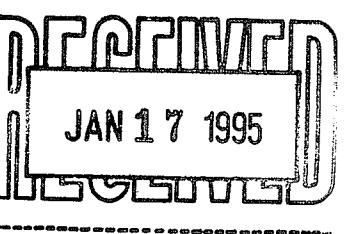


FED. RD. DIST. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
		1
STATE	STATE DIST. NO.	COUNTY
WASHINGTON		WHATCOM
CONTROL NO.	SECTION NO.	JOB NO. HIGHWAY NO.



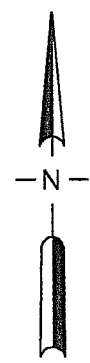
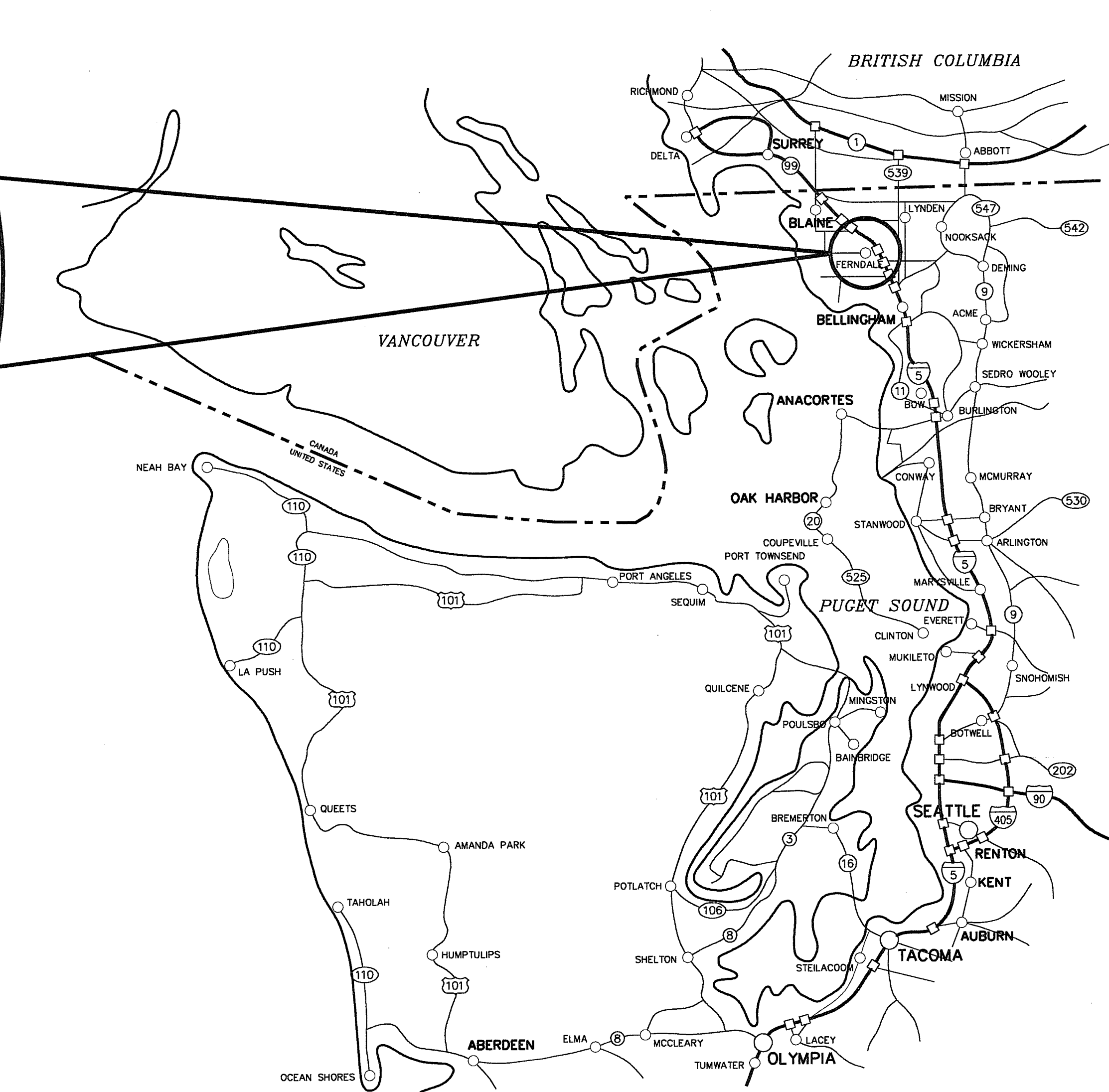
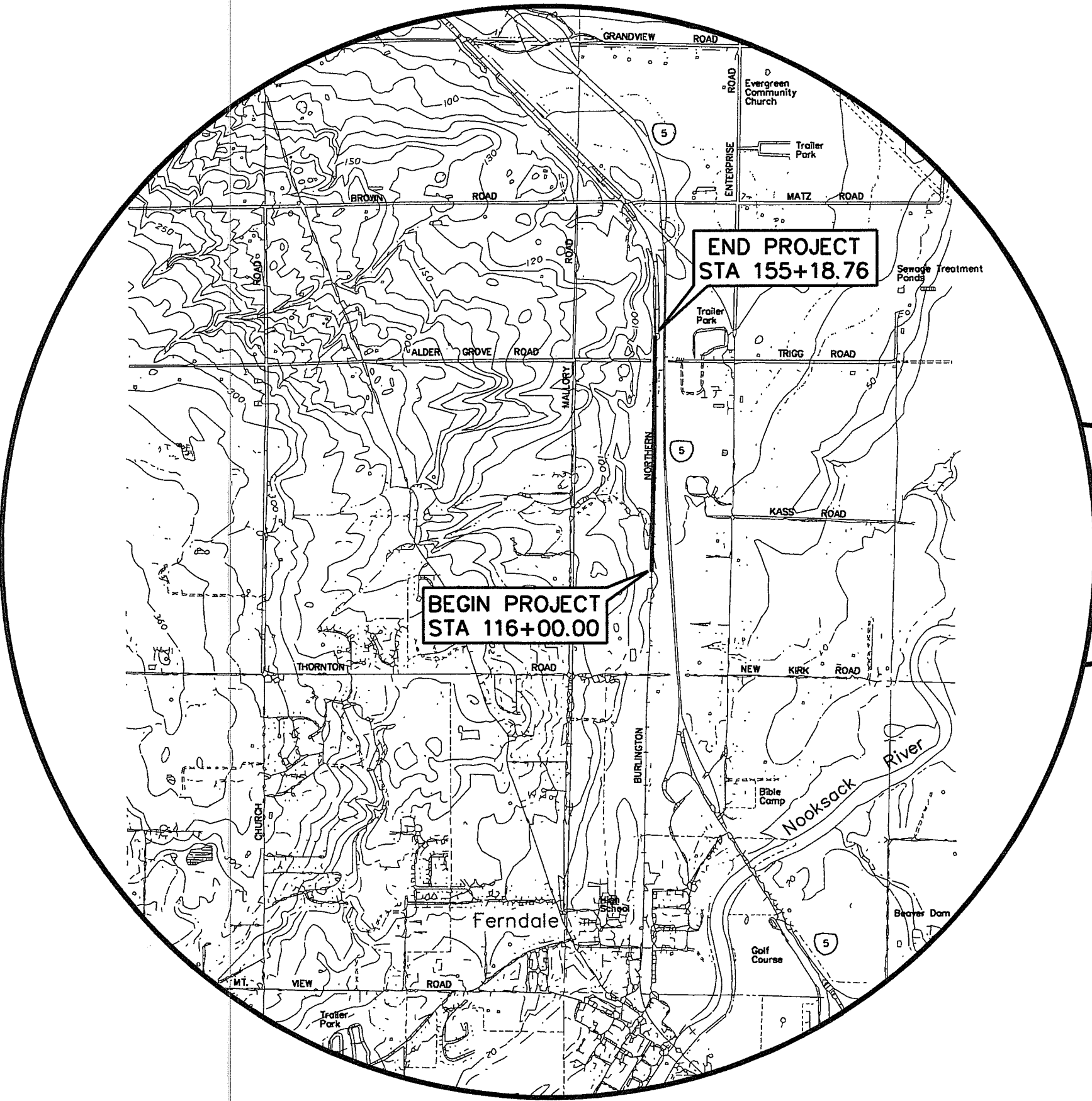
RAILROAD SIDING EXTENSION 97

NET LENGTH OF SIDING PROJECT = 3918.76 FT. = 0.7422 MI.

WHATCOM COUNTY
BURLINGTON NORTHERN RAILROAD
SIDING EXTENSION PROJECT AT
FERNDALE, WASHINGTON

SIDING LIMITS: FROM 1724' TO 5624' NORTH OF THORNTON ROAD

THE PROPOSED FACILITY CONSISTING OF
GRADING, DRAINAGE STRUCTURES AND EMBANKMENT



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QUANTITIES & GENERAL NOTES
3-4	PLAN & PROFILE SHEETS
5	GRADING PLAN
6-8	CROSS SECTIONS
9	DRAINAGE AREA MAP
10	CULVERT DETAILS
11	EROSION & SEDIMENT CONTROL PLAN
12	EROSION CONTROL NOTES
13	EROSION CONTROL DETAILS
14	HAUL ROUTE MAP
15	EXISTING WETLANDS PLAN

VICINITY MAP
N.T.S.

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John R. Aughinbaugh 30849 January 10, 1995
Type or Print Name PE# Date

BURLINGTON NORTHERN RAILROAD

APPROVED:

NAME TITLE DATE



EXPIRES 2/28/95

507.00 CL S/7/12

GENERAL NOTES

THE EXISTING MAINLINE TRACK IS AN ACTIVELY USED FREIGHT RAIL LINE. THE CONTRACTOR SHALL USE EXTREME CARE AND CAUTION WHILE WORKING ADJACENT TO TRACKS SUCH THAT NO EQUIPMENT OR PERSONNEL SHALL OCCUPY TRACKS AT ANY TIME. WHEN ANY EQUIPMENT IS WORKING WITHIN 25 FEET OF THE CENTERLINE OF TRACK, THE CONTRACTOR MUST CONTACT S. R. MORAN, ROADMASTER, AT BELLINGHAM, WASHINGTON, (206) 625-6701 WHO WILL ARRANGE FOR FLAGMAN. THE CONTRACTOR WILL NOT BE BILLED FOR FLAG PROTECTION. THE CONTRACTOR SHALL NOTIFY THE ROADMASTER AT LEAST THREE (3) DAYS PRIOR TO SUCH CONSTRUCTION ACTIVITIES.

ALL CONSTRUCTION WITHIN BURLINGTON NORTHERN RIGHT-OF-WAY SHALL CONFORM TO **BURLINGTON NORTHERN AND AMERICAN RAILWAY ENGINEERING ASSOCIATION (AREA)** STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED ON CONSTRUCTION DRAWINGS.

CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH BURLINGTON NORTHERN OPERATIONS ENGINEER, MIKE HUGHES AT (206) 467-3383. THE CONTRACTOR MAY NOT OCCUPY THE EXISTING TRACK AT ANY TIME DURING CONSTRUCTION ACTIVITIES. IF THE CONTRACTOR MUST CROSS THE EXISTING TRACK DURING CONSTRUCTION IN ORDER TO FACILITATE WORK IN PROGRESS HE SHALL FIRST OBTAIN A WRITTEN APPROVAL FROM THE BURLINGTON NORTHERN OPERATIONS ENGINEER AUTHORIZING CROSSING LOCATION AND TYPE OF RAIL PROTECTION.

EXCESS EXCAVATED MATERIAL SHALL NOT BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAYS, CREATING A RESTRICTED NATURAL WATER FLOW. IF THE CONTRACTOR DOES CAUSE FLOOD DAMAGE, THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM SUCH FILL, AND SHALL REMOVE THAT FILL AT CONTRACTORS EXPENSE.

THE CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL PUBLIC AND PRIVATE ROADWAYS ADJACENT TO THE PROJECT FREE OF MUD, DIRT AND DEBRIS FROM THE CONSTRUCTION.

ALL BARRICADES, WARNING SIGNS, LIGHTS, DEVICES, ETC. FOR THE GUIDANCE AND PROTECTION OF TRAFFIC AND PEDESTRIANS MUST CONFORM TO THE INSTALLATION REQUIREMENTS SHOWN IN THE WASHINGTON MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AS CURRENTLY AMENDED, WASHINGTON DEPARTMENT OF TRANSPORTATION.

ALL TRAFFIC SIGNS SHALL BE HIGH INTENSITY GRADE SHEETING.

CONTRACTOR SHALL MAKE DAILY INSPECTIONS OF BARRICADES AND FLASHING LIGHTS TO INSURE PROPER FUNCTIONING OF ALL WARNING DEVICES.

ALL THE MATERIALS AND LABOR FOR DETOURS, BARRICADES AND WARNING SIGNS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE SUBSIDIARY TO THE VARIOUS BID ITEMS IN THE CONTRACT.

BURLINGTON NORTHERN SIGNAL AND COMMUNICATIONS CABLE MAY BE BURIED ADJACENT TO EXISTING TRACKS AND CONNECTING TO CONTROL BUNGALOWS, SIGNALS, BATTERY BOXES, ETC. CONTRACTOR **MUST** CONTACT MIKE HUGHES AT (206) 467-3383 WHO WILL ARRANGE FOR LOCATING BURIED CABLES.

INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND PIPELINES, CONDUITS AND STRUCTURES BY CONTACTING THE OWNERS OF THE UNDERGROUND UTILITIES AND PROSPECTING IN ADVANCE OF EXCAVATION OPERATIONS.

ALL UTILITIES TO BE RELOCATED BY OTHERS. CONTRACTOR SHALL CONTACT THE FOLLOWING UTILITY COMPANIES 72 HOURS PRIOR TO STARTING ANY CONSTRUCTION/ EXCAVATION:

- WHATCOM COUNTY BIRCH BAY WATER & SEWER DISTRICT No. 10
CONTACT: 1-206-371-7100
- PUGET SOUND POWER & LIGHT
HUGH GREGORY: 1-206-715-7241
- CASCADE NATURAL GAS
STEVE BAJEMA: 1-206-733-5980
- GTE
LARRY MILLER: 1-206-354-1766
- TCI CABLE VISION OF WASHINGTON
JOHN DANIEL: 1-206-384-1581
- ONE CALL # FOR UTILITY LOCATIONS IN WASHINGTON
CONTACT: 1-800-424-5555

ALL BASELINE STATIONING ON PLANS IS CONVERTED TO EXISTING RAILROAD STATIONING AT THE BEGINNING AND ENDING OF PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF ALL SURVEY CONTROL MONUMENTS. SHOULD ANY SURVEY CONTROL MONUMENT BE DAMAGED OR DESTROYED BY THE CONTRACTOR, THE ENGINEER SHALL REPLACE THE MONUMENT SOLELY AT THE CONTRACTORS EXPENSE. THE COST FOR SETTING AND RESURVEYING A MONUMENT SHALL BE \$1500.00 PER MONUMENT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A PRELIMINARY ARCHEOLOGICAL SURVEY OF THE BORROW SOURCES, WASTE DISPOSAL SITES, CONTRACTOR'S YARD AND HAUL ROADS PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE CROSSINGS DURING CONSTRUCTION AT ALL TIMES.

THE CONTRACTOR SHALL COMPLY WITH ALL LEGAL LOAD RESTRICTIONS IN THE HAULING OF MATERIALS ON PUBLIC ROADS BEYOND THE LIMITS OF THE WORK. A SPECIAL PERMIT WILL NOT RELIEVE THE CONTRACTOR OF LIABILITY FOR DAMAGE WHICH MAY RESULT FROM THE MOVING OF MATERIAL OR EQUIPMENT.

THE OPERATION OF EQUIPMENT OF SUCH WEIGHT OR SO LOADED AS TO CAUSE DAMAGE TO STRUCTURES OR TO ANY OTHER TYPE OF CONSTRUCTION WILL NOT BE PERMITTED. HAULING OF MATERIALS OVER THE BASE COURSE OR SURFACE COURSE UNDER CONSTRUCTION SHALL BE LIMITED AS DIRECTED. NO LOADS WILL BE PERMITTED ON A CONCRETE PAVEMENT, BASE, OR STRUCTURE BEFORE THE EXPIRATION OF THE CURING PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE DONE BY HIS/HER HAULING EQUIPMENT AND SHALL CORRECT SUCH DAMAGE AT HIS/HER OWN EXPENSE.

SITE PREPARATION

THE CONTRACTOR SHALL PHASE ALL CLEARING AND GRUBBING OPERATIONS IN SUCH A MANNER AS NOT TO DISTURB THE EXISTING TRACK EMBANKMENT. ALL VEGETATION, STUMPS, LARGE ROOTS, BOULDERS, AND DEBRIS WHICH ARE VISIBLE ON THE GROUND SURFACE SHALL BE REMOVED PRIOR TO PLACING PROPOSED EMBANKMENT.

EMBANKMENT FILL / SUBGRADE

THE EMBANKMENT FILL SOIL SHALL CONSIST OF FREE-DRAINING SAND AND GRAVEL COMPLYING WITH WSDOT SPECIFICATION 9-03.14 FOR GRAVEL BORROW, WITH TWO EXCEPTIONS. FIRST, IT SHALL CONTAIN NOT MORE THAN 5 PERCENT FINES (PERCENTAGE BY WEIGHT OF MINUS 3/4-INCH FRACTION PASSING THE NUMBER 200 SIEVE DURING WET-SIEVING). AND SECOND, THE MAXIMUM PARTICLE SIZE MAY BE INCREASED TO 6 INCHES. THE FILL SHOULD BE FREE OF ORGANIC AND OTHER DELETERIOUS MATERIALS. PIT-RUN SAND AND GRAVEL OR CRUSHED ROCK MAY MEET THESE REQUIREMENTS. ON-SITE SOILS ARE NOT SUITABLE FOR EMBANKMENT FILL BECAUSE OF THE HIGH SILT CONTENT AND WATER CONTENT. THE FILL SLOPE SHALL BE CONSTRUCTED AT A MAXIMUM 2H:1V (2 HORIZONTAL TO 1 VERTICAL).

THE CONTRACTOR SHALL WATER AND MAINTAIN ALL SEEDED SLOPES UNTIL NEW VEGETATION IS FULLY ESTABLISHED AND ACCEPTED BY OWNER.

SUBGRADE

SUBBALLAST - THE TOP 12 INCHES OF EMBANKMENT FILL SOIL SHALL CONSIST OF FREE-DRAINING SAND AND GRAVEL COMPLYING WITH WSDOT SPECIFICATION 9-03.14 FOR GRAVEL BORROW, WITH TWO EXCEPTIONS. FIRST, IT SHALL CONTAIN NOT MORE THAN 5 PERCENT FINES (PERCENTAGE BY WEIGHT OF MINUS 3/4-INCH FRACTION PASSING THE NUMBER 200 SIEVE DURING WET-SIEVING). AND SECOND, THE MAXIMUM PARTICLE SIZE MAY BE INCREASED TO 6 INCHES. THE FILL SHOULD BE FREE OF ORGANIC AND OTHER DELETERIOUS MATERIALS. PIT-RUN SAND AND GRAVEL OR CRUSHED ROCK MAY MEET THESE REQUIREMENTS.

EMBANKMENT - EXCAVATED SOILS FROM THE CHERRY POINT PROJECT MAY BE USED FOR EMBANKMENT FILL PROVIDED THE MOISTURE CONTENT BE MAINTAINED WITHIN A RANGE OF +/- 2 PERCENT OF OPTIMUM. THE MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 12 INCHES IN LOOSE THICKNESS. EACH LIFT SHALL BE COMPACTED WITH A SHEEPSFOOT ROLLER TO A DENSE UNYIELDING CONDITION TO AT LEAST 92 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY AS DETERMINED FROM ASTM D1557.

GENERAL LEGEND

	ASPHALT PAVEMENT		POINT OF SWITCH (Designating number i.e. 9, 11, 20, etc. and type i.e. Power, Manuel, etc.)		SANITARY SEWER MANHOLE
	EXISTING RIGHT-OF-WAY		YARD LIMIT SIGN		STORM SEWER MANHOLE
	PROPOSED RIGHT-OF-WAY		RAILROAD WARNING SIGN		WATER MANHOLE
	EXISTING CULVERT		RAILROAD CROSSING SIGN		CATCH BASIN
	PROPOSED CULVERT		WHISTLE SIGN		WATER METER
	UNDERGROUND TELEPHONE LINE		CTC YARD SIGN		WATER VALVE
	UNDERGROUND GAS LINE		ABS SIGN		WATER VAULT
	OVERHEAD ELECTRIC LINE		SIGNAL		ELECTRIC VAULT
	OVERHEAD TELEPHONE LINE		FLASHING OVERHEAD SIGNALS		ELECTRIC TRANSFORMERS
	EXISTING DITCH w/FLOW		CROSSING GATE w/SIGNALS		POSITION INDICATOR VALVE
	SECTION LINE		SIGNAL CONTROL CABINET		STANDPIPE
	TIMBER ROAD CROSSING		BUNGALOW		STREET LIGHT
	FENCE LINE		SIGNAL FOUNDATION		POWER POLE
	TREE LINE		BURIED TELEPHONE MARKER		TELEPHONE POLE
	RETAINING WALL		BURIED WATER MAIN MARKER		GUY WIRE
	MILE POST MARKER		BURIED GAS MARKER		ROAD SIGN
					SOIL BORING w/DESIGNATION

SUMMARY OF SIDING EXTENSION QUANTITIES

ITEM	DESCRIPTION	UNIT OF MEASURE	QUANTITIES	
			TOTAL	
			ESTIMATED	FINAL
	MOBILIZATION	LS	1	
02100-1	SITE PREPARATION	AC	3.7	
02220-1	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY	4,440	
02220-2	EMBANKMENT *	CY	4,701	
02220-3	TOPSOIL 4 INCH (WSDOT TYPE A)	SF	4,375	
02270-2	SILT FENCE **	LF	4,180	
02270-4	SEEDING, WATERING & FERTILIZER	SY	4,375	
02270-5	CONSTRUCTION EXIT	EA	2	
02451-1	SUBBALLAST (GRAVEL BORROW)	CY	3,129	
02610-1	72" CORRUGATED METAL PIPE	LF	67	
02610-2	CULVERT (30" CLASS IV R.C.P.)	LF	20	
	REMOVE EXISTING 18" CULVERT	LS	1	
	* ALTERNATE 1			
02451-1	SUBBALLAST (GRAVEL BORROW)	CY	4,701	
	** ALTERNATE 2			
02270-1	STRAW BALES	EA	1,395	

SUBGRADE (cont.)

THE FILL SLOPE SHALL BE CONSTRUCTED AT A MAXIMUM 2H:1V (2 HORIZONTAL TO 1 VERTICAL).

THE SAND AND GRAVEL BORROW USED FOR SUBBALLAST MAY BE USED AS EMBANKMENT IN LIEU OF EXCAVATED SOILS FROM THE CHERRY POINT YARD PROJECT.

THE CONTRACTOR SHALL WATER AND MAINTAIN ALL SEEDED SLOPES UNTIL NEW VEGETATION IS FULLY ESTABLISHED AND ACCEPTED BY OWNER.

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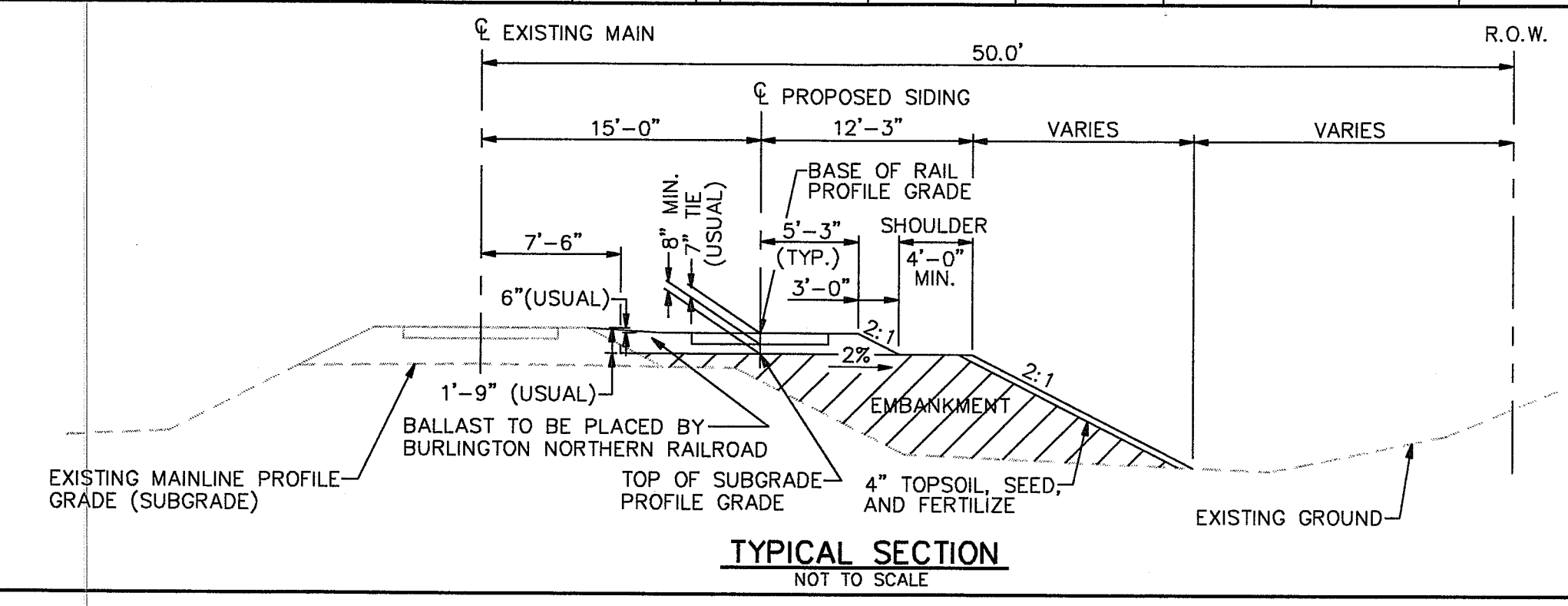
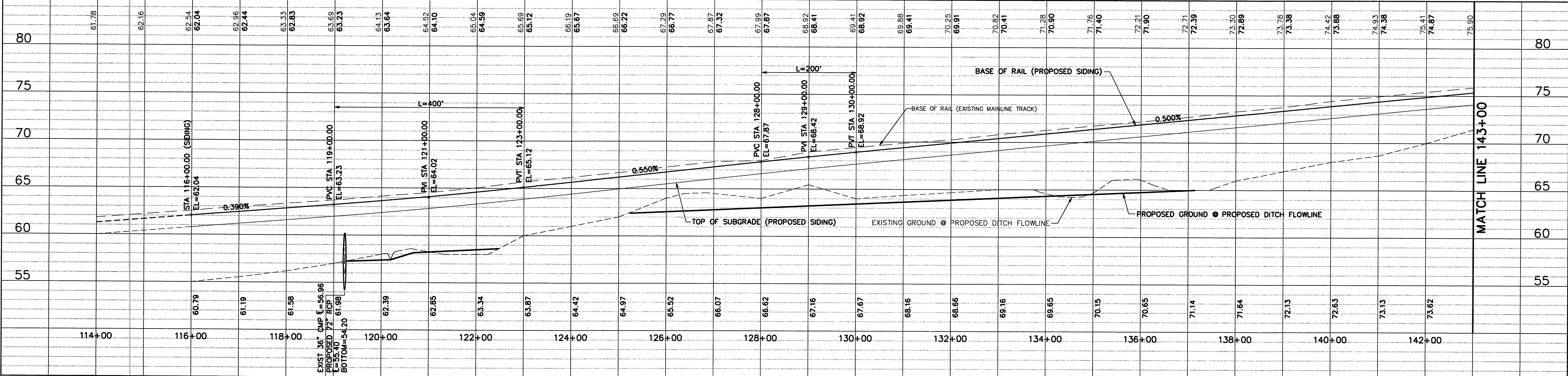
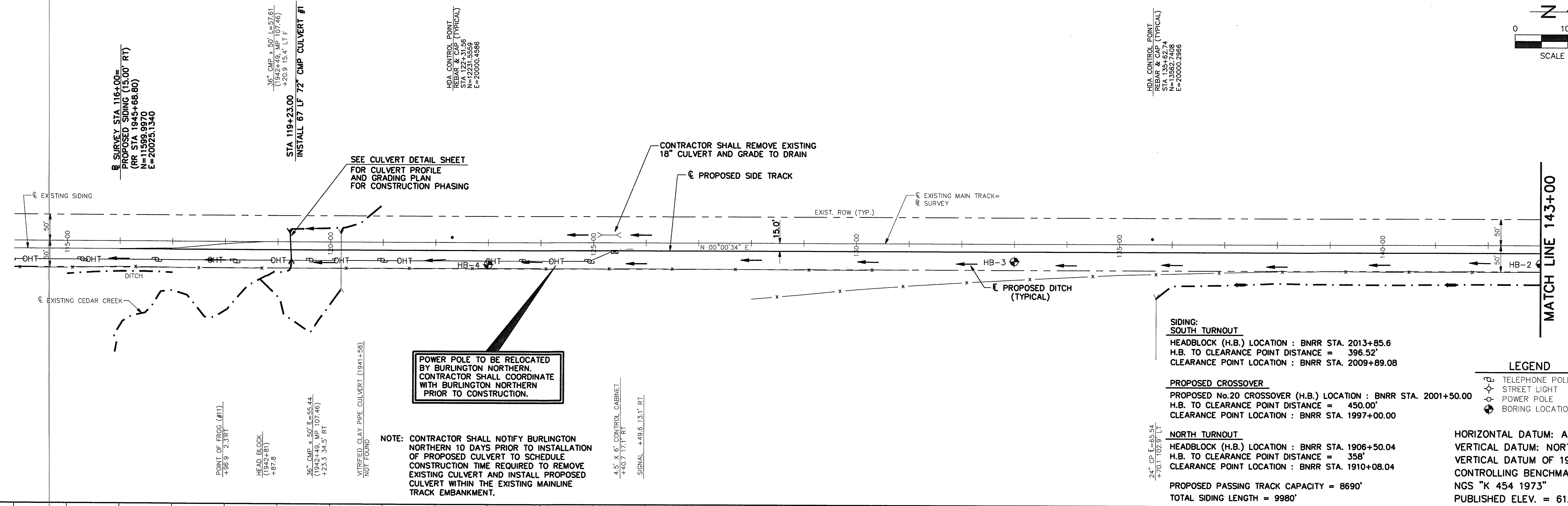
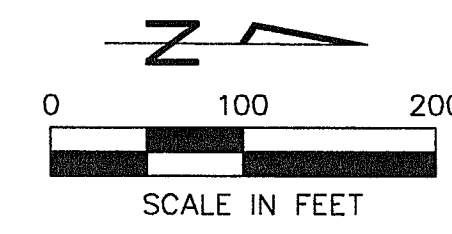
John R. Aughinbaugh 30649 January 10, 1995
Type or Print Name PE# Date

SUMMARY OF QUANTITIES & GENERAL NOTES


FERNDALE
SEATTLE TO VANCOUVER B.C. RAIL SERVICE
BURLINGTON NORTHERN RAILROAD

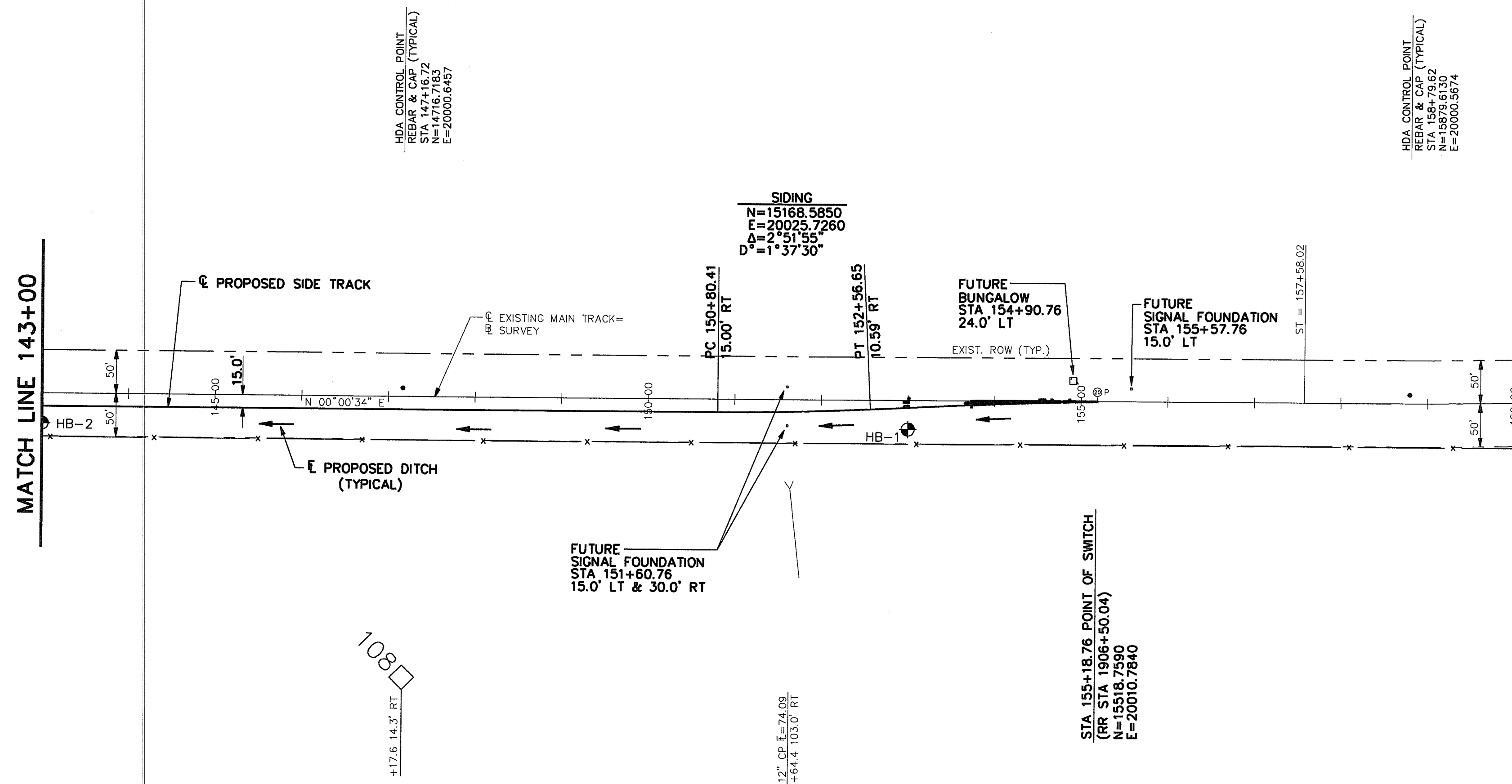
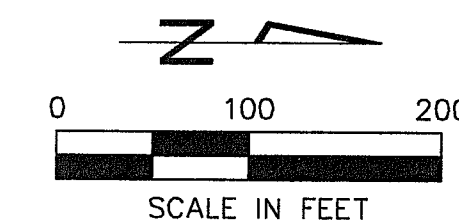
Carter & Burgess
Consultants in Engineering, Architecture,
Planning and the Environment
CARTER & BURGESS, INC.
7950 ELMBROOK DRIVE, SUITE 250
DALLAS, TX 75247-4961

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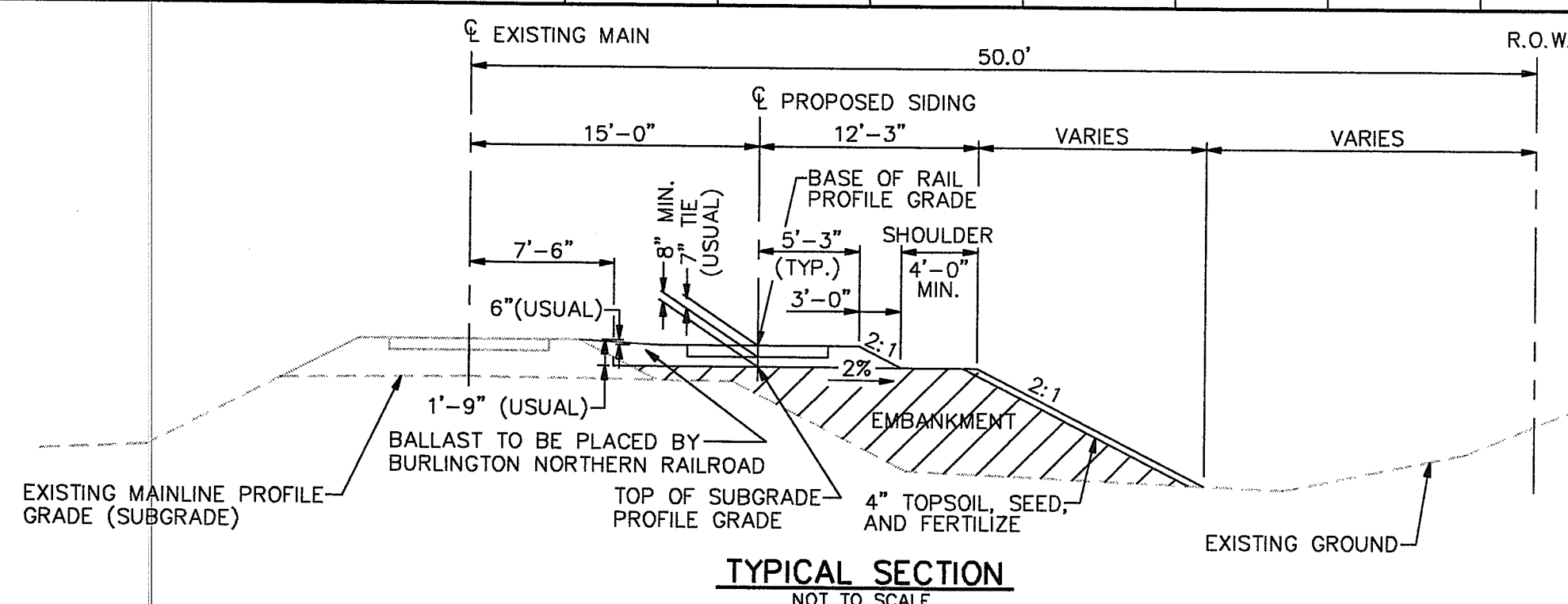
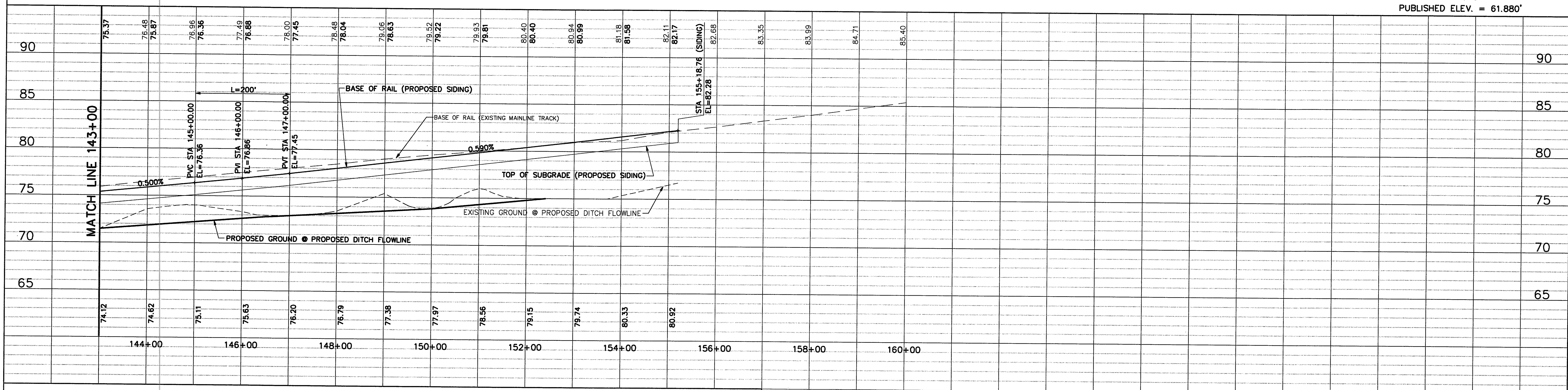
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PLAN & PROFILE						
FERNDAL						
SEATTLE TO VANCOUVER B.C. RAIL SERVICE						
BURLINGTON NORTHERN RAILROAD						
 Carter & Burgess Consultants in Engineering, Architecture, Planning and the Environment CARTER & BURGESS, INC. 7950 ELMBROOK DRIVE, SUITE 250 DALLAS, TX 75247-4961						
DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
DD	JHK	Jan. 1995	1"=100'H 1"=5'V		FD-PP1	3



- LEGEND
- TELEPHONE POLE
 - STREET LIGHT
 - POWER POLE
 - BORING LOCATION

HORIZONTAL DATUM: ASSUMED
VERTICAL DATUM: NORTH AMERICAN
VERTICAL DATUM OF 1988 (NAVD 88)
CONTROLLING BENCHMARK:
NGS "K 454 1973"
PUBLISHED ELEV. = 61.880'



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PLAN & PROFILE

FERNDAL
SEATTLE TO VANCOUVER B.C. RAIL SERVICE
BURLINGTON NORTHERN RAILROAD

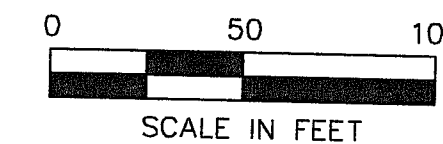
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DALLAS, TX 75247-4961

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
DD	JHK	Jan. 1995	1"=100'H 1"=5'V		FD-PP2	4

CULVERT CONSTRUCTION

CONTRACTOR SHALL PUMP ALL RUNOFF THROUGH EXISTING CULVERT AT STA 120+20 DURING INSTALLATION OF PROPOSED CULVERT AT STA 119+23 IF NEEDED TO FACILITATE CONSTRUCTION. AFTER PROPOSED CULVERT AT STA 119+23 IS COMPLETE THROUGH THE EXISTING RAILROAD EMBANKMENT THE CONTRACTOR SHALL PLUG AND ABANDON THE EXISTING CULVERT AT STA 120+20. (NOT A PAY ITEM)

THE CONTRACTOR SHALL USE HAND TOOLS TO GRADE EXISTING DITCH TO DRAIN FROM STA 120+20 TO STA 119+23 AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL USE EXTREME CARE TO NOT DISTURB THE EXISTING VEGETATION BEYOND WHAT IS REQUIRED TO GRADE DITCH. (NOT A PAY ITEM)



PROJECT LIMITS

EXIST. ROW (TYP.)

CL CEDAR CREEK

PROJECT LIMITS

PROJECT LIMITS

CL CEDAR CREEK

MATCH LINE 130+00

EXIST. ROW (TYP.)

CL PROPOSED SIDE TRACK

PROJECT LIMITS

MATCH LINE 145+00

MATCH LINE 145+00

TOP OF SIGNAL BERM
ELEV.=79.0

PROJECT LIMITS

EXIST. ROW (TYP.)

TOP OF BUNGALOW BERM
ELEV.=81.65

PROJECT LIMITS

TOP OF SIGNAL BERM
ELEV.=82.0

TOP OF SIGNAL BERM
ELEV.=78.0

FUTURE
BUNGALOW FOUNDATION
STA X+XX.XX
XX.XX' LT
ELEV.=XX.XX

NOTE: STATION AND OFFSET AS
PER PLAN AND PROFILE
SHEETS AND ELEVATION
AS PER GRADING PLAN.

FUTURE
SIGNAL FOUNDATION
STA X+XX.XX
XX.XX' LT
ELEV.=XX.XX

NOTES: CONTRACTOR SHALL GRADE PROPOSED DITCH
TO DRAIN TO PROPOSED PROFILE AS SHOWN
ON PLAN AND PROFILE SHEET.

PROPOSED CONTOURS ARE TO TOP OF SUBGRADE.

BUNGALOW BERM
GRADING DETAIL

SIGNAL FOUNDATION BERM
GRADING DETAIL

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GRADING PLAN

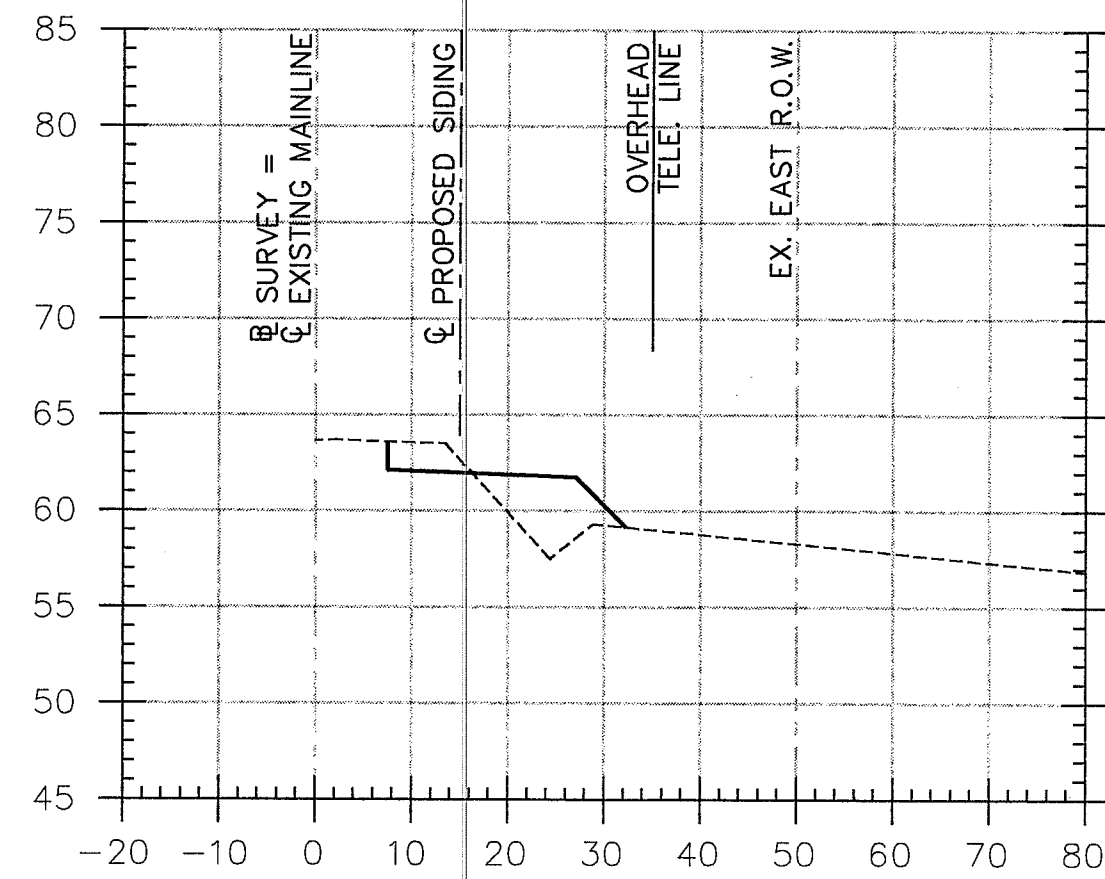
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SEATTLE TO VANCOUVER B.C. RAIL SERVICE

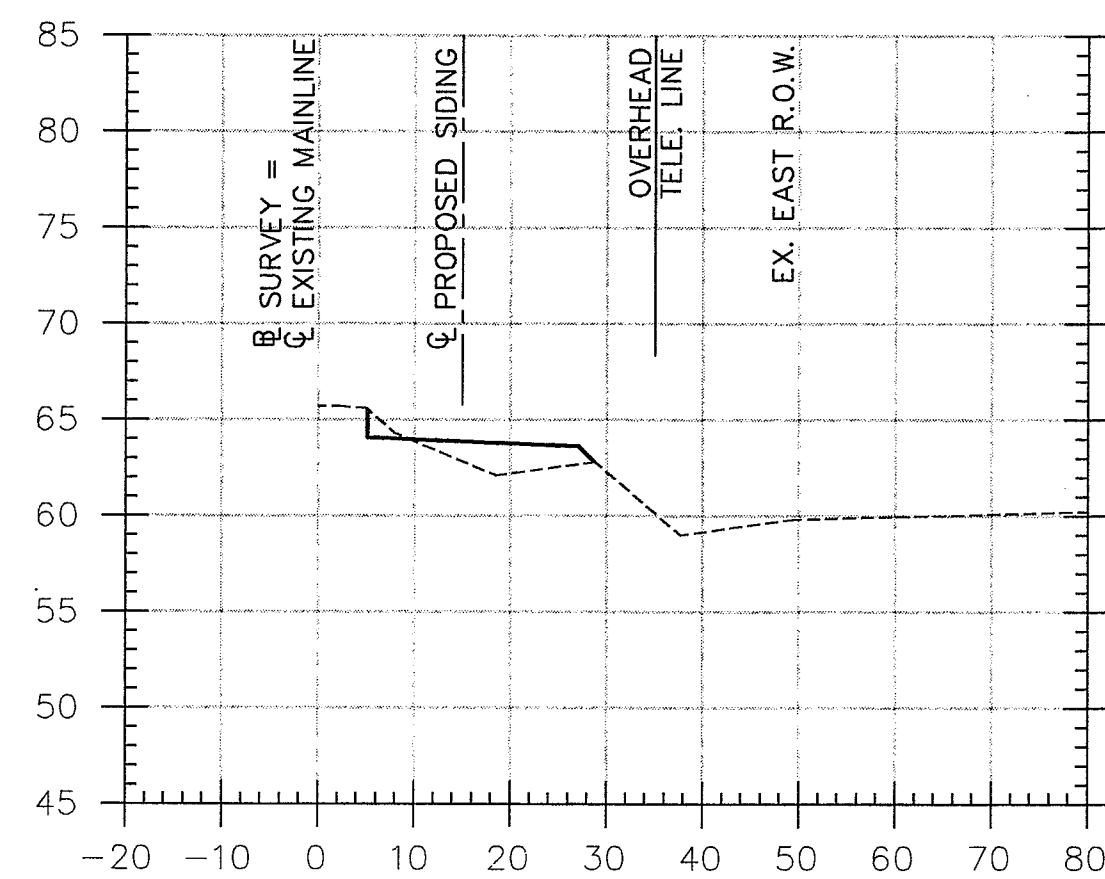
BURLINGTON NORTHERN RAILROAD

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CARTER & BURGESS, INC.
7950 ELMBROOK DRIVE, SUITE 250
DALLAS, TX 75247-4951

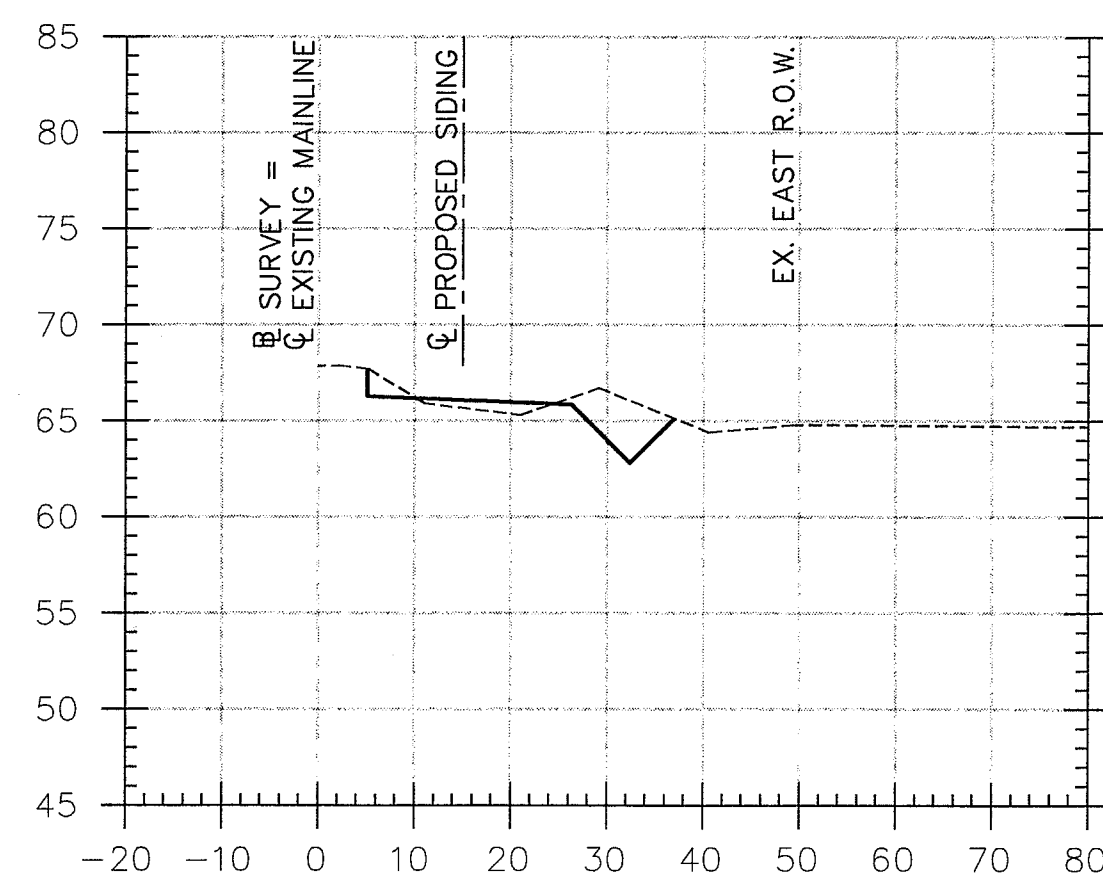
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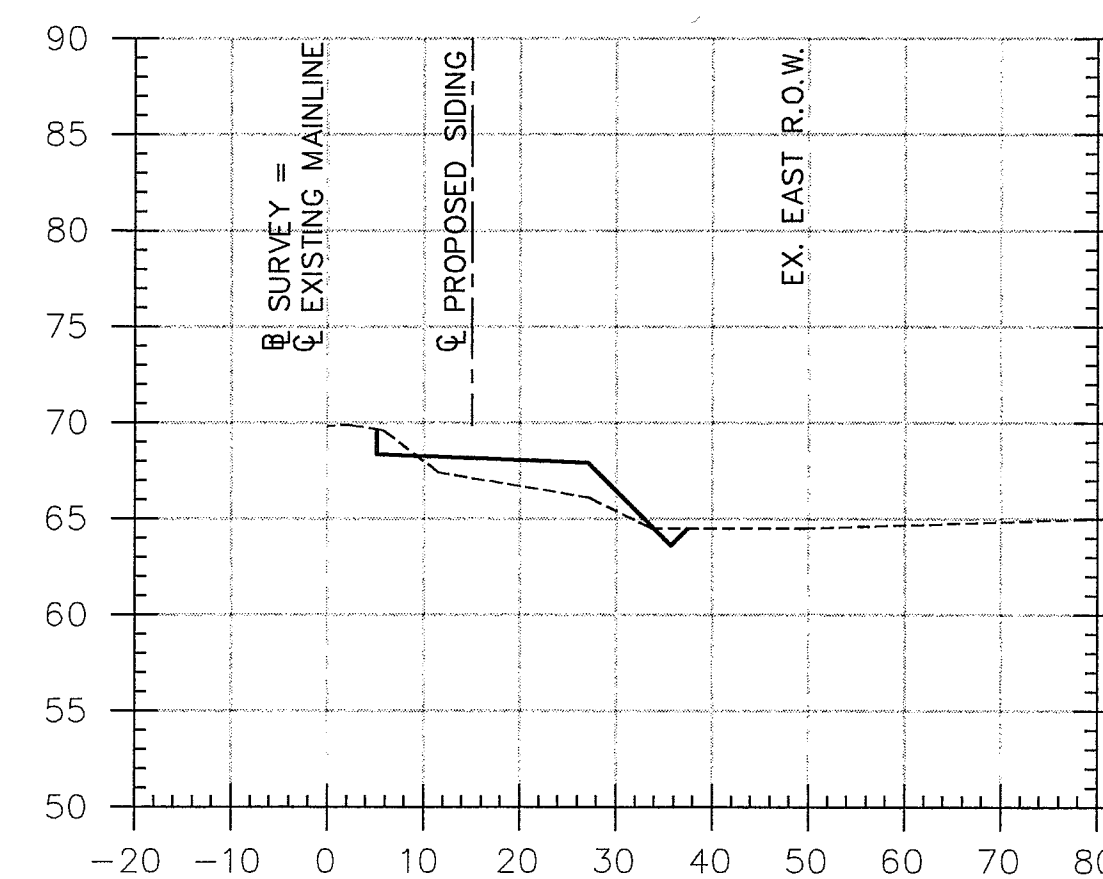
119+00



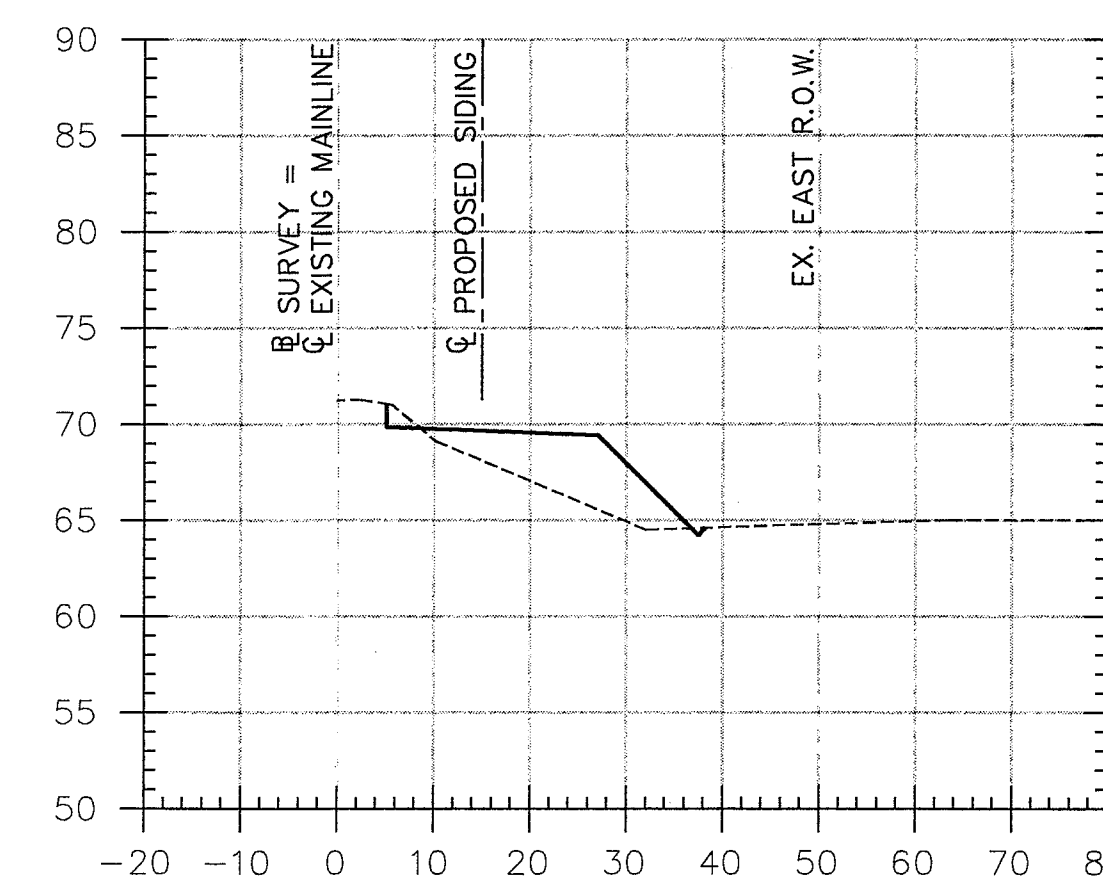
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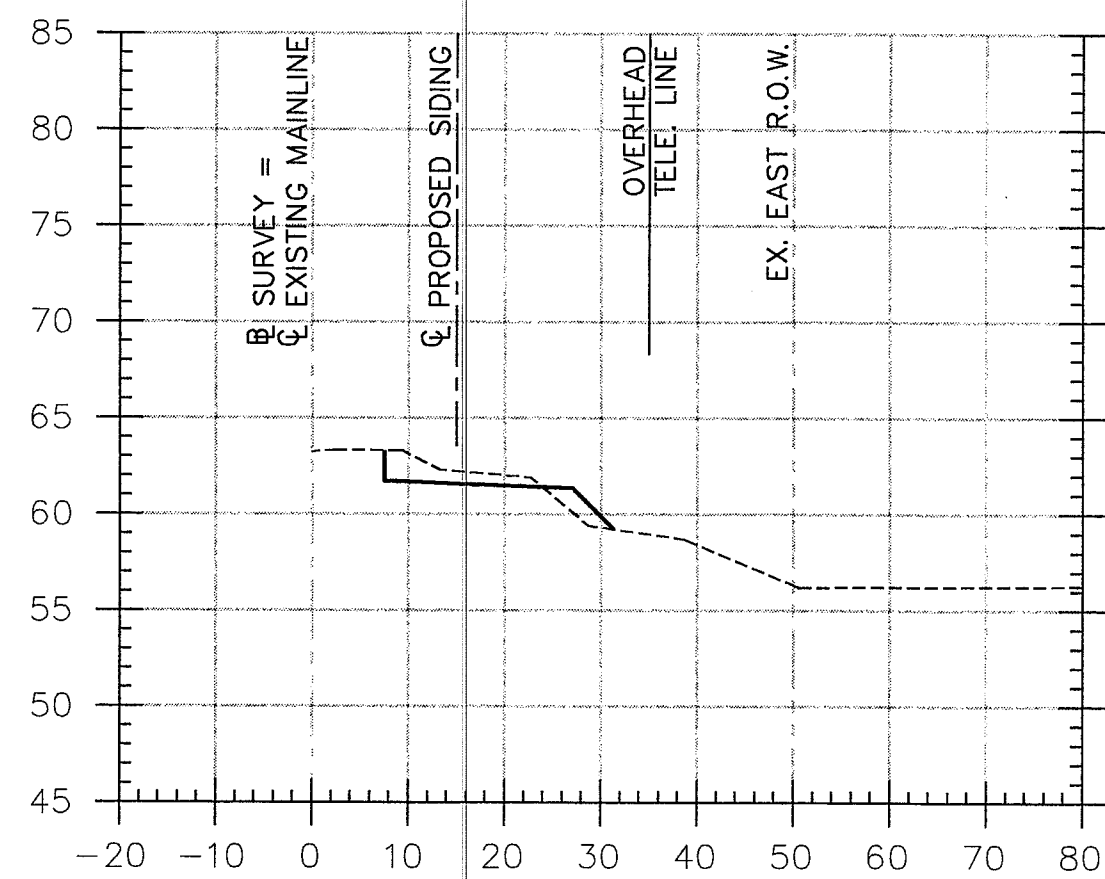
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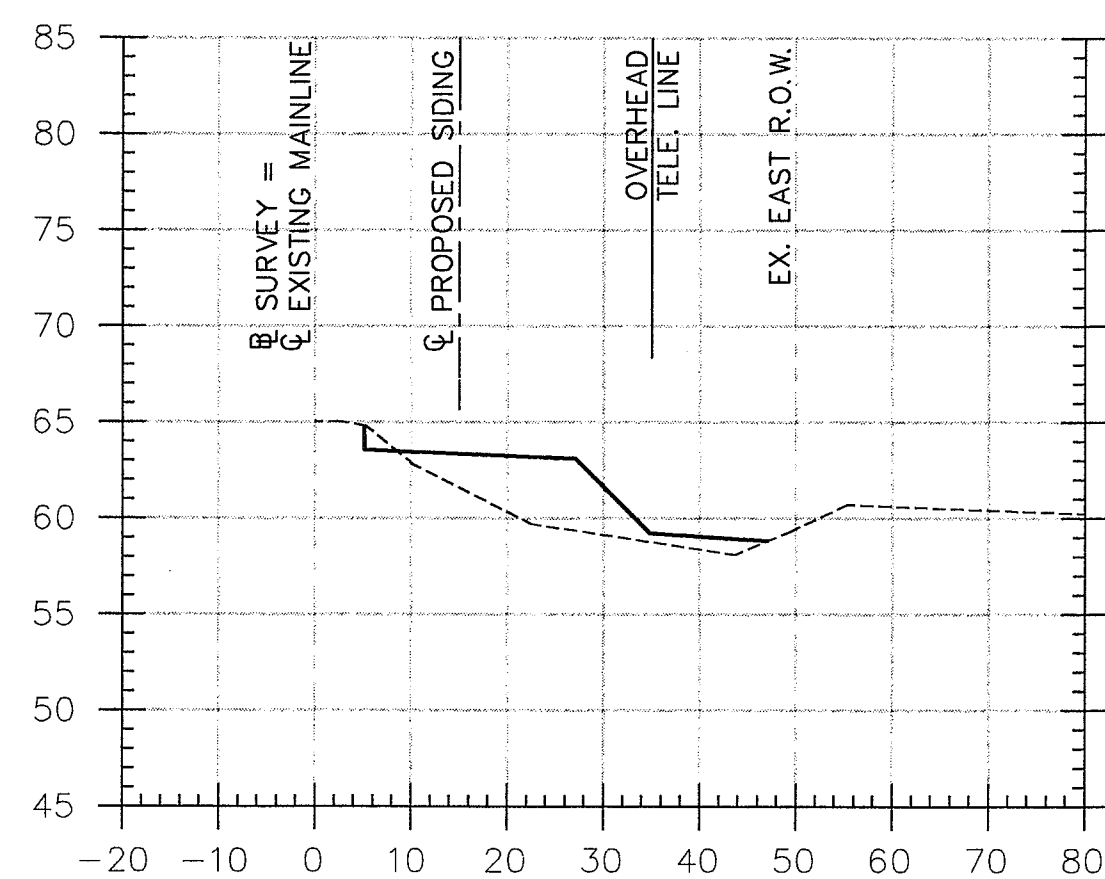
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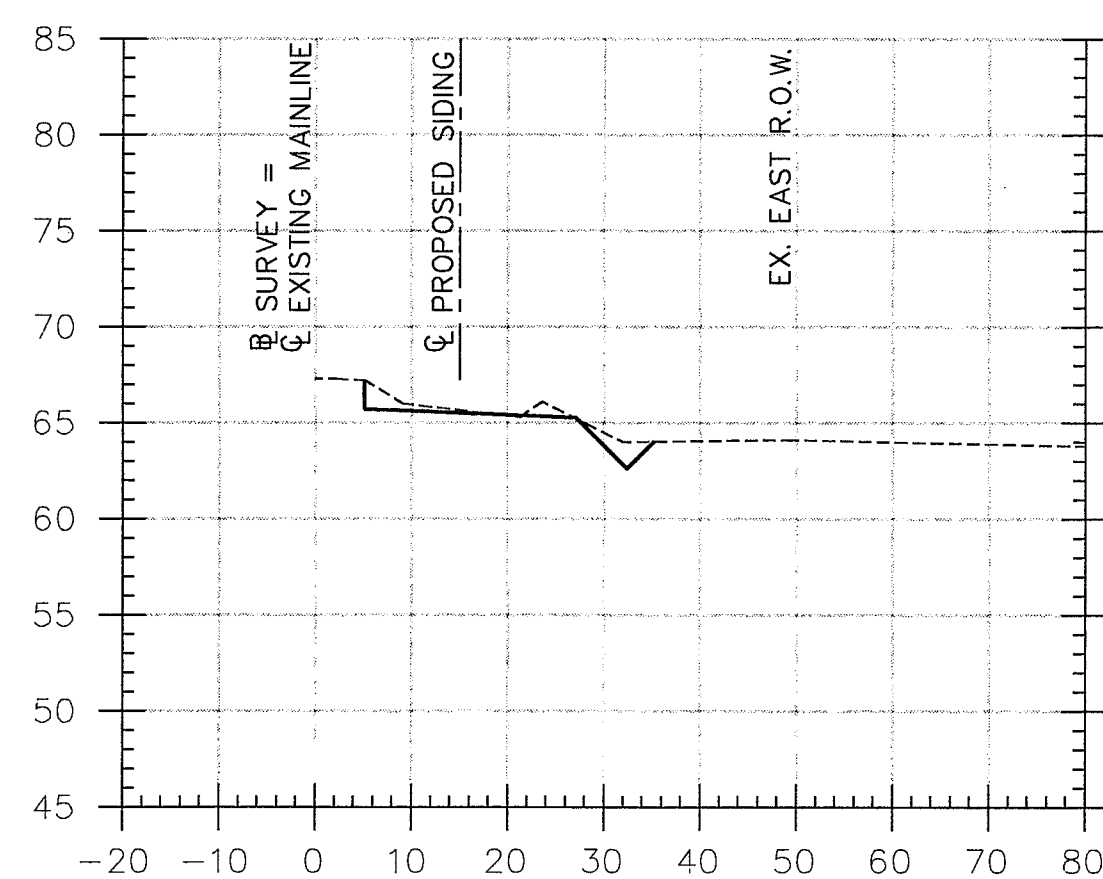
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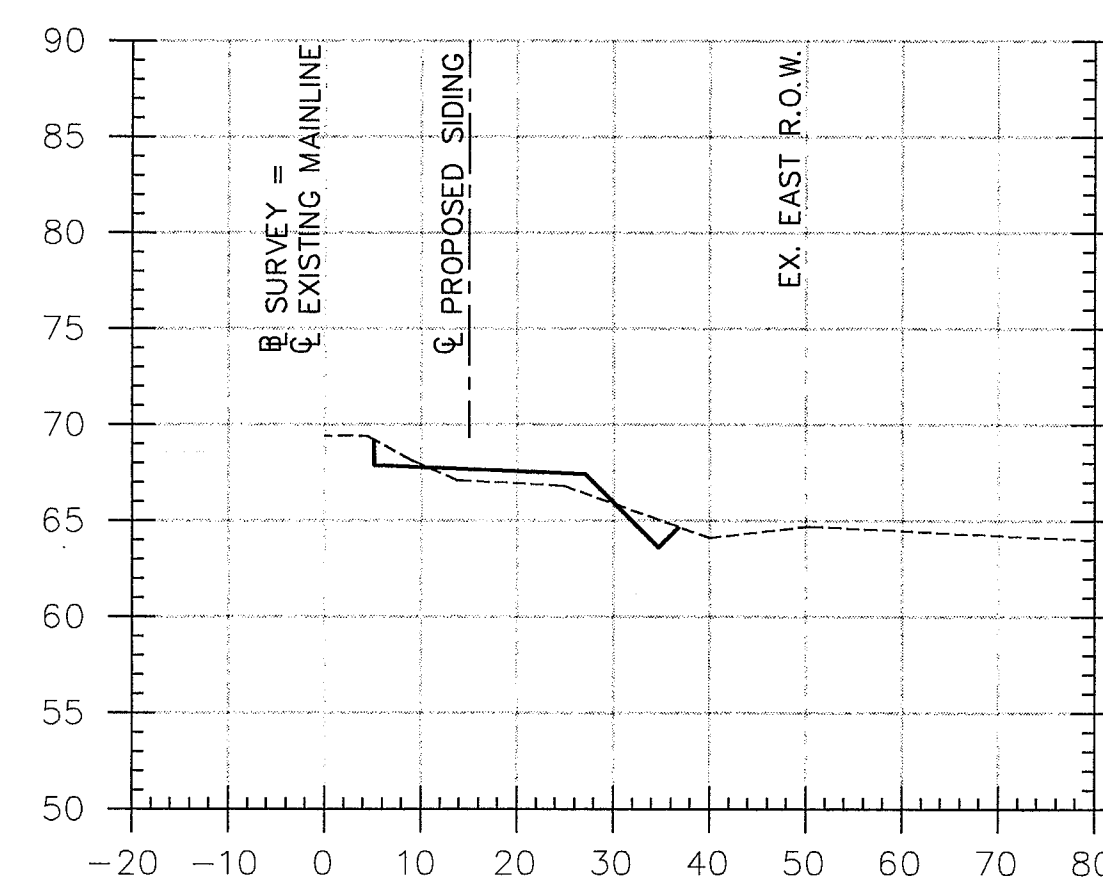
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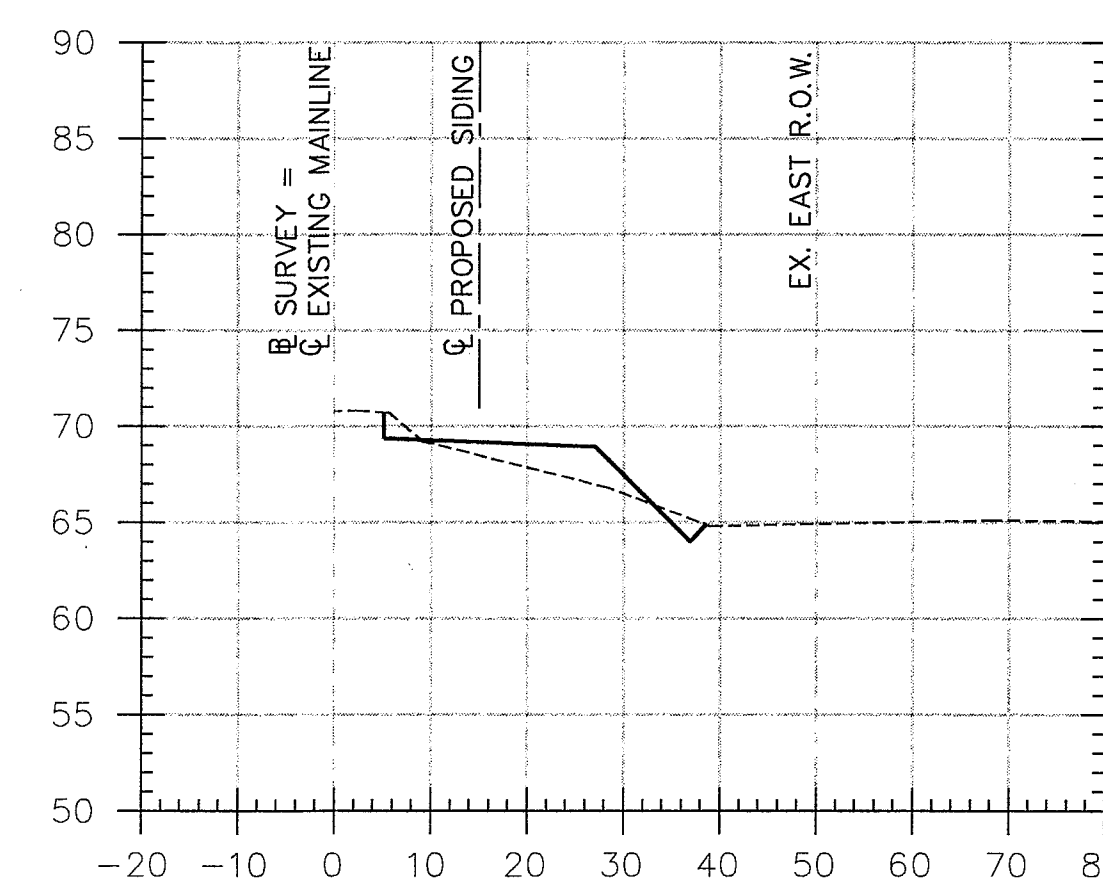
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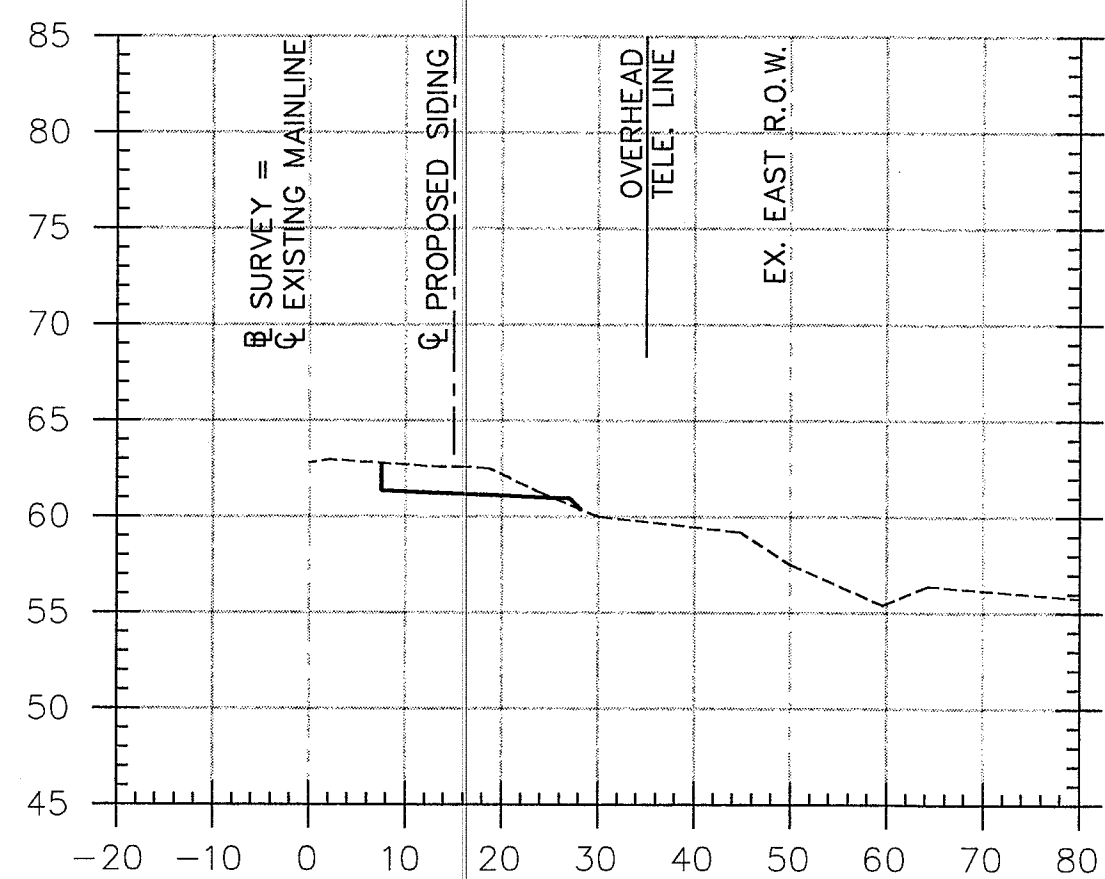
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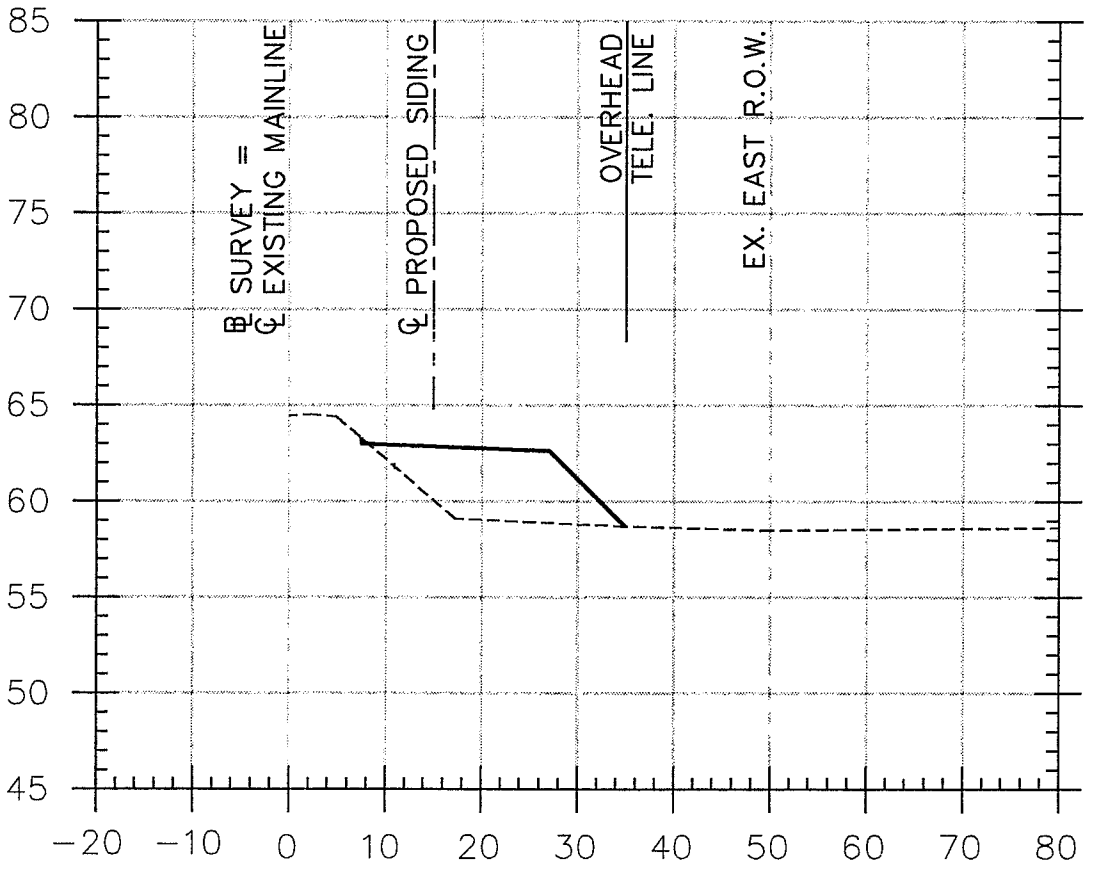
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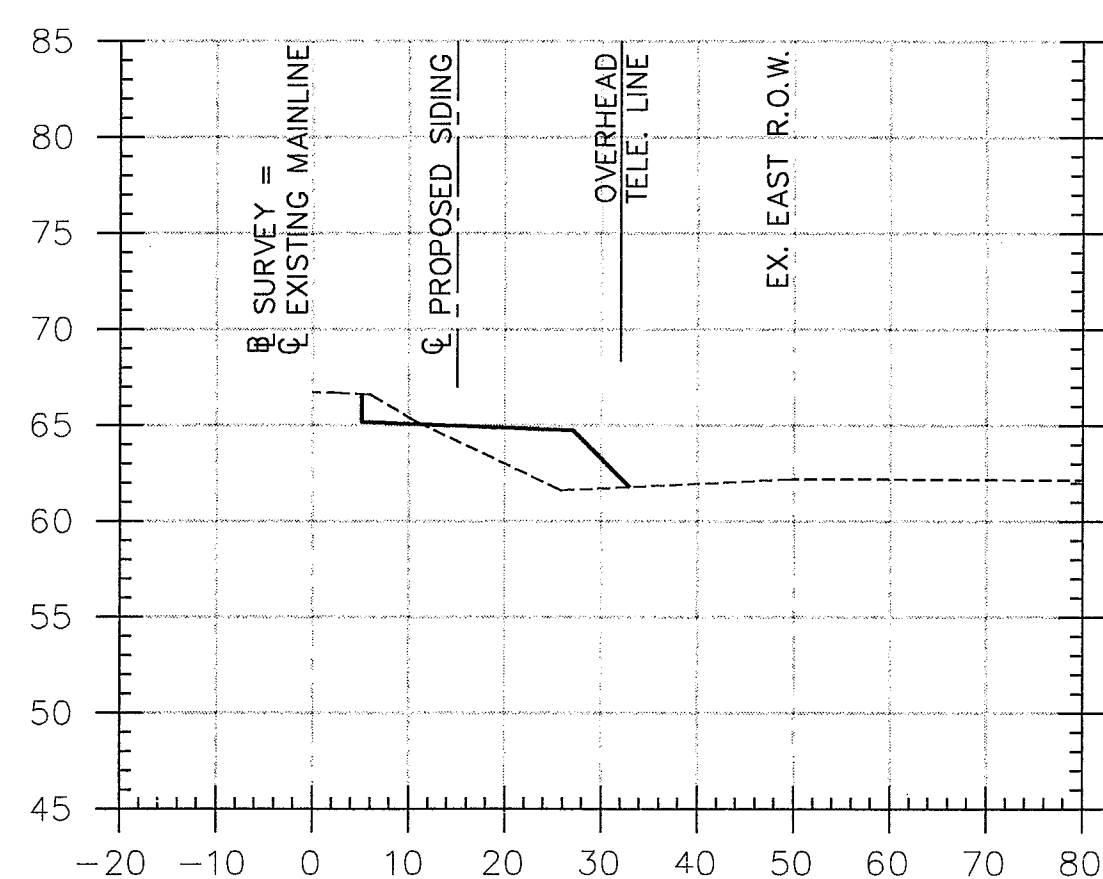
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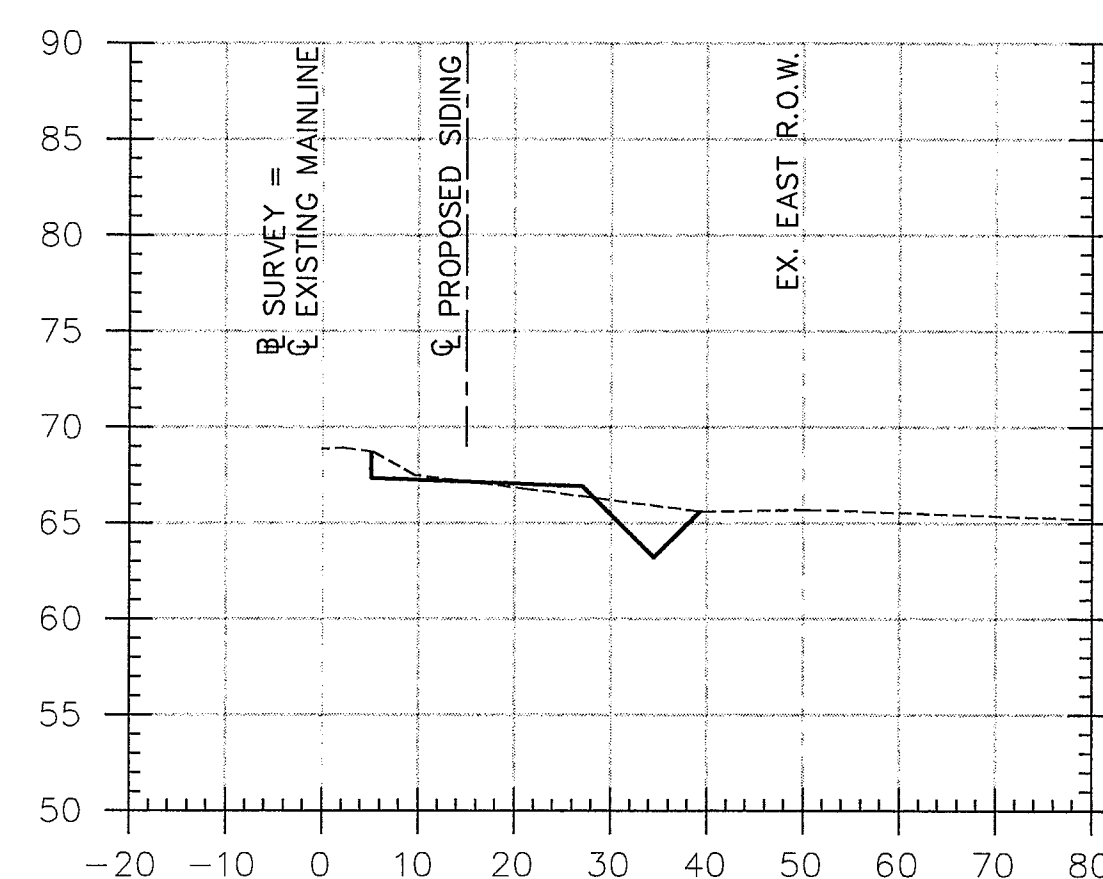
117+00



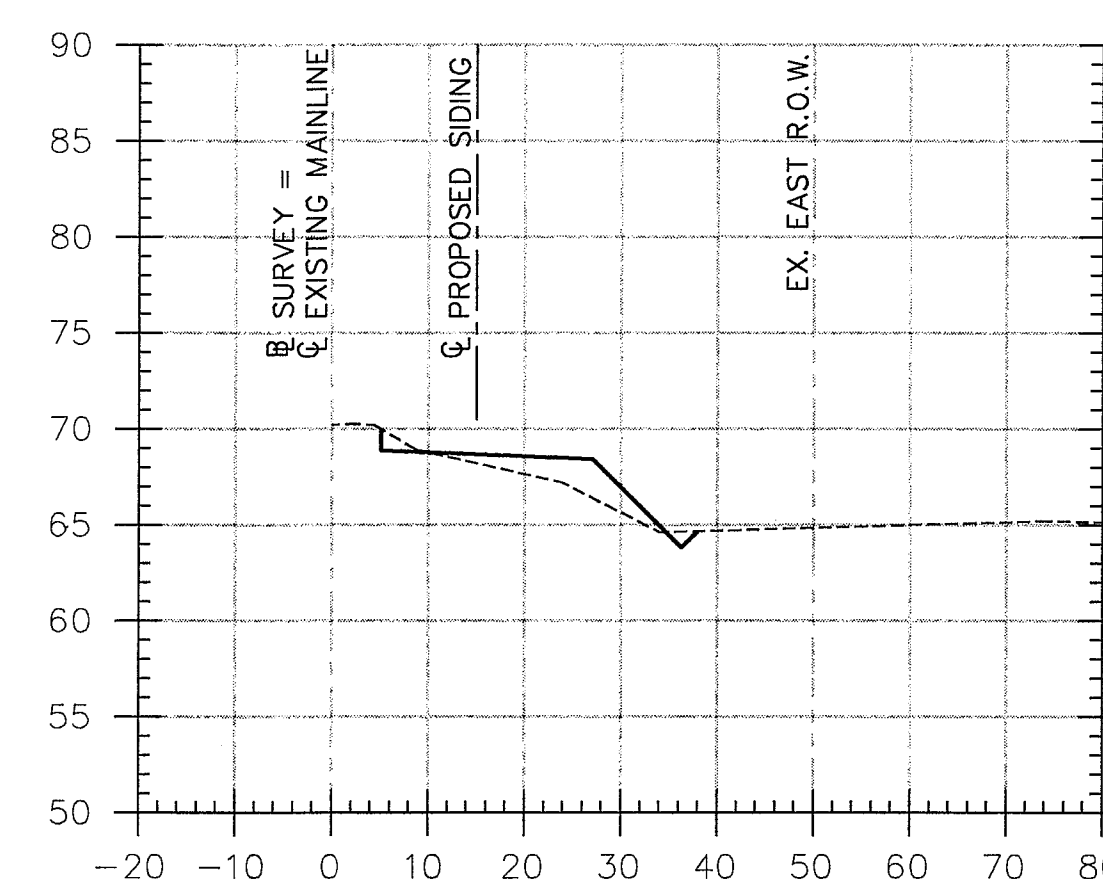
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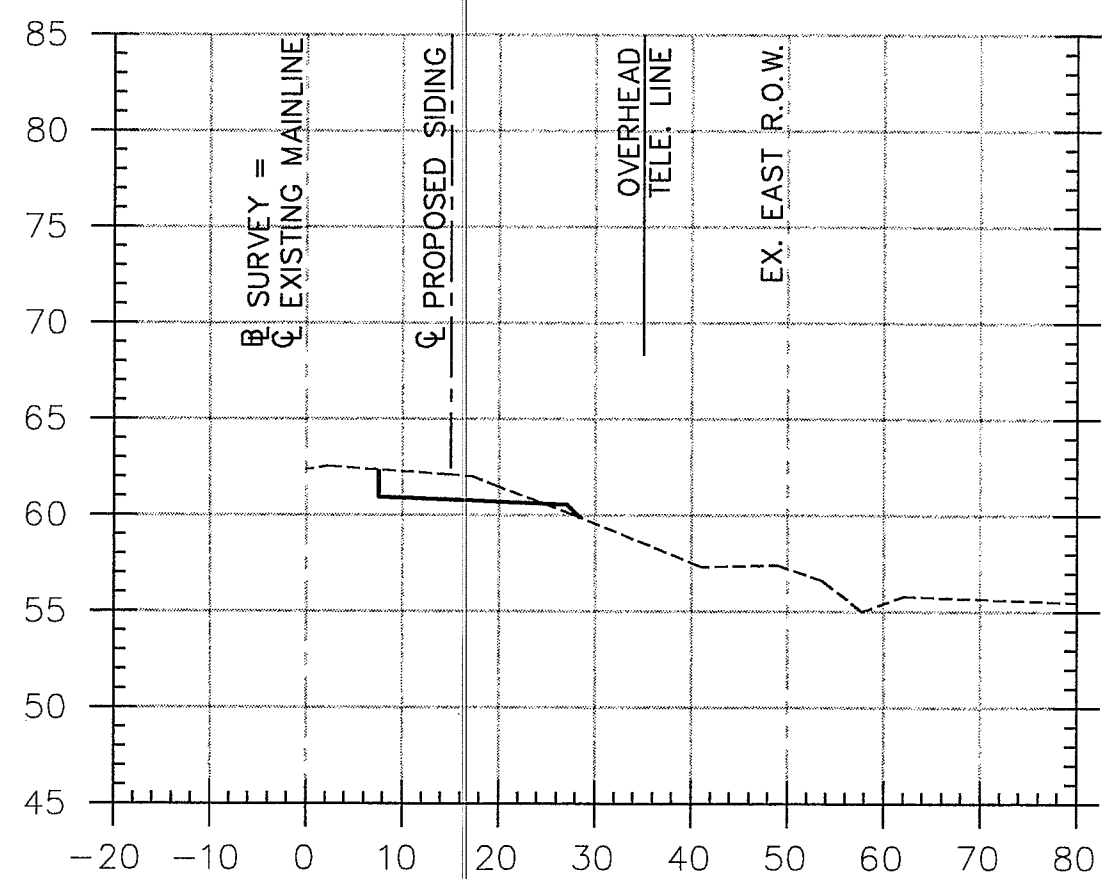
125+00



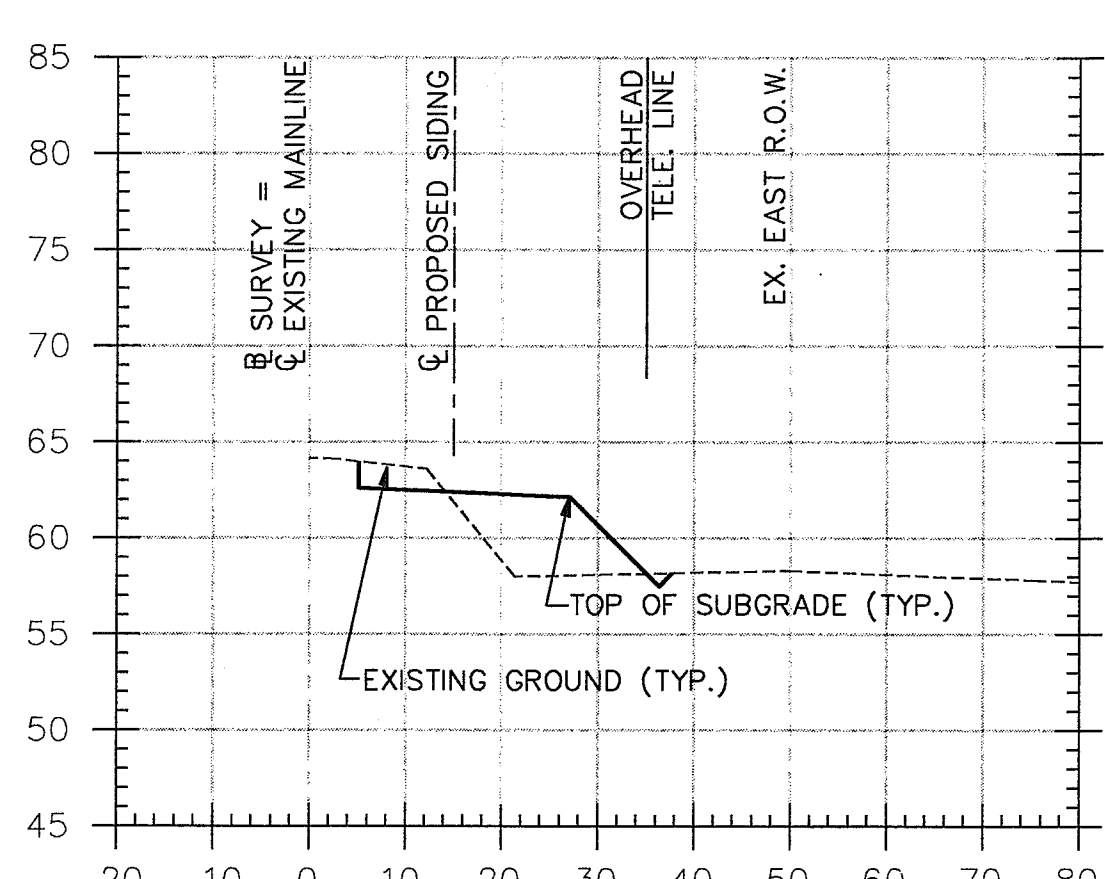
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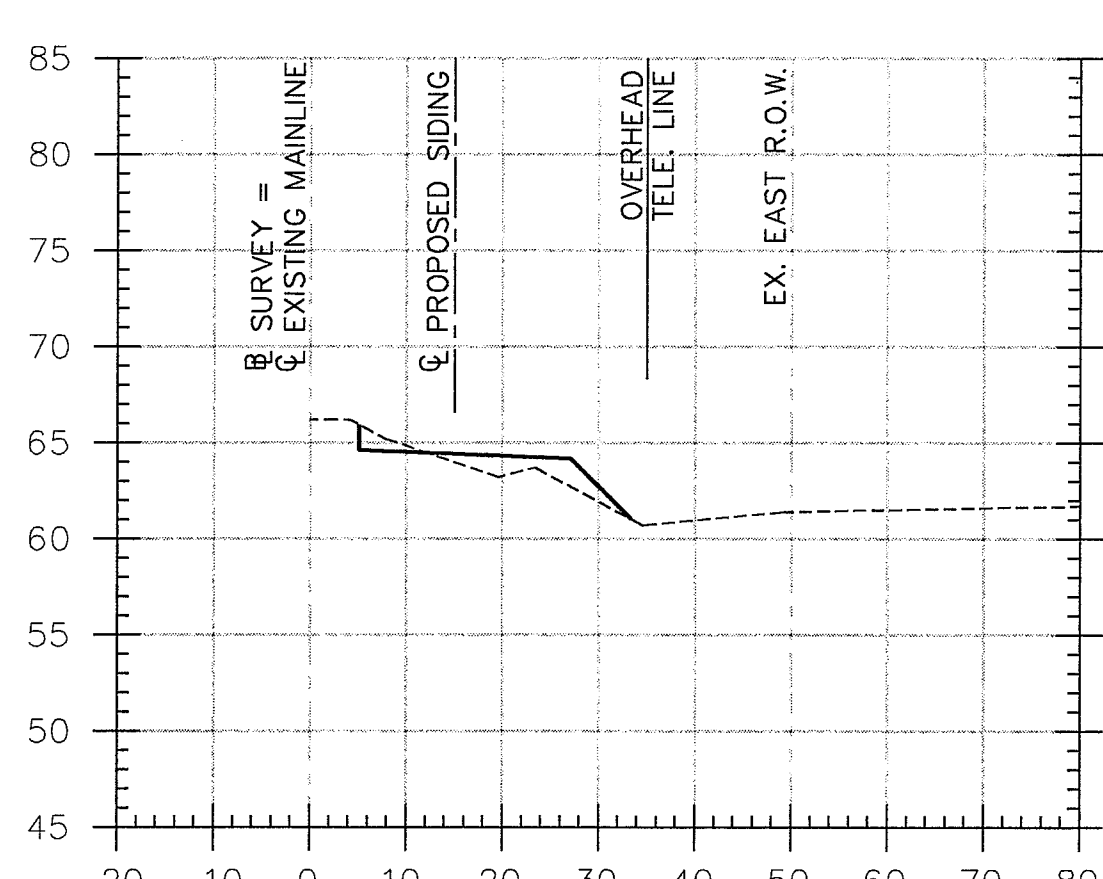
132+00



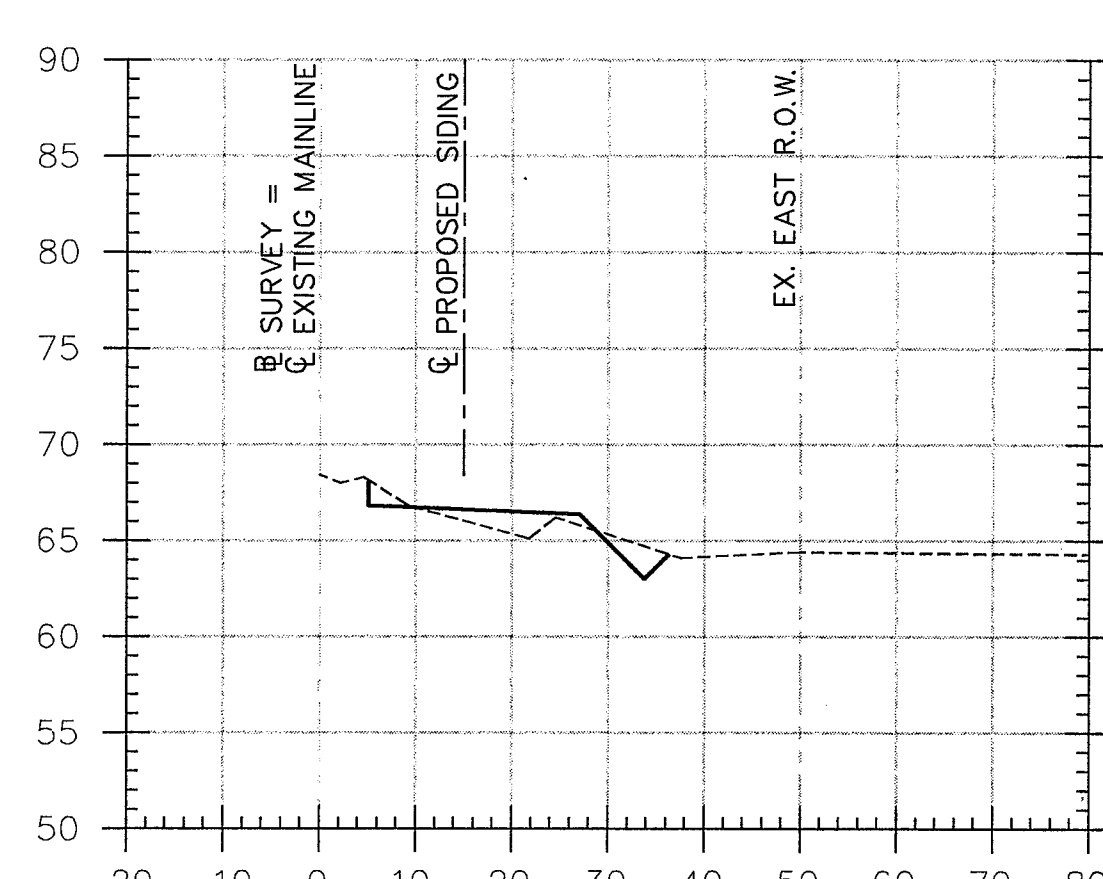
116+00



120+00



124+00



128+00

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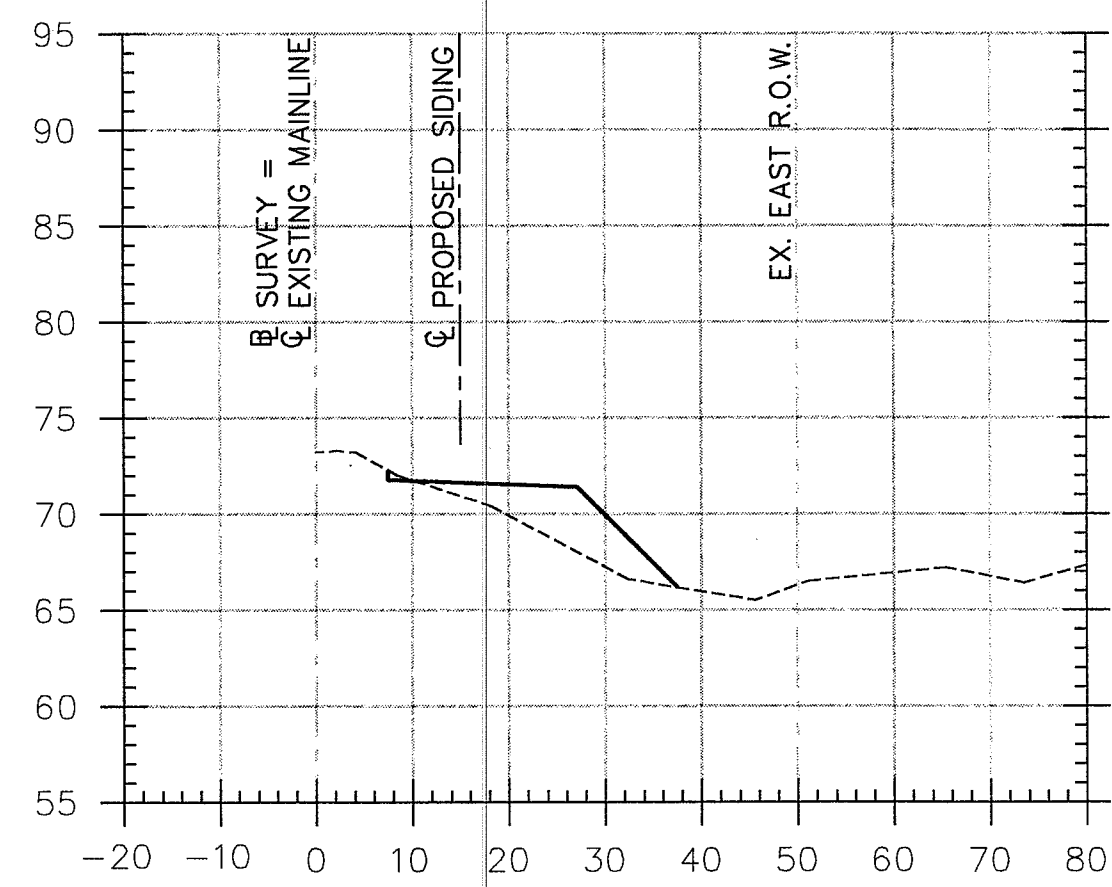
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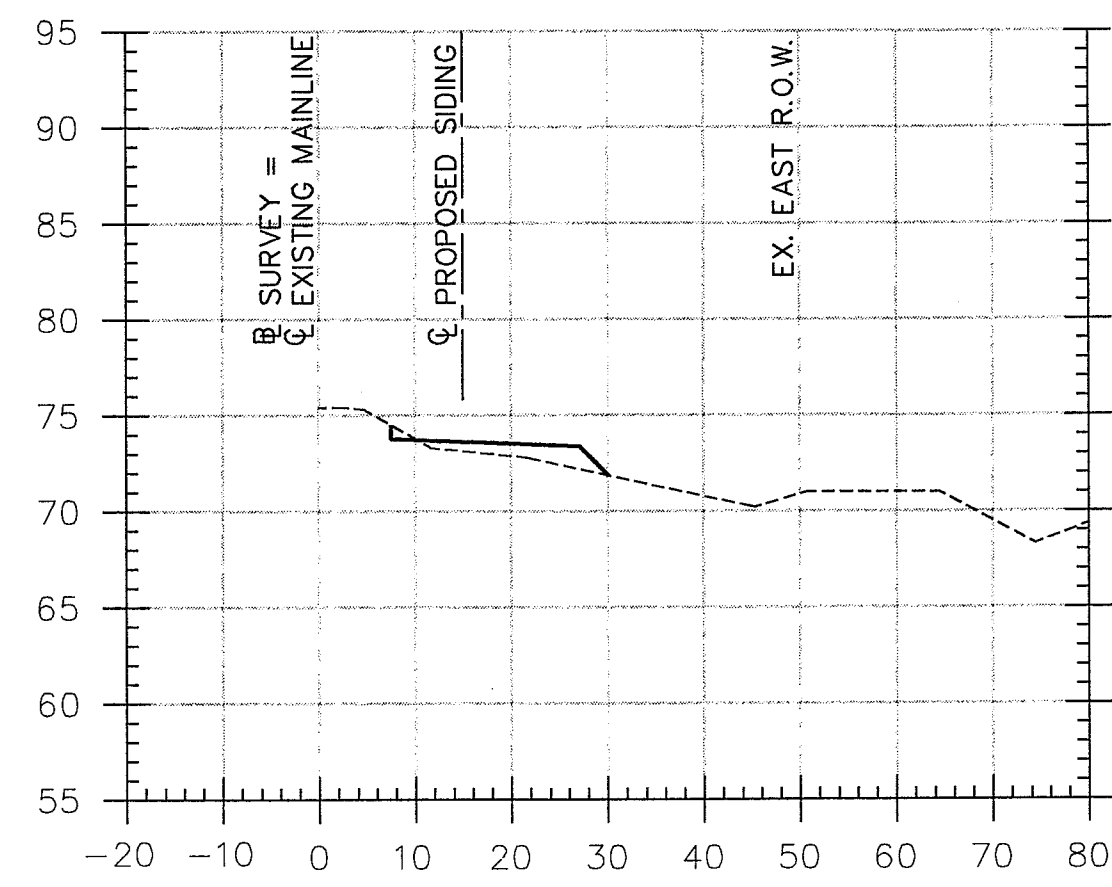
BURLINGTON NORTHERN RAILROAD

Carter-Burgess
Consultants in Engineering, Architecture,
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CARTER & BURGESS, INC.
7850 EMBROOK DRIVE, SUITE 250
DALLAS, TX 75247-4961

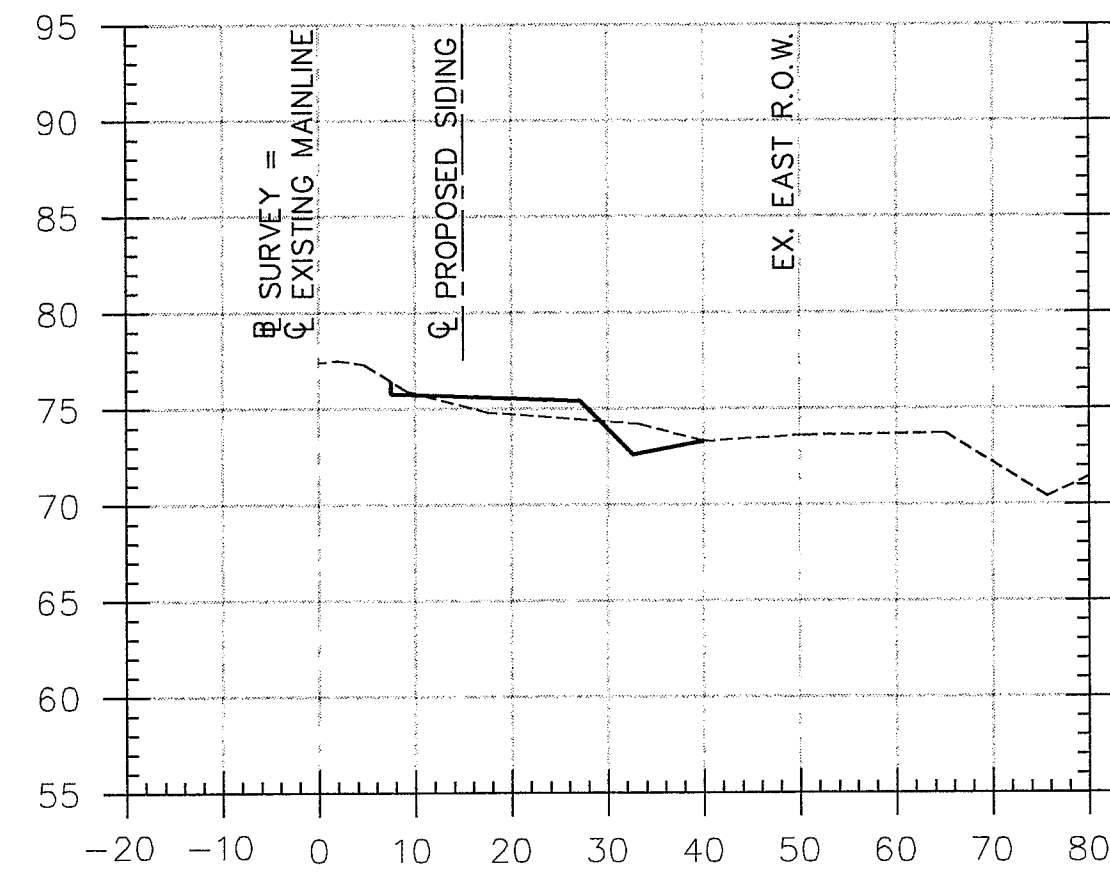
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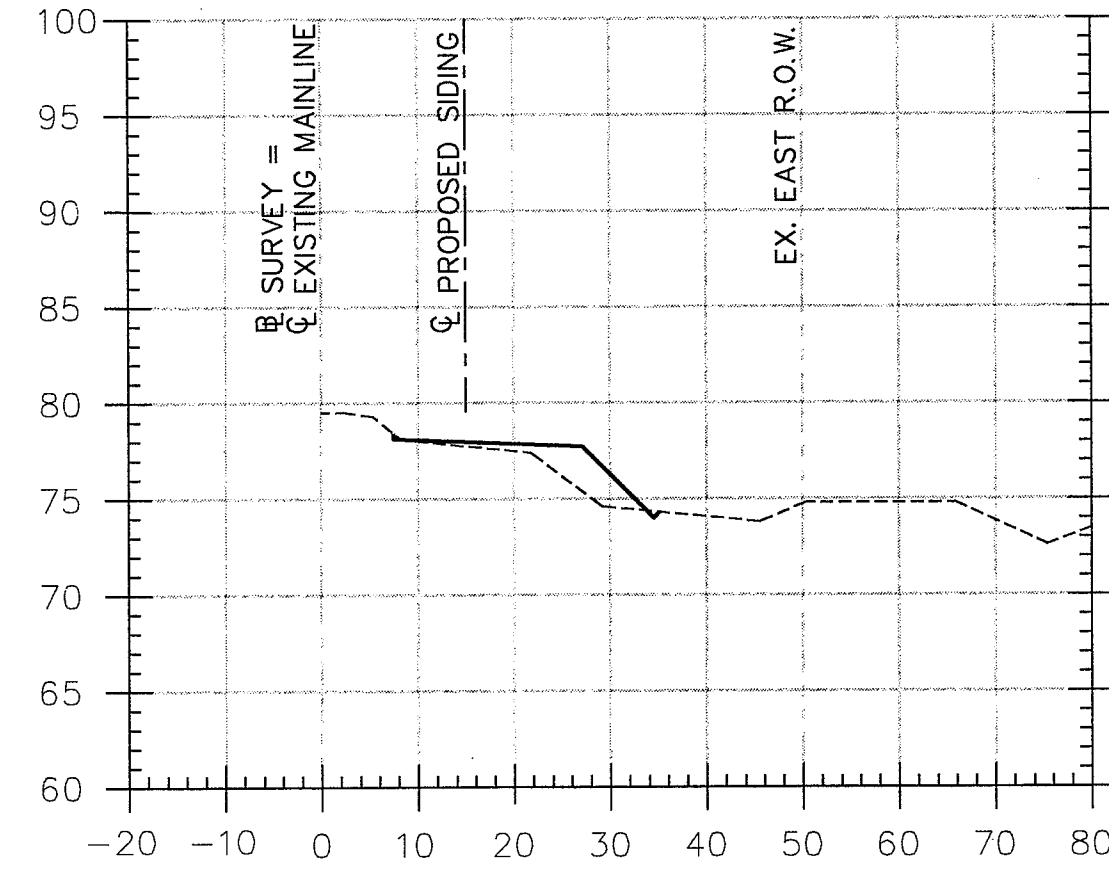
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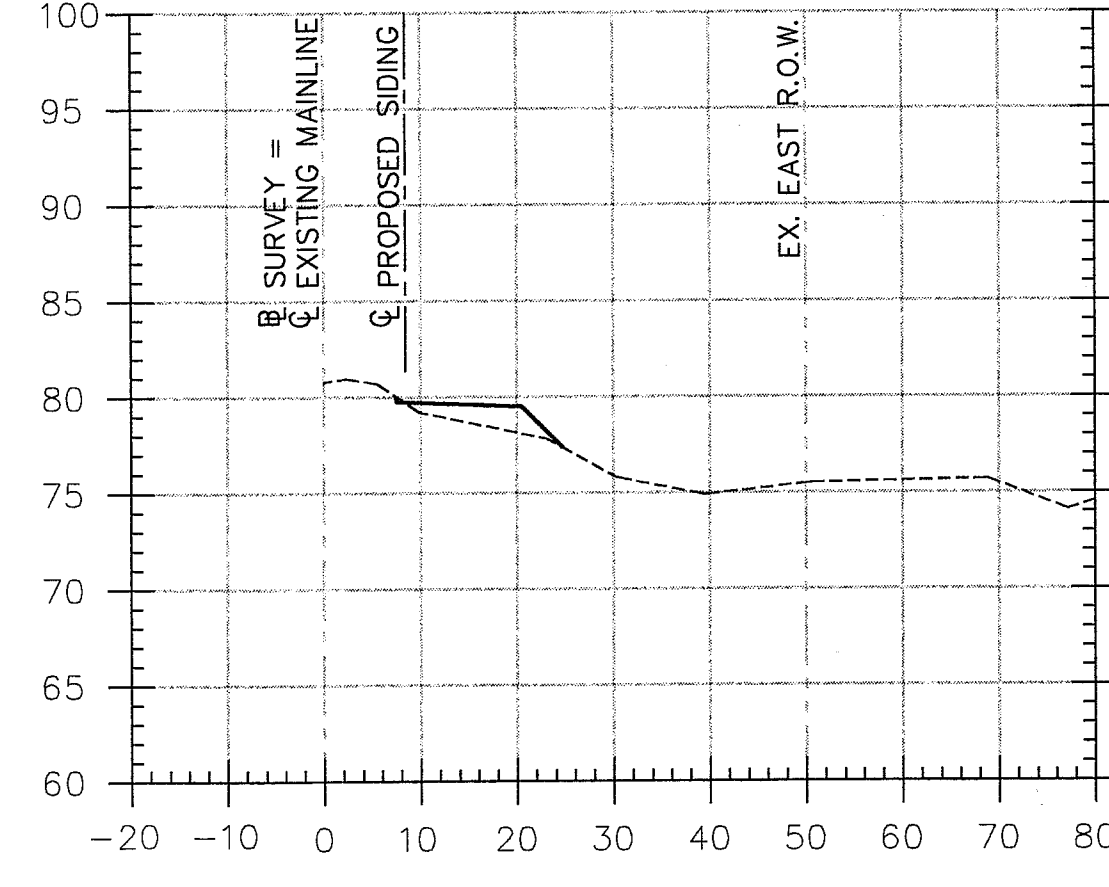
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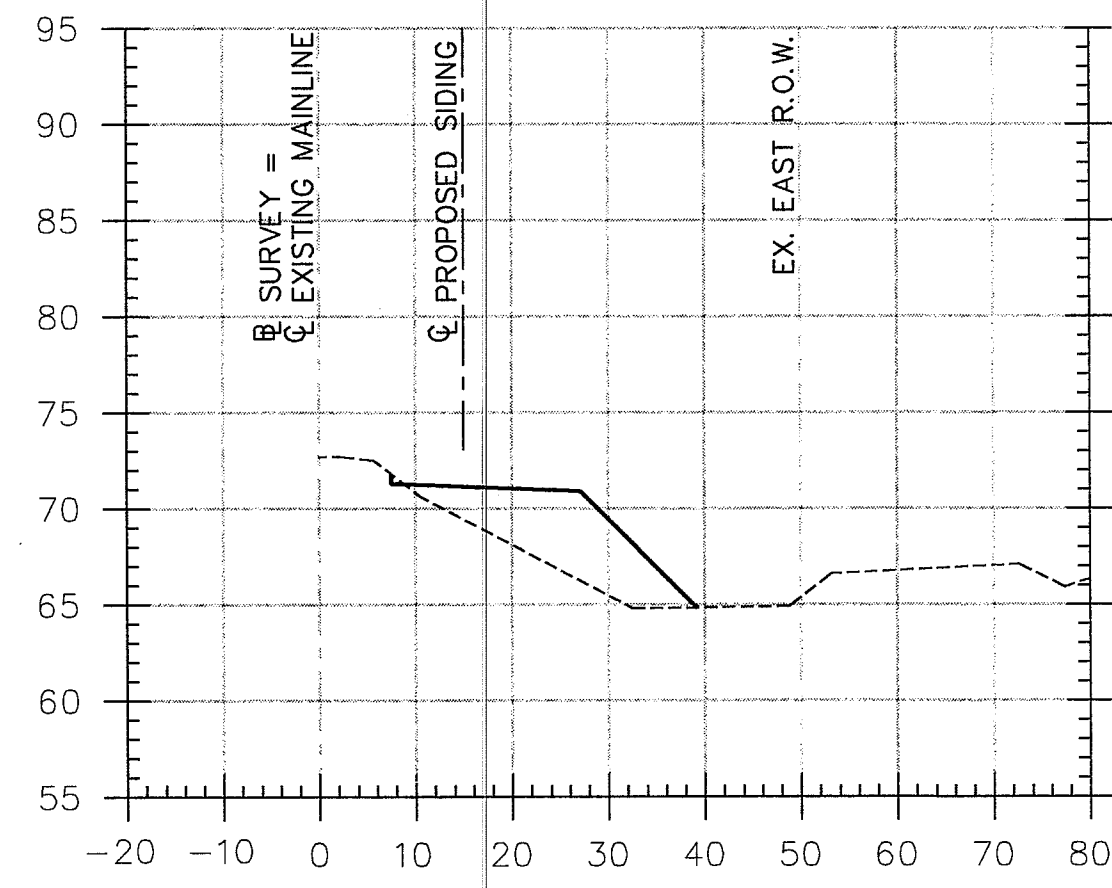
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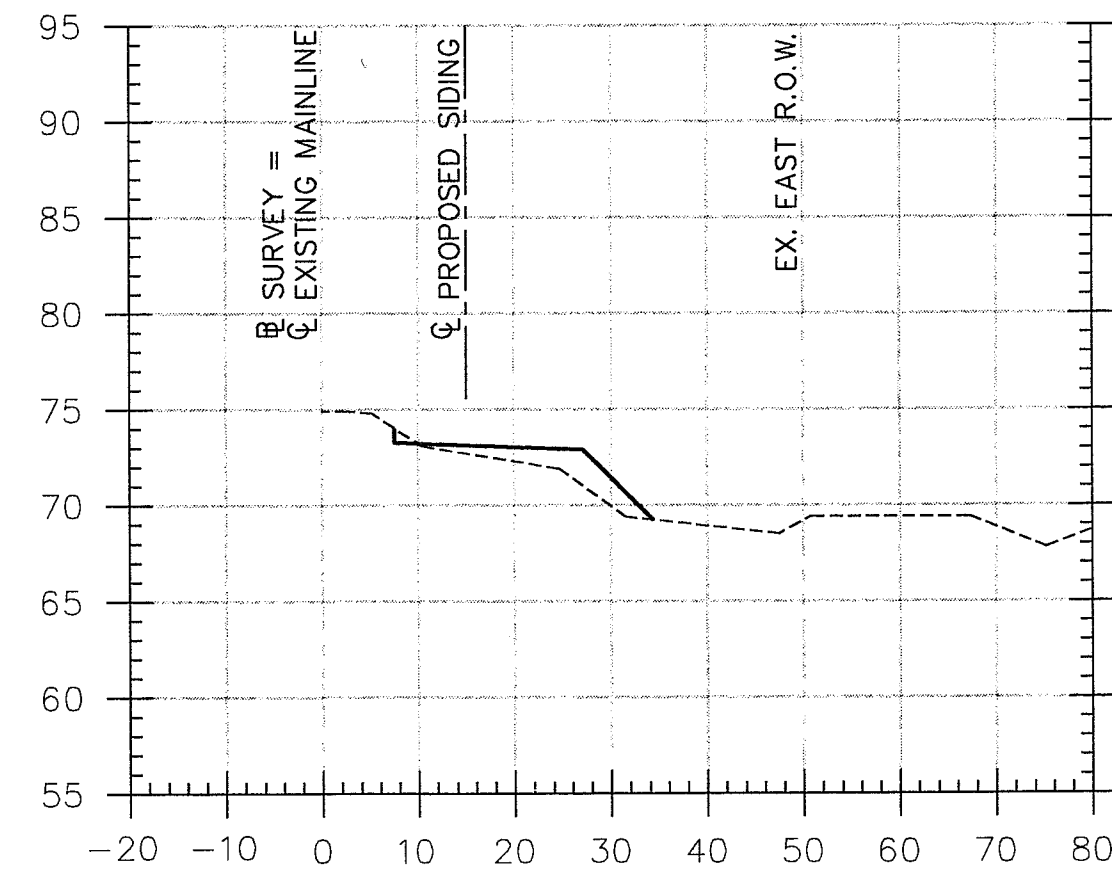
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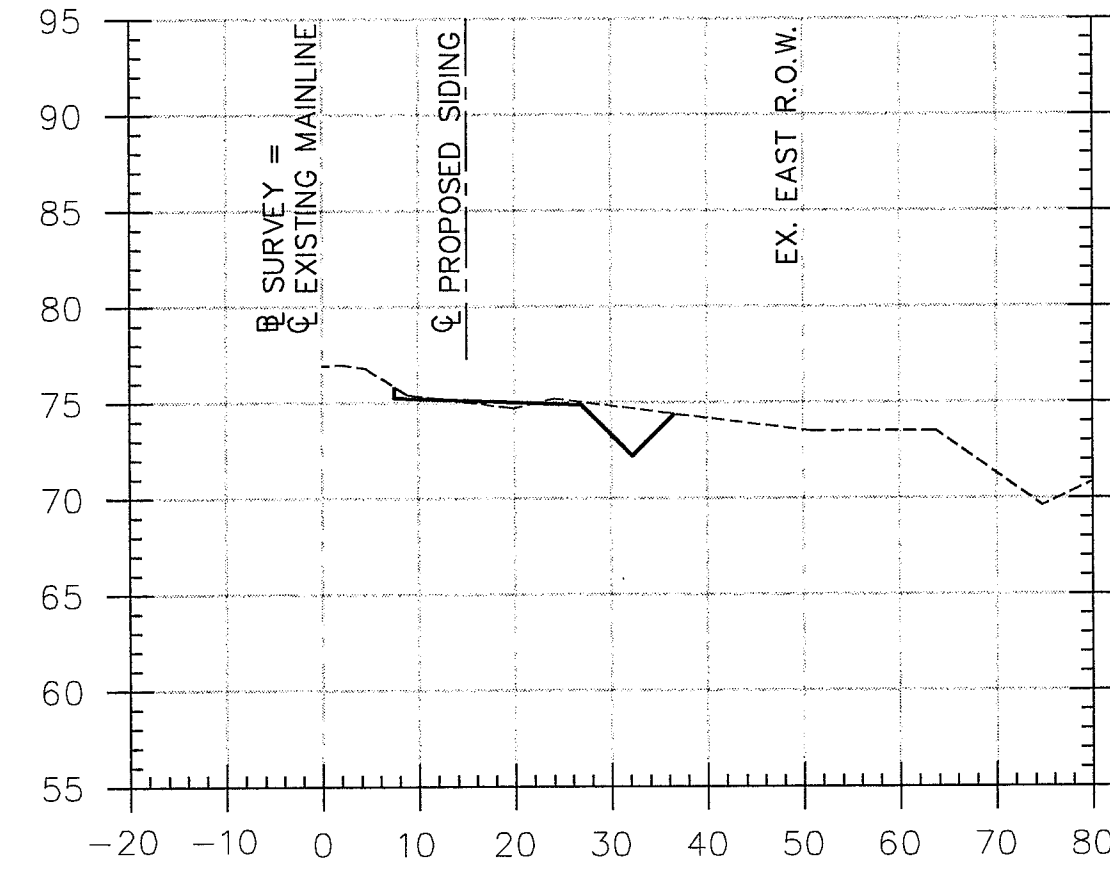
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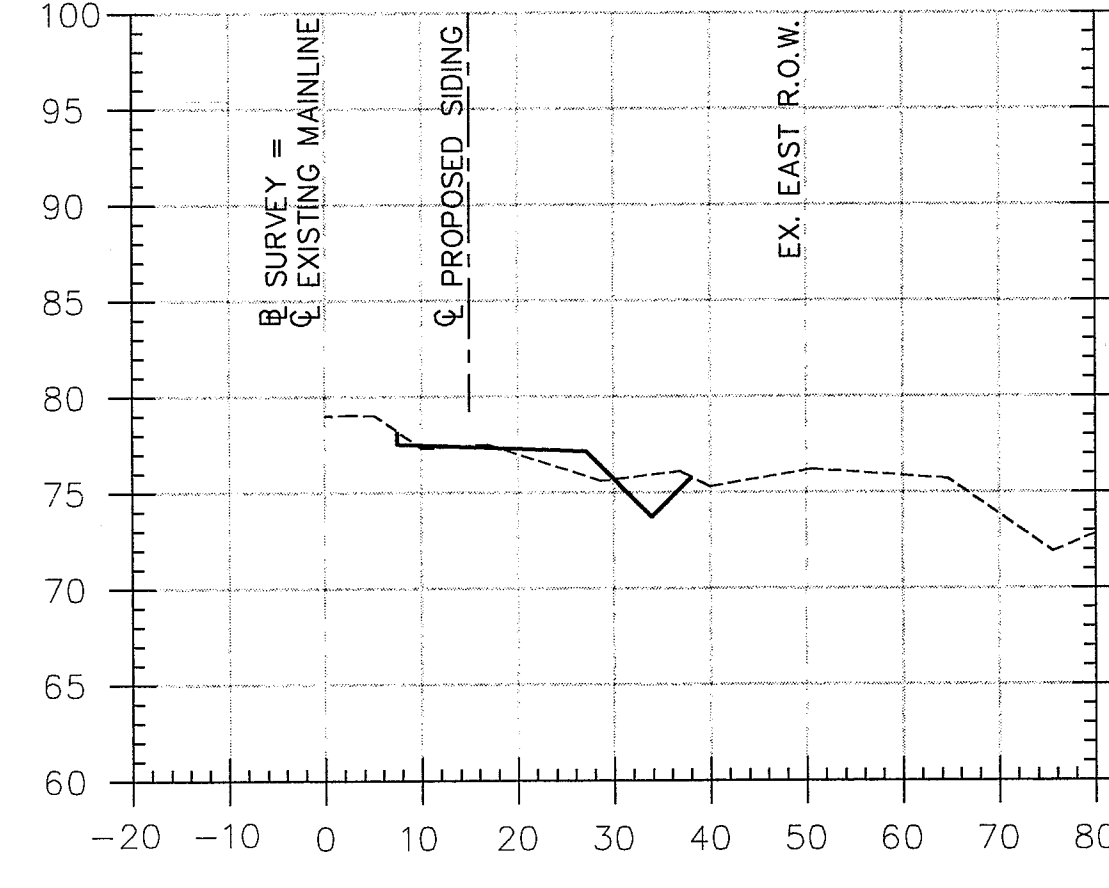
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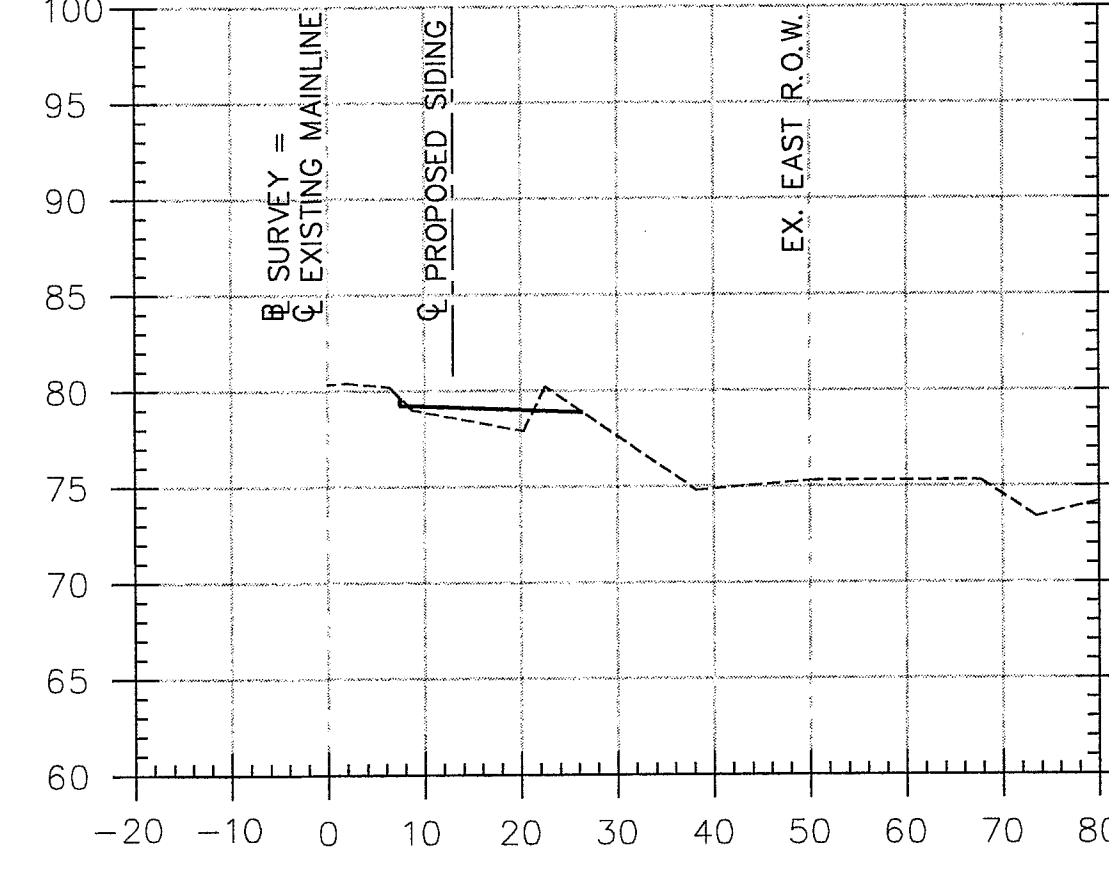
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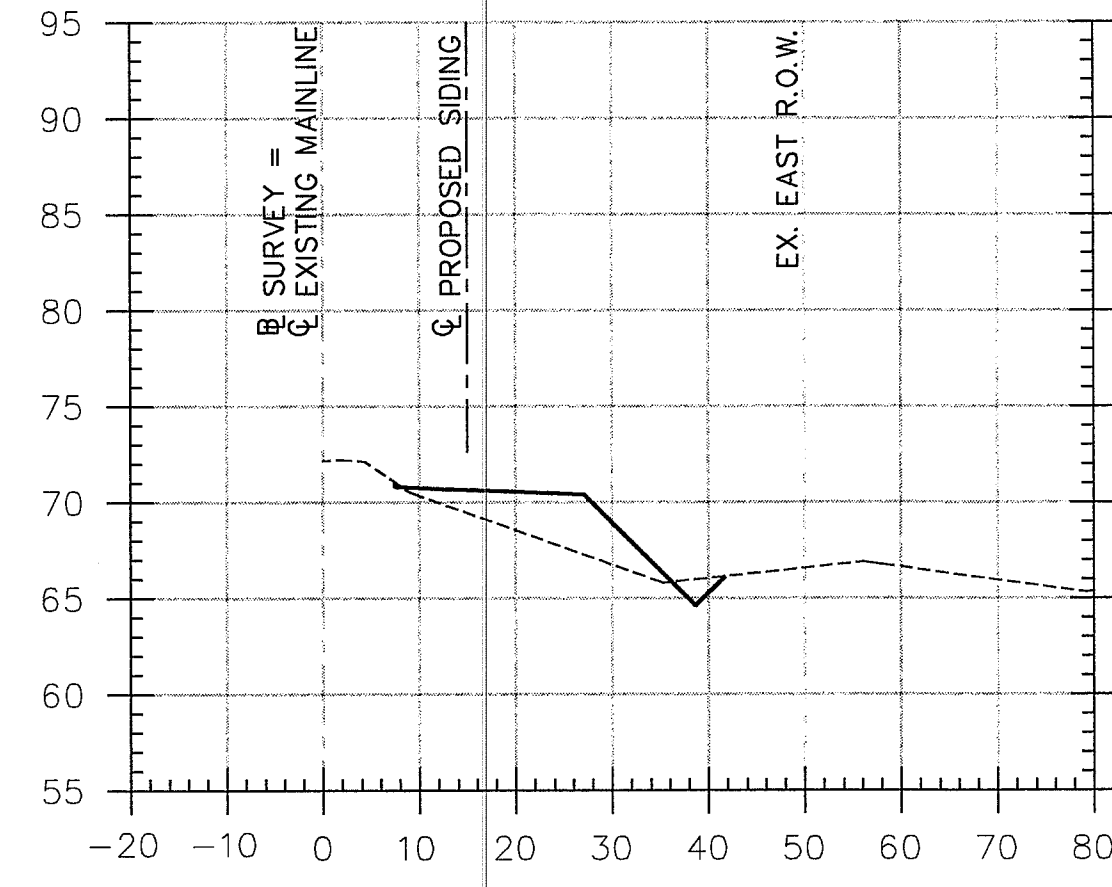
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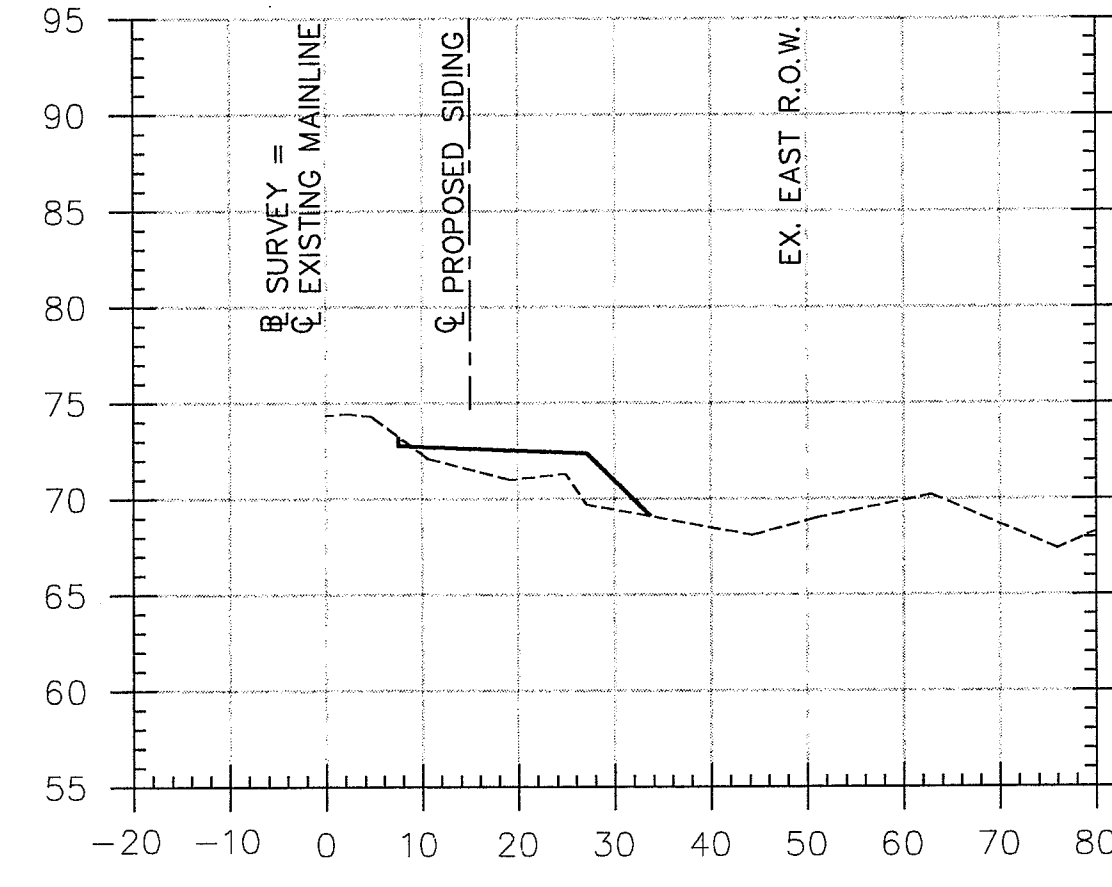
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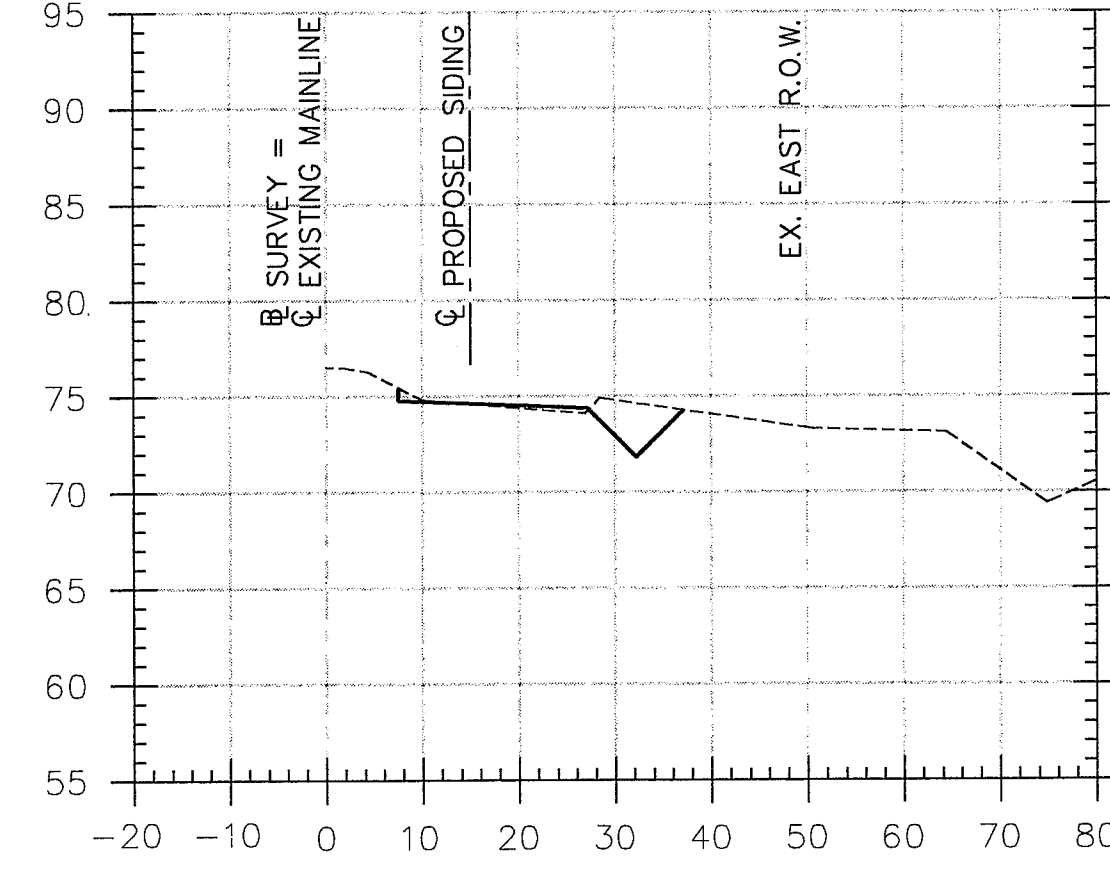
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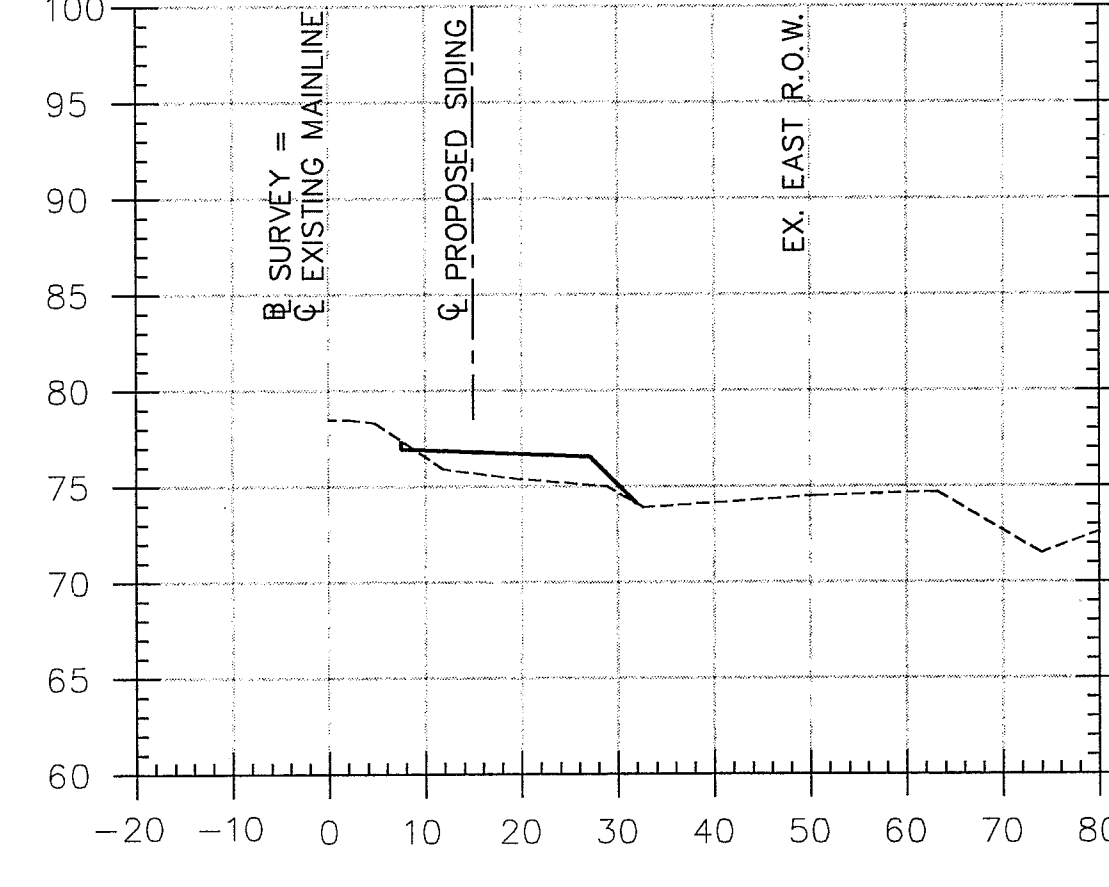
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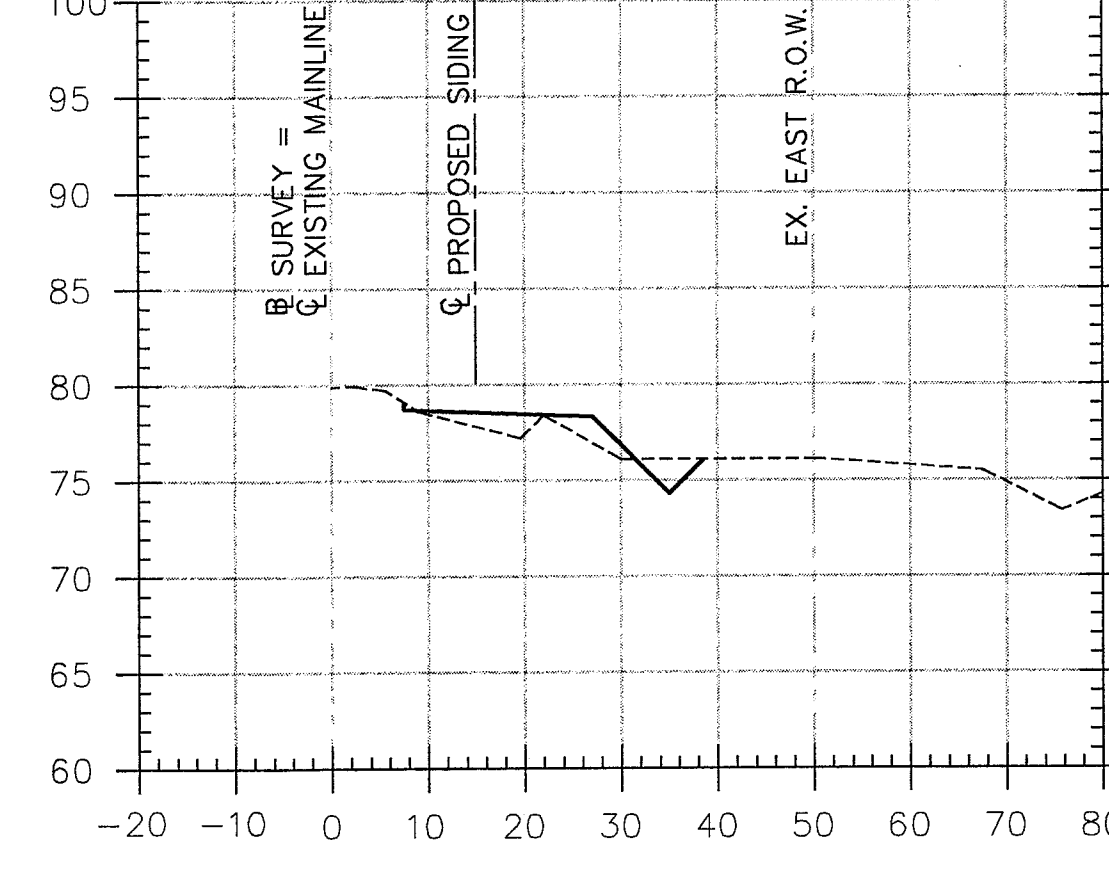
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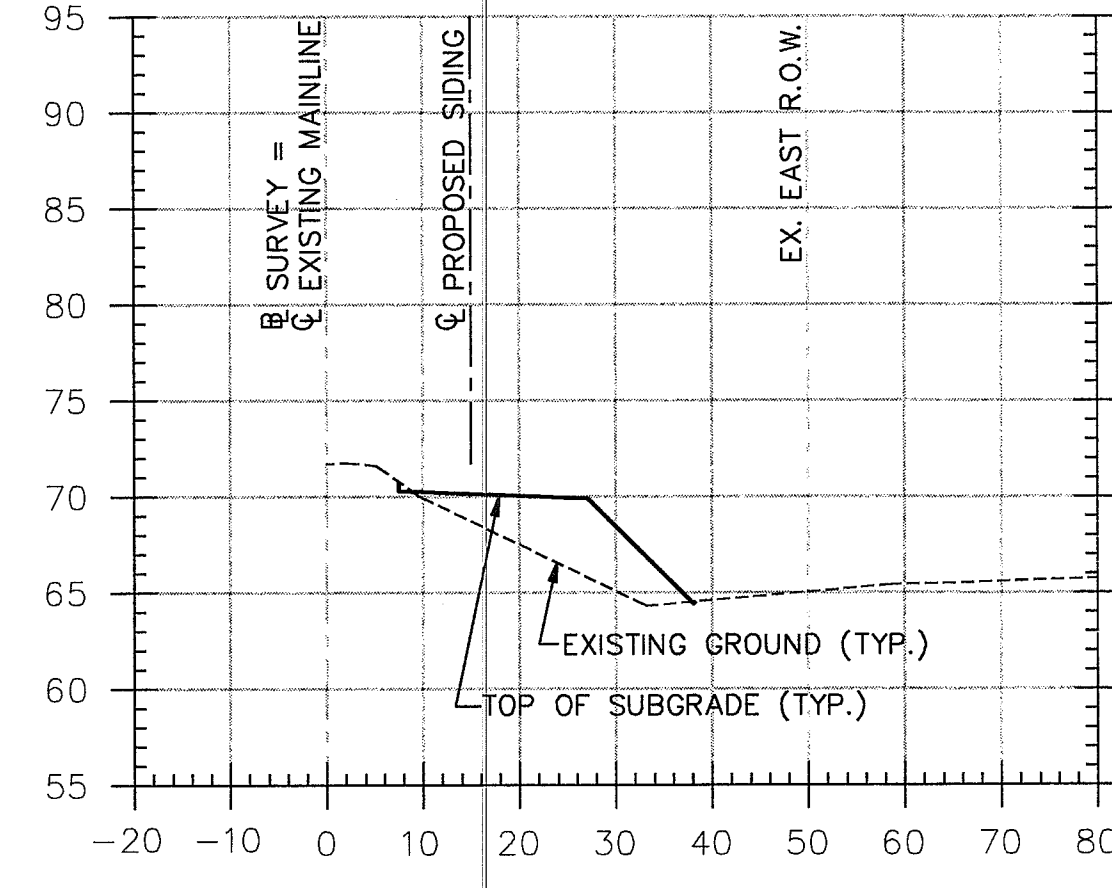
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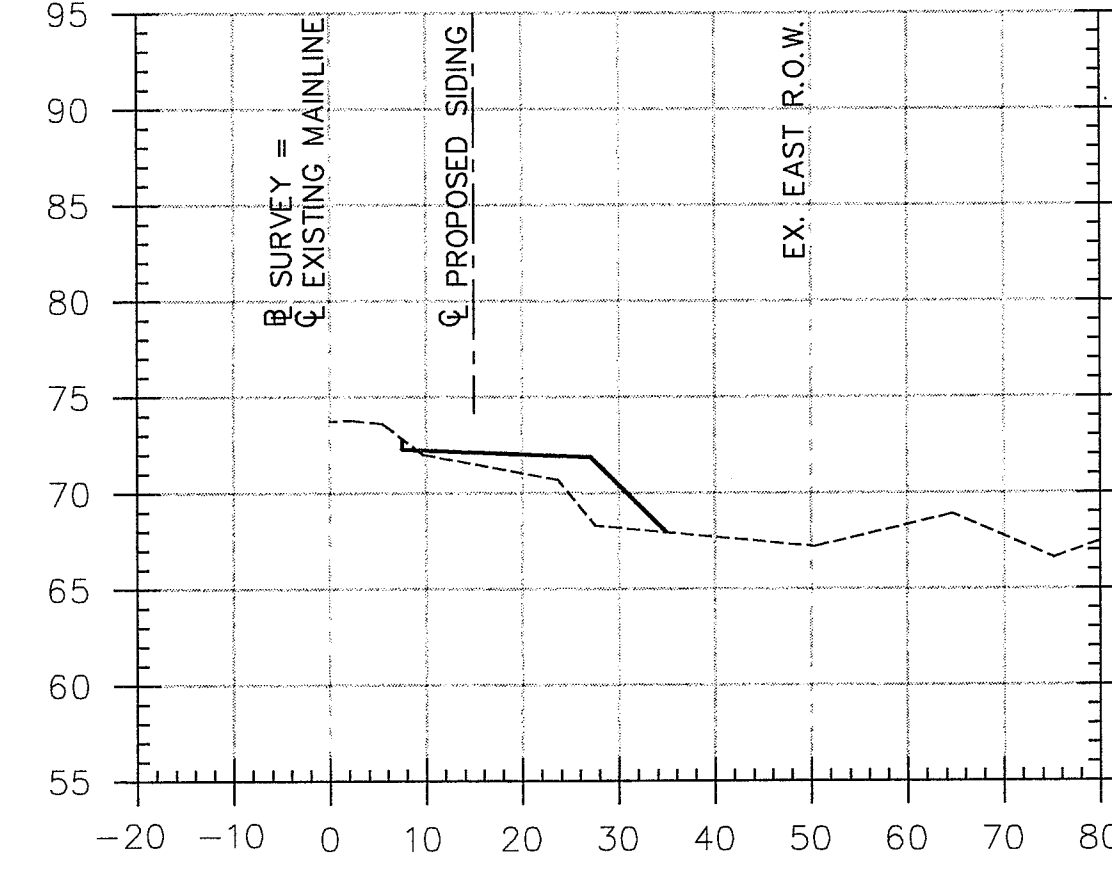
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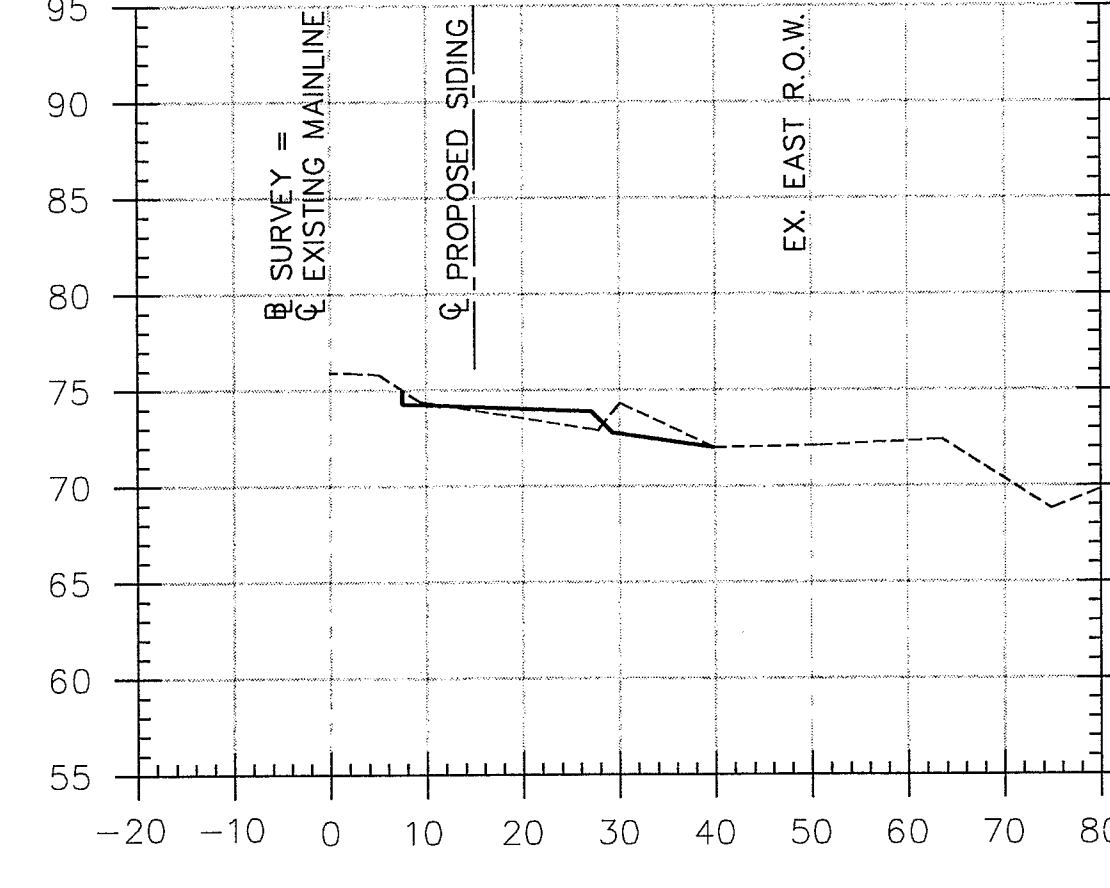
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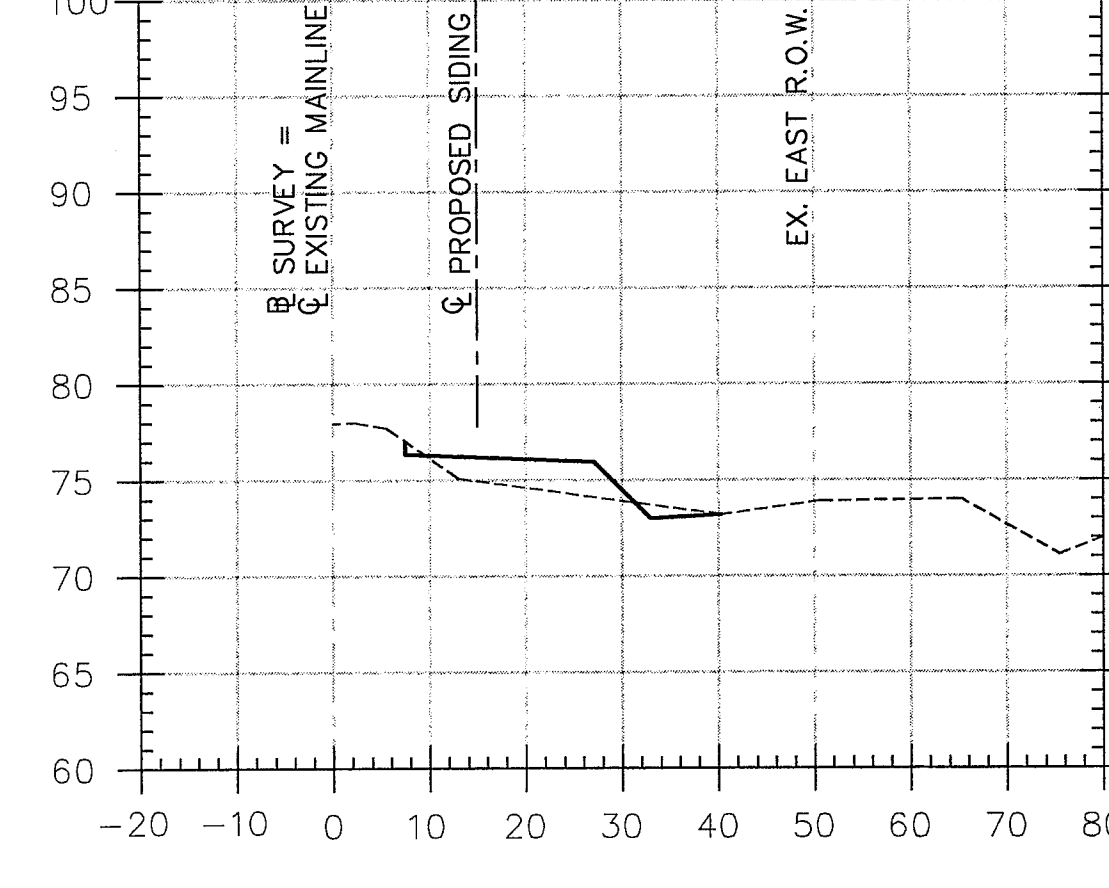
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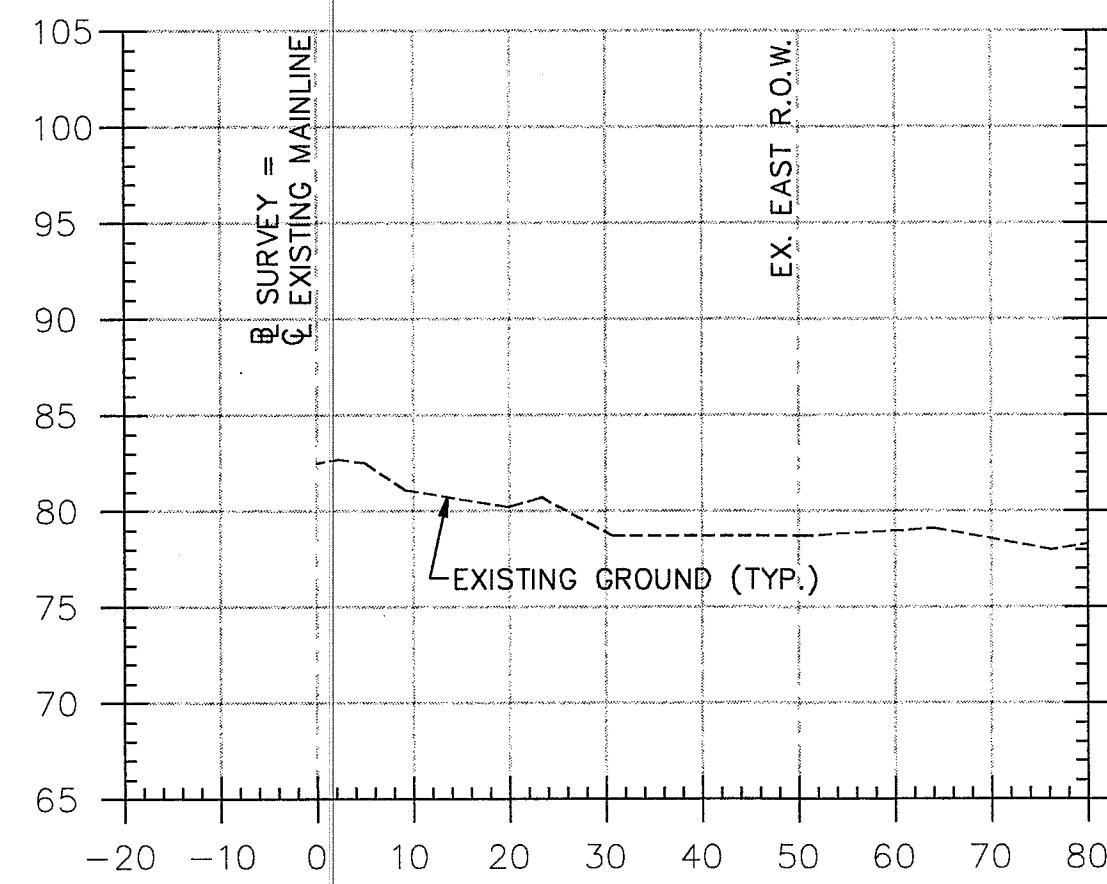
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BURLINGTON NORTHERN RAILROAD

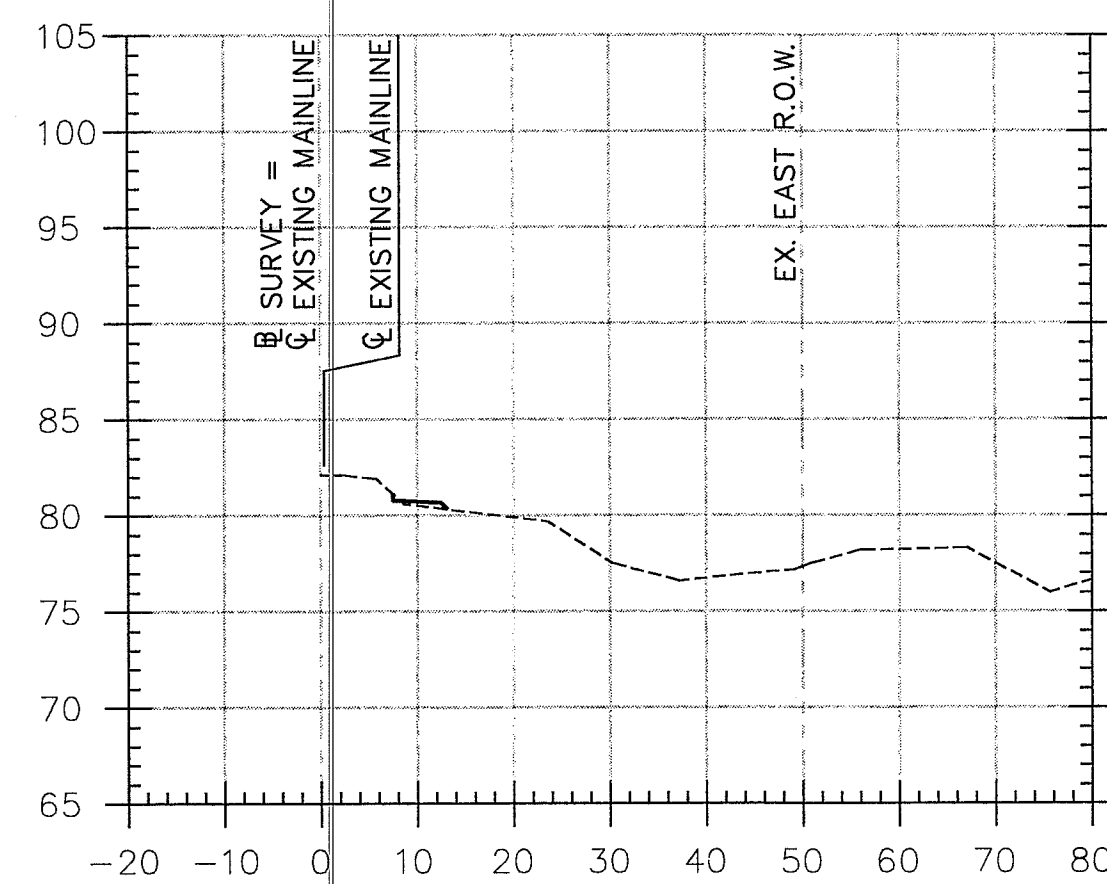


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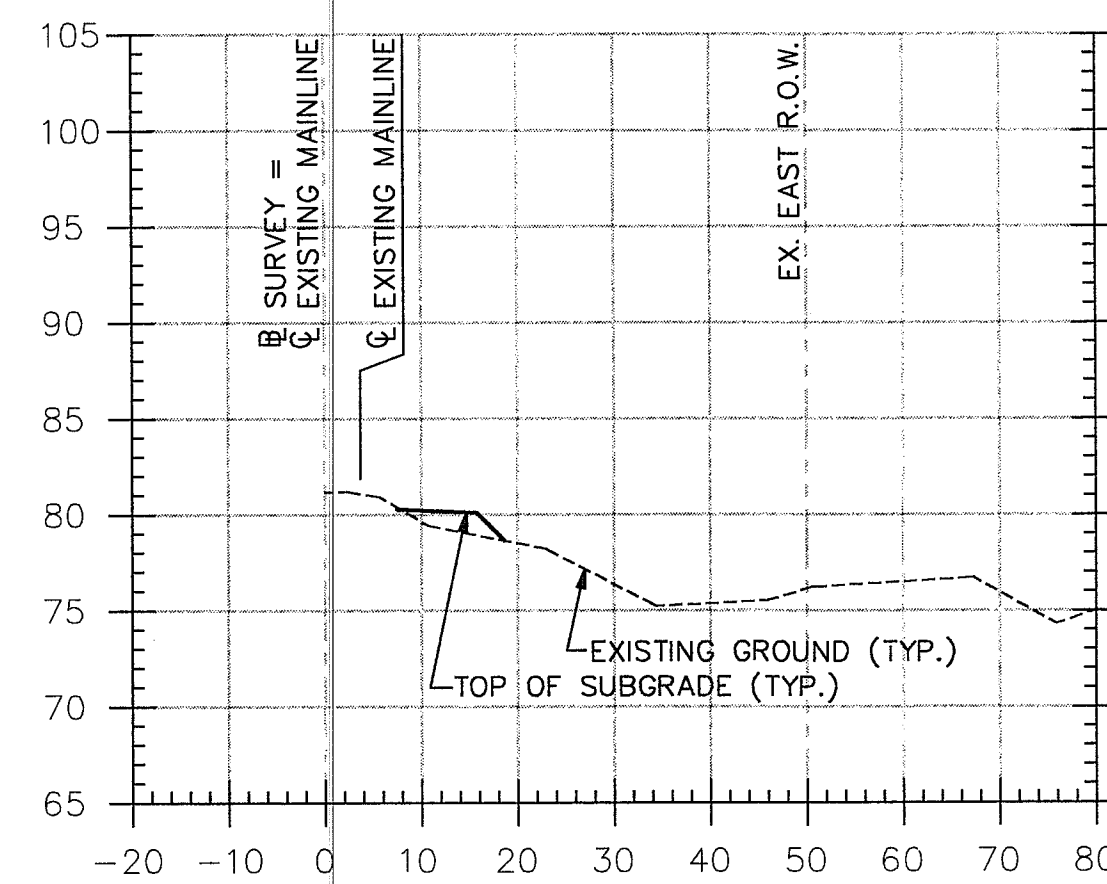
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156+00



155+00



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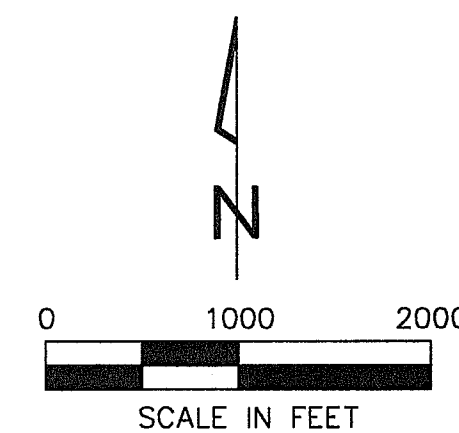
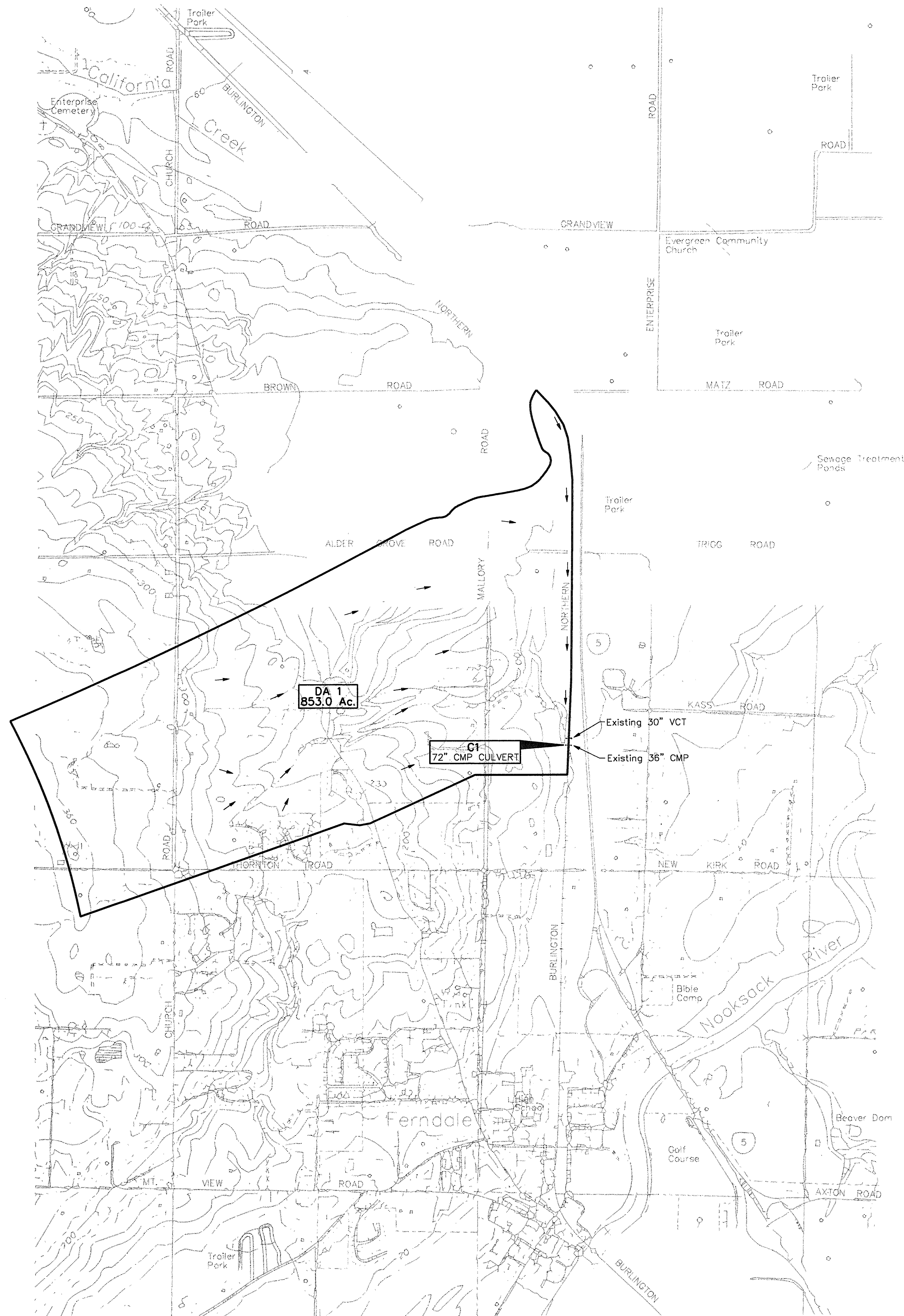
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605



DRAINAGE AREA	C	I in/hr	A acres	Q cfs
1	.205	.47	853.0	82.2

NOTE: RAINFALL INTENSITIES CALCULATED AT 100 YEAR
MEAN RECURRENCE INTERVAL

DRAINAGE AREA MAP

FERDALE

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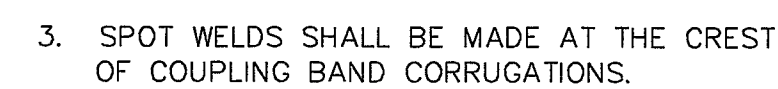
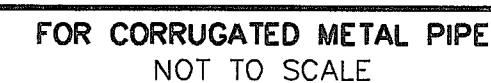
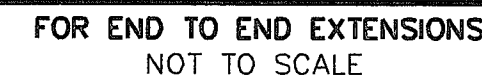
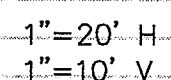
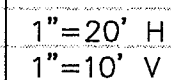
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105



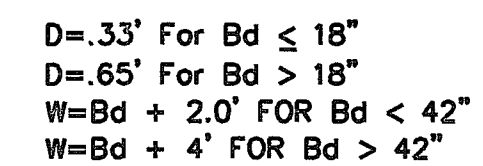
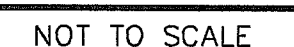
SHOWN: HELICAL C.S.P. COUPLING BAND

THE CONTRACTOR SHALL INSTALL PROPOSED CLASS IV CONCRETE CULVERTS WITHIN THE EXISTING RAILROAD EMBANKMENT SECTION BY JACK OR BORE METHODS AS INDICATED ON PLANS. HOWEVER, THE CONTRACTOR MAY INSTALL 12 GAGE CORRUGATED METAL PIPE CULVERTS OF THE SAME INSIDE DIAMETER BY OPEN CUT AS AN ALTERNATE PROVIDED HE CAN COMPLETE THE INSTALLATION AND RETURN THE EMBANKMENT TO ITS ORIGINAL CONDITION WITHIN A MAXIMUM OF FOUR HOURS. IF THE CONTRACTOR CHOOSES TO INSTALL CORRUGATED METAL PIPE CULVERTS HE SHALL COORDINATE WITH THE BN OPERATIONS ENGINEER TO SCHEDULE A FOUR HOUR WINDOW TEN (10) DAYS PRIOR TO THE PLANNED INSTALLATION. ALL CULVERTS INSTALLED BY OPEN CUT SHALL BE COORDINATED AS A SEPARATE CONSTRUCTION TIME. THE CONTRACTOR SHALL BE ASSESSED A **\$2,000** PER HOUR PENALTY FOR ANY DELAYS DURING OPEN CUT CULVERT INSTALLATION.

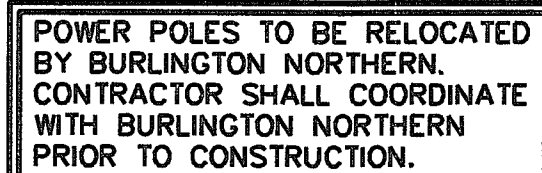
ALL REINFORCED CONCRETE CULVERT INSTALLATION SHALL BE IN ACCORDANCE WITH THE **AREA** SPECIFICATIONS.

ALL CORRUGATED METAL PIPE CULVERT INSTALLATION SHALL BE IN ACCORDANCE WITH THE BURLINGTON NORTHERN RAILROAD COMPANY INSTRUCTIONS FOR SELECTION, INSTALLATION, AND FABRICATION OF CORRUGATED METAL CULVERTS.

ALL CULVERTS CALLED OUT TO BE EXTENDED SHALL BE EXTENDED IN KIND TO A POINT 2 FEET BEYOND THE PROPOSED TOE OF SLOPE. THE ENDS OF THE EXISTING CULVERTS TO BE EXTENDED SHALL BE CLEANED AND STRAIGHTENED TO PROVIDE A SMOOTH CLEAN EDGE PRIOR TO PLACING NEW PIPE.




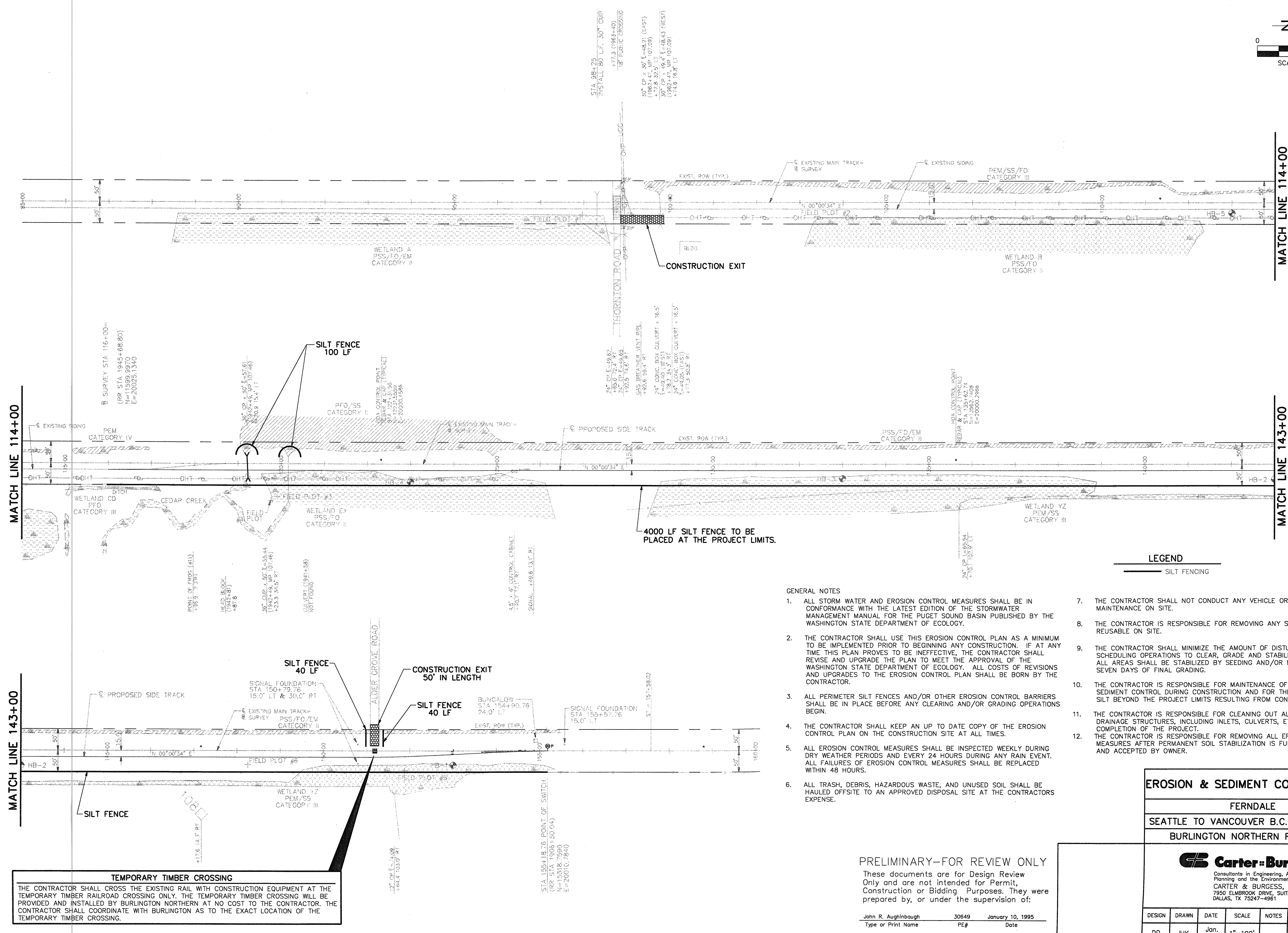
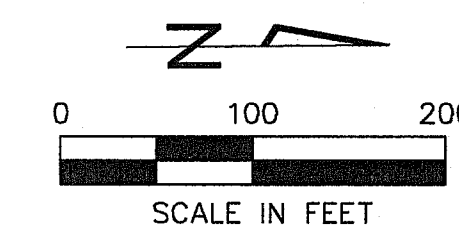
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CULVERT DETAILS						
FERNDALE						
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BURLINGTON NORTHERN RAILROAD						
 Carter Burgess Consultants in Engineering, Architecture, Planning and the Environment CARTER & BURGESS, INC. 7950 ELMBROOK DRIVE, SUITE 250 DALLAS, TX 75247-4961						
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- GENERAL NOTES**
- ALL STORM WATER AND EROSION CONTROL MEASURES SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE STORMWATER MANAGEMENT MANUAL FOR THE PUGET SOUND BASIN PUBLISHED BY THE WASHINGTON STATE DEPARTMENT OF ECOLOGY.
 - THE CONTRACTOR SHALL USE THIS EROSION CONTROL PLAN AS A MINIMUM TO BE IMPLEMENTED PRIOR TO BEGINNING ANY CONSTRUCTION. IF AT ANY TIME THIS PLAN PROVES TO BE INEFFECTIVE, THE CONTRACTOR SHALL REVISE AND UPGRADE THE PLAN TO MEET THE APPROVAL OF THE WASHINGTON STATE DEPARTMENT OF ECOLOGY. ALL COSTS OF REVISIONS AND UPGRADES TO THE EROSION CONTROL PLAN SHALL BE BORNE BY THE CONTRACTOR.
 - ALL PERIMETER SILT FENCES AND/OR OTHER EROSION CONTROL BARRIERS SHALL BE IN PLACE BEFORE ANY CLEARING AND/OR GRADING OPERATIONS BEGIN.
 - THE CONTRACTOR SHALL KEEP AN UP TO DATE COPY OF THE EROSION CONTROL PLAN ON THE CONSTRUCTION SITE AT ALL TIMES.
 - ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY DURING DRY WEATHER PERIODS AND EVERY 24 HOURS DURING ANY RAIN EVENT. ALL FAILURES OF EROSION CONTROL MEASURES SHALL BE REPLACED WITHIN 48 HOURS.
 - ALL TRASH, DEBRIS, HAZARDOUS WASTE, AND UNUSED SOIL SHALL BE HAULED OFFSITE TO AN APPROVED DISPOSAL SITE AT THE CONTRACTORS EXPENSE.
 - THE CONTRACTOR SHALL NOT CONDUCT ANY VEHICLE OR EQUIPMENT MAINTENANCE ON SITE.
 - THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY SILT THAT IS NOT REUSABLE ON SITE.
 - THE CONTRACTOR SHALL MINIMIZE THE AMOUNT OF DISTURBED AREA BY SCHEDULING OPERATIONS TO CLEAR, GRADE AND STABILIZE IN SEQUENCE. ALL AREAS SHALL BE STABILIZED BY SEEDING AND/OR MULCHING WITHIN SEVEN DAYS OF FINAL GRADING.
 - THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION AND FOR THE REMOVAL OF SILT BEYOND THE PROJECT LIMITS RESULTING FROM CONSTRUCTION.
 - THE CONTRACTOR IS RESPONSIBLE FOR CLEANING OUT ALL STORM DRAINAGE STRUCTURES, INCLUDING INLETS, CULVERTS, ETC. PRIOR TO COMPLETION OF THE PROJECT.
 - THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL EROSION CONTROL MEASURES AFTER PERMANENT SOIL STABILIZATION IS FULLY ESTABLISHED AND ACCEPTED BY OWNER.

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EROSION & SEDIMENT CONTROL PLAN
FERDALE
SEATTLE TO VANCOUVER B.C. RAIL SERVICE
BURLINGTON NORTHERN RAILROAD



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TEMPORARY TIMBER CROSSING
THE CONTRACTOR SHALL CROSS THE EXISTING RAIL WITH CONSTRUCTION EQUIPMENT AT THE TEMPORARY TIMBER RAILROAD CROSSING ONLY. THE TEMPORARY TIMBER CROSSING WILL BE PROVIDED AND INSTALLED BY BURLINGTON NORTHERN AT NO COST TO THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH BURLINGTON AS TO THE EXACT LOCATION OF THE TEMPORARY TIMBER CROSSING.

SITE DESCRIPTION		EROSION AND SEDIMENT CONTROLS	
PROJECT LIMITS:	THE SIDING EXTENSION BEGINS APPROXIMATELY 1,724 FEET NORTH OF THORNTON ROAD AND ENDS 5,624 FEET NORTH OF THORNTON ROAD, IS APPROXIMATELY 0.74 MILES LONG AND IS LOCATED EAST OF AND PARALLEL TO THE EXISTING BURLINGTON NORTHERN RAIL LINE. THE SIDING EXTENSION IS LOCATED WITHIN THE NORTHERN LIMITS OF THE CITY OF FERNDAL, WASHINGTON.	SOIL STABILIZATION PRACTICES:	OTHER EROSION AND SEDIMENT CONTROLS:
		<div><div>x</div><div>Temporary seeding Permanent planting, sodding or seeding Mulching Soil retention blanket Buffer Zones</div></div> <div><div>x</div><div>Preservation of natural resources</div></div> <div><div>x</div><div>Other: Disturbed areas on which construction activity has ceased (temporarily or permanently) shall be stabilized within 7 days unless activities are scheduled to resume within 14 days.</div></div>	<div>Maintenance: All erosion and sediment controls will be maintained in good working order. If a repair is necessary, it will be done at the earliest date possible, but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. The areas adjacent to creeks and drainageways shall have priority followed by devices protecting drainage ditches.</div> <div>Inspection: An inspection will be performed by the Engineer every week as well as after every half inch or more of rain (as recorded on a non-freezing rain gauge to be located at the Project Site). An Inspection and Maintenance Report will be made per each inspection. Based on the Inspection results, the controls shall be revised per the Inspection report.</div> <div>Waste Materials: All waste materials will be collected and stored in a securely lidded metal dumpster. The dumpster will meet all state and local city solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as necessary or as required by local regulation, and the trash will be hauled to a legal dump. No construction waste material will be buried on site.</div> <div>Hazardous Waste (Including Spill Reporting): At a minimum, any products in the following categories are considered to be hazardous: paints, acids for cleaning masonry surfaces, cleaning solvents, asphalt products, chemical additives for soil stabilization, or concrete curing compounds and additives, and all petroleum products. In the event of a spill which may be hazardous, the spill Coordinator should be contacted immediately. Washout of concrete trucks shall not be performed onsite without a system of containment. Wash water and concrete will not be allowed to enter any storm drain or water way. These discharges are considered non-allowable non-storm water discharges. Concrete trucks shall not dump into storm drains or sanitary sewers.</div> <div>Sanitary Waste: All sanitary waste will be collected from the portable units as necessary or as required by local regulation by a licensed sanitary waste management contractor.</div> <div>Offsite Vehicle Tracking:<div><div>x</div><div>Haul roads dampened for dust control</div></div><div><div>x</div><div>Loaded haul trucks to be covered with tarpaulin</div></div><div><div>x</div><div>Excess dirt on road removed daily</div></div><div><div>x</div><div>Stabilized construction exit</div></div></div>
NET LENGTH OF PROJECT:	SIDING EXTENSION PROJECT BEGIN PROJECT AT STATION 116+00.00 END PROJECT AT STATION 155+18.76 EXTENSION LENGTH = 3,918.76 FT = 0.74 MI	STRUCTURAL PRACTICES:	
PROJECT DESCRIPTION:	CONSTRUCTION OF 3,946.34 FEET OF RAILROAD SIDING.	<div><div>x</div><div>Silt fences Hay bales Rock berms</div></div> <div><div>x</div><div>Diversion, interceptor, or perimeter dikes Diversion, interceptor, or perimeter swales Pipe slope drains Paved flumes</div></div> <div><div>x</div><div>Rock bedding at construction exit Timber matting at construction exit Channel liners Sediment traps Sediment basins Storm inlet sediment trap Stone outlet structures Curbs and gutters Storms sewers Velocity control devices</div></div>	
MAJOR SOIL DISTURBING ACTIVITIES:	SOIL DISTURBING ACTIVITIES WILL INCLUDE PREPARING THE RIGHT-OF-WAY, CLEARING AND GRUBBING, GRADING, EXCAVATION AND EMBANKMENT FOR ROADBEDS. CONSTRUCTION OF SURFACE DITCHES AND DRAINAGE CULVERTS. ALSO EXCAVATION AND EMBANKMENT FOR SIGNAL OFFSETS, ROAD CROSSINGS AND PUBLIC UTILITIES.	NARRATIVE – SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:	
TOTAL PROJECT AREA:	3.7 ACRES	The order of activities will be as follows:	
TOTAL AREA TO BE DISTURBED:	3.7 ACRES	<div><div>1.</div><div>Install construction exits at the site access points.</div></div> <div><div>2.</div><div>Install silt fences at the locations shown on the plans.</div></div> <div><div>3.</div><div>Install silt fence along the perimeter of stockpiled materials.</div></div> <div><div>4.</div><div>Install rock check dam at culvert crossings.</div></div> <div><div>5.</div><div>Seed entire disturbed area from base of sub-ballast to limit of right-of-way.</div></div> <div><div>6.</div><div>When all construction is complete and site is stabilized and approved by Project Engineer, remove all silt fences and temporary erosion and sediment controls and stabilize any existing areas disturbed by their removal.</div></div>	
WEIGHTED RUNOFF COEFFICIENT AFTER CONSTRUCTION:	SIDING = 0.45	STORM WATER MANAGEMENT:	
EXISTING CONDITION OF SOIL AND VEGETATIVE COVER:	THE EXISTING SURFACE CONDITIONS ALONG THE ALIGNMENT CONSISTS MAINLY OF AN ESTABLISHED ROADSIDE DRAINAGE DITCH THAT HAS DEVELOPED VARIOUS HIGH SPOTS ALONG THE FLOWLINE PREVENTING PROPER DRAINAGE. DUE TO THE POOR DRAINAGE IN THIS DITCH THERE ARE SEVERAL AREAS OF EXISTING WETLAND VEGETATION AS WELL AS NATIVE GRASSLAND. THE ENTIRE SITE IS COMPLETELY COVERED WITH VEGETATION. THE EXISTING TOPSOIL CONSISTS OF SOFT, BLACK, GRAVELLY, SANDY, ORGANIC SILT TO A AN APPROXIMATE DEPTH OF 1 TO 1.5 FEET.	Drainage will be collected in grass lined channels. All areas affected by construction will be stabilized by vegetation or ballast. Silt fencing will be placed and maintained within disturbed drainage channel until all vegetative stabilization is fully established.	REMARKS: All waterways shall be cleared as soon as practicable of temporary embankment, temporary bridges, matting, falsework, piling, debris or other obstructions placed during construction operations that are not a part of the finished work.
NAME OF RECEIVING WATERS:	DRAINAGE FROM THE SITE WILL BE COLLECTED IN GRASS LINED DITCHES WHICH RUN PARALLEL TO THE PROJECTS. THE DITCHES WILL DIRECT RUNOFF TO EXISTING CULVERTS WHICH CROSS I-5 AND CONVEY RUNOFF EAST TO OTHER DRAINAGE DITCHES WHICH EVENTUALLY TRANSPORT THE RUNOFF TO THE NOOKSACK RIVER.		

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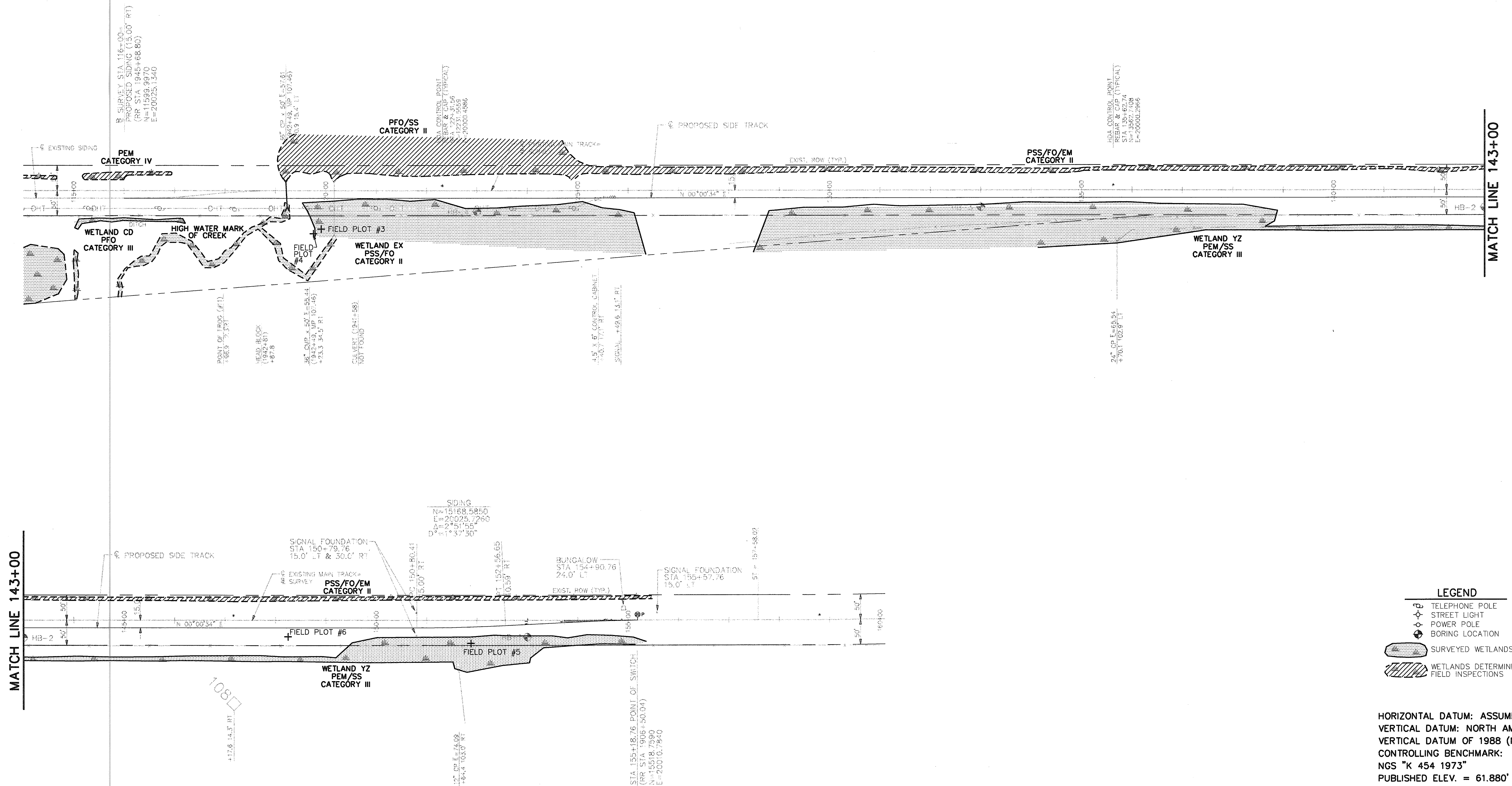
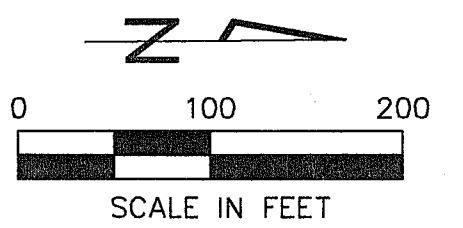
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Date

EROSION CONTROL NOTES						
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<div><div></div><div>Carter & Burgess Consultants in Engineering, Architecture, Planning and the Environment CARTER & BURGESS, INC. 7950 ELMBROOK DRIVE, SUITE 250 DALLAS, TX 75247-4961</div></div>						
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DD	JHK	Jan. 1995	NONE		FDECNOT	12



- LEGEND**
- TELEPHONE POLE
 - ⊕ STREET LIGHT
 - ⊕ POWER POLE
 - ⊕ BORING LOCATION
 - ▨ SURVEYED WETLANDS
 - ▨ WETLANDS DETERMINED BY FIELD INSPECTIONS

HORIZONTAL DATUM: ASSUMED
 VERTICAL DATUM: NORTH AMERICAN
 VERTICAL DATUM OF 1988 (NAVD 88)
 CONTROLLING BENCHMARK:
 NGS "K 454 1973"
 PUBLISHED ELEV. = 61.880'

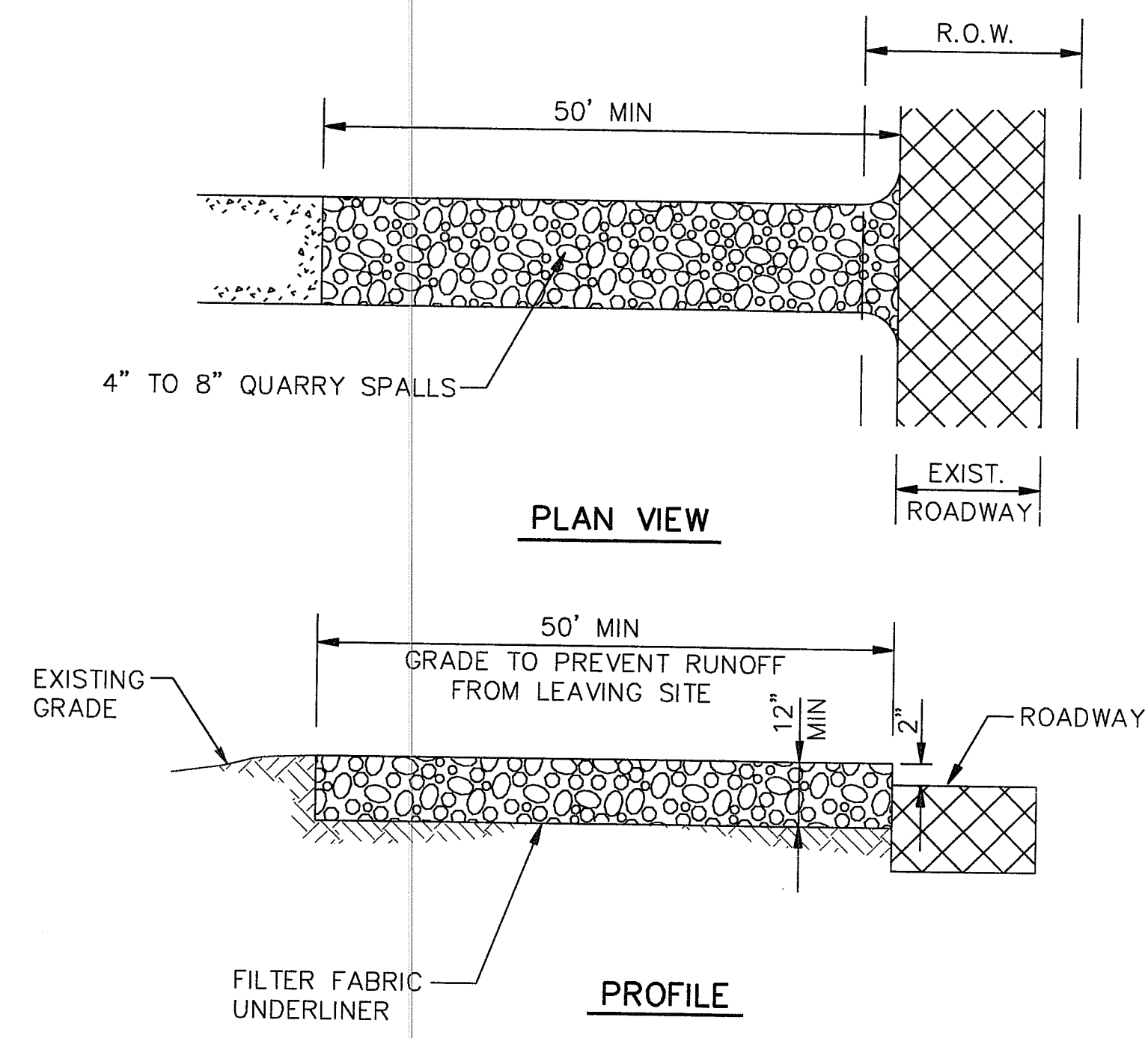
RECONNED & SURVEYED WETLANDS

FERNDAL
 SEATTLE TO VANCOUVER B.C. RAIL SERVICE
 BURLINGTON NORTHERN RAILROAD

Carter Burgess
 Consultants in Engineering, Architecture,
 Planning and the Environment
 CARTER & BURGESS, INC.
 7950 ELMBROOK DRIVE, SUITE 250
 DALLAS, TX 75247-4961

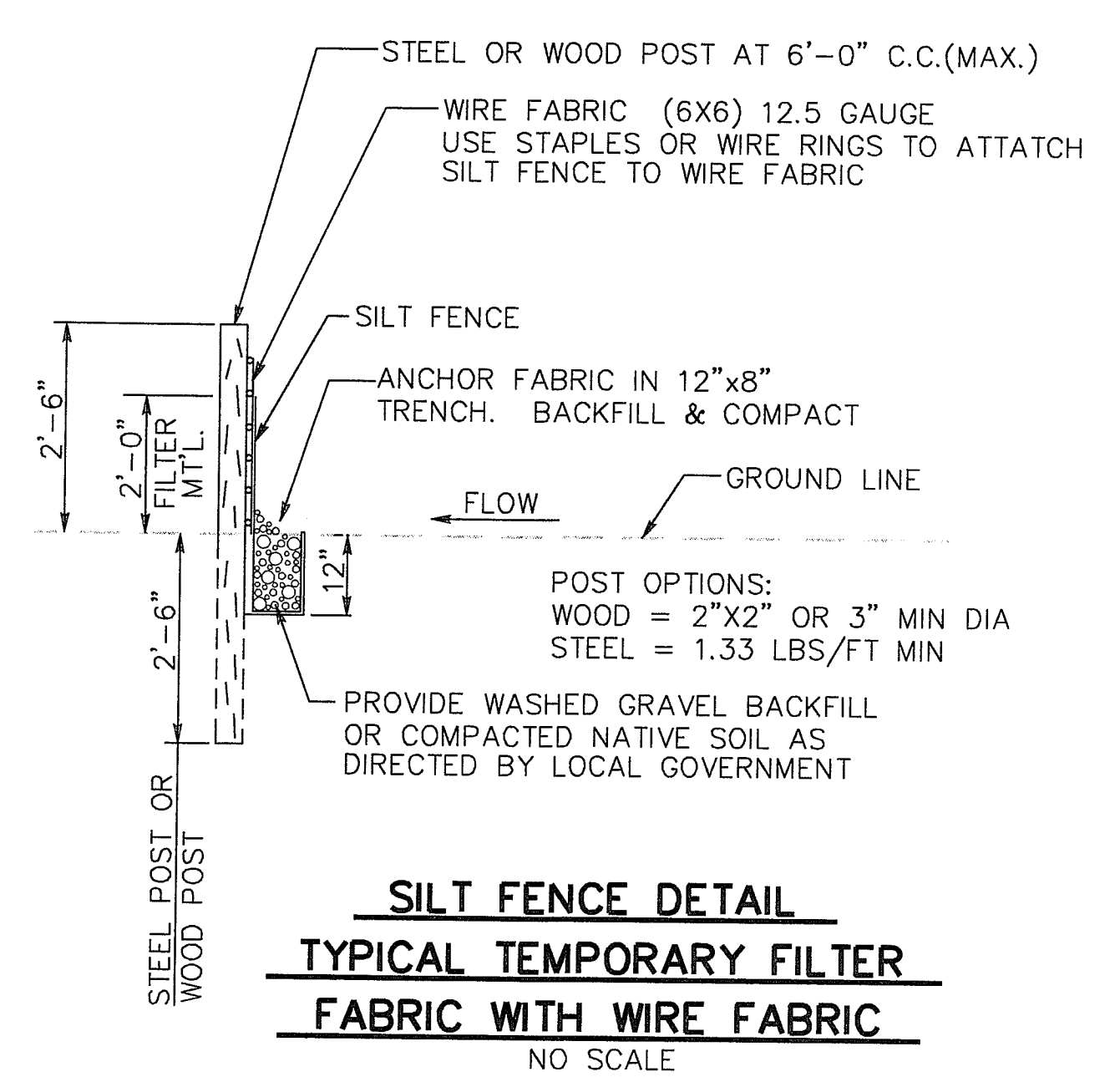
DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
DD	JHK	Jan. 1995	1"=100'		RECONFD	15

507

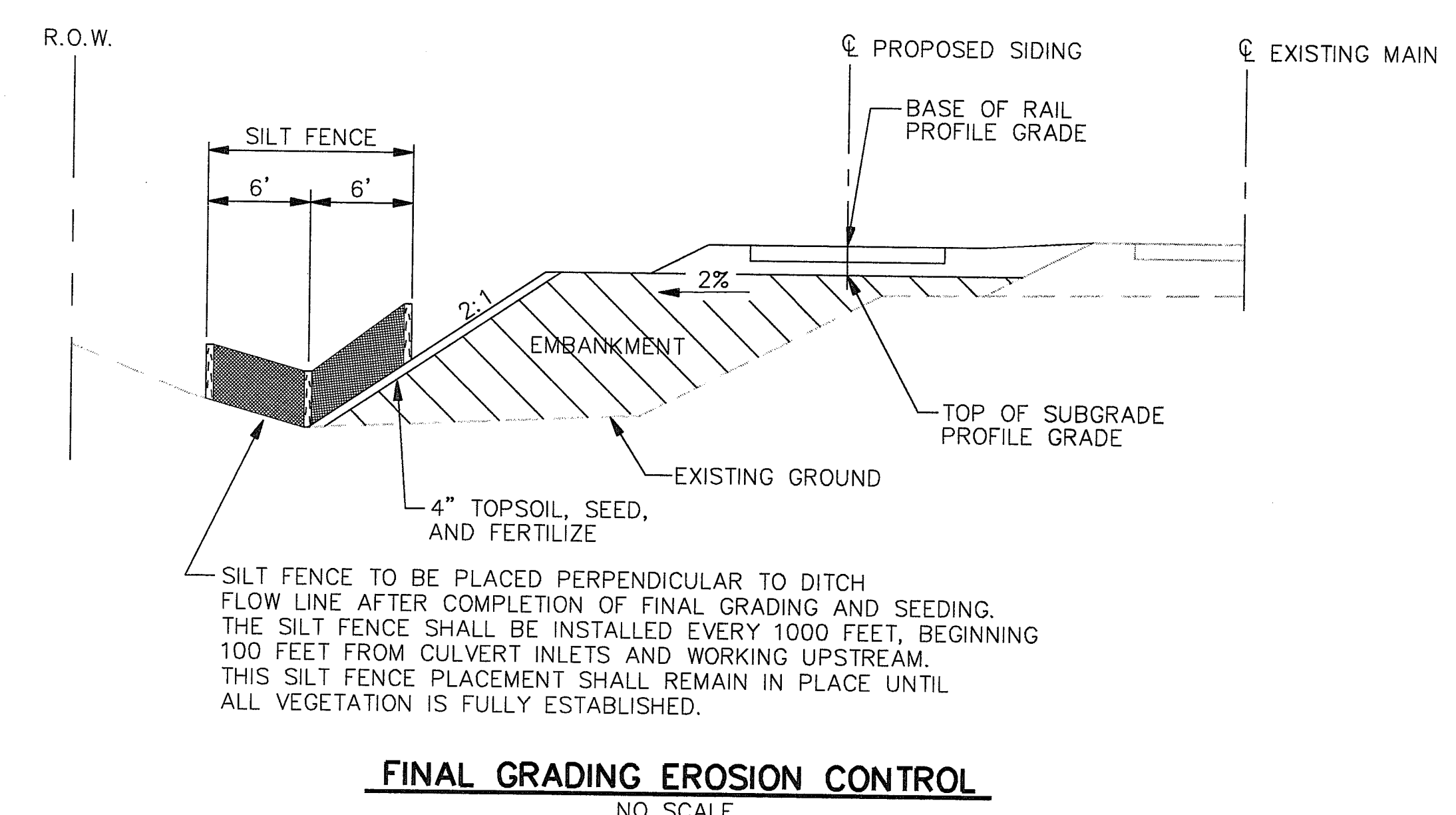


CONSTRUCTION EXIT
NO SCALE

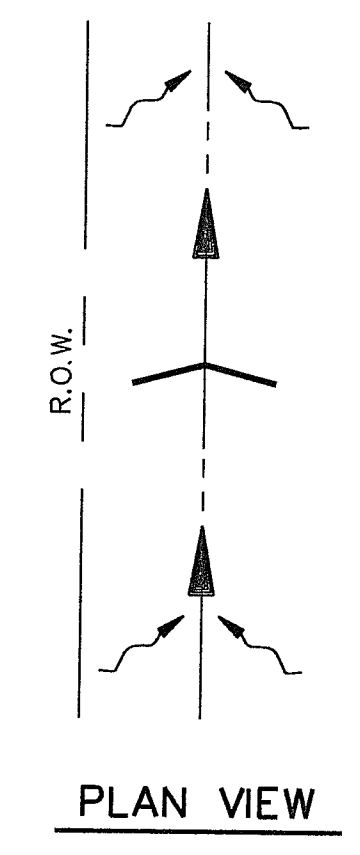
NOTE: LOCATION OF CONSTRUCTION EXIT TO BE DETERMINED DURING CONSTRUCTION BY CONTRACTOR WITH APPROVAL OF ENGINEER AND OWNER.




SILT FENCE DETAIL
TYPICAL TEMPORARY FILTER
FABRIC WITH WIRE FABRIC
NO SCALE



FINAL GRADING EROSION CONTROL
NO SCALE

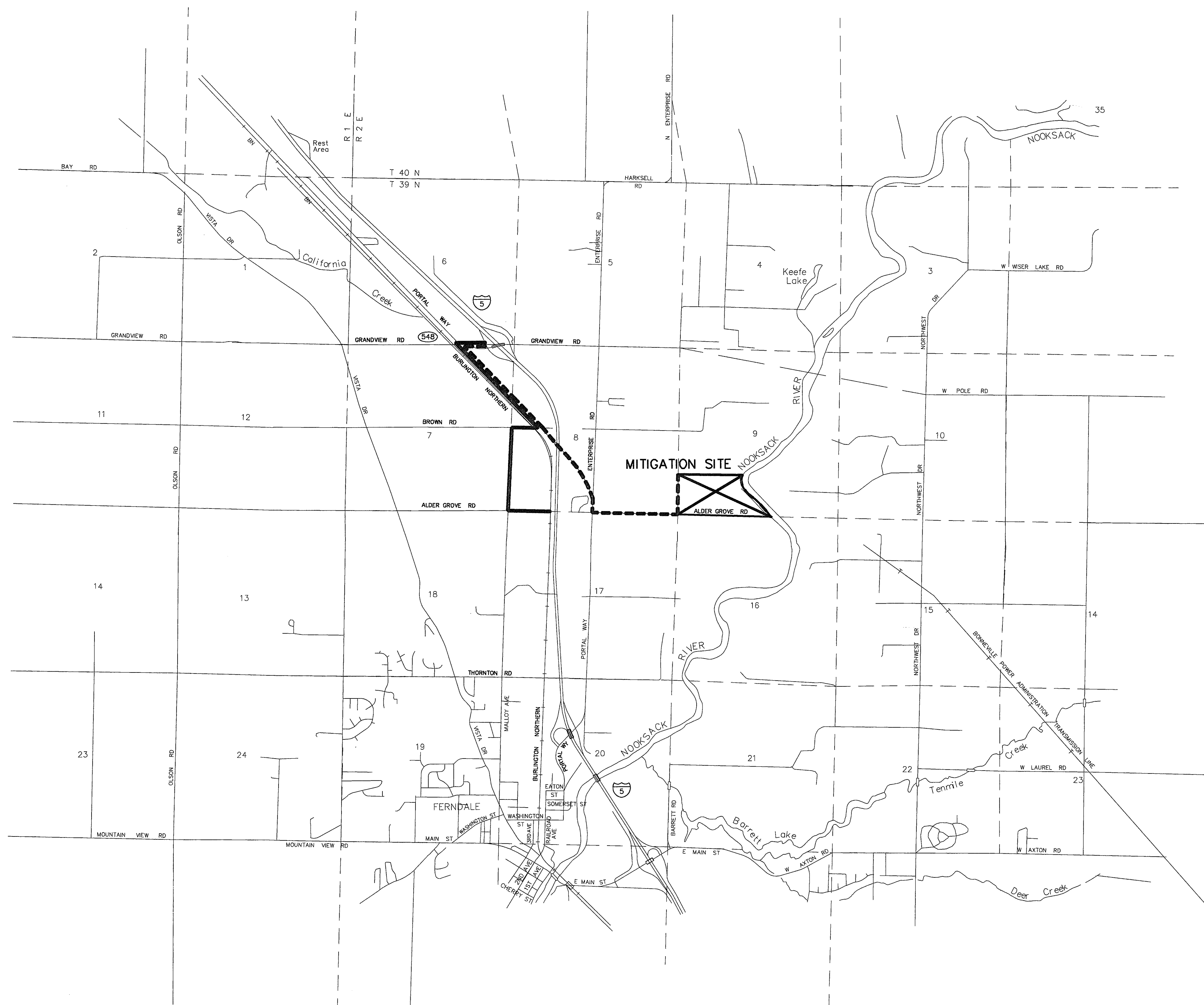
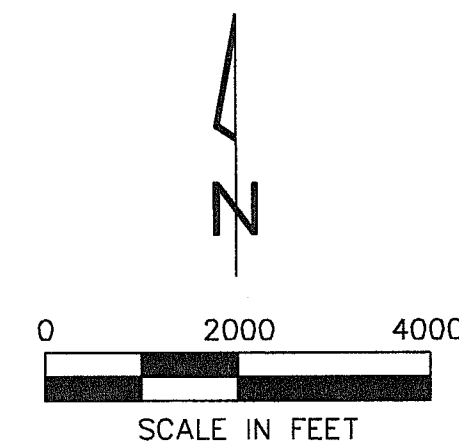


EROSION CONTROL DETAILS						
FERDALE						
SEATTLE TO VANCOUVER B.C. RAIL SERVICE						
BURLINGTON NORTHERN RAILROAD						
 Carter & Burgess Consultants in Engineering, Architecture, Planning and the Environment CARTER & BURGESS, INC. 7950 ELMBROOK DRIVE, SUITE 250 DALLAS, TX 75247-4961						
DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
DD	JHK	Jan. 1995	NONE		FDECDET	13

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John R. Aughinbaugh	30649	January 10, 1995
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507



LEGEND
 — HAUL ROUTE
 - - - MITIGATION SITE HAUL ROUTE

HAUL ROUTE MAP

FERNDALE

SEATTLE TO VANCOUVER B.C. RAIL SERVICE

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John R. Aughinbaugh	30649	January 10, 1995
Type or Print Name	PE#	Date

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
DD	JHK	Jan, 1995	1"=2000'		FD-HAUL	14