunded, was paid by said contractor, or his sub-contractor, between the dates of _____, 19_____, and _____, 19_____; that the tangible personal property upon which said tax was paid was built into the above-mentioned Project No._____ _____.

Affiant further states that the books, records and other substantiating evidence of payment of said taxes are located and kept at _____ (Office Address) _____, in said County and State; and that the same are open to inspection by the Colorado Department of Revenue.

_____

Subscribed and sworn to before me this _____day of _____19____.

My commission expires _____.

_____
Notary Public

March 13, 1953

DISPOSAL OF OIL PROCESSED SURFACING

The present oil processed surfacing in proposed construction areas lying below the elevation of the base of proposed surfacing course shall be thoroughly plowed, broken up and mixed with an equal thickness of the underlying soil. This material shall then be consolidated in accordance with the specifications for Embankments. Where the present oil processed surfacing lies above the elevation of the base of proposed surfacing course, the oil processing shall be thoroughly plowed and broken up, and removed to embankment areas to be consolidated with other embankment materials. All oil processed surfacing shall be broken into pieces with a maximum dimension of six (6) inches.

Consolidation of oil processed surfacing shall be in conformity with requirements of Items 13, 15 and 17 of the Standard Specifications.

The cost of plowing, breaking and mixing of oil processed material with underlying soil will not be paid for as a separate item but shall be considered as subsidiary work pertaining to construction of subgrade, and shall be included in the original contract prices for the project.

Wetting and compaction required after completion of the plowing, breaking and mixing of oil processed surfacing will be paid for as provided under Item 17 of the Standard Specifications.

Rev 11-19-56 T.M.C.
Rev 3-11-57 H.E.P.

FEDERAL ROAD DIVISION NO	DISTRICT	PROJ NO	SHEET NO	TOTAL SHEETS
9	COLORADO	F 005-3(9)	1	

File 167

COLORADO
DEPARTMENT OF HIGHWAYS

PLAN AND PROFILE OF ~~PROPOSED~~ As Const.

FEDERAL AID PROJECT NO. F 005-3(9) UNIT NO.1

STATE HIGHWAY NO. 2

CLEAR CREEK COUNTY

AS CONSTRUCTED

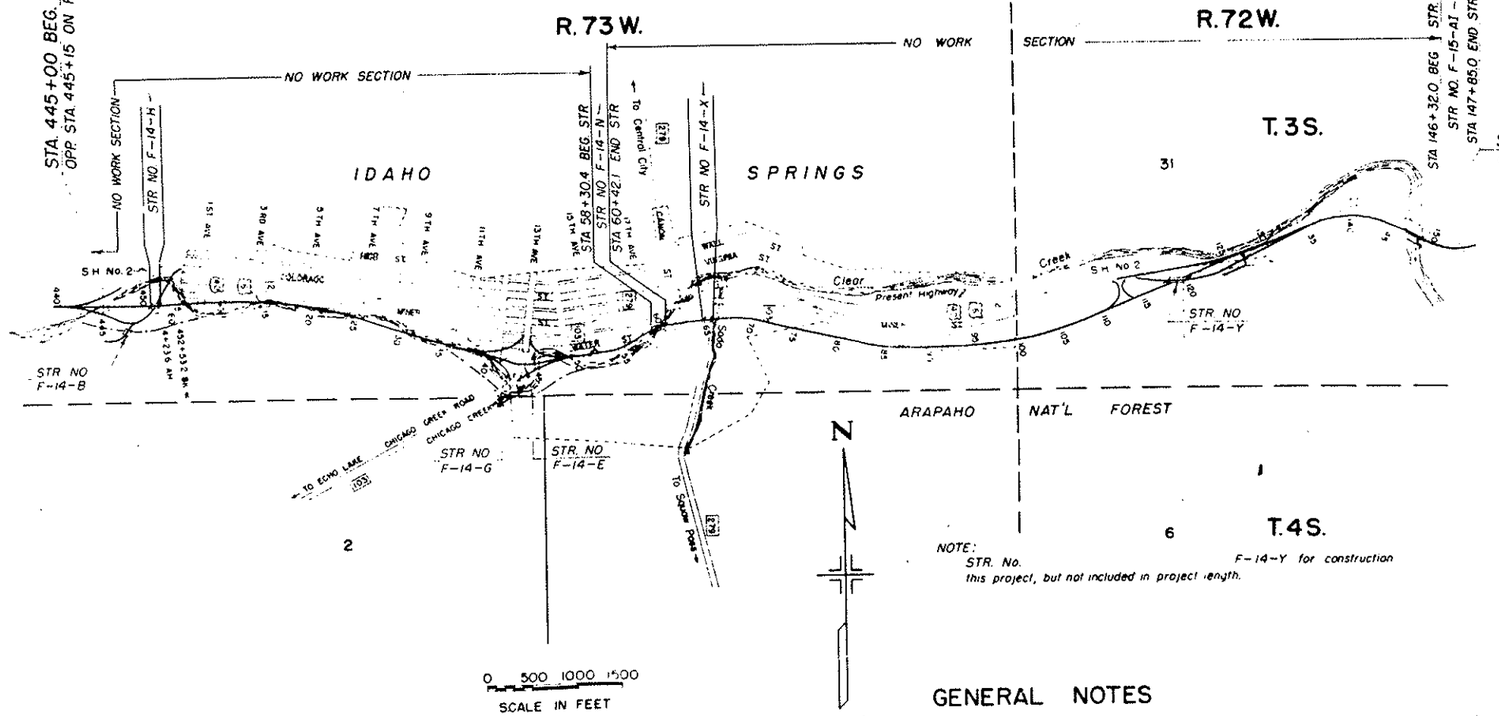
INDEX OF SHEETS

TABULATION OF LENGTH

STATION		TYPE STRUCT. & STRUCT. NO.	STRUCTURE LENGTH OUTSIDE CITY	STRUCTURE LENGTH INSIDE CITY	NO WORK SECTION OUTSIDE CITY	NO WORK SECTION INSIDE CITY
+00 Beg F 005-3(9)					516.5'	
posite 445+15 on FAP 181-F						
+16.5		DOUBLE OVERPASS F-14-H			163.2'	
+79.7					73.5'	
+53.2 Bk. =	EQUATION					
+23.6 Ah.					137.3'	
+60.9	City Limits					789.1'
+50	City Limits				2595.0'	
+45	City Limits					42.5
87.5 Bk. = 39+95.3 Ah.	EQ					1835.1
+30.4	Clear Creek	DOUBLE BRIDGE F-14-N		211.7'		404.9'
+42.1						
+47.0	Sodo Creek	DOUBLE OVERPASS F-14-X				123.7'
+70.7						892.3'
+63.0	City Limits				1262.0'	
+25.0	City Limits					1273.9'
+98.9	City Limits				4619.1'	
+18.0 Bk. =	EQUATION					
+07.1 Ah.					24.9'	
+32.0	Clear Creek	SINGLE BRIDGE F-15-A1	153.0'			
+85.0						
+85.0 End F 005-3(9) =						
pp +41+99.9 on 181-E						
TOTAL			153.0	211.7'	9391.5'	5361.5

SUMMARY	LIN. FT.	MILES
STRUCTURES OUTSIDE CITY	153.0	0.029
STRUCTURES INSIDE CITY	211.7	0.040
NET LENGTH	364.7	0.069
NO WORK SECTION	14753.0	2.794
GROSS LENGTH	15117.7	2.863

STA. 445+00 BEG. F005-3(9)
OPP STA. 445+15 ON FAP 181F



STA. 147+85.0 END F 005-3(9)
OPP STA. 141+99.9 ON FAP 181-E

NOTE:
STR. No. F-14-Y for construction this project, but not included in project length.

SCALES OF ORIGINAL DRAWINGS

ON PLAN, 1 IN. = 100 FT.
ON PROFILE, 1 IN. = 50 FT. HORIZONTAL
1 IN. = 10 & 5 FT. VERTICAL

GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD
GROSS LENGTH OF PROJECT 15,117.7 FT. = 2.863 MI
NET LENGTH OF PROJECT 364.7 FT. = 0.069 MI.

CONVENTIONAL SIGNS

CENTER LINE (PLAN SHEET / TITLE SHEET)
RIGHT OF WAY LINE (ROW MARKER)
COUNTY LINE
TOWNSHIP OR RANGE LINE
LAND LINES (SECTION LINE / 1/4 SECTION LINE)
BARBED WIRE FENCE
COMBINATION WIRE FENCE
TELEPHONE & TELEGRAPH LINES
POWER LINE
DETOUR
PRESENT ROAD (Plan Sheets)
CHANNEL CHANGE

NOTE:
All reference to Project No. should read F 005-3(9), UNIT NO.1

R.C. Hopper, Resident Engineer
James B. Kenney, Inc., Contractor 1956-57
1-Sgl to Kempt 2-11-55

NOTICE TO BIDDERS

IT IS RECOMMENDED THAT BIDDERS ON THIS PROJECT GO OVER THE PLAN DETAILS WITH ONE OF THE FOLLOWING FIELD REPRESENTATIVES OF THIS DEPARTMENT.
MR. F.O. STEARNS, CONST ENGR., DENVER, COLO.
MR R.C HOPPER RES. ENGR., IDAHO SPRINGS, COLO.
HOME PHONE 493

COLORADO
DEPARTMENT OF HIGHWAYS

APPROVED
Mead G. Watkins 11-23-56
CHIEF ENGINEER DATE

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED
DATE
DISTRICT ENGINEER

GENERAL NOTES

This project is to be constructed in conformity with the Standard Specifications of the Colorado Department of Highways, adopted June 1, 1952.

All quantities on preliminary plans are to be considered approximate only

All poles encroaching on construction are to be moved by the owners.

The force account item, 'Clearing of Building Sites, including Removal of Foundations and Appurtenances,' shall include removal of all foundations, wells, backfilling of cellars, cess pools, wells, etc., to provide neat road-side conditions. It is estimated that this item applies at the following location. Sta 58+-62+.

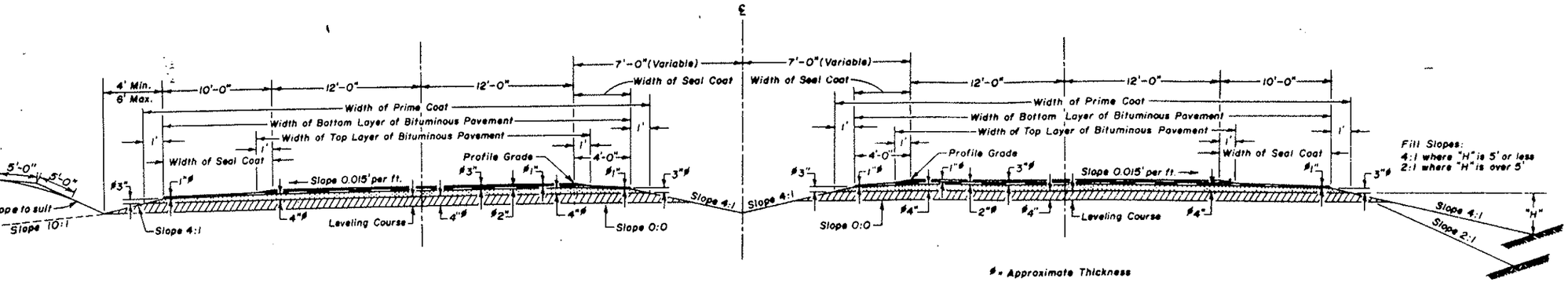
If excavation operations develop materials which will stand on slopes steeper than slope stake lines, the Department reserves the right to change cut slopes during the progress of such excavations.

Excess material that may be developed during construction shall be used to fill old channel.

Rev 11-19-56 T.M.C.

FEDERAL ROAD DIVISION NO.	DISTRICT	PROJ. NO.	SHEET NO
9	COLORADO	F 005-3(9)	1A

TYPICAL CROSS SECTION OF IMPROVEMENT

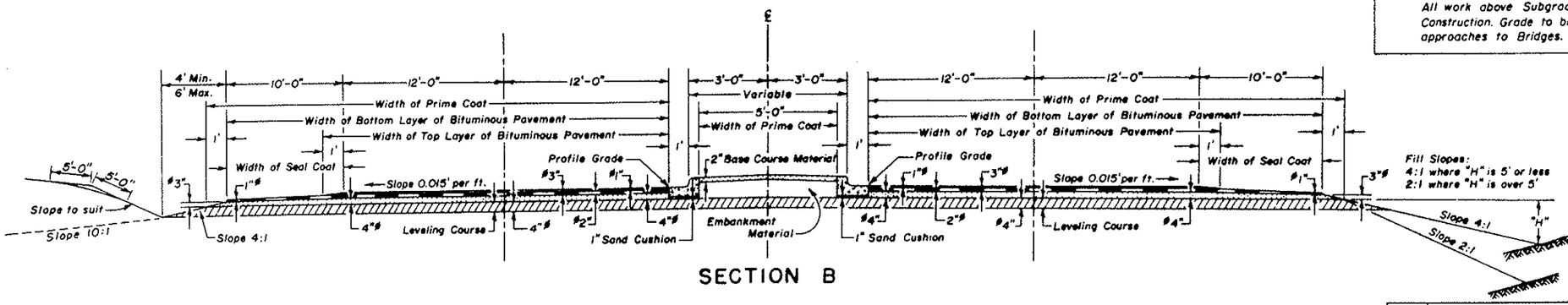


= Approximate Thickness

SECTION A

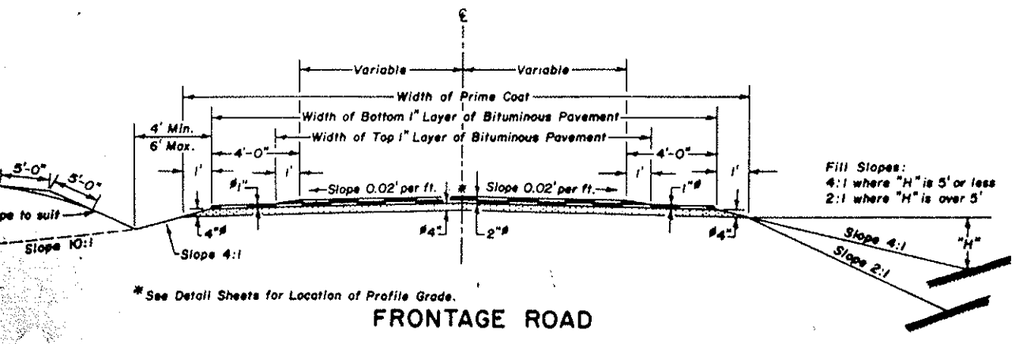
NOTE: Bottom Layer of Bituminous Surfacing shall be completed for full width before Top Layer of Bituminous Surfacing is placed. Paving joints in Top Layer will overlap min. 1 ft. over joints in Bottom Layer.

NOTE:
All work above Subgrade is for Future Construction. Grade to be as required for approaches to Bridges.



SECTION B

NOTE: See Standard M-2-EM for Details of Cut Slope Treatment, Flaring and Widening.



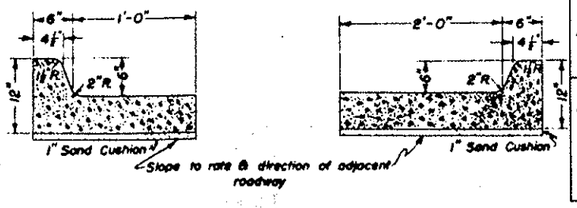
* See Detail Sheets for Location of Profile Grade.

FRONTAGE ROAD

Excavation or Borrow below 4:1 and/or 10:1 will not be permitted.

The depth and width of the side ditch shall be varied where necessary in order to provide proper drainage and/or entrance to drainage structures.

DETAILS OF CONCRETE COMBINATION CURB AND GUTTER

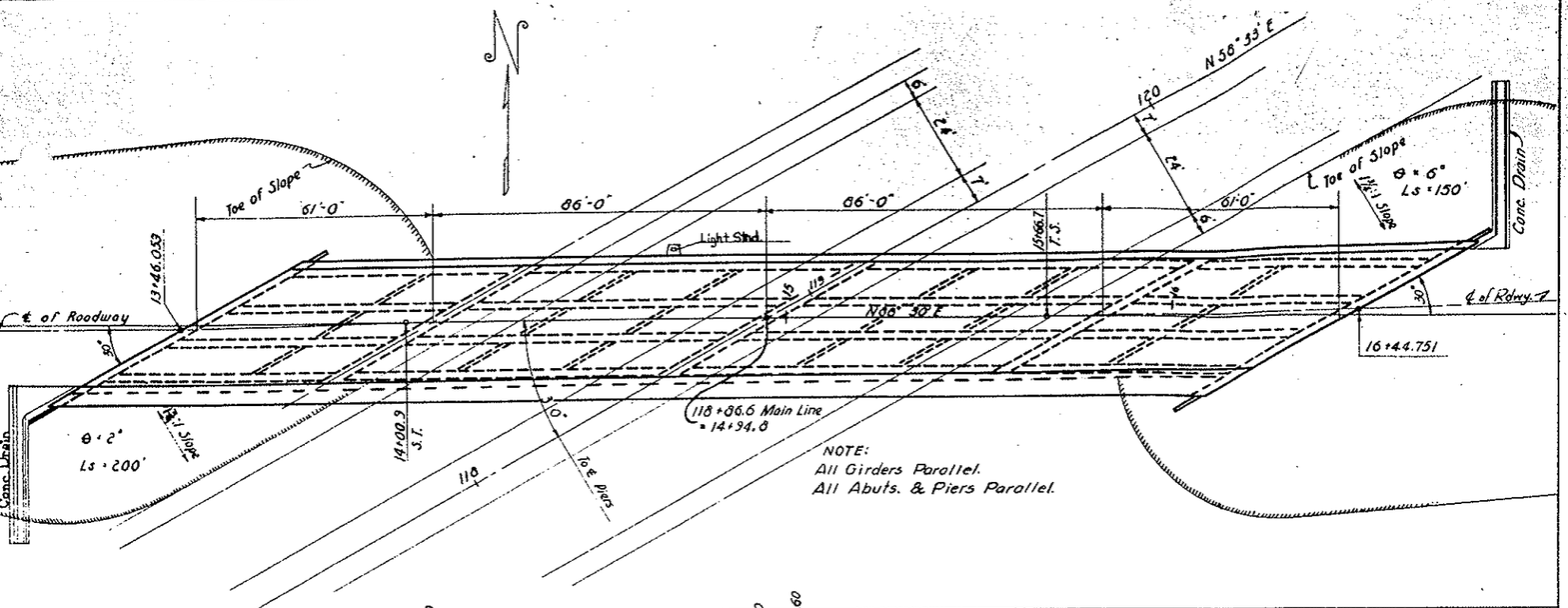


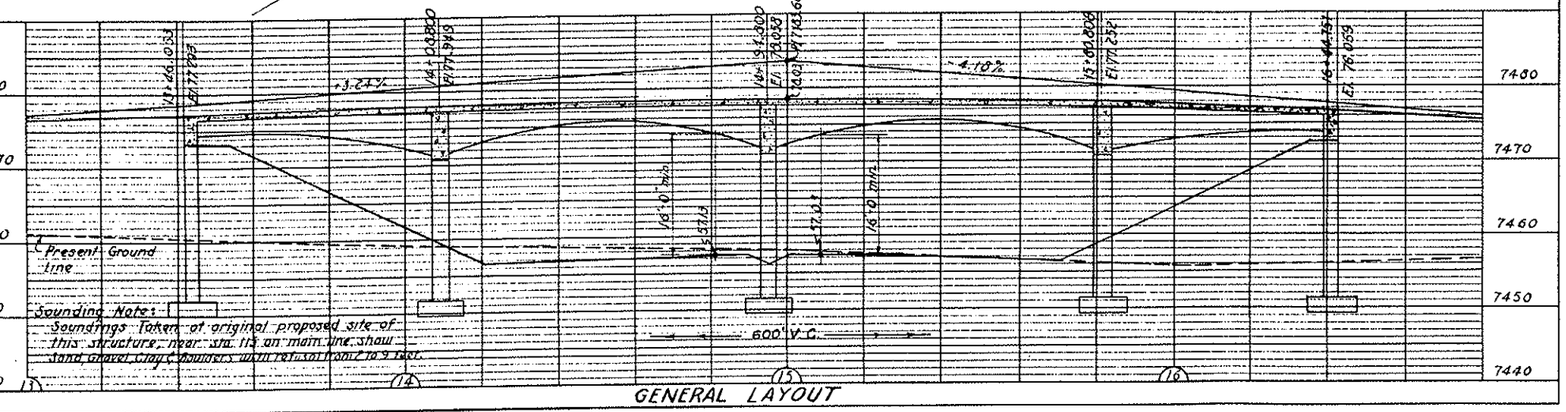
LIST OF STRUCTURES

NOTE NO.	LOCATION	DESCRIPTION	MISCELLANEOUS
*13	58+30.4 to 60+42.1	Bridge (Details on Sheet Nos. 37-47)	Quantities in Summar
*13A	59+	Remove Bridge.	Remove Bridge
20	114+50 to 119+40	Remove Guard Fence Lt.	Removing 515 Lin. Ft. Guard Fence.
21	118+8.7	Underpass Structure (Details on Sheet Nos. 20-28). (Sta. 13+46.1 to 16+44.8 on East connecting line)	Quantities in Summa
22	120+00 to 121+50	Remove Fence Rt.	Removing 200 Lin. Ft. Fence.
23	146+32 to 147+85	Bridge Rt. (Details on Sheet Nos. 29-31)	Quantities in Summar
20A	114+ to 119+	Relocate Football Field & Grandstands. (Details on Sheet No. 74A).	Relocate Grandstan
20B	115+ to 119+	Relocate Fence & Corral.	Force Acc't - Reloca Fence & Corral.

* Inside Idaho Springs

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.
	COLO.	F003-3(9)	20

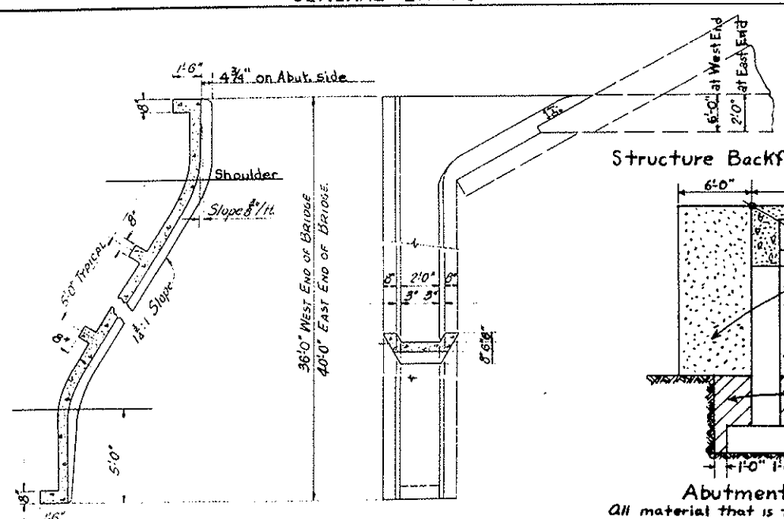




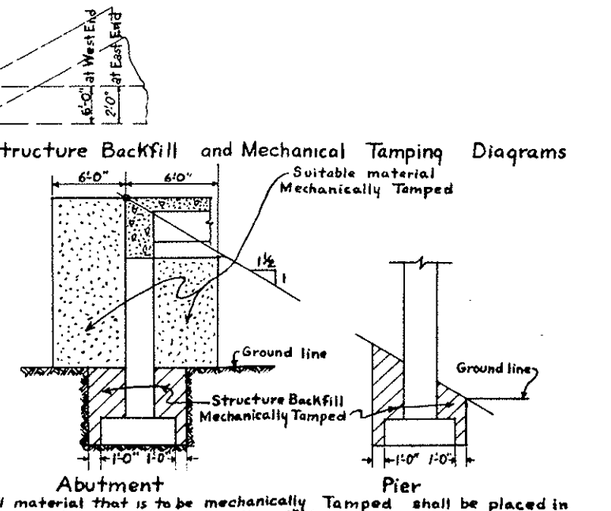
SUMMARY OF QUANTITIES

	ITEM	DESCRIPTION	UNIT	SUPERSTR.	ABUT. 1	PIER 2	PIER 3	PIER 4	ABUT. 5	TOTAL
	14g	Common Excavation (Str.)	Cu.Yd.		83	111	100	78	48	420
	16a	Structure Backfill (Class 1)	Cu.Yd.		66	85	75	56	35	317
	16c	Mechanical Tamping	Hour		43	9	8	13	43	116
	42b	Treated Bridge Timber	Mft.bm.		0.241				0.253	0.494
*	46a	Class "A" Concrete	Cu.Yd.	510	32.5	50.1	50.1	50.1	33.2	786
	47	Reinforcing Steel (Inc. 1% ± for Overrun)	Lb.	191750	7370	7850	7850	7850	7435	230105
	48	Structural Steel (½% added for Paint)	Lb.	24400	715				715	25830
	90a	1½" Electrical Conduit with Junction Boxes.	Lin. Ft.	605						605

* Includes 7 cu. yd. Class "A" Concrete for Concrete drains.



DETAIL OF CONC. DRAINS



All material that is to be mechanically Tamped shall be placed in horizonal layers not more than 6" in depth and tamped before the next layer is placed.

GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS APPLICABLE TO THE PROJECT
ALL CONCRETE SHALL BE CLASS "A" AND AIR ENTRAINED AS SPECIFIED
ALL CONCRETE SURFACES EXPOSED TO NORMAL VIEW BY HIGHWAY TRAFFIC INCLUDING WING SURFACES SHALL RECEIVE CLASS 1 SURFACE FINISH.
CONCRETE GIRDERS, FLOOR SLABS, AND CURBS SHALL BE POURED MONOLITHICALLY.
FORMS FOR CONCRETE SURFACES EXPOSED IN THE FINISHED WORK SHALL BE CONSTRUCTED OF SHIPLAP OR TONGUE AND GROOVE LUMBER S 3 S UNLESS FACED WITH PANEL BOARD
FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED
SOUNDINGS AND DEPTH OF FOOTING SHOWN ARE IN ACCORDANCE WITH THE BEST AVAILABLE DATA AND WHEN DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REDESIGN IS NECESSARY.
ALL REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A 305-50T OR THE LATEST REVISION THEREOF, AND SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE NUMBER DESIGNATION AND THE STATION NUMBER OF THE PROJECT. SECONDARY BARS WHEN SPLICED SHALL LAP 20 DIAMETERS OF THE BAR. DIMENSIONS FOR REINFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTER LINE OF THE BAR.
ALL STRUCTURAL STEEL SHALL BE PAINTED ONE SHOP COAT OF ZINC CHROMATE AND TWO FIELD COATS OF ALUMINUM, UNLESS OTHERWISE NOTED, EXCEPT THE UNEXPOSED PORTION OF STEEL PILING NEED NOT BE PAINTED.
HANDRAIL BOLTS SHALL HAVE HEX HEADS, NUTS, AND LOCK WASHERS UNLESS OTHERWISE SPECIFIED AND ALL RIVETS, EXCEPT AS NOTED ARE ¾" DIA. AND SHALL BE POWER DRIVEN.
WHEN TREATED TIMBER OR PILING IS SHOWN ON THE DRAWING THE PRESERVATIVE FOR TREATMENT SHALL BE CREOSOTE OIL.
WHEN EXCAVATING FOR FOOTINGS THE FINAL ONE FOOT IN DEPTH SHALL BE DONE BY HAND LABOR METHODS.
PRIMARY BARS SHALL NOT BE SPLICED EXCEPT BY PERMISSION OF THE ENGINEER. WHEN PRIMARY BARS ARE SPLICED THEY SHALL LAP 24 DIAMETERS FOR BARS NEAR TOP OF BEAMS AND GIRDERS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS AND 20 DIAMETERS FOR BARS NEAR BOTTOM OF MEMBERS.

STRUCTURE NO. F-14-Y

LOADING DATA

LIVE LOAD A.A.S.H.O. (M 20-S18-44)
DEAD LOAD ASSUMES 15 LBS PER SQ FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ½ INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA

A.A.S.H.O. 1933 UNIT STRESSES, EXCEPT AS NOTED

Reinforcing Steel f_s 20000 lbs. per sq. in.
Structural Steel f_s 18000 lbs. per sq. in.
f_c = 1000 lbs. per sq. in.
n = 10

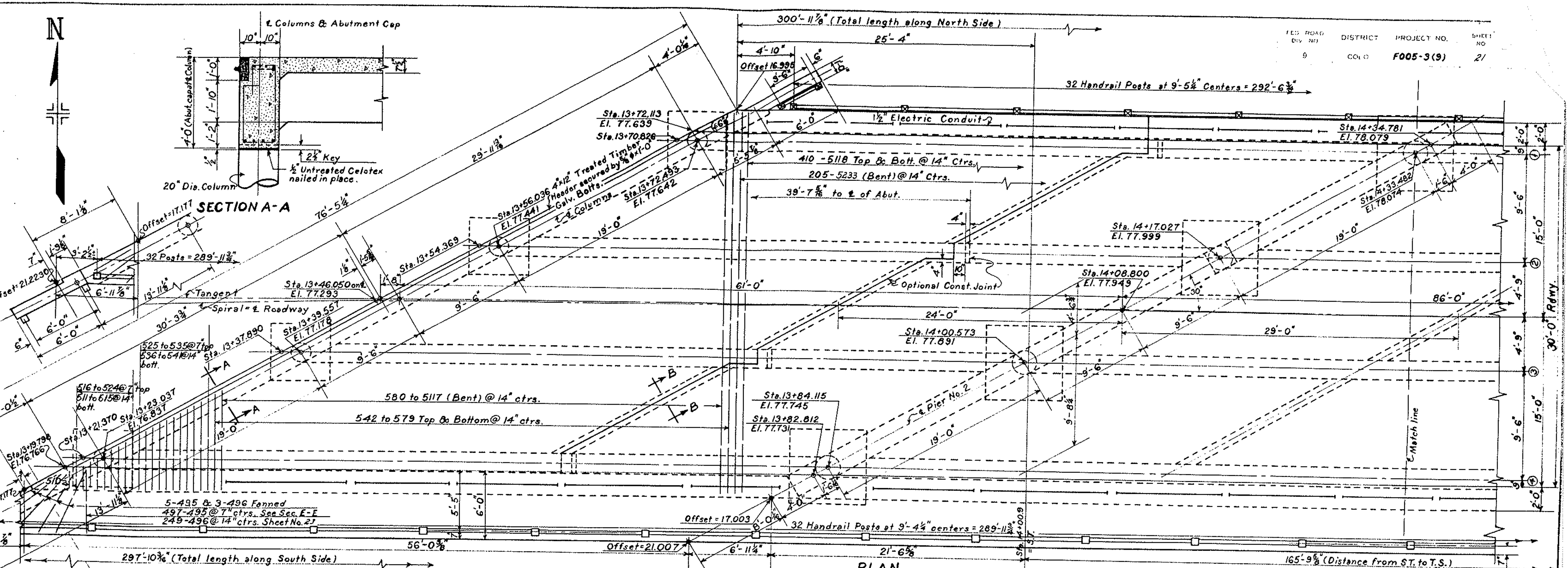
COLORADO
DEPARTMENT OF HIGHWAYS

4 Spans 61'-86'-86'-61' Continuous Concrete Slab & Girder Bridge
30'-0" Roadway, 60° Skew Rt.

Across Interchange
Sta. 13+46.053 to 16+44.751
Near Idaho Spgs. Sec. 31 T. 3S R. 72W.

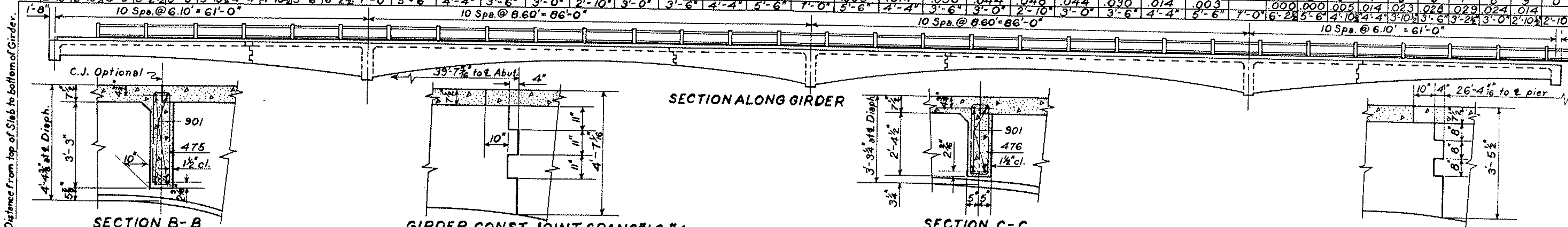
Designed by E.R.S	Approved by C.H. Kennedy
Made by	Bridge Engineer
Checked by	Date: Aug. 31, 1956

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.
9	COLO.	F005-3(9)	21



Point	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Camber for Dead Load (Not incl. in Elev. on plan Sheet) feet		.014	.024	.029	.028	.023	.014	.005	.000	.000		.003	.014	.030	.044	.048	.044	.030	.014	.003
Distance from top of Slab to bottom of Girder	2'-10"	2'-10½"	3'-0"	3'-2½"	3'-6"	3'-10½"	4'-4"	4'-10½"	5'-6"	6'-2½"	7'-0"	5'-6"	4'-4"	3'-6"	3'-0"	2'-10"	3'-0"	3'-6"	4'-4"	5'-6"

Point	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
Camber for Dead Load (Not incl. in Elev. on plan Sheet) feet		.003	.014	.030	.044	.048	.044	.030	.014	.003		.000	.000	.005	.014	.023	.028	.029	.024	.014	
Distance from top of Slab to bottom of Girder	7'-0"	5'-6"	4'-4"	3'-6"	3'-0"	2'-10"	3'-0"	3'-6"	4'-4"	5'-6"	7'-0"	6'-2½"	5'-6"	4'-10½"	4'-4"	3'-10½"	3'-6"	3'-2½"	3'-0"	2'-10½"	2'-10"



...tion on Tangent	13+20.00	13+25.00	13+30.00	13+35.00	13+40.00	13+45.00	13+50.00	13+55.00	13+60.00	13+65.00	13+70.00
...stance-tan. to N.Curb											
...way elev. at N.Curb											
...way elev. at ℄ Girder 2								77.428	77.490	77.549	77.606
...way elev. at ℄ Roadway							77.349	77.417	77.481	77.543	77.601
...way elev. at ℄ Girder 3					77.185	77.262	77.336	77.406	77.473	77.536	77.596
...tan-tan. to S.Curb	15.155	15.127	15.104	15.083	15.066	15.051	15.038	15.028	15.020	15.013	15.009
...w... elev. at S.Curb	76.77	76.869	76.964	77.055	77.143	77.227	77.307	77.382	77.454	77.522	77.585

...tion on Tangent	13+75.00	13+80.00	13+85.00	13+90.00	13+95.00	S.T. = 14+009	14+05.00	14+10.00	14+15.00	14+20.00
...stance-tan. to N.Curb	14.995	14.997	14.999	14.100	15.000	15.000	15.000	15.000	15.000	15.000
...way elev. at N.Curb	77.668	77.716	77.762	77.807	77.848	77.894	77.924	77.957	77.988	78.015
...way elev. at ℄ Girder 2	77.660	77.711	77.759	77.805	77.847	77.894	77.924	77.957	77.988	78.015
...way elev. at ℄ Roadway	77.656	77.709	77.758	77.804	77.847	77.894	77.924	77.957	77.988	78.015
...way elev. at ℄ Girder 3	77.653	77.706	77.756	77.803	77.846	77.894	77.924	77.957	77.988	78.015
...tan-tan. to S.Curb	15.005	15.003	15.001	15.000	15.000	15.000	15.000	15.000	15.000	15.000
...w... elev. at S.Curb	77.644	77.701	77.753	77.8008	77.845	77.894	77.924	77.957	77.988	78.015

TABLE SHOWING OFFSET DISTANCES AND GRADE ELEVATIONS

STRUCTURE NO. F-14-Y

COLORADO
DEPARTMENT OF HIGHWAYS

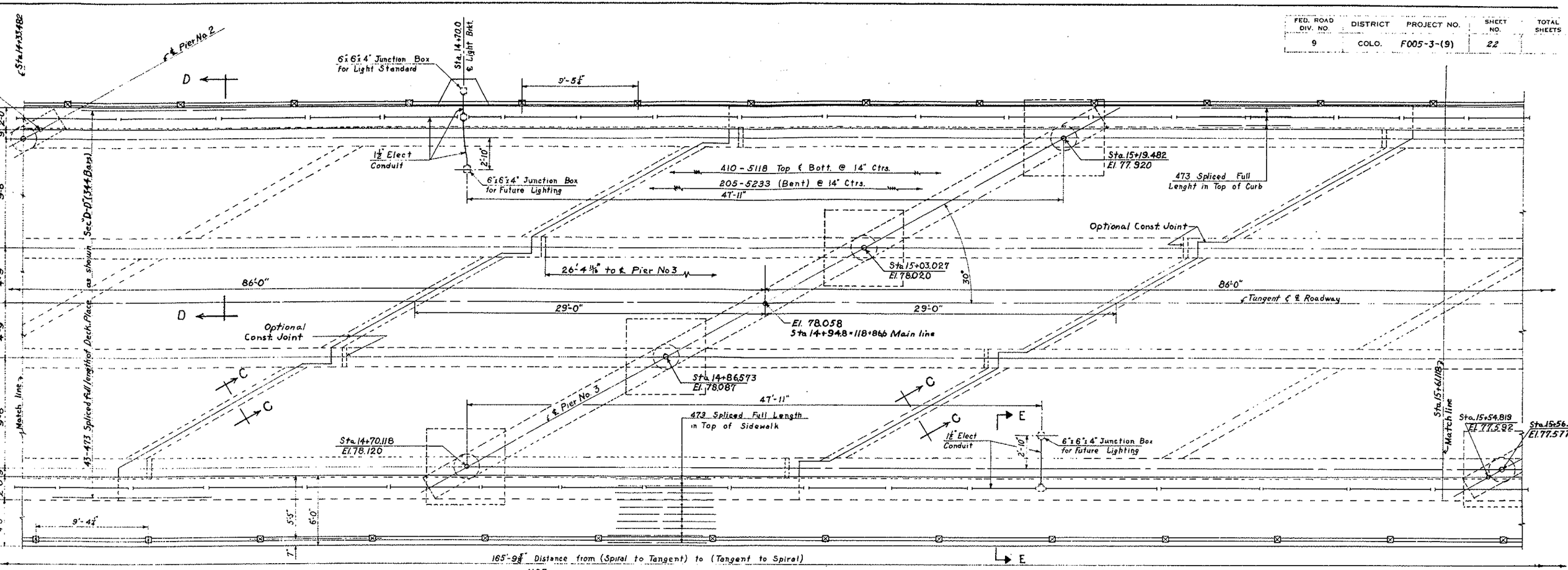
PART PLAN OF SUPERSTRUCTURE GIRDER ELEVATION OPTIONAL CONST. JOINT

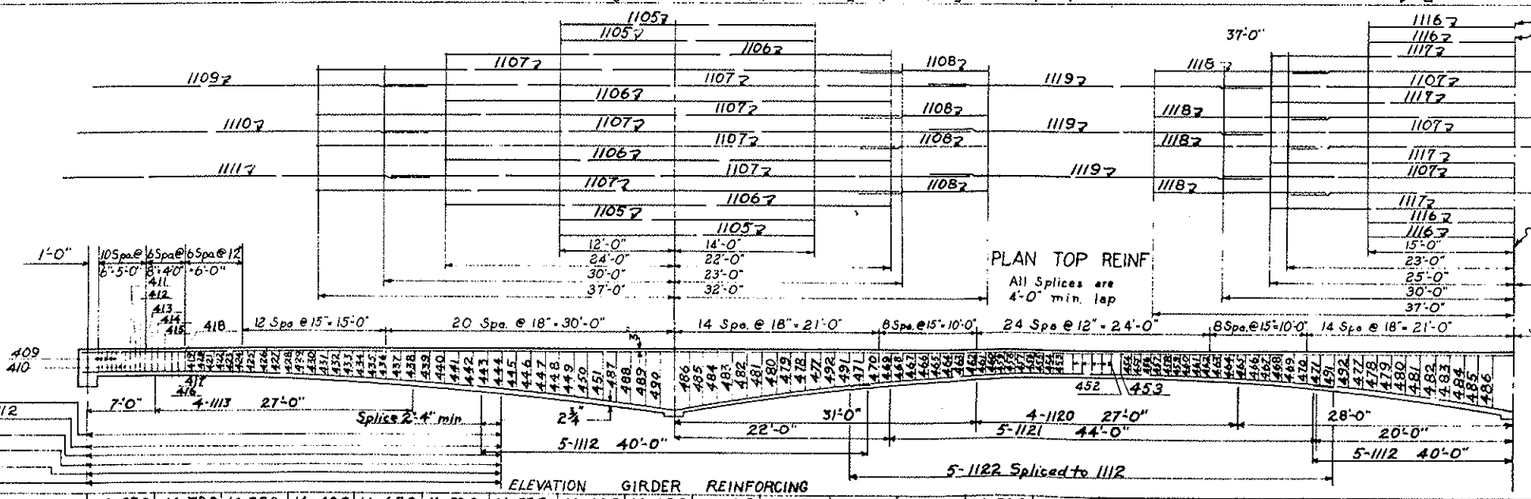
Across Interchange
Sta. 13+46.053 To 16+44.761
Near Idaho Springs Sec. 31 T. 3S R. 72W

Designed by G.H.W. | Approved by E.E. [signature]
Made by T.J.M. | Bridge Engineer
Checked by | Date: Aug 31, 1956

REVISIONS

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F005-3-(9)	22	





ELEVATION GIRDER REINFORCING

ATION ON TANGENT	14+25.0	14+30.0	14+35.0	14+40.0	14+45.0	14+50.0	14+55.0	14+60.0	14+65.0	14+70.0	14+75.0	14+80.0	14+85.0	14+90.0	14+95.0	15+00.0	15+05.0	15+10.0	15+15.0	15+20.0	15+25.0	15+30.0	15+35.0	15+40.0	15+45.0	15+50.0	15+55.0	15+60.0
AD ELEV. CURB TO CURB (NO CROWN)	78.040	78.061	78.079	78.094	78.107	78.116	78.121	78.124	78.124	78.110	78.114	78.104	78.092	78.076	78.057	78.03	78.010	77.982	77.951	77.916	77.879	77.838	77.795	77.748	77.698	77.645	77.590	77.530

TABLE SHOWING GRADE ELEVATIONS

STRUCTURE NO. F-14-Y

COLORADO
DEPARTMENT OF HIGHWAYS

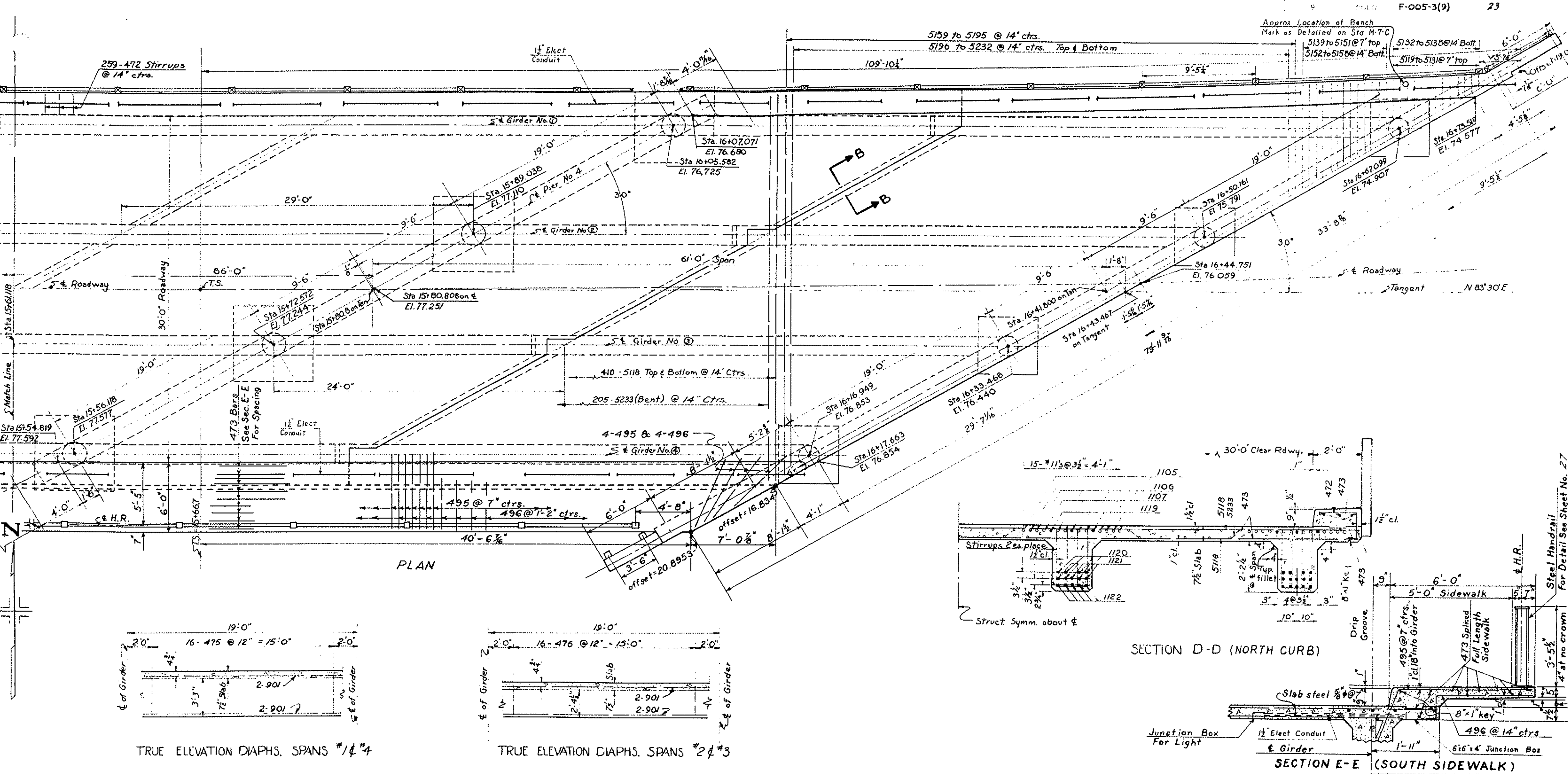
PART PLAN OF SUPERSTRUCTURE
REINFORCING STEEL FOR GIRDERS

Across Interchange
Sta. 13+46.053 to 16+44.751
Near Idaho Springs Sec. 31 T. 3 S. R. 72 W.

Designed by G.H.W.
Made by T.J.M.
Checked by

Approved by [signature]
Bridge Engineer
Date: Aug. 31, 1956

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9		F-005-3(9)	23	



PLAN
Approx. Location of Bench Mark as Detailed on Sta. M-7-C
5159 to 5195 @ 14" ctrs.
5196 to 5232 @ 14" ctrs. Top & Bottom
259-472 Stirrups @ 14" ctrs.
1½" Elect Conduit
℄ Girder No. ①
℄ Girder No. ②
℄ Girder No. ③
℄ Girder No. ④
℄ Pier No. 4
℄ Roadway
61'-0" Span
410-5118 Top & Bottom @ 14" Ctrs.
205-5233(Bent) @ 14" Ctrs.
473 Bars See Sec. E-E For Spacing
4-495 & 4-496
495 @ 7" ctrs.
496 @ 1'-2" ctrs.
℄ H.R.
Tangent N 83°30'E
Match Line
SECTION D-D (NORTH CURB)
30'-0" Clear Rdwy.
Stirrups 2 ea. place
Struct. Symm. about ℄
Drip Groove
SECTION E-E (SOUTH SIDEWALK)
5'-0" Sidewalk
Steel Handrail For Detail See Sheet No. 27
Slab steel
8"×1" key
496 @ 14" ctrs.
Junction Box For Light
1½" Elect Conduit
℄ Girder
6⅛"×4" Junction Box
473 Spliced Full Length Sidewalk
495 @ 7" ctrs. 1'cl. 18" into Girder
4" at no crown Portion of Bridge
TRUE ELEVATION DIAPHS. SPANS #1 & #4
16-475 @ 12" = 15'-0"
TRUE ELEVATION DIAPHS. SPANS #2 & #3
16-476 @ 12" = 15'-0"

...TION ON TANGENT	T.S. = 15+66.7	15+75.00	15+80.00	15+85.00	15+90.00	15+95.00	16+00.00	16+05.00	16+10.00	16+15.00	16+20.00
...STANCE BETWEEN TAN ℄ NO. CURB	15.000	15.001	15.003	15.009	15.020	15.035	15.058	15.088	15.127	15.176	15.236
...WAY ELEVATION AT NORTH CURB	77.446	77.328	77.248	77.159	77.063	76.961	76.849	76.731	76.605	76.472	76.330
...ELEVATION AT ℄ GIRDER ②	77.446	77.333	77.259	77.180	77.096	77.009	76.916	76.820	76.719	76.615	76.506
...LEVATION AT ℄ ROADWAY	77.446	77.335	77.263	77.189	77.111	77.031	76.947	76.860	76.770	76.677	76.581
...WAY ELEVATION AT ℄ GIRDER ③	77.446	77.337	77.268	77.198	77.126	77.053	76.978	76.901	76.823	76.744	76.663
...TANCE BETWEEN TAN ℄ SOUTH CURB	15.000	14.999	14.996	14.991	14.980	14.965	14.943	14.913	14.875	14.826	
...WAY ELEVATION AT SOUTH CURB	77.446	77.341	77.279	77.218	77.159	77.100	77.044	76.988	76.933	76.879	

...TION ON TANGENT	16+25.00	16+30.00	16+35.00	16+40.00	16+45.00	16+50.00	16+55.00	16+60.00	16+65.00	16+70.00
...STANCE BETWEEN TAN ℄ NO. CURB	15.310	15.396	15.498	15.615	15.751	15.904	16.079	16.273	16.489	16.730
...WAY ELEVATION AT NORTH CURB	76.181	76.026	75.868	75.706	75.542	75.374	75.203	75.031	74.859	74.689
...ELEVATION AT ℄ GIRDER ②	76.393	76.277	76.159	76.039	75.918	75.795				
...LEVATION AT ℄ ROADWAY	76.481	76.379	76.274	76.165	76.054	75.939				
...WAY ELEVATION AT ℄ GIRDER ③	76.582	76.499	76.414							
...TANCE BETWEEN TAN ℄ SOUTH CURB										
...WAY ELEVATION AT SOUTH CURB										

TABLE SHOWING SPIRAL OFFSETS AND ELEVATIONS AT EAST END OF BRIDGE

COLORADO
DEPARTMENT OF HIGHWAYS
PART PLAN OF SUPERSTRUCTURE REINFORCING STEEL FOR DIAPHS.

Interchange
Sta. 13+46.053 to 16+44.751
Near Idaho Springs Sec. 31 T. 3S R. 72W

Designed by G.H.W. | Made by T.J.M. | Checked by
Approved by [signature] Bridge Engineer
Date: Aug. 31, 1956

STRUCTURE No. F-14-Y

REVISIONS

FED. ROAD DIV. NO	DISTRICT	PROJECT NO.	SHEET NO	TOTAL SHEETS
9	COLO.	F005-3(9)	24	

PLAN

ELEVATION ABUTMENT No. 1
MAXIMUM TOE PRESSURE = 3.5 TONS / SQ. FT.

SEC. J-J

SECTION D - D

DETAIL OF KEY

SECTION E - E
View is normal to girder

PLAN ABUTMENT No. 5

ELEVATION ABUTMENT NO. 5
MAXIMUM TOE PRESSURE = 3.5 TONS / SQ. FT

SEC. K-K

SECTION F-F
TYPICAL FOR EACH ABUTMENT COLUMN

SECTION G-G

SECTION H-H

STRUCTURE NO. F-14-Y

COLORADO
DEPARTMENT OF HIGHWAYS

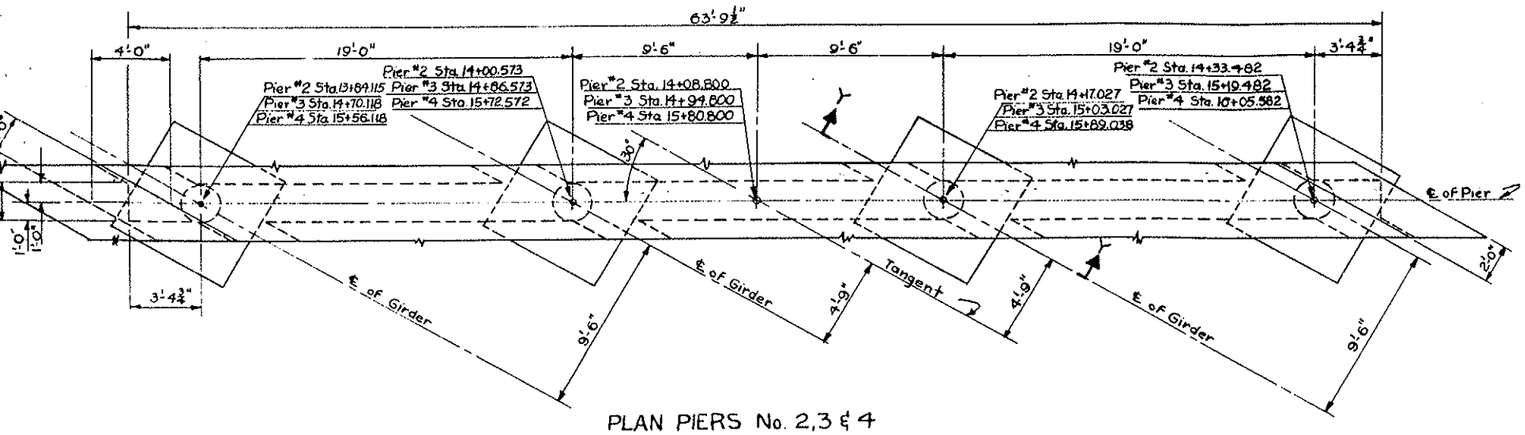
DETAILS ABUTMENT No. 1
DETAILS ABUTMENT No. 5

Across Interchange
Sta. 13+46.053 to 16+44.751
Near Idaho Springs Sec. 31 T. 3 S R. 72 W

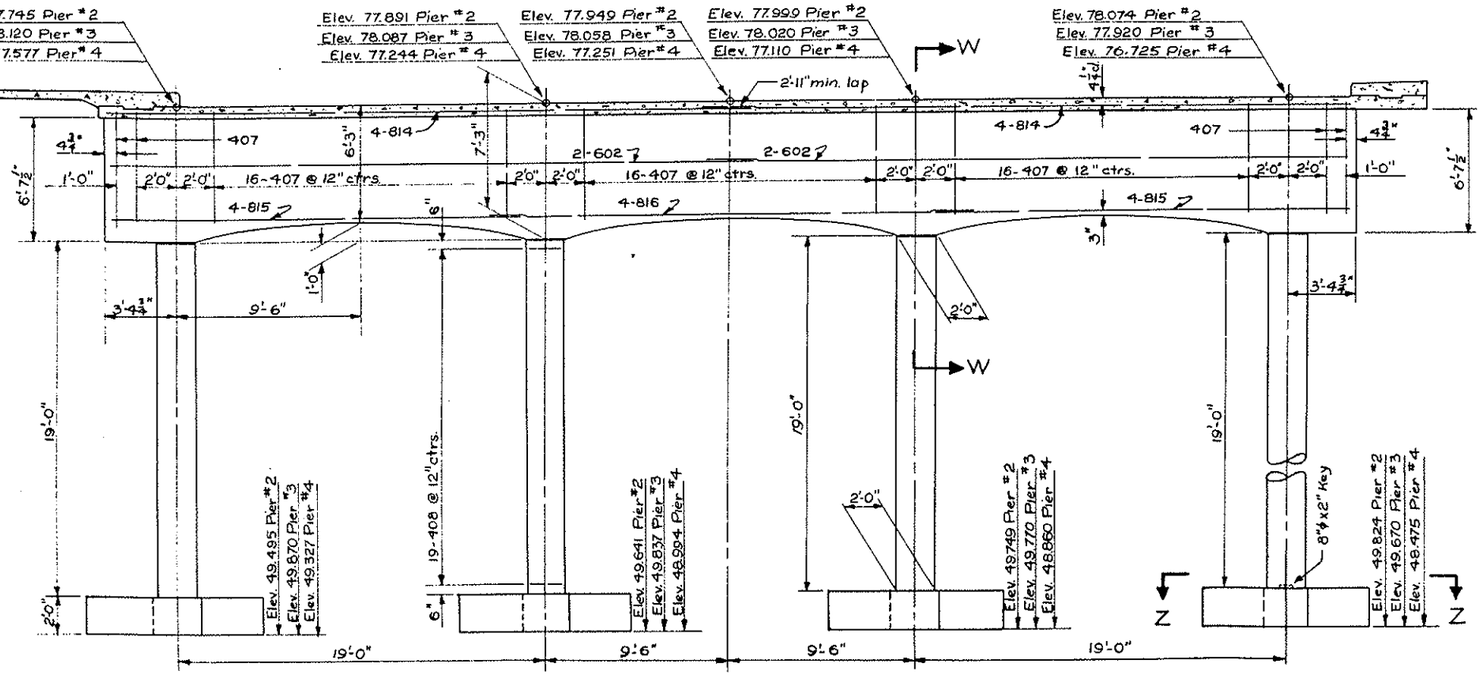
Designed by G. H.W.
Made by T. J. M.
Checked by

Approved by C. D. Hurtado
Bridge Engineer
Date: Aug. 31, 1956

FED. ROAD DIV. NO	DISTRICT	PROJECT NO	SHEET NO	TOTAL SHEETS
9	COLO.	F 005-3(9)	23	

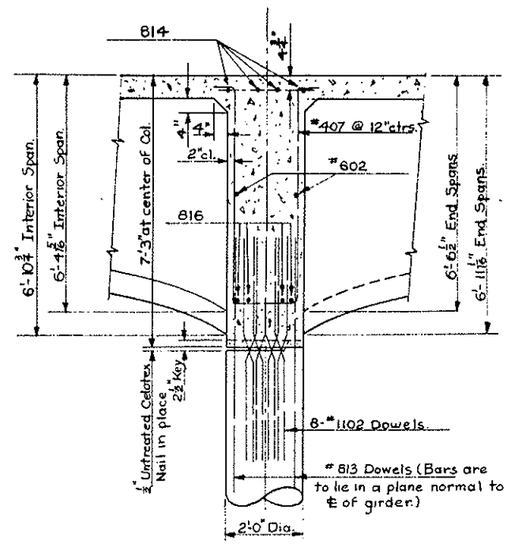


PLAN PIERS No. 2, 3 & 4

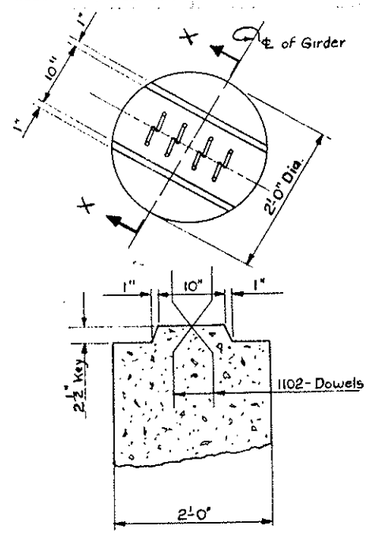


ELEVATION PIERS No. 2, 3 & 4
Max. Toe Pressure 4.4 Tons per sq. ft.

Note: All dimensions to reinforcing steel are to centerline of bar unless noted.

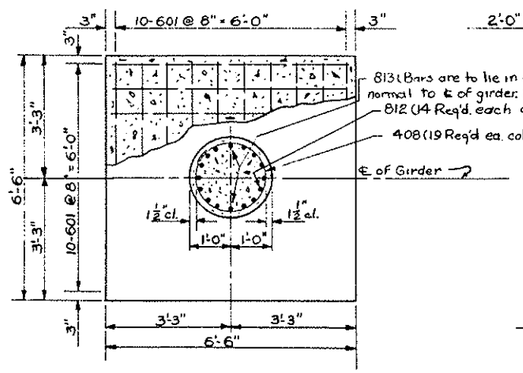


SECTION "W-W"

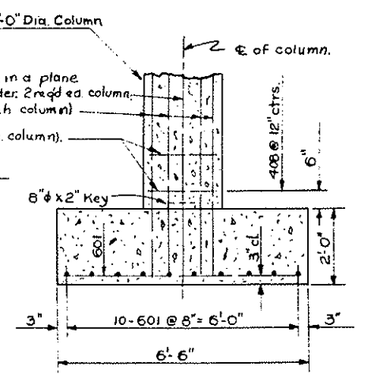


SECTION "X-X"

DETAIL OF KEY AT TOP OF COLUMN



SECTION "Z-Z"



SECTION "Y Y"

STRUCTURE NO F-14-Y

COLORADO
DEPARTMENT OF HIGHWAYS

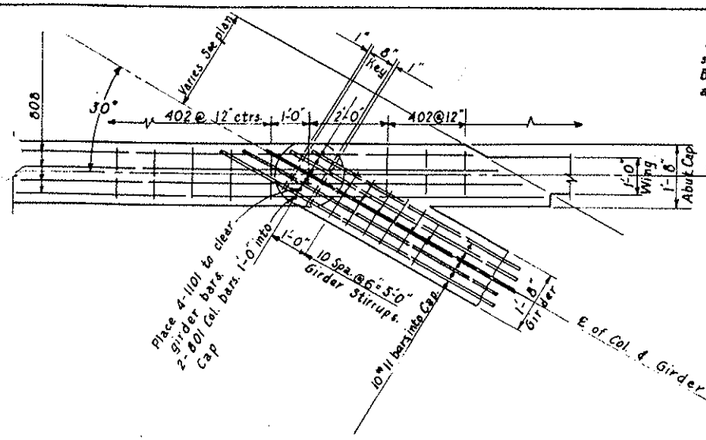
DETAILS OF PIERS

Across Interchange
Sta. Sta. 13+46.053 to 16+44.751
Near Idaho Springs Sec. 31 T. 3S R. 72W

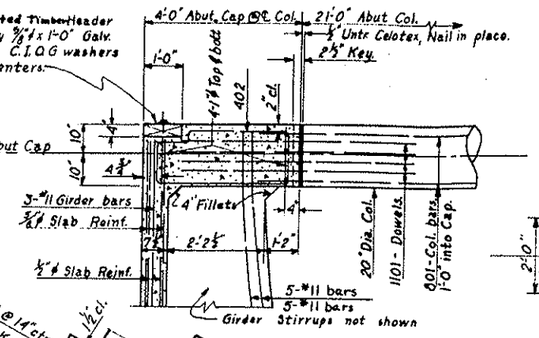
Designed by G.H.W.
Made by J.R.J.
Checked by

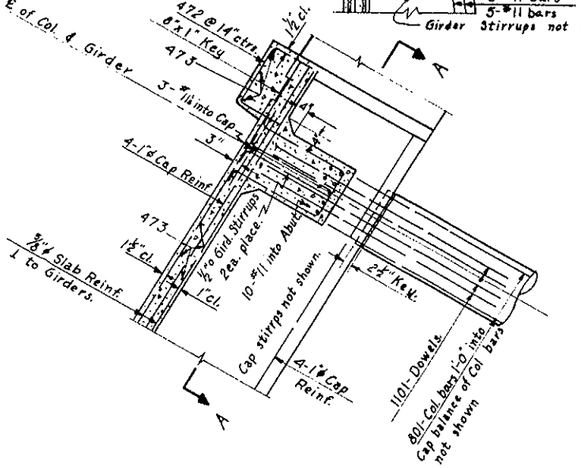
Approved by C. H. Rautenstrauch
Bridge Engineer
Date: Aug. 31, 1956

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F005-3 (9)	26	

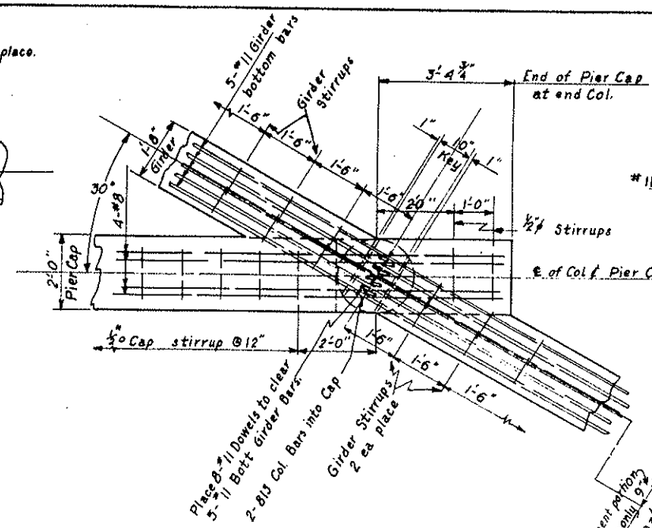


SECTION "A A"

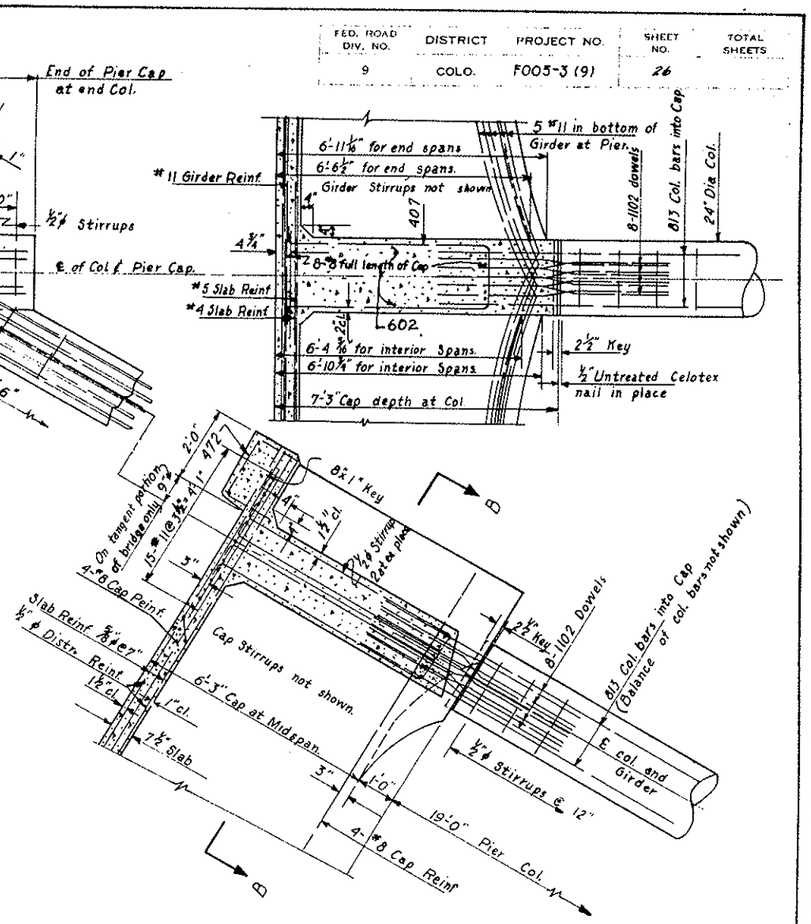




DETAIL AT INTERSECTION OF GIRDER, ABUT CAP AND COLUMN



SETION " B B"



DETAIL AT INTERSECTION OF GIRDER, PIER CAP AND COLUMN

STRUCTURE NO. F-14-Y

COLORADO
DEPARTMENT OF HIGHWAYS

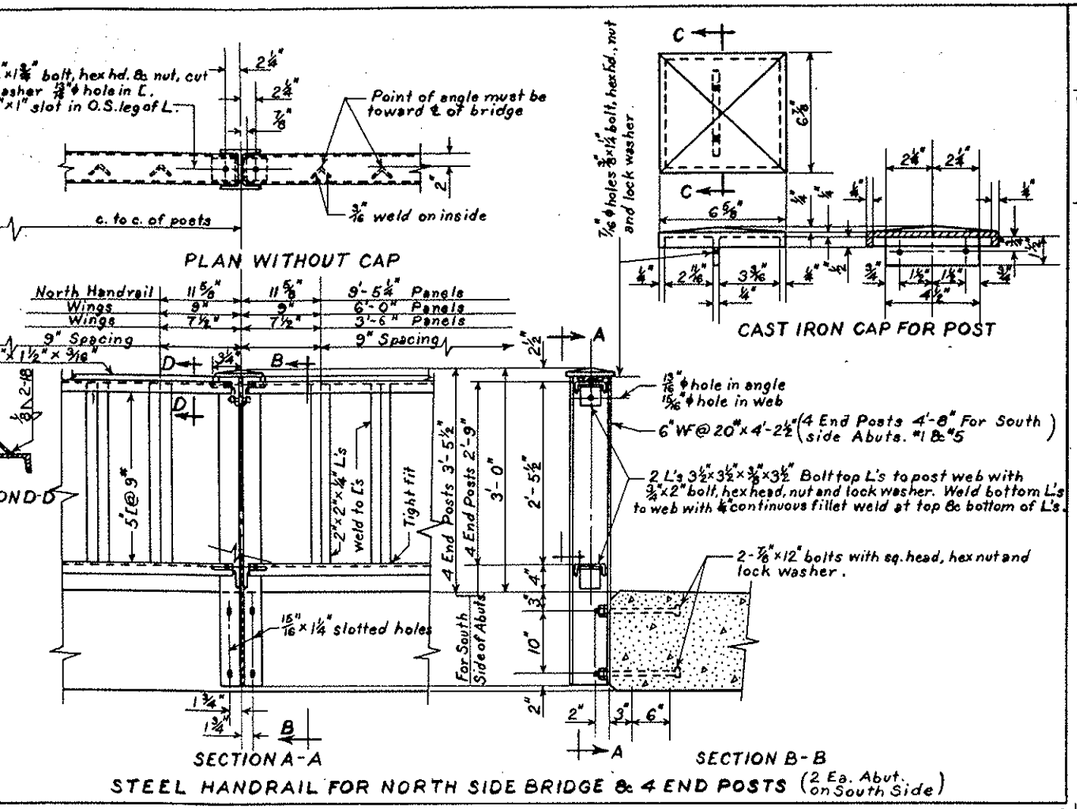
MISC. DETAIL

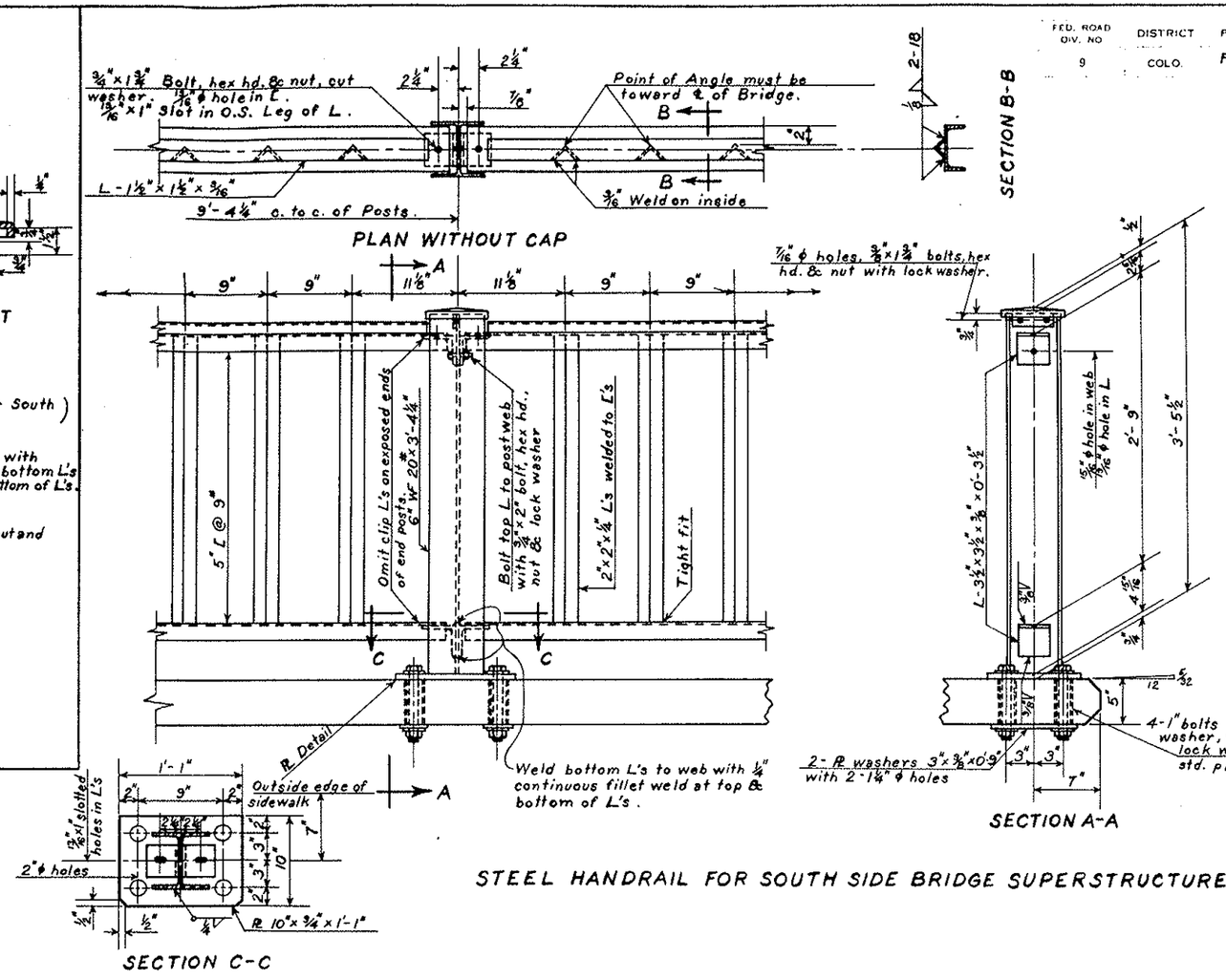
Area: Interchange
Sta. 13+46.053 to 16+44.751
Near Idaho Springs Sec. 31 T 3 S R 72 W

Designed by G.H.W.	Approved by D.C. Kinnebrew
Drawn by J.R.J.	Bridge Engineer
Checked by	Date Aug. 31, 1956

REVISIONS

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F 005-3(9)	27	





STRUCTURE NO. F-14-Y

COLORADO
DEPARTMENT OF HIGHWAYS

DETAILS OF HANDRAIL

Across Interchange
Sta. 13+46.053 To 16+44.751
Near Idaho Springs Sec. 31 T. 3S R. 72W

Designed by	Approved by A. B. Stanbaugh
Made by J.R.J.	Bridge Engineer
Checked by	Date: June 3rd, 1956

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F 005-3(9)	28	

BAR LIST - SUPERSTRUCTURE

Mark	Size	No. Req'd	length	Type	Dimensions ℓ	Dimensions m
409	½"φ	80	6'-8½"	VI	2'-6¾"	11"
410	φ	32	6'-8¾"	VI	2'-6⅞"	11"
411	½"φ	32	6'-9"	VI	2'-7"	11"
412	½"φ	16	6'-9¼"	VI	2'-7⅛"	11"
413	½"φ	32	6'-9½"	VI	2'-7¼"	11"
414	½"φ	16	6'-9¾"	VI	2'-7⅜"	11"
415	½"φ	16	6'-10"	VI	2'-7½"	11"
416	½"φ	16	6'-10¼"	VI	2'-7⅝"	11"
417	½"φ	16	6'-10¾"	VI	2'-7⅞"	11"
418	½"φ	16	6'-11"	VI	2'-8"	11"
419	½"φ	16	6'-11½"	VI	2'-8¼"	11"
420	½"φ	16	7'-0¼"	VI	2'-8⅜"	11"
421	½"φ	16	7'-1"	VI	2'-9"	11"
422	½"φ	16	7'-1¾"	VI	2'-9⅜"	11"
423	½"φ	16	7'-2½"	VI	2'-9¾"	11"
424	½"φ	16	7'-3¼"	VI	2'-10⅛"	11"
425	½"φ	16	7'-4¼"	VI	2'-10⅝"	11"
426	½"φ	16	7'-5½"	VI	2'-11¼"	11"
427	½"φ	16	7'-7"	VI	3'-0"	11"
428	½"φ	16	7'-8¼"	VI	3'-0⅝"	11"
429	½"φ	16	7'-9¾"	VI	3'-1⅜"	11"
430	½"φ	16	7'-11¼"	VI	3'-2⅛"	11"
431	½"φ	16	8'-0¾"	VI	3'-2⅞"	11"
432	½"φ	16	8'-2½"	VI	3'-3¾"	11"
433	½"φ	16	8'-4¼"	VI	3'-4⅝"	11"
434	½"φ	16	8'-6¼"	VI	3'-5⅝"	11"
435	½"φ	16	8'-8¼"	VI	3'-6⅝"	11"
436	½"φ	16	8'-10¼"	VI	3'-7⅝"	11"
437	½"φ	16	9'-0¼"	VI	3'-8⅝"	11"
438	½"φ	16	9'-3½"	VI	3'-10¼"	11"
439	½"φ	16	9'-6¼"	VI	3'-11⅝"	11"
440	½"φ	16	9'-9¼"	VI	4'-1⅛"	11"
441	½"φ	16	10'-0¼"	VI	4'-2⅝"	11"
442	½"φ	16	10'-3½"	VI	4'-4¼"	11"
443	½"φ	16	10'-6¾"	VI	4'-5⅞"	11"
444	½"φ	16	10'-10¼"	VI	4'-7⅝"	11"
445	½"φ	16	11'-1¾"	VI	4'-9⅜"	11"
446	½"φ	16	11'-5¼"	VI	4'-11⅛"	11"
447	½"φ	16	11'-9"	VI	5'-1"	11"
448	½"φ	16	12'-1"	VI	5'-3"	11"
449	½"φ	16	12'-5"	VI	5'-5"	11"
450	½"φ	16	12'-9"	VI	5'-7"	11"
451	½"φ	16	13'-1¼"	VI	5'-9⅛"	11"
452	½"φ	80	6'-8½"	VI	2'-6¾"	11"
453	½"φ	32	6'-9"	VI	2'-7"	11"
454	½"φ	32	6'-9¼"	VI	2'-7⅛"	11"
455	½"φ	32	6'-9¾"	VI	2'-7⅜"	11"
456	½"φ	32	6'-10¼"	VI	2'-7⅝"	11"
457	½"φ	32	6'-11"	VI	2'-8"	11"
458	½"φ	32	6'-11¾"	VI	2'-8⅜"	11"
459	½"φ	32	7'-1"	VI	2'-8⅞"	11"
460	½"φ	32	7'-1¾"	VI	2'-9⅜"	11"
461	½"φ	32	7'-3"	VI	2'-10"	11"
462	½"φ	32	7'-4¼"	VI	2'-10⅝"	11"
463	½"φ	32	7'-6"	VI	2'-11½"	11"
464	½"φ	32	7'-7¾"	VI	3'-0⅜"	11"
465	½"φ	32	7'-9¾"	VI	3'-1⅜"	11"
466	½"φ	32	8'-0"	VI	3'-2½"	11"
467	½"φ	32	8'-2½"	VI	3'-3¾"	11"
468	½"φ	32	8'-5"	VI	3'-5"	11"
469	½"φ	32	8'-7¾"	VI	3'-6⅜"	11"
470	½"φ	32	8'-10½"	VI	3'-7¾"	11"
471	½"φ	32	9'-2¼"	VI	3'-9⅝"	11"
472	½"φ	259	3'-10"	IV	1'-2"	1'-6"
473	½"φ	432	39'-2"	Str.		
475	½"φ	96	8'-8⅝"	III	3'-5 5/16"	7"
476	½"φ	192	6'-11⅝"	III	2'-6 13/16"	7"
477	½"φ	32	10'-2¾"	VI	4'-3⅞"	11"
478	½"φ	32	10'-7½"	VI	4'-6¼"	11"
479	½"φ	32	11'-0¼"	VI	4'-8⅝"	11"
480		32	11'-5½"	VI	4'-11¼"	11"
481	½"φ	32	11'-11"	VI	5'-2"	11"
482	½"φ	32	12'-4½"	VI	5'-4¾"	11"
483	½"φ	32	12'-10½"	VI	5'-7¼"	11"
484	½"φ	32	13'-4½"	VI	5'-10¼"	11"
485	½"φ	32	13'-11"	VI	6'-2"	11"

BAR LIST-SUPERSTRUCTURE (Cont.)

Mark	Size	No. Req'd	length	Type	Dimensions ℓ	Dimensions m
486	½"φ	32	14'-5½"	VI	6'-5¼"	11"
487	½"φ	16	13'-5¾"	VI	5'-11⅜"	11"
488	½"φ	16	13'-10¼"	VI	6'-1⅝"	11"
489	½"φ	16	14'-2¾"	VI	6'-3⅞"	11"
490	½"φ	16	14'-7½"	VI	6'-6¼"	11"
491	½"φ	32	9'-6¼"	VI	3'-11⅝"	11"
492	½"φ	32	9'-10¼"	VI	4'-1⅝"	11"
510	⅝"φ	1	3'-2"	V	1'-8"	1'-6"
511			1'-8"			
to	⅝"φ	1 ea.	by 8" to	Str.		
515			4'-4"			
516			3'-2"		1'-8"	
to	⅝"φ	1 ea.	by 4" to	V	by 4" to	1'-6"
524			5'-10"		4'-4"	
525			4'-8"			
to	⅝"φ	1 ea.	by 4" to	Str.		
535			8'-0"			
536			4'-8"			
to	⅝"φ	1 ea.	by 8" to	Str.		
541			8'-0"			
542			8'-8"			
to	⅝"φ	2 ea.	by 8" to	Str.		
579			33'-4"			
580	⅝"φ	1	9'-0"	IX	5'-0"	3'-5"
581	⅝"φ	1	9'-7¾"	IX	5'-0"	4'-0¾"
582	⅝"φ	1	10'-3½"	IX	5'-0"	4'-8½"
583			11'-1¼"			1'-1¼"
to	⅝"φ	1 ea.	by 7¾" to	X	5'-0"	by 7¾" to
590			15'-7½"			5'-7½"
591			16'-5¼"			1'-0¼"
to	⅝"φ	1 ea.	by 7¾" to	XI	5'-0"	by 7¾" to
597			20'-3¾"			4'-10¾"
598			21'-1½"			1'-3½"
to	⅝"φ	1 ea.	by 7¾" to	XII	5'-0"	by 7¾" to
5105			25'-8"			5'-10"
5106			26'-11¾"			1'-8¾"
to	⅝"φ	1 ea.	by 7¾" to	XIII	5'-0"	by 7¾" to
5111			30'-2½"			4'-11½"
5112			31'-0¼"			1'-4¼"
to	⅝"φ	1 ea.	by 7¾" to	XIV	5'-0"	by 7¾" to
5117			34'-3"			4'-7"
5118	⅝"φ	410	33'-8"	Str.		
5119	⅝"φ	1	2'-7"	V	1'-1"	1'-6"
5120	⅝"φ	1	2'-11"	V	1'-5"	1'-6"
5121	⅝"φ	1	3'-3"	V	1'-9"	1'-6"
5122	⅝"φ	1	3'-6"	V	2'-0"	1'-6"
5123	⅝"φ	1	3'-10"	V	2'-4"	1'-6"
5124	⅝"φ	1	4'-2"	V	2'-8"	1'-6"
5125	⅝"φ	1	4'-6"	V	3'-0"	1'-6"
5126	⅝"φ	1	4'-9"	V	3'-3"	1'-6"
5127	⅝"φ	1	5'-0"	V	3'-6"	1'-6"
5128	⅝"φ	1	5'-4"	V	3'-10"	1'-6"
5129	⅝"φ	1	5'-9"	V	4'-3"	1'-6"
5130	⅝"φ	1	6'-0"	V	4'-6"	1'-6"
5131	⅝"φ	1	6'-3"	V	4'-9"	1'-6"
5132			10"			
to	⅝"φ	1 ea.	by 8" to	Str.		
5138			4'-10"			
5139			4'-10"			
to	⅝"φ	1 ea.	by 4" to	Str.		
5151			8'-10"			
5152			4'-10"			
to	⅝"φ	1 ea.	by 8" to	Str.		
5158			8'-10"			
5159	⅝"φ	1	9'-4"	IX	6'-2"	2'-7"
5160	⅝"φ	1	9'-11"	IX	6'-1"	3'-3"
5161	⅝"φ	1	10'-7"	IX	6'-1"	3'-11"
5162	⅝"φ	1	11'-4"	IX	6'-0"	4'-9"
5163	⅝"φ	1	11'-10"	IX	6'-0"	5'-3"
5164	⅝"φ	1	12'-8"	X	5'-11"	1'-9"
5165	⅝"φ	1	13'-5"	X	5'-11"	2'-6"
5166	⅝"φ	1	14'-0"	X	5'-10"	3'-2"
5167	⅝"φ	1	14'-8"	X	5'-10"	3'-10"
5168	⅝"φ	1	15'-3"	X	5'-9"	4'-6"
5169	⅝"φ	1	15'-11"	X	5'-9"	5'-2"

BAR LIST-SUPERSTRUCTURE (Cont.)

Mark	Size	No. Req'd	length	Type	Dimensions ℓ	Dimensions m
5170	⅝"φ	1	16'-6"	X	5'-8"	5'-10"
5171	⅝"φ	1	17'-4"	XI	5'-8"	1'-3"
5172	⅝"φ	1	18'-1"	XI	5'-8"	2'-0"
5173	⅝"φ	1	18'-8"	XI	5'-8"	2'-7"
5174	⅝"φ	1	19'-4"	XI	5'-7"	3'-4"
5175	⅝"φ	1	20'-1"	XI	5'-7"	4'-1"
5176	⅝"φ	1	20'-6"	XI	5'-6"	4'-7"
5177	⅝"φ	1	21'-4"	XII	5'-6"	1'-0"
5178	⅝"φ	1	22'-0"	XII	5'-6"	1'-8"
5179	⅝"φ	1	22'-7"	XII	5'-5"	2'-4"
5180	⅝"φ	1	23'-4"	XII	5'-5"	3'-1"
5181	⅝"φ	1	23'-4"	XII	5'-5"	3'-8"
5182	⅝"φ	1	24'-9"	XII	5'-5"	4'-6"
5183	⅝"φ	1	25'-2"	XII	5'-4"	5'-0"
5184	⅝"φ	1	25'-11"	XII	5'-4"	5'-9"
5185	⅝"φ	1	26'-8"	XII	5'-4"	6'-6"
5186	⅝"φ	1	27'-6"	XIII	5'-4"	1'-11"
5187	⅝"φ	1	28'-2"	XIII	5'-3"	2'-7"
5188	⅝"φ	1	28'-11"	XIII	5'-3"	3'-4"
5189	⅝"φ	1	29'-7"	XIII	5'-3"	4'-0"
5190	⅝"φ	1	30'-3"	XIII	5'-3"	4'-8"
5191	⅝"φ	1	30'-10"	XIII	5'-3"	5'-4"
5192	⅝"φ	1	31'-8"	XIV	5'-2"	1'-10"
5193	⅝"φ	1	32'-2"	XIV	5'-2"	2'-4"
5194	⅝"φ	1	33'-2"	XIV	5'-2"	3'-4"
5195	⅝"φ	1	33'-10"	XIV	5'-2"	4'-0"
5196			9'-5"			
to	⅝"φ	2 ea.	by 8" to	Str.		
5232			32'-9"			
5233	⅝"φ	205	34'-8"	XIV	5'-0"	5'-0"
901	1⅛"φ	24	60'-0"	Str.		
1105	1⅜"φ	32	26'-0"	Str.		
1106	1⅜"φ	32	46'-0"	Str.		
1107	1⅜"φ	112	60'-0"	Str.		
1108	1⅜"φ	32	13'-0"	Str.		
1109	1⅜"φ	8	35'-2"	Str.		
1110	1⅜"φ	8	36'-8"	Str.		
1111	1⅜"φ	8	38'-3"	Str.		
1112	1⅜"φ	60	41'-0"	VIII		
1113	1⅜"φ	32	27'-0"	Str.		
1114	1⅜"φ	8	43'-11½"	Str.		
1115	1⅜"φ	40	43'-0"	Str.		
1116	1⅜"φ	16	30'-0"	Str.		
1117	1⅜"φ	16	50'-0"	Str.		
1118	1⅜"φ	32	18'-0"	Str.		
1119	1⅜"φ	24	34'-0"	Str.		
1120	1⅜"φ	32	27'-0"	Str.		
1121	1⅜"φ	40	44'-0"	Str.		
1122	1⅜"φ	40	50'-8"	Str.		
1123	1⅜"φ	8	44'-5¾"	Str.		
1124	1⅜"φ	8	45'-0"	Str.		
1125	1⅜"φ	8	45'-6¼"	Str.		
1126	1⅜"φ	8	46'-0½"	Str.		
495	½"φ	506	7'-11"	XV	5'-7"	2'-4"
496	½"φ	256	4'-11"	V	4'-0"	0'-11"
497	½"φ	1	2'-0"	Str.		
498	½"φ	1	3'-0"	Str.		
499	½"φ	1	4'-0"	Str.		
4100	½"φ	6	8'-10"	XV	4'-0"	2'-10"

BAR SUMMARY-SUPERSTRUCTURE

42758 lin. ft. ½"φ @ 0.668#/lin. ft. = 28562 lbs.
25210 lin. ft. ⅝"φ @ 1.043#/lin. ft. = 26294 lbs.
1440 lin. ft. 1⅛"φ @ 3.40#/lin. ft. = 4896 lbs.
24487 lin. ft. 1⅜"φ @ 5.313#/lin. ft. = 130099 lbs.
Plus 1% ± Overrun = 1899 lbs.
Total = 191750 lbs.

BAR LIST ABUTMENT NO. 1

Mark	Size	No. Req'd	length	Type	Dimensions ℓ	Dimensions m
401	½"φ	84	5'-3"	I	1'-5"	10"
402	½"φ	57	10'-3"	II		
403	½"φ	9	10'-3"	III	3'-5½"	1'-4"
404	½"φ	8	8'-0"	Str.		
405	½"φ	14	9'-6"	IV	4'-5"	8"
406	½"φ	2	10'-0"	V	8'-6"	1'-6"
493	½"φ	2	6'-9"	Str.		
501	⅝"φ	56	4'-8"	Str.		
801	1"φ	8	24'-0"	Str.		
802	1"φ	56	22'-6"	Str.		
804	1"φ	6	30'-9"	Str.		
805	1"φ	2	40'-6"	Str.		
806	1"φ	2	29'-6"	Str.		
807	1"φ	4	45'-6"	Str.		
808	1"φ	4	35'-9"	Str.		
1101	1⅜"φ	16	6'-0"	Str.		

BAR SUMMARY ABUTMENT NO. 1

1348 lin. ft. ½"φ @ 0.668#/lin. ft. = 901 lbs.
261 lin. ft. ⅝"φ @ 1.043#/lin. ft. = 272 lbs.
2102 lin. ft. 1"φ @ 2.67#/lin. ft. = 5612 lbs.
96 lin. ft. 1⅜"φ @ 5.313#/lin. ft. = 510 lbs.
Plus 1% Overrun = 75 lbs.
Total = 7370 lbs.

BAR LIST-ABUTMENT NO. 5

Mark	Size	No. Req'd	length	Type	Dimension ℓ	Dimension m
401	½"φ	84	5'-3"	I	1'-5"	10"
402	½"φ	57	10'-3"	II		
403	½"φ	12	10'-3"	III	3'-5½"	1'-4"
404	½"φ	8	8'-0"	Str.		
405	½"φ	12	9'-6"	IV	4'-5"	8"
406	½"φ	2	10'-0"	V	8'-6"	1'-6"
494	½"φ	2	4'-10"	Str.		
501	⅝"φ	56	4'-8"	Str.		
801	1"φ	8	24'-0"	Str.		
802	1"φ	56	22'-6"	Str.		
803	1"φ	4	47'-0"	Str.		
806	1"φ	4	29'-6"	Str.		
817	1"φ	2	35'-9"	Str.		
809	1"φ	4	37'-1"	Str.		
810	1"φ	2	48'-0"	Str.		
811	1"φ	2	25'-0"	Str.		
1101	1⅜"φ	16	6'-0"	Str.		

BAR SUMMARY-ABUTMENT NO. 5

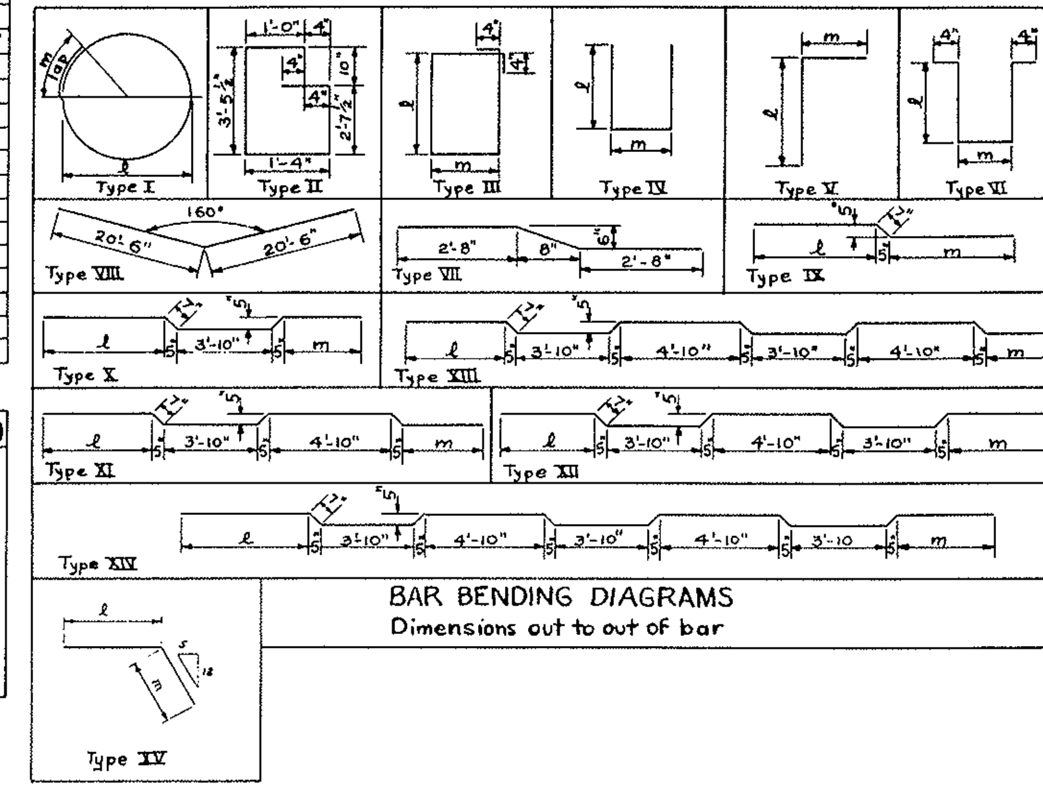
1356 lin. ft. ½"φ @ 0.668#/lin. ft. = 906 lbs.
261 lin. ft. ⅝"φ @ 1.043#/lin. ft. = 272 lbs.
2124 lin. ft. 1"φ @ 2.67#/lin. ft. = 5671 lbs.
96 lin. ft. 1⅜"φ @ 5.313#/lin. ft. = 510 lbs.
Plus 1% ± Overrun = 76 lbs.
Total = 7435 lbs.

BAR LIST - PIER NO. 2
Piers 3 & 4 Same

Mark	Size	No. Req'd	length	Type	Dimensions ℓ	Dimensions m
407	½"φ	52	13'-10½"	VI	5'-9¼"	1'-8"
408	½"φ	76	6'-4"	I	1'-9"	10"
601	¾"φ	80	6'-0"	Str.		
602	¾"φ	4	33'-0"	Str.		
812	1"φ	56	20'-6"	Str.		
813	1"φ	8	24'-0"	Str.		
814	1"φ	8	33'-2"	Str.		
815	1"φ	8	21'-0"	Str.		
816	1"φ	4	24'-8"	Str.		
1102	1⅜"φ	32	6'-2"	VII		

BAR SUMMARY-PIER NO. 2 (3 & 4 SAME)

1209 lin. ft. ½"φ @ 0.668#/lin. ft. = 804 lbs.
612 lin. ft. ¾"φ @ 1.502#/lin. ft. = 919 lbs.
1872 lin. ft. 1"φ @ 2.67#/lin. ft. = 4998 lbs.
197 lin. ft. 1⅜"φ @ 5.313#/lin. ft. = 1047 lbs.
Plus 1% ± Overrun = 82 lbs.
Total = 7850 lbs.



COLORADO
DEPARTMENT OF HIGHWAYS

BAR LIST

Across Interchange
Sta. 13+46.053 to 16+44.751
Near Idaho Springs Sec. 31 T. 3 S R. 72 W

Designed by
Made by R.G.N
Checked by

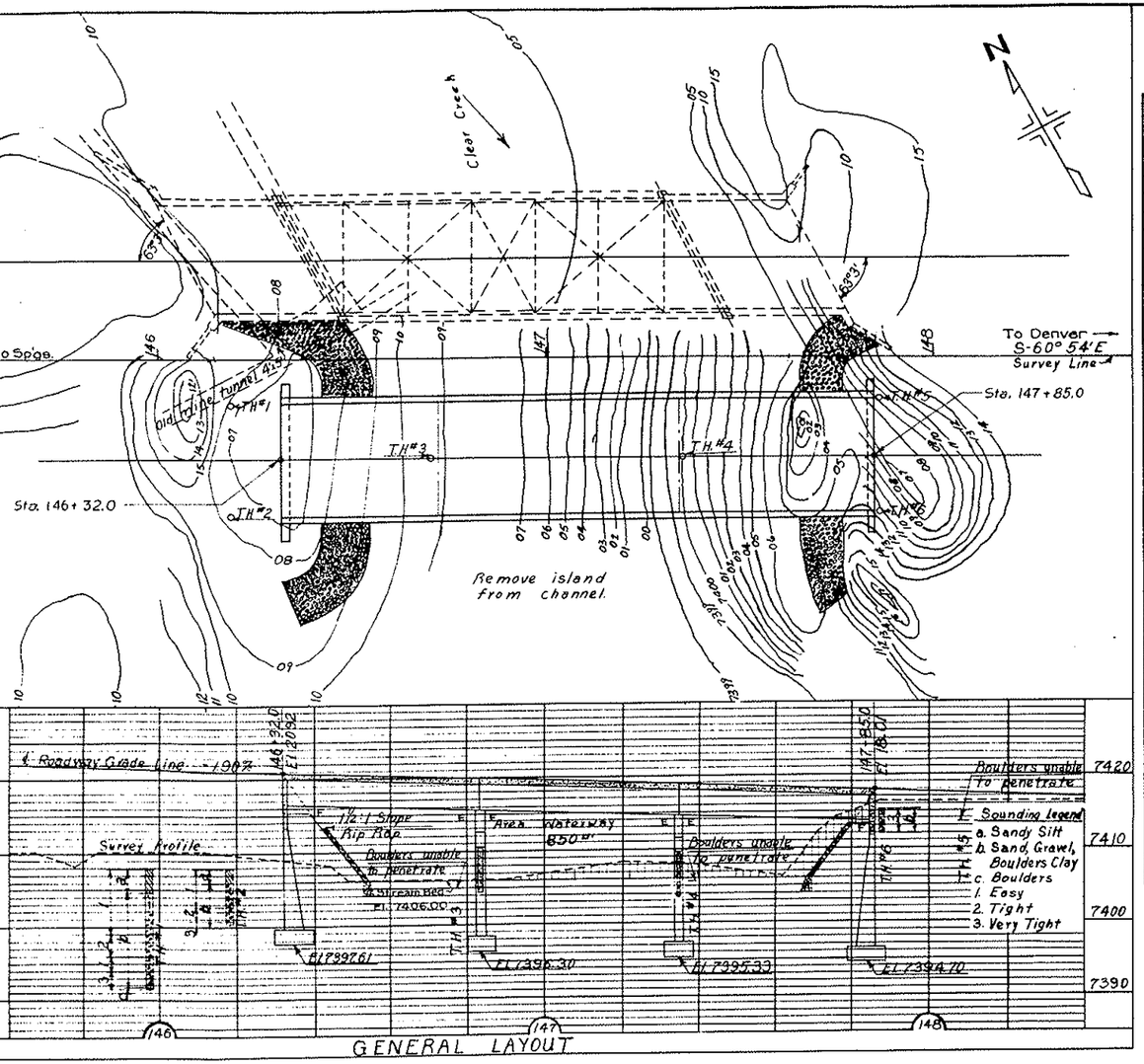
Approved by [signature]
Bridge Engineer
Date: Aug. 31, 1956

STRUCTURE No. F-14-Y

REVISIONS

Revised -11-19-56 Changed No. Reqd of 901 Bars M.E.R

FED ROAD DIV NO	DISTRICT	PROJECT NO	SHEET NO	TOTAL SHEETS
9	COLO	F005-3(9)	29	



GENERAL LAYOUT

BAR LIST SUPERSTRUCTURE

MARK	SIZE	NO. REQD.	LENGTH	TYPE	ℓ	m
401	½" Φ	492	8'-8"	I		
402	½" Φ	105	5'-3"	II	0'-5"	1'-10½"
403	½" Φ	236	25'-11"	Str.		
404	½" Φ	118	25'-9"	Str.		
405	½" Φ	72	3'-7"	II	1'-0"	0'-5½"
406	½" Φ	408	2'-1"	III		
412	½" Φ	4	4'-7"	Str.		
413	½" Φ	4	4'-0"	Str.		
414	½" Φ	4	5'-5"	Str.		
415	½" Φ	4	6'-3"	Str.		
501	⅝" Φ	126	33'-9"	Str.		
502	⅝" Φ	114	34'-6"	VI		
503	⅜" Φ	112	36'-1"	V		
801	1" Φ	14	27'-5"	Str.		
1001	1¼" Φ	36	30'-6"	Str.		
1002	1¼" Φ	24	36'-6"	Str.		
1005	1¼" Φ	36	42'-6"	Str.		
1004	1¼" Φ	24	46'-6"	Str.		
1005	1¼" Φ	40	53'-5"	VII	50'-11"	
1006	1¼" Φ	20	53'-1"	VII	50'-7"	

BAR SUMMARY SUPERSTRUCTURE

15,159 lin.ft. ½" Φ @ 0.668#/lin.ft. = 10,126 lbs.
12,227 " " ⅝" Φ @ 1.043#/" " " = 12,753 "
384 " " 1" Φ @ 2.670#/" " " = 1,025 "
7,819 " " 1¼" Φ @ 4.303#/" " " = 33,645 "
Plus 1% ± Overrun = 571 "
Total = 58,120 lbs

BAR LIST ABUT. 1 (ABUT. 4 Same)

MARK	SIZE	NO. REQD.	LENGTH	TYPE	ℓ	m
408	½" Φ	30	13'-7"	IV	4'-10½"	1'-3"
410	½" Φ	4	14'-7"	II	1'-3"	5'-8½"
411	½" Φ	8	5'-7¾"	Str.		
416	½" Φ	20	8'-1"	II	1'-8½"	2'-0"
417	½" Φ	12	6'-1"	II	1'-8½"	1'-0"
422	½" Φ	4	10'-6"	IX		
504	⅝" Φ	34	6'-3"	Str.		
505	⅝" Φ	12	4'-11"	Str.		
506	⅝" Φ	28	9'-3"	Str.		
507	⅝" Φ	4	21'-3"	Str.		
508	⅜" Φ	4	11'-0"	Str.		
510	⅝" Φ	4	7'-9"	Str.		
601	¾" Φ	5	45'-3"	Str.		
901	1⅛" Φ	4	33'-9"	Str.		
902	1⅛" Φ	2	19'-3"	Str.		
903	1⅛" Φ	1	33'-9"	Str.		
904	1⅛" Φ	1	45'-3"	Str.		
1007	1¼" Φ	4	21'-3"	Str.		
1008	1¼" Φ	4	15'-9"	Str.		
1009	1¼" Φ	4	11'-0"	Str.		

BAR SUMMARY ABUT. 1 (ABUT. 4 Same)

788 lin.ft. ½" Φ @ 0.668#/lin.ft. = 526 lbs.
691 " " ⅝" Φ @ 1.043#/" " " = 721 "
226 " " ¾" Φ @ 1.502#/" " " = 340 "
253 " " 1⅛" Φ @ 3.400#/" " " = 860 "
192 " " 1¼" Φ @ 4.303#/" " " = 826 "
Plus 1% ± Overrun = 32 "
Total = 3305 bs.

BAR LIST PIER 2 & PIER 3

MARK	SIZE	NO. REQD.	LENGTH	TYPE	ℓ	m
418	½" Φ	24	5'-9"	Str.		
419	½" Φ	10	19'-4"	Str.		
420	½" Φ	13	8'-4¾"	VIII	1'-9"	1'-9"
421	½" Φ	13	7'-8"	II	1'-9"	1'-9"
422	½" Φ	4	10'-6"	IX		
509	⅝" Φ	71	10'-8"	II	2'-9"	2'-3"
602	¾" Φ	44	6'-9"	Str.		
802	1" Φ	8	5'-0"	Str.	(Pier No 2 only)	
803	1" Φ	12	18'-0"	Str.		
804	1" Φ	4	15'-9"	Str.		
905	1⅛" Φ	4	33'-6"	Str.		
906	1⅛" Φ	4	19'-4"	Str.		
907	1⅛" Φ	8	12'-0"	Str.		
908	1⅛" Φ	4	33'-6"	Str.		

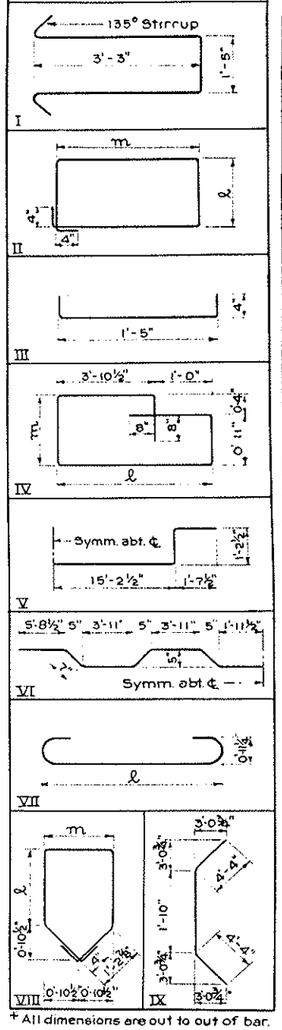
BAR SUMMARY PIER 2

582 lin.ft. ½" Φ @ 0.668#/lin.ft. = 389 lbs.
757 " " ⅝" Φ @ 1.043#/" " " = 790 "
297 " " ¾" Φ @ 1.502#/" " " = 446 "
319 " " 1" Φ @ 2.670#/" " " = 852 "
441 " " 1⅛" Φ @ 3.400#/" " " = 1,499 "
Plus 1% ± Overrun = 39 "
Total = 4,015 lbs.

BAR SUMMARY PIER 3

582 lin.ft. ½" Φ @ 0.668#/lin.ft. = 389 Lbs.
757 " " ⅝" Φ @ 1.043#/" " " = 790 "
297 " " ¾" Φ @ 1.502#/" " " = 446 "
279 " " 1" Φ @ 2.670#/" " " = 745 "
441 " " 1⅛" Φ @ 3.400#/" " " = 1,499 "
Plus 1% ± Overrun = 36 "
Total = 3,905 lbs.

BAR BENDING DIAGRAMS

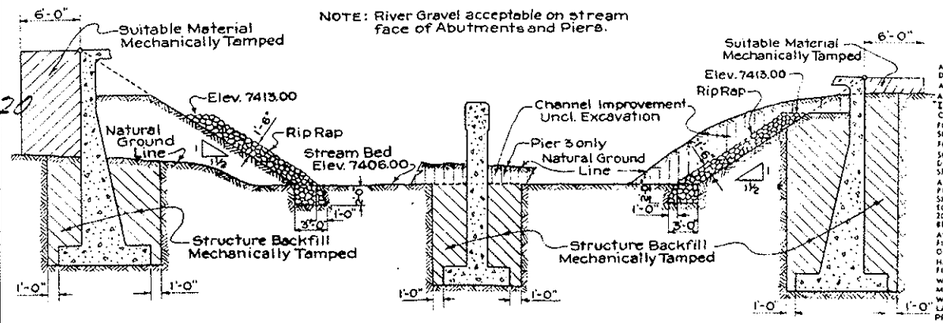


+ All dimensions are out to out of bar.

SUMMARY OF QUANTITIES

DESCRIPTION	UNIT	SUPERSTR.	ABUT. 1	PIER 2	PIER 3	ABUT. 4	TOTAL
Unclassified Excavation	Cu. Yd.						450
Rock Excavation (Str.)	Cu.Yd.						5
Common Excavation (Str.)	Cu Yd.		82	61	67	110	~~192~~ 320
Structure Backfill (Class 1)	Cu.Yd.		70	51	56	143	320
Mechanical Tamping	Hrs.		20	5	6	16	47
Treated Bridge Timber	Mft bm		0.120			0.120	0.240
Class "A" Concrete	Cu Yd.	273	26.8	25.7	25.7	26.8	378
Reinforcing Steel (Includes 1% ± Overrun)	Lbs.	58,120	3,305	4,015	3,905	3,305	72,650
Structural Steel (Includes ½ % ± for Paint)	Lbs.	12,090	580	450	900	580	14,600
Rip Rap (1'-6" thick)	Cu Yd.		130			90	220
Sheet Copper (32 oz)	Lbs.	11					11
Drain Pipe (Conc. Floor) 4" Dia x 2'-0"	Each	6					6
1" Expansion Joint Material (Type 1)	Sq. Ft	68					68

Includes 13,250 lbs. of Steel Handrailing.
Expansion Joint Material to be Type 1, A.A.S.H.O., M 153-54 and to be included in the Bid Price of Class "A" Concrete.



All material that is to be mechanically tamped shall be placed in horizontal layers not more than 6 inches in depth and tamped before the next layer is placed.

STRUCTURE BACKFILL & MECHANICAL TAMPING DIAGRAMS

GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS APPLICABLE TO THE PROJECT
ALL CONCRETE SHALL BE CLASS "A" AND AIR ENTRAINED AS SPECIFIED
ALL CONCRETE SURFACES EXPOSED TO NORMAL VIEW BY HIGHWAY TRAFFIC SHALL RECEIVE CLASS 1 SURFACE FINISH. WING FACES SHALL RECEIVE ORDINARY SURFACE FINISH.
CONCRETE GIRDERS, FLOOR SLABS AND CURBS SHALL BE POURED MONOLITHICALLY
FORMS FOR CONCRETE SURFACES EXPOSED IN THE FINISHED WORK SHALL BE CONSTRUCTED OF SHIPLAP OR TONGUE AND GROOVE LUMBER S 2 S UNLESS FACED WITH PANEL BOARD
FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED
SOUNDINGS AND DEPTH OF FOOTING SHOWN ARE IN ACCORDANCE WITH THE BEST AVAILABLE DATA AND WHEN DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL IN SPECT AND DETERMINE IF REDESIGN IS NECESSARY
ALL REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A 305-53T OR THE LATEST REVISION THEREOF, AND SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE NUMBER DESIGNATION AND THE STATION NUMBER OF THE PROJECT
20 DIAMETERS OF THE BAR. DIMENSIONS FOR RE NFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTER LINE OF THE BAR. SECONDARY BARS WHEN SPLICED SHALL LAP
ALL STRUCTURAL STEEL SHALL BE PAINTED ONE SHOP COAT OF ZINC CHROMATE AND TWO FIELD COATS OF ALUMINUM UNLESS OTHERWISE NOTED EXCEPT THE UNEXPOSED PORTION OF STEEL PILING NEED NOT BE PAINTED
HANDRAIL BOLTS SHALL HAVE HEX HEADS, NUTS AND LOCK WASHERS UNLESS OTHERWISE SPECIFIED AND ALL RIVETS EXCEPT AS NOTED ARE ⅞" DIA AND SHALL BE POWER DRIVEN
WHEN TREATED TIMBER OR PILING IS SHOWN ON THE DRAWING THE PRESERVATIVE FOR TREATMENT SHALL BE CREOSOTE OIL
WHEN EXCAVATING FOR FOOTINGS THE FINAL ONE FOOT IN DEPTH SHALL BE DONE BY HAND LABOR METHODS
PRIMARY BARS SHALL NOT BE SPLICED EXCEPT BY PERMISSION OF THE ENGINEER. WHEN PRIMARY BARS ARE SPLICED THEY SHALL LAP 34 DIAMETERS FOR BARS NEAR TOP OF BEAMS AND GIRDERS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS AND 20 DIAMETERS FOR BARS NEAR BOTTOM OF MEMBERS.

LOADING DATA

LIVE LOAD A A S H O H20-S16-44
DEAD LOAD ASSUMES 15 LBS PER SQ FT ADDITIONAL WEARING SURFACE WHICH INCLUDES THE 2 INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN

DESIGNING DATA

A A S H O 1953 UNIT STRESSES EXCEPT AS NOTED

Reinforcing Steel	fs	20000 lbs per sq in
Structural Steel	fs	18000 lbs per sq in
	fc	1200 lbs per sq in
	n	10

COLORADO DEPARTMENT OF HIGHWAYS

3-SPANS @ 50'-0" CONCRETE SLAB & GIRDER BRIDGE STD STL RAIL 30'-0" R/W'Y 2'-0" CURBS
GENERAL LAYOUT, SUMMARY OF QUANTITIES, GENERAL NOTES

Across Clear Creek
Sta 146+32.0 to 147+85.0
Near Idaho Springs Sec 31 T 3S. R 72W

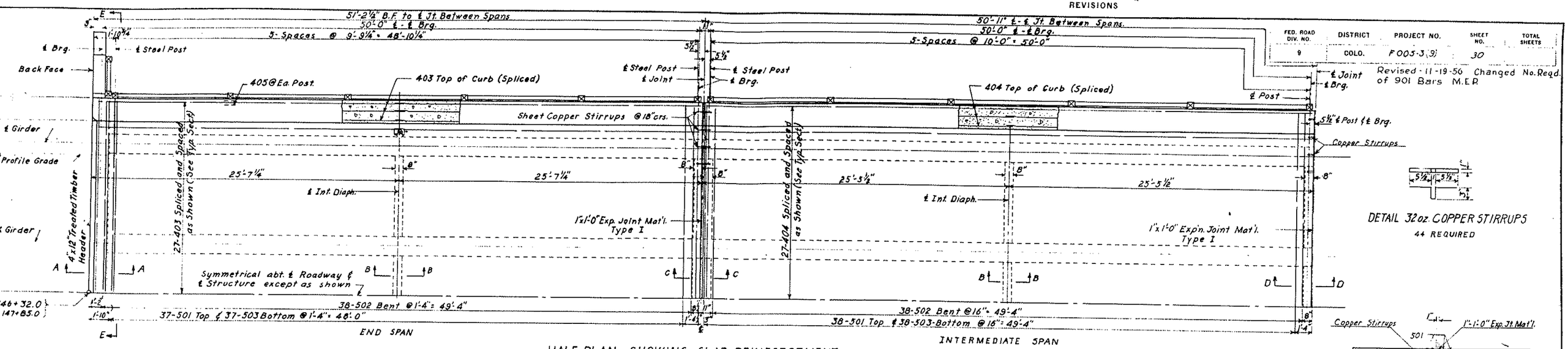
Designed by E F S	Approved by [illegible] Bridge Engineer
Made by E M C	
Checked by	Date Aug. 31, 1956

STRUCTURE NO. F-15-AI

REVISIONS

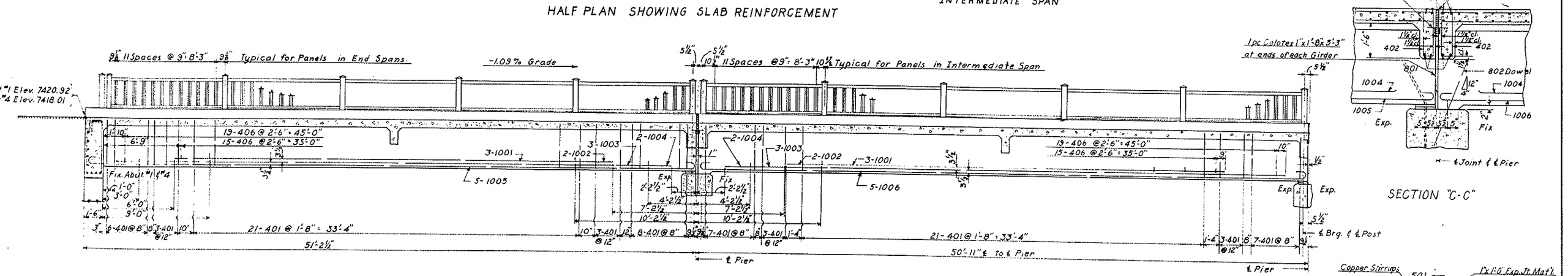
FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F 005-3(9)	30	

Revised - 11-19-56 Changed No. Reqd. of 901 Bars M.E.R.



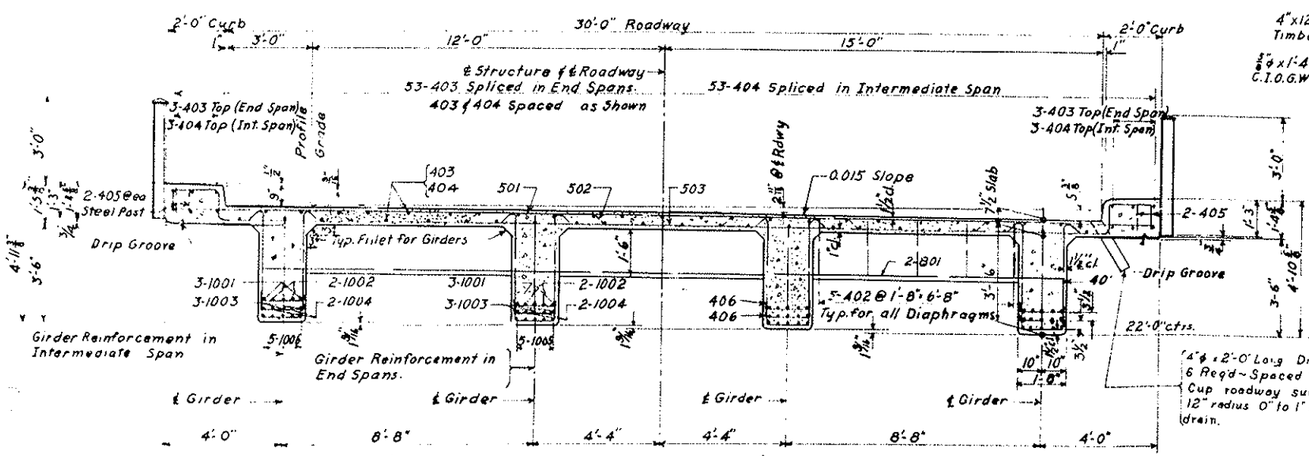
HALF PLAN SHOWING SLAB REINFORCEMENT

DETAIL 32 oz. COPPER STIRRUPS
44 REQUIRED

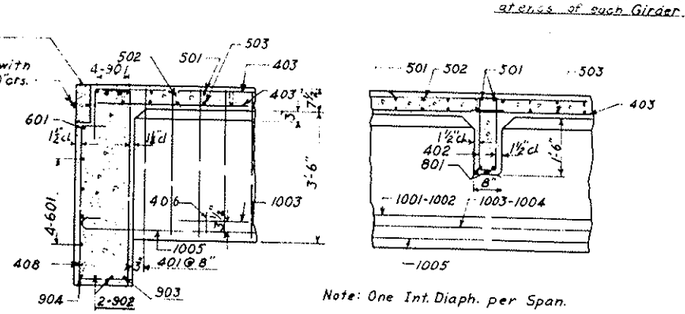


PART LONGITUDINAL SECTION AT PROFILE GRADE

SECTION "C-C"



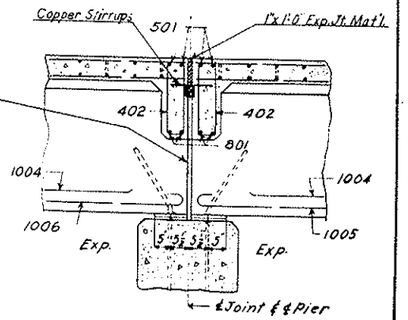
TYPICAL SECTION THRU ROADWAY



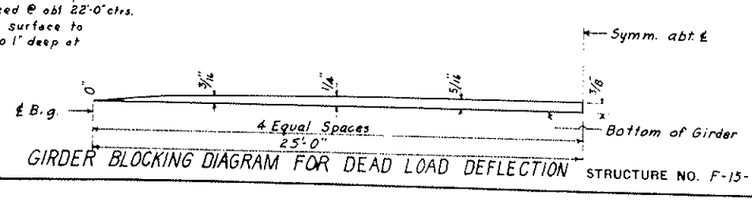
SECTION "A-A"

Note: One Int. Diaph. per Span.

SECTION "B-B"



SECTION "D-D"



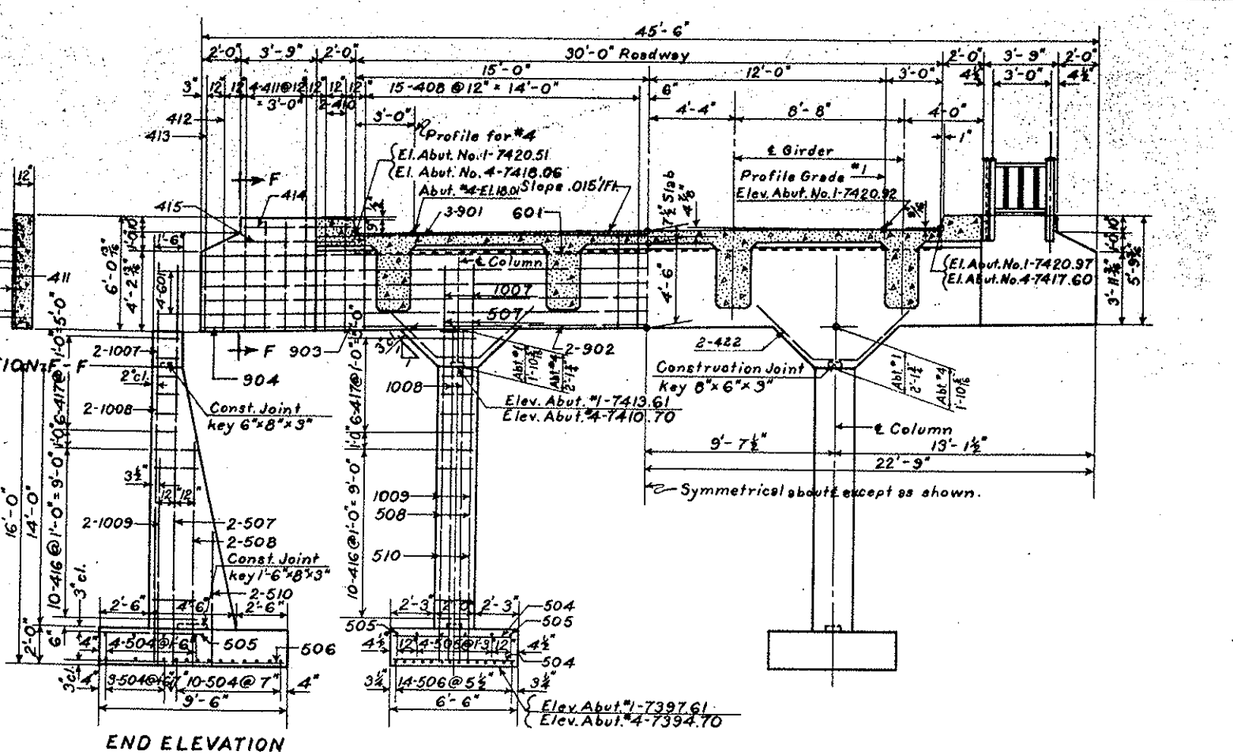
GIRDER BLOCKING DIAGRAM FOR DEAD LOAD DEFLECTION

STRUCTURE NO. F-15-AI

COLORADO
DEPARTMENT OF HIGHWAYS
3 SPANS @ 50'-0" CONCRETE SLAB & GIRDER BRIDGE - 30'-0" ROADWAY
2'-0" CURBS STD. STEEL HANDRAIL
SLAB & GIRDER DETAILS
Across Clear Creek
Sta. 146+32.0 to 147+85.0
Near Idaho Springs Sec. 31 T. 3S R. 72W

Designed by E.F.S.	Approved by [illegible]
Made by D.K.J.	Bridge Engineer
Checked by	Date: Aug. 31, 1956

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F005-3(9)	31	

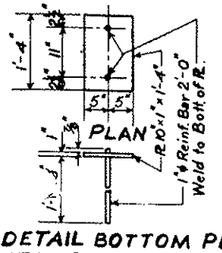


END ELEVATION

Max. Footing Pressure = 6700 #/□ Ft.

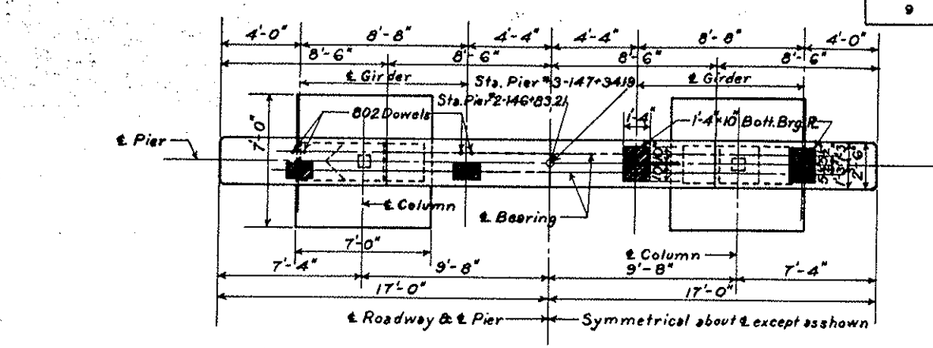
SECTION E-E SHOWING ABUTMENTS NOS. 1 & 4 (SEE SHEET NO. 30)

DETAIL TOP PLATE AT EXPANSION BEARING

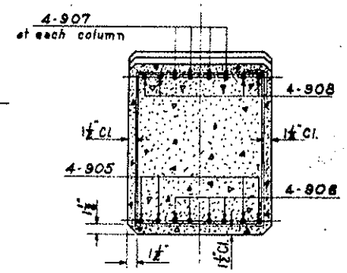


DETAIL BOTTOM PLATE AT EXPANSION BEARING

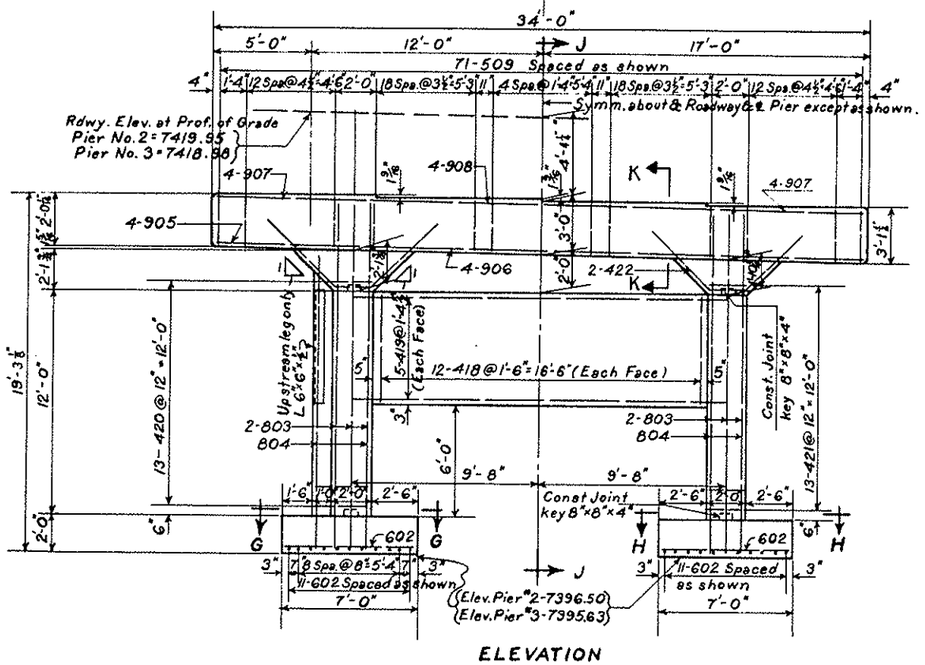
STEEL HANDRAIL & SAFETY CURB DETAIL



HALF PLAN PIER NO. 2 HALF PLAN PIER NO. 3

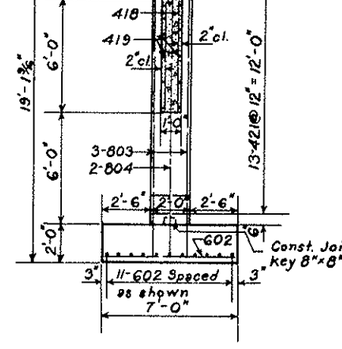


SECTION K-K

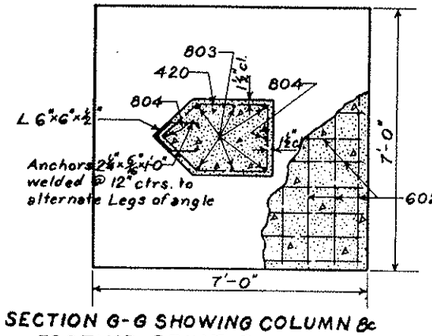


ELEVATION

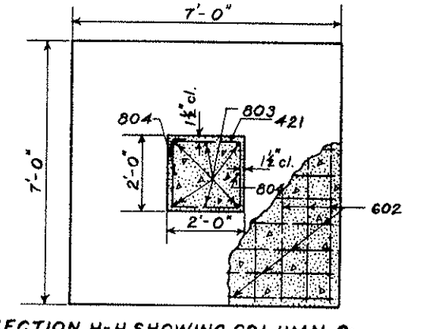
Max. Footing Pressure 6050 #/□ ft.



SECTION J-J



SECTION G-G SHOWING COLUMN & FOOTING REINFORCEMENT



SECTION H-H SHOWING COLUMN & FOOTING REINFORCEMENT

LOADING DATA.
LIVE LOAD - A. A. S. H. O.
DEAD LOAD ASSUMES 10 LBS PER SQ. FT. ADDITION AL WEARING SURFACE WHICH INCLUDES THE ½ INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN

DESIGNING DATA.
A.A.S.H.O. 1944 UNIT STRESSES
fc = 1000 lbs. per sq. in.
fs = 20000 lbs. per sq. in.
n = 10

COLORADO
DEPARTMENT OF HIGHWAYS

3 SPANS @ 50'-0" CONCRETE SLAB & GIRDER BRIDGE-30'-0" ROADWAY
DETAILS OF COLUMNS OF ABUTMENTS PIER DETAILS

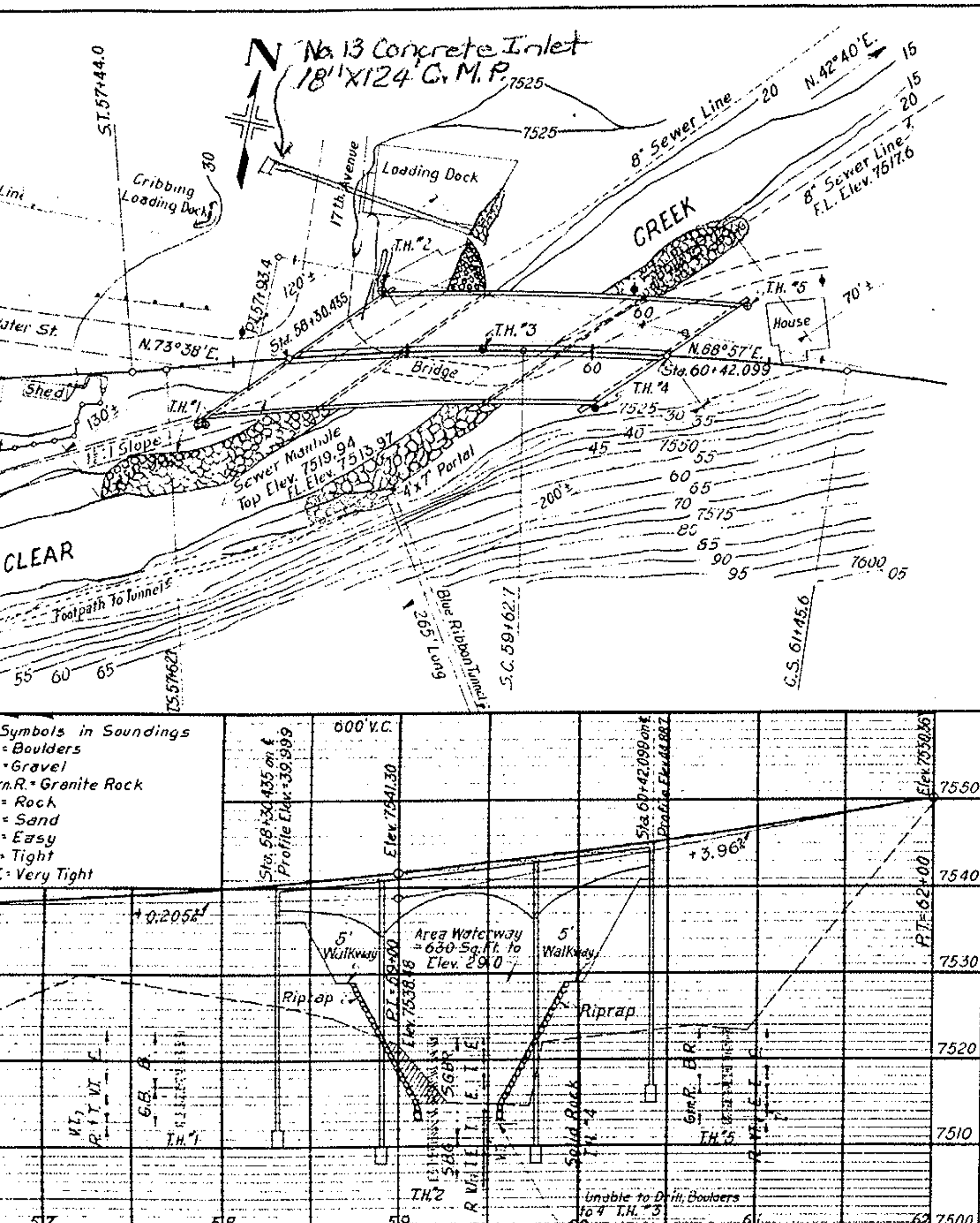
Across: CLEAR CREEK
Sta. 146+32.0 To 147+86.0
Near IDAHO SPRINGS Sec. 31 T. 3S R. 72W

Designed by E.F.S.	Approved by	
Made by D.K.J.	Bridge Engineer	
Checked by	Date: Aug. 31, 1956	

STRUCTURE NO. F-15-AI

Revised: Quantities – Class "A" Concrete for Superstructure. JGG 4-26-57

FED. ROAD DIV NO	DISTRICT	PROJECT NO.	SHEET NO	TOTAL SHEETS
	COLO.	F005-3(8)	37	



GENERAL LAYOUT

SUMMARY OF QUANTITIES

Description	Unit	Superstructure	Abutment No. 1	Pier No. 2	Pier No. 3	Abutment No. 4	Total
[illegible]lassified Excavtion	Cu. Yd.						930
Rock Excavation (Str.)	Cu. Yd.		21		237	181	439
[illegible]mmon Excavation (Str.)	Cu. Yd.		358	354		68	780
[illegible]ucture Backfill (Class I)	Cu. Yd.		251	287	280	131	949
[illegible]chanical Tamping	Hour		82	28	18	102	230
[illegible]ated Bridge Timber	Mft. bm.		0.429			0.363	0.792
[illegible]ss 'A' Concrete	Cu. Yd.	849.2	76.7	47.6	49.5	73.0	1096.0
[illegible]inforcing Steel (Includes 1%± for Overrun)	Lb.	227775	15695	17180	17940	15555	294145
[illegible]uctural Steel (Includes ½%± for Paint)	Lb.	16270	670			685	17625
[illegible]prap	Cu. Yd.		368			382	750
Expansion Joint Material (Type I)	Sq. Ft.	222					222
Electrical Conduit with Junction Boxes	Lin. Ft.	425					425

[illegible]n Jt Mat'l shall be included in the bid price of class 'A' concrete and shall be in accordance with AASHO [illegible]gnation M153-54 and of the type shown.

BAR LIST

Abutment No. 1

Mark	Size	No. Req'd	Length	Type	Dimension ℓ	Dimension m
4105	½" ϕ	94	10'-10½"	XII		
4106	½" ϕ	10	10'-10½"	X	3'-5¼"	1'-8"
4107	½" ϕ	188	6'-2"	XIII		
4108	½" ϕ	20	7'-9"	Str.		
4109	½" ϕ	13	4'-4"	Str.		
4110	½" ϕ	13	4'-6"	Str.		
5400	⅝" ϕ	144	5'-6"	Str.		
801	1" ϕ	4	32'-9"	Str.		
802	1" ϕ	2	35'-6"	Str.		
803	1" ϕ	5	28'-9"	Str.		
804	1" ϕ	1	30'-3"	Str.		
805	1" ϕ	2	43'-9"	Str.		
806	1" ϕ	1	38'-6"	Str.		
807	1" ϕ	1	36'-4"	Str.		
808	1" ϕ	4	41'-0"	Str.		
809	1" ϕ	2	27'-3"	Str.		
810	1" ϕ	1	20'-0"	Str.		
811	1" ϕ	1	22'-0"	Str.		
812	1" ϕ	4	37'-0"	Str.		
813	1" ϕ	2	35'-9"	Str.		
814	1" ϕ	1	30'-6"	Str.		
815	1" ϕ	1	28'-0"	Str.		
816	1" ϕ	2	22'-6"	Str.		
817	1" ϕ	14	21'-3"	Str.		
818	1" ϕ	2	23'-0"	Str.		
819	1" ϕ	14	21'-9"	Str.		
820	1" ϕ	2	23'-6"	Str.		
821	1" ϕ	14	22'-3"	Str.		
822	1" ϕ	2	24'-0"	Str.		
823	1" ϕ	14	22'-9"	Str.		
824	1" ϕ	2	24'-6"	Str.		
825	1" ϕ	14	23'-3"	Str.		
826	1" ϕ	2	25'-0"	Str.		
827	1" ϕ	14	23'-9"	Str.		
828	1" ϕ	2	25'-6"	Str.		
829	1" ϕ	14	24'-3"	Str.		
830	1" ϕ	2	26'-0"	Str.		
831	1" ϕ	14	24'-9"	Str.		
832	1" ϕ	128	3'-6"	Str.		
1165	1⅜" ϕ	32	6'-0"	Str.		

BAR SUMMARY — Abutment No. 1

2554 LinFt. ½" ϕ @ .668 Lbs./Lin.Ft = 1,706 Lbs.
792 LinFt ⅝" ϕ @ 1.043 Lbs/Lin.Ft = 826 Lbs.
4489 Lin.Ft. 1" ϕ @ 2.67 Lbs./Lin.Ft = 11,986 Lbs.
192 Lin.Ft. 1⅜" ϕ @ 5.313 Lbs/Lin.Ft = 1,020 Lbs.
Plus 1%± Overrun = 157 Lbs.
Total = 15,695 Lbs.

BAR LIST

Abutment No. 4

Mark	Size	No. Req'd	Length	Type	Dimension ℓ	Dimension m
4105	½" ϕ	79	10'-10½"	XII		
4106	½" ϕ	6	10'-10½"	X	3'-5¼"	1'-8"
4107	½" ϕ	197	6'-2"	XIII		
4108	½" ϕ	20	7'-9"	Str.		
4111	½" ϕ	13	4'-0"	Str.		
4112	½" ϕ	13	4'-6"	Str.		
5400	⅝" ϕ	144	5'-6"	Str.		
832	1" ϕ	128	3'-6"	Str.		
835	1" ϕ	1	54'-0"	Str.		
836	1" ϕ	1	60'-0"	Str.		
837	1" ϕ	1	59'-6"	Str.		
838	1" ϕ	1	53'-9"	Str.		
839	1" ϕ	1	53'-8"	Str.		
840	1" ϕ	1	59'-9"	Str.		
841	1" ϕ	1	60'-0"	Str.		
842	1" ϕ	1	53'-6"	Str.		
843	1" ϕ	1	52'-3"	Str.		
844	1" ϕ	1	58'-0"	Str.		
845	1" ϕ	1	58'-7"	Str.		
846	1" ϕ	1	52'-0"	Str.		
847	1" ϕ	1	52'-1"	Str.		
848	1" ϕ	1	58'-4"	Str.		
849	1" ϕ	1	57'-9"	Str.		
850	1" ϕ	1	52'-0"	Str.		
851	1" ϕ	2	22'-0"	Str.		
852	1" ϕ	14	20'-9"	Str.		
853	1" ϕ	2	23'-0"	Str.		
854	1" ϕ	14	21'-9"	Str.		
855	1" ϕ	2	24'-0"	Str.		
856	1" ϕ	14	22'-9"	Str.		
857	1" ϕ	2	25'-0"	Str.		
858	1" ϕ	14	23'-9"	Str.		
859	1" ϕ	2	26'-0"	Str.		
860	1" ϕ	14	24'-9"	Str.		
861	1" ϕ	2	27'-0"	Str.		
862	1" ϕ	14	25'-9"	Str.		
863	1" ϕ	2	28'-6"	Str.		
864	1" ϕ	14	27'-3"	Str.		
865	1" ϕ	2	29'-0"	Str.		
866	1" ϕ	14	27'-9"	Str.		
1165	1⅜" ϕ	32	6'-0"	Str.		

BAR SUMMARY — Abutment No. 4

2405 Lin Ft. ½" ϕ @ .668 Lbs./Lin.Ft. = 1,607 Lbs.
792 Lin.Ft. ⅝" ϕ @ 1043 Lbs./Lin.Ft = 820 Lbs.
4475 Lin.Ft. 1" ϕ @ 2.67 Lbs./LinFt = 11948 Lbs
192 Lin.Ft. 1⅜" ϕ @ 5313 Lbs./LinFt. = 1,020 Lbs
Plus 1%± Overrun = 154 Lbs.
Total = 15,555 Lbs.

BAR LIST

Pier No. 2

Mark	Size	No. Req'd	Length	Type	Dimension ℓ	Dimension m
4107	½" ϕ	196	6'-2"	XIII		
4120	½" ϕ	82	13'-10½"	XI	5'-9¼"	1'-8"
601	¾" ϕ	160	6'-2"	Str.		
832	1" ϕ	128	3'-6"	Str.		
870	1" ϕ	16	54'-3"	Str.		
871	1" ϕ	2	25'-8"	Str.		
872	1" ϕ	14	22'-3"	Str.		
873	1" ϕ	2	26'-2"	Str.		
874	1" ϕ	14	22'-9"	Str.		
875	1" ϕ	2	26'-8"	Str.		
876	1" ϕ	14	23'-3"	Str.		
877	1" ϕ	2	27'-2"	Str.		
878	1" ϕ	14	23'-9"	Str.		
879	1" ϕ	2	27'-8"	Str.		
880	1" ϕ	14	24'-3"	Str.		
881	1" ϕ	2	28'-2"	Str.		
882	1" ϕ	14	24'-9"	Str.		
883	1" ϕ	2	28'-8"	Str.		
884	1" ϕ	14	25'-3"	Str.		
885	1" ϕ	2	29'-2"	Str.		
886	1" ϕ	14	25'-9"	Str.		
1170	1⅜" ϕ	64	6'-2"	XIV		

BAR SUMMARY — Pier No. 2

2347 LinFt. ½" ϕ @ 0.668 Lbs./LinFt. = 1568 Lbs.
987 Lin.Ft. ¾" ϕ @ 1.502 Lbs./LinFt. = 1482 Lbs.
4442 Lin.Ft. 1" ϕ @ 2.67 Lbs./LinFt. = 11860 Lbs.
395 Lin.Ft. 1⅜" ϕ @ 5.313 Lbs./LinFt. = 2099 Lbs.
Plus 1%± Overrun = 171 Lbs.
Total = 17180 Lbs.

BAR LIST

Pier No. 3

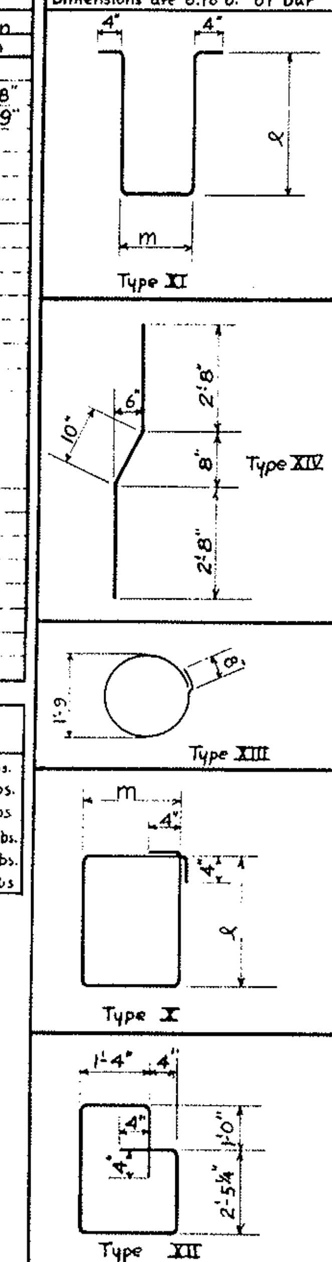
Mark	Size	No. Req'd	Length	Type	Dimension ℓ	Dimension m
4107	½" ϕ	212	6'-2"	XIII		
4120	½" ϕ	80	13'-10½"	XI	5'-9¼"	1'-8"
4121	½" ϕ	2	14'-11½"	XI	5'-9¼"	2'-9"
601	¾" ϕ	160	6'-2"	Str.		
832	1" ϕ	128	3'-6"	Str.		
870	1" ϕ	16	54'-3"	Str.		
879	1" ϕ	2	27'-8"	Str.		
880	1" ϕ	14	24'-3"	Str.		
881	1" ϕ	2	28'-2"	Str.		
882	1" ϕ	14	24'-9"	Str.		
883	1" ϕ	2	28'-8"	Str.		
884	1" ϕ	14	25'-3"	Str.		
885	1" ϕ	2	29'-2"	Str.		
886	1" ϕ	14	25'-9"	Str.		
887	1" ϕ	2	29'-8"	Str.		
888	1" ϕ	14	26'-3"	Str.		
889	1" ϕ	2	30'-2"	Str.		
890	1" ϕ	14	26'-9"	Str.		
891	1" ϕ	2	30'-8"	Str.		
892	1" ϕ	14	27'-3"	Str.		
893	1" ϕ	2	31'-2"	Str.		
894	1" ϕ	14	27'-9"	Str.		
1170	1⅜" ϕ	64	6'-2"	XIV		

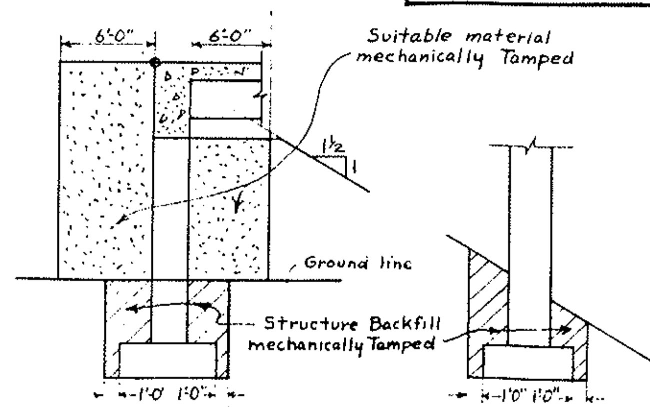
BAR SUMMARY — Pier No. 3

2447 Lin.Ft ½" ϕ @ 0.668 Lbs./Lin.Ft. = 1,635 Lbs.
987 Lin.Ft. ¾" ϕ @ 1.502 Lbs./Lin.Ft. = 1,482 Lbs.
4698 Lin.Ft. 1" ϕ @ 2.67 Lbs./Lin.Ft. = 12,544 Lbs.
395 Lin.Ft. 1⅜" ϕ @ 5.313 Lbs./Lin.Ft. = 2,099 Lbs.
Plus 1%± Overrun = 180 Lbs.
Total = 17,940 Lbs.

BENDING DIAGRAMS

Dimensions are o. to o. of bar





STRUCTURE BACKFILL & TAMPING DIAGRAMS

All material that is to be mechanically tamped shall be placed in horizontal layers not more than 6" in depth and tamped before the next layer is placed

GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS APPLICABLE TO THE PROJECT.

ALL CONCRETE SHALL BE CLASS "A" AND AIR [illegible] AS SPECIFIED.

ALL CONCRETE SURFACES EXPOSED TO NORMAL VIEW BY HIGHWAY TRAFFIC SHALL RECEIVE CLASS "I" SURFACE FINISH.

CONCRETE GIRDERS, FLOOR SLABS, AND CURBS SHALL BE POURED MONOLITHICALLY.

FORMS FOR CONCRETE SURFACES EXPOSED IN THE FINISHED WORK SHALL BE CONSTRUCTED OF SHIPLAP OR TONGUE AND GROOVE LUMBER S 2 S UNLESS FACED WITH PANEL BOARD.

FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED.

SOUNDINGS AND DEPTH OF FOOTING SHOWN ARE IN ACCORDANCE WITH THE BEST AVAILABLE DATA AND WHEN DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REDESIGN IS NECESSARY.

ALL REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A 305 50T OR THE LATEST REVISION THEREOF AND SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE NUMBER DESIGNATION AND THE STATION NUMBER OF THE PROJECT. SECONDARY BARS WHEN SPLICED SHALL LAP 20 DIAMETERS OF THE BAR. DIMENSIONS FOR REINFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTER LINE OF THE BAR.

ALL STRUCTURAL STEEL SHALL BE PAINTED ONE SHOP COAT OF ZINC CHROMATE AND TWO FIELD COATS OF ALUMINUM UNLESS OTHERWISE NOTED EXCEPT THE UNEXPOSED PORTION OF STEEL PILING NEED NOT BE PAINTED.

HANDRAIL BOLTS SHALL HAVE HEX HEADS, NUTS AND LOCK WASHERS UNLESS OTHERWISE SPECIFIED AND ALL RIVETS EXCEPT AS NOTED ARE [illegible] DIA. AND SHALL BE POWER DRIVEN.

WHEN TREATED TIMBER OR PILING IS SHOWN ON THE DRAWING THE PRESERVATIVE FOR TREATMENT SHALL BE CREOSOTE OIL.

WHEN EXCAVATING FOR FOOTINGS THE FINAL ONE FOOT IN DEPTH SHALL BE DONE BY HAND LABOR METHODS.

PRIMARY BARS SHALL NOT BE SPLICED EXCEPT BY PERMISSION OF THE ENGINEER. WHEN PRIMARY BARS ARE SPLICED THEY SHALL LAP 34 DIAMETERS FOR BARS NEAR TOP OF BEAMS AND GIRDERS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS AND 20 DIAMETERS FOR BARS NEAR BOTTOM OF MEMBERS.

LOADING DATA

LIVE LOAD [illegible] H20-S16
DEAD LOAD ASSUMES [illegible] PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE [illegible] INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA

A.A.S.H.O. [illegible] UNIT STRESSES EXCEPT AS NOTED

Reinforcing Steel fs 20000 lbs per sq in
Structural Steel fs 18000 lbs per sq in
fc 1200 lbs per sq in
n 10

COLORADO
DEPARTMENT OF HIGHWAYS
3 SPANS @ 65'-0" CONCRETE SLAB & GIRDER BRIDGE
2 – 28'-0" ROADWAYS
GENERAL LAYOUT & BAR LISTS

Across Clear Creek
Sta. 58+30.435 to 60+42.099 on ℄
In Idaho Springs Sec. 36 T. 3S R. 73W

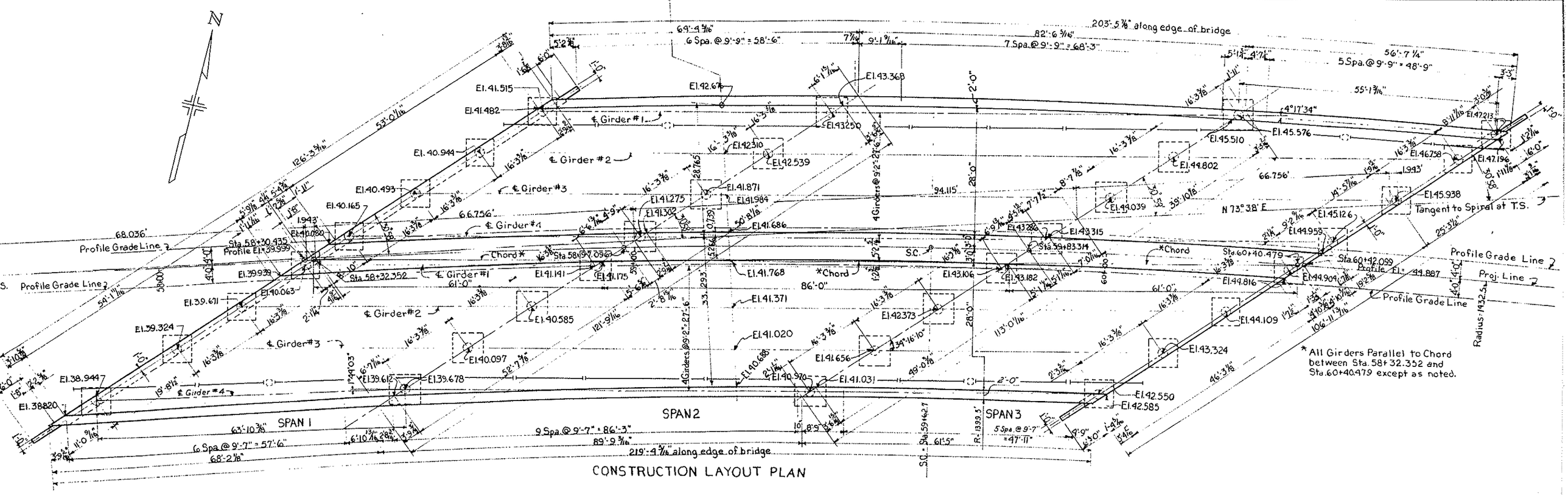
Designed by G. H.W.	Approved by [illegible]
Made by M.E.P.	Bridge Engineer
Checked by	Date: [illegible], 1956

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F005-3(9)	38	

80.000	57+90.000	58+00.000	58+10.000	58+19.999	58+29.999	58+39.999	58+49.998	58+59.997	58+69.995	58+79.993	58+89.990	58+99.985	59+09.979	59+19.970	59+29.960	59+39.947	59+49.931	59+59.907	59+69.883	59+79.852	59+89.816	59+99.773	60+09.724	60+19.667	60+29.603	60+39.531	60+49.450	60+59.360	60+69.260	60+79.151	Station on Tangent
											29.812	29.512	29.162	28.765	28.311	27.804	27.235	26.603	25.905	25.138	24.309	23.402	22.431	21.393	20.286	19.112	17.870	16.561	15.184	13.739	⊥Dist.-Tan. to N. Curb
									40.990	41.258	41.527	41.791	42.053	42.310	42.565	42.816	43.067	43.315	43.566	43.824	44.090	44.365	44.650	44.942	45.242	45.552	45.869	46.196	46.530	47.044	Fin. Rdwy. Elev. N. Curb
								40.619	40.842	41.068	41.296	41.524	41.753	41.984	42.217	42.455	42.696	42.943	43.195	43.455	43.724	44.002	44.289	44.584	44.888	45.200	45.521	45.851			Fin. Rdwy. Elev. Girder #2
						2.732	2.613	2.464	2.282	2.062	1.800	1.496	1.142	0.739	0.278	0.237	0.817	1.459	2.171	2.953	3.804	4.724	5.714	6.773	7.901	9.099	10.365				Fin. Rdwy. Elev. Girder #3
						40.156	40.325	40.500	40.681	40.869	41.063	41.264	41.471	41.686	41.907	42.135	42.370	42.611	42.860	43.114	43.375	43.642	43.915	44.194	44.480	44.772					⊥Dist.-Tan. to S. Curb
					3.178	3.269	3.387	3.537	3.720	3.939	4.201	4.507	4.861	5.266	5.727	6.247	6.828	7.472	8.188	8.973	9.828	10.752	11.746	12.809	13.942	15.145					Fin. Rdwy. Elev. S. Curb
					40.013	40.183	40.360	40.542	40.731	40.926	41.127	41.335	41.548	41.768	41.993	42.224	42.462	42.705	42.955	43.211	43.473	43.741	44.016	44.297	44.584						⊥Dist.-Tan. to N. Curb
				39.719	39.860	40.003	40.150	40.302	40.460	40.624	40.796	40.977	41.169	41.371	41.583	41.807	42.040	42.286	42.544	42.810	43.086	43.371	43.664	43.967							Fin. Rdwy. Elev. N. Curb
			39.416	39.540	39.665	39.790	39.918	40.050	40.191	40.335	40.487	40.651	40.828	41.020	41.223	41.442	41.673	41.920	42.180	42.446	42.724	43.011	43.306								Fin. Rdwy. Elev. Girder #2
03	31.012	31.030	31.062	31.110	31.179	31.270	31.389	31.540	31.725	31.947	32.213	32.522	32.882	33.293	33.761	34.289	34.881	35.539	36.268	37.069	37.941	38.884									Fin. Rdwy. Elev. Girder #3
32	38.952	39.070	39.188	39.302	39.418	39.530	39.646	39.766	39.894	40.028	40.171	40.330	40.500	40.688	40.888	41.103	41.334	41.578	41.833	42.096	42.365										⊥Dist.-Tan. to S. Curb
																															Fin. Rdwy. Elev. S. Curb

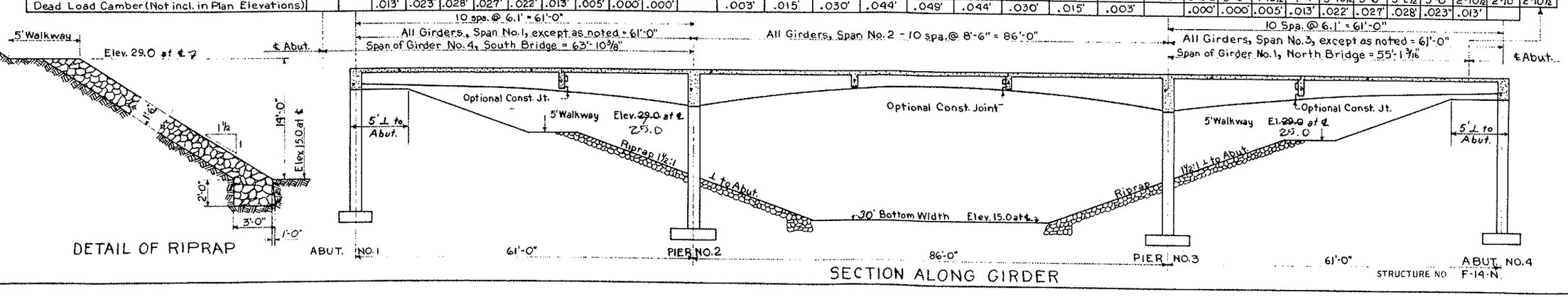
N. Bridge

S. Bridge



CONSTRUCTION LAYOUT PLAN

Distance from top of Slab to bottom of Girder	2'-10"	2'-10"	2'-10½"	3'-0"	3'-2½"	3'-6"	3'-10⅝"	4'-4"	4'-10½"	5'-6"	6'-2½"	7'-0"	5'-6"	4'-4"	3'-6"	3'-0"	2'-10"	3'-0"	3'-6"	4'-4"	5'-6"	7'-0"	6'-2½"	5'-6"	4'-10½"	4'-4"	3'-10⅛"	3'-6"	3'-2½"	3'-0"	2'-10½"	2'-10"	2'-10½"
Dead Load Camber (Not incl. in Plan Elevations)			.013'	.023'	.028'	.027'	.022'	.013'	.005'	.000'	.000'		.003'	.015'	.030'	.044'	.049'	.044'	.030'	.015'	.003'		.000'	.000'	.005'	.013'	.022'	.027'	.028'	.023'	.013'		



SECTION ALONG GIRDER

DETAIL OF RIPRAP

COLORADO
DEPARTMENT OF HIGHWAYS

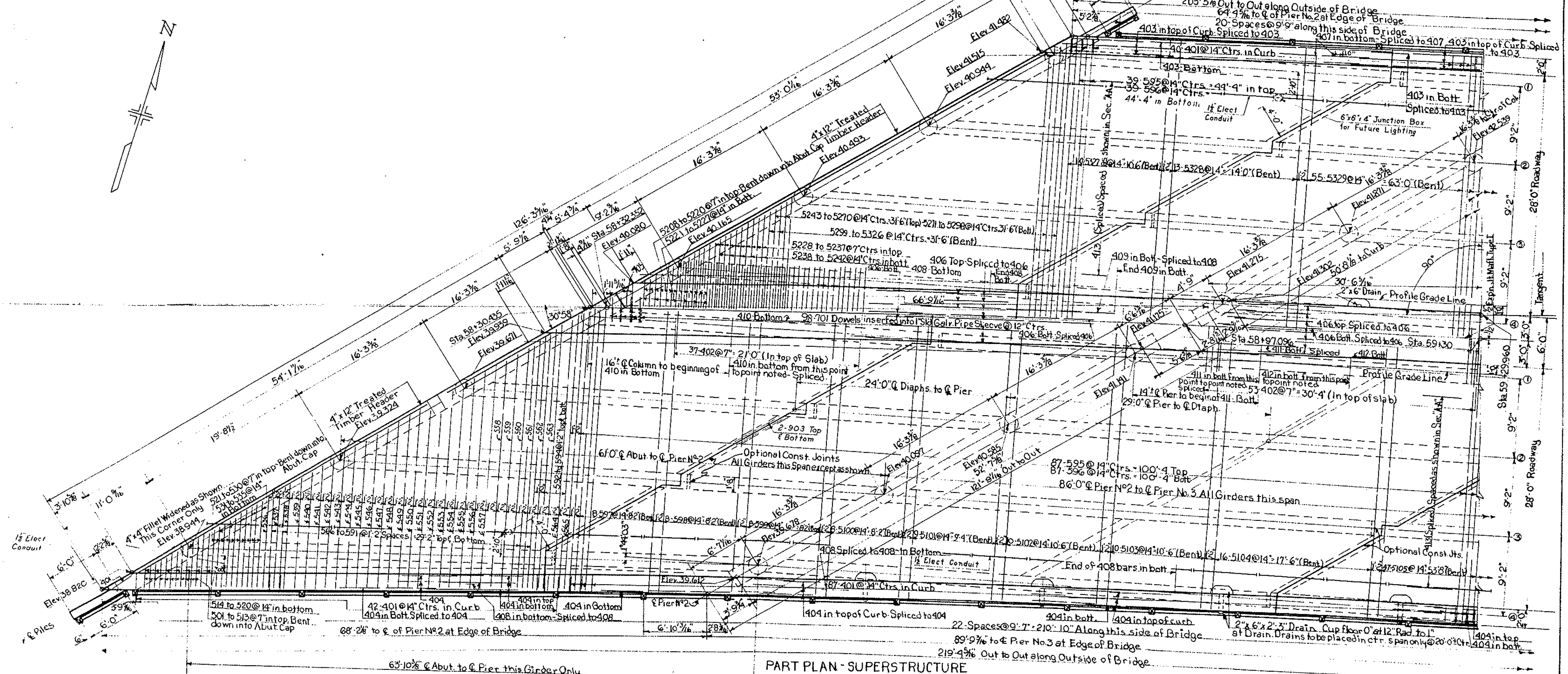
CONSTRUCTION LAYOUT
& SECTION ALONG GIRDER

Across Clear Creek
Sta. 58+30.435 to 60+42.099
In Idaho Springs Sec. 36 T. 3S R. 73W

Designed by G.H.W.	Approved by [illegible]
Made by L.W.F.	Bridge Engineer
Checked by	Date: May 31, 1956

STRUCTURE NO. F-14-N

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F 005-3(9)	39	



PART PLAN - SUPERSTRUCTURE

Note ~ All Girders parallel to chord between Sta. 58+32.352 and Sta. 60+40.479 except as shown.

COLORADO
DEPARTMENT OF HIGHWAYS

PLAN OF WEST HALF OF SUPERSTRUCTURE

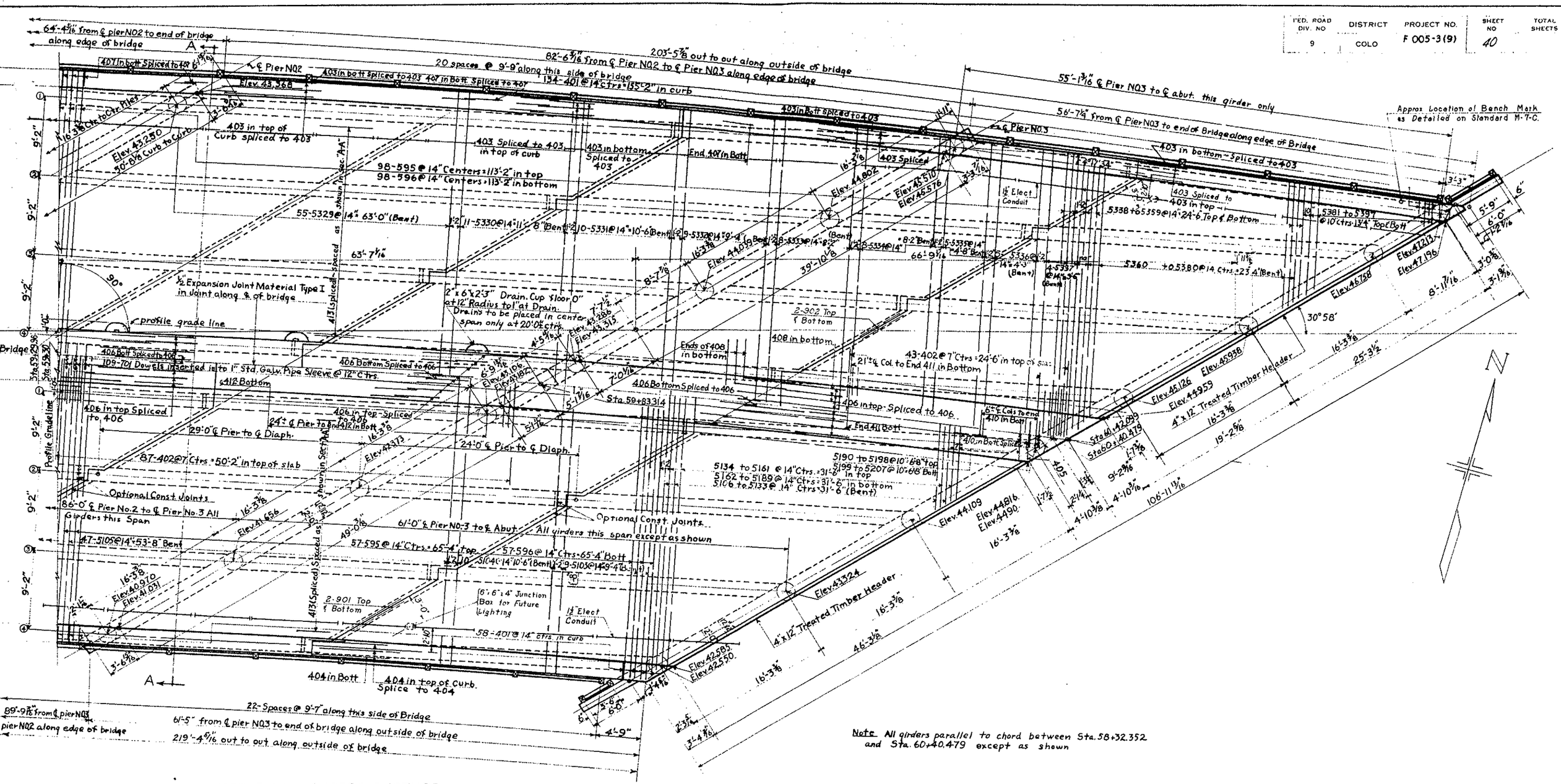
Across Clear Creek
Sta. 58+30.435 to 60+42.099
Near Idaho Springs Sec. 36 T. 3S R. 73W

Designed by G.H.W.
Made by B.D.E.
Checked by

Approved by [signature]
Bridge Engineer
Date: Aug. 21, 1956

STRUCTURE NO. F-14-N

FED. ROAD DIV. NO	DISTRICT	PROJECT NO.	SHEET NO	TOTAL SHEETS
9	COLO	F 005-3(9)	40	



PART PLAN ~ SUPERSTRUCTURE

Note All girders parallel to chord between Sta. 58+32.352 and Sta. 60+40.479 except as shown

STRUCTURE NO. F-14-N

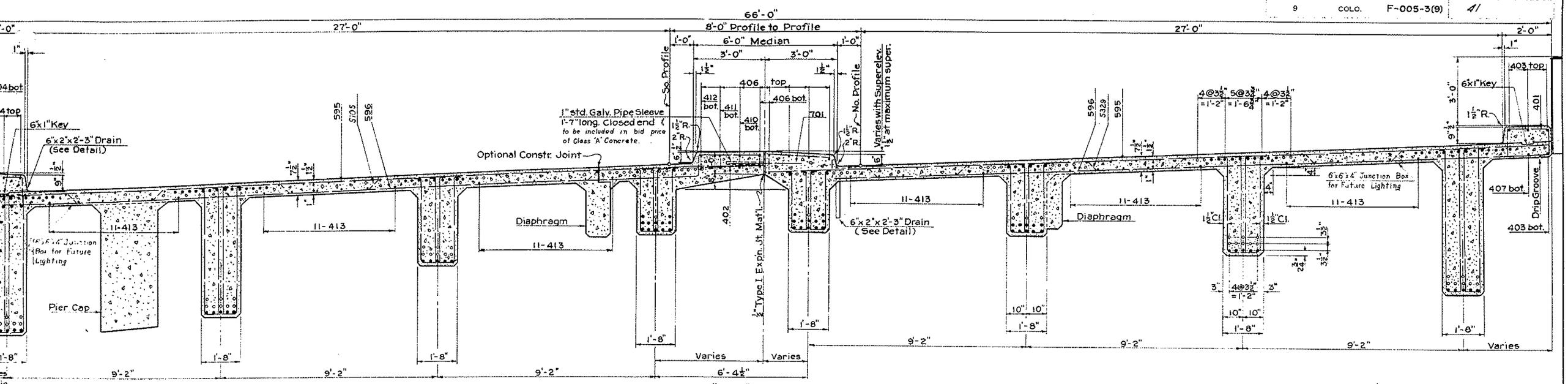
COLORADO
DEPARTMENT OF HIGHWAYS

PLAN OF EAST HALF OF SUPERSTRUCTURE

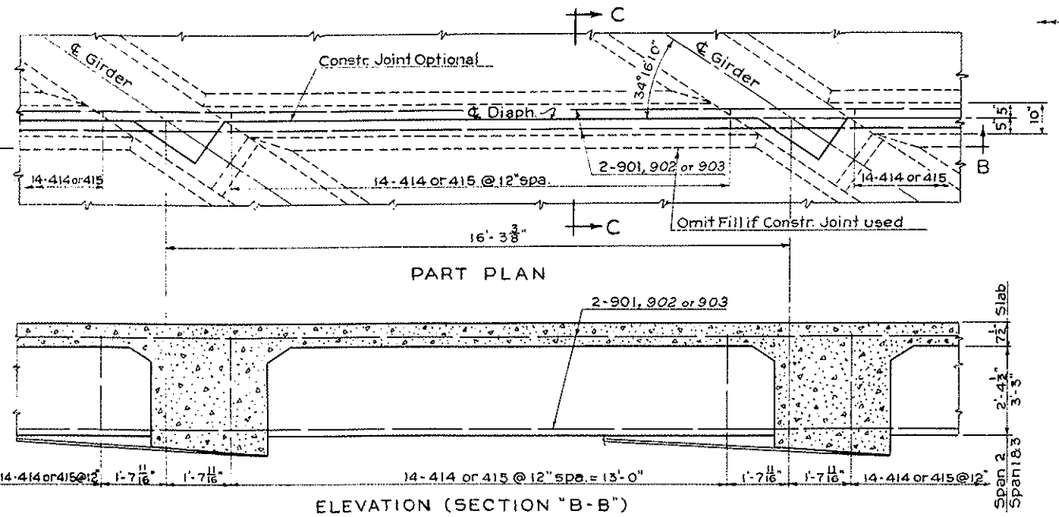
Across Clear Creek
Sta. 58+30.435 to 60+42.099
In Idaho Springs Sec. 36 T. 3 S R. 73 W

Designed by G.H.W.	Approved by [illegible]
Made by B.D.E.	Bridge Engineer
Checked by	Date: [illegible] 31, 1956

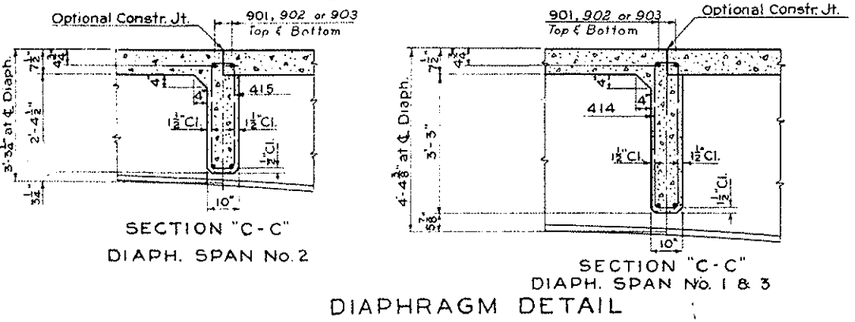
FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F-005-3(9)	41	



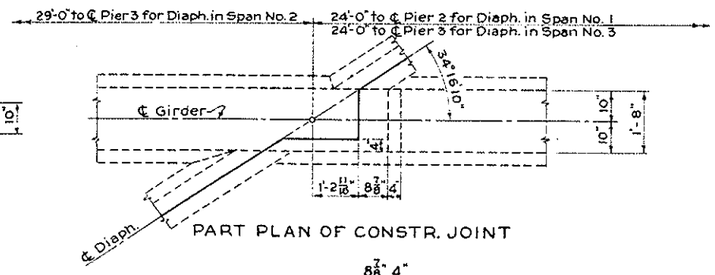
SECTION "A-A" (SUPERSTRUCTURE PLAN)



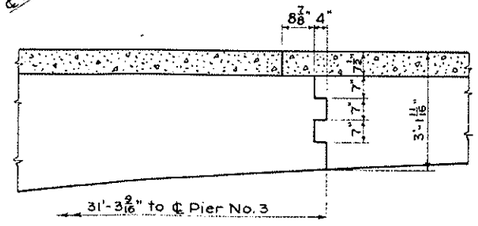
ELEVATION (SECTION "B-B")



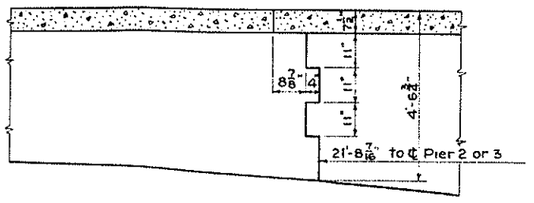
DIAPHRAGM DETAIL



PART PLAN OF CONSTR. JOINT

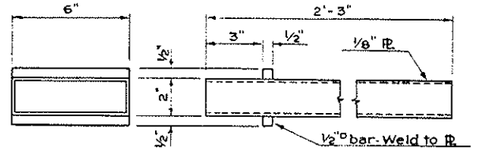


ELEV. OF GIRDER CONSTR. JOINT IN SPAN No. 2



ELEV. OF GIRDER CONSTR. JOINT IN SPAN No. 1 OR 3

OPTIONAL CONSTRUCTION JOINT



END VIEW ELEVATION

Paint - 1 shop coat of zinc chromate
2 field coats of aluminum paint
Note: Drains are included in Structural Steel Quantities.

DETAIL OF SUPERSTR. DRAIN (8 Req'd.)

STRUCTURE NO. F-14-N

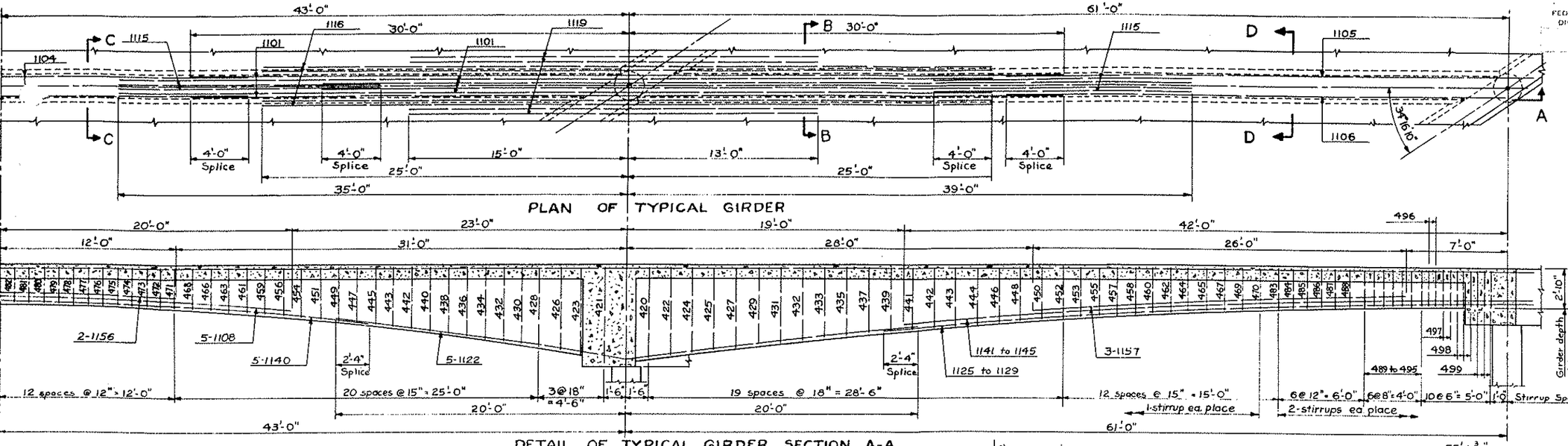
COLORADO
DEPARTMENT OF HIGHWAYS

SUPERSTRUCTURE DETAILS

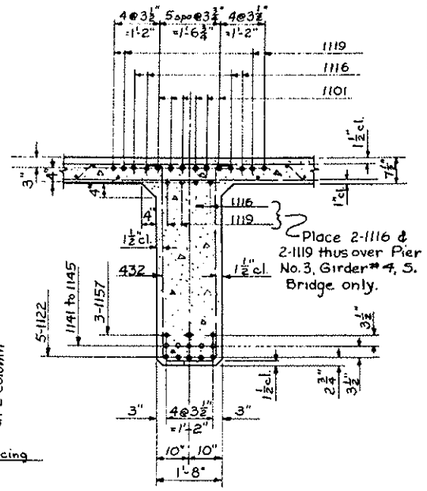
Across Clear Creek
Sta 58+30.435 to 60+42.099
In Idaho Springs Sec. 34 T. 3S R. 71W

Designed by G.H.W.	Approved by R. A. Newcomb
Made by L.W.F.	Bridge Engineer
Checked by	Date: Aug. 31, 1956

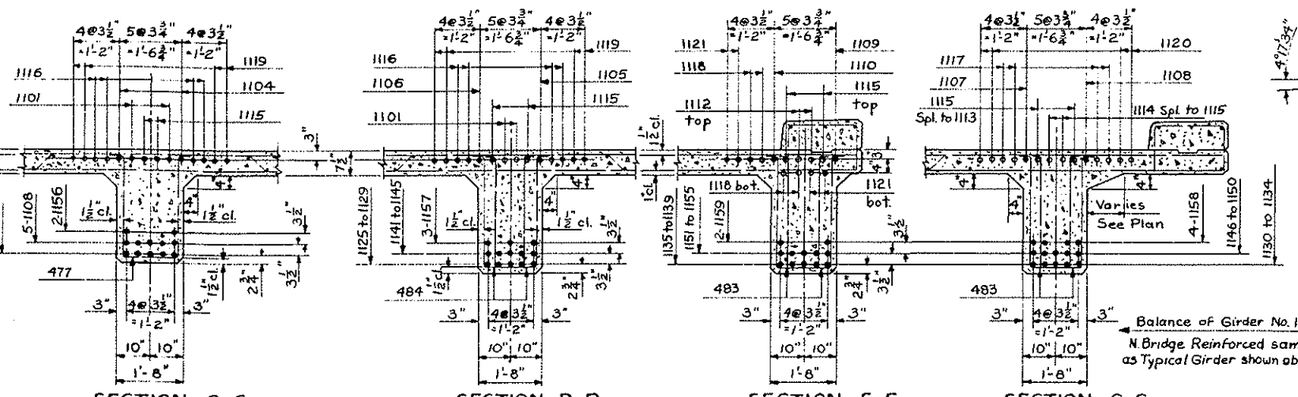
FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9		F005-3(9)	42	



DETAIL OF TYPICAL GIRDER SECTION A-A

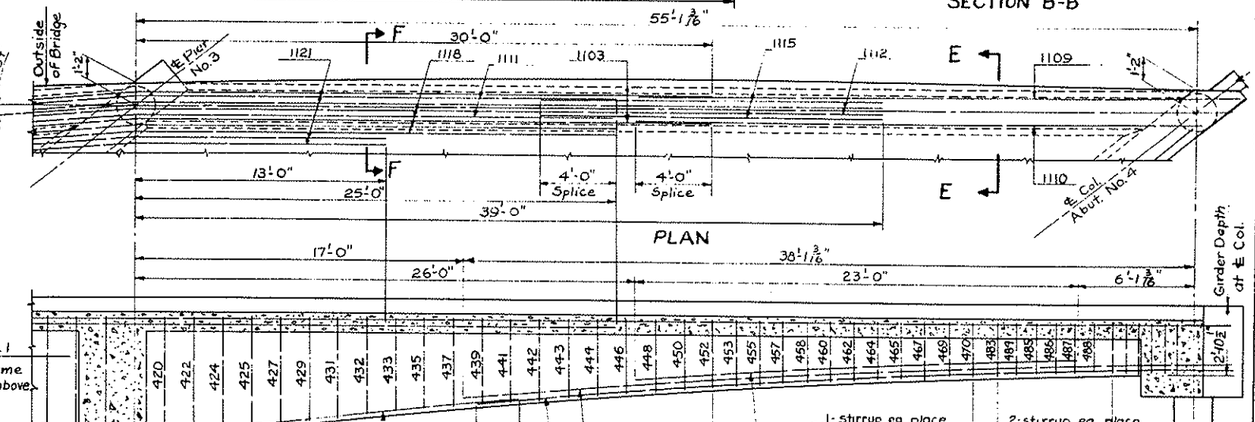


SECTION B-B



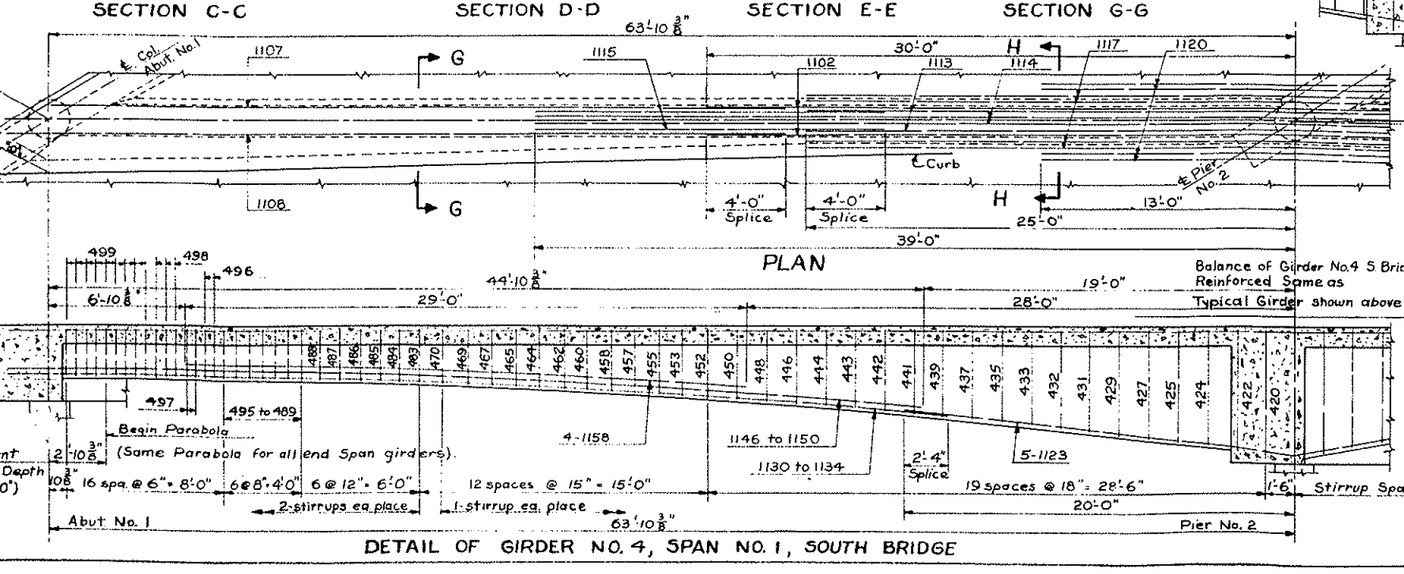
SECTION C-C SECTION D-D SECTION E-E SECTION G-G

Balance of Girder No. 1 N. Bridge Reinforced same as Typical Girder shown above.



PLAN

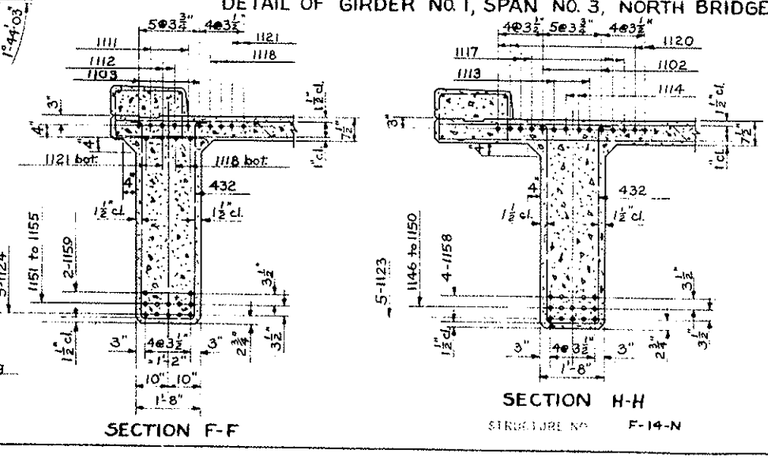
DETAIL OF GIRDER NO. 1, SPAN NO. 3, NORTH BRIDGE



PLAN

Balance of Girder No.4 S Bridge Reinforced Same as Typical Girder shown above.

DETAIL OF GIRDER NO. 4, SPAN NO. 1, SOUTH BRIDGE



SECTION F-F SECTION H-H

COLORADO
DEPARTMENT OF HIGHWAYS

GIRDER DETAILS

Across Clear Creek
Sta. 58+30.435 to 60+42.099
In Idaho Springs Sec. 36 T. 3S. R. 73 W

Designed by G.H.W
Made by L.W.F
Checked by

Approved by C. H. Scheffler
Bridge Engineer
Date June 27, 1956

STRUCTURE NO. F-14-N

FED. ROAD DIV. NO	DISTRICT	PROJECT NO	SHEET NO	TOTAL SHEETS
9	COLO	F005-3(9)	43	

PLAN - ABUTMENT NO. 1

ELEVATION - ABUT. NO. 1

Maximum soil Pressure = 3.2 Tons Per square foot

PLAN - ABUTMENT NO. 4

ELEVATION - ABUT. NO. 4

Maximum Soil Pressure = 3.2 Tons Per square foot

SEC. THRU CAP - ABUT. NO. 1 & 4

SEC. THRU COL. - ABUT. NO. 1 & 4

TYPICAL ABUT. WING PLAN

DETAIL AT TOP OF ABUT. COL. WITH CAP REMOVED

STRUCTURE NO. No. F-14-N

FOOTING ELEVATION

ABUT. FOOTING PLAN

COLORADO
DEPARTMENT OF HIGHWAYS

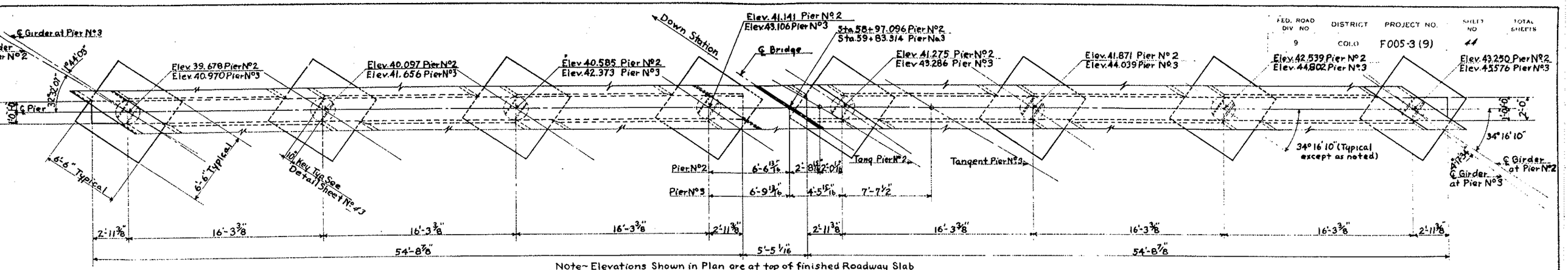
DETAILS ABUTMENT NO. 1 & 4

Across Clear Creek
Sta. 58+30.435 to 60+42.099
In Idaho Springs Sec. 36 T. 3 S R. 73 W

Designed by G.H.W.	Approved by
Made by L.W.F.	Bridge Engineer
Checked by	Date: January 31, 1956

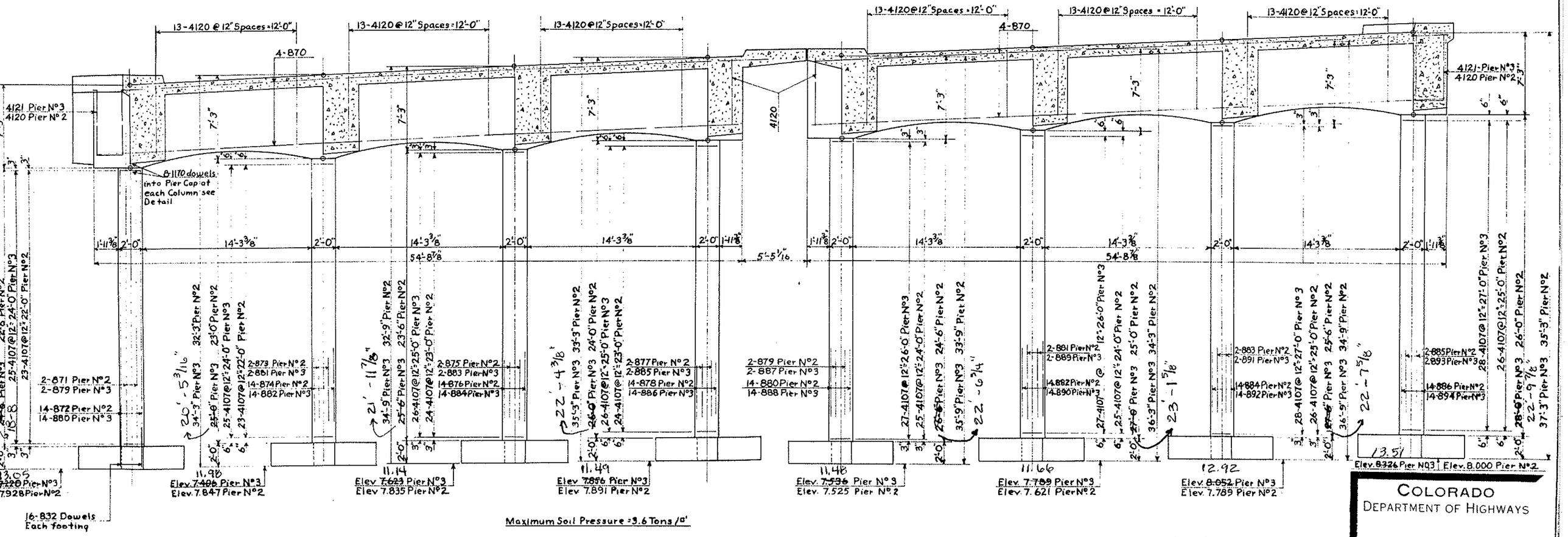
REVISIONS

FED. ROAD DIV NO	DISTRICT	PROJECT NO.	SHEET NO	TOTAL SHEETS
9	COLO	F005-3 (9)	44	



Note~ Elevations Shown in Plan are at top of finished Roadway Slab

PLAN OF PIER N° 3 ~ PIER N° 2 SAME EXCEPT AS NOTED



Maximum Soil Pressure = 3.6 Tons / ☐'

ELEVATION OF PIER N° 3
PIER N° 2 SAME EXCEPT AS NOTED

Note~ For Footing Reinforcement See pier Footing Sheet No. 45
Plan and Elevation Sheet N° 45
For Section Thru Column See Sheet N° 45

STRUCTURE NO. F-14-N

COLORADO
DEPARTMENT OF HIGHWAYS

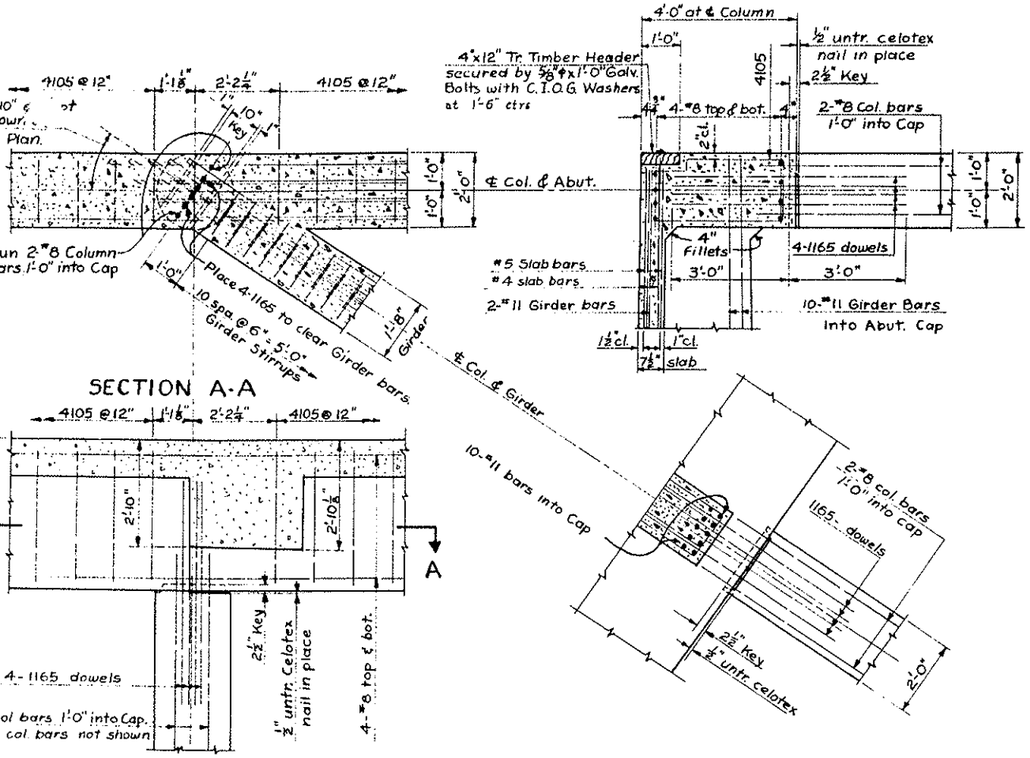
DETAILS OF PIERS NO 2 & 3

Across Clear Creek
In Idaho Springs Sec. 36 T. 3 S R. 73W

Designed by G.H.W.
Detailed by B.D.E.
Checked by

Approved by [illegible]
Bridge Engineer
Date May 31, 1956

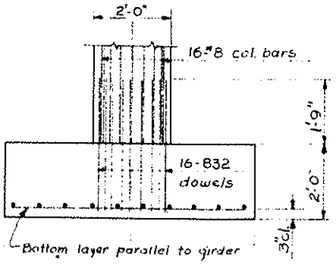
FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F 005-3(9)	45	



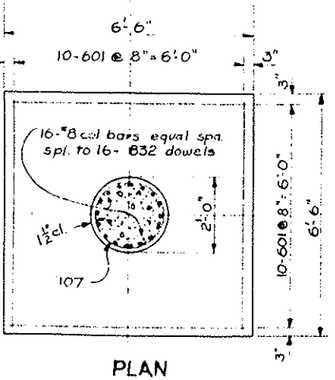
SECTION A-A

ELEV. AT FACE OF ABUT.

DETAIL AT INTERSECTION OF GIRDER, ABUT. CAP AND COLUMN

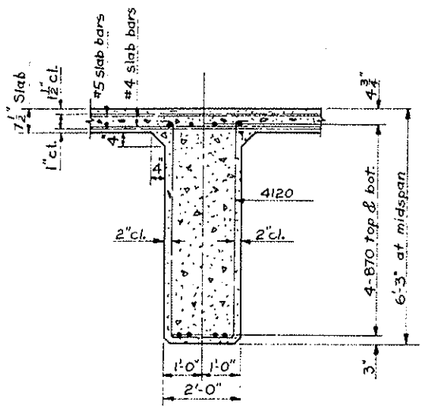


ELEVATION

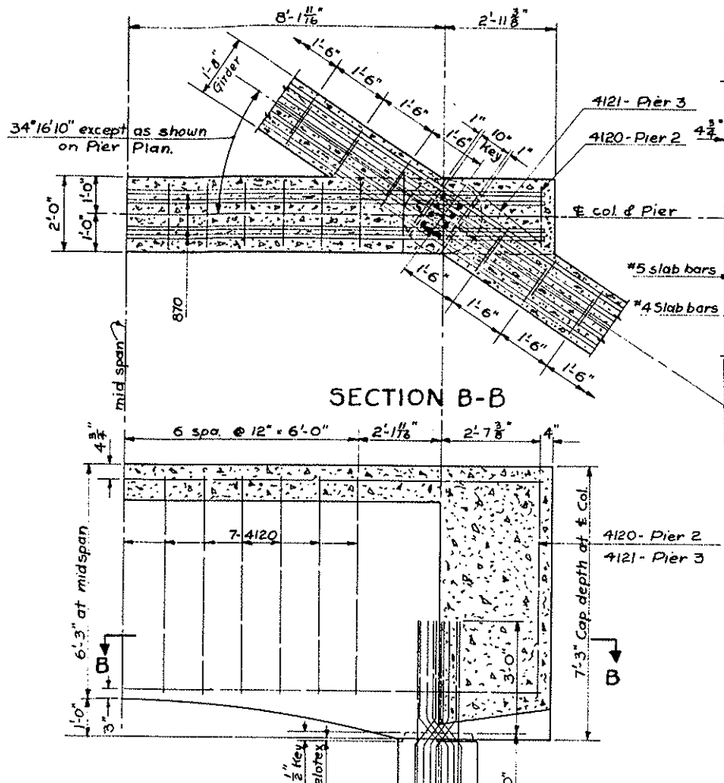


PLAN

DETAIL OF PIER FOOTING



SEC. THRU PIER CAP



ELEV. AT FACE OF PIER

DETAIL AT INTERSECTION OF GIRDER, PIER CAP AND COLUMN

COLORADO
DEPARTMENT OF HIGHWAYS

MISC. DETAILS

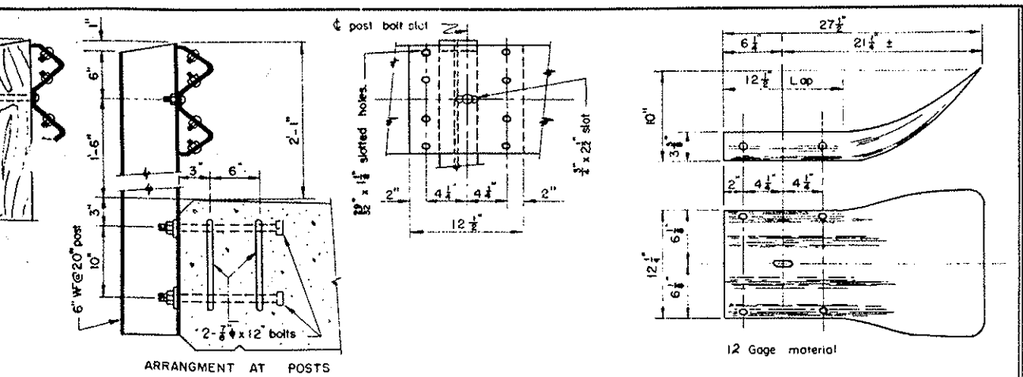
Across Clear Creek
Sta 58+30.435 to 60+42.099
In Idaho Springs Sec. 36 T. 3S R. 73W

Designed by	G.H.W.	Approved by	Asst. Materials Bridge Engineer
Made by	L.W.F.	Date	Aug. 31, 1956
Checked by			

STRUCTURE NO. F-14-N

REVISIONS

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	FOOS-9(9)	46	

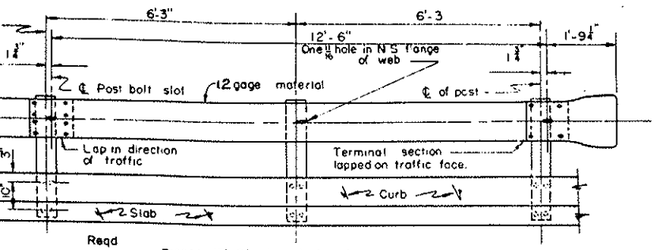


ARRANGMENT AT POSTS

12 Gage material

TERMINAL SECTION

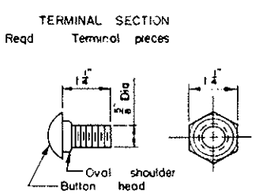
Reqd Terminal peces



Reqd

Pieces 13'-6" for steel posts
Pieces 13'-6" for wood posts
Pieces for steel posts
Pieces for wood posts

INSTALLATION



Splice Bolt

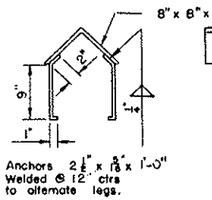
Post Bolt Similar except length.

Reqd

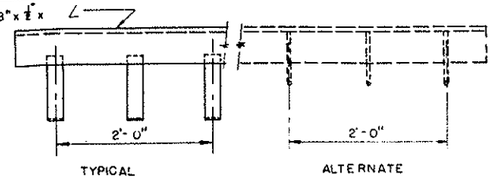
Splice bolts
Post bolts

BOLTS

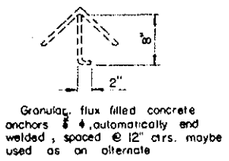
METAL PLATE GUARD RAIL



TYPICAL

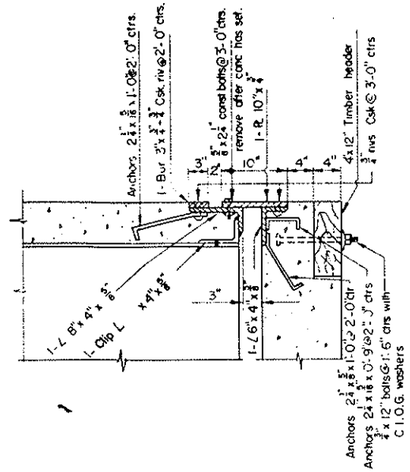


ALTERNATE

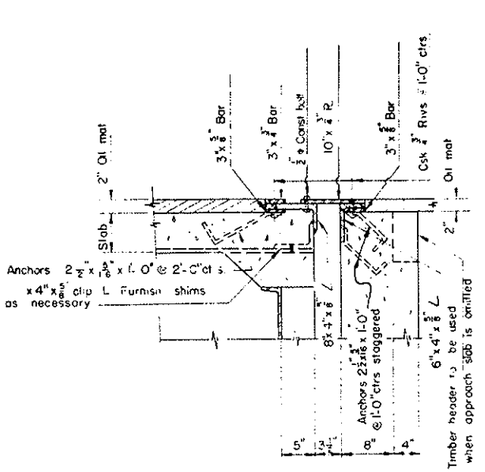


Granular flux filled concrete anchors ⅝ ϕ automatically end welded, spaced @ 12" ctrs. maybe used as an alternate

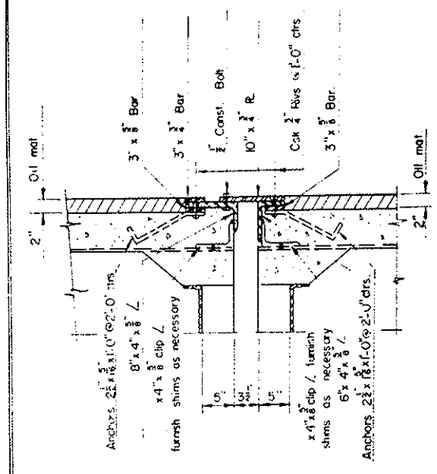
PIER NOSE ANGLE



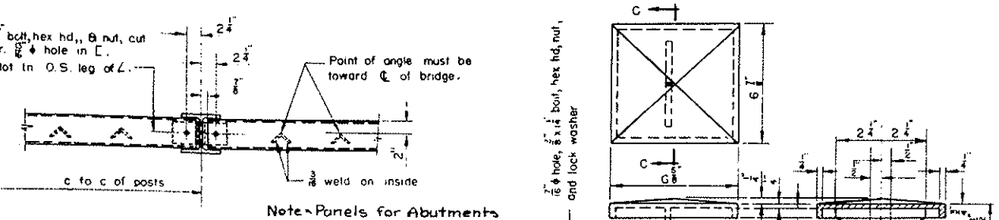
EXP'N DEVICE - ABUT. CONC. DECK



EXP'N DEVICE - ABUT. CONC. DECK WITH OIL SURF.



EXP'N DEVICE - PIER CONC. DECK WITH OIL SURF.

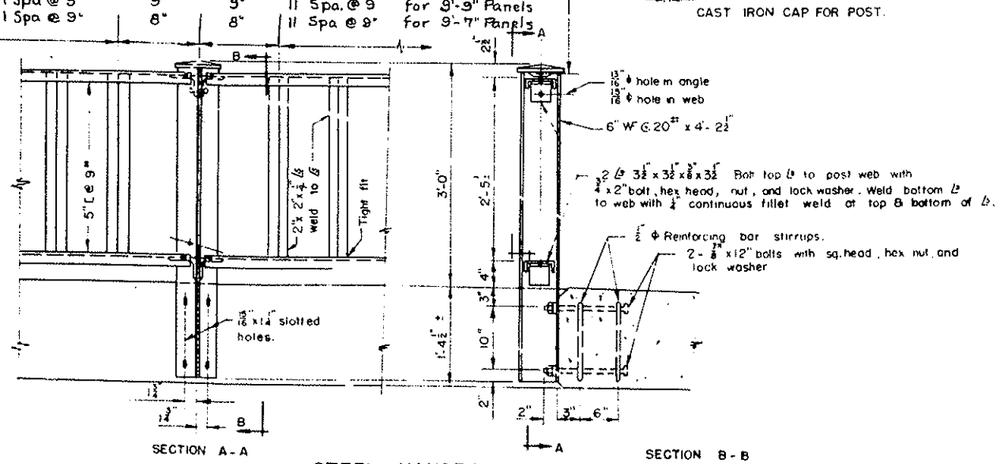


PLAN WITHOUT CAP

Note - Panels for Abutments shown on Abutments sheet No. ____

SECTION C-C

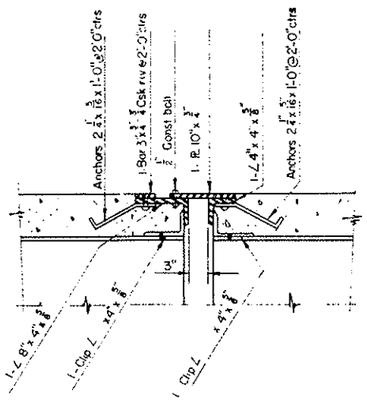
CAST IRON CAP FOR POST.



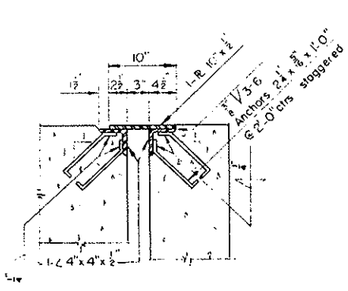
SECTION A-A

SECTION B-B

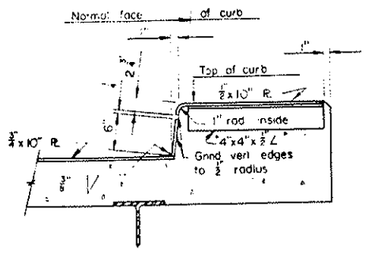
STEEL HANDRAIL



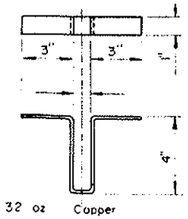
EXPN DEVICE - PIER CONC. DECK



EXP'N DEVICE - CURBS



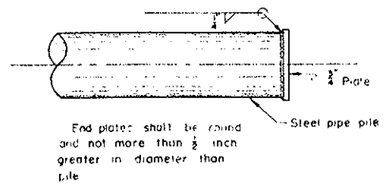
EXP'N DEVICE SECTION AT CURB



32 oz Copper

No Reqd

COPPER STIRRUP



End plates shall be round and not more than ½ inch greater in diameter than pile

END PLATES FOR PIPE PILES

STRUCTURE NO. F-14-N

COLORADO
DEPARTMENT OF HIGHWAYS

MISCELLANEOUS BRIDGE DETAILS

Across Clear Creek
Sta 58+39.435 to 60+42.029
Near Idaho Spgs. Sec. 36 T. 3S R. 73W

Designed by	Approved by A.W. Hawthorne
Made by JRJ	Bridge Engineer
Checked by	Date: Aug. 31, 1956

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F 005-3(9)	47	

BAR LIST SURERSTRUCTURE

Mark	Size	No. Req'd	Lenght	Type	Dimensions ℓ	m	n
401	½"ø	362	3'-10"	VII	1'-8"	1'-1"	
402	½"ø	220	5'-0"	Str.			
403	½"ø	24	34'6"	Str.			
404	½"ø	24	37'-3"	Str.			
[illegible]	½"ø	4	4'-4"	VII	2'-8"	10"	
[illegible]	½"ø	60	36'-0"	Str.			
407	½"ø	4	31'-6"	Str.			
408	½"ø	9	40'-0"	Str.			
409	½"ø	1	17'-6"	Str.			
410	½"ø	5	38'-1"	Str.			
411	½"ø	3	37'-11"	Str.			
412	½"ø	1	38'-0"	Str.			
4[illegible]	½"ø	396	35'-9"	Str.			
414	½"ø	168	8'-9"	X	3'-5½"	7"	
415	½"ø	168	7'-0"	X	2'-7"	7"	
420	½"ø	16	15'-1¾"	XI	6'-6⅞"	1'-5"	
421	½"ø	16	14'-11¼"	XI	6'-5⅝"	1'-5"	
422	½"ø	16	14'-9"	XI	6'-4"	1'-5"	
423	½"ø	16	14'-5"	XI	6'-2"	1'-5"	
424	½"ø	16	14'-4¼"	XI	6'-1⅝"	1'-5"	
425	½"ø	16	13'-11¾"	XI	5'-11⅞"	1'-5"	
426	½"ø	16	13'-10¾"	XI	5'-10⅞"	1'-5"	
427	½"ø	16	13'-7½"	XI	5'-9¼"	1'-5"	
428	½"ø	16	13'-4½"	XI	5'-7¾"	1'-5"	
429	½"ø	16	13'-3¼"	XI	5'-7⅛"	1'-5"	
430	½"ø	16	12'-11½"	XI	5'-5¼"	1'-5"	
431	½"ø	16	12'-11"	XI	5'-5"	1'-5"	
432	½"ø	32	12'-7"	XI	5'-3"	1'-5"	
433	½"ø	16	12'-3"	XI	5'-1"	1'-5"	
434	½"ø	16	12'-2¼"	XI	5'-0⅝"	1'-5"	
435	½"ø	16	11'-11¼"	XI	4'-11⅛"	1'-5"	
436	½"ø	16	11'-10"	XI	4'-10½"	1'-5"	
437	½"ø	16	11'-7¾"	XI	4'-9⅜"	1'-5"	
438	½"ø	16	11'-5¾"	XI	4'-8⅞"	1'-5"	
439	½"ø	16	11'-4¼"	XI	4'-7⅝"	1'-5"	
440	½"ø	16	11'-1½"	XI	4'-6¼"	1'-5"	
441	½"ø	16	11'-0¾"	XI	4'-5⅞"	1'-5"	
442	½"ø	32	10'-9½"	XI	4'-4⅛"	1'-5"	
443	½"ø	32	10'-6"	XI	4'-2½"	1'-5"	
444	½"ø	16	10'-3¼"	XI	4'-1⅞"	1'-5"	
445	½"ø	16	10'-2¼"	XI	4'-0⅝"	1'-5"	
446	½"ø	16	10'-0¼"	XI	3'-11⅝"	1'-5"	
447	½"ø	16	9'-11"	XI	3'-11"	1'-5"	
448	½"ø	16	9'-9½"	XI	3'-10¼"	1'-5"	
449	½"ø	16	9'-7¾"	XI	3'-9⅞"	1'-5"	
450	½"ø	16	9'-6¾"	XI	3'-8⅞"	1'-5"	
451	½"ø	16	9'-4¾"	XI	3'-7⅞"	1'-5"	
452	½"ø	16	9'-4¼	XI	3'-7⅝"	1'-5"	
453	½"ø	16	9'-2¼"	XI	3'-6⅝"	1'-5"	
454	½"ø	16	9'-1¾"	XI	3'-6⅜"	1'-5"	
455	½"ø	16	9-0¼"	XI	3'-5⅝"	1'-5"	
456	½"ø	16	8'-11"	XI	3'-5"	1'-5"	
457	½"ø	16	8-10½"	XI	3-4¾"	1'-5"	
458	½"ø	16	8-8¾"	XI	3'-3⅞"	1'-5"	
459	½"ø	16	8'-8½"	XI	3'-3¾"	1'-5"	
460	½"ø	16	8'-7"	XI	3'-3"	1'-5"	
461	½"ø	16	8'-6¼"	XI	3'-2⅝"	1'-5"	
462	½"ø	16	8'-5¼"	XI	3'-2⅛"	1'-5"	
463	½"ø	16	8'-4	XI	3'-1½"	1'-5"	
464	½"ø	16	8'-3¾"	XI	3'-1⅜"	1'-5"	
465	½"ø	16	8'-2¼"	XI	3'-0⅝"	1'-5"	
466	½"ø	16	8'-2"	XI	3'-0½"	1'-5"	
467	½"ø	16	8'-1"	XI	3'-[illegible]	1'-5"	
468	½"ø	16	8'-0"	XI	2'-11½"	1'-5"	
469	½"ø	16	7'-11¾"	XI	2'-11⅜"	1'-5"	
470	½"ø	16	7'-10½"	XI	2'-10⅞"	1'-5"	
471	½"ø	16	7'-10¼"	XI	2'-10⅝"	1'-5"	
472	½"ø	16	7'-9"	XI	2'-10"	1'-5"	
473	½"ø	16	7'-8"	XI	2'-9½"	1'-5"	
474	½"ø	16	7'-7"	XI	2'-9"	1'-5"	
475	½"ø	16	7'-6"	XI	2'-8½"	1'-5"	
476	½"ø	16	7'-5¼"	XI	2'-8⅛"	1'-5"	
477	½"ø	16	7'-4½"	XI	2'-7⅞"	1'-5"	
478	½"ø	16	7'-3¾"	XI	2'-7⅜"	1'-5"	
479	½"ø	16	7'-3¼"	XI	2'-7⅛"	1'-5"	
480	½"ø	16	7'-3"	XI	2'-7"	1'-5"	

BAR LIST SUPERSTRUCTURE

Mark	Size	No. Req'd	Lenght	Type	Dimensions ℓ	m	n
481	½"ø	16	7'-2¾"	XI	2'-6⅞"	1'-5"	
482	½"ø	24	7'-2½"	XI	2'-6¾"	1'-5"	
483	½"ø	32	7'-6"	XI	2'-10¼"	1'-1½"	
484	½"ø	32	7'-5"	XI	2'-9¾"	1'-1½"	
485	½"ø	32	7'-4¼"	XI	2'-9⅜"	1'-1½"	
486	½"ø	32	7'-3½"	XI	2'-9"	1'-1½"	
487	½"ø	32	7'-2¾"	XI	2'-8⅝"	1'-1½"	
488	½"ø	32	7'-2¼"	XI	2'-8⅜"	1'-1½"	
489	½"ø	32	7'-1¾"	XI	2'-8⅛"	1'-1½"	
490	½"ø	32	7'-1¼"	XI	2'-7⅞"	1'-1½"	
491	½"ø	32	7'-1"	XI	2'-7¾"	1'-1½"	
492	½"ø	32	7'-0¾"	XI	2'-7⅝"	1'-1½"	
493	½"ø	32	7'-0½"	XI	2'-7½"	1'-1½"	
494	½"ø	32	7'-0¼"	XI	2'-7⅜"	1'-1½"	
495	½"ø	30	7'-0"	XI	2'-7¼"	1'-1½"	
496	½"ø	60	6'-11¾"	XI	2'-7⅛"	1'-1½"	
497	½"ø	60	6'-11½"	XI	2'-7"	1'-1½"	
498	½"ø	90	6'-11¼"	XI	2'-6⅞"	1'-1½"	
499	½"ø	102	6'-11"	XI	2'-6¾"	1'-1½"	
501			3'-10"		2'-2"		
to	⅜"ø	1each	by 4¼"to	VIII	by4¼"to		
513			8'-1"		6'-5"		
514			2'-2"				
to	⅝"ø	1each	by 8½"to	Str.			
520			6'-5"				
521			8'-5"		6'-9"		
to	⅝"ø	1each	by 4½"to	VIII	by4½"to		
530			11'-9½"		10'-1½"		
531			7'-1"				
to	⅝"ø	1each	by 9"to	Str.			
535			10'-1"				
536	⅝"ø	1	10'-8"	I		7'-7"	2'-6"
537	⅝"ø	1	11'-5"	I		7'-4"	3'-6"
538	⅝"ø	1	12'-2"	I		7'-4"	4'-3"
539	⅝"ø	1	13'-2"	I		7'-4"	5'-3"
540	⅝"ø	1	13'-8"	II	3'-11"	7'-3"	1'-4"
541	⅝"ø	1	14'-6"	II	4'-0"	7'-3"	2'-1"
542	⅝"ø	1	15'-2"	II	4'-0"	7'-3"	2'-9"
543	⅝"ø	1	16'-2"	II	4'-0"	7'-3"	3'-9"
544	⅝"ø	1	16'-9"	II	3'-11"	7'-2"	4'-6"
545	⅝"ø	1	17'-6"	II	3'-11"	7'-2"	5'-3"
546	⅝"ø	1	18'-2"	II	3'-11"	7'-1"	6'-0"
547	⅝"ø	1	19'-0"	III	3'-11"	7'-0"	1'-4"
548	⅝"ø	1	19'-11"	III	3'-10"	7'-0"	2'-4"
549	⅝"ø	1	20'-7"	III	3'-10	7'-0"	3'-0"
550	⅝"ø	1	21'-4"	III	3'-10"	6'-11"	3'-10"
551	⅝"ø	1	21'-11"	III	3'-10"	6'-10"	4'-6"
552	⅝"ø	1	22'-6"	III	4'-2"	6'-9"	4'-10"
553	⅝"ø	1	23'-9"	IV	4'-2"	6'-9"	2'-2"
554	⅝"ø	1	24'-8"	IV	4'-2"	6'-9	3'-1"
555	⅝"ø	1	25'-1"	IV	4'-1"	6'-8"	3'-8"
556	⅝"ø	1	25'-10"	IV	4'-1"	6'-8"	4'-5"
557	⅝"ø	1	26'-7"	IV	4'-1"	6'-8"	5'-2"
558	⅝"ø	1	27'-4"	IV	4'-0"	6'-7"	6'-1"
559	⅝"ø	1	28'-3"	V	4'-0"	6'-6"	1'-6"
560	⅝"ø	1	29'-0"	V	4'-0"	6'-6"	2'-3"
561	⅝"ø	1	29'-8"	V	3'-11"	6'-5"	3'-1"
562	⅝"ø	1	30'-6"	V	3'-11"	6'-5"	3'-11"
563	⅝"ø	1	31'-7"	VI	3'-11"	6'-4"	1'-2"
564	⅝"ø	1	32'-4"	VI	3'-10"	6'-4"	2'-0"
565	⅝"ø	1	32'-11"	VI	3'-10"	6'-3"	2'-8"
566		1	11'-0"				
to	⅝"ø	2each	by8¾"to	Str.			
591			29-2¼"				
592			30'-3"				
to	⅝"ø	2each	by8 to	Str.			
594			31'-7"				
595	⅝"ø	281	32'-8"	Str.			
596	⅝"ø	281	33'-7"	IX	30'-0"	2'-8"	
597	⅝"ø	8	33'-8"	VI	3-9	6'-2"	3'-7"
598	⅝"ø	8	33'-8"	VI	3'-6"	5'-11"	4'-1"
599	⅝"ø	8	33'-8"	VI	3'-4	5'-9	4'-5
5100	⅝"ø	8	33'-8"	VI	3'-4"	5-4"	4'-10"

BAR LIST SUPERSTRUCTURE

Mark	Size	No. Req'd	Lenght	Type	Dimensions ℓ	m	n
5101	⅝"ø	9	33'-8"	VI	3'-4"	4'-11"	5'-3"
5102	⅝"ø	10	33'-8"	VI	3'-4"	4'-7"	5'-7"
5103	⅝"ø	19	33'-8"	VI	3'-4"	4'-2"	6'-0"
5104	⅝"ø	26	33'-8"	VI	3'-4"	3'-10"	6'-4"
5105	⅝"ø	47	33'-8"	VI	3'-4"	3'-7"	6'-7"
5106	⅝"ø	1	32'-10"	VI	3'-4"	5'-10"	3'-6"
5107	⅝"ø	1	32'-0"	VI	3'-4"	5'-10"	2'-8"
5108	⅝"ø	1	31'-1"	VI	3'-4"	5'-9"	1'-10"
5109	⅝"ø	1	30'-2"	VI	3'-4"	5'-8"	1'-0"
5110	⅝"ø	1	29'-2"	V	3'-4"	5'-8"	3'-11"
5111	⅝"ø	1	28'-5"	V	3'-4"	5'-8"	3'-2"
5112	⅝"ø	1	27'-7"	V	3'-4"	5-7"	2'-5"
5113	⅝"ø	1	26'-8"	V	3'-4"	5'-7"	1'-6"
5114	⅝"ø	1	26'-0"	V	3'-4"	5'-6"	11"
5115	⅝"ø	1	24'-11"	IV	3'-4"	5-5"	5'-6"
5116	⅝"ø	1	24'-0"	IV	3'-4"	5-5	4'-7"
5117	⅝"ø	1	32'-2"	IV	3'-4"	5'-4"	3'-10"
5118	⅝"ø	1	22'-5"	IV	3'-4"	5'-3"	3'-2"
5119	⅝"ø	1	21-5	IV	3'-4"	5'-3"	2'2"
5120	⅝"ø	1	20'-10"	IV	3'-4"	5'-2"	1'-8"
5121	⅝"ø	1	19'-11"	IV	3'-4"	5'-2"	9"
5122	⅝"ø	1	18'-10"	III	3'-4"	5'-1"	3'-8"
5123	⅝"ø	1	18'-0"	III	3'-4"	5'-0"	2'-11"
5124	⅝"ø	1	17'-1"	III	3'-4"	4'-11"	2'-1"
5125	⅝"ø	1	16'-2"	III	3'-4"	4'-11"	1'-2"
5126	⅝"ø	1	15'-2"	II	3'-4"	4'-10"	5'-10"
5127	⅝"ø	1	14'-4"	II	3'-4"	4'-9"	5'-1"
5128	⅝"ø	1	13'-6"	II	3'-4"	4'-8"	4'-4"
5129	⅝"ø	1	12'-9"	II	3'-4"	4'-8"	3'-7"
5130	⅝"ø	1	11'-10"	II	3'-4"	4'-7"	2'-9"
5131	⅝"ø	1	11'-0"	II	3-4	4'-6"	2'-0"
5132	⅝"ø	1	10'-1"	II	3'-4"	4'-5"	1'-2"
5133	⅝"ø	1	9'-2"	I	3'-4"	4'-4"	4'-3"
5134			31'-6"				
to	⅝"ø	1each	by10¼"to	Str.			
5161			8'-5¼"				
5162			32'-5"		28'-10"	2'-8"	
to	⅝"ø	1each	by10¼"to	IX	by10¼"to		
5169			9'-4¼"		5'-9¼"	2'-8"	
5190			8'-0"				
to	⅝"ø	1each	by7½"to	Str.			
5198			3'-0"				
5199			8'-11"		5'-4"	2'-8"	
to	⅝"ø	1each	by 7½"to	IX	by 7½"to		
5207			3'-11"		4"	2'-8"	
5208			4'-7"		2'-11"		
to	⅝"ø	1each	by 4½"to	VIII	by 4½"to		
5220			9'-1"		7'-5"		
5221			3'-10"		3"	2'-8"	
to	⅝"ø	1each	by 9"to	IX	by 9"to		
5227			8'-4"		4'-9"	2'-8"	
5322	⅝"ø	1	29'-5"	V	3'-4"	5'-6"	4'-4"
5323	⅝"ø	1	30'-4"	VI	3'-4"	5'-5"	1'-5"
5324	⅝"ø	1	31'-1"	VI	3'-4"	5'-5"	2'-2"
5325	⅝"ø	1	32'-3"	VI	3'-4"	5'-4"	3'-5"
5326	⅝"ø	1	32'-10"	VI	3'-4"	5'-4"	4'-0"
5327	⅝"ø	10	33'-8"	VI	3'-4"	5'-2"	5'-0"
5328	⅝"ø	13	33'-8"	VI	3'-4"	4'-11"	5'-3"
5329	⅝"ø	55	33'-8"	VI	3'-4"	4'-4"	5'-10"
5330	⅝"ø	11	33'-8"	VI	3'-4"	4'-8"	5'-6"
5331	⅝"ø	10	33'-8"	VI	3'-4"	5'-1"	5'-1"
5332	⅝"ø	9	33'-8"	VI	3'-4"	5'-6"	4'-8"
5333	⅝"ø	8	33'-8"	VI	3'-4"	6'-0"	4'-2"
5334	⅝"ø	8	33'-8"	VI	3'-4"	6'-4"	3'-10"
5335	⅝"ø	5	33'-8"	VI	3'-2"	3'-7"	6'-9"
5336	⅝"ø	5	33'-8"	VI	2'-10"	3'-7"	7'-1"
5337	⅝"ø	4	33'-8"	VI	2'-8"	3'-7"	7'-3"
5338			31'-6"				
to	⅝"ø	2each	by 11" to	Str.			
5359			13'-2"				
5360	⅝"ø	1	32'-9"	VI	2'-5"	3'-7"	6'-7"
5361	⅝"ø	1	31'-8"	VI	2'-4"	3'-6"	5'-8"
5362	⅝"ø	1	30'-6"	VI	2'-3"	3'-6"	4'-7"
5363	⅝"ø	1	29'-9"	VI	2'-3"	3-6"	3'-10"
5364	⅝"ø	1	28'-10"	VI	2'-2"	3'-6"	3'-0"
5365	⅝"ø	1	27'-10"	VI	2'-1"	3'-5"	2'-2"

BAR LIST SUPERSTRUCTURE

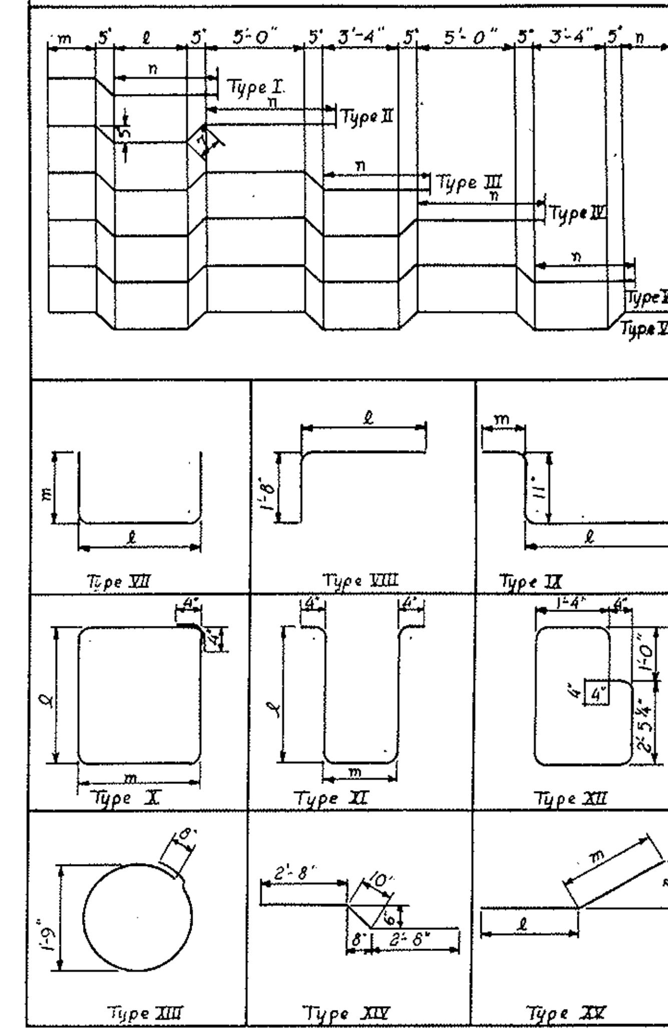
Mark	Size	No. Req'd	Lenght	Type	Dimension ℓ	m	n
5366	⅝"ø	1	27'-1"	VI	2'-0"	3'-5"	1'-6"
5367	⅝"ø	1	26'-0"	V	1'-11"	3'-5"	4'-5"
5368	⅝"ø	1	25'-3"	V	1'-11"	3'-5"	3'-8"
5369	⅝"ø	1	24'-1"	V	1'-10"	3'-4"	2'-8"
5370	⅝"ø	1	23'-3"	V	1'-9"	3'-4"	1'-11"
5371	⅝"ø	1	22'-5"	V	1'-8"	3'-3"	1'-3"
5372	⅝"ø	1	21'-5"	IV	1'-8"	3'-3"	5-10
5373	⅝"ø	1	20'-7"	IV	1'-7"	3'-3"	5'-1"
5374	⅝"ø	1	19'-9"	IV	1'-6"	3'-3"	4'-4"
5375	⅝"ø	1	18'-10"	IV	1'-5"	3'-2"	3'-7"
5228	⅝"ø		7'-8"				
to	⅝"ø	1each	by 4½"to	Str.			
5237			11'-0½"				
5238			8'-11"		5'-4"	2'-8"	
to	⅝"ø	1each	by 9"to	IX	by 9"to		
5242			11'-11"		8'-4"	2'-8"	
5243			11'-8"				
to	⅝"ø	1each	by 9"to	Str.			
5270			31'-11"				
5271			12'-7"		9'-0"	2'-8"	
to	⅝"ø	1each	by 9"to	IX	by 9"to		
5298			32'-10"		29'-3"	2'-8"	
5299	⅝"ø	1	11'-6"	I		6'-7"	4'-4"
5300	⅝"ø	1	12'-5"	II	3'-4"	6'-7"	1'-4"
5301	⅝"ø	1	13'-2"	II	3'-4"	6'-6"	2'-2"
5302	⅝"ø	1	13'-9"	II	3'-4"	6'-5"	2'-10"
5303	⅝"ø	1	14'-6"	II	3'-4"	6'-4"	3'-8"
5304	⅝"ø	1	15'-4"	II	3'-4"	6'-4"	4'-6"
5305	⅝"ø	1	16'-2"	II	3'-4"	6'-4"	5'-4"
5306	⅝"ø	1	16'-11"	II	3'-4"	6'-3"	6'-2"
5307	⅝"ø	1	17'-9"	III	3'-4"	6'-2"	1'-6"
5308	⅝"ø	1	18'-6"	III	3'-4"	6'-1"	2'-4"
5309	⅝"ø	1	19'-1"	III	3'-4"	6'-1"	2'-11"
5310	⅝"ø	1	20'-1"	III	3'-4"	6-1"	3-11
5311	⅝"ø	1	21'-0"	IV	3'-4"	6'-0"	1'-0"
5312	⅝"ø	1	21'-9"	IV	3-4"	6'-0"	1-9
5313	⅝"ø	1	22'-5"	IV	3'-4"	5'-11"	2'-6"
5314	⅝"ø	1	23'-2"	IV	3'-4"	5'-11"	3'-3"
5315	⅝"ø	1	24'-1"	IV	3'-4"	5'-11"	4'-2"
5316	⅝"ø	1	24'-8"	IV	3'-4"	5'-10"	4'-10"
5317	⅝"ø	1	25'-6"	IV	3'-4"	5'-9"	5'-9"
5318	⅝"ø	1	26'-4"	V	3'-4"	5'-8"	1'-1"
5319	⅝"ø	1	27'-2"	V	3'-4"	5'-8"	1'-11"
5320	⅝"ø	1	27'-10"	V	3'-4"	5'-7"	2'-8"
5321	⅝"ø	1	28'-8"	V	3'-4"	5'-7"	3'-6"
5376	⅝"ø	1	17'-11"	IV	1'-5"	3'-2"	2'-8"
5377	⅝"ø	1	17'-1"	IV	1'-4"	3'-2"	1'-11"
5378	⅝"ø	1	16'-1"	III	1'-3"	3'-2"	4'-11"
5379	⅝"ø	1	15-0"	III	1'-2"	3'-2"	3'-11"
5380	⅝"ø	1	14'-3"	III	1'-2"	3'-1"	3'-3"
5381			12'-6"				
to	⅝"ø	2 each	by7¾"to	Str.			
5397			2'-2"				
701	⅞"ø	207	3'-0"	Str.			
901	1⅛"ø	24	48'-0"	Str.			
902	1⅛"ø	4	46'-0"	Str.			
903	1⅛"ø	4	50'-0"	Str.			
1101	1⅜"ø	84	60'-0"	Str.			
1102	1⅜"ø	2	60-0'	XV	30'-0"	30'-0"	11"
1103	1⅜"ø	2	60'-0"	XV	30'-0"	30'-0"	2'-3"
1104	1⅜"ø	16	34'-0"	Str.			
1105	1⅜"ø	14	37'-0"	Str.			
1106	1⅜"ø	14	35'-0"	Str.			
1107	1⅜"ø	1	37'-9"	Str.			
1108	1⅜"ø	41	40'-0"	Str.			
1109	1⅜"ø	1	31'-6"	Str.			
1110	1⅜"ø	1	29'-6"	Str.			

BAR LIST SUPERSTRUCTURE

Mark	Size	No. Req'd	Lenght	Type	Dimensions ℓ	m	n
1111	1⅜"ø	2	60'-0"	XV	35'-0"	25'-0"	1'-10½"
1112	1⅜"ø	2	60'-0"	XV	39'-0"	21'-0"	1'-7"
1113	1⅜"ø	2	60'-0"	XV	35'-0	25'-0"	9"
1114	1⅜"ø	2	60'-0"	XV	39'-0"	21'-0"	7½"
1115	1⅜"ø	64	18'-0"	Str.			
1116	1⅜"ø	56	50'-0"	Str.			
1117	1⅜"ø	4	50'-0"	XV	25'-0"	25'-0"	9"
1118	1⅜"ø	4	50'-0"	XV	25'-0"	25'-0"	1'-10½"
1119	1⅜"ø	56	28'-0"	Str.			
1120	1⅜"ø	4	28'-0"	XV	15'-0"	13'-0"	4¾"
1121	1⅜"ø	4	28'-0"	XV	15'-0"	13'-0"	11¾"
1122	1⅜"ø	70	40'-8"	XV	20'-4	20'-4"	6'-2¼"
1123	1⅜"ø	5	40'-8"	XV	20'-4"	20'-4"	6'-2¾"
1124	1⅜"ø	5	40'-8"	XV	20'-4"	20'-4"	6'-4½"
1125			43'-10"				
to	1⅜"ø	14each	by 6" to	Str.			
1129			45'-10"				
1130			46'-8"				
to	1⅜"ø	1each	by 7" to	Str.			
1134			49'-0"				
1135			38'-0"				
to	1⅜"ø	1each	by5½"to	Str.			
1139			39'-10"				
1140	1⅜"ø	40	51'-0"	Str.			
1141			42'-6"				
to	1⅜"ø	14each	by 6"to	Str.			
1145			44'-6"				
1146			45'-4"				
to	1⅜"ø	1each	by 7" to	Str.			
1150			47'-8"				
1151			38'-6"				
to	1⅜"ø	1each	by 5½ to	Str.			
1155			40'-4"				
1156	1⅜"ø	16	24'-0"	Str.			
1157	1⅜"ø	42	26'-0"	Str.			
1158	1⅜"ø	4	29'-0"	Str.			
1159	1⅜"ø	2	23'-0"	Str.			

BENDING DIAGRAM

Dimensions are out to out of bar.



BAR SUMMERY SUPERSTRUCTURE

39970	Lin.ft. ½"ø @ 0.668 #/Lin.ft.	= 26700	lbs.
35791	Lin.ft. ⅝"ø @ 1.043 #/Lin.ft.	= 37330	lbs
621	Lin.ft. ⅞"ø @ 2.044 #/Lin.ft.	= 1269	lbs.
1536	Lin ft. 1⅛"ø @ 3.4 #/Lin.ft.	= 5222	lbs
29173	Lin.ft. 1⅜"ø @ 5.313 #/Lin.ft	= 154996	lbs.
	Plus 1% ± Overrun	= 2258	lbs.
	Total =	227,775	lbs.

COLORADO
DEPARTMENT OF HIGHWAYS

BAR LIST SUPERSTRUCTURE & BENDING DIAGRAM

Across Clear Creek
St. 58+30.485 to 60+42.099
In Idaho Springs ... 36 T 3S R 73W

Designed by
Made by D.T.S. & MEP
Checked by
Approved by J. L. [illegible] Bridge Engineer
Date: Aug. 31 1956

STRUCTURE NO F-14-N