



CUY-90-14.90

PID 77332/85531

APPENDIX EX-42

CUY-490-1888 PID 0.071

(Reference Document)

State of Ohio
Department of Transportation
Jolene M. Molitoris, Director

**Innerbelt Bridge
Construction Contract Group 1 (CCG1)**

07-0

MICROFILMED
JUN 6 1984

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

I-290-3(1)25

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-290-3(1)25	

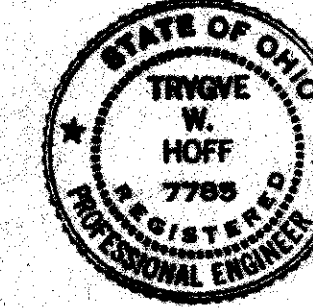
1/81

CUYAHOGA COUNTY
CUY-254-18.88
(490)

CUY-254-18.88 (490)
CITY OF CLEVELAND
CUYAHOGA COUNTY

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.



1963 SPECIFICATIONS

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 of the highway to traffic and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved Louis L. Drasler
Date Feb. 28, 1964 Director of Public Service, City of Cleveland

Approved Charles M. Jurick
Date 2-28-64 Division Deputy Director

Approved F. W. Wilson
Date 4-30-64 Deputy Director of Planning & Programming

Approved T. H. Board
Date 3-12-64 Deputy Director of Right of Way

Approved D. H. Overman
Date 4-21-64 Engineer of Bridges

Approved R. D. Ricketts
Date 4-21-64 Engineer of Location & Design

Approved P. E. Shultz
Date 4-24-64 Deputy Director of Design & Construction

Approved _____
Date _____ First Ass't. Director

Approved P. E. Masteter
Date 4-30-64 Director of Highways

Plans prepared by:
TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO
Jaygo W. Hoff PRESIDENT Stig O. Forsmark CHIEF ENGINEER
J. Lealie Lees PROJECT ENGINEER

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED:
DIVISION ENGINEER _____ DATE _____

CONVENTIONAL SIGNS

CENTER LINE	
FENCE	
GUARD RAIL (EXISTING)	
GUARD RAIL (PROPOSED)	
RAILROAD	
UTILITY POLES	
TREES & STUMPS (EXISTING)	
PROPERTY LINE	
PROPERTY LINE-SAME OWNER CONTIGUOUS PARCELS OF LAND	
EXISTING RIGHT OF WAY	
LIMITED ACCESS RIGHT OF WAY ONLY	
RIGHT OF WAY ONLY	
SUBDIVISION LINE	
ORIGINAL LOT LINE	
RIGHT OF WAY AND LIMITED ACCESS	

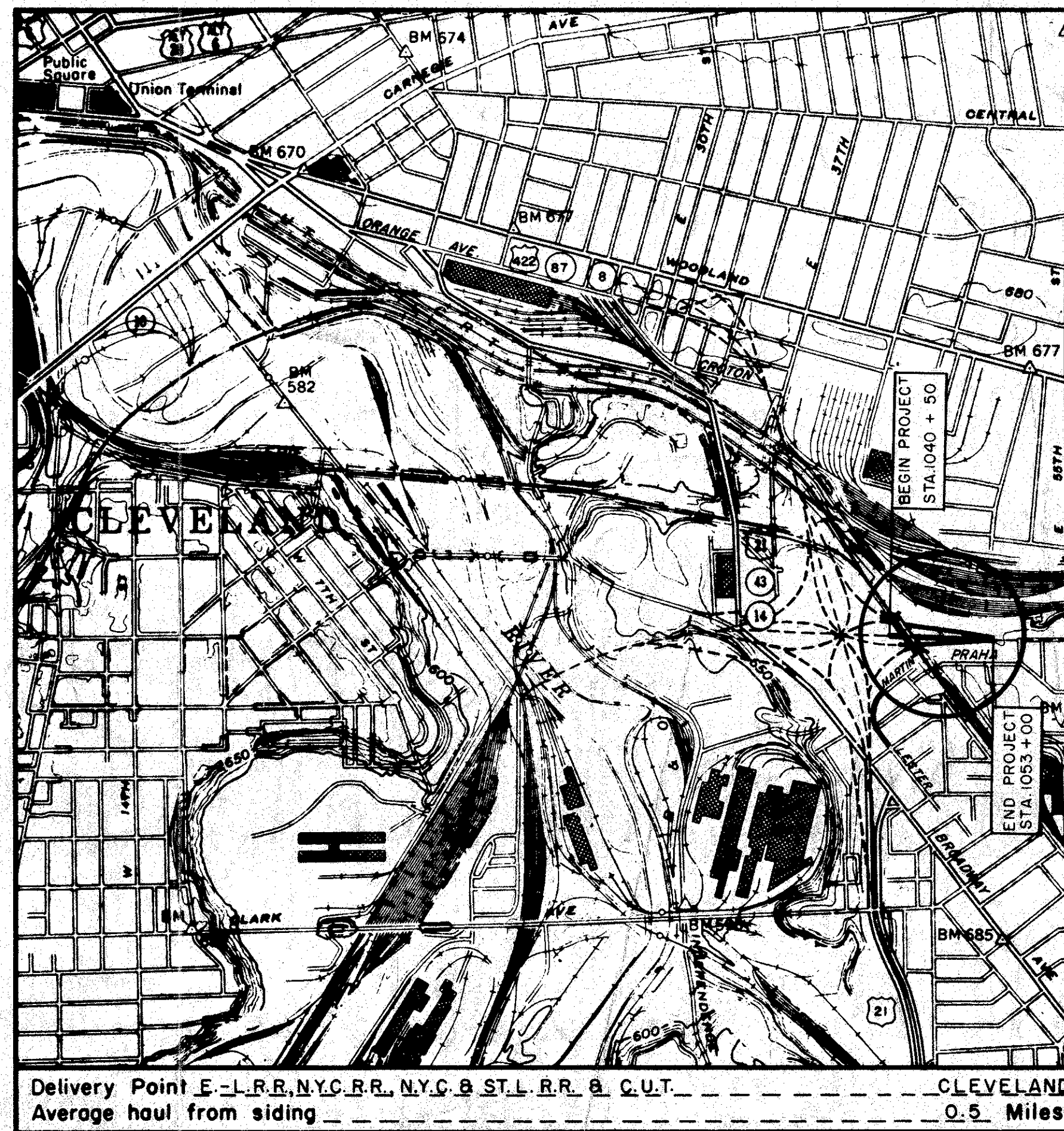
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LINE DATA

BEGIN PROJECT	STA. 1040 + 50
END PROJECT	STA. 1053 + 00
NET LENGTH OF PROJECT	1,250 LIN. FT. OR 0.236 MILE
ADD FOR CLARK FREEWAY	
STA. 1039 + 00 TO STA. 1040 + 50	150 LIN. FT.
STA. 1053 + 00 TO STA. 1059 + 40	640 LIN. FT.
ADD FOR R.R. DETOUR	
BEGIN WORK STA. 13+15	
EQUATION ~ 18+86.10 = 50+00	
END WORK STA. 57+00	
NET LENGTH OF WORK	3,311.10 LIN. FT. OR 0.627 MILE

Sheet Nos. 8 & 9 revised 6-15-64 C.E.H.
Sheet No's 59, 73 and 73A revised 7-9-64



LOCATION MAP
SCALE 1/2 MILE

Portion to be improved
Federal Roads
State Roads
Other Roads & Streets

SCALE
Plan
Profile: Horizontal
Profile: Vertical
Cross Sections
Others
1" = 50'
1" = 50' Unless
1" = 10' Noted
1" = 10'
As Noted

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS					
B-T-70-71	11/15/60	I-8 C.B. No. 5	2/1/63	I-15 No. 2-A	8/17/60
B-T-71R	3/2/53			I-15 No. 6	2/1/63
F-1	2/1/63	I-8 I. No. 2-A	2/1/63	I-21-23	8/1/56
F-3	2/1/63	I-8 M.H. No. 1	2/1/63	I-8 M.H. No. 1-A	2/1/63
FACI-1	2/25/64	I-12	2/1/63	T-35	1/2/56
FACI-2	2/25/64	I-14G	1/22/52	T. J.	9/12/60
G-7.07	4/1/64	I-15 No. 1	11/15/60	L-1	4/1/50
I-1	11/15/60	I-8 C.B. No. 3-A	2/1/63		

SUPPLEMENTAL SPECIFICATIONS	
CE-101.04	5/22/56
L-120	REV. 1/2/62
S-307	8/23/60
I-129	REV. 4/5/61
S-107	REV. 2/16/55
S-407	REV. 12/21/62
S-101	REV. 7/12/62
T-335	10/28/63

CONT. No. 58018 SHEET ACCT. No. 6418

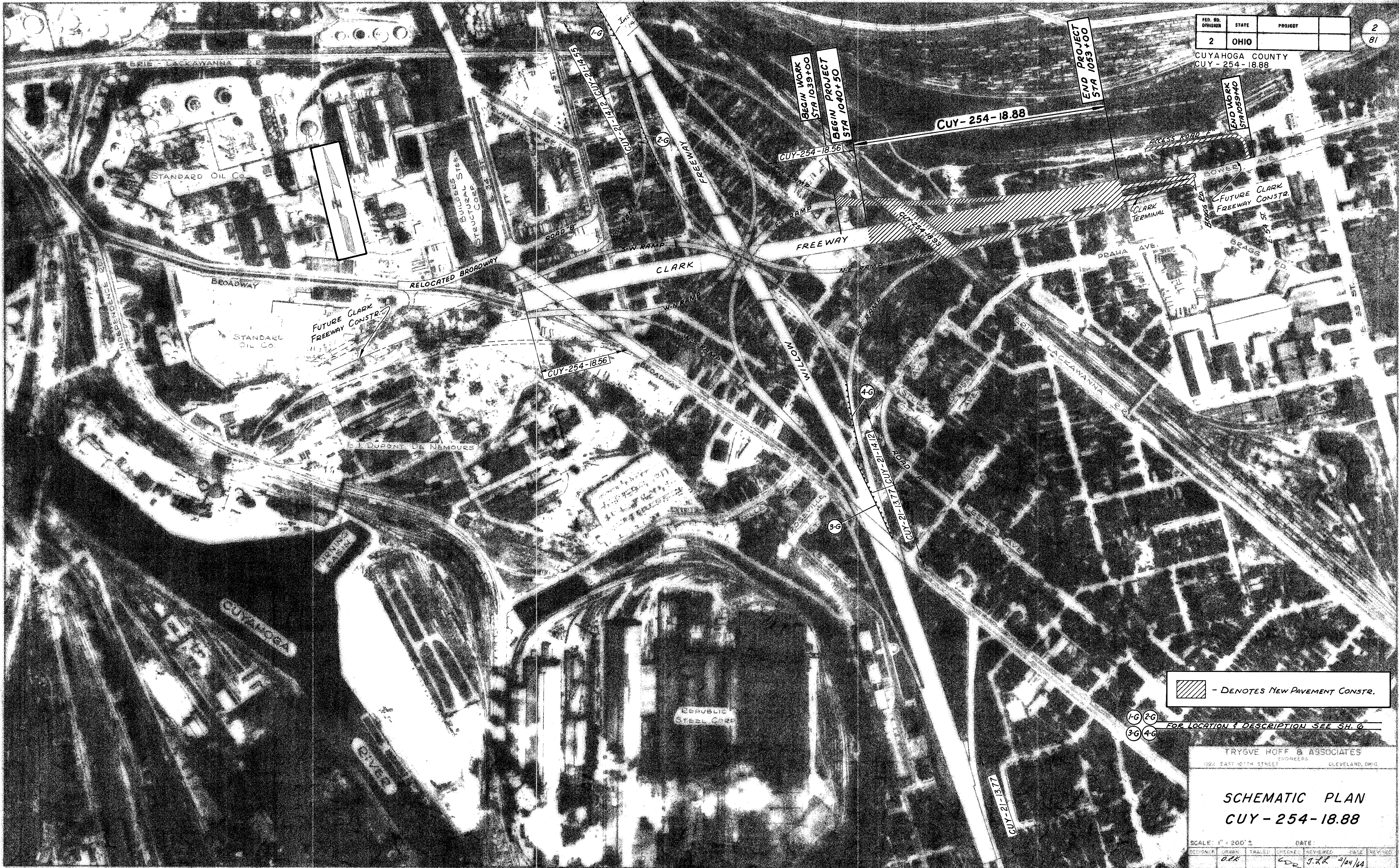
FILE NO.	CUYAHOGA COUNTY CUY-254-18.88	00157
Date of Letting	_____ 196	
Contract No.	_____	

MICROFILMED
JUN 6 1984

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2
81

CUYAHOGA COUNTY
CUY - 254 - 18.88



CONT. NO. 58019 SHEET ACCT. NO. 6419

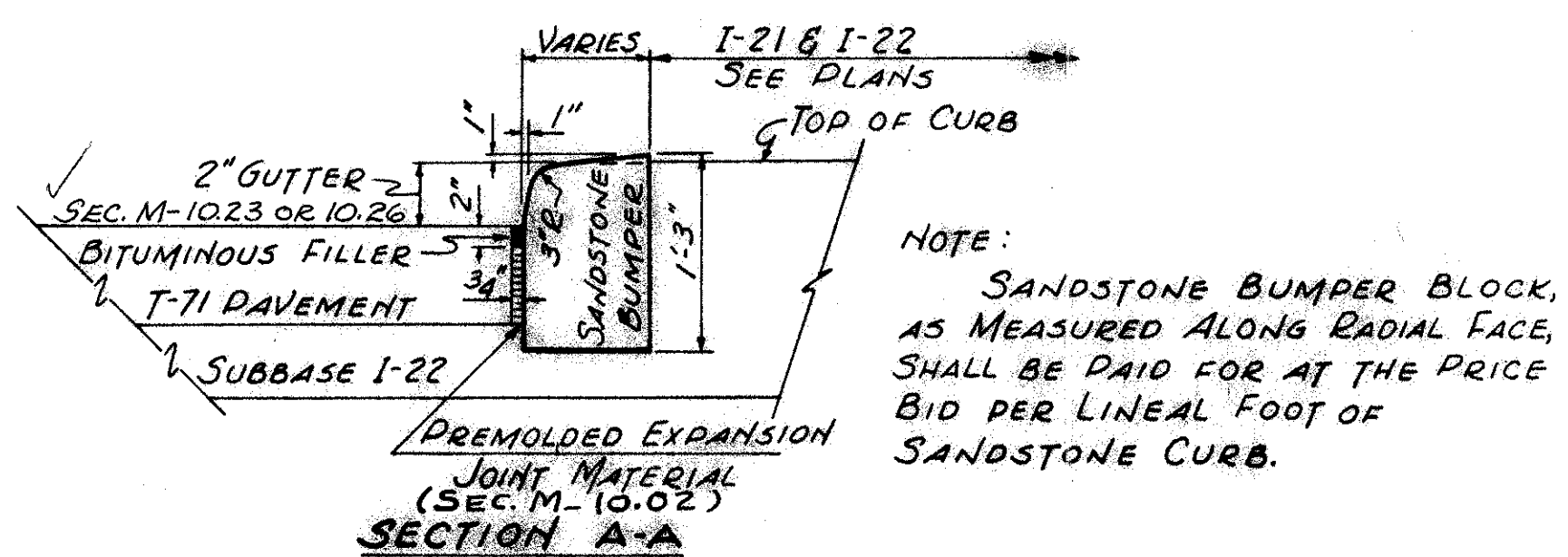
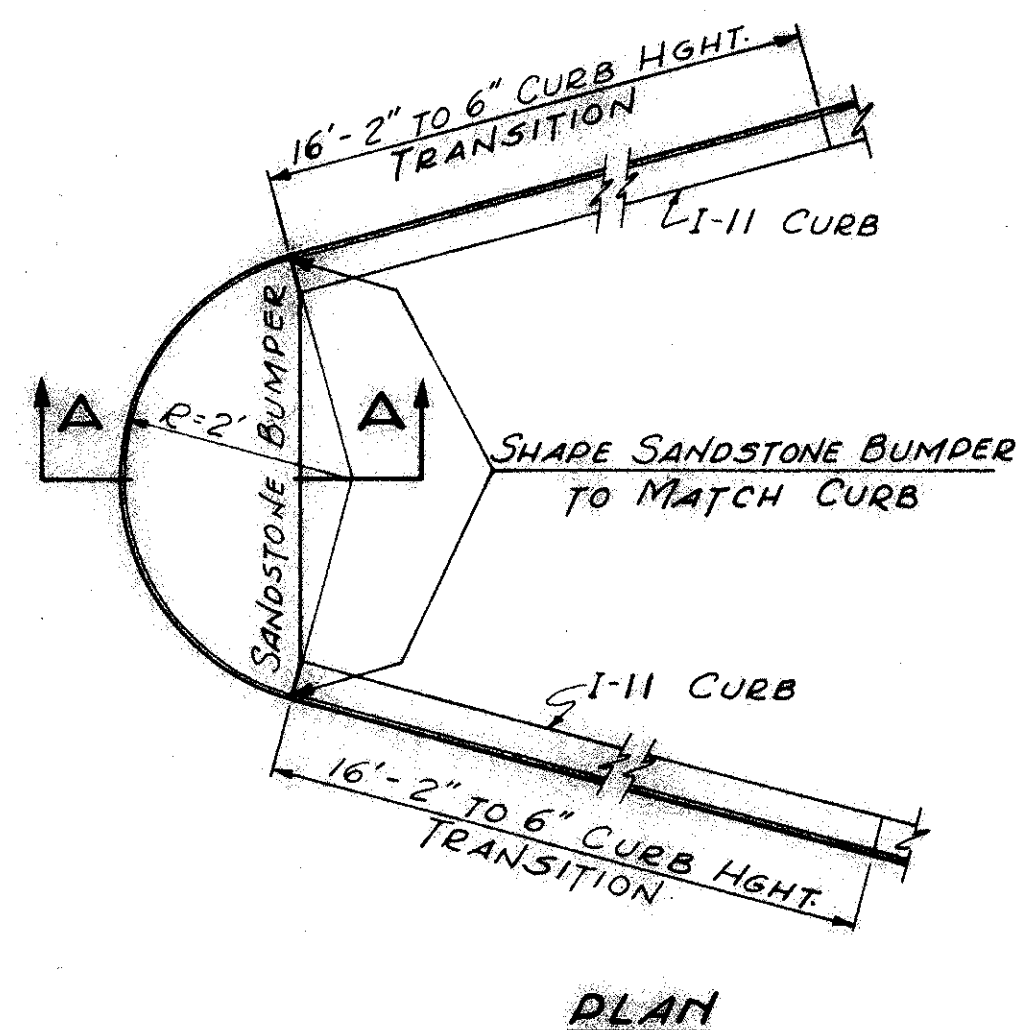
- DENOTES NEW PAVEMENT CONSTR.

FOR LOCATION & DESCRIPTION SEE SH. 6

TRYGVE HOFF & ASSOCIATES
1922 EAST 107TH STREET ENGINEERS CLEVELAND, OHIO

SCHEMATIC PLAN CUY - 254 - 18.88

DESIGNER	DRAWN	CHECKED	REVIEWED	DATE	REVISION
ORR	CDR	J.R.R.		7/24/64	

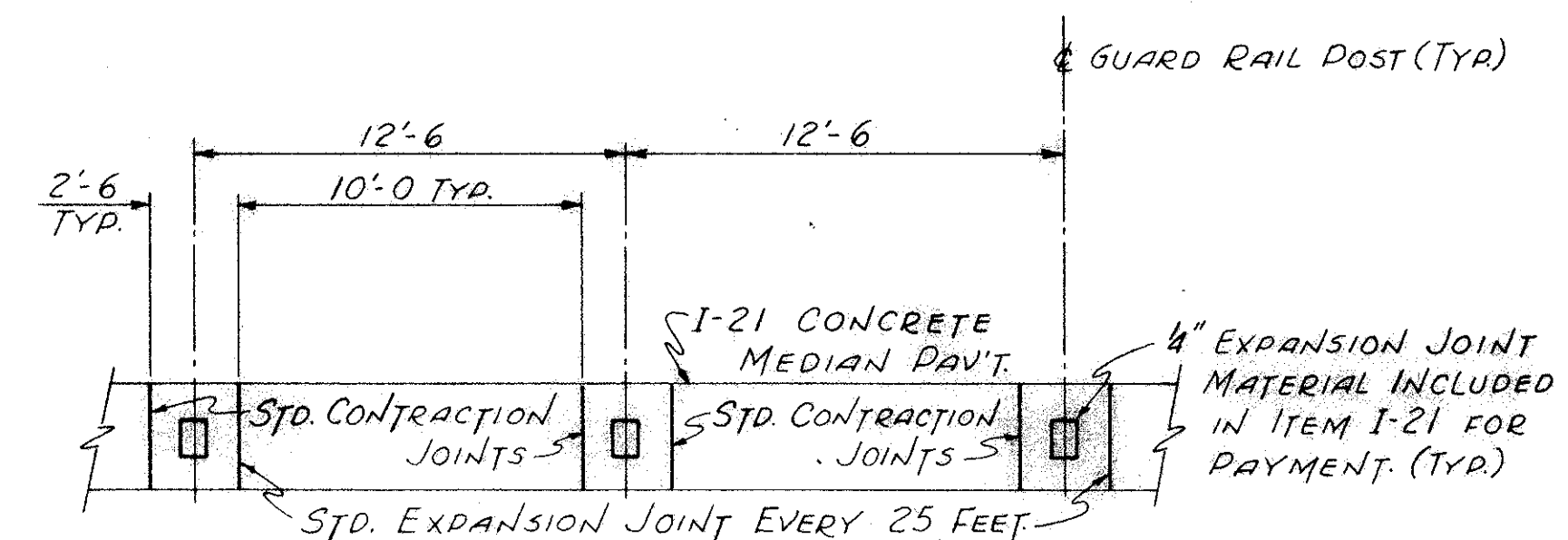


NOTE:
SANDSTONE BUMPER BLOCK, AS MEASURED ALONG RADIAL FACE, SHALL BE PAID FOR AT THE PRICE BID PER LINEAL FOOT OF SANDSTONE CURB.

NOTE:
THE THREE QUARTER (3/4) INCH DREMOLDED JOINT MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION M-10.02 OF THE STANDARD SPECIFICATIONS. IT SHALL BE PLACED IN FRONT OF THE BUMPER BLOCK TO WITHIN TWO (2) INCHES OF THE SURFACE. THE REMAINING SPACE SHALL BE FILLED WITH BITUMINOUS FILLER, MEETING THE REQUIREMENTS OF SECTION M-5.6 F1 OF THE STANDARD SPECIFICATIONS. THE COST OF THE JOINT TO BE INCLUDED IN PRICE BID PER LINEAL FOOT OF CURB.

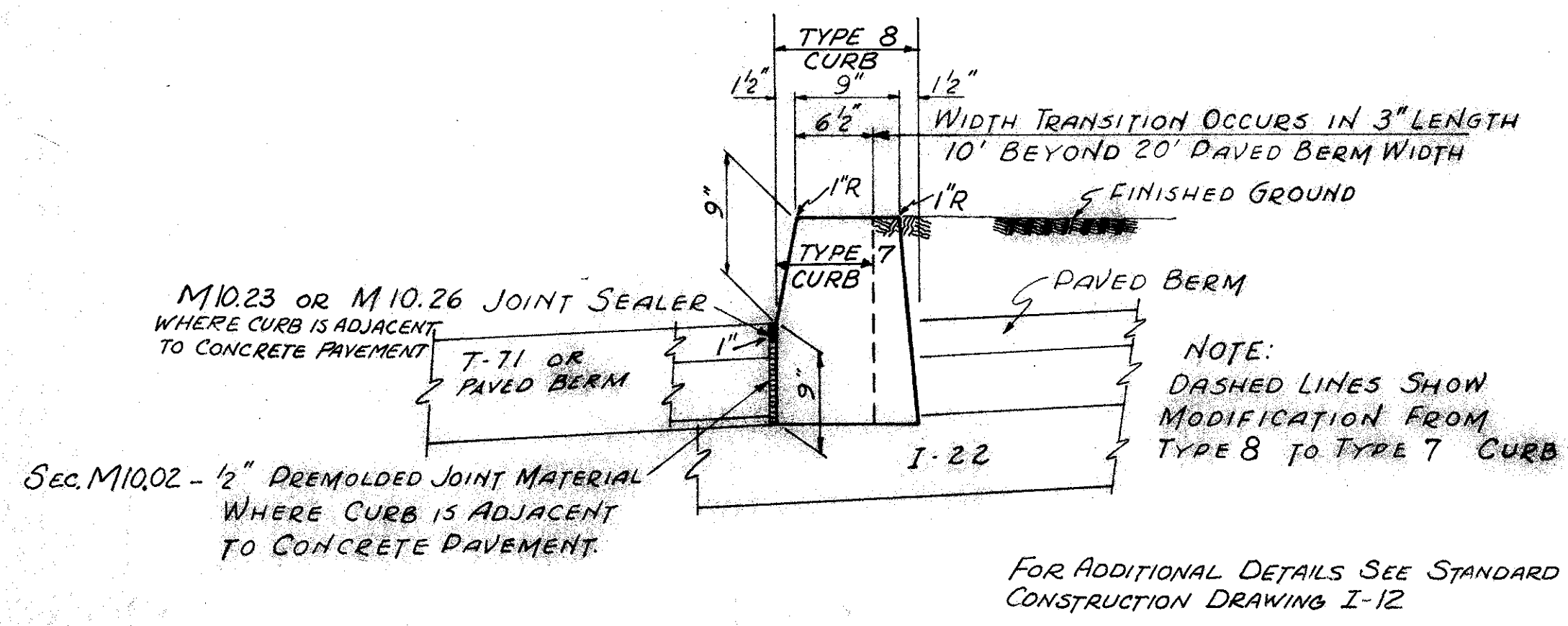
DETAIL K
BUMPER BLOCK AND CURB TERMINATION AT NOSE

NOT TO SCALE
FOR LOCATION SEE SH. 18



JOINT DETAILS
AT
BARRIER GUARD RAIL
POSTS

NOT TO SCALE.
NOTE: - 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.



DETAIL E
STD. TYPE 7 & TYPE 8 PORTLAND CEMENT CONCRETE CURB

SCALE: 1" = 1'-0"
FOR LOCATION SEE SH. 17

± POST LOCATION STATION	SPACING % POSTS FEET	TYPE OF STEEL BEAM RAIL	OFFSET TO FACE OF RAIL - FEET
1040+51.25 TO 1040+57.75	1 SPACE @ 6.50'	BARRIER	
1040+57.75 TO 1042+07.75	12 SPACES @ 12.50'	BARRIER	
1042+07.75 TO 1042+57.75	4 SPACES @ 12.50'	STANDARD	25' TRANSITION THEN 2.00' LT. & RT.
1042+57.75 TO 1043+60.25	12 SPACES @ 8.542'	STANDARD	2.00' LT. & RT.
1043+60.25 TO 1043+85.25	2 SPACES @ 12.50'	STANDARD	25' TRANSITION
1043+85.25 TO 1049+22.75	43 SPACES @ 12.50'	BARRIER	
1049+22.75 TO 1052+22.75	24 SPACES @ 12.50'	STANDARD	25' TRANSITION ON EACH END - REMAINING OFFSET 2.00' LT. & RT.
1052+22.75 TO 1052+97.75	6 SPACES @ 12.50'	BARRIER	

WORK THIS TABLE WITH SHEETS 3, 12 & 44

STATIONING FOR ± OF POSTS FOR MEDIAN GUARD RAIL

SHEET ACCT. No. 6422
58019

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

MISCELLANEOUS
ROADWAY & PAVEMENT
DETAILS

SCALE AS SHOWN DATE

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISION

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

5
81

CUYAHOGA COUNTY
CUY-254-18.88

GENERAL

DESIGN SPEED

THE GEOMETRICS FOR THIS PROJECT HAVE BEEN PLANNED FOR A DESIGN SPEED OF 50 MILES PER HOUR FOR THE CLARK FREEWAY, AND A DESIGN SPEED OF 40 MILES PER HOUR WITH A MAXIMUM SUPERELEVATION RATE OF 0.06 FT. PER FT. (3/4 INCH PER FT.) FOR INTERCONNECTING ROADWAYS.

ELEVATION & COORDINATE DATA

ALL ELEVATIONS AND COORDINATES ARE BASED ON CLEVELAND REGIONAL SURVEY DATA.

FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE FOR THE EXCLUSIVE USE OF THE STATE EMPLOYEES, IN ACCORDANCE WITH SEC. 5-0.01(b), HAVING A MINIMUM OF 500 SQUARE FEET OF FLOOR SPACE. THE CONTRACTOR SHALL HAVE A TELEPHONE INSTALLED AND MAINTAINED IN THE FIELD OFFICE DURING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL ALSO INSTALL WIRING AND OUTLETS SUITABLE FOR CONNECTING TO OFFICE EQUIPMENT, AND PROVIDE 110 VOLT ALTERNATING CURRENT DURING THE CONSTRUCTION OF THIS PROJECT.

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.

DUST CONTROL

ITEM I-4, WATER FOR DUST CONTROL SHALL BE APPLIED AT THE DIRECTION OF THE ENGINEER AND SHALL BE PAID FOR AT THE UNIT PRICE BID FOR
ITEM I-4, WATER FOR DUST CONTROL. ESTIMATED QUANTITY ITEM I-4 = 30 M-GALS.

CELLULAR RETAINING WALL

THE MATERIAL FOR THE CELLULAR RETAINING WALL SHALL BE AS FURNISHED BY THE ARMCO DRAINAGE AND METAL PRODUCTS, INC., THE AMERICAN-MARIETTA COMPANY OR APPROVED EQUAL, AND THE CONSTRUCTION THEREOF WILL BE IN ACCORDANCE WITH THE MANUFACTURERS' SPECIFICATIONS.

MAINTENANCE OF TRAFFIC

THE CONTRACTOR SHALL MAINTAIN LOCAL TRAFFIC AND SAFE SATISFACTORY ACCESS TO ABUTTING PROPERTIES AT ALL TIMES DURING CONSTRUCTION OF THE IMPROVEMENT. THE EXISTING PAVEMENT AND THE PROPOSED PAVEMENT SHALL BE USED TO MAINTAIN TRAFFIC WHEREVER AND WHENEVER POSSIBLE.

BOWER AVENUE

TWO LANES TRAFFIC, ONE IN EACH DIRECTION, SHALL BE MAINTAINED AT ALL TIMES.

BRAGG ROAD

SAME AS FOR BOWER AVENUE.

TRAFFIC COMPACTED SURFACE COURSE

ITEM T-10 AND CALCIUM CHLORIDE ITEM I-4, SHALL BE APPLIED ON TEMPORARY ROADWAYS WHERE DIRECTED AND IN THE AMOUNTS REQUESTED BY THE ENGINEER. PAYMENT FOR CONSTRUCTION, MAINTENANCE, TEMPORARY DRAINAGE STRUCTURES AND SUBSEQUENT REMOVAL, WHERE REQUIRED, OF TEMPORARY ROADWAYS IS INCLUDED IN THE LUMP SUM BID FOR ITEM I-3, MAINTAINING TRAFFIC.

IN ADDITION TO THE ABOVE, SEC. G-4.05, MAINTENANCE OF LOCAL TRAFFIC AND SEC. G-7.07 BARRICADES, SIGNS AND SAFETY DEVICES SHALL BE IN FORCE DURING THE ENTIRE LIFE OF THE CONTRACT. ESTIMATED QUANTITIES OF 400 C.Y. OF ITEM T-10 AGGREGATE AND 10 TONS OF ITEM I-4, CALCIUM CHLORIDE ARE CARRIED IN THE GENERAL SUMMARY FOR USE ON TEMPORARY ROADS.

LIGHTS & SIGNS AT ADJACENT ROAD (STREET) INTERSECTIONS

THE CONTRACTOR SHALL, IN ADDITION TO THE GENERAL REQUIREMENTS OF ITEM I-3 ON THIS PROJECT, PERFORM THE FOLLOWING:

- (a) PROVIDE, ERECT, AND MAINTAIN MOVABLE GATES ON INTERSECTING STREETS CLOSED TO TRAFFIC AT ALL POINTS WHERE LOCAL TRAFFIC MOVEMENT TERMINATES.
- (b) PROVIDE, ERECT, AND MAINTAIN STANDARD 48" x 30" SIZE "ROAD CLOSED" SIGNS AND LIGHTS AT THE WORK LIMITS ON ALL INTERSECTING STREETS WHICH REMAIN OPEN TO TRAFFIC.

SIGN SUPPORTS AND LIGHTS FOR "ROAD CLOSED" SIGNS SHALL BE AS DETAILED IN THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES."

PAYMENT FOR PROVIDING, ERECTING, MAINTAINING, AND REMOVING LIGHTS, SIGNS AND SIGN SUPPORTS SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM I-3, "MAINTAINING TRAFFIC."

CONTINUITY OF UTILITY SERVICES (SANITARY & STORM SEWERS, WATER, ELECTRICAL, GAS AND TELEPHONE)

IN ADDITION TO THE REQUIREMENTS FOR MAINTAINING TRAFFIC, THE CONTRACTOR SHALL PLAN AND COORDINATE HIS OPERATIONS IN SUCH MANNER THAT CONTINUITY OF UTILITY SERVICES (SANITARY & STORM SEWERS, WATER, ELECTRICAL, GAS, TELEPHONE, ETC.) WILL BE MAINTAINED TO THE SATISFACTION OF THE ENGINEER AND RESPECTIVE UTILITIES INVOLVED.

CONSTRUCTION PROCEDURE

THE FOLLOWING PROCEDURE IS SUGGESTED FOR THE CONSTRUCTION OF THIS IMPROVEMENT. IF THE CONTRACTOR ELECTS TO FOLLOW A DIFFERENT PROCEDURE, HE SHALL SUBMIT A COMPLETE OUTLINE OF HIS PROPOSED METHOD OF PERFORMANCES AND SCHEDULE OF OPERATIONS IMMEDIATELY UPON AWARD OF CONTRACT. IF HIS PROPOSED METHOD DOES NOT MEET WITH THE APPROVAL OF THE DIRECTOR OF HIGHWAYS, THE PROCEDURE AS CALLED FOR HEREIN SHALL BE FOLLOWED.

- (1) CONSTRUCT ACCESS ROAD "F", COMPLETE WITH CELLULAR RETAINING WALLS AND DRAINAGE.
- (2) CONSTRUCT ROADBED (COMPLETE WITH DRAINAGE AND NECESSARY SHORING) FOR RAILROAD TEMPORARY DETOUR TRACKAGE.
- (3) DETOUR TRACKAGE COMPLETE SHALL THEN BE LAID (BY THE RAILROAD) AND RAILROAD TRAFFIC TRANSFERRED TO THE RAILROAD TEMPORARY DETOUR.
- (4) CONSTRUCT NEW ERIE-LACKAWANNA RAILROAD BRIDGE, COMPLETE WITH THOROUGHLY COMPACTED EMBANKMENT AND BACKFILL FOR ROADBED APPROACHES TO NEW RAILROAD BRIDGE. (SEE BRIDGE DRAWING NO. 59 FOR ADDITIONAL CONSTRUCTION NOTES.)
- (5) TRACKAGE ON FINAL ALIGNMENT SHALL THEN BE LAID, RAILROAD TRAFFIC TRANSFERRED THERETO, AND TEMPORARY DETOUR TRACKAGE REMOVED, ALL OF THIS WORK TO BE PERFORMED BY THE RAILROAD.
- (6) CONSTRUCT THE CLARK FREEWAY INCLUDING ITS CONNECTION TO BOWER AVENUE, COMPLETE WITH DRAINAGE AND OPEN THE PROJECT TO TRAFFIC.

FEDERAL AID CONSTRUCTION IDENTIFICATION SIGN

THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN AND SUBSEQUENTLY REMOVE A SINGLE DOUBLE FACED SIGN AT THE NORTHWEST CORNER OF EAST 55th STREET AND BOWER AVENUE, WITHIN THE ACQUIRED RIGHT OF WAY. (SEE SHEET 15 FOR APPROXIMATE LOCATION.) ONE SIDE SHALL BE FACING AND IN VIEW OF SOUTHBOUND TRAFFIC ON EAST 55th STREET. THE OTHER SIDE SHALL BE FACING AND IN VIEW OF NORTHBOUND TRAFFIC ON EAST 55th STREET. THE LOCATION OF THIS SIGN MAY BE ALTERED BY THE ENGINEER.

SIGN DETAILS SHALL BE AS SPECIFIED ON STANDARD DRAWING FACI-1, "CODE N-55(1)-132(3)". THE SIGNS SHALL BE ERECTED IN ACCORDANCE WITH STANDARD DRAWING FACI-2. ADDITIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH NOTES IN THE PROPOSAL.

CONSTRUCTION LAYOUT STAKES

SEE NOTE IN PROPOSAL DESCRIBING THE WORK INCLUDED IN THIS LUMP SUM PAY ITEM.

SIGN SUPPORTS

I-129.14 MEASUREMENT

THE PAY QUANTITY "I-129 CONCRETE FOR SIGN SUPPORT FOUNDATIONS AS PER PLAN" SHALL BE BASED ON DIMENSIONS SPECIFIED BY THE CONTRACT PLANS OR THE ENGINEER INSTEAD OF ON PLAN QUANTITY.

I-129.15 PAYMENT

PAYMENT FOR ADDITIONAL CONCRETE SPECIFIED BY THE ENGINEER IS TO BE PAID FOR AT THE UNIT PRICE BID FOR ITEM I-129 CONCRETE FOR SIGN SUPPORT FOUNDATIONS, AS PER PLAN.

PAYMENT FOR REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ABOVE ITEM.

ERIE LACKAWANNA RAILROAD - TEMPORARY DETOUR

AS A PART OF THIS CONTRACT, IT WILL BE NECESSARY FOR THE CONTRACTOR TO CONSTRUCT A THOROUGHLY COMPACTED ROADBED (INCLUDING NECESSARY DRAINAGE FACILITIES) FOR A RAILROAD TEMPORARY DETOUR, IN ACCORDANCE WITH THE PLAN, PROFILE AND TYPICAL SECTION DWG. 16, AND CROSS SECTION DWGS. 38 THRU 41. ON THIS COMPLETED AND ACCEPTED ROADBED, THE ERIE-LACKAWANNA RAILROAD WILL FURNISH, CONSTRUCT, AND SUBSEQUENTLY REMOVE THEIR OWN TEMPORARY DETOUR TRACKAGE, COMPLETE WITH BALLAST, TIES, RAILS, POLES, SIGNAL SYSTEMS AND OTHER NECESSARY ACCESSORIES. WORK REQUIRED TO REMOVE OR RELOCATE EXISTING RAILROAD PROPERTY (SUCH AS TRACKAGE, SIGNALS, ETC.) WILL BE DONE BY THE ERIE-LACKAWANNA RAILROAD COMPANY. NO ADJACENT TRENCH EXCAVATION OR EQUIPMENT OF THE CONTRACTOR SHALL BE CLOSER THAN 10'-0" TO THE CENTERLINE OF THE NEAR TRACK; TRENCHES AND EXCAVATIONS SHALL BE ADEQUATELY SUPPORTED.

THE CONTRACTOR SHALL PAY THE ERIE-LACKAWANNA RAILROAD COMPANY (HEREINAFTER CALLED THE COMPANY) ALL COST FOR WATCHMAN, FLAGMEN, TEMPORARY TRACK SUPPORTS, OR ANY OTHER WORK DEEMED NECESSARY BY THE COMPANY OR OCCASIONED BY THE OPERATIONS OR NEGLIGENCE OF THE CONTRACTOR, OR ANY SUBCONTRACTOR, IN CARRYING FORWARD WORK AT, UNDER OR ADJACENT TO RAILROAD TRACKS, OR ON WORK AFFECTING SAFETY OF RAILROAD OPERATIONS.

THE CONTRACTOR SHALL FIRST SECURE STATE AND COMPANY APPROVAL OF ANY METHODS OF OPERATIONS AT RAILROAD TRACKS AFFECTING THE SAFETY OF RAILROAD OPERATIONS. THE COMPANY WILL PERFORM ENGINEERING REVIEW OF METHODS OF OPERATIONS AND ENGINEERING SUPERVISION OF CONSTRUCTION WITHOUT COST TO THE CONTRACTOR.

THE CONTRACTOR, BEFORE BIDDING, SHALL CONSULT WITH THE COMPANY AS TO WHEN WATCHMEN TO PROTECT RAILROAD TRAFFIC WILL BE REQUIRED IN VIEW OF THE CONTRACTORS OPERATIONS.

THE CONTRACTOR SHALL EXECUTE A BOND IN FAVOR OF THE CITY OF CLEVELAND, OHIO, THE STATE AND COMPANY, AS REQUIRED BY SECTION 5525-16 OF THE REVISED CODE OF OHIO.

THE CONTRACTOR SHALL COOPERATE WITH THE LOCAL OFFICIALS OF THE COMPANY IN WORK ADJACENT TO RAILROAD TRACKS IN ORDER TO AVOID DELAY TO, OR INTERFERENCE WITH RAILROAD TRAFFIC, AND SHALL NOTIFY THE COMPANY FORTY-EIGHT (48) HOURS IN ADVANCE OF OPERATIONS THAT WILL OR MIGHT AFFECT SAFETY OF TRAIN OPERATIONS.

SEQUENCE OF CONSTRUCTION OPERATIONS IN SHOULDER CONSTRUCTION:

UNDERDRAINS SHALL BE INSTALLED AND BACKFILLED TO SUBGRADE ELEVATION PRIOR TO CONSTRUCTION OF THE SUBBASE, EXCEPT THAT INSTALLATION OF THE UNDERDRAINS IN THE MEDIAN MAY BE DEFERRED UNTIL AFTER THE T-71 IS PLACED BUT SHALL OTHERWISE BE SUBJECT TO THE SEQUENCE OF CONSTRUCTION OPERATIONS OUTLINED HEREIN.

THE SUBBASE SHALL THEN BE CONSTRUCTED IN THE CONCRETE PAVEMENT AREA AND EXTENDED OUT TO COVER THE POROUS BACKFILL FOR THE UNDERDRAIN ON THE OUTSIDE EDGE AND TO AT LEAST ONE (1) FOOT BEYOND EDGE OF PAVEMENT AT MEDIAN EDGE.

THE PAVEMENT SHALL THEN BE CONSTRUCTED.

PRIOR TO PLACING THE SHOULDER PAVEMENT THE SUBBASE MATERIAL SHALL BE REMOVED FOR WIDTHS AND DEPTHS AS SHOWN ON DETAILS A,B,C ON SHEET NO. 3 OF THE CONSTRUCTION PLANS AND REPLACED WITH NO. 6 AGGREGATE AND SEC. M-2.1 SAND. ANY CONTAMINATED BACKFILL OVER THE I-3 DRAIN IMMEDIATELY BELOW THE BOTTOM OF THE SUBBASE COURSE SHALL ALSO BE REMOVED AND REPLACED WITH SEC. M-2.1 SAND AT THIS TIME AT NO ADDITIONAL COST TO THE STATE.

THE B-19 AGGREGATE BASE COURSE SHALL THEN BE PLACED AND CONSTRUCTION OF THE WATERPROOFED AGGREGATE COURSE SHALL FOLLOW IMMEDIATELY.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AS INDICATED ON SHEET NO. 3 OF THESE PLANS.

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

GENERAL NOTES

SCALE		DATE			
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
		LKH	TLL	JXL	2/24/64
			CDR		

CONT. No. 58019 SHEET ACC. No. 6423

UTILITIES

AMERICAN TELEPHONE & TELEGRAPH CO.
1538 UNION COMMERCE BUILDING
CLEVELAND 14, OHIO
C. M. BORSON, DIV. PLANT SUPT.
MAIN 2-2807

BUCKEYE PIPELINE COMPANY
MIDWEST PRODUCTS DIVISION
137 WEST NORTH STREET
LIMA, OHIO
J. R. ANDERSON, SUPT.
R. E. LANGSTON
2170 DRY DOCK AVE.- CLEVELAND
CHERRY 1-5853

CITY OF CLEVELAND TOWER 1-4600

DEPARTMENT OF PUBLIC SAFETY
FIRE SIGNAL SYSTEM
310 CARNEGIE AVENUE
CLEVELAND 15, OHIO
(FIRE) F. HUDSON

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF UTILITIES ENGINEERING
600 LINCOLN BUILDING
CLEVELAND 14, OHIO
(WATER) W. J. SWEENEY
ENGINEER OF DESIGN
(LIGHT) A. NICHOLS, CHIEF
BUREAU OF STREET LIGHTING

DEPARTMENT OF PUBLIC SERVICE
CITY HALL
CLEVELAND 14, OHIO
(SEWERS) PERRY NUHN
CHIEF DRAFTSMAN

DEPARTMENT OF PUBLIC SAFETY
DIV. OF TRAFFIC ENGINEERING & PARKING
1404 EAST 9TH STREET
CLEVELAND 14, OHIO
R. H. WITT
TRAFFIC ENGINEERING

CLEVELAND POLICE DEPARTMENT
TRAFFIC DIVISION
2001 PAYNE AVENUE
CLEVELAND 14, OHIO
SAM C. SKEROTES
COMMISSIONER OF TRAFFIC

UTILITY ADJUSTMENTS

THE CONTRACTOR SHALL NOTIFY, AT LEAST 2 WORKING DAYS BEFORE BREAKING GROUND, ALL PUBLIC SERVICE CORPORATIONS HAVING WIRE, POLES, PIPE, CONDUITS, MANHOLES OR OTHER STRUCTURES THAT MAY BE AFFECTED BY THIS OPERATION INCLUDING ALL STRUCTURES WHICH ARE AFFECTED AND NOT SHOWN ON THESE PLANS. ANY AND 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.

UNDERGROUND UTILITIES

THE LOCATIONS OF 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.

ROADWAY

EXISTING GRADE

EXISTING GRADE SHOWN THROUGH BUILDINGS IN THESE PLANS IS THAT OF THE GROUND LINE AT THE FOUNDATION UNLESS OTHERWISE SHOWN.

ROUNDING OF CORNERS ON CROSS SECTIONS

THE ROUNDED CORNERS SHOWN ON STANDARD DRAWINGS RI-1 AS MODIFIED BY THE TYPICAL SECTION, APPLY TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN IN THESE PLANS.

REMOVAL OF REFUSE AND DEBRIS

ANY EXISTING REFUSE, DEBRIS OR ANY OTHER UNSUITABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH ITEM E-1. THE QUANTITY OF REFUSE OR DEBRIS, OR OTHER UNSUITABLE MATERIAL REMOVED AND DISPOSED OF WILL BE DETERMINED BY FINAL CROSS SECTIONS, AND THE YARDAGE SO DETERMINED WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR ROADWAY EXCAVATION, ITEM E-1.

ROADWAY (CONT'D)

AREAS BOUNDED BY RAMPS, ETC.

ALL SOIL AREAS BOUNDED BY RAMPS, ROADS OR STREETS, AND AREAS UNDER BRIDGES SHALL BE CLEARED AND SHAPED IN ACCORDANCE WITH ITEM E-1; THE COST THEREOF SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICE BID FOR ITEM E-1, ROADWAY EXCAVATION.

REMOVAL OF EXISTING NON-RIGID PAVEMENT

COST OF REMOVING NON-RIGID PAVEMENT IS TO BE INCLUDED WITH THE PRICE BID FOR ROADWAY EXCAVATION, ITEM E-1.

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.

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.

GUARD RAIL FLARES

WHERE PROPOSED GUARD RAIL FLARES ARE CONSTRUCTED OF RAIL ELEMENTS WHICH HAVE NOT BEEN FABRICATED EXACTLY TO FIT THE CURVATURE SHOWN ON THE PLANS, THE TWO END POSTS OF EACH FLARED SECTION SHALL BE ENCASED IN A MINIMUM 4-INCH THICKNESS OF CLASS "E" CONCRETE FOR THE FULL DEPTH OF THE POST BELOW THE GROUND LINE. PAYMENT FOR ENCASEMENT, IF REQUIRED, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE GUARD RAIL.

ITEM I-15, TEMPORARY GUARD RAIL AND
ITEM I-15, TEMPORARY GUARD RAIL REMOVED AND REBUILT

SEE NOTE IN PROPOSAL FOR DESCRIPTION OF ITEM I-15, TEMPORARY GUARD RAIL. TEMPORARY GUARD RAIL (BOTH NEW AND REMOVED & REBUILT) IS TO BE INSTALLED AND MAINTAINED AS DIRECTED BY THE ENGINEER AND, UPON COMPLETION OF THE PROJECT, IS TO REMAIN IN PLACE FOR LATER REMOVAL BY OTHERS.

THE LOCATION OF EXISTING AND NEW TEMPORARY GUARD RAIL IS DESCRIBED AS FOLLOWS:

- (A) REMOVED & REBUILT GUARD RAIL (SEE SHEET 2 FOR GENERAL LOCATION)
- 1-G REMOVE TEMPORARY GUARD RAIL NOW LOCATED AT N-W RAMP ENTRANCE AND WILLOW FREEWAY, (WILLOW STA. 88 + 50 TO STA. 92 + 50 LEFT) FOR WILLOW AND RAMP GEOMETRICS SEE SHEET 10.
 - 2-G PLACE 400 L.F. OF REBUILT TEMPORARY GUARD RAIL (OBTAINED FROM 1-G) AT THE BIFURCATION OF THE N-W AND N-E RAMPS. N-E RAMP STA. 0 + 38 (24' RIGHT) TO STA. 4 + 28 (16' RIGHT) 400 L.F.
 - 3-G REMOVE TEMPORARY GUARD RAIL NOW LOCATED AT S-E RAMP ENTRANCE AND WILLOW FREEWAY, (WILLOW STA. 61 + 95 TO 65 + 95 RIGHT) FOR WILLOW AND RAMP GEOMETRICS SEE SHEET 10.
 - 4-G PLACE 400 L.F. OF REBUILT TEMPORARY GUARD RAIL (OBTAINED FROM 3-G) AT THE BIFURCATION OF THE S-W AND S-E RAMPS. S-E RAMP STA. 6 + 83 (24' LEFT) TO STA. 10 + 75 (26' LEFT) 400 L.F.

(B) NEW TEMPORARY GUARD RAIL

- 1. PLACE 710 L.F. OF NEW TEMPORARY GUARD RAIL WHERE DESCRIBED AND SHOWN BY REFERENCE NUMBERS 10-G AND 11-G ON SHEET 12.

GUARD RAIL SHALL BE REBUILT AS PER PROPOSAL NOTE, ITEM I-15, TEMPORARY GUARD RAIL AND ANY BADLY DAMAGED DRUMS OR RAIL ELEMENTS (AS DIRECTED BY THE ENGINEER) SHALL BE REPLACED. ALL OF THE ABOVE WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR ITEM I-15, TEMPORARY GUARD RAIL REMOVED AND REBUILT.

WOODEN BARRICADES (AS PER STD. DWG. G-7.07) SHALL BE REQUIRED AT THE EXIT RAMPS FROM THE WILLOW FREEWAY IN THE INTERIM PERIOD WHILE THE TEMPORARY GUARD RAIL IS BEING REBUILT AND BEFORE THE PROJECT IS OPENED TO TRAFFIC. COST OF ERECTION, MAINTAINING AND SUBSEQUENT REMOVAL OF BARRICADES SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM I-3, MAINTAINING TRAFFIC.

QUANTITIES OF EACH RESPECTIVE TEMPORARY GUARD RAIL PAY ITEM ARE CARRIED TO THE GENERAL SUMMARY (SHEET 9).

ITEM 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 SEC. I-22.02 EXCEPT THAT, FOR EITHER GRADING, NO MORE THAN 10 PERCENT OF THE MATERIAL SHALL PASS A NO. 200 SIEVE AFTER ALL OPERATIONS OF PLACEMENT AND COMPACTION HAVE BEEN COMPLETED.

SEEDING AND PROTECTING, AS PER PLAN

QUANTITIES FOR SEEDING, ITEM L-9, ARE CALCULATED FOR SOIL AREAS BETWEEN LINES LOCATED 10 FEET BEYOND THE WORK LIMITS OR TO THE RIGHT OF WAY OR LIMITED ACCESS LINE WHEN IT IS LESS THAN 10 FEET FROM THE WORK LIMITS, OR AS INDICATED ON THE CROSS SECTIONS.

WHERE PREVIOUS DITCH AND SLOPE CONSTRUCTION HAS BEEN ACCOMPLISHED, SEEDING IS CALCULATED BETWEEN THE OUTER EDGE OF PAVED BERM AND THE DITCH ROUNDING. (SEE SHEET 3 FOR STATION LIMITS.)

SEED SHALL BE SOWN AT THE RATE OF 3 POUNDS PER 1,000 SQUARE FEET. SEEDING FORMULA FOR ALL SEEDED AREAS SHALL BE IN ACCORDANCE WITH SEED MIXTURE LISTED BELOW.

CITY OF CLEVELAND, DEPARTMENT OF PUBLIC PROPERTIES
URBAN AREA GRASS SEED MIXTURE

% OF WT.	NAME
55 %	FESTUCA RUBRA (VAR. CREEPING) ✓ CREEPING RED FESCUE ✓
20 %	POA PRATENSIS ✓ KENTUCKY BLUE GRASS ✓
15 %	AGROSTIS ALBA ✓ RED TOP ✓
10 %	LOLIUM PERENNE ✓ PERENNIAL RYE GRASS ✓

AREAS BOUNDED BY RAMPS, ROADS OR STREETS

THESE AREAS SHALL BE SEEDED IN ACCORDANCE WITH, AND PAYMENT MADE THEREFOR UNDER ITEM L-9, EXCEPT THAT AREAS UNDER BRIDGES SHALL NOT BE SEEDED WHERE ITEM I-10 IS CALLED FOR IN THE PLANS.

L-9 COMMERCIAL FERTILIZER

ALL AREAS TO BE SEEDED UNDER ITEM L-9 OR SODDED UNDER ITEM L-10 SHALL HAVE COMMERCIAL FERTILIZER 12-12-12, APPLIED AT THE RATE OF TWENTY (20) POUNDS PER 1,000 SQUARE FEET.

AGRICULTURAL LIMING MATERIALS

THE LOCATION AND NEED FOR AGRICULTURAL LIMING MATERIALS WILL BE DETERMINED BY LABORATORY TESTS, AFTER ROUGH GRADING OPERATIONS HAVE BEEN PERFORMED. QUANTITIES OF AGRICULTURAL LIMING MATERIAL AS SHOWN ON THE PLANS ARE SUFFICIENT FOR THE ENTIRE PROJECT, BUT WILL BE NONPERFORMED FOR THE AREAS WHERE TESTS SHOW THAT THE LIMING MATERIAL IS NOT NEEDED.

S.S. CE-101.04 COMPACTION USING HEAVY PNEUMATIC TIRED ROLLER

AN ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN PROVIDED IN THE GENERAL SUMMARY FOR USE IN PROOF ROLLING OF SUBGRADE ON THE MAINLINE AND RAMP PAVEMENTS AS DIRECTED BY THE ENGINEER. PROOF ROLLING WILL NOT BE REQUESTED WHERE ROCK OR SHALE OCCURS IN SUBGRADE AND IN AREAS WHERE SUBBASE HAS BEEN THICKENED TO REPLACE FROST SUSEPTIBLE SILTS. IN LIEU OF THE REQUIREMENTS OF CE-101.04, A MINIMUM OF ONE COVERAGE WILL BE REQUIRED TO CHECK THE SUBGRADE. MOISTURE CONTENT OF THE TOP 12" OF SUBGRADE SHALL NOT EXCEED OPTIMUM AT THE TIME OF PROOF ROLLING. TIRE PRESSURE AND TOTAL LOAD SHALL BE VARIED AS DIRECTED BY THE ENGINEER WITHIN THE LIMITS PROVIDED IN SUPPLEMENTAL SPECIFICATION NO. CE-101.04.

RANDOM FILL AREAS

RANDOM FILL, CONSISTING OF CINDERS, BRICKS, CONCRETE FRAGMENTS AND SLAG, IS EXPECTED BETWEEN CLARK STA. 1041 ± AND STA. 1045 ± AND E-N RAMP STA. 12 ± AND STA. 15 ±. IN THESE AREAS, OR WHERE DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL COVER THE CUT SLOPE WITH FOUR (4) INCHES OF ACCEPTABLE FILL MATERIAL. SEEDING AND FERTILIZING SHALL FOLLOW IMMEDIATELY AND SHALL BE PAID FOR AT THE UNIT PRICE BID FOR THE RESPECTIVE ITEMS OF WORK.

REMOVAL OF TREES AND STUMPS

ALL TREES AND STUMPS LYING WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED AT THE CONTRACT UNIT PRICE BID PER TREE AND STUMP FOR ITEM E-9, REMOVAL OF TREES AND STUMPS.

THE FOLLOWING IS AN ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED.

SIZES	NO. TREES
12" & OVER	43

CONTRACTION AND EXPANSION JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN EXPANSION AND CONTRACTION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES AND THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS SHALL IN ALL CASES BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING T.J.

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

GENERAL NOTES

SCALE				DATE			
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION	
			L.K.H.	T.L.L. C.D.R.	J.R.R.	2/24/64	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUYAHOGA COUNTY
CUY- 254-18.88

DRAINAGE

PLUGGING PIPE

NEW PIPE LINES, WHERE SHOWN ON THE PLANS TO BE PLUGGED, SHALL BE PLUGGED WITH FLAT STONE, BRICK LAID IN MORTAR, OR CONCRETE STOPPER IN A MANNER SATISFACTORY TO THE ENGINEER.

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT PIPE ITEM, I-1.

(SEE SHEET NO. 43)

CO-OPERATION

THE CONTRACTOR FOR SEC. CUY-254-18.88 IS HEREBY INFORMED THAT THE STORM DRAIN FACILITIES WHICH ARE UNDER CONSTRUCTION IN ADJOINING SEC. CUY-254-14.12 MAY NOT BE AVAILABLE FOR USE AT THE TIME OF THE CONTRACT LETTING OF SEC. CUY-254-18.88.

EROSION CONTROL

ITEMS I-10, I-14 AND L-120 ARE PROVIDED IN THESE PLANS FOR EROSION CONTROL. ROCK OF STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS. THE ENGINEER SHALL CHECK AND NONPERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. AN ESTIMATED QUANTITY OF 5 CUBIC YARDS OF ITEM I-10 DUMPED ROCK CHANNEL PROTECTION HAS BEEN ENTERED IN THE GENERAL SUMMARY (SHEET 9) FOR USE AS DIRECTED BY THE ENGINEER.

SPECIAL DITCHES

FOR SPECIAL DITCH GRADES, SEE CROSS SECTIONS AND GRADING PLAN.

PIPE FOR SUBGRADE DRAINAGE

SIX (6) INCH DRAIN TILE (SEC. M-6.1 OR M-6.2) SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR, IN MANHOLES AND CATCH BASINS FOR SUBGRADE DRAINAGE, WHERE AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR SUCH DRAIN TILE SHALL BE INCLUDED IN THE BID PRICE FOR EACH MANHOLE OR CATCHBASIN.

REINFORCED ENDS ON CORRUGATED METAL PIPE

REINFORCED ENDS SHALL BE PROVIDED FOR ALL CORR. METAL CLASS F-4, SEC. M-6.4(C) PIPE FOR UNDERDRAIN OUTLETS, IF THE PIPE ENDS ARE UNPROTECTED BY HEADWALLS, CATCH BASINS OR MANHOLES.

MANHOLE FRAME AND COVER CASTINGS

THE CASTINGS USED ON ALL NEW MANHOLES SHALL BE THE CITY OF CLEVELAND STANDARD MANHOLE FRAME AND COVER AS SHOWN IN THE TYPICAL DETAILS, SHEET 46.

ABANDONED SEWERS AND DRAINS

THE CONTRACTOR SHALL PLUG OR BULKHEAD ALL EXISTING SEWERS OR DRAINS WHICH ARE TO BE ABANDONED. HE SHALL PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT TO SEAL THE SEWERS OR DRAINS IN A MANNER SATISFACTORY TO THE ENGINEER. SEALING SHALL CONSIST OF CONSTRUCTING AN 8" THICK BRICK MASONRY BULKHEAD OR EQUIVALENT INSIDE THE SEWER OR DRAIN. PAYMENT FOR SEALING SEWERS OR DRAINS SHALL BE INCLUDED IN THE PRICE BID FOR ITEM E-1, ROADWAY EXCAVATION.

CONNECTING INTO EXISTING SEWERS

AT PLACES WHERE THE PLANS PROVIDE FOR PROPOSED PIPE TO BE CONNECTED TO EXISTING PIPES, 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.

WHERE PROPOSED SEWERS ARE TO BE CONNECTED INTO EXISTING PIPES, THE CONTRACTOR SHALL NOTIFY THE CITY OF CLEVELAND AT LEAST 24 HOURS IN ADVANCE SO THAT INSPECTION CAN BE FURNISHED BY THE CITY AT THE TIME THE CONTRACTOR MAKES THE TAP.

PAYMENT FOR THIS OPERATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT PIPE ITEM.

REMOVAL OF EXISTING SEWERS & APPURTENANCES IN EXCAVATION

WHERE EXISTING SEWERS AND SEWER APPURTENANCES ARE ENCOUNTERED IN EXCAVATION LYING ABOVE SUBGRADE OR BACKSLOPES, REMOVAL OF SUCH ITEMS SHALL BE INCLUDED IN ITEM E-1, ROADWAY EXCAVATION.

MAINTENANCE OF SEWER FLOWS

THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO MAINTAIN AT ALL TIMES SEWER FLOWS THROUGH EXISTING FACILITIES TO BE REPLACED UNTIL NEW FACILITIES ARE COMPLETED AND PLACED INTO USE.

PAYMENT FOR ANY ADDITIONAL COSTS 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.

FOR ADDITIONAL NOTES:

SEE SHEETS 56 & 57 FOR ELECTRICAL
59 FOR STRUCTURAL
47 FOR WATER

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

GENERAL NOTES

SCALE				DATE			
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION	
		LKH	RMR	JXL	2/24/64		

CONT. No. 58019 SHEET ACCT. No. 6425

E-8 REMOVAL ITEMS

SHEET	LOCATION	FROM	TO	PAVEMENT			CURB			SIDEWALK		
				WIDTH	LENGTH	REMOVAL AND DISPOSAL OF EXIST. RIGID PAVEMENT	WIDTH	LENGTH	REMOVAL AND DISPOSAL OF EXISTING CURB	WIDTH	LENGTH	REMOVAL AND DISPOSAL OF EXISTING SIDEWALK
				FT.	FT.	Sq.Yd.	FT.	FT.	L.F.	FT.	FT.	Sq.Ft.
12	E. 49 ST.	So. L.A. LINE	LIMITS OF BRICK PAV'T.	26	366	1,052	LT. 365	365	LT. 4	360	1440	
							RT. 365	365	RT. 4	350	1400	
	E. 50 ST.	So. L.A. LINE	LIMITS OF BRICK PAV'T.	24	189	504	LT. 165	165	LT. 4	216	864	
							RT. 165	165	RT. 4	155	620	
15	E. 54 ST. & BOWER AVE. INTERSECTION						LT. 56	56	LT. 5	22	110	
TOTALS TO SHEET 9						1,556	REMOVAL # DISPOSAL 1,014				4,434	
							REMOVAL FOR REUSE* 102					

* REMOVAL FOR REUSE OF EXISTING CURB IS THE AMOUNT OF I-II SANDSTONE CURB RESET ON SHEET 9.

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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CUYAHOGA COUNTY
CUY-254-18.88

EARTHWORK AND EROSION CONTROL

SHEET	DESCRIPTION	E-1 ROADWAY EXCAVATION METHOD B	ROADWAY EMBANKMENT	EROSION CONTROL		
				L-9 SEEDING AND PROTECTING	L-9 COMMERCIAL FERTILIZER	L-9 AGRICULTURAL LIMING MATERIAL
				Sq.Yd.	TONS	TONS
21	CLARK FREEWAY	181,191	845	13,991		
25	TERMINAL AREA	410	4,303	* 6,071	(* 0.55)	(* 2.75)
27	S-E RAMP	64,868	96	8,143		
31	E-N RAMP	57,579	28	7,585		
35	ACCESS ROAD "F"	4,380	3,051	3,867		
38	RAILROAD DETOUR	8,032	143			
TOTALS TO SHEET 9		316,460	8,466	39,657	3.57	17.85

* No Federal Participation

E-1 COMPACTED SUBGRADE

SHEET	DESCRIPTION	QUANTITY
		Sq.Yd.
9	T-71 AREA	18,468
9	I-21 AREA	886
9	BERM AREA	8,640
9	T-70 AREA	1,321
TOTAL TO SHEET 9		29,315

E-11 WATER

SHEET	DESCRIPTION	QUANTITY
		M. GAL.
8	ROADWAY EMBANKMENT (9,990 x 5) ÷ 1,000	50.0
9	B-19 (663 x 5) ÷ 1,000	3.3
9	I-22 (10,112 x 5) ÷ 1,000	50.6
TOTAL TO SHEET 9		103.9

EARTHWORK SUMMARY

DESCRIPTION	Cu.Yd.
E-1 ROADWAY EXCAVATION	+ 316,460
ROADWAY EMBANKMENT + 18%	- 9,990
E-2 STRUCTURAL EXCAVATION (EXCESS)	+ 2,317
TOTAL EXCESS EXCAVATION	308,787

CONT. No. 58019 SHEET ACCT. No. 6426

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

ROADWAY QUANTITY SUMMARY AND CALCULATIONS

SCALE		DATE					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
	G.O.C.		G.O.H.	J.H.	2/24/64		

REV. 6-15-64 C.E.H.

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	9 81
2	OHIO		

CUYAHOGA COUNTY
CUY-254-18.88

ITEM	SHEET NUMBER										Normal Partic.	State City Partic.	ITEM	TOTAL QUAN.	UNIT	DESCRIPTION CODE 7221
	5	6	8	12	13	15	17	18	19	80						
ROADWAY																
E-1			316,460								316,460	E-1	316,460	C.Y.	ROADWAY EXCAVATION, METHOD B, AS PER PLAN	
E-1			29,315								29,315	E-1	29,315	S.Y.	COMPACTED SUBGRADE	
E-2		16									LUMP	E-2	LUMP	LUMP	COFFERDAMS, CRIBS AND SHEETING	
E-2											16	E-2	16	Hour	COMPACTION USING HEAVY PNEUMATIC TIRED ROLLER	
E-8			1,556						71		1,556	E-8	1,627	S.Y.	REMOVAL & DISPOSAL OF EXISTING RIGID PAVEMENT	
E-8			4,434								4,434	E-8	4,434	S.F.	REMOVAL & DISPOSAL OF EXISTING SIDEWALK	
E-8			1,014						76		1,014	E-8	1,090	L.F.	REMOVAL & DISPOSAL OF EXISTING CURB	
E-8			102								102	E-8	102	L.F.	REMOVAL FOR RE-USE OF EXISTING SANDSTONE CURB	
E-9		43									43	E-9	43	Ea.	REMOVAL OF TREES & STUMPS	
E-11			104								104	E-11	104	M-GAL.	WATER	
I-4	30										30	I-4	30	M-GAL.	WATER FOR DUST CONTROL	
I-4	10										10	I-4	10	TON	CALCIUM CHLORIDE FOR DUST CONTROL	
I-8						1					1	I-8	1	Ea.	MONUMENT ASSEMBLIES, STANDARD	
I-15					1,755		4125				2,1675	I-15	2,1675	L.F.	GUARD RAILS, STEEL BEAM STANDARD TYPE (DEEP)	
I-15					769						769	I-15	769	L.F.	Guard Rail, Steel Beam Barrier Type (Deep) Using Square sawed Wood Posts, as per plan	
I-15					150						150	I-15	150	L.F.	GUARD RAIL, STEEL BEAM STANDARD TYPE (DEEP), AS PER PLAN	
I-15					710						710	I-15	710	L.F.	GUARD RAIL, TEMPORARY, AS PER PLAN	
I-15		800									800	I-15	800	L.F.	GUARD RAIL, TEMPORARY - REMOVED AND REBUILT	
I-15					75						75	I-15	75	L.F.	GUARD RAIL REMOVED AND DISPOSED OF	
L-9			39,657								39,657	L-9	39,657	S.Y.	SEEDING & PROTECTING, AS PER PLAN	
L-9			3.57								3.57	L-9	3.57	TON	COMMERCIAL FERTILIZER (12-12-12)	
L-9			17.85								17.85	L-9	17.85	TON	AGRICULTURAL LIMING MATERIAL, AS PER PLAN	
L-120					1,526						1,526	L-120	1,526	S.Y.	JUTE MATTING	
T-10	400										400	T-10	400	C.Y.	TRAFFIC COMPACTED SURFACE COURSE FOR MAINTAINING TRAFFIC	
I-17						4,300					4,300	I-17	4,300	S.F.	Galvanized Metal or Reinforced Concrete Cellular Retaining Wall	
I-26											1,290	I-26	1,290	L.F.	Chain Link Fence	
S-24					LUMP						LUMP	S-24	LUMP	LUMP	REMOVAL OF EXISTING STRUCTURES	
E-10					Lump						Lump	E-10	Lump	Lump	Removal of one frame Pigeon Coop, Parcel No. 1801T	
E-10					Lump						Lump	E-10	Lump	Lump	Removal of one frame Shed, Parcel No. 1802T	
E-10					Lump						Lump	E-10	Lump	Lump	Removal of one frame garage & one frame outhouse, Parcel No. 1803W	
E-10					Lump						Lump	E-10	Lump	Lump	Removal of one 1 1/2 story frame residence and one fire garage, Parcel No. 1806W	
PAVEMENT																
B-19						357	306				663	B-19	663	C.Y.	AGGREGATE BASE COURSE	
B-20								253			253	B-20	253	S.Y.	4" WATERBOUND MACADAM BASE COURSE, USING SIZE NO. 2 COARSE AGGREGATE	
B-20					1,068						1,068	B-20	1,068	S.Y.	6" WATERBOUND MACADAM BASE COURSE, USING SIZE NO. 2 COARSE AGGREGATE	
B-21						470	440				910	B-21	910	C.Y.	WATERPROOFED AGGREGATE BASE COURSE	
I-11							170	397			567	I-11	567	L.F.	6"x18" SANDSTONE CURB	
I-11					46		56				102	I-11	102	L.F.	SANDSTONE CURB RESET, AS PER PLAN	
I-12							75				75	I-12	75	L.F.	CONCRETE CURB, ST'D. TYPE 7	
I-12							279				279	I-12	279	L.F.	CONCRETE CURB, ST'D. TYPE 8	
I-12								742			742	I-12	742	L.F.	CONCRETE CURB, ST'D. TYPE 2-A	
I-21						417	417				834	I-21	834	S.Y.	PORTLAND CEMENT CONCRETE MEDIAN PAV'T., ST'D. TYPE 2, AS PER PLAN	
I-21							52				52	I-21	52	S.Y.	4" PORTLAND CEMENT CONCRETE TRAFFIC ISLAND PAV'T., AS PER PLAN	
I-22						4,346	5,766				10,112	I-22	10,112	C.Y.	SUBBASE; GRADING A OR B, AS PER PLAN	
T-31					427	959	833	101			2,219	T-31	2,320	GAL.	BITUMINOUS SURFACE TREATMENT, BITUMINOUS MATERIAL, AS PER PLAN	
T-31					18	31	27	5			76	T-31	81	C.Y.	BITUMINOUS SURFACE TREATMENT, NO. 6 AGGREGATE	
T-70								1,321			1,321	T-70	1,321	S.Y.	9" PORTLAND CEMENT CONCRETE PAVEMENT	
T-71						9,174	9,294				18,468	T-71	18,468	S.Y.	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	

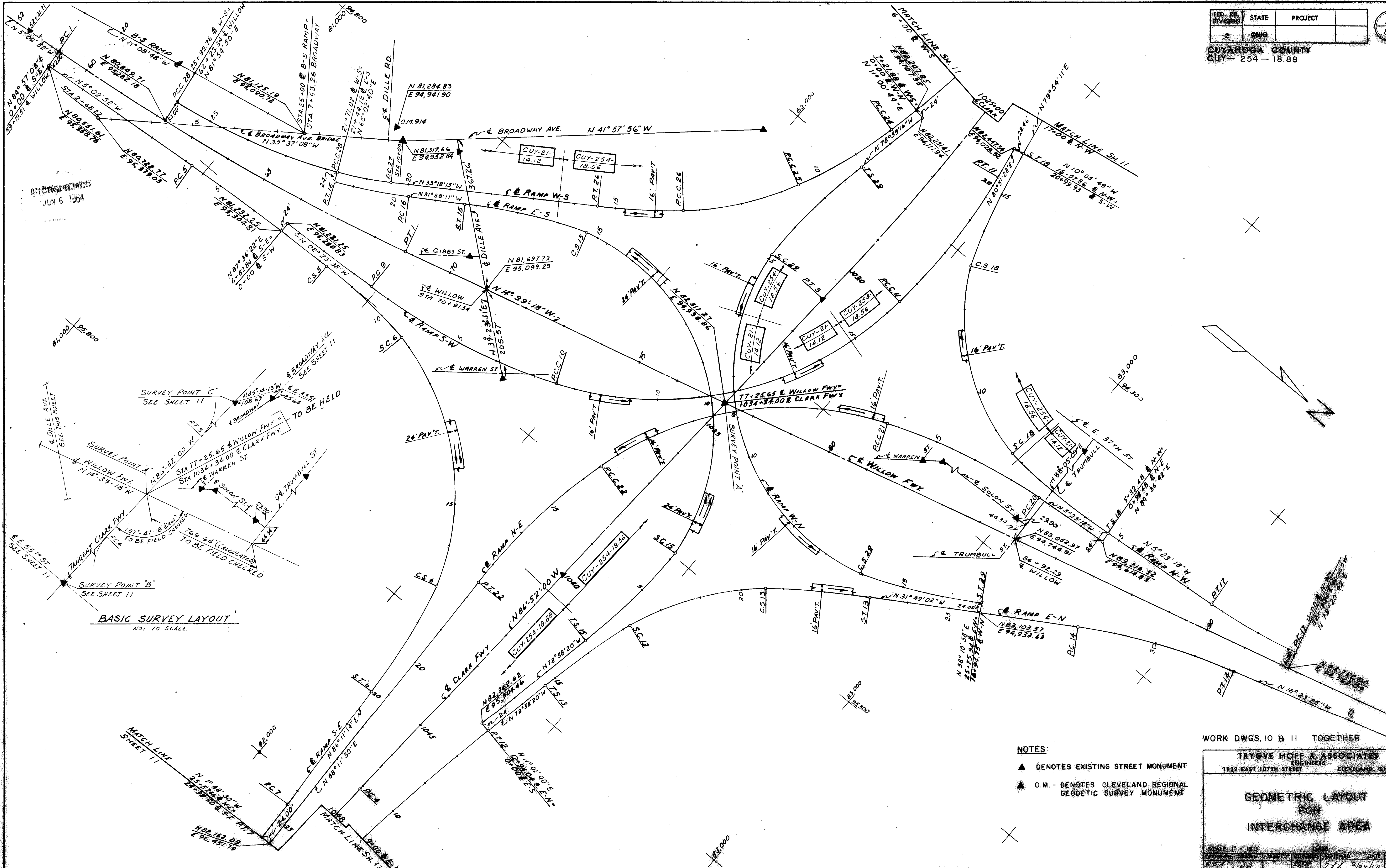
ITEM	SHEET NUMBER					Normal Partic.	State City Partic.	ITEM	TOTAL QUAN.	UNIT	DESCRIPTION CODE 7221
	13	15	19	7	45						
DRAINAGE											
I-1						40	40	I-1	40	L.F.	8" PIPE CLASS F-4, SEC. M-6.4(c)
I-1	160	92				252	252	I-1	252	L.F.	6" PIPE CLASS F-4
I-1	6164					6164	6164	I-1	6164	L.F.	6" PIPE CLASS I-3, AS PER PLAN
I-1						400	400	I-1	400	L.F.	6" PIPE CLASS I-3 SEC. M-6.4(h), AS PER PLAN
I-1	177					177	177	I-1	177	L.F.	6" PIPE CLASS J-1 SEC. M-6.6(b) OR M-6.8(b)
I-1			328			328	328	I-1	328	L.F.	6" PIPE CLASS I-3 SEC. M-6.4(h)
I-1		108				108	108	I-1	108	L.F.	12" PIPE CLASS B-1 SEC. M-6.6(d)
I-1	410					410	410	I-1	410	L.F.	12" PIPE CLASS E-1
I-1	329		118			329	118	I-1	447	L.F.	12" PIPE CLASS J-1
I-1	250					250	250	I-1	250	L.F.	15" PIPE CLASS J-1
I-1	700					700	700	I-1	700	L.F.	18" PIPE CLASS E-1
I-1	283					283	283	I-1	283	L.F.	18" PIPE CLASS J-1
I-1	155					155	155	I-1	155	L.F.	21" PIPE CLASS E-1
I-5			1			4	5	I-5	5	Ea.	6" PIPE SPECIALS CLASS F-4
I-5	16					16	16	I-5	16	Ea.	6" PIPE SPECIALS CLASS I-3
I-8	2					2	2	I-8	2	Ea.	ST'D. 2'-A-10 PAVED SHOULDER INLET, MODIFIED AS PER PLAN
I-8	4					4	4	I-8	4	Ea.	ST'D. 3'-A CATCH BASIN, MODIFIED AS PER PLAN
I-8	6	1	1			7	7	I-8	8	Ea.	ST'D. NO. 5 CATCH BASIN
I-8	5					5	5	I-8	5	Ea.	ST'D. NO. 1 MANHOLE WITH SPECIAL FRAME & COVER AS PER PLAN
I-8						1	1	I-8	1	Ea.	CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN
I-10					5	5	5	I-10	5	C.Y.	DUMPED ROCK CHANNEL PROTECTION
I-14	366	450				816	816	I-14	816	L.F.	ST'D. TYPE I PAVED GUTTER
SPECIAL	600					600	600	SPECIAL	600	C.Y.	NO. 6 AGGREGATE

ITEM	SHEET NUMBER	CITY ITEM	ITEM	TOTAL QUAN.	UNIT	DESCRIPTION CODE Y060	* BETTERMENT (6" HYDRANT REPLACES 4")
SPECIAL	1	3	SPECIAL	4	Ea.	REMOVAL OF 4" HYDRANTS AND VALVES	
SPECIAL	2	2	SPECIAL	2	Ea.	FLUSHING PIPE ASSEMBLY (COMPLETE)	
SPECIAL	10	1A	SPECIAL	10	L.F.	6" CEMENT LINED CAST IRON PIPE & FITTINGS	
SPECIAL	195	2A	SPECIAL	195	Ea.	FURNISHING & SETTING 6" HYDRANTS	
SPECIAL	1	B	SPECIAL	1	Lb.	MISCELLANEOUS METAL WORK	
SPECIAL	2	1	SPECIAL	2	Ea.	RELOCATE & RECONNECT HOUSE WATER SERVICE CONN.	
SPECIAL	2	1	SPECIAL	2	Ea.	PLUG EXISTING 6" WATER MAINS	
SPECIAL	1	1	SPECIAL	1	Ea.	6"x6" BRANCH SLEEVE & VALVE	
SPECIAL	29	1	SPECIAL	29	Ea.	PLUG HOUSE CONNECTION AT MAIN	
SPECIAL	1	1	SPECIAL	1	Ea.	PLUG 6" FIRE PROTECTION CONNECTION AT MAIN	

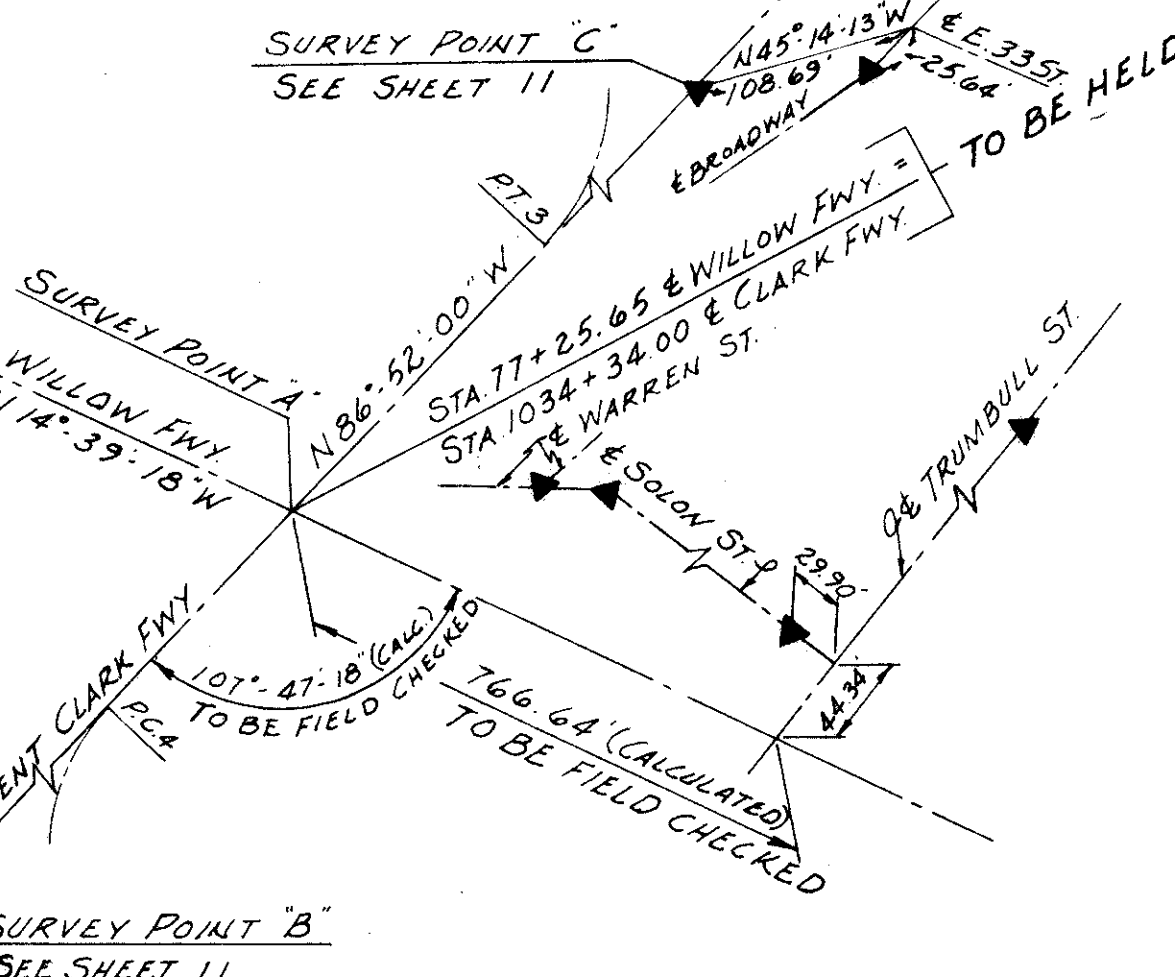
ITEM	SHEET NUMBER	ITEM	TOTAL QUAN.	UNIT	DESCRIPTION Code 7221
OVERHEAD SIGN SUPPORTS					
I-129	1	I-129	1	Ea.	OVERHEAD SIGN SUPPORT NO. 7.3 DESIGN 1, 50' SPAN, AS PER PLAN
I-129	1	I-129	1	Ea.	OVERHEAD SIGN SUPPORT NO. 7.6 DESIGN 4, 90' SPAN, AS PER PLAN
I-129	18.2	I-129	18.2	C.Y.	CLASS "E" CONCRETE FOR SIGN SUPPORT FOUNDATIONS, AS PER PLAN
S-25	2	S-25	2	Ea.	SIGN SWITCH AND ENCLOSURE "Z"
S-25	2	S-25	2	Ea.	GROUND WIRE AND WIRE CONNECTION
S-25		S-25			ELECTRICAL EQUIPMENT, SEE SUMMARY SH. 49
STRUCTURES OVER 20'					
BRIDGE NO. CUY-254-1893, S.R. 254 UNDER THE ERIE-LACKAWANNA RAILROAD, SEE SUMMARY SH. 59					
I-3	LUMP	I-3	LUMP	LUMP	CONSTRUCTION LAYOUT STAKES
	LUMP		LUMP	LUMP	MAINTAINING TRAFFIC

REV. 6-15-64 C.E.H.

CONT. NO. 58019 SHEET A.C.T. NO. 6228



MICROFILMED
JUN 6 1984



- NOTES:**
- ▲ DENOTES EXISTING STREET MONUMENT
 - ▲ O.M. - DENOTES CLEVELAND REGIONAL GEODETIC SURVEY MONUMENT

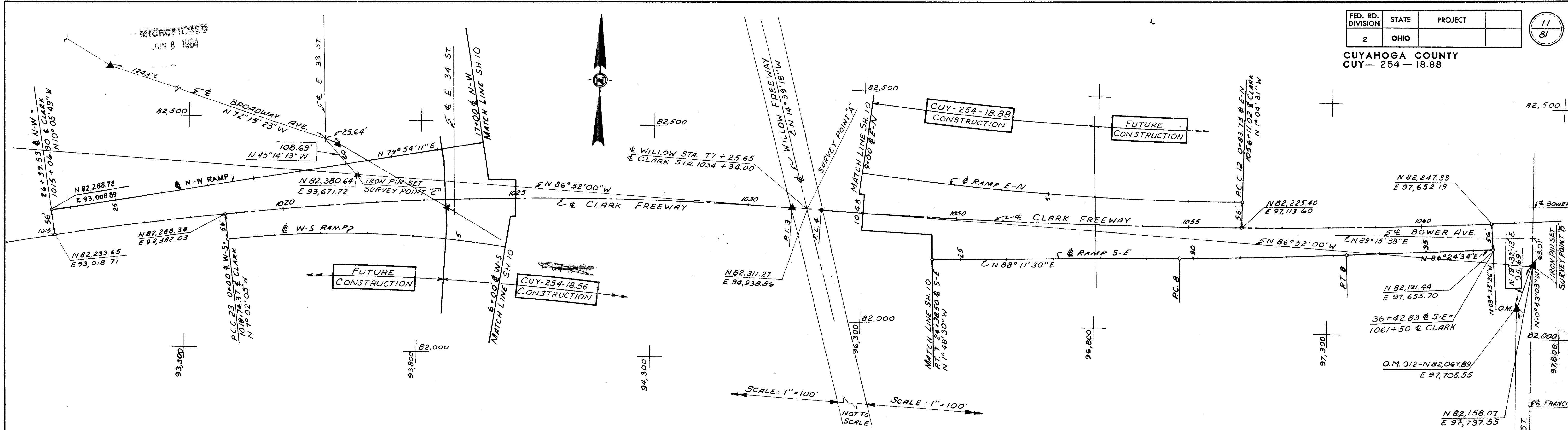
WORK DWGS. 10 & 11 TOGETHER

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

GEOMETRIC LAYOUT FOR INTERCHANGE AREA

SCALE: 1" = 100'	DATE: 2/24/64
DESIGNED: RB	CHECKED: J.H.R.
DRAWN: RB	DATE: 2/24/64

CONT. NO. 58019 SHEET ACCT. NO. 6248

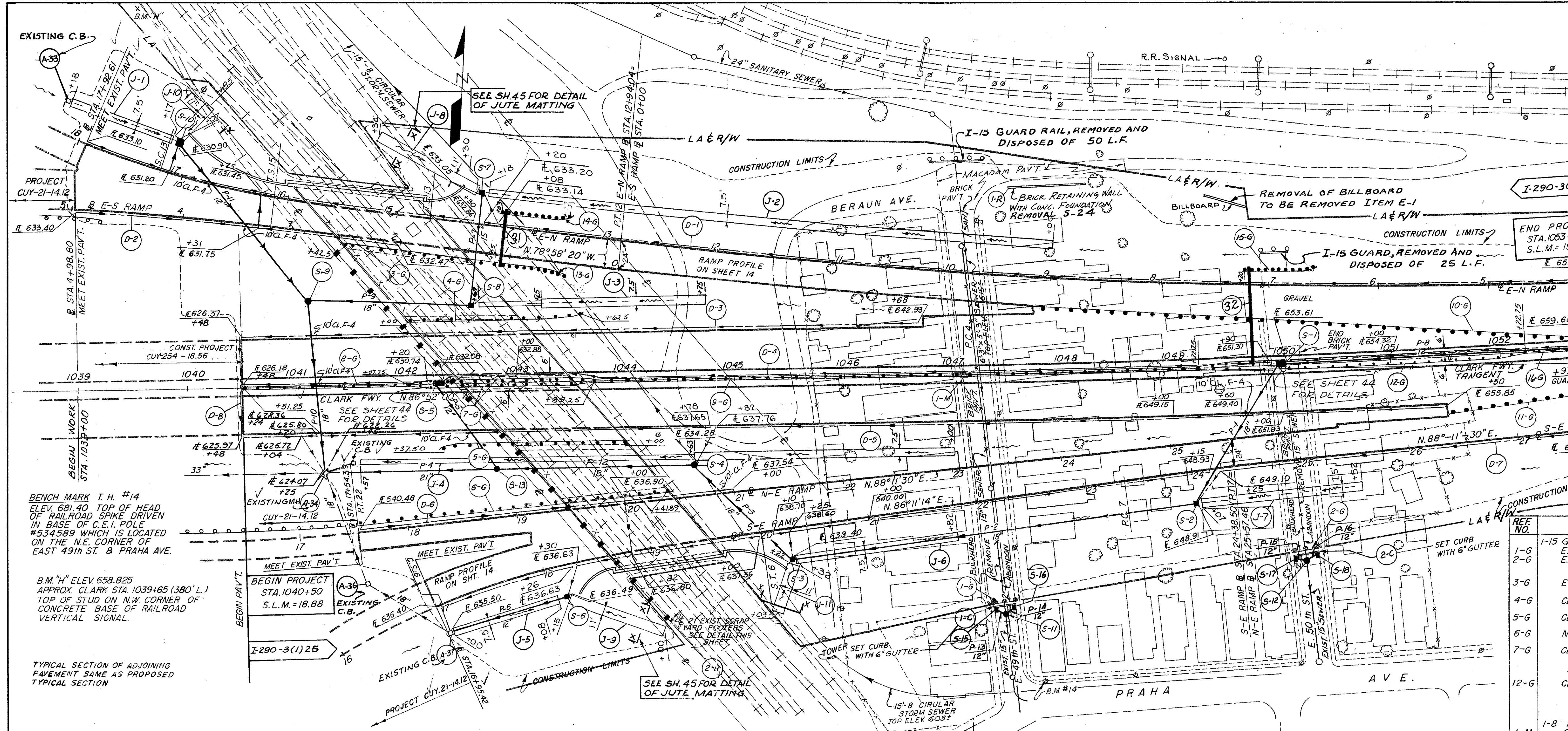


SPIRAL DATA

CURVE NO.	TANGENT TO SPIRAL			SPIRAL TO CURVE			POINT OF INTERSECTION			CURVE TO SPIRAL			SPIRAL TO TANGENT			Δ	ϕ _s	L _s	T _s	L.C.	X _c	Y _c	Δ _c	D _c	R	T	L _c	REMARKS	CURVE NO.
	STATION	N	E	STATION	N	E	STATION	N	E	STATION	N	E	STATION	N	E														
5	*4 + 17.45	80,967.44	95,322.03	10 + 71.01	81,619.39	95,317.14				8 + 21.01	81,370.35	95,300.70				17° 09' 38"	13° 07' 30"	250'	—	249.42	248.69	19.02	4° 02' 08"	1° 00' 00"	5729.58	201.86	403.56	Ramp S-E	5
6				10 + 71.01	81,619.39	95,317.14				17 + 00.74	82,066.22	95,719.82	20 + 00.74	82,110.74	96,015.66	74° 04' 28"	14° 15' 00"	300'	—	299.18	298.15	24.76	59° 49' 28"	9° 30' 00"	603.11	346.97	629.73	Ramp S-E	6
13	14 + 69.63	82,419.77	95,736.70	17 + 19.63	82,481.69	95,494.84	19 + 08.65	82,503.75	9																				

NOTES:

TYPICAL SECTION	3
GEOMETRIC LAYOUT	10 B 11
PAV'T. DETAILS & QUANTITIES	17-18
E-8 REMOVAL ITEMS	8
GRADING PLAN & CROSS SECTION KEY PLAN	20
EXISTING UTILITIES	13
DRAINAGE QUANTITIES	42 & 43
SEWER PROFILES	44-46
SEWER DETAILS	47
WATERWORK PLAN	49-57
ELECTRICAL PLANS	58-74-A
STRUCTURAL PLANS	80
FENCE LOCATION	80
OVERHEAD SIGN DETAILS	57-A

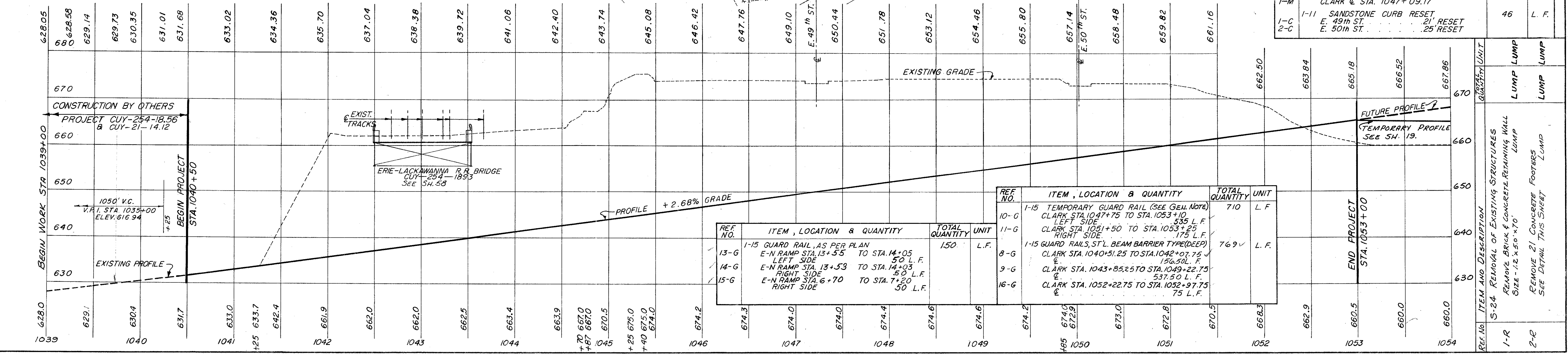


BENCH MARK T.H. #14
 ELEV 681.40 TOP OF HEAD
 OF RAILROAD SPIKE DRIVEN
 IN BASE OF C.E.I. POLE
 #534589 WHICH IS LOCATED
 ON THE N.E. CORNER OF
 EAST 49th ST. & PRAHA AVE.

B.M. "H" ELEV 658.825
 APPROX. CLARK STA. 1039+65 (380' L.)
 TOP OF STUD ON N.W. CORNER OF
 CONCRETE BASE OF RAILROAD
 VERTICAL SIGNAL.

TYPICAL SECTION OF ADJOINING
 PAVEMENT SAME AS PROPOSED
 TYPICAL SECTION

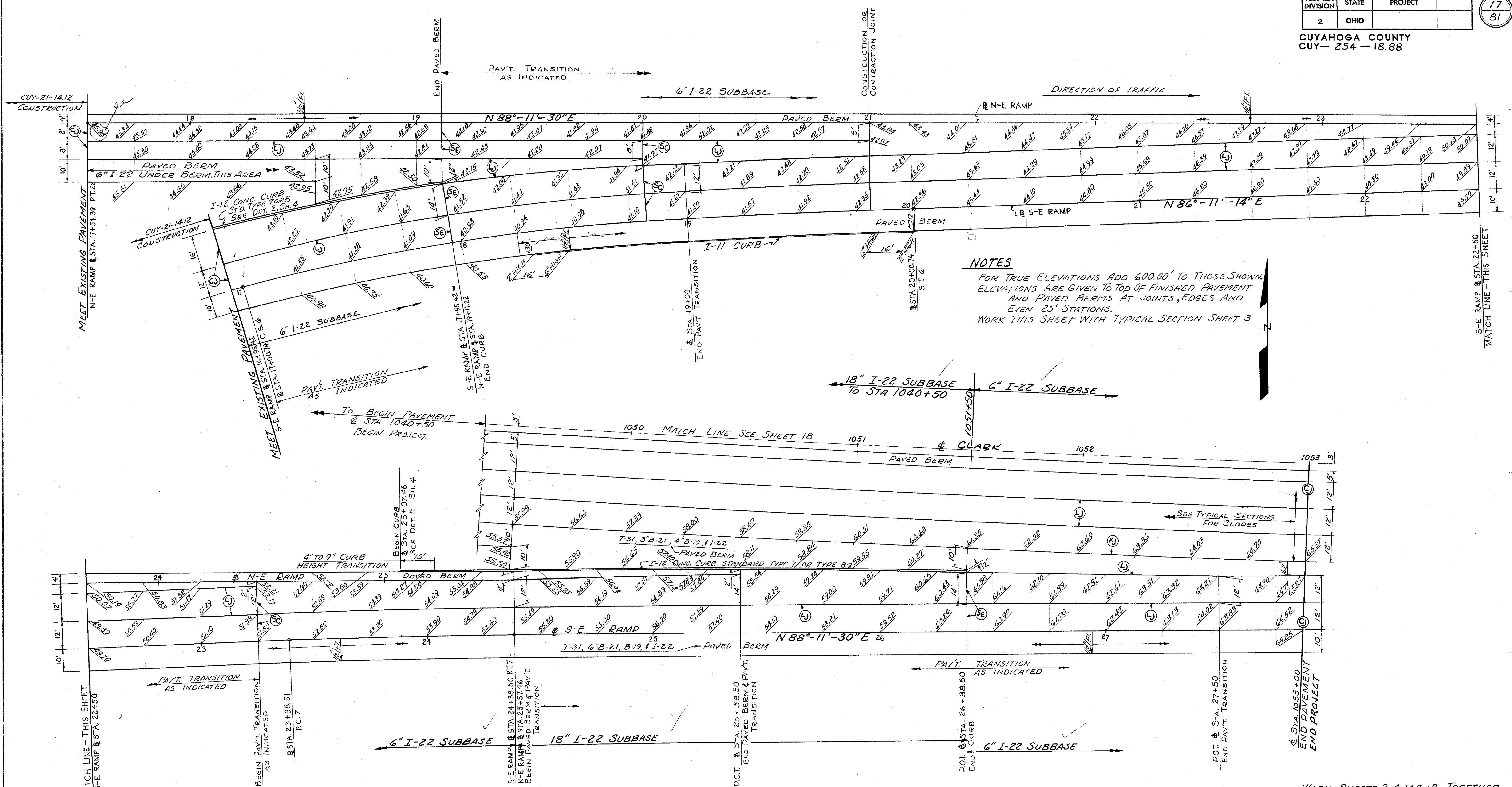
REF. NO.	ITEM, LOCATION & QUANTITY	TOTAL QUANTITY	UNIT
1-15	1-15 GUARD RAIL, STEEL BEAM STD. TYPE (DEEP) E. 49th ST. 25 L.F.	1755	L.F.
2-G	E. 50th ST. 25 L.F.		
3-G	E-N RAMP STA. 14+05.00 TO STA. 15+42.50 LEFT SIDE 137.50 L.F.		
4-G	CLARK STA. 1042+00 TO STA. 1043+62.50 LEFT SIDE 162.50 L.F.		
5-G	CLARK STA. 1042+37.50 TO STA. 1044+00 RIGHT SIDE 162.50 L.F.		
6-G	N-E RAMP STA. 17+54.39 TO STA. 20+41.89 LEFT SIDE 287.50 L.F.		
7-G	CLARK STA. 1042+07.75 TO STA. 1043+82.25 LEFT & RIGHT SIDE 355 L.F.		
12-G	CLARK STA. 1049+22.75 TO STA. 1052+22.75 LEFT & RIGHT SIDE 600 L.F.		
1-M	1-8 MONUMENT ASSEMBLIES, STANDARD CLARK @ STA. 1047+09.17	1	EACH
1-C	1-11 SANDSTONE CURB RESET E. 49th ST. 21 RESET	46	L.F.
2-C	E. 50th ST. 25 RESET		



REF. NO.	ITEM, LOCATION & QUANTITY	TOTAL QUANTITY	UNIT
10-G	1-15 TEMPORARY GUARD RAIL (SEE GEN. NOTE) CLARK STA. 1047+75 TO STA. 1053+10 LEFT SIDE 335 L.F.	710	L.F.
11-G	CLARK STA. 1051+50 TO STA. 1053+25 RIGHT SIDE 175 L.F.		
8-G	1-15 GUARD RAILS, ST'L BEAM BARRIER TYPE (DEEP) CLARK STA. 1040+51.25 TO STA. 1042+07.75 156.50 L.F.	769	L.F.
9-G	CLARK STA. 1043+85.25 TO STA. 1049+22.75 537.50 L.F.		
16-G	CLARK STA. 1052+22.75 TO STA. 1052+97.75 75 L.F.		
13-G	E-N RAMP STA. 13+55 TO STA. 14+05 LEFT SIDE 50 L.F.	150	L.F.
14-G	E-N RAMP STA. 13+53 TO STA. 14+03 RIGHT SIDE 50 L.F.		
15-G	E-N RAMP STA. 6+70 TO STA. 7+20 RIGHT SIDE 50 L.F.		

CLARK PLAN & PROFILE STA. 1040+50 TO STA. 1053+00 S-E & E-N RAMP PLAN

CONT. No. 58019 SHEET NO. 6430



NOTES
FOR TRUE ELEVATIONS ADD 600.00' TO THOSE SHOWN. ELEVATIONS ARE GIVEN TO TOP OF FINISHED PAVEMENT AND PAVED BERMS AT JOINTS, EDGES AND EVEN 25' STATIONS.
WORK THIS SHEET WITH TYPICAL SECTION SHEET 3

QUANTITIES									
T-71	I-22	T-31		B-21	B-19	I-12		I-21	I-11
9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	SUBBASE	BITUMINOUS SURFACE TREATMENT		WATERPROOFED AGGREGATE BASE COURSE	AGGREGATE BASE COURSE	CONCRETE CURB STANDARD TYPE B	CONCRETE CURB STANDARD TYPE 7	PORTLAND CEMENT CONCRETE MEDIAN PAVEMENT STANDARD TYPE 2	SANDSTONE CURB 6"x18"
Sq. Yd.	Cu. Yd.	GAL.	Cu. Yd.	Cu. Yd.	Cu. Yd.	L.F.	L.F.	Sq. Yd.	L.F.
5000	3317	507	16	169	272			417	
RAMPS									
4174	1029	452	15	301	85	279	75		170
TOTAL THIS SHEET									
9174	4346	959	31	470	357	279	75	417	170

CLARK RIGHT OF STA. 1040+50 TO STA. 1053+00

DIRECTION OF TRAFFIC →

- JOINT SYMBOLS**
- ⊕ STANDARD LONGITUDINAL JOINT
 - ⊗ STANDARD KEY JOINT WITHOUT TIE BARS
 - ⊕ STANDARD EXPANSION JOINT
 - ⊙ STANDARD CONSTRUCTION JOINT
 - ⊕ STANDARD EXPANSION JOINT WITHOUT TIE BARS
 - ⊗ STANDARD CONTRACTION JOINT

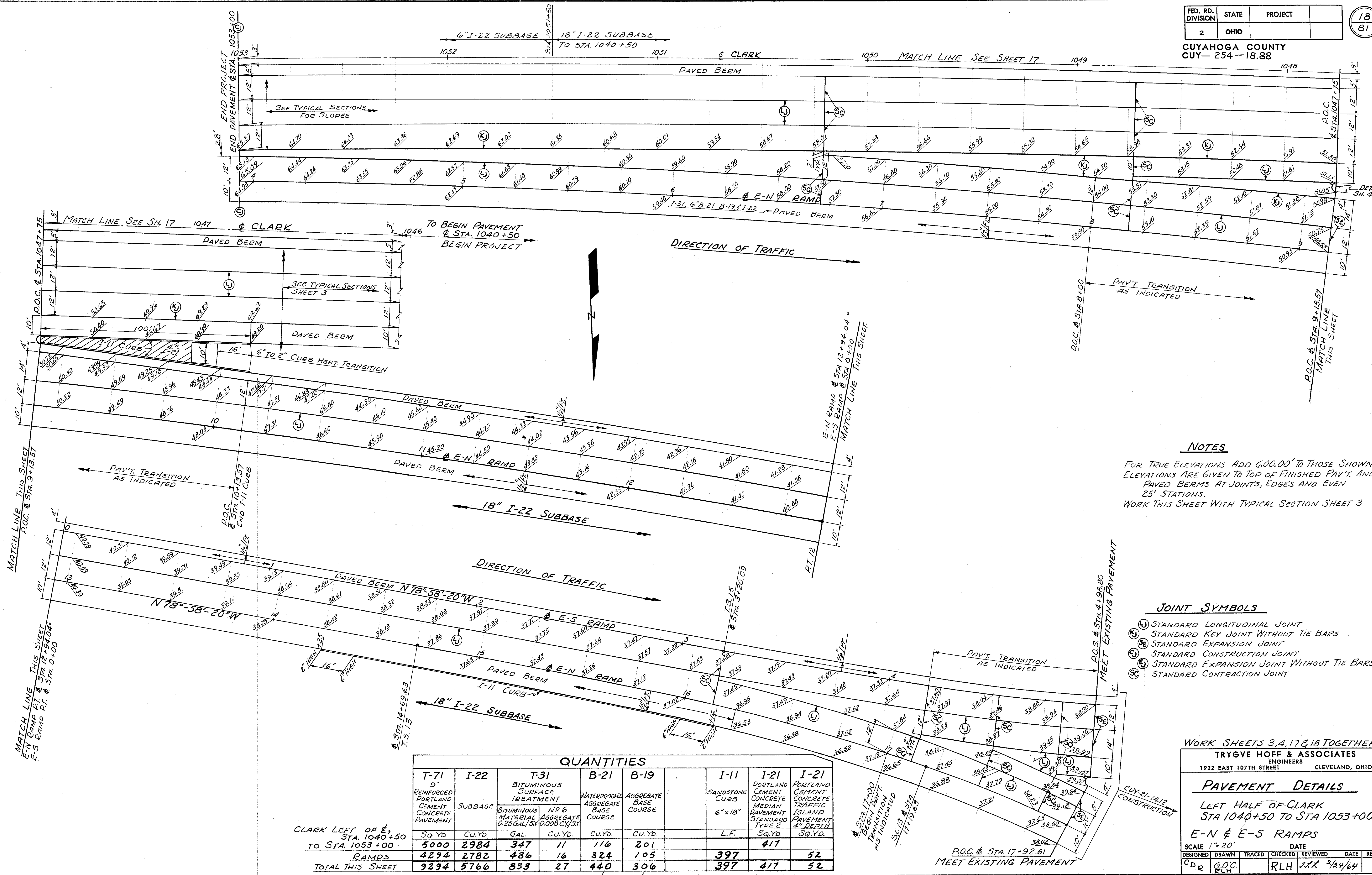
WORK SHEETS 3, 4, 17 & 18 TOGETHER

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

PAVEMENT DETAILS
RIGHT HALF OF CLARK
STA. 1040+50 TO STA. 1053+00
N-E & S-E RAMPS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
CDR	RLH	FT	RLH	JXX	2/24/44	

CONT. NO. 58019 SHEET ACCT. NO. 6292



NOTES
 FOR TRUE ELEVATIONS ADD 600.00' TO THOSE SHOWN. ELEVATIONS ARE GIVEN TO TOP OF FINISHED PAV'T. AND PAVED BERMS AT JOINTS, EDGES AND EVEN 25' STATIONS.
 WORK THIS SHEET WITH TYPICAL SECTION SHEET 3

- JOINT SYMBOLS**
- (L) STANDARD LONGITUDINAL JOINT
 - (K) STANDARD KEY JOINT WITHOUT TIE BARS
 - (E) STANDARD EXPANSION JOINT
 - (C) STANDARD CONSTRUCTION JOINT
 - (S) STANDARD EXPANSION JOINT WITHOUT TIE BARS
 - (SC) STANDARD CONTRACTION JOINT

QUANTITIES

T-71	I-22	T-31	B-21	B-19	I-11	I-21	I-21	
9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	SUBBASE	BITUMINOUS SURFACE TREATMENT	WATERPROOFED AGGREGATE BASE COURSE	AGGREGATE BASE COURSE	SANOSTONE CURB 6" x 18"	PORTLAND CEMENT CONCRETE MEDIAN STANDARD PAVEMENT TYPE 2	PORTLAND CEMENT CONCRETE TRAFFIC ISLAND PAVEMENT 4" DEPTH	
Sq. Yd.	Cu. Yd.	GAL.	Cu. Yd.	Cu. Yd.	L.F.	Sq. Yd.	Sq. Yd.	
5000	2984	347	11	116	201	417	52	
4294	2782	486	16	324	105	397	52	
TOTAL THIS SHEET		833	27	440	306	397	417	52

CLARK LEFT OF &
 STA. 1040+50
 TO STA. 1053+00
 RAMPS
 TOTAL THIS SHEET

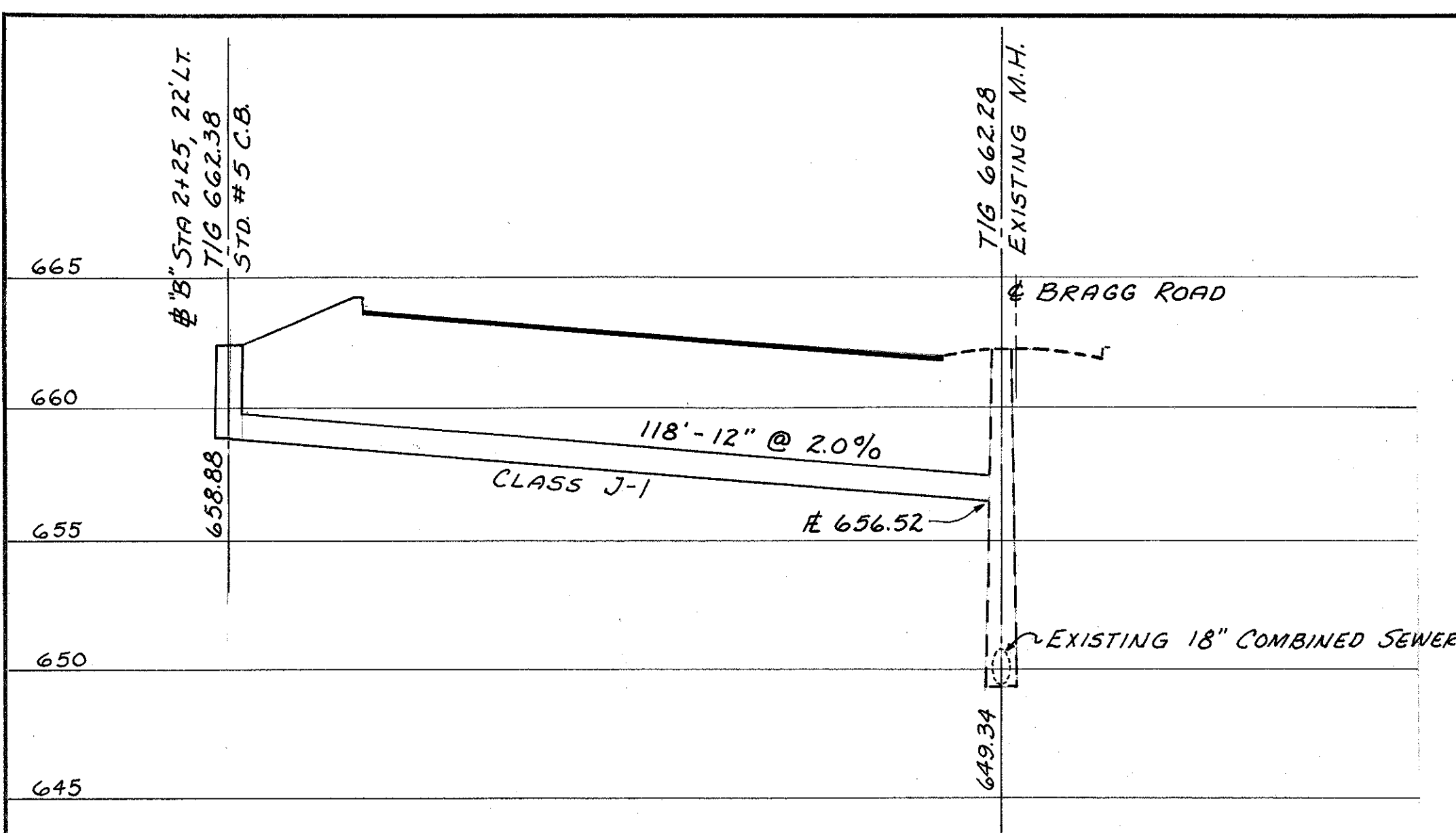
WORK SHEETS 3, 4, 17, 18 TOGETHER.

TRYGVE HOFF & ASSOCIATES
 ENGINEERS
 1922 EAST 107TH STREET CLEVELAND, OHIO

PAVEMENT DETAILS
 LEFT HALF OF CLARK
 STA 1040+50 TO STA 1053+00
 E-N & E-S RAMPS

SCALE 1" = 20' DATE
 DESIGNED DRAWN TRACED CHECKED REVIEWED DATE REVISIONS
 CDR GOC RLH JXX 2/24/64

SHEET ADCT. NO. 6293
 PLOT. NO. 58019

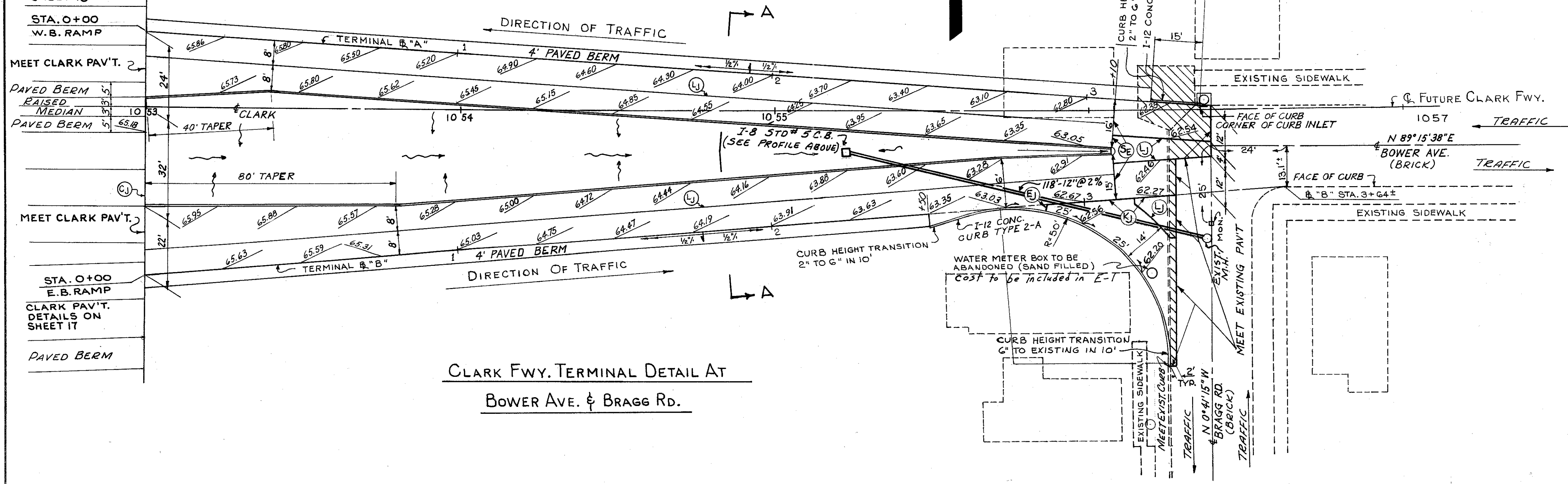


JOINT SYMBOLS

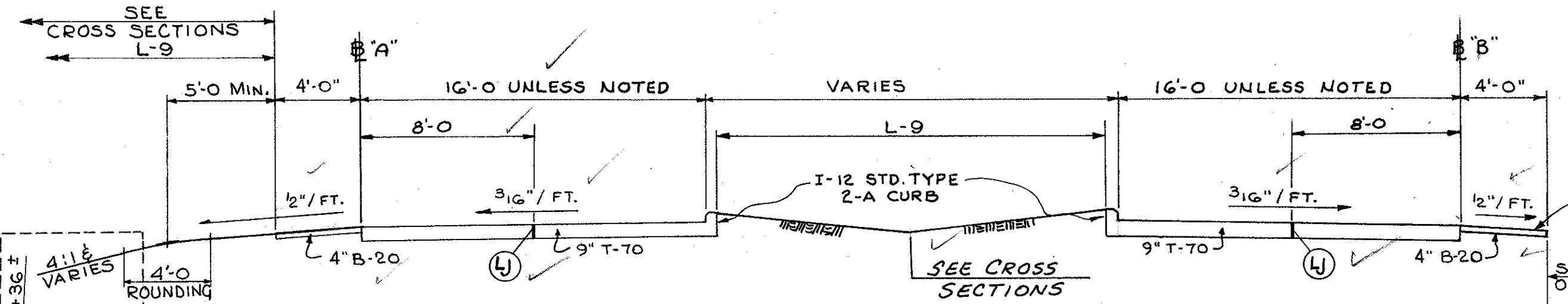
- (L) STANDARD LONGITUDINAL JOINT
- (K) STANDARD KEY JOINT WITHOUT TIE BARS
- (R) STANDARD EXPANSION JOINT
- (E) STANDARD EXPANSION JOINT WITHOUT TIE BARS
- (C) STANDARD CONSTRUCTION JOINT

END PROJECT
CUY. 254-18.88

PAVED BERM
CLARK PAV'T. DETAILS ON SHEET 18
STA. 0+00 W.B. RAMP
MEET CLARK PAV'T.
PAVED BERM
RAISED MEDIAN
PAVED BERM
MEET CLARK PAV'T.
STA. 0+00 E.B. RAMP
CLARK PAV'T. DETAILS ON SHEET 17
PAVED BERM



**CLARK FWY. TERMINAL DETAIL AT
BOWER AVE. & BRAGG RD.**



SECTION A-A

QUANTITIES

NOTE: ALL ITEMS OF WORK ON THIS SHEET INVOLVE NO FEDERAL PARTICIPATION.

ITEM E-8 REMOVAL & DISPOSAL OF EXIST. RIGID PAV'T.	71 S.Y.
ITEM E-8 REMOVAL & DISPOSAL OF EXIST. CURB	76 L.F.
ITEM T-70 9" PORTLAND CEMENT CONCRETE PAVEMENT	1321 S.Y.
ITEM B-20 4" WATERBOUND MACADAM BASE COURSE, NO. 12 AGG.	253 S.Y.
ITEM T-31 BITUMINOUS SURFACE TREATMENT BITUMINOUS MATERIAL AGGREGATE (NO. 6)	101 GALS. 5 C.Y.
ITEM I-12 CONCRETE CURB STD. TYPE 2-A	742 L.F.
ITEM I-1 12" PIPE CLASS J-1	118 L.F.
ITEM I-8 STD. NO. 5 CATCH BASIN	1 EA.

/// DENOTES E-8 PAVEMENT REMOVAL

NOTE FOR TRUE ELEVATIONS ADD 600.00' TO THOSE SHOWN. ELEVATIONS ARE GIVEN TO TOP OF FINISHED PAVEMENT AT JOINTS, EDGES AND EVEN 25' STATIONS.

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

TERMINAL DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.L.H.	J.B.		F.T.	C.D.R.	J.L.L. 2/24/64	

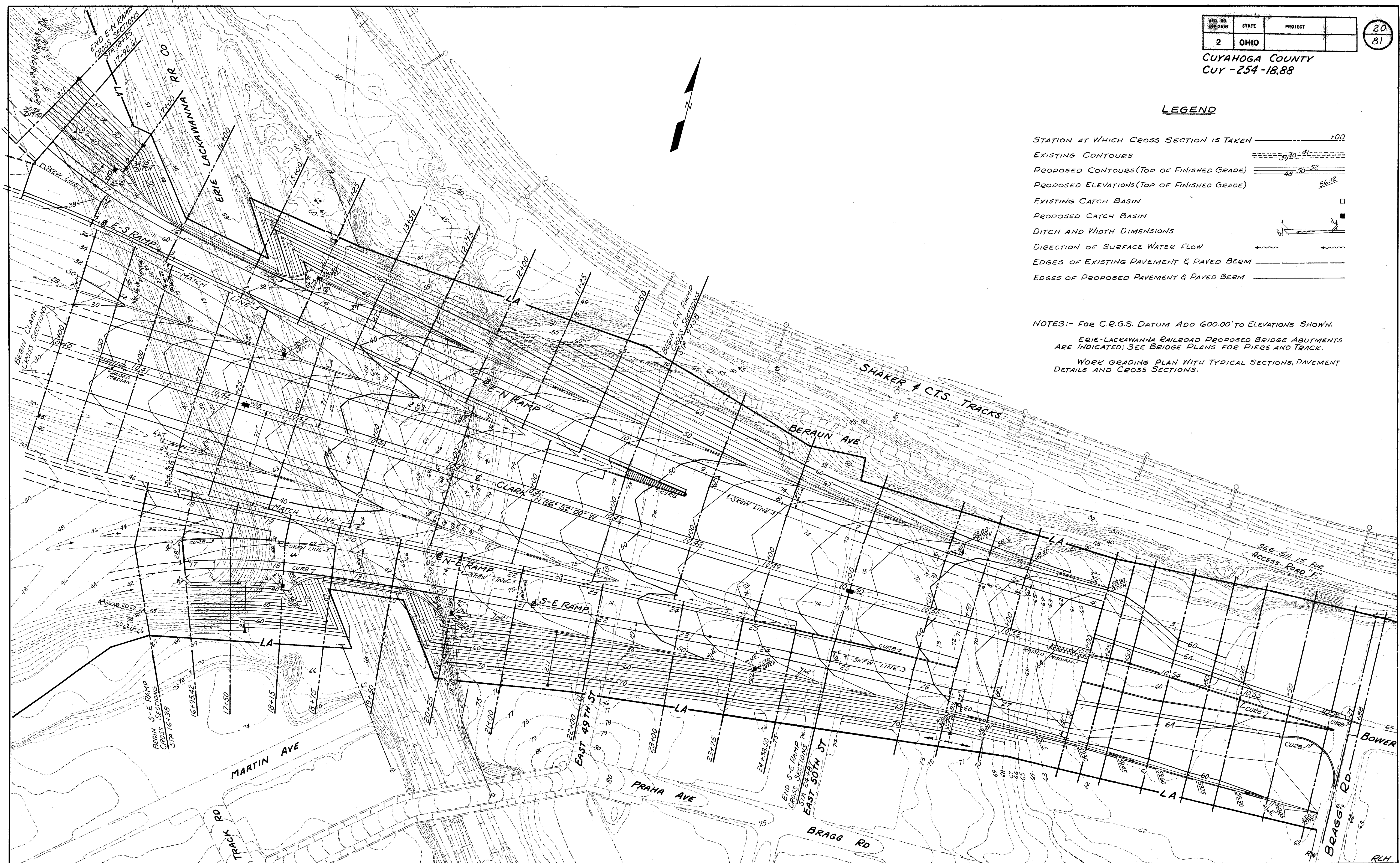
T-31 BITUMINOUS SURFACE TREATMENT BITUMINOUS MAT'L. SEC. M-5. (PT-1 OR PT-2) APPLIED @ 0.4 GAL./S.Y. AGGREGATE SEC. M-3.3 OR M-5.7 (SEE "G") APPLIED @ 0.017 CY./S.Y. TYPICAL FOR BOTH RAMPS

JOB NO. 58019 SHEET ACCT. NO. 6441

LEGEND

- STATION AT WHICH CROSS SECTION IS TAKEN -----+00
- EXISTING CONTOURS -----39.40-41-----
- PROPOSED CONTOURS (TOP OF FINISHED GRADE) -----48.50-52-----
- PROPOSED ELEVATIONS (TOP OF FINISHED GRADE) -----56.12-----
- EXISTING CATCH BASIN □
- PROPOSED CATCH BASIN ■
- DITCH AND WIDTH DIMENSIONS
- DIRECTION OF SURFACE WATER FLOW
- EDGES OF EXISTING PAVEMENT & PAVED BERM -----
- EDGES OF PROPOSED PAVEMENT & PAVED BERM -----

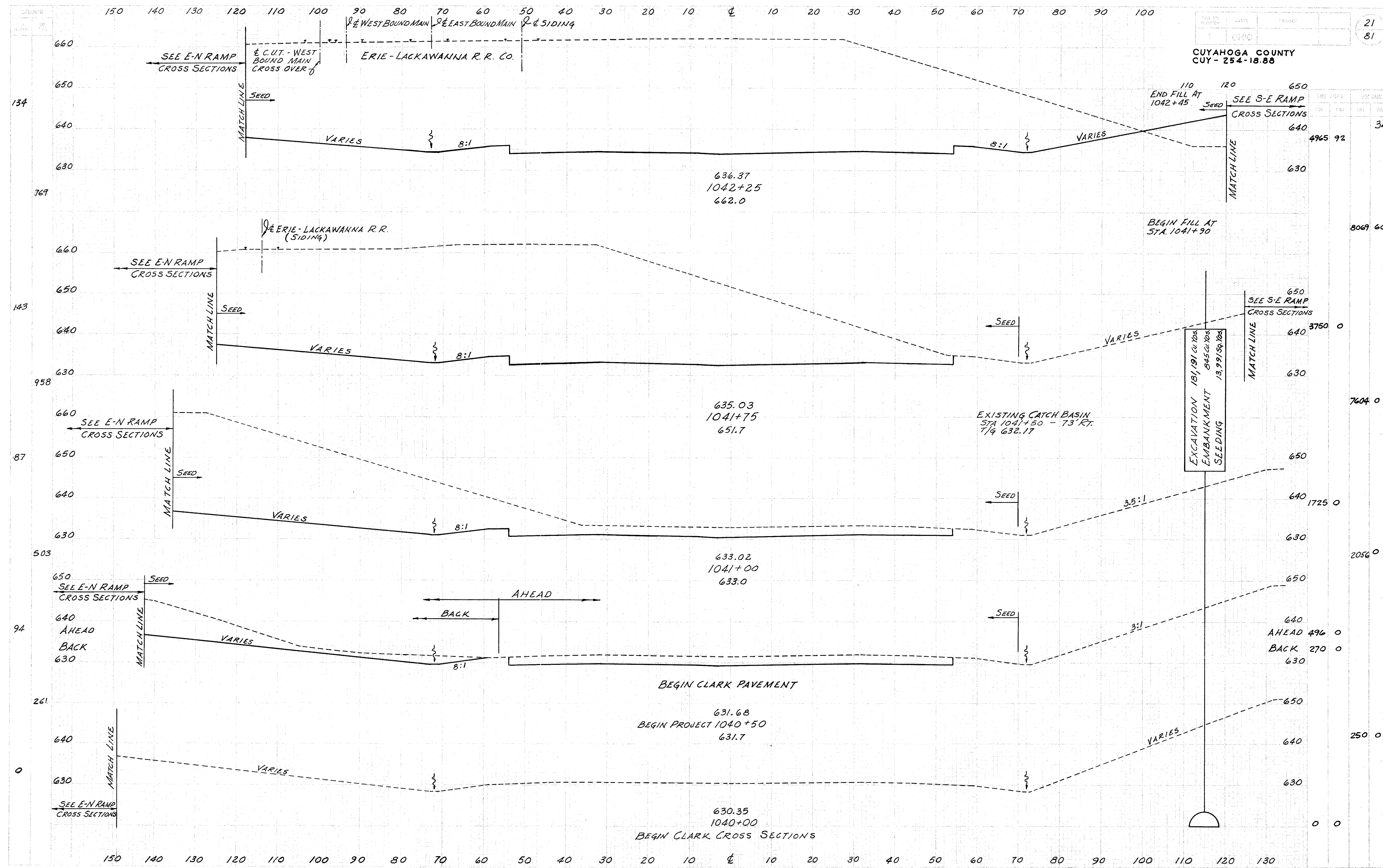
NOTES:- For C.R.G.S. DATUM Add 600.00' to ELEVATIONS SHOWN.
 ERIE-LACKAWANNA RAILROAD PROPOSED BRIDGE ABUTMENTS ARE INDICATED; SEE BRIDGE PLANS FOR PIERS AND TRACK.
 WORK GRADING PLAN WITH TYPICAL SECTIONS, PAVEMENT DETAILS AND CROSS SECTIONS.



GRADING & CROSS SECTION KEY PLAN

CONF. NO. 58019 SHEET NO. 5825

CUYAHOGA COUNTY
CUY - 254-18.88

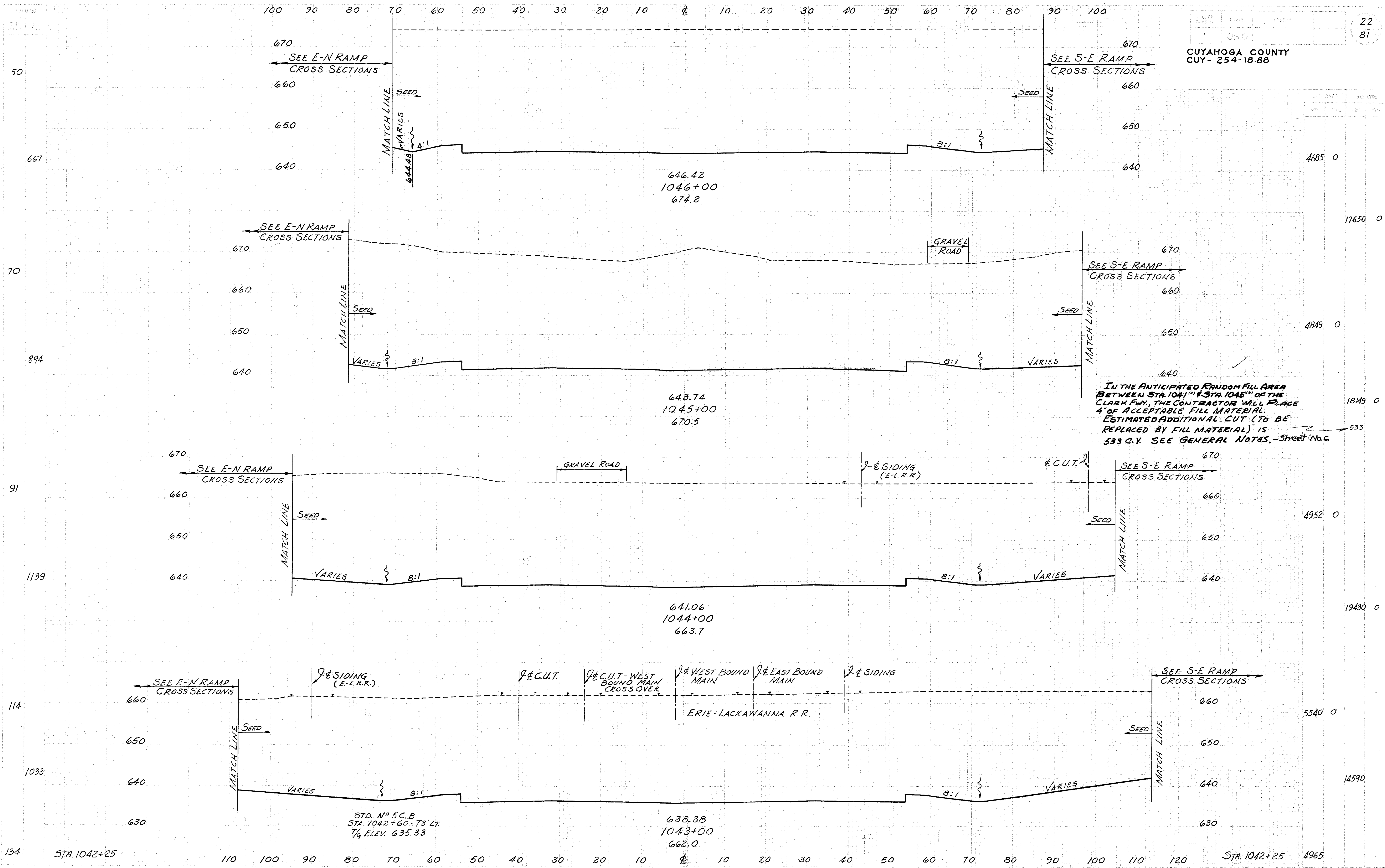


STATION	EXISTING ELEVATION	PROPOSED ELEVATION	REMARKS
1042+45	640	640	END FILL AT
1042+25	630	630	
1041+90	630	630	BEGIN FILL AT STA. 1041+90
1041+75	630	630	
1041+50	630	630	EXISTING CATCH BASIN STA. 1041+50 - 73' RT. 7/9 632.17
1041+00	630	630	
1040+50	630	630	BEGIN CLARK PAVEMENT
1040+00	630	630	BEGIN CLARK CROSS SECTIONS

CLARK STA. 1040+00 TO STA. 1042+25

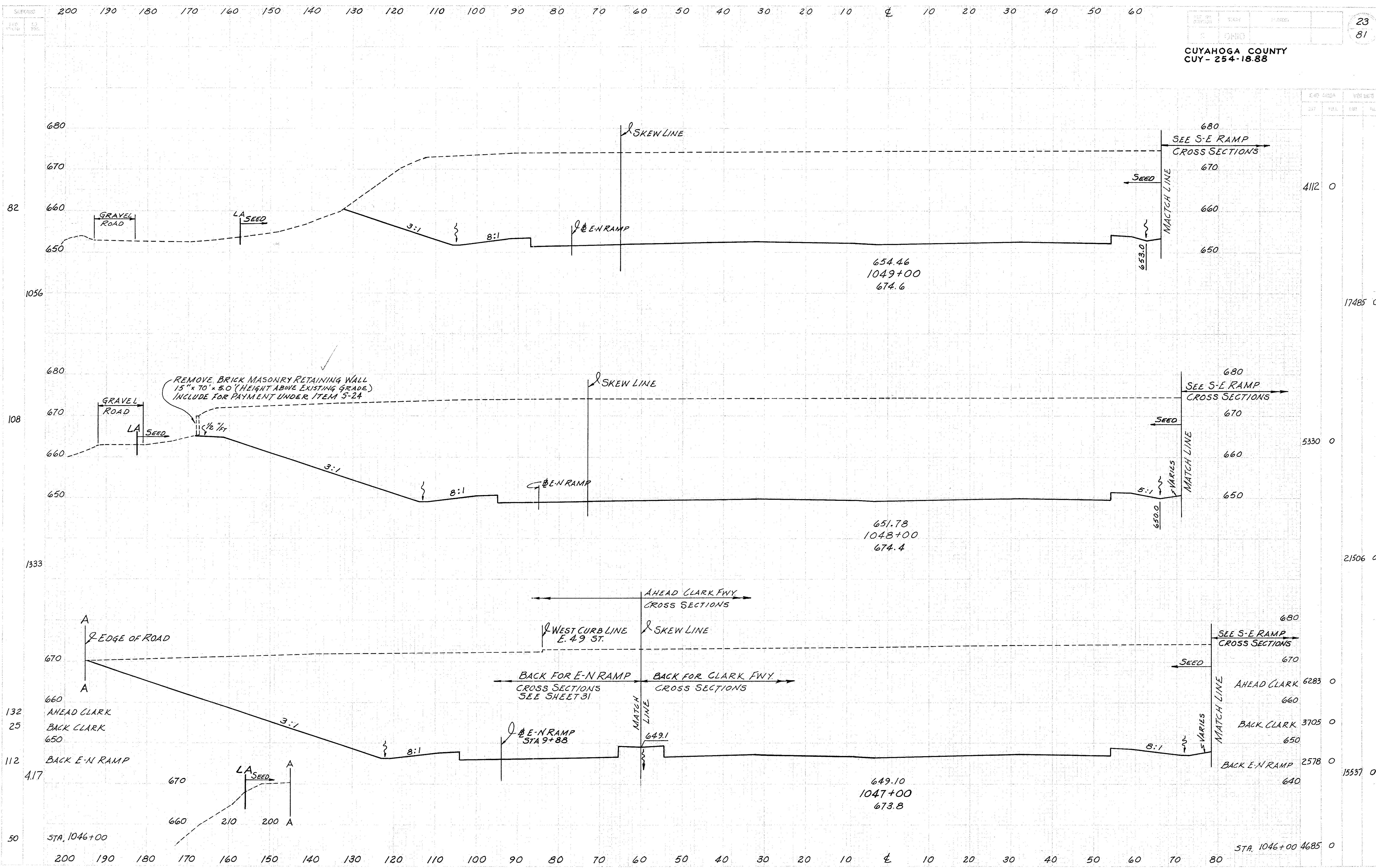
58019 6446

CUYAHOGA COUNTY
CUY- 254-18.88



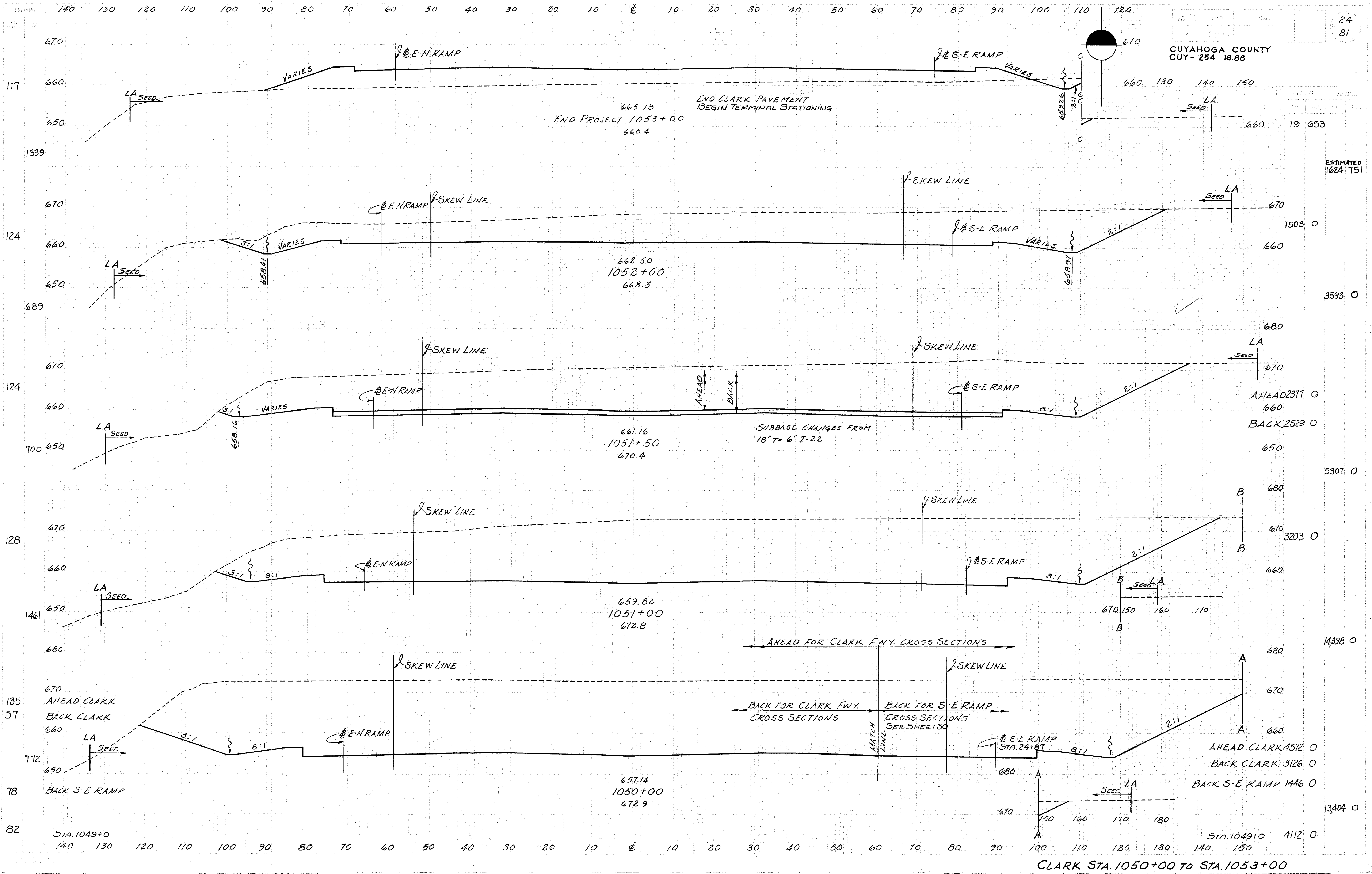
CLARK STA. 1043+00 TO STA. 1046+00

58019
6447



CLARK STA. 1047+00 TO STA. 1049+00

58019 6448

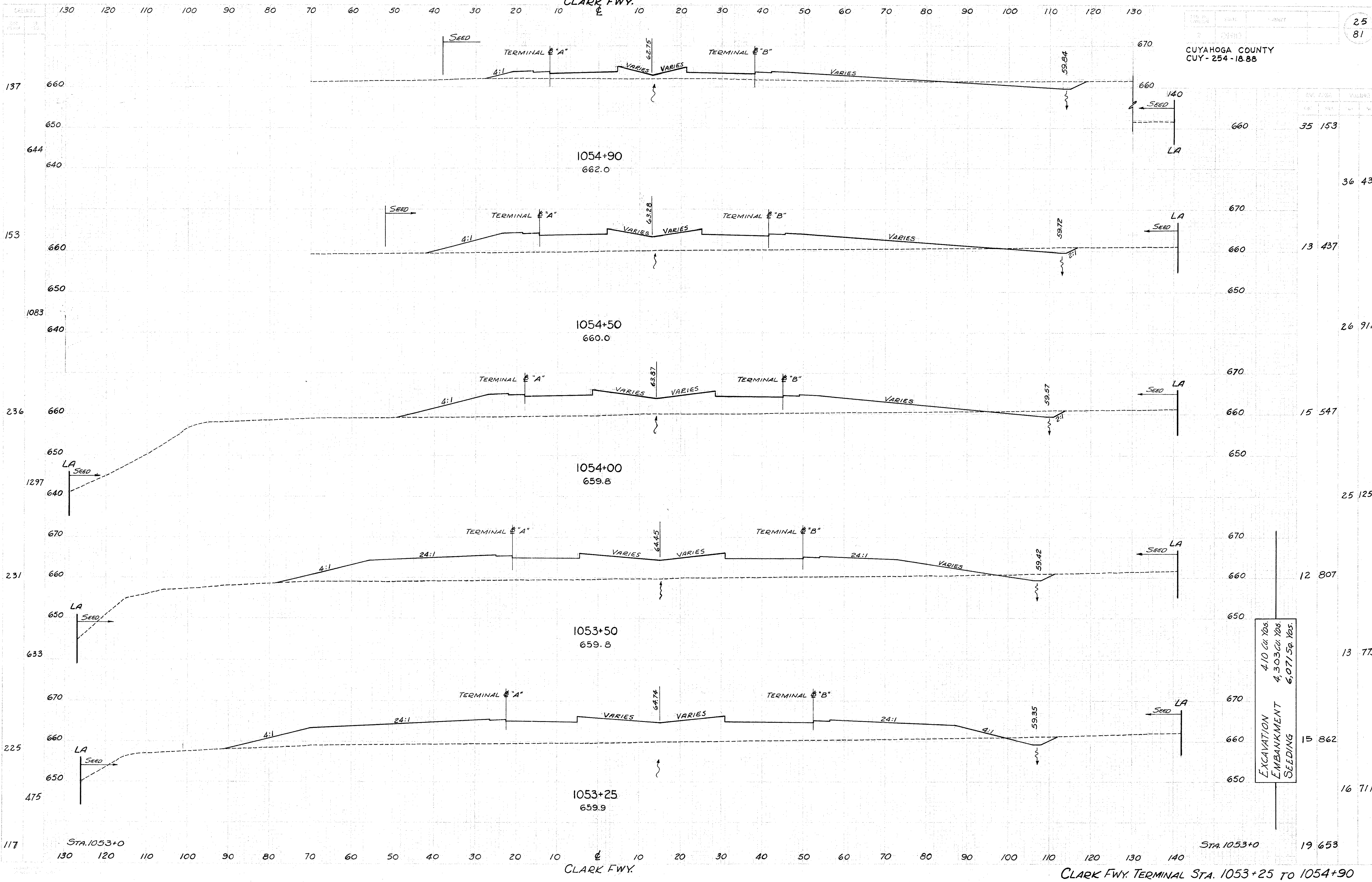


STATION	ELEVATION	DESCRIPTION
1053+00	660.4	END CLARK PAVEMENT BEGIN TERMINAL STATIONING
1052+00	668.3	
1051+50	670.4	SUBBASE CHANGES FROM 18" T-6" I-22
1050+00	672.9	
1049+00	672.9	
1049+00	672.9	CLARK STA. 1050+00 TO STA. 1053+00

58019 6449

CLARK FWY.

CUYAHOGA COUNTY
CUY-254-18.88



EXCAVATION 4.10 Cu Yds.
EMBANKMENT 4.303 Cu Yds.
SEEDLING 6,071 Sq. Yds.

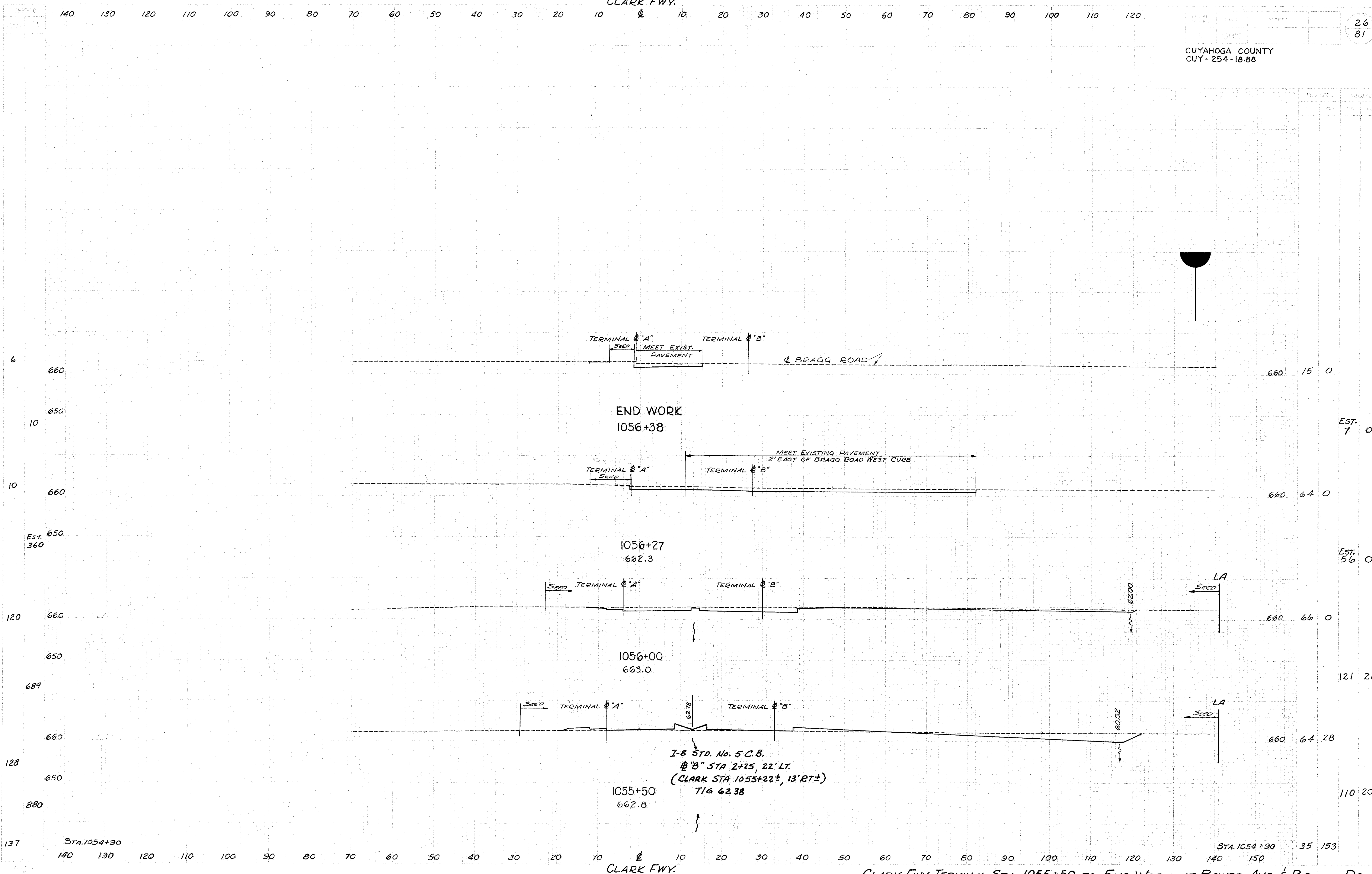
CONT. NO. 59019 SHEET ACCT. NO. 6462

CLARK FWY. TERMINAL STA. 1053+25 TO 1054+90

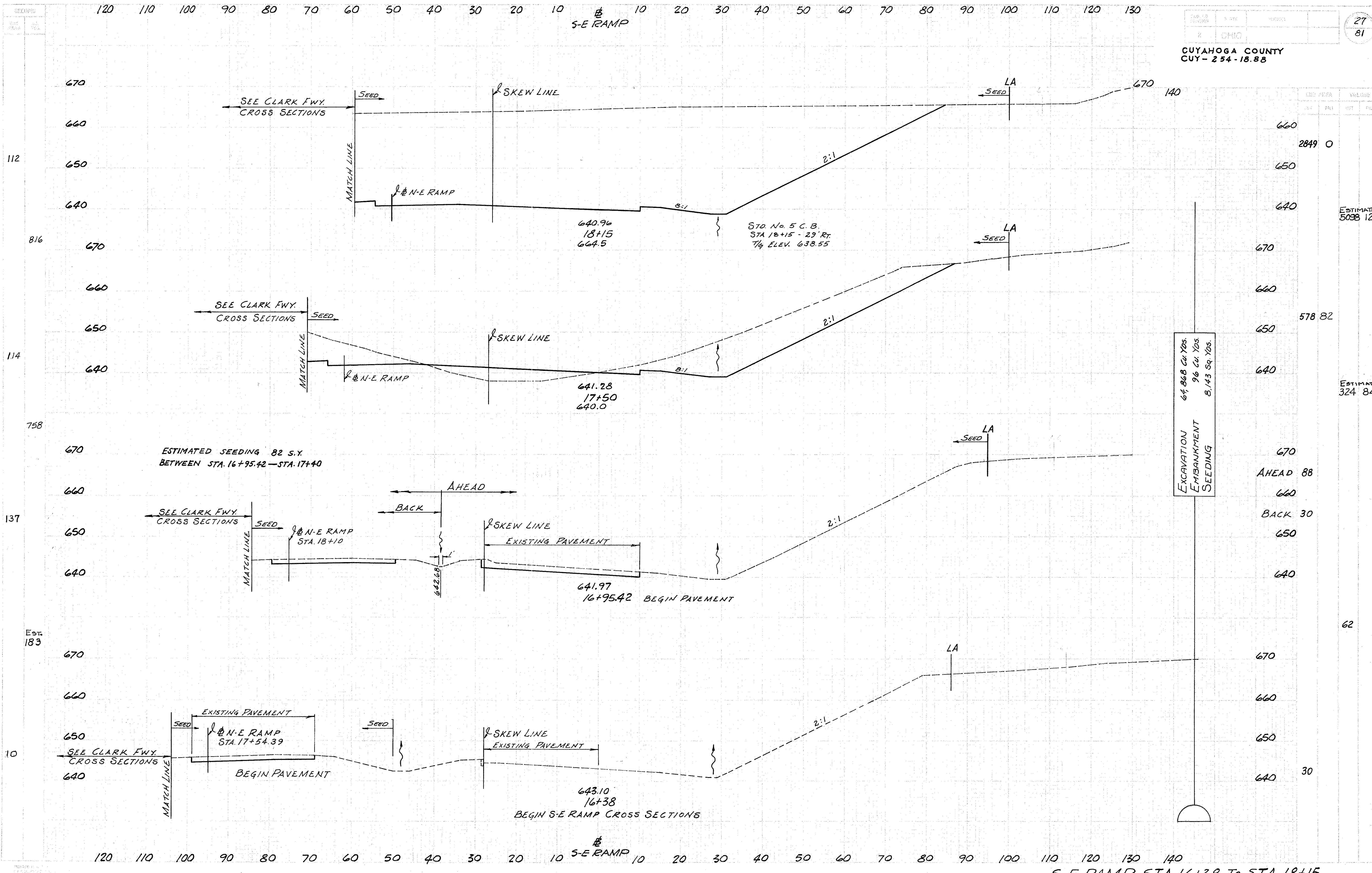
CLARK FWY.

CUYAHOGA COUNTY
CUY-254-18.88

26
81



CONT. NO. 53012 SHEET NO. 6443



LINE	AREA	VOLUME
1		
2		
3		
4		

2849 0

ESTIMATED 5038 12

578 82

ESTIMATED 324 84

AHEAD 88

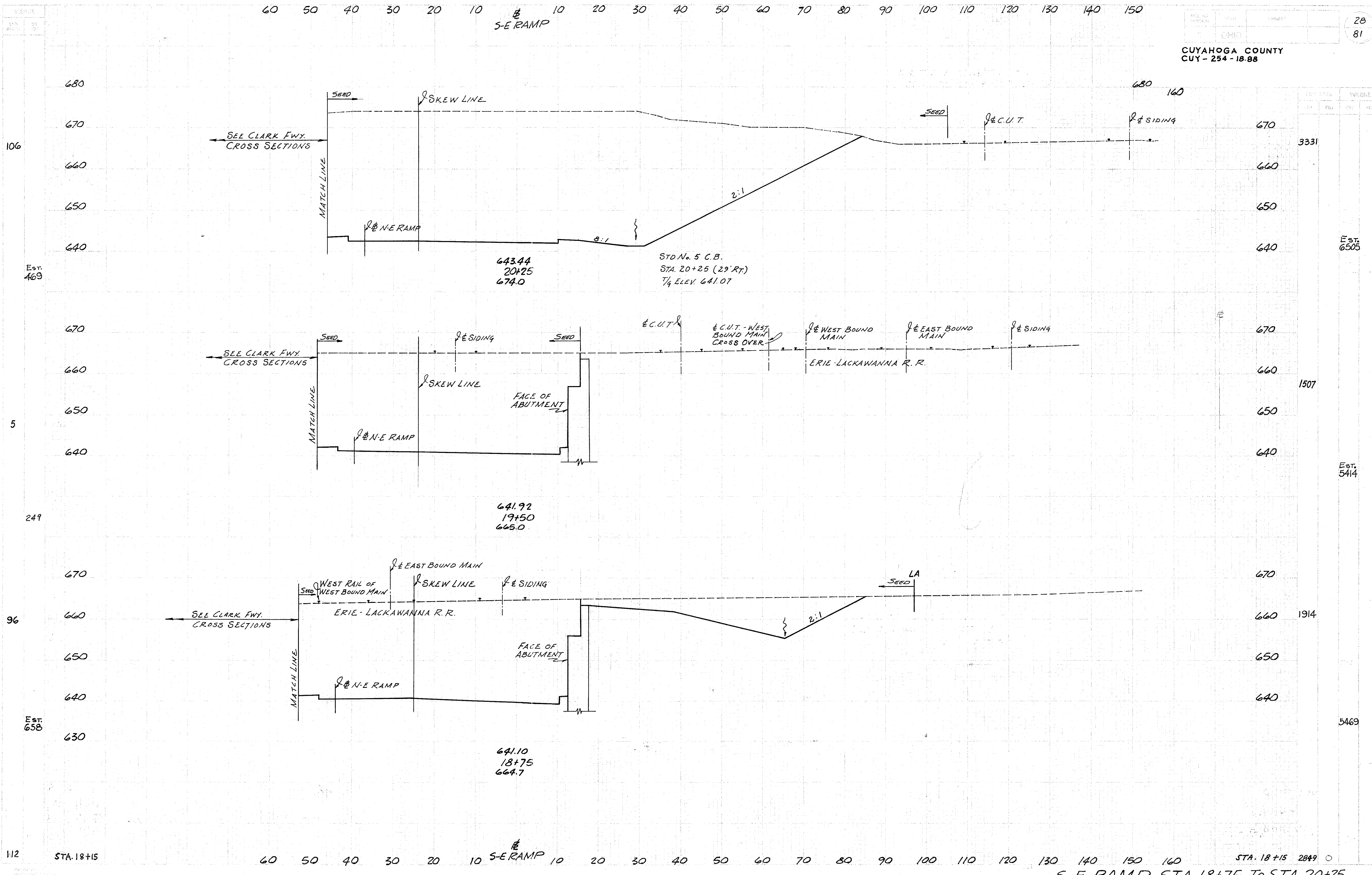
BACK 30

62

30

58019 6450

S-E RAMP STA. 16+38 TO STA. 18+15



643.44
20+25
674.0

STD. No. 5 C.B.
STA. 20+25 (29' RT.)
1/4 ELEV. 641.07

641.92
19+50
665.0

641.10
18+75
664.7

EST. NO.	EST. VOL.	EST. CUB. YDS.
106	3331	

EST. NO.	EST. VOL.	EST. CUB. YDS.
5	1507	

EST. NO.	EST. VOL.	EST. CUB. YDS.
96	1914	

EST. NO.	EST. VOL.	EST. CUB. YDS.
112	5469	

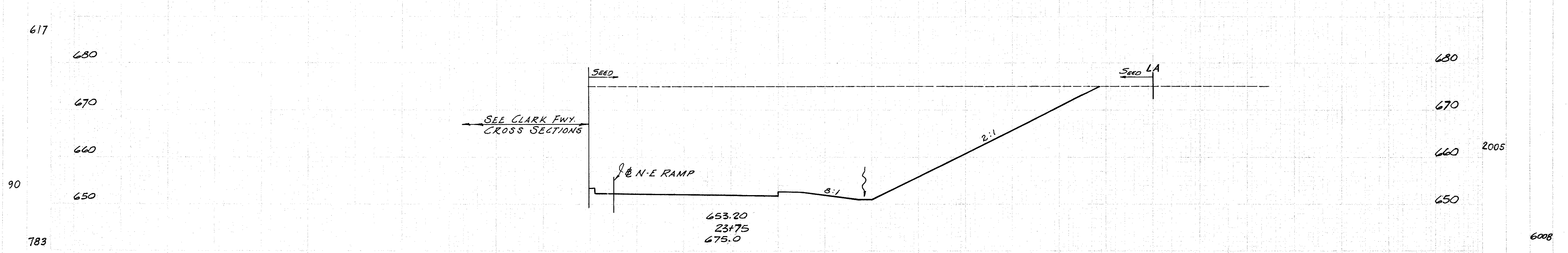
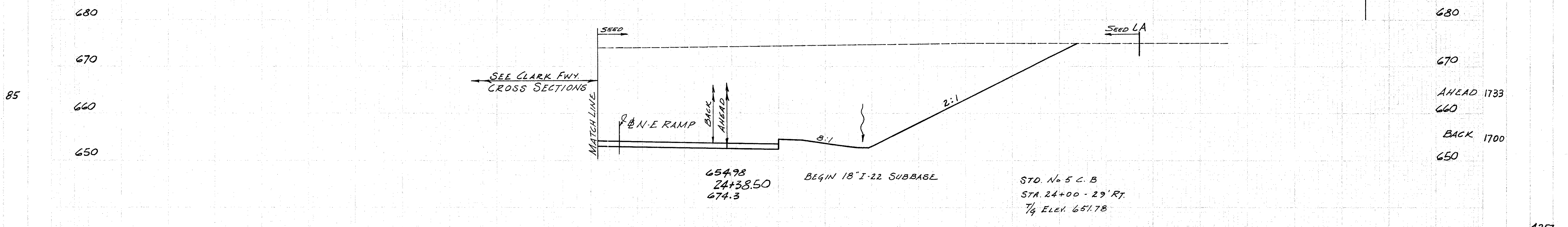
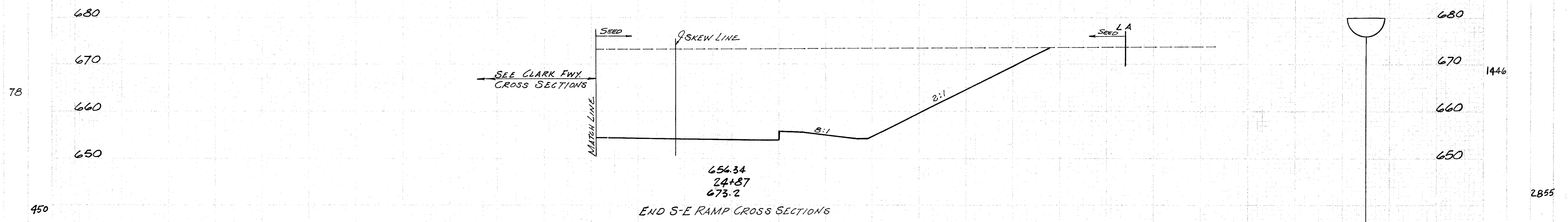
CONT. NO. 58019 6451

50 40 30 20 10 10 20 30 40 50 60 70 80 90 100 110 120

S-E RAMP

CUYAHOGA COUNTY
CUY - 254 - 18.88

FOR CONTINUATION AHEAD SEE
CLARK FWY. CROSS SECTIONS SHEET 24



50 40 30 20 10 10 20 30 40 50 60 70 80 90 100 110 120

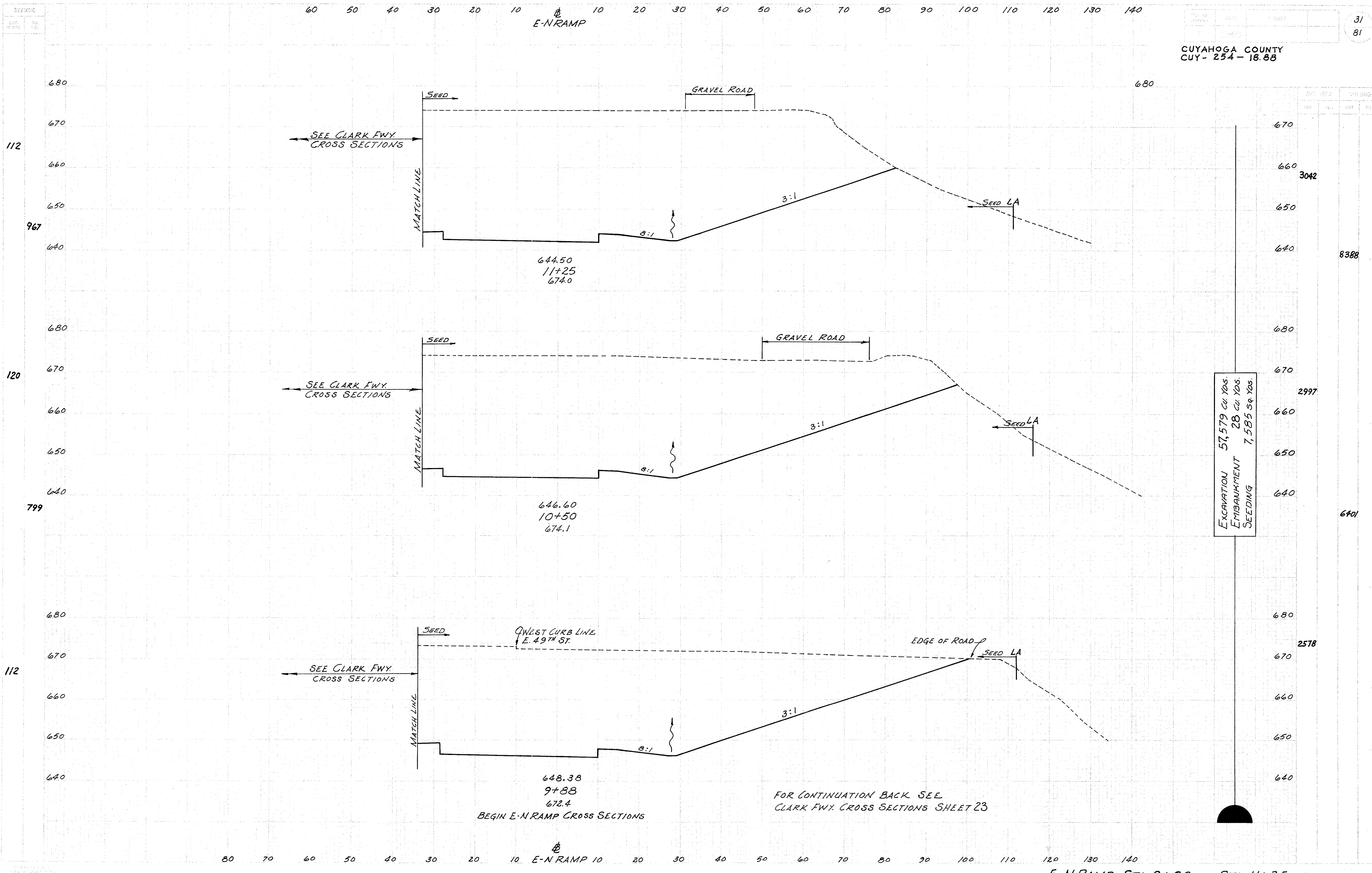
S-E RAMP

STA. 23+00

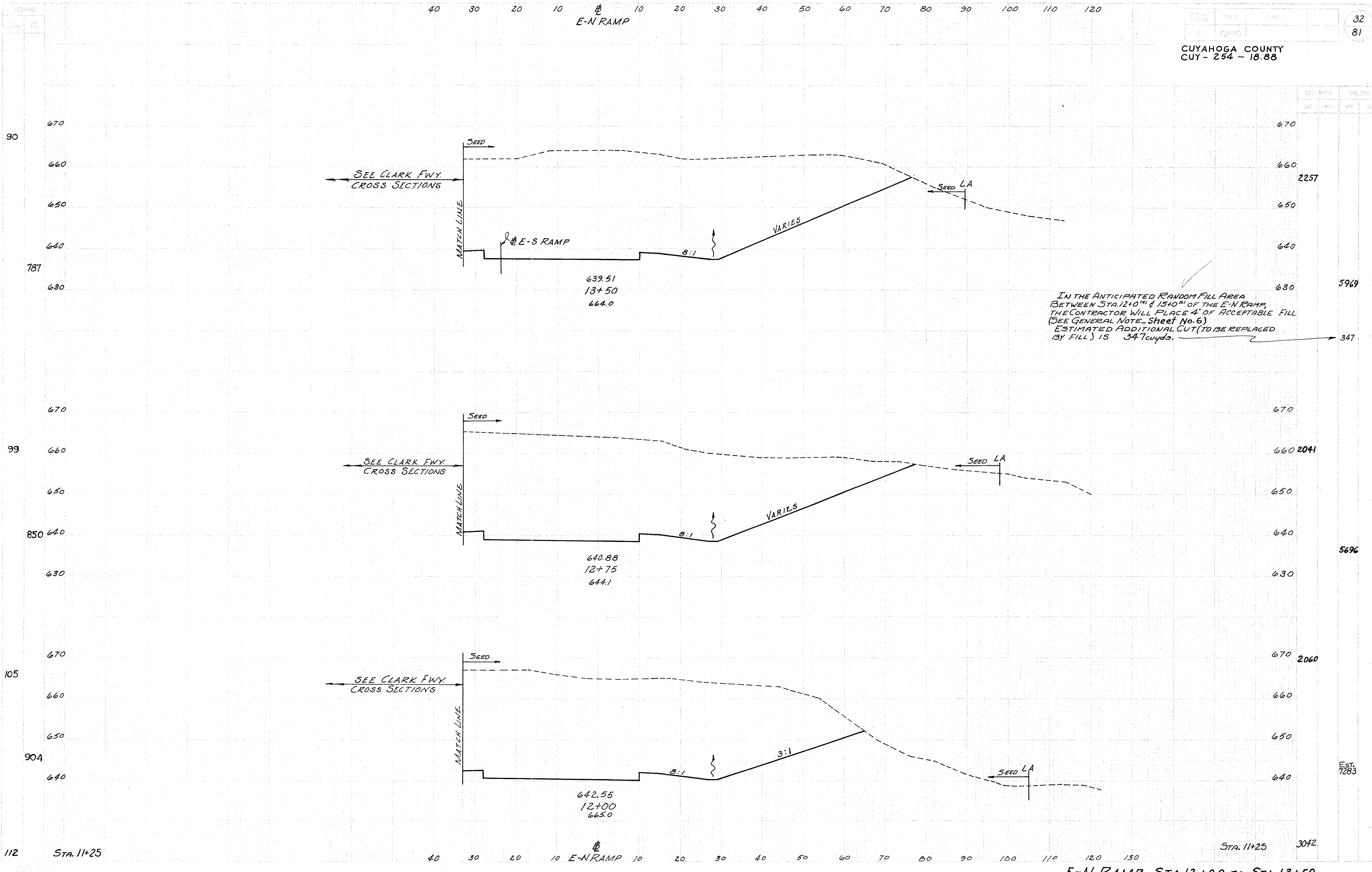
STA. 23+00 2321

S-E RAMP STA. 23+75 TO STA. 24+87

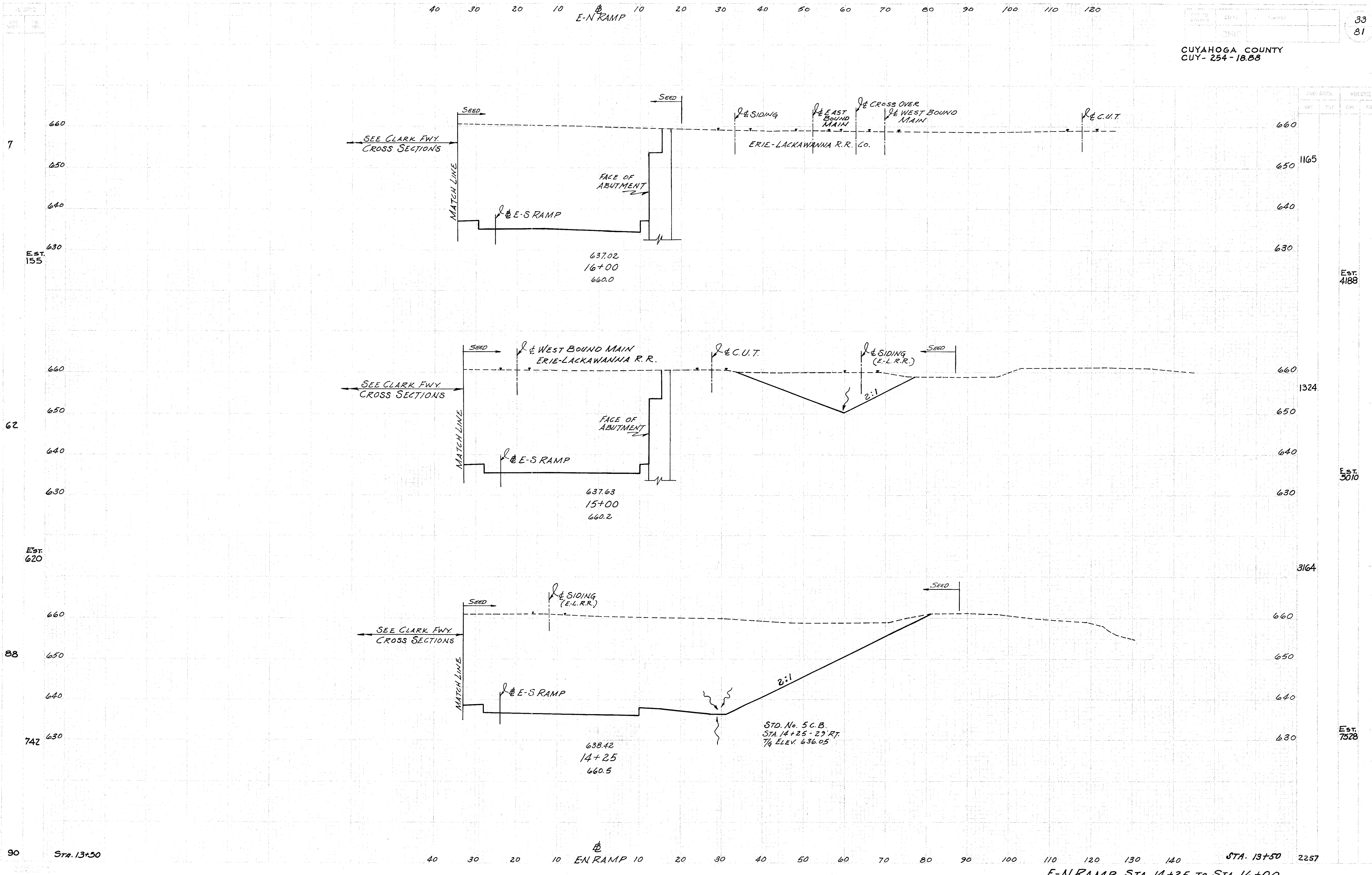
CONT. NO. 58019



58019 SHEET 81 OF 81 6454



6455

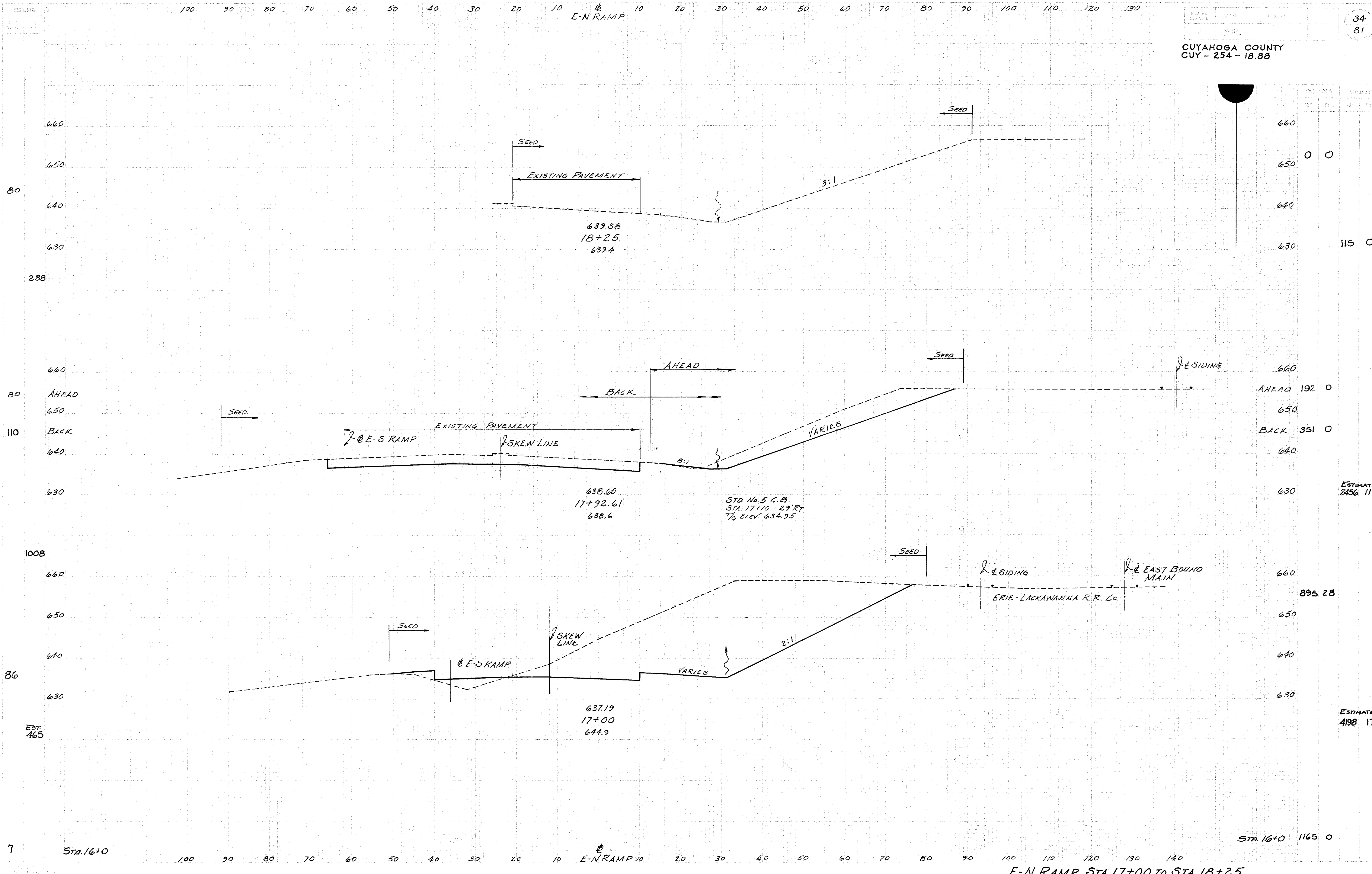


SHEET NO. 58012 SHEET ACCT. NO. 6456

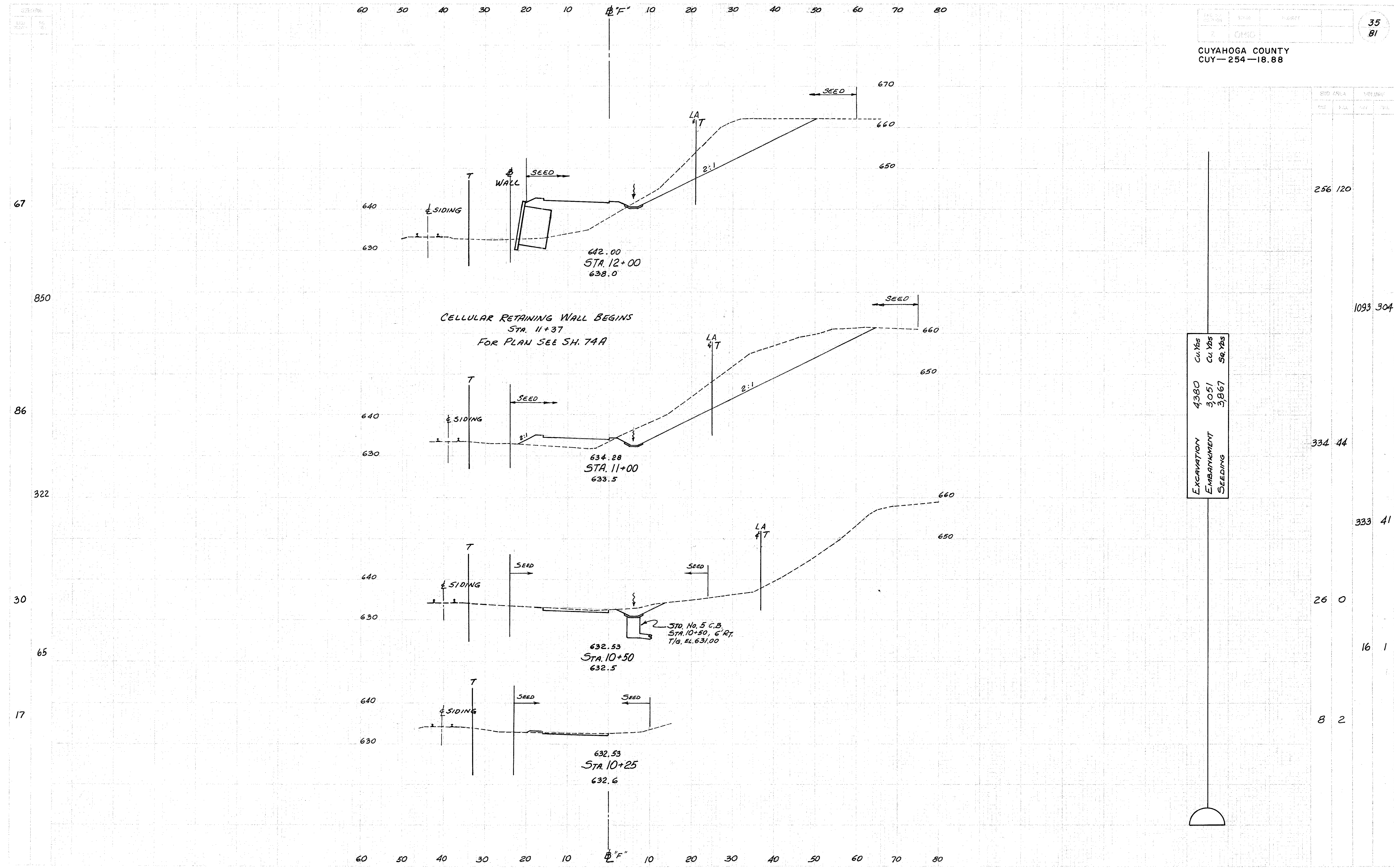
Est. 4188

Est. 3010

Est. 7528



CONT. No. 58019 SHEET No. 6957



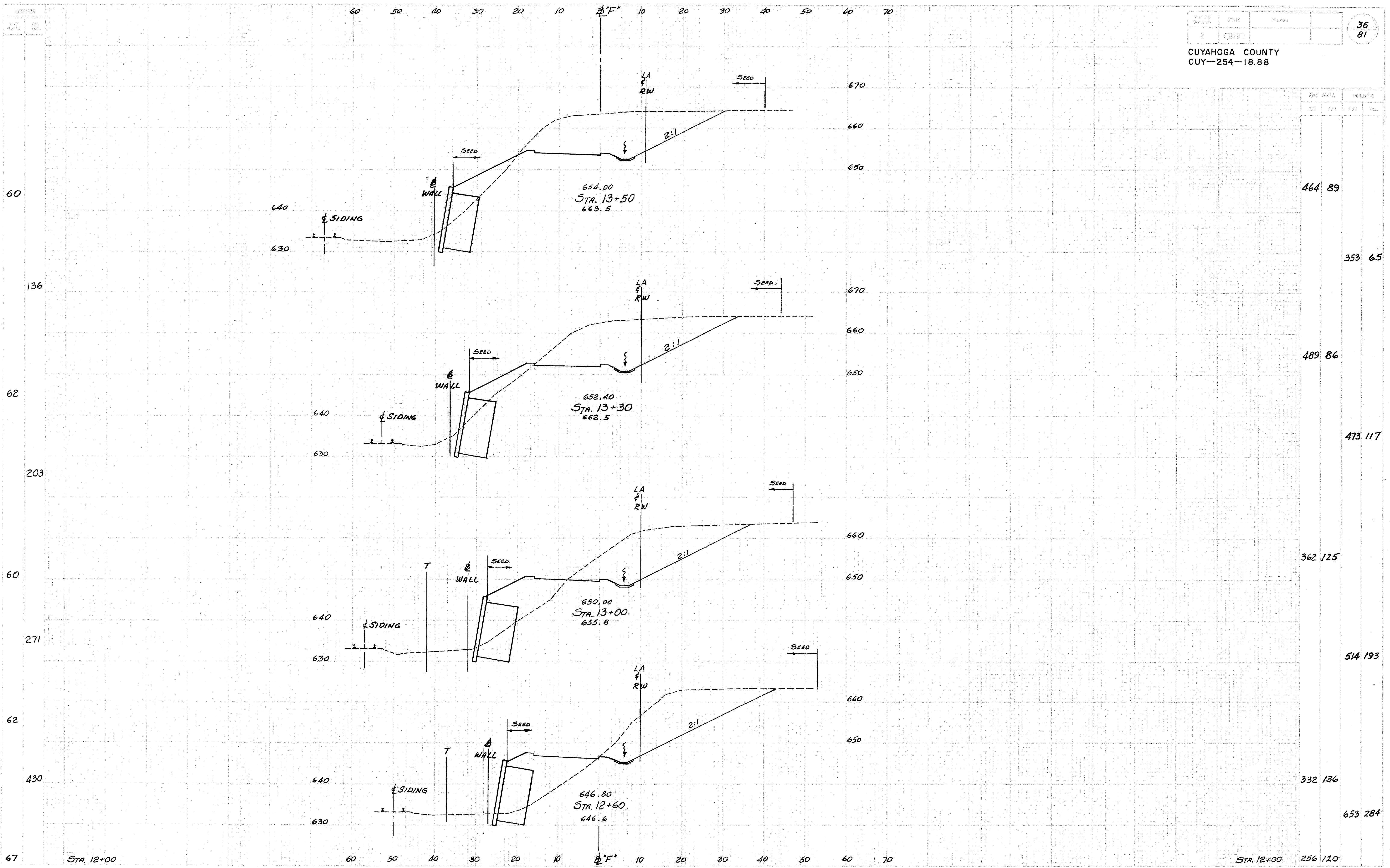
END AREA	VOLUME	
	EST.	ACT.
256	120	
1093	304	
334	44	
333	41	
26	0	
16	1	
8	2	

EXCAVATION	4380	Cu. Yds
EMBANKMENT	3051	Cu. Yds
SEEDING	3867	Sq. Yds

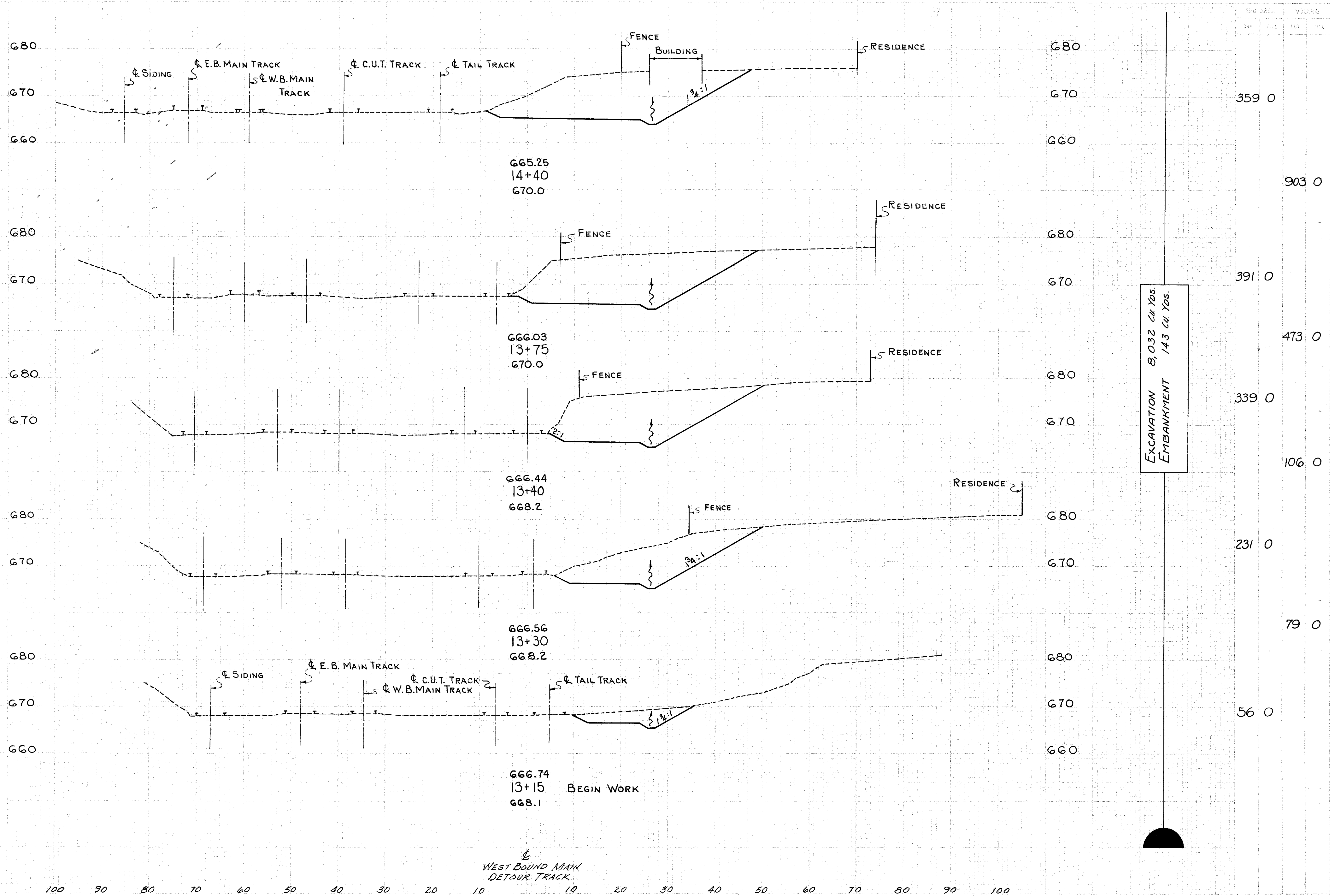
ACCESS RD. "F" STA. 10+25 TO STA. 12+00

DEPT. NO. 58019

RWD AREA		VOLUME	
CU	YD	CU	YD



COUNT 58019
PLAN 6467



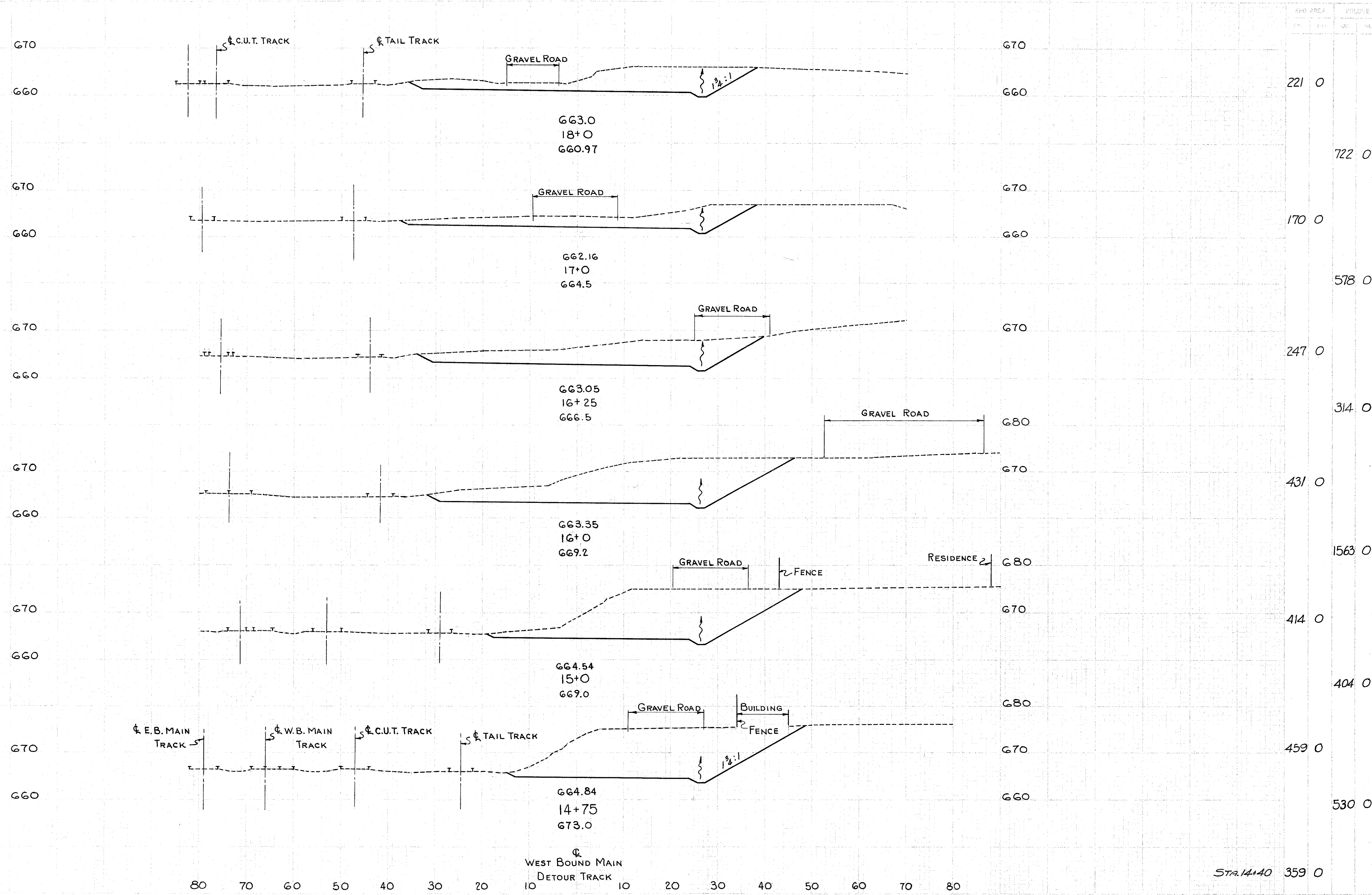
EXCAVATION 8,032 cu Yds.
 EMBANKMENT 143 cu Yds.

CONT. NO. 28019 SHEET ACCT. NO. 6458

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

WEST BOUND MAIN
DETOUR TRACK

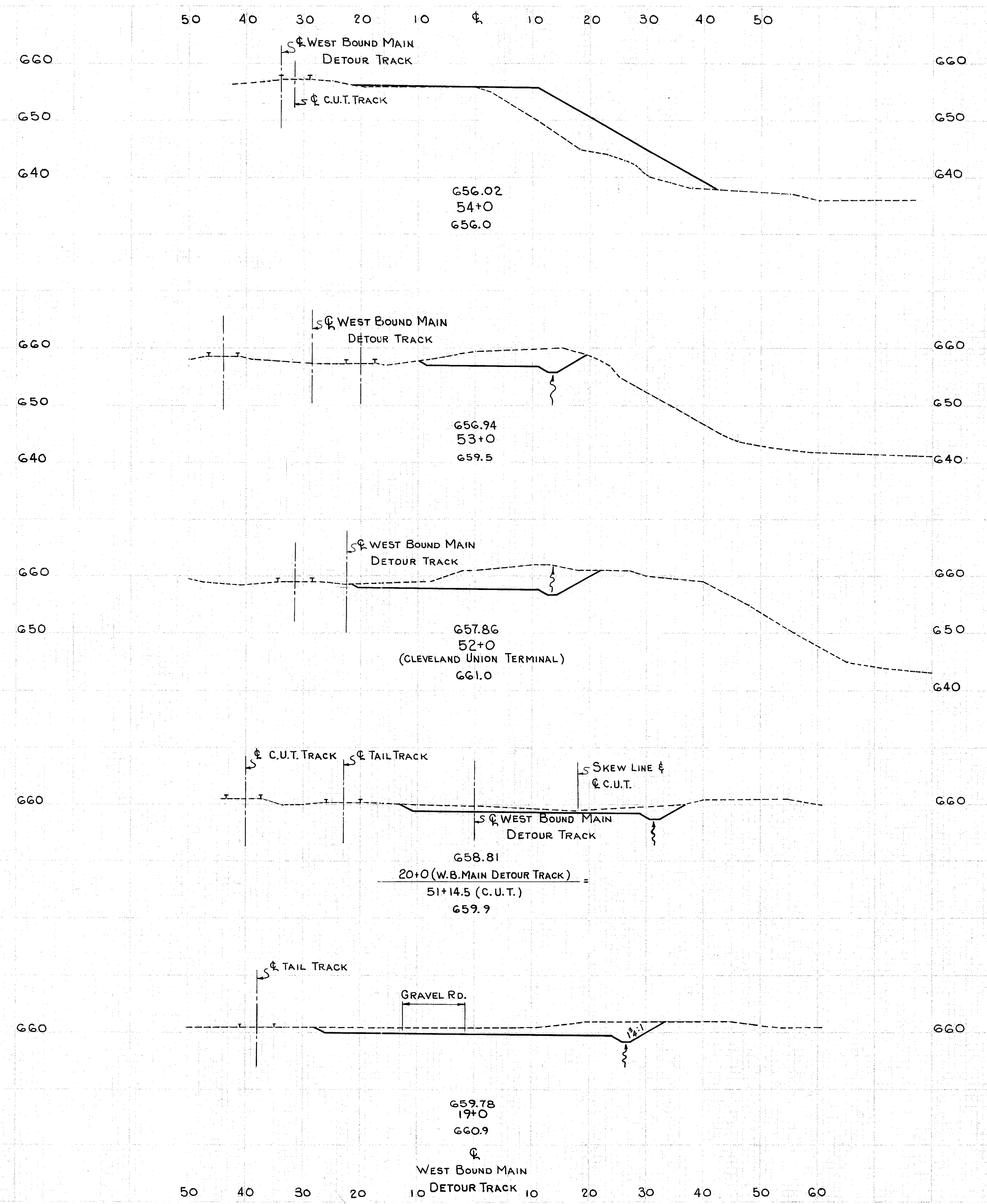
CUYAHOGA COUNTY
CUY-254-18.88



CONT. NO. 58019 SHEET ACCT. No. 6459

RAILROAD DETOUR STA. 14+75 TO STA. 18+0

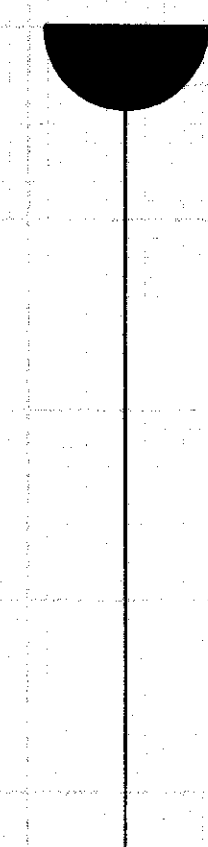
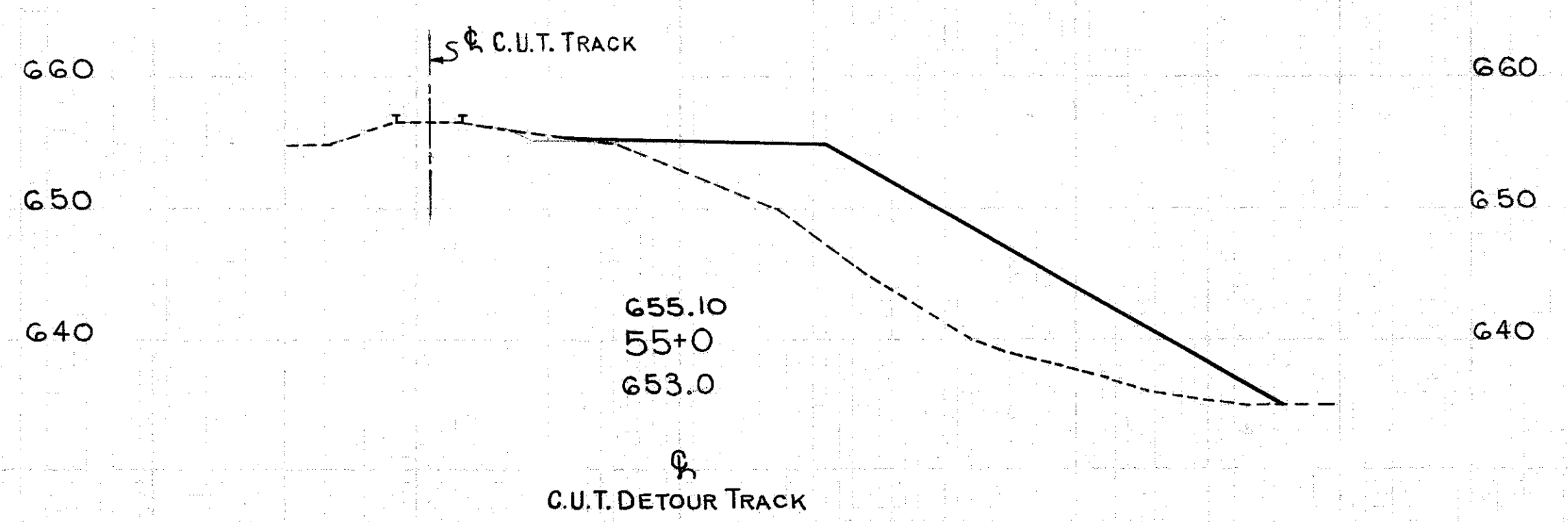
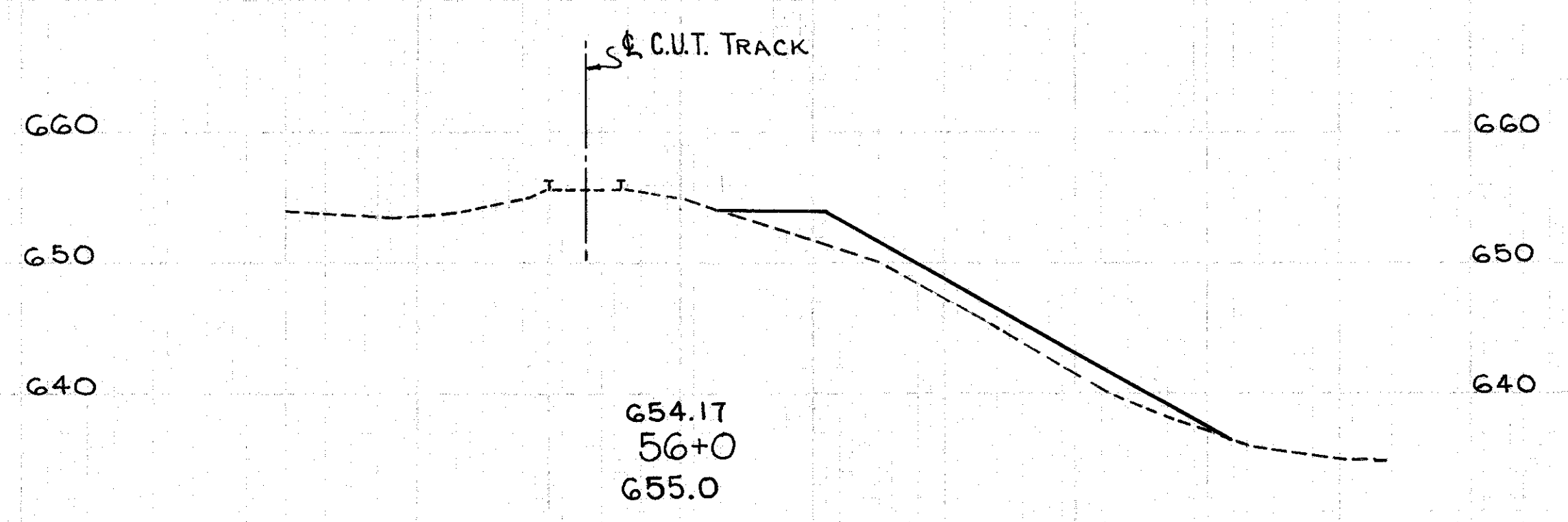
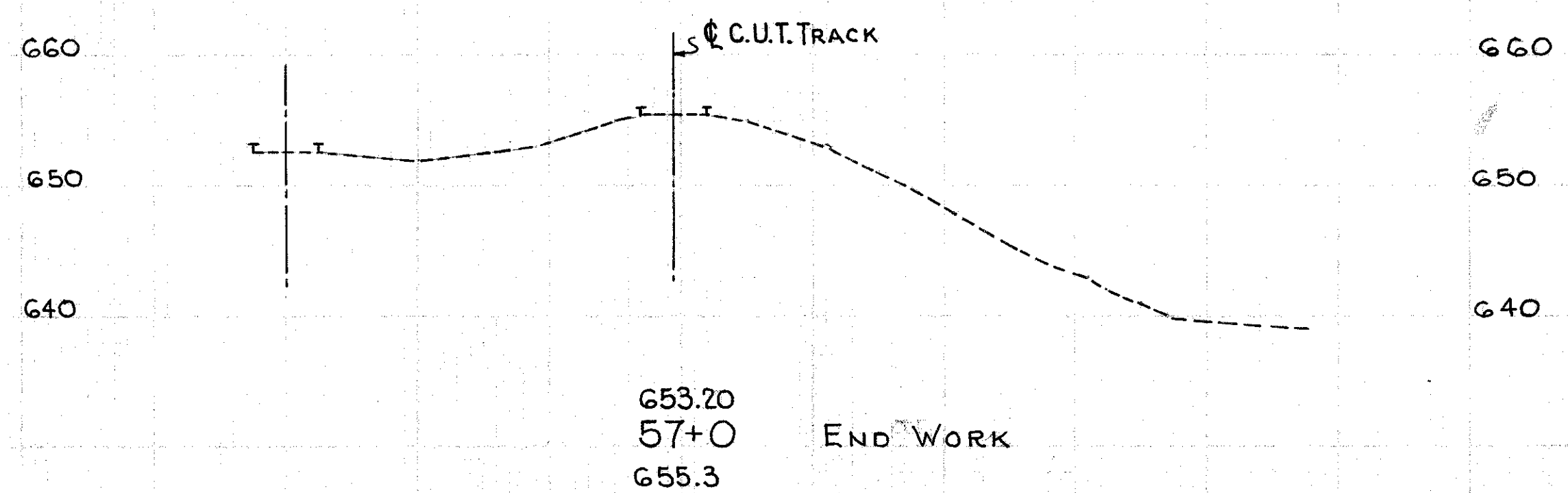
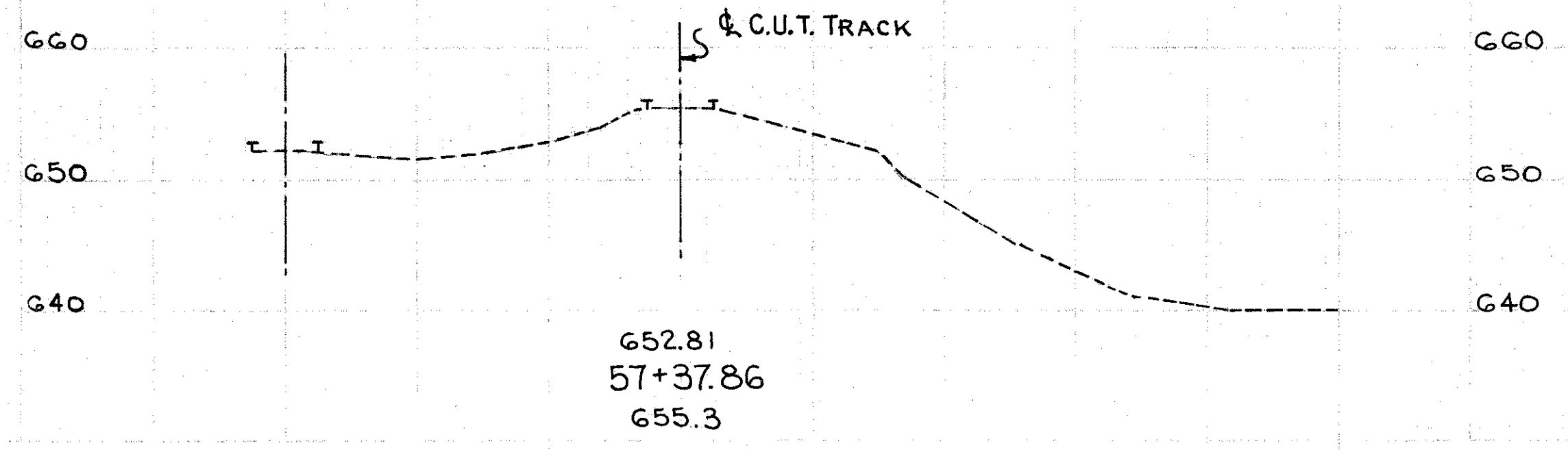
STA. 14+40 359 0



STATION	AREA		VOLUME	
	FT.	FEET	CU	CU
0	183			
67	0			
322	0			
107	0			
241	0			
45	0			
244	0			
88	0			
570	0			
221	0			

ESTIMATED
108.62

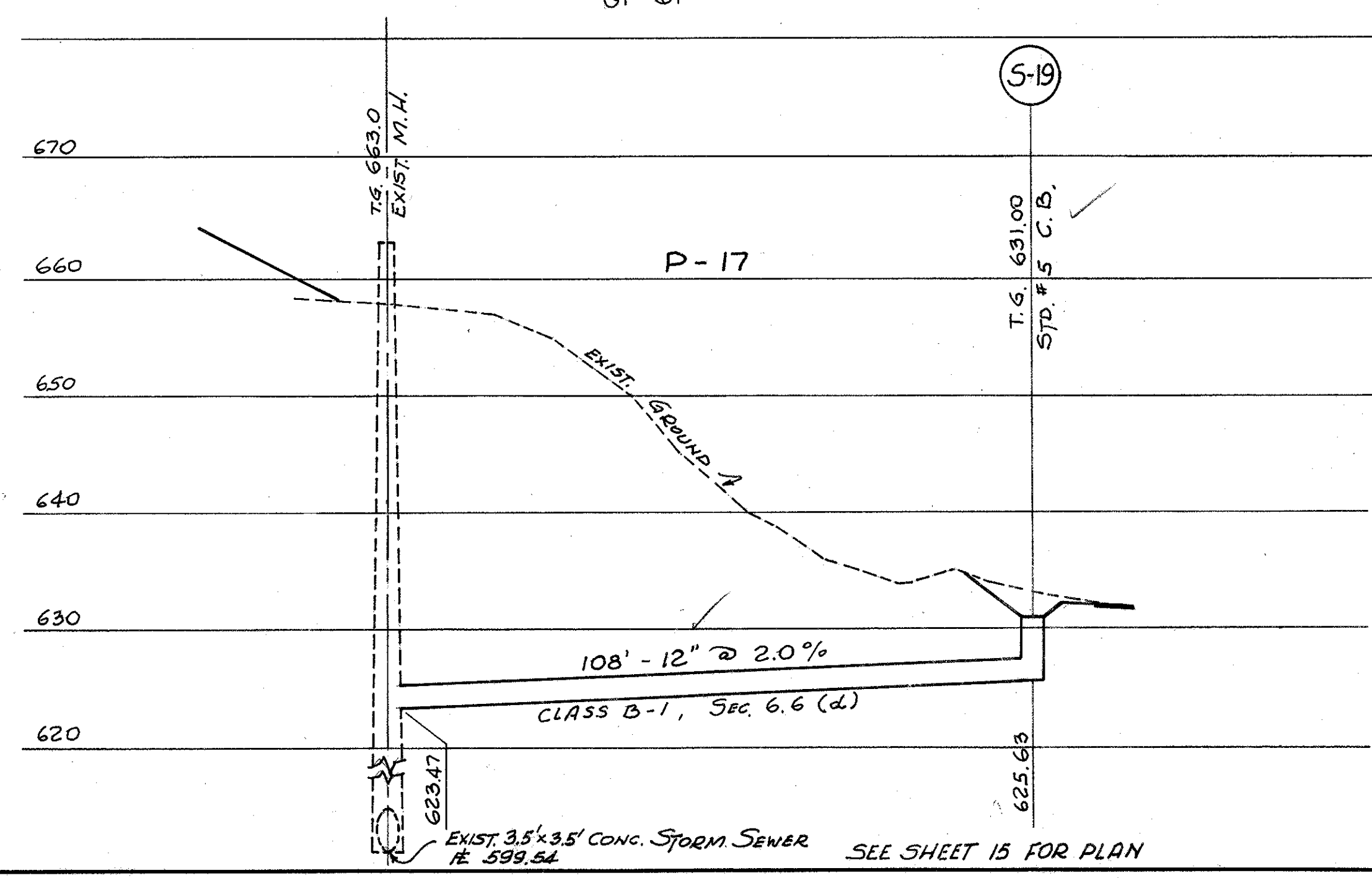
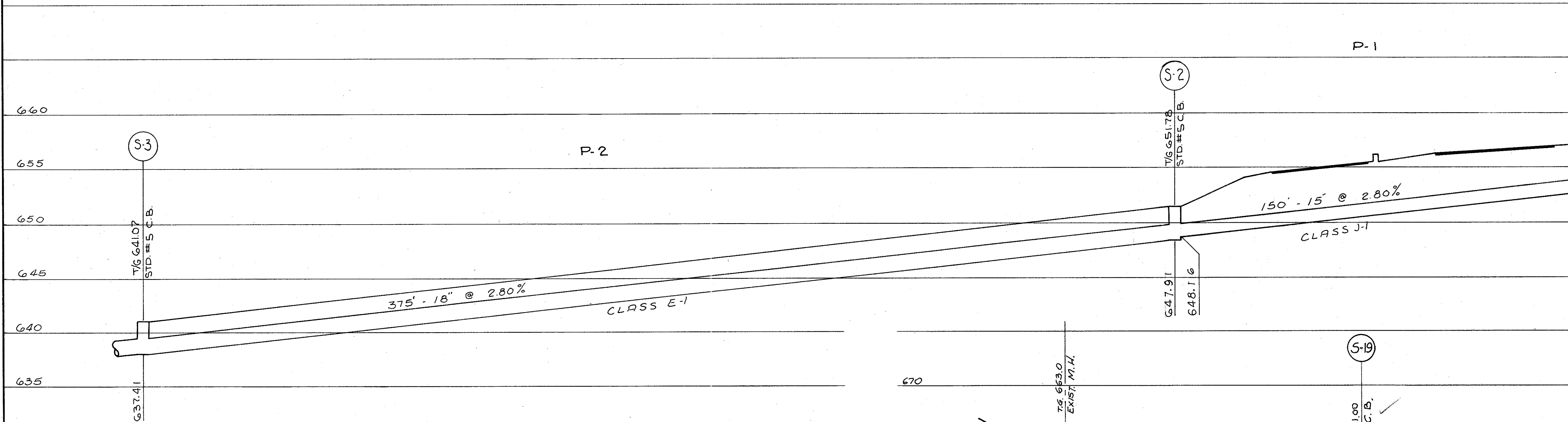
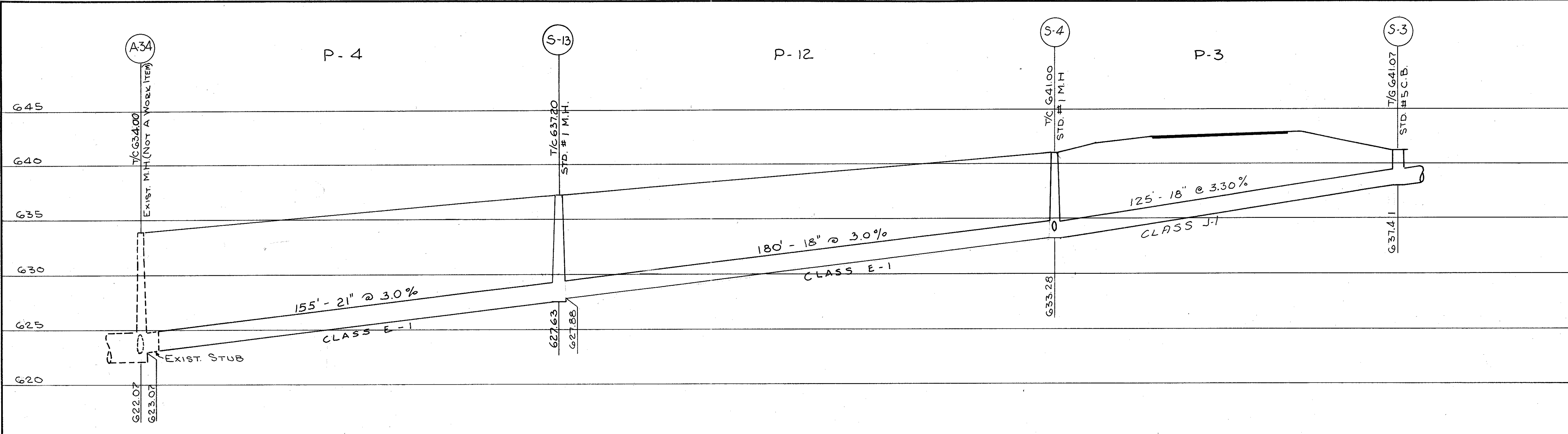
CONT. No. 58019 SHEET ACCT. NO. 6460



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		0	0
		0	58
		53	0
		0	262
		822	0
		0	183

ESTIMATED
 0 81

CONT. No. 58019 SHEET ACCT. No. 6461



SEE SHEET 12 FOR PLAN

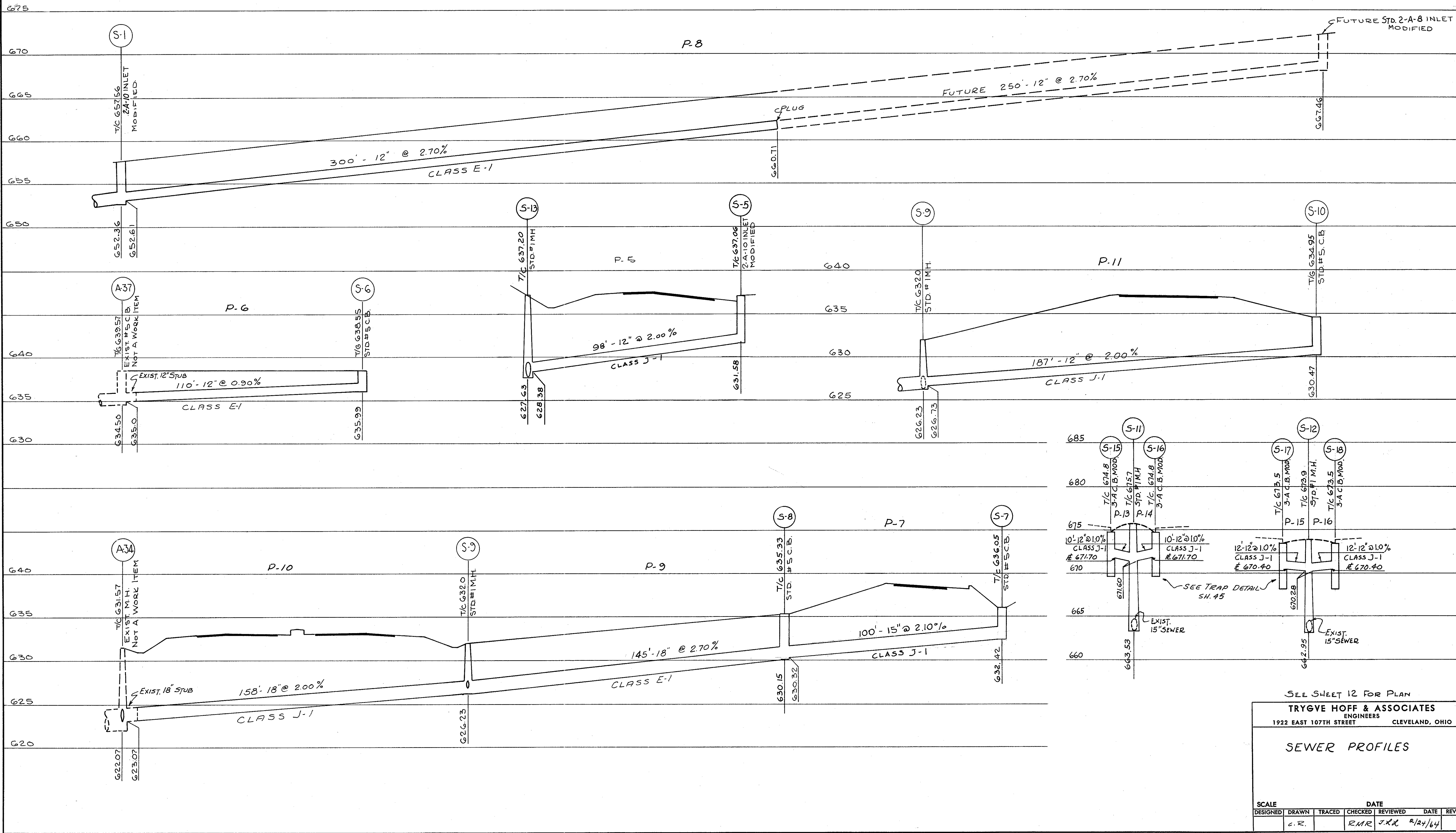
TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

SEWER PROFILES

SCALE		DATE				
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	C.R.		RUR	J.K.L.	2/24/44	

CONT. NO. 58019 SHEET ACCT. NO. 6470

SEE SHEET 15 FOR PLAN



CONT. No. 58019 SHEET ACCT. No. 6471

SEE SHEET 12 FOR PLAN

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

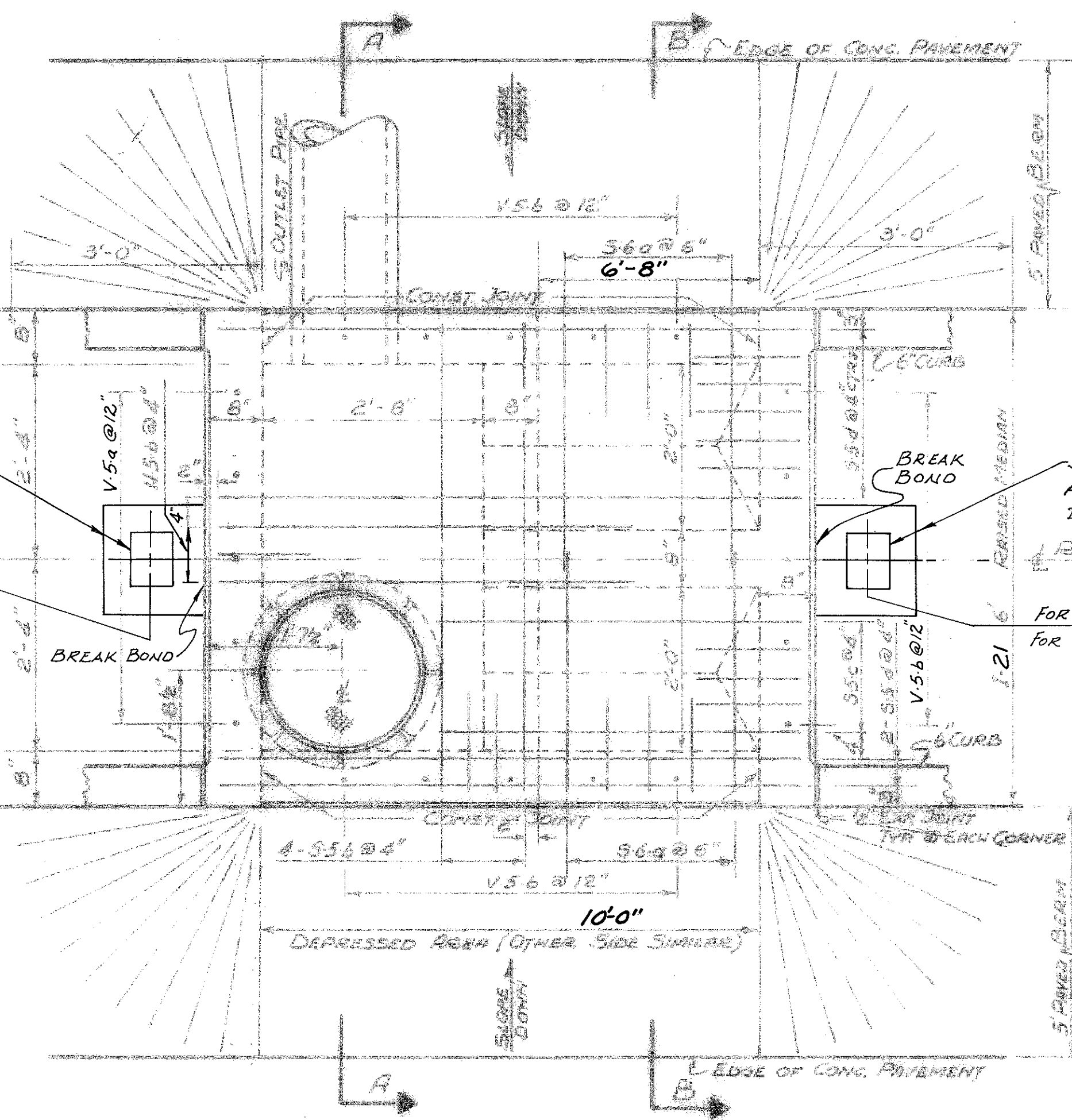
SEWER PROFILES

SCALE		DATE			
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
	C.R.		R.M.R.	J.R.D.	2/24/64

EXCASE GUARD RAIL POST ON EACH SIDE OF P.S.I. IN CONCRETE AS PER STD CONSTR. DWG. 1-15 N^o 1. INCLUDE FOR PAYMENT IN PRICE BID PER LINEAR FOOT OF GUARD RAIL. ACTUAL POST LOCATION NOT ON & OF ROADWAY AS DWG. INDICATES, BUT OFFSET ON EACH SIDE OF & - SEE STA. & OFFSET - THIS SHEET.

FOR P.S. 1, MK. S-1, & GUARD RAIL POST @ STA 1049+97.75 - OFFSET LT. & RT. 2.00 TO FACE OF RAIL.

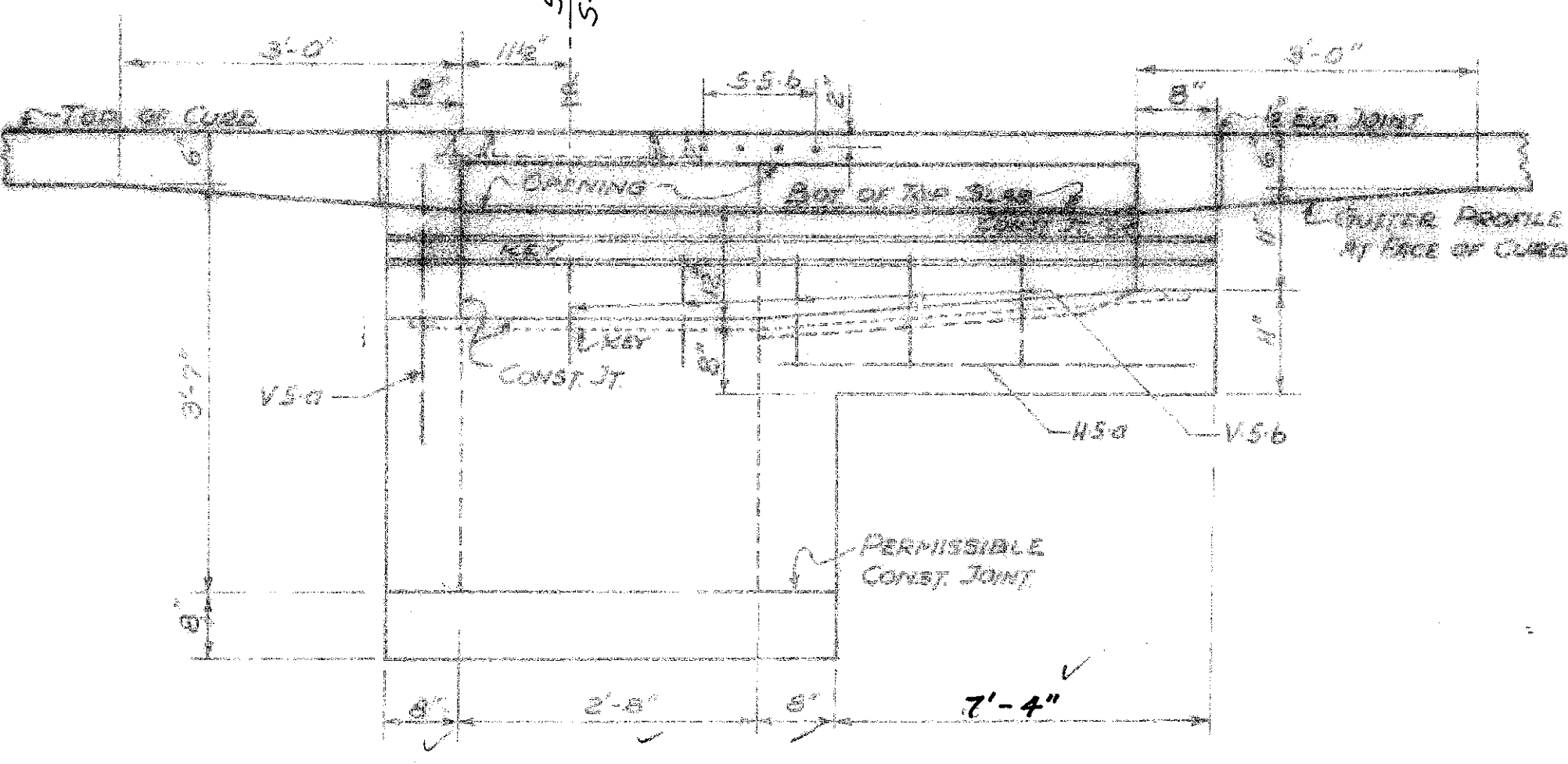
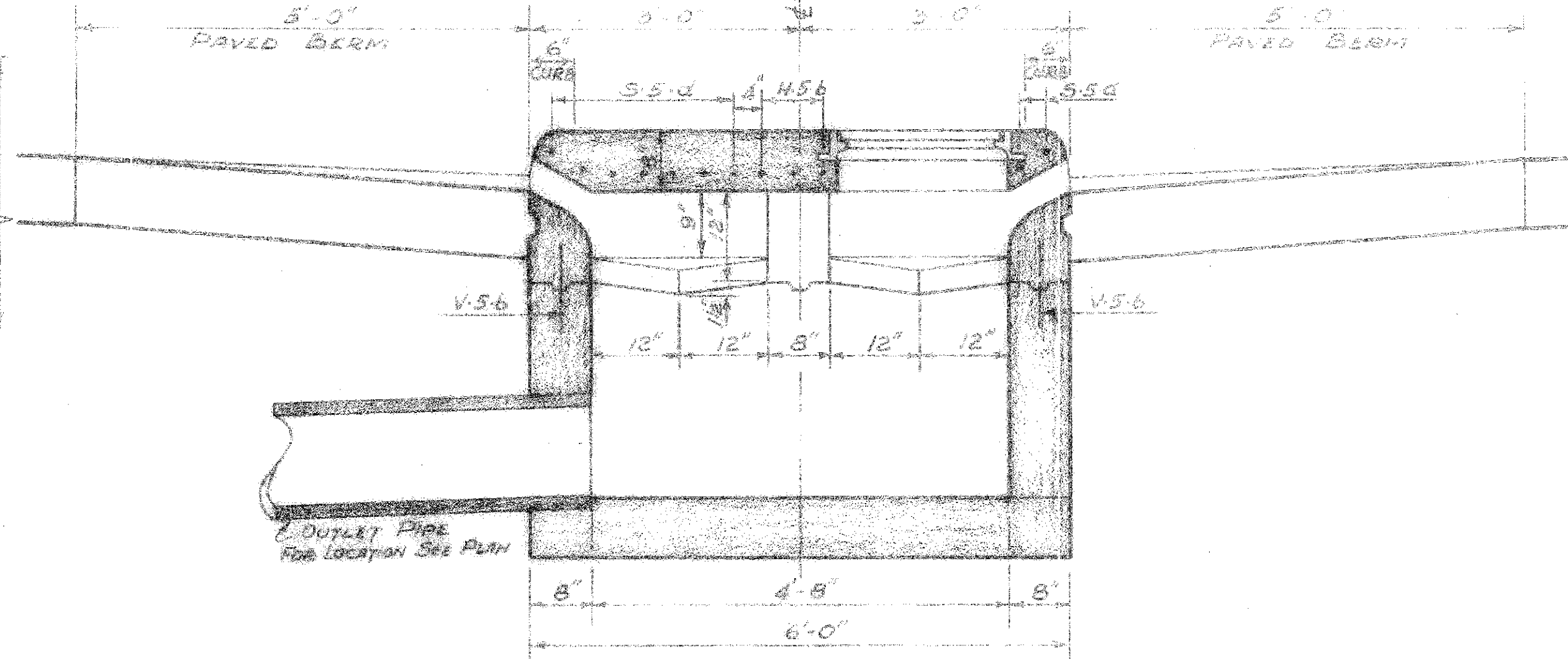
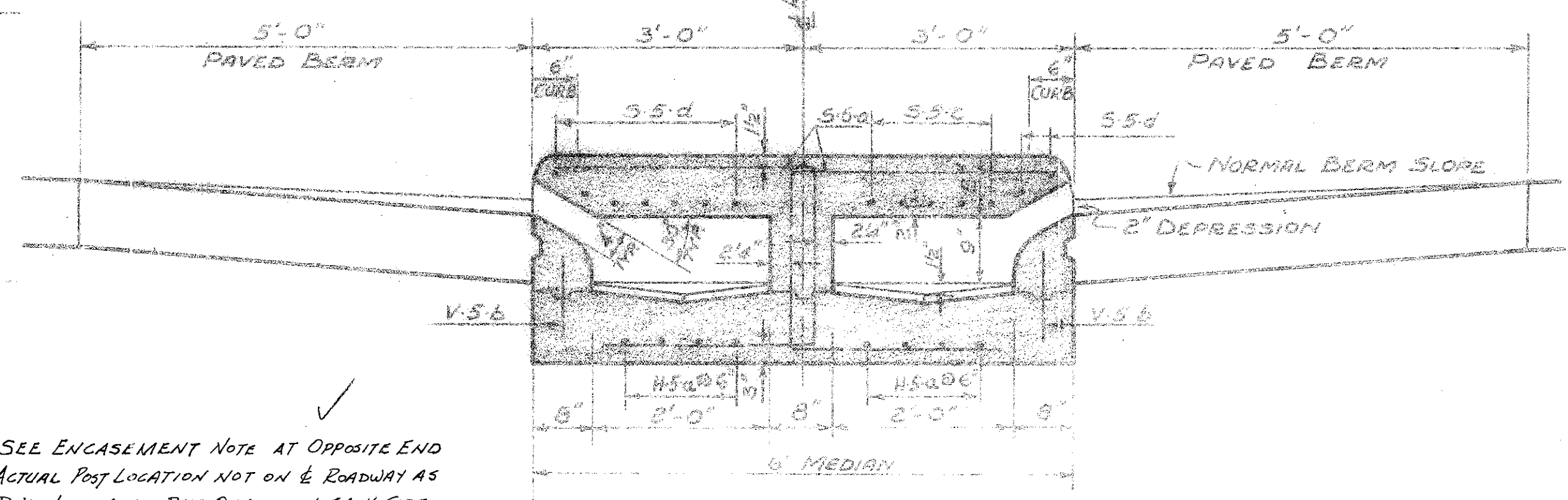
FOR P.S. 1, MK. S-5, & GUARD RAIL POST @ STA 1042+32.75 - OFFSET LT. & RT. 2.00 TO FACE OF RAIL.



SEE ENCASMENT NOTE AT OPPOSITE END ACTUAL POST LOCATION NOT ON & ROADWAY AS DWG. INDICATES, BUT OFFSET ON EACH SIDE OF & - SEE STA. & OFFSET - THIS SHEET

FOR P.S. 1, MK. S-1, & GUARD RAIL POST @ STA 1050+10.25 - OFFSET LT. & RT. 2.00 TO FACE OF RAIL

FOR P.S. 1, MK. S-5, & GUARD RAIL POST @ STA 1042+45.25 - OFFSET LT. & RT. 2.00 TO FACE OF RAIL



REINFORCING BAR LIST

#2-3/4 ROUND BARS S-5.b, S-5.c, S-5.d, H-5.a, H-5.b, V-5.a, V-5.b - STRAIGHT 5/8" ROUND BARS

CURB	S-5.a		S-5.b		S-5.c		S-5.d		H-5.a		H-5.b		V-5.a		V-5.b	
	NO. REQ'D	LENGTH	NO. REQ'D	LENGTH	NO. REQ'D	LENGTH	NO. REQ'D	LENGTH	NO. REQ'D	LENGTH	NO. REQ'D	LENGTH	NO. REQ'D	LENGTH	NO. REQ'D	LENGTH
10'-0"	26	7'-2 1/2"	4	5'-7"	5	8'-4"	9	11'-0"	8	7'-8"	3	5'-0"	5	2'-6"	23	1'-0"

DETAIL OF MODIFIED No. 2A-10 PAVED SHOULDER INLET, AS PER PLAN

FOR NOTES, DIMENSIONS AND DETAILS SEE STD. CONSTRUCTION DWG. I-B-1 No. 2-A
FOR LOCATION SEE ITEMS S-1 & S-5 SH. 12 & 13

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST TENTH STREET CLEVELAND, OHIO

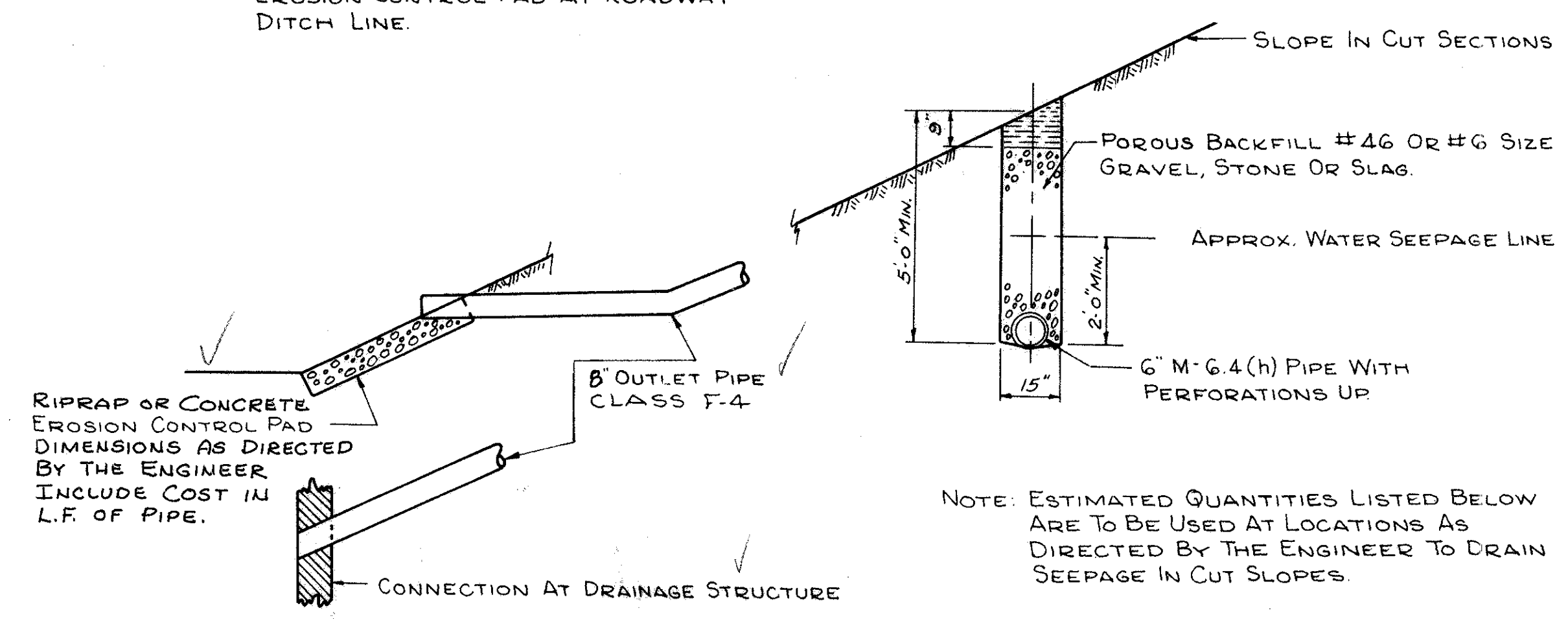
DETAIL OF MODIFIED No. 2A-10 PAVED SHOULDER INLET

DATE	BY	CHECKED	APPROVED
2/24/64	JXX	RR	CR

SHEET NO. 58019 SHEET ACCT. NO. 6469

10'-0"
11'-4"
2'-A

NOTE: OUTLET INTERCEPTING DRAINS EITHER INTO DITCH DRAINAGE STRUCTURE OR ONTO AN EROSION CONTROL PAD AT ROADWAY DITCH LINE.

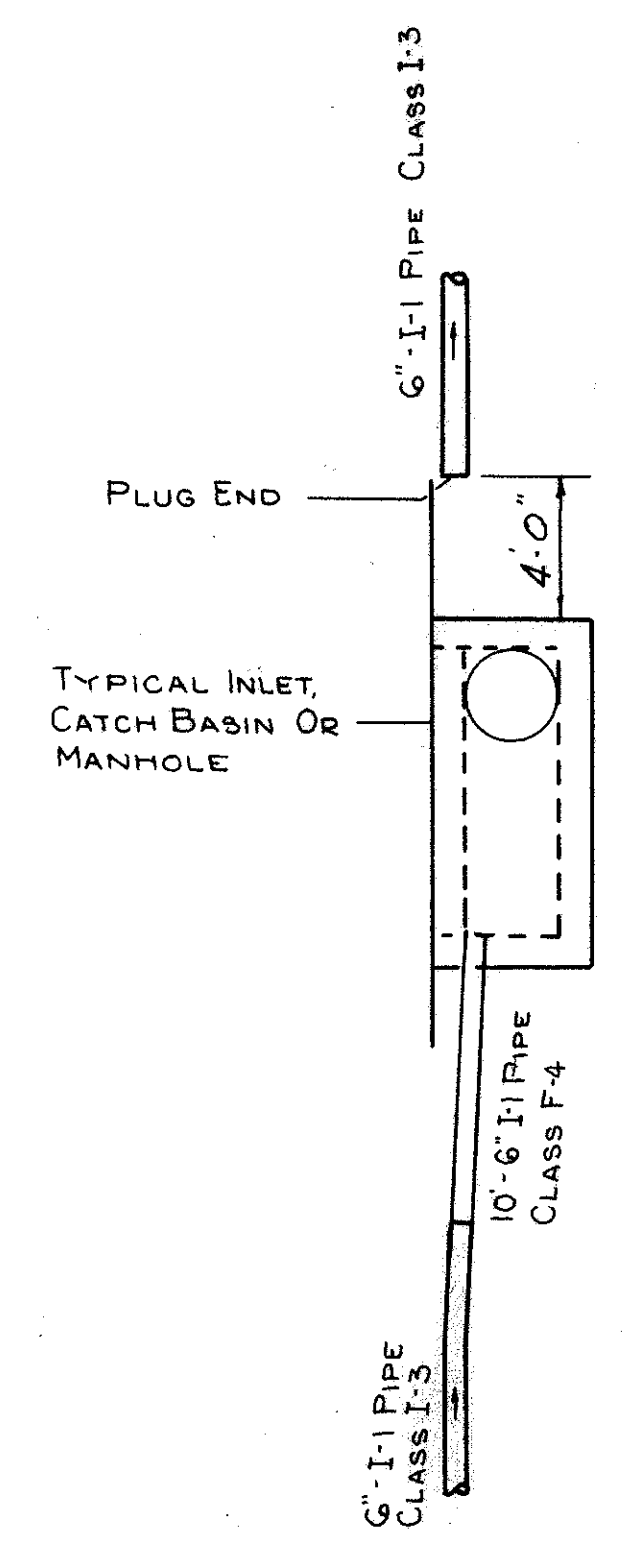


NOTE: ESTIMATED QUANTITIES LISTED BELOW ARE TO BE USED AT LOCATIONS AS DIRECTED BY THE ENGINEER TO DRAIN SEEPAGE IN CUT SLOPES.

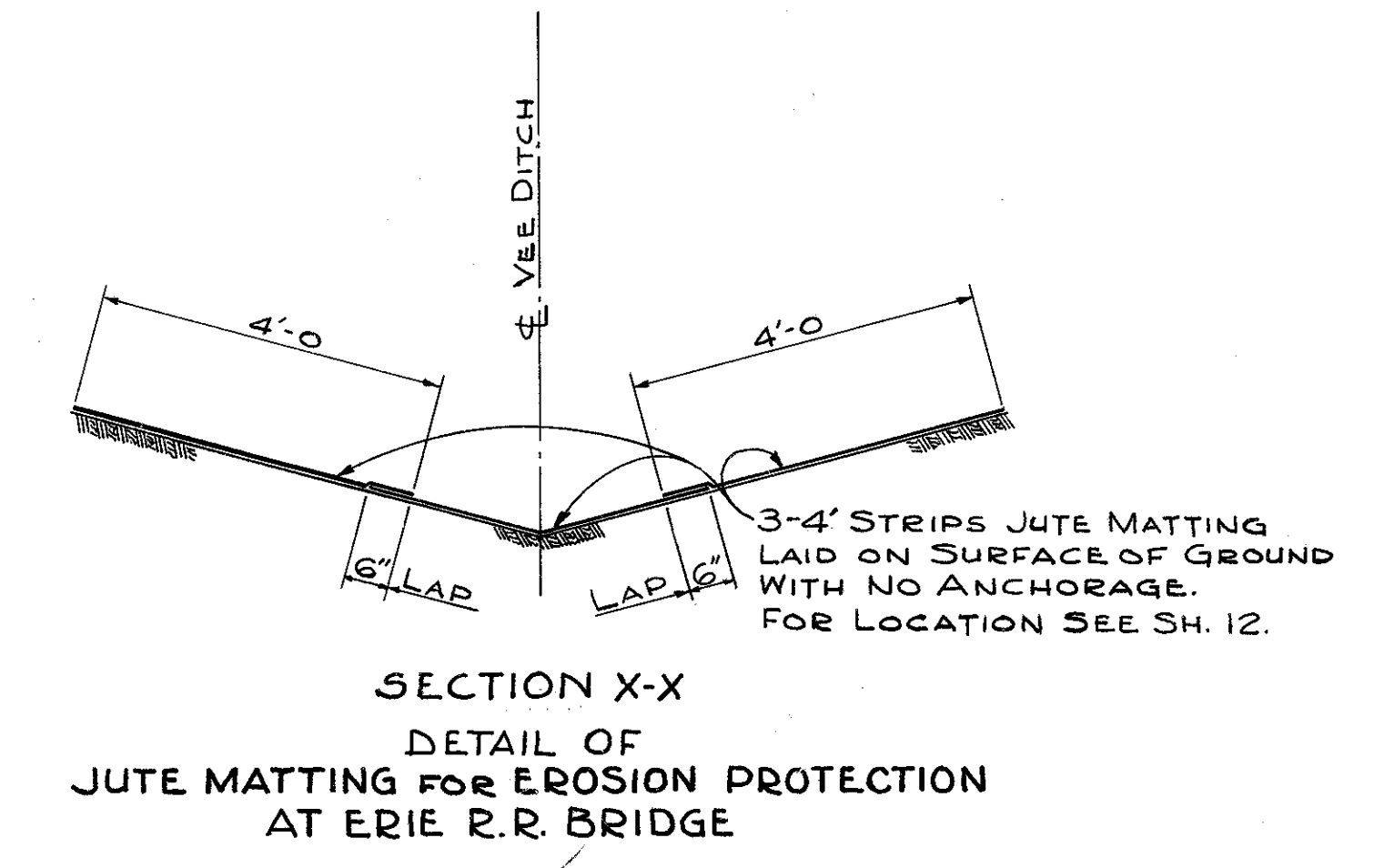
ESTIMATED QUANTITIES

ITEM I-1	6" UNDERDRAINS	SEC. M-G.4(h) CLASS I-3 (AS PER PLAN)	400 LIN. FT.
ITEM I-1	8" CLASS F-4,	SEC. M-G.4(r)	40 LIN. FT.
ITEM I-5	6" PIPE SPECIALS	CLASS F-4	4 EACH

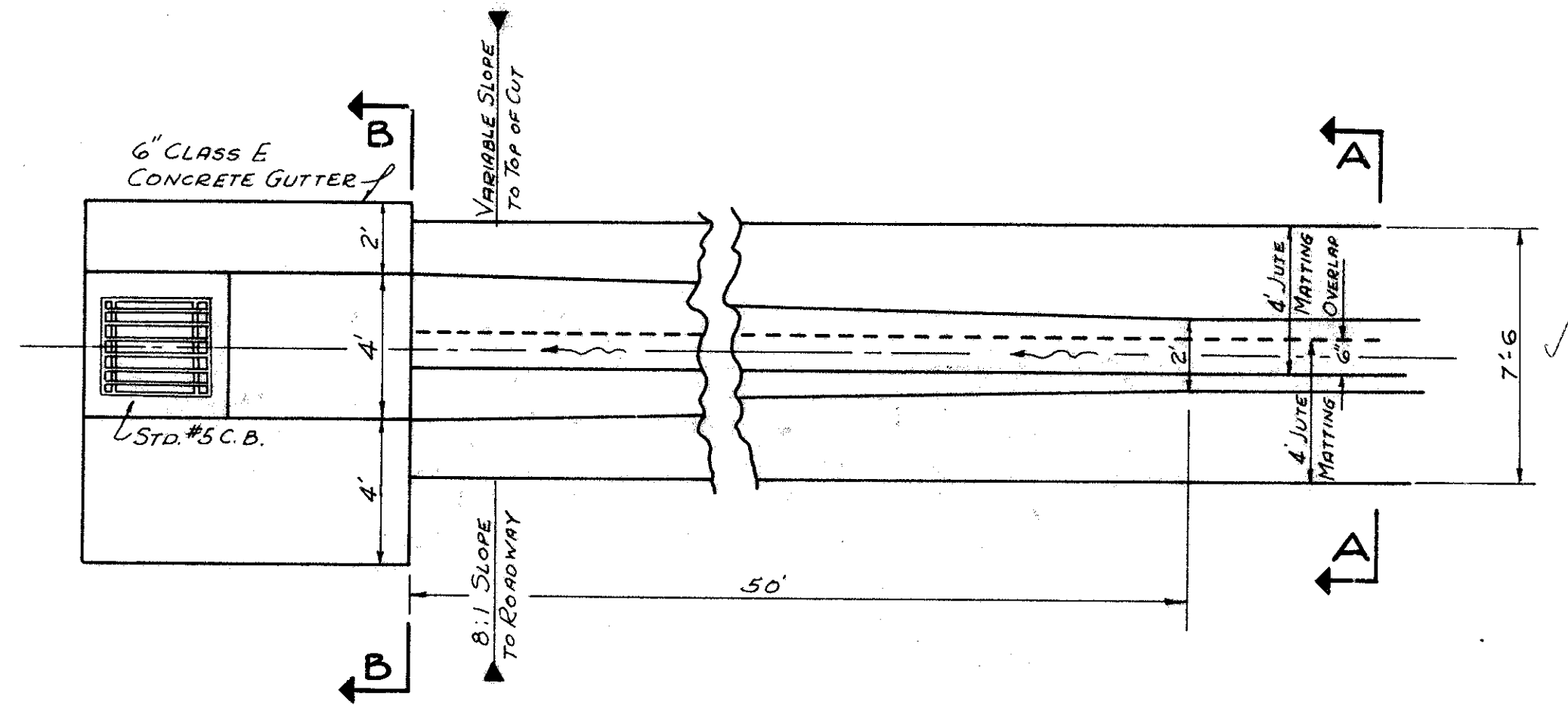
DETAIL FOR UNDER DRAIN, AS PER PLAN



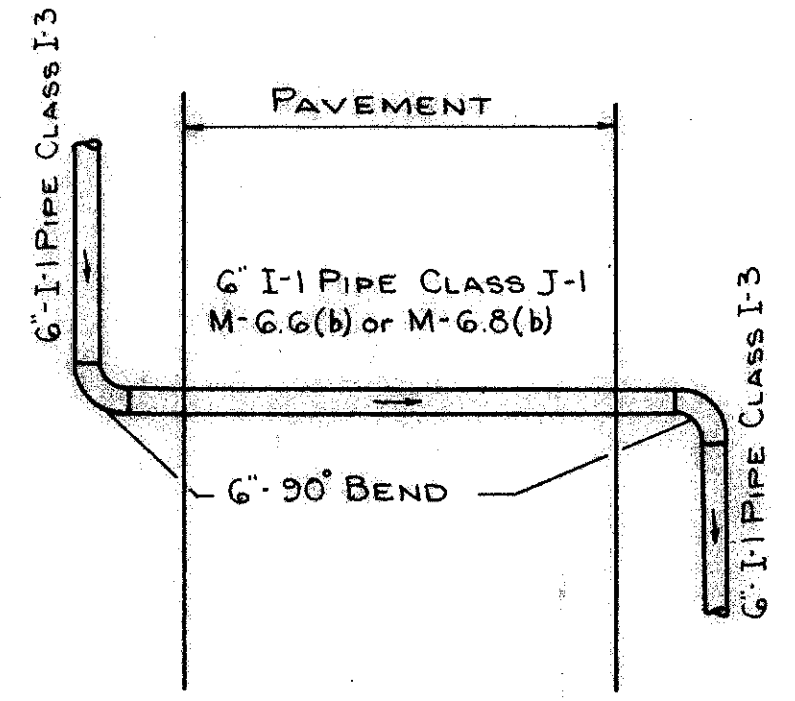
UNDERDRAIN OUTLET DETAIL A



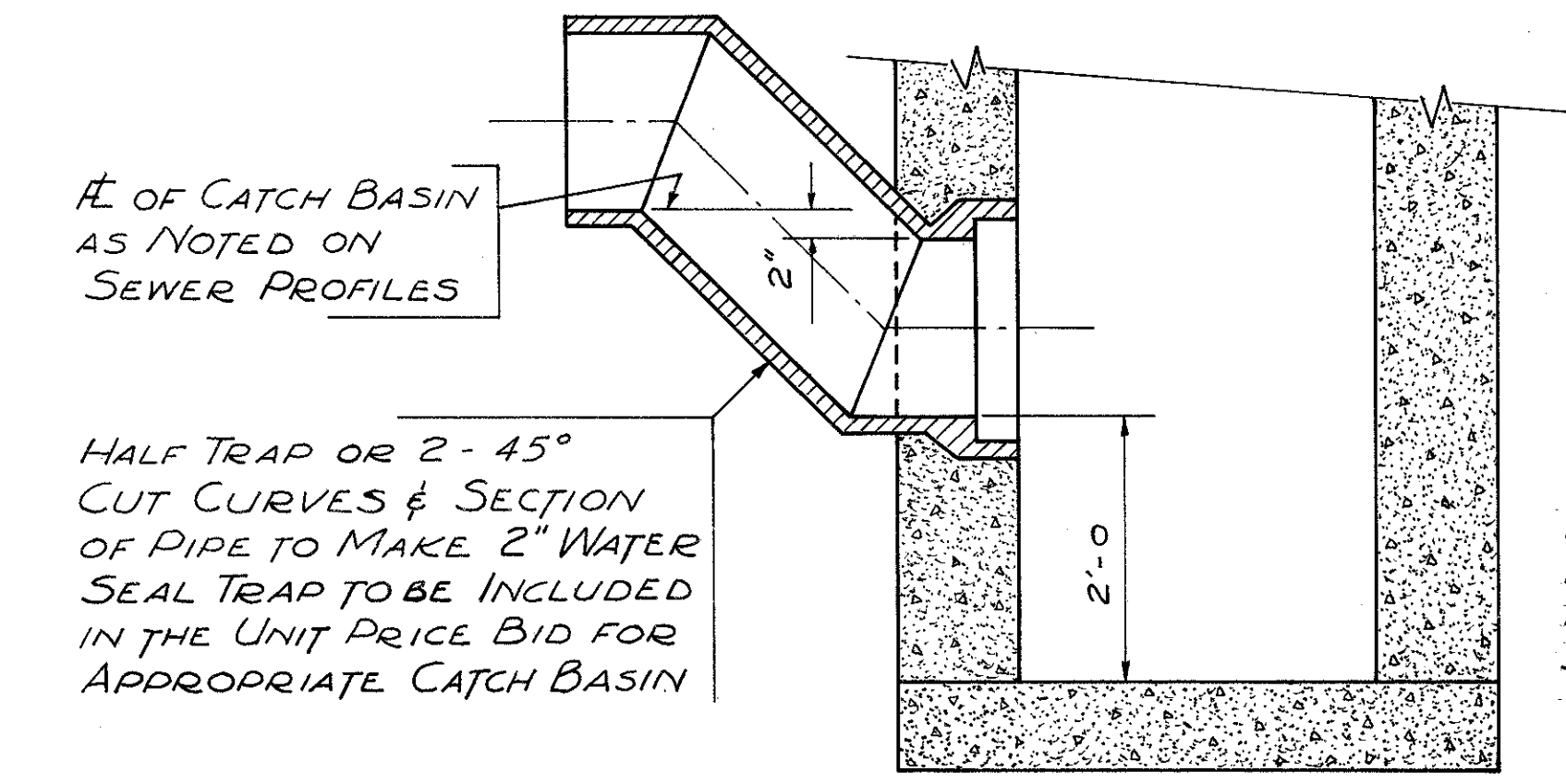
SECTION X-X
DETAIL OF JUTE MATTING FOR EROSION PROTECTION AT ERIE R.R. BRIDGE



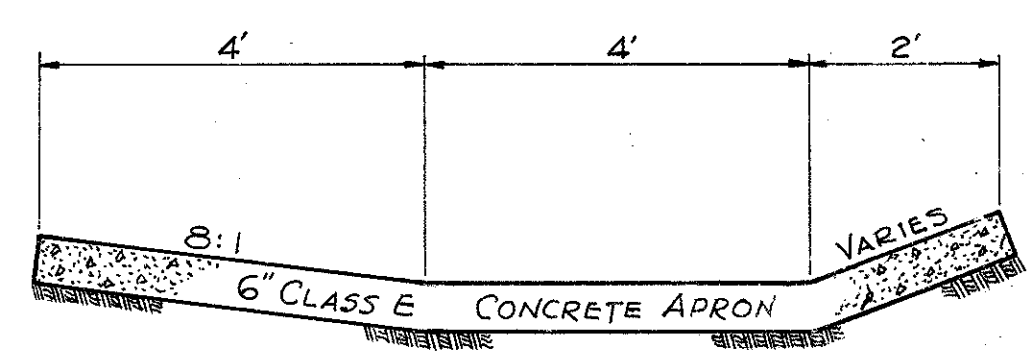
TRANSITION FROM 4' TO 2' DITCH



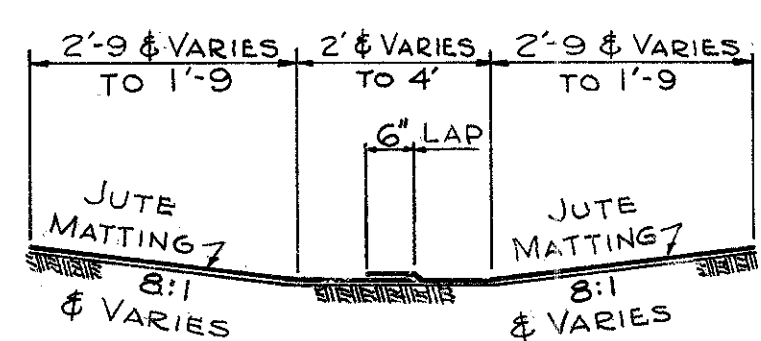
UNDERDRAIN CROSSOVER DETAIL B



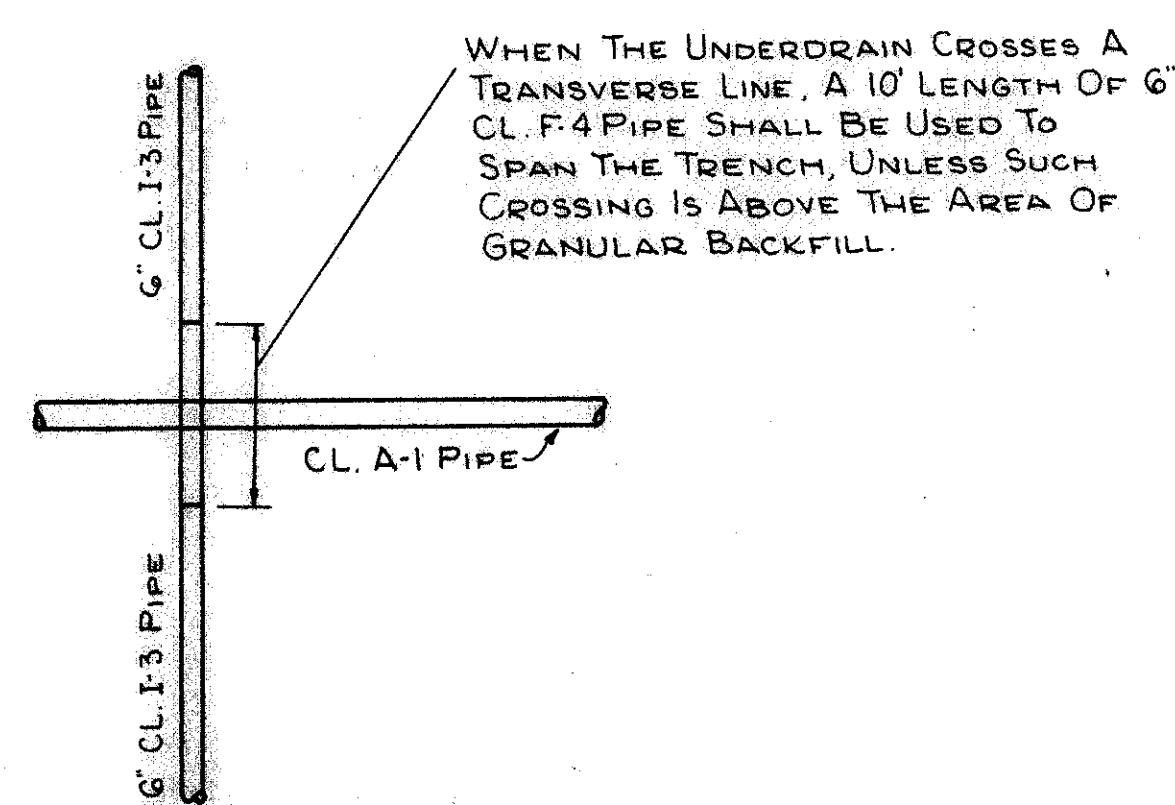
DETAIL OF STD. NO. 3-A CATCH BASIN (MODIFIED), AS PER PLAN



SECTION B-B



SECTION A-A



UNDERDRAIN CROSSOVER DETAIL C

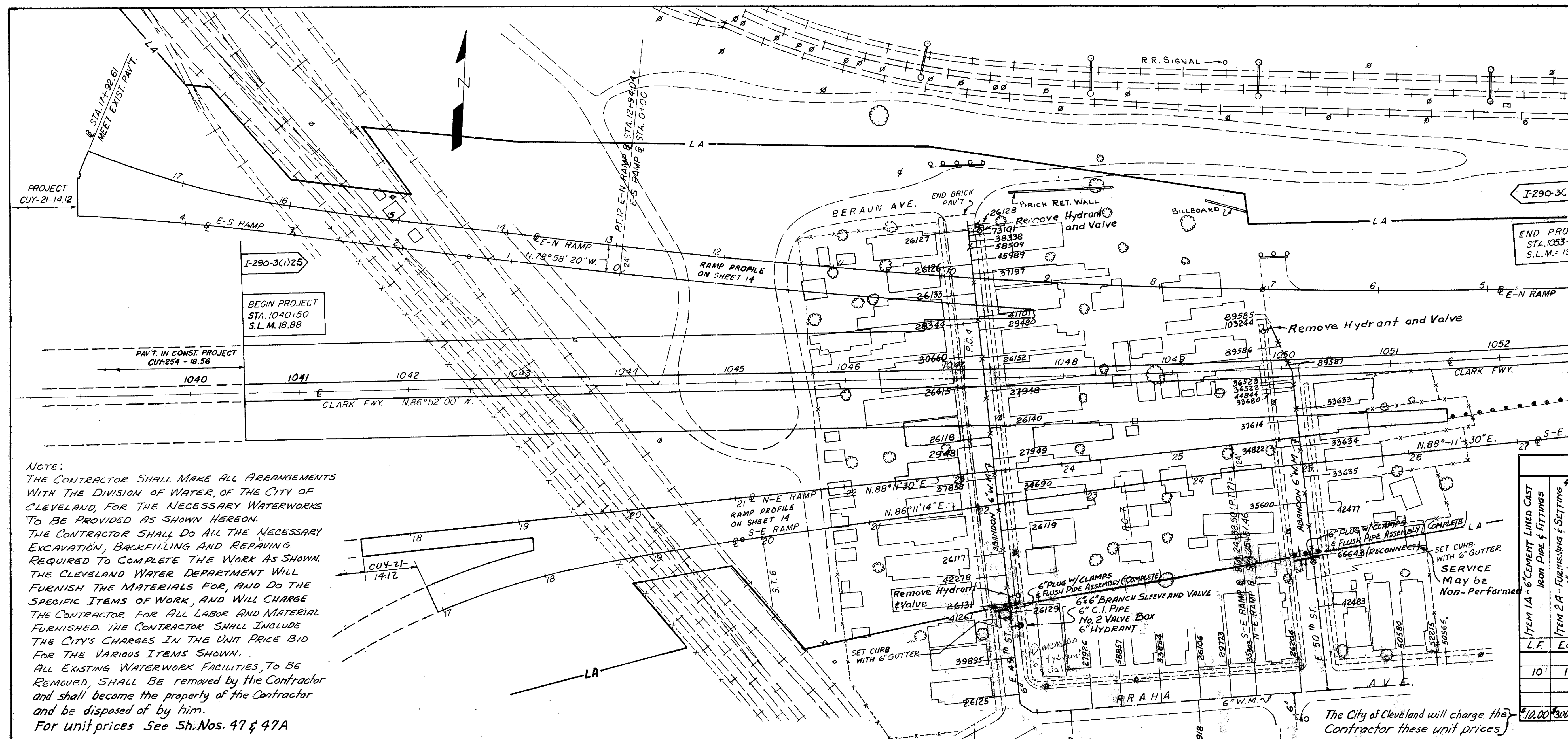
TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

TYPICAL DETAILS
DRAINAGE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.B.				J.R.K.	2/24/64	

NOTES:

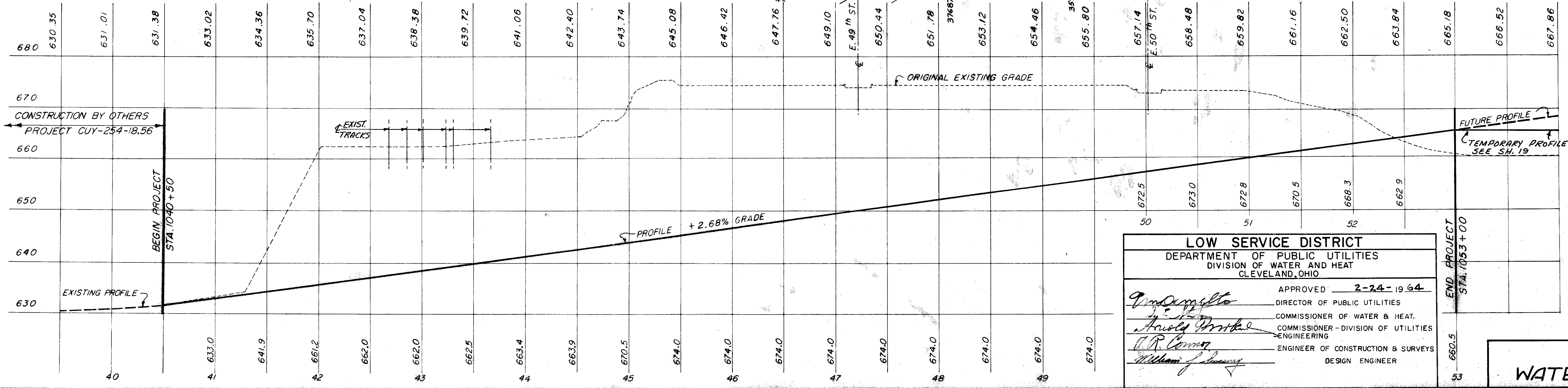
TYPICAL SECTIONS	3
GEOMETRIC LAYOUT	10-11
PAV'T. DETAILS & QUANTITIES	17-18
E-B REMOVAL ITEMS	8
GRADING, PLAN & CROSS	20
SECTION KEY PLAN	48
EXISTING UTILITIES	48-49
SEWER PROFILES	49-51
ELECTRICAL PLANS	58-74A
STRUCTURAL PLANS	58-74A



NOTE:
THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE DIVISION OF WATER, OF THE CITY OF CLEVELAND, FOR THE NECESSARY WATERWORKS TO BE PROVIDED AS SHOWN HEREON. THE CONTRACTOR SHALL DO ALL THE NECESSARY EXCAVATION, BACKFILLING AND REPAIRING REQUIRED TO COMPLETE THE WORK AS SHOWN. THE CLEVELAND WATER DEPARTMENT WILL FURNISH THE MATERIALS FOR, AND DO THE SPECIFIC ITEMS OF WORK, AND WILL CHARGE THE CONTRACTOR FOR ALL LABOR AND MATERIAL FURNISHED. THE CONTRACTOR SHALL INCLUDE THE CITY'S CHARGES IN THE UNIT PRICE BID FOR THE VARIOUS ITEMS SHOWN. ALL EXISTING WATERWORK FACILITIES, TO BE REMOVED, SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF BY HIM.
For unit prices See Sh. Nos. 47 & 47A

* BLITZMENT
CODE TYPE Y060

WATERWORK QUANTITIES									
ITEM	QTY	UNIT	PRICE	TOTAL	ITEM	QTY	UNIT	PRICE	TOTAL
ITEM 1A - 6" CEMENT LINED CAST IRON PIPE & FITTINGS	10	LF	10.00	100.00	ITEM 8 - MISCELLANEOUS METAL WORK	3	Lbs	0.26	0.78
ITEM 2A - FURNISHING & SETTING 6" HYDRANT	1	Ea	300.00	300.00	SPECIAL - HYDRANTS AND (4") VALVES REMOVED	1	Ea	300.00	300.00
					SPECIAL - RELOCATE & RECONNECT HOUSE WATER SUPPLY CONN.	2	Ea	100.00	200.00
					SPECIAL - PLUS EXISTING 6" WATER MAINS	1	Ea	950.00	950.00
					SPECIAL - 6" x 6" BRANCH SLEEVE AND 2" x 2" BRANCH SLEEVE	2	Ea	125.00	250.00
					FLUSHING PIPE ASSEMBLY (COMPLETE)				



LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

APPROVED 2-24-19 64
 _____ DIRECTOR OF PUBLIC UTILITIES
 _____ COMMISSIONER OF WATER & HEAT.
 _____ ENGINEERING
 _____ ENGINEER OF CONSTRUCTION & SURVEYS
 _____ DESIGN ENGINEER

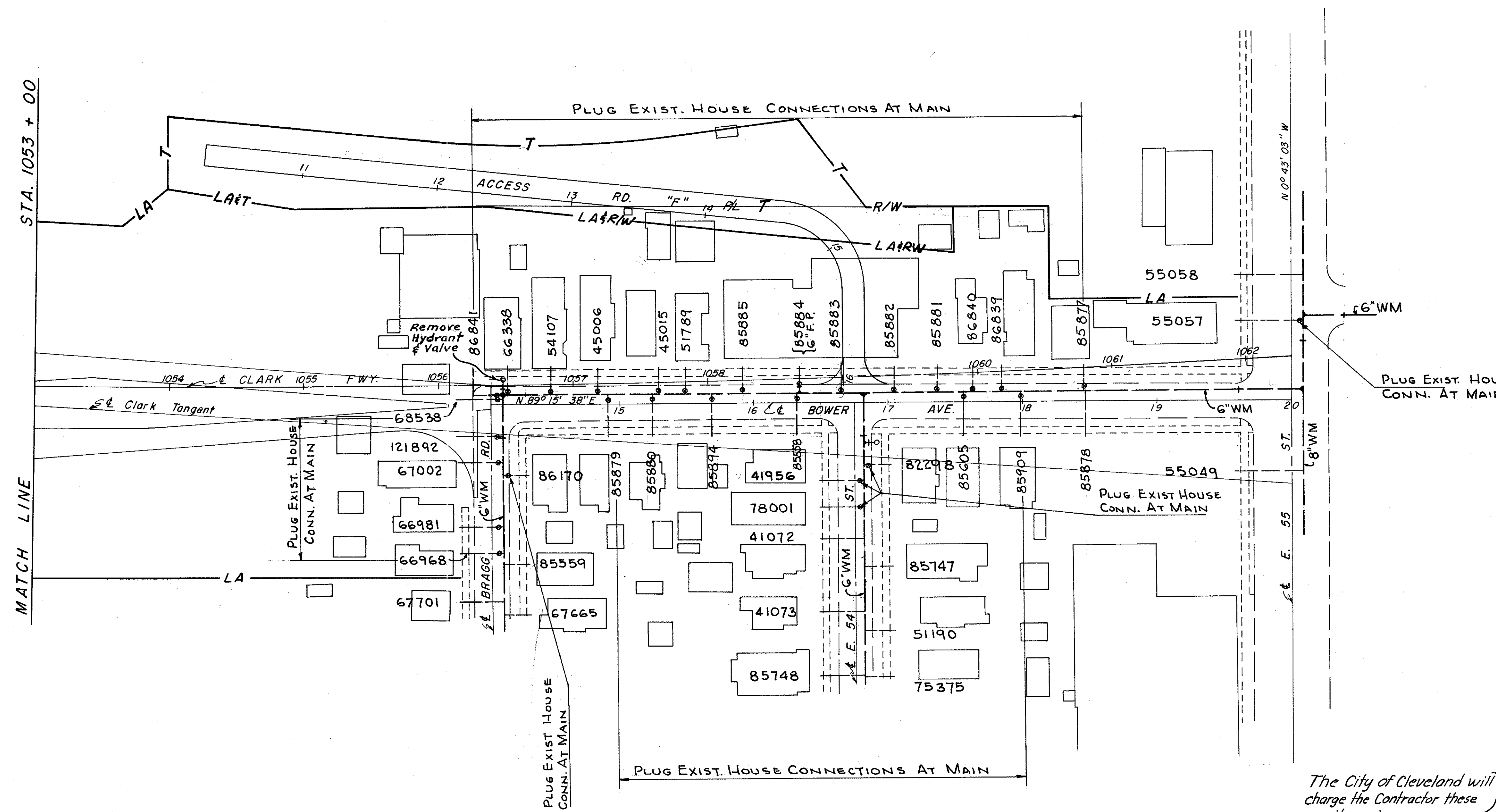
WATERWORK

CONT. NO. 58019 SHEET ACCT. NO. 6473

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

47A
81

CUYAHOGA COUNTY
CUY- 254 - 18.88



CODE Y060

* No. 85884

WATERWORK QUANTITIES		
SPECIAL - PLUG HOUSE WATER CONN. AT MAIN	SPECIAL - PLUG 6" FIRE PROTECTION CONN AT MAIN**	SPECIAL - HYDRANTS AND VALVES REMOVED (4')
EA.	EA.	EA.
29	1	1
\$35.00	\$100.00	

The City of Cleveland will charge the Contractor these unit prices

CONT. No. 58019 SHEET ACCT. No. 6474

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

APPROVED 2-24-1964
J. C. [Signature] DIRECTOR OF PUBLIC UTILITIES
Arvid [Signature] COMMISSIONER OF WATER & HEAT
J. R. Connor COMMISSIONER - DIVISION OF UTILITIES ENGINEERING
William J. [Signature] ENGINEER OF CONSTRUCTION & SURVEYS
 DESIGN ENGINEER.

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

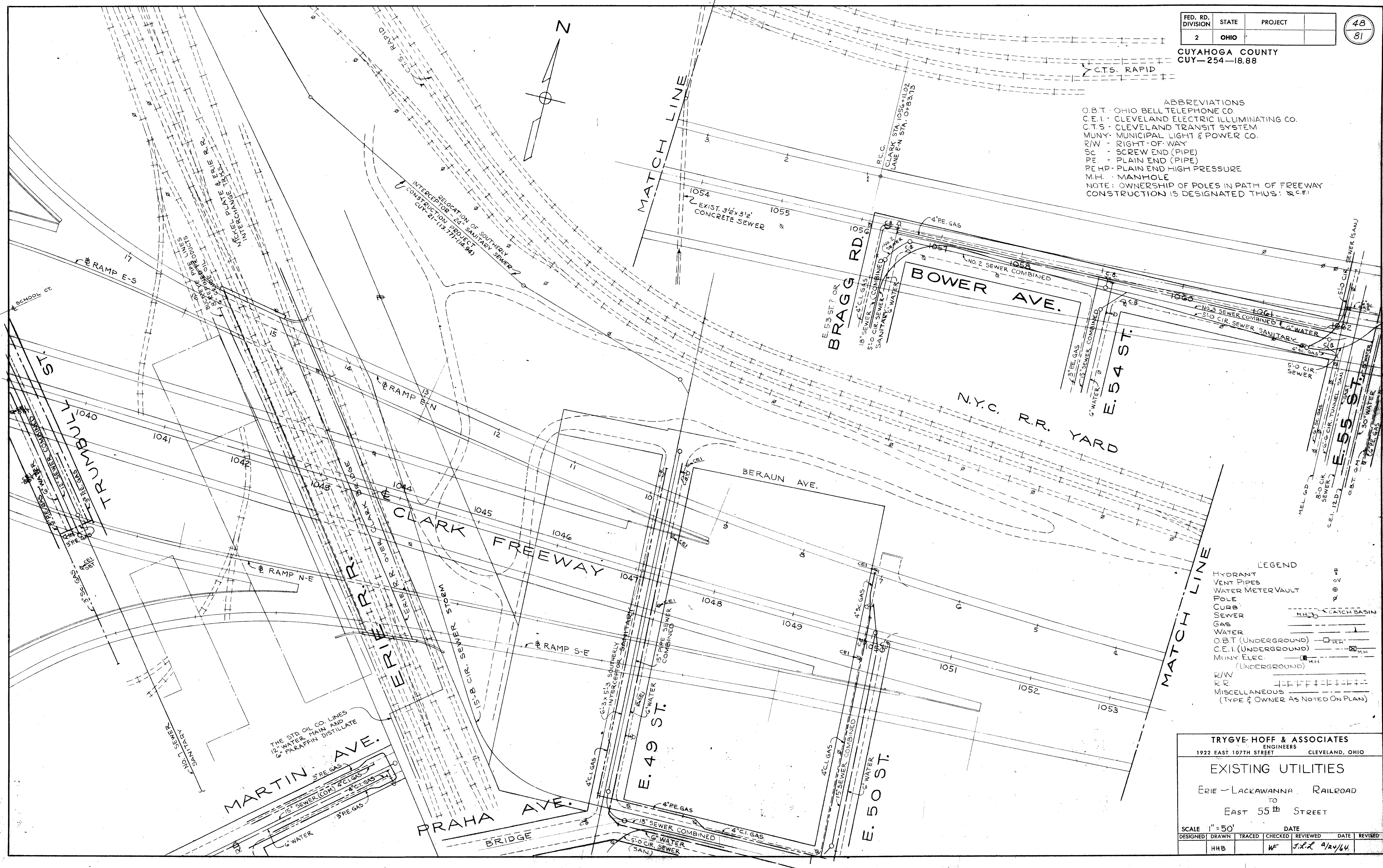
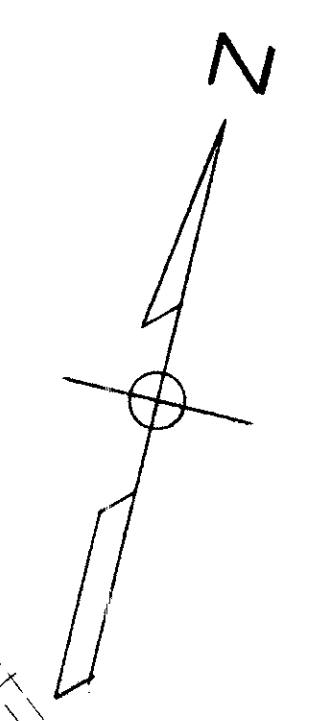
WATERWORK

SCALE 1" = 50' DATE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JWP	LKH		RLH			

CUYAHOGA COUNTY
CUY-254-18.88

ABBREVIATIONS
 O.B.T. - OHIO BELL TELEPHONE CO.
 C.E.I. - CLEVELAND ELECTRIC ILLUMINATING CO.
 C.T.S. - CLEVELAND TRANSIT SYSTEM
 MUNY. - MUNICIPAL LIGHT & POWER CO.
 R/W - RIGHT-OF-WAY
 SC - SCREW END (PIPE)
 PE - PLAIN END (PIPE)
 RE HP - PLAIN END HIGH PRESSURE
 M.H. - MANHOLE
 NOTE: OWNERSHIP OF POLES IN PATH OF FREEWAY CONSTRUCTION IS DESIGNATED THUS: \square & \square



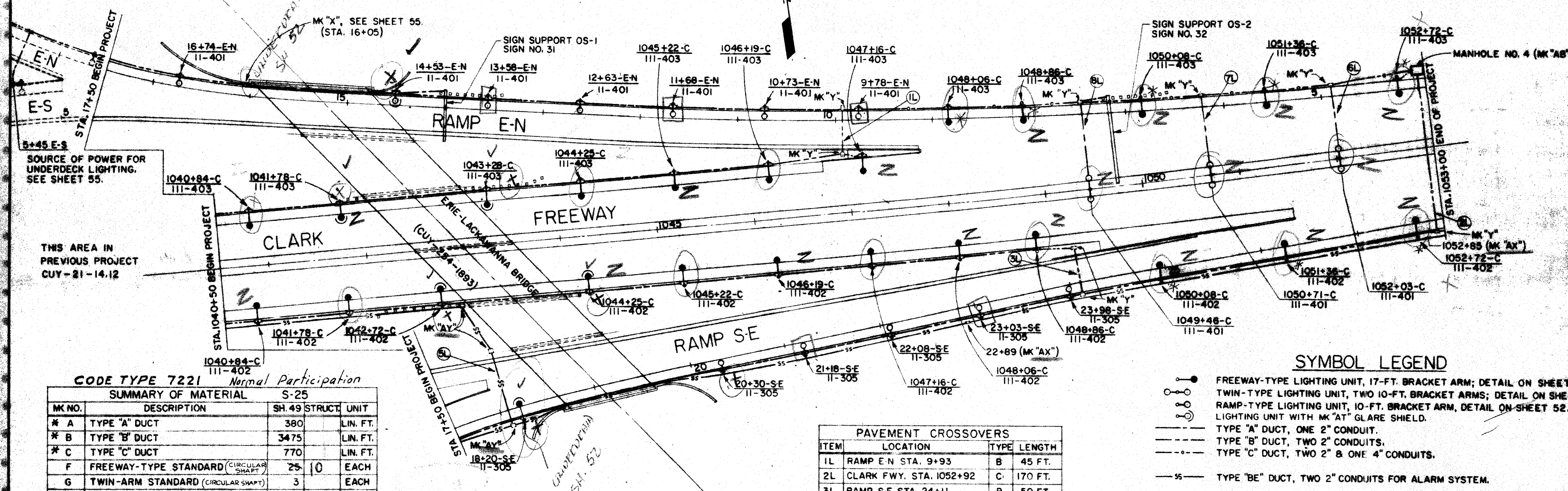
LEGEND
 HYDRANT
 VENT PIPES
 WATER METER VAULT
 POLE
 CURB
 SEWER
 GAS
 WATER
 O.B.T. (UNDERGROUND)
 C.E.I. (UNDERGROUND)
 MUNY. ELEC. (UNDERGROUND)
 R/W
 RR
 MISCELLANEOUS
 (TYPE & OWNER AS NOTED ON PLAN)

TRYGVE HOFF & ASSOCIATES
 ENGINEERS
 1922 EAST 107TH STREET CLEVELAND, OHIO

EXISTING UTILITIES
 ERIE - LACKAWANNA RAILROAD
 TO
 EAST 55th STREET

SCALE 1" = 50' DATE
 DESIGNED DRAWN TRACED CHECKED REVIEWED DATE REVISED
 HHB WF J.H.L. 2/24/64

CONT. No. 28029 SHEET ACCT. No. 1772



SYMBOL LEGEND

- FREeway-TYPE LIGHTING UNIT, 17-FT. BRACKET ARM; DETAIL ON SHEET 51.
 - ○ TWIN-TYPE LIGHTING UNIT, TWO 10-FT. BRACKET ARMS; DETAIL ON SHEET 51A.
 - ○ RAMP-TYPE LIGHTING UNIT, 10-FT. BRACKET ARM, DETAIL ON SHEET 52.
 - ○ LIGHTING UNIT WITH MK "AT" GLARE SHIELD.
 - TYPE "A" DUCT, ONE 2" CONDUIT.
 - TYPE "B" DUCT, TWO 2" CONDUITS.
 - TYPE "C" DUCT, TWO 2" & ONE 4" CONDUITS.
 - TYPE "BE" DUCT, TWO 2" CONDUITS FOR ALARM SYSTEM.
- 9+78-E-N III-401 **OR** **STATION - INITIAL OF ROADWAY**
 III-401 **ASA IES DISTRIBUTION - CIRCUIT NUMBER**

PAVEMENT CROSSOVERS

ITEM	LOCATION	TYPE	LENGTH
1L	RAMP E-N STA. 9+93	B	45 FT.
2L	CLARK FWY. STA. 1052+92	C	170 FT.
3L	RAMP S-E STA. 24+11	B	50 FT.
4L	CLARK FWY. STA.		
5L	RAMP S-E STA. 18+08	BE	80 FT.
6L	CLARK FWY. STA. 1052+03	A	80 FT.
7L	CLARK FWY. STA. 1050+71	A	85 FT.
8L	CLARK FWY. STA. 1049+46	A	90 FT.

NOTE:
* CODE SPLIT SHOWING FEDERAL PARTICIPATION AND 100% CITY COST

DUCT LINE PARTICIPATION

TYPE	FED. PARTIC.	100% CITY	TOTAL
*A	260'	120'	380'
*B	885'	2590'	3475'
*C	170'	600'	770'

NOTE 1 = TOTAL OF 4380' INCLUDES 1470' THIS SHEET (49), 1080' FOR CLARK FREEWAY, STA. 1040+50 TO STA. 1030+00 (1) 600' FOR CLARK FREEWAY, STA. 1030+00 TO STA. 1024+10 (2) 50' FOR CROSSOVER TO STA. 5+29, RAMP W-S (2) 480' FOR RAMP W-S, STA. 5+29 TO STA. 9+93 (2) 700' FOR RAMP S-E, STA. 17+50 TO STA. 10+80 (1) REFER TO (1) SHEET 129, PROJECT CUY-21-14.12 AND (2) SHEET 64, PROJECT CUY-254-18.56.

○ ELIMINATE 3 TWIN STDs.
 * NON-PERFORMED PLAN "E" TYPE. ADD NEW TYPE
 + MARK "X" TO BE LEFT IN PLACE -
 90 ALL CRICKS TO BE
 80 NON-PERFORMED.
 5/15
NOTE!
 ORIGINAL TRACING
 NOT FOUND -

CODE TYPE 7221 Normal Participation

SUMMARY OF MATERIAL S-25

MK NO.	DESCRIPTION	SH. 49	STRUCT	UNIT
* A	TYPE "A" DUCT	380		LIN. FT.
* B	TYPE "B" DUCT	3475		LIN. FT.
* C	TYPE "C" DUCT	770		LIN. FT.
F	FREeway-TYPE STANDARD (CIRCULAR SHAFT)	25	10	EACH
G	TWIN-ARM STANDARD (CIRCULAR SHAFT)	3		EACH
H	RAMP-TYPE STANDARD (CIRCULAR SHAFT)	12	7	EACH
L	POLE BASE FOUNDATION, 6 FT.	12		EACH
M	POLE BASE FOUNDATION, 8 FT.	25	10	EACH
N ₁	LUMINAIRE, 400 W., TYPE III	30		EACH
N ₂	LUMINAIRE, 400 W., TYPE II	13		EACH
R	UNDERDECK LIGHTING		LUMP	LUMP SEE SHEET 55.
X	SINGLE PULLBOX (LIGHTING)	38		EACH
Y	DOUBLE PULLBOX (LIGHTING)	8		EACH
AB	MANHOLE, 8' x 11', COMPLETE	1		EACH SEE SHEET 54.
	Structure grounding system		LUMP	LUMP
AG	WIRE, NO. 4, 600 V.	19420		LIN. FT.
* AM	ALARM CABLE, 25-PAIR	4380		LIN. FT. SEE NOTE 1.
AT	GLARE SHIELD	6		EACH *100% City
AX	SINGLE PULLBOX (ALARM)	2		EACH
AY	DOUBLE PULLBOX (ALARM)	3		EACH
BE	TYPE "B" DUCT (ALARM)	1430		LIN. FT.
BL	SPECIAL FOUNDATION - ISLAND	3	0	EACH
	PERFORMANCE TEST		LUMP	LUMP
	Special Freeway Light Standard	5		
ALTERNATE BID ITEMS				
F (Alt)	FREeway TYPE STANDARD (Other than Circular Shaft)	25		EACH
G (Alt)	TWIN ARM STANDARD (Other than Circular Shaft)	3		EACH
H (Alt)	RAMP TYPE STD. (Other than Circular Shaft)	12		EACH

z-out

I-9 DRAINAGE

MK NO.	SH. NO.	UNIT
AK	24	LIN. FT.

Non-perform MK 'F' standards
 " " MK 'M' foundations
 " " MK 'N₁' luminaires
 " " MK 'L' foundations
 " " MK 'N₂' luminaires

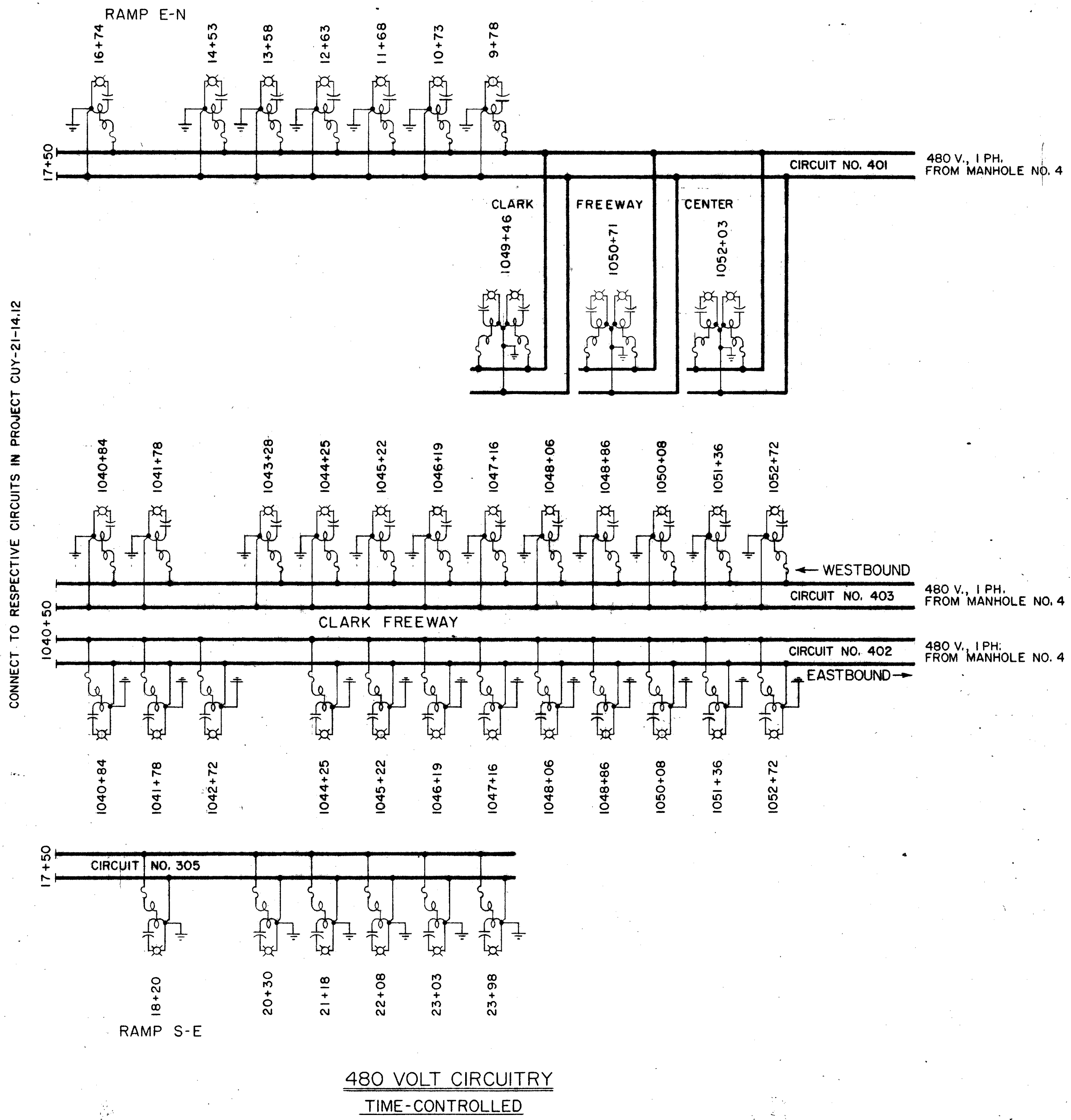
TRYGVE HOFF & ASSOCIATES
 ENGINEERS
 1922 EAST 107TH STREET CLEVELAND, OHIO

LIGHTING PLAN
 CLARK FREEWAY
 EAST OF WILLOW INTERCHANGE

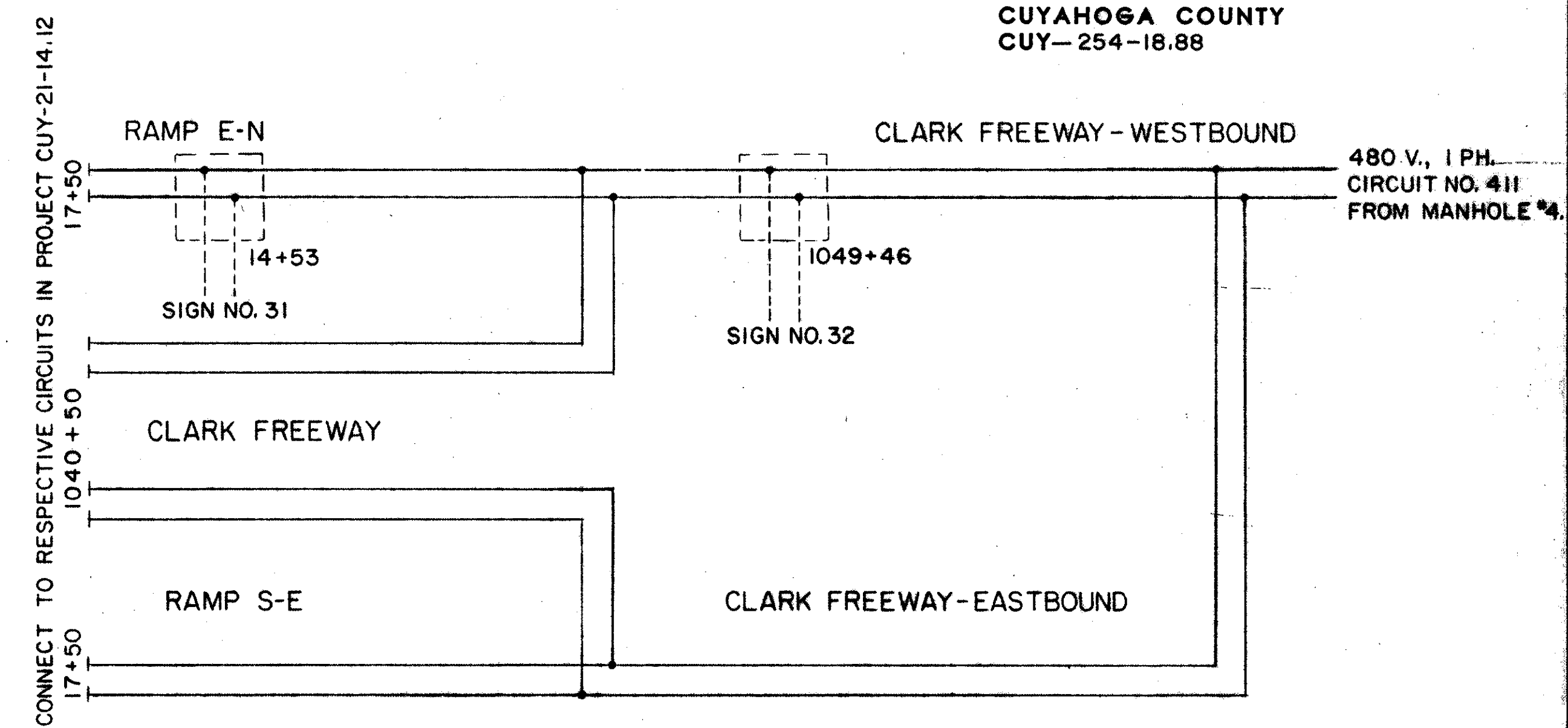
SCALE 1" = 50' DATE SEPT. 11, 1963

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
SGF	SGF		PTB		

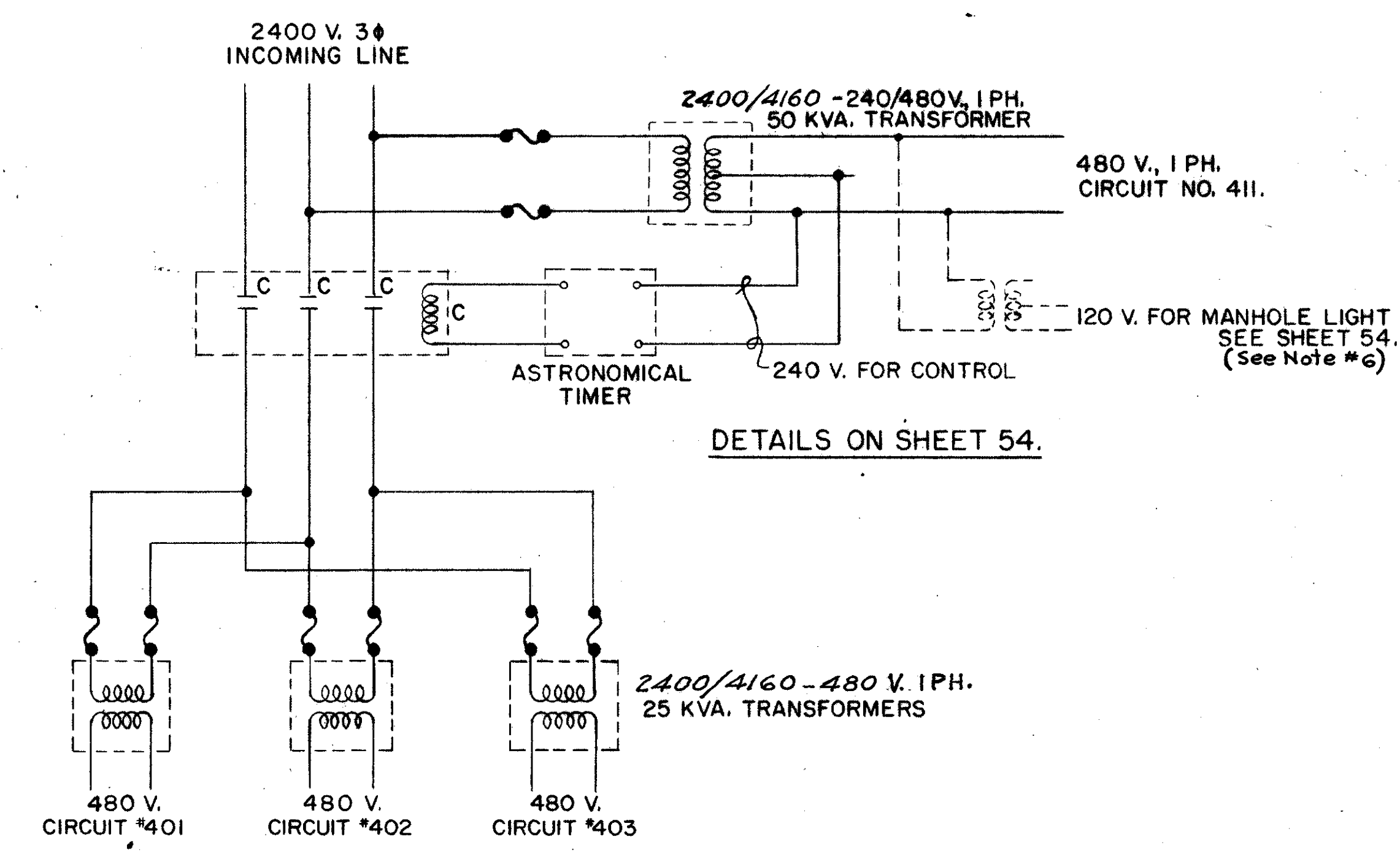
CUYAHOGA COUNTY
CUY-254-18.88



480 VOLT CIRCUITRY
TIME-CONTROLLED



AUXILIARY 480 VOLT CIRCUITRY
NOT TIME-CONTROLLED



MANHOLE NO. 4 - POWER CONNECTIONS

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

LIGHTING SCHEMATIC
CLARK FREEWAY
EAST OF WILLOW INTERCHANGE

SCALE NONE DATE SEPT. 11, 1963

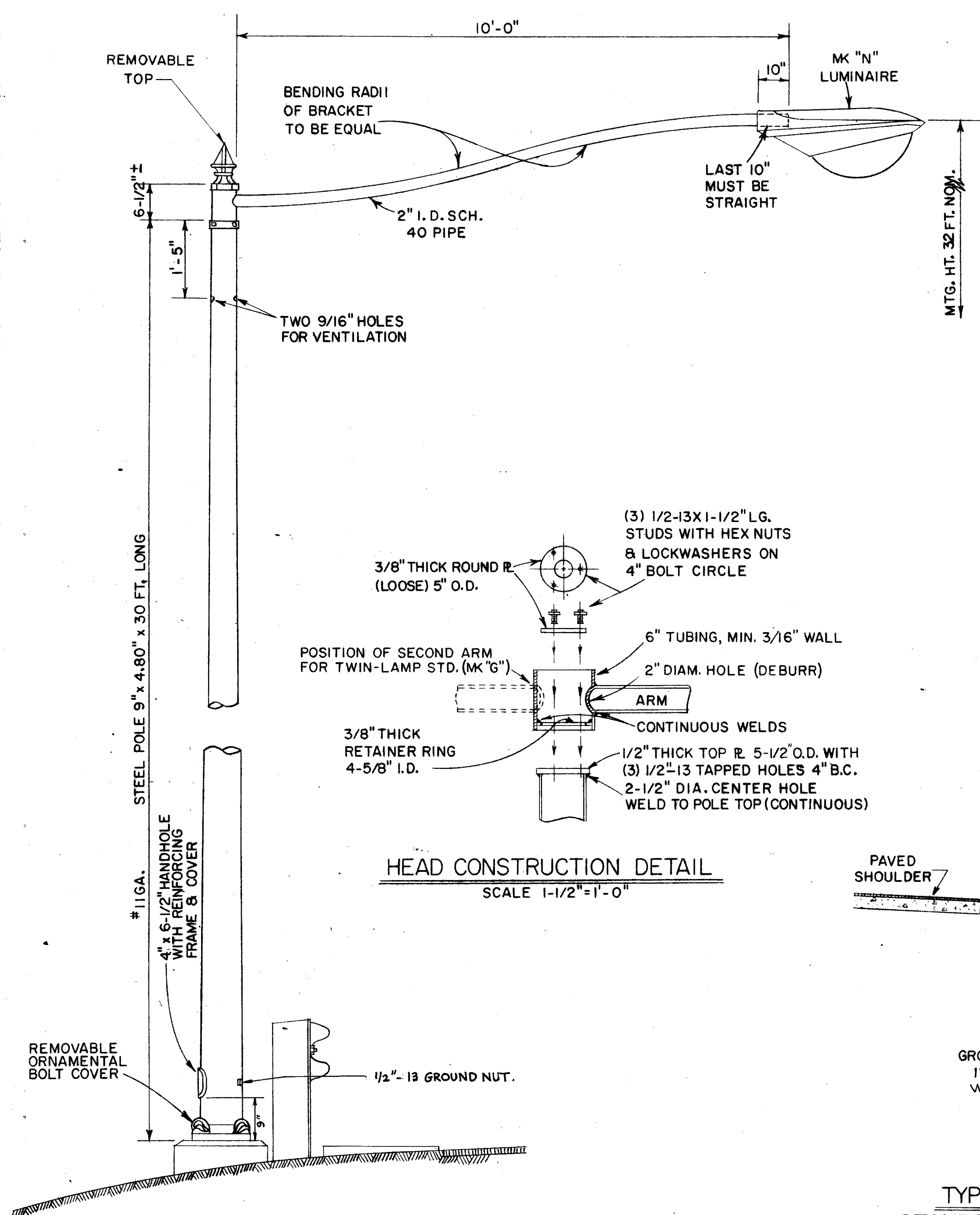
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SGF	SGF		PTB			

Revised 5-8-64

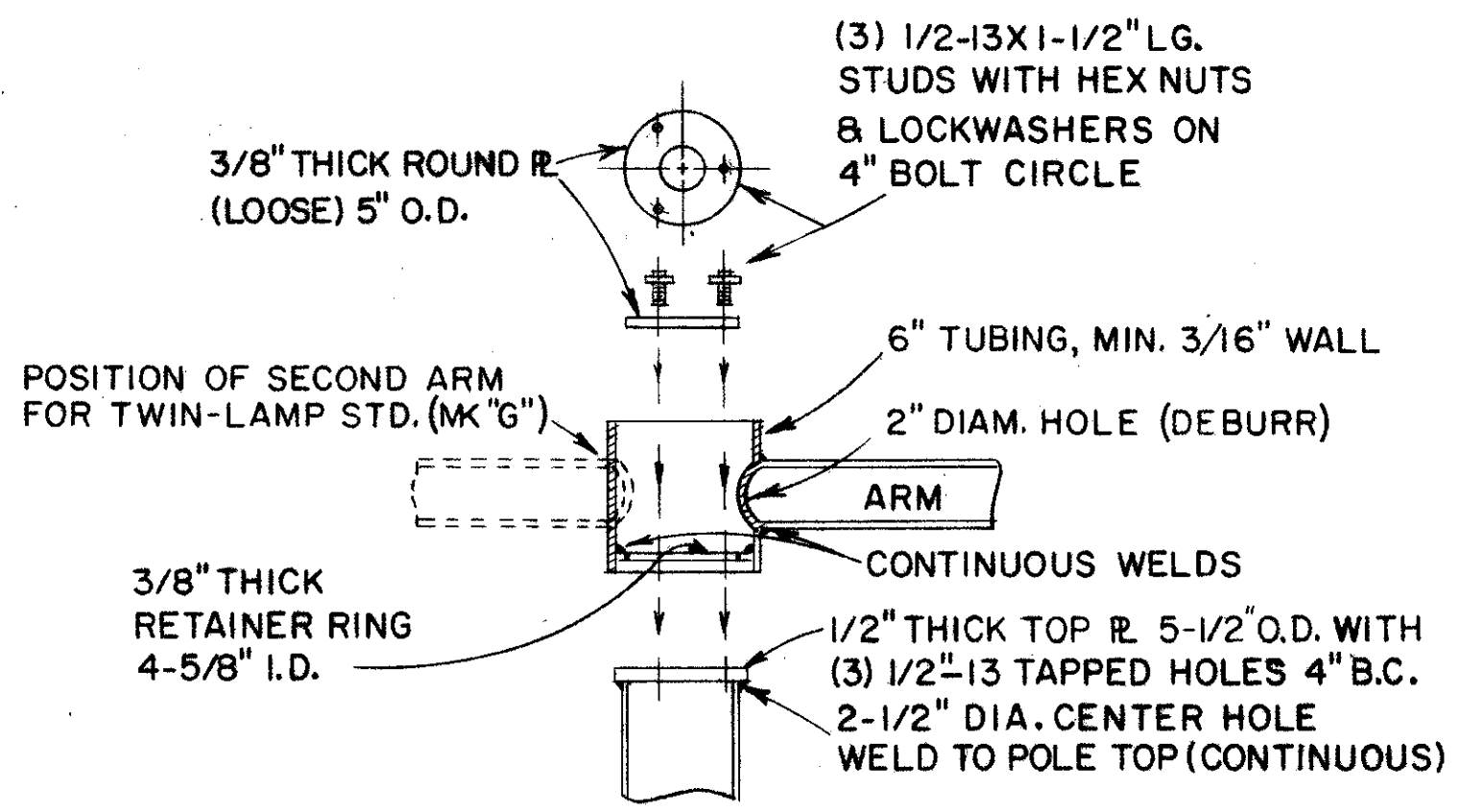
CONT. No. 58019 SHEET ACCT. No. 5055

CONNECT TO RESPECTIVE CIRCUITS IN PROJECT CUY-21-14.12

CONNECT TO RESPECTIVE CIRCUITS IN PROJECT CUY-21-14.12

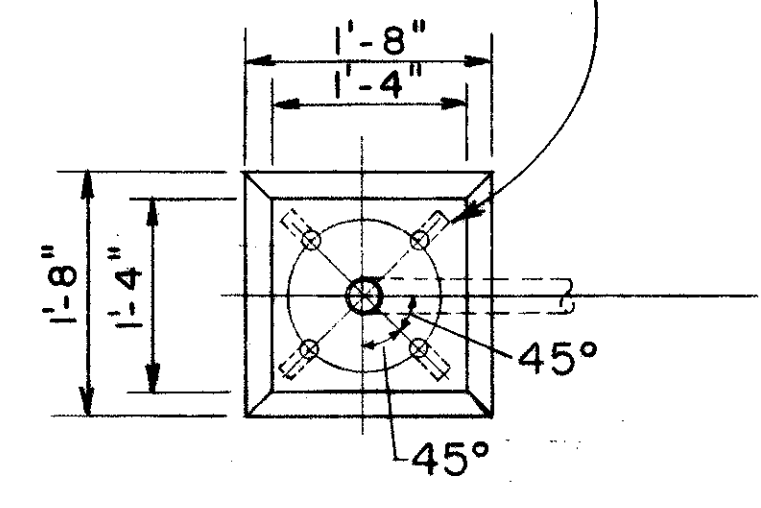


TYPICAL LAMP STANDARD
MK "H"
SCALE 3/4" = 1'-0"

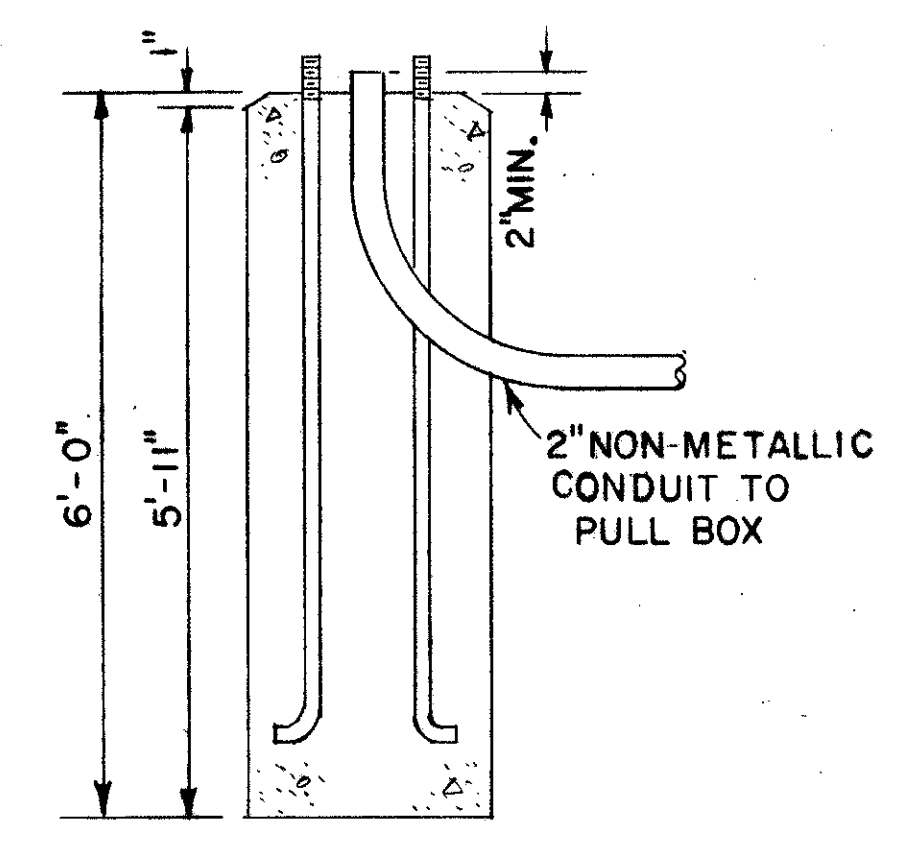


HEAD CONSTRUCTION DETAIL
SCALE 1-1/2" = 1'-0"

FOUR 1-1/4" ANCHOR RODS 60" OVERALL LENGTH ON 12-1/2" BOLT CIRCLE. RODS MUST PROJECT 3-1/16" ABOVE BASE.

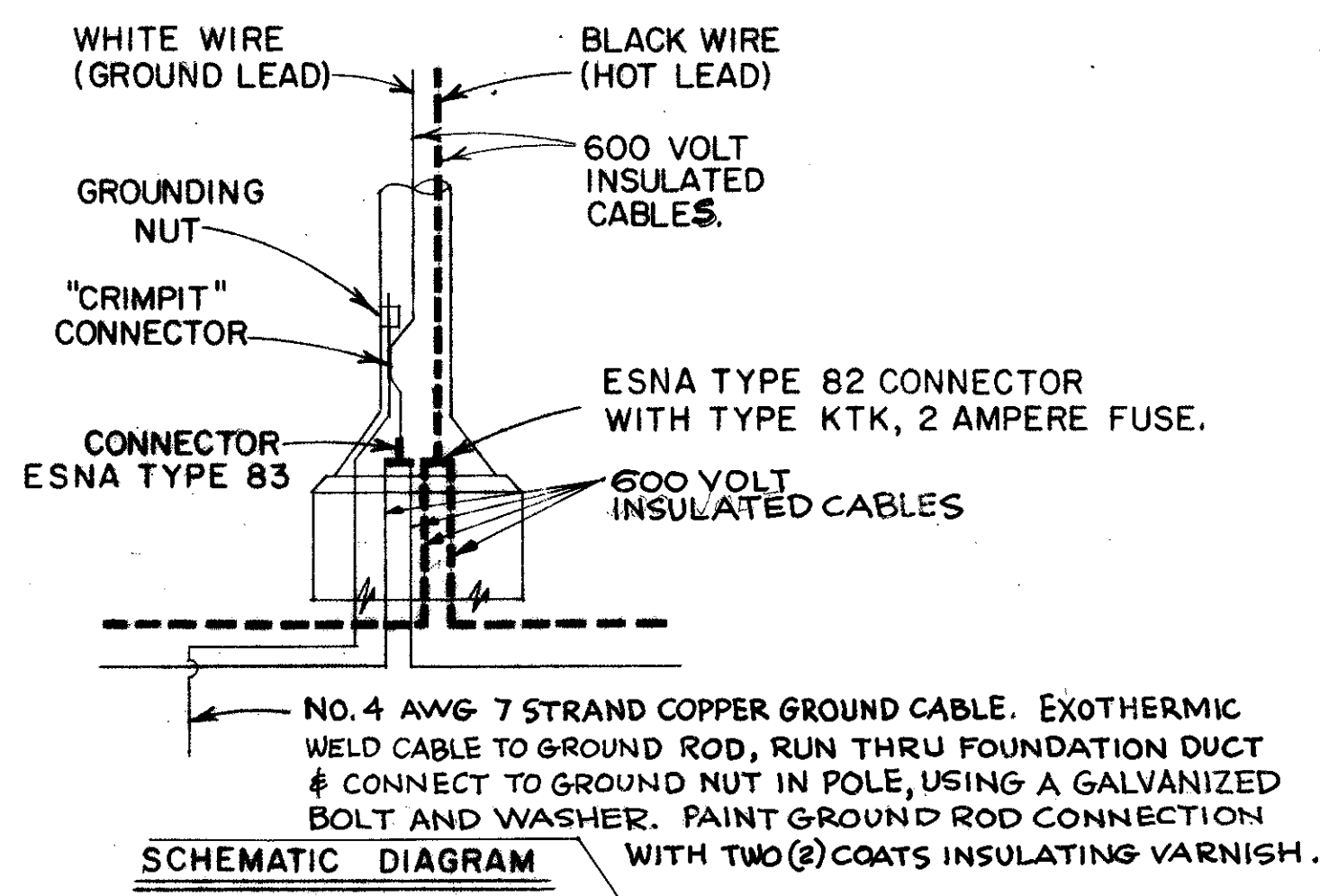


PLAN

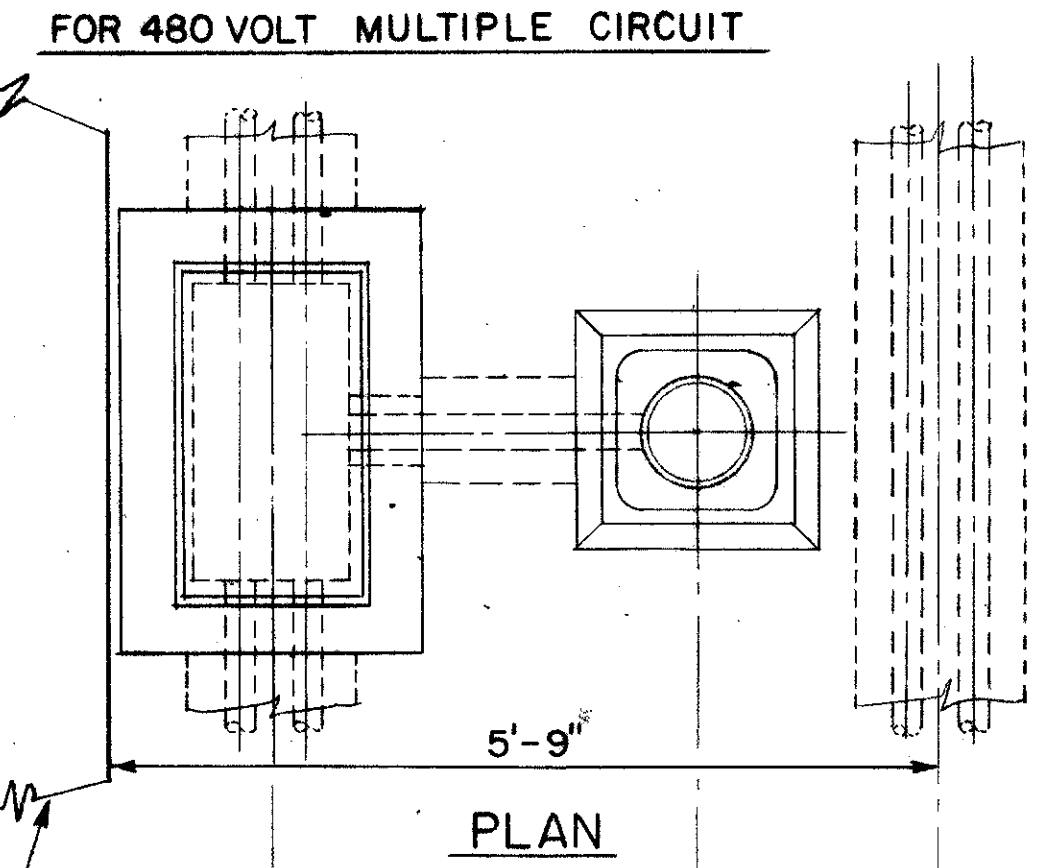


SECTION

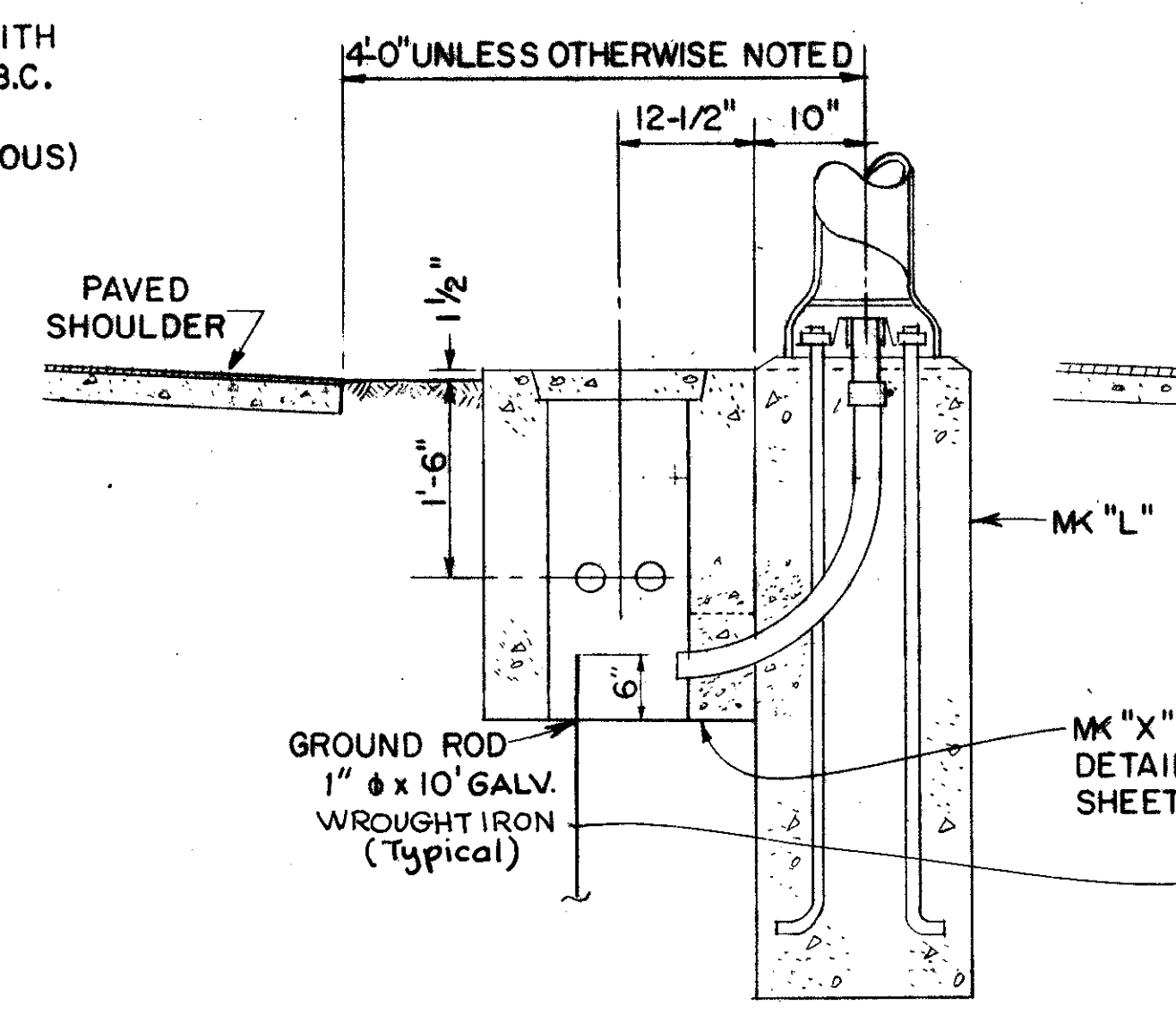
LAMP STANDARD FOUNDATION MK "L"
SCALE 3/4" = 1'-0"



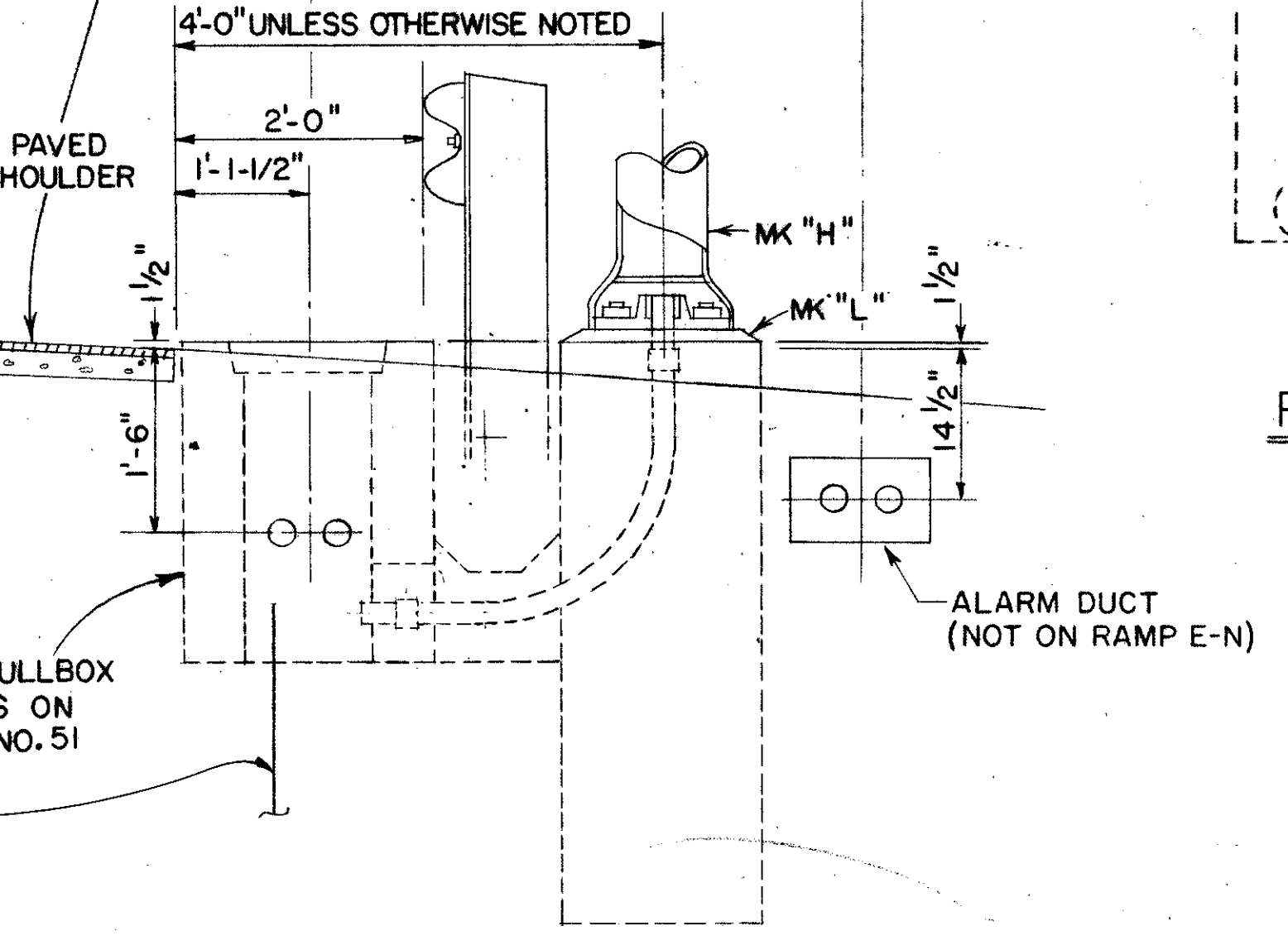
SCHMATIC DIAGRAM
ELECTRICAL WIRING
AT LIGHT POLE
FOR 480 VOLT MULTIPLE CIRCUIT



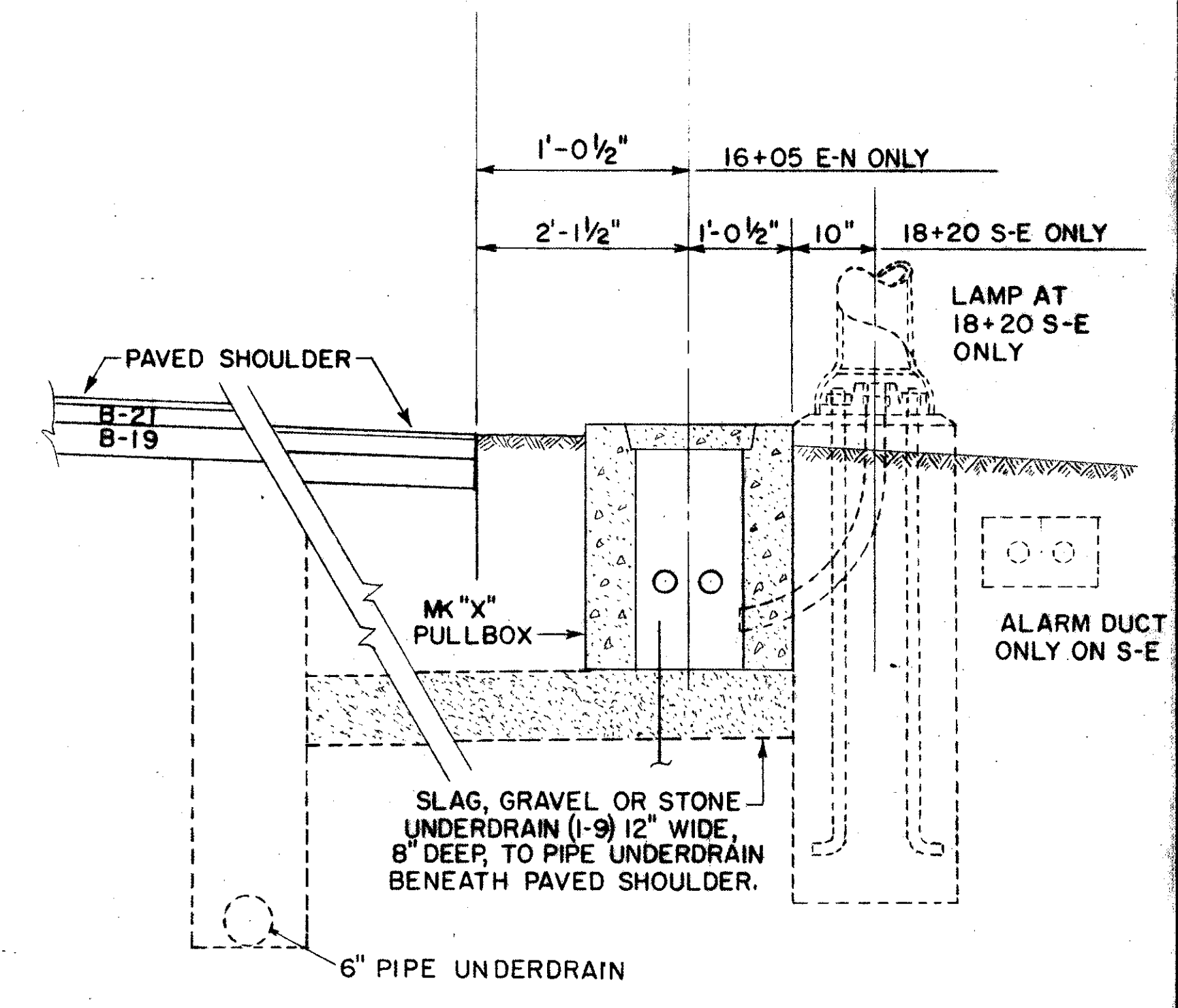
PLAN



TYPICAL ARRANGEMENT-LAMP
STANDARD & PULLBOX-NO GUARD RAIL
SCALE 3/4" = 1'-0"



TYPICAL ARRANGEMENT-LAMP
STANDARD & PULLBOX WITH GUARD RAIL
SCALE 3/4" = 1'-0"



PULLBOX WITH UNDERDRAIN
SCALE 3/4" = 1'-0"
STA. 18+20 RAMP S-E
STA. 16+05 RAMP E-N

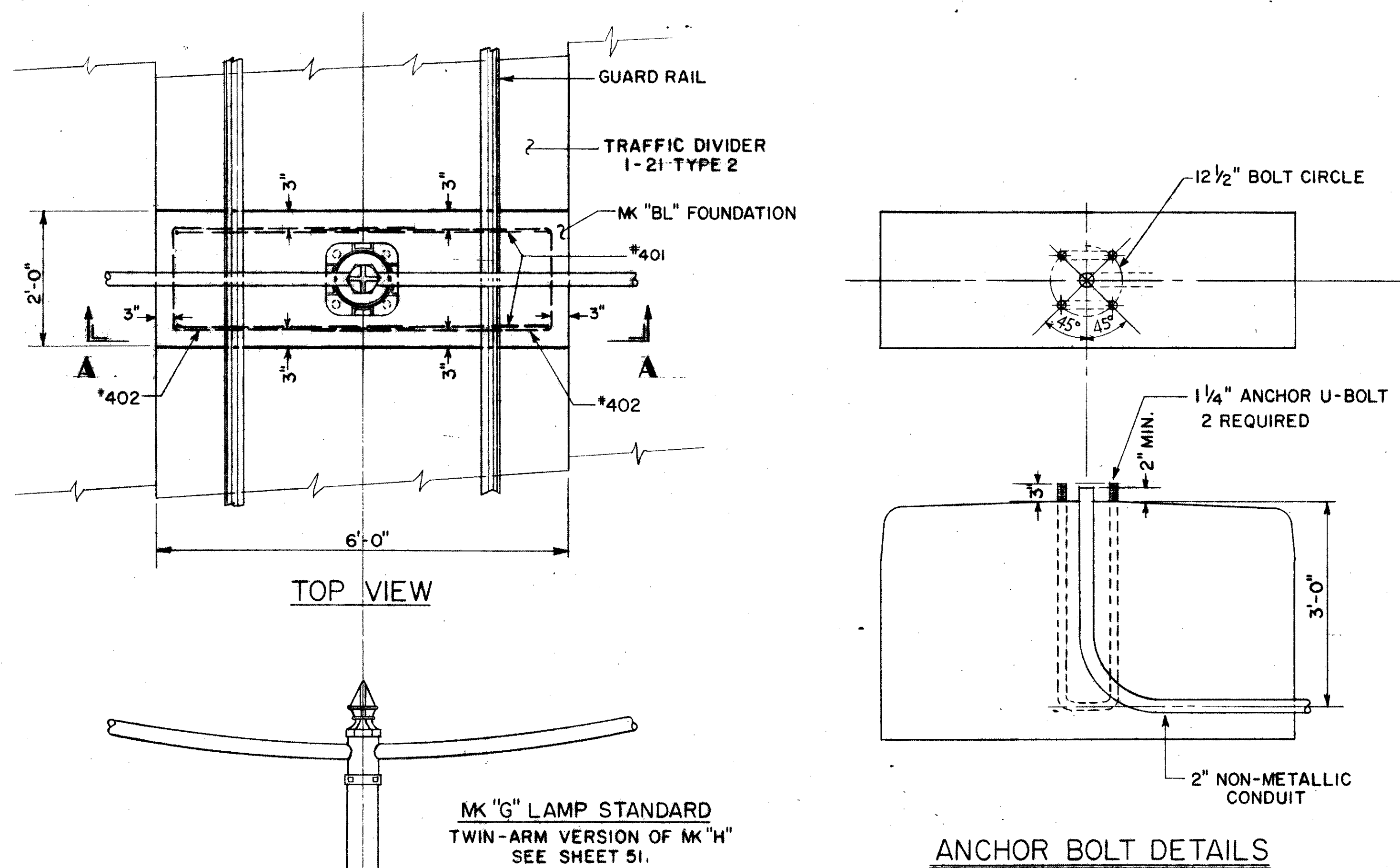
TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

LIGHTING DETAILS
CLARK FREEWAY
EAST OF WILLOW INTERCHANGE

SCALE AS NOTED DATE SEPT. 11, 1963

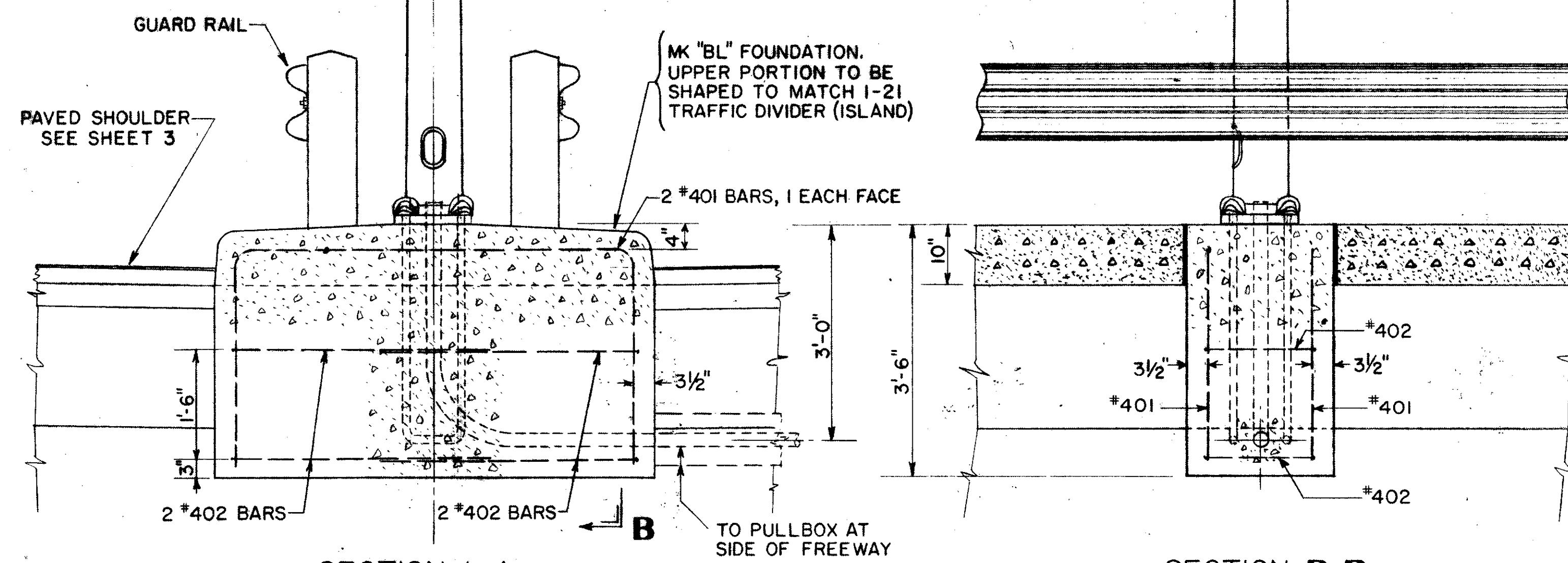
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SGF	API	-	PTB		4-17-64	RL-pb

CONT. No. 58019 SHEET ACCT. No. 5053



MK "G" LAMP STANDARD
TWIN-ARM VERSION OF MK "H"
SEE SHEET 51.

REINFORCING BAR SCHEDULE					
MARK	SIZE	NO. REQ.	L'GTH	WGT	BENDING DIAGRAMS
401	4	2	11'-2 1/2"	15	
402	4	4	8'-6"	23	
TOTAL			38		



ARRANGEMENTS FOR LAMPS IN CENTER OF FREEWAY

SCALE 3/4" = 1'-0"

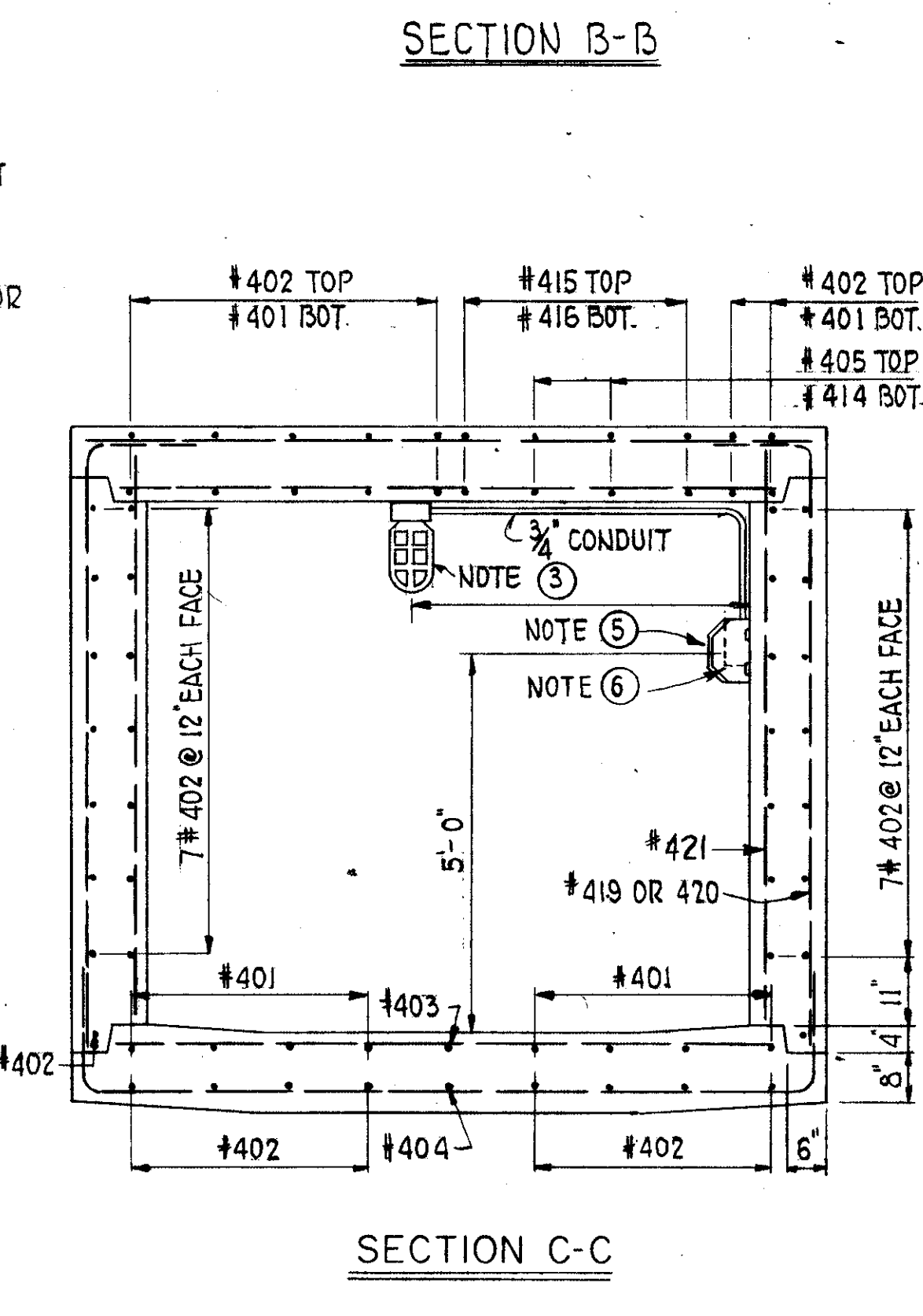
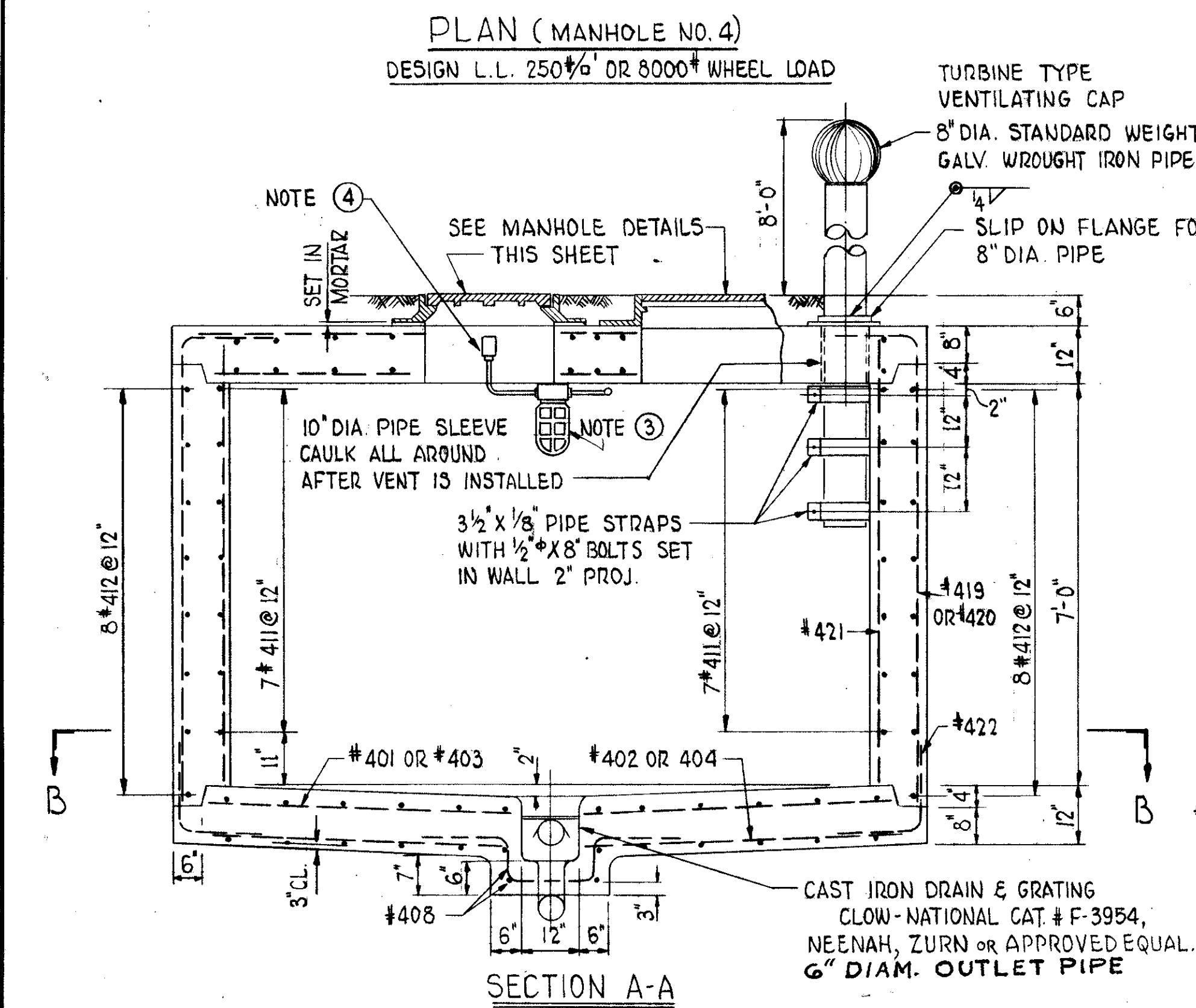
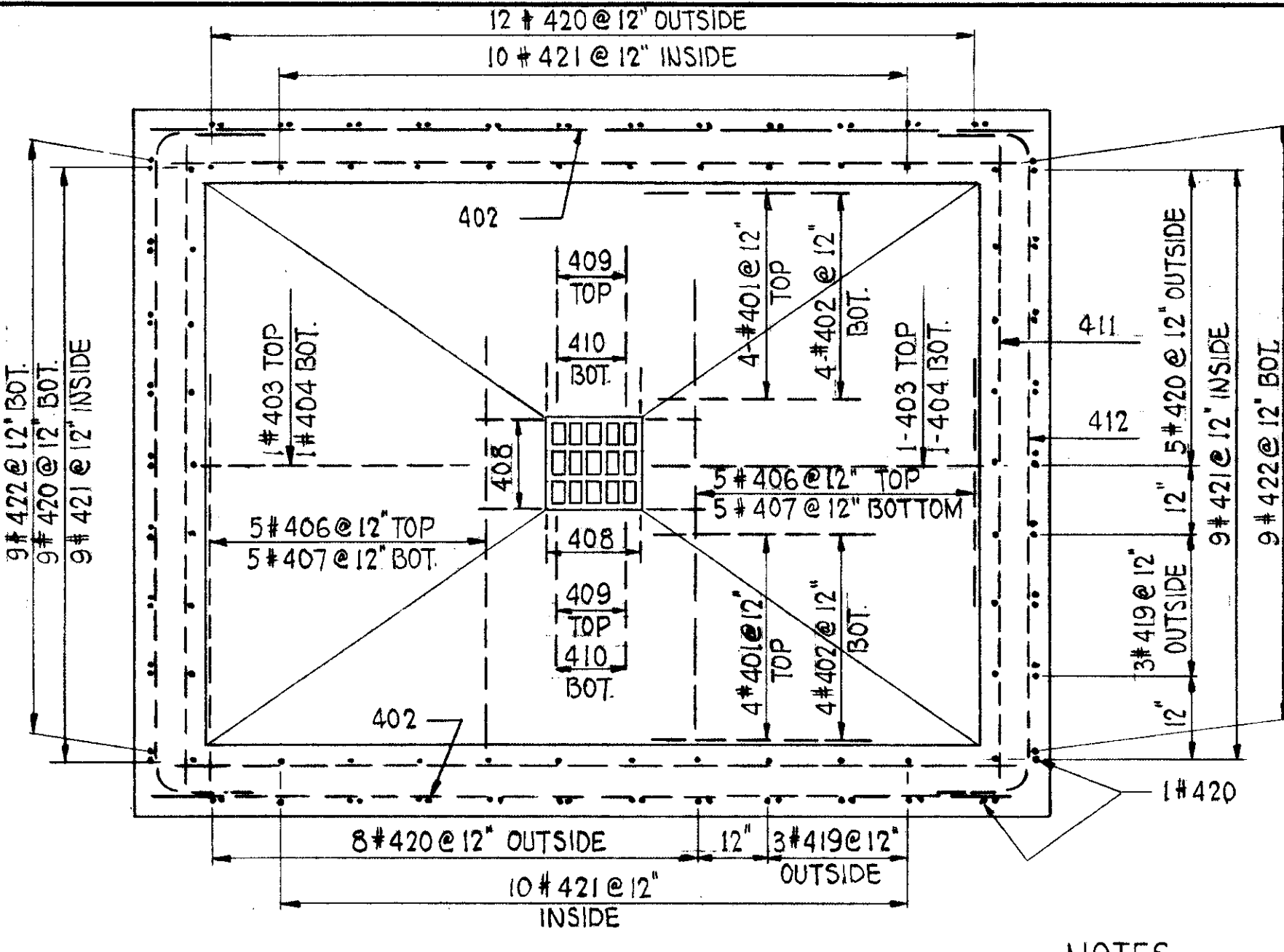
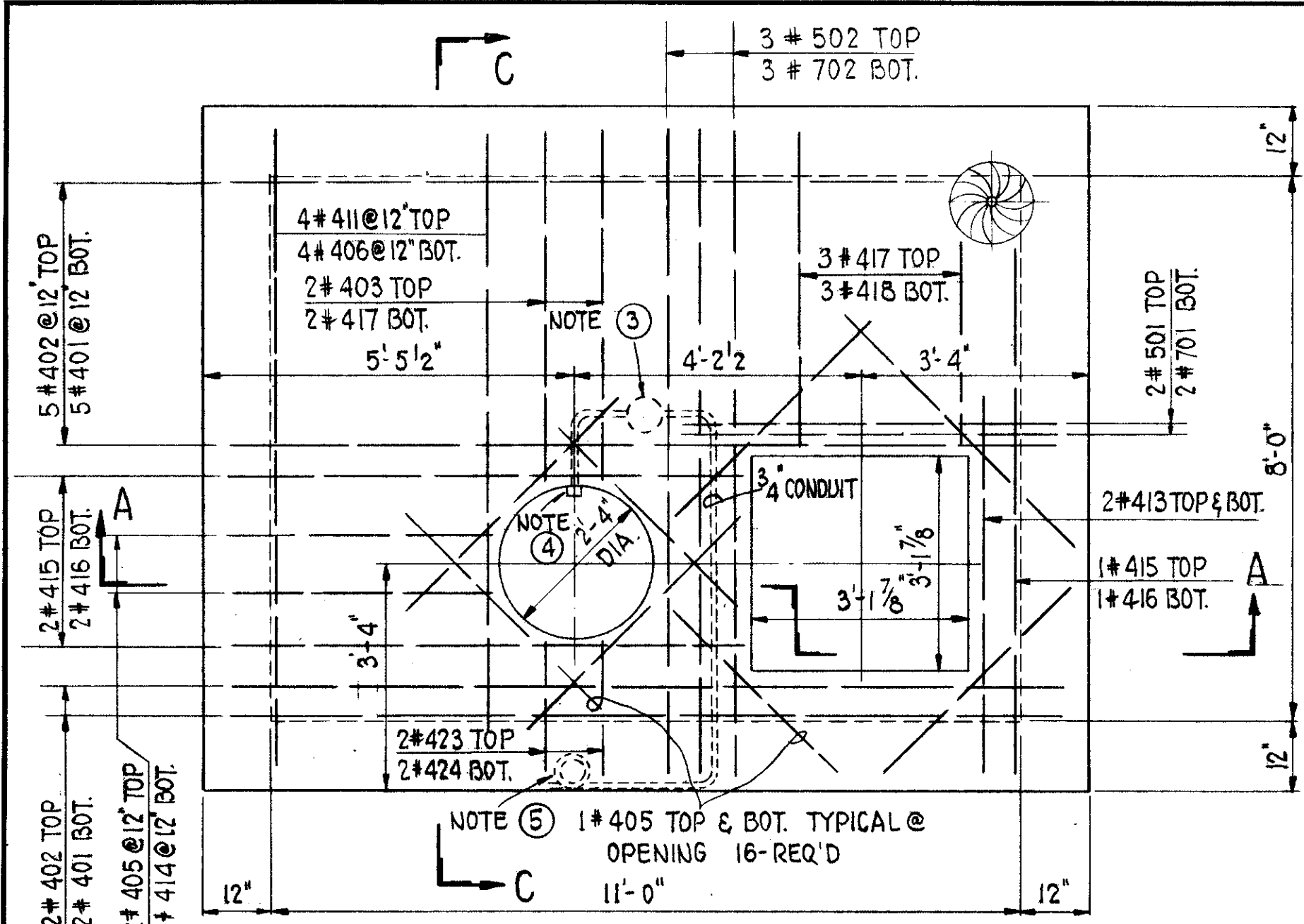
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TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

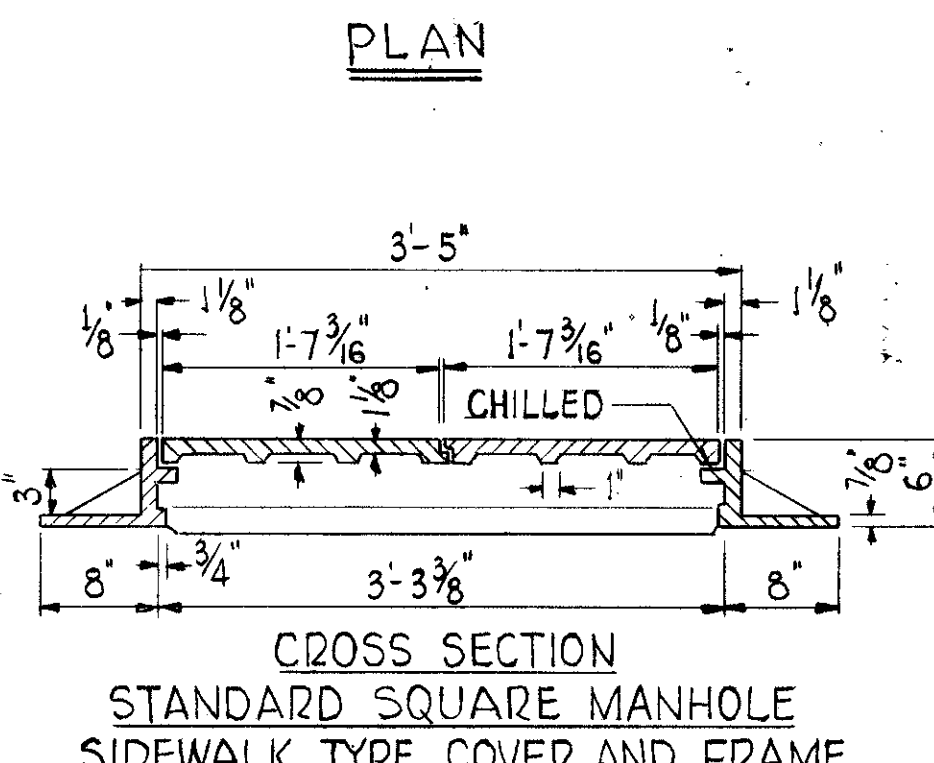
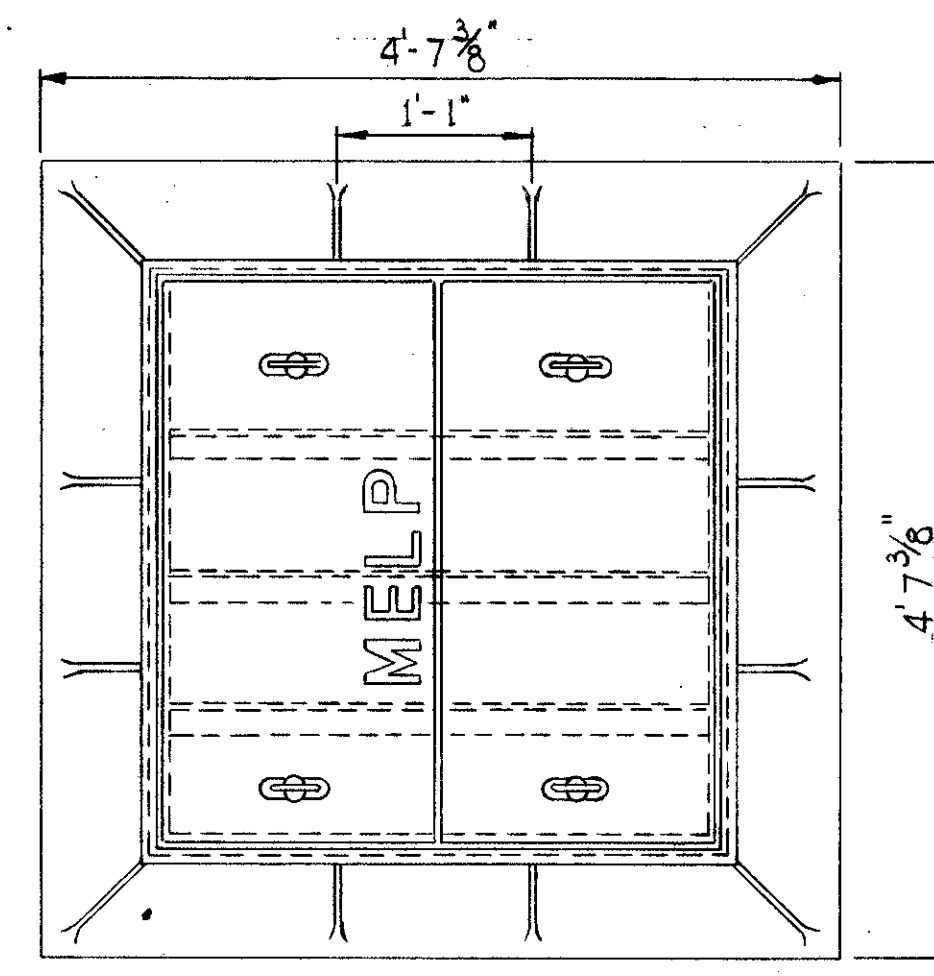
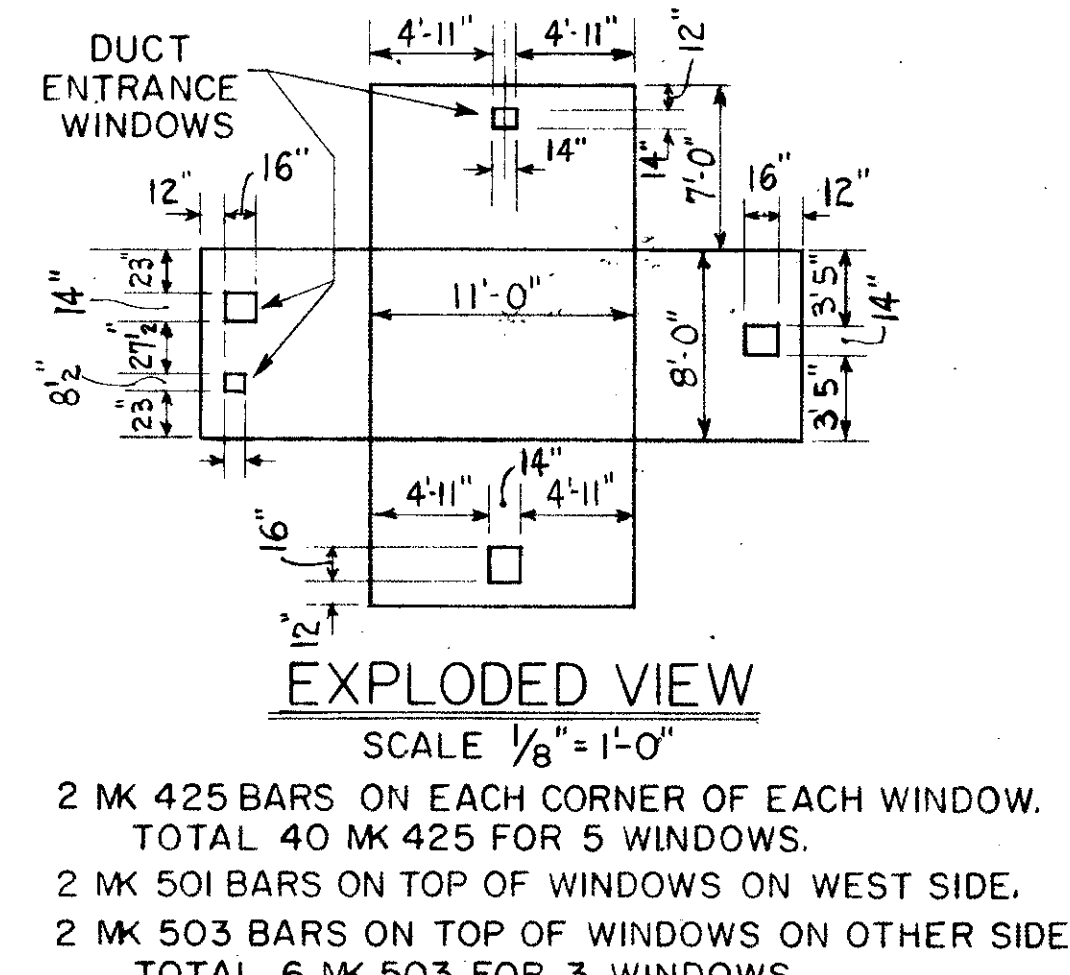
LIGHTING DETAILS
CLARK FREEWAY
WEST OF WILLOW INTERCHANGE

SCALE AS NOTED DATE SEPT. 11, 1963

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
SGF	SGF		PTB			



REINFORCING BAR SCHEDULE										BENDING DIAGRAM			
MARK	SIZE	NO. REQ'D	L'GTH	TYPE	WGT	MARK	SIZE	NO. REQ'D	L'GTH	TYPE	WGT		
401	#4	15	11'-8"	STR	117	417	#4	5	4'-9"	STR	16		
402		45	12'-8"	STR	381	418		3	4'-3"	STR	9		
403		4	5'-2"	STR	14	419		6	9'-6 1/2"	B	38		
404		2	5'-8"	STR	8	420		36	9'-1 1/2"	B	219		
405		18	4'-0"	STR	48	421		38	7'-9 1/2"	STR	197		
406		14	8'-8"	STR	81	422		18	2'-5"	B	29		
407		10	12'-6"	B	84	423		2	2'-0"	STR	3		
408		4	6'-0"	B	16	424		2	1'-6"	STR	2		
409		4	3'-8"	STR	10	425		40	2'-0"	STR	54		
410		4	5'-7"	B	15	501	#5	4	5'-6"	STR	23		
411		18	9'-8"	STR	116	502	#5	3	9'-8"	STR	30		
412		16	11'-8"	B	125	503	#5	6	3'-0"	STR	19		
413		2	5'-6"	STR	7	701	#7	2	5'-6"	STR	22		
414		2	3'-6"	STR	5	702	#7	3	8'-8"	STR	53		
415		3	7'-9"	STR	16								
416		3	7'-3"	STR	15								TOTAL



EQUIPMENT LEGEND

- OIL CUTOFF SUBWAY TYPE 100A. 5.2 KV WITH EXPANSION CHAMBER AND DETACHABLE WIPING SLEEVE BUSHING FOR LEAD COVERED CABLE REQ'D 8.
- 25 KVA SINGLE PHASE SUBWAY TYPE DISTRIBUTION TRANSFORMER OIL FILLED ²⁴⁰⁰/₄₁₆₀ - 240/480 V. 60CYCLE WITH (2) 2 1/2 PERCENT TAPS ABOVE AND (2) 2 1/2 PERCENT TAPS BELOW NORMAL. REQ'D 3
- 50 KVA SINGLE PHASE CONTROL TRANSFORMER OIL FILLED ²⁴⁰⁰/₄₁₆₀ - 240/480 VOLT, 60 CYCLE, SUBWAY TYPE, WITH (2) 2 1/2 PERCENT TAPS ABOVE AND (2) 2 1/2 PERCENT TAPS BELOW NORMAL. REQ'D 1.
- OIL SWITCH, 3 POLE 2500VOLT 60AMP., SOUTH BEND CPM-3-120 SPEC. NO. 6069A. REQ'D 1.
- TIMER - SANGAMO ELECTRIC WZGL 21, TORK 7200ZL, OR APPROVED EQUAL WITH RESERVE MAIN SPRING OPERATION TO PROVIDE ACCURATE TIMING DURING POWER OUTAGES UP TO 10 HOURS DURATION, WITH ASTRONOMICAL DIAL AND ADJUSTED FOR CLEVELAND LATITUDE REQ'D 1.

NOTE A; THE CONTROL TRANSFORMER [3], OIL SWITCH [4], TIMER [5] AND TWO OF THE OIL CUTOFFS [1] ARE TO BE FURNISHED BUT NOT MOUNTED BY THE CONTRACTOR

NOTE B; THE ABOVE EQUIPMENT MUST CONFORM TO THE STANDARDS OF DIVISION OF LIGHT AND POWER OF THE CITY OF CLEVELAND.

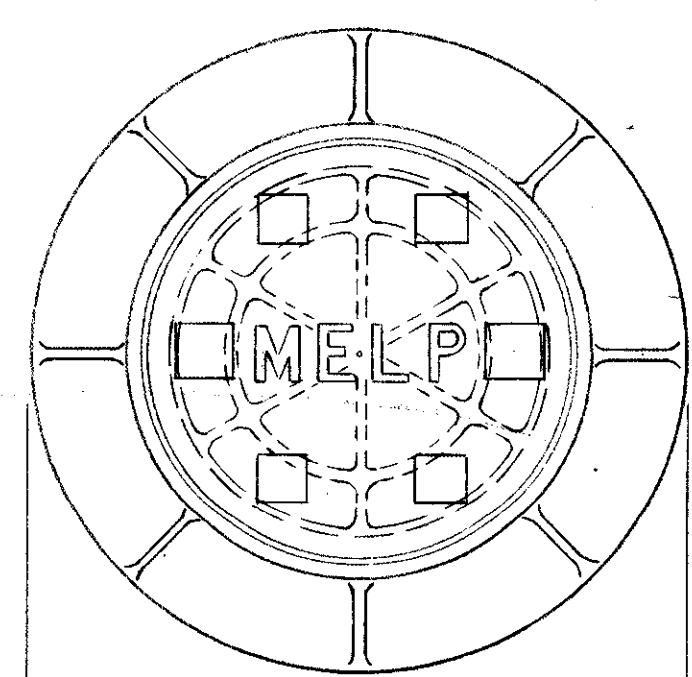
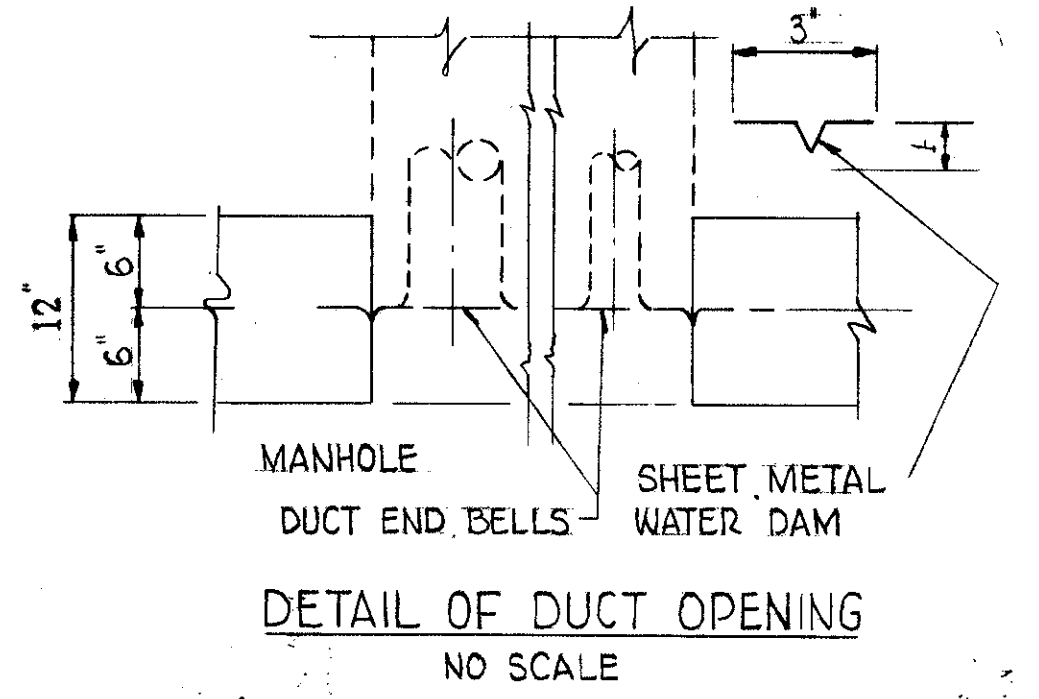
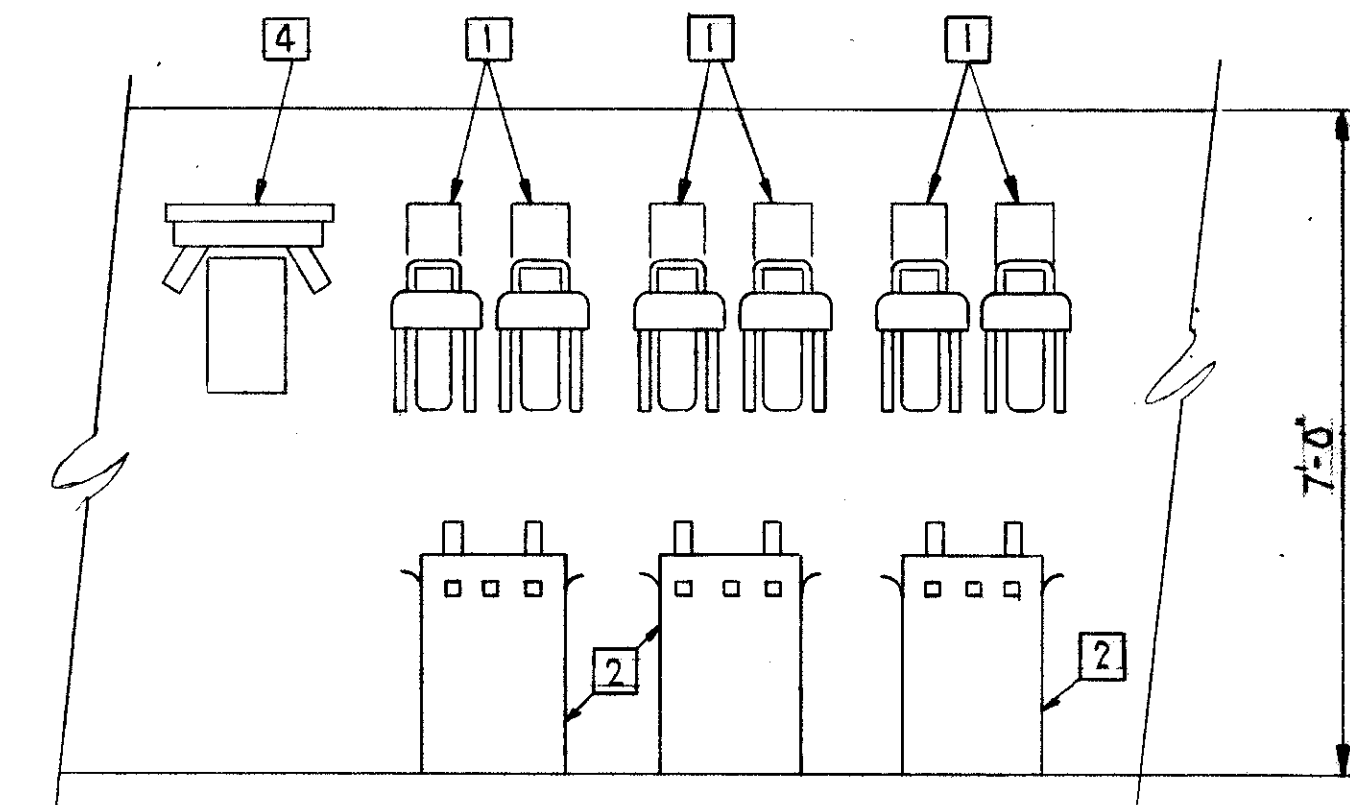
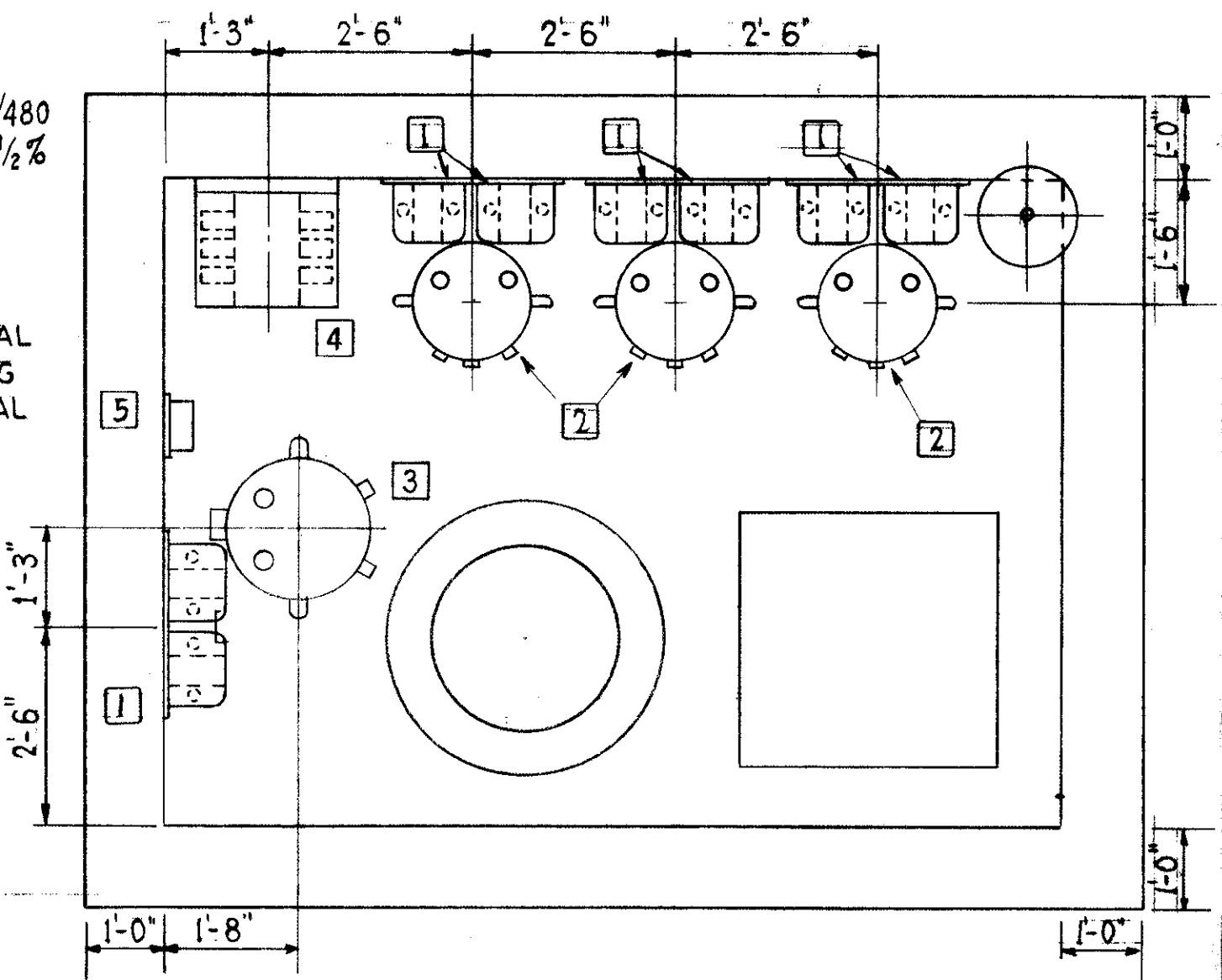
NOTES -

- FOR GROUNDING, 2-1" DIAM. X 10'-0" GALV. WROUGHT IRON GND. ROD SHALL BE PLACED IN DIAGONALLY OPPOSITE CORNERS OF THE VAULT, WITH 6' OF THE EXTENDING ABOVE THE FLOOR. ADDITIONAL GROUND RODS SHALL BE USED, IF REQUIRED, TO INSURE NOT OVER 5-OHMS RESISTANCE TO GROUND.
- THE TOP AND SIDES OF THE VAULT SHALL BE PROVIDED WITH TYPE "B" WATERPROOFING ACCORDING TO OHIO STANDARD CONSTRUCTION AND MATERIAL SPECIFICATIONS. FOR THE FLOOR VAPOR BARRIER A 0.004 POLYETHYLENE FILM SHALL BE APPLIED OVER THE SUB-GRADE. THE FILM SHALL NOT BE LAPPED LESS THAN 6" WITH THE TOP LAP PLACED IN DIRECTION OF THE CONCRETE.
- VAPORTIGHT LIGHT FIXTURE; APPLETON CAT. # VC-2075 G, KILLARK CAT. # VUC GG-2-200, OR APPROVED EQUAL.
- WEATHERPROOF TOGGLE SWITCH; APPLETON CAT. # REA-IPS, KILLARK CAT. # REA-E1, OR APPROVED EQUAL
- CIRCUIT BREAKER CONDULET; CROUSE HINDS CAT. # EFDC2515G, KILLARK CAT. # XCBRT-218-215, OR APPROVED EQUAL.
- LIGHTING TRANSFORMER 250VA, 480-120/240V. GENERAL ELECTRIC NO. 9T51Y7 (CITY STANDARD), WESTINGHOUSE, LINE MATERIALS, OR APPROVED EQUAL.

STRUCTURAL NOTE

CONCRETE SHALL BE CLASS "C".

REINFORCING STEEL SHALL BE A MINIMUM OF 2" CLEAR FROM FACE OF CONCRETE, UNLESS NOTED OTHERWISE.



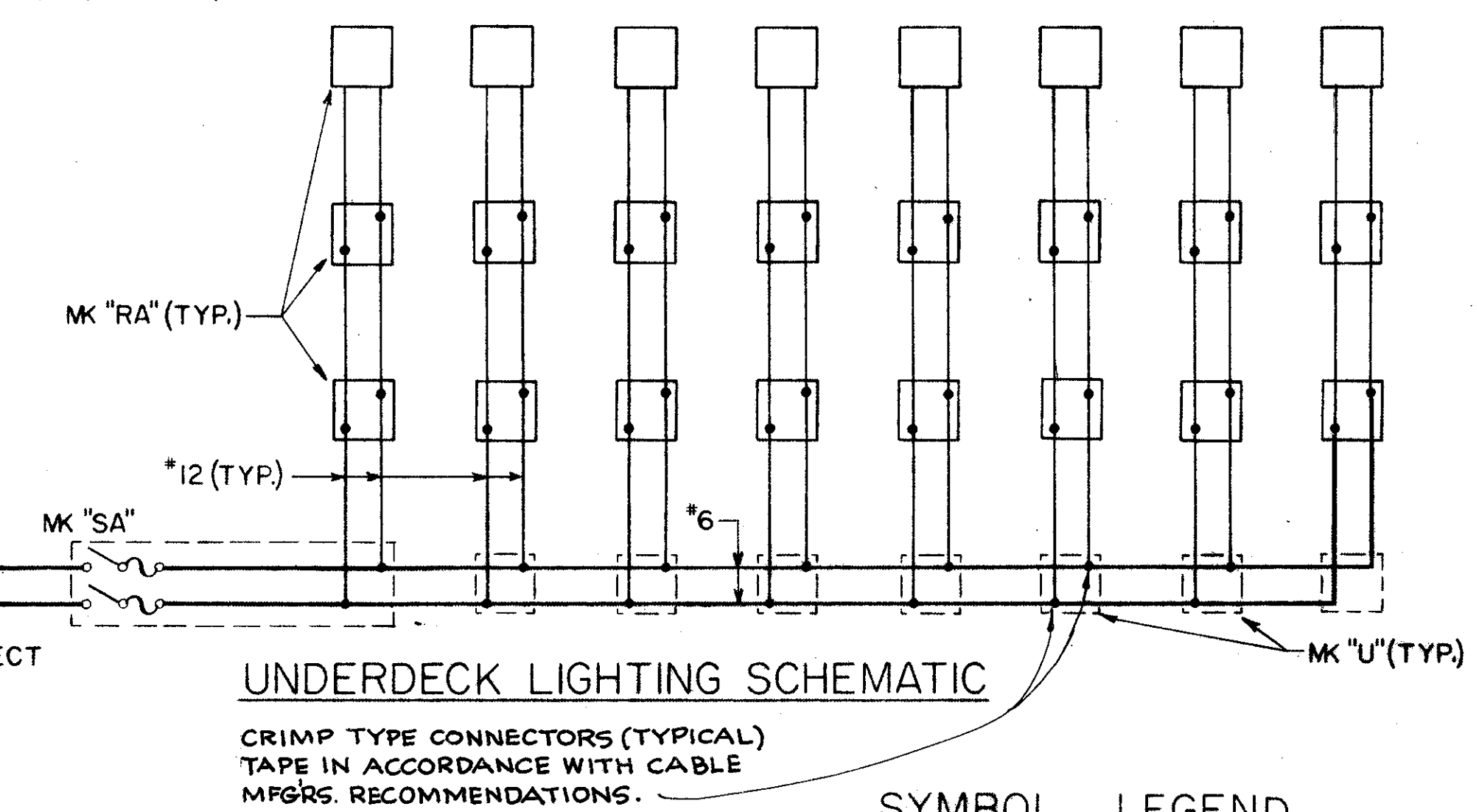
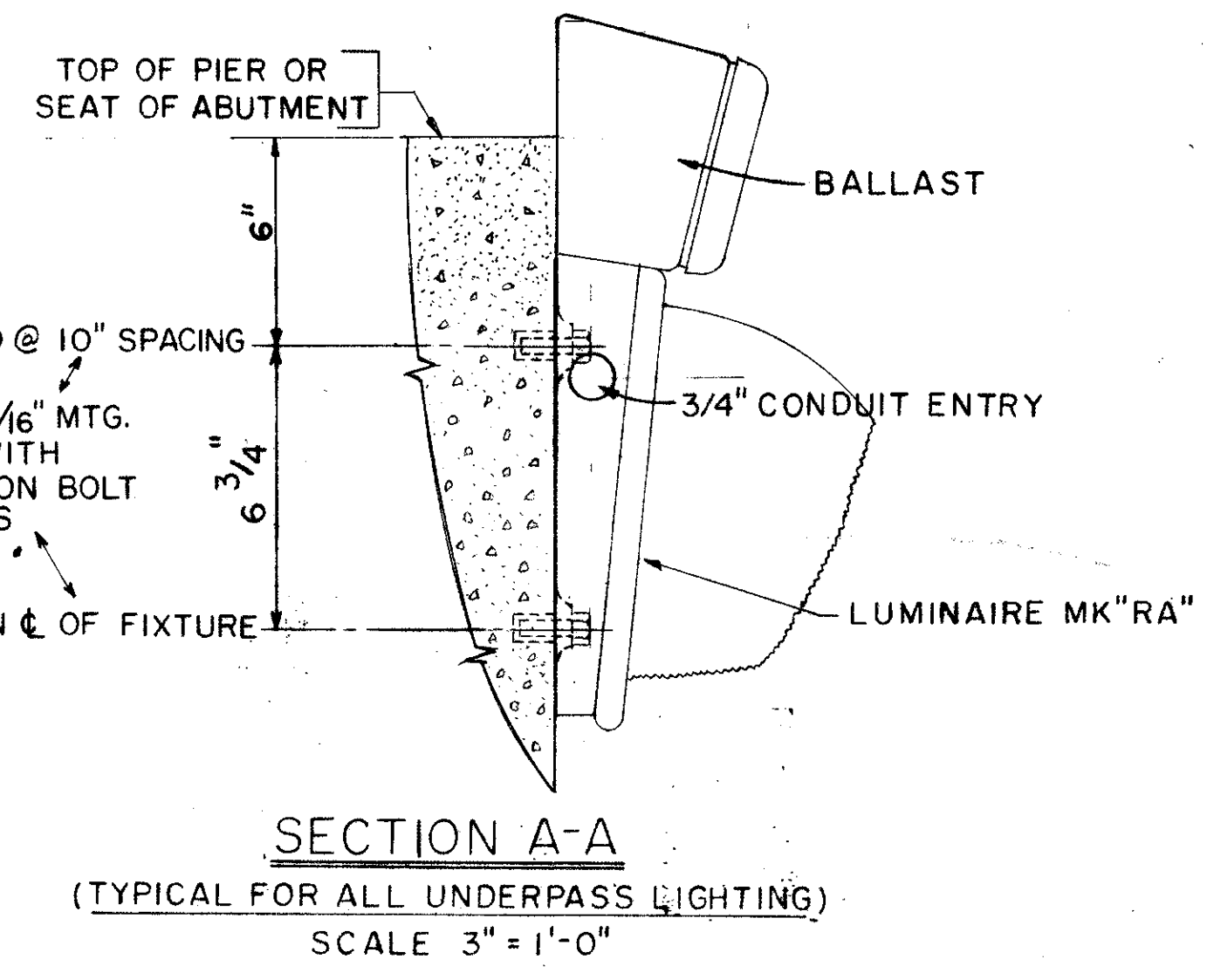
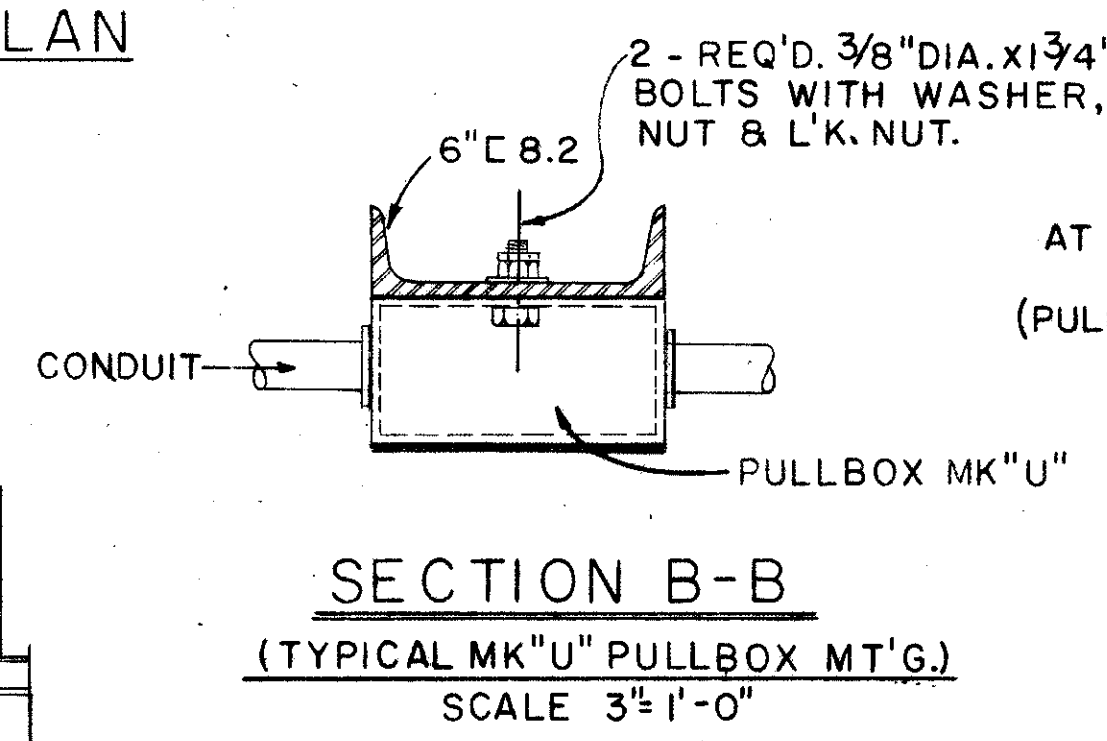
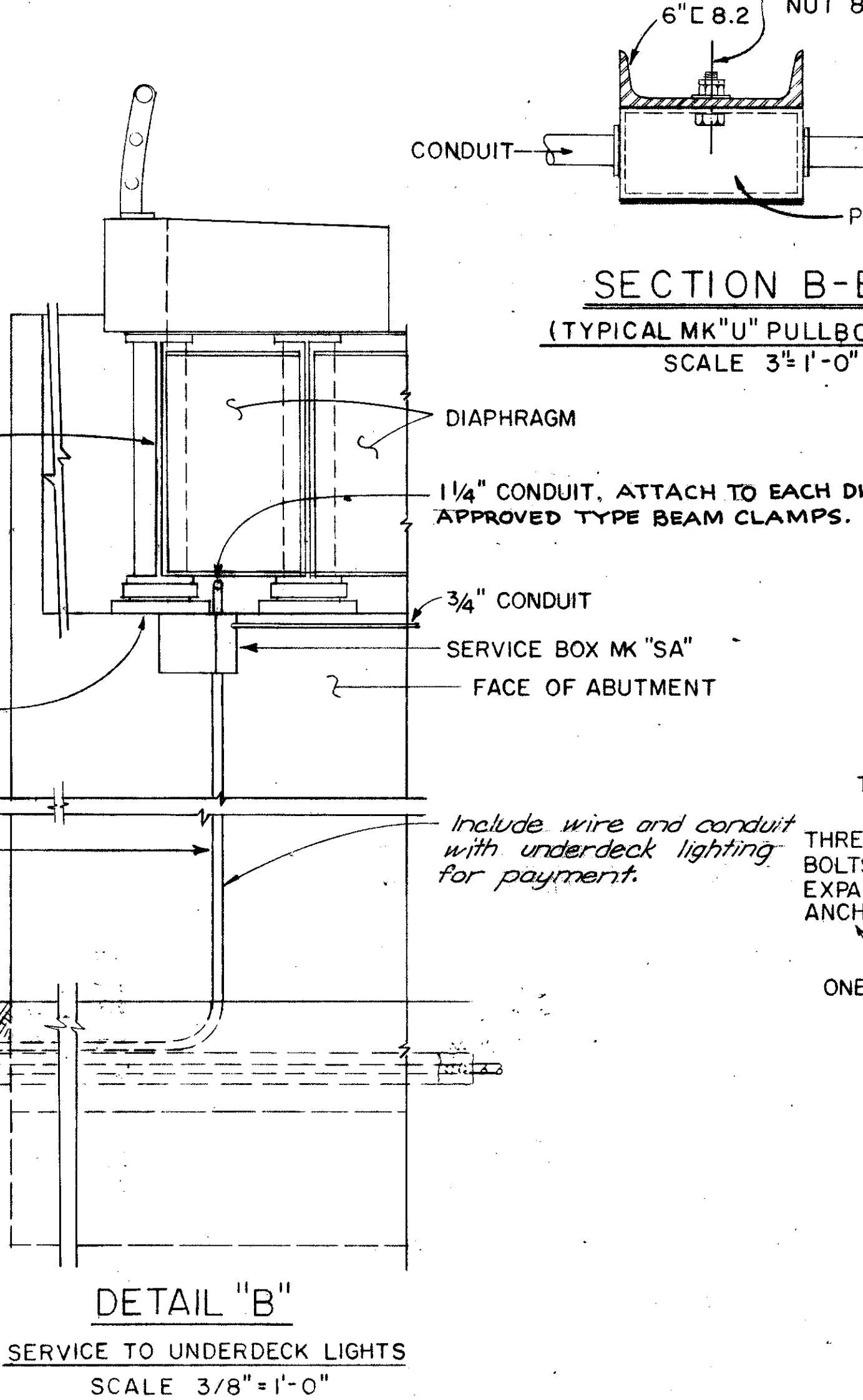
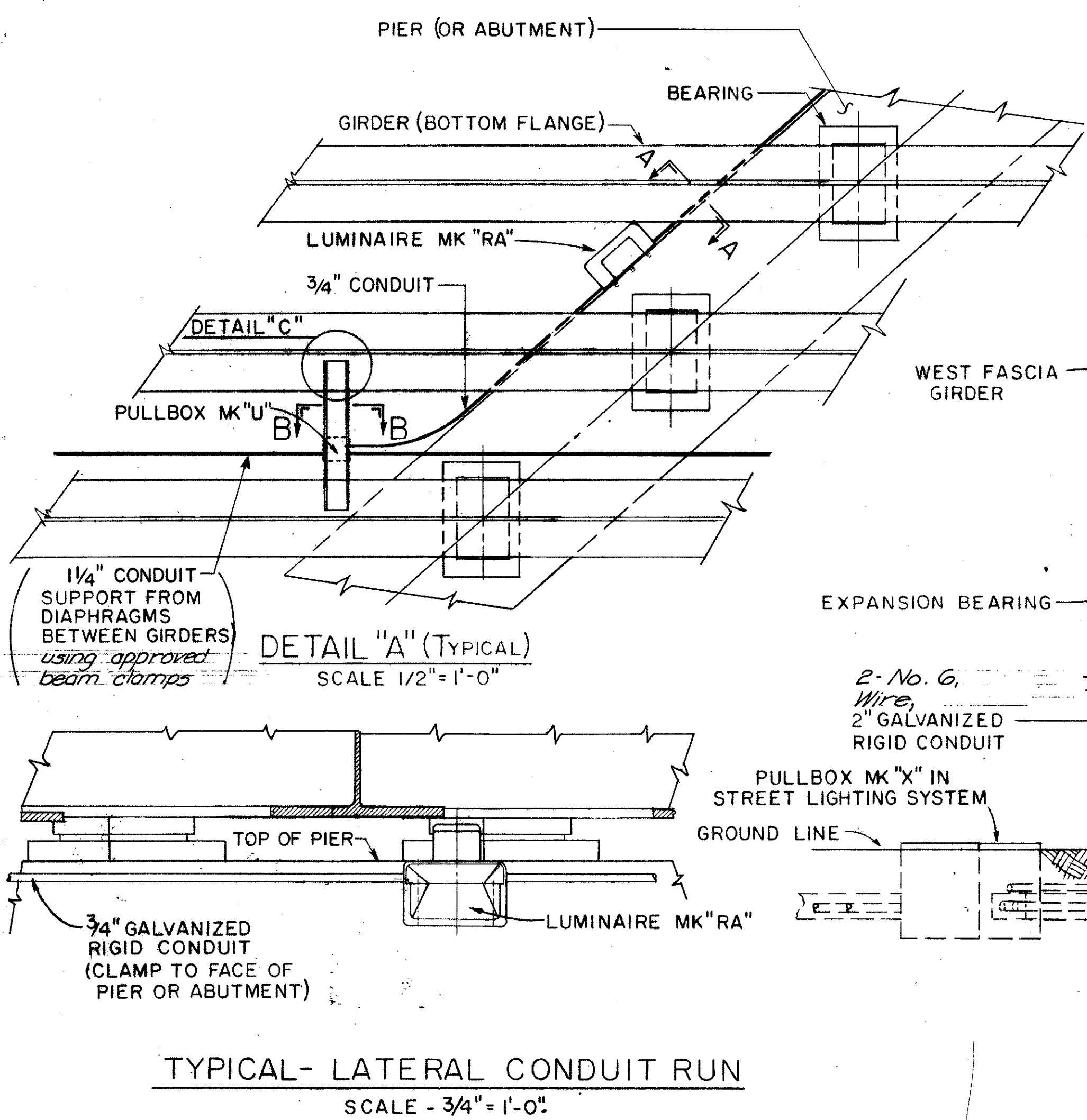
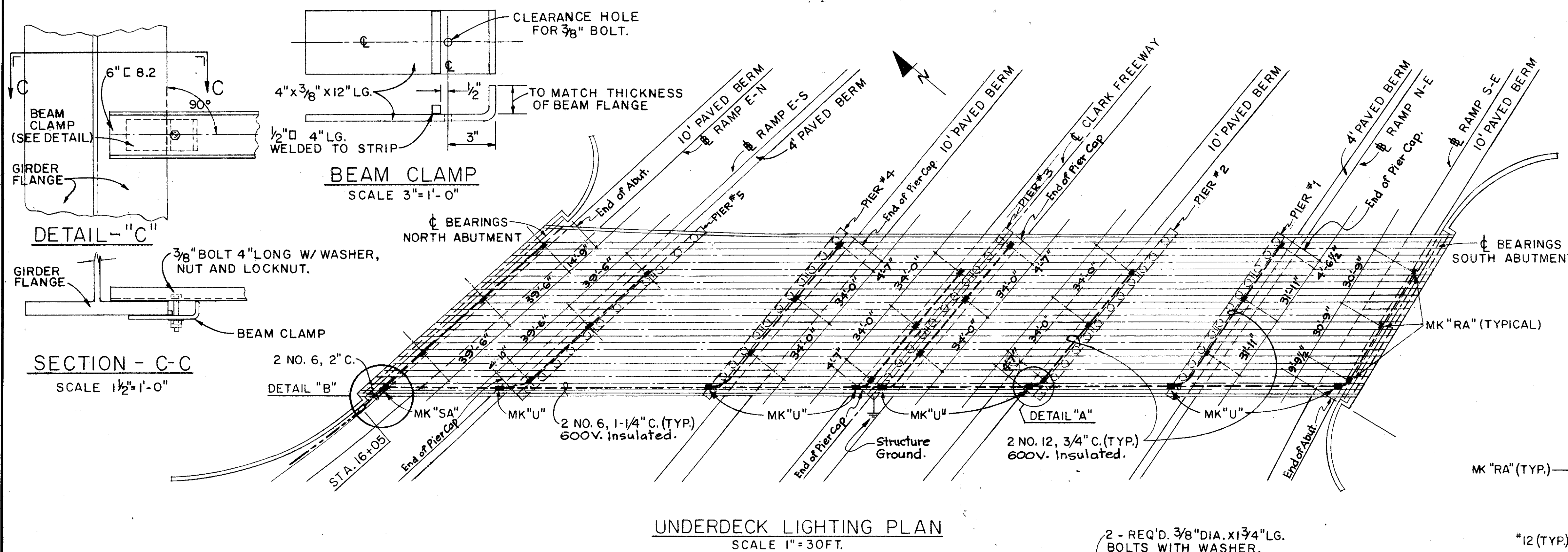
TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

MANHOLE NO. 4 - DETAILS
CLARK FREEWAY
EAST OF WILLOW INTERCHANGE

SCALE 1/2" = 1'-0" UNLESS NOTED DATE SEPT. 11, 1963

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
		LGS	SGF			4-17-64 RL-pb

Revised 5-8-64



- SYMBOL LEGEND FOR PAY ITEM "R"**
- MK "RA" = LUMINAIRE, MERCURY-VAPOR, WIDE SPREAD, UNDERPASS TYPE WITH 175 WATT LAMP, A.S.A. CODE H-30-22 KB.
 - MK "U" = INTERMEDIATE PULLBOX 6" X 6" X 3" CAST-IRON, WATERTIGHT, OZ TYPE YS060603, HOPE TYPE H-1210, OR APPROVED EQUAL.
 - MK "SA" = SERVICE BOX 16" X 12" X 8", CAST-IRON WATERTIGHT, OZ TYPE YS161208, HOPE TYPE H-1295, OR APPROVED EQUAL TO INCLUDE TWO-POLE, 600 VOLT, 30AMP, FUSIBLE SAFETY SWITCH.
- NOTE 1** = SERVICE BOXES AND PULLBOXES SHALL NOT BE FASTENED TO BEAM OR GIRDER BY WELDING.

ALL CONDUIT FOR UNDERDECK LIGHTING IS RIGID, GALVANIZED, UNLESS NOTED.
All wire for underdeck lighting shall be 600 volt, see note 1 on sheet 57.

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

LIGHTING DETAILS
BRIDGE NO. CUY-254-1893
CLARK FREEWAY UNDER
ERIE-LACKAWANNA RAILROAD

SCALE AS NOTED	DATE SEPT. 11, 1963				
DESIGNED	TRACED	CHECKED	REVIEWED	DATE	REVISED
JAF	JAF	SGF			4-17-64 RL-24

58019-14 5056

ELECTRICAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

56
81

CUYAHOGA COUNTY
CUY-254-18.88

GENERAL

THIS SPECIFICATION SHALL SUPPLEMENT THE STATE OF OHIO CONSTRUCTION AND MATERIAL SPECIFICATIONS DATED JANUARY 1, 1963, FOR THE MATERIALS USED AND FOR THE INSTALLATION OF ROADWAY LIGHTING, UNDERDECK LIGHTING AND A POLICE AND FIRE ALARM SYSTEM FOR THE CLARK FREEWAY, EAST OF THE WILLOW FREEWAY INTERCHANGE.

POWER FEED FOR INTERNALLY-ILLUMINATED ROADWAY SIGNS IS TO BE PROVIDED AS PART OF THIS CONTRACT.

THROUGHOUT THESE PLANS THE USE OF TRADE NAMES FOR ELECTRICAL LIGHTING EQUIPMENT IS MEANT TO BE DESCRIPTIVE ONLY. COMPARABLE PRODUCTS OF OTHER ELECTRICAL FIRMS ARE ACCEPTABLE IF ACCESSORIES AND MAIN MEMBERS ARE COMPATIBLE WITH ONE ANOTHER AND SERVE THE INTENDED PURPOSE.

FOR THE ROADWAY LIGHTING, 400 WATT MERCURY LUMINAIRES ARE TO BE INSTALLED AS INDICATED ON THE DRAWINGS, AND ARE TO OPERATE FROM 480 VOLT SINGLE PHASE CIRCUITS AS SHOWN ON THE SCHEMATIC DIAGRAM, SHEET 50. AVG. MAINTAINED ILLUMINATION, 0.8 FOOT CANDLES.

UNDERDECK LIGHTING SHALL BE MERCURY-VAPOR TYPE, OPERATING FROM 480-VOLT CIRCUITS, AS DESCRIBED UNDER "MATERIALS AND EQUIPMENT." AVG. MAINTAINED ILLUMINATION, 2.4 FOOT CANDLES.

THE ELECTRICAL WORK SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE I.E.E.E. STANDARDS AND PRACTICES, I.E.S./A.S.A. STANDARDS, N.E.M.A. CODE, AND THE NATIONAL ELECTRIC SAFETY CODE, AND SHALL ALSO CONFORM TO ALL LOCAL AND SPECIAL LAWS AND/OR ORDINANCES. SHOULD THE PLANS AND DETAIL SPECIFICATIONS BE IN CONFLICT WITH THESE REQUIREMENTS, THROUGH ERROR OR OMISSION, THE CONTRACTOR SHALL CALL SUCH CONFLICT TO THE ATTENTION OF THE ENGINEER AND SHALL MAKE THE NECESSARY CORRECTIONS AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL CONSULT AND COOPERATE WITH THE CLEVELAND DIVISION OF LIGHT AND POWER AND THE CLEVELAND CITY POLICE AND FIRE DEPARTMENTS.

MATERIALS AND EQUIPMENT

ALL BOLTS, NUTS, STUDS, WASHERS, PINS, TERMINALS, SPRINGS, AND SIMILAR FASTENINGS AND FITTINGS SHALL BE, WHERE APPLICABLE, OF AN APPROVED CORROSION-RESISTING MATERIAL SUCH AS BRASS OR BRONZE, OR OF A MATERIAL TREATED IN AN APPROVED MANNER TO RENDER IT ADEQUATELY RESISTANT TO CORROSION; HOT-DIP GALVANIZING WILL BE CONSIDERED SUCH APPROVED TREATMENT. ALL MATERIALS FURNISHED SHALL BE NEW, SHALL BE OF THE BEST QUALITY AND WORKMANSHIP, SHALL BE THE BEST STANDARD PRODUCT OF A MANUFACTURER REGULARLY ENGAGED IN THE PRODUCTION OF THIS TYPE OF EQUIPMENT, AND SHALL BE OF THE MANUFACTURER'S LATEST APPROVED DESIGN.

THREE TYPES OF ROADWAY LIGHTING UNITS WILL BE REQUIRED. THEY WILL BE REFERRED TO BY THEIR MARK NUMBERS, AS FOLLOWS:

- MK "F", FREEWAY-TYPE, WITH 30 FT. POLE AND 17 FT. BRACKET ARM.
- MK "G", TWIN-ARM TYPE, WITH 30 FT. POLE AND TWO 10 FT. BRACKET ARMS.
- MK "H", RAMP-TYPE, WITH 30 FT. POLE AND ONE 10 FT. BRACKET ARM.

THE LIGHTING UNITS SHALL CONFORM TO THE SPECIFICATIONS GIVEN ON THE DETAIL SHEETS, AND TO THE SPECIFICATIONS FOLLOWING.

LIGHT POLES SHALL BE TAPERED STEEL POLES, THE SHAFT SHALL BE FABRICATED FROM NOT LESS THAN #11 MANUFACTURERS STANDARD GAUGE, HOT ROLLED, BASIC OPEN HEARTH, CARBON STEEL. IT SHALL HAVE ONLY ONE LONGITUDINAL, AUTOMATICALLY ELECTRICALLY WELDED JOINT AND SHALL HAVE NO INTERMEDIATE TRANSVERSE JOINTS OR WELDS. ONLY ONE LENGTH OF STEEL SHEET SHALL BE USED, WHICH SHALL BE FORMED INTO A CONTINUOUSLY ROUND TAPERED SHAFT, HAVING A TAPER OF APPROXIMATELY .14" PER FOOT.

SHAFT SHALL BE COLD WORKED AFTER WELDING WITH SUFFICIENT PRESSURE TO DEVELOP A MINIMUM YIELD STRENGTH OF 48,000 P.S.I., AND TO FLATTEN THE WELD TO A TRUE TAPERED TUBE OF UNIFORM THICKNESS THROUGHOUT (INCLUDING THE WELD AREA), WITHOUT FLAT SPOTS AND WITHOUT FINISH GRINDING.

LIGHT POLES SHALL BE CAPABLE OF WITHSTANDING LOADING (APPLIED 18" FROM THE TOP) AS INDICATED BELOW WITHOUT EXCEEDING THE PERMANENT SET AND DEFLECTION (MEASURED IN INCHES 18" FROM TOP OF POLE).

PERMANENT SET IS DEFINED AS THE TOTAL TRANSVERSE DISPLACEMENT OF THE LONGITUDINAL CENTERLINE OF THE SHAFT AT THE POINT OF TEST LOAD APPLICATION BETWEEN ITS INITIALLY UNLOADED POSITION AND THE FINAL UNLOADED POSITION AFTER APPLICATION OF TEST LOADS.

TYPE	POLE SIZE	GA.	ELASTIC DEFL. RATE IN. PER 100 LB.			AT 2/3 YIELD STR.			AT YIELD STRENGTH		
			LOAD 18" DOWN	TOTAL DEFL. IN.	PERM. SET IN.	LOAD 18" DOWN	TOTAL DEFL. IN.	PERM. SET IN.	LOAD 18" DOWN	TOTAL DEFL. IN.	PERM. SET IN.
MK "F", MK "G", MK "H"	9.0" x 4.80" x 30'-0"	11	2.30	647	15.38	.50	971	25.06	2.73		

WELDING. WELDERS AND WELDING OPERATORS SHALL BE PREQUALIFIED FOR CLASS "A" WELDING ACCORDING TO THE INSTRUCTIONS GIVEN IN "INSTRUCTIONS FROM THE LABORATORY, PREQUALIFICATION OF ELECTRIC ARC WELDERS AND WELDING OPERATORS." WELDING EQUIPMENT SHALL BE OF SUFFICIENT CAPACITY OF SUCH DESIGN AND IN SUCH CONDITION AS TO MAKE POSSIBLE THE PRODUCTION OF FIRST CLASS WELDS.

ALL SURFACES TO BE WELDED SHALL BE SMOOTH, UNIFORM AND FREE FROM FINS, TEARS, AND OTHER DEFECTS WHICH MIGHT ADVERSELY AFFECT THE QUALITY OF THE WELDS. SURFACES TO BE WELDED SHALL BE FREE FROM LOOSE SCALE, SLAG, RUST, MOISTURE, GREASE, PAINT, AND OTHER FOREIGN MATERIAL. MILL SCALE SHALL BE REMOVED BY POWER BRUSHING, BLASTING OR GRINDING.

IF THE TAPERED STEEL SHAFTS OF THE LIGHTING POLES ARE MANUFACTURED BY OTHER MEANS THAN THAT SPECIFIED ABOVE, ALTERNATES WILL BE ACCEPTED, PROVIDED THEY BE MADE OF STEEL HAVING A MINIMUM YIELD STRENGTH OF 48,000 P.S.I. AND A MINIMUM THICKNESS OF #11 GAUGE (U.S. STD.), AS TABULATED HEREIN. ALTERNATES MUST ALSO MEET THE PERMANENT SET AND DEFLECTIONS SPECIFICATIONS TABULATED. SUCH POLES SHALL BE SHOT BLASTED TO REMOVE MILL SCALE AND WELD SLAG PREPARATORY TO PAINTING.

ANCHOR BASES SHALL BE ONE-PIECE CAST STEEL CONFORMING TO SECTION M-7.7. AND TOP FLANGE SHALL BE SECURED TO THE LOWER END OF THE SHAFT BY TWO CONTINUOUS ELECTRIC ARC WELDS. THE BASE SHALL TELESCOPE THE SHAFT AND THE ONE WELD SHALL BE ON THE INSIDE OF THE BASE AT THE END OF THE SHAFT, WHILE THE OTHER WELD SHALL BE ON THE OUTSIDE AT THE TOP OF THE BASE. THE TWO WELDS SHALL BE NOT LESS THAN 1-1/2" APART. THE WELDED CONNECTION SHALL DEVELOP THE FULL STRENGTH OF THE ADJACENT SHAFT SECTION TO RESIST BENDING ACTION.

THE BASE SHALL BE PROVIDED WITH FOUR (4) HOLES TO RECEIVE THE ANCHOR BOLTS, FOUR (4) HOLES FOR VENTILATION LOCATED IN THE BODY OF THE BASE DIRECTLY BEHIND EACH ANCHOR BOLT HOLE, AND FOUR (4) TAPPED HOLES FOR ATTACHING THE ORNAMENTAL COVERS.

FOR EACH MK "F" OR MK "H" STANDARD, FOUR (4) HIGH GRADE STEEL ANCHOR RODS, EACH FITTED WITH A HEX NUT, SHALL BE FURNISHED. EACH ANCHOR BOLT SHALL HAVE AN "L" BEND AT THE BOTTOM END AND BE THREADED AT THE TOP END. THREADED ENDS AND ALL NUTS SHALL BE GALVANIZED WITH GALVANIZING EXTENDING 1" TO 4" INCHES BEYOND THREAD. THE ANCHOR BOLTS SHALL BE CAPABLE OF RESISTING AT YIELD STRENGTH STRESS THE BENDING MOMENT OF THE SHAFT AT ITS YIELD STRENGTH STRESS. ANCHOR BOLTS SHALL BE FABRICATED FROM STEEL, AISI C1035, HOT ROLLED SPECIAL QUALITY, MINIMUM YIELD STRENGTH 46,000 PSI. THIS SPECIFICATION IS IDENTICAL TO ASTM A107 GRADE 1035 SPECIAL QUALITY. GALVANIZE IN ACCORDANCE WITH ASTM-A-153.

ANCHOR RODS FOR MK "G", TWIN-ARM STANDARDS SHALL BE "U" BOLTS, TWO FOR EACH STANDARD. THESE RODS SHALL BE MADE FROM STEEL, AISI-C1035, HOT ROLLED SPECIAL QUALITY. MINIMUM YIELD STRENGTH 46,000 P.S.I. (THIS SPECIFICATION IS IDENTICAL TO ASTM A107, GRADE 1035 SPECIAL QUALITY). ANCHOR RODS SHALL BE CAPABLE OF RESISTING AT YIELD STRENGTH STRESS THE BENDING MOMENT OF THE SHAFT AT ITS YIELD STRENGTH STRESS. ANCHOR RODS SHALL BE THREADED AT THE ENDS, AND THREADED ENDS AND ALL NUTS SHALL BE GALVANIZED, WITH THE GALVANIZING EXTENDING 1" TO 4" INCHES BEYOND THE THREAD. FOUR HEX NUTS SHALL BE FURNISHED FOR EACH SET OF TWO RODS. DIMENSIONS FOR THESE RODS ARE ON SHEET 53. GALVANIZE IN ACCORDANCE WITH ASTM-A-153.

EACH MK "F" STANDARD SHALL HAVE A SPREADER-TYPE BRACKET ARM, MADE OF STANDARD PIPE, AS SHOWN ON SHEET 51. THE INNER END OF THE BRACKET ARM SHALL BE WELDED TO A PRESSED STEEL MAST ARM PLATE HAVING A RAISED SURFACE EXCEEDING 1/2 INCH IN HEIGHT ON EITHER SIDE, GIVING A SCALLOPED WELD LINE SO THAT THE WELD DOES NOT LIE IN ONE CIRCUMFERENTIAL PLANE. THE POLE PLATE AND ARM PLATE SHALL BE SUCH THAT THEY ARE INTERCHANGEABLE WITH EXISTING CITY OF CLEVELAND DESIGNS PREVIOUSLY INSTALLED.

EACH MK "G" STANDARD SHALL BE SIMILAR TO MK "H" STANDARD HEREINAFTER DESCRIBED, BUT WITH TWO BRACKET ARMS AS SHOWN ON SHEET 53.

EACH MK "H" STANDARD SHALL HAVE A BRACKET ARM, MADE OF STANDARD PIPE, AS SHOWN ON SHEET 52. THE INNER END OF THE BRACKET ARM SHALL BE WELDED TO A TUBULAR HEAD, AS SHOWN ON THE DETAIL DRAWINGS, SO A BLOCK CAN BE BOLTED THROUGH THE HEAD PIECE TO A PLATE WELDED TO THE TOP OF THE POLE, TO PERMIT RADIAL ADJUSTMENT OF THE BRACKET ARM.

IN EACH OF THE ABOVE TYPES OF STANDARD, PROVISION SHALL BE MADE TO PERMIT PASSAGE OF CONCEALED WIRES TO THE BRACKET ARM, AND THE OUTER END OF THE BRACKET ARM SHALL ACCOMMODATE A 2" SLIP FITTER LUMINAIRE, AS SHOWN ON THE DRAWINGS.

BRACKET ARMS AND THEIR RELATED POLE ATTACHMENT DEVICES SHALL SUSTAIN A VERTICAL LOAD OF 250 LBS. APPLIED WITHIN 3" OF THE LUMINAIRE END OF THE SUPPORT WITHOUT COLLAPSE OR RUPTURE OF ANY PORTION OF THE POLE ASSEMBLY.

THE BRACKET ARMS AND THEIR RELATED POLE ATTACHMENT DEVICES SHALL SUSTAIN A VERTICAL LOAD OF 100 LBS. APPLIED WITHIN 3" OF THE LUMINAIRE END OF THE SUPPORT AND WITH THE SUPPORT ATTACHED TO A RIGID STRUCTURE. THE VERTICAL DEFLECTION SHALL NOT EXCEED 5-1/2% OF THE SUPPORT LENGTH. THIS INCLUDES A MAXIMUM ALLOWANCE OF 1/2 OF 1% OF THE SUPPORT LENGTH FOR TESTING METHODS AND PERMANENT SET.

THE BRACKET ARMS AND THEIR RELATED POLE ATTACHMENT DEVICES SHALL SUSTAIN A TRANSVERSE HORIZONTAL LOAD OF 50 LBS. APPLIED WITHIN 3" OF THE LUMINAIRE END OF THE SUPPORT WITH THE SUPPORT ATTACHED TO A RIGID STRUCTURE. THE HORIZONTAL DEFLECTION SHALL NOT EXCEED 5% OF THE SUPPORT LENGTH AND THE POLE ATTACHMENT DEVICES SHALL NOT DEVELOP ANY LOOSENESS WITHIN THE SPECIFIED LOADING RANGE. THIS TEST SHALL BE CONDUCTED WITH A VERTICAL LOAD OF 30 LBS. ON THE SUPPORT.

DEFLECTION SHALL BE DEFINED AS THE TOTAL TRANSVERSE DISPLACEMENT OF THE LONGITUDINAL CENTERLINE OF THE SHAFT OR LUMINAIRE SUPPORT AT THE POINT OF TEST LOAD APPLICATION BETWEEN ITS INITIALLY UNLOADED AND FULLY LOADED POSITION.

THE TOP ELEVATION OF POLE FOUNDATIONS SHALL BE SET TO PROVIDE THE SPECIFIED MOUNTING HEIGHT OF LUMINAIRES ABOVE TOP OF PAVEMENT.

CONCRETE FOR POLE BASE FOUNDATIONS, DUCT LINES AND PULL BOXES SHALL BE CLASS C CONCRETE USING #4 AGGREGATE UNLESS OTHERWISE SHOWN.

SHAFT TRANSVERSE SECTION CONFIGURATION

- BID ITEMS, AS SHOWN AND DETAILED, ARE FOR STANDARDS WITH SHAFTS OF CIRCULAR TRANSVERSE SECTION.
- ALTERNATE BID ITEMS ARE FOR STANDARDS WITH SHAFTS OF TRANSVERSE SECTION OTHER THAN CIRCULAR. SPECIFY CONFIGURATION BID.
- ALL SHAFTS THROUGHOUT THE PROJECT SHALL HAVE THE SAME TRANSVERSE SECTIONAL CONFIGURATION.

WIRING FOR LIGHT STANDARDS SHALL BE CARRIED OUT AS DESCRIBED UNDER "CONSTRUCTION METHODS."

A SET OF "U" SHAPED SHIMS OF PROPER DIMENSIONS TO FIT AROUND 1-1/4 INCH DIAMETER ANCHOR RODS SHALL BE FURNISHED WITH EACH POLE FOR USE IN THE PROPER ALIGNMENT OF THE POLE. THESE SHIMS SHALL BE GALVANIZED.

STANDARDS AND BRACKETS SHALL BE PAINTED WITH A FIRST AND SECOND SHOP COAT OF PRIME PAINT, AND TWO FIELD COATS OF GREEN ENAMEL, AS RECOMMENDED IN STANDARD SPECIFICATIONS, PARAGRAPH S-25.10.

NON-METALLIC CONDUIT SHALL BE USED IN DUCT LINES, AND IN STRUCTURE CONCRETE. SUCH CONDUIT SHALL BE ASBESTOS CEMENT TYPE "I" PER FEDERAL SPECIFICATION WC-571-b, OR FIBER TYPE "I" PER FEDERAL SPECIFICATION WC-581-c. THE WALLS SHALL BE COMPACT AND INCAPABLE OF SEPARATION INTO LAYERS WHEN HEATED TO 212 DEGREES FAHRENHEIT. THE FINISHED CONDUIT SHALL NOT BE AFFECTED BY MOISTURE OR ACIDS PRESENT IN THE CONCRETE. THE INNER SURFACE OF THE CONDUIT SHALL BE FREE FROM DENTS OR OBSTRUCTIONS. THE HARRINGTON OR TAPERED SLEEVE TYPE OF JOINT, OR APPROVED EQUAL, SHALL BE USED. THE CONTACT SURFACES OF THE CONDUIT AND COUPLINGS SHALL BE ACCURATELY MACHINED TO INSURE TIGHT JOINTS.

METAL CONDUIT FOR UNDERDECK LIGHTS SHALL BE RIGID STEEL HOT DIPPED GALVANIZED INSIDE AND OUTSIDE, INCLUDING FITTINGS, AND WITH NECESSARY SUPPORTS AND FASTENERS.

ROADWAY LUMINAIRES SHALL BE GENERAL ELECTRIC M-400, WESTINGHOUSE OV 25 (400 WATT), LINE MATERIAL UNISTYLE (400 WATT), OR APPROVED EQUAL.

UNDERDECK LUMINAIRES SHALL BE 175 WATT, MERCURY TYPE WITH INTEGRAL BALLAST, INSECT-PROOF GASKET, STAINLESS STEEL HINGES AND LATCHES, WEATHERPROOF CAST ALUMINUM HOUSING AND DOOR, ANODIZED ALUMINUM VISOR, ASYMMETRIC ALUMINUM REFLECTOR AND ONE-PIECE PRISMATIC HEAT-AND-SHOCK-RESISTANT BOROSILICATE CRYSTAL GLASS REFLECTOR. UNDERDECK LUMINAIRES SHALL BE HOLOPHANE SERIES U-488-480 CG OR APPROVED EQUAL.

CONSTRUCTION METHODS

THE INSTALLATION AS A WHOLE SHALL BE CARRIED OUT IN CONFORMANCE WITH THE REQUIREMENTS HEREIN STATED AND IMPLIED, AND UPON COMPLETION OF THE WORK SHALL PRESENT A NEAT AND WORKMANLIKE FINISHED APPEARANCE. SAFE CONSTRUCTION AND OPERATING PRACTICES MEETING THE REQUIREMENTS OF THE NATIONAL ELECTRIC SAFETY CODE SHALL BE MAINTAINED.

AFTER THE LUMINAIRES ARE ATTACHED, THE POLES SHALL BE SET AS NEARLY VERTICAL AS POSSIBLE, USING THE SHIMS AS REQUIRED.

POWER LINE CONNECTIONS FOR LIGHTING UNITS EQUIPPED WITH MERCURY LUMINAIRES ARE SHOWN ON SHEET 52. THE GROUND WIRE IS RUN DOWN THROUGH A FEED DUCT TO THE PULL-BOX, WHERE IT IS EXOTHERMICALLY WELDED TO A GALV. WROUGHT IRON GROUND ROD. GROUNDING IS SHOWN ON THE DETAIL DRAWING FOR EACH TYPE OF STANDARD.

WORKING PLANS THE CONTRACTOR SHALL COMPLY WITH ITEM S-25.05 OF CONSTRUCTION AND MATERIAL SPECIFICATIONS BEFORE ORDERING ANY ELECTRICAL MATERIALS.

THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT AND QUALIFIED PERSONNEL TO PERFORM THE FOLLOWING TESTS:

CIRCUIT TESTS: THE RESISTANCE TO GROUND FOR ALL NON-GROUNDED MULTIPLE CIRCUIT CONDUCTORS WITH ALL BALLASTS CONNECTED IN THE CIRCUITS, SHALL BE NOT LESS THAN TEN (10) MEGOHMS, USING A 500 VOLT MEGG-OR. RECORD RESISTANCE READING, LOCATION AND DATE. SUBMIT THREE (3) CERTIFIED COPIES OF THE LOG TO THE HIGHWAY LIGHTING ENGINEER IN COLUMBUS, OHIO.

GROUND TESTS: THE GROUND RESISTANCE FOR EACH GROUND SHALL NOT EXCEED 15 OHMS. WHERE RESISTANCE EXCEEDS 15 OHMS ADDITIONAL RODS SHALL BE DRIVEN FIVE FEET APART UNTIL 15 OHMS OR LESS IS SECURED. PERFORM TEST FOR EACH GROUND BEFORE CIRCUIT CABLE IS CONNECTED. RECORD RESISTANCE, LOCATION AND DATE MADE. SUBMIT THREE CERTIFIED COPIES OF THE TEST LOG TO THE HIGHWAY LIGHTING ENGINEER IN COLUMBUS, OHIO.

PAYMENT FOR CIRCUIT AND GROUND TESTS SHALL BE CONSIDERED A SUBSIDIARY WORK ITEM INCLUDED IN THE UNIT PRICE BID FOR THE RESPECTIVE ITEMS.

PERFORMANCE TEST: THE CONTRACTOR SHALL OPERATE THE LIGHTING SYSTEM, INCLUDING ALL SPECIFIED APPARATUS FROM SUNSET TO SUNRISE FOR SEVEN SUCCESSIVE DAYS WITHOUT INTERRUPTION OR FAILURE PRIOR TO ACCEPTANCE BY THE STATE. PAYMENT SHALL BE LUMP SUM BID INCLUDING COST OF ELECTRICAL ENERGY.

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

ELECTRICAL NOTES
CLARK FREEWAY
EAST OF WILLOW INTERCHANGE

SCALE				DATE			
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
	LKH		S9F		4-15-64		RL-26

5057
58019

ELECTRICAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

57
81

CUYAHOGA COUNTY
CUY-254-18.88

PAYMENT FOR ELECTRICAL EQUIPMENT - S25

PAYMENT FOR THE ROADWAY AND UNDERDECK LIGHTING SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEMS AS INDICATED IN THE SUMMARY OF QUANTITIES, WHICH PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY, WHETHER SPECIFICALLY MENTIONED OR NOT, TO COMPLETE THE ENTIRE WORK, INSTALLED AND IN OPERATING CONDITION, ACCORDING TO THE PLANS AND SPECIFICATIONS. PAYMENT WILL BE MADE AS FOLLOWS:

- A. TYPE "A" DUCT (AS SHOWN IN THE APPROPRIATE FIGURE ON DRAWING 51), PER LINEAR FOOT, SHALL INCLUDE NECESSARY FIBER OR TRANSITE CONDUIT, CONCRETE AND FORMWORK, END BELLS, NO. 9 A.W.G. GALVANIZED IRON PULL WIRE, AND SHALL ALSO INCLUDE THE PLUGGING AND CONDITIONING OF DUCTS AND SEALING AROUND DUCTS WHERE THEY ENTER MANHOLES OR PULLBOXES. ITEM "A" INCLUDES LIGHTING FEED DUCT TO SIGN STRUCTURES.
- B. TYPE "B" DUCT, PER LINEAR FOOT, SHALL INCLUDE THE NECESSARY COMPONENTS AND WORK AS DESCRIBED UNDER "A", BUT IN QUANTITIES REQUIRED FOR TYPE "B" DUCT AS SHOWN IN THE APPROPRIATE FIGURE ON DRAWING 51.
- C. TYPE "C" DUCT, PER LINEAR FOOT, SHALL INCLUDE THE NECESSARY COMPONENTS AND WORK AS DESCRIBED UNDER "A", BUT IN QUANTITIES AND SIZES REQUIRED FOR TYPE "C" DUCT AS SHOWN IN THE APPROPRIATE FIGURE ON DRAWING 51.
- F. FREEWAY-TYPE STANDARD, SINGLE ARM, SHALL INCLUDE 30 FOOT POLE, BRACKET ATTACHMENTS, 17 FOOT STEEL BRACKET ARM WITH TWO 1/2 INCH GUY RODS, NECESSARY SINGLE-CONDUCTOR NO. 12 AWG 600 VOLT POLE AND BRACKET CABLE, ALL CONNECTIONS AND SPLICING, FUSING, BOLTS, NUTS, WASHERS, AND ALL MODIFICATIONS SHOWN ON THE PLANS, INCLUDING GROUNDING.
- G. TWIN-ARM TYPE STANDARD SHALL INCLUDE 30 FOOT POLE, BRACKET ATTACHMENTS, TWO 10 FOOT STEEL BRACKET ARMS ARRANGED FOR 2" SLIP-FIT LUMINAIRES, NECESSARY SINGLE-CONDUCTOR NO. 12 AWG 600 VOLT POLE AND BRACKET CABLE, ALL CONNECTIONS AND SPLICING, FUSING, BOLTS, NUTS, WASHERS AND ALL MODIFICATIONS SHOWN ON THE PLANS, INCLUDING GROUNDING.
- H. RAMP-TYPE STANDARD SHALL INCLUDE A 30 FOOT POLE, BRACKET ATTACHMENTS, 10 FOOT STEEL BRACKET ARM ARRANGED FOR 2" SLIP-FIT LUMINAIRE, NECESSARY SINGLE-CONDUCTOR NO. 12 AWG 600 VOLT POLE AND BRACKET CABLE, ALL CONNECTIONS AND SPLICING, FUSING, BOLTS, NUTS, WASHERS, AND ALL MODIFICATIONS SHOWN ON THE PLANS, INCLUDING GROUNDING.
- L. POLE BASE FOUNDATION, 6 FOOT, SHALL INCLUDE EXCAVATION, FORMWORK CONCRETE, REINFORCING STEEL, 90 DEGREE CONDUIT BEND, ANCHOR RODS, NUTS, SHIMS AND WASHERS, AND PLACING OF CONDUIT THROUGH BASE TO PULLBOX FOR WIRING, BACKFILLING, TAMPING, AND REMOVAL OF WASTE.
- M. POLE-BASE FOUNDATION, 8 FT., SHALL INCLUDE THE SAME COMPONENTS AS IN ITEM "L" ABOVE, BUT IN AMOUNTS NECESSARY FOR THE LARGER BASE.
- N₁ LUMINAIRE, MERCURY, 400 WATT, SHALL CONSIST OF 2 INCH SLIPFITTER, REFLECTING-HOUSING ASSEMBLY, HINGED REFRACTOR, INTERNAL BALLAST, AND ARRANGED FOR TYPE III (N₁) OR TYPE II (N₂) IES/A.S.A. DISTRIBUTION, AS CALLED FOR ON THE PLAN. 10,500 INITIAL-HORIZONTAL-LUMEN LAMP, ASA CODE H37-5KB, IS TO BE INCLUDED. THE BALLAST SHALL BE HIGH-POWER-FACTOR, REGULATOR TYPE, 240/480V, WITH PROPER LAMP OPERATION WITHIN +13% OF RATED PRIMARY VOLTAGE, AND STARTING AT -20 DEGREES FAHRENHEIT. SHIPPING CARTON SHALL BE MARKED TO SHOW DISTRIBUTION TYPE.
- R. UNDERDECK LIGHTING, COMPLETE, FOR BRIDGE NO. CUY-254-1893, SHALL CONSIST OF MERCURY LUMINAIRES, PULLBOXES, SAFETY SWITCH, AND POWER SERVICE (AS SHOWN AND SPECIFIED ON SHEET 55). NECESSARY CONDUIT, MOUNTINGS, INTERCONNECTING WIRING, TERMINALS, SPLICES, ADAPTORS, BOLTS, NUTS, WASHERS AND SPACERS SHOWN ON THE DRAWING, OR NECESSARY TO COMPLETE THE JOB. BOXES SHALL BE PROVIDED WITH NECESSARY CONDUIT ENTRANCE HOLES AND BOSSES. ALL FIXTURES AND BOXES SHALL BE GROUNDED TO THE STRUCTURE, AND THE STRUCTURE SHALL BE GROUNDED AS SPECIFIED.
- X. SINGLE PULLBOX SHALL INCLUDE EXCAVATION, FORMWORK, CONCRETE, REINFORCING STEEL, CONDUIT STUBS THROUGH WALLS, BACKFILLING, TAMPING AND REMOVAL OF WASTE, AS REQUIRED ON PLANS. SEE SHEET 51.
- Y. DOUBLE PULLBOX SHALL INCLUDE EXCAVATION, FORMWORK, CONCRETE, REINFORCING STEEL, CONDUIT STUBS THROUGH WALLS, BACKFILLING, TAMPING AND REMOVAL OF WASTE, AS REQUIRED ON PLANS. SEE SHEET 51.
- AB. TRANSFORMER MANHOLE 8 x 11, SHALL INCLUDE REQUIRED EXCAVATION, FORMWORK, CONCRETE, REINFORCING STEEL, MANHOLE FRAMES AND COVERS, BOLTS, AND FASTENINGS FOR HOLDING MANHOLE FRAMES DOWN, CAST IRON DRAIN AND GRATING, 6 INCH DIAMETER VITREOUS CLAY PIPE DRAIN LINE TO STORM SEWER, LIGHTING DUCTS, END BELLS, VENTILATION COMPLETE WITH VENT CAP, FASTENINGS, ANCHOR INSERTS FOR MOUNTING OF EQUIPMENT, FITTINGS AND STRAPS, GROUNDING, WATERPROOFING, BACKFILLING, TAMPING, COMPACTING AND REMOVAL OF WASTE. ELECTRICAL EQUIPMENT, CONSISTING OF OIL SWITCH, TIMER, CONTROL TRANSFORMER, OIL CUTOUPS AND DISTRIBUTION TRANSFORMERS SPECIFIED ON DRAWING NO. 54, ARE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR, WHO SHALL ALSO MAKE LOW VOLTAGE CONNECTIONS ONLY TO THE DESIGNATED LIGHTING CIRCUITS. MANHOLE CONSTRUCTION IS SHOWN ON DRAWING NO. 54.

- AG. WIRE, NO. 4 GAUGE, 600 VOLT, PER LINEAR FOOT, SHALL INCLUDE ONE SINGLE CONDUCTOR CABLE TO BE PLACED IN DUCTS AND PULLBOXES AS REQUIRED, WITH NECESSARY SPLICING, TERMINALS, CONNECTIONS AND TESTING. MEASUREMENT FOR CABLE SHALL BE THE LENGTH OF EACH SINGLE RUN OF CABLE TIMES THE NUMBER OF CABLES IN EACH CONDUIT. SEE NOTE 1.
SPLICES. SPLICES SHALL BE MADE IN PULL BOXES WITH ESNA MOULDED RUBBER SPLICE KITS, STYLE 51 OR STYLE 84 AS REQUIRED. INCLUDE WITH CIRCUIT CABLE FOR PAYMENT.
- AK. STONE UNDERDRAIN NO. 2 (ITEM I-9), PER LINEAR FOOT, SHALL INCLUDE EXCAVATING THE TRENCH, BACKFILLING, DISPOSAL OF SURPLUS EXCAVATION AND DISCARDED MATERIAL, FURNISHING AND PLACING OF ALL MATERIAL, AND ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM. THE NUMBER OF LINEAR FEET SHOWN ON THE SUMMARY INCLUDES ONE EXTRA LINEAR FOOT FOR EACH PULL BOX SO DRAINED TO PROVIDE A PRACTICALLY COMPLETE DRAINAGE FLOOR FOR THE PULL BOX.
- AM. WIRE, ALARM CIRCUITS, PER LINEAR FOOT, SHALL INCLUDE ONE MULTI-CONDUCTOR CABLE TO BE PLACED IN CONDUIT AND PULLBOXES AS REQUIRED. NO CONNECTIONS OR SPLICING WILL BE MADE BY THE CONTRACTOR, BUT THE CABLE RUNS SHOULD HAVE SUFFICIENT EXTRA LENGTH TO ASSURE EASE OF SPLICING OF TYPE "AN" SERVICE CABLE AT PULLBOXES, AND TO THE EXISTING SYSTEM. CABLE TO BE 25 PAIR, 19 GAUGE, P.I.C. INSULATED; PLASTIC WIRE AND CABLE COMPANY TYPE 200 NO. 627-925 OR WESTERN ELECTRIC TYPE BHBA, OR ANACONDA "ALPETH".
- AT. GLARE SHIELD SHALL BE ALUMINUM, ONE PIECE DESIGN OF THE SAME MANUFACTURE AS THE LUMINAIRE AND SHALL REDUCE OVERALL LUMINAIRE OUTPUT BY NOT MORE THAN TWO PERCENT.
- AX. SINGLE PULLBOX FOR ALARM SYSTEM SHALL CARRY THE SAME SPECIFICATIONS AS ITEM "X" WITH PROPER CONDUIT ENTRIES.
- AY. DOUBLE PULLBOX FOR ALARM SYSTEM SHALL CARRY THE SAME SPECIFICATIONS AS ITEM "Y" WITH PROPER CONDUIT ENTRIES.
- BE. TYPE "B" DUCT FOR ALARM SYSTEM SHALL CARRY THE SAME SPECIFICATIONS AS TYPE "B" DUCT.
- BL. SPECIAL FOUNDATION, FOR TWIN-ARM LAMP STANDARD IN CENTER ISLAND OF CLARK FREEWAY, SHALL BE AS SHOWN ON SHEET 52. THIS ITEM SHALL INCLUDE EXCAVATION, FORMWORK, CONCRETE, REINFORCING STEEL, CONDUIT ENTRY TO LAMP STANDARD, "U" SHAPED ANCHOR RODS, NUTS, SHIMS, WASHERS, BACKFILLING, TAMPING AND REMOVAL OF WASTE.

NOTE 1:

ALL 600 VOLT WIRE SHALL BE FAA SPEC. L-824, TYPE "A" (SEVEN STRAND), SINGLE CONDUCTOR.

SUPERSTRUCTURE ELECTRICAL GROUND.

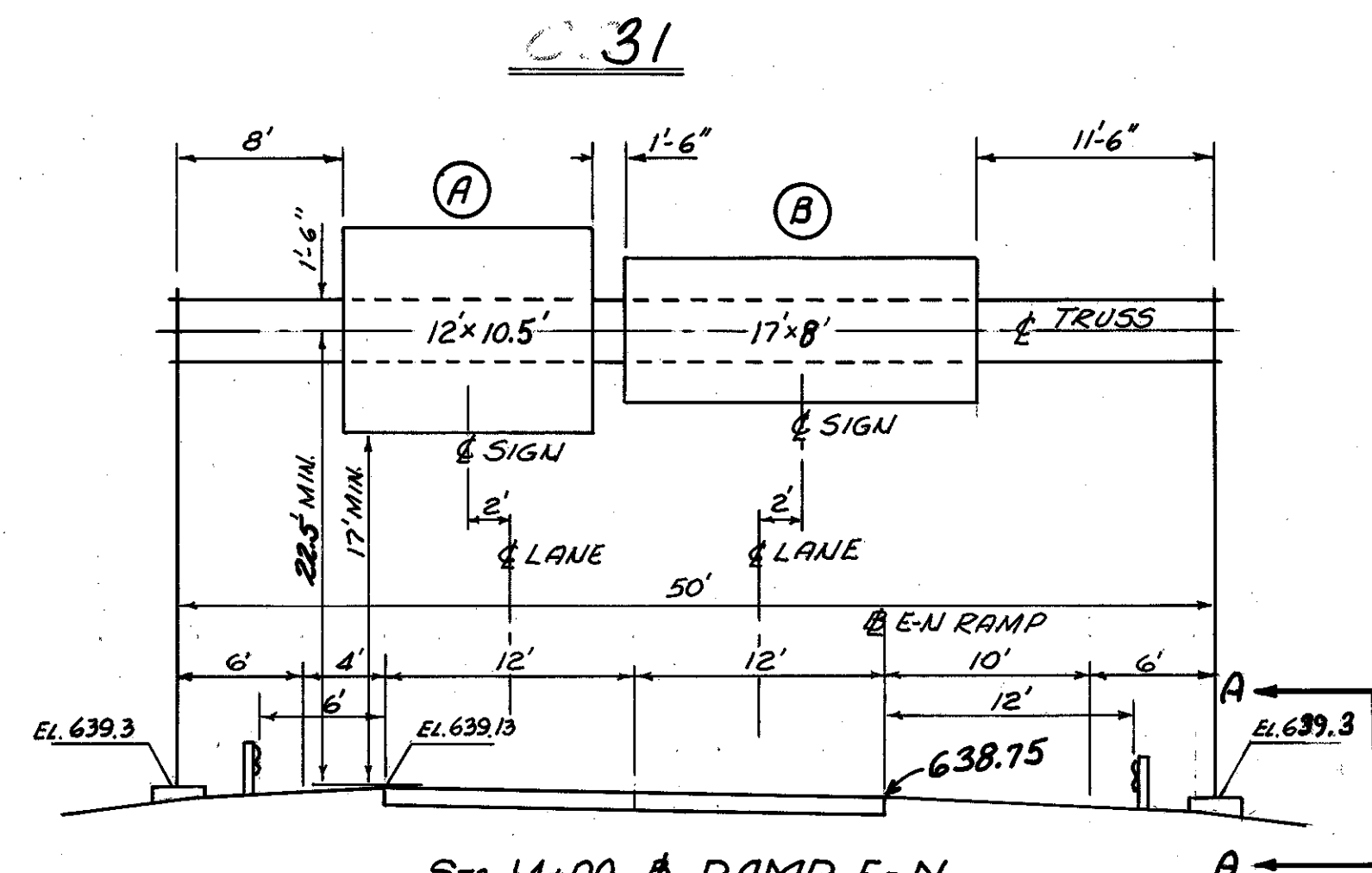
GROUND SHALL BE NO. 1/0 AWG, 7 STRAND SOFT ANNEALED BARE COPPER CABLE ENCASED IN THE WEST END OF FIXED PIER NO. 3 (SHEET 55). EXOTHERMIC WELD LOWER END OF CABLE TO STEEL SHELL OF A CAST-IN-PLACE CONCRETE PILE. IF THE STEEL SHELLS ARE REMOVED PROVIDE A TWENTY-FIVE (25) FOOT LOOP OF CABLE UNDER THE PIER FOOTING AND SEPARATE FROM THE CONCRETE WITH TWO (2) LAYERS OF TAR PAPER. EXTEND CABLE, IN ONE CONTINUOUS LENGTH, THROUGH TOP OF PIER CAP AND EXOTHERMIC WELD THE UPPER END OF CABLE TO OUTSIDE STEEL GIRDER OF THE SUPERSTRUCTURE. PAYMENT FOR STRUCTURE GROUND SYSTEM SHALL BE LUMP SUM BID.

CONT. No. 58019 SHEET ACCT. No. 5058

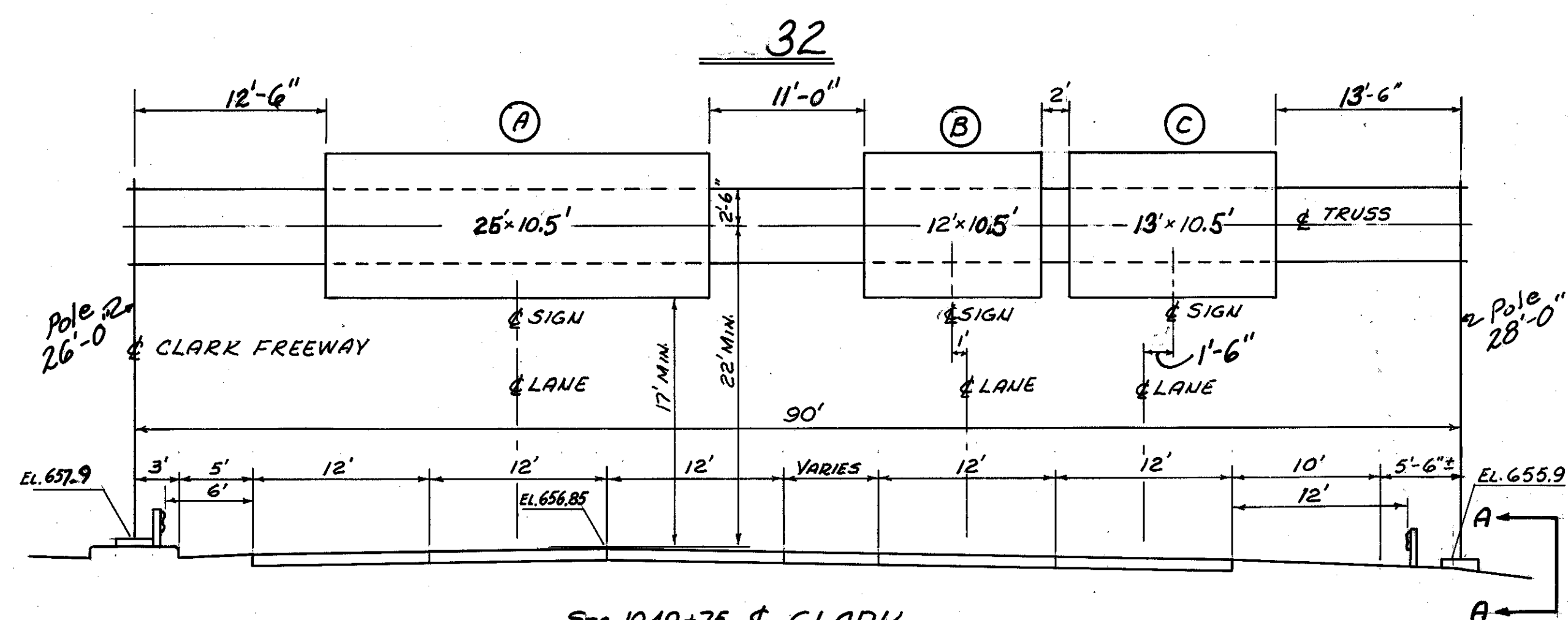
TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

ELECTRICAL NOTES
CLARK FREEWAY
EAST OF WILLOW INTERCHANGE

SCALE		DATE	
DESIGNED	DRAWN	TRACED	CHECKED
	LKH		SGF
REVIEWED	DATE	REVISED	
			4-17-88



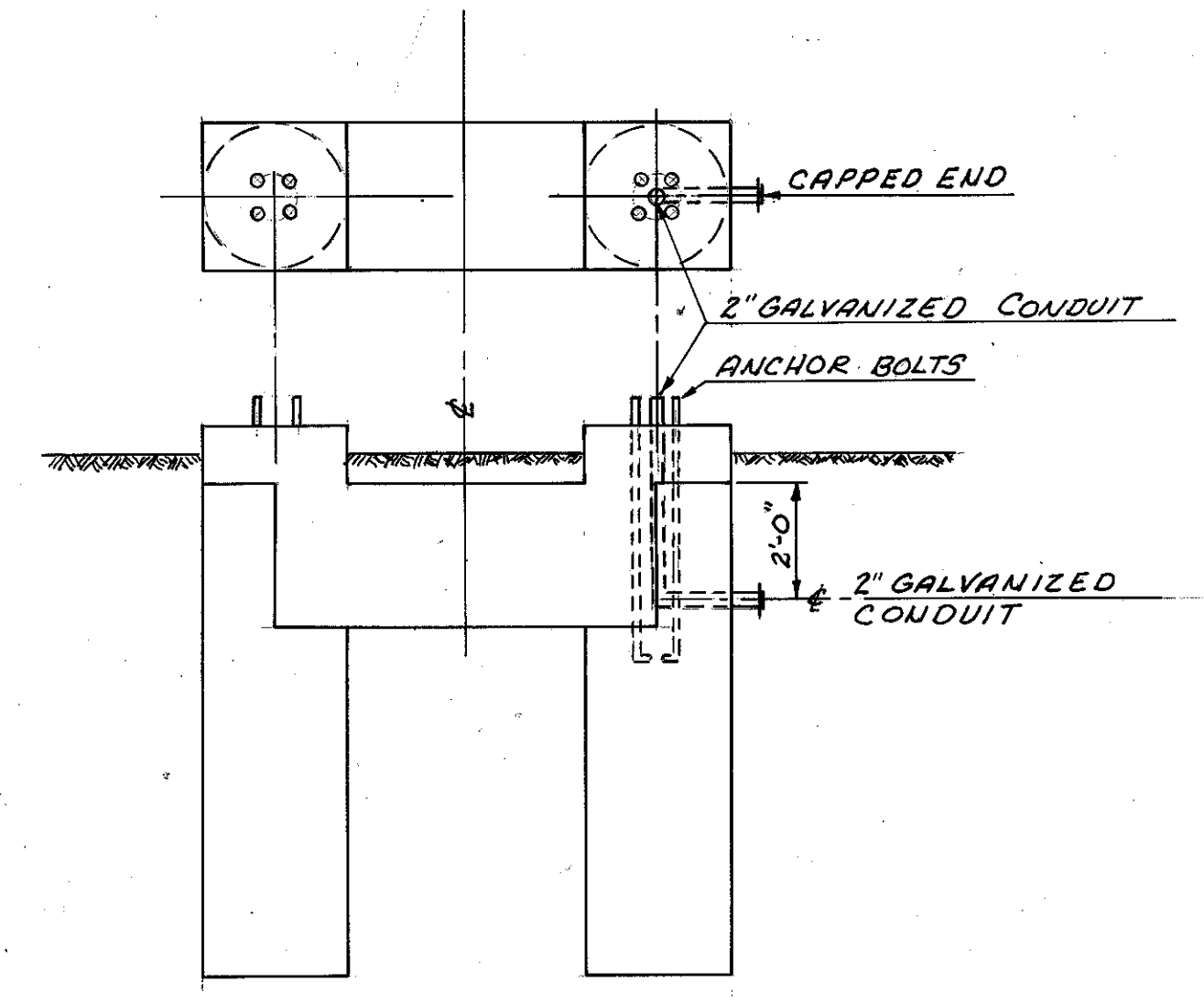
31
 STA. 14+00 & RAMP E-N
 I-129 No. 73 DESIGN-1 50' SPAN AS PER PLAN
 $12 \times 10.5 = 126 \text{ sq ft}$ $17 \times 8 = 136 \text{ sq ft}$
 SPACING: 6", 5'-6", 5'-6", 6"
 No. of BR: 3
 TYPE: Y₂ HEIGHT: 10.5'



32
 STA. 1049+75 & CLARK
 I-129 No. 76 DESIGN-4 90' SPAN AS PER PLAN
 $25 \times 10.5 = 262.5 \text{ sq ft}$ $12 \times 10.5 = 126 \text{ sq ft}$ $13 \times 10.5 = 136.5 \text{ sq ft}$
 SPACING: 1'-2 5/8", 6'-2 1/4", 2 @ 8'-2 1/4", 1'-2 5/8"
 No. of BR: 4
 TYPE: Y₂ HEIGHT: 10.5'

REFERENCE No.	S-25			I-129				I-15	
	SIGN SWITCH & ENCLOSURE	GROUND WIRE & WIRE CONNECTION	7.3 DES. 1	7.6 DES. 4	CLASS 'E' CONC. FOR SIGN SUPPORT FOUNDATIONS	GUARD RAIL AS PER PLAN			
	EA.	EA.	EA.	EA.	C.Y.	L.F.			
31	1	1	1		8.3	SH.12			
32	1	1		1	9.9	SH.12			
TOTALS	2	2	1		18.2				

NOTE: TYPE Y₂ BRACKET SIZE IS 4" x 2 21/32" x 3/16" - I AT 2.64 LB. ALUM.



SECTION A-A
 FOUNDATION DETAIL SHOWING MODIFICATION
 OF 2" GALVANIZED CONDUIT OUTLET.
 (NOT TO SCALE)
 FOR DIMENSIONS & DETAILS NOT SHOWN,
 SEE SH. 57B, C, D OR E.
 FOR GUARD RAIL LOCATION & PLAN SEE SHEET 12.

TRYGVE HOFF & ASSOCIATES
 ENGINEERS
 1922 EAST 107TH STREET CLEVELAND, OHIO

OVERHEAD SIGN SUPPORT DETAILS

SCALE	DATE
DESIGNED	DRAWN
TRACED	CHECKED
REVIEWED	DATE
REVISED	

G.O.H. J.K.L. 2/24/64

SHEET NO. 58019 SHEET NO. 6465

CUY-254-18.88

NOTES

MATERIALS
 THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.
 SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION I-129 UNLESS OTHERWISE NOTED.
 STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.
 AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION
 THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. M-7.4(d). MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION
 USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/4" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

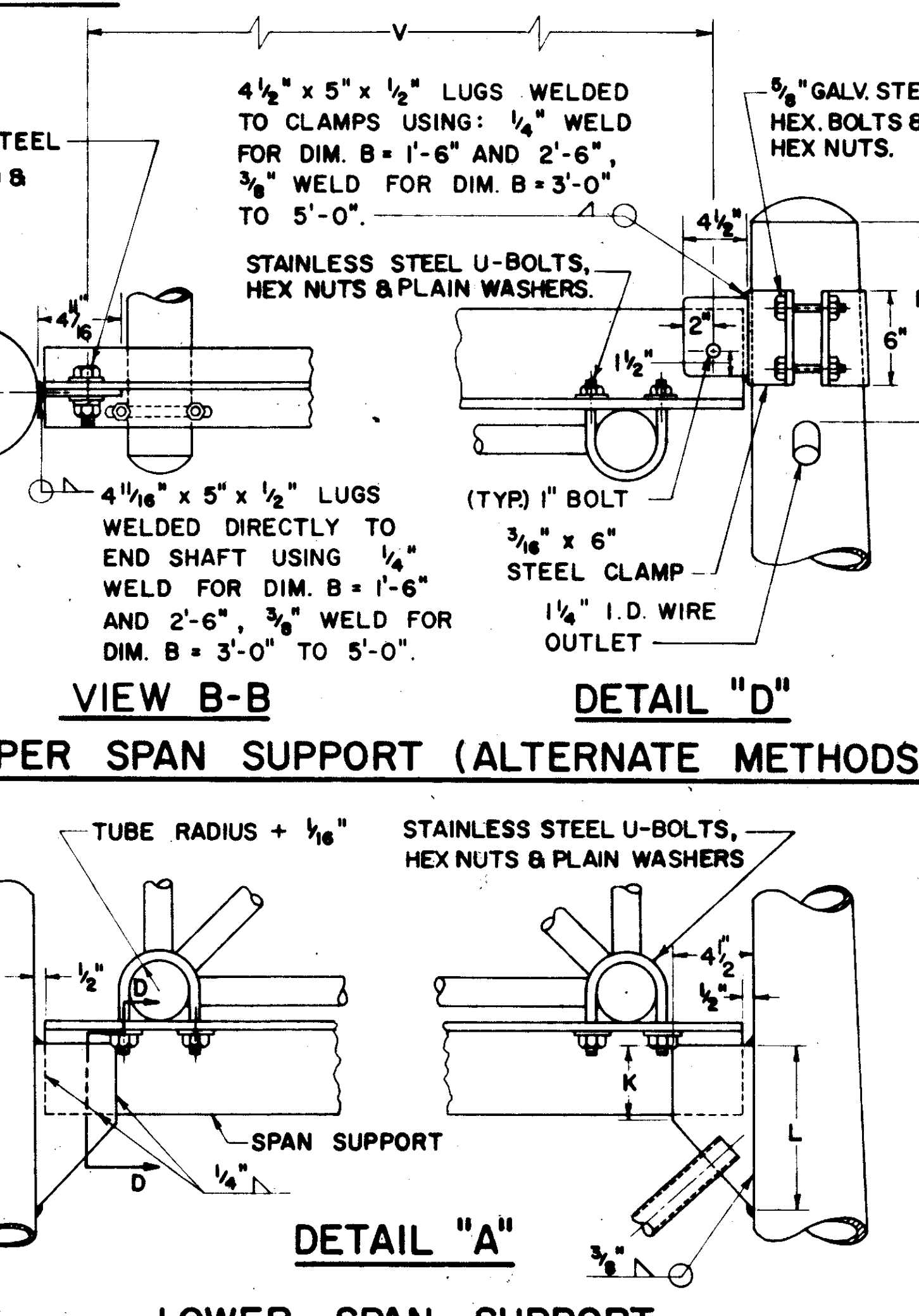
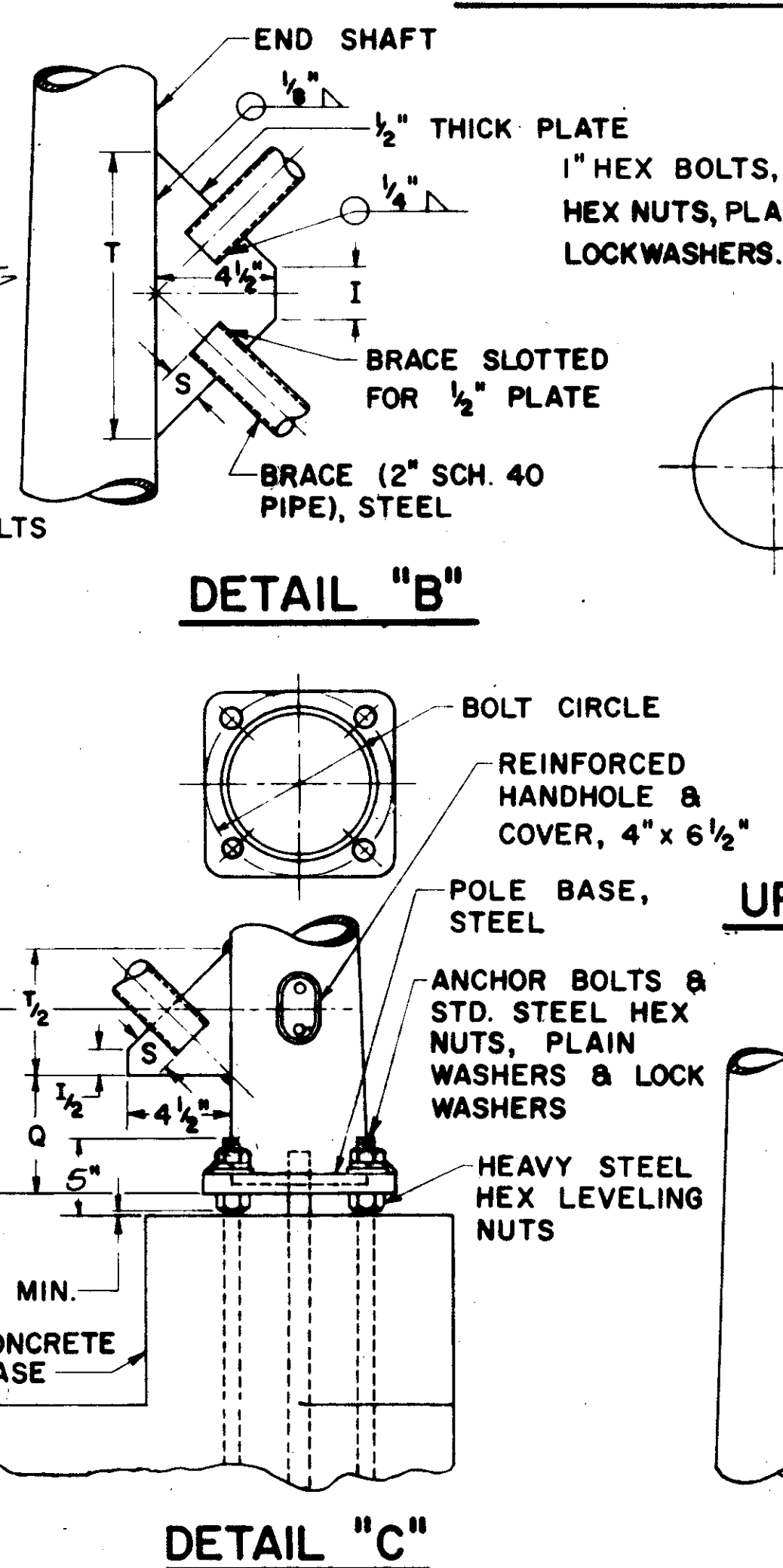
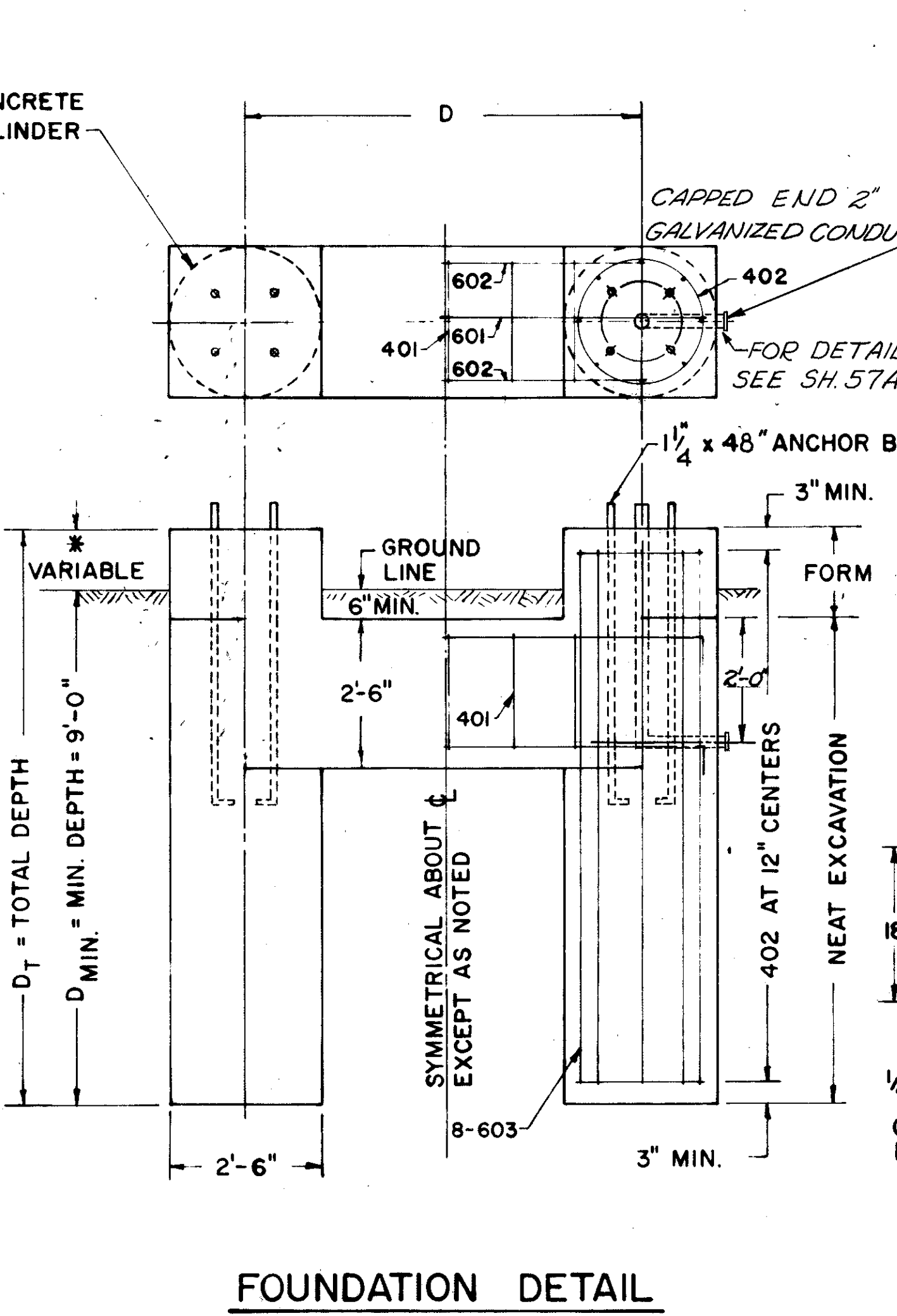
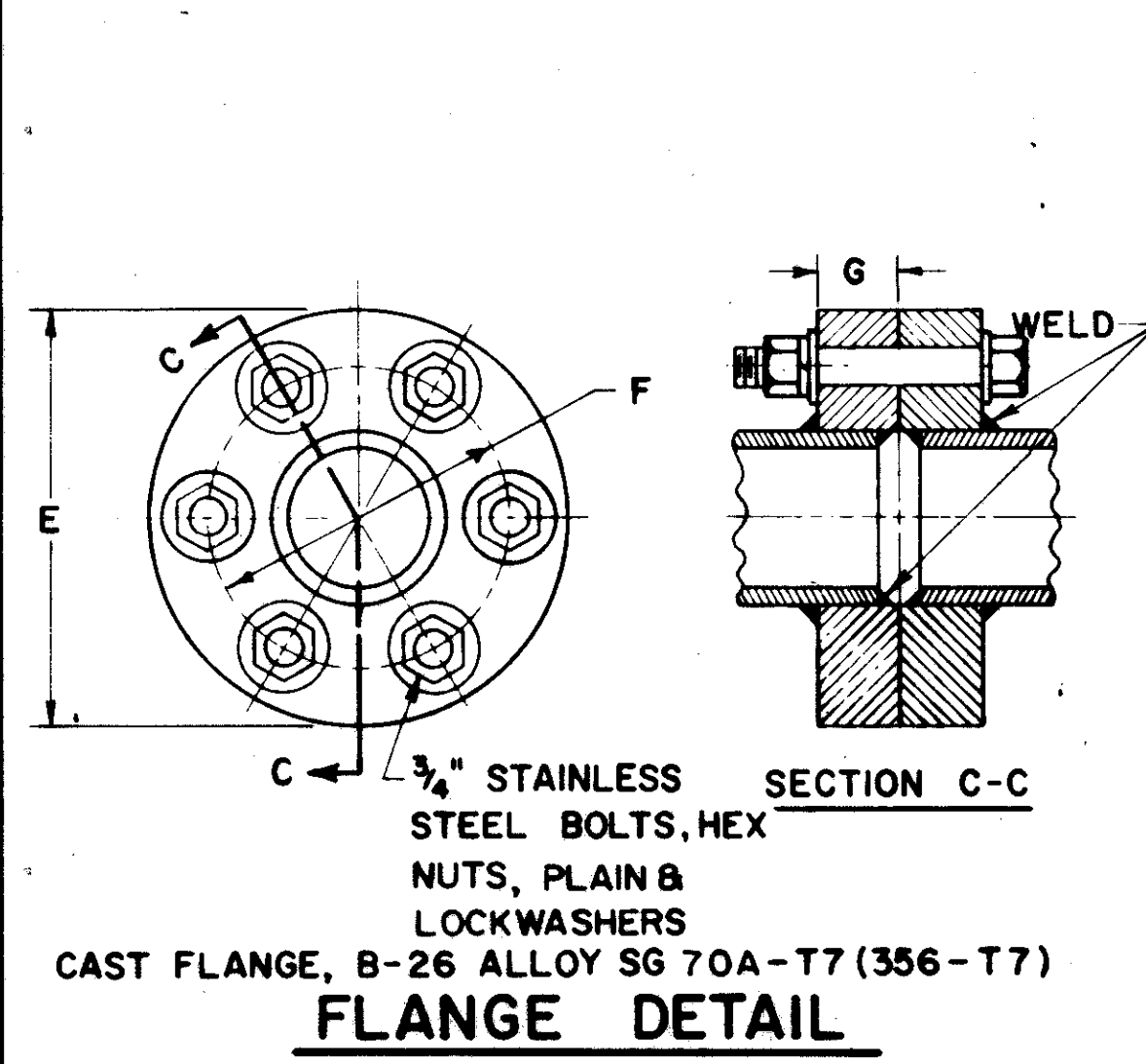
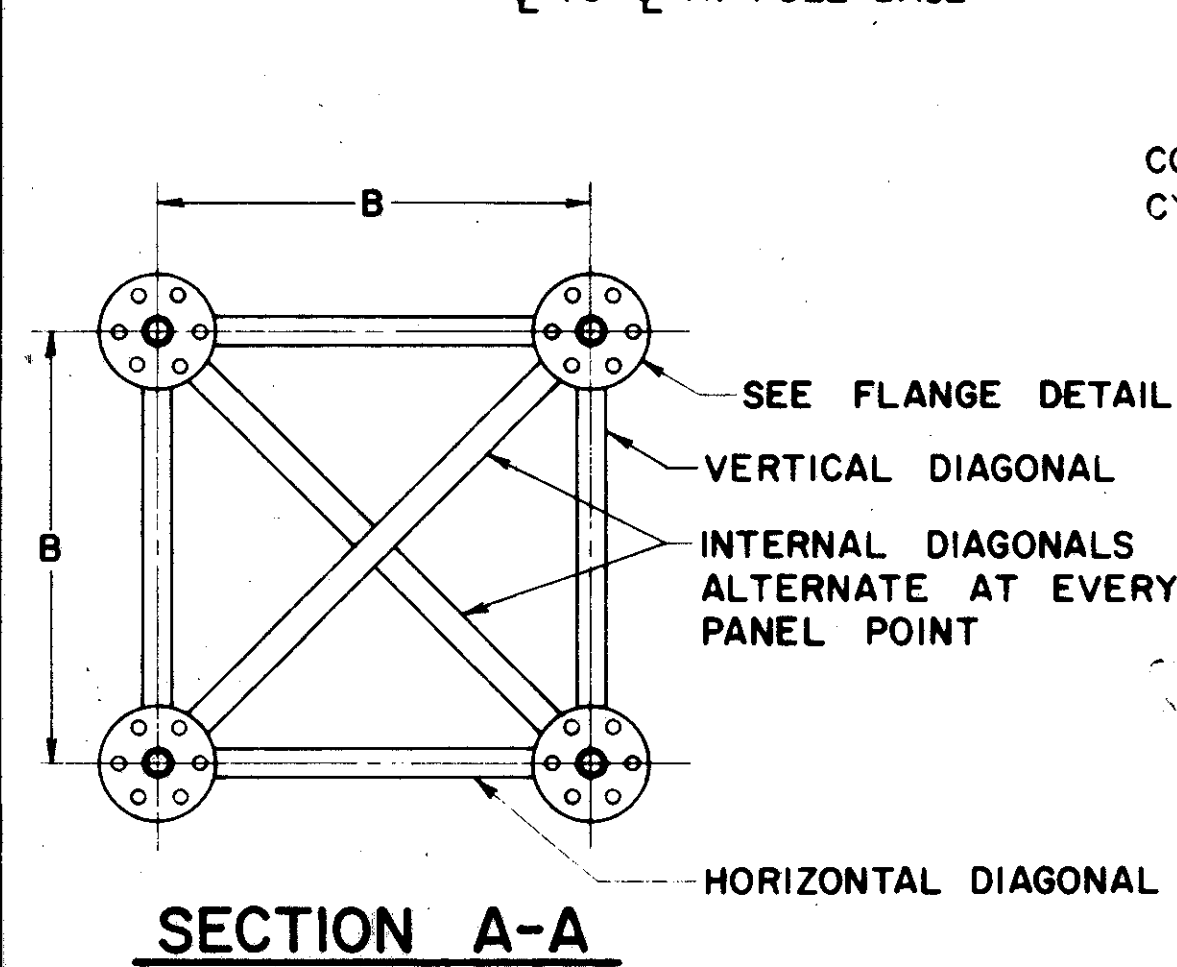
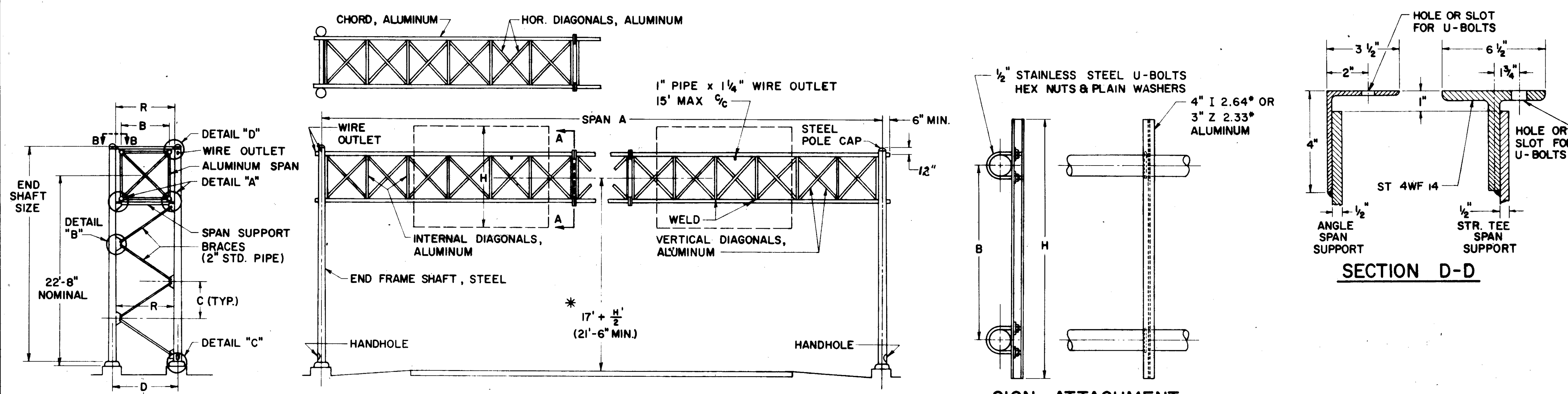
PAYMENT
 PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

SOILS
 THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEANATED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE 100% 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
 COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM I-129 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.
 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.

FOUNDATION ELEVATION
 ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

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.



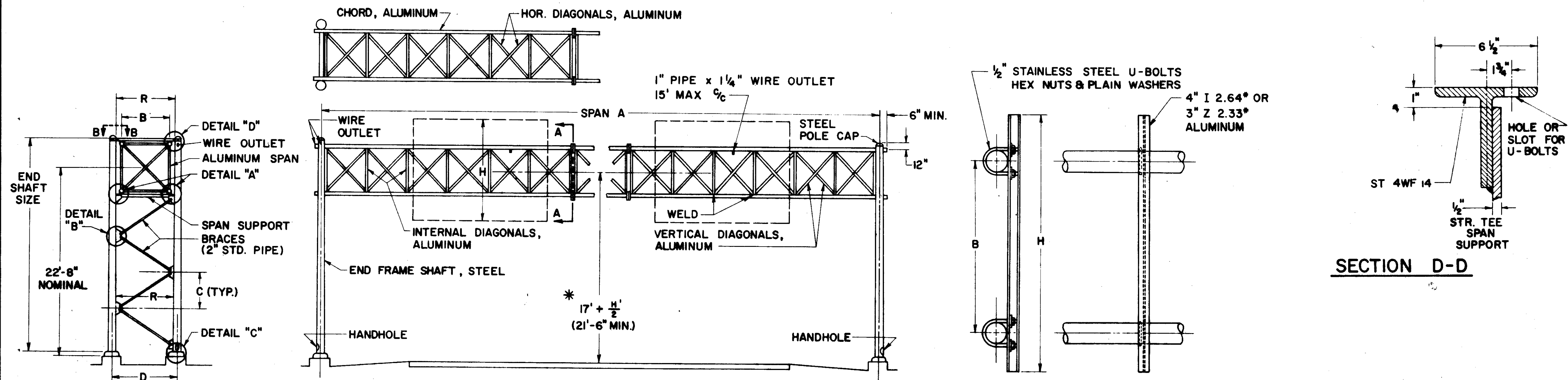
DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL	REINFORCEMENT SCHEDULE
1	50' Thru 55'	3'-0"	4'-11 3/4"	4'-5"	7"	8" x 4.5" x 25'-0", 3GA	5'-10 13/16"	5 1/2"	1 1/4"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5 5/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	3 1/2" x .188"	1.660" x .140"	1.660" x .140"	101, 102, 103
2	56' Thru 80'	3'-0"	4'-11 3/4"	4'-5"	9 1/4"	8" x 4.5" x 25'-0", 3GA	5'-10 13/16"	7 7/16"	1 3/8"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5 5/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	4 3/4" x .188"	1.900" x .145"	1.660" x .140"	601, 602, 603
3	81' Thru 90'	4'-0"	4'-10 1/4"	5'-6"	9 1/4"	8" x 6.22" x 25'-6", 3GA	6'-7 1/8"	7 7/16"	1 3/8"	5 5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-1"	1 1/2"	9 1/2"	5 5/8"	4'-4 5/8"	11"	SPLIT TEE 4'-9"	4 3/4" x .188"	1.900" x .145"	1.900" x .145"	601, 602, 603
4	91' Thru 105'	4'-0"	4'-10 1/4"	5'-6"	9 1/4"	8" x 6.22" x 25'-6", 3GA	6'-7 1/8"	7 7/16"	1 3/8"	5 5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-1"	1 1/2"	9 1/2"	5 5/8"	4'-4 5/8"	11"	SPLIT TEE 4'-9"	4 3/4" x .188"	2" x .188"	1.900" x .145"	601, 602, 603

BUREAU OF TRAFFIC
 OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS No. 7.3

APPROVED: *Robert J. Lamer*
 ENGINEER OF TRAFFIC

DATE: 7-25-62



NOTES

MATERIALS

THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL. SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION I-129 UNLESS OTHERWISE NOTED.

STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.

AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION

THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. M-7.4(d). MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION

USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/4" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

PAYMENT

PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

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

COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM I-129 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

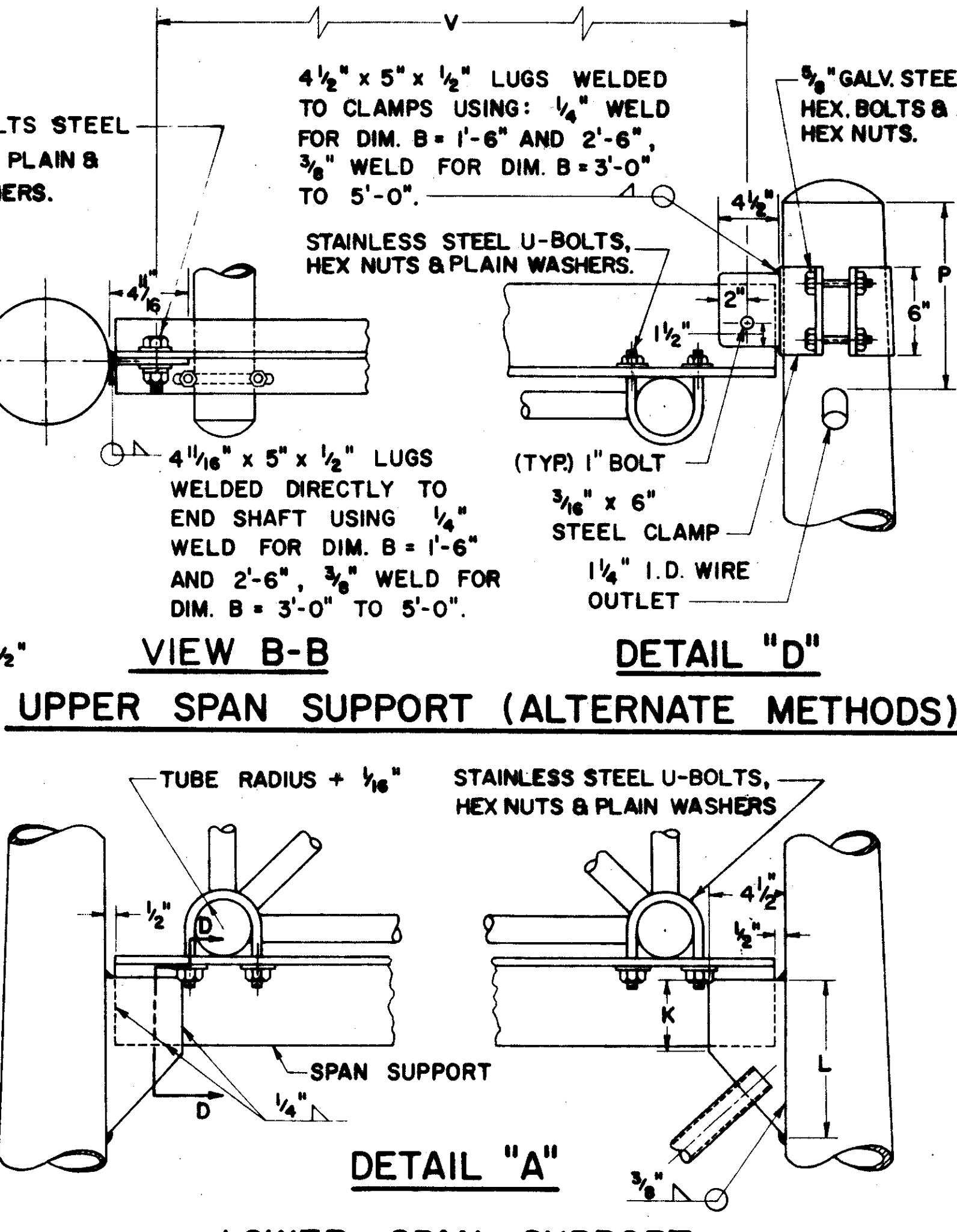
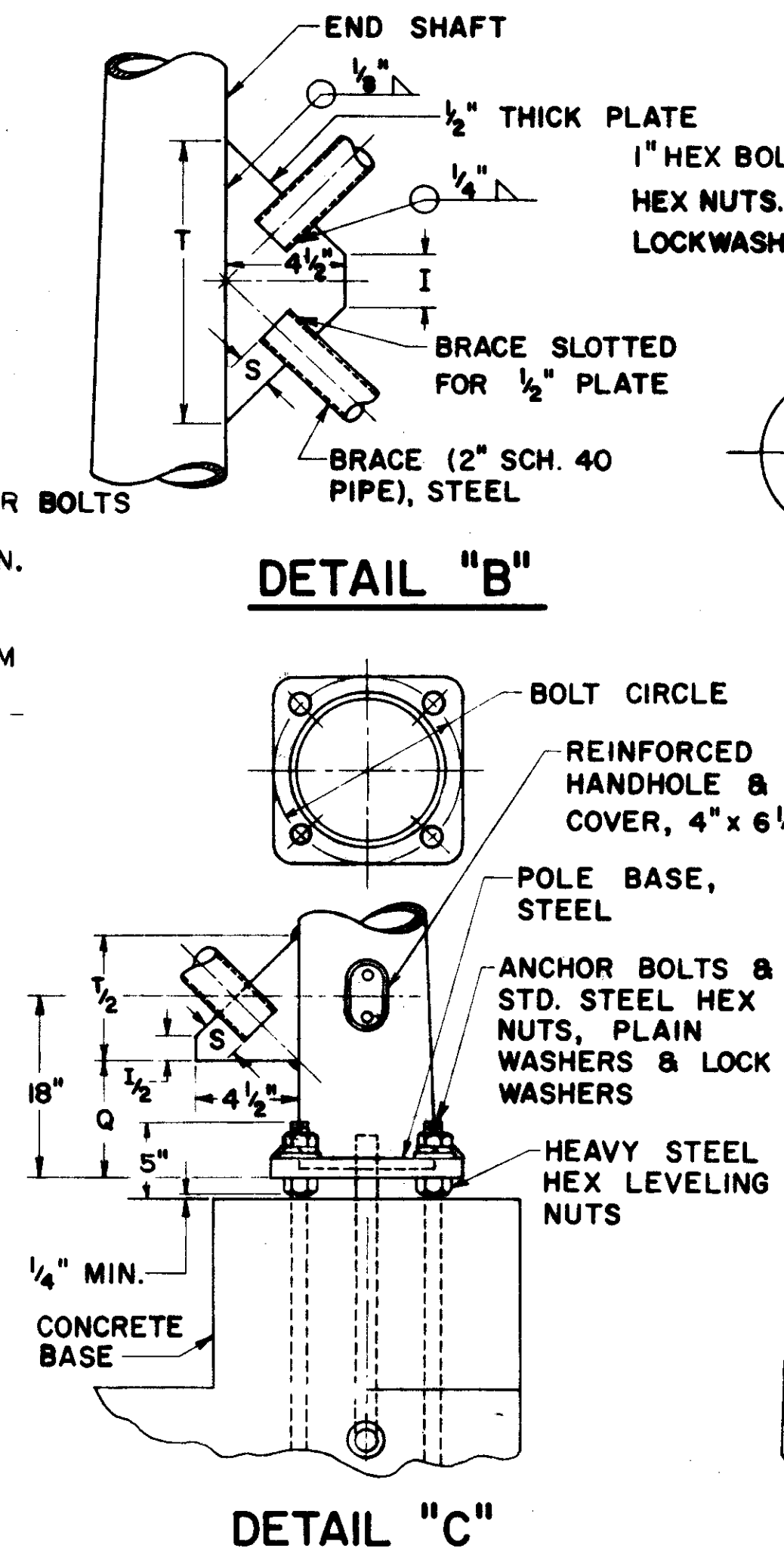
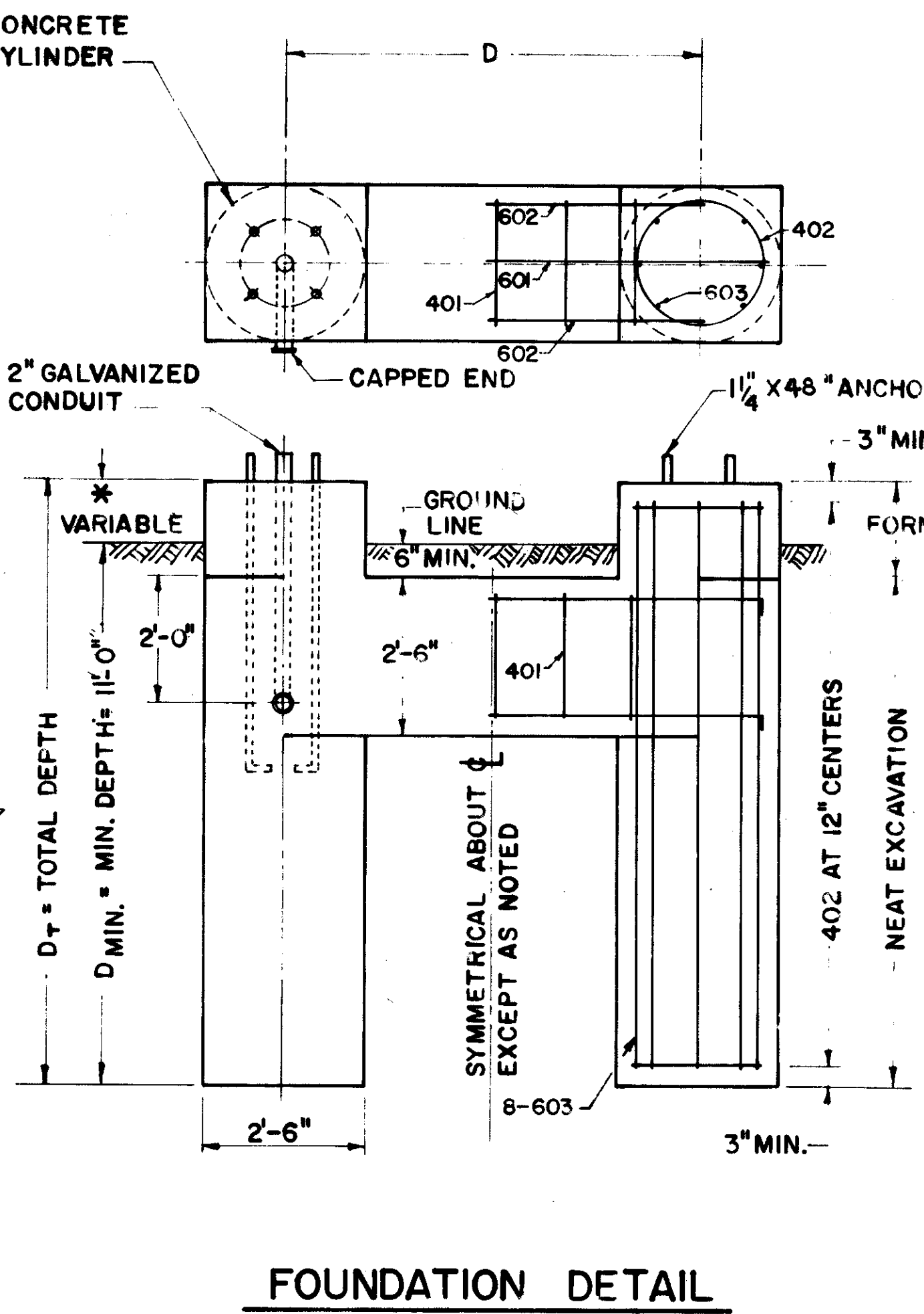
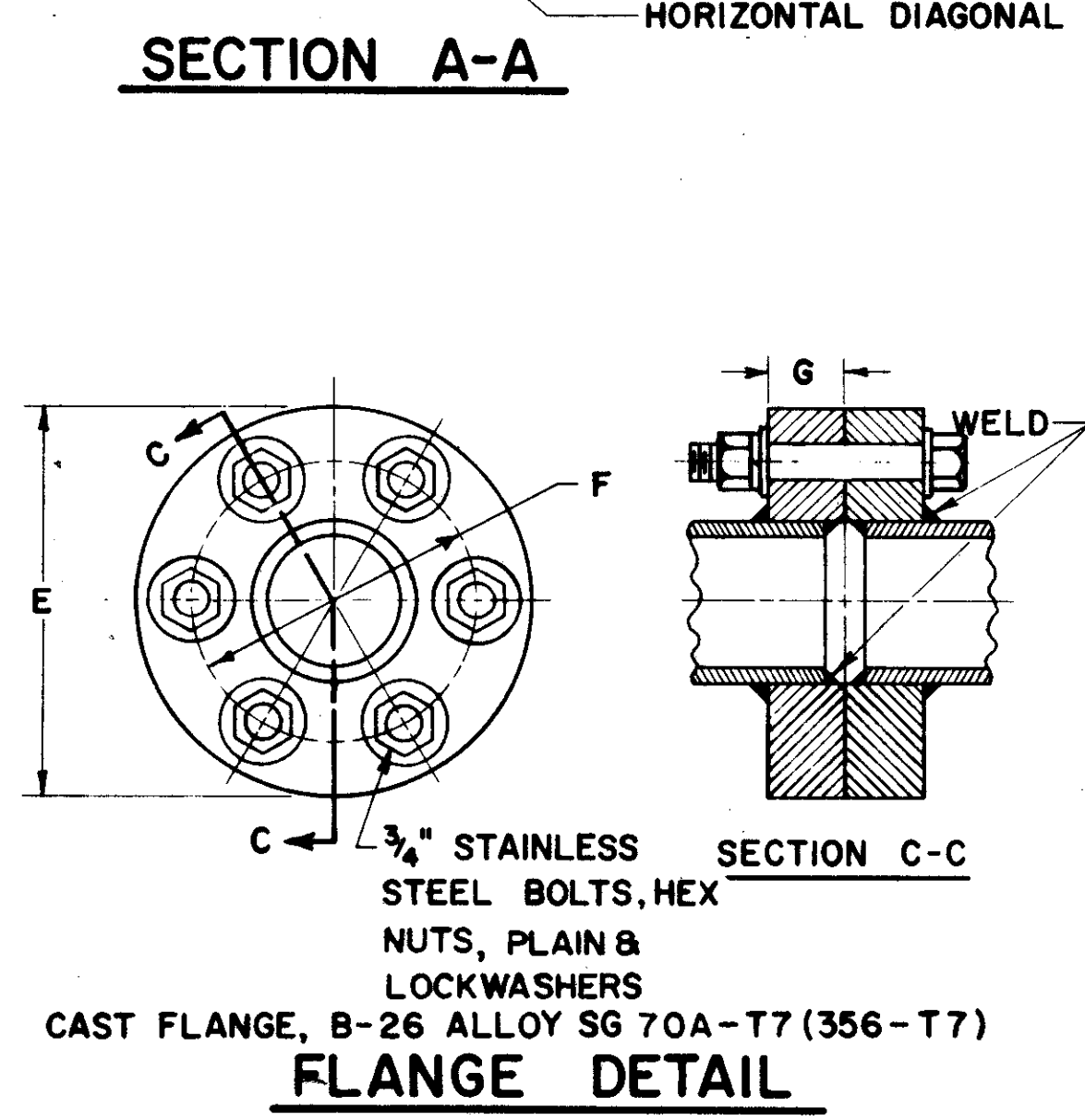
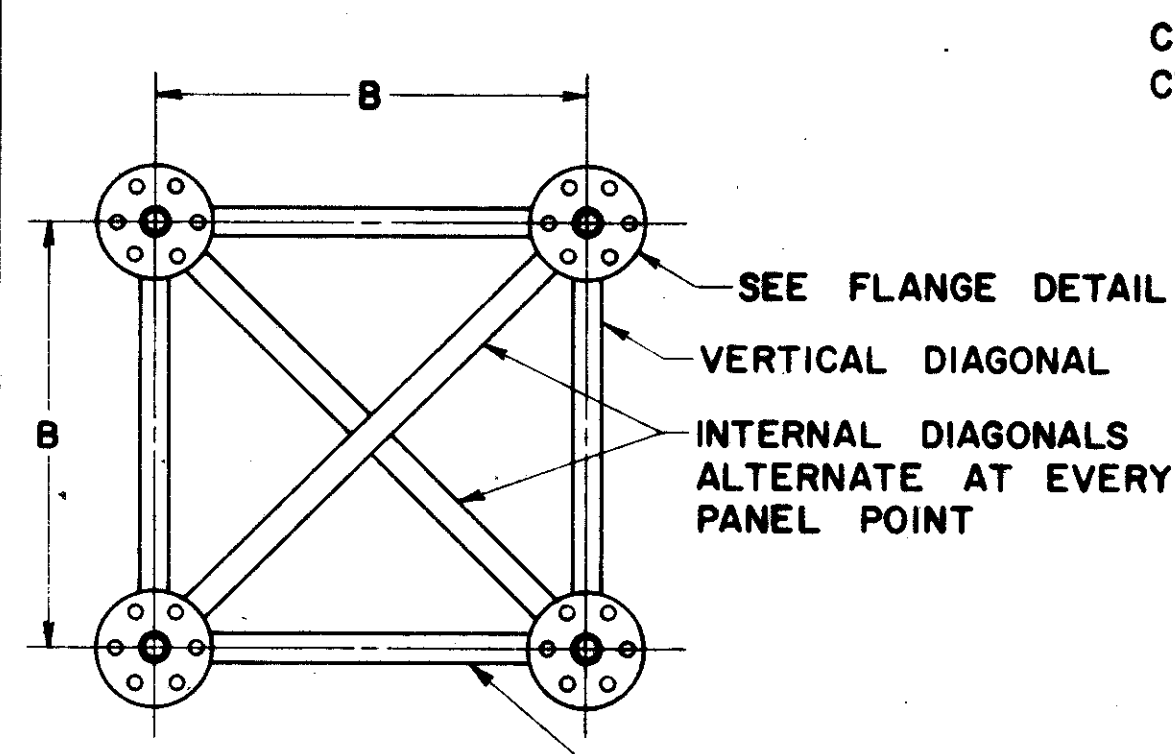
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED, INDICATE THE BAR SIZE NUMBER.

FOUNDATION ELEVATION

ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17" CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

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 A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1.	50' thru 65'	3'-0"	4'-11 3/4"	4'-5"	9 1/4"	8" X 4.5 X 25'-0", 3GA	5'-10 13/16"	7 7/16"	1 3/8"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5 5/8"	3'-3 5/8"	11"	Split Tee 3'-8"	4 3/4" X .188"	2" X .188"	1.660" X .140"
2.	66' thru 75'	4'-0"	4'-10 1/4"	5'-6"	9 1/4"	8" X 6.22 X 25'-6", 3GA	6'-7 1/8"	7 7/16"	1 3/8"	5 5/8"	4 3/4"	7 3/4"	12"	6 1/4"	4'-10"	1 1/2"	9 1/2"	5 5/8"	4'-5 5/8"	11"	Split Tee 4'-9"	4 3/4" X .188"	2" X .188"	1.900" X .145"
3.	76' thru 85'	4'-0"	4'-10 1/4"	5'-6"	11"	8" X 6.22 X 25'-6", 3GA	6'-7 1/8"	8 1/2"	1 1/2"	5 5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-10"	1 1/2"	9 1/2"	5 5/8"	4'-5 5/8"	11"	Split Tee 4'-9"	5 1/2" X .250	2 1/2" X .188"	1.900" X .145"
4.	86' thru 110'	5'-0"	4'-8 1/2"	6'-6"	11"	8" X 6.18 X 26'-0", 3GA	7'-3 1/4"	8 1/2"	1 1/2"	-	3 1/2"	7 3/4"	12"	7 1/4"	5'-10"	1 1/4"	11 1/4"	3 3/4"	5'-5 5/8"	11"	Split Tee 5'-9"	5 1/2" X .250	2 1/2" X .188"	2 1/2" X .188"

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12'C/C	8'-6"	102
402	12'C/C	7'-6"	103
601	4	D+4'-0"	101
602	8	D+2'-0"	101
603	32	D _T -6"	STR.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS No.7.6

DESIGN I-129

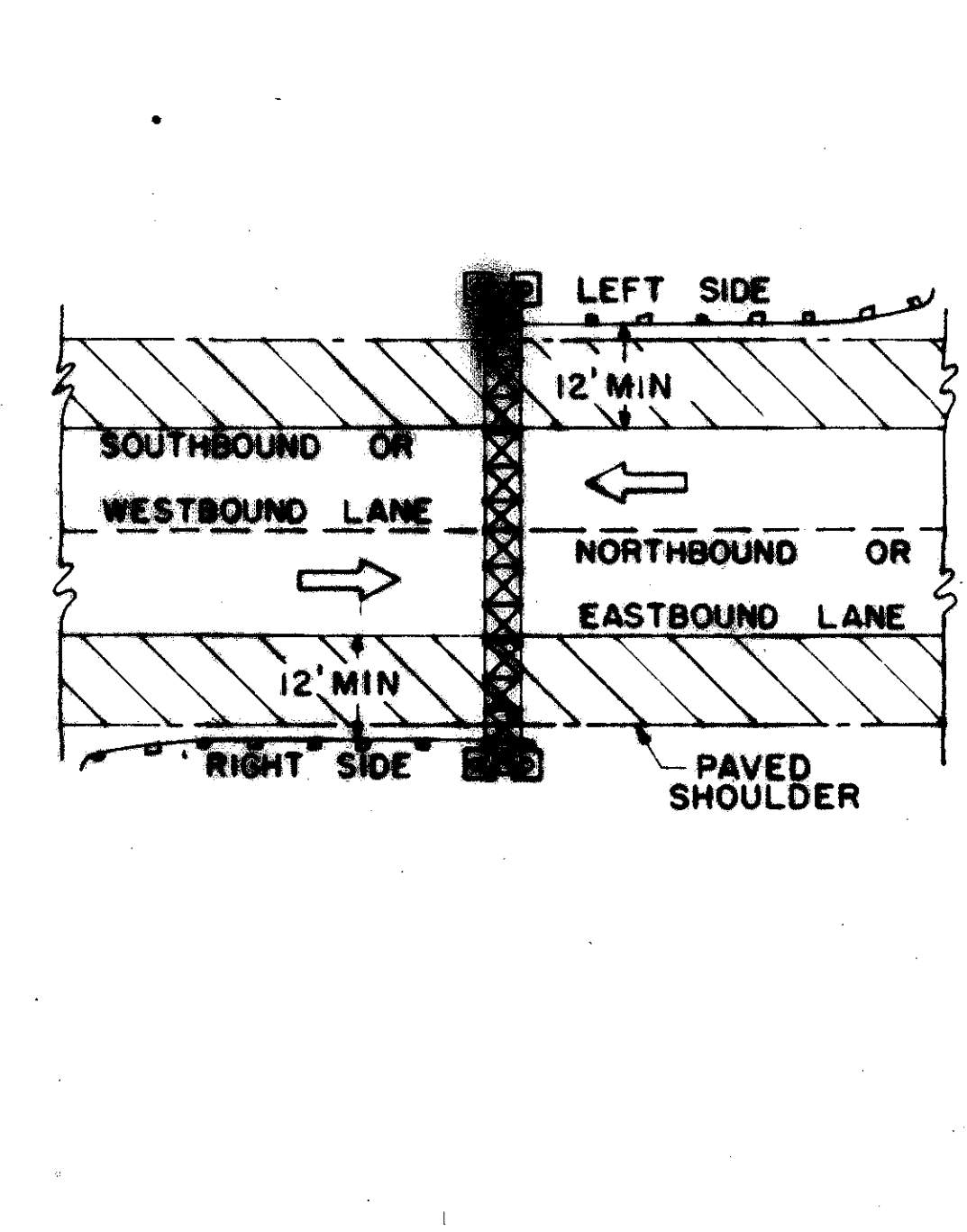
DATE 4-7-64

APPROVED _____ ENGINEER OF TRAFFIC

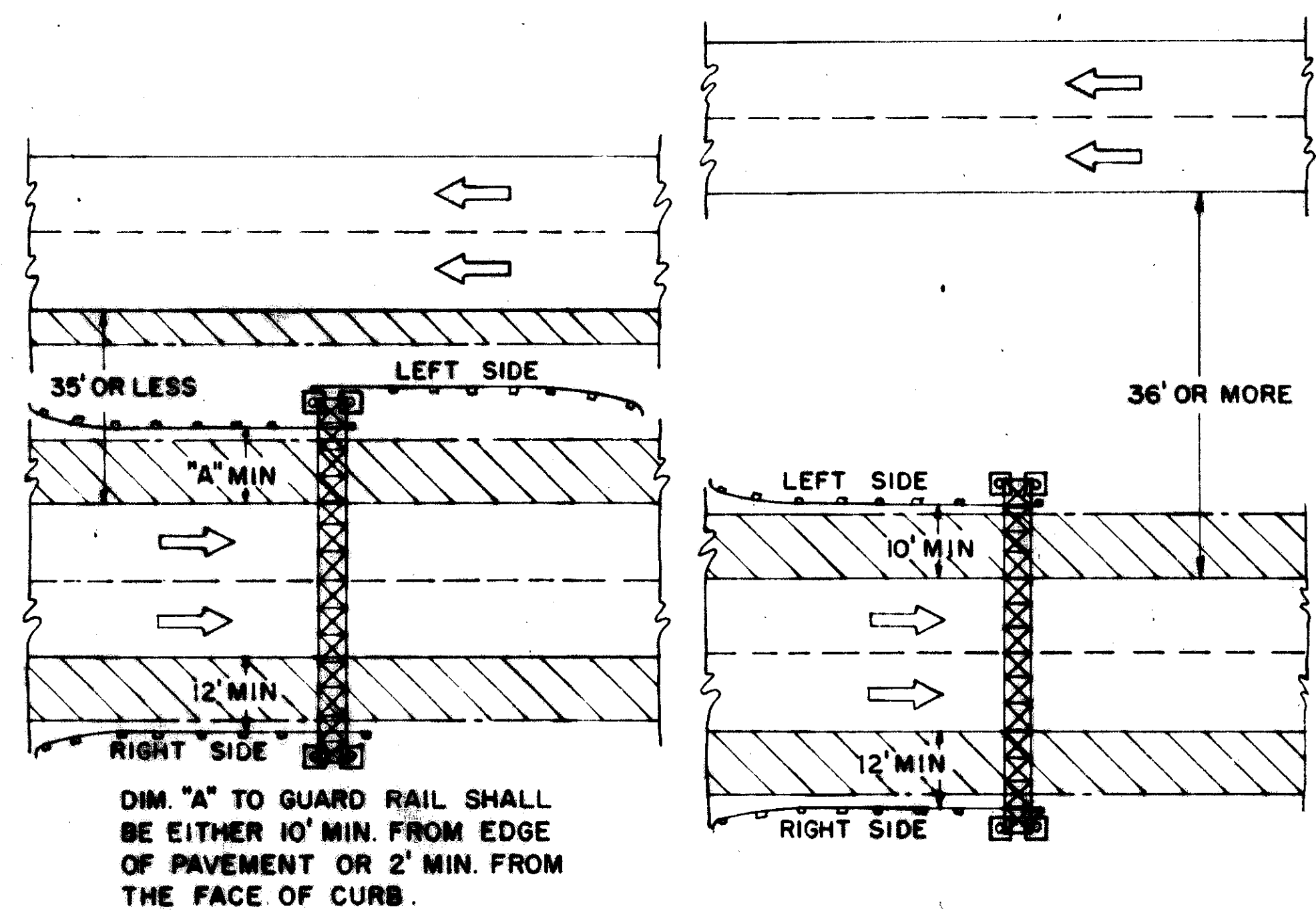
NOTES

GENERAL

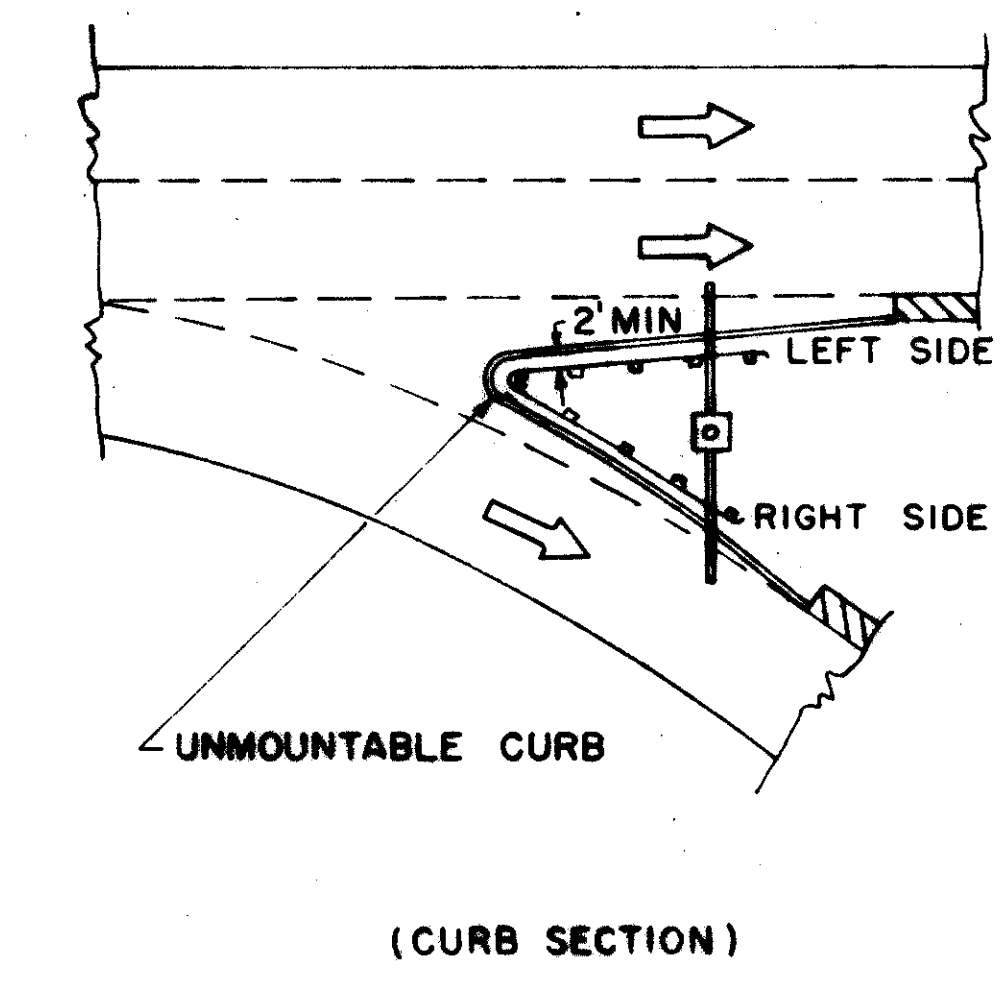
PROTECTIVE GUARD RAIL FOR OVERHEAD SIGN STRUCTURES SHALL CONFORM TO SEC. I-15, FOR STEEL BEAM TYPE (DEEP).
 AT LOCATIONS WHERE GUARD RAIL IS IN PLACE, THE SIGN SUPPORT FOUNDATIONS SHALL BE ERECTED BEHIND EXISTING GUARD RAIL.
 A MINIMUM OF SIX GUARD RAIL POSTS IS REQUIRED IN ADVANCE OF THE SIGN SUPPORT.
 THE LENGTH OF GUARD RAIL DEPENDS ON THE POST SPACING. (EXAMPLE: FOR A SINGLE LINE OF GUARD RAIL IN ADVANCE OF A SIGN SUPPORT, THE MINIMUM LENGTH IS 50 FT. FOR A POST SPACING OF 6'-3".
 WHERE PROPOSED GUARD RAIL FLARES ARE CONSTRUCTED OF RAIL ELEMENTS WHICH HAVE NOT BEEN FABRICATED EXACTLY TO FIT THE CURVATURE SHOWN ON THE PLANS. THE TWO END POSTS OF EACH FLARED SECTION SHALL BE ENCASED IN A MINIMUM 4" THICKNESS OF CLASS "E" CONCRETE FOR THE FULL DEPTH OF THE POST BELOW THE GROUND LINE. PAINTMENT FOR ENCASEMENT, IF REQUIRED, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE GUARD RAIL.



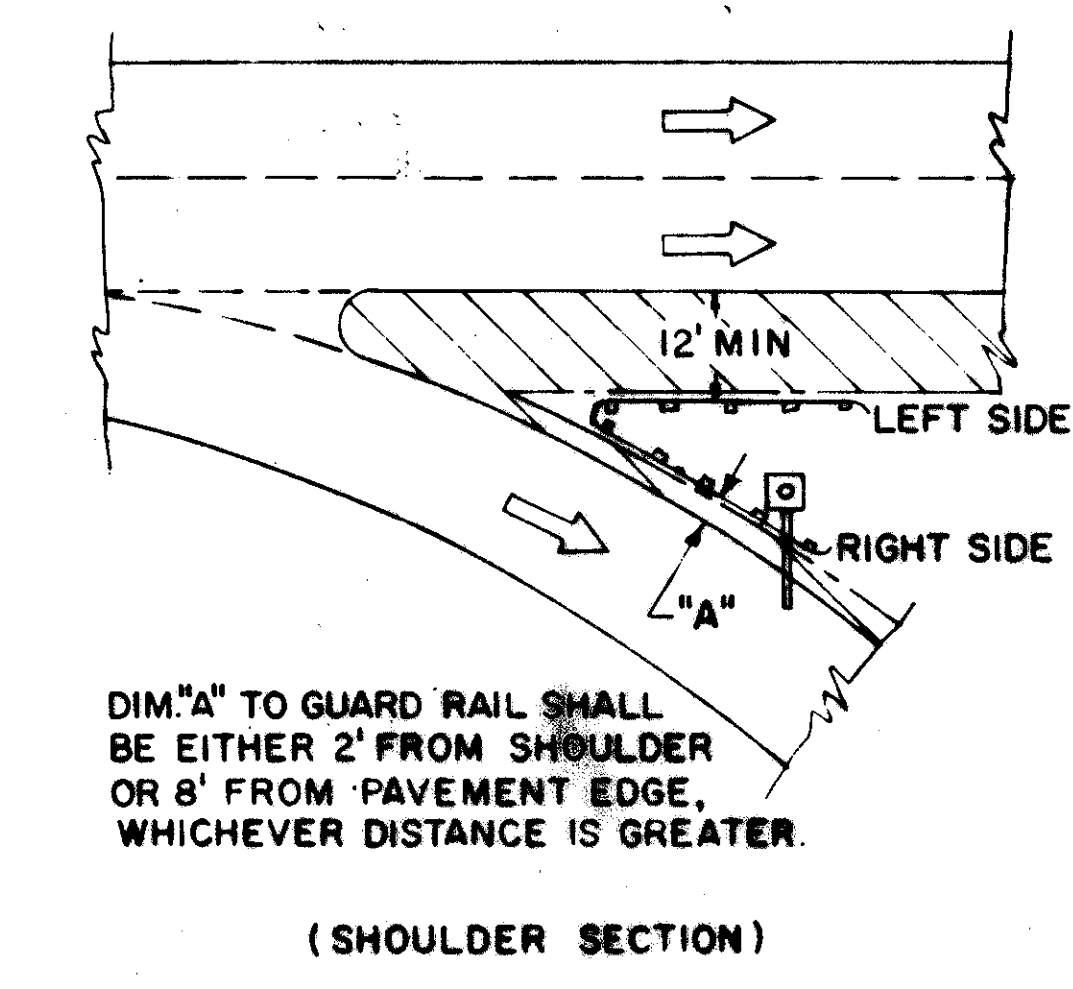
MULTIPLE LANE UNDIVIDED



FOUR LANE DIVIDED

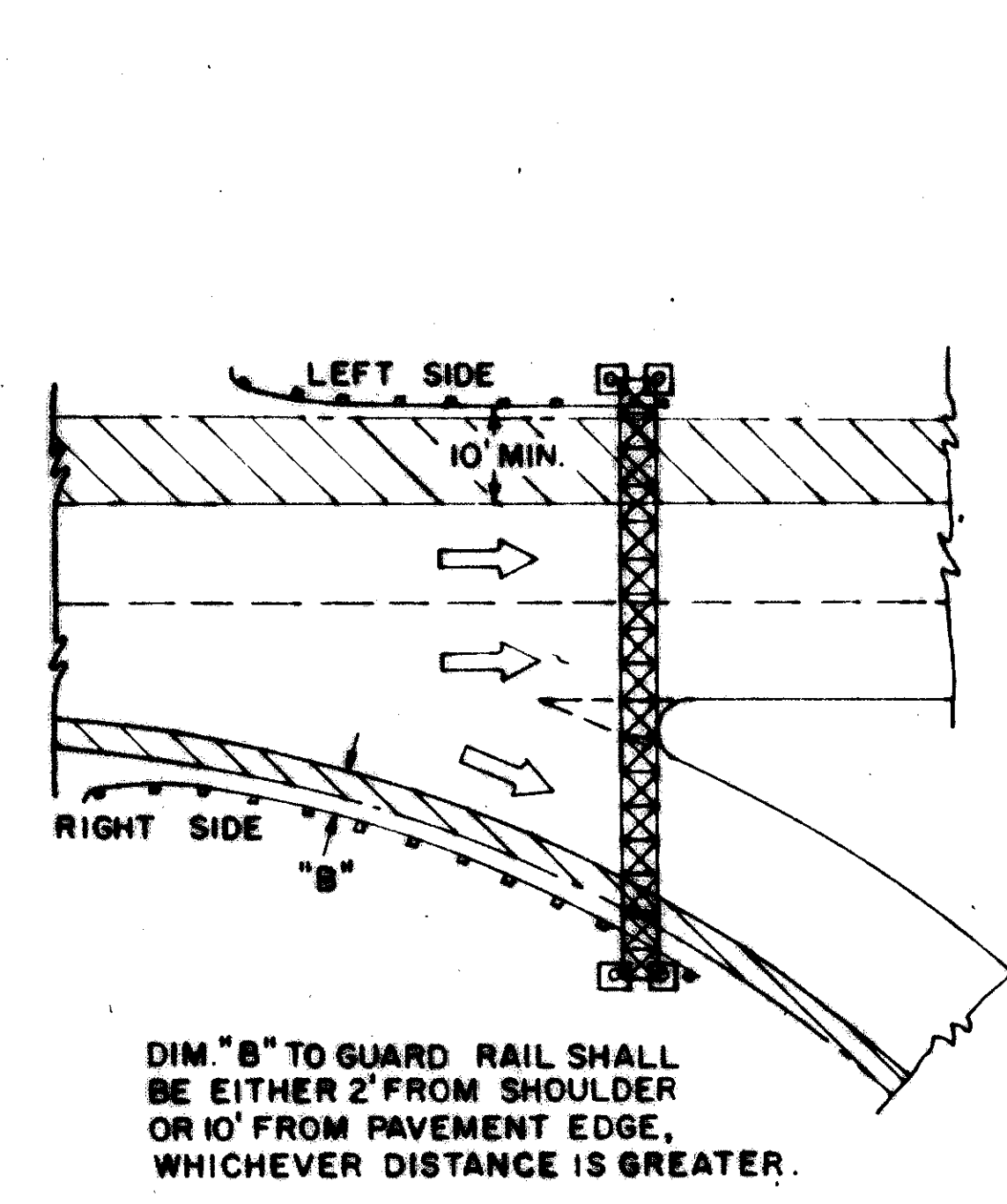


(CURB SECTION)



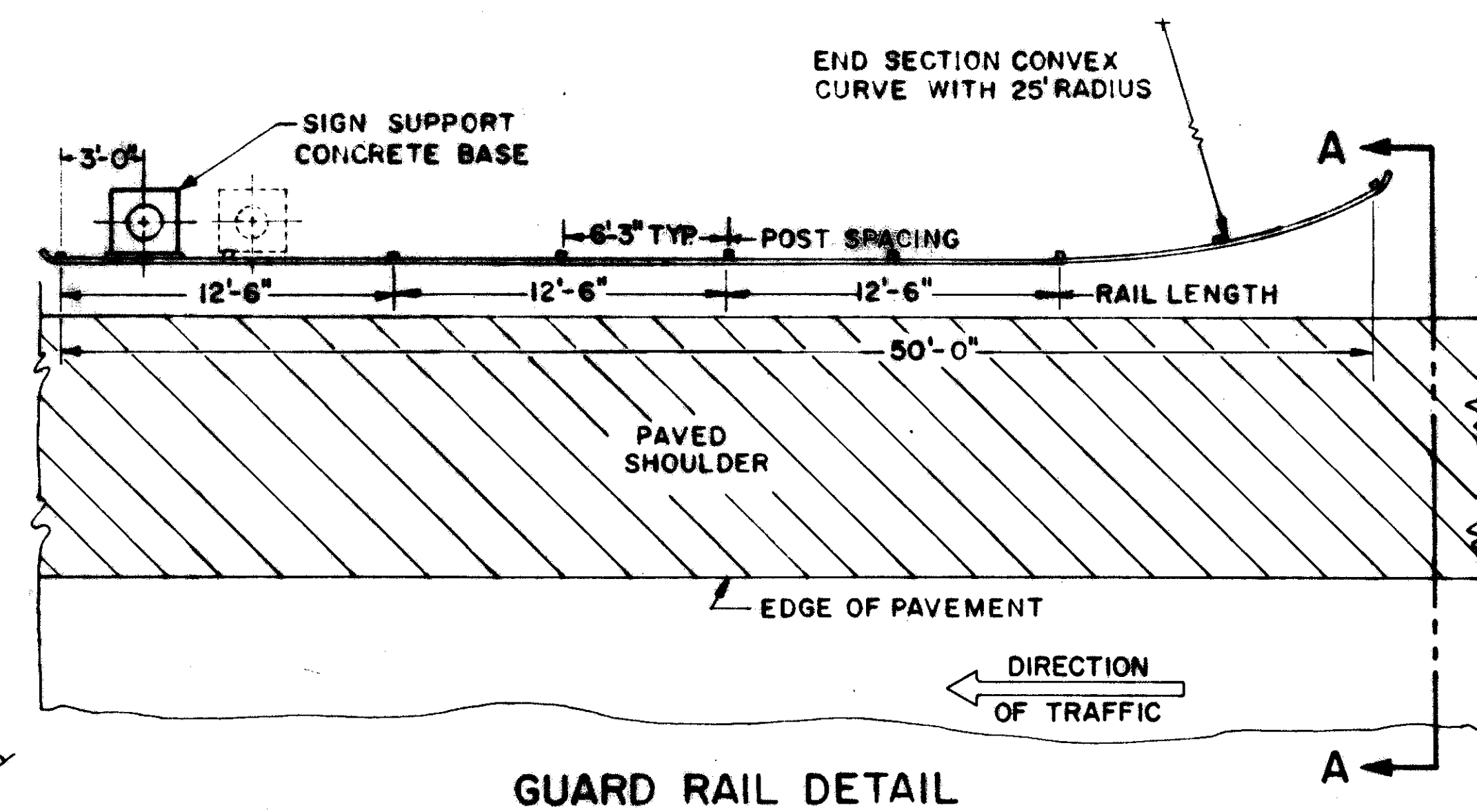
(SHOULDER SECTION)

BIFURCATION

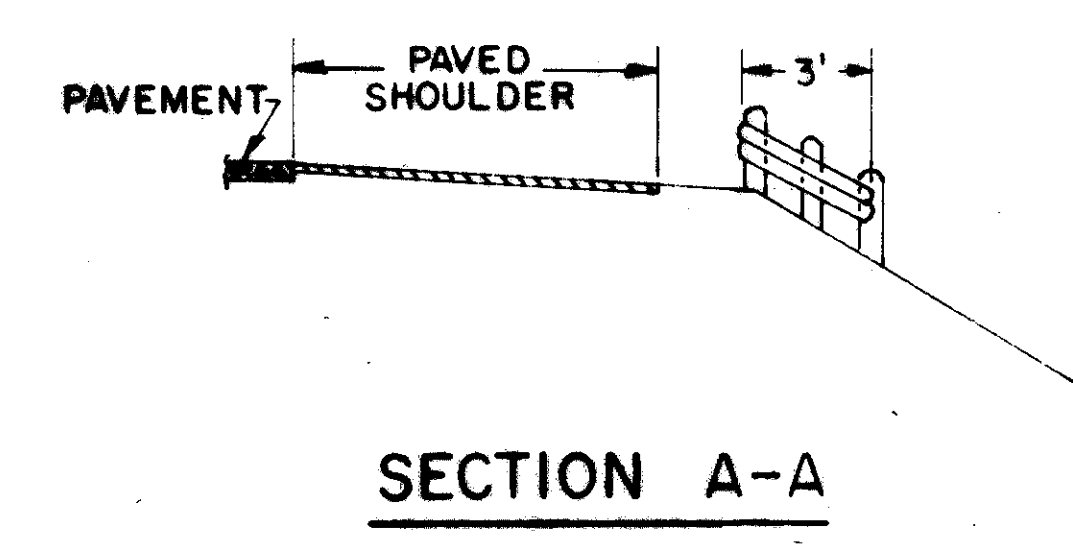


(ROADWAY SPAN)

BIFURCATION



GUARD RAIL DETAIL



SECTION A-A

DESIGN

THE DESIGN OF GUARD RAIL PROTECTION FOR OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

BUREAU OF TRAFFIC OHIO DEPARTMENT OF HIGHWAYS	
GUARD RAIL	I-129 I-15
APPROVED <i>Robert E. Conner</i> ENGINEER OF TRAFFIC	DATE 4-8-81

NOTES

GENERAL

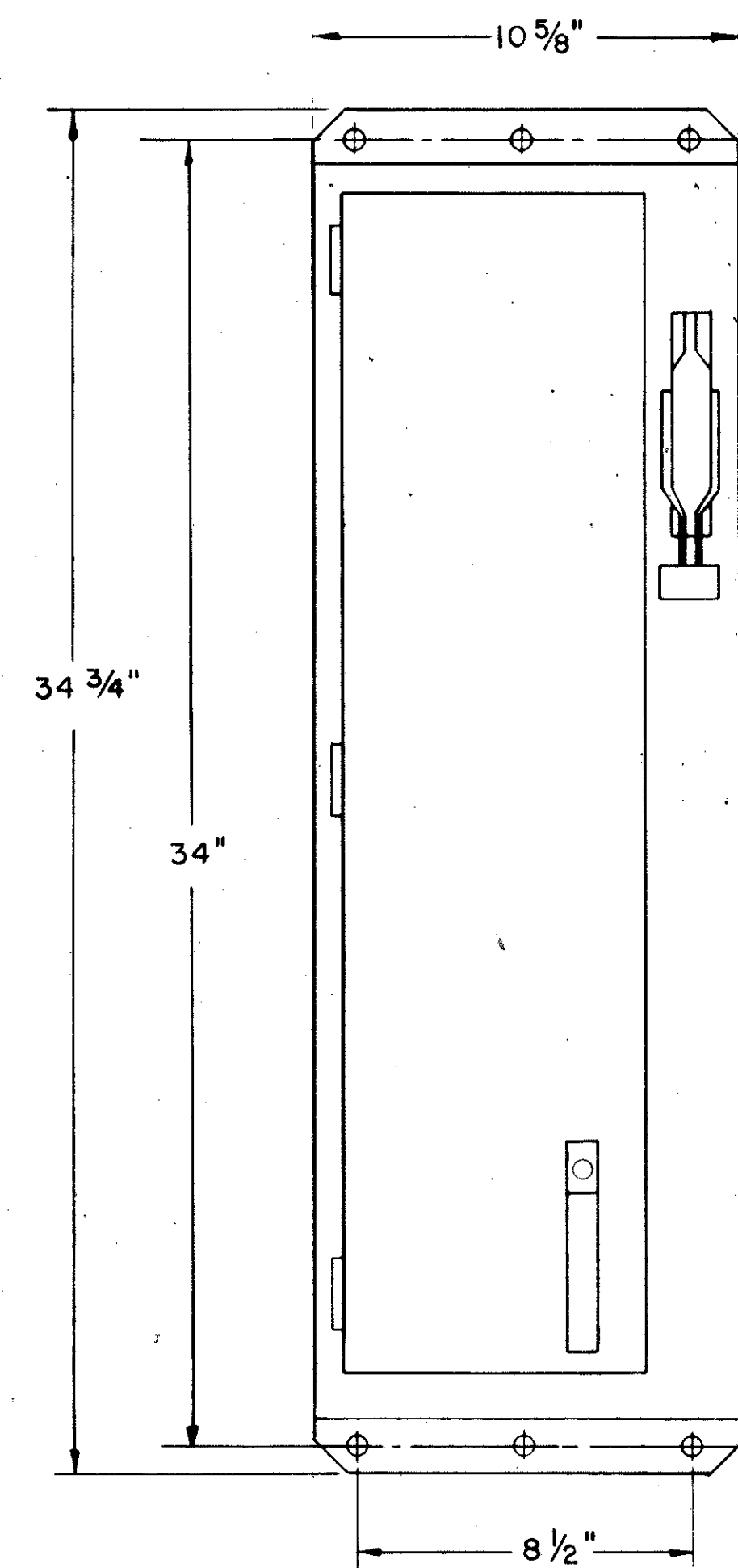
DETAILS ON THIS SHEET SHALL APPLY TO EACH OVERHEAD SIGN STRUCTURE TO SUPPORT ILLUMINATED SIGNS. ELECTRIC SERVICE SHALL ENTER THE STRUCTURE THROUGH A 2" RIGID STEEL GALVANIZED CONDUIT PLACED IN THE STRUCTURE FOUNDATION. SERVICE WIRES SHALL ENTER THE DISCONNECT SWITCH OR COMBINATION SWITCH CONTACTOR THROUGH AN INSULATED CHASE NIPPLE TO BE FIELD INSTALLED AS SHOWN IN DETAIL. FIELD DETERMINE SIZE OF NIPPLE. SIGN LOAD WIRES AND CONTROL WIRES (IF REQUIRED) SHALL ENTER SIGN STRUCTURE AND CONTINUE UPWARD TO PROPER OUTLET. CONTROL PILOT DEVICE SHALL BE A PHOTO-ELECTRIC CELL UNIT AS SPECIFIED IN THE ELECTRICAL NOTES AND INSTALLED ON THE CAP OF THE UPRIGHT STRUCTURE MEMBER.

CONTROLLER

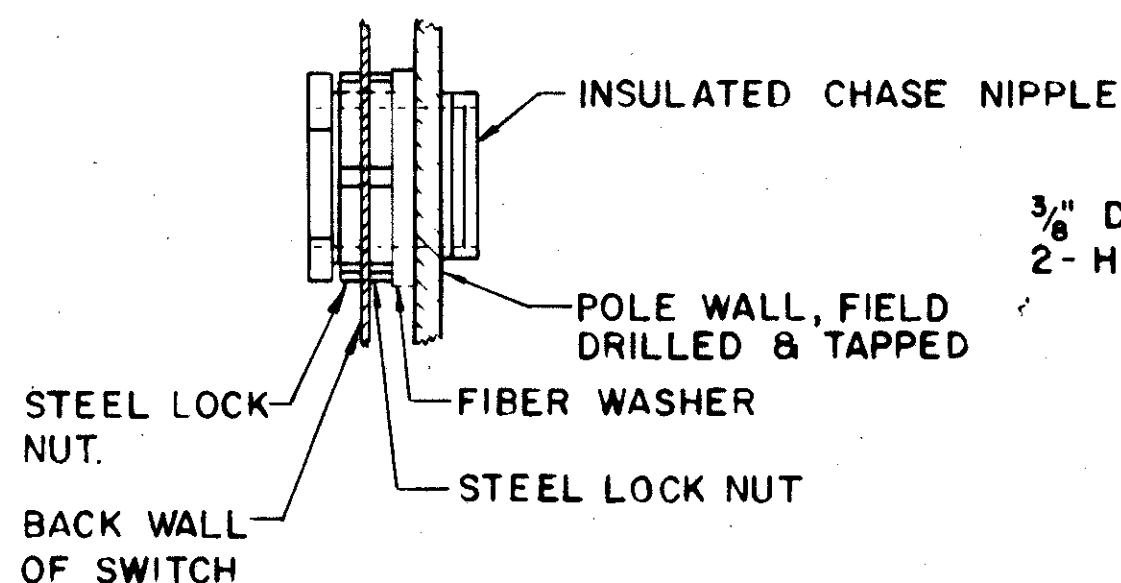
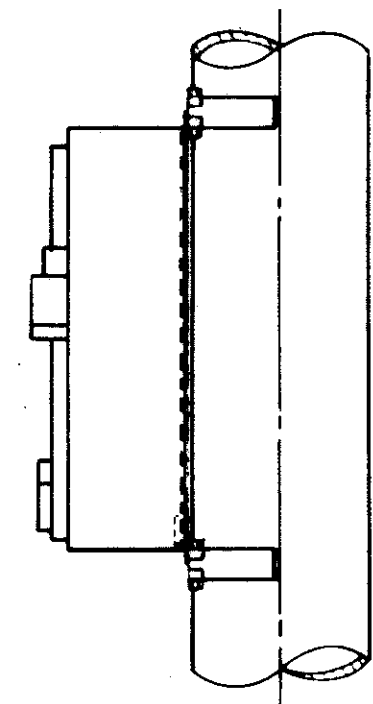
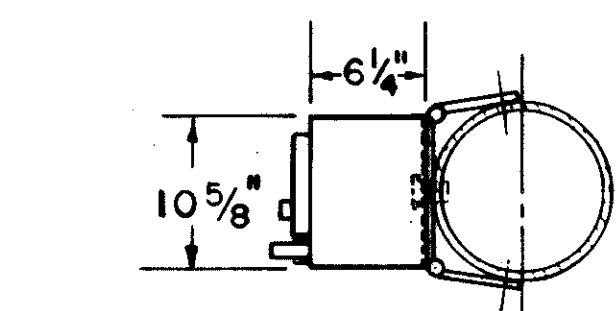
SIGN CIRCUIT SHALL BE CONTROLLED AS REQUIRED BY THE SYSTEM DESIGN, EITHER AT THE PRIMARY SOURCE OR AT THE STRUCTURE LOCATION. A DISCONNECTING MEANS MUST BE PROVIDED AT EACH STRUCTURE FOR MAINTENANCE AND CIRCUIT PROTECTION. CONTROLLERS SHALL HAVE NEMA TYPE II, WATERTIGHT STAINLESS STEEL ENCLOSURES FURNISHED WITHOUT HUBS. DISCONNECT MECHANISM SHALL BE FLANGE MOUNTED TO REMAIN IN OPERATING POSITION WHEN COVER IS OPEN. DEVICES SHALL HAVE ALL DESIGN FEATURES AS SQUARE "D" FUSIBLE DISCONNECT SWITCH CLASS 8903, TYPE W999FA221A AND SQUARE "D" COMBINATION SWITCH AND CONTACTOR CLASS 8903, TYPE W939FA600 SERIES. CONTROLLER SHALL BE MOUNTED WITH 5/16" - 18 X 1/2" HEX. HEAD CADMIUM PLATED MACHINE BOLTS. ALL MOUNTING BOLT HOLES TO BE FIELD DRILLED AND TAPPED.

MOUNTING BRACKET

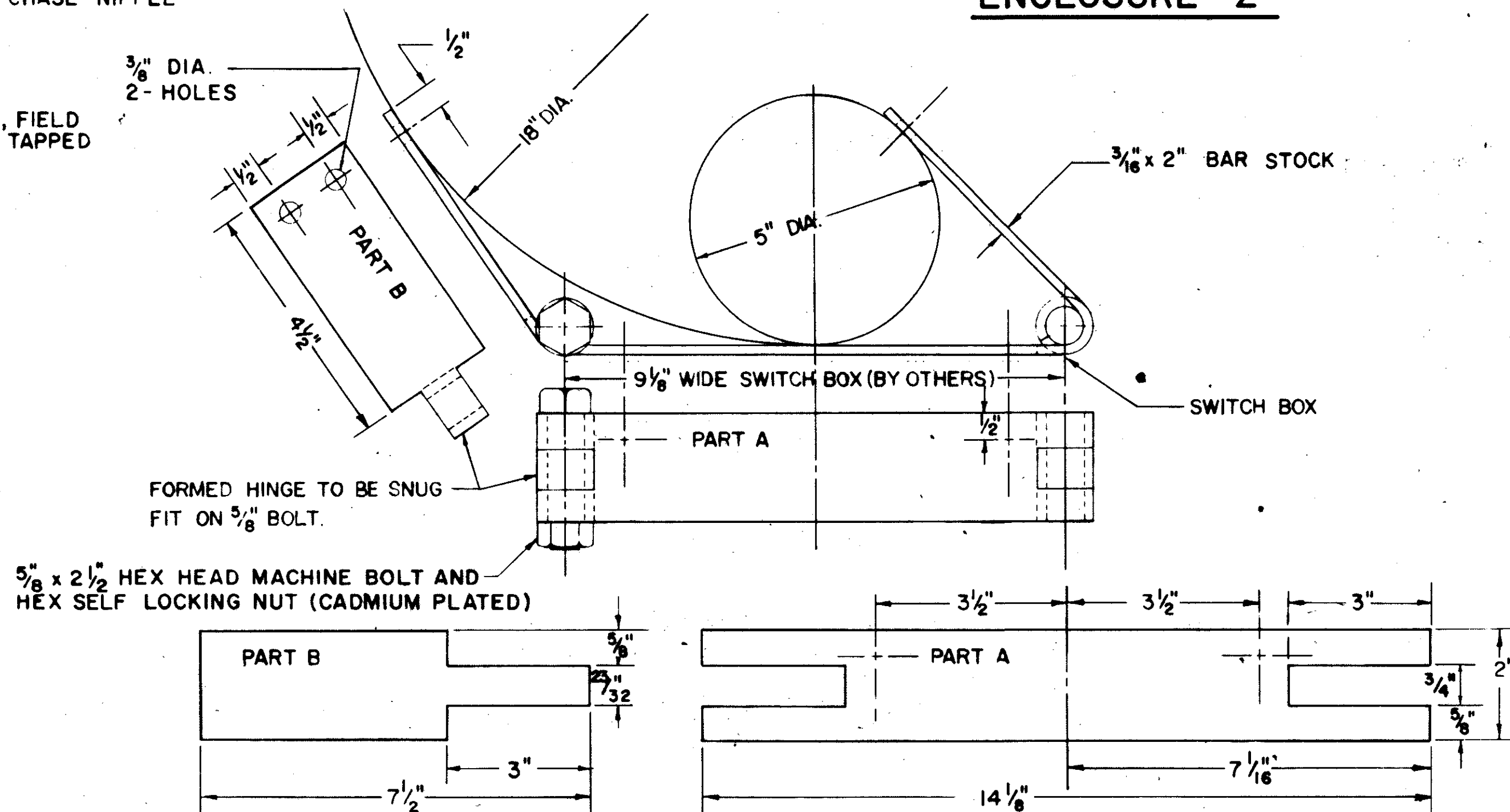
THE SWITCH BOX MOUNTING BRACKET SHALL FIRST BE FABRICATED THEN GALVANIZED BEFORE ASSEMBLY. THE BRACKET SHALL BE FIELD MOUNTED WITH 5/16" HEX. HEAD SELF-TAPPING CADMIUM PLATED SCREWS. HOLES IN POLE TO BE FIELD DRILLED.



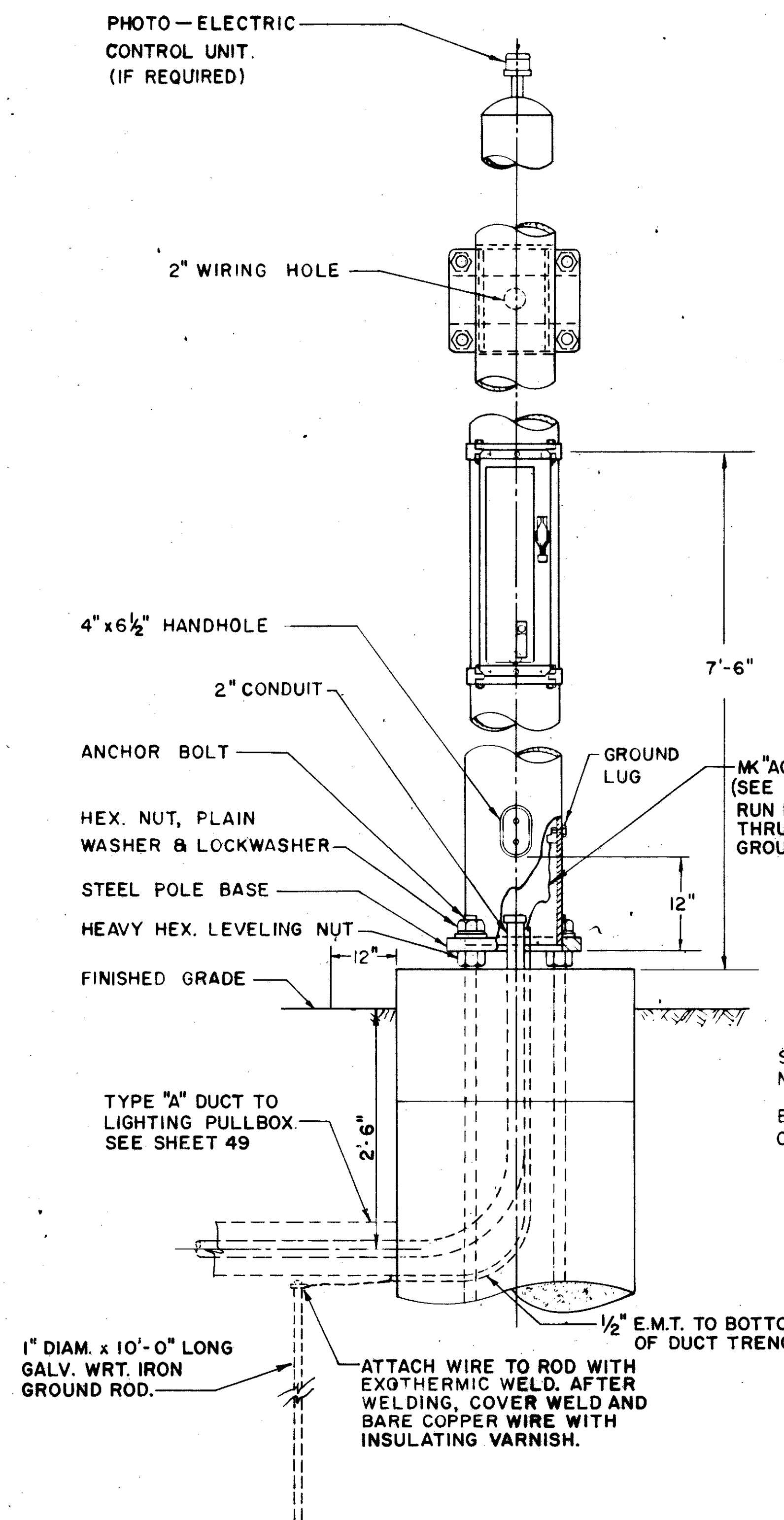
ENCLOSURE "Z"



CHASE NIPPLE ASSEMBLY DETAIL



SWITCH BOX MOUNTING BRACKET



STRUCTURE DETAIL FOR ILLUMINATED SIGNS

CONT. No. 58019-14 SHEET ACCT. No. 5061

MICROFILMED
JUN 6 1984

CURVE DATA FOR RAMP E-N

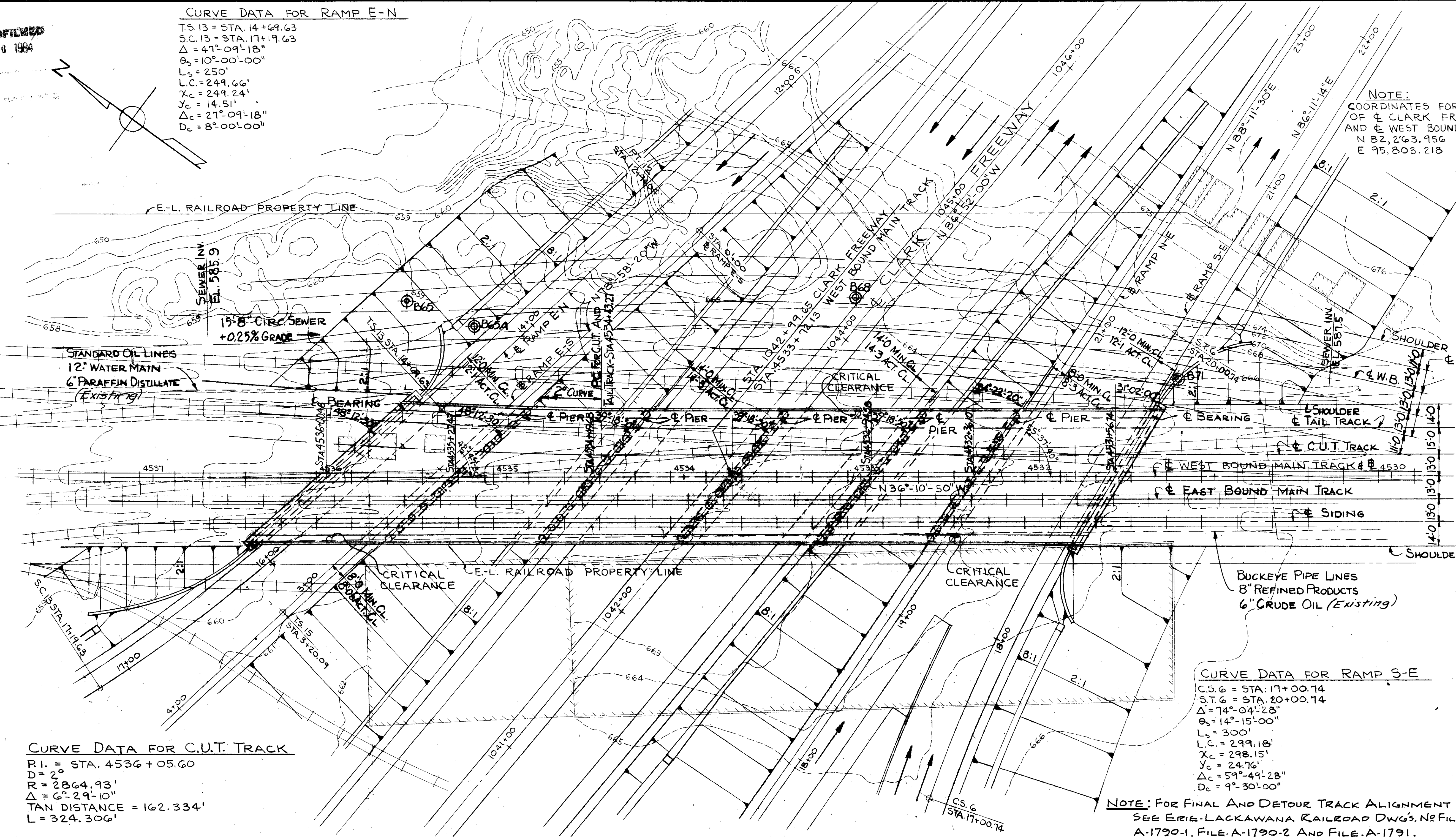
T.S. 13 = STA. 14+69.63
S.C. 13 = STA. 17+19.63
 $\Delta = 47^{\circ}09'18''$
 $\theta_s = 10^{\circ}00'00''$
 $L_s = 250'$
L.C. = 249.66'
 $X_c = 249.24'$
 $Y_c = 14.51'$
 $\Delta_c = 27^{\circ}09'18''$
 $D_c = 8^{\circ}00'00''$

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

58
81

CUYAHOGA COUNTY
CUY-254-18.88

NOTE:
COORDINATES FOR INTERSECTION
OF CLARK FREEWAY
AND WEST BOUND MAIN TRACK:
N 82,263.956
E 95,803.218



PI. (W.B. MAIN TRACK)
N 43°06'20" W
N 24°50'10" W

DETOUR TRACKS

CURVE DATA FOR W.B. DETOUR TRACK

COORDINATES FOR P.I. = N 82,275.50
E 95,940.31
D = 4°
R = 1432.69
 $\Delta = 18^{\circ}16'10''$
TAN. DISTANCE = 230.37
L = 456.74'

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, THE ACCURACY OF WHICH THE STATE DOES NOT GUARANTEE, MAY BE EXAMINED IN THE OFFICE OF THE BUREAU OF BRIDGES IN COLUMBUS OR IN THE DIVISION OFFICE.

⊗ PRESS-DRIVE SAMPLE BORINGS.

CURVE DATA FOR C.U.T. TRACK

P.I. = STA. 4536+05.60
D = 2°
R = 2864.93'
 $\Delta = 6^{\circ}29'10''$
TAN DISTANCE = 162.334'
L = 324.306'

CURVE DATA FOR RAMP S-E

C.S.G. = STA. 17+00.74
S.T.G. = STA. 20+00.14
 $\Delta = 74^{\circ}04'28''$
 $\theta_s = 14^{\circ}15'00''$
 $L_s = 300'$
L.C. = 299.18'
 $X_c = 298.15'$
 $Y_c = 24.76'$
 $\Delta_c = 59^{\circ}49'28''$
 $D_c = 9^{\circ}30'00''$

NOTE: FOR FINAL AND DETOUR TRACK ALIGNMENT SEE ERIE-LACKAWANA RAILROAD DWGS. NO. FILE A-1790-1, FILE A-1790-2 AND FILE A-1791. SUBGRADE EXCAVATION AND FILL FOR TEMP. ORARY E.L. RAILROAD DETOUR TRACKS IS PAID FOR UNDER ITEM E-1 (SEE DWGS. NO. 8, 16 & 38-41) THIS WORK MUST CONFORM TO THE 4.23' PERTINENT SPECIFICATION REQUIREMENTS OF STANDARD SPECIFICATION S-15.

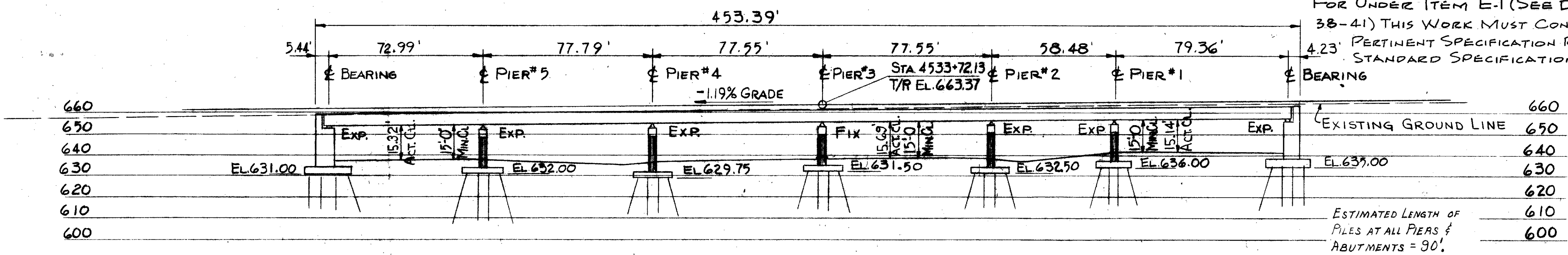
PROPOSED STRUCTURE

TYPE: SIX SPAN CONTINUOUS WELDED PLATE GIRDER WITH SEPARATE FLOOR PLATE AND REINFORCED CONCRETE SUBSTRUCTURE.
LOAD: COOPER E-72 LIVE LOAD WITH DIESEL IMPACT.
SPANS: VARY FROM 58.48' TO 79.36'.
ROADWAY: FIVE RAILROAD TRACKS; FOUR @ 13'0" CENTERS AND ONE @ 15'0" WITH 5'3" SIDEWALKS EACH SIDE.
SKEW: VARIES FROM 31°02'00" TO 48°12'30"
ALIGNMENT: WESTERLY THREE TRACKS TANGENT AND EASTERLY TWO TRACKS TANGENT WITH 2° CURVE AT NORTH END.

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

SITE PLAN
BRIDGE No. CUY-254-1893
CLARK FREEWAY UNDER E.L. RAILROAD
CUYAHOGA COUNTY
STA. 1042+99.65

SCALE	DATE
DESIGNED	DRAWN
TRACED	CHECKED
REVIEWED	DATE
D.W.M.	H.H.B.
D.W.M.	D.W.M. 2.21.69



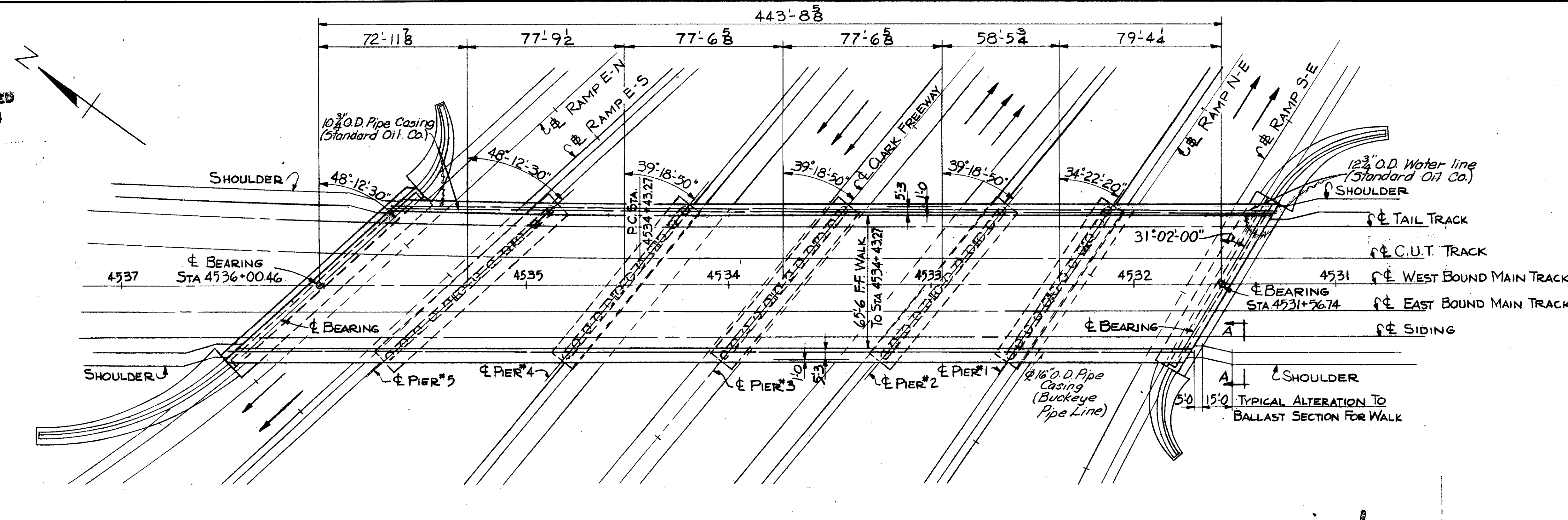
ESTIMATED LENGTH OF PILES AT ALL PIERS & ABUTMENTS = 90'

CONT. No. 58019-30 SHEET ACCT. No. 1711

MICROFILMED
JUN 6 1984

FED. RD. DIVISION	STATE	PROJECT	59 81
2	OHIO		

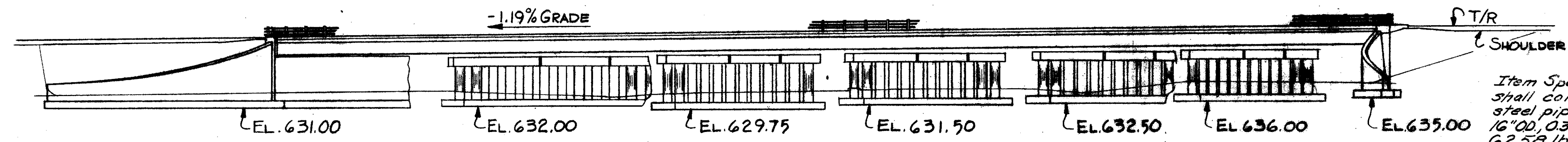
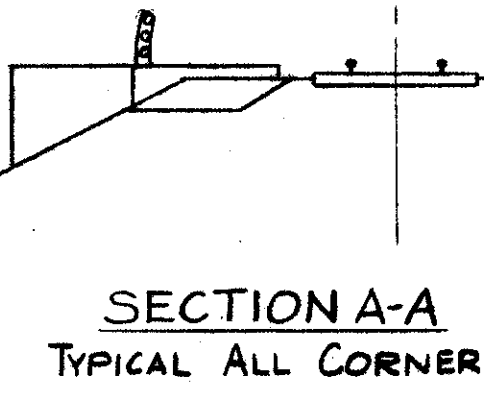
CUYAHOGA COUNTY
CUY-254-18.88



GENERAL PLAN

Item Special, 12 3/4" Water line, as per plan, shall conform to Sec. M-6.9 seamless steel pipe with welded joints, 12 3/4" O.D. 0.375" wall thickness and weighing 49.56 lbs. per lineal ft.

Item Special, 10 3/4" Pipe Casing, as per plan, shall conform to Sec. M-6.9 seamless steel pipe with welded joints, 10 3/4" O.D. 0.25" wall thickness and weighing 28.04 lbs. per lineal ft.



ELEVATION

Item Special, 16" Pipe Casing, as per plan shall conform to Sec. M-6.9 seamless steel pipe with 30 bevels for welding 16" O.D. 0.375" wall thickness and weighing 62.58 lbs. per lineal ft.

UNDER DECK LIGHTING UNITS to be attached to piers and abutments (See sheets 49 thru 57)

GENERAL NOTES (CONT.)

8. SURFACE FINISH OF CONCRETE: THE REQUIREMENTS OF SPECIFICATIONS S-1.22 "RUBBED SURFACE FINISH" SHALL APPLY TO THE EXPOSED OUTSIDE FACE OF THE SIDEWALKS ON THE BRIDGE AND THE ENTIRE EXPOSED SURFACE OF PIERS, ABUTMENTS AND WINGWALLS, EXCEPT BRIDGE SEATS AND BACKWALLS.
9. REINFORCING STEEL (ITEM S-4): ALL REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF SECTION M-7.1. ALL REINFORCING STEEL SHALL BE DEFORMED BARS, INTERMEDIATE GRADE, EXCEPT SPIRAL REINFORCEMENT WHICH MAY BE PLAIN STRUCTURAL GRADE.
10. CONSTRUCTION CLEARANCE OF 8'-0" HORIZONTALLY FROM THE CENTER OF TRACKS, BOTH DETOUR AND PERMANENT, SHALL BE MAINTAINED AT ALL TIMES.
11. SHEETING AND BRACING: BEFORE CONSTRUCTION IS STARTED, EIGHT SETS OF PRINTS SHOWING DETAILS OF THE SHEETING AND BRACING TO BE USED FOR EXCAVATION ADJACENT TO THE RAILROAD TRACKS, BOTH DETOUR AND PERMANENT, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL BY THE DEPARTMENT OF HIGHWAYS AND BY THE ERIE-LACKAWANNA RAILROAD COMPANY.
12. RAILROAD TRACKS, AERIAL LINES, SIGNALS AND INTERLOCKING PLANT WILL BE RELOCATED FROM THEIR EXISTING LOCATION TO THE

DETOUR ALIGNMENT AND RETURNED TO THEIR FINAL POSITION BY THE RAILROAD. THE CONTRACTOR SHALL USE ALL PRECAUTIONS NECESSARY TO SEE THAT THESE ITEMS ARE NOT DISTURBED DURING CONSTRUCTION AND SHALL COOPERATE WITH THE RAILROAD IN THEIR RELOCATION. THE COST OF THE RELOCATION SHALL BE INCLUDED IN THE RAILROAD FORCE ACCOUNT WORK.

13. CONCRETE CLASS C - BASIC UNIT STRESS 1,333 PSI.
CONCRETE CLASS E - BASIC UNIT STRESS 1,133 PSI.
STRUCTURAL STEEL - ASTM A36 - BASIC UNIT STRESS 20,000 PSI. (except piling)
- ASTM A441 - BASIC UNIT STRESS 27,000 PSI. (ASTM A7 AND A373 NOT PERMITTED.)
REINFORCING STEEL - ASTM A15, DEFORMED, INTERMEDIATE GRADE, BASIC UNIT STRESS 20,000 PSI, EXCEPT SPIRAL REINFORCEMENT MAY BE PLAIN STRUCTURAL GRADE WITH BASIC UNIT STRESS OF 18,000 PSI.

13. CONCRETE CLASS C - BASIC UNIT STRESS 1,333 PSI.
CONCRETE CLASS E - BASIC UNIT STRESS 1,133 PSI.
STRUCTURAL STEEL - ASTM A36 - BASIC UNIT STRESS 20,000 PSI. (except piling)
- ASTM A441 - BASIC UNIT STRESS 27,000 PSI. (ASTM A7 AND A373 NOT PERMITTED.)
REINFORCING STEEL - ASTM A15, DEFORMED, INTERMEDIATE GRADE, BASIC UNIT STRESS 20,000 PSI, EXCEPT SPIRAL REINFORCEMENT MAY BE PLAIN STRUCTURAL GRADE WITH BASIC UNIT STRESS OF 18,000 PSI.
14. CONSTRUCTION PROCEDURE:
 - (1) RAILROAD WILL RELOCATE THEIR TRACKS TO THE DETOUR ALIGNMENT. CONTRACTOR MUST COOPERATE WITH E.L.R.R. IN EXCAVATING FOR SUB-GRADE. BUCKEYE PIPE LINE CO. & STANDARD OIL CO. SHALL RELOCATE THEIR LINES DURING CONSTRUCTION.
 - (2) COMPLETE BRIDGE, EXCLUSIVE OF N.E. AND S.E. WINGWALLS.
 - (3) E.L.R.R. WILL RELOCATE THEIR TRACKS TO THE FINAL PERMNT. ALIGN.
 - (4) COMPLETE N.E. & S.E. WINGWALLS & FINISH GRADING.

ITEM	TOTAL	UNIT	ESTIMATED QUANTITIES				
			DESCRIPTION	SUPER	ABUT.	PIERS	GEN'L
E-2	6,280	CU. YDS.	UNCLASSIFIED EXCAVATION		4,490	1,790	
E-2		LUMP SUM	COFFERDAMS, CRIBS AND SHEETING				
E-1	450	CU. YDS.	EMBANKMENT METHOD-A as per plan		450		
S-1	311	CU. YDS.	CLASS C CONCRETE, SUPERSTRUCTURE	311			
S-1	582	CU. YDS.	CLASS C CONCRETE, PIERS ABOVE FOOTINGS			582	
S-1	1,497	CU. YDS.	CLASS E CONCRETE, PIER & ABUTMENT FOOTINGS		675	782	
S-1	1,260	CU. YDS.	CLASS E CONCRETE, ABUTMENTS ABOVE FOOTINGS		1,260		
Special	454	Lin. Ft.	16" Pipe Casing, as per plan	454			
S-3	1,290	SQ. YDS.	WATERPROOFING-TYPE "A"	250	1,040		
SPECIAL	3,230	SQ. YDS.	POURED-IN-PLACE ASPHALT MASTIC WATERPROOFING	3,230			
S-4	518,036	LB.	REINFORCING STEEL	24,791	117,255	375,990	
S-107	370,000	LB.	STRUCTURAL STEEL (A36)				
S-107	838,000	LB.	STRUCTURAL STEEL (A441)				
S-8	454,000	LB.	FIELD PAINTING OF STRUCTURAL STEEL, as per plan	454,000			
Special	454	Lin. Ft.	10 3/4" Pipe Casing, as per plan	454			
S-7	277	CU. FT.	PREFOAMED EXPANSION JOINT FILLER		277		
S-7	263	CU. FT.	7 1/2" PREFOAMED EXPANSION JOINT FILLER		204	59	
S-9	554	LIN. FT.	FOLDED COPPER STRIP, 11" X 16 OZ.	258		296	
S-9	924	LIN. FT.	COPPER STRIP, 8" X 16 OZ.			924	
Special	454	Lin. Ft.	12 3/4" Water line, as per plan	454			
S-14	902.58	LIN. FT.	ALUMINUM RAILING	902.58			
S-16		LUMP SUM	FIRST TEST PILE				
S-17		LUMP SUM	FIRST PILE TEST LOAD				
S-17	2	LUMP SUM	SUBSEQUENT PILE TEST LOAD				
S-18	60,990	LIN. FT.	1 1/2" CAST-IN-PLACE REINFORCED CONCRETE PILES		18,990	41,400	2
S-23			LIGHTING DETAILS (SEE SHEETS NO. 49 TO 57)				
S-23	670	CU. YDS.	POROUS ASPHALT		670		
S-23	886	LIN. FT.	DECK DRAIN (1/2" HALF ROUND PIPE & BOTTOM PAN)	886			
S-23	305	LIN. FT.	8 DIA. STD. PIPE DOWNSPOUTS, W.I. OR HOT-DIP GALVANIZED STEEL INCL. SPECIALS.	305			
S-29	675	LIN. FT.	10" BITUMINOUS COATED CORRUGATED METAL PIPE	585	90		
S-29	475	LIN. FT.	10" PERFORATED BITUMINOUS COATED CORR. METAL PIPE		475		
S-101	311	EACH	WATER-REDUCING, SET-RETARDING ADMIXTURE	311			

- GENERAL NOTES:**
1. DESIGN SPECIFICATIONS FOR "SUPERSTRUCTURE OR STRUCTURAL STEEL" SHALL CONFORM TO CURRENT "A.R.E.A. SPECIFICATIONS FOR IRON AND STEEL STRUCTURES." DESIGN SPECIFICATIONS FOR "SUBSTRUCTURE OR CONCRETE" SHALL CONFORM TO THE DESIGN SPECIFICATIONS FOR HIGHWAY STRUCTURES OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, 9-1-57 TOGETHER WITH CURRENT REVISIONS. "MATERIAL AND CONSTRUCTION" SPECIFICATIONS SHALL CONFORM TO THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, CURRENT "CONSTRUCTION AND MATERIAL SPECIFICATIONS."
 2. DESIGN LOAD: COOPER E72 LIVE LOAD WITH IMPACT AS SPECIFIED FOR DIESEL ENGINES. LOAD ON SIDEWALK IN ACCORDANCE WITH OHIO DEPT. OF HIGHWAYS "DESIGN SPECIFICATIONS FOR HIGHWAY STRUCTURES."
 3. REFERENCE SHALL BE MADE TO THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, SUPPLEMENTAL SPECIFICATIONS:
 - S-101 DATED 7-12-62
 - S-107 REVISED 2-16-55 (STRUCTURAL STEEL IN ADDITION TO THE REQUIREMENTS OF SECTION S-107.03 OF THE SUPPLEMENTAL SPECIFICATIONS, ASTM A-36-62T COPPER BEARING CARBON STEEL AND A-441-63T HIGH STRENGTH LOW ALLOY STL. SHALL BE USED.)
 - S-307 DATED 8-23-60
 - S-407 12-21-62
 4. 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.
 5. BUTT WELDS SHALL BE RADIOGRAPHICALLY EXAMINED AS REQUIRED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION NO. S-307 DATED AUG. 23, 1960.
 6. PAINTING OF STRUCTURAL STEEL (ITEM S-8) ALL PAINTING SHALL CONFORM BOTH AS TO MATERIALS AND APPLICATION WITH THE STANDARD SPECIFICATIONS OF THE CITY OF CLEVELAND FOR PAINTING STRUCTURAL STEEL, SEE PROPOSAL NOTE
 7. ALIGNING RAILROAD TRACKS: AFTER THE CONTRACTOR HAS COMPLETED ALL EXCAVATION AND BACKFILL ADJACENT TO THE RAILROAD TRACKS IN COMPLIANCE WITH SEC. E-2.04 AND E-2.08 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SUBJECT TO THE SUPERVISION OF THE RAILROAD COMPANY, NOTHING IN SEC. E-2.04, E-2.08 OR C-8.07 OF THE SPECIFICATIONS SHALL BE CONSTRUED TO HOLD THE CONTRACTOR LIABLE FOR ALIGNING AND RESURFACING THE RAILROAD TRACKS.

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

GENERAL PLAN
BRIDGE NO. GUY-254-1893
CLARK FREEWAY UNDER E.L. RAILROAD
CUYAHOGA COUNTY

SCALE DATE
DESIGNED DRAWN TRACED CHECKED REVIEWED DATE REV.
OAM DW.M. D.V.M. 2-21-64 7-9-64

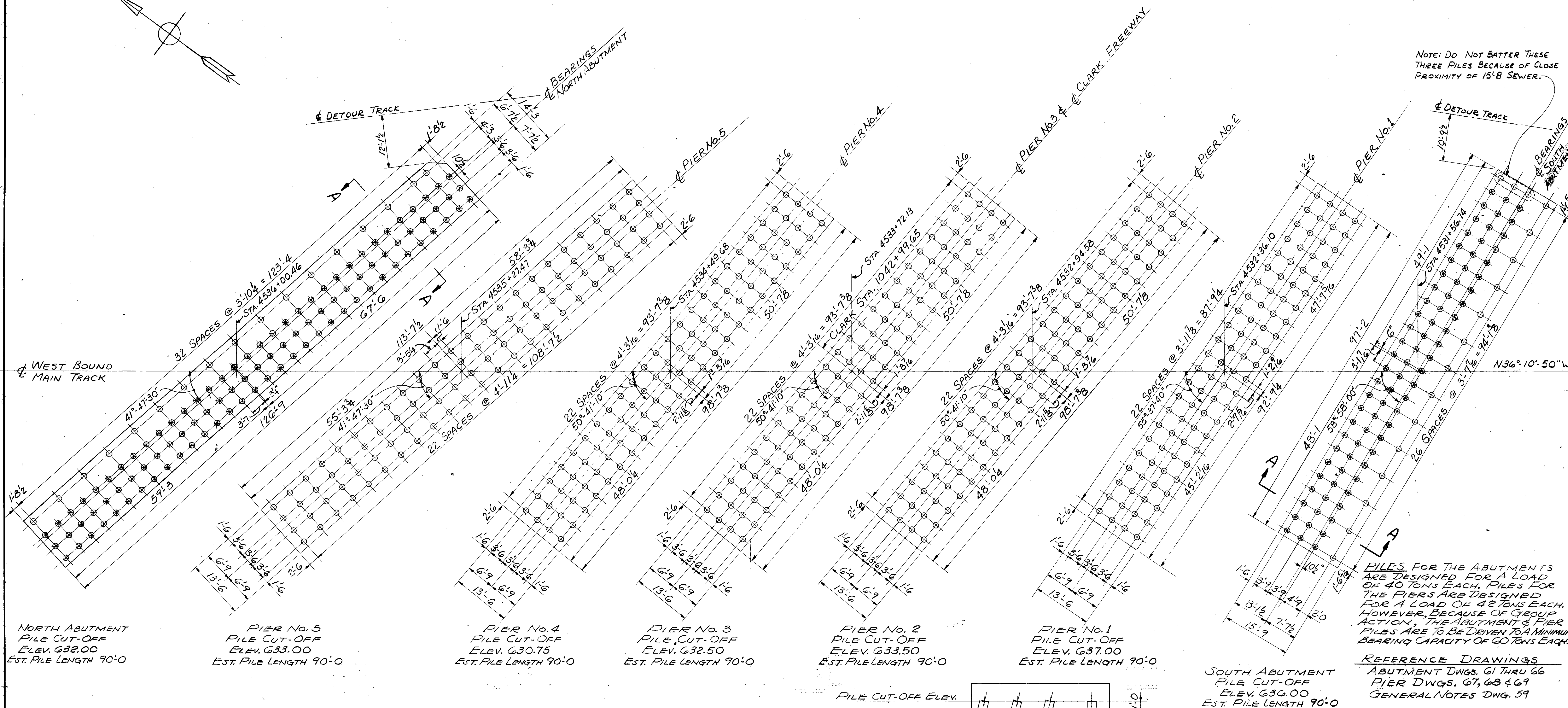
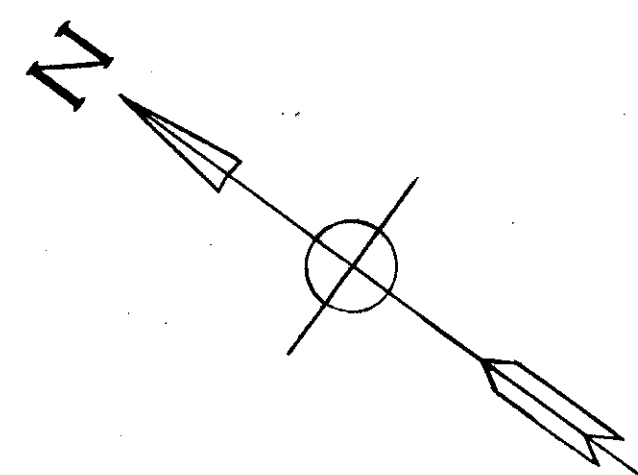
CONT. NO. 58019-30 SHEET ACCT. NO. 1910

ARCHITECTS JUN 6 1964

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

60
81

CUYAHOGA COUNTY
CUY-254-18.88



NORTH ABUTMENT
PILE CUT-OFF
ELEV. G32.00
EST. PILE LENGTH 90'-0

PIER No. 5
PILE CUT-OFF
ELEV. G33.00
EST. PILE LENGTH 90'-0

PIER No. 4
PILE CUT-OFF
ELEV. G30.75
EST. PILE LENGTH 90'-0

PIER No. 3
PILE CUT-OFF
ELEV. G32.50
EST. PILE LENGTH 90'-0

PIER No. 2
PILE CUT-OFF
ELEV. G33.50
EST. PILE LENGTH 90'-0

PIER No. 1
PILE CUT-OFF
ELEV. G37.00
EST. PILE LENGTH 90'-0

SOUTH ABUTMENT
PILE CUT-OFF
ELEV. G36.00
EST. PILE LENGTH 90'-0

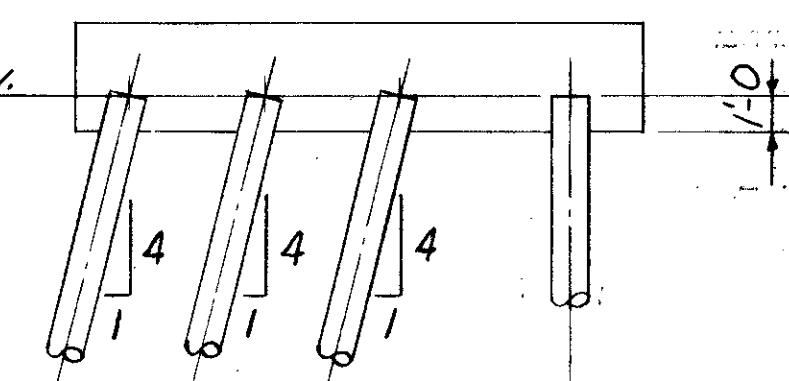
PILES FOR THE ABUTMENTS ARE DESIGNED FOR A LOAD OF 40 TONS EACH. PILES FOR THE PIERS ARE DESIGNED FOR A LOAD OF 42 TONS EACH. HOWEVER, BECAUSE OF GROUP ACTION, THE ABUTMENT & PIER PILES ARE TO BE GIVEN A MINIMUM BEARING CAPACITY OF 60 TONS EACH.

REFERENCE DRAWINGS
ABUTMENT DWGS. G1 THRU G6
PIER DWGS. G7, G8 & G9
GENERAL NOTES DWG. 59

PILE DESIGNATION.

- ⊙ INDICATES VERTICAL PILES
- ⊗ INDICATES BATTER PILES

PILE CUT-OFF ELEV.



SECTION A-A

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

PILE PLAN
BRIDGE No. 254-1893
CLARK FREEWAY UNDER E.L. RAILROAD
CUYAHOGA COUNTY
STA. 1042+99.65

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
	HHB		CAT.	DWM.	2-21-64	

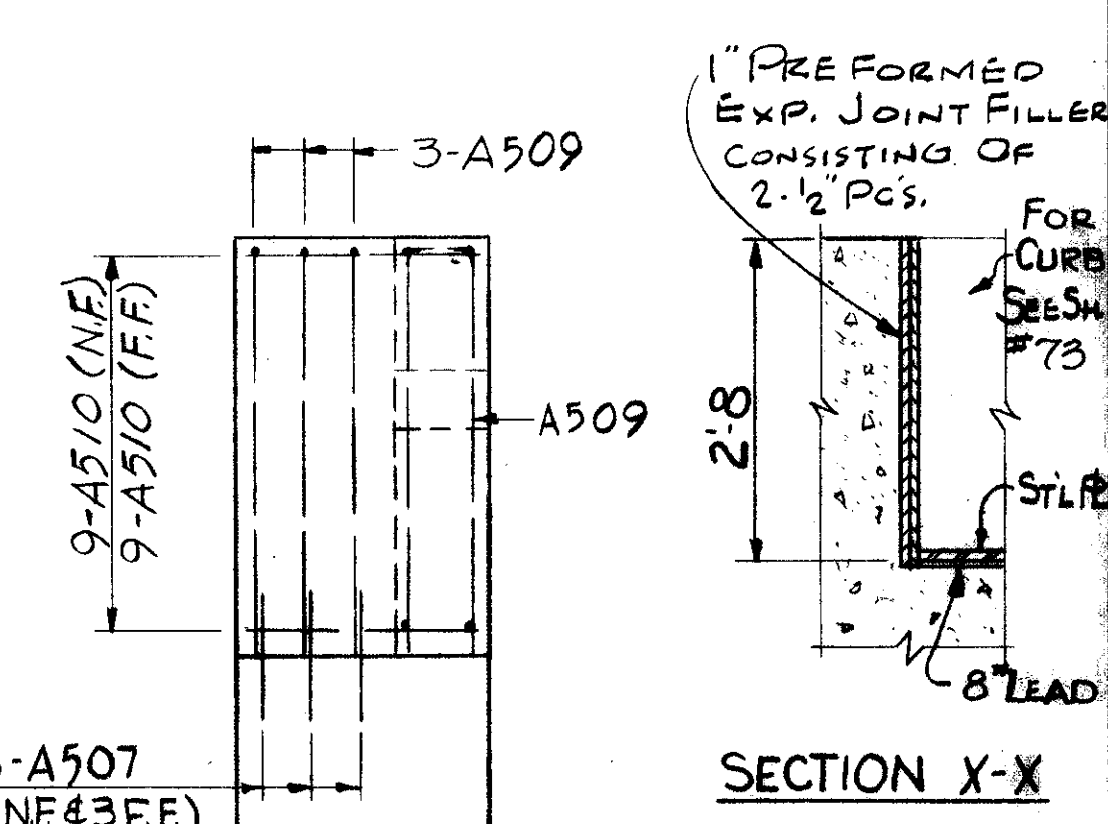
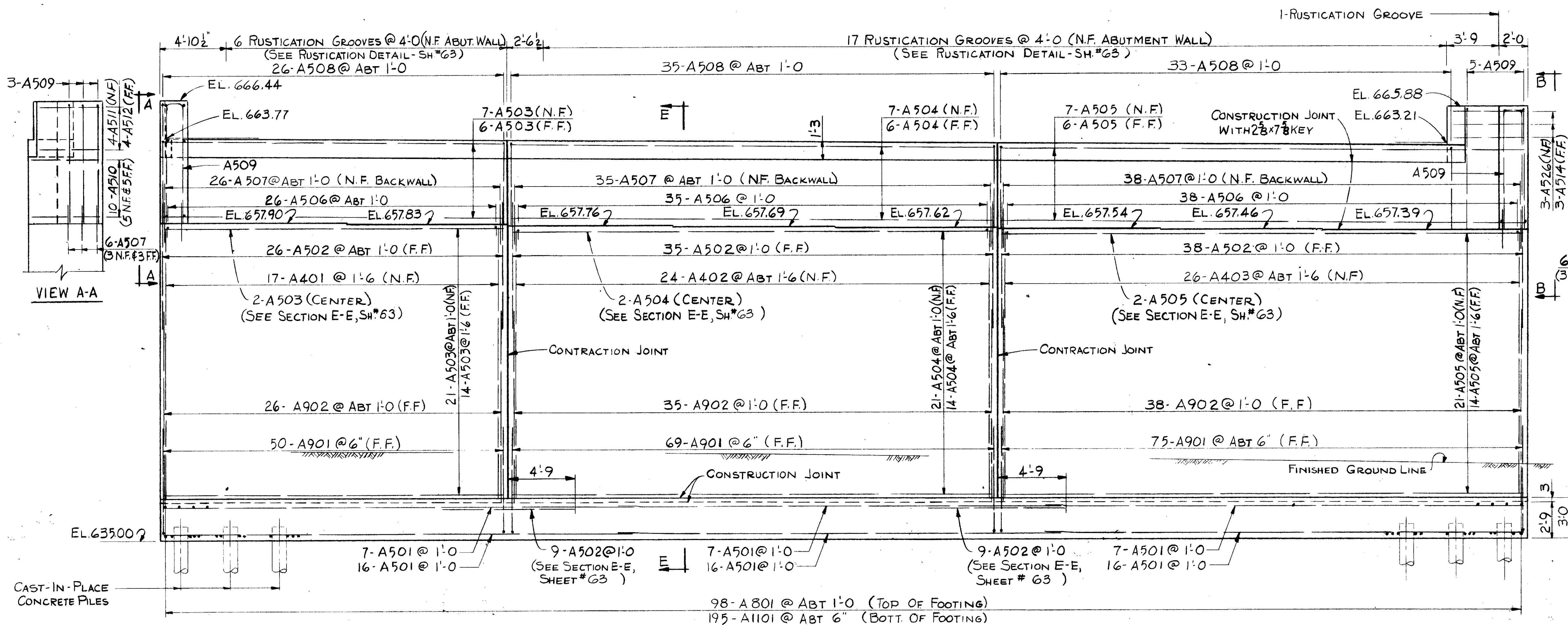
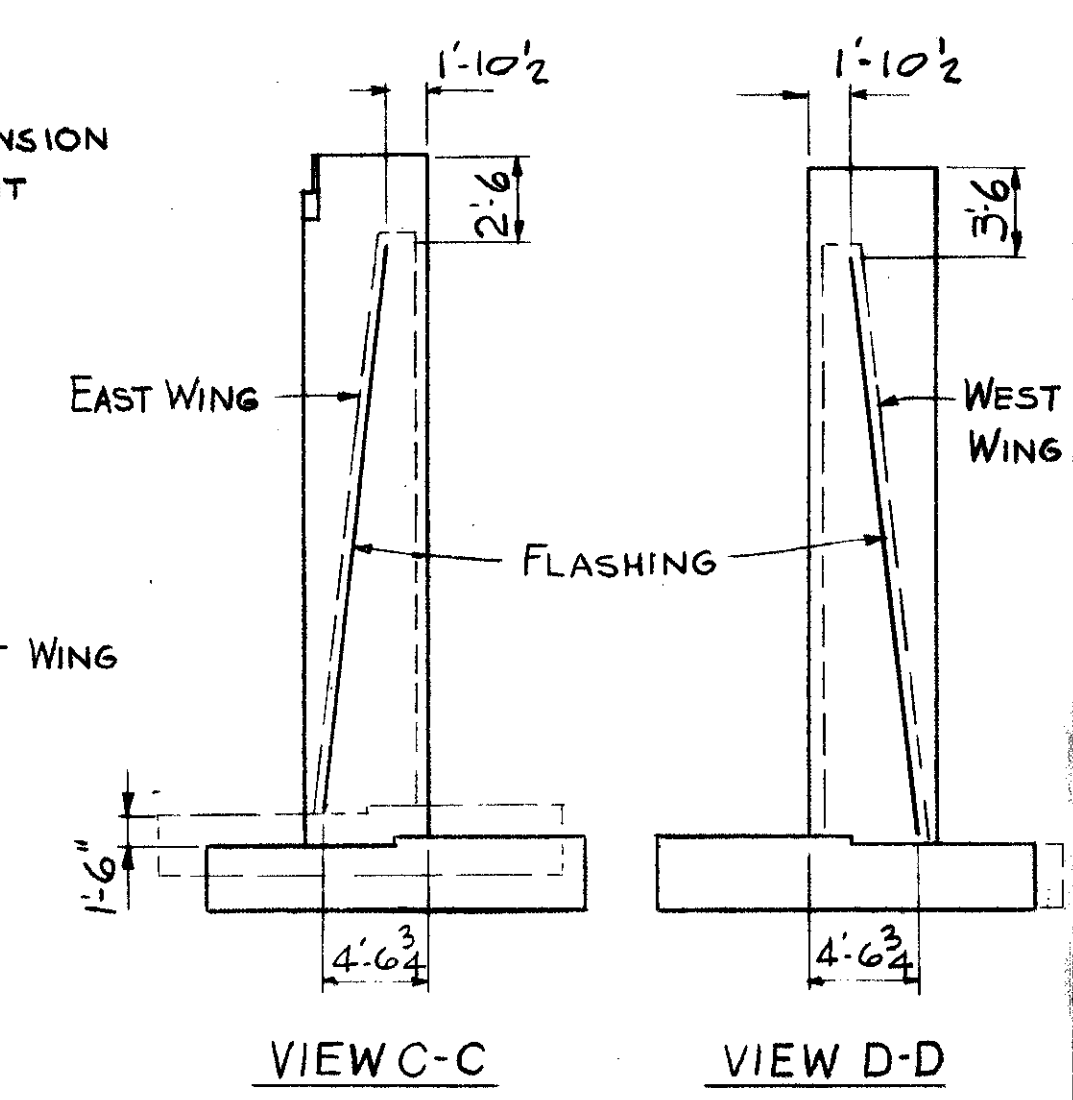
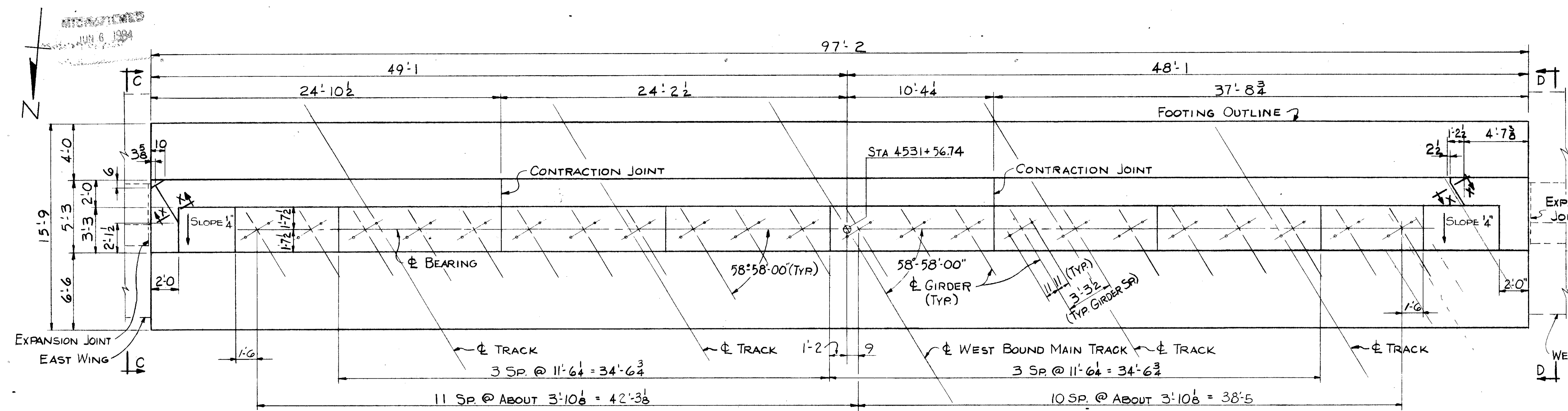
SHEET ACCT. NO. 1920

NO. 58019-30

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

61/81

CUYAHOGA COUNTY
CUY-254-18.88



NOTES:
N.F. = NEAR FACE.
F.F. = FAR FACE.

FOR GENERAL NOTES SEE SHEETS No. 59 & 63
WORK THIS SHEET WITH SHEETS No. 62 & 63

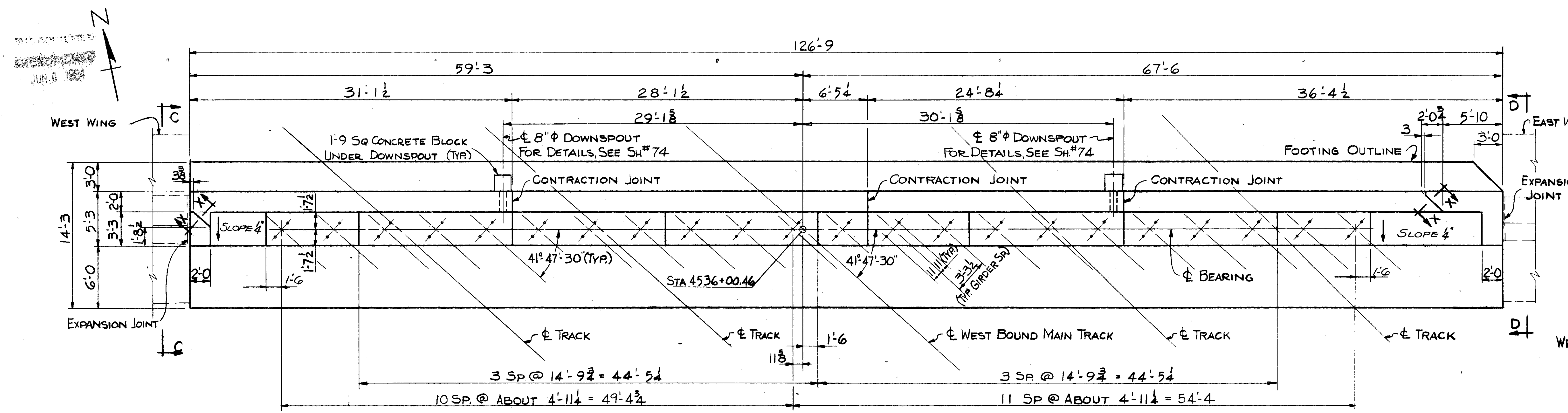
TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

SOUTH ABUTMENT
BRIDGE No. CUY-254-1893
CLARK FREEWAY UNDER E.L. RAILROAD
CUYAHOGA COUNTY

SCALE DATE
DESIGNED DRAWN TRACED CHECKED REVIEWED DATE REVIEWED
OAM EHM DWM 2-21-69

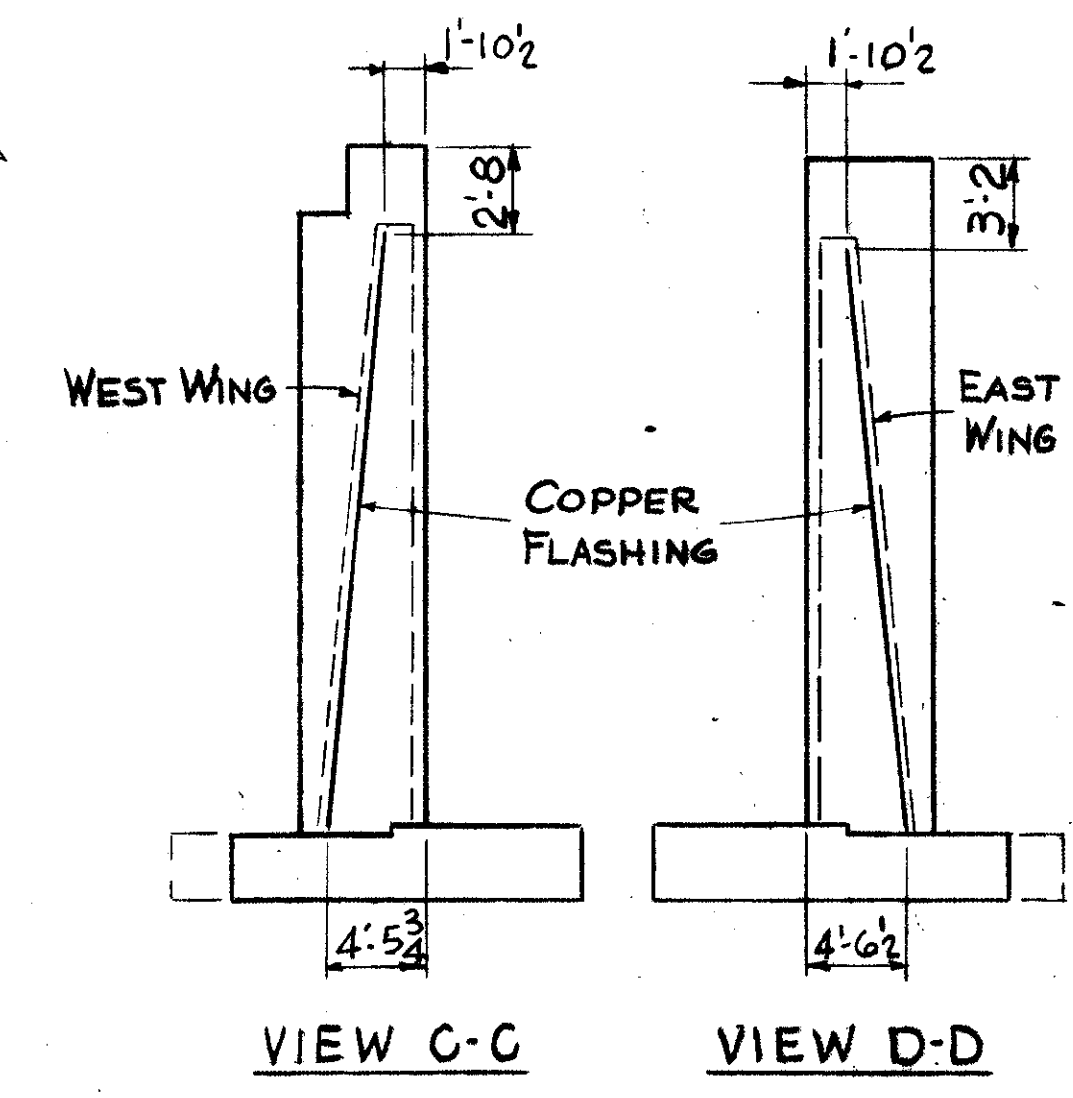
SHEET ACCT. NO. 1911
58019-30

CUYAHOGA COUNTY
CUY-254-18.88



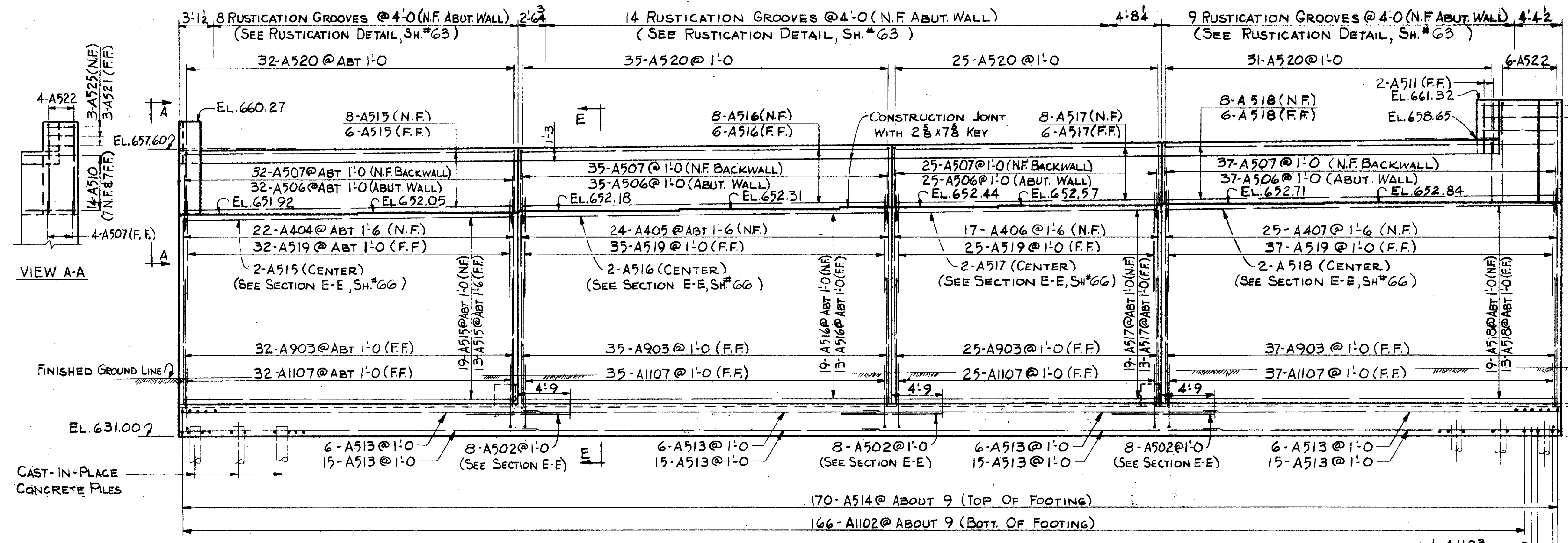
NOTE: REINFORCING STEEL MUST BE PLACED SO AS TO INSURE DRILLING CLEARANCE FOR 1/2" Ø x 1'-6" ANCHOR BOLTS (5/2" PROJ.) ADJUST REINFORCING SPACING LOCALLY TO SUIT.

PLAN

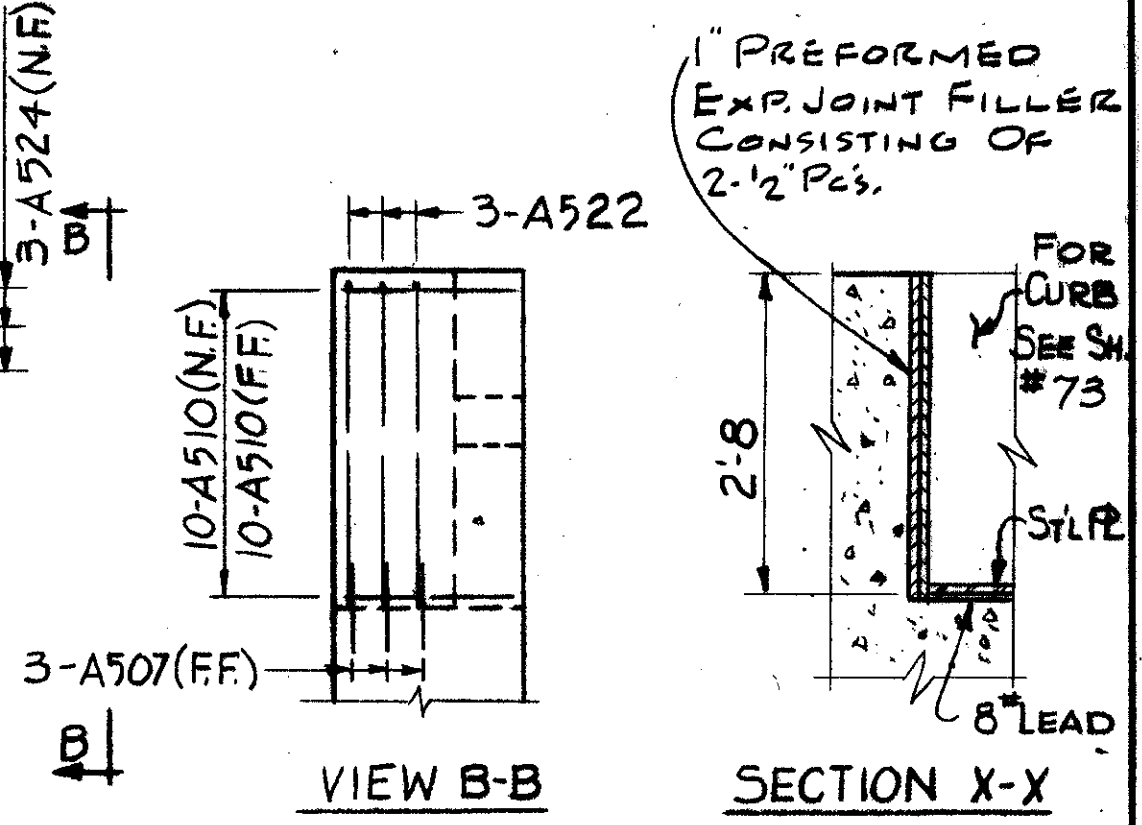


VIEW C-C

VIEW D-D



ELEVATION



VIEW B-B

SECTION X-X

NOTES:-
N.F. = NEAR FACE
F.F. = FAR FACE
SEE SHEET NO. G3
FOR DETAILS OF:
EXPANSION JOINT
CONSTRUCTION JOINT
CONTRACTION JOINT
RUSTICATION GROOVE
COPPER FLASHING
WORK THIS SHEET WITH SHEETS NO. G5 & G6
FOR GENERAL NOTES, SEE SHEETS NO. 59 & 63

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

NORTH ABUTMENT
BRIDGE No. CUY-254-1893
CLARK FREEWAY UNDER E.L. RAILROAD
CUYAHOGA COUNTY

SCALE	DATE					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	OAM		RJM	DWM	2-21-69	

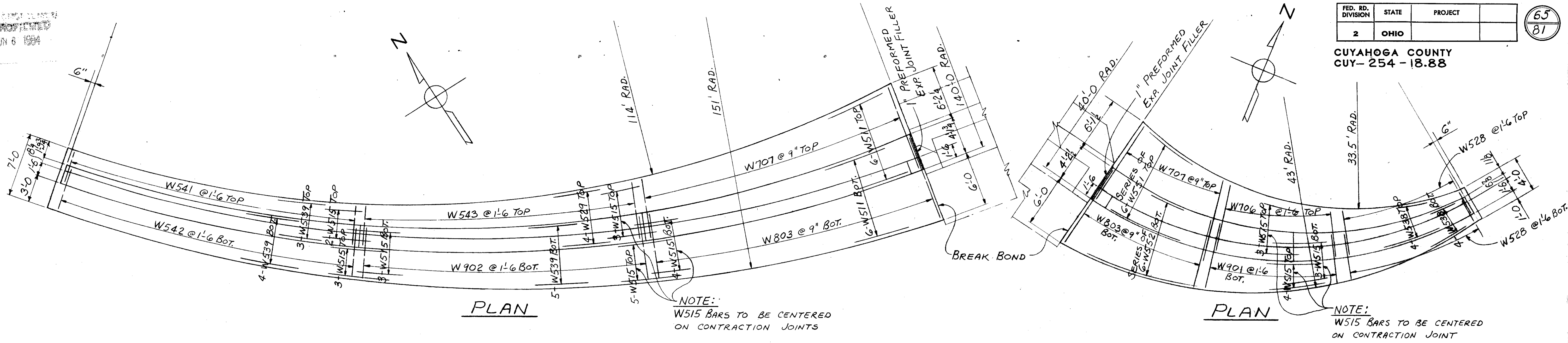
SHEET ACCT. NO. 1714
CONT. NO. 58019-30

JUN 6 1964

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
CUY-254-18.88

65
81

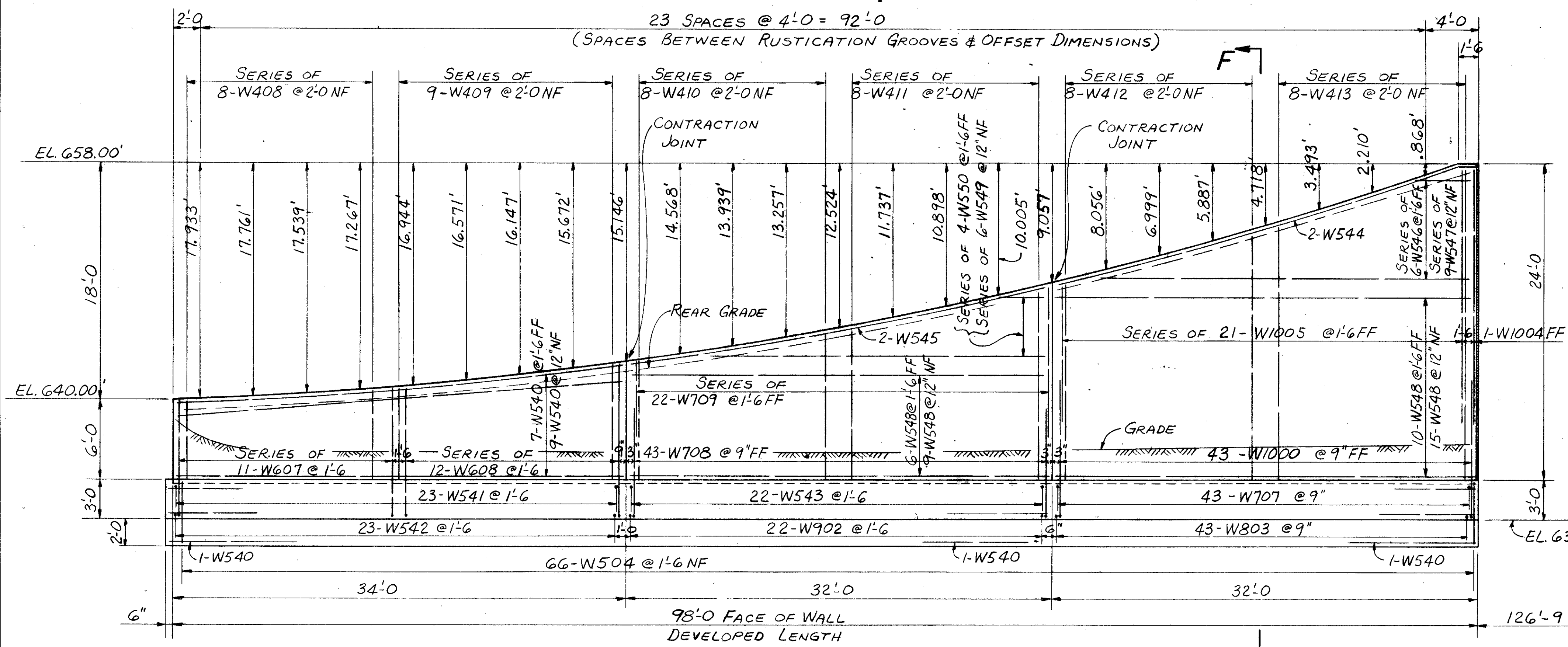


PLAN

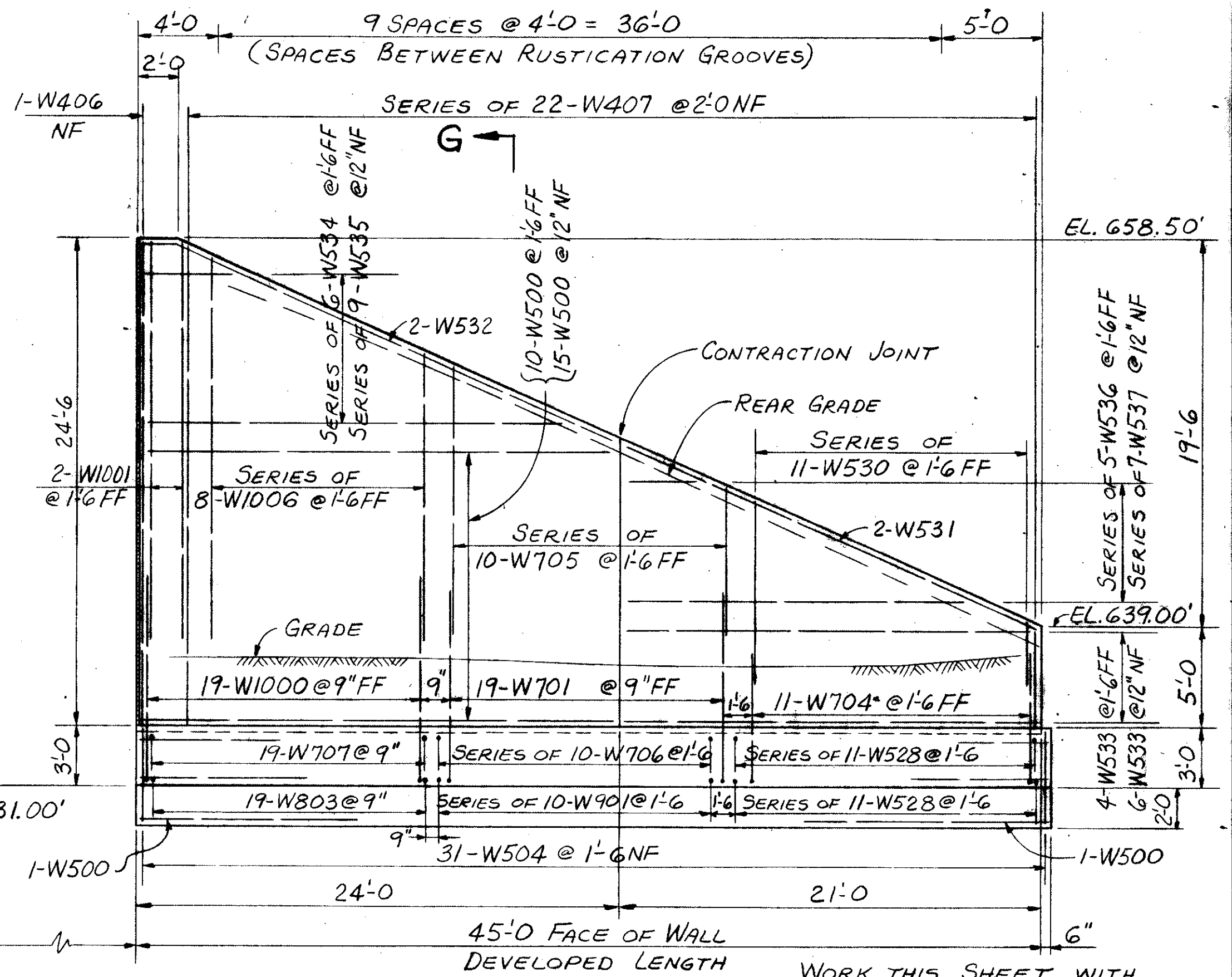
PLAN

NOTE:
W515 BARS TO BE CENTERED
ON CONTRACTION JOINTS

NOTE:
W515 BARS TO BE CENTERED
ON CONTRACTION JOINT



ELEVATION
NORTH ABUTMENT-WEST WING WALL
(DEVELOPED VIEW)



ELEVATION
NORTH ABUTMENT-EAST WING WALL
(DEVELOPED VIEW)

WORK THIS SHEET WITH
SHEETS No. 64 & 66
FOR GENERAL NOTES SEE SHEETS No. 59 & 63

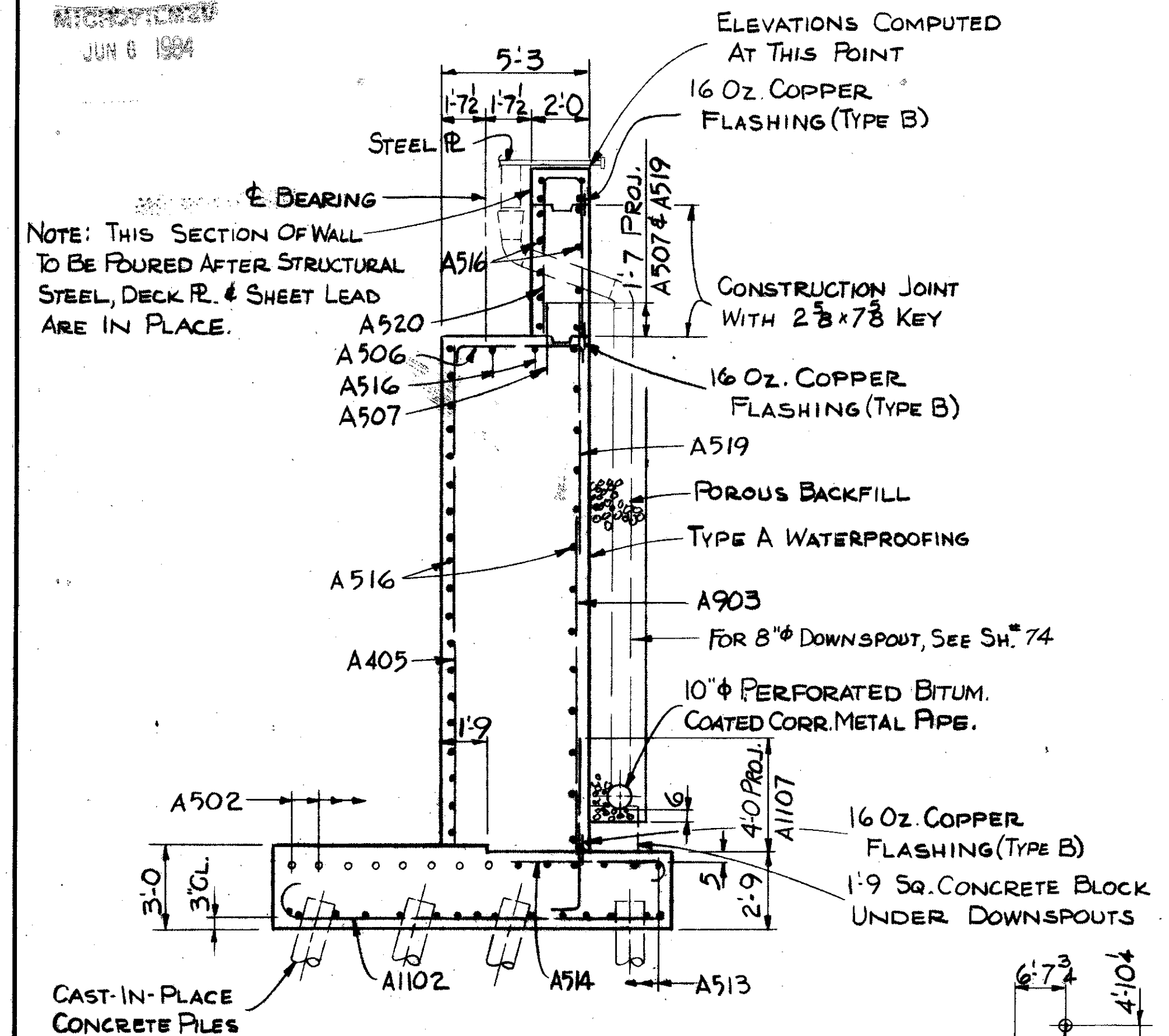
NOTES:-
NF = NEAR FACE
FF = FAR FACE
SEE SHEET No. 63
FOR DETAILS OF:
EXPANSION JOINT
CONTRACTION JOINT
RUSTICATION GROOVE
COPPER FLASHING

TRYGVE HOFF & ASSOCIATES ENGINEERS 1922 EAST 107TH STREET CLEVELAND, OHIO					
NORTH ABUTMENT WINGWALLS BRIDGE No. 254-1893 CLARK FREEWAY UNDER E-L. RAILROAD CUYAHOGA COUNTY					
SCALE	DATE				
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
	HHB		DWM	DWM	2-21-64

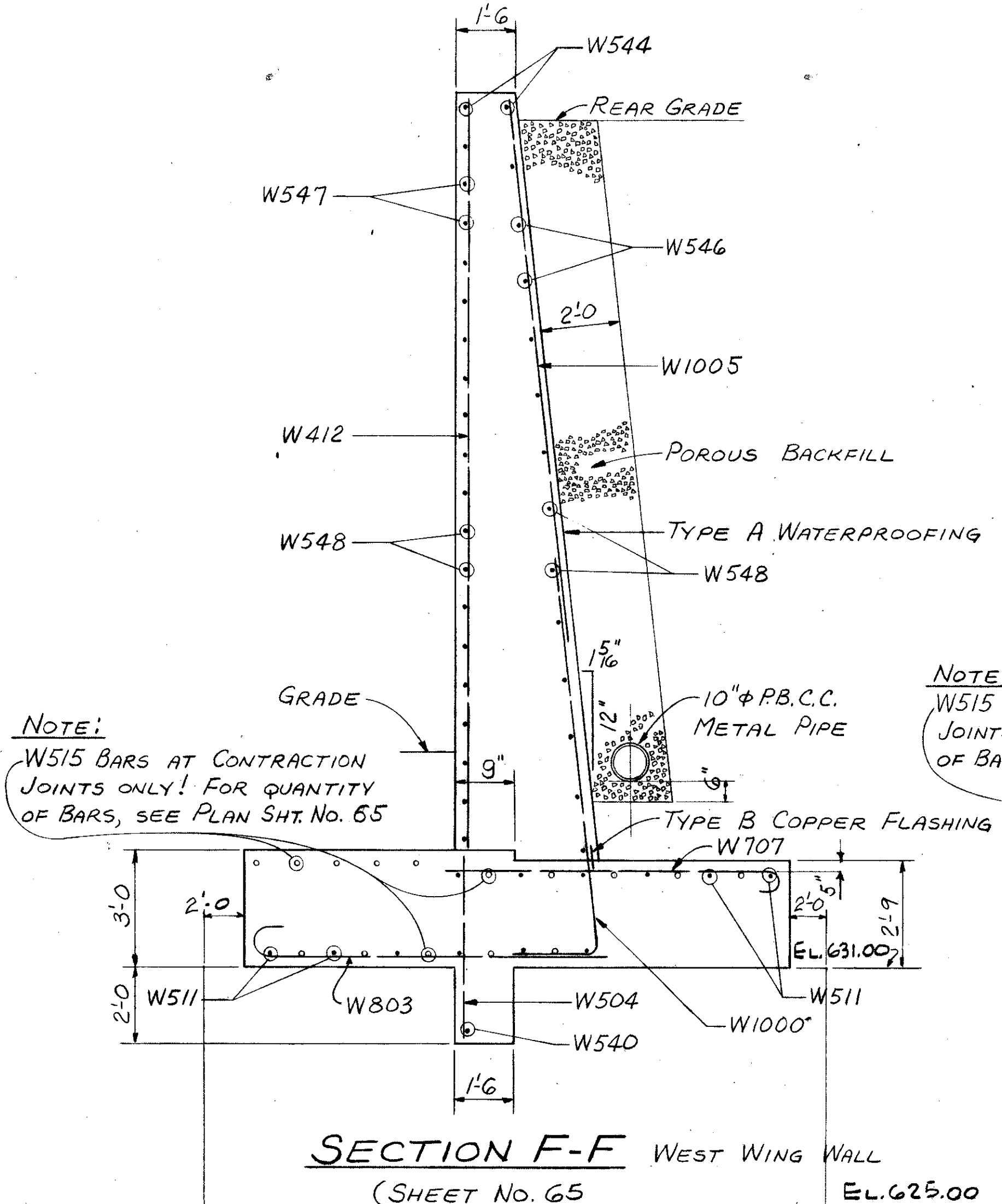
5801A-30
SHEET ACCT. No. 1915

JUN 6 1964

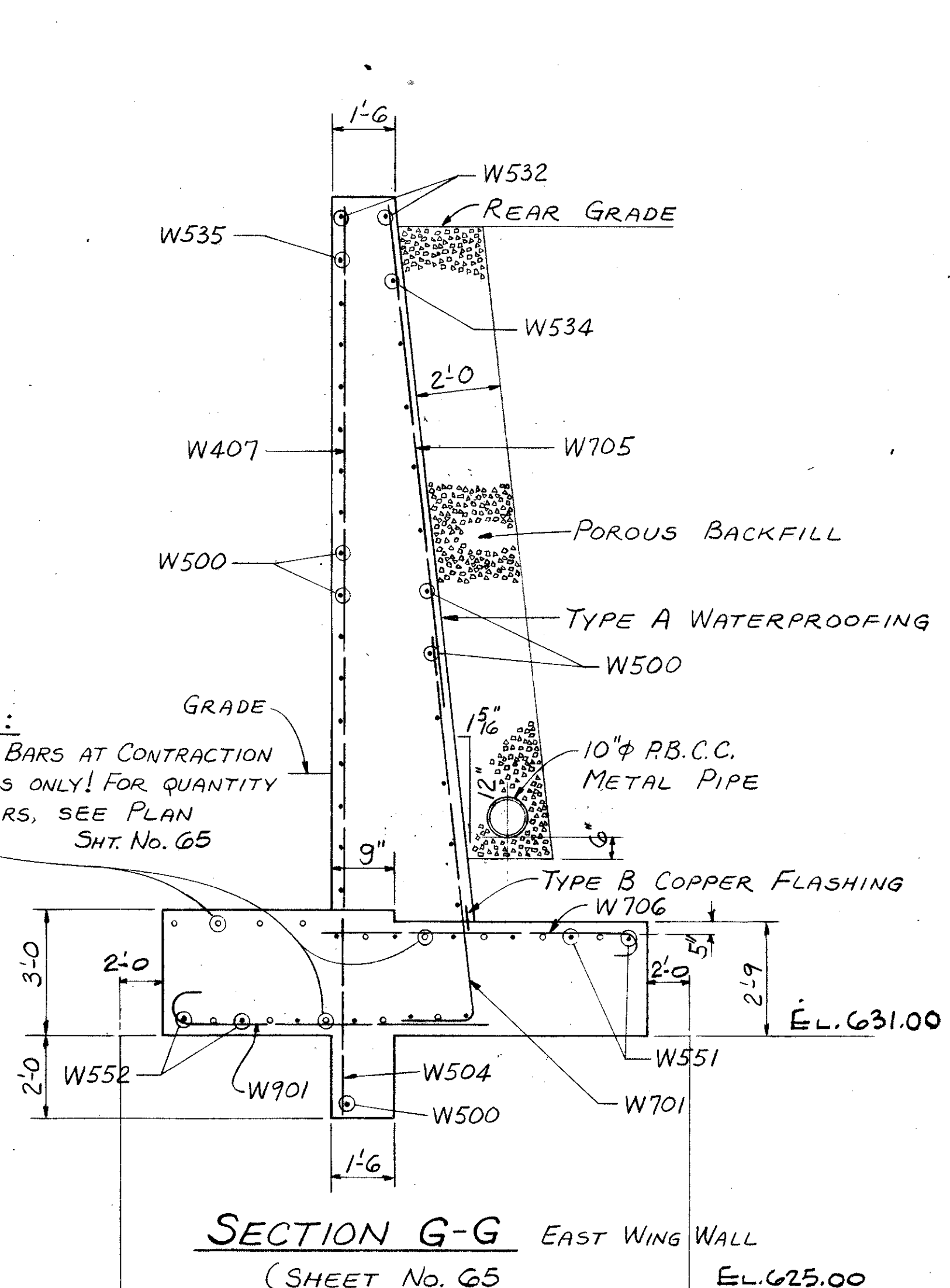
CUYAHOGA COUNTY
CUY-254-18.88



SECTION E-E
TYPICAL SECTION THRU ABUT. WALL
(SHEET #64)



SECTION F-F WEST WING WALL
(SHEET No. 65) EL. 625.00

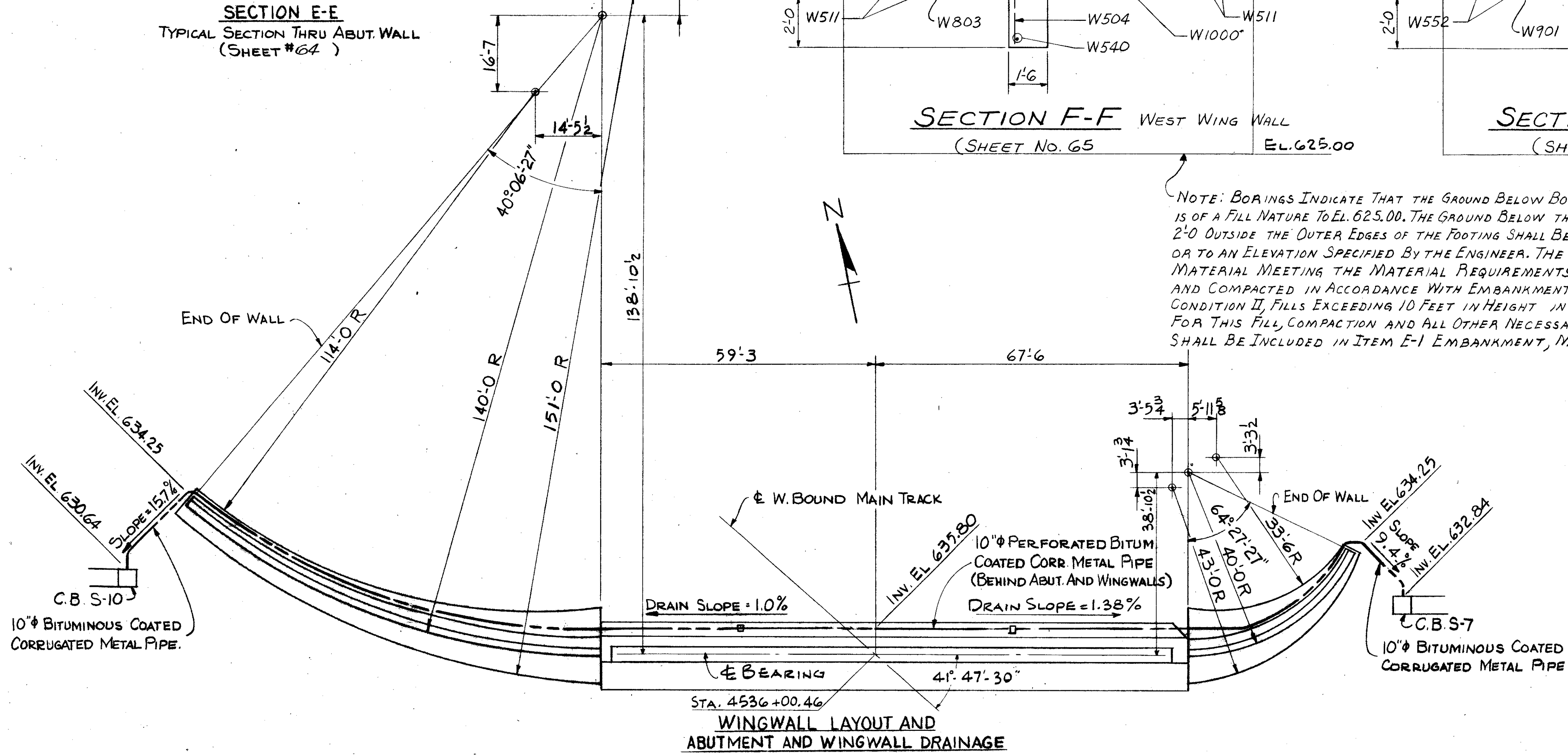


SECTION G-G EAST WING WALL
(SHEET No. 65) EL. 625.00

NOTE:
W515 BARS AT CONTRACTION JOINTS ONLY! FOR QUANTITY OF BARS, SEE PLAN SHT. No. 65

NOTE:
W515 BARS AT CONTRACTION JOINTS ONLY! FOR QUANTITY OF BARS, SEE PLAN SHT. No. 65

NOTE: BORINGS INDICATE THAT THE GROUND BELOW BOTTOM OF THESE WING WALL FOOTINGS IS OF A FILL NATURE TO EL. 625.00. THE GROUND BELOW THE FOOTINGS & BOUNDED ON THE SIDES 2'-0" OUTSIDE THE OUTER EDGES OF THE FOOTING SHALL BE EXCAVATED (ITEM E-2) TO EL. 625.00 OR TO AN ELEVATION SPECIFIED BY THE ENGINEER. THE VOLUME SHALL BE FILLED WITH MATERIAL MEETING THE MATERIAL REQUIREMENTS OF STANDARD SPECIFICATION I-22 AND COMPACTED IN ACCORDANCE WITH EMBANKMENT SOIL COMPACTION REQUIREMENTS, CONDITION II, FILLS EXCEEDING 10 FEET IN HEIGHT IN STANDARD SPECIFICATION E1. PAYMENT FOR THIS FILL, COMPACTION AND ALL OTHER NECESSARY WORK IN CONNECTION THEREWITH SHALL BE INCLUDED IN ITEM E-1 EMBANKMENT, METHOD A, as per plan.



WINGWALL LAYOUT AND ABUTMENT AND WINGWALL DRAINAGE

WORK THIS SHEET WITH SHEETS No. 64 & 65
FOR GENERAL NOTES, SEE SHEETS No. 59 & 63

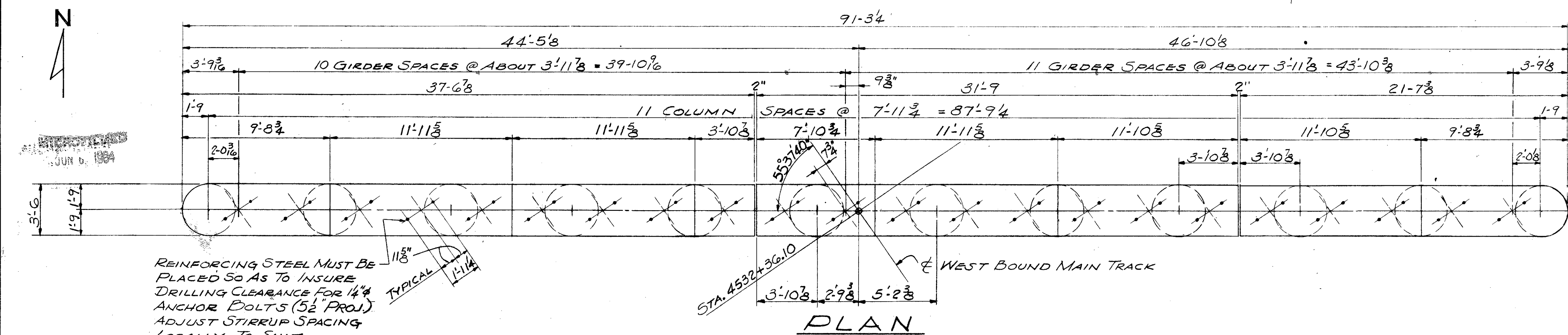
TRYGVE HOFF & ASSOCIATES ENGINEERS 1922 EAST 107TH STREET CLEVELAND, OHIO						
NORTH ABUT. AND WINGWALL DETAILS BRIDGE No. CUY-254-1893 CLARK FREEWAY UNDER E.L. RAILROAD CUYAHOGA COUNTY						
SCALE	DATE					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
	OAM	HHS	REM	DWM	2-21-69	

SHEET ACCT. NO. 1916

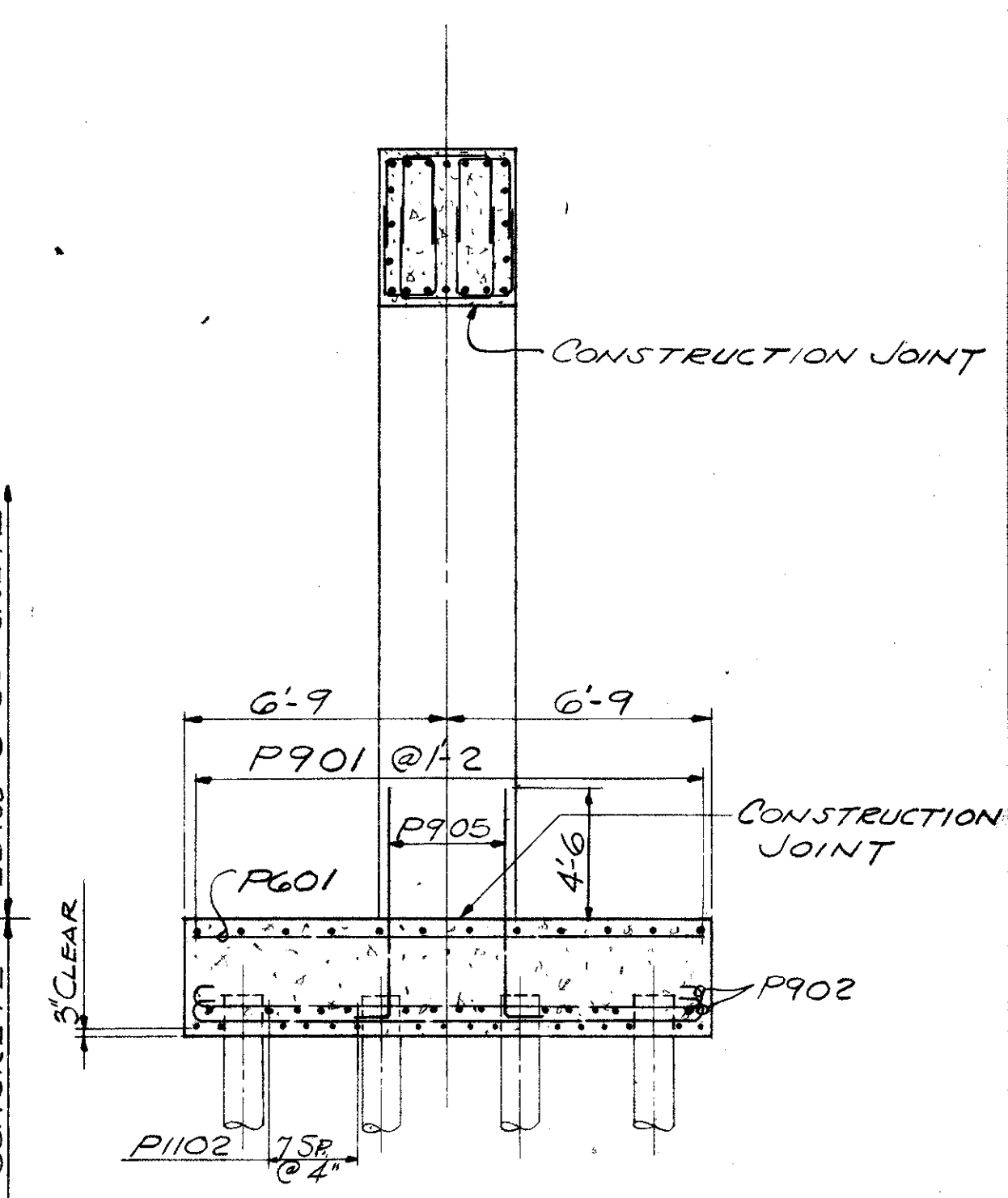
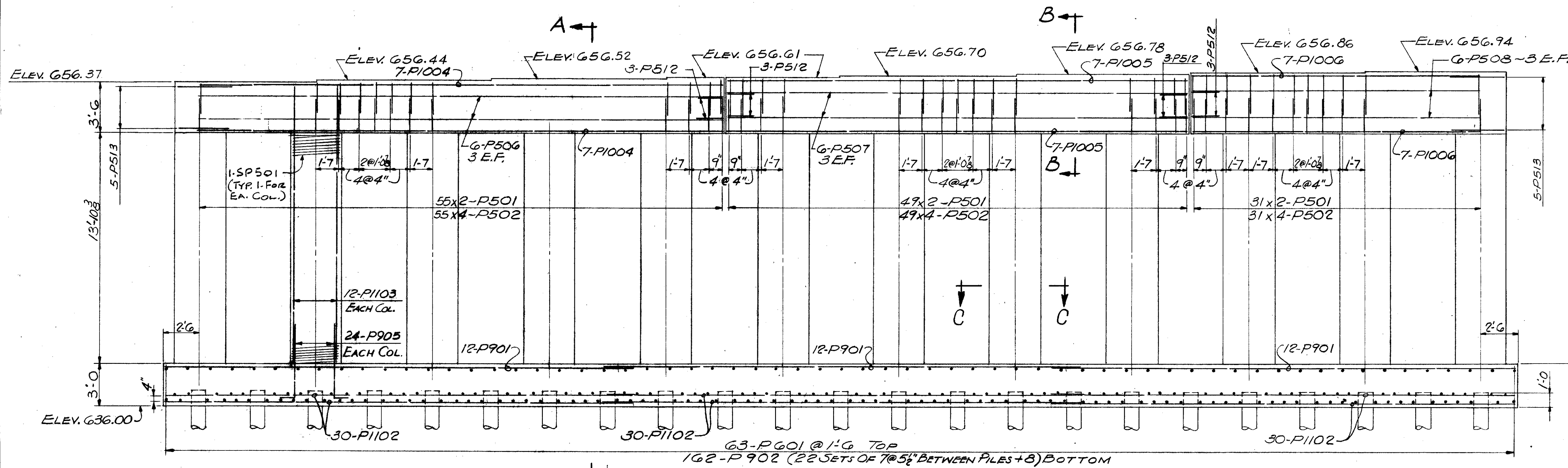
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

67
81

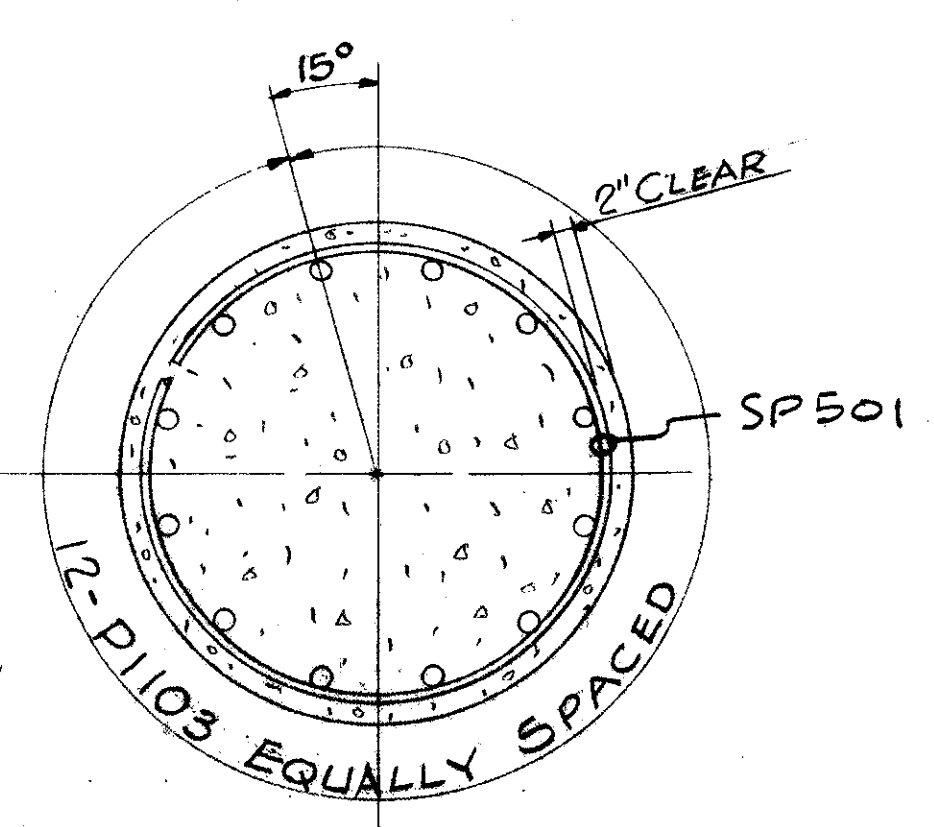
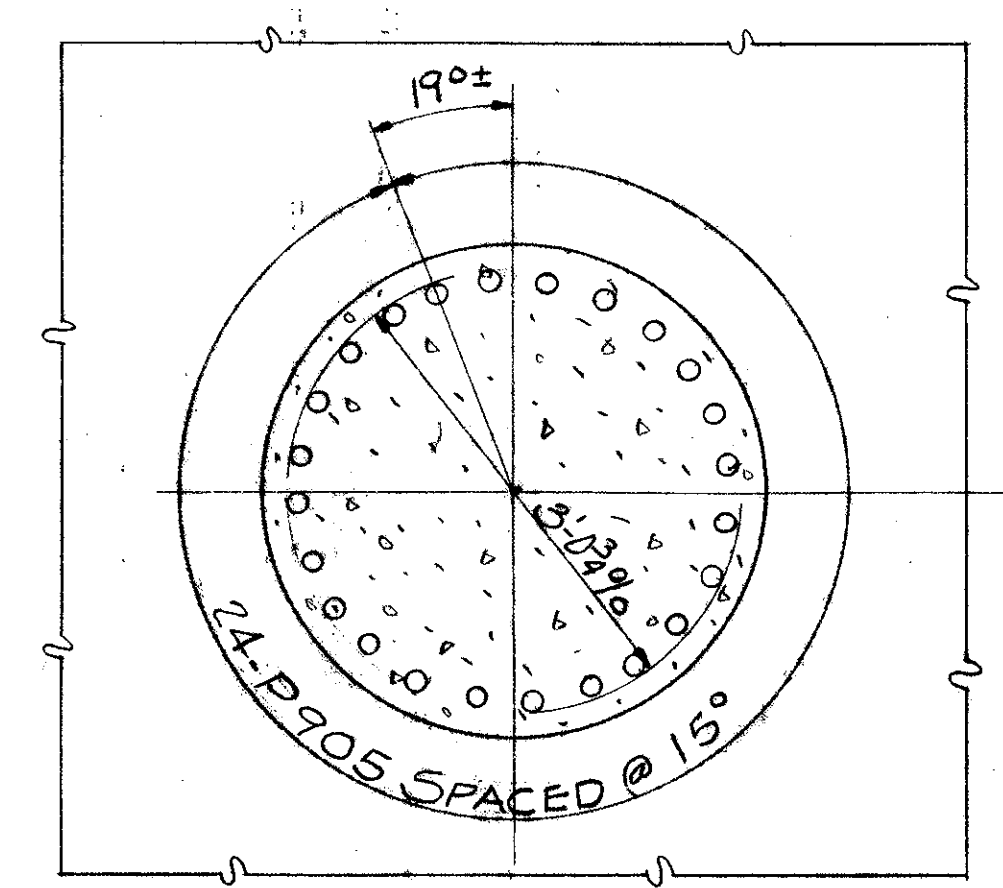
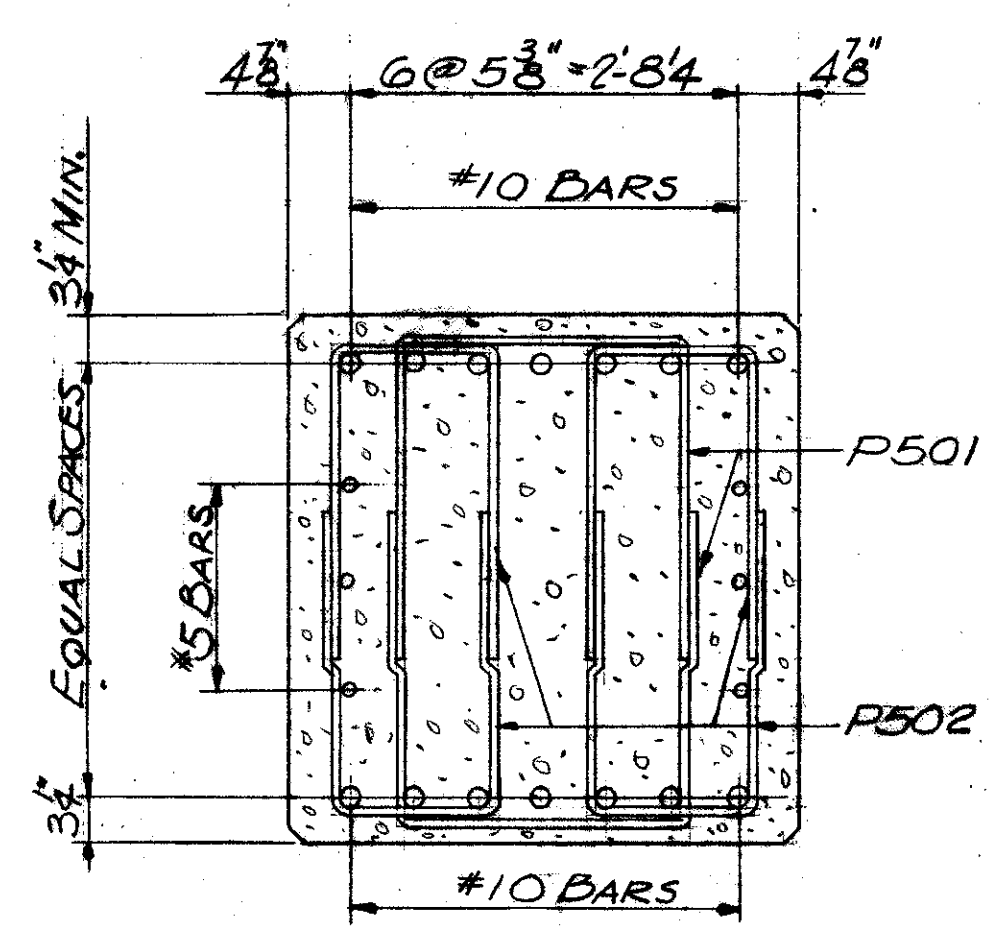
CUYAHOGA COUNTY
CUY-254-18.88



REINFORCING STEEL MUST BE PLACED SO AS TO INSURE DRILLING CLEARANCE FOR 1/4\"/>



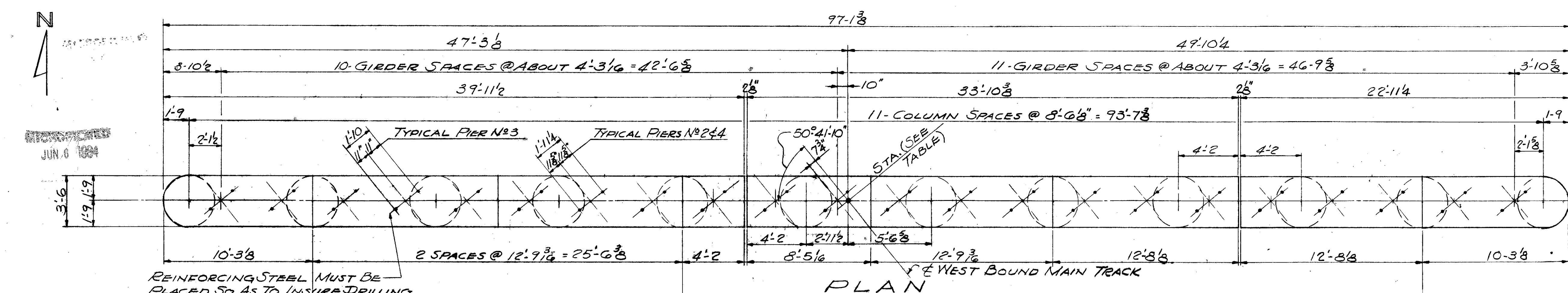
ELEVATION
PIER NO. 1
STA. 4532+36.10



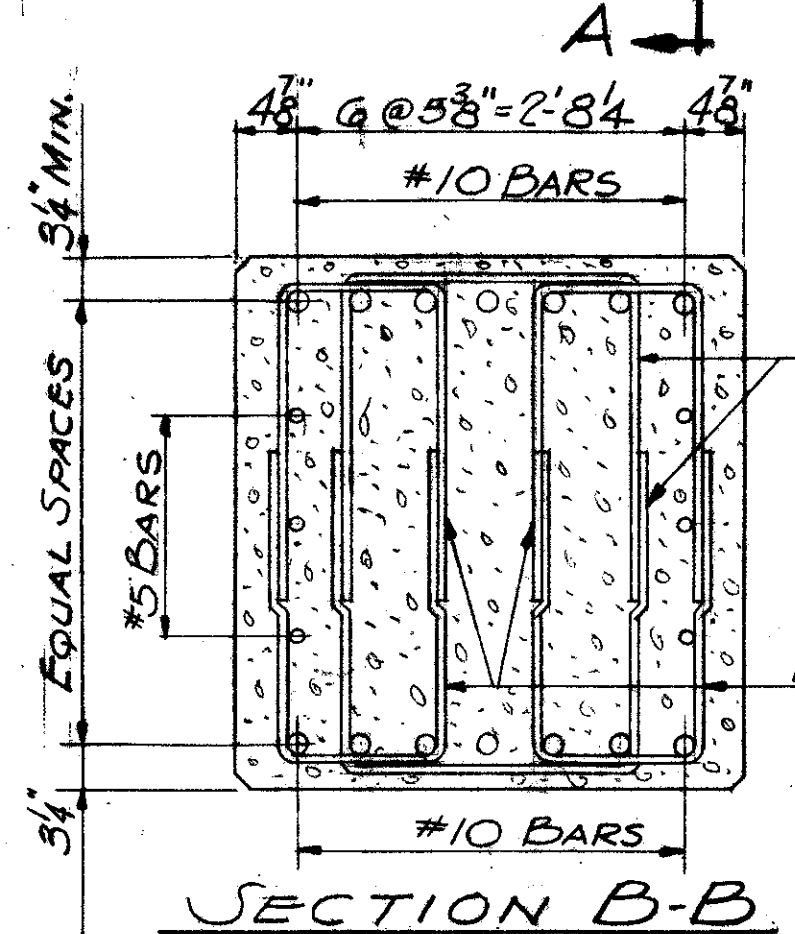
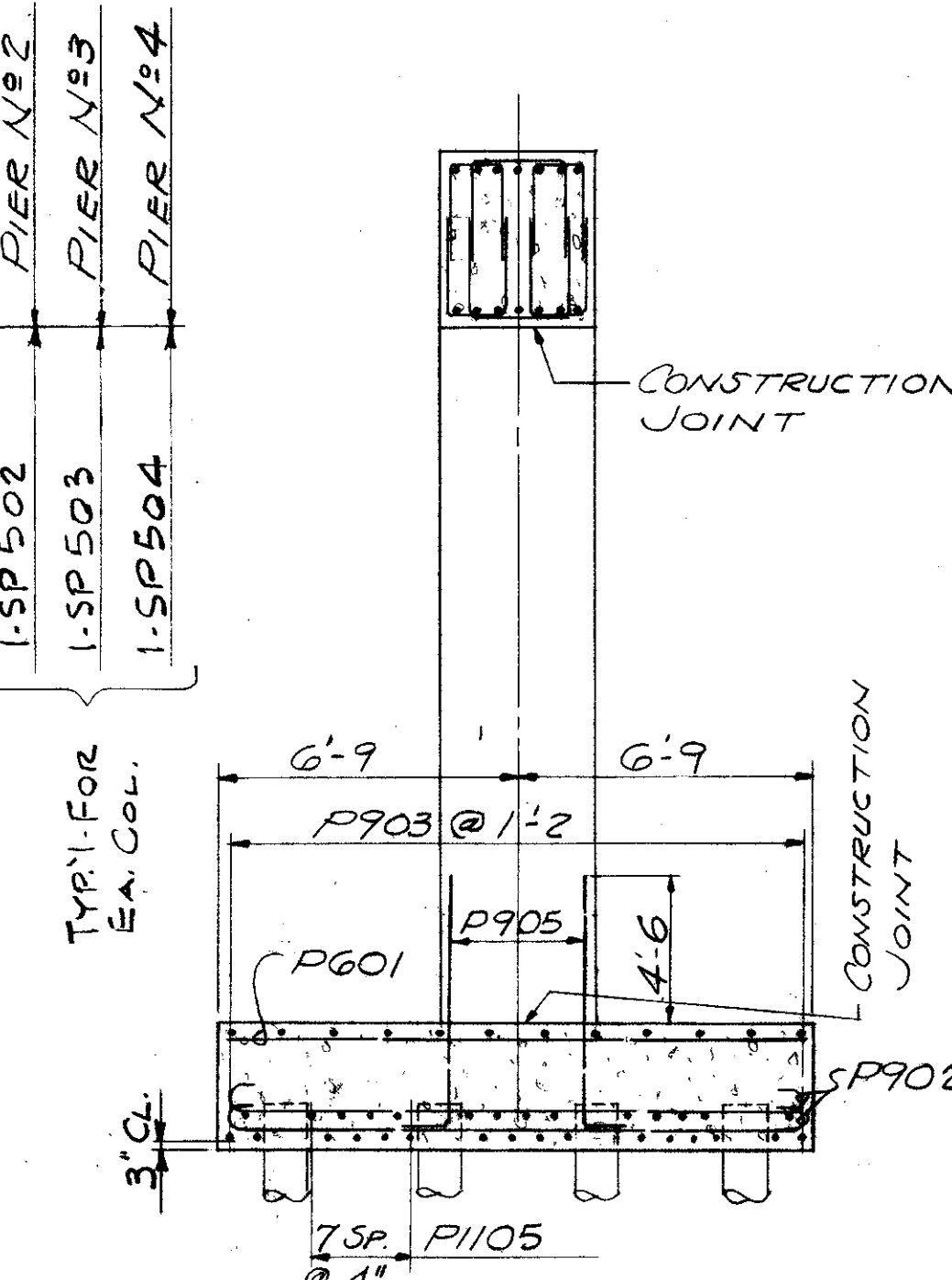
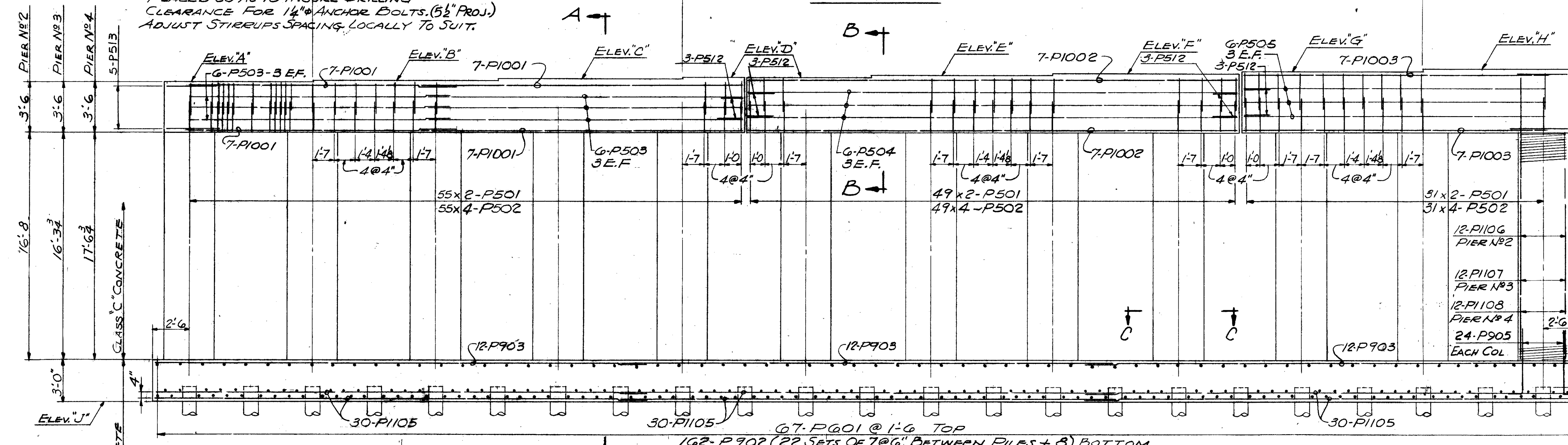
REFERENCE DRAWINGS
GENERAL NOTES - DWGS. 59 & 63
PILES DRAWING - DWG. 60

TRYGVE HOFF & ASSOCIATES ENGINEERS 1922 EAST 107TH STREET CLEVELAND, OHIO					
PIER DETAILS					
BRIDGE NO. 254-1893 CLARK FREEWAY UNDER E.L. RAILROAD CUYAHOGA COUNTY					
SCALE	DATE				
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
SAE. CAT.			SAE. D.W.M.	2-21-64	

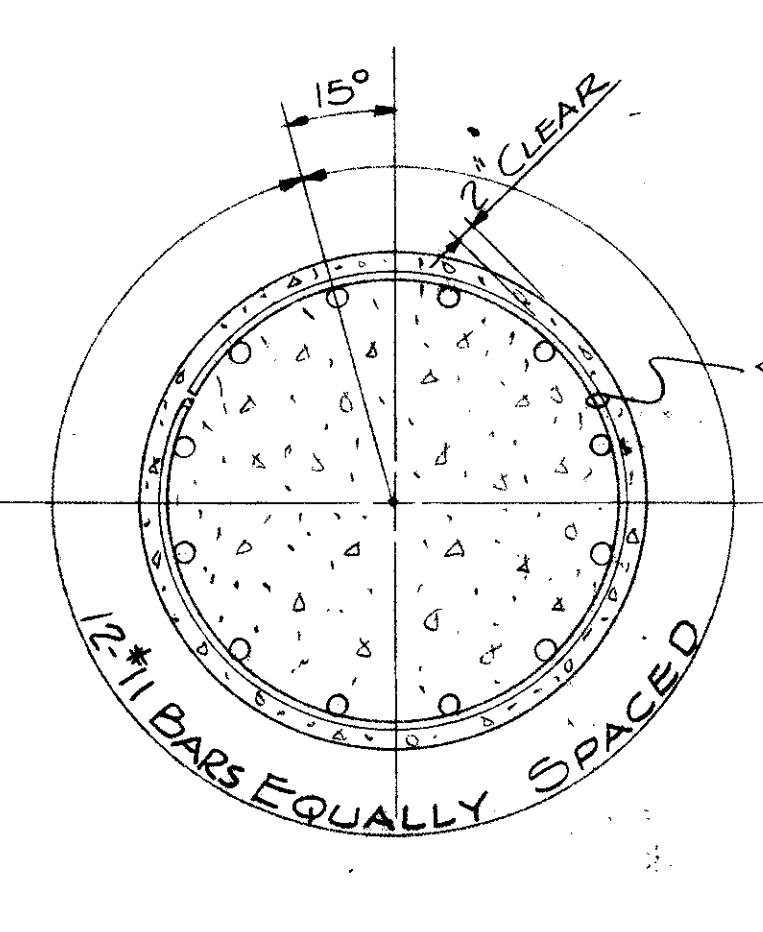
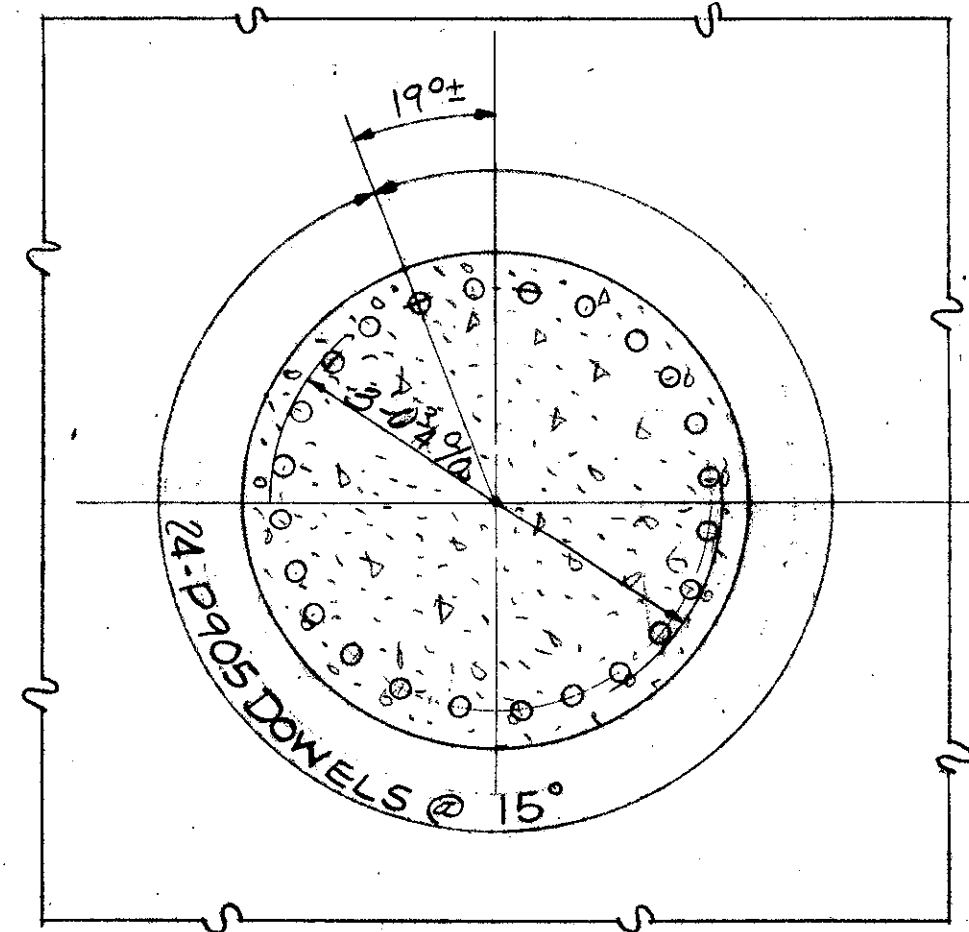
SHEET ACCT. NO. 1918
CONT. NO. 58019-30



REINFORCING STEEL MUST BE PLACED SO AS TO INSURE DRILLING CLEARANCE FOR 1/4" ANCHOR BOLTS. (5 1/2" PROJ.) ADJUST STIRRUPS SPACING LOCALLY TO SUIT.



ELEVATION
PIER N^o 2
PIER N^o 3
PIER N^o 4



TYPICAL DOWEL PLAN

REFERENCE DRAWINGS
GENERAL NOTES - DWGS. 59 & 63
PILES DRAWING - DWG. 60

SP502 PIER 2
SP503 PIER 3
SP504 PIER 4

PIER	ELEVATIONS									
	A	B	C	D	E	F	G	H	J	STATION
PIER N ^o 2	655.67	655.76	655.86	655.96	656.05	656.15	656.24	656.34	632.42	4532+94.58
PIER N ^o 3	654.31	654.40	654.50	654.59	654.69	654.79	654.88	654.98	631.50	4533+72.13
PIER N ^o 4	653.82	653.92	654.01	654.11	654.21	654.30	654.40	654.51	629.67	4534+49.68

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

PIER DETAILS
BRIDGE N^o 254-1893
CLARK FREEWAY UNDER E.L. RAILROAD
CUYAHOGA COUNTY

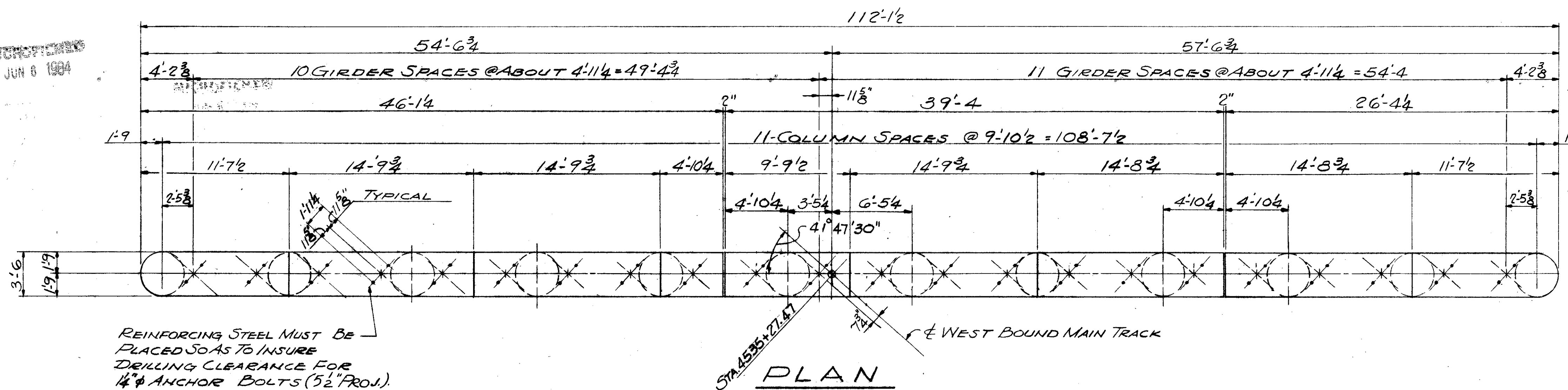
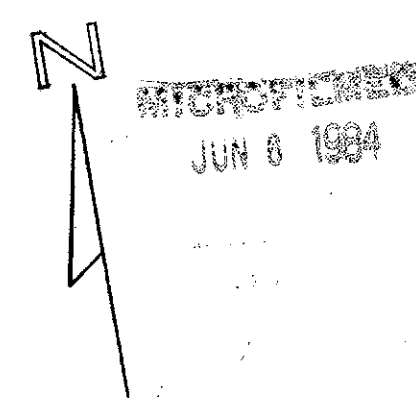
SCALE	DATE					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SAE	CAT.		SAE	D.W.M.	2-21-64	

SHEET ACCT. NO. 1917
D.W.G. NO. 58019-30

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

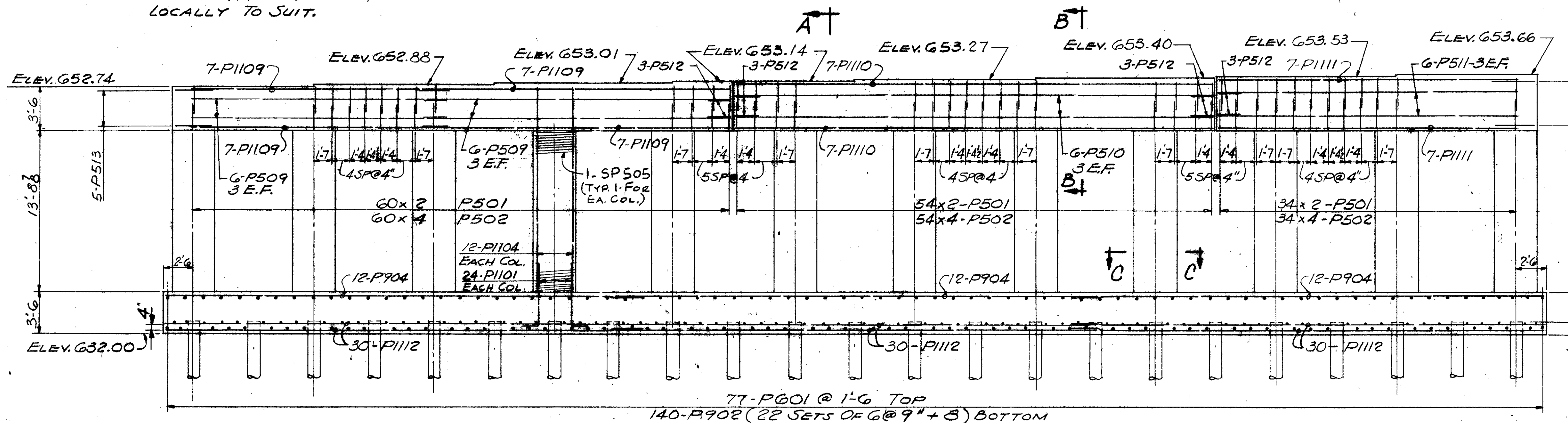
69
81

CUYAHOGA COUNTY
CUY-254-18.88

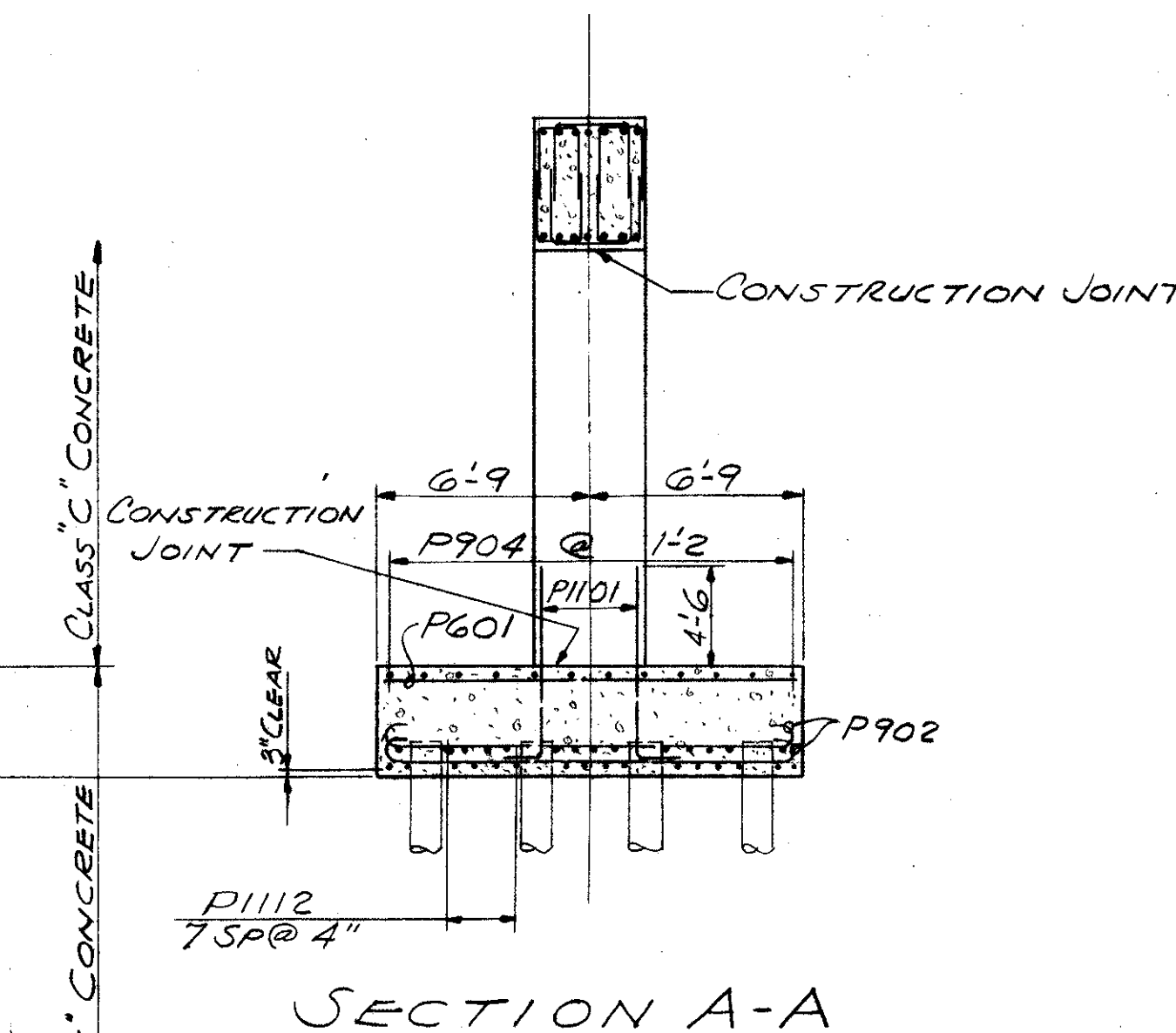


REINFORCING STEEL MUST BE PLACED SO AS TO INSURE DRILLING CLEARANCE FOR 1/2" ANCHOR BOLTS (3/2" PROJ.). ADJUST STIRRUP SPACING LOCALLY TO SUIT.

PLAN

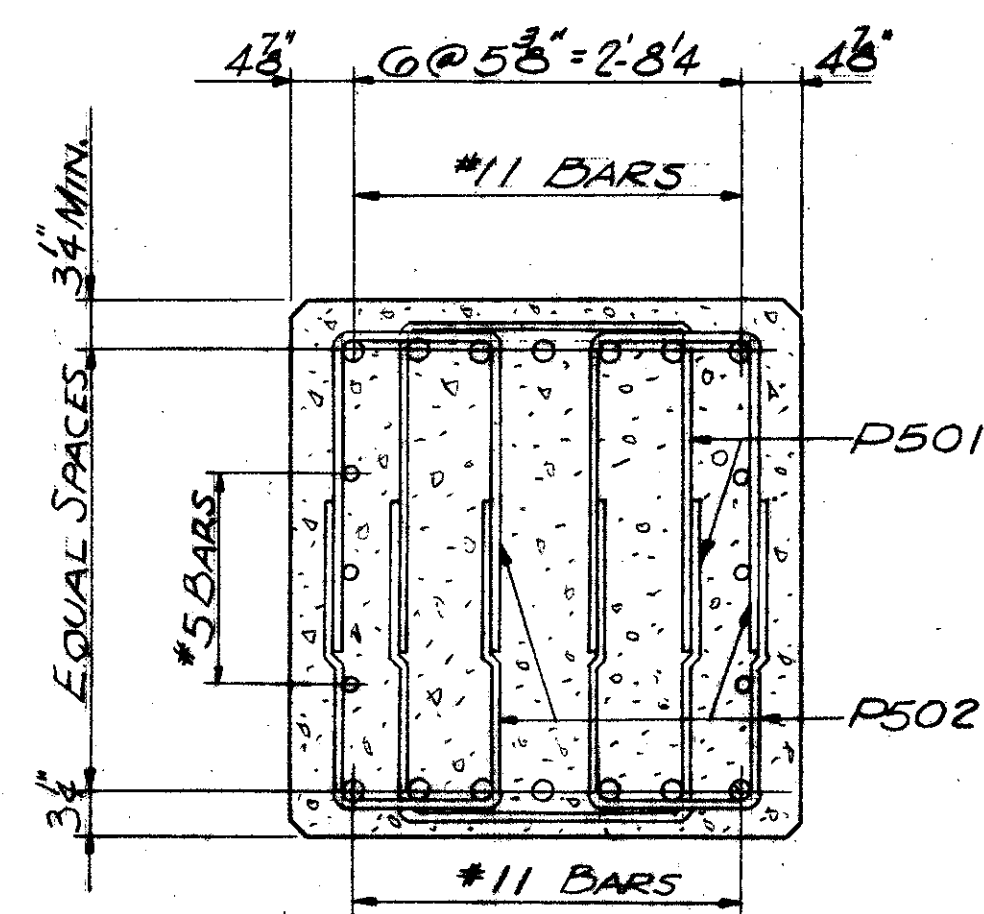


ELEVATION
PIER NO 5
STA. 4535+27.47

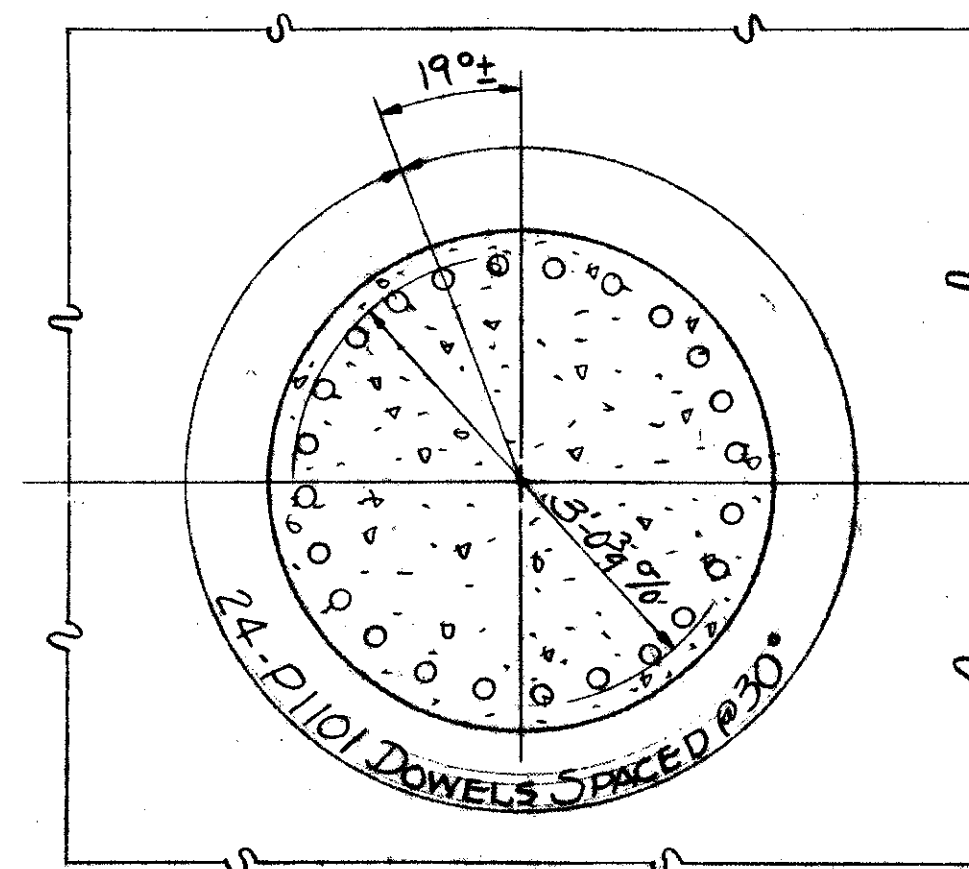


SECTION A-A

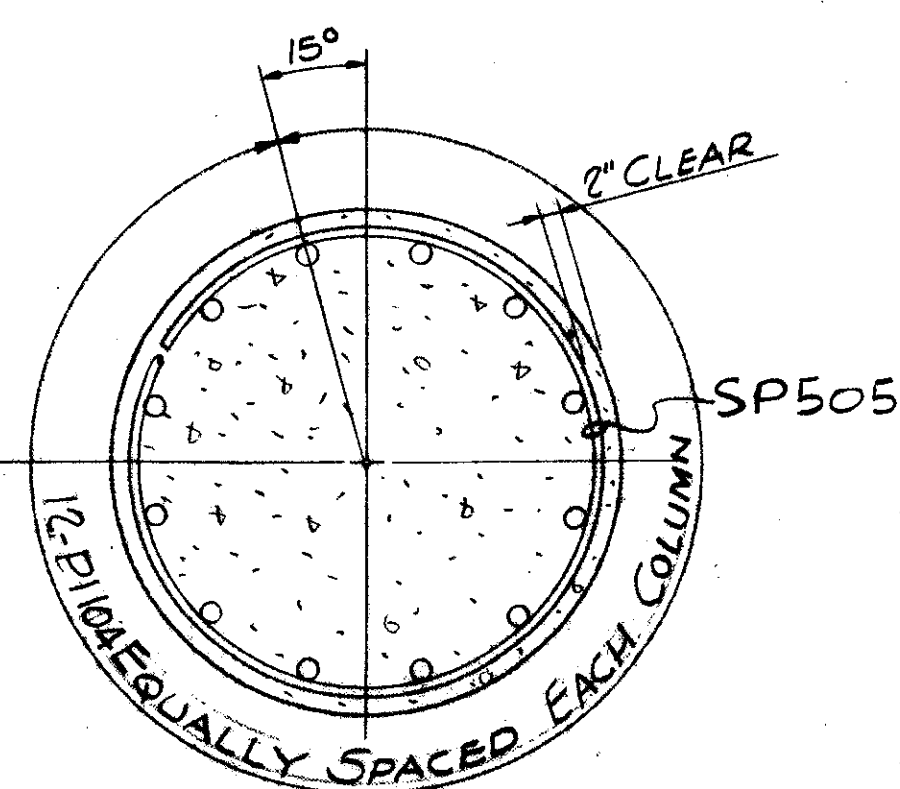
REFERENCE DRAWINGS
GENERAL NOTES - DWGS. 57 & 63
FILES DRAWING - DWG. 60



SECTION B-B



TYPICAL DOWEL PLAN



SECTION C-C

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

PIER DETAILS
BRIDGE NO 254-1893
CLARK FREEWAY UNDER E.L. RAILROAD
CUYAHOGA COUNTY

SCALE	DATE
DESIGNED	DRAWN
TRACED	CHECKED
REVIEWED	DATE
SAE, C.A.T.	SAE, D.W.M. 2-21-64

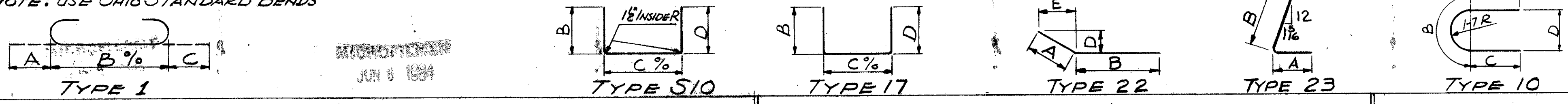
CONT. NO. 58019-30 SHEET ACCT. NO. 1717

REINFORCING STEEL BAR SCHEDULE

FED. RD. DIVISION	STATE	PROJECT	70 81
2	OHIO		

CUYAHOGA COUNTY
CUY-254-1888

NOTE: USE OHIO STANDARD BENDS

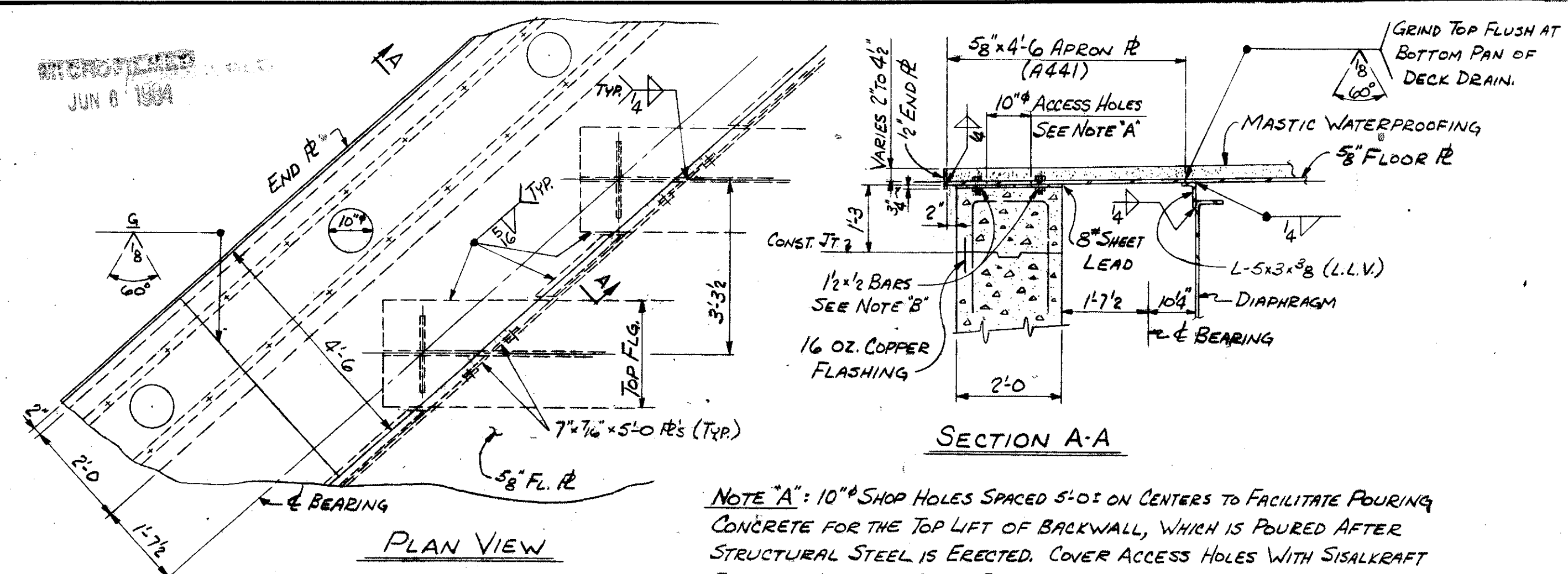


PIERS												ABUTMENTS												WING WALLS																														
No. REQUIRED												No. REQUIRED												No. REQUIRED																														
MARK	PIER No. 1	PIER No. 2	PIER No. 3	PIER No. 4	PIER No. 5	TOTAL	LENGTH	TYPE	A	B	C	D	E	WEIGHT	MARK	SOUTH ABUT.	NORTH ABUT.	TOTAL	LENGTH	TYPE	A	B	C	D	E	WEIGHT	MARK	SHT No.	SHT No.	TOTAL	LENGTH	TYPE	A	B	C	D	E	WEIGHT	MARK	SHT No.	SHT No.	TOTAL	LENGTH	TYPE	A	B	C	D	E	WEIGHT				
P501	270	270	270	270	296	1376	7-4	S10		2-9	2-0	2-9		10,525	A401	17		17	19-8	STR							223	W400	9		9	18-0 to 24-4	STR							128	W543	22		22	7-3	1	7	6-8					166	
P502	540	540	540	540	592	2752	6-5	S10		2-9	1-1	2-9		18,418	A402	24		24	19-5	STR							311	W401	10		10	12-8 to 17-6	STR							101	W544	2		2	32-9	22	1-3	31-6			5	1-2	68	
P503	12	12	12	12		36	20-0	STR						751	A403	26		26	19-2	STR							261	W402	9		9	9-10 to 12-6	STR							67	W545	2		2	32-3	STR							67	
P504	6	6	6	6		18	33-6	STR						629	A404	22		22	17-9	STR							261	W403	9		9	8-3 to 9-7	STR							54	W546	6		6	4-6 to 29-6	STR							106	
P505	6	6	6	6		18	31-0	STR						374	A405	24		24	18-0	STR							288	W404	11		11	14-6 to 23-8	STR							140	W547	9		9	3-6 to 29-6	STR							155	
P506	6	6	6	6		18	25-0	STR						222	A406	17		17	18-3	STR							207	W405	2		2	24-6	STR							33	W548	40		40	31-6	STR							1,314	
P507	6	6	6	6		18	31-3	STR						196	A407	25		25	18-6	STR							309	W406	1		1	24-3	STR							16	W549	6		6	2-0 to 27-0	STR							91	
P508	6	6	6	6		18	19-6	STR						122	SUB TOTAL 1,932												W407	22		22	4-9 to 24-0	STR							211	W550	4		4	4-0 to 27-0	STR							7-8	65	
P509	6	6	6	6		18	23-0	STR						122	A501	69		69	33-4	STR							2,398	W408	8		8	5-9 to 6-8	STR							33	W551	6		6	12-1 to 20-0	STR							1-5	103
P510	6	6	6	6		18	39-0	STR						244	A502	117	24	141	9-10	STR							1,447	W409	9		9	6-9 to 8-6	STR							45	W552	6		6	17-2 to 23-0	STR							1-2	126
P511	6	6	6	6		18	24-6	STR						153	A503	50		50	24-6	STR							1,278	W410	8		8	8-9 to 11-1	STR							53	SUB TOTAL 12,609													
P512	12	12	12	12	12	60	5-9	S10		1-7	2-9	1-7		360	A504	50		50	34-2	STR							1,782	W411	8		8	11-6 to 14-5	STR							69														
P513	10	10	10	10	10	50	8-11	S10	2-0	4-11	2-0	3-2		465	A505	50		50	37-4	STR							1,947	W412	8		8	14-1 to 18-9	STR							62														
SUB TOTAL 32,767												A506	99	129	228	6-3	17		10	4-10	10			1,487	W413	8		8	19-4 to 23-9	STR							115																	
P601	63	67	67	67	77	341	13-0	STR						6658	A507	111	136	247	3-2	STR							818	W414	13		13	3-9 to 14-3	STR							78														
P901	36					36	32-5	STR						3968	A508	94		94	12-6	17	5-7	1-7	5-7				1,226	SUB TOTAL 1,233																										
P902	162	162	162	162	140	788	15-6	STR	1-3	13-0	1-3			41,528	A509	11		11	18-0	17	8-4	1-7	8-4				206	W500	33	27	60	23-6	STR							1,471														
P903	36	36	36	36		108		STR						12,639	A510	28	34	62	5-0	STR							324	W501	10		10	2-6 to 22-9	STR							132														
P904	36	36	36	36		108		STR						12,639	A511	4	2	6	4-4	STR							27	W502	4		4	6-5 to 8-5	STR							31														
P905	288	288	288	288		1152	8-1	STR	7-3	1-1				31,661	A512	4		4	4-11	22	3-0	2-0	1-6	2-6			21	W503	12		12	3-7 to 5-0	STR	7	3-3					54														
SUB TOTAL 94,651												A513	84	84	168	32-10	STR							2,877	W504	79	97	176	4-6	STR							826																	
P1001	28	28	28	28		84	20-9	STR						7500	A514	3	170	173	5-3	STR							948	W505	4		4	37-0	STR							154														
P1002	14	14	14	14		42	33-6	STR						6054	A515	48	48	96	30-9	STR							1,539	W506	16		16	33-0	STR							551														
P1003	14	14	14	14		42	21-0	STR						3795	A516	48	48	96	27-9	STR							1,389	W507	7		7	2-6 to 22-6	STR							91														
P1004	14					14	35-6	STR						2,139	A517	48	48	96	24-4	STR							1,218	W508	12		12	19-0	STR							238														
P1005	14					14	31-3	STR						1,883	A518	48	48	96	36-0	STR							1,802	W509	5		5	28-0 to 35-0	STR							164														
P1006	14					14	19-6	STR						1,178	A519	129	129	258	10-3	STR							1,379	W510	4		4	25-0 to 31-0	STR							117														
SUB TOTAL 22,546												A520	123	123	246	12-0	17	5-4	1-7	5-4			1,540	W511	20	12	32	25-0	STR							834																		
P1101					288	288	8-6	STR	7-9	1-1				13,006	A521	3	3	6	3-7	22	2-3	1-6	1-8	1-6		11	W512	5		5	19-0 to 27-0	STR							120															
P1102	90					90	33-2	STR						15,859	A522	13	13	26	17-8	17	8-2	1-7	8-2			240	W513	4		4	17-0 to 24-0	STR							86															
P1103	144					144	17-3	STR						13,197	A523	3	3	6	7-3	STR						23	W514	7		7	2-0 to 22-0	STR							88															
P1104					144	144	17-0	STR						13,006	A524	3	3	6	7-10	22	2-4	5-7	1-8	1-9		25	W515	26	30	56	10-0	STR							584															
P1105	90	90	90			270	35-2	STR						50,447	A525	3	3	6	3-0	STR						9	W516	3		3	26-0	STR							81															
P1106	144					144	20-0	STR						15,301	A526	3	3	6	6-3	22	1-11	4-4	1-8	1-0		20	W517	2		2	25-6	22	1-9	23-9		9-2	1-6-2		53															
P1107					144	144	19-6	STR						14,919	SUB TOTAL 25,981												W518	11		11	2-6 to 33-4	STR						206																
P1108					144	144	20-9	STR						15,875	W519	22		22	35-6	STR							815	W520	21		21	7-3 to 11-10	STR							209														
P1109					28	28	24-0	STR						3,570	A901	194		194	8-9	17	1-3	7-9				5,772	W521	4		4	6-0 to 29-3	STR							74															
P1110					14	14																																																

INTERSTATE
JUN 6 1964

FED. RD. DIVISION	STATE	PROJECT	73 81
2	OHIO		

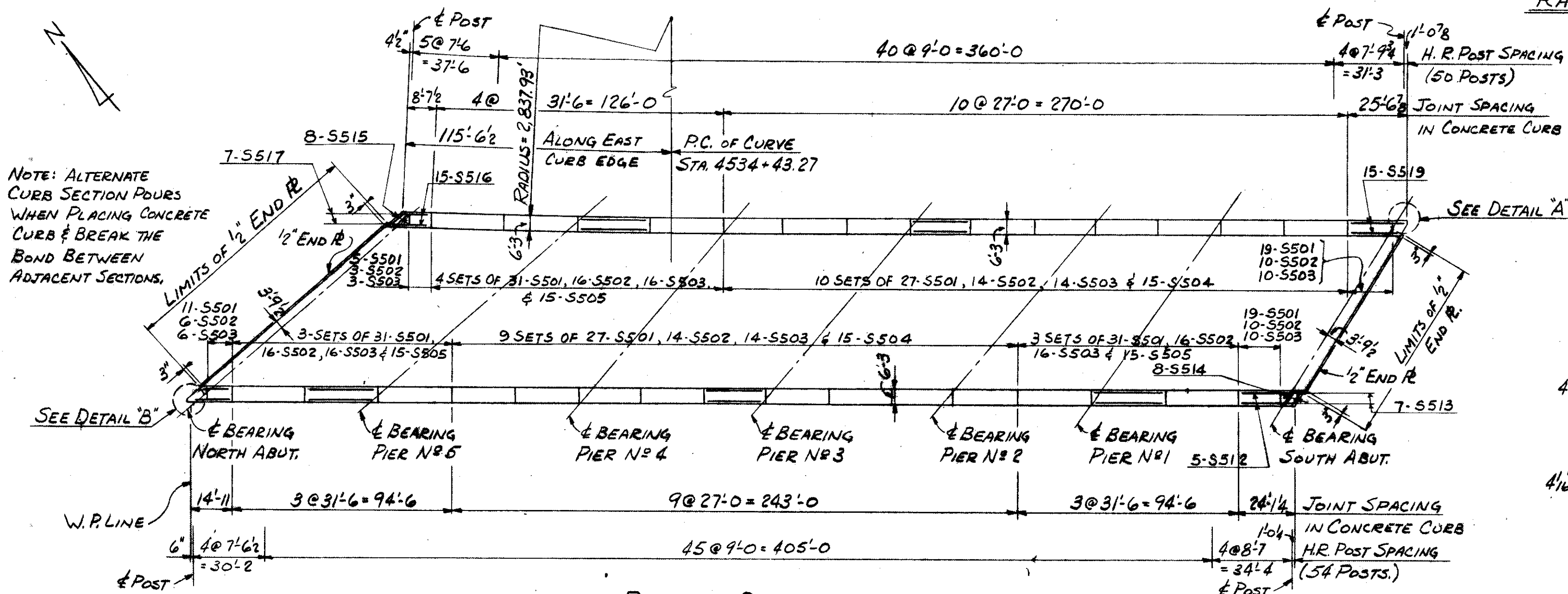
CUYAHOGA COUNTY
CUY-254-18.88



NOTE A: 10" SHOP HOLES SPACED 5'-0" ON CENTERS TO FACILITATE POURING CONCRETE FOR THE TOP LIFT OF BACKWALL, WHICH IS POURED AFTER STRUCTURAL STEEL IS ERECTED. COVER ACCESS HOLES WITH SISALKRAFT PAPER OR APPROVED EQUAL BEFORE MASTIC WATERPROOFING IS APPLIED.
NOTE B: 1/2" x 1/2" BARS TO BE CONTINUOUS, SUPPORTING THE LEAD PLATE FOR FULL LENGTH OF BACKWALL. FASTEN TO FLOOR PLATE WITH TAP SCREWS OR BOLTS @ 18" O.C. BOLTS TO BE REMOVED WHEN BACKWALL CONCRETE HAS TAKEN ITS INITIAL SET.

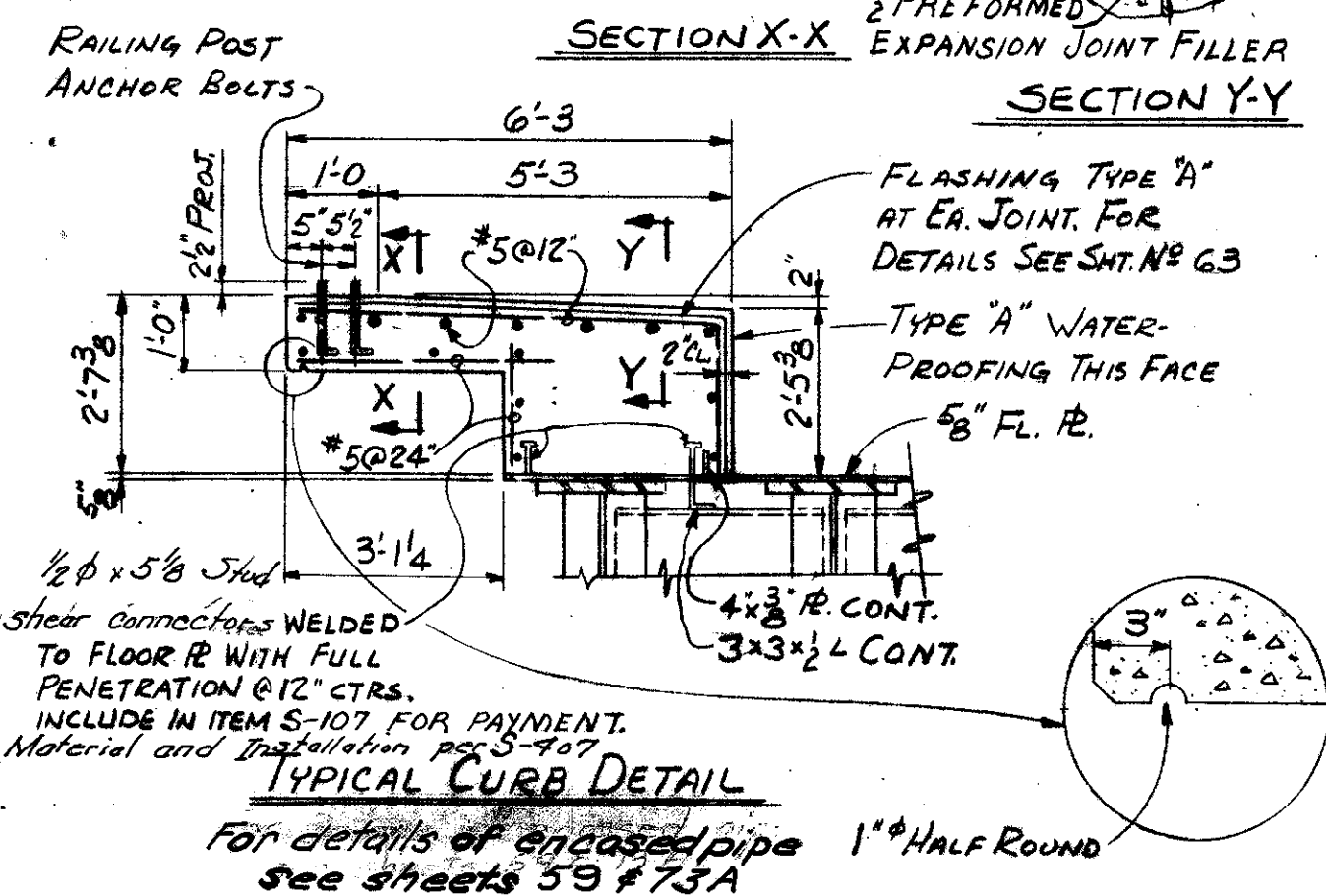
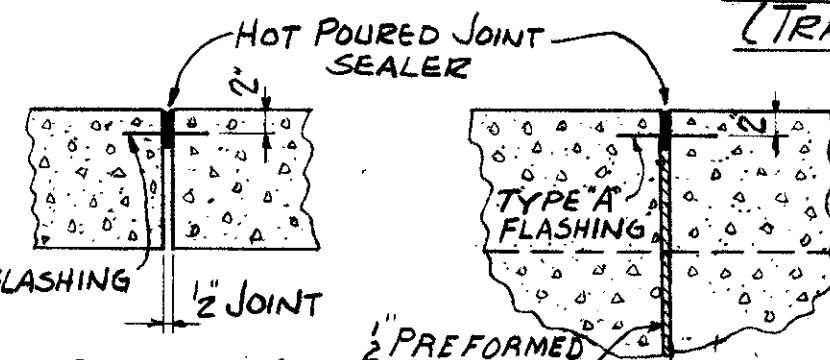
NOTE: CONCRETE AT ACCESS HOLES SHALL NOT PROJECT ABOVE BOTTOM OF LEAD PLATE.

FLOOR PLATE DETAIL OVER BACKWALL
(NORTH ABUTMENT SHOWN ~ SOUTH ABUTMENT SIMILAR AND OPP. HAND)

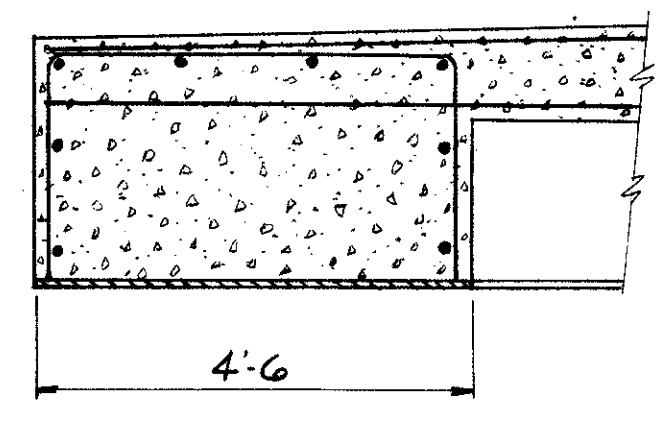


NOTE: ALTERNATE CURB SECTION POURS WHEN PLACING CONCRETE CURB & BREAK THE BOND BETWEEN ADJACENT SECTIONS.

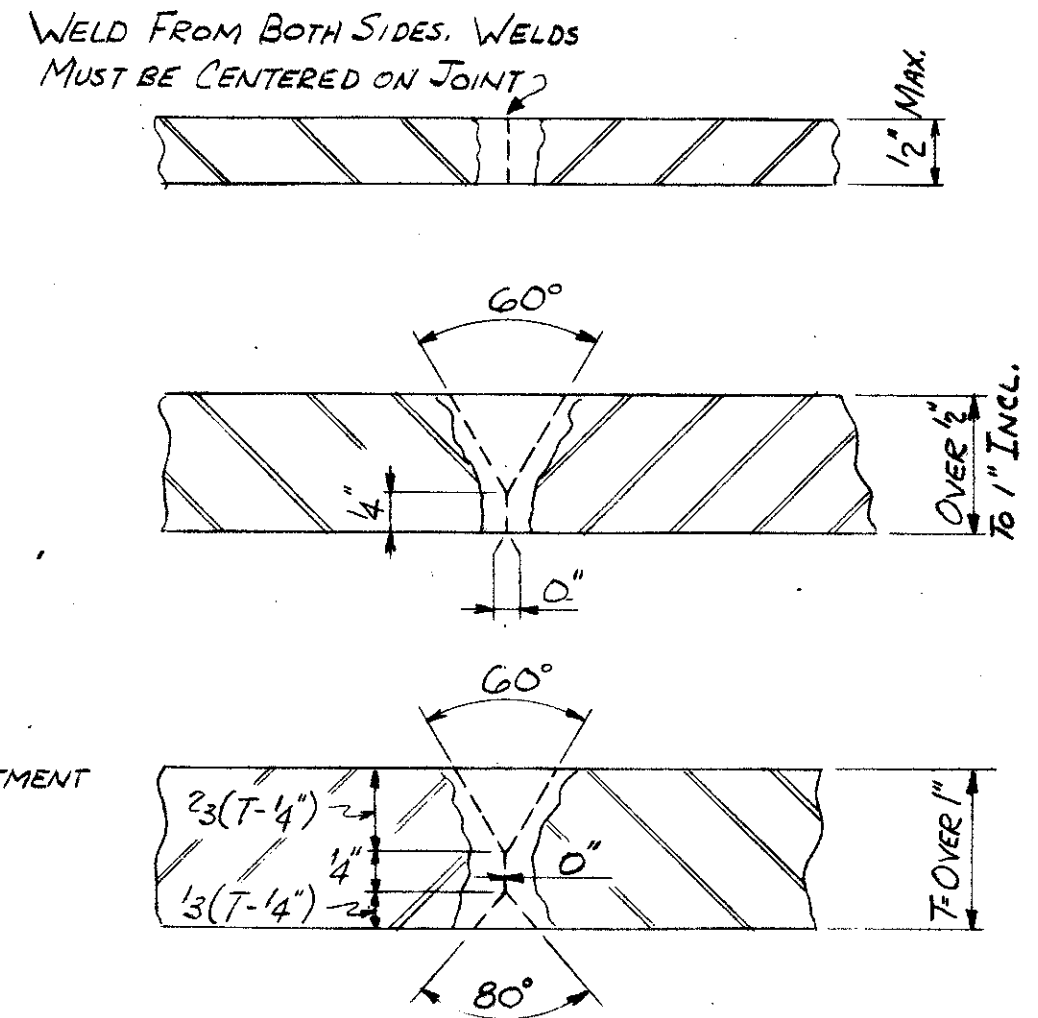
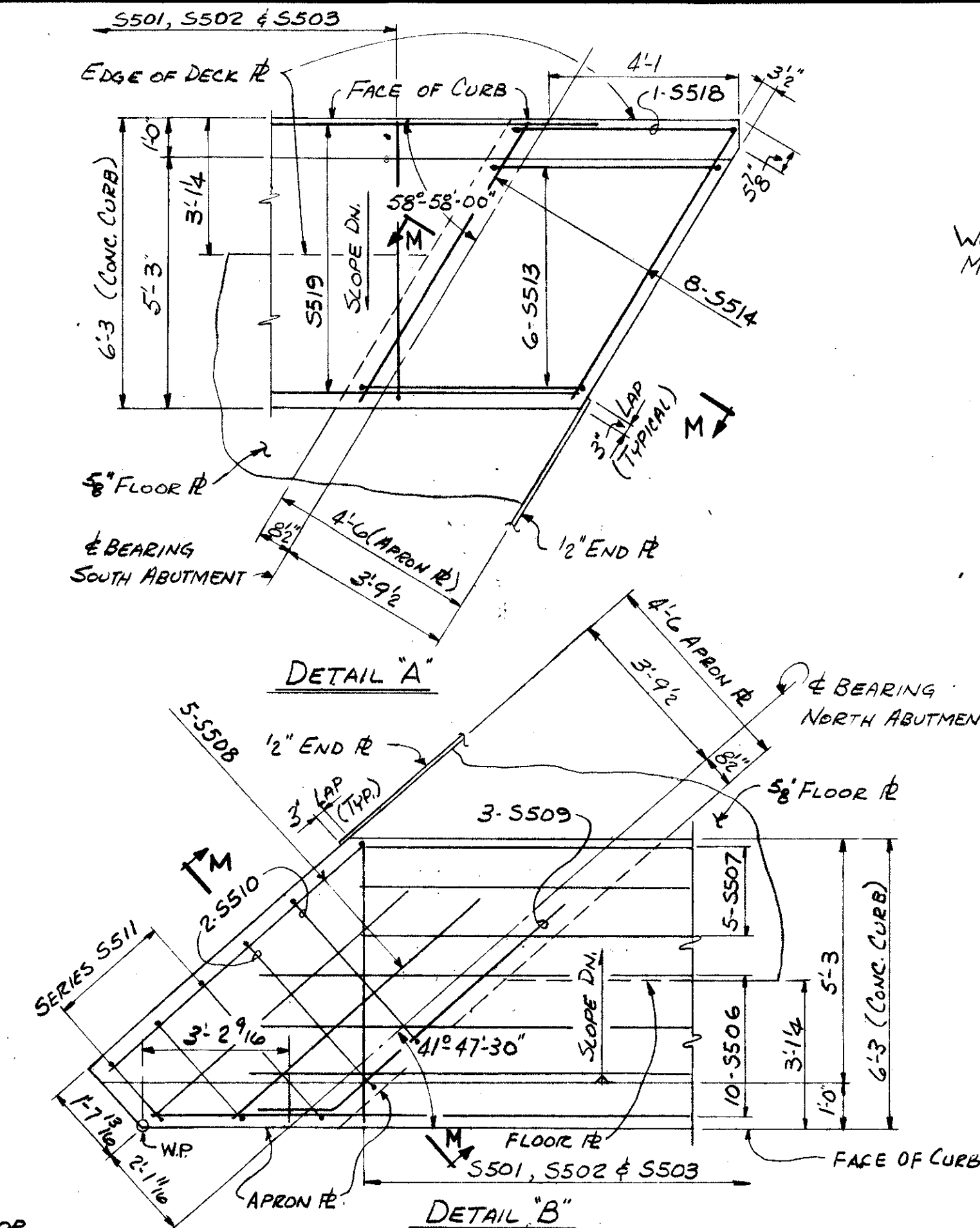
PLAN OF DECK
(TRACKS NOT SHOWN)



REINFORCING STEEL BAR SCHEDULE										
MARK	Nº	REQ'D	SIZE	LENGTH	TYPE	A	B	C	E	WEIGHT
S501	877	5	8-2	1			5-11	2-4	2'	74.70
S502	455		4-3	STR.						2017
S503	455		2-3	STR.						1068
S504	285		26-8	STR.						7927
S505	150		31-2	STR.						4876
S506	10		12-6	STR.						130
S507	5		10-0	STR.						52
S508	5		7-6	STR.						39
S509	3		8-6	1		1-6	7-0	11-1		27
S510	2		8-8	1	2-4 1/2	4-2	2-4 1/2			18
S511	3		6-0 x 10	1	2-4 1/2	10-0	2-4 1/2			22
S512	15		23-0	STR.						360
S513	13		9-4	1	2-4	4-11	2-4			127
S514	16		6-10	STR.						114
S515	8		8-10	STR.						74
S516	15		8-0	STR.						42
S517	7		10-9	1	2-4	6-4	2-4			78
S518	1		9-2	1	2-4	4-9	2-4			10
S519	15		21-9	STR.						340
TOTAL WT.										24,791

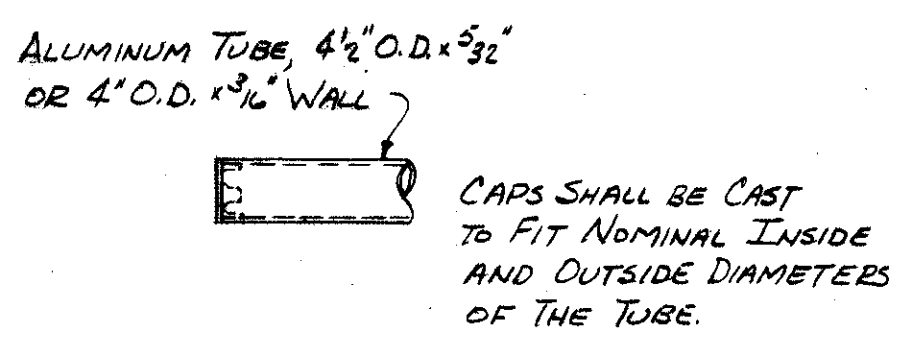


SECTION M-M
TYPICAL @ ALL 4 CORNERS

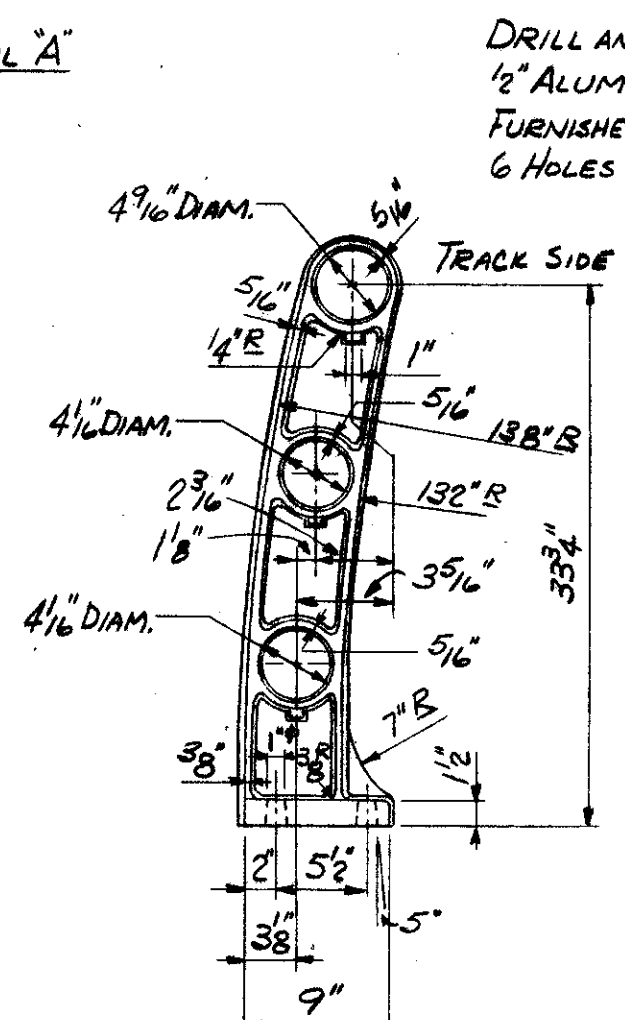


ALL OF THE ABOVE FULL PENETRATION WELDS SHALL BE BACK-GROUSED AND WELDED AFTER WELDING FAR SIDE.
BUTT JOINTS ON GIRDER FLANGE PLATES AND ON FLOOR PLATES WHERE WELD IS IN CONTACT WITH GIRDER FLANGE OR DECK DRAINS SHALL BE GROUND FLUSH, THE FINISH GRINDING BEING PARALLEL TO THE DIRECTION OF STRESS.

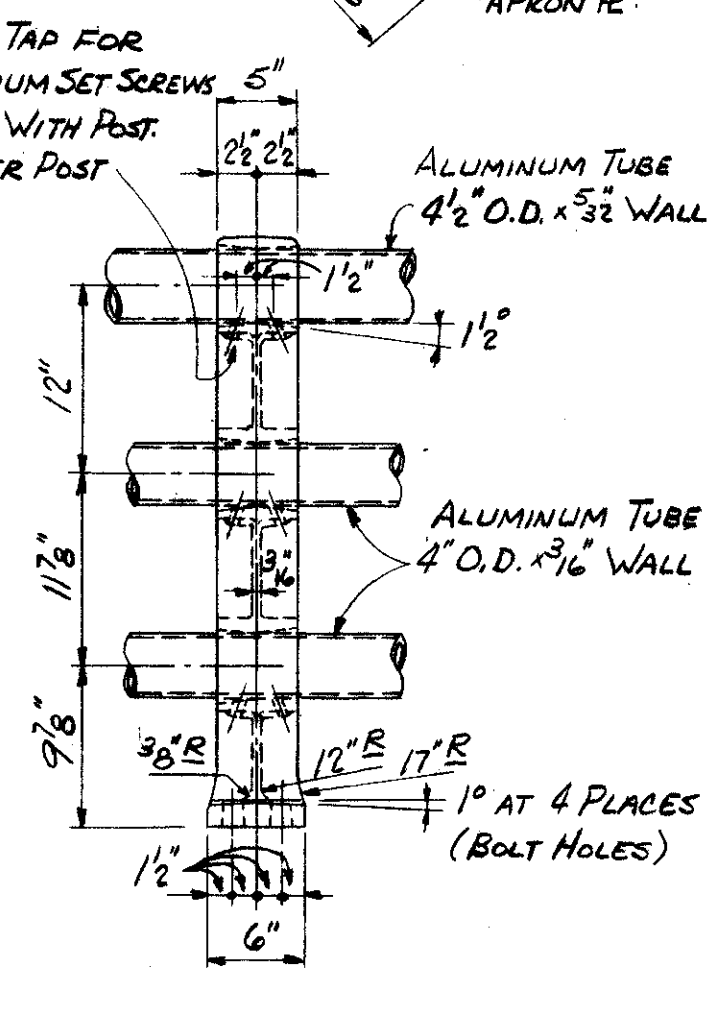
TYPICAL SHOP WELD DETAILS



RAIL CAP DETAIL

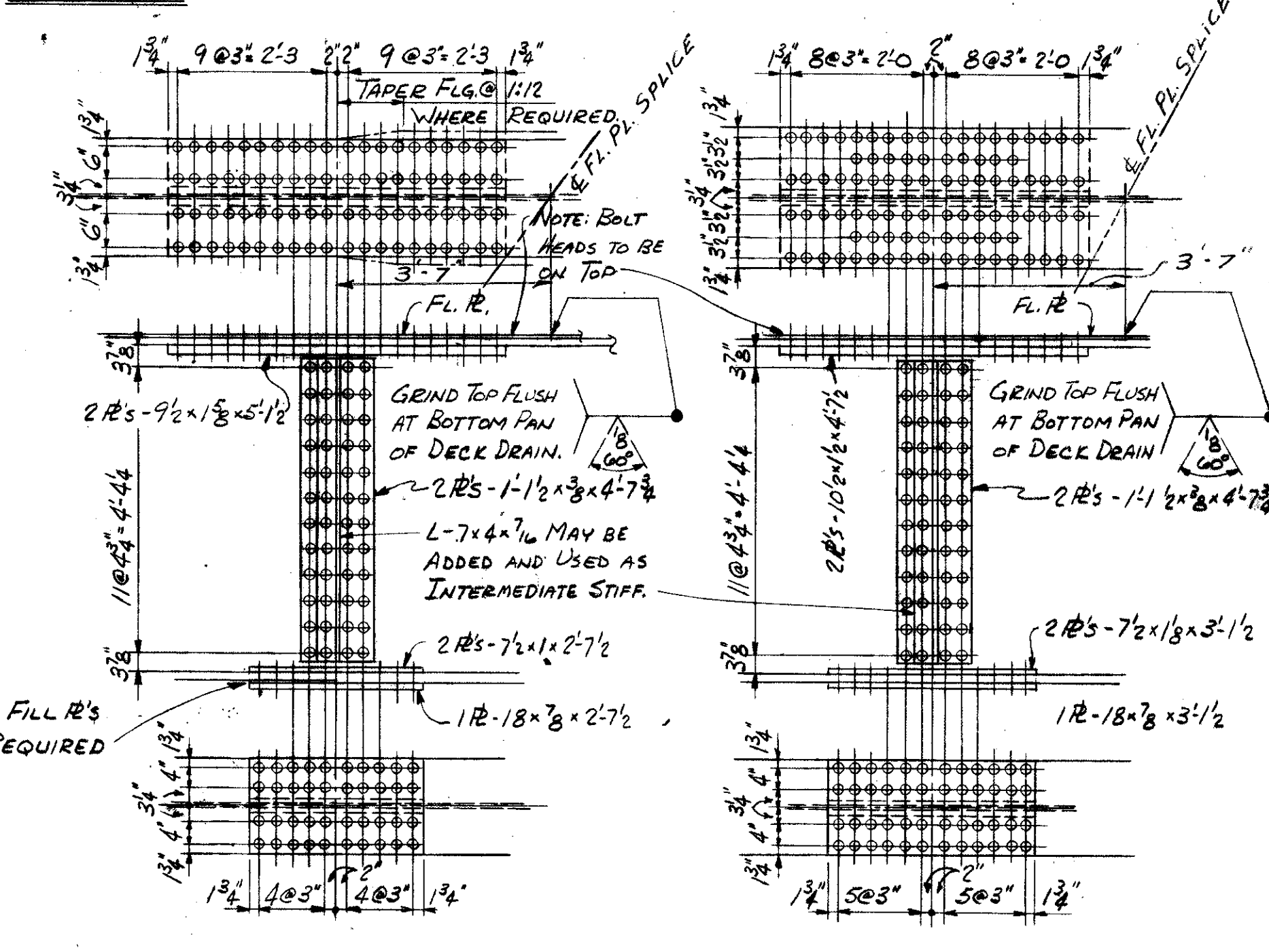


ALUMINUM RAILING POST DETAIL
(RAILING POSTS TO BE PLACED NORMAL TO GRADE)



NOTES ON HAND RAIL AND POSTS

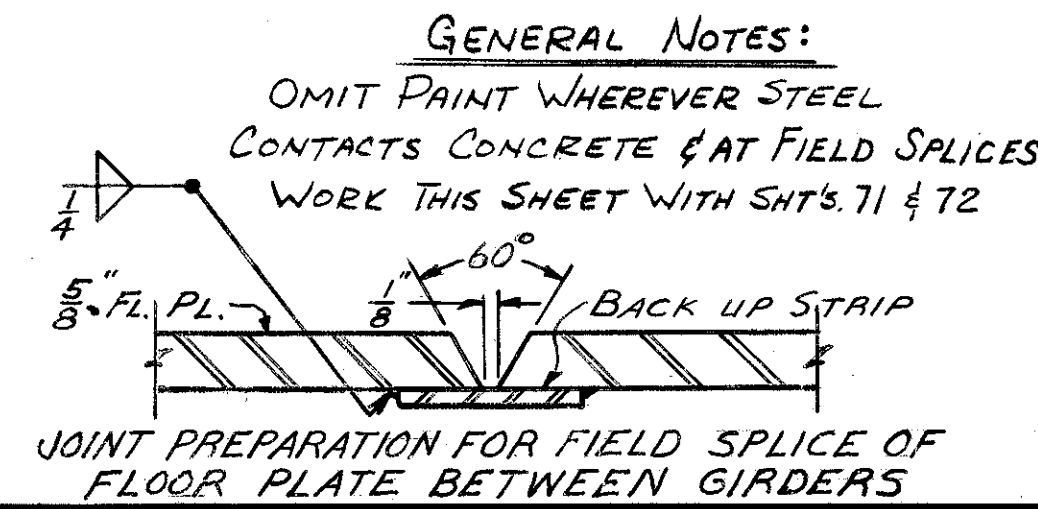
FINISH! THE EXTREME OUTER SURFACES OF CAST RAILING POSTS SHALL BE GIVEN A 60 GRIT FINISH.
ANCHOR BOLTS SHALL BE 3/4" GALVANIZED STEEL, 1'-0" LONG PLUS A 2 1/2" 90° BEND OR A HEAD AT THE BOTTOM END, AND SHALL HAVE A MINIMUM DIAMETER OF 0.62" AT THE ROOT OF THE THREAD WITH ONE GALV. HEX HEAD NUT AND ONE GALV. WASHER.
SHIMS SHALL BE PROVIDED UNDER THE RAILING POSTS, WHERE NECESSARY, TO ASSIST IN VERTICAL ALIGNING. THEY SHALL BE OF ALUMINUM ALLOY, 2 1/8" x 1/8" x 9", AND SHALL BE SLOTTED FOR ANCHOR BOLTS TO PERMIT INSERTION AFTER THE POSTS ARE IN PLACE.
THE RAILING TUBES SHALL TERMINATE WITH A CAP (AS DETAILED) AT THE ENDS. RAILING SHALL BE IN LENGTHS OF NOT LESS THAN TWO PANEL LENGTHS AT ENDS OF SUPERSTRUCTURE NOR THREE PANELS ELSEWHERE.



FIELD SPLICE TYPE A

FIELD SPLICE TYPE B

NOTE: ALL FIELD SPLICE BOLTS TO BE 1" H.S. BOLTS.



GENERAL NOTES:

OMIT PAINT WHEREVER STEEL CONTACTS CONCRETE & AT FIELD SPLICES.
WORK THIS SHEET WITH SHTS. 71 & 72

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE Nº CUY. 254-1893
CLARK FREEWAY UNDER E.L. RAILROAD
CUYAHOGA COUNTY

SCALE: _____ DATE: _____
DESIGNED: R.D.H. DRAWN: J.J.D. TRACED: D.W.M. CHECKED: _____ REVIEWED: _____ DATE: 2-21-64

SHEET ACCT. NO. 1728
CONT. NO. 58017-30

MICROFILMED
JUN 6 1984

POURED-IN-PLACE ASPHALT MASTIC WATERPROOFING
ON BRIDGE DECKS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

73A
81

CUYAHOGA COUNTY
CUY-254-18.88

1. GENERAL

UNDER THIS ITEM THE CONTRACTOR SHALL FURNISH AND APPLY A LAYER OF POURED-IN-PLACE ASPHALT MASTIC NOT LESS THAN ONE AND ONE-HALF (1 1/2) INCHES THICK ON THE BRIDGE DECK AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

f. EXPANSION JOINT MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT A.S.T.M. STANDARD SPECIFICATIONS FOR CONCRETE JOINT SEALER, HOT-POURED ELASTIC TYPE, DESIGNATION D-1190.

2. MATERIALS

THE POURED-IN-PLACE MASTIC SHALL CONSIST OF ASPHALT, COARSE MINERAL AGGREGATE, FINE MINERAL AGGREGATE AND MINERAL FILLER CONFORMING TO THE FOLLOWING REQUIREMENTS:

a. ASPHALT FOR MASTIC SHALL BE HOMOGENEOUS AND FREE FROM WATER AND SHALL MEET THE FOLLOWING REQUIREMENTS:

PENETRATION: AT 77°F (25°C), 100 g. 5 SEC.	25 TO 30
SOFTENING POINT	145° TO 160°F
FLASH POINT (OPEN CUP)	NOT LESS THAN 347°F (175°C)
LOSS ON HEATING AT 325°F (163°C), 50 g. 5 HR.	NOT MORE THAN 2 PERCENT
PENETRATION AT 77°F (25°C) 100 g. 5 SEC. OF RESIDUE AFTER HEATING AT 325°F (163°C), AS COMPARED WITH PENETRATION OF ASPHALT BEFORE HEATING	NOT LESS THAN 60 PERCENT
DUCTILITY AT 77°F (25°C)	NOT LESS THAN 15 CM.
PROPORTION OF BITUMEN SOLUBLE IN CARBON TETRA-CHLORIDE	NOT LESS THAN 99 PERCENT

b. COARSE MINERAL AGGREGATE SHALL BE UNIFORMLY GRADED CRUSHED STONE OR WASHED GRAVEL THAT WILL PASS A 3/8 IN. SIEVE AND BE RETAINED ON A NO 10 SIEVE. IT SHALL BE FREE FROM SOFT PARTICLES AND ORGANIC MATTER.

c. FINE MINERAL AGGREGATE SHALL BE UNIFORMLY GRADED WASHED SAND OR CRUSHED STONE THAT WILL MEET THE FOLLOWING REQUIREMENTS:

PASSING A NO 100 SIEVE	NOT MORE THAN 6 PERCENT
PASSING A NO 40 SIEVE	40-80 PERCENT
PASSING A NO 10 SIEVE	NOT LESS THAN 90 PERCENT

d. MINERAL FILLER SHALL BE PORTLAND CEMENT CONFORMING TO THE REQUIREMENTS OF THE CURRENT A.S.T.M. STANDARD SPECIFICATIONS FOR PORTLAND CEMENT, DESIGNATION C-150, OR FINELY GROUND LIMESTONE OR SILICA MEETING THE FOLLOWING REQUIREMENTS:

PASSING A NO 200 SIEVE	NOT LESS THAN 75 PERCENT
PASSING A NO 30 SIEVE	NOT LESS THAN 100 PERCENT

e. ASPHALT PRIMER SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT A.S.T.M. STANDARD SPECIFICATIONS FOR PRIMER FOR USE WITH ASPHALT IN DAMPROOFING AND WATERPROOFING, DESIGNATION D-41, FOR STEEL.

3. CONSTRUCTION METHODS

THE ASPHALT AND MINERAL AGGREGATES SHALL BE MIXED IN THE FOLLOWING PROPORTIONS BY WEIGHT, VARIED WITHIN THE SPECIFIED LIMITS, TO GIVE A MASTIC OF THE GREATEST DENSITY AND STABILITY:

ASPHALT	9 PERCENT TO 12 PERCENT
COARSE MINERAL AGGREGATE	33 PERCENT TO 40 PERCENT
FINE MINERAL AGGREGATE	33 PERCENT TO 37 PERCENT
MINERAL FILLER	15 PERCENT TO 19 PERCENT

THE ASPHALT MASTIC SHALL BE MIXED AT THE SITE OF THE WORK IN EITHER SUITABLE MECHANICALLY OPERATED HEATERS AND MIXERS, OR BY MANUAL STIRRING IN OPEN PANS OR KETTLES. THE ASPHALT SHALL BE MELTED AND HEATED TO 350°F. THE AGGREGATE SHALL BE MIXED AND HEATED TO 212° - 275°F AND THEN PLACED IN THE MELTED BITUMEN. THESE INGREDIENTS SHALL BE WELL MIXED UNTIL ALL PIECES OF THE AGGREGATE ARE COVERED WITH BITUMEN, AND THE AGGREGATES ARE DISTRIBUTED UNIFORMLY THROUGHOUT THE MIXTURE. THE MINERAL FILLER SHALL THEN BE UNIFORMLY INCORPORATED IN THE MIXTURE. DURING THE MIXING PROCESS CARE SHALL BE TAKEN TO AVOID LOCAL OVERHEATING OF THE MIXTURE, THE TEMPERATURE OF WHICH SHALL BE MAINTAINED BETWEEN 300°F AND 375°F.

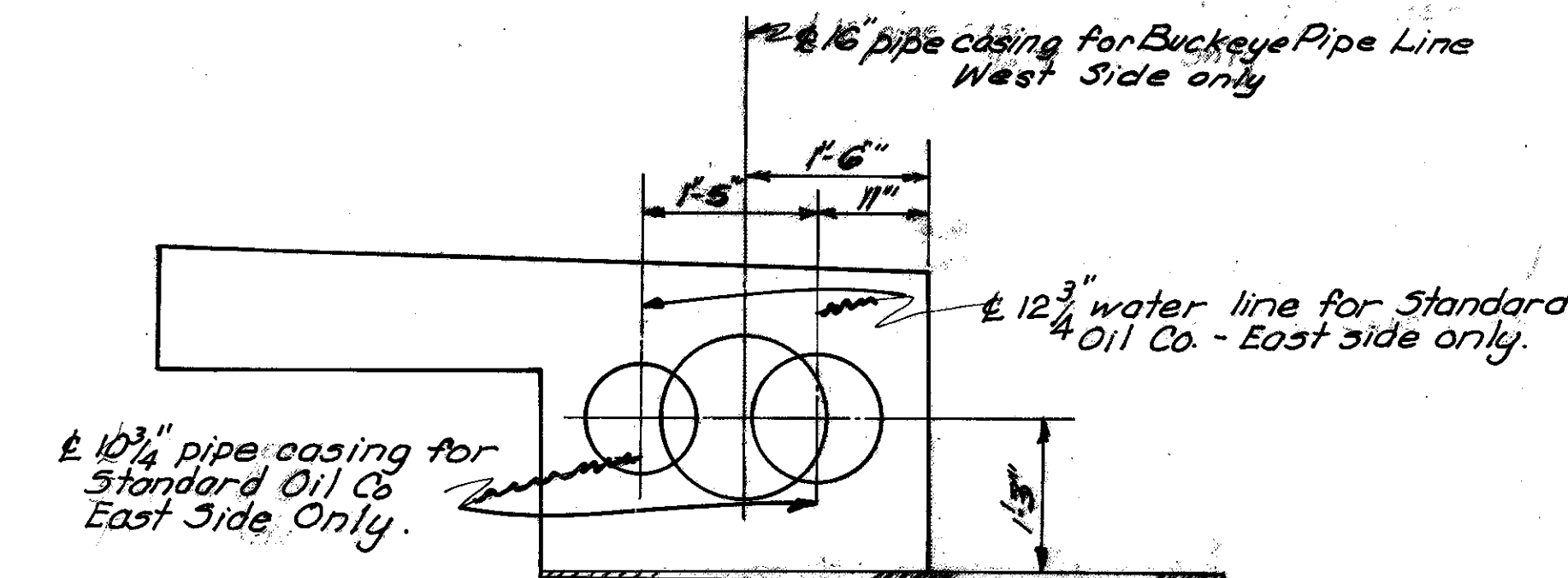
AFTER THE MASTIC HAS BEEN MIXED IT SHALL BE POURED INTO PLACE WHILE HOT. IT SHALL BE PLACED IN LAYERS NOT MORE THAN 3/4 IN. THICK. THE THICKNESS SHALL BE GAUGED BY WOODEN STRIPS HELD IN POSITION BY SUITABLE WEIGHTS. THE LAYERS SHALL BE BROUGHT TO THE REQUIRED THICKNESS WITH WOODEN SPREADERS AND FLOATS, AND SHALL LAP JOINTS NOT LESS THAN 6 IN. THE TOP LAYER SHALL BE FINISHED TO THE REQUIRED GRADE AND TO A SMOOTH SURFACE. AS SOON AS THE TOP LAYER OF THE MASTIC IS FINISHED, IT SHALL BE GIVEN A MOPPING OF HOT BITUMEN OF THE SAME KIND AS USED IN THE MASTIC, SANDED TO A WALKING SURFACE WHILE HOT.

BEFORE APPLYING THE ASPHALT MASTIC, THE BRIDGE DECK SHALL BE DRY AND FREE OF ALL OIL, GREASE, RUST, SCALE, LOOSE PAINT AND DIRT, TO THE SATISFACTION OF THE ENGINEER, AND SHALL THEN BE GIVEN A MOPPING OF ASPHALT PRIMER APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS OR AS DIRECTED BY THE ENGINEER.

EXPANSION JOINTS SHALL BE PROVIDED BETWEEN THE ASPHALT MASTIC AND THE STEEL GIRDERS OR CONCRETE CURBS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER BY INSERTING A WOOD STRIP 5/8" THICK AGAINST THE STEEL OR CURB, AND AFTER THE MASTIC HAS SET, THE STRIP REMOVED AND THE SPACE FILLED WITH EXPANSION JOINT MATERIAL, MELTED AND POURED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS.

4. HOW MEASURED

THE QUANTITY UNDER THIS ITEM WILL BE MEASURED BY THE NUMBER OF SQUARE YARDS OF PROTECTION COURSE PLACED IN THE COMPLETED WORK.



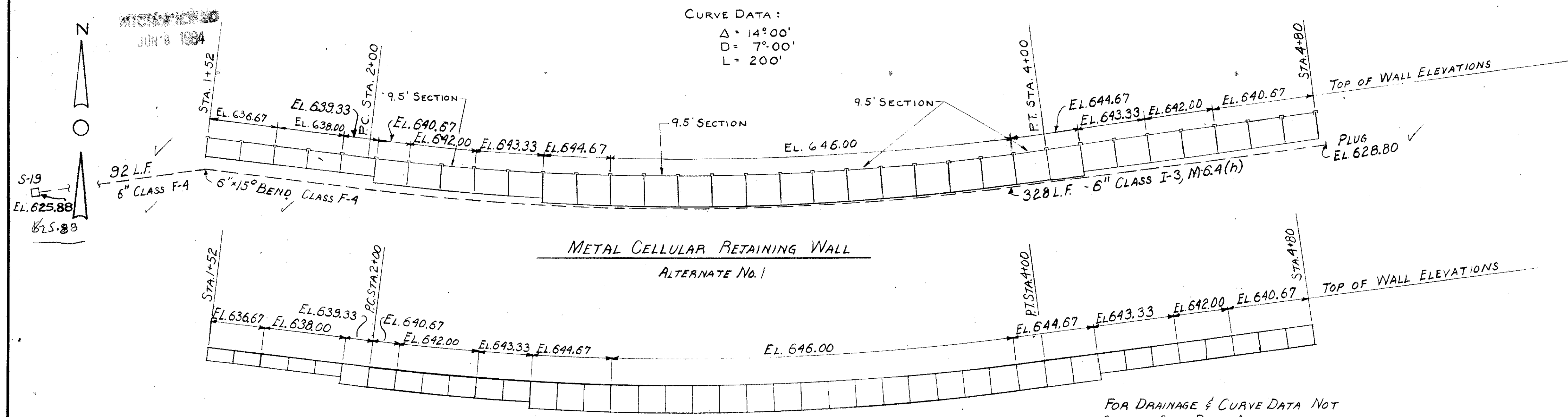
ENCASED PIPE DETAILS

SHEET NO. 30 58019-30 1957

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

DECK WATERPROOFING NOTES
BRIDGE NO CUY-254-1893
CLARK FREEWAY UNDER E.L. RAILROAD
CUYAHOGA COUNTY

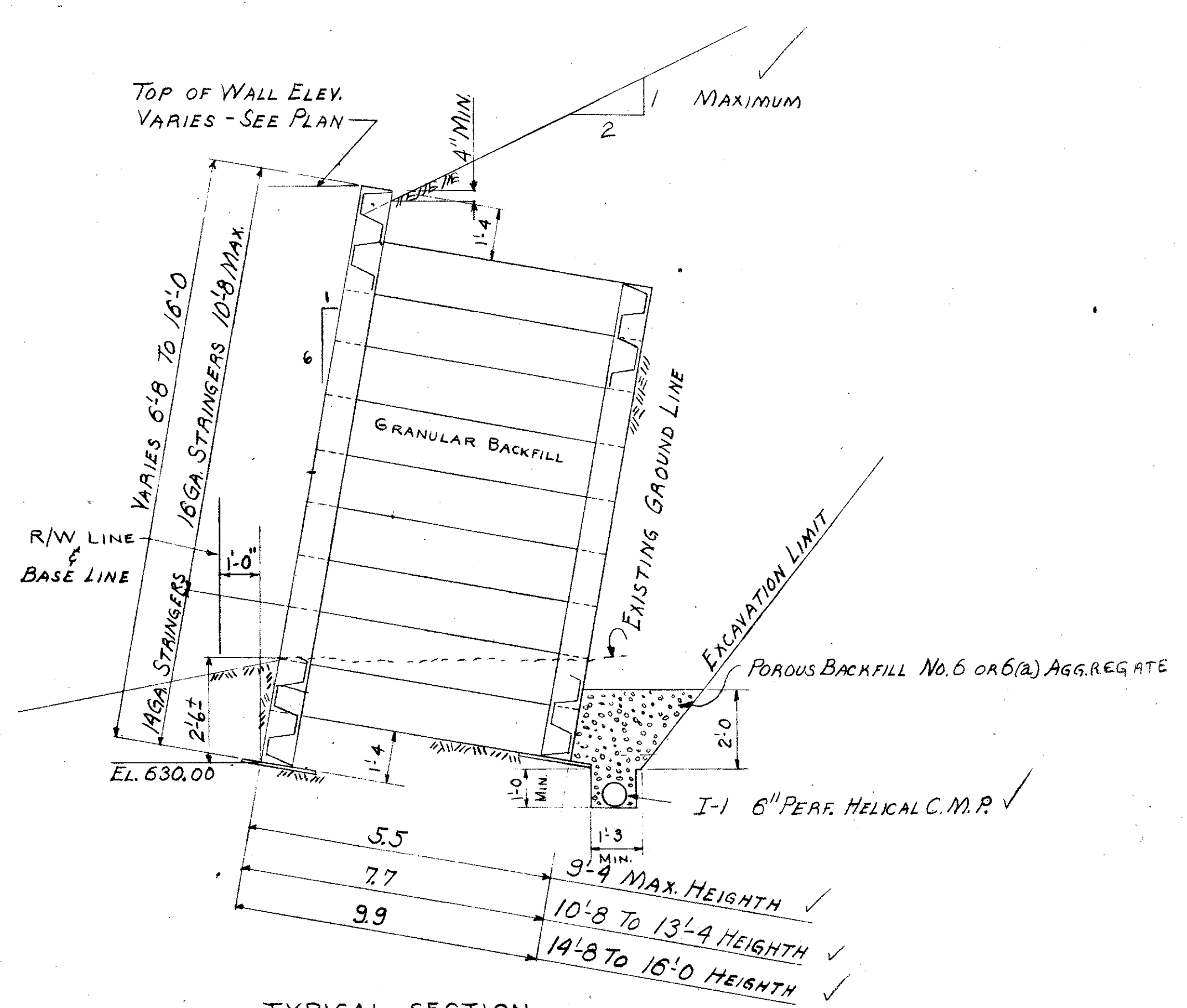
SCALE	DATE				
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
	W.P.H.		D.W.M.	D.W.M.	2-21-64
					7-9-64



NOTE:
CONSTRUCTION OF WALL, EITHER METAL OR CONCRETE, SHALL BE ADVANCED IN STAGES NOT TO EXCEED 50' OF OPEN TRENCH AT ANY ONE TIME.

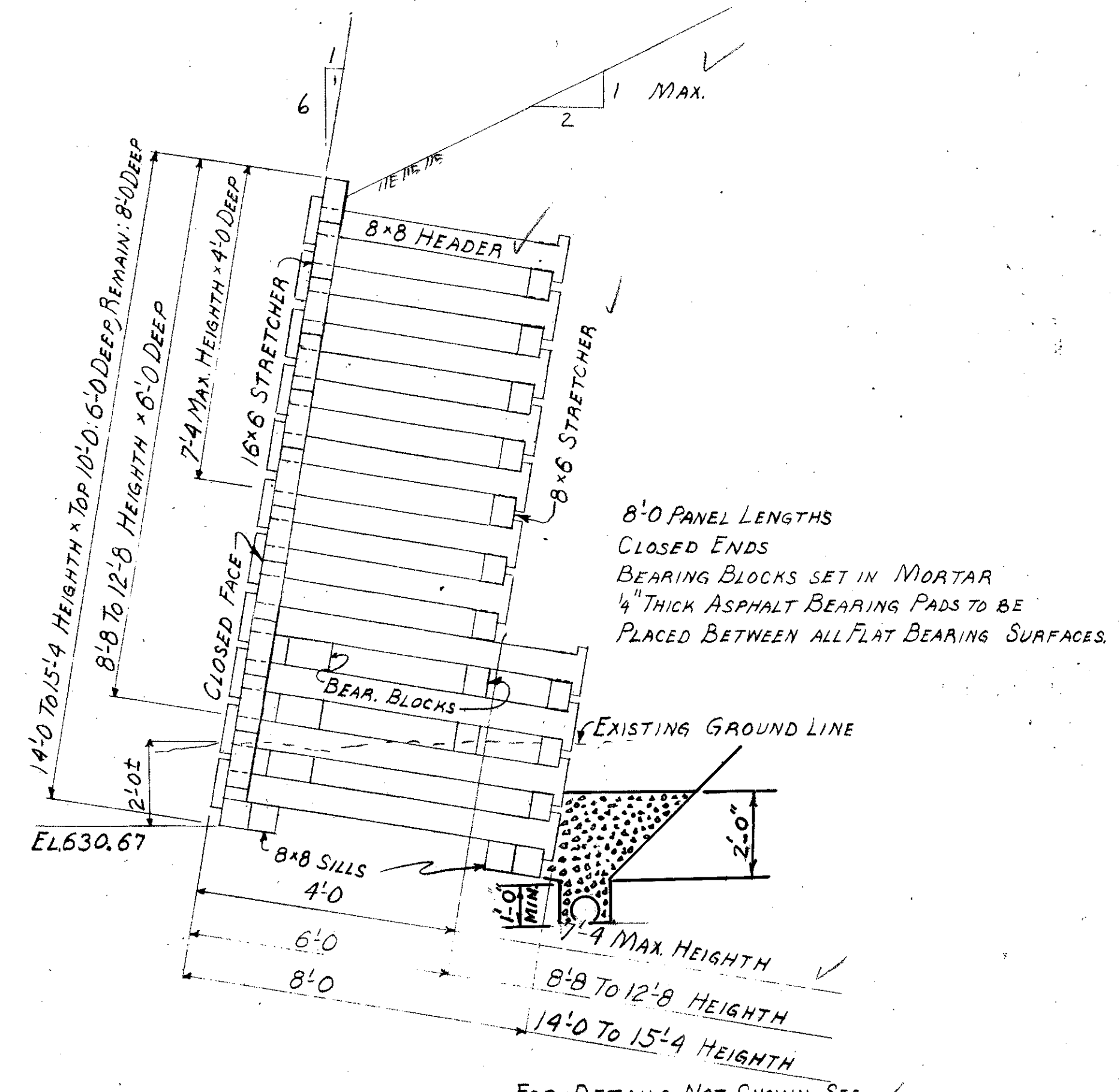
CONCRETE CELLULAR RETAINING WALL
ALTERNATE No. 2
PLAN
SCALE 1"=20'-0"

FOR DRAINAGE & CURVE DATA NOT SHOWN SEE PLAN ABOVE.



TYPICAL SECTION
METAL CELLULAR RETAINING WALL
SCALE 3/8"=1'-0"

COPIES OF DETAILS FOR METAL CELLULAR RETAINING WALL ARE ON FILE AT THE DEPARTMENT OF HIGHWAYS, COLUMBUS, OHIO AND ARE FURTHER IDENTIFIED AS "BIN-TYPE RETAINING WALLS", ARMCO BIN-TYPE DWGS. NO. 4-340-D & BVV-95-A.



TYPICAL SECTION
CONCRETE CELLULAR RETAINING WALL
SCALE 3/8"=1'-0"

ESTIMATED QUANTITIES CARRIED TO SH. 15			
ITEM	DESCRIPTION	UNIT	QUANTITY
E-2	COFFEEDAIMS, CRIBS & SHEETING	LUMP	LUMP
I-1	6" PIPE CLASS I-3, SEC. M-6.4 (h)	L. F.	328
I-1	6" PIPE CLASS F-4	L. F.	92
I-5	6" PIPE SPECIAL CLASS FA, 15° BEND	EACH	1
I-17	GALVANIZED METAL OR REINFORCED CONCRETE CELLULAR RETAINING WALL	S. F.	4,300

FOR LOCATION PLAN SEE SH. 15
FOR GENERAL NOTES SEE SH. 5

TRYGVE HOFF & ASSOCIATES
ENGINEERS
1922 EAST 107TH STREET CLEVELAND, OHIO

ACCESS ROAD "F"
CELLULAR RETAINING WALL

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
AHJ	AHJ		DW.M	DW.M	2-21-69	

SHEET NO. 1934

MICROFILMED
JUN 8 1984

ERIE-LACKAWANNA RAILROAD COMPANY
MAHONING DIVISION - FIRST DISTRICT
STAGE NO. 1
CLARK FREEWAY - BRIDGE 3,35
CLEVELAND, OHIO
PLAN FILE A-1790-1
SCHEDULE OF TRACK CONSTRUCTION
STEP NO. 1

Remove turnout and siding from about Sta. 4538+75⁺ easterly. Throw runaround track from about Sta. 4536+40⁻ to about Sta. 4538+75⁺. Construct Central Interlocking Housing and controls at relocated Signal Station.

STEP NO. 2

Construct #8 turnout in track 141 at about Sta. 4520+05⁺, connecting track 108. Remove portion of track 108 from about Sta. 4519+25⁺ to about Sta. 4519+90⁻ and portion of track 108 from about Sta. 4524+30 to about Sta. 4525+60⁻. Remove portion of track 142 from about Sta. 4524+70⁺ to about Sta. 4526+70⁻. Construct #8 turnout in track 141 at about Sta. 4525+50⁺ connecting to track 142. Construct #16 crossover and #16 turnout and track from about Sta. 4520+00⁻ to about Sta. 4526+40⁻. Signals and power switches for C.U.T. Detour to be connected to Central Interlocking Housing and ready for service when required.

STEP NO. 3

Remove track 180 from heel of frog at about Sta. 4528+70⁺ westerly to end of track. Construct C.U.T. Detour from about Sta. 4528+70⁺ to about Sta. 4540+10⁻, including #8 crossover to Westbound Detour. Construct tell-tales. Construct Westbound Detour from about Sta. 4529+10⁻ to about Sta. 4537+45⁺, including as much of #10 crossover to Eastbound Detour as possible and #10 turnouts for interchange tracks to about Sta. 4538+80⁻. Construct Eastbound Detour from about Sta. 4529+00⁻ to about Sta. 4537+00⁻. Construct Runaround Detour from about Sta. 4530+00⁻ to about Sta. 4536+40⁻. Power switches in C.U.T. Detour, Westbound Detour and Interchange tracks to be connected to Central Interlocking Housing and ready for service when required.

STEP NO. 4

Remove track 163 from heel of frog at about Sta. 4531+60⁺ easterly, including as much of tracks 108, 141, 142, 143 and Industrial track as necessary to construct westerly connections to yard and install bumper in Industrial track. Construct C.U.T. Detour from about Sta. 4526+40⁻ to about Sta. 4528+70⁺. Throw C.U.T. Detour from about Sta. 4540+10⁻ to about Sta. 4541+95⁻. Temporarily connect C.U.T. Detour signals and power switches to West End Tower. Operate C.U.T. trains over C.U.T. Detour.

STEP NO. 5

Remove C.U.T. track from about Sta. 4536+00⁺ to about Sta. 4540+10⁻ and northerly Interchange track to about Sta. 4540+70⁻. Remove southerly Interchange track from heel of frog at about Sta. 4537+90⁺ to about Sta. 4540+70⁻ and track 182 to about Sta. 4542+00⁻. Construct and throw Interchange tracks from about Sta. 4538+80⁻ to about Sta. 4541+90⁻. Signals and derail to be connected to Central

(1)

ERIE-LACKAWANNA RAILROAD COMPANY
MAHONING DIVISION - FIRST DISTRICT
STAGE NO. 2
SCHEDULE OF TRACK CONSTRUCTION
CLARK FREEWAY - BRIDGE 3,35
CLEVELAND, OHIO
PLAN FILE A-1790-2

STEP NO. 1

Construct Runaround track from about Sta. 4531+15⁺ to about Sta. 4536+85⁺ over new bridge.

Construct Eastbound main from about Sta. 4528+30 to about 4540+20⁺ over new bridge, including #10 crossover to Westbound main.

Construct Westbound main from about Sta. 4529+40⁺ to about Sta. 4539+40⁻ over new bridge, including #16 crossover to C.U.T. connection and #10 turnouts and Interchange tracks to about Stations 4538+00⁻ and 4538+50⁻.

Signals and power switches relocated to Central Interlocking Housing and ready for service when required.

Construct Tail Track from about Sta. 4530+40⁻ to about Sta. 4536+50⁺, including Yard lead from Sta. 4530+40⁻ to #16 crossover in C.U.T. connection.

STEP NO. 2

Throw Runaround track from Sta. 4525+72.72 to about Sta. 4527+40⁺.

Operate Runaround track on final alignment over new bridge.

Remove Runaround Detour from about Sta. 4527+40⁺ to heel of frog at about Sta. 4538+80⁻.

STEP NO. 3

Throw Eastbound main from Sta. 4525+72.72 to about Sta. 4528+30⁺, including as much of #16 crossover to Westbound main as possible. At the same time throw and construct Eastbound main from about Sta. 4540+20⁻ to Sta. 4543+52.66, including #10 turnout from about Sta. 4540+20⁻ to existing turnout in Runaround track. Operate Eastbound main on final alignment over new bridge.

Signals and power switches relocated as necessary to Central Interlocking Housing for Eastbound trains.

STEP NO. 4

Remove portion of Eastbound Detour westerly to about Sta. 4530+00⁺. Throw and construct Westbound Main from Sta. 4525+72.72 to about Sta. 4529+40⁻ completing #16 crossover to Eastbound Main. At the same time remove Eastbound Detour from about Sta. 4536+50⁺ westerly, including turnouts. Throw and construct Westbound Main from about Sta. 4539+40⁻ to Sta. 4543+52.66.

(1)

ERIE-LACKAWANNA RAILROAD COMPANY
CLARK FREEWAY - BRIDGE 3,35
PLAN FILE A-1790-1
STAGE NO. 1
SCHEDULE OF TRACK CONSTRUCTION
STEP NO. 5 (Continued)

Interlocking Housing and ready for service when required. Construct Westbound Detour and #10 turnout to track 182 from about Sta. 4537+45⁺ to about Sta. 4542+00. Power switch to be connected to Central Interlocking Housing and ready for service when required. Construct Eastbound Detour from about Sta. 4537+00⁻ to about 4540+70⁺, including completion of #10 crossover to Westbound Detour and as much of #10 crossover to Runaround Detour as possible. Signals and power switches to be connected to Central Interlocking Housing and ready for service when required. Construct Westbound Detour from about Sta. 4529+40⁻ to about Sta. 4529+10⁻ and Eastbound Detour from about Sta. 4528+30⁻ to about Sta. 4529+50⁺.

STEP NO. 6

Throw Westbound Detour from Sta. 4525+72.72 to about Sta. 4527+40⁺ and throw and construct Eastbound Detour from Sta. 4525+72.72 to about Sta. 4528+30⁻. At the same time throw Westbound Detour from about Sta. 4542+00 to Sta. 4543+52.66 and throw and construct Eastbound Detour from about Sta. 4540+70⁺ to Sta. 4543+52.66. Signals and power switches to be connected to Central Interlocking Housing. At this time power switches and signals in C.U.T. Detour Westbound Detour and Eastbound Detour to be operated from Central Interlocking Housing. Operate Eastbound and Westbound trains over Detour tracks.

STEP NO. 7

Remove as much of Eastbound and Westbound tracks as necessary to construct and throw Runaround Detour from Sta. 4525+72.72 to about Sta. 4530+00⁻. Remove as much of Eastbound and Westbound tracks as necessary to construct Runaround Detour from about Sta. 4536+40⁻ to about Sta. 4541+10⁻, including remainder of #10 crossover to Eastbound Detour. Signals and power switch to be connected to Central Interlocking Housing. Operate Runaround trains over Detour.

All trains are now operating over Detour tracks. Signals and power switches operated from Central Interlocking Housing.

STEP NO. 8

Remove all tracks from about Sta. 4531+15⁺ to about Sta. 4536+85⁺, including siding in Runaround track at about Sta. 4540+90⁻. Remove West End Tower and facilities.

Office of Chief Engineer
Cleveland, Ohio
March 8, 1963 - Revised to June 19, 1963.

(2)

ERIE-LACKAWANNA RAILROAD COMPANY
CLARK FREEWAY - BRIDGE 3,35
SCHEDULE OF TRACK CONSTRUCTION
STAGE NO. 2
PLAN FILE A-1790-2
STEP NO. 4 (Continued)

Operate Westbound Main on final alignment over new bridge.

Signals and power switches relocated as necessary to Central Interlocking Housing for westbound trains.

STEP NO. 5

Remove Westbound Detour from about Sta. 4536+50⁺ westerly, including turnouts and connections to Interchange tracks and track 182. Throw and construct Interchange tracks from Stations 4538+00⁻ and 4538+50⁻, including #10 turnout to track 182.

Operate Interchange tracks and track 182 off Westbound Main on final alignment.

STEP NO. 6

Throw and construct C.U.T. connection from about Sta. 4537+30⁺ to about Sta. 4542+40⁺.

Operate C.U.T. trains on final alignment over new bridge.

Signals and power switches to be relocated as necessary to Central Interlocking Housing.

STEP NO. 7

Remove C.U.T. Detour from about Sta. 4525+00⁺ to about 4529+40⁻ and turnouts off detour to tracks 141, 142, 143 and 163 as necessary to construct final connections to tracks 108, 141, 142 143, 163 and Industrial track. Removing bumper from Industrial track. Construct Tail track from about Sta. 4536+50⁺ to about Sta. 4539+40⁻ and install bumper. Relocate tail-tales.

Remove #8 turnout at about Sta. 4520+05⁺ easterly connecting to track 108. Throw and construct track 108 to original alignment.

Operate west end of yard on final alignment.

Signals and power switches to be relocated as necessary to Central Interlocking Housing.

All railroad traffic now on final alignment. Signals and power switches operated from Central Interlocking Housing.

STEP NO. 8

Remove all remaining tracks and temporary facilities required for detour operation.

Office of Chief Engineer
Cleveland, Ohio
March 8, 1963 - Revised to June 19, 1963

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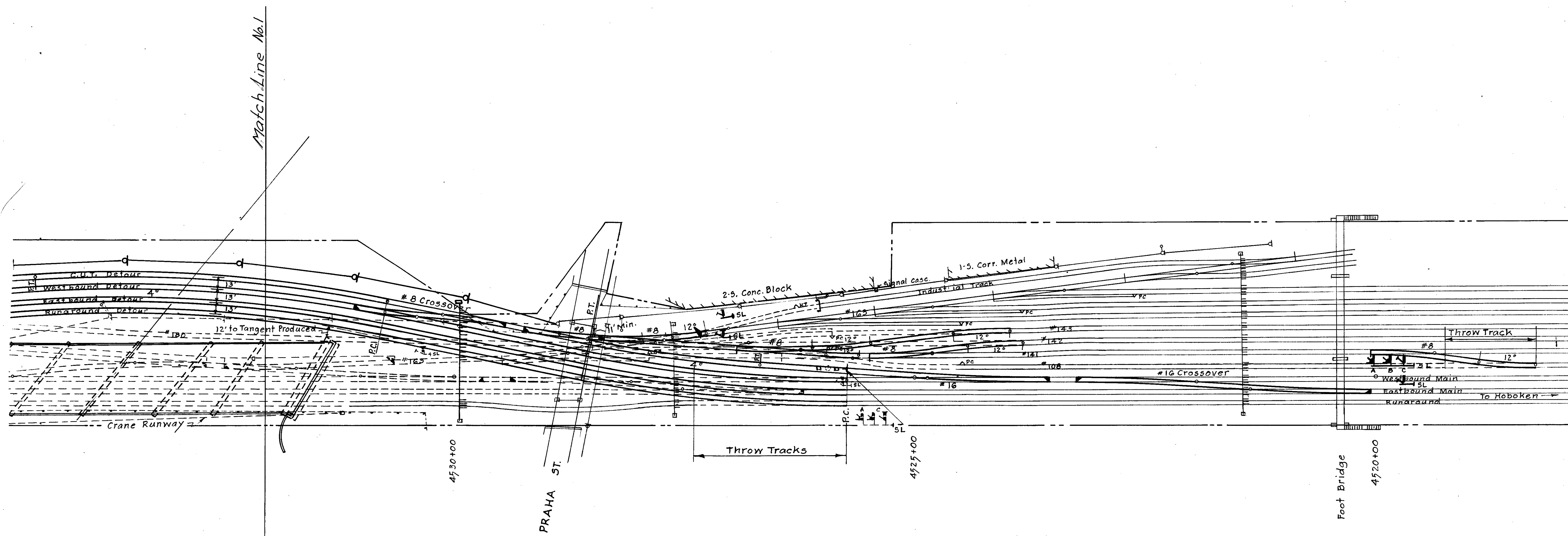
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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CUY-254-18.88

HIGHWAY BRIDGE No. CUY-254-1893

CUY-254-18.88

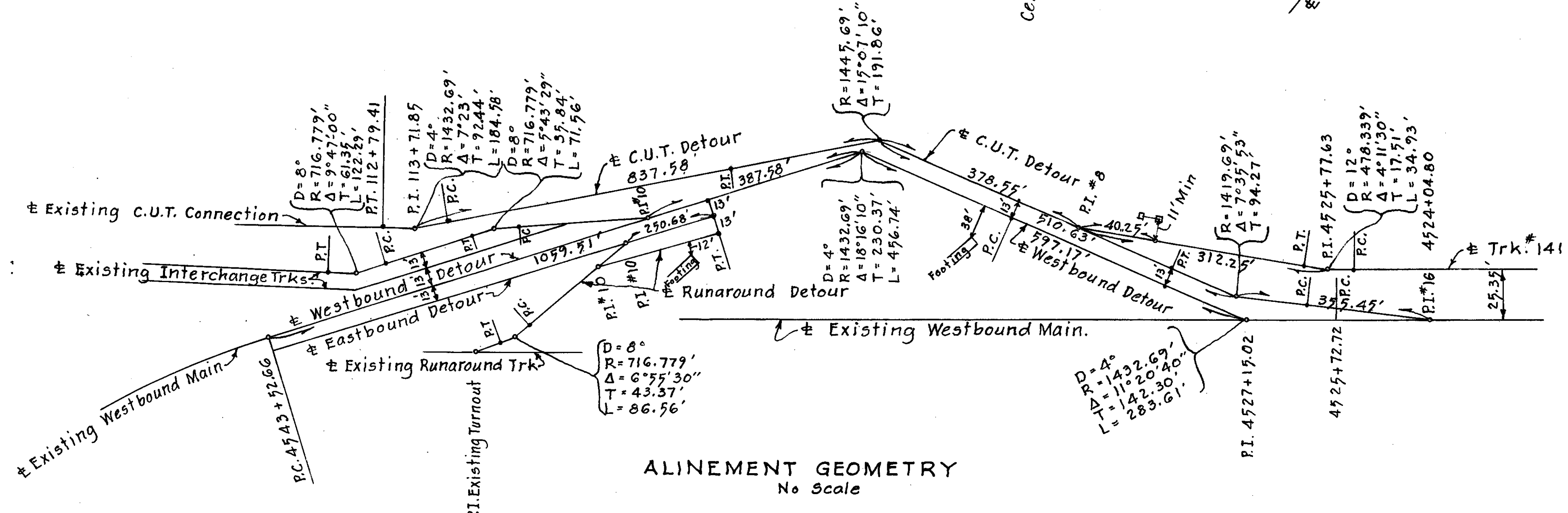
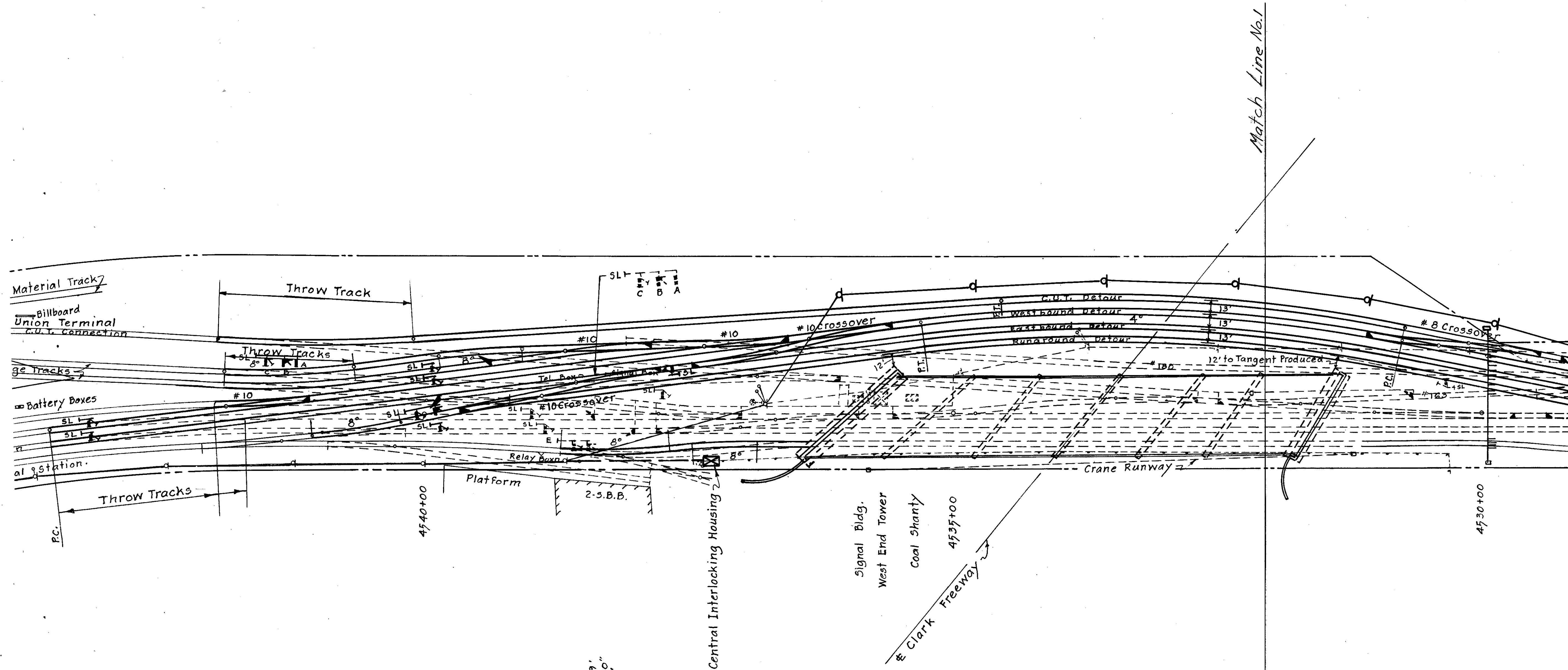


REVISION RECORD		
Date	Description	Made by
4-16-63	Yard layout east of Praha St. and Alinement Geometry revised. Signals and Right of Way added.	M.M.
6-19-63	Revised Runaround Track to provide for Central Interlocking Housing and Facilities.	M.M.

Made by M.M.
 Traced by M.M.
 Checked by B.D.K.

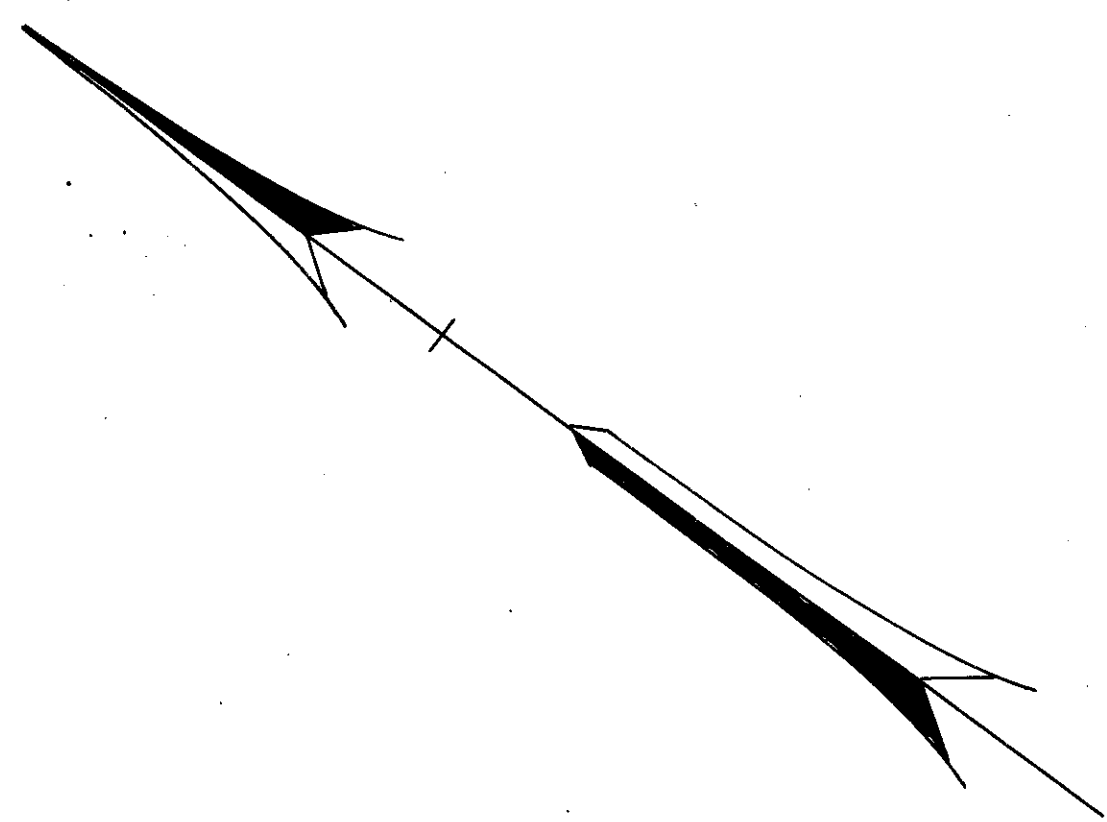
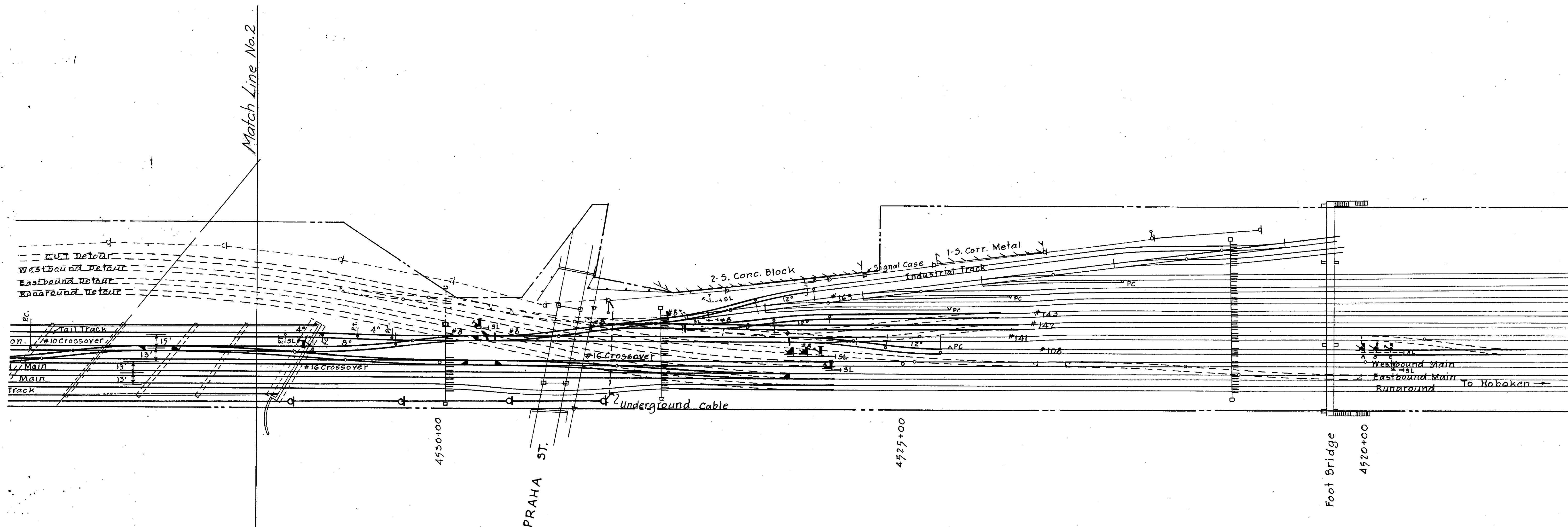
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 Present to be removed - - - -
 Proposed ————

HIGHWAY BRIDGE No. CUY-254-1893
STAGE NO. I
ERIE-LACKAWANNA RAILROAD COMPANY
 MAHONING DIVISION FIRST DISTRICT
STAGES OF CONSTRUCTION
 CLARK FREEWAY - BRIDGE 3.35
CLEVELAND, OHIO
 SCALE: 1" = 50' MARCH 8, 1963
 OFFICE OF CHIEF ENGINEER
 SHEET 1 OF 2 Revised to June 19, 1963
FILE-A-1790-1



ALINEMENT GEOMETRY
No Scale

HIGHWAY BRIDGE No. CUY-254-1893



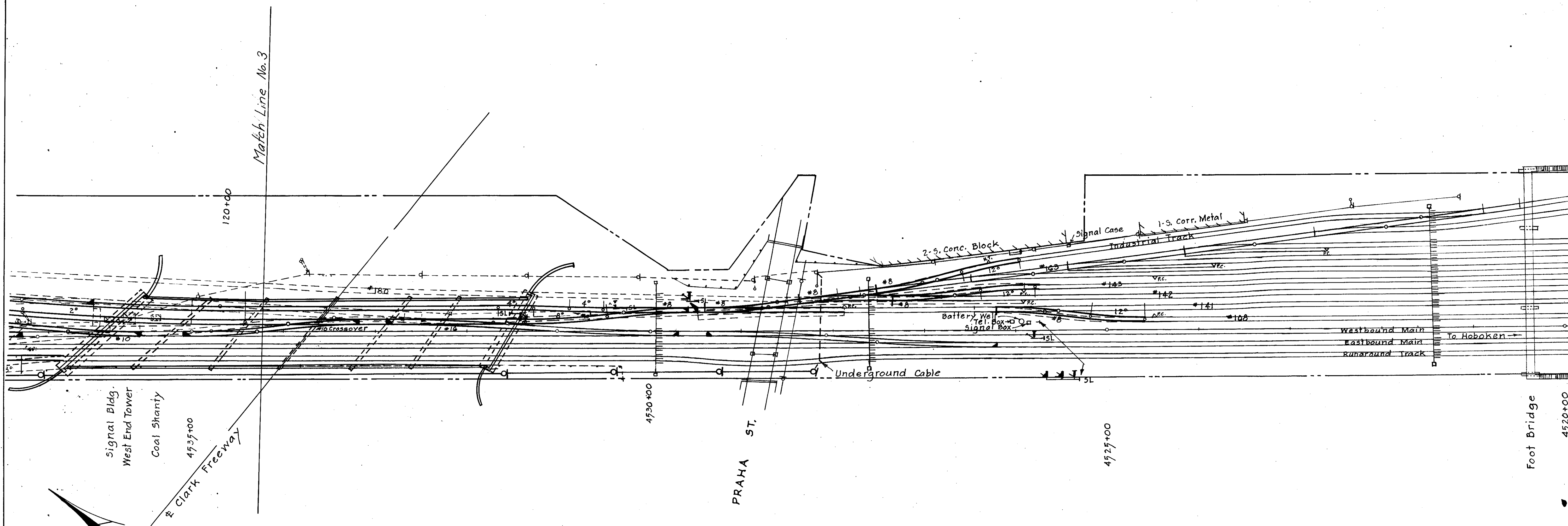
REVISION RECORD		
Date	Description	Made by
6-19-63	Revised Runaround Track to provide for Central Interlocking Housing and Facilities.	M.M.

Made by M.M.
Traced by M.M.
Checked by B.D.K.

Legend:
Present to remain
Present to be removed
Proposed

HIGHWAY BRIDGE No. CUY-254-1893
STAGE NO. 2
ERIE-LACKAWANNA RAILROAD COMPANY
 MAHONING DIVISION FIRST DISTRICT

STAGES OF CONSTRUCTION
CLARK FREEWAY - BRIDGE 3.35
CLEVELAND, OHIO
 SCALE: 1" = 50' MARCH 8, 1963
 OFFICE OF CHIEF ENGINEER. Revised to June 19, 1963
 SHEET 2 OF 2



REVISION RECORD		
Date	Description	Made by
6-19-63	Revised Runaround Track to provide for Central Interlocking Housing and Facilities.	M.M.

Made by M.M.
 Traced by M.M.
 Checked by B.V.K.

Legend:
 Present to remain
 Present to be removed
 Proposed

HIGHWAY BRIDGE No. CUY-254-1893

ERIE-LACKAWANNA RAILROAD COMPANY
 MAHONING DIVISION FIRST DISTRICT

REVISION OF FACILITIES
 IN CONNECTION WITH
CLARK FREEWAY-BRIDGE 3.35
CLEVELAND, OHIO

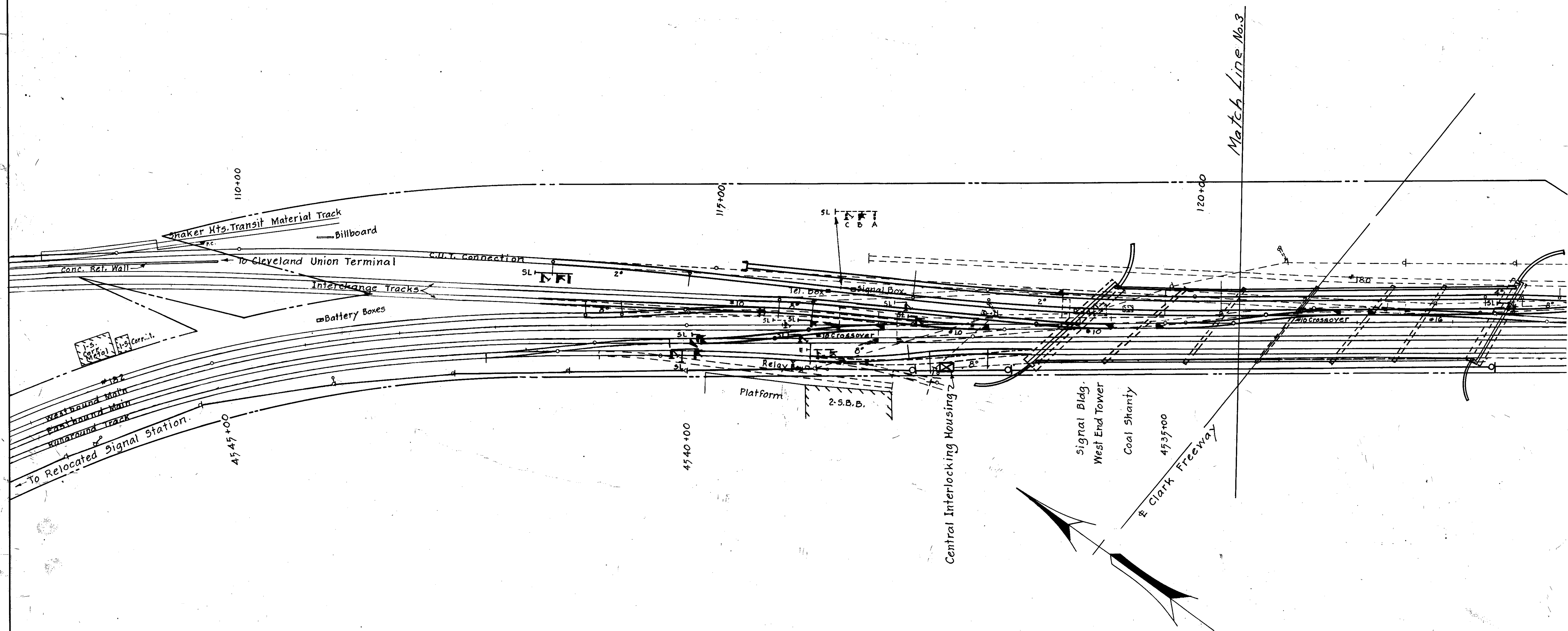
SCALE: 1"=50' MARCH 8, 1963
 OFFICE OF CHIEF ENGINEER Revised to June 12, 1963

FILE A-1791

FED. RD. DIVISION	STATE	PROJECT
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CUY-254-1888



HIGHWAY BRIDGE No. CUY-254-1893