

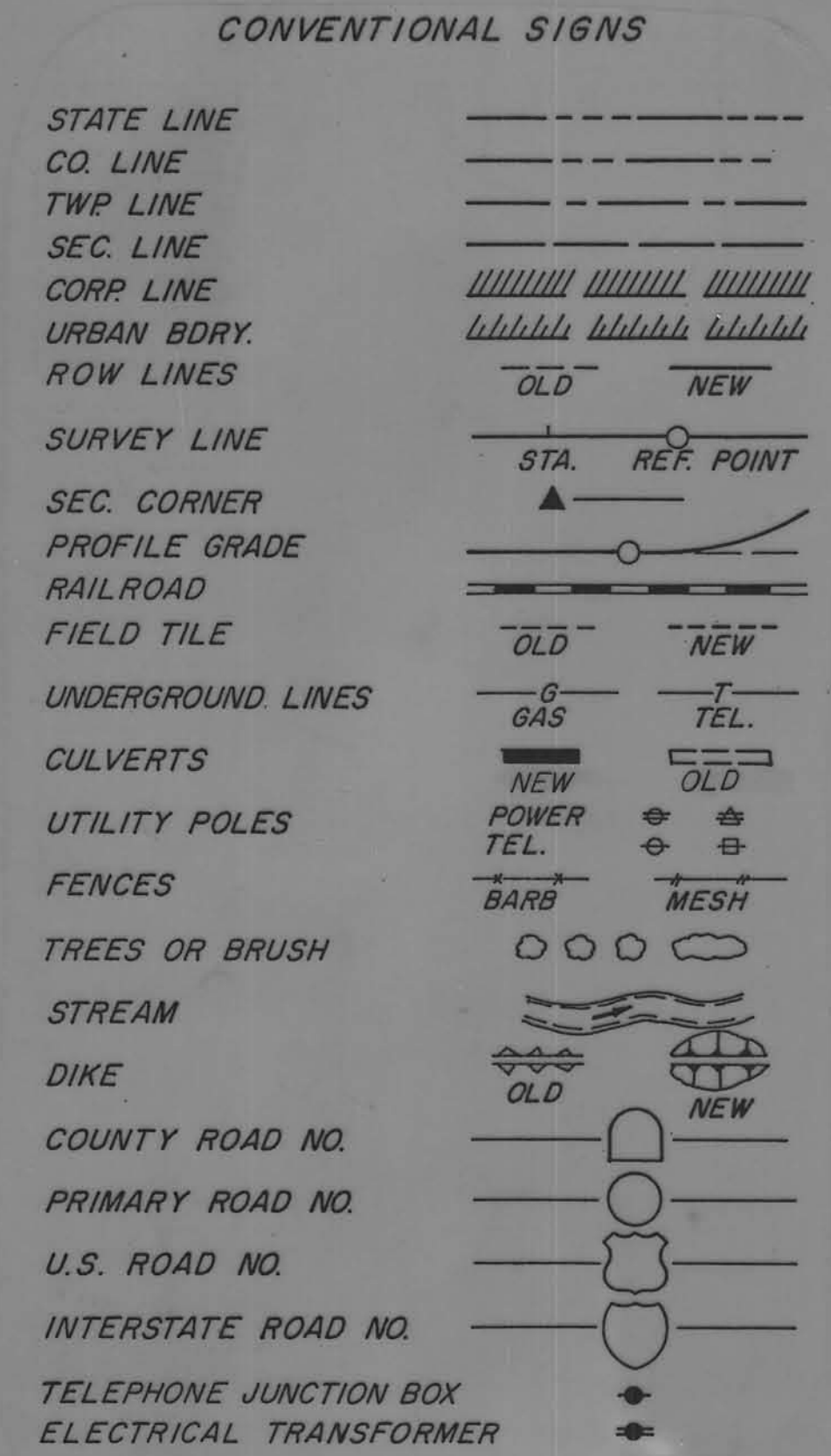
SN-3230(3)--51-24

GRADING

364210

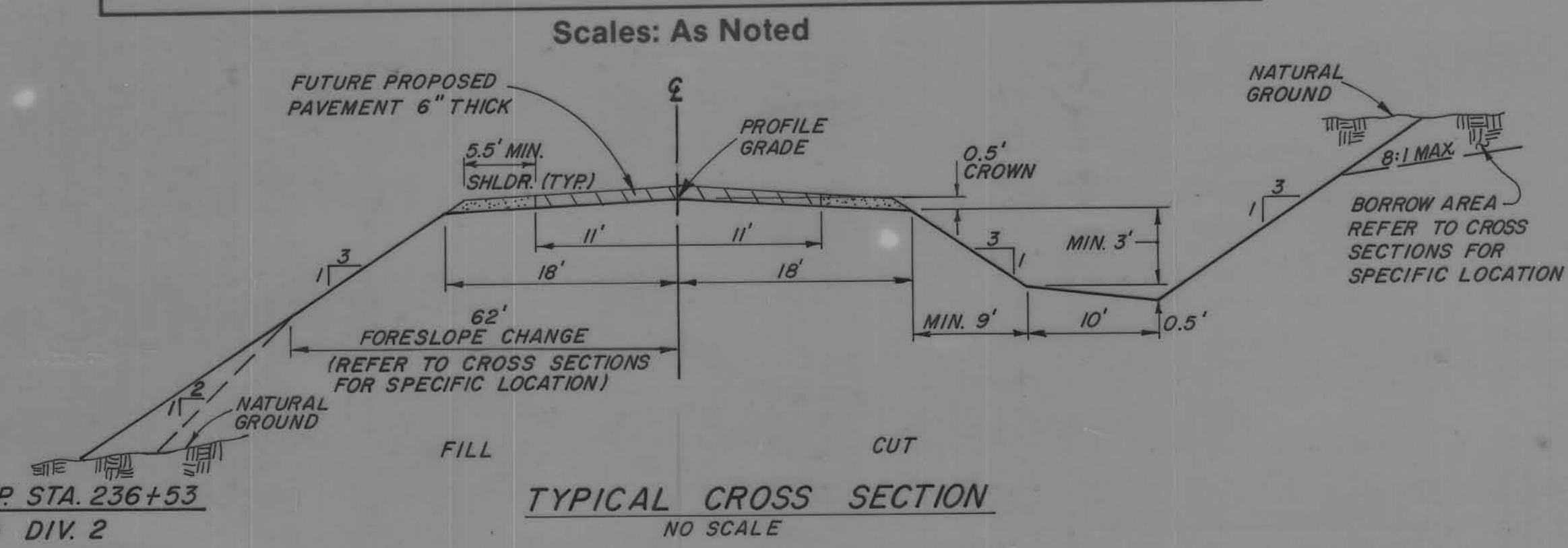
CRAWFORD COUNTY

Letting Date Oct. 8, 1991

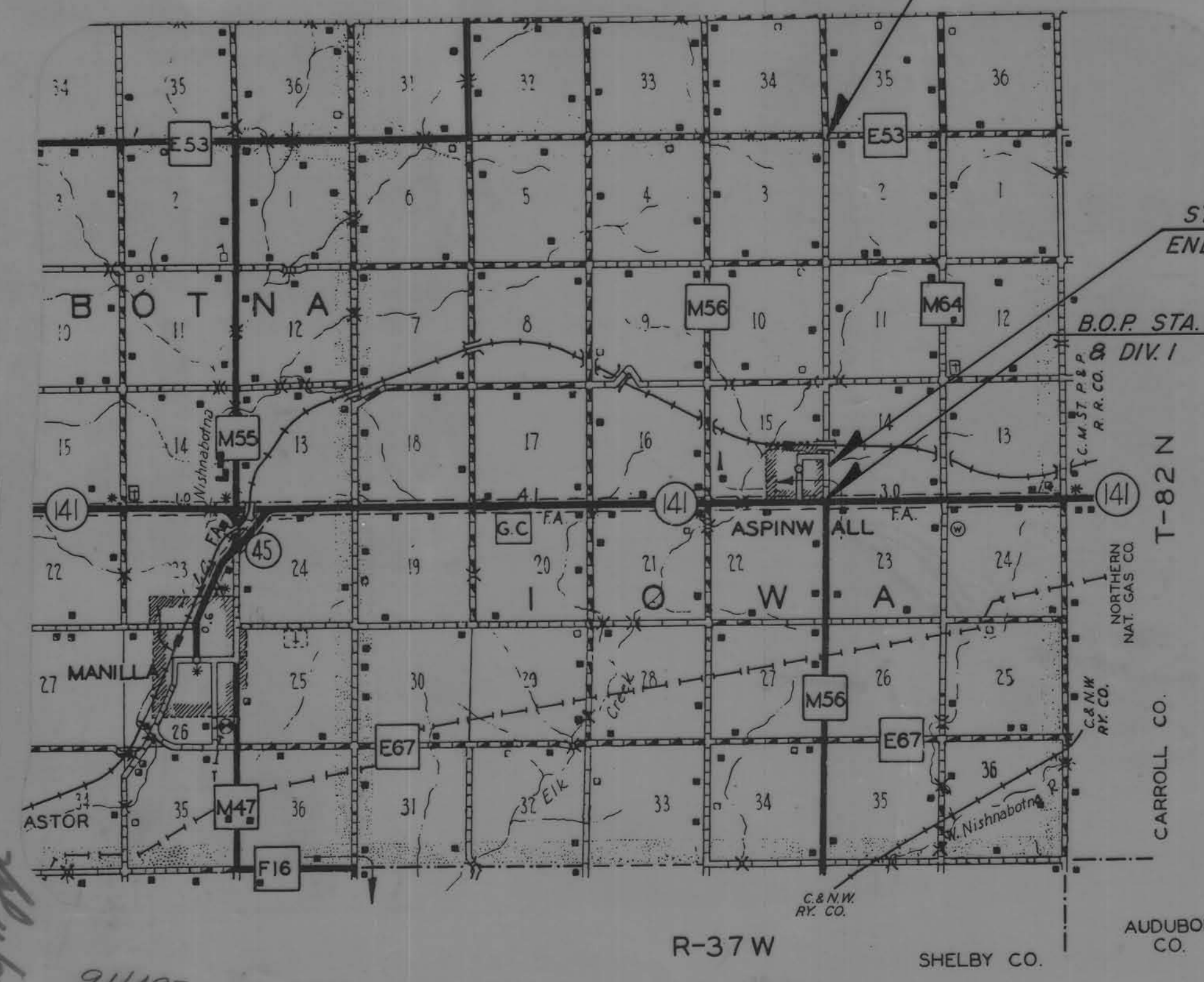


IOWA
DEPARTMENT OF TRANSPORTATION
Highway Division
PLANS OF PROPOSED IMPROVEMENT ON THE
**FARM TO MARKET SYSTEM
CRAWFORD COUNTY**
RS-3230(3)--61-24
GRADING PROJECT

The Standard Specifications, Series of 1984, of the Iowa Department of Transportation Shall Apply to Construction Work on this Project
Plus Current Special Provisions and Supplemental Specifications



This Project to be Let as
SN-3230(3)--51-24



PROJECT TRAFFIC CONTROL PLAN
THIS ROAD WILL BE CLOSED TO THROUGH TRAFFIC DURING CONSTRUCTION. LOCAL TRAFFIC TO ADJACENT PROPERTIES WILL BE MAINTAINED AS PROVIDED FOR IN ARTICLE 1107.08, 1984 STANDARD SPECIFICATIONS. TRAFFIC CONTROL DEVICES, PROCEDURES AND LAYOUTS SHALL BE AS PROVIDED FOR BY SUPPLEMENTAL SPECIFICATIONS FOR TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS SPECIFICATION 502S.

SEE DETAIL SHEET 520-26 "SIGNING FOR TEMPORARY ROAD CLOSURES IN RURAL AREAS" (PROJECT ROUTE CLOSED TO TRAFFIC). DETOUR WILL BE PROVIDED BY COUNTY.
Traffic Control for work adjacent to 13.141 shall be as per RS-2 and RS-3.

1988 AADT 65-140V.P.D.

Project Number: RS-3230(3)--61-24

INDEX OF SHEETS

No.	Description
1	TITLE SHEET
2	ESTIMATE OF QUANTITIES, ESTIMATE REFERENCE INFORMATION
3	GENERAL NOTES
4	TABULATION OF DRAINAGE STRUCTURES, POINTS OF ACCESS, DITCH CHECKS, SOIL BORINGS
5-10	PLAN & PROFILE
11	DETAILS FOR FLOWABLE MOTOR PLACEMENT AT RAILROAD BRIDGE
12	CULVERT DESIGN FOR TWIN 10'x 8' RCB
13-18	ROADWAY CULVERT DESIGN
19	TIES, BENCH MARKS
20	DETAIL SHEET 520-26

CROSS SECTIONS AVAILABLE AT COUNTY ENGINEER'S OFFICE

MILEAGE SUMMARY

Div.	Location	Lin. Ft.	Miles
1	B.O.P. STA. 0+28 TO STA. 18+46.16	1,818.16	0.3443
	TOTAL DIV. 1	1,818.16	0.3443
2	STA. 18+46.16 TO STA. 20+95.93	249.77	0.0474
	EQUATION: STA. 20+95.93 BACK = STA. 94+89.23 AHEAD	14,163.77	2.6825
	STA. 94+89.23 TO E.O.P. STA. 236+53	14,413.54	2.7299
	TOTAL DIV. 2	16,231.70	3.0742
	TOTAL DIV. 1 PLUS DIV. 2		

ROAD STANDARD PLANS
The following Standard Plans shall be considered applicable to construction work on this project.

Identification	Date	Identification	Date	Identification	Date
RC-16	10-2-90	RF-30B	7-21-87	RS-2	7-16-91
RF-1	9-3-76	RF-31	12-3-71	RS-3	11-15-83
RF-3	12-9-77	RF-32	1-9-90		
RF-14	7-16-91	RL-7	7-16-91		
RF-30A	1-9-90				

BRIDGE STANDARDS
(May be obtained at Bridge Design Services)

Standard	Date Issued	Latest Revision	Standard	Date Issued	Latest Revision
TWRCB-G1-87	7-87	10-2-89	TWH 0-4-87	7-87	8-1-89
TWRCB 10-8-87	7-87	8-1-89	TWCBJ 2-87	7-87	8-1-89
TWH 0-1-87	7-87	8-1-89			
TWH 0-2-87	7-87	8-1-89			
TWH 0-3-87	7-87	8-1-89			

APPROVED

John P. Lawler

Don Jensen

LeRoy A. Hansohn

Vigil E. Anderson

Eileen Heider

Approved
Board of Supervisors

APPROVED

H. Dale Wight 2-3-91
H. DALE WIGHT, P.E. & L.S.
CRAWFORD COUNTY ENGINEER

I hereby certify that this plan was prepared under my supervision and that engineering decisions with regard to the design were made by me or by other duly registered professional engineers under the laws of the State of Iowa. *Stephen A. Sudduth*

5107 2-3-91
Iowa Registration Number Date

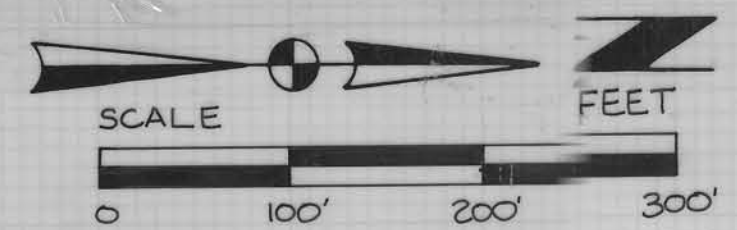
Iowa Department of Transportation
Highway Division

Authorized for Letting
George F. Sisson 3-28-91
Deputy Chief Engineer Date

U.S. Department of Transportation
Federal Highway Administration
Approved

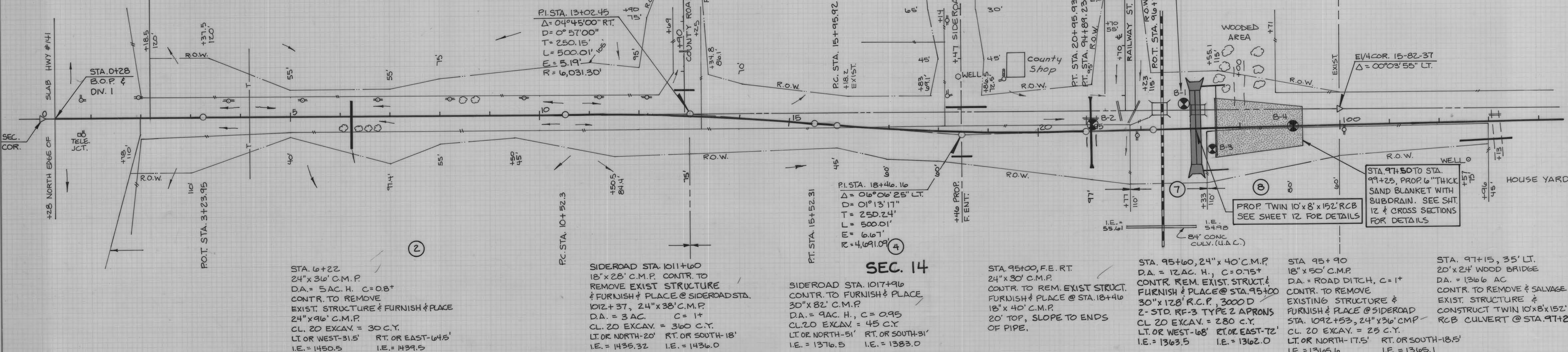
Division Engineer Date

IOWA TOWNSHIP
T-82N R-37W
SEC. 15



- ① MILTON & BETTY LOU SINOW
- ② VIOLA RANNIGER
- ③ GARY R. & JOYCE M. VINKE
- ④ MYRA KAY WITTRICK
- ⑤ CRAWFORD COUNTY
- ⑥ SHIPPERS CONSORTIUM INC.
- ⑦ ROLAND K. MEEVES
- ⑧ ROGER A. HANSEN
- ⑨ JOY E. HANSEN
- ⑩ JAMES W. HANSEN
- ⑪ VERNON H. HANSEN
- ⑫ ALVAN HANSEN L.E.

END DIV. 1 BEGIN DIV. 2



SEC. 14

STA. 6+22
24'x36' C.M.P.
D.A. = 5 AC. H. C = 0.8'
CONTR. TO REMOVE
EXIST. STRUCTURE & FURNISH & PLACE
24'x36' C.M.P.
CL. 20 EXCAV. = 30 C.Y.
LT. OR WEST-31.5' RT. OR EAST-64.5'
I.E. = 1450.5 I.E. = 1439.5

PC STA. 10+52.3
SIDEROAD STA. 10+11+60
18'x28' C.M.P. CONTR. TO REMOVE EXIST. STRUCTURE & FURNISH & PLACE @ SIDEROAD STA. 10+12+37, 24'x38' C.M.P.
D.A. = 3 AC. C = 1'
CL. 20 EXCAV. = 360 C.Y.
LT. OR NORTH-20' RT. OR SOUTH-18'
I.E. = 1435.32 I.E. = 1436.0

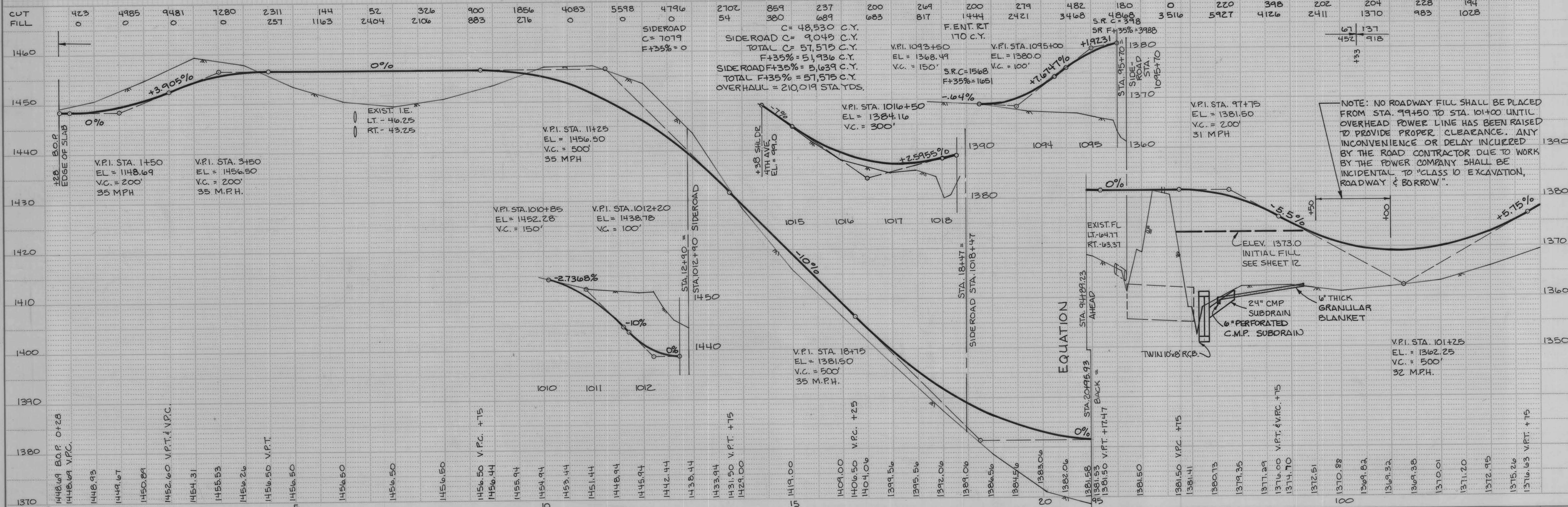
PT. STA. 15+52.31
SIDEROAD STA. 10+17+96
CONTR. TO REMOVE EXIST. STRUCTURE & FURNISH & PLACE @ STA. 18+46
30'x82' C.M.P.
D.A. = 9 AC. H. C = 0.95
CL. 20 EXCAV. = 45 C.Y.
LT. OR NORTH-51' RT. OR SOUTH-31'
I.E. = 1376.5 I.E. = 1383.0

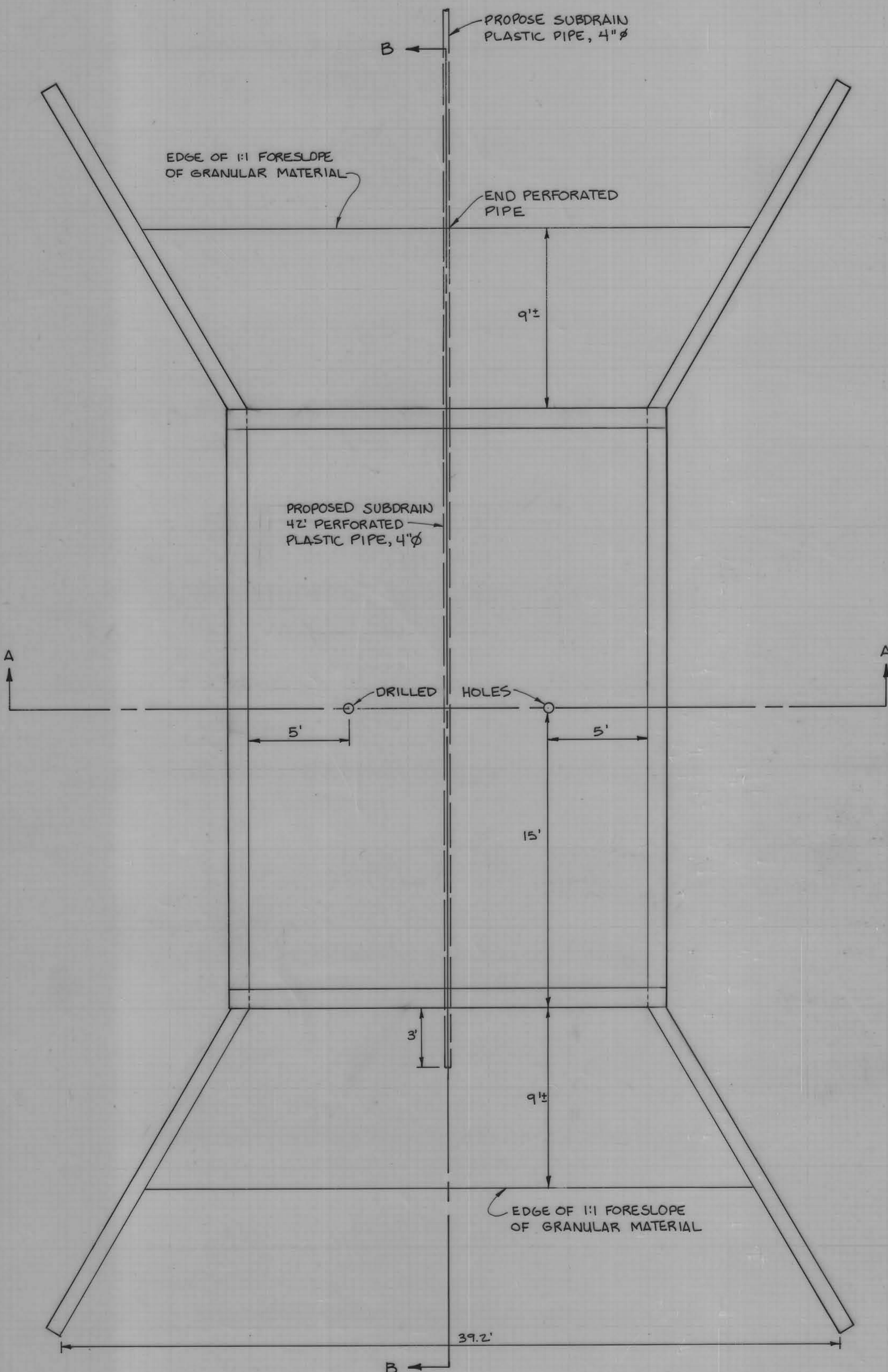
STA. 95+00, F.E. RT.
24'x30' C.M.P.
CONTR. TO REMOVE EXIST. STRUCTURE & FURNISH & PLACE @ STA. 18+46
18'x40' C.M.P.
20' TOP, SLOPE TO ENDS OF PIPE.

STA. 95+60, 24'x40' C.M.P.
D.A. = 12 AC. H., C = 0.75'
CONTR. REMOVE EXIST. STRUCTURE & FURNISH & PLACE @ STA. 95+00
30'x128' R.C.P. 3000 D
2-STD. RF-3 TYPE 2 APRONS
CL. 20 EXCAV. = 280 C.Y.
LT. OR WEST-68' RT. OR EAST-72'
I.E. = 1363.5 I.E. = 1362.0

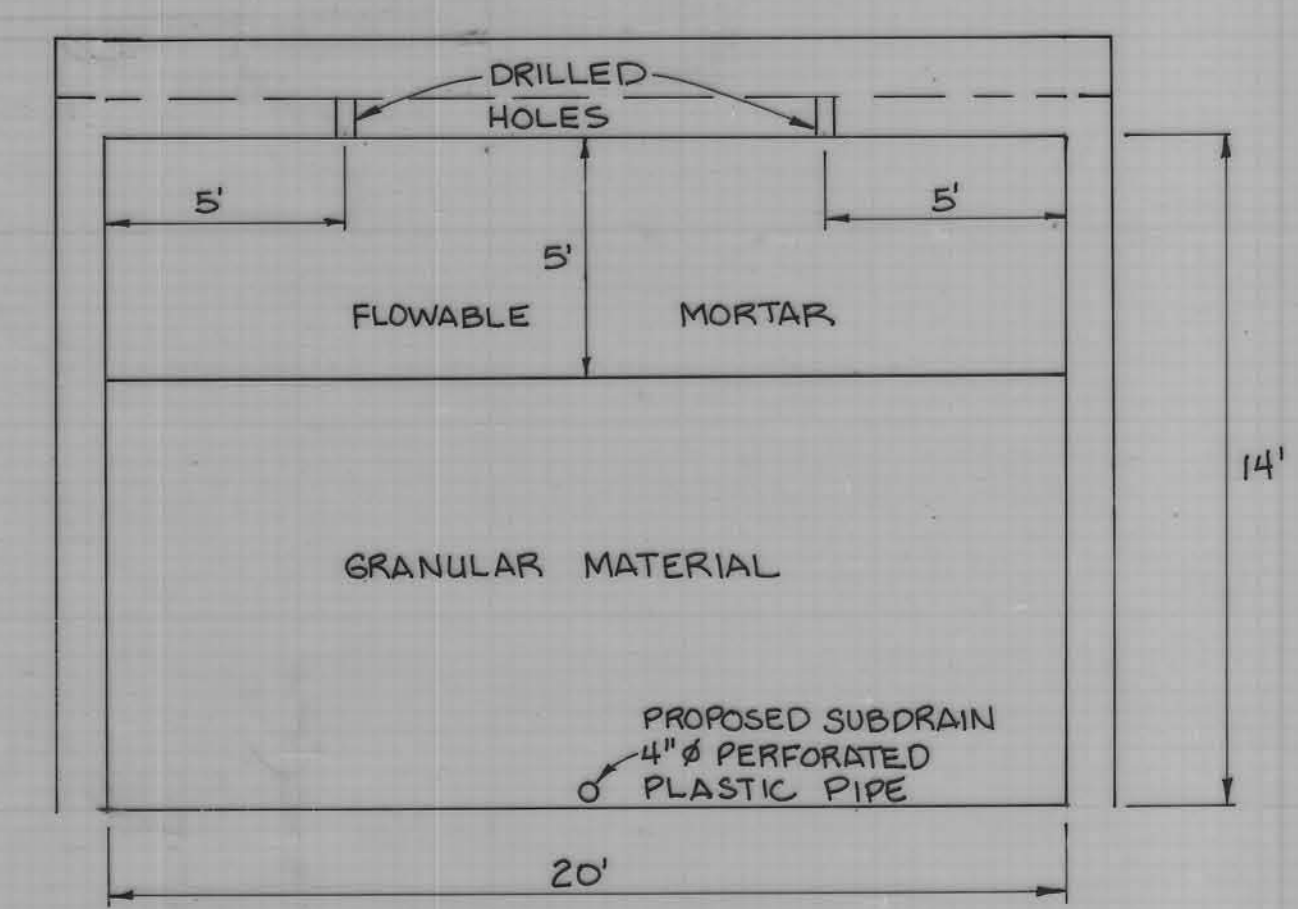
STA. 95+90
18'x50' C.M.P.
D.A. = ROAD DITCH, C = 1'
CONTR. TO REMOVE EXISTING STRUCTURE & FURNISH & PLACE @ SIDEROAD STA. 10+92+53, 24'x36' C.M.P.
CL. 20 EXCAV. = 25 C.Y.
LT. OR NORTH-17.5' RT. OR SOUTH-18.5'
I.E. = 1365.6 I.E. = 1365.1

STA. 97+15, 35' LT.
20'x24' WOOD BRIDGE
D.A. = 1366 AC
CONTR. TO REMOVE & SALVAGE EXIST. STRUCTURE & CONSTRUCT TWIN 10'x8'x152' RCB CULVERT @ STA. 97+25
I.E. = 1365.1

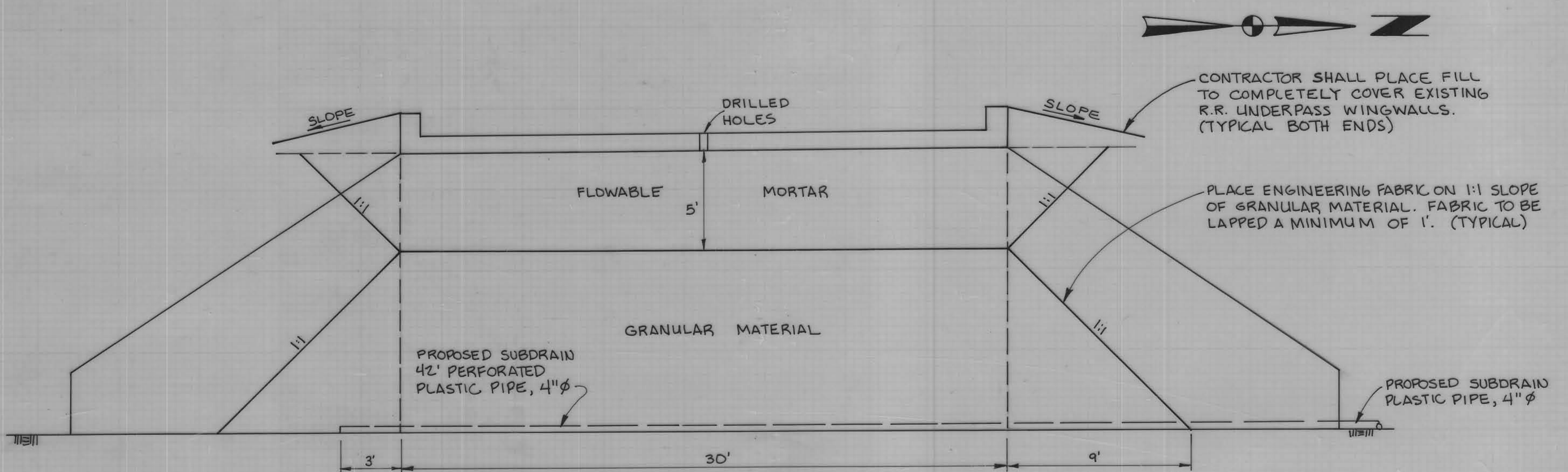




PLAN VIEW
SCALE: 1" = 4'



SECTION A-A



SECTION B-B

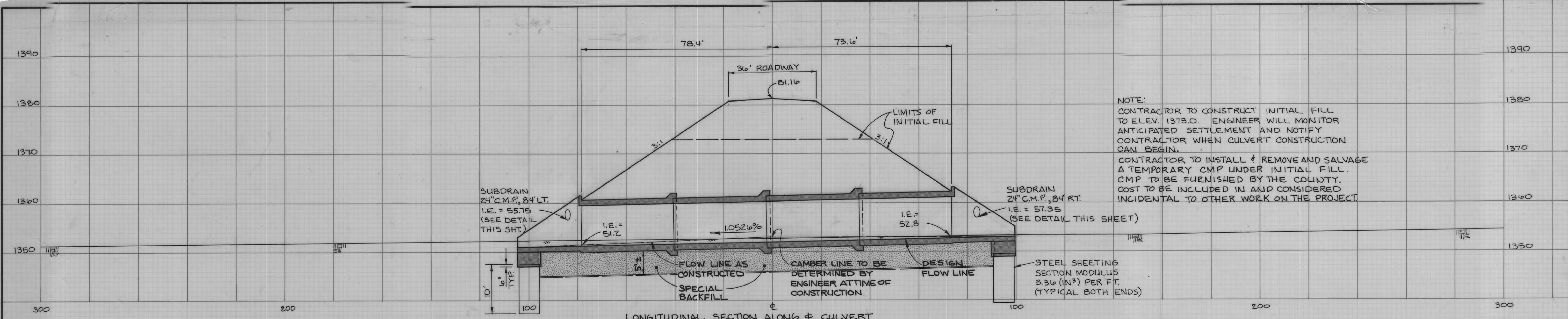


CONTRACTOR SHALL PLACE FILL
TO COMPLETELY COVER EXISTING
R.R. UNDERPASS WINGWALLS.
(TYPICAL BOTH ENDS)

PLACE ENGINEERING FABRIC ON 1:1 SLOPE
OF GRANULAR MATERIAL. FABRIC TO BE
LAPPED A MINIMUM OF 1'. (TYPICAL)

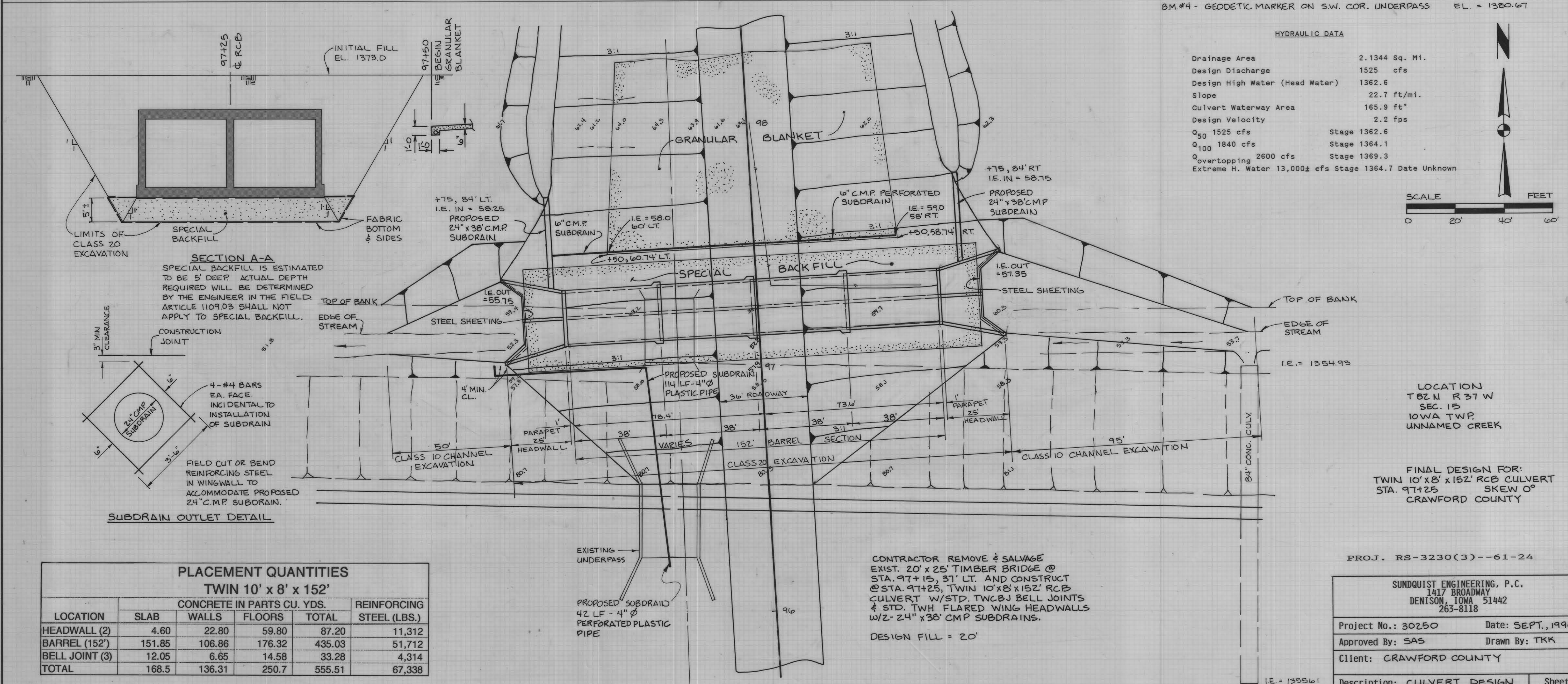
S SUNDQUIST ENGINEERING, P.C.
CONSULTING ENGINEERS
1417 Broadway
Denison, IA 51442

Project No.: 30250	Date: SEPT, 1990
Approved By: SAS	Drawn By: TKK
Client: CRAWFORD COUNTY	
Description: DETAILS FOR FLOWABLE MORTAR PLACEMENT AT R.R. BRIDGE	Sheet 11/20



NOTE:
 CONTRACTOR TO CONSTRUCT INITIAL FILL TO ELEV. 1373.0. ENGINEER WILL MONITOR ANTICIPATED SETTLEMENT AND NOTIFY CONTRACTOR WHEN CULVERT CONSTRUCTION CAN BEGIN.
 CONTRACTOR TO INSTALL & REMOVE AND SALVAGE A TEMPORARY CMP UNDER INITIAL FILL. CMP TO BE FURNISHED BY THE COUNTY. COST TO BE INCLUDED IN AND CONSIDERED INCIDENTAL TO OTHER WORK ON THE PROJECT.

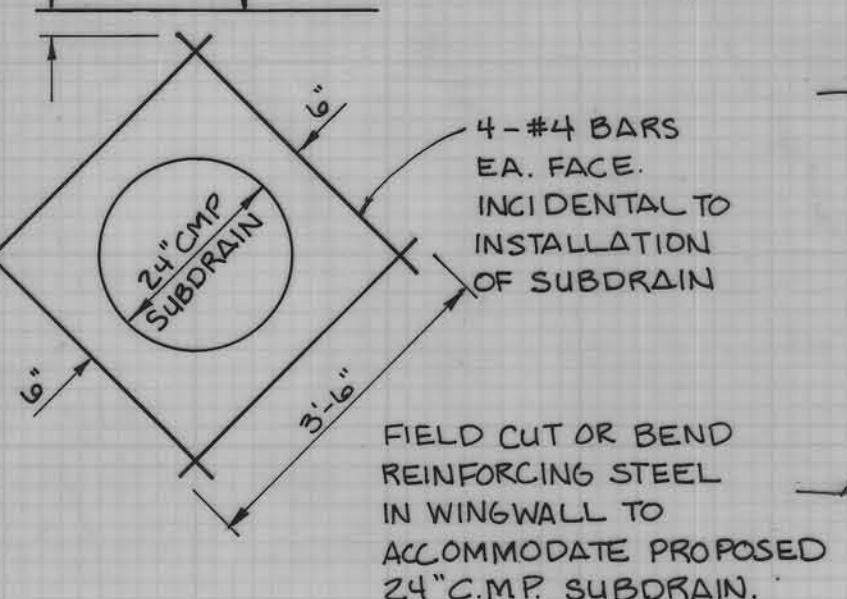
B.M.#4 - GEODETIC MARKER ON S.W. COR. UNDERPASS EL. = 1380.67



HYDRAULIC DATA

Drainage Area	2.1344 Sq. Mi.
Design Discharge	1525 cfs
Design High Water (Head Water)	1362.6
Slope	22.7 ft/mi.
Culvert Waterway Area	165.9 ft²
Design Velocity	2.2 fps
Q ₅₀ 1525 cfs	Stage 1362.6
Q ₁₀₀ 1840 cfs	Stage 1364.1
Q _{overtopping} 2600 cfs	Stage 1369.3
Extreme H. Water 13,000± cfs	Stage 1364.7 Date Unknown

SECTION A-A
 SPECIAL BACKFILL IS ESTIMATED TO BE 5' DEEP. ACTUAL DEPTH REQUIRED WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. ARTICLE 1109.03 SHALL NOT APPLY TO SPECIAL BACKFILL.



PLACEMENT QUANTITIES
TWIN 10' x 8' x 152'

LOCATION	CONCRETE IN PARTS CU. YDS.				REINFORCING STEEL (LBS.)
	SLAB	WALLS	FLOORS	TOTAL	
HEADWALL (2)	4.60	22.80	59.80	87.20	11,312
BARREL (152')	151.85	106.86	176.32	435.03	51,712
BELL JOINT (3)	12.05	6.65	14.58	33.28	4,314
TOTAL	168.5	136.31	250.7	555.51	67,338

CONTRACTOR REMOVE & SALVAGE EXIST. 20' x 25' TIMBER BRIDGE @ STA. 97+15, 37' LT. AND CONSTRUCT @ STA. 97+25, TWIN 10' x 8' x 152' RCB CULVERT W/STD. TWCBJ BELL JOINTS & STD. TWH FLARED WING HEADWALLS W/2-24" x 38" CMP SUBDRAINS.
 DESIGN FILL = 20'

PROJ. RS-3230(3)--61-24

SUNDQUIST ENGINEERING, P.C.
 1417 BROADWAY
 DENISON, IOWA 51442
 263-8118

Project No.: 30250 Date: SEPT., 1990
 Approved By: SAS Drawn By: TTK
 Client: CRAWFORD COUNTY

Description: CULVERT DESIGN Sheet 12/20
 TWIN 10' x 8' x 152' RCB CULVERT