FED. PROJ. NO. STATE FUNDS

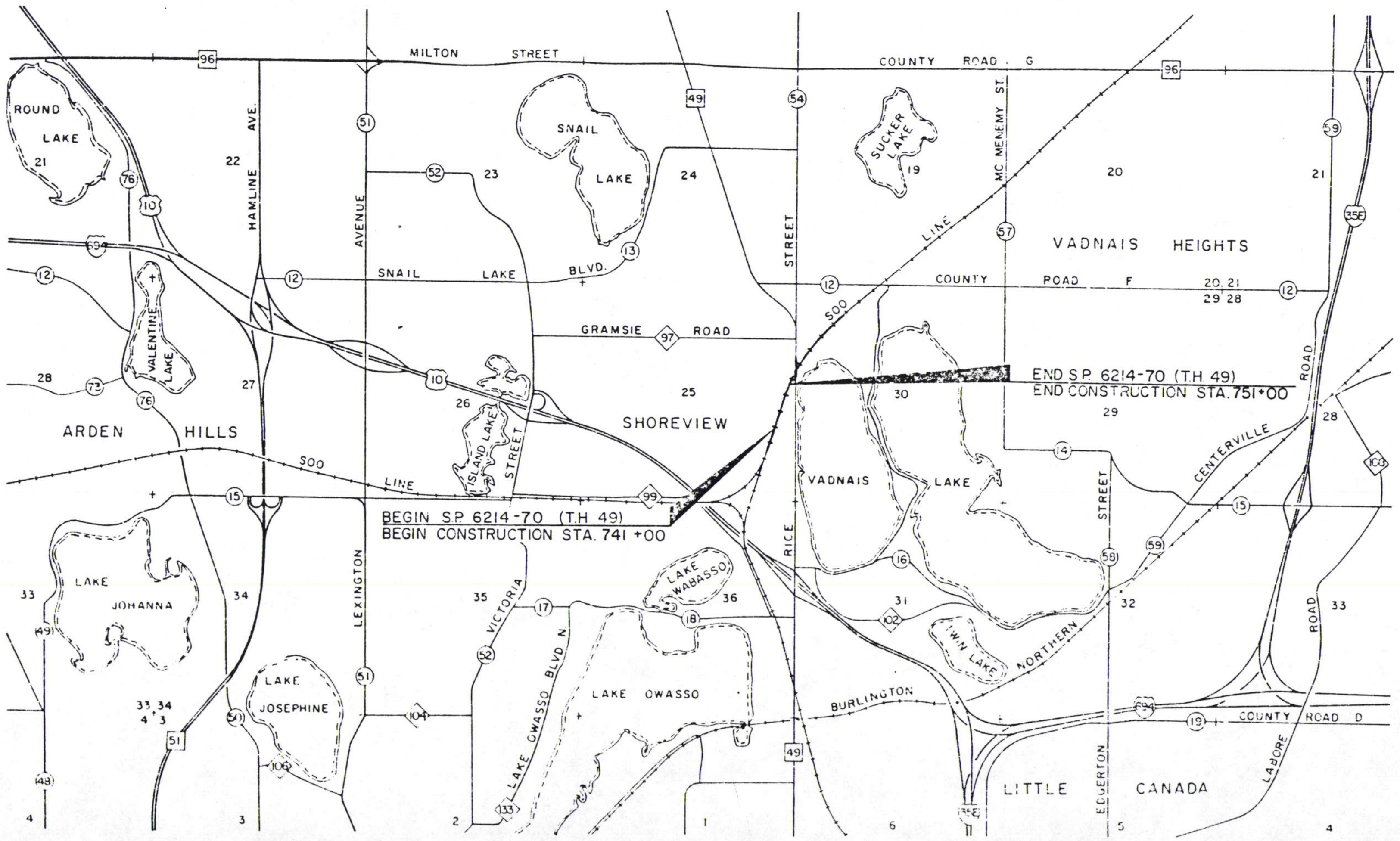
MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR APPROACH FILL FOR BRIDGE NO. 62002

LOCATED ON SOO LINE RAILROAD **FROM** A PT. 556.18 FT. S AND 402.12 FT. W OF E 1/4 COR. SEC. 25 T30N R23W **TO** A PT. 391.65 FT. N AND 84.72 FT. W OF E 1/4 COR. SEC. 25 T30N R23W

STATE PROJ. NO.				
GROSS LENGTH		FEET		MILES
BRIDGES-LENGTH		FEET		MILES
EXCEPTIONS-LENGTH		FEET		MILES
NET LENGTH		FEET		MILES

STATE PROJ. NO. 6214-70 (T.H. 49) SOO LINE RAILROAD				
GROSS LENGTH	1000.00	FEET	0.189	MILES
BRIDGES-LENGTH	0	FEET	0	MILES
EXCEPTIONS-LENGTH	0	FEET	0	MILES
NET LENGTH	1000.00	FEET	0.189	MILES



SCALES

PLAN	0	100
PROFILE	0	100
INDEX MAP	0	2000
GENERAL LAYOUT		

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

DESIGN DESIGNATION

ADT (Current Year)	=	**Design Speed**	**MPH**
ADT (Future Year)	=	**Based on**	**Sight Distance**
DHV (Design Hr. Vol.)	=	**Height of eye**	**Height of object**
D (Directional Distr.)	= %	**Design Speed not achieved at:**	
T (Heavy Commercial)	= %	**STA. TO STA. MPH**	
		STA. TO STA. MPH	

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO.	AREA	JOB
6214-70		

GOVERNING SPECIFICATIONS

THE 1983 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

DATE 3/3/86 REG. NO. 7433 ENGR. Amando J. Romano

DESIGN SQUAD EDWARDS AND KELCEY, INC.

Right of Way Approval [signature] 4-2 1986
DIRECTOR RIGHT OF WAY OPERATIONS

Recommended for Approval Robert H. Cargford 3-3 1986
Asst. DISTRICT DIRECTOR

Recommended for Approval William M. Mueller 3-28 1986
TRANSPORTATION PLANS ENGINEER

Recommended for Approval [signature] 4-3 1986
ACTG DESIGN SERVICES DIRECTOR

Recommended for Approval 19
DIRECTOR OF TRAFFIC ENGINEERING

Approved 4/3 1986 [signature]
DIRECTOR, OFFICE OF ENGINEERING SERVICES

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR DATE

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THIS PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE REG. NO.

23 MAY 1986

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES
2021.501	Mobilization	L.S.	1	
2051.501	Maintenance and Restoration of Haul Roads	L.S.	1	
2105.505	Muck Excavation	C.Y.	1429	
2105.522	Select Granular Borrow (EV)	C.Y.	2504	
2105.522	Select Granular Borrow - Modified (EV)	C.Y.	10,222	
2105.523	Common Borrow (EV)	C.Y.	15,429	
2105.535	Salvaged Topsoil (In Stockpile)	C.Y.	445	
105.602	Settlement Platform	Each	12	
105.602	Piezometer	Each	18	
105.602	Control Stake	Each	12	
105.602	Inclinometer Casing	Each	2	
105.602	Capillary Reader	Each	2	
105.609	Geotextile Fabric, Special	S.Y.	3500	
105.609	Geogrids	S.Y.	14,340	
105.606	Wick Drain	L.F.	60,000	
2130.501	Water (1)	(M) Gallons	5	
2451.503	Granular Backfill (C.Y.) (P)	C.Y.	153	
0452.603	Steel Sheet Piling (Temporary)	S.F.	1340	
0452.606	Steel Sheet Piling (Temporary) (2)	L.S.	1	
2501.501	Culvert Excavation, Class E	C.Y.	324	
2501.511	54" C.S. Pipe Culvert, 12 Gage (2)(3)	L.F.	52	
2501.511	48" RC Pipe Culvert, Class V	L.F.	106	
2501.515	48" RC Pipe Aprons	Each	1	
2575.501	Seeding (P)	Acre	0.6	
2575.502	Seed, Mixture 1	Pound	30	
2573.501	Bale Check	Each	280	
2573.502	Silt Fence, Heavy Duty	Lin.Ft.	830	

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES

(1) For use as directed by the Engineer for Dust Control.
(2) For Details see Sheet 9.
(3) Includes Geotextile wrapping and 12"×12" supporting timbers as incidental items.

CHARTS

CHART NO.	CHART CONTENT	SHEET NO.
1	Earthwork Summary	3
2	Culvert Exc. & Gran. Backfill	3
3	Standard Plates	3
4	Culverts	3
5	Construction Fabrics	3
6	Instrumentation	3
7	Steel Sheet Piling	3
8	Erosion Control	3
9	Settlement Platform	6
10	Control Stakes	6
11	Piezometers	6
12	Inclinometers	6
13	Utilities	12
14	Curve Table	15
15	Intersection Points	15

Construction and Soils Notes:

1. Clearing and Grubbing shall be incidental work and no direct compensation will be made.
2. All compaction on this project shall be accomplished in accordance with the "Specific Density Method" except "Ordinary Compaction Method" shall apply in Stage I until a firm foundation is established.
3. The toe of fill slopes shall be rounded to naturalize the construction even though the cross sections do not show any rounding.
4. Muck Excavation shall be accomplished as shown in the Excavation Details on Sheet 9. Remove unstable material to firm bottom and backfill with Select Granular Material. The backfill shall follow immediately behind the Excavation.

ESTIMATE SHEET

EARTHWORK SUMMARY | 1

STATION TO STATION	REMARKS	EXCAVATION		EMBANKMENT ④		
		MUCK ①	SALVAGED TOPSOIL ②	SELECT GRANULAR	SELECT GRANULAR MODIFIED ③	COMMON
		CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.
741+50 TO 750+40	Stage I	1429	445	1855	7572	
741+20 TO 751+00	Stage II					11,429

① To be Disposed of off Project.
② In Stockpile
③ Select Granular Material Modified to 100% passing the 3/4" sieve and not more than 10%, by weight, passing the No. 200 sieve. Place Material within the Limits of the Wick Drain Area.
④ To Compensate for anticipated settlement between Stations 744+50 and 750+30 Embankment Volumes were Estimated using the following assumptions:
a) The lower limit of Stage I was Estimated as 1.0' (avg.) below existing ground.
b) The lower limit of Stage II was Estimated as 1.5' (avg.) below the upper limit of Stage I.

CULVERT EXCAVATION, CLASS E AND GRANULAR BACKFILL | 2

STATION	DIST.	CUT			VOLUME OF CUT	FILL			VOLUME OF FILL
		DEPTH	END AREA	1/2 SUM OF END AREAS		HEIGHT	END AREA	1/2 SUM OF END AREAS	
					CU. YD.				CU. YD.
Begin 48" RCP		10.5	89			8	68		
	71			72	189			51	153
48" RCP		6.5	55			4	34		
48" RCP		0	0						
	43			85	135				
End 48" RCP		20	170						

CONSTRUCTION FABRICS | 5

STATION TO STATION	LOCATION	REMARKS	GEOTEXTILE SPECIAL	GEOGRID	WICK DRAIN
			SQ. YD.	SQ. YD.	LIN. FT.
744+50 TO 750+30	LT.	Stage I	3500	4740	60,000
744+50 TO 750+30	LT.	Stage II		9600	

INSTRUMENTATION | 6

STATION TO STATION	LOCATION	SETTLEMENT PLATFORM	PIEZOMETER	CONTROL STAKE	INCLINOMETER CASING	CAPILLARY READER
		EACH	EACH	EACH	EACH	EACH
745+00 TO 750+10	30' LT. TO 120' LT.	12	18	12	2	2

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FED. HWY. ADMIN., SHALL APPLY TO THIS PROJECT.

STANDARD PLATES | 3

PLATE NO.	DESCRIPTION
3000K	Reinforced Concrete Pipe
3040F	Corrugated Metal Pipe Culvert
3100F	Concrete Apron for Reinforced Concrete Pipe
3145D	Concrete Pipe Ties

STEEL SHEET PILING (TEMPORARY) | 7

STATION	LOCATION	DIST.	DEPTH FT.	1/2 SUM OF DEPTHS	AREA SQ. FT.
742+60			6'		
		40'		6'	240
743+00			6'		
		100'		7'	700
744+00			8'		
		50'		8'	400
744+50			8'		

CULVERTS | 4

STATION TO STATION	LOCATION	REMARKS	INLET	OUTLET	DIAM. "D"	PIPE CULVERT C.S. ①	PIPE CULVERT RC.	APRONS RC.	CLASS OR GAGE OF PIPE
			ELEV.	ELEV.		LIN. FT.	LIN. FT.	EACH	
746+46	84' LT. TO 32' LT.		878.5	878.5	54" D	52			12
749+50 TO 750+17	100' LT. TO 12' LT.	Tie all joints.	880.0	880.0	48" D		106	1	V

① Payment Includes Geotextile and Timber Platform.

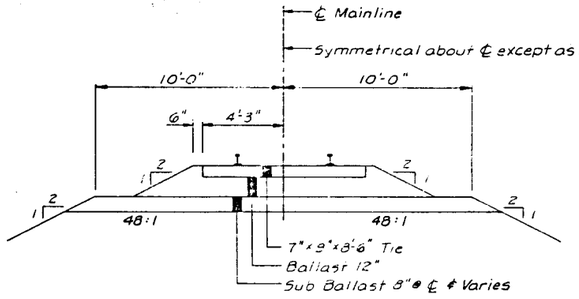
EROSION CONTROL | 8

STATION TO STATION	LOCATION	REMARKS	SEEDING	SEED MIXTURE 1	HAY OR STRAW BALES	SILT FENCE
			ACRE	POUND	EACH	LIN. FT.
741+00 TO 751+00			0.6	30		
742+00 TO 750+30					280	830

EARTHWORK SUMMARY AND TABULATIONS

NOTES:

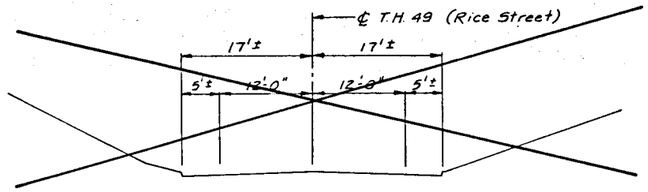
1. Sta. 744+01 to 745+12 Transition from 2 Tracks to 1 Track.
2. Sta. 737+30 to 741+05 Transition from 3 Tracks to 2 Tracks.
3. When the 10'-0" Berm is adjacent to face of Abutment, substitute "Stabilized Agg. Slope Paving" for "6" Topsoil."
4. Ditch modified to meet existing Ditch.
5. No B624 C&G at edge of Pavement.
6. Transition Shoulder width from existing (6 ft.) to 10'-0".
7. Sta. 254+91 to 255+03 6'-0" Curb opening. See Standard Plate 7035J for details on Curb Return.
8. Sta. 257+50 to 258+00 Berm tapers from 10'-0" to match existing (3 ft.) and Shoulder tapers from 10'-0" to match existing 6 ft.



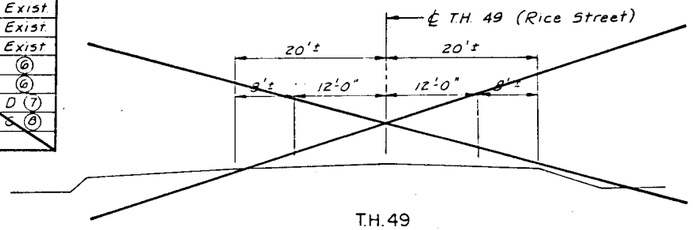
SOO LINE RAILROAD

Sta. 745+12 to 752+87
and Sta. 754+32 to 771+00
For Information Only (By Others)

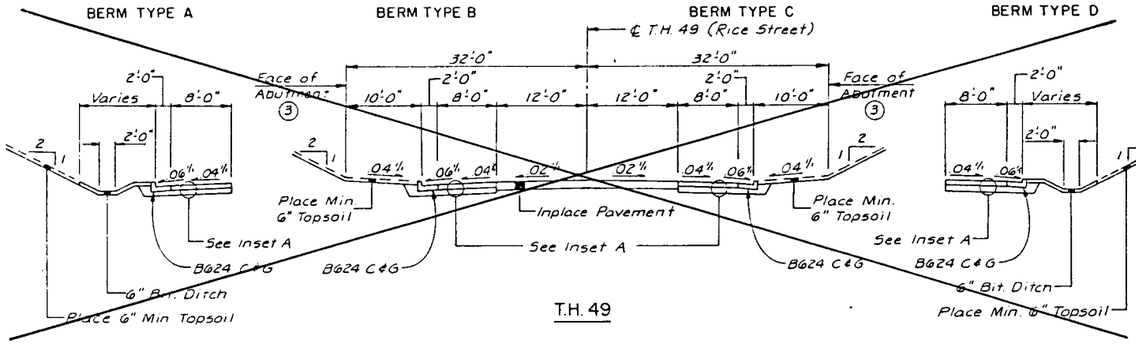
STATION TO STATION	LEFT SIDE		RIGHT SIDE	
	BERM TYPE	DITCH WIDTH	DITCH WIDTH	BERM TYPE
Rice Street				
253+00 to 253+13	Exist	0	0	Exist
253+13 to 253+38	Exist	(4)	0	Exist
253+38 to 253+53	Exist	10'-0" (5)	0	Exist
253+53 to 253+84	A	10'-0"	0	Exist
253+84 to 254+25	A	10'-0"	0	(6)
254+25 to 254+50	A	10'-0"	10'-0" (5)	(6)
254+50 to 255+03	A (7)	10'-0" (7)	10'-0" (7)	D (7)
255+03 to 258+00	B (8)	0	0	C (8)



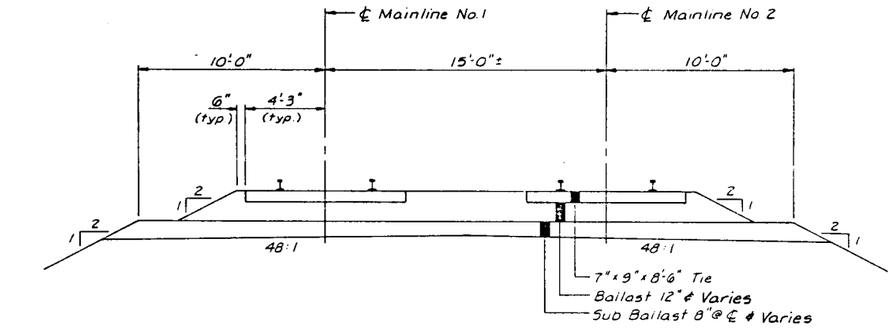
T.H. 49
Sta. 258+00



T.H. 49
Sta. 253+00

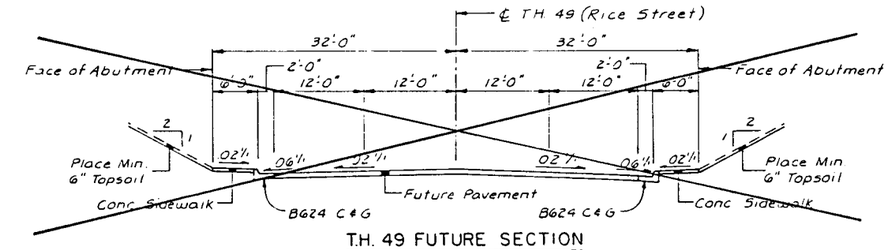


T.H. 49

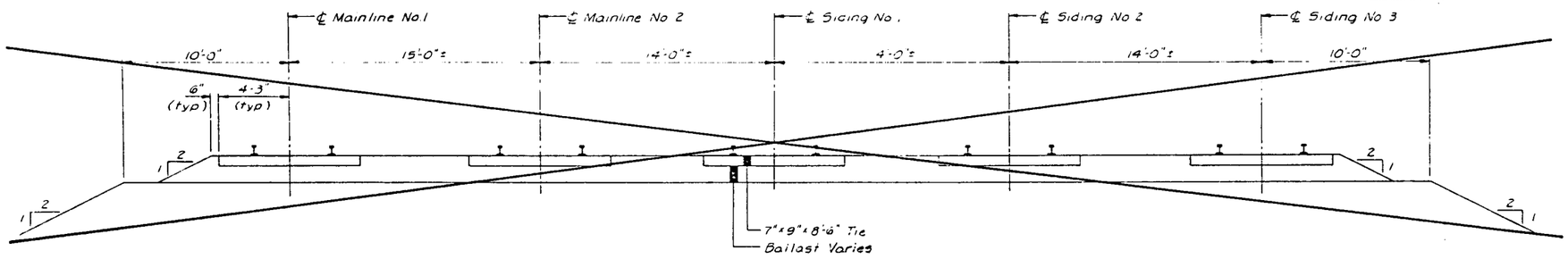


SOO LINE RAILROAD

Sta. 741+05 to 744+01 (1)
For Information Only (By Others)

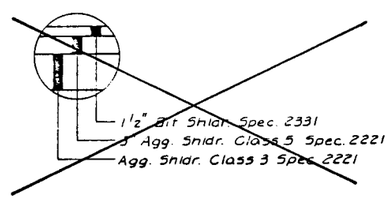


T.H. 49 FUTURE SECTION



SOO LINE RAILROAD

Sta. 731+00 to 737+30 (2)

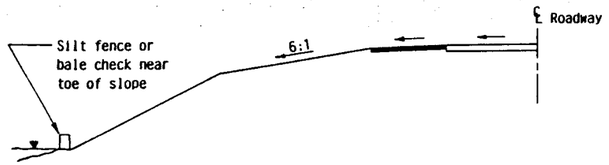


INSET A

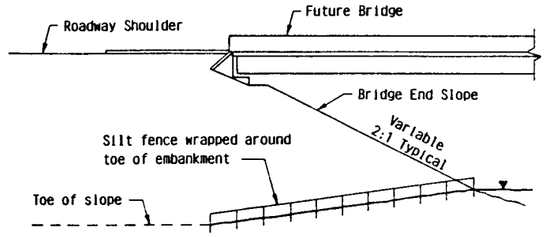
TYPICAL SECTIONS
SOO LINE RAILROAD
T.H. 49

State Proj. No. 6214-70 (T.H. 49)

Sheet No. 4 of 17 Sheets

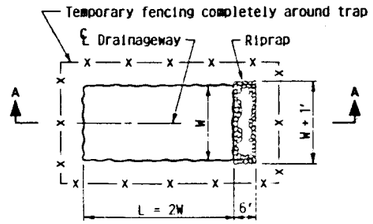


ROADWAY EMBANKMENT

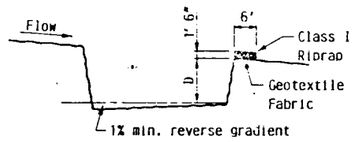


BRIDGE ABUTMENT

SILT FENCE OR BALE CHECK TO PROTECT ADJACENT CRITICAL AREAS



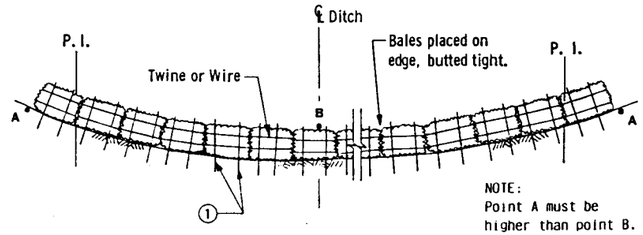
PLAN



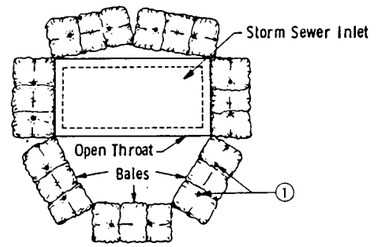
SECTION A-A

NOTE:
D = 3' min., 6' max.
W = 10' min., 20' max.

TEMPORARY SEDIMENT TRAP



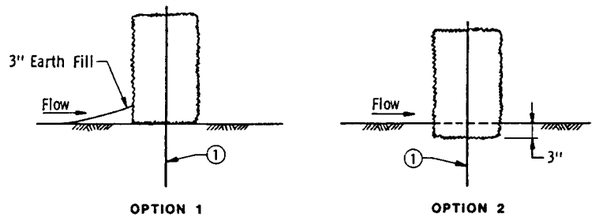
BALE DITCH CHECK



BALE CHECK TO PROTECT STORM SEWER INLETS

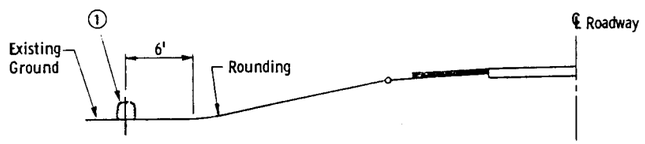
FLOATATION SILT CURTAIN

TEMPORARY DRAIN ON FILL SLOPE

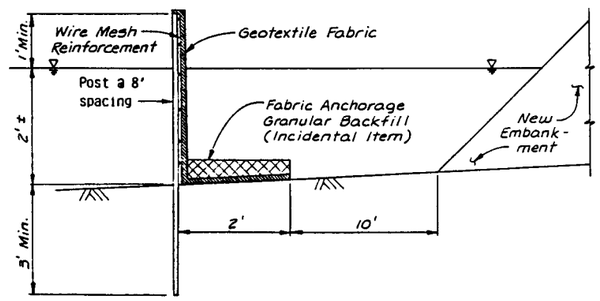


OPTION 1 OPTION 2

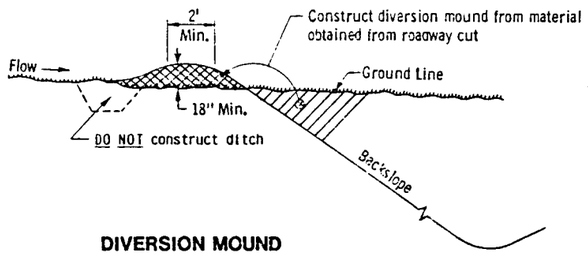
BALE CHECK DETAILS



BALE DIVERSION



SILT FENCE DETAIL



DIVERSION MOUND

NOTE:

① Two 2" x 2" Wood Stakes or Reinforcing Bars in each bale and embedded in the ground 10" minimum.

APPROVED January 31, 1985
Director
OFFICE OF ENGINEERING STANDARDS

(MODIFIED)

TEMPORARY EROSION CONTROL

MnDOT NO. 9 (8-82)

SETTLEMENT PLATFORM			9
NO.	STATION	OFFSET	
SP-1	745+10	45' Left	
SP-2	745+60	68' Left	
SP-3	746+00	40' Left	
SP-4	746+60	75' Left	
SP-5	747+05	45' Left	
SP-6	747+50	82' Left	
SP-7	748+00	35' Left	
SP-8	748+65	90' Left	
SP-9	749+00	40' Left	
SP-10	749+60	90' Left	
SP-11	750+00	45' Left	
SP-12	750+15	85' Left	

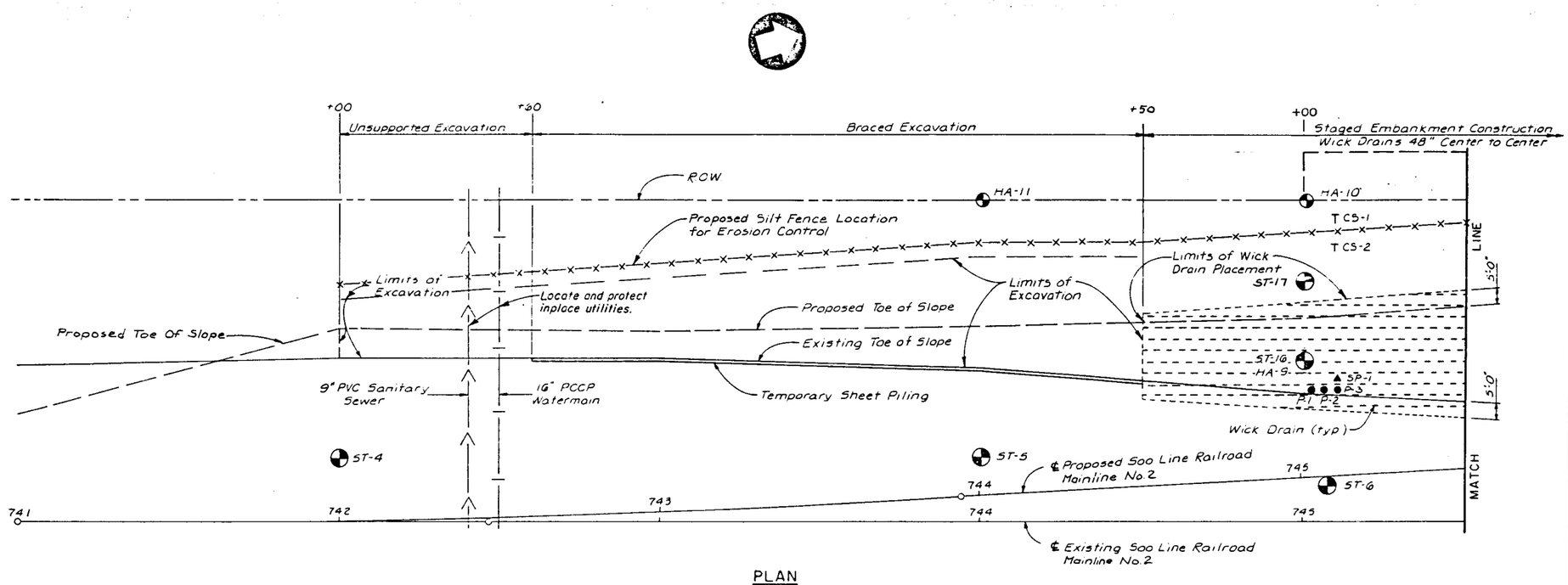
CONTROL STAKES			10
NO.	STATION	OFFSET	
CS-1	745+10	95' Left	
CS-2	745+10	85' Left	
CS-3	746+00	100' Left	
CS-4	746+00	90' Left	
CS-5	747+00	115' Left	
CS-6	747+00	105' Left	
CS-7	748+00	120' Left	
CS-8	748+00	110' Left	
CS-9	749+00	120' Left	
CS-10	749+00	110' Left	
CS-11	750+00	120' Left	
CS-12	750+00	110' Left	

PIEZOMETERS				11
NO.	STATION	OFFSET	ELEV.	
P-1	745+01	40' Left	877.0'	
P-2	745+05	40' Left	874.0'	
P-3	745+09	40' Left	870.0'	
P-4	746+00	35' Left	868.0'	
P-5	746+04	35' Left	872.0'	
P-6	746+08	35' Left	876.0'	
P-7	747+10	30' Left	864.5'	
P-8	747+14	30' Left	870.0'	
P-9	747+18	30' Left	876.0'	
P-10	748+10	30' Left	857.5'	
P-11	748+14	30' Left	865.0'	
P-12	748+18	30' Left	873.0'	
P-13	749+00	35' Left	858.0'	
P-14	749+04	35' Left	865.0'	
P-15	749+08	35' Left	873.0'	
P-16	750+00	35' Left	817.0'	
P-17	750+04	35' Left	879.0'	
P-18	750+08	35' Left	881.0'	

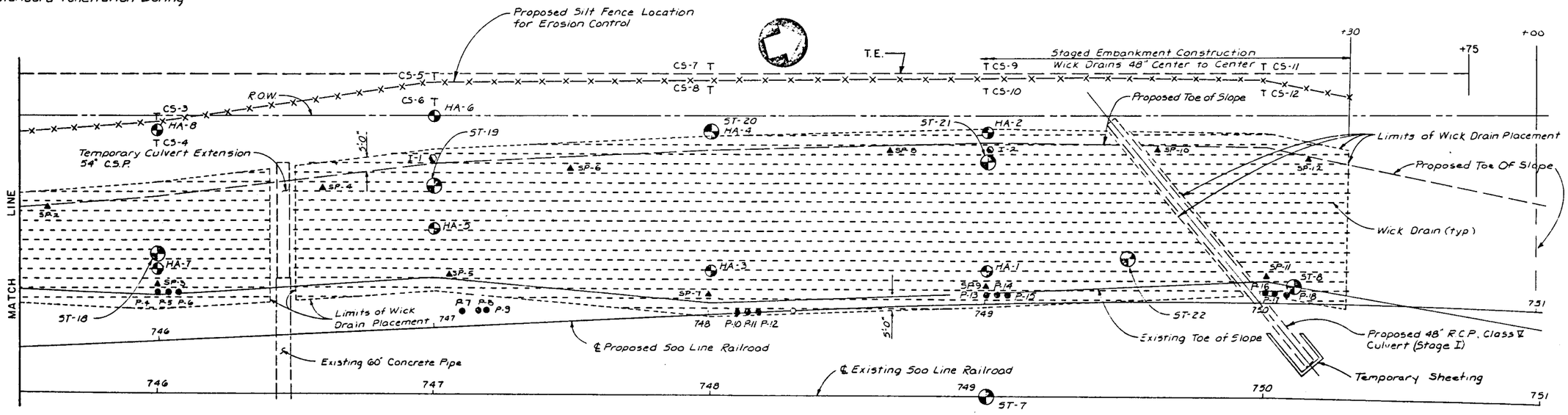
INCLINOMETERS				12
NO.	STATION	OFFSET	ELEV.	
I-1	747+00	85' Left	848.0'	
I-2	749+00	90' Left	855.0'	

LEGEND

- ▲ SP-0 Settlement Platform
- T CS-0 Control Stake
- ● P-0 Piezometer
- I-0 Inclinometer
- HA-0 Hand Auger Probe
- ST-0 Standard Penetration Boring



PLAN

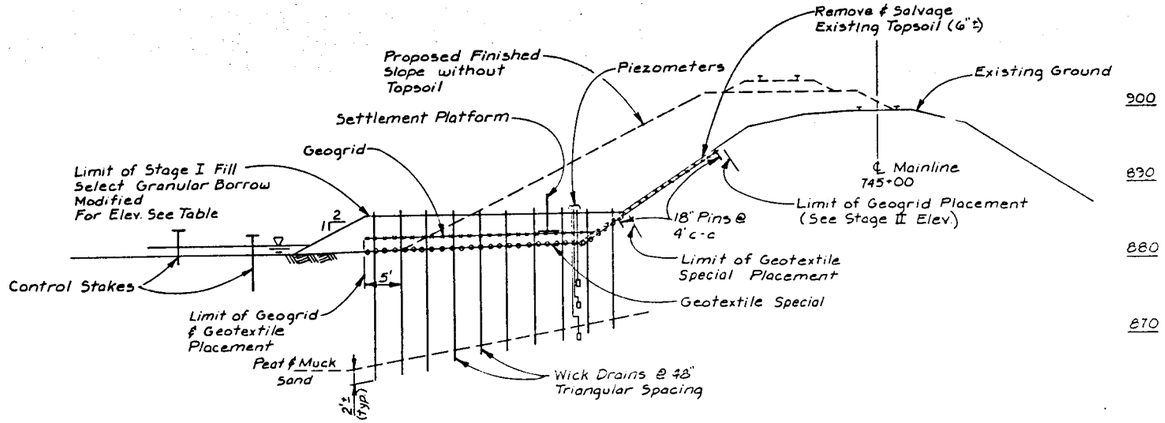


PLAN

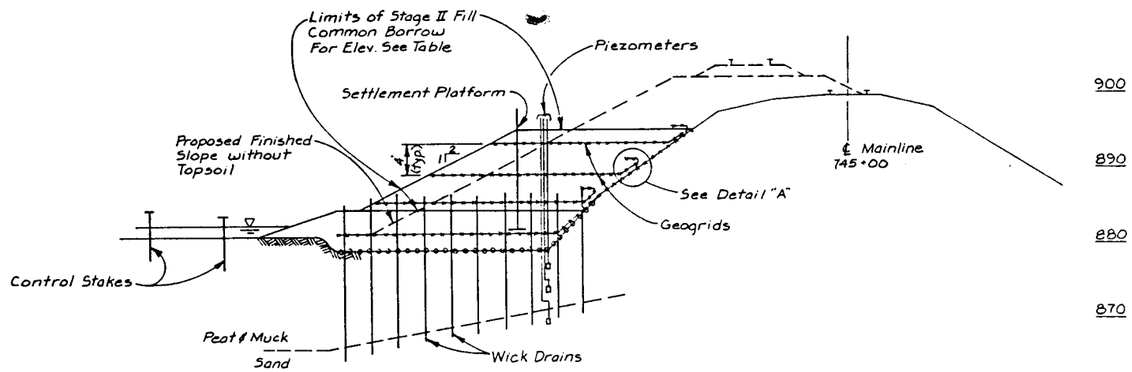
20 SCALE

EMBANKMENT PLAN

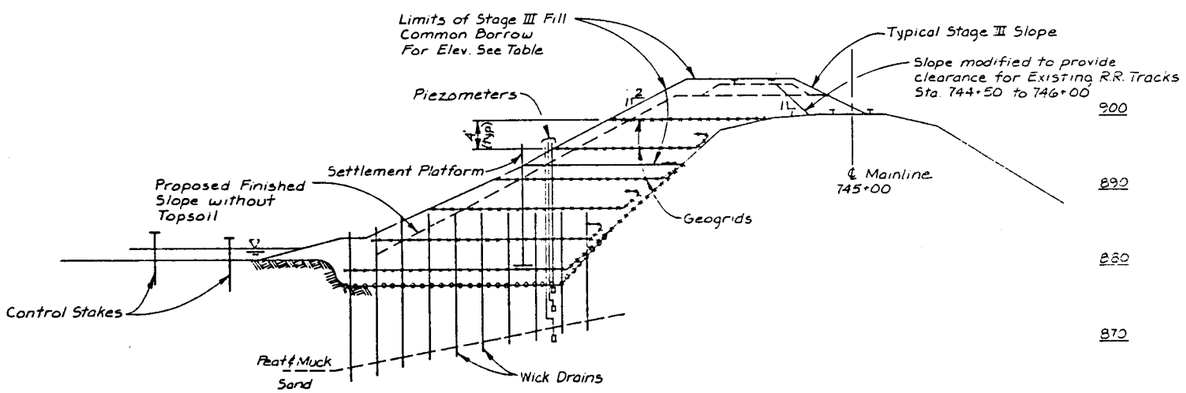
State Proj. No. 6214-70 (T.H. 49) Sheet No. 6 of 17 Sheets



STAGE I



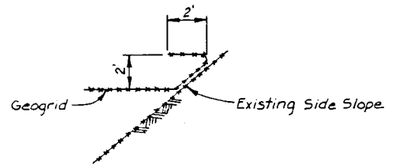
STAGE II



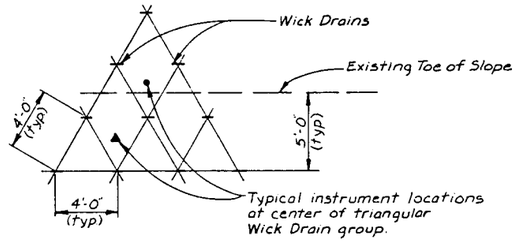
STAGE III (By Others)

DETAILS FOR STAGED EMBANKMENT CONSTRUCTION

Station 744+50.00 to 750+30.00



DETAIL "A"



TYPICAL SPACING FOR WICK DRAINS

NOTES:

STAGE I

1. SALVAGE TOPSOIL FROM EXISTING EMBANKMENT BETWEEN WATERLINE AND ELEVATION 895.±
2. PLACE GEOTEXTILE SPECIAL, SECURING THE FABRIC TO EXISTING EMBANKMENT SIDESLOPE WITH PINS AS SHOWN.
3. PLACE SELECT GRANULAR BORROW MODIFIED UNTIL A WORKING SURFACE IS REACHED ABOVE THE EXISTING WATERLINE. THE HEIGHT OF FILL CAN BE RAISED AT A MAXIMUM RATE OF 2 FEET PER WEEK.
4. PLACE GEOGRID SECURING THE FABRIC TO THE EXISTING EMBANKMENT SIDESLOPE WITH PINS AS SHOWN.
5. PLACE SETTLEMENT PLATFORMS.
6. ALLOW THE MATERIAL TO SETTLE FOR AN ADDITIONAL TWO WEEKS.
7. PLACE ADDITIONAL SELECT GRANULAR BORROW MODIFIED UP TO THE STAGE I ELEVATION AS LISTED IN THE TABLE.
8. INSTALL DRAIN WICKS AS SHOWN.
9. INSTALL INCLINOMETERS, PIEZOMETERS AND CONTROL STAKES.
10. ALLOW THE FILL TO SETTLE FOR AN ADDITIONAL 180 DAYS OR AS DIRECTED BY THE ENGINEER.

STAGE II

1. PLACE GEOGRIDS AND COMPACTED COMMON BORROW LIFTS UP TO THE ELEVATIONS LISTED IN THE TABLE (APPROX. 10 FEET). THE HEIGHT OF THE FILL CAN BE RAISED AT A MAXIMUM RATE OF 2 FEET PER WEEK.
2. ALLOW THE FILL TO SETTLE FOR APPROXIMATELY 240 DAYS, OR AS DIRECTED BY THE ENGINEER.

STAGE III (By Others)

1. PLACE COMPACTED SOIL AND GEOGRIDS UP TO FINAL GRADE (BOTTOM OF SUBBALLAST PLUS 3 FEET± OF SURCHARGE).
2. REMOVE SURCHARGE AND PLACE SUBBALLAST AFTER ABOUT 6 MONTHS WHEN SETTLEMENT TAPERS OFF, AS DIRECTED BY THE ENGINEER.

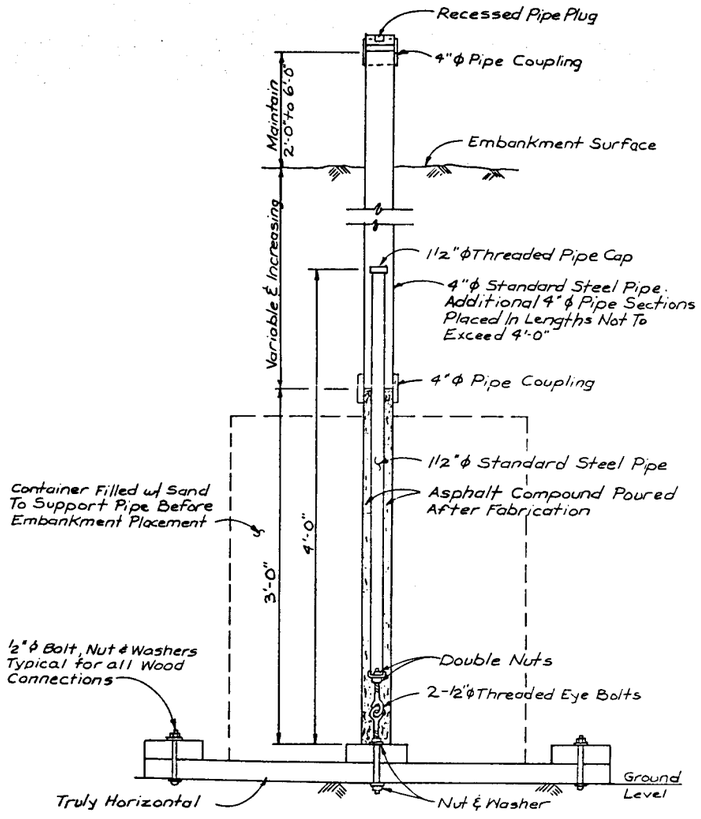
TOP OF EMBANKMENT ELEVATIONS FOR STAGED CONSTRUCTION

Station	Stage I	Stage II	Stage III①
744+50 to 746+00	886.6	895.2	To Final Grade
746+00 to 749+00	885.0	894.0	To Final Grade
749+00 to 750+30	886.5	895.5	To Final Grade

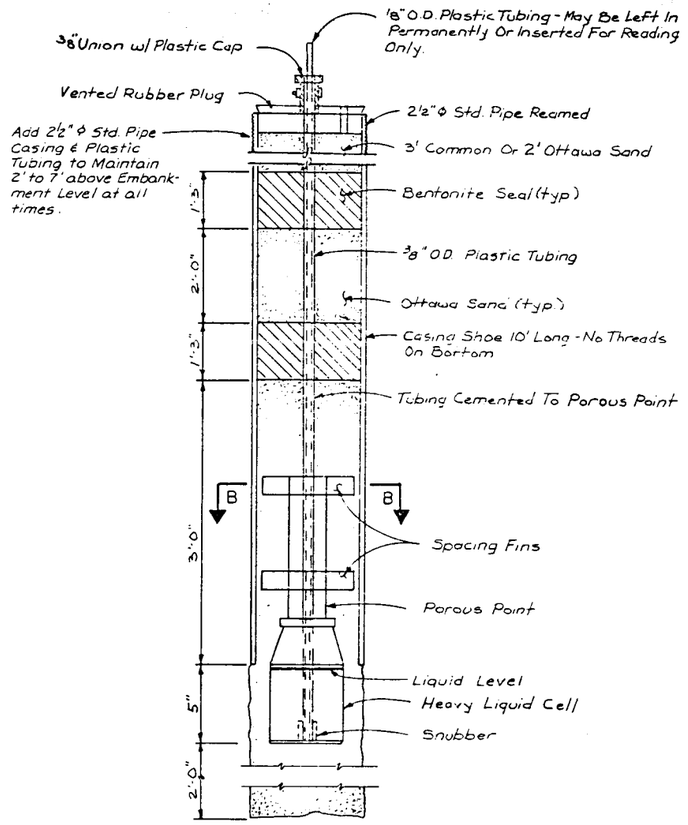
Final grade is top of rail profile elevation. (See Sheet 13 of 14)

① By Others

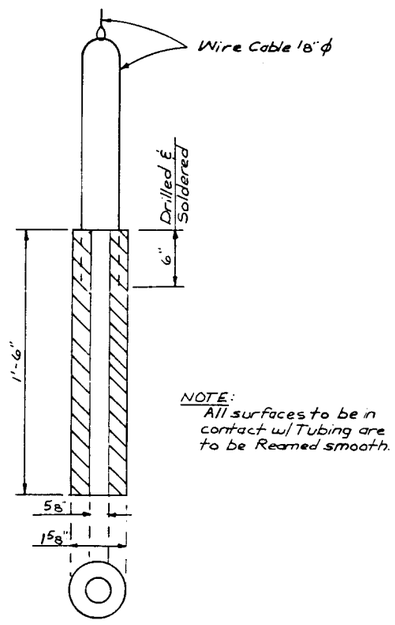
EMBANKMENT CONSTRUCTION DETAILS



SECTION A-A

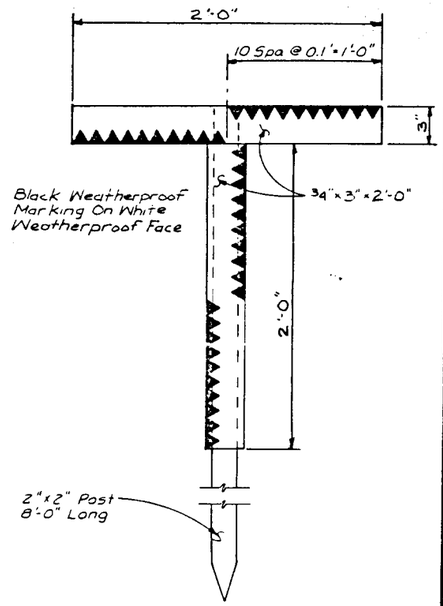


HEAVY LIQUID PIEZOMETER

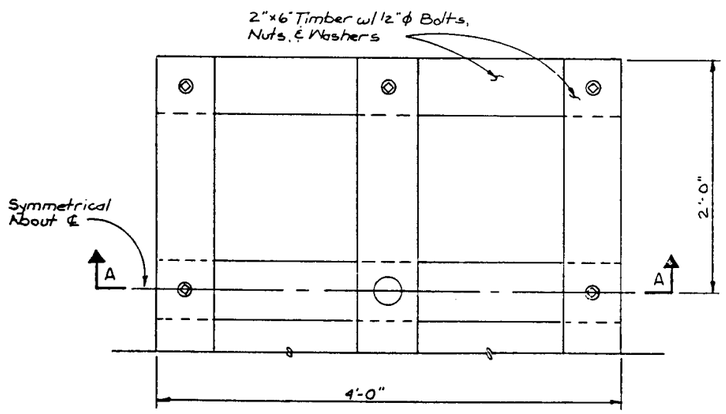


TAMPING HAMMER

NOTE:
All surfaces to be in contact w/ Tubing are to be Reamed smooth.

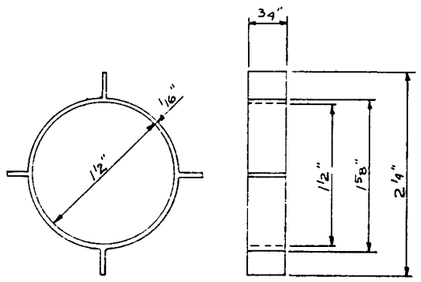


CONTROL STAKE

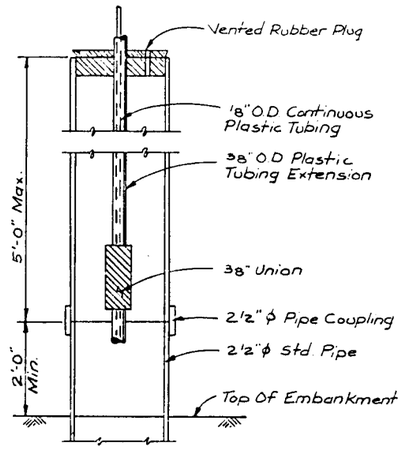


PLAN

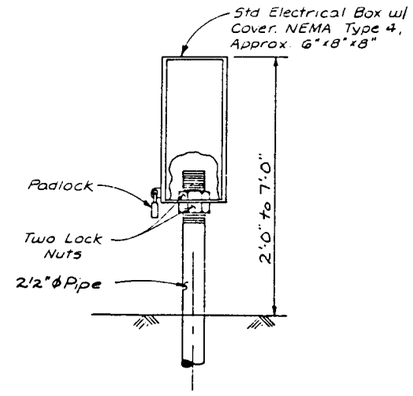
SETTLEMENT PLATFORM



SECTION B-B



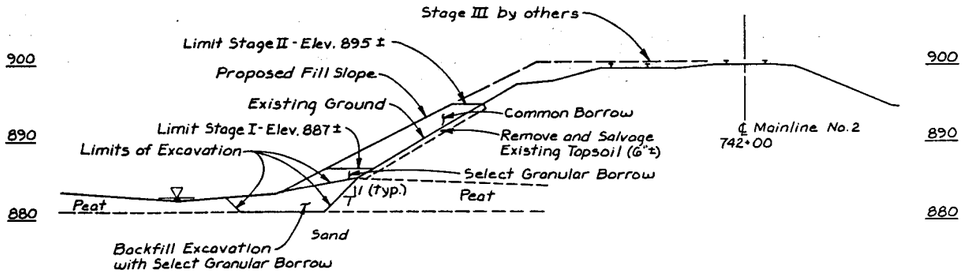
PIEZOMETER EXTENSION



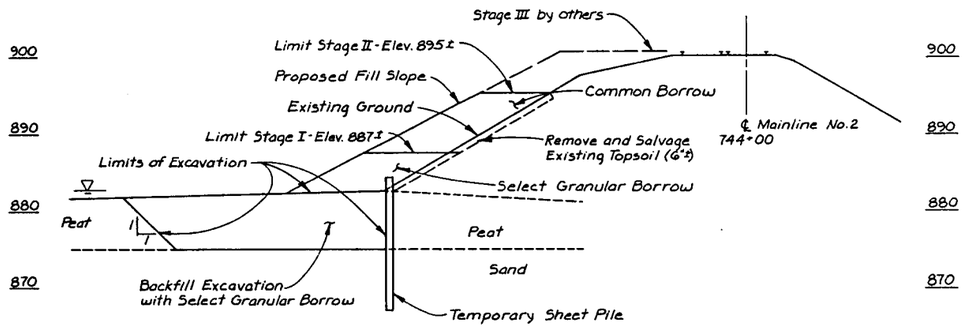
PIEZOMETER LOCK BOX

PIEZOMETER DETAILS

INSTRUMENTATION DETAILS

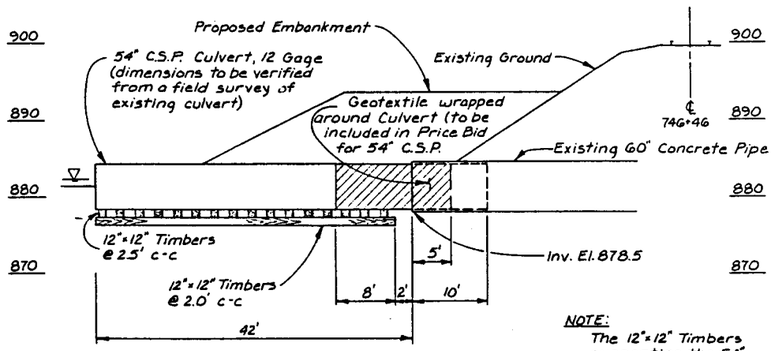


TYPICAL UNSUPPORTED EXCAVATION
Station 742+00 to 742+60



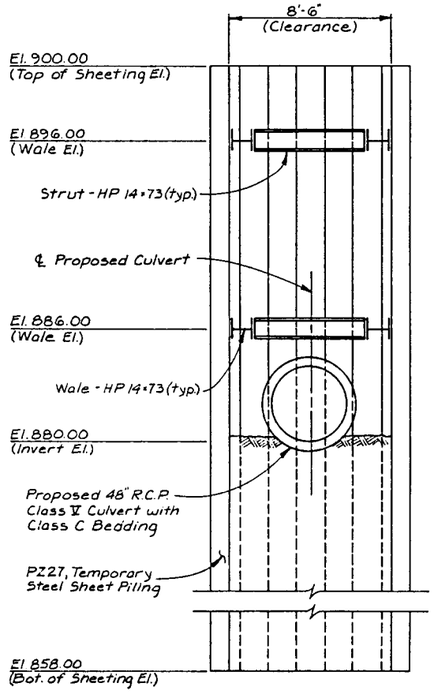
TYPICAL BRACED EXCAVATION
Station 742+60 to 744+50

EXCAVATION DETAILS

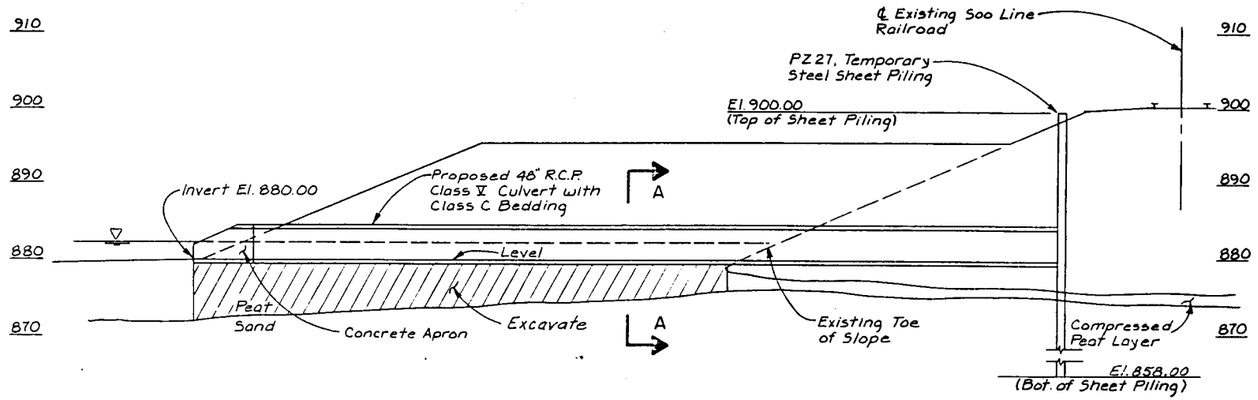


TEMPORARY CULVERT EXTENSION

NOTE:
The 12"×12" Timbers supporting the 54" C.S.P. are incidental items, to be included in Price Bid for 54" C.S.P., 12 Gage
See Standard Plate - 3040 F or 3041 G

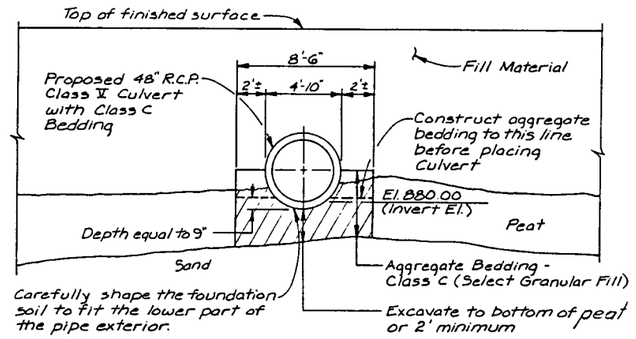


ELEVATION - PROPOSED SHEET PILING

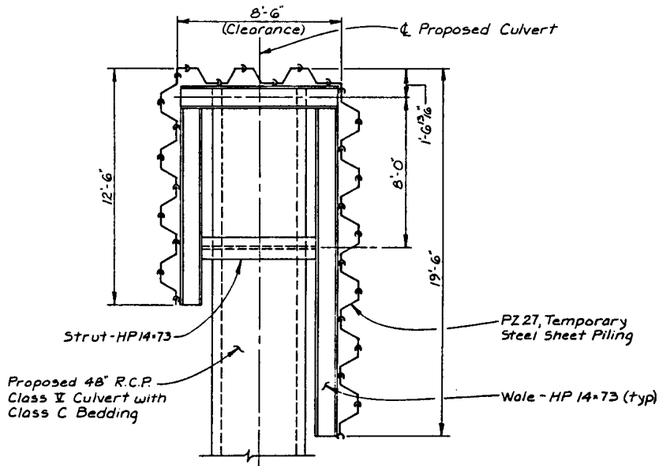


NOTE:
See Standard Plates - 3000 K (3 Sheets) & 3100 F

PROPOSED CULVERT - STAGE I



PROPOSED CULVERT
SECTION A-A



PLAN - PROPOSED SHEET PILING

EXCAVATION AND CULVERT DETAILS

930,000

R.O.W.

100'

250'

R.O.W.

Railroad Communication Line

9" P.V.C. Sanitary Sewer

730

735

740

745

16" P.C.C.P. Watermain

Existing 500 Line Railroad Company Tracks

60" Concrete Pipe Culvert

R.O.W.

100'

150'

R.O.W.

+00

750

MATCH LINE

232

+25

250

℄ T.H. 49 (Rice Street)

R.O.W

41,000

931,000

42,000

43,000

920

910

900

890

880

870

730+00

735+00

740+00

745+00

750+00

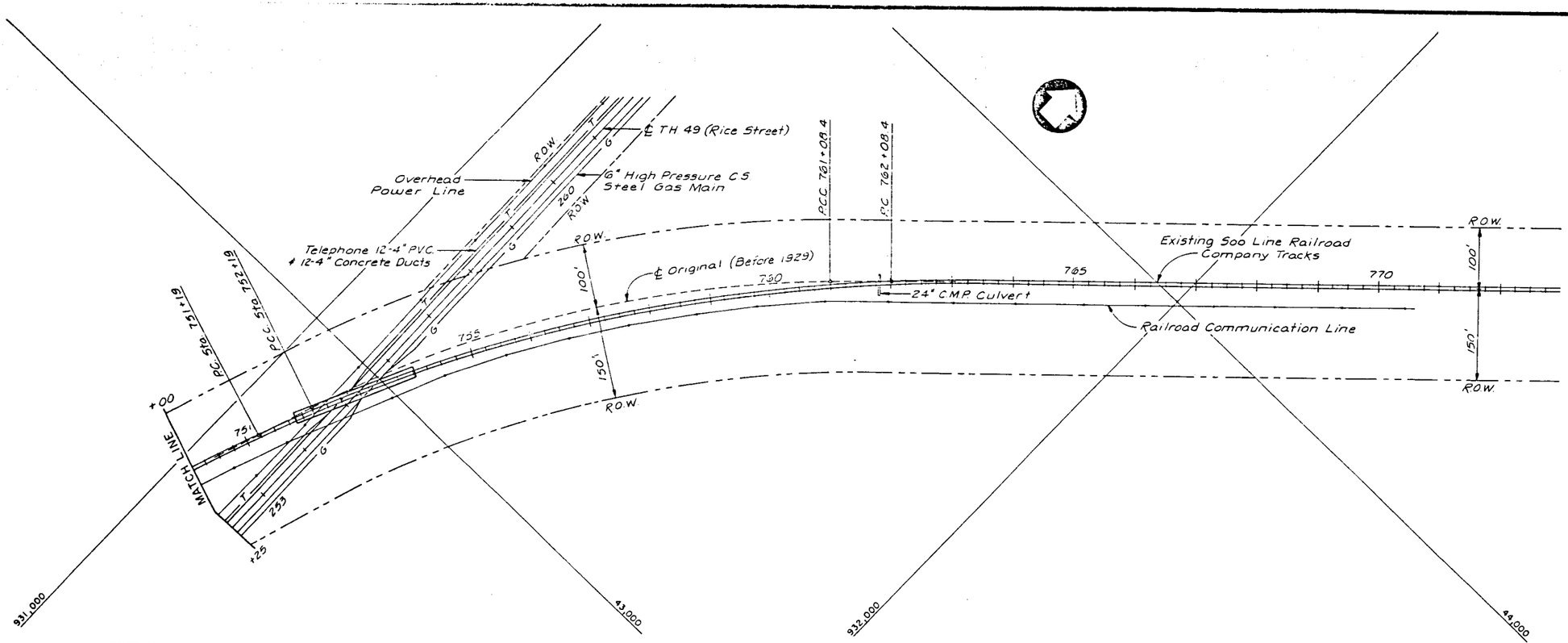
Existing Top of Rail

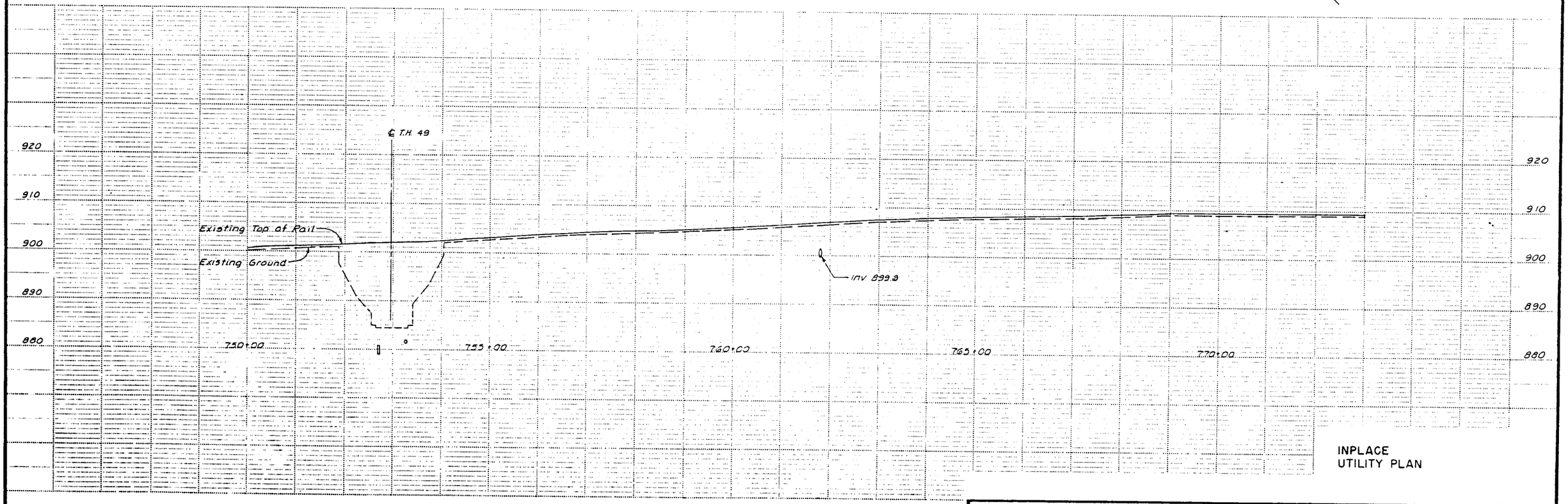
Existing Ground

Inv. 873.0

Scale 100' Horiz
10' Vert

INPLACE
UTILITY PLAN



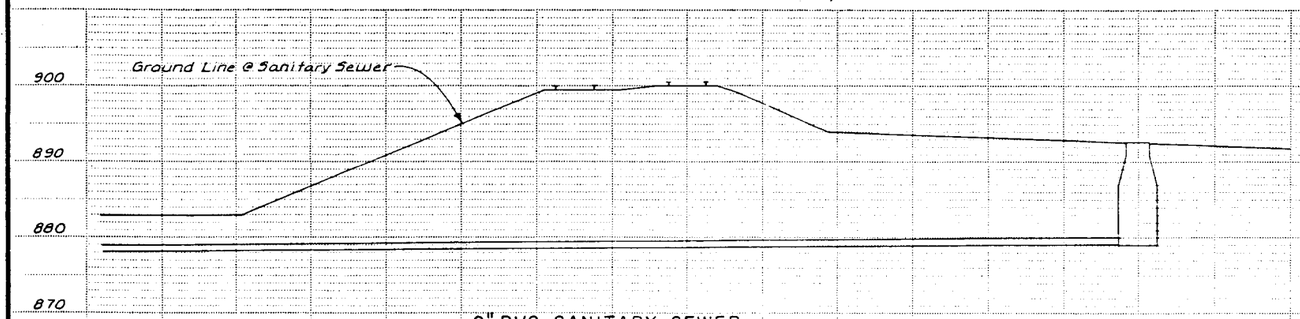


INPLACE
UTILITY PLAN

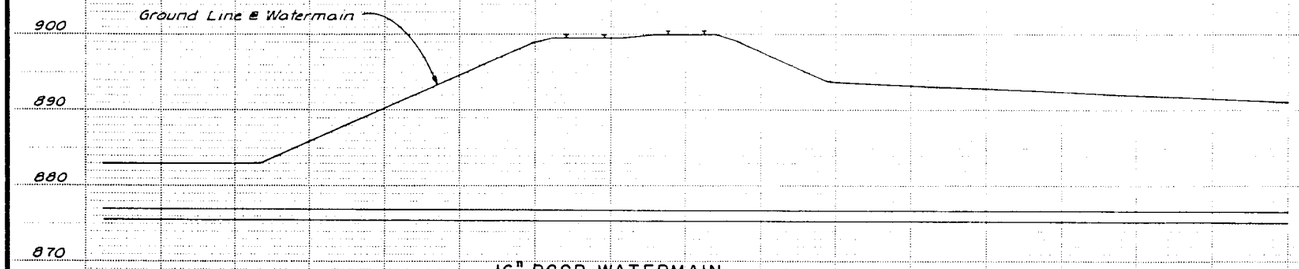
INPLACE UTILITIES

STATION	LOCATION	ITEM IN PLACE	OWNER
Rice Street			
254+00 to 258+00	28'± Lt.	Overhead Power Line	North States Power
254+00 to 258+00	12'-19' Rt.	6" High Pressure C.S. Steel Gas Main	North States Power
254+00 to 258+00	10'-16' Lt.	4" PVC. and 4" Concrete Duct	Northwestern Bell
Railroad (Existing Alignment)			
730+00 to 739+83	47' Lt.	Railroad Communication Line	Soo Line Railroad
739+83 to 740+80	47' Lt. to 26' Rt.	Railroad Communication Line	Soo Line Railroad
740+80 to 771+00	26'-36' Rt.	Railroad Communication Line	Soo Line Railroad
742+41	100' Lt. to 60' Rt.	9" PVC. Sanitary Sewer	City of Shoreview
742+41 to 743+60	60' Rt.	9" PVC. Sanitary Sewer	City of Shoreview
742+51	100' Lt. to 100' Rt.	16" P.C.C.P. Watermain	City of Shoreview
746+46	42' Lt. to 42' Rt.	60" Concrete Pipe Culvert	Soo Line Railroad
761+80	18' Lt. to 18' Rt.	24" C.M.P. Culvert	Soo Line Railroad

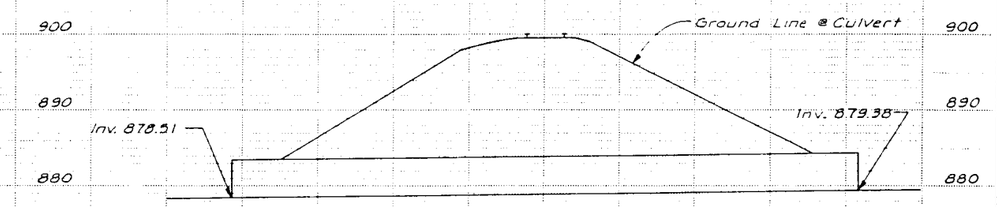
NOTE: All utilities to remain inplace as shown. Culvert at Sta. 746+46 to be extended — See Sheets 6 & 9.



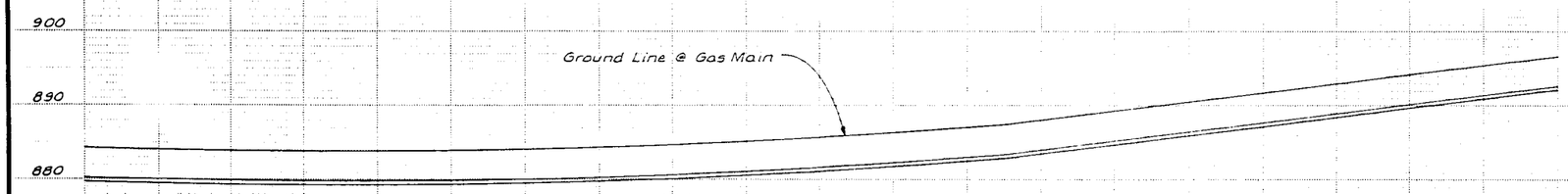
9" PVC SANITARY SEWER
Sta. 742+41



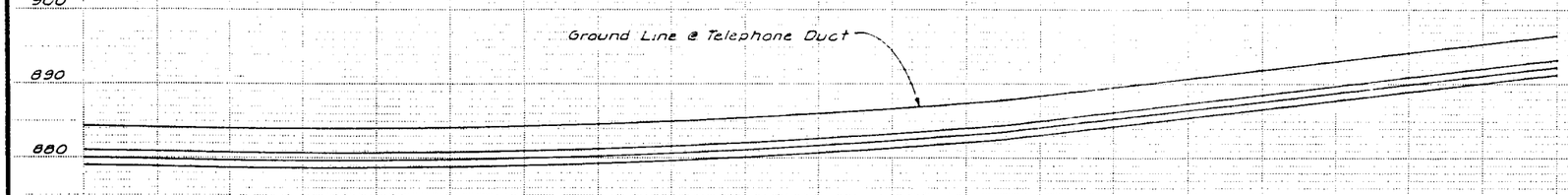
16" PCCP WATERMAIN
Sta. 742+51



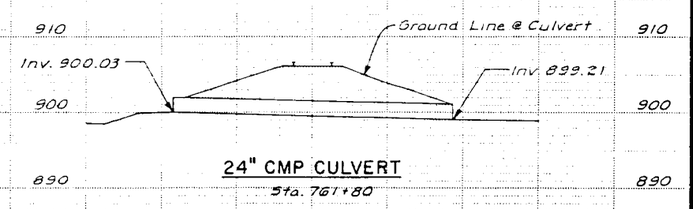
60" CONCRETE PIPE CULVERT
Sta. 746+46



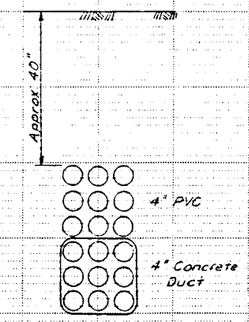
6" HIGH PRESSURE C.S. STEEL GAS MAIN



4" PVC AND 4" CONCRETE TELEPHONE DUCT



24" CMP CULVERT
Sta. 761+80



TELEPHONE PVC AND DUCT SECTION

INPLACE UTILITIES

930,000

931,000

Begin S.F. 6214-70 (T.H. 43)
741+00.00

Proposed Toe of Slope

℄ Proposed Soo Line Railroad (By Others)

Proposed 48" R.C.P. Culvert

Temporary Culvert Extension

R.O.W.

Mainline No. 2

Mainline No. 1

730

735

740

P.C.

P.T.

No. 14

T.S.

S.C.

+00

730

LINE

℄ Original (Before 1929)

MATCH

No. 18

No. 10

No. 10

738+59 P.S.

739+92 P.S.

741+05 P.S.

745+12 P.S.

Existing 60" C.P.

Existing Soo Line Railroad Company Tracks

Siding No. 3

Siding No. 2

Siding No. 1

Soo Line R.R. P.O.T. Sta. 731+00.00 =
Prop. Soo Line R.R. P.O.T. Sta. 731+00.00

R.O.W.

232

+25

250

℄ T.H. 49 (Rice Street)

R.O.W.

41,000

42,000

43,000

VERTICAL CONTROL

Elevations shown in this Plan are based on National Geodetic Datum, 1929 adjustment, and tied to the U.S. Level Net through permanent vertical control marks; 1G RDS 1950, T 2 Reset, G285 N, T4, by 3rd Order leveling, date February 1969. For complete vertical control data refer to SP 6214-65 (T.H. 49) file.

T.B.M.
Elev. 900.00
R.R. Spike in last telephone pole on S.E. side of tracks at Sta. 740+80, 25' Rt.

910
900
890
880

732+00.00
El. 904.18

738+56.00
El. 901.49

Point of Switch

Mainline No. 1 =
Mainline No. 2 P.O.T. Sta. 745+12.00

Proposed Top of Rail Mainline No. 1 (Future)

-0.41%

P.V.C.

Existing Top of Rail

Existing Ground @ Proposed ℄

Proposed Top Rail Mainline (Future)

P.V.I.

L = 1312'
M = 1.378

731+00.00
El. 904.48

740+00.00
El. 900.43

749+00.00
El. 906.46

749+90.00
El. 907.06

Soo Line R.R. P.O.T. Sta. 731+00.00 =
Proposed Soo Line R.R. P.O.T. Sta. 731+00.00

-0.45%

Proposed Top of Rail Mainline No. 2 (Future)

Point of Switch

Point of Switch

0.67%

Proposed Top of Rail Mainline (Future)

P.V.C.

Begin Construction

Existing Top of Rail

P.V.I.

P.V.T.

P.V.C.

L = 1800'
M = 2.520'

Existing Ground @ Proposed ℄

Siding No. 3 =
Siding No. 2 P.O.T. Sta. 738+52.00

730+50.00
El. 904.10

735+75.00
El. 903.30

733+00.00
El. 903.20

737+00.00
El. 902.90

Point of Switch

739+02.50
El. 902.74

Point of Switch

Siding No. 1 =
Mainline No. 2 P.O.T. Sta. 741+05.00

750+00

910

-0.64%

Top of Rail Siding No. 1 & Siding No. 2 (Future)

-0.09%

P.V.C.

P.V.I.

P.V.C.

P.V.I.

P.V.C.

P.V.I.

Proposed Top of Rail Mainline No. 2 (Future)

900

Existing Ground @ ℄

Existing Top of Rail

L = 250'
M = 0.175

L = 405'
M = 0.128

Siding No. 2 =
Siding No. 1 P.O.T. Sta. 739+92.00

745+00

730+00

735+00

740+00

Scale 100 Horiz
10 Vert

ALIGNMENT PLAN AND PROFILE

State Proj. No. 6214-70 (T.H. 49) | **Sheet No. 13 of 17 Sheets**

T.B.M.
Elev. 898.22
Paint mark on top
West edge of East
Abutment of R.R.
Bridge, approximately
8' North of South end.

B.M. T-4
Elev. 927.223
Brass Cap
100' North of
Rice St. and
Cty. Rd. "F" 25'
West of ℄ Rice St.

℄ T.H. 49 (Rice Street)

ROW.

200

ROW.

ROW.

PC.C. 02

P.C. 02

C.S.

S.T.

℄ Existing Soo Line R.R. P.O.T. Sta. 765+00.00 =
℄ Proposed Soo Line R.R. P.O.T. Sta. 765+10.62

765

ROW.

Existing Soo Line Railroad
Company Tracks

770

Soo Line R.R. P.O.T. Sta. 771+00.00 =
Proposed Soo Line R.R. P.O.T. Sta. 771+00.00

ROW.

End S.P. 6214-70 (T.H. 49)
751+00.00

Bridge No. 6200Z
(By others)

℄ Original (Before 1929)

760

755

P.C.C. 01

P.C. 01

Proposed Toe of Slope

℄ Proposed Soo
Line R.R. (By Others)

ROW.

751

+00

LINE

MATCH

Soo Line R.R. P.O.C. 753+61.43 =
T.H. 49 P.O.T. 255+91.53

T.B.M.
Elev. 903.15
R.R. Spike in
telephone pole at
Sta. 761+90, 25' Rt.

Future Bridge No. 6200Z
The designated roadway gradients have provided for a minimum vertical clearance of 16'-9" between the low point of the bridge structure and the finished grade of the intersecting roadway.

Proposed 48"
R.C.P. Culvert

753

+25

931.000

43.000

932.000

49.000

℄ T.H. 49 (Rice Street)

753+25.00
El. 909.51

756+60.00
El. 909.51

771+00.00
El. 909.51

Soo Line R.R. P.O.T. Sta. 771+00.00 =
Prop. Soo Line R.R. P.O.T. Sta. 771+00.00

920

910

900

890

880

Proposed Top of
Rail Mainline (Future)

End Construction

Existing Top of Rail

Existing Ground @
Proposed ℄

0.00 %

P.V.I.

L = 670'
M = 0.561'

P.V.I.

Meet Existing Grade

750+00

755+00

760+00

765+00

770+00

731+50.00
El. 903.90

731+75.00
El. 903.16

735+00.00
El. 903.06

737+00.00
El. 902.90

737+76.50
El. 902.84

Point of Switch

Siding No. 3 =
Siding No. 2 P.O.T. Sta. 738+53.00

Proposed Top of Rail
Siding No. 1 & Siding No. 2 (Future)

Existing Ground
℄

-0.59 %

-0.08 %

Existing
Top of Rail

P.V.C.

P.V.I.

P.V.C.

P.V.I.

P.V.C.

P.V.I.

L = 250'
M = 0.139'

Top of Rail
Siding No. 3

L = 153'
M = 0.019'

730+00

735+00

740+00

Scale 100' Horiz.
10' Vert.

ALIGNMENT PLAN
AND PROFILE

State Proj. No. 6214-70 (T.H. 49) | Sheet No. 14 of 17 Sheets

CURVE TABLE

14

C.NO	PT.	STATION	CURVE DATA Δ	D	R	T	L	COORDINATES N	E	AZIMUTH
1	P.C.	740+99.81						41825.26	930739.20	18°-15'-00"
1	P.I.	742+46.98	2°-56'-34"	1°-00'-00"	5729.65'	147.17'	294.27'	41965.03	930795.28	
1	P.T.	743+94.08						42106.97	930824.13	15°-18'-26"
2	T.S.	747+43.34				116.67'		42443.84	930916.34	15°-18'-26"
2	P.I.	748+60.01	1°-58'-07"	2°-15'-00"			175.00'	42556.37	930947.14	
2	S.C.	749+18.34				58.34'		42612.08	930964.46	17°-16'-33"
2	P.I.	755+45.87	27°-41'-09"	2°-15'-00"	2546.64'	627.53'	1230.55'	43211.31	931150.82	
2	C.S.	761+48.89				58.34'		43655.34	931594.26	44°-57'-42"
2	P.I.	762+07.23	1°-58'-07"	2°-15'-00"			175.00'	43696.62	931635.48	
2	S.T.	763+23.89				116.67'		43776.29	931720.72	46°-55'-49"
2	P.I.	755+52.15	31°-37'-23"	2°-15'-00"		808.81'		43223.96	931129.86	

NOTE: All Curve Data is calculated using the chord definition of a circular curve except curve length which is calculated using the arc definition of a circular curve.

INTERSECTION POINTS

15

POINT	COORDINATES N	E	STATION
℄ Proposed Soo Line R.R.	43021.63	931132.10	Proposed Soo Line R.R. P.O.C. Sta. 753+61.43 =
℄ T.H. 49 (Rice St.)			T.H. 49 P.O.T. Sta. 255+91.60
℄ Existing Soo Line R.R.	40875.72	930426.16	Existing Soo Line R.R. P.O.T. Sta. 731+00.00 =
℄ Proposed Soo Line R.R.			Proposed Soo Line R.R. P.O.T. Sta. 731+00.00
℄ Existing Soo Line R.R.	43903.81	931857.13	Existing Soo Line R.R. P.O.T. Sta. 765+00.00 =
℄ Proposed Soo Line R.R.			Proposed Soo Line R.R. P.O.T. Sta. 765+10.62

HORIZONTAL CONTROL

Coordinate values shown in this plan are Project Coordinates referred to Minnesota State Plane Coordinate datum by 3rd Order traverse ties to permanent control stations "Shoreview" and "Luhrsen." Azimuth reference is to zero degrees North.

The conversion to Project Coordinates from State Plane Coordinates is:

$$X\ Project = \frac{X\ State\ Plane}{0.9999357} - 1{,}300{,}000$$

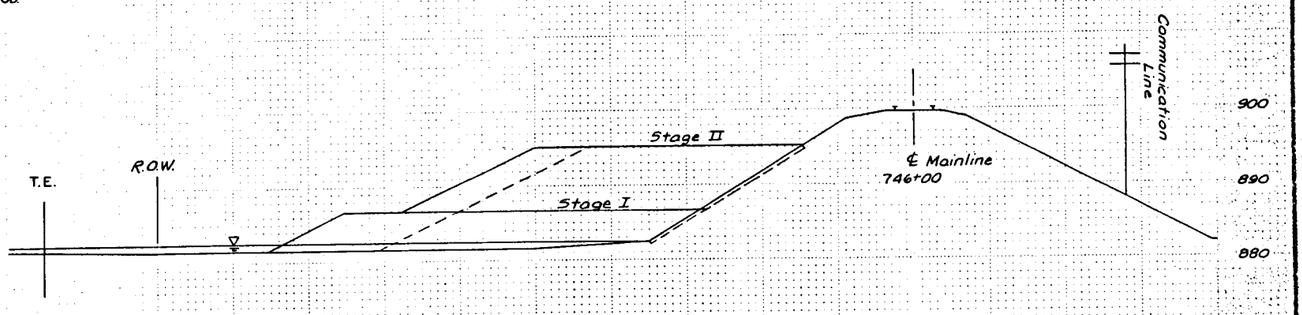
$$Y\ Project = \frac{Y\ State\ Plane}{0.9999357} - 709{,}000$$

ALIGNMENT TABULATION

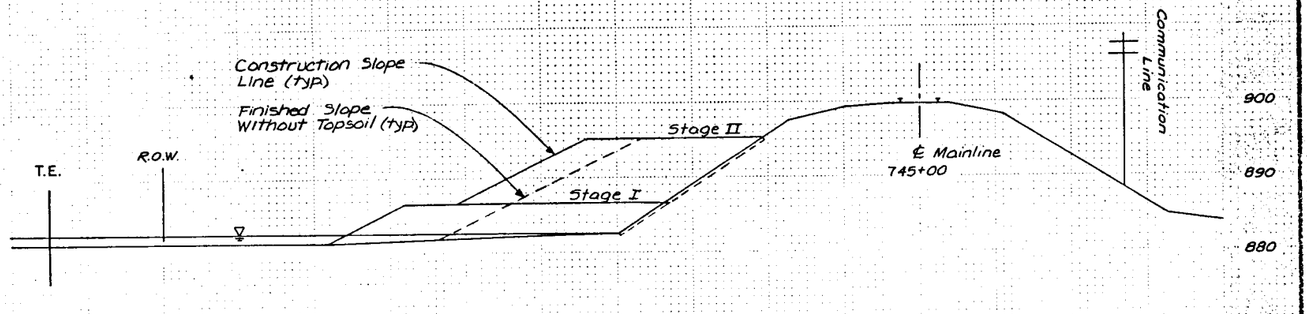
EDWARDS AND KELCEY
ENGINEERS AND CONSULTANTS
MINNEAPOLIS, MINNESOTA

EXCAVATION C.Y. | EMBANKMENT C.Y.
MUCK | TOTAL | COMMON | SELECT GRAN. | SELECT GRAN. MOD.

0 | 2760 | 1512 | 0 | 1248



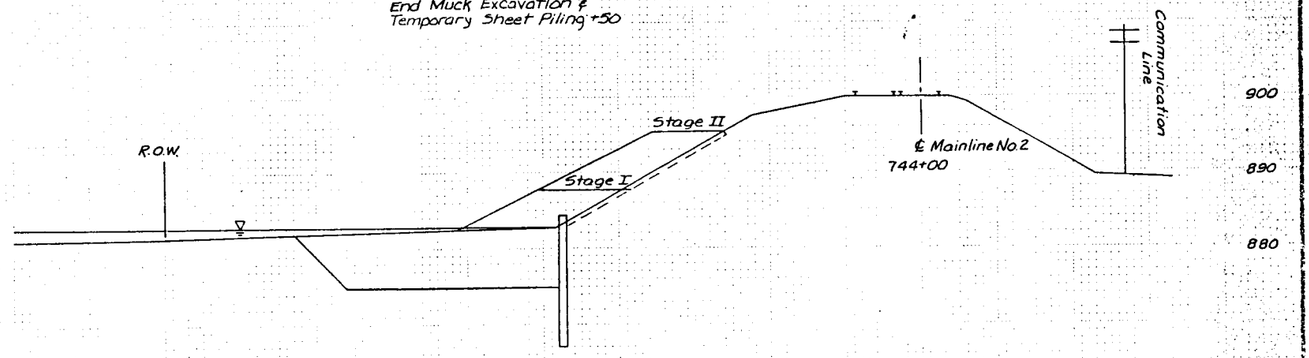
0 | 2122 | 1185 | 0 | 937



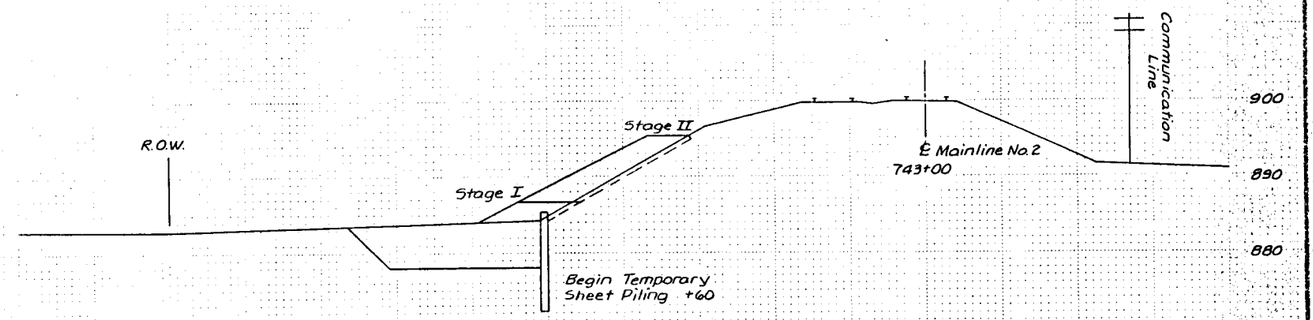
Begin Staged Embankment Construction with Wick Drains +50

End Muck Excavation & Temporary Sheet Piling +50

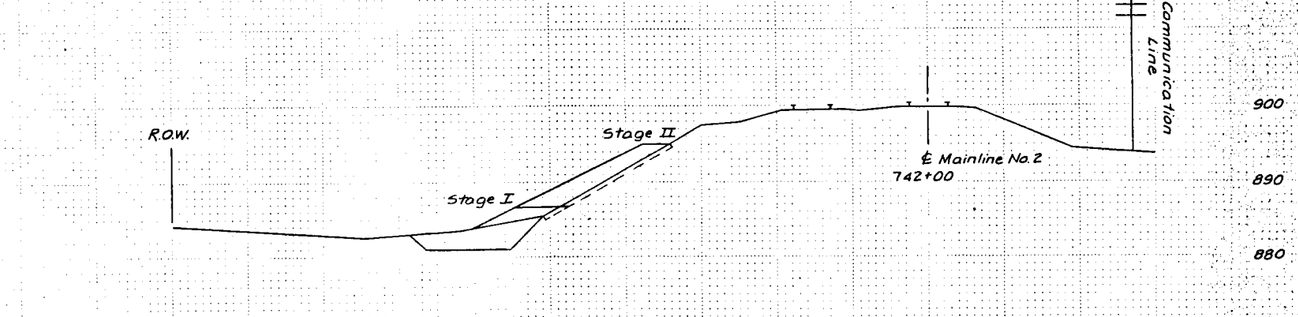
430 | 1582 | 629 | 551 | 402



679 | 1097 | 259 | 838 | 0



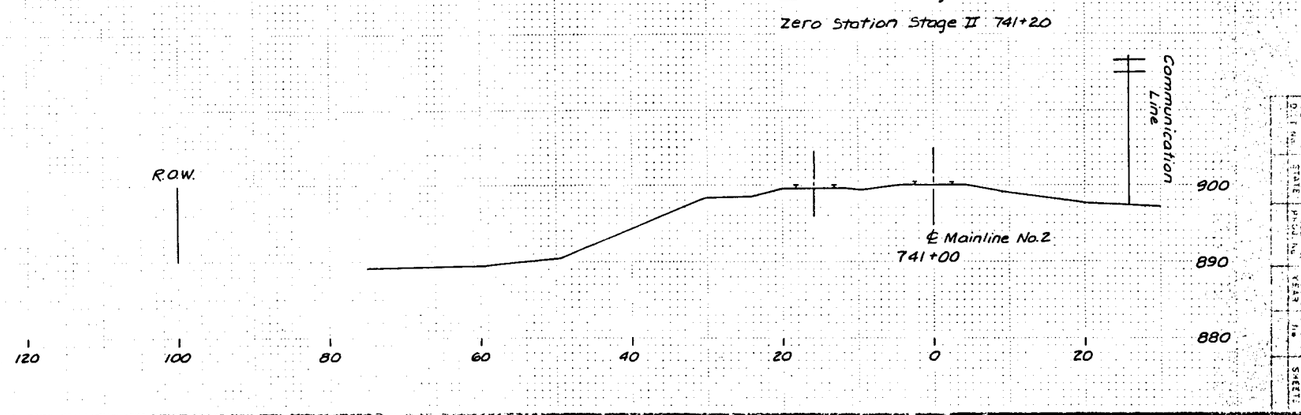
320 | 590 | 201 | 389 | 0



Begin Muck Excavation 742+00

Zero Station Stage I 741+50
Zero Station Stage II 741+20

0 | 87 | 72 | 15 | 0



CROSS SECTIONS
SOO LINE RAILROAD
STA. 741+00 TO 746+00

State Proj. No. 6214-70(T.H. 49)

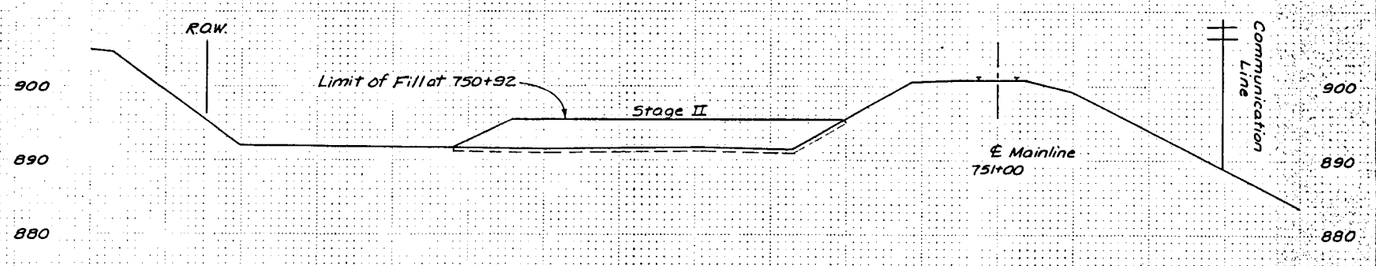
Sheet No. 16 of 17 Sheets

EDWARDS AND KELCEY
ENGINEERS AND CONSULTANTS
MINNEAPOLIS, MINNESOTA

EXCAVATION EMBANKMENT

MUCK TOTAL — COMMON / SELECT GRAN. / SELECT GRAN. MOD.

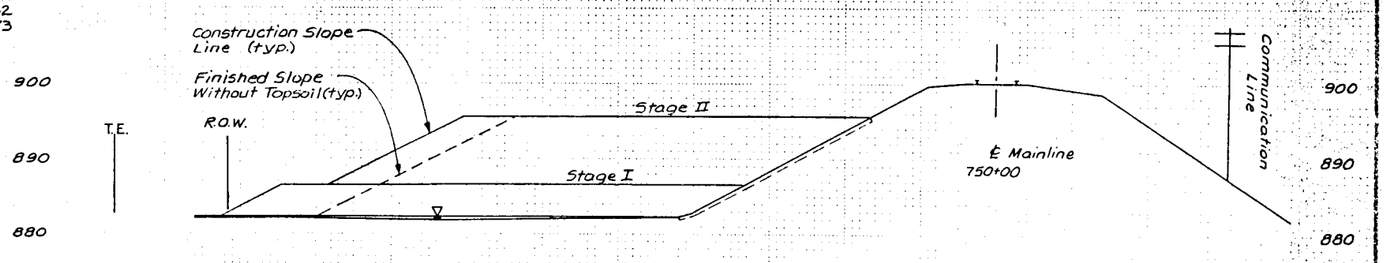
Zero Station Stage II 751+00



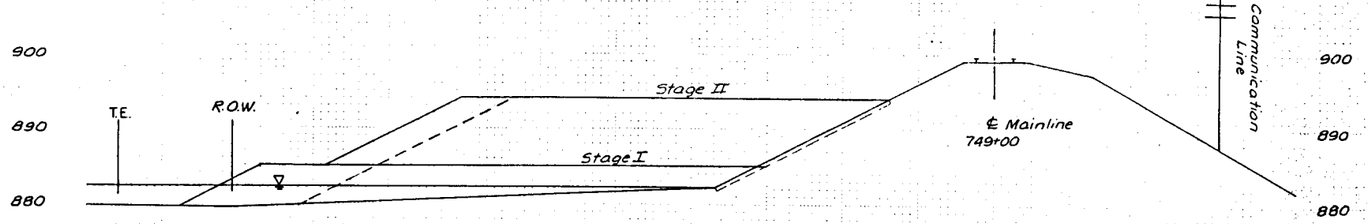
Zero Station Stage I 750+40

End Staged Embankment Construction with Wick Drains +30

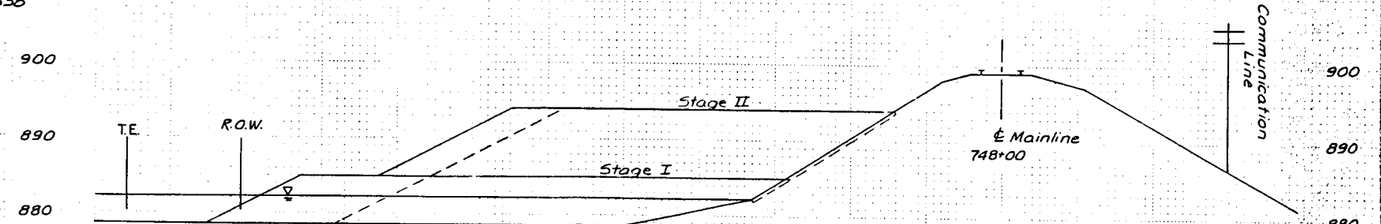
0 1806 — 1371 / 62 / 373



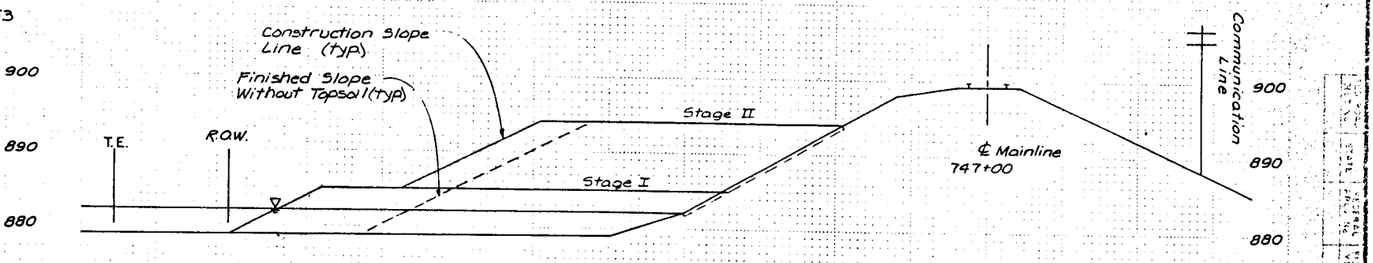
0 3528 — 2207 / 0 / 1321



0 3792 — 2154 / 0 / 1638



0 3492 — 1839 / 0 / 1653



120 100 80 60 40 20 0 20 40

State Proj. No. 6214-70(T.H.49)

Sheet No. 17 of 17 Sheets

CROSS SECTIONS
SOO LINE RAILROAD
STA. 747+00 TO 751+00