F-U-457 (11)

COLUMBIANA COUNTY
COL-30-32.19

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
COL-30-32.19
COLUMBIANA COUNTY
LIVERPOOL & ST. CLAIR TOWNSHIPS
& CITY OF EAST LIVERPOOL

LIMITED ACCESS

This improvement is especially designed for through traffic and has been declared a limited access highway or freeway by action of the Director of Highways in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

CONVENTIONAL SIGNS

- TOWNSHIP LINE
- SECTION LINE
- CORPORATION LINE
- PROPERTY LINE
- CENTER LINE
- FENCE LINE
- POLE LINE — Telephone & Electric
- RAILROAD
- GUARD RAIL — Old / New
- DRAIN PIPE — Old / New
- LIMITED ACCESS — LA
- RIGHT-OF-WAY — R/W

INDEX OF SHEETS

SHEETS NO. 231, 199 TO 206 INCL. NOT USED

Revised Sheets Nos. 14 and 17
R.E.C. 11-16-62

LINE DATA

PROJECT LIMITS
F-457(11) = 789+00 ~ 833+09.81 = 4409.81 Ft. or 0.835 Mi.
U-457(11) = 833+09.81 ~ 888+00 = 5490.19 Ft. or 1.039 Mi.
TOTAL LENGTH OF PROJECT
F-457(11) + U-457(11) = 9900 Ft. or 1.875 Mi.

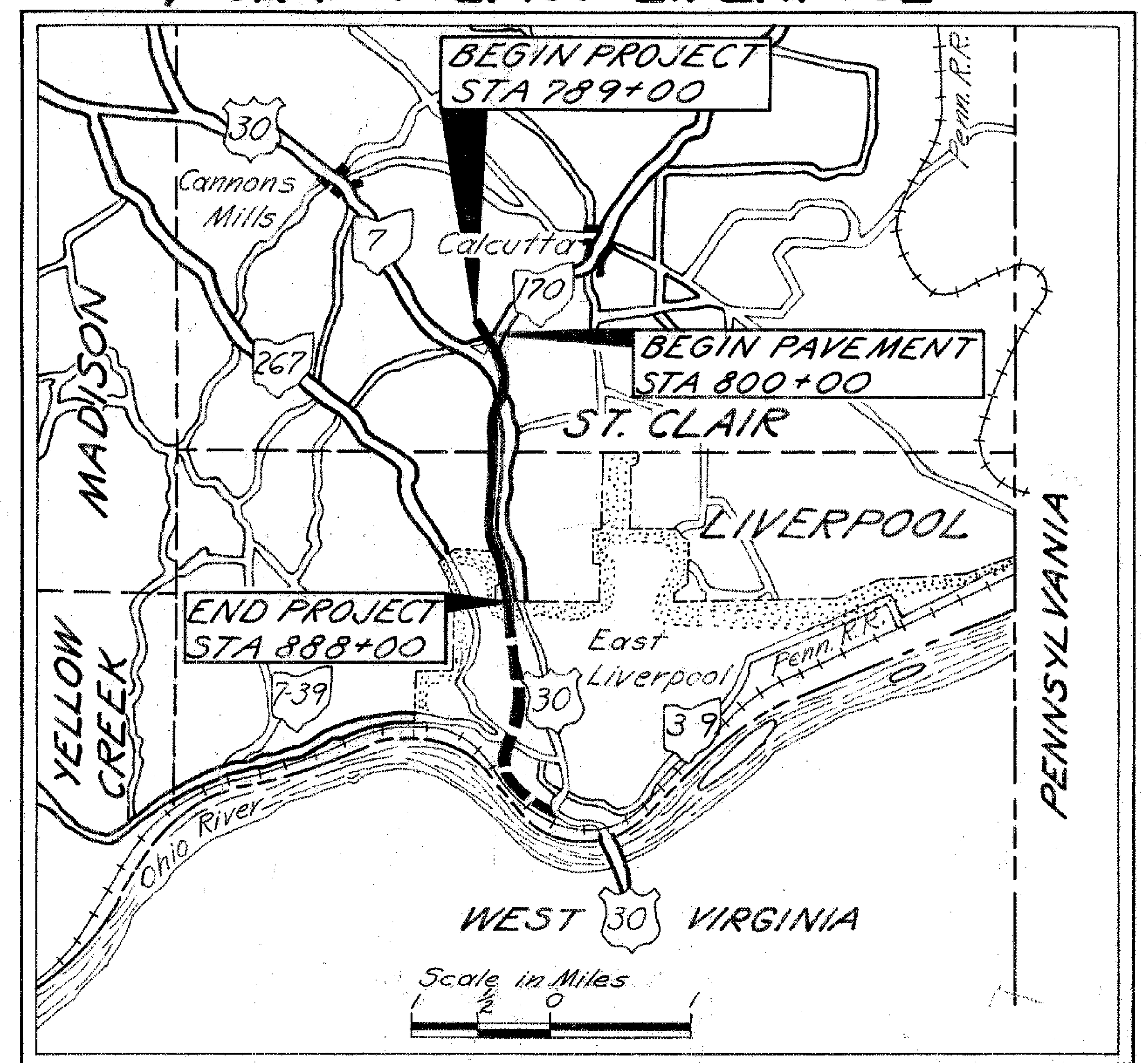
WORK LIMITS
F-457(11) 788+50 ~ 833+09.81 = 4459.81 Lin. Ft.
Add For TWP. ROAD 928 AND RELOCATED S.R. 170
11+30 ~ 36+00 = 2470.00 Lin. Ft.
Add For Approach "B"
79+90 ~ 87+10.82 = 720.82 Lin. Ft.

NET LENGTH OF WORK - F-457 (11) 7650.63 Lin. Ft. or 1.448 Mi.

U-457(11) = 833+09.81 ~ 891+75 = 5865.19 Lin. Ft.
899+70 ~ 907+20 = 750.00 Lin. Ft.

NET LENGTH WORK U-457(11) = 6615.19 Lin. Ft. or 1.252 Mi.

TOTAL NET LENGTH WORK = 14,265.82 Lin. Ft. or 2.701 Mi.



DELIVERY POINT: EAST LIVERPOOL
AVERAGE HAUL — 3.0 MILES

LOCATION MAP
Scale: 1" = 1 Mile

- Portion to be Improved
- Federal Highways
- State Highways
- Other Highways

SCALES

- PLAN
- PROFILE, Horizontal — 0 20 40 / 10 30 50
- PROFILE, Vertical
- CROSS SECTIONS — 0 4 8 / 2 6 10

The Standard Specifications of the State of Ohio, Department of Highways, including changes and Supplemental Specifications listed in the proposal shall govern this improvement.

The right of way for this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth on these plans and estimates.

Approved: Wm. P. McKenna
Date Feb. 23, 1962 Division Deputy Director

Approved: [signature]
Date 4-26-62 Engineer of Bridges

Approved: [signature]
Date 4-30-62 Engineer of Location & Design

Approved: C.W. McCaughey
Date 5-1-62 Deputy Director of Design & Construction

Approved: [signature]
Date 4-27-62 Deputy Director of Right of Way

Approved: Guy E. Yagen
Date 5-4-62 Deputy Director of Planning & Programming

Approved: G.A. Berry
Date 5-4-62 First Assistant Director

Approved: E. S. Preston
Date 5-4-62 Director of Highways

STANDARD DRAWINGS

B-T-70-71	11-15-60	I-8 C.B. No. 2-2A&B	3-2-59	I-15 No. 1	11-15-60	T-J	9-12-60
B-T-71R	3-2-53	I-8 C.B. 2-3 & 2-4	1-26-59	I-15 No. 2A	8-17-60		
DR-1	1-3-55	I-8 C.B. 2-5 & 2-6	1-26-59			S.P.-53	6-30-61
F-1	9-1-59	I-8 C.B. No. 3-A	1-26-59	I-21-23	8-1-56	A.S.-1-54	12-1-54
F-3	9-1-59	I-8 C.B. No. 6	1-26-59	L-1	4-1-50	A.R.-1-57	12-12-60
G-7.07	6-1-56	I-8 I No. 2	4-23-59	L-3	4-1-50		
H.W.-A & B	7-15-57	I-8 I No. 2A	4-23-59	L-3-A	4-1-50	C.S.B.-2-56 (Sh. No. 2 & 3)	2-2-59
H.W.-C	7-15-57	I-8 M.H. No. 1	1-26-59	L.J. No. 1	7-1-55		
H.W.-E	11-15-60	I-8 M.H. NO. 1-A	10-2-61			F.A.C.I.-1	12-27-61
		I-12	7-1-54	R.I.-1	7-15-58	F.A.C.I.-2	12-27-61
I-1	11-15-60	I-14G	1-22-52	T-35	1-2-56		

SUPPLEMENTAL SPECIFICATIONS

CE-101.04	5-22-56	I-212	Rev. 6-23-61
B-112	8-21-61	M-106.6 (d)	Rev. 4-1-58
I-129	Rev. 4-5-61		
18	Rev. 6-15-59		
I-128	7-31-59		
M-107.18	Rev. 4-3-61		
M-109.28	Rev. 8-12-59		
30	5-28-48		

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED:

DIVISION ENGINEER   DATE

File No.	COLUMBIANA COUNTY
	COL-30-32.19
	Date of Letting ________ 196__
	Contract No. ________

SCHEMATIC LAYOUT PLAN

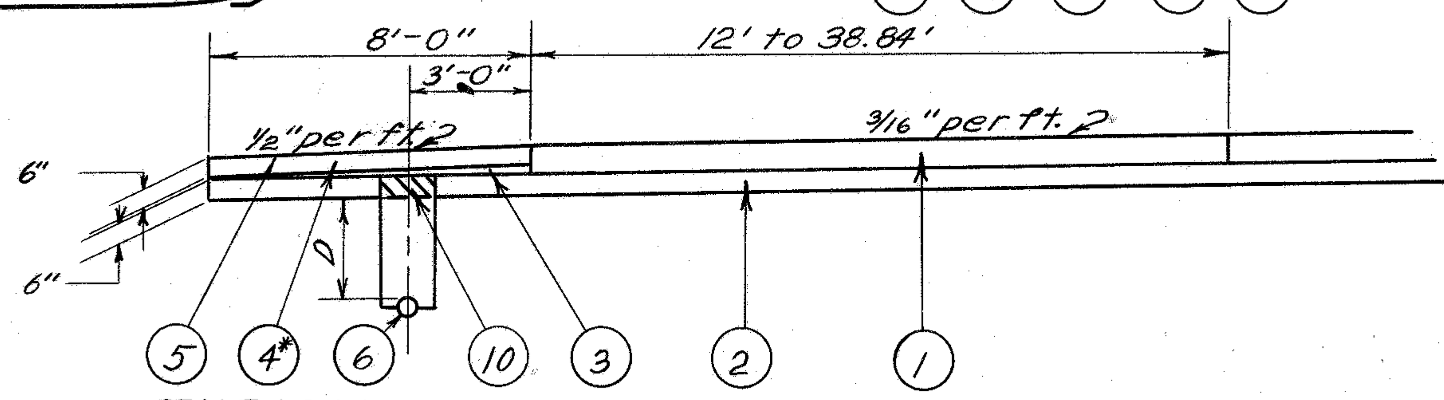
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

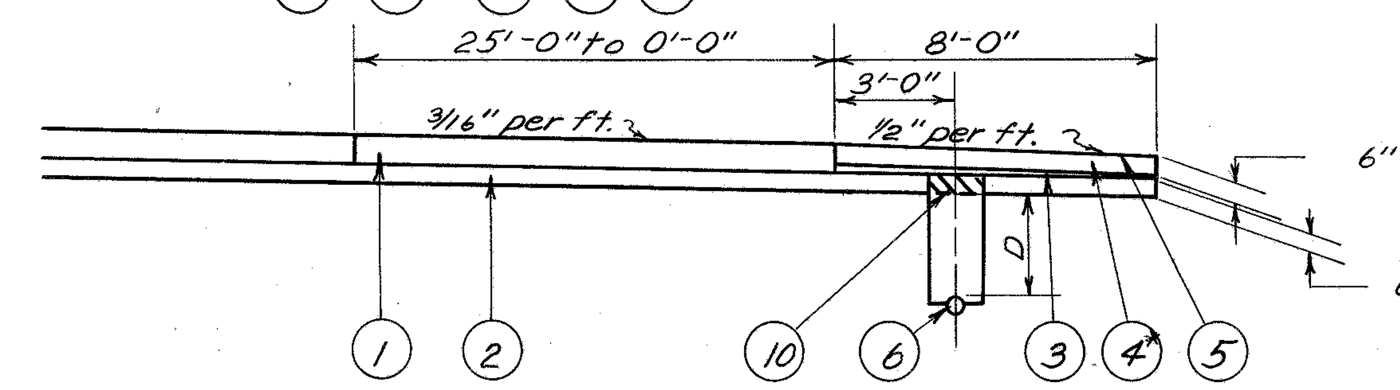
TYPICAL SECTION
TYPE -T-71
SCALE ¼"=1'

NORMAL SECTION

STA. 801+00 to STA. 820+00
STA. 830+00 to STA. 833+00
STA. 842+00 to STA. 855+00
STA. 877+00 to STA. 888+00



TYPICAL PART SECTION
SPEED CHANGE LANES

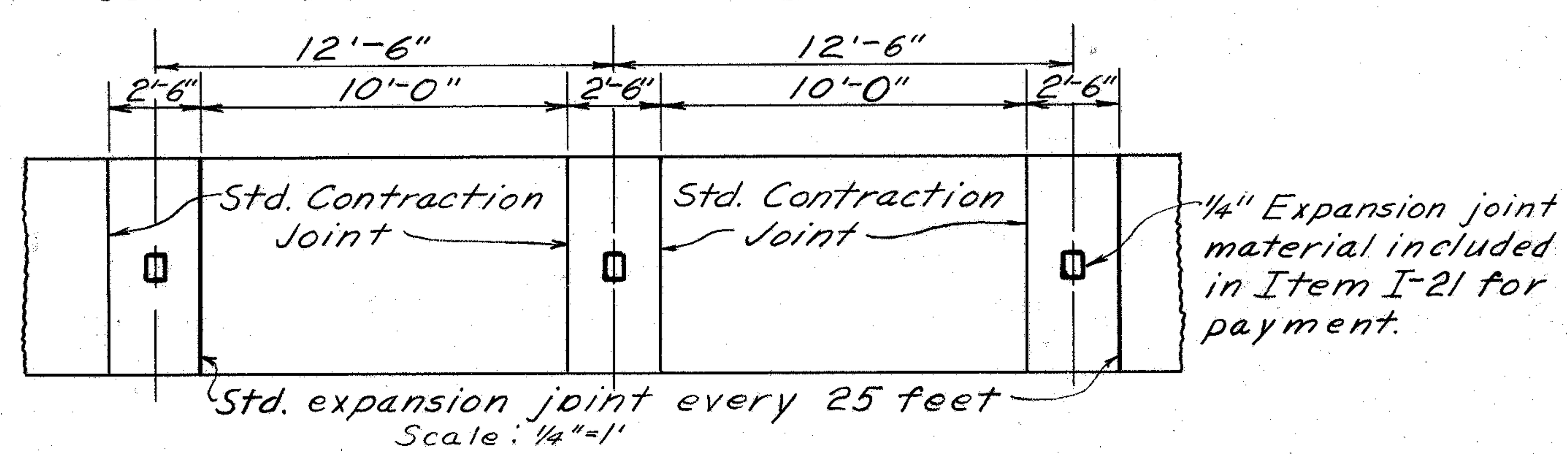


TYPICAL PART SECTION
SPEED CHANGE LANES

SUPERELEVATED SECTION

STA. 800+00 to STA. 801+00
STA. 820+00 to STA. 826+04.25
STA. 827+88.75 to STA. 830+00
STA. 833+00 to STA. 842+00
STA. 855+00 to STA. 877+00

JOINT DETAIL AT GUARD RAIL POSTS

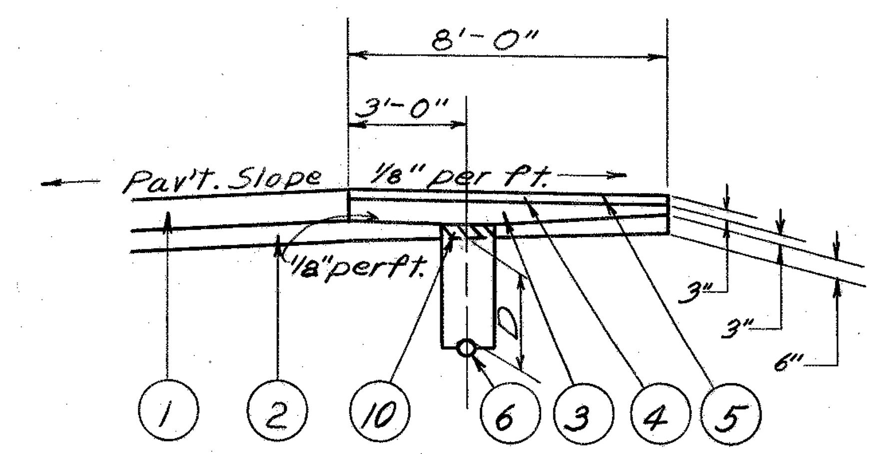


In lieu of spacing requirements of Standard Drawing I-21-23, expansion and contraction joints shall be provided in Item I-21 Median Pavement, as detailed hereon, whenever guard rail is called for.

ǂThickness shown is "designed" thickness as described in Section B-21.01
*Note: B-21 6" Thick for Speed Change Lanes.
Note D: 30" or as shown on Plan & Profile Sheet.

KEY

1. Item T-71 9" Reinforced Portland Cement Concrete Pavement
2. Item I-22 6" Subbase, Grading "A or B", modified as per general note
3. Item B-112 Porous Base Course
4. ǂItem B-21 3" Waterproofed Aggregate Base Course (Type "A" T-35 material may be used in construction of this course ~ See note in Proposal)
5. Item T-31 Bituminous Surface Treatment using 0.008 cu.yd. No. 6 aggregate per sq. yd. and 0.25 gal. bituminous material per sq. yd. (See note in Proposal)
6. Item I-1 6" Pipe, Class I-3
7. Item I-18 Stabilized Crushed Aggregate Shoulders and Approaches
8. Item I-21 Standard Type 2 Median Pavement, as per plan
9. Item I-15 Barrier Type Guard Rail Steel Beam (Deep)
10. Remove subbase for width of I-1 trench and replace with either Class 3 Backfill or with porous base material immediately prior to placing the Item B-112 Porous Base Course. Cost shall be included in price bid per lin. ft. for Item I-1, Class I-3.



SHOULDER DETAIL FOR 1°30' CURVES OR LESS

STA. 833+00 to STA. 842+00 1°00'
STA. 867+00 to STA. 877+00 1°20'

TYPICAL SECTION
TYPE-T-71
SCALE ¼"= 1'
RELOCATED SR170

NORMAL SECTION
*STA. 14+33.65 to STA. 16+04
STA. 16+04 to STA. 18+87.49
***STA. 0+27.7 to STA. 1+11 APPROACH "A"

SUPERELEVATED SECTION
**STA. 21+12.49 to STA. 34+50

*Same Pavement type except width is 24'. See Detail Sheet No. 107

**For Pavement Transition Detail Sta. 30+00 to Sta. 34+50 see Detail Sheet No. 108

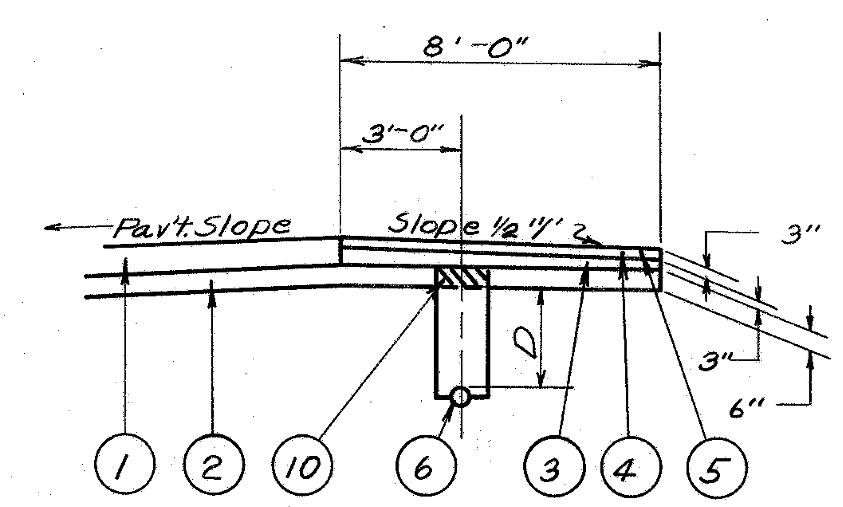
‡Thickness shown is "designed" thickness as described in Section B-21.01

*** Same Pavement type except width is 36'. See Detail Sheet No. 107

Note D: 30" or as shown on Plan & Profile Sheet.

KEY

(1) Item T-71 9" Reinforced Portland Cement Concrete Pavement
(2) Item I-22 6" Subbase Grading "A or B" modified as per general note
(3) Item B-112 Porous Base Course
(4) ‡ Item B-21 3" Waterproofed Aggregate Base Course (Type "A" T-35 material may be used in construction of this course - See note in Proposal)
(5) Item T-31 Bituminous Surface Treatment using 0.008 cu.yd. No. 6 aggregate per sq.yd. and 0.25 gal. bituminous material per sq.yd. (See note in Proposal)
(6) Item I-1 6" Pipe, Class I-3
(10) Replace I-22 with B-112 (See Description Sheet No. 3)
(11) Item I-12 Type 2-A Concrete Curb
(12) Item I-21 4" St'd. Type I Portland Cement Concrete Median Pavement
See Sheet 13 for Location of Median Pavement

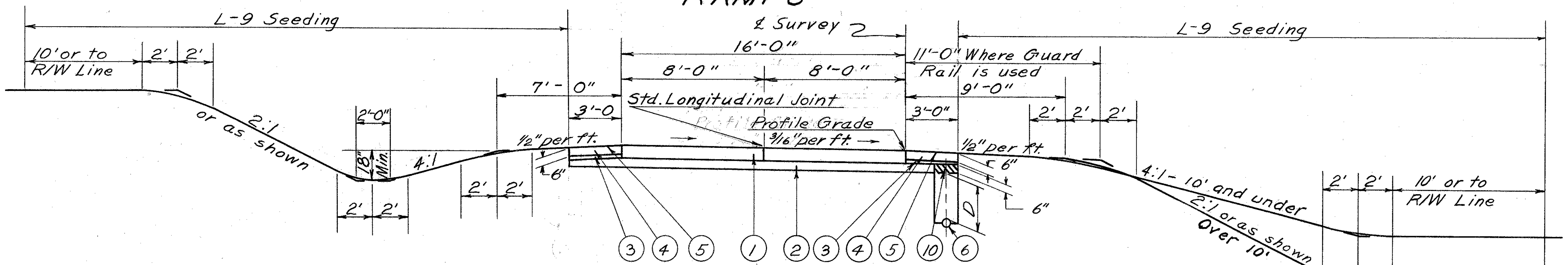


SHOULDER TRANSITION DETAIL
STA. 21+12.49 to STA. 23+83.57
STA. 30+01.54 to STA. 34+01.54

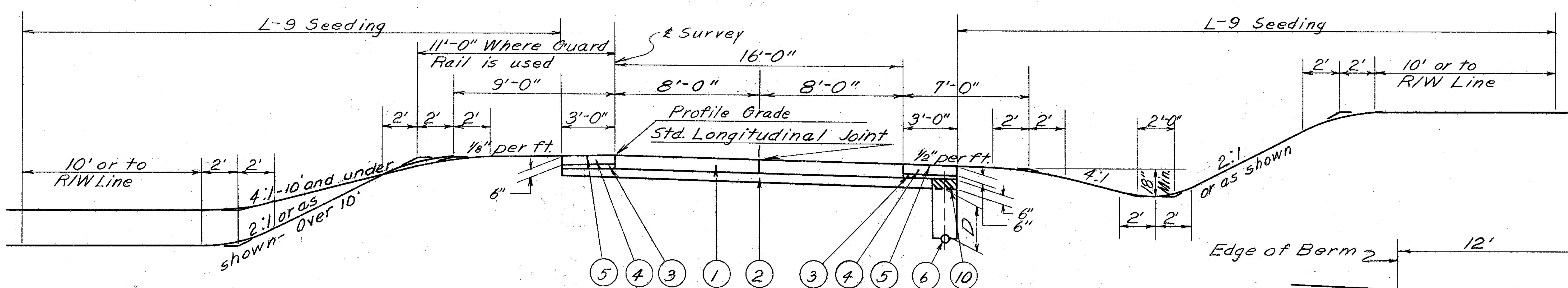
TYPICAL SECTIONS
TYPE-T-71

SCALE: 1/4" = 1'

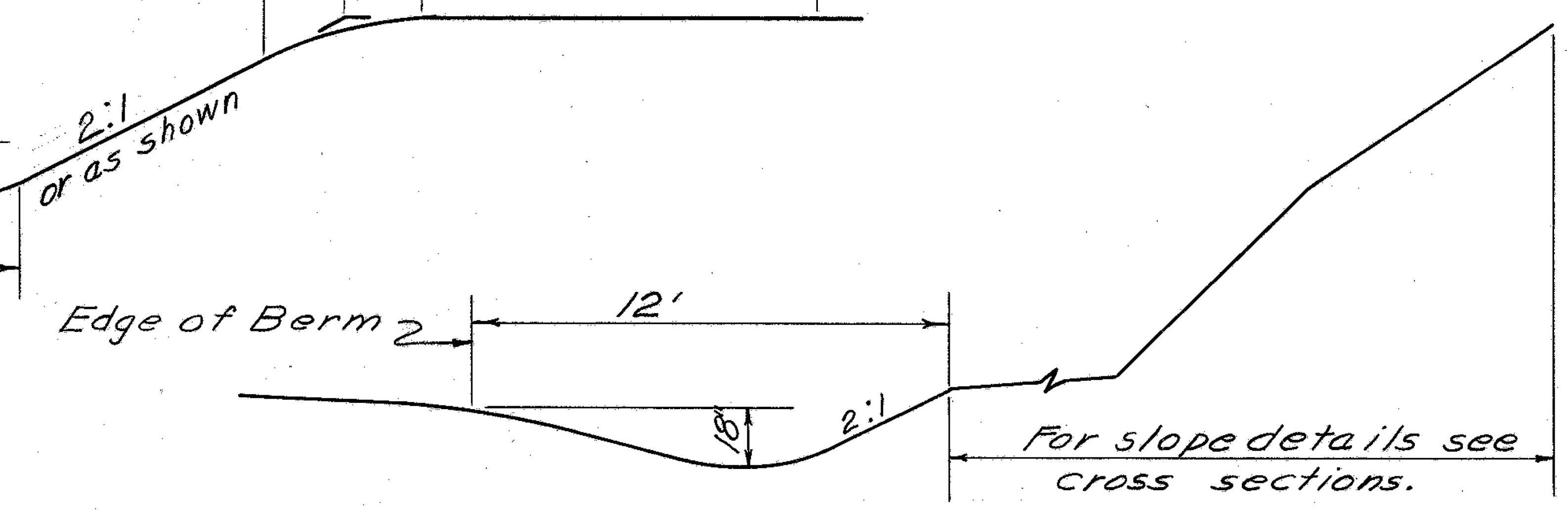
RAMPS



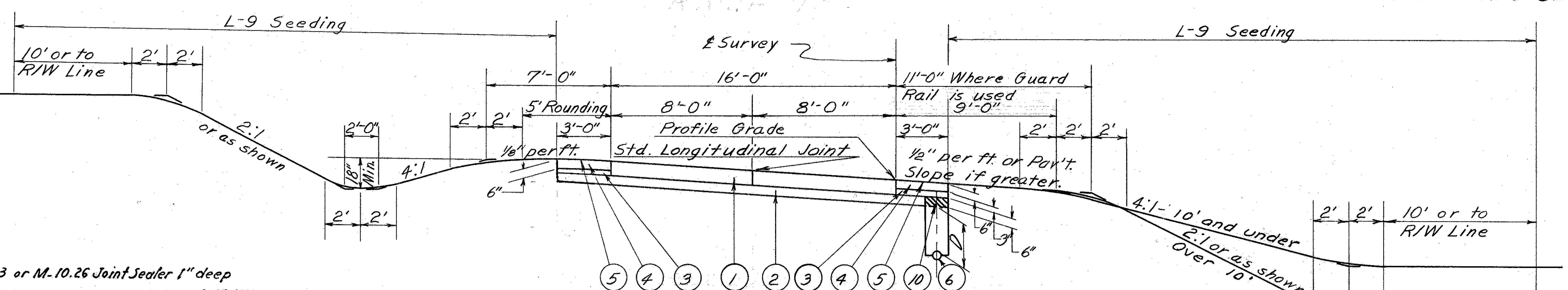
NORMAL SECTION



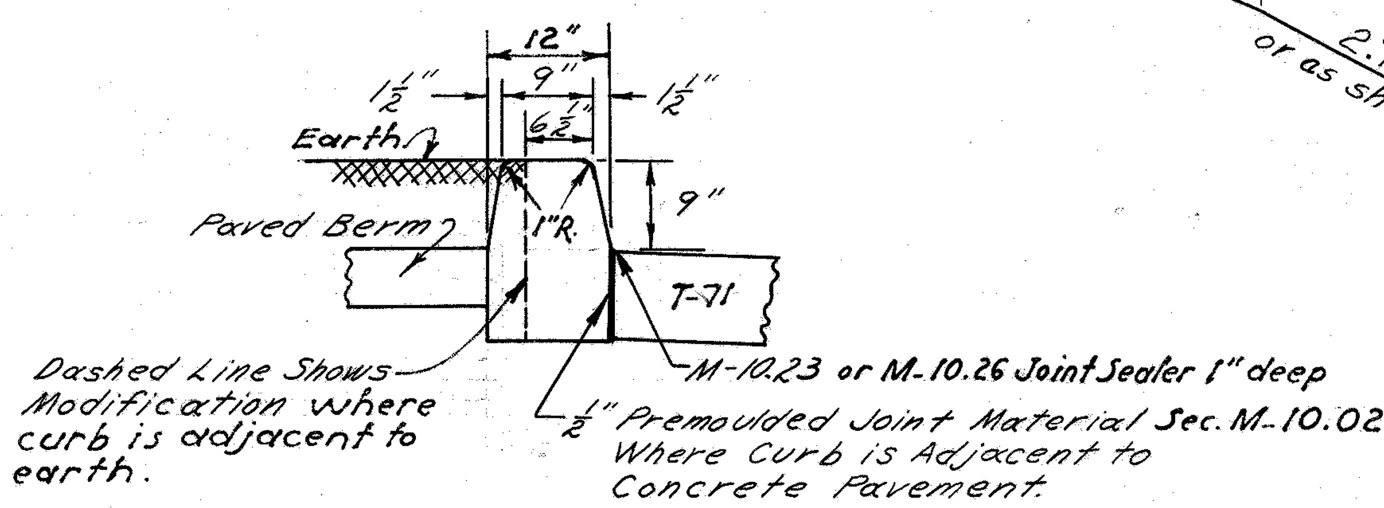
SUPERELEVATED SECTION
RAMP "A"



DITCH AND SLOPE DETAIL IN ROCK CUTS



SUPERELEVATED SECTION
RAMP "D"



SPECIAL CONCRETE CURB DETAIL (ENTRANCE RAMPS)
Scale 3/4" = 1'-0"

KEY

1. Item T-71 9" Reinforced Portland Cement Concrete Pavement
2. Item I-22 6" Subbase, Grading "A" or "B", modified as per general note
3. Item B-112 Porous Base Course
4. # Item B-21 6" Waterproofed Aggregate Base Course (Type "A" T-35 material may be used in construction of this course ~See note in Proposal)
5. Item T-31 Bituminous Surface Treatment using 0.008 cu.yd. No. 6 aggregate per sq.yd. and 0.25 gal. bituminous material per sq.yd. (See note in Proposal)
6. Item I-1 6" Pipe Class I-3
10. Replace I-22 with B-112 (See Description Sheet No. 3)

Thickness shown is "designed" thickness as described in Section B-21.01

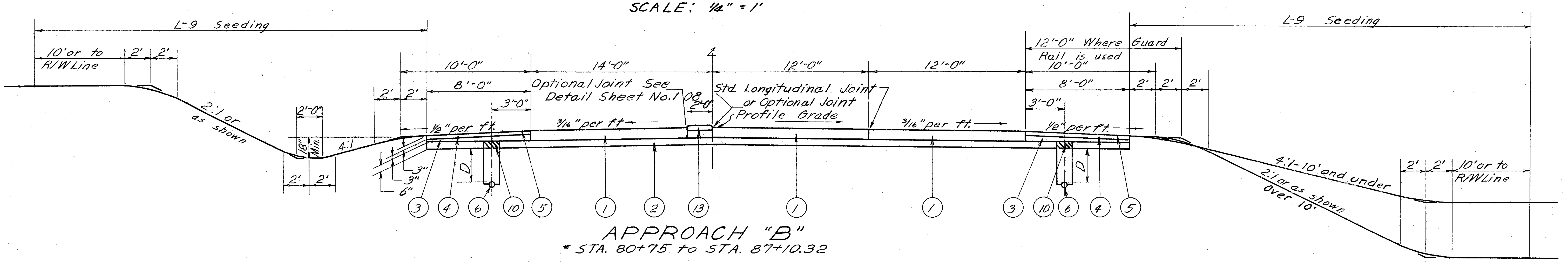
Note D: 30" or as shown on Plan & Profile Sheet.

ITEM I-1, 6" PIPE, CLASS I-3.
Subsequent to the completion of these plans it was decided to remove the proposed I-3 Underdrains from the high side of Ramps "A" and "D". An estimated quantity of 3000 Linear Feet of I-3 Underdrains was deducted from the plan quantities as shown on Sheet 18, however the corrections were not carried through the individual sheets.
Additional necessary adjustments will be made at the time of construction and payment will be based on final measurements for Item I-1, 6" pipe, Class I-3.

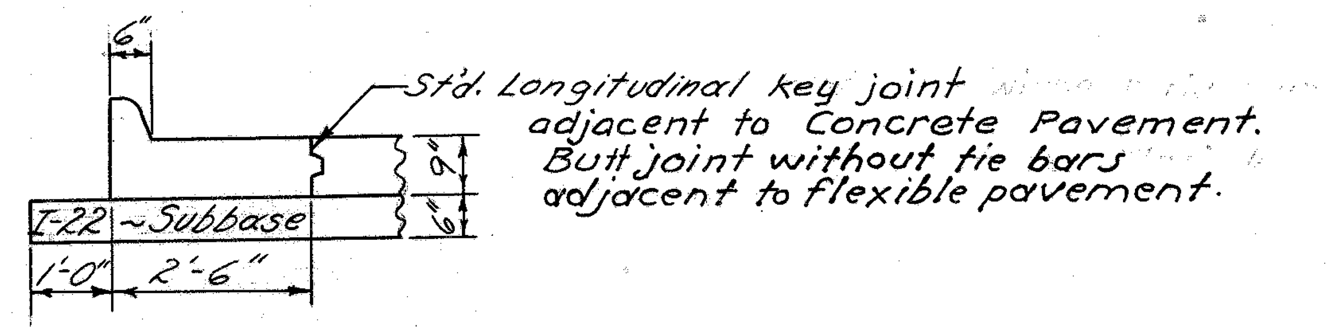
TYPICAL SECTIONS

TYPE - T - 71

SCALE: 1/4" = 1'



APPROACH "B"
* STA. 80+75 to STA. 87+10.32



TYPE 2 CURB & GUTTER DETAIL
Scale: 1/2" = 1'-0"

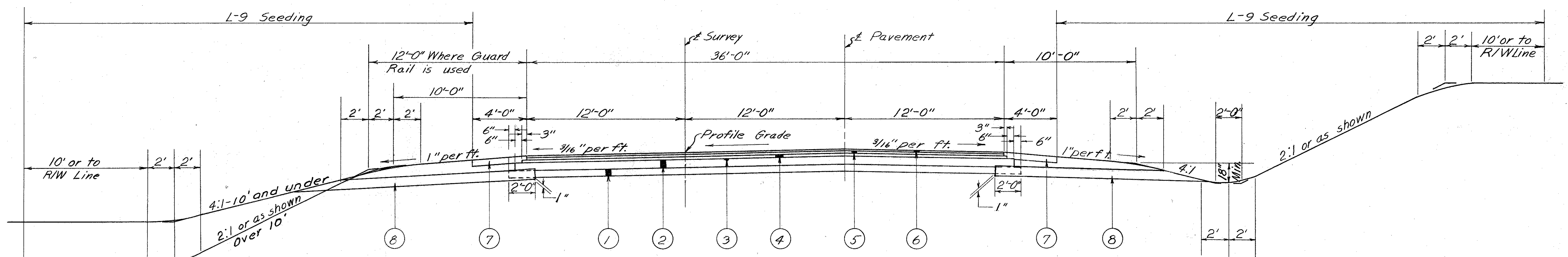
KEY

1. Item T-71 9" Reinforced Portland Cement Concrete Pavement
2. Item I-22 6" Subbase Grading "A" or "B", modified as per general note
3. Item B-112 Porous Base Course
4. ‡ Item B-21 3" Waterproofed Aggregate Base Course (Type "A" T-35 material may be used in construction of this course ~ See note in Proposal)
5. Item T-31 Bituminous Surface Treatment using 0.008 cu. yd. No. 6 aggregate per sq. yd. and 0.25 gal. bituminous material per sq. yd. (See note in Proposal)
6. Item I-1 6" Pipe, Class I-3
10. Replace I-22 with B-112 (See Description Sheet No. 3)
13. Item I-23 Precast Concrete Traffic Dividers

*Note: For Pavement Transition Detail STA. 80+75 to STA. 83+50 see Detail Sheet No. 108

Note D: 30" or as shown on Plan & Profile Sheet.

TYPE-T-35 ON B-19



APPROACH "A"
STA. 1+11 to STA. 16+00

KEY

1. Item I-22 6" Subbase, Grading "A" or "B", modified as per general note
2. Item B-19 8" Aggregate Base Course
3. Item T-30 Prime Coat, Sec. M-5.7 RT-2 or RT-3, Applied at the rate of 0.4 gal. per sq. yd.
4. ‡ Item B-35 3" Asphaltic Concrete Base Course (70-85)
5. ‡ Item B-35 1 1/4" Asphaltic Concrete Leveling Course (70-85)
6. ‡ Item T-35 1 1/4" Asphaltic Concrete Surface Course, Type "C" (70-85)
7. Item I-18 6" Stabilized Crushed Aggregate Shoulders and Approaches #
8. Item I-9 Stone Underdrains, No. 2

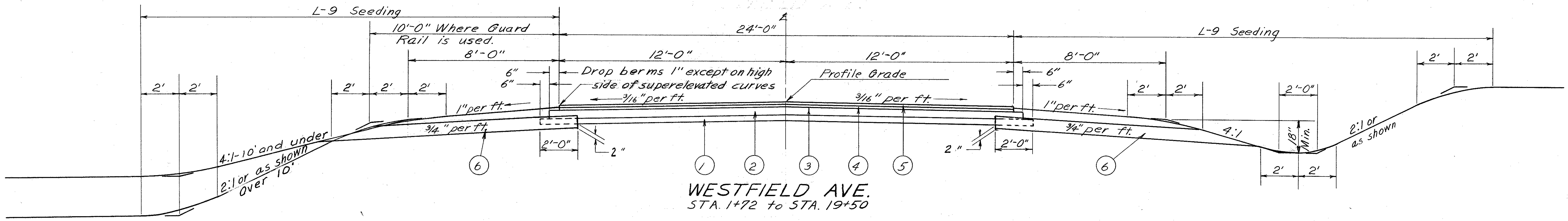
See note in proposal for additional stabilization with calcium chloride in upper three (3) inches of this item.

‡ Thicknesses shown are "designed" thicknesses as described in Sections B-21.01, B-35.01 and T-35.01

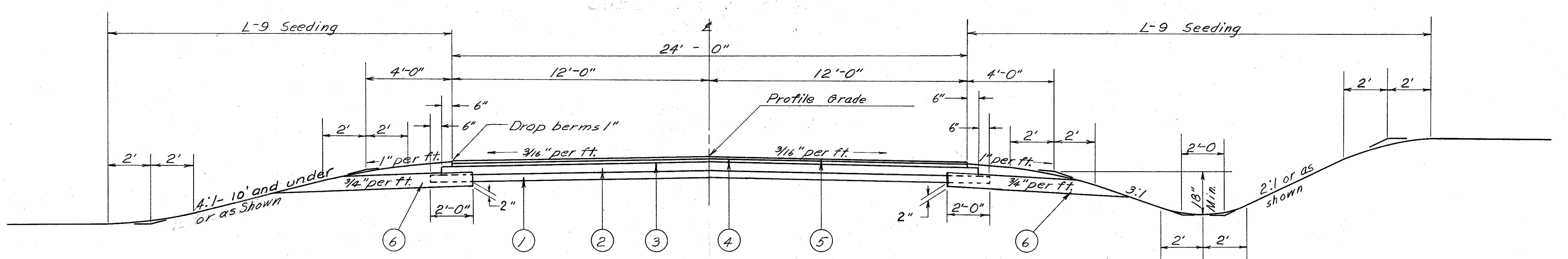
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

COL-30-32.19

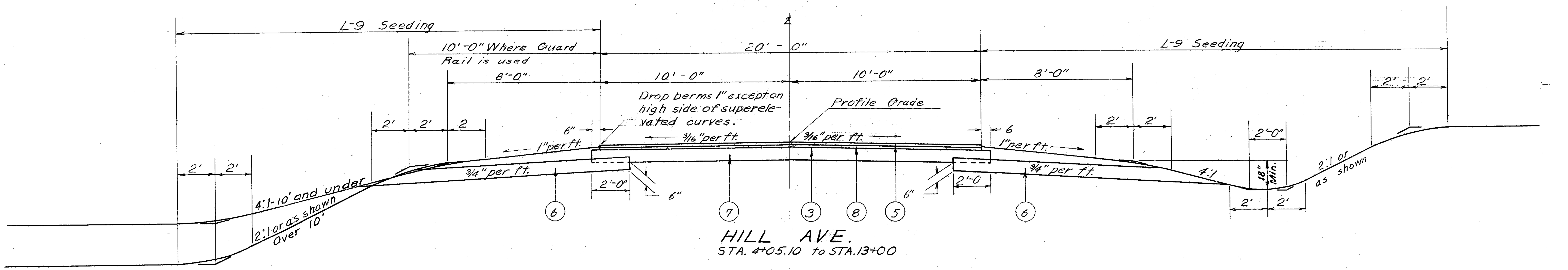
TYPICAL SECTIONS
TYPE-T-350NB-19
SCALE: 3/8" = 1'



WESTFIELD AVE.
STA. 1+72 to STA. 19+50



SUBSTATION ROAD
STA. 11+50 to STA. 14+33.65



HILL AVE.
STA. 4+05.10 to STA. 13+00

KEY

1. Item I-22 4" Subbase, Grading "A" or "B", modified as per general note
2. Item B-19 5" Aggregate Base Course
3. Item T-30 Prime Coat, Sec. M-5.7 RT-2 or RT-3, Applied at the rate of 0.4 gal. per. sq. yd.
4. ‡ Item B-35 1¾" Asphaltic Concrete Leveling Course (85-100)
5. ‡ Item T-35 1¼" Asphaltic Concrete Surface Course, Type "C" (85-100)
6. Item I-9 Stone Underdrains, No. 2
7. Item B-19 8" Aggregate Base Course
8. ‡ Item B-35 1¼" Asphaltic Concrete Leveling Course (85-100)

‡ Thicknesses shown are "designed" thicknesses as described in Sections B-35.01 and T-35.01

Note: For superelevation details see Standard Drawing RT-1.

GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

DESIGN SPEED: The geometrics for this project have been planned for a design speed of 60 miles per hour; except for Relocated S.R. 170 which has a design speed of 35 miles per hour.

SUPERELEVATION: Superelevated curves shall be built without crown. The crown shall be worked out of the pavement in the portion between the beginning of the transition and the point where the superelevation equals twice the crown.

ROUNDING OF CORNERS: The rounded corners shown on Standard Drawing RI-1, as modified by the typical sections, apply to all cross sections, even though otherwise shown on these plans.

SPECIAL SEEDING PREPARATION AREAS: The references in the first paragraph of Sec. L-9.11 to preparation of the seed bed in front of residences, etc., shall, on this project, be considered to be particularly applicable in the following areas.

S.R.170 (Sub. Sta. Rd.)	Sta 11+30 To Sta 16+00	Lt. & Rt.
S.R.170	Sta 28+00 To Sta 36+00	Rt.
S.R.170	Sta 30+50 To Sta 36+00	Lt.
Ramp "D"	Sta 0+39 To Sta 3+50	Rt.
Approach "B"	Sta 80+20 To Sta 83+50	Lt.
Cemetery Approach		

BENCHING OF FOUNDATION SLOPES: Although cross sections on this plan indicate specific widths and depths of proposed benching of the embankment foundation in certain areas, no waiver of specifications is intended and all other sloped foundation areas shall be benched as set forth in Sec. E-1.04. No additional payment will be made for benching required by the provisions of Sec. E-1.04.

PUBLIC UTILITIES AFFECTED

Ohio Power Co. ~ Steubenville Ohio ; Ohio Valley Gas Co. ~ Steubenville Ohio
Ohio Bell Telephone Co. ~ Steubenville Ohio
City of East Liverpool, Sanitary Sewers

FIELD OFFICE: The contractor shall, in accordance with Sec. S-0.01(b), provide, for the exclusive use of the State's employees, a suitable field office having a minimum of 500 sq. ft. of floor space. The Contractor shall have a telephone installed and maintained in this field office during the construction of this project.
The Contractor shall also provide and install wiring and outlets suitable for connecting electric lights and office equipment in this field office and provide 110-volt alternating current to this office during the entire period of construction of this project. This office shall be provided within ten days after beginning of work.

UNDERGROUND UTILITIES: The locations of the underground utilities shown on the plans have been obtained by diligent field checks and searches of available records. It is believed that they are essentially correct, but the State of Ohio makes no guarantees as to their accuracy or completeness.

CONSTRUCTION LAYOUT STAKES: See note in proposal describing the work included in this lump sum pay item.

GUARD RAIL ADJUSTMENT: The stationing of individual runs of guard rail will be adjusted, if necessary, by the Engineer at the time of construction to accommodate the standard panel lengths furnished.

STONE UNDERDRAINS: No. 2 stone underdrains shall be constructed at intervals not to exceed 50 feet on each side of the pavement on tangents and at 25 foot intervals on the low side of the pavement on superelevated curves. Additional underdrains may be required and shall be constructed at locations determined by the Engineer. An estimated quantity of 3000 lin. feet has been included in the General Summary. In the final finishing of slopes and ditches care shall be exercised to assure that the exposed edge of the underdrains will be left free of earth cover, seeding, or mulch, that would impede free drainage of the Base Material.

REMOVAL OF TREES AND STUMPS: All trees and stumps lying within the construction limits of this project shall be removed under the lump sum price bid for Item E-9, Removal of Trees and Stumps, except that those trees and stumps for which protection and preservation work is indicated elsewhere in these plans shall not be removed.
The following is an approximate estimate of the number of trees and stumps to be removed:

Sizes	No. Trees	No. Stumps
12"-18"	757	
18"-24"	118	
24"-30"	26	
30"-36"	14	
36"-42"	7	
42"-48"		
Over 48"		

The above estimate is approximate and the State of Ohio reserves the right to order the removal of additional trees or stumps outside of the limits of construction but within the right-of-way and/or easement lines. Payment for the removal of these additional trees or stumps shall be included in the lump sum price bid for Item E-9, Removal of Trees and Stumps.

ROCK SUBGRADE: The Contractor shall be paid for the thickness of I-22 material shown on the typical sections in rock excavation areas. Any pockets in the rock below the plan subgrade elevation shall drain either longitudinally or laterally and all irregularities in the rock below this elevation shall be filled with I-22 material at no additional cost to the State.

CONTRACTION AND EXPANSION JOINTS: Although specific locations of certain expansion and contraction joints have been detailed on this plan, no waiver of specifications is intended. Provision of expansion joints at all major structures & intersecting roads and the maximum spacing between contraction joints shall in all cases be in accordance with Standard Construction Drawing T.J.

PIPE CONNECTIONS TO CORRUGATED METAL AND CONCRETE STRUCTURES: Connections of proposed drainage structures to the proposed longitudinal channel structures enclosing carpenters Run shall be by means of a shop fabricated stub and the hole cut at the plant. When the longitudinal structure is of corrugated metal the stub shall meet the requirements of Sec. M-6.4 and have a minimum length of two feet and gage the same as the carrying line. When the longitudinal structure is of concrete the stub shall be concrete pipe and shaped at the plant to fit the inside circumference of the carrying line. The stub shall meet the requirements of Sec. M-6.6 and have a minimum length of two feet and same strength designation as the carrying line. Location and elevation of the stub are to be considered approximate and may be adjusted by the Engineer. Payment for cutting into the structure, and providing and attaching the shop fabricated stubs described shall be included in the unit price bid for the pertinent pipe item.

STANDARD NO. 6 CATCH BASIN: In lieu of the provisions for depressing the pavement 1" as shown on Standard Drawing I-8 C.B. No. 6, the pavement shall be depressed 2" on this project.

PLUGGING PIPE:

The upstream end, or both ends, of all drainage pipe intercepted by earthwork operations or to be abandoned in place shall be effectively blocked and covered as directed by the Engineer. Broken pieces and portions of pipe or tile shall be removed until a whole length is encountered. The pipe shall then be blocked with concrete or flat stone or brick laid in mortar. Payment for above work shall be included in the unit price bid for Item E-1, Roadway Excavation.

CONNECTIONS TO EXISTING PIPE: At places where the plans provide for proposed drainage pipe to be connected to existing pipe, it shall be the responsibility of the contractor to locate the existing pipe both as to line and grade before he starts to lay the proposed pipe. The cost of the operation shall be included in the unit price bid for the pertinent pipe item.

REINFORCED CONCRETE CATCH BASIN: Catch basins over 12' in depth shall be built of Class "C" concrete reinforced by placing ½" diameter bars 12" center to center both vertically and horizontally with a 2" clearance from the inside face of the wall. Payment for furnishing and placing the reinforcing steel shall be included in the unit price bid for Item I-8, Reinforced Concrete Catch Basins.

EROSION CONTROL: Item I-10, I-14, and L-10 are provided in these plans for erosion control. Rock of a stable nature will not be removed in order to place any of these items. The Engineer will check and nonperform quantities or adjust locations and quantities for these items where indicated by field conditions during construction.

STEPS IN DEEP CATCH BASINS: All catch basins (6) six feet deep or greater shall have steps. The steps shall be built in accordance with Standard Drawing I-8 Manhole No. 1. The price of all material and work for building these steps shall be included in the bid price per each of the catch basins.

SOD ADJACENT TO PAVED GUTTERS: Eighteen (18) inch width of sod shall be used on all slopes adjacent to paved gutter.

SPRING DRAINS: Reference is made to the detailed drawing on Sheet No. 11 showing the method of draining any spring that may be encountered during construction.

SEALING OF PIPE JOINTS: Where connections are made between rigid and flexible pipe sections or between pipe sections of different kind or type of end fabrication, whether required by the plans, arising from permissible use of optional materials, or encountered in connection to existing facilities, the joint shall be sealed, if sealing is required by the specifications, by means of a Class "E" Standard concrete collar as shown on detail Sheet No. 11. Payment for sealing as described above shall be included in the unit price bid for the pertinent pipe item.

MAINTENANCE OF SEWER FLOWS: The Contractor shall conduct his operations so as to maintain at all times sewer flows through existing facilities to remain in place and through existing facilities to be replaced until new facilities are completed and placed into use. Payment for any additional cost involved in maintaining these flows by pumping or by any other means approved by the Engineer shall be included in the unit prices bid for the respective pipe items.

GUARD RAIL REMOVAL: Existing guard rail on this project shall be removed where called for on the plans. The steel rail element will be removed by and become the property of the State Highway Department. The rails will be removed immediately after the Contractor notifies the Engineer that they will interfere with his operations. The remainder of the guard rail shall be removed by and become the property of the Contractor and shall be disposed of by him.

GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

SPECIAL DRAINAGE: Due to the presence of abandoned mine entries in the hillside along this project, water is seeping out at several locations. No attempt has been made to intercept this water, since the location of the source is not known. During construction these drainage situations shall be remedied as they develop. Additional items have been added to the General Summary for this purpose, to be used where directed by the Engineer.

ITEM SPECIAL, DRILLED WELL ABANDONED: The existing concrete or stone slab well cover shall be removed and disposed of. The pump and all other salvageable parts shall be carefully removed and stored on the abutting property. The casing shall be cut off at least two feet below the proposed finished grade outside proposed pavement areas or at least two feet below the proposed subgrade elevation inside proposed pavement areas and capped with Class "E" concrete or a standard threaded pipe cap. The unit price bid for each "Drilled Well Abandoned" shall include payment for all labor, tools, materials, and incidentals necessary to complete this item.

SMALL DRAINS: Where drains from downspouts, field drains, etc. are encountered and not shown on the plans, they shall be given an unobstructed outlet as directed by the Engineer. No drain carrying domestic waste shall be connected to any proposed highway drainage facility.

ESTIMATED QUANTITIES: Specific locations and usage of estimated quantities set up on this plan to be used "as directed by the Engineer" shall be made a matter of record by incorporation into the final change order governing completion of this project.

OVERHEAD SIGNS: The exact stationing of Bridge Type Overhead Sign Assemblies in guard rail sections may be adjusted at the time of construction, as directed by the Engineer, to avoid interference with guard rail posts.

SCARIFICATION OF EXISTING FLEXIBLE PAVEMENT: Within the limits of construction where the existing flexible pavement will have less than six (6) inches of fill placed upon it, the pavement shall be thoroughly scarified for its full depth, mixed with sufficient soil and properly recompacted to insure the elimination of any planes of separation between it and the embankment placed thereon. Payment for scarification as described above shall be included in the unit price bid for Item E-1, Roadway Excavation.

PAVEMENT REMOVAL OUTSIDE NORMAL CONSTRUCTION LIMITS: After the existing pavement has been removed, the old roadway shall be plowed, harrowed, and dragged to a smooth grade, the old ditches filled, and the entire area sloped to drain and left in a neat condition ready for seeding. Payment for this work shall be included in the unit price bid for pavement removal, Item E-8. Seeding shall be measured and paid for in accordance with Item L-9.

SEEDING: Quantities for seeding are calculated for the soil areas between lines ten (10) feet outside the work limits, as shown on the cross sections, or to the right-of-way line if such line is less than ten (10) feet from the work limits. Except for Westfield Ave., Hill Ave., and Approach "A" where quantities for seeding are calculated for the soil areas between the work limits, as shown on the cross sections. The following seed mixture shall, in lieu of the mixture listed in Section L-9.11, be used throughout the limits of this project:

- 30% Kentucky Bluegrass
- 45% Kentucky 31 Fescue
- 10% Red Top
- 10% Creeping Red Fescue
- 5% Alsike Clover

Seeding shall not be used on slopes exceeding a 1:1 inclination or where fill slopes are composed of rock.

REINFORCED END ON CORRUGATED METAL Pipe: Reinforced ends will be required on all corrugated metal, Class F-1, Sec. M-6.4(c) pipe for driveways and underdrain outlets, if the pipe ends are unprotected by headwalls, catch basins or manholes.

STABILIZED SHOULDERS: Aggregate surfaced shoulders on this project shall be stabilized by a mixture of calcium chloride. See note in proposal describing the work included in the Stabilized Shoulders.

MONUMENT ASSEMBLY I-8: See Standard Drawing RI-1 for details of Standard Monument Assembly.

UTILITY ADJUSTMENT: Any or all work required for Public or Private Utilities will be done by and at the expense of their respective owners, unless otherwise noted on these plans.

***SEQUENCE OF CONSTRUCTION OPERATIONS:**

Underdrains shall be installed and backfilled to subgrade elevation immediately prior to construction of the subbase, except that, where subsurface conditions are such that improvement of an unstable subgrade can be accomplished through the drying action of deep underdrains, the project engineer may authorize or require the contractor to delay the construction of the subbase as necessary.

The subbase shall then be constructed under the concrete pavement area and extended out to cover the porous backfill for the underdrain.

Pavement shall then be constructed.

After the surface of the subbase in the shoulder area is in place and compacted as specified, and immediately prior to placing the porous base course, the material located above and within the underdrain trench shall be removed to the depth necessary to expose clean Class 3 backfill. The trench so excavated shall be backfilled with new Class 3 backfill material, or if the contractor so elects, he may substitute material meeting the requirements of Item B-112, Porous Base Course.

Porous base course shall then be constructed and construction of the waterproofed aggregate course shall follow immediately.

* Continued on Sheet 10.

T-10 MODIFIED: This item shall consist of furnishing No. 3 or No. 34 aggregate as directed by the Engineer, in lieu of the grading specified under Item T-10. All other provisions of Item T-10 shall apply. The weights to be used in calculating the yardage to be paid for under this item shall be the same as those indicated in the Construction and Material Specifications for crusher run or bank run materials.

ROCK EMBANKMENT AREA: In the area between Stations 807+50 and 812+00, rock embankment shall be placed as indicated on the plans. Rock for this item shall be obtained from roadway excavation and meet the requirements of Section E-1.02 and shall be placed in accordance with Section E-1.08(d) of the Specifications. Under no conditions will shale be permitted as part of this embankment. Payment for this work shall be included in the price bid for Item E-1.

DUMPED ROCK CHANNEL PROTECTION, AS PER PLAN I-10: The size of stone furnished for this item as provided in Section I-10.02, is hereby modified to permit the use of stones, obtained from excavation, as large as may be conveniently placed to the lines and grades called for in the plans. Payment for the above shall be included in the unit price bid for Item I-10 Dumped Rock Channel Protection, as per plan.

I-22 SUBBASE, GRADING "A" or "B", AS PER PLAN: The material furnished for this item shall meet the requirements of Grading "A" or "B" of Section I-22.02 except that for either grading not more than 10% of the material shall pass a No. 200 sieve after all operations of placement and compaction have been completed.

MAINTAINING TRAFFIC: The Contractor shall maintain traffic at all times in accordance with the requirements of Sec. G-7.07 & G-4.05. The length of one-way traffic zones shall be kept to a minimun consistent with the requirements of the work. Maximum use shall be made of the existing pavement for traffic maintenance, holding the length and duration of use of temporary traffic lanes to an absolute minimum.

Temporary traffic lanes shall be surfaced with T-10 material, treated with calcium chloride and the surface maintained daily in a manner satisfactory to the Engineer. Two-way traffic lanes shall be surfaced with aggregate at least 20 feet wide. One-way traffic lanes shall have the surfacing aggregate not less than 12 feet wide.

The work in the Interchange area shall be performed in the following sequence for the maintenance of two-way traffic at all times.

1. All work on Relocated S.R. 170 and pertinent grading on Mainline shall be accomplished while maintaining traffic on the existing routes.
2. S.R. 170 traffic shall be routed over the new grade, and Approach "A" and Ramp "A" shall be constructed, except that portion of Ramp "A" which would interfere with traffic on existing U.S. 30.
3. When Approach "A" is completed, U.S. 30 traffic shall be routed over Approach "A" and S.R. 170 and the remainder of the work completed.

Traffic shall be maintained at all times on Hill Ave. and the contractor shall safeguard the traveling public by providing platforms, nets, or other suitable protection above the traveled lanes. Payment for this protection shall be included in the lump sum bid for "Maintaining Traffic."

Relocated Westfield Ave. shall be constructed and traffic placed thereon before existing Westfield Ave shall be removed.

Payment for construction, maintaining and removing temporary traffic lanes and for all other items required for the maintenance of traffic, except furnishing and placing T-10, and M-10 items shall be included in the lump sum bid for "Maintaining Traffic."

CONTRACTOR'S MAINTENANCE RESPONSIBILITY
On this project, the Contractor's responsibility for maintenance of the existing pavement per Sec. G-7.07 shall be limited to those portions of the existing pavement lying within the proposed work limits.

FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS: The contractor shall furnish, erect, maintain, and subsequently remove Federal Aid Construction Identification Signs at each of the following locations:

1. At beginning of work- Approach "B".
2. At end of work- S.R. 170, Relocated.
3. At end of work- Main Line

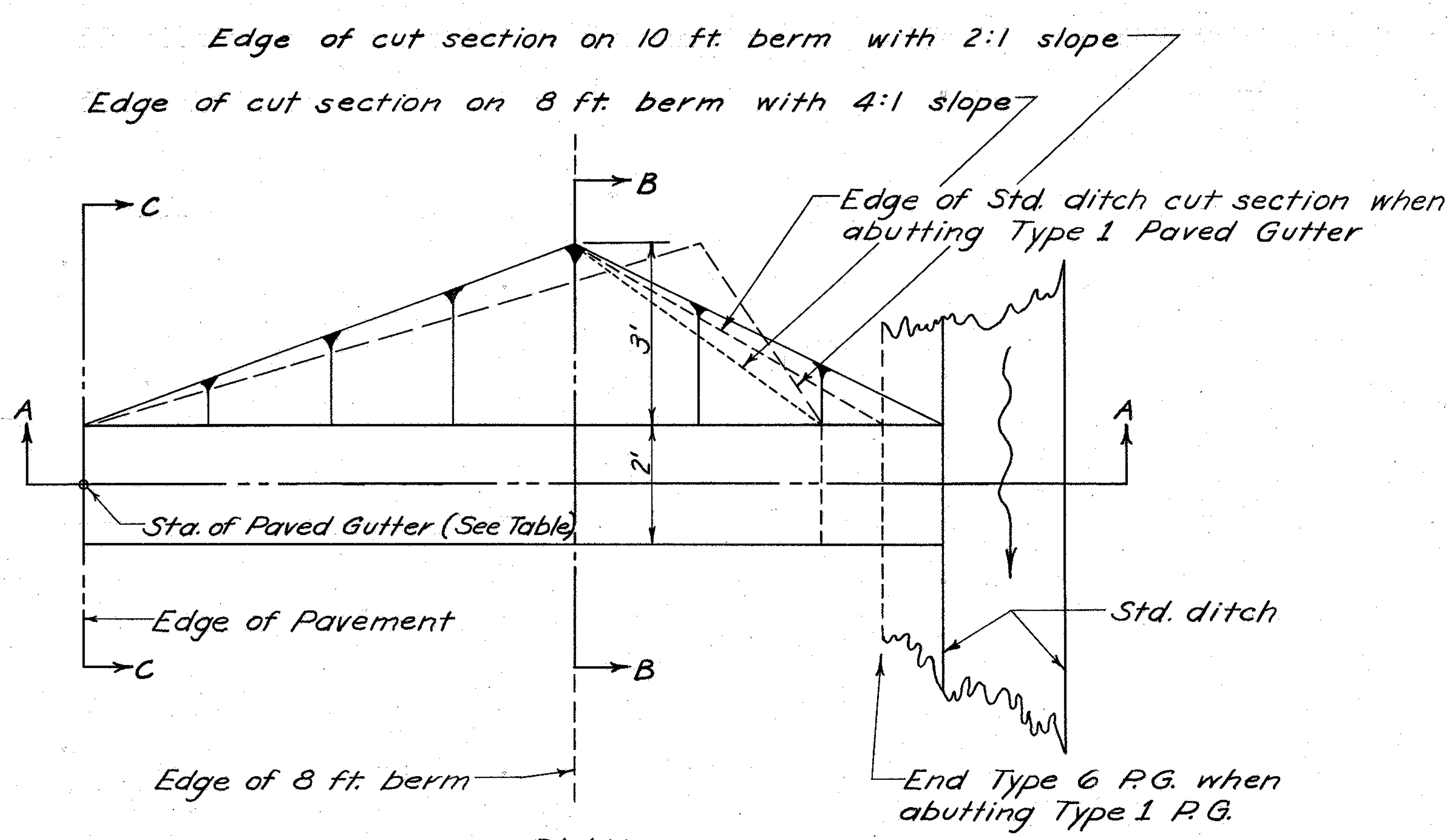
Sign details shall be as specified on Standard Drawing F.A.C.I. 1, "Code N-44(3) 102," and the signs shall be erected in accordance with Standard Drawing FACI-2. Additional requirements shall be in accordance with notes in the Proposal.

PLUGGING GAS WELLS: The gas well located within the limits of the right-of-way shall be plugged by the the contractor before any other construction is started in the vicinity of the well. The well shall be filled solid from bottom to top and all work shall be done in accordance with the requirements of the State of Ohio Division of Mines. All work connected with plugging of the well shall be performed under the supervision of a representative of the Division of Mines. The contractor shall notify the Project Engineer and the Division of Mines at least 14 days in advance of the date on which he intends to begin work. Payment for the work shall be made at the contract lump sum price bid for "Item Special, Plugging Gas Well", which price and payment shall constitute full compensation for furnishing all material, labor, tools and equipment, and all incidentals necessary to complete this item.

ITEM S.S. CE-101.04: An estimated quantity for this item has been included in the General Summary, for use as directed by the Engineer, in proof rolling of all subgrade, except for areas where rock or shale is encountered. The pneumatic tired roller shall be operated at 50 tons gross load for the final proof rolling.

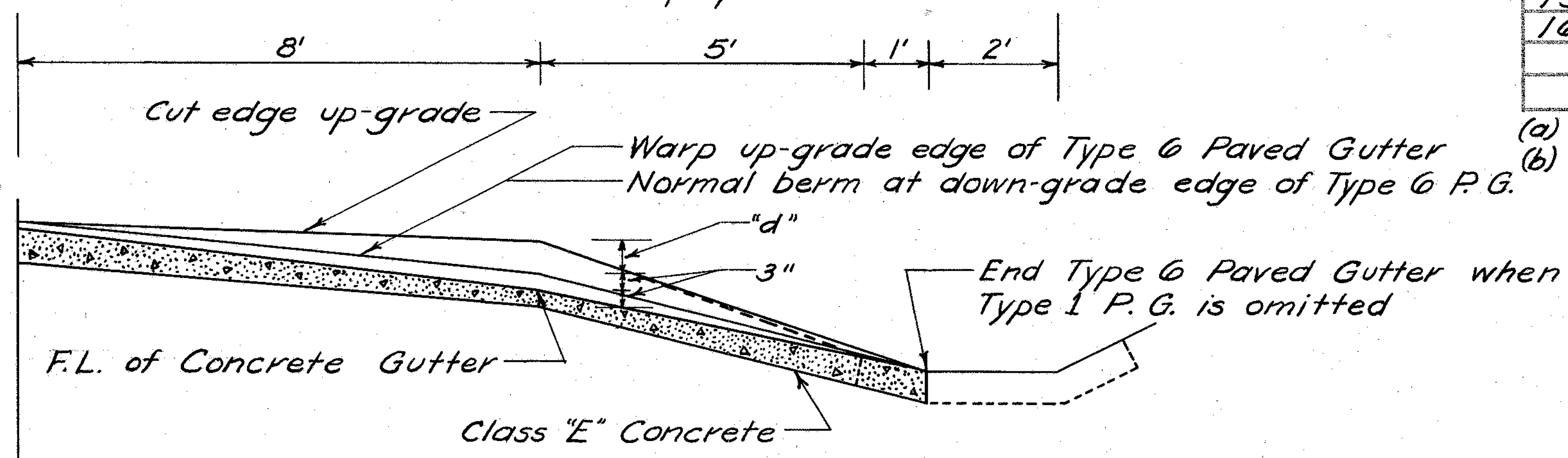
GENERAL NOTES CONTINUED ON SHEET 10

Rev. 6-21-62 Rev 5-10-62

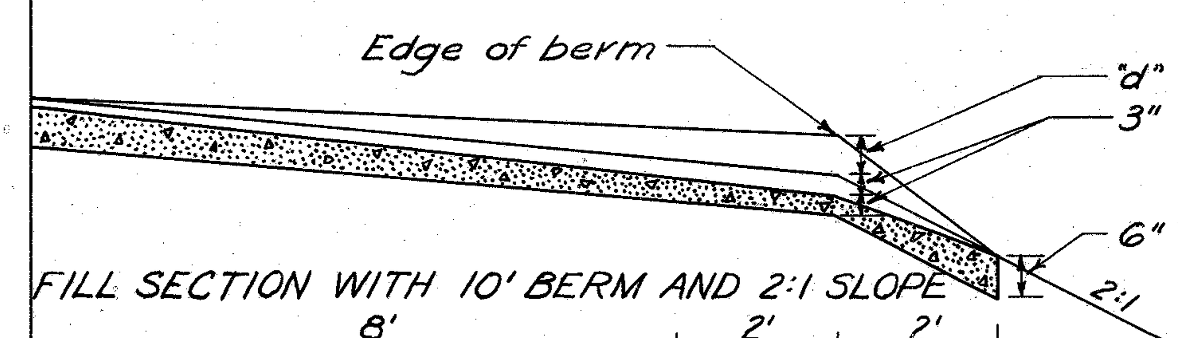


PLAN
Scale: 1" = 2'

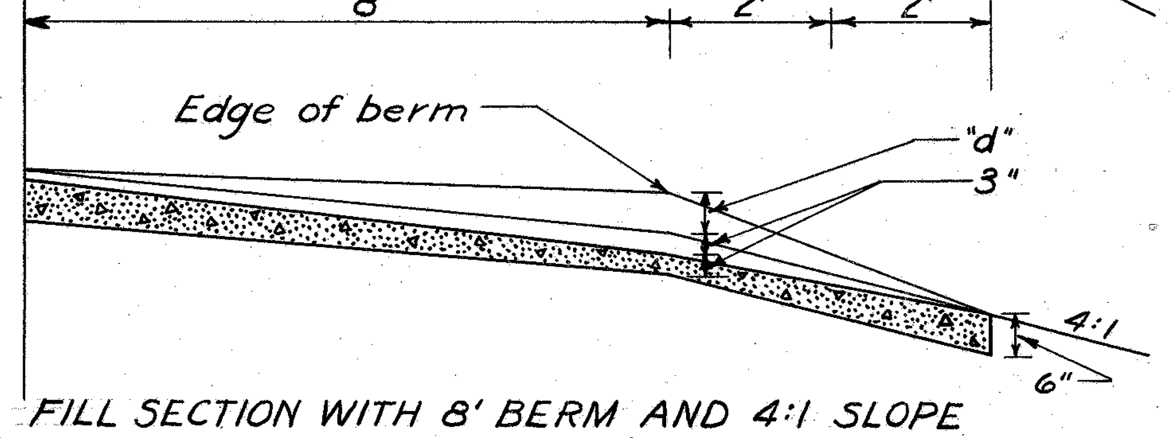
Note: Warp Type 6 P. Gutter from Section C-C to Section B-B to proposed condition at terminal end.



CUT SECTION WITH STD. DITCH



FILL SECTION WITH 10' BERM AND 2:1 SLOPE

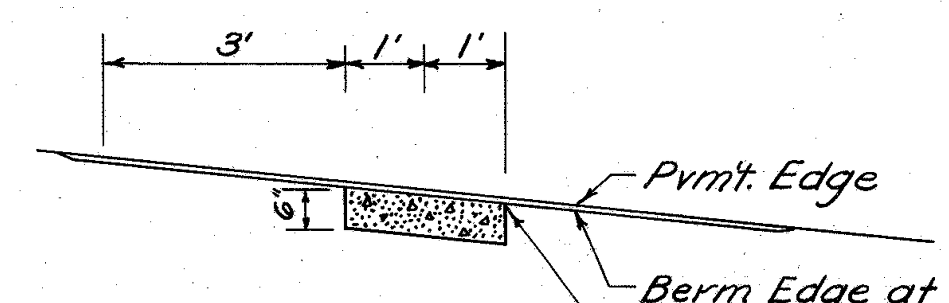


FILL SECTION WITH 8' BERM AND 4:1 SLOPE

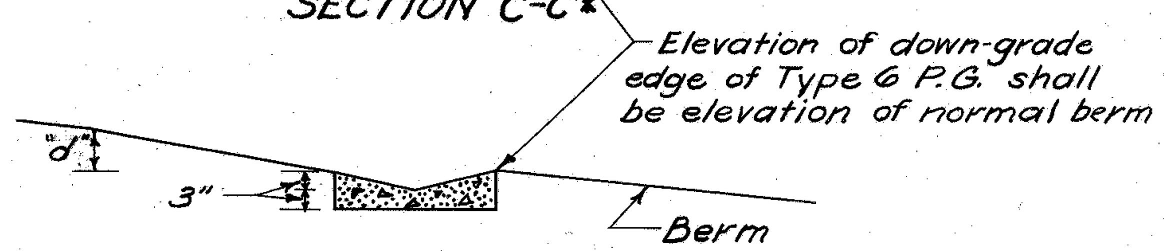
SECTIONS A-A
Scale: 1" = 2'

Type 6 Paved Gutter		
Sta.	Side ℄	Length
Hill Avenue		
4+50	Rt.	13
4+70	Rt.	13
6+00	Lt.	13
8+00	Lt.	13
10+00	Lt.	13
12+00	Lt.	14
Westfield Avenue		
3+60	Lt.	13
4+75	Lt.	13
6+00	Rt.	13
7+50	Rt.	13
9+00	Rt.	13
10+50	Rt.	13
10+50	Lt.	10
13+50	Rt.	14
13+50	Lt.	12
15+50	Rt.	13
17+50	Rt.	13
Approach "A"		
4+00	Rt. & Lt.	28 (a)
6+50	Rt. & Lt.	32 (b)
9+00	Rt. & Lt.	32 (b)
11+50	Rt. & Lt.	32 (b)
14+00	Rt.	16
14+00	Lt.	13
15+50	Lt.	13
16+50	Rt.	14
	Total	399 ft.

(a) 14' on each side
(b) 16' on each side



SECTION C-C *

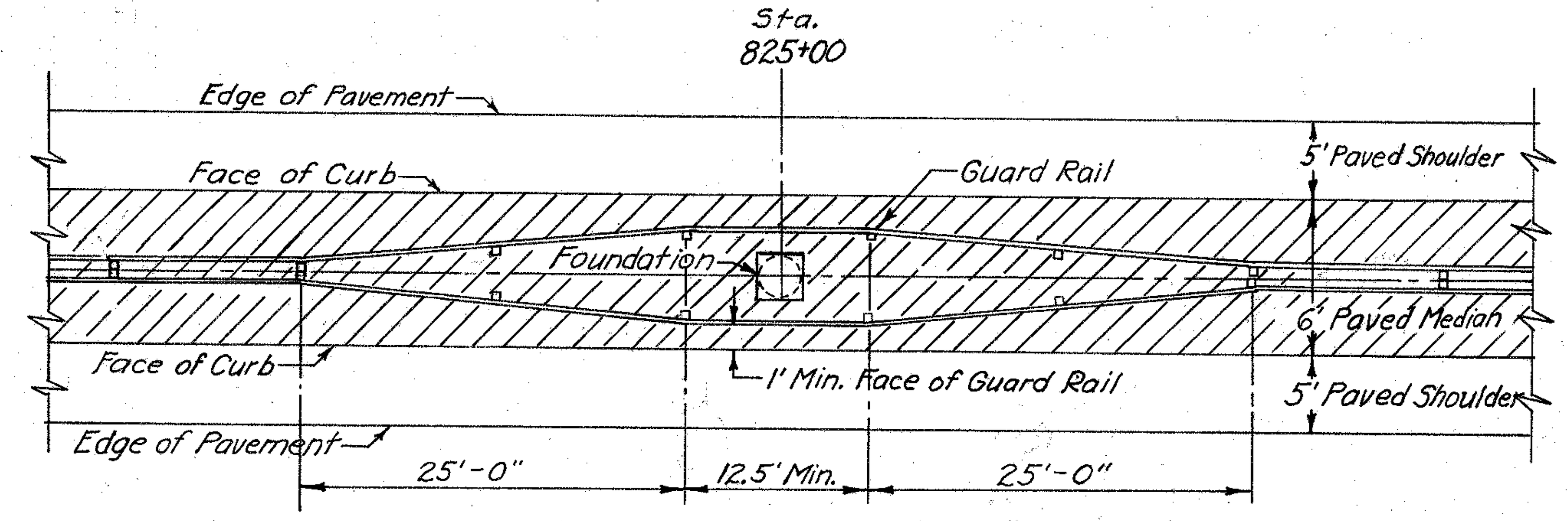


SECTION B-B *

* Same for 8 ft. and 10 ft. berm widths
"d" dimension varies as to pvm't edge grade

Note: This detail is for ascending grade. For descending grade detail will be reversed.

DETAIL OF TYPE 6 PAVED GUTTER
HILL AND WESTFIELD AVENUES AND APPROACH "A"

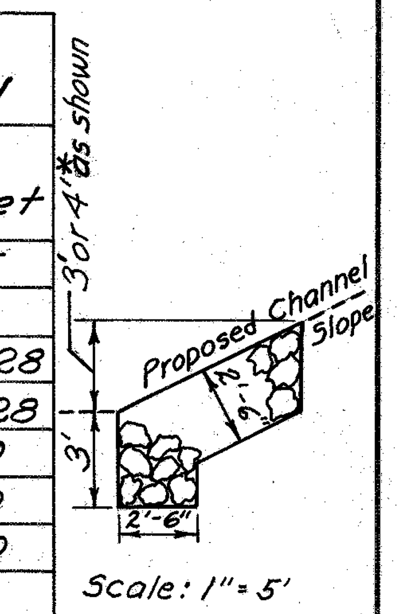


DETAIL OF GUARD RAIL BARRIER TYPE (DEEP), MODIFIED AS PER PLAN

Unit price bid per linear foot for Item I-15 Guard Rail Barrier Type (Deep), As Per Plan, shall include cost of all material and labor necessary to change typical median barrier type guard rail to two single guard rail by-passing over head sign support as shown in above detail. See General Summary sheet No. 17 for quantity.

DUMPED ROCK CHANNEL PROTECTION AS PER PLAN				
Station		Side Of Channel	Cu. Yds.	See Sheet
From	To			
815+00	815+95	Rt.	70	25
829+50	831+25	Lt.	167	27
839+50	841+00	Lt.	130	27 & 28
839+50	841+50	Rt.	185	27 & 28
862+00	863+50	Lt.	120	30
862+00	867+00	Rt.	454	30
869+00	869+90	Rt.	88	30
878+00	879+50	Rt.	141	31
885+00	888+00	Rt.	278	32
Total F-457(11)			237	
Total U-457(11)			1396	
Total			1633	

* See Cross Section Sheets



Scale: 1" = 5'

DETAIL OF DUMPED ROCK CHANNEL PROTECTION

GENERAL NOTES CONTINUED FROM SHEET 9.

*SEQUENCE OF CONSTRUCTION OPERATIONS - CONTINUED

If, after testing the subbase material for composition, it is found that removal of contaminated material from the surface is necessary, such material shall be replaced in the shoulder area with material meeting the requirements of Item B-112, Porous Base Course, at the expense of the Contractor.
Payment for all of the above shall be included in the pertinent items affected.

REMOVAL OF EXISTING RIGID PAVEMENT

Existing rigid type pavements shall be removed under Item E-8 when they are located less than 3 feet below the proposed pavement subgrade in proposed pavement areas or less than 3 feet below the proposed finished surface in areas outside the proposed pavement.
When existing rigid type pavements lie below the above limits they shall not be removed. In lieu thereof, they shall be broken up in place into portions not to exceed one square foot in area prior to placement of proposed embankment. Payment for this operation shall be included in the unit price bid for Item E-1, Roadway Excavation.

NON-RIGID PAVEMENT REMOVAL

Removal and disposal of existing non-rigid pavement, unless otherwise indicated on these plans, shall be measured and paid for as Item E-1, Roadway Excavation.

CUT-OFF WALLS FOR RIPRAP, ITEM I-10

All costs for providing cut-off walls for Item I-10, Riprap, as indicated on these plans or as directed by the Engineer shall be included in the unit price bid for Item I-10, Riprap, as per plan.

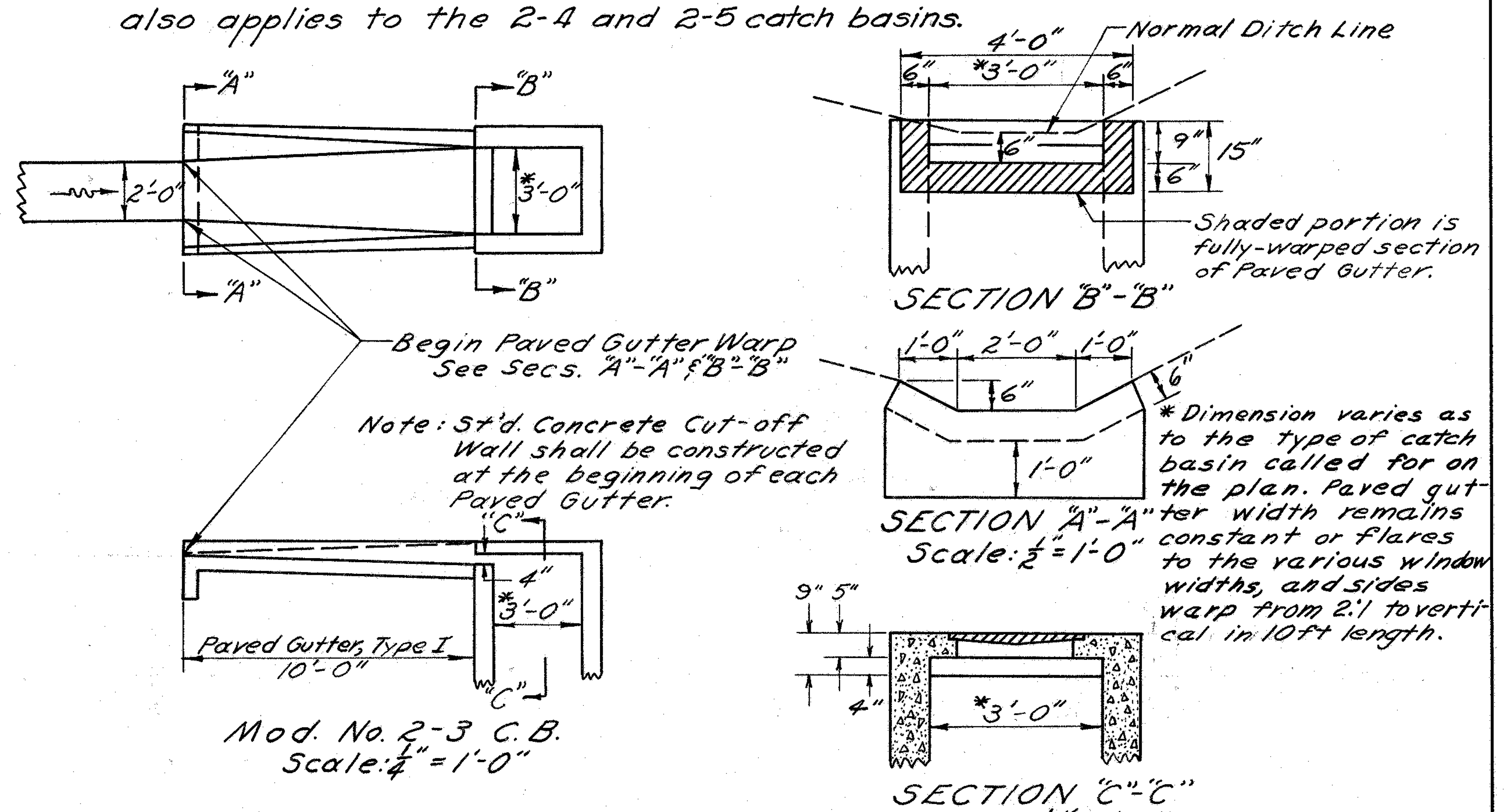
T-35, 2" ASPHALTIC CONCRETE SURFACE COURSE, TYPE "C"

This item shall be placed in two 1 inch courses.

Rev. 6-21-62

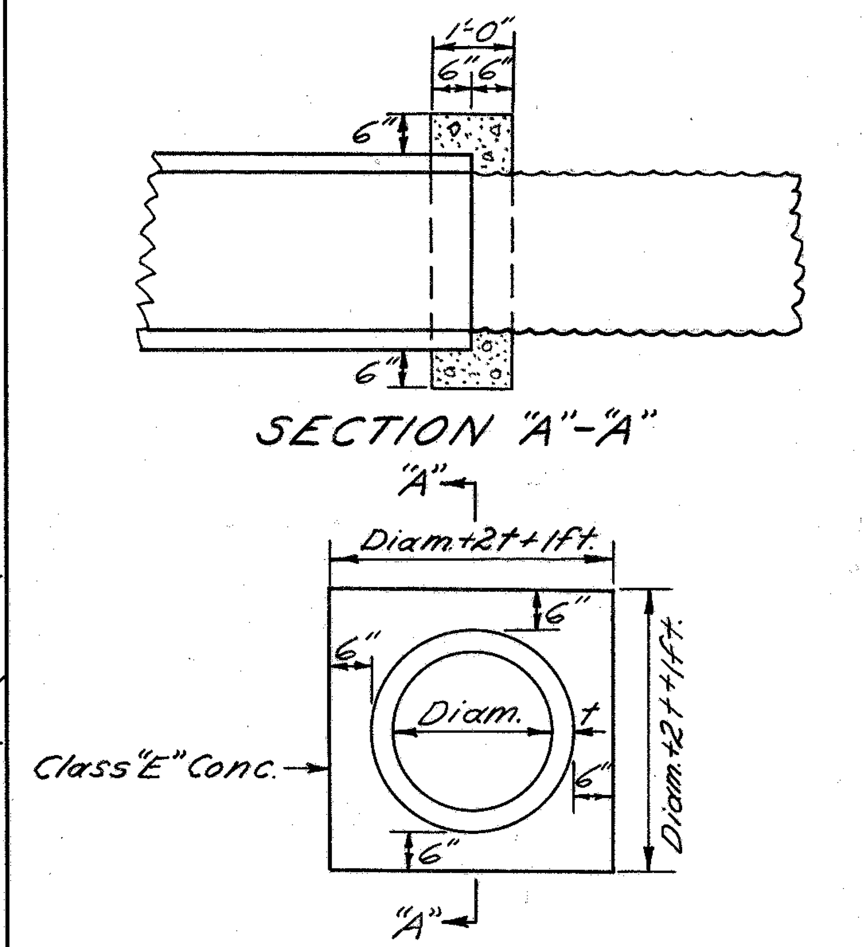
TYPICAL DETAILS

Note: All modification shown for 2-3 catch basin also applies to the 2-4 and 2-5 catch basins.



Mod. No. 2-3 C.B.
Scale: 1/4"=1'-0"

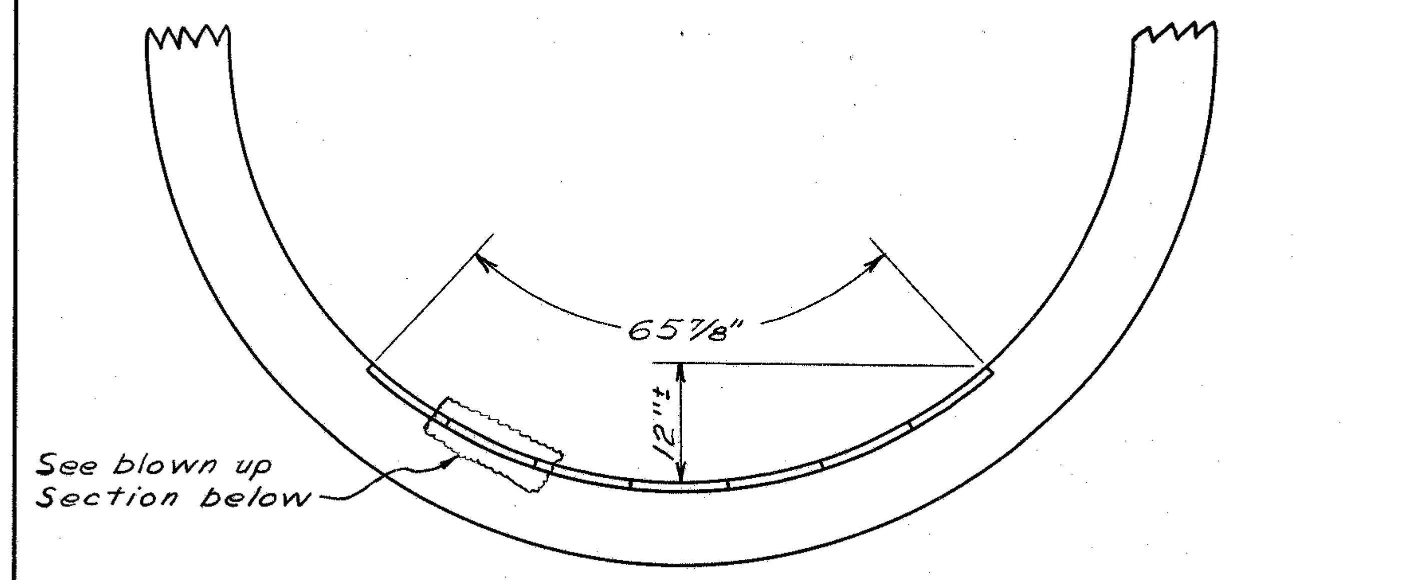
MODIFIED NO. 2-3 CATCH BASIN AND PAVED GUTTER



DETAIL OF CONNECTING COLLAR

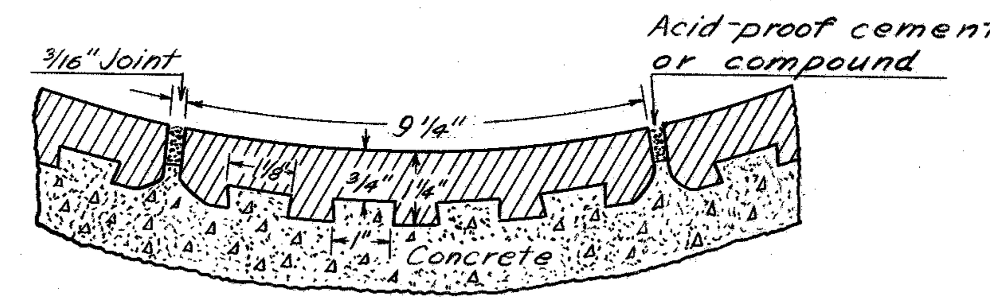
Scale: None

See Note Sheet No. 8



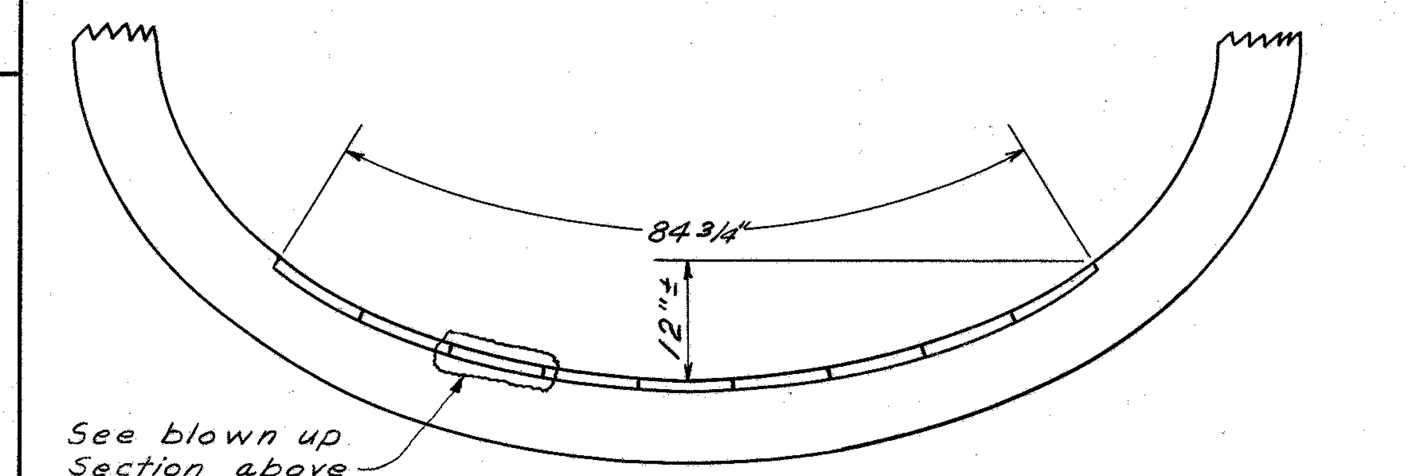
DETAIL OF PLACEMENT OF VITRIFIED LINER PLATES IN CIRCULAR CULVERTS

Scale: 3/4"=1'-0"



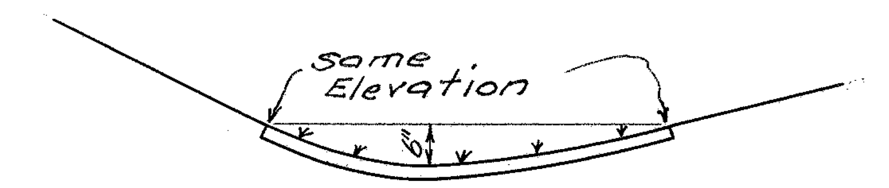
DETAIL OF LINERS ANCHORED IN CONCRETE PIPE

Scale: None



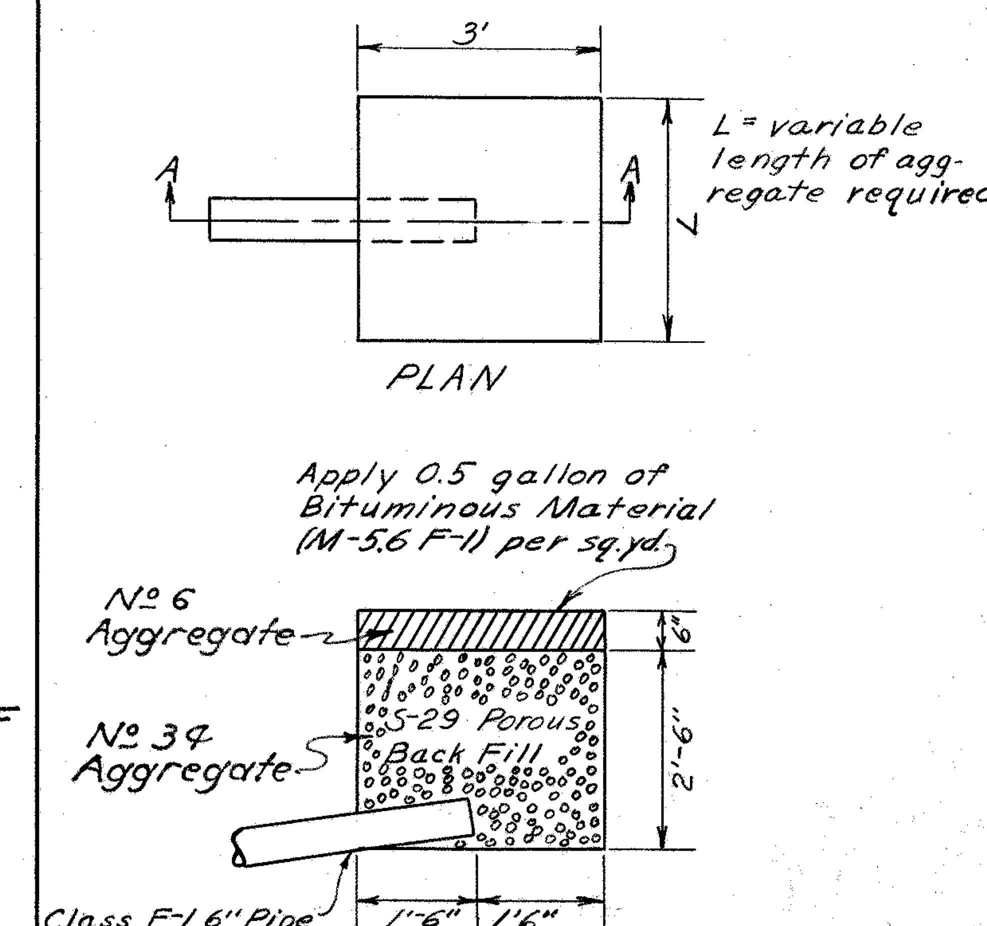
DETAIL OF PLACEMENT OF VITRIFIED LINER PLATES IN ELLIPTICAL CULVERT

Scale: 3/4"=1'-0"



DETAIL OF SOD DITCH

(To be used where shown on plans)



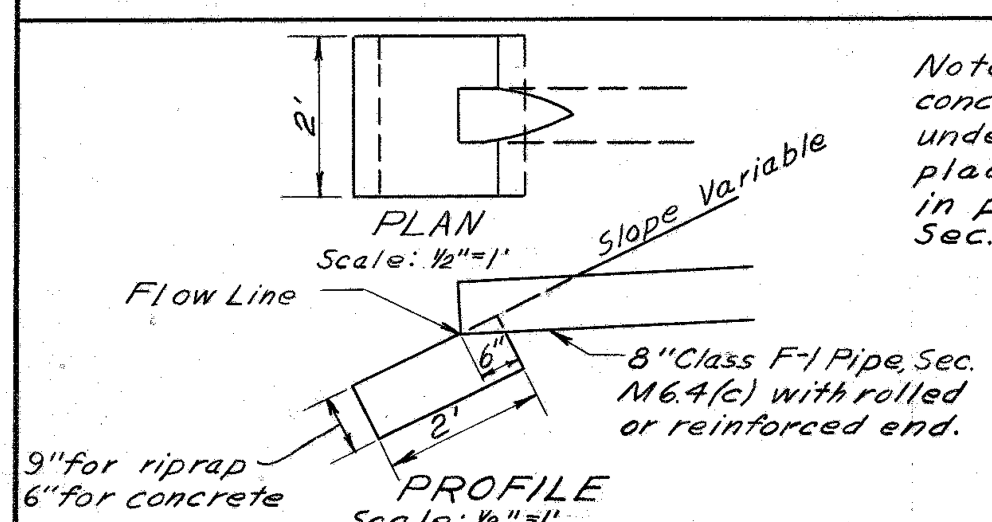
SPRING DRAIN DETAIL

Scale: 1/2"=1'

Note: No. 34 Aggregate shall be used with a 6" layer of No. 6 Aggregate over the top and sealed with Bituminous Material.

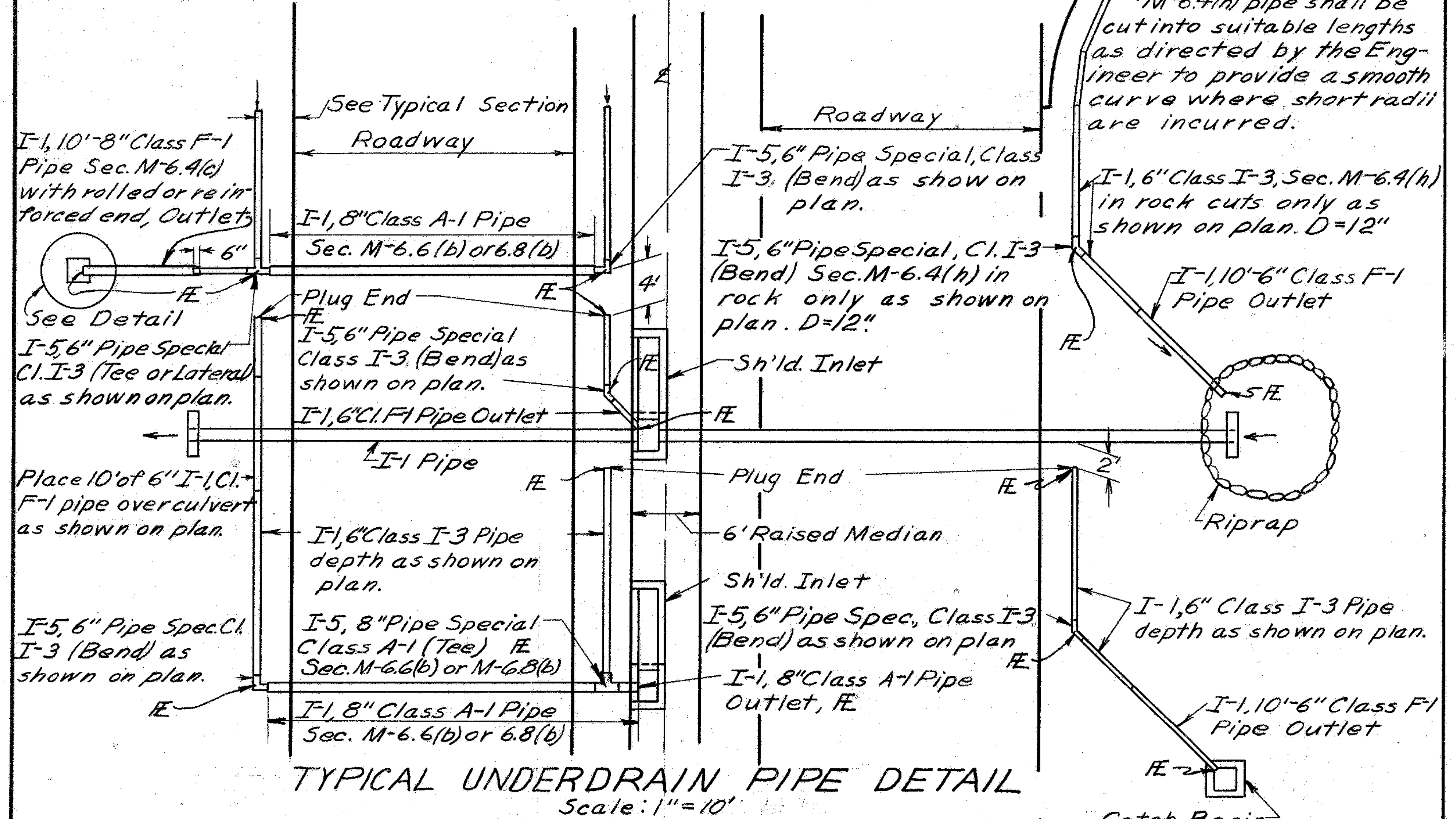
Aggregates, Bituminous Material, and necessary Excavation for Spring Drains shall be paid for at the Unit Price bid per cubic yard of Item S-29 Porous Back Fill. Quantities for Class F-1 6" Pipe and S-29 Porous Back Fill are carried in the General Summary.

Spring drains are to be placed at locations designated by the Engineer. Springs are known to exist at Sta. 842+00± and others may be encountered at other locations. Payment shall be based on final measurement.



Note: Place grouted riprap 9" thick or Class "E" plain concrete slab 6" thick at the outlet end of underdrain as shown. Cost of furnishing and placing riprap or concrete shall be included in price bid per lineal foot of 8" Class F-1 Pipe, Sec. M 6.4(C) with rolled or reinforced end.

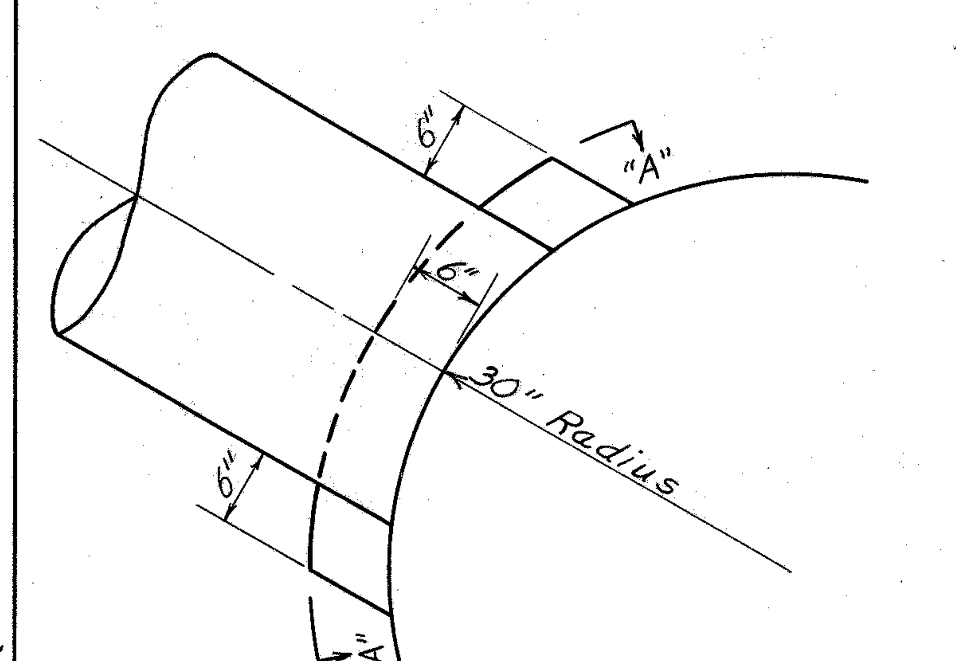
8" PIPE UNDERDRAIN OUTLET DETAIL



TYPICAL UNDERDRAIN PIPE DETAIL

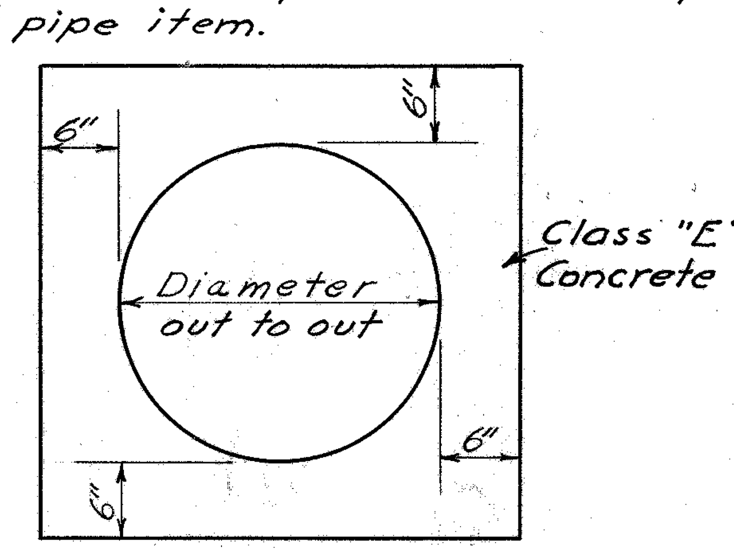
Scale: 1"=10'

Note: Closed joints shall be maintained at all connections between Class A-1 Pipe and I-5 Pipe Specials.



Field cuts shall be painted on the inside and outside with two coats of Red Lead, Sec. M-9.9, and two coats of Graphite Paint, Sec. M-9.11, before the concrete collar is placed.

Payment for cutting into the structure and providing the connection described shall be included in the unit price bid for the pertinent pipe item.

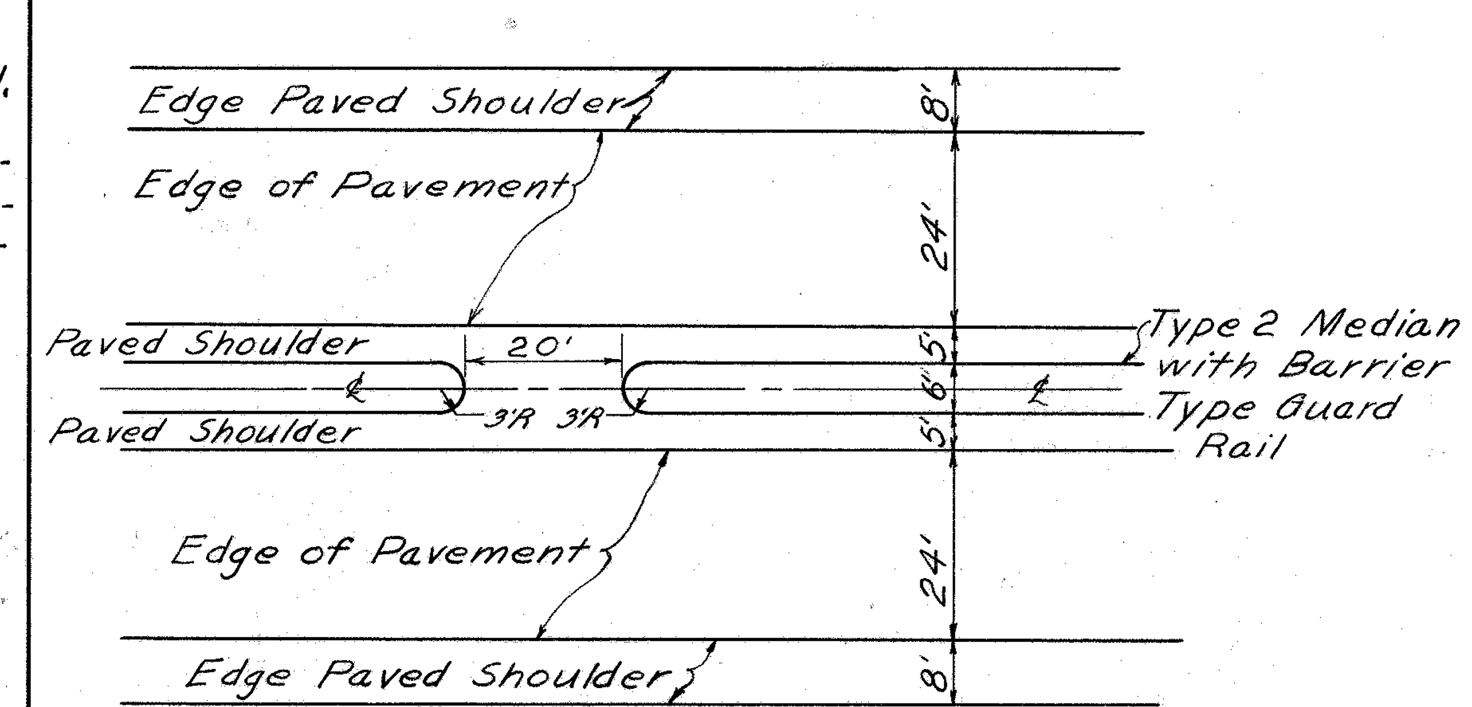


SECTION "A"-"A"

DETAIL OF TAP AND CONCRETE COLLAR

Scale: 1"=1'-0"

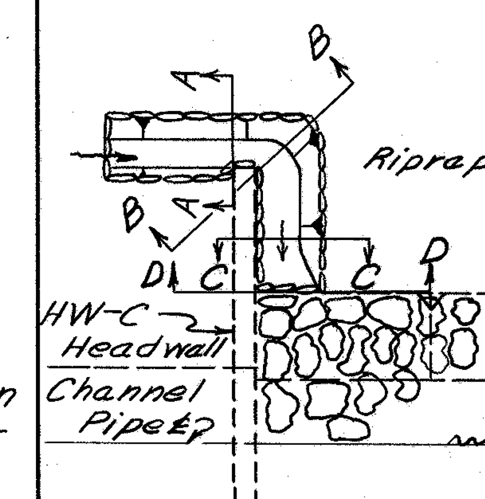
TYPICAL U-TURN MEDIAN OPENING

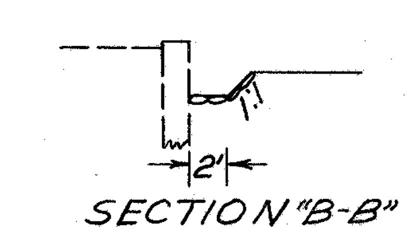


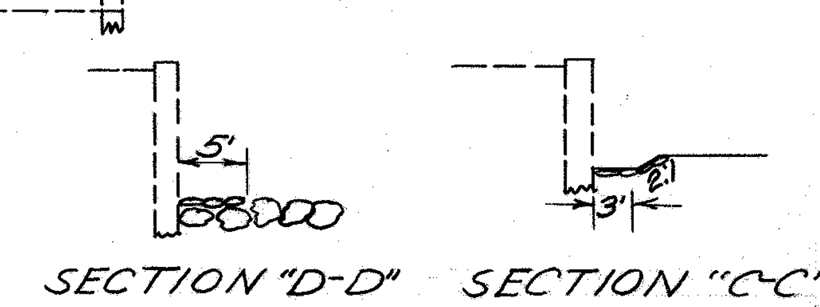
Scale: 1"=20

Note: The Median Opening shall be paved with same material as used in the paved shoulders.

SECTION A-A as shown on culvert drawing.







Note: Place riprap in depressed ditch around end and in front of headwall as shown so that concentrated flow will be contained until in contact with dumped rock.

DETAIL OF RIPRAP DITCH AT CHANNEL PIPE HEADWALLS

Scale: None

SUMMARY OF QUANTITIES

T-71 PAVEMENT
Sta 800+00.00 to 826+04.25 2604.25x48÷9 =13,889 Sq. Yds.
827+88.75 to 833+09.81 521.06x48÷9 = 2,779 " "
Total = 16,668 Sq. Yds.

S.R. 170
Sta 14+33.65 to 16+80 See Sheet No. 107 = 1,015 Sq. Yds.
16+80 to 18+87.49 207.49x51÷9 = 1,176 " "
21+12.49 to 30+00 887.51x51÷9 = 5,029 " "
Add for Median Openings 175x2÷9 = 39 " "
30+00 to 34+50 See Sheet No. 108 = 1,841 " "
Total = 9,100 Sq. Yds.

Ramp "A"
Sta 0+26.5 to 16+98.94 See Sheet No. 119 = 3,251 Sq. Yds.
Dec. lane 16+98.94 to 28+97.29 See Sheet No. 120 = 2,032 " "
Total = 5,283 Sq. Yds.

Ramp "D"
Sta 0+39.2 to 16+96.58 See Sheet No. 126 = 2,974 Sq. Yds.
Accel. lane 16+96.58 to 28+96.84 See Sheet No. 127 = 1,667 " "
Total = 4,641 Sq. Yds.

Appr. "A"
Sta 0+27.7 to 1+11 See Sheet No. 107 = 554 Sq. Yds.

Appr. "B"
Sta 80+75 to 85+77.78 See Sheet No. 108 = 1,868 Sq. Yds.
85+77.78 to 87+10.32 See Sheet No. 107 = 692 " "
Total = 2,560 Sq. Yds.

Total T-71 F457(11) = 38,806 Sq. Yds.

Sta 833+09.81 to 888+00 5490.19x48÷9 = 29,281 Sq. Yds.

Total T-71 U457(11) = 29,281 Sq. Yds.

I-22 SUBBASE
Sta 800+00 to 801+47.2 147.2x39.9°÷27 = 218 Cu. Yds.
801+47.2 to 807+00 552.8x36.05°÷27 = 738 " "
807+00 to 818+15 1115x32°÷27 = 1,322 " "
818+15 to 820+00 185x36°÷27 = 247 " "
820+00 to 826+04.25 604.25x39.85°÷27 = 892 " "
Add for Appr. Slabs = 74 " "
827+88.75 to 830+00 211.25x39.85°÷27 = 312 " "
830+00 to 833+09.81 309.81x40°÷27 = 459 " "
Total = 4,262 Cu. Yds.

S.R. 170
Sta 14+33.65 to 16+80 See Sheet No. 107 = 194 Cu. Yds.
16+80 to 18+87.49 207.49x34.5°÷27 = 265 " "
Add for Appr. Slabs = 64 " "
21+12.49 to 22+62.5 150.01x34.35°÷27 = 191 " "
22+62.5 to 25+78.1 315.6x30.5°÷27 = 357 " "
25+78.1 to 30+00 421.9x34.35°÷27 = 537 " "
Add for Median 63 " "
30+00 to 34+50 See Sheet No. 108 = 475 " "
Total = 2,146 Cu. Yds.

Ramp "A"
Sta 0+26.5 to 16+98.94 See Sheet No. 119 = 734 Cu. Yds.
Dec. lane 16+98.94 to 28+97.29 See Sheet No. 120 = 499 " "
Total = 1,233 Cu. Yds.

Ramp "D"
Sta 0+39.2 to 16+96.58 See Sheet No. 126 = 821 Cu. Yds.
Accel. lane 16+96.58 to 28+96.84 See Sheet No. 127 = 456 " "
Total = 1,277 Cu. Yds.

Appr. A
Sta 0+27.7 to 1+11 See Sheet No. 107 = 130 Cu. Yds
1+11 to 16+00 1489x19.25°÷27 = 1062 " "
Total = 1,192 Cu. Yds.

Appr. "B"
Sta 80+75 to 85+77.78 See Sheet No. 108 = 461 Cu. Yds.
85+77.78 to 87+10.32 See Sheet No. 107 = 161 " "
Total = 622 Cu. Yds.

Substation Rd.
Sta 11+50 to 12+00 50x7.33°÷27 = 14 Cu. Yds.
12+00 to 14+33.65 233.65x8.67°÷27 = 75 " "
Total = 89 Cu. Yds.

Westfield Ave
Sta 1+72 to 2+15.5 43.5x14.86°÷27 = 24 Cu. Yds.
2+15.5 to 19+25 1709.5x8.67°÷27 = 549 " "
19+25 to 19+50 25x9.08÷27 = 9 " "
Total = 582 Cu. Yds.

Total I-22 F457(11) = 11,403 Cu. Yds.

Sta 833+09.81 to 842+00 890.19x39.85°÷27 = 1,314 Cu. Yds.
842+00 to 855+00 1300x40°÷27 = 1,926 " "
855+00 to 877+00 2200x39.85°÷27 = 3,247 " "
877+00 to 888+00 1100x40°÷27 = 1,630 " "

Total I-22 U457(11) = 8117 Cu. Yds.

B-112 BASE COURSE
Sta 800+00 to 801+47.2 147.2x(3.16° av. + 3.73° av.)÷27 = 38 Cu. Yds.
801+47.2 to 807+00 552.8x3.20° Lt.÷27 = 66 " "
818+15 to 820+00 185x3.17° Rt.÷27 = 22 " "
820+00 to 826+04.25 604.25x(3.15°+4°)÷27 = 160 " "
Add for Appr. Slabs = 14 " "
827+88.75 to 830+00 211.25x(3.15°+4°)÷27 = 56 " "
830+00 to 833+09.81 309.81x(3.17°+3.17°)÷27 = 73 " "
Total = 429 Cu. Yds.

S.R. 170
Sta 14+33.65 to 16+80 See Sheet No. 107 = 13 Cu. Yds.
16+80 to 18+87.49 207.49x(3.17°+3.17°)÷27 = 49 " "
Add for Appr. Slabs = 13 " "
21+12.49 to 22+62.5 150.01x(4°+3.15°)÷27 = 40 " "
22+62.5 to 25+78.1 315.6x4° Lt.÷27 = 47 " "
25+78.1 to 30+00 421.9x(4°+3.15°)÷27 = 112 " "
30+00 to 34+50 See Sheet No. 108 = 119 " "
Total = 393 Cu. Yds.

Ramp "A"
Sta 0+26.5 to 16+98.94 See Sheet No. 119 = 91 Cu. Yds.
Dec. lane 16+98.94 to 28+97.29 See Sheet No. 120 = 49 " "
Total = 140 Cu. Yds.

Ramp "D"
Sta 0+39.2 to 16+96.58 See Sheet No. 126 = 160 Cu. Yds.
Accel. lane 16+96.58 to 28+96.84 See Sheet No. 127 = 37 " "
Total = 197 Cu. Yds.

Appr. "A"
Sta 0+27.7 to 1+11 See Sheet No. 107 = 30 Cu. Yds.

Appr. "B"
Sta 80+75 to 85+77.78 See Sheet No. 108 = 118 Cu. Yds.
85+77.78 to 87+10.32 See Sheet No. 107 = 26
Total = 144 Cu. Yds.

Total B-112 F457(11) = 1,333 Cu. Yds.

Sta 833+09.81 to 842+00 890.19x(4°+3.15°)÷27 = 236 Cu. Yds.
842+00 to 855+00 1300x(3.17°+3.17°)÷27 = 305 " "
855+00 to 877+00 2200x(3.58° av.+3.57° av.)÷27 = 583 " "
877+00 to 888+00 1100x(3.17°+3.17°)÷27 = 258 " "

Total B-112 U457(11) = 1,382 Cu. Yds.

B-21 BASE COURSE
Sta 800+00 to 801+47.2 147.2x6.5°÷27 = 36 Cu. Yds.
801+47.2 to 807+00 552.8x4.52° av.÷27 = 93 " "
807+00 to 818+15 1115x2.5°÷27 = 103 " "
818+15 to 820+00 185x4.5°÷27 = 31 " "
Add for Appr. Slabs = 8 " "
827+88.75 to 833+09.81 521.06x6.5°÷27 = 126 " "
Add for Median Opening = 2
Total = 399 Cu. Yds.

S.R. 170
Sta 14+33.65 to 16+80 See Sheet No. 107 = 14 Cu. Yds.
16+80 to 18+87.49 207.49x(2°+2°)÷27 = 31 " "
Add for Appr. Slabs = 8 " "
21+12.49 to 22+62.5 150.01x(2°+2°)÷27 = 22 " "
22+62.5 to 25+78.1 315.6x2°÷27 = 24 " "
25+78.1 to 30+00 421.9x(2°+2°)÷27 = 63 " "
30+00 to 34+50 See Sheet No. 108 = 67 " "
Total = 229 Cu. Yds.

Ramp "A"
Sta 0+26.5 to 16+98.94 See Sheet No. 119 = 195 Cu. Yds.
Del. lane 16+98.94 to 28+97.29 See Sheet No. 120 = 161 " "
Total = 356 Cu. Yds.

Ramp "D"
Sta 0+39.2 to 16+96.58 See Sheet No. 126 = 319 Cu. Yds.
Accel. lane 16+96.58 to 28+96.84 See Sheet No. 127 = 178 " "
Total = 497 Cu. Yds.

Appr. "A"
Sta 0+27.7 to 1+11 See Sheet No. 107 = 19 Cu. Yds

Appr. "B"
Sta 80+75 to 85+77.78 See Sheet No. 108 = 75 Cu. Yds.
85+77.78 to 87+10.32 See Sheet No. 107 = 25 " "
Total = 100 Cu. Yds.

Total B-21 F457(11) = 1591 Cu. Yds.

Sta 833+09.81 to 888+00 5490.19x6.5°÷27 = 1,322 Cu. Yds.
Add for Median Opening = 2 " "

Total B-21 U457(11) = 1,324 Cu. Yds.

T-31 BIT. SURF. TREATMENT
Sta 800+00 to 826+04.25
2240.7x8÷9 = 1992 Sq. Yds.
2604.25x5x2÷9 = 2894 " "
Add for Appr. Slabs = 89 " "
Sta 827+88.75 to 833+09.81
521.06x26÷9 = 1,505 " "
Add for Median Opening = 18 " "
Total = 6498 Sq. Yds.
No. 6 Aggr. 6498x0.008 = 52 Cu. Yds.
Bit. Mat'l. 6498x0.25 = 1,625 Gals.

S.R. 170
Sta 14+33.65 to 16+80 See Sheet No. 107
No. 6 Aggr. = 1 Cu. Yd.
Bit. Mat'l. 30 Gals.
Sta 16+80 to 18+87.49
207.49x16÷9 = 369 Sq. Yds.
Add for Appr. Slabs = 89 " "
Sta 21+12.49 to 30+00
1459.42x8÷9 = 1298 " "
Total = 1756 Sq. Yds.
No. 6 Aggr. 1756x0.008 = 14 Cu. Yds.
Bit. Mat'l 1756x0.25 = 439 Gals.
Sta 30+00 to 34+50 See Sheet No. 108
No. 6 Aggr. = 7 Cu. Yds.
Bit. Mat'l. = 200 Gals.
Total = 22 Cu. Yds.
Total = 669 Gals.

SUMMARY OF QUANTITIES

PAVEMENT QUANTITIES

T-31 BIT. SURF. TREATMENT (Cont.)

Ramp "A" & Dec. Lane
Sta 0+26.5 to 28+97.29 See Sh'ts. No. 119 & 120
No. 6 Aggr. 10+8 = 18 Cu. Yds.
Bit. Mat'l. 292+241 = 533 Gals.

Ramp "D" & Accel. Lane
Sta 0+39.2 to 28+96.84 See Sh'ts. No. 126 & 127
No. 6 Aggr. 15+9 = 24 Cu. Yds.
Bit. Mat'l. 477+267 = 744 Gals.

Appr. "A"
Sta 0+27.7 to 1+11 See Sheet No. 107
No. 6 Aggr. = 2 Cu. Yds.
Bit. Mat'l. = 57 Gals.

Appr. "B"
Sta 80+75 to 87+10.32 See Sh'ts. No. 107 & 108
No. 6 Aggr. 7+2 = 9 Cu. Yds.
Bit. Mat'l. 224+55 = 279 Gals.

Total T-31 (No. 6 Aggr.) F457(11) = 127 Cu. Yds.
Total T-31 (Bit. Mat'l.) F457(11) = 3907 Gals.

Sta 883+09.81 to 888+00
5490.19x26÷9 = 15,861 Sq. Yds.
Add for Median Opening = 18 " "
Total = 15,879 Sq. Yds.
No. 6 Aggr. 15,879x0.008 = 127 Cu. Yds.
Bit. Mat'l. 15,879x0.25 = 3970 Gals.

Total T-31 (No. 6 Aggr.) U457(11) = 127 Cu. Yds.
Total T-31 (Bit. Mat'l.) U457(11) = 3970 Gals.

I-18 STABILIZED SHOULDERS

Sta 800+00 to 826+04.25 2604.25x8"÷27 = 772 Cu. Yds.
827+88.75 to 833+09.81 521.06x8"÷27 = 155 " "
Total = 927 Cu. Yds.

Appr. "A"
Sta 1+11 to 17+00 1589x4"÷27 = 235 Cu. Yds.

Total I-18 F457(11) = 1162 Cu. Yds.

Sta 833+09.81 to 888+00 5490.19x8"÷27 = 1627 Cu. Yds.

Total I-18 U457(11) = 1,627 Cu. Yds.

I-12 CONC. CURB, TYPE 2-A

S.R. 170
Sta 16+80 to 18+87.49 207.49x2 = 415 Lin. Ft.
21+12.49 to 22+25 112.51x2 = 225 " "
23+00 to 24+25 125x2 = 250 " "
25+25 to 30+00 475x2 = 950 " "
30+00 to 34+50 See Sheet No. 108 = 595 " "
Deduct for Median Inlets = -48 " "
Total = 2,387 Lin. Ft.

Total I-12 Curb, Type 2-A F457(11) = 2387 Lin. Ft.

I-23 TRAFFIC DIVIDERS

S.R. 170 - Sta 33+23 to 33+83 See Sheet No. 108 = 6 Each
Appr. "B" - Sta 84+81 to 86+75 See Sheet No. 108 = 17 Each

Total I-23 Traffic Dividers F457(11) = 23 Each

I-12 CONC. CURB, TYPE 6

Ramp "A" See Sheet No. 119 = 204 Lin. Ft.

Total I-12 Curb, Typ 6 F457(11) = 204 Lin. Ft.

I-21 STANDARD TYPE 2 MEDIAN PAVEMENT

Sta 800+00 to 826+04.25 2604.25x6÷9 = 1,736 Sq. Yds.
827+88.75 to 833+09.81 521.06x6÷9 = 348 " "
Deduct for Median Opening = -18 " "
Deduct for Shld'rs. Inlets = -16 " "
Total I-21 St'd. Type 2 MEDIAN PAVEMENT F457(11) = 2,050 Sq. Yds.
Sta 833+09.81 to 887+74 5464.19x6÷9 = 3643 Sq. Yds.
Deduct for Shld'r. Inlets = -26 " "
Total I-21 Std. Type 2 Med. Pav't. = 3,617 Sq. Yds.

I-21 STANDARD TYPE 1 MEDIAN PAVEMENT

S.R. 170 Sta 16+80 to 18+87.49 207.49x2÷9 = 46 Sq. Yds.
21+12.49 to 22+25 112.51x2÷9 = 25 " "
23+00 to 24+25 125x2÷9 = 28 " "
25+25 to 30+00 475x2÷9 = 106 " "
30+00 to 33+10.34 See Sheet No. 108 = 66 " "
Deduct for Median Inlets -5 " "
Total = 266 Sq. Yds.
Ramp "A" See Sheet No. 119 = 29 " "

Total I-21 Std. Type 1 Med. Pav't. F457(11) = 295 Sq. Yds.

I-12 COMB. CURB & GUTTER, Type 2

S.R. 170 See Sheet No. 107 = 67 Lin. Ft.
Appr. "B" See Sheet No. 107 = 103 Lin. Ft.

Total I-12 Comb. Curb & Gutter F457(11) = 170 Lin. Ft.

I-12 SPECIAL CURB

Ramp "D" See Sheet No. 126 = 622 Lin. Ft.

Total I-12 Special Curb F457(11) = 622 Lin. Ft.

B-19 BASE COURSE

Appr. "A"
Sta 1+11 to 16+00 1489x25"÷27 = 1,379 Cu. Yds.
16+00 to 17+00 See Sheet No. 131 = 16 " "
Total = 1,395 Cu. Yds.

Substation Rd.
Sta 11+50 to 12+00 50x8.75"÷27 = 17 Cu. Yds.
12+00 to 14+33.65 233.65x10.42"÷27 = 90 " "
Total = 107 Cu. Yds.

Westfield Ave.
Sta 1+72 to 2+15.5 43.5x12.93"÷27 = 29 Cu. Yds.
2+15.5 to 19+25 1709.5x10.42"÷27 = 660 " "
19+25 to 19+50 25x10.52"÷27 = 10 " "
Total = 699 Cu. Yds.

Hill Ave.
Sta 4+05.10 to 4+70.66 65.56x21.24"÷27 = 52 Cu. Yds.
4+70.66 to 5+28.33 57.67x15.33"÷27 = 33 " "
5+28.33 to 12+50 721.67x14"÷27 = 374 " "
12+50 to 13+00 50x13.33"÷27 = 25 " "
Total = 484 Cu. Yds.

Total B-19 F457(11) = 2,685 Cu. Yds.

T-30 PRIME COAT

Appr. "A"
Sta 1+11 to 16+00 1489x37.5÷9x0.4 = 2,482 Gals.
16+00 to 17+00 See Sheet No. 131 = 29 "
Total = 2,511 Gals.

Substation Rd.
Sta 11+50 to 12+00 50x21÷9x0.4 = 47 Gals.
12+00 to 14+33.65 233.65x25÷9x0.4 = 260 "
Total = 307 Gals.

Westfield Ave.
Sta 1+72 to 2+15.5 43.5x43.04÷9x0.4 = 84 Gals.
2+15.5 to 19+25 1709.5x25÷9x0.4 = 1900 "
19+25 to 19+50 25x26.25÷9x0.4 = 29 "
Total = 2,013 Gals.

Hill Ave.
Sta 4+05.10 to 4+70.66 65.56x31.24÷9x0.4 = 91 Gals.
4+70.66 to 5+28.33 57.67x23÷9x0.4 = 59 "
5+28.33 to 12+50 721.67x21÷9x0.4 = 674 "
12+50 to 13+00 50x20÷9x0.4 = 45 "
Total = 869 Gals.

Total T-30 F457(11) = 5,700 Gals.

B-35 BASE COURSE (70-85)

Appr. "A"
Sta 1+11 to 16+00 1489x9.125"÷27 = 504 Cu. Yds.
16+00 to 17+00 See Sheet No. 131 = 11 " "

Total B-35 Base Course (70-85) F457(11) = 515 Cu. Yds.

B-35 LEVELING COURSE (70-85)

Appr. "A"
Sta 1+11 to 16+00 1489x3.75"÷27 = 207 Cu. Yds.
16+00 to 17+00 See Sheet No. 131 = 7 " "

Total B-35 Leveling Course (70-85) F457(11) = 214 Cu. Yds.

B-35 LEVELING COURSE (85-100)

Substation Rd.
Sta 11+50 to 12+00 50x20÷9 = 111 Sq. Yds.
12+00 to 14+33.65 233.65x24÷9 = 623 " "
Total = 734 Sq. Yds.
734x0.0486 = 36 Cu. Yds.

Westfield Ave.
Sta 1+72 to 2+15.5 43.5x41.5÷9 = 201 Sq. Yds.
2+15.5 to 19+25 1709.5x24÷9 = 4559 " "
19+25 to 19+50 25x25.25÷9 = 70 " "
Total = 4830 Sq. Yds.
4830x0.0486 = 235 Cu. Yds.

Hill Ave
Sta 4+05.10 to 4+70.66 65.56x29.41÷9 = 214 Sq. Yds.
4+70.66 to 5+28.33 57.67x22÷9 = 141 " "
5+28.33 to 12+50 721.67x20÷9 = 1604 " "
12+50 to 13+00 50x19÷9 = 106 " "
Total = 2065 Sq. Yds.
2065x0.035 = 73 Cu. Yds.

Total B-35 Leveling Course (85-100) F457(11) = 344 Cu. Yds.

T-35 SURFACE COURSE (70-85)

Appr. "A"
Sta 1+11 to 16+00 1489x3.75"÷27 = 207 Cu. Yds.
16+00 to 17+00 See Sheet No. 131 = 14 " "

Total T-35 Surface Course (70-85) F457(11) = 221 Cu. Yds.

T-35 SURFACE COURSE (85-100)

Substation Rd. 734x0.035 = 26 Cu. Yds.
Westfield Ave. 4830x0.035 = 169 Cu. Yds.
Hill Ave 2065x0.035 = 73 Cu. Yds.

Total T-35 Surface Course (85-100) F457(11) = 268 Cu. Yds.

SUMMARY OF QUANTITIES

E-1 COMPACTED SUBGRADE
Sta 800+00 to 833+09.81
Under T-71 = 16,668 Sq. Yds.
Berms = 6,498 " "
Add for Appr. Slabs = 356 " "
Total = 23,522 Sq. Yds.

S.R. 170
Sta 14+33.65 to 16+80 See Sheet No. 107 = 1,161 Sq. Yds.
16+80 to 30+00 = 6,244 " "
Berms = 1,756 " "
Add for Appr. Slabs = 295 " "
30+00 to 34+50 See Sheet No. 108 = 2,725 " "
Total = 12,181 Sq. Yds.

Ramp "A" & Dec. Lane
Sta 0+26.5 to 28+97.29 See Sh'ts. No. 119 & 120
4419+2994 Total = 7,413 Sq. Yds.

Ramp "D" & Accel. Lane
Sta 0+39.2 to 28+96.84 See Sh'ts. No. 126 & 127
4679+2733 Total = 7,412 Sq. Yds.

Appr. "A"
Sta 0+27.7 to 1+11 See Sheet No. 107 = 554 Sq. Yds.
1+11 to 16+00 = 5,956 " "
Appr. "B" Total = 6,510 Sq. Yds.
Sta 80+75 to 87+10.32 See Sh'ts. No. 107 & 108
2762 + 963 Total = 3725 Sq. Yds.

Substation Rd.
Sta 11+50 to 14+33.65 Total = 734 Sq. Yds.
Westfield Ave.
Sta 1+72 to 19+50 Total = 4830 Sq. Yds.
Hill Ave.
Sta 4+05.10 to 13+00 Total = 2065 Sq. Yds.
Deduct For Rock Cuts = -13,564 Sq. Yds.
Total E-1 Compacted Subgrade F457(11) = 55,004 Sq. Yds.

Sta 833+09.81 to 888+00
Under T-71 = 29,281 Sq. Yds.
Berms = 15,879 " "
Total = 45,160 Sq. Yds.
Deduct for Rock Cuts = -7,845 " "
Total E-1 Compacted Subgrade U457(11) = 37,315 Sq. Yds.

ITEM SPECIAL - Mixing Calcium Chloride & Aggr. (for Stabilized Shoulders)
Appr. "A" - Sta 1+11 to 17+00 1589x4x2÷9 = 1413 Sq. Yds.
Total Item Special F457(11) = 1,413 Sq. Yds.

M-10 Calcium Chloride for Stabilized Shoulders
1413 x 2.1 = 2967 lbs. or 1.49 Tons
M-10 F457(11) = 1.49 Tons
Use 2 Tons

T-10 for Maintaining Traffic
Sta 797+00 to 803+00 = 700 Lin. Ft.
S.R. 170
Sta 15+75 to 34+50 = 1,650 Lin. Ft.
Appr. "B"
Sta 80+75 to 87+10 = 650 Lin. Ft.
Ramp "D"
Sta 0+50 to 3+50 = 300 Lin. Ft.
Appr. "A"
Sta 14+00 to 17+00 = 300 Lin. Ft.
Total = 3600 Lin. Ft.
3600 x 200 ÷ 100 = 7200 Cu. Yds.

Westfield Ave.
Sta 1+72 to 4+22 = 250 Lin. Ft.
18+00 to 19+50 = 150 Lin. Ft.
Hill Ave.
Sta 4+00 to 13+00 = 900 Lin. Ft.
Substation Rd.
Sta 11+50 to 15+75 = 425 Lin. Ft.
Total = 1725 Lin. Ft.
1725 use 1800 x 100 ÷ 100 = 1800 Cu. Yds.
Total T-10 F457(11) = 9000 Cu. Yds. { 2250 Cu. Yds. T-10; 6750 Cu. Yds. T-10, Modified as per plan }
M-10 for Maintaining Traffic - 9000 ÷ 50 = 180 Tons
M-10 F457(11) = 180 Tons

SS-18 R/W FENCE, TYPE "C" (See R/W Sheet For Plan Location)
Sta 780+22 to 13+92.29
Appr. to S.R. 170, Rt. & Lt. 574 Lin. Ft.
780+78 to 782+72 T.L., Rt. 276 " "
799+00 T.L. to 805+00, Rt. 607 " "
Total = 1457 Lin. Ft.

S.R. 170
Sta 26+61.12 to 34+49.08, Rt. 890 Lin. Ft.
27+25 to 35+96.04, Lt. 866 " "
Total = 1756 Lin. Ft.

Total SS-18 F457(11) = 3213 Lin. Ft.

Sta 856+50 T.L. to 861+20, Lt. = 451 Lin. Ft.

Total SS-18 U457(11) = 451 Lin. Ft.

ITEM I-8 MONUMENT ASSEMBLY

F-457(11)

Main Line

Station	Location	Each
S.T. 801+47.37	℄	1
P.O.T. 805+00	℄	1
P.O.T. 810+00	℄	1
P.O.T. 815+00	℄	1
T.S. 819+60.00	℄	1
S.C. 823+60.00	℄	1
C.S. 826+12.50	℄	1
S.T. 830+12.50	℄	1
Main Line Total		8

S.R. 170

Station	Location	Each
P.O.T. 15+00	℄	1
T.S. 19+83.57	℄	1
S.C. 23+83.57	℄	1
P.O.C. 27+00	℄	1
C.S. 30+01.24	℄	1
S.T. 34+01.24	℄	1
S.R. 170 Total		6
F-457(11) Total		14

U-457(11)

Main Line

Station	Location	Each
P.C. 833+82.50	℄	1
P.O.C. 837+00	℄	1
P.T. 841+35.83	℄	1
P.O.T. 846+00	℄	1
P.O.T. 851+00	℄	1
T.S. 855+33.39	℄	1
S.C. 859+33.39	℄	1
C.S. 861+33.60	℄	1
S.T. 865+33.60	℄	1
P.C. 867+64.11	℄	1
P.O.C. 873+00	℄	1
P.T. 875+74.11	℄	1
P.O.T. 882+00	℄	1
Main Line Total		13
U-457(11) Total		13

EARTHWORK AND SEEDING

Station From	Station To	Sheet No.	Exc. Cu. Yds.	Emb. Cu. Yds.	Chan. Exc. Cu. Yds.	Seeding Sq. Yds.	Fertilizer Tons	Lime Tons
F-457(11) Code Type 0010								
788+50	800+00		87,248	213		14,081	1.27	6.34
For Sodding							0.02	0.09
TOTALS			87,248	213		14,081	1.29	6.43
F-457(11) Code Type 7221								
Approach "B"			857	2,629	126	10,275	0.92	4.62
S.R. 170			45,193	15,781		25,929	2.33	11.67
Approach "A"			57,876	27,582		17,728	1.60	7.98
Ramp "A"			3,848	49,271		16,637	1.50	7.49
Ramp "D"			5,973	10,307		13,347	1.20	6.01
Hill Ave.			62,328	1,452		10,362	0.93	4.66
Westfield Ave.			129,954	20,434		20,967	1.89	9.44
800+00	833+09.81		156,705	281,435	937	43,842	3.95	19.73
For Sodding							0.46	2.32
TOTALS			462,734	408,891	1063	159,087	14.78	73.92
U-457(11) Code Type 7221								
833+09.81	888+00		303,048	296,970	11,075	97,697	8.79	43.96
* 883+00	888+00		24,777					
For Sodding							0.19	0.97
Potential Slides		14	100,000					
TOTALS			~~403,048~~ 427,825	296,970	11,075	97,697	8.98	44.93

Item E-11, Water F-457(11) Code Type 0010
For Emb (213) = 213X5÷1000 = 1 M-Gals
Item E-11, Water F-457(11) Code Type 7221
For Emb+I-18+I-22+B-19 (408,891+1162+11,403+3348) = 424,804X5÷1000 = 2124 M-Gals
Item E-11, Water U-457(11) Code Type 7221
For Emb+I-18+I-22 (296,970+1627+8117) = 306,714X5÷1000 = 1534 M-Gals

ROADWAY EXCAVATION
In the event slides should occur on this project, due to no fault of the Contractor, the displaced material shall be removed at the direction of, and in amounts determined by, the Engineer in accordance with Item E-1, Roadway Excavation, at the unit price bid for this item.
An estimated quantity of 100,000 cubic yards of excavation has been included in the general summary to allow for such a contingency. Payment, however, will be based on final measurement and if no slides occur, this quantity will be non-performed in it's entirety.

*NOTE:
Quantity added as per Proposal Note on Sheet No. 5.

Revised R.E.C. 11-16-62

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

15
250

COL-30-32.19

SUB-SUMMARY FOR CULVERTS

PIPES ~ LIN. FT.

STATION	See Sheet	12" Class A-1 M6.6(a) M6.8(b)	12" Class B-1 M6.8(b)	12" Class D-1	12" Class F-1	15" Class E-1 M6.8(b)	15" Class F-1 M6.4(e) Gage 14	15" Class D-1	15" Class E-1 M6.6(c)	18" Class A-1 M6.4(d)	18" Class C-1	18" Class D-1 M-6.6(b) M-6.8(b)	18" Class E-1	18" Class F-1	18" Class A-1 M6.6(d)	24" Class A-1	24" Class A-1 M6.4(d)	24" Class A-1 M6.6(a) M6.8(b)	24" Class A-1 M6.6(b) M6.8(b)	24" Class B-1 M6.6(b) M6.8(b)	24" Class F-1	30" Class A-1	30" Class A-1 M6.6(a) M6.8(b)
F457(11) Code 7221																							
12+26.6 (S.R.170)	154																						
14+73.6 (S.R.170)	155																						
0+32.2 (Mem.Park)	156										194												
80+80 (Appr.B)	157		60											74				66					
83+66 (Appr.B)	158																						
85+90 (Appr.B)	159															102							
797+53.4	160&161							16															
27+95 (S.R.170)	162																					170	
20+88 (S.R.170)	111													57									
0+43.5 (Boyd St.)	163					36												108					
*7+50 (Ramp D)	129																		46				
800+00	43	49																					
802+85.7	164&165																						
11+00 (Ramp A)	123			32																			
804+91	166																						82
806+50	47													52									
15+50 (Appr.A)	135						53																
812+71.5	167																196						
819+65	168											50						103			52		
820+00	169																						
827+00	170		12										6										
826+05	60											56											
4+40 (Hill Ave)	151											32											
2+99.3 (W.A.)	171																						
3+50 (W.A.)	142							■33															
14+75 (W.A.)	172							70															
19+06.5 (W.A.)	173									48													
829+50	63	45			77																		
796+50	41																			69			
Total F457(11)-7221		94	72	32	77	36	53	86		48	194	138	6	183		102	196	277	46	69	52	170	82
U457(11) Code 7221																							
836+50	174																			4			
837+35	175																						
840+00	71																						
841+25	176																			19			
852+50	82								22														
853+00	177														16								
855+25	178																						
862+00	86	45			54																		
865+00	88	46			50																		
866+10	179																						
870+50	91	65																					
876+00	180												100										143
881+60	181																						
887+50	182																	114					
Total U457(11)-7221		156			104				22				100		16			114		23			143

M-106.6(d)

STATION	See Sheet	30" Class A-1 M6.4(d)	30" Class A-1 M6.8(b)	30" Class A-1 M6.6(c)	30" Class B-1 M6.8(b) M6.6(b)	36" Class A-1 M6.4(d)	36" Class A-1 M6.4(d) Gage 10	42" Class A-1	42" Class A-1 M6.6(a) M6.4(d)	42" Class A-1 M6.6(b) M6.4(d)	42" Class A-1 M6.6(c) M6.4(d)	42" Class A-1 M6.6(d) M6.4(d)	48" Class A-1 M6.6(a)	48" Class A-1 M6.4(d)	48" Class B-1	60" Class A-1 M6.4(d) Gage 10	72" Class A-1 M6.6(a)	72" Class A-1 M6.6(b)	72" Radius Class A-1 M6.6(b)	72" Class A-1 M6.6(d) M6.4(g) Gage 10-8	72" Class A-1 M6.4(g) Gage 10-8	72" Class A-1 M6.4(g) Gage 8-7	90" Class A-1 with Vitrified Liner Plate	90" Radius Class A-1 with Vit. Liner Plate
F457(11) Code 7221																								
12+26.6 (S.R.170)	154												119		132									
14+73.6 (S.R.170)	155																120							
0+32.2 (Mem.Park)	156																							
80+80 (Appr.B)	157																							
83+66 (Appr.B)	158							108																
85+90 (Appr.B)	159																							
797+53.4	160&161								154	120	250	212												
27+95 (S.R.170)	162																							
20+88 (S.R.170)	111																							
0+43.5 (Boyd St.)	163																							
*7+50 (Ramp D)	129				51																			
800+00	43																							
802+85.7	164&165						18														1300	232		
11+00 (Ramp A)	123																							
804+91	166	64																						
806+50	47																							
15+50 (Appr.A)	135																							
812+71.5	167																							
819+65	168																							
820+00	169																	292	60					
827+00	170																							
826+05	60																							
4+40 (Hill Ave)	151																							
2+99.3 (W.A.)	171															284								
3+50 (W.A.)	142																							
14+75 (W.A.)	172	220	56			28																		
19+06.5 (W.A.)	173																							
829+50	63																							
796+50	41																							
Total F457(11)-7221		284	56		51	28	18	108	154	120	250	212	119		132	284	120	292	60		1300	232		
U457(11) Code 7221																								
836+50	174																							
837+35	175					136																		
840+00	71																							
841+25	176			134																				
852+50	82																							
853+00	177																						927	120
855+25	178																			149				
862+00	86																							
865+00	88																							
866+10	179					146																		
870+50	91																							
876+00	180																							
881+60	181													112										
887+50	182																							
Total U457(11)-7221				134		282								112						149			927	120

* See Sta 796+50 Sheet No. 41 For Quantities

■ M-6.6(b) M-6.8(b)

SUB-SUMMARY FOR CULVERTS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

STATION	See Sheet	PIPES ~ LIN. FT. 106"x68" Elliptical Class G-1 M6.7(b)	106"x68" Elliptical Class G-1 M6.7(b) with Vit. Liner Plate	106"x68" Elliptical Radius Class G-1 M6.7(b)	106"x68" Elliptical Radius Class G-1 M6.7(b) with Vit. Liner Plate	PIPE SPECIALS ~ EACH 12"x12" Tee Class A-1 M6.6(a) M6.8(b)	12"x30° Bend Class F-1	12"x45° Bend Class B-1 M6.8(b)	18"x18" Tee Class C-1	18"x22°30' Bend Class F-1	30"x12" Double Tee Class A-1 M6.6(c)	36"x12" Tee Class A-1 M6.4(d)	42"x15" Tee Class A-1 M6.6(a) M6.4(d)	60"x40" Bend Class A-1 M6.4(d) Gage 10	72"x30" Bend Class A-1 M6.6(d) M6.4(g) Gage 10-8	Excavation Cu. Yds. Structure	Excavation Cu. Yds. Channel	Pipe Removed Lin. Ft. 15" & Under	Pipe Removed Lin. Ft. Over 15"
F457(11) Code 7221																			
12+26.6(S.R.170)	154															51			
14+73.6(S.R.170)	155																215		
0+32.2(Mem. Park)	156								1										
80+80(Appr.B)	157																4		
83+66(Appr.B)	158																151	39	87
85+90(Appr.B)	159																		
797+53.4	160&161																876		
27+95(S.R.170)	162																251	22	
20+88(S.R.170)	111									1									
0+43.5(Boyd St.)	163																	160	
*7+50(Ramp D)	129																2		
800+00	43					1													
802+85.7	164&165																8		
11+00(Ramp A)	123																		
804+91	166																10	14	
806+50	47																		
15+50(Appr.A)	135																		
812+71.5	167																	10	
819+65	168																	18	
820+00	169															25	17		
827+00	170	146	160	64				1								121	58	26	
826+05	60																		
4+40(Hill Ave.)	151																		
2+99.3(W.A.)	171													1			28		
3+50(W.A.)	142																		
14+75(W.A.)	172																15		
19+06.5(W.A.)	173																		
829+50	63						2										1		
Total F457(11)-7221		146	160	64		1	2	1	1	1				1		197	1636	289	87
F457(11) Code 0010																			
797+53.4	160												1						
796+50	41																		
800+00	43																		
Total F457(11)-0010													1						
U457(11) Code 7221																			
836+50	174		264		80											35	9		
837+35	175											1							
840+00	71																4		
841+25	176										1						49		
852+50	82																		
853+00	177															71	7		11
855+25	178														1		49		
862+00	86						2												
865+00	88						2												
866+10	179																24		
870+50	91																		
876+00	180																5		
881+60	181																65		
887+50	182																40		
Total U457(11)-7221			264		80		4				1	1			1	106	252		11

STATION	Masonry Cu. Yds. as per plan Class "C"	Masonry Class "E"	CATCH BASINS ~ EACH 2-2A	2-2B	Mod. 2-3	2-3 Reinf. Conc.	Mod. 2-4	2-4 Reinf. Conc.	Mod. 2-5	3-A	St'd No. 1 Manhole Each	Shoulder Inlets Each St'd. No. 2-8A	Shoulder Inlets Each St'd. No. 2-10A	Riprap 6" Reinf. Slab Sq. Yds.	Riprap Grout Filled Sq. Yds.	Dump. Rock Channel Prot. Cu. Yds.	Type 1 Paved Gutter Lin. Ft.	Conc. for Struct. Class "C" Cu. Yds.	Reinf. Steel Lbs.	Removal Portions Existing Struct. Cu. Yds.	Sodding Sq. Yds.
F457(11) Code 7221																					
12+26.6(S.R.170)	0.9								1					24			10	15	2157		
14+73.6(S.R.170)		6.1												145							
0+32.2(Mem. Park)			1							2				11							
80+80(Appr.B)	0.4				1										12	7					
83+66(Appr.B)	1.5													44		47				4	
85+90(Appr.B)	0.4		1												17						
797+53.4	23.3		1					2							48	15	280				127
27+95(S.R.170)	1.0														155						
20+88(S.R.170)					1										6	9	10				
0+43.5(Boyd St.)	0.4		1																		
*7+50(Ramp D)	0.5				2										11	5	20				
800+00			1														10				
802+85.7	50.4						1								60	100	10			5	
11+00(Ramp A)	0.3		1												3	2					
804+91	7.5										1				25		85				
806+50					1										5		10				
15+50(Appr.A)					1										10		10				
812+71.5						1											20				
819+65					3										31		45				
820+00	24.2													64		60		20	1847		
827+00	20.7		1											62		98		55	6811	28	
826+05			1												7		10				
4+40(Hill Ave.)			1												6		10				
2+99.3(W.A.)		3.0												20							
3+50(W.A.)			1												4		10				
14+75(W.A.)	0.5		1				1				2			57							
19+06.5(W.A.)	0.3			1											3						
829+50	0.3											1				5					
Total F457(11)-7221	132.6	9.1	11	1	9	1	2	2	1	2	3	1		427	403	348	540	90	10,815	37	127
F457(11) Code 0010																					
797+53.4			1				1	1							14		20				
796+50					1																
800+00																	10				
Total F457(11)-0010			1		1		1	1							14		30				
U457(11) Code 7221																					
836+50	20.7													65		110		28	3095	23	
837+35							1	1							18		10				
840+00															15	13					
841+25	12.6										1			22		5				5	
852+50			1												7						
853+00	33.7													93		118		72	9098	131	
855+25	23.5													120							
862+00	0.3												1								
865+00	0.3												1			5					
866+10	17.6													35		15	15				
870+50	0.3												1								
876+00	7.3				3								1		31	7	30				
881+60	30.4													36		29	50				
887+50	3.6		1												12	20	10				
Total U457(11)-7221	150.3		2		3		1	1			1		4	371	83	322	115	100	12,193	159	

*See Sta 796+50 Sheet No. 41 For Quantities

* Extra quantities to be placed where directed by the Engineer. Any of these items may be nonperformed and payment will be made on the basis of final measurement.

GENERAL SUMMARY

Revised R.E.C. 11-16-62

CARRIED FROM Sheet No.

Removal of Temporary Connection — Sanitary

ITEM	F457(11) Code 0010: 14	23	24	*	F-457(11) Code 7221: 8	12	13	14	16	24	25	26	27
E-1	87248							462734					
E-1								55004					
E-8			769							868			
E-8													
E-9					Lump								
E-11	1							2124					
E-12									289				
E-12			105						87				
I-8								14					
I-15										183	617	300	
I-15											1347	1419	275
I-15										697	1100	949.25	285.81
I-15													
I-15										25	1000		
I-15													
I-15												62.5	
L-9	14081							159,087					
L-9	1.29							14.78					
L-9	6.43							73.92					
L-10			203						127	462	524	486	
S-14												51.46	
Special													
Special		1											
Special								1413					
M-10								182					
T-10								2250					
T-10								6750					
SS-18								3213					
SS-CE 101.04													
T-35													
B-19							2685						
B-112						1333							
B-21						1591							
B-35							515						
B-35							214						
B-35							344						
T-30							5700						
T-31							3907						
T-31							127						
T-35							221						
T-35							268						
T-21						38806							
I-7												356	
I-12							2387						
I-12							204						
I-12							622						
I-12							170						
I-18							1162						
I-21							295						
I-21							2050						
I-22						11,403							
I-23							23						

ITEM	F-457(11) Code 7221: 104	105	106	118	119	125	126	130	131	136	138	140	141	150	*
E-1															
E-1											880				
E-8		865	1631	476	924	4140		567	1060	2553					
E-8						120					88				
E-9															
E-11															
E-12	55	21	437							839			26		
E-12	71					69									
I-8															
I-15						728	147			25					
I-15	162.5	500		926	795.5	637.5		312.5	150	425		440	410	575	
I-15															
I-15															
I-15															
I-15															
I-15															
L-9															
L-9															
L-9															
L-10	117	80	63	530		364	226	562	246	129		383	293	448	110
S-14															
Special															
Special															
Special															
M-10															
T-10															
T-10															
SS-18															
SS-CE 101.04															28
T-35															75
B-19	12		409					13		40	168		21		
B-112															
B-21															
B-35															
B-35															
B-35															
T-30											300				
T-31															
T-31															
T-35															19
T-35	4.8		12							67	42		8		3.5
T-21															
I-7		295													
I-12															
I-12															
I-12															
I-12											474				
I-18															
I-21															
I-21															
I-22															
I-23															

ITEM	U-457(11) Code 7221: 8	12	13	14	16	27	28	29	30	31	32	33	196	*
E-1				403048										
E-1				37,315										
E-8												331		
E-8														
E-9	Lump													
E-11				1534										
E-12									14				572	
E-12					11								50	
I-8				13										
I-15						100		62						
I-15						816	1174	1899.5	1098	975	400	150		
I-15						690.19	1100	1100	1100	1100	374	150		
I-15												150		
I-15														
I-15												712.5		
I-15														
L-9				97,697										
L-9				8.98										
L-9				44.93										
L-10						196	72	652	416	537	188			86
S-14														
Special							1							
Special									1	1				
Special														
M-10														
T-10														
T-10														
SS-18				451										
SS-CE 101.04														19
T-35														125
B-19														
B-112		1382												
B-21		1324												
B-35														
B-35														
B-35														
T-30														
T-31			3970											
T-31			127											
T-35														
T-35														
T-21		29,281												
I-7														
I-12														
I-12												200		
I-12														
I-12														
I-18			1627											
I-21														
I-21			3617											
I-22		8117												
I-23														

ITEM	QUANTITY Code Type 0010 F457(11)	7221 F457(11)	7221 U457(11)	TOTAL	UNIT	DESCRIPTION
						ROADWAY
E-1	87,248	462,734	~~403,048~~ 427,825	~~953,030~~ 977,807	Cu.Yds.	Roadway Excavation, Method B, as per plan.
E-1		55,884	37,315	93,199	Sq.Yds.	Compacted Subgrade
E-8	769	13,084	331	14,184	Sq.Yds.	Removal and Disposal of Existing Pavement, as per plan.
E-8		208		208	Lin.Ft.	Removal and Disposal of Existing Curb and Gutter.
E-9	Lump	Lump	Lump	Lump	Lump	Removal of Trees and Stumps
E-11	1	2124	1534	3659	M-Gals.	Water
E-12		1667	586	2253	Lin.Ft.	Pipe Removed, 15" and Under
E-12	105	227	61	393	Lin.Ft.	Pipe Removed, Over 15"
I-8		14	13	27	Each	Standard Monument Assemblies
I-15		2000	162	2162	Lin.Ft.	Guard Rail, Removed and Disposed of, as per plan
I-15		8375	6512.5	14887.5	Lin.Ft.	Guard Rail, Steel Beam Standard Type (Deep)
I-15		3032.06	5614.19	8646.25	Lin.Ft.	Guard Rail, Steel Beam Barrier Type (Deep)
I-15			150	150	Lin.Ft.	Guard Rail, Removed and Rebuilt
I-15		1025		1025	Lin.Ft.	Temporary Guard Rail
I-15			712.5	712.5	Lin.Ft.	Temporary Guard Rail, Removed and Disposed of
I-15		62.5		62.5	Lin.Ft.	Guard Rail, Steel Beam Barrier Type (Deep), Modified as per plan
L-9	14081	159,087	97,697	270,865	Sq.Yds.	Seeding and Protecting, as per plan.
L-9	1.29	14.78	8.99	25.06	Tons	Commercial Fertilizer (12-12-12)
L-9	6.43	73.91	44.93	125.27	Tons	Agricultural Liming Material
L-10	203	5150	2147	7500	Sq.Yds.	Sodding
S-14		51.46		51.46	Lin.Ft.	Railing (Barrier Type I-15.11 with galvanized steel posts, base plates and bolts.)
Special			1	1	Each	Plugging Gas Well
Special	1		2	3	Each	Drilled Wells Abandoned
Special		1413		1413	Sq.Yds.	Mixing Calcium Chloride and Aggregate
M-10		182		182	Tons	Calcium Chloride furnished and applied
T-10		2250		2250	Cu.Yds.	Traffic Compacted Surface Course for Maintaining Traffic
T-10		6750		6750	Cu.Yds.	Traffic Compacted Surface Course for Maintaining Traffic Modified as per plan
SS-18		3213	451	3664	Lin.Ft.	Fence, Type C
SS-CE 101.04		28	19	47	Hours	Compaction, Using Heavy Pneumatic Tired Roller
T-35		75	125	200	Cu.Yds.	Asphaltic Concrete Surface Course or an Approved Bituminous Premixed Surface Course for Maintaining Traffic
						PAVEMENT
B-19		3348		3348	Cu.Yds.	Aggregate Base Course
B-112		1333	1382	2715	Cu.Yds.	Porous Base Course
B-21		1591	1324	2915	Cu.Yds.	Waterproofed Aggregate Base Course
B-35		515		515	Cu.Yds.	Asphaltic Concrete Base Course (70-85)
B-35		214		214	Cu.Yds.	Asphaltic Concrete Leveling Course (70-85)
B-35		344		344	Cu.Yds.	Asphaltic Concrete Leveling Course (85-100)
T-30		6000		6000	Gals.	Bituminous Prime Coat, Sec. M-5.7 Rt2 or Rt3
T-31		3907	3970	7877	Gals.	Bituminous Surface Treatment, Bituminous Material as per plan
T-31		127	127	254	Cu.Yds.	Bituminous Surface Treatment, No. 6 Aggregate
T-35		240		240	Cu.Yds.	Asphaltic Concrete Surface Course, Type C (70-85)
T-35		345		345	Cu.Yds.	Asphaltic Concrete Surface Course, Type C (85-100)
T-21		38,806	29,281	68,087	Sq.Yds.	9" Reinforced Portland Cement Concrete Pavement
I-7		651		651	Sq.Yds.	Reinforced Concrete Approach Slabs (T=13"), as per plan
I-12		2387		2387	Lin.Ft.	Standard Type 2-A Concrete Curb
I-12		204	200	404	Lin.Ft.	Standard Type 6 Concrete Curb
I-12		622		622	Lin.Ft.	Special Concrete Curb, as per plan
I-12		644		644	Lin.Ft.	Standard Type 2 Combination Curb & Gutter
I-18		1162	1627	2789	Cu.Yds.	Stabilized Crushed Aggregate Shoulders and Approaches
I-21		295		295	Sq.Yds.	St'd. Type 1, 4" Portland Cement Concrete Median Pavement
I-21		2050	3617	5667	Sq.Yds.	St'd. Type 2, Portland Cement Concrete Median Pavement, as per plan
I-22		11403	8117	19,520	Cu.Yds.	Subbase, as per plan
I-23		23		23	Each	Standard Precast White Portland Cement Concrete Traffic Dividers

* Extra quantities to be placed where directed by the Engineer. Any of these items may be nonperformed and payment will be made on the basis of final measurement.

GENERAL SUMMARY

Sanitary

CARRIED FROM SHEET NO.

F-457(II) Code 0010: 16	24	*	F-457(II) Code 7221: 8	10	14	15	16	24	25	26	27	104	105	106	118	119	125	126	130	131	136	140	141	150	5	*	U-457(II) Code 7221: 10	14	15	16	27	28	29	30	31	32	196	*	ITEM	QUANTITY Code Type 0010 F457(II)	7221 F457(II)	7221 U457(II)	TOTAL	UNIT	DESCRIPTION
																																														DRAINAGE
							197																							106										E-2		197	106	303	Cu.Yds	Excavation for Structures
					1063		1636																					11,075		252										E-3		2699	11,327	14,026	Cu.Yds	Channel Excavation
	20							1308	1695	1025	201	655	360	1376	1150	1239	2067	727			1252				$-\boxed{3000}$	395					1690	596	2905	2185	1019	895		240	I-1	20	10,450	9530	20,000	Lin.Ft.	6" Pipe, Class I-3
	10							48		30	13	20	20	20	10		40	10			60					319					20			20	67	30		263	I-1	10	590	400	1000	Lin.Ft.	6" Pipe, Class F-1
	20							50	485	1200	984		959		934											188					770	1246		790	1415			159	I-1	20	4800	4380	9200	Lin.Ft.	6" Pipe, Class I-3 Sec. M6.4(h)
										34			65	52	30	24		40								80					68			34				73	I-1		325	175	500	Lin.Ft.	8" Pipe, Class A-1 Sec. M6.6(b) or Sec. M6.8(b)
																16					10					24							10	10		10		20	I-1		50	50	100	Lin.Ft.	8" Pipe, Class F-1 Sec. M6.4(c)
																															36	102							I-1			138	■ 138	Lin.Ft.	12" Pipe, Class A-1 Sec. M6.6(b) or Sec. M6.8(b)
																																					172		I-1			172	■ 172	Lin.Ft.	12" Pipe, Class A-1 Sec. M6.8(b) Concrete Encased
	20					94		240		353			415	105															156						56				I-1	20	1207	212	1439	Lin.Ft.	12" Pipe, Class A-1 Sec. M6.6(a) or Sec. M6.8(b)
						72																																	I-1		72		72	Lin.Ft.	12" Pipe, Class B-1 Sec. M6.8(b)
						32																																	I-1		32		32	Lin.Ft.	12" Pipe, Class D-1
									148																														I-1		148		148	Lin.Ft.	12" Pipe, Class E-1
						77																							104										I-1		77	104	181	Lin.Ft.	12" Pipe, Class F-1
								442					54																										I-1		496		496	Lin.Ft.	15" Pipe, Class A-1 Sec. M6.6(a) or Sec. M6.8(b)
																																					250		I-1			250	■ 250	Lin.Ft.	15" Pipe, Class C-1 Sec. M6.8(b)
																																					66		I-1			66	■ 66	Lin.Ft.	15" Pipe, Class C-1 Sec. M6.8(b), Concrete Encased
						86																																	I-1		86		86	Lin.Ft.	15" Pipe, Class D-1
																													22										I-1			22	22	Lin.Ft.	15" Pipe, Class E-1 Sec. M6.6(c)
						36																																	I-1		36		36	Lin.Ft.	15" Pipe, Class E-1 Sec. M6.8(b)
						53																																	I-1		53		53	Lin.Ft.	15" Pipe, Class F-1 Sec. M6.4(c), Gage 14
						33																																	I-1		33		33	Lin.Ft.	15" Pipe, Class D-1, Sec. M-6.6 (b) or Sec. M-6.8 (b)
						48																																	I-1		48		48	Lin.Ft.	18" Pipe, Class A-1 Sec. M6.4(d)
																													16										I-1			16	16	Lin.Ft.	18" Pipe, Class A-1 Sec. M6.6(d)
						194																																	I-1		194		194	Lin.Ft.	18" Pipe, Class C-1
																																					862		I-1			862	■ 862	Lin.Ft.	18" Pipe, Class C-1 Sec. M6.8(b)
						138																																	I-1		138		138	Lin.Ft.	18" Pipe, Class D-1, Sec. M-6.6(b) or Sec. M-6.8 (b)
						6																							100										I-1		6	100	106	Lin.Ft.	18" Pipe, Class E-1
						183																																	I-1		183		183	Lin.Ft.	18" Pipe, Class F-1
						102																																	I-1		102		102	Lin.Ft.	24" Pipe, Class A-1
						196																																	I-1		196		196	Lin.Ft.	24" Pipe, Class A-1 Sec. M6.4(d)
						277																							114										I-1		277	114	391	Lin.Ft.	24" Pipe, Class A-1 Sec. M6.6(a) or Sec. M6.8(b)
						46																																	I-1		46		46	Lin.Ft.	24" Pipe, Class A-1 Sec. M6.6(b) or Sec. M6.8(b)
						69																							23										I-1		69	23	92	Lin.Ft.	24" Pipe, Class B-1 Sec. M6.6(b) or Sec. M6.8(b)
						52																																	I-1		52		52	Lin.Ft.	24" Pipe, Class F-1
						170																																	I-1		170		170	Lin.Ft.	30" Pipe, Class A-1
						284																																	I-1		284		284	Lin.Ft.	30" Pipe, Class A-1 Sec. M6.4(d)
						82																							143										I-1		82	143	225	Lin.Ft.	30" Pipe, Class A-1 Sec. M6.6(a) or Sec. M6.8(b)
																													134										I-1			134	134	Lin.Ft.	30" Pipe, Class A-1 Sec. M6.6(c)
						56																																	I-1		56		56	Lin.Ft.	30" Pipe, Class A-1 Sec. M6.8(b)
						51																																	I-1		51		51	Lin.Ft.	30" Pipe, Class B-1 Sec. M6.6(b) or Sec. M6.8(b)
						28																							282										I-1		28	282	310	Lin.Ft.	36" Pipe, Class A-1 Sec. M6.4(d)
						18																																	I-1		18		18	Lin.Ft.	36" Pipe, Class A-1 Sec. M6.4(d), Gage 10
						108																																	I-1		108		108	Lin.Ft.	42" Pipe, Class A-1
						154																																	I-1		154		154	Lin.Ft.	42" Pipe, Class A-1 Sec. M6.6(a) or Sec. M6.4(d)
						120																																	I-1		120		120	Lin.Ft.	42" Pipe, Class A-1 Sec. M6.6(b) or Sec. M6.4(d)
						250																																	I-1		250		250	Lin.Ft.	42" Pipe, Class A-1 Sec. M6.6(c) or Sec. M6.4(d)
						212																																	I-1		212		212	Lin.Ft.	42" Pipe, Class A-1 Sec. M6.6(d) or Sec. M6.4(d)
						119																																	I-1		119		119	Lin.Ft.	48" Pipe, Class A-1 Sec. M6.6(a)
																													112										I-1			112	112	Lin.Ft.	48" Pipe, Class A-1 Sec. M6.4(d)
						132																																	I-1		132		132	Lin.Ft.	48" Pipe, Class B-1
						284																																	I-1		284		284	Lin.Ft.	60" Pipe, Class A-1 Sec. M6.4(d), Gage 10
						120																																	I-1		120		120	Lin.Ft.	72" Pipe, Class A-1 Sec. M6.6(a)
						292																																	I-1		292		292	Lin.Ft.	72" Pipe, Class A-1 Sec. M6.6(b)
																													149										I-1			149	149	Lin.Ft.	72" Pipe, Class A-1 Sec. M6.6(d) or Sec. M-6.4(g) Gage 10-8, as per plan
						1300																																	I-1		1300		1300	Lin.Ft.	72" Pipe, Class A-1 Sec. M6.4(g), Gage 10-8 as per plan
						232																																	I-1		232		232	Lin.Ft.	72" Pipe, Class A-1 Sec. M6.4(g), Gage 8-7, as per plan
						60																																	I-1		60		60	Lin.Ft.	72" Radius Pipe, Class A-1 Sec. M6.6(b)
																													927										I-1			927	927	Lin.Ft.	90" Pipe, Class A-1 Sec. M-106.6(d) with Vitrified Liner Plates
																													120										I-1			120	120	Lin.Ft.	90" Radius Pipe, Class A-1 Sec. M-106.6(d) with Vitrified Liner Plates, as per plan.
																																											■		Pipe with Compression Type Joints, Sec. I-1.06

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

19/250

COL-30-32.19

* Extra quantities to be placed where directed by the Engineer. Any of these items may be nonperformed and payment will be made on the basis of final measurement.

GENERAL SUMMARY

CARRIED FROM SHEET NO.

F457(11) Code 0010				F-457(11) Code 7221																							U-457(11) Code 7221												ITEM	QUANTITY Code Type 0010 F457(11)	7221 F457(11)	7221 U457(11)	TOTAL	UNIT	DESCRIPTION
15	16	24	*	8	10	14	15	16	24	25	26	27	104	105	106	118	119	125	126	130	131	136	140	141	150	*	10	14	15	16	27	28	29	30	31	32	196 (sanitary)	*							DRAINAGE
								146																															I-1		146		146	Lin.Ft	106"x68" Elliptical Reinforced Concrete Pipe, Class G-1, Sec. M6.7(b)
								160																						264									I-1		160	264	424	Lin.Ft	106"x68" Elliptical Reinforced Concrete Pipe, Class G-1 Sec. M6.7(b) with Vitrified Liner Plates, as per plan
								64																															I-1		64		64	Lin.Ft	106"x68" Elliptical Reinforced Concrete Radius Pipe, Class G-1 Sec M6.7(b)
																														80									I-1			80	80	Lin.Ft	106"x68" Elliptical Reinforced Concrete Radius Pipe, Class G-1 Sec. M6.7(b) with Vitrified Liner Plates, as per plan
								141.7																		5.8				150.3								7.2	I-2		147.5	157.5	305.0	Cu.Yds.	Masonry, as per plan
									5		1		1	1	3		2	2	3			5									1		1	2	1	3			I-5		23	8	31	Each	6" Pipe Specials, Class I-3
											1	1		2		2															1				1				I-5		6	2	8	Each	6" Pipe Specials, Class I-3 Sec. M6.4(h)
											1																				1			1					I-5		1	2	3	Each	8" Pipe Specials, Class A-1 Sec. M6.6(b) or Sec. M6.8(b)
								1																															I-5		1		1	Each	12" Pipe Special, Class A-1 Sec. M6.6(a) or Sec. M6.8(b)
								1																															I-5		1		1	Each	12" Pipe Special, Class B-1 Sec. M6.8(b)
										1																													I-5		1		1	Each	12" Pipe Special, Class E-1
								2																						4									I-5		2	4	6	Each	12" Pipe Specials, Class F-1
								1																															I-5		1		1	Each	18" Pipe Special, Class C-1
								1																															I-5		1		1	Each	18" Pipe Special, Class F-1
																														1									I-5			1	1	Each	30" Pipe Special, Class A-1 Sec. M6.6(c)
																														1									I-5			1	1	Each	36" Pipe Special, Class A-1 Sec. M6.4(d)
	1																																						I-5	1			1	Each	42" Pipe Special, Class A-1 Sec. M6.4(d) or Sec. M6.6(a)
								1																															I-5		1		1	Each	60" Pipe Special, Class A-1 Sec M6.4(d) Gage 10
																														1									I-5			1	1	Each	72" Pipe Special, Class A-1 Sec. M6.6(d) or Sec. M6.4(g), Gage 10-8, as per plan
								3																						1							6		I-8		3	7	10	Each	Standard No.1 Manholes
	1							11																						2									I-8	1	11	2	14	Each	Standard No.2-2A Catch Basins
								1																															I-8		1		1	Each	Standard No.2-2B Catch Basin
	1							9																						3									I-8	1	9	3	13	Each	Standard No.2-3 Catch Basins, Modified as per plan
								1																															I-8		1		1	Each	Standard No.2-3 Reinforced Concrete Catch Basin, Modified as per plan
	1							2																						1									I-8	1	2	1	4	Each	Standard No.2-4 Catch Basins, Modified as per plan
	1							2																						1									I-8	1	2	1	4	Each	Standard No.2-4 Reinforced Concrete Catch Basins, Modified as per plan
								1																															I-8		1		1	Each	Standard No.2-5 Catch Basin, Modified as per plan
								2																															I-8		2		2	Each	Standard No.3-A Catch Basins
									5	1																													I-8		6		6	Each	Standard No 6 Catch Basins
														1																									I-8		1		1	Each	Standard No.2-6 Median Inlet
														2																									I-8		2		2	Each	Standard No.2-8 Median Inlets
															1																								I-8		1		1	Each	Standard No.2-12 Median Inlet
								1			3																					1							I-8		4	1	5	Each	Standard No.2-8A Paved Shoulder Inlets
									1																					4	1	1			1				I-8		1	7	8	Each	Standard No.2-10A Paved Shoulder Inlets
				3000																																			I-9		3000		3000	Lin.Ft.	Stone Underdrains, No.2
								427																						371									I-10		427	371	798	Sq.Yds.	Riprap, using 6" Reinforced Concrete Slab, as per plan
	14		6					403																		30				83								16	I-10	20	433	99	552	Sq.Yds.	Riprap, grout filled, as per plan
								348													8					14				322				90	37	9		22	I-10		370	480	850	Cu.Yds.	Dumped Rock Channel Protection
					237																					13	1396											54	I-10		250	1450	1700	Cu.Yds.	Dumped Rock Channel Protection, as per plan
	30							540		452	285					100				250	738		795	515	693	252				115	50	218	500	298	256			213	I-14	30	4620	1650	6300	Lin.Ft.	Standard Type 1 Paved Gutter, as per plan
																							321			29													I-14		350		350	Lin.Ft.	Standard Type 4 Paved Gutter
					399																					51													I-14		450		450	Lin.Ft.	Type 6 Paved Gutter, as per plan
																																					2		I-16			2	2	Each	Manholes Abandoned
																		2				2																	I-16		4		4	Each	Catch Basins Abandoned
								90																		5				100								5	S-1		95	105	200	Cu.Yds.	Concrete for Structures, Class "C"
								10815																						12193									S-4		10,815	12,193	23,008	Lbs.	Reinforcing Steel
								37							6.2							19				0.8				159							8		S-22		63	167	230	Cu.Yds	Removal of Portions of Existing Structures
																										100												50	S-29		100	50	150	Cu.Yds.	Drainage of Structures, Porous Backfill, as per plan

* Extra quantities to be placed where directed by the Engineer. Any of these items may be nonperformed and payment will be made on the basis of final measurement.

GENERAL SUMMARY

Corried from Sheet No. F-457(11) Code 0010 *	F-457(11) Code 7221 197	F-457(11) Code 7221 198	F-457(11) Code 7221 *	U-457(11) Code 7221 *	ITEM	QUANTITY Code Type F457(11) 0010	QUANTITY Code Type F457(11) 7221	QUANTITY Code Type U457(11) 7221	TOTAL	UNIT	DESCRIPTION
											OVERHEAD SIGN SUPPORTS
		1			I-129		1		1	Each	Bridge Type Overhead Sign Support, 73' Span as per plan No.13.2 Design 4
		1			I-129		1		1	Each	Bridge Type Overhead Sign Support, 46' Span as per plan No.13.2 Design 1
	1				I-129		1		1	Each	Single Pole Overhead Sign Support, 20' Arm as per plan No.9.12 Design 3
	2.0	8.4			I-129		10.4		10.4	Cu. Yds.	Concrete for Sign Support Foundations, Class "C"
						Lump	Lump	Lump	Lump	Lump	Construction Layout Stakes
											QUANTITIES FOR STRUCTURES OVER 20' SPAN
											For Bridge No. Col-30-3201 See Sheet No. 211
											For Bridge No. Col-30-3271 See Sheet No. 221
											BUILDING REMOVALS
					E-10		Lump		Lump	Lump	Parcel No. 49-LA Remove One Concrete Block Service Station and All Underground Installations such as Gas Tanks, Pipes, etc.
					E-10		Lump		Lump	Lump	Parcel No. 50-LA Remove One 1½ Story Concrete Block Service Station with Office and all Underground Installations such as Gas Tanks, Pipes, etc.
					E-10		Lump		Lump	Lump	Parcel No. 55-LA Remove One 2 Story Frame Residence and Six Frame Sheds
					E-10			Lump	Lump	Lump	Parcel No. 93-LA Remove One 1 Story Brick Residence, One 1 Story Frame Residence, Two Concrete Block Chicken Houses and Two Frame Sheds.
					E-10		Lump		Lump	Lump	Parcel No. 57- Remove One Frame Shed
					E-10		Lump		Lump	Lump	Parcel No. 57-T- Remove One Stone Office Building
					E-10		Lump		Lump	Lump	Parcel No. 58-LA-Remove One Stone Spring House


PLAN
Scale: 1" = 50'
STA. 762+00
STA. 774+00
BEGIN SHEET
END SHEET
LA
Proposed Future Ramp "B"
Proposed Future Ramp "C"
S 60°13' E
763
764
765
766
767
768
769
770
771
772
773
Gravel Road
HARVEY STREET
HOUSTON STREET
HAMILTON STREET
Existing U.S. 30
15" Conc. Pipe
Well Casing
Brick Incinerator
Conc. Block Gar.
Septic Tank
Septic Tanks
Fish Pond
Garage
Pens
30-2" Pines
Cabins
Trailer
Telephone
Conc. Patio
1 Sty. Fr. Bldg.
1 1/2 Sty. Fr. Res.
2 Sty. Gar.
Shed
Fr. Bldg.
12" V.S.P.
15" V.S.P.
12" C.P.
Sign Post
PROFILE
Scale: Horizontal 1" = 50'
Vertical 1" = 10'
1189.00
1187.50
1186.00
1184.50
1183.00
1181.50
1180.00
1178.50
1177.00
1175.50
1174.00
1172.50
1171.00
1169.50
1168.00
1166.50
1165.00
1163.50
1162.00
1160.50
1159.00
1157.50
1156.00
1154.50
1153.00
1200
1190
1180
1170
1160
1150
1140
Proposed Future -3.00% Grade
1193.7
1186.6
1178.6
1173.3
1168.2
1164.2
1159.1
1153.7
1148.7
1146.0
1140.9
1137.7
1138.7
1140.1
1139.8
1140.0
1139.2
1138.7
1136.1
1140.0
1142.6
1147.2
1157.7
1159.4
1160.9
762
763
764
765
766
767
768
769
770
771
772
773
774

COL-30-32.19


PLAN
Scale: 1" = 50'
STA. 774+00
BEGIN SHEET
STA 785+00
END SHEET
LA
BLYTHE STREET
HAMILTON STREET
CALVIN STREET
Gravel Road
S60°13'E
775
779
780
781
782
783
784
Proposed Future Ramp "B"
Proposed Future Ramp "C"
T.S.-15+45.0
S.C.17+45.0
T.S.-780+78.70
S.C.-783+78.70
T.S.-13+33.82
S.C.-15+33.82
P.T.-11+98.34
21" V.S.P.
16" Conc. Pipe
13-1" Pines
54-1" Pines
90 Various Pines & Shrubs
1 Sty. Fr. Res.
2 Sty. Fr. Res.
1½ Sty. Fr. Res.
1 Sty. Fr. Cabin
Conc. Block Gar.
Fr. Bldg.
Bldg.
Well
Gar.
Res.
Trailer
Septic Tank
Motel Cabins
15" C.P.
8" V.S.P.
PROFILE
Scale: Horizontal 1" = 50'
Vertical 1" = 20'
1153.00
1151.50
1150.00
1148.50
1147.00
1145.50
1144.00
1142.50
1141.00
1139.50
1138.00
1136.50
1135.00
1133.50
1132.00
1130.50
1129.00
1127.50
1126.00
1124.50
1123.00
1121.50
1120.00
1160
1150
1140
1130
1120
Proposed Future -3.00% Grade
1160.9
1162.0
1158.8
1157.7
1156.2
1154.4
1151.1
1148.5
1143.4
1140.7
1135.9
1131.7
1127.0
1125.3
1124.1
1121.0
1123.6
1126.3
1127.9
1127.3
1126.4
1124.9
1123.1
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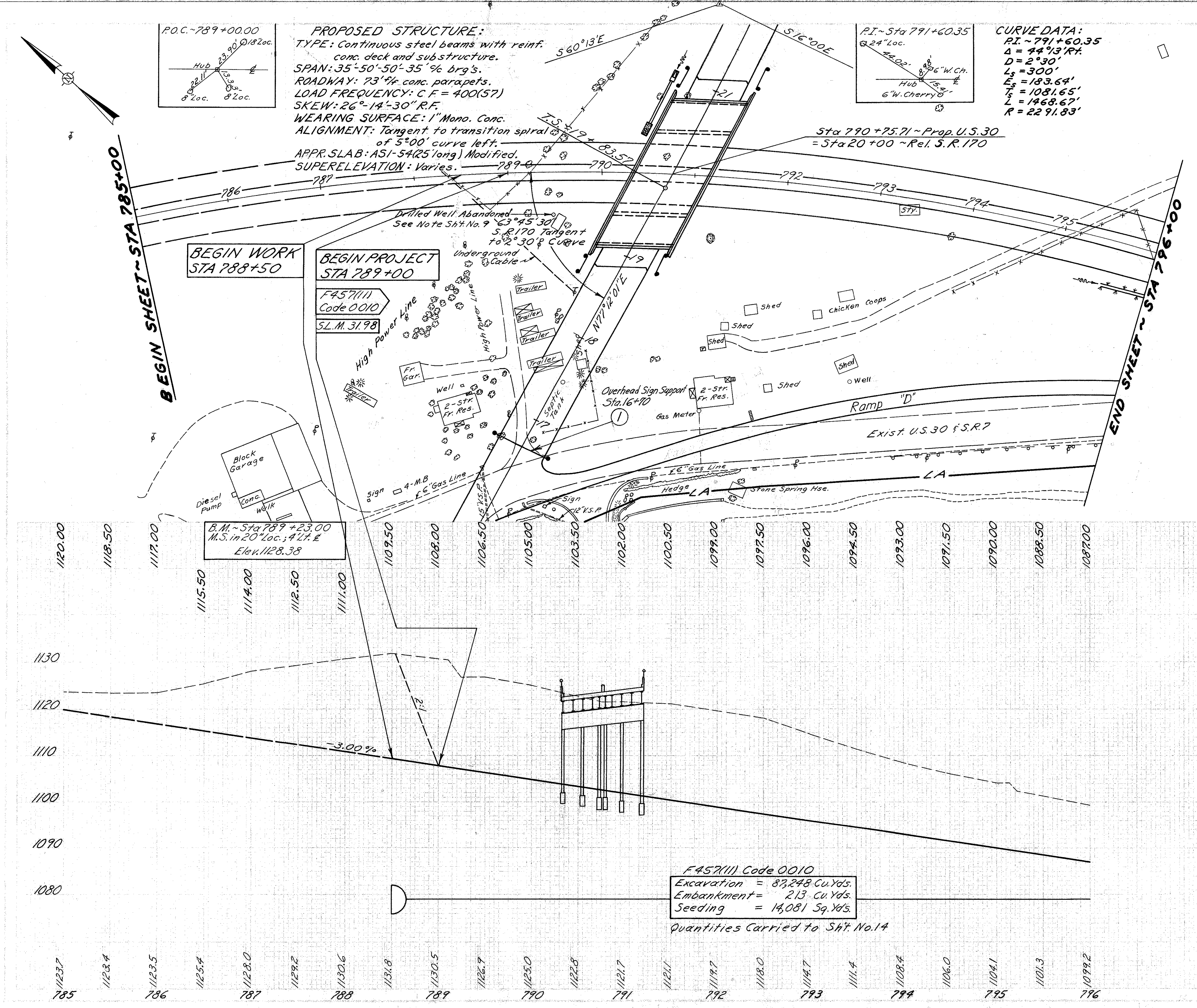
785

COL-30-32.19

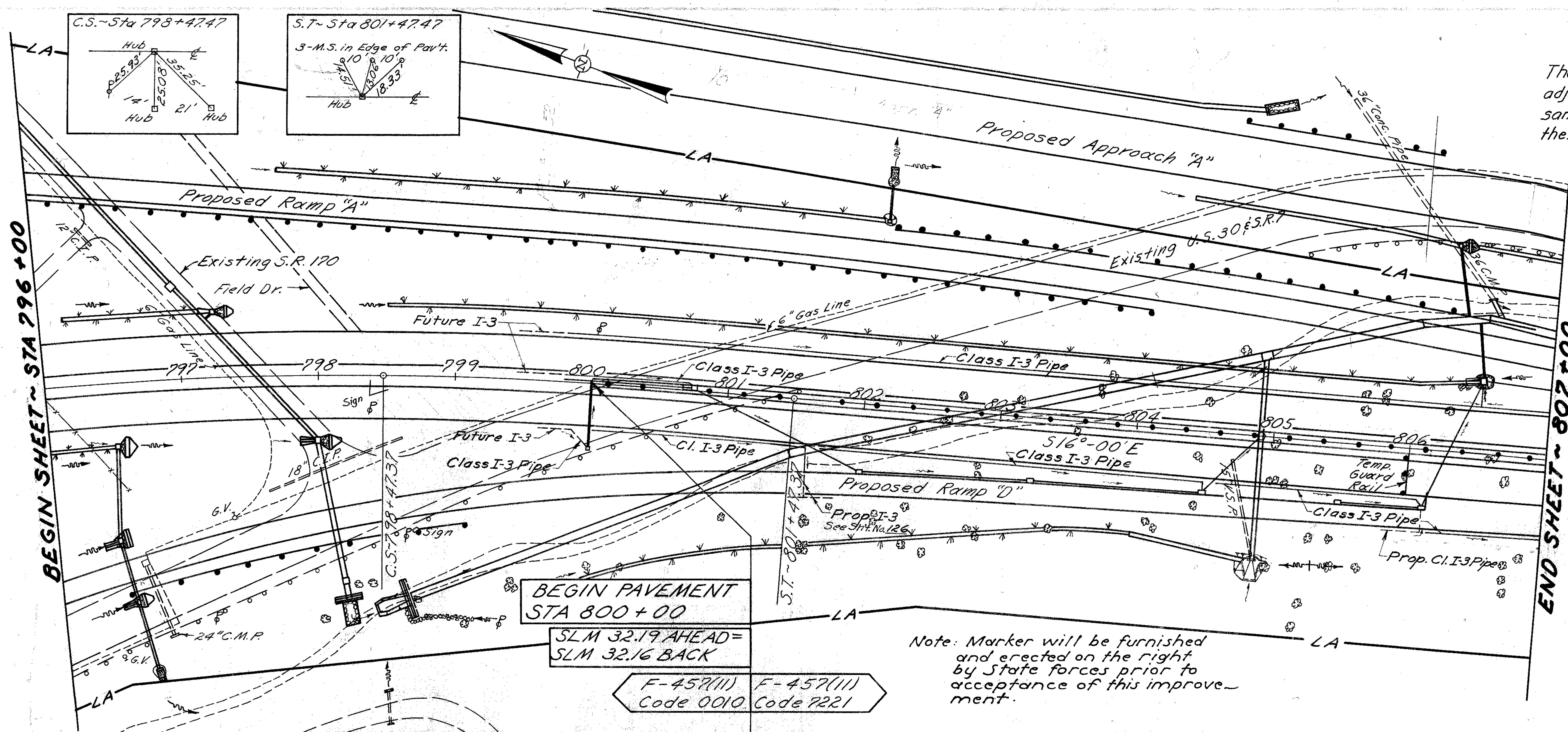


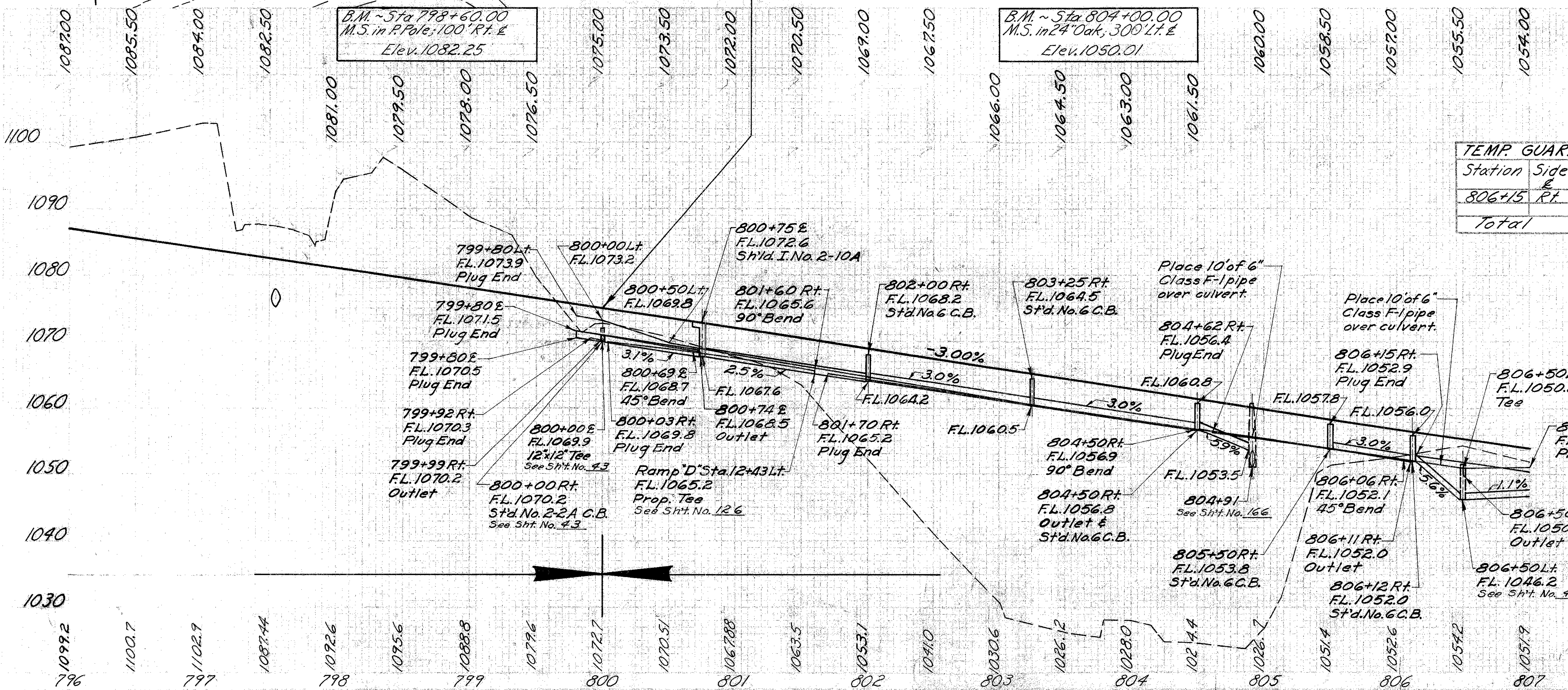
Main Line Pavement from Sta. 789+00 to Sta. 800+00 will be constructed on future contract.

(1) Overhead Sign Support - Sta. 16+70 Rel. S.R. 170
℄ of Structure = ℄ of Relocated S.R. 170
I-129 No. 13.2 Design 4
Span: 73'-0"
Bracket Assemblies (Clamp Sizes): 4-14", 2-13", 2-12" = 8 Total
Sign Height: 5'-0"
Concrete Quantity: 4.2 Cu. Yds., Class "C"
For additional details see sheet No. 198

COL-30-32.19

The typical section of the future adjoining pavement will be the same as shown on sheet No. 3 of these plans.





TEMP. GUARD RAIL		
Station	Side ℄	Lin. Ft.
806+15	Rt.	25
Total		25

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Sod Sq. Yds.	Pipe Removed 15" & over Lin. Ft.
796+50		Rt.	41	Pipe	24"	69'		
797+53.43		Lt. & Rt.	160 & 161	Pipe	42"	736'		
798+50	806+38	Lt.	24				500	
800+00		Rt.-℄	43	Pipe	12"	49'		
802+85.7		Lt. & Rt.	164 & 165	Ch. Pipe	72"	1532'		
804+91		Lt. & Rt.	166	Pipe	30"	146'		
806+50		Lt.	47	Pipe	18"	52'		
797+62	798+62	Rt.	24					105
795+48	796+48	Rt.	24				62	
796+13	797+13	Lt.	24				56	
806+38	807+00	Lt.	24				47	
Total - Code Type 0010							203	105
Total - Code Type 7221							462	
Grand Total							665	105

STORM SEWERS

Station From	Station To	Side ℄	See Sheet	*12" Pipe Lin. Ft.	*15" Pipe Lin. Ft.	No. 6 Catch Basin-Each	No. 2-10A Sh'ld. Inlet Each
799+80	800+75	℄	24	95			
800+75		℄	24				1
800+75	802+00	℄-Rt.	24		134		
802+00		Rt.	24			1	
802+00	804+50	Rt.	24		250		
803+25		Rt.	24			1	
804+50		Rt.	24			1	
804+50	804+91	℄-Rt.	24		58		
805+50	806+12	Rt.	24	62			
805+50		Rt.	24			1	
806+12		Rt.	24			1	
806+12	806+50	Rt.-Lt.	24	103			
Code Type 0010				20			
Code Type 7221				240	442	5	1
Total				260	442	5	1

* Class A-1 Sec. M-6.8(b) or Sec. M-6.6(a)

GUARD RAIL

Station From	Station To	Side ℄	Barrier Type Lin. Ft.	Remove Lin. Ft.
800+03	807+00	℄	697	
805+20	807+00	Lt.		183
Total			697	183

PAVEMENT REMOVAL

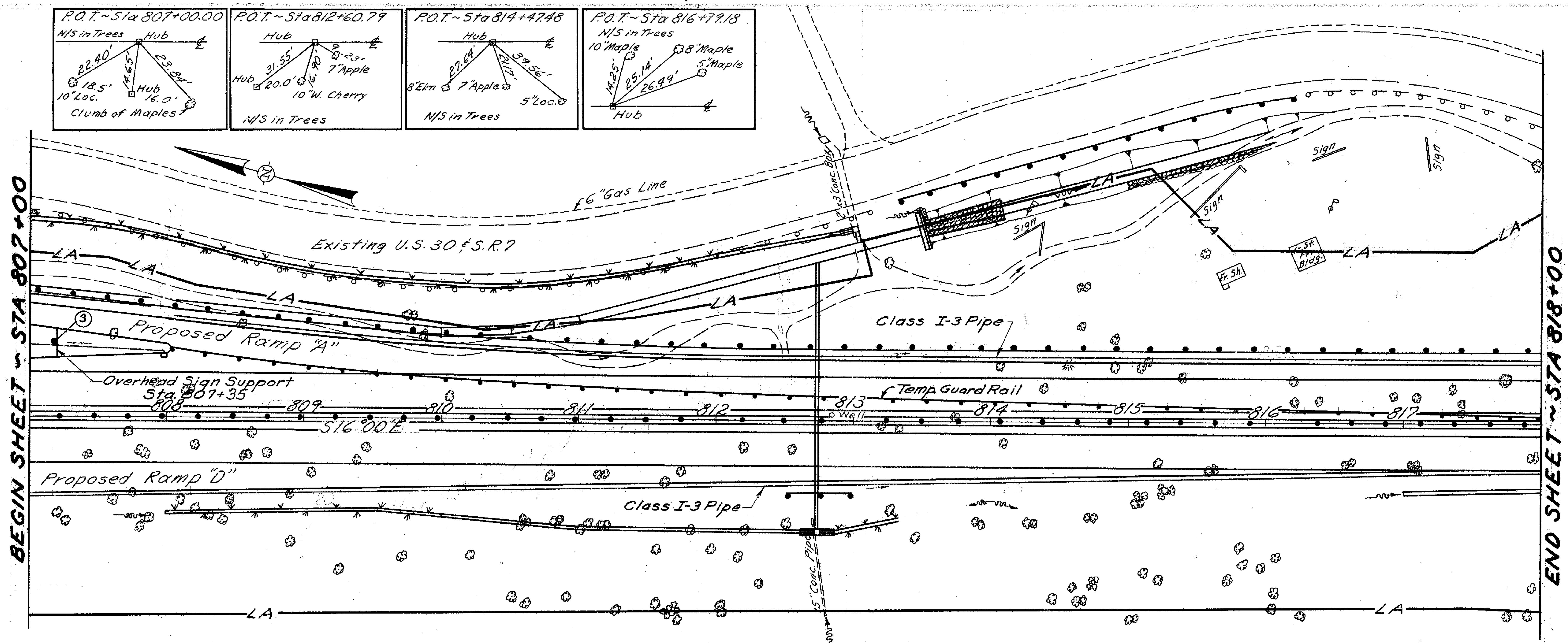
Station From	Station To	Side ℄	Sq. Yds.
796+90	798+63	Rt. & Lt.	589
799+60	802+00	Rt. & Lt.	1040
Code Type 0010			769
Code Type 7221			868
Total			1637

UNDERDRAIN

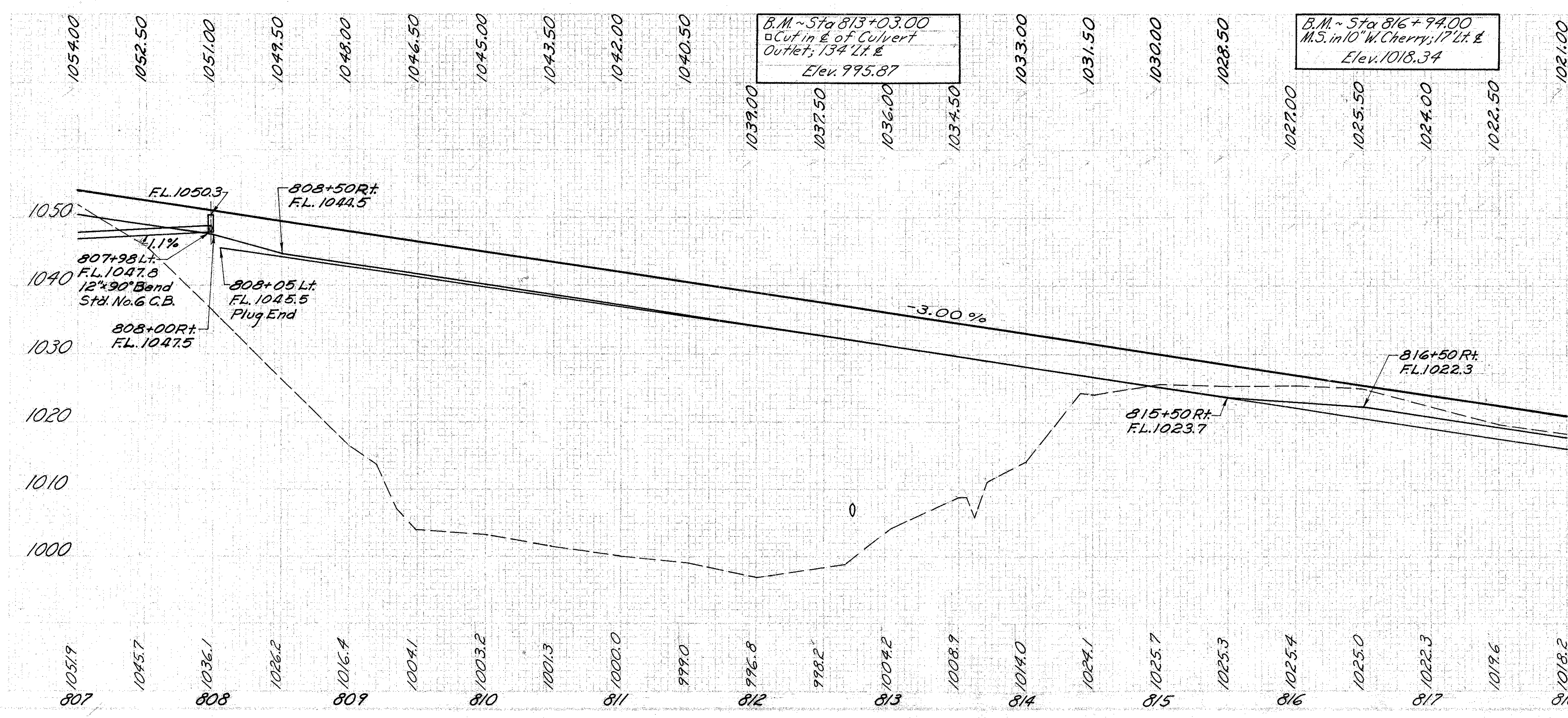
Station From	Station To	Side ℄	6" Class I-3 D=12"* Lin. Ft.	6" Class I-3 D=30" Lin. Ft.	Class F-1 6" Lin. Ft.	6" Class I-3 Pipe Spec. 45° Each	6" Class I-3 Pipe Spec. 90° Each	6" Class I-3 Pipe Spec. Tee Each
799+80	800+50	Lt.	70					
799+80	800+74	℄		93	3	1		
799+92	799+99	Rt.			10			
800+03	801+60	Rt.		172			1	
800+50	807+00	Lt.		648	20			1
801+70	804+50	Rt.		280	7		1	
804+62	806+11	Rt.		135	18	1		
Code Type 0010			20	20	10	0	0	0
Code Type 7221			50	1308	48	2	2	1
Total			70	1328	58	2	2	1

* Sec. M-6.4(h)

COL-30-32.19



For Rock Embankment on left-
Sta. 807+50 to Sta. 812+00,
see Sheets 9, 47-50.



DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Sod Sq. Yds.	Paved Gutter Lin. Ft.
808+00	810+00	Rt.	25				112	
810+00	812+60	Rt.	25				88	262
812+71.5		Lt.&Rt.	167	Pipe	24"	196'		
817+00	818+00	Rt.	25				33	100
812+84	813+34	Rt.	25				25	
812+00	812+88	Lt.	25				30	90
807+00	812+00	Lt.	25				236	
Total							524	452

STORM SEWER

Station From	Station To	Side ℄	See Sheet	*12" Pipe Lin. Ft.	No. 6 Catch Basin-Each	12" Pipe Special *90° Bend Each	
806+50	807+98	Lt.	25	148			
807+98		Lt.	25		1	1	
Total				148	1	1	

*Class E-1

GUARD RAIL

Station From	Station To	Side ℄	Barrier Type Lin. Ft.	New Lin. Ft.	Remove Lin. Ft.	Temp. Lin. Ft.
807+00	818+00	℄	1100			
807+00	813+12	Lt.			617	
808+02.72	818+00	Lt.		997		
812+50	813+00	Rt.		50		
813+30	816+20	Lt.		300		
808+00	818+00	Lt.				1000
Total			1100	1347	617	1000

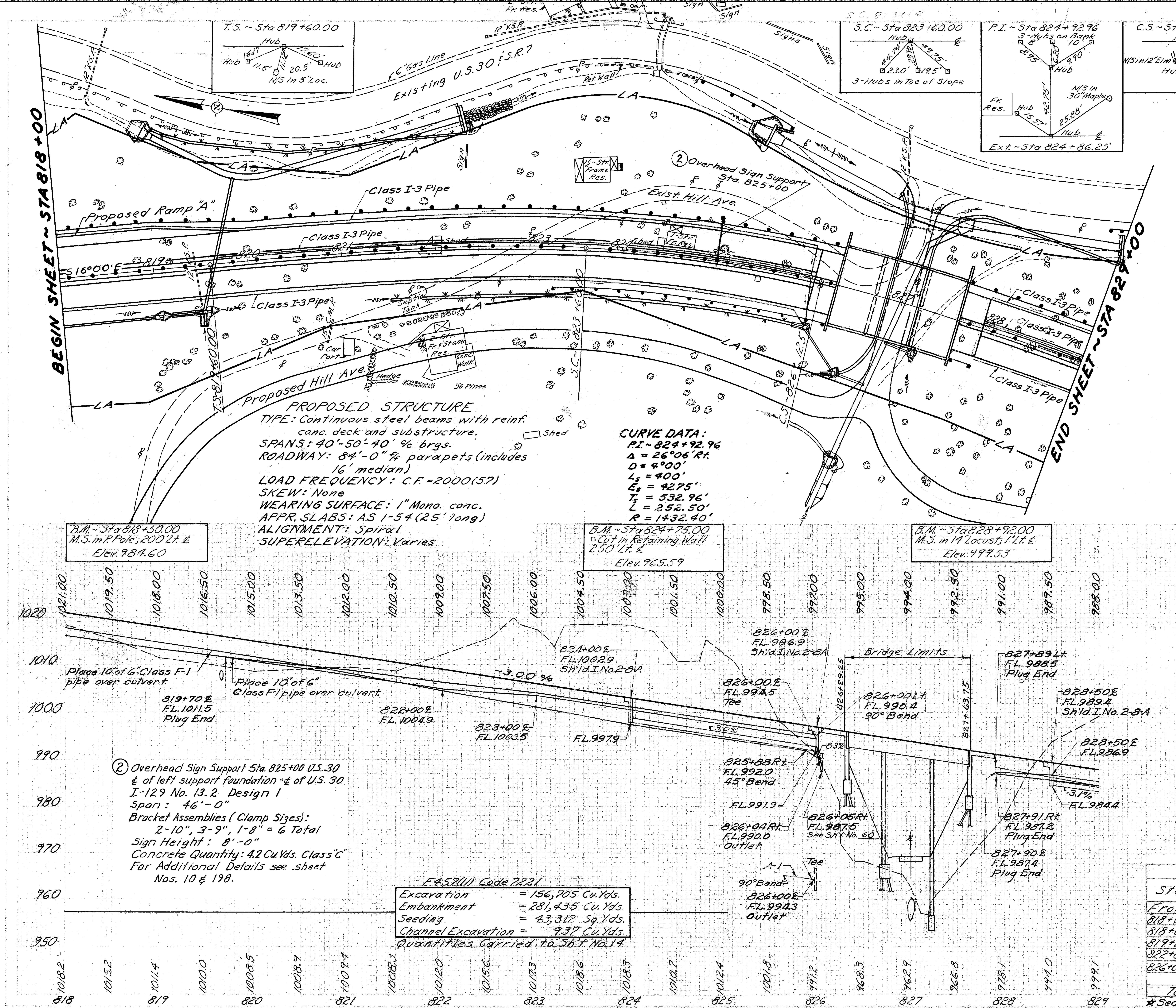
UNDERDRAIN

Station From	Station To	Side ℄	6" Class I-3 D=12"** Lin. Ft.	6" Class I-3 D=30" Lin. Ft.
806+15	808+50	Rt.	235	
808+05	818+00	Lt.		995
808+50	815+50	Rt.		700
815+50	818+00	Rt.	250	
Total			485	1695

**Sec. M-6.4(h)

(3) Overhead Sign Support Sta. 807+35 U.S. 30
℄ of Foundation is offset 5 ft.
From Face of Curb on the Main Line
I-129 No. 9.12 Design 3
Arm: 20'-0"
Bracket Assemblies (Clamp Sizes):
4-6" = 4 Total
Sign Height: 8'-0"
Concrete Quantity: 2.0 Cu. Yds. Class "C"
For Additional Details See Sh. No. 197

COL-30-32.19



DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Paved Gutter Lin. Ft.	Sod Sq. Yds.
818+00	818+88	Rt.	26				88	29
819+65		Lt.&Rt.	168	Pipe	24"	155'		
820+00		Lt.	169	Ch. Pipe	72"	352'		
819+12	822+36	Lt.	26					150
821+50	825+93	Rt.	26					241
826+05		Rt.	60	Pipe	18"	56'		
827+00		Lt.	170	Ch. Pipe	106"x68"	370'		
2+99.3	(West. AVE.)	Lt.&Rt.	171	Pipe	60"	284'		
2+20 (W.A.)	829+00	Lt.	26				197	66
Total							285	486

STORM SEWER

Station From	Station To	Side ℄	See Sheet	*12" Pipe Lin. Ft.	No. 2-8A Sh'ld. Inlets. Each
826+00		℄	26		1
826+00	826+05	℄-Rt.	26	53	
828+50		℄	26		1
828+50	829+50	℄	26	100	
824+00	826+00	℄	26	200	
824+00		℄	26		1
Total				353	3

*Class A-1 Sec. M-6.8(b) or Sec. M-6.6(a)

GUARD RAIL

Station From	Station To	Side ℄	I-15 Barrier Lin. Ft.	I-15 New Lin. Ft.	I-15 Remove Lin. Ft.	I-15 Barrier, as per plan Lin. Ft.	S-14 Appr. Slabs Lin. Ft.
818+00	824+68.75	℄	668.75				
826+04.25	826+29.98	℄					* 25.73
818+00	826+29	Lt.		844			
819+28	822+11	Lt.			300		
824+60	825+55	Lt.		112.5			
823+25	826+25	Rt.		300			
827+63.02	827+88.75	℄					* 25.73
827+88.75	829+96.25	℄	207.5				
827+64	829+00	Lt.		137.5			
827+68	827+93	Rt.		25			
825+31.25	826+04.25	℄	73.0				
824+68.75	825+31.25	℄				** 62.5	
Totals			949.25	1419.0	300	62.5	51.46

* Includes 1.27' for end finish
** For details see sheet No. 10

APPROACH SLABS

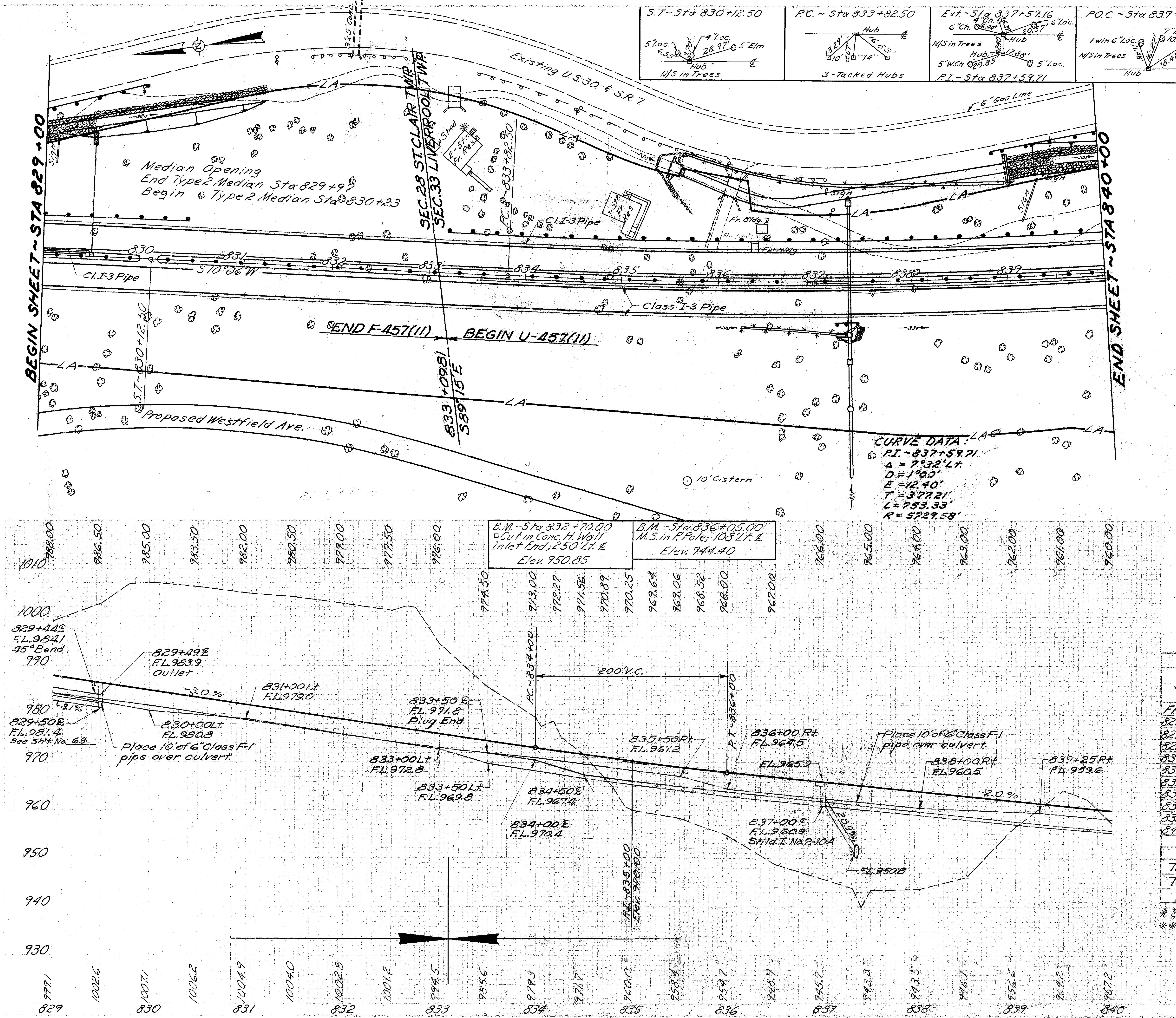
Station From	Station To	Sq. Yds.
826+04.25	826+29.25	177.7
827+63.75	827+88.75	177.7
Total		356

UNDERDRAIN

Station From	Station To	Side ℄	6" Class I-3 D=12"☆ Lin. Ft.	6" Class I-3 D=30" Lin. Ft.	Class F-1 6" Lin. Ft.	Class A-1 8"☆☆ Lin. Ft.	Pipe Special Class I-3 6"-45° Bend Each☆	Pipe Special Class I-3 6"-90° Bend Each	Pipe Special Class A-1 8" Tee☆☆ Each
818+00	826+00	Lt.		795	10			1	
818+00	826+04	Rt.	800		20		1		
819+70	822+00	℄		230					
822+00	826+00	℄	400						
826+00		Lt.				34			1
Total			1200	1025	30	34	1	1	1

☆ Sec. M-6.4(h) ☆☆ Sec. M-6.6(b) or Sec. M-6.8(b)

COL-30-32.19



DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Paved Gutter Lin. Ft.	Sod Sq. Yds.
829+50		℄-Lt.	63	Pipe	12"	122		
836+50		Lt.	174	Ch. Pipe	106"x68"	344'		
835+72	838+50	Lt.	27					123
838+50	839+00	Lt.	27				50	17
837+35		Lt. & Rt.	175	Pipe	36"	136'		
836+23	837+23	Rt.	27					56
Total							50	196

STORM SEWER

Station From	Station To	Side ℄	See Sheet	No. 2-10A Sh'ld. Inlets Each	* 12" Pipe Lin. Ft.
837+00		℄	27	1	
837+00	837+35	℄	27		36
Total				1	36

* Class A-1 Sec. M-6.8(b) or Sec. M-6.6(b)

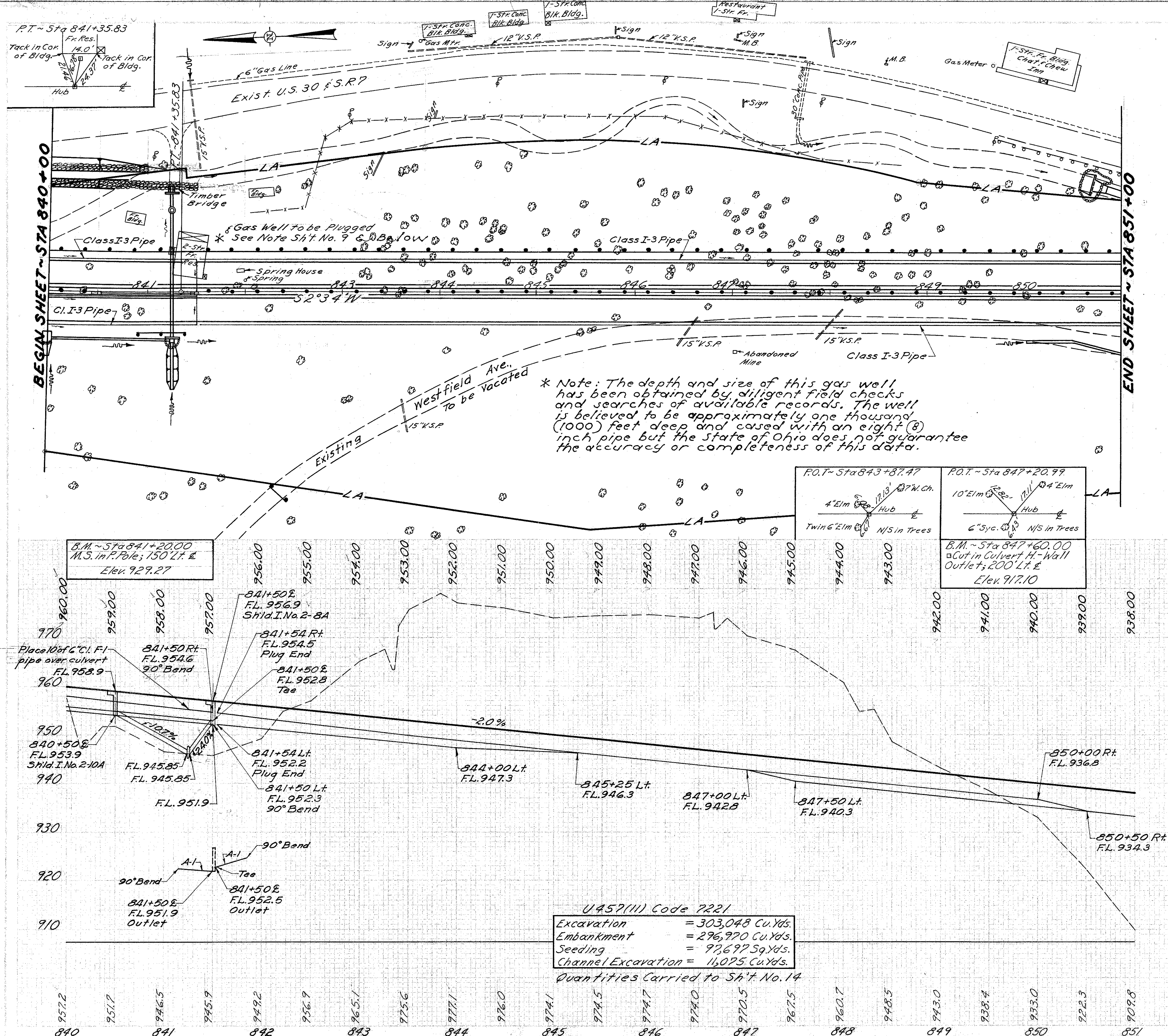
GUARD RAIL

Station From	Station To	Side ℄	Barrier Type Lin. Ft.	New Lin. Ft.	Remove Lin. Ft.
828+83	830+00	Lt.		125	
829+00	830+49	Lt.		150	
830+24	840+00	℄	976		
833+17	840+00	Lt.		678.5	
835+72	835+95	Lt.			25
836+36	837+11	Lt.			75
837+20	837+45	Rt.		25	
838+85	840+00	Lt.		112.5	
Total F-457(11)			285.81	275	
Total U-457(11)			690.19	816	100
Total			976	1091	100

UNDERDRAIN

Station From	Station To	Side ℄	6" Class I-3 D=12"* Lin. Ft.	6" Class I-3 D=30" Lin. Ft.	Class F-1 6" Lin. Ft.	Class A-1 8"** Lin. Ft.	Pipe Special Class I-3 * 6"-45° Bend Each	Pipe Special Class I-3 6"-90° Bend Each		Pipe Special Class A-1 ** 8" Tee Each
827+89	830+00	Lt.		201	10				*	
827+90	829+49	℄	154		3		1			
827+91	836+00	Rt.	810							
830+00	833+50	Lt.	350							
833+50	834+50	℄	100							
833+50	841+50	Lt.		800				1		
834+50	841+50	℄		700						
836+00	838+00	Rt.		190	10					
838+00	841+50	Rt.	340		10				1	
841+50		Lt. & Rt.				68				1
Total F-457(11)			984	201	13	0	1	0	0	0
Total U-457(11)			770	1690	20	68	0	1	1	1
Total			1754	1891	33	68	1	1	1	1

* Sec. M-6.4(h)
** Sec. M-6.6(b) or Sec. M-6.8(b)



* Note: The depth and size of this gas well has been obtained by diligent field checks and searches of available records. The well is believed to be approximately one thousand (1000) feet deep and cased with an eight (8) inch pipe but the State of Ohio does not guarantee the accuracy or completeness of this data.

U457(11) Code 7221

Excavation	= 303,048 Cu. Yds.
Embankment	= 296,970 Cu. Yds.
Seeding	= 97,697 Sq. Yds.
Channel Excavation	= 11,075 Cu. Yds.

Quantities Carried to Sh't No. 14

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Paved Gutter Lin. Ft.	Sod Sq. Yds
840+00		Rt.	71	Slope Protection				
840+05	841+18	Rt.	28				115	38
841+25		Lt. & Rt.	176	Pipe	30"	134'		
850+00	851+00	Rt.	28				103	34
Total							218	72

STORM SEWER

Station From	Station To	Side ℄	See Sheet	*12" Pipe Lin. Ft.	No. 2-8A Shld. Inlets Each	No. 2-10A Shld. Inlets Each
840+50		℄	28			1
840+50	841+25	℄	28	76		
841+25	841+50	℄	28	26		
841+50		℄	28		1	
Total				102	1	1

*Class A-1 Sec. M-6.8(b) or Sec. M-6.6(b)

GUARD RAIL

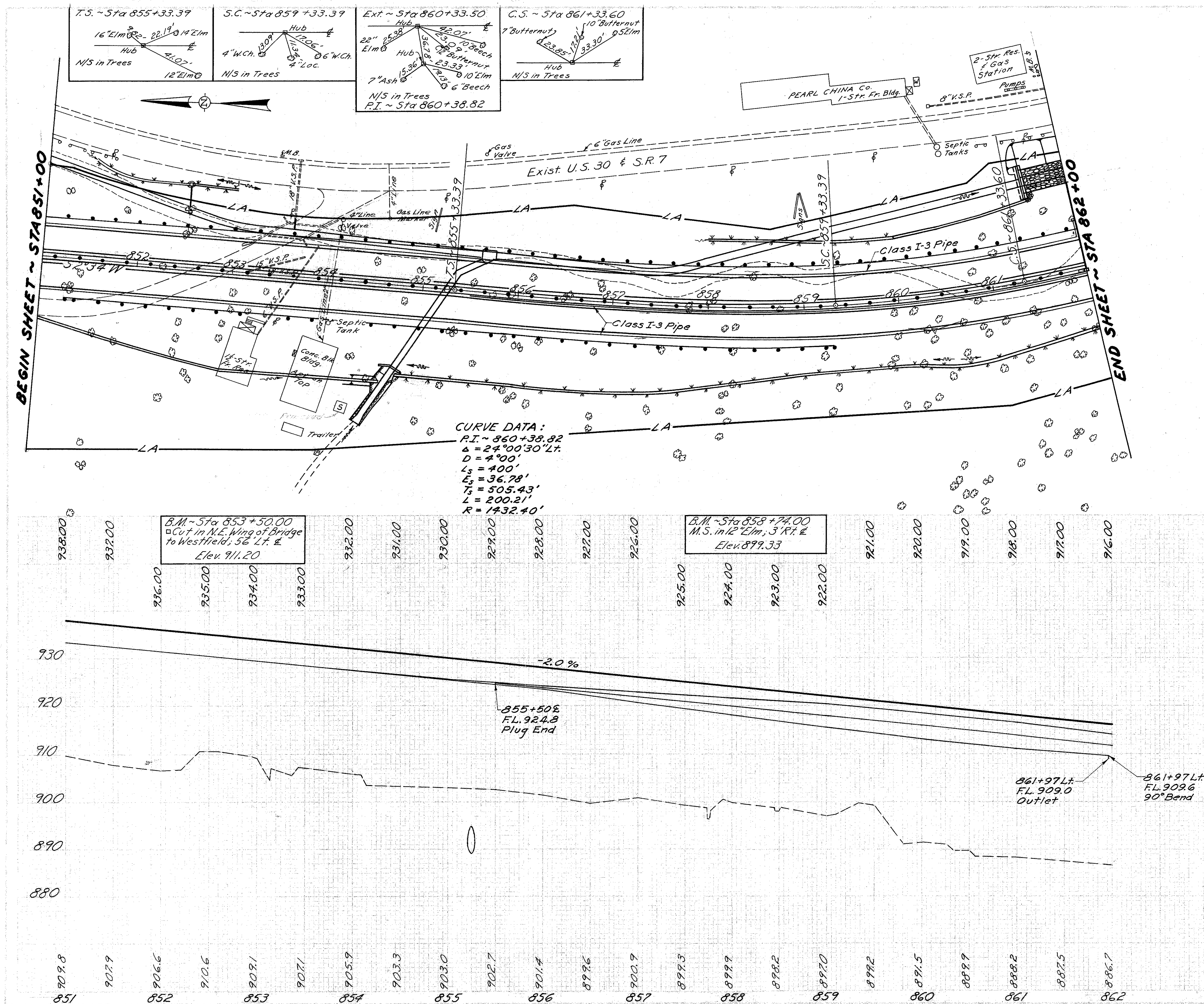
Station From	Station To	Side ℄	Barrier Type Lin. Ft.	New Lin. Ft.
840+00	851+00	℄	1100	
840+00	851+00	Lt.		1099
840+90	841+40	Rt.		50
842+21	842+40	Rt.		25
Total			1100	1174

UNDERDRAIN

Station From	Station To	Side ℄	6" Class I-3 Pipe D=12"* Lin. Ft.	6" Class I-3 Pipe D=30" Lin. Ft.
841+54	850+50	Rt.	896	
841+54	844+00	Lt.		246
844+00	847+50	Lt.	350	
847+50	851+00	Lt.		350
Total			1246	596

* Sec. M-6.A(h)

Rev. 5-9-62



DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Paved Gutter Lin. Ft.	Sod Sq. Yds.
851+00	854+50	Rt.	29				355	118
851+50	852+45	Lt.	29					45
852+50		Lt.	82	Pipe	15"	22'		
853+00		Lt.	177	Ch.Pipe	90"	1077'		
854+84	862+00	Rt.	29					331
855+25		Lt.&Rt.	178	Pipe	72"	149'		
858+00	860+00	Lt.	29					85
860+00	861+50	Lt.	29				145	48
852+45	853+00	Lt.	29					25
Total							500	652

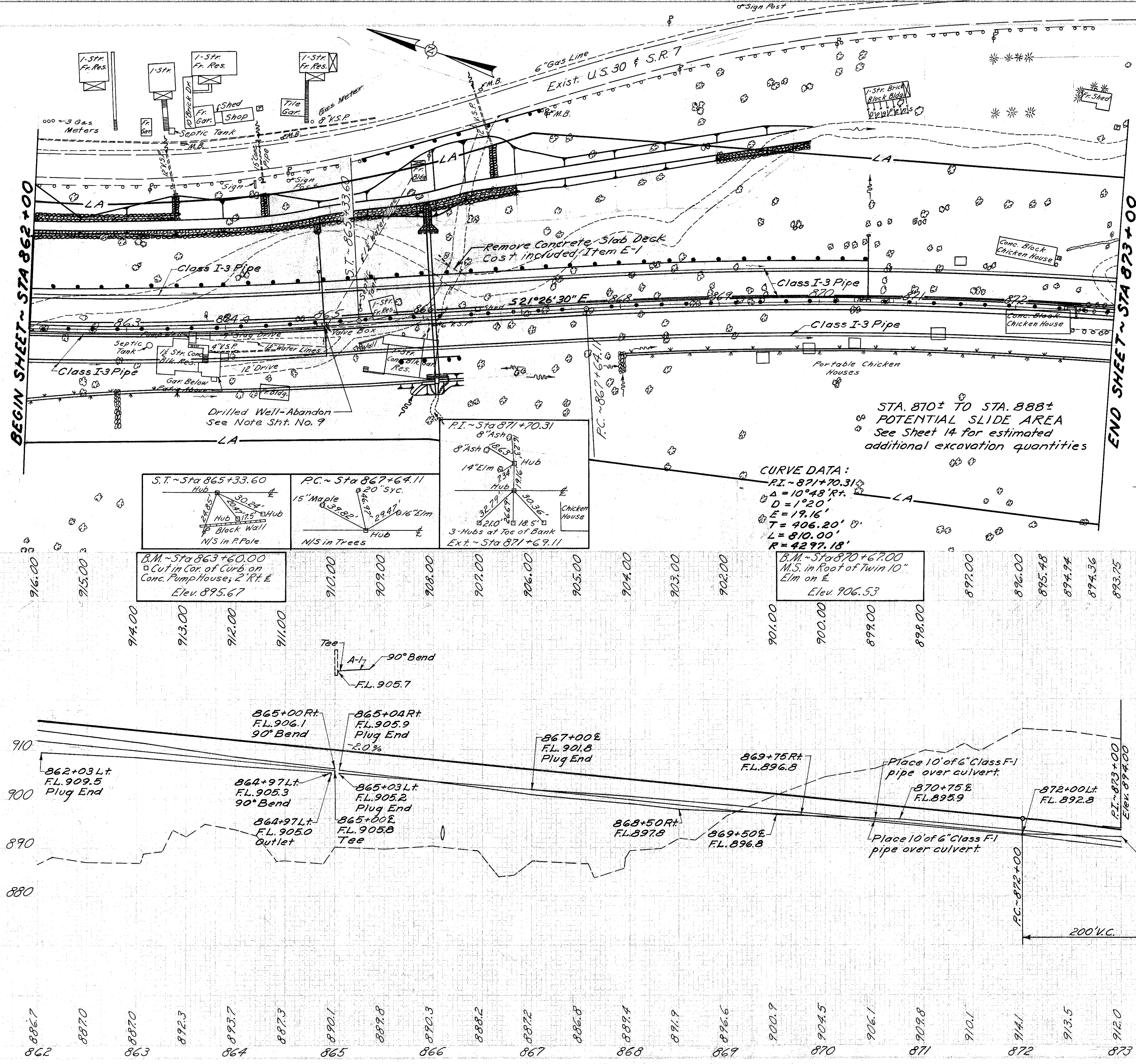
GUARD RAIL

Station From	Station To	Side ℄	Barrier Type Lin. Ft.	New Lin. Ft.	Remove Lin. Ft.
851+00	862+00	℄	1100		
851+00	862+00	Lt.		1087	
851+09	851+70	Lt.			62
851+25	859+30	Rt.		812.5	
Total			1100	1899.5	62

UNDERDRAIN

Station From	Station To	Side ℄	6" Cl. I-3 D=30" Lin. Ft.	Class F-1 8" * Lin. Ft.	Class I-3 Pipe Spec. 6" 90° Bend Each
850+50	862+00	Rt.	1150		
851+00	861+97	Lt.	1105	10	1
855+50	862+00	℄	650		
Total			2905	10	1

* Sec. M-6.4(c)



DRAINAGE									
Station		Side ℄	See Sheet	New Work			Paved Gutter Lin. Ft.	Sod Sq. Yds.	Pipe Removed 15" & Under Lin. Ft.
From	To			Type	Size	Length			
862+00		℄-Lt.	86	Pipe	12"	99'			
862+00	863+50	Rt.	30					69	
863+50	865+95	Rt.	30				248	83	
865+00		℄-Lt.	88	Pipe	12"	96'			
866+10		Lt.&Rt.	179	Pipe	36"	146'			
866+78		Lt.	30						14
870+50		℄-Lt.	91	Pipe	12"	65'			
868+04	872+50	Rt.	30					247	
872+50	873+00	Rt.	30				50	17	
Total							298	416	14

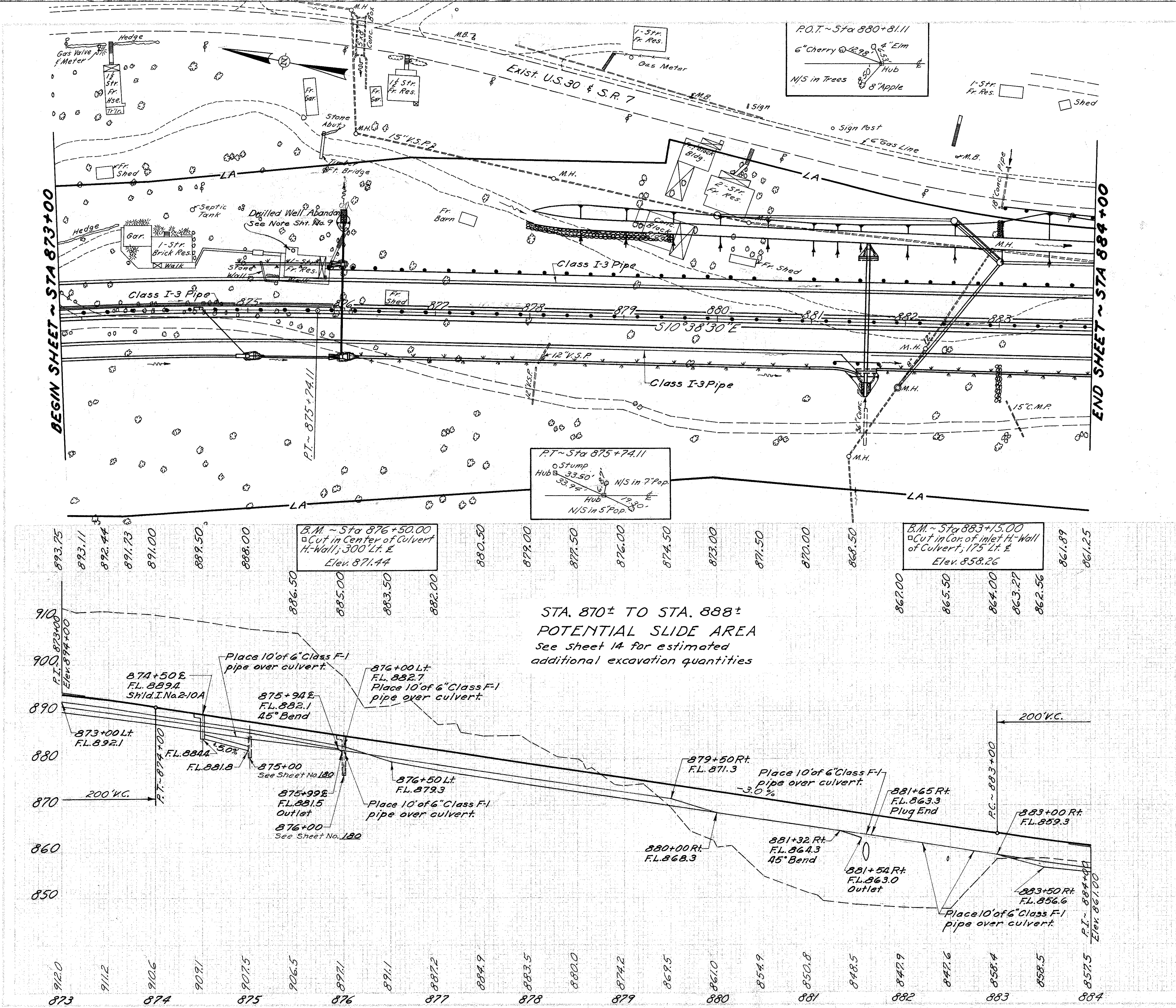
GUARD RAIL					
Station		Side ℄	Barrier Type Lin. Ft.	New Lin. Ft.	Remove Lin. Ft.
From	To				
862+00	873+00	℄	1100		
862+00	870+50	Lt.		848	
865+46	867+30	Lt.		187.5	
865+72	866+35	Rt.		62.5	
Total			1100	1098.0	

UNDERDRAIN									
Station		Side ℄	6" Cl. I-3 D=12" *	6" Cl. I-3 D=30"	Class F-1 6"	Class F-1 8" **	Class A-1 8" ***	Pipe Special 6" Cl. I-3 90° Bend	Pipe Special 8" Cl. A-1 Tee ***
From	To		Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each
862+00	865+00	Rt.		300				1	
862+00	865+00	℄		300					
862+03	864+97	Lt.		301		10		1	
865+00		Rt.					34		1
865+03	872+00	Lt.		688	10				
865+04	868+50	Rt.		346					
867+00	869+50	℄		250					
868+50	873+00	Rt.	450						
869+50	873+00	℄	340		10				
Total			790	2185	20	10	34	2	1

* Sec. M-6.4(h)
** Sec. M-6.4(c)
*** Sec. M-6.6(b) or Sec. M-6.8(b)

Dumped Rock Channel Protection				
Station		Side	I-10	See
From	To	℄	Cu Yds.	Sheet
862+90		Rt.	25	87
863+50		Lt.	11	87
864+50		Lt.	14	88
866+78		Lt.	30	89
868+00		Rt.	10	89
Total			90	

COL-30-32.19



DRAINAGE										
Station		Side ℄	See Sheet	New Work			Paved Gutter	Sod	Pipe Removed 15" & Under	I-10 Dump. Rock Ch. Prot.
From	To			Type	Size	Length	Lin. Ft.	Sq. Yds.	Lin. Ft.	Cu. Yds.
873+00	874+88	Rt.	31				186	62		
875+18	875+88	Rt.	31				70	23		
876+00		Lt. & Rt.	180	Pipe Pipe	30" 18"	143' 100'				
876+18	881+00	Rt.	31					268		
881+60		Lt. & Rt.	181	Pipe	48"	112'				
881+70	884+00	Rt.	31					128		
883+00		Lt. & Rt.	100							37
874+88	875+88	Lt.	31					56		
880+00	884+00	Lt. & Rt.	196	Sanitary Sewer						
Total							256	537		37

GUARD RAIL				
Station		Side	Barrier Type	New
From	To	℄	Lin. Ft.	Lin. Ft.
873+00	884+00	℄	1100	
875+75	884+00	Lt.		825
881+25	881+75	Rt.		50
883+00	884+00	Lt.		100
Total			1100	975

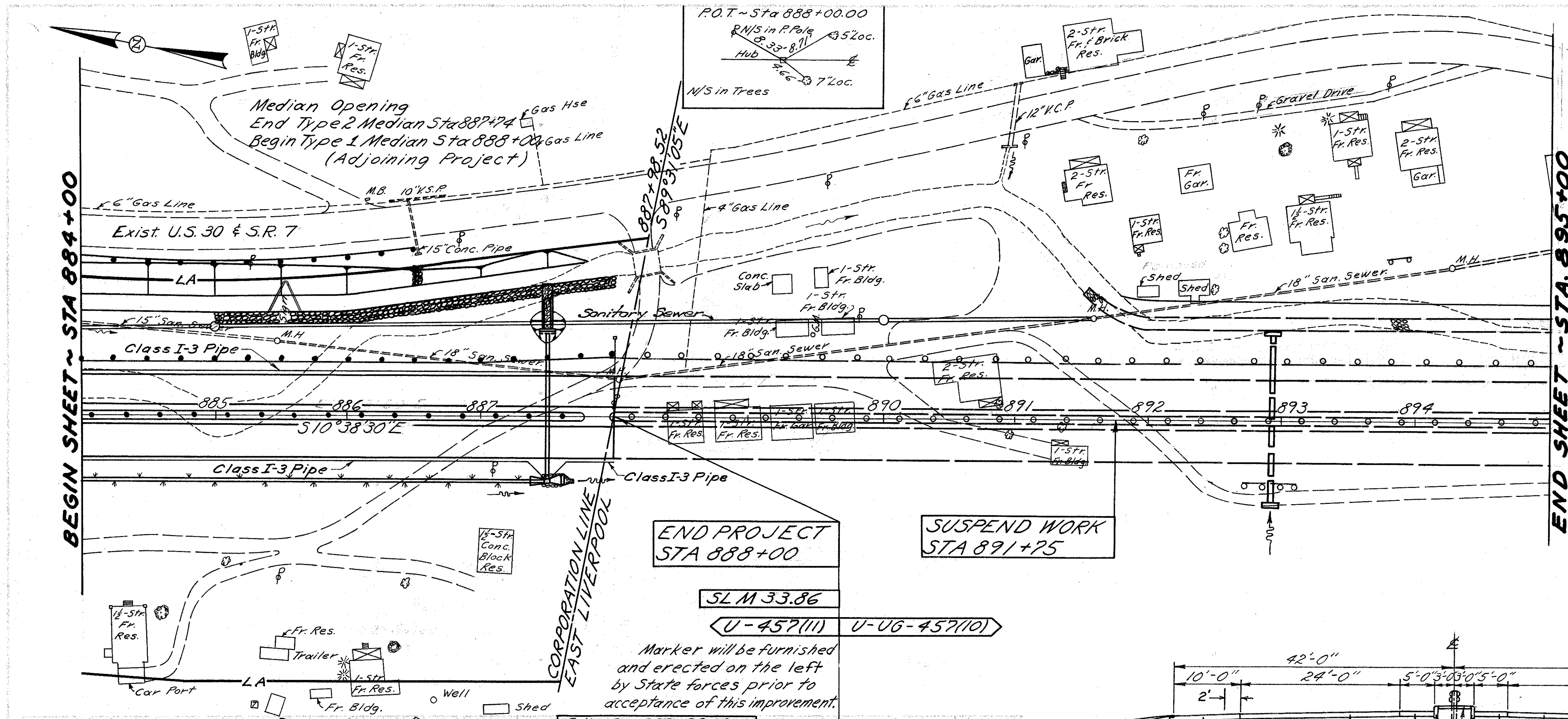
STORM SEWER					
Station		Side	See	*12" Pipe	No. 2-10A Shld. Inlet
From	To	℄	Sheet	Lin. Ft.	Each
874+50		℄	31		1
874+50	875+00	℄ Rt.	31	56	
Total				56	1

* Class A-1 Sec. M-6.8(b) or Sec. M-6.6(a)

UNDERDRAIN							
Station		Side ℄	6" Cl. I-3 D=12" **	6" Cl. I-3 D=30"	Class F-1 6"	Pipe Spec. 6" Cl. I-3 45° Bend	
From	To		L.F.	L.F.	Lin. Ft.	Each	
872+00	876+50	Lt.	440		10	**	
873+00	875+99	℄	295		7	1	
873+00	880+00	Rt.	680		20		
876+50	884+00	Lt.		730	20		
880+00	881+54	Rt.		154	10		1
881+65	883+00	Rt.		135			
Total			1415	1019	67	1	1

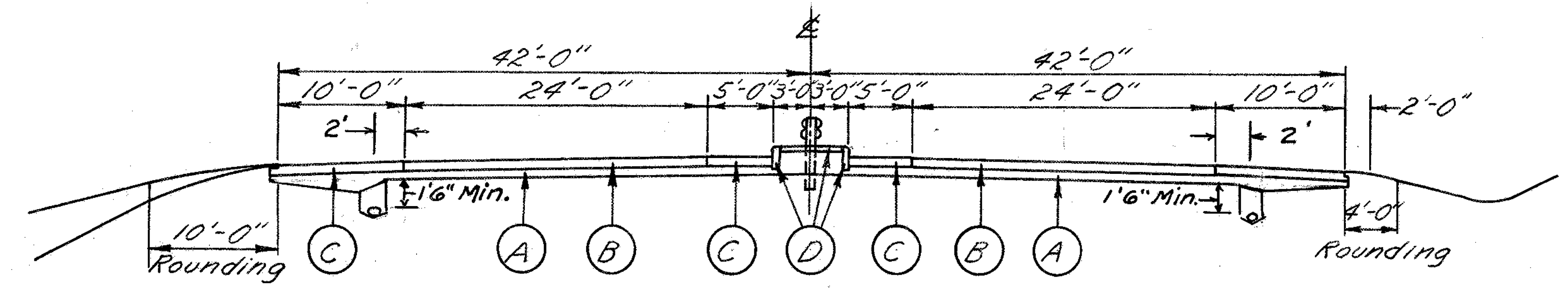
** Sec. M-6.4(h)

COL-30-32.19



DRAINAGE								
Station		Side	See	New Work			Sod	I-10 Dump. Rock Channel Prot.
From	To	℄	Sheet	Type	Size	Length	Sq. Yds.	Cu. Yds.
884+00	887+38	Rt.	32				188	
887+50			182	Pipe	24"	113'		
~~884+00~~	891+60	Lt.	196	Sanitary Sewer				
886+50		Lt.	101					9
Total							188	9

GUARD RAIL				
Station		Side	Barrier Type	New
From	To	℄	Lin. Ft.	Lin. Ft.
884+00	887+74	℄	374	
884+00	888+00	Lt.		400
Total			374	400



~KEY~

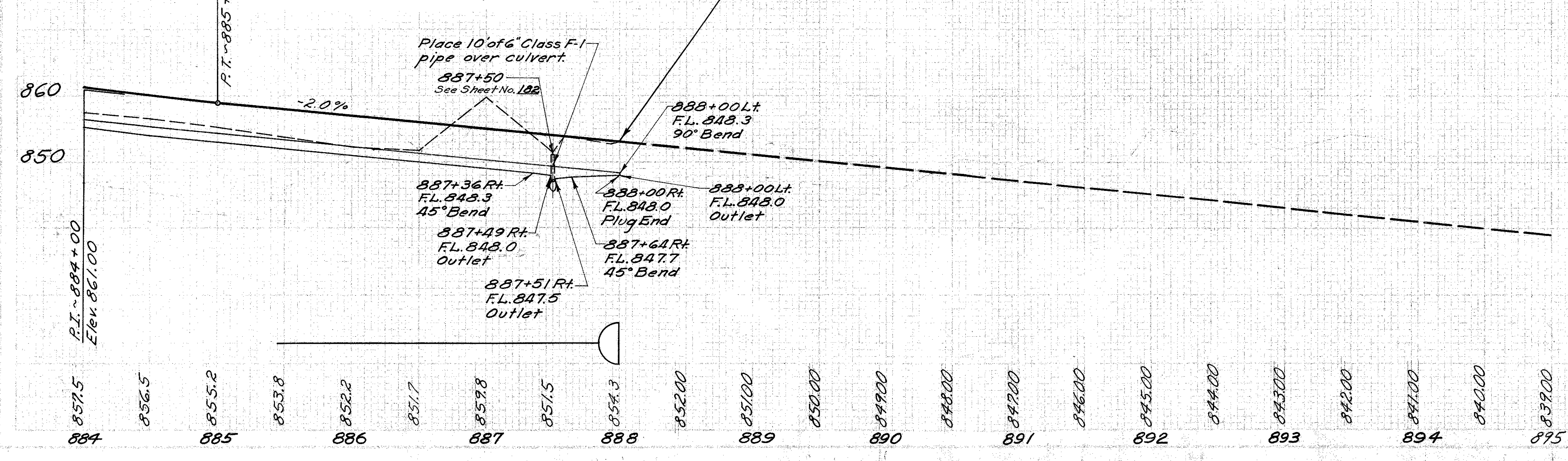
(A) I-22 ~ Subbase, Grading "A" or "B"
(B) T-71 ~ 9" Reinforced Concrete Pavement
(C) Paved Berm
(D) Type 1 Median

TYPICAL SECTION ADJOINING PAVEMENT
Scale: 1"=10'-0"
UNDER CONSTRUCTION

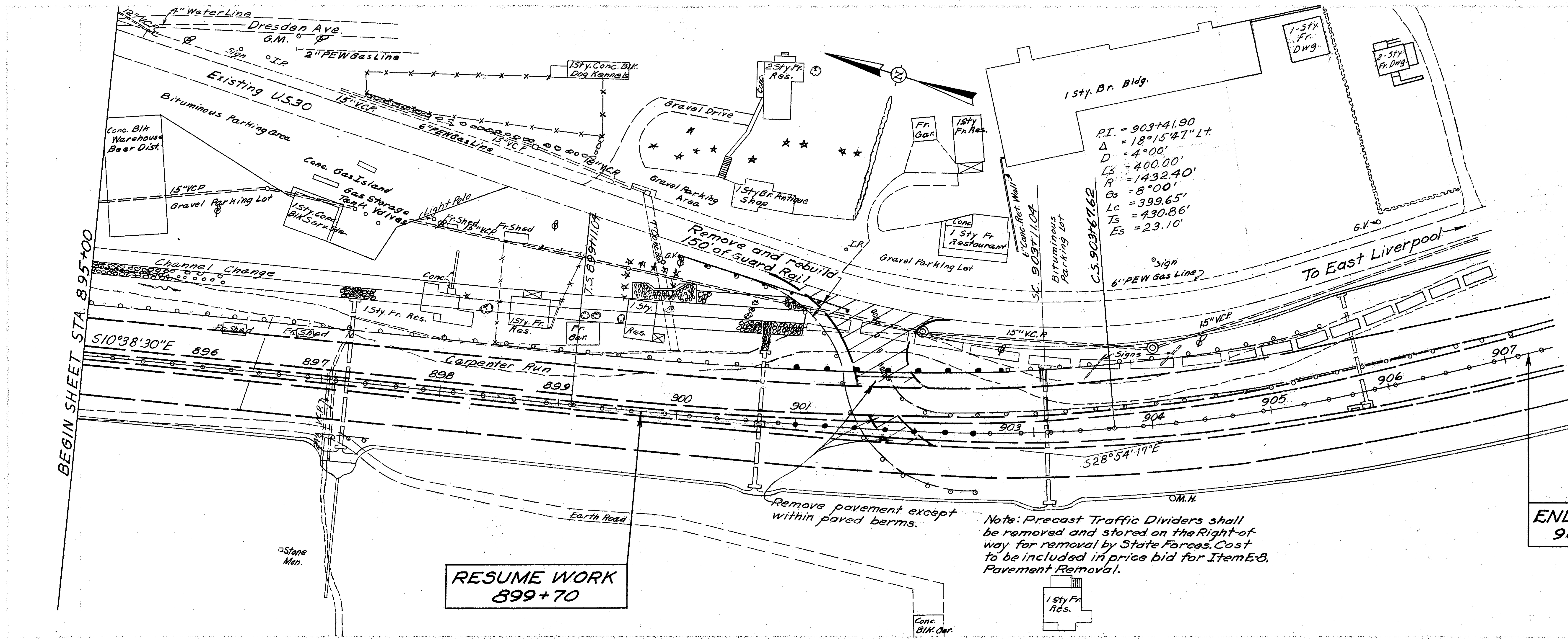
UNDERDRAIN								
Station		Side ℄	6" Cl. I-3 D=30"	6" Cl. I-3 D=50"	Class F-1 6"	Class F-1 8*	6" Pipe Special Class I-3 45° Bend	6" Pipe Special Class I-3 90° Bend
From	To		Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each
883+00	887+49	Rt.		445	10		1	
884+00	888+00	Lt.	405		10	10		1
887+51	888+00	Rt.		45	10		1	
Total			405	490	30	10	2	1

* Sec. M-6.4(c)

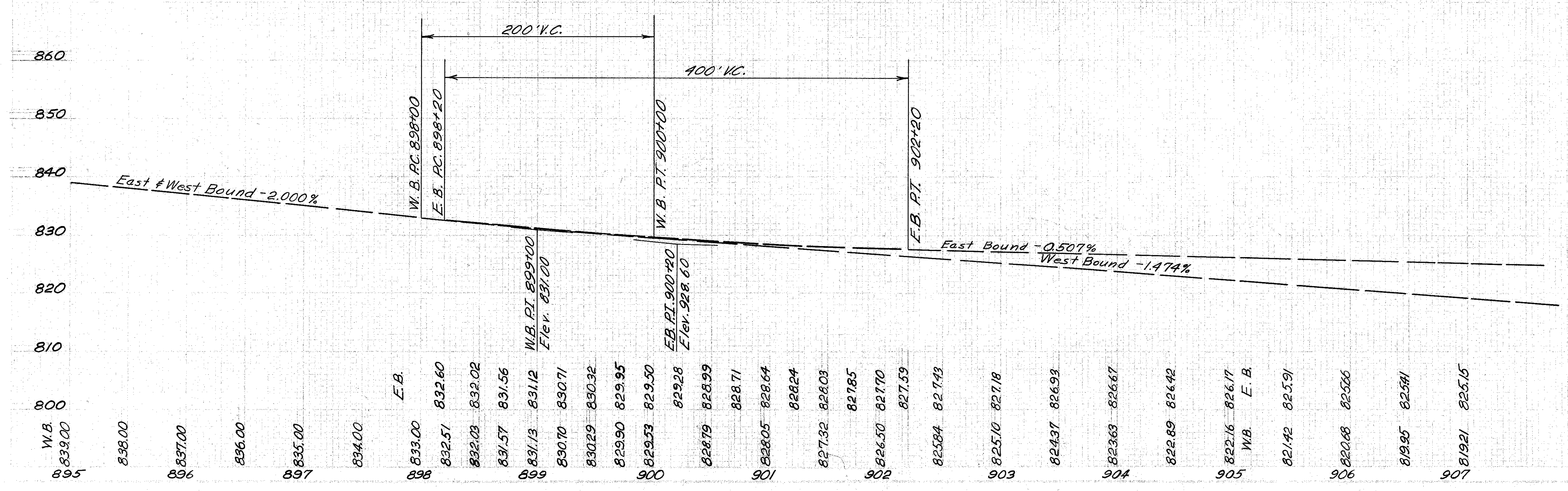
STA. 870± TO STA. 888±
POTENTIAL SLIDE AREA
See Sheet 14 for estimated additional excavation quantities



COL-30-32.19



ESTIMATED QUANTITIES Temporary Connection Removal				
ITEM	Station From	Station To	Side ℄	Quantity
I-15 Guard Rail Remove & Rebuild	899+90	901+40	Lt.	150 Lin. Ft.
I-15 Guard Rail Standard Deep Beam	901+25	902+75	Lt.	150 Lin. Ft.
I-15 Guard Rail Barrier Type	901+00	902+50	℄	150 Lin. Ft.
I-15 Temporary Guard Rail, Remove & Dispose of.	901+36	902+44	Lt. & Rt.	175 Lin. Ft.
I-15 Temporary Guard Rail, Remove & Dispose of.	901+75	907+08	Lt.	537.5 Lin. Ft.
I-12 Type 6 Conc. Curb.	901+40	902+40	Lt. & Rt.	200 Lin. Ft.
E-8 Pavement Removal	900+70	902+25	Lt. & Rt.	331 Sq. Yds.
Below Quantities	Carried To Sheet No. 102			
E-1 Embankment	900+70	902+40	Lt. & Rt.	140 Cu. Yds.
L-9 Seeding	900+70	902+40	Lt. & Rt.	525 Sq. Yds.



SUPERELEVATION TABLES

T.S. =780+78.70
S.C.=783+78.70

D=2°30′Rt.

C.S.=798+47.37
S.T.=801+47.37

Left Lanes Outside Edge	Left Lanes ℄	Left Lanes Inside Edge	STATION	Profile Grade +0.08	Super Elevation	Right Lanes Inside Edge	Right Lanes ℄	Right Lanes Outside Edge
Elevation						Elevation		
			779+00	1138.08				
1036.87	1037.06	1037.25	+25	1137.33		1037.25	1037.06	1036.87
1136.17	1136.34	1136.51	+50	1136.58		1136.50	1136.31	1136.12
1135.48	1135.63	1135.78	+75	1135.83		1135.75	1135.56	1135.37
1134.80	1134.92	1135.04	780+00	1135.08		1135.00	1134.81	1134.62
1134.10	1134.21	1134.31	+25	1134.33		1134.25	1134.06	1133.87
1133.43	1133.51	1133.58	+50	1133.58		1133.50	1133.31	1133.12
1132.78	1132.81	1132.84	+75	1132.83		1132.75	1132.56	1132.37
1132.69	1132.71	1132.72	T.S.~780+78.70	1132.72		1132.64	1132.46	1132.26
1132.14	1132.12	1132.10	781+00	1132.08		1132.00	1131.81	1131.62
1131.53	1131.46	1131.38	+25	1131.33		1131.25	1031.05	1130.85
1130.93	1130.79	1130.65	+50	1130.58		1130.50	1130.27	1130.03
1130.33	1030.13	1129.92	+75	1129.83	Obtained Graphically	1129.73	1129.48	1129.23
1129.73	1129.46	1129.19	782+00	1129.08		1128.94	1128.65	1128.35
1129.13	1128.80	1128.47	+25	1128.33		1128.17	1127.82	1127.46
1128.53	1128.14	1127.74	+50	1127.58		1127.40	1126.99	1126.58
1127.93	1127.47	1127.01	+75	1126.83		1126.64	1126.17	1125.69
1127.33	1126.81	1126.28	783+00	1126.08		1125.86	1125.33	1124.80
1126.73	1126.14	1125.55	+25	1125.33		1125.07	1124.49	1123.91
1126.13	1125.49	1124.84	+50	1124.58		1124.30	1123.66	1123.02
1125.49	1124.80	1124.11	+75	1123.83		1123.54	1122.87	1122.19
1125.34	1124.67	1123.99	S.C.~783+78.70	1123.72		1123.42	1122.76	1122.09
1124.75	1124.04	1123.33	784+00	1123.08		1122.82	1122.11	1121.40
1124.04	1123.33	1122.62	+25	1122.33	0.171	1122.04	1121.33	1120.62
1123.29	1122.58	1121.87	+50	1121.58		1121.29	1120.58	1119.87
1122.54	1121.83	1121.12	+75	1120.83		1120.54	1119.83	1119.12
1121.79	1121.08	1120.37	785+00	1120.08		1119.79	1119.08	1118.37
1121.04	1120.33	1119.62	+25	1119.33		1119.04	1118.33	1117.62
1120.29	1119.58	1118.87	+50	1118.58		1118.29	1117.58	1116.87
1119.54	1118.83	1118.12	+75	1117.83		1117.54	1116.83	1116.12
1118.79	1118.08	1117.37	786+00	1117.08		1116.79	1116.08	1115.37
1118.04	1117.33	1116.62	+25	1116.33		1116.04	1115.33	1114.62
1117.29	1116.58	1115.87	+50	1115.58		1115.29	1114.58	1113.87
1116.54	1115.83	1115.12	+75	1114.83		1114.54	1113.83	1113.12
1115.79	1115.08	1114.37	787+00	1114.08		1113.79	1113.08	1112.37
1115.04	1114.33	1113.62	+25	1113.33		1113.04	1112.33	1111.62
1114.29	1113.58	1112.87	+50	1112.58		1112.29	1111.58	1110.87
1113.54	1112.83	1112.12	+75	1111.83		1111.54	1110.83	1110.12
1112.79	1112.08	1111.37	788+00	1111.08		1110.79	1110.08	1109.37
1112.04	1111.33	1110.62	+25	1110.33		1110.04	1109.33	1108.62
1111.29	1110.58	1109.87	+50	1109.58		1109.29	1108.58	1107.87
1110.54	1109.83	1109.12	+75	1108.83		1108.54	1107.83	1107.12
1109.79	1109.08	1108.37	789+00	1108.08		1107.79	1107.08	1106.37
1109.04	1108.33	1107.62	+25	1107.33		1107.04	1106.33	1105.62
1108.29	1107.58	1106.87	+50	1106.58		1106.29	1105.58	1104.87
1107.54	1106.83	1106.12	+75	1105.83		1105.54	1104.83	1104.12
1106.79	1106.08	1105.37	790+00	1105.08		1104.79	1104.08	1103.37
1106.04	1105.33	1104.62	+25	1104.33		1104.04	1103.33	1102.62
1105.29	1104.58	1103.87	+50	1103.58		1103.29	1102.58	1101.87
1104.54	1103.83	1103.12	+75	1102.83		1102.54	1101.83	1101.12
1103.79	1103.08	1102.37	791+00	1102.08		1101.79	1101.08	1100.37
1103.04	1102.33	1101.62	+25	1101.33		1101.04	1100.33	1099.62
1102.29	1101.58	1100.87	+50	1100.58		1100.29	1099.58	1098.87
1101.54	1100.83	1100.12	+75	1099.83		1099.54	1098.83	1098.12
1100.79	1100.08	1099.37	792+00	1099.08		1098.79	1098.08	1097.37
1100.04	1099.33	1098.62	+25	1098.33		1098.04	1097.33	1096.62
1099.29	1098.58	1097.87	+50	1097.58		1097.29	1096.58	1095.87
1098.54	1097.83	1097.12	+75	1096.83		1096.54	1095.83	1095.12
1097.79	1097.08	1096.37	793+00	1096.08		1095.79	1095.08	1094.37
1097.04	1096.33	1095.62	+25	1095.33		1095.04	1094.33	1093.62
1096.29	1095.58	1094.87	+50	1094.58		1094.29	1093.58	1092.87
1095.54	1094.83	1094.12	+75	1093.83		1093.54	1092.83	1092.12
1094.79	1094.08	1093.37	794+00	1093.08		1092.79	1092.08	1091.37
1094.04	1093.33	1092.62	+25	1092.33	0.171	1092.04	1091.33	1090.62

T.S. =780+78.70
S.C. =783+78.70

D=2°30′Rt.

C.S.=798+47.37
S.T.=801+47.37

Left Lanes Outside Edge	Left Lanes ℄	Left Lanes Inside Edge	STATION	Profile Grade +0.08	Super Elevation	Right Lanes Inside Edge	Right Lanes ℄	Right Lanes Outside Edge
Elevation						Elevation		
1093.29	1092.58	1091.87	794+50	1091.58	0.171	1091.29	1090.58	1089.87
1092.54	1091.83	1091.12	+75	1090.83		1090.54	1089.83	1089.12
1091.79	1091.08	1090.37	795+00	1090.08		1089.79	1089.08	1088.37
1091.04	1090.33	1089.62	+25	1089.33		1089.04	1088.33	1087.62
1090.29	1089.58	1088.87	+50	1088.58		1088.29	1087.58	1086.87
1089.54	1088.83	1088.12	+75	1087.83		1087.54	1086.83	1086.12
1088.79	1088.08	1087.37	796+00	1087.08		1086.79	1086.08	1085.37
1088.04	1087.33	1086.62	+25	1086.33		1086.04	1085.33	1084.62
1087.29	1086.58	1085.87	+50	1085.58		1085.29	1084.58	1083.87
1086.54	1085.83	1085.12	+75	1084.83		1084.54	1083.83	1083.12
1085.79	1085.08	1084.37	797+00	1084.08		1083.79	1083.08	1082.37
1085.04	1084.33	1083.62	+25	1083.33		1083.04	1082.33	1081.62
1084.29	1083.58	1082.87	+50	1082.58		1082.29	1081.58	1080.87
1083.54	1082.83	1082.12	+75	1081.83		1081.54	1080.83	1080.12
1082.79	1082.08	1081.37	798+00	1081.08		1080.79	1080.08	1079.37
1082.04	1081.33	1080.62	+25	1080.33	0.171	1080.04	1079.33	1078.62
1081.32	1080.64	1079.95	C.S.~798+47.37	1079.66		1079.37	1078.69	1078.00
1081.23	1080.55	1079.87	+50	1079.58		1079.30	1078.62	1077.93
1080.38	1079.74	1079.10	+75	1078.83		1078.57	1077.92	1077.27
1079.48	1078.90	1078.32	799+00	1078.08		1077.85	1077.26	1076.66
1078.58	1078.07	1077.55	+25	1077.33		1077.12	1076.59	1076.05
1077.68	1077.23	1076.77	+50	1076.58		1076.40	1075.92	1075.44
1076.78	1076.39	1076.00	+75	1075.83		1075.67	1075.25	1074.82
1075.88	1075.56	1075.23	800+00	1075.08		1074.95	1074.58	1074.21
1074.98	1074.72	1074.45	+25	1074.33	Obtained Graphically	1074.23	1073.92	1073.60
1074.08	1073.88	1073.68	+50	1073.58		1073.50	1073.24	1072.97
1073.19	1073.05	1072.90	+75	1072.83		1072.75	1072.53	1072.31
1072.29	1072.21	1072.13	801+00	1072.08		1072.00	1071.81	1071.62
1071.39	1071.37	1071.35	+25	1071.33		1071.25	1071.06	1070.87
1070.60	1070.63	1070.66	S.T.~801+47.37	1070.66		1070.58	1070.39	1070.20
1070.52	1070.55	1070.58	+50	1070.58		1070.50	1070.31	1070.12
1069.68	1069.75	1069.82	+75	1069.83		1069.75	1069.56	1069.37
1068.87	1068.96	1069.05	802+00	1069.08		1069.00	1068.81	1068.62
1068.05	1068.17	1068.29	+25	1068.33		1068.25	1068.06	1067.87
1067.24	1067.39	1067.53	+50	1067.58		1067.50	1067.31	1067.12
1066.42	1066.59	1066.76	+75	1066.83		1066.75	1066.56	1066.37
1065.62	1065.81	1066.00	803+00	1066.08		1066.00	1065.81	1065.62

T.S. =819+60.00
S.C.=823+60.00

D=4°00′Rt.

C.S.=826+12.50
S.T.=830+12.50

Left Lanes Outside Edge	Left Lanes ℄	Left Lanes Inside Edge	STATION	Profile Grade +0.08	Super Elevation	Right Lanes Inside Edge	Right Lanes ℄	Right Lanes Outside Edge
Elevation						Elevation		
1020.62	1020.81	1021.00	818+00	1021.08		1021.00	1020.81	1020.62
1019.92	1020.09	1020.25	+25	1020.33		1020.25	1020.06	1019.87
1019.23	1019.38	1019.52	+50	1019.58		1019.50	1019.31	1019.12
1018.54	1018.67	1018.79	+75	1018.83		1018.75	1018.56	1018.37
1017.85	1017.94	1018.03	819+00	1018.08		1018.00	1017.86	1017.72
1017.16	1017.23	1017.30	+25	1017.33		1017.25	1017.05	1016.84
1016.51	1016.55	1016.58	+50	1016.58		1016.50	1016.28	1016.06
1016.28	1016.28	1016.28	T.S.~819+60.00	1016.28	Obtained Graphically	1016.20	1015.97	1015.73
1015.86	1015.86	1015.85	+75	1015.83		1015.72	1015.49	1015.25
1015.24	1015.18	1015.12	820+00	1015.08		1014.97	1014.70	1014.42
1014.65	1014.53	1014.40	+25	1014.33		1014.19	1013.87	1013.55
1014.05	1013.86	1013.67	+50	1013.58		1013.42	1013.05	1012.68
1013.46	1013.21	1012.95	+75	1012.83		1012.65	1012.23	1011.80
1012.86	1012.55	1012.23	821+00	1012.08		1011.88	1011.41	1010.93
1012.27	1011.89	1011.50	+25	1011.33		1011.11	1010.59	1010.06
1011.67	1011.23	1010.78	+50	1010.58		1010.34	1009.77	1009.19

T.S. 819+60.00
S.C. 823+60.00

D=4°00′Rt.

C.S.=826+12.50
S.T.=830+12.50

Left Lanes Outside Edge	Left Lanes ℄	Left Lanes Inside Edge	STATION	Profile Grade +0.08	Super Elevation	Right Lanes Inside Edge	Right Lanes ℄	Right Lanes Outside Edge
Elevation						Elevation		
1011.08	1010.57	1010.06	821+75	1009.83		1009.57	1008.95	1008.32
1010.48	1009.91	1009.33	822+00	1009.08		1008.80	1008.12	1007.44
1009.89	1009.25	1008.61	+25	1008.33		1008.02	1007.30	1006.57
1009.29	1008.59	1007.88	+50	1007.58		1007.25	1006.48	1005.70
1008.70	1007.93	1007.16	+75	1006.83	Obtained Graphically	1006.48	1005.66	1004.83
1008.10	1007.27	1006.44	823+00	1006.08		1005.71	1004.84	1003.96
1007.51	1006.61	1005.71	+25	1005.33		1004.94	1004.01	1003.08
1006.90	1005.95	1004.99	+50	1004.58		1004.17	1003.20	1002.22
1006.63	1005.66	1004.69	S.C.~823+60.00	1004.28		1003.85	1002.88	1001.90
1006.25	1005.25	1004.25	+75	1003.83	2.42	1003.41	1002.41	1001.41
1005.50	1004.50	1003.50	824+00	1003.08		1002.66	1001.66	1000.66
1004.75	1003.75	1002.75	+25	1002.33		1001.91	1000.91	999.91
1004.00	1003.00	1002.00	+50	1001.58		1001.16	1000.16	999.16
1003.25	1002.25	1001.25	+75	1000.83		1000.41	999.42	998.42
1002.50	1001.50	1000.50	825+00	1000.08		999.66	998.66	997.66
1001.75	1000.75	999.75	+25	999.33		998.91	997.91	996.91
1001.00	1000.00	999.00	+50	998.58		998.16	997.16	996.16
1000.25	999.25	998.25	+75	997.83	2.42	997.41	996.41	995.41
999.49	998.50	997.50	826+00	997.08		996.68	995.70	994.72
999.04	998.06	997.08	C.S.~826+12.50	996.70		996.32	995.34	994.35
998.63	997.68	996.73	+25	996.33		995.93	994.99	994.04
997.73	996.84	995.95	+50	995.58		995.20	994.32	993.43
996.83	996.01	995.18	+75	994.83		994.47	993.64	992.81
995.93	995.17	994.40	827+00	994.08		993.75	992.98	992.20
995.02	994.32	993.62	+25	993.33		993.02	992.30	991.58
994.12	993.49	992.85	+50	992.58		992.30	991.64	990.97
993.22	992.65	992.07	+75	991.83		991.57	990.96	990.35
992.31	991.81	991.30	828+00	991.08		990.85	990.30	989.74
991.41	990.96	990.51	+25	990.33		990.12	989.63	989.13
990.50	990.13	989.75	+50	989.58		989.40	988.97	988.53
989.60	989.28	988.96	+75	988.83		988.67	988.30	987.92
988.69	988.44	988.18	829+00	988.08		987.95	987.64	987.32
987.79	987.60	987.41	+25	987.33		987.22	986.96	986.70
986.88	986.76	986.63	+50	986.58		986.50	986.28	986.05
985.98	985.92	985.86	+75	985.83		985.75	985.56	985.36
985.09	985.09	985.08	830+00	985.08		985.00	984.81	984.62
984.67	984.69	984.70	S.T.~830+12.50	984.70		984.62	984.43	984.24
984.25	984.29	984.32	+25	984.33		984.25	984.06	983.87
983.40	983.48	983.56	+50	983.58		983.50	983.31	983.12
982.59	982.70	982.80	+75	982.83	Obtained Graphically	982.75	982.56	982.37
981.77	981.90	982.03	831+00	982.08		982.00	981.81	981.62
980.96	981.12	981.27	+25	981.33		981.25	981.06	980.87
980.15	980.33	980.51	+50	980.58		980.50	980.31	980.12
979.37	979.56	979.75	+75	979.83		979.75	979.57	979.38
978.62	978.81	979.00	832+00	979.08		979.01	978.85	978.69
977.87	978.06	978.25	+25	978.33		978.28	978.15	978.02
977.12	977.31	977.50	+50	977.58		977.54	977.45	977.35
976.35	976.55	976.75	+75	976.83		976.80	976.74	976.68

SUPERELEVATION TABLES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

P.C.~833+82.50 | D=1°00' Lt. | P.T.~841+35.83

Left Lanes Outside Edge (Elevation)	Left Lanes ℄ (Elevation)	Left Lanes Inside Edge (Elevation)	STATION	Profile Grade +0.08	Super Elevation	Right Lanes Inside Edge (Elevation)	Right Lanes ℄ (Elevation)	Right Lanes Outside Edge (Elevation)
975.62	975.81	976.00	833+00	976.08		976.07	976.04	976.00
974.87	975.06	975.25	+25	975.33		975.33	975.34	975.35
974.12	974.31	974.50	+50	974.58		974.61	974.67	974.73
973.36	973.56	973.75	+75	973.83	Obtained Graphically	973.88	974.01	974.13
973.15	973.34	973.52	P.C.~833+82.50	973.60		973.66	973.81	973.95
972.57	972.79	973.00	834+00	973.08		973.16	973.35	973.54
971.74	972.00	972.25	+25	972.35		972.45	972.71	972.96
970.94	971.23	971.52	+50	971.64		971.76	972.05	972.33
970.27	970.56	970.85	+75	970.97	0.70	971.09	971.38	971.67
969.63	969.92	970.21	835+00	970.33		970.45	970.74	971.03
969.02	969.31	969.60	+25	969.72		969.84	970.13	970.42
968.44	968.73	969.02	+50	969.14		969.26	969.55	969.84
967.90	968.19	968.48	+75	968.60		968.72	969.01	969.30
967.38	967.67	967.96	836+00	968.08		968.20	968.49	968.78
966.88	967.17	967.46	+25	967.58		967.70	967.99	968.28
966.38	966.67	966.96	+50	967.08		967.20	967.49	967.78
965.88	966.17	966.46	+75	966.58		966.70	966.99	967.28
965.38	965.67	965.96	837+00	966.08		966.20	966.49	966.78
964.88	965.17	965.46	+25	965.58		965.70	965.99	966.28
964.38	964.67	964.96	+50	965.08		965.20	965.49	965.78
963.88	964.17	964.46	+75	964.58		964.70	964.99	965.28
963.38	963.67	963.96	838+00	964.08		964.20	964.49	964.78
962.88	963.17	963.46	+25	963.58		963.70	963.99	964.28
962.38	962.67	962.96	+50	963.08		963.20	963.49	963.78
961.88	962.17	962.46	+75	962.58		962.70	962.99	963.28
961.38	961.67	961.96	839+00	962.08		962.20	962.49	962.78
960.88	961.17	961.46	+25	961.58		961.70	961.99	962.28
960.38	960.67	960.96	+50	961.08		961.20	961.49	961.78
959.88	960.17	960.46	+75	960.58		960.70	960.99	961.28
959.38	959.67	959.96	840+00	960.08		960.20	960.49	960.78
958.88	959.17	959.46	+25	959.58		959.70	959.99	960.28
958.38	958.67	958.96	+50	959.08	0.70	959.20	959.49	959.78
957.90	958.18	958.46	+75	958.58		958.70	958.98	959.26
957.51	957.75	957.98	841+00	958.08		958.18	958.42	958.65
957.10	957.30	957.50	+25	957.58		957.65	957.83	958.00
956.90	957.09	957.28	P.T.~841+35.83	957.36		957.42	957.57	957.71
956.62	956.81	957.00	+50	957.08		957.13	957.24	957.34
956.12	956.31	956.50	+75	956.58		956.60	956.65	956.70
955.62	955.81	956.00	842+00	956.08	Obtained Graphically	956.08	956.08	956.08
955.12	955.31	955.50	+25	955.58		955.56	955.52	955.48
954.62	954.81	955.00	+50	955.08		955.05	954.98	954.91
954.12	954.31	954.50	+75	954.58		954.54	954.44	954.33
953.62	953.81	954.00	843+00	954.08		954.02	953.89	953.75
953.12	953.31	953.50	+25	953.58		953.51	953.35	953.19
952.62	952.81	953.00	+50	953.08		953.00	952.82	952.63

T.S.~855+33.39, S.C.~859+33.39 | D=4°00' Lt. | C.S.~861+33.60, S.T.~865+33.60

Left Lanes Outside Edge (Elevation)	Left Lanes ℄ (Elevation)	Left Lanes Inside Edge (Elevation)	STATION	Profile Grade +0.08	Super Elevation	Right Lanes Inside Edge (Elevation)	Right Lanes ℄ (Elevation)	Right Lanes Outside Edge (Elevation)
932.12	932.31	932.50	853+75	932.58		932.50	932.31	932.12
931.62	931.81	932.00	854+00	932.08		932.01	931.84	931.67
931.12	931.31	931.50	+25	931.58		931.52	931.38	931.24
930.62	930.81	931.00	+50	931.08		931.04	930.93	930.82
930.12	930.31	930.50	+75	930.58		930.55	930.48	930.40
929.62	929.81	930.00	855+00	930.08		930.06	930.02	929.98
929.12	929.31	929.50	+25	929.58		929.58	929.57	929.55
928.95	929.14	929.33	T.S.~855+33.39	929.41	Obtained Graphically	929.41	929.42	929.42
928.62	928.81	929.00	+50	929.08		929.10	929.14	929.18
928.12	928.31	928.50	+75	928.58		928.62	928.73	928.83
927.60	927.80	928.00	856+00	928.08		928.15	928.32	928.48
927.01	927.25	927.48	+25	927.58		927.68	927.91	928.13
926.38	926.67	926.95	+50	927.08		927.20	927.49	927.78
925.73	926.08	926.42	+75	926.58		926.72	927.08	927.43
925.07	925.49	925.90	857+00	926.08		926.25	926.67	927.08
924.42	924.90	925.38	+25	925.58		925.78	926.26	926.73

T.S.~855+33.39, S.C.~859+33.39 | D=4°00' Lt. | C.S.~861+33.60, S.T.~865+33.60

Left Lanes Outside Edge (Elevation)	Left Lanes ℄ (Elevation)	Left Lanes Inside Edge (Elevation)	STATION	Profile Grade +0.08	Super Elevation	Right Lanes Inside Edge (Elevation)	Right Lanes ℄ (Elevation)	Right Lanes Outside Edge (Elevation)
923.77	924.31	924.85	857+50	925.08		925.31	925.85	926.39
923.12	923.72	924.32	+75	924.58		924.83	925.44	926.04
922.47	923.13	923.79	858+00	924.08		924.36	925.03	925.69
921.82	922.55	923.27	+25	923.58		923.89	924.62	925.34
921.17	921.96	922.74	+50	923.08	Obtained Graphically	923.41	924.21	925.00
920.51	921.36	922.21	+75	922.58		922.94	923.80	924.65
919.86	920.78	921.69	859+00	922.08		922.46	923.38	924.30
919.23	920.20	921.17	+25	921.58		921.99	922.96	923.92
919.03	920.02	921.00	S.C.~859+33.39	921.41		921.82	922.81	923.79
918.66	919.66	920.66	+50	921.08	2.42	921.50	922.50	923.50
918.16	919.16	920.16	+75	920.58		921.00	922.00	923.00
917.66	918.66	919.66	860+00	920.08		920.50	921.50	922.50
917.16	918.16	919.16	+25	919.58		920.00	921.00	922.00
916.66	917.66	918.66	+50	919.08		919.50	920.50	921.50
916.16	917.16	918.16	+75	918.58		919.00	920.00	921.00
915.66	916.66	917.66	861+00	918.08	2.42	918.50	919.50	920.50
915.19	916.18	917.16	+25	917.58		918.00	918.99	919.97
915.05	916.03	917.00	C.S.~861+33.60	917.41		917.82	918.80	919.77
914.77	915.73	916.68	+50	917.08		917.48	918.44	919.39
914.41	915.31	916.20	+75	916.58		916.95	917.85	918.75
914.06	914.90	915.73	862+00	916.08		916.42	917.26	918.10
913.71	914.49	915.26	+25	915.58		915.90	916.67	917.44
913.37	914.08	914.78	+50	915.08		915.38	916.09	916.79
913.02	913.67	914.31	+75	914.58		914.85	915.50	916.14
912.67	913.25	913.83	863+00	914.08		914.32	914.91	915.49
912.32	912.84	913.36	+25	913.58		913.80	914.32	914.84
911.97	912.43	912.89	+50	913.08		913.27	913.73	914.19
911.62	912.02	912.41	+75	912.58	Obtained Graphically	912.75	913.14	913.53
911.27	911.61	911.94	864+00	912.08		912.22	912.55	912.88
910.91	911.19	911.47	+25	911.58		911.69	911.96	912.23
910.54	910.77	910.99	+50	911.08		911.17	911.38	911.58
910.11	910.31	910.50	+75	910.58		910.64	910.79	910.93
909.62	909.81	910.00	865+00	910.08		910.12	910.20	910.28
909.12	909.31	909.50	+25	909.58		909.60	909.62	909.63
908.95	909.14	909.33	S.T.~865+33.60	909.41		909.41	909.42	909.42
908.64	908.82	909.00	+50	909.08		909.07	909.05	909.02
908.22	908.37	908.51	+75	908.58		908.56	908.51	908.45
907.80	907.91	908.02	866+00	908.08		908.04	907.96	907.87
907.38	907.46	907.54	+25	907.58		907.53	907.42	907.30
906.96	907.01	907.06	+50	907.08		907.02	906.87	906.72
906.54	906.56	906.57	+75	906.58		906.50	906.33	906.15
906.16	906.13	906.09	867+00	906.08		906.00	905.56	905.12

P.C.~867+64.11 | D=1°20' Rt. | P.T.~875+74.11

Left Lanes Outside Edge (Elevation)	Left Lanes ℄ (Elevation)	Left Lanes Inside Edge (Elevation)	STATION	Profile Grade +0.08	Super Elevation	Right Lanes Inside Edge (Elevation)	Right Lanes ℄ (Elevation)	Right Lanes Outside Edge (Elevation)
906.16	906.13	906.09	867+00	906.08		906.00	905.81	905.62
905.81	905.71	905.61	+25	905.58		905.50	905.31	905.12
905.47	905.31	905.15	+50	905.08		905.00	904.80	904.60
905.28	905.09	904.89	P.C.~867+64.11	904.81	Obtained Graphically	904.73	904.51	904.29
905.12	904.90	904.67	+75	904.58		904.49	904.26	904.02
904.77	904.49	904.20	868+00	904.08		903.96	903.68	903.39
904.40	904.05	903.70	+25	903.58		903.44	903.10	902.75
903.98	903.61	903.24	+50	903.08		902.92	902.55	902.17
903.51	903.13	902.74	+75	902.58	0.93	902.42	902.04	901.65
903.01	902.63	902.24	869+00	902.08		901.92	901.54	901.15
902.51	902.13	901.74	+25	901.58		901.42	901.04	900.65
902.01	901.63	901.24	+50	901.08		900.92	900.54	900.15
901.51	901.13	900.74	+75	900.58		900.42	900.04	899.65
901.01	900.63	900.24	870+00	900.08	0.93	899.92	899.54	899.15

P.C.~867+64.11 | D=1°20' Rt. | P.T.~875+74.11

Left Lanes Outside Edge (Elevation)	Left Lanes ℄ (Elevation)	Left Lanes Inside Edge (Elevation)	STATION	Profile Grade +0.08	Super Elevation	Right Lanes Inside Edge (Elevation)	Right Lanes ℄ (Elevation)	Right Lanes Outside Edge (Elevation)
900.51	900.13	899.74	870+25	899.58	0.93	899.42	899.04	898.65
900.01	899.63	899.24	+50	899.08		898.92	898.54	898.15
899.51	899.13	898.74	+75	898.58		898.42	898.04	897.65
899.01	898.63	898.24	871+00	898.08		897.92	897.54	897.15
898.51	898.13	897.74	+25	897.58		897.42	897.04	896.65
898.01	897.63	897.24	+50	897.08		896.92	896.54	896.15
897.51	897.13	896.74	+75	896.58		896.42	896.04	895.65
897.01	896.63	896.24	872+00	896.08		895.92	895.54	895.15
896.49	896.11	895.72	+25	895.56		895.40	895.02	894.63
895.95	895.57	895.18	+50	895.02		894.86	894.48	894.09
895.37	894.99	894.60	+75	894.44		894.28	893.90	893.51
894.76	894.38	893.99	873+00	893.83		893.67	893.29	892.90
894.12	893.74	893.35	+25	893.19		893.03	892.65	892.26
893.45	893.07	892.68	+50	892.52		892.36	891.98	891.59
892.74	892.36	891.97	+75	891.81		891.65	891.27	890.88
892.01	891.63	891.24	874+00	891.08		890.92	890.54	890.15
891.26	890.88	890.49	+25	890.33		890.17	889.79	889.40
890.51	890.13	889.74	+50	889.58	0.93	889.42	889.04	888.65
889.75	889.37	888.99	+75	888.83		888.67	888.29	887.90
888.95	888.60	888.24	875+00	888.08		887.92	887.56	887.20
888.10	887.78	887.46	+25	887.33		887.20	886.88	886.56
887.20	886.95	886.69	+50	886.58		886.47	886.22	885.96
886.33	886.14	885.94	P.T.~875+74.11	885.86		885.78	885.56	885.34
886.30	886.11	885.91	+75	885.83		885.75	885.53	885.31
885.39	885.26	885.13	876+00	885.08		885.00	884.81	884.61
884.49	884.43	884.36	+25	884.33		884.25	884.06	883.87
883.59	883.59	883.58	+50	883.58	Obtained Graphically	883.50	883.31	883.12
882.75	882.79	882.82	+75	882.83		882.75	882.56	882.37
881.92	881.99	882.05	877+00	882.08		882.00	881.81	881.62
881.09	881.19	881.29	+25	881.33		881.25	881.06	880.87
880.26	880.39	880.52	+50	880.58		880.50	880.31	880.12
879.43	879.60	879.76	+75	879.83		879.75	879.56	879.37
878.62	878.81	879.00	878+00	879.08		879.00	878.81	878.62

SUPERELEVATION TABLES

S.R.170

T.S.=19+83.57 · S.C.=23+83.57 · **D=5°00'Lt.** · C.S.=30+01.24 · S.T.=34+01.24

Left Lanes Outside Edge Elevation	Left Lanes ℄ Elevation	Left Lanes Inside Edge Elevation	STATION	Profile Grade +0.02	Super Elevation	Right Lanes Inside Edge Elevation	Right Lanes ℄ Elevation	Right Lanes Outside Edge Elevation
			18+00	1116.54				
1117.04	1117.23	1117.42	+25	1117.44		1117.42	1117.23	1117.04
1117.94	1118.13	1118.32	+50	1118.34		1118.32	1118.15	1117.98
1118.84	1119.03	1119.22	+75	1119.24		1119.23	1119.09	1118.95
1119.74	1119.93	1120.12	19+00	1120.14		1120.13	1120.02	1119.91
1120.64	1120.83	1121.02	+25	1121.04		1121.03	1120.96	1120.88
1121.54	1121.73	1121.92	+50	1121.94		1121.94	1121.90	1121.85
1122.44	1122.63	1122.82	+75	1122.84		1122.84	1122.83	1122.82
1122.75	1122.94	1123.13	T.S.~19+83.57	1123.15		1123.15	1123.15	1123.15
1123.34	1123.53	1123.72	20+00	1123.74		1123.74	1123.76	1123.78
1124.24	1124.43	1124.62	+25	1124.64		1124.64	1124.69	1124.74
1125.14	1125.33	1125.52	+50	1125.54		1125.55	1125.63	1125.71
1126.04	1126.23	1126.42	+75	1126.44		1126.45	1126.56	1126.67
1126.94	1127.13	1127.32	21+00	1127.34	Obtained Graphically	1127.35	1127.49	1127.63
1127.84	1128.03	1128.22	+25	1128.24		1128.25	1128.42	1128.59
1128.72	1128.92	1129.12	+50	1129.14		1129.16	1129.36	1129.56
1129.56	1129.79	1130.02	+75	1130.04		1130.06	1130.29	1130.52
1130.40	1130.66	1130.92	22+00	1130.94		1130.96	1131.22	1131.48
1131.20	1131.49	1131.78	+25	1131.81		1131.83	1132.12	1132.41
1131.95	1132.27	1132.59	+50	1132.62		1132.65	1132.97	1133.29
1132.65	1133.00	1133.35	+75	1133.38		1133.40	1133.75	1134.10
1133.29	1133.67	1134.05	23+00	1134.08		1134.11	1134.49	1134.87
1133.87	1134.28	1134.69	+25	1134.72		1134.75	1135.16	1135.57
1134.38	1134.82	1135.26	+50	1135.30		1135.34	1135.78	1136.22
1134.85	1135.32	1135.79	+75	1135.83		1135.87	1136.34	1136.81
1135.00	1135.48	1135.96	S.C.~23+83.57	1136.00	1.00	1136.04	1136.52	1137.00
1135.30	1135.78	1136.26	24+00	1136.30		1136.34	1136.82	1137.30
1135.74	1136.22	1136.70	+25	1136.74		1136.78	1137.26	1137.74
1136.18	1136.66	1137.14	+50	1137.18		1137.22	1137.70	1138.18
1136.62	1137.10	1137.58	+75	1137.62		1137.66	1138.14	1138.62
1137.06	1137.54	1138.02	25+00	1138.06		1138.10	1138.58	1139.06
1137.50	1137.98	1138.46	+25	1138.50		1138.54	1139.02	1139.50
1137.94	1138.42	1138.90	+50	1138.94		1138.98	1139.46	1139.94
1138.38	1138.86	1139.34	+75	1139.38		1139.42	1139.90	1140.38
1138.82	1139.30	1139.78	26+00	1139.82		1139.86	1140.34	1140.82
1139.26	1139.74	1140.22	+25	1140.26		1140.30	1140.78	1141.26
1139.70	1140.18	1140.66	+50	1140.70		1140.74	1141.22	1141.70
1140.14	1140.62	1141.10	+75	1141.14		1141.18	1141.66	1142.14
1140.58	1141.06	1141.54	27+00	1141.58		1141.62	1142.10	1142.58
1141.02	1141.50	1141.98	+25	1142.02		1142.06	1142.54	1143.02
1141.46	1141.94	1142.42	+50	1142.46		1142.50	1142.98	1143.46
1141.88	1142.36	1142.84	+75	1142.88		1142.92	1143.40	1143.88
1142.26	1142.74	1143.22	28+00	1143.26		1143.30	1143.78	1144.26
1142.60	1143.08	1143.56	+25	1143.60		1143.64	1144.12	1144.60
1142.90	1143.38	1143.86	+50	1143.90		1143.94	1144.42	1144.90
1143.16	1143.64	1144.12	+75	1144.16		1144.20	1144.68	1145.16
1143.39	1143.87	1144.35	29+00	1144.39		1144.43	1144.91	1145.39
1143.57	1144.05	1144.53	+25	1144.57		1144.61	1145.09	1145.57
1143.71	1144.19	1144.67	+50	1144.71		1144.75	1145.23	1145.71
1143.81	1144.29	1144.77	+75	1144.81		1144.85	1145.33	1145.81
1143.88	1144.36	1144.84	30+00	1144.88		1144.92	1145.40	1145.88
1143.88		1144.84	C.S.~30+01.24	1144.88	1.00	1144.92		1145.88
1143.99		1144.86	+25	1144.90		1144.94		1145.81
1144.07		1144.85	+50	1144.89		1144.93		1145.71
1144.09		1144.79	+75	1144.83		1144.87		1145.57
1144.08		1144.70	31+00	1144.73		1144.76		1145.38
1144.02		1144.57	+25	1144.60		1144.63		1145.18
1143.92		1144.40	+50	1144.43	Obtained Graphically	1144.46		1144.94
1143.77		1144.18	+75	1144.21		1144.24		1144.65
1143.59		1143.94	32+00	1143.96		1143.98		1144.33
1143.35		1143.64	+25	1143.66		1143.68		1143.97
1143.06		1143.31	+50	1143.33		1143.35		1143.59
1142.70		1142.94	+75	1142.96		1142.98		1143.17
1142.30		1142.53	33+00	1142.55		1142.56		1142.70

For Pavement Transition Elevations See Sheet No.108

S.R.170(Con't.)

1141.86		1142.07	33+25			1142.10		1142.20
1141.38		1141.58	+50			1141.60		1141.66
1140.85		1141.05	+75			1141.06		1141.09
1140.28		1140.48	34+00		Obtained Graphically	1140.48		1140.48
1140.25		1140.45	S.T.~34+01.24			1140.45		1140.45
1139.75		1139.87	+25			1139.87		1139.80
1139.22		1139.22	+50			1139.22		1139.08

WESTFIELD AVE

P.C.=3+70.00 · P.T.=5+68.97

Edge Pav't. Grade Lt.	Deduct Crown	STATION	Profile Grade	Add Super.	Edge Pav't. Grade Rt.
962.80	-0.19	2+25	962.94		962.83
964.39		+50	964.58		964.50
966.65		+75	966.84		966.84
969.15		3+00	969.34		969.42
971.65		+25	971.84		972.00
974.15		+50	974.34		974.61
976.19		P.C.~3+70.00	976.38		976.79
976.73		+75	976.65		977.29
979.40		4+00	979.59		980.20
982.21		+25	982.40	Obtained Graphically	983.14
985.15		+50	985.34		986.15
988.21		+75	988.40		989.21
991.40		5+00	991.59		992.40
994.71		+25	994.90		995.62
998.15		+50	998.34		998.84
1000.85		P.T.~5+68.97	1001.04		1001.35
1001.75		+75	1001.90		1002.15
1005.59	-0.19	6+00	1005.59		1005.59

P.C.=6+38.93 · **D=6°00'Rt.** · P.T.=10+32.26

Edge Pav't. Grade Lt.	Add Super	STATION	Profile Grade	Deduct Crown	Edge Pav't. Grade Rt.
1009.49		6+25	1009.34		1009.22
1011.67		P.C.~6+38.93	1011.43		1011.24
1013.40	Obtained Graphic	+50	1013.09	-0.19	1012.90
1017.32		+75	1016.84		1016.65
1021.15		7+00	1020.50		1020.31
1024.66	+0.86	+25	1023.99		1023.80
1027.97		+50	1027.30		1027.11
1031.11		+75	1030.44		1030.25
1034.06		8+00	1033.39		1033.20
1036.85		+25	1036.18		1035.99
1039.46		+50	1038.79		1038.60
1041.89		+75	1041.22		1041.03
1044.15		9+00	1043.48		1043.29
1046.23		+25	1045.56		1045.37
1048.13	+0.86	+50	1047.46		1047.27
1049.82		+75	1049.20		1049.01
1051.23		10+00	1050.75		1050.56
1052.41		+25	1052.13		1051.94
1052.73	Obtained Graphically	P.T.~10+32.26	1052.49		1052.30
1053.46		+50	1053.34		1053.15
1054.34		+75	1054.36		1054.17
1055.11		11+00	1055.22		1055.03
1055.70		+25	1055.89	-0.19	1055.70

P.C.=15+38.15 · **D=14°00'Rt.** · P.T.=19+28.69

Edge Pav't. Grade Lt.	Add Super	STATION	Profile Grade	Deduct Crown	Edge Pav't. Grade Rt.
1055.52		13+50	1055.71	-0.19	1055.52
1055.76		+75	1055.90		1055.71
1056.23		14+00	1056.29		1056.10
1056.94		+25	1056.86		1056.67
1057.83	Obtained Graphically	+50	1057.61		1057.42
1058.95		+75	1058.56		1058.37
1060.26		15+00	1059.70		1059.51
1061.74		+25	1061.02		1060.83
1062.57		P.C.~15+38.15	1061.80	-0.19	1061.61

WESTFIELD AVE (Con't.)

1063.42		15+50	1062.53	0.19	1062.34
1065.28		+75	1064.22		1064.03
1067.33		16+00	1066.11		1065.92
1069.52		+25	1068.18		1067.99
1071.85		+50	1070.45		1070.26
1074.30		+75	1072.90		1072.71
1076.84		17+00	1075.53		1075.34
1079.45		+25	1078.36		1078.17
1082.13		+50	1081.28		1081.09
1084.82	Obtained Graphically	+75	1084.20		1084.01
1087.56		18+00	1087.12		1086.93
1090.30		+25	1090.04	0.19	1089.85
1093.08		+50	1092.96		1092.84
1095.84		+75	1095.84		1095.84
1098.50		19+00	1098.63	Obtained Graphically	1098.76
1100.96		+25	1101.34		1101.58
		P.T.~19+28.69	1101.73		
		+50	1103.96		

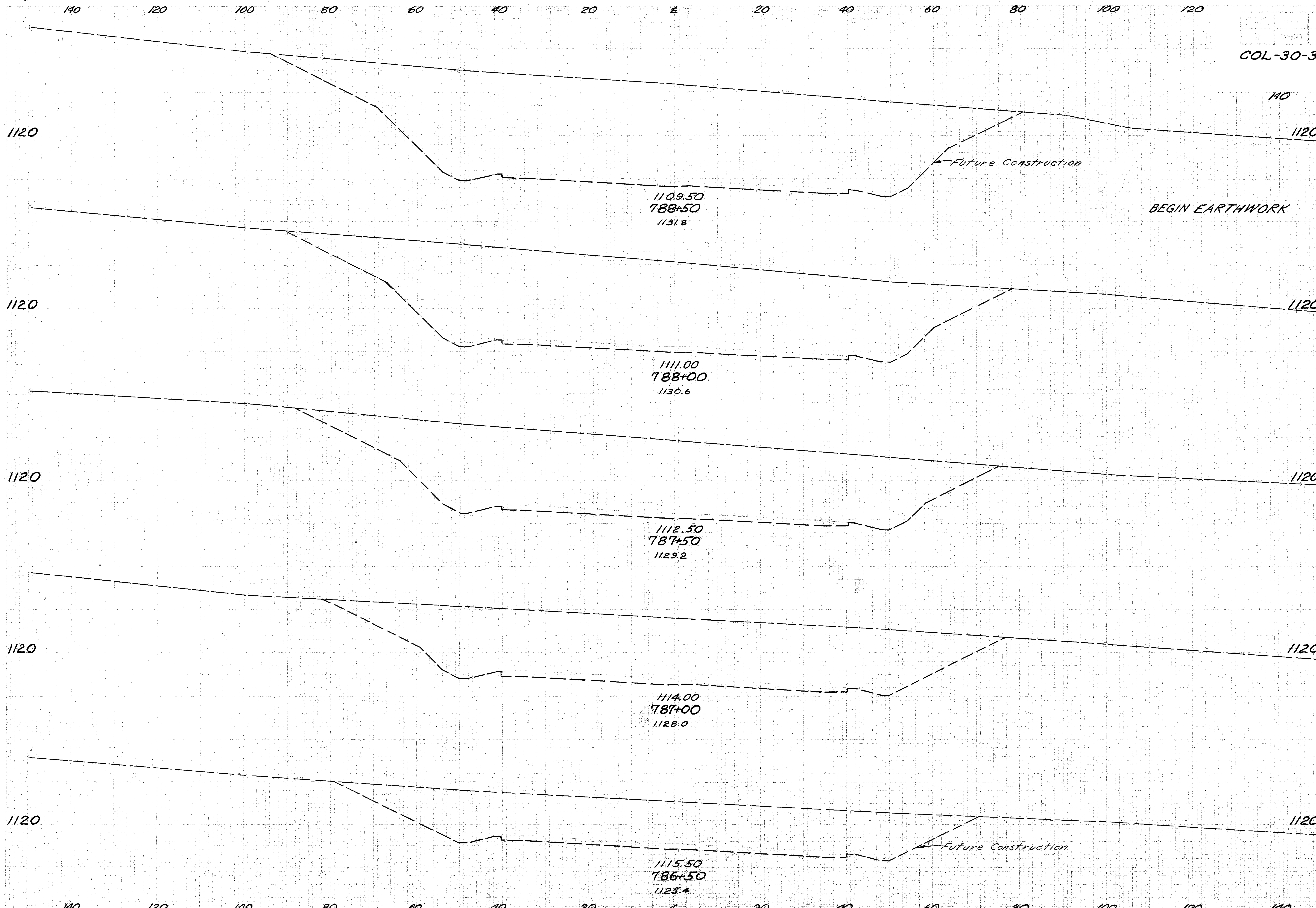
HILL AVE

P.C.=5+28.33 · **D=10°00'Lt.** · P.T.=9+17.41

Edge Pav't. Grade Lt.	Deduct Crown	STATION	Profile Grade	Add Super.	Edge Pav't. Grade Rt.
985.45	+0.22	4+75	985.23		985.23
987.29	-0.16	5+00	987.45		987.45
989.81		+25	989.97		990.15
990.15		P.C.~5+28.33	990.31		990.52
992.34		+50	992.50		992.85
994.87		+75	995.03		995.56
997.40		6+00	997.56		998.27
999.93		+25	1000.09		1000.98
1002.46		+50	1002.62		1003.69
1004.99		+75	1005.15		1006.34
1007.52		7+00	1007.68		1008.91
1010.05		+25	1010.21	Obtained Graphically	1011.44
1012.58		+50	1012.74		1013.97
1015.11		+75	1015.27		1016.50
1017.64		8+00	1017.80		1019.03
1020.17		+25	1020.33		1021.49
1022.70		+50	1022.86		1023.90
1025.23		+75	1025.39		1026.25
1027.76		9+00	1027.92		1028.60
1029.52		P.T.~9+17.41	1029.68		1030.24
1030.29		+25	1030.45		1030.97
1032.82	-0.16	+50	1032.98		1033.32

P.C.=10+24.60 · **D=23°00'Lt.** · P.T.=12+99.31

Edge Pav't. Grade Lt.	Deduct Crown	STATION	Profile Grade	Add Super.	Edge Pav't. Grade Rt.
1035.35	-0.16	9+75	1035.51		1035.78
1037.88		10+00	1038.04		1038.42
1040.37		P.C.~10+24.60	1040.53		1041.07
1040.41		+25	1040.57		1041.12
1042.94		+50	1043.10		1043.81
1045.47		+75	1045.63		1046.44
1048.00		11+00	1048.16		1049.01
1050.53		+25	1050.69		1051.54
1053.06		+50	1053.22		1054.07
1055.59		+75	1055.75		1056.54
1058.12		12+00	1058.28	Obtained Graphically	1058.93
1060.65		+25	1060.81		1061.30
1063.18		+50	1063.34		1063.66
1065.71		+75	1065.87		1066.02
1068.18		P.T.~12+99.31	1068.		1068.31
	-0.16	13+00	1068.40		



BEGIN EARTHWORK

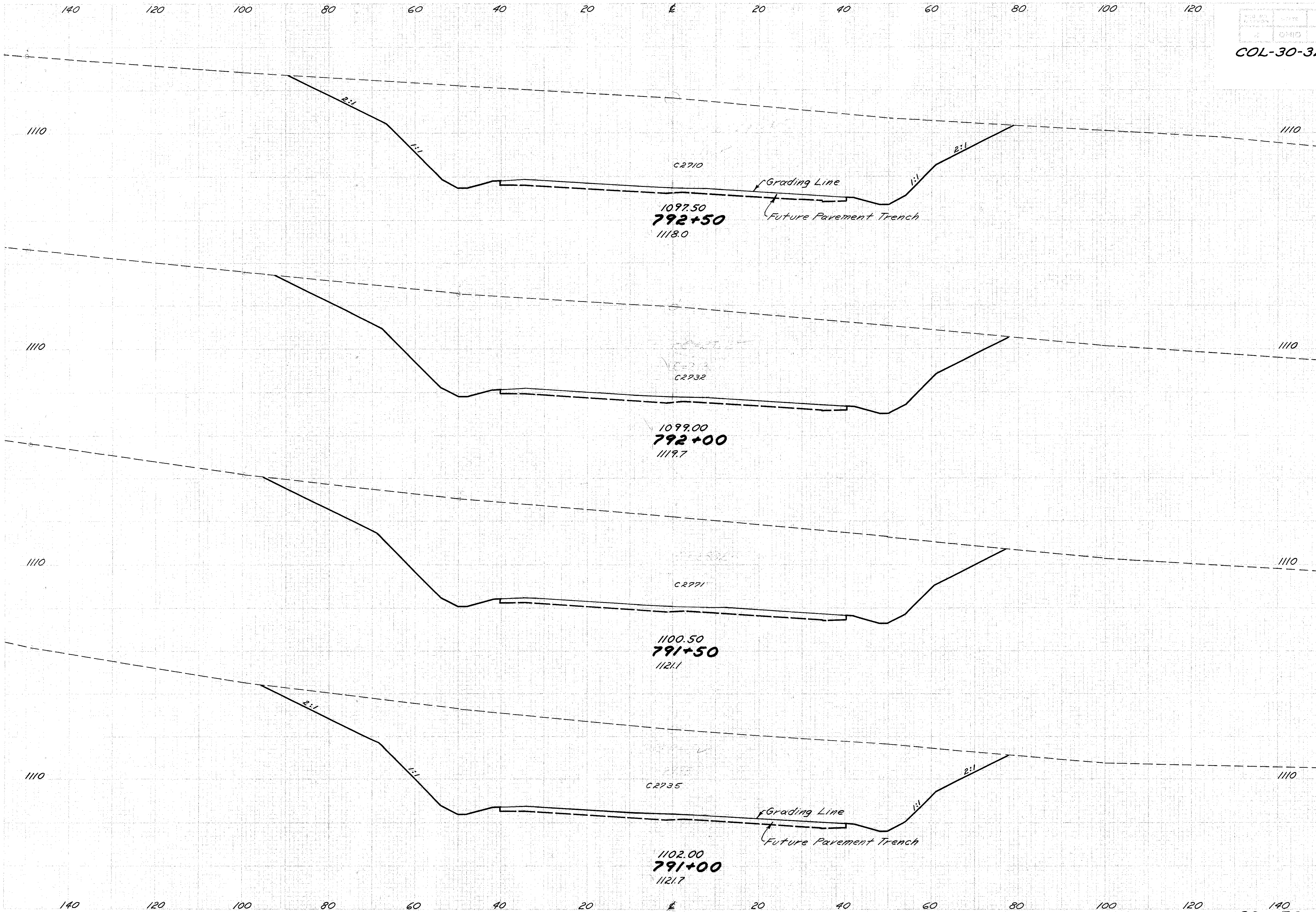
Seeding		End Area		Cu. Yds.	
Width	Sq. Yds.	Cut	Fill	Exc.	Emb.
0		0	0		

COL-30-32.19

Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
130		2707	0		
	725			5009	0
131		2703	0		
	714			5049	0
126		2750	0		
	703			5182	0
127		2847	0		
	353			2636	0

Sta 789+00 to Sta 790+50

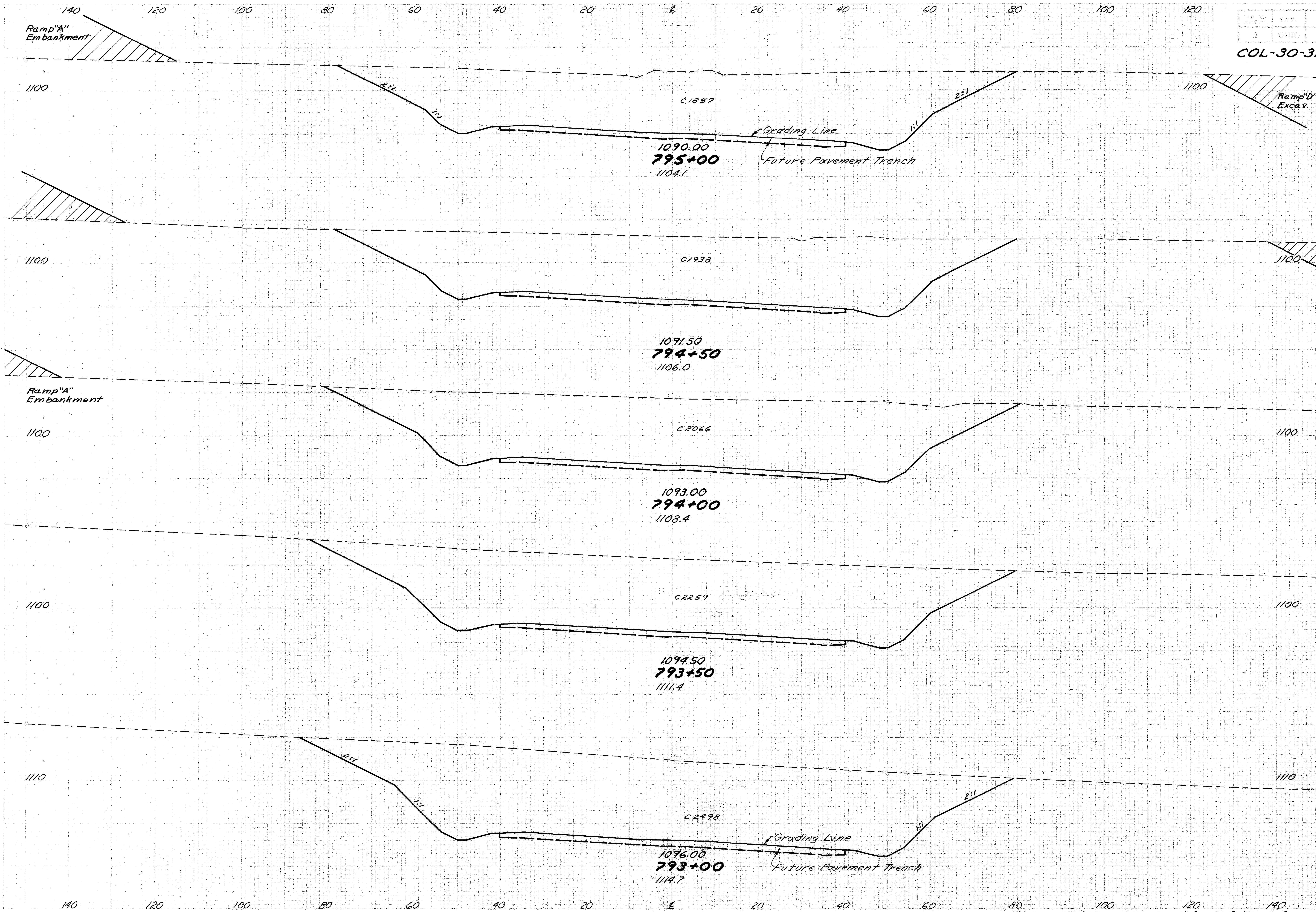
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	669			4822	0
122		2710	0		
	686			5039	0
125		2732	0		
	706			5095	0
129		2771	0		
	714			5098	0
128		2735	0		
	717			5039	0

Sta 791+00 to Sta 792+50

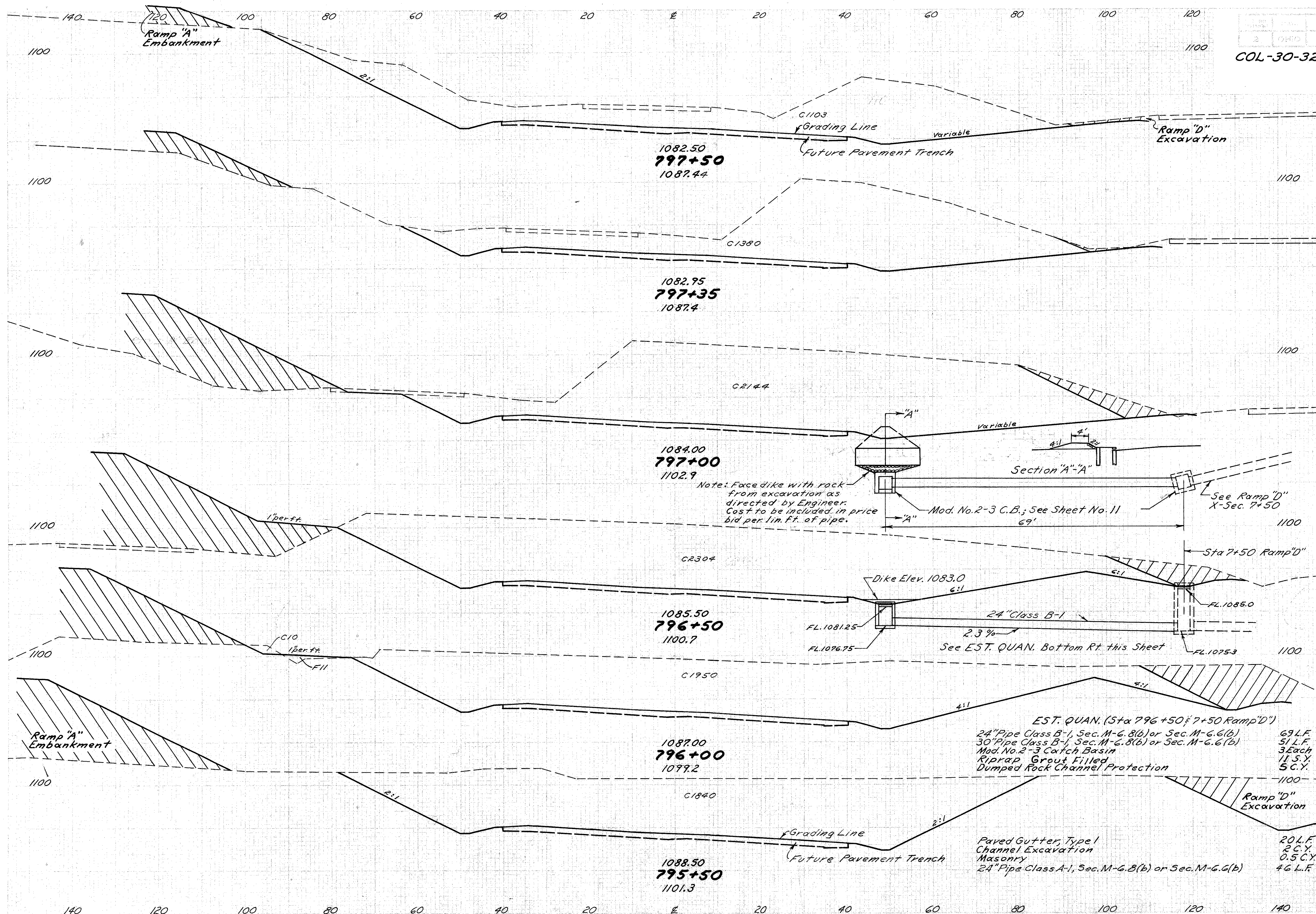
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
109		1857	0		
	603			3509	0
108		1933	0		
	619			3703	0
115		2066	0		
	644			4005	0
117		2259	0		
	656			4405	0
119		2498	0		

Sta 793+00 to Sta 795+00

COL-30-32.19



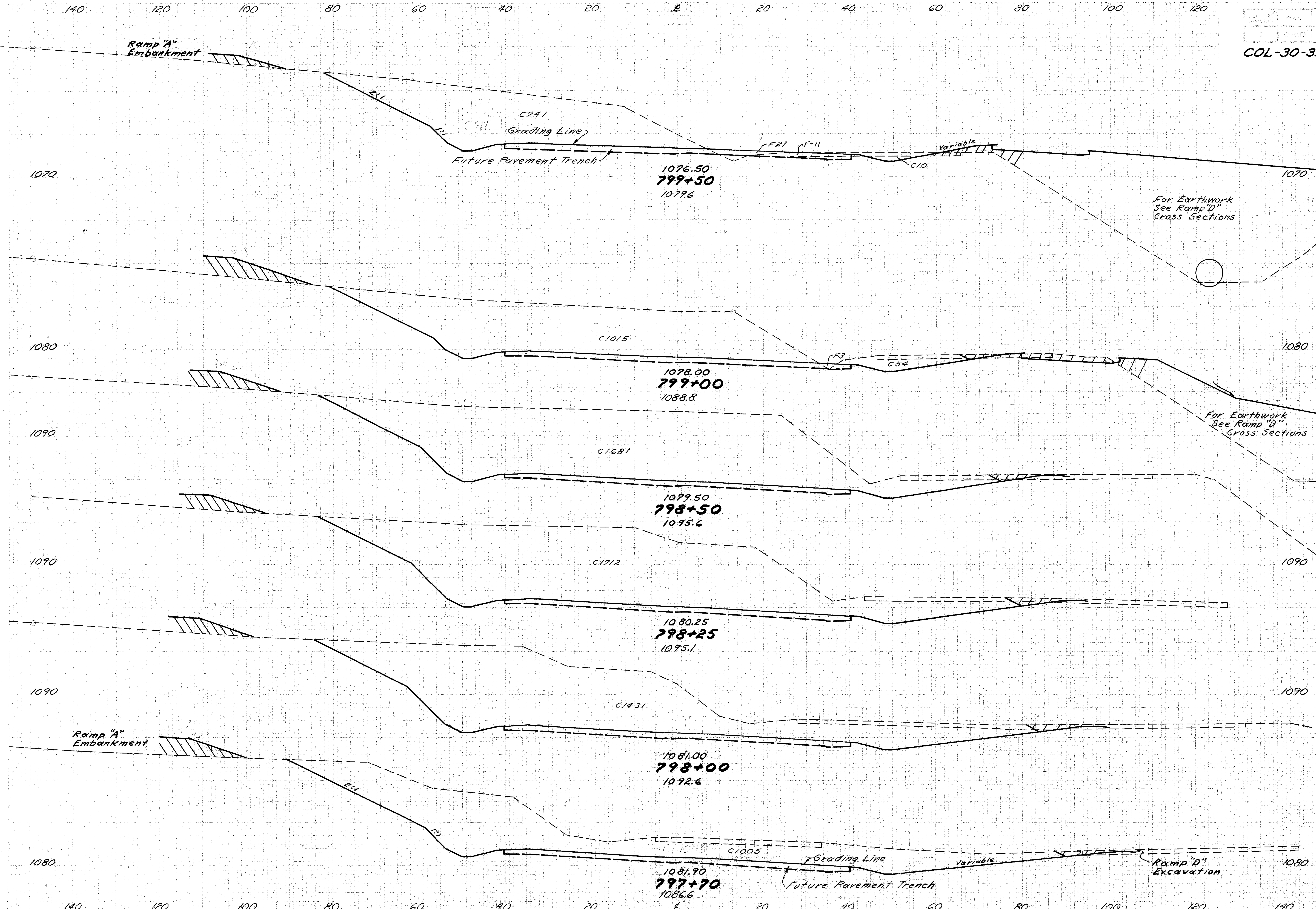
EST. QUAN. (Sta 796+50 & 7+50 Ramp "D")

24" Pipe Class B-1, Sec. M-6.8(b) or Sec. M-6.6(b)	69 L.F.
30" Pipe Class B-1, Sec. M-6.8(b) or Sec. M-6.6(b)	51 L.F.
Mod. No. 2-3 Catch Basin	3 Each
Riprap Grout Filled	11 S.Y.
Dumped Rock Channel Protection	5 C.Y.
Paved Gutter, Type 1	20 L.F.
Channel Excavation	2 C.Y.
Masonry	0.5 C.Y.
24" Pipe Class A-1, Sec. M-6.8(b) or Sec. M-6.6(b)	46 L.F.

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
118		1103	0		
	176			690	0
93		1380	0		
	385			2284	0
105		2144	0		
	625			4119	0
120		2304	0		
	719			3948	10
139		1960	11		
	694			3519	10
111		1840	0		
	611			3423	0

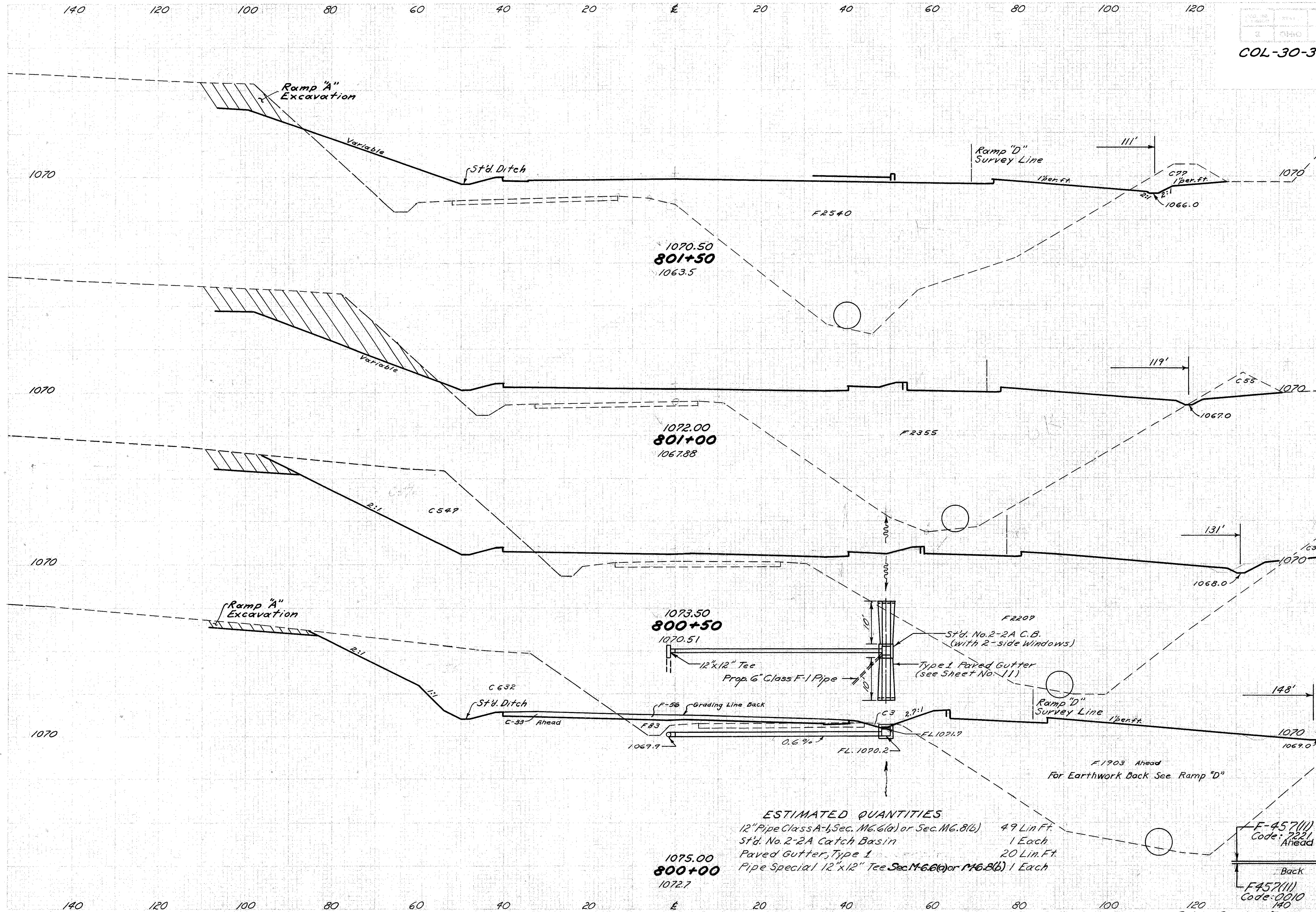
Sta 795+50 to Sta 797+50

COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	165'				
68		751	32		
	400			1685	32
76		1069	3		
	464			2546	3
91		1681	0		
	260			1571	0
96		1712	0		
	275			1455	0
102		1431	0		
	357			1353	0
112		1005	0		
	256			781	0

Sta 797+70 to Sta 799+50



ESTIMATED QUANTITIES

12" Pipe Class A-1, Sec. M6.6(a) or Sec. M6.8(b)	49 Lin. Ft.
St'd. No. 2-2A Catch Basin	1 Each
Paved Gutter, Type 1	20 Lin. Ft.
Pipe Special 12"x12" Tee Sec. M-6.6(a) or M6.8(b)	1 Each

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
114		77	2540		
	572			122	4532
92		55	2355		
	669			592	4224
149		584	2207		
	783			1159	3882
133		668	1986		
58		635	139		
	350			1283	158

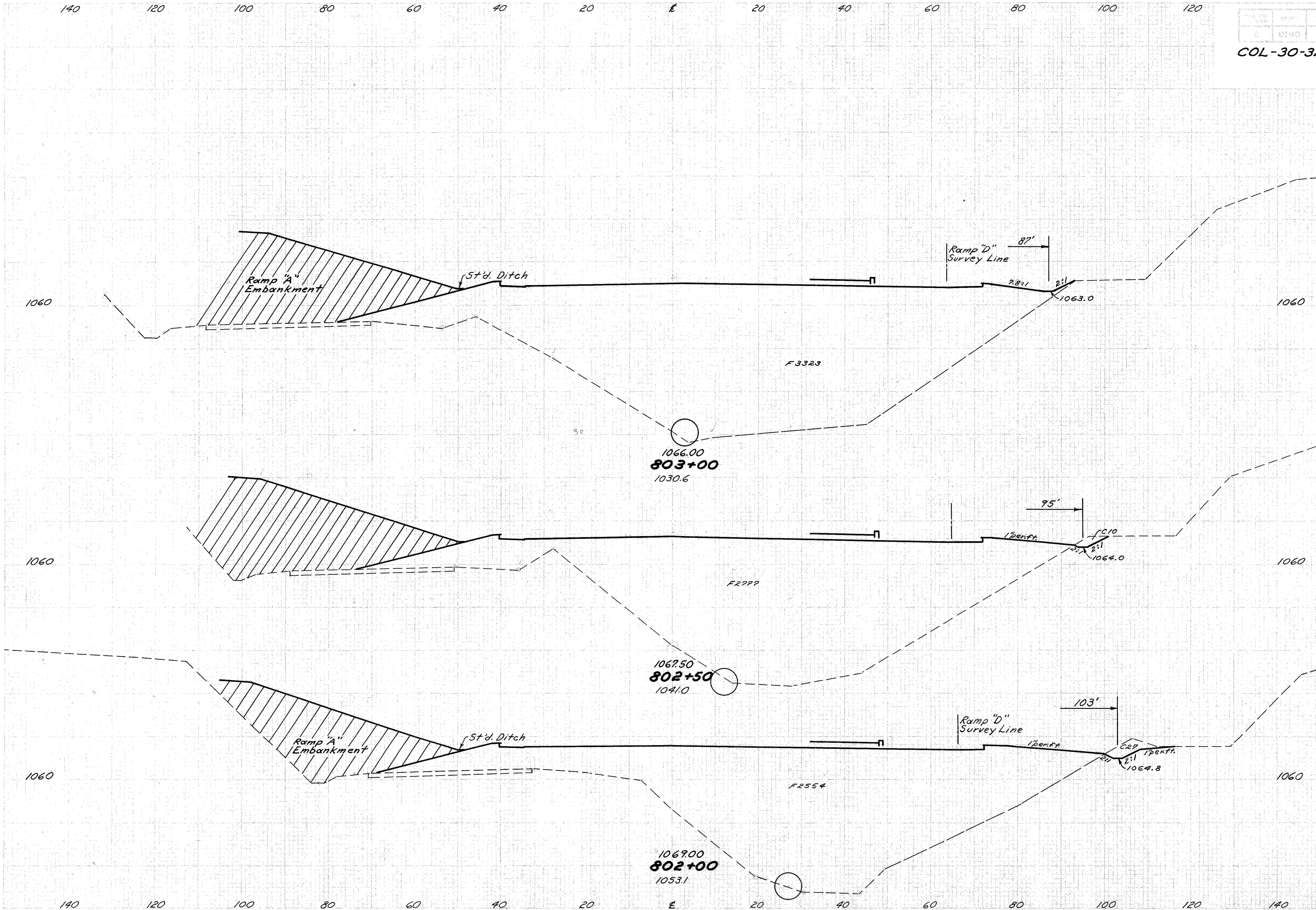
F-457(11) Code: 7221 Ahead

Back

F457(11) Code: 0010

Sta 800+00 to Sta 801+50

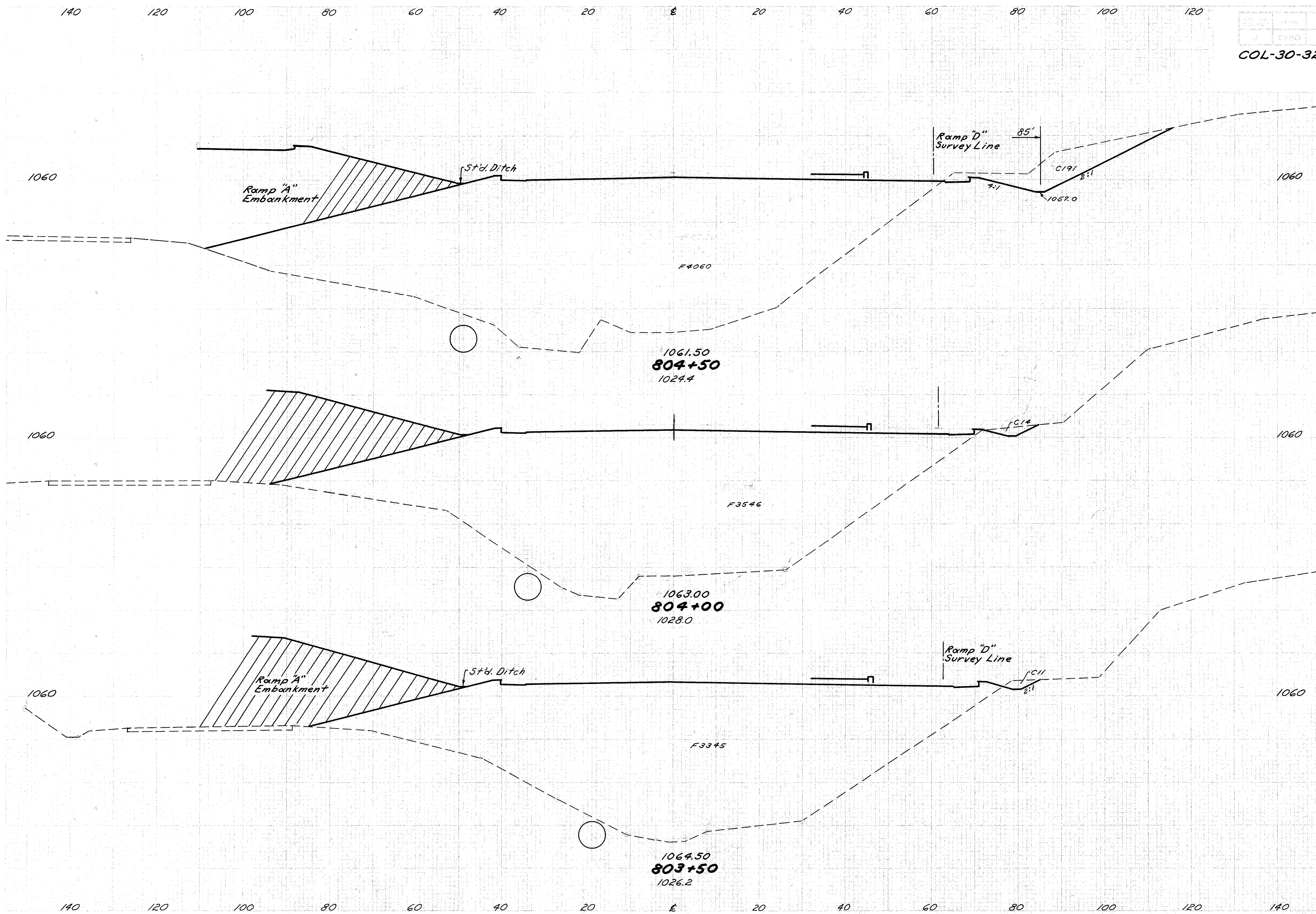
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
42		0	3323		
	253			9	5648
49		10	2777		
	314			34	4936
64		27	2554		
	494			96	4717

Sta 802+00 to Sta 803+00

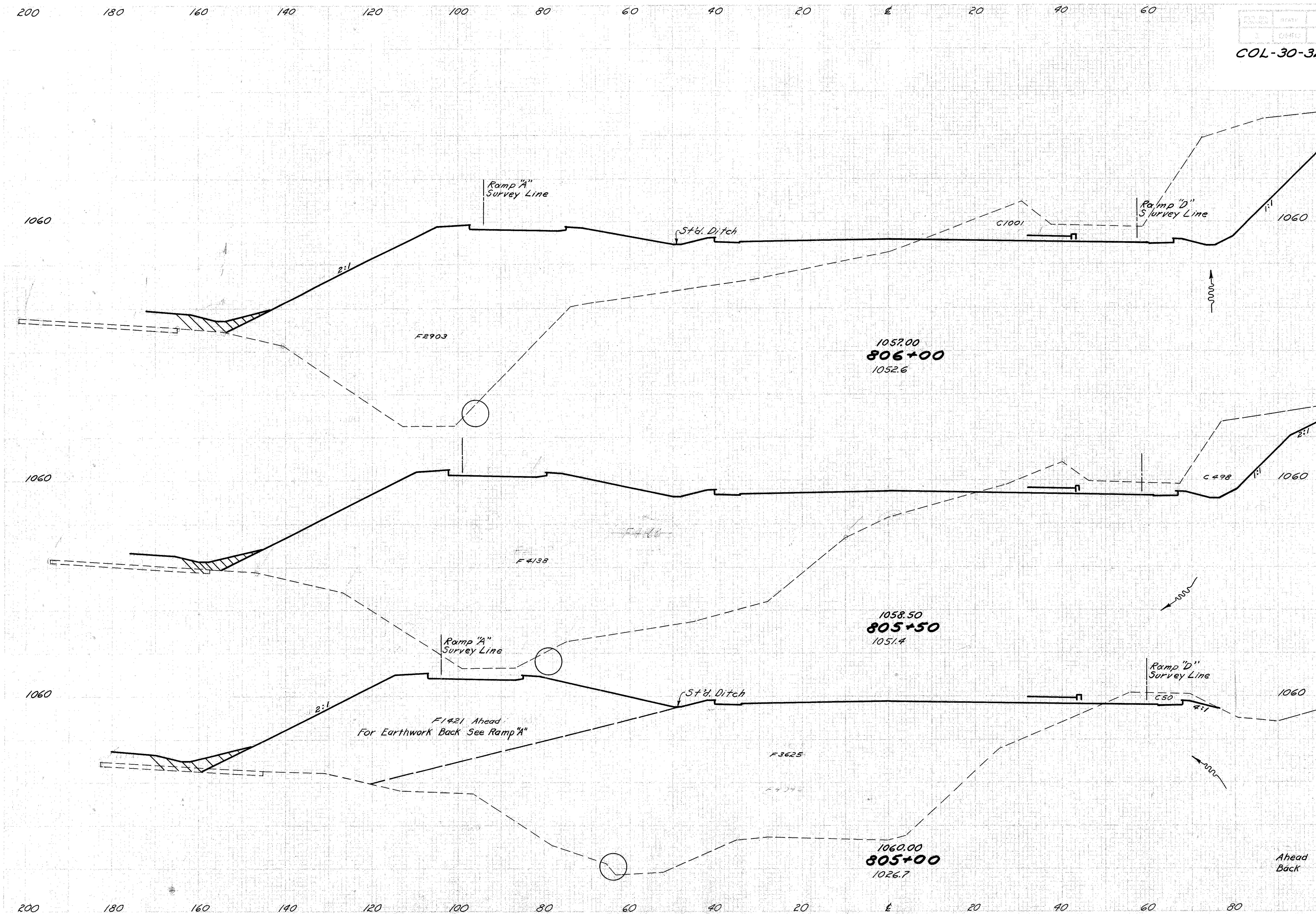
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
70		191	4060		
	289			190	7043
34		14	3546		
	186			23	6381
33		11	3345		
	208			10	6174

Sta 803+50 to Sta 804+50

COL-30-32.19

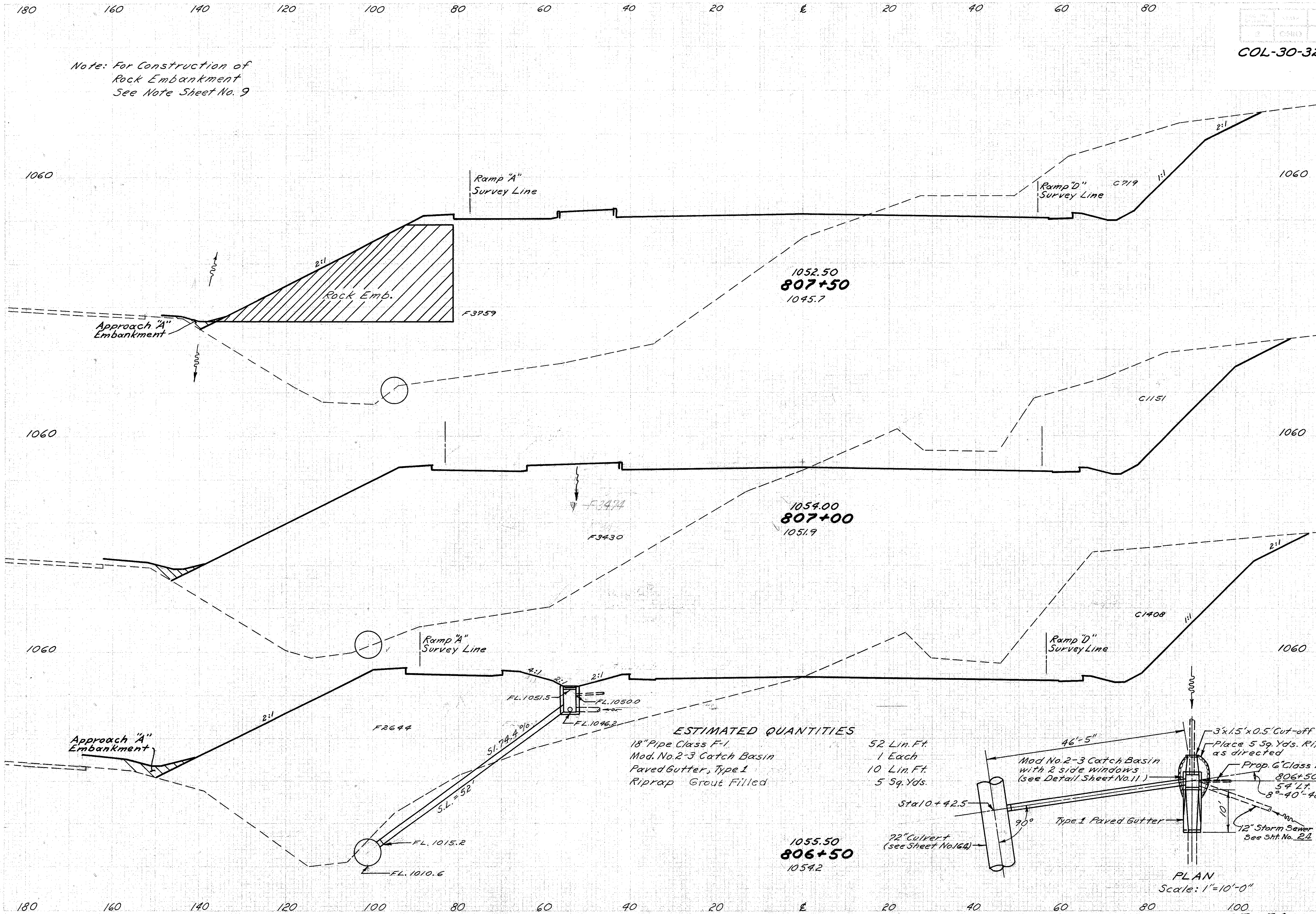


	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
806+00	124		1001	2903		
		647			1388	6519
805+50	109		498	4138		
		481			507	8504
805+00 Ahead	64		50	5046		
805+00 Back	29		50	3625		
		275			223	7116

Sta 805+00 to Sta 806+00

COL-30-32.19

Note: For Construction of Rock Embankment See Note Sheet No. 9



ESTIMATED QUANTITIES

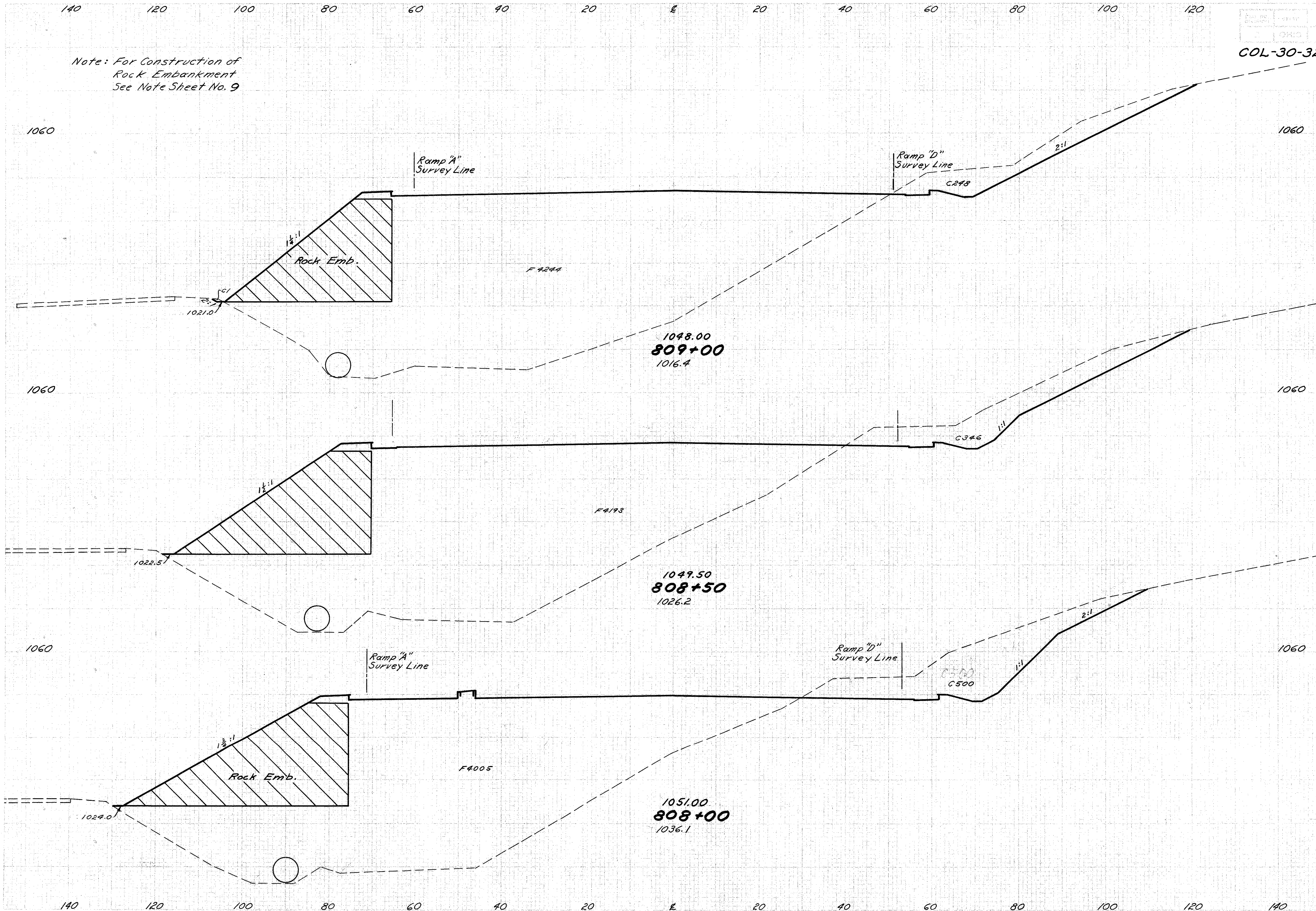
18" Pipe Class F-1	52 Lin. Ft.
Mod. No.2-3 Catch Basin	1 Each
Paved Gutter, Type 1	10 Lin. Ft.
Riprap Grout Filled	5 Sq. Yds.

Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
113		719	3759		
	675			1731	6656
130		1151	3430		
	725			2369	5624
131		1408	2644		
	708			2231	5136

Sta 806+50 to Sta 807+50

COL-30-32.19

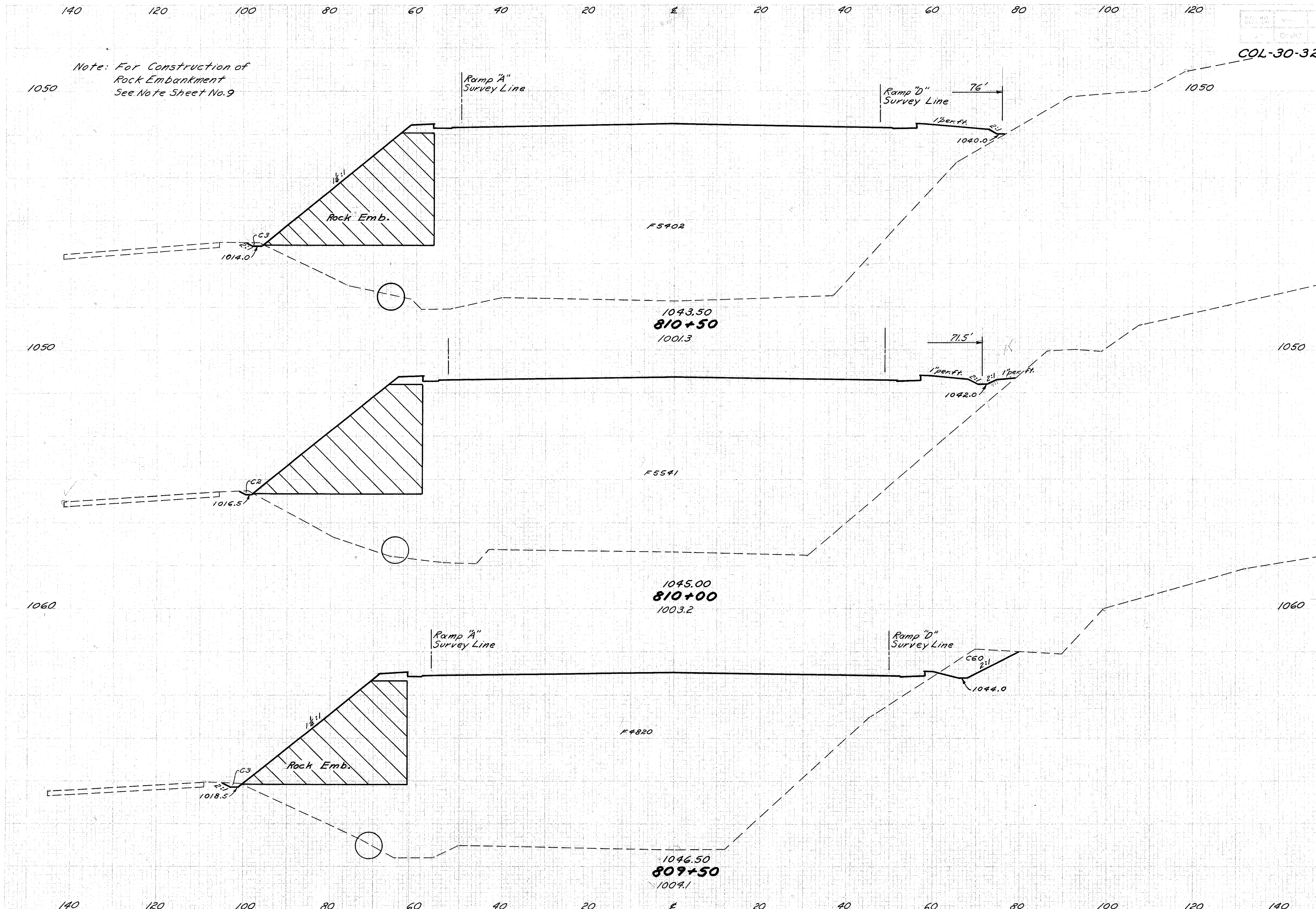
Note: For Construction of
Rock Embankment
See Note Sheet No. 9



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
100		248	4244		
	550			550	7812
98		346	4193		
	525			783	7591
91		500	4005		
	567			1129	7199

Sta 808+00 to Sta 809+00

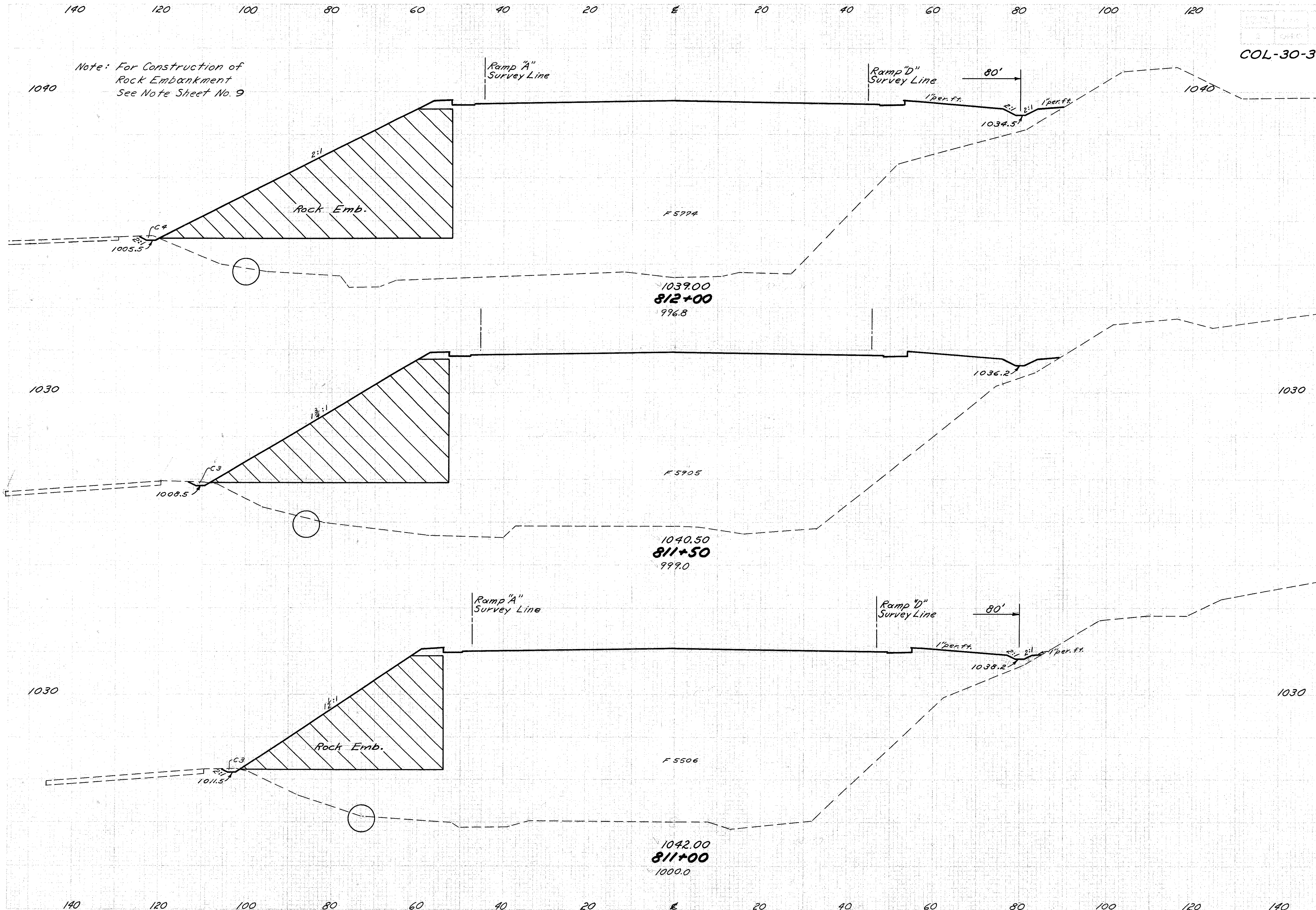
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
50		3	5402		
	278			5	10,132
50		2	5541		
	283			60	9594
52		63	4820		
	422			288	8393

Sta 809+50 to Sta 810+50

COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb
134		4	5774		
	553			6	10,814
65		3	5905		
	342			6	10,566
58		3	5506		
	300			6	10,100

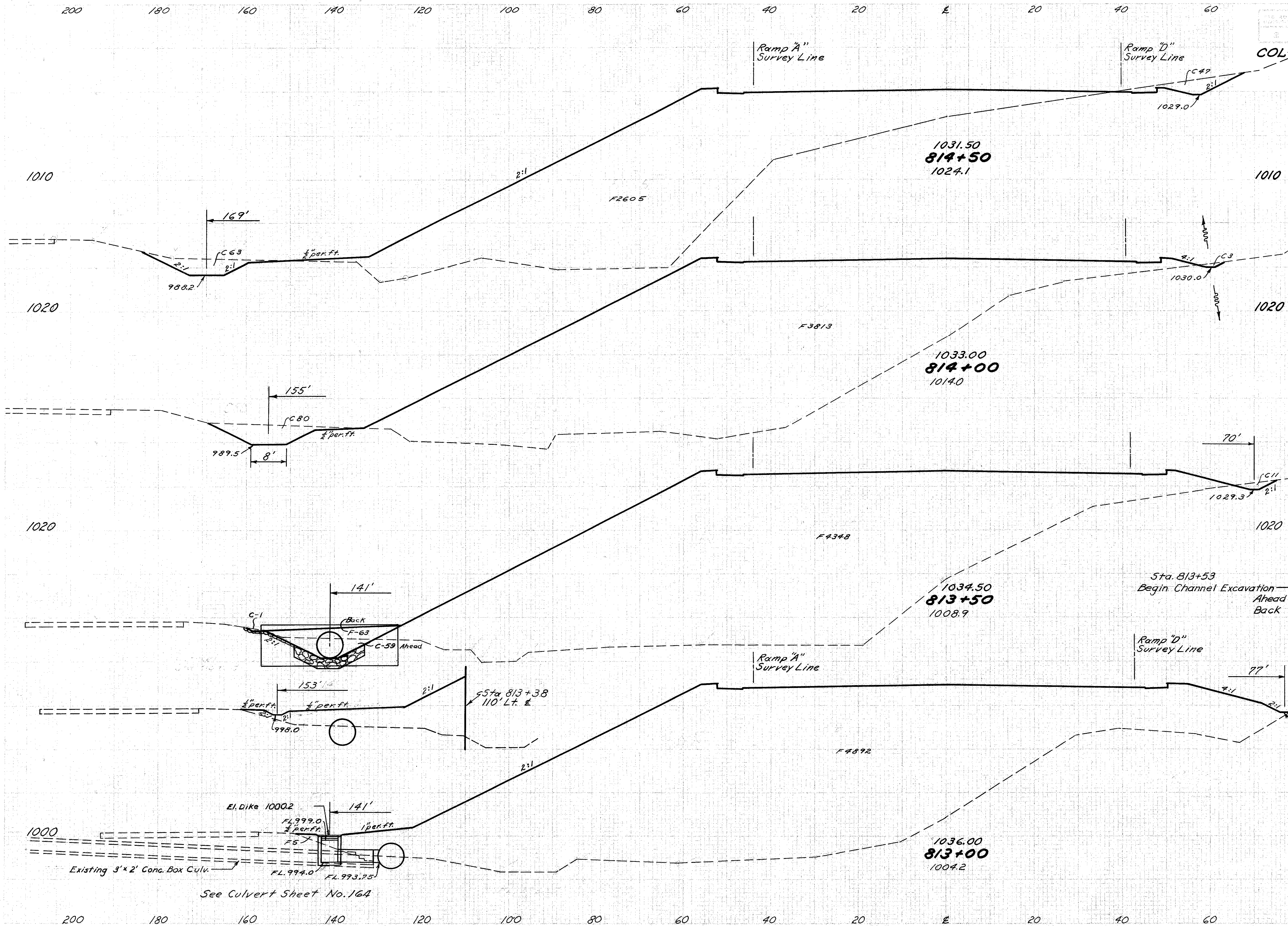
Sta 811+00 to Sta 812+00

COL-30-32.19

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
153		0	5569		
	429			0	5381
156		0	6053		
	414			0	5396
142		0	5602		
	397 383			2	5367

Sta 812+25 to Sta 812+75

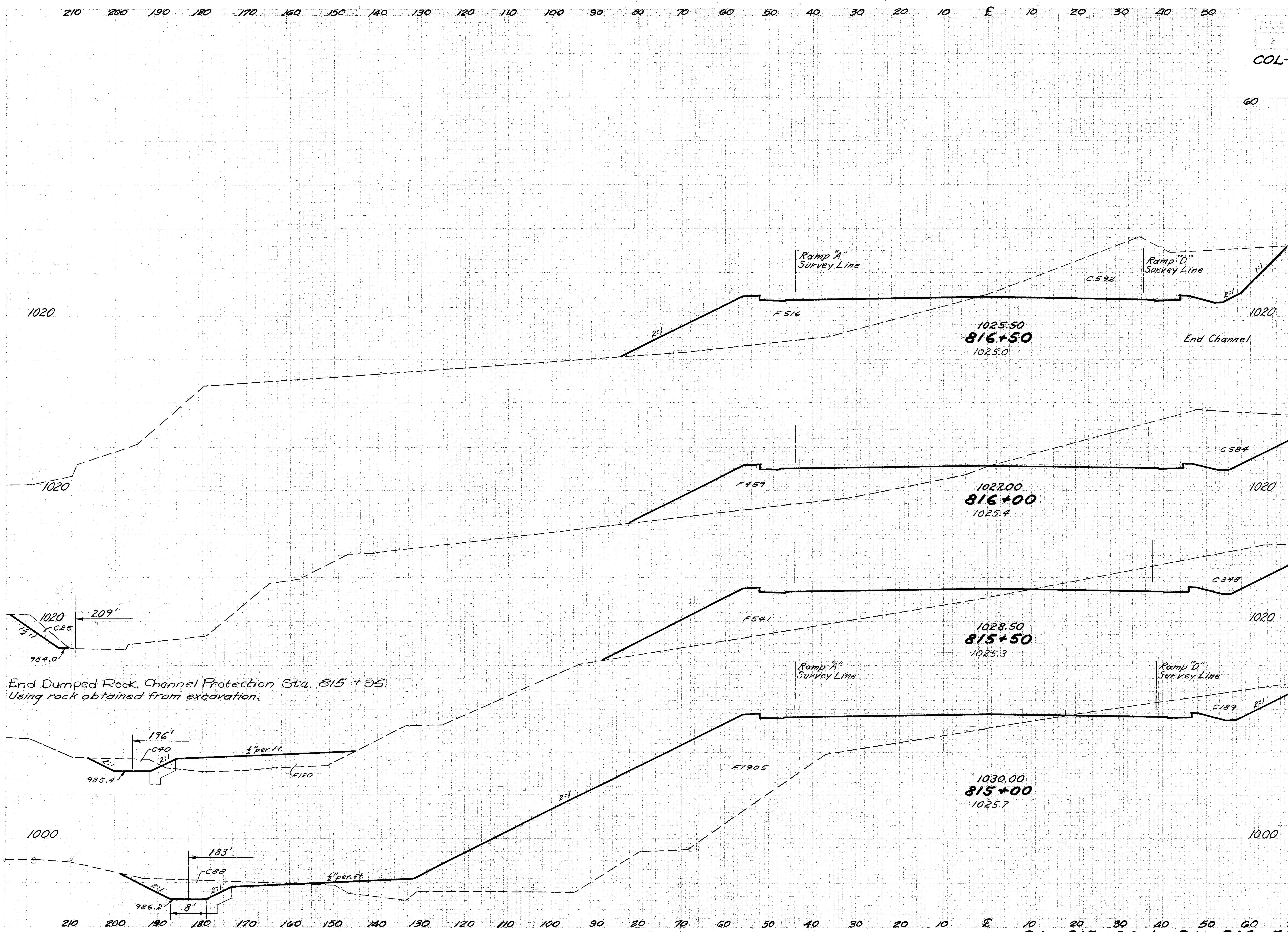
COL-30-32.19



Channel		Seeding		End Area		Cu. Yds.	
Area	Cu. Yd.	Width	S.Y.	Cut	Fill	Exc.	Emb.
63		177		47	2605		
	132		919			46	5943
80		154		3	3813		
	121		850			14	7556
59							
		152		12	4348		
		161		12	4411		
			869			11	8619
		152		0	4897		
			424			0	4845

Sta 813+00 to Sta 814+50

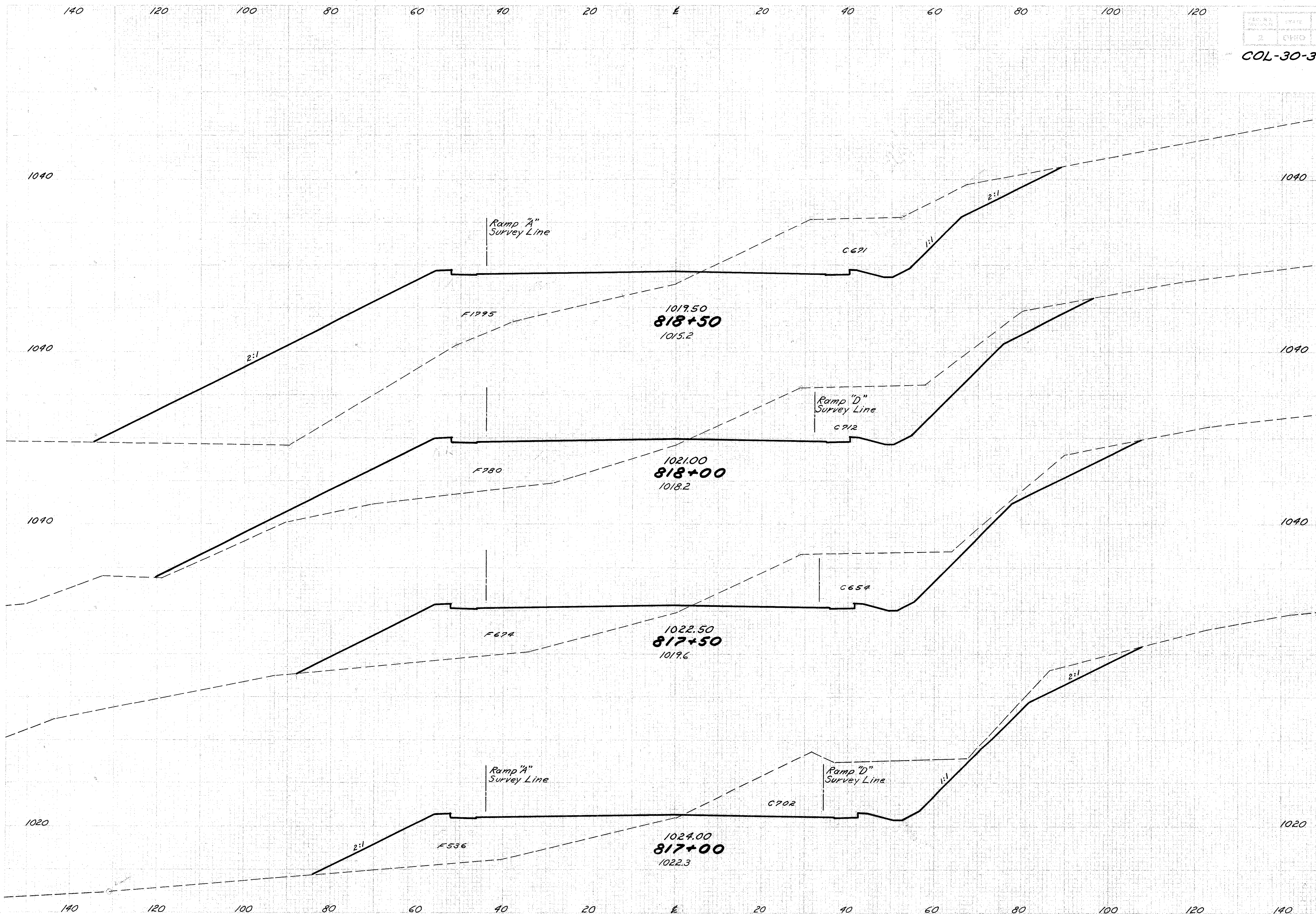
COL-30-32.19



Channel Area	Channel Cu.Yd.	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu.Yds. Exc.	Cu.Yds. Emb.
0		85		592	516		
	23		592			1089	903
25		128		584	459		
	60		831			863	1037
40		171		348	661		
	119		1050			497	2376
88		207		189	1905		
	140		1067			219	4176

Sta 815+00 to Sta 816+50

COL-30-32.19



Seeding Width	Seeding S-Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
171		671	1795		
	928			1281	2384
163		712	780		
	842			1265	1346
140		654	674		
	769			1256	1120
137		702	536		
	617			1198	974

Sta 817+00 to Sta 818+50

COL-30-32.19

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
195		724	2528		
	994			1068	4781
163		429	2635		
	878			888	4584
153		530	2316		
	900			1112	3806

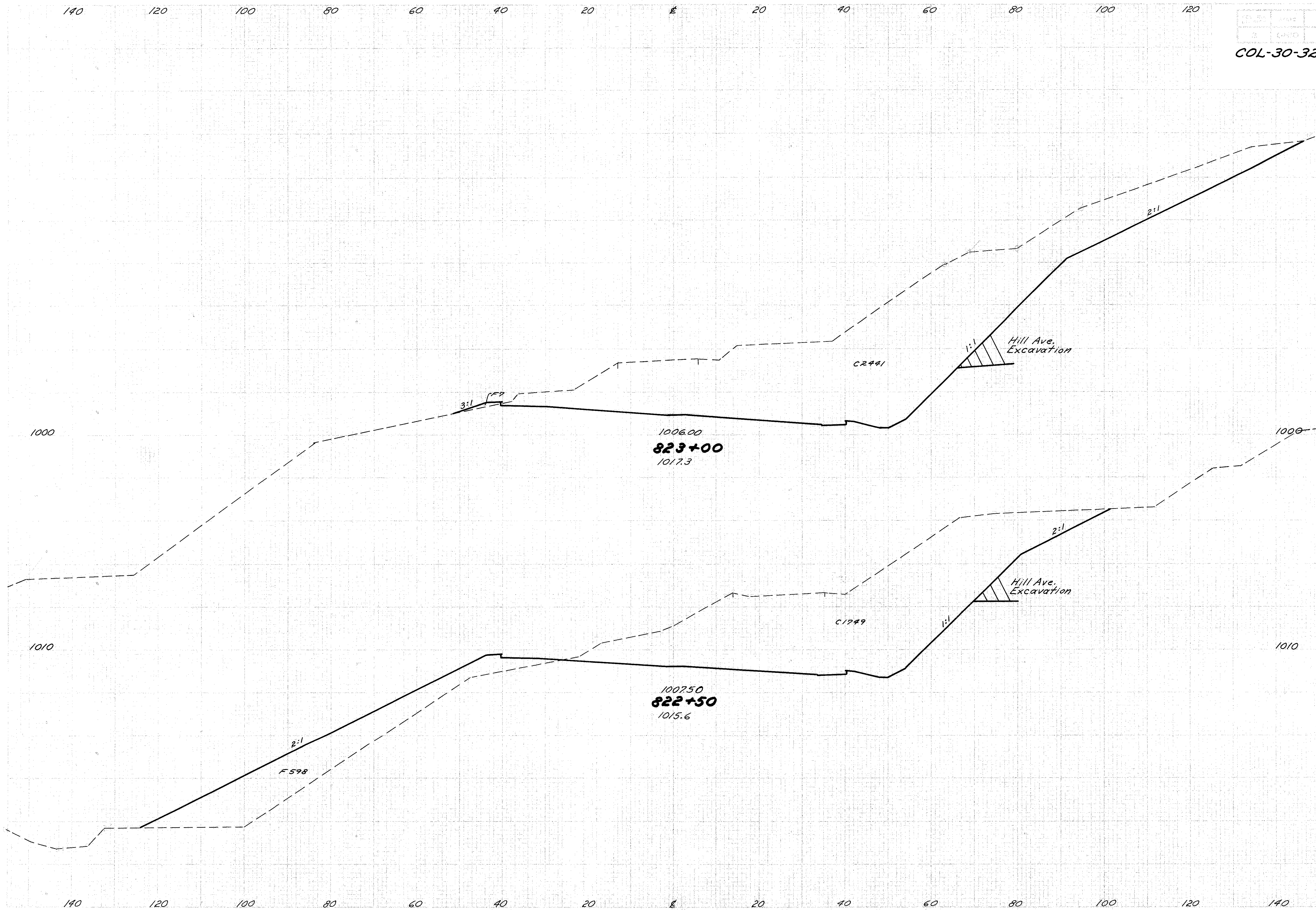
Sta 819+00 to Sta 820+00

Add Embankment for filling Over 72" Pipe, Left of Sta 822+00 to Sta 822+32.5 → 40

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
162		1302	1512		
					40
	867			2340	3621
150		1225	2399		
	833			2158	4331
150		1106	2278		
	858			1881	4317
159		926	2384		
	983			1528	4548

Sta 820+50 to Sta 822+00

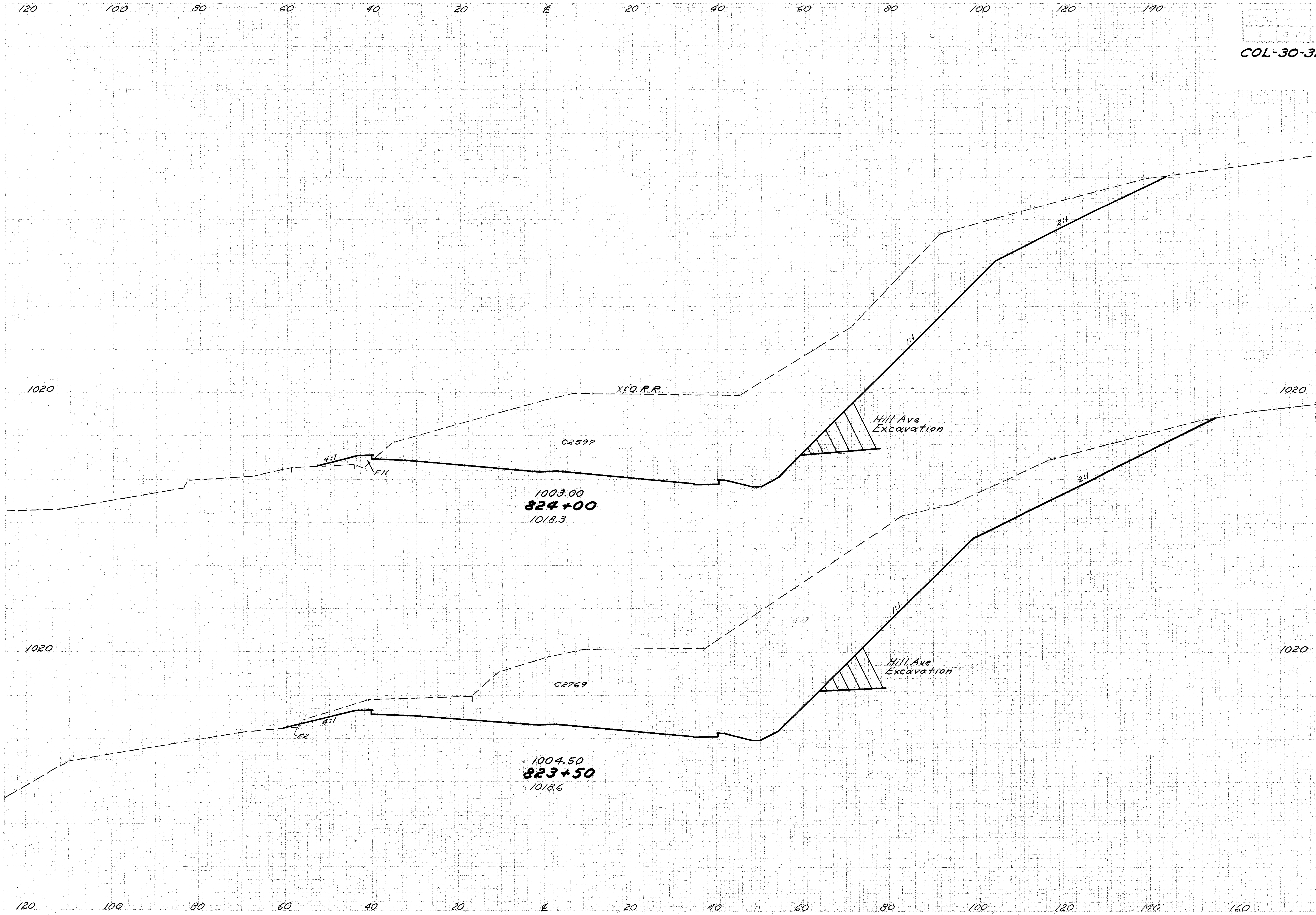
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
54		2441	7		
	542			3880	560
141		1749	598		
	842			2825	1954

Sta 822+50 to Sta 823+00

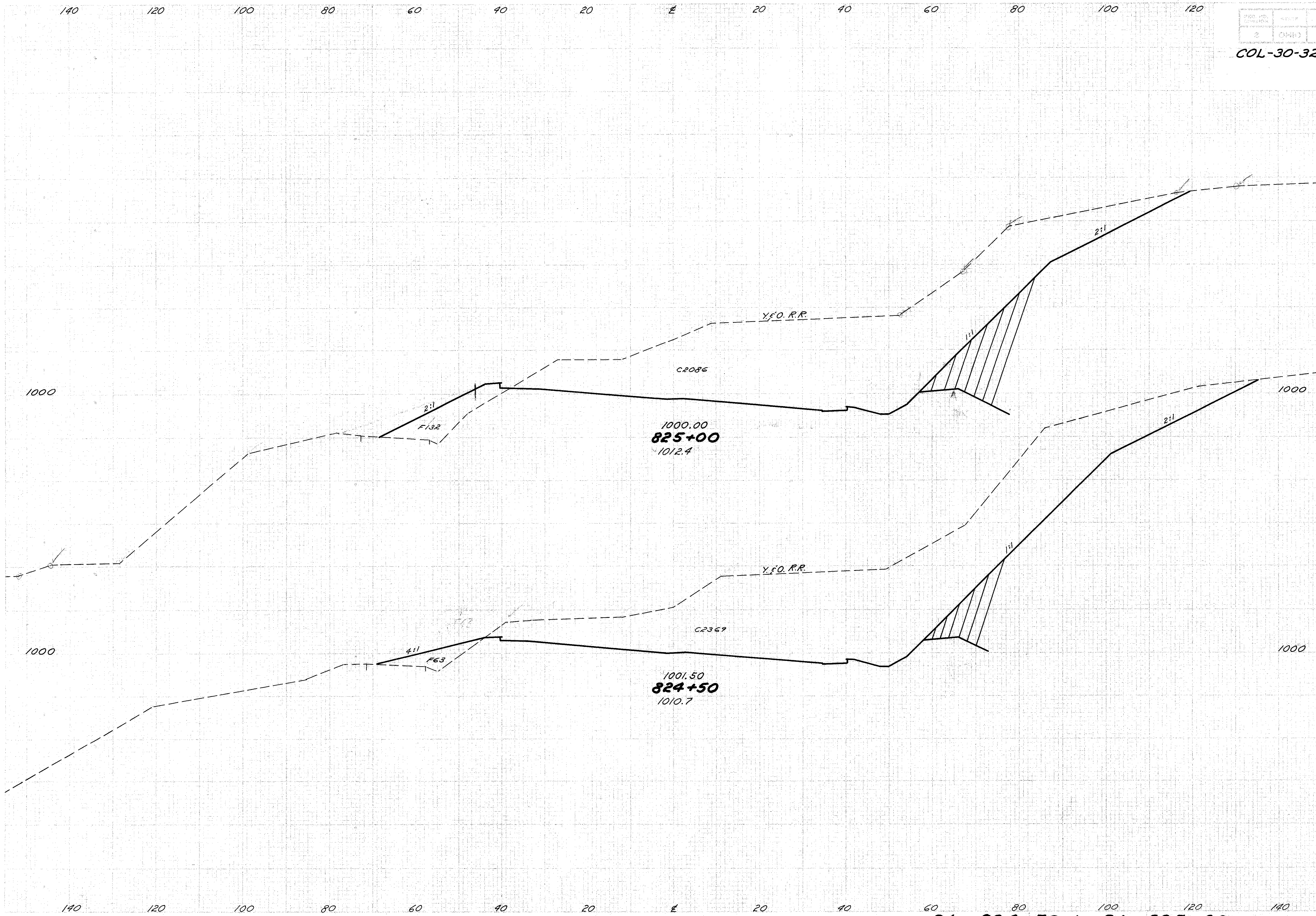
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
46		2597	11		
	272			4969	12
52		2769	2		
	294			4824	8

Sta 823+50 to Sta 824+00

COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
61		2086	132		
	339			4125	181
61		2369	63		
	297			4598	69

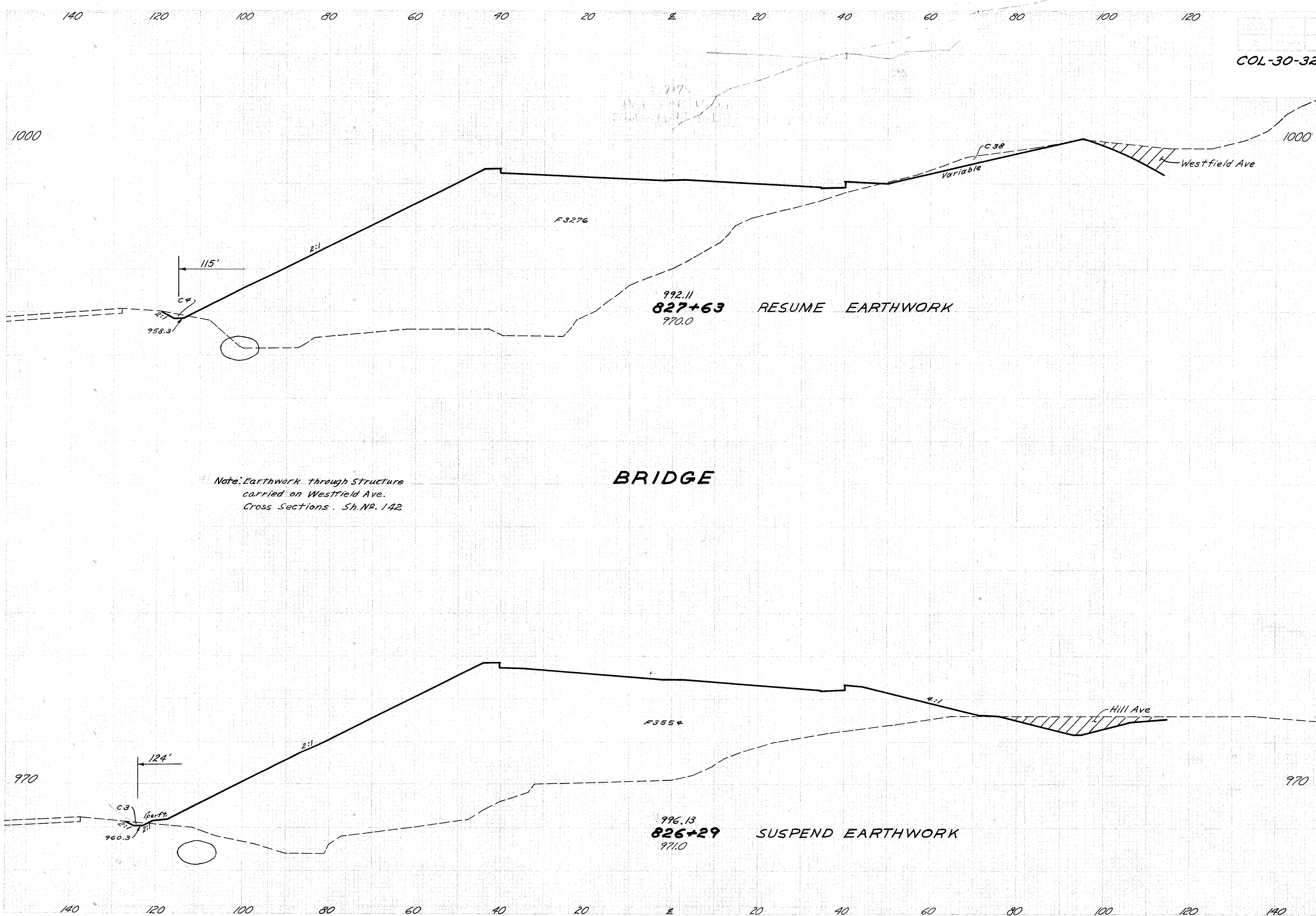
Sta 824+50 to Sta 825+00

COL-30-32.19

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
133		148	2098		
	375			443	1790
137		809	1769		
	389			951	1380
143		1245	1212		
	562			3084	1244

Sta 825+50 to Sta 826+00

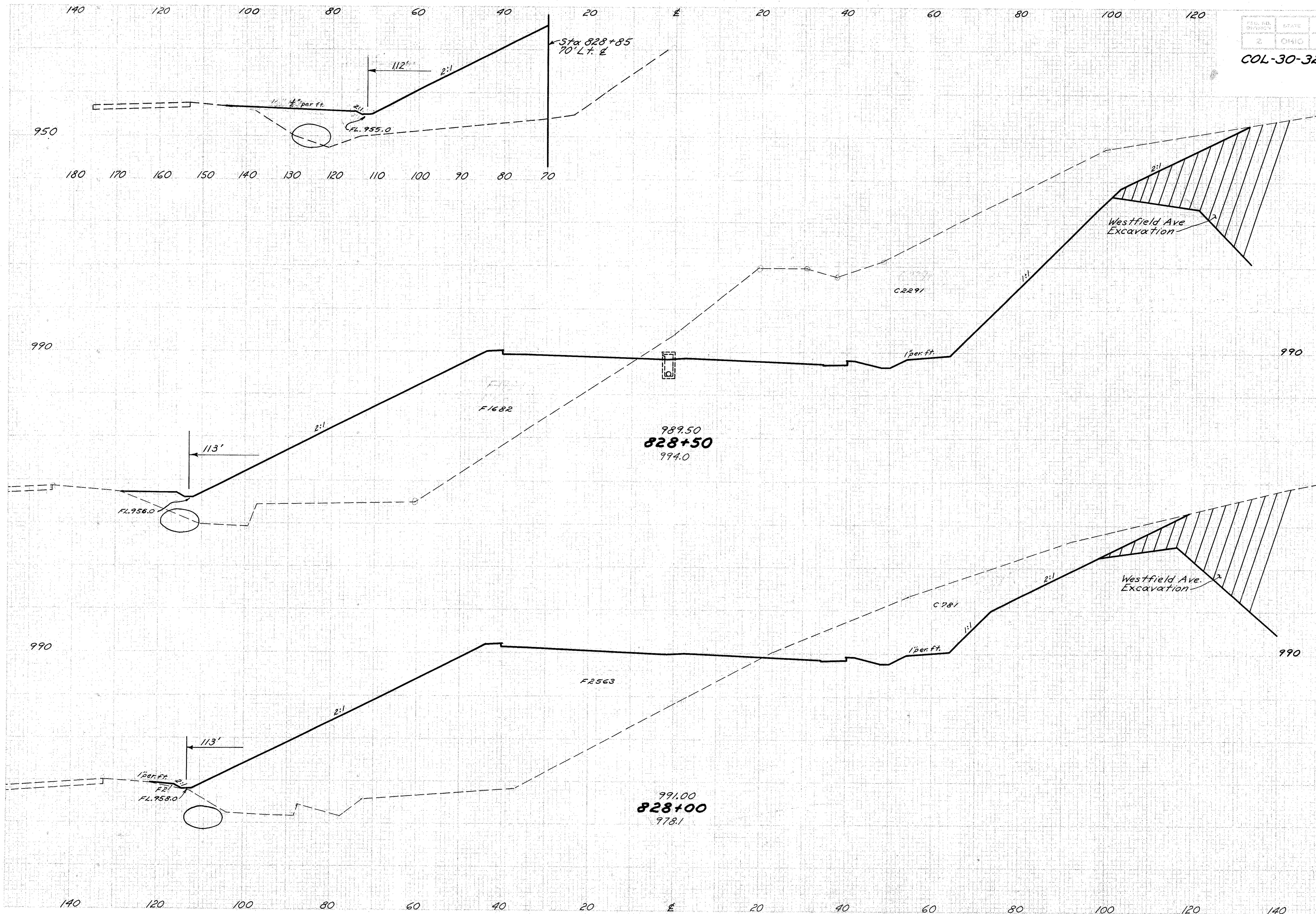
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
154		42	3276		
144		3	3554		
	446			81	3035

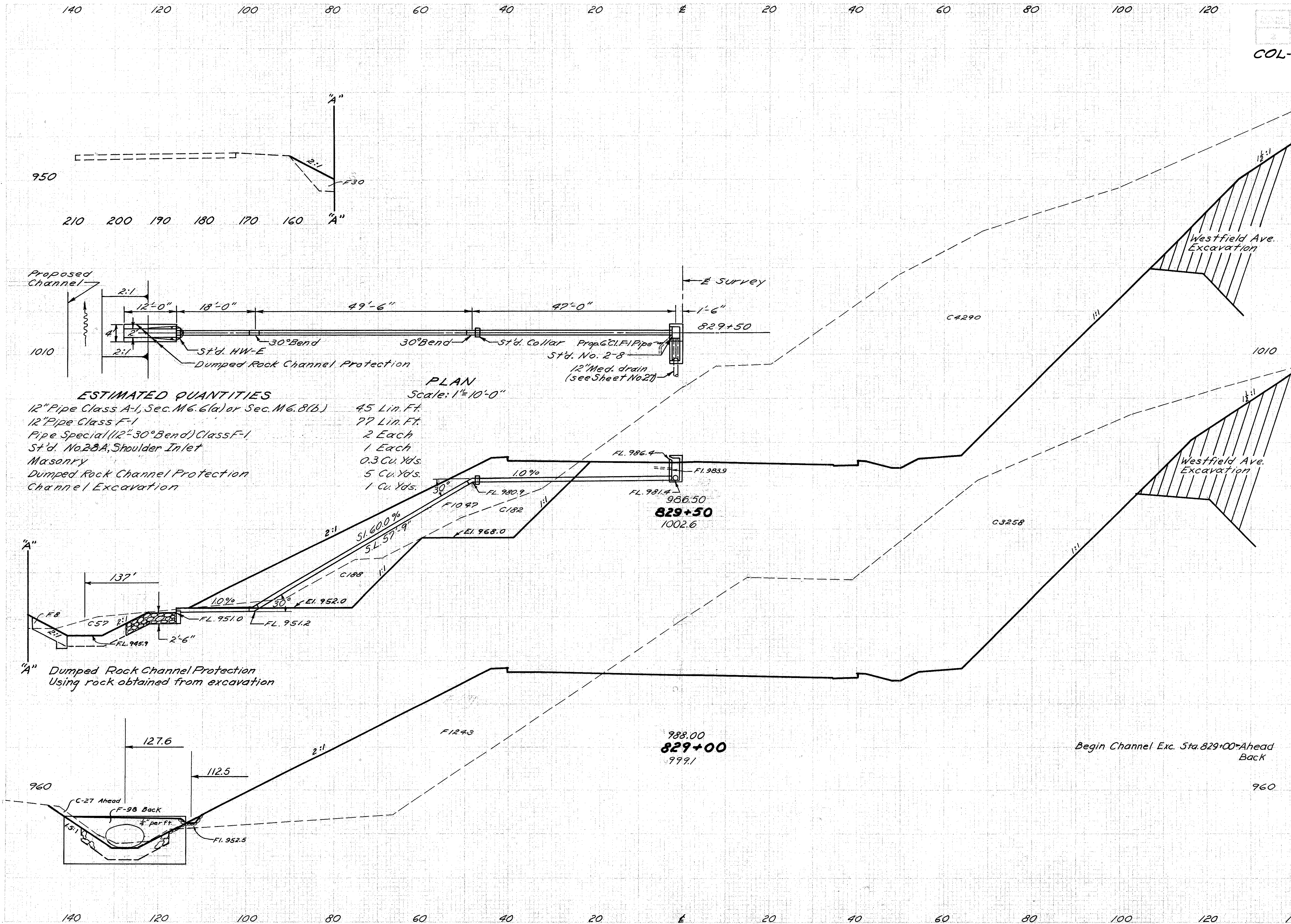
Sta 826+29 to Sta 827+63

COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
185		2291	1682		
	978			2844	3932
167		781	2565		
	660			564	4002

Sta 828+00 to Sta 828+50

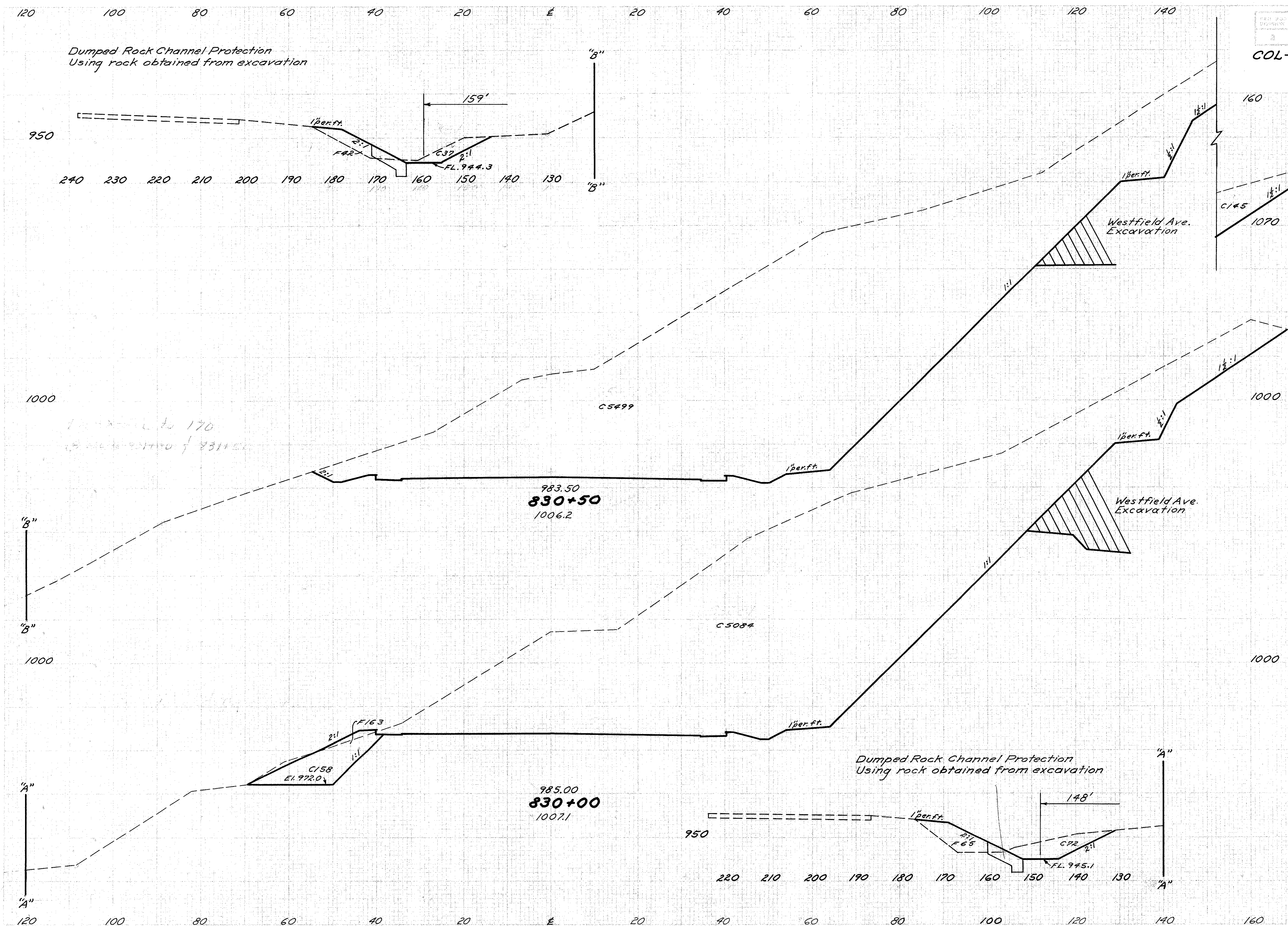


ESTIMATED QUANTITIES

12" Pipe Class A-1, Sec. M6.6(a) or Sec. M6.8(b)	45 Lin. Ft.
12" Pipe Class F-1	77 Lin. Ft.
Pipe Special (12" 30° Bend) Class F-1	2 Each
St'd. No. 2-8A, Shoulder Inlet	1 Each
Masonry	0.3 Cu. Yds.
Dumped Rock Channel Protection	5 Cu. Yds.
Channel Excavation	1 Cu. Yds.

	Channel E.Area	Channel C.Y.	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
829+50	57		223		4660	1085		
		78		1153			7331	2156
Begin Channel Exc. Sta. 829+00 → Ahead	27		192		3258	1243		
Back	0		199		3258	1341		
				1067			5138	2799

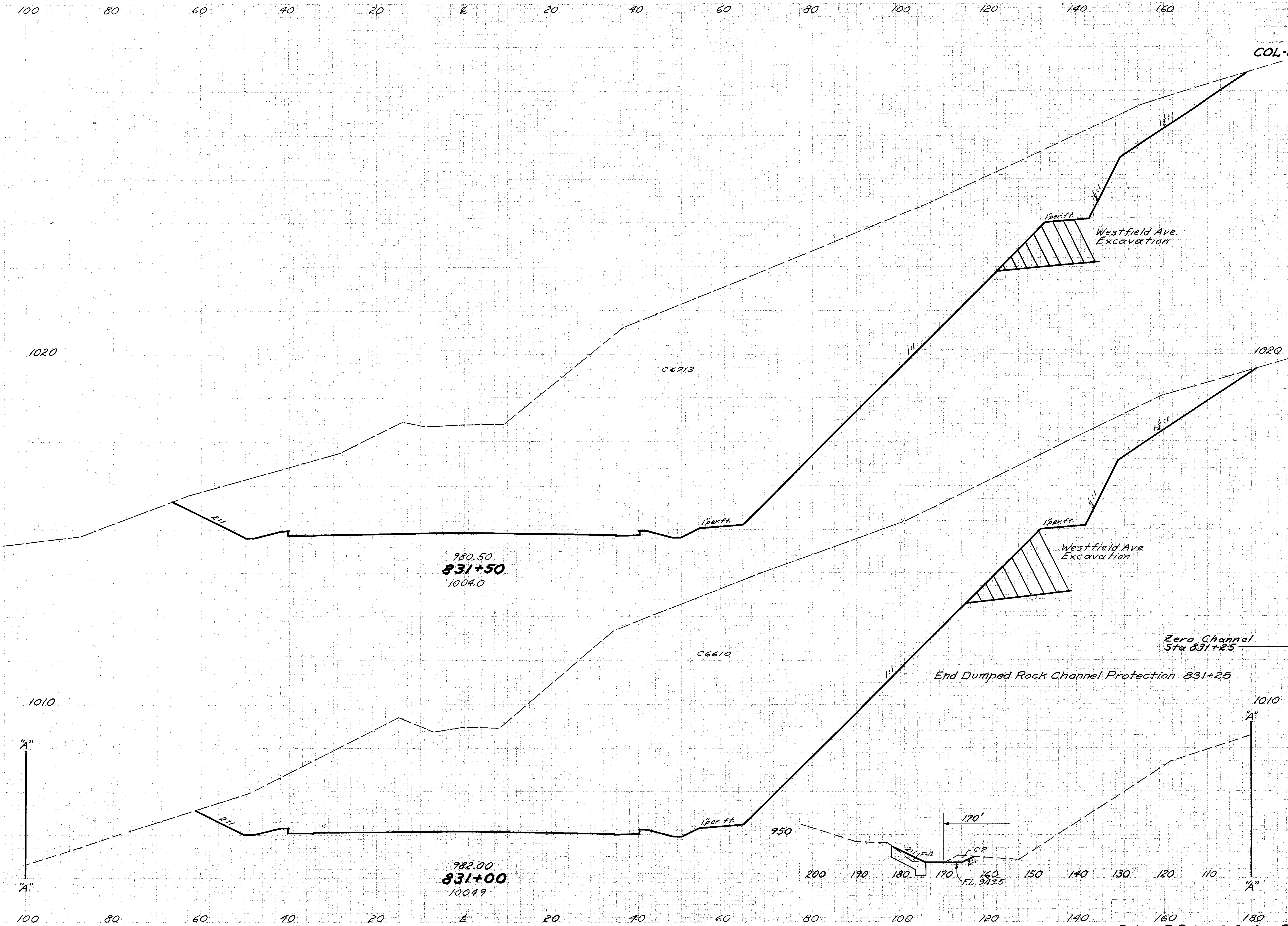
COL-30-32.19



Channel E.Area	Channel Cu.Yds	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu.Yds. Exc.	Cu.Yds. Emb.
37		173		5644	42		
	101		1017			10,080	250
72		193		5242	228		
	119		1156			9169	1216

Sta 830+00 to Sta 830+50

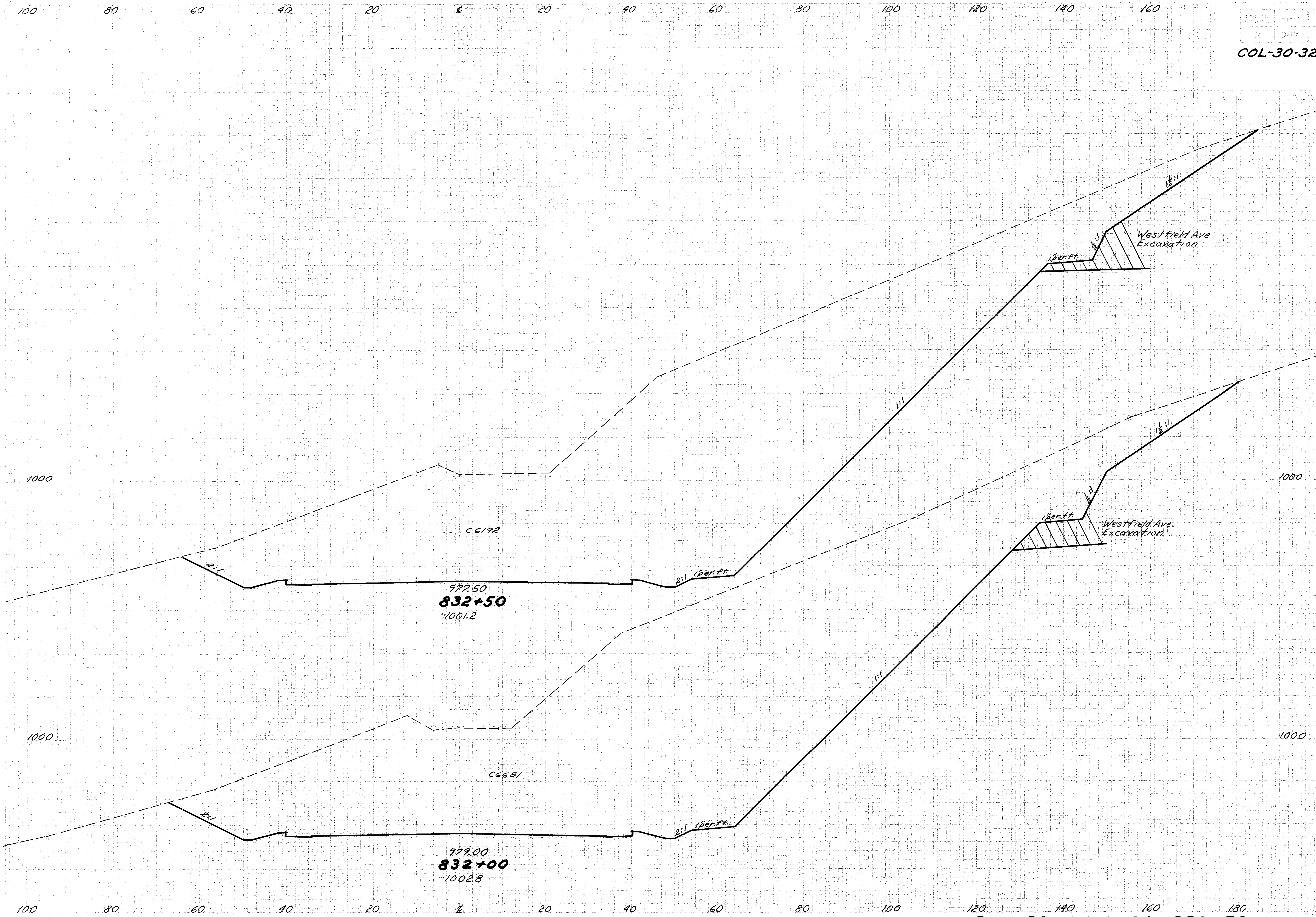
COL-30-32.19



Channel		Seeding		End Area		Cu. Yds.	
E. Area	Cu. Yds.	Width	S.Y.	Cut	Fill	Exc.	Emb.
		146		6713	0		
0							
	3		853			12,336	4
7		161		6610	4		
	41		928			11,346	43

Sta 831+00 to Sta 831+50

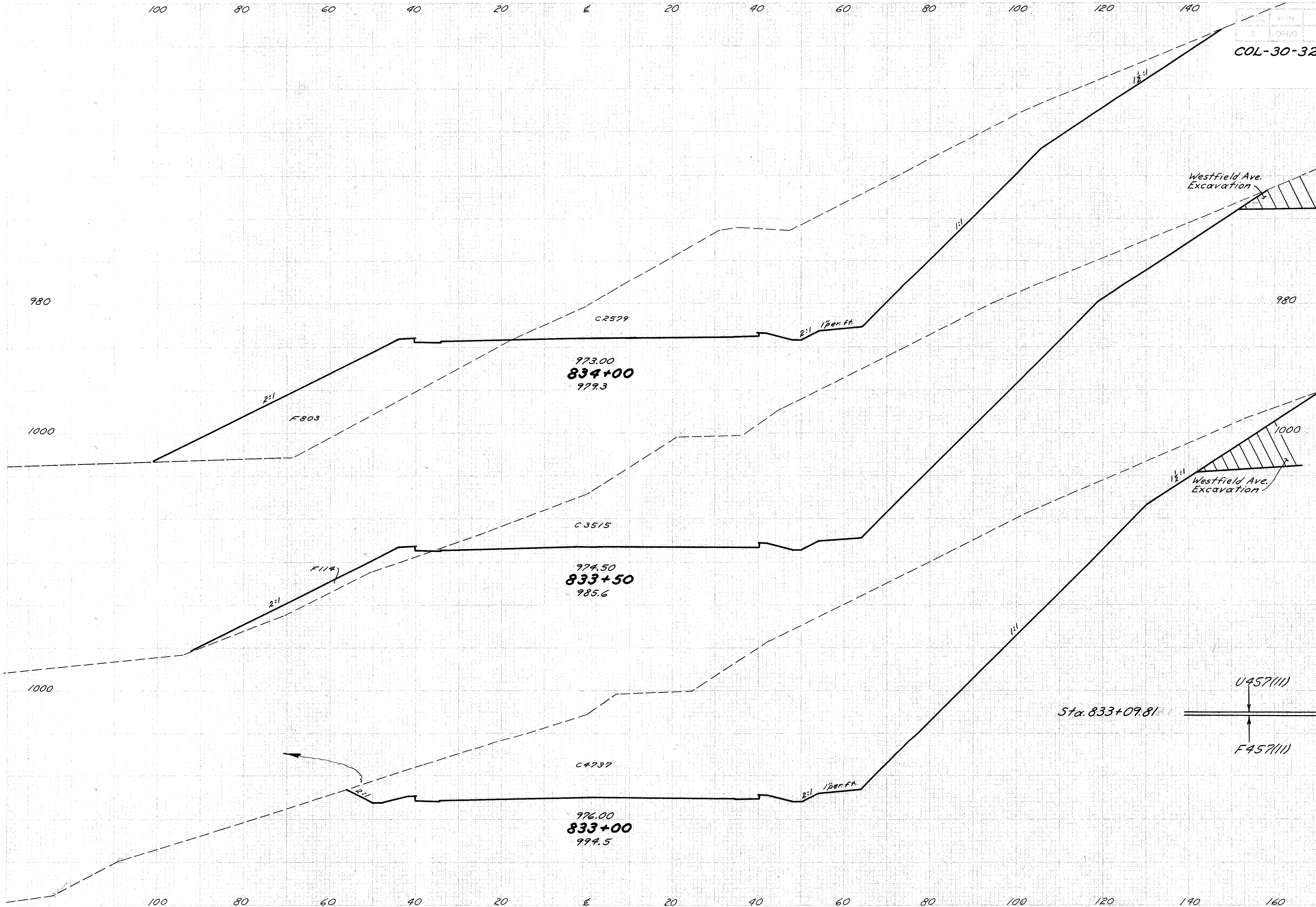
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
160		6192	0		
	875			11,892	0
155		6651	0		
	836			12,374	0

Sta 832+00 to Sta 832+50

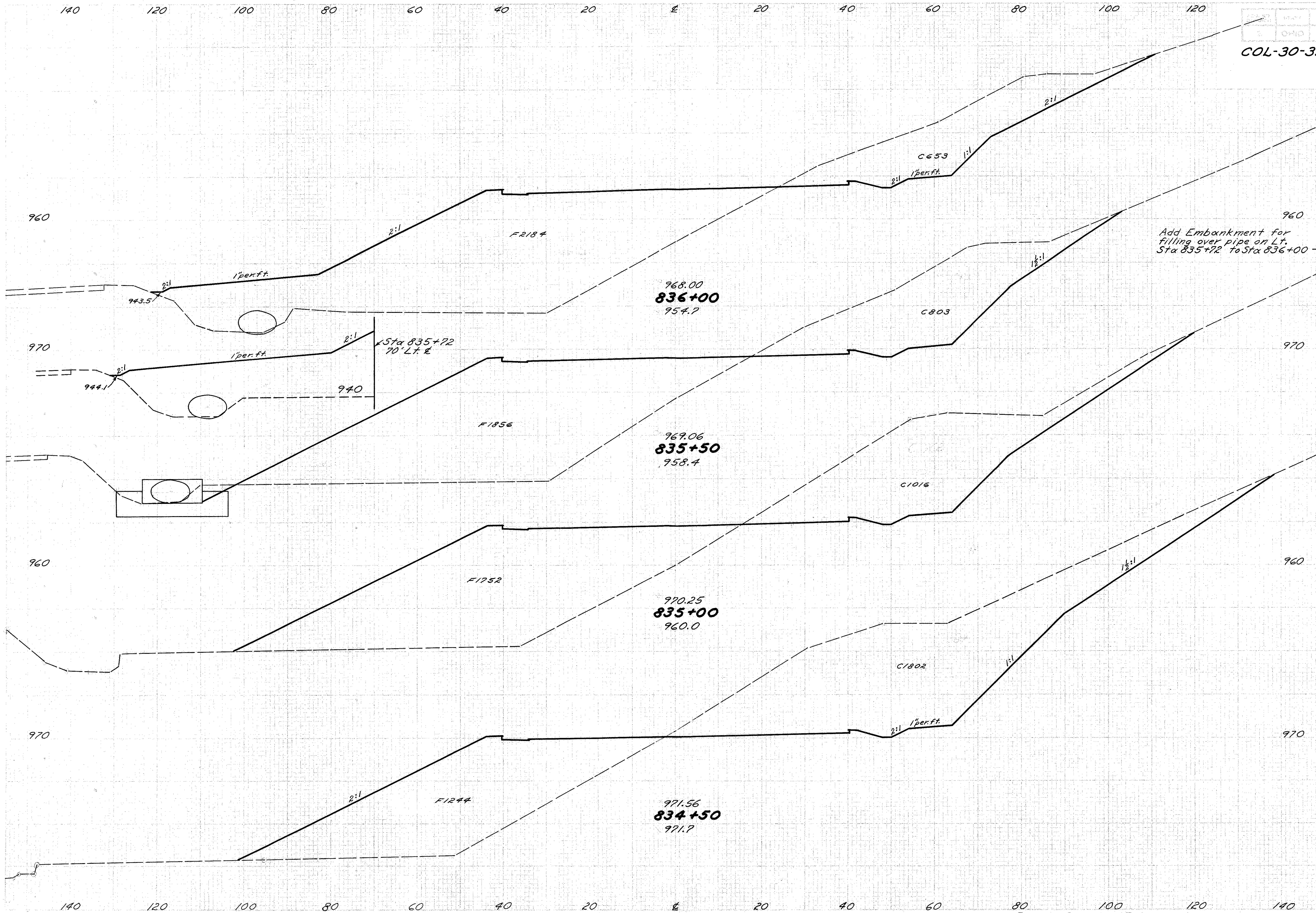
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
221		2579	803		
	1203			5643	849
212		3515	114		
	793			6142	85
	193			1499	21
143		4737	0		
	842			10,119	0

Sta 833+00 to Sta 834+00

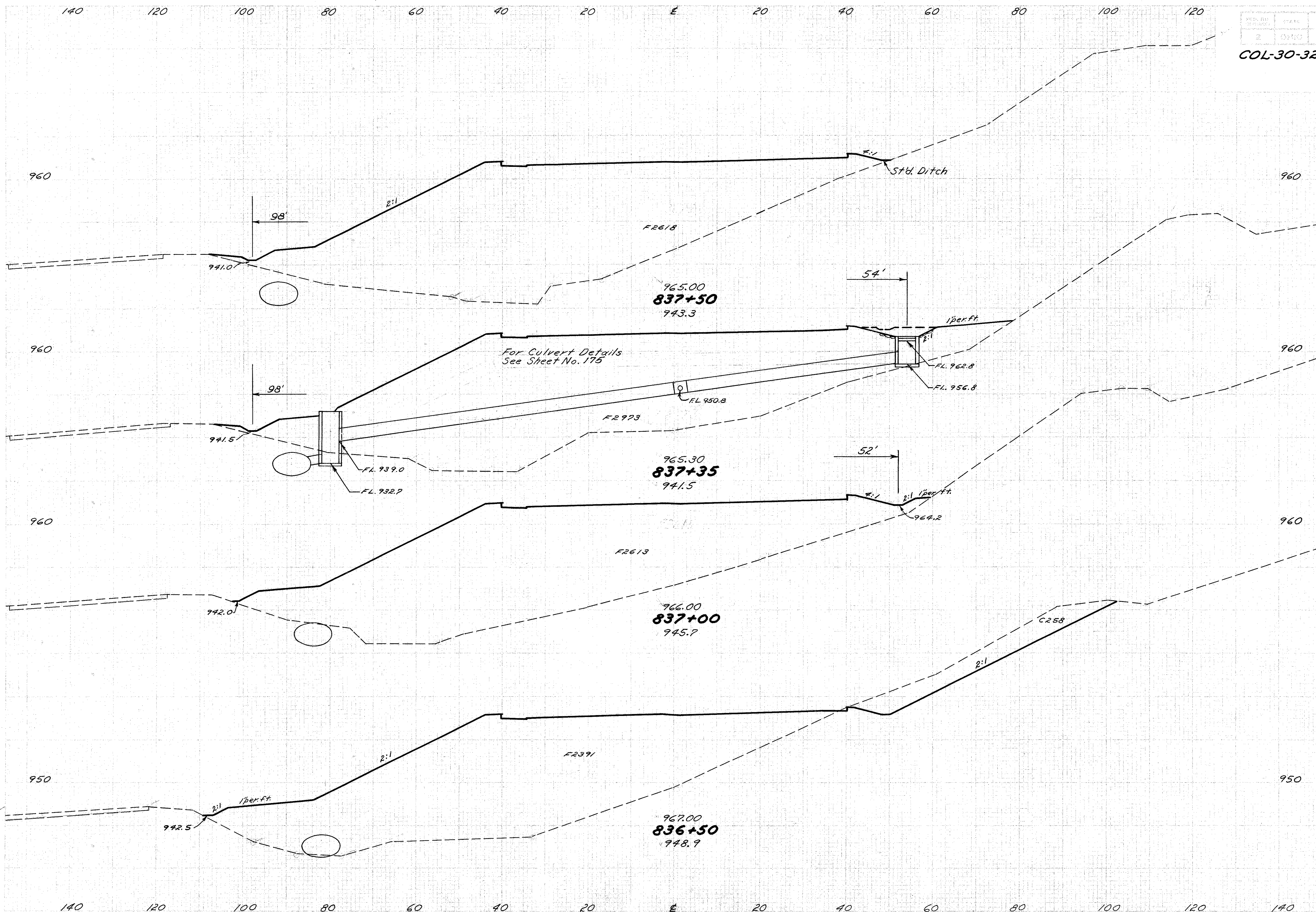
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
					225
186		653	2184		
	972			1348	3741
164		803	1856		
	967			1684	3341
184		1016	1752		
	1094			2609	2774
210		1802	1244		
	1197			4056	1895

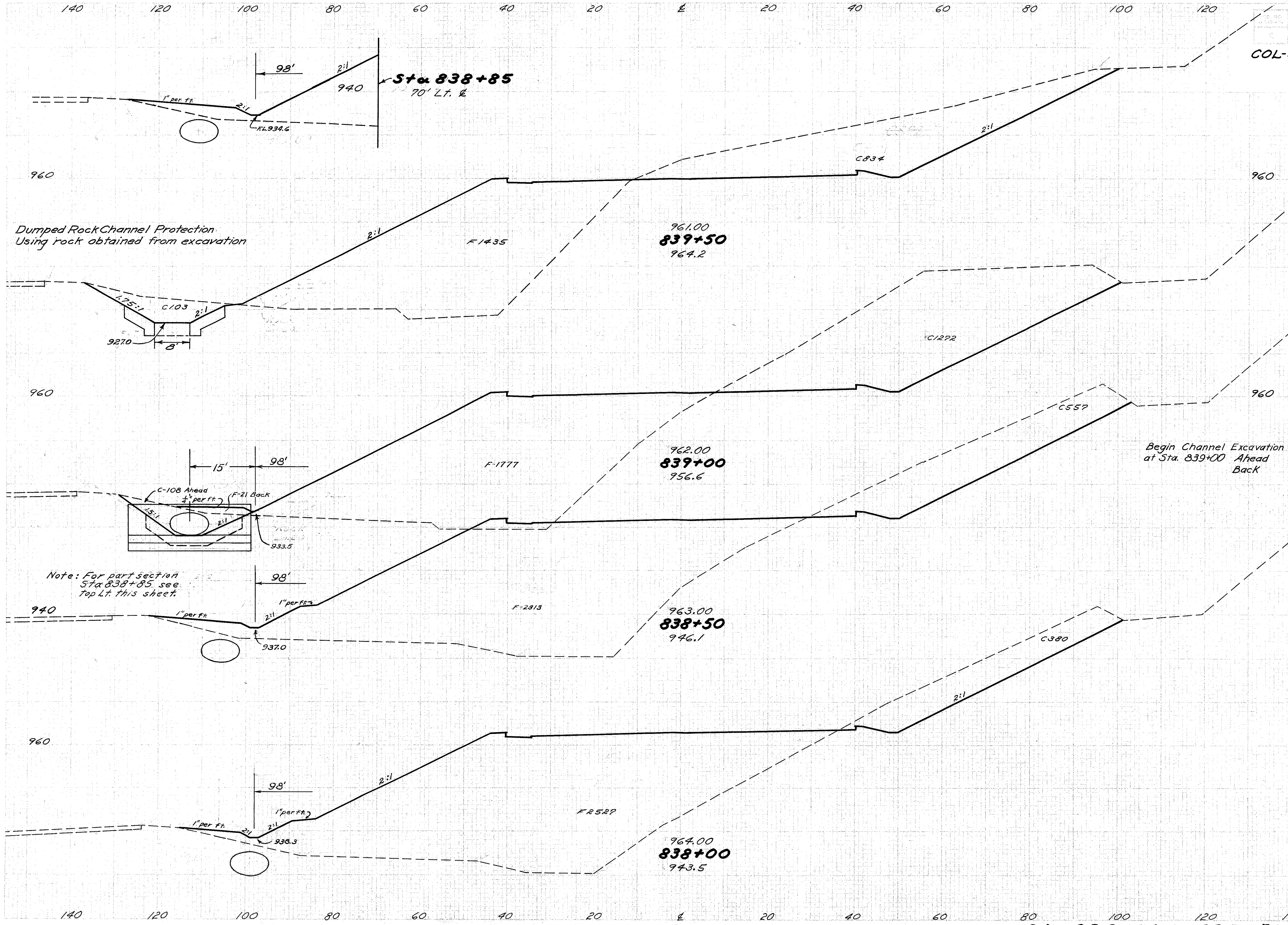
Sta 834+50 to Sta 836+00

COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
97		0	2618		
	186			0	1553
126		0	2973		
	457			0	3621
109		0	2613		
	758			239	4633
164		258	2391		
	972			844	4236

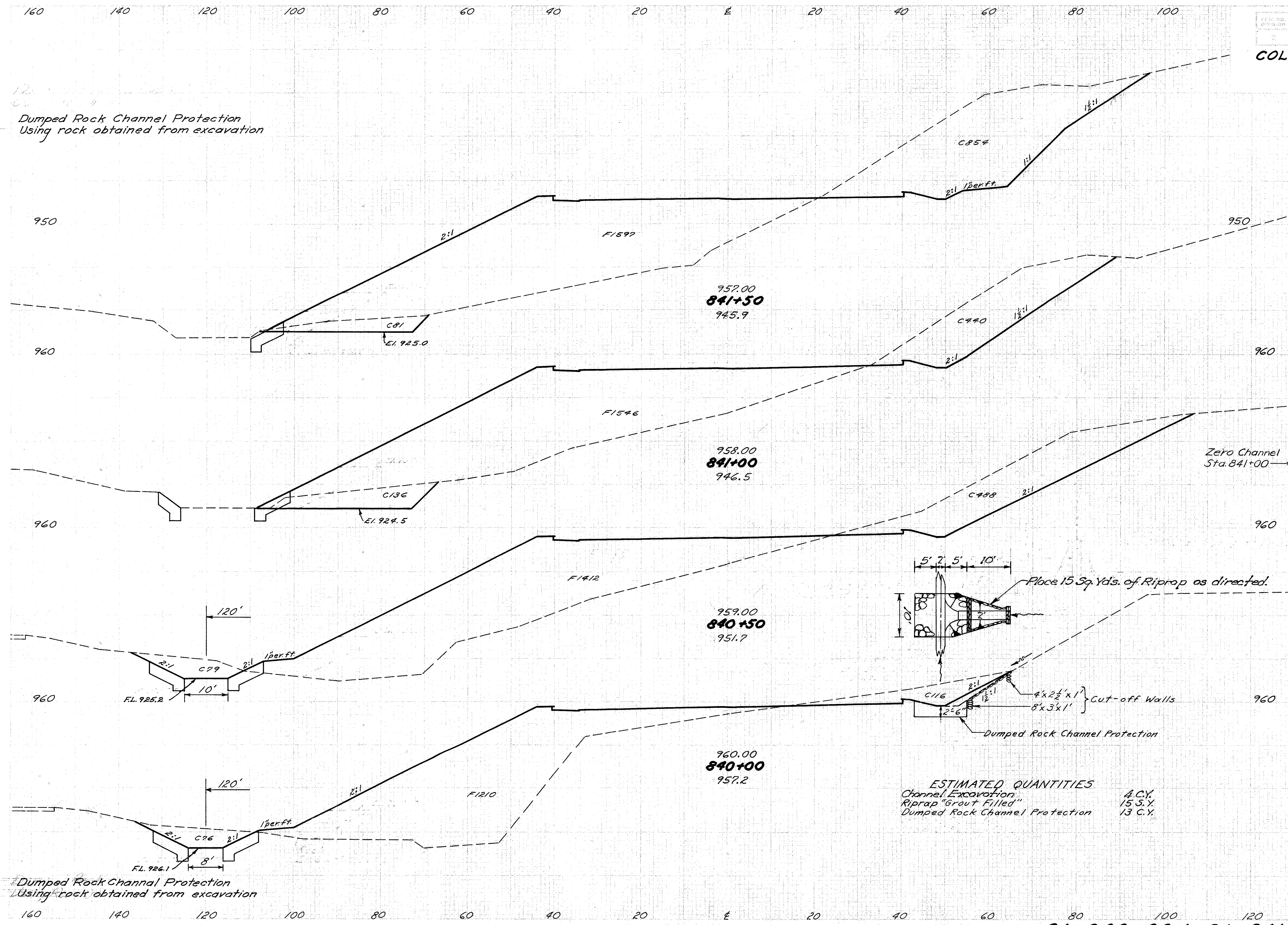
Sta 836+50 to Sta 837+50



Channel		Seeding		End Area		Cu.Yds.	
E.Area	Cu.Yds.	Width	S.Y.	Cut	Fill	Exc.	Emb.
103		176		834	1435		
	195		961			1950	2974
108		170		1272	1777		
0		170		1272	1798		
			958			1694	3806
		175		557	2313		
			950			868	4481
		167		380	2527		
			733			352	4764

Sta 838+00 to 839+50

COL-30-32.19



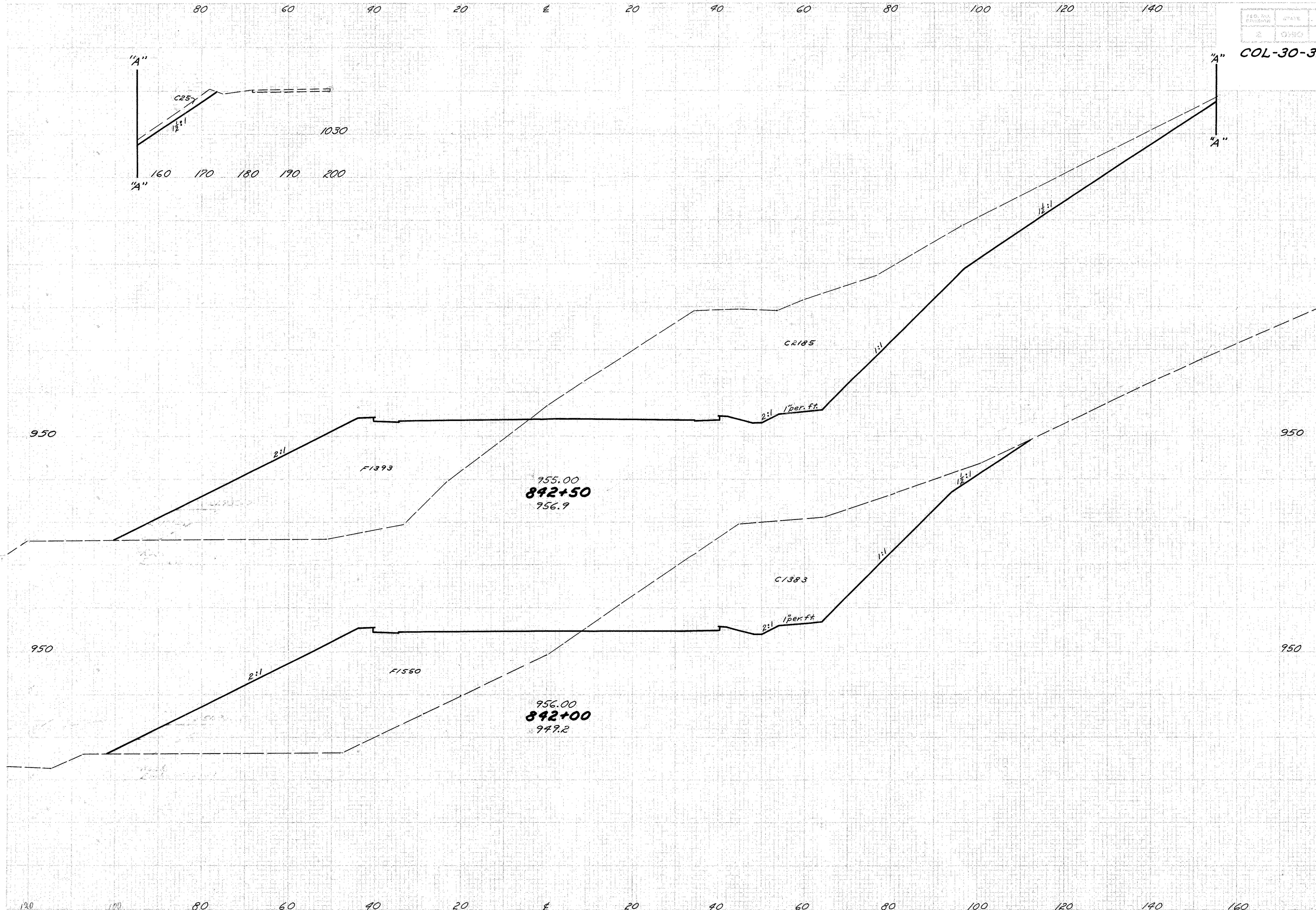
ESTIMATED QUANTITIES

Channel Excavation	4 C.Y.
Riprap "Grout Filled"	15 S.Y.
Dumped Rock Channel Protection	13 C.Y.

Channel E. Area	Channel Cu. Yds.	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb
		141		935	1597		
			753			1399	2910
0		130		576	1546		
	73		825			985	2739
79		167		488	1412		
	144		814			559	2428
76		126		116	1210		
	166		839			880	2449

Sta 840+00 to Sta 841+50

COL-30-32.19

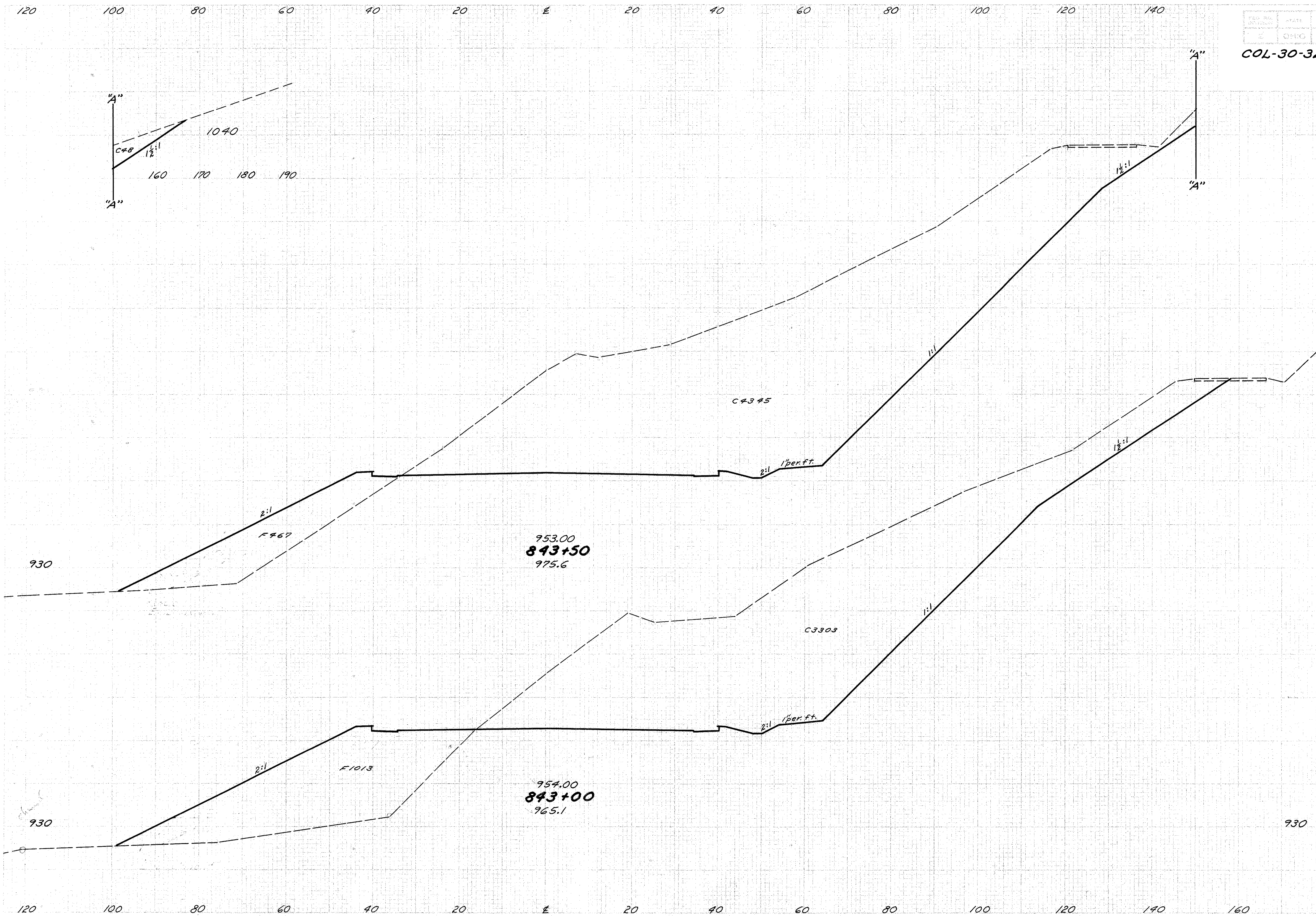


Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
235		2210	1393		
	1733			3327	2725
173		1383	1550		
	872			2146	2914

Sta 842+00 to 842+50

OHIO

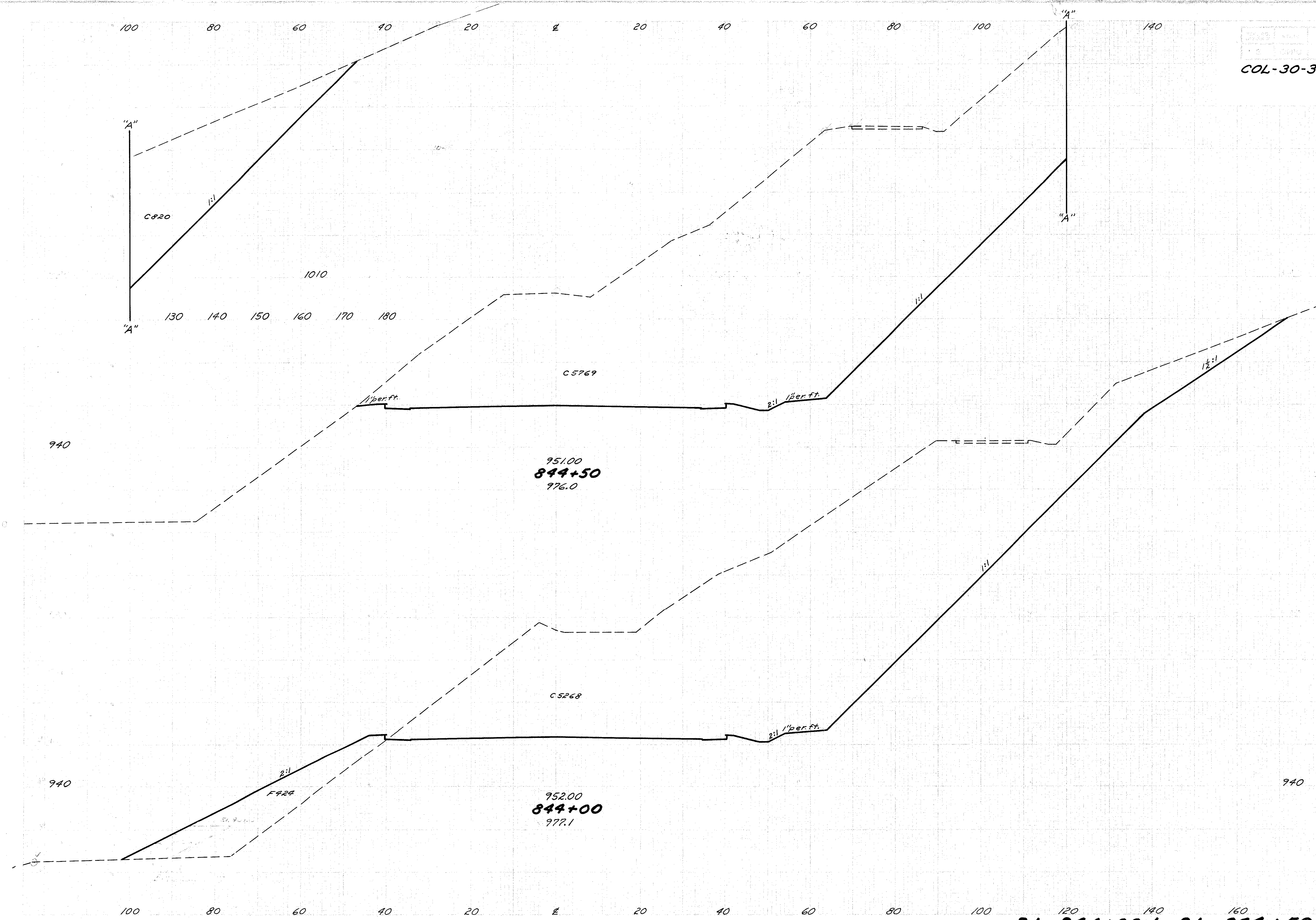
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu.Yds. Exc.	Cu.Yds. Emb.
231		4393	467		
	1244			7126	1370
217		3303	1013		
	1256			5105	2228

Sta 843+00 to Sta 843+50

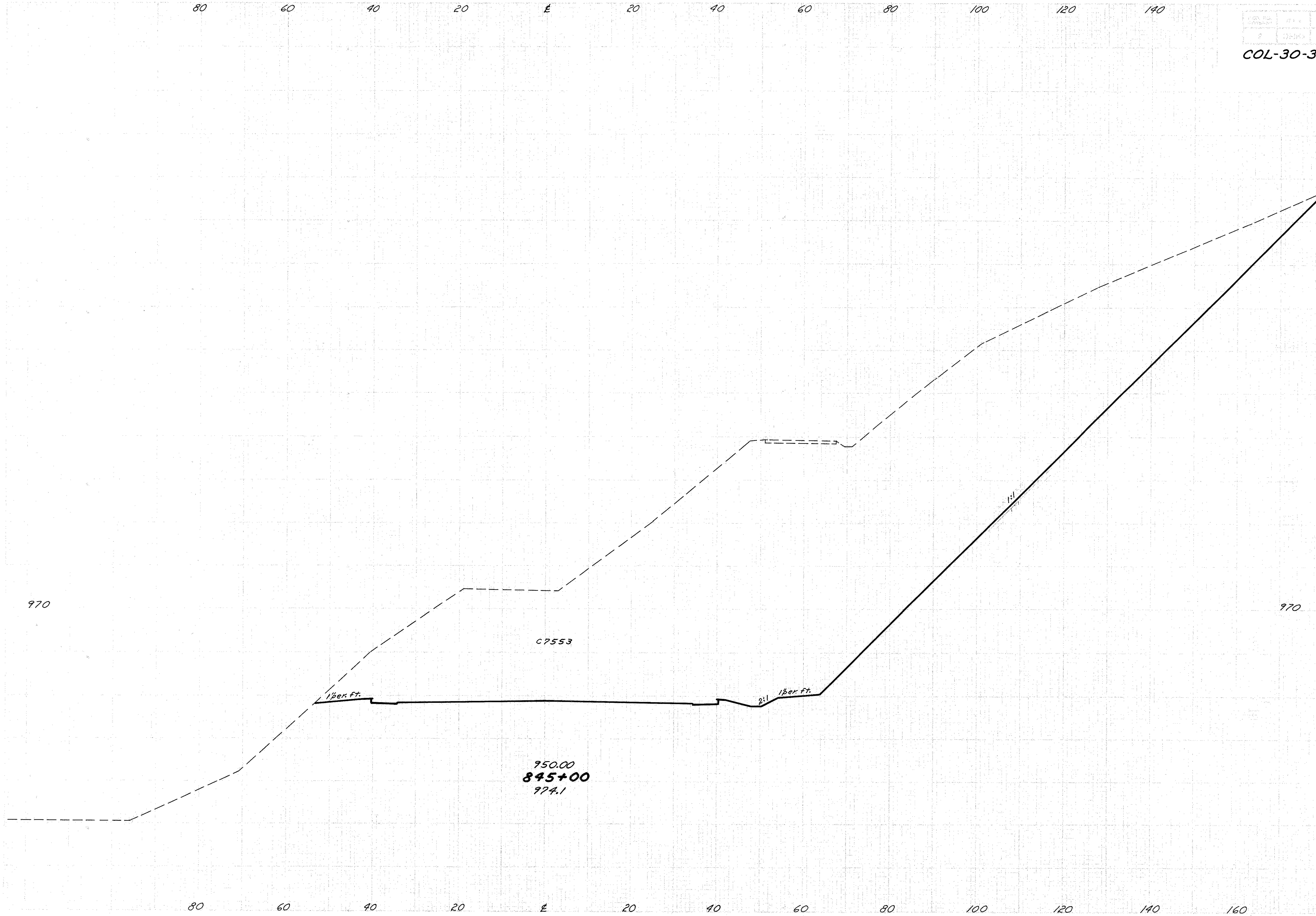
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
217		6589	0		
	1275			10,979	393
242		5268	424		
	1314			8945	825

Sta 844+00 to Sta 844+50

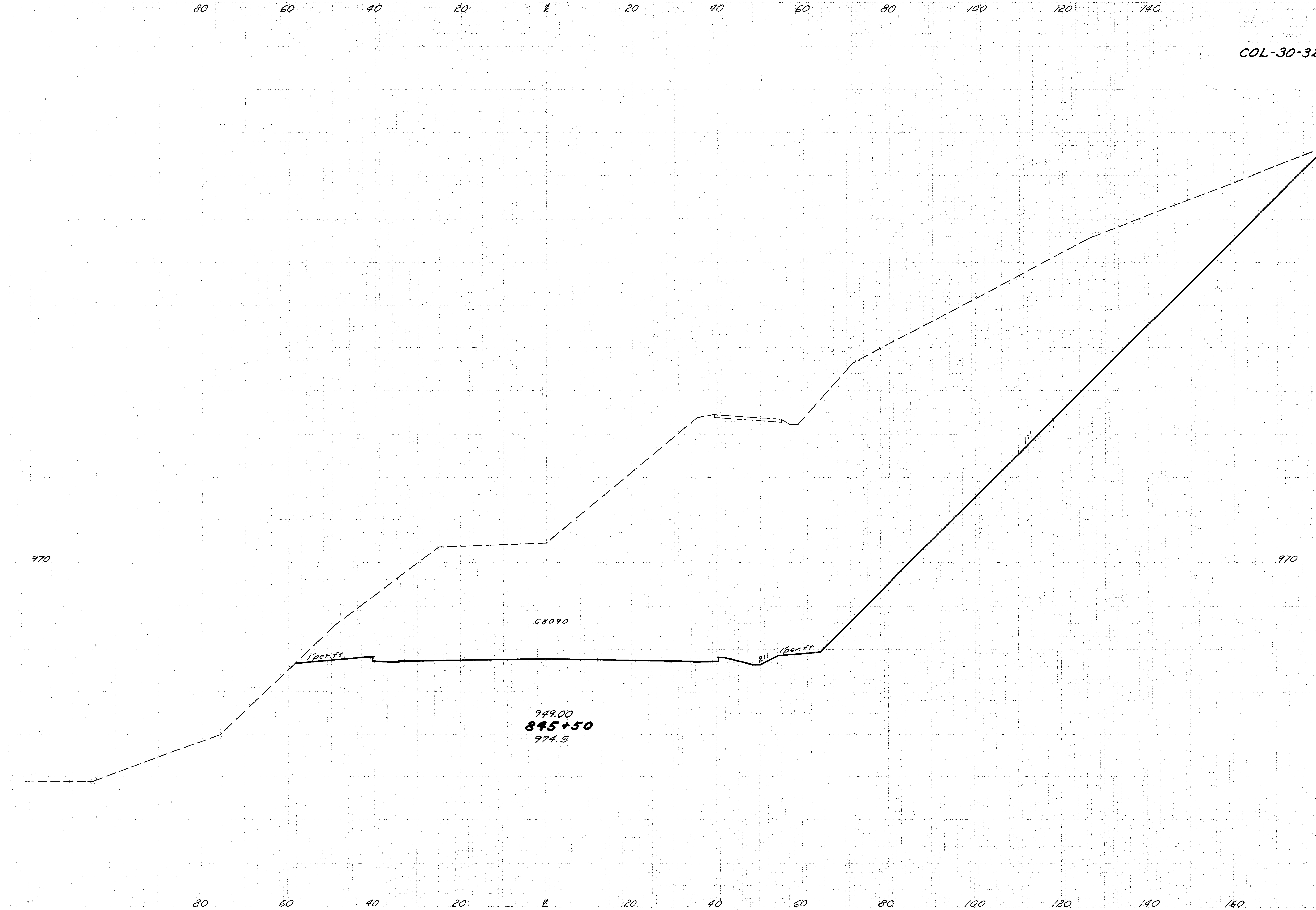
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
244		7553	0		
	1281			13,094	0

Sta 845+00

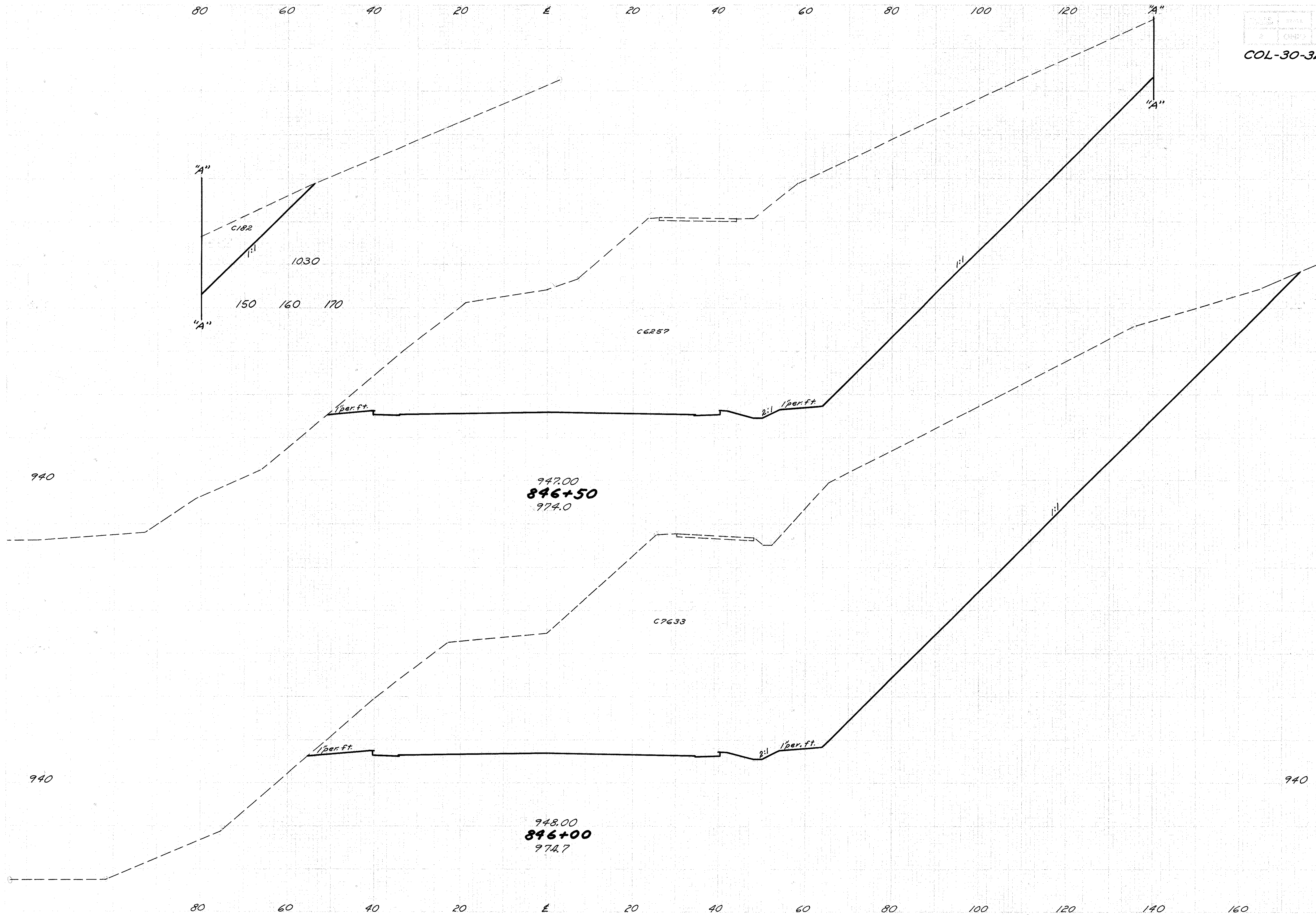
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
230		8090	0		
	1317			14,484	0

Sta 845+50

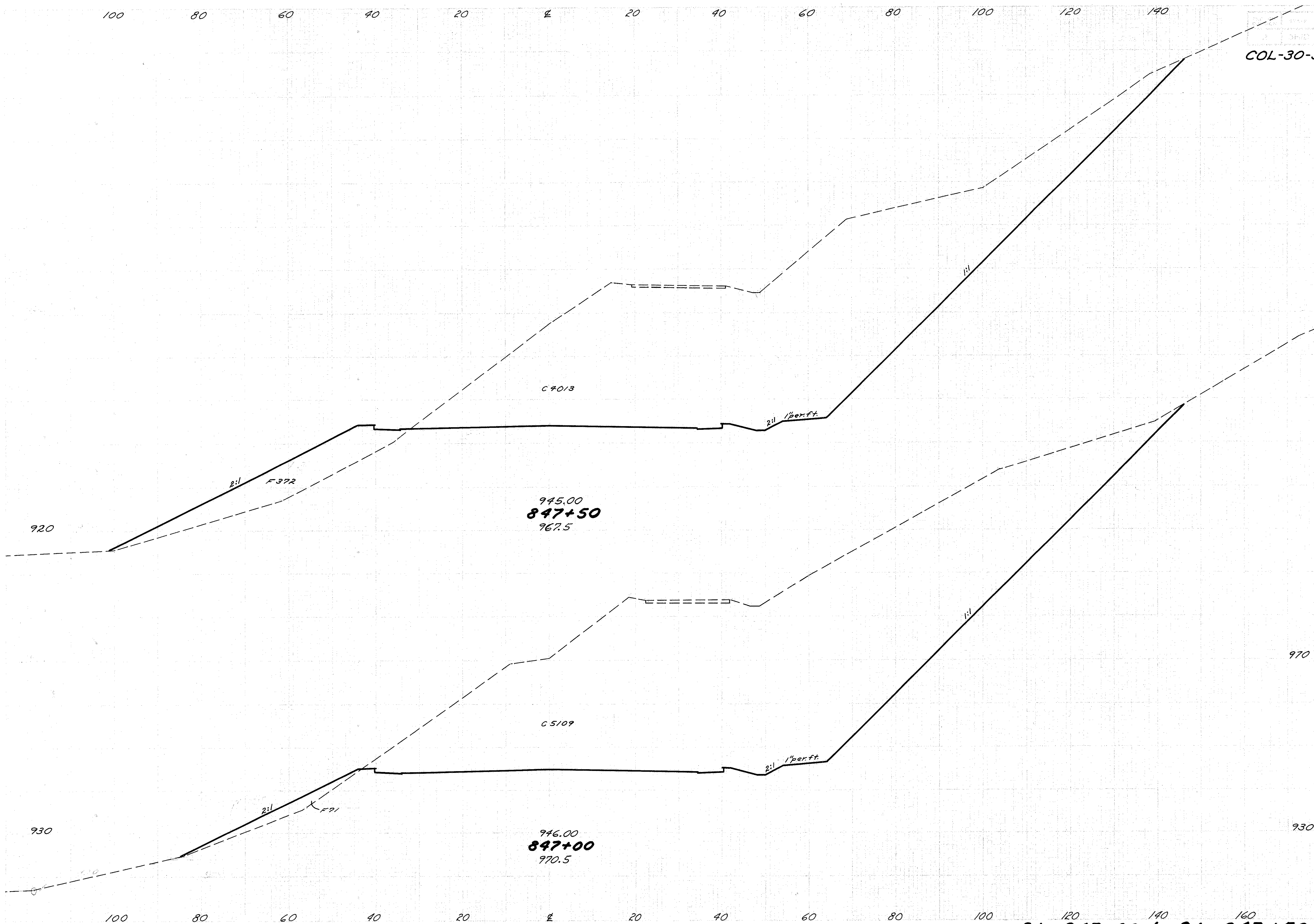
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
200		6439	0		
	1158			13,030	0
217		7633	0		
	1242			14,558	0

Sta 846+00 to Sta 846+50

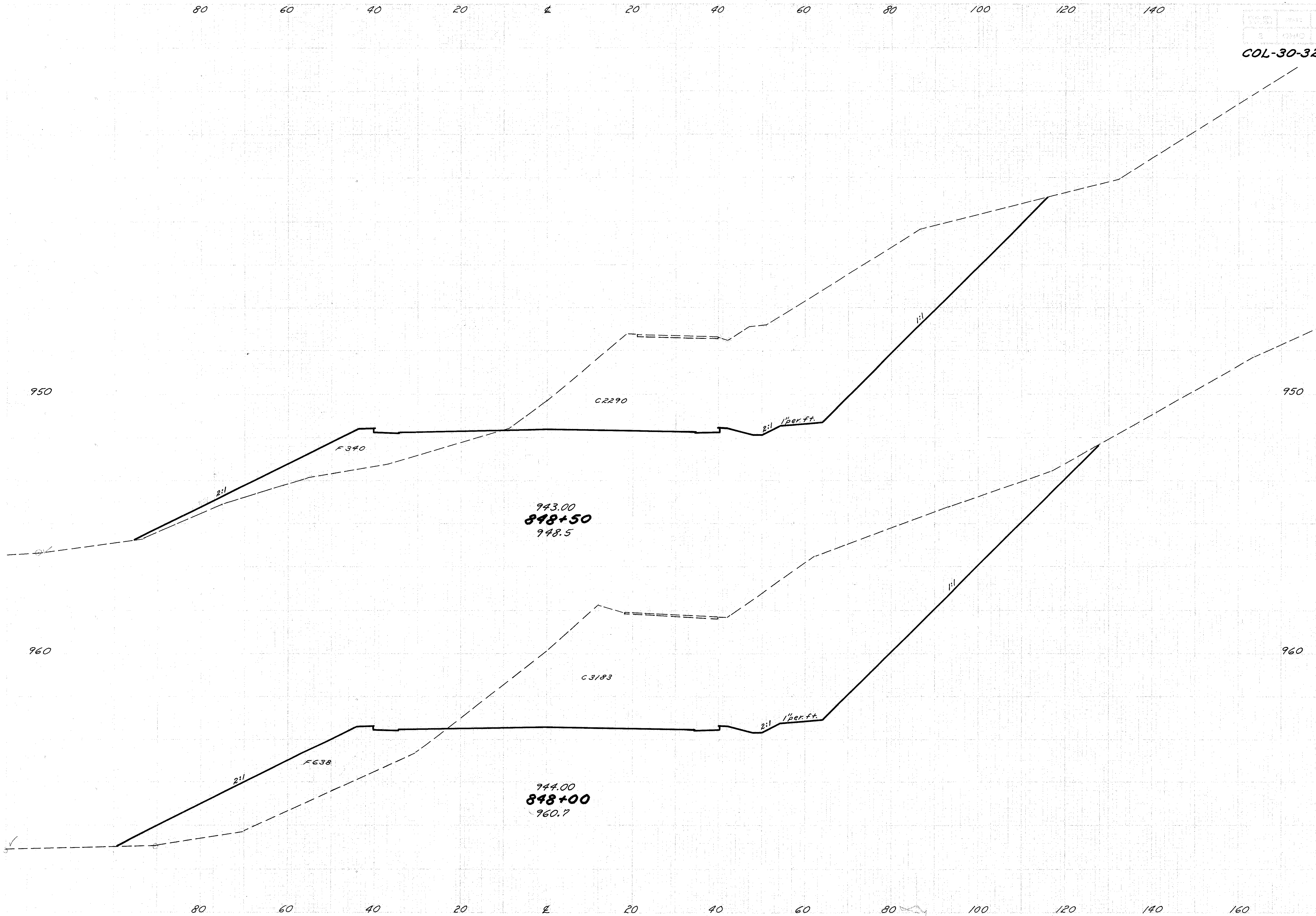
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
230		4013	372		
	1225			8446	410
211		5109	71		
	1142			10,693	66

Sta 847+00 to Sta 847+50

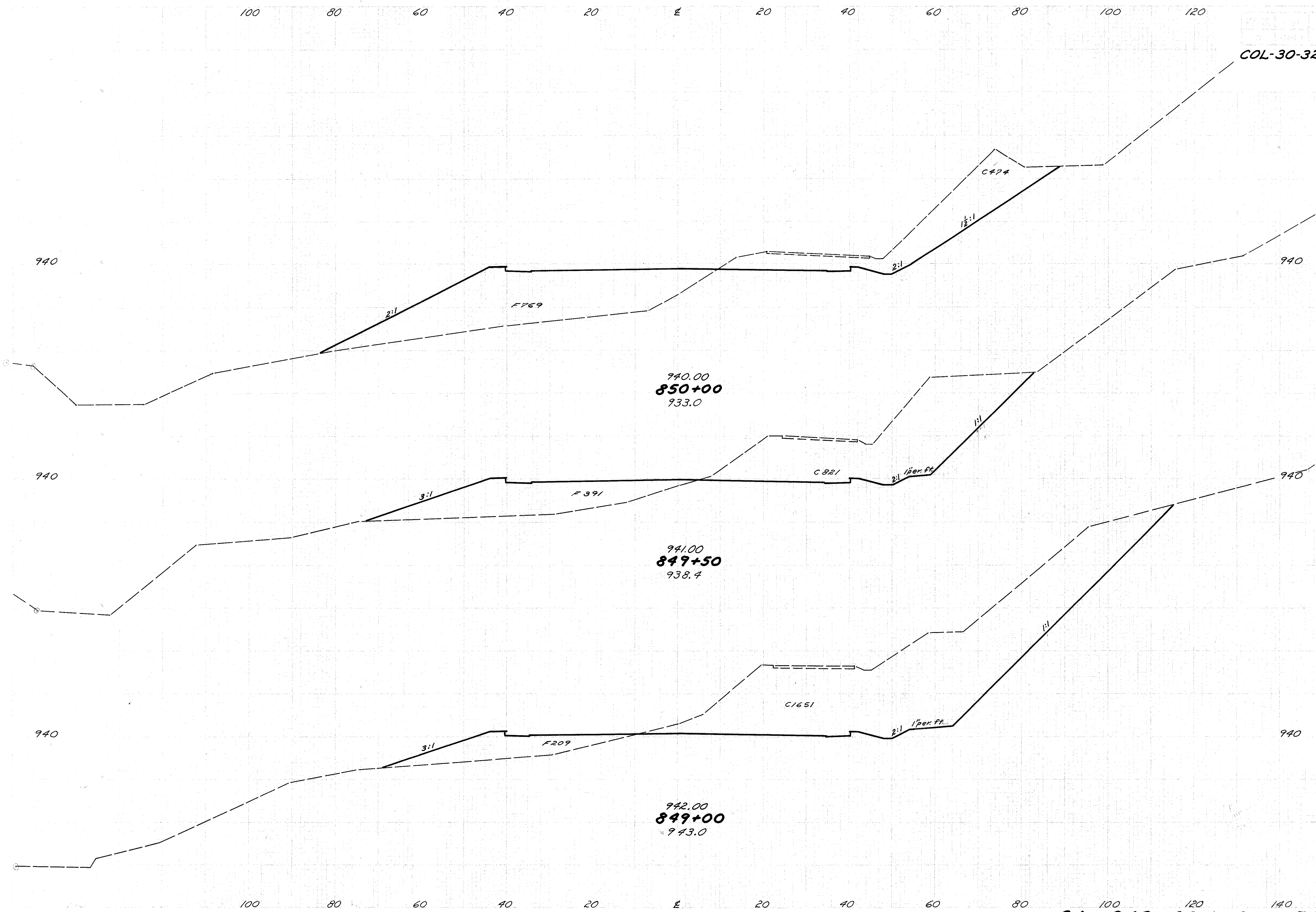
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
181		2290	340		
	1061			5068	906
201		3183	638		
	1197			6663	935

Sta 848+00 to Sta 848+50

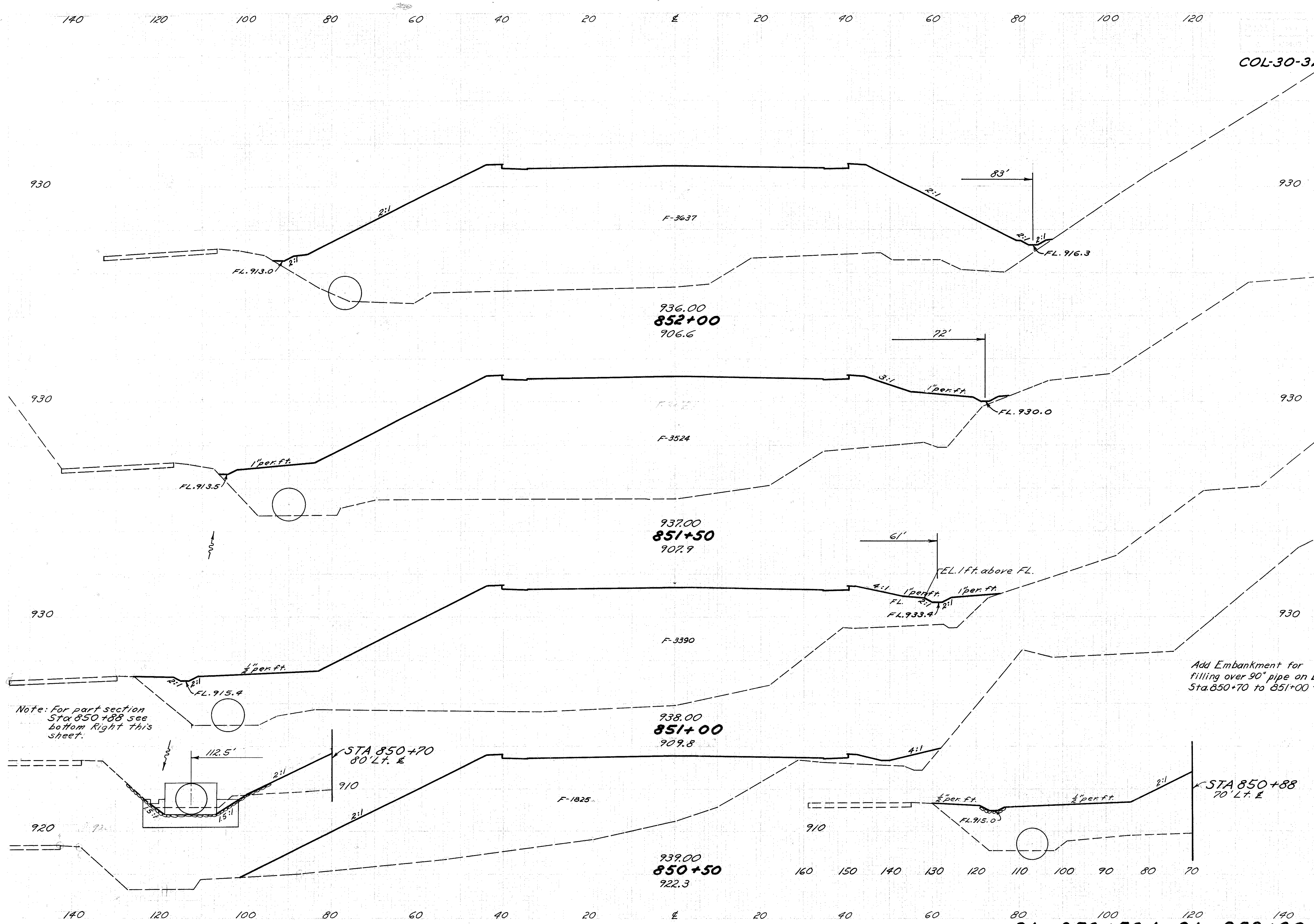
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
125		474	769		
	647			1199	1074
108		821	391		
	711			2289	556
148		1651	209		
	914			3649	508

Sta 849+00 to Sta 850+00

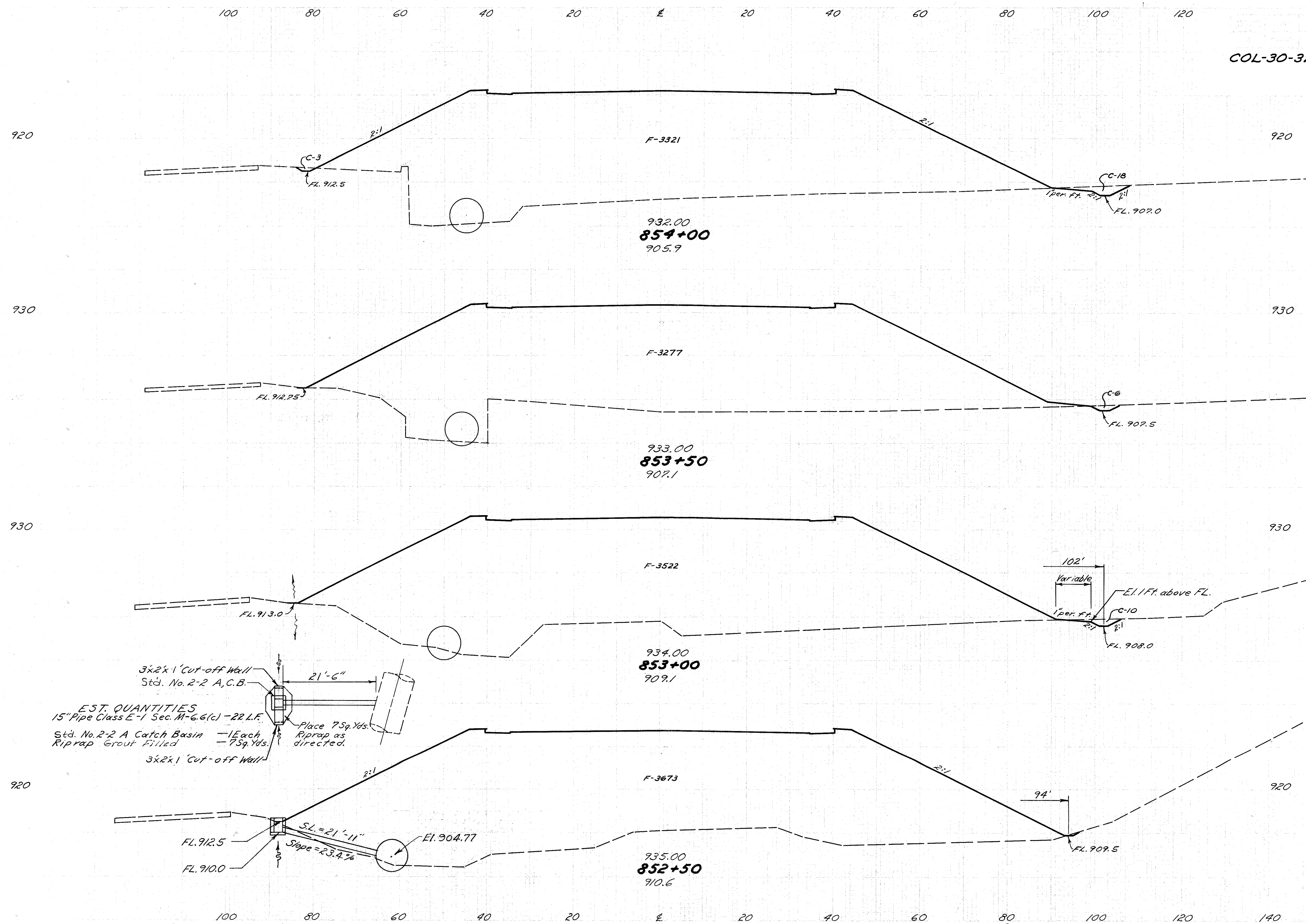
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
126		0	3637		
	697			0	6631
125		0	3524		
	733			0	6402
					70
139		0	3390		
	692			0	4829
110		0	1825		
	653			439	2402

Sta 850+50 to Sta 852+00

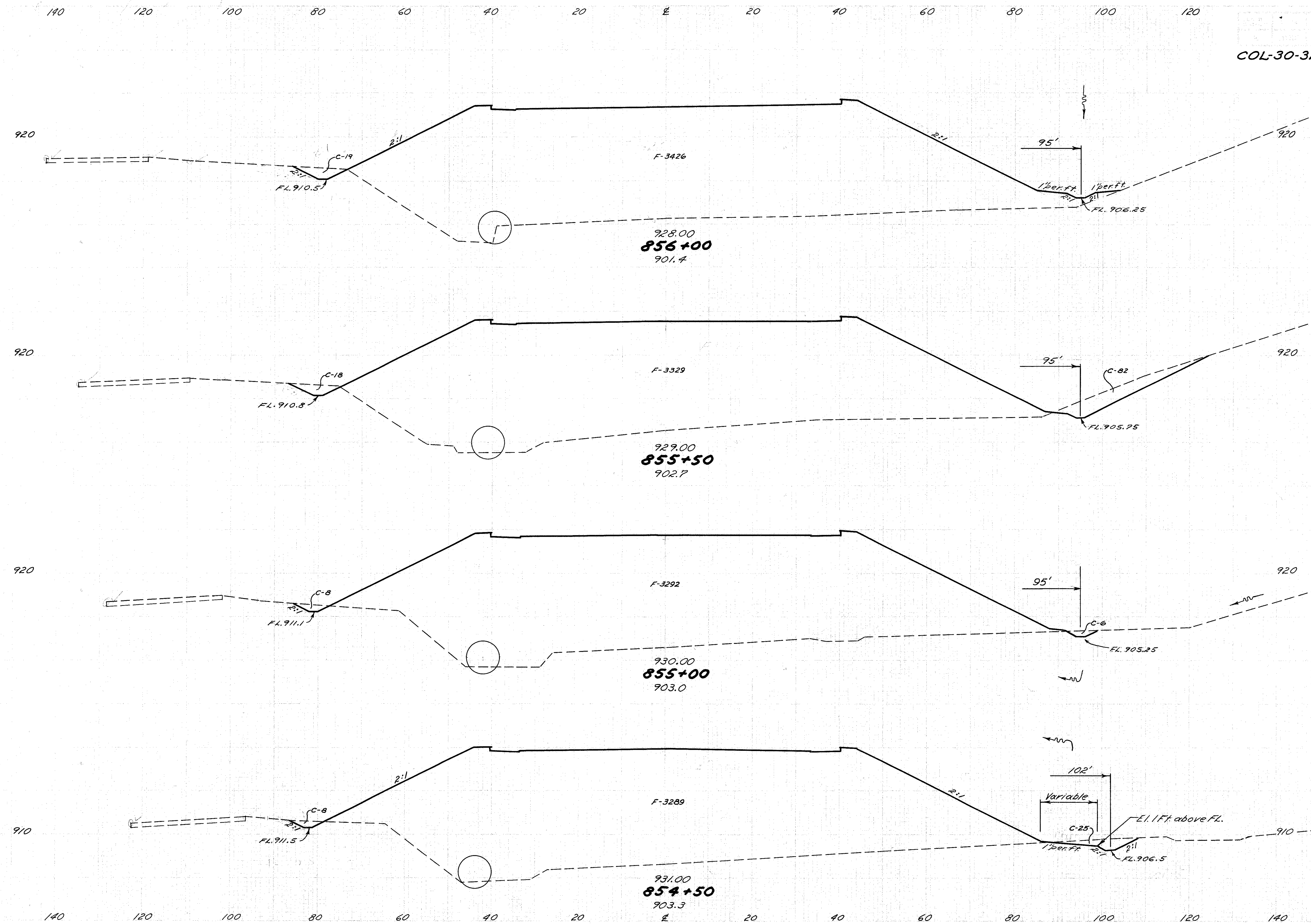
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
138		21	3321		
	756			25	6109
134		6	3277		
	753			15	6295
137		10	3522		
	744			9	6662
131		0	3673		
	714			0	6769

Sta 852+50 to 854+00

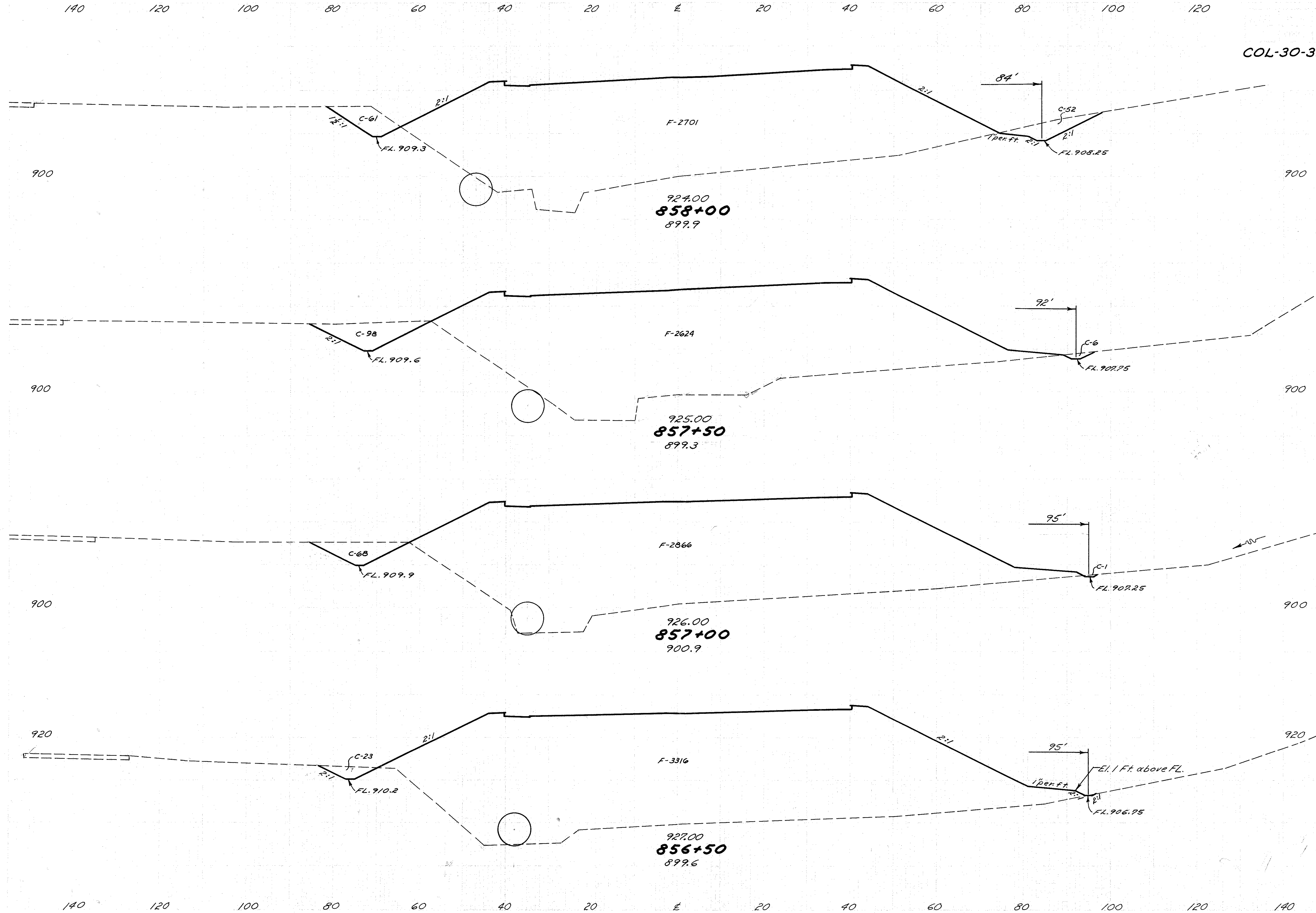
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
141		19	3426		
	850			110	6255
165		100	3329		
	844			106	6131
139		14	3292		
	778			44	6094
141		33	3289		
	775			50	6120

Sta 854+50 to Sta 856+00

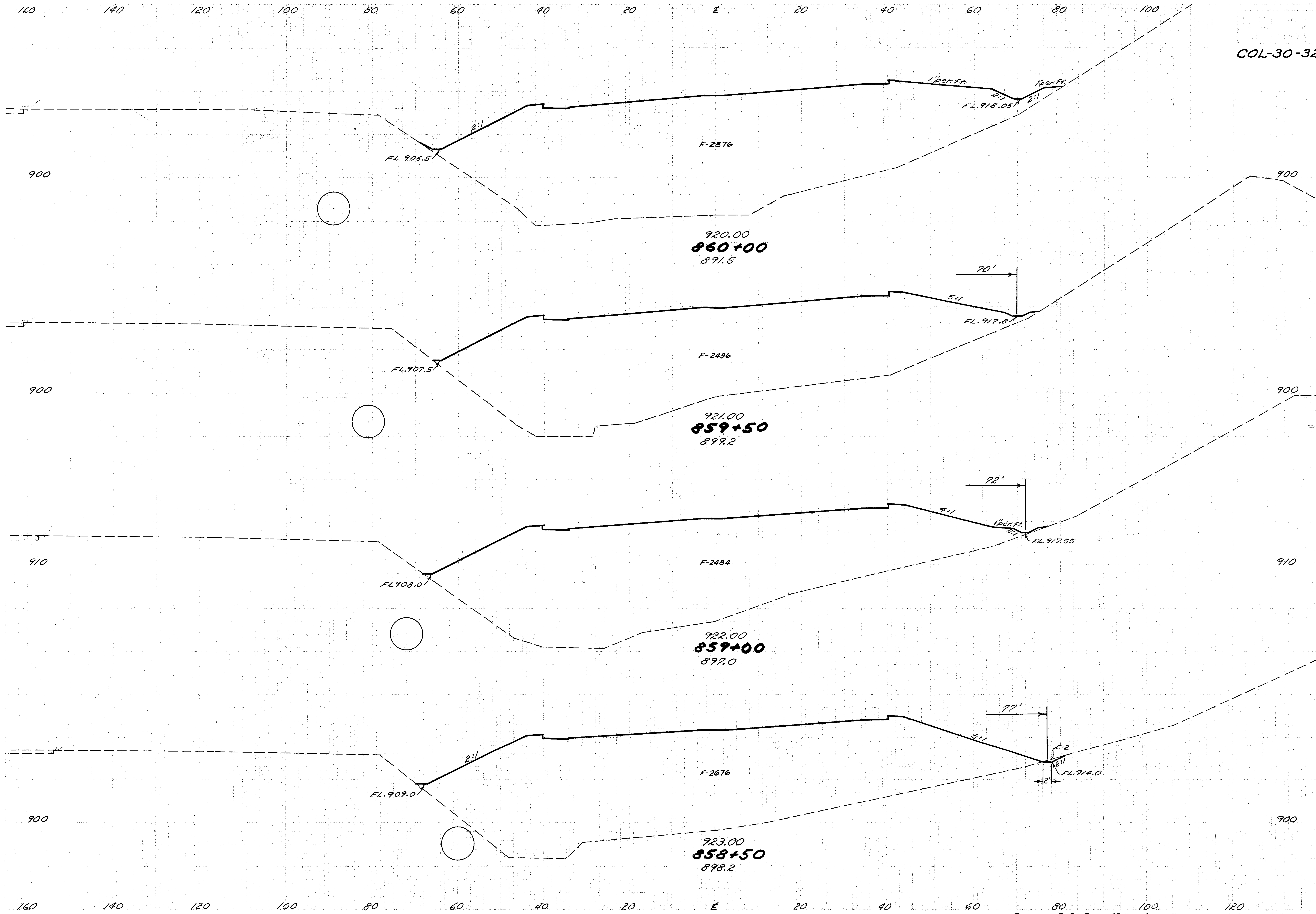
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
131		113	2701		
	728			201	4931
131		104	2624		
	733			160	5083
133		69	2866		
	731			85	5724
130		23	3316		
	753			39	6243

Sta 856+50 to Sta 858+00

COL-30-32.19



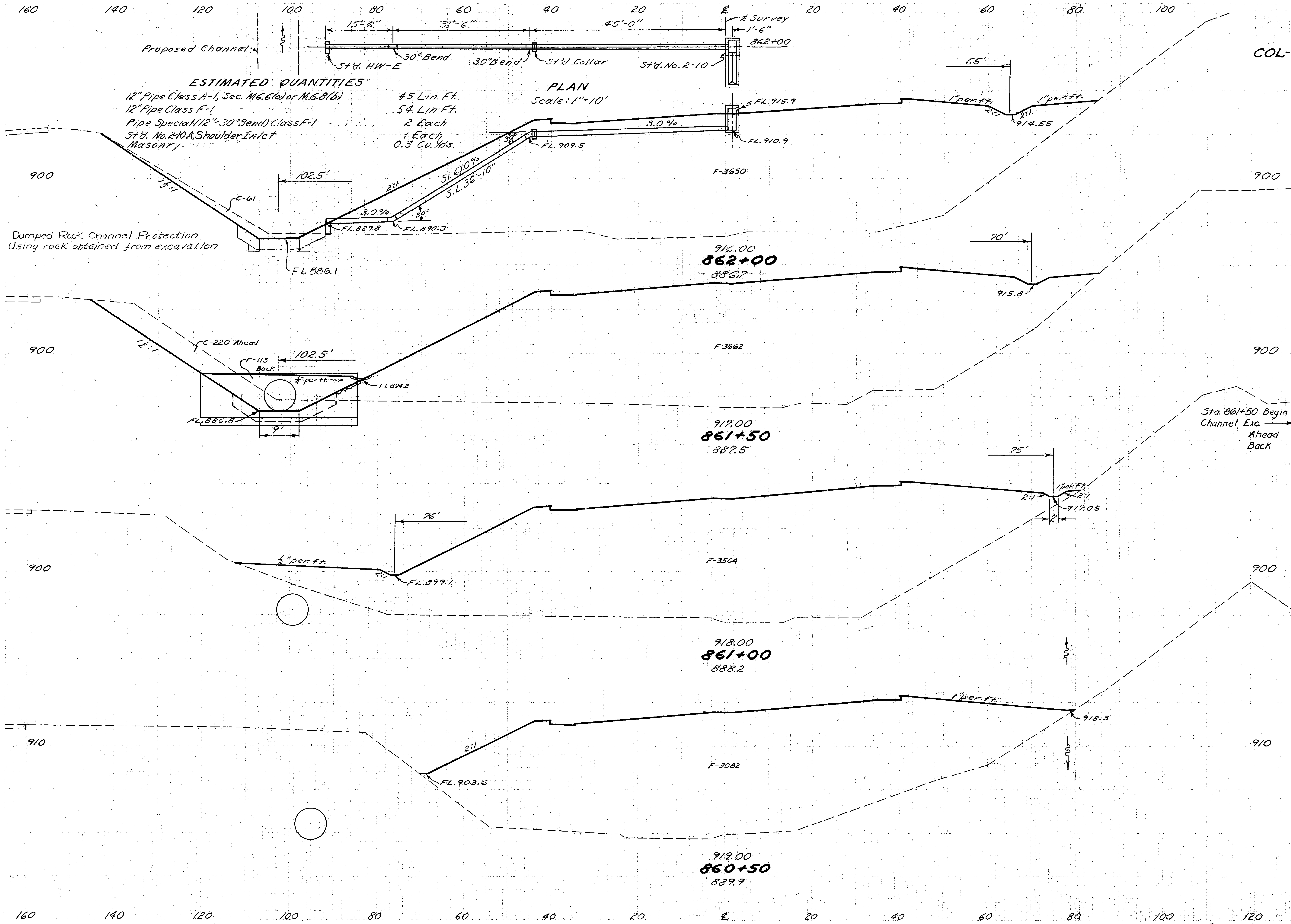
Seeding Width	S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
94		0	2876		
	494			0	4974
84		0	2496		
	483			0	4611
90		0	2484		
	517			2	4778
96		2	2676		
	631			106	4979

Sta 858+50 to Sta 860+00

COL-30-32.19

ESTIMATED QUANTITIES

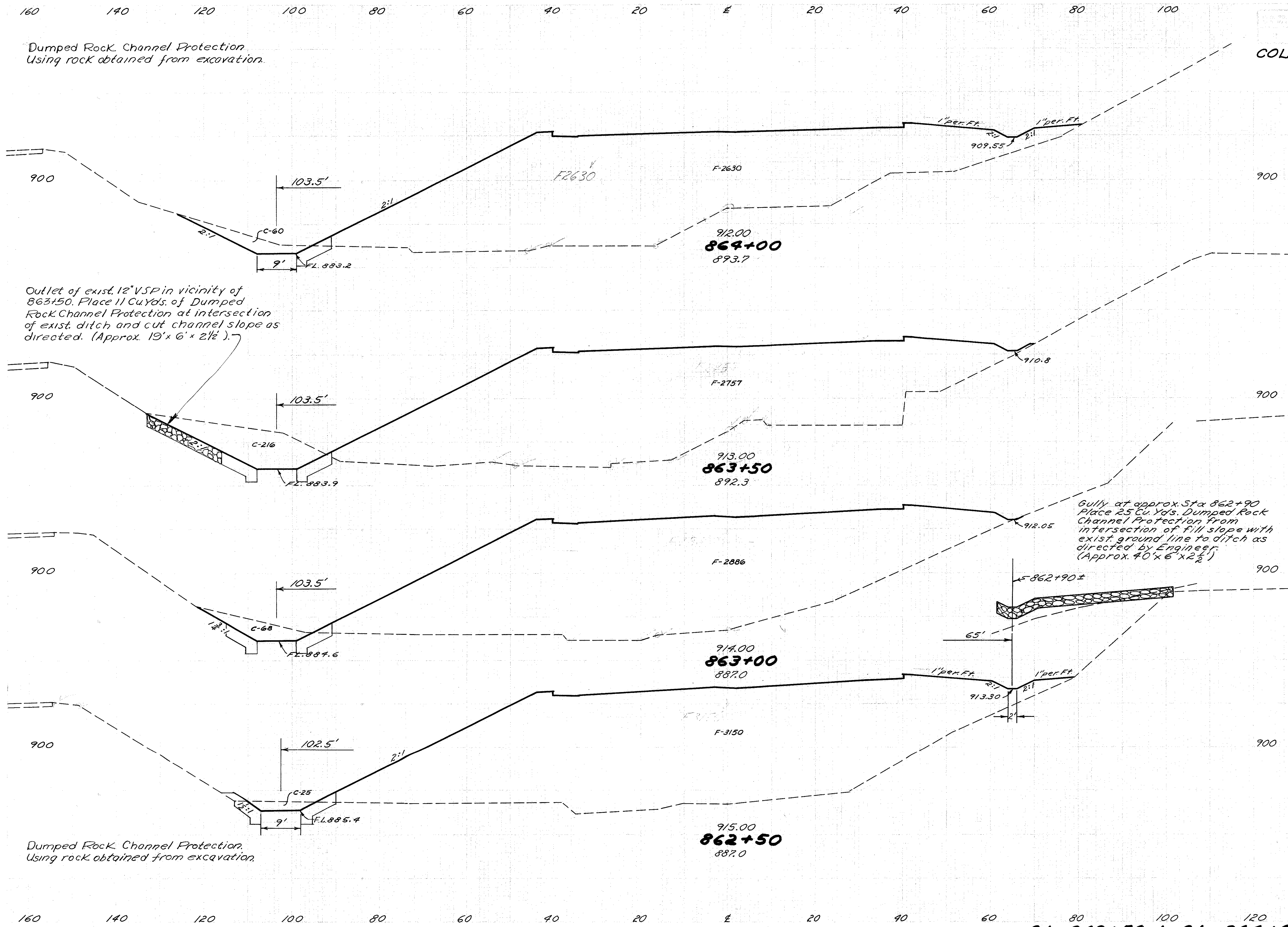
12" Pipe Class A-1, Sec. M6.6(a) or M6.8(b)	45 Lin. Ft.
12" Pipe Class F-1	54 Lin. Ft.
Pipe Special (12"-30° Bend) Class F-1	2 Each
St'd. No. 2-10A, Shoulder Inlet	1 Each
Masonry	0.3 Cu. Yds.



Station	Channel Area	Channel Cu. Yd.	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
862+00	61		162		0	3650		
		260		911			0	6770
861+50 (Sta. 861+50 Begin Channel Exc.)	220							
Ahead			166		0	3662		
Back			144		0	3775		
				783			0	6740
861+00			138		0	3504		
				642			0	6098
860+50			93		0	3082		
				519			0	5517

Sta 860+50 to 862+00

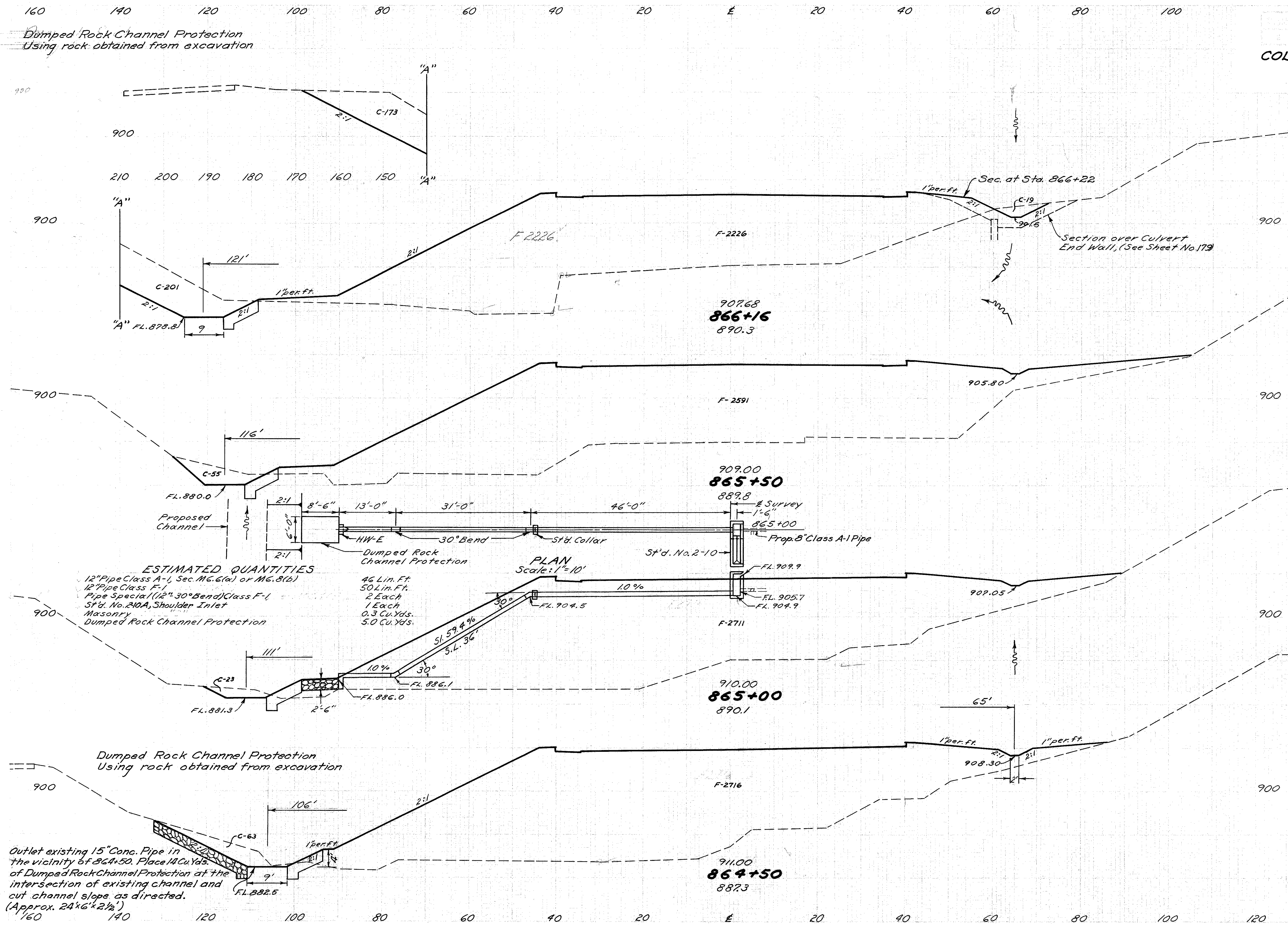
COL-30-32.19



Channel Area	Channel Cu. Yd.	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
60		140		0	2630		
	256		769			0	4988
216		137		0	2757		
	263		722			0	5225
68		123		0	2886		
	86		678			0	5589
25		121		0	3150		
	80		786			0	6296

Sta 862+50 to Sta 864+00

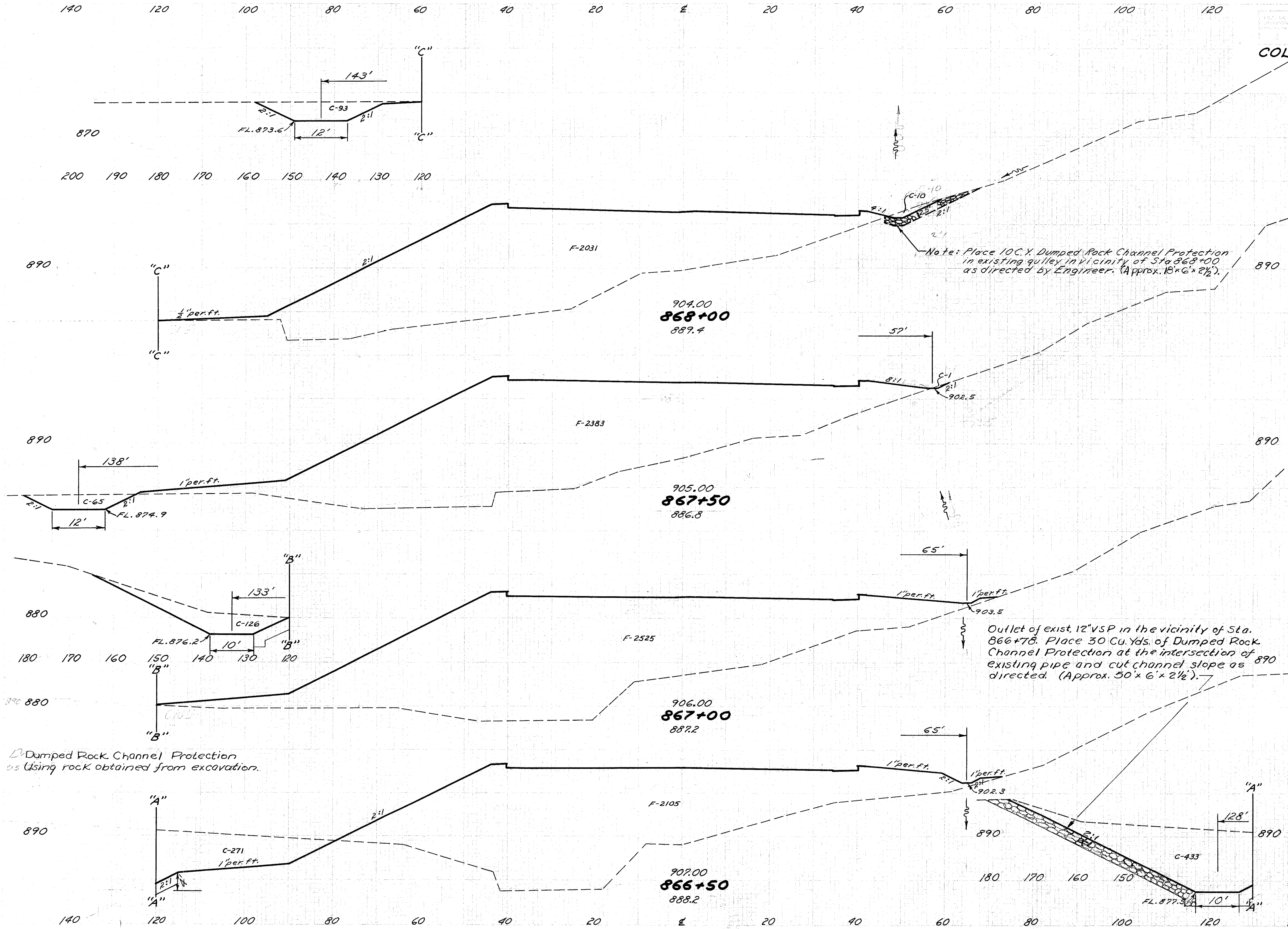
COL-30-32.19



Channel Area	Channel Cu. Yd.	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
374		175		19	2226		
	524		1250			23	5887
55		166		0	2591		
	72		850			0	4909
23		140		0	2711		
	80		808			0	5025
63		151		0	2716		
	114		808			0	4950

Sta 864+50 to Sta 866+16

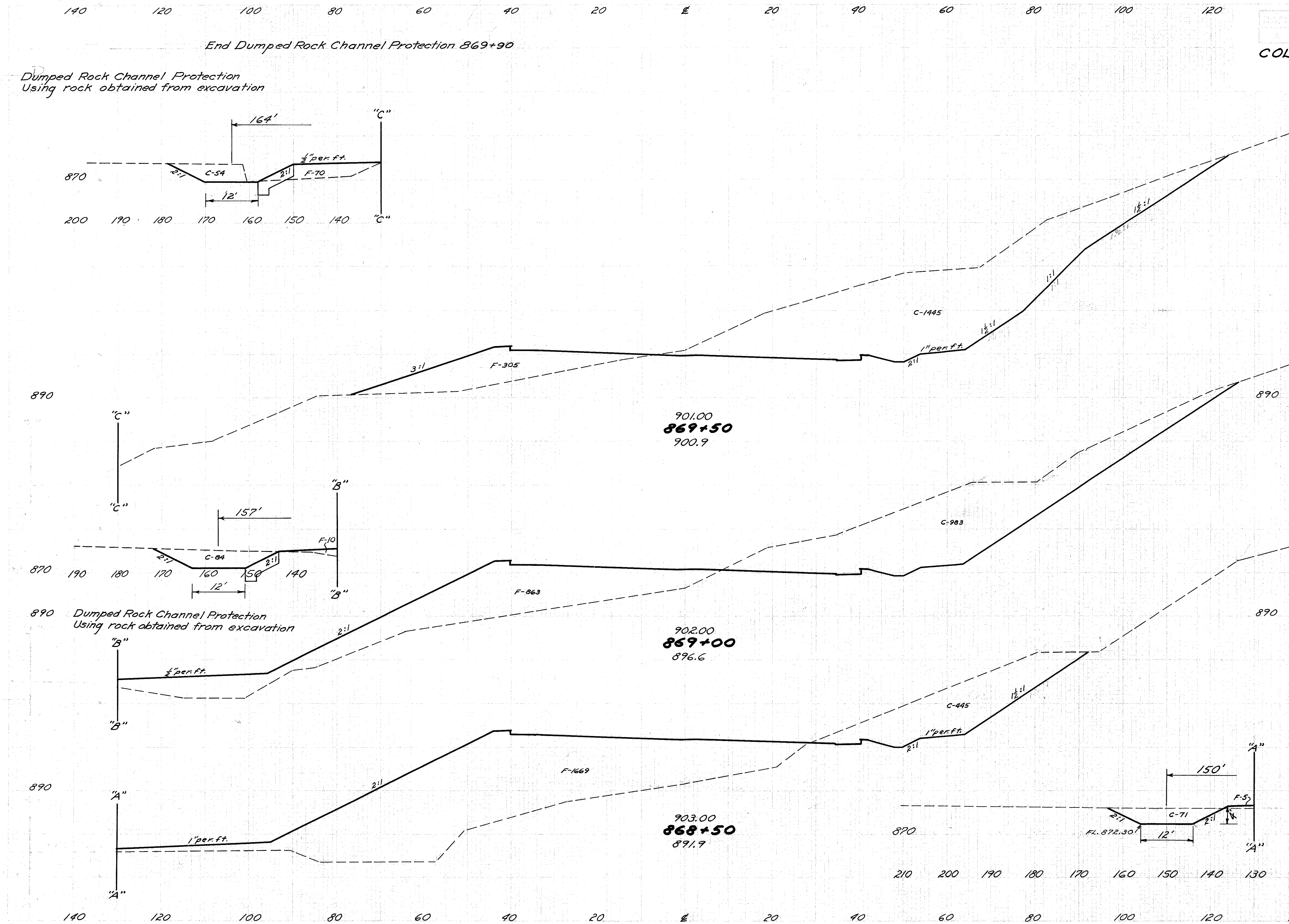
COL-30-32.19



Channel Area	Channel Cu. Yd.	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
93		146		10	2031		
	146		792			10	4087
65		139		1	2383		
	177		856			1	4544
126		169		0	2525		
	769		981			0	4287
704		184		0	2105		
	679		678			12	2727

Sta 866+50 to Sta 868+00

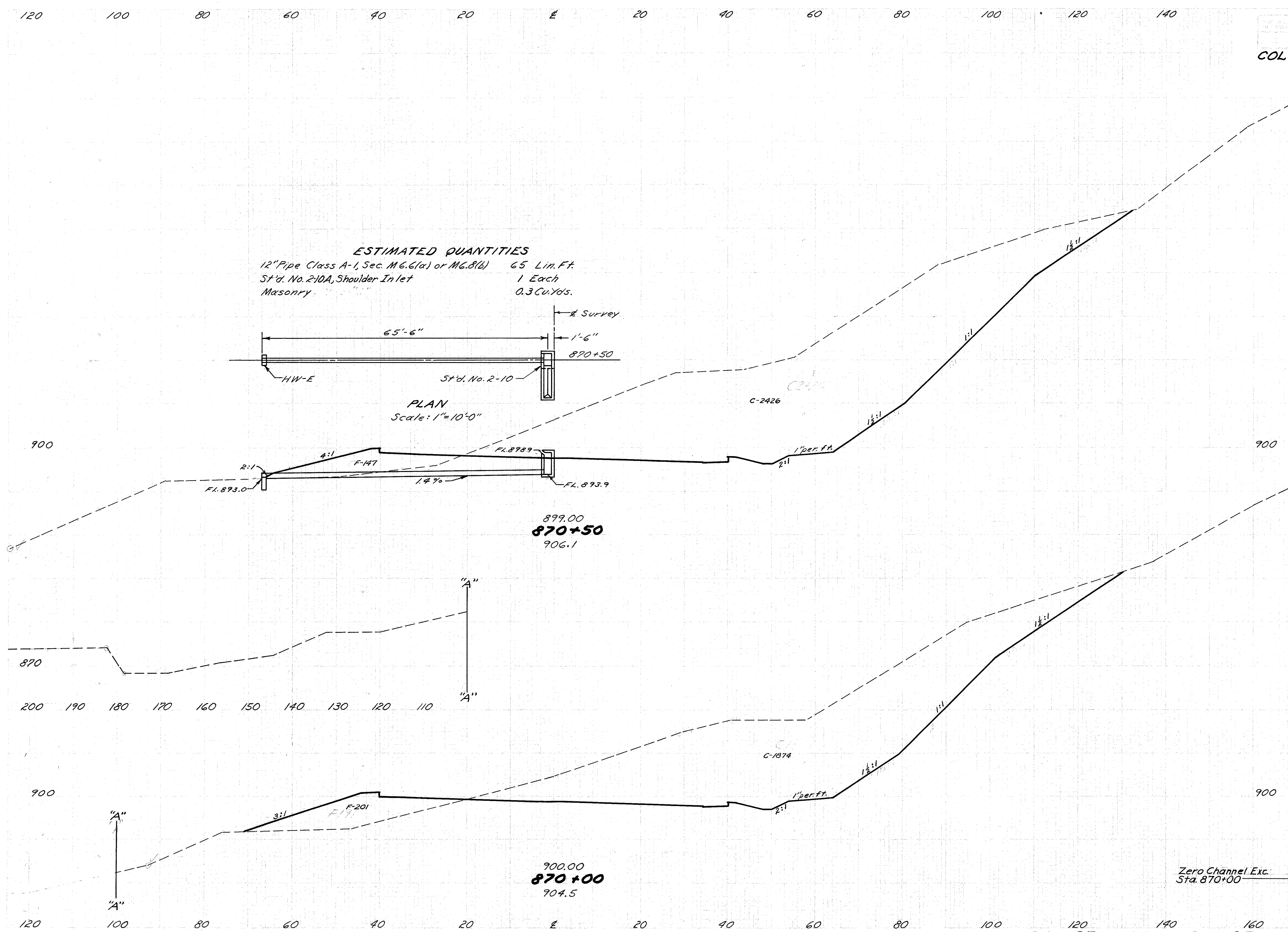
COL-30-32.19



Channel Area	Channel Cu.Yd.	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
54		209		1445	375		
	128		1247			2248	1156
84		240		983	873		
	144		1194			1322	2358
71		190		445	1674		
	152		933			421	3431

Sta 868+50 to Sta 869+50

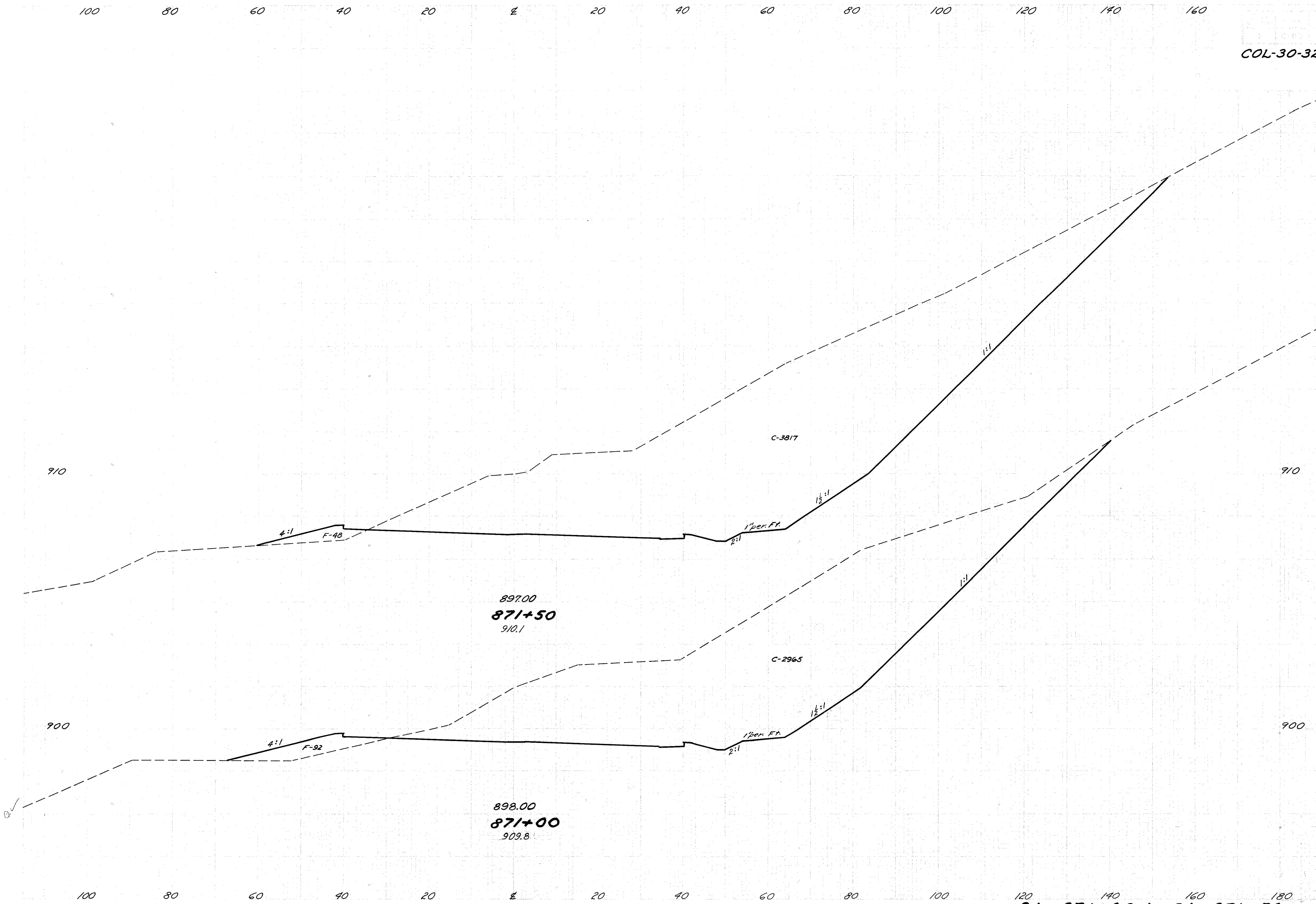
COL-30-32.19



Channel		Seeding		End Area		Cu. Yds.	
Area	Cu. Yd.	Width	S.Y.	Cut	Fill	Exc.	Emb.
		162		2426	147		
			897			3981	322
0		161		1874	201		
	50		1028			3073	533

Sta 870+00 to Sta 870+50

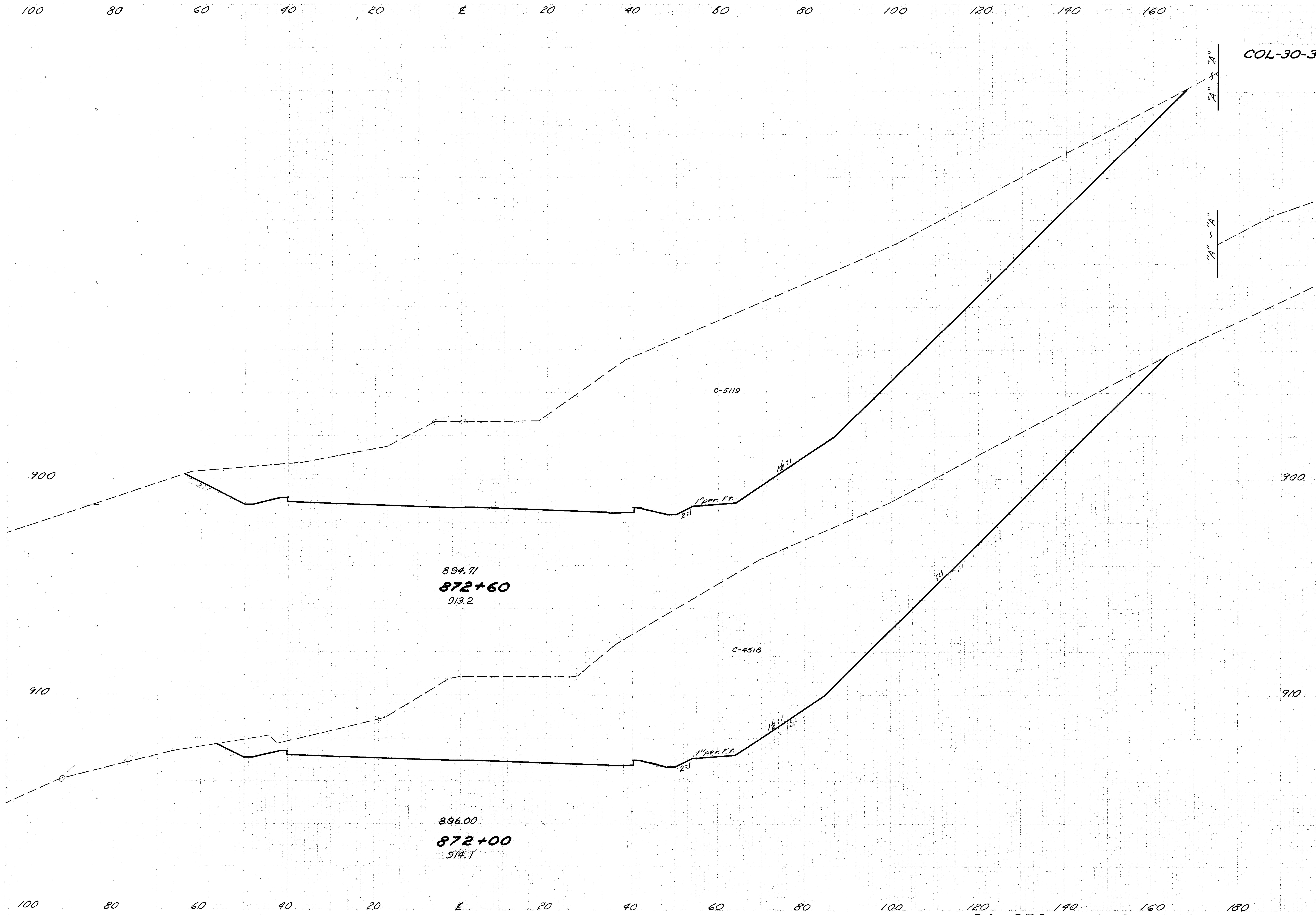
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
189		3817	48		
	1019			6280	130
178		2965	92		
	944			4992	221

Sta 871+00 to Sta 871+50

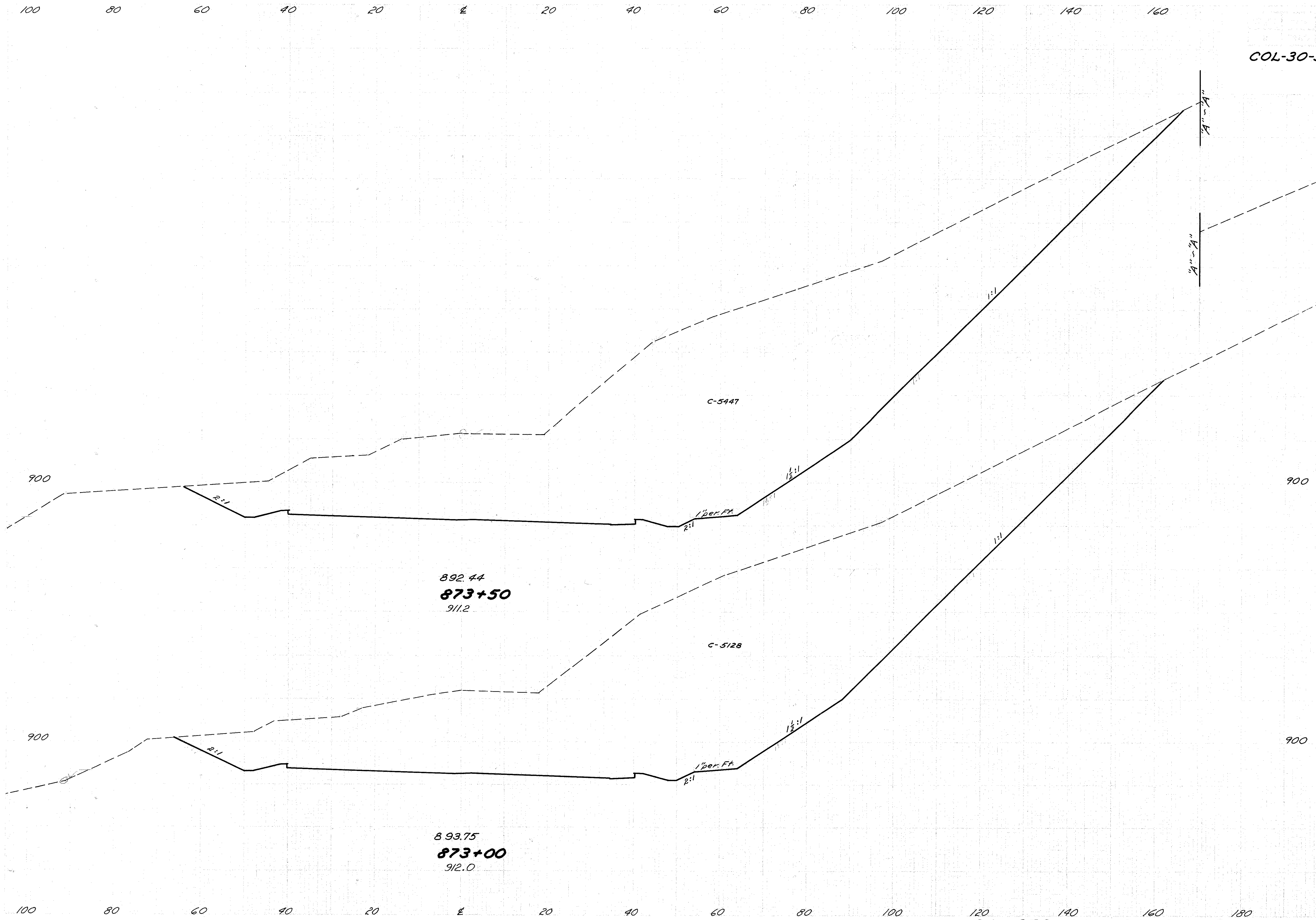
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
212		5119	0		
	1367			10,708	0
198		4518	0		
	1075			7718	44

Sta 872+00 to Sta 872+60

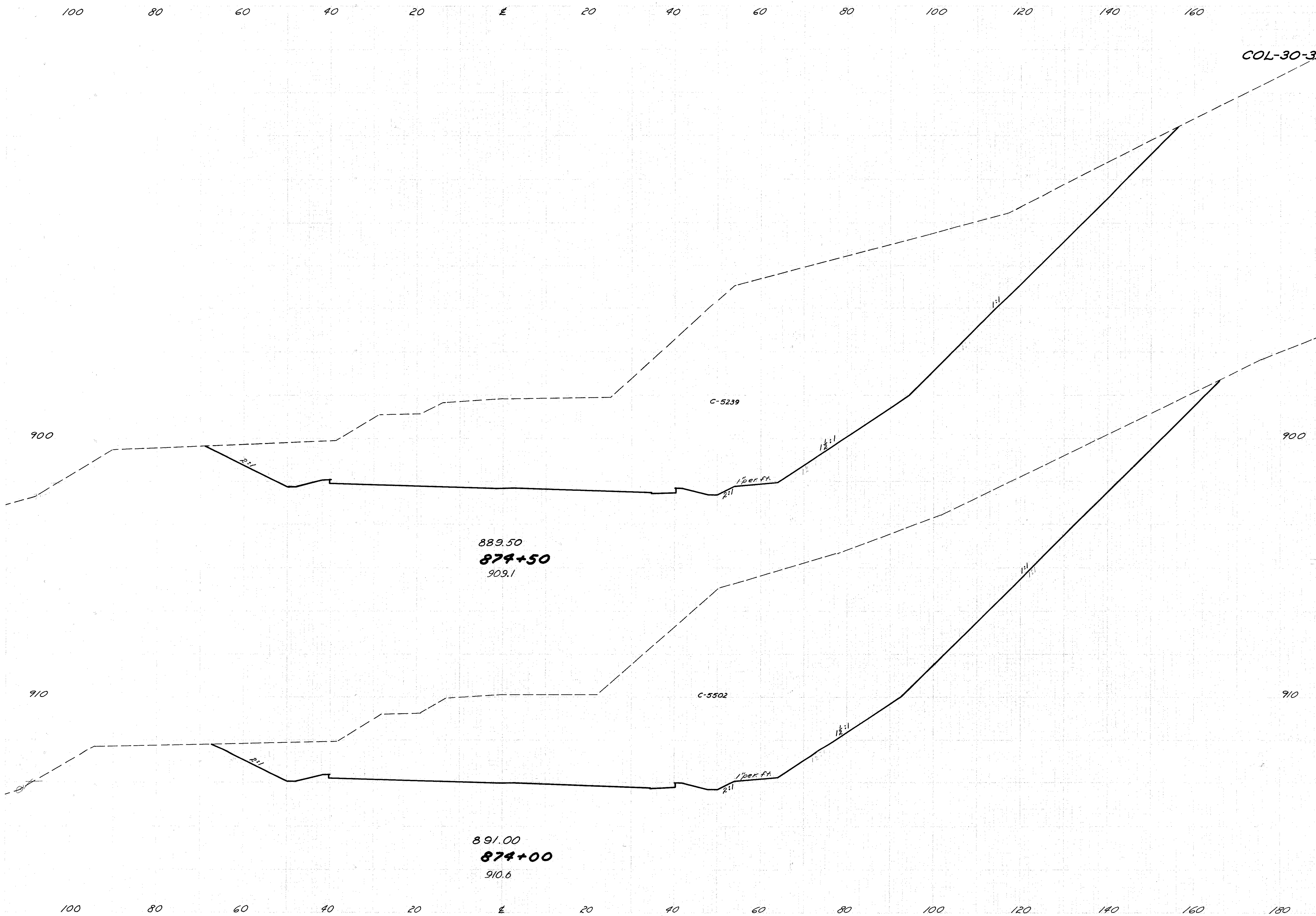
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
210		5447	0		
	1158			9792	0
207		5128	0		
	931			7590	0

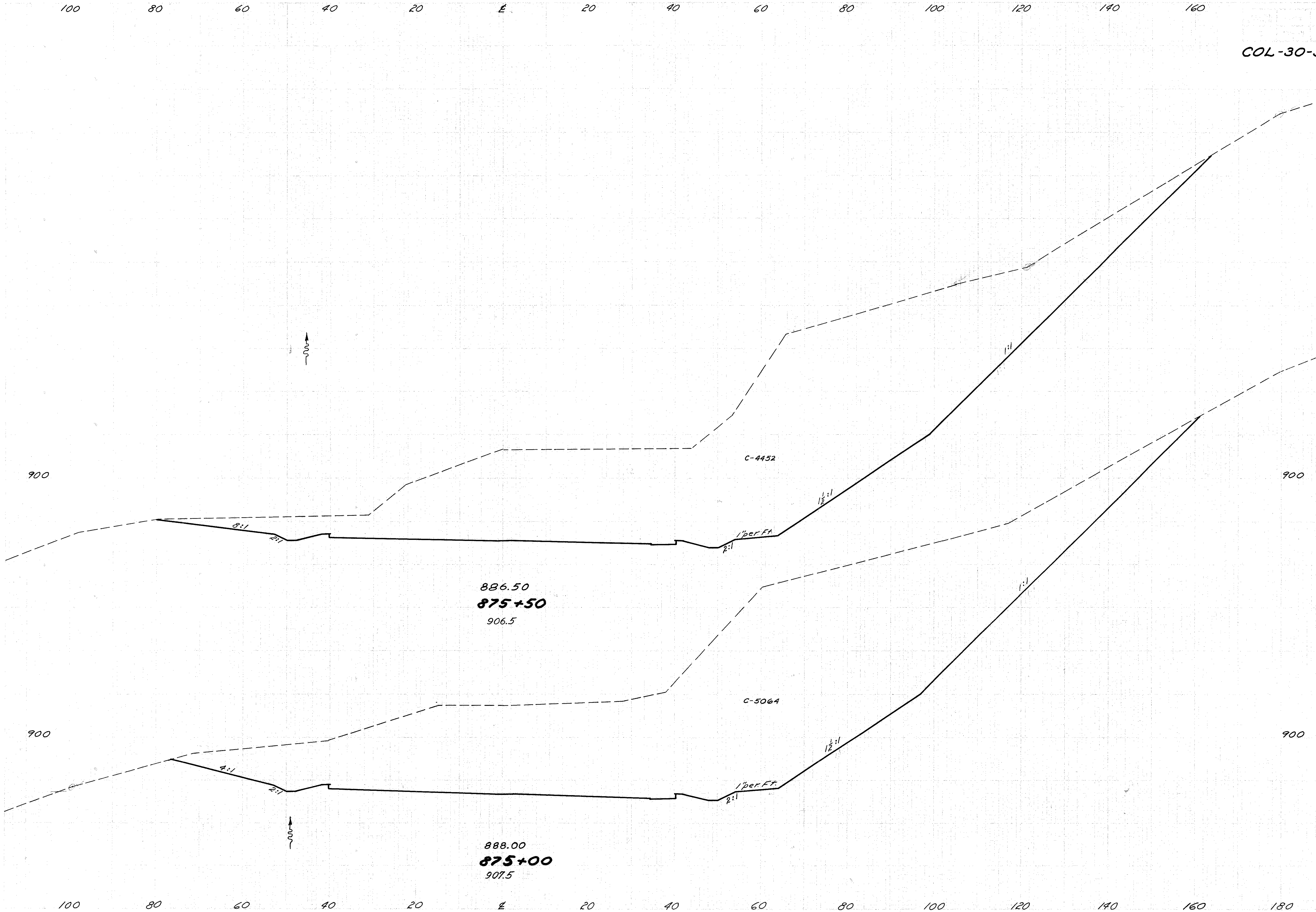
Sta 873+00 to Sta 873+50

COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S. Y.	Cut	Fill	Exc.	Emb.
201		5239	0		
	1147			9945	0
212		5502	0		
	1172			10,138	0

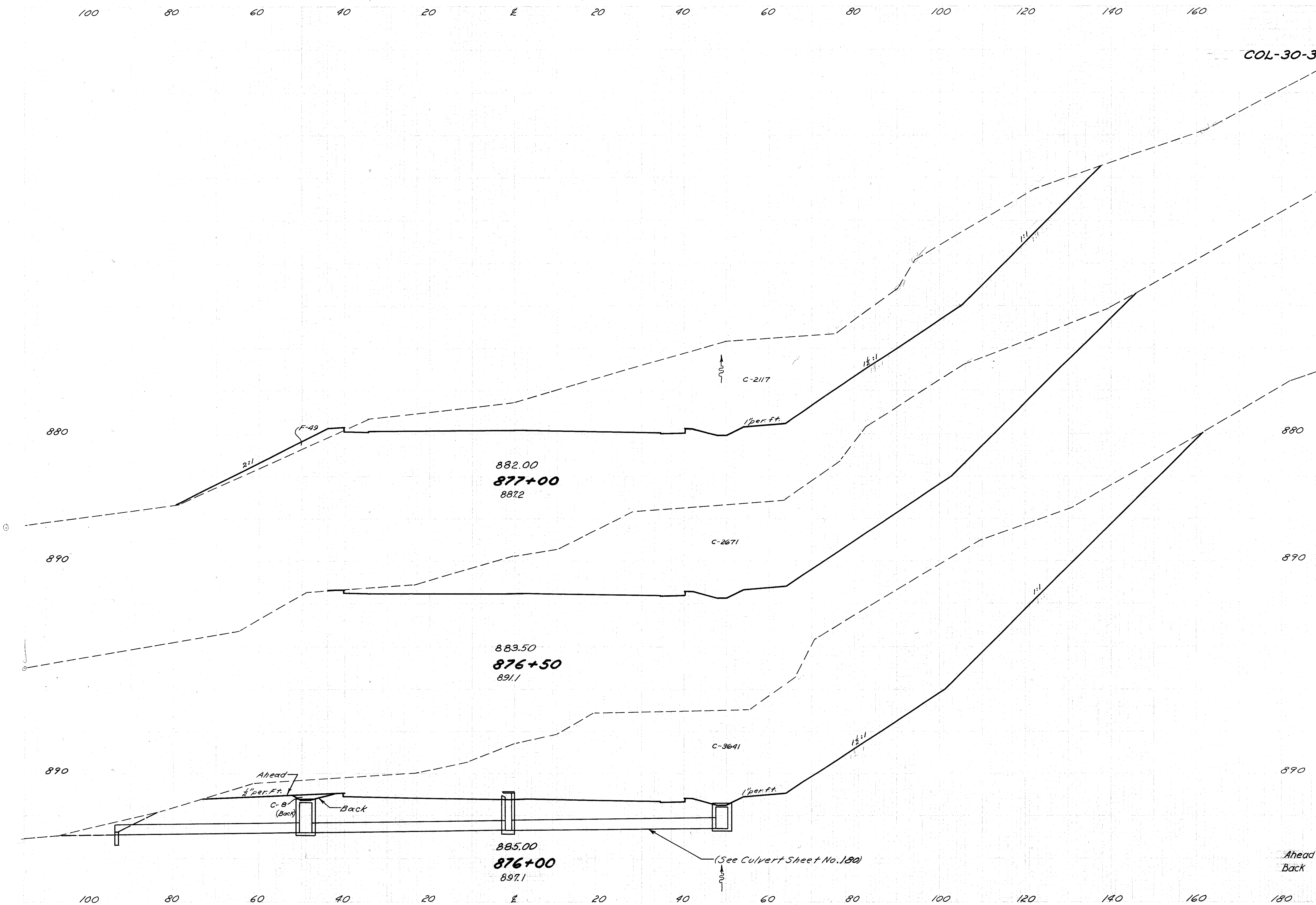
COL-30-32.19



Seeding		End Area		Cu. Yds	
Width	S. Y.	Cut	Fill	Exc.	Emb.
219		4452	0		
	1203			8811	0
214		5064	0		
	1153			9540	0

Sta 875+00 to Sta 875+50

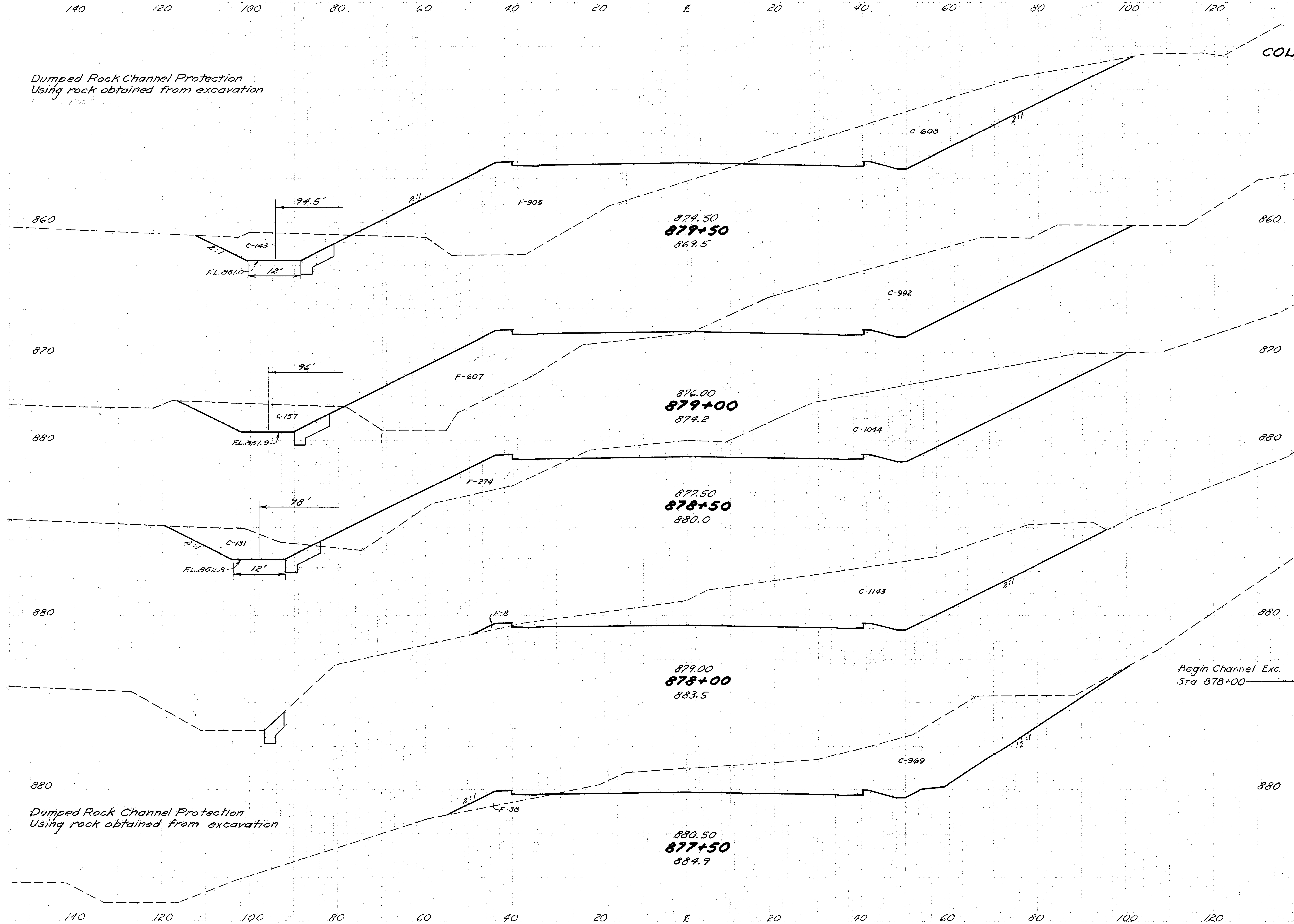
COL-30-32.19



	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	184		2117	49		
		944			4433	45
	156		2671	0		
		1011			5844	0
Ahead	208		3641	0		
Back	209		3649	0		
		1189			7501	0

Sta 876+00 to Sta 877+00

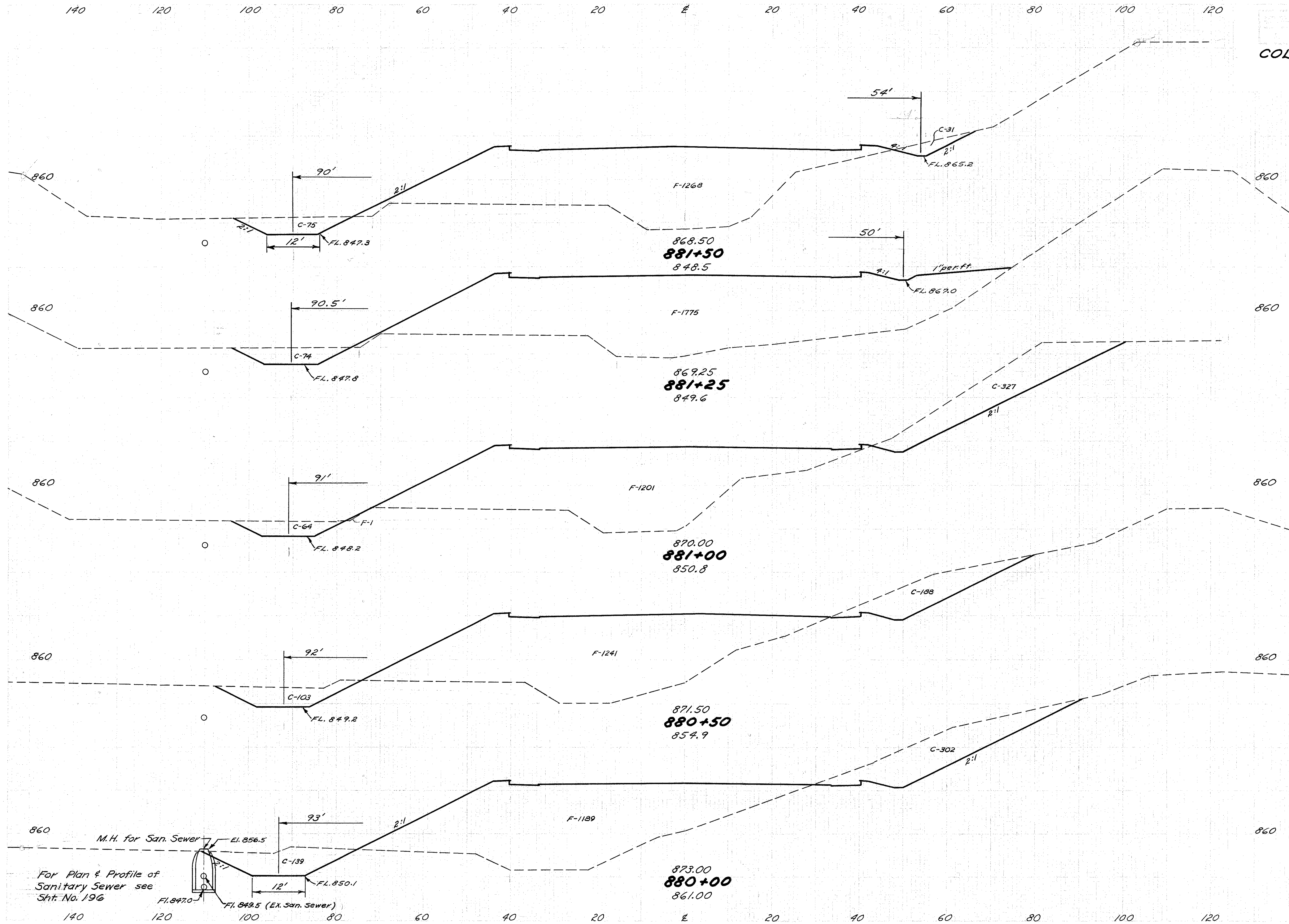
COL-30-32.19



Channel E.Area	Channel C.Y.	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
143		146		608	905		
	278		828			1481	1400
157		152		992	607		
	267		847			1685	816
131		153		1044	274		
	121		678			2025	261
0		91		1143	8		
			547			1956	43
		106		969	38		
			806			2857	81

Sta 877+50 to 879+50

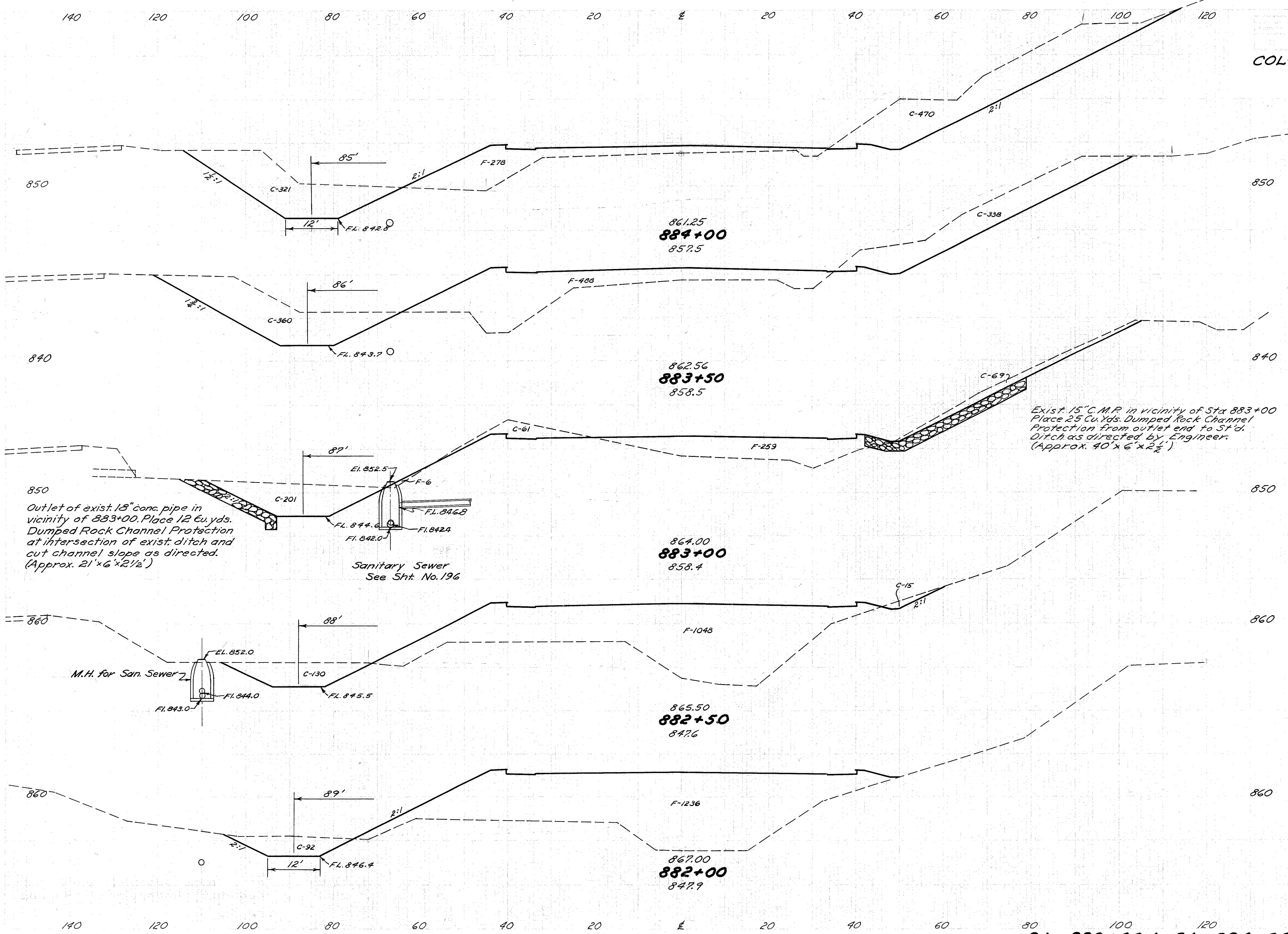
COL-30-32.19



Channel		Seeding		End Area		Cu. Yds.	
E.Area	C.Y.	Width	S.Y.	Cut	Fill	Exc.	Emb.
75		97		31	1268		
	69		279			74	1409
74		104		0	1775		
	64		333			151	1378
64		136		327	1201		
	155		706			477	2261
103		118		188	1241		
	224		697			454	2250
139		133		302	1189		
	261		775			843	1939

Sta 880+00 to 881+50

COL-30-32.19



Channel		Seeding		End Area		Cu. Yds.	
E.Area	C.Y.	Width	S.Y.	Cut	Fill	Exc.	Emb.
321		163		470	278		
	631		883			748	709
360		155		338	488		
	519		842			433	697
201		148		130	265		
	306		669			134	1216
130		93		15	1048		
	206		483			14	2115
92		81		0	1236		
	155		494			29	2319

Sta 882+00 to Sta 884+00

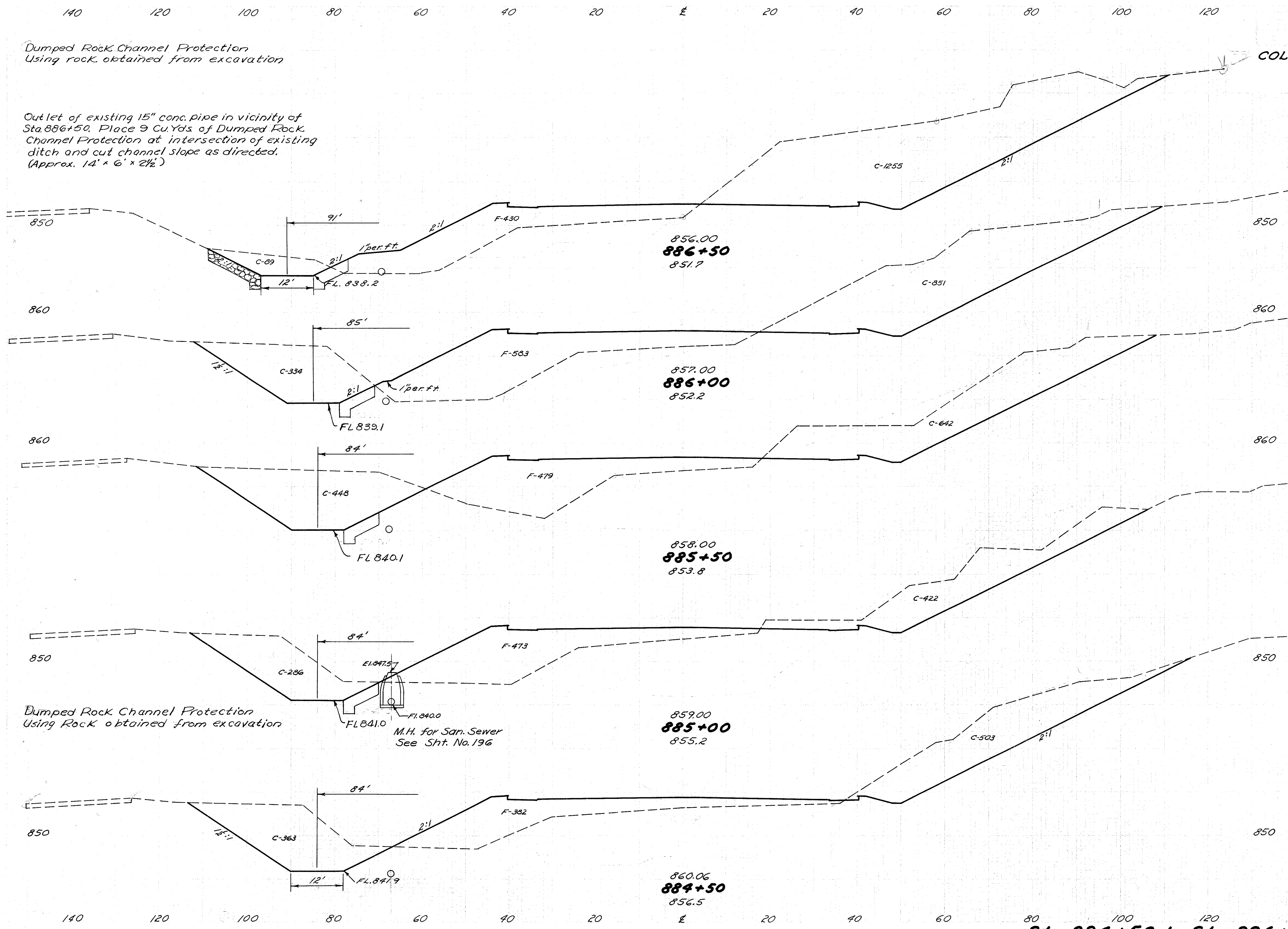
COL-30-32.19

Dumped Rock Channel Protection
Using rock obtained from excavation

Out let of existing 15" conc. pipe in vicinity of Sta. 886+50. Place 9 Cu. Yds. of Dumped Rock Channel Protection at intersection of existing ditch and cut channel slope as directed. (Approx. 14' × 6' × 2½')

Dumped Rock Channel Protection
Using Rock obtained from excavation

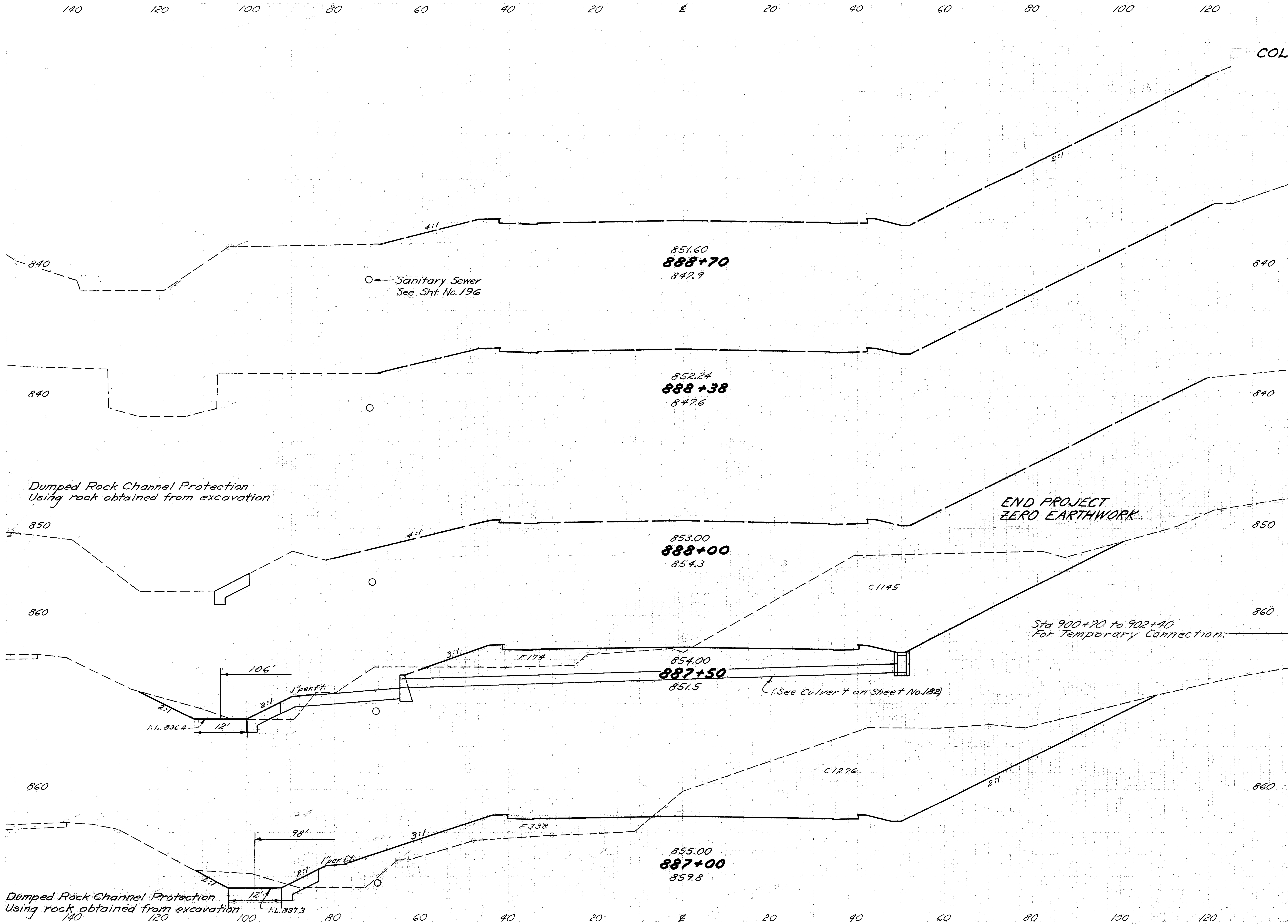
M.H. for San. Sewer
See Sht. No. 196



Channel		Seeding		End Area		Cu. Yds.	
E.Area	C.Y.	Width	S.Y.	Cut	Fill	Exc.	Emb.
89		155		1255	430		
	392		867			1950	938
334		157		851	583		
	724		861			1382	983
448		153		642	479		
	680		844			985	881
286		151		422	473		
	601		872			856	792
363		163		503	382		
	633		906			901	611

Sta 884+50 to Sta 886+50

COL-30-32.19



Channel		Seeding		End Area		Cu. Yds.	
E.Area	C.Y.	Width	S.Y.	Cut	Fill	Exc.	Emb.
0		147		0	0		
	29		847			1060	161
			525				140
31		158		1145	174		
	74		858			2242	474
49		151		1276	338		
	128		850			2344	711

Sta 887+00 to Sta 888+70

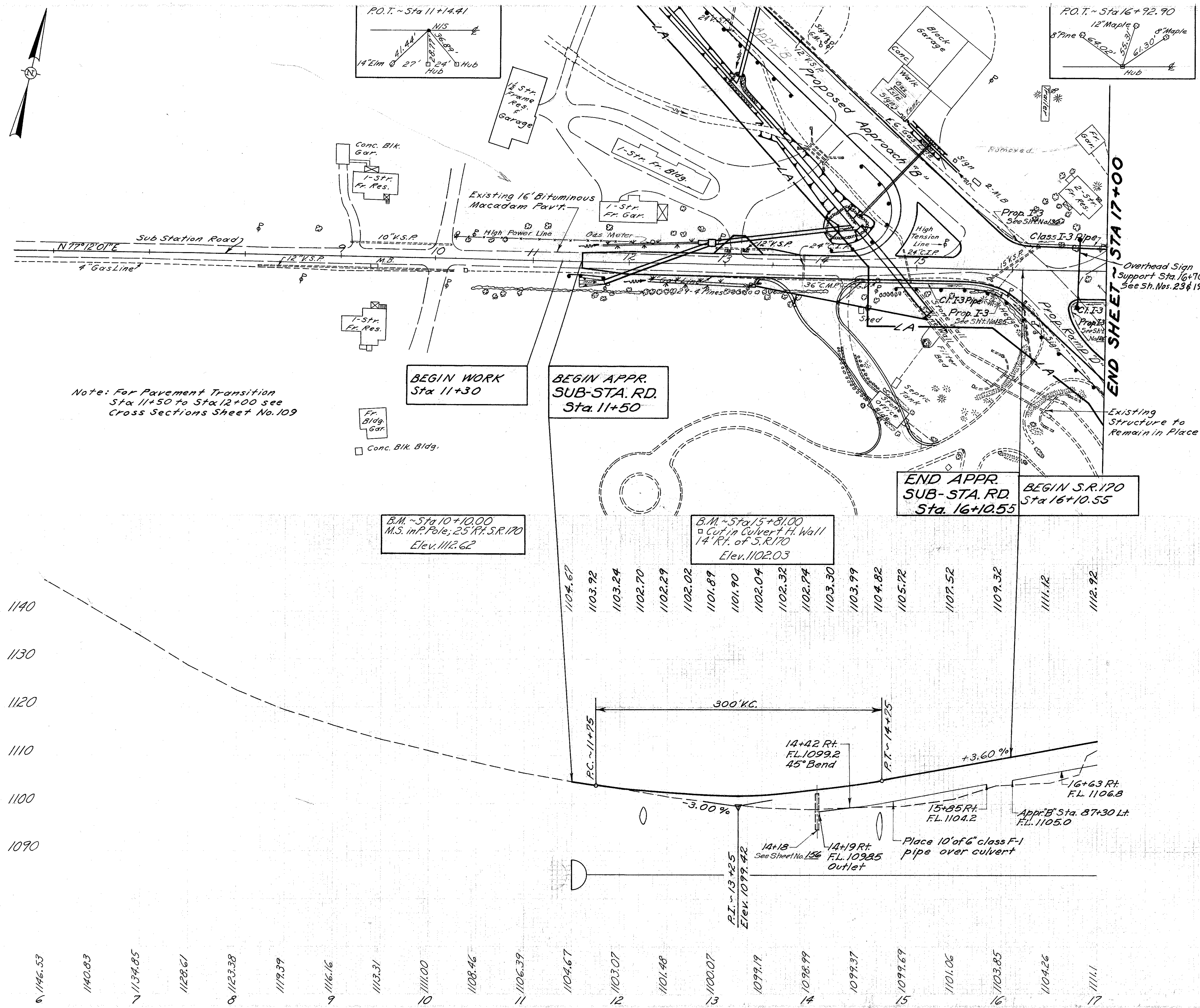
S.R.-170 INTERCHANGE PLAN

Scale ~1"=100'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

COL-30-32.19



APPR. SUB-STATION Rd. & S.R.170 Sta. 11+50 to Sta. 17+00

APPROACHES

Station	Side ℄	See Sheet	T-35 Surface Cu. Yds.	B-19 Aggr. Cu. Yds.	Pipe Removed ~ Lin. Ft. 15" & Under	Pipe Removed ~ Lin. Ft. Over 15"	Remarks
13+13	Lt.	104	4.8	12.0	55'		
14+28	Rt.	104				16	
13+83	Lt. & Rt.	104				25	
14+91	Lt. & Rt.	104				30	
15+75.07	Rt.	125					Ramp "D"
16+10.55	Lt.	136					Appr. "B"
Total			4.8	12.0	55	71	

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length		Sod Sq. Yds.
12+26.6		Lt. & Rt.	154	Pipe	48"	251'		
0+32.2 (Mem. Park)		Rt.	156	Pipe	18"	194'		
14+73.6		Lt. & Rt.	155	Pipe	72"	120'		
11+73	12+73	Lt.	104					56
12+18	13+18	Rt.	104					61
Total								117

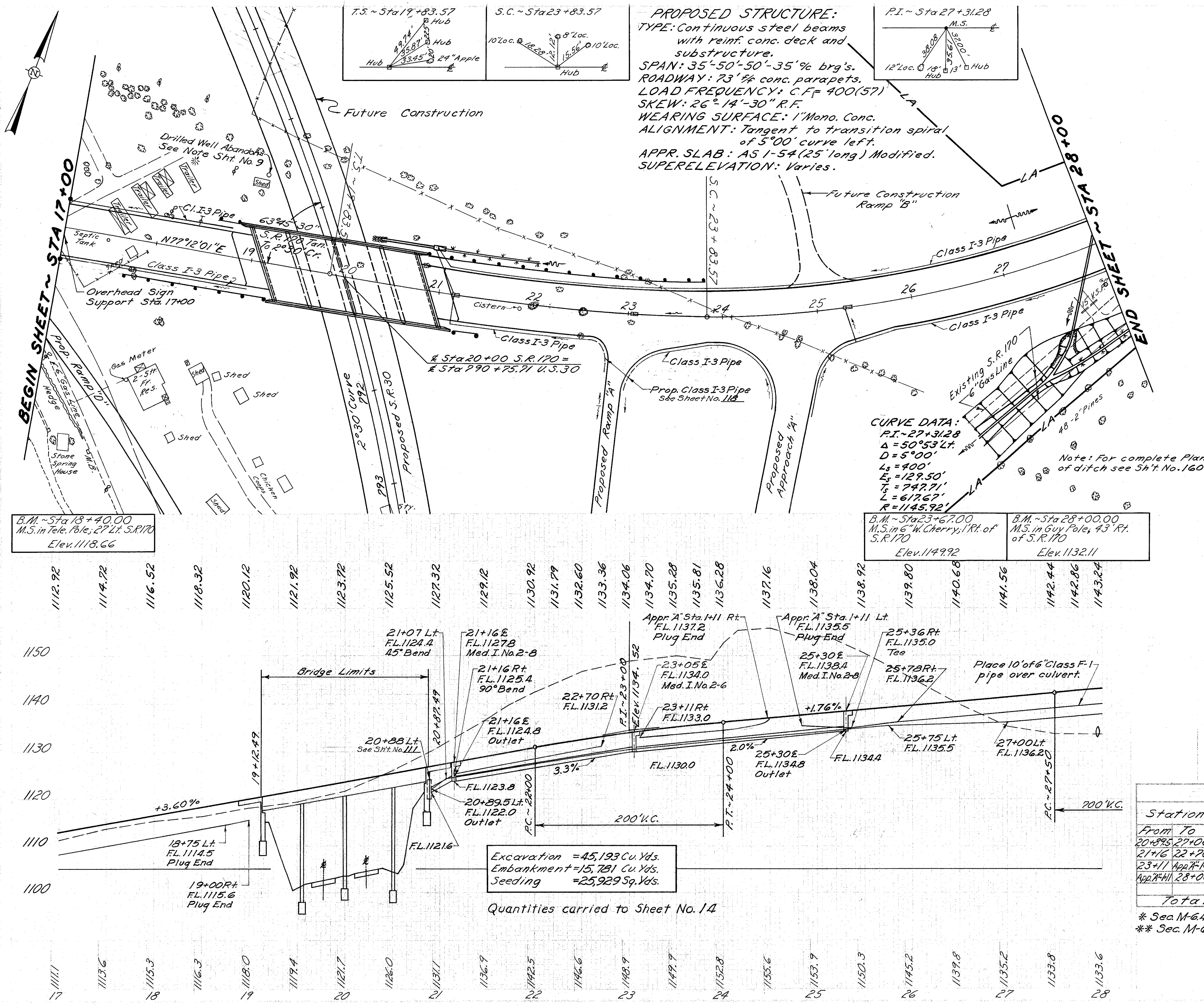
GUARD RAIL

Station From	Station To	Side ℄	See Sheet	New Lin. Ft.
11+32.5	11+75	Rt.	104	37.5
14+74	0+37.22	Rt.	104	125
Total				162.5

UNDERDRAIN

Station From	Station To	Side ℄	6" Cl. I-3 D=30" Lin. Ft.	Class F-1 6" Lin. Ft.	6" Pipe Spec. Class I-3 45° Bend Each
14+19	15+85	Rt.	155	20	1
Appr. "B" 87+30	18+75	Lt.	263		
16+63	19+00	Rt.	237		
Total			655	20	1

COL-30-32.19



APPROACHES							
Station	Side ℄	See Sheet	T-35 Surface Cu. Yds.	B-19 Aggr. Cu. Yds.			Remarks
23+00	Rt.	118					Ramp "A"
25+00	Rt.	130					Appr. "A"
Total							

DRAINAGE							
Station		Side	See	New Work			Pipe Removed 15" Under
From	To	℄	Sheet	Type	Size	Length	Lin. Ft.
20+32	20+88	Lt.	111	Pipe	18"	57'	
27+66	27+85	Rt.	105				21
27+95		Lt.&Rt.	162	Pipe	30"	170'	
Total							21

STORM SEWER							
Station		Side	See	*12" Pipe	*15" Pipe	No. 2-8 Med. Inlet	No. 2-6 Med. Inlet
From	To	℄	Sheet	Lin. Ft.	Lin. Ft.	Each	Each
20+88	21+16	Lt.-℄	105		54		
21+16		℄	105			1	
21+16	25+30	℄	105	415			
23+05		℄	105				1
25+30		℄	105			1	
Total				415	54	2	1

* Class A-1 Sec. M-6.8(b) or Sec. M-6.6(a)

PAVEMENT REMOVAL			
Station		Side	Sq.
From	To	℄	Yds.
25+00	28+00	Rt.	865
Total			865

GUARD RAIL			
Station		Side	New
From	To	℄	Lin. Ft.
18+60	18+85	Lt.	25
17+71	19+21	Rt.	150
20+82	23+82	Lt.	300
21+20	21+45	Rt.	25
Total			500

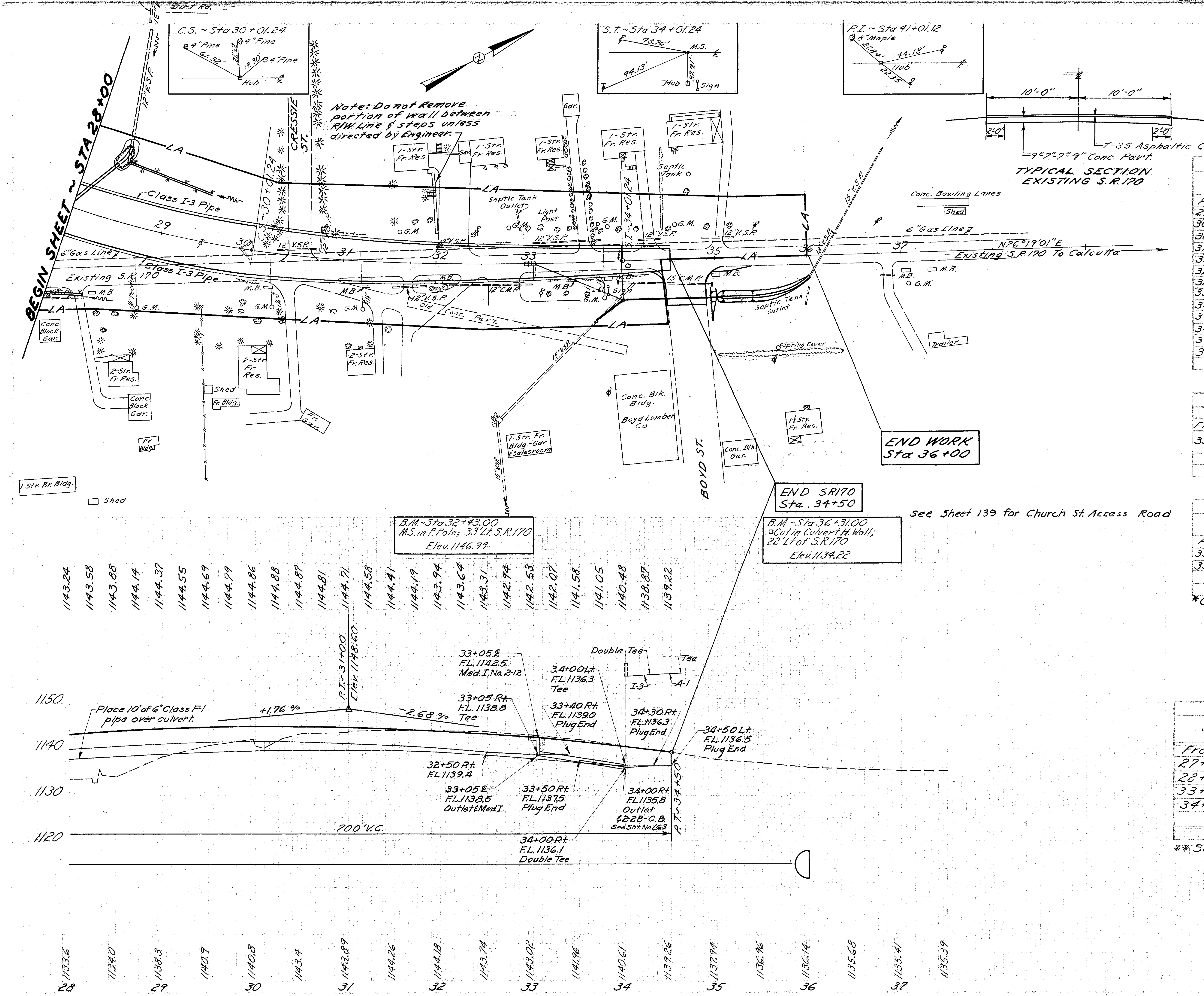
SOD		
Station		Sq. Yds.
From	To	
21+00	22+00	56
27+50	28+00	24
Total		80

APPROACH SLABS		
Station		Sq.
From	To	Yds.
18+87.49	19+12.49	147.2
20+87.49	21+12.49	147.2
Total		295

UNDERDRAIN									
Station		Side	6" Class I-3 D=12"*	D=30"	Class F-1 6"	Class A-1 8"**	6" Pipe Specials Cl. I-3,* 45°	Cl. I-3,* 90°	Cl. I-3, Tee
From	To	℄	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	Each
20+89.5	27+00	Lt.	606		10		1		
21+16	22+70	Rt.	157			29		1	
23+11	App."A"~1+11	Rt.	196						
App."A"~1+11	28+00	Rt.		360	10	36			1
Total			959	360	20	65	1	1	1

* Sec. M-6.4(h)
** Sec. M-6.6(b) or Sec. M-6.8(b)

COL-30-32.19



APPROACHES							
Station From	Station To	Side ℄	See Sheet	T-35 Surface Cu. Yds	B-19 Aggr. Cu. Yds.	Pipe Removed 15" & Under Lin. Ft.	S-22 Wall & Steps Cu. Yds.
27+83	28+42	Rt.	105&106			66	
30+29	30+71	Lt.	106			43	
30+74	30+76	Lt.	106			27	
31+54	31+86	Rt.	106			37	
31+89	32+02	Lt.	106				6.2
32+00	32+46	Lt.	106			46	
32+14	33+04	Rt.	106			90	
33+05	33+78	Lt.	106			73	
34+20	34+42	Lt.	106			22	
34+66		Rt.	106	11	38		
34+89	35+22	Lt.	106			33	
35+04		Rt.	106	1	3		
32+50		Rt.	139		368		
Total				12	409	437	6.2

DRAINAGE									
Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Removal Type	Removal Size	Removal Lgth.
33+70	35+09	Rt.	163	Pipe Pipe	15" 18"	36' 108'			
Total									

STORM SEWER					
Station From	Station To	Side ℄	See Sheet	*12" Pipe Lin. Ft.	No. 2-12 Med. Inlet Each
33+05	34+00	℄-Rt.	106	105	
33+05		℄	106		1
Total				105	1

*Class A-1 Sec. M-6.8(b) or Sec. M-66(a)

PAVEMENT REMOVAL			
Station From	Station To	Side ℄	Sq. Yds.
28+00	34+50	Lt.&Rt.	1496
31+70	33+00	Rt.	135
Total			1631

UNDERDRAIN							
Station From	Station To	Side ℄	6" Cl. I-3 D=30" Lin. Ft.	Class F-1 6" Lin. Ft.	Class A-1 8"** Lin. Ft.	6" Pipe Spec. Cl. I-3 Dou. Tee Each	6" Pipe Spec. Cl. I-3 Tee Each
27+00	34+50	Lt.	740	10			1
28+00	33+40	Rt.	540		19		1
33+50	34+30	Rt.	80			1	
34+00		Lt.&Rt.	16	10	33		
Total			1376	20	52	1	2

** Sec. M-6.6(b) or Sec. M-6.8(b)

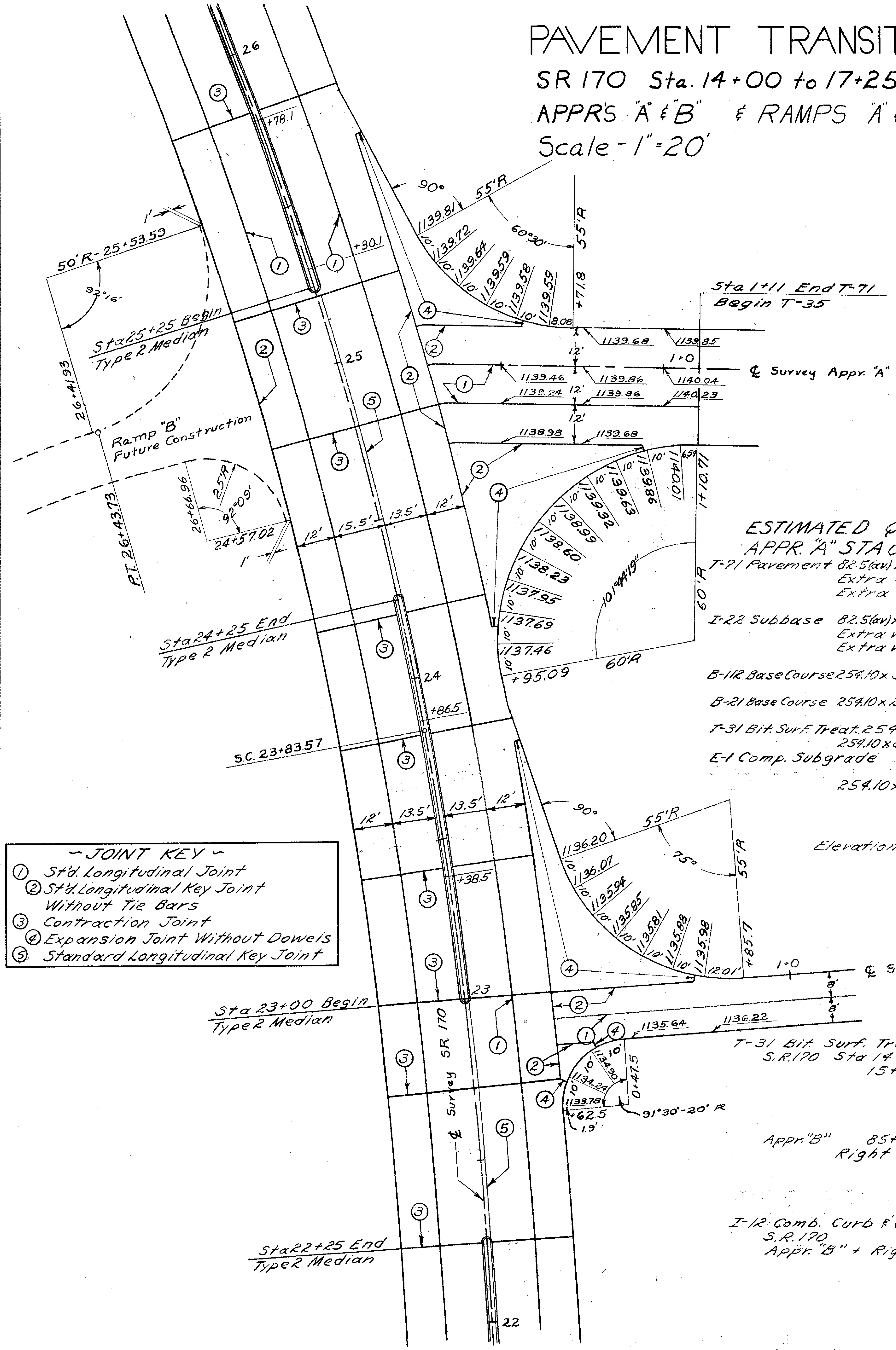
SOD		
Station From	Station To	Sq. Yds.
28+00	28+35	18
28+39	29+47	45
Total		63

PAVEMENT TRANSITION DETAILS

SR 170 Sta. 14+00 to 17+25 Sta. 22+00 to 26+00

APPR'S "A" & "B" & RAMPS "A" & "D"

Scale - 1"=20'



ESTIMATED QUANTITIES
APPR. "A" STA 0+27.7 to STA 1+11

T-71 Pavement 82.5(av.) x 36 ÷ 9 = 330 Sq. Yds.
Extra area left = 76 " "
Extra area right = 148 " "
Total T-71 = 554 Sq. Yds.

I-22 Subbase 82.5(av.) x 36 x 0.5 ÷ 27 = 55 Cu. Yds.
Extra volume left = 35 " "
Extra volume right = 40 " "
Total I-22 = 130 Cu. Yds.

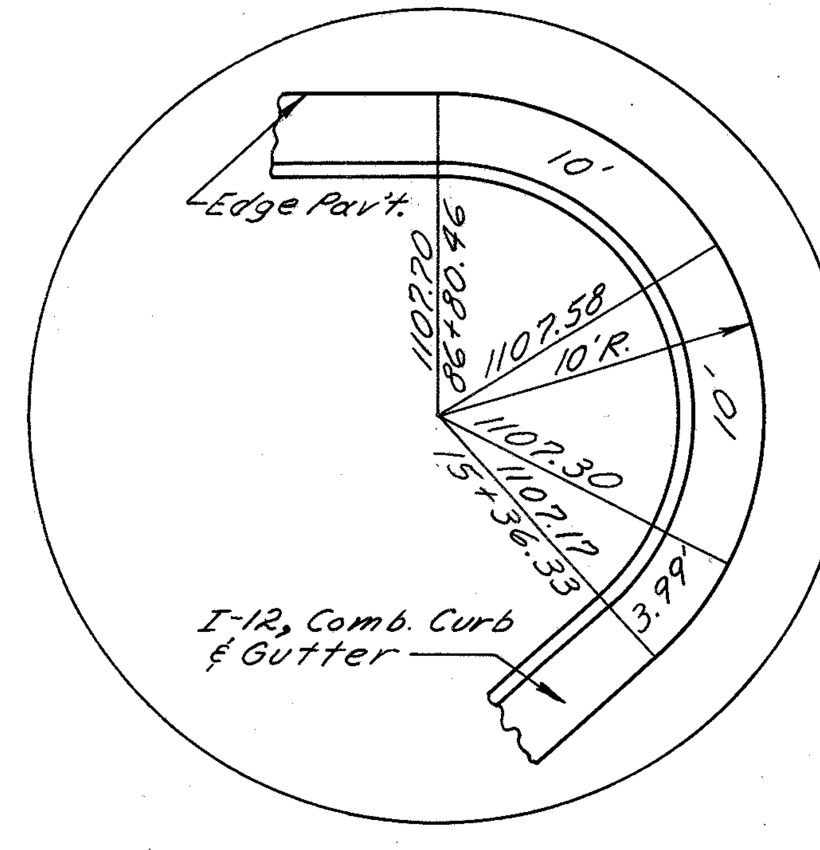
B-112 Base Course 254.10 x 3.17" ÷ 27 = 30 Cu. Yds.

B-21 Base Course 254.10 x 2" ÷ 27 = 19 Cu. Yds.

T-31 Bit. Surf. Treat. 254.10 x 8 ÷ 9 x 0.008 = 2 Cu. Yds.
254.10 x 8 ÷ 9 x 0.25 = 57 Gals.

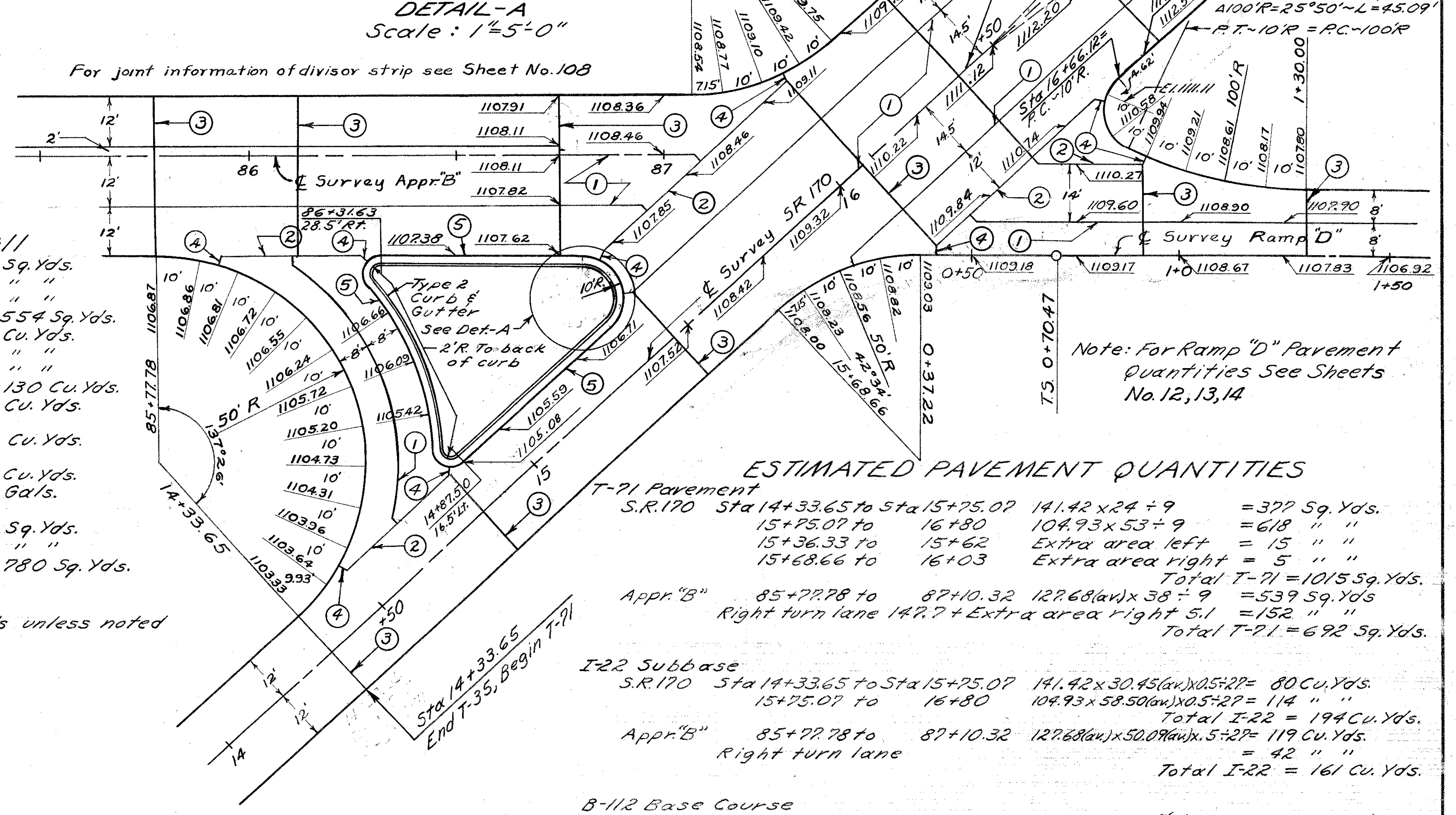
E-1 Comp. Subgrade
554 Sq. Yds.
254.10 x 8 ÷ 9 = 226 " "
Total T-31 = 780 Sq. Yds.

Elevations at 25' intervals unless noted



DETAIL-A
Scale: 1"=5'-0"

For joint information of divisor strip see Sheet No. 108



ESTIMATED PAVEMENT QUANTITIES

T-71 Pavement
S.R.170 Sta 14+33.65 to Sta 15+75.07 141.42 x 24 ÷ 9 = 377 Sq. Yds.
15+75.07 to 16+80 104.93 x 53 ÷ 9 = 618 " "
15+36.33 to 15+62 Extra area left = 15 " "
15+68.66 to 16+03 Extra area right = 5 " "
Total T-71 = 1015 Sq. Yds.
Appr. "B" 85+77.78 to 87+10.32 127.68(av.) x 38 ÷ 9 = 539 Sq. Yds
Right turn lane 147.7 + Extra area right 5.1 = 152 " "
Total T-71 = 692 Sq. Yds.

I-22 Subbase
S.R.170 Sta 14+33.65 to Sta 15+75.07 141.42 x 30.45(av.) x 0.5 ÷ 27 = 80 Cu. Yds.
15+75.07 to 16+80 104.93 x 58.50(av.) x 0.5 ÷ 27 = 114 " "
Total I-22 = 194 Cu. Yds.
Appr. "B" 85+77.78 to 87+10.32 127.68(av.) x 50.09(av.) x .5 ÷ 27 = 119 Cu. Yds.
Right turn lane = 42 " "
Total I-22 = 161 Cu. Yds.

B-112 Base Course
S.R.170 Sta 14+33.65 to Sta 15+75.07 163.31 x 0.61" ÷ 27 = 4 Cu. Yds.
15+75.07 to 16+80 72 x 3.17" ÷ 27 = 9 " "
Total B-112 = 13 Cu. Yds.
Appr. "B" 85+77.78 to 87+10.32 165.95 x 3.17" ÷ 27 = 20 Cu. Yds.
Right turn lane = 6 " "
Total B-112 = 26 Cu. Yds.

B-21 Base Course
S.R.170 Sta 14+33.65 to Sta 15+75.07 163.31 x 1.5" ÷ 27 = 9 Cu. Yds.
15+75.07 to 16+80 72 x 2" ÷ 27 = 5 " "
Total B-21 = 14 Cu. Yds.
Appr. "B" 85+77.78 to 87+10.32 165.95 x 2" ÷ 27 = 13 Cu. Yds.
Right turn lane 12 " "
Total B-21 = 25 Cu. Yds.

E-1 Comp. Subgrade
S.R.170 Sta 14+33.65 to Sta 15+75.07 141.42 x 30.45(av.) ÷ 9 = 479 Sq. Yds.
15+75.07 to 16+80 104.93 x 58.5(av.) ÷ 9 = 682 " "
Total E-1 = 1161 Sq. Yds.
Appr. "B" 85+77.78 to 87+10.32 127.68 x 50.09(av.) ÷ 9 = 711 Sq. Yds.
Right turn lane = 252 " "
Total E-1 = 963 Sq. Yds.

ESTIMATED QUANTITIES (Con't.)

T-31 Bit. Surf. Treatment
S.R.170 Sta 14+33.65 to Sta 15+75.07 163.31 x 3 ÷ 9 = 55 Sq. Yds.
15+75.07 to 16+80 72 x 8 ÷ 9 = 64 " "
Total T-31 = 119 Sq. Yds.
No. 6 Aggr. = 119 x 0.008 = 1 Cu. Yd.
Bit. Mat'l. = 119 x 0.25 = 30 Gals.

Appr. "B" 85+77.78 to 87+10.32 ? 165.95 x 8 ÷ 9 = 148 Sq. Yds.
Right turn lane = 73 " "
Total T-31 = 221 Sq. Yds.
No. 6 Aggr. = 221 x 0.008 = 2 Cu. Yds.
Bit. Mat'l. = 221 x 0.25 = 55 Gals.

I-12 Comb. Curb & Gutter, Type 2
S.R.170 = 67 Lin. Ft.
Appr. "B" + Right turn lane = 103 Lin. Ft.

PAVEMENT TRANSITION DETAILS

Scale: 1"=20'

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

COL-30-32.19

ESTIMATED QUANTITIES

T-71 PAVEMENT
Sta 30+00 to 33+10.34
310.34 x 41(av.) ÷ 9 = 1414 Sq. Yds.
Sta 33+10.34 to 34+50
139.66 x 27.5(av.) ÷ 9 = 427 " "
Total T-71 = 1841 Sq. Yds.

I-22 SUBBASE
Sta 30+00 to 34+50
450 x 54.5(av.) x 0.5 ÷ 27 = 454 Cu. Yds.
Add for median = 21 " "
Total I-22 = 475 Cu. Yds.

B-112 BASE COURSE
Sta 30+00 to 34+50
450 x (4"+3.15") ÷ 27 = 119 Cu. Yds.

B-21 BASE COURSE
Sta 30+00 to 34+50
450 x (2" x 2) ÷ 27 = 67 Cu. Yds.

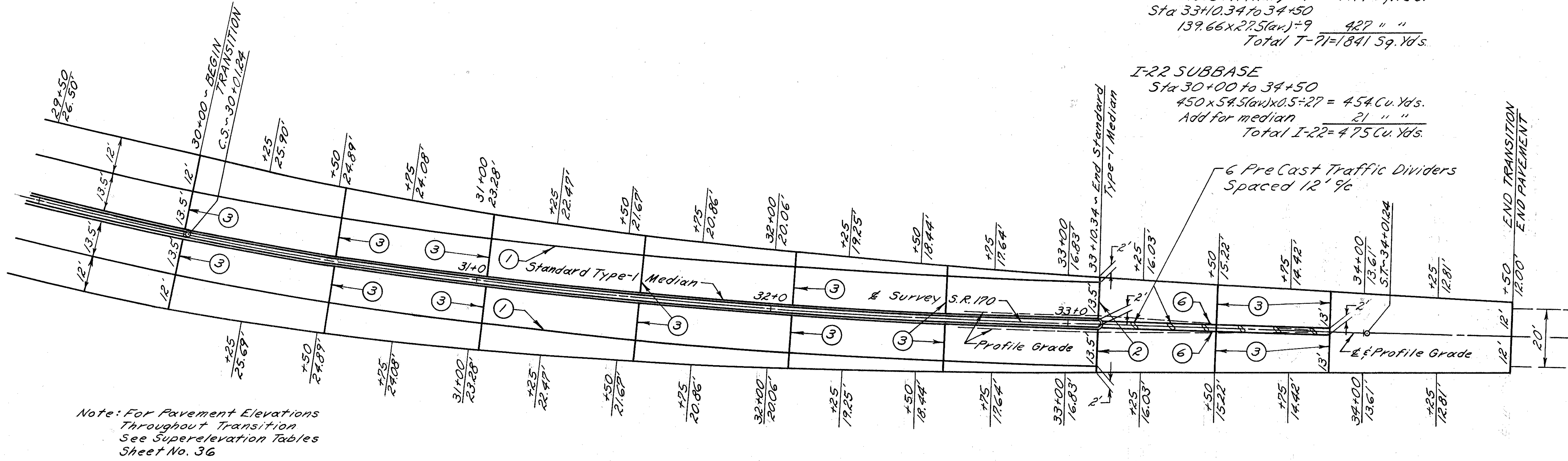
T-31 BIT. SURF. TREATMENT
Sta 30+00 to 34+50
No. 6 Aggr.
450 x (2 x 8) ÷ 9 x 0.008 = 7 Cu. Yds.
Bit. Mat'l.
450 x (2 x 8) ÷ 9 x 0.25 = 200 Gals.

E-1 COMP. SUBGRADE
Sta 30+00 to 34+50
450 x 54.5(av.) ÷ 9 = 2725 Sq. Yds.

I-12 CONC. CURB - TYPE 2-A
Sta 30+00 to 33+10.34
310.34 x 2 = 621 Lin. Ft.
Deduct for Med. Inlet = -26 " "
Total I-12 = 595 Lin. Ft.

I-21 MEDIAN PAV'T
Sta 30+00 to 33+10.34
310.34 x 2 ÷ 9 = 69 Sq. Yds.
Deduct for Med. Inlet = -3 " "
Total I-21 = 66 Sq. Yds.

I-23 PRECAST DIVIDERS
Sta 33+23 to 33+83 = 6 Each



Note: For Pavement Elevations Throughout Transition See Superelevation Tables Sheet No. 36

S.R. 170 ~ Sta 30+00 To Sta 34+50

ESTIMATED QUANTITIES

T-71 PAVEMENT
Sta 80+75 to 83+50
275 x 30'(av.) ÷ 9 = 917 Sq. Yds.
Sta 83+50 to 84+44.95
94.95 x 37(av.) ÷ 9 = 390 " "
Sta 84+44.95 to 85+77.78
132.83 x 38 ÷ 9 = 561 " "
Total T-71 = 1868 Sq. Yds.

I-22 SUBBASE
1868 x 6 ÷ 36 = 311 Cu. Yds.
502.78 x 8 x 0.5 ÷ 27 x 2 = 150 " "
Total I-22 = 461 Cu. Yds.

I-23 PRECAST DIVIDERS
Sta 84+81 to 86+75 = 17 Each

B-112 BASE COURSE
Sta 80+75 to 85+77.78
502.78 x 2 x 3.17" ÷ 27 = 118 Cu. Yds.

B-21 BASE COURSE
Sta 80+75 to 85+77.78
502.78 x 2 x 2" ÷ 27 = 75 Cu. Yds.

T-31 BIT. SURF. TREATMENT
Sta 80+75 to 85+77.78
No. 6 Aggr. 502.78 x 2 x 8 ÷ 9 x 0.008 = 7 Cu. Yds.
Bit. Mat'l. 502.78 x 2 x 8 ÷ 9 x 0.25 = 224 Gals.

E-1 COMP. SUBGRADE
Pavement = 1868 Sq. Yds.
Berms 502.78 x 2 x 8 ÷ 9 = 894 " "
Total E-1 = 2762 Sq. Yds.

~JOINT KEY~

1. Standard Longitudinal Joint
2. Standard Expansion Joint
3. Contraction Joint
4. Standard Longitudinal Key Joint Without Tie Bars
5. Expansion Joint Without Dowels
6. Standard Longitudinal Joint With Hook Bolts; One or Both of these Joints must be built.

APPROACH "B" ~ Sta 80+75 To Sta 86+75

COL-30-32.19

Sta 10+00 to Sta 15+00

COL-30-32.19

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
18+50	59		59	93		
		165			71	75
18+25	60		95	70		
		167			84	69
18+00	60		87	79		
		157			85	53
17+75	53		96	36		
		143			74	32
17+50	50		64	34		
		133			61	23
17+25	46		68	16		
		139			47	136
17+00	54		33	278		
		231			69	496
16+50	29		42	258		
		183			39	546
16+00 Ahead	37		0	332		
16+00 Back	37		0	449		
		219			0	773
15+50	42		0	386		

Sta 15+50 to Sta 18+50

ESTIMATED QUANTITIES

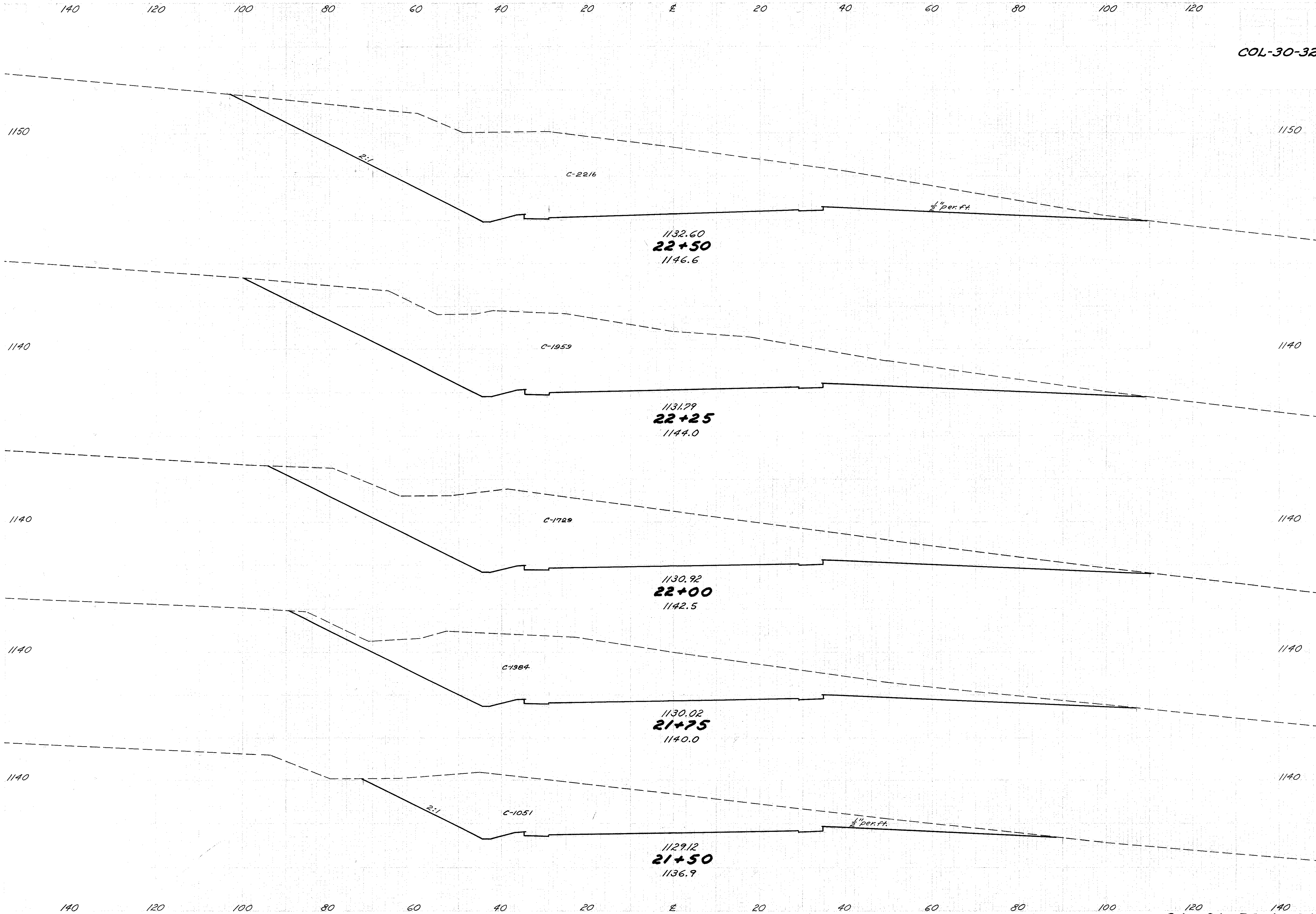
18" Pipe Class F-1	52 Lin. Ft.
Pipe Special (18"-22°30' Bend) Class F-1	1 Each
Mod. No. 2-3 Catch Basin	1 Each
Paved Gutter, Type 1	10 Lin. Ft.
Riprap Grout Filled	6 Sq. Yds.
Dump Rock Channel Protection	9 Cu. Yds.

COL-30-32.19

SR 170

Sta 18+75 to Sta 21+25

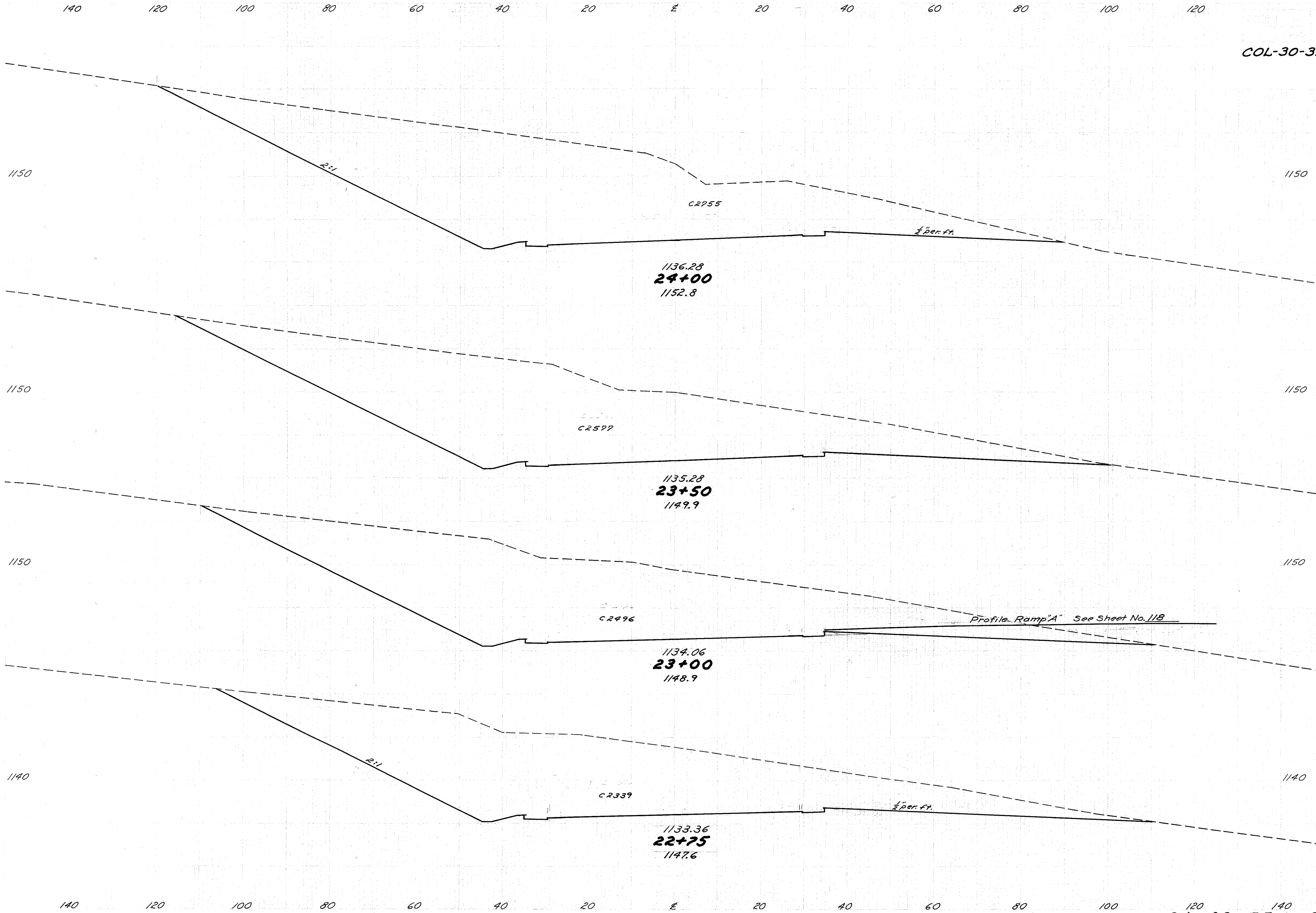
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
171		2216	0		
	469			1933	0
167		1959	0		
	457			1707	0
162		1729	0		
	438			1441	0
153		1384	0		
	372			1127	0
115		1051	0		
	254			840	0

Sta 21+50 to Sta 22+50

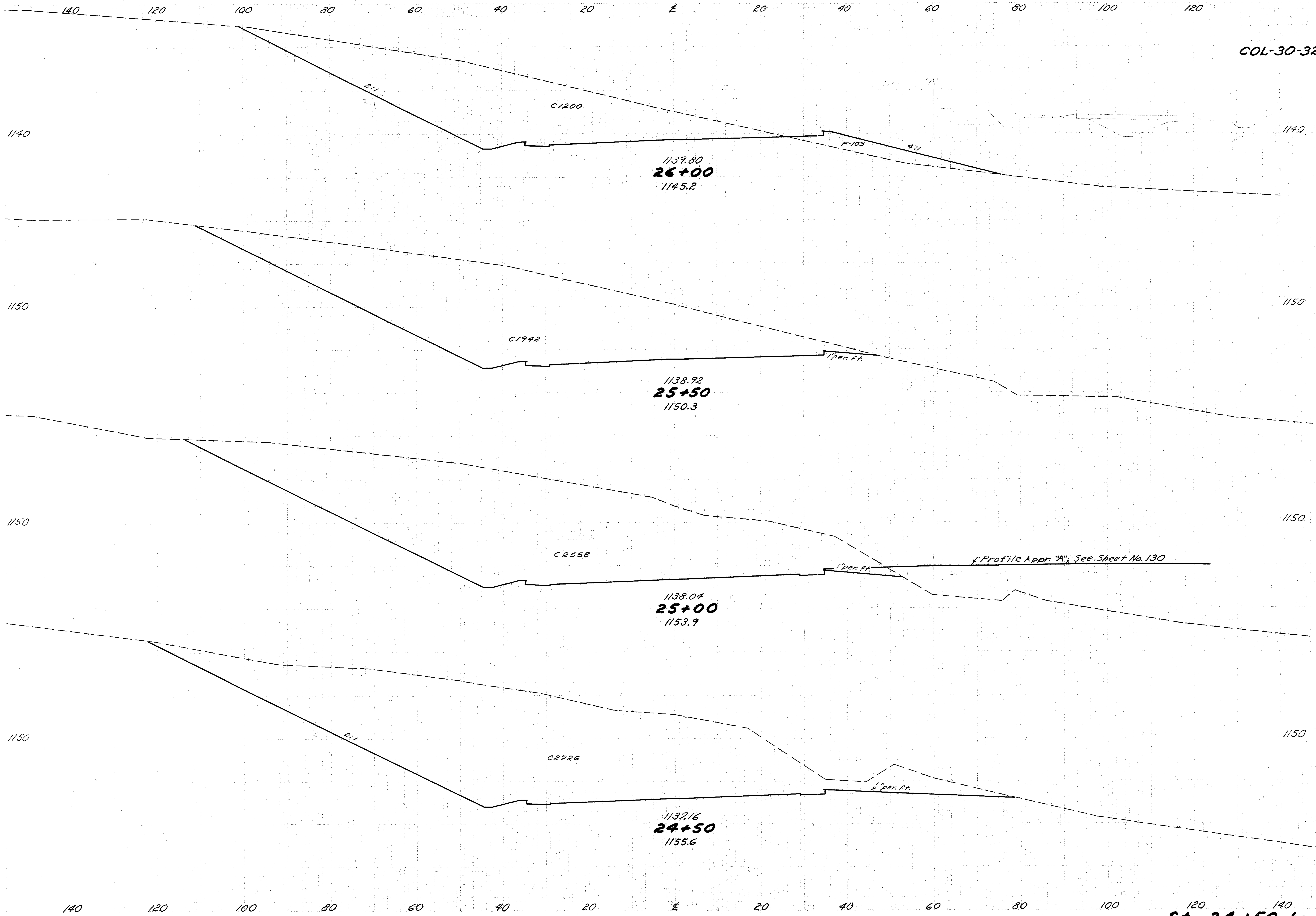
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
169		2755	0		
	958			4937	0
176		2577	0		
	989			4697	0
180		2496	0		
	493			2238	0
175		2339	0		
	481			2109	0

Sta 22+75 to Sta 24+00

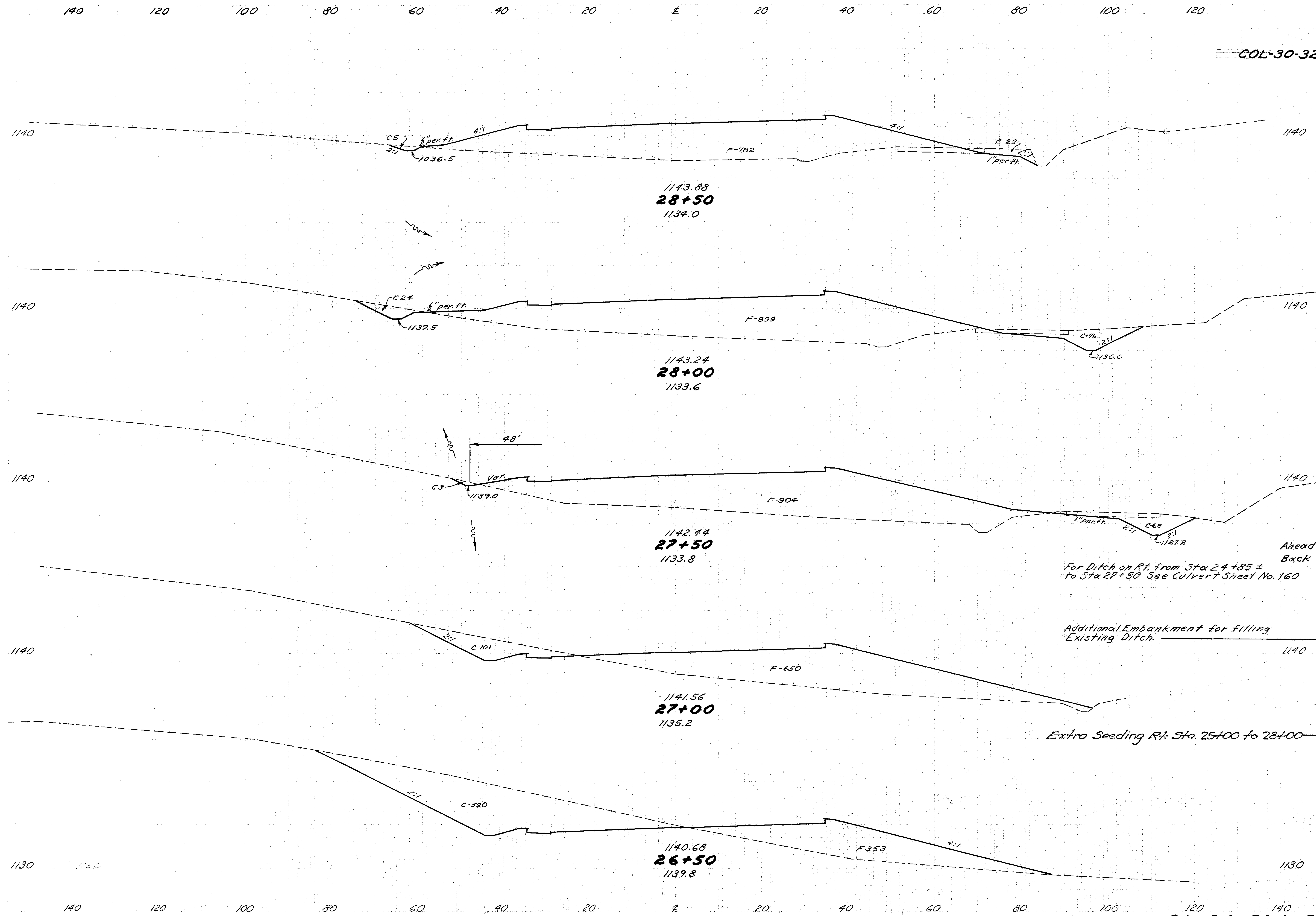
COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
135		1200	103		
	703			2909	95
118		1942	0		
	597			4167	0
97		2558	0		
	717			4893	0
161		2726	0		
	917			5075	0

Sta 24+50 to Sta 26+00

COL-30-32.19



	Seeding		End Area		Cu. Yds.	
	Width	S.Y.	Cut	Fill	Exc.	Emb.
	104		28	782		
		669			119	1556
	137		100	899		
		731			158	1669
Ahead	126		71	904		
Back	126		3	904		
		664			96	1439
						261
	113		101	650		
		2812				
		669			575	929
	128		520	353		
		731			1593	422

Sta 26+50 to Sta 28+50

COL-30-32.19

Station	Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
33+50	69		127	10		
		369			252	10
33+00	64		145	1		
		361			306	2
32+50	66		186	1		
		378			379	3
		1185			272	272
32+00	70		223	2		
		156				
		386			416	6
31+50	69		226	5		
		361			385	32
31+00	61		190	30		
		306			240	179
30+50	49		69	49		
		269			93	156
30+00	48		31	120		
		308			30	407

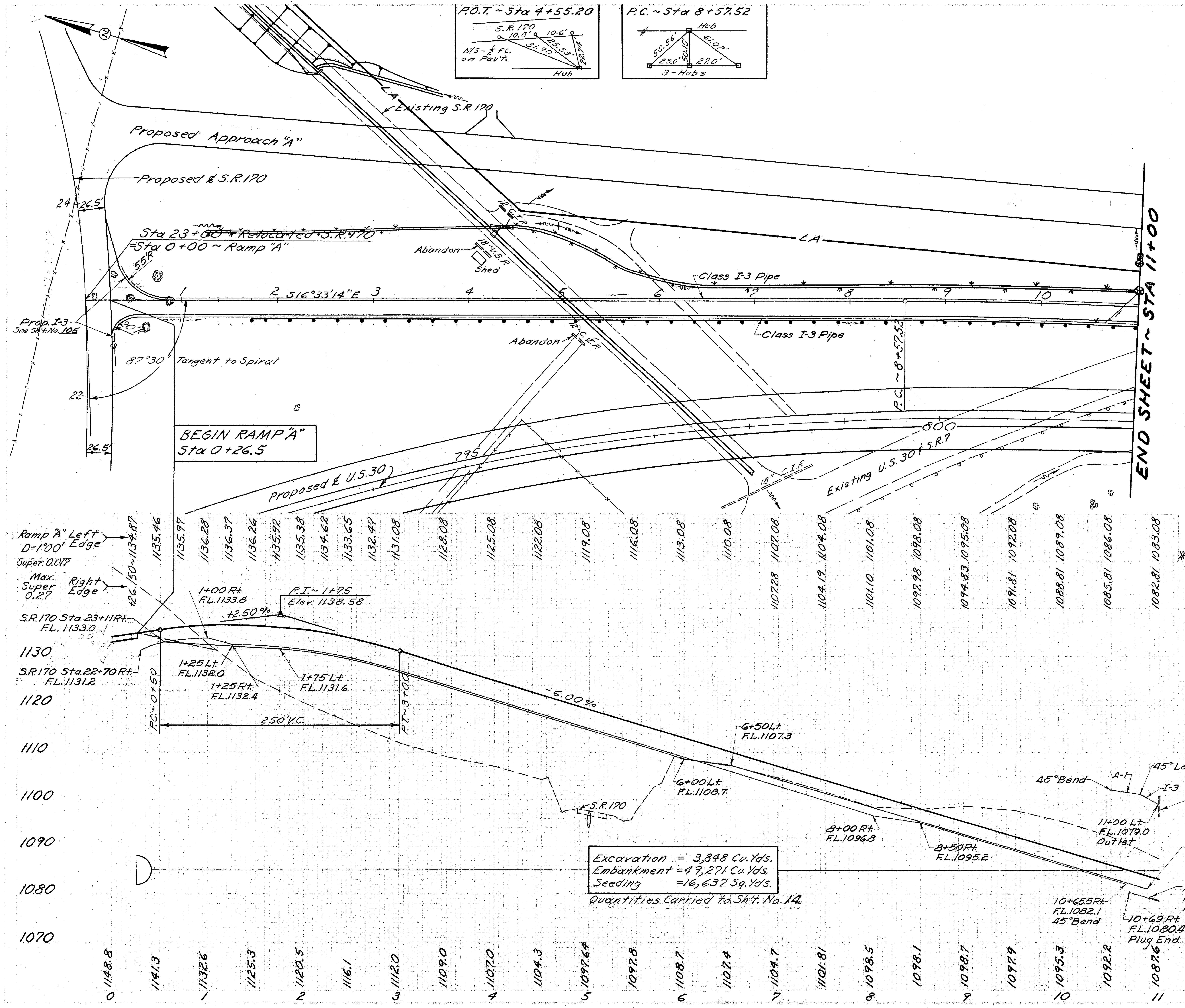
Station	Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
29+50	63		1	320		
		375			5	757
29+00	72		4	498		
		489			30	1185

COL-30-32.19

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
36+00	8		0	0		
		258			31	47
35+50	85		34	51		
		439			49	95
Sta 35+04					4	
35+00	73		19	52		
Sta 34+66					49	
		342			41	51
34+50 Ahead	50		25	3		
34+50 Back	50		72	3		
		347			175	6
34+00	75		117	3		
		400			226	12

Sta 34+00 to Sta 36+50

COL-30-32.19



DRAINAGE								
Station		Side ℄	See Sheet	New Work			Sod Sq. Yds.	Paved Gutter Lin. Ft.
From	To			Type	Size	Length		
5+01.5		Lt.&Rt.	160	Pipe	42"	736		
4+48	10+95	Lt.	118				380	
11+00		Lt.	123	Pipe	12"	32'		
1+25	3+25	Lt.	118				117	
3+25	4+25	Lt.	118				33	100
Total							530	100

GUARD RAIL			
Station		Side ℄	New Lin. Ft.
From	To		
1+73	11+00	Rt.	926
Total			926

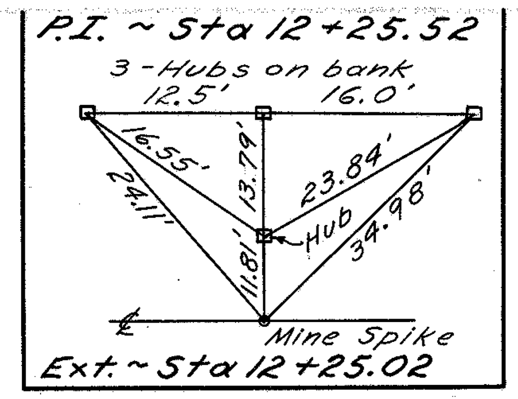
PAVEMENT REMOVAL			
Station		Side ℄	Sq. Yds.
From	To		
4+18	5+75	Lt.&Rt.	476
Total			476

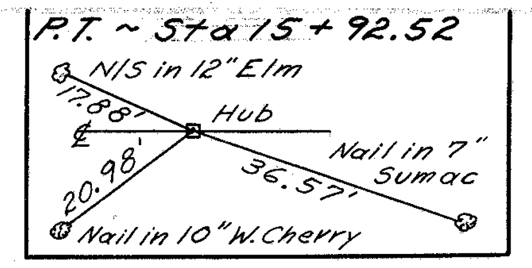
UNDERDRAIN								
Station		Side ℄	6" Class I-3 D=12"*	6" Class I-3 D=30"	Class F-1 6"	Class A-1 8"**	6" Pipe Spec. Cl. I-3 45° Bend	6" Pipe Spec. Cl. I-3 45° Lateral
From	To		Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each*	Each*
S.R.170-22+70	1+25	Rt.	98					
S.R.170-23+11	1+25	Lt.	75					
1+25	6+00	Lt.		475				
1+25	8+00	Rt.		675				
6+00	10+86.5	Lt.	487					1
8+00	10+65.5	Rt.	266				1	
10+65.5	11+00	Lt.&Rt.	8		10	30		
Total			934	1150	10	30	1	1

* Sec. M-6.4(h)
** Sec. M-6.6(b) or Sec. M-6.8(b)

RAMP "A" ~ Sta 0+00 To Sta 11+00

COL-30-32.19

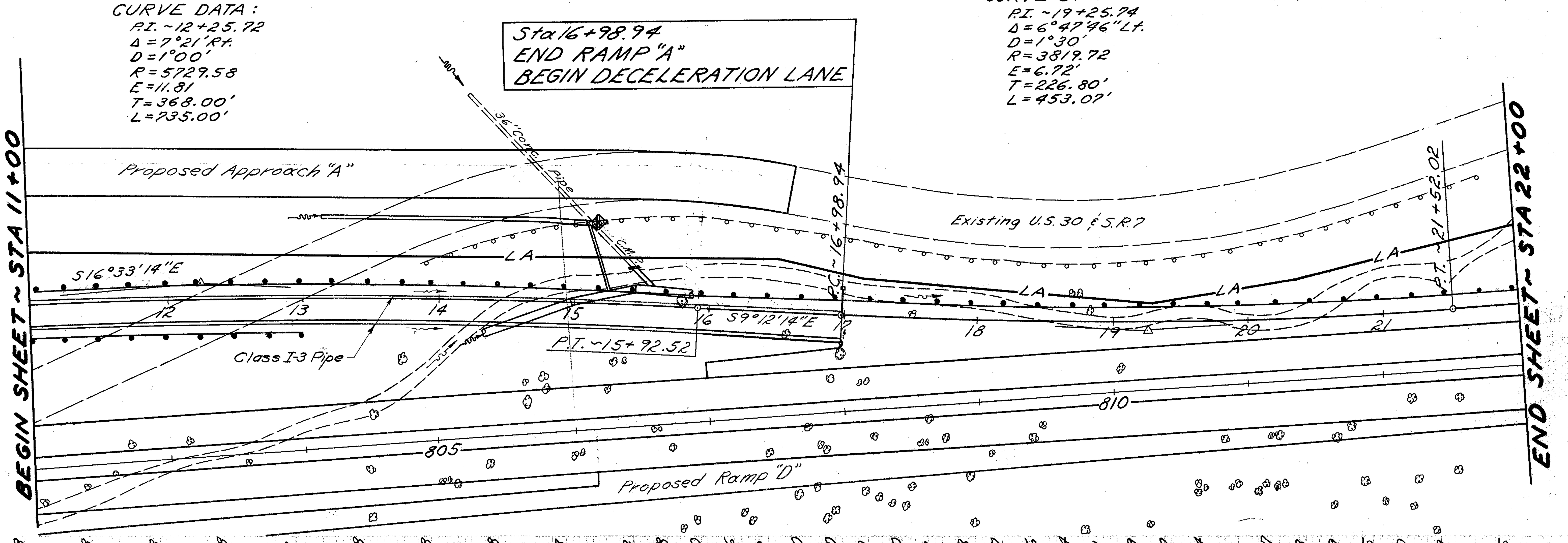




Note: Quantities throughout Deceleration Lane shown on Mainline Sheets No. 24 & 25

CURVE DATA:
P.I. ~12+25.72
Δ=7°21' Rt.
D=1°00'
R=5729.58
E=11.81
T=368.00'
L=735.00'

CURVE DATA:
P.I. ~19+25.74
Δ=6°47'46" Lt.
D=1°30'
R=3819.72
E=6.72'
T=226.80'
L=453.07'

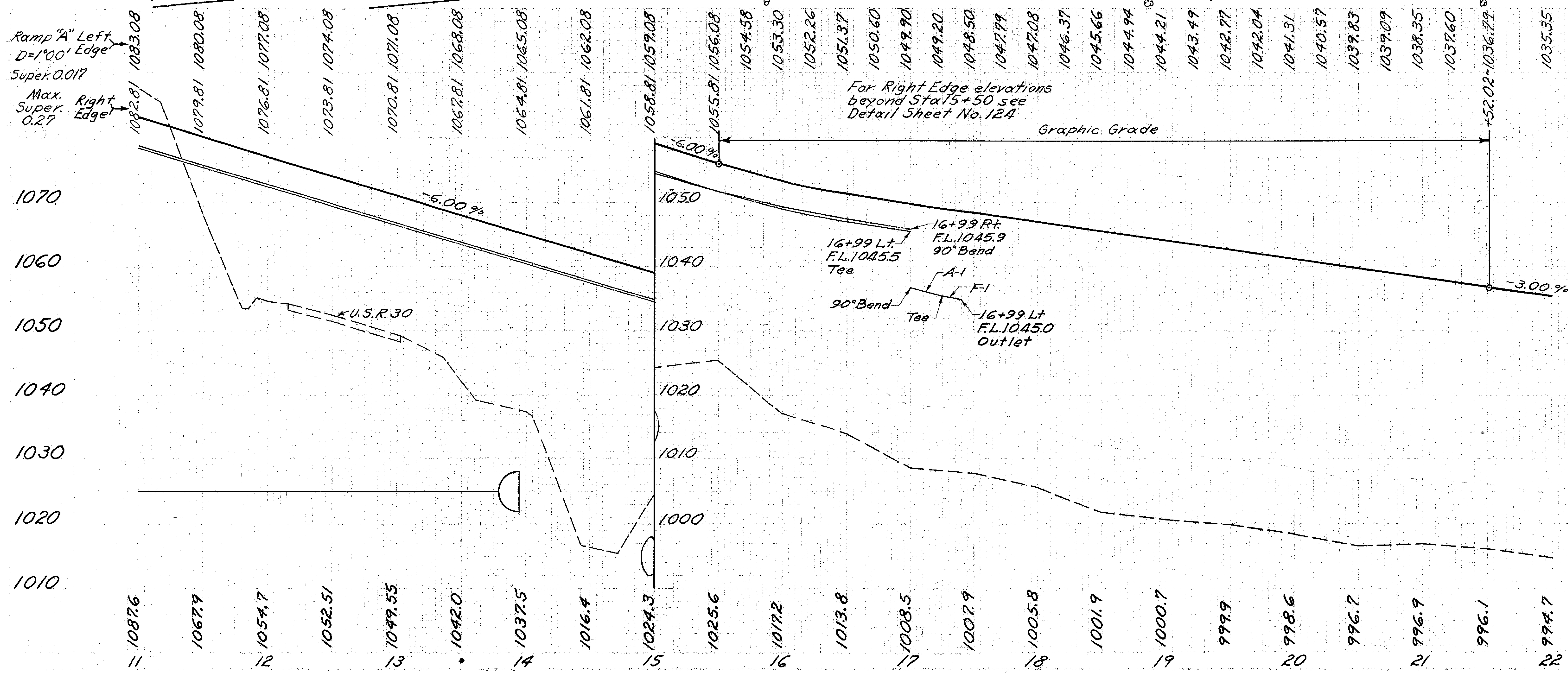


GUARD RAIL			
Station		Side ℄	New Lin. Ft.
From	To		
11+00	13+00	Rt.	199
11+03	16+98.94	Lt.	596.5
Total			795.5

PAVEMENT REMOVAL			
Station		Side ℄	Sq. Yds.
From	To		
11+00	13+12	Lt.&Rt.	924
Total			924

UNDERDRAIN							
Station		Side ℄	6" Cl. I-3 D=30"	Class F-1 8" *	Class A-1 8" **	6" Pipe Spec. I-3 90° Bend	6" Pipe Spec. I-3 Tee
From	To		Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each
10+69	16+99	Rt.	630			1	
10+90	16+99	Lt.	609				1
16+99		Lt.&Rt.		16	24		
Total			1239	16	24	1	1

* Sec. M-6.4(c)
** Sec. M-6.6(b) or Sec. M-6.8(b)



Carried To Sheet No.'s 12, 13 & 14

ESTIMATED QUANTITIES ~ RAMP "A"

T-71 PAVEMENT
Sta 0+26.5 to Sta 15+98.94
1572.44 x 16 ÷ 9 = 2796 Sq. Yds.
Extra Area Lt. & Rt. = 123+10 = 133 " "
Sta 15+98.94 to Sta 16+98.94
100 x 17(av.) ÷ 9 = 189 " "
Sta 15+98.94 to Sta 16+98.94
100 x 12(av.) ÷ 9 = 133 " "
Total T-71 = 3251 Sq. Yds.

I-21 MEDIAN PAVEMENT
Sta 16+58 to Sta 16+98 Rt.
40 x 6.5(av.) ÷ 9 = 29 Sq. Yds.

I-22 SUBBASE
Sta 0+26.5 to Sta 9+00
873.5 x 10.75°' ÷ 27 = 348 Cu. Yds.
Extra Volume Lt. & Rt. = 29+6 = 35 " "
Sta 9+00 to Sta 15+98.94
698.94 x 10.87°' ÷ 27 = 281 " "
Sta 15+98.94 to Sta 16+98.94
100 x 11.70°' ÷ 27 = 43 " "
Sta 15+98.94 to Sta 16+98.94 Rt.
100 x 6.00°' ÷ 27 = 22 " "
Under Median Pavement = 5 " "
Total I-22 = 734 Cu. Yds.

B-112 BASE COURSE
Sta 0+26.5 to Sta 9+00
952.9(av.) x (0.61°' + 0.75°') ÷ 27 = 48 Cu. Yds.
Sta 9+00 to Sta 16+98.94
798.94 x (0.84°' + 0.61°') ÷ 27 = 43 " "
Total B-112 = 91 Cu. Yds.

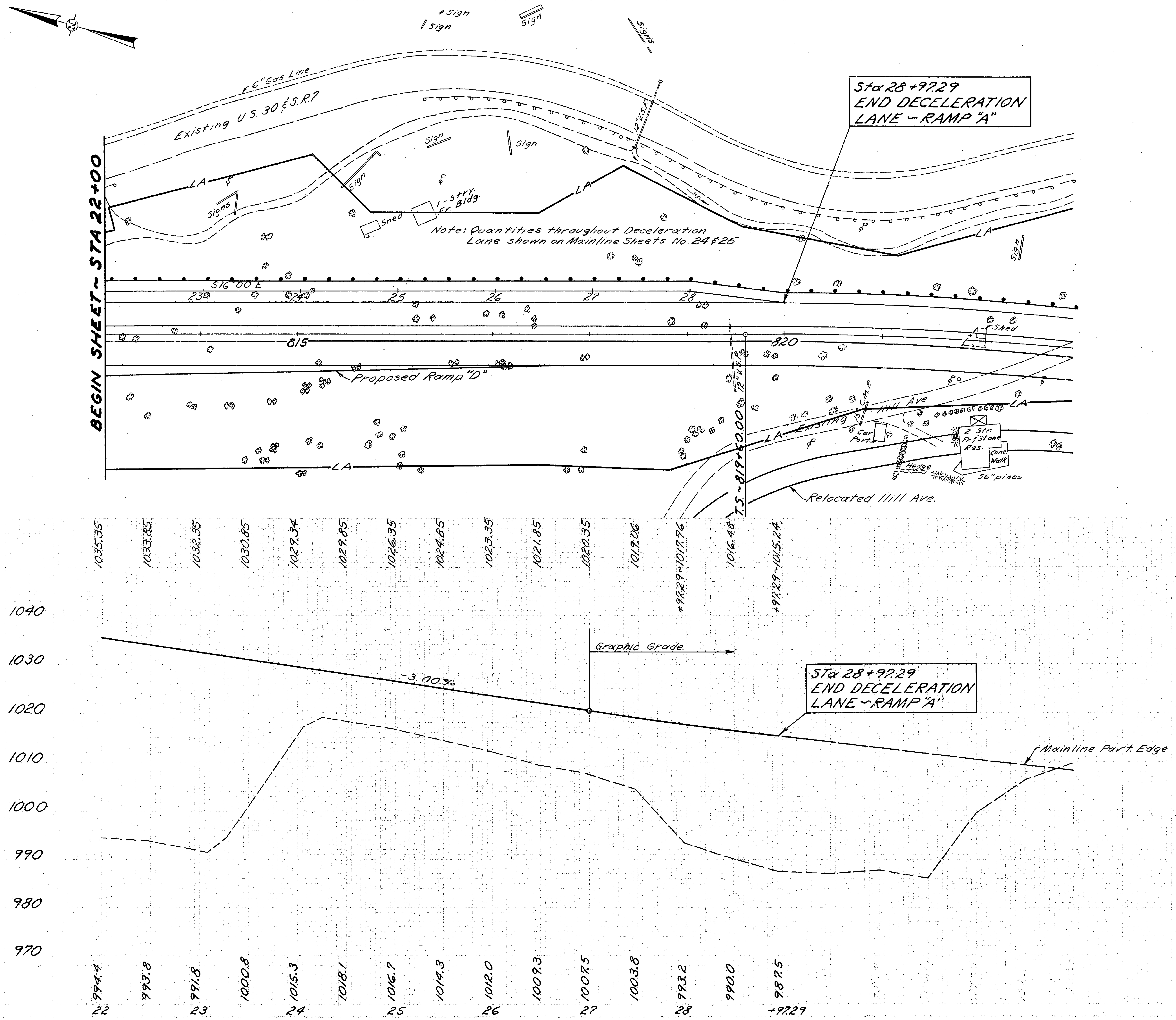
B-21 BASE COURSE
Sta 0+26.5 to Sta 16+98.94
1751.84(av.) x (1.5°' + 1.5°') ÷ 27 = 195 Cu. Yds.

T-31 BIT. SURF. TREATMENT
Sta 0+26.5 to Sta 16+98.94
1751.84(av.) x 6 ÷ 9 = 1168 Sq. Yds.
No. 6 Aggr. 1168 x 0.008 = 10 Cu. Yds.
Bit. Mat'l. 1168 x 0.25 = 292 Gals.

I-12 ST'D. TYPE 6 CURB = 204 Lin. Ft.

E-1 COMP. SUBGRADE
Pav't + Berms = 3251 + 1168 = 4419 Sq. Yds.

RAMP "A" ~ Sta 11+00 To Sta 22+00



COL-30-32.19

Carried To Sheet No.'s 12, 13 & 14

ESTIMATED QUANTITIES
DECELERATION LANE
Sta 16+98.94 to Sta 28+97.29

T-71 PAVEMENT

Sta 16+98.94 to 21+52.02
453.08 x 21.95 (av.) ÷ 9 = 1105 Sq. Yds.
Sta 21+52.02 to 27+97.29
645.27 x 12 ÷ 9 = 860 " "
Sta 27+97.29 to 28+97.29 Rt.
100 x 6 (av.) ÷ 9 = 67 " "

Total T-71 = 2032 Sq. Yds.

I-22 SUBBASE

Sta 16+98.94 to 21+52.02
453.08 x 27.9 (av.) x 0.5 ÷ 27 = 234 Cu. Yds.
Sta 21+52.02 to 27+97.29
645.27 x 20 x 0.5 ÷ 27 = 239 " "
Sta 27+97.29 to 28+97.29
100 x 14 (av.) x 0.5 ÷ 27 = 26 " "

Total I-22 = 499 Cu. Yds.

B-21 BASE COURSE

Sta 16+98.94 to 21+52.02
453.08 x 3" (av.) ÷ 27 = 50 Cu. Yds.
Sta 21+52.02 to 27+97.29
645.27 x 4" ÷ 27 = 96 " "
Sta 27+97.29 to 28+97.29
100 x 4" ÷ 27 = 15 " "

Total B-21 = 161 Cu. Yds.

B-112 BASE COURSE

Sta 16+98.94 to 21+52.02
453.08 x 1.03" (av.) ÷ 27 = 17 Cu. Yds.
Sta 21+52.02 to 27+97.29
645.27 x 1.16" ÷ 27 = 28 " "
Sta 27+97.29 to 28+97.29
100 x 1.16" ÷ 27 = 4 " "

Total B-112 = 49 Cu. Yds.

T-31 BIT. SURF. TREATMENT

Sta 16+98.94 to 28+97.29
1198.35 x 7.22 (av.) ÷ 9 = 962 Sq. Yds.
962 x 0.008 = 8 Cu. Yds.
962 x 0.25 = 241 Gals.

E-1 COMP. SUBGRADE

Sta 16+98.94 to 28+97.29
2032 + 962 = 2994 Sq. Yds.

RAMP "A" ~ Sta 22+00 To Sta 28+97.29

COL-30-32.19

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
5+00	149		0	2238		
		814			0	4129
4+50	144		0	2221		
		808			0	4015
4+00	147		0	2115		
		817			0	3907
3+50	147		0	2105		
		817			0	3953
3+00	147		0	2164		
Extra Seeding Rt. Sta. 0+50 to 5+00		1358				
		806			0	3788
2+50	143		0	1927		
		819			0	3306
2+00	152		0	1643		
		842			0	2488
1+50	151		0	1044		
		611			0	1055
1+11	131		0	417		
		615			0	653
Excavation for Pavement Trench					11	
STA. 0+26.5 BEGIN EARTHWORK	0		0	0		

RAMP "A" ~ Sta 1+11 To Sta 5+00

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	408			624	603
57		440	0		
	411			1037	0
91		680	0		
	433			989	0
65		388	0		
	353			587	0
62		246	0		
	314			280	8
51		56	9		
	297			56	131
56		4	133		
	300			6	219
52		3	103		
	289			5	179
	1056				
52		2	90		
	278			3	182
48		1	107		
	417			16	526

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
102		16	461		
	581			15	1693
107		0	1367		
	711			0	3338

COL-30-32.19

122
250

RAMP "A" ~ Sta 5+50 To Sta 10+5(

COL-30-32.19

RAMP "A" ~ Sta 11+00 To Sta 13+50

Ramp "A" Sta 13+94 =
Mainline Sta 805+00
(For Earthwork Only)

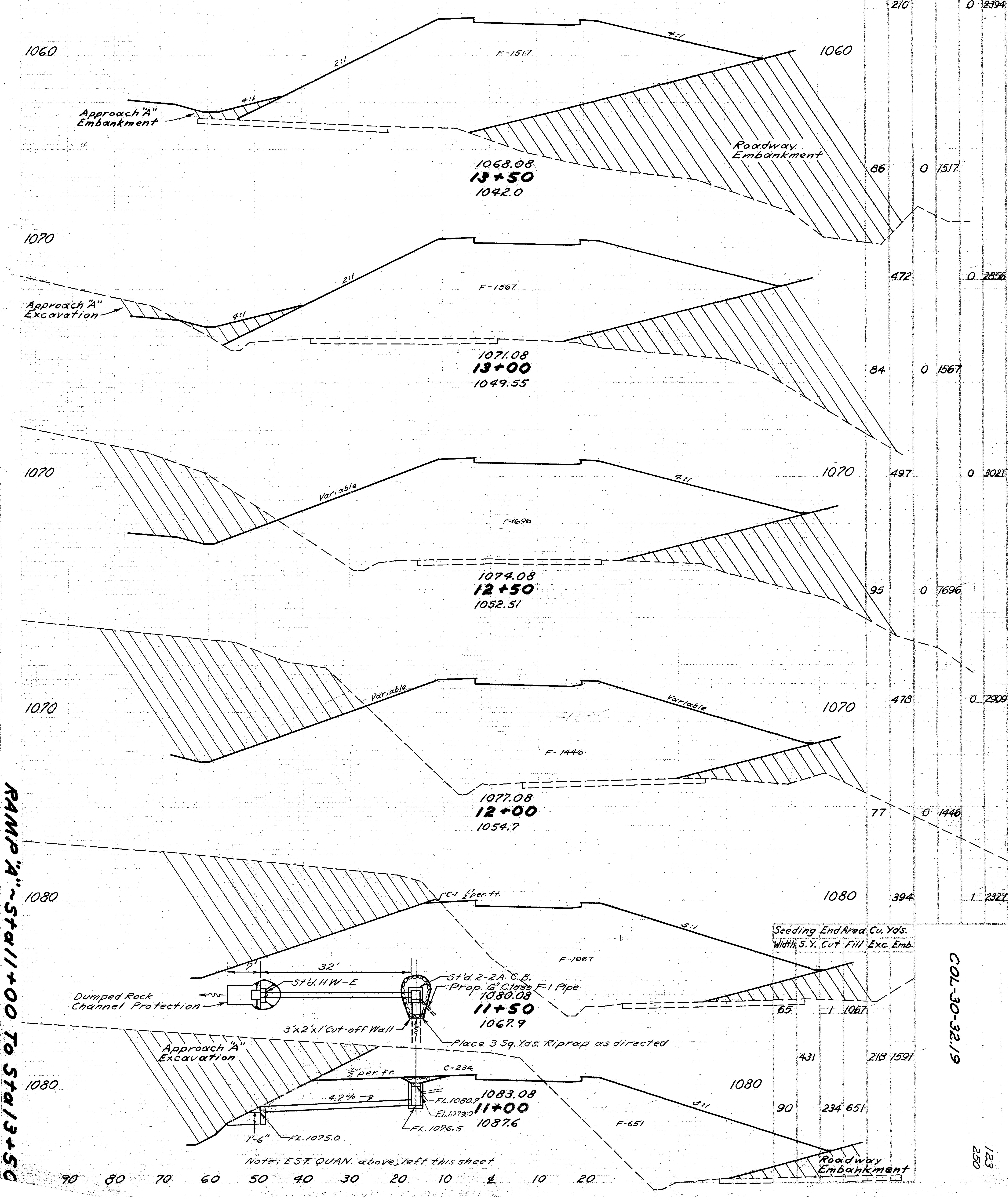
Note: Balance of Ramp "A" Earthwork shown on Mainline Cross Section. Quantity shown for Sta 13+94 taken from Mainline Cross Section.

ESTIMATED QUANTITIES (Sta 11+00)

12" Pipe Class D-1	32 Lin. Ft.
St'd. No. 2-2A Catch Basin	1 Each
Masonry "	0.3 Cu. Yds.
Riprap Grout Filled	3.0 Sq. Yds.
Dumped Rock Channel Protection	2.0 Cu. Yds.

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
Sta. 13+94	0		0	1421		
		210			0	2394
13+50	86		0	1517		
		472			0	2856
13+00	84		0	1567		
		497			0	3021
12+50	95		0	1696		
		478			0	2909
12+00	77		0	1446		
		394			1	2327

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
11+50	65		1	1067		
		431			218	1591
11+00	90		234	651		



RAMP DETAILS

Scale: 1"=20' Unless Noted

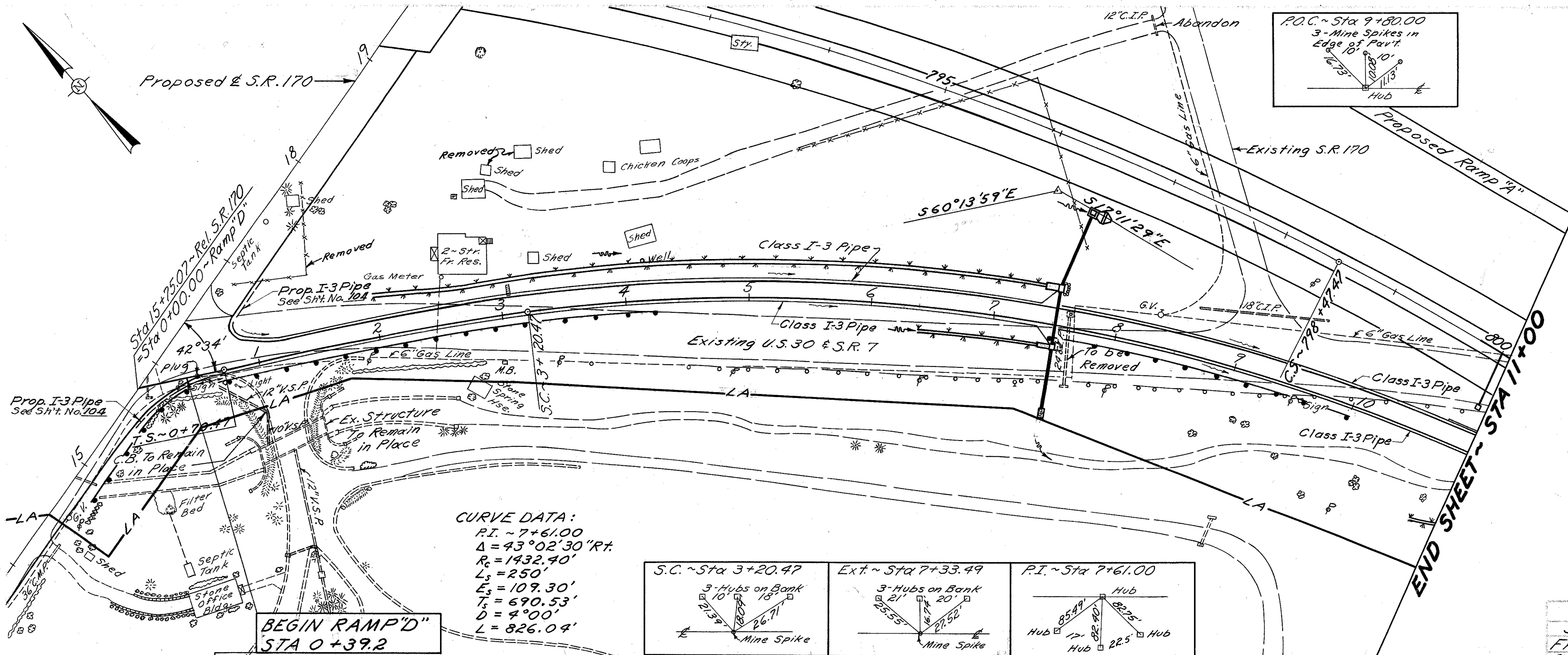
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

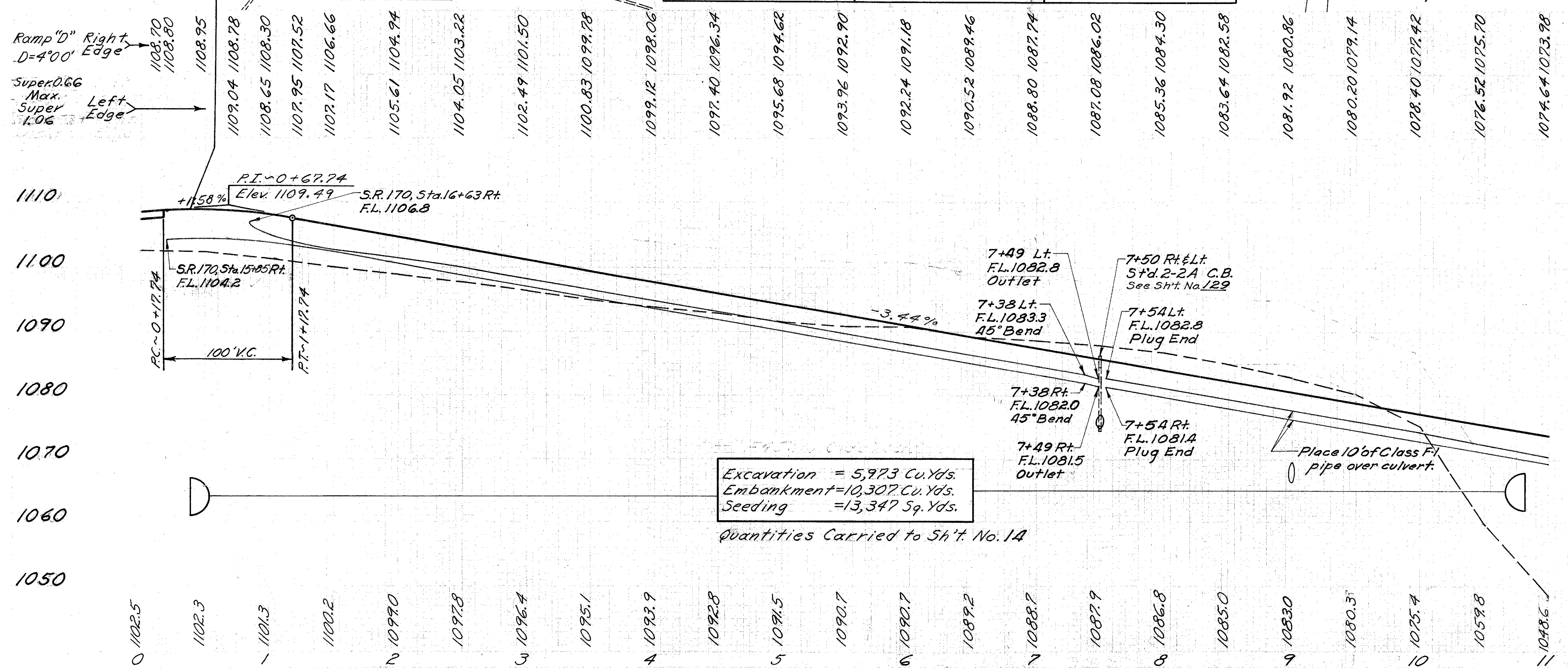
COL-30-32.19

INTERCHANGE
USR 30 & SR 170

RAMPS "A" & "D"

COL-30-32.19





DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Pipe Removed 15" & Over Lin. Ft.		Catch Basin Abandon Each
0+48		Rt.	125						1
7+50		Lt. & Rt.	129	Pipe	24" & 30"	46' & 51'			
7+62		Lt. & Rt.	125				69		1
Total							69		2

REMOVALS

Station From	Station To	Side ℄	See Sheet	Pavement Sq. Yds.	Curb & Gutter Lin. Ft.	
0+26	10+50	Lt. & Rt.	125	4140		
0+52	0+98	Rt.	125		60	
1+35	1+86	Rt.	125		60	
Total				4140	120	

SOD

Station From	Station To	Sq. Yds.
2+00	7+40	308
6+40	7+40	56
Total		364

GUARD RAIL

Station From	Station To	Side ℄	See Sheet	New Lin. Ft.	Remove Lin. Ft.
0+37.22	4+26	Rt.	125	387.5	
3+68	11+00	Lt. & Rt.	125		728
7+48	10+00	Rt.	125	250	
Total				637.5	728

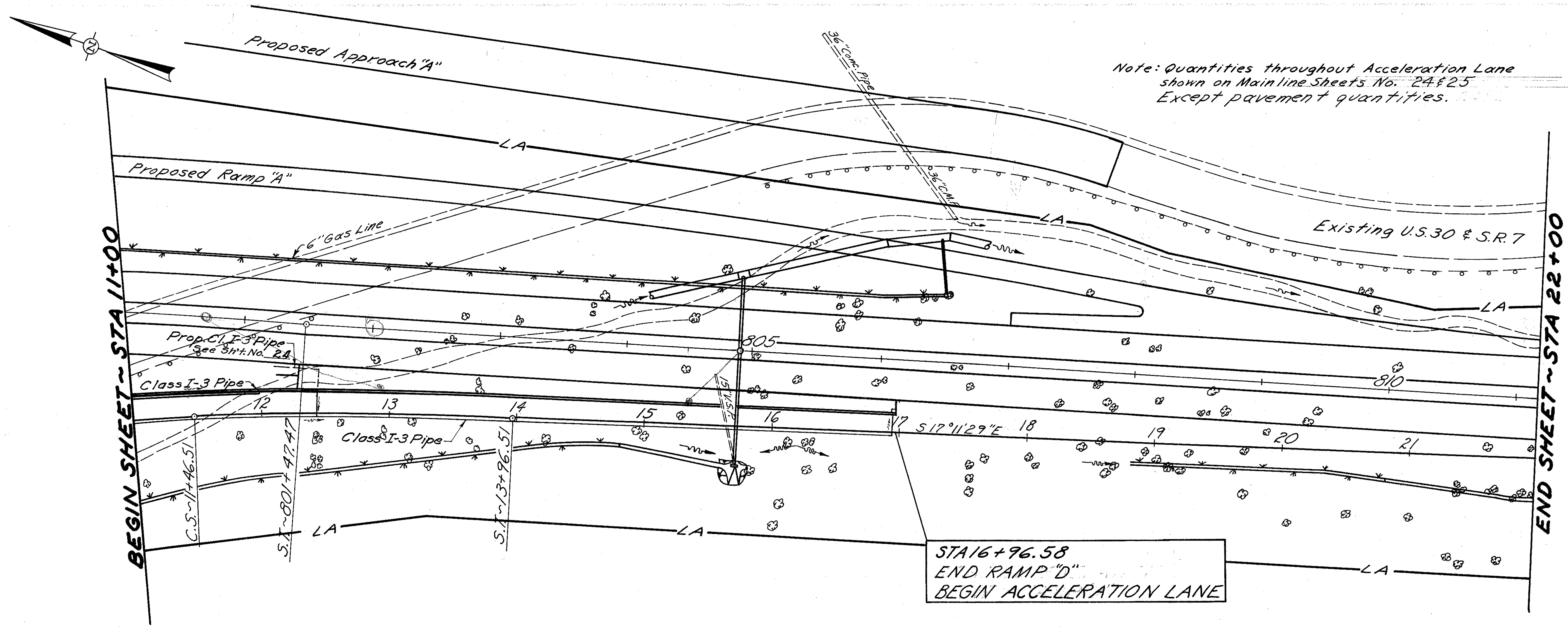
UNDERDRAIN

Station From	Station To	Side ℄	6" Cl. I-3 D=30" Lin. Ft.	Class F-1 6" Lin. Ft.	Pipe Spec. Cl. I-3, 6" 45° Each
S.R.170~15+85	7+49	Rt.	725	10	1
S.R.170~16+63	7+49	Lt.	670	10	1
7+54	11+00	Rt.	336	10	
7+54	11+00	Lt.	336	10	
Total			2067	40	2

Ramp "D" ~ Sta 0+00 to Sta 11+00

COL-30-32.19

Note: Quantities throughout Acceleration Lane shown on Mainline Sheets No. 24 & 25 Except pavement quantities.

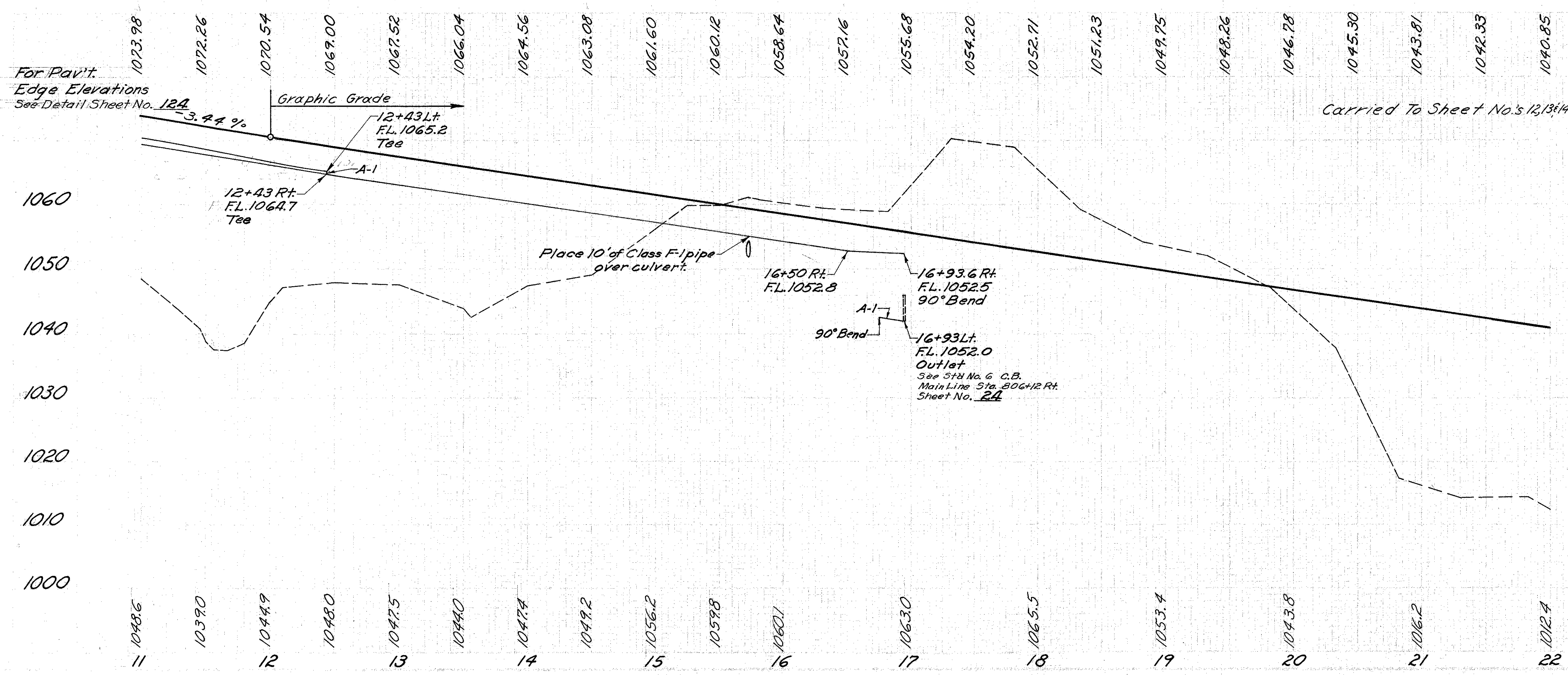


DRAINAGE							
Station		Side ℄	See Sheet	New Work			Sod Sq. Yds.
From	To			Type	Size	Length	
10+76	14+85	Rt.	125&126				226
804+91	(U.S.30)	Lt.&Rt.	166	Pipe	30"	146'	
Total							226

GUARD RAIL					
Station		Side ℄	See Sheet	New Lin. Ft.	Remove Lin. Ft.
From	To				
11+00	12+38	Lt.	126		147
Total					147

* Sec. M-6.6(b) or Sec. M-6.8(b)

UNDERDRAIN							
Station		Side ℄	6" Cl. I-3 D=30"	Class F-1 6"	Class A-1 8" *	Pipe Spec. 90°	6" Cl. I-3 Tee
From	To		Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each
11+00	12+43	Lt.	143				1
11+00	16+93.6	Rt.	584	10		1	1
12+43		Lt.&Rt.			21		
16+93.6		Lt.&Rt.			19		
Total			727	10	40	1	2



ESTIMATED QUANTITIES ~ RAMP "D"

T-71 PAVEMENT
Sta 0+39.2 to Sta 11+96
1148.11(av.) x 16 ÷ 9 = 2041 Sq. Yds.
Extra Area Lt. (Intersection = 54 " "
Sta 11+96 to Sta 16+96.58
500.58 x 15.80(av.) ÷ 9 = 879 " "
Total T-71 = 2974 Sq. Yds.

I-22 SUBBASE
Sta 0+39.2 to Sta 11+46.51
1098.62(av.) x 10.81"' ÷ 27 = 440 Cu. Yds.
Extra Volume Lt. = 12 " "
Sta 11+46.51 to Sta 16+96.58
550.07 x 12"(av.) ÷ 27 = 245 " "
Extra Volume Lt. = 124 " "
Total I-22 = 821 Cu. Yds.

B-21 BASE COURSE
Sta 0+39.2 to Sta 11+46.51
1111(av.) x (1.5"+1.5") ÷ 27 = 124 Cu. Yds.
Extra Volume Lt. = 124 " "
Sta 11+46.91 to Sta 13+96.51
250 x 2.75"' ÷ 27 = 26 " "
Sta 13+96.51 to Sta 16+96.58
300.07 x 4"' ÷ 27 = 45 " "
Total B-21 = 319 Cu. Yds.

B-112 BASE COURSE
Sta 0+39.2 to Sta 11+46.51
1111(av.) x (1"'+0.75"') ÷ 27 = 72 Cu. Yds.
Extra Volume Lt. = 62 " "
Sta 11+46.51 to Sta 13+96.51
250 x 1.375"' ÷ 27 = 13 " "
Sta 13+96.51 to Sta 16+96.58
300.07 x 1.16"' ÷ 27 = 13 " "
Total B-112 = 160 Cu. Yds.

T-31 BIT. SURF. TREATMENT
Sta 0+39.2 to Sta 11+46.51
1111(av.) x 6 ÷ 9 = 741 Sq. Yds.
Extra Area Lt. = 745 " "
Sta 11+46.51 to Sta 13+96.51
250 x 5.5(av.) ÷ 9 = 153 " "
Sta 13+96.51 to Sta 16+96.58
300.07 x 8 ÷ 9 = 267 " "
Total T-31 = 1906 Sq. Yds.
No. 6 Aggr. 1906 x 0.008 = 15 Cu. Yds.
Bit. Mat'l. 1906 x 0.25 = 477 Gals.

SPECIAL CURB ~ 10+75 to 16+96.58 = 622 Lin. Ft.

E-1 COMP. SUBGRADE
Pav't + Berms + Curb = 2974 + 1906 + 69 = 4949 Sq. Yds.
Deduct for Rock Cuts = -270 " "
Total E-1 = 4679 Sq. Yds.

Ramp "D" ~ Sta 11+00 to Sta 22+00

COL-30-32.19

Note: Quantities throughout Acceleration Lane shown on Mainline Sheets No. 24 & 25 Except pavement quantities.

Carried To Sheet No. 12, 13 & 14

ESTIMATED QUANTITIES

Acceleration Lane ~ Ramp "D"
Sta 16+96.58 to Sta 28+96.84

T-21 PAVEMENT
1200 x 12.5(av) ÷ 9 = 1667 Sq. Yds.

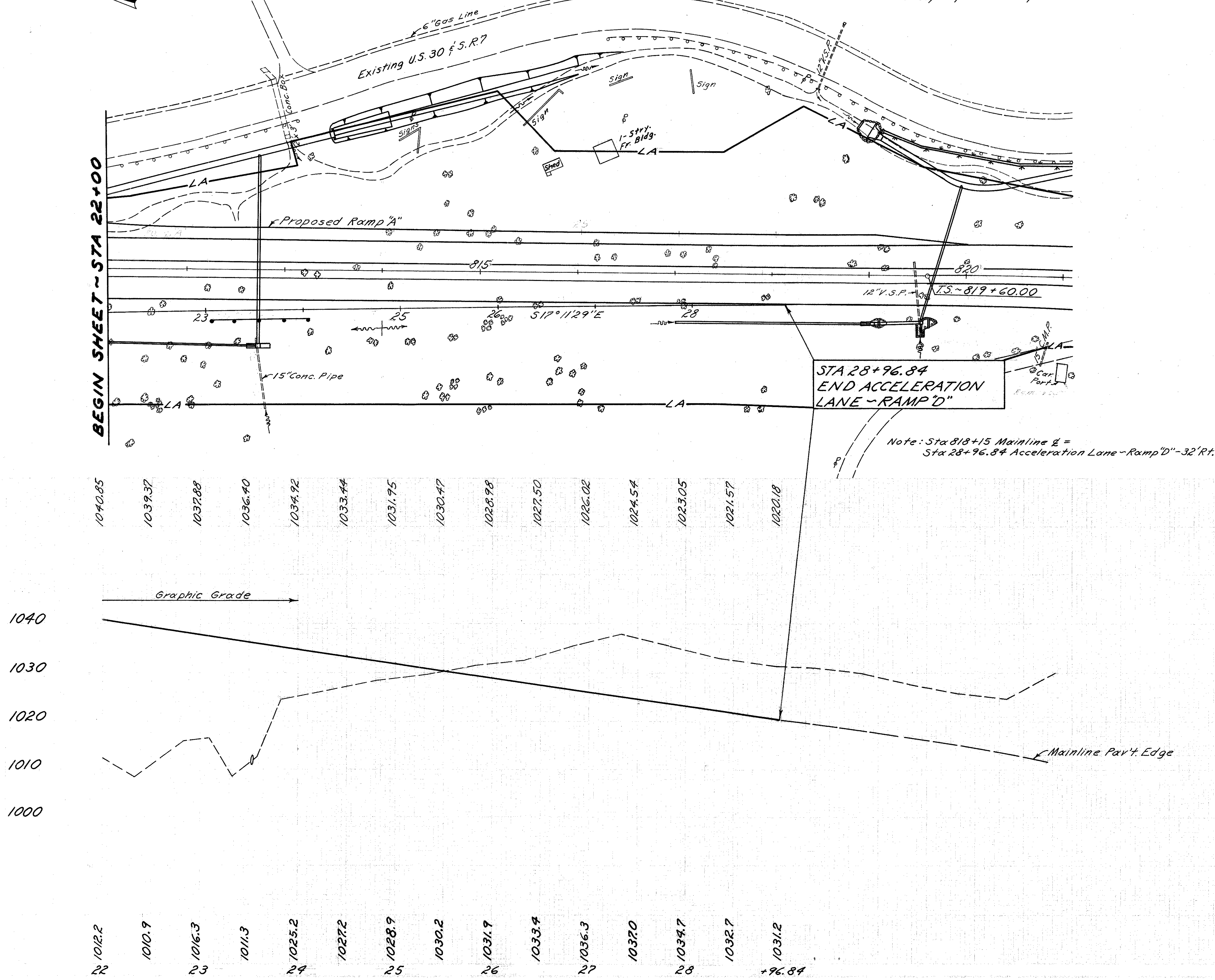
I-22 SUBBASE
1200 x 20.5(av) x 0.5 ÷ 27 = 456 Cu. Yds.

B-21 BASE COURSE
1200 x 4 sq.ft. ÷ 27 = 178 Cu. Yds.

B-112 BASE COURSE
1200 x 0.833 sq.ft. ÷ 27 = 37 Cu. Yds.

T-31 BIT. SURF. TREATMENT
No. 6 Aggr. 1200 x 8 ÷ 9 x 0.008 = 9 Cu. Yds.
Bit. Mat'l. 1200 x 8 ÷ 9 x 0.25 = 267 Gals.

E-1 COMPACTED SUBGRADE
1200 x 20.5(av) ÷ 9 = 2733 Sq. Yds.



RAMP "D" ~ Sta 22+00 To Sta 28+96.84

COL-30-32.19

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
5+50	101	553	372	18	659	53
5+00	98	528	340	39	560	97
4+50	92	489	265	66	371	205
4+00	84	447	136	155	158	317
3+50	77	403	35	187	45	393
3+00	68	378	14	237	23	460
2+50	68	397	11	260	10	544
2+00	75	428	0	328	0	635
1+50	79	91	0	412	0	164
1+38	57	211	0	326	0	474

451 Extra Seeding Lt. Sta. 1+50 to 7+00

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
1+00	43	119	0	348	0	353
0+73	36	91	0	357	0	230
0+50	35	23	0	182	0	40
0+38	0		0	0		

Ramp "D" ~ Sta 0+50 to Sta 5+50

COL-30-32.19

Ramp "D" ~ Sta 6+00 to Sta 10+50

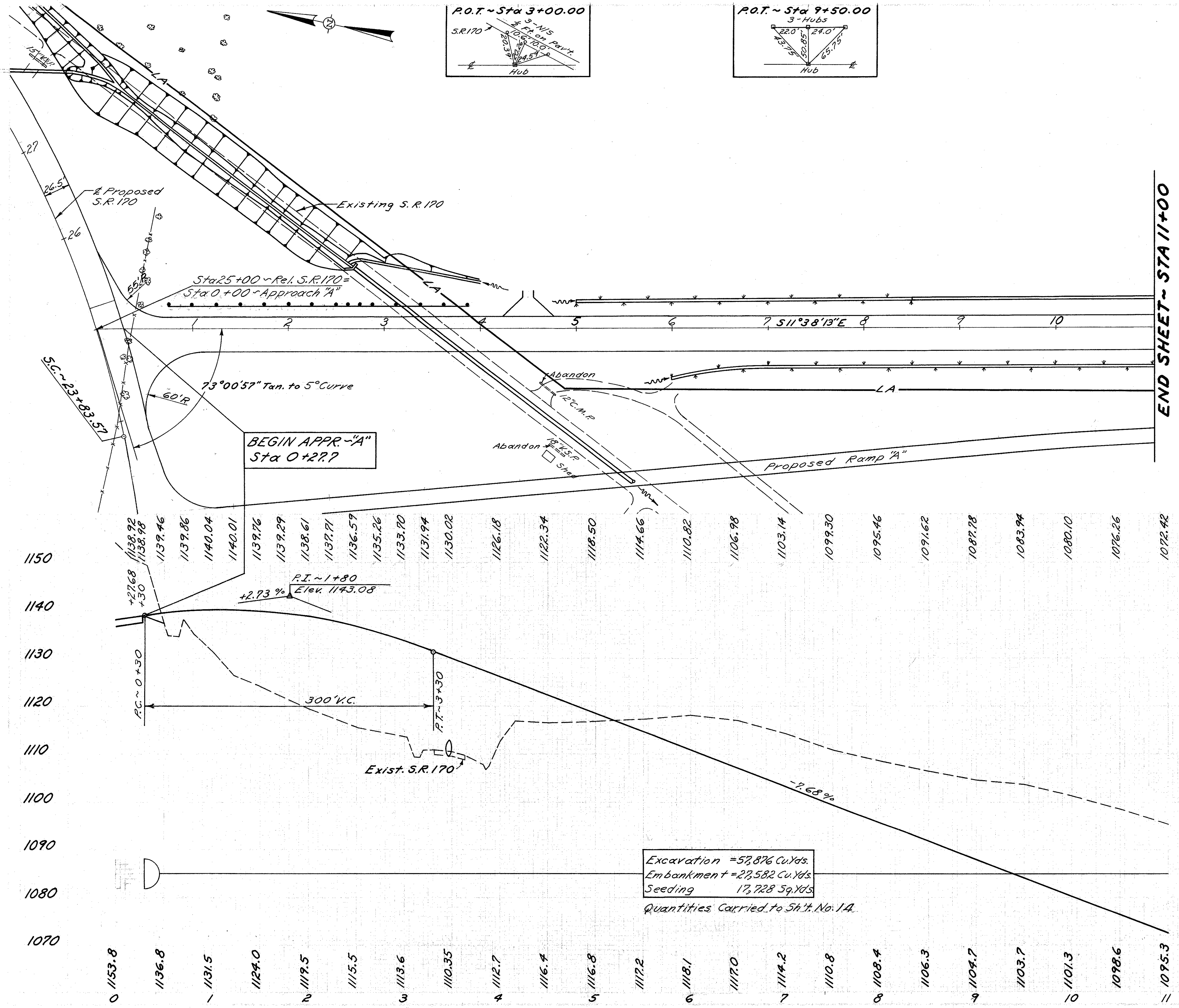
Ramp "D" Sta 10+82 =
Mainline Sta 800+00
(For Earthwork only)

Note: Balance of Ramp "D" Earthwork shown on Mainline Cross Sections. Quantities shown for Sta. 10+82 taken from Mainline Cross Section

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
Sta. 10+82	100		0	1903		
		348			0	2128
10+50	96		0	1688		
		544			9	2772
10+00	100		10	1306		
		528			46	1361
9+50 Ahead	90		40	164		
9+50 Back	34		40	5		
		231			121	5
9+00	49		91	0		
		314			221	0
8+50	64		148	0		
		369			393	0
8+00	69		276	0		
		397			472	0
7+50 Ahead	74		234	0		
7+50 Back	74		251	0		
		364			536	0
7+00	57		328	0		

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
		442			718	0
6+50	102		447	0		
		572			850	5
6+00	104		471	5		
		569			781	21

COL-30-32.19



APPROACHES

Station	Side ℄	See Sheet	T-35 Surface Cu. Yds.	B-19 Aggr. Cu. Yds.
4+50	Lt.	130		13.0
Total				13.0

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Paved Gutter Lin. Ft.	Sod Sq. Yds.
3+47.2		Lt.&Rt.	160	Pipe	42"	736		
8+50	11+00	Lt.	130				250	84
5+00	8+50	Lt.	130					194
6+00	11+00	Rt.	130					284
Total							250	562

GUARD RAIL

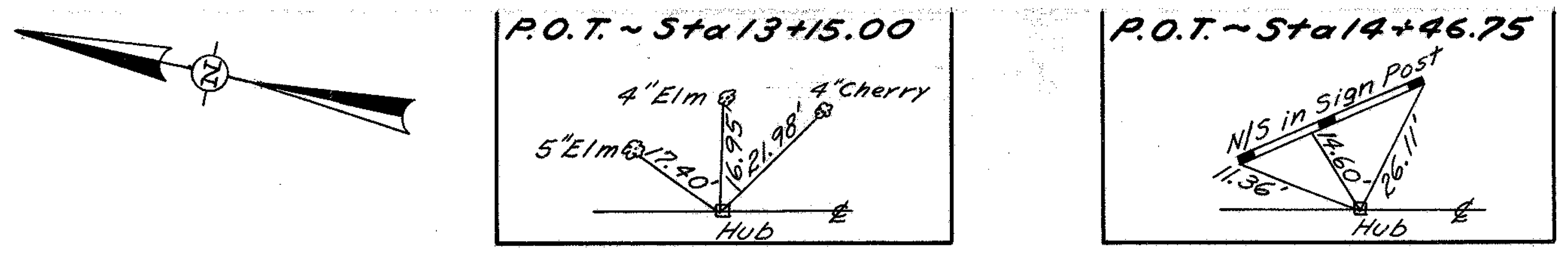
Station From	Station To	Side ℄	New Lin. Ft.
0+75	3+87.5	Lt.	312.5
Total			312.5

PAVEMENT REMOVAL

Station From	Station To	Side ℄	Sq. Yds.
2+50	4+50	Lt.&Rt.	567
Total			567

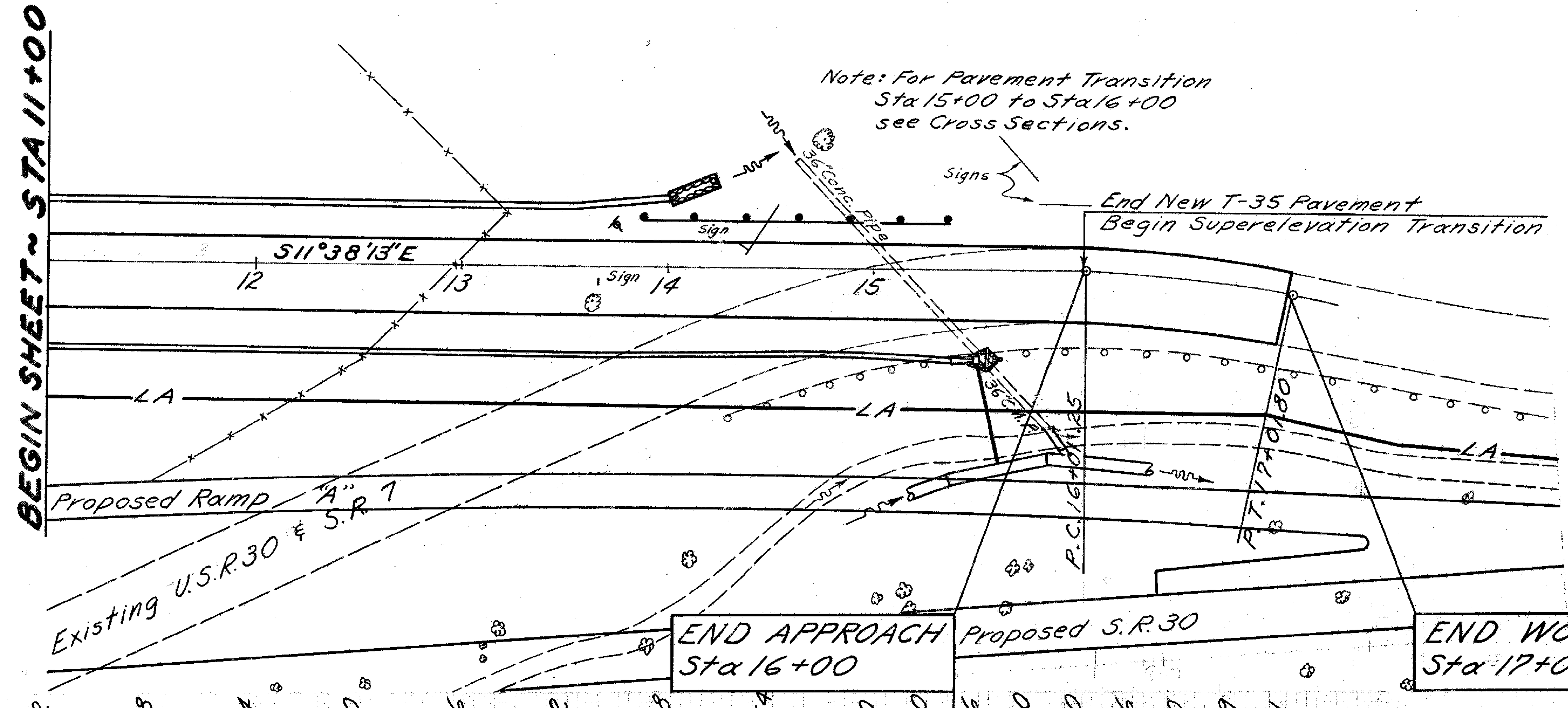
APPROACH "A" ~ Sta 0.00 To Sta 11+00

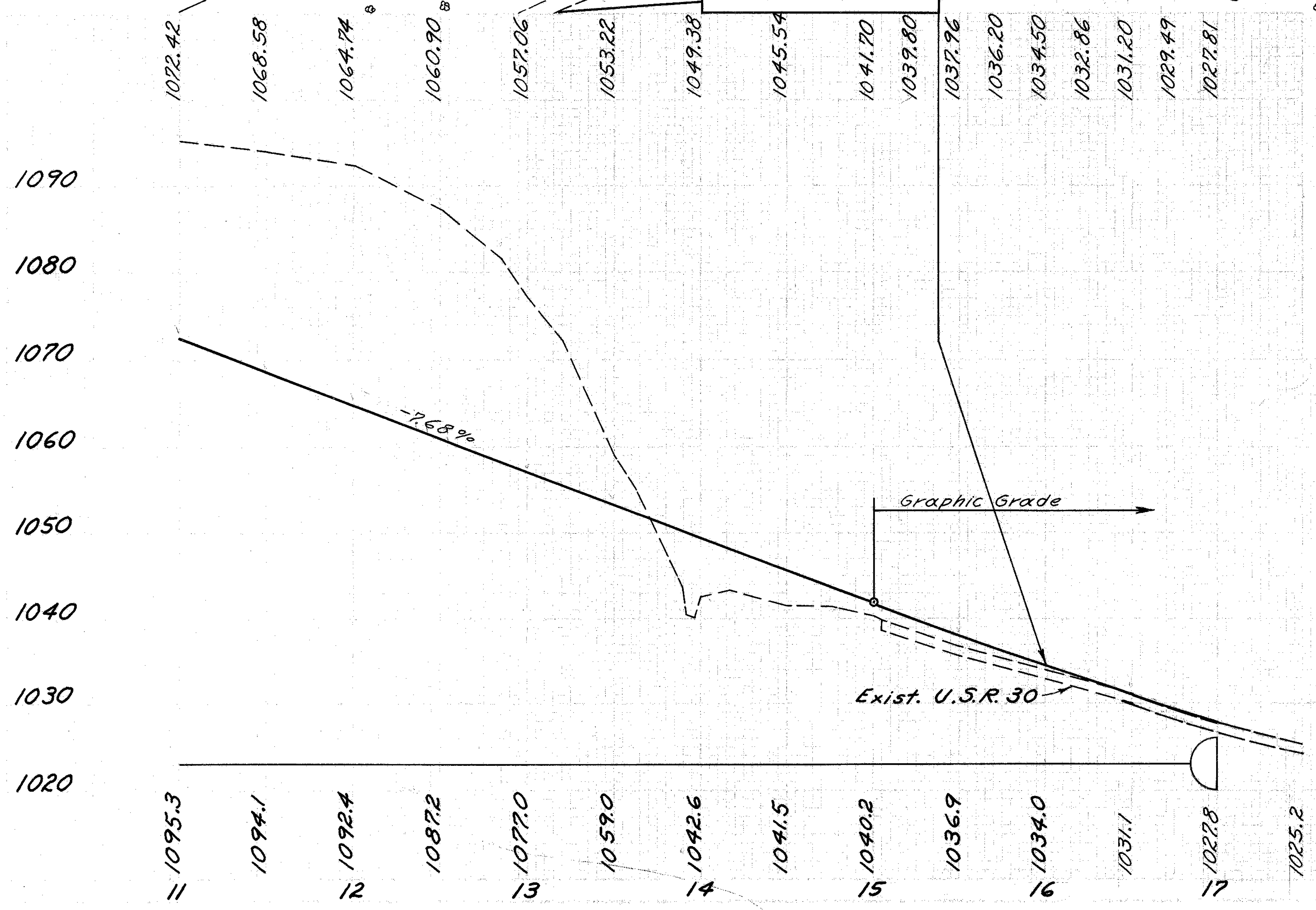
COL-30-32.19



APPR. "A" - CURVE DATA:
P.I. - 16+51.71
Δ = 12°04' Rt.
D = 12°00'
T = 50.46'
L = 100.55'
E = 2.66'
R = 477.46'

Note: For Pavement Transition Sta 15+00 to Sta 16+00 see Cross Sections.

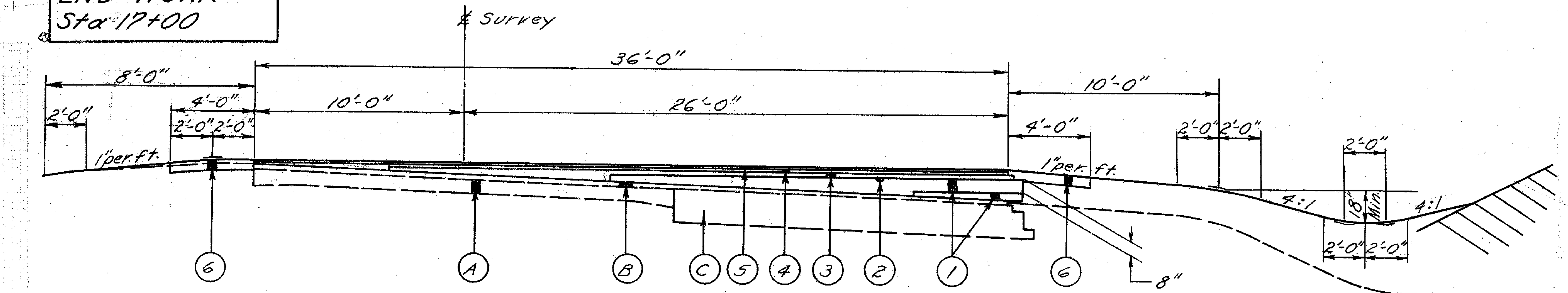




DRAINAGE									
Station		Side ℄	See Sheet	New Work			Paved Gutter Lin. Ft.	Sod Sq. Yds.	Dump Rock Chan. Prot. Cu. Yds.
From	To			Type	Size	Length			
11+00	14+00	Lt.	131				300	100	
11+00	15+38	Rt.	131				438	146	
14+00	14+23	Lt.	135						8
15+50		Rt.	135	Pipe	15"	53'			
Total							738	246	8

GUARD RAIL				
Station		Side ℄	New Lin. Ft.	
From	To			
13+87	15+37	Lt.	150	
Total			150	

PAVEMENT REMOVAL			
Station		Side ℄	Sq. Yds.
From	To		
13+50	16+00	Lt.&Rt.	1060
Total			1060



TYPICAL SECTION SUPERELEVATED TRANSITION & ADJOINING PAVEMENT
STA 16+00 TO STA 17+00

1. Item B-19 Aggregate Base Course
2. Item T-30 Prime Coat, Sec. M-5.7 RT-2 or RT-3, Applied at the rate of 0.4 gal. per Sq. Yd.
3. Item B-35 3" Asphaltic Concrete Base Course (70-85)
4. Item B-35 1¼" Asphaltic Concrete Leveling Course (70-85)
5. Item T-35 1¼" Asphaltic Concrete Surface Course, Type "C" (70-85)
6. Item I-18 6" Stabilized Crushed Aggregate Shoulders

A. Existing 9"-7"-7"-9" Concrete Base
B. Existing Asphaltic Concrete Surface Course
C. Existing Macadam Base Widening Course

Carried To Sheet No. 13
ESTIMATED QUANTITIES

T-35 Surface Course Sta 16+00 to Sta 17+00
100 X 36 ÷ 9 X .0347 = 14.0 Cu. Yds.

B-35 Leveling Course Sta 16+00 to Sta 16+75
75 X 22.6 Av. ÷ 9 X .0347 = 7.0 Cu. Yds.

B-35 Base Course Sta 16+00 to Sta 16+69
69 X 17.2 Av. ÷ 9 X .0833 = 11.0 Cu. Yds.

B-19 Base Course Sta 16+00 to Sta 16+50
50 X 13 Av. ÷ 9 X .222 = 16.0 Cu. Yds.

T-30 Prime Coat
50 X 13 ÷ 9 X .40 = 29.0 Gal.

APPROACH "A" ~ Sta 11+00 To Sta 17+00

COL-30-32.19

APPROACH "A" ~ Sta 0+55 To Sta 4+50

COL-30-32.19

APPROACH "A" ~ Sta. 5+00 To Sta. 9+50

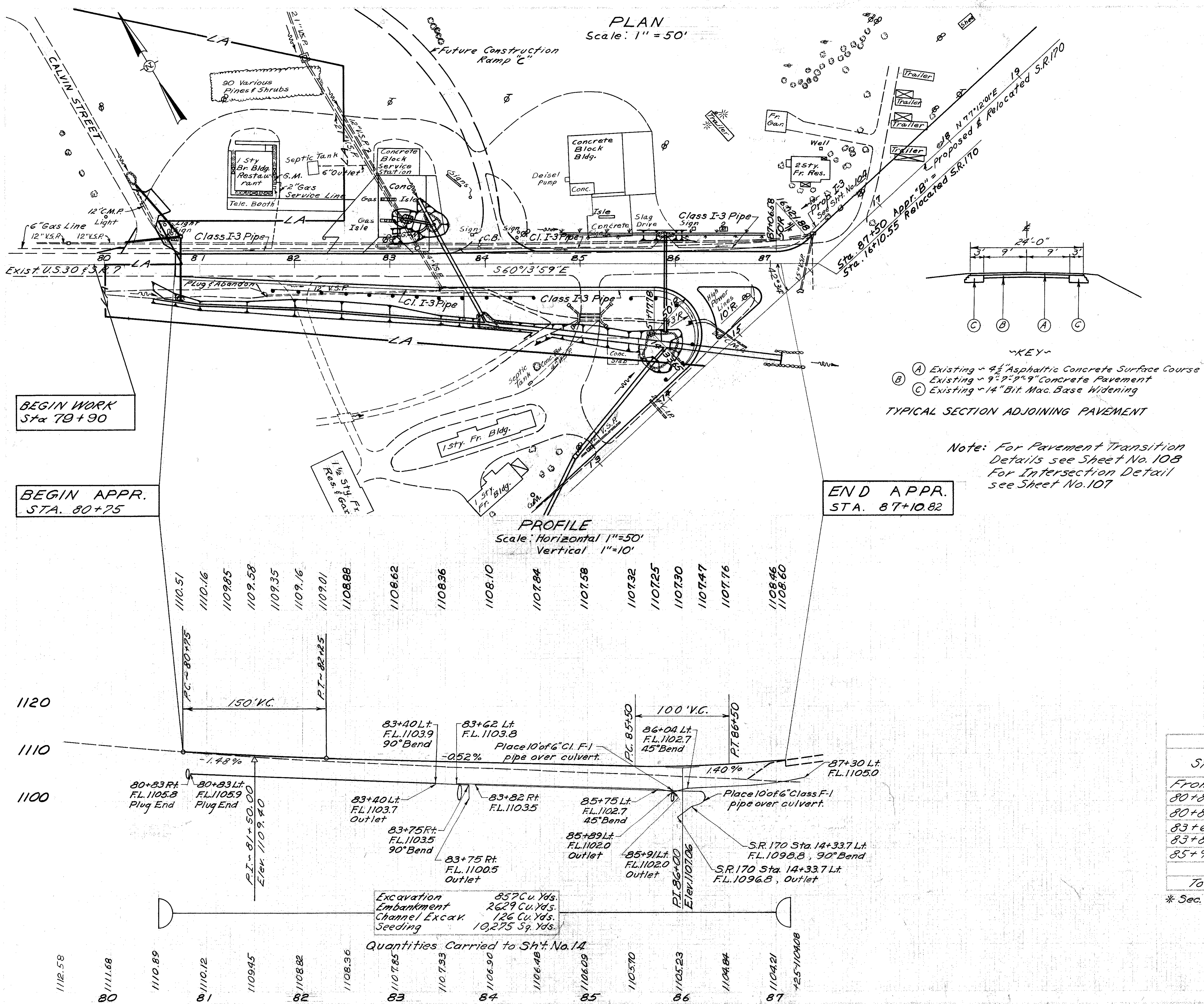
COL-30-32.19

APPROACH "A" ~ Sta 10+00 To Sta 13+50

COL-30-32.19

APPROACH "A" Sta. 14+00 to Sta. 17+25

COL-30-32.19



APPROACHES					
Station	Side ℄	See Sheet	T-35 Surface Cu. Yds.	B-19 Aggr. Cu. Yds.	Remarks
80+50	Lt.	137		17.0	off Calvin St. to Restaurant
80+67	Lt.	137	6.0	21.0	Calvin St.
80+17	Lt.	137	0.7	2.0	Mail Box Appr.
Total			6.7	40	

DRAINAGE								
Station		Side ℄	See Sheet	New Work			Pipe Removed 15" & Under Lin. Ft.	Catch Basins Abandoned Each
From	To			Type	Size	Length		
80+18	80+80	Lt. & Rt.	157	Pipe Pipe Pipe	12" 18" 24"	60' 76' 66'		
80+18	87+44	Lt.	136				777	
83+66		Lt. & Rt.	158	Pipe	42"	108		
83+95		Lt.	136					1
85+90		Lt. & Rt.	159	Pipe	24"	102		
87+31	87+46	Lt. & Rt.	136				62	1
Total							839	2

REMOVALS					
Station		Side ℄	See Sheet	Pavement Removal-Sq. Yds.	S-22-Removal Portions Exist. Structures-Cu. Yd.
From	To				
80+75	87+50	Lt. & Rt.	136	1967	
82+89	83+40	Lt.	136	278	
85+09	85+56	Lt.	136	216	
85+10		Rt.	136		19.0
85+29	85+62	Rt.	136	92	
Total				2553	19.0

SOD		
Station		Sq. Yds.
From	To	
86+00	16+25	73
84+80	85+80	56
Total		129

GUARD RAIL				
Station		Side ℄	New Lin. Ft.	Remove Lin. Ft.
From	To			
81+75	84+50	Rt.	275	
82+80	83+05	Lt.		25
85+53	14+10	Rt.	150	
Total			425	25

UNDERDRAIN							
Station		Side ℄	6" Cl.-I-3 D=30"	Class F-1 6"	Class F-1 8"*	6" Pipe Spec. Cl. I-3 45°	6" Pipe Spec. Cl. I-3 90°
From	To		Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each
80+83	83+40	Lt.	267	10			1
80+83	83+75	Rt.	313		10		1
83+62	85+89	Lt.	236	10		1	
83+82	S.R.170-14+33.7	Rt.	300	30			1
85+91	87+30	Lt.	136	10		1	
Total			1252	60	10	2	3

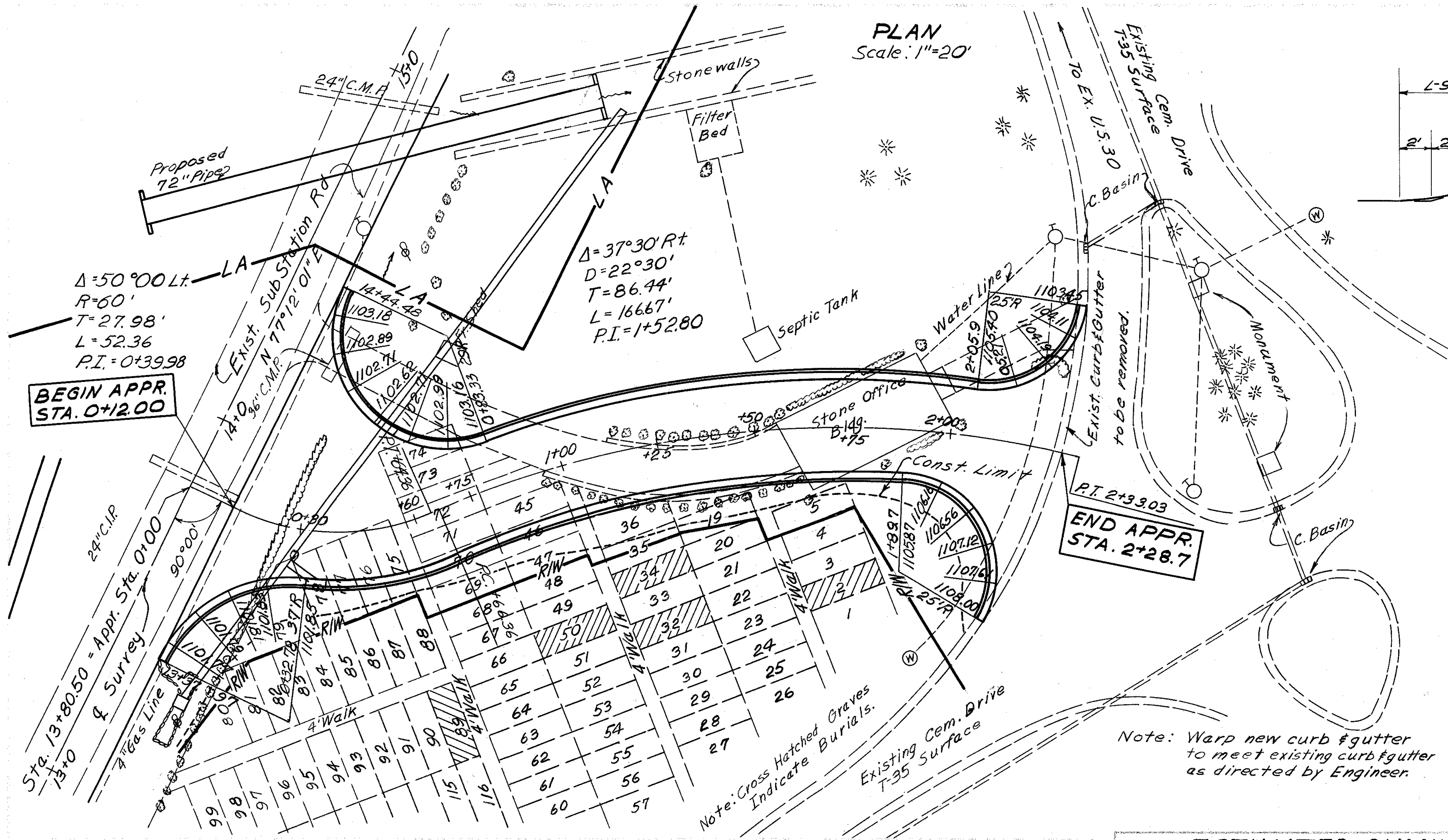
* Sec. M-6.A(c)

APPROACH "B" ~ Sta 80+75 To Sta 87+10.82

COL-30-32.19

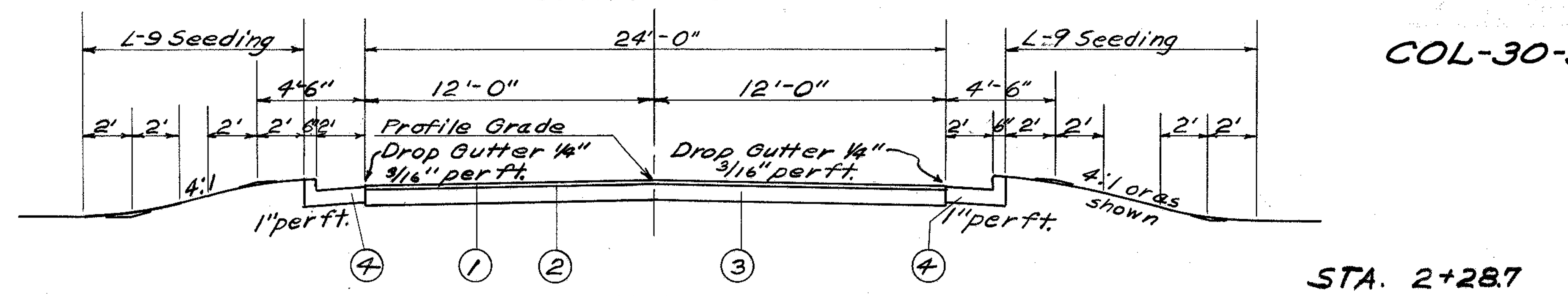
Approach "B" ~ Sta. 80+00 to Sta. 87+00

COL-30-32.19



TYPICAL SECTION

Scale: 1"=5'



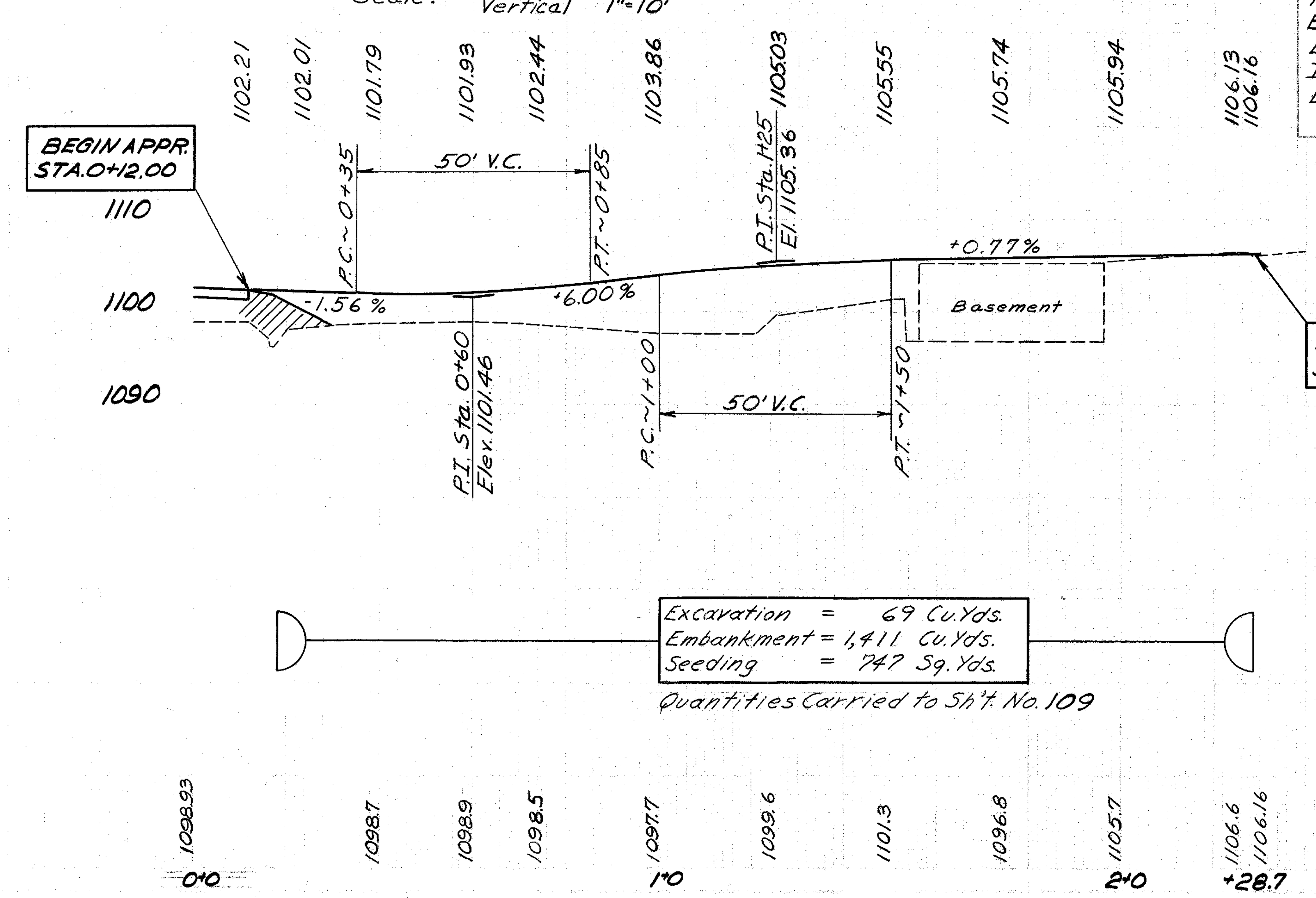
KEY

1. Item T-35 2" Asphaltic Concrete Surface Course Type "C" (85-100)
2. Item T-30 Bituminous Prime Coat, Applied at the rate of 0.4 gal. per Sq. Yd.
3. Item B-19 8" Crushed Aggregate Base Course
4. Item I-12 Combined Curb & Gutter, Std. Type 2

2" T-35, Type "C", (85-100) shall be placed in two 1 inch courses

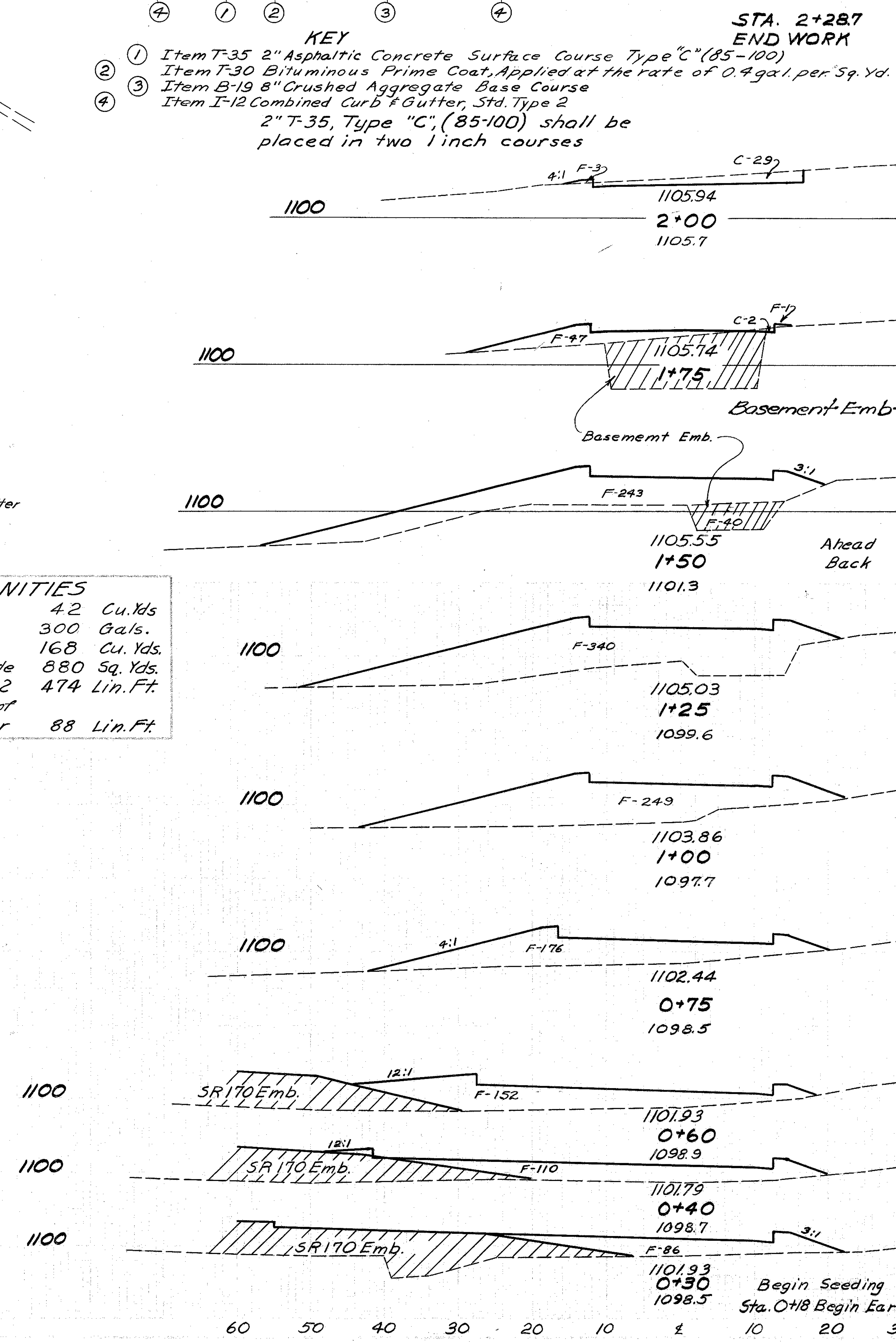
ESTIMATED QUANITIES

T-35	Surface Course	42	Cu. Yds
T-30	Prime Coat	300	Gals.
B-19	Base Course	168	Cu. Yds.
E-1	Compacted Subgrade	880	Sq. Yds.
I-12	Curb & Gutter, Type 2	474	Lin. Ft.
E-8	Removal & Disposal of Existing Curb & Gutter	88	Lin. Ft.



Excavation = 69 Cu. Yds.
Embankment = 1,411 Cu. Yds.
Seeding = 747 Sq. Yds.

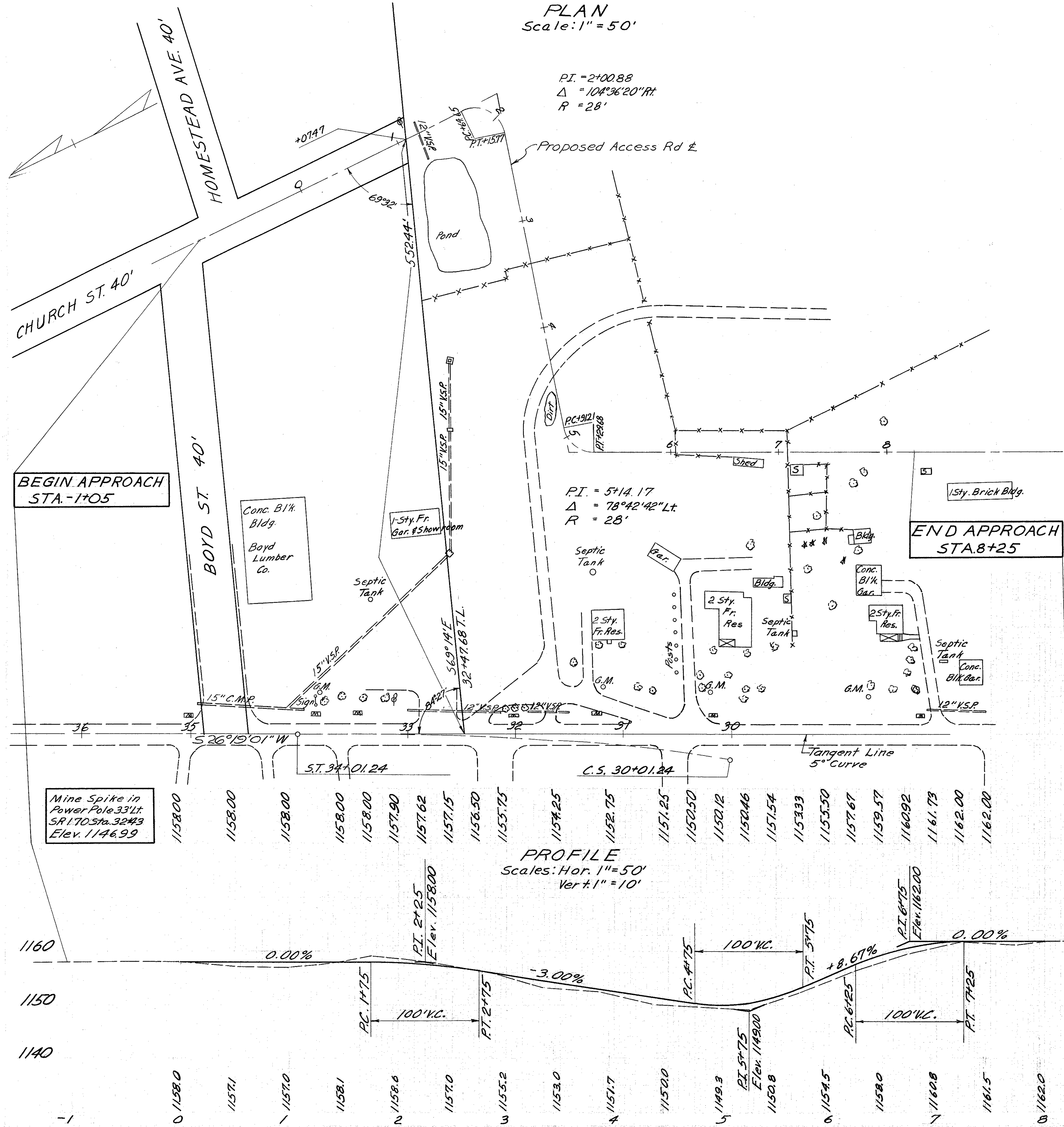
Quantities Carried to Sh't. No. 109



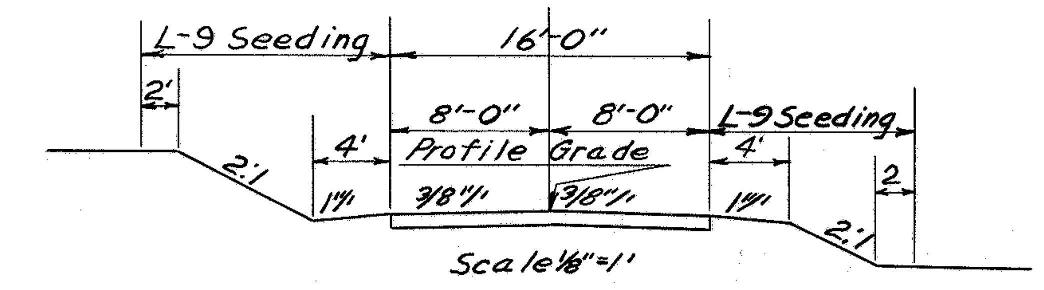
Station	Seeding Width	Seeding Sq. Yd.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
2+28.7	8		72	0		
		29			54	2
2+00	10		29	3		
		50			14	24
1+75	26		2	48		
Basement Emb						249
		117			1	135
1+50 Ahead	58		0	243		
1+50 Back	58		0	283		
		158			0	288
1+25	56		0	340		
		144			0	273
1+00	48		0	249		
		121			0	197
0+75	39		0	176		
		55			0	91
0+60	27		0	152		
		54			0	97
0+40	22		0	110		
		19			0	36
0+30	13		0	86	0	19
Sta. 0+18			0	0		

CEMETERY APPROACH

COL-30-32.19



TYPICAL SECTION

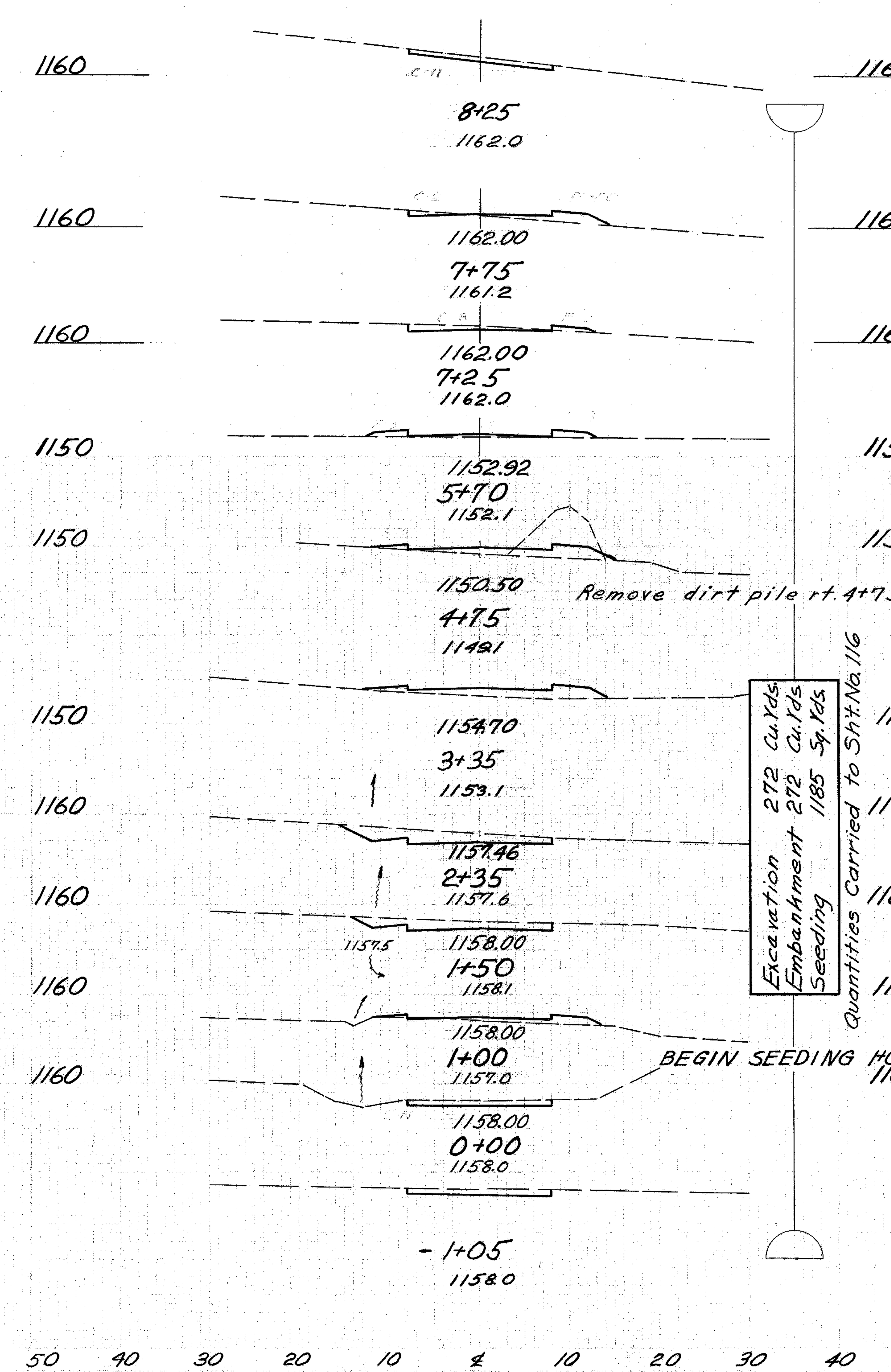


Item B-19 8" Aggregate Base Course

ESTIMATED QUANTITIES

B-19 Base Course 368 Cu. Yds.

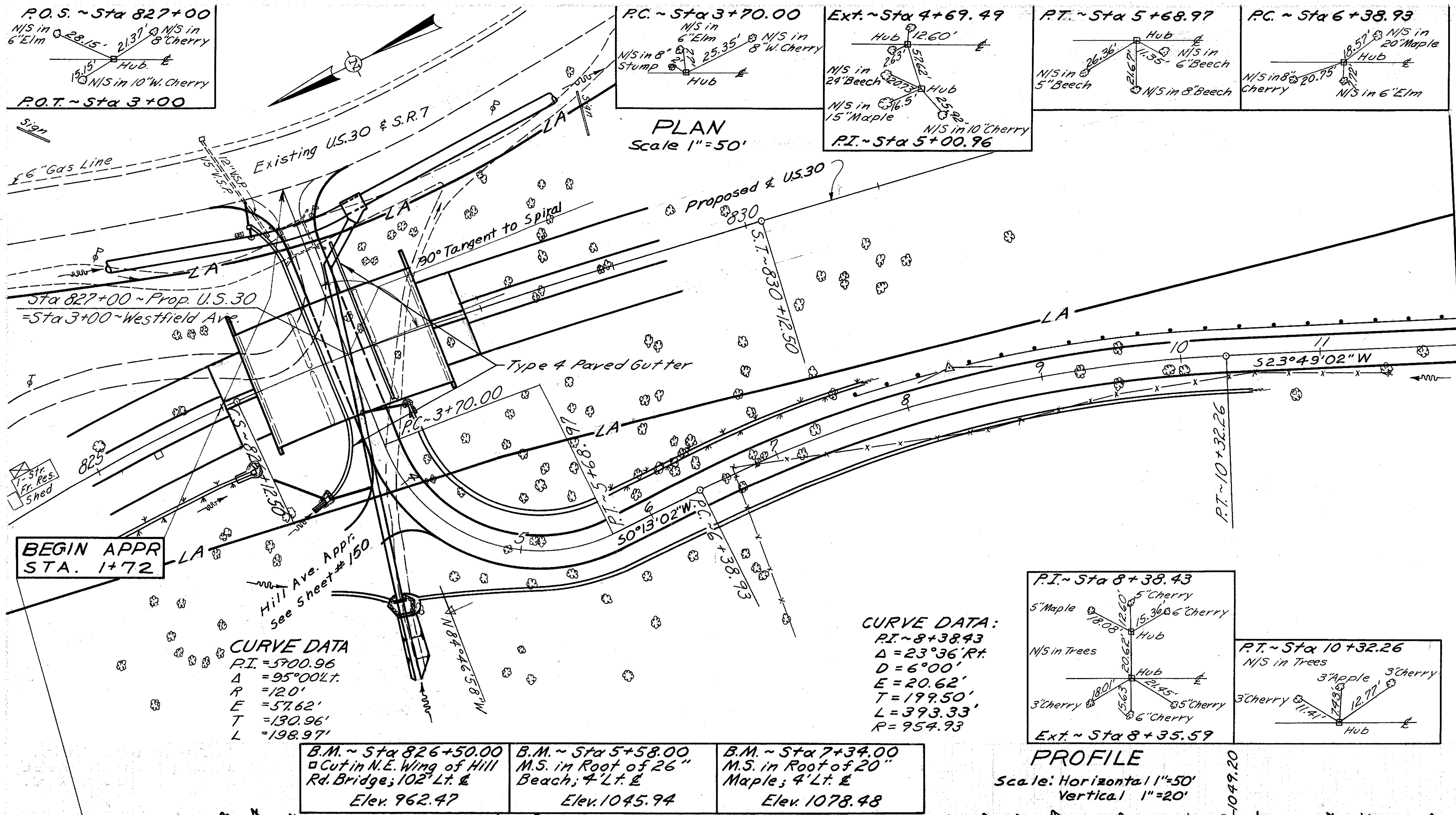
Est. Quant. carried to Sheet No. 106

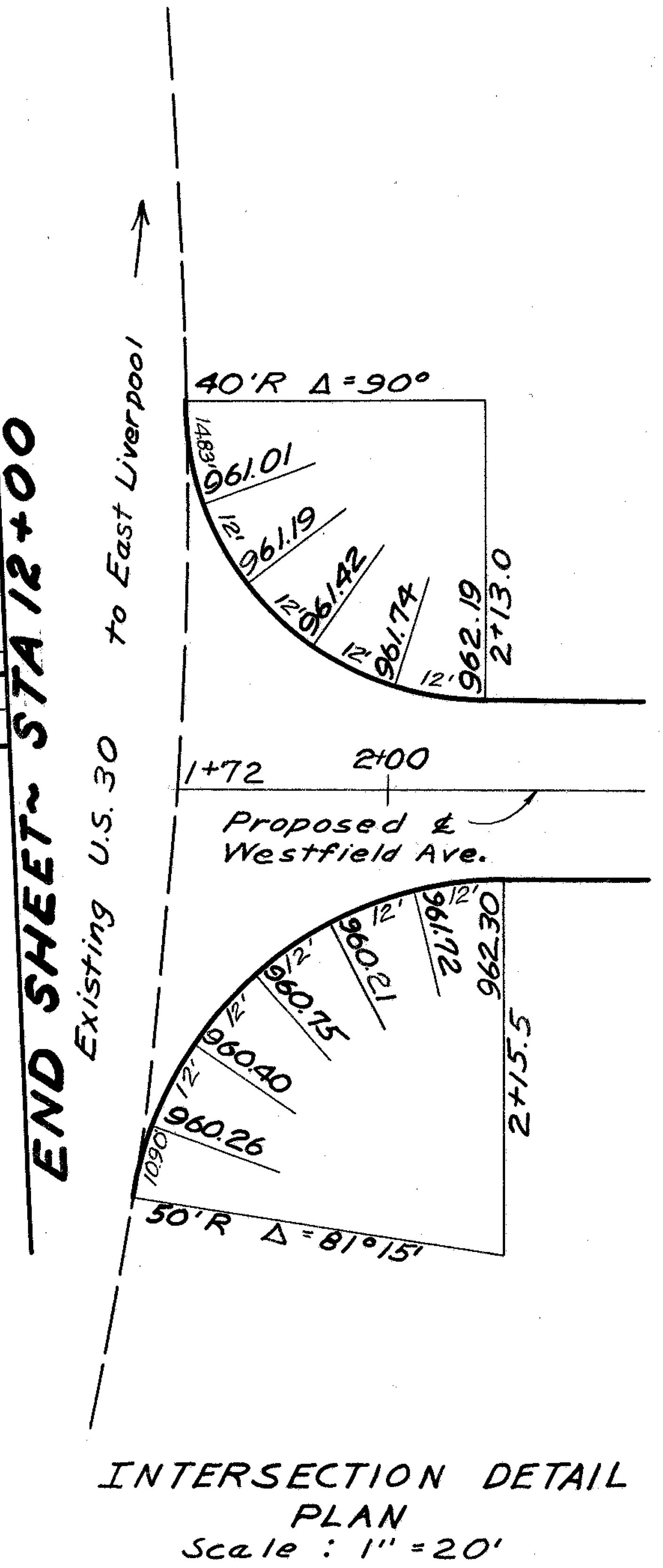


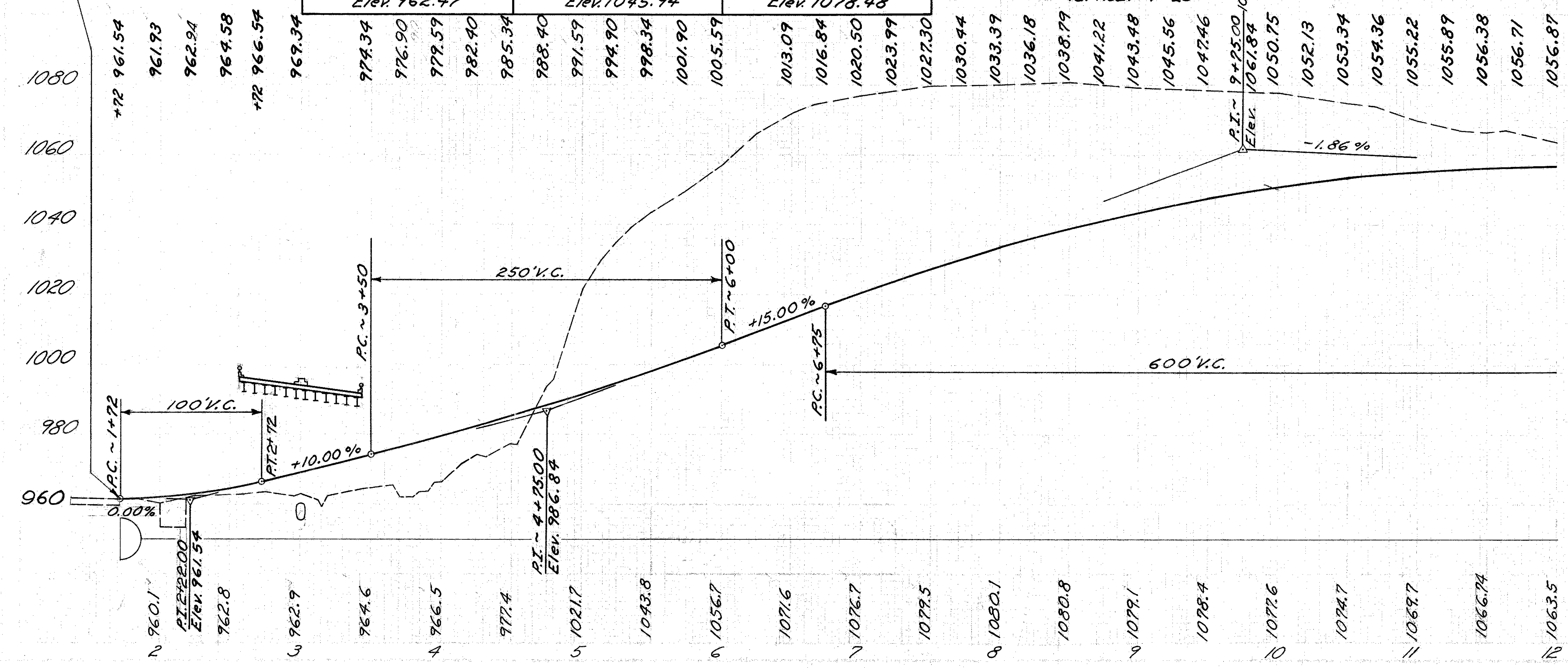
Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
12		11	0		
	75			12	9
15		2	10		
	78			9	11
13		8	2		
	232			23	29
14		0	8		
	153			0	48
				26	
15		0	19		
	249			0	106
17		0	22		
	183			48	41
16		26	0		
	146			72	0
15		20	0		
	69			19	9
14		0	10		
				20	19
		11	0		
				43	0
		11	0		

CHURCH STREET ACCESS ROAD

COL-30-32.19







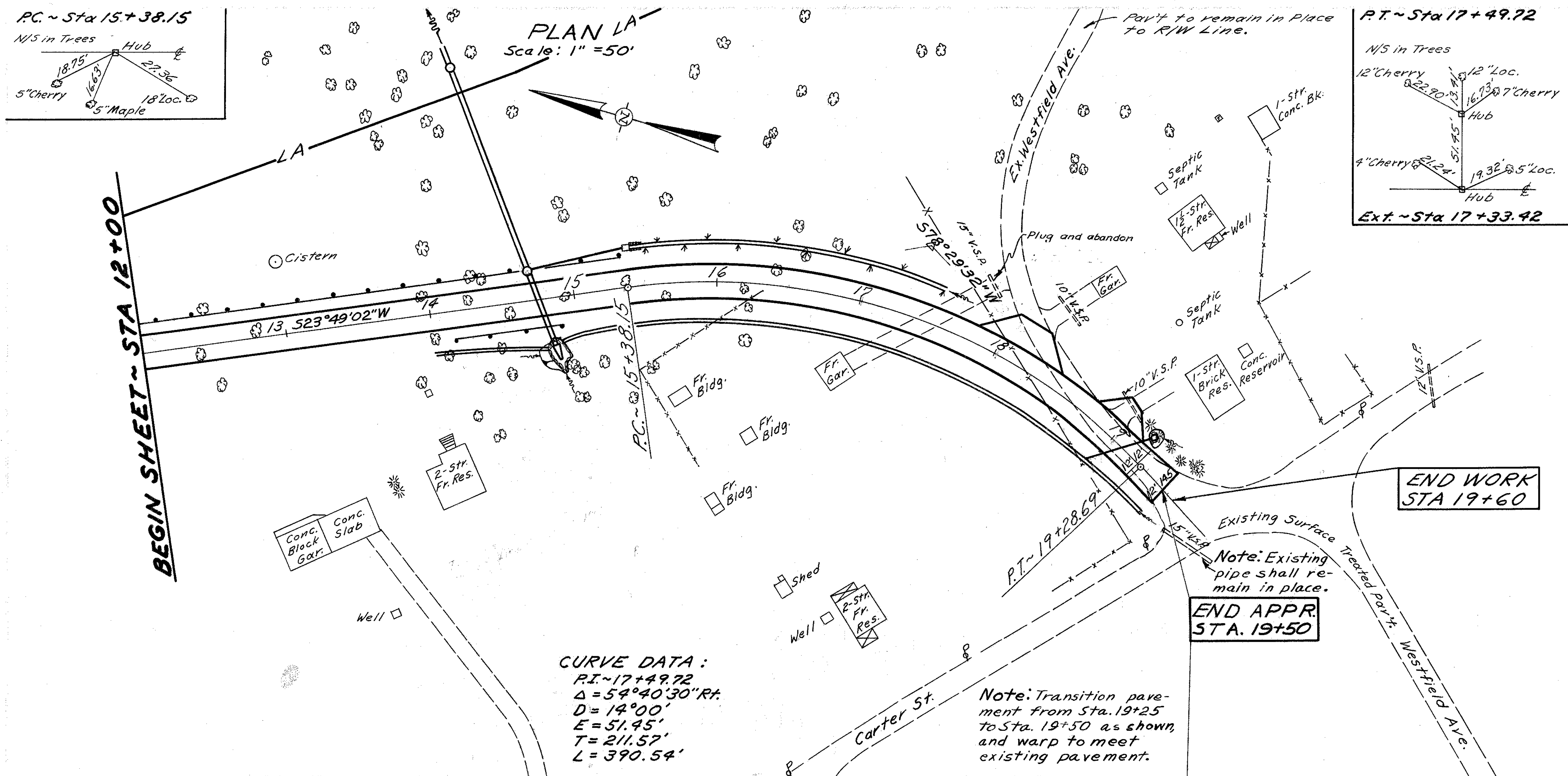
APPROACHES						
Station	Side ℄	See Sheet				Remarks
4+09.75	Rt.	150				Hill Ave.
Total						

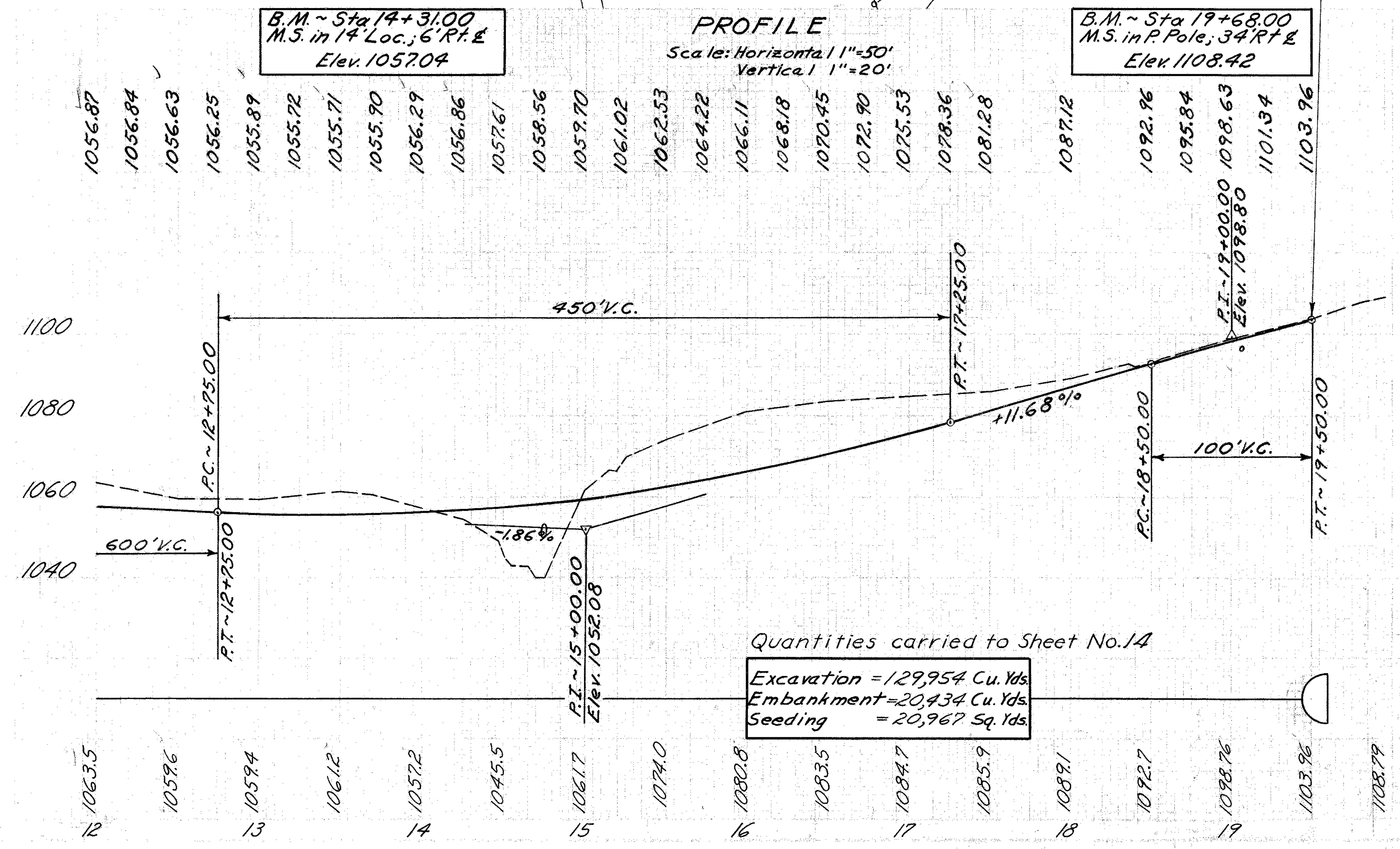
DRAINAGE									
Station		Side	See	New Work			Paved Gutter-L.F.		Sod
From	To	℄	Sheet	Type	Size	Length	Type 1	Type 4	Sq. Yds.
1+89		Rt.	170	Pipe	18"	6'			
1+89	3+82	Rt.	140					196	
2+04.39		Lt.&Rt.	170	Ch. Pipe	106"x68"	370'			
2+20	3+44	Lt.	140					125	
2+99.3		Lt.&Rt.	171	Pipe	60"	284'			
3+50		Lt.	142	Pipe	15"	33'			
3+61	5+75	Lt.	140				170		57
5+75	7+75	Lt.	140						117
4+51	10+50	Rt.	140				625		209
Total							795	321	383

GUARD RAIL			
Station		Side	New
From	To	℄	Lin. Ft.
7+65	12+00	Lt.	440
Total			440

WESTFIELD AVE ~ Sta 1+72 to 12+00

COL-30-32.19





APPROACHES

Station	Side ℄	See Sheet	T-35 Surface Cu. Yds.	B-19 Aggr. Cu. Yds.	Pipe Removed 15" & Under Lin. Ft.
18+13	Lt.	149	5.4	14	
18+85	Lt.	149	2.6	7.0	26
Total			8.0	21	26

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Paved Gutter Lin. Ft.	Sod Sq. Yds.
13+94	14+77	Rt.	141				83	28
14+75		Lt.&Rt.	172	Pipe Pipe	3" 15"	70		
14+92	19+50	Rt.	141				432	145
15+50	17+50	Lt.	141					120
19+06.5			173	Pipe	15"	48		
Total							515	293

GUARD RAIL

Station From	Station To	Side ℄	See Sheet	New Lin. Ft.
12+00	15+35	Lt.	141	335
14+15	14+90	Rt.	141	75
Total				410

WESTFIELD AVE ~ Sta 12+00 to Sta 19+96

COL-30-32.19

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb
	375			67	1084
115 / 16	5				
16		36	1028		
	78			29	1982
16		0	1404		
	73			0	2291
16		0	1613		
	9				
16 / 122					
	163			0	996
123		0	1551		
	229			3	879
120		10	1242		
	319			5	997
110		0	911		

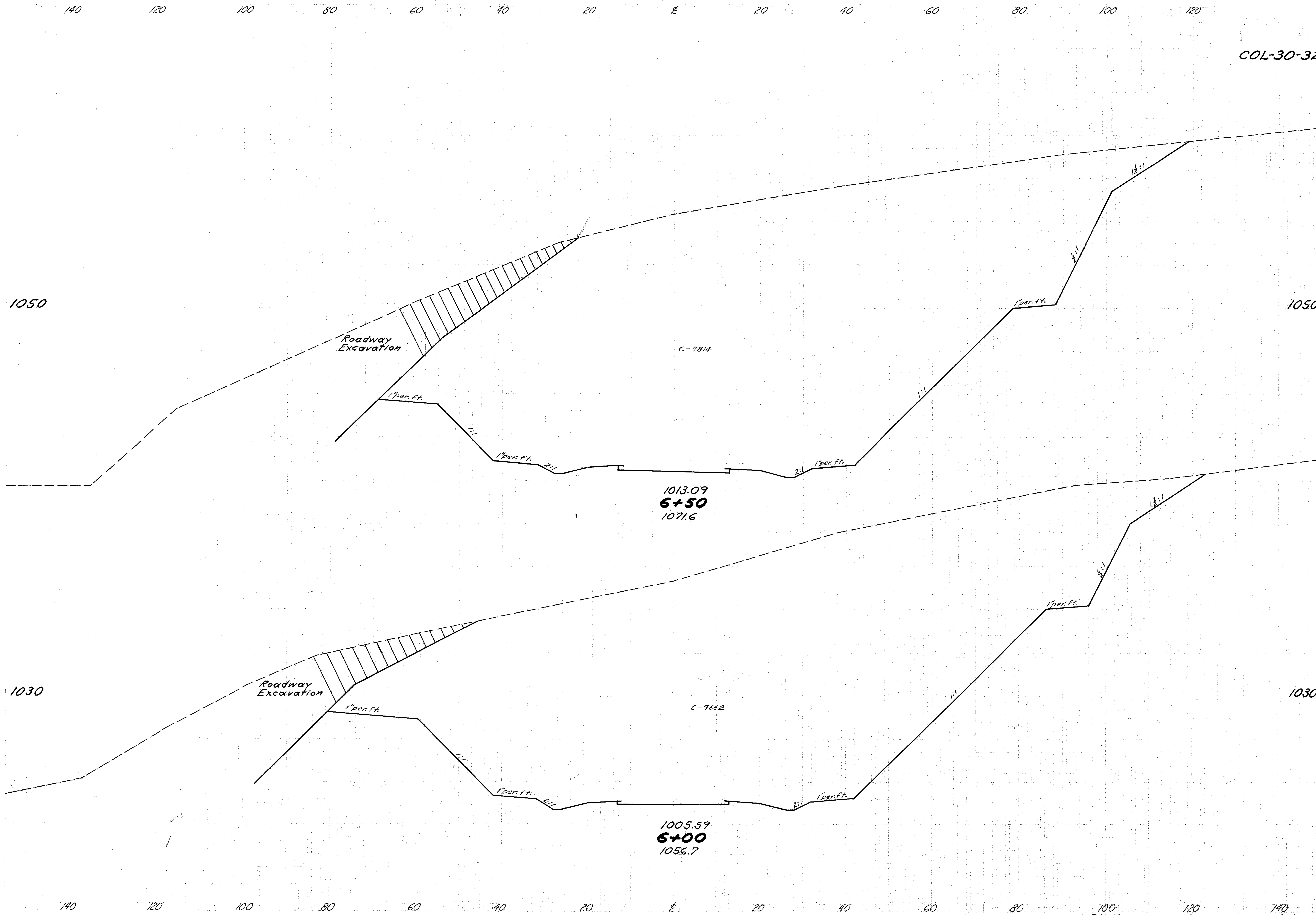
Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	125			12	194
95		60	40		
	93			60	13
4		129	0		

WESTFIELD AVE. Sta 1+72 to Sta 3+44

COL-30-32.19

WESTFIELD AVE. Sta 3+75 to Sta 5+50

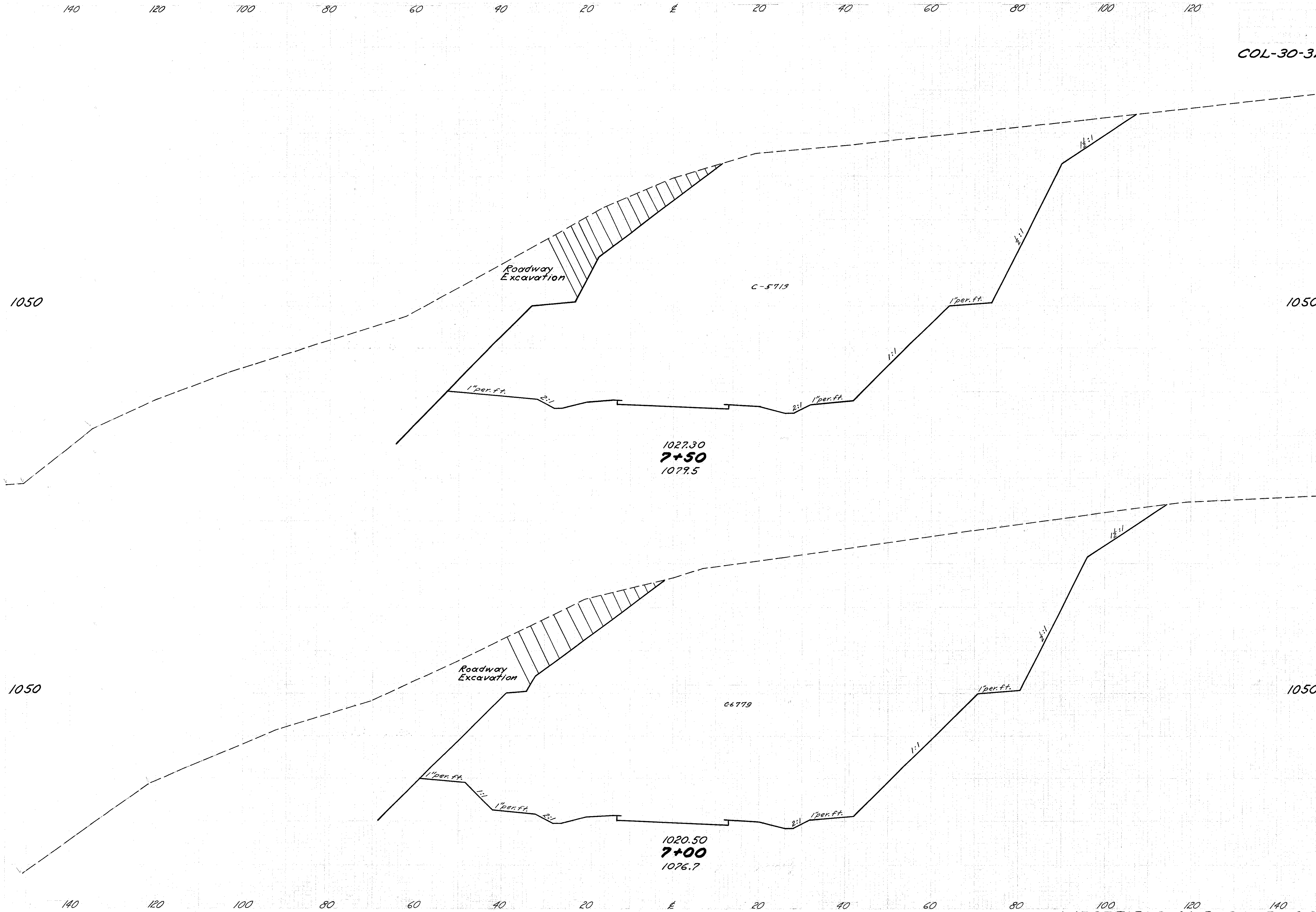
COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
171		7814	0		
	1011			14330	0
193		7662	0		

WESTFIELD AVE. Sta 6+00 to Sta 6+50

COL-30-32.19



Seeding		End Area		Cu. Yds.	
Width	S. Y.	Cut	Fill	Exc.	Emb.
127		5713	0		
	761			11,567	0
147		6779	0		
	883			13,512	0

WESTFIELD AVE. Sta 7+00 to Sta 7+50

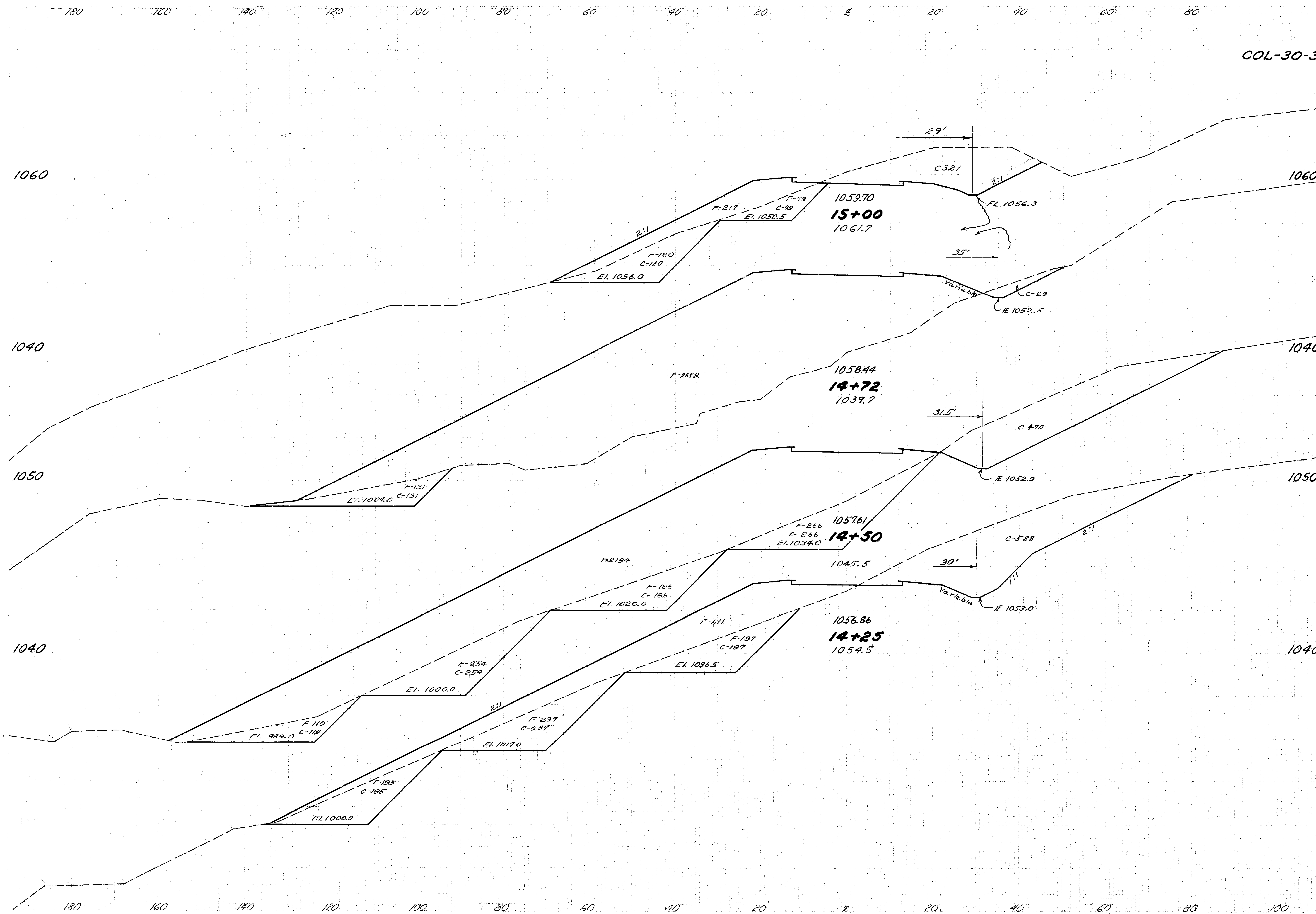
COL-30-32.19

WESTFIELD AVE. Sta 8+00 to Sta 10+00

COL-30-32.19

WESTFIELD AVE. Sta 10+50 to Sta 14+00

COL-30-32.19



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
100		580	476		
	428			384	1705
175		160	2813		
	519			593	2376
250		1295	3019		
	653			1163	1972
220		1217	1240		
	586			1125	981

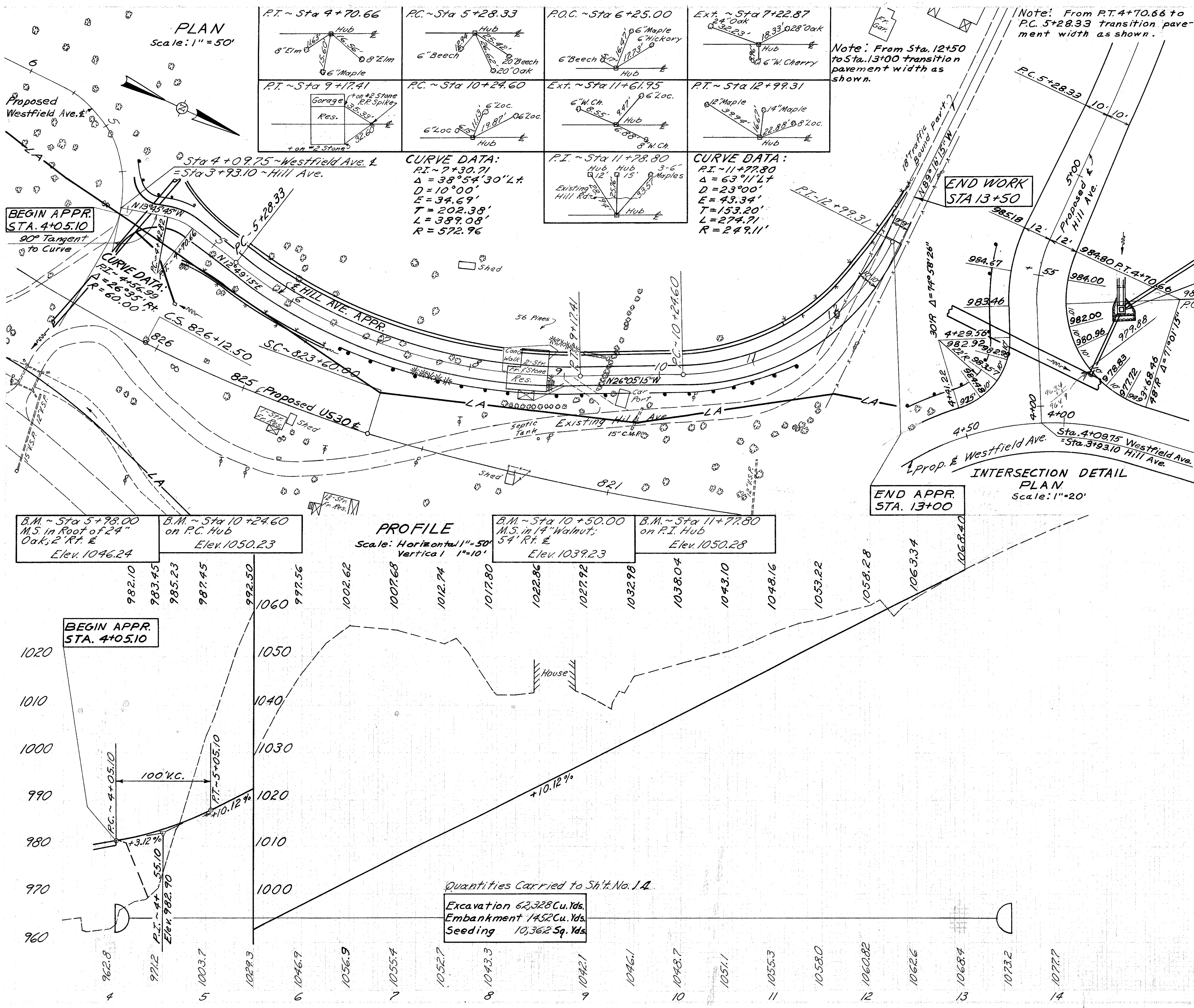
WESTFIELD AVE. Sta 14+25 to Sta 15+00

COL-30-32.19

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
19+60	4		0	0		
		7			0	1
19+50 Ahead	8		0	1		
19+50 Back	8		38	1		
		44			32	1
19+25	24		32	2		
		88			36	5
19+00	39		45	8	2	
		231			158	7
18+50	44		126	0	13	
		278			308	10
18+00	56		207	11		
		344			583	10
17+50	68		423	0		
		431			1131	0
17+00	87		798	0		
		517			1849	0
16+50	99		1199	0		
		567			2351	0
16+00	105		1340	0		
		558			2273	0
15+50	96		1115	0		
		544			1569	441

WESTFIELD AVE. Sta 15+50 to Sta 19+60

COL-30-32.19



DRAINAGE								
Station		Side	See	New Work			Paved Gutter	Sod
From	To	℄	Sheet	Type	Size	Length	Lin. Ft.	Sq. Yds
4+40		Rt.	151	Pipe	18"	32		
4+47	11+50	Lt.	150				693	231
4+63	6+50	Rt.	150					111
11+50	13+50	Lt.	150					106
Total							693	448

GUARD RAIL				
Station		Side	See	New
From	To	℄	Sheet	Lin. Ft.
4+02	4+62	Lt.	150	87.5
6+65	11+37	Rt.	150	487.5
Total				575

HILL AVE. ~ Sta 3+50 to Sta 14+00

COL-30-32.19

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
		789			8712	0
6+50	148		5066	0		
		856			9227	0
6+00	160		4899	0		
		828			8260	0
5+50	156		4022	0		
		767			5273	0
5+00	120		1673	0		
		296			919	6
4+71	64		39	12		
		248			22	539
4+40	80		0	927		
					0	584
			0	0		

EST. QUANT.

Std. 2-2A Catch Basin	1 Each
Riprap Grout-Filled	6 Sq. Yds.
18" Pipe Class D-1 {6.6 (b), 6.8 (b)}	32 Lin. Ft.
Paved Gutter Type 1	10 Lin. Ft.

Note: Payment for cutting hole and sealing connection with collar shall be included in the unit price bid for the pertinent Class D-1 pipe. See Detail / Sht № 11

HILL AVE. Sta 4+40 to Sta 6+50

COL-30-32.19

HILL AVE. Sta 7+00 to Sta 9+50

COL-30-32.19

HILL AVE. Sta 10+00 to Sta 13+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

PLAN
Scale: 1"=10'

ESTIMATED QUANTITIES

48" Pipe Class A-1 Sec M-6.6(a)	119 Lin. Ft.
Masonry	0.9 Cu. Yds.
Excavation for Structure	51 Cu. Yds.
Mod. No. 2-5 Catch Basin	1 Each
Paved Gutter Type 1	10 Lin. Ft.
Reinforcing Steel	2157 Lbs.
Concrete for Structures Class "C"	15 Cu. Yds.
48" Pipe Class B-1	132 Lin. Ft.
Riprap 6" Reinforced Concrete Slab	24 Sq. Yds.

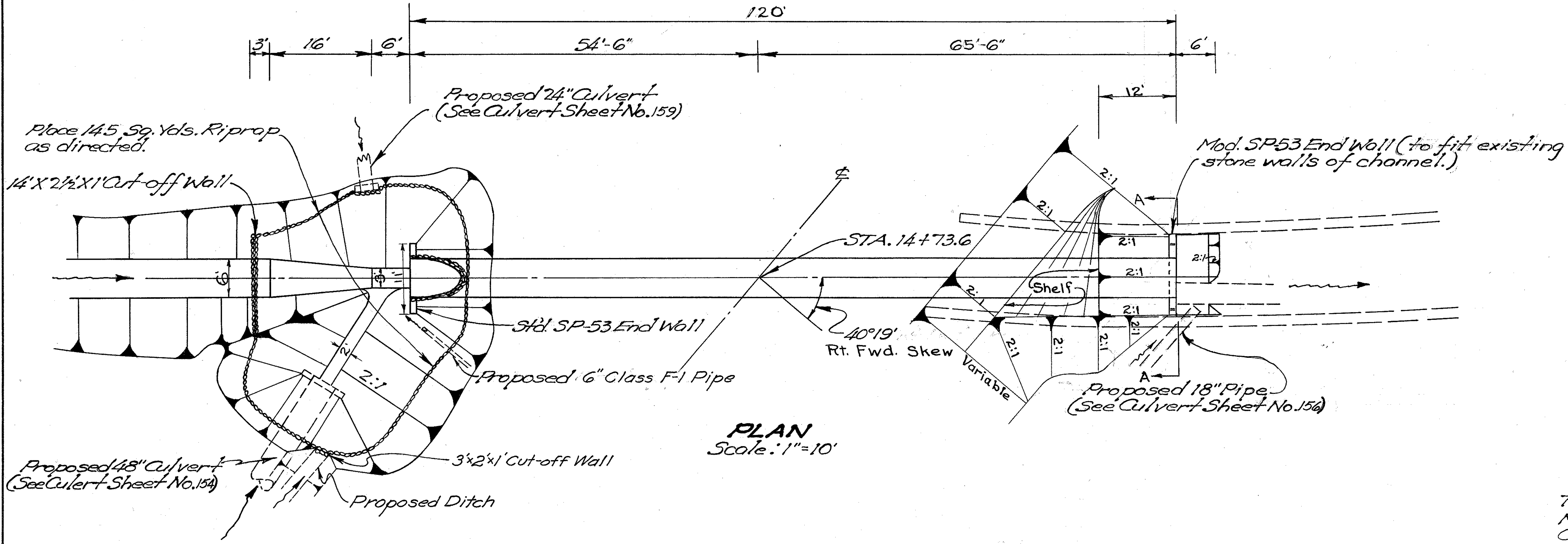
Area: 58 acres
Q_{25}: 85 cfs

CROSS SECTION
Scale: 1"=10'

SUB-STATION RD. 12+26.6
48" X 251' PIPE CULVERT

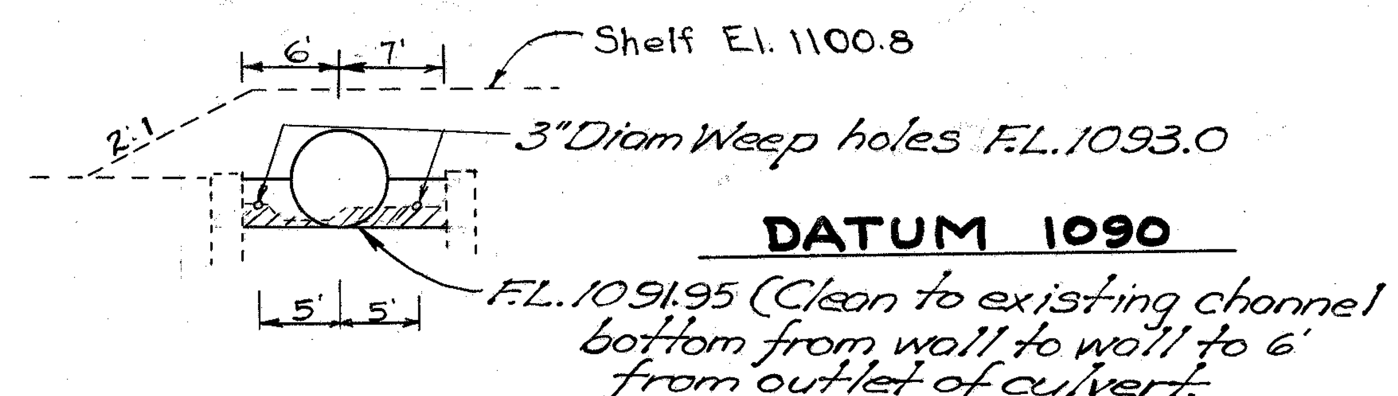
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19



PLAN
Scale: 1"=10'

DATUM 1090



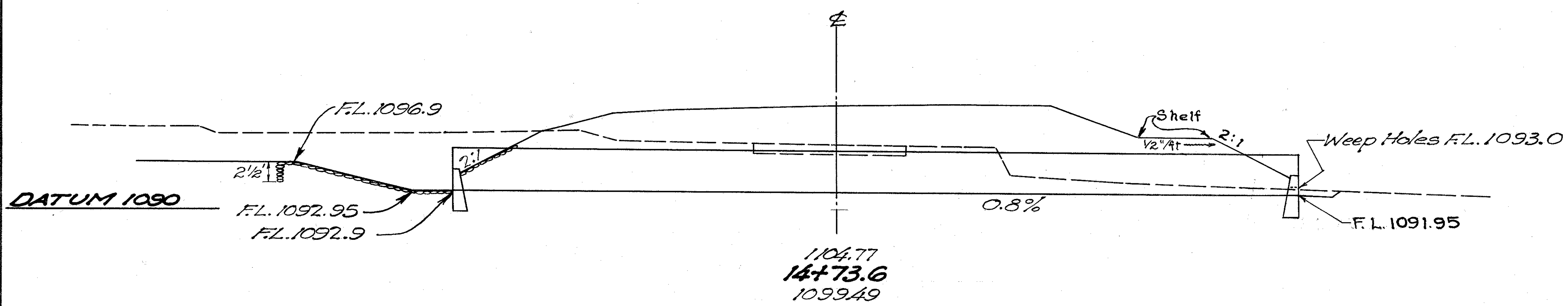
DATUM 1090

SECTION A-A
Scale: 1"=10'

ESTIMATED QUANTITIES

72" Pipe Class A-1 Sec M-6.6(a)	120	Lin. Ft.
Masonry Class "E"	6.1	Cu. Yds.
Channel Excavation	215	Cu. Yds.
Riprap 6" Reinforced concrete slab	145	Sq. Yds.

Area: 280 acres
Q_{25}: 250 cfs



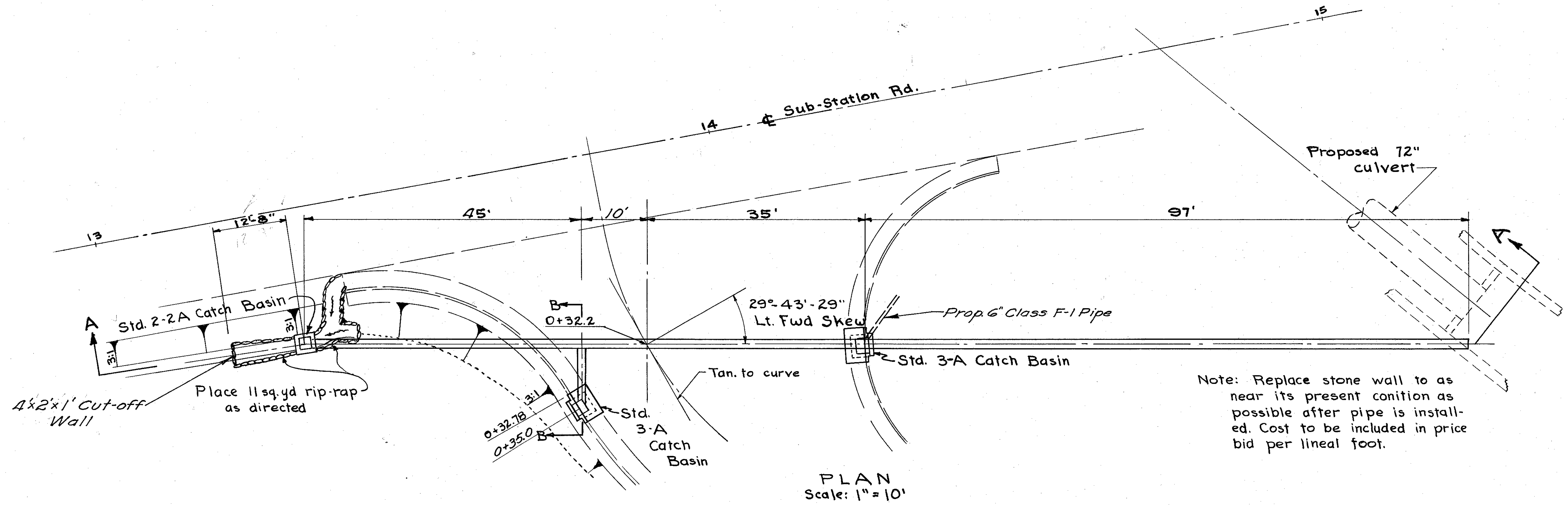
CROSS SECTION
Scale: 1"=10'

SUB-STATION RD. 14+73.6
72"X 120' PIPE CULVERT

ESTIMATED QUANTITIES

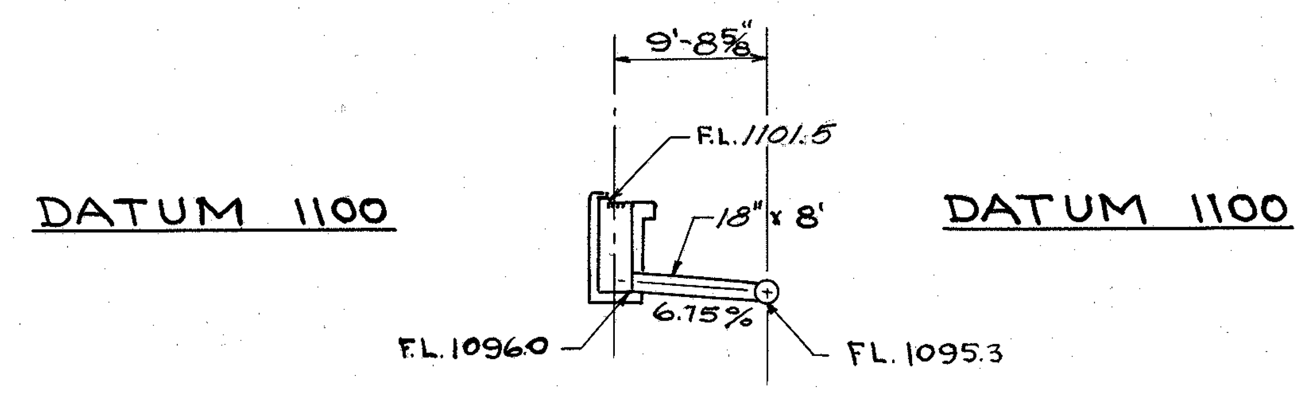
18" Pipe, Class C-1		194 Lin. Ft.
Std. 2-2A Catch Basin		1 Each
Std. 3-A Catch Basin		2 Each
Rip-rap	6" Reinforced Concrete Slab	11 S.Y.
Pipe Special	18" x 18" Tee Class C-1	1 Each

Area: 2 acres
Q_{10}: 6 c.f.s.

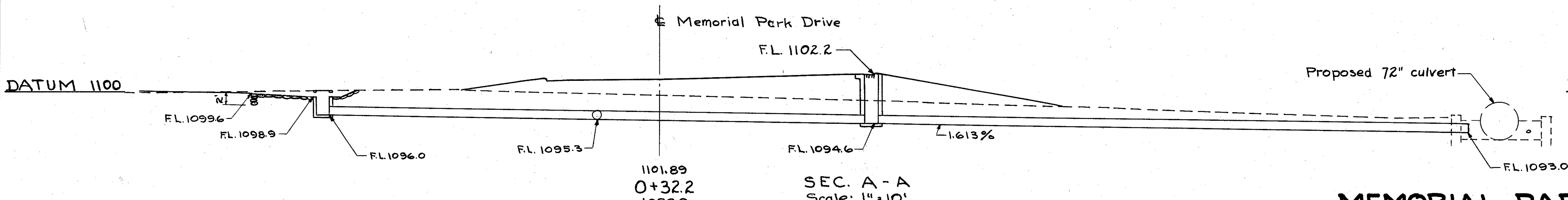


Note: Replace stone wall to as near its present conition as possible after pipe is installed. Cost to be included in price bid per lineal foot.

PLAN
Scale: 1" = 10'

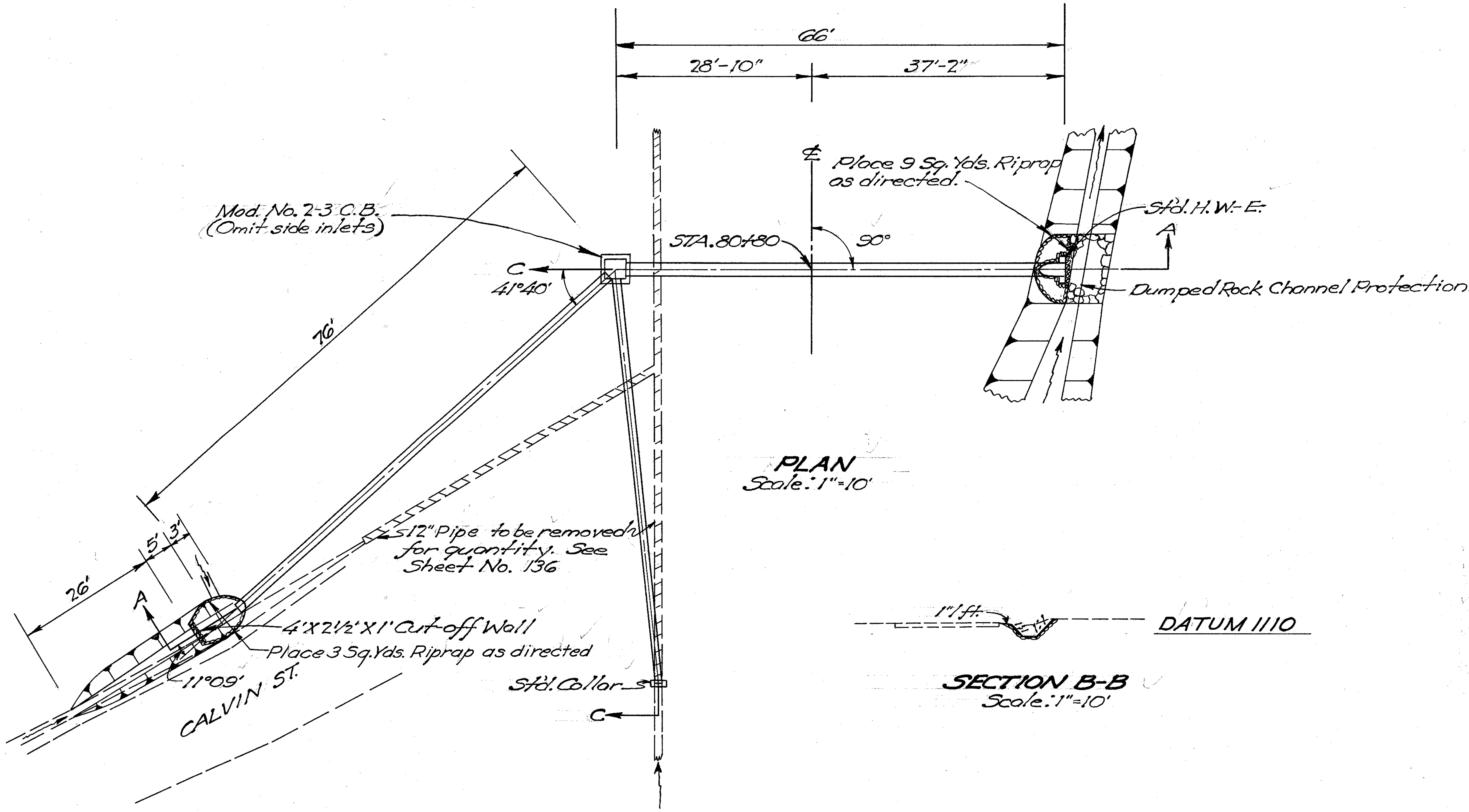


SEC. B - B
Scale: 1" = 10'



SEC. A - A
Scale: 1" = 10'

MEMORIAL PARK DRIVE STATION 0+32.2
18" x 194' CULVERT



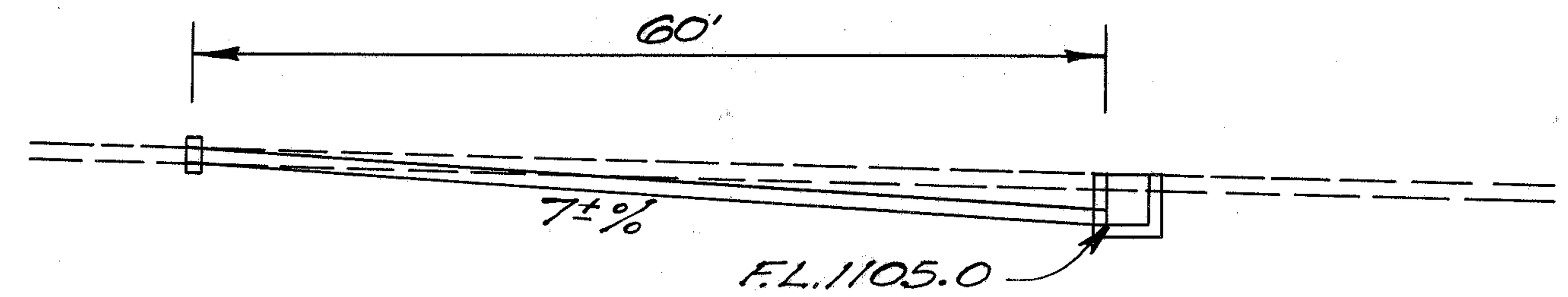
PLAN
Scale: 1"=10'

SECTION B-B
Scale: 1"=10'

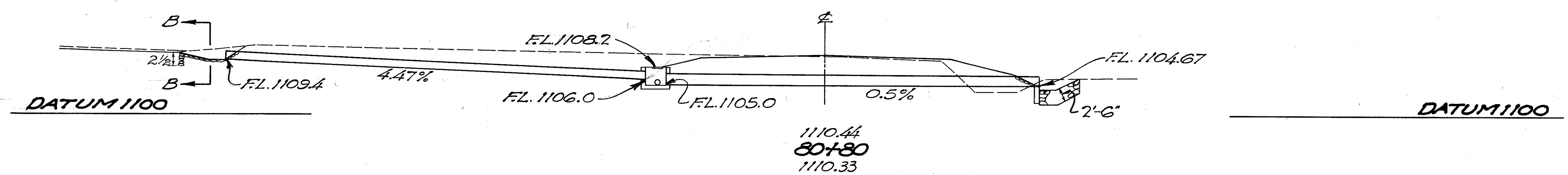
ESTIMATED QUANTITIES

12" Pipe Class B-1 Sec. M-6.8(b)	60 Lin. Ft.
18" Pipe Class F-1	74 Lin. Ft.
24" Pipe Class A-1 Sec. M-6.6(a) or Sec. M-6.8(b)	66 Lin. Ft.
Masonry	0.4 Cu. Yd.
Channel Excavation	4 Cu. Yds.
Riprap Grout Filled	12 Sq. Yds.
Dumped Rock Channel Protection	7 Cu. Yds.
Mod. No. 2-3 Catch Basin	1 Each

Area: 16 acres
Q_{25} = 18 cfs



SECTION C-C
Scale: 1"=10'

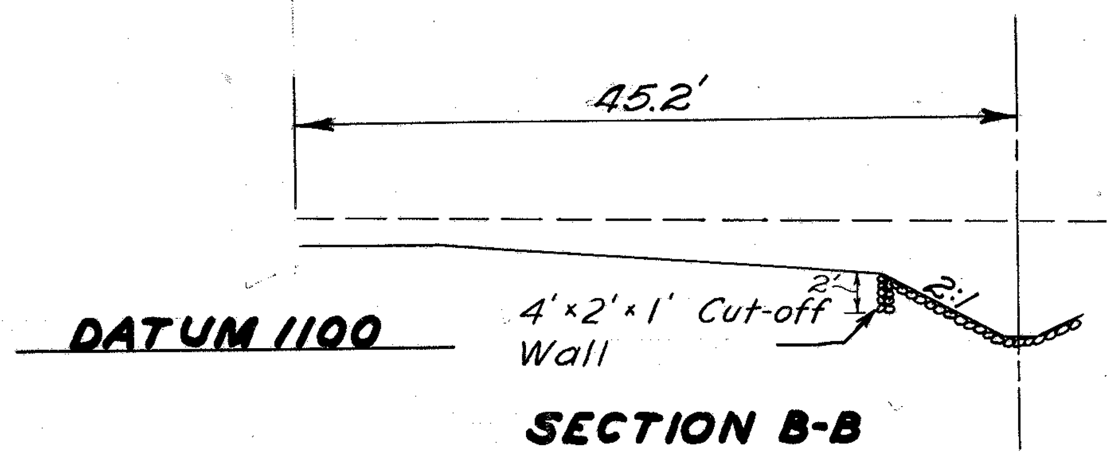


CROSS SECTION A-A
Scale: 1"=10'

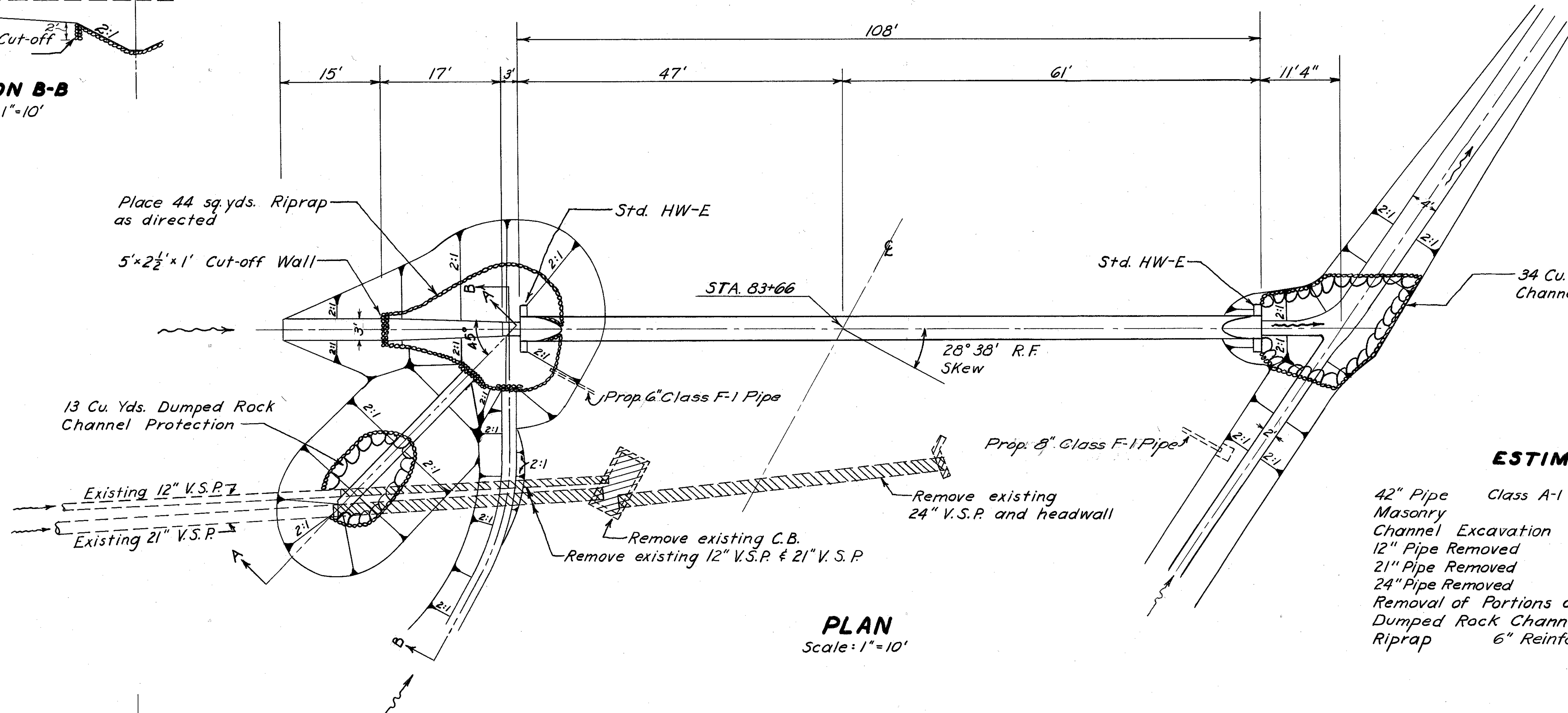
STA. 80+80 APPR "B"
24" X 66' PIPE CULVERT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19



SECTION B-B
Scale: 1"=10'

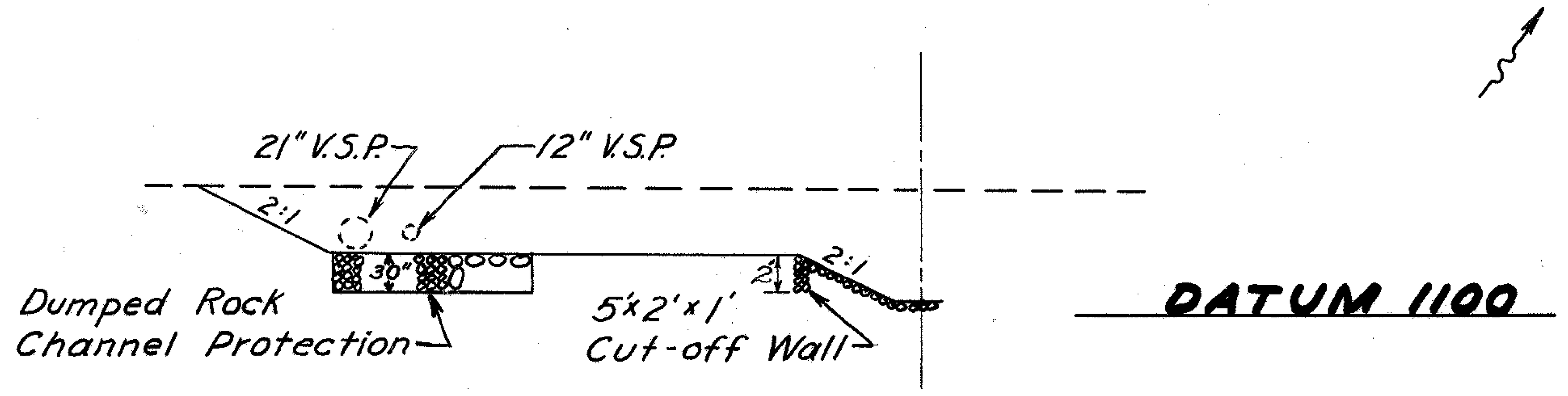


PLAN
Scale: 1"=10'

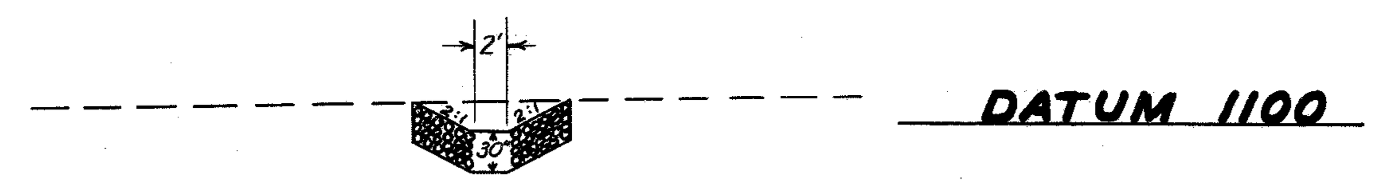
ESTIMATED QUANTITIES

42" Pipe	Class A-1	108 Lin. Ft.
Masonry		1.5 Cu. Yds.
Channel Excavation		151 Cu. Yds.
12" Pipe Removed		39 Lin. Ft.
21" Pipe Removed		39 Lin. Ft.
24" Pipe Removed		48 Lin. Ft.
Removal of Portions of Existing Structures		4 Cu. Yds.
Dumped Rock Channel Protection		47 Cu. Yds.
Riprap	6" Reinforced Concrete Slab	44 Sq. Yds.

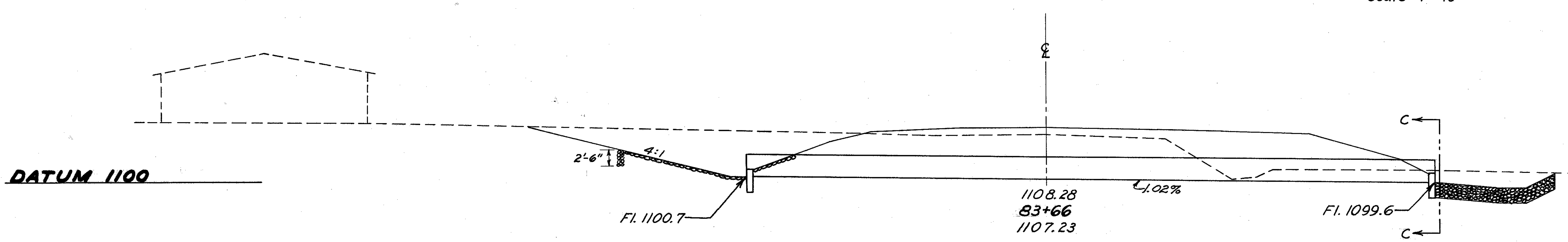
A: 38 Acres
Q_{25}: 65 cfs



SECTION A-A
Scale: 1"=10'

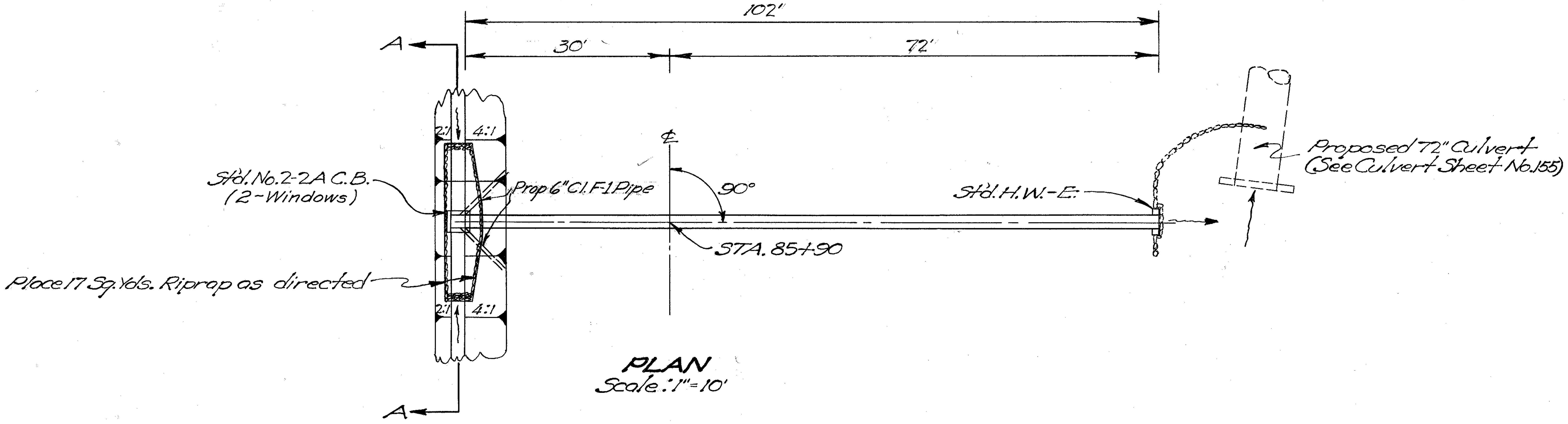


SECTION C-C
Scale: 1"=10'



CROSS SECTION
Scale: 1"=10'

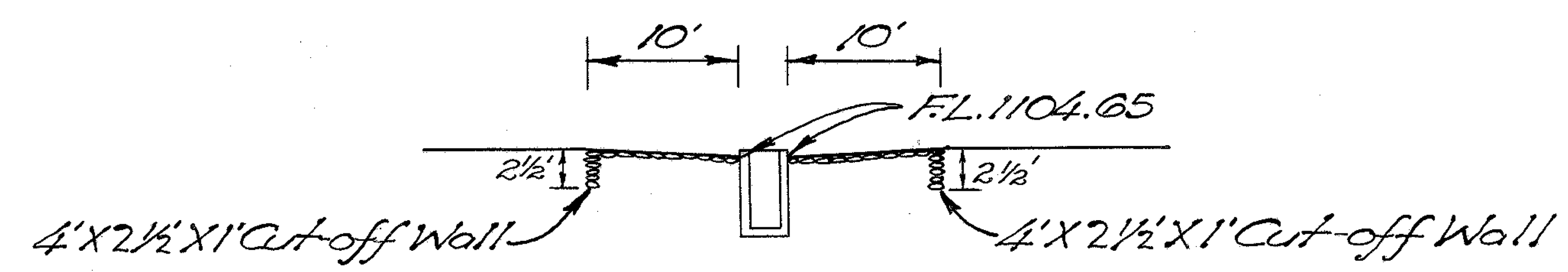
APPR. "B" STA. 83+66
42"×108' PIPE CULVERT



PLAN
Scale: 1"=10'

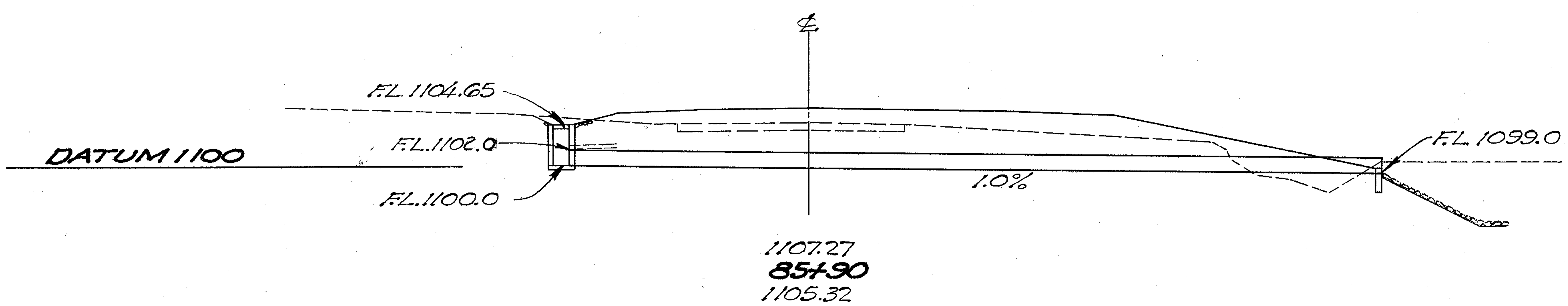
ESTIMATED QUANTITIES

24" Pipe Class A-1		102 Lin. Ft.
Masonry		0.4 Cu. Yd.
Std. 2-2A Catch Basin		1 Each
Riprap	Grout Filled	17 Sq. Yds.



SECTION A-A
Scale: 1"=10'

Area: 6 acres
Q_{25}: 18 cfs



CROSS SECTION
Scale: 1"=10'

APPR. "B" STA. 85+90
24" X 102' PIPE CULVERT

COL-30-32.19

Note: The modified No. 2-4 catch basins shall be constructed according to standard drawing I-8 CB 2-4 except as noted:
(a) Catch Basin at Sta. 12+72.5 shall have window three feet wide by four inches high.
(b) Remaining catch basins shall omit windows and in place of grate a one inch solid steel plate with a handle firmly attached shall be used. See "General Notes" for construction of basins over twelve feet in depth.

Note: All paved gutter into Catch Basins shall be warped from 2:1 to vertical side slopes in ten feet. See detail sheet No. 11

COL-30-32.14

STATION 797+53.4
42"x736' PIPE CULVERT

SHEET 1 OF 2

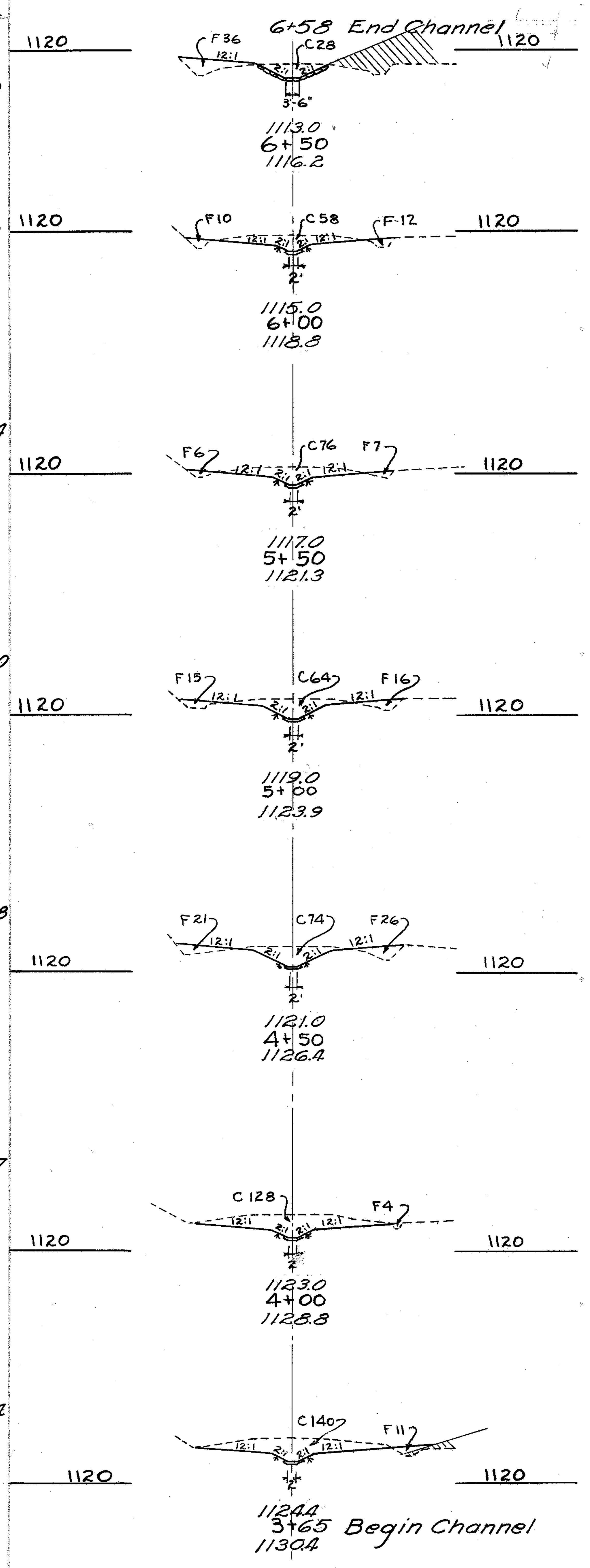
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

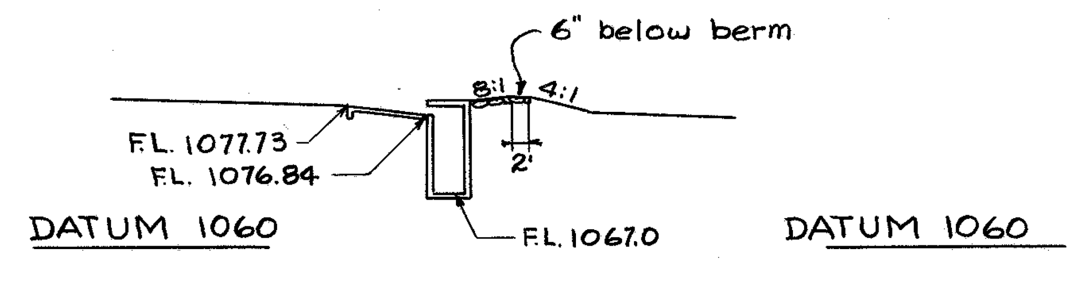
ESTIMATED QUANTITIES

42" Pipe Class A-1 Sec. M-6.6(c) or Sec. M-6.4(d)	250 L.F.
42" Pipe Class A-1 Sec. M-6.6(d) or Sec. M-6.4(d)	212 L.F.
42" Pipe Class A-1 Sec. M-6.6(a) or Sec. M-6.4(d)	154 L.F.
42" Pipe Class A-1 Sec. M-6.6(b) or Sec. M-6.4(d)	120 L.F.
Pipe special 42"x15" Tee Class A-1 Sec. M-6.6(a) or Sec. M-6.4(d)	1 Each
Mod. No. 2-4 Reinforced Concrete Catch Basin	3 Each
Mod. No. 2-4 Catch Basin	1 Each
Std. No. 2-2A Catch Basin	2 Each
15" Pipe Class D-1	16 L.F.
Masonry	23.3 C.Y.
Paved gutter Type 1	300 L.F.
Rip-rap "Grout Filled"	62 S.Y.
Dumped Rock Channel Protection	15 C.Y.
Sodding	127 S.Y.
Channel excavation	876 C.Y.

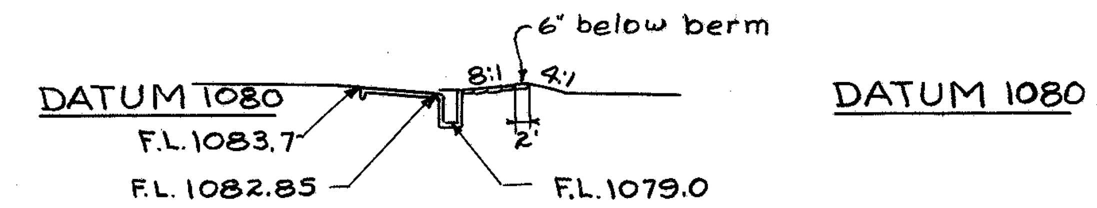
End Area	Cu. Yds.
22	
	50
32	
	83
58	
	124
76	
	130
64	
	128
74	
	187
128	
	174
140	



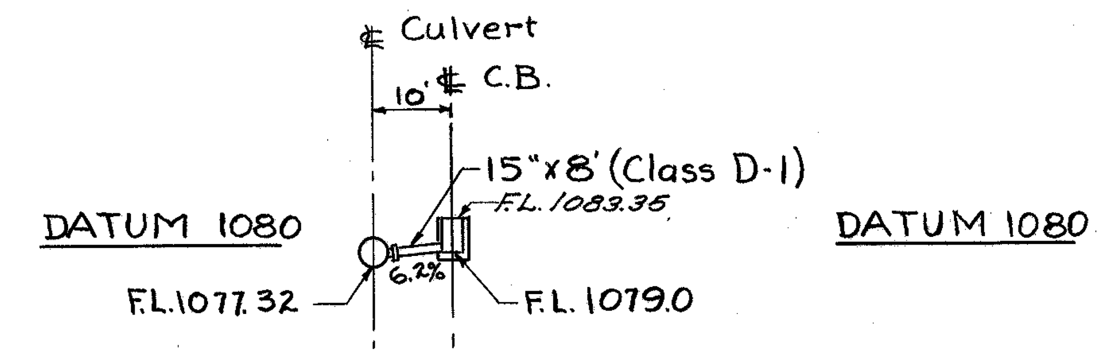
CROSS-SECTIONS
Scale: 1"=20'



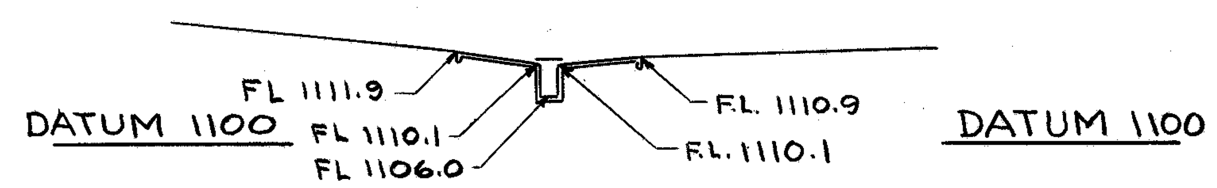
SEC. C-C



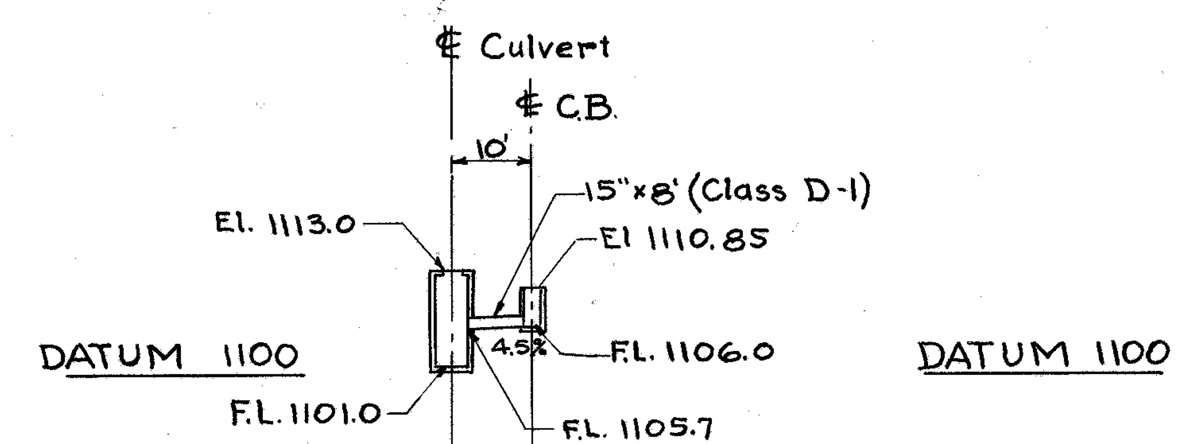
SEC. B-B



SEC. 11+50.3



SEC A-A



SEC. 9+08.3

Area: 30 acres
Q_{50}: 66 c.f.s.

Reinforcing Steel List HW-C			
Symbol	No	Length	Weight
a	11	19'-1"	219
c	12	7'-4"	92
d	6	6'-8"	42
f	6	4'-1"	25
g	10	8'-6"	89
			467 lbs
Masonry			11.0 C.Y.

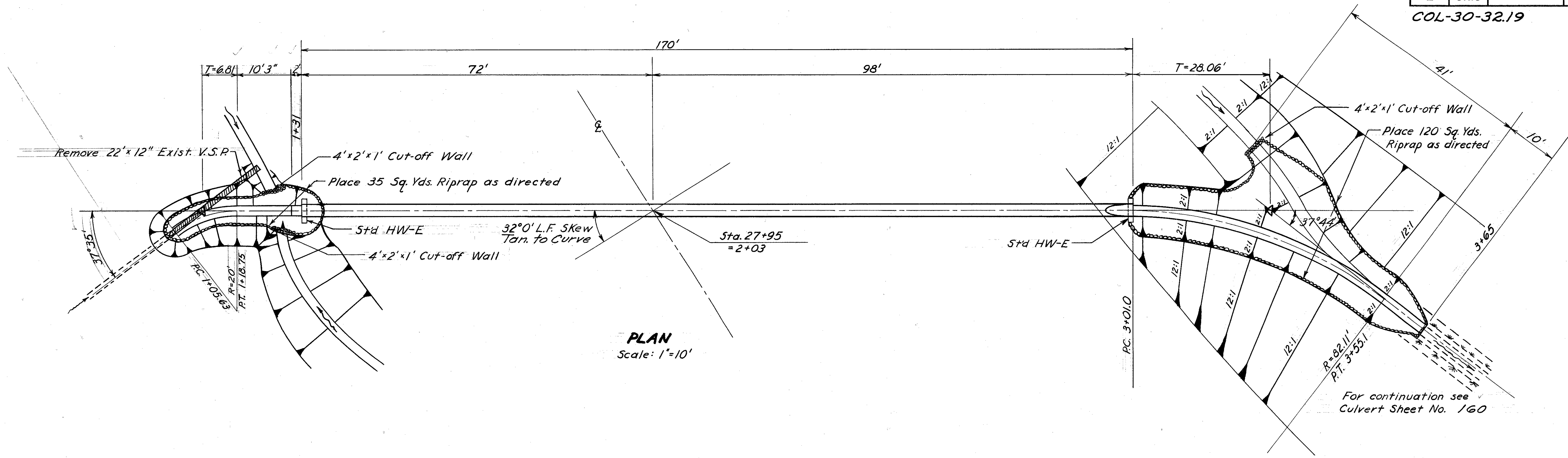
STATION 797+53.4
42"x736' PIPE CULVERT

SHEET 2 OF 2

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

162/250

COL-30-32.19



For continuation see Culvert Sheet No. 160

PLAN
Scale: 1"=10'

ESTIMATED QUANTITIES

30" Pipe Class A-1	170 Lin.Ft.
Channel Excavation	251 Cu.Yds.
Riprap Grout Filled	155 Sq.Yds.
Masonry	1.0 Cu.Yd.
12" Pipe Removed	22 Lin.Ft.

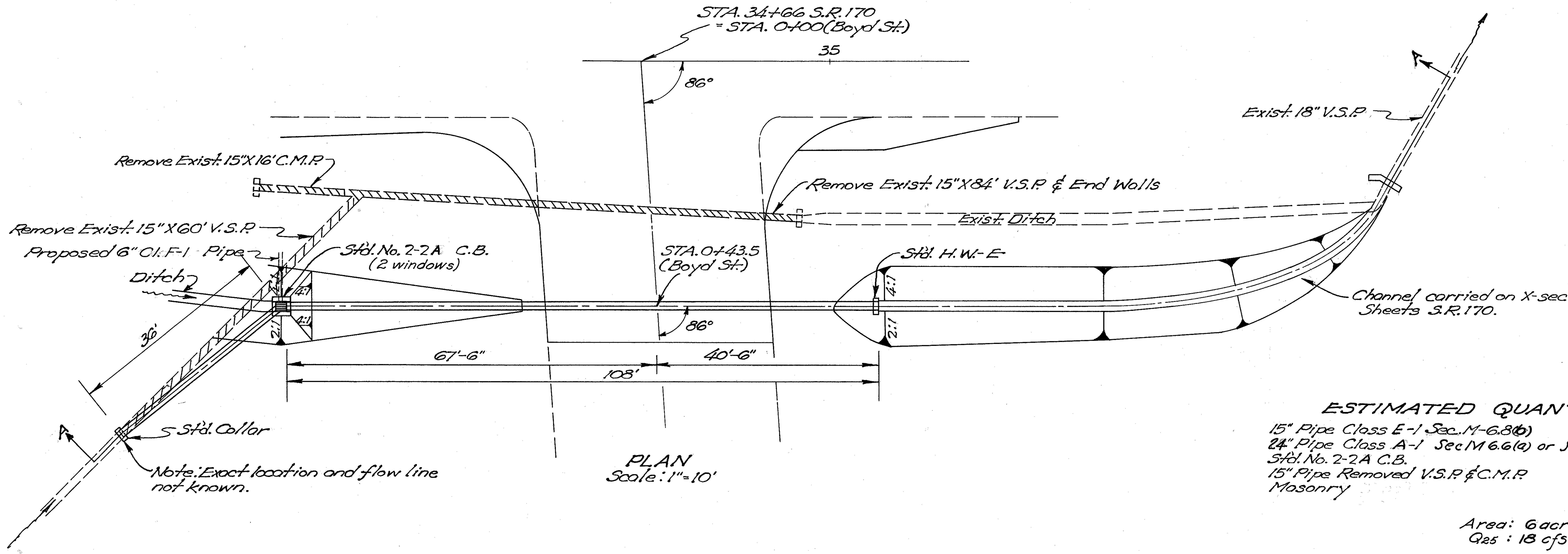
Area: 10 Acres
Q_{25}: 27 cfs

CROSS-SECTION
Scale: 1"=10'

COL-170-0015

S.R. 170 STA. 27+95
30"×170' PIPE CULVERT

7



PLAN
Scale: 1"=10'

ESTIMATED QUANTITIES

15" Pipe Class E-1 Sec. M-6.8(b)	36 Lin. Ft.
24" Pipe Class A-1 Sec. M 6.6(a) or Sec. M 6.8(b)	108 Lin. Ft.
Std. No. 2-2A C.B.	1 Each
15" Pipe Removed V.S.P. & C.M.P.	160 Lin. Ft.
Masonry	0.4 Cu. Yd.

Area: 6 acres
Q_{25} : 18 cfs

CROSS SECTION A-A
Scale: 1"=10'

STA. 0+43.5 (BOYD ST.) OFF S.R. 170
24"X108' PIPE CULVERT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

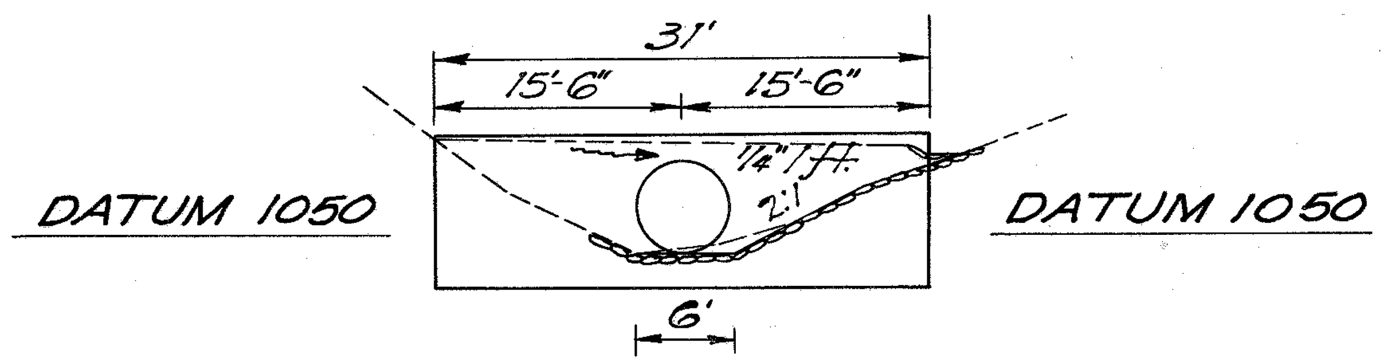
COL-30-32.19

COL-30-32.24

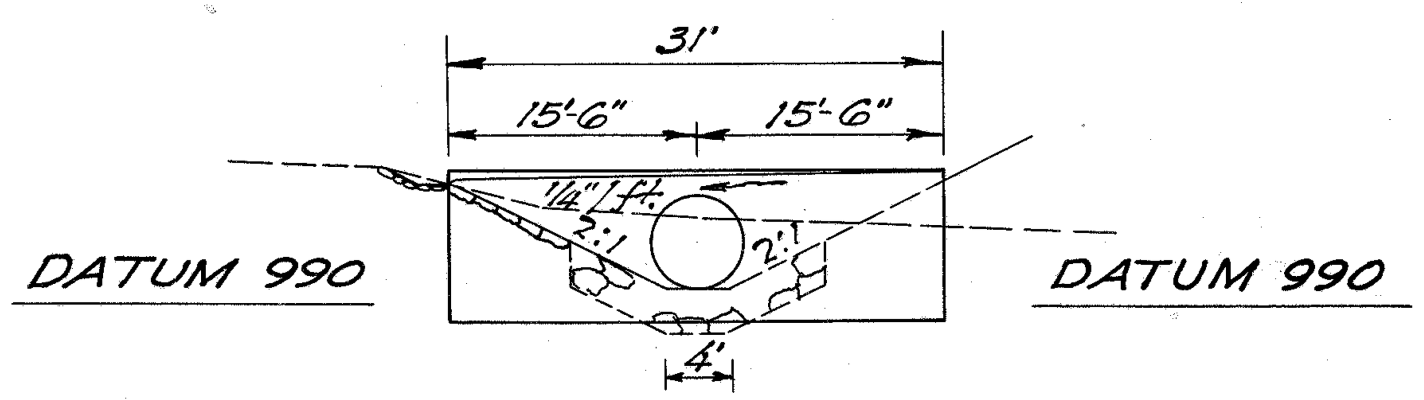
STA. 802+85.7

72" X 153.2' PIPE CULVERT

SHEET 1 OF 2 SHEETS



SECTION A-A
Scale: 1"=10'

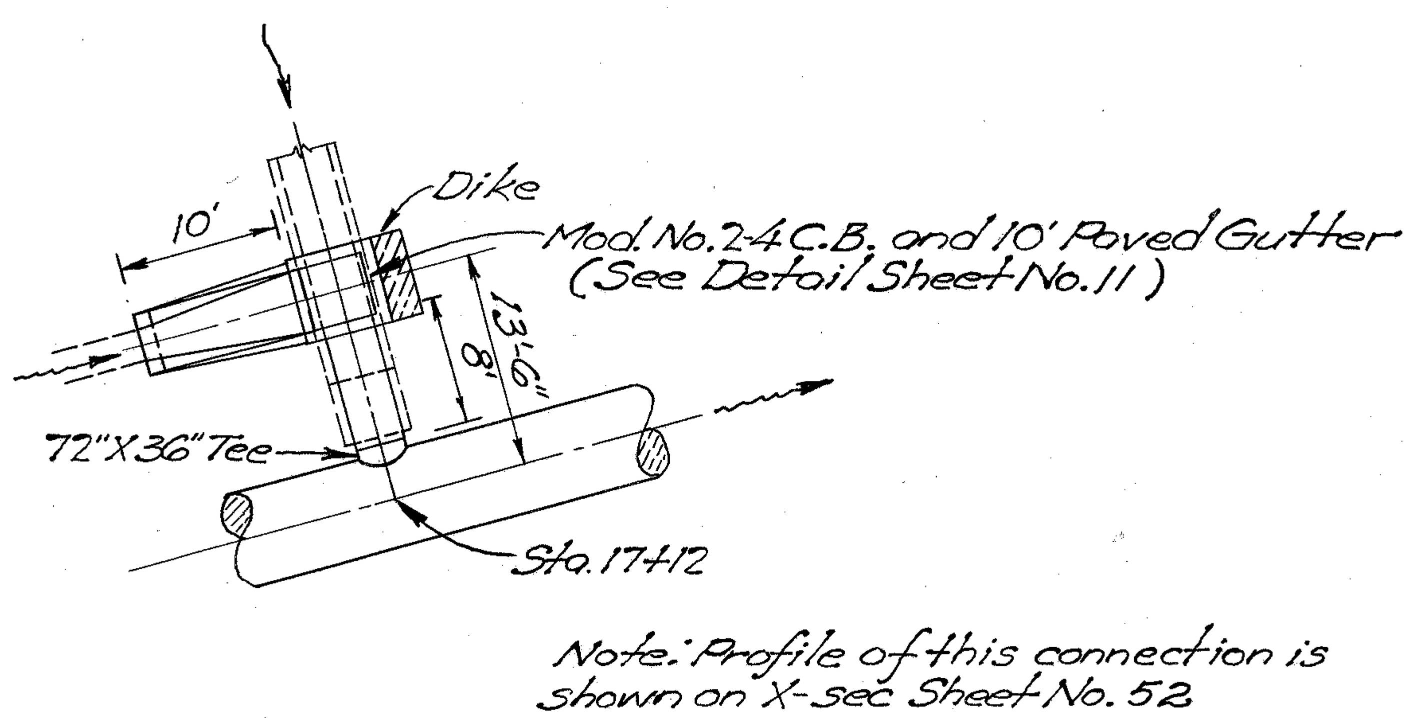


SECTION B-B
Scale: 1"=10'

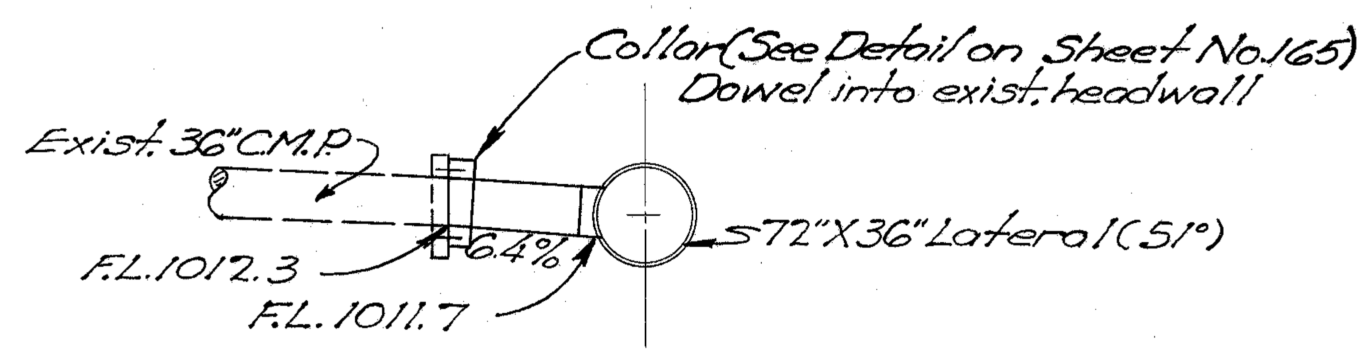
DETAILS OF H.W.-C.

✻ Reinforcing Steel List H.W.-C.			
Symbol	No.	Length	Weight
a	11	30'-8"	352
b	8	12'-9"	106
c	12	11'-7"	145
d	8	9'-7"	80
f	8	4'-1"	34
g	18	12'-3"	331
			1048 Lbs.
Masonry			25 Cu. Yds.

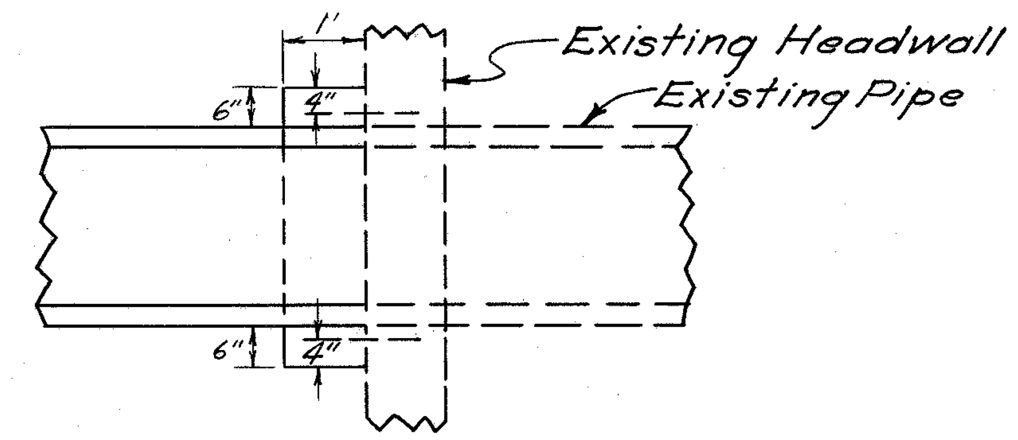
✻ Quantities per HW-C



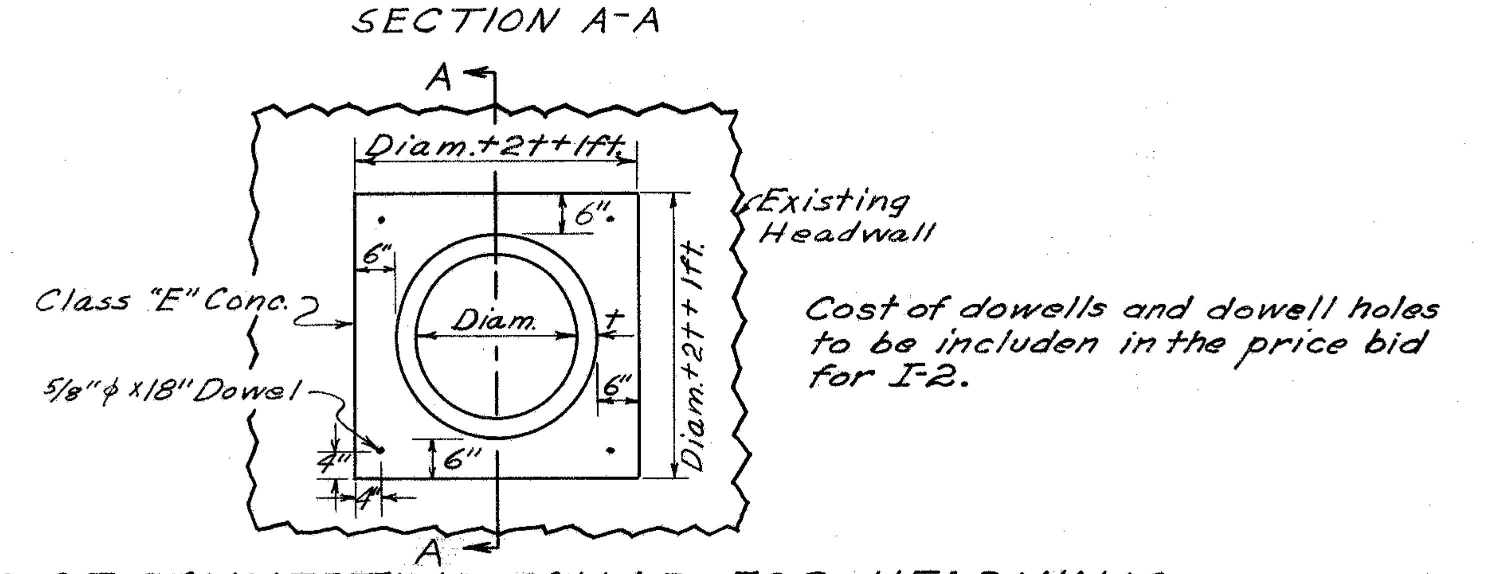
DETAIL OF STRUCTURE STA. 17+12
Scale: 1"=10'



DETAIL OF LATERAL STA. 10+61.5
Scale: 1"=10'



SECTION A-A



DETAIL OF CONNECTING COLLAR FOR HEAD WALLS
Scale: None

Note: From Sta. 16+50 to Sta. 17+62
This portion of Sec. Corr. Metal Structure shall be shop coated and field paved in accordance with Sec. M-6.4(d) of the Construction and Material Specifications. After installation of the structure, the damaged or worn spots in the bituminous coating on the inside of the structure shall be recoated using materials and methods recommended by the manufacturer and as directed by the Engineer.

Results obtained from the field paving shall meet with the satisfaction of the Engineer.

The bituminous paving may consist of an acceptable mixture of hot sand and Sec. M-5.1 asphalt cement spread and compacted, to the satisfaction of the Engineer, to form a smooth durable pavement and having a minimum thickness of approximately one inch over the inside crest of the corrugations.

Payment for these operations shall be included in the unit price bid for Item I-1.

Note: The bends in the 72" sectional plate corrugated metal pipe shall be obtained by mitered joints. This shall be done so that the galvanizing will meet the requirements of "galvanizing after corrugating and forming", as described under Sec. M-6.4(a), "Galvanizing". The joint fabricating cost shall be included in the unit price bid per lineal foot for the pipe.

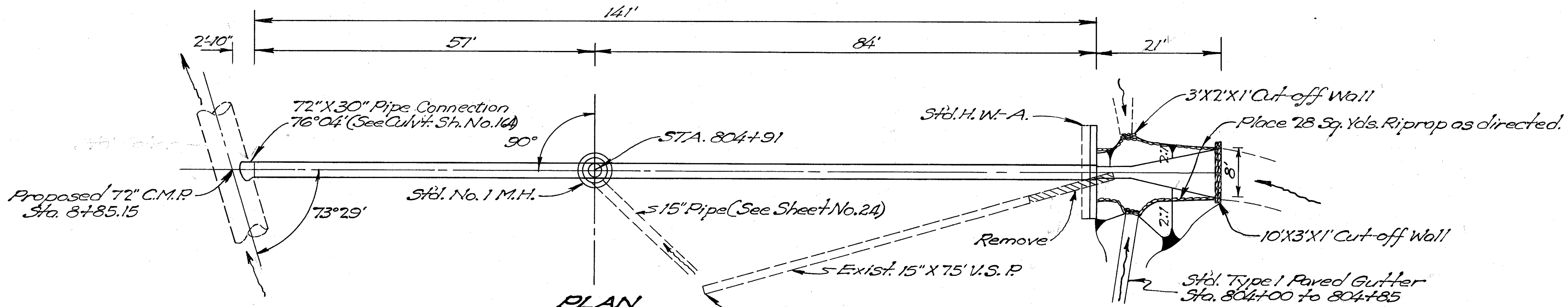
ESTIMATED QUANTITIES

Removal of Portions of Existing Structures	5 Cu. Yds
Mod. No. 2-4 Catch Basin	1 Each
36" Pipe Class A-1 Sec M-6.4(d) Gage 10	18 Lin. Ft.
72" Pipe Sec M-6.4(g) Class A-1 Gage 10-8 as per plan	1300 Lin. Ft.
✻ 72" Pipe Sec M-6.4(g) Class A-1 Gage 8-7 as per plan	232 Lin. Ft.
Channel Excavation	8 Cu. Yds.
Paved Gutter Type 1	10 Lin. Ft.
Masonry	50.4 Cu. Yds.
Riprap Grout Filled	60 Sq. Yds.
Dumped Rock Channel Protection	100 Cu. Yds.

✻ The higher gage plates (8-7) will be used from Sta. 8+95 to 11+25

Area: 375 acres
Q50: 350 cfs

STA. 802+85.7
72" X 1532' PIPE CULVERT
SHEET 2 OF 2 SHEETS



PLAN
Scale: 1"=10'

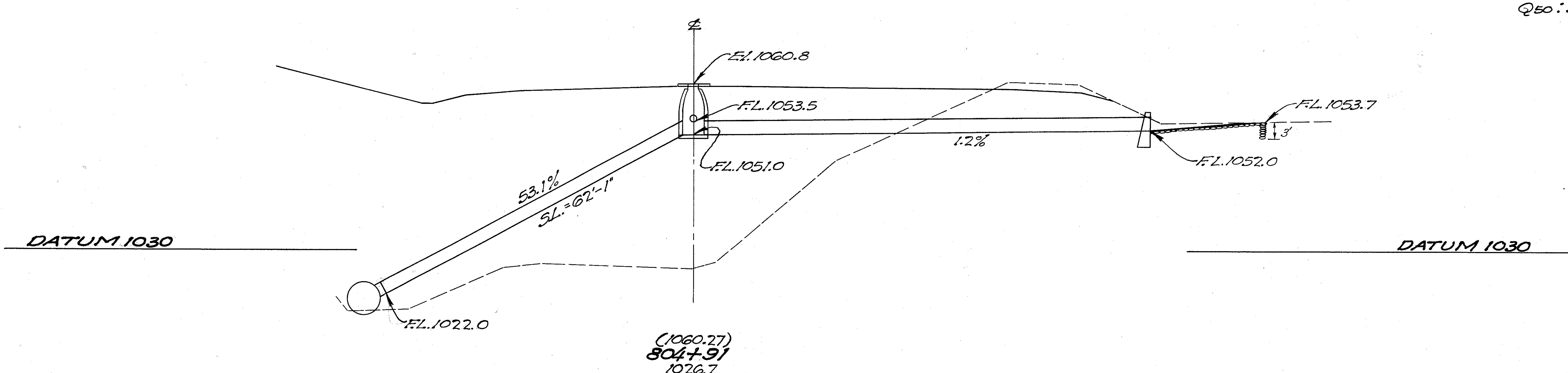
Plug inlet and outlet ends. Cost shall be included in the unit price bid for Item E-1, Roadway Excavation.

Note: For connection of the 30" pipe lateral to the 72" carrying line see Note on Sht. No. 8

ESTIMATED QUANTITIES

30" Pipe Class A-1 Sec M-6.6(a) or Sec M-6.8(b)	82 Lin. Ft.
30" Pipe Class A-1 Sec M-6.4(d)	64 Lin. Ft.
Std. No. 1 Manhole	1 Each
Pipe Removed 15" V.S.P.	14 Lin. Ft.
Riprap Grout Filled	25 Sq. Yds.
Channel Excavation	10 Cu. Yds.
Masonry	7.5 Cu. Yds.
Std. Paved Gutter Type 1	85 Lin. Ft.

Area: 13 acres
Q50: 38 cfs



CROSS SECTION
Scale: 1"=10'

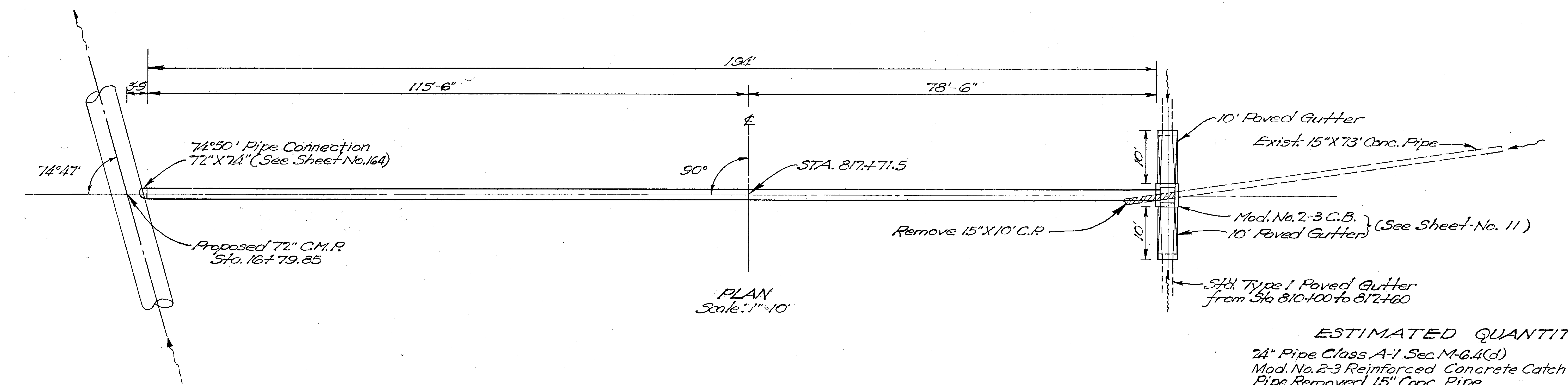
COL-30-32.28

STA. 804+91
30" X 146' PIPE CULVERT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

167/250

COL-30-32.19



PLAN
Scale: 1"=10'

ESTIMATED QUANTITIES

24" Pipe Class A-1 Sec. M-6.4(d)	196 Lin. Ft.
Mod. No. 2-3 Reinforced Concrete Catch Basin	1 Each
Pipe Removed 15" Conc. Pipe	10 Lin. Ft.
Paved Gutter Type 1	20 Lin. Ft.

Note: For connection of the 24" pipe lateral to the 72" carrying line see "Note" on Sh't. No. 8

Area: 11 acres
Q50: 35 cfs

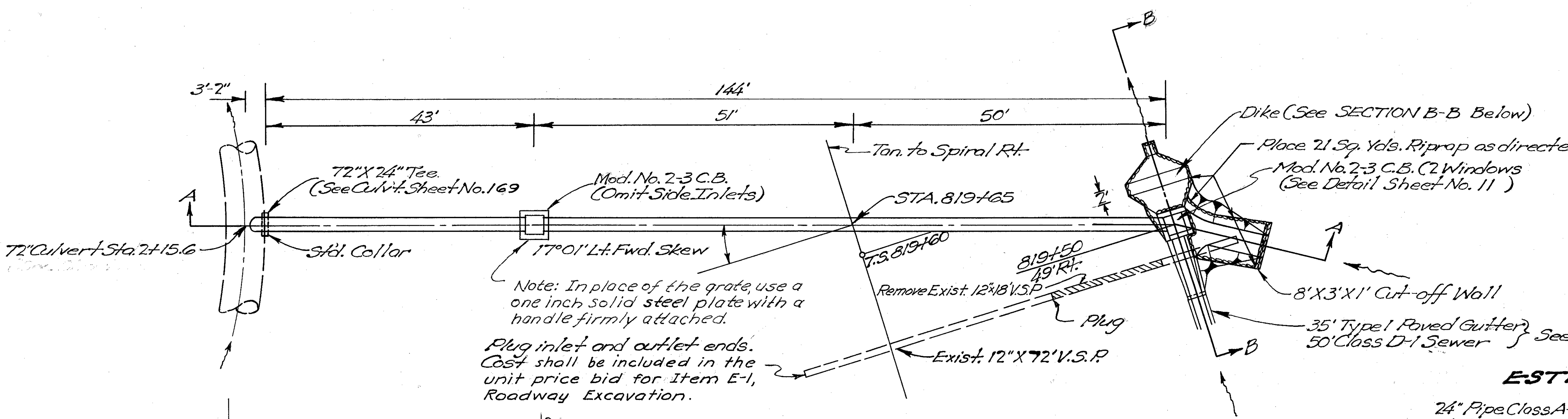
CROSS SECTION
Scale: 1"=10'

COL-30-3243

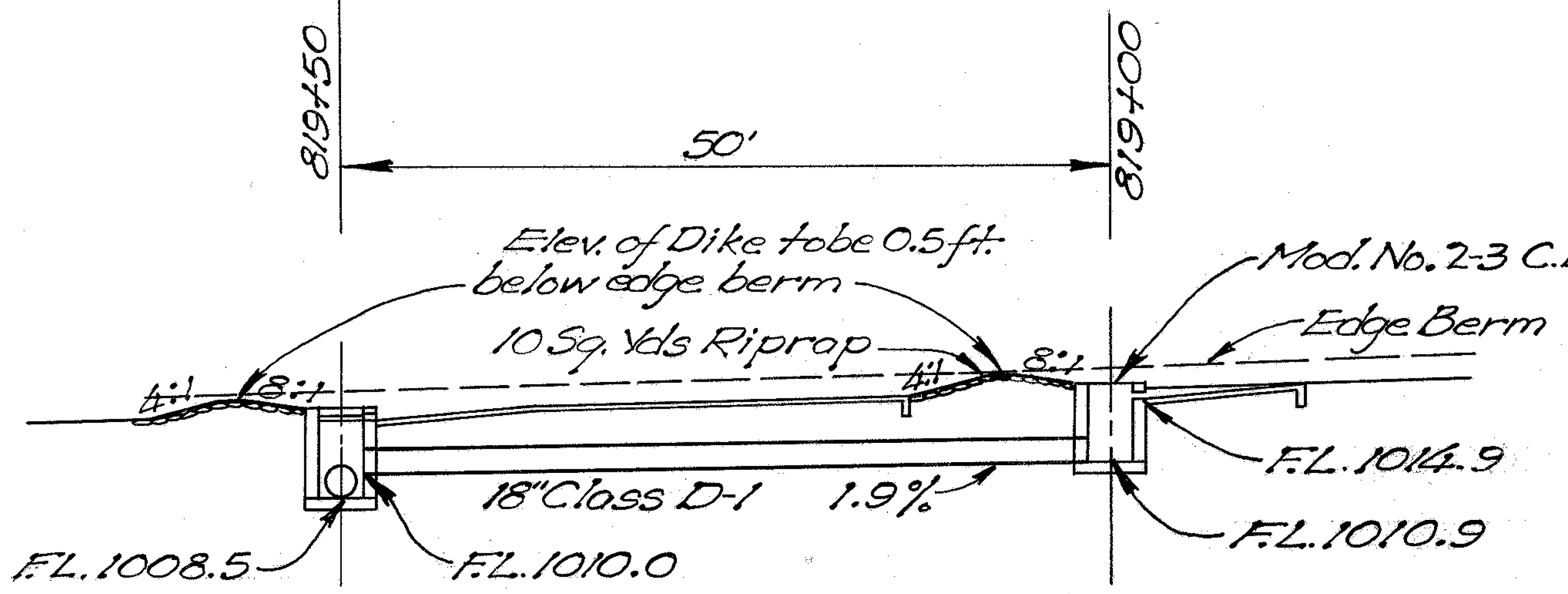
STA. 812+71.5
24" X 196' PIPE CULVERT

10

Note: For connection of 24" pipe lateral to 72" carrying line see "Note" on sheet No. 8.



PLAN
Scale: 1"=10'

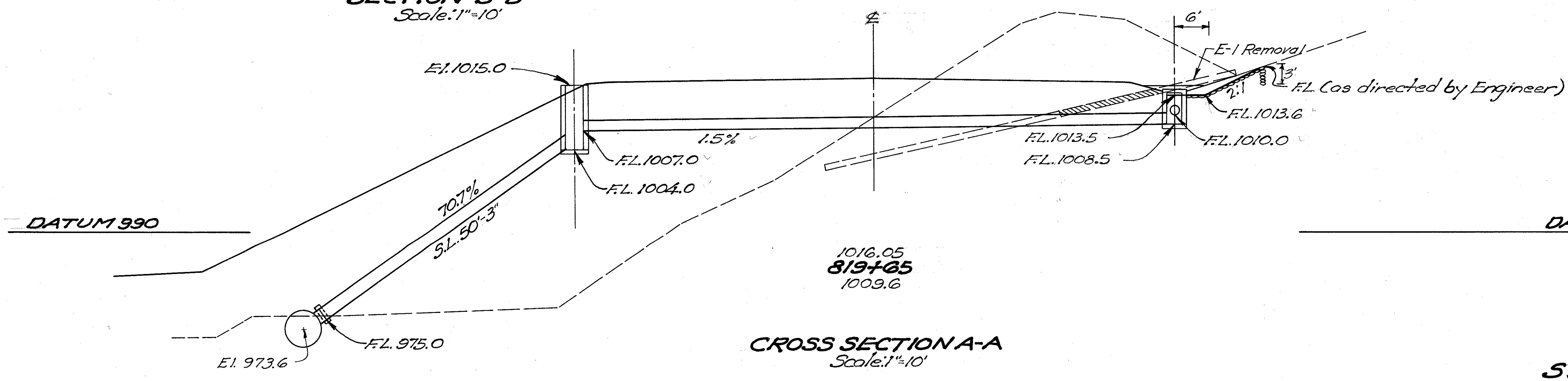


SECTION B-B
Scale: 1"=10'

ESTIMATED QUANTITIES

24" Pipe Class A-1 Sec M-6.6(a) or Sec M-6.8(b)	103 Lin. Ft.
24" Pipe Class F-1	52 Lin. Ft.
Pipe Removed 12" V.S.P.	18 Lin. Ft.
Mod. No. 2-3 Catch Basin	3 Each
18" Pipe Class D-1, Sec. M-6.6(b) or Sec. M-6.8(b)	50 Lin. Ft.
Riprap Grout Filled	31 Sq. Yds.
Std. Type 1 Paved Gutter	45 Lin. Ft.

Area: 9 acres
Q50: 29 cfs



CROSS SECTION A-A
Scale: 1"=10'

COL-30-3256

STA. 819+65
24"X 155' PIPE CULVERT

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

COL-30-32.19

Note: If flow outlets on existing rock bottom at Sta 4+65 the Dumped Rock Channel Protection with End Sill will not be used.

Note: For connection of the 24" pipe lateral to the 72" carrying line see note on Sheet No. 8

Reinforcing Steel List HW-C			
Symbol	No.	Length	Weight
a	11	27'-8"	318
b	8	11'-3"	94
c	12	10'-1"	126
d	8	9'-7"	80
f	8	4'-1"	34
h	16	12'-3"	294
			946 Lbs
Masonry			22.4 Cu. Yds.

ESTIMATED QUANTITIES

72" Pipe Sec M-6.6(b) Class A-1	292 Lin. Ft.
Masonry	24.2 Cu. Yds.
Concrete for Structures Class "C"	20 Cu. Yds.
Channel Excavation	17 Cu. Yds.
Riprap (6" reinforced concrete slab)	64 Sq. Yds.
Dumped Rock Channel Protection	60 Cu. Yds.
72" Radius Pipe Sec M-6.6(b) Class A-1	60 Lin. Ft.
Reinforcing Steel	1847 Lbs.
Excavation for Structures	25 Cu. Yds.

Area: 556 acres
Q_{50}: 465 cfs

STA. 820+00 – 85' LT.
72"X352' CHANNEL PIPE CULVERT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

NOTE: For 18" pipe connection to be made into 106"×68" Elliptical Pipe at Sta. 2+42.25 see note on sheet No 8.

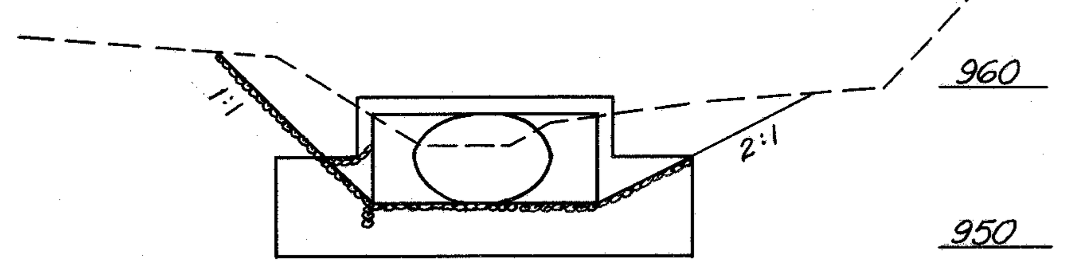
NOTE: From Sta. 3+29.3 to 4+89.3 the 106"×68" Elliptical Pipe shall have the lower portion protected with Vitrified Liner Plates as shown on detail drawing. (See Detail Sht. No.11)

NOTE: Proposed flow line of inlet channel may be on rock and a portion of riprap not needed. The placement or omission shall be as directed by the Engineer. The riprap on the 1:1 channel slope shall not be omitted and will be a 6" reinforced concrete slab Keyed at the bottom 1 foot into rock.

PLAN

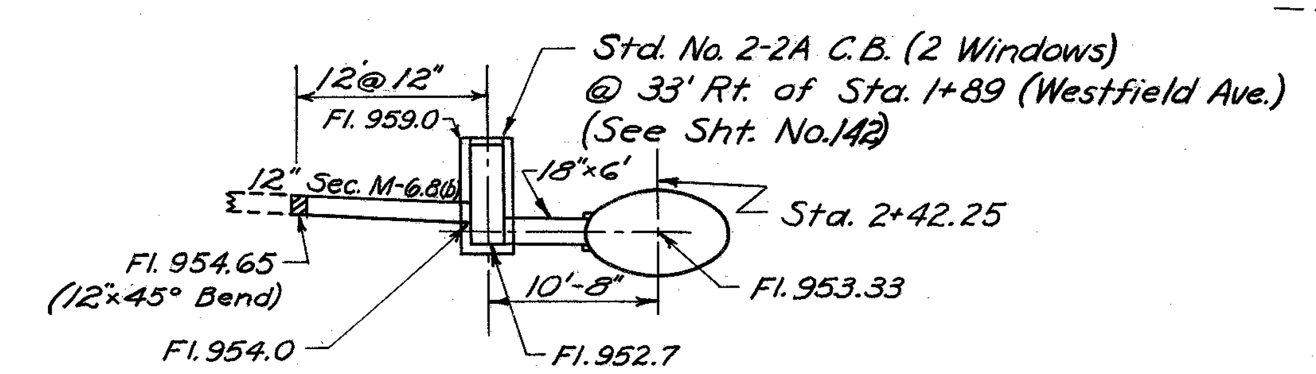
Scale: 1" = 20'

Reinforcing Steel List HW-C			
Symbol	No.	Length	Weight
a	8	27'-8"	317
b	11	9'-11"	83
c	12	8'-7"	107
d	6	9'-5"	59
f	6	4'-1"	26
g	14	11'-11"	215
			807Lbs.
Masonry			20.7 Cu.Yds.



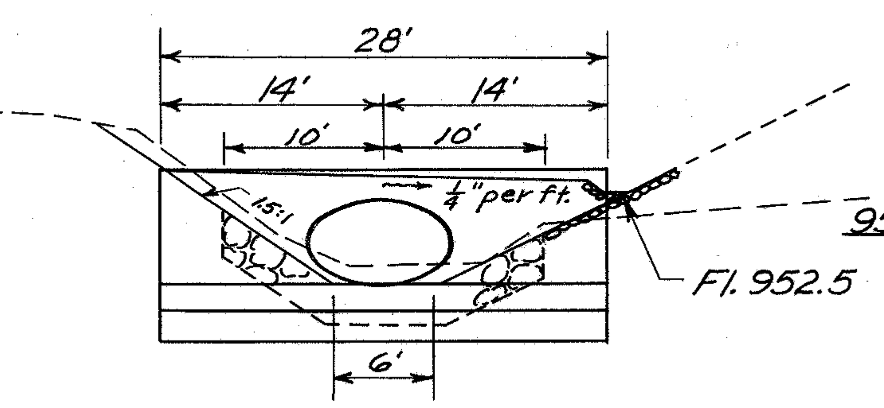
SECTION A-A

Scale: 1" = 10'



SECTION Y-Y

Scale: 1" = 10'



SECTION B-B

Scale: 1" = 10'

ESTIMATED QUANTITIES

106"×68" Elliptical Pipe Class G-1 Sec. M-6.7(b)	146 Lin. Ft.
106"×68" Elliptical Pipe Class G-1 Sec. M-6.7(b) with Vitrified Liner Plates as per Plan	160 Lin. Ft.
106"×68" Elliptical Radius Pipe Class G-1 Sec. M-6.7(b)	64 Lin. Ft.
Riprap 6" Reinforced Concrete Slab	62 Sq. Yds.
Dumped Rock Channel Protection	98 Cu. Yds.
Concrete for Structures Class "C"	55 Cu. Yds.
Reinforcing Steel	6811 Lbs.
Pipe Removed (12" V.S.P.)	26 Lin. Ft.
Masonry	20.7 Cu. Yds.
Removal of Portions of Existing Structures	28 Cu. Yds.
Channel Excavation	58 Cu. Yds.
18" Pipe Class E-1	6 Lin. Ft.
12" Pipe Class B-1 Sec. M-6.8(b)	12 Lin. Ft.
12" Pipe Special 45° Bend Class B-1 Sec. M-6.8(b)	1 Each
Std. No. 2-2A Catch Basin	1 Each
Excavation for Structures	121 Cu. Yds.

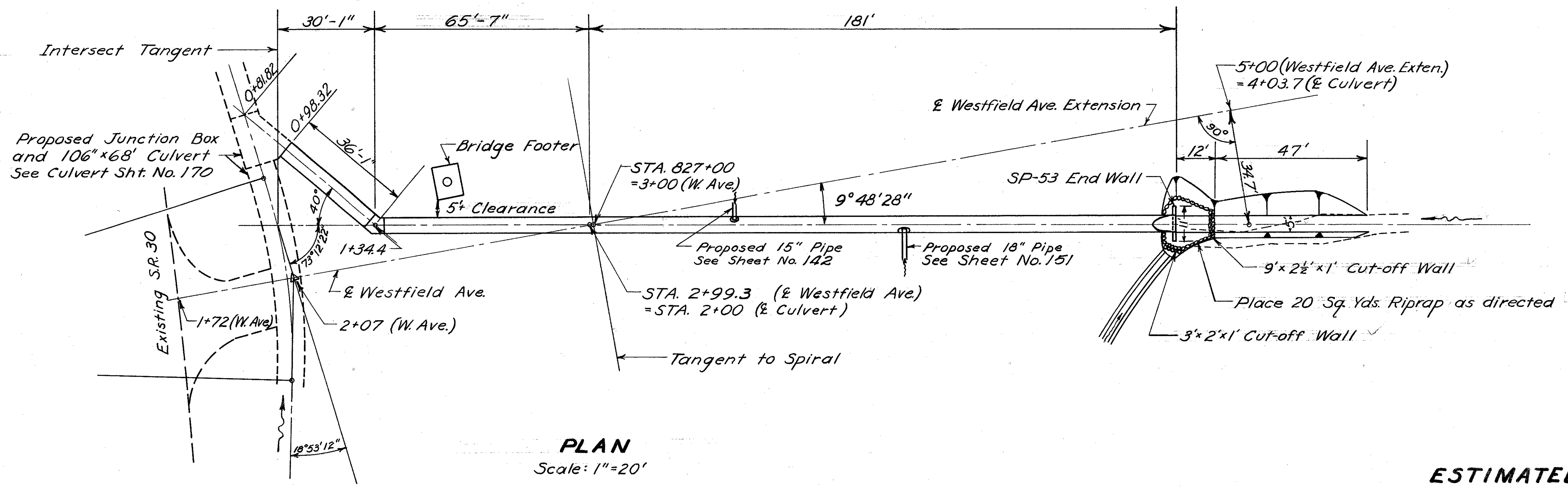
Area: 770 Acres

Q_{50}: 560 cfs

CROSS SECTION

Scale: 1" = 20'

STA. 827+00
106" × 68" × 370' CHANNEL PIPE CULVERT



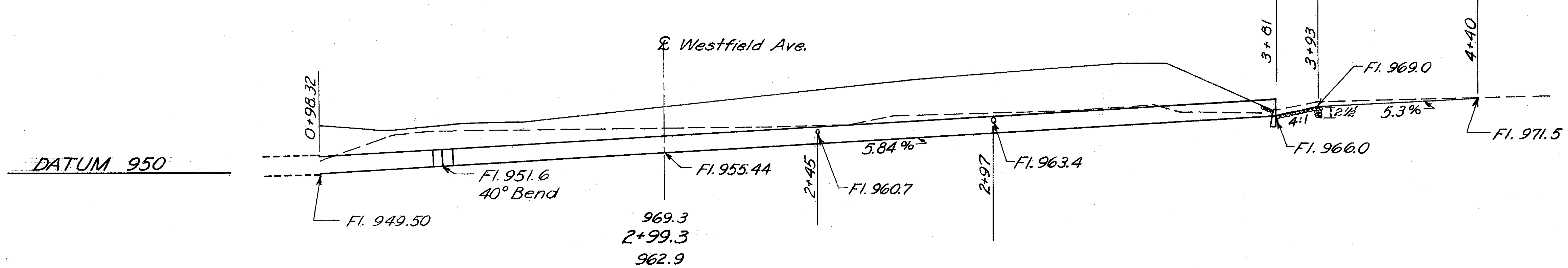
PLAN
Scale: 1"=20'

ESTIMATED QUANTITIES

60" Pipe Sec. M-6.4(d) Class A-1 Gage 10	284 Lin.Ft.
Channel Excavation	28 Cu.Yds.
Riprap 6" Reinforced Concrete Slab	20 Sq.Yds.
Masonry "Class E"	3 Cu.Yds.
Pipe Special 60"×40° Bend Class A-1 Sec. M6.4(d) Gage 10	1 Each

Note: This structure requires anchor bolts as shown on St'd. Drawing SP-53 Cost is to be included in price bid per lineal foot of pipe.

Area: 131 Acres
Q_{50}: 175 cfs



CROSS SECTION
Scale: 1"=20'

COL-30-3270

STA. 2+99.3 (WESTFIELD AVE.) - 827+00
60"×284' PIPE CULVERT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

ESTIMATED QUANTITIES

30" Pipe Class A-1 Sec. M 6.8(b)	56 Lin. Ft.
30" Pipe Class A-1 Sec. M 6.4(d)	220 Lin. Ft.
36" Pipe Class A-1 Sec. M 6.4(d)	28 Lin. Ft.
15" Pipe Class D-1	70 Lin. Ft.
St'd. No. 2-2 A Catch Basin	1 Each
Mod. No. 2-4 Catch Basin	1 Each
St'd. No. 1 Manhole	2 Each
Channel Excavation	15 Cu. Yds.
Masonry	0.5 Cu. Yds.
Riprap 6" Reinforced Concrete Slab.	57 Sq. Yds.

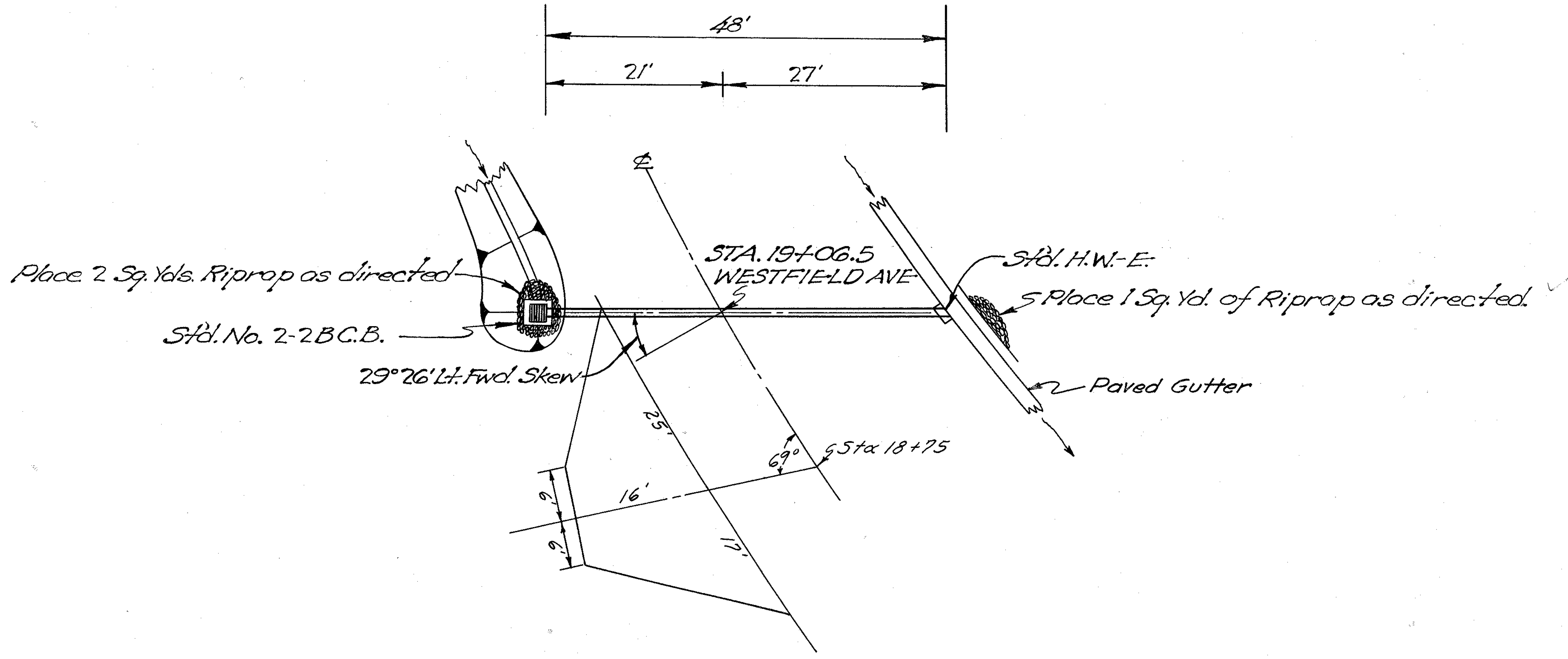
Area : 20 acres

Q_{25} : 42 cfs

STA. 14+75 WESTFIELD AVE.
30" x 276' PIPE CULVERT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

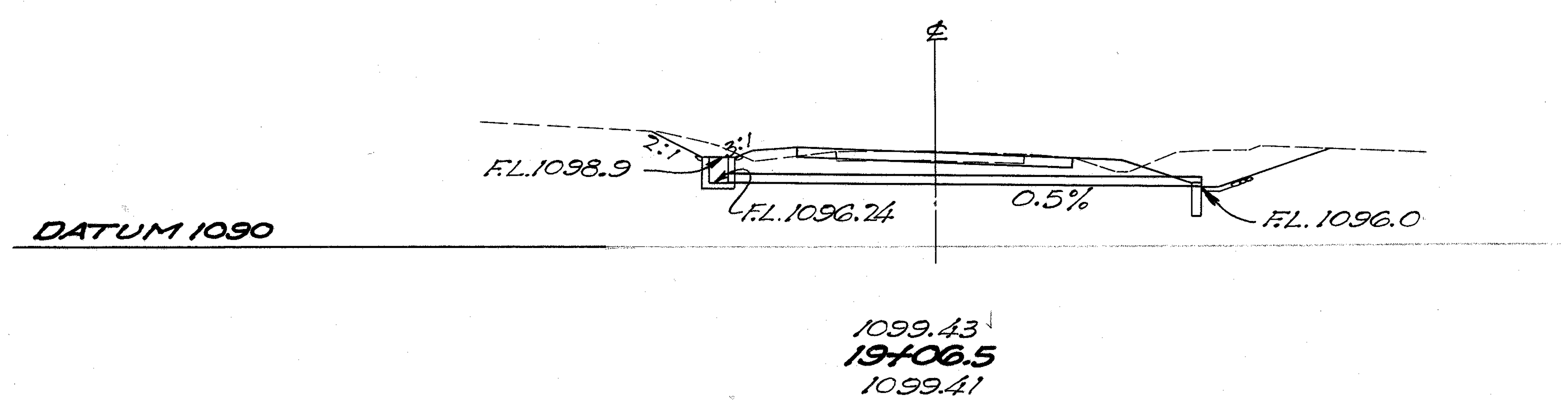


PLAN
Scale: 1" = 10'

ESTIMATED QUANTITIES

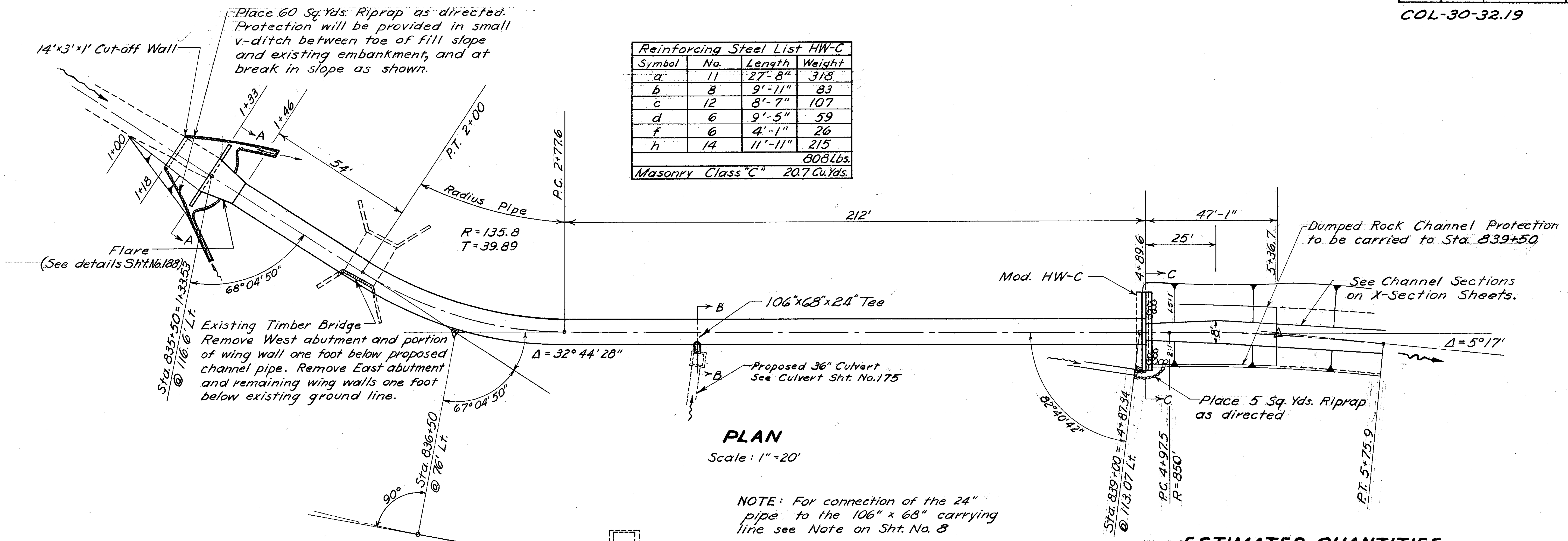
18" Pipe Class A-1 Sec. M-6.4(d)	48 Lin. Ft.
Std. No. 2-2B Catch Basin	1 Each
Riprap Grout Filled	3 Sq. Yds.
Masonry	0.3 Cu. Yds.

Area: 2 acres
Q_{25}: 8 cfs



CROSS SECTION
Scale: 1" = 10'

STA. 19+06.5 WESTFIELD AVE.
18" X 48' PIPE CULVERT

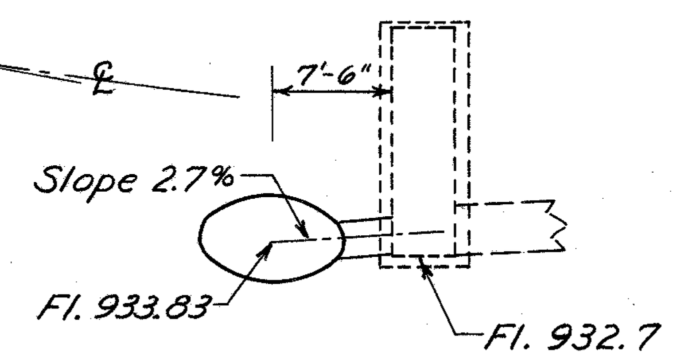


PLAN

Scale: 1" = 20'

Reinforcing Steel List HW-C			
Symbol	No.	Length	Weight
a	11	27'-8"	318
b	8	9'-11"	83
c	12	8'-7"	107
d	6	9'-5"	59
f	6	4'-1"	26
h	14	11'-11"	215
			808 Lbs.
Masonry	Class "C"		20.7 Cu. Yds.

NOTE: For connection of the 24" pipe to the 106" x 68" carrying line see Note on Sht. No. 8

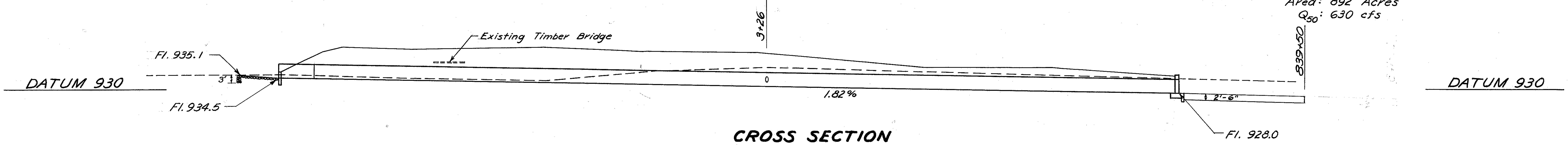


Sta. 3+26
SECTION B-B
Scale: 1" = 10'

ESTIMATED QUANTITIES

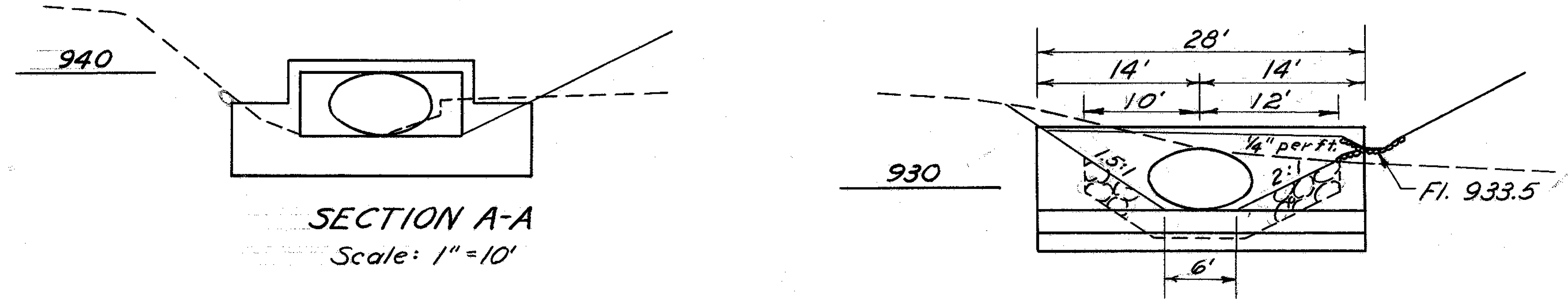
106" x 68" Elliptical Pipe Class G-1 Sec. M-6.7(b) with Vitrified Liner Plates as per plan	264 Lin. Ft.
106" x 68" Elliptical Radius Pipe Class G-1 Sec. M-6.7(b) with Vitrified Liner Plates as per plan	80 Lin. Ft.
Channel Excavation	9 Cu. Yds.
Riprap 6" Reinforced Concrete Slab	65 Cu. Yds.
Dumped Rock Channel Protection	110 Cu. Yds.
Concrete for Structures Class "C"	28 Cu. Yds.
Reinforcing Steel	3095 Lbs.
Masonry	20.7 Cu. Yds.
Removal of Portions of Existing Structure	23 Cu. Yds.
24" Pipe Class B-1 Sec. M 6.8(b) or Sec. M 6.6(b)	4 Lin. Ft.
Excavation for Structures	35 Cu. Yds.

Area: 892 Acres
Q_{50}: 630 cfs



CROSS SECTION

Scale: 1" = 20'



SECTION A-A
Scale: 1" = 10'

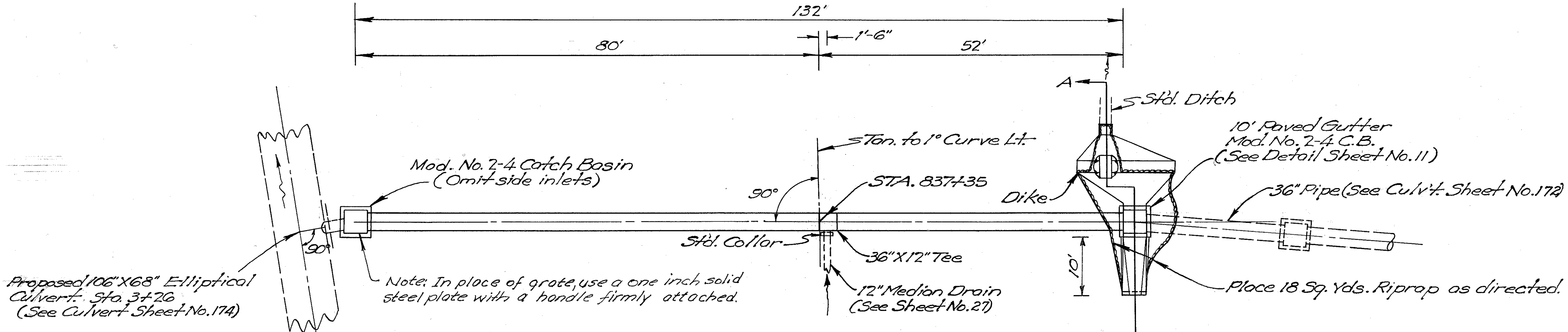
SECTION C-C
Scale: 1" = 10'

STA. 836+50
106" x 68" x 344' CHANNEL PIPE CULVERT

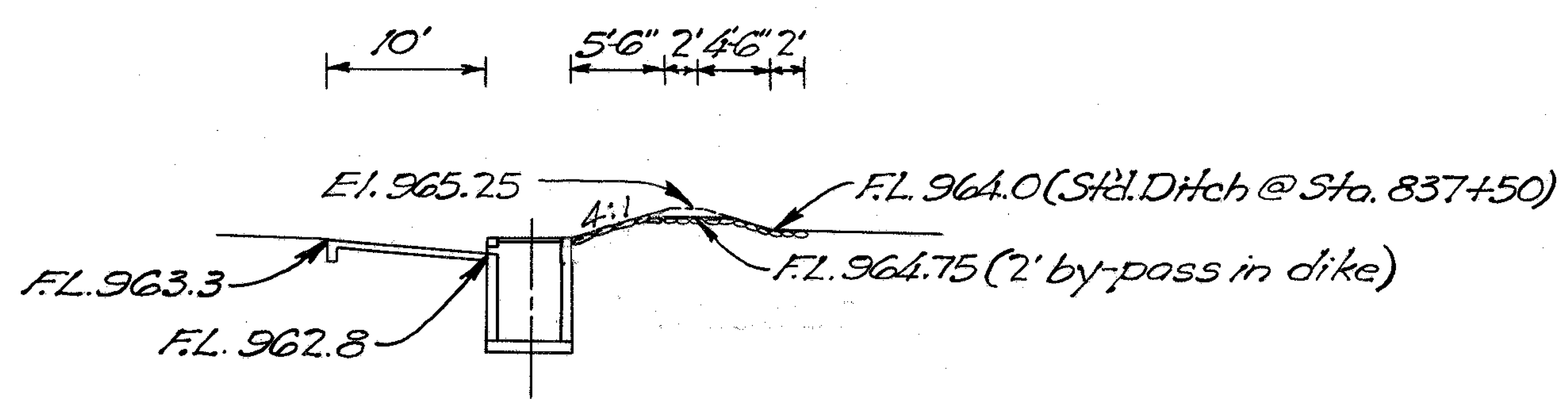
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

175
250

COL-30-32.19



PLAN
Scale: 1"=10'

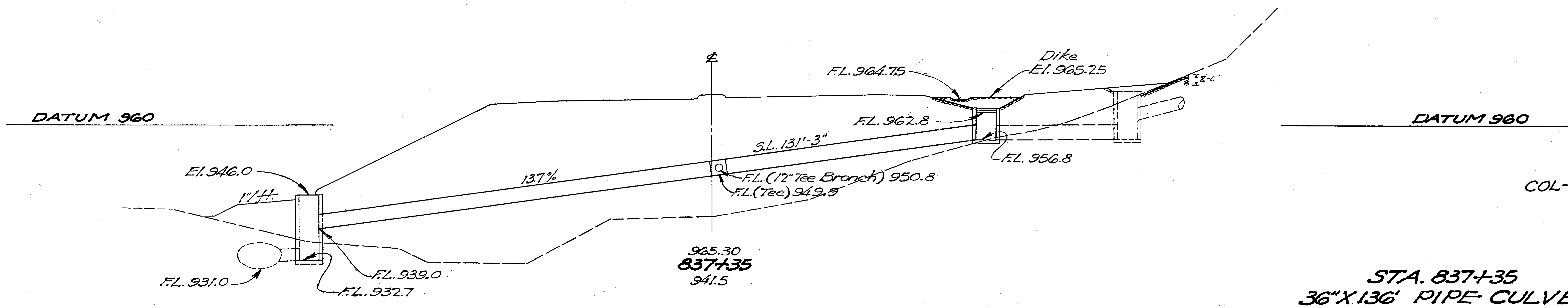


SECTION A-A
Scale: 1"=10'

ESTIMATED QUANTITIES

36" Pipe Class A-1 Sec. M-6.4(d)	136 Lin. Ft.
Mod. No. 2-4 Catch Basin	1 Each.
Paved Gutter Type 1	10 Lin. Ft.
Riprap Grout Filled	18 Sq. Yds.
Pipe Special 36"X12" Tee Class A-1 Sec. M-6.4(d)	1 Each
Mod. No. 2-4 Reinforced Concrete Catch Basin	1 Each

Area: 25 acres
Q50: 59 cfs



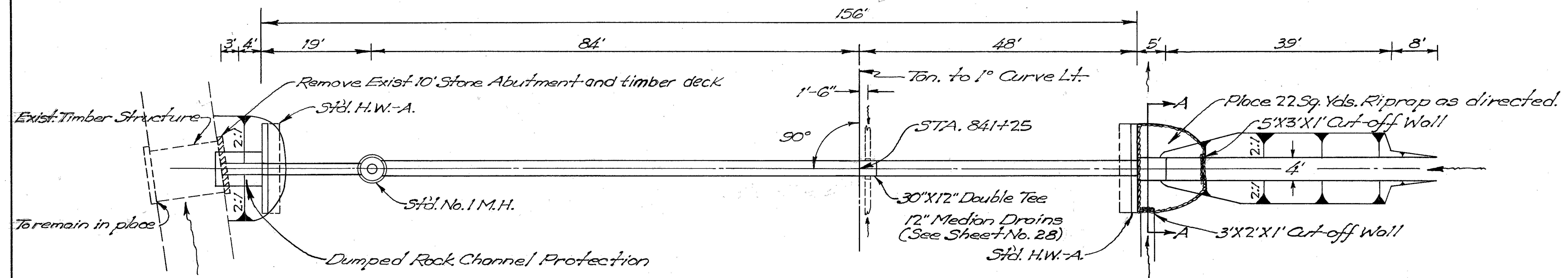
COL-30-3290

CROSS SECTION
Scale: 1"=10'

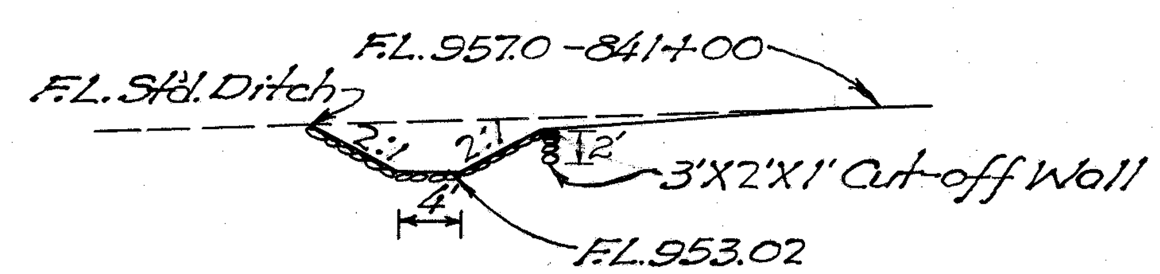
STA. 837+35
36"X136' PIPE CULVERT

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

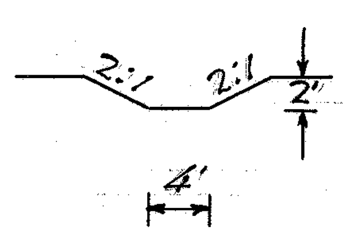
COL-30-32.19



PLAN
Scale: 1"=10'



SECTION A-A
Scale: 1"=10'

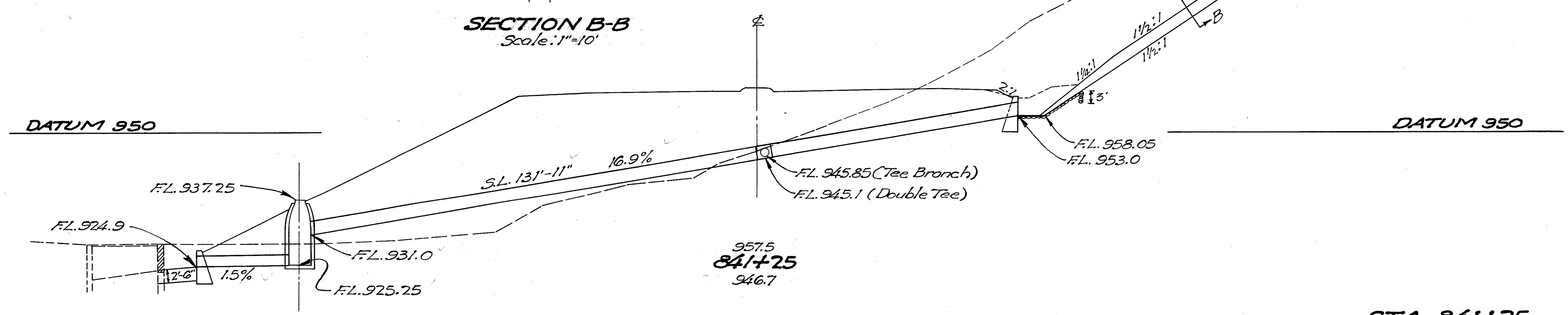


SECTION B-B
Scale: 1"=10'

ESTIMATED QUANTITIES

30" Pipe Class A-1 Sec. M-6.6(c)	134 Lin. Ft.
Dumped Rock Channel Protection	5 Cu. Yds.
24" Pipe Class B-1 Sec. M 6.6(b) or Sec. M 6.8(b)	19 Lin. Ft.
Removal of Portions of Existing Structures	5 Cu. Yds.
Masonry	12.6 Cu. Yds.
Std. No. 1 Manhole	1 Each
Channel Excavation	49 Cu. Yds.
Riprap 6" Reinforced Concrete Slab	22 Sq. Yds.
Pipe Special 30"X12" Double Tee Class A-1 Sec. M-6.6(c)	1 Each

Area: 10 acres
Q50: 33 cfs



CROSS SECTION
Scale: 1"=10'

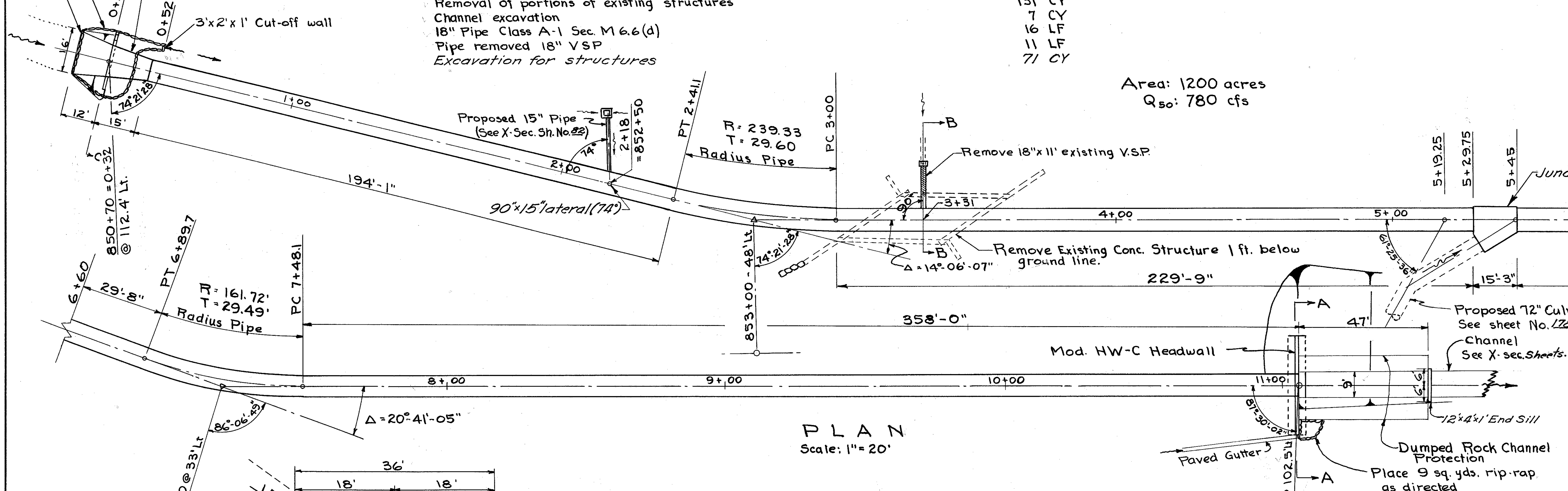
COL-30-3297

STA. 841+25
30" X 134' PIPE CULVERT

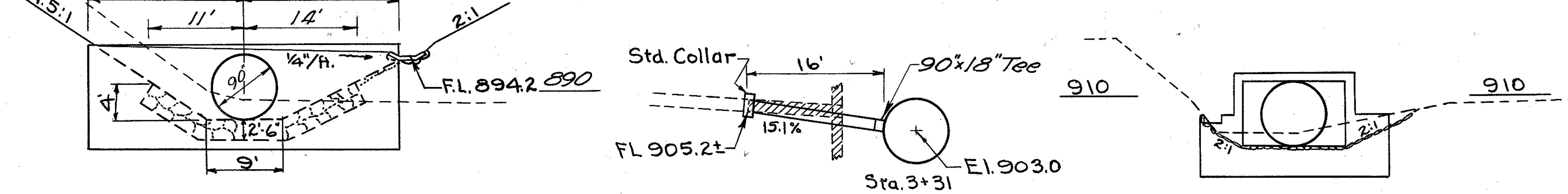
ESTIMATED QUANTITIES

90" Pipe Class A-1 Sec. M-106.6(d) with vitrified liners as per plan	927 LF
90" Radius Pipe Class A-1 Sec. M-106.6(d) with vitrified liners as per plan	120 LF
Masonry	33.7 CY
Concrete for structures Class "C"	72 CY
Reinforcing steel	9098 lbs.
Riprap 6" reinforced concrete slab	93 SY
Dumped rock channel protection	118 CY
Removal of portions of existing structures	131 CY
Channel excavation	7 CY
18" Pipe Class A-1 Sec. M 6.6(d)	16 LF
Pipe removed 18" VSP	11 LF
Excavation for structures	*71 CY*

Area: 1200 acres
Q_{50}: 780 cfs



Reinforcing steel list HW-C			
Symbol	No.	Length	Weight
a	11	35'-8"	409
b	8	14'-5"	120
c	16	13'-2"	220
d	10	10'-10"	113
f	10	4'-2"	44
h	20	13'-8"	730
			1636 lbs
Masonry Class "C"			31.9 CY



SEC A-A
Scale: 1" = 10'
Mod. HW-C Headwall

SEC. B-B
Scale: 1" = 10'

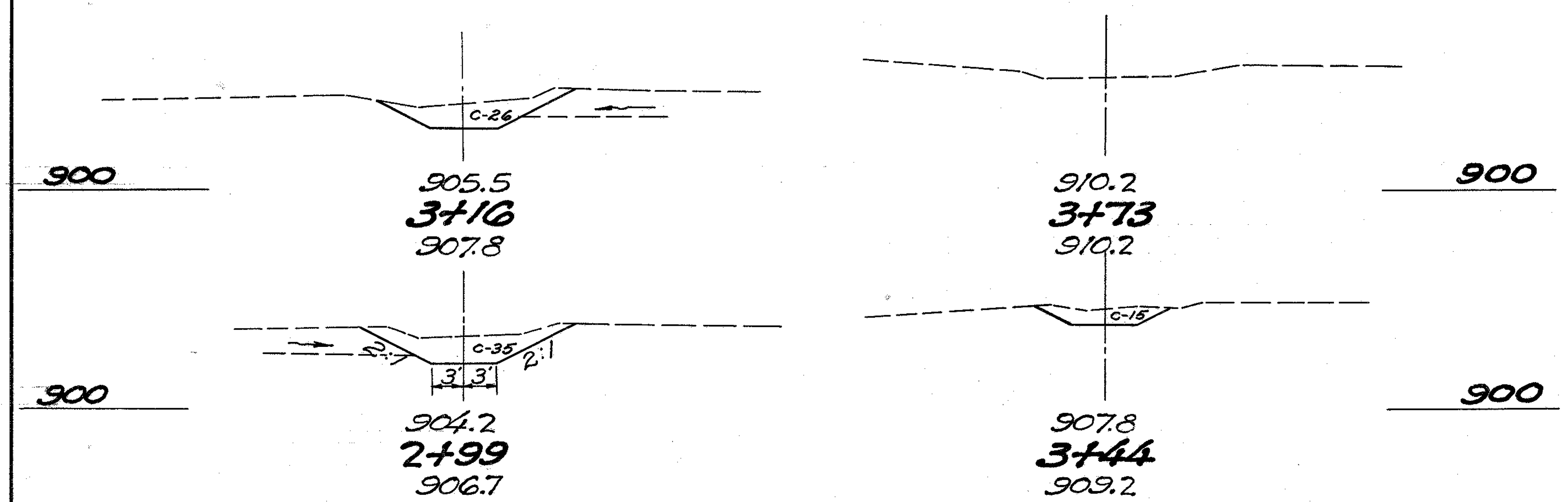
SEC. C-C
Scale: 1" = 10'

NOTE: For connection of the 15" and 18" pipes to the 90" concrete carrying line see Note on sheet No. 8

CROSS-SECTION
Scale: 1" = 20'

STA. 853+00-48' LT.
90"x1047' CHANNEL CULVERT

PLAN
Scale: 1"=10'



Note: If Sectional Corrugated Metal Structure is used, it shall be shop coated and field paved in accordance with Sec. M-6.4(d) of the Construction and Material Specifications. See note on culvert sheet number 165.

ESTIMATED QUANTITIES

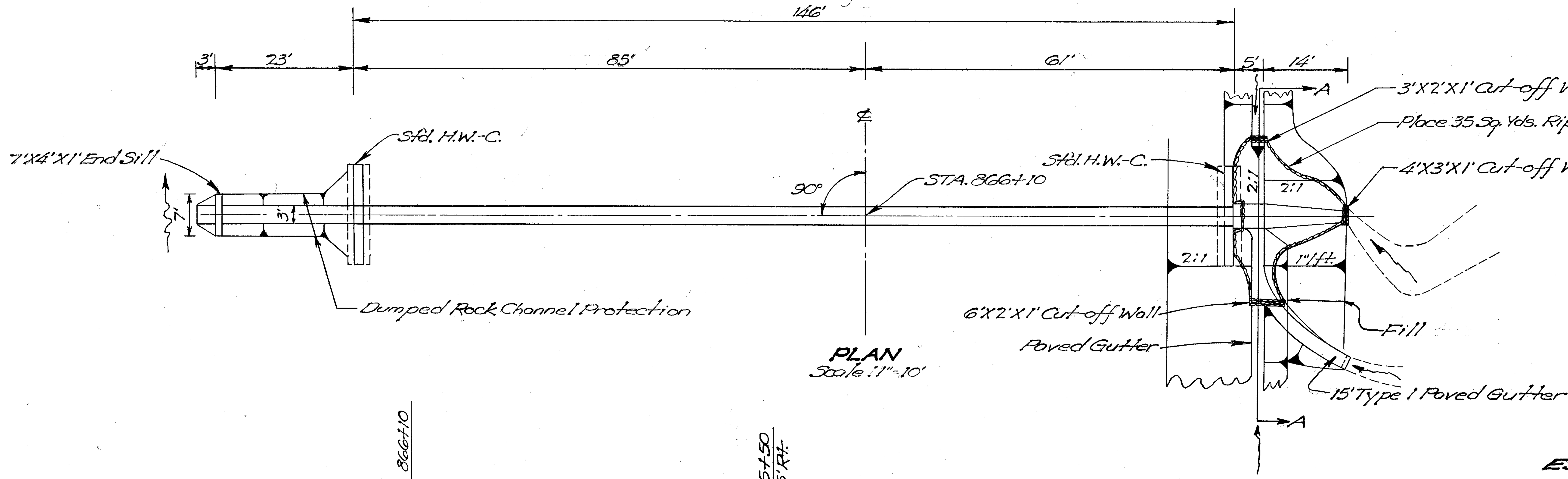
72" Pipe Class A-1 Sec M-6.6(d) or Sec M-6.4(g) Gage 10-8		149 Lin Ft.
Pipe Special 72"X30° Bend Class A-1 Sec M-6.6(d) or Sec M-6.4(g) Gage 10-8		1 Each
Masonry		23.5 Cu. Yds.
Channel Excavation		49 Cu. Yds.
Riprap	6" Reinforced Concrete Slab	120 Sq. Yds.

Area: 240 acres
Q50: 260 cfs

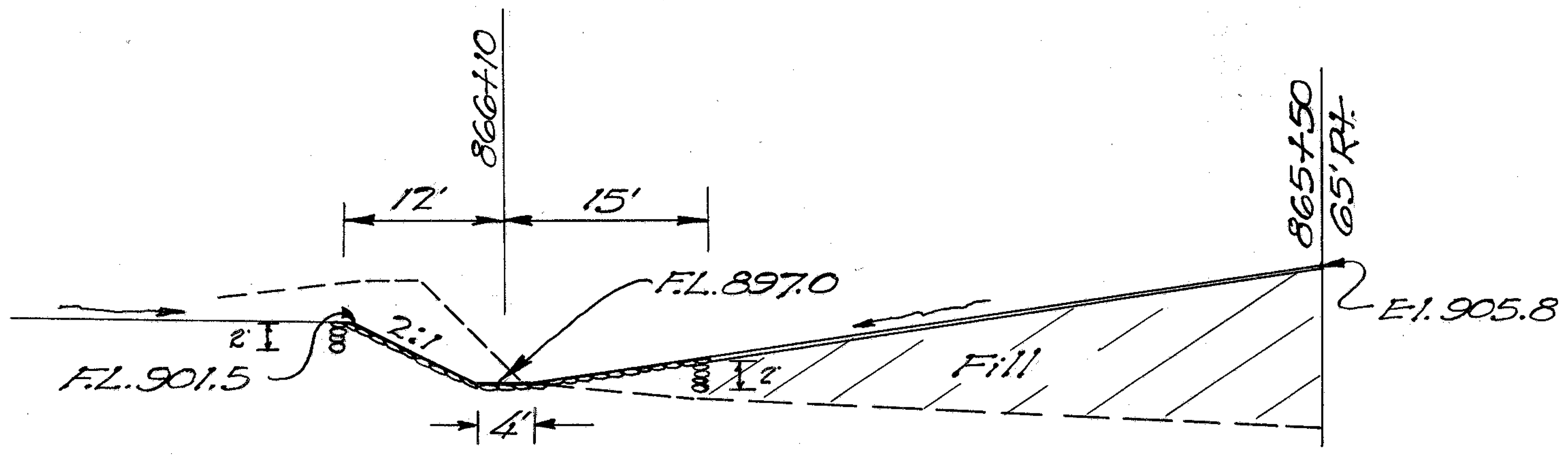
CROSS SECTION A-A
Scale: 1"=10'

COL-30-3324

STA. 855+25
72"X149' PIPE CULVERT



PLAN
Scale: 1"=10'



SECTION A-A
Scale: 1"=10'

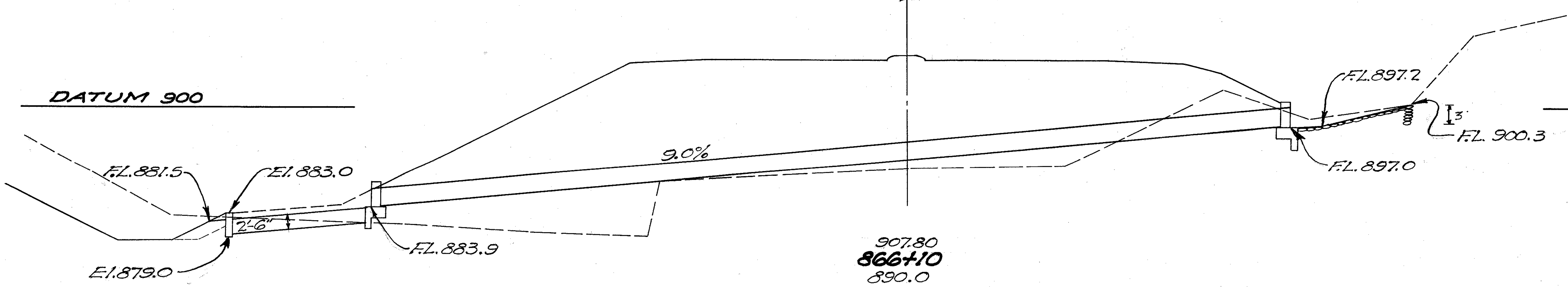
* Reinforcing Steel List HW-C			
Symbol	No.	Length	Weight
a	11	16'-2"	186
c	12	7'-1"	89
d	6	6'-1"	38
f	6	4'-1"	26
h	10	7'-8"	80
			419 Lbs.
Masonry			8.3 C.Y.

* Quantities per HW-C

ESTIMATED QUANTITIES

36" Pipe Class A-1 Sec. M-6.4(d)	146 Lin. Ft.
Masonry	17.6 Cu. Yds.
Riprap 6" Reinforced Concrete Slab	35 Sq. Yds.
Channel Excavation	24 Cu. Yds.
Dumped Rock Channel Protection	15 Cu. Yds.
Paved Gutter Type 1	15 Lin. Ft.

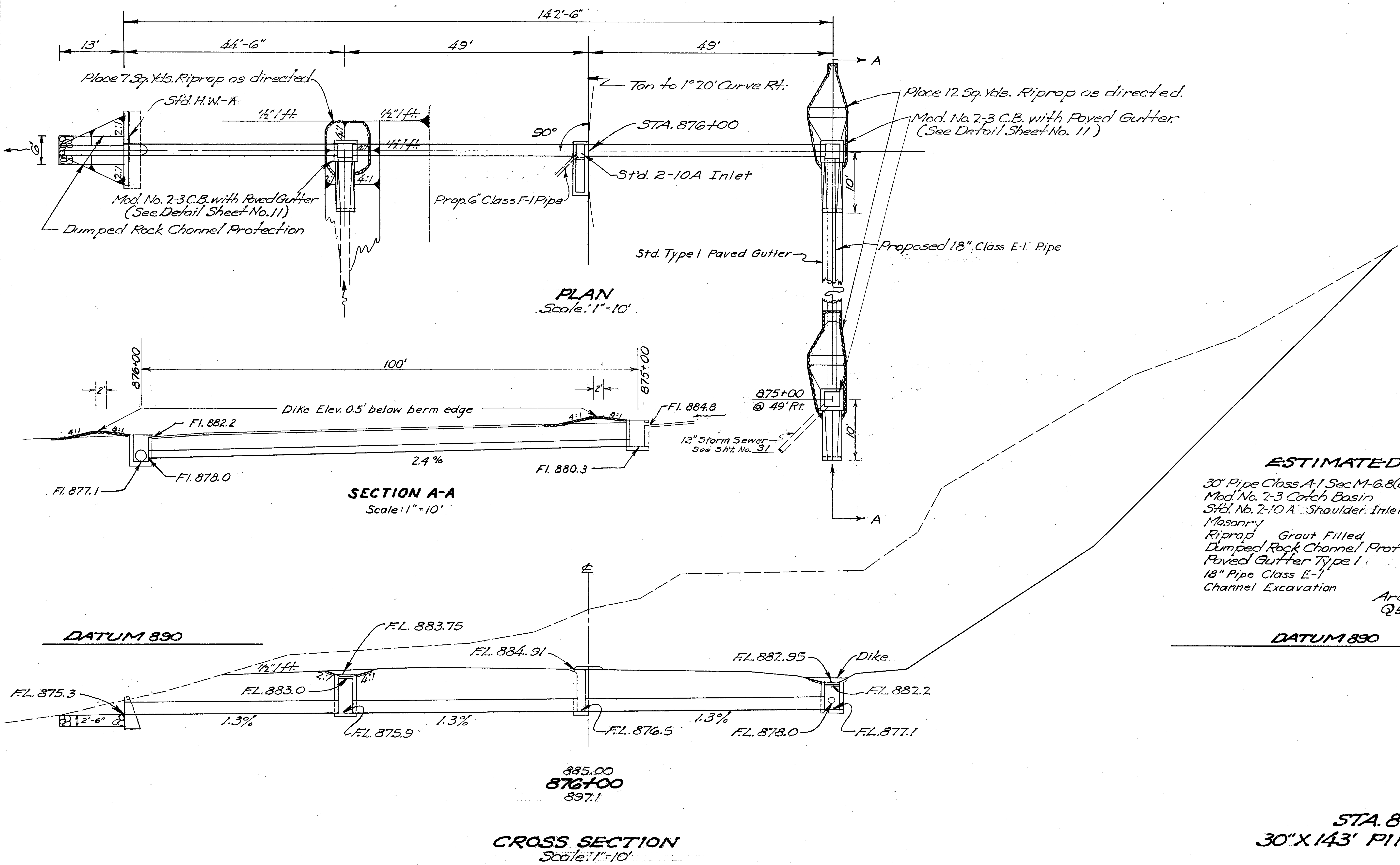
Area: 31 acres
Q50: 52 cfs



COL-30-33.44

CROSS SECTION
Scale: 1"=10'

STA. 866+10
36"X 146' PIPE CULVERT



ESTIMATED QUANTITIES

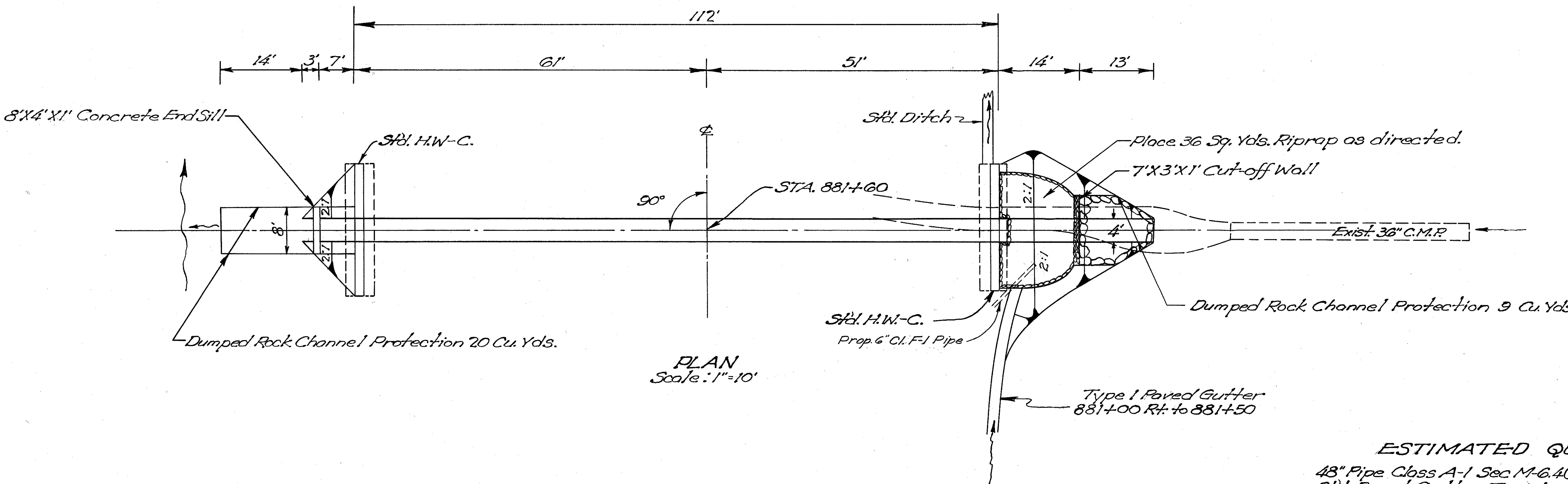
30" Pipe Class A-1 Sec M-6.8(b) or Sec M-6.6(a)	143 Lin. Ft.
Mod. No. 2-3 Catch Basin	3 Each
Std. No. 2-10 A Shoulder Inlet	1 Each
Masonry	7.3 Cu. Yds.
Riprap Grout Filled	31 Sq. Yds.
Dumped Rock Channel Protection	7 Cu. Yds.
Paved Gutter Type 1	30 Lin. Ft.
18" Pipe Class E-1	100 Lin. Ft.
Channel Excavation	5 Cu. Yds.

Area: 14 acres
Q50: 39 cfs

DATUM 890

COL-30-3363

STA. 876+00
30" X 143' PIPE CULVERT



PLAN
Scale: 1"=10'

ESTIMATED QUANTITIES

48" Pipe Class A-1 Sec M-6.4(d)	112 Lin. Ft.
Std. Paved Gutter Type 1	50 Lin. Ft.
Masonry	30.4 Cu. Yds.
Riprap 6" Reinforced Concrete Slab	36 Sq. Yds.
Dumped Rock Channel Protection	29 Cu. Yds.
Channel Excavation	65 Cu. Yds.

Area: 42 acres
Q50: 86 cfs

* Reinforcing Steel List HW-C			
Symbol	No.	Length	Weight
a	11	22'-8"	260
c	12	8'-5"	106
d	8	7'-4"	61
f	8	4'-1"	34
h	14	9'-3"	135
			596 lbs.
Masonry			14.6 C.Y.

* Quantities per HW-C

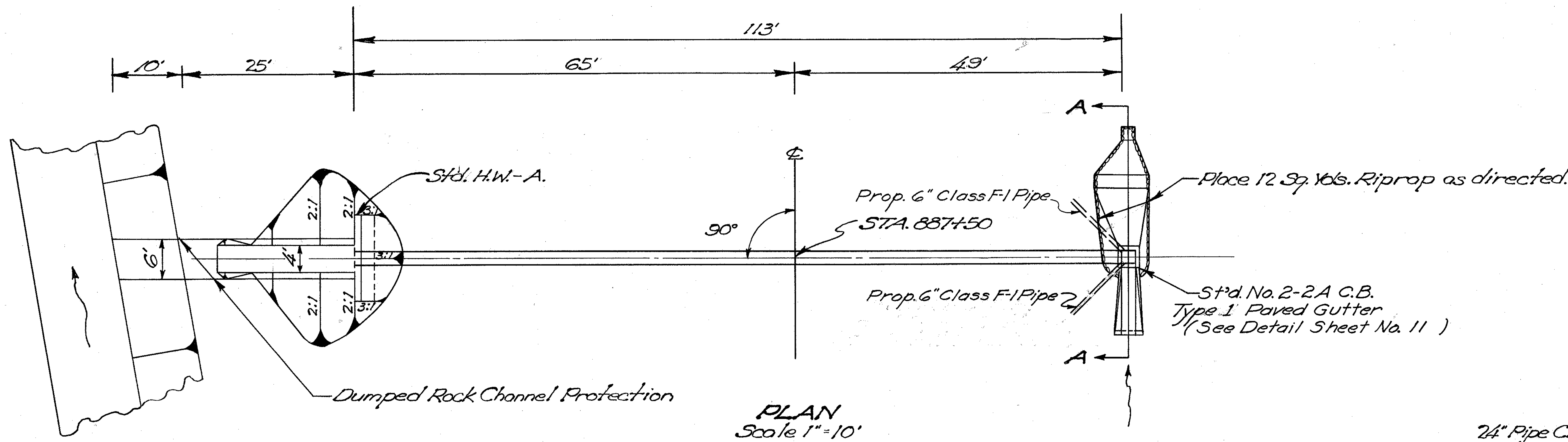
CROSS SECTION
Scale: 1"=10'

COL-30-3374

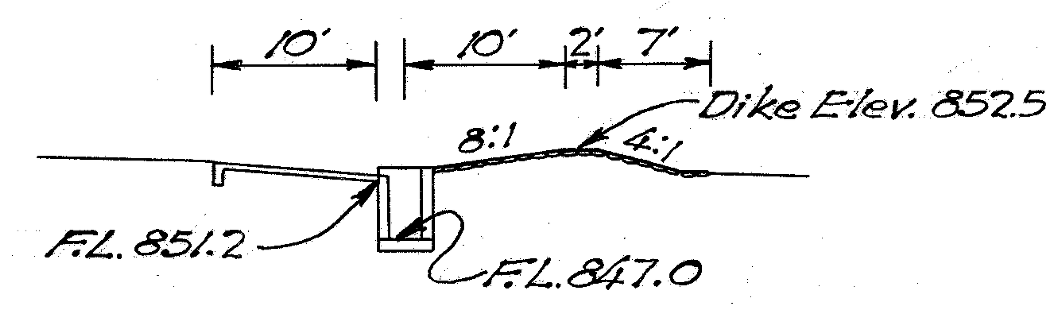
STA. 881+60
48"X112' PIPE CULVERT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19



PLAN
Scale 1" = 10'

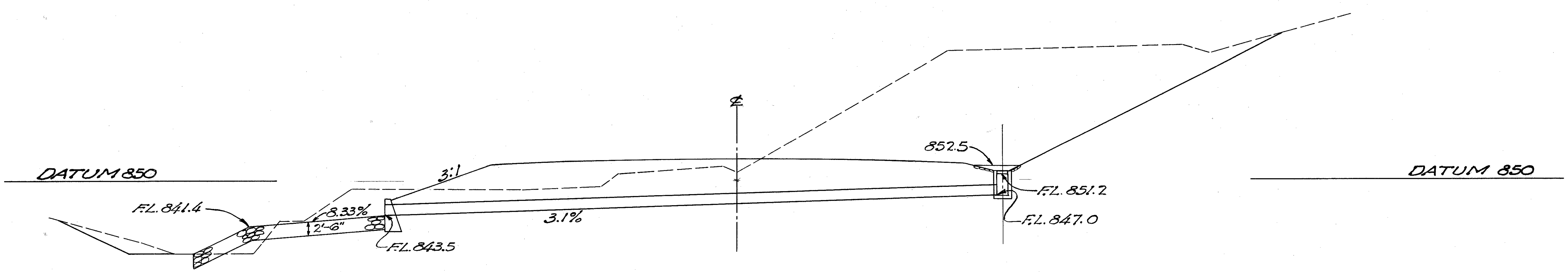


SECTION A-A
Scale 1" = 10'

ESTIMATED QUANTITIES

24" Pipe Class A-1 Sec M-6.8(b) or Sec M-6.6(a)	114 Lin. Ft.
Std. No. 2-2A Catch Basin	1 Each
Paved Gutter Type 1	10 Lin. Ft.
Riprap Grout Filled	12 Sq. Yds.
Dumped Rock Channel Protection	20 Cu. Yds.
Channel Excavation	40 Cu. Yds.
Masonry	3.6 Cu. Yds.

Area 5 acres
Q50 : 20 cfs



854.0
887+50
851.5

CROSS SECTION
Scale 1" = 10'

COL-30-3385

STA. 887+50
24" X 114' PIPE CULVERT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

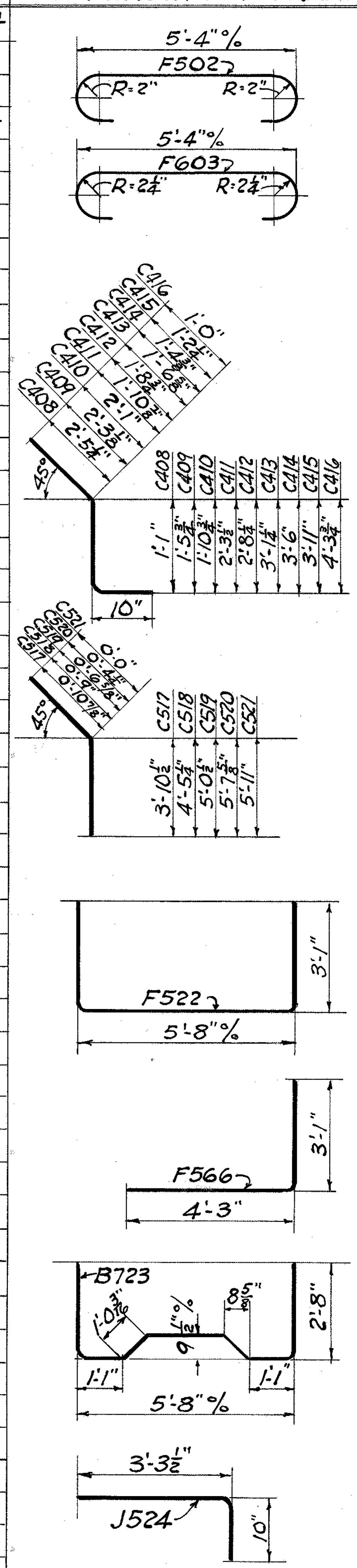
Quanities Carried to Sheet No. 154

Concrete, Class "C" 15 cu. yd.
Reinforcing Steel 2157 lb.
Exc. for Struct. 51 cu. yd.

SUB-STATION ROAD ~ STA. 12+26.6
INLET FLUME TO 48" R.C. PIPE

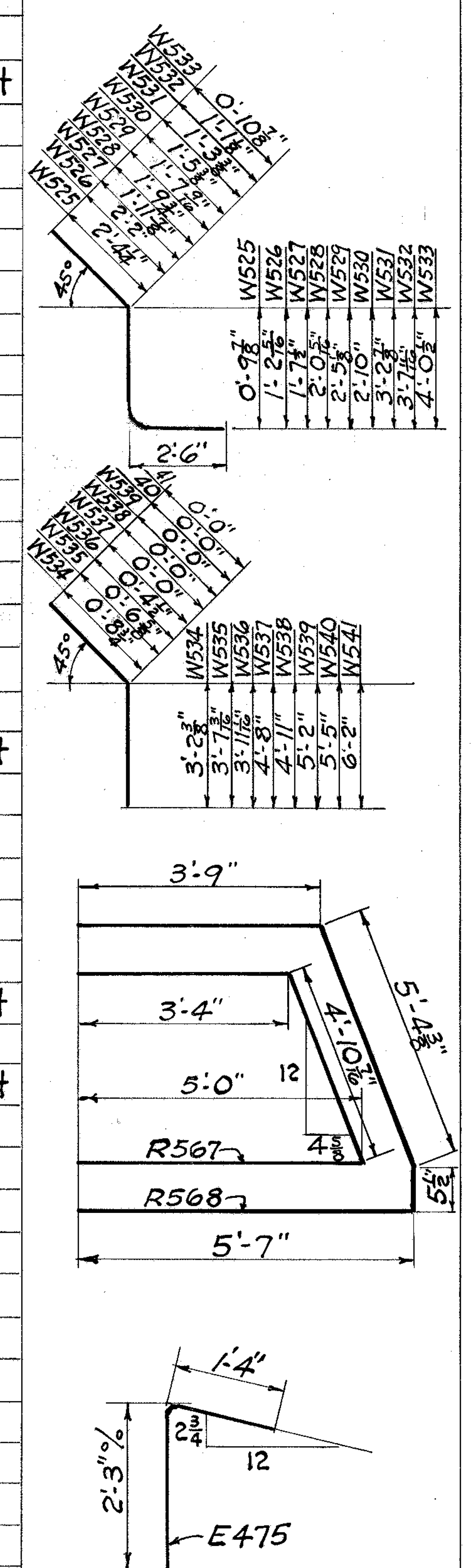
BAR	No.	LENGTH	WEIGHT	SHAPE
F501	2	9'-1	19	Straight
F502	9	6'-6	61	Bent
F603	8	6'-8	80	"
F604	3	5'-6	25	Straight
F705	6	5'-6	67	"
F706	1	4'-3	9	"
F707	1	2'-9	13	"
C408	2	4'-3½	6	Bent
C409	2	4'-6	6	"
C410	2	4'-9	6	"
C411	2	4'-11½	6	"
C412	2	5'-2	7	"
C413	2	5'-5	7	"
C414	2	5'-7½	8	"
C415	2	5'-10¼	8	"
C416	2	6'-1	8	"
C517	2	4'-9½	10	Bent
C518	2	5'-2¼	11	"
C519	2	5'-7	12	"
C520	2	6'-0	13	"
C521	4	5'-11	25	"
F522	9	11'-7	109	Bent
F566	1	7'-2½	8	"
B723	10	11'-2	228	Bent
J524	12	4'-0	50	Bent
W525	2	5'-6½	12	Bent
W526	2	5'-8¾	12	"
W527	2	5'-11¾	12	"
W528	2	6'-2½	13	"
W529	2	6'-5	13	"
W530	2	6'-7¾	14	"
W531	2	6'-10¾	14	"
W532	2	7'-1¼	15	"
W533	2	7'-3¾	15	"
W534	2	3'-11	8	"
W535	2	4'-1¾	9	"
W536	2	4'-3½	9	"
W537	2	4'-8	10	"
W538	2	4'-11	10	"
W539	2	5'-2	11	"
W540	2	5'-5	11	"
W541	6	6'-2	39	"

BAR BENDING DIAGRAMS

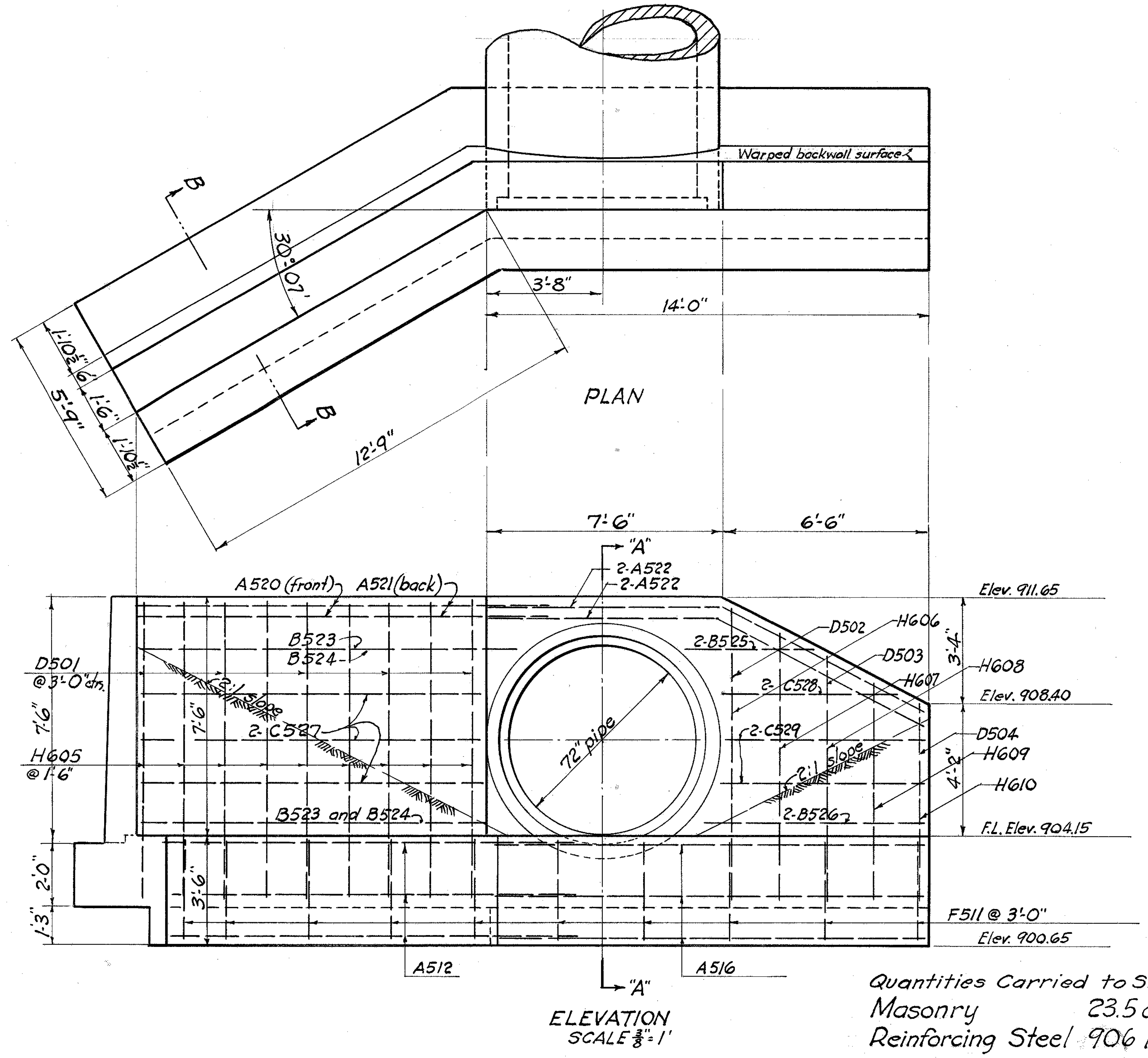


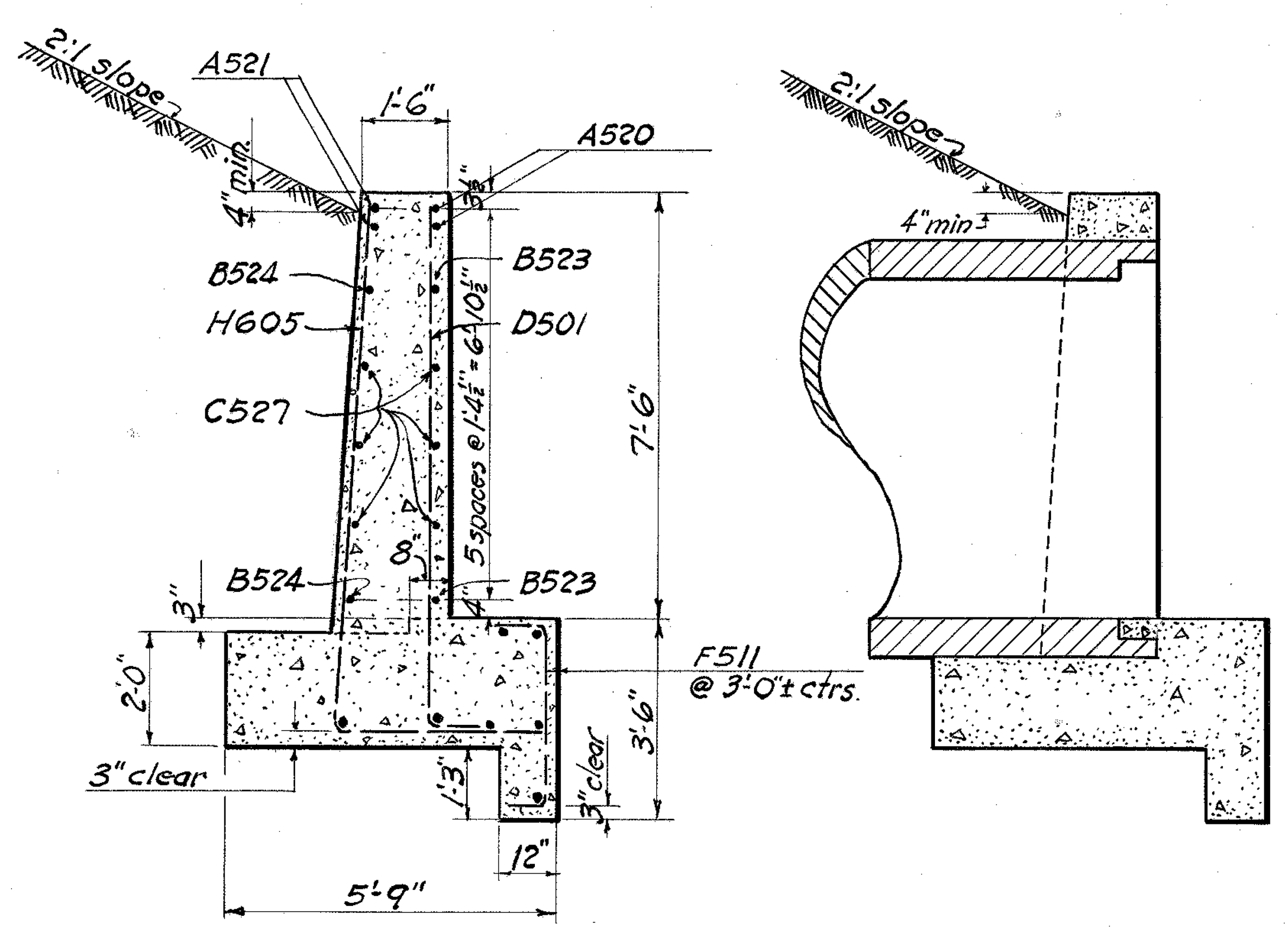
BAR	No.	LENGTH	WEIGHT	SHAPE
B649	2	24'-3	73	Straight
B650	1	24'-5	37	"
B651	1	24'-8	37	"
B652	1	25'-0	38	"
B653	1	25'-4	38	"
B654	1	25'-7	38	"
B655	2	25'-9	77	"
K656	2	21'-0	63	Straight
K657	2	22'-0	66	"
K658	2	20'-0	60	"
K659	2	21'-0	63	"
K660	2	22-0	66	"
K661	2	23-0	69	"
K662	2	22'-6	68	"
K663	2	22'-0	66	"
K664	2	17'-0	51	"
K665	2	18'-0	54	"
R567	3	13'-1	41	Bent
R568	3	14'-7	46	"
R569	2	6'-2	13	Straight
R570	1	5'-11	6	"
R571	4	2'-3	9	"
R572	6	1'-9	11	"
E474	4	4'-0	11	Straight
E475	6	3'-6	14	Bent
E476	2	9'-1	13	Straight
		TOTAL	2157	POUNDS

BAR BENDING DIAGRAMS



SUB-STATION ROAD ~ STA. 12+266
INLET FLUME TO 48" R.C. PIPE





Quantities Carried to Sheet No. 178
Masonry 23.5 cu. yd.
Reinforcing Steel 906 lb.

REINFORCING STEEL						
MARK	SIZE	No.	LENGTH	WEIGHT	SHAPE	BAR BENDING DIAGRAMS
D501	5/8" φ	5	9'-11	93	Bent	
D502	"	1	9'-10	10	"	
D503	"	1	8'-2	9	"	
D504	"	1	6'-8	7	"	
H605	3/4" φ	9	13'-0	176	"	
H606	"	1	12'-10	19	"	
H607	"	1	12'-1	18	"	
H608	"	1	11'-3	17	"	
H609	"	1	10'-6	16	"	
H610	"	1	9'-9	15	"	
F511	5/8" φ	10	4'-2	43	"	
A512	"	3	4'-7	46	"	
A513	"	2	14'-10	31	"	
A514	"	1	15'-1	16	"	
A515	"	1	15'-6	16	"	
A516	"	3	13'-6	42	Straight	
A517	"	2	13'-8	28	"	
A518	"	1	14'-0	15	"	
A519	"	1	14'-4	15	"	
A520	"	2	14'-7	30	Bent	
A521	"	2	14'-11	31	"	
A522	"	4	14'-7	61	"	
B523	"	2	13'-9	29	Straight	
B524	"	2	14'-6	30	"	
B525	"	2	4'-0	8	"	
B526	"	2	7'-3	15	"	
C527	"	4	10'-9	45	"	
C528	"	2	5'-6	11	"	
C529	"	2	6'-6	14	"	
TOTAL 906 POUNDS						

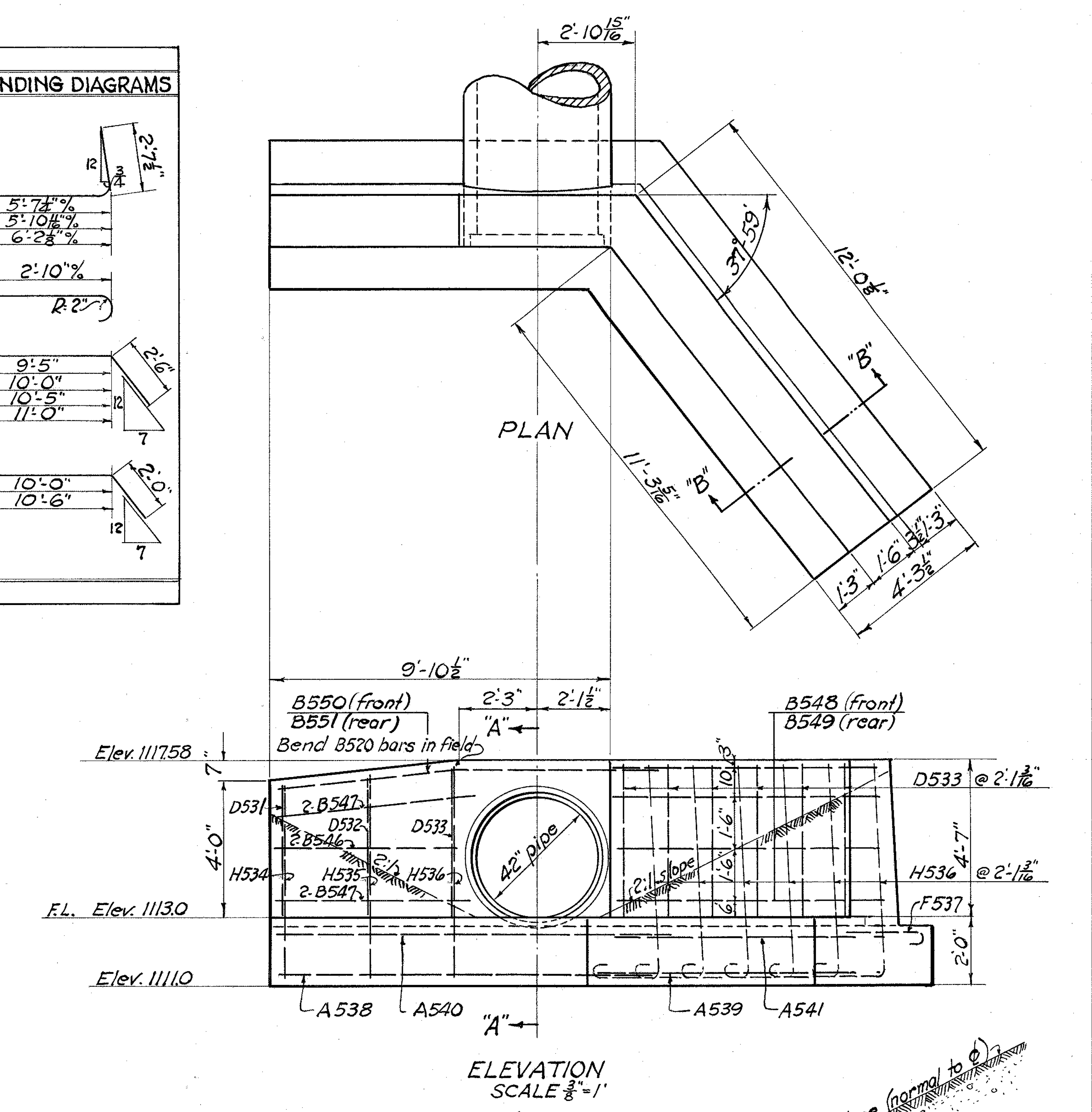
D501 9'-3"% ; D502 9'-1½"% ; D503 7'-6"% ; D504 6'-0"% ; 10"
H605 9'-5¼"% ; H606 9'-4"% ; H607 8'-6½"% ; H608 7'-8½"% ; H609 7'-0"% ; H610 6'-2½"% ; 3'-8"
F511 3'-1"% ; 6" ; 10"
A512 12'-1 ; A513 12'-4 ; A514 12'-7 ; A515 13'-0 ; 2'-6"
A520 12'-7 ; A521 12'-11 ; 2'-0"
A522 7'-4 ; 7'-3"

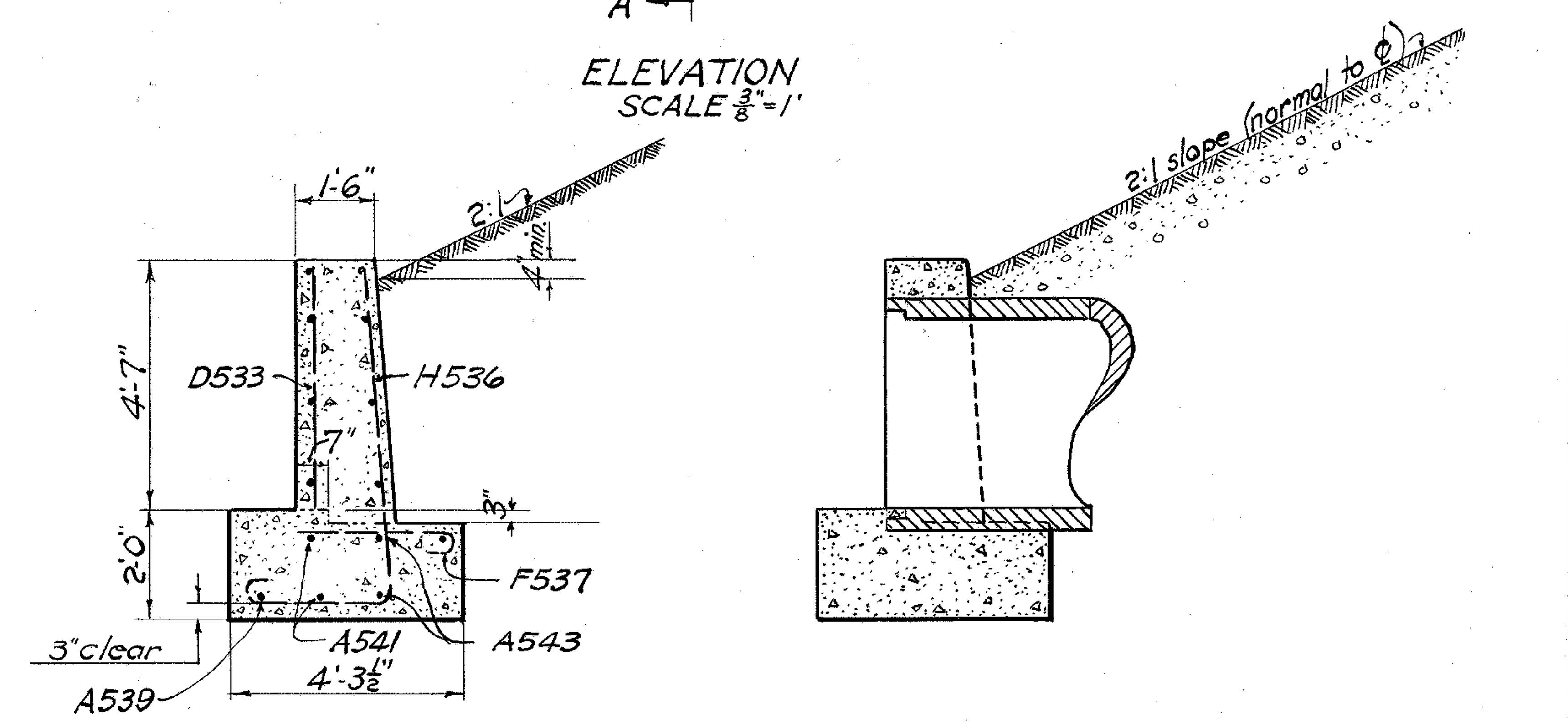
STA. 855+25

HW-B HEADWALL FOR 72" PIPE

REINFORCING STEEL						
MARK	SIZE	No.	LENGTH	WEIGHT	SHAPE	BAR BENDING DIAGRAMS
D531	5/8" φ	1	3'-10	4	Straight	
D532	"	1	4'-1½	4	"	
D533	"	7	4'-5	32	"	
H534	"	1	8'-9	9	Bent	
H535	"	1	9'-0½	9	"	
H536	"	7	9'-4	68	"	
F537	"	9	3'-5	32	"	
A538	"	1	11'-11	12	"	
A539	"	1	10'-9	11	Straight	
A540	"	2	12'-6	26	Bent	
A541	"	2	11'-2	23	Straight	
A542	"	2	12'-11	27	Bent	
A543	"	2	11'-9	25	Straight	
A544	"	1	13'-6	14	Bent	
A545	"	1	12'-4	13	Straight	
B546	"	2	5'-4	11	"	
B547	"	4	5'-9	24	"	
B548	"	4	11'-2	47	"	
B549	"	4	12'-0	50	"	
B550	"	1	12'-0	13	Bent	
B551	"	1	12'-6	13	"	
TOTAL 467 POUNDS						

H534 5'-7¼"% ; H535 5'-10 11/16"% ; H536 6'-2⅛"% ; 2'-7½"
F537 2'-10"% ; R 2"
A538 9'-5" ; A540 10'-0" ; A542 10'-5" ; A544 11'-0" ; 2'-6"
B550 10'-0" ; B551 10'-6" ; 2'-0"





Quantities Carried to Sheet No. 161
Masonry 12.3 cu. yd.
Reinforcing Steel 467 lb.

STA. 797+53.4

HW-B HEADWALL FOR 42" PIPE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

186/250

COL-30-32.19

Exc. for Struct.	25	cu. yd.
Concrete, Class "C"	20	cu. yd.
Reinforcing Steel	1847	lb.

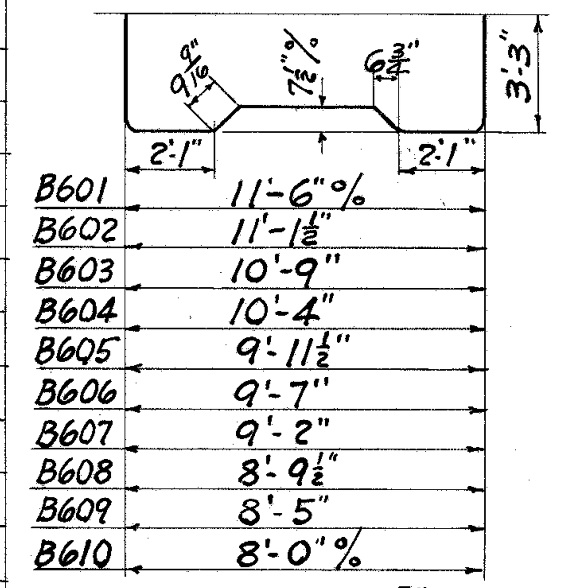
Quantities Carried to Sheet No. 169

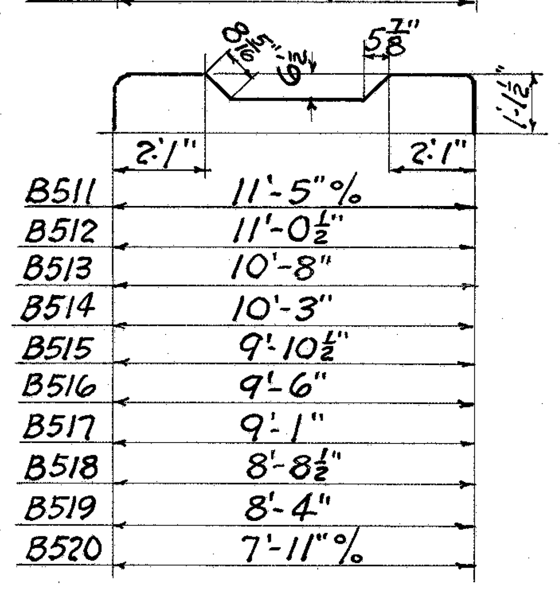
STA. 820+00

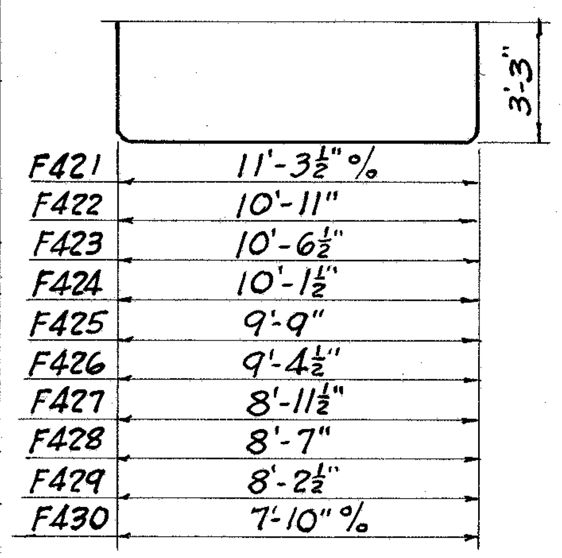
FLARED ENTRANCE FOR 72" PIPE

	BAR	No.	LENGTH	WEIGHT	SHAPE
FLOOR	B601	1	18'-2	27	Bent
	B602	1	17'-10	27	"
	B603	1	17'-5	26	"
	B604	1	17'-0	26	"
	B605	1	16'-8	25	"
	B606	1	16'-3	24	"
	B607	1	15'-10	24	"
	B608	1	15'-6	23	"
	B609	1	15'-1	23	"
	B610	1	14'-8	22	"
ROOF	B511	1	13'-10	14	Bent
	B512	1	13'-5	14	"
	B513	1	13'-1	14	"
	B514	1	12'-8	13	"
	B515	1	12'-3	13	"
	B516	1	11'-11	12	"
	B517	1	11'-6	12	"
	B518	1	11'-1	12	"
	B519	1	10'-9	11	"
	B520	1	10'-4	11	"
FLOOR	F421	1	17'-8	12	Bent
	F422	1	17'-3	12	"
	F423	1	16'-11	11	"
	F424	1	16'-6	11	"
	F425	1	16'-1	11	"
	F426	1	15'-9	11	"
	F427	1	15'-4	10	"
	F428	1	14'-11	10	"
	F429	1	14'-7	10	"
	F430	1	14'-2	9	"

BAR BENDING DIAGRAMS

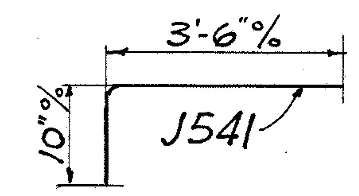


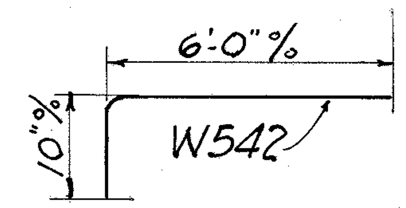




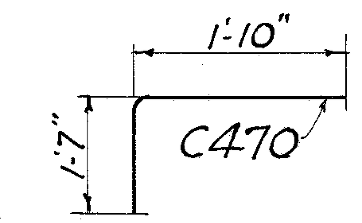
	BAR	No.	LENGTH	WEIGHT	SHAPE
FLOOR	F631	1	11'-1	17	Straight
	F632	1	10'-9	16	"
	F633	1	10'-4	16	"
	F634	1	9'-11	15	"
	F635	1	9'-7	14	"
	F636	1	9'-2	14	"
	F637	1	8'-9	13	"
	F638	1	8'-5	13	"
	F639	1	8'-0	12	"
	F640	1	7'-8	12	"
WALLS	J541	8	4'-3	23	Bent
	W542	40	6'-9	282	Bent
	W543	8	5'-9	48	Straight
ROOF	R544	1	11'-2	12	Straight
	R545	1	10'-10	11	"
	R546	1	10'-5	11	"
	R547	1	10'-0	10	"
	R548	1	9'-8	10	"
	R549	1	9'-3	10	"
	R550	1	8'-10	9	"
	R551	1	8'-6	9	"
	R552	1	8'-1	8	"
	R553	1	7'-9	8	"
	R454	1	11'-5	8	Straight
	R455	1	11'-2	7	"
	R456	1	10'-10	7	"
	R457	1	10'-5	7	"

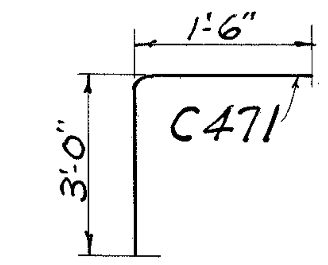
BAR BENDING DIAGRAMS

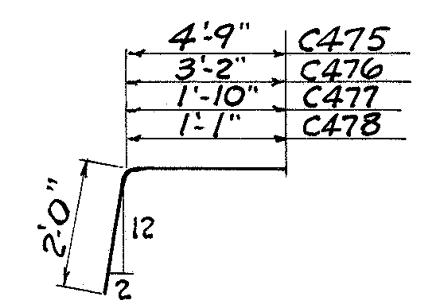




	BAR	No.	LENGTH	WEIGHT	SHAPE	BAR BENDING DIAGRAMS
ROOF	R458	1	10'-0	7	Straight	
	R459	1	9'-8	6	"	
	R460	1	9'-3	6	"	
	R461	1	8'-10	6	"	
	R462	1	8'-6	6	"	
	R463	1	8'-1	5	"	
	R464	1	7'-9	5	"	
	K565	8	11'-9	98	Straight	Floor bottom
	K566	19	11'-5	226	"	Floor and walls
	K567	7	11'-4	83	"	Roof
	K568	8	11'-8	97	"	"
PIPE WALL	C469	2	9'-8	13	Straight	
	C470	10	3'-4	22	Bent	
END WALL	C471	12	4'-5	35	Bent	
	C472	3	19'-6	39	Straight	
	C473	9	6'-2	37	"	
	C474	3	5'-2	10	"	
	C475	5	6'-9	23	Bent	
	C476	5	5'-2	17	"	
	C477	1	3'-10	2	"	
	C478	1	3'-1	2	"	
			TOTAL	1847	POUNDS	





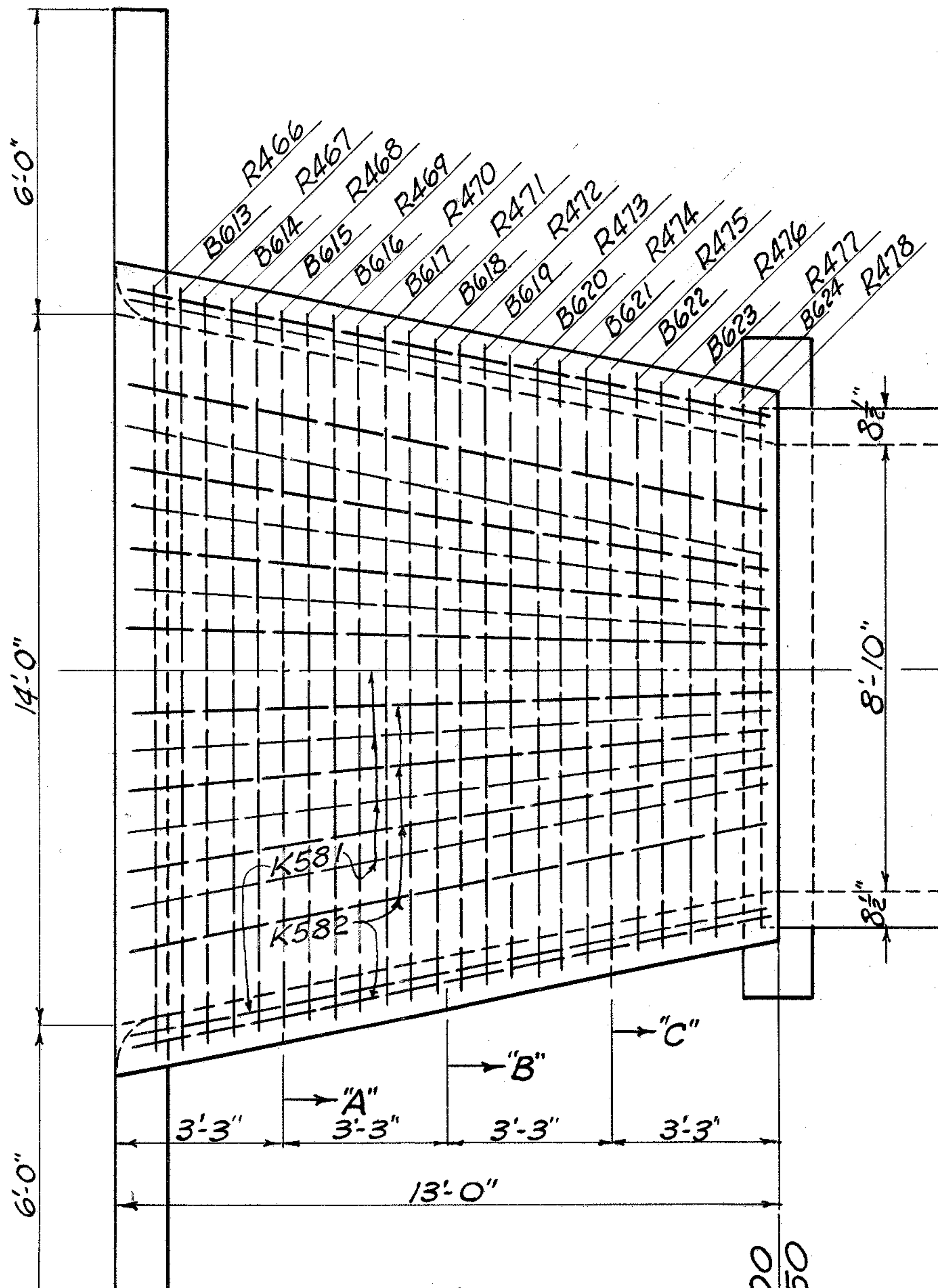


STA. 820+00

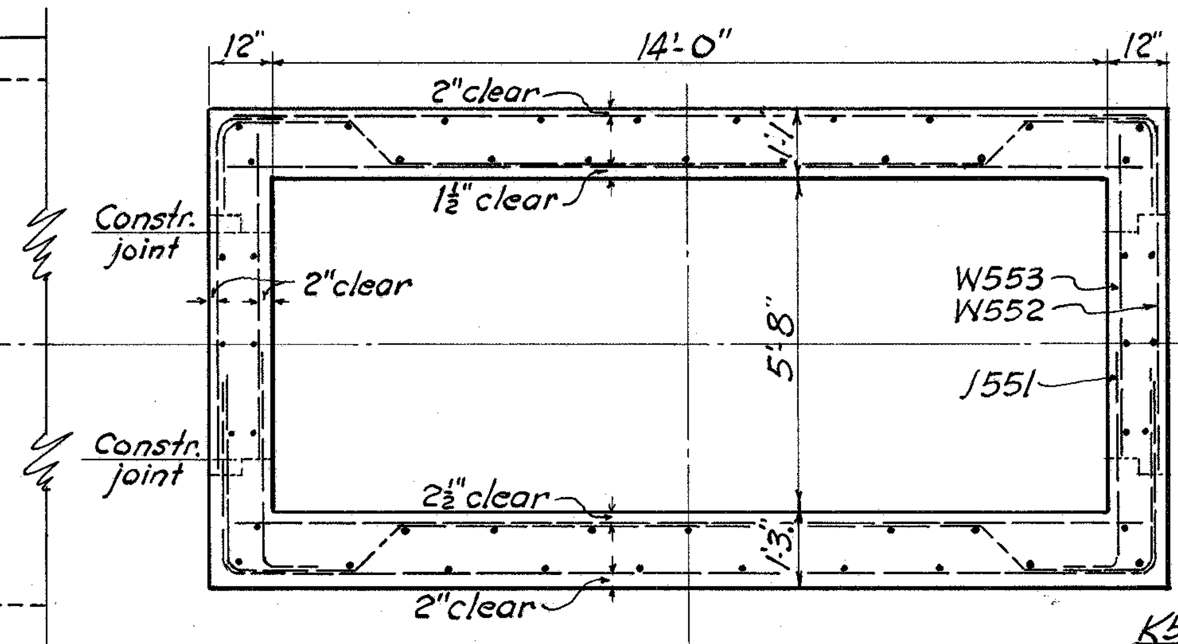
FLARED ENTRANCE FOR 72" PIPE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

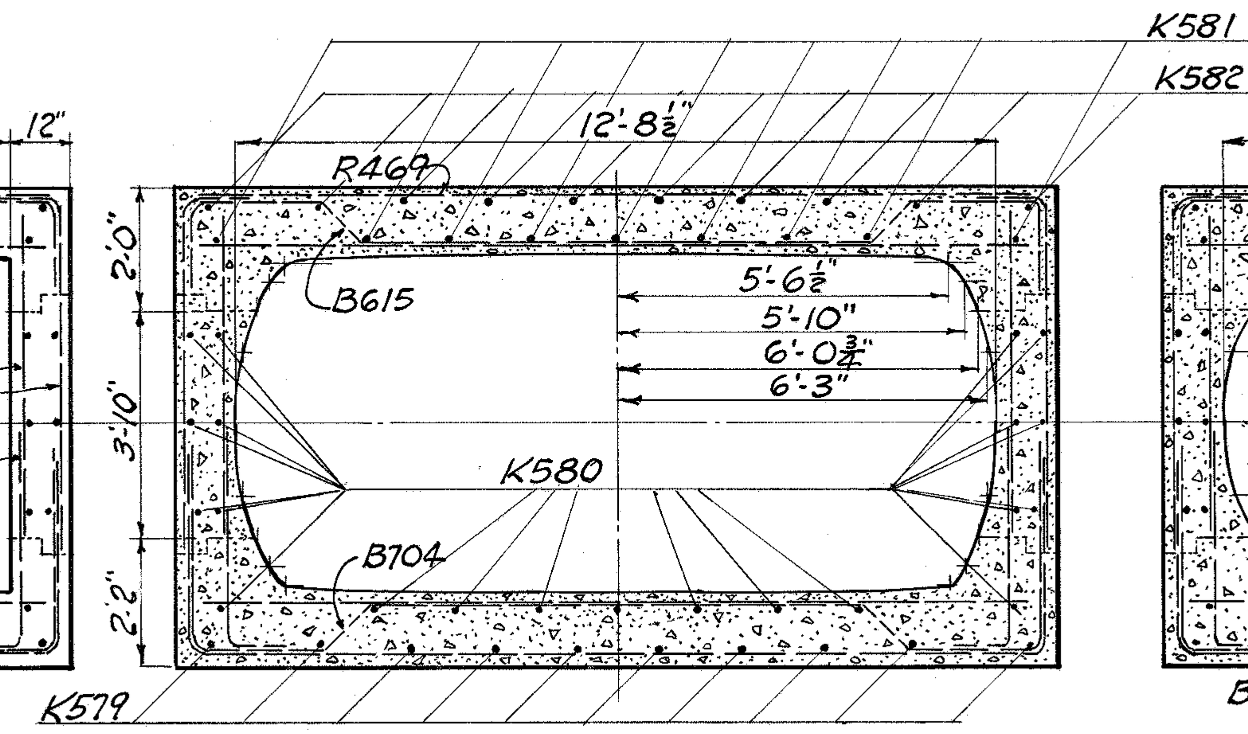
COL-30-32.19



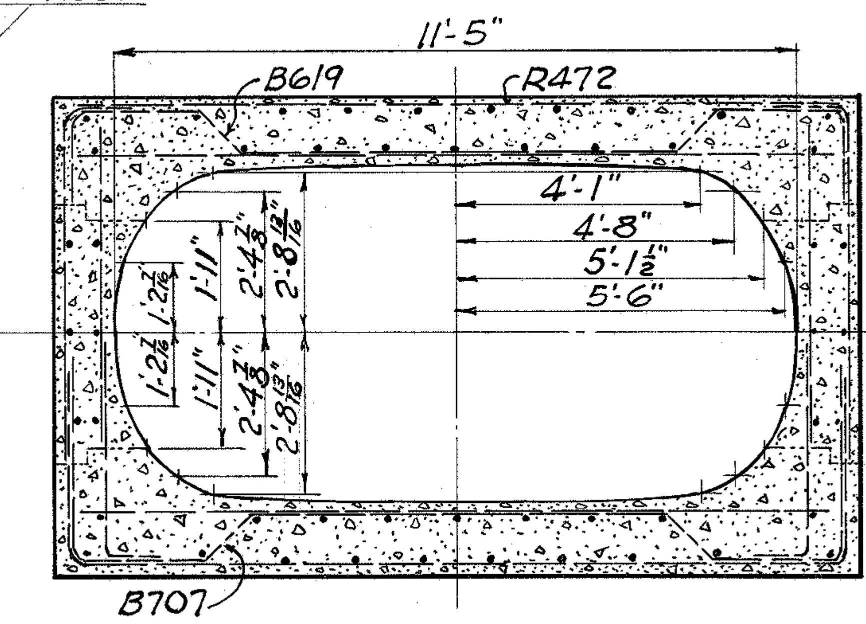
PLAN



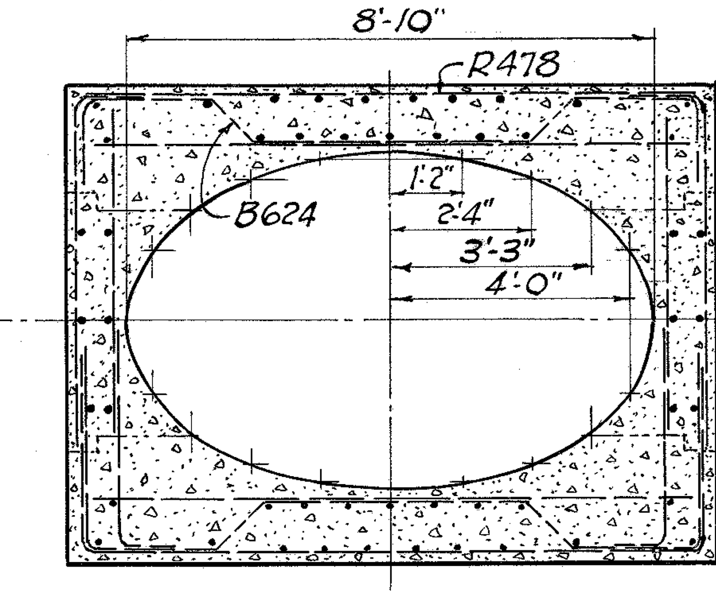
INLET END



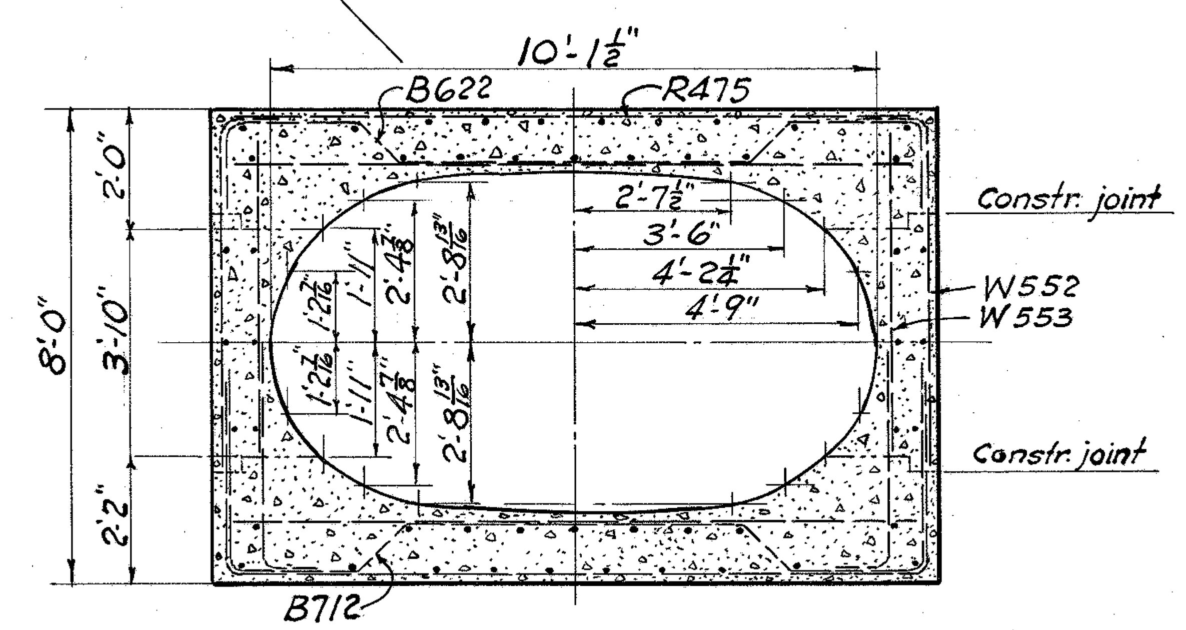
SEC. "A-A"



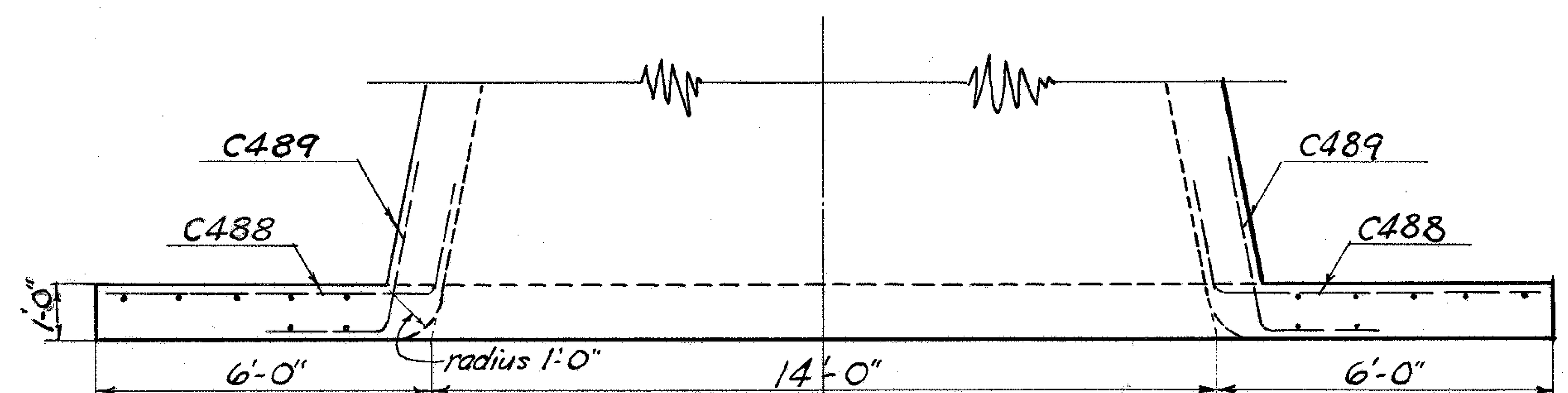
SEC. "B-B"



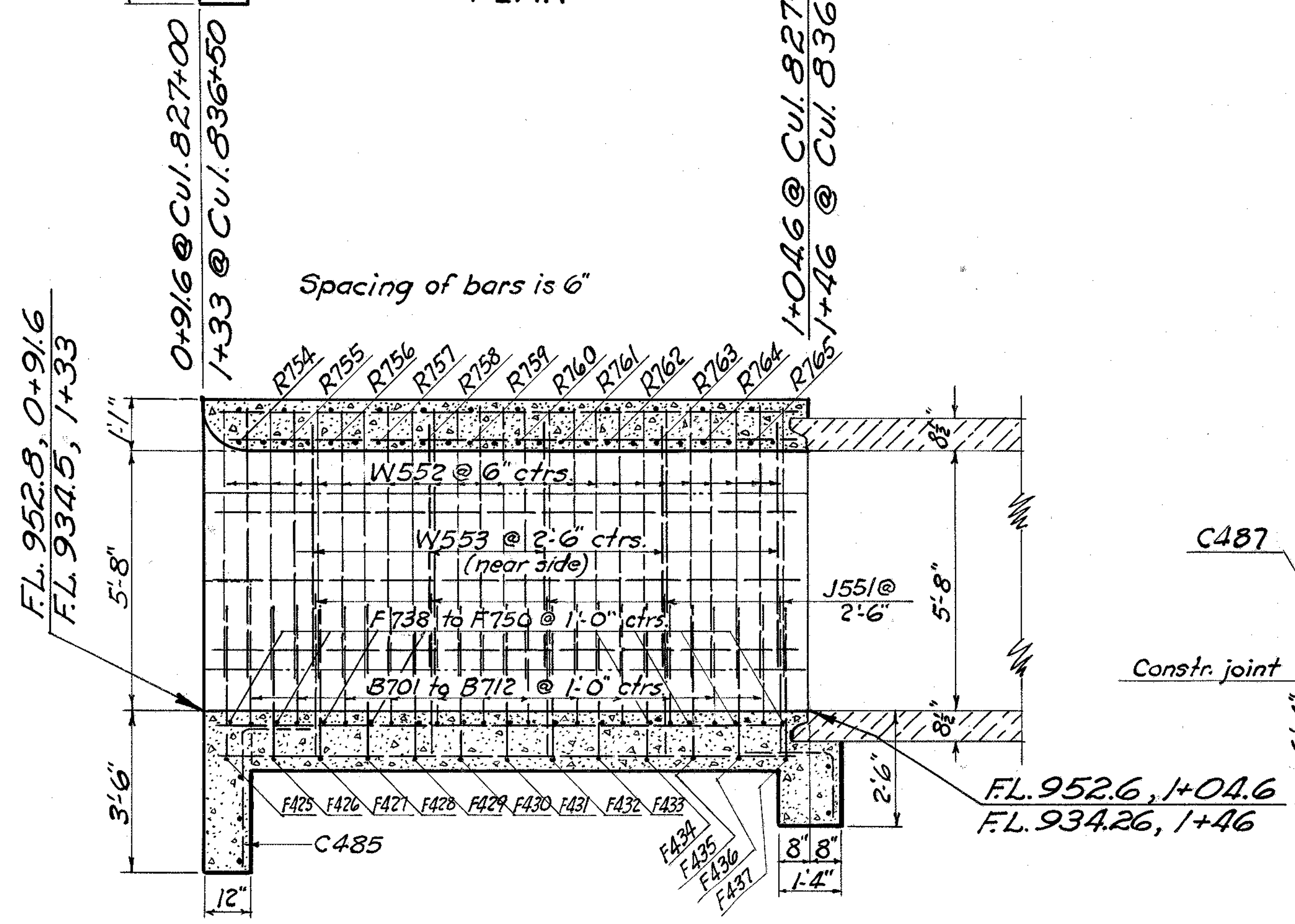
EXIT END SEC.



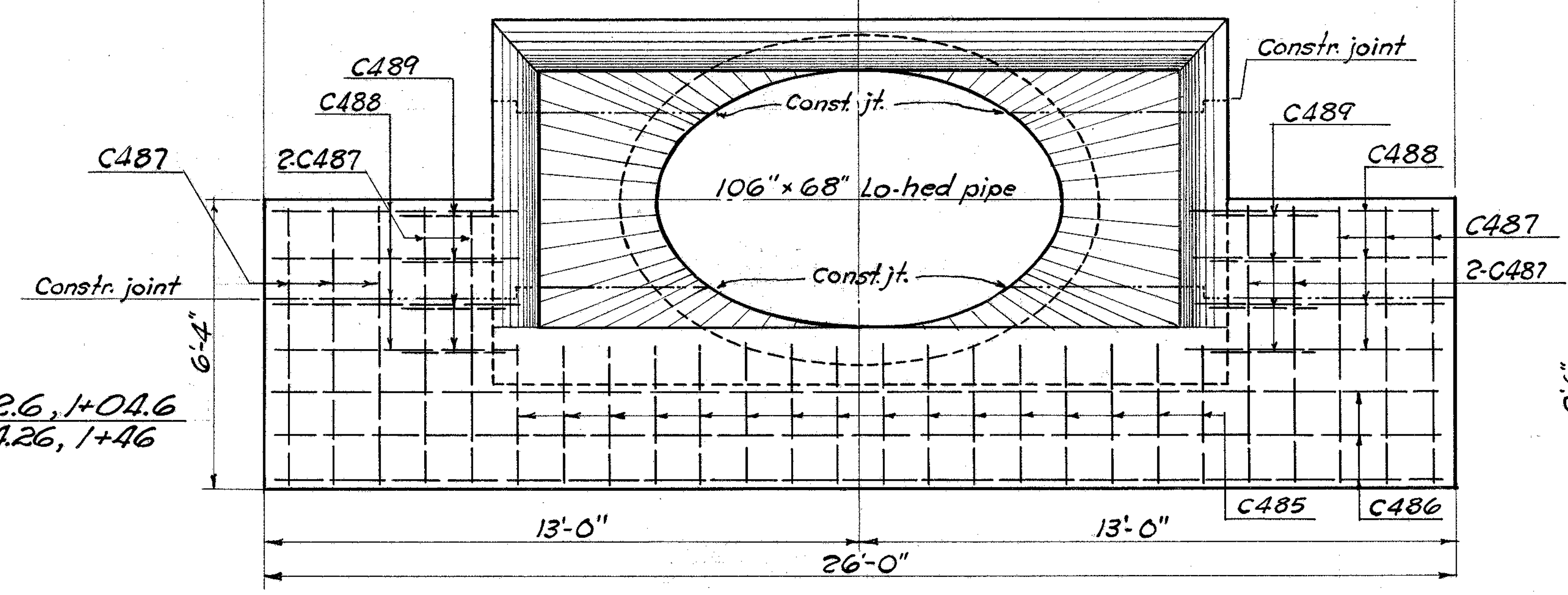
SEC. "C-C"



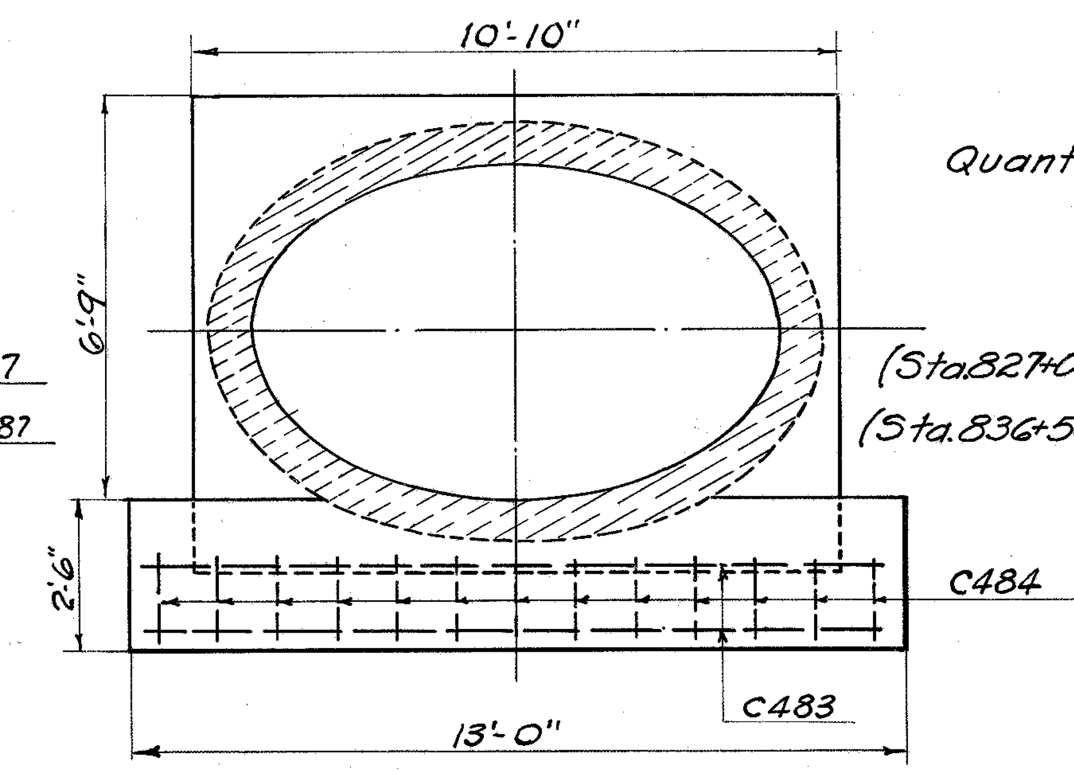
PART PLAN



SECTION ON CENTER LINE



INLET ELEVATION
SCALE: ⅜" = 1'



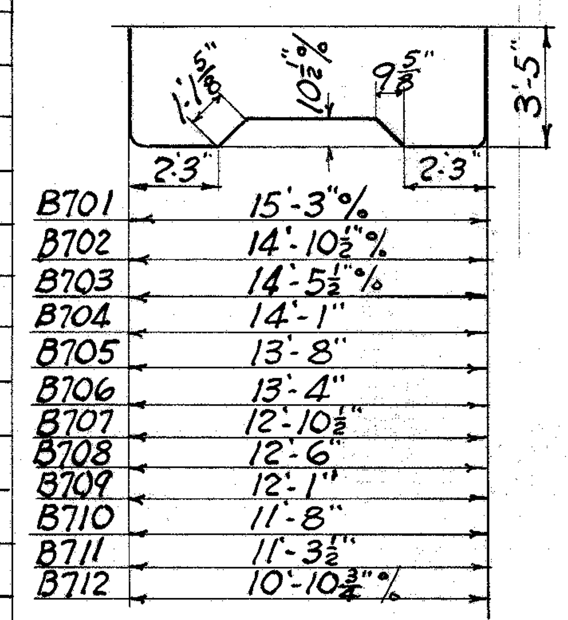
ELEVATION AT JUNCTION
TO 106" × 68" LO-HED CONCRETE PIPE

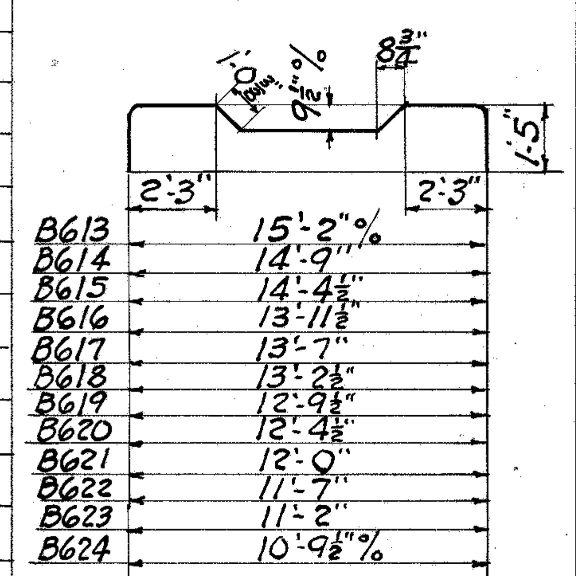
Quantities Carried to Sheet No. 170 & 174
Concrete, Class "C" 28 cu. yd.
Reinforcing Steel 3095 lb.
(Sta. 827+00) Exc. for Struct. 69 cu. yd.
(Sta. 836+50) Exc. for Struct. 35 cu. yd.

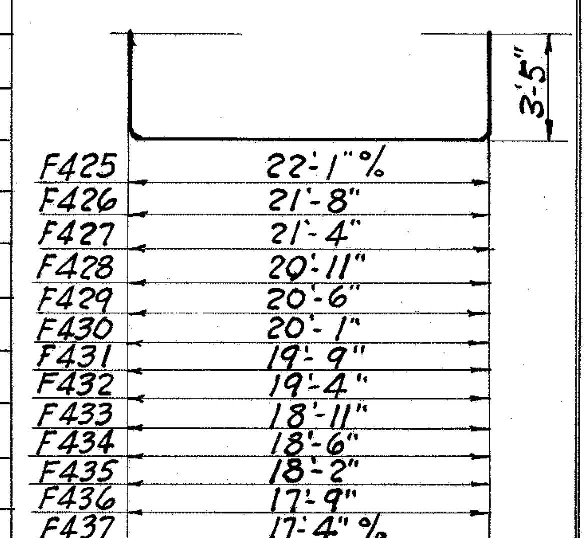
STA. 827+00 and STA. 836+50
FLARED ENTRANCE FOR 106" × 68"
ELLIPTICAL PIPE

	BAR	No.	LENGTH	WEIGHT	SHAPE
FLOOR	B701	1	22'-5	46	Bent
	B702	1	22'-1	45	"
	B703	1	21'-8	44	"
	B704	1	21'-3	43	"
	B705	1	20'-10	43	"
	B706	1	20'-6	42	"
	B707	1	20'-1	42	"
	B708	1	19'-8	40	"
	B709	1	19'-3	39	"
	B710	1	18'-10	39	"
	B711	1	18'-6	38	"
	B712	1	18'-1	37	"
ROOF	B613	1	18'-4	28	Bent
	B614	1	17'-11	27	"
	B615	1	17'-6	26	"
	B616	1	17'-1	26	"
	B617	1	16'-9	25	"
	B618	1	16'-4	25	"
	B619	1	15'-11	24	"
	B620	1	15'-6	23	"
	B621	1	15'-2	23	"
	B622	1	14'-9	22	"
	B623	1	14'-4	22	"
	B624	1	13'-11	21	"
FLOOR	F425	1	22'-1	15	Bent
	F426	1	21'-8	14	"
	F427	1	21'-4	14	"
	F428	1	20'-11	14	"
	F429	1	20'-6	14	"
	F430	1	20'-1	13	"
	F431	1	19'-9	13	"
	F432	1	19'-4	13	"
	F433	1	18'-11	13	"
	F434	1	18'-6	12	"
	F435	1	18'-2	12	"
	F436	1	17'-9	12	"
	F437	1	17'-4	12	"

BAR BENDING DIAGRAMS

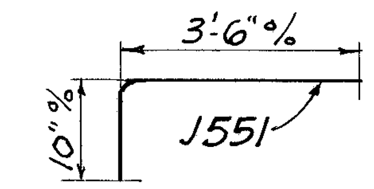


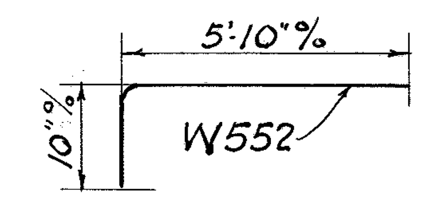




	BAR	No.	LENGTH	WEIGHT	SHAPE
FLOOR	F738	1	15'-3	31	Straight
	F739	1	14'-10	31	"
	F740	1	14'-6	30	"
	F741	1	14'-1	29	"
	F742	1	13'-8	28	"
	F743	1	13'-4	27	"
	F744	1	12'-11	26	"
	F745	1	12'-6	26	"
	F746	1	12'-2	25	"
	F747	1	11'-8	24	"
	F748	1	11'-4	23	"
	F749	1	10'-11	22	"
	F750	1	10'-6	21	"
WALLS	J551	10	4'-3	40	Bent
	W552	50	6'-7	344	Bent
	W553	10	5'-4	56	Straight
ROOF	R754	1	15'-2	31	Straight
	R755	1	14'-9	30	"
	R756	1	14'-5	30	"
	R757	1	14'-0	29	"
	R758	1	13'-7	28	"
	R759	1	13'-2	27	"
	R760	1	12'-10	26	"
	R761	1	12'-5	25	"
	R762	1	12'-0	25	"
	R763	1	11'-7	24	"
	R764	1	11'-3	23	"
	R765	1	10'-10	22	"

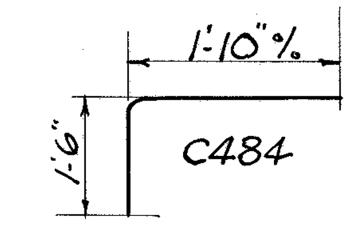
BAR BENDING DIAGRAMS

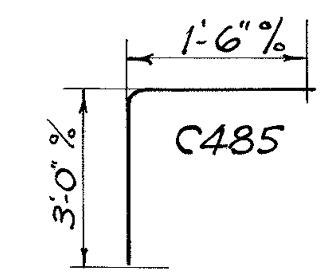


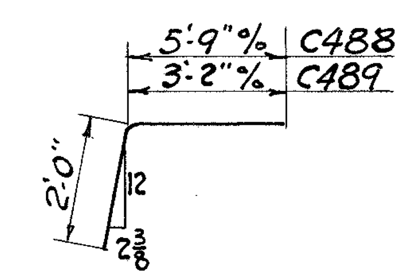


	BAR	No.	LENGTH	WEIGHT	SHAPE
ROOF	R466	1	15'-2	10	Straight
	R467	1	14'-9	10	"
	R468	1	14'-5	10	"
	R469	1	14'-0	9	"
	R470	1	13'-7	9	"
	R471	1	13'-2	9	"
	R472	1	12'-10	9	"
	R473	1	12'-5	8	"
	R474	1	12'-0	8	"
	R475	1	11'-7	8	"
	R476	1	11'-3	8	"
	R477	1	10'-10	7	"
	R478	1	10'-5	7	"
BARREL	K579	10	12'-9	133	Straight
	K580	21	12'-6	274	"
	K581	9	12'-0	113	"
	K582	10	12'-8	132	"
PIPE WALL	C483	2	12'-8	17	Straight
	C484	13	3'-3	28	Bent
END WALL	C485	16	4'-5	47	Bent
	C486	3	25'-6	51	Straight
	C487	14	6'-0	56	"
	C488	8	7'-9	41	Bent
	C489	8	5'-2	28	"
			TOTAL	3095	POUNDS

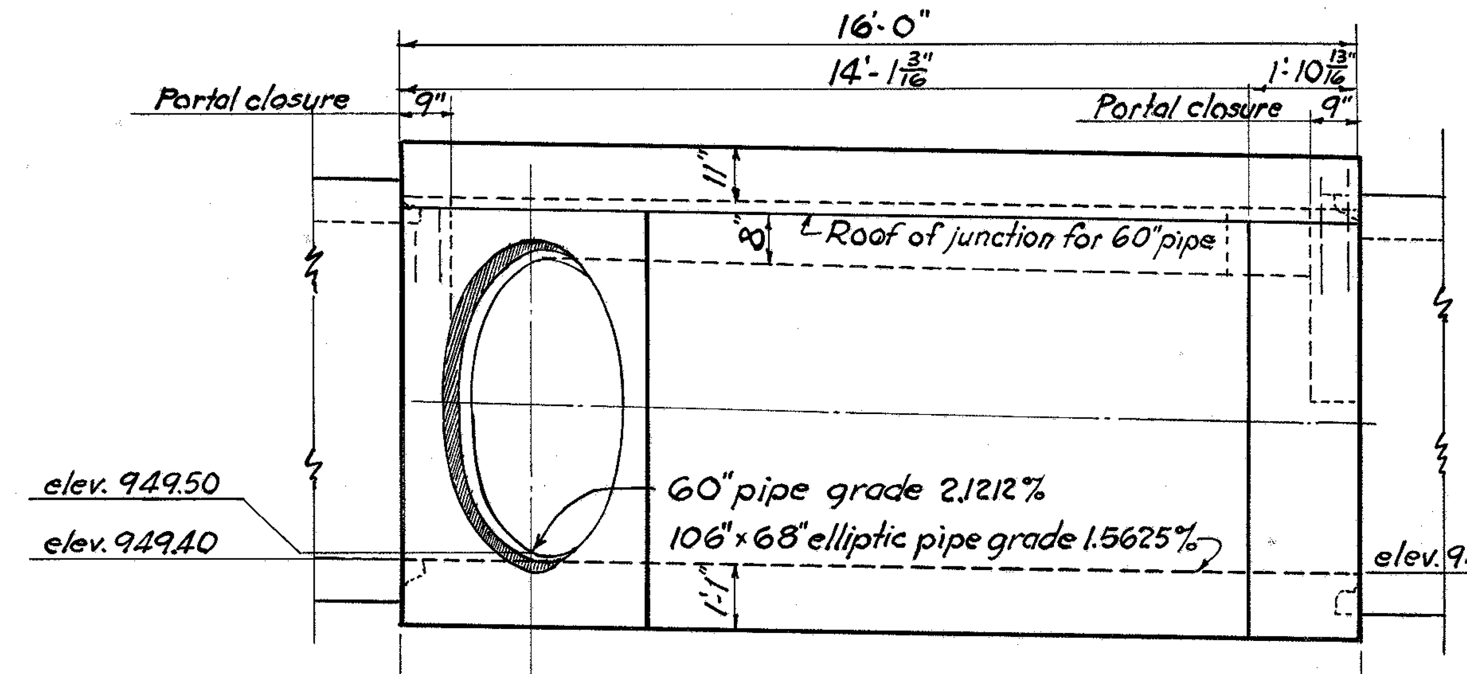
BAR BENDING DIAGRAMS



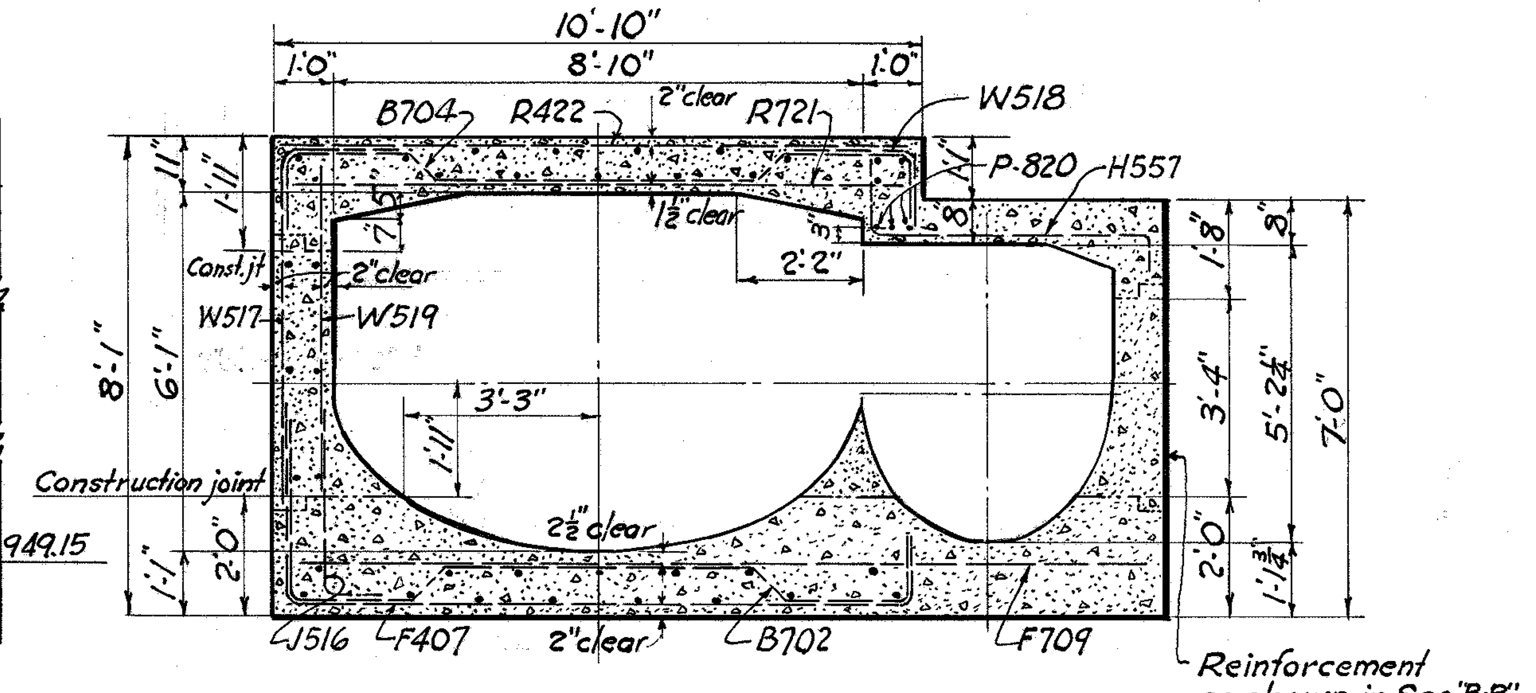




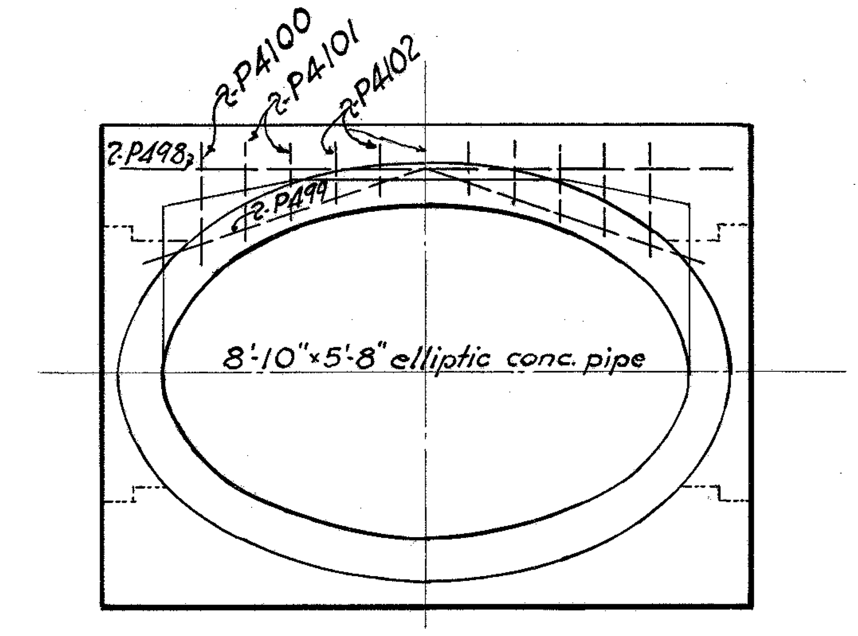
STA. 827+00 and STA. 836+50
FLARED ENTRANCE FOR 106"×68"
ELLIPTICAL PIPE



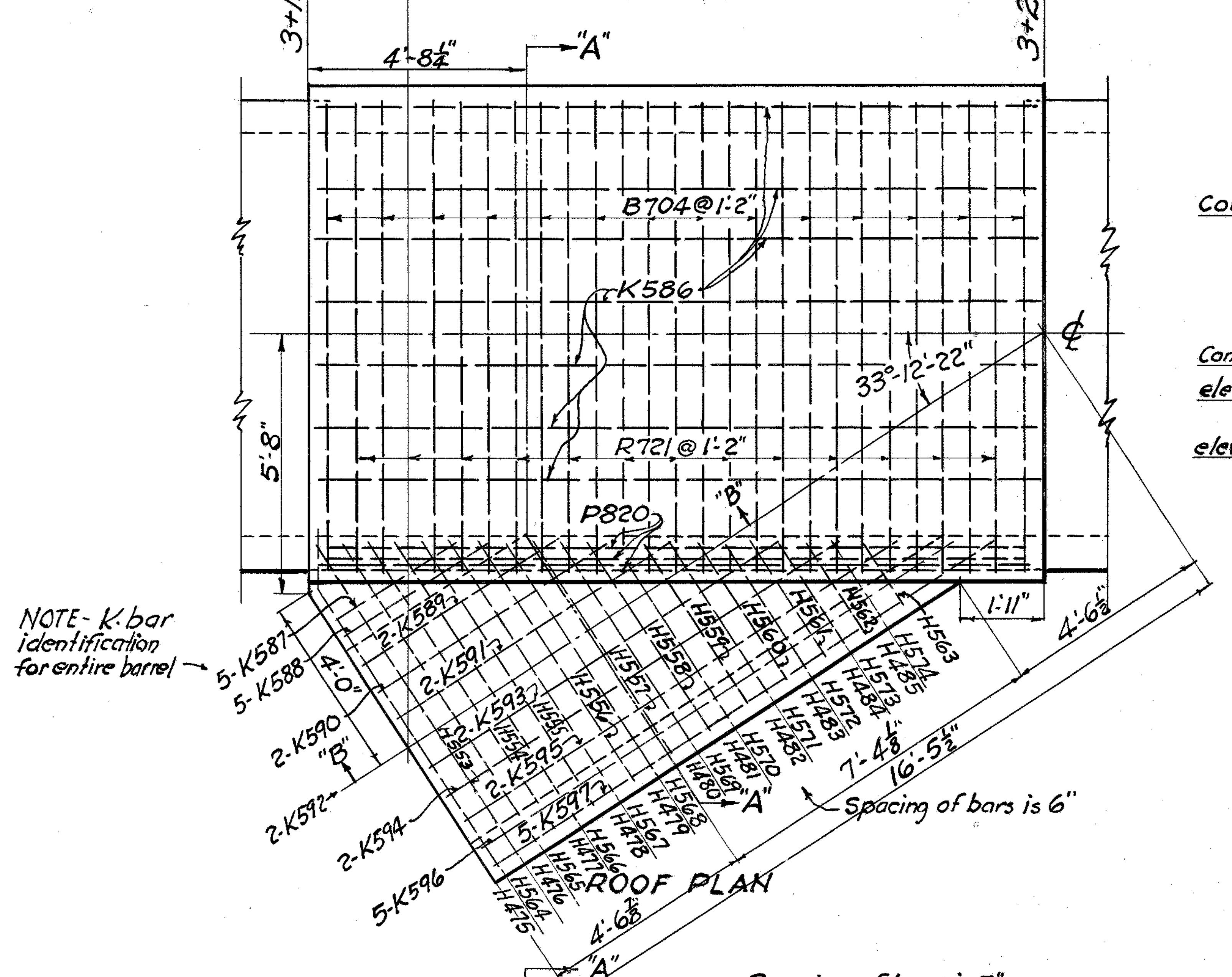
ELEVATION

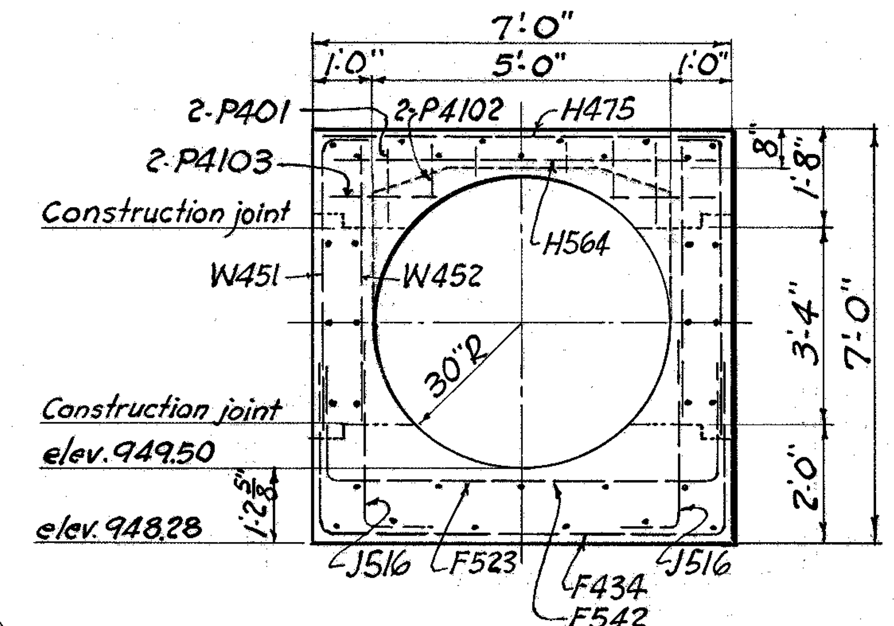


SECTION "A-A"

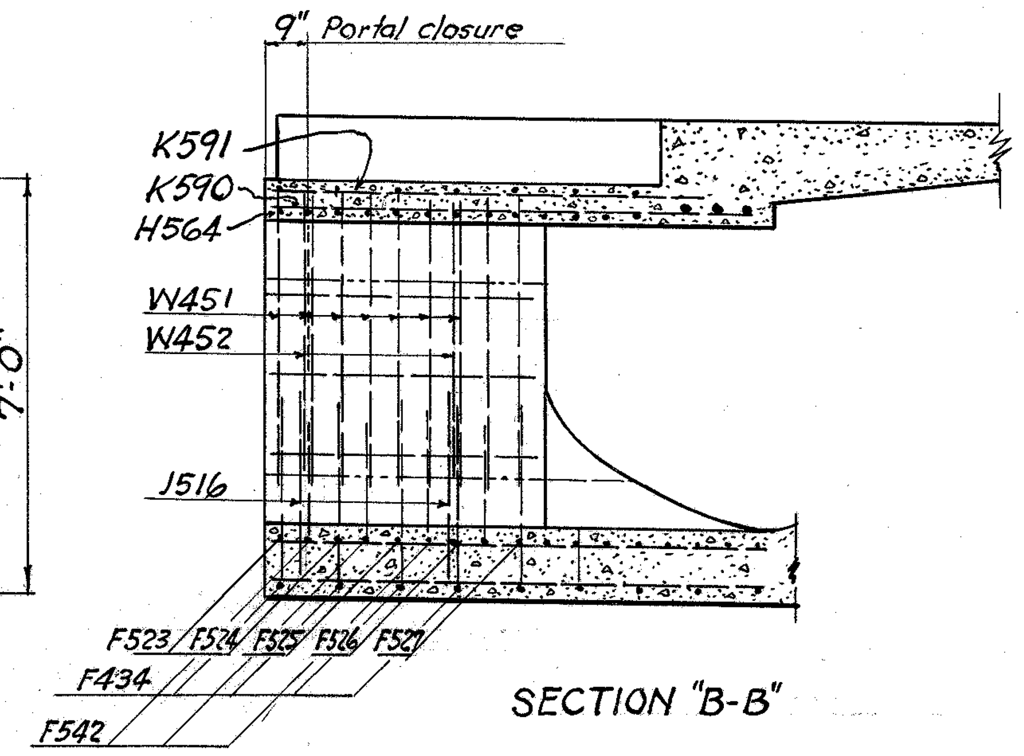


EXIT END ELEV. — PORTAL CLOSURE REINF.

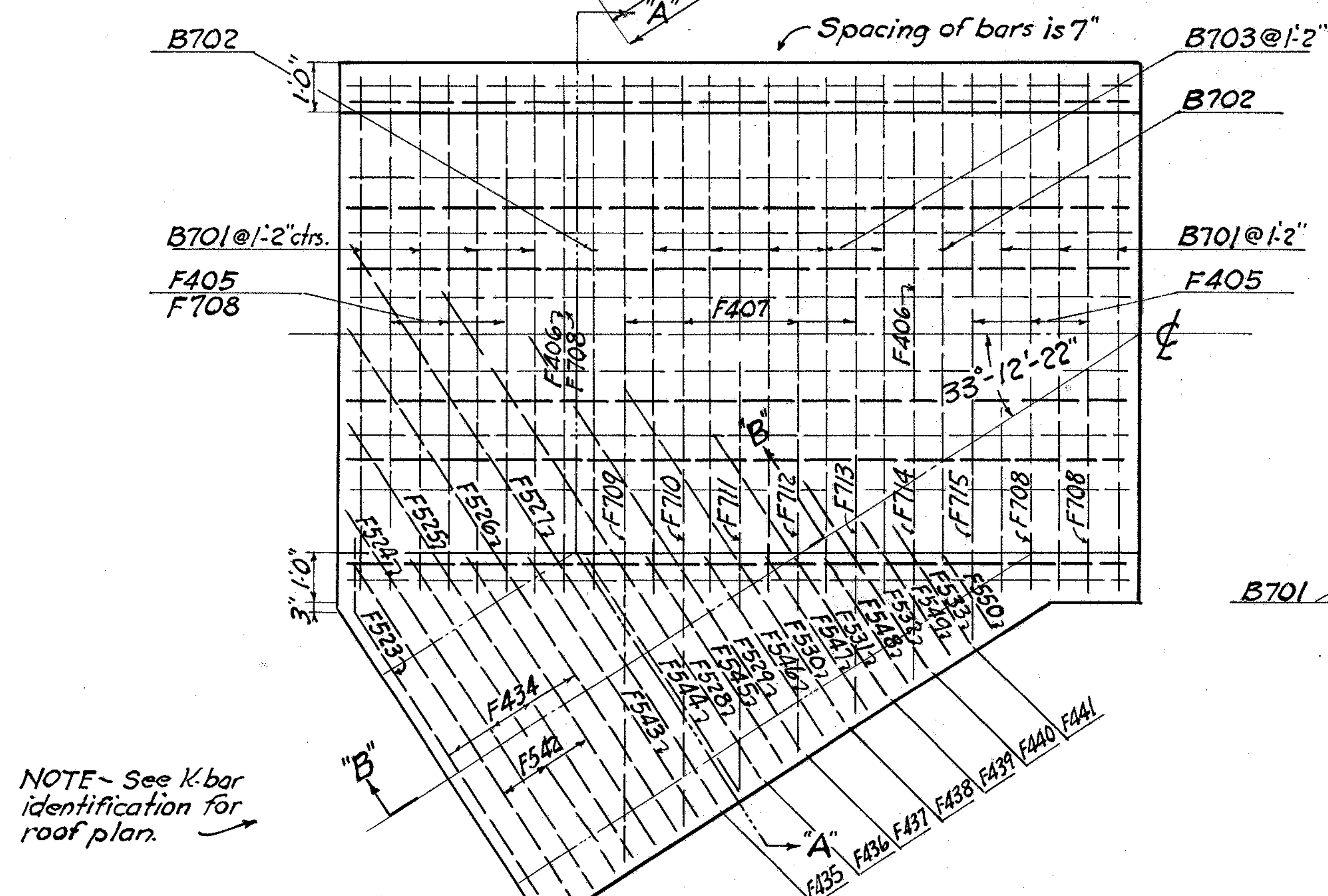




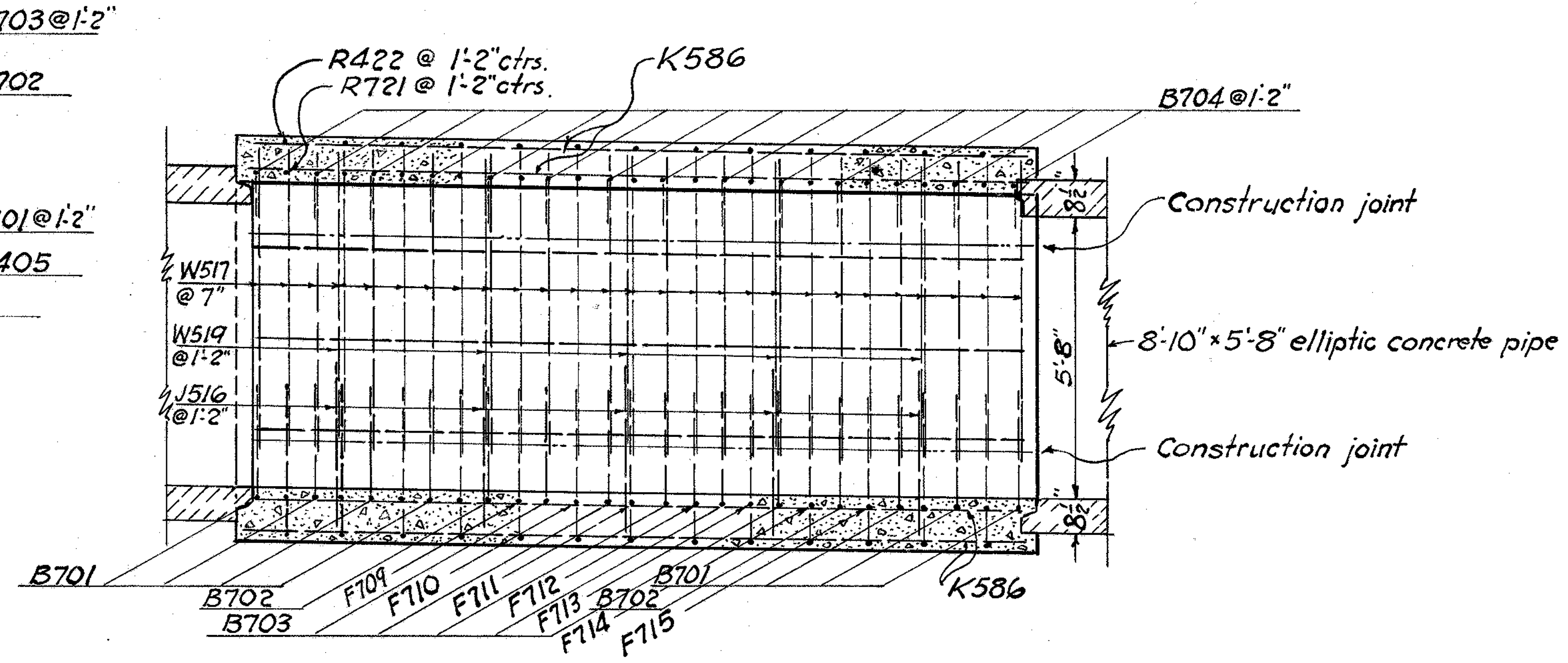
END ELEV. OF 60 INCH PIPE



SECTION "B-B"



FLOOR PLAN



SECTION THROUGH ELLIPTIC BARREL
SCALE, 3/8" = 1'

Quantities Carried to Sheet No. 170

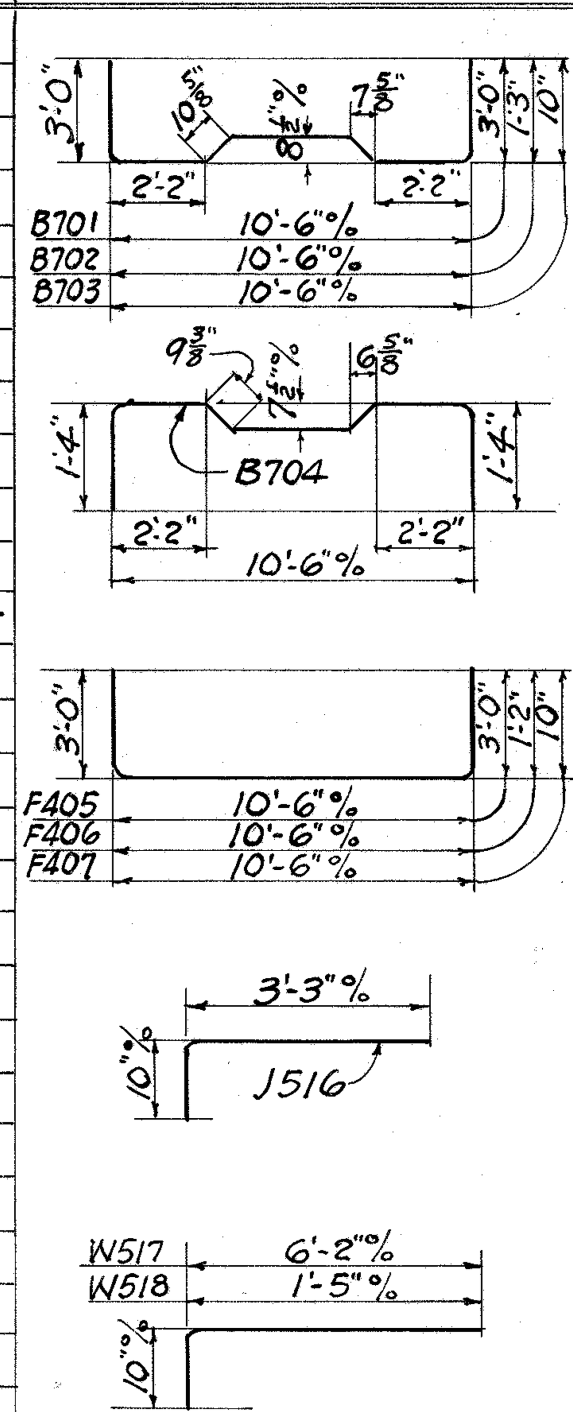
Concrete, Class "C"	27	cu. yd.
Reinforcing Steel	3716	lb.
Exc. for Struct.	52	cu. yd.

STA. 827+00

JUNCTION BOX FOR 106"x68" ELLIPTICAL PIPE AND 60" R.C. PIPE

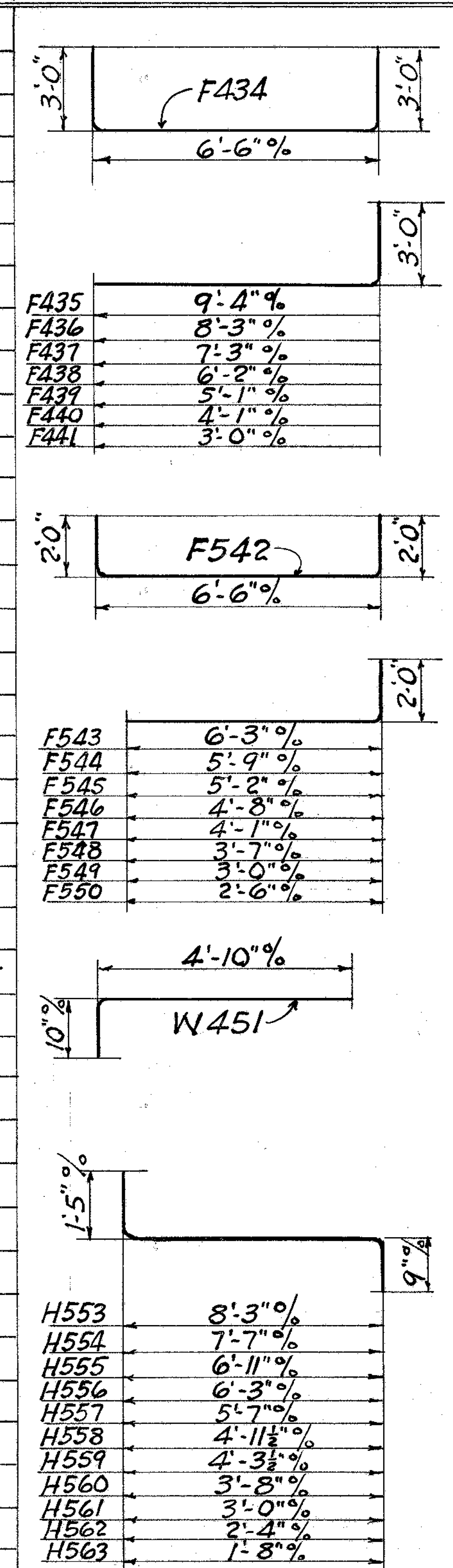
	BAR	No.	LENGTH	WEIGHT	SHAPE
FLOOR	B701	7	6'-8"	238	Bent
FLOOR	B702	2	14'-11	61	"
FLOOR	B703	5	14'-6	148	"
Roof	B704	14	13'-4	382	"
	F405	6	16'-3	65	Bent
	F406	2	14'-6	19	"
	F407	5	14'-2	47	"
FLOOR	F708	6	10'-4	127	Straight
FLOOR	F709	1	16'-0	33	"
FLOOR	F710	1	15'-3	31	"
FLOOR	F711	1	14'-6	30	"
FLOOR	F712	1	13'-9	28	"
FLOOR	F713	1	13'-0	27	"
FLOOR	F714	1	12'-3	25	"
FLOOR	F715	1	11'-6	24	"
WALL	J516	14	4'-0	58	Bent
WALL	W517	39	6'-11	248	Bent
WALL	W518	15	2'-2	33	"
WALL	W519	7	5'-10	43	Straight
ROOF	P820	3	15'-3	122	Straight
ROOF	R721	13	10'-4	275	Straight
ROOF	R422	13	10'-4	90	"
FLOOR	F523	1	8'-6	9	Straight
FLOOR	F524	1	9'-0	9	"
FLOOR	F525	1	10'-8	11	"
FLOOR	F526	1	12'-2	13	"
FLOOR	F527	1	13'-8	14	"
FLOOR	F528	1	11'-10	12	"
FLOOR	F529	1	10'-2	12	"
FLOOR	F530	1	8'-3	9	"
FLOOR	F531	1	6'-6	7	"
FLOOR	F532	1	4'-8	5	"
FLOOR	F533	1	3'-0	3	"

BAR BENDING DIAGRAMS



	BAR	No.	LENGTH	WEIGHT	SHAPE
FLOOR	F434	4	12'-3	33	Bent
FLOOR	F435	1	12'-3	8	"
FLOOR	F436	1	11'-2	7	"
FLOOR	F437	1	10'-2	7	"
FLOOR	F438	1	9'-1	6	"
FLOOR	F439	1	8'-0	5	"
FLOOR	F440	1	7'-0	5	"
FLOOR	F441	1	5'-11	4	"
FLOOR	F542	3	10'-3	32	Bent
FLOOR	F543	1	8'-2	9	"
FLOOR	F544	1	7'-8	8	"
FLOOR	F545	1	7'-1	7	"
FLOOR	F546	1	6'-7	7	"
FLOOR	F547	1	6'-0	6	"
FLOOR	F548	1	5'-6	6	"
FLOOR	F549	1	4'-11	5	"
FLOOR	F550	1	4'-5	5	"
WALL	W451	29	5'-7	108	Bent
WALL	W452	7	4'-8	22	Straight
ROOF	H553	1	10'-2	11	Bent
ROOF	H554	1	9'-6	10	"
ROOF	H555	1	8'-10	9	"
ROOF	H556	1	8'-2	9	"
ROOF	H557	1	7'-6	8	"
ROOF	H558	1	6'-10½	7	"
ROOF	H559	1	6'-2½	6	"
ROOF	H560	1	5'-7	6	"
ROOF	H561	1	4'-11	5	"
ROOF	H562	1	4'-3	4	"
ROOF	H563	1	3'-7	4	"
ROOF	H564	1	8'-6	9	Straight
ROOF	H565	1	7'-10	8	"
ROOF	H566	1	7'-2½	8	"
ROOF	H567	1	6'-7	6	"
ROOF	H568	1	5'-11½	6	"
ROOF	H569	1	5'-4	6	"
ROOF	H570	1	4'-8	5	
ROOF	H571	1	4'-0½	4	
ROOF	H572	1	3'-5	4	
ROOF	H573	1	2'-9½	3	
ROOF	H574	1	2'-2	2	

BAR BENDING DIAGRAMS



	BAR	No.	LENGTH	WEIGHT	SHAPE
ROOF	H475	1	8'-6	6	Straight
ROOF	H476	1	7'-10	5	"
ROOF	H477	1	7'-2½	5	"
ROOF	H478	1	6'-7	4	"
ROOF	H479	1	5'-11½	4	"
ROOF	H480	1	5'-4	4	"
ROOF	H481	1	4'-8	3	"
ROOF	H482	1	4'-0½	3	"
ROOF	H483	1	3'-5	2	"
ROOF	H484	1	2'-9½	2	"
ROOF	H485	1	2'-2	1	"
	~ LONGITUDINAL STEEL ~				
	K586	37	15'-3	588	Straight
BARREL	K587	5	3'-3	17	"
BARREL	K588	5	4'-0	21	"
BARREL	K589	2	5'-0	10	"
BARREL	K590	2	6'-0	13	"
BARREL	K591	2	7'-0	15	"
BARREL	K592	2	8'-0	17	"
BARREL	K593	2	9'-2	19	"
BARREL	K594	2	10'-6	22	"
BARREL	K595	2	11'-3	23	"
BARREL	K596	5	12'-3	64	"
BARREL	K597	5	13'-0	68	"
	~ PORTAL STEEL ~				
	P498	4	10'-4	28	Straight
	P499	8	6'-0	32	"
	P4100	8	2'-0	11	"
	P4101	20	1'-6	20	"
	P4102	24	1'-0	16	"
	P4103	4	1'-9	5	"
			TOTAL	3716	POUNDS

BAR BENDING DIAGRAMS

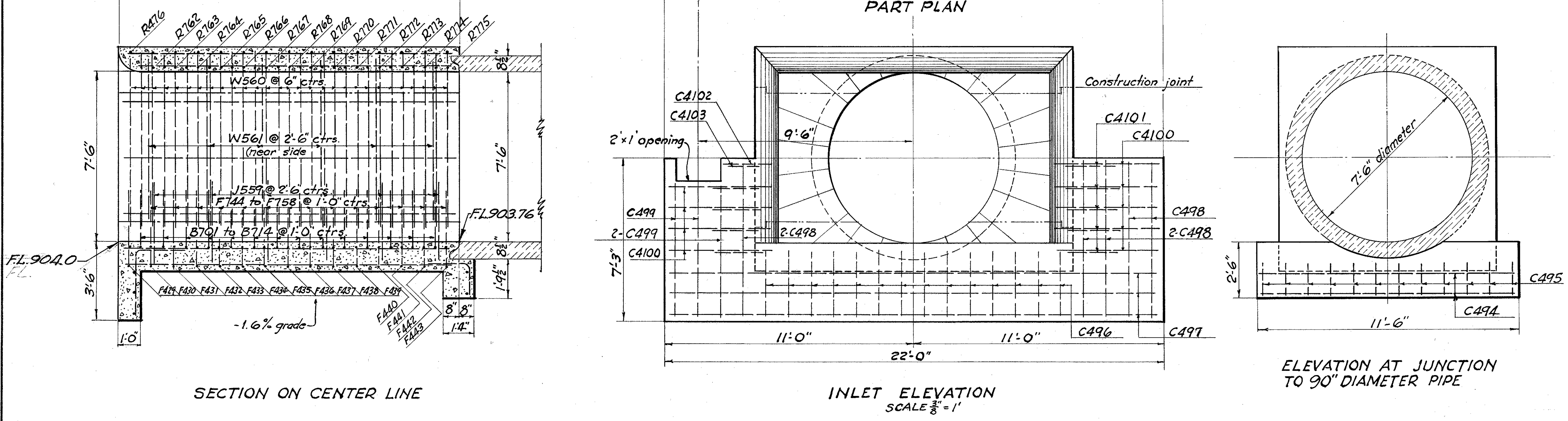
STA. 827+00

JUNCTION BOX FOR 106"×68" ELLIPTICAL PIPE AND 60" R.C. PIPE

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

192/250

COL-30-32.19



Quantities Carried to Sheet No. 177

Concrete, Class "C"	32 cu. yd.
Reinforcing Steel	3562 lb.
Exc. for Struct.	35 cu. yd.

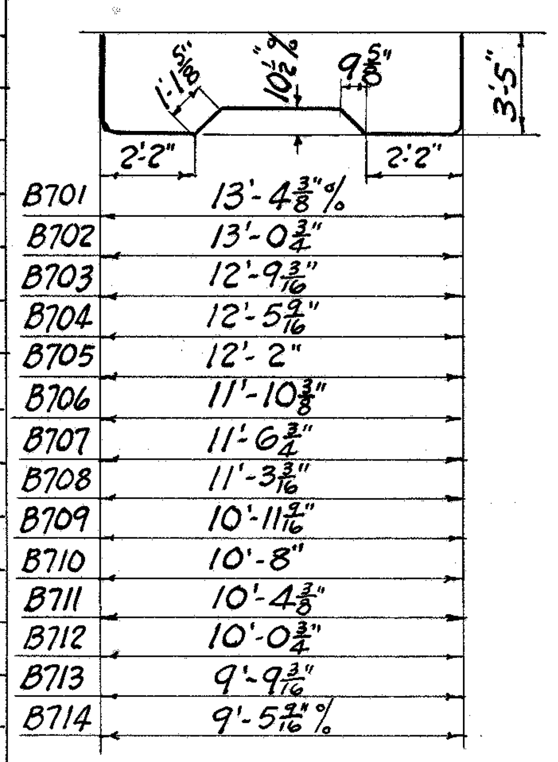
STA. 853+00

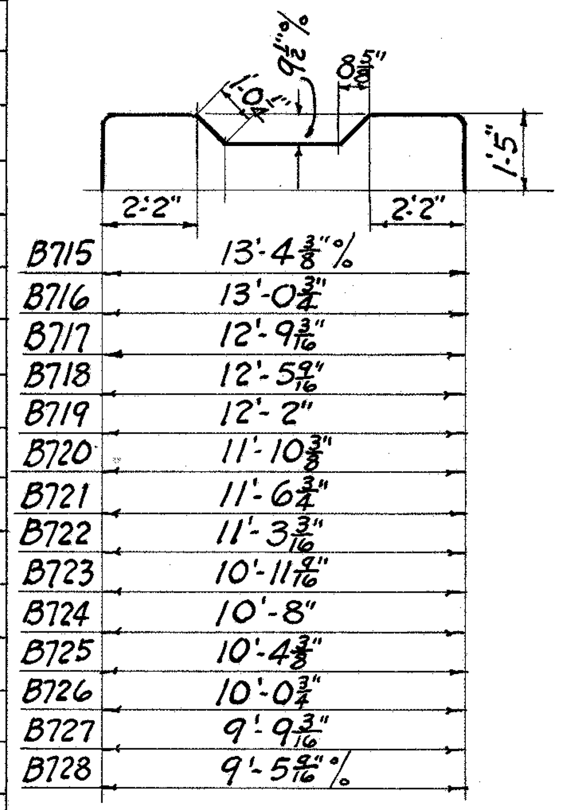
FLARED ENTRANCE FOR 90" PIPE

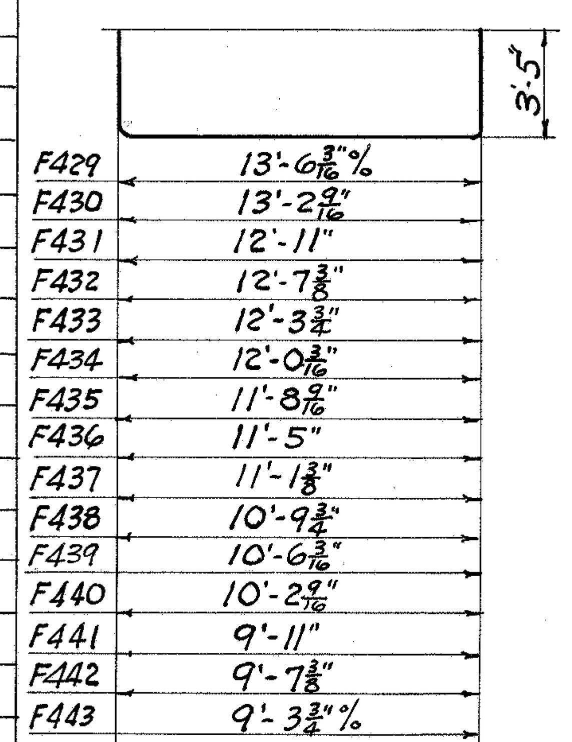
SHEET 1 OF 2 SHEETS

	BAR	No.	LENGTH	WEIGHT	SHAPE
FLOOR	B701	1	20'-6	42	Bent
	B702	1	20'-3	41	"
	B703	1	19'-11	41	"
	B704	1	19'-8	40	"
	B705	1	19'-4	40	"
	B706	1	19'-0	39	"
	B707	1	18'-9	38	"
	B708	1	18'-5	38	"
	B709	1	18'-1½	37	"
	B710	1	17'-10	36	"
	B711	1	17'-6	36	"
	B712	1	17'-3	35	"
	B713	1	16'-11	35	"
	B714	1	16'-7½	34	"
ROOF	B715	1	16'-5	34	"
	B716	1	16'-2	33	"
	B717	1	15'-10	32	"
	B718	1	15'-7	32	"
	B719	1	15'-3	31	"
	B720	1	14'-11	31	"
	B721	1	14'-8	30	"
	B722	1	14'-4	29	"
	B723	1	14'-1	29	"
	B724	1	13'-9	28	"
	B725	1	13'-5	27	"
	B726	1	13'-2	27	"
	B727	1	12'-10	26	"
	B728	1	12'-7	26	"
FLOOR	F429	1	20'-2	13	Bent
	F430	1	19'-10	13	"
	F431	1	19'-7	13	"
	F432	1	19'-3	13	"
	F433	1	18'-11	13	"
	F434	1	18'-8	12	"
	F435	1	18'-4	12	"
	F436	1	18'-0½	12	"
	F437	1	17'-9	12	"
	F438	1	17'-5	12	"
	F439	1	17'-2	11	"
	F440	1	16'-10	11	"
	F441	1	16'-6½	11	"
	F442	1	16'-3	11	"
	F443	1	15'-11	11	"

BAR BENDING DIAGRAMS

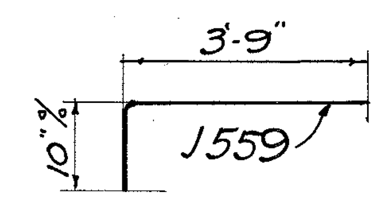


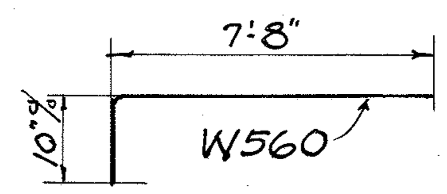




	BAR	No.	LENGTH	WEIGHT	SHAPE
FLOOR	F744	1	13'-4	27	Straight
	F745	1	13'-1	27	"
	F746	1	12'-9	26	"
	F747	1	12'-5	26	"
	F748	1	12'-2	25	"
	F749	1	11'-10	24	"
	F750	1	11'-7	24	"
	F751	1	11'-3	23	"
	F752	1	11'-0	23	"
	F753	1	10'-8	22	"
	F754	1	10'-4	21	"
	F755	1	10'-1	21	"
	F756	1	9'-9	20	"
	F757	1	9'-5	19	"
	F758	1	9'-2	19	"
	J559	12	4'-6	55	Bent
WALLS	W560	58	8'-5	509	Bent
	W561	12	7'-2	89	Straight
ROOF	R762	1	13'-0	27	Straight
	R763	1	12'-9	26	"
	R764	1	12'-5	25	"
	R765	1	12'-2	25	"
	R766	1	11'-10	24	"
	R767	1	11'-7	24	"
	R768	1	11'-3	23	"
	R769	1	11'-0	23	"
	R770	1	10'-8	22	"
	R771	1	10'-4	21	"
	R772	1	10'-0	20	"
	R773	1	9'-9	20	"
	R774	1	9'-5	19	"
	R775	1	9'-2	19	"
	R476	1	13'-4	9	Straight
	R477	1	13'-0	9	"
	R478	1	12'-9	9	"
	R479	1	12'-5	8	"
	R480	1	12'-2	8	"
	R481	1	11'-10	8	"
	R482	1	11'-7	8	"
	R483	1	11'-3	8	"
	R484	1	11'-0	7	"

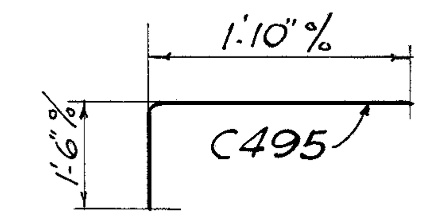
BAR BENDING DIAGRAMS

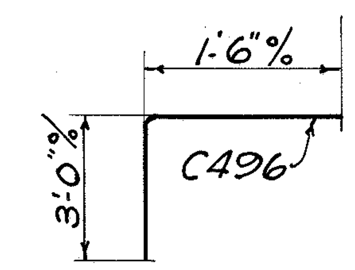


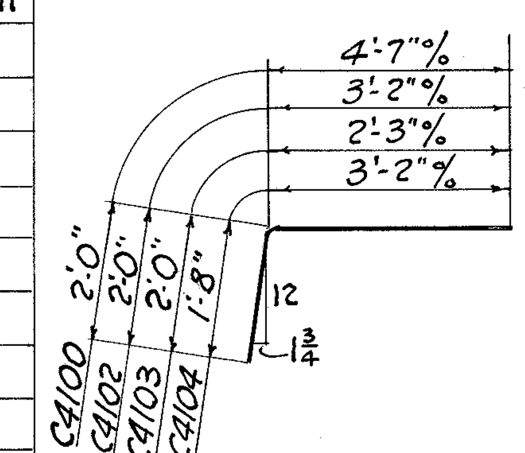


	BAR	No.	LENGTH	WEIGHT	SHAPE
ROOF	R485	1	10'-8	7	Straight
	R486	1	10'-4	7	"
	R487	1	10'-0	7	"
	R488	1	9'-9	7	"
	R489	1	9'-5	6	"
	R490	1	9'-2	6	"
BARREL	K591	31	14'-6	469	Straight
	K592	9	14'-0	131	"
	K593	10	14'-4	149	"
PIPE WALL	C494	2	11'-2	15	Straight
	C495	12	3'-3	26	Bent
END WALL	C496	14	4'-5	41	Bent
	C497	13	21'-6	43	Straight
	C498	8	7'-0	37	"
	C499	4	6'-0	16	"
	C4100	9	6'-7	39	Bent
	C4101	9	5'-2	31	"
	C4102	1	4'-3	3	"
	C4103	1	4'-8	3	"
			TOTAL	3562	POUNDS

BAR BENDING DIAGRAMS







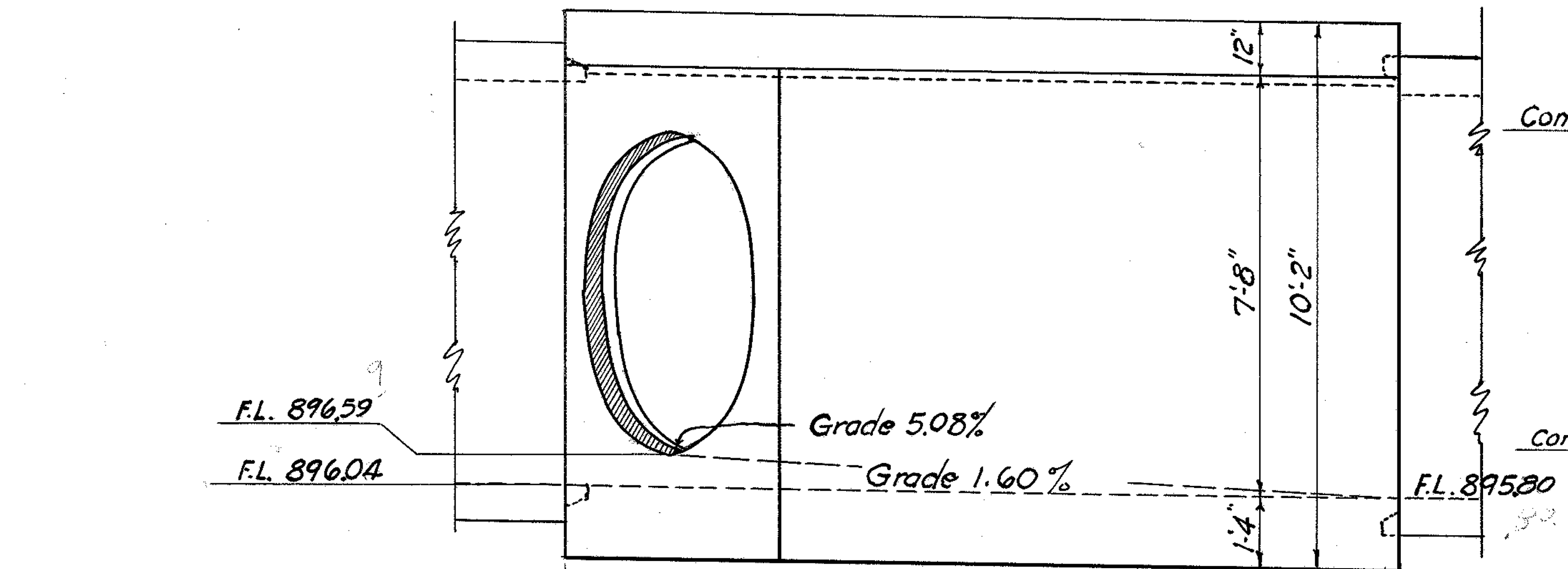
STA. 853+00

FLARED ENTRANCE FOR 90" PIPE

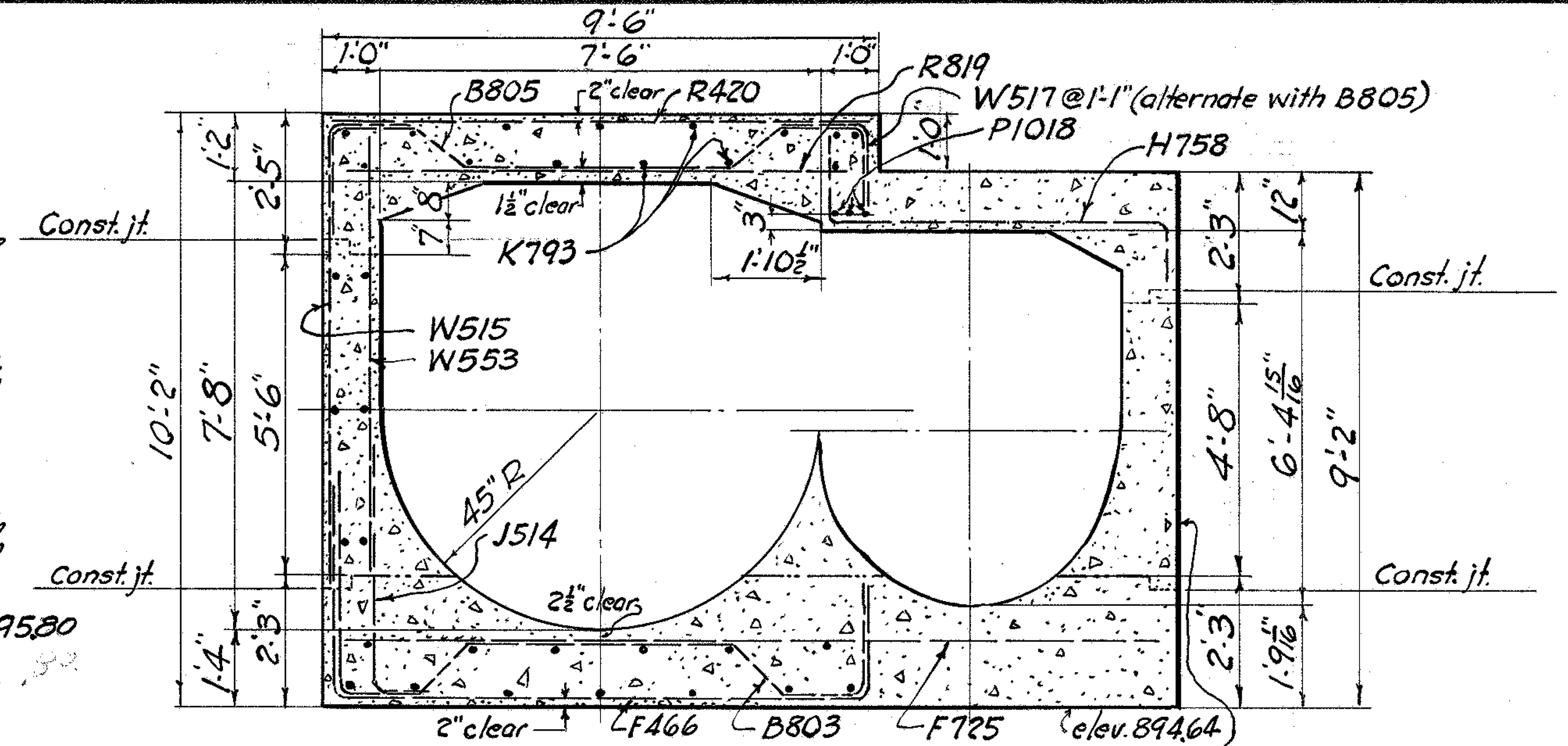
SHEET 2 OF 2 SHEETS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

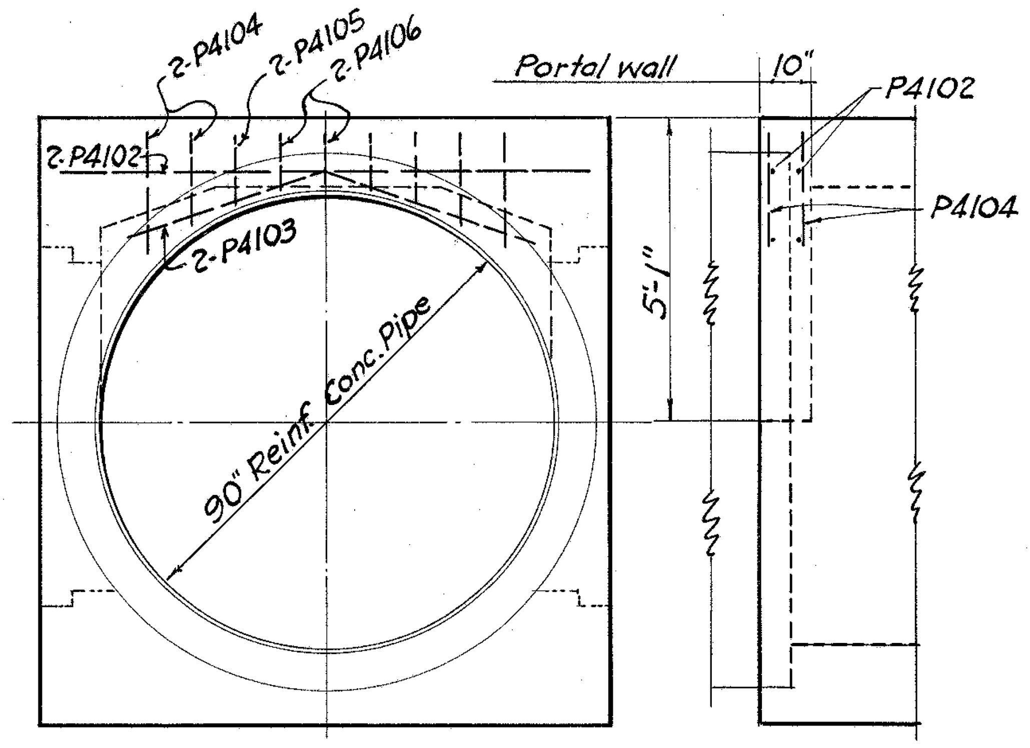
COL-30-32.19



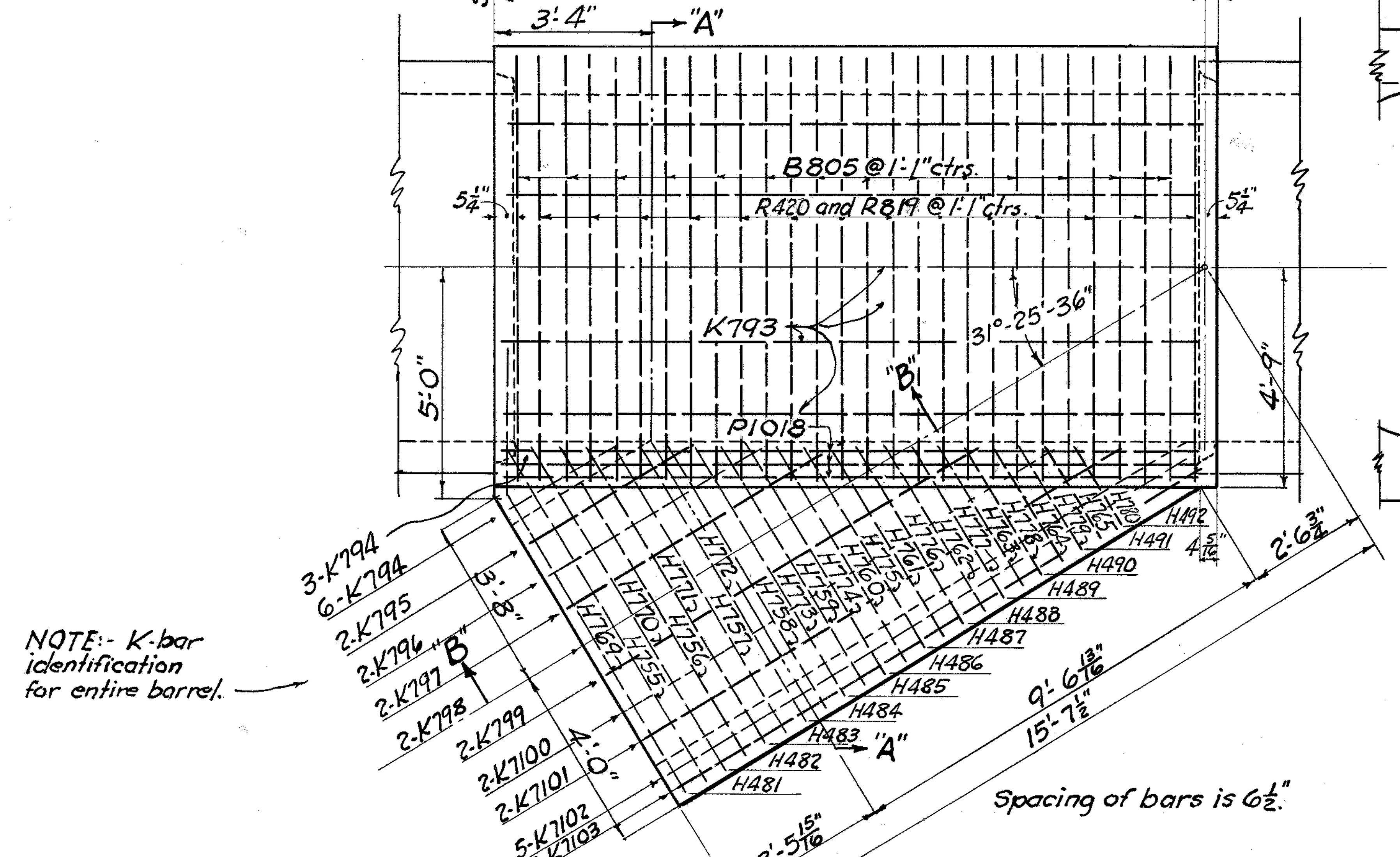
ELEVATION



SECTION "A-A"

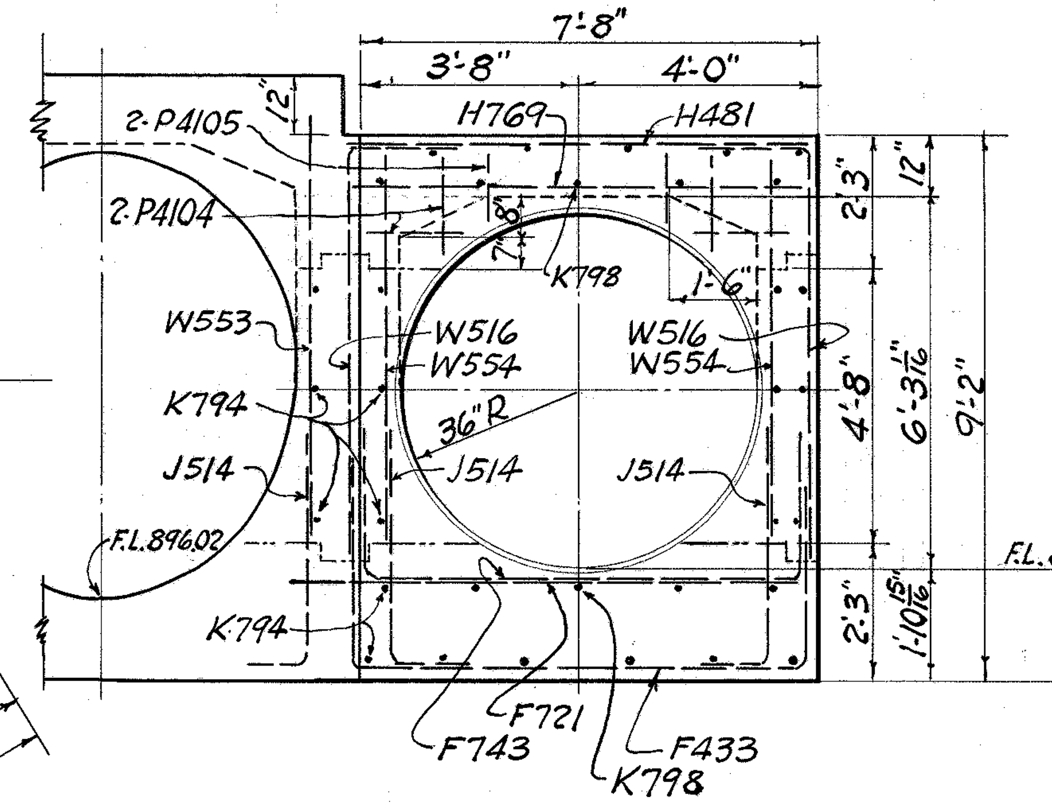


INLET AND OUTLET END ELEV.
PORTAL CLOSURE REINFORCING

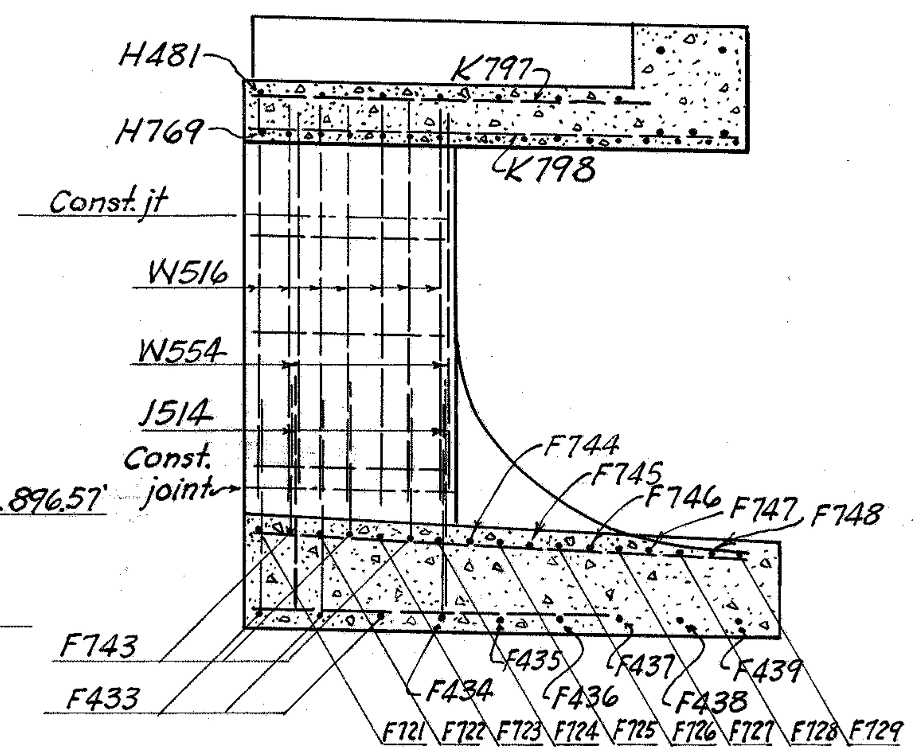


NOTE:- K-bar identification for entire barrel.

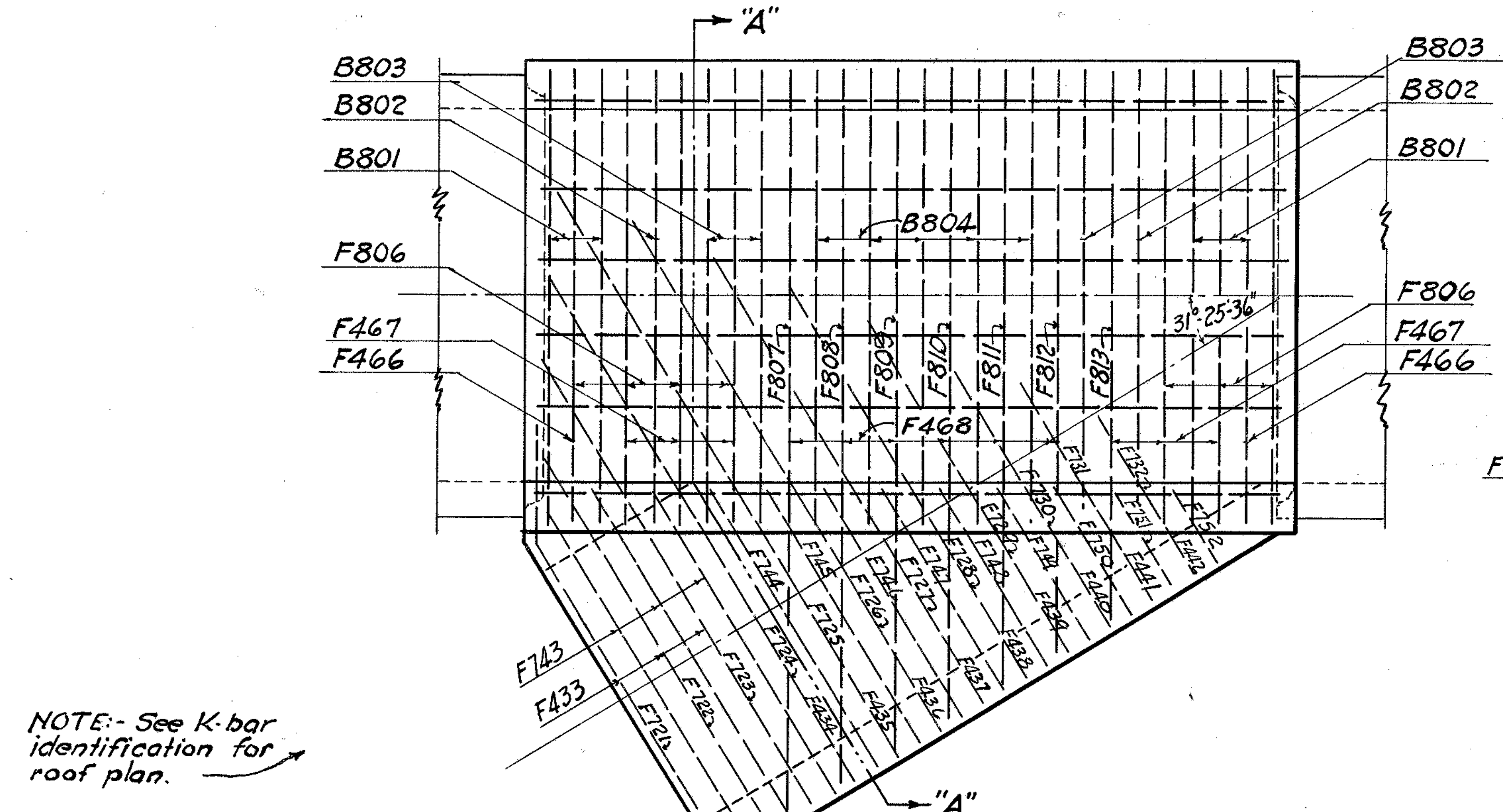
ROOF PLAN



INLET END ELEVATION OF 72" PIPE

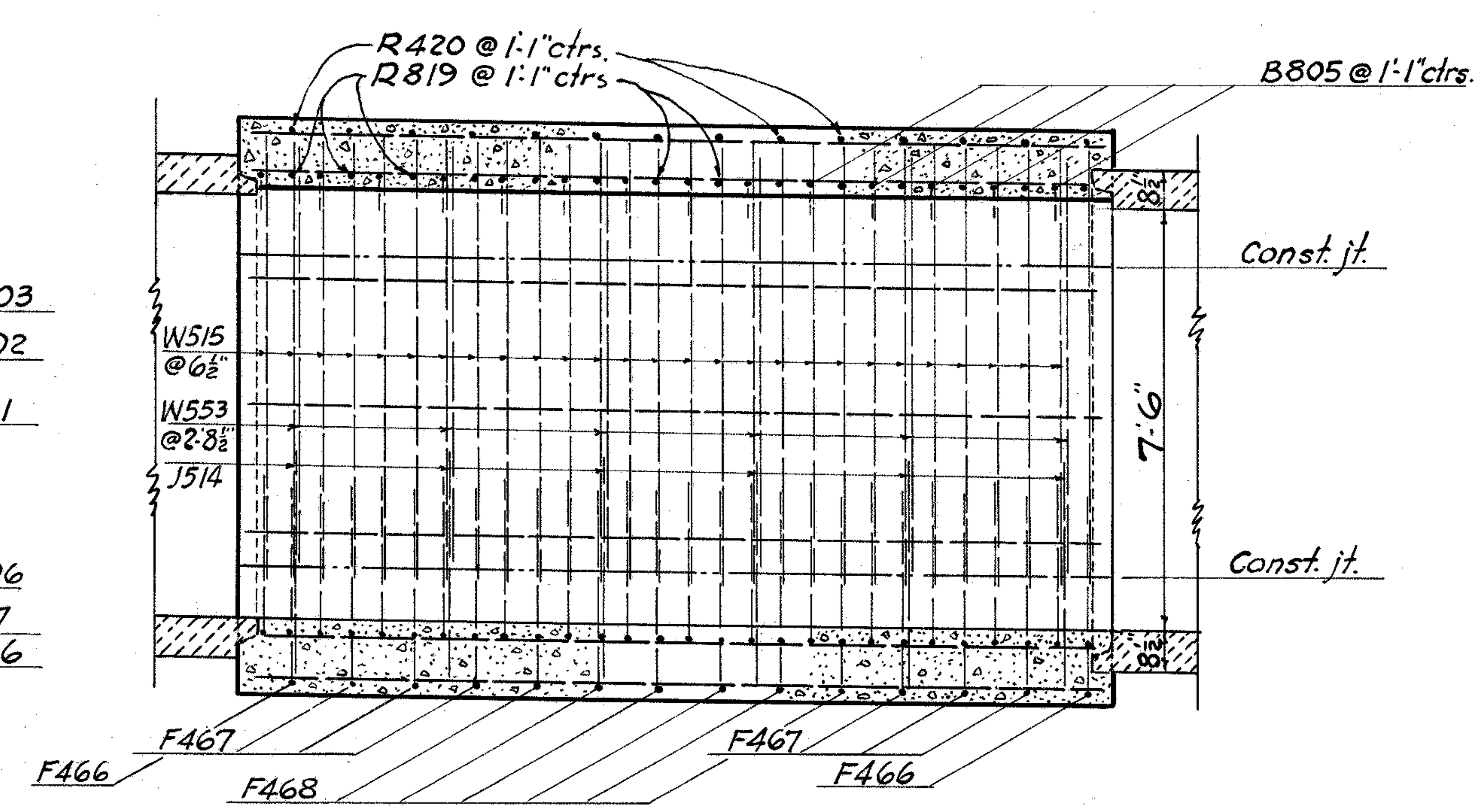


SECTION "B-B"



NOTE:- See K-bar identification for roof plan.

FLOOR PLAN



SECTION THROUGH MAIN BARREL
SCALE: ⅜" = 1'

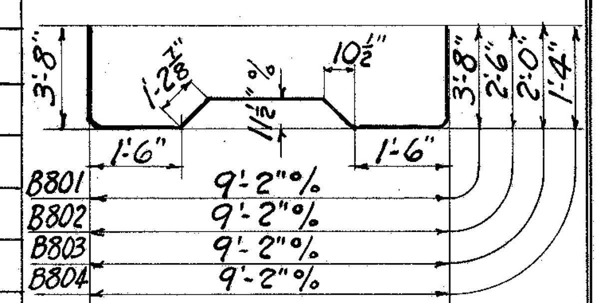
Quantities Carried to Sheet No. 177

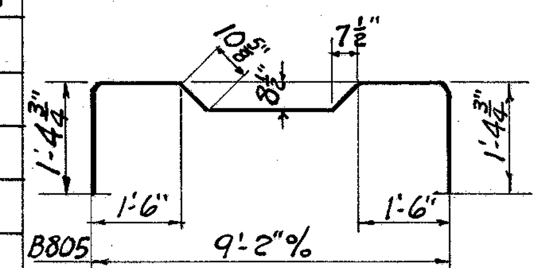
Concrete, Class "C"	40 cu. yd.
Reinforcing Steel	5536 lb.
Exc. for Struct.	36 cu. yd.

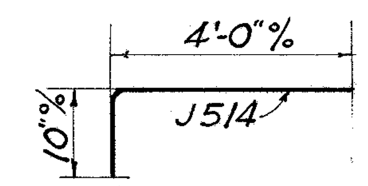
STA. 853+00
JUNCTION BOX FOR 90" R.C. PIPE
AND 72" PIPE
SHEET 1 OF 2 SHEETS

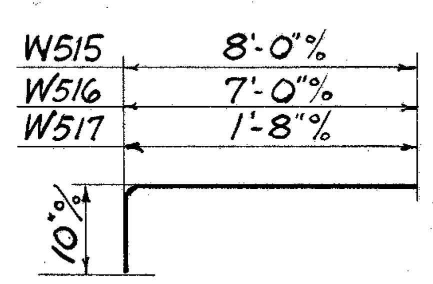
	BAR	No.	LENGTH	WEIGHT	SHAPE
Roof – Floor	B801	4	16'-10"	180	Bent
	B802	2	15'-8	84	"
	B803	3	15'-2	121	"
	B804	5	14'-6	194	"
	B805	14	12'-0	449	"
Floor	F806	7	9'-0	168	Straight
	F807	1	15'-0	40	"
	F808	1	14'-6	39	"
	F809	1	13'-9	37	"
	F810	1	13'-0	35	"
	F811	1	12'-6	33	"
	F812	1	11'-9	31	"
	F813	1	11'-3	30	"
Wall	J514	16	4'-9	79	Bent
	W515	34	8'-9	310	Bent
	W516	31	7'-9	251	"
	W517	10	2'-5	25	"
Roof	P1018	3	17'-8	228	Bent
	R819	14	9'-0	336	Straight
	R420	14	9'-0	84	Straight
Floor	F721	1	10'-0	20	Straight
	F722	1	9'-0	18	"
	F723	1	10'-6	21	"
	F724	1	12'-3	25	"
	F725	1	13'-9	28	"
	F726	1	12'-0	25	"
	F727	1	10'-6	21	"
	F728	1	9'-3	19	"
	F729	1	8'-0	16	"
	F730	1	6'-6	13	"
	F731	1	5'-3	11	"
	F732	1	4'-0	8	"
	F433	3	14'-1"	9	Bent
	F434	1	13'-11	9	"
	F435	1	12'-11	9	"
	F436	1	11'-11	8	"
	F437	1	10'-11	7	"
	F438	1	9'-11	7	"
	F439	1	8'-11	6	"
	F440	1	8'-2	5	"

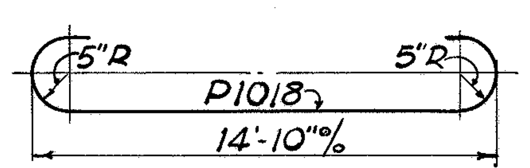
BAR BENDING DIAGRAMS

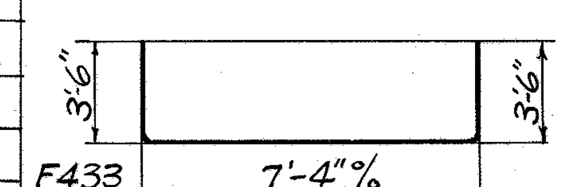


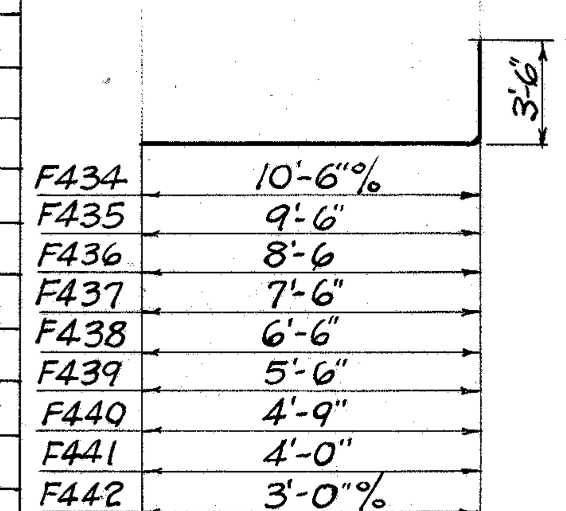






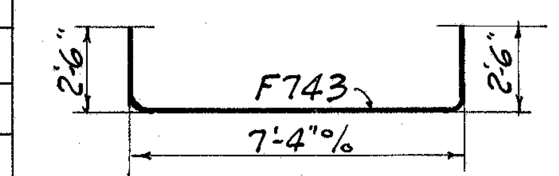


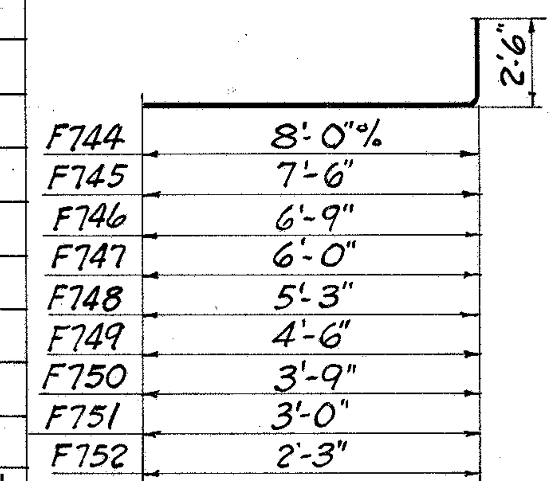


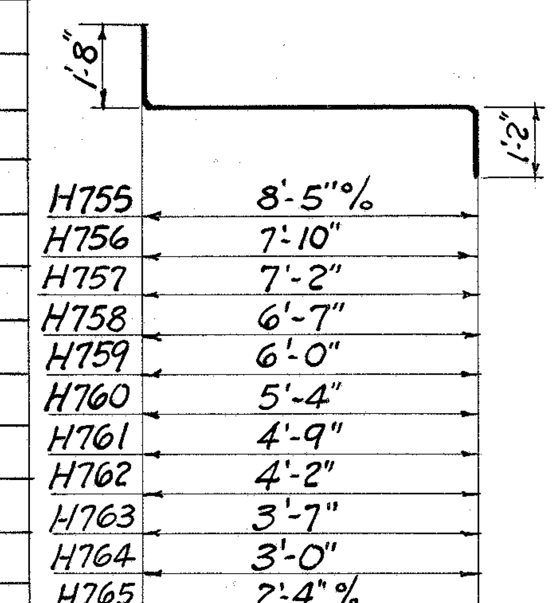


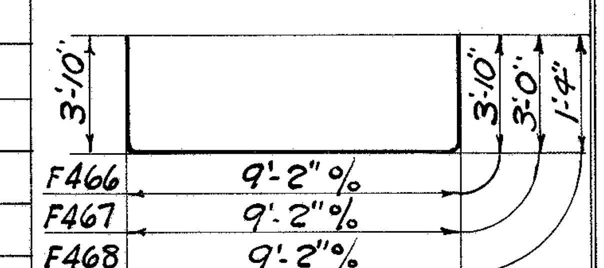
	BAR	No.	LENGTH	WEIGHT	SHAPE
Floor	F441	1	7'-5	5	Bent
	F442	1	6'-5	4	"
	F743	3	11'-10	73	Bent
	F744	1	10'-3	21	"
	F745	1	9'-9	20	"
	F746	1	9'-0	18	"
	F747	1	8'-3	17	"
	F748	1	7'-6	15	"
	F749	1	6'-9	14	"
	F750	1	6'-0	12	"
	F751	1	5'-3	11	"
	F752	1	4'-6	9	"
Wall	W553	9	7'-8	72	Straight
	W554	7	6'-8	49	"
Roof	H755	1	10'-11"	22	Bent
	H756	1	10'-4	21	"
	H757	1	9-8	20	"
	H758	1	9-1	19	"
	H759	1	8'-6	17	"
	H760	1	7'-10	16	"
	H761	1	7'-3	15	"
	H762	1	6'-8	14	"
	H763	1	6'-1	12	"
	H764	1	5'-6	11	"
	H765	1	4'-10	10	"
Floor	F466	2	16'-9	22	Bent
	F467	6	15'-10	63	"
	F468	6	14'-2	57	"
Roof	H769	1	8'-9	18	Straight
	H770	1	8'-3	17	"
	H771	1	7'-6	15	"
	H772	1	6'-10	14	"
	H773	1	6'-3	13	"
	H774	1	5'-8	12	"
	H775	1	5'-0	10	"
	H776	1	4'-6	9	"
	H777	1	3'-10	8	"
	H778	1	3'-3	7	"
	H779	1	2'-7	6	"
	H780	1	2'-0	4	"

BAR BENDING DIAGRAMS









	BAR	No.	LENGTH	WEIGHT	SHAPE
Roof	H481	1	8'-9	6	Straight
	H482	1	8'-3	5	"
	H483	1	7'-6	5	"
	H484	1	6'-10	5	"
	H485	1	6'-3	4	"
	H486	1	5'-8	4	"
	H487	1	5'-0	3	"
	H488	1	4'-6	3	"
	H489	1	3'-10	3	"
	H490	1	3'-3	2	"
	H491	1	2'-7	2	"
	H492	1	2'-0	1	"
	Longitudinal Steel				
	K793	33	15'-0	1012	Straight
	K794	9	2'-9	51	"
	K795	2	4'-6	18	"
	K796	2	5'-6	22	"
	K797	2	6'-9	28	"
	K798	2	8'-3	34	"
	K799	2	9'-9	40	"
	K7100	2	11'-0	45	"
	K7101	2	12'-0	49	"
	K7102	5	13'-3	135	"
	K7103	5	13'-6	138	"
	~ Portal Steel ~				
	P4102	4	9'-0	24	Straight
	P4103	8	4'-6	24	"
	P4104	24	1'-6	24	"
	P4105	12	1'-3	10	"
	P4106	12	1'-0	8	"
			Total	5536	Pounds

BAR BENDING DIAGRAMS

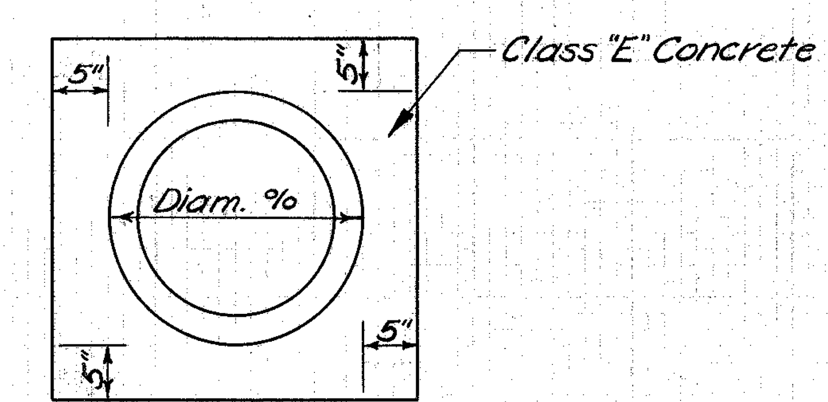
☆ REPLACEMENT BARS

BAR	No.	LENGTH	WEIGHT
RE-10	1	9'-0	—
RE-8	1	6'-6	—
RE-7	1	6'-3	—
RE-6	1	5'-11	—
RE-5	1	5'-7	—
RE-4	1	5'-3	—
			—

☆ Steel to replace cut test samples for all structural steel in drainage structures on the project.

STA. 853+00
JUNCTION BOX FOR 90" R.C. PIPE AND 72" PIPE
SHEET 2 OF 2 SHEETS

COL-30-32.19

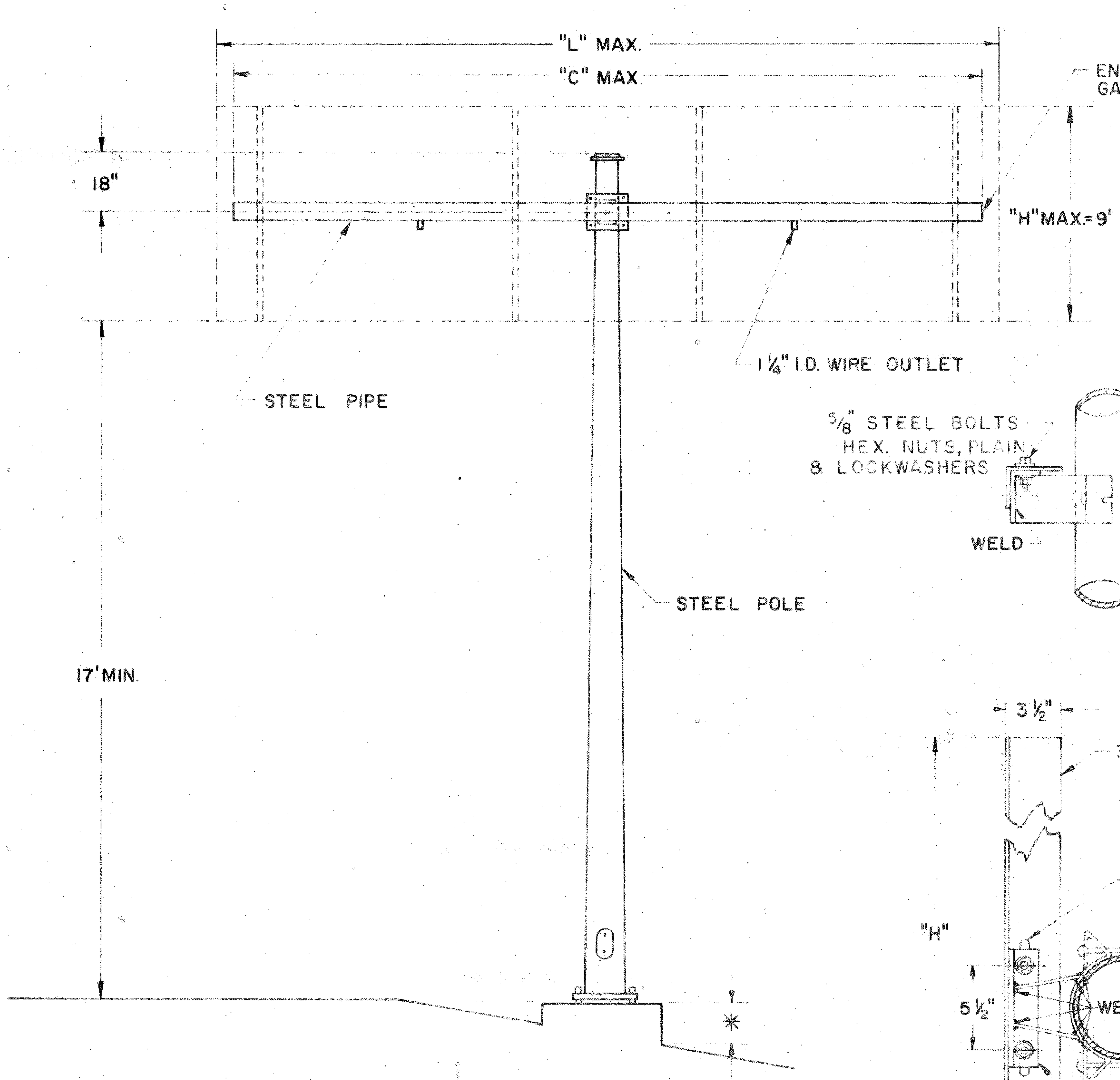


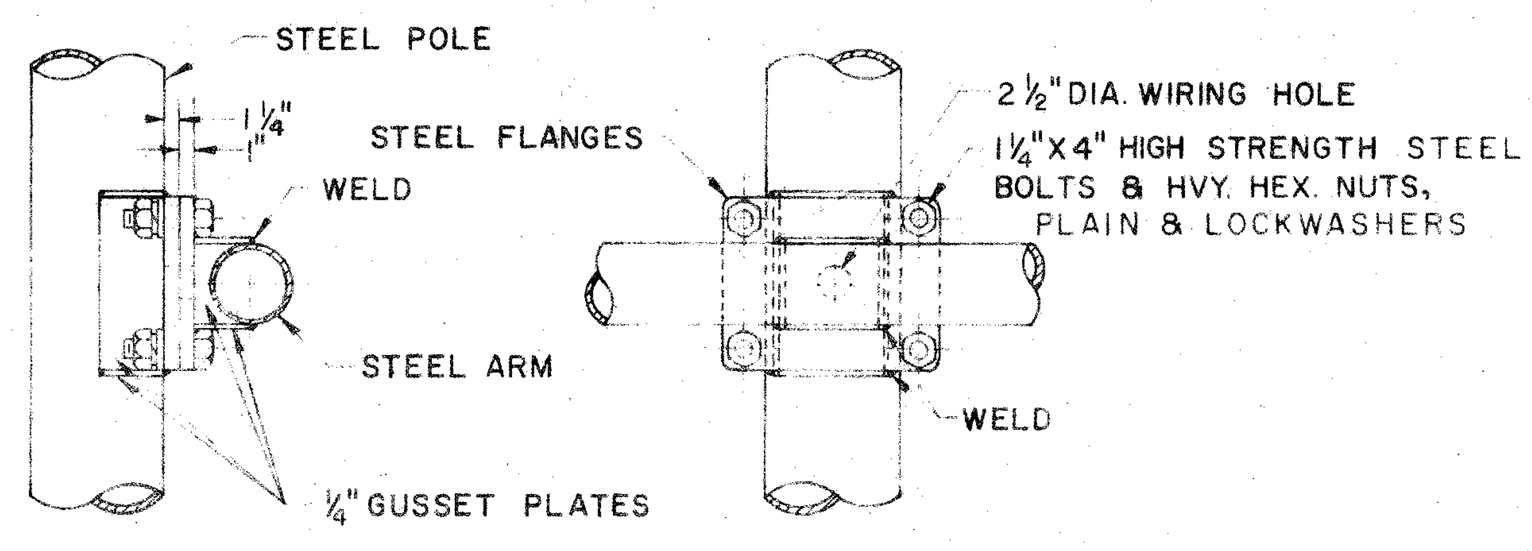
SECTION A-A
DETAIL OF CONCRETE ENCASEMENT
Scale: 1" = 1'

ESTIMATED QUANTITIES

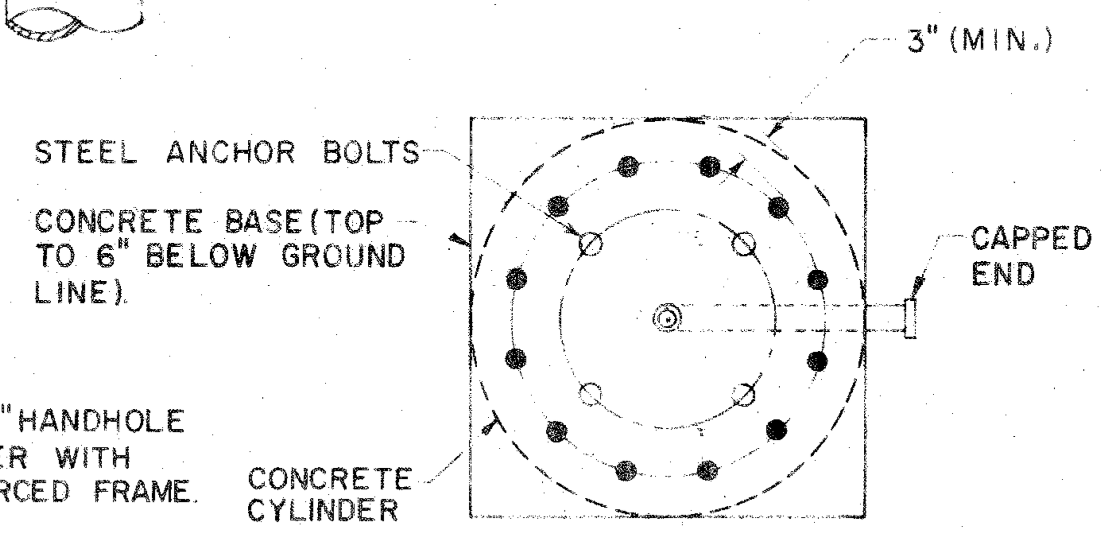
12" Pipe	Class A-1	Sec. M-6.8(b)	Encased as per Plan	172 Lin. Ft.
15" Pipe	Class C-1	Sec. M-6.8(b)		250 Lin. Ft.
15" Pipe	Class C-1	Sec. M-6.8(b)	Encased as per Plan	66 Lin. Ft.
18" Pipe	Class C-1	Sec. M-6.8(b)		862 Lin. Ft.
Std. No. 1 Manhole				6 Each
Pipe Removed (Over 15")				50 Lin. Ft.
Manholes Abandoned				2 Each
Removal of Portions of Existing Structures				8 Cu. Yds.
Pipe Removed (15" and under)				572 Lin. Ft.

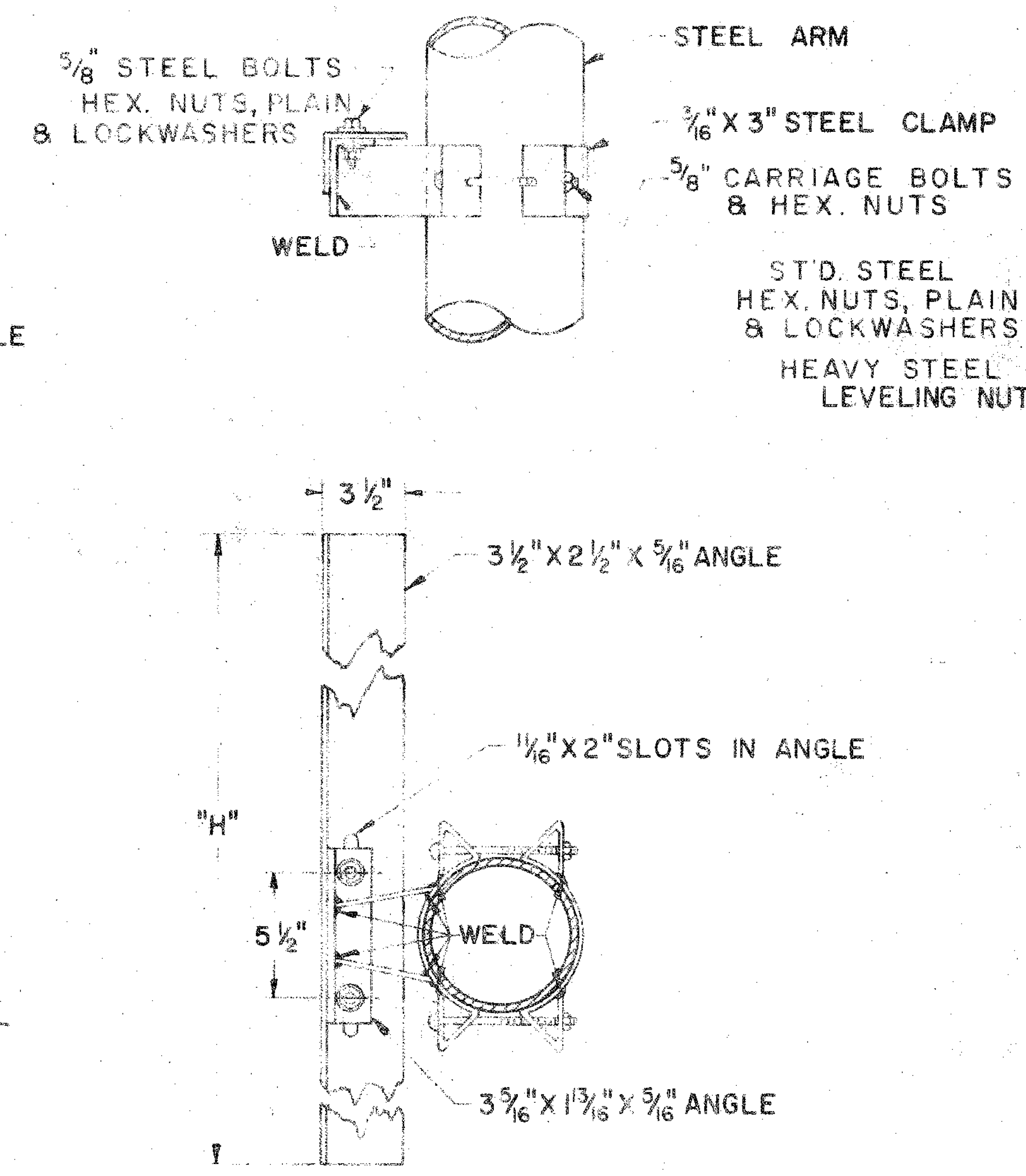
STA. 880+00 TO 891+60
SANITARY SEWER



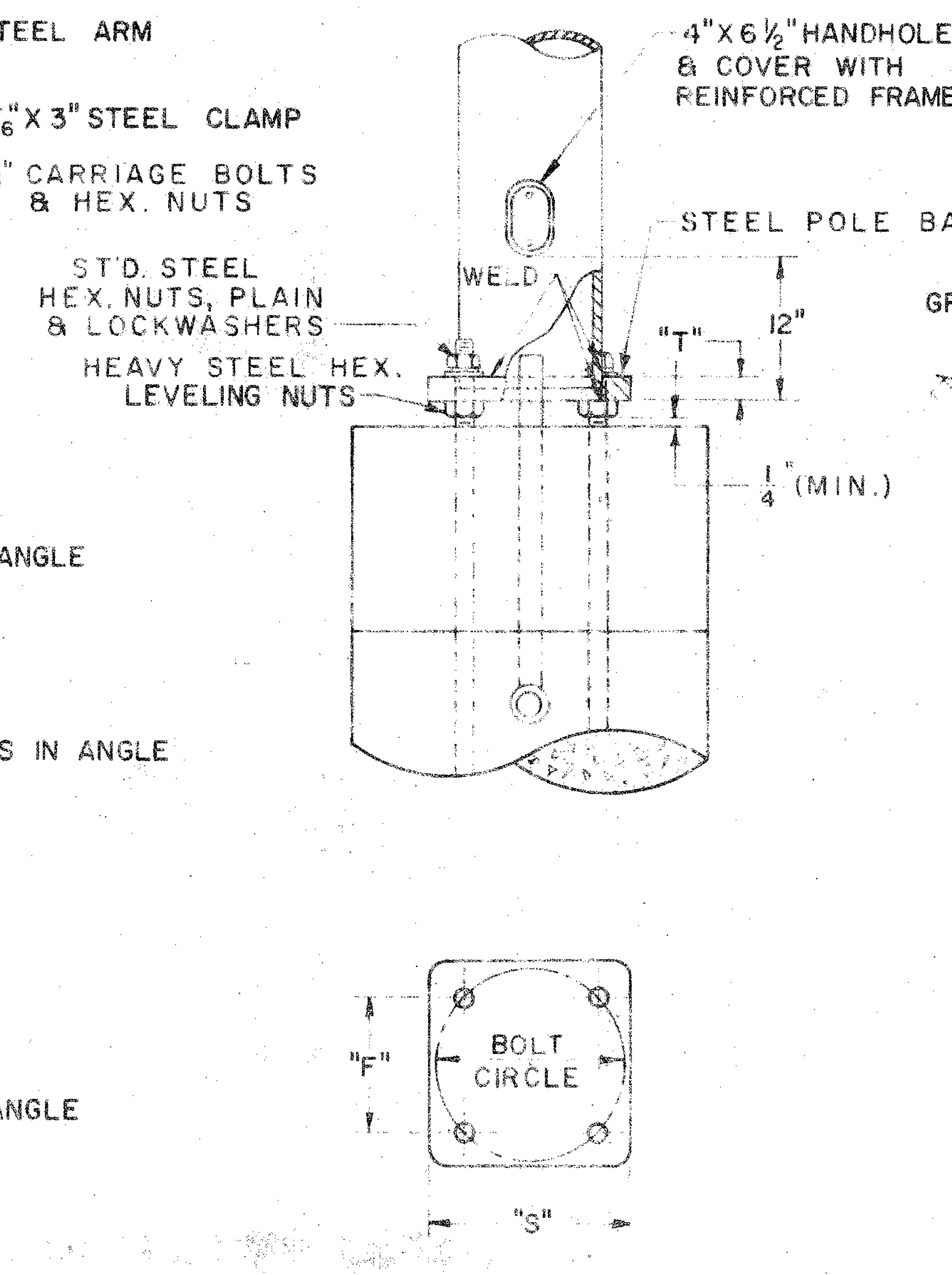


ARM ATTACHMENT

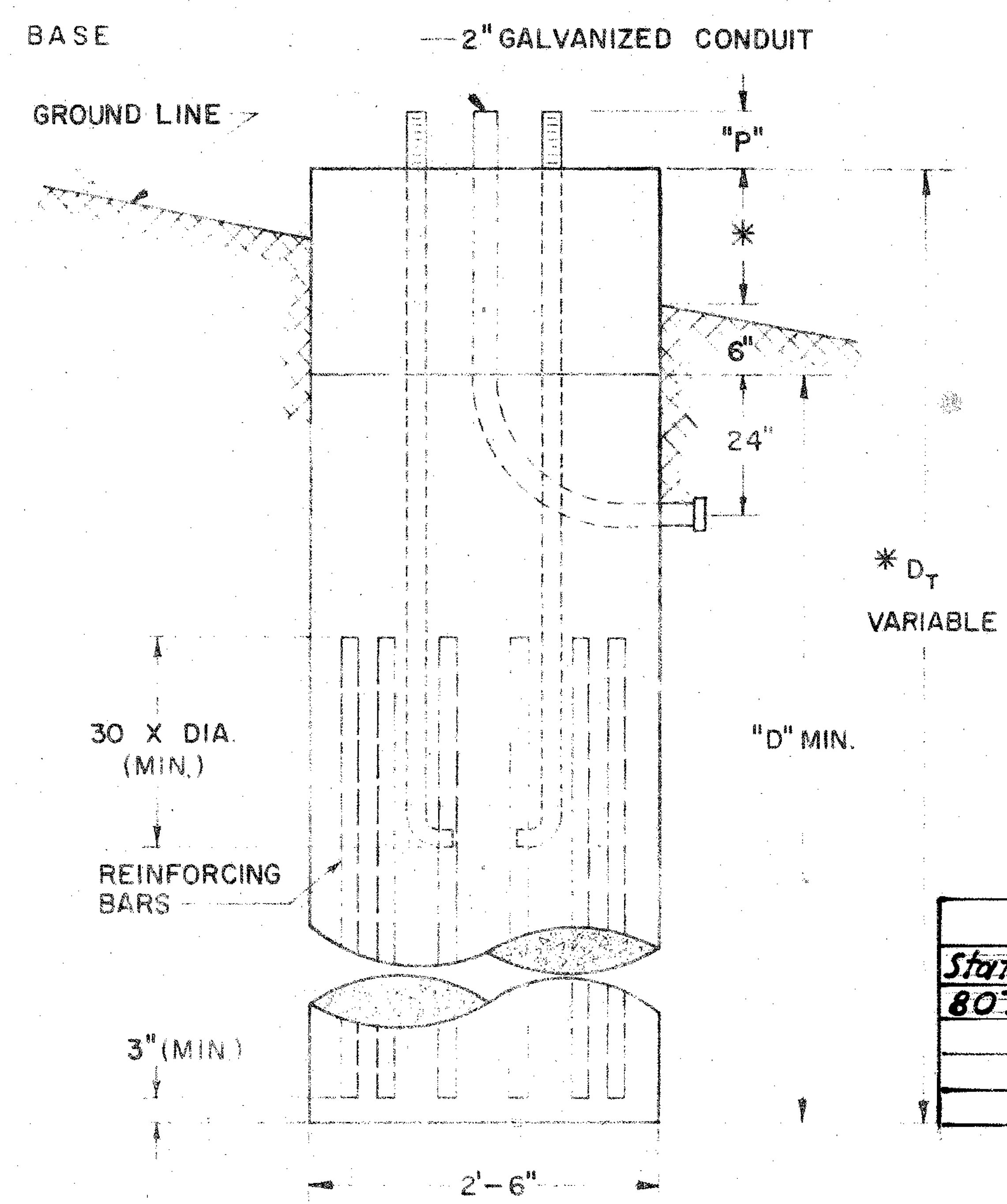




SIGN ATTACHMENT DETAIL



POLE DETAIL



FOUNDATION DETAIL

DESIGN NO.	POLE SIZE	PIPE SIZE	DIM C	DIM F	DIM P	DIM S	DIM T	BOLT CIRCLE	ANCHOR BOLT SIZE	MAX SIGN AREA	MAX. "L" WITH MAX. SIGN AREA	"D" MIN.	REINF. BARS TYPE	REINF. BARS NO.
1	7ga, 11"X 7.99 X 21'-6"	4" SCH.40 GRADE A	18'	10⅝"	6½"	15⅝"	1½"	15"	1½"X60"	60	24'-9"	7'-0"	#6	8
2	3ga, 13"X 9.99 X 21'-6"	4" SCH.80 GRADE A	14'	12¾"	7¾"	18½"	2"	18"	1¾"X90"	120	16'-9"	8'-6"	#7	12
3	3ga, 13"X 9.99 X 21'-6"	6" SCH.40 GRADE A	20'	12¾"	7¾"	18½"	2"	18"	1¾"X90"	120	24'-0"	9'-0"	#7	12

NOTES

FABRICATION – ALL PORTIONS OF THE SIGN SUPPORT, INCLUDING SIGN ATTACHMENTS, SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF A.S.T.M. DESIGNATIONS A-123 AND A-153. THE CONDUIT SHALL BE GALVANIZED IN ACCORDANCE WITH SEC. S-25.08 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS FOR PAYMENT.

* FOUNDATION – THE TOP ELEVATION OF FOUNDATIONS SHALL BE VARIED SO AS TO MAINTAIN A MINIMUM CLEARANCE OF 17' BETWEEN THE BOTTOM OF THE SIGN AND THE HIGHWAY CROWN.

MATERIAL – STEEL POLE BASES, FLANGES, AND END CAPS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 30 GRADE B. HIGH STRENGTH STEEL BOLTS SHALL CONFORM TO ASTM SPECIFICATION A 193 GRADE B7. AFTER FABRICATION TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

SOILS – THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL – REINFORCING STEEL AS SHOWN IN TABLE SHALL BE INSTALLED WHEN "D_T" EXCEEDS THE ANCHOR BOLT LENGTH BY MORE THAN 3 FT. THE COST AND PLACEMENT OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR I-129 CONCRETE FOR SIGN SUPPORT FOUNDATION.

ESTIMATED QUANTITIES

Station	See Sheet	Structures - Each	Concrete - Cu. Yd.
807+35	25	Design No 3, 20' Arm	2.0

DESIGN
THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORT

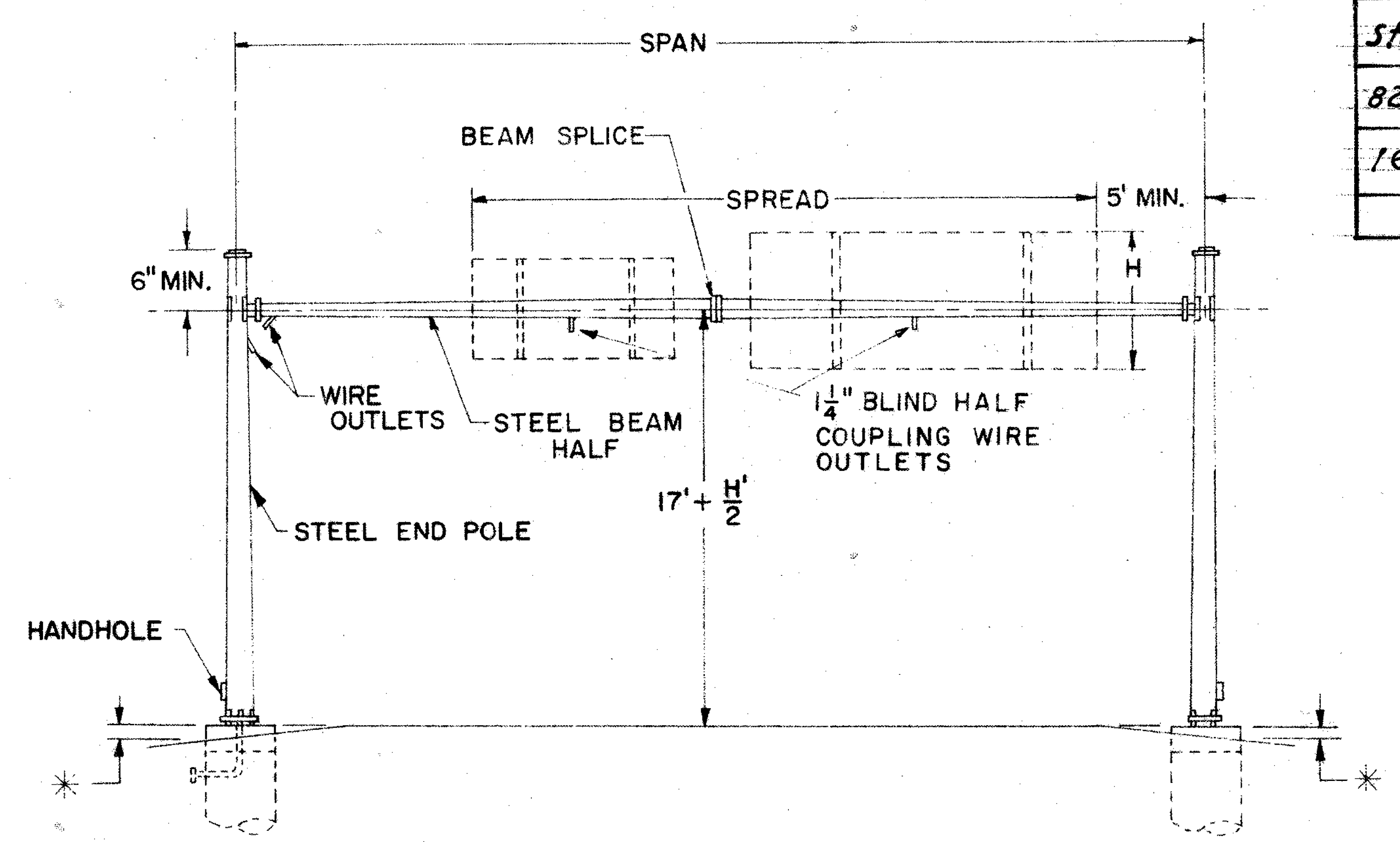
I-129 No. 9.12

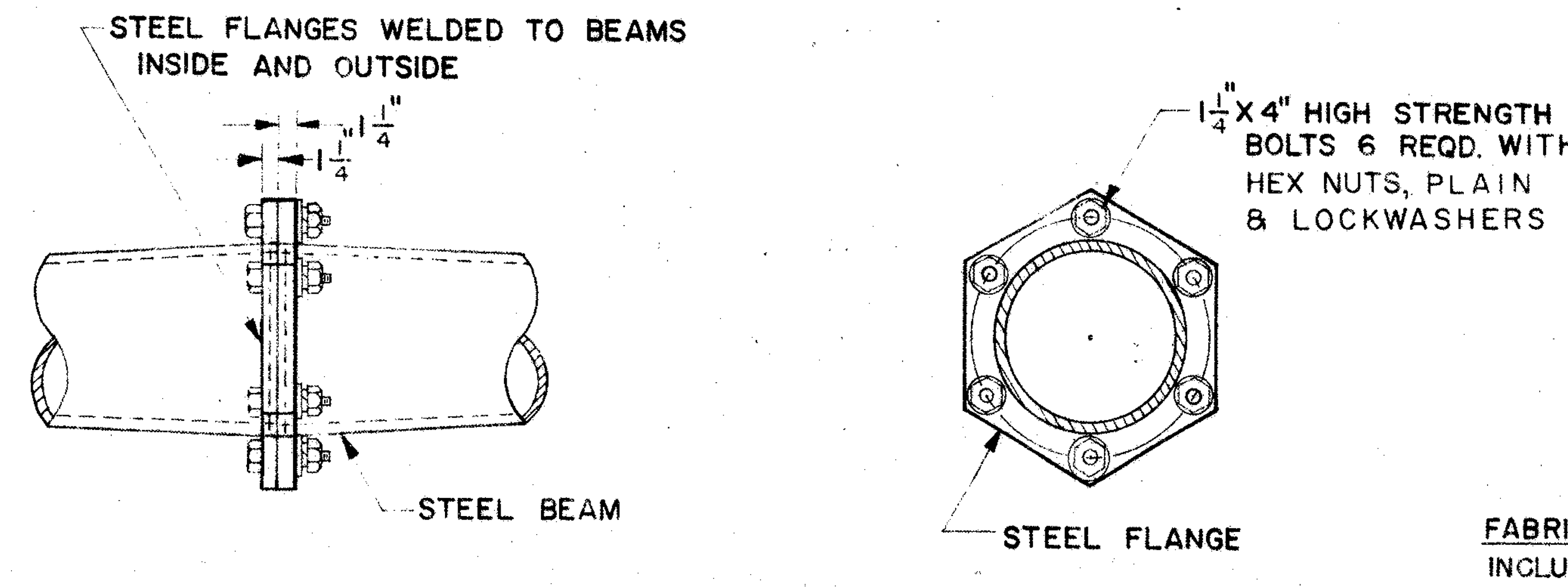
DATE
1-19-62
3-30-62

APPROVED Robert E. Comer
ENGINEER OF TRAFFIC

ESTIMATED QUANTITIES

Station	See Sheet	Structures Each	Concrete Cu. Yd.
825+00	26	Design No 1 46' Span	4.2
16+70	23	Design No 4 73' Span	4.2
Total			8.4





BEAM SPLICE DETAIL

NOTES

FABRICATION ALL-PORTIONS OF THE SIGN SUPPORT, INCLUDING SIGN ATTACHMENTS, SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF A.S.T.M. DESIGNATIONS A-123 AND A-153. THE CONDUIT SHALL BE GALVANIZED IN ACCORDANCE WITH SEC.S-25.08 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS FOR PAYMENT.

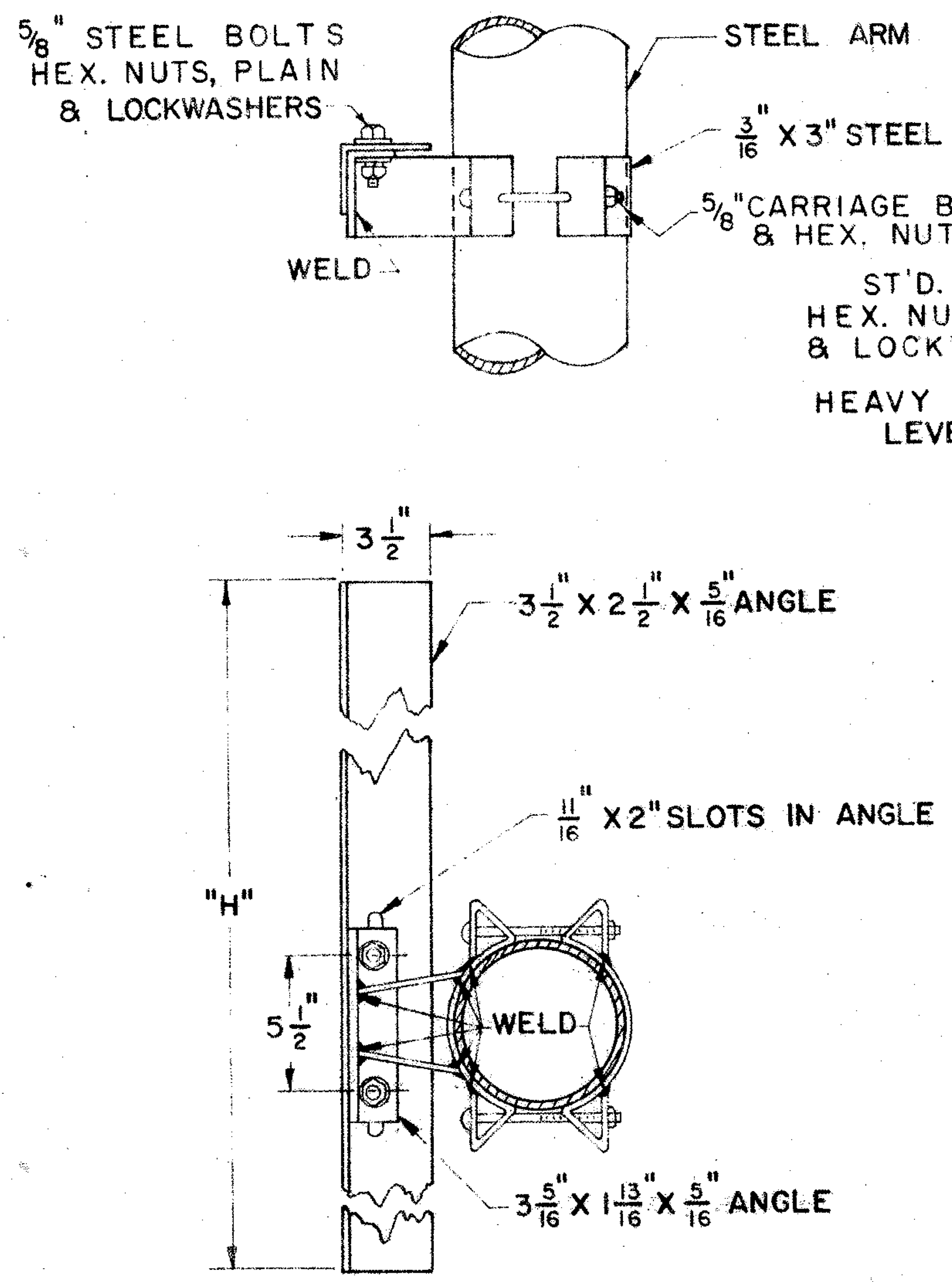
* FOUNDATION - THE TOP ELEVATION OF FOUNDATIONS SHALL BE VARIED SO AS TO MAINTAIN A MINIMUM CLEARANCE OF 17' BETWEEN THE BOTTOM OF THE SIGN AND THE HIGHWAY CROWN.

** ERECTION - FOR SPANS LESS THAN MAX. LENGTH, THE LARGER DIA. OF BEAM HALVES IS HELD AND THE BEAM IS SHORTENED ON THE SMALLER DIA. END.

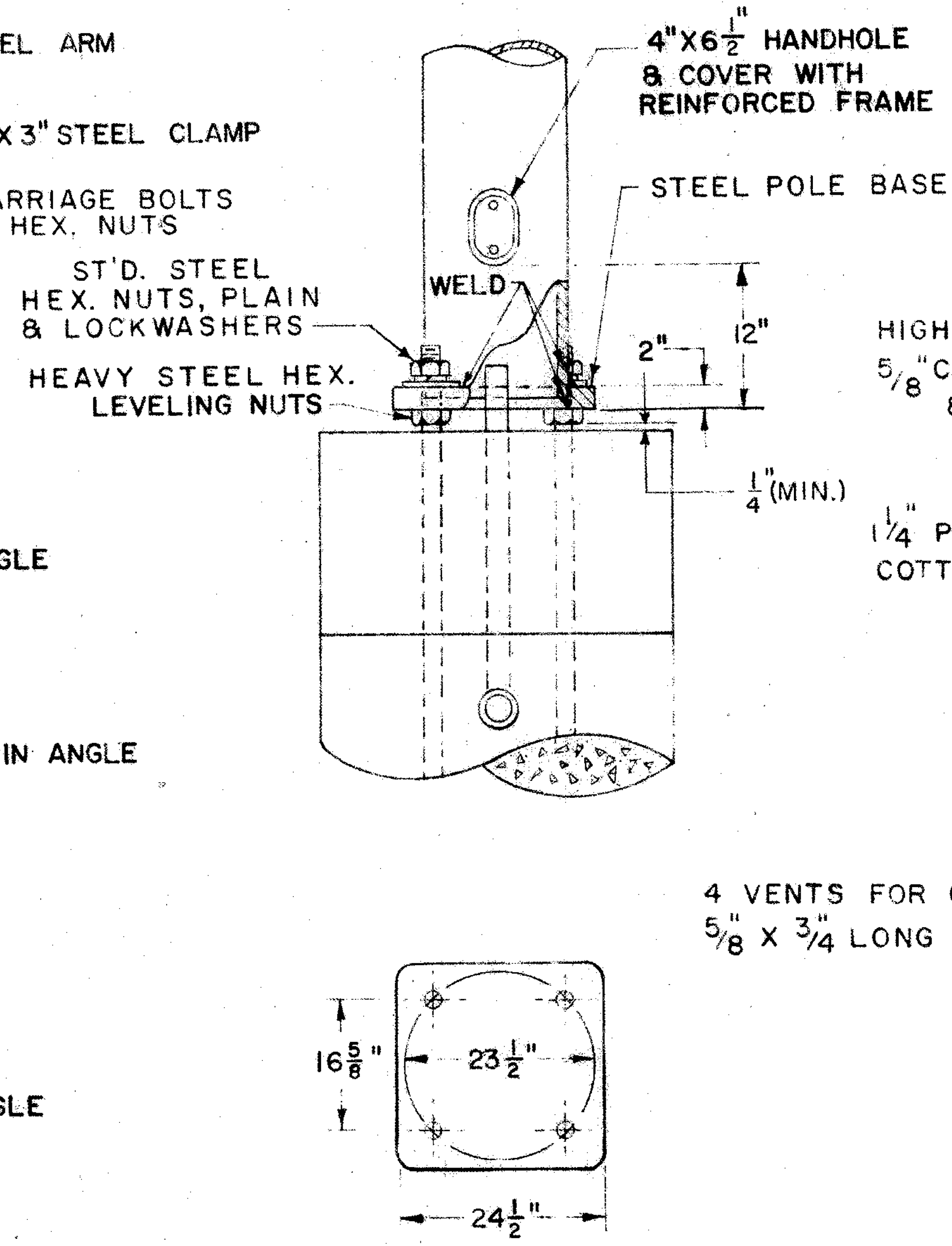
MATERIAL - STEEL POLE BASES AND FLANGES SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 30 GRADE B.
HIGH STRENGTH STEEL BOLTS SHALL CONFORM TO ASTM SPECIFICATION A193 GRADE B 7.
AFTER FABRICATION, TAPERED POLES AND BEAM HALVES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

SOILS - THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY).
FOR POOR SOIL CONDITIONS INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

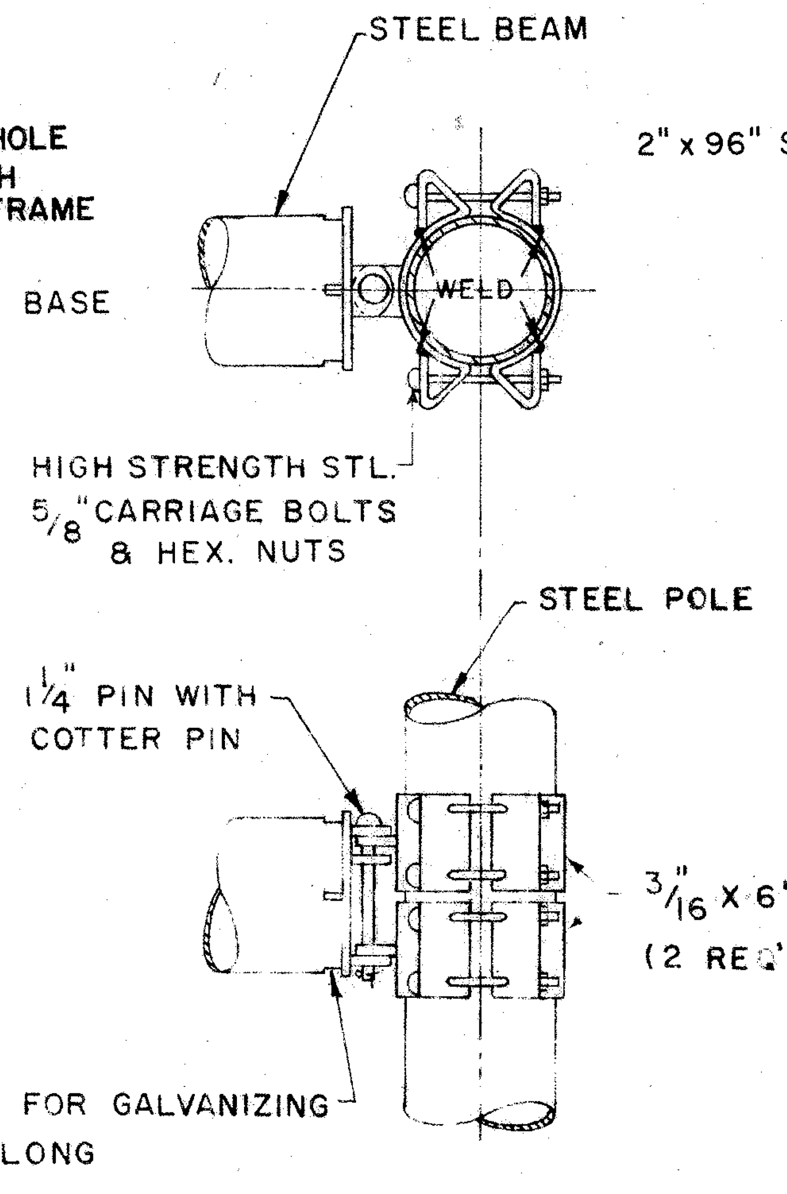
REINFORCING STEEL - REINFORCING STEEL AS SHOWN IN DETAIL SHALL BE INSTALLED WHEN "D_T" EXCEEDS THE ANCHOR BOLT LENGTH BY MORE THAN 3'.
THE COST AND PLACEMENT OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR I-129 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.



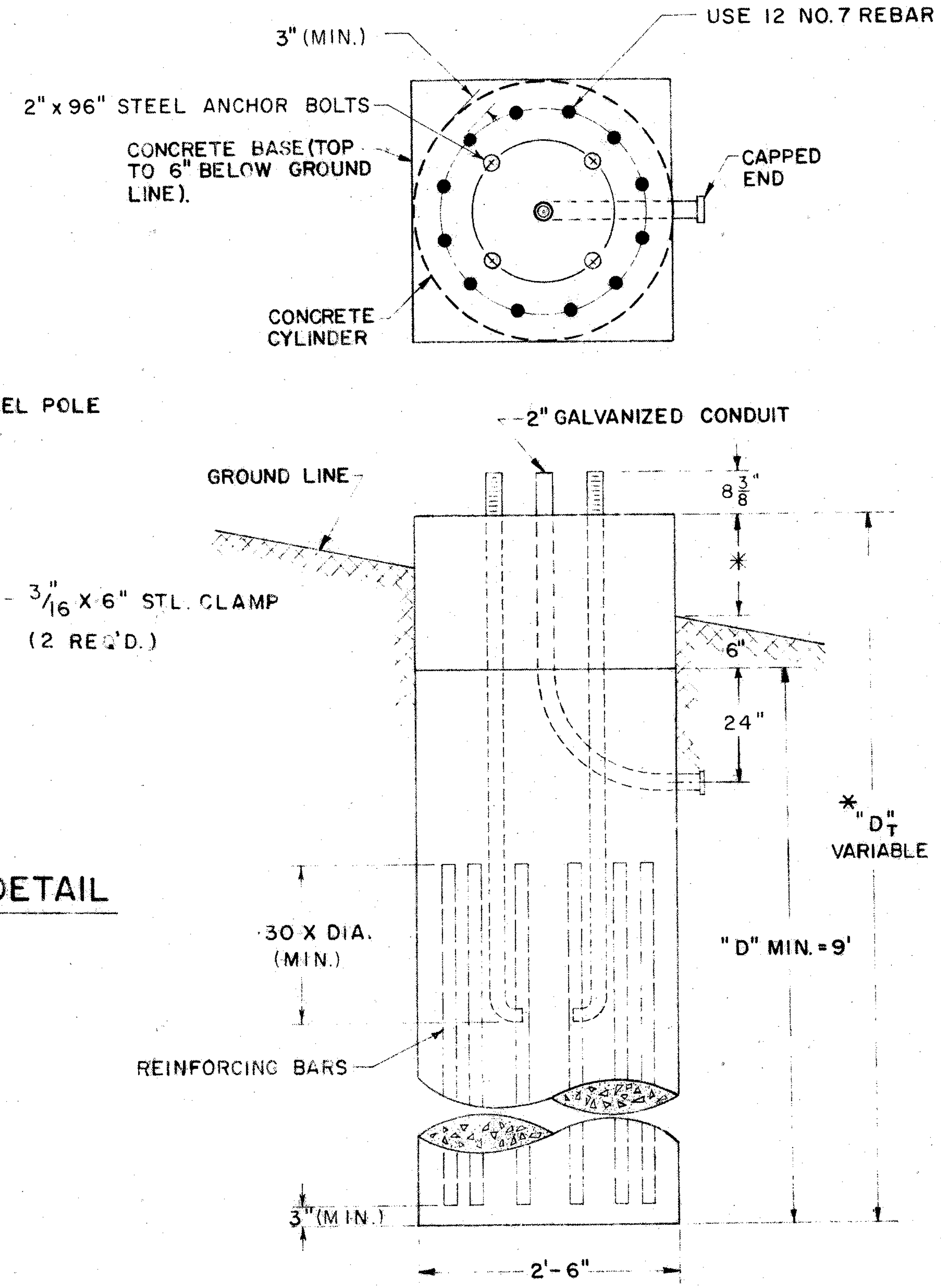
SIGN ATTACHMENT DETAIL



POLE DETAIL



BEAM CLAMP DETAIL



FOUNDATION DETAIL

DESIGN - THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

DESIGN NO.	SPAN	BEAM HALVES FOR MAX. SPAN **	END POLE SIZE
1	41'-6" THRU 51'-3"	3ga., 10.5"X 7"X 25'-0"	7ga., 16"X12.92"X 22'-0"
2	51'-6" THRU 61'-3"	7ga., 14"X9.8"X 30'-0"	7ga., 16"X12.92"X 22'-0"
3	61'-6" THRU 71'-3"	7ga., 14"X9.1"X 35'-0"	7ga., 16"X12.92"X 22'-0"
4	71'-6" THRU 81'-3"	7ga., 16"X10.4"X 40'-0"	7ga., 16"X12.92"X 22'-0"

SPAN FT.	MAX. SIGN AREA, SQ. FT.					
	SPREAD, FT.					
	20'	30'	40'	50'	60'	70'
50	130	155	185			
60	125	150	175	200		
70	90	110	130	150	175	
80	100	120	140	160	185	210

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORT

I-129 No.13.2

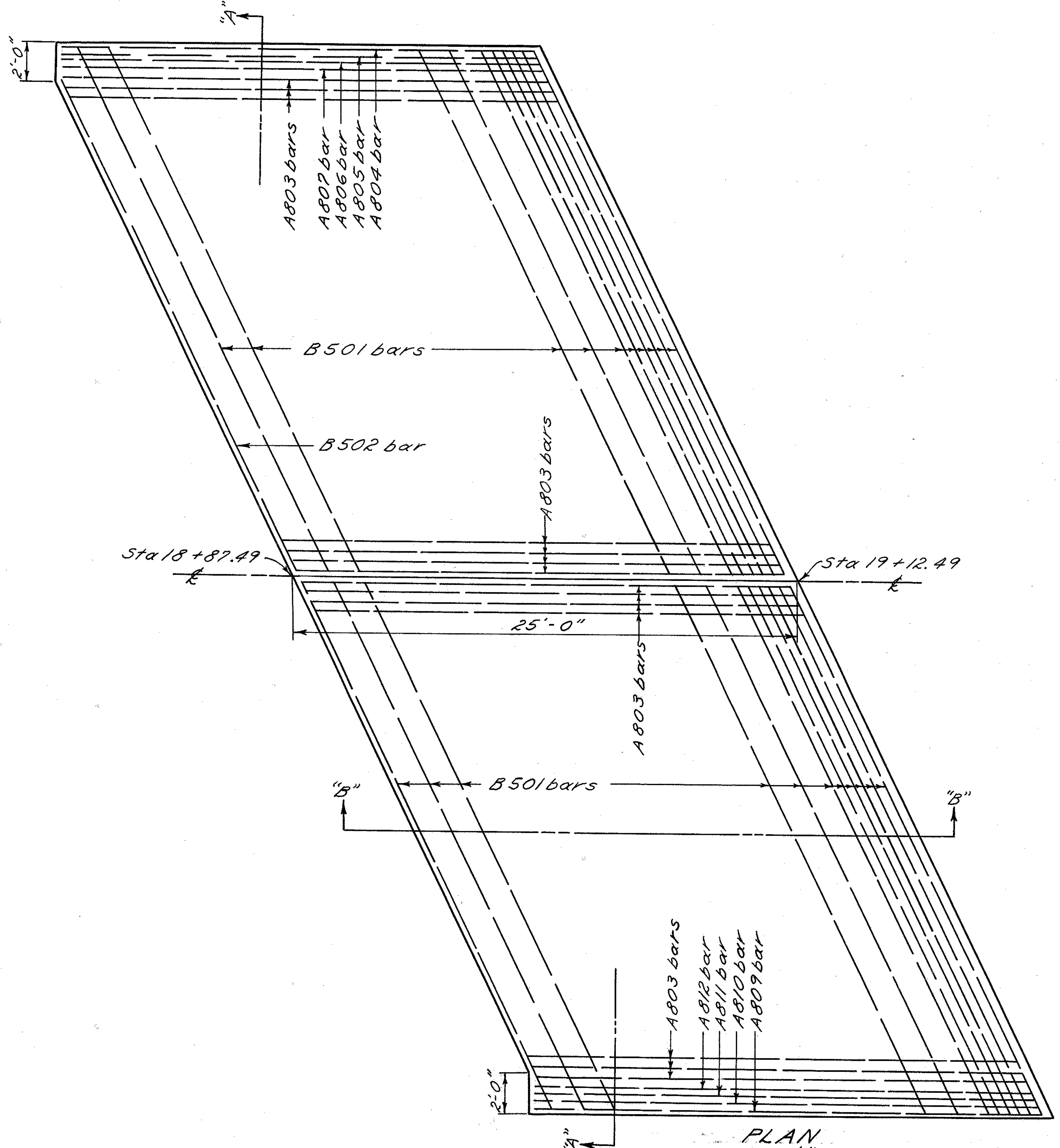
DATE 8-18-61 11-16-61 1-27-62 3-30-62 4-18-62

APPROVED Robert S. Conner
ENGINEER OF TRAFFIC

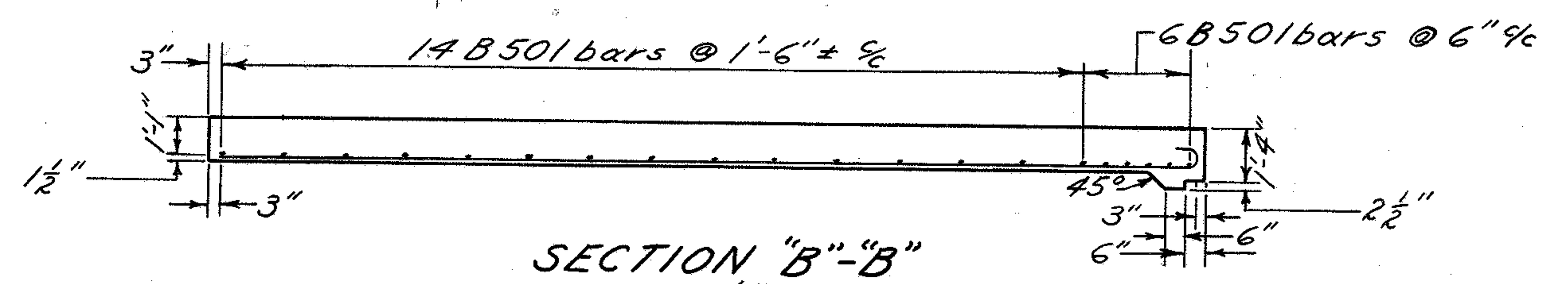
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

207
250

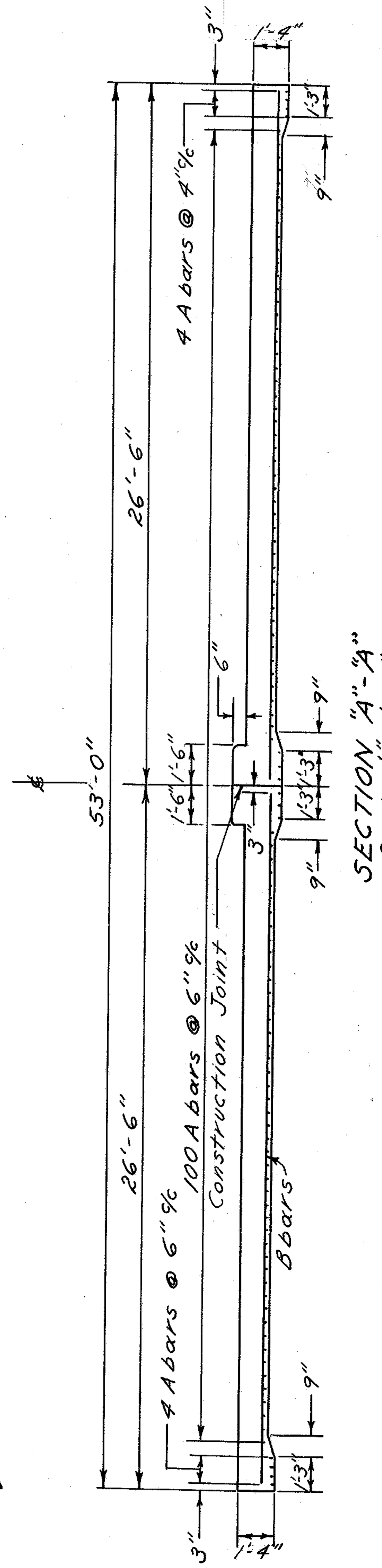
COL-30-32.19



PLAN
Scale: $\frac{1}{4}$"= 1'-0"



SECTION "B"-"B"
Scale: $\frac{1}{4}$"= 1'-0"



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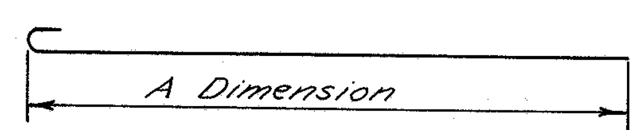
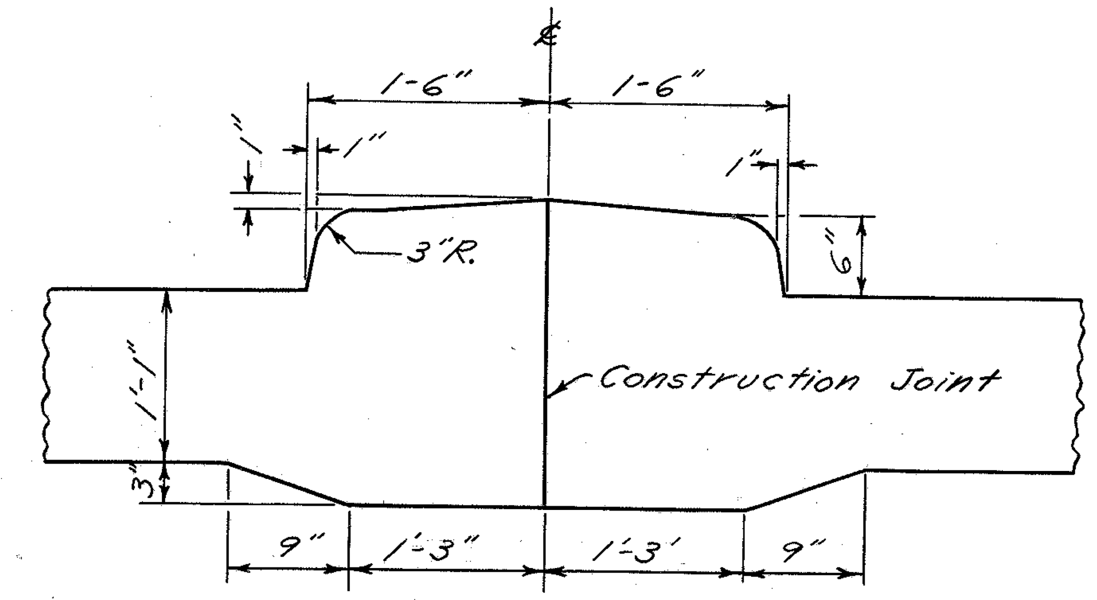




DETAIL OF RAISED MEDIAN
Scale: 1"= 1'-0"

STEEL LIST				
Mark	Bar Size	Length	Dim. A	No.
A803	1"ϕ	25'-7"	24'-6"	100
A804	1"	24'-9"	23'-8"	1
A805	1"	24'-11"	23'-10"	1
A806	1"	25'-1"	24'-0"	1
A807	1"	25'-3"	24'-2"	1
A809	1"	26'-5"	25'-4"	1
A810	1"	26'-3"	25'-2"	1
A811	1"	26'-1"	25'-0"	1
A812	1"	25'-11"	24'-10"	1
B501	$\frac{5}{8}$"ϕ	29'-0"	~	39
B502	$\frac{5}{8}$"ϕ	27'-1"	~	1

NOTES

1. Details shown are for Approach Slab Sta 18+87.49 to Sta 19+12.49. Approach Slab Sta 20+87.49 to Sta 21+12.49 is opposite and details are similar.

2. For other typical details not shown see Standard Drawing No. AS-1-54.

3. Payment for thickened part of Median shall be included in price bid per Sq. Yd. of Approach Slab.

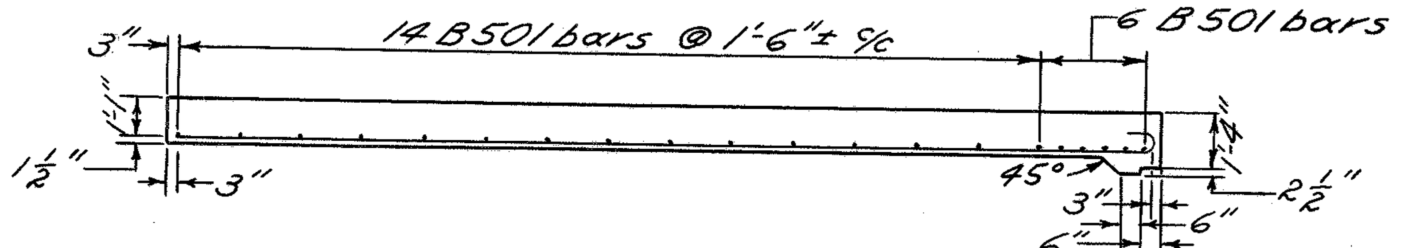
QUANTITY

Sta 18+87.49 to Sta 19+12.49	147.2 Sq. Yds.
Sta 20+87.49 to Sta 21+12.49	147.2 Sq. Yds.

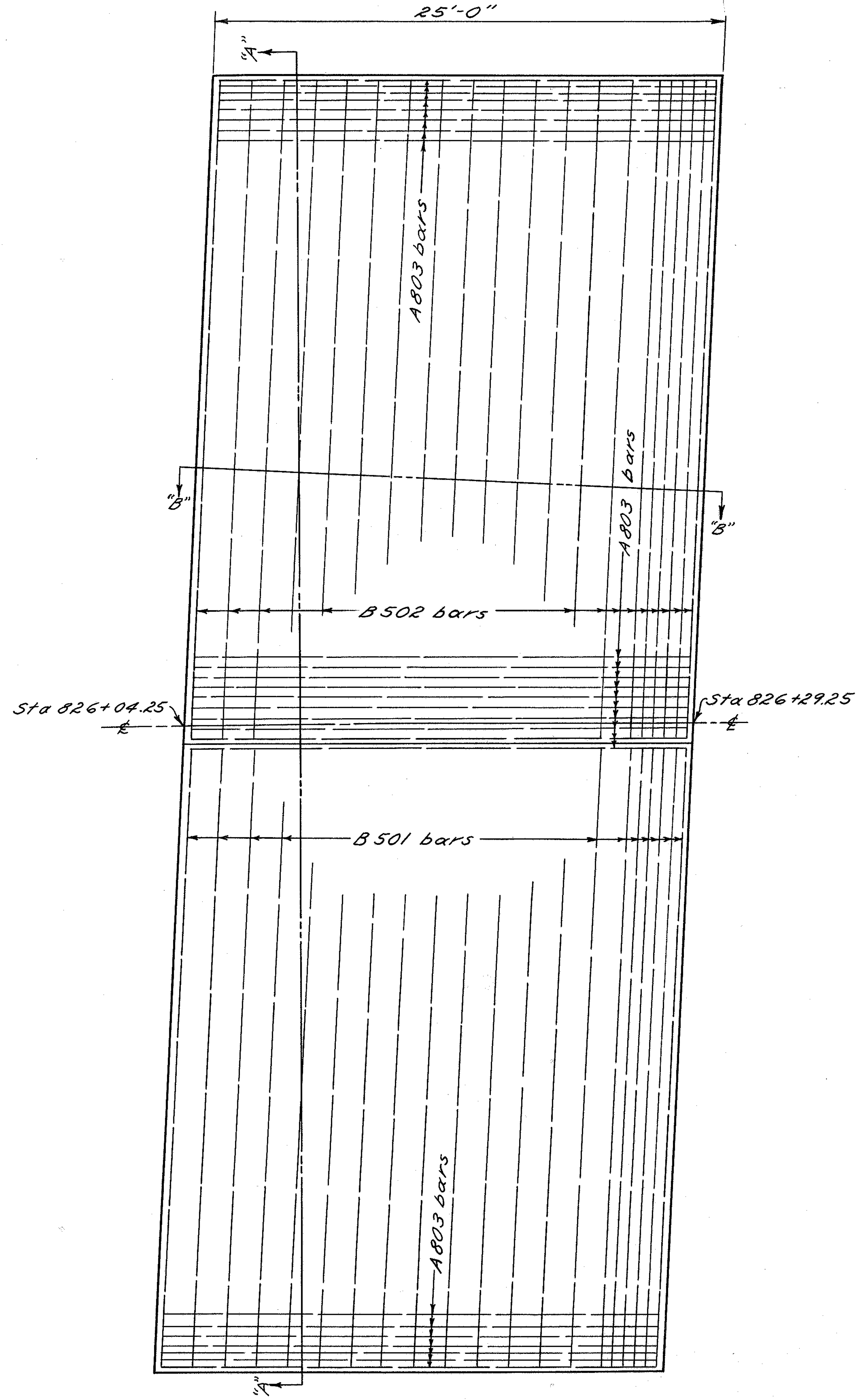
Bridge No. Col.-30-3201

APPROACH SLAB DETAILS

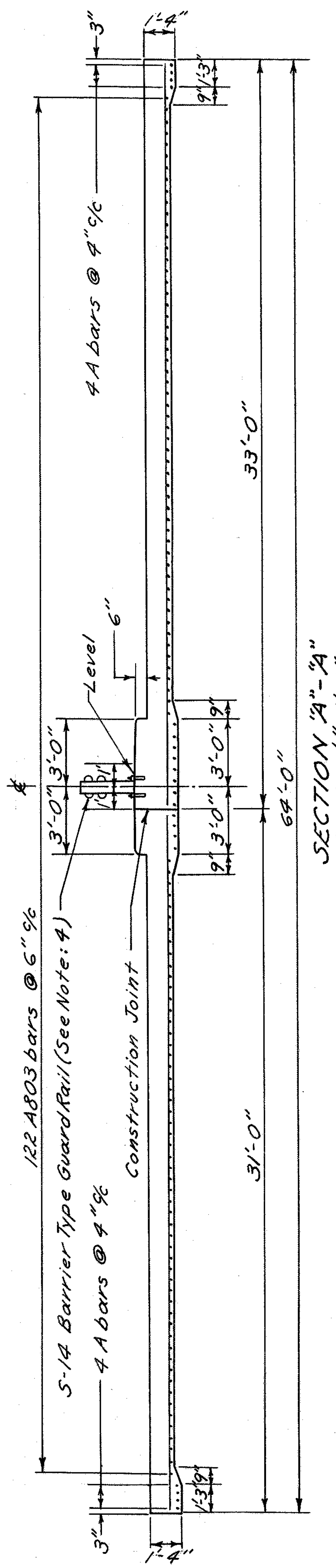
Sta 18+87.49 to Sta 19+12.49
Sta 20+87.49 to Sta 21+12.49



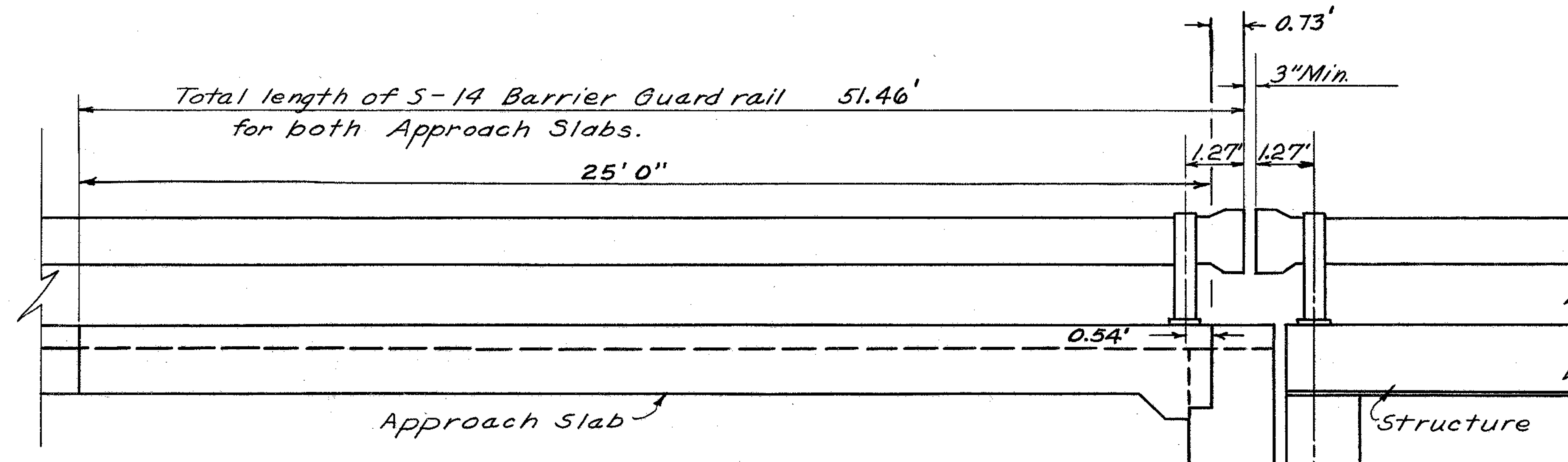
SECTION "B"-"B"
Scale ¼"=1'-0"



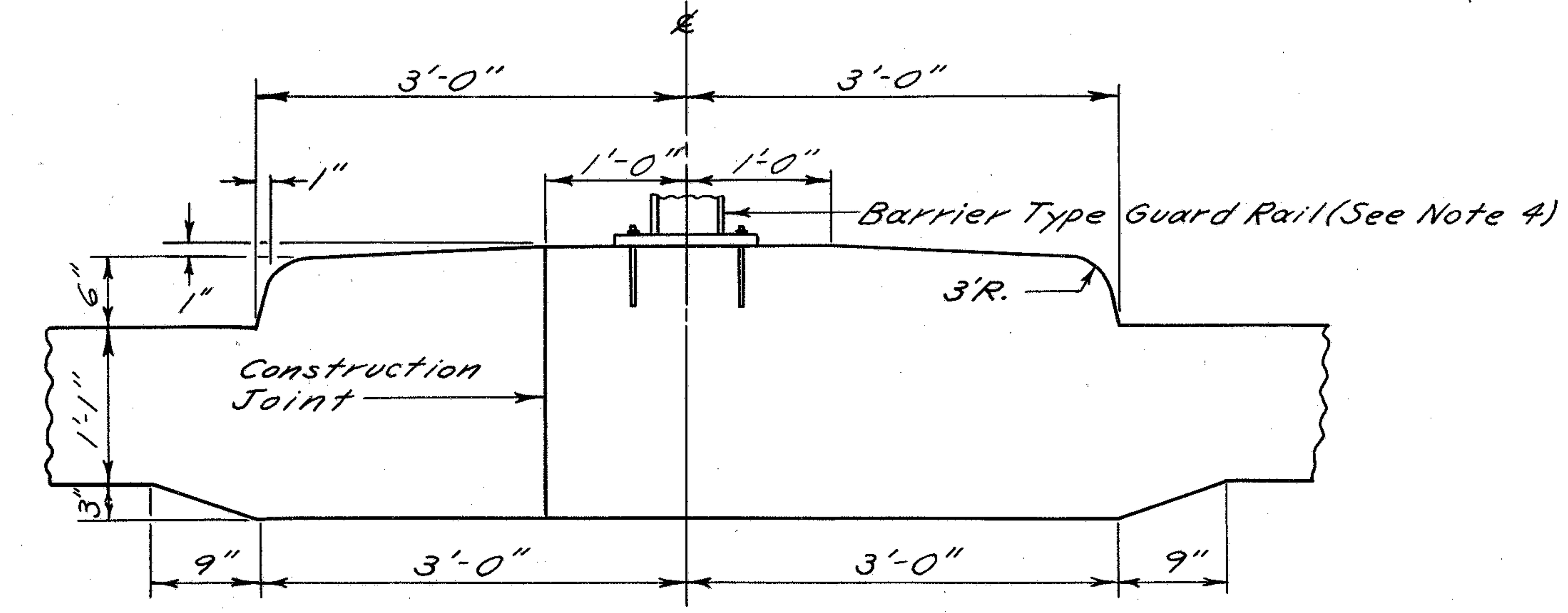
PLAN
Scale: ¼"=1'-0"



SECTION "A"-"A"
Scale: ¼"=1'-0"



DETAIL OF S-14 BARRIER GUARDRAIL
ON APPROACH SLAB AND STRUCTURE



DETAIL OF RAISED MEDIAN
Scale: 1"=1'-0"

NOTES

1. Details shown are for Approach Slab Sta 826+04.25 to Sta 826+29.25. Approach Slab Sta 827+63.75 to Sta 827+88.75 is opposite and details are similar.

2. For other typical details not shown see Standard Drawing No. AS-1-54.

3. Payment for thickened part of Median shall be included in price bid per. Sq. Yd. of Approach Slab.

4. S-14 Barrier Type Guard Rail on Approach Slabs shall be the same as that on structure. For detail see sheet No. 9 of Bridge Plan COL.-30-32.71 Detail D & Section "E"-"E" and Sheet No. 11.

STEEL LIST

Mark	Bar Size	Length	Dim. A	No.
A803	1"φ	25'-7"	24'-6"	130
B501	⅝"φ	32'-6"	——	20
B502	⅝"φ	30'-6"	——	20

QUANTITY

Sta 826+04.25 to Sta 826+29.25	177.7 Sq. Yds.
Sta 827+63.75 to Sta 827+88.75	177.7 Sq. Yds.

Bridge No. Col.-30-32.71

APPROACH SLAB DETAILS

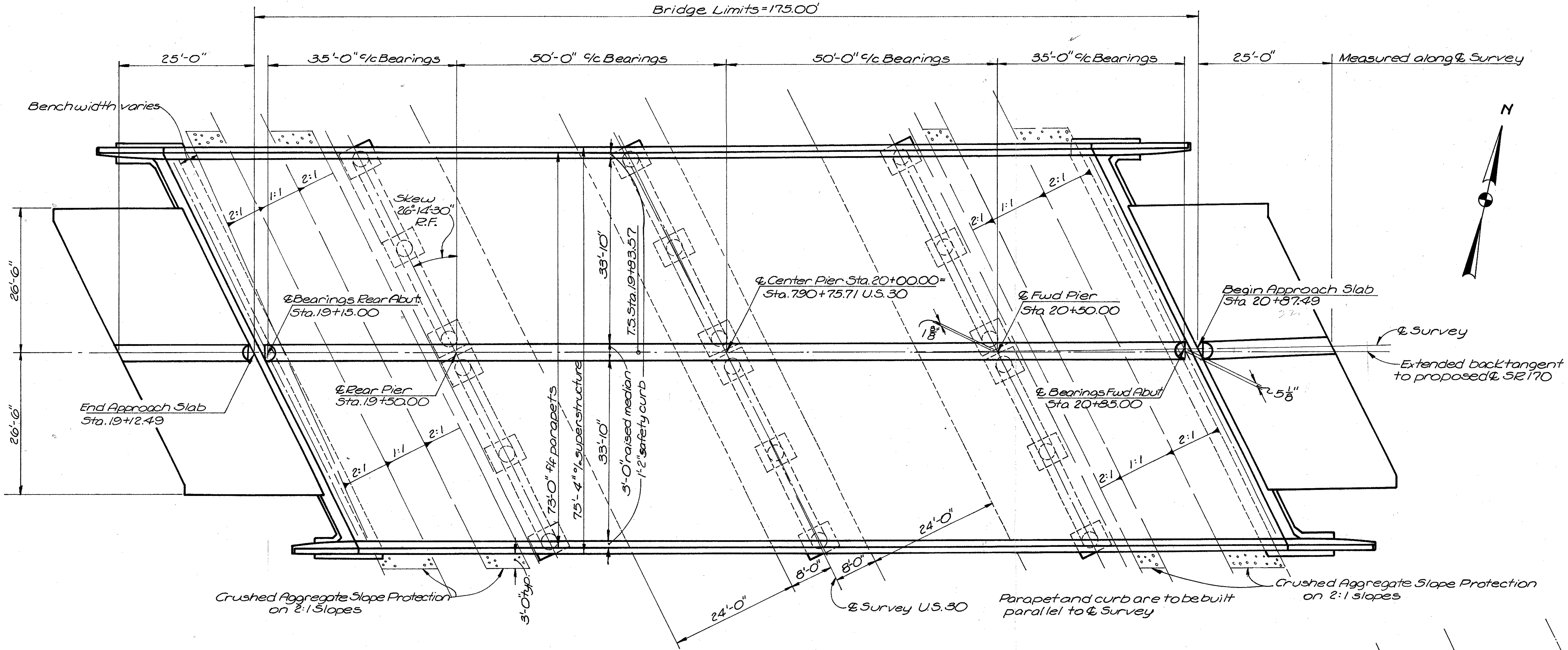
Sta 826+04.25 to Sta 826+29.25
Sta 827+63.75 to Sta 827+88.75

BENCH MARK
Elev. 1128.38
4' Lt. Sta. 789+23
20" Locust
FED. RD. DIVISION | STATE | PROJECT
2 | OHIO
209
250
COL. 30 - 32.19
1.84 Miles North
East Liverpool N.C.L.
U.S. 30 Curve Data
P.I. 791+60.35
Δ = 44°13' Rt.
Dc = 2°30'
Rc = 2291.83'
Es = 183.64'
Ts = 1081.65
Ls = 300'
θs = 3°45'
S.R. 170 Curve Data
P.I. 27+31.28
Δ = 50°53' Lt.
Dc = 5°00'
Ls = 400'
Ts = 747.71'
θs = 10°
Rc = 1145.92'
Es = 129.50'
To Lisbon
B.M.
Frame Garage
2 St. Fr. Res.
Well
Slag Drive
Trailer Home
Trailer Home
Trailer Home
Trailer Home
Trailer Home
Frame Bldg.
Underground Cable
Bench width varies
26°14'30"
(10' min)
10.47' (actual)
Critical Clearance Pt. "A"
C.B.
63°45'30"
SR 170 Tang.
To Tang. 2°30' Cf.
35.71'
Ts 19+83.57
10' (min)
11.39' (actual)
Sta. 790+75.71 U.S. 30 =
Sta 20+00 S.R. 170
Median Drain
To Calcutta
17 Proposed ℄ S.R. 170
N 77° 12' 01" E
Septic Tank
Steel Bldg.
End Appr. Slab
Sta 19+12.49
Begin Appr. Slab
Sta 20+87.49
Transition 2:1 to 4:1 slope
1/2" per ft.
24'
16'
24'
℄ South Bound Lanes
℄ North Bound Lanes
FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the division office, but the State does not guarantee the accuracy thereof.
BRIDGE LIMITS
Sta 19+12.49
Sta 20+87.49
792
Proposed ℄ U.S. 30
To East Liverpool
Existing Routes 30 & 7
2 Sty. Frame Res.
Frame Garage
PROPOSED STRUCTURE
TYPE: Continuous steel beams with reinf. conc. deck and substructure.
SPAN: 35'-50'-50'-35' c/c brg's.
ROADWAY: 73' f/f conc. parapets.
LOAD FREQUENCY: CF=400(57)
SKEW: 26°-14'-30" R.F.
WEARING SURFACE: 1" Mono. Conc.
APPR. SLABS: AS-1-54 (25' long) Modified
ALIGNMENT: Tangent to transition spiral of 5°00' Curve left.
SUPERELEVATION: Varies.
Top of slope Elev. 1115.2±
15' (min)
15.12' (actual)
Critical Clearance Pt. "A"
Top of slope Elev. 1121.4±
Proposed Grade +3.6%
Existing ground line
Ftg. Elev. 1108.00
2:1 (Normal)
Ftg. Elev. 1114.20
Ftg Elevs {1096.70 left 1094.30 right
Ftg Elevs {1099.60 left 1097.20 right
Ftg Elevs {1099.20 left 1096.60 right
200' V.C.
1140
1120
1100
1080
17
18
19
20+00
21
22
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES
SITE PLAN
BRIDGE NO. COL-30-3201
under S.R. 170
Columbiana Co.
Sta. 19+12.49
20+87.49
SCALE: 1" = 20'
EXISTING TOPO | PROPOSED WORK
SURVEY | DRAWN | DESIGN | DRAWN | CHECK | REVIEW
Div. Office | Div. Office | B.D.H. | B.D.H. | D.H.S. | R.E.S.
BFG
7-5-61

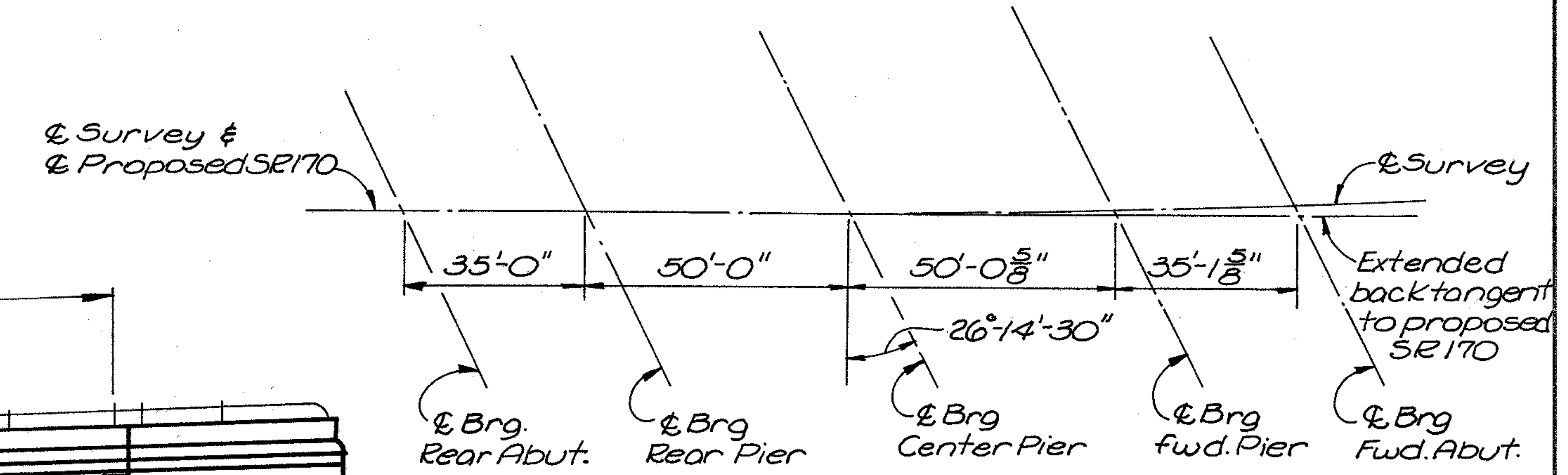
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

210/250

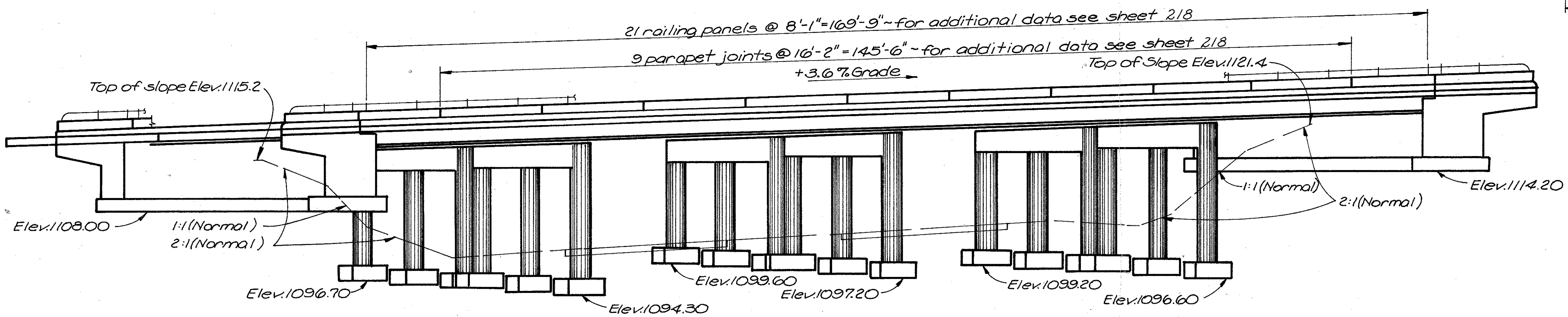
COL-30-32.19



GENERAL PLAN



LAYOUT DIAGRAM



ELEVATION

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN, ELEVATION & LAYOUT DIAGRAM

BRIDGE No. COL-30-3201
UNDER S.R.170
COLUMBIANA COUNTY Sta.19+12.49 Sta.20+87.49

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGB	JGB	MKH	NJB	BFG ajg	7-5-61	

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

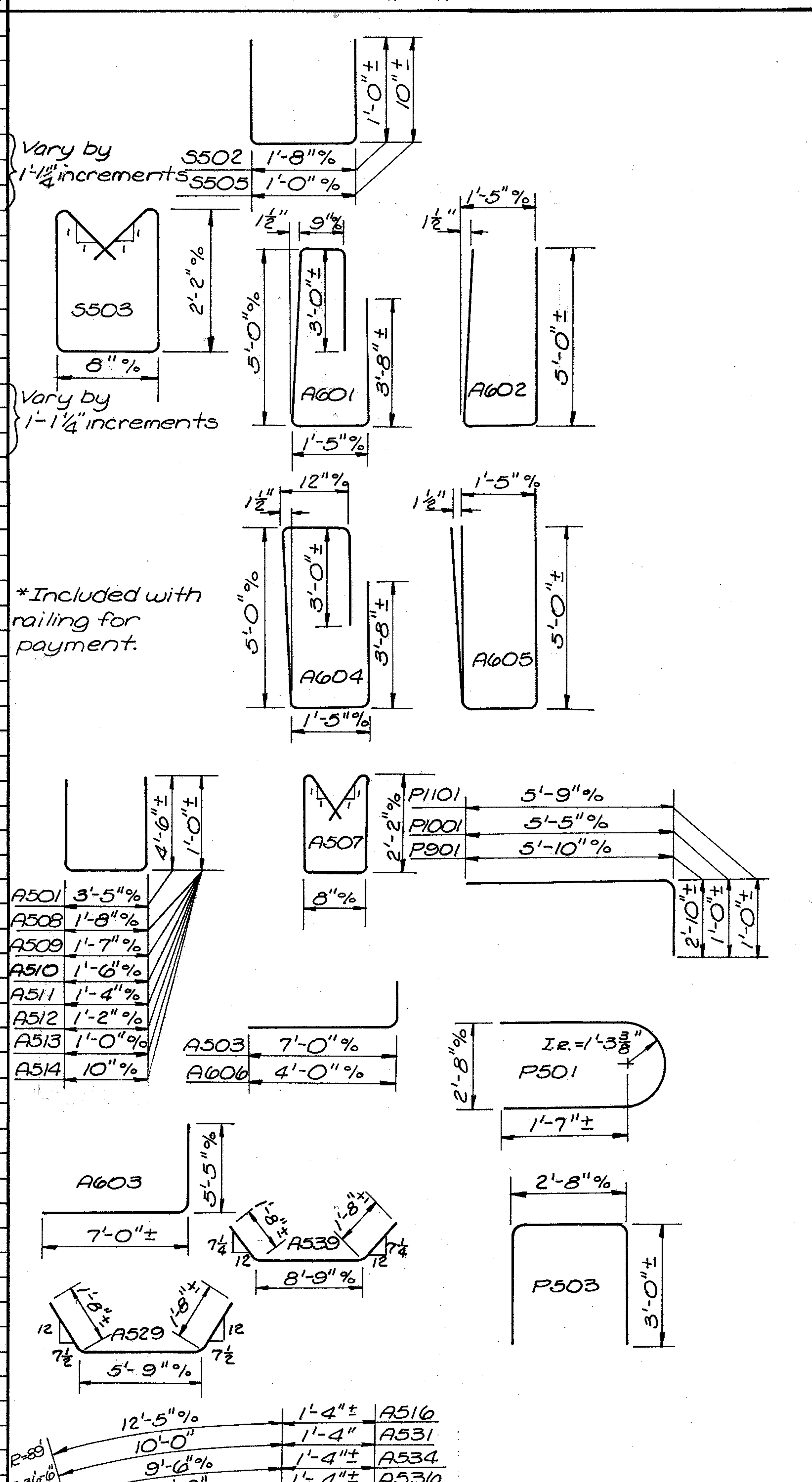
211/250

COL-30-32.19

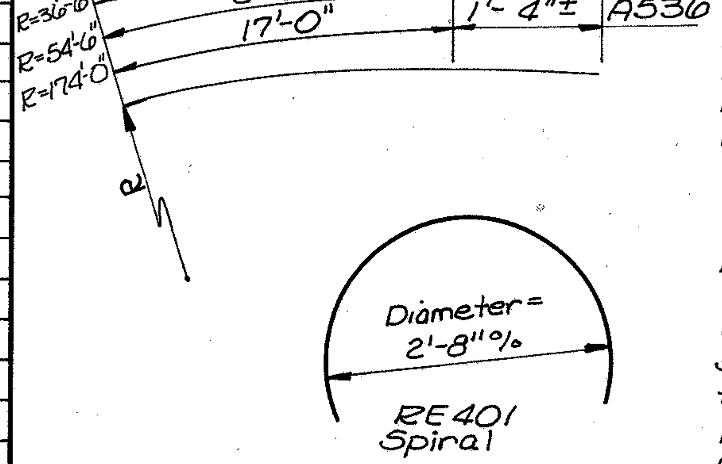
REINFORCING STEEL LIST

MARK	No.	LENGTH	WEIGHT	SHP.
SUPERSTRUCTURE				
S601	566	36'-11"	31,384	S
S602	660	35'-10"	35,522	S
S603	162	25'-0"	6,083	S
S604	Four Series of 29	5'-1" to 36'-0"	895	S
S605	12	4'-0"	72	S
S501	566	37'-0"	21,843	S
S502	460	3'-5"	1,639	B
S503	238	5'-7"	1,386	B
S504	Four Series of 29	5'-1" to 36'-0"	621	S
S505	444	2'-5"	1,119	B
S506	12	4'-0"	50	S
RAILING				
R501	72	15'-10"	*	S
R502	16	12'-7"	*	S
R503	4	13'-7"	*	S
R504	4	10'-11"	*	S
R505	4	11'-11"	*	S
R506	4	18'-0"	*	S
ABUTMENTS				
A801	32	23'-0"	1,965	S
A601	59	13'-2"	1,167	B
A602	19	11'-1"	316	B
A603	108	12'-3"	1,987	B
A604	59	13'-5"	1,189	B
A605	19	11'-1"	316	B
A606	65	4'-8"	456	B
A501	108	12'-2"	1,371	B
A502	8	11'-3"	94	S
A503	108	7'-6"	845	B
A504	88	21'-3"	1,950	S
A505	12	26'-9"	335	S
A506	4	32'-2"	134	S
A507	40	5'-7"	233	B
A508	28	3'-5"	100	B
A509	8	3'-4"	28	B
A510	10	3'-3"	34	B
A511	10	3'-1"	32	B
A512	8	2'-11"	24	B
A513	8	2'-9"	23	B
A514	8	2'-7"	22	B
A515	9	10'-4"	97	S
A516	2	13'-9"	29	B
A517	5	13'-8"	71	S
A518	10	2'-8"	28	S
A519	12	3'-0"	38	S
A520	4	3'-3"	14	S
A521	14	3'-7"	52	S
A522	2	3'-11"	8	S
A523	2	4'-3"	9	S
A524	16	7'-3"	121	S
A525	3	16'-3"	51	S
A526	18	9'-9"	183	S
A527	22	10'-8"	245	S
A528	26	9'-3"	251	S
A529	13	8'-11"	121	B
A530	4	13'-2"	55	S
A531	2	11'-4"	24	B
A532	10	8'-1"	84	S
A533	2	14'-3"	30	S
A534	2	10'-10"	23	B
A535	37	12'-0"	463	S

BENDING DIAGRAMS



*Included with railing for payment.



MARK	No.	LENGTH	WEIGHT	SHP.
ABUT (con't)				
A536	2	18'-4"	38	B
A537	2	17'-0"	35	S
A538	2	20'-0"	42	S
A539	13	11'-10"	160	B
A540	2	18'-5"	38	S
REPLACEMENT BARS				
RE1101	2	7'-6"	-	S
RE1001	1	7'-2"	-	S
RE901	1	6'-10"	-	S
RE801	1	6'-6"	-	S
RE601	4	5'-11"	-	S
RE501	2	5'-7"	-	S
RE401	1	5'-3"	-	B
PIERS				
P1101	144	6'-6"	4,973	B
P1102	12	18'-0"	1,148	S
P1103	24	20'-3"	2,582	S
P1104	12	22'-1"	1,408	S
P1105	12	16'-11"	1,079	S
P1106	24	19'-3"	2,455	S
P1107	12	21'-3"	1,355	S
P1108	12	19'-1"	1,217	S
P1109	24	21'-6"	2,742	S
P1110	12	23'-9"	1,514	S
P1001	48	6'-2"	1,274	B
P1002	30	33'-3"	4,292	S
P1003	8	19'-2"	660	S
P1004	8	21'-3"	732	S
P1005	8	18'-1"	622	S
P1006	16	20'-3"	1,394	S
P1007	8	22'-8"	780	S
P901	60	8'-5"	1,717	B
P902	72	21'-1"	5,161	S
P501	36	7'-3"	272	B
P502	12	36'-8"	459	S
P503	264	8'-5"	2,318	B

Mark	No.	Core Dia. % Spiral	Length	Pitch	No. of Turns	Weight
SP401	2	32"	14'-8"	4½"	42	542
SP402	1	32"	15'-3"	4½"	44	284
SP403	2	32"	15'-10"	4½"	45	582
SP404	2	32"	17'-1"	4½"	49	634
SP405	1	32"	17'-8"	4½"	50	323
SP406	2	32"	18'-3"	4½"	52	672
SP407	1	32"	13'-7"	4½"	39	252
SP408	1	32"	14'-3"	4½"	41	265
SP409	1	32"	16'-0"	4½"	46	297
SP410	1	32"	16'-7"	4½"	47	304
SP411	1	32"	17'-3"	4½"	49	317
SP412	1	32	16'-5"	4½"	47	304
SP413	1	32	18'-11"	4½"	53	343
SP414	1	32	19'-7"	4½"	55	359

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example A601 is a No. 6 size bar and P1001 is a No. 10 size.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4. 1½ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Superst	Abut	Piers	Gen'l
E-2	359	cu. yds.	Unclassified excavation		359		
E-2	184	cu. yds.	Rock excavation		75	109	
S-1	354	cu. yds.	Class "C" concrete, superstructure	354			
S-1	183	cu. yds.	Class "C" concrete, piers above footings			183	
S-1	226	cu. yds.	Class "E" concrete, abutments above footings		226		
S-1	142	cu. yds.	Class "E" concrete, footings		92	50	
S-3	22	lin. ft.	Waterproofing, premolded sealing strip		22		
S-4	161,177	lbs.	Reinforcing Steel	100,614	14,931	45,632	
S-7	265,700	lbs.	Structural Steel	265,700			
S-8	265,700	lbs.	Field painting of structural steel	265,700			
S-14	399.27	lin. ft.	Railing (aluminum rail & supports & conc. parapet)	343.36	55.91		
S-29	57	cu. yds.	Porous backfill		57		
S-29	15	each	Scuppers	15			
*Special	354	Each	Water-reducing, set-retarding admixture	354			
I-10	337	sq. yds.	Crushed aggregate slope protection				337

* See Proposal Note.

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CSB-2-56 revised 2-2-59, Sheet No. 2 and 3, and AR-1-57, revised 12-12-60.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

FOOTINGS shall extend a minimum of 3" into underlying layers of shale and/or sandstone or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Abutment footings are designed for a maximum bearing pressure of 2.0 tons per sq. ft. and pier footings for 10 tons per sq. ft.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in shop.

DECK SLAB HAUNCH: The haunch in the deck slab adjacent to the top of the steel beams, which is shown as 9" wide, may vary from this dimension with a minimum of 6" and a maximum of 12". Maximum slope of haunch shall be one vertical to four horizontal. Payment for deck slab concrete shall be based on the 9" width.

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine.

SHOP PAINTING STEEL: The surface preparation of all steel, requiring shop painting as per the Plans and Specifications, shall be accomplished by blast cleaning or power tool cleaning, except as noted in the Specifications regarding the use of Chromate Primers.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL NOTES, ESTIMATED QUANTITIES AND REINFORCING STEEL LIST

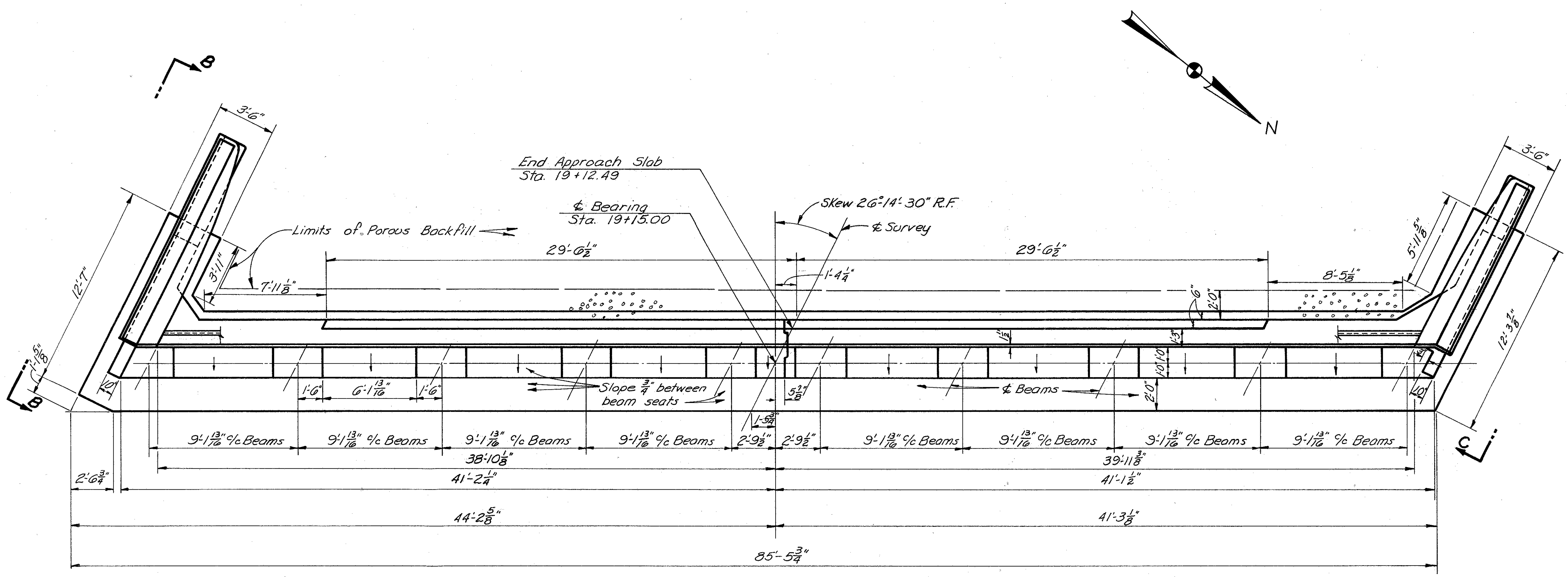
BRIDGE No. COL-30-3201
UNDER S.R. 170
COLUMBIANA COUNTY STA 19+12.49
STA 20+87.49

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGB	JGB	MKH	NJB	BFG	7-5-61	

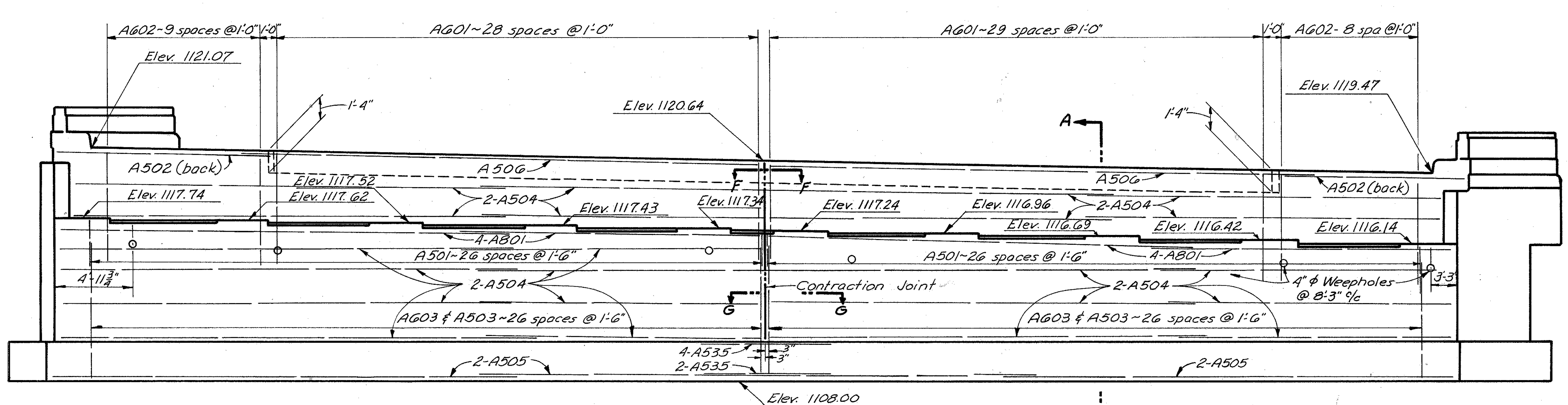
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

212/250

COL-30-32.19

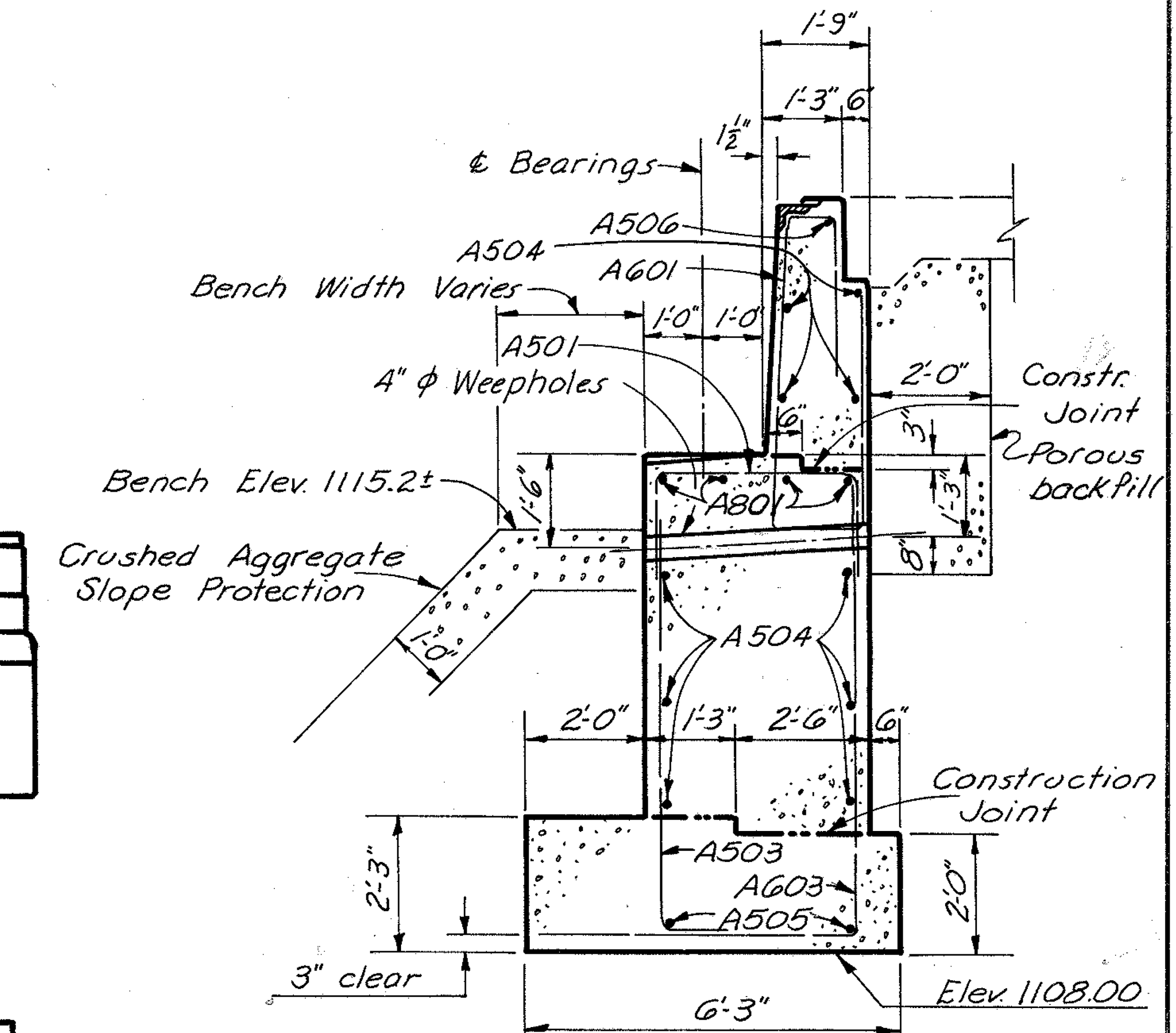


PLAN



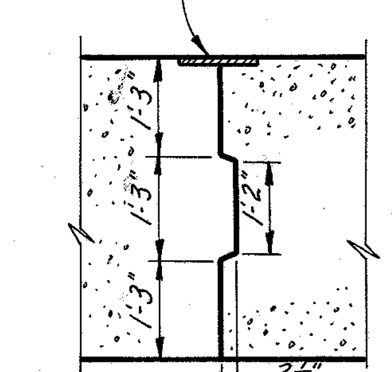
ELEVATION

(End Dam not shown)

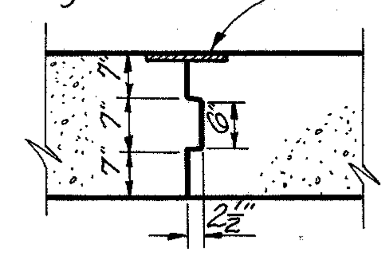


SECTION A-A

12"x1/2" Premolded Sealing Strip in 13"x3/4" recess, full height of wall



SECTION G-G



SECTION F-F

NOTES

POROUS BACKFILL, 2 ft. thick, full length of abutment and wings, shall extend up to the underside of the approach slab or to the finished ground surface. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu.yd. paid for porous backfill.

CONCRETE shall be Class "E" and payment will be made on this basis, but Class "C" concrete may be used for any or all parts of the abutments.

FOR ADDITIONAL DETAILS see Sheet No. 213

SPECIAL CARE shall be taken in placing the reinforcing steel in the bridge seat so that it will not interfere with the drilling of anchor bolt holes.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS

BRIDGE No. COL-30-3201

UNDER S.R. 170

COLUMBIANA COUNTY STA. 19+12.49 STA. 20+87.49

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGB	JGB	REE	NJB	BFG	7-5-61	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

For additional details see Sheet No. 212.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS

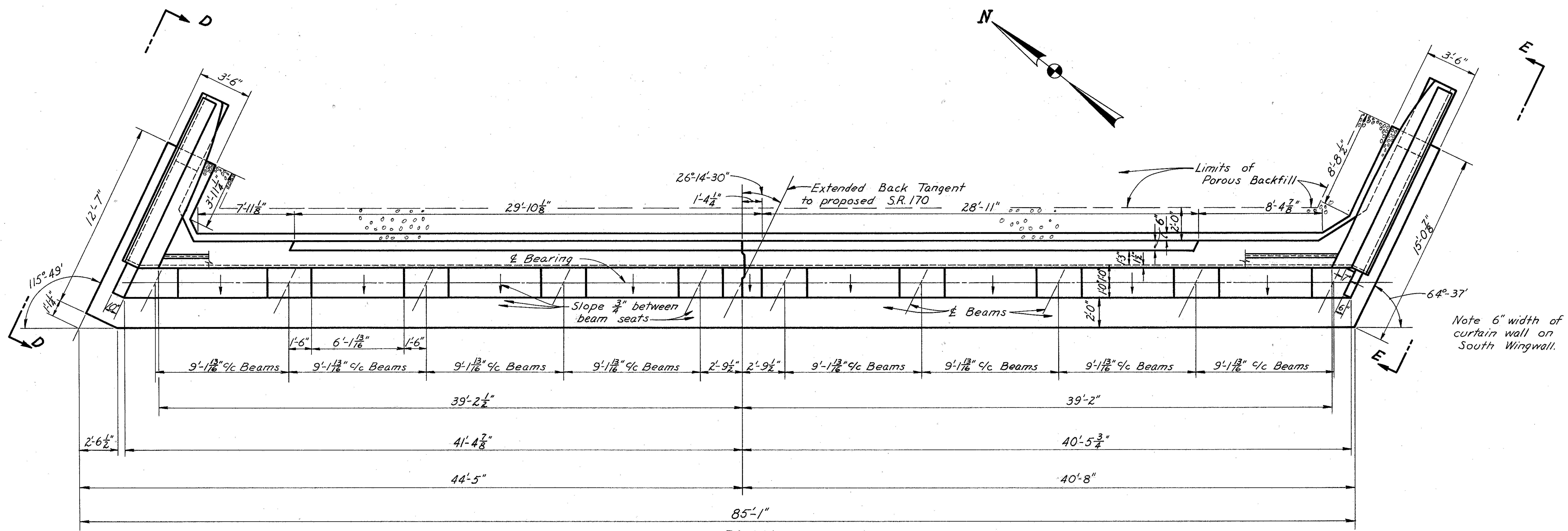
BRIDGE No. COL-30-3201
UNDER S.R. 170
COLUMBIANA COUNTY STA. 19+12.49
STA. 20+87.49

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGB	JGB		NJB	BFG	7-5-61	

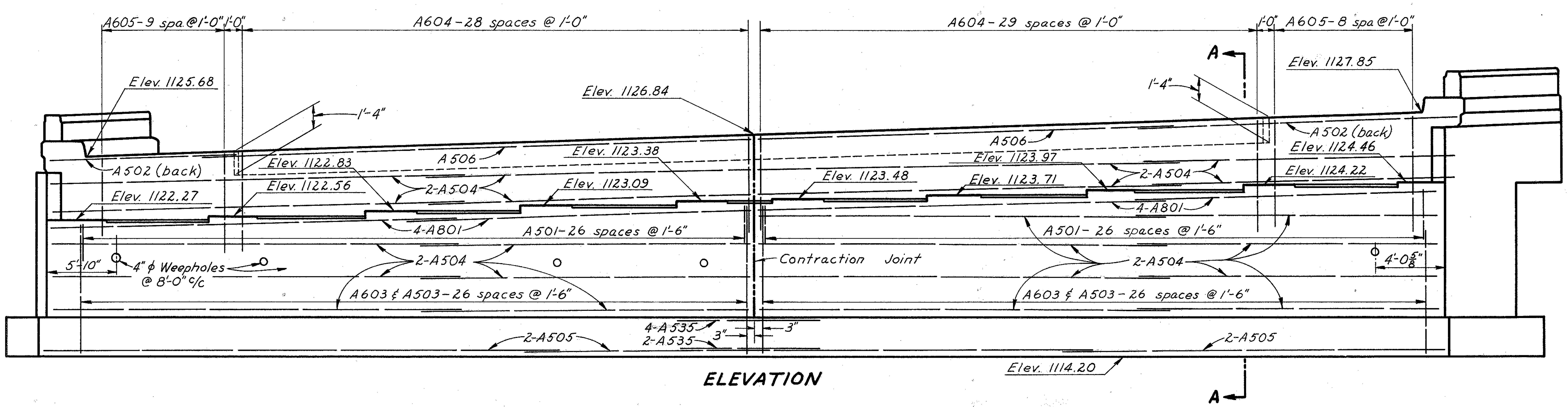
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

214/250

COL-30-32.19

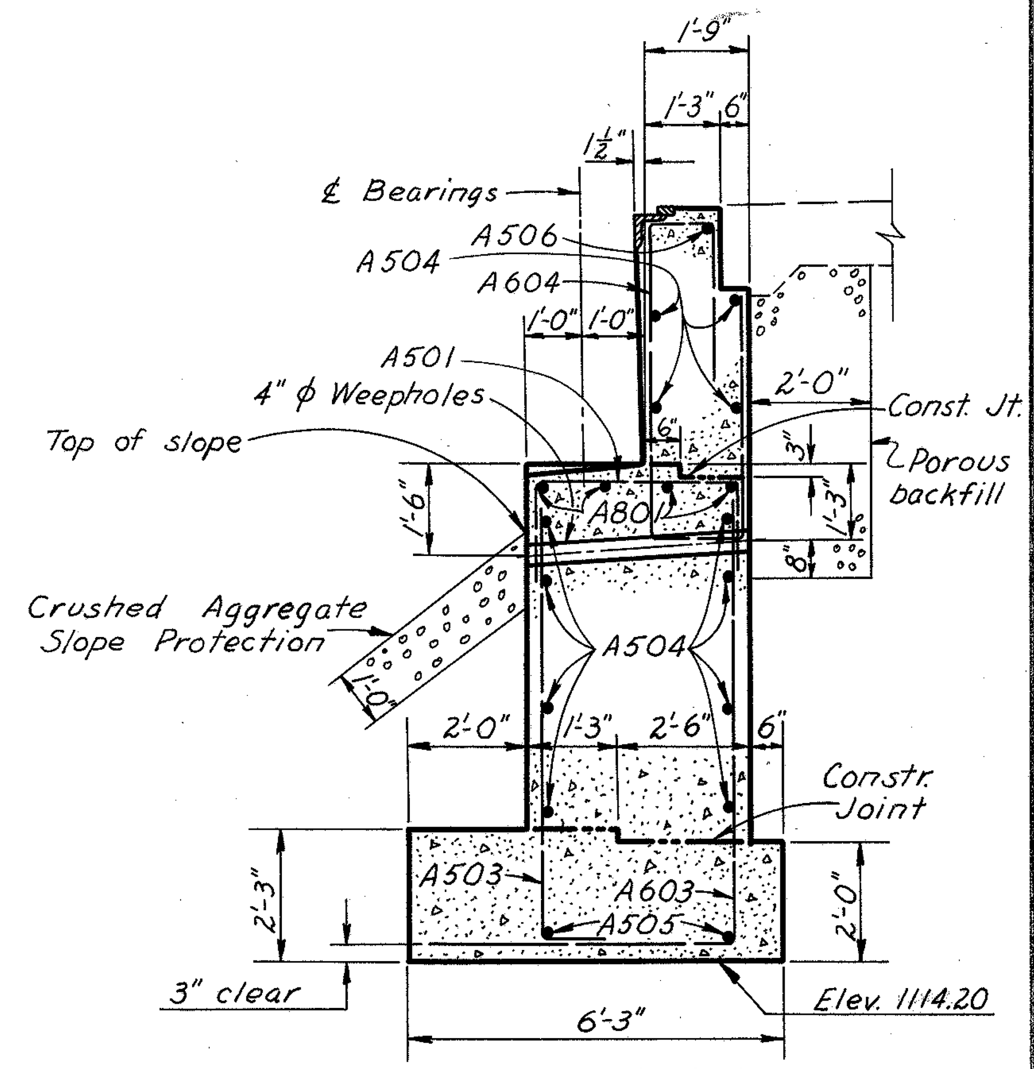


PLAN



ELEVATION

For notes and additional details, see Sheet Nos. 212 & 215



SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS

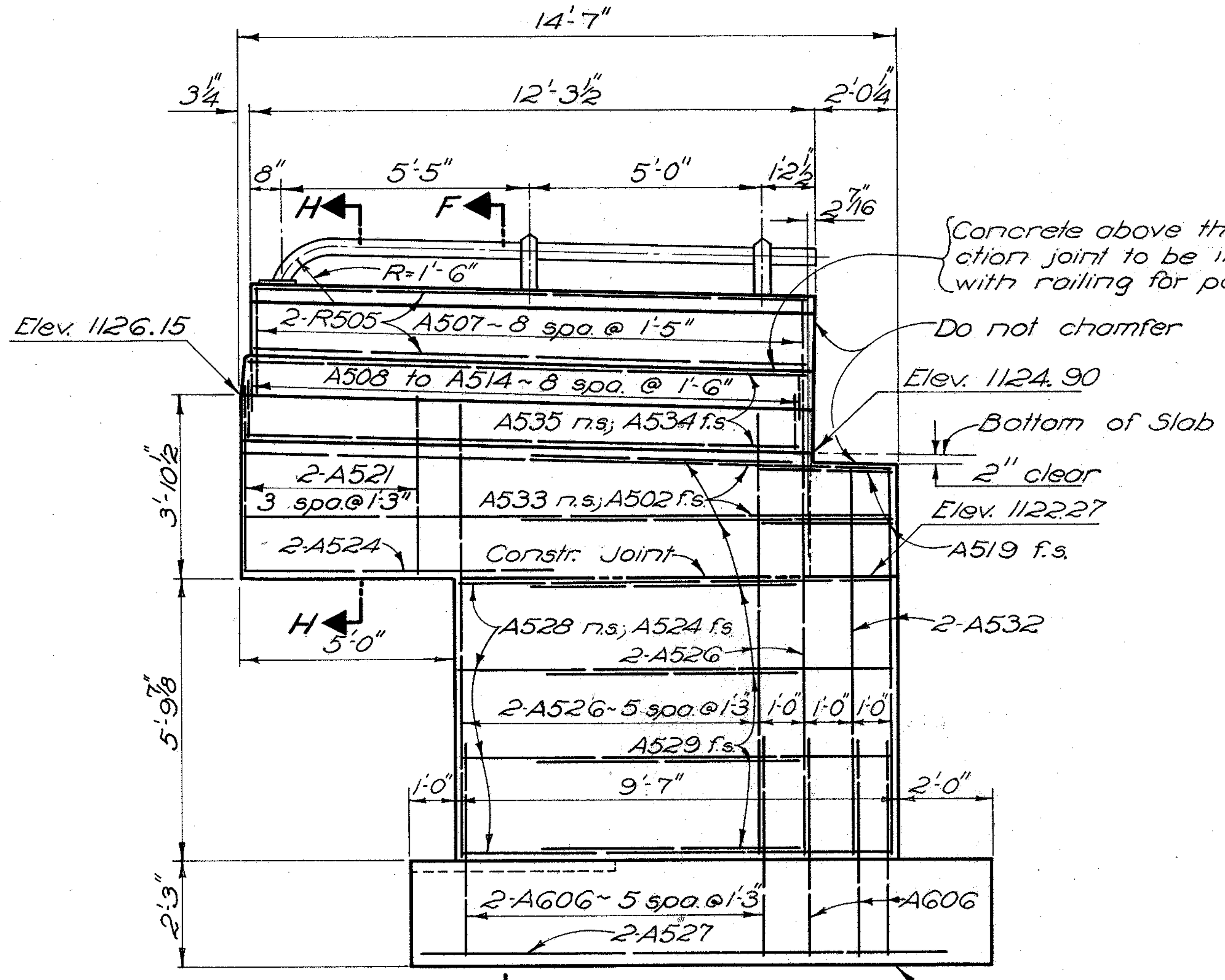
BRIDGE No. COL-30-3201

UNDER S.R. 170

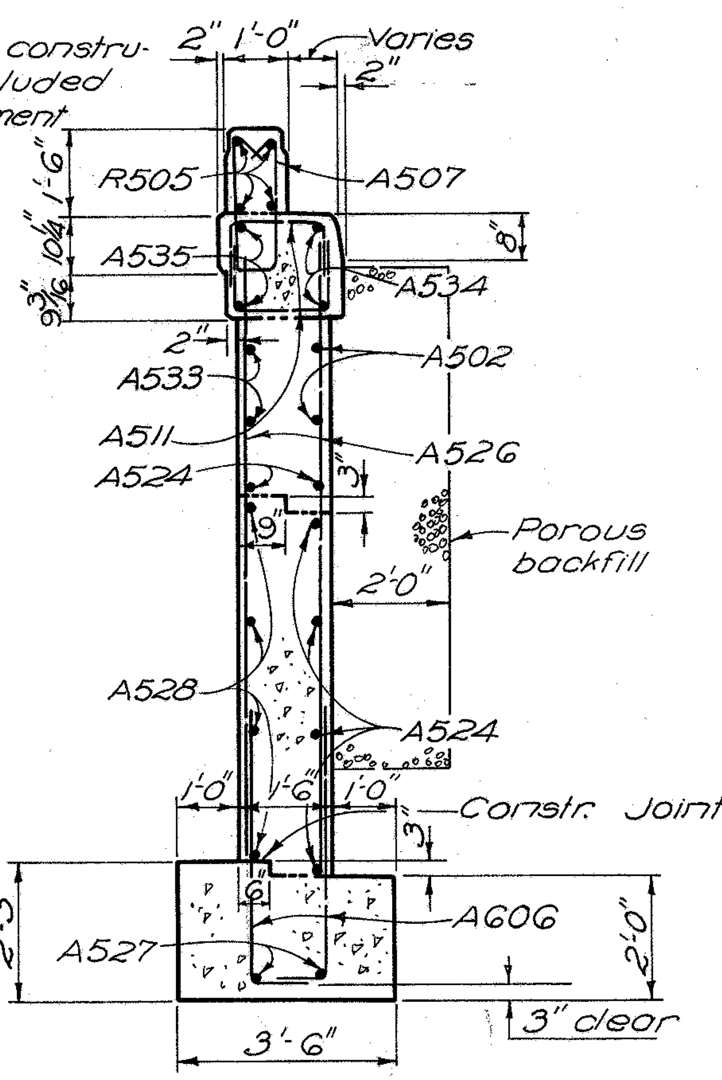
COLUMBIANA COUNTY STA. 19+12.49 STA. 20+87.49

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGB	JGB	A.A.K.	NJB	BFG G.J.F.	7-5-61	

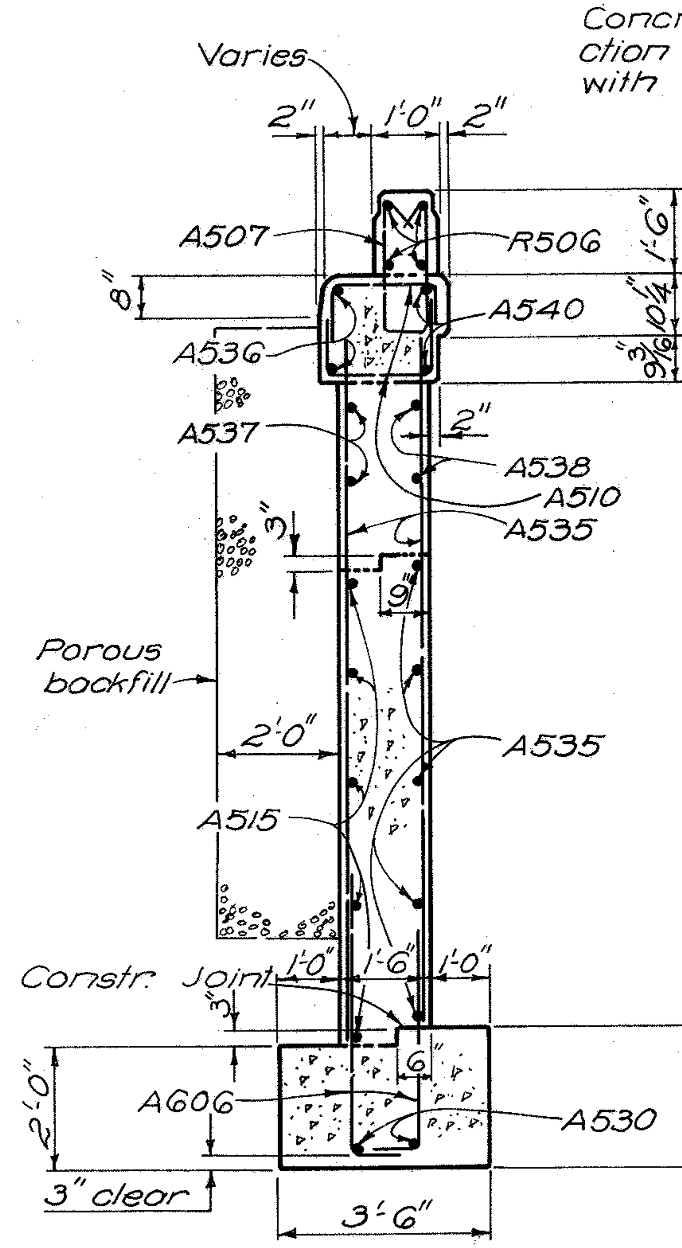
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		



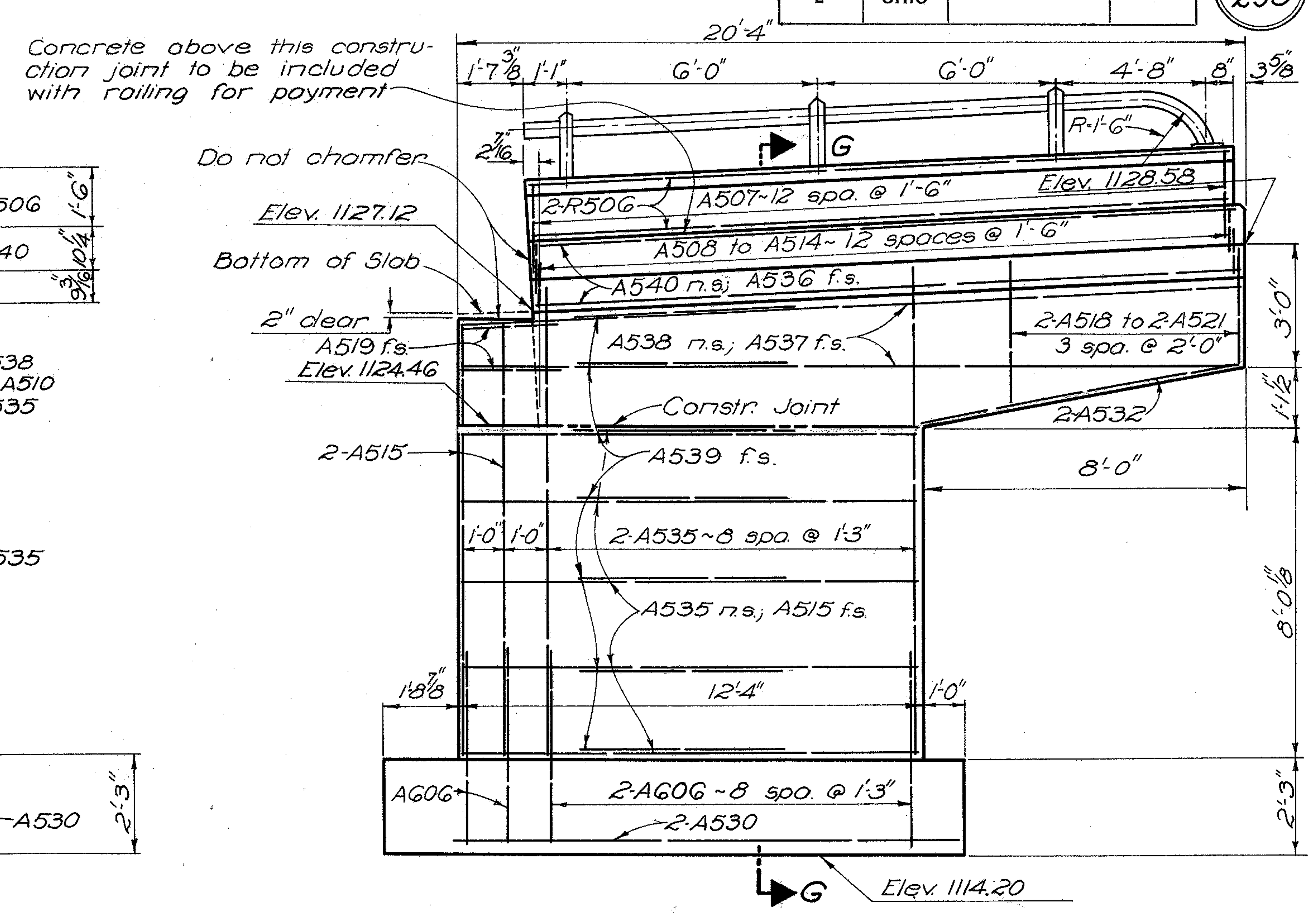
VIEW D-D



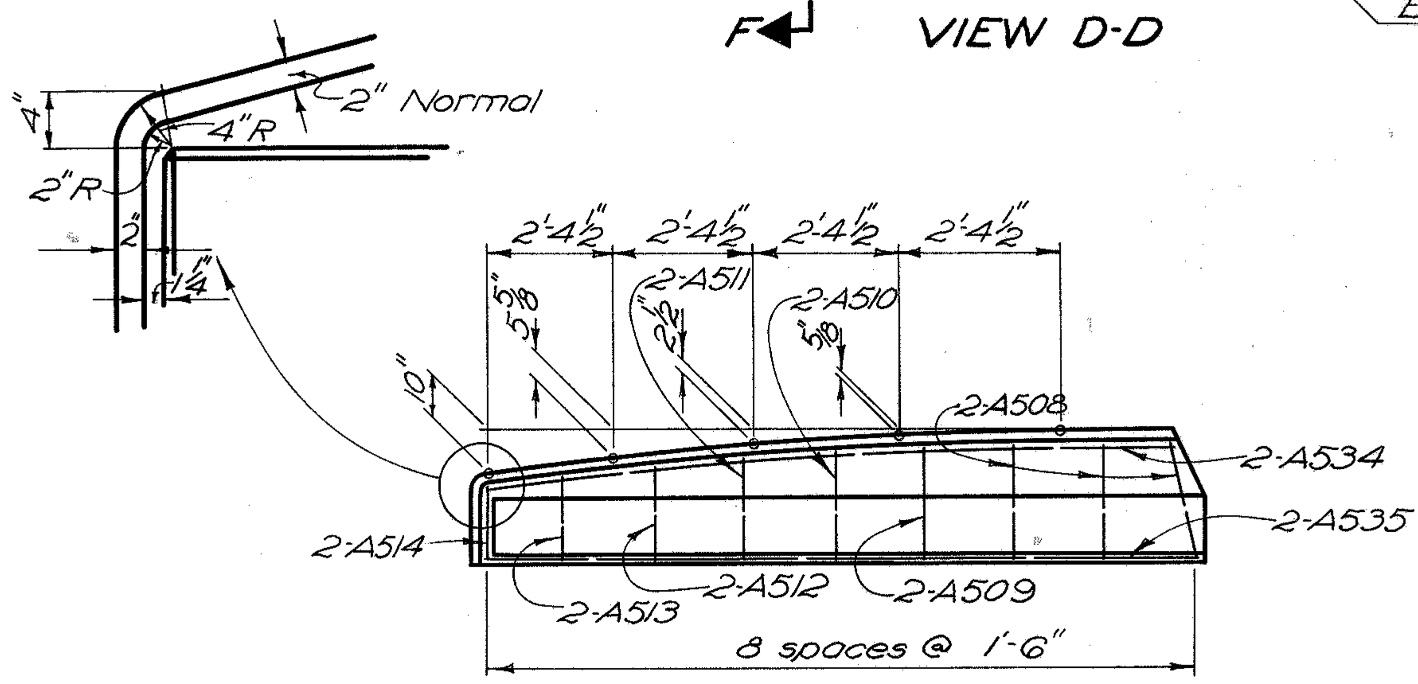
SECTION F-F



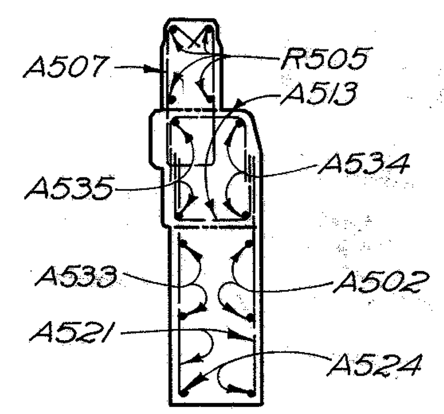
SECTION G-G



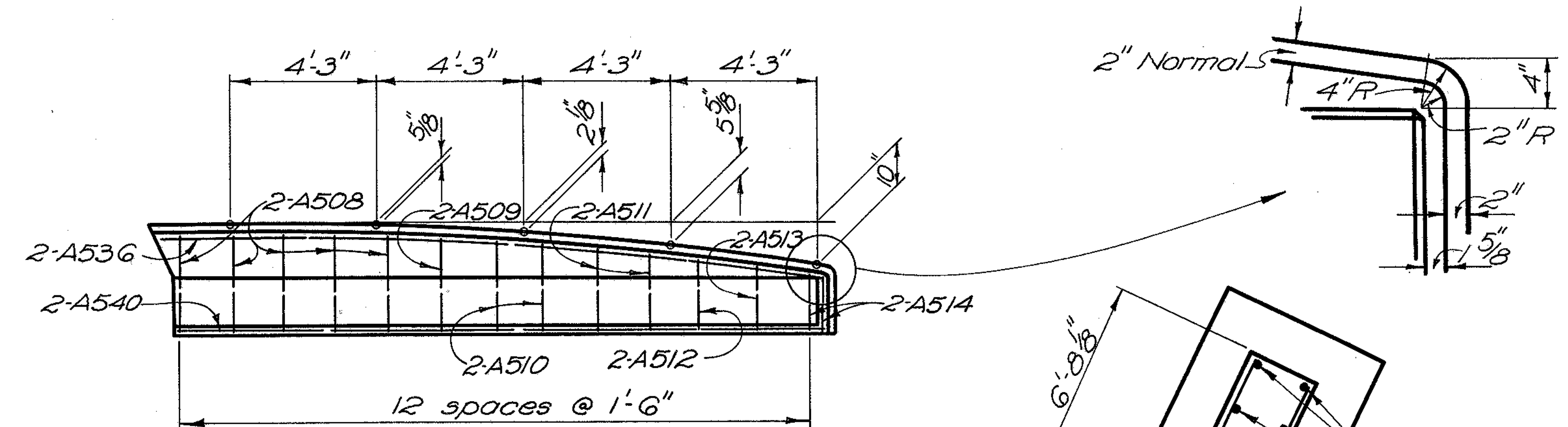
VIEW E-E



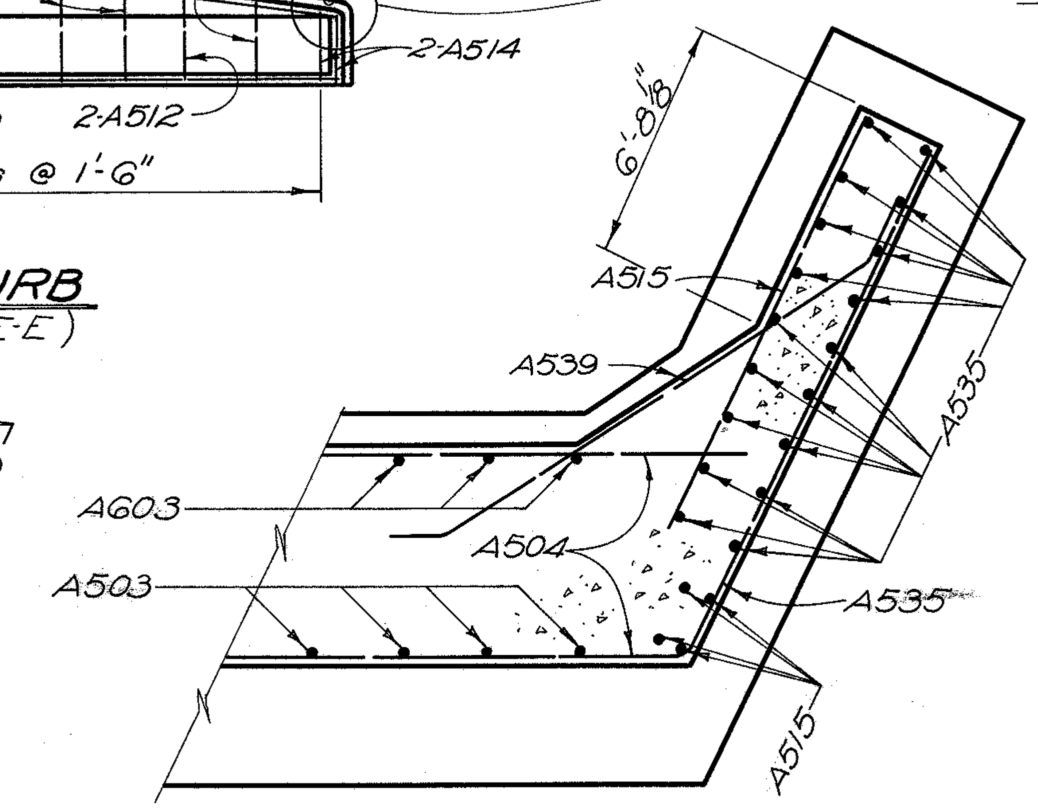
PLAN CURB
(From View D-D)



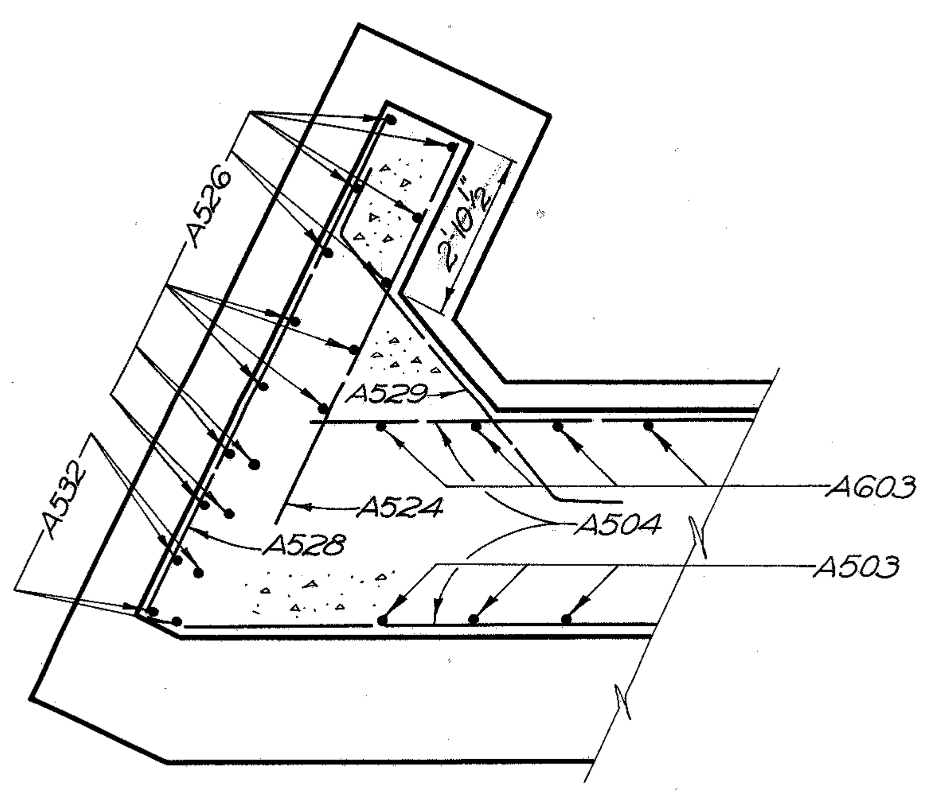
SECTION H-H



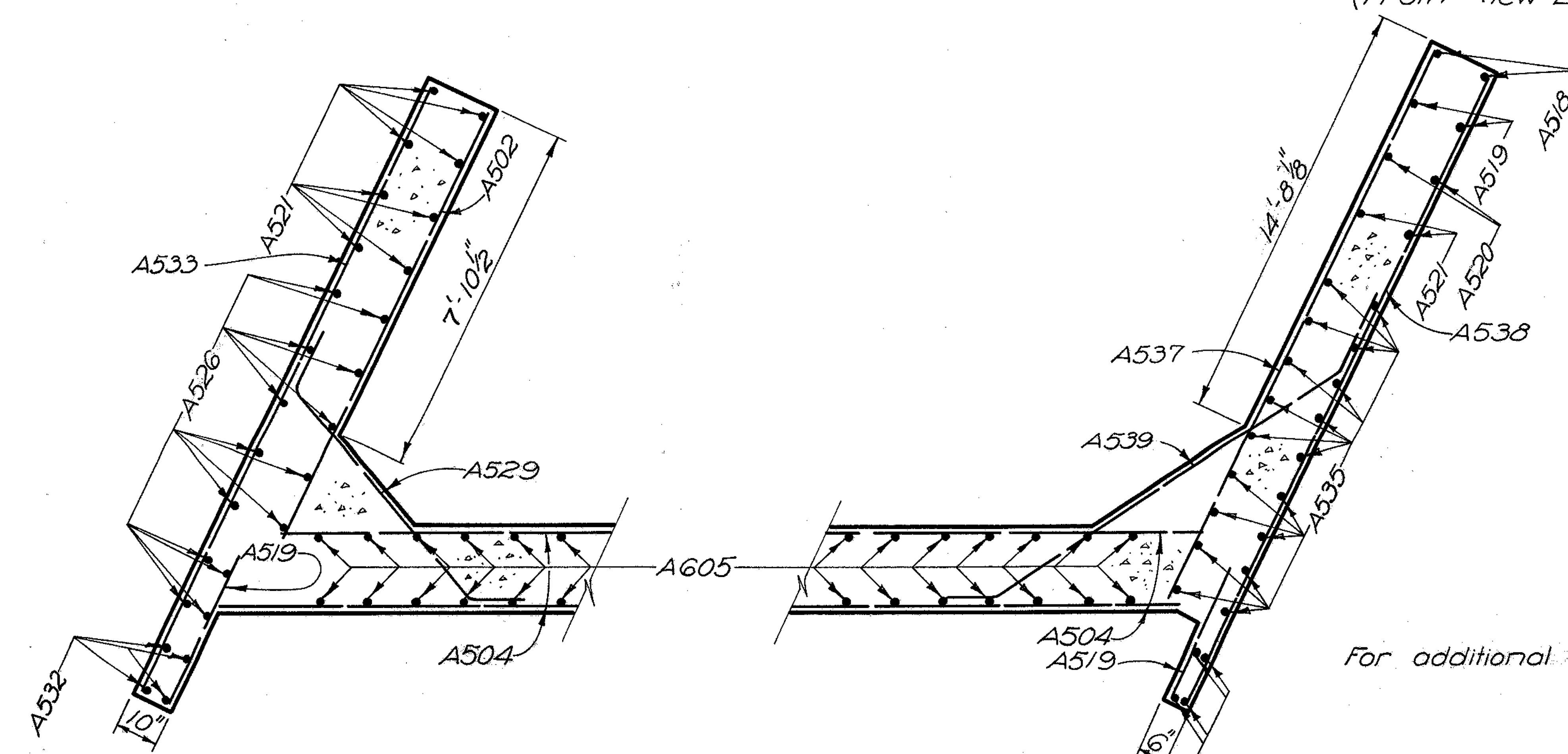
PLAN CURB
(From View E-E)



PART SECTION
ABOVE FOOTING



PART SECTION
ABOVE FOOTING



PART SECTION ABOVE BRIDGE SEAT

For additional details, see sheet no. 214

LEGEND
n.s. denotes Near Side
f.s. denotes Far Side

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

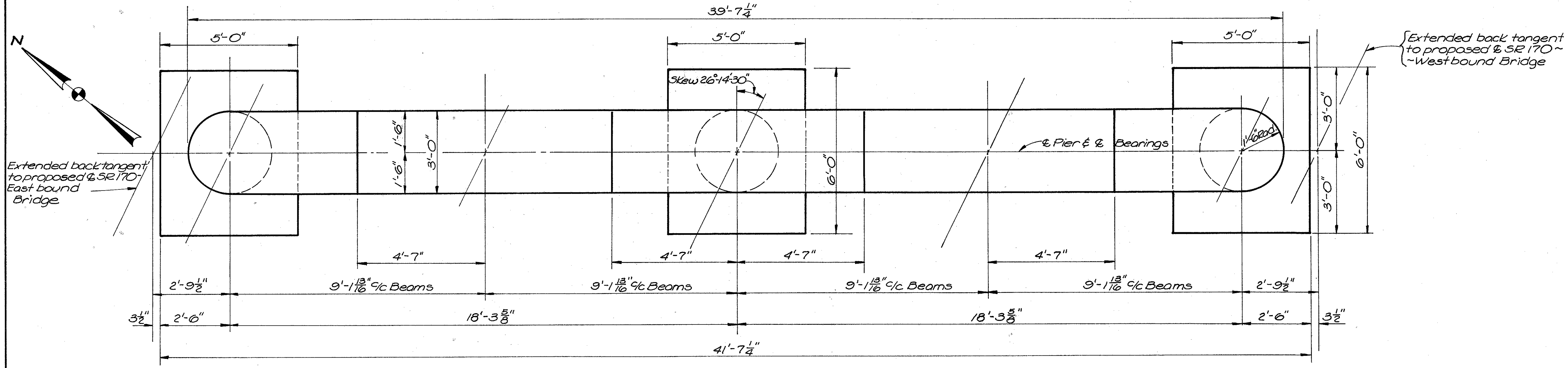
FORWARD ABUTMENT DETAILS

BRIDGE No. COL-30-3201
UNDER S.R. 170

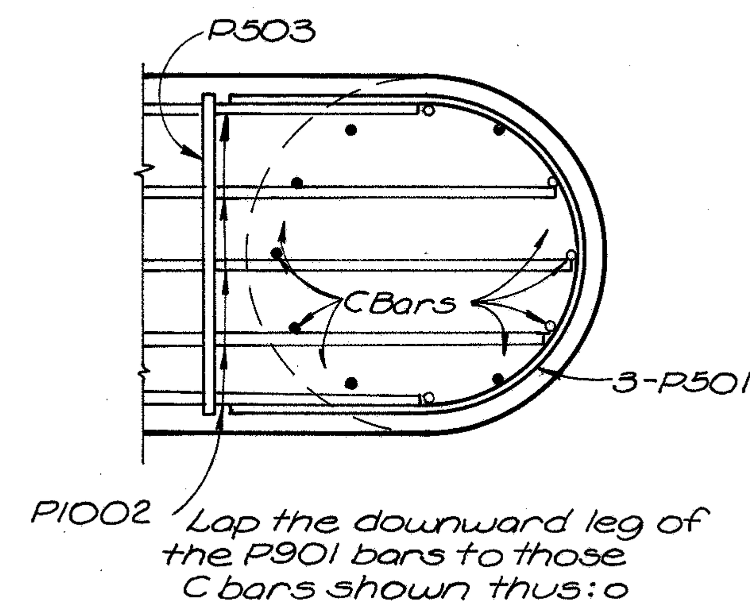
COLUMBIANA CO.

Sta. 19 + 12.49
Sta. 20 + 87.49

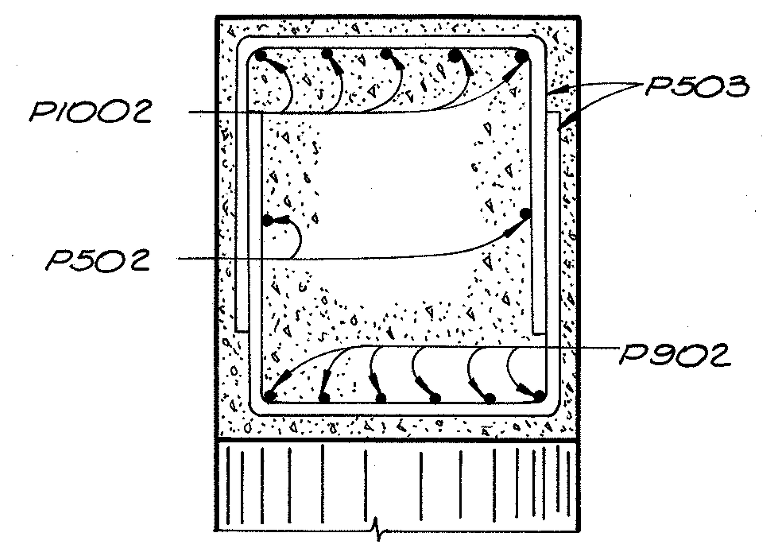
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGB	JGB	G.P.G.	NJB	BFG	7-5-61	



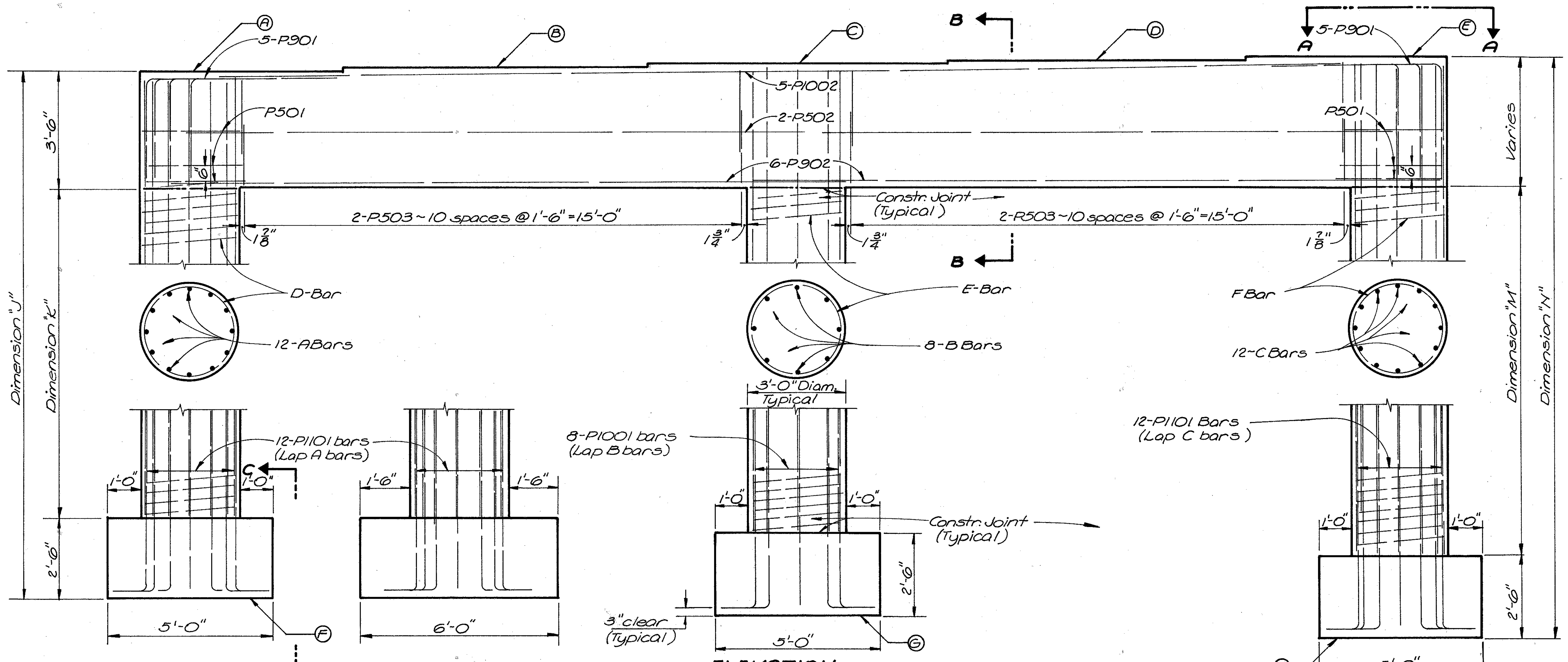
PLAN



VIEW A-A



SECTION B-B



VIEW C-C

ELEVATION

	Westbound Lanes			Eastbound Lanes		
	Rear Pier	Ctr. Pier	Fwd. Pier	Rear Pier	Ctr. Pier	Fwd. Pier
Elev. A	1117.38	1119.22	1120.97	1118.58	1120.45	1122.20
Elev. B	1117.65	1119.50	1121.25	1118.71	1120.61	1122.40
Elev. C	1117.93	1119.79	1121.53	1118.83	1120.78	1122.61
Elev. D	1118.20	1120.07	1121.81	1118.96	1120.96	1122.83
Elev. E	1118.48	1120.34	1122.08	1119.11	1121.15	1123.07
Elev. F	1096.70	1099.60	1099.20	1095.50	1098.40	1097.90
Elev. G	1096.10	1099.00	1098.55	1094.90	1097.80	1097.25
Elev. H	1095.50	1098.40	1097.90	1094.30	1097.20	1096.60
A Bars	P1102	P1105	P1108	P1103	P1106	P1109
B Bars	P1003	P1005	P1006	P1004	P1006	P1007
C Bars	P1103	P1106	P1109	P1104	P1107	P1110
D Bars	SP401	SP407	SP403	SP404	SP409	SP406
E Bars	SP402	SP408	SP412	SP405	SP410	SP413
F Bars	SP403	SP401	SP404	SP406	SP411	SP414
Dim "J"	20'-8 1/8"	19'-7 1/2"	21'-9 1/4"	23'-1"	22'-0 5/8"	24'-3 5/8"
Dim "K"	14'-8 1/8"	13'-7 1/2"	15'-9 1/4"	17'-1"	16'-0 5/8"	18'-3 5/8"
Dim "M"	15'-10 1/2"	14'-9 7/8"	17'-0 7/8"	18'-3 3/8"	17'-3"	19'-7 1/4"
Dim "N"	22'-11 3/4"	21'-11 1/4"	24'-2 1/8"	24'-9 3/4"	23'-11 3/8"	26'-5 5/8"

SPECIAL CARE shall be taken in placing the reinforcing steel in the pier cap so as to avoid interference with the drilling of anchor bar holes.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS

BRIDGE No. COL-30-3201
UNDER S.R. 170
COLUMBIANA COUNTY STA. 19+12.49
STA. 20+87.49

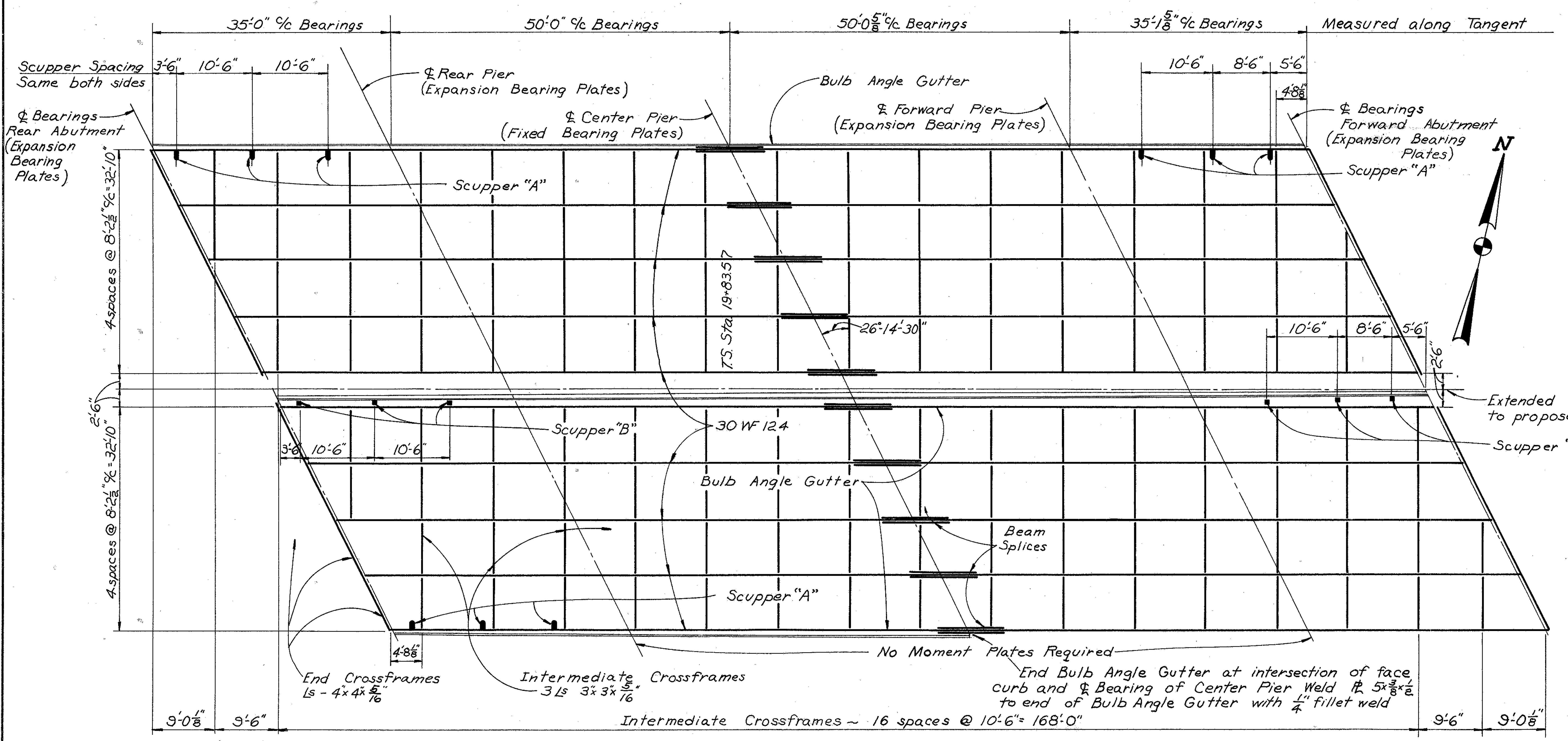
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGB	JGB	M.K.H.	NJB	BFG A.J.F.	7-5-61	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

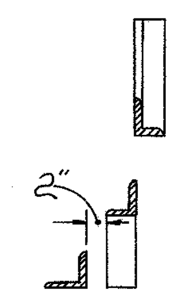
217/250

COL-30-32.19

HALF TRANSVERSE SECTION
(Westbound Lanes shown)



STEEL FRAMING PLAN



SECTION B-B

BEAM SPLICE WELDING PROCEDURE
(Use if two beams are to be spliced)

1. Raise the Rear Abutment end of the beam 3¼"
2. Butt-weld the beam flanges and web, using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld the bottom and top moment plates.
4. Lower the beam end to final position.

OPTIONAL BEAM SPLICE WELDING PROCEDURE
(Use if four beams are to be spliced)

1. Raising the end of beams at the center pier is not required.
2. Butt-weld the beam flanges and web, at the rear pier, using the following sequence: make two passes on each flange then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld the bottom and top moment plates, if such are necessary.
4. Lowering of beam ends to final position is necessary at the forward piers only.
5. Make splices at center and forward piers in the same manner raising the end of the beams ⅝" at the forward pier. No raise is required at the forward abutment.

Steel beams are placed parallel to extended back tangent of proposed ℄ SR 170.

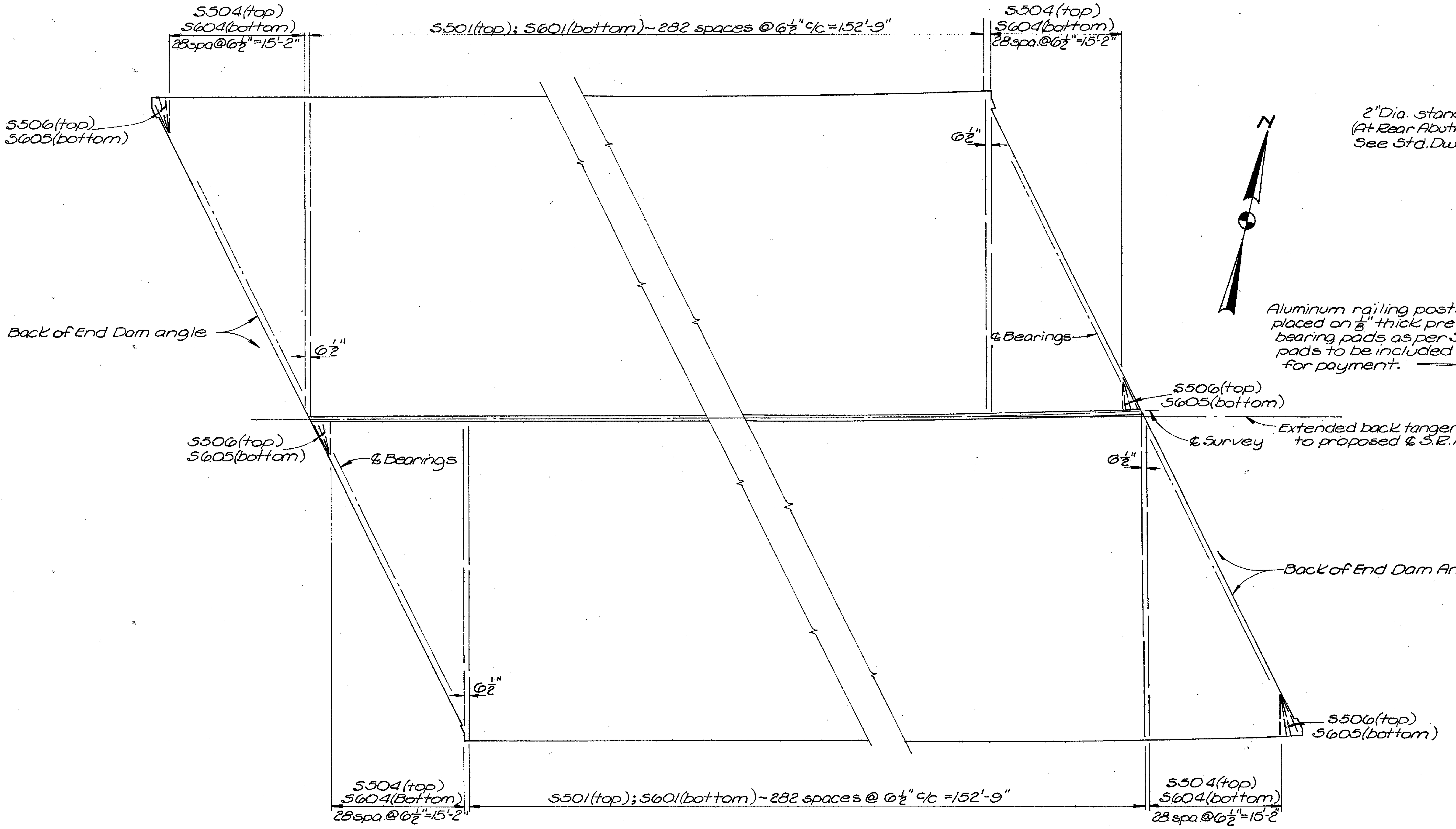
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS
BRIDGE No. COL-30-3201
UNDER SR 170
COLUMBIANA COUNTY STA. 19+12.49 STA. 20+87.49

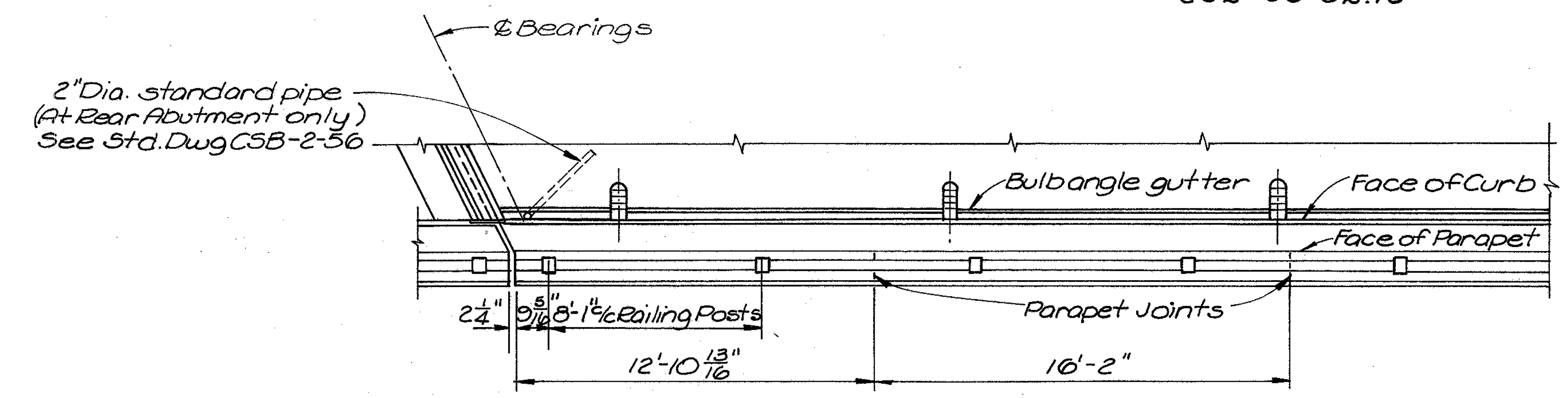
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGB	JGB	W.W.N.	NJB	BFG	7-5-61	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-32.19

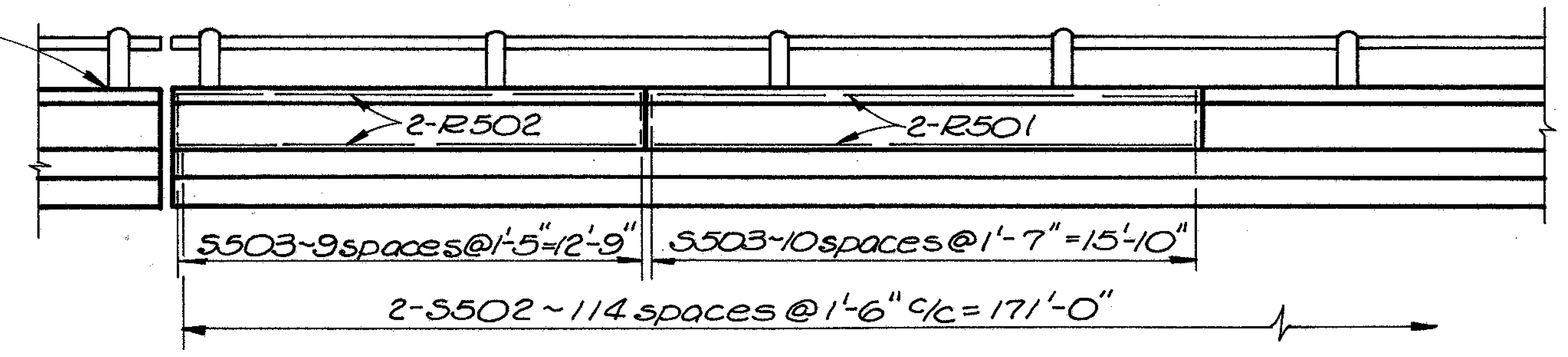


TRANSVERSE DECK REINFORCING STEEL LAYOUT

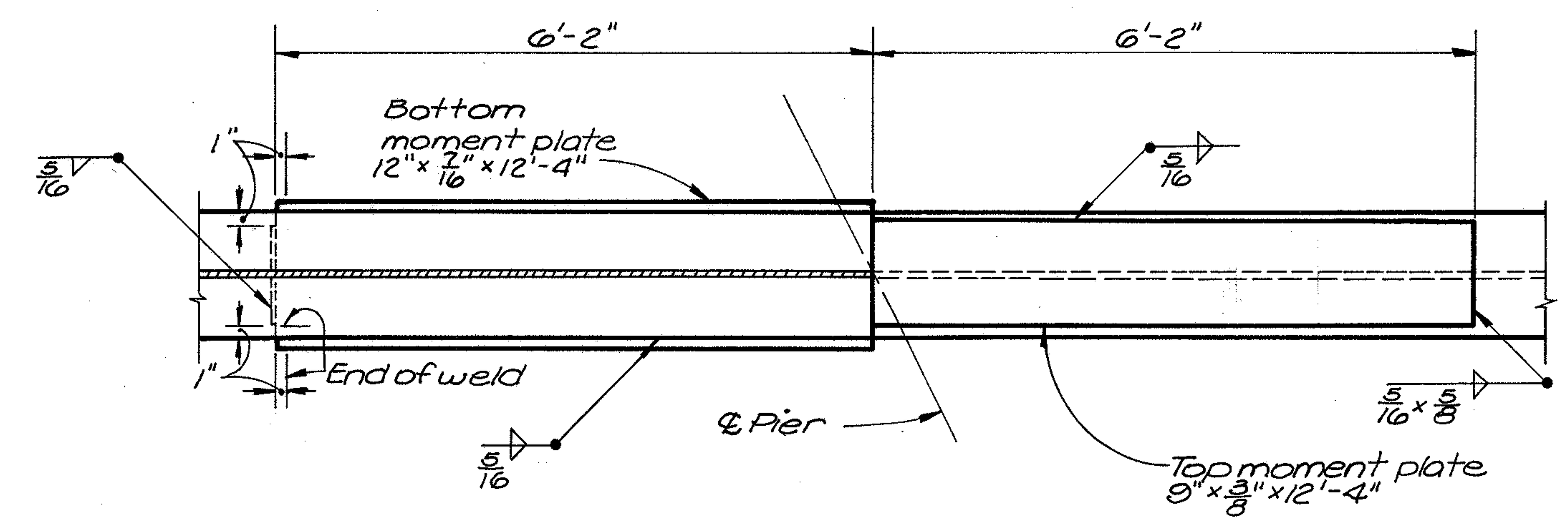


PART PLAN AT ABUTMENT

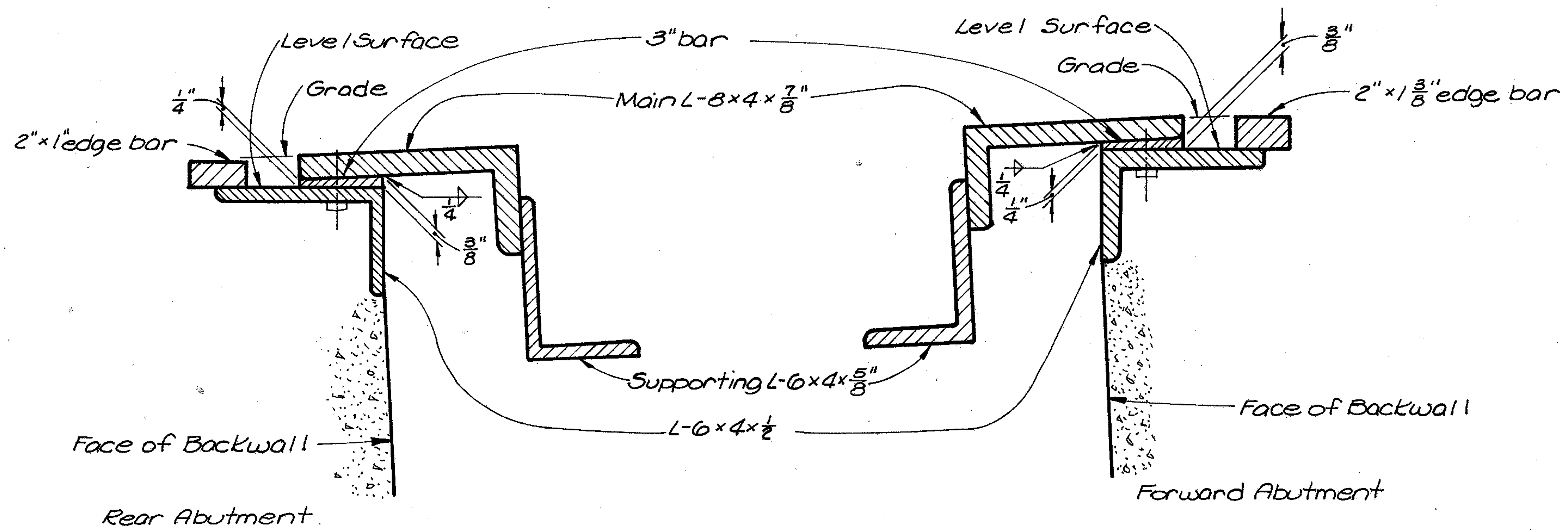
Aluminum railing posts shall be placed on ⅛" thick preformed bearing pads as per Sec. M-10.11; pads to be included with railing for payment.



ELEVATION OF PARAPET

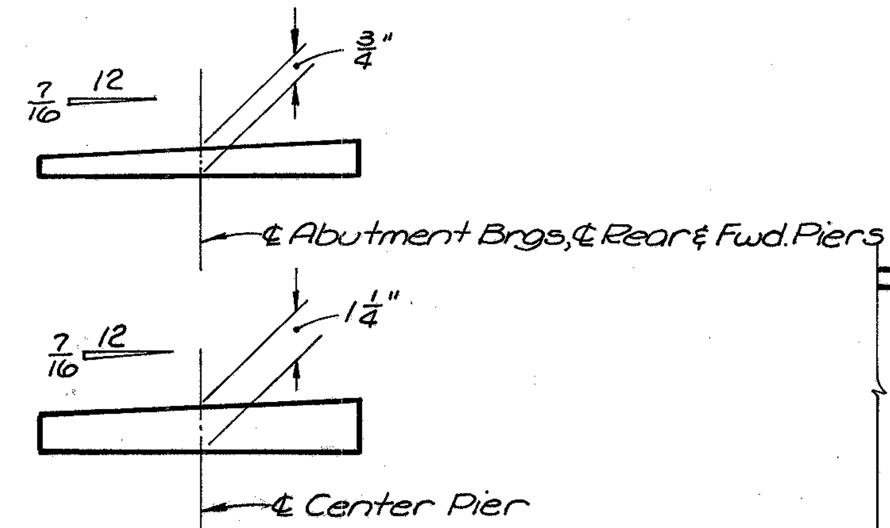


SECTION A-A



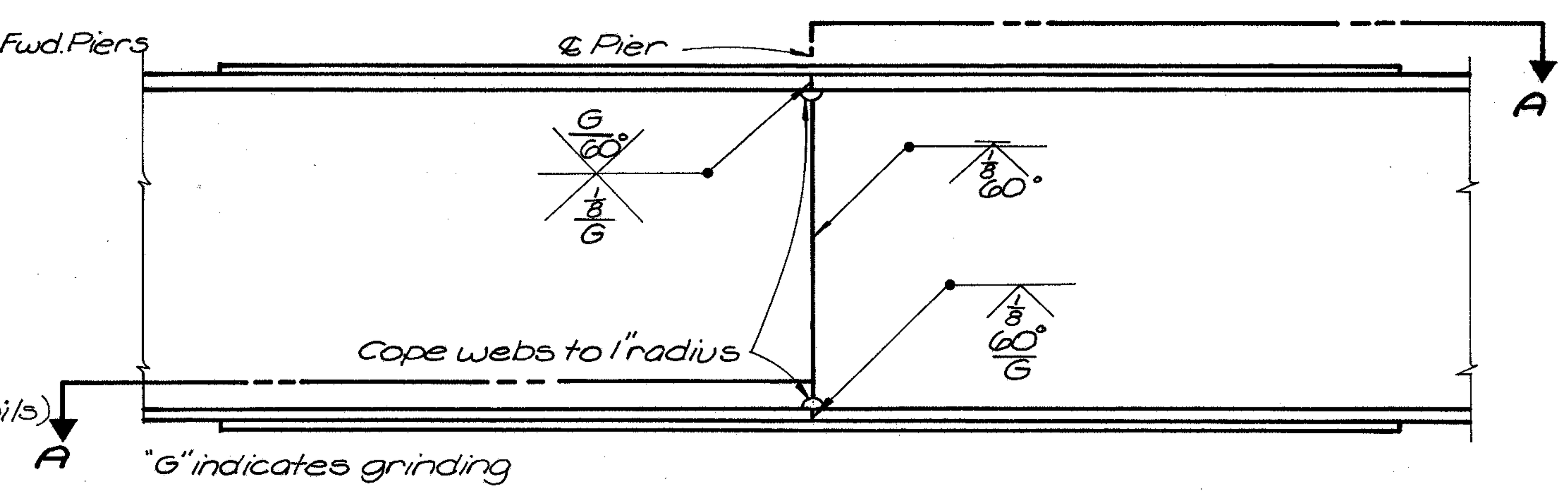
MODIFICATION OF END DAM

(See Std. Dwg CSB-2-56, Sheet No 2 for remaining details)



DETAILS OF BEVELED SOLE PLATES

(See Std. Dwg. CSB-2-56, sheet no. 3 for additional details)



BEAM SPLICE DETAILS FOR CENTER PIER ONLY

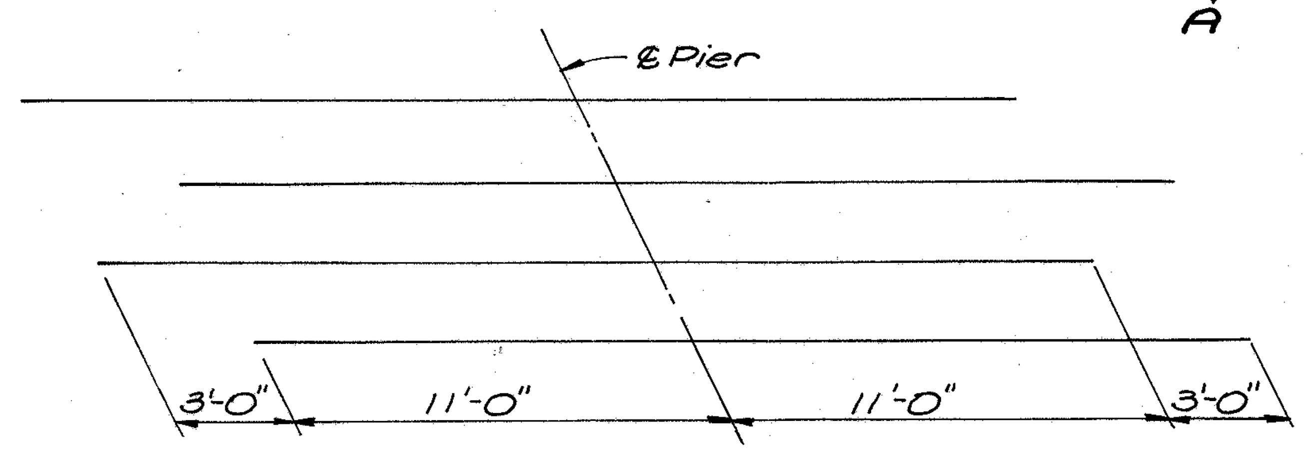


DIAGRAM SHOWING STAGGER OF S603 BARS OVER PIERS

REFERENCE shall be made to Std. Dwg CSB-2-56 sheet no. 3 for Beam Splice Details without moment plates for the Rear and Forward Piers if the "Optional Beam Splice Procedure" is to be used. Butt welds in webs may have convex reinforcement in accordance with Sect. S-7.22. Finishing flush by grinding is not required.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

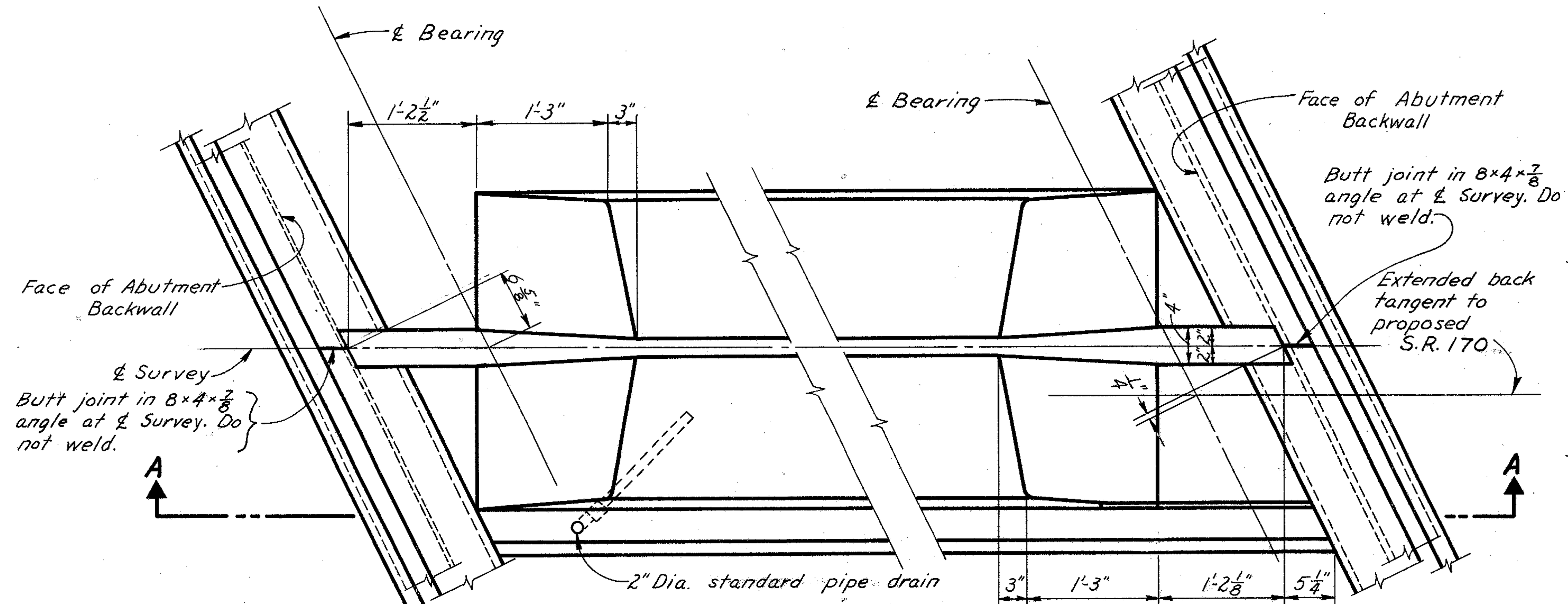
BRIDGE No. COL-30-3201
UNDER S.R. 170
COLUMBIANA COUNTY STA.19+12.49
STA.20+87.49

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGB	JGB	MKH	NJB	BFG	7-5-61	

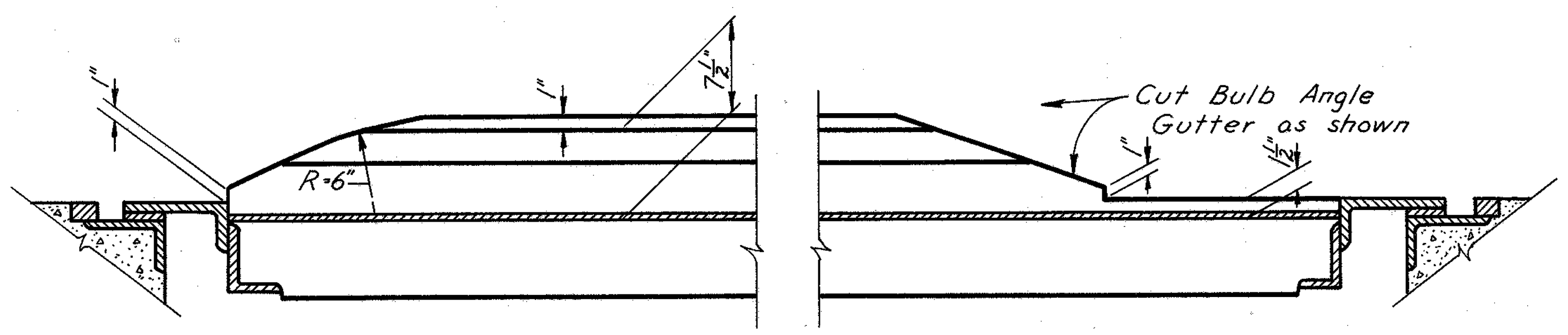
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

219/250

COL-30-32.19

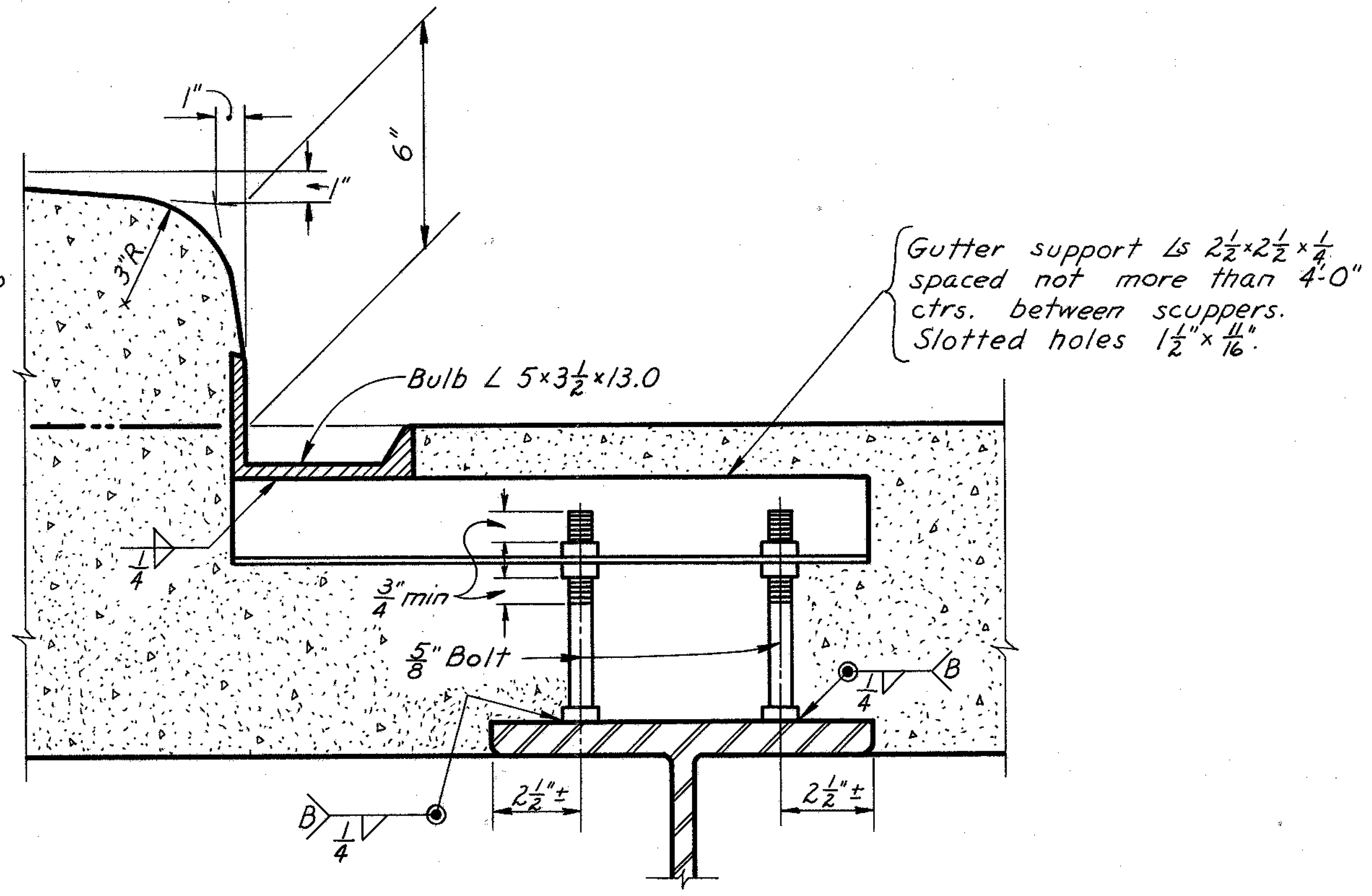


PLAN

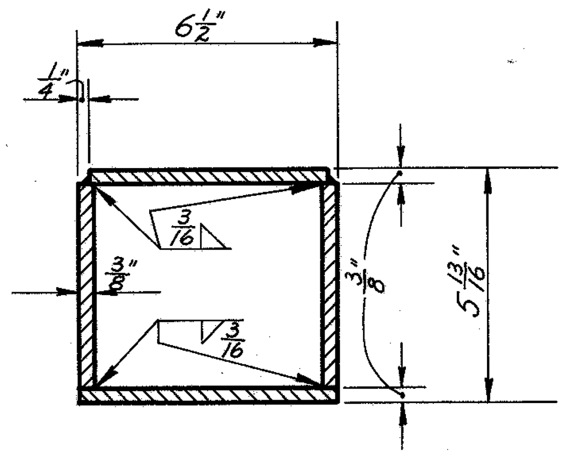


SECTION A-A

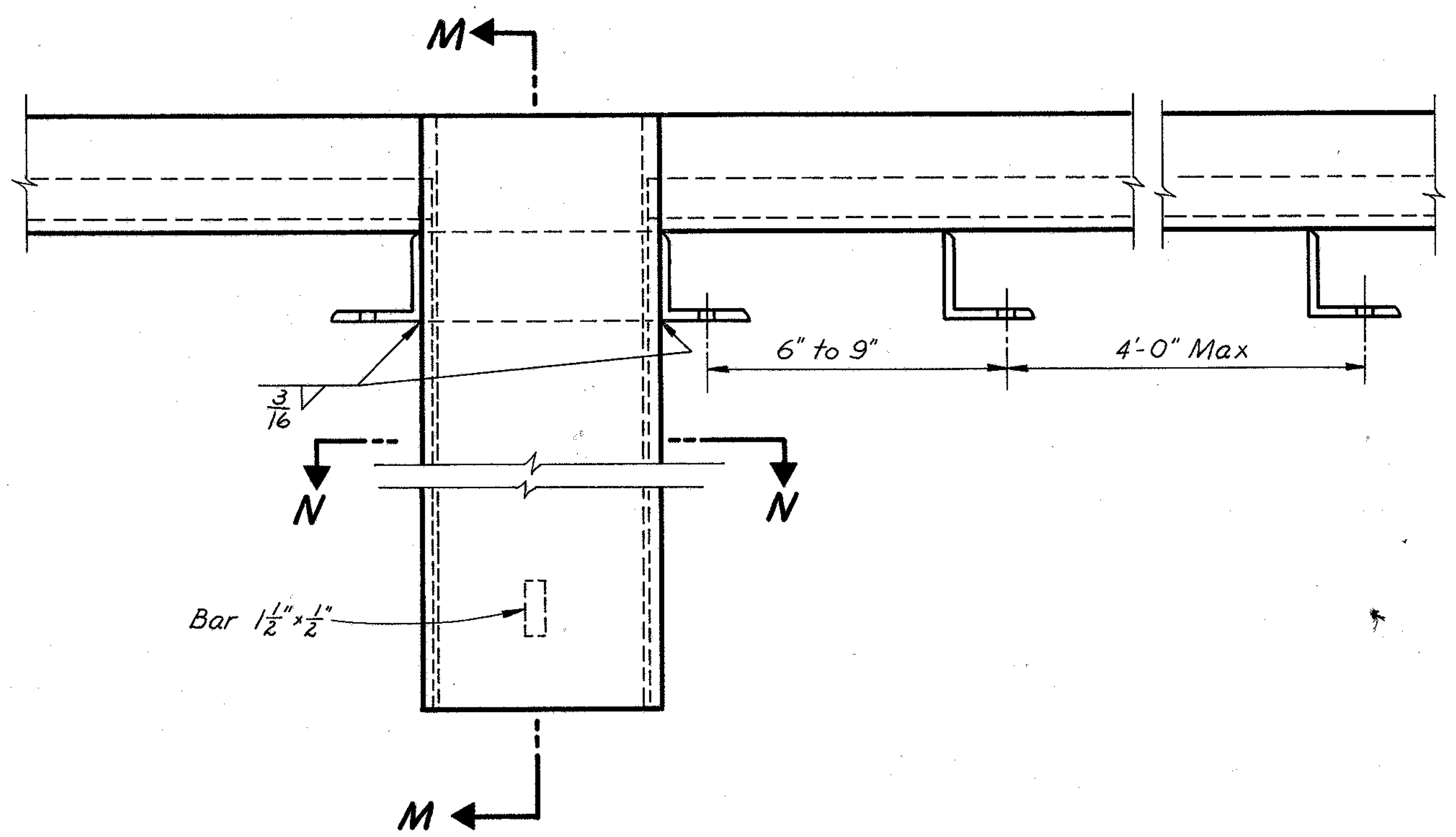
MEDIAN DETAILS NEAR END DAM



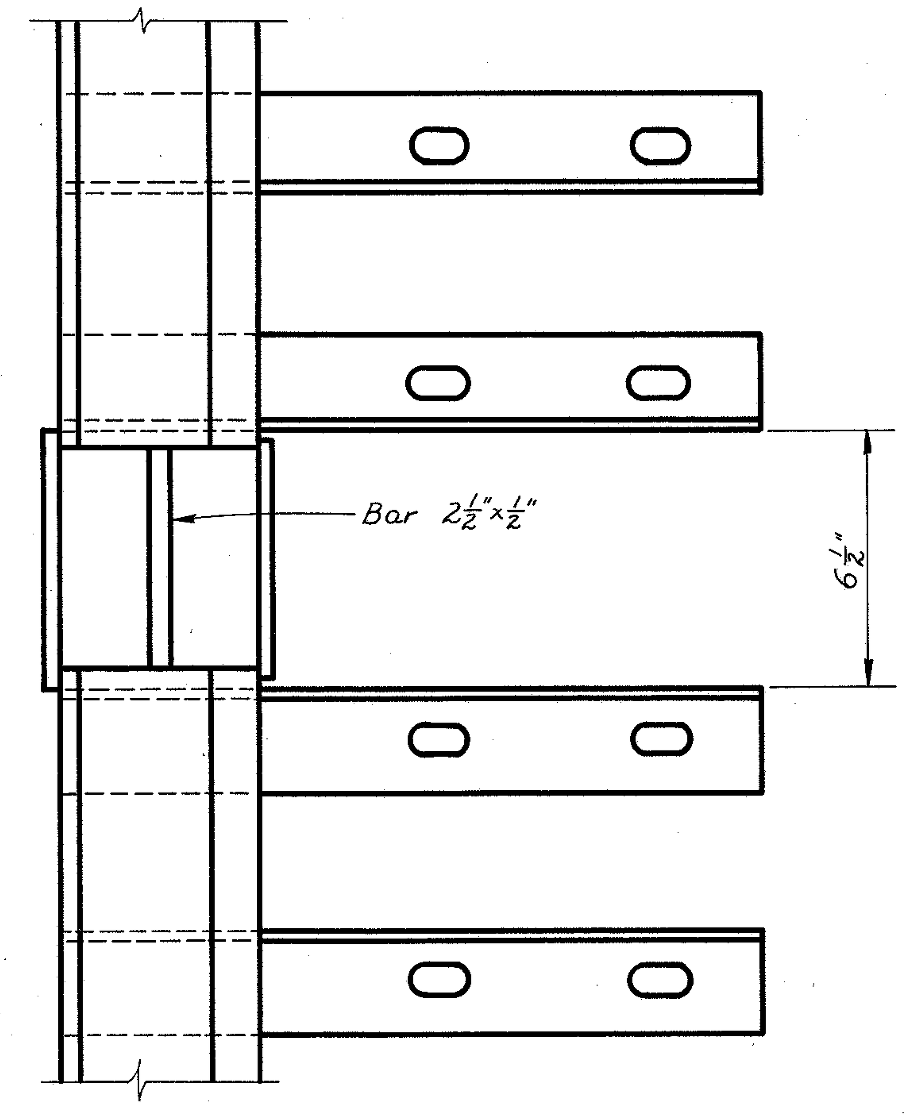
GUTTER SUPPORT FOR SCUPPER "B"



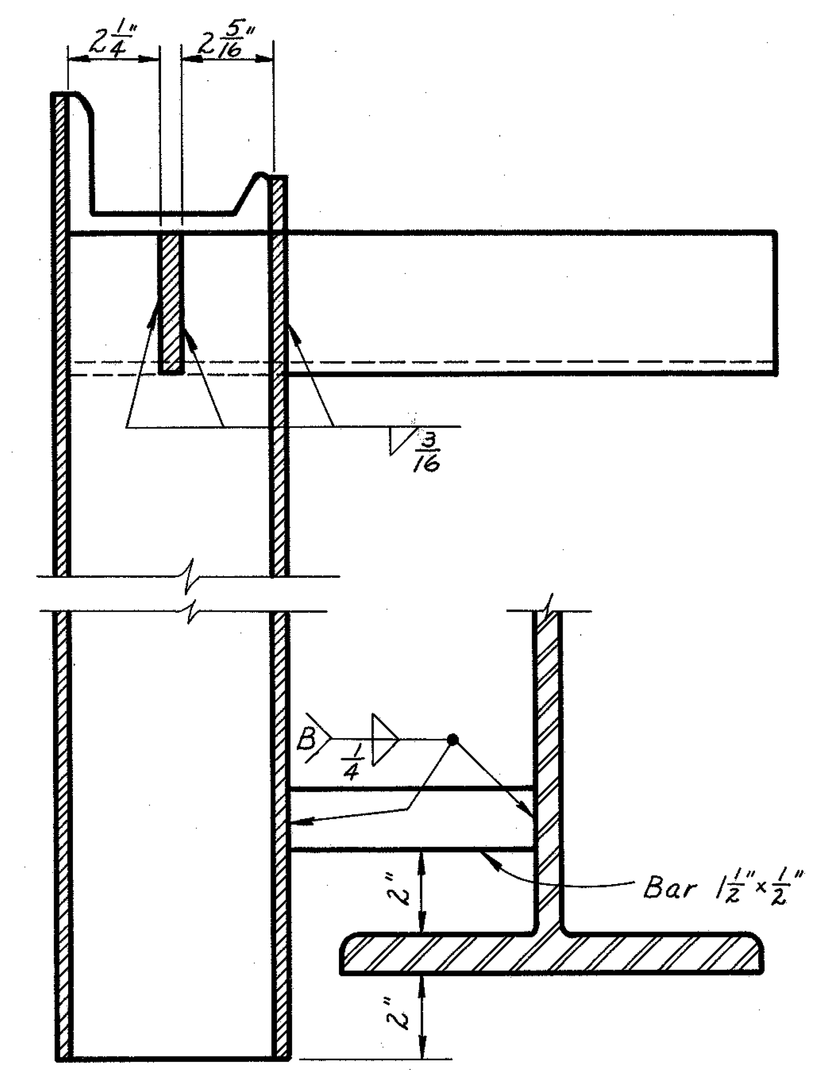
SECTION N-N



REAR ELEVATION



PART PLAN



SECTION M-M

SCUPPER "B" DETAILS

DEFLECTION AND CAMBER				
LOCATION	OUTSIDE BEAMS		INSIDE BEAMS	
	END SPANS	MIDDLE SPANS	END SPANS	MIDDLE SPANS
Deflection due to weight of steel	0	0	0	0
Deflection due to remaining dead load	1/16"	3/16"	1/16"	3/16"
Total Deflection	1/16"	3/16"	1/16"	3/16"
Required Camber	0	0	0	0

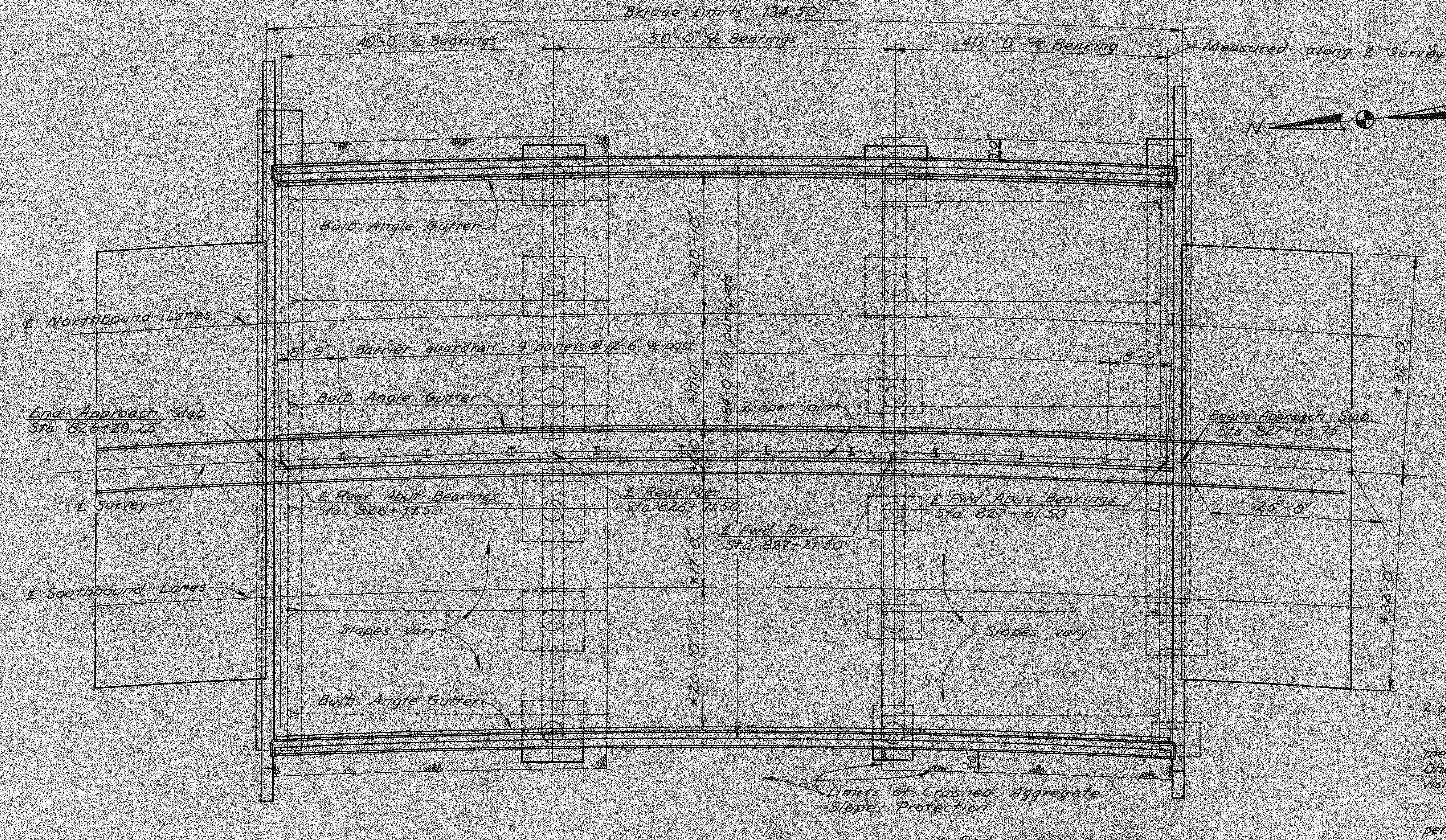
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS
BRIDGE No. COL-30-3201
UNDER S.R. 170

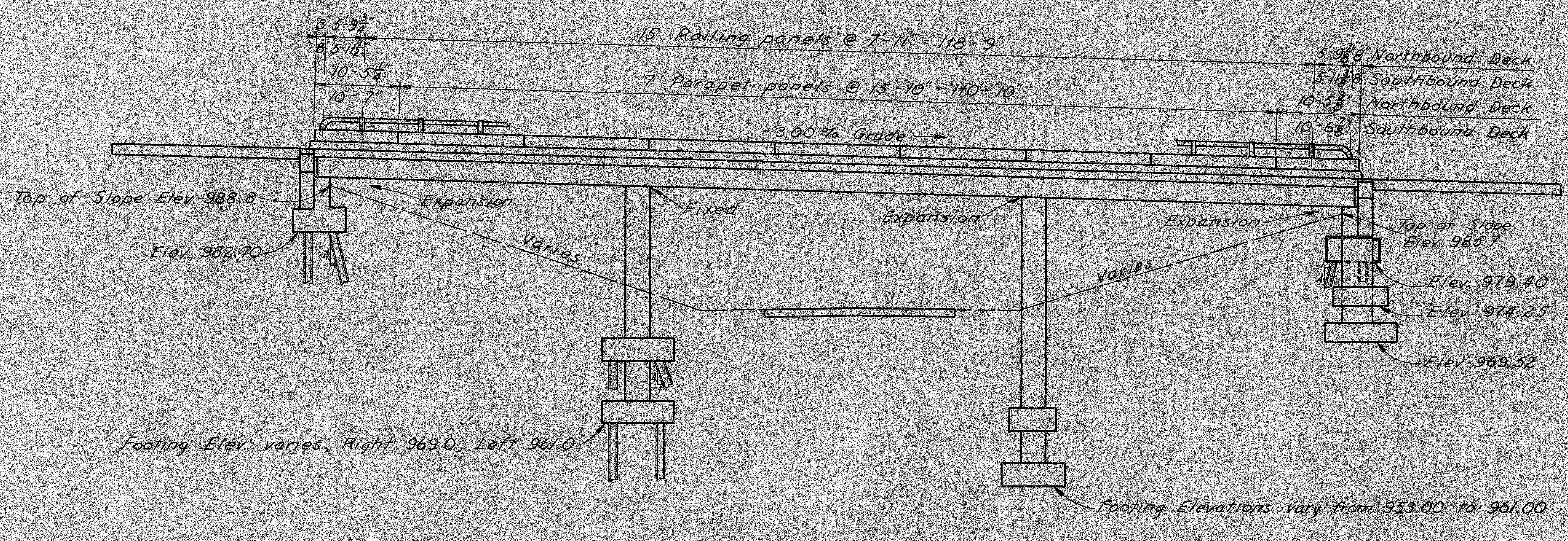
COLUMBIANA COUNTY — STA. 19+12.49, STA. 20+87.49

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGB	JGB	A.A.K.	NJB	BFG	7-5-61	

FED. RD. DIVISION 2 | STATE OHIO | PROJECT
220
200
COL.-30-32.13
1.15 Miles North
East Liverpool N.C.L.
BENCH MARK
Elev. 962.47
□ Cut in N.E. Wing Wall
Hill Road Bridge
102' Lt. Sta. 826+85
Existing U.S. 30
Carpenters Run
Junction Box
Sign
U.S. 30 Curve Data
P.I. = 824+92.96
Δ = 26°06' Rt.
D = 4°00'
R = 1432.40'
Ls = 400'
Θs = 8°00'
Lc = 252.50'
Es = 42.75'
Ts = 532.96'
Existing Hill Ave.
End Appr. Slab
Sta. 826+29.25
Begin Appr. Slab
Sta. 827+63.75
℄ Northbound
℄ Southbound
1 Sty. Frame Res.
Septic Tank
To Lisbon
℄ Proposed New ℄
S10°06'W
To East Liverpool
FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.
℄ Proposed ℄ Hill Ave.
Westfield & Hill Ave.
BRIDGE LIMITS
PROPOSED STRUCTURE
TYPE: Continuous steel beams with reinforced concrete deck and substructure
SPANS: 40'-50'-40' c/c brgs
ROADWAY: 84'-0" f/f parapets (includes 6' median)
LOAD FREQUENCY: CF-2000 (57)
SKEW: None
WEARING SURFACE: 1" monolithic concrete
APPROACH SLABS: AS-1-54 (25' long)
ALIGNMENT: Spiral
SUPERELEVATION: Varies
Proposed -3.00%
14.5' min @ Pt. 'A'
Top of Slope El. 988.8
Top of Slope El. 988.7
Ftg. El. 982.70
Ftg. El. 979.40
Ftg. El. 974.25
Ftg. El. 968.52
Ftg. El. varies Rgnl. 963.00 - Left 961.00
Ftg. El. vary from 963.00 to 961.00
All piles steel "H" - 12BP53
Estimated Pay Length
Rear Abut. 17' to 23'
Rear Pier 11' to 17'
Fwd. Pier 13' to 16'
Fwd. Abut. 10' to 35'
825+00
826+00
827+00
828+00
829+00
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES
SITE PLAN
BRIDGE NO. COL-30-3271
OVER HILL AVE.
COLUMBIANA COUNTY
STA 826+29.25
827+63.75
SCALE: 1" = 20'
EXISTING TOPO | PROPOSED WORK
SURVEY | DRAWN | DESIGN | DRAWN | CH'K'D. | REVIEW
Div. Office | Div. Office | D.H.S. | D.H.S. | B.D.H. | G.C.S.
BFG 7-21-61



GENERAL PLAN



ELEVATION

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super.	Piers	Abut.	Gen'l.		
E-2	737	Cu. Yds.	Unclassified excavation including rock		320	417			
S-1	352	Cu. Yds.	Class "C" concrete, superstructure	352					
S-1	137	Cu. Yds.	Class "C" concrete, piers above footings		137				
S-1	105	Cu. Yds.	Class "E" concrete, forward abutment above footings			105			
S-1	108	Cu. Yds.	Class "E" concrete, rear abutment above footings			108			
S-1	223	Cu. Yds.	Class "E" concrete, footings		91	132			
S-3	18	Lin. Ft.	Waterproofing, premolded sealing strip			18			
S-4	154,475	Lbs.	Reinforcing steel	94,099	39,295	21,081			
S-7	248,000	Lbs.	Structural steel	248,000					
S-8	248,000	Lbs.	Field painting of structural steel	248,000					
S-9	67	Sq. Ft.	1" Preformed expansion joint filler (Type I)			67			
S-14	132.54	Lin. Ft.	Railing (Barrier type I-15.11 with galvanized steel posts, base plates and bolts.)	132.54					
S-14	263.71	Lin. Ft.	Railing (aluminum rail & supports & concrete parapets	263.71					
S-16	Lump	Sum	First test pile				Lump		
S-18	1660	Lin. Ft.	Steel piles, 12BP53		560	1100			
S-29	61	Cu. Yds.	Porous backfill			61			
S-29	18	Each	Scuppers	18					
I-10	1000	Sq. Yds.	Crushed aggregate slope protection				1000		
* Special	352	Each	Water-reducing, set-retarding admixture	352					

* See Proposal Note

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CSB-2-56, sheets 2 and 3, and AR-1-57 revised 2-2-59 and 12-12-60 respectively.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

PILES shall be driven using a hammer of not less than 11,000 ft. lb per blow to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

For the Rear abutment piles:

41 tons per pile using an 11000 ft. lb. hammer
37 tons per pile using a 15000 ft. lb. or greater hammer

For the forward abutment piles:

48 tons per pile using an 11000 ft. lb. hammer
42 tons per pile using a 15000 ft. lb. or greater hammer

For the pier piles:

43 tons per pile using an 11000 ft. lb. hammer
38 tons per pile using a 15000 ft. lb. or greater hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 30 tons per pile.

FOUNDATION BEARING PRESSURE: Pedestal and pier footings are designed for a maximum bearing pressure of 6 tons per sq. ft.

PROCEDURE:

Rear Abutment and Rear Pier
The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 70 feet back of the rear abutment after which excavation shall be made for the abutment and rear pier and piles driven.

Forward Abutment and Forward Pier
The spread footings and columns of the forward pier and the forward abutment pedestals shall be constructed, and then the embankment shall be placed and compacted up to the spill-thru slope and to the level of the subgrade for a distance of 70 feet back of the forward abutment. Excavation shall then be made for the abutment and pier footings on piles, and that portion of the cross beam supported by pedestals.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments and piers.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop. Class "B" welds are shown thus: B

BEAM WEB WELDS: Butt welds in webs of beams may have convex reinforcement in accordance with Sec. S-7.22. Finishing flush by grinding is not required.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine.

SHOP PAINTING STEEL. The surface preparation of all steel, requiring shop painting as per the Plans and Specifications, shall be accomplished by blast cleaning or power tool cleaning, except as noted in the Specifications regarding the use of Chromate Primers.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION NOTES & ESTIMATED QUANTITIES

BRIDGE NO. COL-30-3271
over HILL AVE.

COLUMBIANA COUNTY — Sta. 826+29.25 / 827+63.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.B.L.	E.B.L.	A.A.K.	ACH	BFG ajf	7-21-61	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

222/250

COL-30-32.19

FOOTING PLAN
Pier piling not shown

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FOOTING PLAN
BRIDGE No. COL-30-3271
over HILL AVE.

COLUMBIANA COUNTY — Sta 826+29.25, 827+63.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KLH	KLH	Mothys		BFG	7-21-61	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

225
250

COL-30-32.19

The downward leg of the cap reinforcing bars shall be placed in the periphery of the column reinforcing bars and wired thereto.

Special care shall be taken in placing the cap reinforcing so as to avoid interference with the bearing plate anchor bars.

Footing steel shall be placed as follows unless otherwise shown: One bar on each side of piles, other bars to be equally spaced between piles.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR PIER DETAILS

BRIDGE NO. COL-30-3271
over HILL AVE

COLUMBIANA COUNTY — Sta. 826+29.25, 827+63.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
EBL	EBL		[illegible]	BFG [illegible]	7-21-61	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

224/250

COL-30-32.19

ELEVATION

The downward leg of the cap reinforcing bars shall be placed in the periphery of the column reinforcing bars and wired thereto.

Special care shall be taken in placing the cap reinforcing so as to avoid interference with the bearing plate anchor bars.

Footing steel shall be placed as follows unless otherwise shown. One bar on each side of piles, other bars to be equally spaced between piles.

Spread footings of piers shall be placed 3" into rock.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD PIER DETAILS
BRIDGE NO. COL-30-3271
over HILL AVE.

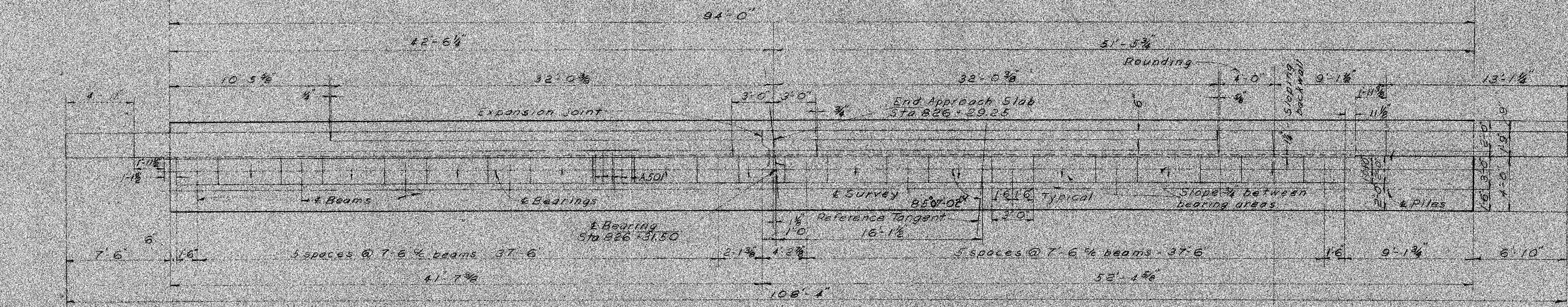
COLUMBIANA COUNTY — Sta. 326+29.25, 327+63.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
EBL	EBL		UM	BFG AJF	7-21-61	

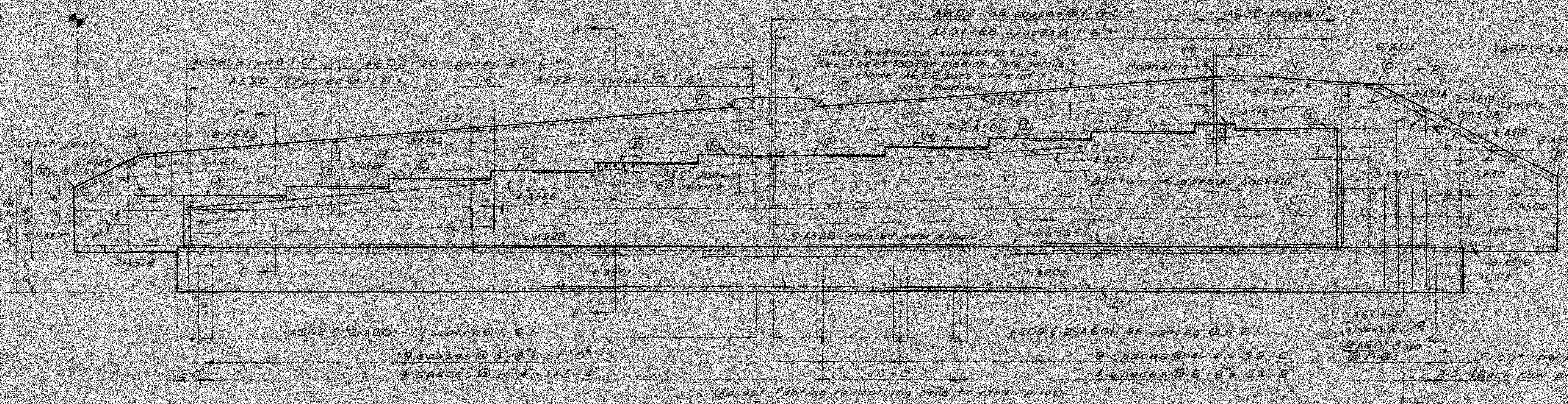
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

225/250

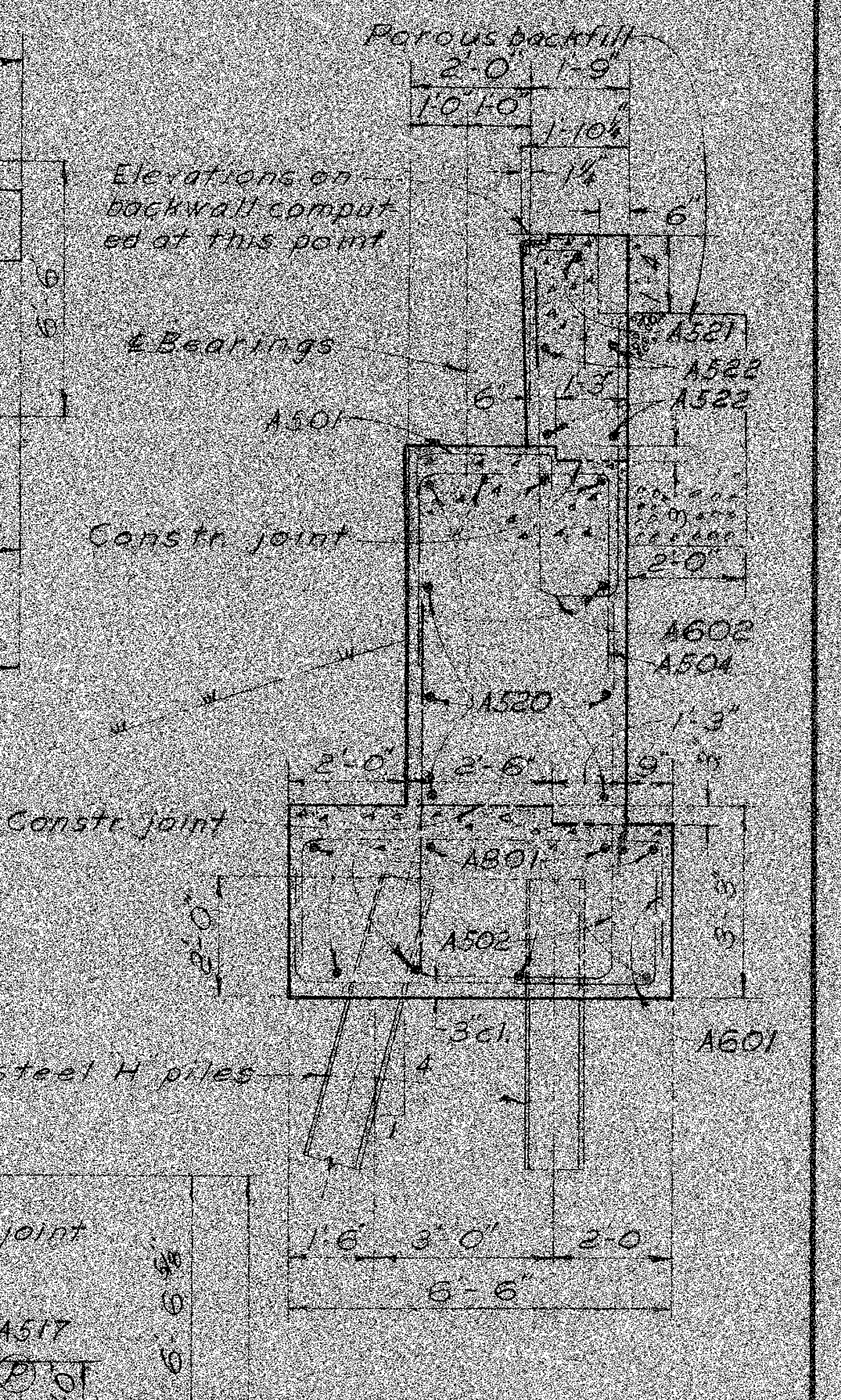
COL-30-32.19



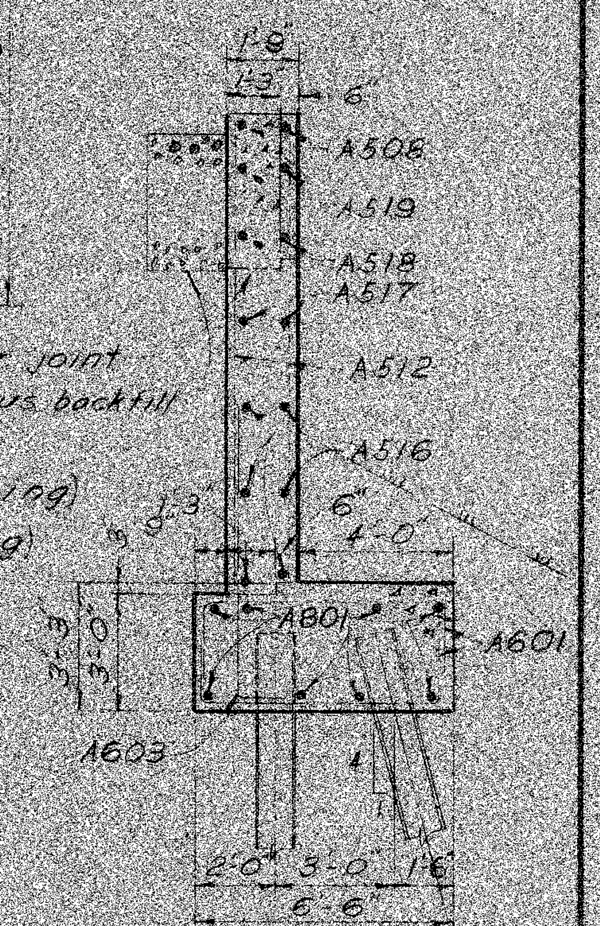
PLAN



ELEVATION



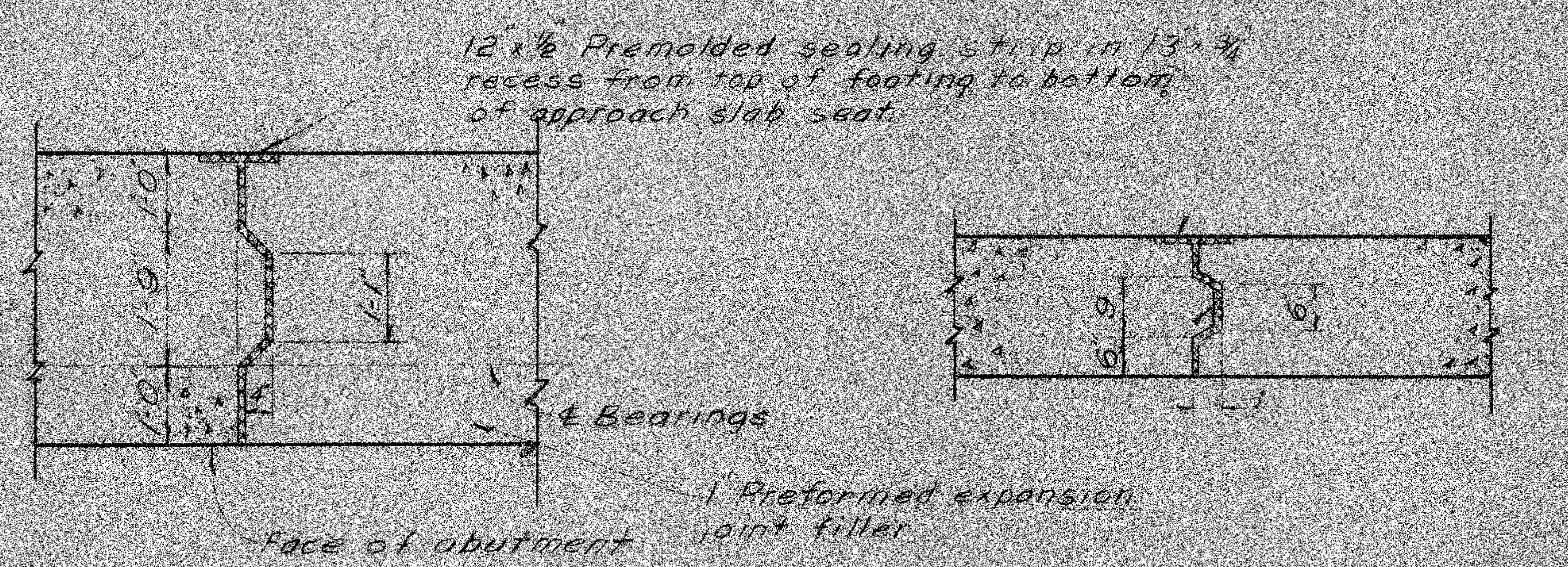
SECTION A-A



SECTION B-B

TABLE OF ELEVATIONS

Point	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Elevation	989.79	990.36	990.95	991.54	992.12	992.69	992.70	993.25	993.82	994.39	994.96	994.64	998.39	998.41	997.89	991.30	982.70	990.48	992.94	996.16

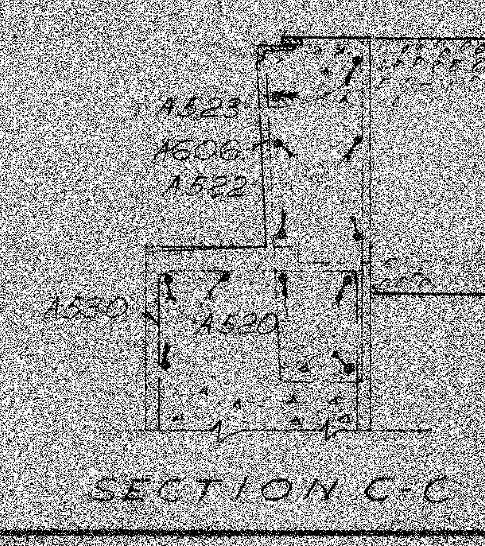


SECTION THRU BRIDGE-SEAT

SECTION THRU BACKWALL

EXPANSION JOINT DETAILS

POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulders, and outward to the surface of the embankment slopes. Excavation therefor, in excess of that required for construction of the abutment shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.



SECTION C-C

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT
DETAILS
BRIDGE No. COL-30-3271
over HILL AVE.
Sta 826+29.25
COLUMBIANA COUNTY 827+63.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KLH	KLH		KCH	BFG	7-21-61	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

226/250

COL-30-32.19

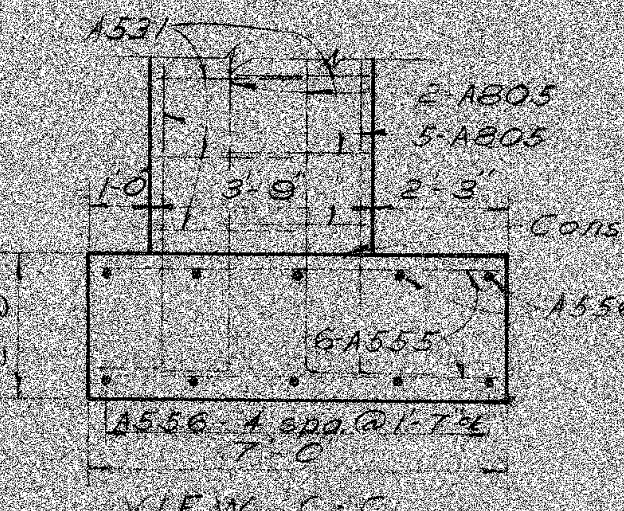


TABLE OF ELEVATION

POINT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
ELEVATION	986.76	987.15	987.56	987.96	988.36	988.75	988.81	989.19	989.57	989.96	990.35	989.99	988.13	993.13	993.70	993.71	992.21	989.99	987.99	979.40	969.32	974.25

POROUS BACKFILL. See note on REAR ABUTMENT DETAILS.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

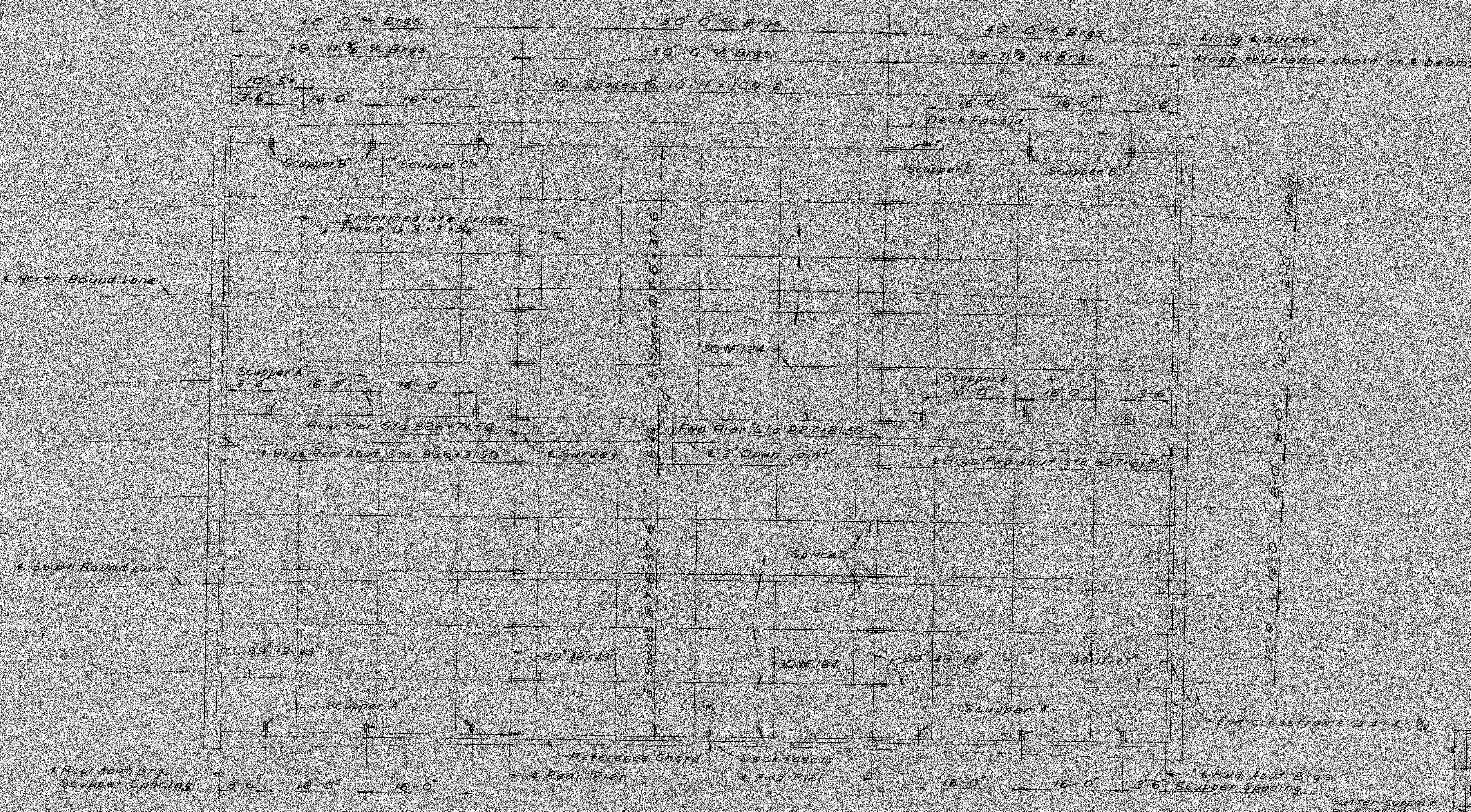
FORWARD ABUTMENT DETAILS
BRIDGE No. COL-30-3271
over HILL AVE.
COLUMBIANA COUNTY Sta 826+29.25 / 827+63.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K-H	K-H		UCL	BFG	7-21-61	

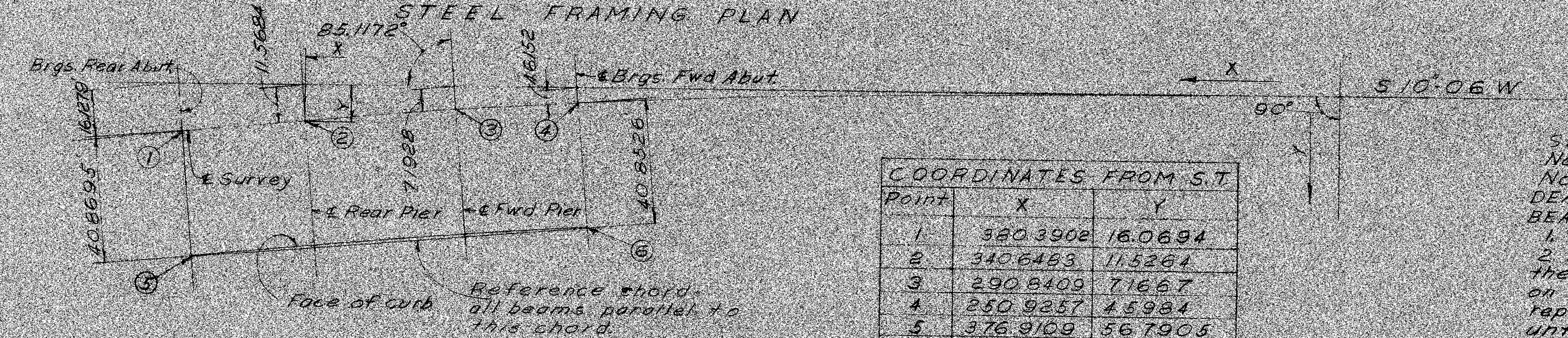
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

$\frac{227}{250}$

COL-30-32.19

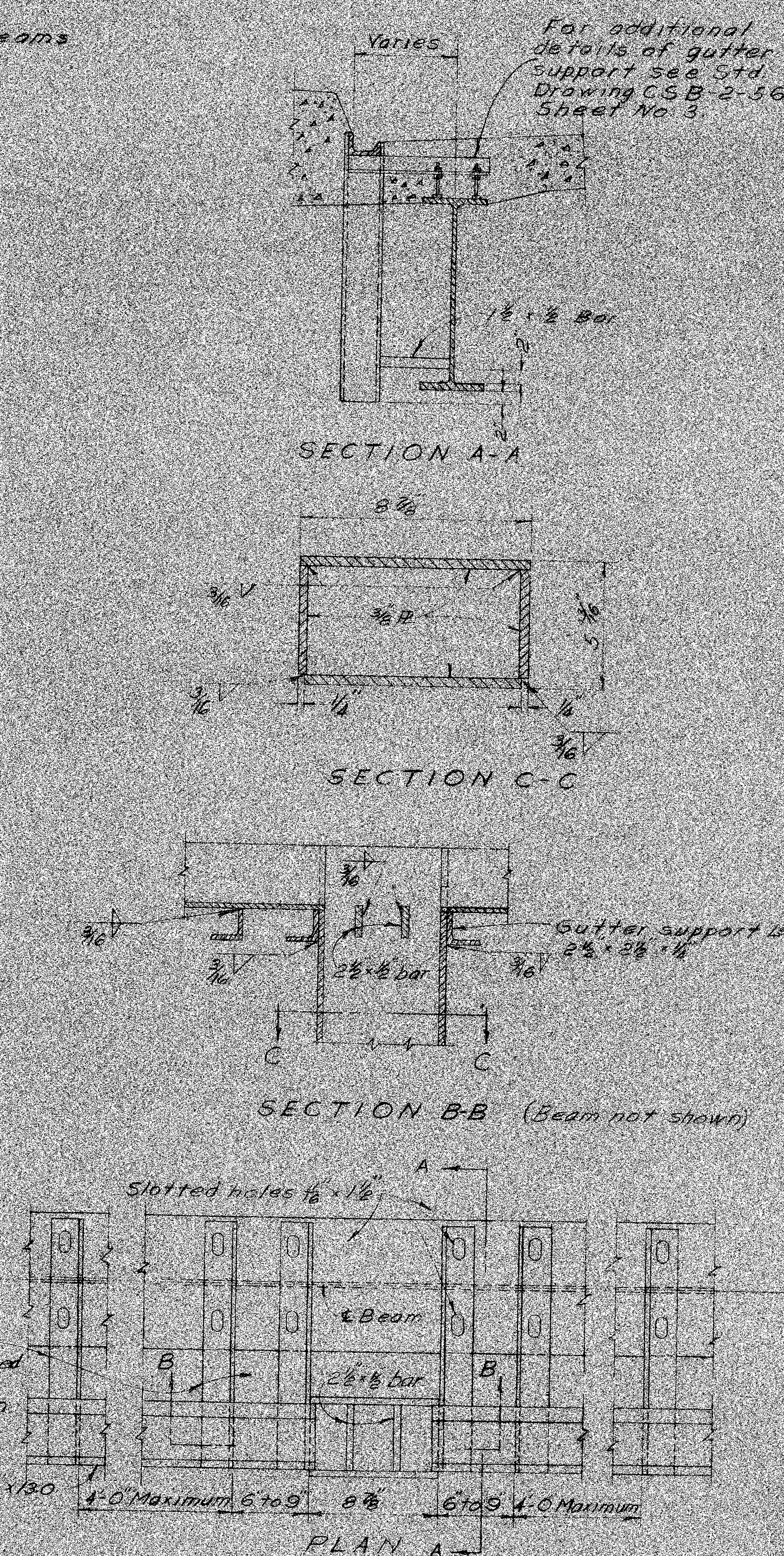


STEEL FRAMING PLAN



LOCATION OF REFERENCE CHORD

COORDINATES FROM S.T.		
Point	X	Y
1	380.3902	16.0694
2	340.6483	11.5264
3	290.8409	7.1667
4	250.9257	4.5984
5	376.9109	56.7905
6	247.4485	45.3027



DETAILS OF SCUPPER "C"

SEE STD. DWG. CSB-2-56 Sht. No. 3 for Beam Splice Details
No camber of beams required.
DEAD LOAD DEFLECTION equals ⅛"

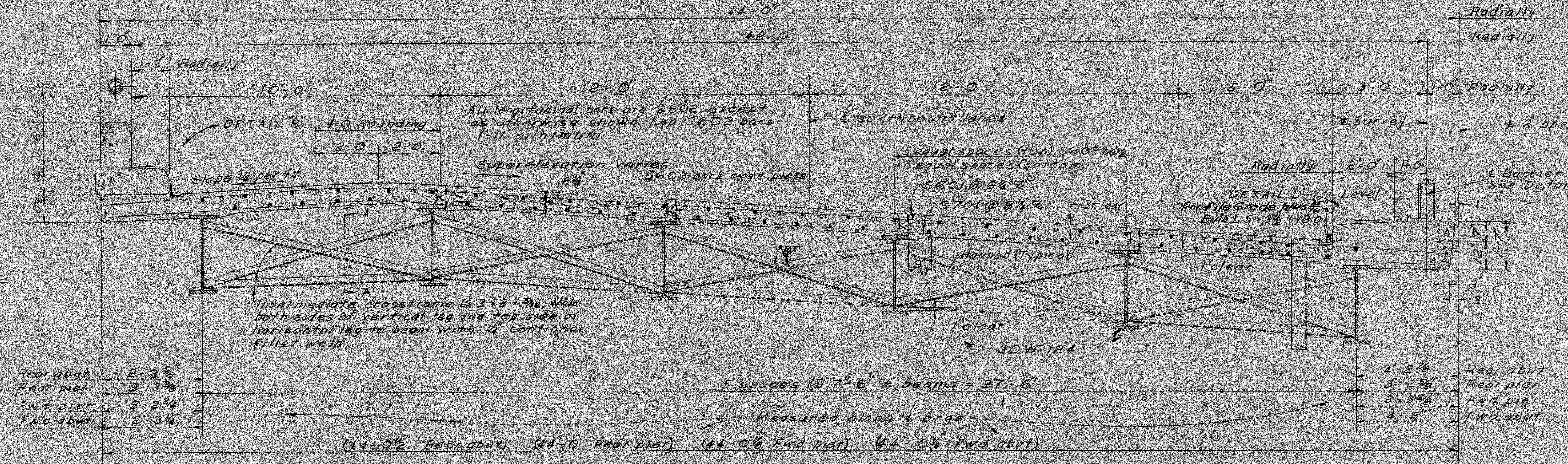
BEAM SPLICE WELDING PROCEDURE
1. Raise the abutment ends of the beams ⅜"
2. Butt-weld the flanges and web, using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location until welds are completed.
3. Weld the bottom and top moment plates.
4. Lower the beam ends to final position

Bottom moment plate 12 × 7/16 × 9'-6"
Top moment plate 9 × ⅜ × 9'-6"

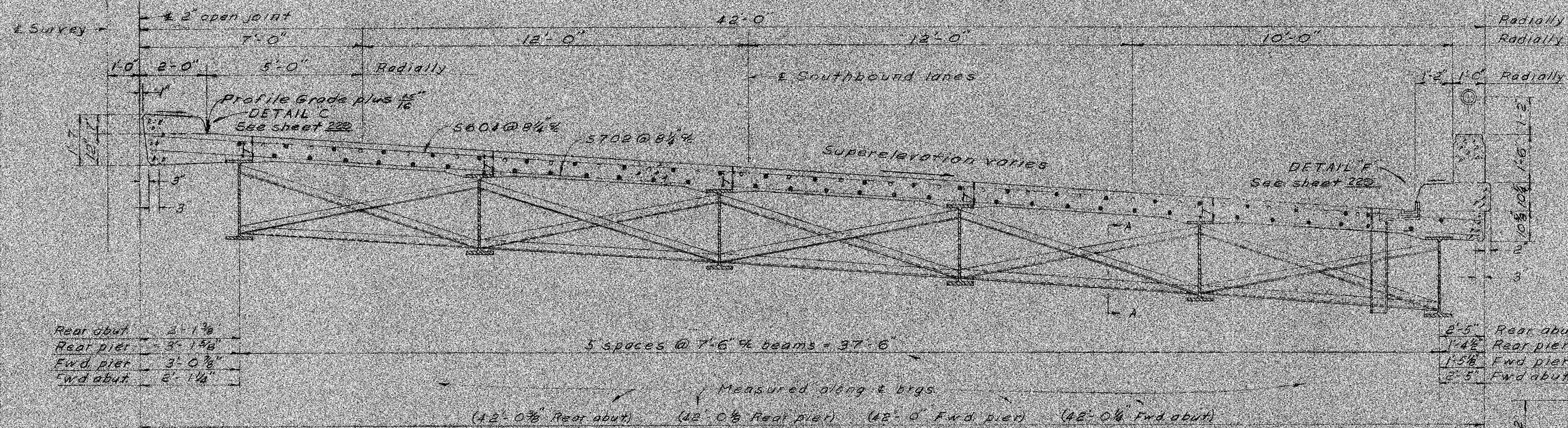
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS
BRIDGE NO. COL-30-3271
OVER HILL AVE.
COLUMBIANA COUNTY — Sta 826+29.25, 827+63.75

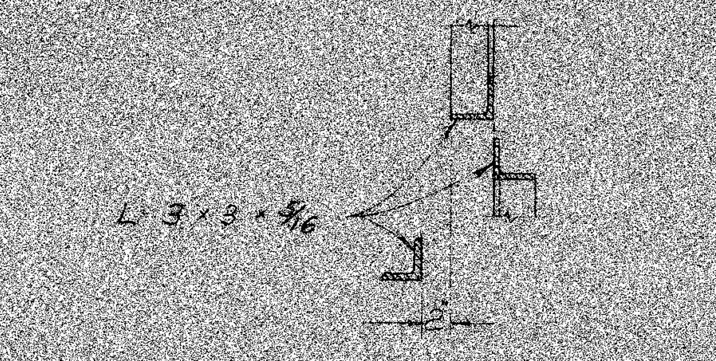
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KLH	KLH		RGH	BFG ajf	7-21-61	



TRANSVERSE SECTION
(Northbound Bridge)



TRANSVERSE SECTION (For details not shown see TRANSVERSE SECTION Northbound Bridge)
(Southbound Bridge)

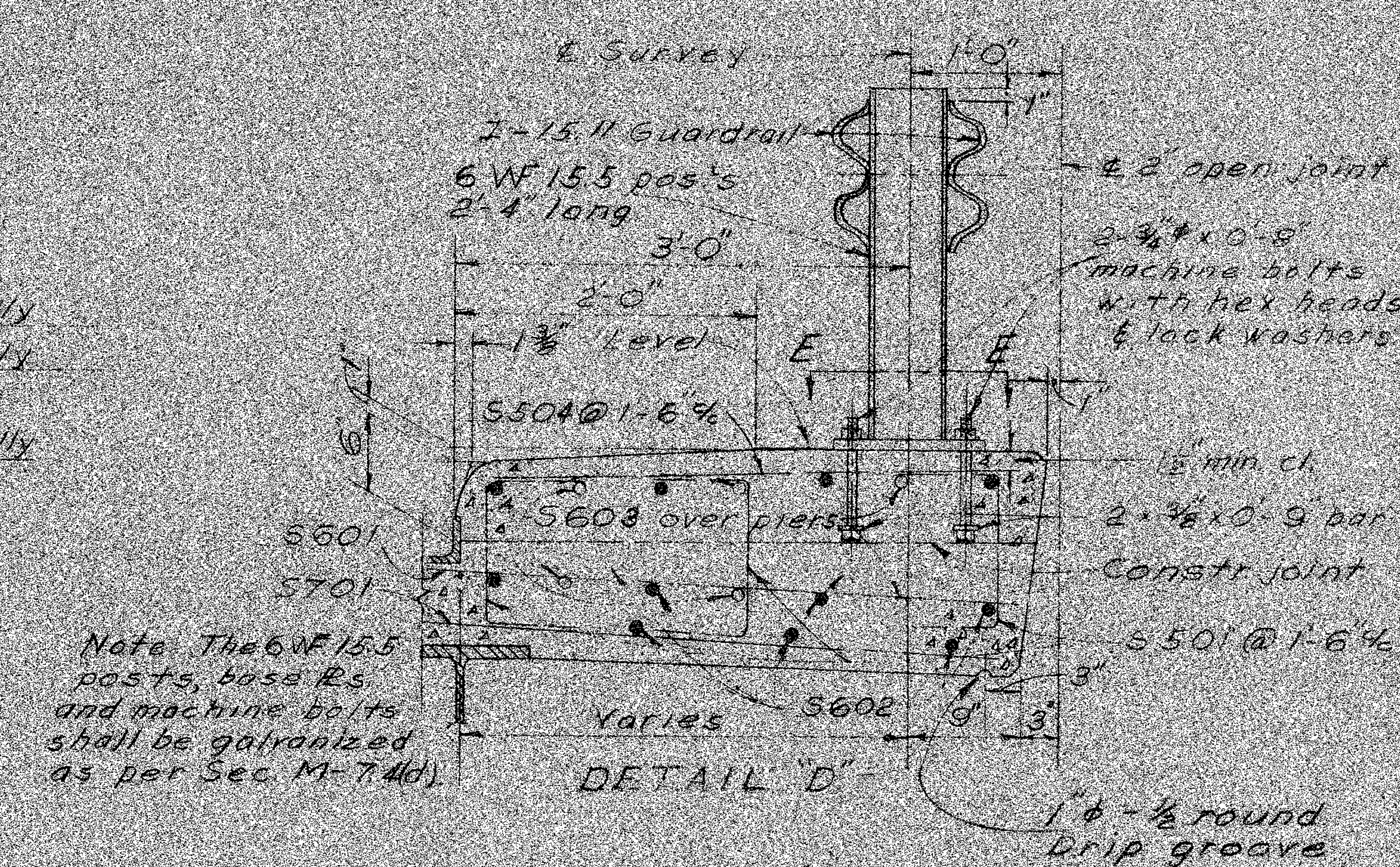


SECTION A-A

Slab thickness shown includes 1" for monolithic wearing surface

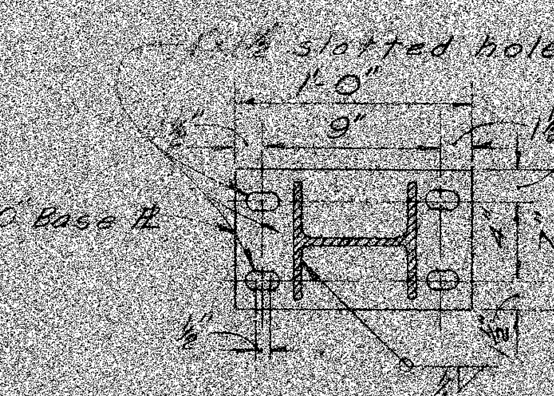
SLAB THICKNESS OVER BEAMS		
LOCATION	℄ Brgs. Piers	℄ Brgs. Abuts.
"T" *	9"	8¾"

* These dimensions are nominal. The quantity of deck concrete to be paid for shall be based on these dimensions, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

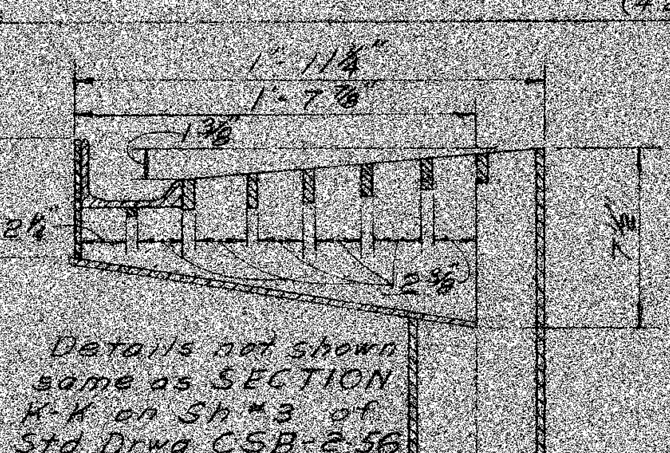


DETAIL "D"

Note: The 6 WF 15.5 posts, base ℞s and machine bolts shall be galvanized as per Sec. M-7.4(a).



SECTION E-E



SCUPPER "B"

SCUPPER DETAILS

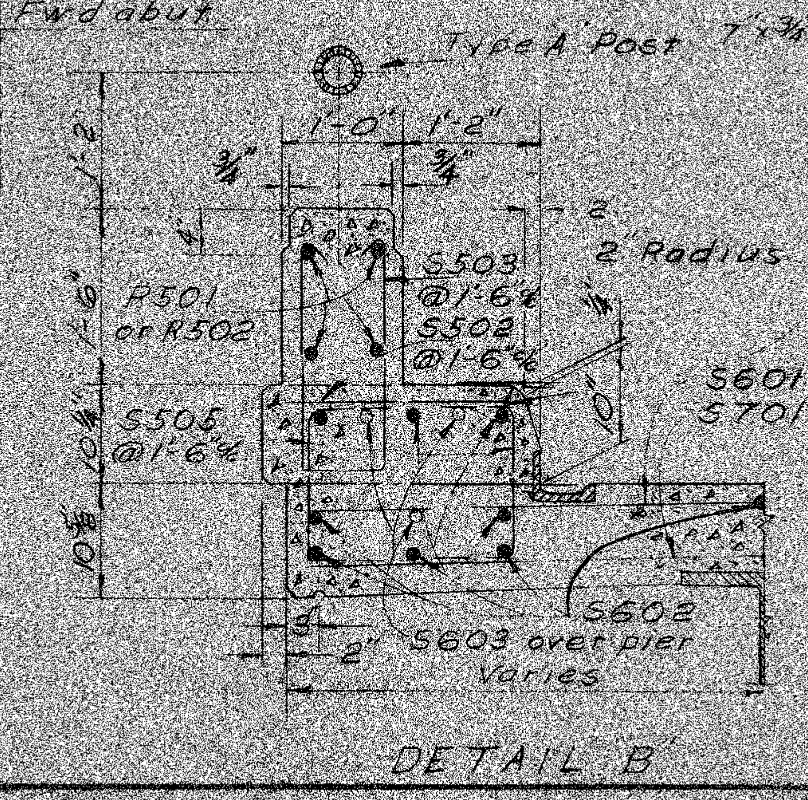
See FRAMING PLAN Sh. No. 229 for spacing and location of Scuppers "A", "B" and "C".

SCUPPER "A" is the same as SECTION K-K on Sh. No. 3 of Std. Drwg. CSB-2-56

SCUPPER "C" shown on sheet No. 227

DECK SLAB HAUNCH: The haunch in the deck slab adjacent to the top of the steel beams, which is shown as 9" wide, may vary from this dimension with a minimum of 6" and a maximum of 12". Maximum slope of haunch shall be one vertical to four horizontal. Payment for deck slab concrete shall be based on the 9" width.

CONCRETE shall be class "C"

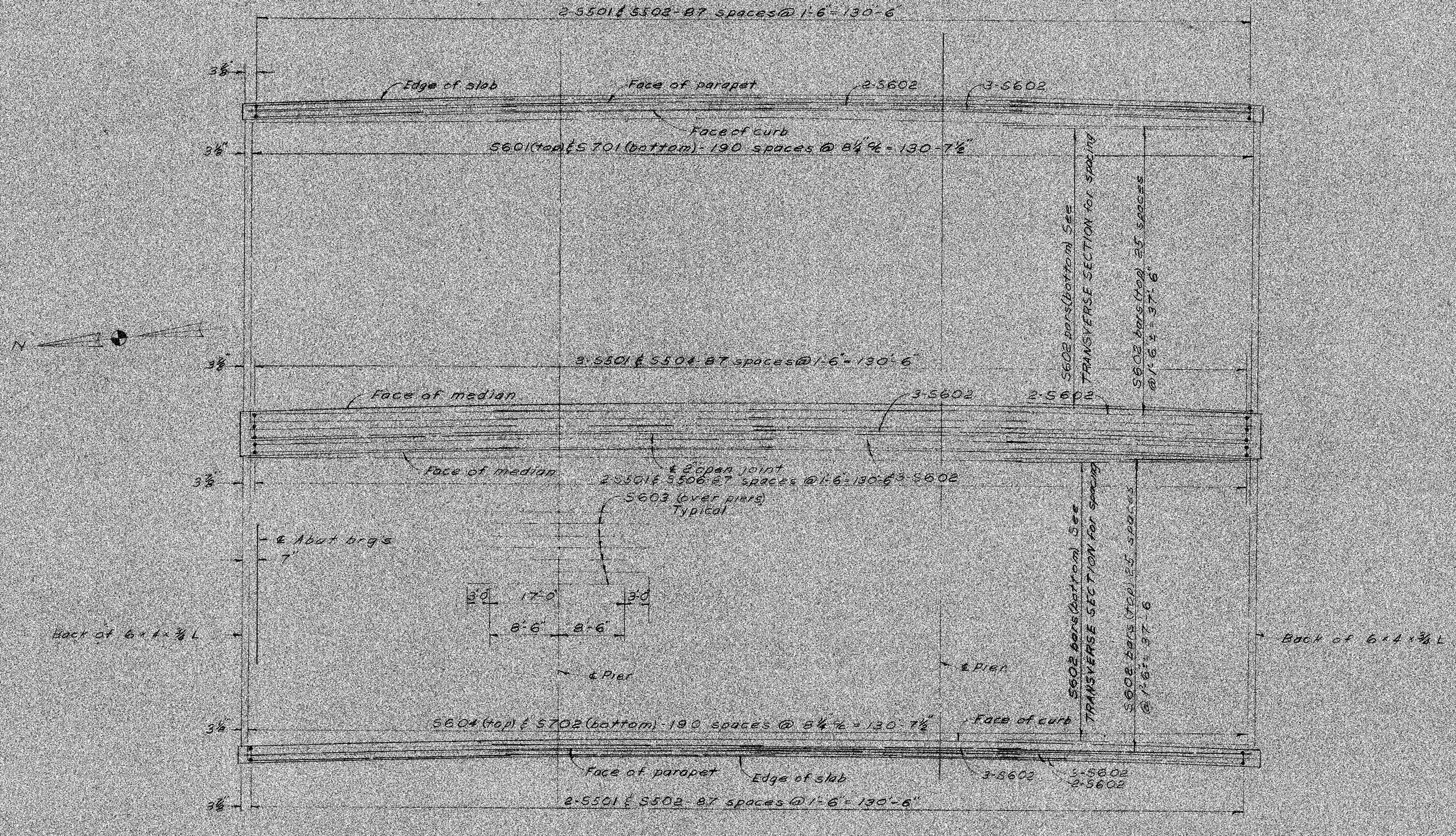


DETAIL B

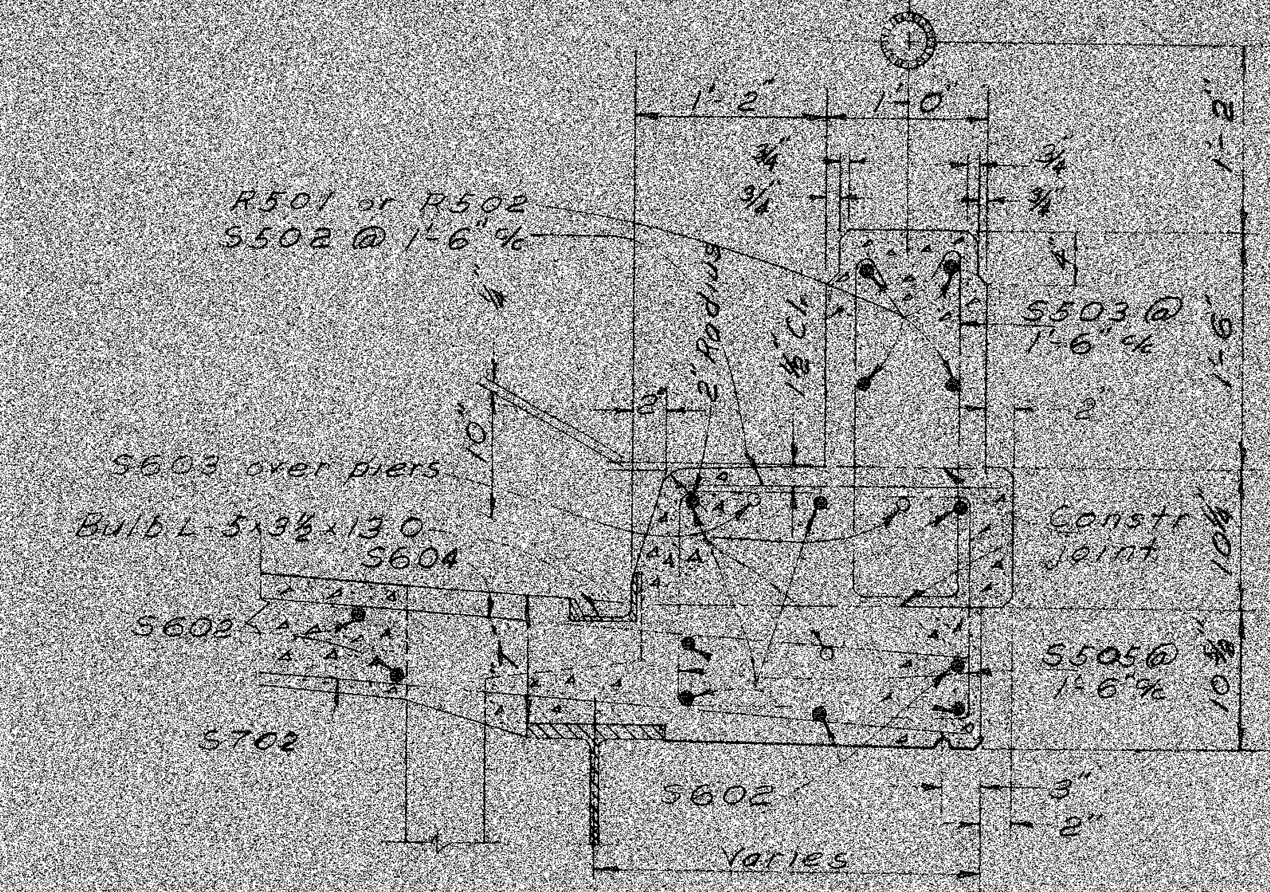
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS
BRIDGE No. COL-30-3271
over HILL AVE.
COLUMBIANA COUNTY Sta. 226+29.25 / 827+83.75

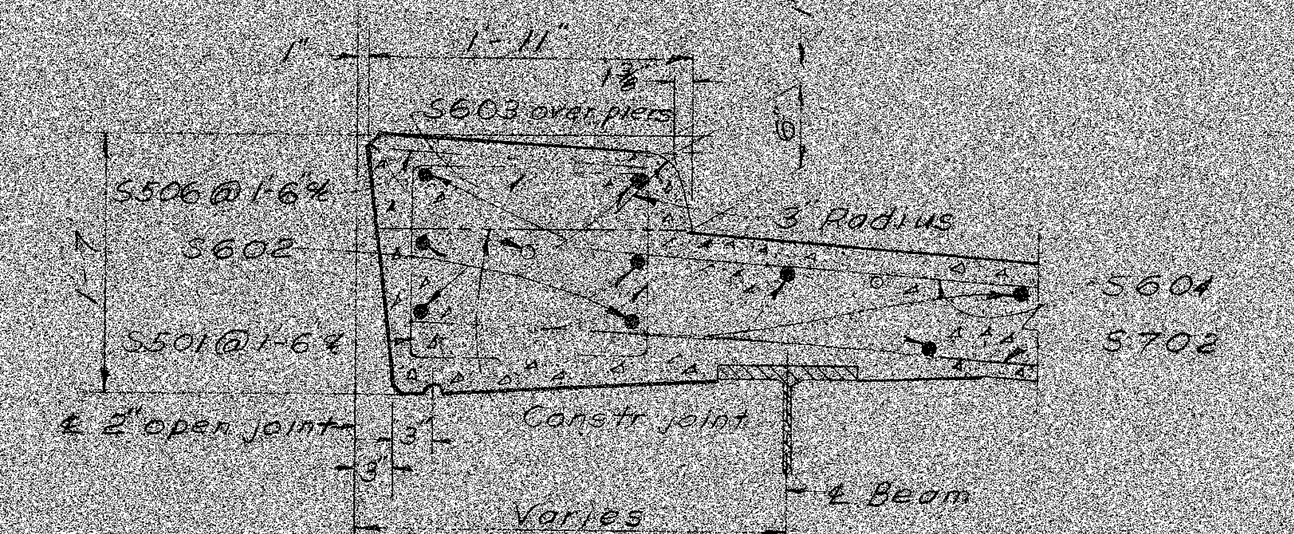
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
					7-21-61	



DECK REINFORCING STEEL

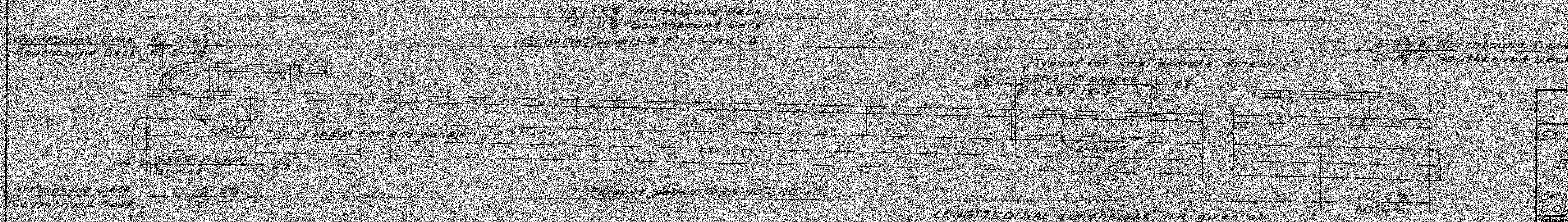


DETAIL F



DETAIL C

REFERENCE shall be to sheet 228 for additional details and also to Standard Drawing AR-1-57, Type "A" Post.
⅛" Preformed bearing pad as per Sec. M-10.11 under posts shall be included with railing for payment



LONGITUDINAL dimensions are given on the ℄ of the parapet

ELEVATION-RAILING & PARAPET
See PART PLAN AT ABUTMENT for additional details Sheet 230

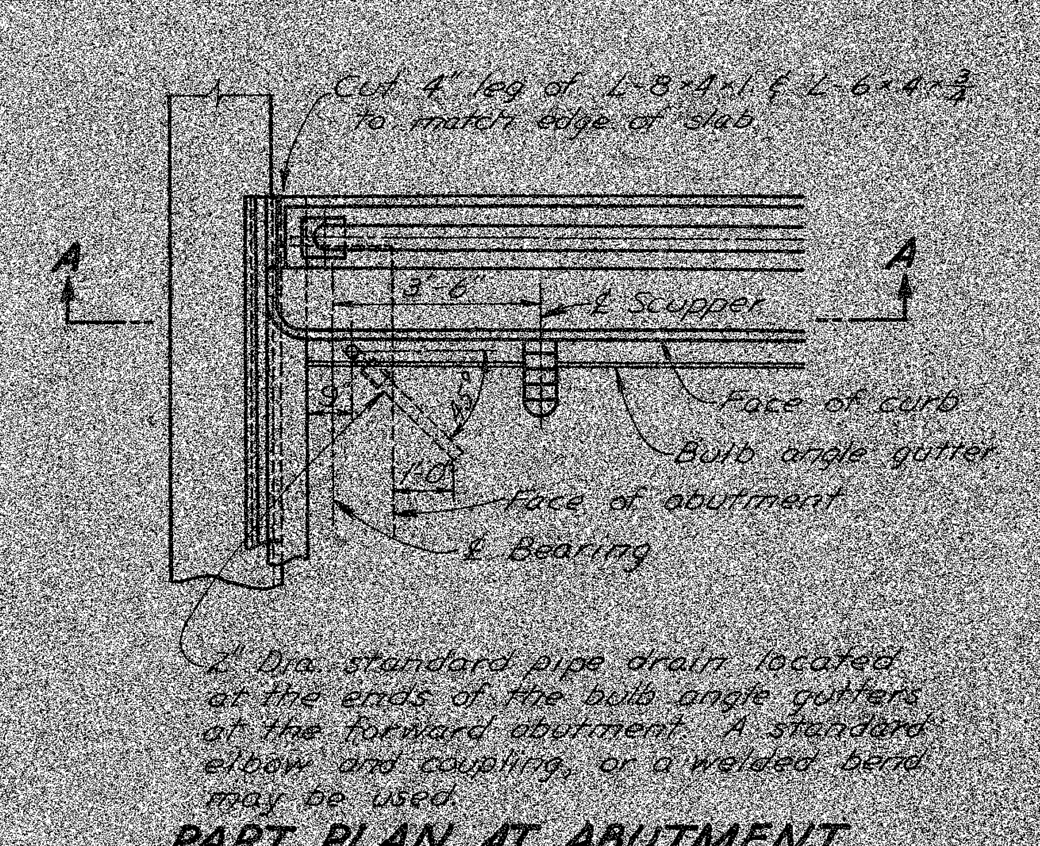
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

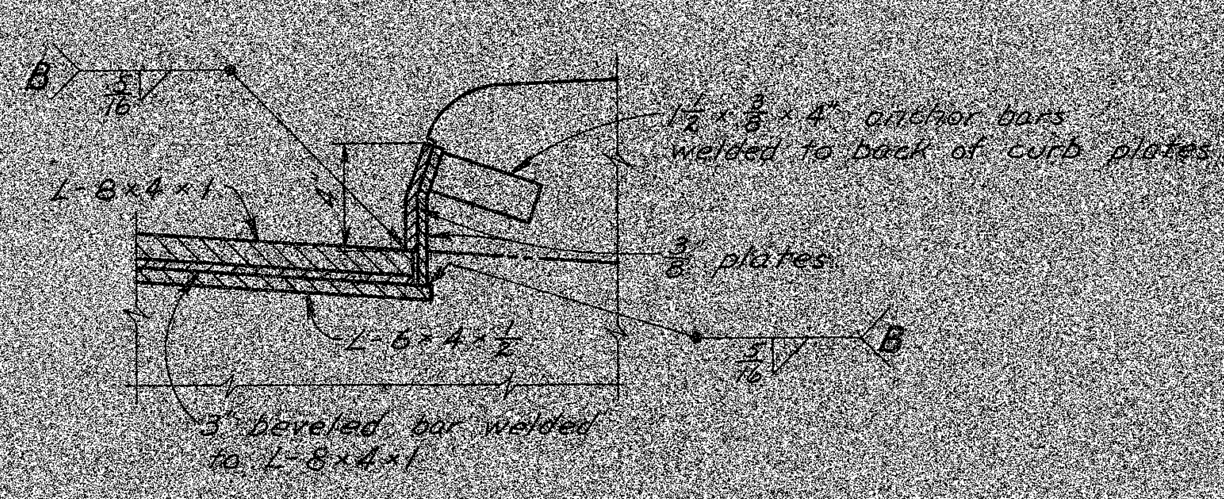
BRIDGE No. COL 30-3271
over HILL AVE

COLUMBIANA COUNTY — Sta. 826+29.25, 827+63.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KLH	KLH		[illegible]	BFG G.J.F.	7-21-61	

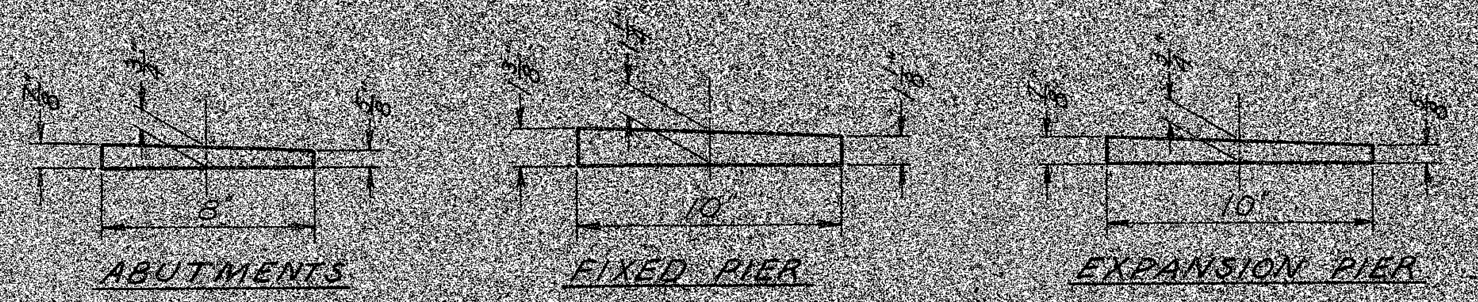


PART PLAN AT ABUTMENT



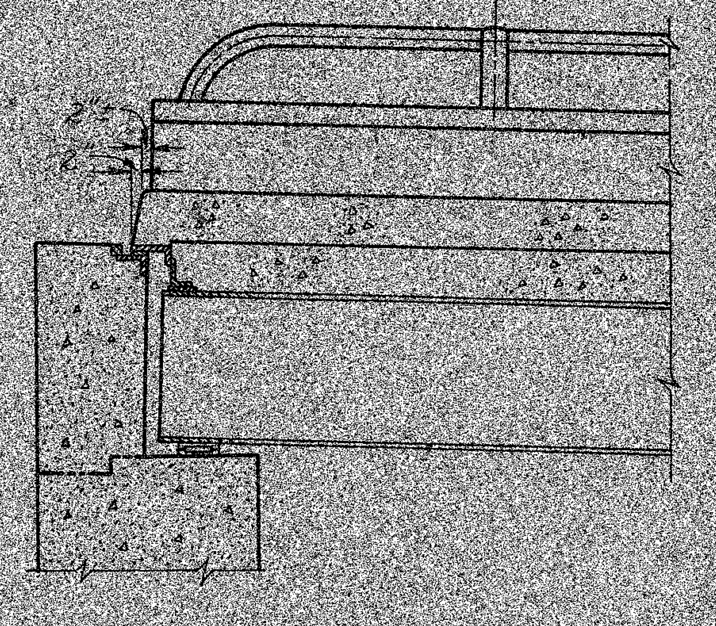
SECTION THRU CURB AT MEDIAN

(For other details refer to Curb Plate Details on CSB-2-56 sheet 3)



BEVELED BEARING PLATES

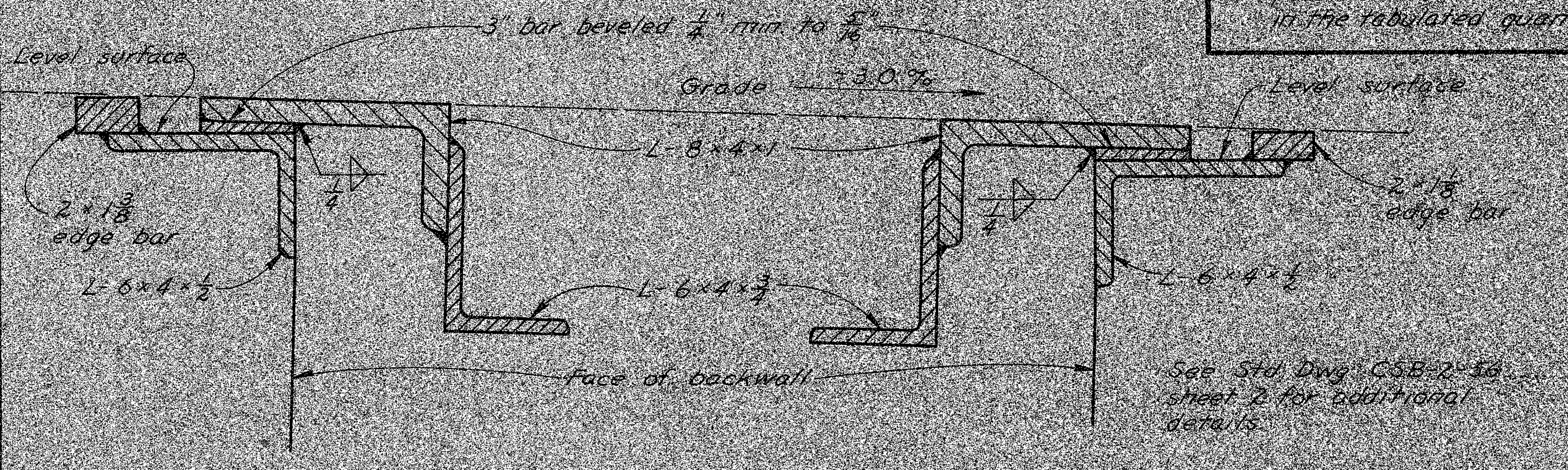
See Std. Dwg. CSB-2-56 sheet 5 for additional details.



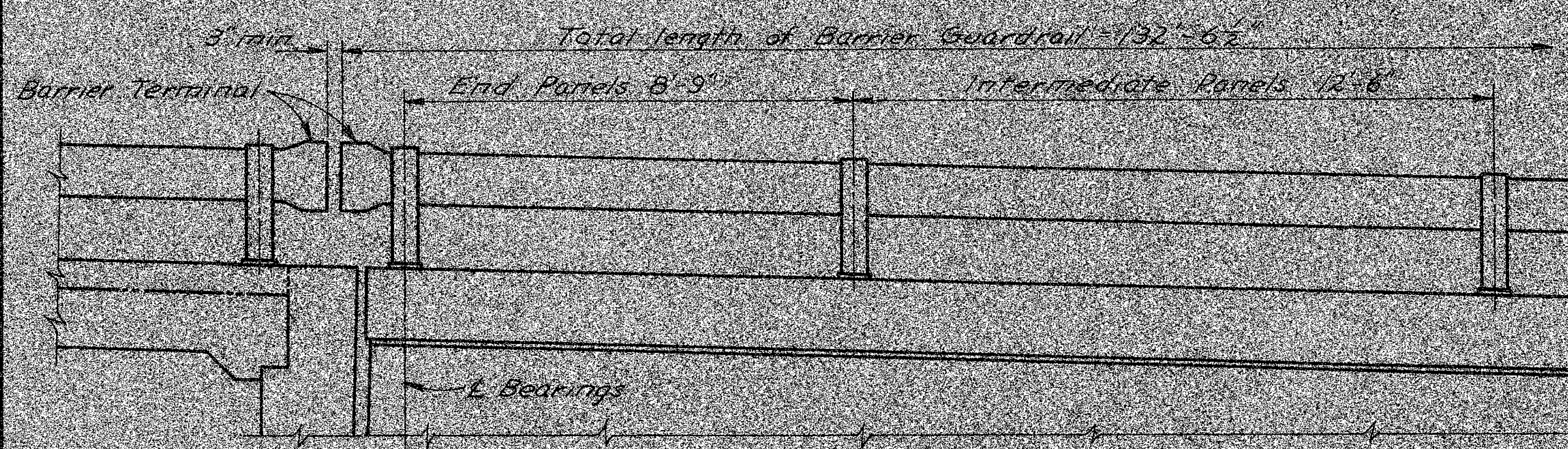
SECTION A-A

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" is the Length divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4. 1½ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lb per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb per lin. ft. will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.



END DAM DETAILS

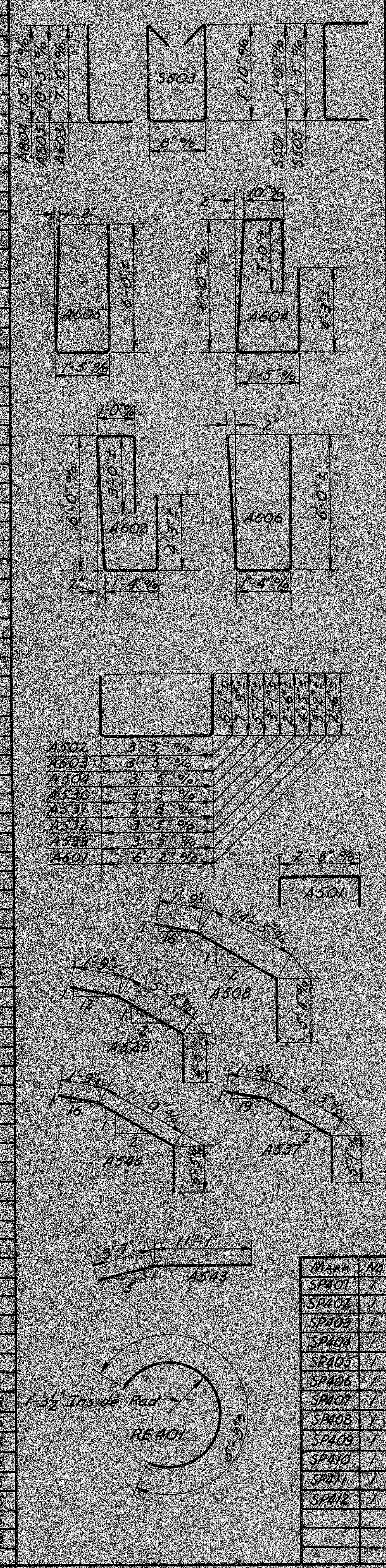


TYPICAL BARRIER GUARDRAIL DETAILS

REINFORCING STEEL LIST

Mark	No.	Rear	Fwd.	Length	Weight	Shp.
Abutments						
A801	24	24		33'-0"	2,115	S
A802	16		16	35'-3"	1,506	S
A803	12		12	27'-0"	865	S
A804	14		14	15'-11"	595	B
A805	14		14	11'-2"	417	B
A601	220	126	94	10'-10"	3,580	B
A602	64	64		14'-11"	1,434	B
A603	14	9	5	7'-8"	161	B
A604	62		62	14'-10"	1,381	B
A605	20		20	13'-1"	393	B
A606	21	21		13'-0"	410	B
A501	120	60	60	3'-3"	407	B
A502	73	28	45	15'-4"	1,167	B
A503	29	29		18'-8"	565	B
A504	60	29	31	14'-4"	897	B
A505	24	24		22'-10"	572	S
A506	10	5	5	34'-4"	358	S
A507	2	2		12'-9"	27	S
A508	2	2		21'-5"	45	B
A509	2	2		7'-9"	16	S
A510	2	2		6'-7"	14	S
A511	2	2		8'-5"	18	S
A512	2	2		9'-9"	20	S
A513	2	2		10'-10"	23	S
A514	2	2		11'-10"	25	S
A515	2	2		12'-0"	25	S
A516	6	6		17'-7"	110	S
A517	2	2		15'-7"	33	S
A518	2	2		19'-9"	41	S
A519	2	2		17'-0"	35	S
A520	20	20		21'-3"	443	S
A521	2	1	1	32'-9"	68	S
A522	8	8		25'-3"	211	S
A523	4	2	2	12'-8"	53	S
A524	2	2		7'-0"	15	S
A525	2	2		6'-3"	13	S
A526	2	2		11'-5"	24	B
A527	2	2		5'-5"	11	S
A528	6	6		9'-7"	60	S
A529	20	10	10	10'-0"	209	S
A530	15	15		9'-4"	146	B
A531	30		30	7'-5"	232	B
A532	27	13	14	12'-0"	338	B
A533	8		8	16'-3"	136	S
A534	6		6	8'-9"	55	S
A535	2		2	7'-1"	15	S
A536	2		2	6'-8"	14	S
A537	2		2	11'-0"	23	B
A538	8		8	24'-11"	208	S
A539	30		30	9'-6"	297	B
A543	2		2	13'-1"	27	S
A544	2		2	16'-0"	33	S
A545	2		2	16'-3"	34	S
A546	2		2	18'-1"	38	B
A547	2		2	10'-1"	21	S
A548	2		2	10'-4"	22	S
A549	2		2	8'-9"	18	S
A550	2		2	6'-10"	14	S
A551	8		8	14'-5"	120	S
A552	2		2	10'-11"	23	S
A553	16		16	8'-6"	142	S
A554	14		14	5'-5"	79	S
A555	12		12	6'-6"	81	S
A556	10		10	4'-5"	46	S
A557	24		24	22'-3"	557	S
Replacement Bars						
RE1101	1	—	—	7'-6"	—	S
RE1001	1	—	—	7'-2"	—	S
RE901	1	—	—	6'-10"	—	S
RE801	1	—	—	6'-6"	—	S
RE701	2	—	—	6'-6"	—	S
RE601	4	—	—	5'-11"	—	S
RE501	1	—	—	5'-7"	—	S
RE401	1	—	—	5'-3"	—	B

BENDING DIAGRAMS



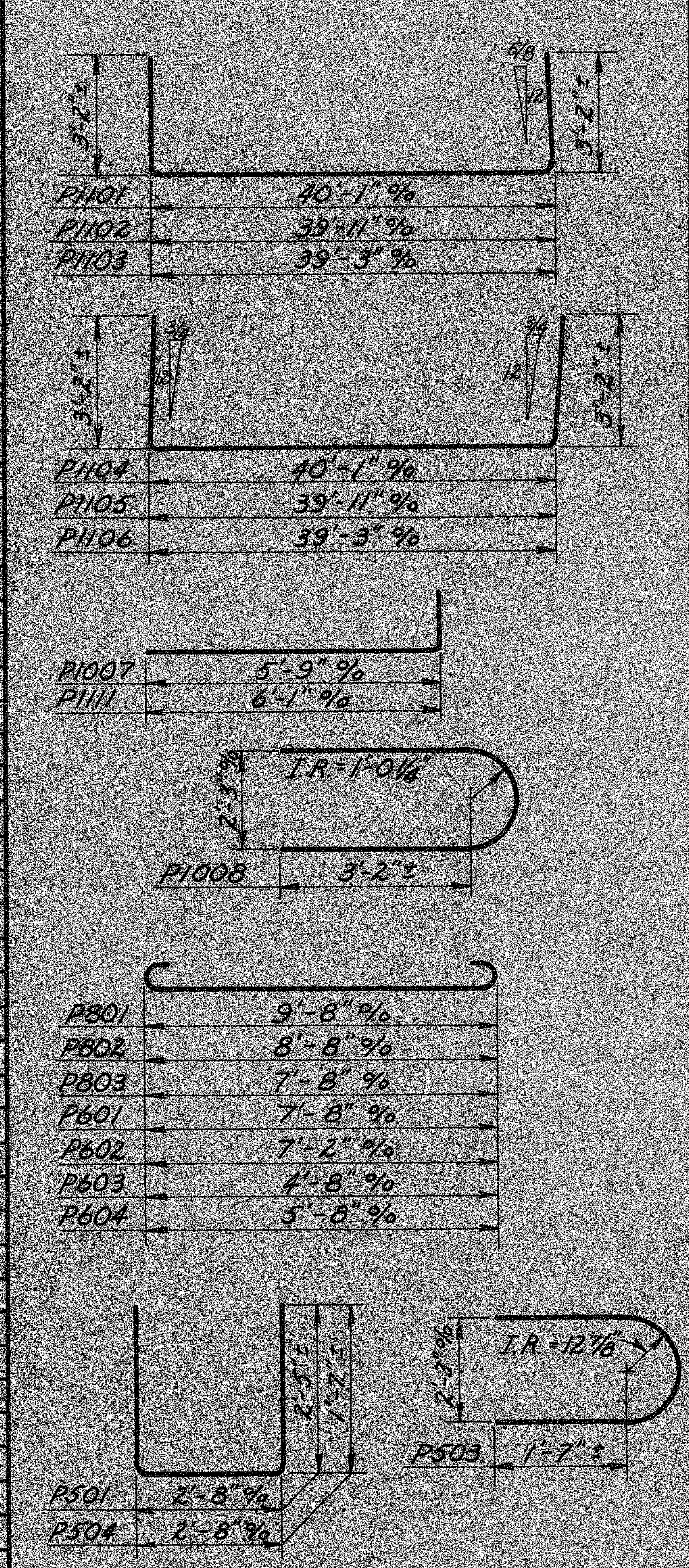
Mark	No.	Length	Weight	Shp.
Superstructure				
S701	191	43'-4"	15,917	S
S702	191	41'-4"	16,137	S
S601	191	43'-7"	12,505	S
S602	572	34'-2"	29,354	S
S603	124	20'-0"	3,725	S
S604	191	41'-7"	11,929	S
S501	440	2'-0"	918	B
S502	176	1'-10"	337	S
S503	182	4'-11"	933	B
S504	88	3'-6"	321	S
S505	352	2'-5"	887	B
S506	88	1'-6"	138	S
Piers				
P1101	2	45'-10"	487	B
P1102	4	45'-8"	971	B
P1103	4	45'-0"	956	B
P1104	2	45'-10"	487	B
P1105	4	45'-8"	971	B
P1106	4	45'-0"	956	B
P1107	10	33'-6"	1,780	S
P1108	10	31'-9"	1,687	S
P1109	10	27'-9"	1,474	S
P1110	10	23'-9"	1,262	S
P1111	48	7'-3"	1,541	B
P1001	10	28'-11"	1,244	S
P1002	10	26'-6"	1,140	S
P1003	10	24'-1"	1,036	S
P1004	10	21'-8"	932	S
P1005	10	19'-1"	821	S
P1006	10	15'-11"	685	S
P1007	80	6'-10"	2,352	B
P1008	8	9'-8"	336	B
P1009	12	40'-0"	2,065	S
P1010	8	39'-3"	1,351	S
P1011	10	28'-7"	1,230	S
P1012	10	26'-4"	1,133	S
P901	20	16'-4"	1,111	S
P801	56	11'-10"	1,769	B
P802	39	10'-10"	868	B
P803	47	5'-10"	1,234	B
P601	16	9'-0"	216	B
P602	30	8'-6"	383	B
P603	27	6'-0"	243	B
P604	12	7'-0"	126	B
P501	176	7'-3"	1,331	B
P502	4	38'-10"	162	S
P503	4	6'-6"	27	B
P504	4	5'-7"	23	B
Railing				
R501	16	10'-1"	*	S
R502	56	15'-6"	*	S

Mark	No.	Size of Spiral	Length	Pitch	No. of Turns	Weight
SP401	1	32"	25'-3"	4½	72	467
SP402	1	32"	23'-4"	4½	65	421
SP403	1	32"	20'-11"	4½	59	382
SP404	1	32"	18'-8"	4½	53	345
SP405	1	30"	16'-0"	4½	46	297
SP406	1	30"	12'-11"	4½	37	239
SP407	1	32"	25'-3"	4½	70	454
SP408	1	32"	23'-1"	4½	65	421
SP409	1	32"	30'-4"	4½	84	543
SP410	1	32"	28'-8"	4½	79	513
SP411	1	30"	24'-8"	4½	69	447
SP412	1	32"	20'-8"	4½	58	376

Fed. Rd. Division	State	Project	
2	OHIO		180/250

COL-30-32.19

BENDING DIAGRAMS



See additional notes on this sheet.

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, A801 is a No. 8 size bar and P1101 is a No. 11 size.

*Included with railing for payment.

REPLACEMENT BARS: If reinforcing bars are fabricated from steel which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS & REINFORCING STEEL LIST

BRIDGE NO. COL-30-3271 over HILL AVE.

COLUMBIANA COUNTY — Sta. 826+29.25, 827+63.75

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
E.B.L.	E.B.L.	A.A.K.	VCH	BFG	7-20-61	

TE-54-A
200-1-58

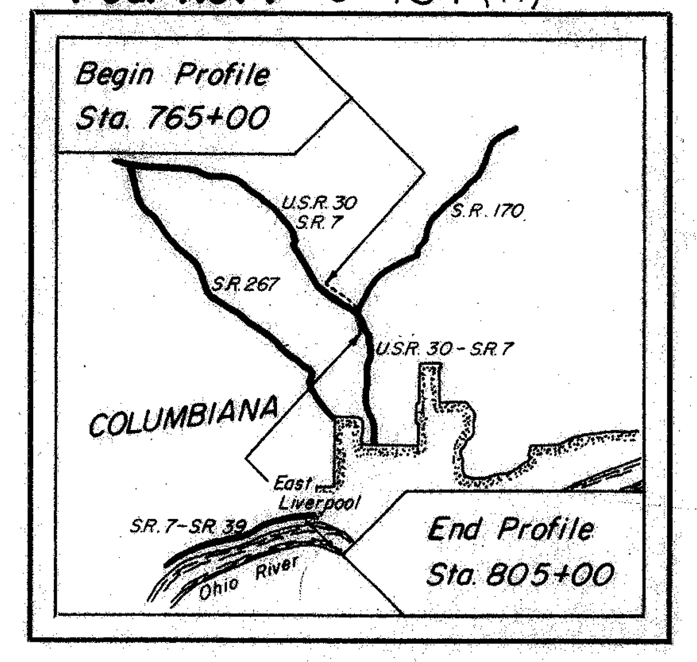
SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19

1/19

OHIO STATE HIGHWAY
TESTING LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

NOTE: Information shown by this subgrade profile was obtained solely for use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

Fed. No. F-U-457(11)



LOCATION MAP

Recon - I.M., P.L.H. - 10/22/59

Drilling Auger - C.E.G., B.E.B. - 11/12/59
Core - J.H.S. - 10/29/59 to 11/3/59

Drafting - D.M. - 12/29/59

GENERAL INFORMATION

Exploratory borings were made by means of truck mounted mechanical earth auger, on November 12, and rotary drill rig, between Octoter 29 and Novemter 3, 1959.

The project consists of the realignment of 0.8 mile of USR 30, beginning approximately 4 miles north of East Liverpool and continuing generally southward in a line approximately parallel to, and 400 feet east of, existing USR 30. The terminus of this section is 600 feet south of the junction of USR 30 and SR 170.

The alignment crosses the unglaciated portion of the somewhat rugged Allegheny Plateau in a region where shallow residual soil (ranging from 0 to 20 feet in thickness) overlies argillaceous shales and thin to medium bedded sandstones, of Pennsylvanian age. Alluvial material was observed along a small stream at the southern end of the project; scant in some areas and totally absent in others.

The proposed grade indicates fill embankments a maximum of 25 feet in height; cuts as deep as 23 feet.

Borings disclose that shale and sandstone bedrock comprise the predominant material occurring immediately below the proposed grade. Silty clay, in the A-6a classification, is the predominant soil type beneath grade. Bedrock will be encountered in the excavation at the following approximate locations:

Station 774+00 to 777+75 - Shale, extremely weathered, at grade and left ditchline.
Station 785+00 to 793+00 - Shale, broken and very badly broken, at grade, ditches, and in the lower backslopes.
Station 793+00 to 797+50 - Sandstone at grade, in ditches, and in the lower backslopes.

In the remaining cut area, from station 797+50 to 805+00, sandstone will be encountered at grade and left ditchline, with very little, if any, rock right of centerline.

Embankment foundation material consists predominantly of silty clay, in the A-6a classification.

LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS- 49 SAMPLES TESTED

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Stone fragments	A-1-a(0)	A-1-a	74	4	8	8	6	NP	NP	19	1
Stone fragments with sand	A-1-b(0)	A-1-b	60	4	14	14	8	NP	NP	8	2
Stone fragments with sand and silt	A-2-4(0)	A-2-4	23	7	38	14	18	NP	NP	10	1
Sandy silt	A-4(7)	A-4a	16	8	6	41	29	28	6	18	1
Silt	A-4(8)	A-4b	7	4	4	54	31	31	6	21	4
Silt and clay	A-6(9)	A-6a	11	3	3	40	43	35	12	20	20
Elastic clay with organic material	A-7-5(16)	A-7-5	0	1	6	39	54	61	21	42	1
Clay	A-7-6(8)	A-7-6	23	6	5	23	43	42	13	25	1
Weathered shale	VISUAL CLASSIFICATION										1
Shale	VISUAL CLASSIFICATION										17
Sandstone	VISUAL CLASSIFICATION										

Auger boring-plan view.

Drive sample-core boring-plan view.

Auger boring plotted to vertical scale only.

Number of blows for "Standard Penetration" test.
X=number of blows for the first 6 inches.
Y=number of blows for the second 6 inches.

Small vertical figures beside boring indicate loss on ignition. e.g. 15%

Sod and/or Topsoil=X'=Approximate depth.

Berm material.

W Free water

NOTE: Figures beside borings indicate water content in percent. e.g. 15

Samples Tested
Lab.Nos.So.
36864
37476
38760-38806 incl.

SUMMARY OF SOIL TEST DATA

NOTE: NP shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic
*Denotes sample taken at or near grade.

STATION	OFFSET	DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
765+00	CL	0.5-3.0	6	6	6	39	43	35	11	24	A-6a
		3.0-8.0	Brown Soft Shale							10	Visual
		8.0-10.0	Dark Brown Broken Shale							11	Visual
767+50	CL	1.0-6.0	0	1	1	48	50	39	13	24	A-6a
		6.0-9.0	0	0	1	41	58	33	11	19	A-6a
		9.0-15.0	0	0	2	49	49	35	11	19	A-6a
		15.0-19.0	1	0	1	43	55	29	11	24	A-6a
771+40	CL	0.5-3.0	0	2	1	49	48	36	13	24	A-6a
		3.0-6.0	5	3	5	47	40	35	12	9	A-6a
		6.0-9.0	16	8	6	41	29	28	6	18	A-4a
		9.0-11.0	0	4	4	59	33	32	9	23	A-4b
		11.0-13.0	19	6	5	34	36	33	11	19	A-6a
		13.0-15.0	Dark Brown Broken Shale							20	Visual
		15.0-17.0	Black Broken Carbonaceous Shale							12	Visual
773+25	CL	0.0-6.0	0	5	7	40	48	30	11	11	A-6a*
		6.0-7.0	0	1	2	42	55	39	12	20	A-6a*
		7.0-13.0	Dark Brown Broken Shale							10	Visual
775+75	70'Lt.	0.3-5.0	Light Brown Broken Shale							9	Visual
		5.0-9.5	Brown Broken Shale							13	Visual
775+75	CL	0.3-2.0	27	2	3	36	32	36	11	18	A-6a
		2.0-7.0	Brown Broken Shale							10	Visual
778+50	CL	1.0-5.0	3	3	4	48	42	35	12	21	A-6a*
		5.0-7.0	23	7	4	37	29	32	11	16	A-6a
		7.0-10.0	Brown & Gray Broken Shale							11	Visual
		10.0-15.0	Dark Gray Broken Carbonaceous Shale							11	Visual
781+00	CL	0.5-4.0	7	1	0	45	47	38	15	23	A-6a
		4.0-8.0	22	6	5	39	28	31	11	21	A-6a
		8.0-12.0	Black Broken Carbonaceous Shale							10	Visual
784+00	CL	0.5-2.0	6	5	5	50	34	31	6	24	A-4b
		2.0-7.0	55	4	4	18	19	36	11	24	A-6a*
		7.0-11.0	Black Broken Carbonaceous Shale							11	Visual
		11.0-13.0	Black Broken Carbonaceous Shale							11	Visual
788+30	100'Lt.	0.5-2.0	3	3	3	56	35	29	4	24	A-4b
		2.0-7.0	20	3	5	50	22	30	4	12	A-4b
		7.0-12.0	Gray Broken Shale							8	Visual
		12.0-14.0	Black Broken Carbonaceous Shale							19	Visual
788+30	CL	0.5-3.0	14	7	7	21	51	39	13	19	A-6a
		3.0-7.0	23	6	5	23	43	42	13	25	A-7-6
		7.0-10.0	Black Broken Carbonaceous Shale							18	Visual
792+00	CL	0.5-3.0	0	1	2	55	42	36	15	24	A-6a
		3.0-4.0	0	1	6	39	54	61	21	42	A-7-5
		4.0-9.0	24	1	5	31	39	40	12	27	A-6a
		9.0-12.5	Black Broken Shale							15	Visual
795+00	CL	0.5-3.0	23	7	38	14	18	NP	NP	10	A-2-4
		3.0-4.5	60	3	16	11	10	NP	NP	7	A-1-b
800+00	CL	0.5-3.0	60	5	12	16	7	NP	NP	9	A-1-b
804+00	CL	0.5-3.5	74	4	8	8	6	NP	NP	19	A-1-a

DRIVE SAMPLE BORING SOIL TEST DATA

STATION	OFFSET	DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
775+50	50'Lt.	5.0-5.5	Light Brown Extremely Weathered Shale							15	Visual
788+30	50'Lt.	5.0-6.0	0	19	10	32	39	37	14	23	A-6a

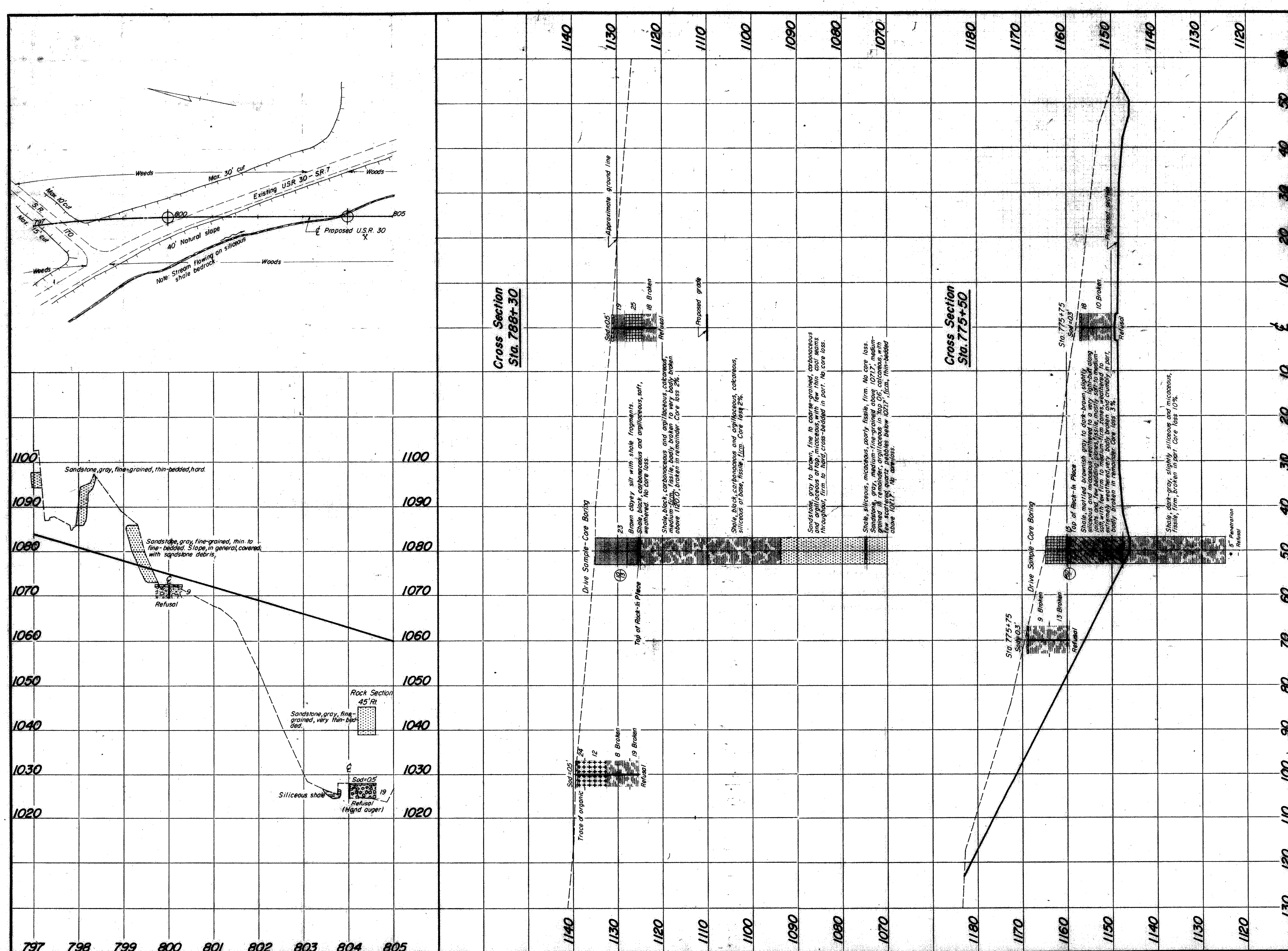
TE-54-B
900-5-59

SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19

2/19

OHIO STATE HIGHWAY
TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

TE-54-B
900-5-59



SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19

3
19

OHIO STATE HIGHWAY
TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

TE-54-A
208-1-58

GENERAL INFORMATION

Exploratory borings were made by means of truck mounted mechanical earth auger, between August 18 and 27, 1959, and rotary-type drill rig, between August 6 and 25, 1959.

This project consists of the realignment of USR 30, beginning approximately 600 feet south of the USR 30 - SR 170 junction (approximately 1.7 miles north of East Liverpool), and proceeding southward, roughly paralleling existing USR 30, 100 to 300 feet to the west, terminating at the north corporation limit of East Liverpool. The proposed grade indicates fill embankments approaching 42 feet in height, and cut as deep as 62 feet along ditchline (a maximum of 38 feet along centerline).

The alignment crosses an unglaciated portion of the dissected Allegheny Plateau generally at the toe or slightly above the toe of the west valley wall of California Run. In this region the soil cover is of residual and alluvial origin and is rather shallow - generally ranging from 0 to 16 feet in depth, but as much as 45 feet. At scattered locations along the floodplain of California Run, the alluvial cover amounts to 14 feet, but as a general rule, bedrock is at, or very near, ground surface. Local bedrock (Pennsylvanian in age) consists primarily of shales, sandstones, and indurated clay with minor amounts of coal and underclay.

Borings disclose the predominant materials below the grade to consist of shale, sandstone, and indurated clay bedrock, as well as sandy silt, silty clay, and sands, in the A-4a, A-6a and A-3a classifications. The majority of the cuts will be to the right of centerline and, predominantly in bedrock. Further specific information regarding each cut area follows:

Station 805+50 to 806+25 - coal in right ditchline, and below grade in right lane.

Station 806+25 to 807+25 - shale bedrock in the right ditchline and right backslope.

Station 819+20 to 820+25 - shale will probably be encountered only at grade (right lanes)

Station 822+30 to 825+30 - some sandstone is expected in the upper right backslope.

Station 828+35 to 830+75 - shale bedrock at grade (right lane), right ditch and backslope.

Station 830+75 to 833+25 - shale bedrock at grade (both lanes), both ditches, and right backslope.

Station 833+25 to 834+75 - shale bedrock at grade (right lane), right ditch and backslope.

Station 834+75 to 835+75; 838+00 to 839+75; 840+50 to 843+25 - shale bedrock in right ditch and backslope.

Station 843+25 to 849+50 - shale bedrock at grade (both lanes), right ditch and backslope.

Station 844+00 to 850+00 - sandstone is expected in the backslope between elevations 940 and 950 feet.

Station 868+40 to 870+00 - shale bedrock at grade in the right ditchline and right backslope.

Station 870+00 to 879+25 - shale bedrock at grade, ditches, and right backslope.

Station 871+25 to 877+30 - coal, occasional beds of clay, and isolated layers of sandstone, are expected throughout portions of the cut section.

~~Station 879+25 to 881+25 and 883+50 to 888+00 - shale bedrock in right ditch and backslope.~~

Attention is directed to borings which encountered void intervals believed to be abandoned mine drifts. At station 817+33, 88 feet left of centerline the void was encountered between elevations 996 and 991 feet. An abandoned entry was observed at station 817+60, 99 feet left of centerline, elevation at the floor of entry being approximately elevation 1000 feet. At station 831+00, centerline the void was encountered between elevations 978 and 973 feet. An abandoned entry was observed, partially obscured by an abandoned traction line embankment, at station 830+20, 20 feet left of centerline, elevation at the floor of the entry being approximately 985 feet.

Embankment foundation materials consist predominantly of gravel, sandy silt, and silty clay in the A-2-4, A-4a and A-6a classifications. It is noted that wet sandy silt was encountered from 0 to 2 feet below ground surface at station 815+00, 55 feet left and also at station 854+00, centerline, 4 to 11 feet below ground surface, and wet gravel in the A-1-a classification, at station 883+25, 40 feet left, from 2 to 5 feet beneath the ground surface .

It is noted that there is indication of earth movement on the natural slope in the area right of centerline from station 885+00 to 889+00 and in a road cut right of centerline between stations 886+00 and 888+00. Further indication of earth movement is the settlement of a porch on a residence at approximately station 884+00, 150 feet right of centerline and cracking of walls at a home 100 feet right of centerline at station 887+00.

LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS- 252 SAMPLES TESTED

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Stone fragments	A-1-a(0)	A-1-a	62	15	11	8	4	NP	NP	15	2
Gravel or stone fragments with sand	A-1-b(0)	A-1-b	59	10	11	11	9	25	2	13	10
Coarse and fine sand	-----	A-3a	30	15	43	2	10	NP	NP	10	1
Gravel and/or stone fragments with sand and silt	A-2-4(0)	A-2-4	53	11	10	14	12	28	6	13	22
Stone fragments with sand, silt, and clay	A-2-6(0)	A-2-6	52	12	10	14	12	30	11	16	5
Sandy silt	A-4(3)	A-4a	25	12	12	29	22	26	6	16	54
Silt and clay	A-6(6)	A-6a	23	8	8	31	30	31	12	15	38
Silty clay	A-6(7)	A-6b	20	10	13	26	31	33	17	19	3
Clay	A-7-6(12)	A-7-6	8	7	5	30	50	44	18	21	6
Underclay	VISUAL CLASSIFICATION										3
Indurated clay	VISUAL CLASSIFICATION										1
Coal	VISUAL CLASSIFICATION										6
Rock-soil mixture	VISUAL CLASSIFICATION										
Overburden	VISUAL CLASSIFICATION										
Weathered shale	VISUAL CLASSIFICATION										23
Shale	VISUAL CLASSIFICATION										75
Weathered sandstone	VISUAL CLASSIFICATION										1
Sandstone	VISUAL CLASSIFICATION										2

Berm material

Sod or Topsoil = X' = Approximate depth.

Drive sample and/or core boring plotted to vertical scale only.

Auger boring plotted to vertical scale only.

Auger boring plan view.

Drive sample core boring-plan view.

Number of blows for "Standard Penetration" test.
X=number of blows for the first 6 inches.
Y=number of blows for the second 6 inches.

Indicates a non-plastic material with high water content.

Free water

NOTE: Figures beside borings indicate water content in percent. e.g. 15

Water content nearly equal to or greater than liquid limit.

S Indicates soft rock interval

B Indicates broken rock interval

Samples Tested
Lab. Nos. So.
30807-30918 incl.
31374-31488 incl.
29770-29775 incl.
29882-29889 incl.
30664-30670 incl.
31201-31203 incl.
29870
29897

SOIL PROFILE

COLUMBIANA COUNTY

COL-30-32.19

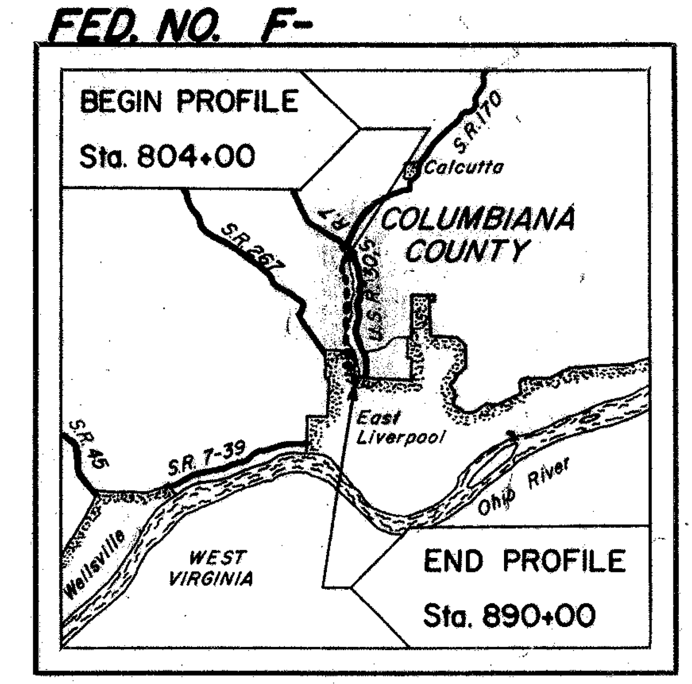
4/19

OHIO STATE HIGHWAY TESTING LABORATORY

O.S.U. CAMPUS, COLUMBUS, OHIO

NOTE: Information shown by this subgrade profile was obtained solely for use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

FED. NO. F-



LOCATION MAP

Recon - I.M. - 7-11-59

Drilling - Auger - B.E.B. - 8-18-59 to 8-27-59
Core - K.D.E., J.H.G., E.F.M., J.H.S. - 8-6-59 to 8-25-59

Drafting - R.E.W. - 2-15-60

TE-54-B
900-5-59

SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19

5/19

OHIO STATE HIGHWAY TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

SUMMARY OF SOIL TEST DATA

NOTE: NP shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic.
*Denotes sample taken at or near grade.

STATION	OFFSET	DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
804+50	50'Lt	9.5-3.0	Gray Broken Shale							4	Visual
		3.0-7.0	Brown Broken Shale							8	Visual
806+00	45'Lt	0.5-5.0	14	4	5	44	33	31	11	13	A-6a
806+00	45'Rt	0.5-2.0	35	19	17	13	16	29	11	10	A-2-6
		2.0-5.0	Coal & Coal Blossom							13	Visual*
		5.0-10.0	Light Brown to Light Gray Under Clay							19	Visual*
		10.0-13.0	Gray Broken Shale							5	Visual
810+50	CL	0.5-4.0	62	10	8	8	12	29	8	10	A-2-4
		4.0-5.0	Gray Weathered Shale							9	Visual
812+00	CL	0.5-2.5	43	17	13	15	12	NP	NP	14	A-2-4
814+00	55'Lt	0.5-2.0	30	16	12	22	20	NP	NP	34	A-4a
		2.0-3.0	Black Coal & Coal Blossom							15	Visual
		3.0-4.5	Gray Broken Shale							5	Visual
814+30	CL	0.5-4.0	0	12	9	42	37	29	11	13	A-6a
		4.0-8.0	62	5	10	11	12	NP	NP	10	A-1-b
		8.0-12.0	25	10	15	25	25	30	16	13	A-6b
		12.0-16.0	Dark Gray & Brown Carbonaceous Shale							11	Visual
		16.0-17.5	Dark Gray & Brown Broken Carbonaceous Shale							7	Visual
817+30	88'Lt	0.5-4.0	32	6	5	28	29	30	11	18	A-6a
		4.0-7.0	64	6	5	12	13	27	9	9	A-2-4
		7.0-10.0	Gray Weathered Carbonaceous Shale							16	Visual
		15.0-15.5	Gray Broken Shale							5	Visual
817+50	CL	0.5-5.0	22	11	7	34	26	27	7	9	A-4a*
		5.0-9.0	Dark Brown Broken Shale							9	Visual
		9.0-14.0	Gray Broken Carbonaceous Shale							7	Visual
817+50	50'Rt	0.5-3.0	Gray Broken Shale							3	Visual
819+25	15'Lt	0.5-4.0	25	13	8	26	28	29	7	14	A-4a
		4.0-5.0	Dark Gray Broken Carbonaceous Shale							20	Visual
		5.0-9.0	Brown & Gray Soft & Firm Broken Shale							12	Visual
		9.0-11.0	Gray Broken Shale							25	Visual
820+00	120'Lt	0.5-3.5	Gray Broken Shale							8	Visual
820+00	31'Rt	0.5-2.0	Slag Material								Visual
		2.0-7.0	Brown Broken Shale,							10	Visual
		7.0-11.0	Brown Broken Shale,							8	Visual
		11.0-15.0	Dark Gray Broken Shale							8	Visual*
		15.0-16.0	Gray Broken Shale,							4	Visual
820+12	50'Rt	0.5-3.0	26	17	15	25	23	NP	NP	17	A-4a
		3.0-5.0	62	13	8	9	8	20	4	7	A-1-b
		5.0-8.0	30	12	7	26	25	29	4	12	A-4a
		8.0-14.0	Gray & Brown Broken Shale							10	Visual*
		14.0-15.5	Gray Carbonaceous Shale							10	Visual
822+00	65'Lt	0.5-4.0	4	8	10	47	31	28	14	14	A-6a
		4.0-8.0	50	7	12	14	17	22	6	14	A-2-4
		8.0-13.0	39	8	14	24	15	NP	NP	12	A-4a
		13.0-17.0	Brown Sandy Broken Shale							12	Visual
		17.0-19.5	Brown Broken Shale							13	Visual
822+33	35'Lt	0.5-4.0	47	8	9	21	15	26	10	13	A-4a
		4.0-5.5	Gray & Brown Broken Sandstone							10	Visual
823+60	20'Lt	0.5-5.0	21	13	25	27	14	NP	NP	11	A-4a*
		5.0-10.0	30	15	43	2	10	NP	NP	10	A-3a*
		10.0-15.0	Brown Weathered Shale							19	Visual
		15.0-19.0	Brown Sandy Weathered Shale							9	Visual
		19.0-21.0	Gray Weathered Shale							10	Visual
824+00	CL	0.5-6.0	53	7	14	15	11	23	7	9	A-2-4
		6.0-10.0	Dark Gray Carbonaceous Broken Shale							10	Visual
		10.0-15.5	Dark Gray Broken Shale							7	Visual*
824+00	35'Rt	0.5-6.0	Dark Gray Broken Shale							6	Visual
824+00	165'Rt	0.5-3.5	Gray Soft Sandstone							4	Visual
825+40	46'Rt	0.5-5.0	60	6	8	13	13	NP	NP	8	A-2-4
		5.0-10.0	Brown Broken Carbonaceous Shale							10	Visual
		10.0-14.0	Dark Gray Broken Carbonaceous Shale							10	Visual
		14.0-16.0	Dark Gray Broken Carbonaceous Shale							9	Visual
826+70	CL	0.5-5.0	46	12	8	18	16	26	6	12	A-2-4
		5.0-9.0	46	15	8	14	17	33	9	14	A-2-4
		9.0-14.0	21	9	10	34	26	28	7	22	A-4a
		14.0-16.0	Gray Soft Carbonaceous Shale							9	Visual
829+00	150'Lt	0.5-2.0	49	11	7	17	16	27	8	11	A-2-4
		2.0-3.5	Gray Broken Carbonaceous Shale							9	Visual
829+00	25'Rt	0.5-5.0	65	7	9	8	11	27	9	10	A-2-4
		5.0-10.0	63	8	9	11	9	NP	NP	9	A-1-b
		10.0-14.0	Brown to Dark Brown Broken Carbonaceous Shale							10	Visual
		14.0-17.0	Dark Gray Carbonaceous Broken Shale							7	Visual
830+50	6'Rt	0.5-4.0	39	17	6	20	18	27	4	12	A-4a
		4.0-10.0	Gray Broken Carbonaceous Shale							11	Visual
		10.0-14.0	Gray Broken Carbonaceous Shale							9	Visual
		14.0-19.0	Gray Broken Carbonaceous Shale							7	Visual
834+50	116'Lt	0.5-4.0	64	9	7	10	10	28	1	13	A-1-b
		4.0-8.0	59	13	7	12	9	30	11	24	A-2-6
		8.0-13.5	53	13	10	14	10	29	7	20	A-2-4
836+00	100'Rt	0.5-4.0	34	14	11	22	19	28	6	21	A-4a
		4.0-9.0	44	10	9	18	19	29	10	19	A-4a
		9.0-12.0	Brown Broken Shale							6	Visual
836+40	30'Lt	0.5-3.0	33	12	13	23	19	22	1	14	A-4a
		3.0-8.5	70	5	7	10	8	25	7	10	A-2-4
839+50	CL	0.5-4.0	21	10	8	29	32	30	11	12	A-6a
		4.0-8.0	Brown Sandy Weathered Shale							10	Visual*
		8.0-10.5	Brown Sandy Weathered Shale							9	Visual*
841+00	75'Lt	0.5-4.0	60	12	12	9	6	NP	NP	10	A-1-a
		4.0-8.0	39	12	12	22	15	24	7	14	A-4a
		8.0-11.0	38	6	8	28	20	27	7	18	A-4a
		11.0-14.0	Gray Weathered Shale							10	Visual
		14.0-15.0	Gray Broken Shale							6	Visual
843+00	40'Rt	0.5-2.0	Light Brown to Gray Broken Shale,							4	Visual
843+25	150'Rt	0.5-4.0	50	8	17	12	12	NP	NP	8	A-1-b
		4.0-7.0	Brown Broken Shale							6	Visual
		7.0-10.0	Dark Gray Broken Carbonaceous Shale							10	Visual
		10.0-12.0	Dark Gray Broken Carbonaceous Shale							13	Visual
		12.0-16.0	Dark Gray Broken Carbonaceous Shale							10	Visual
		16.0-20.0	Dark Gray Broken Carbonaceous Shale							9	Visual
		20.0-24.0	Dark Gray Broken Carbonaceous Shale							9	Visual
846+00	14'Lt	0.5-4.5	Light Brown to Gray, Broken, Shale							4	Visual
847+50	CL	0.5-5.0	39	10	11	19	21	29	8	17	A-4a
		5.0-9.0	Gray Broken Shale							12	Visual
		9.0-14.0	Brown Broken Shale							10	Visual
		14.0-19.0	Gray Carbonaceous Shale							8	Visual
850+00	35'Lt	0.5-3.0	23	18	20	20	19	25	4	10	A-4a
		3.0-8.0	22	13	15	23	27	30	11	13	A-6a
		8.0-14.0	Brown Weathered Shale							10	Visual
		14.0-15.0	Black Soft Coal							12	Visual
		15.0-16.0	Gray Under Clay							6	Visual
850+00	20'Rt	0.5-2.0	14	16	18	26	26	26	8	17	A-4a
		2.0-5.0	35	14	16	18	17	21	5	10	A-2-4
		5.0-10.0	16	9	6	30	39	33	11	14	A-6a
		10.0-15.0	Gray Extremely Weathered Shale							8	Visual*
850+00	85'Rt	0.5-1.0	25	21	12	23	19	27	5	10	A-4a
		1.0-4.5	Gray Broken Shale							6	Visual
852+00	50'Lt	0.5-5.0	43	9	10	19	19	35	11	15	A-6a
		5.0-6.0	Dark Gray Broken Shale.							6	Visual
852+50	CL	0.5-5.0	49	11	7	18	15	27	11	11	A-2-6
		5.0-8.0	3	6	10	49	32	31	8	27	A-4a
		8.0-12.0	45	12	10	17	16	37	12	24	A-2-6
		12.0-14.0	Dark Gray Broken Carbonaceous Shale							5	Visual
854+00	CL	0.5-4.0	55	11	11	13	10	NP	NP	22	A-1-b
		4.0-8.0	23	17	18	24	18	NP	NP	36	A-4a
		8.0-11.0	38	13	13	22	14	26	6	30	A-4a
856+50	CL	0.5-4.0	75	8	5	6	6	28	8	7	A-2-4
		4.0-8.0	67	10	5	10	8	28	9	20	A-2-4
		8.0-11.0	17	13	14	31	25	28	7	18	A-4a
859+00	CL	0.5-4.0	33	9	9	22	27	41	13	15	A-7-6
		4.0-8.0	23	11	12	28	26	34	6	18	A-4a
		8.0-10.0	76	4	3	11	6	32	7	17	A-2-4
		10.0-11.5	Gray Soft Shale							9	Visual
862+00	CL	0.5-4.0	56	16	10	9	9	33	7	27	A-2-4
864+00	CL	0.5-5.0	9	12	10	36	33	42	13	17	A-7-6
		5.0-10.0	22	11	8	30	29	31	5	15	A-4a
		10.0-15.0	14	10	15	29	32	35	11	19	A-6a
		15.0-17.0	Gray Weathered Shale							8	Visual
866+25	10'Lt	0.5-5.0	55	6	8	15	16	33	9	12	A-2-4
		5.0-10.0	38	13	13	20	16	NP	NP	12	A-4a
		10.0-14.0	50	14	9	13	14	33	5	20	A-2-4
		14.0-16.0	Gray Broken & Hard Shale							7	Visual
869+10	CL	0.5-4.0	12	12	18	32	26	30	9	10	A-4a
		4.0-8.0	41	6	5	29	19	30	11	10	A-6a*
		8.0-11.0	11	18	19	15	37	34	11	16	A-6a*
		11.0-15.0	0	0	1	46	53	35	11	13	A-6a
		15.0-19.0	Gray Weathered Shale							10	Visual
		19.0-24.0	Gray Weathered Shale							9	Visual
869+75	45'Rt	0.5-6.0	65	17	10	7	1	NP	NP	19	A-1-a
		6.0-9.0	24	12	8	23	33	35	16	19	A-6b
		9.0-14.0	Brown Broken Shale							8	Visual
		14.0-18.0	Black Carbonaceous Shale							11	Visual
870+00	50'Lt	0.5-4.0	12	8	16	29	35	34	18	25	A-6b*
		4.0-8.0	10	8	8	46	28	28	11	20	A-6a*
		8.0-10.0	Brown Soft Shale							15	Visual
		10.0-15.0	Brown & Gray Soft Shale							17	Visual
		15.0-19.5	Red & Gray Soft Shale							7	Visual
870+00	10'Lt	0.5-5.0	27	11	12	25	25	31	11	10	A-6a
		5.0-8.0	30	9	9	24	28	33	14	22	A-6a
		8.0-13.0	0	0	2	48	50	31	12	17	A-6a*
871+25	CL	0.5-5.0	59	11	10	19	1	NP	NP	17	A-1-b
		5.0-8.0	0	13	4	42	41	42	15	19	A-7-6
		8.0-10.0	0	1	2	30	67	53	24	20	A-7-6
		10.0-14.0	Soft Coal							17	Visual
		14.0-16.0	Brown Under Clay							28	Visual
		16.0-23.0	Gray Broken Shale							8	Visual*
871+75	75'Lt	0.5-5.0	10	12	14	35	29	27	11	21	A-6a
		5.0-10.0	0	10	7	39	44	36	12	26	A-6a
		10.0-15.0	Gray Weathered Shale							14	Visual
		15.0-20.0	Gray Weathered Shale							29	Visual
872+75	25'Rt	0.5-1.0	27	21	8	24	20	36	13	14	A-6a
		1.0-4.0	Coal							15	Visual
		4.0-7.0	Gray Broken Carbonaceous Shale							11	Visual
		7.0-11.0	Dark Gray Broken Shale							9	Visual
873+50	20'Rt	0.5-1.0	Brown & Gray Broken Shale & Coal Fragments							15	Visual
		1.0-5.0	Brown & Gray Soft Shale							8	Visual
		5.0-9.0	Gray Broken Shale							6	Visual
876+00	50'Rt	0.5-3.0	8	8	8	27	49	41	17	23	A-7-6
		3.0-8.0	Brown & Gray Broken Shale							8	Visual
		8.0-12.0	Black Broken Carbonaceous Shale							8	Visual
877+25	CL	0.5-5.0	23	12	11	36	18	27	10	15	A-4a
		5.0-10.0	39	16	9	25	11	22	3	13	A-4a
		10.0-14.0	18	17	11	37	17	24	8	15	A-4a*
		14.0-17.0	17	15	9	29	30	25	11	17	A-6a
		17.0-18.5	Brown Broken Shale							5	Visual
877+50	50'Lt	0.5-5.0	33	10	7	29	21	28	10	19	A-4a*
		5.0-10.0	13	20	13	34	20	23	7	17	A-4a*
		10.0-15.0	Brown Weathered Shale							15	Visual
		15.0-19.0	Brown Weathered Shale							15	Visual
877+50	75'Rt	0.5-4.0	13	9	4	29	45	43	19	28	A-7-6
		4.0-5.0	Black Broken Carbonaceous Shale							17	Visual
		5.0-7.0	Black Broken Carbonaceous Shale							11	Visual
		7.0-10.5	Coal and Shale Fragments							30	Visual
879+50	100'Rt	0.5-5.0	23	12	13	28	24	28	12	15	A-6a
		5.0-10.0	22	12	11	36	19	27	11	15	A-6a
		10.0-14.0	Gray Weathered Shale & Coal Fragments							21	Visual
		14.0-19.0	Gray Weathered Carbonaceous Shale							22	Visual
		19.0-23.0	Gray Weathered Shale							10	Visual
881+50	35'Lt	0.5-3.0	29	21	18	21	11	NP	NP	12	A-2-4
		3.0-5.0	23	9	15	41	12	30	10	25	A-4a
882+50	100'Rt	0.5-5.0	57	10	8	14	11	34	9	11	A-2-4
		5.0-9.0	46	7	6	20	21	33	12	12	A-6a
		9.0-12.0	Brown, Broken Sandy Shale							6	Visual
		12.0-15.0	Brown, Broken Sandy Shale							6	Visual
883+25	40'Lt	0.5-2.0	52	16	14	10	8	NP	NP	7	A-1-b
		2.0-5.0	54	9	13	12	12	25	6	24	A-1-b
886+00	20'Lt	0.5-3.0	2	12	28	30	28	27	7	14	A-4a
		3.0-5.0	52	20	10	6	12	25	6	17	A-1-b
886+00	70'Rt	0.5-5.0	40	7	6	27	20	28	11	17	A-6a
		5.0-10.0	27	9	9	30	25	27	11	16	A-6a
		10.0-14.0	38	11	10	21	20	21	3	16	A-4a
		14.0-16.5	37	10	11	21	21	25	7	17	A-4a
886+75	130'Rt	0.5-5.0	13	10	10	35	32	31	13	23	A-6a
		5.0-10.0	14	17	9	39	21	23	7	20	A-4a
		10.0-15.0	25	13	13	28	21	23	8	13	A-4a
		15.0-16.5	75	5	7	9	4	26	11	11	A-2-6
887+23	363'Rt	0.5-4.0	29	5	11	30	25	28	8	10	A-4a
		4.0-5.0	Gray Weathered Shale							9	Visual
		5.0-7.0	Brown Broken Sandy Shale							7	Visual
887+40	CL	0.5-5.0	23	11	10	31	25	24	9	10	A-4a*
		5.0-10.0	16	10	11	30	33	29	11	11	A-6a
		10.0-15.0	32	9	9	24	26	29	11	12	A-6a
887+53	233'Rt	0.5-5.0	16	9	13	30	32	30	12	14	A-6a
		5.0-10.0	25	9	9	30	27	30	13	19	A-6a
		10.0-14.0	16	5	10	39	30	32	14	22	A-6a
		14.0-18.0	15	11	10	37	27	28	10	19	A-4a
		18.0-21.0	Gray Broken Shale							8	Visual
		21.0-23.0	Gray Soft Shale							5	Visual

DRIVE SAMPLE BORING SOIL TEST DATA

NOTE: NP shown in Liquid limit and Plasticity Indec columns indicates that the material is non-plastic

STATION	OFFSET	DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
831+00	CL	5.0-6.0	27	14	6	29	24	35	11	17	A-6a
		10.0-11.0	Black & Gray Extremely Weathered Shale							15	Visual
831+00	169' Rt.	5.0-6.0	Brown Weathered Sandstone							7	Visual
834+50	46' Lt.	5.0-6.0	20	8	12	33	27	32	11	19	A-6a
834+50	52' Rt.	5.0-6.0	47	8	10	21	14	28	4	13	A-2-4
		11.5-12.5	20	8	9	29	34	37	11	30	A-6a
		15.0-16.0	36	4	4	24	32	35	11	21	A-6a
846+00	30' Rt.	10.0-11.0	20	18	15	18	29	37	14	18	A-6a
		15.0-16.0	11	19	9	35	26	33	9	13	A-4a
874+00	20' Rt.	5.0-5.5	Gray Extremely Weathered Shale							12	Visual
		10.0-11.0	Dark Gray Carbonaceous Shale							13	Visual
		20.0-20.2	Gray Indurated Clay							10	Visual
887+50	146' Rt.	5.0-6.0	11	10	11	43	25	NP	NP	18	A-4a
		10.0-11.0	12	12	10	39	27	24	7	16	A-4a
		15.0-16.0	15	11	15	34	25	24	6	16	A-4a
		20.0-21.0	17	11	15	31	26	25	7	16	A-4a
		25.0-26.0	14	8	10	35	33	26	6	18	A-4a
		30.0-31.0	25	6	13	28	28	27	11	13	A-6a
		35.0-36.0	15	6	13	31	35	27	7	19	A-4a
		40.0-41.0	38	6	14	23	19	25	5	18	A-4a
887+50	191' Rt.	5.0-6.0	23	13	13	30	21	26	6	13	A-4a
		10.0-11.0	30	11	10	22	27	26	9	16	A-4a
		15.0-16.0	15	12	12	26	35	28	7	16	A-4a
		20.0-21.0	8	13	8	30	41	30	11	17	A-6a
		25.0-25.9	10	16	20	34	20	26	5	17	A-4a
887+56	CL	10.0-11.0	5	9	19	38	29	26	7	13	A-4a

TE-54-B
900-5-59

SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19

OHIO STATE HIGHWAY
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6
19


SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19
OHIO STATE HIGHWAY
TESTING LABORATORY
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7/19
Rock Section
20' Rt.
For description of rock section see cross section, sheet 5.
45' Rt.
TS=0.5'
Refusal
45' Lt.
TS=0.5'
50' Lt.
TS=0.5'
55' Lt.
TS=0.5'
31' Rt.
Sod=0.5'
Slag material
15' Lt.
35' Lt.
20' Lt.
65' Lt.
Sod=0.5'
Rock Section
70' Rt.
For description of rock section see cross section, sheet 5.
46' Rt.
Sod=0.5'
Rock Section
30' Lt.-25' Rt.
Shale, greenish-gray, siliceous, with some mica; less resistant and crumbly from elev. 976.0' to 980.5'.
25' Rt.
Sod=0.5'
For description of drive sample-core boring see cross section, sheet 5.
Core Boring
79' Rt.
For description of core boring see cross section, sheet 5.
Drive Sample-Core Boring
For description of drive sample-core boring see cross section, sheet 5.
Mined interval
Drive Sample-Core Boring
52' Rt.
For description of drive sample-core boring see cross section, sheet 5.
Drive Sample-Core Boring
46' Lt.
For complete boring log and description of drive sample-core boring see cross section, sheet 5.
1090
1080
1070
1060
1050
1040
1030
1020
1010
1000
990
980
970
960
950
940
804
805
806
807
808
809
810
811
812
813
814
815
816
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TE-54-B
900-5-59
SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19
OHIO STATE HIGHWAY
TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO
8
19
Cross Section
Sta. 820+00
Sta. 820+12
Proposed section
Slag material
Refusal
Cross Section
Sta. 817+50
Sta. 817+30
Mined interval
Refusal
Cross Section
Sta. 806+00
Refusal
Cross Section
Sta. 805+00
Rock Section
Sta. 805+18
This exposure extends from 8' Lt. of ¢ at Sta. 805+18 to 25' Lt. of ¢ at Sta. 805+40.
Shale, yellow to gray, siliceous, jointed, several thin, (max. 2") fine-grained sandstone beds present within shale.
Stream flowing on shale bedrock
Shale, olive-green, fissile, jointed, very regularly bedded.
Cross Section
Sta. 831+00
Description of Core Boring at ¢.
A. Top of Rock-In-Place
B. Shale, gray, argillaceous, weathered, very badly broken (but most fragments are firm). Core loss 5%.
C. Shale, gray to dark-gray, argillaceous, contains considerable carbonaceous matter in some portions, siliceous 980.2' to 979.5', firm, fissile. Core loss 8%.
D. Mined interval.
E. Coal, badly broken. No core loss.
F. Shale, gray to dark-gray, siliceous, somewhat carbonaceous in portions, firm, poorly fissile, broken below 968.5', with soft seams at about 968.0' to 966.0'. Core loss 15%.
G. Shale, black to dark-gray, carbonaceous, hard, firm, fissile. No core loss.
Description of Core Boring at 79' Rt.
A. Mottled brown and gray silty clay with sandstone boulders.
B. Top of Rock-In-Place.
C. Sandstone, brown to brownish-gray, medium-grained, micaceous, calcareous, firm, thin-bedded. No core loss.
D. Shale, brown to brownish-gray, siliceous, micaceous in part, firm, jointed above 1037.9' and from 1036.1' to 1034.6'. Core loss 6%.
E. Shale, brownish-gray, slightly siliceous, generally firm, but broken throughout. Core loss 3%.
F. Shale, brownish-gray and gray, argillaceous, generally firm, but badly broken throughout. Core loss 2%.
G. Shale, gray, siliceous to slightly siliceous, micaceous in part, firm, broken below 1022.3', with 0.2' fine-grained sandstone at top. Core loss 3%.
H. Shale, gray, siliceous, dense, firm, non-fissile. No core loss.
I. Shale, brownish gray, argillaceous, firm, but jointed and broken throughout. Core loss 7%
J. Shale, dark-gray, argillaceous, generally firm, but with some friable zones above 1013.1', jointed and badly broken above 1011.4', and between 1008.9'—1008.1' and 1003.7'—1001.9'. Core loss 6%.
Core Boring
Drive Sample-Core Boring
Sta. 830+50
Mined interval
Refusal
Proposed section
Description of Core Boring at 169' Rt.
A. Top of Rock-In-Place.
B. Sandstone, brownish-gray and brown, coarse-grained, somewhat micaceous in part (very micaceous 1070.2' to 1069.4' and 1061.2' to 1060.6'), medium-firm to firm, jointed 1067.8' to 1066.1',* medium to thin-bedded, with scattered very thin clay seams. No core loss.
C. Sandstone, brown to gray at base, medium-grained, micaceous, firm, jointed 1056.2' to 1054.5',* massive. Core loss 7%.
D. Shale, gray, argillaceous, medium-firm, broken. Core loss 38%.
E. Coal. Core loss 7%.
F. Indurated Clay, brownish-gray, firm, contains numerous carbonized plant remains. Core loss 26%.
G. Indurated Clay, gray, calcareous, firm, broken in part. Core loss 32%.
H. Sandstone, gray, fine to medium-grained, micaceous, firm, jointed above 1041.4', medium-bedded. No core loss.
I. Shale, gray to brown at base, siliceous, firm, moderately fissile. No core loss.
* Most of the joints are high-angle joints that cut across the core, and hence, may form more extensive fissures than is indicated by the above depth figures. Such joints are potential slippage surfaces.
Cross Section
Sta. 829+00
Proposed section
Refusal
Cross Section
Sta. 824+00
This exposure extends approximately 70' Rt. of centerline and parallel to it, from sta. 823+50 to sta. 824+65.
Shale, greenish-gray, micaceous, slightly siliceous, lenses of fine-grained sandstone in upper 80', with a more resistant sandstone bed from elev. 1044.3' to 1046.3'.
Proposed section
Refusal
Cross Section
Sta. 834+50
Description of Core Boring at 52' Rt.
Description of Core Boring at 46' Lt.
Drive Sample-Core Boring
Proposed section
Refusal

TE 54 B
900-5-59

SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19

OHIO STATE HIGHWAY
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9/19

SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19
OHIO STATE HIGHWAY TESTING LABORATORY
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10/19

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SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19

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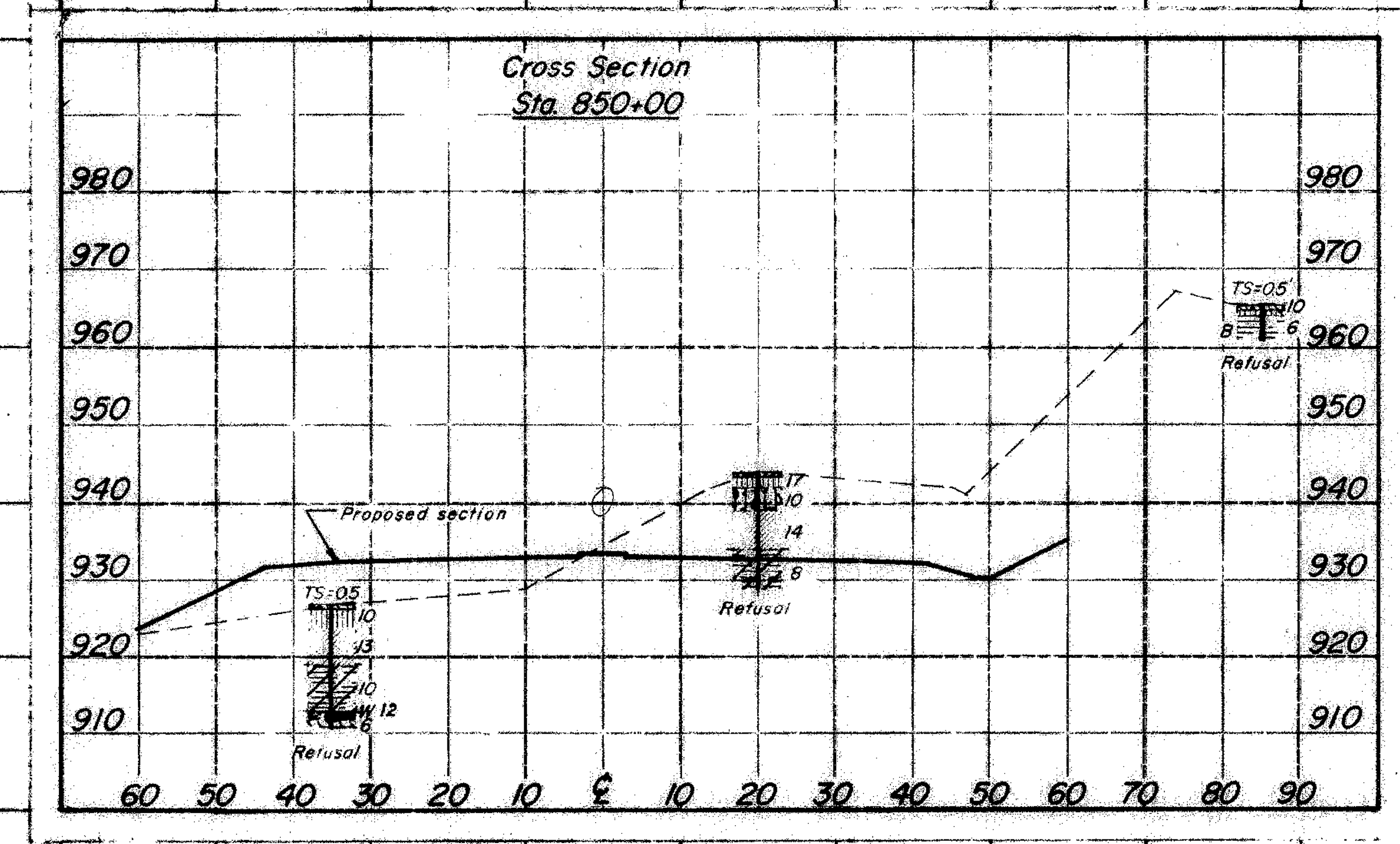
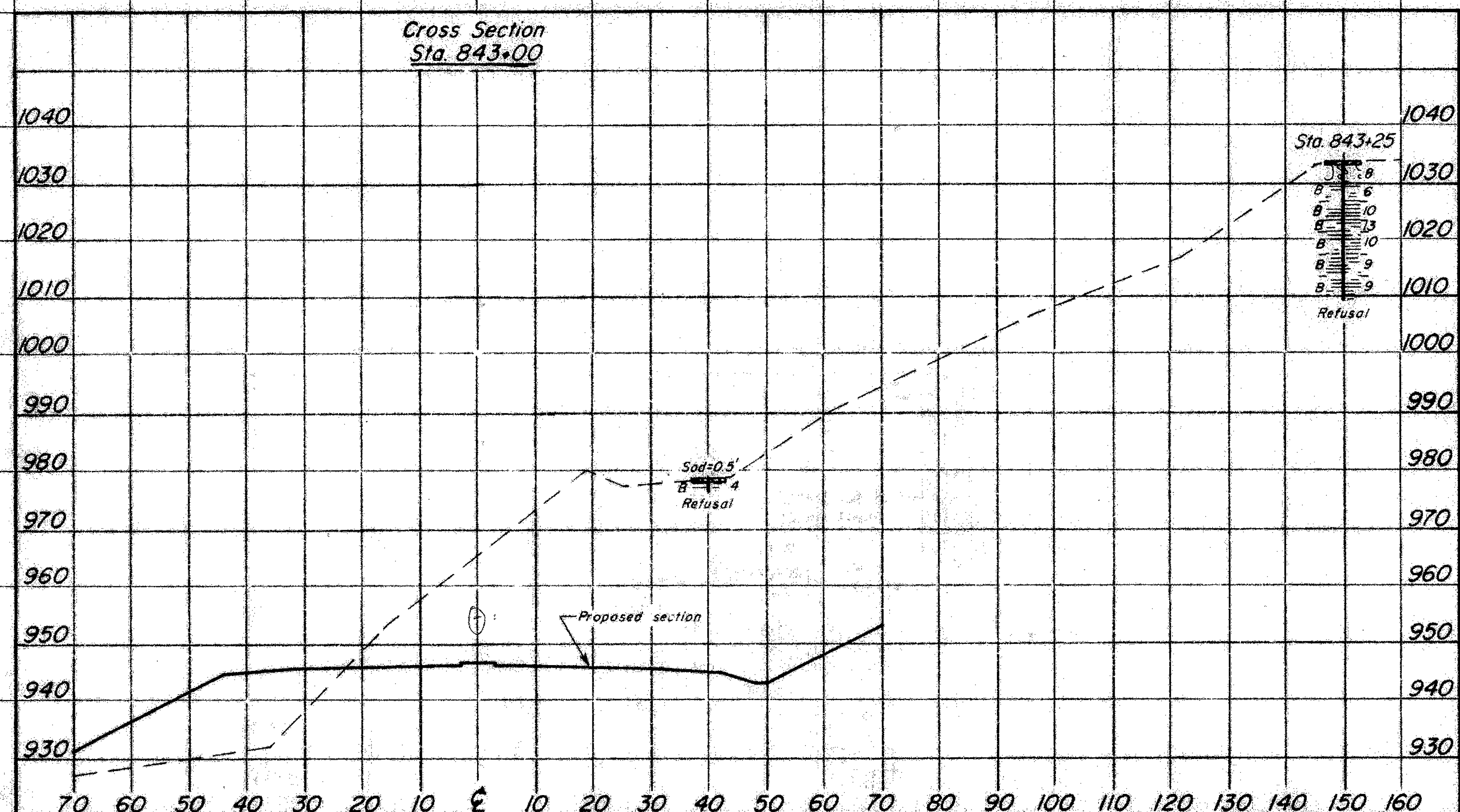
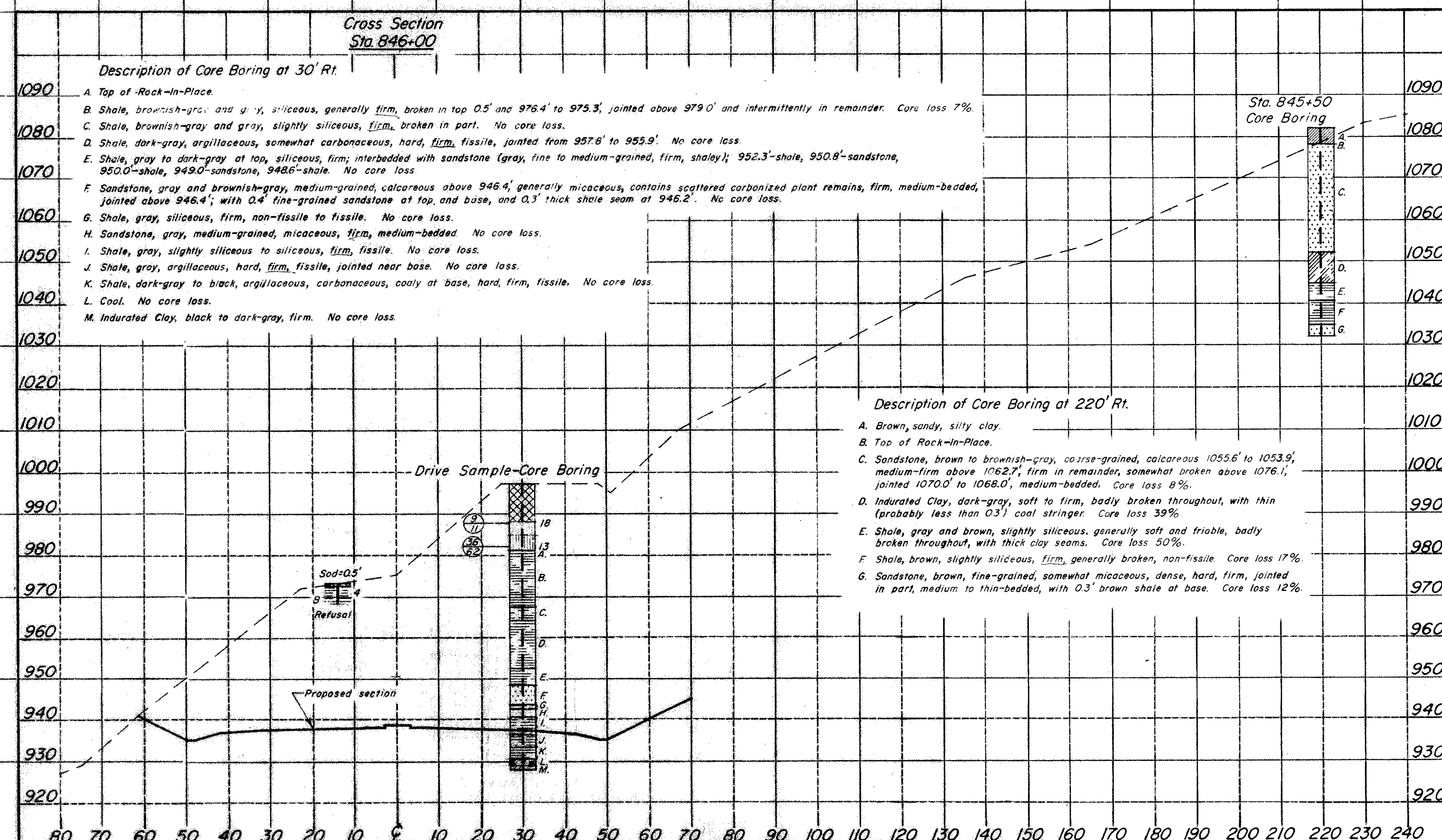
11/19







Description of Core Boring at 30' Rt.

A. Top of Rock-In-Place.

B. Shale, brownish-gray and gray, siliceous, generally firm, broken in top 0.5' and 976.4' to 975.3', jointed above 979.0' and intermittently in remainder. Core loss 7%.

C. Shale, brownish-gray and gray, slightly siliceous, firm, broken in part. No core loss.

D. Shale, dark-gray, argillaceous, somewhat carbonaceous, hard, firm, fissile, jointed from 957.8' to 955.9'. No core loss.

E. Shale, gray to dark-gray at top, siliceous, firm; interbedded with sandstone (gray, fine to medium-grained, firm, shaley); 952.3'-shale, 950.8'-sandstone, 950.0'-shale, 949.0'-sandstone, 948.6'-shale. No core loss.

F. Sandstone, gray and brownish-gray, medium-grained, calcareous above 946.4', generally micaceous, contains scattered carbonized plant remains, firm, medium-bedded, jointed above 946.4'; with 0.4' fine-grained sandstone at top and base, and 0.3' thick shale seam at 946.2'. No core loss.

G. Shale, gray, siliceous, firm, non-fissile to fissile. No core loss.

H. Sandstone, gray, medium-grained, micaceous, firm, medium-bedded. No core loss.

I. Shale, gray, slightly siliceous to siliceous, firm, fissile. No core loss.

J. Shale, gray, argillaceous, hard, firm, fissile, jointed near base. No core loss.

K. Shale, dark-gray to black, argillaceous, carbonaceous, coaly at base, hard, firm, fissile. No core loss.

L. Coal. No core loss.

M. Indurated Clay, black to dark-gray, firm. No core loss.

Description of Core Boring at 220' Rt.

A. Brown, sandy, silty clay.

B. Top of Rock-In-Place.

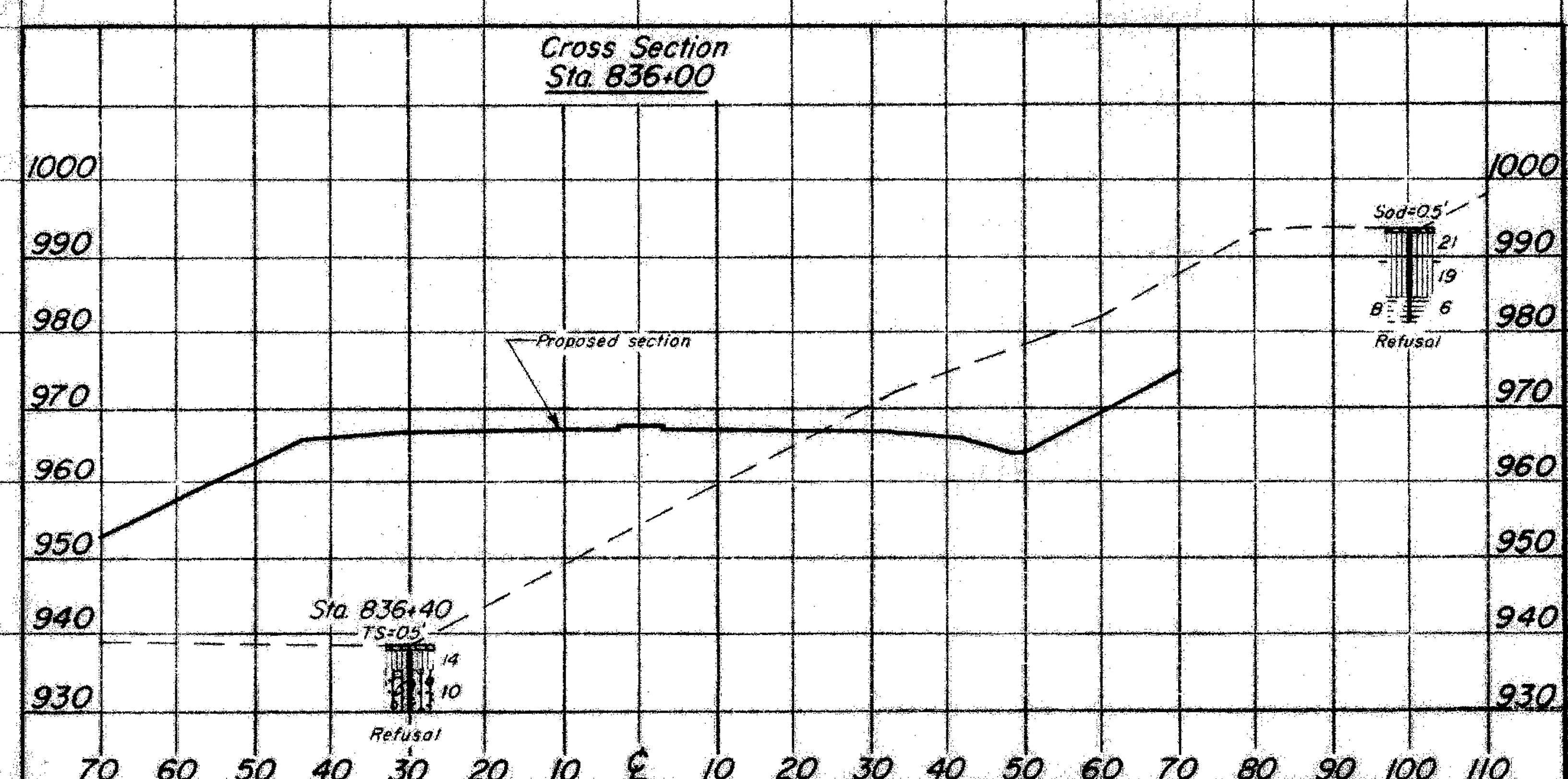
C. Sandstone, brown to brownish-gray, coarse-grained, calcareous 1055.6' to 1053.9', medium-firm above 1062.7', firm in remainder, somewhat broken above 1076.1', jointed 1070.0' to 1068.0', medium-bedded. Core loss 8%.

D. Indurated Clay, dark-gray, soft to firm, badly broken throughout, with thin (probably less than 0.3') coal stringer. Core loss 39%.

E. Shale, gray and brown, slightly siliceous, generally soft and friable, badly broken throughout, with thick clay seams. Core loss 50%.

F. Shale, brown, slightly siliceous, firm, generally broken, non-fissile. Core loss 17%.

G. Sandstone, brown, fine-grained, somewhat micaceous, dense, hard, firm, jointed in part, medium to thin-bedded, with 0.3' brown shale at base. Core loss 12%.



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SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19

12/19

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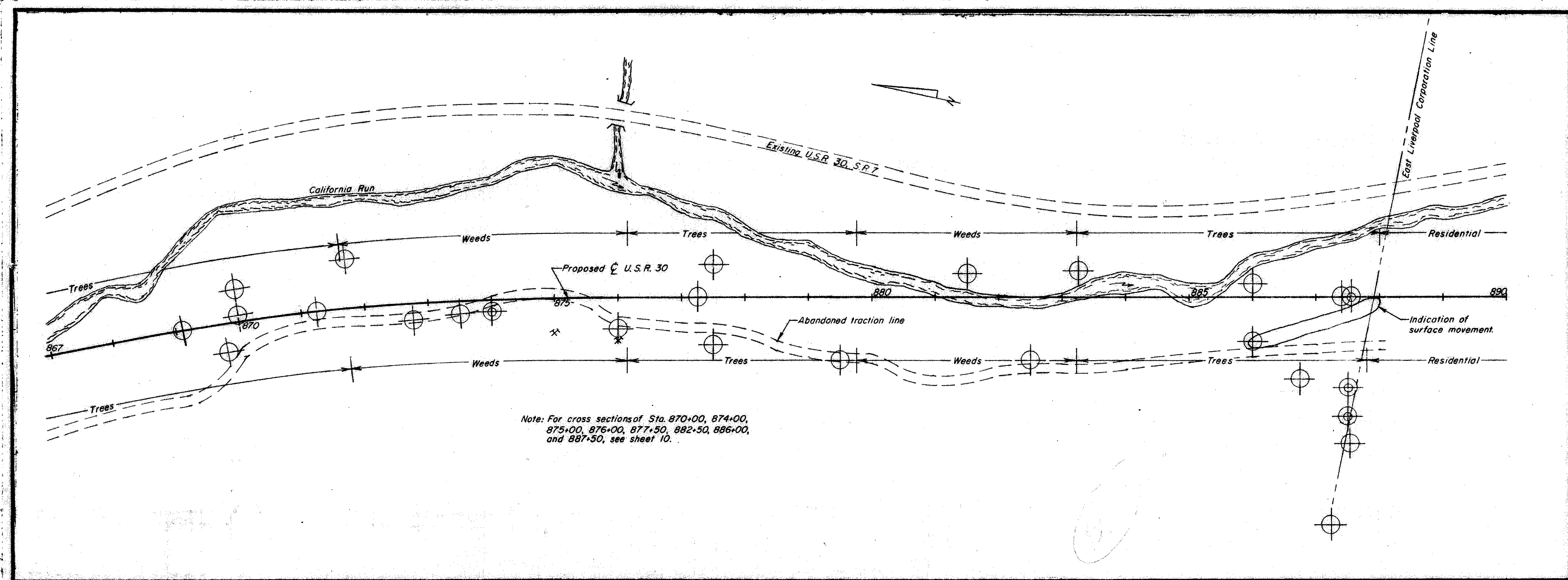

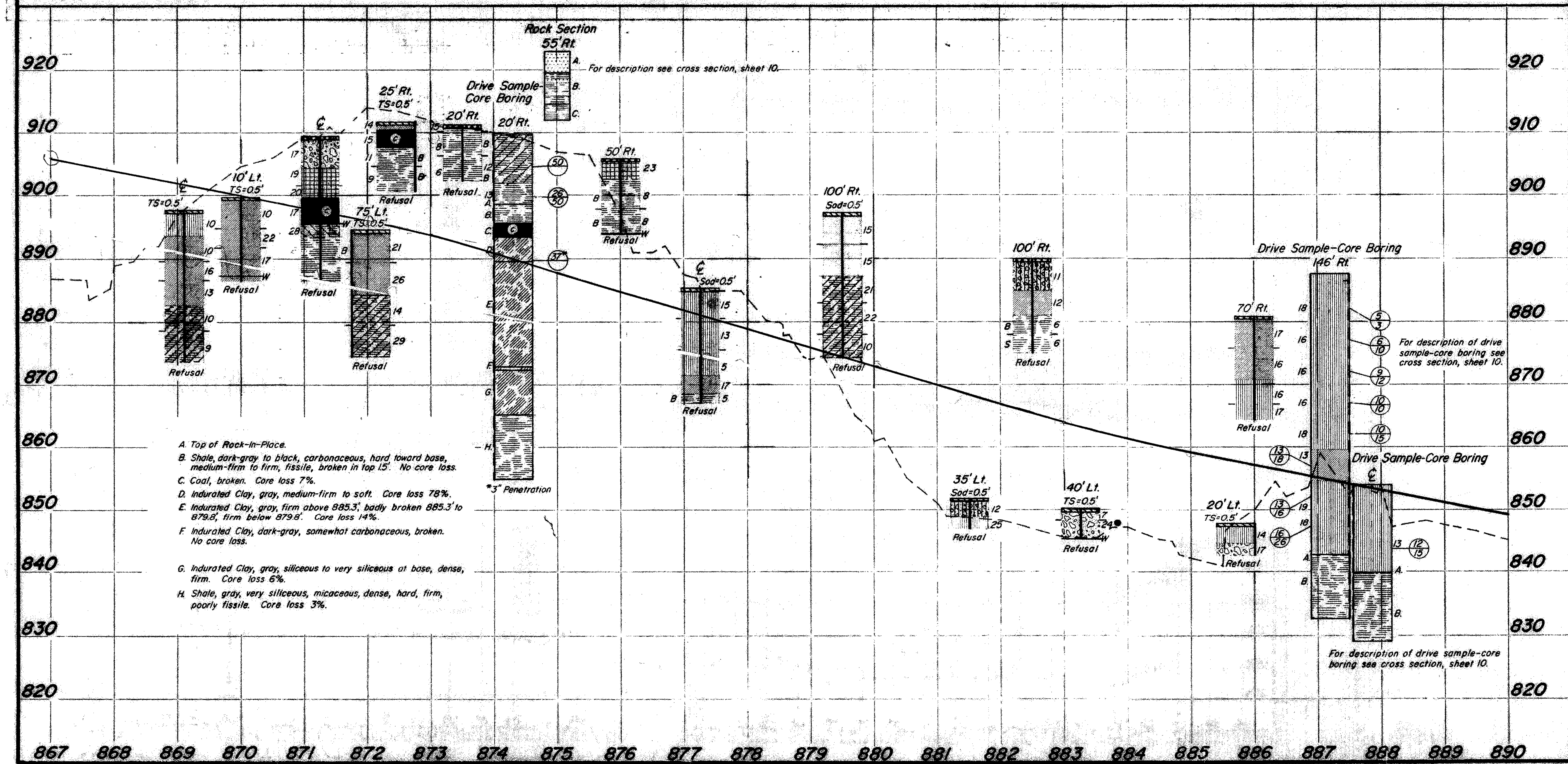

TE 54.8
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SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19
OHIO STATE HIGHWAY TESTING LABORATORY
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13/19
Cross Section Sta. 875+00
A. Sandstone, fine-to medium-grained.
B. Shale with sandstone lenses (50% shale, 50% sandstone); sandstone is olive-gray, fine-grained, hard, jointed; shale is gray, blocky, irregular bedded.
C. Shale, iron-stained, micaceous, nodular, crumbly.
This exposure extends on average of 55' Rt of ℄, and parallel to it, from approx. Sta. 873+00 to Sta. 877+00.
Proposed section
Cross Section Sta. 887+50
Drive Sample-Core Boring
Sta. 887+56
Sta. 887+40
Surface indication of movement
Proposed section
A. Top of Rock-in-Place.
B. Shale, gray, siliceous, micaceous, dense, hard, firm, poorly fissile. Core loss 4%.
A. Top of Rock-in-Place.
B. Shale, dark-gray, siliceous, micaceous, carbonaceous, hard, firm, fissile, broken in top 0.5'. Core loss 5%.
Drive Sample-Core Boring
Drive Sample-Core Boring
"3" Penetration
Sta. 887+53
TS=0.5'
Refusal
Sta. 887+23
TS=0.5'
Refusal
A. Top of Rock-in-Place.
B. Shale, gray, generally siliceous, firm (but with soft brown seam 862.5' to 862.0'), broken near base. Core loss 3%.
C. Sandstone, gray to brown at top, medium-grained, weathered, very friable, broken, with 0.2' shale at top. No core loss.
D. Shale, gray, siliceous, micaceous, firm, moderately fissile, with clay seams above 858.5'. No core loss.
E. Sandstone, light-gray, medium-grained, micaceous, firm, massive. No core loss.
F. Shale, gray to dark-gray, siliceous, micaceous, dense, firm, grades to argillaceous sandstone in part. No core loss.
Cross Section Sta. 874+00
Drive Sample-Core Boring
Proposed section
For description see profile, sheet 9.
"3" Penetration
Cross Section Sta. 877+50
Sta. 877+25
Sod=0.5'
TS=0.5'
Proposed section
Refusal
Cross Section Sta. 886+00
Surface indication of movement
Sta. 886+75
Sod=0.5'
Proposed section
TS=0.5'
Refusal
Cross Section Sta. 870+00
Sta. 869+75
Sod=0.5'
TS=0.5'
Sod=0.5'
Proposed section
Refusal
Cross Section Sta. 876+00
A. Sandstone, light brown, fine-to medium-grained, very hard, massive, weathers rust brown.
B. Shale, gray to brown, siliceous, hard.
C. Sandstone, brown, fine-grained, hard.
D. Shale, gray to brown, siliceous, very hard.
E. Sandstone, brown, fine-grained, thin-bedded.
F. Shale, light-brown, siliceous, very hard.
G. Sandstone, brown, fine-grained, thin-bedded, weathers rust brown.
H. Shale, siliceous at top, grading into a hard, light-brown shale.
I. Shale, gray, intermittently soft and hard, brown weathered spots throughout.
J. Coal, black
K. Clay, gray, soft, grading upward into fire clay.
Proposed section
Refusal
Cross Section Sta. 882+50
Proposed section
Sta. 883+25
TS=0.5'
Sta. 881+50
Sod=0.5'
Refusal

TE-54-A
100-5-59

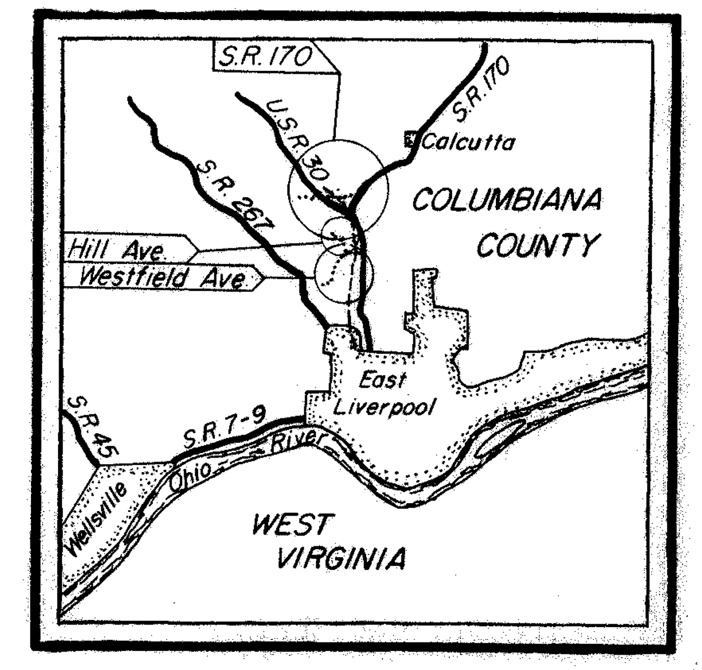
SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19

14
19

OHIO STATE HIGHWAY
TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

INTERSECTING ROADS

NOTE: INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THIS DATA AND IT IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.



LOCATION MAP

Recon.- N.P.L.- 11/14/60

Drilling- Auger - J.R.F. - 11/17/60-11/18/60
Core - C.S.C., W.A.H. - 11/14/60-11/30/60

Drafting - R.C.B. - 12/15/60

GENERAL INFORMATION

INTRODUCTION

Following are brief comments concerning the proposed grades on the project:

SR 170 - cuts, ranging between 0 and 30 feet in depth, and fill embankment, between 0 and 10 feet in height.

Hill Avenue - cut, as deep as 65 feet, at ditchline, and fill embankment 0 to 12 feet high.

Westfield Avenue - cuts, up to 65 feet deep, and fill embankment, as high as 30 feet.

EXPLORATION

Exploratory borings were made by means of truck mounted mechanical earth auger and rotary-type drill rig, between November 14 and 30, 1960. Included with this report is the log of a drive sample-core boring made in conjunction with the proposed USR 30 structures over Westfield Avenue and over SR 170.

INVESTIGATIONAL DISCLOSURES

SR 170

Borings disclose shale to occur immediately below grade in the cut area between approximately stations 22+00 and 26+00, while in the remaining slight cut and embankment foundation areas, thin to absent (maximum - 10 feet) soil cover, predominantly silt and silt clay, in the A-4b and A-6a classifications, overlies shale and sandstone bedrock.

Hill Avenue

Materials occuring below grade and in the backslopes are comprised of shale, and sandstone. It is noted that at station 6+50, 60 feet left of centerline, between elevations 900.5 and 906.5 feet, an abandoned coal mine was encountered; at this station, approximately 10 feet below proposed grade.

Westfield Avenue

Borings disclose that materials immediately below proposed grade and materials occuring in the backslopes are comprised of shale and sandstone. Embankment foundation materials are comprised of dense sands and gravels, in the A-1-b classification.

LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS- 46 SAMPLES TESTED

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Gravel with sand	A-1-b	A-1-b	60	10	8	11	11	NP	NP	15	1
Gravel and stone fragments with sand, and silt	A-2-4	A-2-4	60	3	7	14	16	31	8	16	2
Gravel and stone fragments with sand, silt, and clay	A-2-6(1)	A-2-6	77	3	3	7	10	39	13	20	2
Sandy silt	A-4(7)	A-4a	21	5	5	43	26	NP	NP	25	1
Silt	A-4(8)	A-4b	0	3	3	56	38	30	6	20	3
Silt and clay	A-6(9)	A-6a	18	4	6	41	31	33	13	18	6
Silty clay	A-6(10)	A-6b	11	3	5	38	43	38	16	33	4
Clay	A-7-6(9)	A-7-6	30	3	7	31	29	41	13	39	1
Random fill consisting of - gray clayey silt with ashes and stone fragments			VISUAL CLASSIFICATION								
Coal			VISUAL CLASSIFICATION								
Coal blossom			VISUAL CLASSIFICATION								
Weathered shale			VISUAL CLASSIFICATION								5
Weathered sandstone			VISUAL CLASSIFICATION								
Indurated clay			VISUAL CLASSIFICATION								
Shale			VISUAL CLASSIFICATION								11
Sandstone			VISUAL CLASSIFICATION								10
Limestone			VISUAL CLASSIFICATION								
Various other materials											

Sod and/or Topsoil=X'=Approximate depth.

Berm material.

Auger boring - plan view.

Core boring - plan view.
Drive sample-core boring - plan view.

Auger boring plotted to vertical scale only.

Drive sample and/or core boring plotted to vertical scale only.

Number of blows for "Standard Penetration" test.
X=number of blows for the first 6 inches.
Y=number of blows for the second 6 inches.

Water content nearly equal to or greater than liquid limit.

Indicates a non plastic material with high water content.

W Free water.

B Indicates broken rock interval.

NOTE: Figures beside borings indicate water content in percent. e.g. *15*

SUMMARY OF SOIL TEST DATA

NOTE: NP shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic.
*Denotes sample taken at or near grade.

STATION	OFFSET	DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
			S.R. 170								
5+00	10'Lt	0.4-5.0	Black Weathered Shale							9	Visual *
9+00	10'Lt	0.4-2.0	0	4	3	57	36	NP	NP	22	A-4b *
		2.0-7.0	30	3	7	31	29	41	13	39	A-7-6 *
		7.0-10.0	Black Weathered Shale							19	Visual
12+75	10'Lt	0.4-3.0	Gray Broken Sandstone								Visual*
15+00	10'Lt	0.4-2.0	0	4	7	39	50	38	16	37	A-6b
		2.0-5.0	Black Weathered Shale								Visual
18+000	CL	0.5-2.0	0	3	3	53	41	29	9	17	A-4b *
		2.0-4.0	57	1	1	15	26	39	16	23	A-6b
		4.0-6.0	69	2	3	9	17	32	6	20	A-2-4
		6.0-9.0	Black Broken Shale							13	Visual
21+00	CL	0.5-4.0	0	7	6	47	40	35	15	21	A-6a *
		4.0-9.0	Brown & Black Extremely Weathered Shale								Visual*
		9.0-12.0	Black Broken Shale							13	Visual
23+00	CL	0.5-5.0	Black Broken Shale							10	Visual
		5.0-10.0	Black Broken Shale							8	Visual
25+00	CL	0.0-5.0	Gray Broken Shale							9	Visual
		5.0-7.0	Gray Broken Shale							7	Visual
			S.R. 170 (CONT'D)								
27+00	CL	1.0-6.0	22	3	4	43	28	31	12	13	A-6a
		6.0-10.0	Black Weathered Shale								Visual
		10.0-12.0	Black Weathered Shale								Visual
29+00	CL	1.0-6.0	0	2	3	57	38	31	10	21	A-4b
		6.0-8.0	Brown Broken Shale							19	Visual
		8.0-12.0	Brown Broken Shale							12	Visual
32+00	15'Rt	0.4-4.0	46	4	3	28	19	36	14	16	A-6a *
		4.0-8.0	Brown Broken Shale							12	Visual
35+07	16'Rt	0.5-1.5	0	4	3	67	26	32	11	25	A-6a *
		1.5-5.0	21	5	5	43	26	NP	NP	25	A-4a *
		5.0-6.0	0	1	2	54	43	38	16	35	A-6b
		6.0-10.0	21	3	6	26	44	40	15	25	A-6a
			WESTFIELD AVENUE								
3+00	CL	1.0-2.0	Gray Clayey Silt W/Ashes & Stone Fragments								Visual
		2.0-4.0	Gray Clayey Silt W/Ashes & Stone Fragments								Visual
		4.0-8.0	81	4	3	5	7	34	11	21	A-2-6
		8.0-10.0	0	4	9	45	42	38	16	34	A-6b
6+38	CL	0.3-4.5	Light Brown Broken Sandstone							5	Visual
			WESTFIELD AVENUE (CONT'D)								
8+50	CL	0.5-4.0	Light Brown Broken Sandstone							7	Visual
		4.0-6.5	Light Brown Broken Sandstone							6	Visual
11+50	21'Rt	0.5-3.5	Light Brown Broken Sandstone							6	Visual
15+25	6'Rt	0.5-5.0	Light Brown Broken Sandstone							7	Visual
		5.0-6.5	Light Brown Broken Sandstone							5	Visual
18+50	CL	0.5-5.0	Light Brown Broken Sandstone							10	Visual *
		5.0-9.5	Light Brown Broken Sandstone							7	Visual *
			HILL AVENUE								
5+89	CL	0.3-5.0	Gray Broken Shale							5	Visual
10+08	15'Lt	0.5-4.0	Gray Broken Sandstone							4	Visual
		4.0-6.5	Gray Broken Shale							9	A-6a
12+25	CL	0.0-2.5	52	5	11	18	14	29	10	12	A-2-4 *
			DRIVE SAMPLE SOIL TEST DATA S.R. 170								
20+90	CL	5.0-6.0	0	5	6	71	18	31	9	20	A-4b *
25+00	60'Lt	5.0-6.0	Shale Extremely Weathered							11	Visual
			WESTFIELD AVENUE								
3+32	22' Rt.	5.0-6.0	62	12	3	17	6	NP	NP	36	A-1-b
8+50	80'Rt	5.0-6.0	43	3	29	14	11	NP	NP	12	A-2-4

TE-54 B
800 4-60

SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19

15/19

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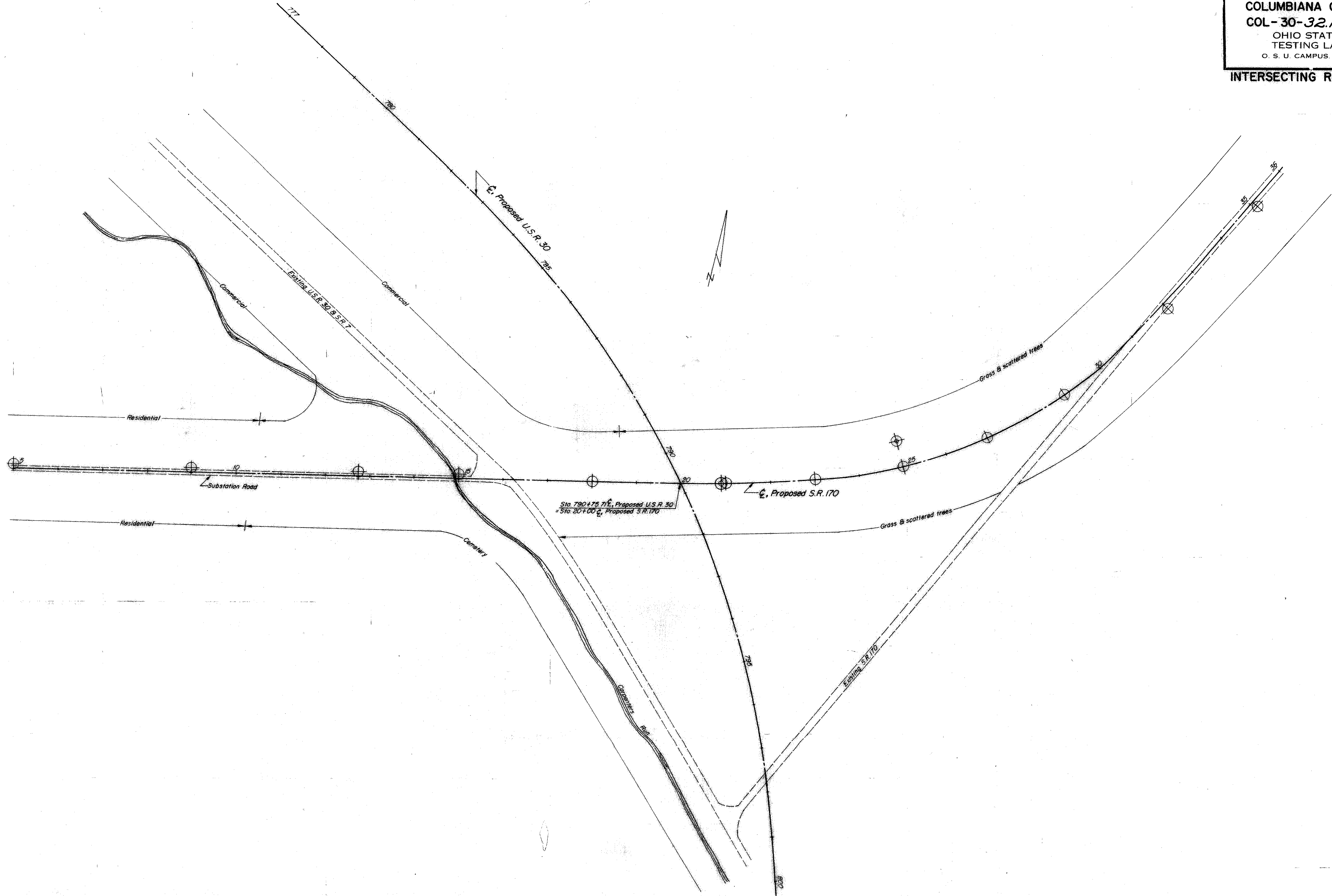
INTERSECTING ROADS



TE-54-B
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SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19

OHIO STATE HIGHWAY TESTING LABORATORY
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16/19

INTERSECTING ROADS

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SOIL PROFILE
COLUMBIANA COUNTY
COL-30-32.19
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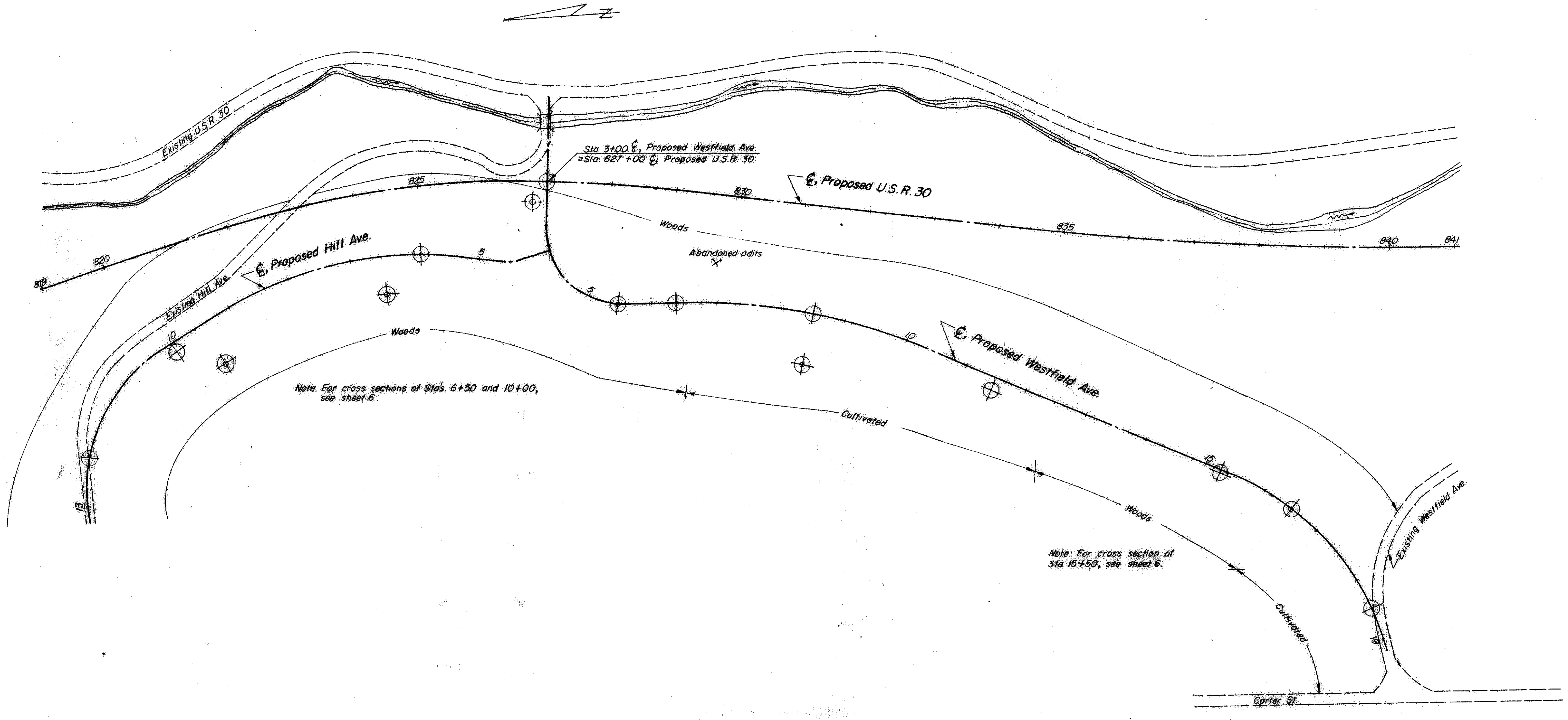
17/19

INTERSECTING ROADS



TE-54-B
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SOIL PROFILE
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18
19
INTERSECTING ROADS
60' Lt.
Gray and brown sandstone fragments.
Top of Rock-In-Place
70' Lt.
TS=0.8'
Gray shale fragments.
Top of Rock-In-Place
15' Lt.
TS=0.3'
Refusal
TS=0.3'
Refusal
STATION 9+50 70'LT
A. Shale, olive-brown fissile, medium-soft, crumbly. Core Loss 5%.
B. Sandstone, brown, coarse grained, micaceous, firm, broken with iron stains. Core Loss 37%.
C. Indurated Clay, gray, soft, crumbly, with trace of coal blossom. Core Loss 11%.
D. Shale, gray, slightly siliceous, massive-bedded, medium-firm, badly broken. Core Loss 11%.
E. Sandstone, gray, fine-grained, micaceous, thin-bedded, firm, broken, calcareous in places. No Core Loss.
F. Shale, gray, slightly siliceous, fissile, firm, broken. Core Loss 1%.
G. Shale, dark gray, slightly siliceous, fissile, firm, broken. No Core Loss.
H. Shale, dark gray, fissile, firm, broken, with badly broken zone from elev. 1011.5'-1010.0'. Core Loss 2%.
STATION 6+50 60'LT
A. Sandstone, light brown, micaceous, medium-grained, thin-bedded, firm, broken. Core Loss 10%.
B. Sandstone, brown, coarse-grained, micaceous, massive-bedded, firm, broken. Core Loss 1%.
C. Shale, gray, massive-bedded, medium-soft, very badly broken, with heavy iron stains and vugs. Core Loss 26%.
D. Sandstone, gray, micaceous, thin-bedded, firm, badly broken, with heavy irons, vugs, and concretions with fractures. No Core Loss.
E. Sandstone, gray, fine-grained, thin-bedded, firm, broken. No Core Loss.
F. Shale, olive-green, fissile, firm, broken. No Core Loss.
G. Shale, gray, fissile, firm, broken, with 1.0' gray fine-grained sandstone from 1025.1' to 1024.1'. No Core Loss.
H. Shale, dark gray, fissile, firm, broken. Core Loss 8%.
I. Void - Old Mine workings. No recovery. Core Loss 100%.
J. Clay, gray, with coal fragments. No Core Loss.
K. Shale, gray, slightly siliceous, massive-bedded, medium-firm, broken. Core Loss 9%.
L. Shale, gray, siliceous, fissile, firm, broken. No Core Loss.
M. Shale, gray, fissile, firm, broken. Core Loss 2%.
Hill Ave.
STATION 5+50-℄
A. Sandstone, olive-brown, medium-grained, micaceous, thin-bedded, firm, broken, with iron stains. Core Loss 2%
B. Shale, olive-green, fissile, firm, badly broken, with iron stains. No Core Loss.
C. Shale, olive-brown, fissile, slickensided, firm, very badly broken, crumbly in places, with extremely heavy iron staining. No Core Loss.
D. Shale, black, carbonaceous, slickensided, firm, broken. No Core Loss.
E. Shale, gray, siliceous, fissile, firm, broken. No Core Loss.
F. Shale, gray, fissile, firm, broken. No Core Loss.
G. Shale, black, carbonaceous, fissile, firm, very badly broken, with crumbly zone from 1017.8' to 1016.3. No Core Loss.
H. Shale, black, carbonaceous, fissile, firm, broken. Core Loss 2%
I. Shale, dark gray, micaceous, siliceous, massive-bedded, firm, broken. No Loss.
J. Shale, black, carbonaceous, fissile, firm, broken. No Core Loss.
K. Clay, dark gray. No Core Loss.
L. Shale, black, carbonaceous, fissile, firm, broken. No Loss.
M. Sandstone, gray, micaceous, thin-bedded firm, broken, with 0.1' coal at top and 0.1' crumbly gray shale at
Core Loss 13%.
Proposed grade U.S.R. 30
22' Rt.
TS=1.0'
Refusal
Top of Rock-In-Place
Brown sandy clayey silt, with small shale fragments.
Top of Rock-In-Place
TS=0.3'
Refusal
80' Rt.
TS=0.5'
Refusal
Top of Rock In-Place
21' Rt.
TS=0.5'
Refusal
STATION 8+50-80'RT.
A. Sandstone, brown, coarse-grained, micaceous, thin-bedded firm, broken, calcareous from elev. 1073.1' to 1071.1', with trace of shale. Core Loss 1%.
B. Sandstone, gray, coarse-grained, micaceous, thin-bedded, firm, broken, with trace of fractured, gray shale. Core Loss 15%.
C. Shale, black, carbonaceous, fissile, firm, broken. No Core Loss.
D. Indurated clay, gray, slickensided, medium-soft, crumbly. No Core Loss.
E. Shale, gray, massive-bedded, medium-firm, broken. Core Loss 3%.
F. Sandstone, gray, fine-grained, micaceous, slightly calcareous, thin-bedded, firm, broken. No Core Loss.
G. Shale, gray, fissile, firm, broken, with iron stains. No Core Loss.
STATION 3+32 - 22'RT
A. Shale, gray, siliceous, fissile, firm, broken. No Core Loss.
B. Sandstone, gray, medium-grained, thin-bedded, firm, broken with few streaks of carbonaceous shale. No Core Loss.
C. Shale, dark gray, fissile, firm, broken, siliceous in top 0.6'. No Core Loss.
D. Shale, black, carbonaceous, fissile, firm, broken. No Core Loss.
E. Coal, pure, blocky, medium-firm, broken. No Core Loss.
F. Shale, gray, fossiliferous, slightly siliceous, massive, medium-firm, broken. No Core Loss.
G. Sandstone, gray, coarse-grained, micaceous, massive, firm, broken. No Core Loss.
Westfield Ave.
Top of Rock-In-Place
6' Rt.
TS=0.5'
Refusal
Refusal
STATION 16+50-℄
A. Sandstone, brown, weathered.
B. Sandstone, brown, coarse-grained, slightly micaceous, thin-bedded, firm, broken. Core Loss 9%.
C. Shale, olive-green, fissile, medium-firm, badly broken, with heavy slickensides. Core Loss 11%.
D. Sandstone, brown, coarse-grained, slightly micaceous, thin-bedded, firm, broken. No Core Loss.
E. Sandstone, gray, coarse-grained, slightly micaceous, thin-bedded, firm, broken. No Core Loss.
F. Sandstone, gray, medium-grained, thin bedded, firm, broken. No Core Loss.
G. Shale, gray, fissile, firm, very badly broken. Core Loss 13%.
H. Coal, impure, blocky, medium-firm, broken, with heavy amounts of pyrite. Core Loss 17%.
I. Shale, gray, fissile, medium-soft, very badly broken. Core Loss 23%.
J. Shale, gray, fissile, firm, badly broken. Core Loss 7%.
K. Sandstone, gray, fine-grained, firm, broken, with some iron staining. No Core Loss.
1080
1070
1060
1050
1040
1030
1020
1010
1000
990
980
970
960
1110
1100
1090
1080
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1060
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1040
1030
1020
1010
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SOIL PROFILE
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