

TYPE OF WORK	
1 RIGHT OF WAY	8 SHOULDER WIDENING
2 GRADE AND DRAIN	9 SHOULDER STABILIZATION
3 PAVE	10 BRIDGE PRESERVATION-DECK
4 EROSION CONTROL	11 BRIDGE OR CULVERT PRESERVATION-OTHER
5 PAVEMENT WIDENING ONLY	12 BRIDGE OR CULVERT REPLACEMENT
6 PAVEMENT PRESERVATION ONLY	13 SAFETY
7 PAVEMENT PRESERVATION WITH WIDENING	14 MISCELLANEOUS

Subject to change by final design and review.

Points of access shown on these plans are suggestions only.

Final determination of access is to be made at time of right-of-way.

Purchase with the approval of the district engineer.

IOWA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION PRELIMINARY PLANS

STATE CONTROL SECTION NO.
64-1400

R.O.W. PROJECT NUMBER
FN-146-4(11)--21-64

PIN NUMBER
82-64050-1

DESIGN DATA

PROJ. ENGR. R. WEIGEL DESIGNER IN CHARGE F. BEHNAMI

LOCATION RTE. 146 FROM CO. RD. E-49 N. TO US 30 (2 MI)

FUNCTION CLASS ARTERIAL CONN. SERVICE LEVEL C HYDRAULICS FILE NO.

1987 AVERAGE DAILY TRAFFIC 1855 V.P.D. TRUCKS 10 %

2007 AVERAGE DAILY TRAFFIC 2395 V.P.D.

DESIGN HOURLY TRAFFIC V.P.H.

TERRAIN MAINTAIN TRAFFIC THROUGH PROJECTS ? NO

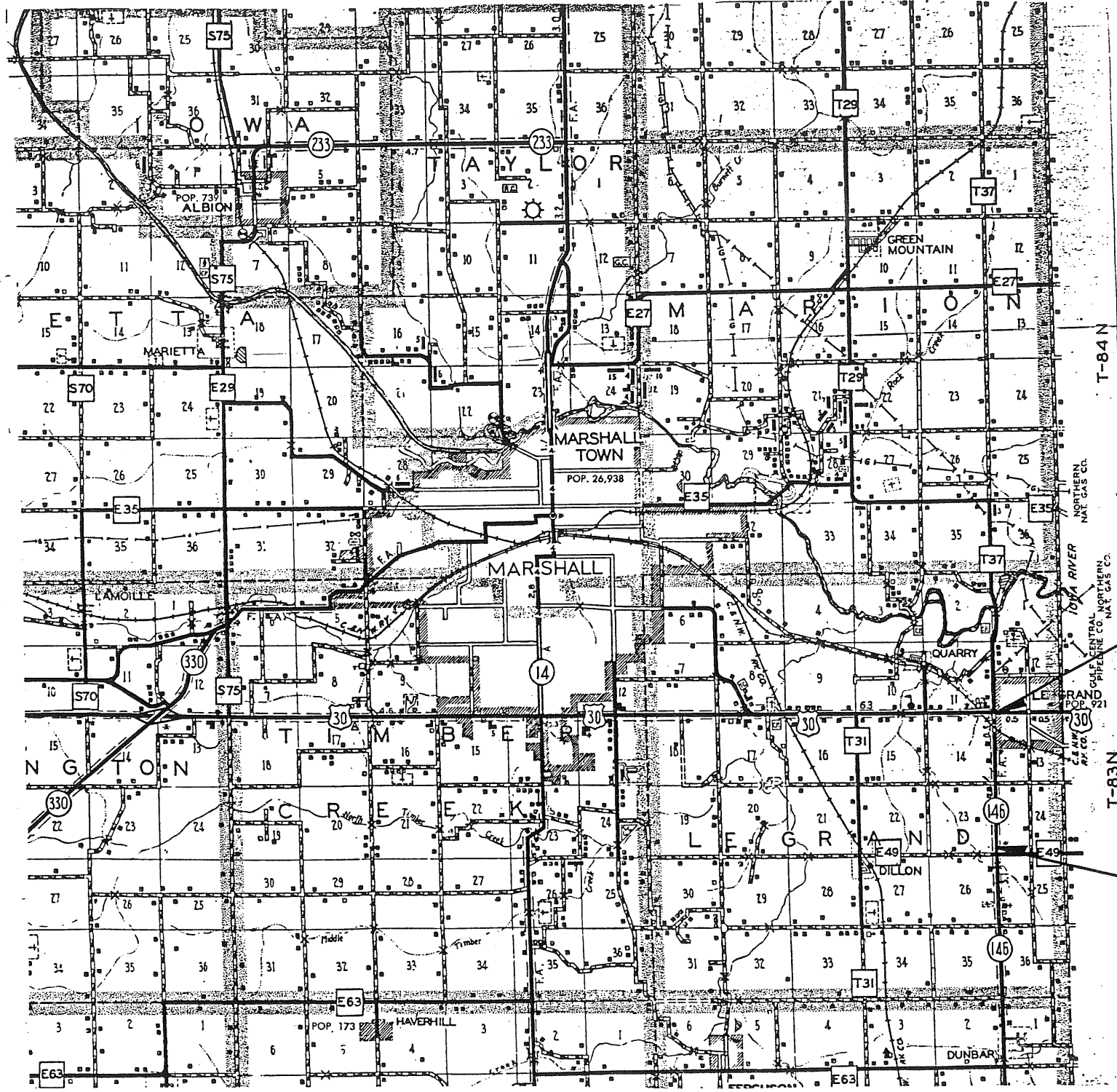
DETOURS WEST ON CO. ROAD E-63, NORTH ON IOWA 14 AND EAST ON US 30 TO IOWA 146.

Date Assigned to Design Section **11-25-87**

PRODUCTION SCHEDULE

EVENT	Proposed Date	Completed Date
D-1 Survey	9-04-87	8-17-87
D-2 Field Exam	5-06-88	5-10-88
D-3 To Prelim. Culverts	7-08-88	7-11-88
D-4 Soils	2-02-89	
D-5 To Right of Way	3-09-89	
D-6 Grade		
D-7 Pave		
D-8 Reconstruction	2-18-92	
L-1 Grade		
L-2 Pave		
L-3 Reconstruction		

	Date	
	Sent	Returned
PRE-FIELD EXAM SUBMITTALS		
Pavement Determination		
To Soils (Preliminary)		
To Culverts (Preliminary)		
Methods (Intersection)		
Methods (Interchange)		
FHWA (Interchange)		
To Field Exam Engineer		
Pre F.E. Access Submittal		
Field Exam Held (D-2)		



3-9-89
PRINTS FOR R.O.W.
1 Set Plastics (Signed) B.C.W.
1 50% copy - Cross Sections
3 Prints - Plan & Profile District #
Date Printed 3-10-89

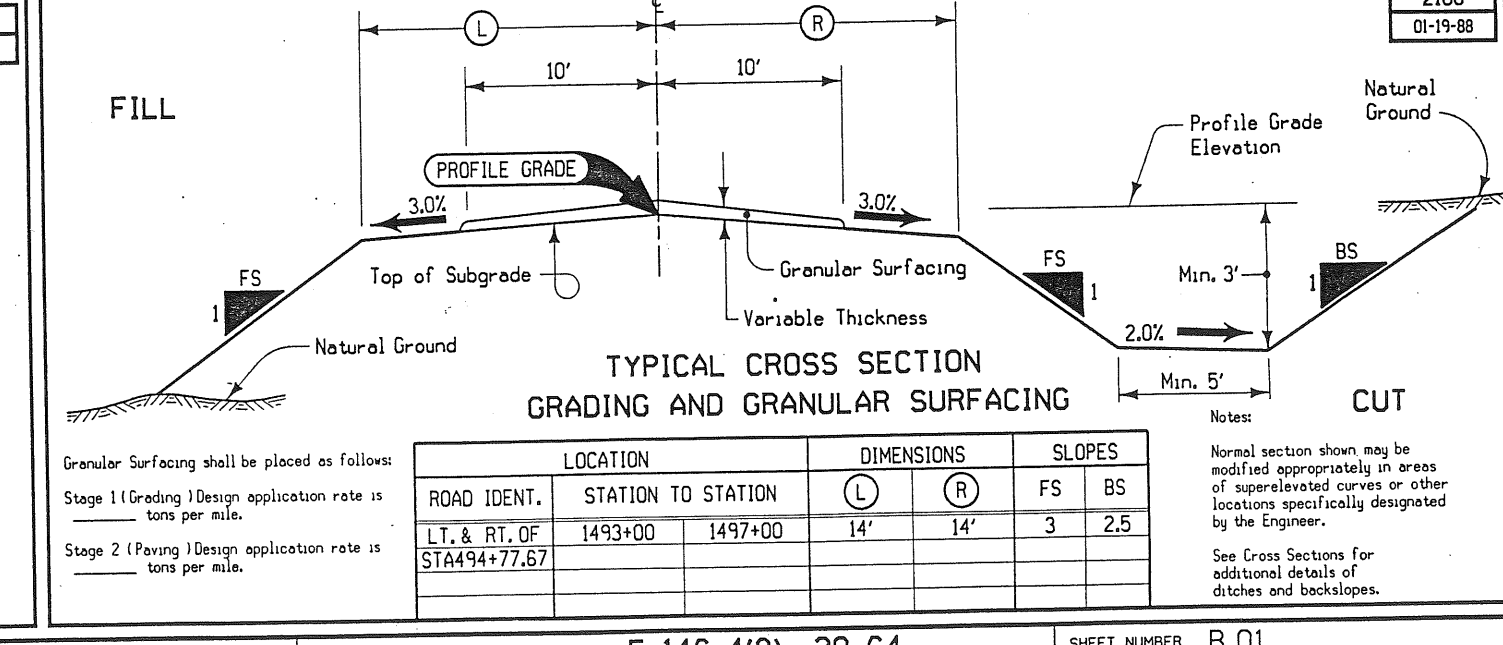
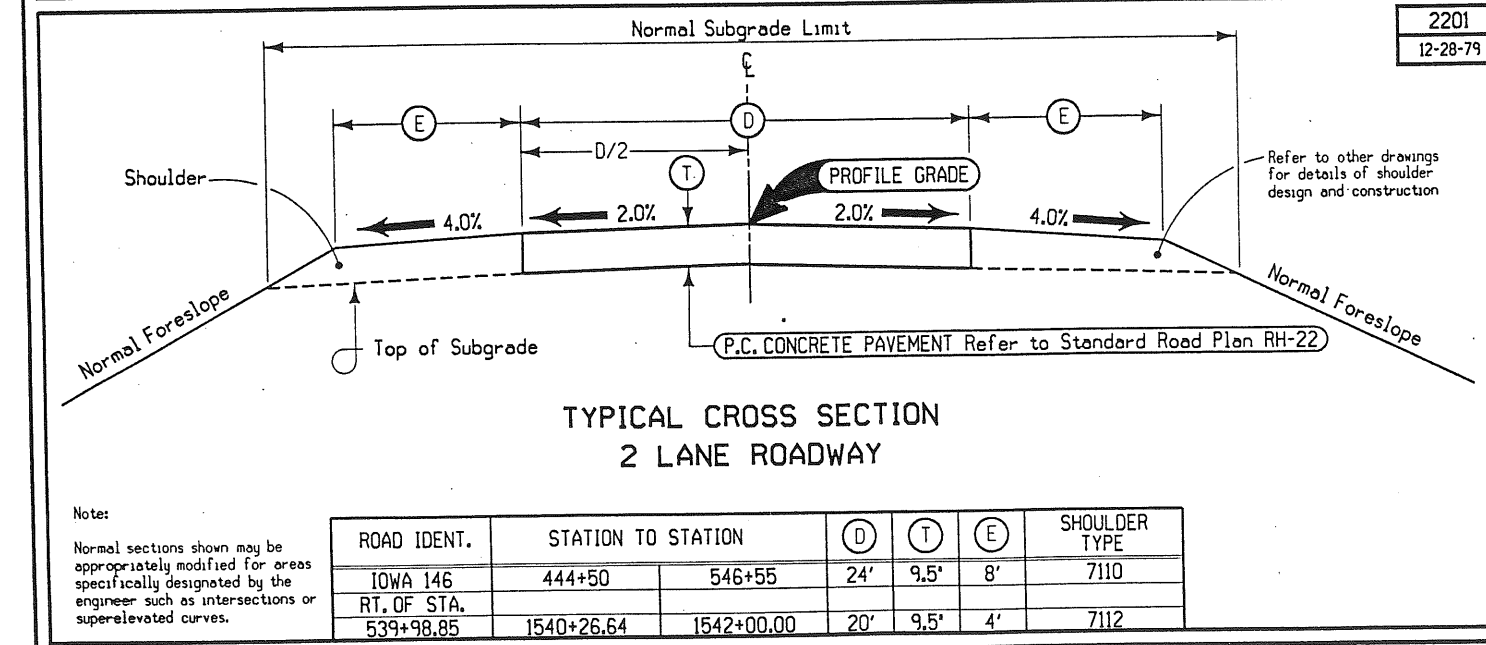
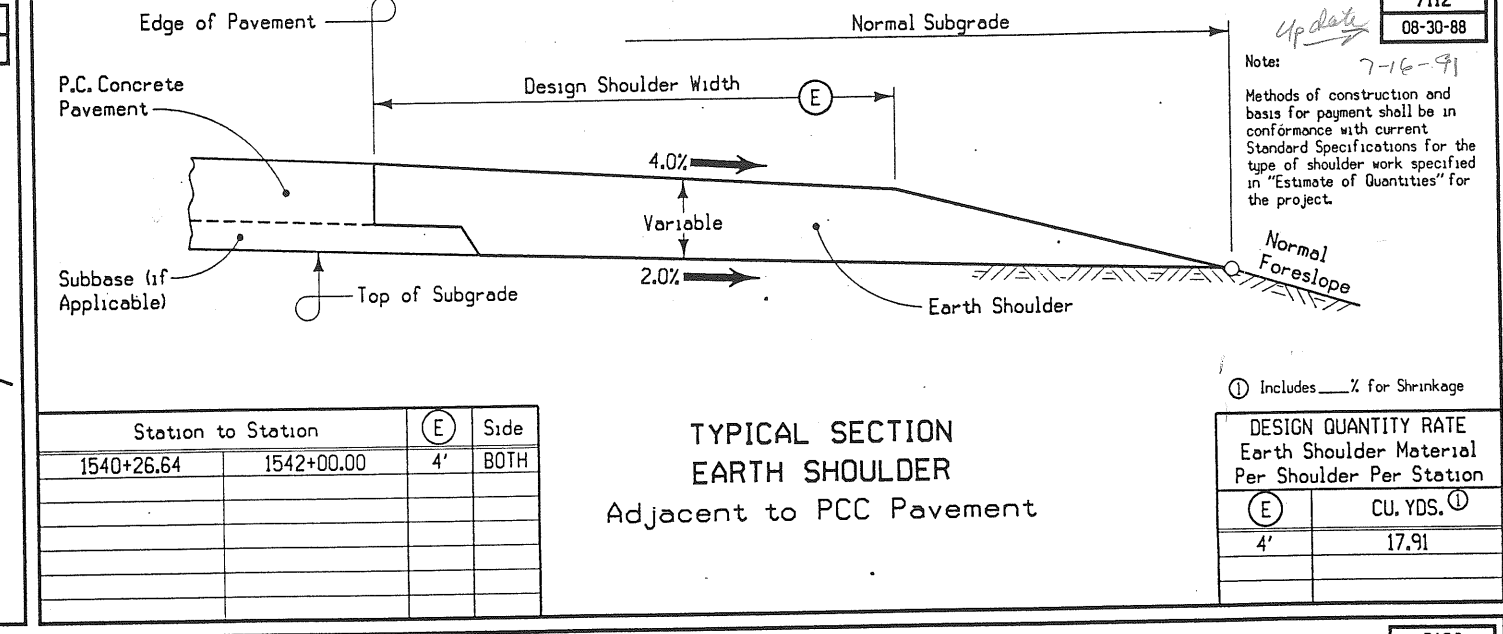
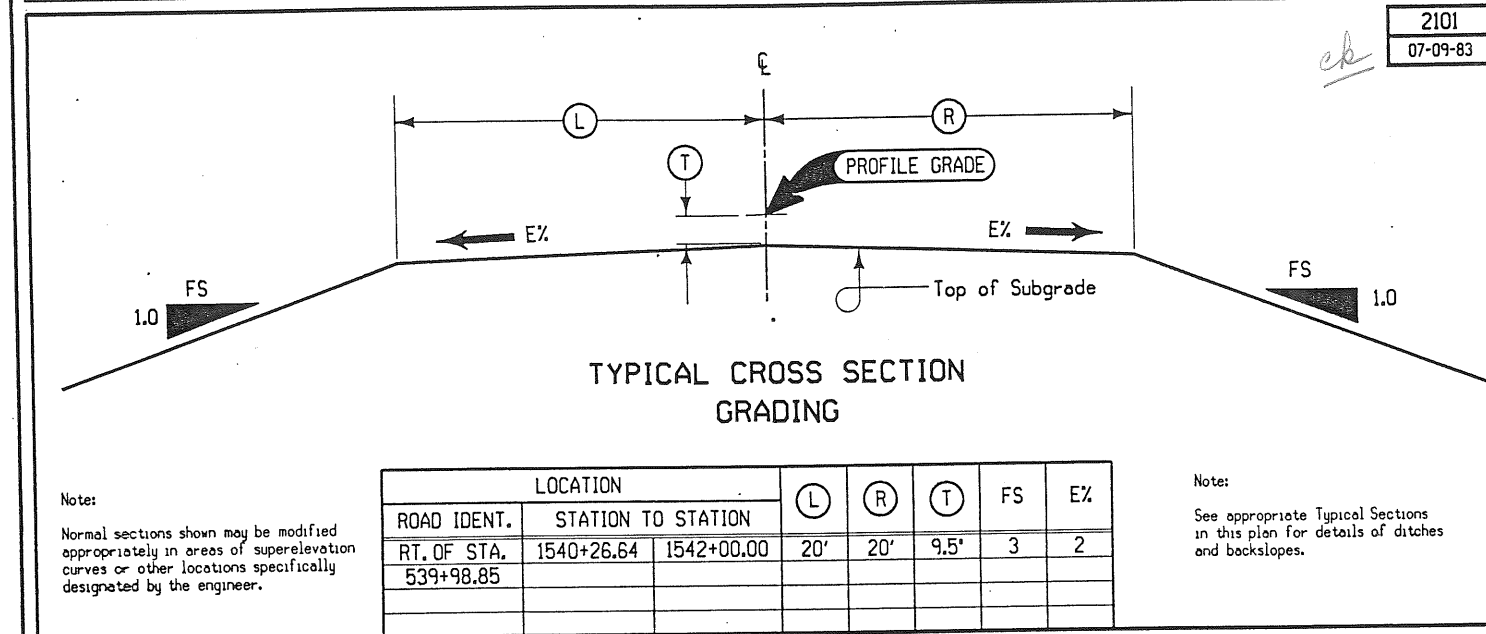
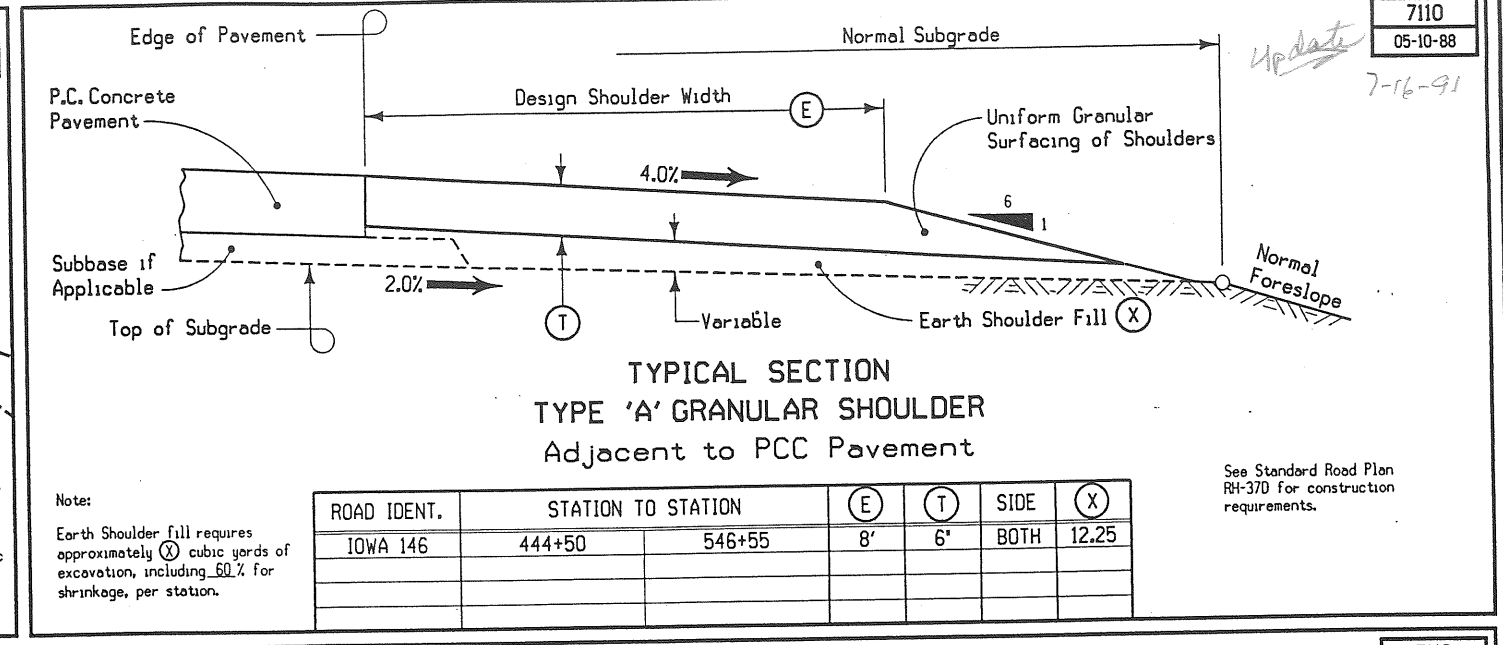
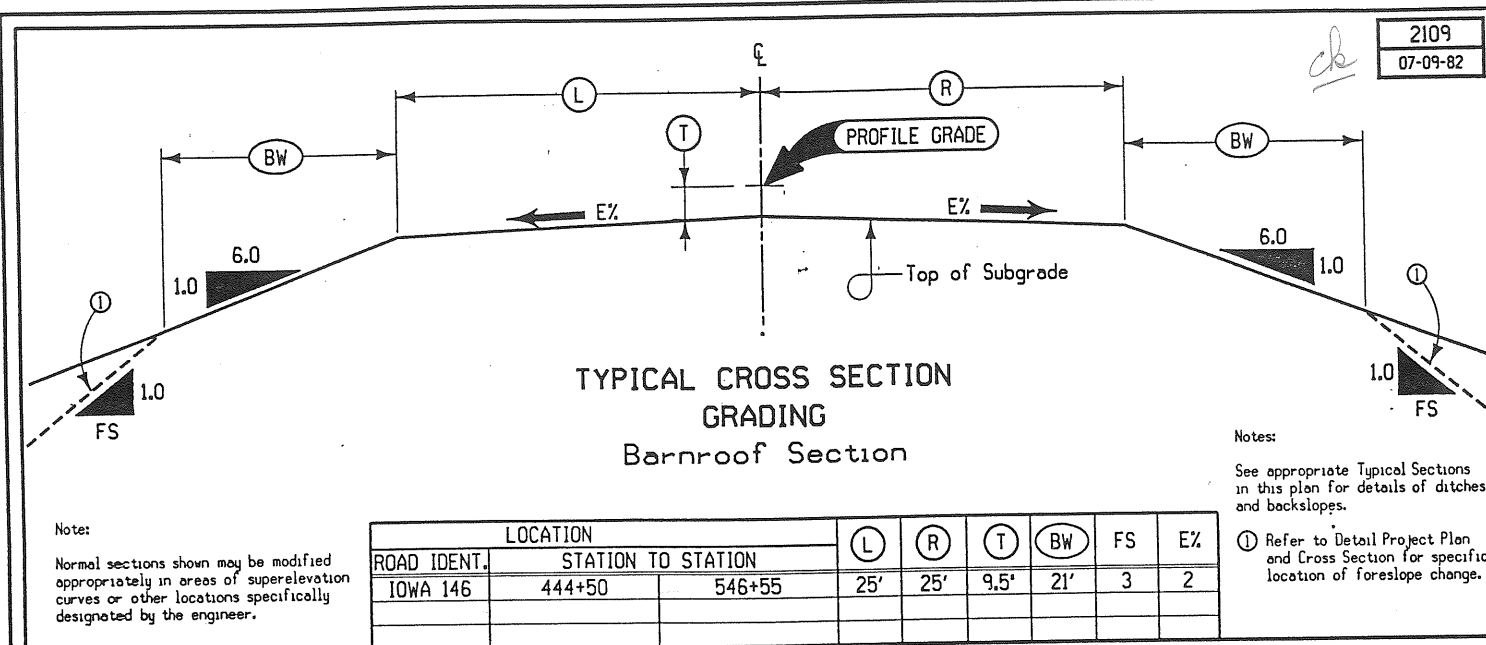
11 Plan Sheets
3 Rolls of X-section
1 Bridge Situation Plan
1 RCB Situation Plan
R.O.W. Needs Tab
5-23-89

2 Plan Sheets
4 X-sections
1 Needs Tab
5-22-89

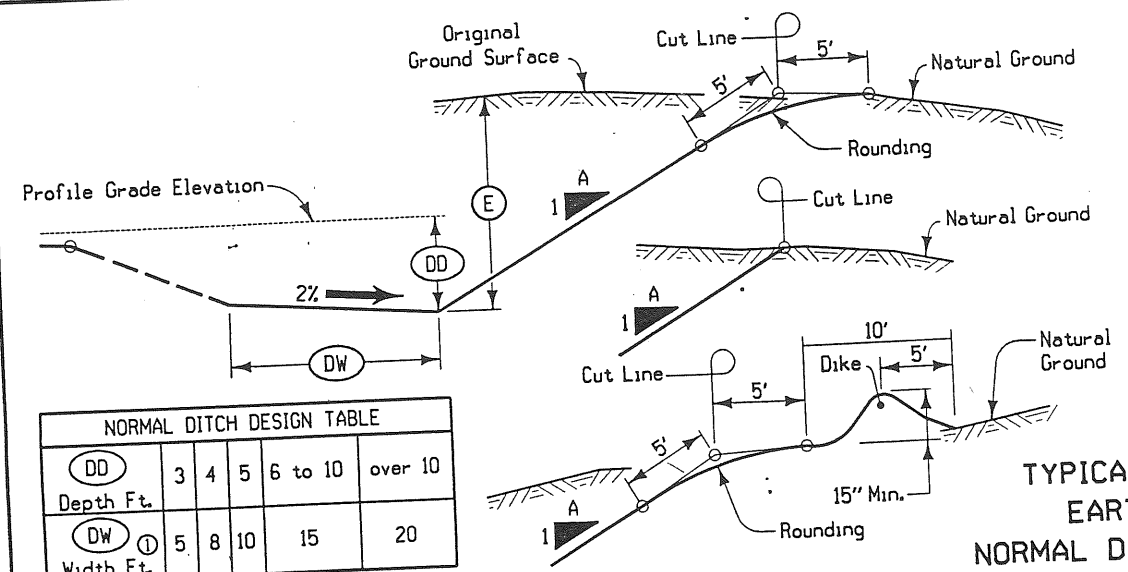
STA 546+55
END PROJECT

STA 444+50
BEGIN PROJECT





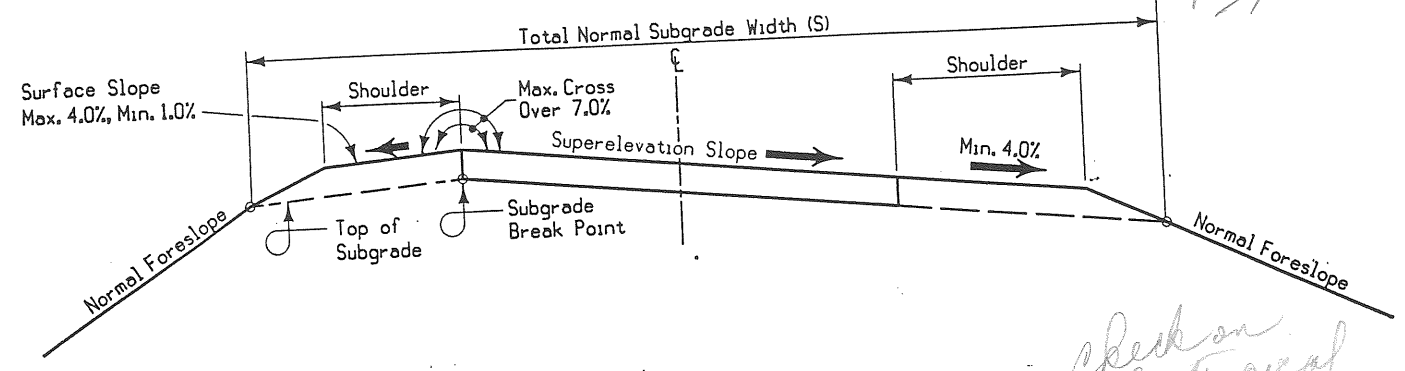
4101
09-23-86



Notes:
For normal conditions, backslopes (A) shall be 2.5 on 1.0 for E depths less than 25', unless specified otherwise. Refer to detail project plans and cross sections for Ditch Depth or for Special Ditches.
Refer to project plans for locations of areas where rounding of the back slope is not required.
Refer to plans for locations of intercepting ditches. Dike for intercepting ditch shall be made by taking earth from roadway side. Do not excavate back of dike.

TYPICAL CROSS SECTION
EARTH EXCAVATION
NORMAL DITCH AND BACKSLOPE

① A 100' transition should be used between width changes.

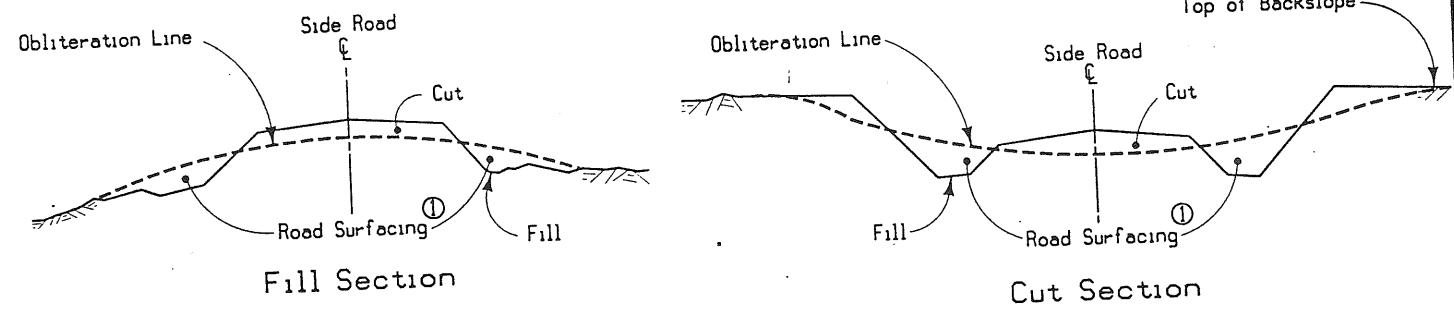


Notes:
High Side: The shoulder slope shall be maintained at the normal rate of 4.0% unless this slope produces a grade break with adjacent pavement of more than 7.0%. The shoulder slope shall then be determined by a 7.0% break with adjacent pavement. If superelevation slope exceeds 6.0%, use Typical 2014 for high side shoulder.
Low Side: The shoulder slope shall be maintained at normal rate of 4.0% unless the adjacent pavement slope is steeper, in which case the shoulder will slope at the same slope as adjacent pavement.

SUPERELEVATION (UP TO 6.0%)
TYPICAL CROSS SECTION
ALL PAVED A.C. CONC. or P.C. CONC. SHOULDERS

Update
check on this typical

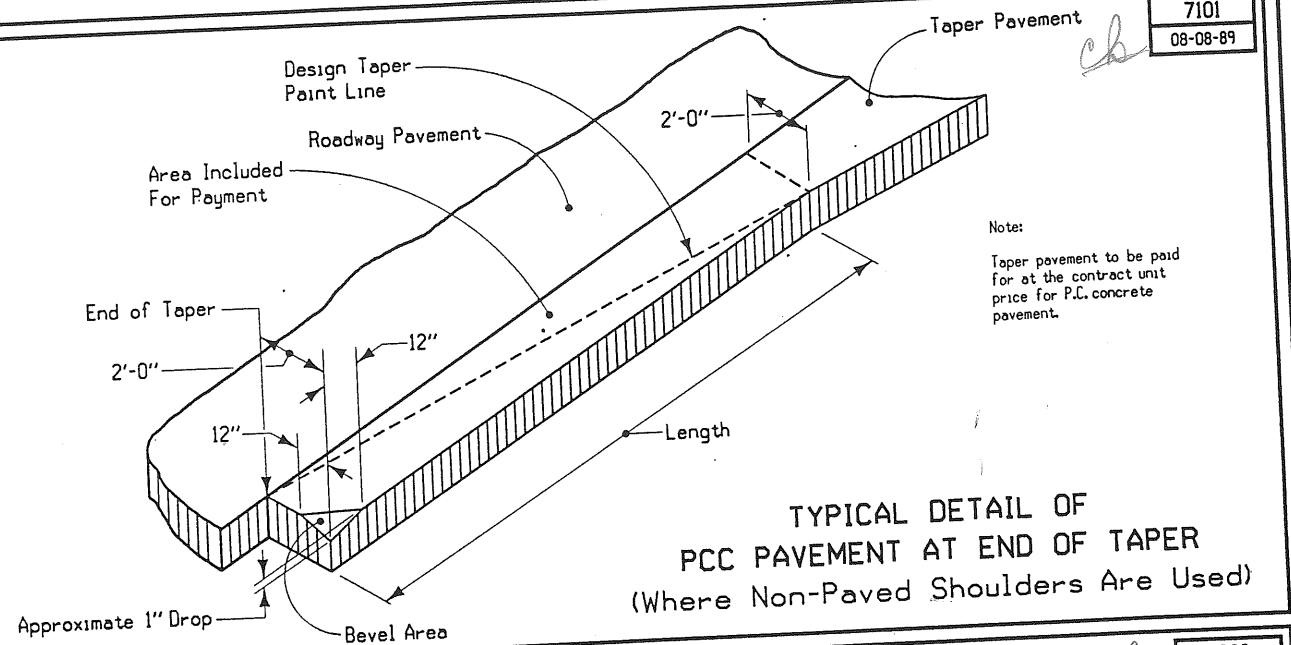
7101
08-08-89



① Existing road surfacing (granular material) shall be placed as shown unless otherwise directed by the engineer or provided for in the detail project plans.

Note:
The work of obliterating or reshaping old roadbeds shall be done at the direction of the engineer. Any such work necessary shall not be paid for directly, but shall be considered incidental to other work on the project.

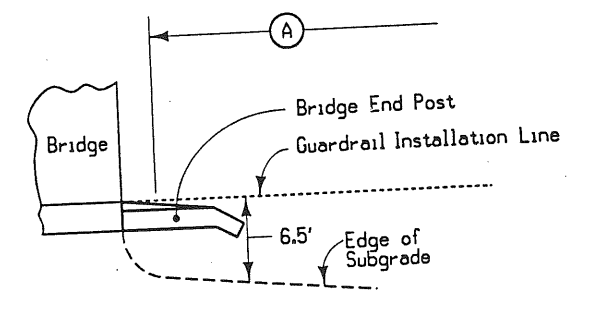
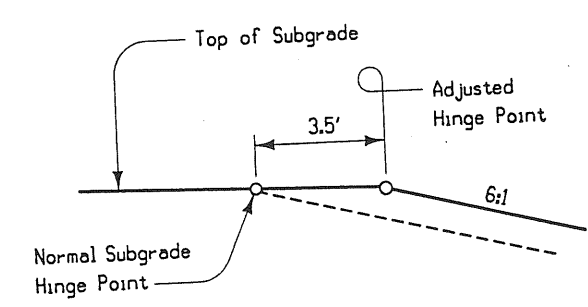
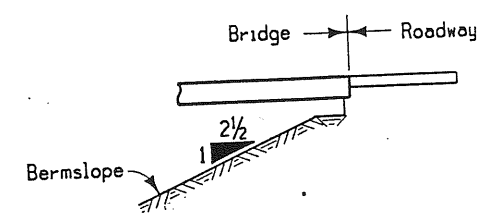
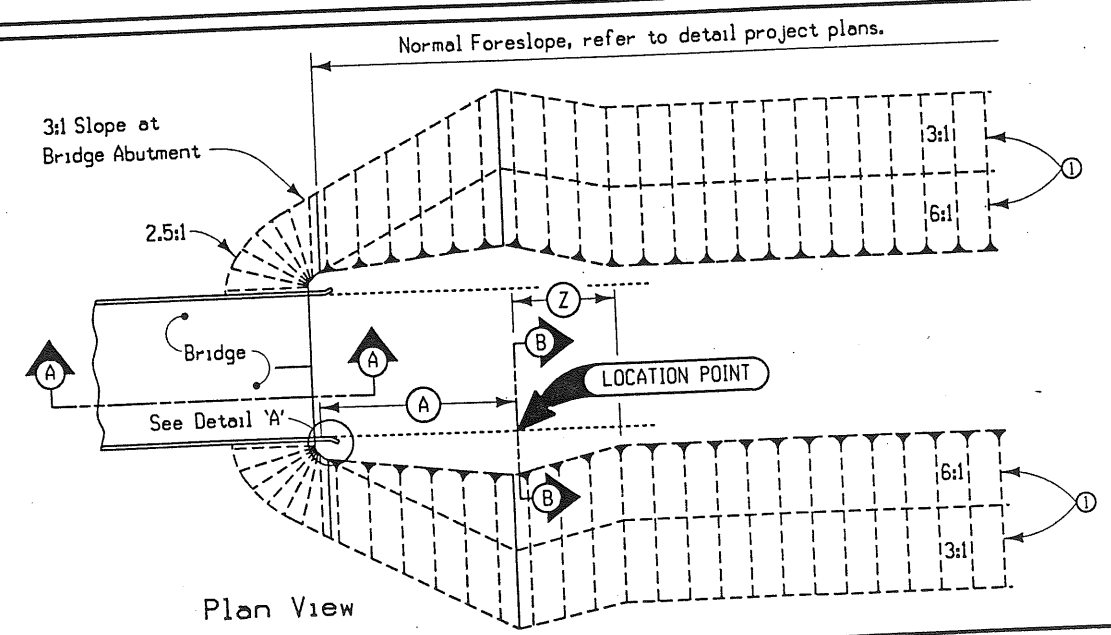
TYPICAL DETAILS FOR OBLITERATION EXISTING ROADBED



Note:
Taper pavement to be paid for at the contract unit price for P.C. concrete pavement.

TYPICAL DETAIL OF
PCC PAVEMENT AT END OF TAPER
(Where Non-Paved Shoulders Are Used)

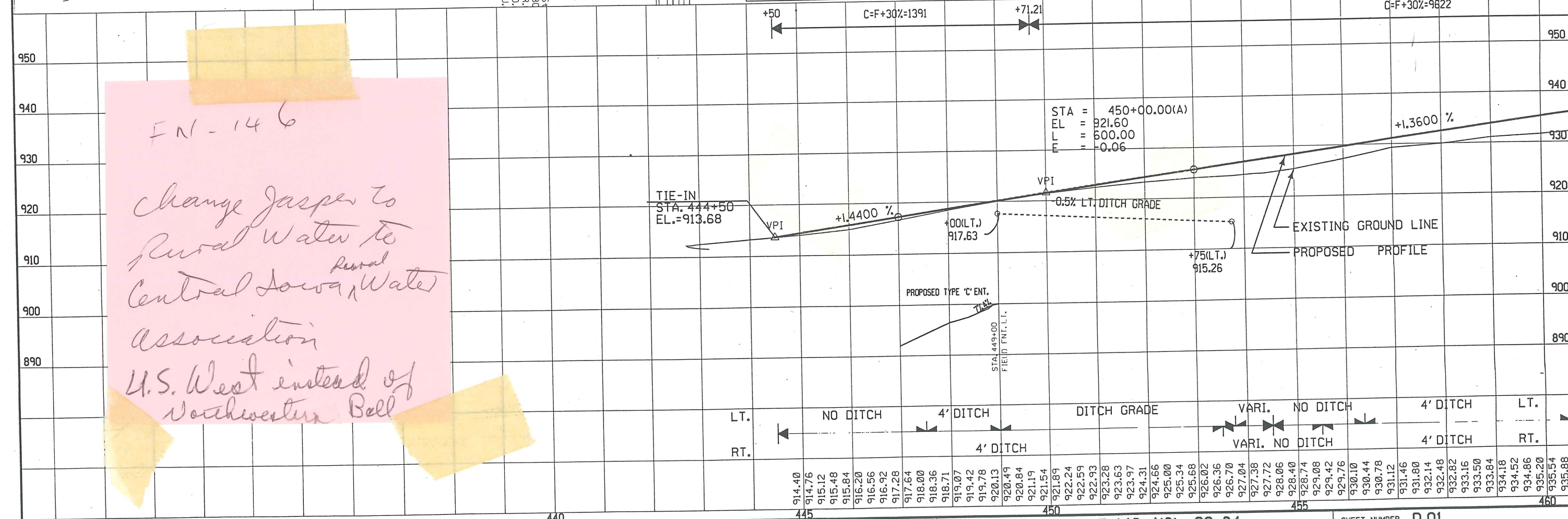
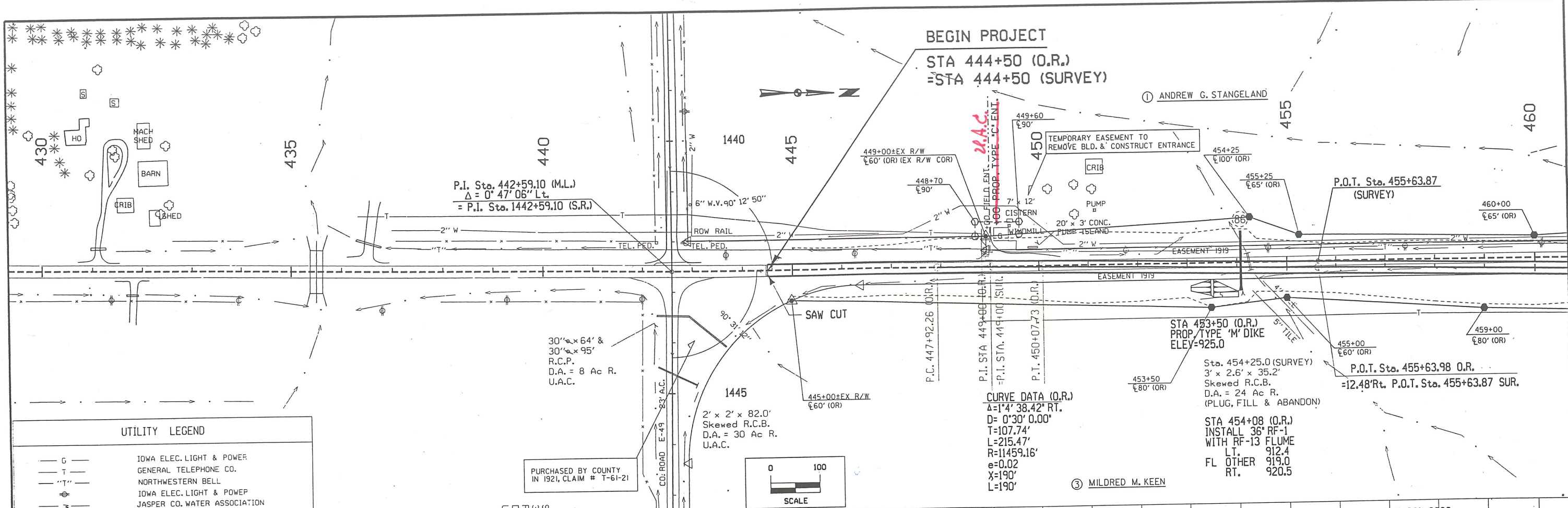
4306
07-21-87



Notes:
Refer to tabulation 107-23 for listings of Location Points and Dimensions A and Z.

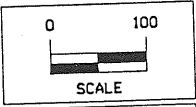
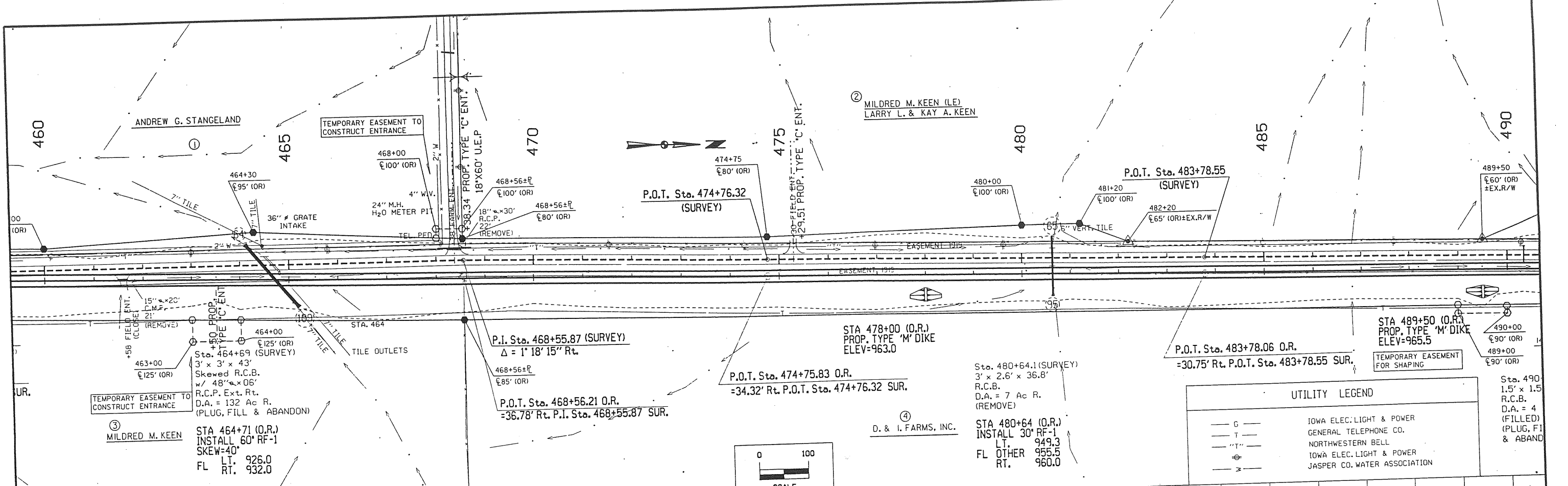
① Barnroof section refer to other Typical Drawings.

FORESLOPE TRANSITION AT BRIDGE
FROM BARNROOF SECTION

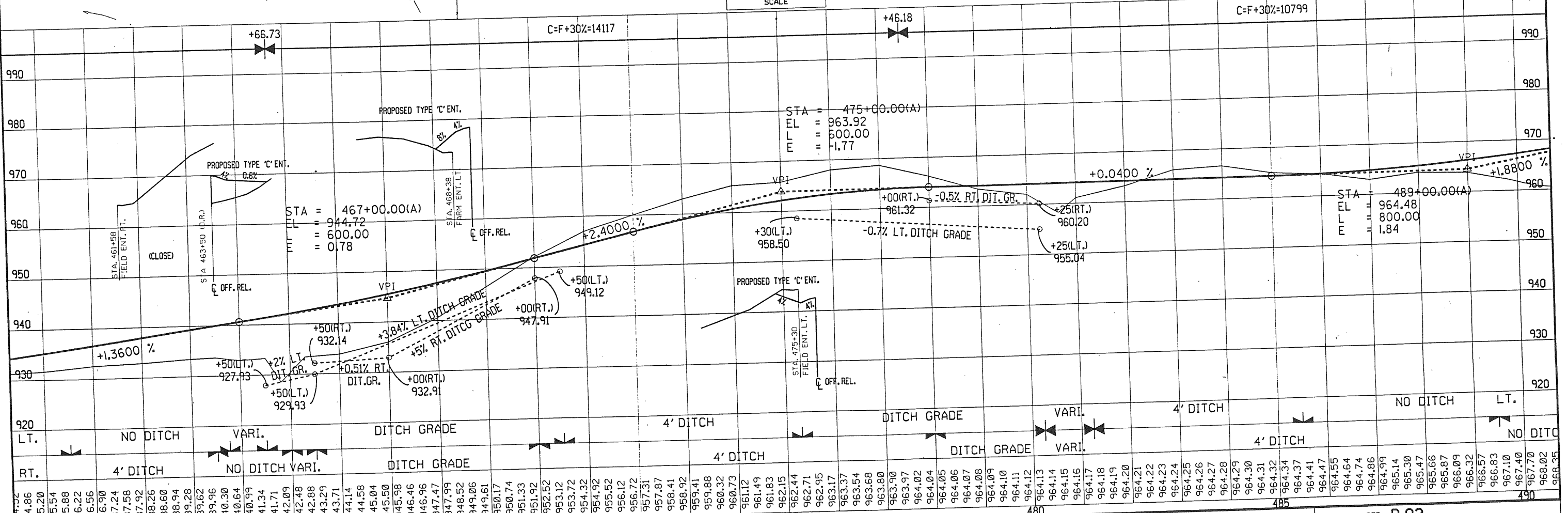


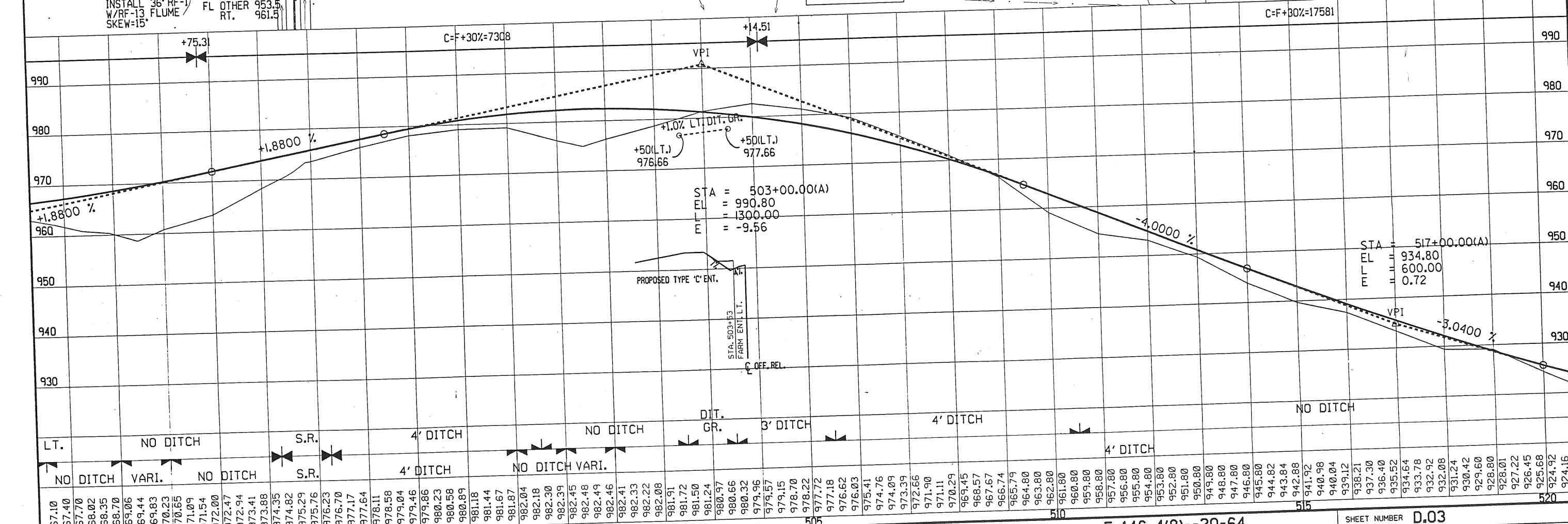
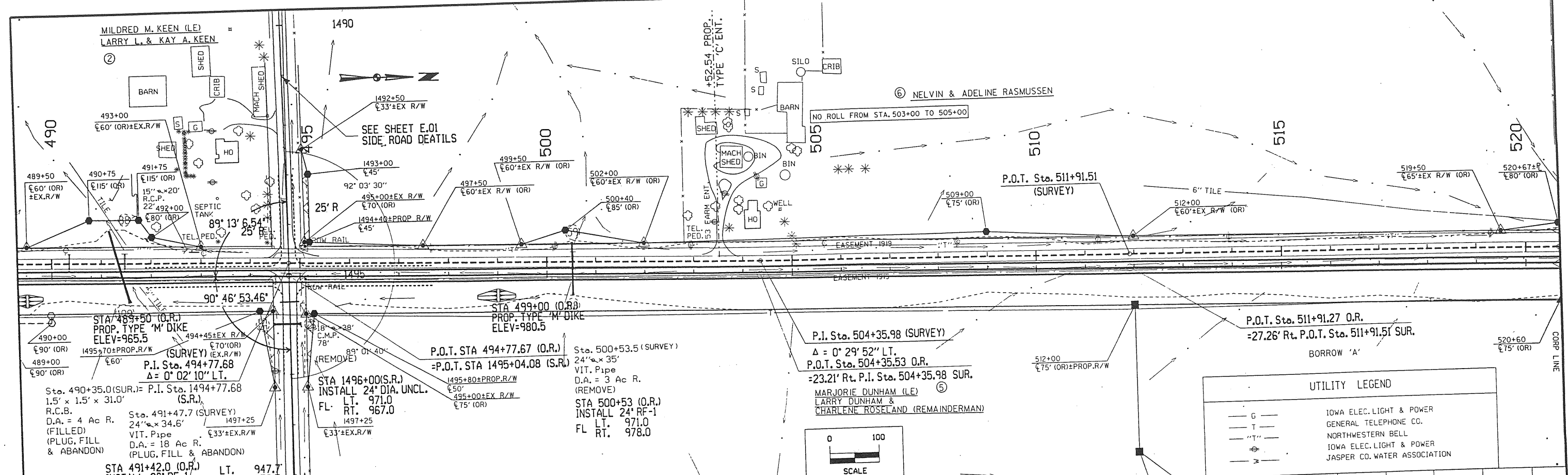
FN-146

change Jasper to Rural Water to Central Iowa Water Association U.S. West instead of Northwestern Bell

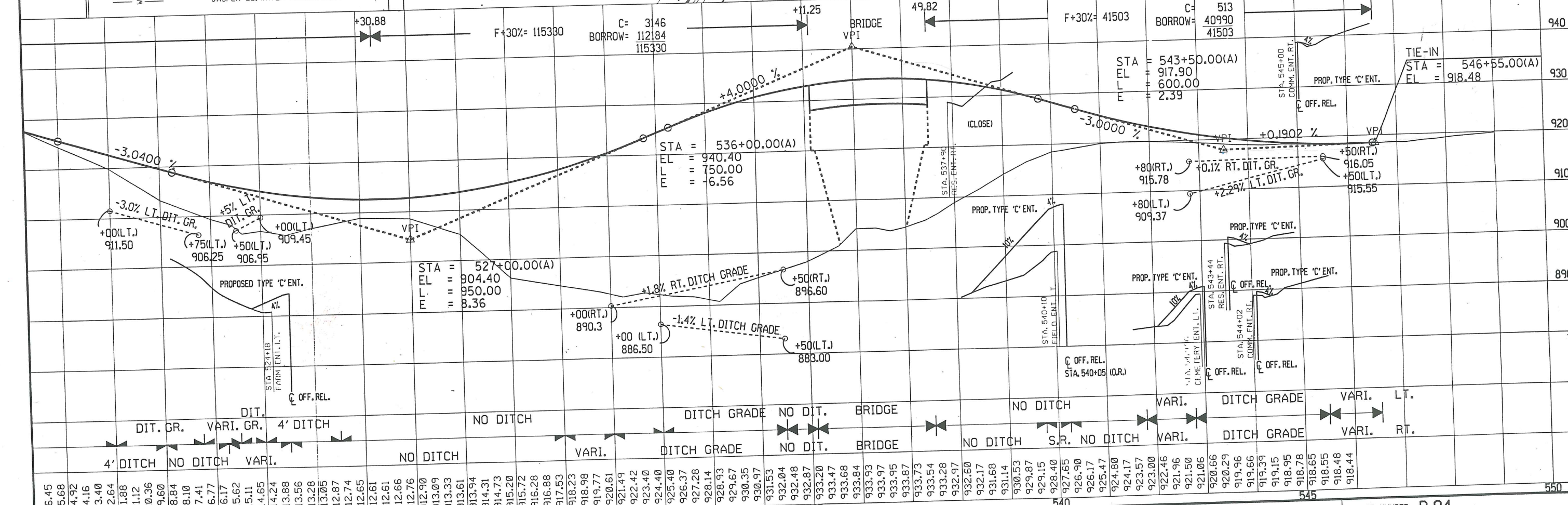
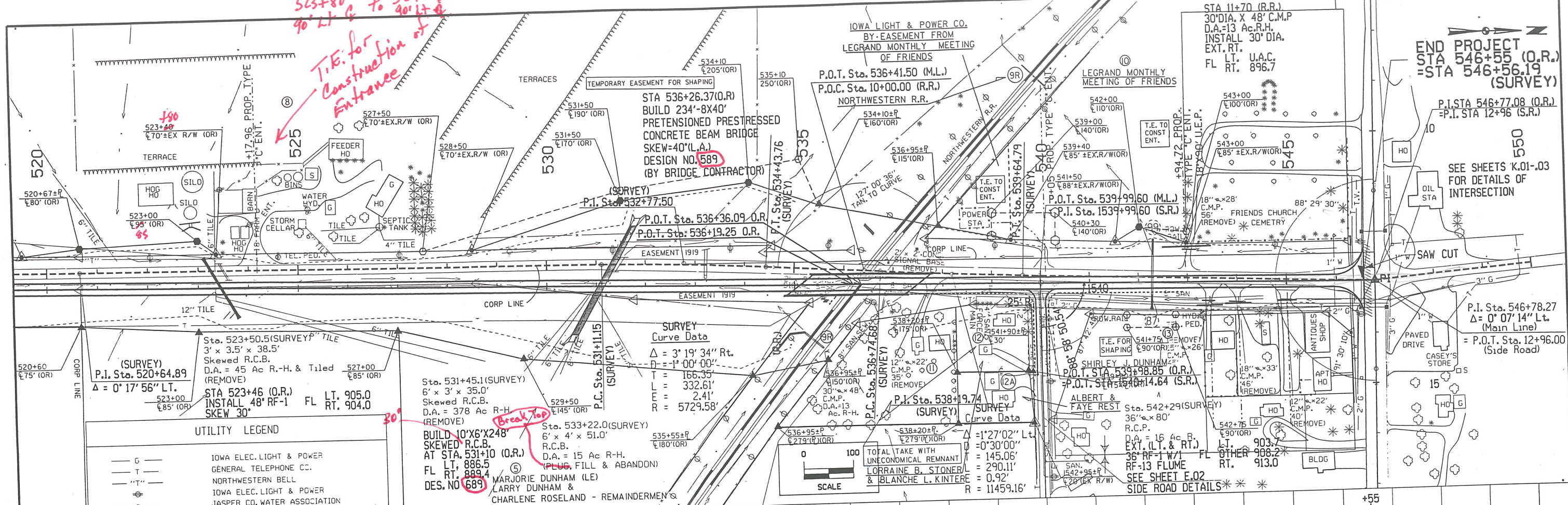


— G —	IOWA ELEC. LIGHT & POWER
— T —	GENERAL TELEPHONE CO.
— "T" —	NORTHWESTERN BELL
⊕	IOWA ELEC. LIGHT & POWER
— W —	JASPER CO. WATER ASSOCIATION

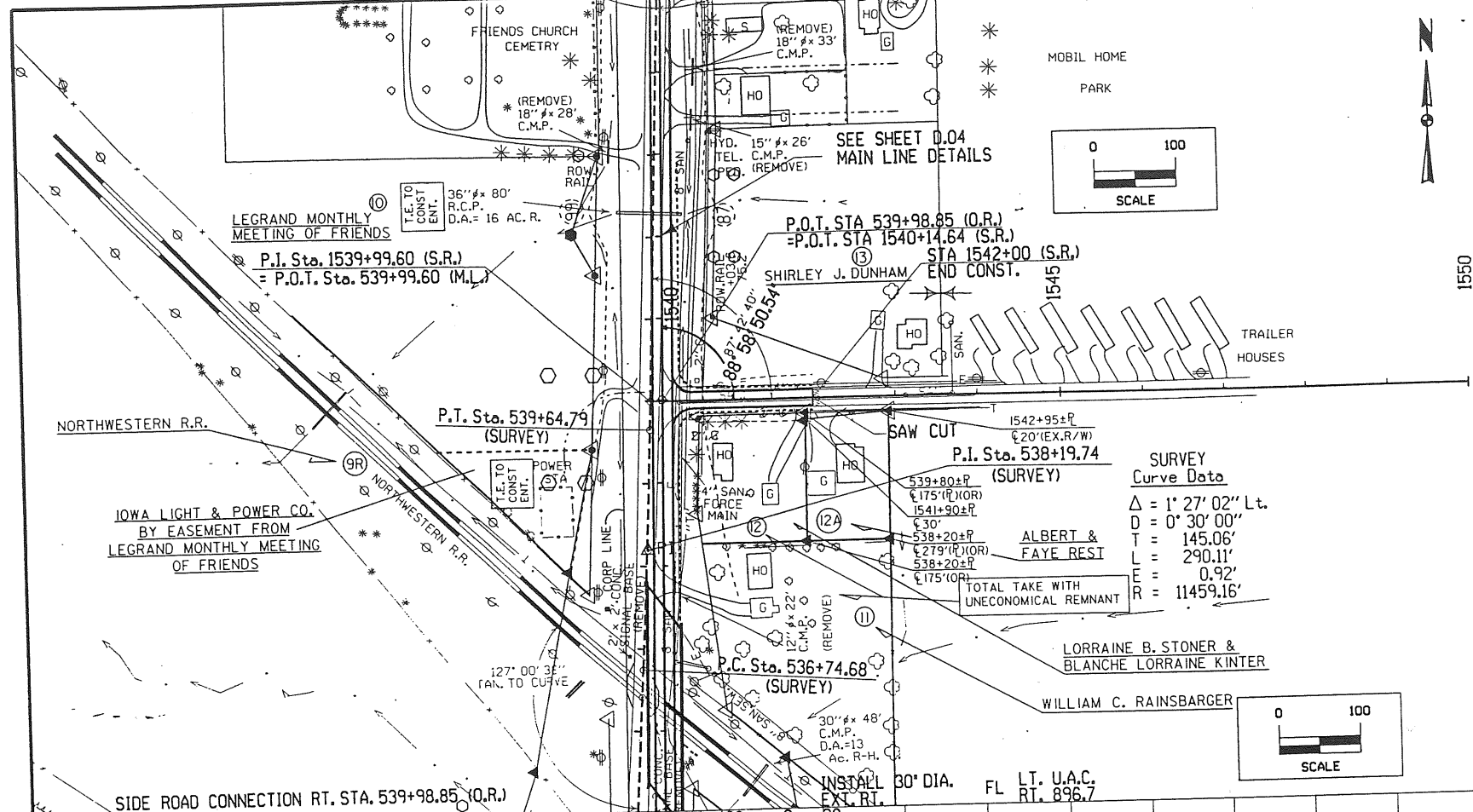




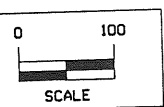
523+80
90' LT. G to 524+60
90' LT. G
T.I.E. for
Construction of



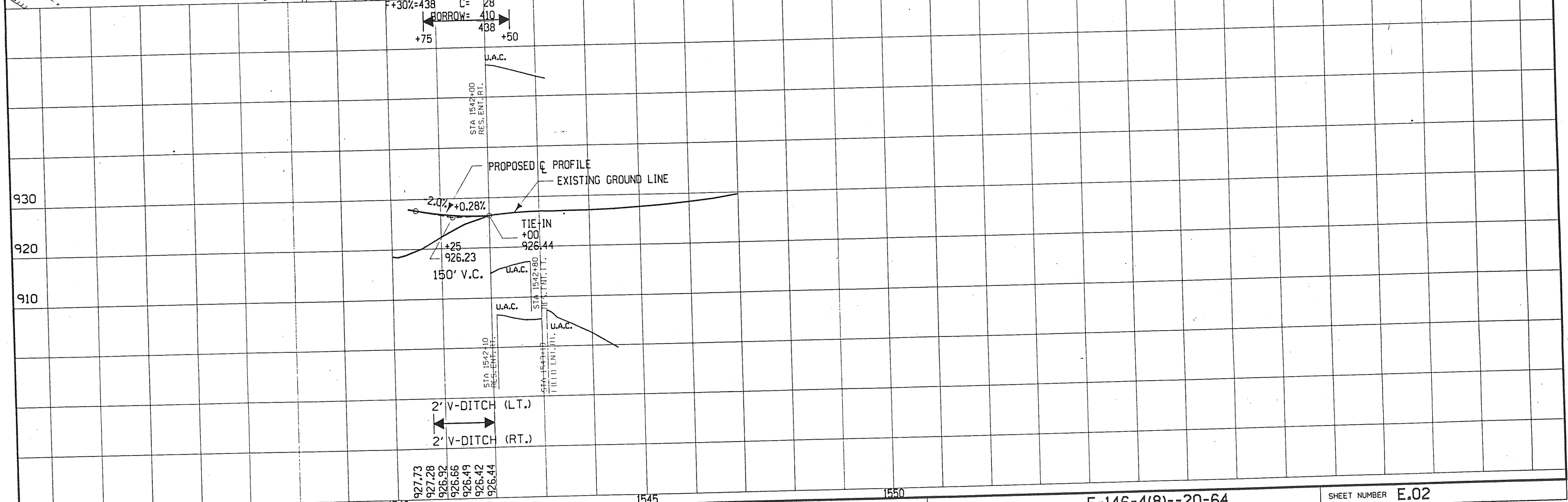
926.45	925.68	924.92	924.16	923.40	922.64	921.88	921.12	920.36	919.60	918.84	918.10	917.41	916.77	916.17	915.62	915.11	914.65	914.24	913.88	913.56	913.28	913.05	912.87	912.74	912.65	912.61	912.61	912.66	912.76	912.90	913.09	913.33	913.61	913.94	914.31	914.73	915.20	915.72	916.28	916.88	917.53	918.23	918.98	919.77	920.61	921.49	922.42	923.40	924.40	925.40	926.37	927.28	928.14	928.93	929.67	930.35	930.97	931.53	932.04	932.48	932.87	933.20	933.47	933.68	933.84	933.93	933.97	933.95	933.87	933.73	933.54	933.28	932.97	932.60	932.17	931.68	931.14	930.53	929.87	929.15	928.40	927.65	926.90	926.17	925.47	924.80	924.17	923.57	923.00	922.46	921.96	921.50	921.06	920.66	920.29	919.96	919.66	919.39	919.15	918.95	918.78	918.65	918.55	918.48	918.44
520		525										530										535										540										545										550																																																					
ROAD DESIGN		CADD		PRODUCED		STATE OF IOWA										FHWA REGION 7										FISCAL YEAR										MARSHALL COUNTY										PROJECT NUMBER										F-146-4(8)--20-64										SHEET NUMBER										D.04																													



1550



UTILITY LEGEND	
— G —	IOWA ELEC. LIGHT & POWER
— T —	GENERAL TELEPHONE CO.
— NWB —	NORTHWESTERN BELL
— W —	IOWA ELEC. LIGHT & POWER JASPER CO. WATER ASSOCIATION



1550

GENERAL INFORMATION

The datum plane for this survey is on USC & GS datum. Benches were set at the beginning of this project and run north along Ia. 146 to U.S. 30 then northwest along railroad tracks to USC & GS B.M. #E-83 1934 Elev. = 872.872 this elev. = 872.872 was used as datum plane. A first check was also run.

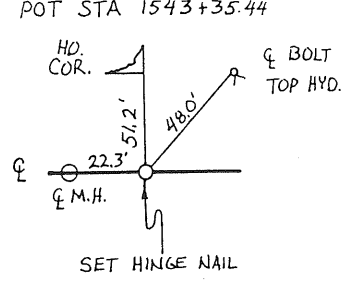
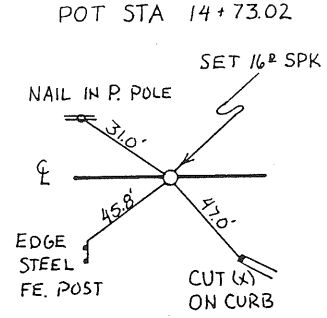
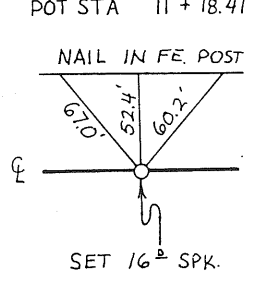
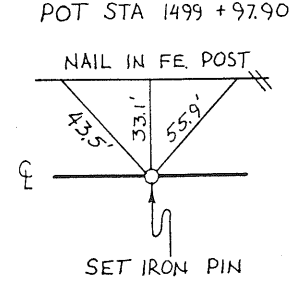
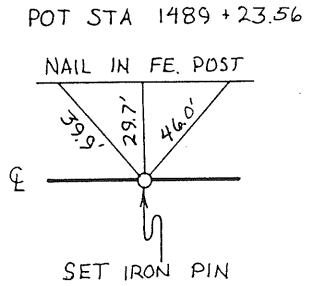
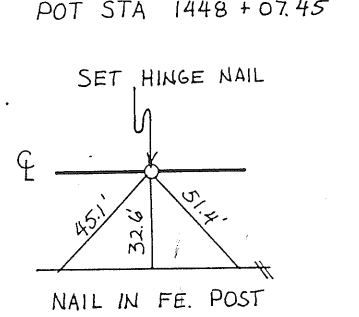
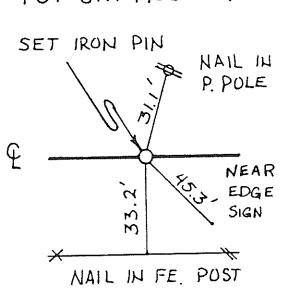
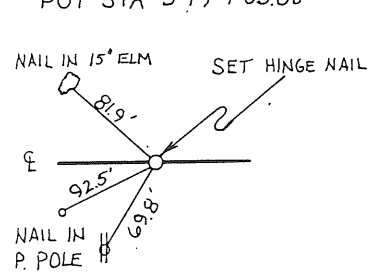
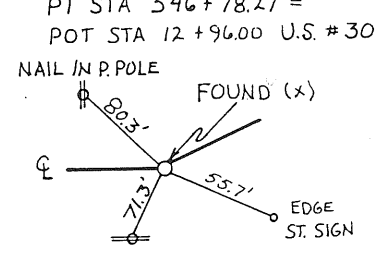
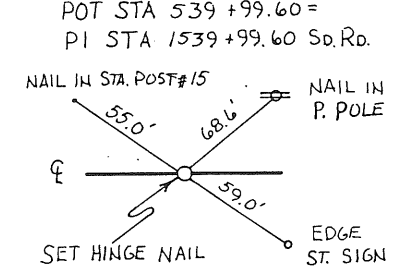
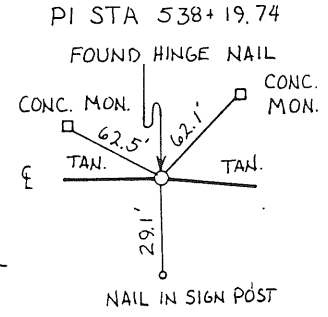
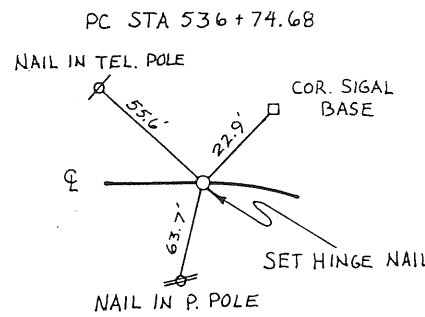
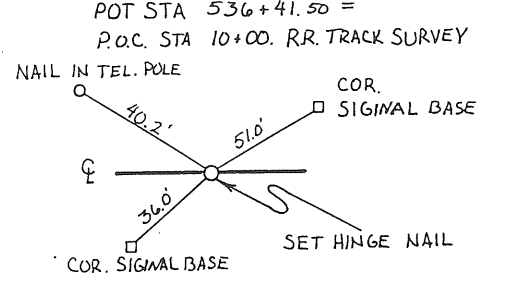
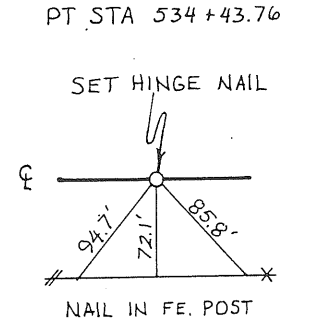
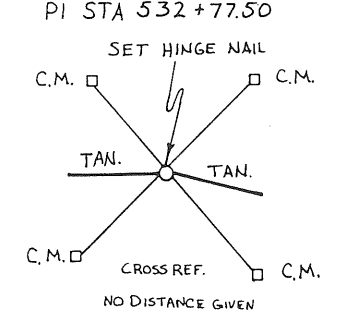
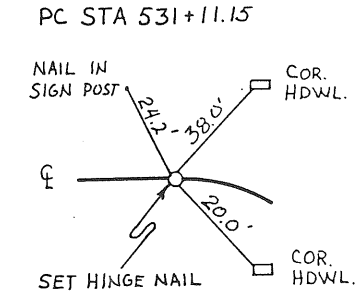
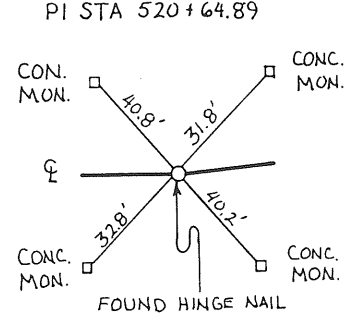
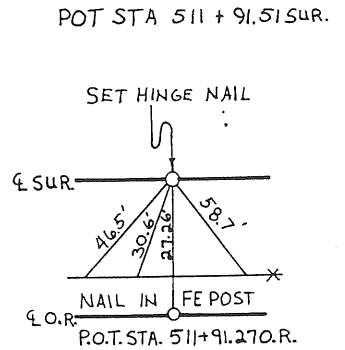
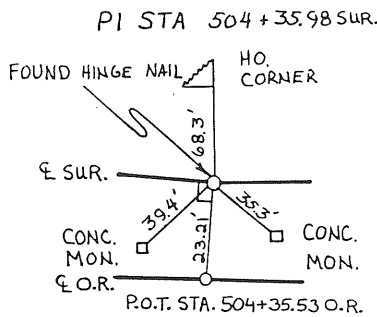
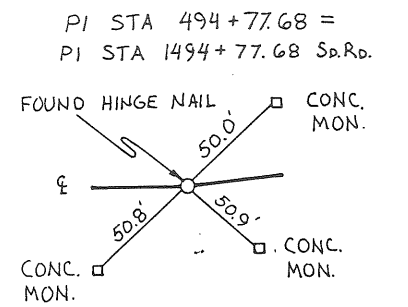
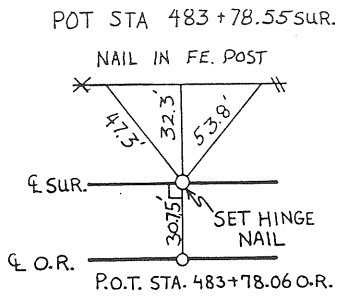
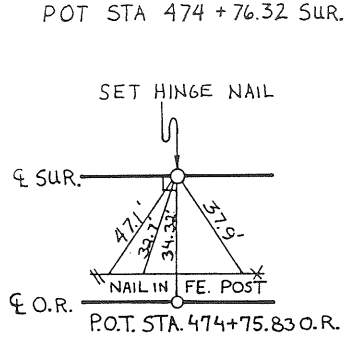
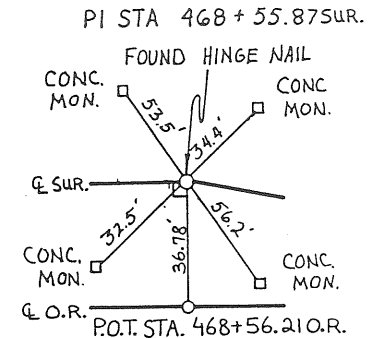
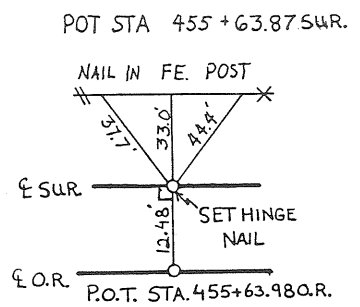
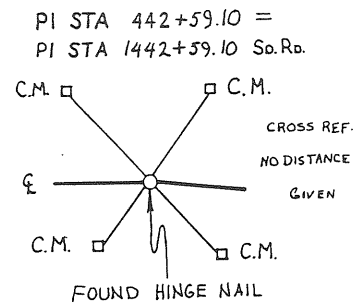
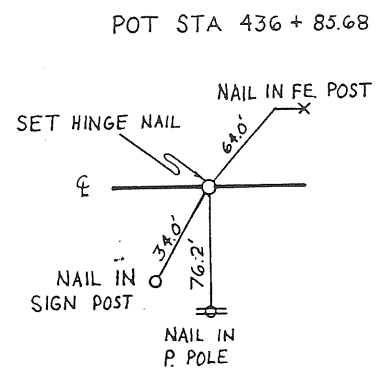
BENCH MARKS	ELEV.
BM #200 435+50 - 43' Rt.	Found I.H.C.B.M. Rt. Hdwl. twin 12' x 10 RC Box----- 909.25
BM #201 442+00 - 54' Rt.	Set R.R. spk. in w. side p. pole rt.----- 908.17
BM #202 454+28.6 - 16' Rt.	Cut (x) on rt. hdwl. 3' x 2.6' R.C. Box----- 923.17
BM #203 464+51 - 18' Lt.	Cut (x) lt. hdwl. 3' x 3' R.C. Box----- 930.58
BM #204 480+64 - 17' Rt.	Found (x) rt. hdwl. 3' x 2.6' R.C. Box = B.M. #95 Elev. 969.47---- 962.19
BM #205 495+08 - 30' Lt.	Set R.R. spk. in E. side p. pole lt.----- 976.51
BM #206 503+95 - 30' Rt.	USC & GS sta. conc. mon. dillon #1----- 986.96
BM #207 511+27 - 31' Lt.	Set R.R. spk. in e. side p. pole lt.----- 955.56
BM #208 523+42 - 15' Lt.	Cut (x) lt. hdwl. 3' x 3.5' R.C. box----- 910.65
BM #209 533+22 - 21' Rt.	Found (x) rt. hdwl. 6' x 3' R.C. Box----- 895.33
BM #210 539+07 - 58' Lt.	Set R.R. spk. e. side p. pole lt.----- 913.02
BM #211 546+52 - 67' Rt.	Found R.R. spk. s. side lumina:rd pole rt.----- 920.05
BM #212	Cut "X" on east end of conc. block----- 893.25
BM #213	Cut (x) on old signal base----- 878.00
USC & GS #E 83 1934	At quarry, Marshall county 10 poles east of the Chicago & Northwestern railway station, 5 poles west of mile post 145, at 150 foot steel bridge 439, in the north end of the west concrete abutment, 10 feet north of the centerline of the north main track, and about 1 foot lower than the rail. A standard disc, stamped "E 83 1934"----- 872.87

MARSHALL COUNTY

PROJECT NUMBER

F-146-4(8)--20-64

STATE	FHWA Region	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		G.01	



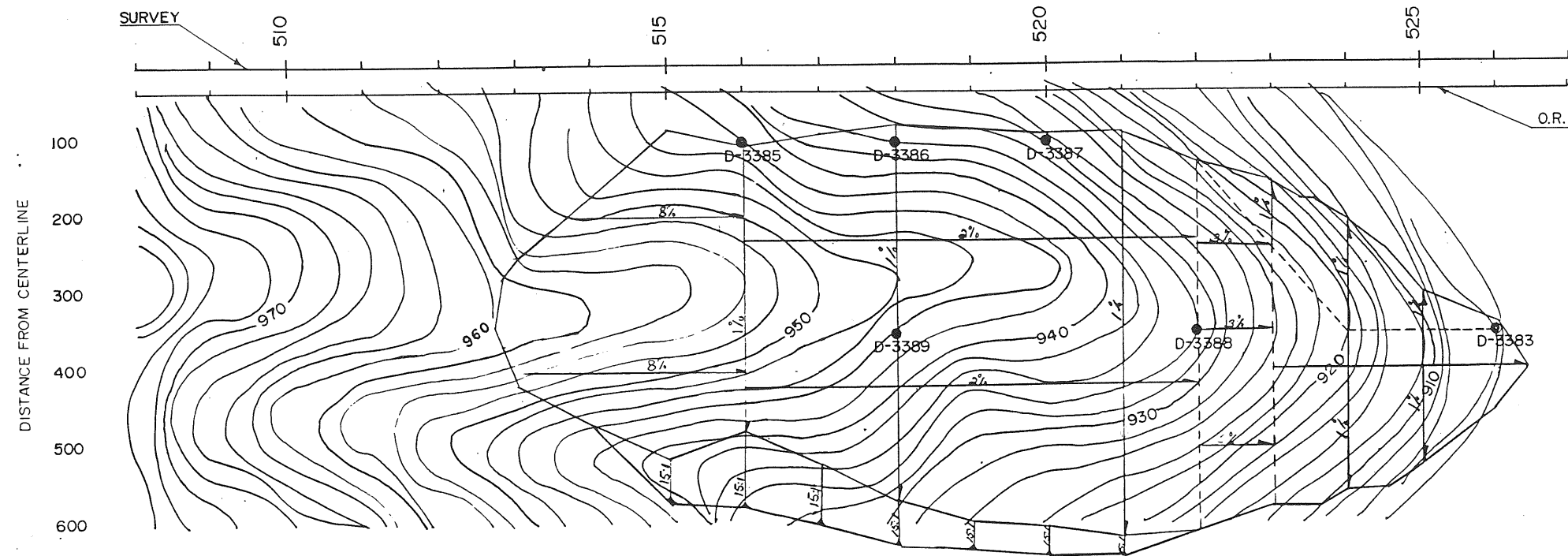
65300

MARSHALL COUNTY

PROJECT NUMBER	F-146-4(8)--20-64	STATE	IOWA	FHWA Region	7	FISCAL YEAR		SHEET NO.	G.02	TOTAL SHEETS	
----------------	-------------------	-------	------	-------------	---	-------------	--	-----------	------	--------------	--

DATE	
BY	
FINAL SURVEY	
NO. OF SHEETS	
NOTE BOOK	
AREAS CHECKED	

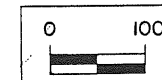
DATE	
BY	
ORIGINAL SURVEY	
NO. OF SHEETS	
NOTE BOOK	
AREAS CHECKED	



LE GRAND TWP
T-83-N R-17-W
SEC 14



SCALE



BORROW SHEET NO. 1

BORROW "A" = 13.03 ACRES

TOTAL CLASS 10 AVAIL. = 164,912
 TOTAL SELECT AVAIL. = 28,907
 TOTAL TOPSOIL AVAIL. = 22,081
 TOTAL AVAIL. = 215,900

TOTAL CLASS 10 NEEDED = 148,600
 TOTAL SELECT NEEDED = 22,631
 TOTAL TOPSOIL NEEDED = 22,081
 TOTAL NEEDED = 193,312

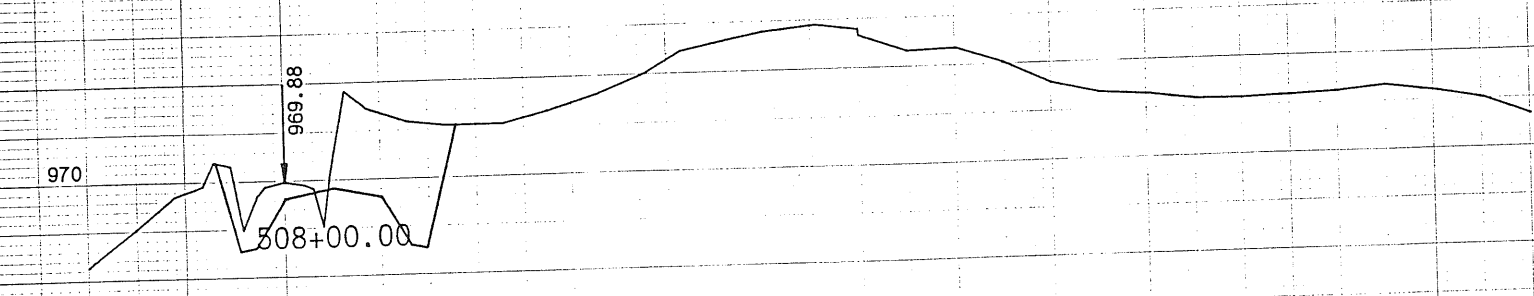
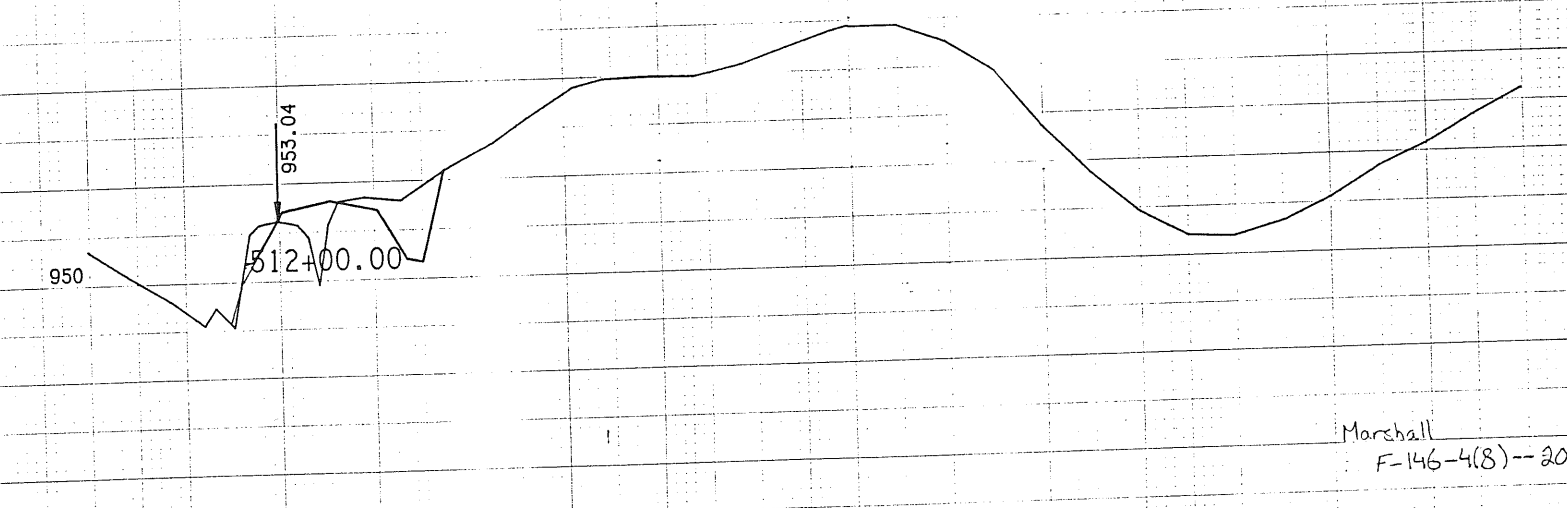
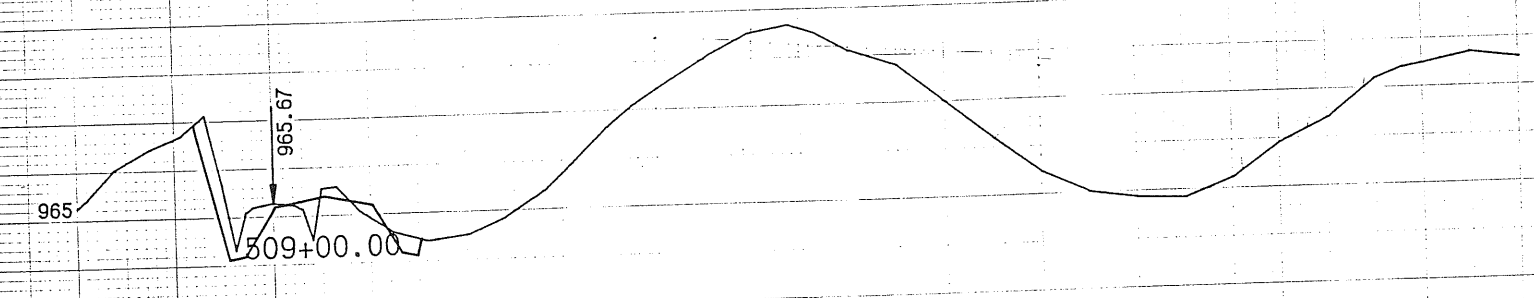
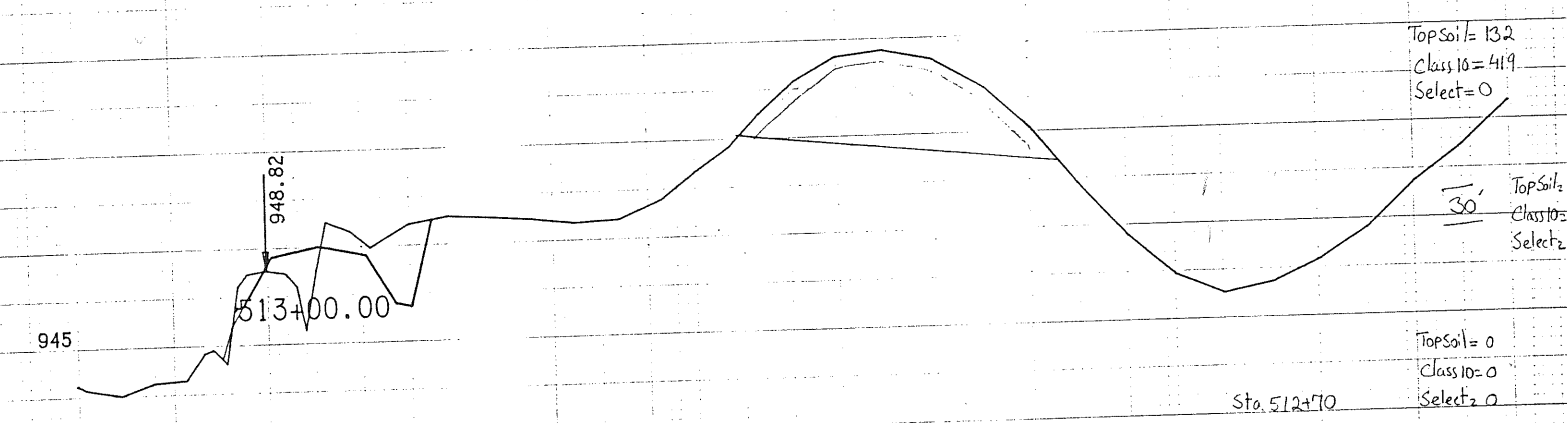
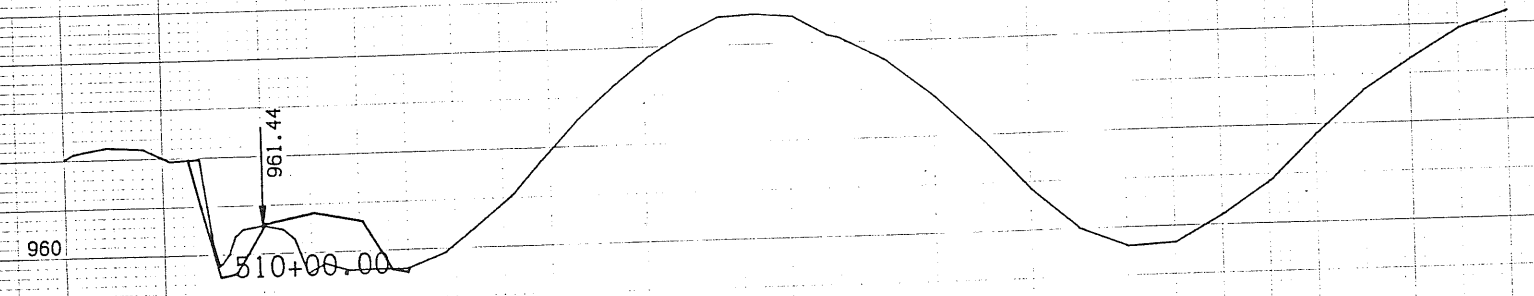
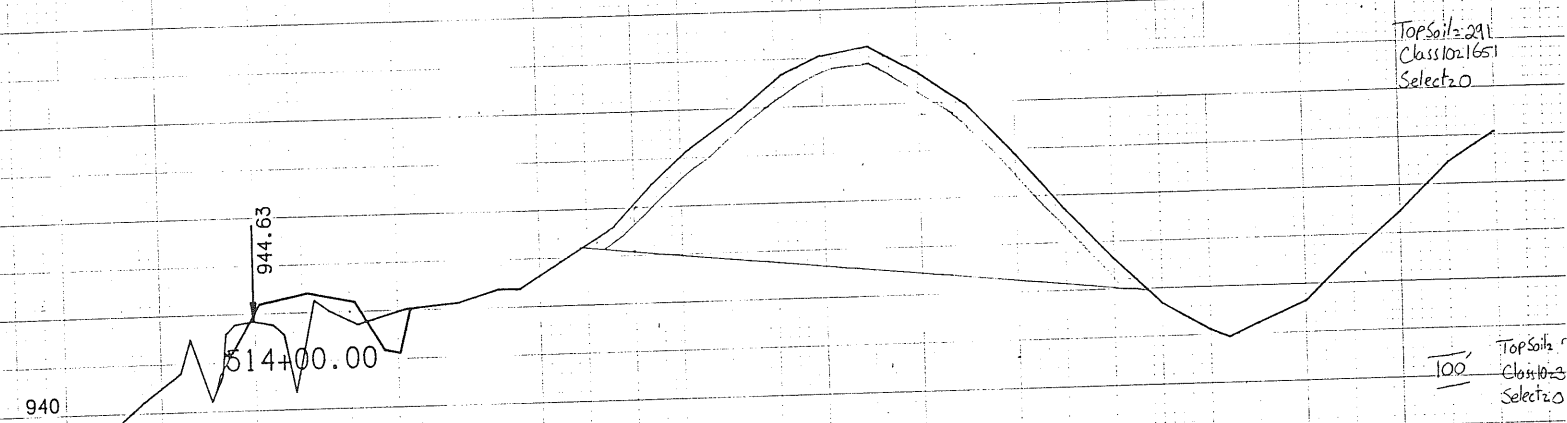
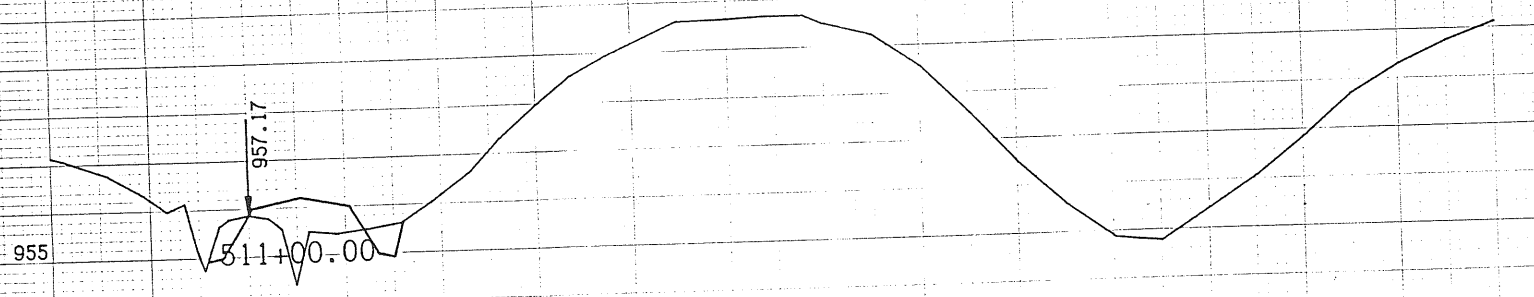
RUNNING 44 232 6627 1DOT 317043

DESCRIPTION FROM E49 N. TO US 30 (1.9 MI)			
SOIL SURVEYOR G. BUNYAN	DATE 1/89	WATER	DENS. CORE
DESIGNER/CADD J. MCCOLLOUGH	DATE 2/89	(S) SAMPLE	SHELBY
SOILS BOOK NO. S-64-H		SHALE	PLUGGED
SELECT SOIL	UNSUITABLE	ROCK	MOISTURE
SELECT SAND	SANDY SOIL		

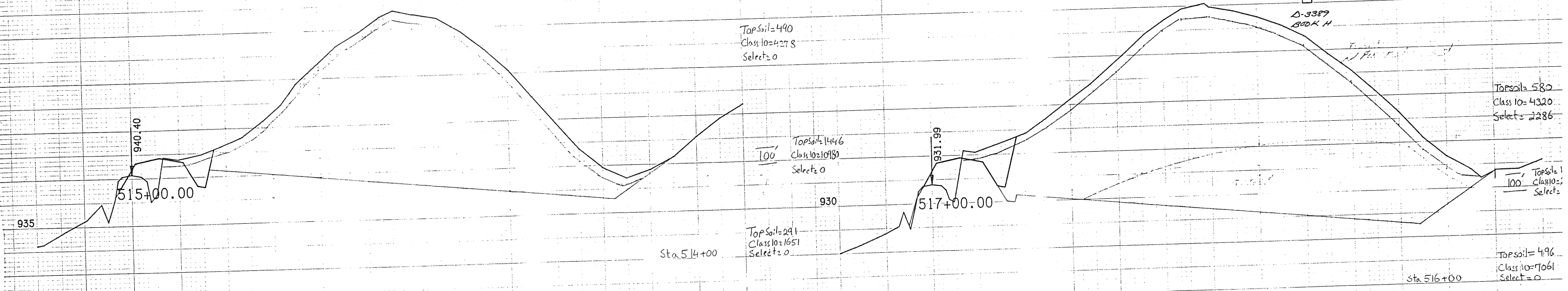
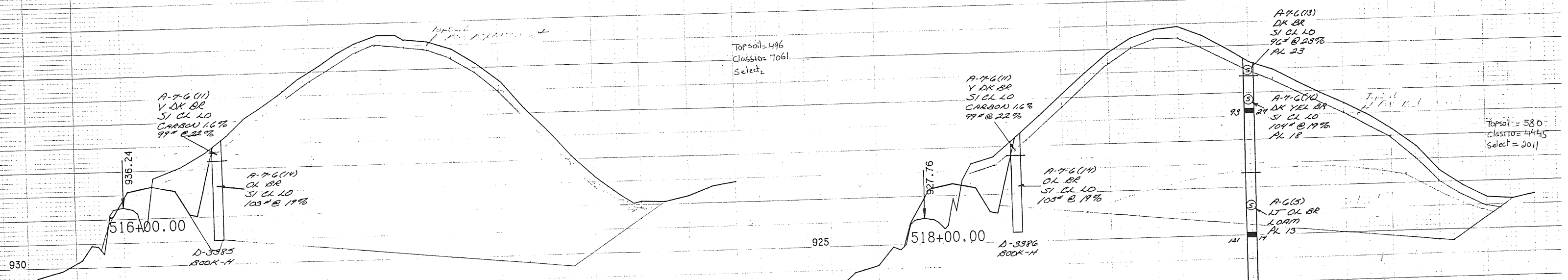
SOILS DESIGN

COUNTY MARSHALL

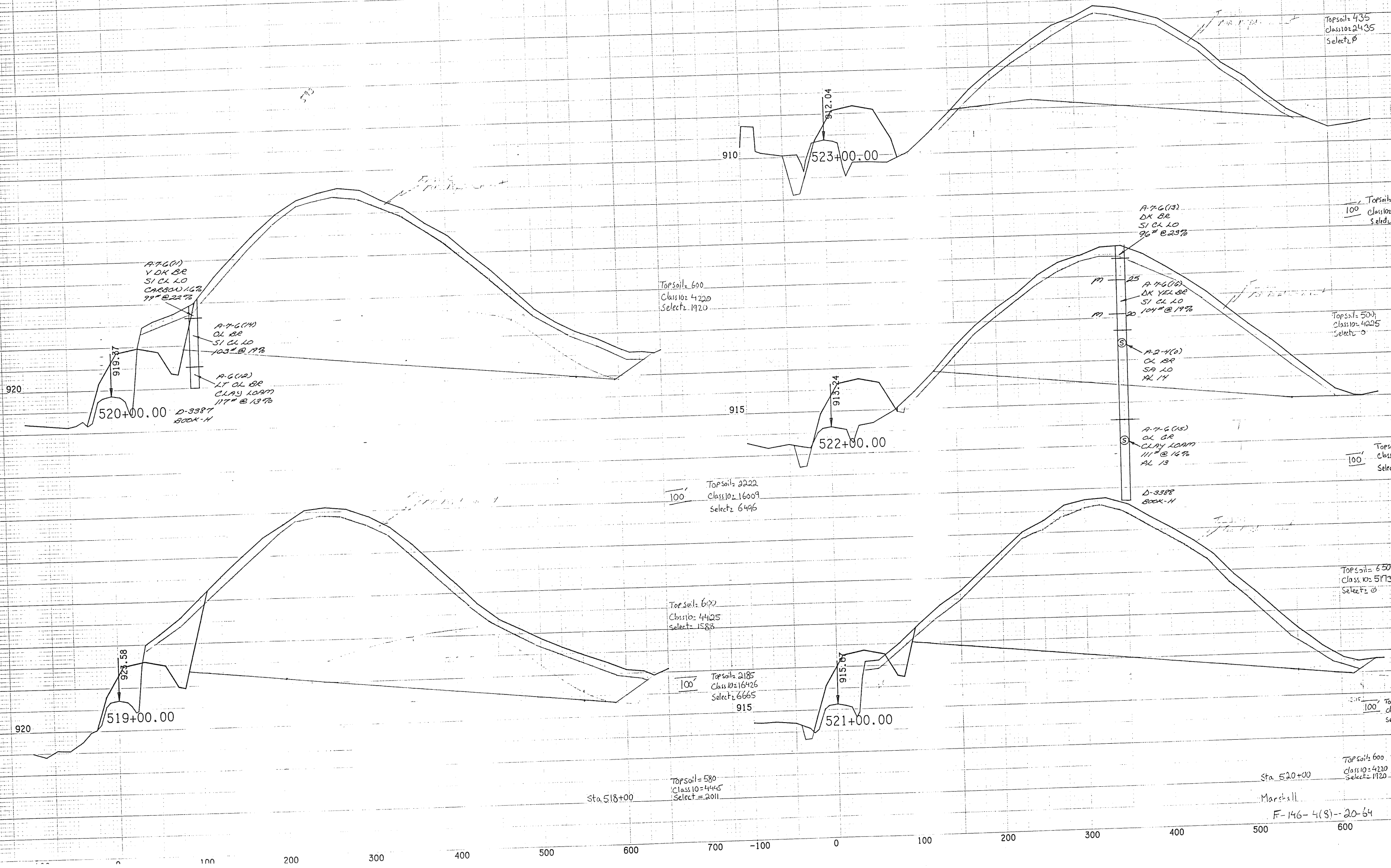
PROJECT NUMBER	F-146-4(8)-20-64	STATE	IOWA	FHWY	7	FISCAL YEAR		SHEET NO.	R.01	TOTAL SHEETS	
----------------	------------------	-------	------	------	---	-------------	--	-----------	------	--------------	--



100 200 300 400 500 600 700 -100 0 100 200 300 400 500 600



64004
 50.0 FEET Horiz.
 5.0 FEET Vert.
 Sta 514+00
 Marshall
 F-146-4(8)--20-64



920

520+00.00

919.97

A-7-G(11)
Y DK BR
SI CL LO
CARBON 16%
99' @ 22%

A-7-G(14)
OL BR
SI CL LO
103' @ 19%

A-6(12)
LT OL BR
CLAY LOAM
117' @ 13%

D-3387
BOOK-H

Topsoil = 600
Class 10 = 4220
Select = 1920

A-7-G(13)
DK BR
SI CL LO
96' @ 23%

Topsoil = 435
Class 10 = 2435
Select = 0

Topsoil = 100
Class 10 = 12
Select = 2

Topsoil = 500
Class 10 = 4225
Select = 0

915

522+00.00

913.24

100' Topsoil = 2222
Class 10 = 16009
Select = 6496

A-7-G(15)
OL BR
CLAY LOAM
111' @ 16%

100' Topsoil = 100
Class 10 = 10
Select = 0

D-3388
BOOK-H

920

519+00.00

923.58

Topsoil = 600
Class 10 = 4425
Select = 1588

100' Topsoil = 2185
Class 10 = 16426
Select = 6665

915

521+00.00

915.07

Topsoil = 650
Class 10 = 5173
Select = 0

Sta 518+00

Topsoil = 580
Class 10 = 4445
Select = 2011

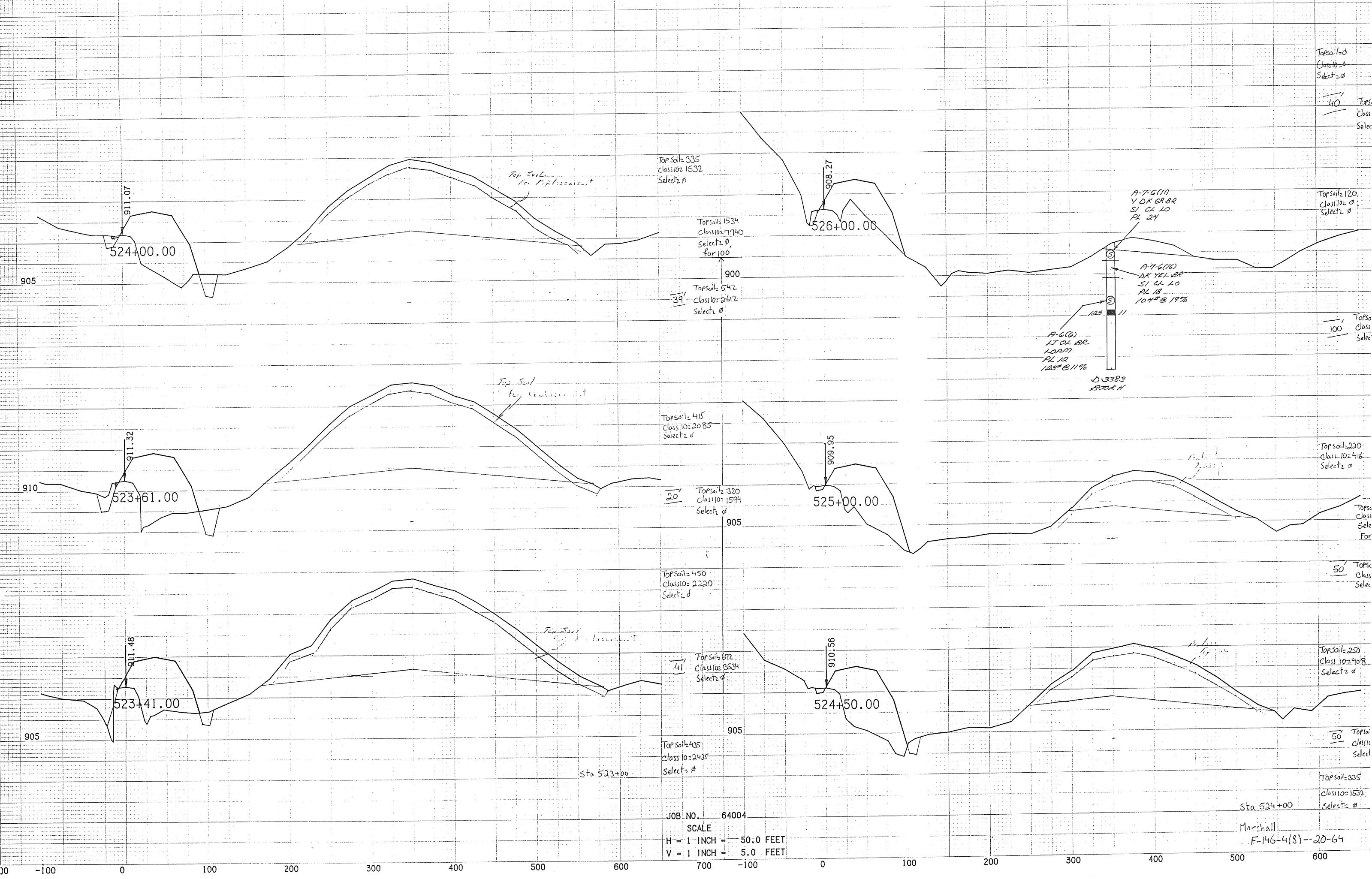
Sta 520+00

Topsoil = 600
Class 10 = 4220
Select = 1920

Marshall

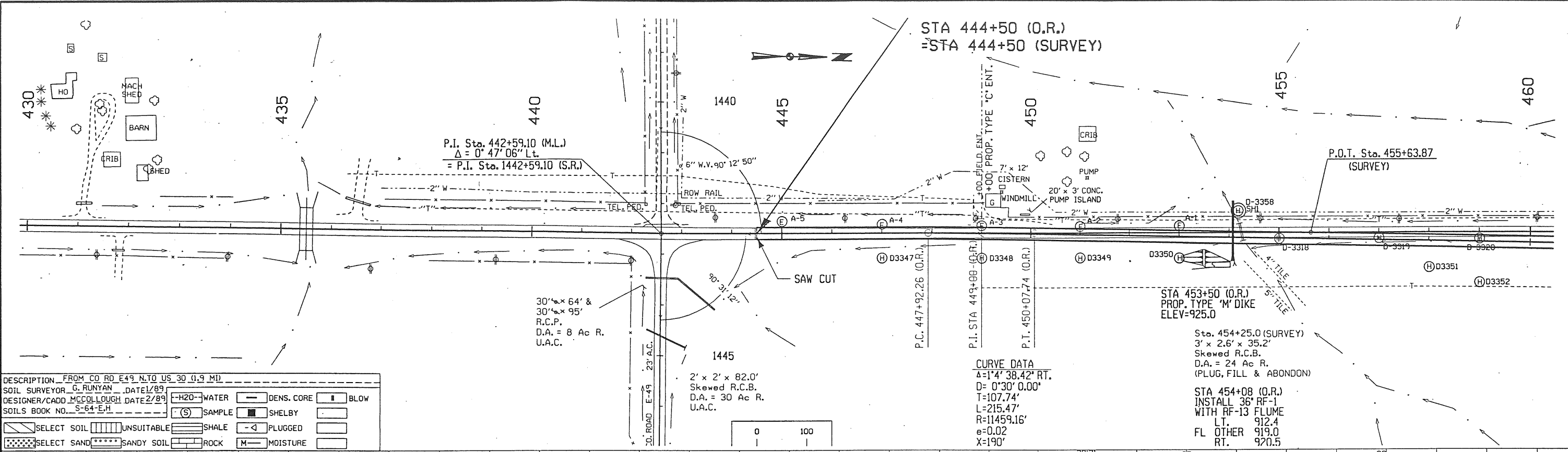
F-146-4(8)-20-64

0 100 200 300 400 500 600 700 -100 0 100 200 300 400 500 600



JOB NO. 64004
 SCALE
 H = 1 INCH = 50.0 FEET
 V = 1 INCH = 5.0 FEET

Sta 524+00
 Marshall
 F-146-4(8)--20-64



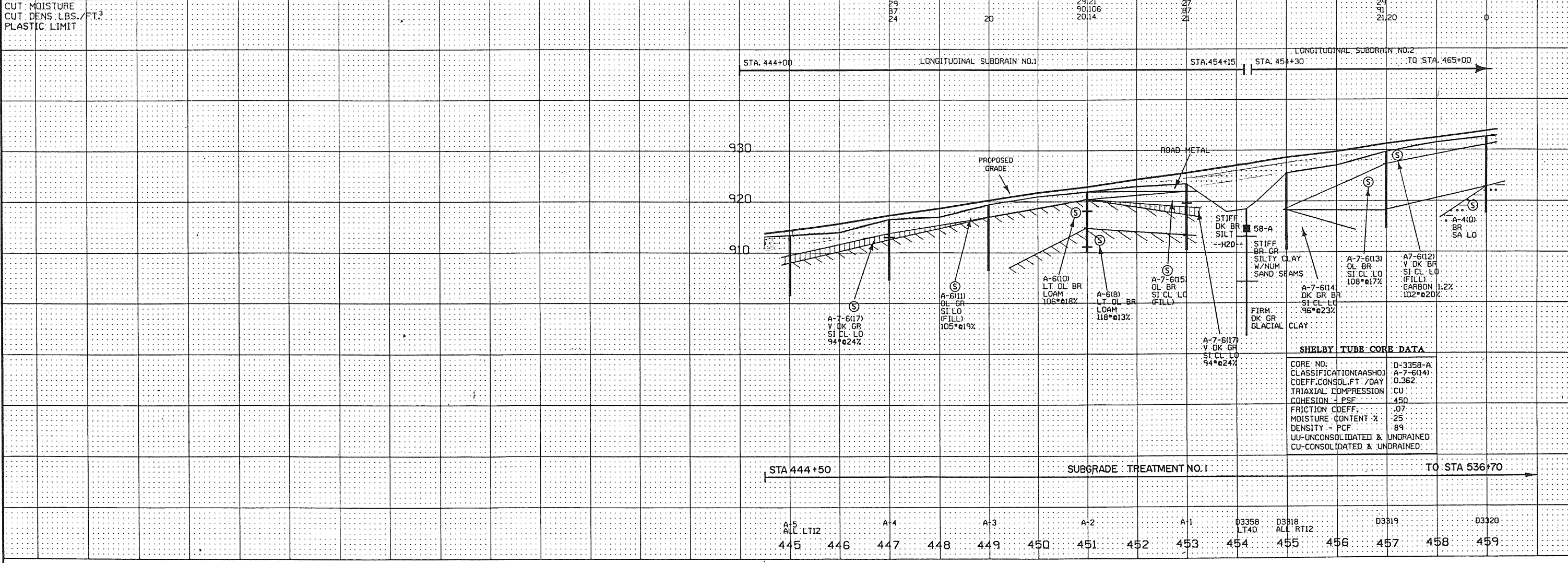
DESCRIPTION FROM CO. RD. E49 N. TO US 30 (1.9 MI.)

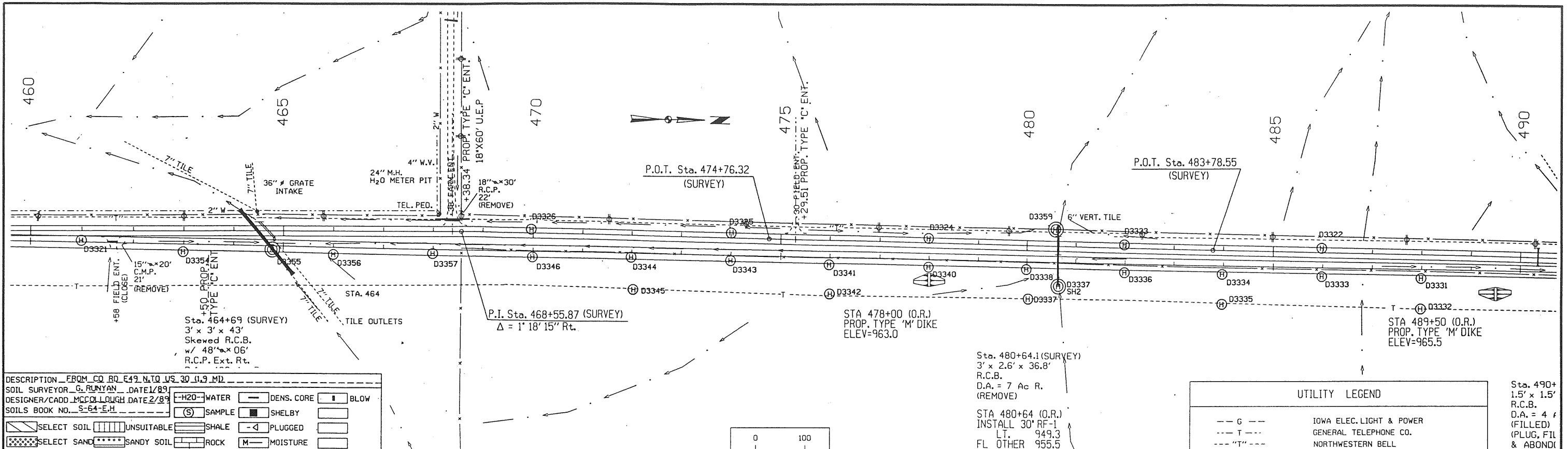
SOIL SURVEYOR G. RUNYAN DATE 1/89

DESIGNER/CADD MCCOLLUGH DATE 2/89

SOILS BOOK NO. S-64-E.H

---H2O---	WATER	---DENS. CORE---	DENS. CORE	---BLOW---	BLOW
(S)	SAMPLE	---SHELBY---	SHELBY	---	
---	SELECT SOIL	---	UNSUITABLE	---	SHALE
---	SELECT SAND	---	SANDY SOIL	---	ROCK
---		---	PLUGGED	---	
---		---	MOISTURE	---	





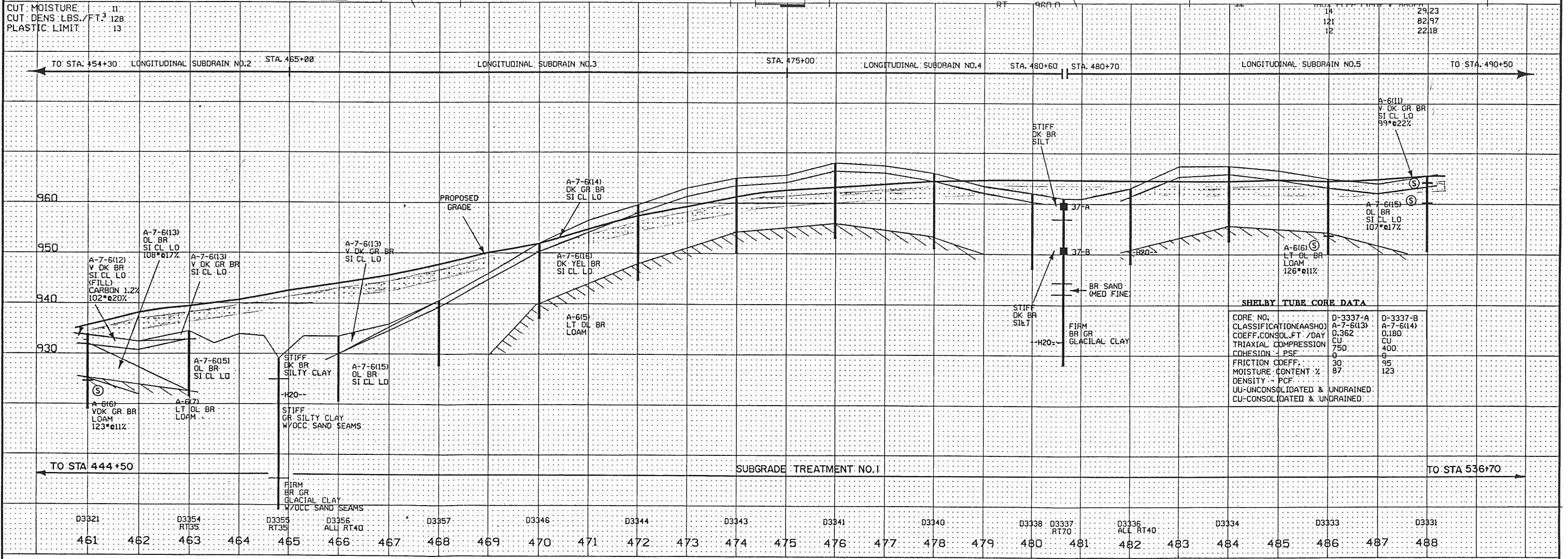
DESCRIPTION FROM CO. RQ. E49 N. TO US 30 (1.9 MI.)
 SOIL SURVEYOR G. RUNYAN DATE 1/89
 DESIGNER/CADD M.C.C. LOUGH DATE 2/89
 SOILS BOOK NO. S-64-E.H.

---H2O---	---WATER---	---DENS. CORE---	---BLOW---
(S)	SAMPLE	---SHELBY---	---
---SELECT SOIL---	---UNSUITABLE---	---SHALE---	---PLUGGED---
---SELECT SAND---	---SANDY SOIL---	---ROCK---	---MOISTURE---

UTILITY LEGEND

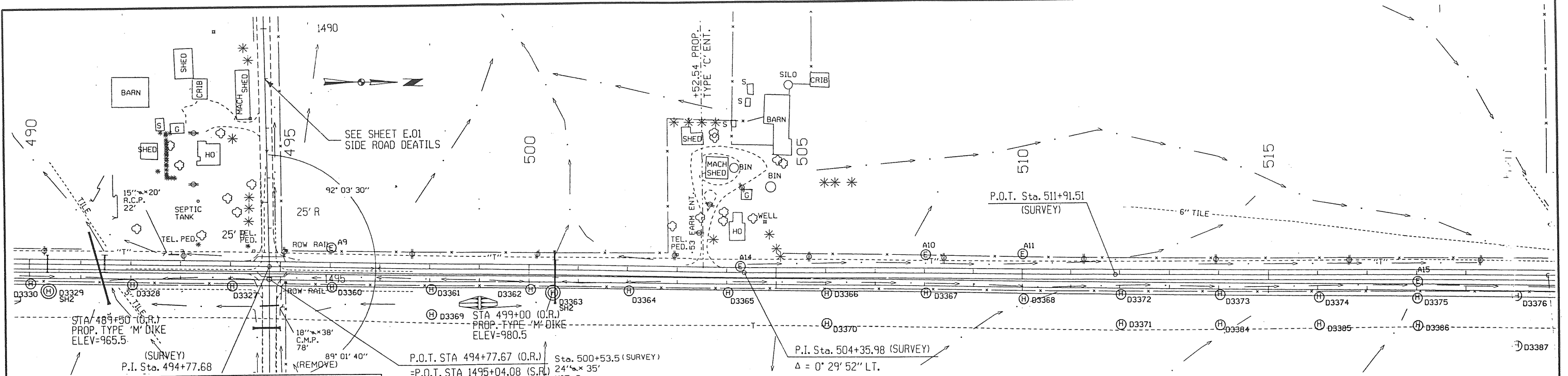
---G---	IOWA ELEC. LIGHT & POWER
---T---	GENERAL TELEPHONE CO.
---"T"---	NORTHWESTERN BELL

Sta. 490+
 1.5' x 1.5'
 R.C.B.
 D.A. = 4 f
 (FILLED)
 (PLUG, FIL
 & ABOND)



SHELBY TUBE CORE DATA

CORE NO.	D-3337-A	D-3337-B
CLASSIFICATION(AASH)	A-7-6(13)	A-7-6(14)
COEFF. CONSOL. FT./DAY	0.362	0.180
TRIAxIAL COMPRESSION	CU	CU
COHESION - PSF	750	400
FRICITION COEFF.	30	95
MOISTURE CONTENT %	87	123
DENSITY - PCF		
UU-UNCONSOLIDATED & UNDRAINED		
CU-CONSOLIDATED & UNDRAINED		



DESCRIPTION FROM CO RD E49 N TO US 30 (1.9 MI)
 SOIL SURVEYOR G. RUNYAN DATE 1/89
 DESIGNER/CADD MCCOLLDOUGH DATE 2/89
 SOILS BOOK NO. S-64-E.H

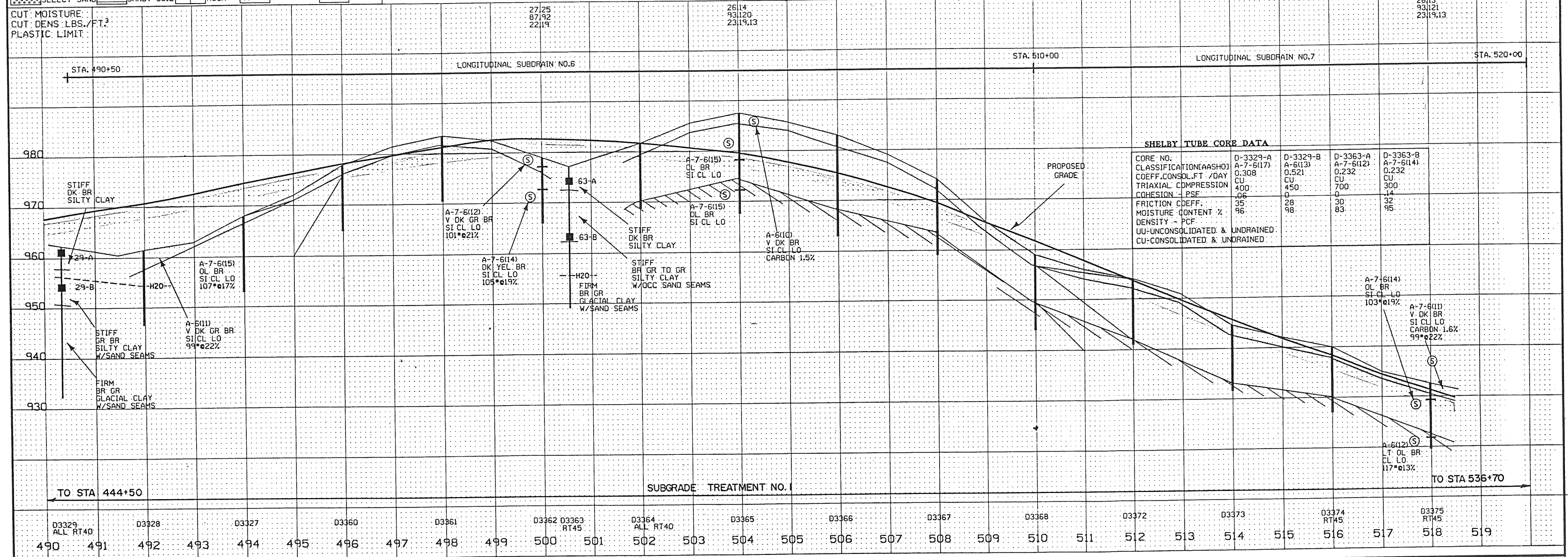
(H) SELECT SOIL	(S) SAMPLE	(---) WATER	(---) DENS. CORE	(■) BLOW
(---) UNSUITABLE	(---) SHALE	(---) PLUGGED	(---) SHELBY	(---) MOISTURE
(---) SAND	(---) SANDY SOIL	(---) ROCK	(---) M	(---)

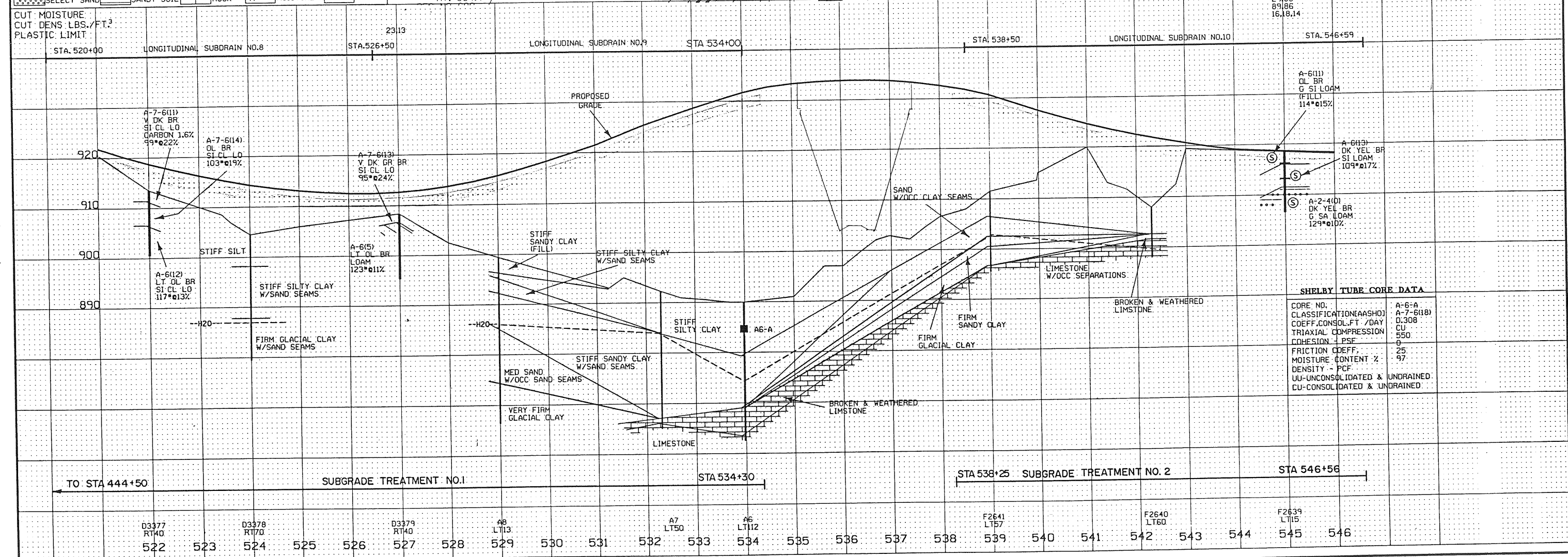
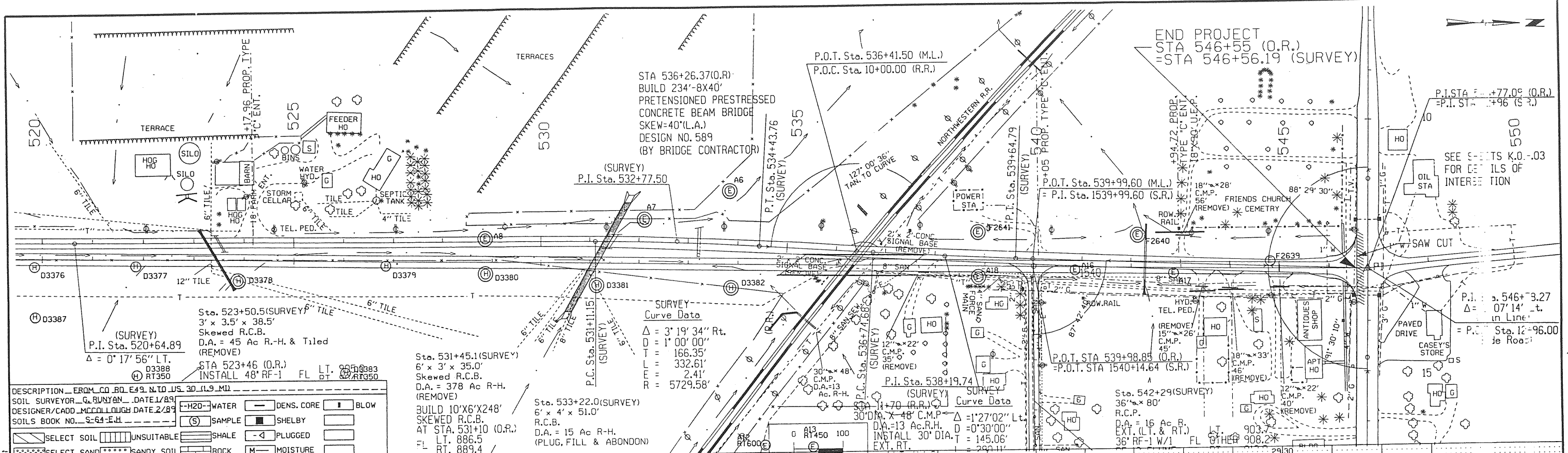
27.25
87.92
2211.9

26.14
93.120
23119.13

24" x 35"
VIT. PIPE
D.A. = 3 Ac R.
(REMOVE)
STA 500+53 (O.R.)
INSTALL 24" RF-1
FL LT. 971.0
RT. 978.0

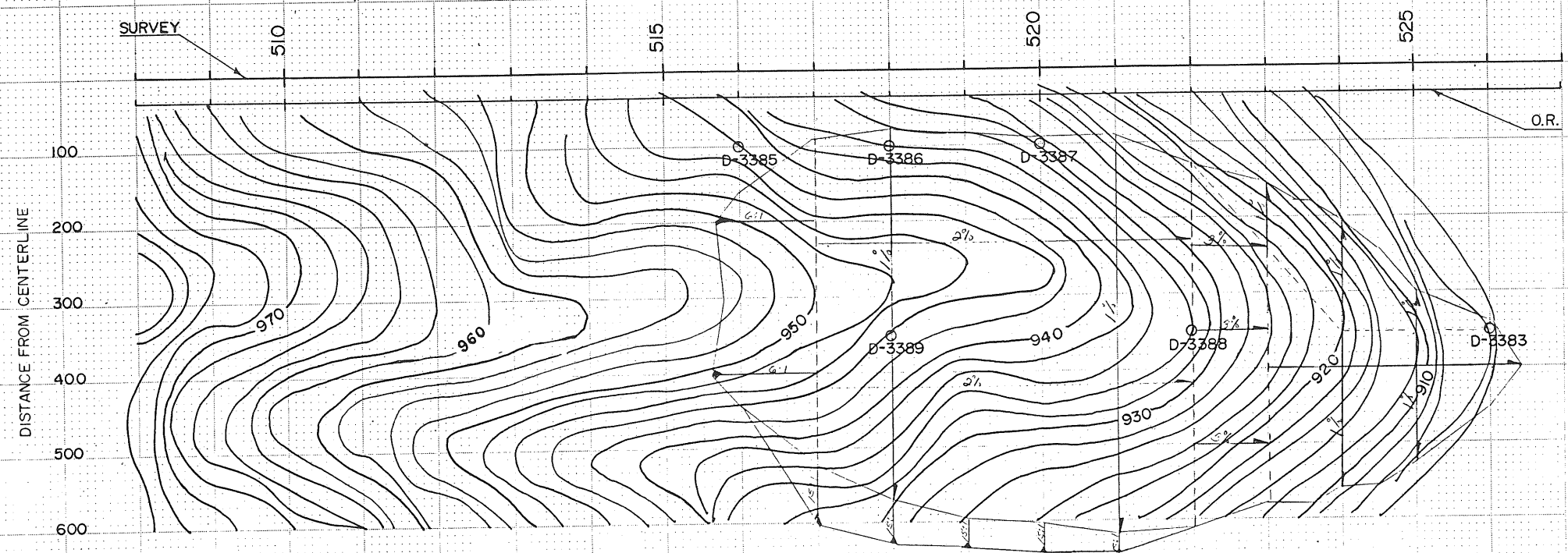
UTILITY LEGEND	
(--- G ---)	IOWA ELEC. LIGHT & POWER D3389 RT350





FINAL SURVEY	BURVEYED
PLOTTED	PLATE
NOTE BOOK	NO.
AREAS CHECKED	

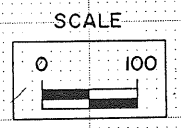
ORIGINAL SURVEY	BY	DATE
PLOTTED		
NOTE BOOK		
NO.		
AREAS CHECKED		



LE GRAND TWP
T-83-N R-17-W
SEC 14



BORROW SHEET NO. 1



JING 44232 66227 I.D.O.T. 317043

SOILS DESIGN

COUNTY MARSHALL

PROJECT NUMBER
RRP-146-4(8)--48-64

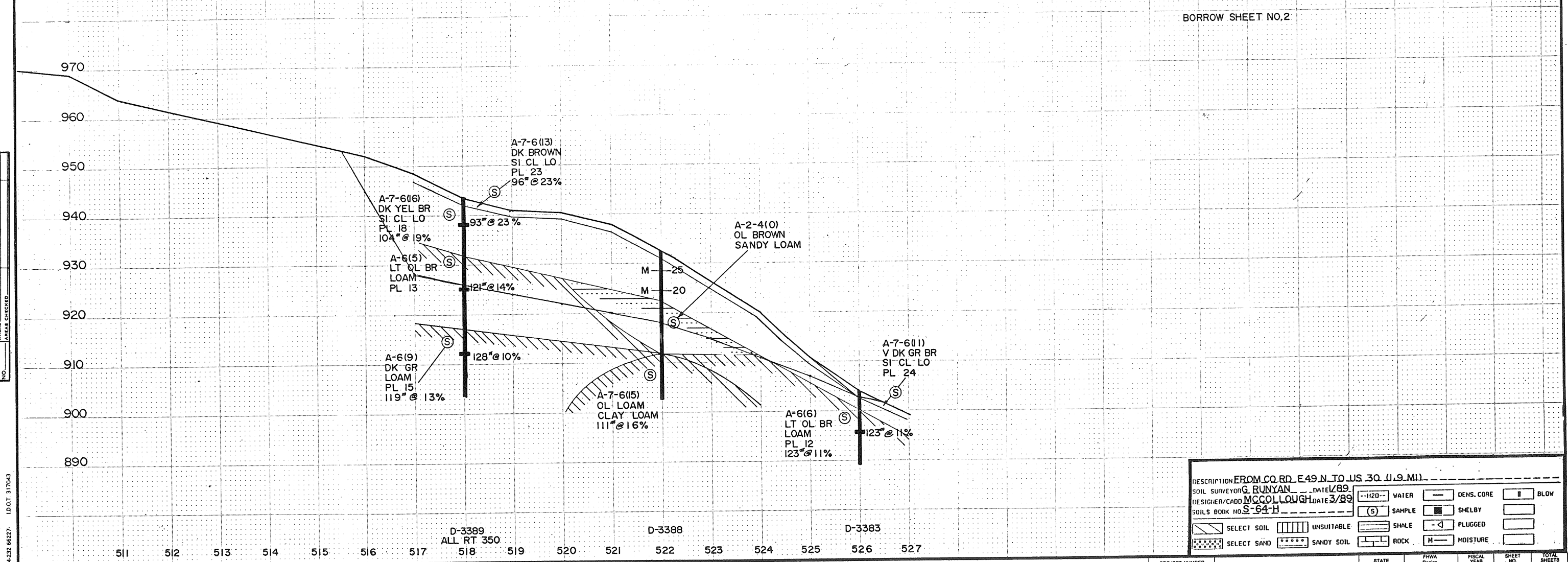
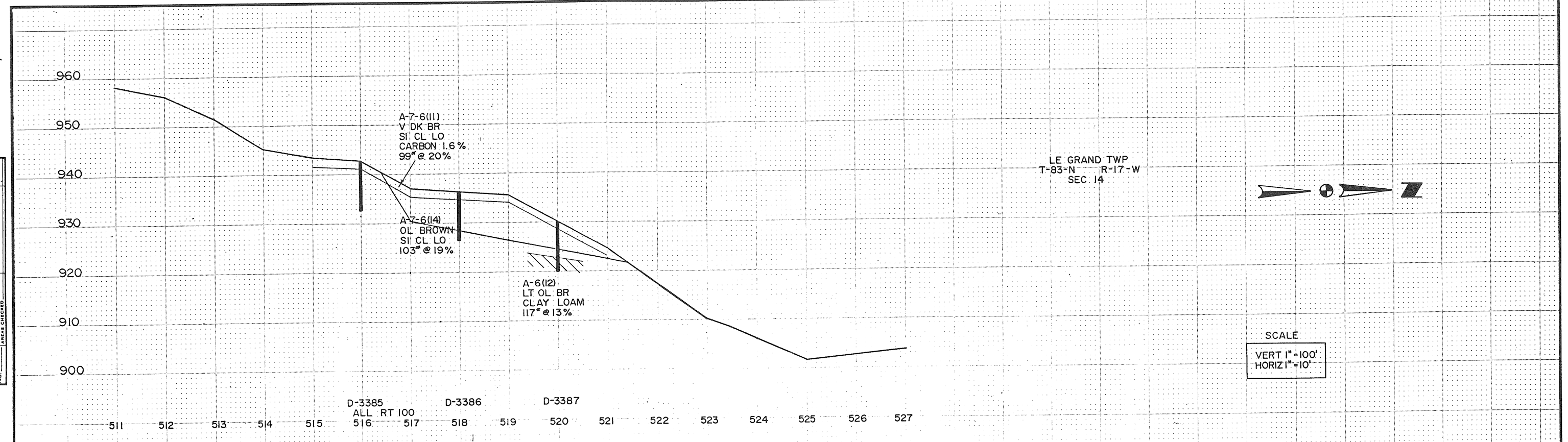
DESCRIPTION FROM E49 N. TO US 30 (1.9 MI)
 SOIL SURVEYOR G. RUNYAN DATE 1/89
 DESIGNER/CADD J. MCCOLLOUGH DATE 2/89
 SOILS BOOK NO. S-64-H

SELECT SOIL	UNSUITABLE	WATER	DENS. CORE	BLOW
SELECT SAND	SANDY SOIL	SAMPLE	SHELBY	PLUGGED
ROCK	MOISTURE	SLOPE	PLUGGED	MOISTURE

STATE	FHW Region	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7			

DATE	
BY	
FINAL SURVEY	
SURVEY	
PLOTTED	
TEMPLATE	
NOTE BOOK	
NO.	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
SURVEY	
PLOTTED	
TEMPLATE	
NOTE BOOK	
NO.	
AREAS CHECKED	



DESCRIPTION FROM CO. RD. E 49 N. TO US 30 (1.9 MI.)
 SOIL SURVEYOR G. RUNYAN DATE 1/89
 DESIGNER/CADD MCCOLLOUGH DATE 3/89
 SOILS BOOK NO. S-64-H

WATER	DENS. CORE	BLOW
SAMPLE	SHELBY	
UNSUITABLE	PLUGGED	
SELECT SAND	ROCK	MOISTURE
SELECT SOIL	SANDY SOIL	

RUNING 44-233 66227- I.D.T. 317043

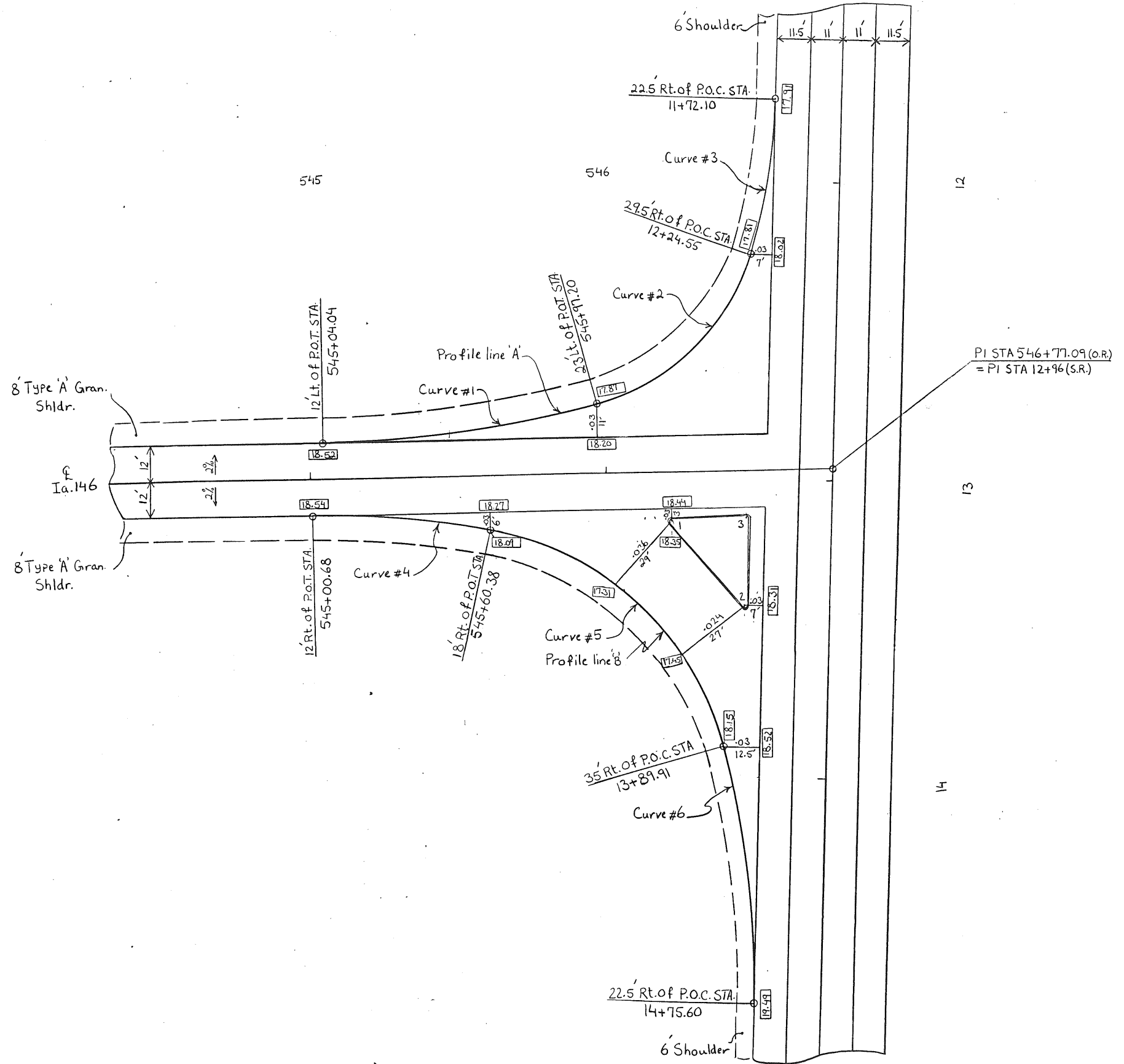
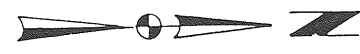
SOILS DESIGN

MARSHALL COUNTY

PROJECT NUMBER
RRP-146-4(8)--48-64

STATE	FHWA Region	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KOWA	7			

US 30



ISLAND DATA			101-13
			05-10-88
POINT NO.	STATION	DISTANCE	
1	546+21.975	16	
2	13+41.922	29.5	
3	546+46.828	15	
3	13+12.446	29.5	

NO.	Δ	D	T	L	E	R
1	13° 28' 04.93"	14° 19' 26.20"	47.23'	94.02'	2.78'	400'
2	58° 33' 21.31"	76° 23' 39.74"	42.05'	76.65'	10.98'	75'
3	15° 12' 12.97"	28° 38' 52.40"	26.69'	53.07'	1.77'	200'
4	11° 28' 42.03"	19° 05' 54.94"	30.15'	60.10'	1.51'	300'
5	64° 41' 46.52"	57° 17' 44.81"	63.34'	112.92'	18.37'	100'
6	16° 35' 52.23"	19° 05' 54.94"	43.76'	86.91'	3.17'	300'

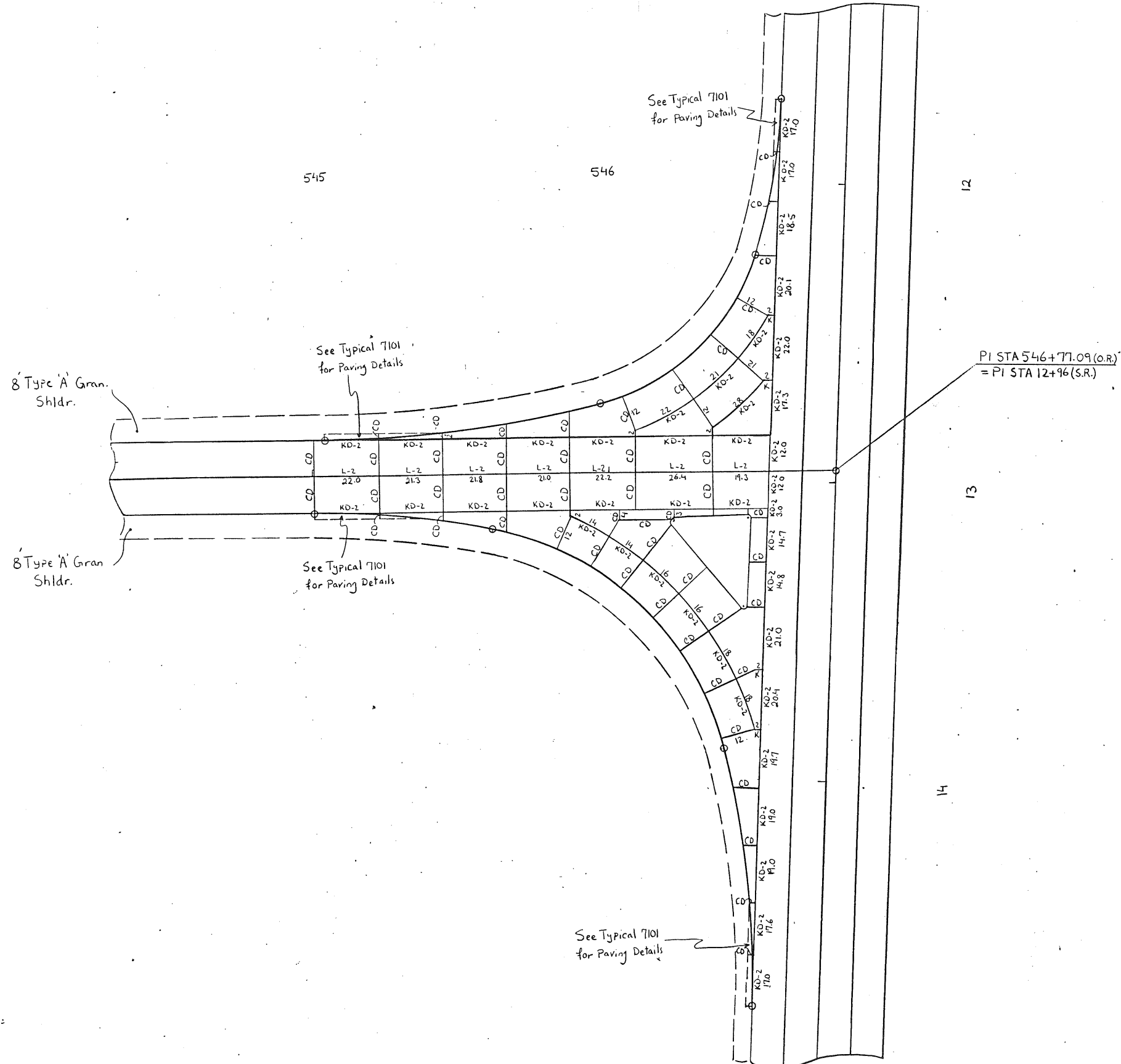
GEOMETRIC & STAKEOUT
INTERSECTION OF IA 146 & US 30
SCALE: 1"=20'

65300

MARSHALL COUNTY

PROJECT NUMBER F-146-4(8)--20-64

STATE	PIWA Region	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	7		K.01	



JOINTING DETAILS
 INTERSECTION OF IA-146 AND
 US 30
 SCALE: 1"=20'

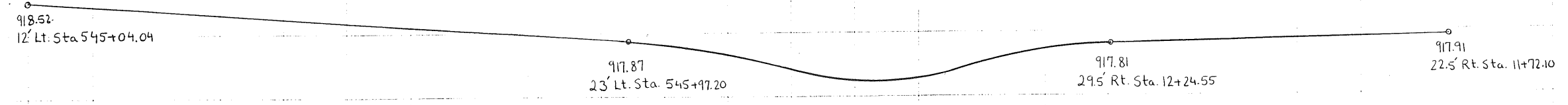
MARSHALL COUNTY

PROJECT NUMBER	F-146-4(8)--20-64	STATE	IAWA	FHWA Region	7	FISCAL YEAR		SHEET NO.	K02	TOTAL SHEETS	
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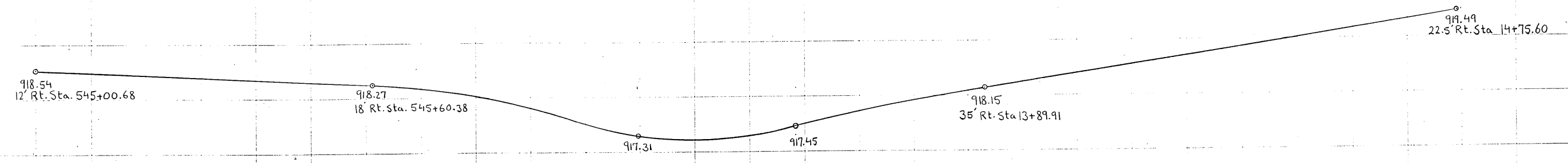
PLAN
 SHEET NO. 14
 DATE: 11/15/64

PROFILE
 SHEET NO. 14
 DATE: 11/15/64

919
 918
 917



919
 918
 917



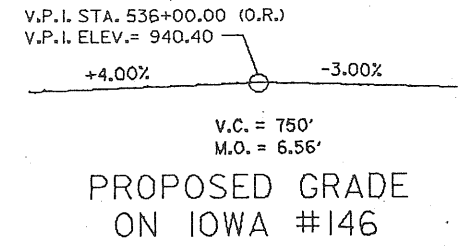
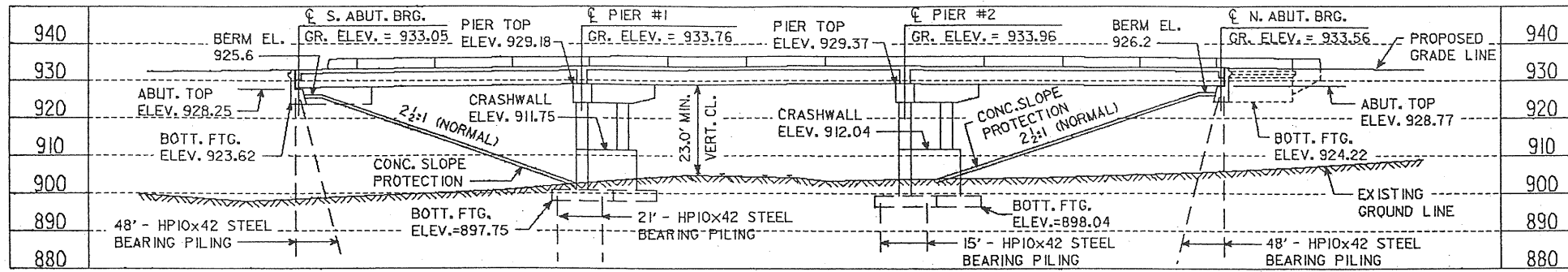
EDGE PROFILE
 INTERSECTION OF IA. 146
 AND U.S. 30
 SCALE: HORZ: 1"=10'
 VERT: 1"=1'

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260

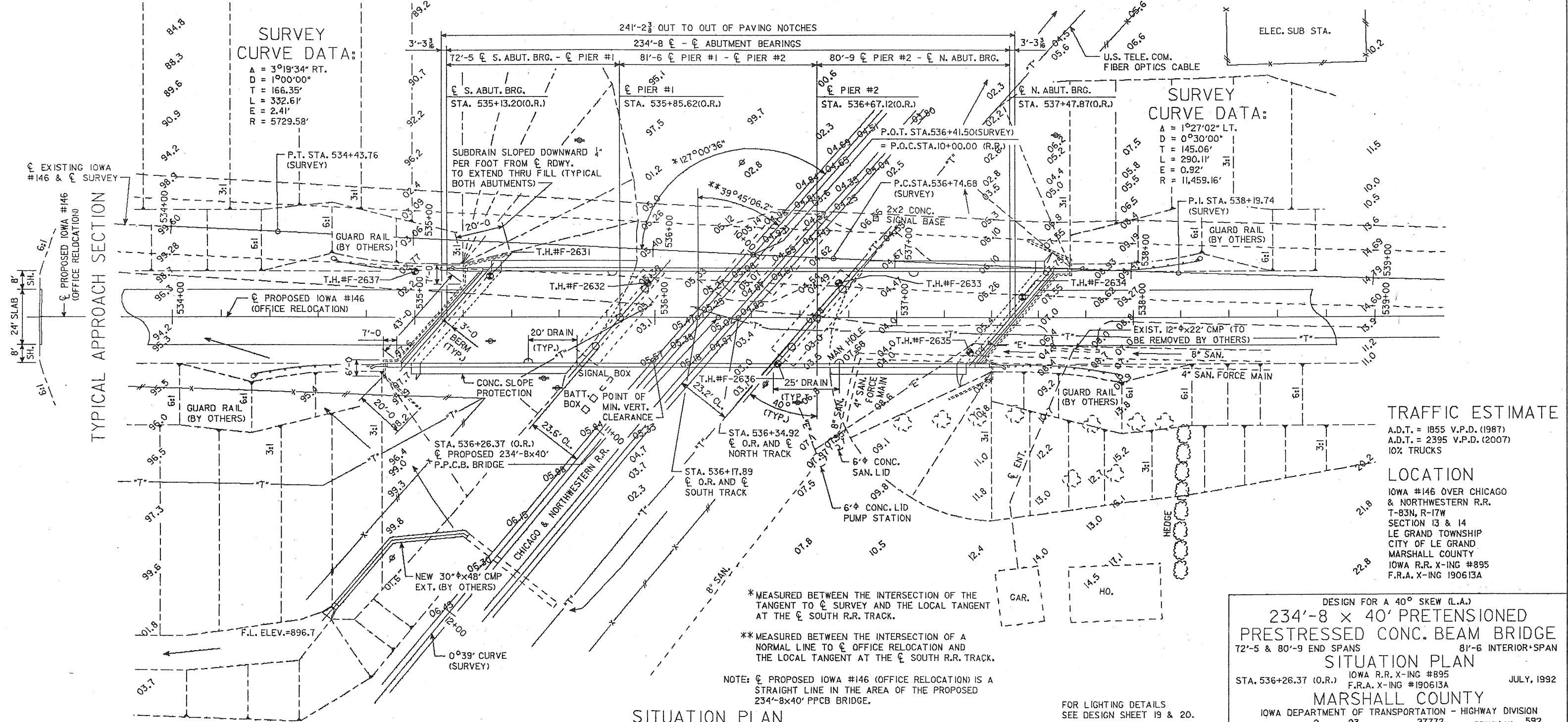
MARSHALL COUNTY

PROJECT NUMBER	F-146-4(8)--20-64	STATE	IOWA	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
					K-03	

RUNNING 65300-1



LONGITUDINAL SECTION ALONG C PROPOSED ROADWAY



TRAFFIC ESTIMATE
 A.D.T. = 1855 V.P.D. (1987)
 A.D.T. = 2395 V.P.D. (2007)
 10% TRUCKS

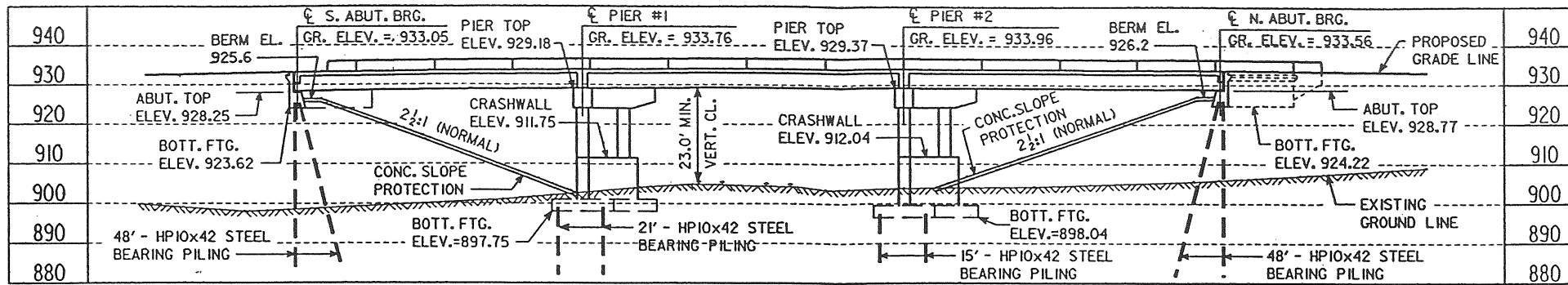
LOCATION
 IOWA #146 OVER CHICAGO
 & NORTHWESTERN R.R.
 T-83N, R-17W
 SECTION 13 & 14
 LE GRAND TOWNSHIP
 CITY OF LE GRAND
 MARSHALL COUNTY
 IOWA R.R. X-ING #895
 F.R.A. X-ING 190613A

* MEASURED BETWEEN THE INTERSECTION OF THE TANGENT TO C SURVEY AND THE LOCAL TANGENT AT THE C SOUTH R.R. TRACK.
 ** MEASURED BETWEEN THE INTERSECTION OF A NORMAL LINE TO C OFFICE RELOCATION AND THE LOCAL TANGENT AT THE C SOUTH R.R. TRACK.

NOTE: C PROPOSED IOWA #146 (OFFICE RELOCATION) IS A STRAIGHT LINE IN THE AREA OF THE PROPOSED 234'-8x40' PPCB BRIDGE.

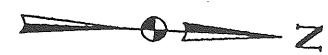
FOR LIGHTING DETAILS SEE DESIGN SHEET 19 & 20.

DESIGN FOR A 40° SKEW (L.A.)
234'-8 x 40' PRETENSIONED PRESTRESSED CONC. BEAM BRIDGE
 72'-5 & 80'-9 END SPANS 81'-6 INTERIOR SPAN
SITUATION PLAN
 STA. 536+26.37 (O.R.) IOWA R.R. X-ING #895
 F.R.A. X-ING #190613A
MARSHALL COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 2 OF 23 FILE NO. 27772 DESIGN NO. 592
 JULY, 1992

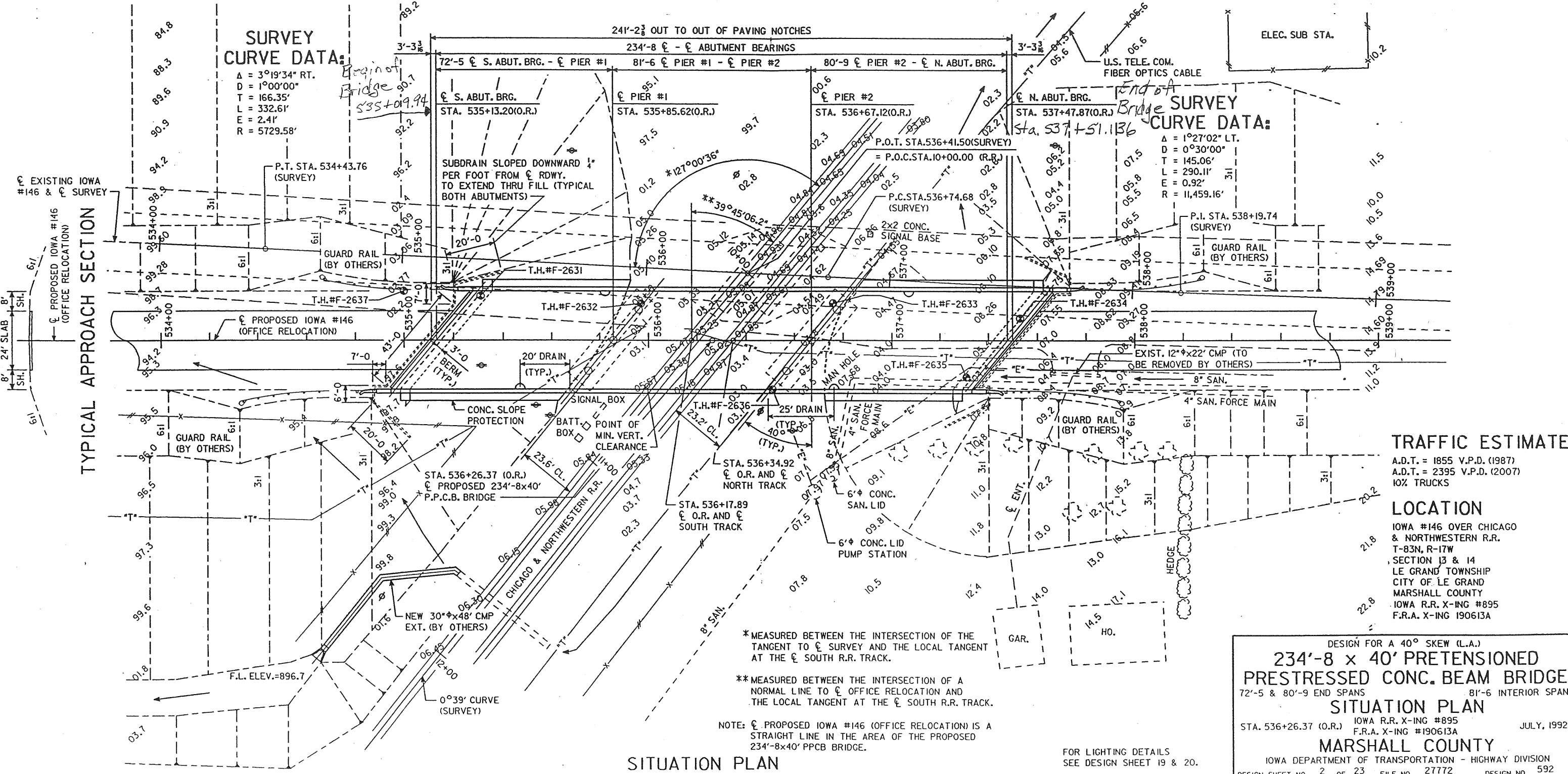


V.P.I. STA. 536+00.00 (O.R.)
 V.P.I. ELEV.= 940.40
 +4.00% -3.00%
 V.C. = 750'
 M.O. = 6.56'

PROPOSED GRADE ON IOWA #146



LONGITUDINAL SECTION ALONG C PROPOSED ROADWAY



SURVEY CURVE DATA:
 Δ = 3°19'34" RT.
 D = 1°00'00"
 T = 166.35'
 L = 332.61'
 E = 2.41'
 R = 5729.58'

SURVEY CURVE DATA:
 Δ = 1°27'02" LT.
 D = 0°30'00"
 T = 145.06'
 L = 290.11'
 E = 0.92'
 R = 11,459.16'

TRAFFIC ESTIMATE

A.D.T. = 1855 V.P.D. (1987)
 A.D.T. = 2395 V.P.D. (2007)
 10% TRUCKS

LOCATION

IOWA #146 OVER CHICAGO & NORTHWESTERN R.R.
 T-83N, R-17W
 SECTION 13 & 14
 LE GRAND TOWNSHIP
 CITY OF LE GRAND
 MARSHALL COUNTY
 IOWA R.R. X-ING #895
 F.R.A. X-ING 190613A

SITUATION PLAN

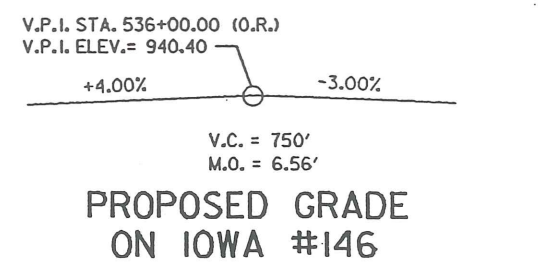
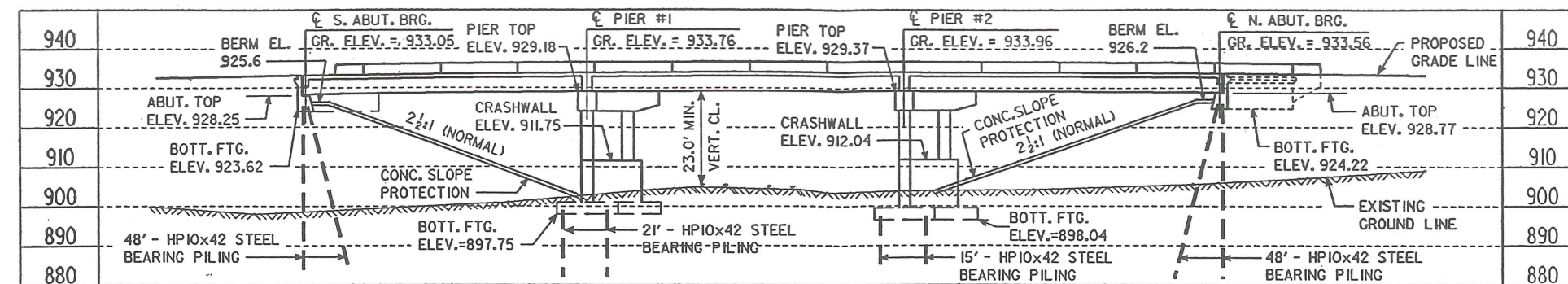
* MEASURED BETWEEN THE INTERSECTION OF THE TANGENT TO C SURVEY AND THE LOCAL TANGENT AT THE C SOUTH R.R. TRACK.

** MEASURED BETWEEN THE INTERSECTION OF A NORMAL LINE TO C OFFICE RELOCATION AND THE LOCAL TANGENT AT THE C SOUTH R.R. TRACK.

NOTE: C PROPOSED IOWA #146 (OFFICE RELOCATION) IS A STRAIGHT LINE IN THE AREA OF THE PROPOSED 234'-8'x40' PPCB BRIDGE.

FOR LIGHTING DETAILS
 SEE DESIGN SHEET 19 & 20.

DESIGN FOR A 40° SKEW (L.A.)
**234'-8' x 40' PRETENSIONED
 PRESTRESSED CONC. BEAM BRIDGE**
 72'-5' & 80'-9' END SPANS 81'-6' INTERIOR SPAN
SITUATION PLAN
 STA. 536+26.37 (O.R.) IOWA R.R. X-ING #895
 F.R.A. X-ING #190613A
MARSHALL COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 2 OF 23 FILE NO. 27772 SHEET NO. 592



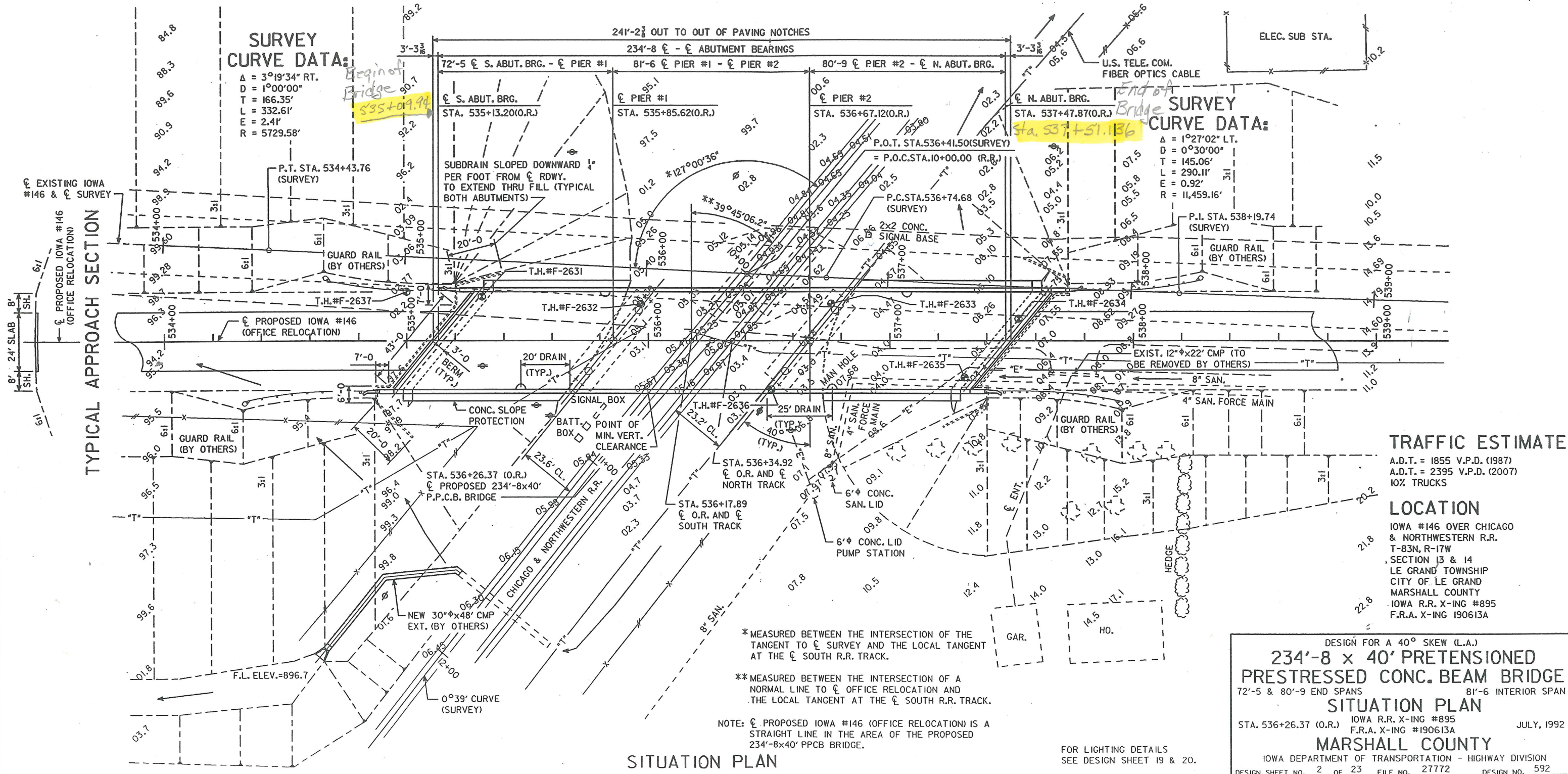
LONGITUDINAL SECTION ALONG C PROPOSED ROADWAY

SURVEY CURVE DATA:

$\Delta = 3^{\circ}19'34''$ RT.
 $D = 1^{\circ}00'00''$
 $T = 166.35'$
 $L = 332.61'$
 $E = 2.41'$
 $R = 5729.58'$

SURVEY CURVE DATA:

$\Delta = 1^{\circ}27'02''$ LT.
 $D = 0^{\circ}30'00''$
 $T = 145.06'$
 $L = 290.11'$
 $E = 0.92'$
 $R = 11,459.16'$



TRAFFIC ESTIMATE

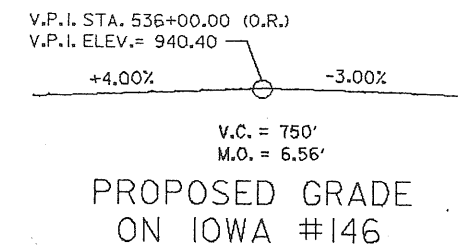
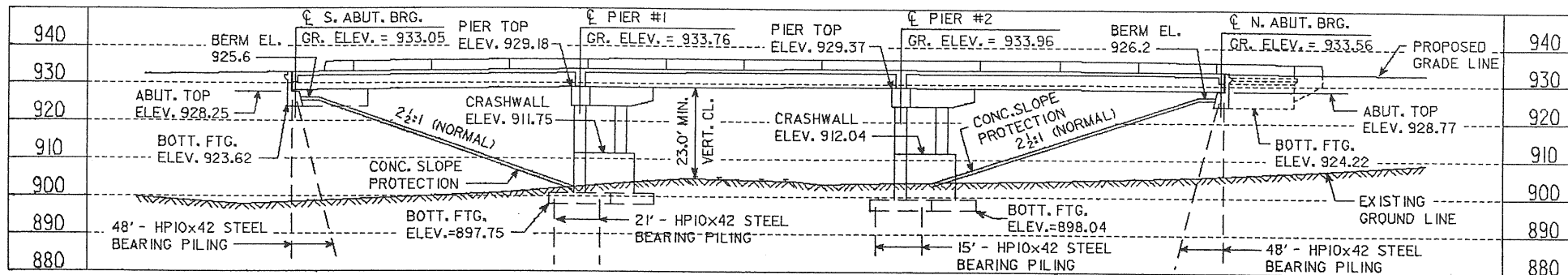
A.D.T. = 1855 V.P.D. (1987)
 A.D.T. = 2395 V.P.D. (2007)
 10% TRUCKS

LOCATION

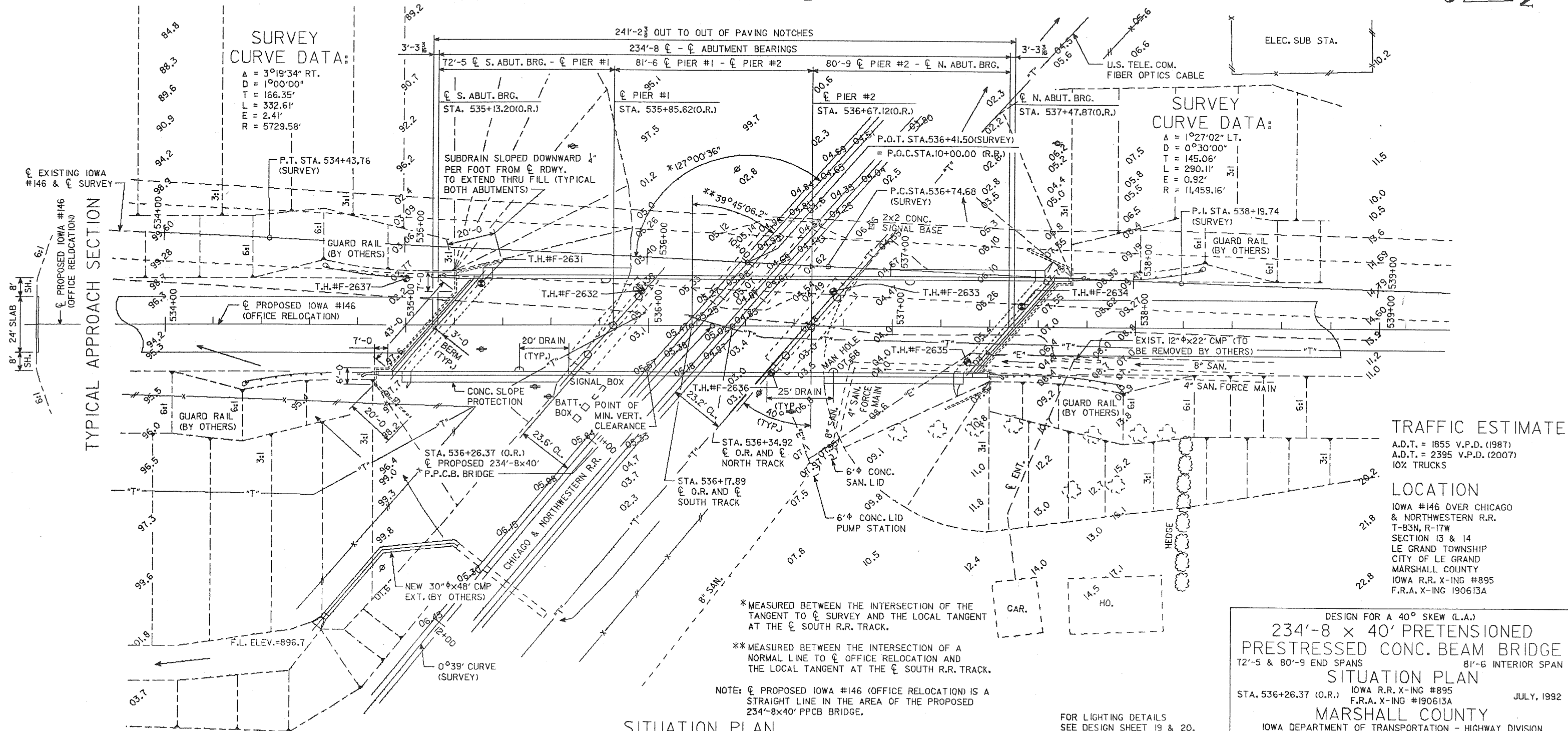
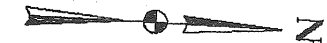
IOWA #146 OVER CHICAGO & NORTHWESTERN R.R.
 T-83N, R-17W
 SECTION 13 & 14
 LE GRAND TOWNSHIP
 CITY OF LE GRAND
 MARSHALL COUNTY
 IOWA R.R. X-ING #895
 F.R.A. X-ING 190613A

DESIGN FOR A 40° SKEW (L.A.)
**234'-8 x 40' PRETENSIONED
 PRESTRESSED CONC. BEAM BRIDGE**
 72'-5 & 80'-9 END SPANS 81'-6 INTERIOR SPAN
SITUATION PLAN
 STA. 536+26.37 (O.R.) IOWA R.R. X-ING #895
 F.R.A. X-ING #190613A JULY, 1992
MARSHALL COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 2 OF 23 FILE NO. 27772 DESIGN NO. 592

BENCH MARK NO. 209, STA. 533+22 (SURVEY), 2' RT., FOUND "X" ON RT. HDWL. OF 6'x4' R.C.B., ELEV. 895.33.



LONGITUDINAL SECTION ALONG CL PROPOSED ROADWAY



SURVEY CURVE DATA:
 A = 3°19'34" RT.
 D = 1900'00"
 T = 166.35'
 L = 332.61'
 E = 2.41'
 R = 5729.58'

SURVEY CURVE DATA:
 A = 1°27'02" LT.
 D = 0°30'00"
 T = 145.06'
 L = 290.11'
 E = 0.92'
 R = 11,459.16'

TRAFFIC ESTIMATE
 A.D.T. = 1855 V.P.D. (1987)
 A.D.T. = 2395 V.P.D. (2007)
 10% TRUCKS

LOCATION
 IOWA #146 OVER CHICAGO & NORTHWESTERN R.R.
 T-83N, R-17W
 SECTION 13 & 14
 LE GRAND TOWNSHIP
 CITY OF LE GRAND
 MARSHALL COUNTY
 IOWA R.R. X-ING #895
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* MEASURED BETWEEN THE INTERSECTION OF THE TANGENT TO CL SURVEY AND THE LOCAL TANGENT AT THE CL SOUTH R.R. TRACK.
 ** MEASURED BETWEEN THE INTERSECTION OF A NORMAL LINE TO CL OFFICE RELOCATION AND THE LOCAL TANGENT AT THE CL SOUTH R.R. TRACK.

NOTE: CL PROPOSED IOWA #146 (OFFICE RELOCATION) IS A STRAIGHT LINE IN THE AREA OF THE PROPOSED 234'-8x40' PPCB BRIDGE.

SITUATION PLAN

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