COUNTY	CONTRACT	F.H.A. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)		1	65

THE STATE OF DELAWARE

STATE HIGHWAY DEPARTMENT

PLAN
FOR
CONSTRUCTION OF CONTRACT № 65-01-002

STA. 52+00.00 TO STA. 346+50.00

29,457.01 FEET: 5.579 MILES

SCALE: PLAN: 1 IN.= 50 FT.
PROFILE: HOR. 1 IN.= 50 FT.
VERT. 1 IN.=10 FT.

FEDERAL AID PROJECT № F-182(8)

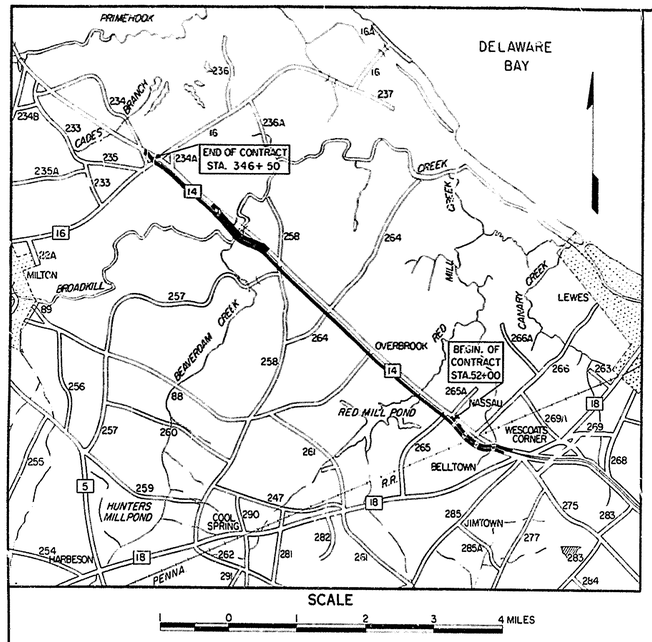
As Built Plans
Plotted by Y.M.
11-2-1967

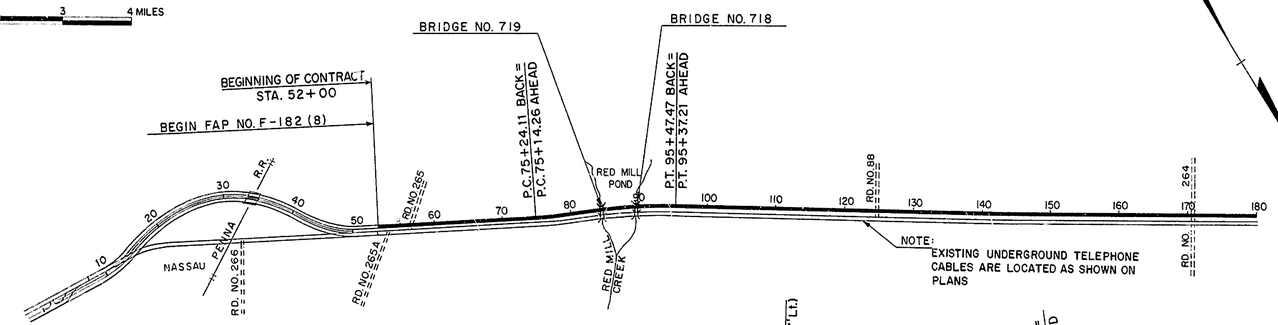
STATION EQUATIONS

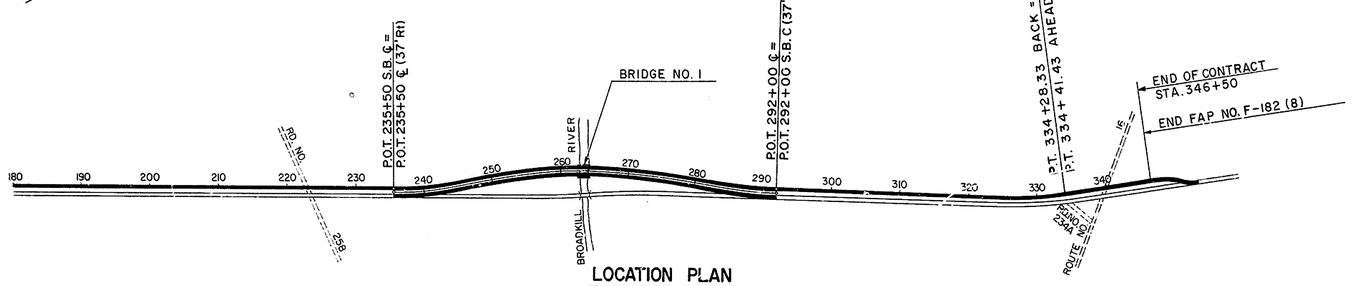
75+24.11 BACK =
75+14.26 AHEAD

95+47.47 BACK =
95+37.21 AHEAD

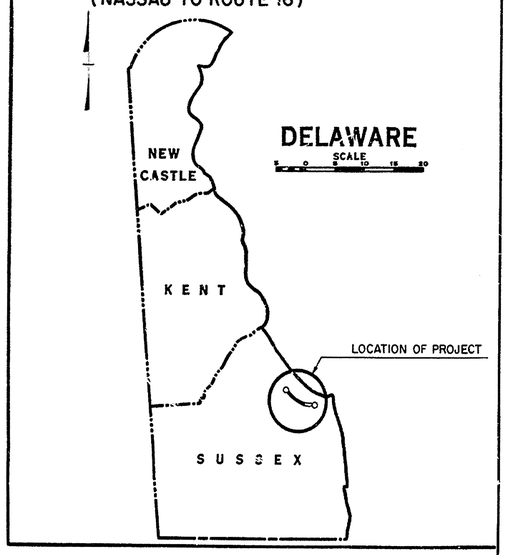
334+28.33 BACK =
334+41.43 AHEAD







LOCATION PLAN
Scale: 1" = 1000'



BOOK NUMBER 4335, 4336, 4337

Section I
52+00 – 235+50
292+00 – 346+50
Section II
235+50 – 261+13.44 } 2 Lanes
264+08.47 – 292+00 }
Section III
261+13.44 – 264+08.47 – Bridge

DESIGN DATA	
FEDERAL CLASS	RURAL
CURRENT DESIGN HOURLY TRAFFIC VOLUME	1225
ANNUAL AVERAGE DAILY TRAFFIC VOLUME	6800
DESIGN SPEED	70 MPH
STOPPING SIGHT DISTANCE	600 FT.
MAXIMUM SUPERELEVATION	.08 FT./FT.
MAXIMUM HORIZONTAL CURVE	3° 30'
MAXIMUM GRADE	3.0 %

PREPARED AND RECOMMENDED
GOODKIND & O'DEA INC.
CONSULTING ENGINEERS
BY J. Goodkind DATE 4/1/65
TITLE SECRETARY
DELAWARE PROF. ENGINEER
LICENSE NO. 2061

INDEX OF SHEETS

SHEET NO.	
1	TITLE SHEET
2-4	TYPICAL SECTION
5-6	MISCELLANEOUS DETAILS
7	OVERLOAD & MUCK EXCAV. DETAILS
8	PIEZOMETERS, SETTLEMENT PLATFORM
9	SPECIAL DETAIL MUCK EXCAV. LIMITS
10	BORING INFORMATION SHEET

SHEET NO.	
11-31	PLAN AND PROFILE
32-33	BRIDGE NO. 719
34-36	BRIDGE NO. 718
37-51	BRIDGE NO. 1
52-53	QUANTITIES
54	SOILS DATA
55-65	STANDARDS A, A-1, B, DT, G, H, K, M, Q, R, W,

CONVENTIONAL SIGNS

COUNTY LINE
CITY OR TOWN LINE
RIGHT OF WAY LINE
CENTRE LINE, PROPOSED ROAD
MACADAM, TRAVELLED ROAD
TROLLEY OR RAILROAD
WIRE FENCE
PRESENT CULVERT
PROPOSED CULVERT
TELEGRAPH POLE
TREE

PROFILE: GRADE, GROUND, DATUM, 35.0 GR. 33.3, 33.3 GR. 33.0

RECOMMENDED	April 1	19 65	PLANNING & REVIEW ENGINEER
RECOMMENDED	4/1	1965	ASSISTANT CHIEF ENGINEER
APPROVED	4/2	1965	CHIEF ENGINEER
APPROVED	4-2	1965	DIRECTOR OF OPERATIONS

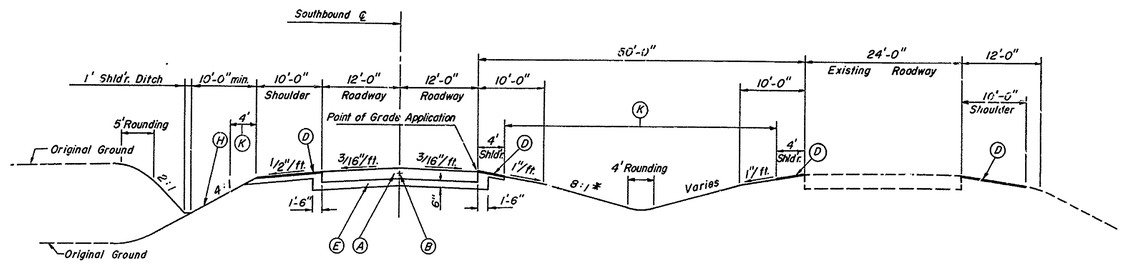
DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED:

DIVISION ENGINEER DATE

"Imperial" 156 W. B. & E.

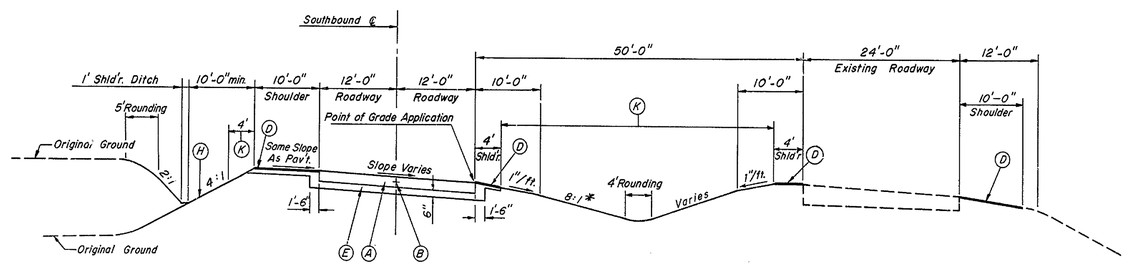
COUNTY	CONTRACT	R.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		2	65



TYPICAL SECTION NORMAL

DUALIZATION OF EXISTING ROADWAY

NOTE:
* Slope Varies Where Median Flow Line Elevations Are Shown On Plans

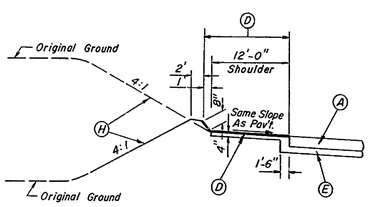


TYPICAL SECTION SUPERELEVATED

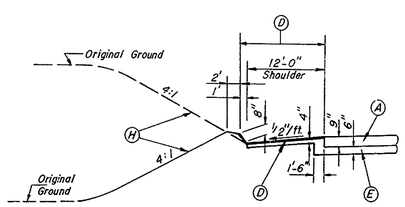
DUALIZATION OF EXISTING ROADWAY

LEGEND

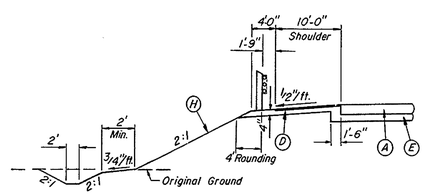
- (A) 9" REIN. CONC. PAVEMENT WITH 54#/SQ. WIRE MESH
- (B) DOWELLED LONGITUDINAL SAWED JOINT
- (C) HOT MIX, HOT LAID ASPHALTIC CONCRETE
- (D) BITUMINOUS SURFACE TREATMENT
- (E) COMPACTED SELECT BORROW
- (F) SOIL CEMENT BASE COURSE
- (G) WIRE ROPE GUARD FENCE (WOOD POSTS)-3 WIRE
- (H) SEED AND MULCH
- (I) WATERBOUND MACADAM BASE COURSE
- (K) TOPSOILING, (4" DEPTH), SEED AND MULCH



SHOULDER DETAIL – TOWN SECTION
SUPERELEVATED



SHOULDER DETAIL – TOWN SECTION
NORMAL



SHOULDER DETAIL WITH GUARD RAIL

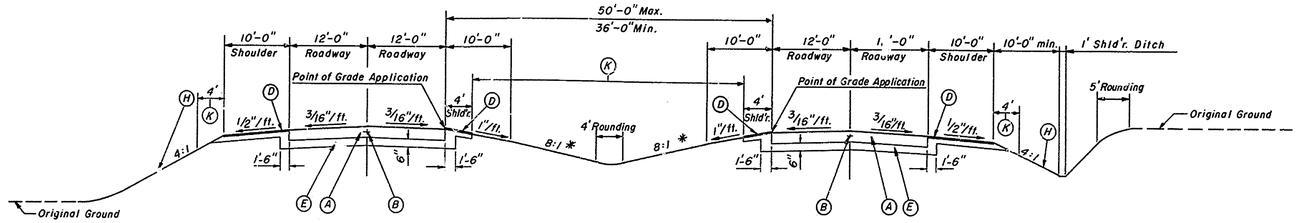
TYPICAL SECTIONS

Scale: Horizontal 3/32" = 1'-0"
Vertical 3/16" = 1'-0"

GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

EARTHWORK
DRAINAGE

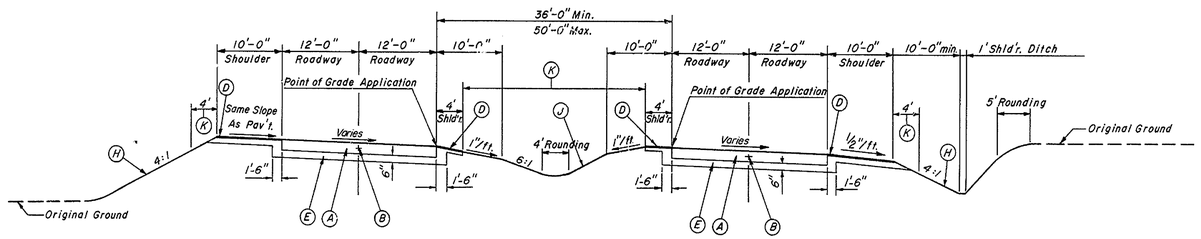
COUNTY	CONTRACT	P.B.A. REG. NO.	STATE	FED. AID PROJECT A.O.	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)	3	65



TYPICAL SECTION NORMAL

FOUR LANE DIVIDED HIGHWAY

NOTE:
* Slope Varies Where Median Flow Line Elevations Are Shown On Plans

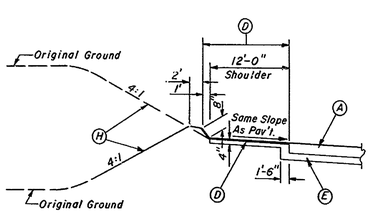


TYPICAL SECTION SUPERELEVATED

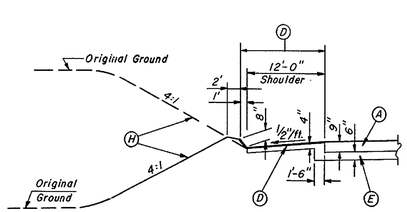
FOUR LANE DIVIDED HIGHWAY

LEGEND

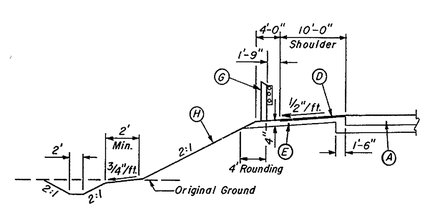
- (A) 9" REIN. CONC. PAVEMENT WITH 54#/SQ WIRE MESH
- (B) DOWELLED LONGITUDINAL SAWED JOINT
- (C) HOT MIX, HOT LAID ASPHALTIC CONCRETE
- (D) BITUMINOUS SURFACE TREATMENT
- (E) COMPACTED SELECT BORROW
- (F) SOIL CEMENT BASE COURSE
- (G) WIRE ROPE GUARD FENCE (WOOD POSTS) - 3 WIRE
- (H) SEED AND MULCH
- (J) SLOPE VARIES
- (K) TOPSOILING, (4" DEPTH), SEED AND MULCH



SHOULDER DETAIL - TOWN SECTION
SUPERELEVATED



SHOULDER DETAIL - TOWN SECTION
NORMAL



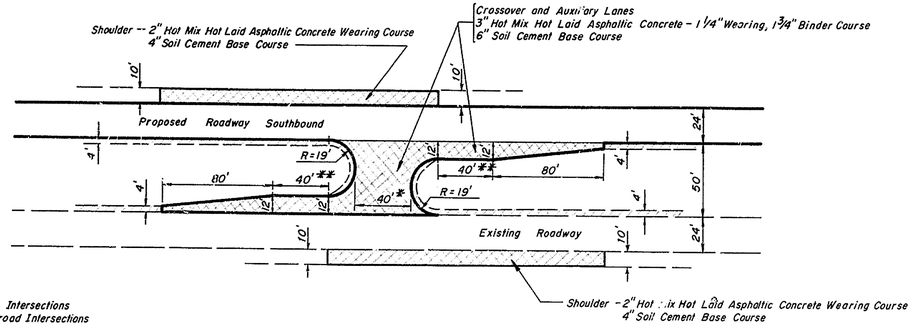
SHOULDER DETAIL WITH GUARD RAIL

TYPICAL SECTIONS

Scale: Horizontal 3/32" = 1'-0"
Vertical 3/16" 1'-0"

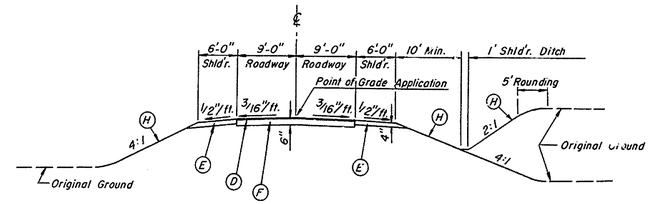
GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

COUNTY	CONTRACT	P.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		4	65

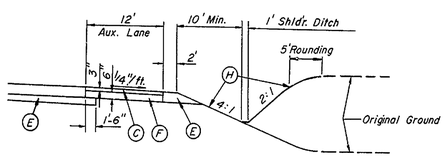


NOTES:
* 50' Opening at Crossroad Intersections
** 80' Storage Lane at Crossroad Intersections

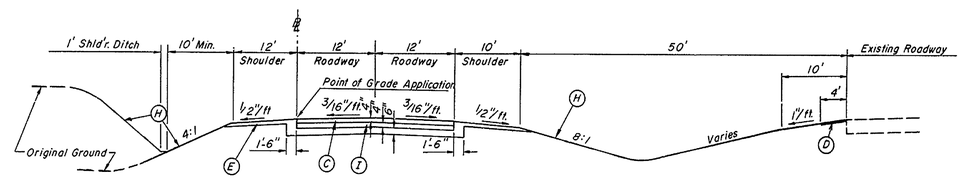
TYPICAL CROSSOVER
Scale 1"=50'



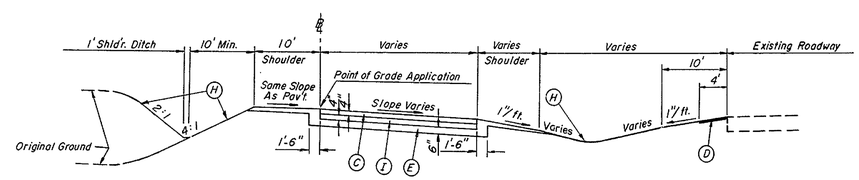
TYPICAL SECTION
ROAD 258
Scale: Horiz. 3/32"=1'-0"
Vert. 3/16"=1'-0"



TYPICAL AUXILIARY LANE
AT LOCAL ROAD INTERSECTIONS
Scale: Horiz. 3/32"=1'-0"
Vert. 3/16"=1'-0"

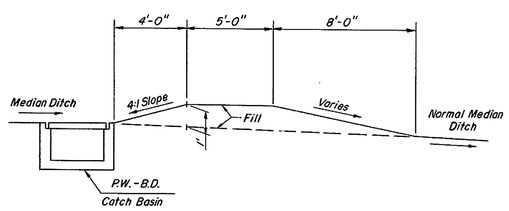


TYPICAL SECTION NORMAL
TEMPORARY CONNECTOR
Scale: Horiz. 3/32"=1'-0"
Vert. 3/16"=1'-0"



TYPICAL SECTION SUPERELEVATED
TEMPORARY CONNECTOR
Scale: Horiz. 3/32"=1'-0"
Vert. 3/16"=1'-0"

LEGEND
- (C) HOT MIX, HOT LAID ASPHALTIC CONCRETE
- (D) BITUMINOUS SURFACE TREATMENT
- (E) COMPACTED SELECT BORROW
- (F) SOIL CEMENT BASE COURSE
- (H) SEED AND MULCH
- (I) WATERBOUND MACADAM BASE COURSE



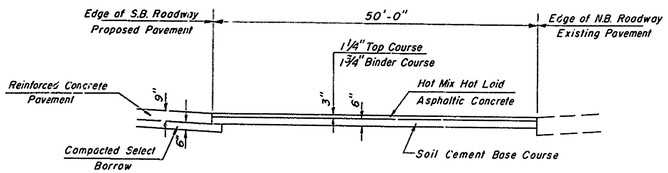
MEDIAN CONSTRUCTION AT CATCH BASIN
Scale 1/4"=1'-0"

TYPICAL SECTIONS
MISCELLANEOUS DETAILS

GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

EARTHWORK
DRAINAGE

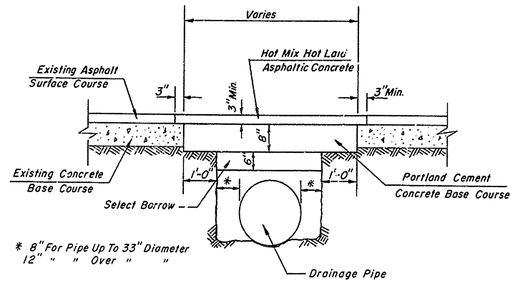
COUNTY	CONTRACT	R.R.A. REQ. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182-(8)		5	65



TYPICAL SECTION

CROSSOVER PAVEMENT

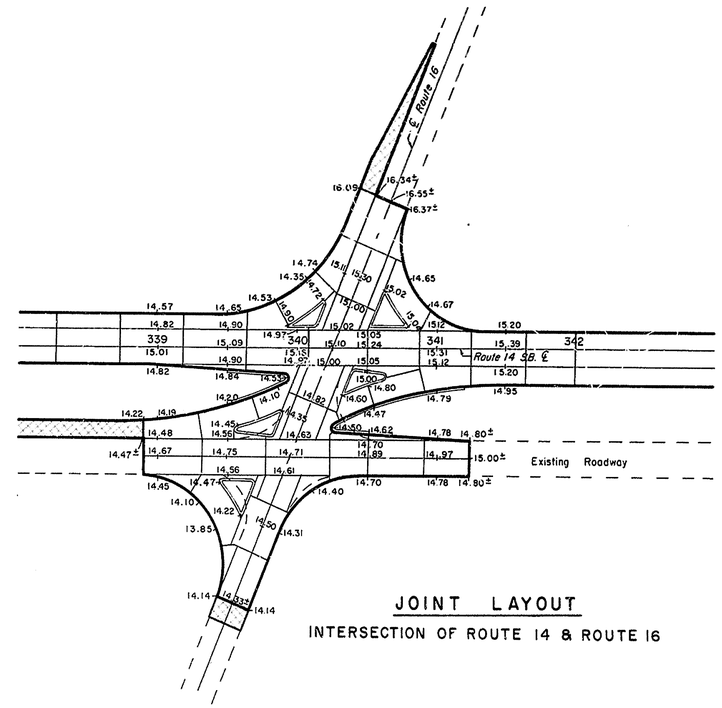
Scale: Horiz. 3/32" = 1'-0"
Vert. 3/16" = 1'-0"



* 8" For Pipe Up To 33" Diameter
12" " " Over " "

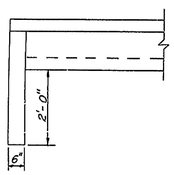
PATCHING DETAIL

No Scale



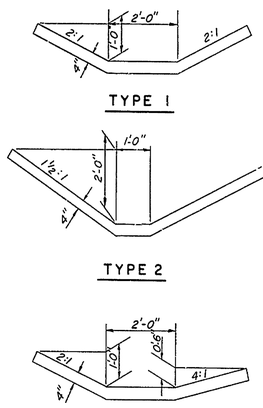
JOINT LAYOUT

INTERSECTION OF ROUTE 14 & ROUTE 16



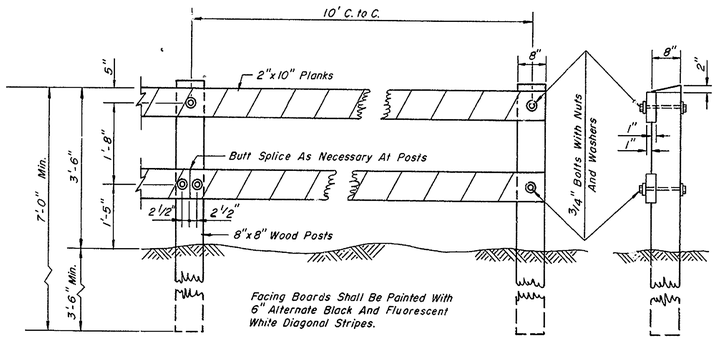
CUT-OFF WALL

Note:
Concrete Cut-off wall To be constructed at the End of all conc. gutters Cost to be included in Item 37



PORTLAND CEMENT CONCRETE GUTTERS

Scale: 1/2" = 1'-0"



DETAIL FOR PERMANENT BARRICADE

No Scale

GENERAL NOTES

1. This contract is to be built under Standard Specifications dated July 1, 1960 except as amended by the Special Provisions and these General Notes and Plans.
2. Any remaining cellar walls, foundations of buildings or underground storage tanks removed by others shall be removed under Item 1, Clearing and Grubbing, if required for the proposed construction. The cost of any backfill required shall be included in the unit price bid for Item 2, Excavation.
3. Any fences remaing within the R.O.W. limits at time of construction in the area shall be removed by the contractor as part of Item 1, Clearing and Grubbing.
4. Privately owned utilities affected by construction will be adjusted or relocated by others. The location of the utilities as indicated on the plans is approximate and the State Highway Department will not be responsible for the accuracy or completeness thereof nor any construction difficulties arising therefrom.
5. It shall be the contractors responsibility to protect the existing utilities at all times during construction and to notify the owner of the utilities 48 hours before any excavation is made across or adjacent to this underground utility.
6. The contractor shall remove and reset all mail boxes, house lamps, street signs and traffic devices as directed by the Engineer. The cost thereof shall be included in the unit price bid for Item 1.
7. Removal of existing Roadway pavement other than concrete, grading and reshaping, is to be included in the unit price bid for Item 2, Excavation.
8. Existing storm sewer pipe, castings, catch basins, guard rail, as noted on the plans, will be removed under Item 2, Excavation. The pipes, castings and guard rail shall be salvaged free of damage and stockpiled for removal by State Highway Department forces.
9. Existing storm sewer pipes to be abandoned, as shown on the plans or directed by the Engineer, shall be plugged with cement masonry and backfilled with suitable material as directed by the Engineer. The cost thereof shall be considered as included in the contract unit prices of the various drainage items except backfill, which shall be included in the unit price bid for Item 2, Excavation.
10. All existing storm drainage pipes to be used as part of the proposed drainage system must be cleaned and free from any obstruction.
11. The entire area, within construction limits, shall be seeded and mulched unless otherwise indicated.
12. All driveways at the outside shoulder of the existing pavement shall receive the full application of Bituminous Surface Treatment, except that driveways which are presently surface treated shall only receive a final treatment of Bituminous Surface Treatment. Field entrances shall not receive Bituminous Surface Treatment.
13. The contractor's attention is directed to any United States Coast & Geodetic Survey Monuments which may be encountered during construction. The Contractor shall notify the Director of the location of these monuments & take care not disturb them.

UTILITIES

Diamond State Telephone Co.
Georgetown, Delaware

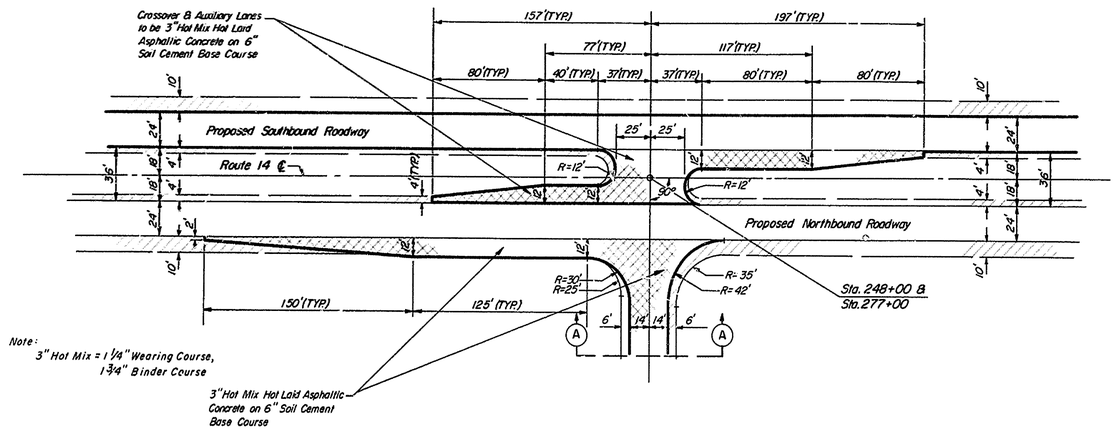
Delaware Power & Light Co.
Harrington, Delaware

Delaware Electric Cooperative, Inc.
Greenwood, Delaware

GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

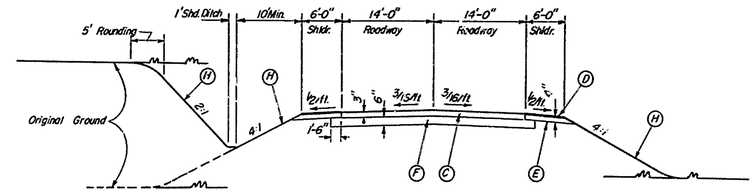
MISCELLANEOUS DETAILS

COUNTY	CONTRACT	P. R. A. REG. RD.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)	6	65



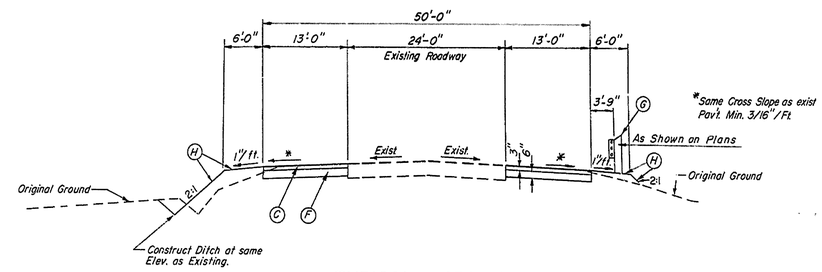
TYPICAL CROSSOVER

Scale = 1" = 50'



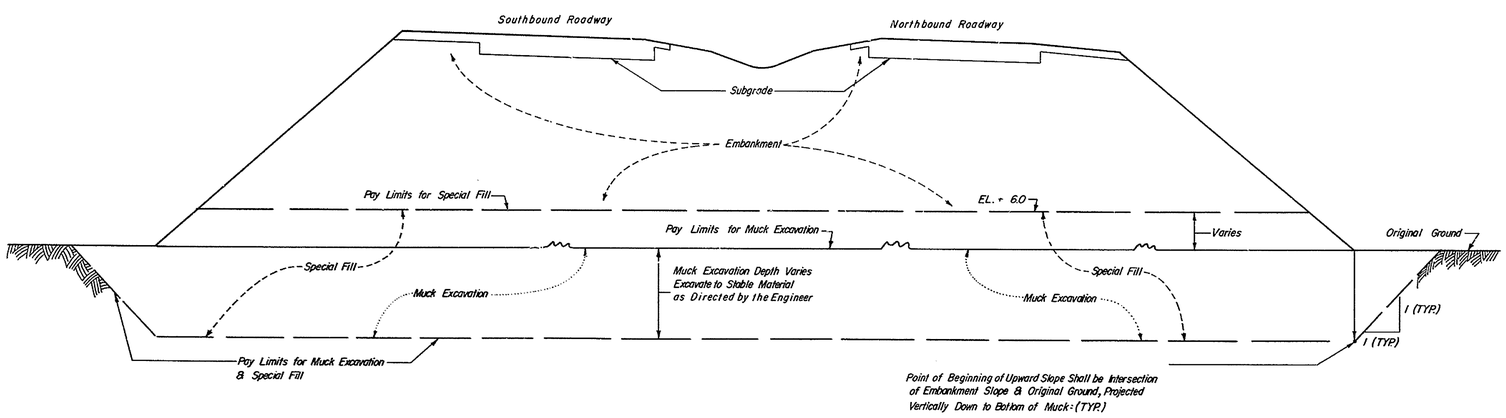
TYPICAL SECTION "A-A"

Scale: Horiz 3/32" = 1'-0"
Vert 3/16" = 1'-0"



TYPICAL SECTION
TURNAROUND

Scale: Horiz 3/32" = 1'-0"
Vert. 3/16" = 1'-0"



TYPICAL SECTION
MUCK EXCAVATION

(Not To Scale)

LEGEND

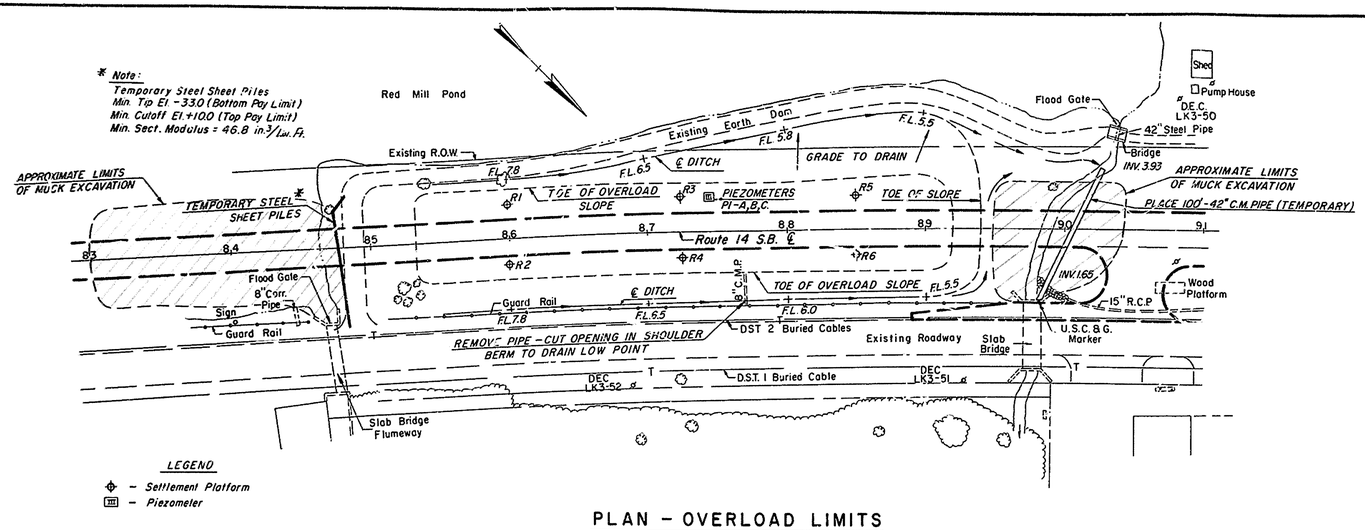
- (C) HOT MIX, HOT LAID ASPHALTIC CONCRETE
- (D) BITUMINOUS SURFACE TREATMENT
- (E) COMPACTED SELECT BORROW
- (F) SOIL CEMENT BASE COURSE
- (G) WIRE ROPE GUARD FENCE (WOOD POSTS) - 3 WIRE
- (H) SEED AND MULCH

GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

MISCELLANEOUS DETAILS

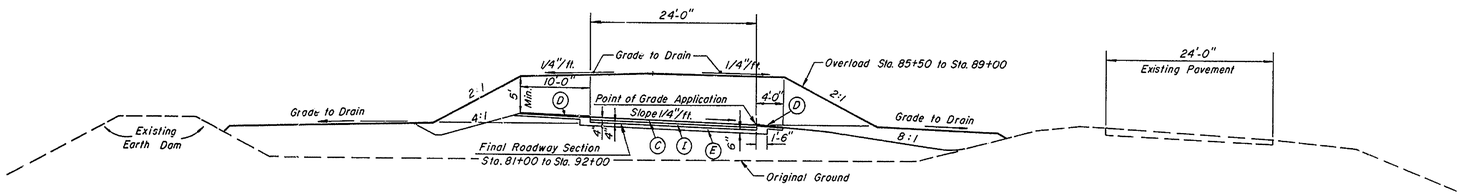
K+E IMPERIAL™ TRADE MARK

COUNTY	CONTRACT	P.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)	7	65



PLAN - OVERLOAD LIMITS

Scale: 1"=50'

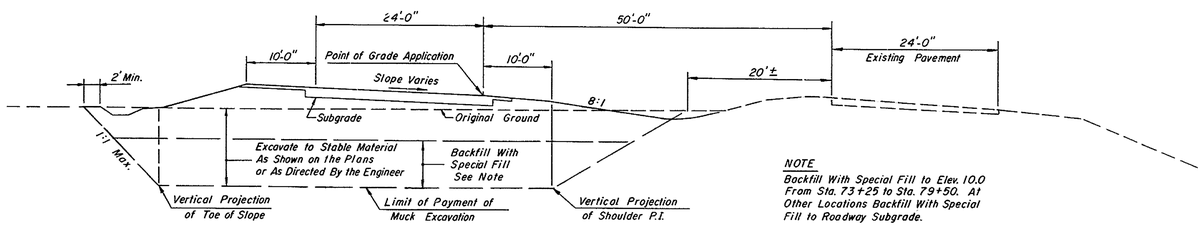


TYPICAL OVERLOAD SECTION

Scale: 1"=10'

LEGEND

- (C) HOT MIX, HOT LAID ASPHALTIC CONCRETE
- (D) BITUMINOUS SURFACE TREATMENT
- (E) COMPACTED SELECT BORROW
- (I) WATERBOUND MACADAM BASE COURSE



NOTE
Backfill With Special Fill to Elev. 10.0 From Sta. 73+25 to Sta. 79+50. At Other Locations Backfill With Special Fill to Roadway Subgrade.

TYPICAL MUCK EXCAVATION

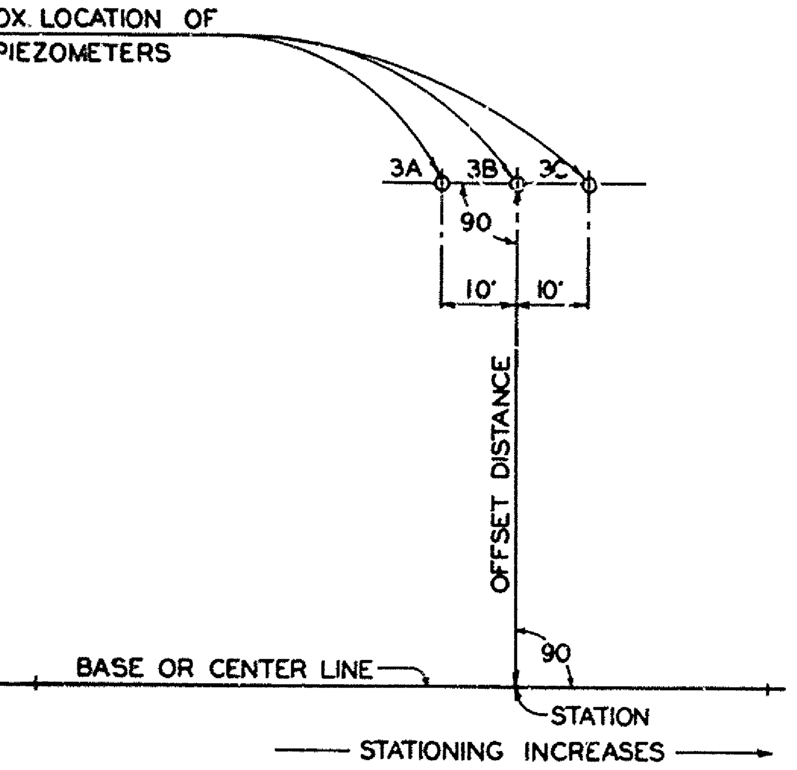
Scale: 1"=10'

OVERLOAD & MUCK EXCAVATION DETAILS

GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

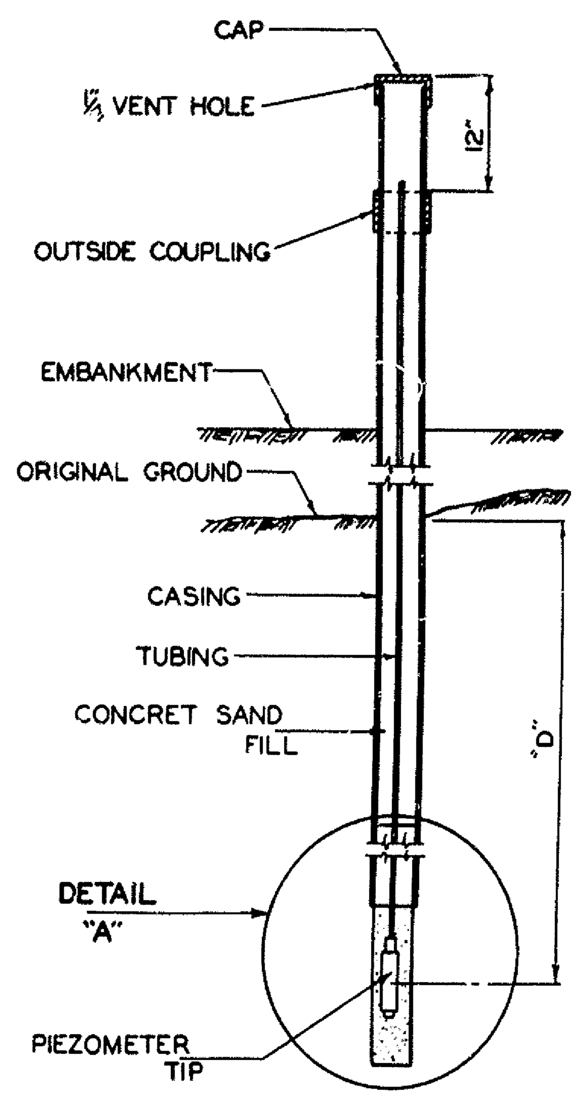
K+E IMPERIAL™ TRACING CLOTH

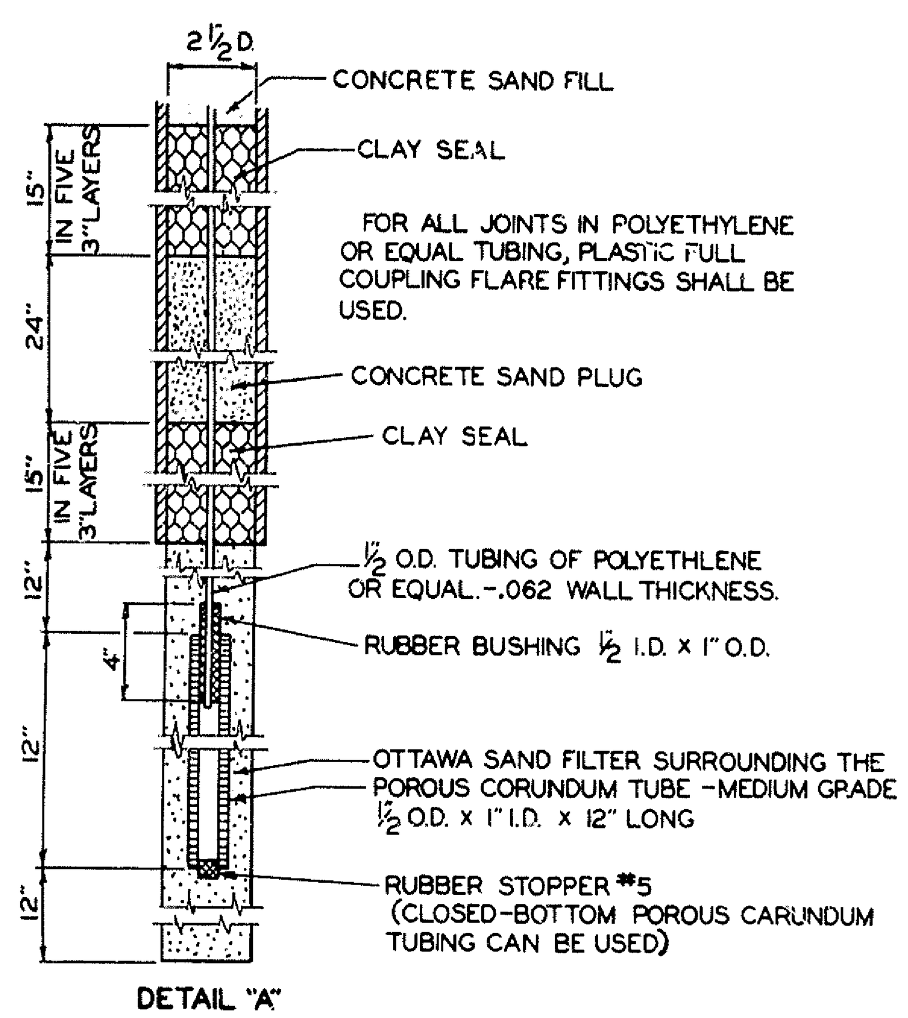
COUNTY	CONTRACT	P.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		8	65



12" NIPPLE TO BE PAINTED ORANGE WITH PIEZOMETER NUMBER AS LISTED IN THE TABLE BELOW PAINTED BLACK.

TYPICAL PLAN
SHOWING GROUPING & METHOD OF LOCATING PIEZOMETERS

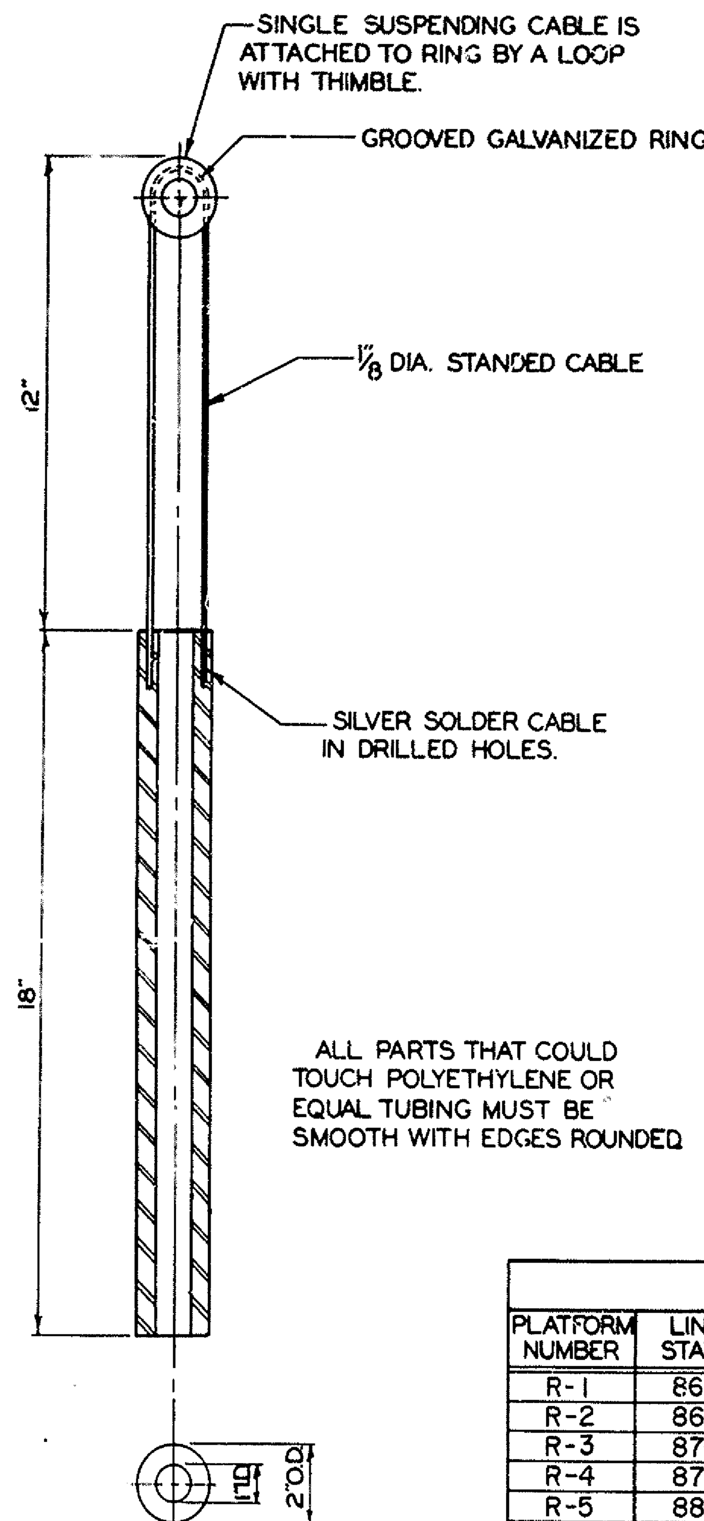




FOR ALL JOINTS IN POLYETHYLENE OR EQUAL TUBING, PLASTIC FULL COUPLING FLARE FITTINGS SHALL BE USED.

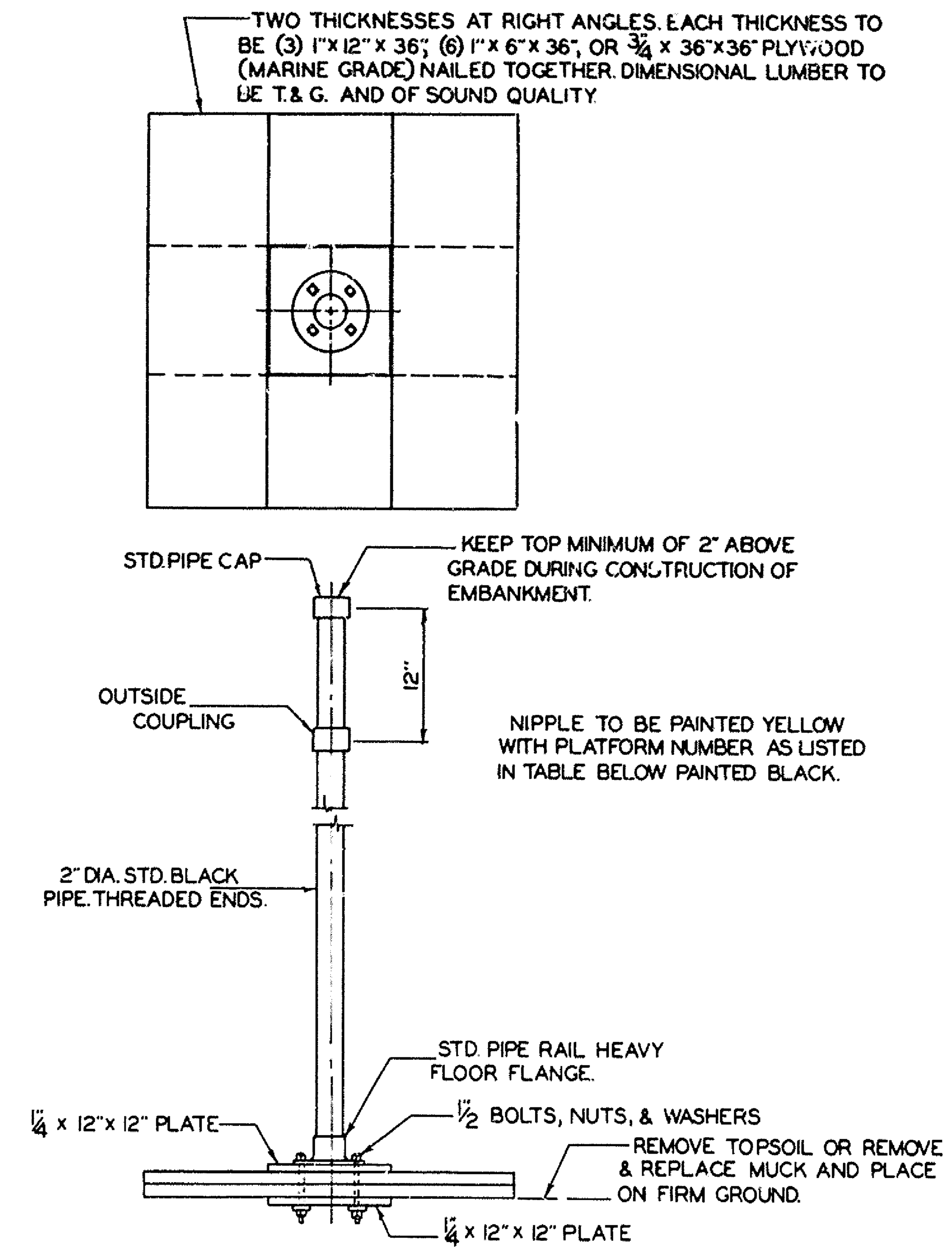
DETAIL "A"

TYPICAL PIEZOMETER INSTALLATION



ALL PARTS THAT COULD TOUCH POLYETHYLENE OR EQUAL TUBING MUST BE SMOOTH WITH EDGES ROUNDED.

TAMPING HAMMER



DETAILS OF SETTLEMENT PLATFORM

LOCATION OF PIEZOMETERS (DATE)

PIEZOMETER NUMBER	LINE & STATION	APPROX. OFFSET	ELEVATION OF POROUS TIP	D-APPROX. DEPTH IN FT.	PIEZOMETER NUMBER	LINE & STATION	APPROX. OFFSET	ELEVATION OF POROUS TIP	~~D-APPROX. DEPTH IN FT.~~ (DATE)	PIEZOMETER NUMBER	LINE & STATION	APPROX. OFFSET	ELEVATION OF POROUS TIP	D= APPROX. DEPTH IN FT.
~~P1-A~~	~~87+45~~	~~23'L~~	~~-4~~	~~6~~	P1-A	87+35	23'L	-3.85	8-3-65					
~~P1-B~~	~~"~~	~~"~~	~~-10~~	~~12~~	P1-B	87+45	23'L	-11.00	8-4-65					
~~P1-C~~	~~"~~	~~"~~	~~-17~~	~~19~~	P1-C	87+55	23'L	-15.00	8-5-65					
~~P2-A~~	~~TO~~	~~BE~~	~~DETERMINED~~		P2-A	86+10	17'R	-5.0	8-[illegible]-65					
~~P2-B~~	~~"~~	~~"~~	~~"~~	~~"~~	P2-B	86+20	17'R	-9.0	8-9-65					
~~P2-C~~	~~"~~	~~"~~	~~"~~	~~"~~	P2-C	86+30	17'R	-13.0	8-10-65					
		Note:												
		Piezometer P1-B & P2-B Re-set by Del. State Highway Dept. Materials & Research Section												
					P1-B	87+34	3'L	-9.00	3-10-66					
					P2-B	86+18	℄	-10.00	3-11-66					

LOCATIONS OF SETTLEMENT PLATFORMS

PLATFORM NUMBER	LINE & STATION	APPROX. OFFSET	~~PLATFORM NUMBER~~ (DATE)	LINE & STATION	APPROX. OFFSET	PLATFORM NUMBER	LINE & STATION	APPROX. OFFSET
R-1	86+00	23'L	8-[illegible]-65					
R-2	86+00	17'R	8-[illegible]-65					
R-3	87+25	23'L	8-[illegible]-65					
R-4	87+25	17'R	8-3-65					
R-5	88+50	23'L	8-2-65					
R-6	88+50	17'R	8-2-65					
	Note:							
R-7 & R-8 was set by Del. State Highway Dept.								
R-7	86+30	℄	4-19-66					
R-8	87+52	℄	4-19-66					

SYMBOLS
USED ON PLAN SHEETS

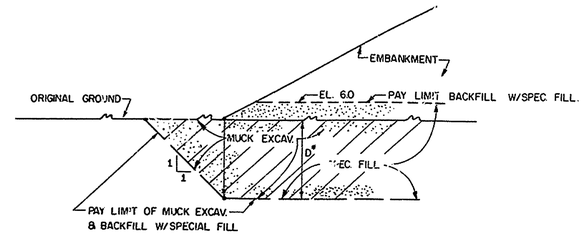
[III] PIEZOMETERS — THE ROMAN NUMERAL INDICATES THE NUMBER OF PIEZOMETERS IN THIS GROUP. THE ARABIC NUMERALS AND LETTERS ARE USED IN REFERING TO TABLE "LOCATION OF PIEZOMETERS" AT FAR LEFT.

⌖ SETTLEMENT PLATFORM

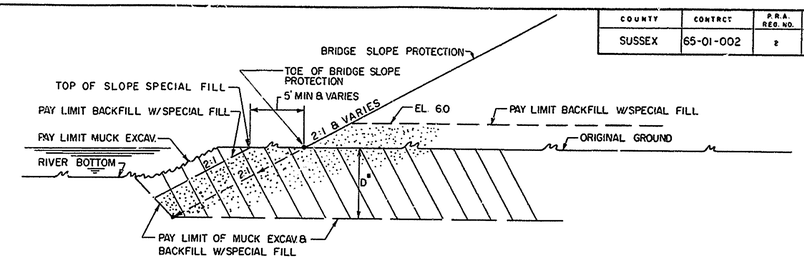
PIEZOMETERS
SETTLEMENT PLATFORM

GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

COUNTY	CONTRCT	P.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		9	65



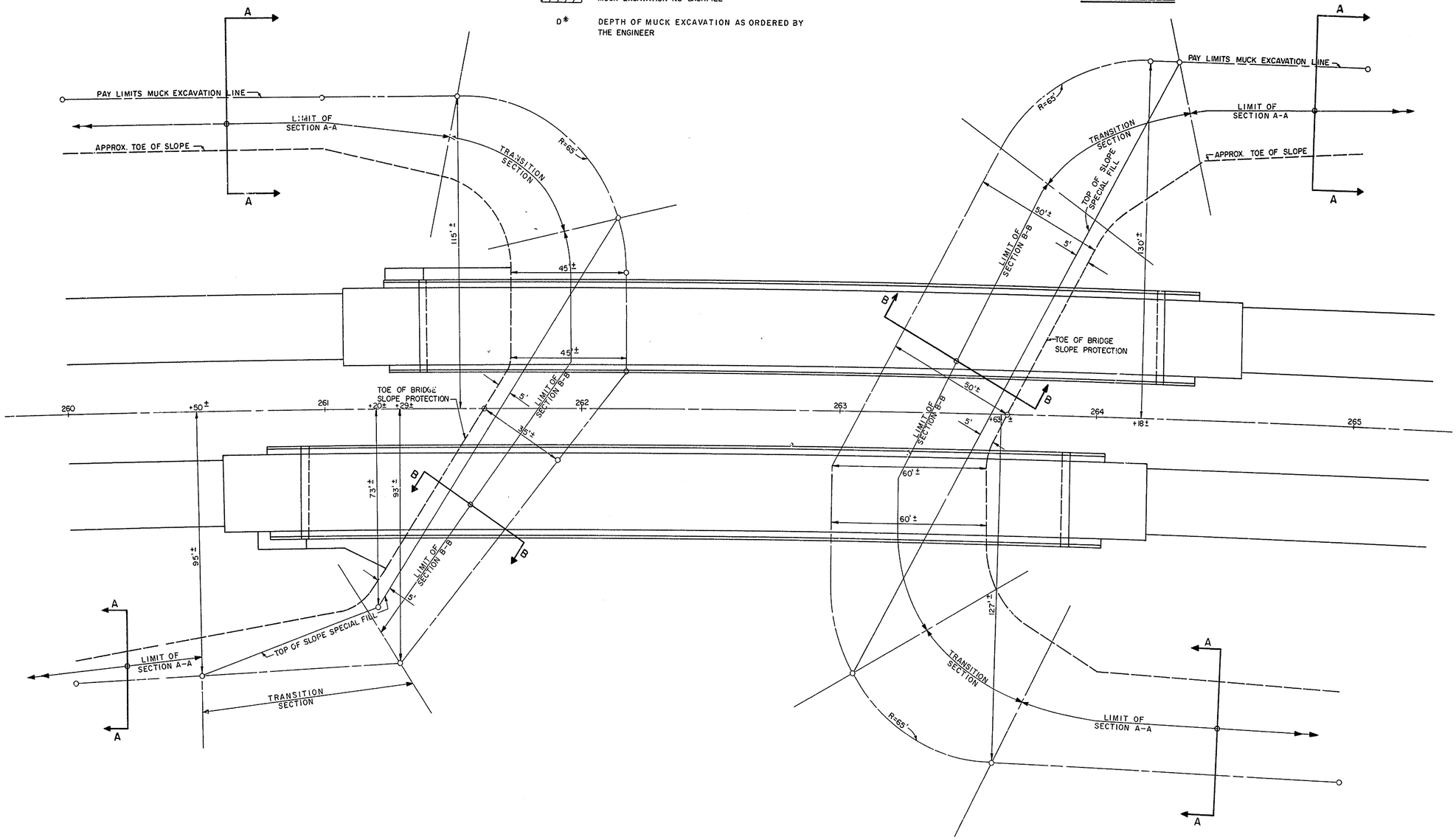
SECTION A-A



SECTION B-B

LEGEND FOR SECTIONS

- BACKFILL W/SPECIAL FILL
- MUCK EXCAVATION AND BACKFILL W/SPECIAL FILL
- MUCK EXCAVATION NO BACKFILL
- D* DEPTH OF MUCK EXCAVATION AS ORDERED BY THE ENGINEER

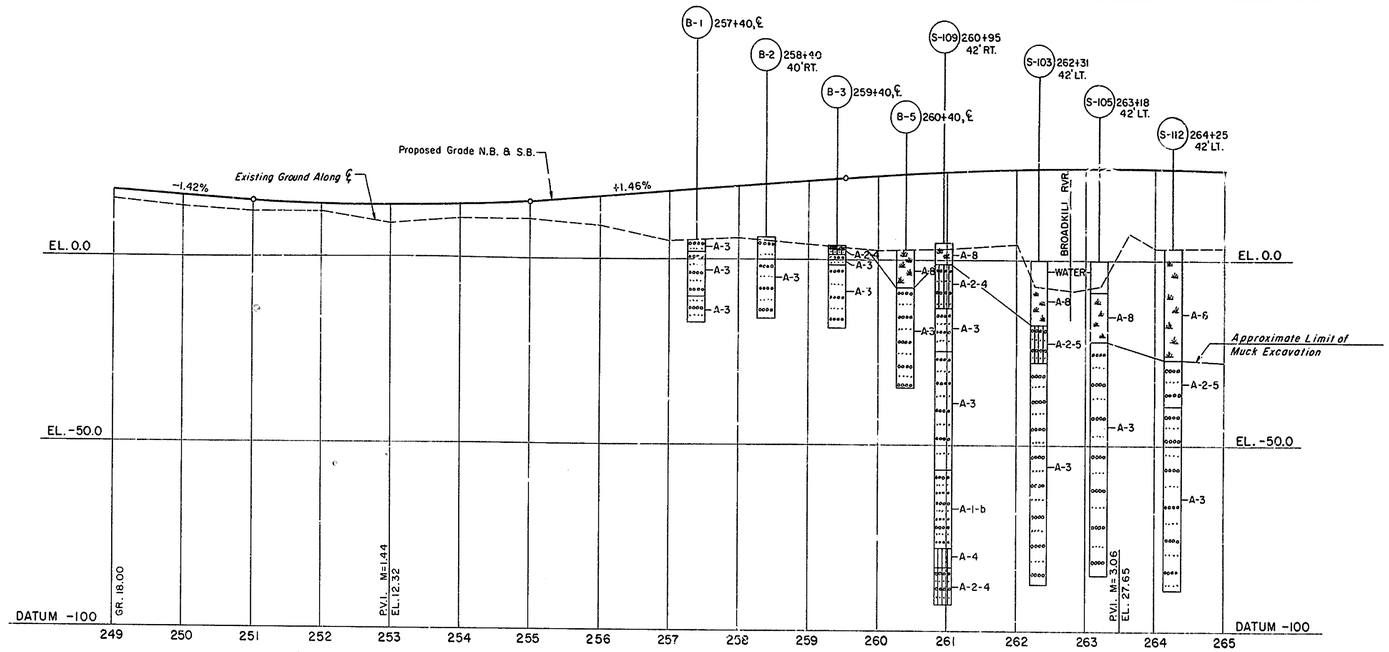


GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

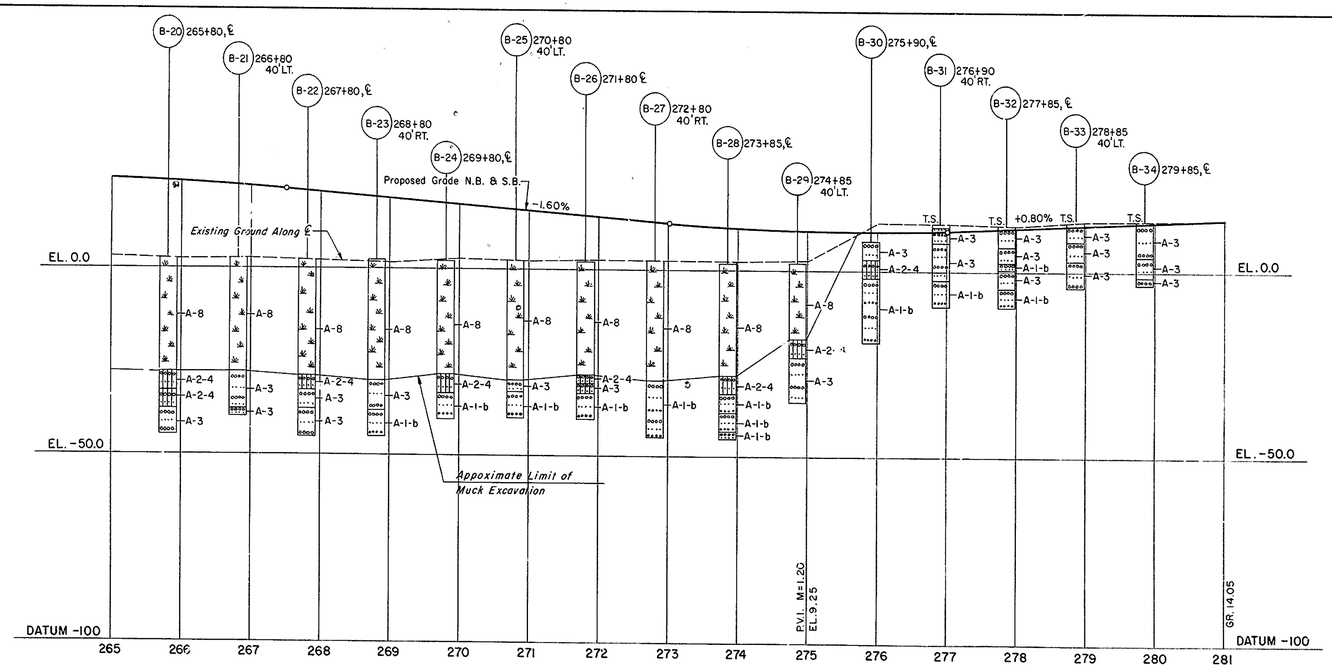
MUCK EXCAVATION PAY LIMITS IN AREA OF BROADKILL BRIDGE

Scale:
Plan: 1" = 20'-0"
Sections: None

COUNTY	CONTRACT	P. & A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)	10	65



PROPOSED NORTHBOUND & SOUTHBOUND PROFILE



PROPOSED NORTHBOUND & SOUTHBOUND PROFILE

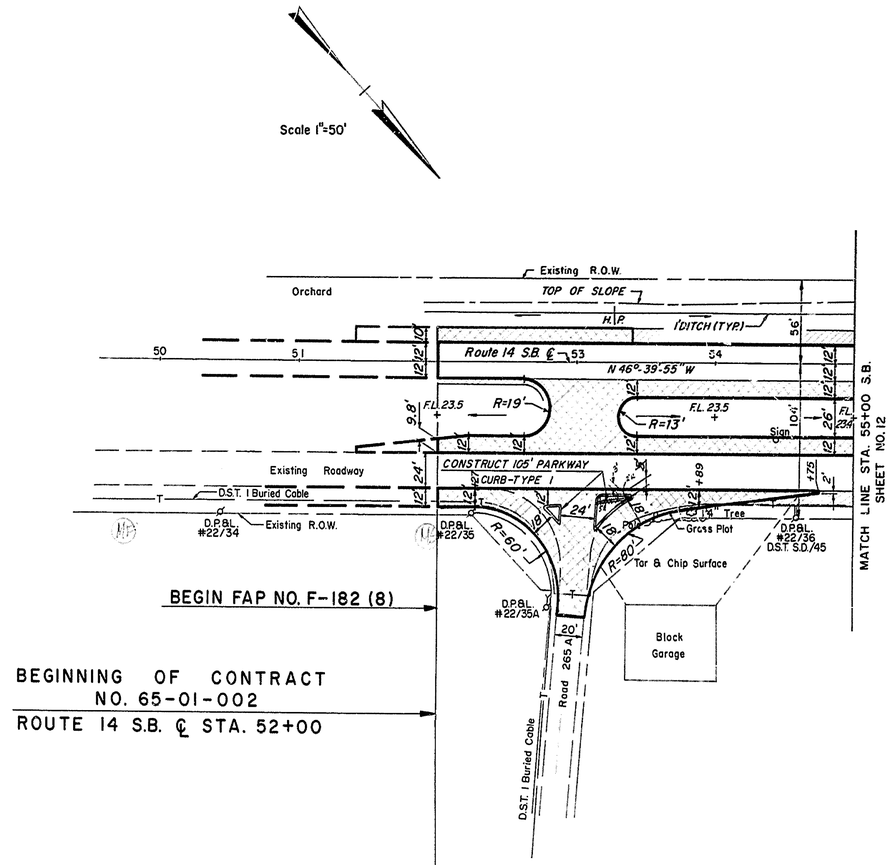
GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

NOTE:
For Boring Legend See Sheet No. 54 "Soils Data"

PROPOSED DELAWARE ROUTE 14
BORING DESCRIPTION SHEET

Scale: Horiz. 1"=100'
Vert. 1"=20'

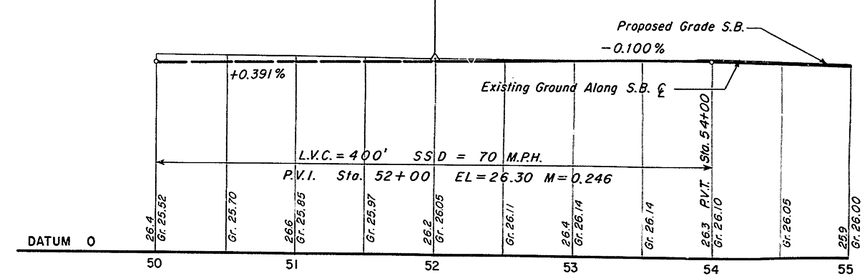
COUNTY	CONTRACT	R.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		11	65



SYMBOLS

- PROPOSED WIRE ROPE GUARD FENCE
- PROPOSED REINFORCED CONC. PAVEMENT
- PROPOSED HOT MIX HOT LAID ASPHALTIC CONC. ON SOIL CEMENT BASE COURSE *
- PROPOSED BITUMINOUS SURFACE TREATMENT
- PROPOSED HOT MIX HOT LAID ASPHALTIC CONC. ON PORTLAND CEMENT CONC. BASE COURSE *
- (R) TO BE REMOVED BY OTHERS

* SEE TYPICAL SECTIONS FOR THICKNESSES



SOUTHBOUND PROFILE

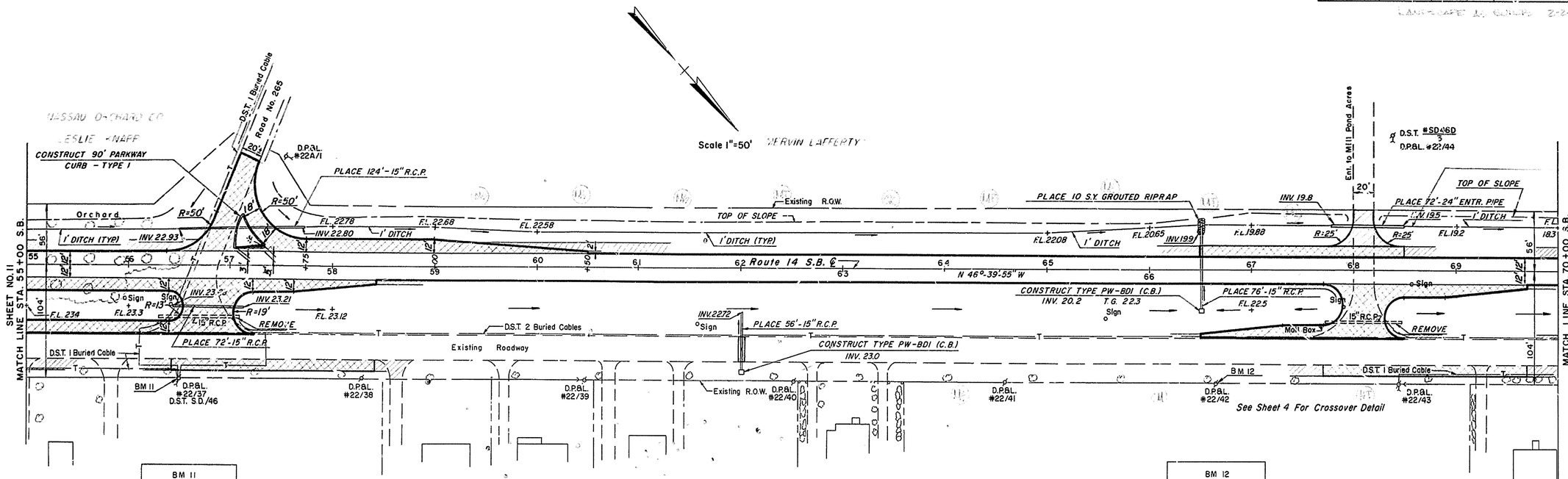
Scale Horiz. 1" = 50'
Vert. 1" = 10'

GOODKIND & O'DEA, INC.
CONSULTING ENGINEERS

BENCH MARKS
EARTHWORK
DRAINAGE

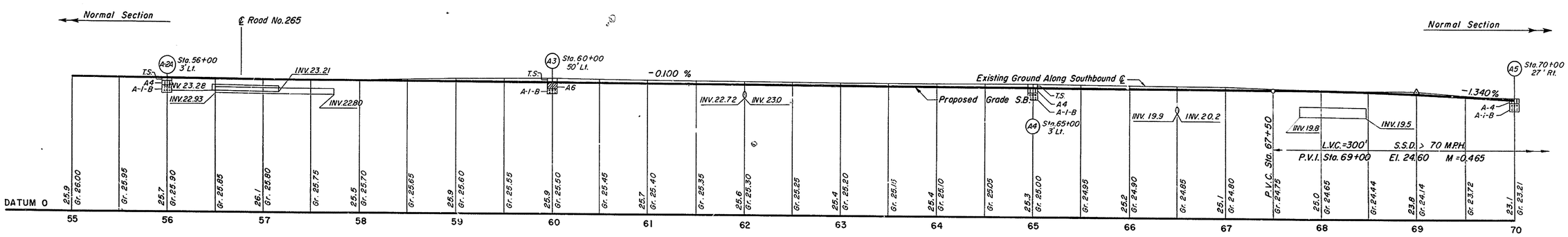
COUNTY	CONTRACT	R.R.& R.C.B. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		12	65

LANDSCAPE & GUARDRAIL 2-24-83



BM 11
Nail in D.P. & L. Pole
S.B. ℄ Sta. 56+53
103' Right
Elev. 26.21

BM 12
Nail in D.P. & L. Pole
S.B. ℄ Sta. 66+60
103' Right
Elev. 26.72



SOUTHBOUND PROFILE

Scale Horiz. 1"= 50'
Vert. 1"= 10'

NOTE:

For Boring Legend See Sheet No. 54, "Soils Data"

GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

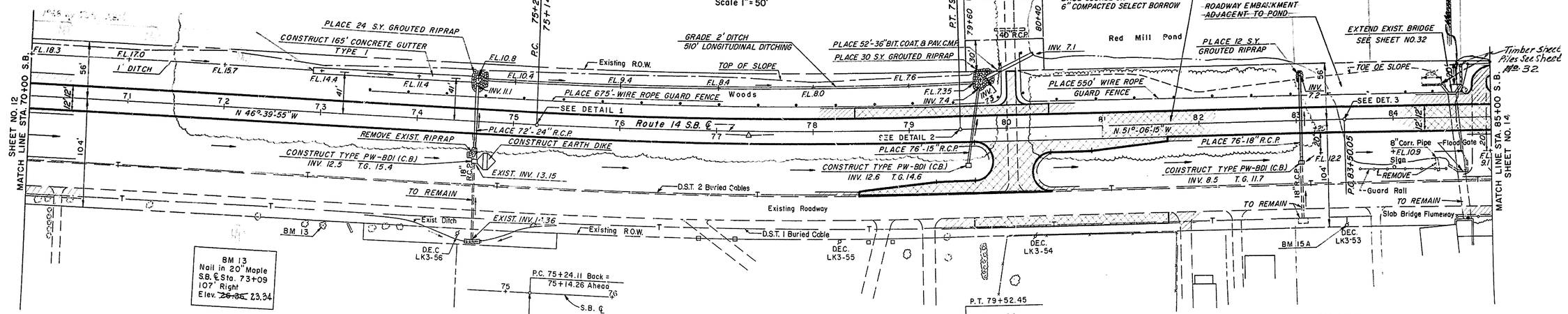
COUNTY	CONTRACT	R.R. & REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		13	65

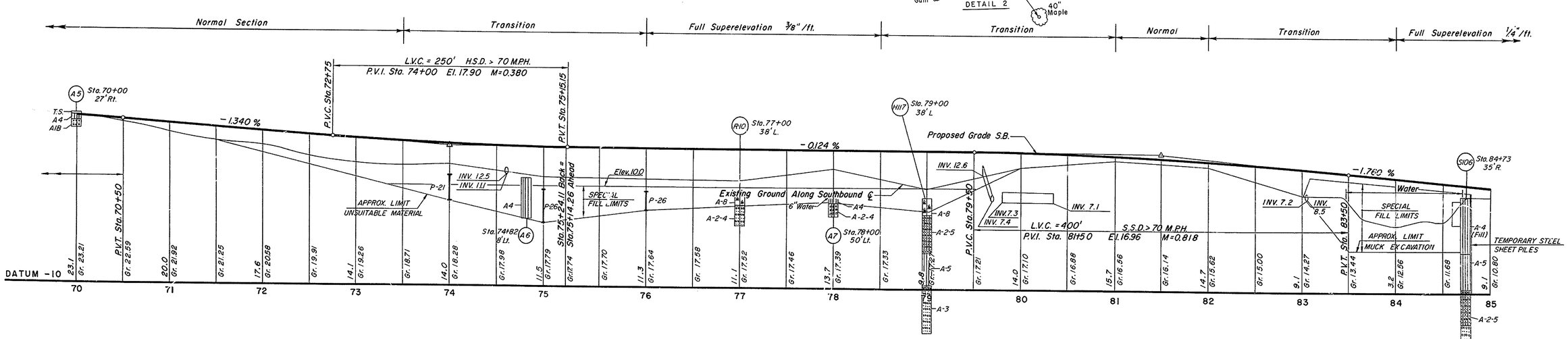
NOTE: FOR APPROXIMATE LIMITS OF MUCK EXCAVATION IN THIS AREA SEE PROFILE, THIS SHEET.

S.B. ℄ CURVE DATA

P.I. STA. 77+33.46
Δ = 4°-26'-20"
D = 1°-00'-46.83"
R = 5656.00'
T = 219.20'
L = 438.19'

Scale 1" = 50'



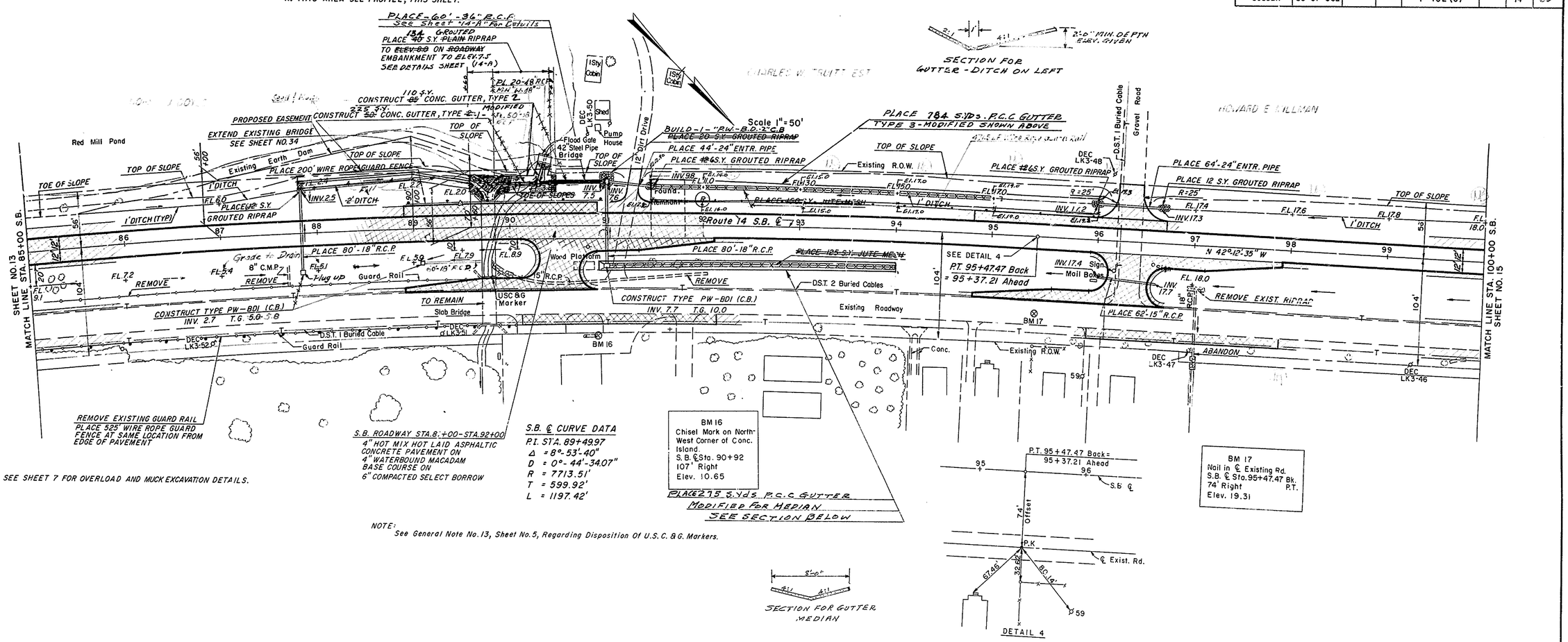


SOUTHBOUND PROFILE

Scale Horiz 1" = 50'
Vert. 1" = 10'

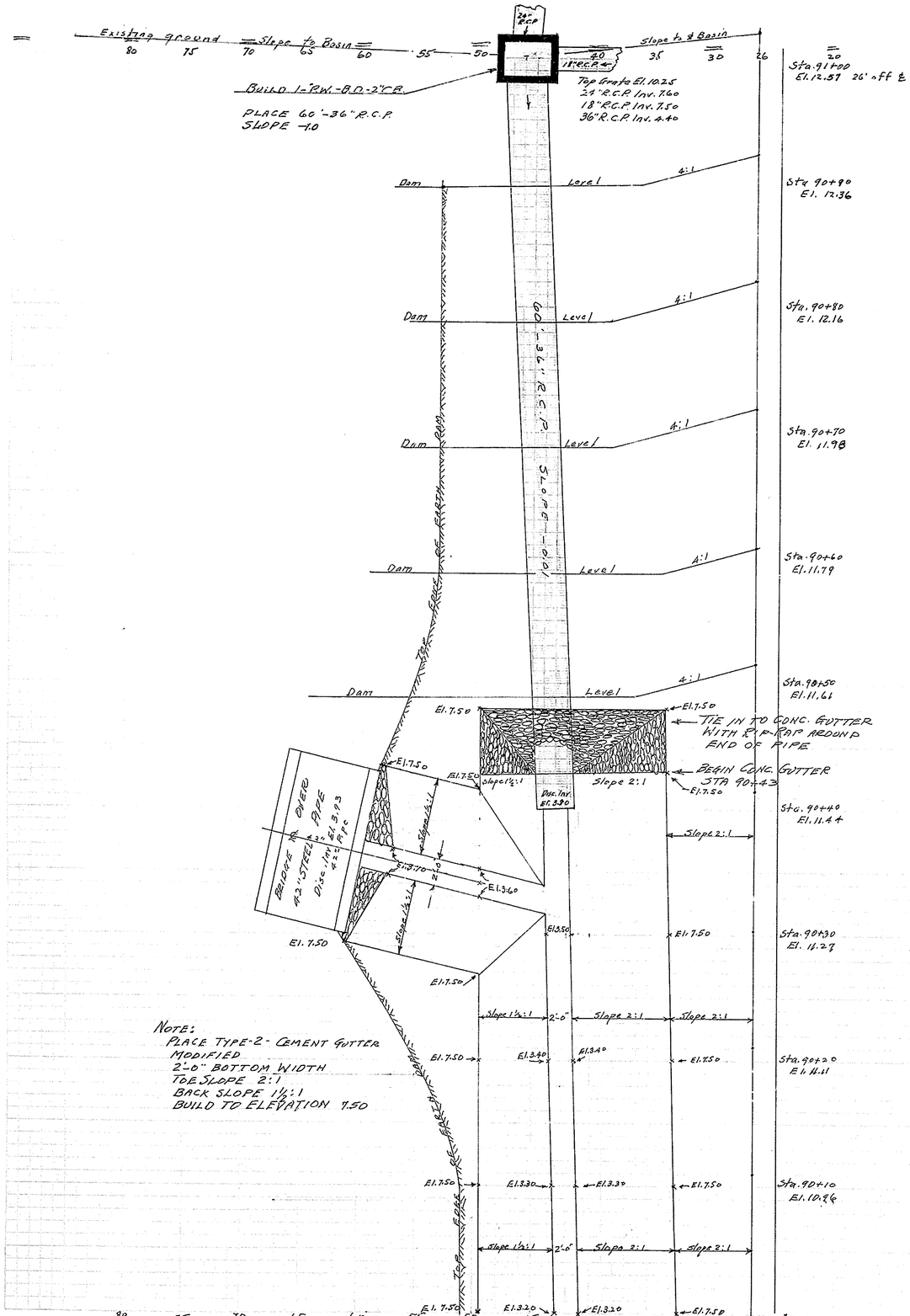
GOODKIND & O'DEA, INC.
CONSULTING ENGINEERS

COUNTY	CONTRACT	R.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	E	DEL.	F-182 (8)		14	65



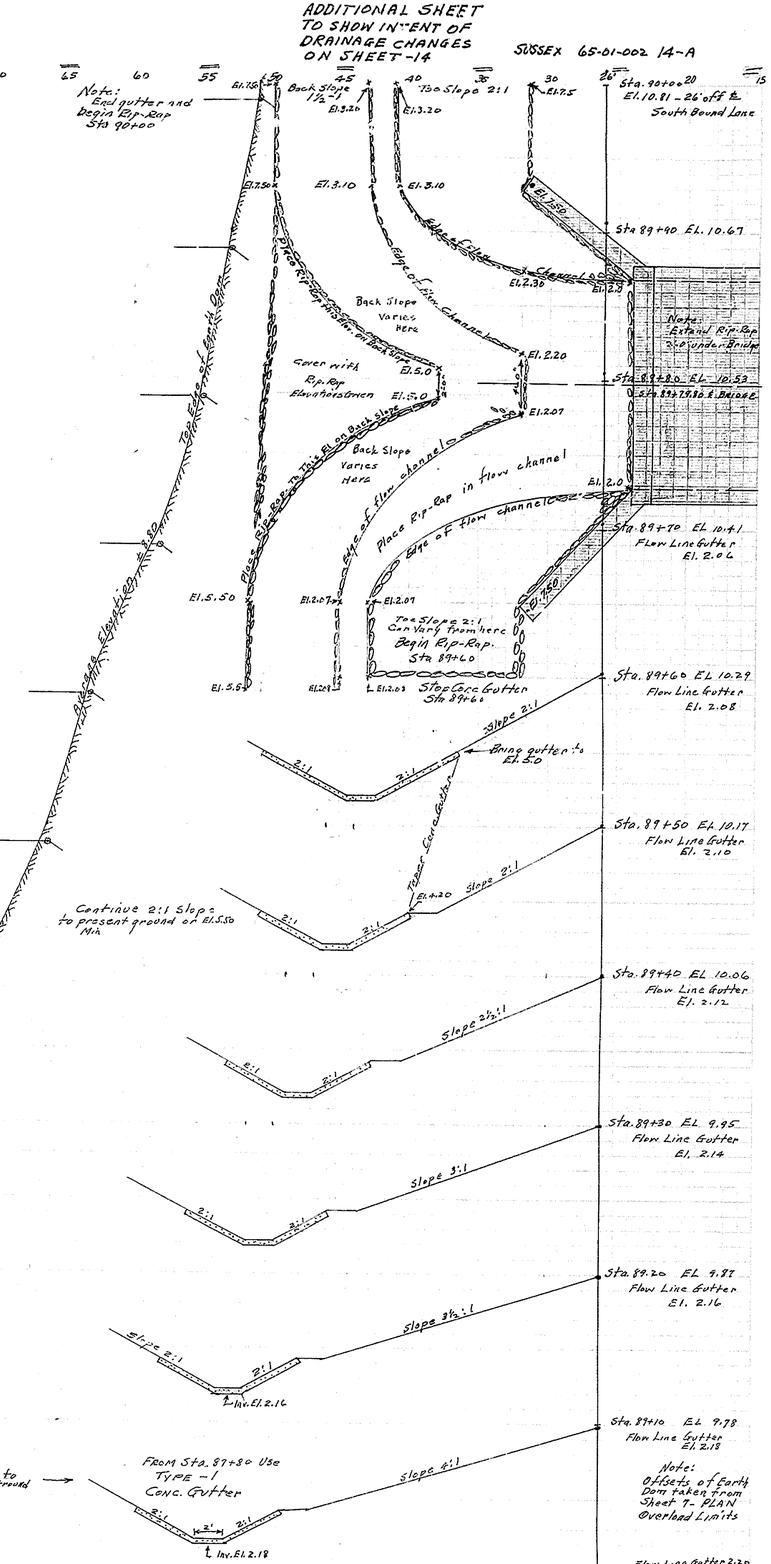
ADDITIONAL SHEET TO SHOW IN"ENT OF DRAINAGE CHANGES ON SHEET-14

SUSSEX 65-01-002 14-A



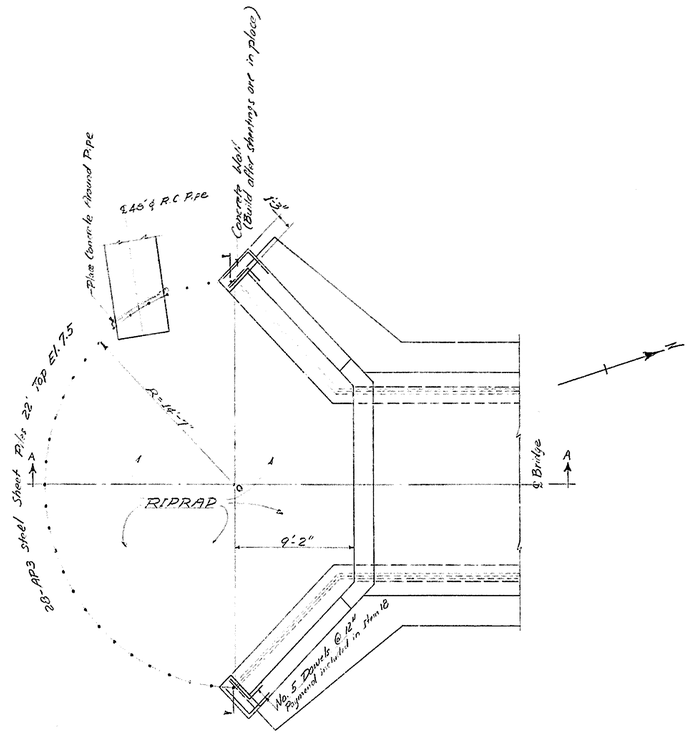
NOTE:
Measurements for dam Location, Bridge over 42" pipe and flood gate were taken from Sheet-7

PLAN-OVERLOAD LIMITS



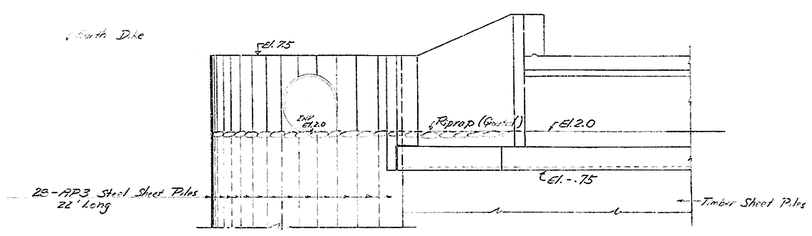
COUNTY	CONTRACT	P.R.R. PROJ. NO.	STATE	F. A. PROJ. NO.	SHEET NO.	TOTAL
SUSSEX	65-01-002	2	DEL	F-182(8)	14B	65

S.10.2



PLAN
3/16" = 1'-0"

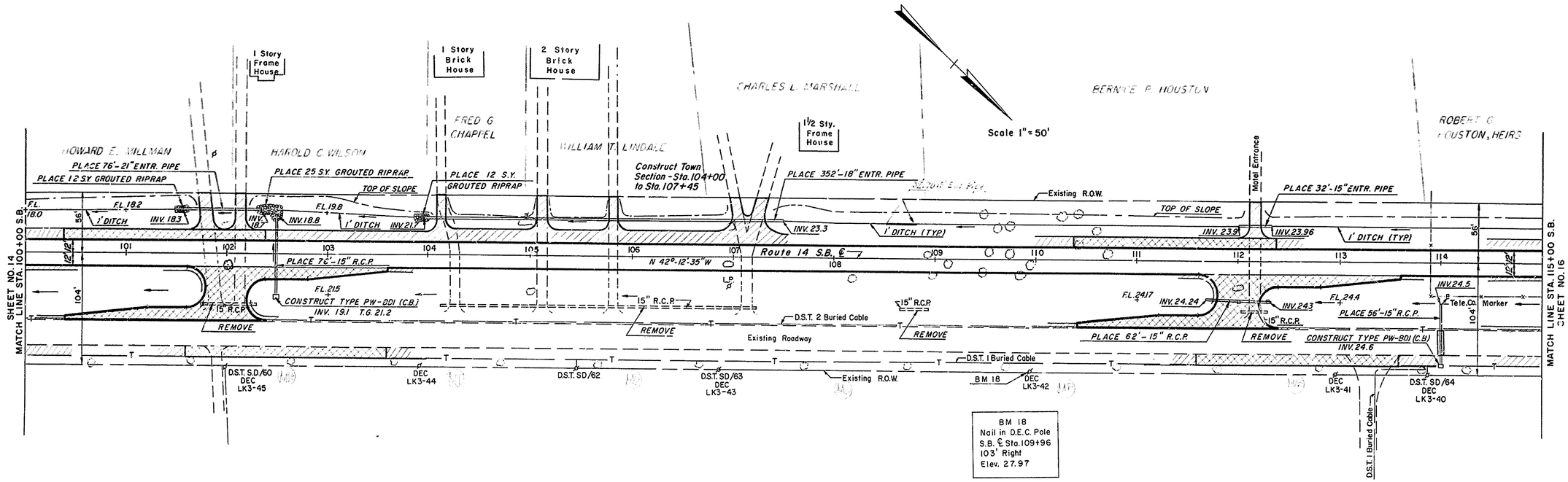
ADDITIONAL QUANTITIES FOR REVISION			
ITEM	DESCRIPTION	UNIT	ESTIMATE
–	Fill Material	C.Y.	1,800
18	P.C.C. Masonry	C.Y.	2.0
26	R.C. Pipe (18" ϕ)	L.F.	60
26	R.C. Pipe (36" ϕ)	L.F.	10
26	R.C. Pipe (48" ϕ)	L.F.	70
44	Catch Basins & Drop Inlets (PW-BDE)	Each	1
45	Manholes (Type "W-48")	Each	1
–	Steel Sheet Piles (AP3 or Equivalent)	L.F.	616

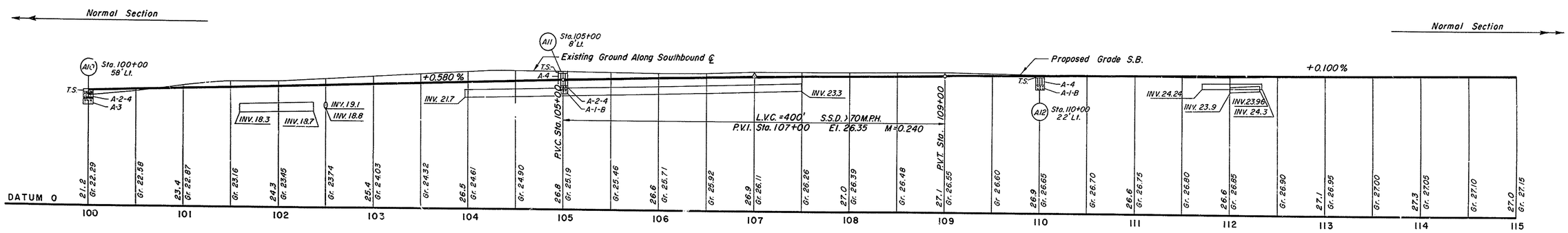


SECTION A-A
3/16" = 1'-0"

C.H. 11/21/66

COUNTY	CONTRACT	P.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		15	65





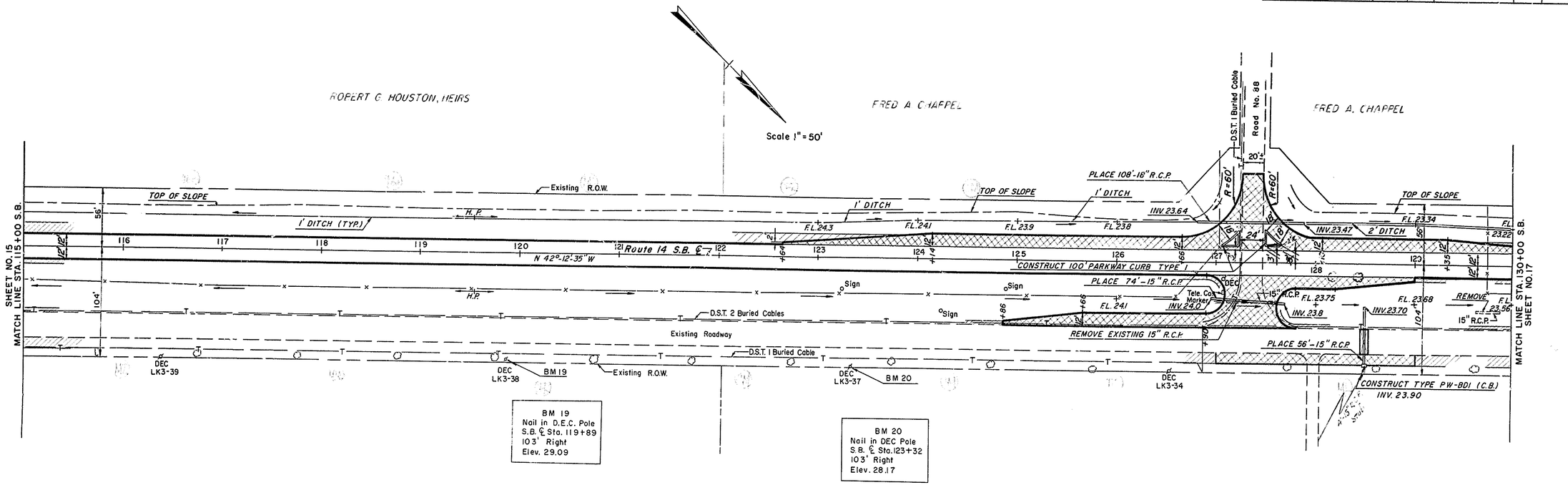
SOUTHBOUND PROFILE

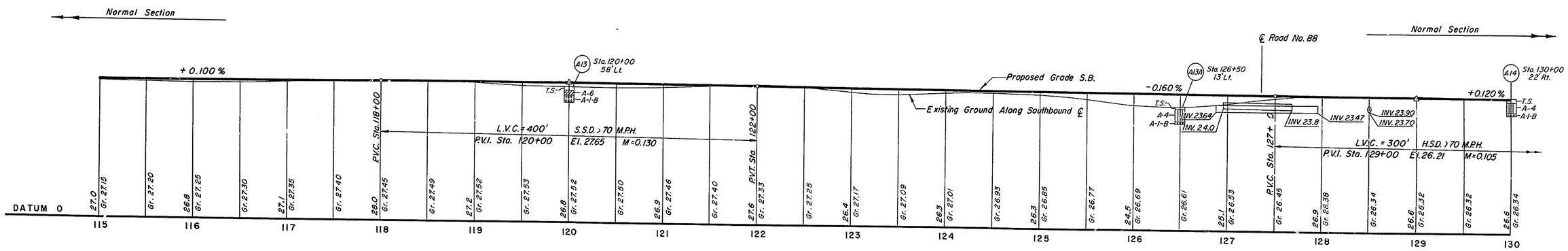
Scale Horiz. 1" = 50'
Vert. 1" = 10'

WOODKIND & O'DEA INC.
CONSULTING ENGINEERS

EARTHWORK
DRAINAGE

COUNTY	CONTRACT	P.R.A. H.Z.G. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		16	65





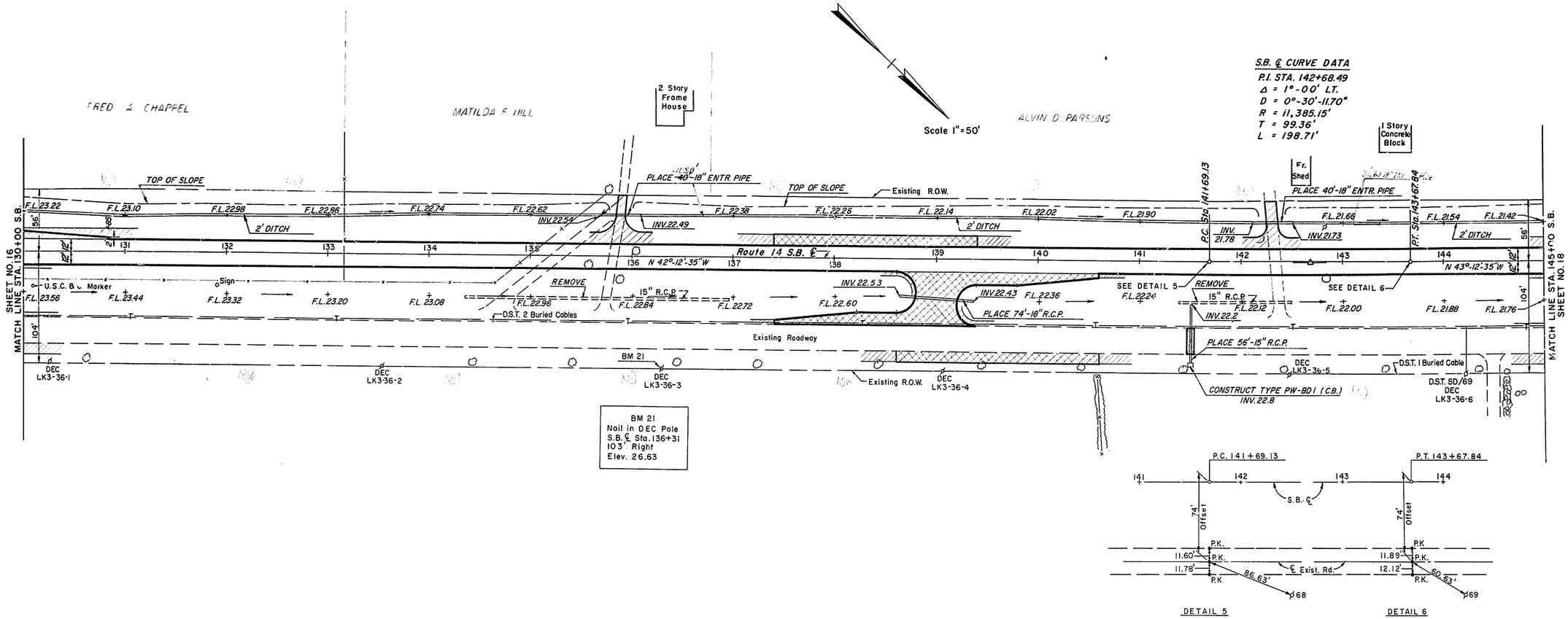
SOUTHBOUND PROFILE

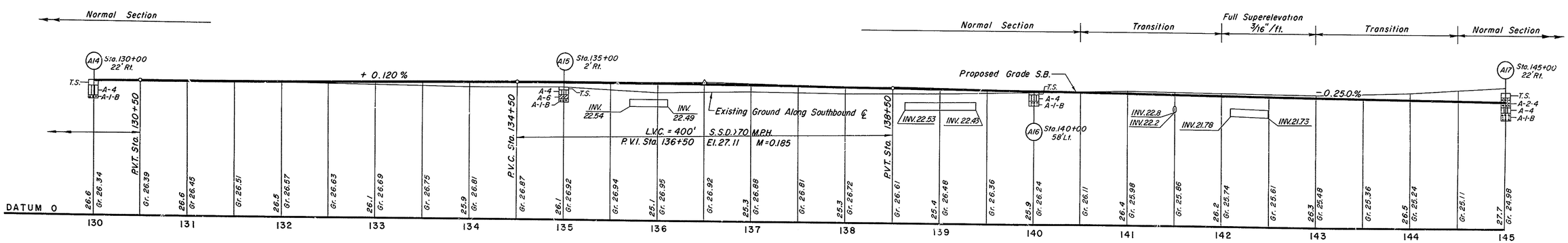
Scale Horiz 1" = 50'
Vert. 1" = 10'

GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

I.E. POINTS
BENCHMARKS
EARTHWORK
DRAINAGE

COUNTY	CONTRACT	R.R.A. REQ. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		17	65





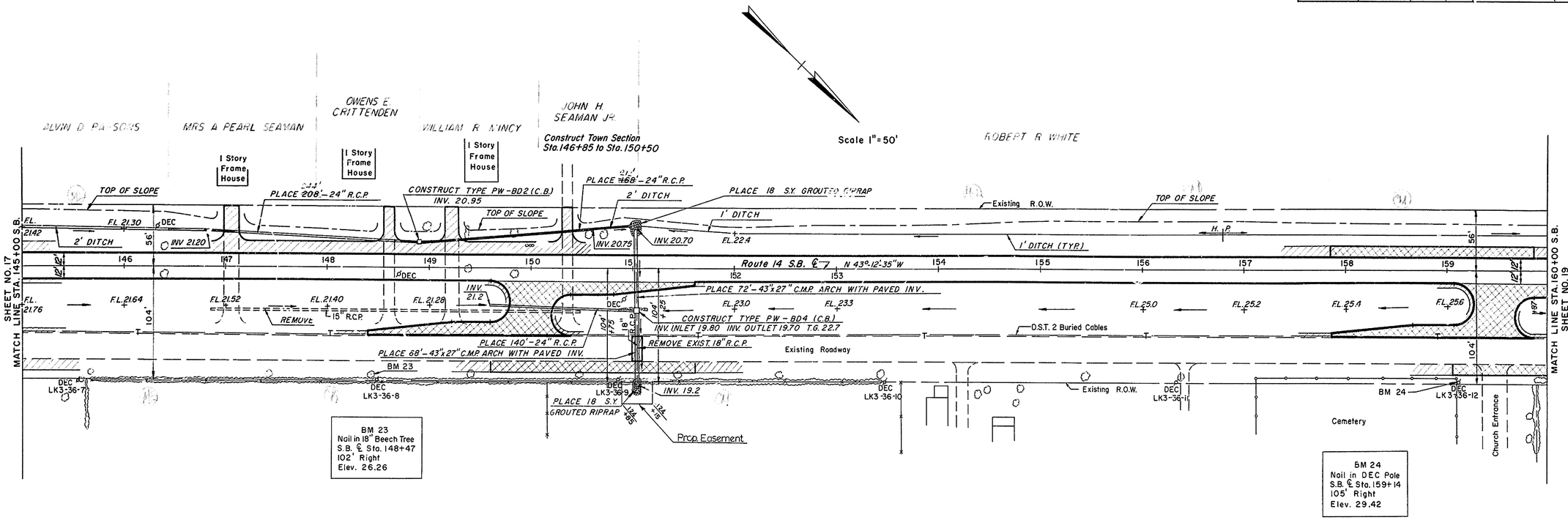
SOUTHBOUND PROFILE

Scale Horiz. 1" = 50'
Vert. 1" = 10'

GOODKIND & HOUSTON
CONSULTING ENGINEERS

TIE POINTS
BENCH MARKS
EARTHWORK
DRAINAGE

COUNTY	CONTRACT	P.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		18	65

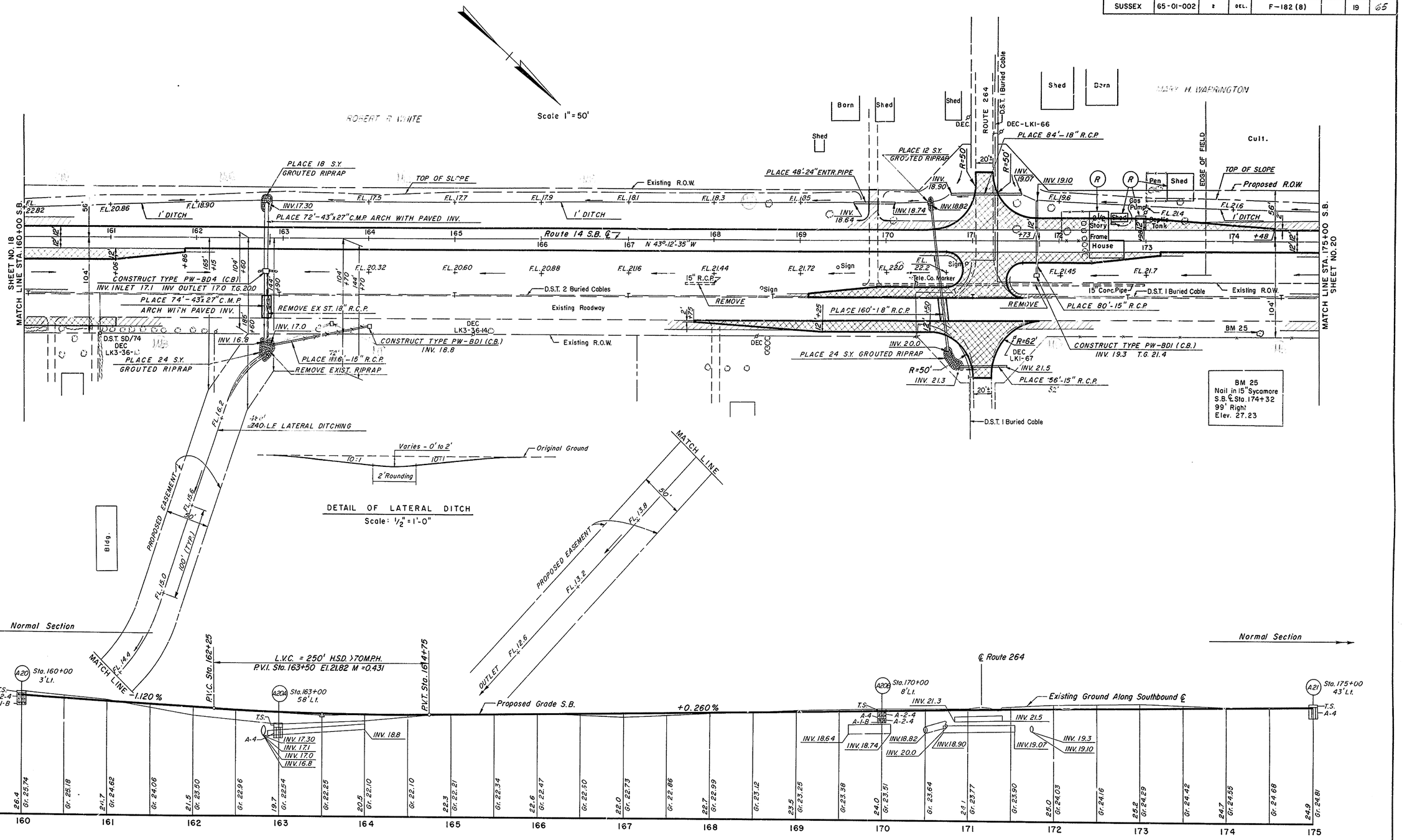


SOUTHBOUND PROFILE

Scale: Horiz. 1" = 50'
Vert. 1" = 10'

DODKIN & O'DEA INC.
CONSULTING ENGINEERS

COUNTY	CONTRACT	R.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		19	65

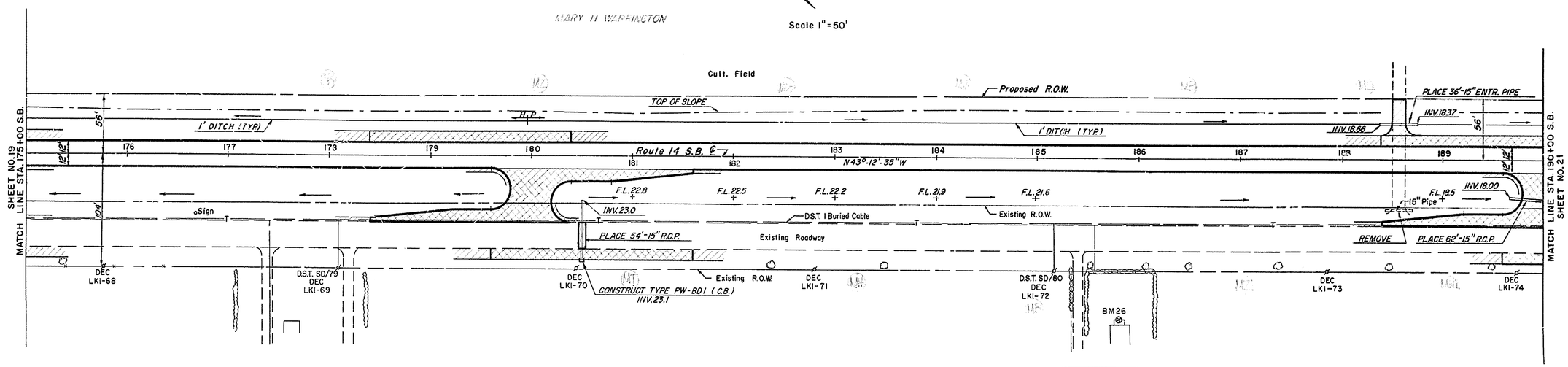


SOUTHBOUND PROFILE

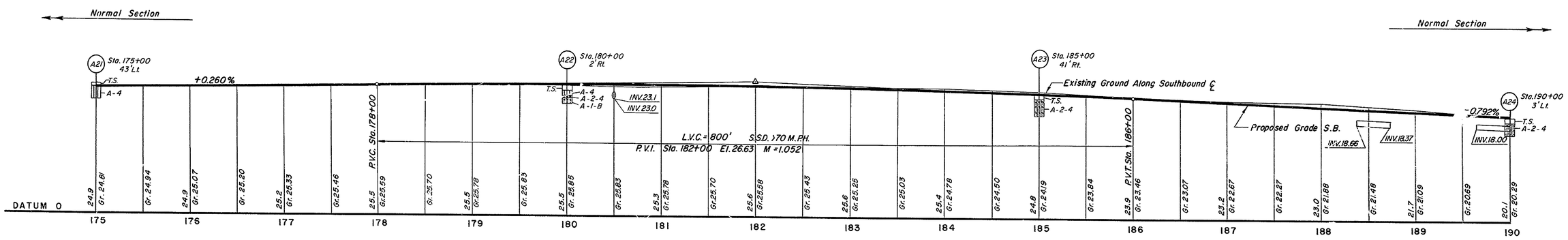
Scale Horiz. 1" = 50'
Vert. 1" = 10'

GOODKIND & O'DEA, INC.
CONSULTING ENGINEERS

COUNTY	CONTRACT	P.R.A. REQ. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)		20	65



BM 26
Chisel Mark on NorthWest
Corner of Bottom Step
S.B. ℄ Sta. 185+80
149' Right
Elev. 24.52



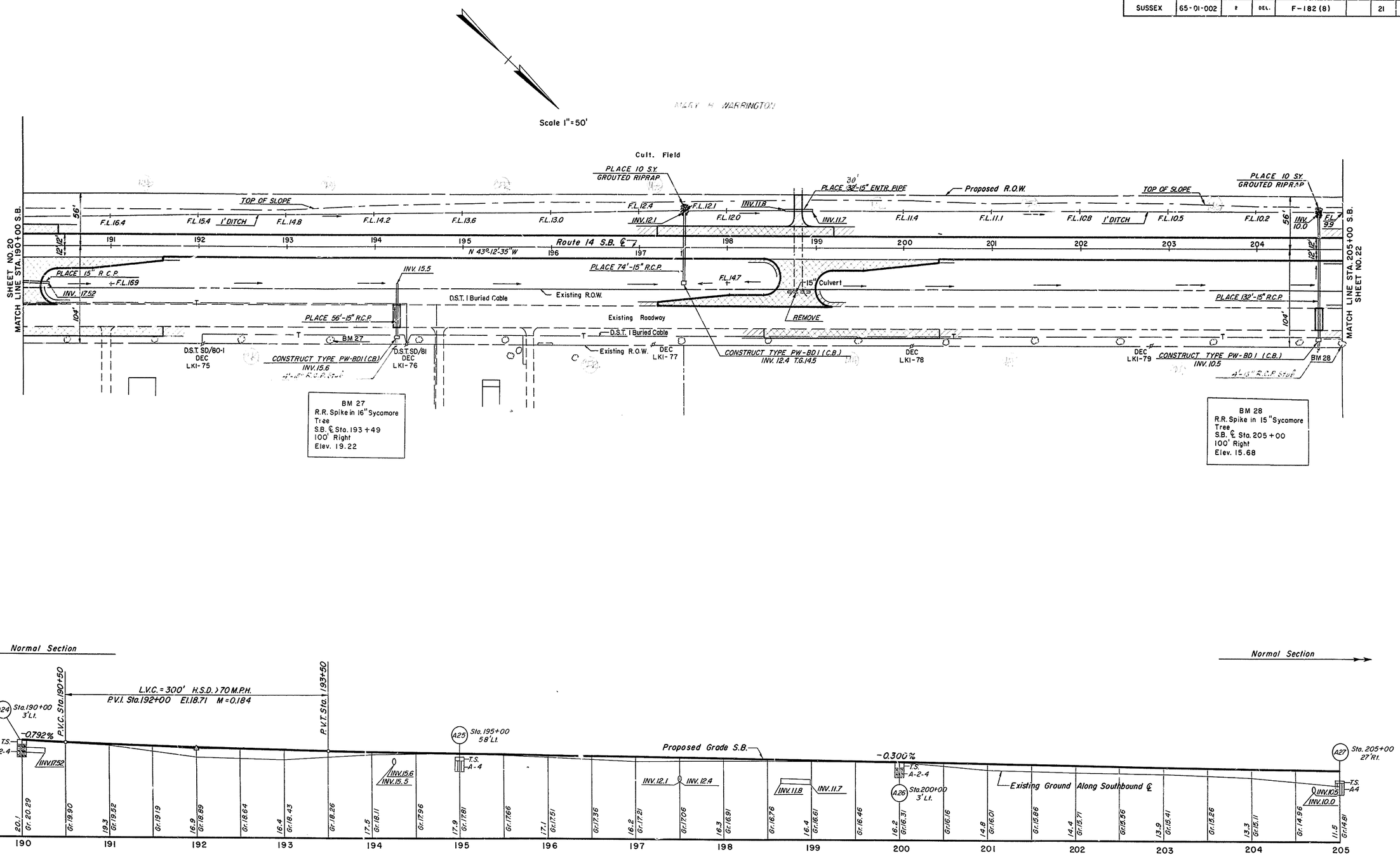
SOUTHBOUND PROFILE

Scale: Horiz. 1"= 50'
Vert. 1"= 10'

COOKINL & O'DEA INC.
CONSULTING ENGINEERS

BENCH MARKS
EARTHWORK
DRAINAGE

COUNTY	CONTRACT	F.H.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		21	65



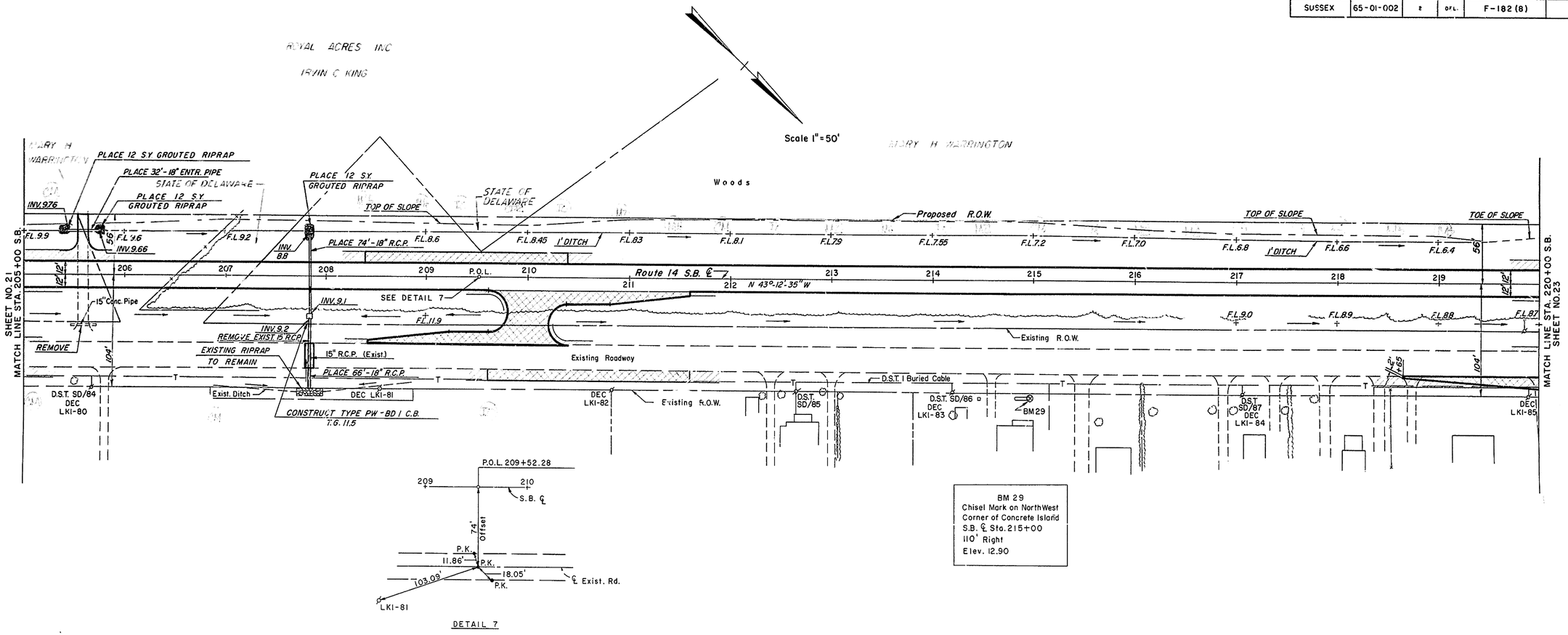
SOUTHBOUND PROFILE

Scale: Horiz 1" = 50'
Vert. 1" = 10'

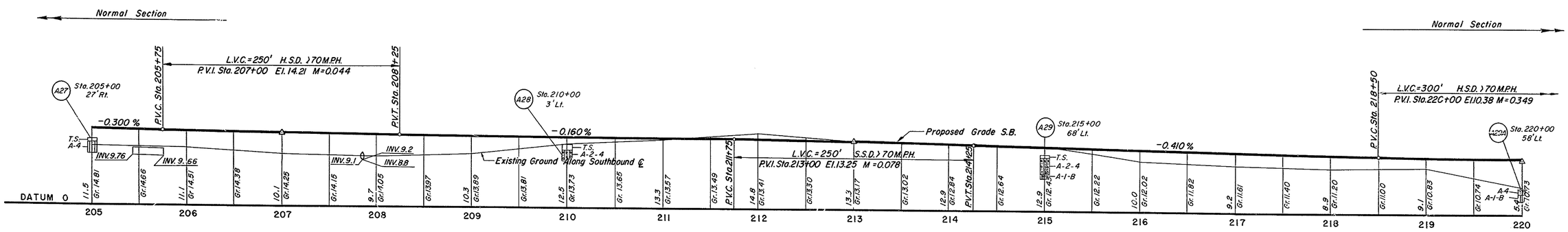
GOODKIND & O'DEA, INC.
CONSULTING ENGINEERS

BENCH MARKS
EARTHWORK
DRAINAGE

COUNTY	CONTRACT	R.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		22	65



DETAIL 7



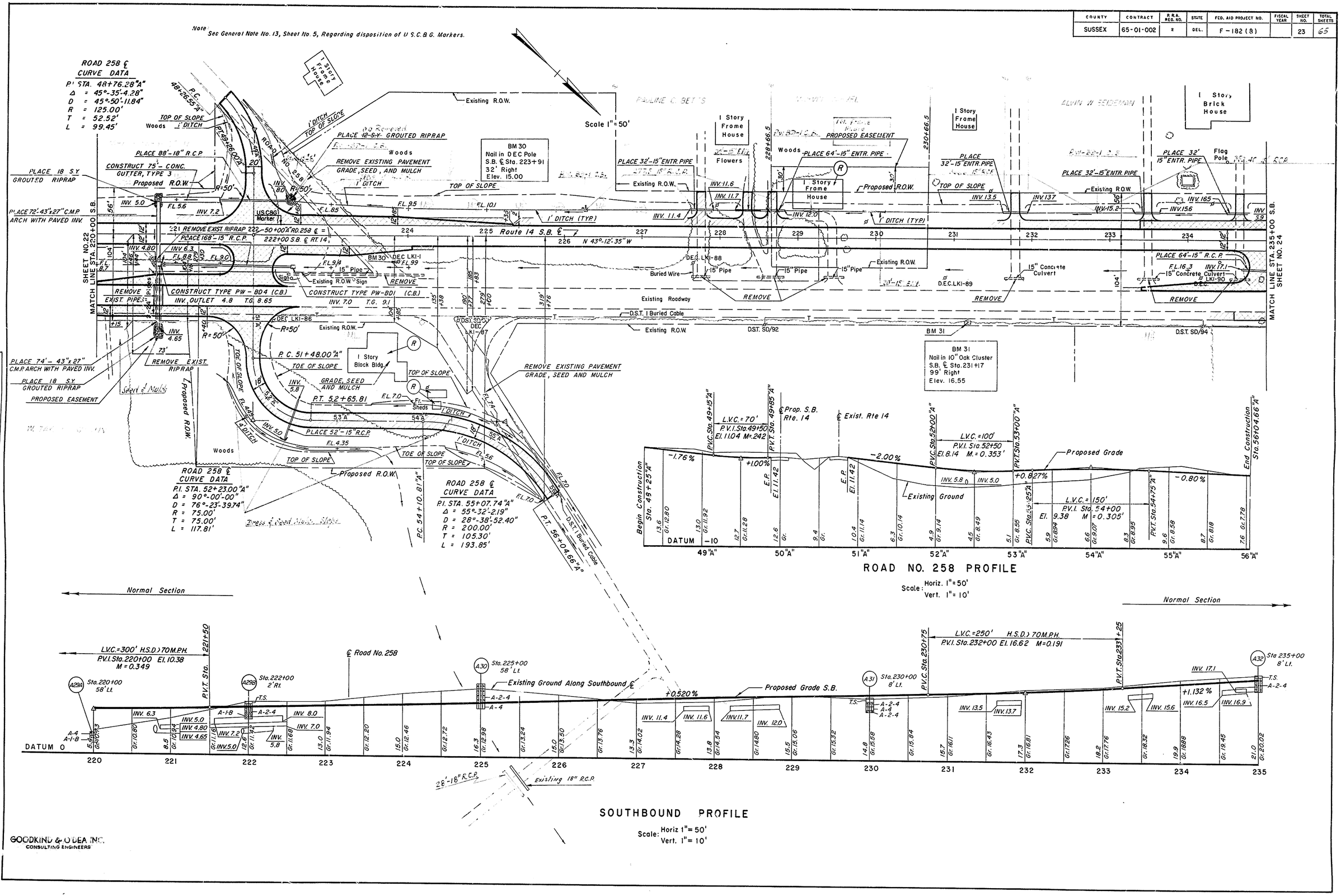
SOUTHBOUND PROFILE

Scale Horiz 1" = 50'
Vert. 1" = 10'

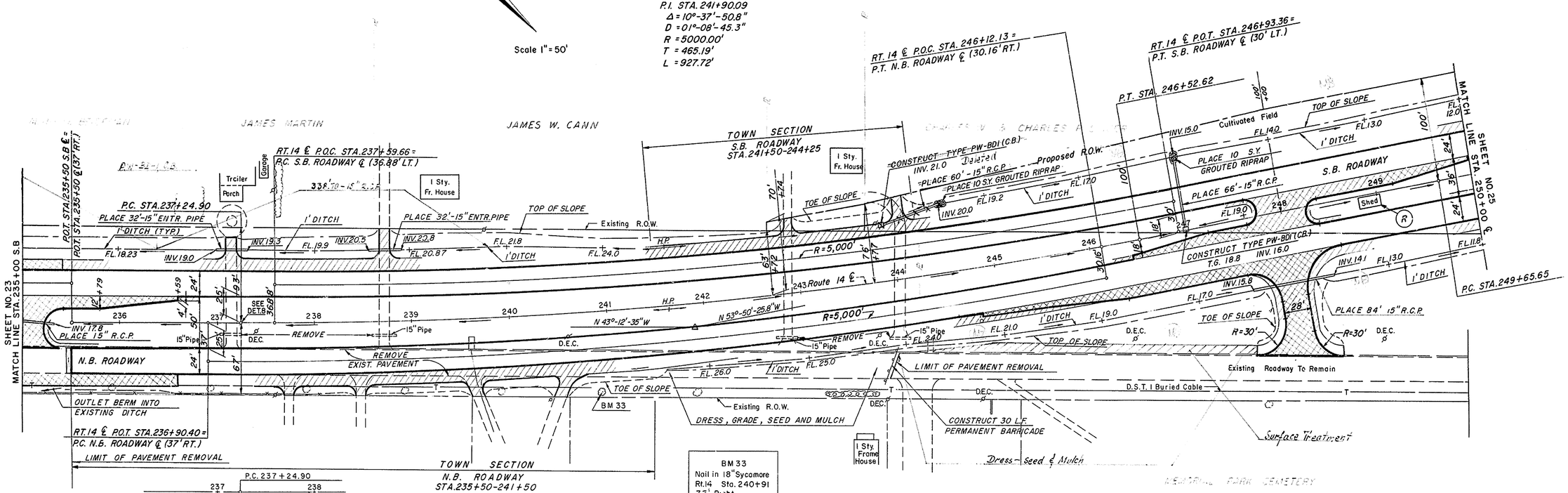
GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

BENCH MARKS
EARTHWORK
DRAINAGE

COUNTY	CONTRACT	R.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		23	65



COUNTY	CONTRACT	R.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		24	25



SYMBOLS

- PROPOSED WIRE ROPE GUARD FENCE
- PROPOSED REINFORCED CONC. PAVEMENT
- PROPOSED HOT MIX HOT LAID ASPHALTIC CONC. ON SOIL CEMENT BASE COURSE *
- PROPOSED BITUMINOUS SURFACE TREATMENT
- PROPOSED HOT MIX HOT LAID ASPHALTIC CONC. ON PORTLAND CEMENT CONCRETE BASE COURSE *
- (R) TO BE REMOVED BY OTHERS

* SEE TYPICAL SECTIONS FOR THICKNESSES

NORTHBOUND & SOUTHBOUND PROFILE

Scale: Horiz. 1" = 50'
Vert. 1" = 10'

BENCH MARKS
EARTHWORK
DRAINAGE

GOODKIND & O'DEA, INC.
CONSULTING ENGINEERS

COUNTY	CONTRACT	P.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	8	DEL.	F-182 (8)		25	65

NOTE: FOR APPROXIMATE LIMITS OF MUCK EXCAVATION IN THIS AREA, SEE SHEET NO. 10

Scale 1"=50'

LEIGHTON L. LOCKERMAN

Proposed R.O.W.

GRADE 1' DITCH
200 L.F. LONGITUDINAL DITCHING

TOE OF SLOPE

TOP OF SLOPE

FL 6.2 FL 4.0 FL 2.6 FL 6.4 FL 7.6 FL 6.8 FL 10.0 FL 11.0 FL 12.0

INV. 6.0

PLACE 12 S.Y. GROUTED RIPRAP

PLACE 80'-15" BIT. COATED AND PAVED C.M.P.

PLACE 480 L.F. WIRE ROPE GUARD FENCE

1' DITCH

S.B. ROADWAY

N.B. ROADWAY

R=2000' (TYP.)

Route 14 ℄

CONSTRUCT EARTH DIKE

CONSTRUCT TYPE PW-BDI (C.B.)
T.G. 11.7 INV. 9.0

CONSTRUCT TYPE PW-BDI (C.B.)
T.G. 16.1 INV. 10.0

PLACE 66'-15" R.C.P.

INV. 8.2

Cultivated Field

FL 9.4 FL 10.6 FL 11.8 FL 7.5 FL 6.8 FL 6.1 FL 5.4 FL 4.7 FL 4.0 FL 3.3

PLACE 12 S.Y. GROUTED RIPRAP

TOP OF SLOPE

Proposed R.O.W.

GRADE 1' DITCH
500 L.F. LONGITUDINAL DITCHING

PLACE 150 L.F. WIRE ROPE GUARD FENCE

PLACE 425 L.F. WIRE ROPE GUARD FENCE

ELECTRICAL METER BOX (BRIDGE ITEM)

BRIDGE BEGINS STA. 260+90.61

BRIDGE NO. 1 SEE SHEET NO. 37

BRIDGE ENDS STA. 263+90.30

BRIDGE BEGINS STA. 261+36.27

BRIDGE ENDS STA. 264+26.63

N 53°-50'-25.8" W

N 34°-46'-53.1" W

BROADKILL RIVER

50' (Typ.)

MATCH LINE STA. 250+00 ℄ SHEET NO. 24

MATCH LINE STA. 265+00 ℄ SHEET NO. 26

1 Sty. Fr. House

Fr. Dwelling

Shed

1 Sty. Hse.

Garage

FL 1.8 FL 1.85 FL 1.9

LEIGHTON L. LOCKERMAN

GRADE 3' DITCH (REFILL AREA)
200 L.F. LONGITUDINAL DITCHING

WALTER H. LANK

℄ CURVE DATA

P.I. STA. 263+08.63
Δ = 19°-03'-32.7"
D = 00°-42'-58.3"
R = 8000.00'
T = 1342.98'
L = 2661.16'

Seed & Mulch

CONSTRUCT 50' WIRE ROPE GUARD FENCE

REMOVE EXISTING GUARD FENCE

CONSTRUCT 100' PERMANENT BARRICADE

2 Sty. Fr. House & Store

D.E.C.

Existing Easement

Existing R.O.W.

Existing Roadway To Remain

D.S.T. 1 Buried Cable

BM 34

BM 36

MEMORIAL PARK CEMETERY

EXISTING BRIDGE TO BE REMOVED

REMOVE EXIST. GUARD FENCE

CONSTRUCT 100' WIRE ROPE GUARD FENCE

3" HOT MIX, HOT LAID ASPHALTIC CONCRETE ON 6" SOIL CEMENT BASE COURSE. (TYP.)

BM 34
R.R. Spike in 18" Sycamore Tree
Rt. 14 ℄ Sta. 252+70
261' Rt.
Elev. 14.70

BM 36
Chisel Mark on SW Cor. of Base of Conc. Wall
Rt 14 ℄ Sta. 260+80
299' Rt.
Elev. 9.27

Transition N.B. & S.B. | Full Superelevation 1/4"/ft. N.B. & S.B.

Full Superelevation 1/4"/ft. N.B. & S.B.

* Note: Embankment Material Within This Area to be Free of Rock, Stones or Any Other Material That Would Impede Driving of Piles.

L.V.C. = 400' H.S.D. > 70 M.P.H.
P.V.I. Sta. 253+00 El. 1232 M = 1.440

P.V.C. Sta. 251+00

P.V.T. Sta. 255+00

-1.420 %

+1.460 %

-1.600%

Proposed Grade S.B. & N.B.

Existing Ground Along Route 14 ℄

INV. 6.0 INV. 10.0

INV. 8.2 INV. 9.0

Limit of Fill Before Bridge Construction (Typ.)

N.B. EL. 12.0

S.B. EL. 13.0

N.B. EL. 13.0

S.B. EL. 13.5

EL. 6.0 Limit of Special Fill

P.V.C. Sta. 259+50

L.V.C. = 1800' S.S.D. > 70 M.P.H.
P.V.I. Sta. 263+50 El. 22.65
M = 3.060

EL. 6.0 Limit of Special Fill

DATUM -10

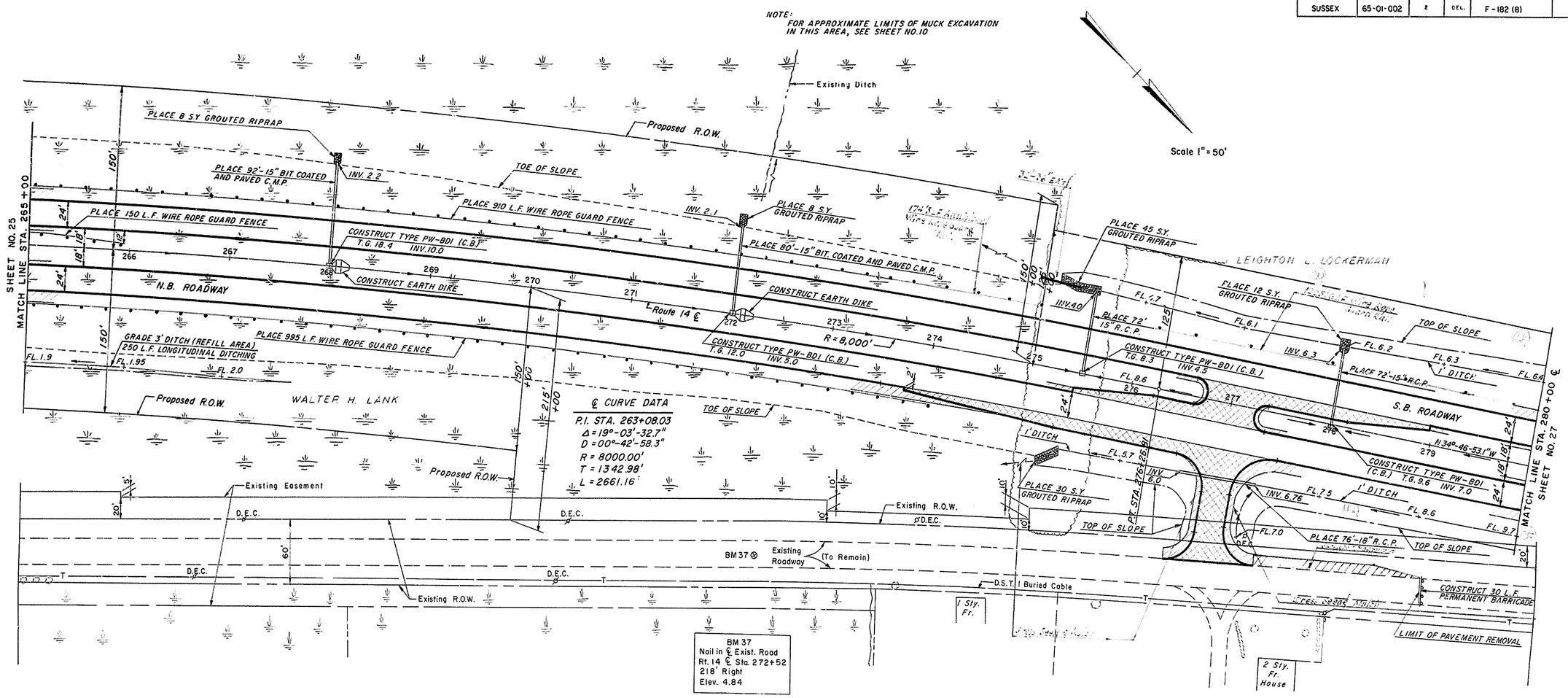
Station	Gr.
250	13.3 / 16.38
251	12.1 / 15.16
252	11.8 / 14.10
253	10.9 / 13.76
254	10.3 / 14.14
255	10.6 / 15.24
256	8.8 / 16.70
257	4.9 / 18.16
258	5.5 / 19.62
259	4.3 / 21.08
260	2.5 / 22.49
261	2.5 / 23.57
262	4.2 / 24.28
263	7.2 / 24.58
264	2.8 / 24.51
265	2.7 / 24.06

NORTHBOUND & SOUTHBOUND PROFILE

Scale: Horiz 1" = 50'
Vert. 1" = 10'

GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

COUNTY	CONTRACT	R.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		26	65



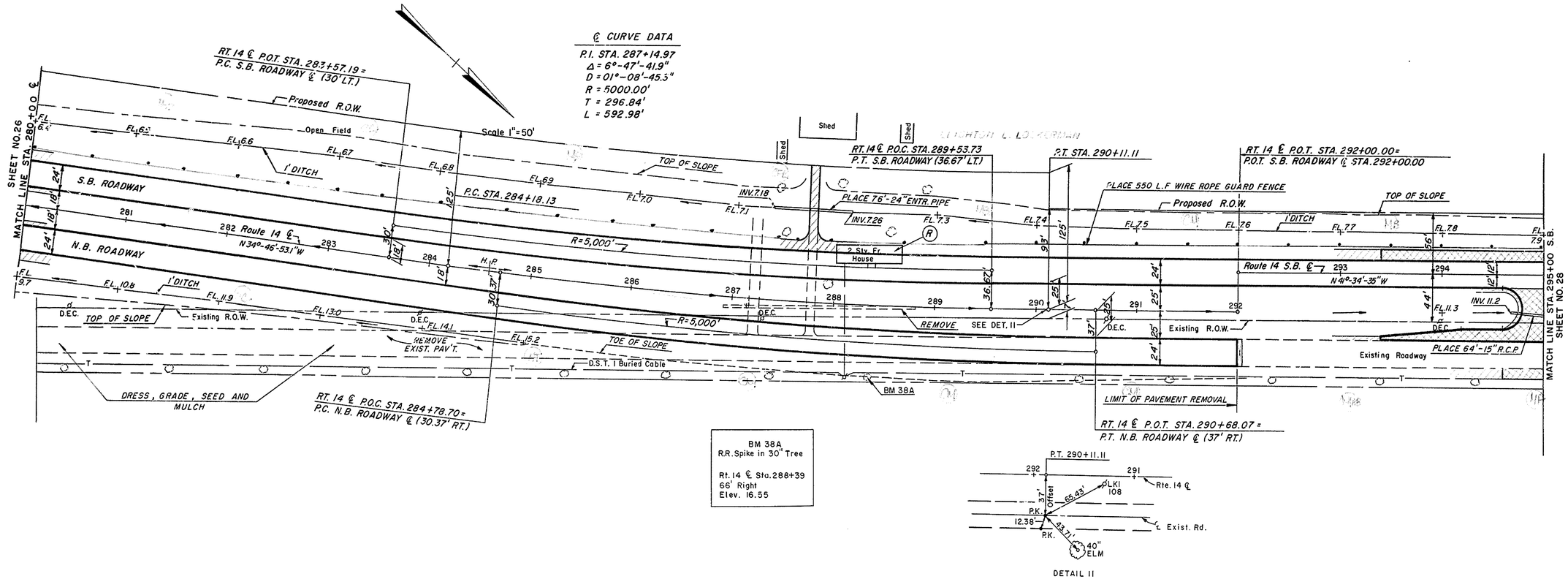
NORTHBOUND & SOUTHBOUND PROFILE

Scale: Horiz. 1" = 50'
Vert. 1" = 10'

GOODKIND & O'NEILL, INC.
CONSULTING ENGINEERS

EARTHWORK
DRAINAGE

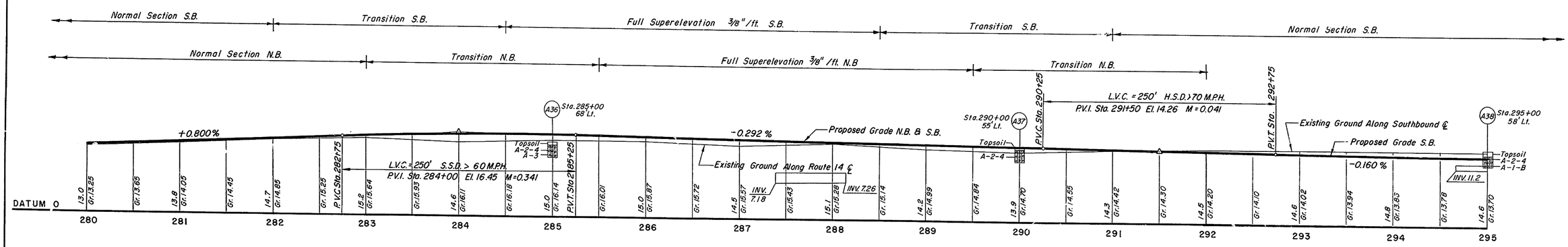
COUNTY	CONTRACT	P.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	4	DEL.	F-182 (8)		27	65



BM 38A
R.R. Spike in 30" Tree

Rt. 14 ℄ Sta. 288+39
66' Right
Elev. 16.55

DETAIL II



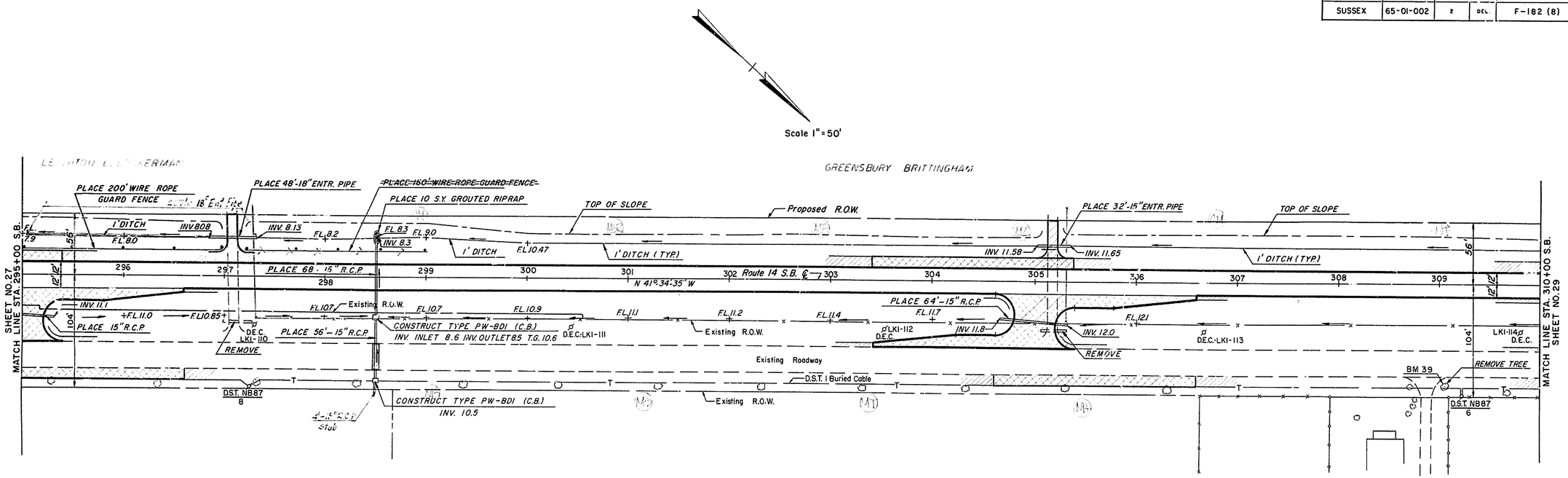
NORTHBOUND & SOUTHBOUND PROFILE

Scale: Horiz. 1" = 50'
Vert. 1" = 10'

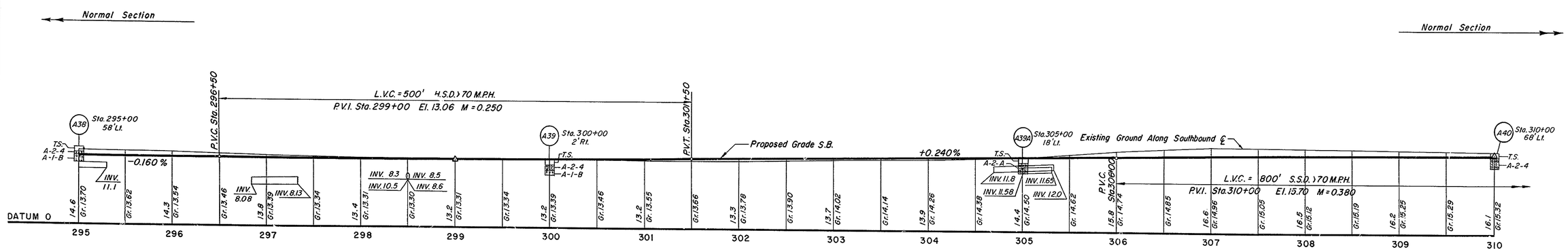
GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

TIE POINTS
BENCH MARKS
EARTHWORK
DRAINAGE

COUNTY	CONTRACT	R.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		28	65



BM 39
R.R. Spike in 18" Black Walnut Tree
S.B. ℄ Sta. 309+05
98' Right
Elev. ~~14.49~~ 16.28



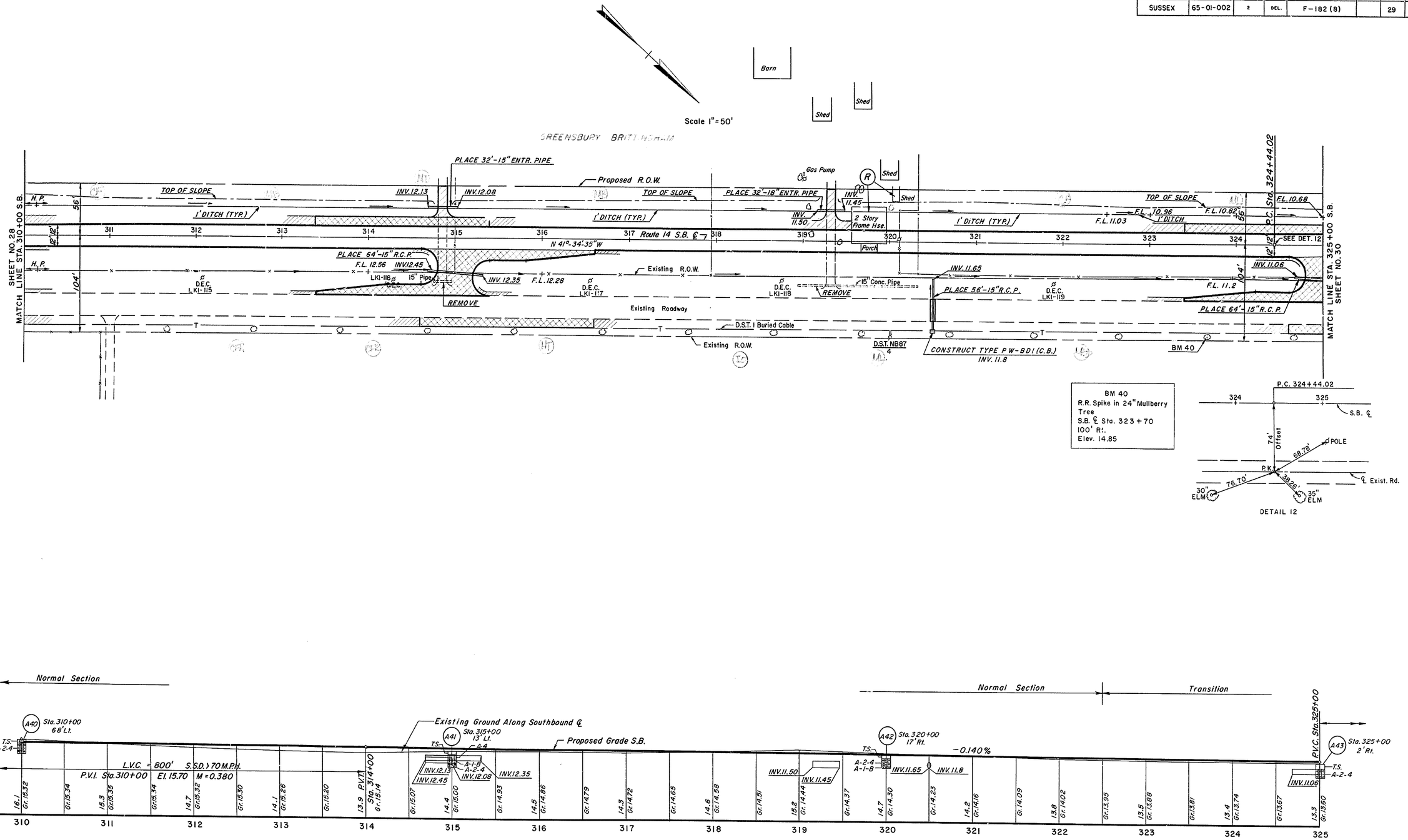
SOUTHBOUND PROFILE

Scale Horiz 1" = 50'
Vert. 1" = 10'

GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

TIE POINTS
BENCH MARKS
EARTHWORK
DRAINAGE

COUNTY	CONTRACT	P.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		29	65



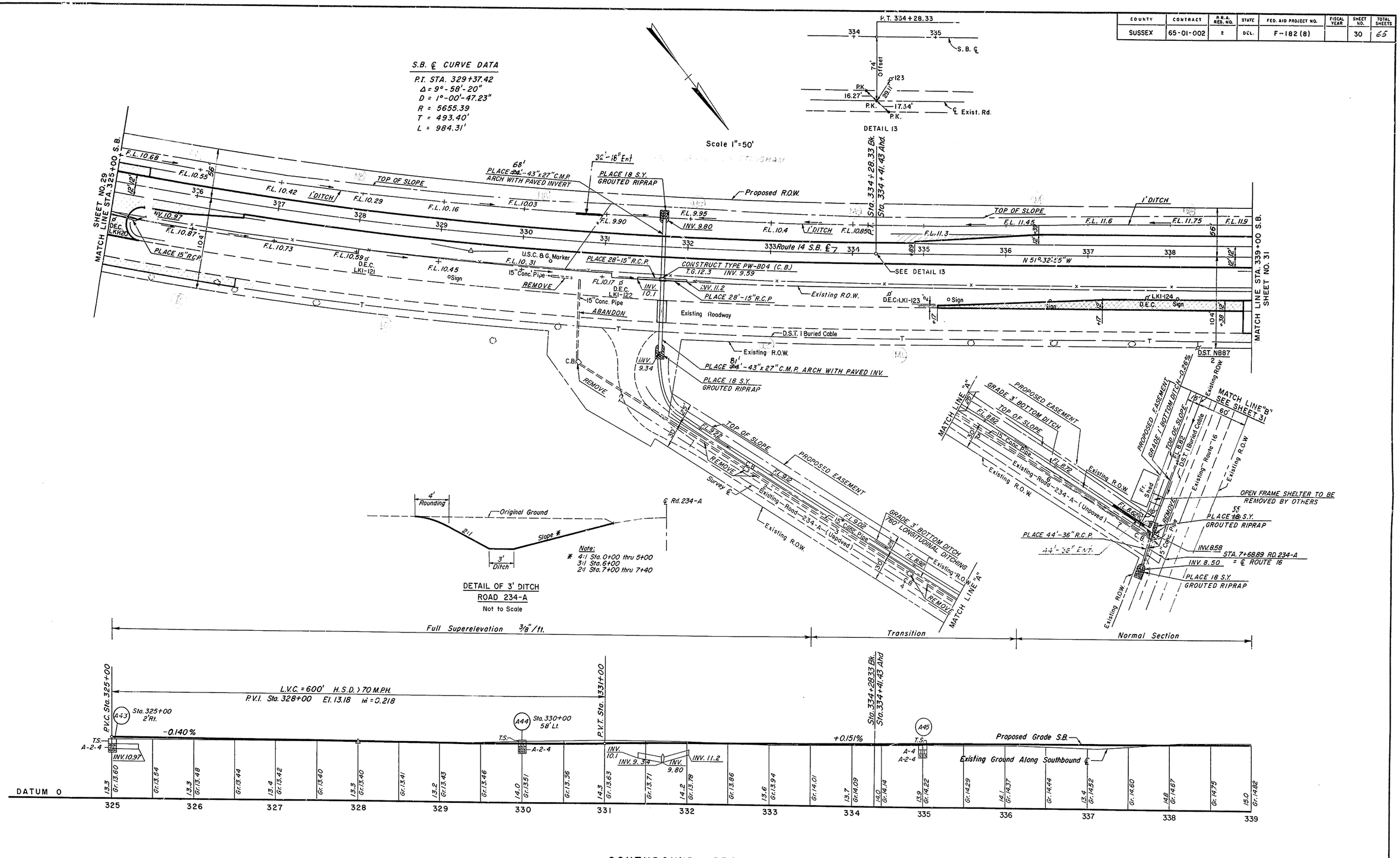
SOUTHBOUND PROFILE

Scale: Horiz. 1" = 50'
Vert. 1" = 10'

GOODKIND & O'DEA, INC.
CONSULTING ENGINEERS

BENCH MARKS
EARTHWORK
DRAINAGE

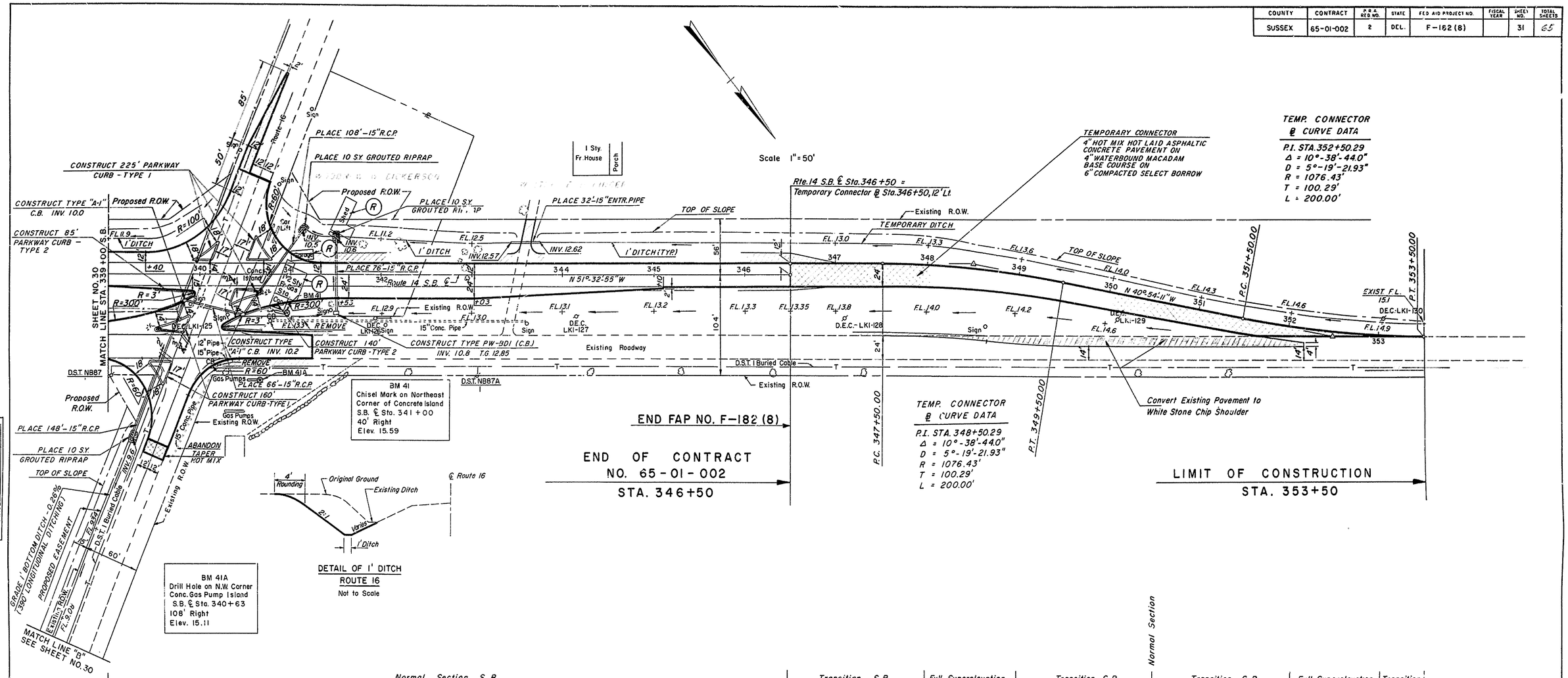
COUNTY	CONTRACT	R.B.A. RED. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		30	65



GOODKIND & O'DEA INC
CONSULTING ENGINEERS

RECORD OF CHANGES
BENCHMARKS
EARTHWORK
DRAINAGE

COUNTY	CONTRACT	P.D.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)		31	65



SOUTHBOUND PROFILE

Scale: Hariz. 1" = 50'
Vert. 1" = 10'

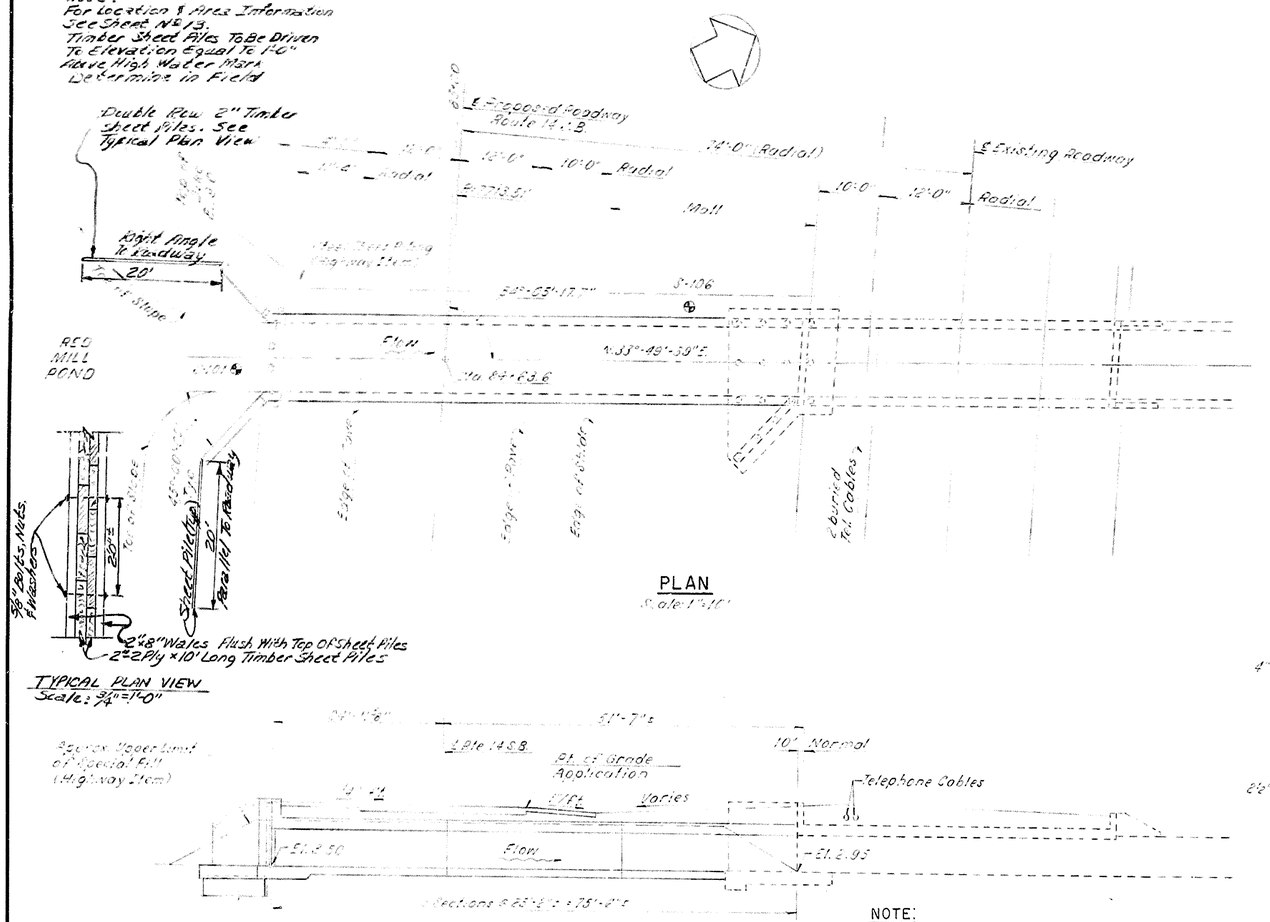
GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

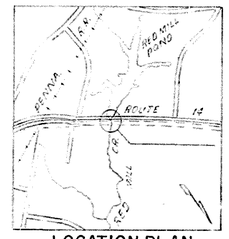
BENCH MARKS
EARTHWORK
DRAINAGE

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		32	49

STATE ROUTE 14
BRIDGE NO. 719

Note:
For Location & Area Information
See Sheet No. 13.
Timber Sheet Piles To Be Driven
To Elevation Equal To 1'-0"
Above High Water Mark.
Determine in Field





LOCATION PLAN
Scale: 1" = 2,000'

QUANTITIES			
NO.	ITEM	UNIT	QUANTITY
7	Excavation for Structures	C.Y.	435
7	Select Borrow	C.Y.	110
18	Portland Cement Concrete Masonry - Drainage Structure	C.Y.	120
19	Superficial Waterproofing	S.Y.	270
120	Bar Reinforcement	Lbs.	16,520
122.2	Removal of Existing Masonry	C.Y.	2
33	Timber Sheet Piles	M.F.B.M.	~~1.05~~ 2.35

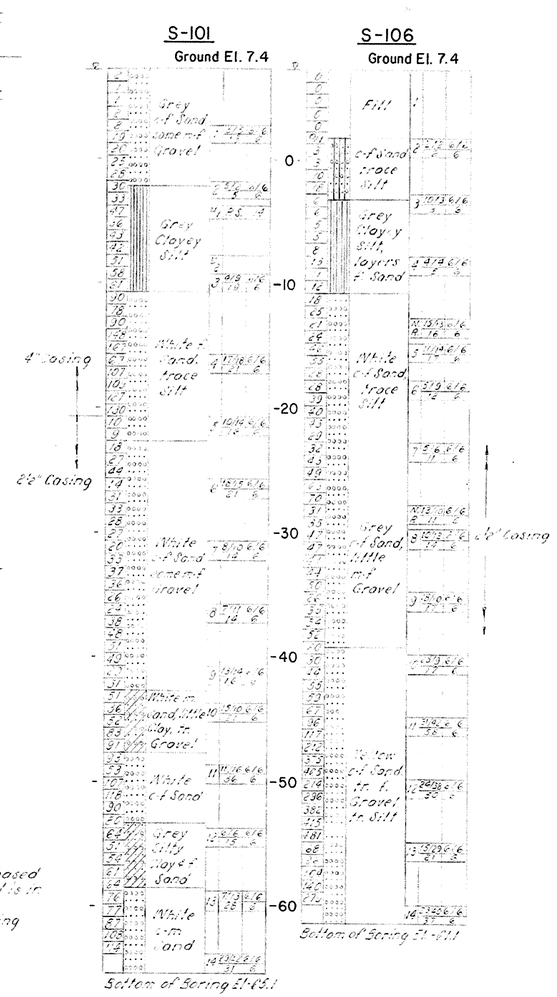
* Fixed Quantity Item. See Special Provisions.

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: A.A.S.H.O. 1961 and A.A.S.H.O. 1961, 1962, 1963 & 1964 Interim Specifications.
2. LOADING: M.S. 20-44
3. MATERIAL AND FABRICATION: State of Delaware, State Highway Department Standard Specifications July 1, 1960 and Special Provisions.
4. DESIGN: Reinforcing steel fs = 20,000 p.s.i.
   Concrete fc = 1,200 p.s.i. n = 10
   28 days strength of concrete shall be 3,000 p.s.i.
5. FOUNDATION: Culvert and Wingwalls are on spread footings, maximum soil pressure 1.0 ton per square foot.
6. All dimensions and elevations of the proposed roadway which may be affected by the location or geometrics of the existing structure shall be checked in the field by the Contractor before any construction is begun or any material is ordered.

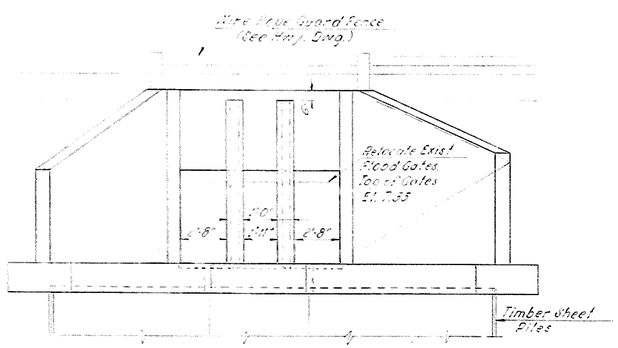
REFERENCES:

1. For Roadway Profile, see Sheet No. 13.
2. For the Pipe Specifications, see Standard Sheet No. 41.



NOTE:

Unsuitable material under footings shall be removed to a depth as directed by the Engineer and replaced by Selected Borrow. See Special Provisions.



END ELEVATION
Scale: 1/4" = 1'-0"

NOTE:

The information shown on this sheet is based on limited investigation by the State and is in no way warranted to indicate the true conditions which will be encountered during construction.

HYDRAULIC DATA:

See Sheet No. 34.

BORING NOTES:

1. Borings made January 1965
2. ⊕ denotes Boring location (See Plan)
3. Description.
   Casing: 2½" — Sampler - 1⅜" I.D.
   Hammer Wt. - 300# — Hammer Wt. 140#
   Drop - 24" — Drop - 30"
4. Vertical Boring Scale: 1" = 6'

BORING LEGEND:

(a)	(b)	(c)	(d)	(e)
		Ground El. 7.4		
23	Gravel & Sandy Clay	1	9/12	6/6
27			15/24	6/6
13				
19				
20				

(a) Hammer blows to drive casing one (1) foot.
(b) Description
(c) Sample number
(d) Blows on Sample Spoon
(e) Penetration of Sample Spoon

Prepared and Recommended
GOODKIND & O'DEA, INC. Consulting Engineers

Date_____

In Charge of D. Goldberg	Date	Revision
Designed by S. Gindsi	6/30/66	Revised Chief Eng. Tech.
Drawn by D. J. Pedersen		
Checked by K. C. McKee		

DELAWARE
STATE HIGHWAY DEPARTMENT

STATE ROUTE 14
CULVERT AT STA. 84+63.6 S.B.
GENERAL PLAN

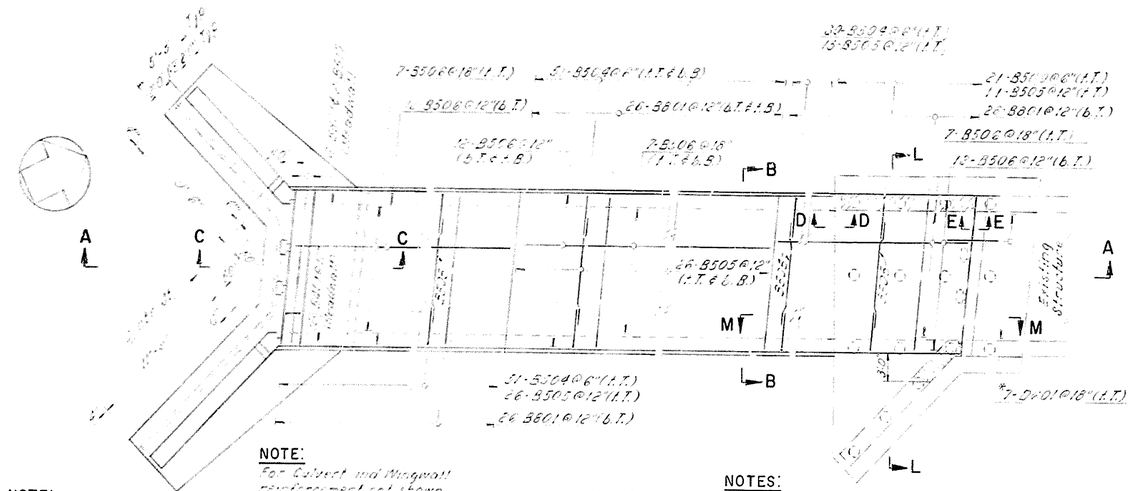
APPROVED BY:
Lawrence K. Karabashian, BRIDGE ENGINEER — DATE 4/19/65

DWG. NO.	SCALE	DATE	
1	As Noted		GOODKIND & O'DEA, INC. CONSULTING ENGINEERS

D & W BLUEPRINT CO. 17-13-5

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		33	65

STATE ROUTE 14
BRIDGE NO. 719

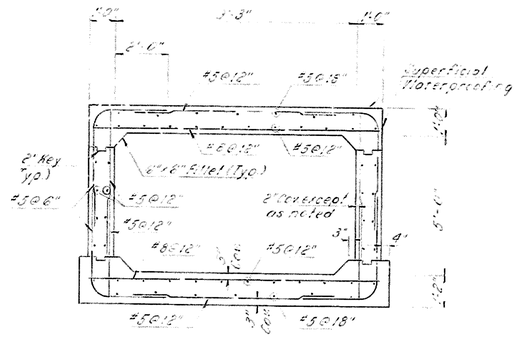


NOTE:
T = Top of Slab
B = Bottom of Slab
T = Top Slab
B = Bottom Slab

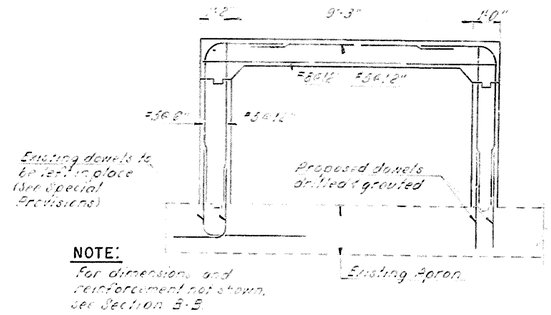
NOTE:
For Culvert and Wingwall reinforcement not shown, see Dwg. No. 3.

PLAN
Scale: 3/8" = 1'-0"

NOTES:
1. Remove existing Wingwalls within hatched area. (Payment - Removal of Existing Masonry)
2. Remove Headwall and top of existing concrete Wingwall to 3'-0" below Finished Grade. (Payment - Removal of Existing Masonry)
3. Remove and store existing Flood Gates for relocation. Flood Gates to be modified as necessary to obtain Elevation shown on plans.

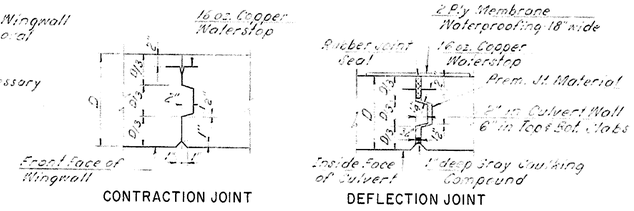


SECTION B-B
Scale: 3/8" = 1'-0"



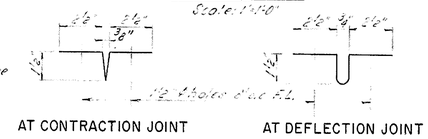
NOTE:
For dimensions and reinforcement not shown, see Section B-B

SECTION L-L
Scale: 3/8" = 1'-0"

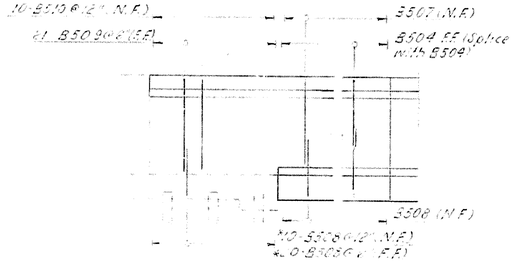


CONTRACTION JOINT
DEFLECTION JOINT

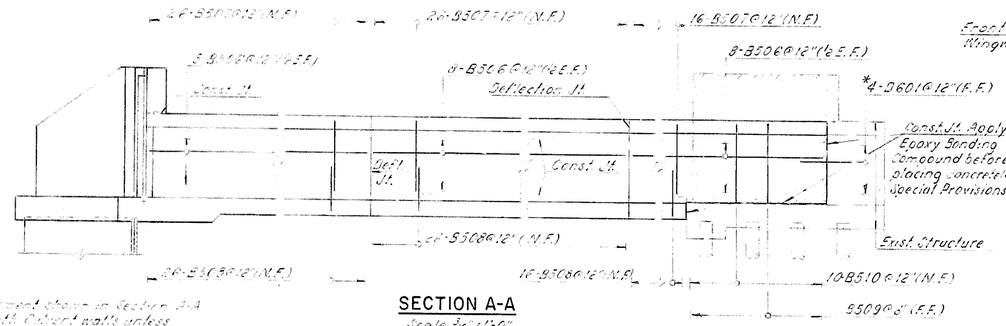
JOINT DETAILS
Scale: 1" = 1'-0"



COPPER WATER STOP DETAILS
Scale: 3" = 1'-0"



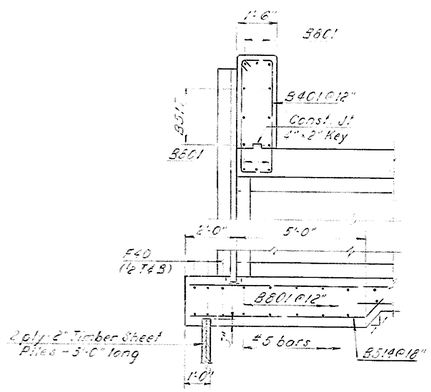
SECTION M-M
Scale: 3/8" = 1'-0"



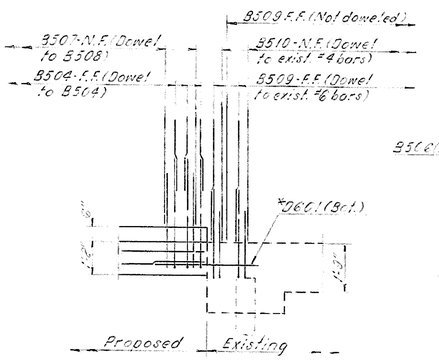
NOTE:
Reinforcement shown in Section A-A is for both Culvert walls unless otherwise shown.

SECTION A-A
Scale: 3/16" = 1'-0"

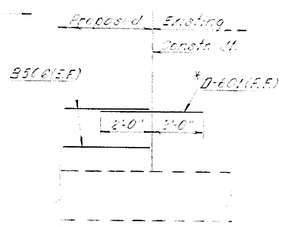
*Drill and grout into Exist. Structure (Payment - P.C. Concrete Masonry)



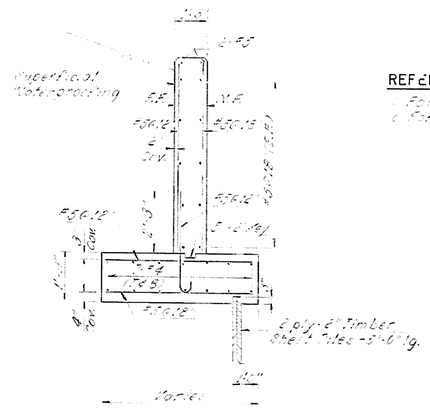
SECTION C-C
Scale: 3/8" = 1'-0"



SECTION D-D
Scale: 3/8" = 1'-0"



SECTION E-E
Scale: 3/8" = 1'-0"



SECTION F-F
Scale: 3/8" = 1'-0"

REFERENCES:
For General Notes see Sh. No. 32.
For Excavation Payment Limits see Sh. No. 26.

In Charge of D. Goldberg	Date	Revision
Designed by B. Ghodsi		
Drawn by D.J. Pedersen		
Checked by K. C. McKee		

Prepared and Recommended
GOODKIND & O'DEA, INC.
Consulting Engineers
Date MAR 1965

DELAWARE
STATE HIGHWAY DEPARTMENT

STATE ROUTE 14
CULVERT AT STA. 84+63.6 S.B.
DETAILS I

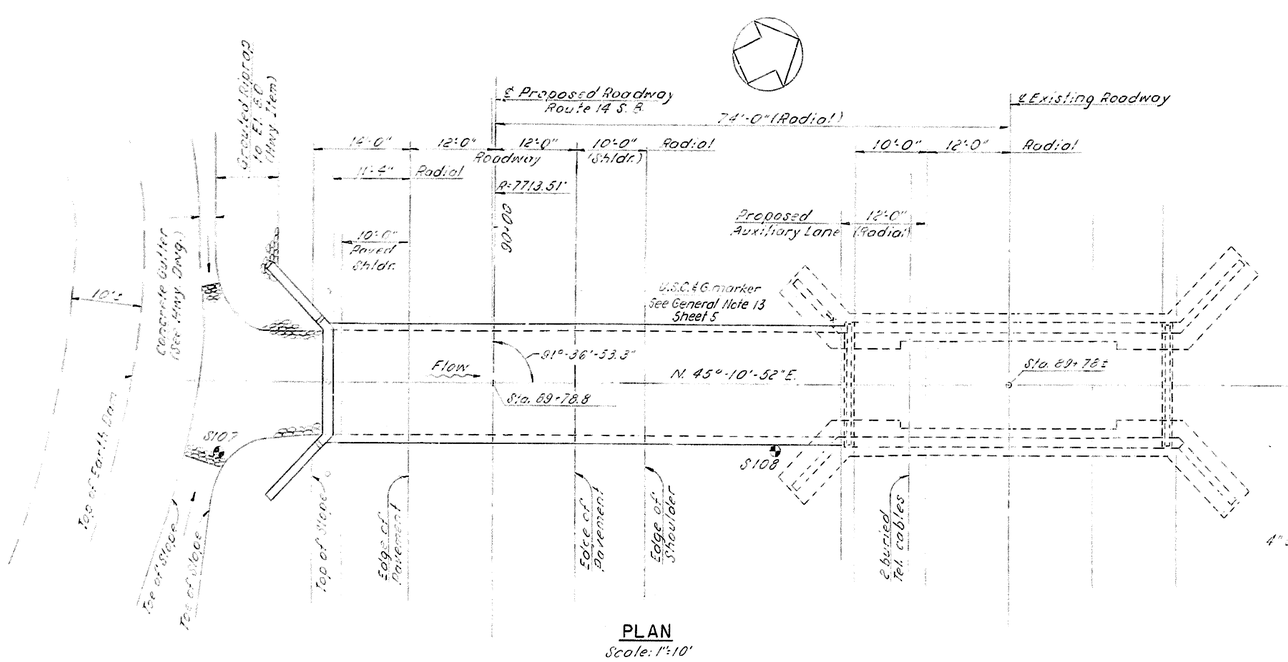
APPROVED BY:
BRIDGE ENGINEER
DATE 4/14/65

DWG. NO.	SCALE	DATE	
2	As Noted		GOODKIND & O'DEA, INC. CONSULTING ENGINEERS

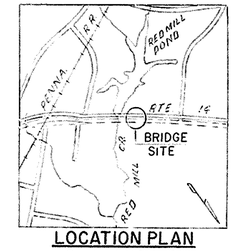
O & W BLUEPRINT CO. 3740-5

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-162 (8)		34	65

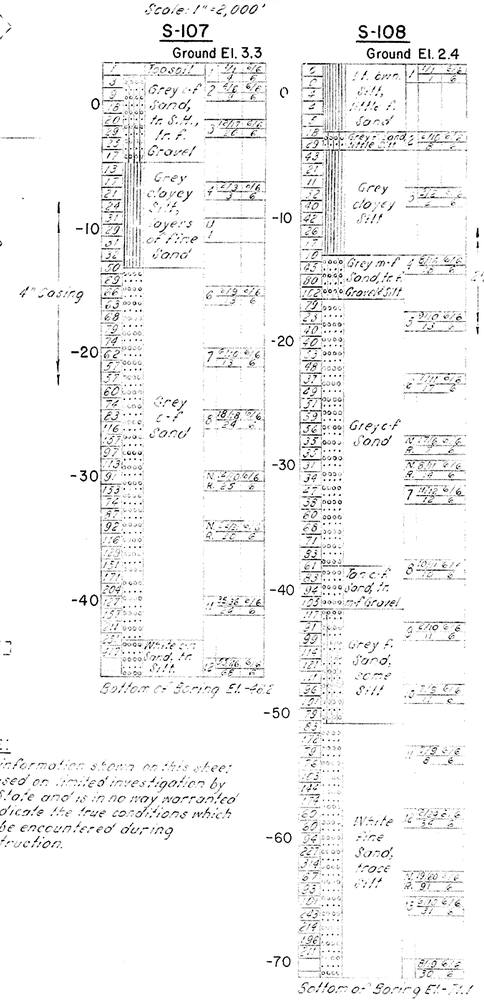
STATE ROUTE 14
BRIDGE NO. 718



PLAN
Scale: 1"=10'



LOCATION PLAN
Scale: 1"=2,000'



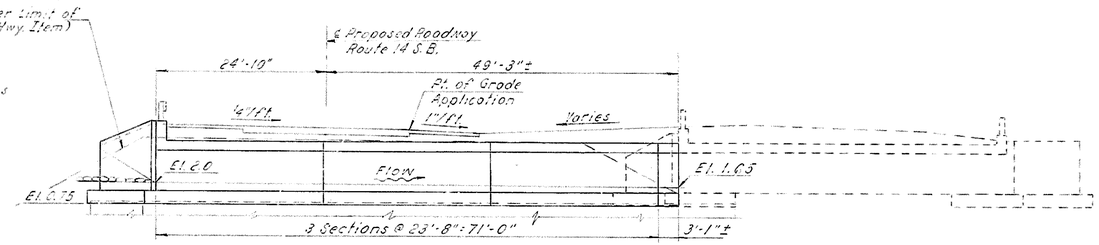
QUANTITIES			
NO.	ITEM	UNIT	QUANTITY
4	Excavation for Structures	C.Y.	807
*18	Portland Cement Concrete Masonry Drainage Structure	C.Y.	136
19	Superficial Waterproofing	S.Y.	261
*20	Bar Reinforcement	Lbs.	18,398
7	Select Borrow	C.Y.	10
33	Timber Sheet Piles	M.F.B.M.	4
*2A	Removal of Existing Masonry	C.Y.	8

* Fixed Quantity Item. See Special Provisions.

GENERAL NOTES:

1. DESIGN SPECIFICATIONS: A.A.S.H.O. 1961 and A.A.S.H.O. 1961, 1962, 1963 & 1964 Interim Specifications.
2. LOADING: HS 20-44
3. MATERIAL AND FABRICATION: State of Delaware, State Highway Department Standard Specifications July 1, 1960 and Special Provisions.
4. DESIGN: Reinforcing Steel f_s = 20,000 p.s.i. Concrete: f_c = 1,200 p.s.i. n=10 28 days strength of concrete shall be 3,000 p.s.i.
5. FOUNDATION: Culvert and Wingwalls are on spread footings, maximum soil pressure = 1.5 tons per square foot.
6. All dimensions & elevations of the proposed widening which may be affected by the location or geometrics of the existing structure shall be checked in the field by the Contractor before any construction is begun or any material is ordered.

NOTE:
Unsuitable material under footings shall be removed to a depth as directed by the Engineer and replaced by Selected Borrow. See Special Provisions.



LONGITUDINAL SECTION
Scale: 1"=10'

NOTE:
The information shown on this sheet is based on limited investigation by the State and is in no way warranted to indicate the true conditions which will be encountered during construction.

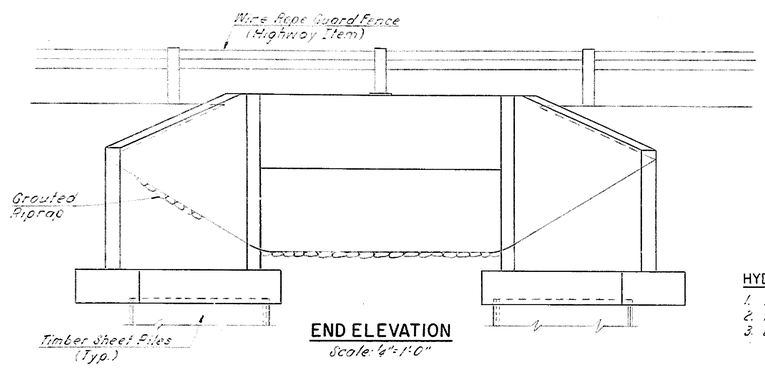
BORING NOTES:

1. Borings made January 1965
2. ● denotes boring location (See Plan)
3. Description:
   Casing - 2½" ø4" — Sampler - 1⅜" I.D.
   Hammer Wt. - 300# — Hammer Wt. - 140#
   Drop - 24" — Drop - 30"
4. Vertical Boring Scale: 1"=6'

BORING LEGEND

(a)	(b)	(c)	(d)	(e)
	Ground El. 2.0			
25	Gravel	1	13/12	6/6
29			16/11	6/6
17				
27	Sandy Clay			
30				

(a) Hammer blows to drive casing one (1) foot.
(b) Description
(c) Sample number
(d) Blows on Sample Spoon
(e) Penetration of Sample Spoon



END ELEVATION
Scale: ¼"=1'-0"

HYDRAULIC DATA BRIDGES NO. 718 & 719

1. Total Area draining into Pond = 7.22 sq. mi. = 4,620 Acres.
2. Inflow into Pond, 25 year storm = 140 c.f.s.
3. Bridge No. 718
   a. Velocity at outlet with no downstream control and 40" pipe outlet from Pond flowing full = 5.6 ft./sec.
   b. Maximum capacity Bridge No. 718 = 550 c.f.s.
4. Bridge No. 719
   a. Velocity at outlet, with flood gate in place and dam not overtopped = 4.2 ft./sec.
   b. Maximum capacity Bridge No. 719 (300 c.f.s. minus constriction losses at inlet and outlet = 150± c.f.s.
5. Note: Both culverts have inverts at approximately mean high tide. According to a local resident, the bridges were submerged by the tide of March, 1962.

REFERENCES:

1. For Roadway Profile, see Sheet No. 14.
2. For Wire Rope Guard Fence Details, see Standard Sheet No. 41.

	Date	Revision
In Charge of D. Goldberg		
Designed by B. Ghodsi		
Drawn by D.J. Pedersen		
Checked by K.C. Mehter		

Prepared and Recommended
GOODKIND & O'DEA, INC.
Date MAR 1965
Consulting Engineers

DELAWARE
STATE HIGHWAY DEPARTMENT

STATE ROUTE 14
CULVERT AT STA. 89+78.8 S.B.
GENERAL PLAN

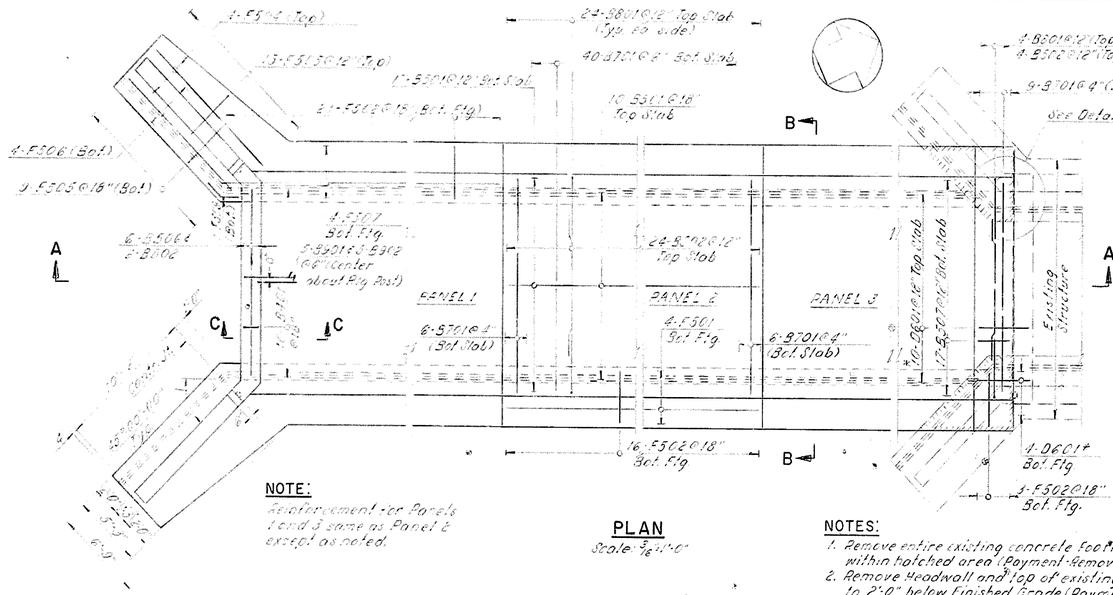
APPROVED BY:
BRIDGE ENGINEER — DATE 4/17/65

DWG. NO.	SCALE	DATE	GOODKIND & O'DEA, INC. CONSULTING ENGINEERS
1	As Noted		

D & W BLUEPRINT CO. 3743-5

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-1F2(9)		35	65

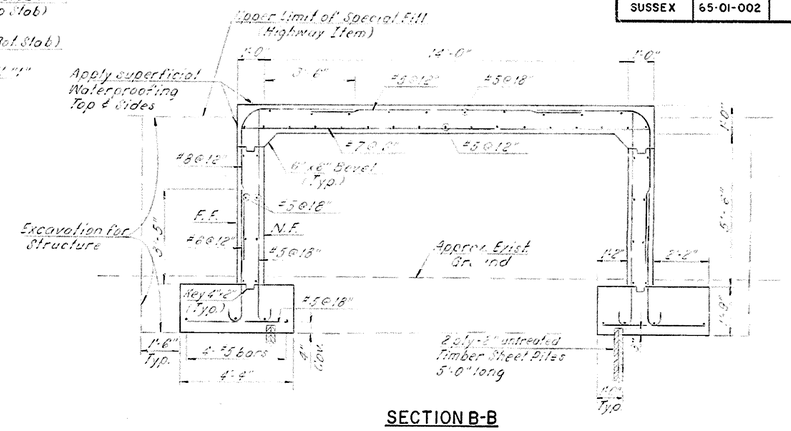
STATE ROUTE 14
BRIDGE NO. 718



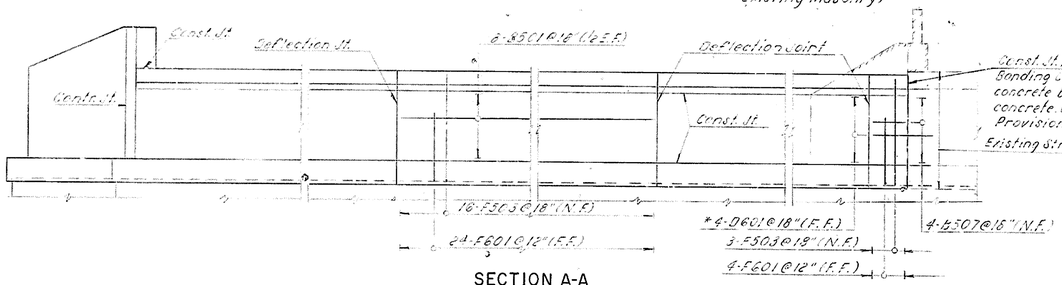
NOTE:
Reinforcement for Panels 1 and 3 same as Panel 2 except as noted.

PLAN
Scale: 3/16"=1'-0"

NOTES:
1. Remove entire existing concrete footing and wingwall within hatched area (Payment-Removal of Existing Masonry)
2. Remove headwall and top of existing concrete wingwall to 2'-0" below finished Grade (Payment-Removal of Existing Masonry)

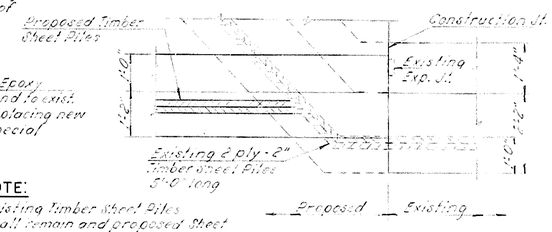


SECTION B-B



SECTION A-A
Scale: 1/8"=1'-0"

*Drill and grout into Existing Structure. Minimum Embedment 6'-0" (Payment-P.C. Concrete Masonry)

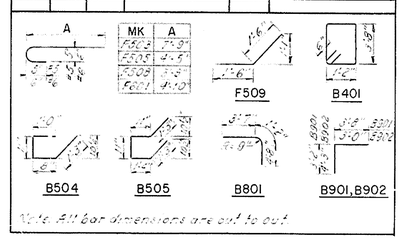


NOTE:
Existing Timber Sheet Piles shall remain and proposed Sheet Piles shall be cut so as to insure a tight joint with the existing Timber Sheet Piles.

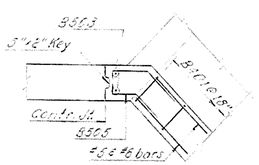
DETAIL "1"
Scale: 1/2"=1'-0"

BAR LIST

MARK	SIZE	TYPE	LENGTH	NO.	NOTES
			Footing		
E601	5	St.	23'-4"	16	
E512	1	St.	4'-0"	112	
E503		St.	8'-4"	102	
E504		St.	12'-6"	3	
E505		St.	5'-0"	44	
E506		St.	11'-4"	6	
E507		St.	23'-0"	8	
E508	1	St.	4'-3"	20	
E509	5	St.	5'-0"	2	
E601	6	St.	5'-6	132	
			Culvert		
D601	6	St.	4'-10"	26	
B401	4	St.	10'-5"	10	
B501	5	St.	23'-4"	129	
B502	1	St.	10'-4"	76	
B503		St.	9'-3"	4	
B504		St.	3'-8"	10	
B505		St.	5'-6"	8	
B506	1	St.	14'-0"	6	
B507	5	St.	2'-8"	25	
B701	7	St.	15'-6"	183	
B801	8	St.	9'-5"	132	
B802	3	St.	14'-0"	6	
B901	9	St.	2'-9"	5	
B902	9	St.	7'-2"	5	
			Wingwall		
W501	5	St.	9'-4" to 9'-3"	16	2 sets of 8 @ 3"
W502	1	St.	9'-4" to 9'-3"	32	2 sets of 11 @ 3/2"
W503		St.	10'-2"	20	
W504	1	1	5'-7"	4	
W505	5	St.	10'-5"	4	

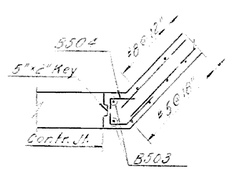


Note: All bar dimensions are out to out.

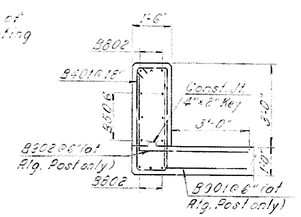


SECTION E-E

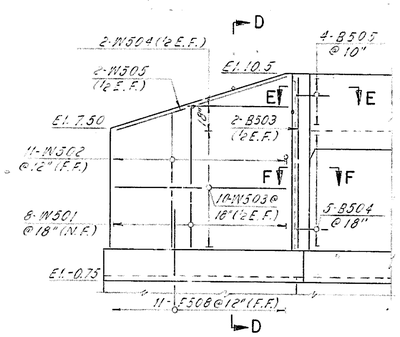
NOTE:
Contraction joint shall extend full height of Wingwall. Key shall extend from top of footing to within 6" of top of Wingwall.



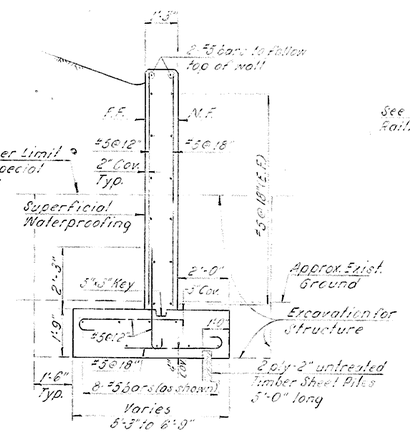
SECTION F-F



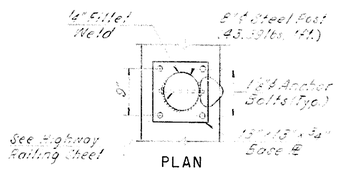
SECTION C-C



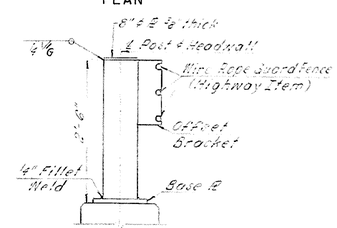
TYPICAL WINGWALL ELEVATION
Scale: 1/4"=1'-0"



SECTION D-D



PLAN



ELEVATION

RAILING POST DETAIL
(Highway Item)
Scale: 3/4"=1'-0"

REFERENCES:
1. For General Notes, see Sheet No. 34
2. For Deflection and Contraction Joint Details see Sheet No. 33.

	Date	Revision
In Charge of D. Goldberg		
Designed by B. Ghodsi		
Drawn by D.L. Pedersen		
Checked by K.C. McKay		

Prepared and Recommended
GOODKIND & O'DEA, INC.
Consulting Engineers
Date MAR 1965

DELAWARE
STATE HIGHWAY DEPARTMENT

STATE ROUTE 14
CULVERT AT STA. 89+78.8 S.B.
DETAILS

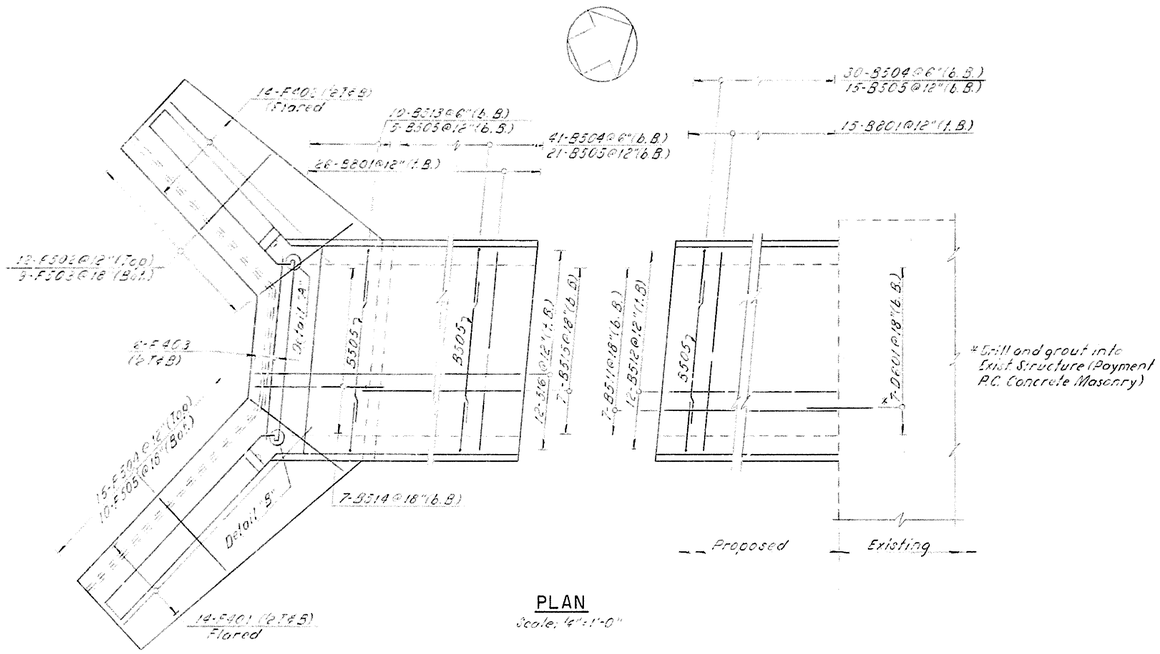
APPROVED BY: Johnnie R. Pearson, Jr.
BRIDGE ENGINEER
4/14/65
DATE

DWG. NO.	SCALE	DATE
2	3/8"=1'-0" & As Noted	

GOODKIND & O'DEA, INC.
CONSULTING ENGINEERS

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		36	65

STATE ROUTE 14
BRIDGE NO. 719

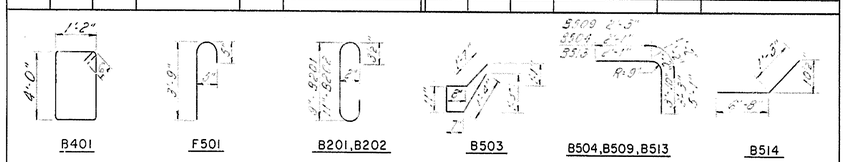


PLAN
Scale: 1/4" = 1'-0"

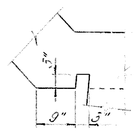
BAR LIST

MARK	SIZE	TYPE	LENGTH	NO.	NOTES
		Wall	Footing		
F401	4	St.	14'-6" to 16'-2"	14	2 sets of 7 Δ = 4"
F402	4	St.	11'-2" to 14'-2"	12	2 sets of 7 Δ = 6"
F403	4	St.	8'-0"	6	
F501	5	St.	4'-4"	22	
F502	1	St.	4'-9" to 6'-6"	12	Δ = 9"±
F503	1	St.	4'-9" to 8'-6"	9	Δ = 3"
F504	1	St.	4'-9" to 8'-0"	15	Δ = 1'-3"
F505	5	St.	4'-9" to 8'-6"	10	Δ = 2'-6"±
			Wall		
W501	5	St.	4'-11" to 9'-2"	10	Δ = 6"±
W502	1		4'-11" to 9'-2"	7	Δ = 3'-2"
W503	1		9'-2"	8	
W504	1		3'-4" to 8'-4"	4	2 sets of 2 Δ = 3'-0"
W505	1		9'-10"	2	
W506	1		11'-5"	8	
W507	1		5'-2" to 10'-2"	4	2 sets of 2 Δ = 3'-0"
W508	1		11'-7"	2	
W509	1		5'-11" to 9'-2"	12	Δ = 2'-2"±
W510	5	St.	5'-11" to 9'-2"	9	Δ = 3"±
			Culvert		
U601	6	St.	4'-0"	22	

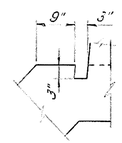
MARK	SIZE	TYPE	LENGTH	NO.	NOTES
W201	4	St.	1'-5"	28	
B202	2	St.	1'-7"	14	
B401	4	St.	11'-1"	12	
B501	5	St.	6'-8"	14	
B502	1	St.	5'-2"	6	
B503		St.	4'-1"	20	
B504		St.	6'-6"	308	
B505		St.	5'-3"	145	
B506		St.	24'-10"	124	
B507		St.	5'-1"	136	
B508		St.	2'-6"	166	
B509		St.	2'-6"	42	
B510		St.	3'-10"	20	
B511		St.	14'-1" to 15'-1"	7	Δ = 2"
B512		St.	14'-1" to 15'-2"	12	Δ = 1'-1"±
B513		St.	5'-1"	20	
B514		St.	7'-11"	7	
B515		St.	20'-2"	7	
B516		St.	56'-10"	12	
B517	1	St.	10'-11"	6	
B518	7	St.	2'-6"	20	
B801	8	St.	10'-11"	151	



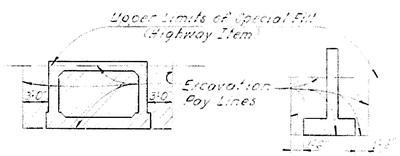
Note: Bar dimensions shown are out to out.



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



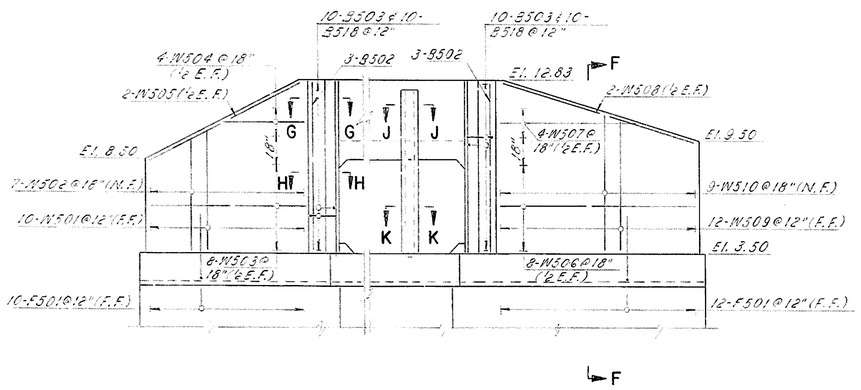
DETAIL "B"
Scale: 3/4" = 1'-0"



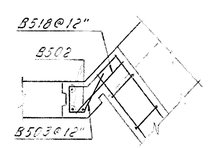
AT CULVERT AT WINGWALL

EXCAVATION PAYMENT LIMITS
Scale: 3" = 1'-0"

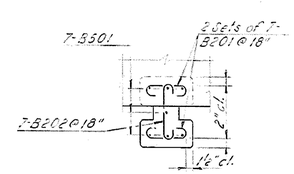
REFERENCES:
1. For General Notes, see Sh. No. 34.



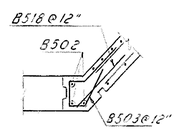
WINGWALL ELEVATIONS
Scale: 1/4" = 1'-0"



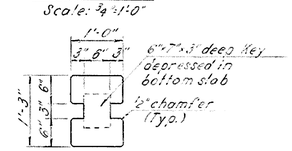
SECTION G-G
Scale: 1/8" = 1'-0"



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



SECTION H-H
Scale: 3/8" = 1'-0"



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

In Charge of D. Goldberg	Date	Revision
Designed by B. Ghoo'si		
Drawn by D. J. Pedersen		
Checked by K. C. [illegible]		

Prepared and Recommended
GOODKIND & O'DEA, INC.
Consulting Engineers
Date MAR 1965

DELAWARE
STATE HIGHWAY DEPARTMENT

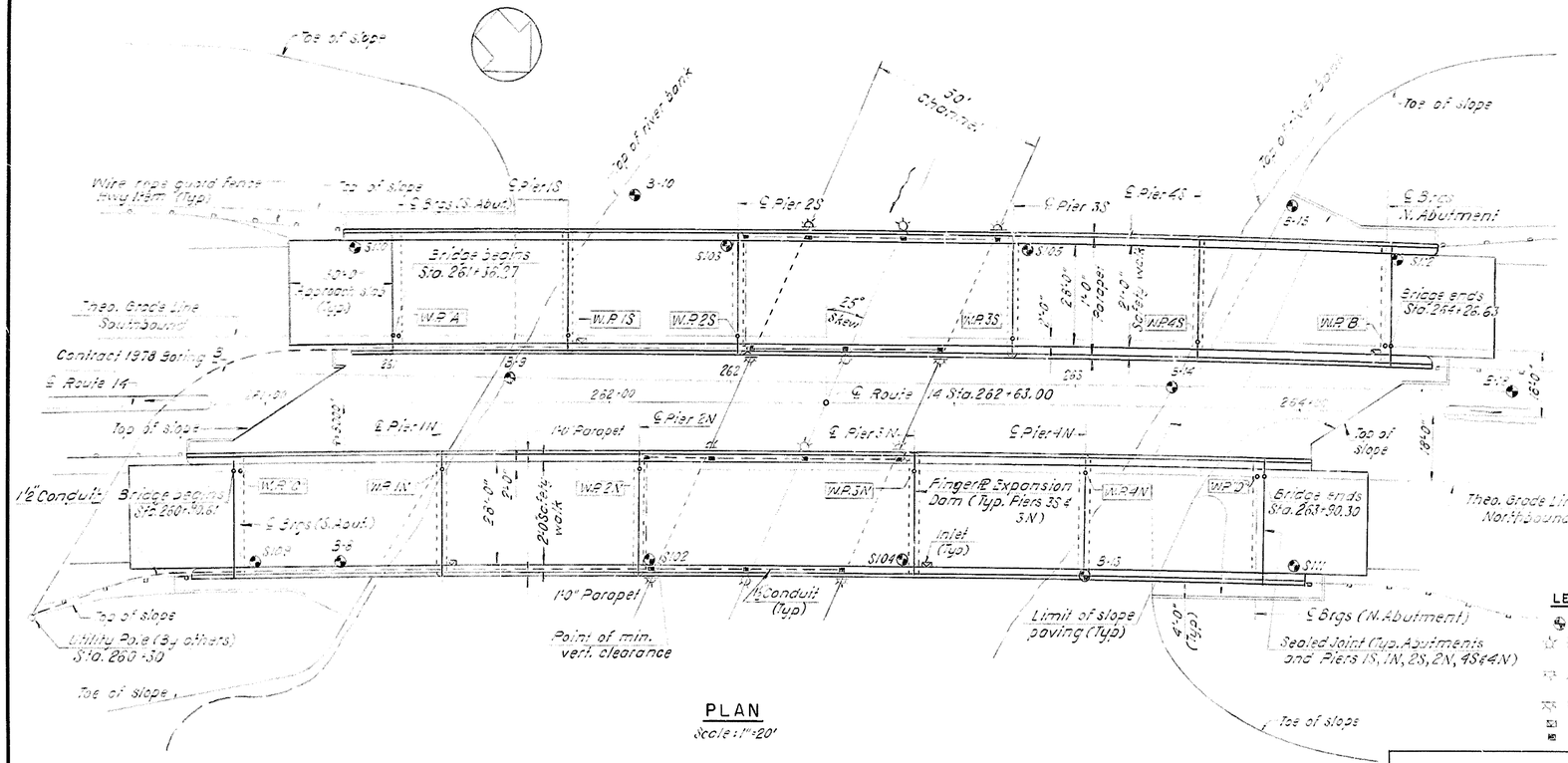
STATE ROUTE 14
CULVERT AT STA. 84+63.6 S.B.
DETAILS II

APPROVED BY:
BRIDGE ENGINEER
4/14/65
DATE

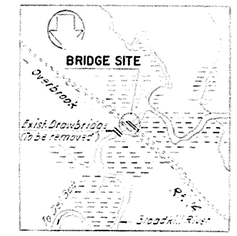
DWG. NO.	SCALE	DATE	
5	As Noted		GOODKIND & O'DEA, INC. CONSULTING ENGINEERS

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-162 (8)		37	65

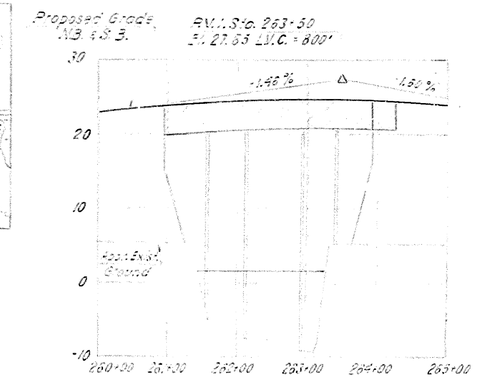
STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1



PLAN
Scale: 1" = 20'



LOCATION PLAN
Scale: 1" = 2000'



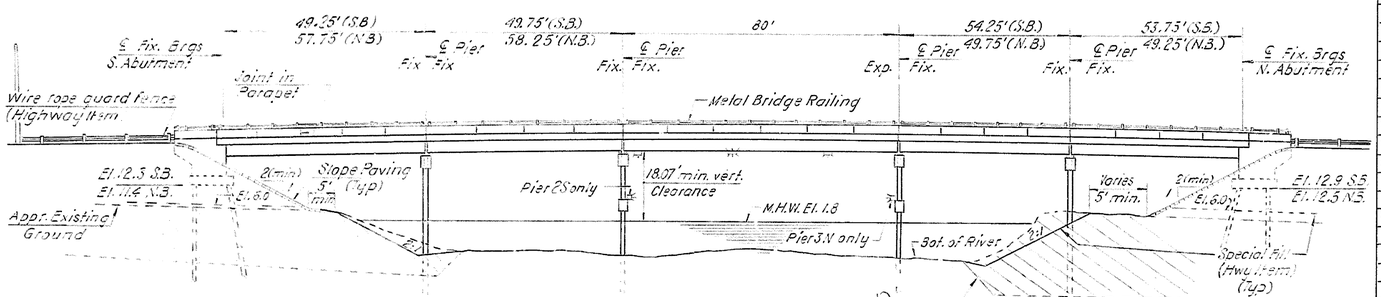
PROFILE ROUTE 14
Scales: Horiz. 1" = 100'; Vert. 1" = 10'

LEGEND

- Boring
- 360° Green Navigation Light (on bridge superstructure).
- 180° Red Navigation Light (on bridge superstructure).
- 150° Red Navigation Light on pier strut.
- Inlet
- Junction Box

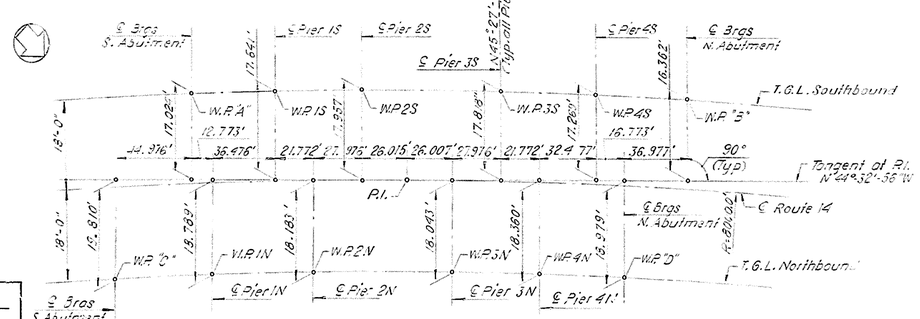
GENERAL NOTES:

1. DESIGN SPECIFICATIONS: AASHO 1961 & AASHO 1961, 1962, 1963 & 1964 interim specifications.
2. LOADING: HS 20-44
3. MATERIAL AND FABRICATION: State of Delaware State Highway Department Standard Specifications, July 1, 1960 and special provisions.
4. DESIGN: Structural Steel A.S.T.M. A-36. Reinforcing Steel, f s = 20,000 psi. Concrete: f c = 4,000 p.s.i. n = 10. 28 Day strength of concrete shall be 5,000 psi. Temporary Intermediate Supports for Composite construction shall not be used.
5. FOUNDATION: Abutments supported by 2 & 4 Cast-in-Place Concrete Piles, Design capacity 35 tons minimum. Trestle Bents 1S, 4S, 1N & 4N supported by 16" φ fluted, Cast-in-Place Concrete Piles, Design capacity 30 tons min. Trestle Bents 2S, 3S, 2N & 3N supported by 18" fluted, Cast-in-Place Concrete Piles, Design capacity 35 tons min.



ELEVATION
Scale: 1" = 20'

W. POINT	STATIONS
W.P. "A"	261+38.265
W.P. 1S	261+87.406
W.P. 2S	262+37.044
W.P. 3S	263+16.862
W.P. 4S	263+70.991
W.P. "B"	264+24.628
W.P. "C"	260+92.613
W.P. 1N	261+50.304
W.P. 2N	262+08.887
W.P. 3N	262+89.065
W.P. 4N	263+38.928
W.P. "D"	263+88.291
P.I.	262+63.000



LAYOUT PLAN
Not to Scale

QUANTITIES

NO.	ITEM	UNIT	QUANTITY
4	EXCAVATION FOR STRUCTURES	C.Y.	149
7	SELECT BORROW	C.Y.	359
11	HOT MIX, HOT LAID ASPHALTIC CONCRETE PAVEMENT	TON	165
11	ASPHALT TACK COAT	GAL	51
*18	PORTLAND CEMENT CONCRETE MASONRY-ABUTMENTS	C.Y.	278
*18	PORTLAND CEMENT CONCRETE MASONRY-PIER STRUTS	C.Y.	42
*18	PORTLAND CEMENT CONCRETE MASONRY-PIER CAPS	C.Y.	101
*18	PORTLAND CEMENT CONCRETE MASONRY-SUPERSTRUCTURE	C.Y.	767
*18	PORTLAND CEMENT CONCRETE MASONRY-APPROACH SLAB	C.Y.	204
18	PORTLAND CEMENT CONCRETE MASONRY-SUBFOUNDATION	C.Y.	10
19	SUPERFICIAL WATERPROOFING	S.Y.	188
*20	BAR REINFORCEMENT	LBS.	265,180
22	STRUCTURAL STEEL (APPROXIMATELY 565,274 LBS.)	L.S.	L.S.
31	PERFORATED CORRUGATED METAL PIPE UNDERDRAIN 6" φ	L.F.	194
35	CAST-IN-PLACE CONCRETE PILES 12" φ	L.F.	3,871
35	CAST-IN-PLACE CONCRETE PILES 16" φ	L.F.	2,053
35	CAST-IN-PLACE CONCRETE PILES 18" φ	L.F.	2,477
35	STEEL SHELL TEST PILES 12" φ	L.F.	126
35	STEEL SHELL TEST PILES 16" φ	L.F.	146
35	STEEL SHELL TEST PILES 18" φ	L.F.	176
	SLOPE PAVING WITH CEMENT CONCRETE BLOCKS	S.Y.	1,136
	METAL BRIDGE RAIL	L.F.	1,283
	ELECTRICAL WORK	L.S.	L.S.
	DISPOSAL OF EXISTING BRIDGE STRUCTURE	L.S.	L.S.
	BRIDGE DRAINAGE	L.S.	L.S.

NOTE:
Items indicated (*) are Fixed Quantity Items. See Special Provisions.

In Charge of	D. Goldberg	Date	Revision
Designed by	M. Zolnikhale		
Drawn by	A. Cerniglia		
Checked by	K. Mehta		

Prepared and Recommended
GOODKIND & O'DEA, INC.
Date MAR 1965
Consulting Engineers

DELAWARE
STATE HIGHWAY DEPARTMENT

GENERAL PLAN

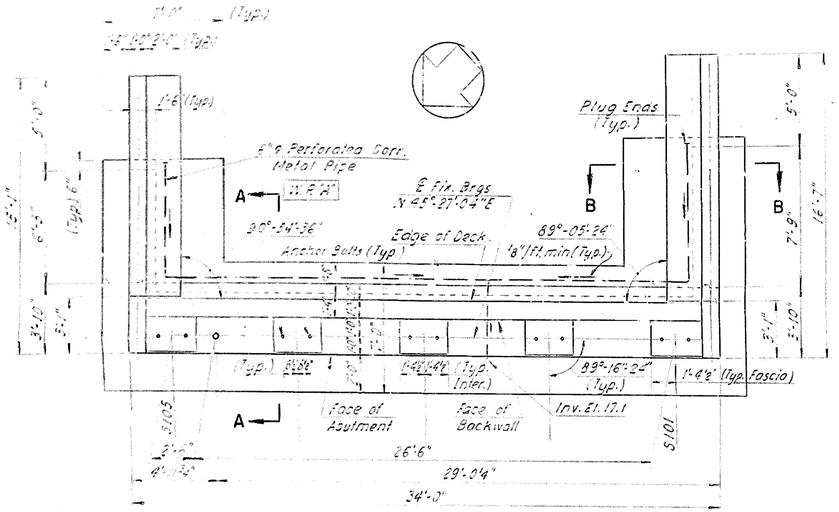
APPROVED BY:
BRIDGE ENGINEER
4/14/65
DATE

DWG. NO.	SCALE	DATE	
1 of 15	As shown		GOODKIND & O'DEA, INC. CONSULTING ENGINEERS

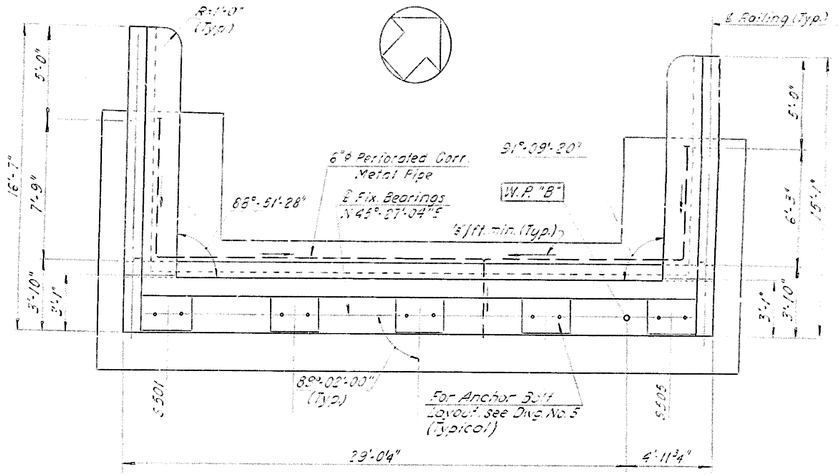
D & W BLUEPRINT CO. 1740-3

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL	F-182 (8)		38	65

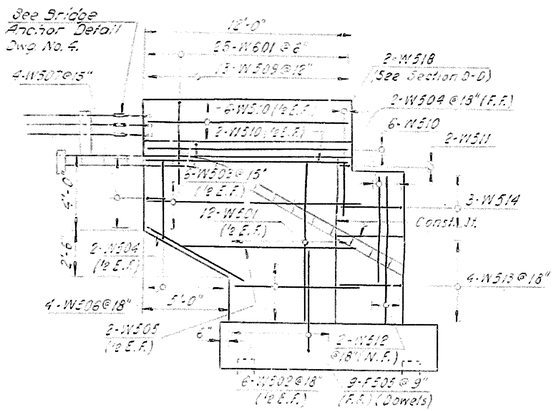
STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1



PLAN

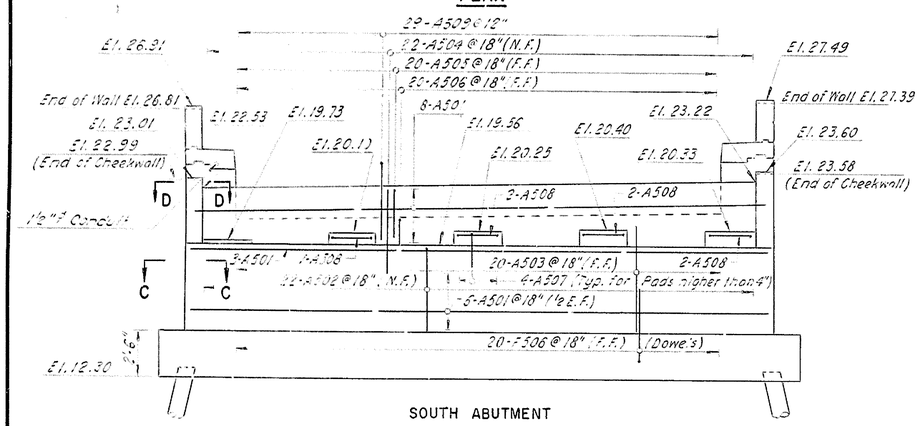


PLAN



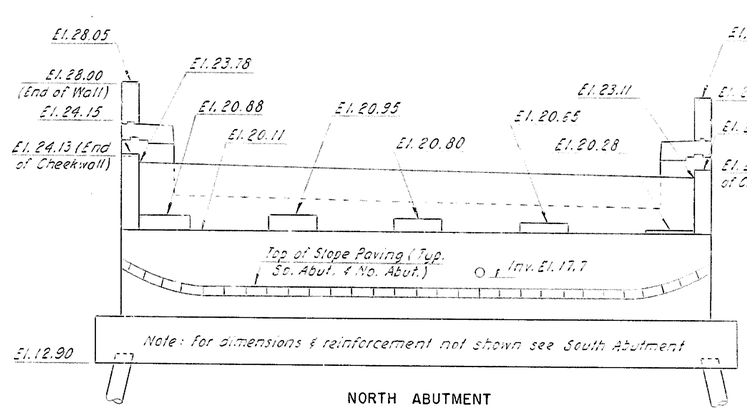
S.E. & N.E. WINGWALLS – SOUTHBOUND & NORTHBOUND

NOTE: Railing not shown. For Railing Spacing see Dwg. No. 11



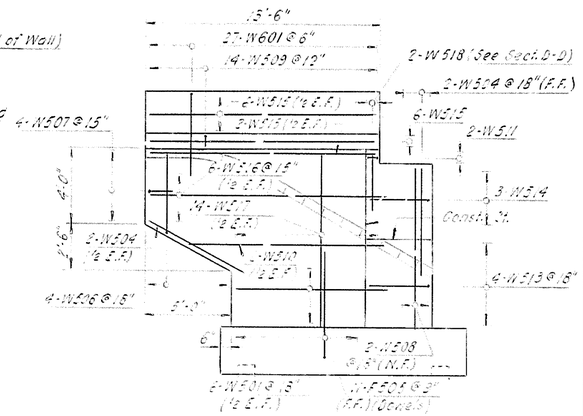
SOUTH ABUTMENT

ELEVATION



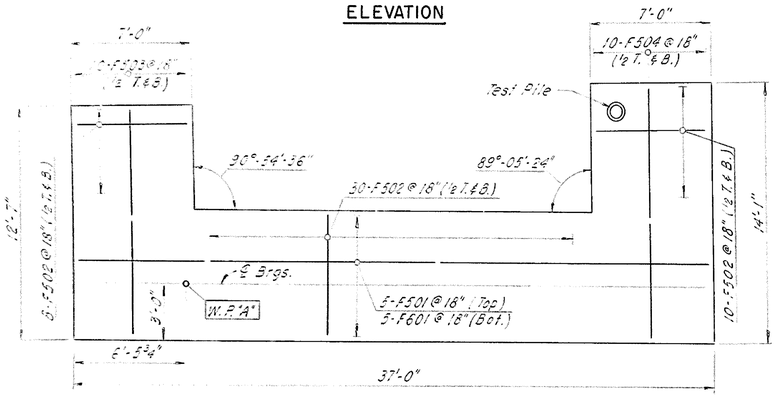
NORTH ABUTMENT

ELEVATION

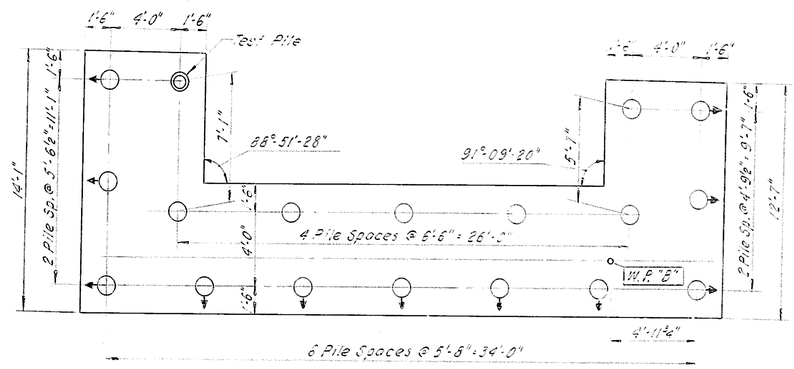


S.W. & N.W. WINGWALLS – SOUTHBOUND & NORTHBOUND

WINGWALL ELEVATIONS



TYPICAL FOOTING REINFORCEMENT
(South Abutment shown)



TYPICAL FOOTING PILES LAYOUT
(North Abutment shown)

PILE LEGEND

- ○ Indicates Vertical Pile
- ○→ Indicates Pile Battered 6 on 1 in the direction of Arrow
- ◎ Indicates Test Pile

REFERENCES:

1. For Bar List & Bearing Details see Dwg. No. 3.
2. For Sections C-C & D-D see Dwg. No. 3.
3. For Additional References see Dwg. No. 3.
4. For Pile Notes see Dwg. No. 3.

DELAWARE
STATE HIGHWAY DEPARTMENT

SOUTH BOUND ABUTMENTS

APPROVED BY: Robert L. Lawson — BRIDGE ENGINEER — 4/17/65 DATE

DWG. NO.	SCALE	DATE	GOODKIND & O'DEA, INC. CONSULTING ENGINEERS
2 of 5	1/4"=1'-0"		

Prepared and Recommended: GOODKIND & O'DEA, INC. — Consulting Engineers

Date MAR 1965

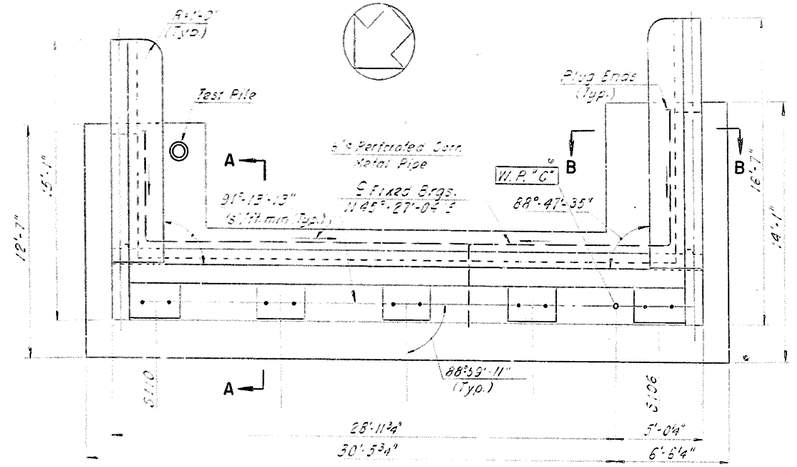
In Charge of	D. Goldberg
Designed by	M. Zolotikhaie
Drawn by	B. Rumiancew
Checked by	K. Mehta

Date	Revision

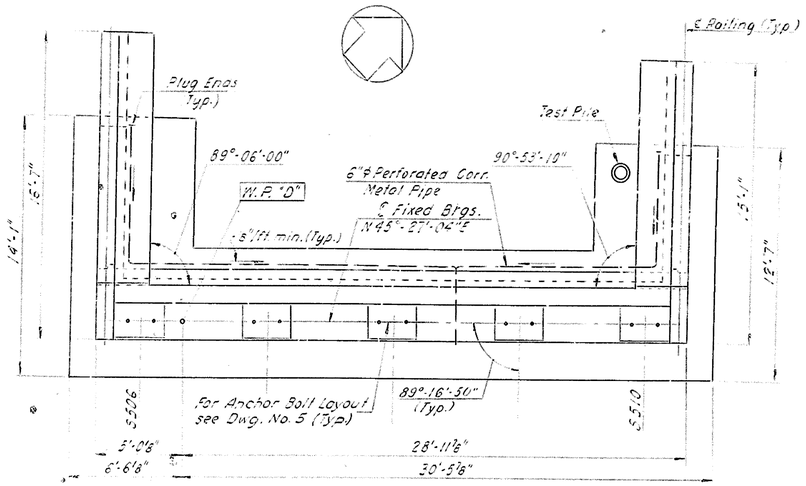
D & W BLUEPRINT CO. 1710-5

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65 01-002	2	DEL.	F-182(8)		39	65

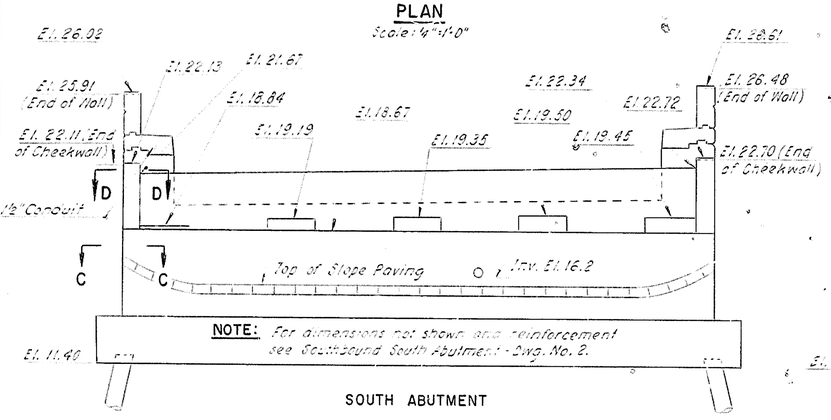
STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1



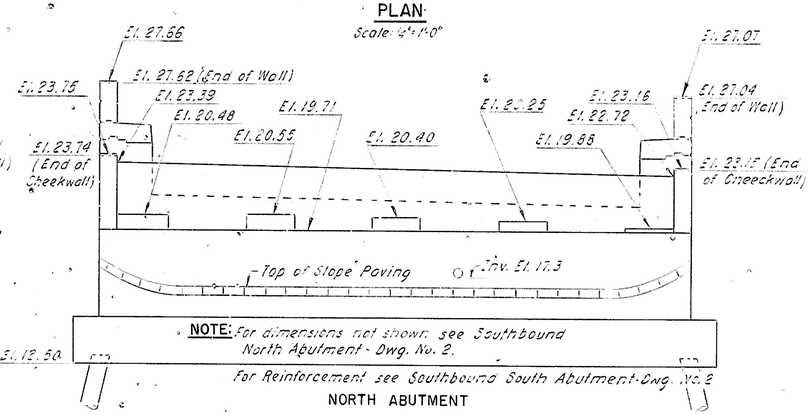
PLAN
Scale: ¼"=1'-0"



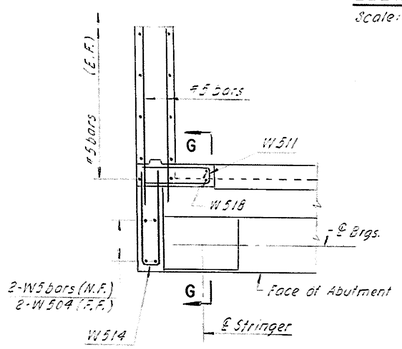
PLAN
Scale: ¼"=1'-0"



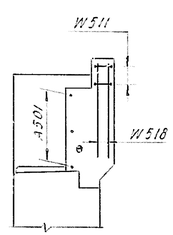
SOUTH ABUTMENT
ELEVATION
Scale: ¼"=1'-0"



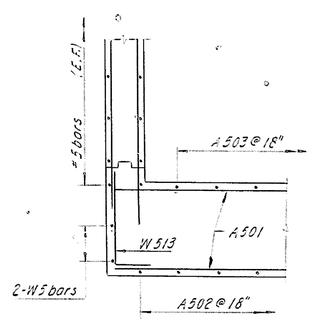
NORTH ABUTMENT
ELEVATION
Scale: ¼"=1'-0"



SECTION D-D
Scale: ⅜"=1'-0"



SECTION G-G
Scale: ⅜"=1'-0"



SECTION C-C
Scale: ⅜"=1'-0"

REFERENCES:

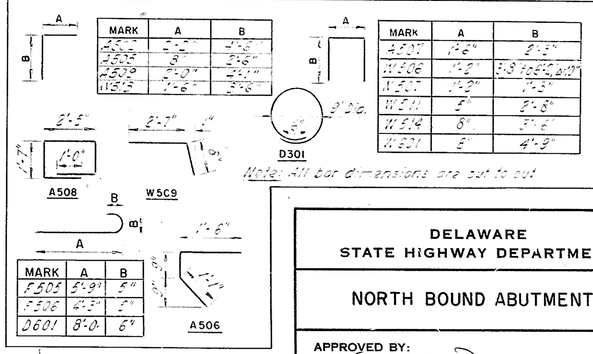
1. For General Notes see Dwg. No. 1.
2. For W.P. Stations and Layout Plan, see Dwg. No. 1.
3. For Footings' Reinforcement and Pile Layout see Dwg. No. 3.
4. For Wingwall Elevations and Reinforcement see Dwg. No. 2.
5. For Sections A-A & B-B see Dwg. No. 4.
6. For Pile Reinforcing & Details see Dwg. No. 4.
7. For Typical Excavation Limits & Slope Paving Detail, see Dwg. No. 4.
8. For Construction & Fixed Joint Details see Dwg. No. 4.
9. For Stringer Spacing see Framing Plan Dwg. No. 7.
10. For Anchor Bolt Details see Dwg. No. 6.
11. For Pile Legend see Dwg. No. 2.
12. For Parapet and Safetywalk Details, see Dwg. No. 11.

PILE NOTES:

Minimum Tip Elevation -35 for South Abutments
Minimum Tip Elevation -45 for North Abutments
Minimum Tip Elevation -45 for Test Piles South Abutments
Minimum Tip Elevation -55 for Test Piles North Abutments

BAR LIST AND BENDING DETAILS

MARK	SIZE	TYPE	LENGTH	TOTAL	S.B. S.ABUT.	S.B. N.ABUT.	N.B. S.ABUT.	N.B. N.ABUT.	NOTES
Footing									
F501	5	St.	36'-6"	20	5	5	5	5	
F502	5	St.	6'-6"	192	48	48	48	48	
F503	5	St.	12'-1"	40	10	10	10	10	
F504	5	St.	13'-5"	40	10	10	10	10	
F505	5	St.	6'-4"	80	20	20	20	20	Dowels
F506	5	St.	4'-10"	80	20	20	20	20	Dowels
F601	6	St.	36'-2"	20	5	5	5	5	
D601	5	St.	6'-8"	432	108	108	108	108	Dowels in Piles
D301	3	St.	2'-10"	360	90	90	90	90	Ties in Piles
Abutment									
A501	5	St.	33'-6"	68	17	17	17	17	
A502	5	St.	6'-7"	88	22	22	22	22	
A503	5	St.	5'-10"	80	20	20	20	20	
A504	5	St.	5'-0"	88	22	22	22	22	
A505	5	St.	3'-1"	80	20	20	20	20	
A506	5	St.	3'-3"	80	20	20	20	20	
A507	5	St.	5'-10"	64	16	16	16	16	
A508	5	St.	8'-8"	28	7	7	7	7	
A509	5	St.	6'-0"	116	29	29	29	29	
Wingwalls									
W501	5	St.	8'-9"	72	18	18	18	18	
W502	5	St.	7'-6"	24	6	6	6	6	
W503	5	St.	12'-6"	24	6	6	6	6	
W504	5	St.	6'-0"	32	8	8	8	8	
W505	5	St.	10'-6"	8	2	2	2	2	
W506	5	St.	8'-4" to 3'-4"	32	8	8	8	8	8 Sets at 4 Bars at 1'-8"
W507	5	St.	3'-6"	32	8	8	8	8	
W508	5	St.	8'-6"	8	2	2	2	2	
W509	5	St.	3'-2"	108	27	27	27	27	
W510	5	St.	11'-8"	64	16	16	16	16	
W511	5	St.	5'-7"	16	4	4	4	4	
W512	5	St.	8'-0"	8	2	2	2	2	
W513	5	St.	4'-11"	32	8	8	8	8	
W514	5	St.	7'-6"	24	6	6	6	6	
W515	5	St.	12'-2"	56	14	14	14	14	
W516	5	St.	14'-0"	24	6	6	6	6	
W517	5	St.	9'-4"	56	14	14	14	14	
W518	5	St.	3'-3"	16	4	4	4	4	
W601	6	St.	10'-2"	208	52	52	52	52	



Note: All bar dimensions are out to out.

Prepared and Recommended
GOODKIND & O'DEA, INC.
Date MAR 1965
Consulting Engineers

DELAWARE
STATE HIGHWAY DEPARTMENT

NORTH BOUND ABUTMENTS

APPROVED BY:
BRIDGE ENGINEER
DATE 4/14/65

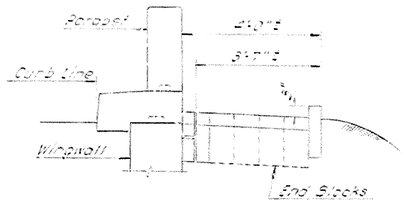
DWG. NO.	SCALE	DATE	GOODKIND & O'DEA, INC. CONSULTING ENGINEERS
3 of 15	As Noted		

		Date	Revision
In Charge of	D. Goldberg		
Designed by	M. Zolaikhaie		
Drawn by	S. Rumiancew		
Checked by	K. Nehia		

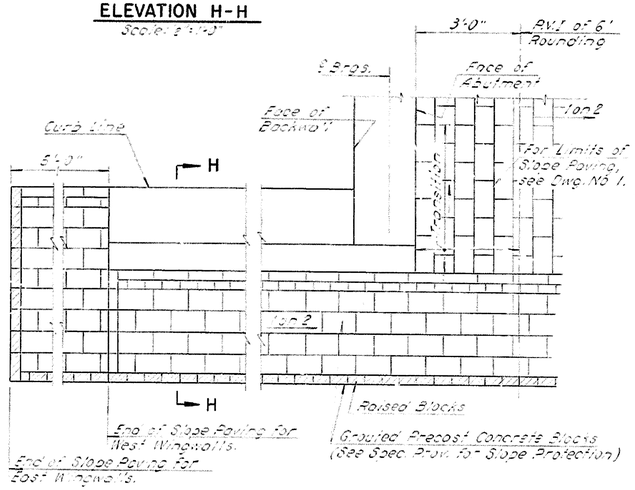
D & W BLUEPRINT CO. 1740-5

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)		40	65

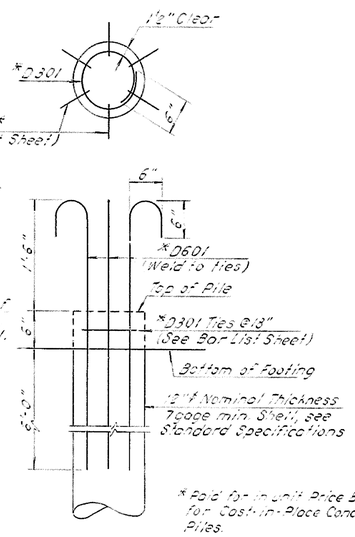
STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1



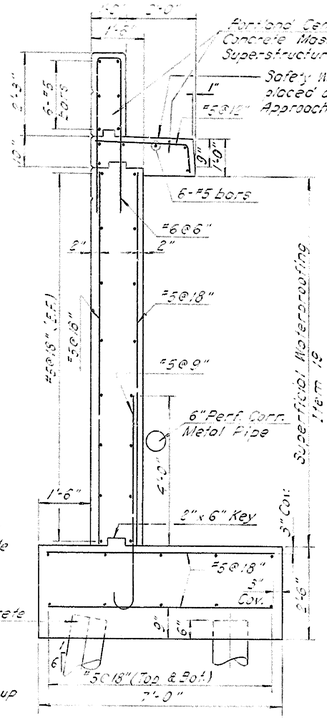
ELEVATION H-H
Scale: 1/8"=1'-0"



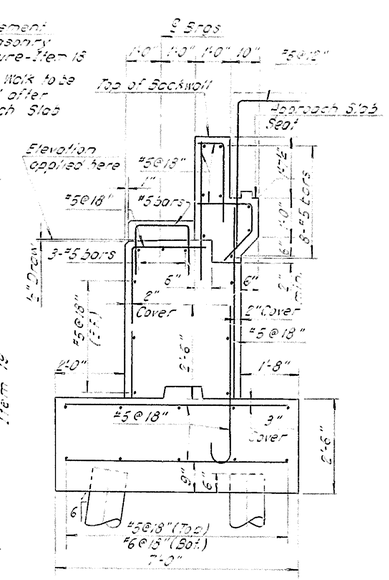
TYPICAL SLOPE PAVING DETAIL
Scale: 1/8"=1'-0"



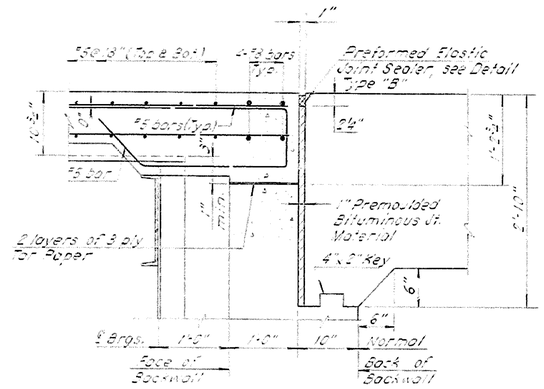
PILE DETAILS
Scale: 1"=1'-0"



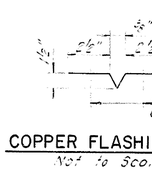
SECTION B-B
Scale: 1/2"=1'-0"



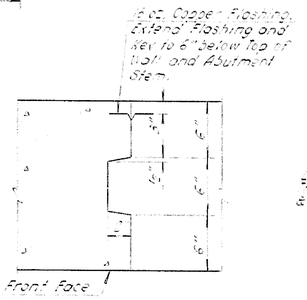
SECTION A-A
Scale: 1/2"=1'-0"



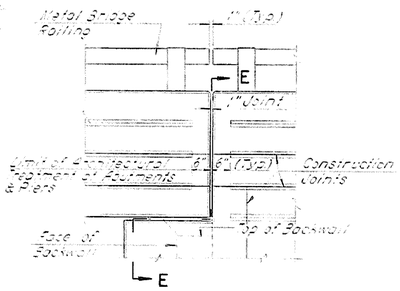
FIXED JOINT AT ABUTMENT
Scale: 1"=1'-0"



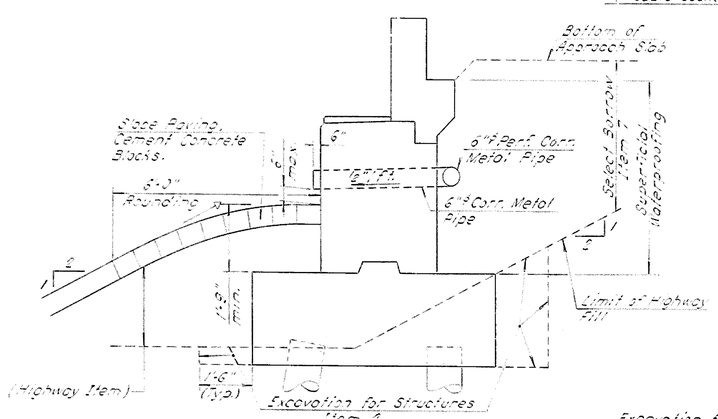
COPPER FLASHING DETAIL
Not to Scale



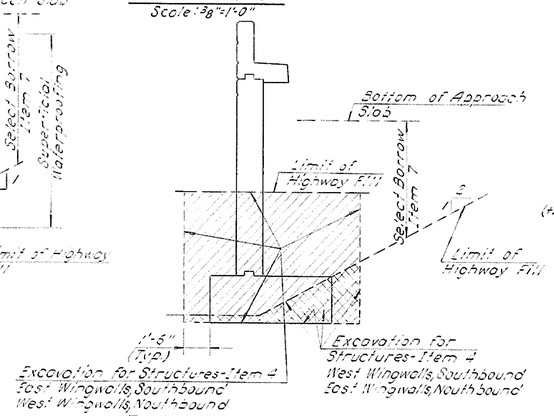
CONSTRUCTION JOINT DETAIL FOR WINGWALLS
Not to Scale



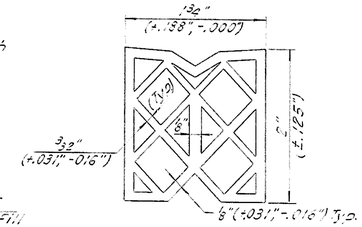
PARAPET FIXED JOINT AT ABUTMENT
Scale: 1/2"=1'-0"



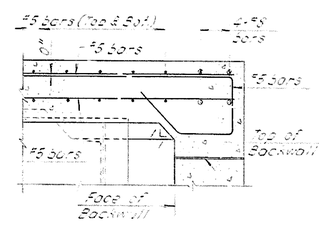
TYPICAL ABUTMENT EXCAVATION LIMITS
Scale: 1/2"=1'-0"



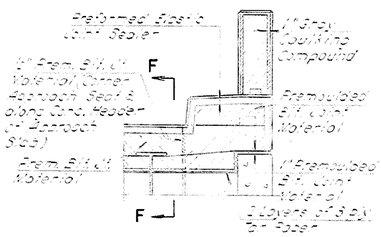
TYPICAL WINGWALL EXCAVATION LIMITS
Scale: 1/4"=1'-0"



PREFORMED ELASTIC JOINT SEALER
TYPE B
Not to Scale



SECTION F-F
Scale: 1/2"=1'-0"



SECTION E-E
Scale: 1/2"=1'-0"

References:
1. For Plan and Elevation of Southbound Abutments see Dwg. No.
2. For Plan and Elevation of Northbound Abutments see Dwg. No.
3. For other References see Dwg. No.

	Date	Revision
In Charge of D. Goldberg		
Designed by M. Zalikhale		
Drawn by R. Metcalf		
Checked by K. Mehta		

Prepared and Recommended
GOODKIND & O'DEA, INC.
Date MAR 1965
Consulting Engineers

DELAWARE
STATE HIGHWAY DEPARTMENT

ABUTMENT AND WINGWALL DETAILS

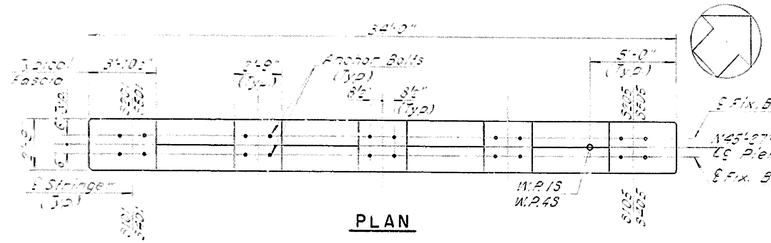
APPROVED BY:
BRIDGE ENGINEER
4/14/65
DATE

DWG. NO.	SCALE	DATE	
			GOODKIND & O'DEA, INC. CONSULTING ENGINEERS

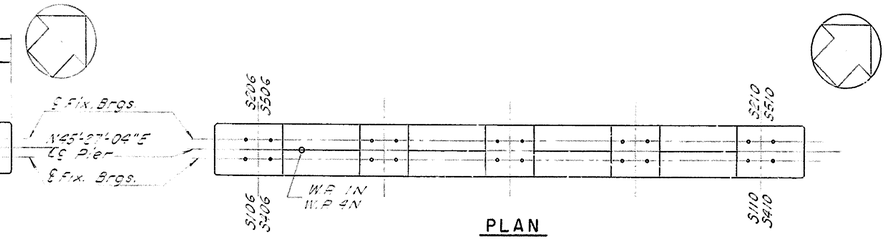
D & W BLUEPRINT CO. 17985

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)		41	68

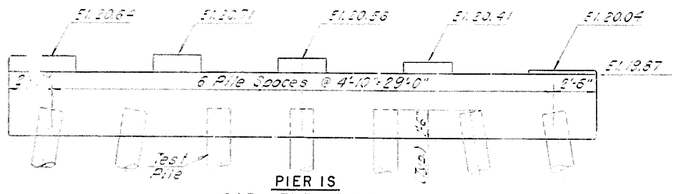
STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1



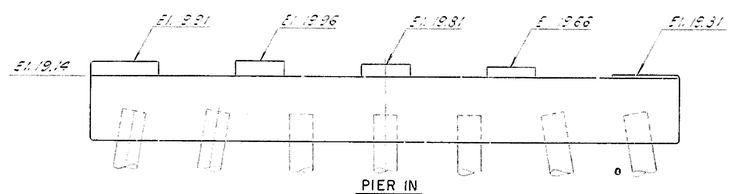
PLAN



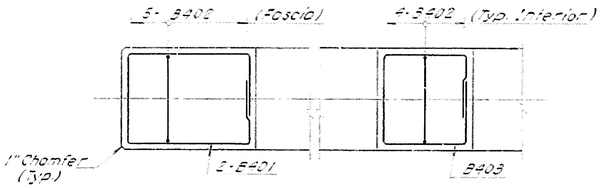
PLAN



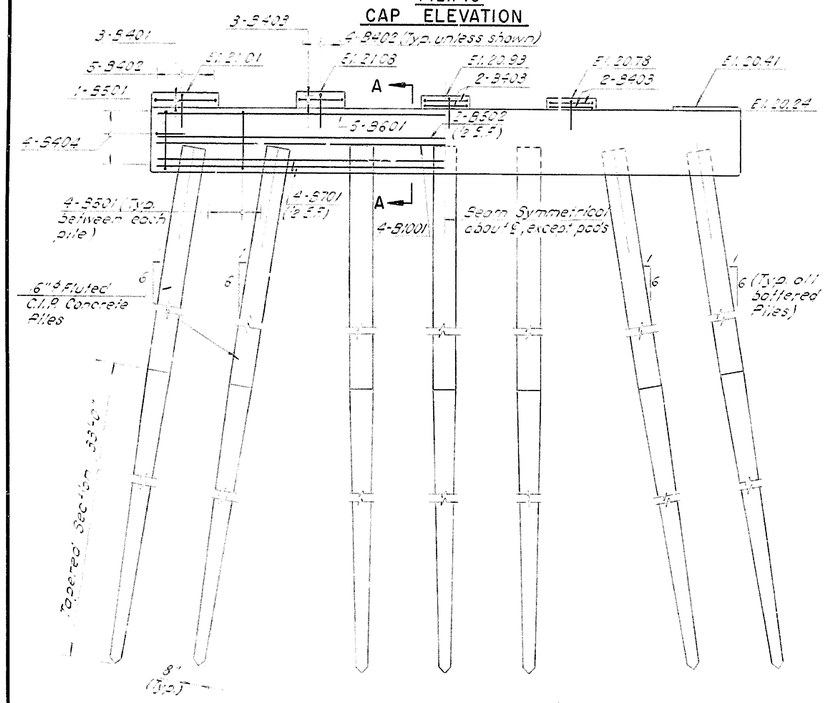
PIER 1S
CAP ELEVATION



PIER 1N
CAP ELEVATION

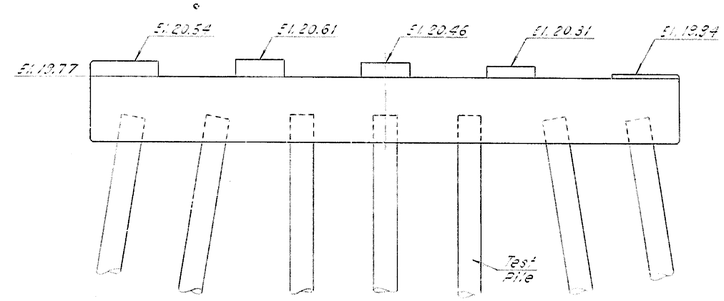


PEDESTAL REINFORCEMENT DETAIL
Scale: 1/2" = 1'-0"

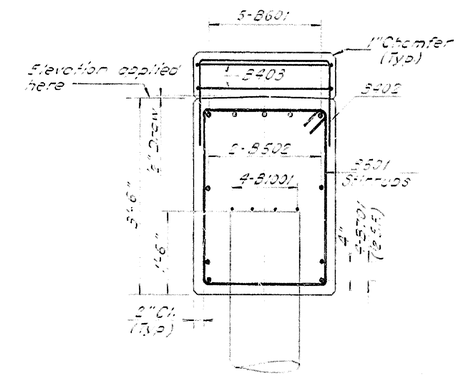


PIER 4S
ELEVATION

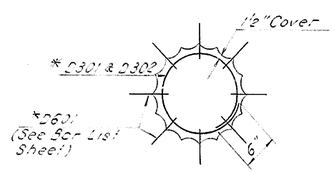
Note:
Reinforcement and Dimensions of Piers 1S, 1N and 4N similar to Pier 4S except as shown.

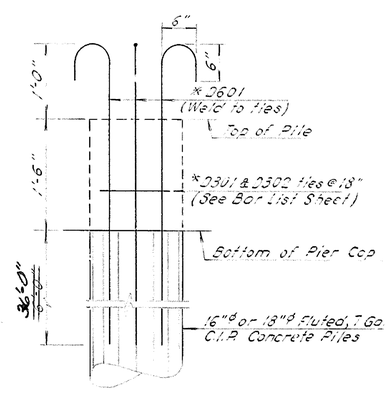


PIER 4N
ELEVATION



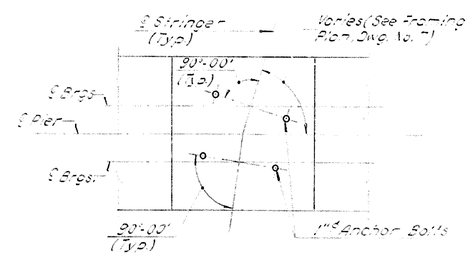
SECTION A-A
Scale: 1/2" = 1'-0"





PILE DETAILS
Scale: 1" = 1'-0"

* Paid for in unit Price Bid for Cast-in-Place Concrete Piles.



TYPICAL ANCHOR BOLT LAYOUT
Not to Scale

REFERENCES:
1. For General Notes, see Dwg. No. 4.
2. For Layout Plan and W.P. Stations see Dwg. No. 1.
3. For Anchor Bolt Details see Dwg. No. 8.
4. For Bar List see Dwg. No. 6.
5. For Stringer Spacing see Framing Plan Dwg. No. 7.

PILE NOTES:
Estimated Pile Tip Elevations:
Pier 1S, Pier 2S, Pier 1N, Pier 4N } El. -55
Pier 2S, Pier 3S, Pier 2N, Pier 3N } El. -70
Order length of Test Piles for Piers 1S & 4N 83' min.
Order length of Test Piles for Piers 3S & 2N 98' min.

In Charge of D. Goldberg	Date	Revision
Designed by M. Zolotkoble	1/29/66	Dimension Pile Detail
Drawn by R. Neicoff		
Checked by K. Mehta		

D & W BLUEPRINT CO. 17-10-5

Prepared and Recommended
GOODKIND & O'DEA, INC.
Consulting Engineers
Date MAR 1965

DELAWARE
STATE HIGHWAY DEPARTMENT

PIERS 1S, 4S, 1N & 4N

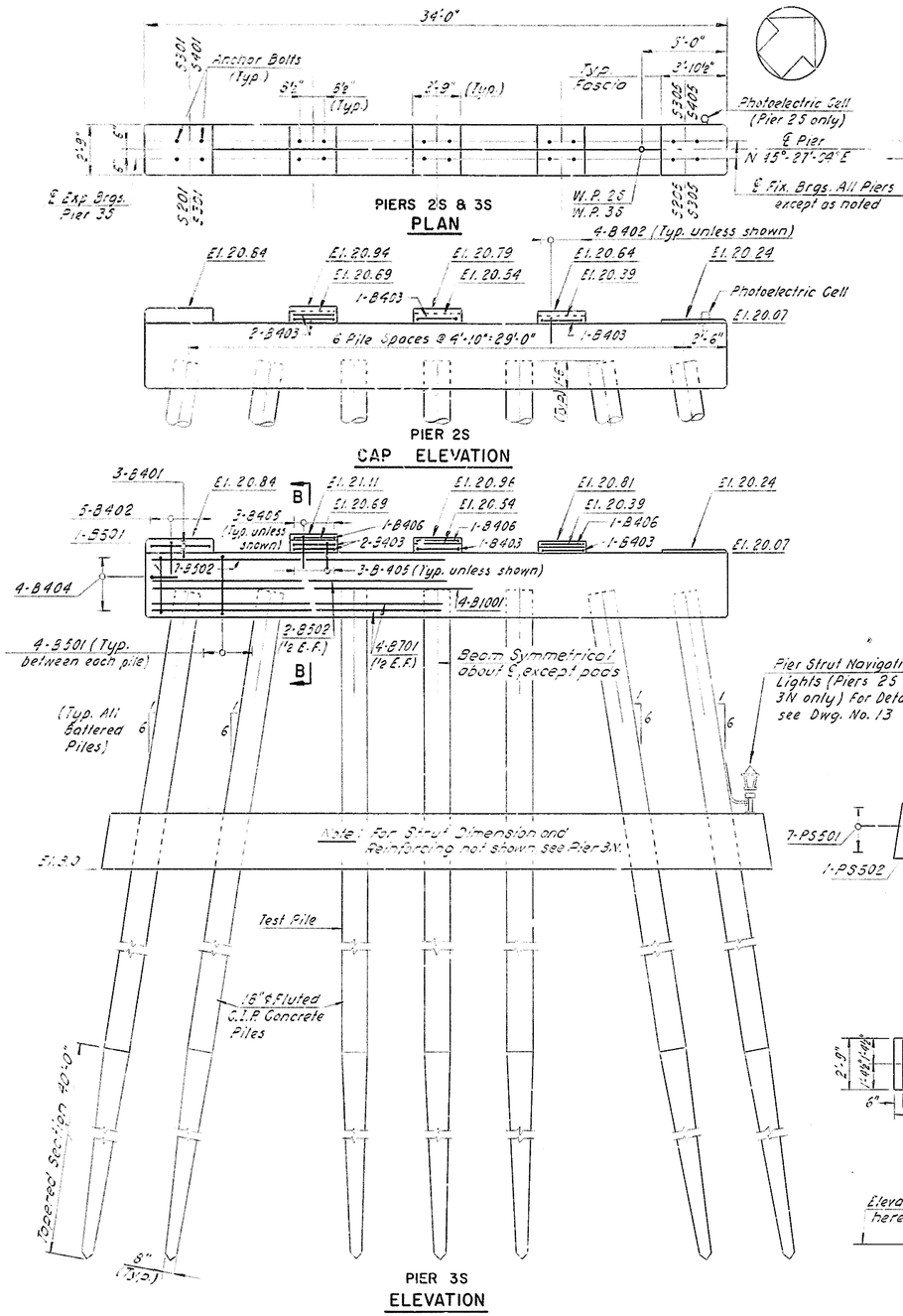
APPROVED BY:
BRIDGE ENGINEER
DATE 4/14/65

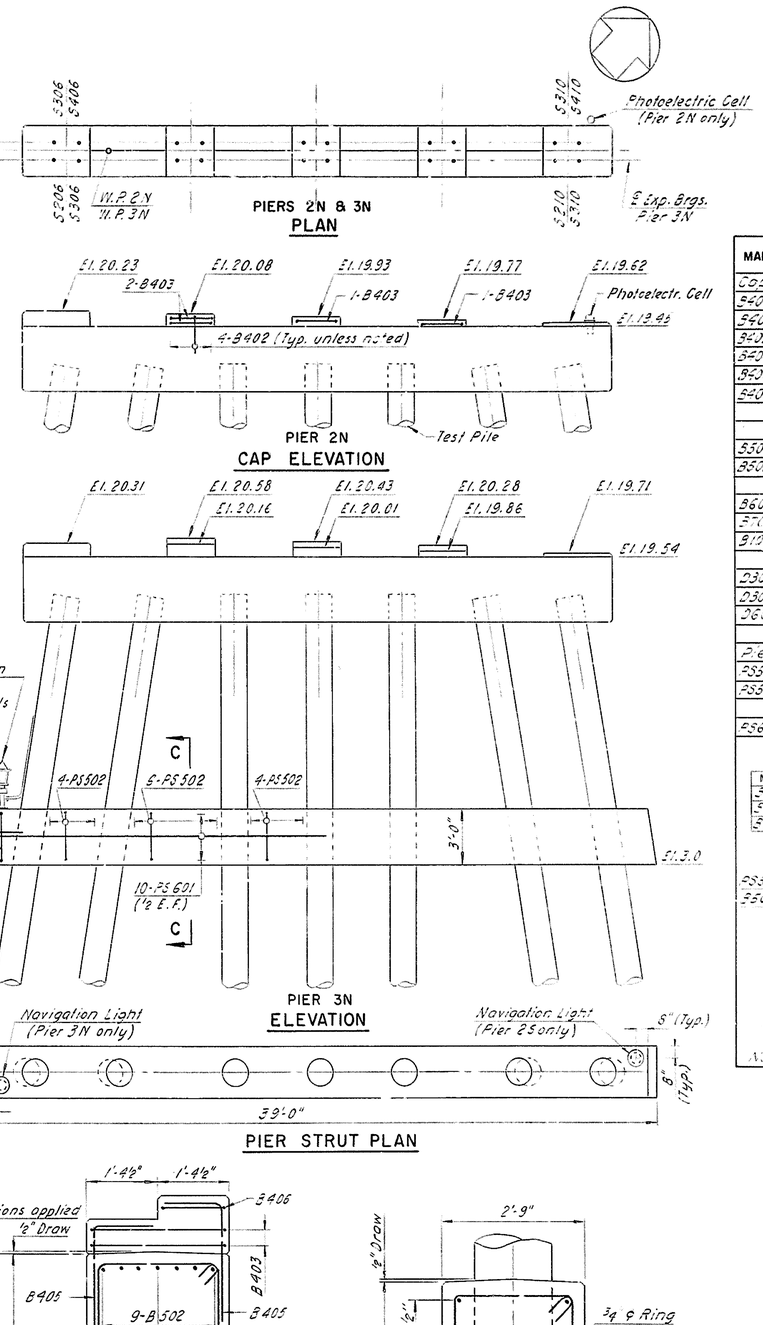
DWG. NO.	SCALE	DATE
5 of 15	1/4" = 1'-0" except as noted	

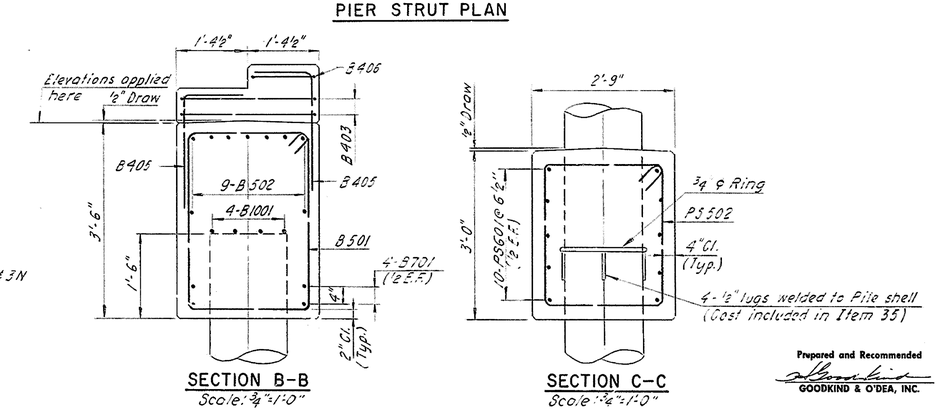
GOODKIND & O'DEA, INC.
CONSULTING ENGINEERS

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(6)		42	65

STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1





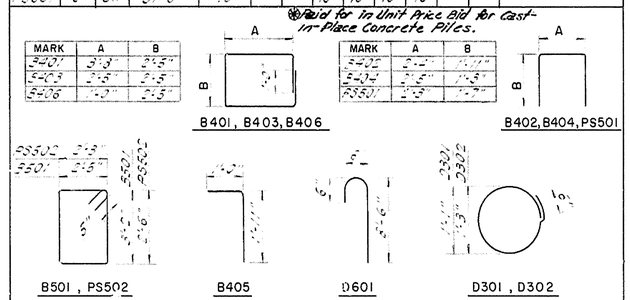


Note:
Reinforcing & Dimensions of Piers 2S, 2N & 3N similar to Pier 3S except as shown

BAR LIST & BENDING DETAILS

MARK	SIZE	TYPE	LENGTH	TOTAL	PIER NO. 1S	1N	2S	2N	3S	3N	4S	4N	NOTES
Cap Beam													
B401	4	Bl.	12'-10"	24	3	3	3	3	3	3	3	3	
B402	4	Bl.	5'-10"	112	17	17	17	17	5	5	17	17	
B403	4	Bl.	6'-0"	32	4	4	4	4	4	4	4	4	
B404	4	Bl.	2'-9"	84	3	3	3	3	3	3	3	3	
B405	4	Bl.	2'-10"	36					18	18			
B406	4	Bl.	7'-6"	6					3	3			
B501	5	Bl.	11'-8"	208	26	26	26	26	26	26	26	26	Stirrups
B502	5	Bl.	33'-8"	44	2	2	9	9	2	2	2	2	
B601	6	St.	33'-8"	20	5	5					5	5	
B701	7	St.	33'-8"	32	4	4	4	4	4	4	4	4	
B1001	10	St.	33'-8"	32	4	4	4	4	4	4	4	4	
D301	3	Bl.	3'-11"	~~132~~ 504	42	42					42	42	Ties in Piles ⊛
D302	3	Bl.	4'-11"	~~168~~			42	42	42	42			" " " ⊛
D601	6	Bl.	~~21'-0"~~ 39'-2"	~~252~~ 234 504	56	56	56	56	56	56	56	56	Dowels in Piles ⊛
Pier Strut													
PS501	5	Bl.	5'-3"	56			14	14	14	14			
PS502	5	Bl.	10'-0"	120			30	30	30	30			
PS601	6	St.	37'-6"	40			10	10	10	10			

⊛ Paid for in Unit Price Bid for Cast-in-Place Concrete Piles.



REFERENCES:
1. For Drawn Split Layout see Dwg. No. 5.
2. For Pile Detail and Pile Notes see Dwg. No. 5.
3. For Additional References see Dwg. No. 5.
4. For Photoelectric Cell and Navigation Lights Details see Dwg. No. 13.

In Charge of D. Goldberg	Date	Revision
Designed by N. Zolbikhole	1/24/66	Bar Quantities
Drawn by B. Rumionciew		
Checked by K. Mehta, K. Huang		

DELAWARE
STATE HIGHWAY DEPARTMENT

PIERS 2S, 3S, 2N, 3N & BAR LIST

APPROVED BY:
BRIDGE ENGINEER — DATE 4/17/66

Prepared and Recommended
GOODKIND & O'DEA, INC.
Consulting Engineers
Date MAR 1966

DWG. NO.	SCALE	DATE
6 of 15	1/4"=1'-0" except as noted	

GOODKIND & O'DEA, INC.
CONSULTING ENGINEERS

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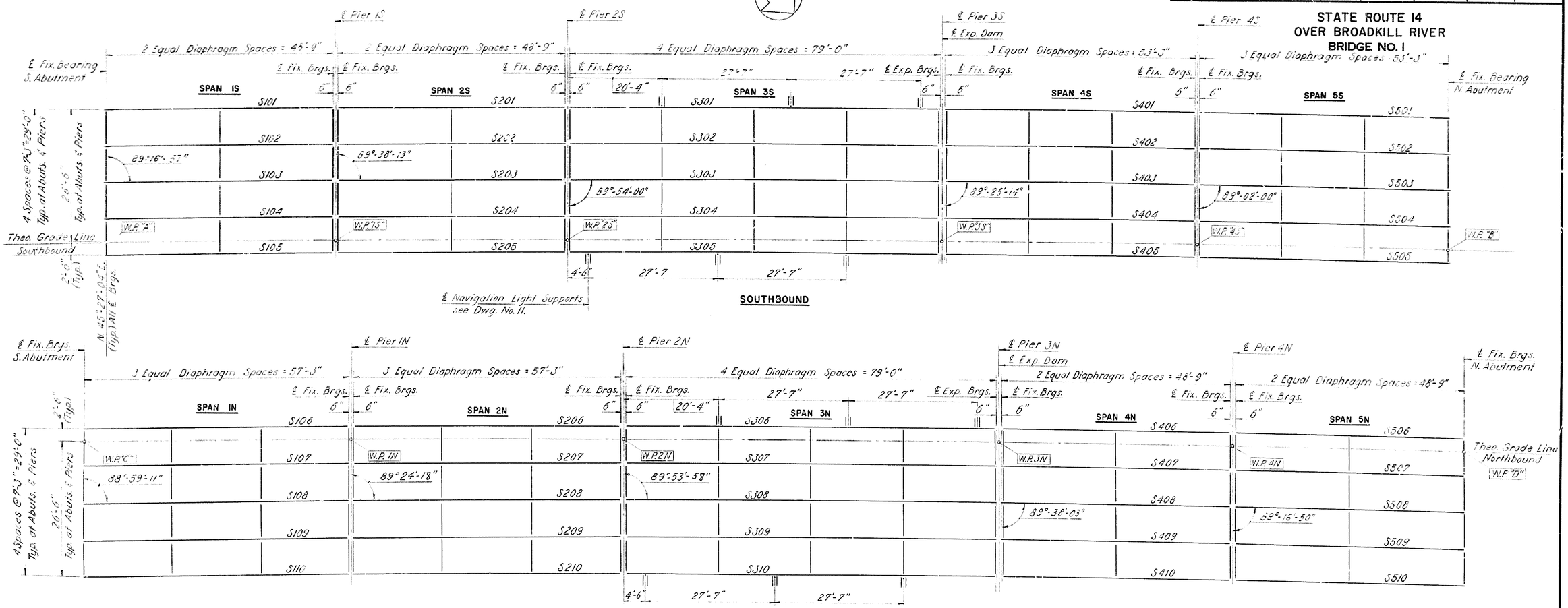
COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)		43	65

STATE ROUTE 14 OVER BROADKILL RIVER

BRIDGE NO. 1



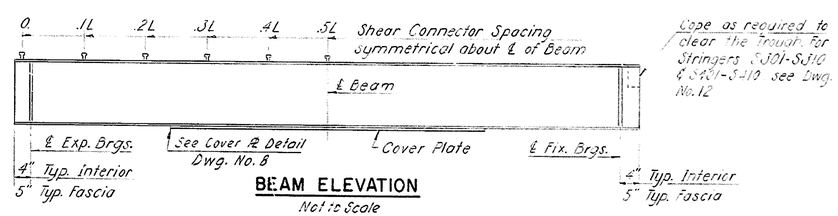
FRAMING PLAN

Scale: 1" = 1'-0"

BEAM SCHEDULE

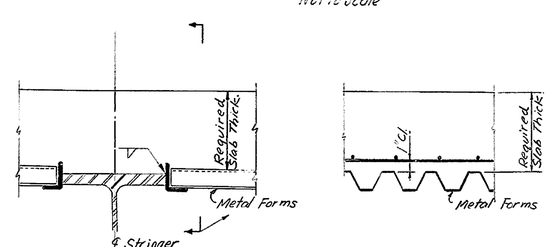
STRINGER			COVER PL		STUD SHEAR CONNECTORS MAXIMUM SPACING						CAMBER AT MIDSPAN				
MARK	LENGTH c.to c.Brgs.	SIZE	SIZE	LENGTH	0	.1L	.2L	.3L	.4L	.5L	STEEL	CONC. DECK	S.D.L.	V.C.C.	CAMB.
S101, S106, S201, S206 S406, S410, S506, S510	48'-9"	36WF135	—	—	5½"	6"	7½"	9"	12"		⅛"	⅝"	⅛"	⅛"	1"
S102-S104, S202-S204 S407-S409, S507-S509	48'-9"	33WF118	10 × ⅝"	24'-5"	4½"	5½"	6½"	8½"	10½"		⅛"	½"	⅛"	⅛"	1"
S105, S110, S205, S210	57'-3"	36WF135	10 × ⅝"	29'-9"	5"	6"	7"	9"	11½"		⅛"	⅝"	¼"	⅛"	2"
S107-S109, S207-S209	57'-3"	33WF130	10 × ⅝"	34'-6"	4½"	5½"	6½"	8"	10½"		⅛"	¾"	⅛"	⅛"	2"
S301, S305, S306, S310	79'-0"	36WF230	10 × 1¼"	39'-0"	5½"	6½"	7½"	10½"	12"		½"	1"	⅝"	¼"	3"
S302-S304, S307-S309	79'-0"	36WF230	10 × 1¾"	41'-9"	5½"	6"	7"	9½"	12"		½"	1⅛"	¼"	¼"	3"
S401, S405, S501, S505	53'-3"	36WF135	10 × ⅝"	22'-0"	5"	6"	7"	9"	12"		⅛"	½"	⅛"	⅛"	2"
S402-S404, S502-S504	53'-3"	33WF118	10 × ½"	31'-9"	4½"	5½"	6"	8"	10½"		⅛"	⅝"	⅛"	⅛"	2"

Note: SDL = Deflection for Safety Walks, Parapets and Railing



BEAM ELEVATION

Not to Scale



ARRANGEMENT OF METAL FORMS FOR SLAB SUPPORT

SCALE: 1½" = 1'-0"

Note: Metal deck forms to remain in place will be permitted on this structure with the review and approval of the Engineer. Metal forms must be galvanized, mortar tight and sheet metal screws must be non-corrosive.

REFERENCES:

1. For General Notes see Dwg. No. 1.
2. For W.P. & Layout Plan, see Dwg. No. 1.
3. For Bearing, Diaphragm and other Steel Details, see Dwg. No. 8.
4. For Expansion "Dam" Details, see Dwg. No. 12.
5. For Welding Notes see Dwg. No. 6.

Prepared and Recommended
GOODKIND & O'DEA, INC. Consulting Engineers
Date MAR 1965

In Charge of	D. Goldberg	Date	Revision
Designed by	M. Zolaikhaie		
Drawn by	H Wargo		
Checked by	K. Mehta		

DELAWARE
STATE HIGHWAY DEPARTMENT

FRAMING PLAN

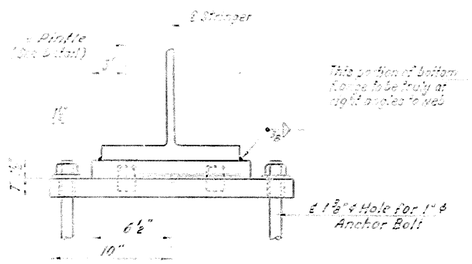
APPROVED BY: BRIDGE ENGINEER — DATE 4/7/65

DWG. NO.	SCALE	DATE	
7 of 15	As Noted		GOODKIND & O'DEA, INC. CONSULTING ENGINEERS

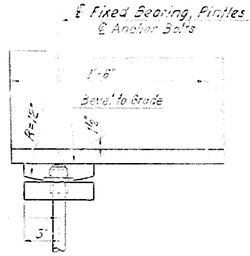
D & W BLUEPRINT CO. 17-10-5

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		44	65

STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1

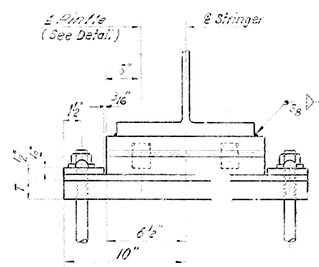


END ELEVATION

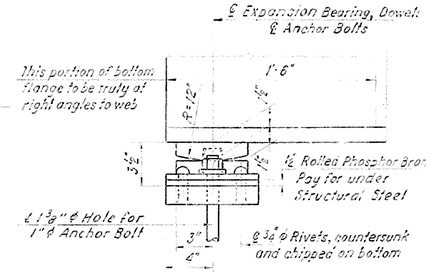


SIDE ELEVATION

FIXED BEARING

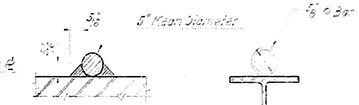


END ELEVATION



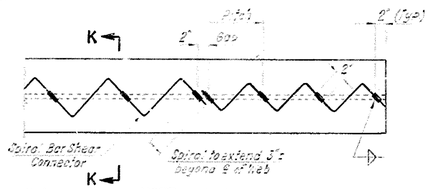
SIDE ELEVATION

EXPANSION BEARING



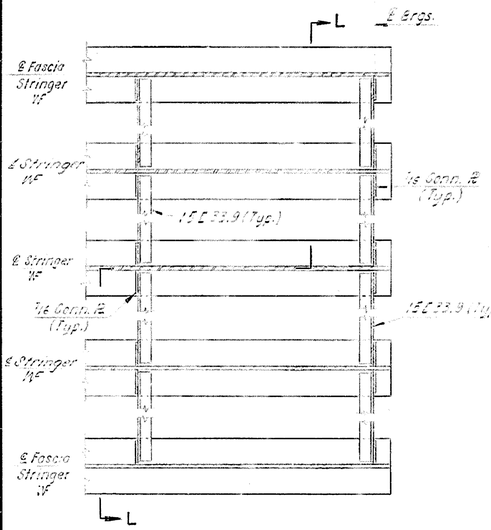
SPIRAL BAR WELD

SECTION K-K



NOTE: Spiral pitch to be the same as the spacing of the studs.

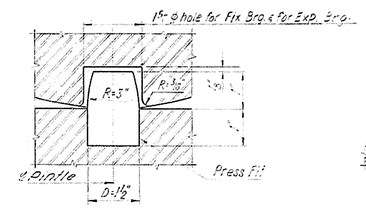
PARTIAL PLAN OF SPIRALS



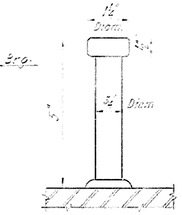
DIAPHRAGMS BETWEEN ROLLED BEAMS

BEARING PLATE THICKNESS "T"

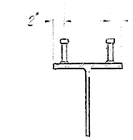
STRINGER MARK \ BEARING	SO. ABUT. FIX.	PIERS 1S or 1N FIX.	PIERS 1S or 1N FIX.	PIERS 2S or 2N FIX.	PIERS 2S or 2N FIX.	PIERS 3S or 3N EXP.	PIERS 3S or 3N FIX.	PIERS 4S or 4N FIX.	PIERS 4S or 4N FIX.	NO. ABUT. FIX.
S101-S105, S106-S110	1 1/2"	1 1/2"								
S201, S205, S206, S210			1 1/2"	1 7/8"						
S202-S204			1 1/2"	1 1/2"						
S207-S209			1 1/2"	4 1/8"						
S301-S305, S306-S310					1 1/2"	1 1/2"				
S401, S405, S406, S410							3 1/8"	1 1/2"		
S402-S404, S407-S409							1 1/2"	1 1/2"		
S501-S505, S506-S510									1 1/2"	1 1/2"



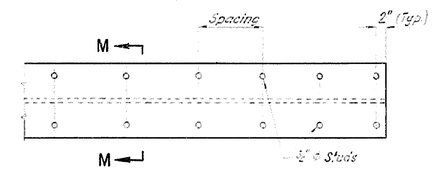
PINTLE DETAIL



DETAIL OF STUD

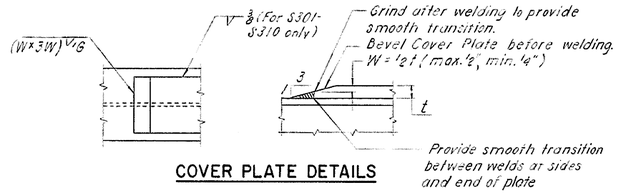


SECTION M-M

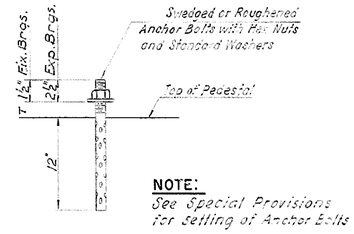


PARTIAL PLAN OF STUDS

NOTE:
When top flange of stringer is coped, provide some number of shear connectors reducing spacing.



COVER PLATE DETAILS

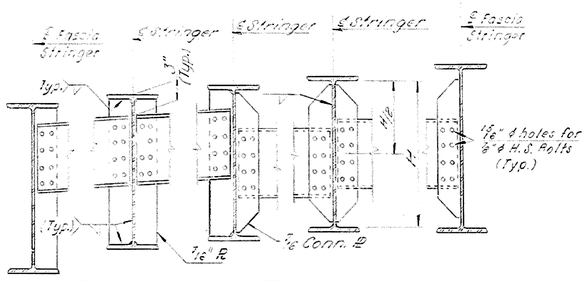


NOTE:
See Special Provisions for Setting of Anchor Bolts

ANCHOR BOLT DETAIL

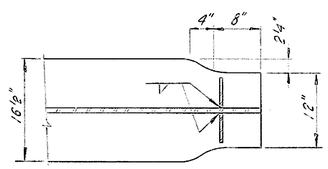
REFERENCES:

1. For General Notes see Dwg. No. 1.
2. For Framing Plan see Dwg. No. 7.
3. For Bridge Inlet Details see Dwg. No. 12.



END DIAPHRAGMS INTERMEDIATE DIAPHRAGMS

SECTION L-L



COPING DETAIL

(For Both Ends of Bottom Flanges of Stringers S301-S310 only)

WELDING NOTE:

All welds are 1/4" fillet welds, unless otherwise noted. All welding shall comply with the provisions of the current Specifications for Welded Highway and Parkway Bridges of the A.W.S. (See Special Provisions.)

In Charge of	D. Goldberg
Designed by	M. Zolaikhaie
Drawn by	F. Kiyoshi
Checked by	K. Mehta

Date	Revision

Prepared and Recommended
GOODKIND & O'DEA, INC. Consulting Engineers
Date MAR 1965

DELAWARE
STATE HIGHWAY DEPARTMENT

STEEL DETAILS

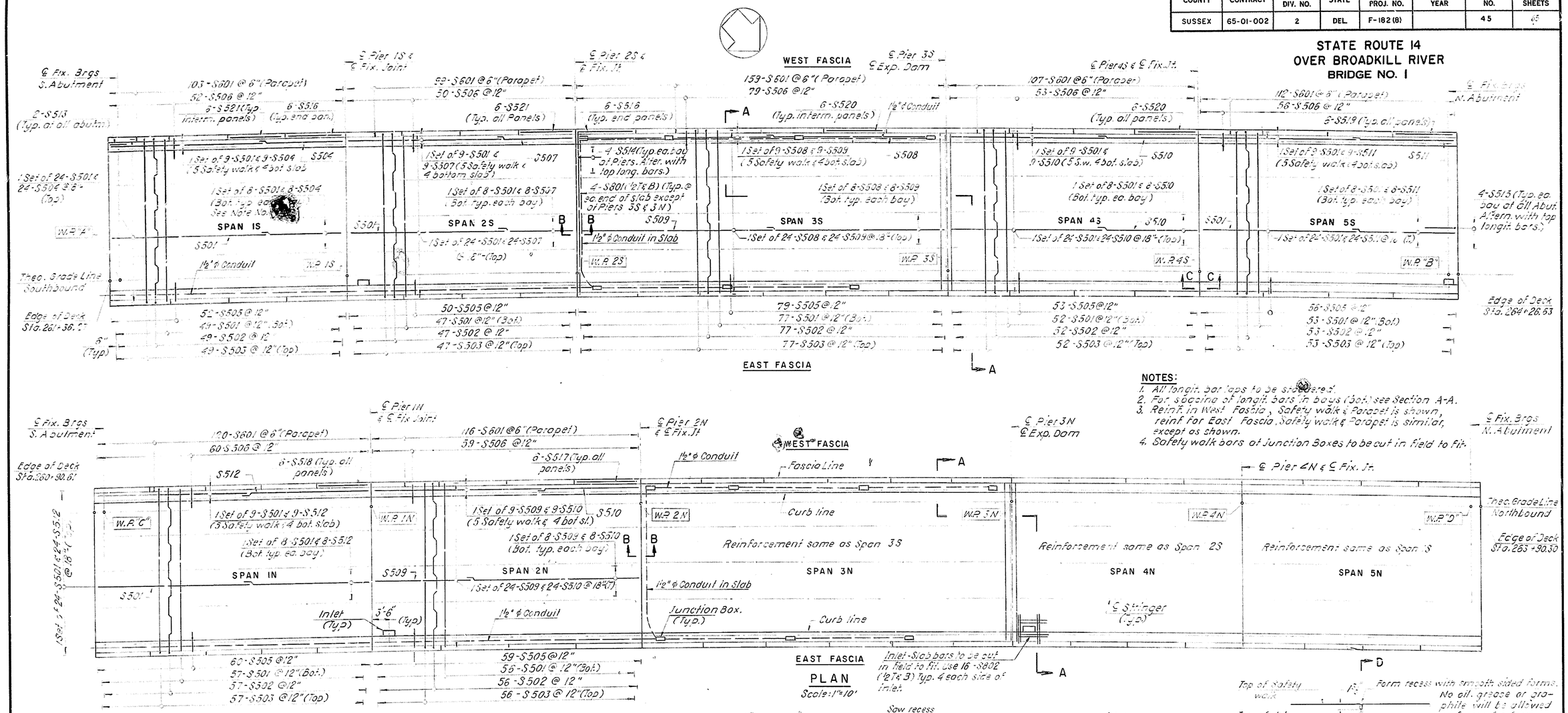
APPROVED BY:
BRIDGE ENGINEER — DATE 4/07/65

DWG. NO.	SCALE	DATE	
8 of 15	No Scale		GOODKIND & O'DEA, INC. CONSULTING ENGINEERS

D & W BLUEPRINT CO. 1740-9

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)		45	65

STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1



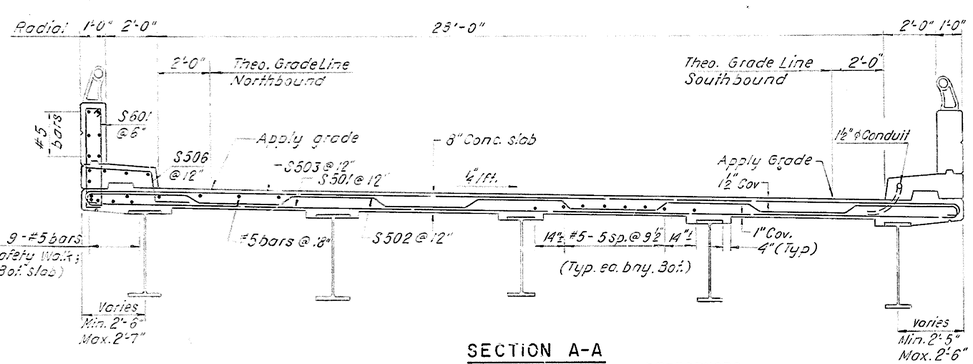
NOTES:

1. All longit. bar laps to be staggered.
2. For spacing of longit. bars in bays (bot.) see Section A-A.
3. Reinf. in West Fascia, Safety walk & Parapet is shown, reinf. for East Fascia, Safety walk & Parapet is similar, except as shown.
4. Safety walk bars at Junction Boxes to be cut in field to fit.

EAST FASCIA

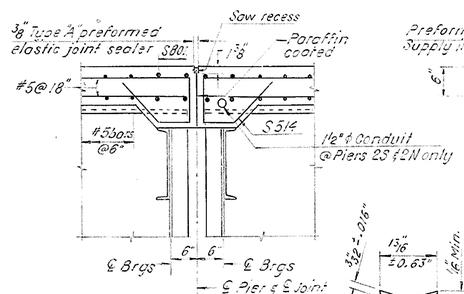
PLAN

Scale: 1" = 10'



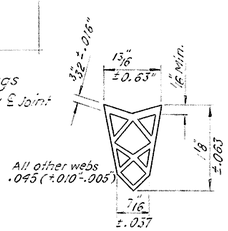
SECTION A-A

Scale: 3/8" = 1'-0"



SECTION B-B

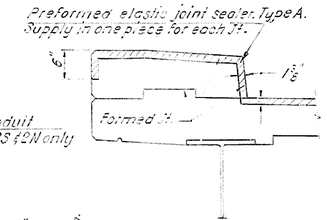
Scale: 3/4" = 1'-0"



PREFORMED ELASTIC JOINT SEALER

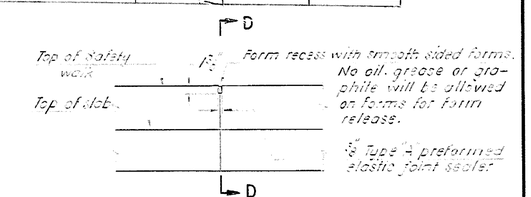
TYPE A

Full Size



SECTION D-D

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



SECTION C-C

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

REFERENCES

1. For General Notes see Dwg. No. 1.
2. For W.P. Stations and Layout Plan see Dwg. No. 1.
3. For Bar List, Bending Details see Dwg. No. 10.
4. For Expansion Dam Detail, Inlet Detail see Dwg. No. 12.
5. For Framing Plan see Dwg. No. 7.
6. For Railing & Parapet Jt. spacing and Details see Dwg. No. 11.
7. For Junction Box & Navigation Light Details see Dwg. No. 13

	Date	Revision
In Charge of D. Goldberg		
Designed by M. Malakhoff		
Drawn by A. Centelic		
Checked by K. Mehta		

Prepared and Recommended

GOODKIND & O'DEA, INC.

Consulting Engineers

Date MAR 1965

DELAWARE
STATE HIGHWAY DEPARTMENT

DECK PLAN

APPROVED BY:

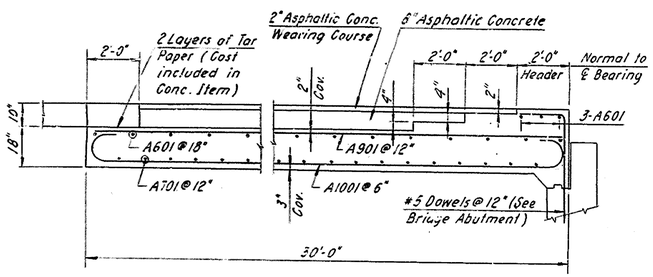
BRIDGE ENGINEER — DATE 4/12/65

DWG. NO.	SCALE	DATE	GOODKIND & O'DEA, INC. CONSULTING ENGINEERS
9 of 15	As shown		

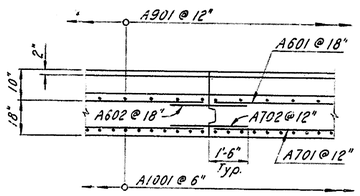
D C B A 1 5 10 A B C D

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)		46	65

STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1



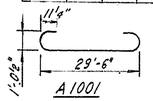
SECTION A-A
Scale: 3/8" = 1'-0"



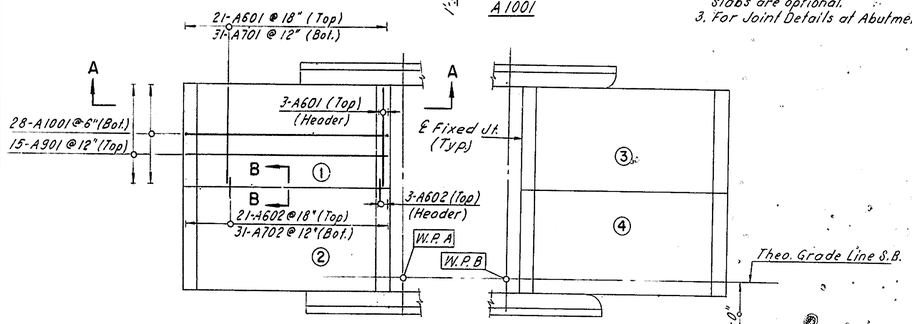
SECTION B-B
Scale: 3/8" = 1'-0"

APPROACH SLAB BAR LIST

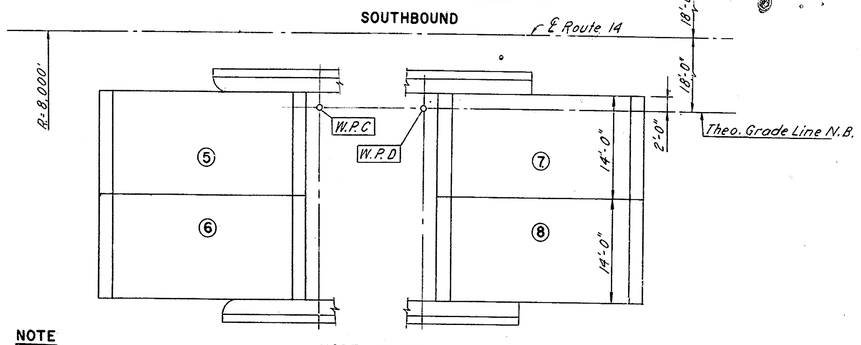
MARK	SIZE	TYPE	LENGTH	S.B. S	S.B. N	N.B. S	N.B. N	TOTAL	NOTES
A601	6	St	13'-8"	48	48	48	48	192	
A602	6	St.	3'-0"	24	24	24	24	96	Dowels
A701	7	St.	13'-8"	62	62	62	62	248	
A702	7	St.	3'-0"	31	31	31	31	124	Dowels
A901	9	St.	29'-6"	30	30	30	30	120	
A1001	10	Bt.	32'-4"	56	56	56	56	224	



NOTES:
1. Cost of Approach Slab reinforcement to be included in price bid for Item 20.
2. Longitudinal Construction Joints between slabs are optional.
3. For Joint Details at Abutments see Dwg. No. 4



SOUTHBOUND



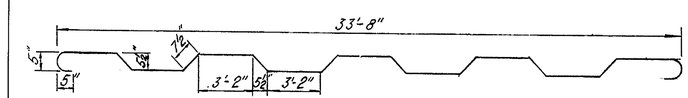
NORTHBOUND

NOTE
Reinforcement in Panels 2 thru 8 is similar to Panel 1

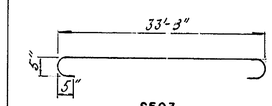
APPROACH SLAB
Scale: 1" = 10'

DECK BAR LIST & BENDING DETAILS

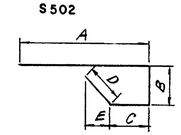
MARK	SIZE	TYPE	LENGTH	TOTAL	SOUTHBOUND 1S	2S	3S	4S	5S	NORTHBOUND 1N	2N	3N	4N	5N	NOTES
S501	5	St	33'-8"	1082	123	121	77	126	127	131	56	77	121	123	
S502	5	Bt	36'-2"	564	49	47	77	52	53	57	56	77	47	49	
S503	5	Bt	34'-10"	564	49	47	77	52	53	57	56	77	47	49	
S504	5	St.	18'-6"	148	74									74	
S505	5	Bt.	5'-2"	590	52	50	79	53	56	60	59	79	50	52	
S506	5	Bt.	5'-2"	590	52	50	79	53	56	60	59	79	50	52	
S507	5	St.	16'-10"	148		74							74		
S508	5	St.	42'-4"	148			74					74			
S509	5	St	38'-0"	222			74				74	74			
S510	5	St	21'-0"	148				74			74				
S511	5	St	23'-0"	74					74						
S512	5	St	27'-0"	74						74					
S513	5	Bt	7'-10"	16	4				4	4				4	
S514	5	Bt.	7'-5"	256	16	32	32	32	16	16	32	32	32	16	
S515	5	Bt	10'-1"	64	16				16	16				16	
S516	5	St	12'-8"	96	24		24					24		24	
S517	5	St	14'-2"	48							48				
S518	5	St	11'-6"	60						60					
S519	5	St	13'-6"	48					48						
S520	5	St	13'-2"	144			48	48				48			
S521	5	St	12'-0"	96	24	48							48	24	
S601	6	Bt	6'-11"	2354	206	198	318	214	224	240	232	318	198	206	
S801	8	St	33'-8"	64	8	8	4	4	8	8	8	4	4	8	
S802	8	St	6'-0"	64		16			16		16		16		



S502

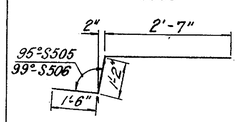


S503

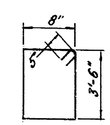


S513 - S515

MARK	A	B	C	D	E
S513	5'-6"	9"	9"	1'-0"	8½"
S514	5'-6"	8"	6"	11"	8"
S515	6'-6"	9"	2'-0	1'-0"	8½"



S505 & S506



S601

In Charge of	D. Goldberg
Designed by	M. Zolakohie
Drawn by	A. Cenfield, B. Rumia
Checked by	L. Lin

Date	Revision

Prepared and Recommended
GOODKIND & O'DEA, INC.
Consulting Engineers

Date MAR 1965

DELAWARE
STATE HIGHWAY DEPARTMENT

APPROACH SLAB AND DECK BAR LIST

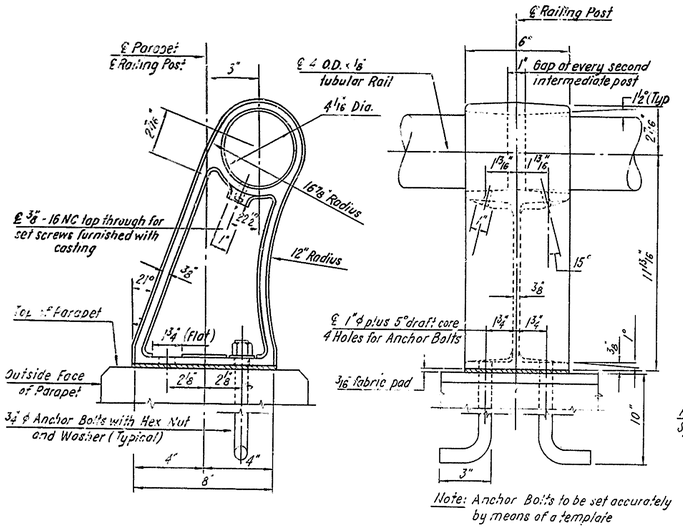
APPROVED BY:
BRIDGE ENGINEER — DATE 4/17/65

DWG. NO.	SCALE	DATE	
10 of 15	As Noted		GOODKIND & O'DEA, INC. CONSULTING ENGINEERS

D & W BLUEPRINT CO. 1740-5

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)		47	65

STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1

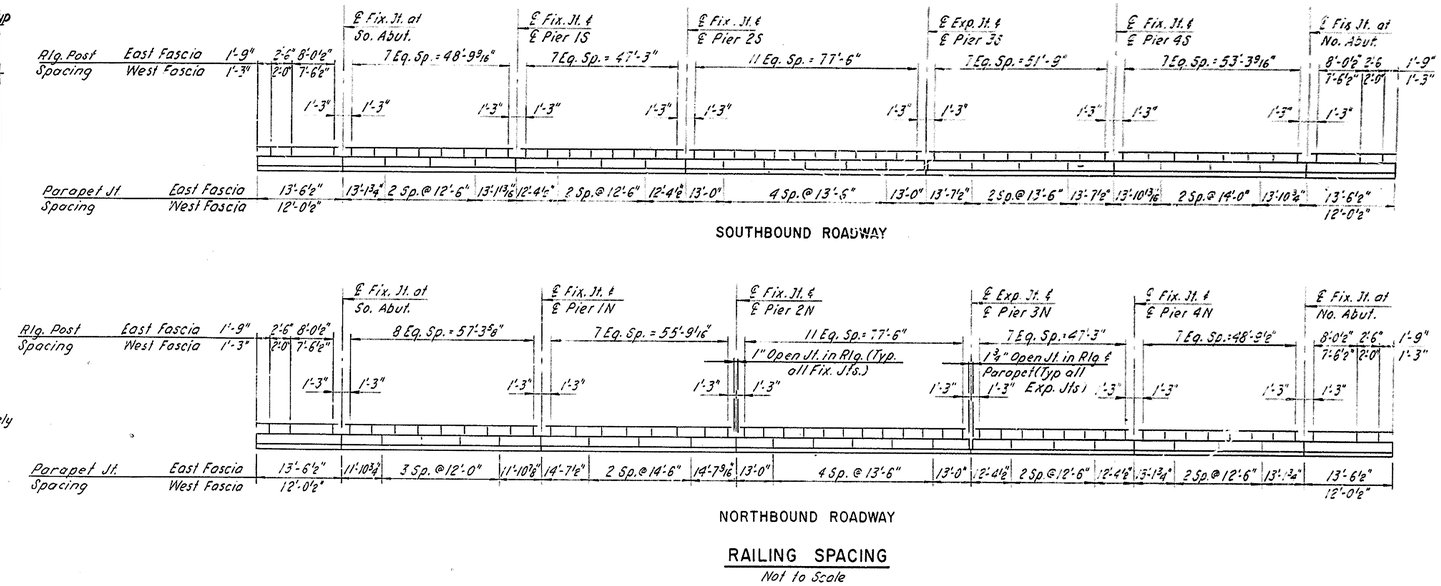


Note: Anchor Bolts to be set accurately by means of a template

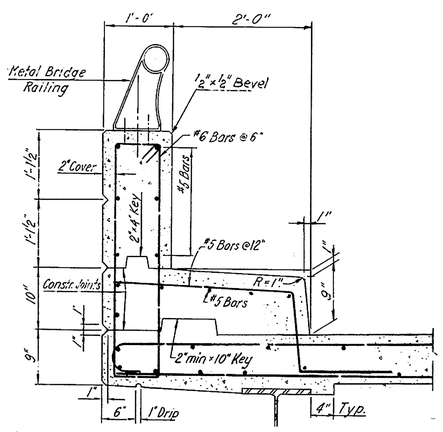
RAILING DETAILS

Railing Notes:

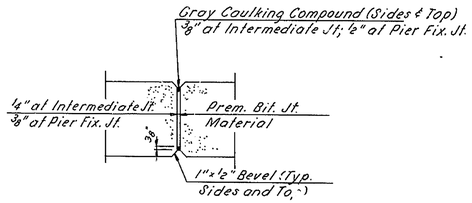
1. All railings are to be fabricated and erected so that rail is parallel to grade
2. For materials see "Special Provisions."
3. After nuts have been placed and tightened to the satisfaction of the Engineer, bolts shall be cut off 1/8" above nuts and peened.
4. All rails to be continuous through all end posts adjacent to piers and abutments.
5. Tubular rails shall be closed at all piers and abutments with welded-in plug.



RAILING SPACING
Not to Scale



TYPICAL PARAPET & SAFETY WALK



PARAPET JOINT DETAIL

REFERENCES:

1. For General Notes, see Dwg. No. 1.
2. For Location of Safety Walk and Parapet see Deck Plan Dwg. No. 3.
3. For Safety Walk and Parapet Reinforcement see Deck Bar List Dwg. No. 10.

	Date	Revision
In Charge of D. Goldberg		
Designed by M. Zolakathie		
Drawn by B. Rumiancew		
Checked by K. Mehta, L. Lin		

Prepared and Recommended
GOODKIND & O'DEA, INC.
Consulting Engineers
Date MAR 1965

DELAWARE
STATE HIGHWAY DEPARTMENT

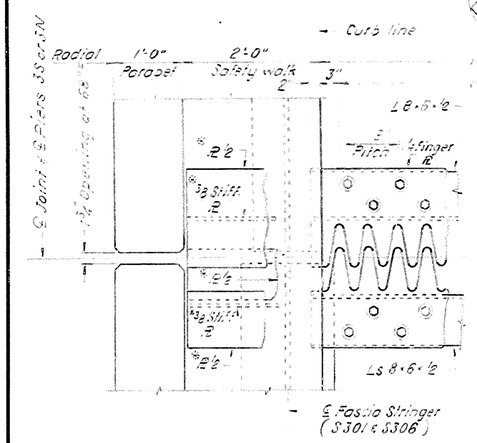
RAILING DETAILS

APPROVED BY:
BRIDGE ENGINEER
DATE 4/17/65

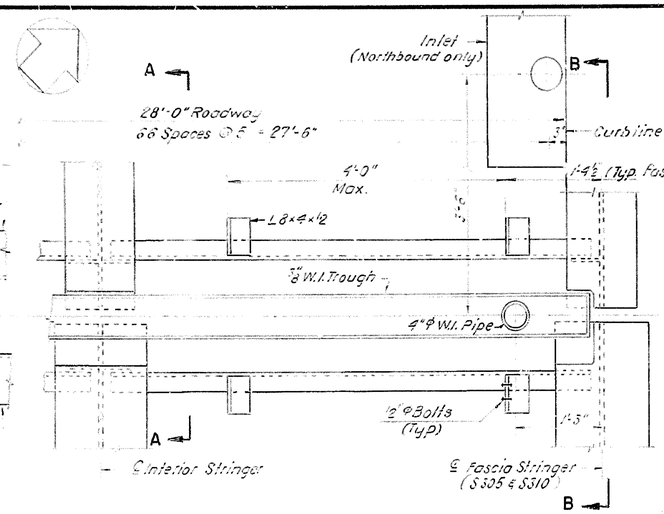
DWG. NO.	SCALE	DATE	
11 of 15	Not to Scale		GOODKIND & O'DEA, INC. CONSULTING ENGINEERS

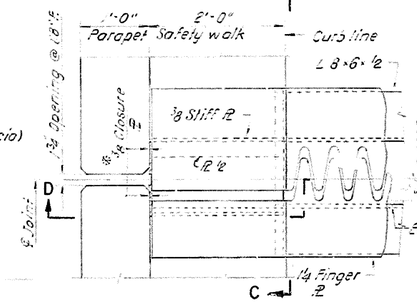
COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL	F-182(8)		48	65

STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1

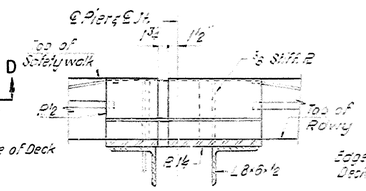


PLAN AT EXPANSION DAM & TROUGH
Scale: 1" = 1'-0"

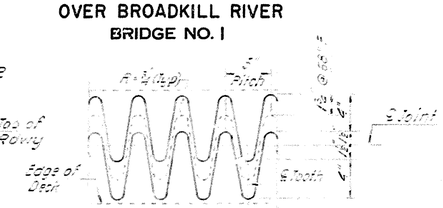




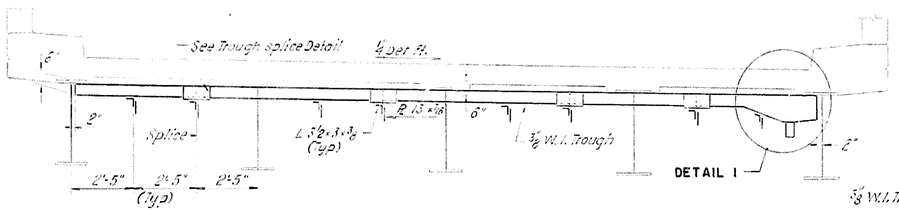
PLAN AT CURB
Scale: 1" = 1'-0"



SECTION C-C
Scale: 1" = 1'-0"

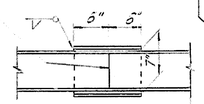


FINGER PLATE DETAIL
Scale: 1½" = 1'-0"

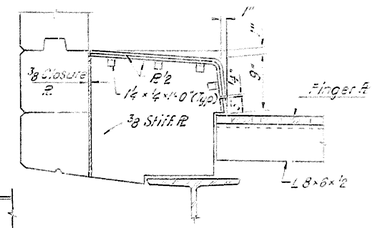


ELEVATION AT EXPANSION DAM & TROUGH
Scale: ⅜" = 1'-0"

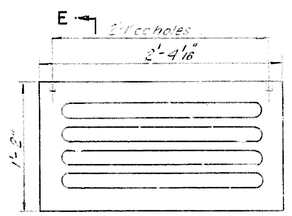
Fill Joint with Bitum. Material



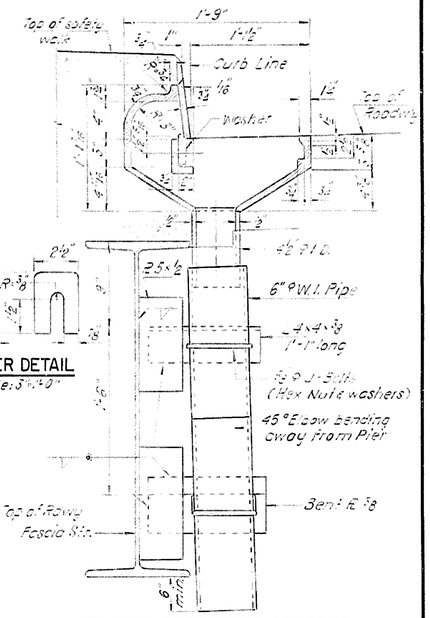
TROUGH SPLICE DETAIL
Scale: 1" = 1'-0"



SECTION D-D
Scale: 1" = 1'-0"

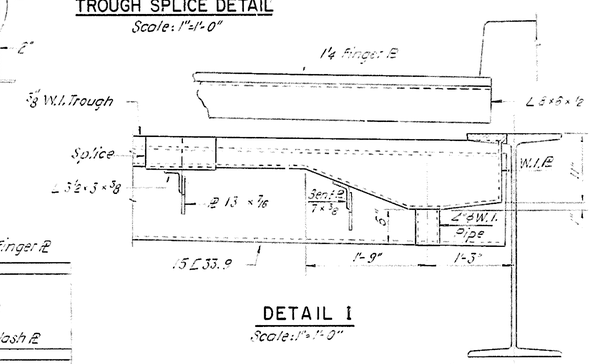


E
INLET GRATING PLAN
Scale: 1½" = 1'-0"

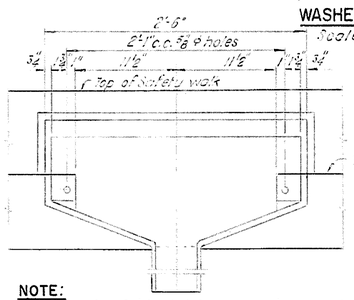


TYPICAL SECTION AT SCUPPER
Scale: 1½" = 1'-0"

WASHER DETAIL
Scale: 3" = 1'-0"

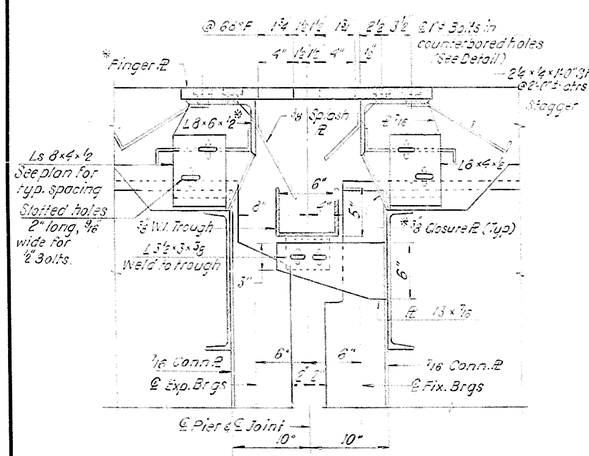


DETAIL I
Scale: 1" = 1'-0"

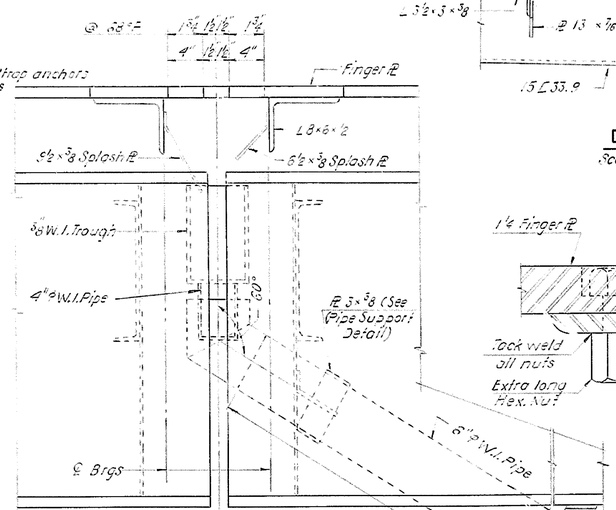


NOTE:
Payment for Bridge Inlets shall be included in the Unit Price Bid for "Bridge Drainage (See Special Provisions).

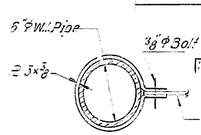
INLET CROSS-SECTION AT CURB
Scale: 1½" = 1'-0"



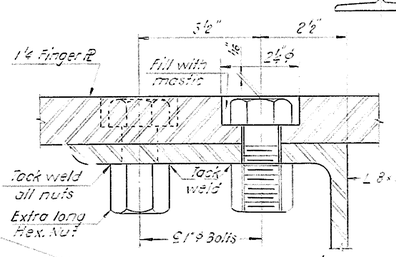
SECTION A-A
Scale: 1½" = 1'-0"



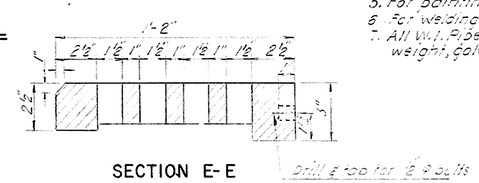
SECTION B-B
Scale: 1½" = 1'-0"



PIPE SUPPORT DETAIL
Scale: 1½" = 1'-0"



BOLT DETAIL
Full Size



SECTION E-E
Scale: 3" = 1'-0"

NOTES:
1. Structural Steel A.S.T.M. A36, except as noted.
2. Steel marked thus (*) shall conform to A.S.T.M. A242, having a corrosion resistance equal to 4 to 6 times that of Carbon Steel.
3. Payment for footed plates, W.I. splash PLs, W.I. trough and connections shall be included in Item "Structural Steel".
4. Payment for all W.I. Pipes and connections shall be included in the Item "Bridge Drainage".
5. For painting W.I. see "Special Provisions".
6. For welding Notes see Dwg. No. 6.
7. All W.I. Pipes shall be Standard weight, Galvanized.

REFERENCES:
1. For General Notes see Dwg. No. 1.
2. For Location of Expansion Dam see Framing Plan, Dwg. No. 7.
3. For Location of Scuppers & Inlets see Deck Plan Dwg. No. 9.

In Charge of	D. Goldberg
Designed by	R. Sisti
Drawn by	A. Canfeld
Checked by	K. Mehta

Date	Revision

Prepared and Recommended
GOODKIND & O'DEA, INC.
Consulting Engineers
Date MAR 1965

DELAWARE
STATE HIGHWAY DEPARTMENT

DRAINAGE & EXPANSION DAM DETAILS

APPROVED BY:
BRIDGE ENGINEER
4/17/65
DATE

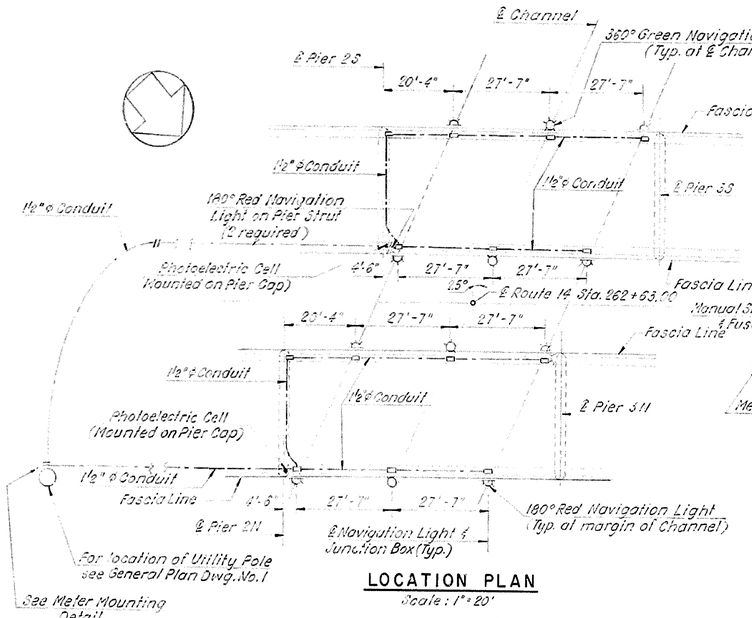
DWG. NO.	SCALE	DATE
12 of 15	As noted	

GOODKIND & O'DEA, INC.
CONSULTING ENGINEERS

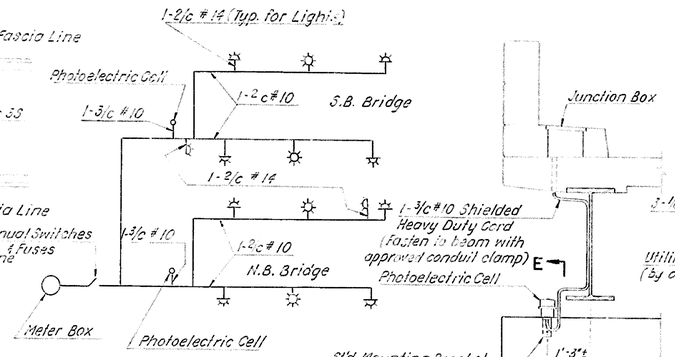
D & W BLUEPRINT CO. 3740-5

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)		49	65

STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1

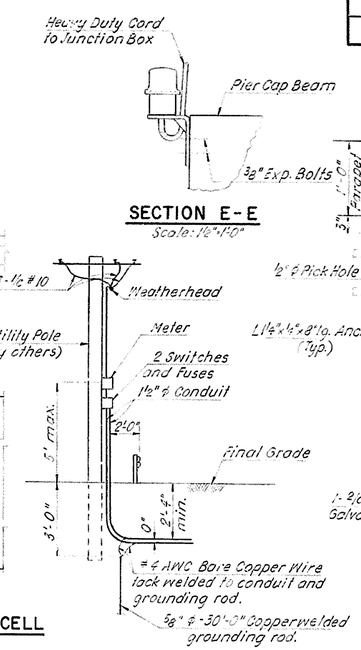


LOCATION PLAN
Scale: 1" = 20'



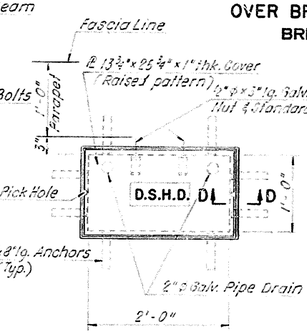
SCHEMATIC WIRING DIAGRAM
Not to scale

SECTION AT PHOTOELECTRIC CELL
Scale: ½" = 1'-0"

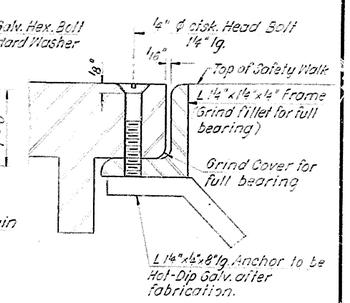


SECTION E-E
Scale: 1½" = 1'-0"

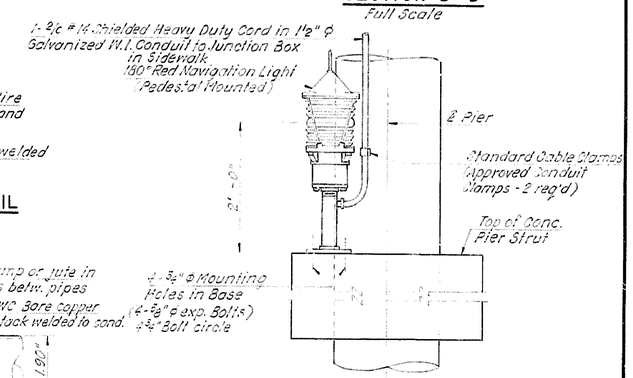
METER MOUNTING DETAIL
Not to scale



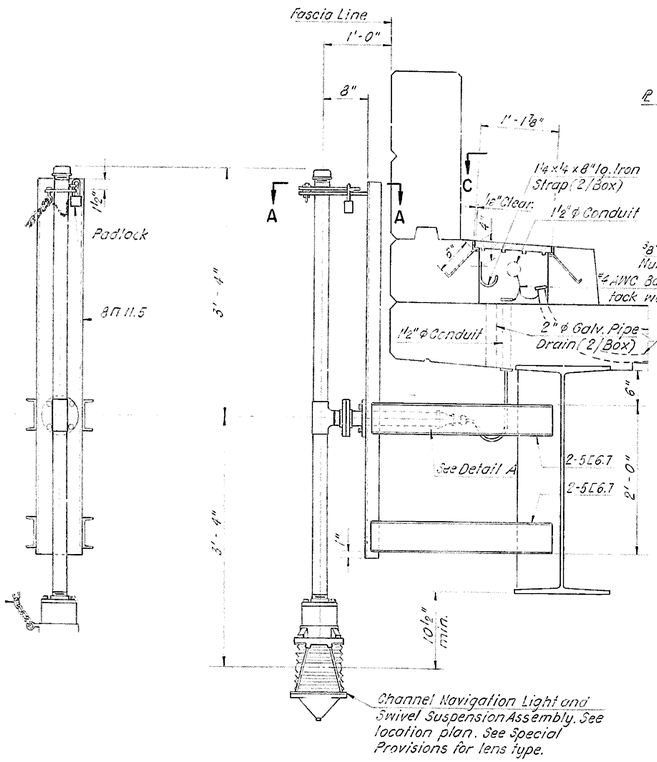
ELEVATION C-C
Scale: 1" = 1'-0"



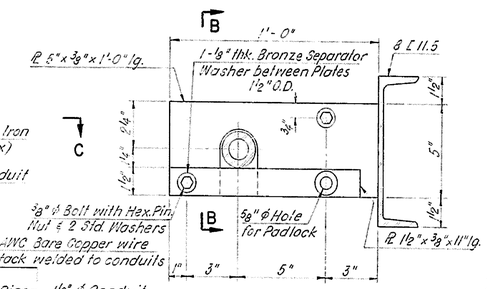
SECTION D-D
Full Scale



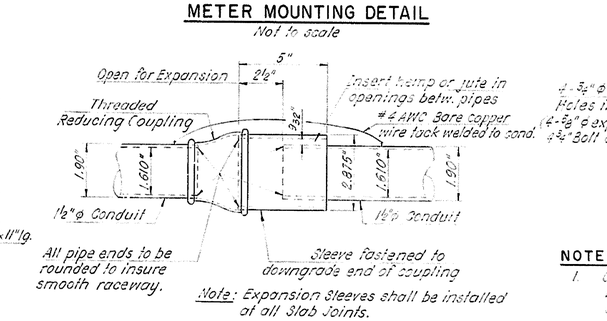
PIER STRUT LIGHT DETAIL
Scale: 1" = 1'-0"



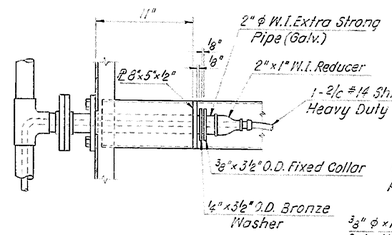
CHANNEL LIGHT DETAIL
Scale: 1" = 1'-0"



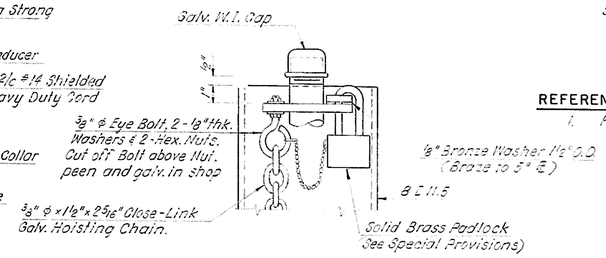
SECTION A-A
Scale: 3" = 1'-0"



CONDUIT EXPANSION SLEEVE
Not to scale



DETAIL A
Scale: 1½" = 1'-0"



SECTION B-B
Scale: 3" = 1'-0"

NOTES:

1. Covers and exposed edges of frames of Junction Boxes to receive one shop coat of red lead and two field coats of paint as per specifications. Color to match adjacent concrete.
2. Conduits, including all fittings and drains shall be in approved Galvanized Steel. Exposed Conduits shall be Wrough Iron. Conduit ends shall be carefully reamed.
3. Conduits ending in Junction Boxes shall be fitted with Galvanized Malleable Iron Locknut and Bonding Bushing.

REFERENCES.

1. For General Notes see Dwg. No. 1.

	Date	Revision
In Charge of D. Goldberg		
Designed by R. Sisti		
Drawn by W. Kowblansky		
Checked by K. Mehta		

Prepared and Recommended
GOODKIND & O'DEA, INC.
Date MAR 1965
Consulting Engineers

DELAWARE
STATE HIGHWAY DEPARTMENT

NAVIGATION LIGHTING DETAILS

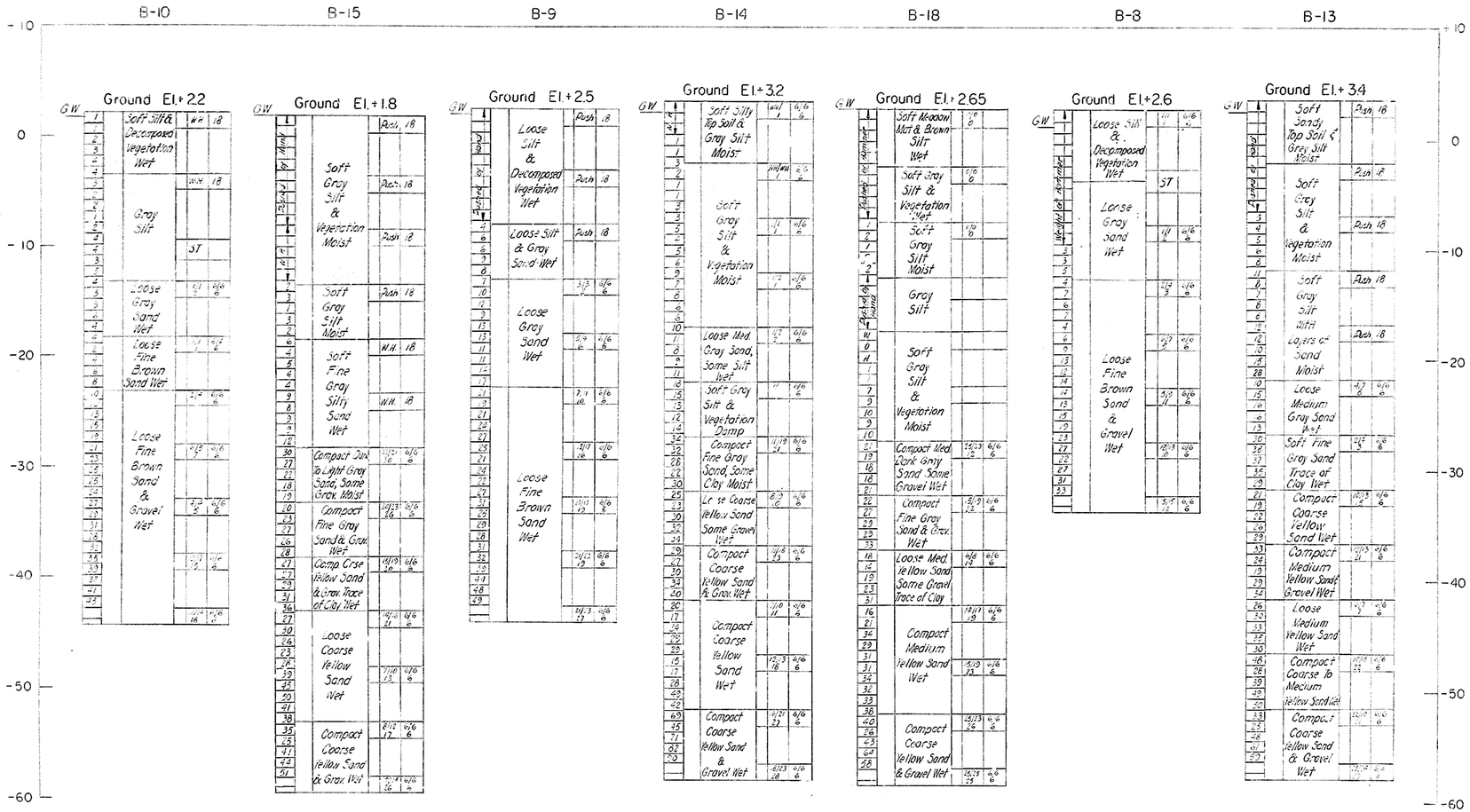
APPROVED BY:
BRIDGE ENGINEER
DATE 4/17/65

DWG. NO.	SCALE	DATE	GOODKIND & O'DEA, INC. CONSULTING ENGINEERS
15 of 15	As noted		

D & N BLUEPRINT CO. 1740-5

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL	F-182 (8)		50	65

STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1



BORING LEGEND

(a) (b) (c) (d) (e)

25	Gravel & Sandy Clay	1	5/12	6/6
23			4/11	6/6
11				
21				
30				

(a) Hammer blows to drive casing one (1) foot
(b) Description
(c) Sample number
(d) Blows on Sample Spoon
(e) Penetration of Sample Spoon

BORING NOTES

1. Borings made 1962
2. Location: see boring table
3. Description Casing 2½"
   Hammer Wt. 300#
   Drop 24"
4. Vertical Boring Scale 1"=6"

Sampler 1⅜" ID
Hammer Wt. 140#
Drop 30"

BORING TABLE

BORING	STA ℄	OFF	SIZE
B-10	261+72	50'L	2½"
B-15	263+62	50'L	"
B-9	261+56	0	"
B-14	263+28	0	"
B-18	264+26	0	"
B-8	260+58	50'R	"
B-13	263+04	50'R	"

NOTE ℄ Sta. based on Contract 1978 ℄

NOTE

The information shown on this sheet is based on limited investigation by the State and is in no way warranted to indicate the true conditions which will be encountered during construction.
The boring logs shown on this sheet have been copied from drawings dated 5-16-62, prepared by Sprague & Henwood Inc.

	Date	Revision
In Charge of D. Goldberg		
Designed by M. Glickman		
Drawn by R. Adams		
Checked by M. Glickman		

Prepared and Recommended
GOODKIND & O'DEA, INC.
Consulting Engineers

Date MAR 1965

DELAWARE
STATE HIGHWAY DEPARTMENT

BORING LOGS I

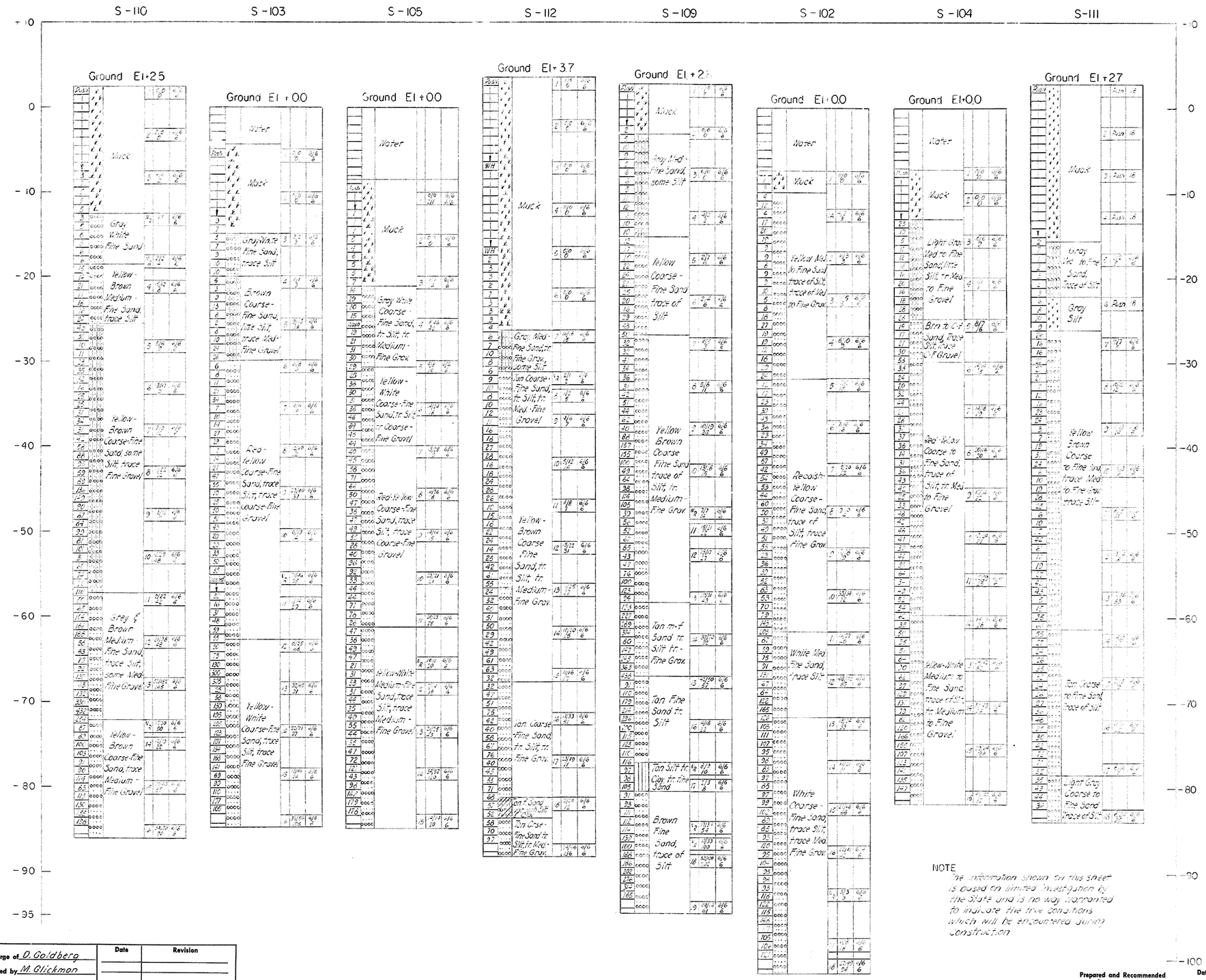
APPROVED BY:
BRIDGE ENGINEER
4/17/65
DATE

DWG. NO.	SCALE	DATE	
14 of 15	No scale		GOODKIND & O'DEA, INC. CONSULTING ENGINEERS

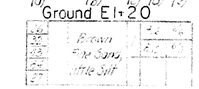
D & W BLUEPRINT CO. 1740-5

COUNTY	CONTRACT	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		51	65

STATE ROUTE 14
OVER BROADKILL RIVER
BRIDGE NO. 1



BORING LEGEND



(a) Hammer blows to drive casing 1 foot.
(b) Description
(c) Sample Number
(d) Blows on Sample Spoon
(e) Penetration of Sample Spoon

BORING NOTES

1. Borings made Jan. & Feb. 1965
2. Location: See boring table
3. Description: Casing - 2"
   Hammer Wt. 300#
   Drop - 24"
4. Water Elevation subject to tidal action
5. Vertical Boring Scale 1" = 6'

Sampler - 1 3/8"
Hammer Wt. - 140#
Drop - 30"

BORING TABLE

BORING	STA. ℄	OFF.	SIZE
S-110	261+23	42 L	2 1/2
S-103	262+31	42 L	2 1/2
S-105	263+16	42 L	2 1/2
S-112	264+25	42 L	2 1/2
S-109	260+95	42 R	2 1/2
S-102	262+09	42 R	2 1/2
S-104	262+63	42 R	2 1/2
S-111	263+96	42 R	2 1/2

NOTE
The information shown on this sheet is based on limited investigation by the State and is no way warranted to indicate the true conditions which will be encountered during construction

	Date	Revision
In Charge of D. Goldberg		
Designed by M. Glickman		
Drawn by R. Adams		
Checked by M. Glickman		

Prepared and Recommended
GOODKIND & O'DEA, INC.
Consulting Engineers

Date MAR 1965

DELAWARE
STATE HIGHWAY DEPARTMENT

BORING LOGS II

APPROVED BY:
BRIDGE ENGINEER
4/17/65
DATE

DWG. NO.	SCALE	DATE	
15 of 15			GOODKIND & O'DEA, INC. CONSULTING ENGINEERS

D & W BLUEPRINT CO. 1740-5

COUNTY	CONTRACT	P.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182(8)		52	65

HIGHWAY QUANTITIES

NO.	ITEM	STA. 52+00 TO STA. 235+50	STA. 235+50 TO STA. 261+13	STA. 264+08 TO STA. 292+00	STA. 292+00 TO STA. 353+50	UNIT	TOTAL
1	CLEARING AND GRUBBING					L.S.	LUMP SUM
2	EXCAVATION	101,050	9,525	18,700	31,725	C.Y.	161,000
2C	MUCK EXCAVATION	15,560	22,350	252,090		C.Y.	290,000
5	BORROW			35,700		C.Y.	35,700
7	SELECT BORROW	21,315	5,100	5,605	6,805	C.Y.	38,825
	SPECIAL FILL	14,880	27,100	276,870		C.Y.	318,850
8	WATERBOUND MACADAM BASE COURSE	705			320	TON	1,025
8D	4" SOIL CEMENT BASE COURSE	6,480	150		1,780	S.Y.	8,410
8D	6" SOIL CEMENT BASE COURSE	17,985	1,710	1,625	2,730	S.Y.	24,050
	PORTLAND CEMENT	2,355	190	170	415	BBL.	3,130
11	HOT-MIX HOT LAID ASPHALTIC CONCRETE PAVEMENT	4,370	315	280	920	TON	5,885
14	RC-70 ASPHALT	24,100	3,980	4,170	7,275	GAL.	39,525
14	RC-250 ASPHALT	28,950	4,775	5,000	8,730	GAL.	47,455
14	COARSE AGGREGATE	1,930	320	335	585	TON	3,170
15	PORTLAND CEMENT CONCRETE PAVEMENT	11,560	3,355	3,705	4,165	C.Y.	22,785
21	WIRE MESH REINFORCEMENT	3,975	1,160	1,280	1,595	SQUARE	8,010
26	15" R.C. PIPE	1,760	276	144	890	L.F.	3,070
26	18" R.C. PIPE	890		76		L.F.	966
26	24" R.C. PIPE	536				L.F.	536
26	36" R.C. PIPE				44	L.F.	44
29	15" C.M. PIPE, BIT. C. & P. INVERT		80	172		L.F.	252
29	36" C.M. PIPE, BIT. C. & P. INVERT	52				L.F.	52
29	43"x27" C.M. PIPE, BIT. C & P INVERT, 12 GA.	432			148	L.F.	580
	15" ENTRANCE PIPE	292	64		128	L.F.	484
	18" ENTRANCE PIPE	464			48	L.F.	512
	21" ENTRANCE PIPE	76				L.F.	76
	24" ENTRANCE PIPE	180		76		L.F.	256
37	PORTLAND CEMENT CONCRETE GUTTER	285				S.Y.	285
40	PORTLAND CEMENT CONCRETE PARKWAY CURB, TYPE 1				680	L.F.	680
40	PORTLAND CEMENT CONCRETE PARKWAY CURB, TYPE 2				225	L.F.	225
44	CATCH BASIN, TYPE "A-1"				2	EA.	2
44	CATCH BASIN, TYPE "PW-BD1"	19	4	4	4	EA.	31
44	CATCH BASIN, TYPE "PW-BD2"	1				EA.	1
44	CATCH BASIN, TYPE "PW-BD4"	3			1	EA.	4
46	ADJUSTING AND REPAIRING MINOR INSTALLATIONS	2				EA.	2
48	WIRE ROPE GUARD FENCE (WOOD POSTS)- 3 WIRE	1,950	1,055	2,255	680	L.F.	5,940
49	END POST ATTACHMENTS	14	8	8	6	EA.	36

HIGHWAY QUANTITIES

NO.	ITEM	STA. 52+00 TO STA. 235+50	STA. 235+50 TO STA. 261+13	STA. 264+08 TO STA. 292+00	STA. 292+00 TO STA. 353+50	UNIT	TOTAL
52	TOPSOILING	86,070	10,730	12,070	27,585	S.Y.	136,455
53	SEEDING	25.2	4.7	6.3	7.9	AC.	44.1
54	MULCHING	122,100	22,500	30,670	37,900	S.Y.	213,170
	JUTE MESH	275				S.Y.	275
60	LATERAL DITCHING	740				L.F.	740
	LONGITUDINAL DITCHING	510	700	450	1,150	L.F.	2,810
61	CALCIUM CHLORIDE FOR DUST CONTROL	40	11	12	12	TON	75
64	RIPRAP, GROUTED	411	44	115	112	S.Y.	682
64	RIPRAP, PLAIN	240				S.Y.	240
65	REMOVAL OF EXISTING PAVEMENT, CURB	210	2,240	3,480	1,490	S.Y.	7,420
	WHITE STONE SHOULDER				380	S.Y.	380
	TEMPORARY STEEL SHEET PILES	4,050				S.F.	4,050
	PERMANENT BARRICADE		80	80		L.F.	160
	SETTLEMENT PLATFORM	6				EA.	6
	PIEZOMETER	6				EA.	6
	MAINTENANCE OF TRAFFIC					L.S.	LUMP SUM
	FIELD OFFICE TRAILER					L.S.	LUMP SUM

GOODKIND & O'DEA INC.
CONSULTING ENGINEERS

COUNTY	CONTRACT	P.B.A. REG. NO.	STATE	FED. AID PROJECT NO	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL	F-182(8)		53	65

STRUCTURAL QUANTITIES

STRUCTURAL QUANTITIES

NO.	ITEM	BRIDGE NO. 719	BRIDGE NO. 718	BRIDGE NO. 1	UNIT	TOTAL
4	EXCAVATION FOR STRUCTURES	435	607	149	C.Y.	1,191
7	SELECT BORROW	10	10	359	C.Y.	379
11	HOT MIX, HOT LAID ASPHALTIC CONCRETE PAVEMENT			165	TON	165
*18	PORTLAND CEMENT CONCRETE MASONRY-DRAINAGE STRUCTURE	129	136		C.Y.	265
*18	PORTLAND CEMENT CONCRETE MASONRY-ABUTMENTS			278	C.Y.	278
*18	PORTLAND CEMENT CONCRETE MASONRY-PIER STRUTS			42	C.Y.	42
*18	PORTLAND CEMENT CONCRETE MASONRY-PIER CAPS			101	C.Y.	101
*18	PORTLAND CEMENT CONCRETE MASONRY-SUPERSTRUCTURE			767	C.Y.	767
*18	PORTLAND CEMENT CONCRETE MASONRY-APPROACH SLAB			204	C.Y.	204
18	PORTLAND CEMENT CONCRETE MASONRY-SUBFOUNDATION			10	C.Y.	10
19	SUPERFICIAL WATERPROOFING	207	261	188	S.Y.	656
*20	BAR REINFORCEMENT	16,920	18,398	265,180	LBS.	300,498
*	REMOVAL OF EXISTING MASONRY	6	8		C.Y.	14
22	STRUCTURAL STEEL (APPROX. WT. 565,274 LBS.)			LUMP SUM	L.S.	LUMP SUM
31	6" PERFORATED CORRUGATED METAL PIPE UNDERDRAIN			194	L.F.	194
33	TIMBER SHEET PILES	0.65	4		M.F.B.M.	4.65
35	12" CAST-IN-PLACE CONCRETE PILES			3,871	L.F.	3,871
35	16" CAST-IN-PLACE CONCRETE PILES			2,053	L.F.	2,053
35	18" CAST-IN-PLACE CONCRETE PILES			2,477	L.F.	2,477
35	12" STEEL SHELL TEST PILES			126	L.F.	126
35	16" STEEL SHELL TEST PILES			146	L.F.	146
35	18" STEEL SHELL TEST PILES			176	L.F.	176
	SLOPE PAVING WITH CEMENT CONCRETE BLOCKS			1,136	S.Y.	1,136
	METAL BRIDGE RAIL			1,283	L.F.	1,283
	ELECTRICAL WORK			LUMP SUM	L.S.	LUMP SUM
	DISPOSAL OF EXISTING BRIDGE STRUCTURE			LUMP SUM	L.S.	LUMP SUM
	BRIDGE DRAINAGE			LUMP SUM	L.S.	LUMP SUM

Note: Items Indicated (*) Are Fixed Quantity Items
See Special Provisions

GOODKIND & O'DEA, INC.
CONSULTING ENGINEERS

COUNTY	CONTRACT	F.A.P. NO.	STATE	FED. AID PROJECT NO.	FINAL YEAR	SHEET NO.	TOTAL SHEETS
SUSSEX	65-01-002	2	DEL.	F-182 (8)		54	65

SOILS SHEET

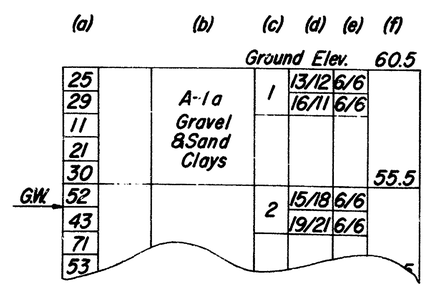
SOILS CLASSIFICATION & BORING DATA

SOILS CLASSIFICATION

GENERAL CLASSIFICATION	Granular Materials (35% or less passing a No. 200 sieve)							Silt-Clay Materials (More than 35% passing a No. 200 sieve)					
GROUP CLASSIFICATION	A-1		A-3	A-2				A-4	A-5	A-6	A-7*		A-8
	a	b		4	5	6	7				5	6	
STANDARD SYMBOL													
SIEVE ANALYSIS PERCENT PASSING No. 10	50 max												
No. 40	30 max	50 max	51 min										
No. 200	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min	36 min	
CHARACTERISTICS OF FRACTION PASSING NO. 40 LIQUID LIMIT				40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min	41 min	42-400
PLASTICITY INDEX	6 max	6 max	N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11 min	11 min	0-60
GROUP INDEX	0		0	0		4 max		8 max	12 max	16 max	20 max		
GENERAL SUBGRADE RATING	Excellent		Good	Good		Fair		Poor	Poor	Poor	Very poor		Unsat.
MATERIAL	Well graded gravels & sands.		Clean sands & gravelly sands.	Poorly graded, silty or clayey sands and gravel.				Silty soils	Elastic silts	Plastic clays	Expansive plastic clays		Muck-Peat

*P.I. of A-7-5 ≤ L.L. -30
*P.I. of A-7-6 > L.L. -30

BORING DATA



(a) Hammer blows to drive casing one (1) foot.
(b) Classification and description.
(c) Sample number.
(d) Blows on sample spoon.
(e) Penetration of sample spoon.
(f) Elevations

GOODKIND & O'DEA, INC.
CONSULTING ENGINEERS

REVISIONS (4-20-61 R.W. & W.K.)	STATE OF DELAWARE STATE HIGHWAY DEPARTMENT
	SOILS DATA
	Prepared: J.G.K.— Reviewed: W.K. & R.W.