Minn. Proj. No. BROS 5504 (126)

MINNESOTA DEPARTMENT OF TRANSPORTATION
OLMSTED COUNTY - S.P. 55-598-53

OLMSTED COUNTY ROAD 120

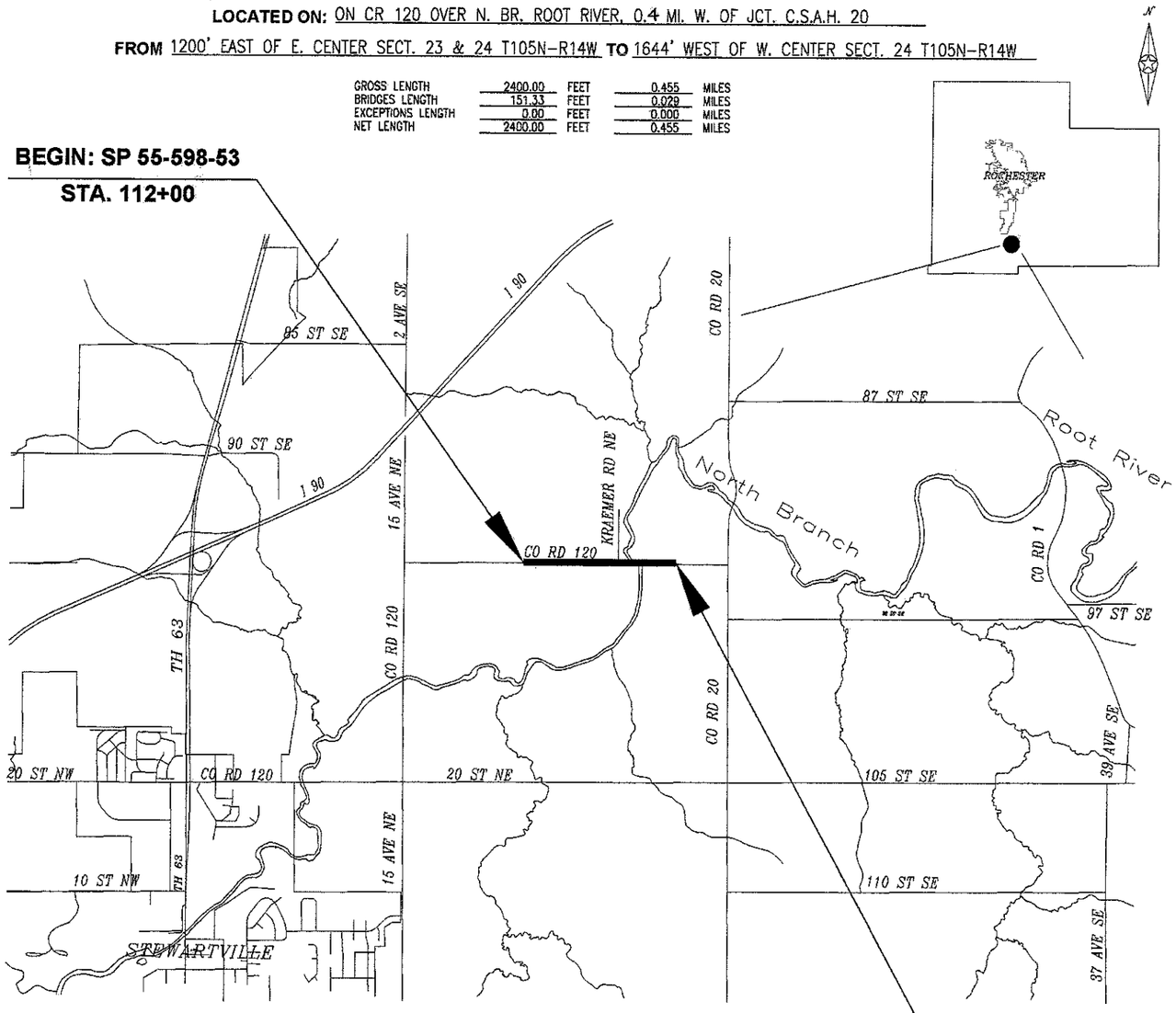
CONSTRUCTION PLAN FOR: GRADING, AGGREGATE SURFACING AND BRIDGE NO. 55579 (OLD BR. NO. L6181

LOCATED ON: ON CR 120 OVER N. BR. ROOT RIVER, 0.4 MI. W. OF JCT. C.S.A.H. 20

FROM 1200' EAST OF E. CENTER SECT. 23 & 24 T105N–R14W **TO** 1644' WEST OF W. CENTER SECT. 24 T105N–R14W

GROSS LENGTH	2400.00	FEET	0.455	MILES
BRIDGES LENGTH	151.33	FEET	0.029	MILES
EXCEPTIONS LENGTH	0.00	FEET	0.000	MILES
NET LENGTH	2400.00	FEET	0.455	MILES

BEGIN: SP 55-598-53
STA. 112+00



END: SP 55-598-53
STA. 136+00

LEGEND

ROAD AND ROADWAY FEATURES
PROJECTED ROAD
PRIVATE ROAD
UNIMPROVED ROAD
GRADED AND DRAINED ROAD
SOIL SURFACE ROAD
GRAVEL OR STONE ROAD
BITUMINOUS ROAD
PAVED ROAD
DIVIDED ROAD
TRUNK HIGHWAY UNDER CONSTRUCTION
ROADS IN UNINCORPORATED COMMUNITIES, EXTENSIONS OF LOCAL ROADS (NOT F.A.S.) WITHIN MUNICIPALITIES AND FRONTAGE ROADS
POINTS BETWEEN WHICH DISTANCES ARE MEASURED INDICATED THUS + 6.2 +

ROAD SYSTEM DESIGNATIONS
INTERSTATE TRUNK HIGHWAY (35)
U.S. NUMBERED TRUNK HIGHWAY (52)
STATE NUMBERED TRUNK HIGHWAY (30)
COUNTY STATE AID HIGHWAY (5)
COUNTY ROAD (12)
COUNTY STATE AID IN ADJOINING COUNTY (5)
FEDERAL AID INTERSTATE SYSTEM F.A.I.
NATIONAL FOREST HIGHWAY N.F.H.
NATIONAL FOREST DEVELOPMENT N.F.D.
STATE FOREST ROAD S.F.R.
STATE PARK ROAD S.P.R.

RAILROADS
RAILROAD (ANY NUMBER OF TRACKS) USED BY A SINGLE OPERATING COMPANY OR BY TERMS OF ANOTHER CARRIER UNDER TRACKAGE RIGHTS
RAILROADS IN JUXTAPOSITION (TWO OR MORE TRACKS OF SEPARATELY OPERATED COMPANIES ON ADJACENT RIGHTS OF WAY
RAILROAD STATION
GRADE CROSSING
UNDERPASS (HIGHWAY BELOW)
OVERPASS (HIGHWAY ABOVE)

AIRWAYS
RUNWAY
MILITARY FIELD
COMMERCIAL OR MUNICIPAL FIELD
LANDING AREA OR STRIP
AIRWAY LIGHT BEACON, GENERAL

STRUCTURES
General Symbols (over 20' span)
HIGHWAY BRIDGE
SMALL BRIDGES CLOSELY SPACED
DRAWBRIDGE
TRUSS
Other Structures
PEDESTRIAN BRIDGE
DAM WITH ROAD
DAM WITHOUT ROAD
LEVEE OR DIKE WITH ROAD
LEVEE OR DIKE WITHOUT ROAD
MINOR STRUCTURES (5' TO 20' SPAN)
CONCRETE FORD OR DIP
FORD — ROAD ESTABLISHED

BOUNDARIES
NATIONAL OR STATE
COUNTY
CIVIL TOWNSHIP
CONGRESSIONAL TOWNSHIP (U.S. LAND)
CORPORATE LINE
SECTION LINE
CONGESTED AREA
NATIONAL OR STATE PARK
NATIONAL OR STATE FOREST
GAME REFUGE
AIRPORT
WILDLIFE MANAGEMENT AREA (STATE) OR WATERFOWL AREA (FEDERAL)

DRAINAGE
NARROW STREAM
WIDE STREAM
MARSH OR SWAMP LAND
DRAINAGE DITCH
LAKE OR POND

CONSERVATION
FOREST RANGER STATION
GUARD OR RANGER STATION (NOT PERMANENTLY OCCUPIED)
FISH HATCHERY
GAME PRESERVE
OBSERVATION OR LOOKOUT TOWER
SMALL PARK: SP = STATE, CP = COUNTY, MP = MUNICIPAL, WP = WAYSIDE (WP)
PUBLIC ACCESS POINT

RECREATION
GOLF COURSE OR COUNTRY CLUB
GUN CLUB
ATHLETIC FIELD
AMUSEMENT PARK
PICNIC GROUND
PLAYGROUND, BALLFIELD ETC.
BATHING BEACH OR SWIMMING POOL
SCENIC SITE
CAMP SITE
CAMP OR LODGE

FARM AND DWELLING UNITS
FARM UNIT
DWELLING OTHER THAN FARM
BARRACKS OR DORMITORIES FOR STUDENTS, WORKERS, MIGRANTS ETC.
SEASONAL DWELLING
ROWS OR GROUPS OF DWELLINGS CLOSELY SPACED (NUMBER ADJACENT TO SYMBOL INDICATES NUMBER OF EACH UNIT)

INDUSTRIAL
FACTORY OR INDUSTRIAL PLANT
SAWMILL
STORAGE TANKS, OIL OR GAS
GRAIN ELEVATOR
BEET DUMP
STOCKYARD, FEEDLOT
QUARRY
MILK DEPOT, CREAMERY OR CHEESE FACTORY
WAREHOUSE

COMMERCIAL
STORE OR SMALL BUSINESS ESTABLISHMENT
HOTEL
MOTEL
TOURIST COURT
DRIVE-IN THEATRE
NURSERY
GREENHOUSE

PUBLIC SERVICE FACILITIES
POST OFFICE
FIRE STATION
MUSEUM
PUBLIC LIBRARY
SCHOOL
RADIO STATION
SEWAGE DISPOSAL PLANT
HOSPITAL
TOWN HALL

CITY CENTERS
COUNTY SEAT
CITY CENTER
INCORPORATED CITY (GENERALIZED)
UNINCORPORATED COMMUNITY

MISCELLANEOUS MAP FEATURES
CHURCH, OTHER RELIGIOUS INSTITUTIONS
CEMETERY
FAIRGROUND, RACE COURSE, SPEEDWAY
GRAVEL PIT
SANITARY LANDFILL
AUTO JUNKYARD
HIGHWAY GARAGE
DEPARTMENT OF TRANSPORTATION DISTRICT OFFICE
VALVE HOUSE NATURAL GAS, PETROLEUM PRODUCTS, CRUDE OIL OR WATER
GAUGING OR PUMPING STATION NATURAL GAS, PETROLEUM PRODUCTS, CRUDE OIL OR WATER
PIPELINE, NATURAL GAS — NG —
PIPELINE, PETROLEUM PRODUCTS — PP —
PIPELINE, CRUDE OIL — CO —
PIPELINE, WATER — W —
TRANSMISSION LINE (230V OR OVER) — T —
POWER PLANT
TRANSFORMER STATION
LATITUDE AND LONGITUDE INTERSECTION
HISTORIC SITE: STATE OR NATIONAL OPEN TO PUBLIC

SCALES

PLAN: 100 FEET
PROFILE: 100 FEET HORIZ. / 20 FEET VERT.
CROSS SECTIONS: 20 FEET HORIZ. and VERT

INDEX MAP- NOT TO SCALE

DESIGN DESIGNATION

ADT (Current Year)	= 57	(2004)
ADT (Future Year)	= 91	(2024)
HCADT (Heavy Commercial)	=	
Functional Classification	= Rural Local	
No. of Traffic Lanes	= 2 at 11 Ft.	
Shoulder Width	= 3 Ft.	
Soil Factor	= 130%	

Design Speed 30 MPH Based on Stopping Sight Distance
Stopping Sight Distance based on 3.5 Ft. Height of Eye and 0.5 Ft. Height of Object
Design Speed not achieved at:

GOVERNING SPECIFICATIONS

THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

SHEET No.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES, STANDARD PLATES AND TYPICAL SECTION
3–4	COUNTY ROAD 120 PLAN AND PROFILE
5–11	COUNTY ROAD 120 CROSS SECTIONS
12–17	EROSION CONTROL SHEETS
18	TRAFFIC CONTROL PLAN
B1–B15	BRIDGE PLANS & DETAILS
B16–B17	BRIDGE SURVEY SHEETS

THIS PLAN CONTAINS 35 SHEETS

AS-BUILT
MAR 0 1 2006
ENGINEERING

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

DATE 5/20/04 REG. NUMBER 19917
PRINTED NAME: KAYE M. BIENIEK
SIGNED NAME: Kaye M Bieniek
COUNTY DESIGN ENGINEER

DATE 5/20/04 REG. NUMBER 10397
Michael Hudson
APPROVED: OLMSTED COUNTY ENGINEER

Donald L Wingen DATE: 6/2/04
RECOMMENDED FOR APPROVAL: STATE BRIDGE ENGINEER

DATE: 5/25/04
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE-AID RULES/POLICY

DATE: 6/28/04
STATE AID ENGINEER: APPROVED FOR STATE-AID & FEDERAL-AID FUNDING

FILE NAME: COVER.DGN DATE: 05-19-04

STATEMENT OF ESTIMATED QUANTITIES

SPECIFICATION NO.	ITEM	ITEM NOTES	UNITS	ROADWAY	BRIDGE	TOTAL ESTIMATED QUANTITIES
2021.501	MOBILIZATION		LUMP SUM	0.28	0.72	1
2031.501	FIELD OFFICE TYPE D		EACH	0.28	0.72	1
2101.511	CLEARING AND GRUBBING	(1)	LUMP SUM	1		1
2104.501	REMOVE PIPE CULVERT		LN. FT.	190		190
2105.515	UNCLASSIFIED EXCAVATION	(2)	CU. YD.	9027		(P) 9027
2105.523	COMMON BORROW (CV)		CU. YD.	4954		(P) 4954
2105.511	COMMON CHANNEL EXCAVATION		CU. YD.	3110		(P) 3110
2211.501	AGGREGATE BASE, CLASS 2	(3)	TON	2784		2784
2501.511	18" C.S. PIPE CULVERT		LIN. FT.	188		188
2501.511	36" R.C.P. CULVERT CLASS III		LIN. FT.	44		44
2501.515	18" C.S. PIPE APRON		EACH	8		8
2501.515	36" R.C.P. APRON		EACH	2		2
2511.501	RANDOM RIPRAP CLASS IV	(6)	CU. YD.	886		886
2563.601	TRAFFIC CONTROL		LUMP SUM	0.28	0.72	1
2573.502	SILT FENCE, TYPE MACHINE SLICED	(4) (5)	LIN. FT.	2065		2065
2575.501	SEEDING		ACRE	4.0		(P) 4.0
2575.502	SEED MIXTURE 50B		POUND	200		200
2575.502	SEED MIXTURE 110B		POUND	400		400
2575.511	MULCH MATERIAL TYPE 1		TON	8.0		8.0
2575.519	DISK ANCHORING		ACRE	3.6		(P) 3.6
2575.532	COMMERCIAL FERTILIZER ANALYSIS 12-12-12		POUND	800		800

(1) APPROXIMATELY 1.1 ACRES CLEAR AND GRUB AND APROX. 20 TREES IN R/W. TREES FOR REMOVAL SHALL BE DESIGNATED BY THE ENGINEER. REMOVAL OF DEBRIS IN CHANNEL CHANGE AREA SHALL BE INCLUDED.

(2) UNCLASSIFIED EXCAVATION INCLUDES SUBGRADE TREATMENT AS SHOWN IN TYPICAL SECTION AND CROSS SECTIONS. 2063 CU. YDS. OF TOPSOIL TO BE SALVAGED FROM UNCLASSIFIED EXCAVATION.

(3) INCLUDES 2546 TON FOR MAINLINE AND 238 TON FOR DRIVEWAYS. QUANTITY FOR DRIVEWAYS BASED ON 6" AGGREGATE DEPTH.

(4) SPECIFICATION 1903 SHALL NOT APPLY FOR THESE ITEMS.

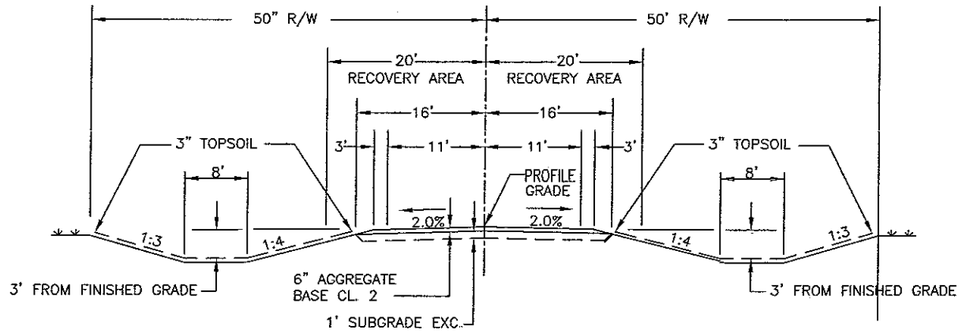
(5) TO BE PLACED AS DIRECTED BY THE ENGINEER.

(6) PLACE RIPRAP ON 9" OF GRANULAR FILTER WHICH WILL BE INCIDENTIAL

BASIS OF QUANTITY

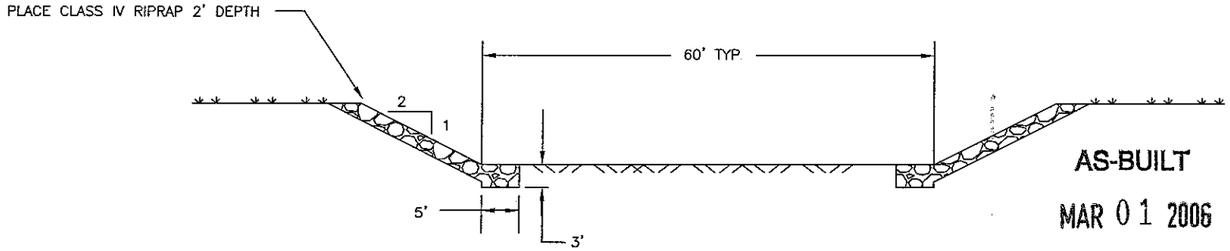
AGGREGATE BASE, CLASS 2 – 140 LBS./CU. FT COMPACTED
SEED MIXTURE 50B – 50 LBS./ACRE
MULCH MATERIAL TYPE 1 – 2 TONS/ACRE
SEED MIXTURE 110B – 100 LBS./ACRE
DISK ANCHORING – ALL SEEDING AREAS EXCEPT 1:2 SLOPES
COMMERCIAL FERTILIZER – 200 LBS./ACRE

TYPICAL SECTION
STA. 112+00 TO 136+00



NOTES: ALL UTILITY POLES AND UNYIELDING OBJECTS WILL BE LOCATED OUTSIDE THE 20' RECOVERY AREA BY OTHERS.

TYPICAL SECTION
CHANNEL CHANGE



AS-BUILT
MAR 01 2006
ENGINEERING

UTILITY LOCATIONS

GOPHER STATE ONE CALL 1-800-252-1166

NOTE: CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION. ALL INPLACE UTILITIES MAY NOT BE SHOWN ON THIS PLAN.

STANDARD PLATES
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

PLATE NO.	DESCRIPTION
3040 F	CORRUGATED METAL PIPE CULVERT
3000 L	REINFORCED CONCRETE PIPE
3006 G	GASKET JOINT FOR R.C. PIPE
3007 C	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3123 J	METAL APRON FOR C.S. PIPE
3124 B	METAL APRON CONNECTION
3133 C	RIPRAP AT RCP OUTLETS
3145 E	CONCRETE PIPE TIES
3221 C	CORRUGATED STEEL PIPE COUPLING BAND
8000 I	STANDARD BARRICADES
9000 D	APPROACHES AND ENTRANCES (MINIMUM STANDARDS)
9102 D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

DATE: 03-19-04
FILE NAME: quan.dwg

CERTIFIED BY Kevin M Barnick REG. NO. 19917 6/21 2004
LICENSED PROFESSIONAL ENGINEER

S.P. 55-598-53

Sheet No. 2 of 18 Sheets

F.E. LT. STA. 128+16
NO CULV INPL.
REMOVE FIELD ENTRANCE

250' R/W

CHANNEL CHANGE
PLACE 872 CU. YDS. CLASS IV RANDOM RIPRAP
WITH 9 " OF GRANULAR FILTER INCLUDED
IN THE BID PRICE FOR CLASS IV RIPRAP

BR. NO. L6181 STA. 131+08
72' x 18' STEEL TRUSS SPAN
REMOVE BRIDGE

INPL. F.E. LT STA. 133+80
18" x 36' C.M.P.
REMOVE 36 LN FT.
REMOVE FIELD ENTRANCE
METAL GATE MOVED BY OTHERS

F.E. LT. STA. 135+00
18" X 40' C.M.P
2 -18" C M P APRONS

STA. 134+50
36" X 44' CLASS III R.C.P
CULVERT. PLACE ON CLASS B BEDDING
2 - 36" R.C.P APRONS
PLACE 14 CU. YDS. OF CLASS IV
RANDOM RIPRAP OUTLET END
PLACE ON 9" OF GRANULAR
FILTER.

METAL GATE
W/ CONC. PADS

50' R/W

+00 127+00 128+00 129+00 130+00 131+00 132+00 133+00 134+00 135+00

50' R/W

50' R/W

PT Sta = 126+66.36

BUSHES

20' T/E

FARM ENT RT STA. 133+63

INPL. 36" X 28' C M P
REMOVE 28 LN. FT.

END PROJECT
STA. 136+00

F.E. RT. 128+90
18" x 40' C.M.P.
2-18" C.M.P. APRONS

AS-BUILT
MAR 0 1 2006
ENGINEERING

FINISH GRADE
PROPOSED PROFILE
EXISTING PROFILE

P.V.C. STA. 126+65.00 EL 1177.98
P.I. STA 127+70.00 EL 1167.93 V.C. 330.00 E = 3.54
P.V.T. STA 129+35.00 EL 1172.05
BR. NO. 55579
-6.09% 2.50% 2.50% -1.60% 0.34%
P.V.C. STA 131+70.00 EL 1177.93
P.I. STA 132+70.00 EL 1180.43 V.C. 200.00 E = 1.02
P.V.T. STA 133+70.00 EL 1178.84
P.V.C. STA 133+70.00 EL 1178.84
P.I. STA 134+70.00 EL 1177.24 V.C. 200.00 E = 0.48
R.V.T. STA 135+70.00 EL 1177.58
EOP STA 136+00.00
STA. 134+50 36" R.C. PIPE CULVERT INLET 1172.50 OUTLET 1172.00

1200 1190 1180 1170 1160 1150 1140 1130

1175.50 1173.37 1171.88 1171.05 1170.87 1171.34 1173.68 1176.18 1178.59 1179.27 1179.45 1179.11 1178.40 1177.87 1177.58 1177.53 1177.68

1174.61 1169.88 1167.02 1167.35 1171.42 1173.65 1176.07 1177.36 1177.68

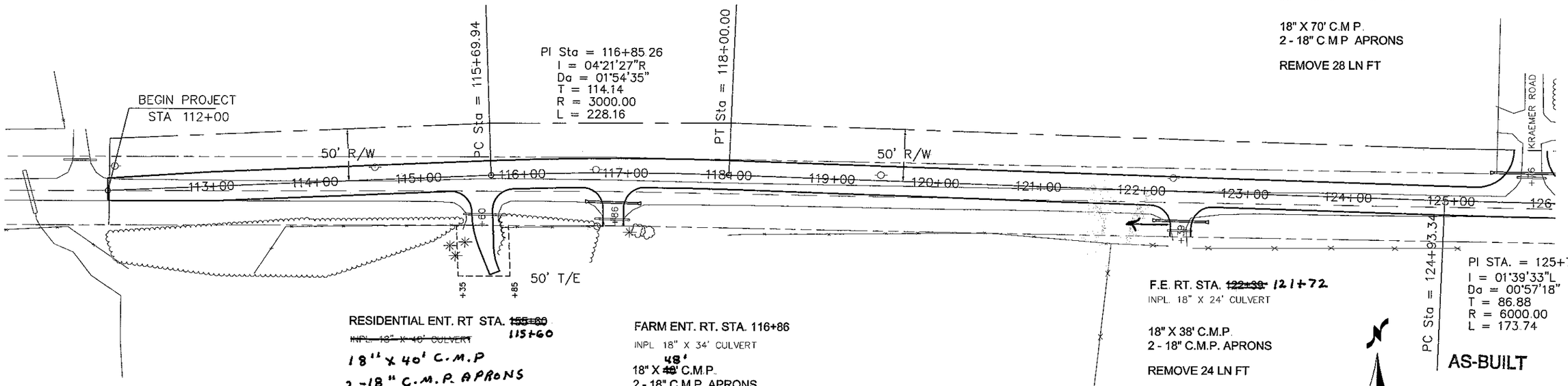
126+00 127+00 128+00 129+00 130+00 131+00 132+00 133+00 134+00 135+00 136+00 137+00 138+00 139+00 140+00 141+00

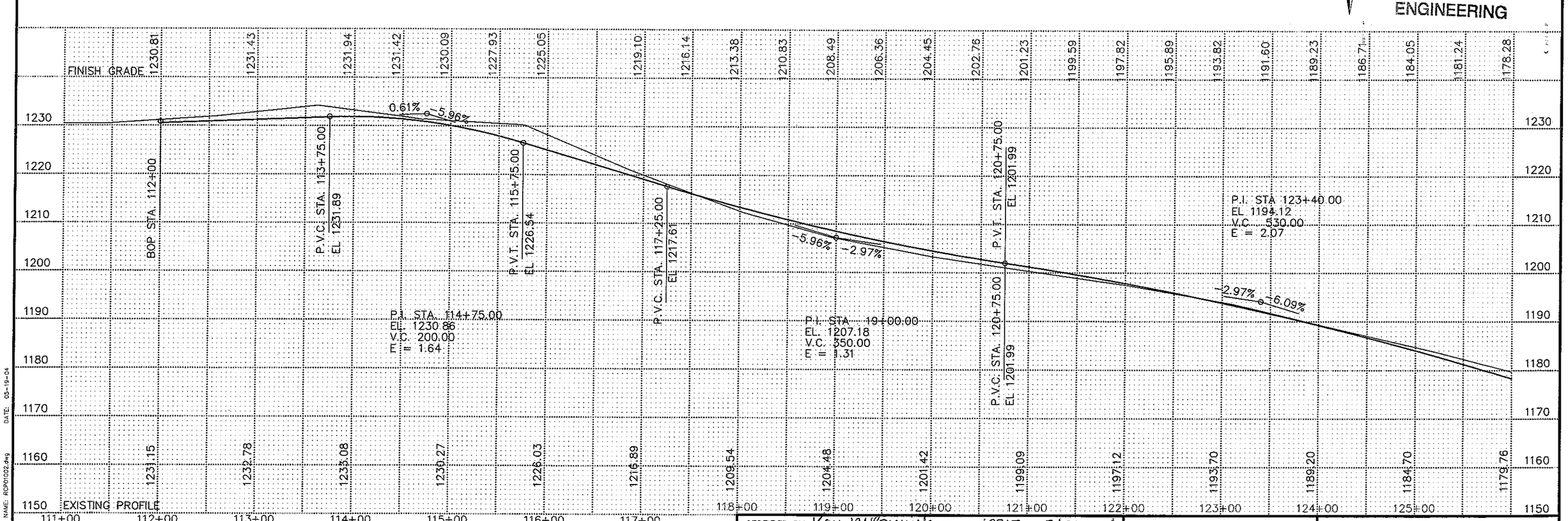
FILE NAME: RCP6002.dwg
DATE: 05-19-04

CERTIFIED BY Kayc M Friemel LICENSED PROFESSIONAL ENGINEER REG. NO. 19917 5/20 2004

S.P. 55-598-53

Sheet No. 4 of 18 Sheets





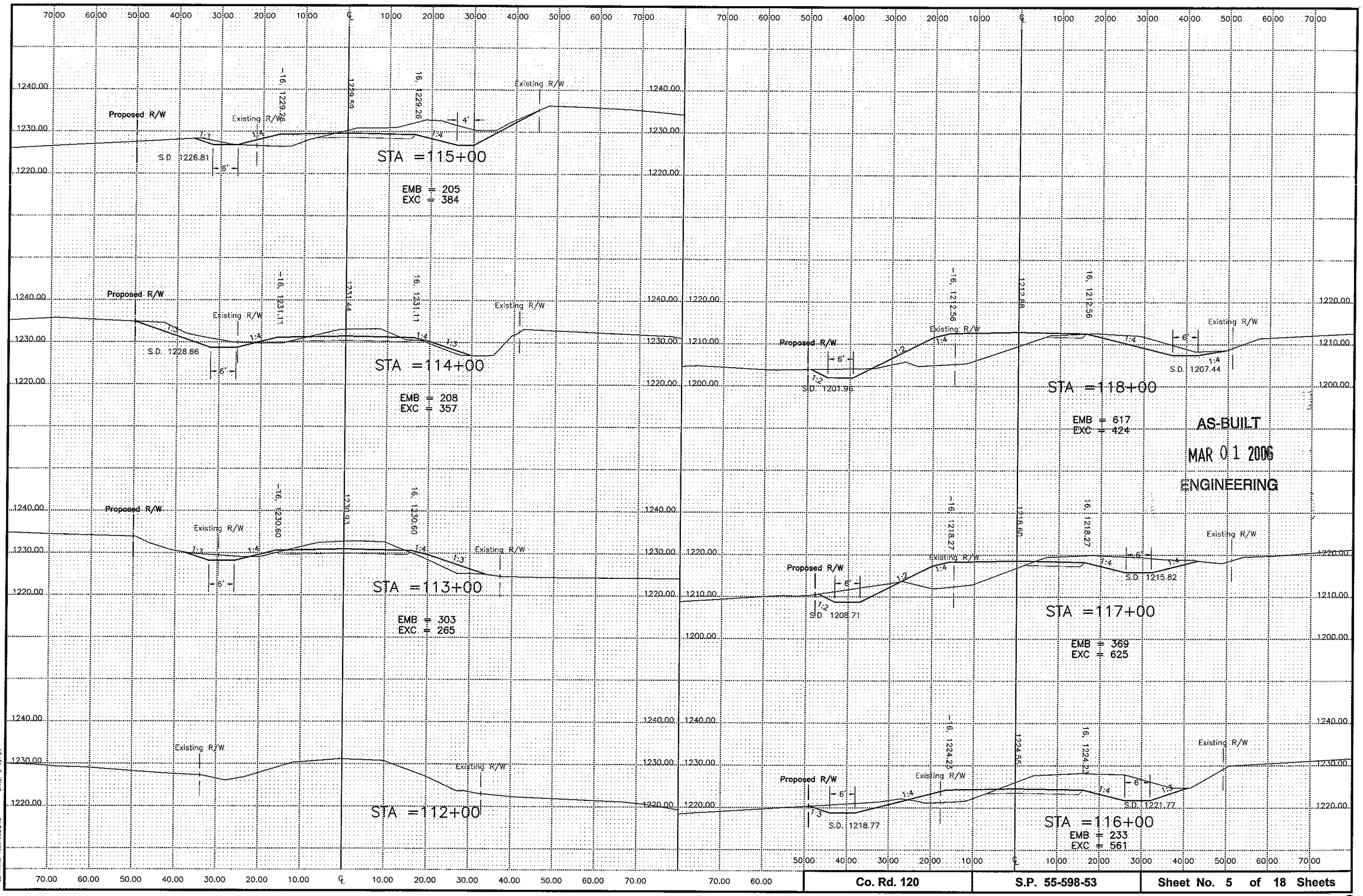
DATE: 05-19-04

FILE NAME: RDP01002.dwg

CERTIFIED BY Kaye M. Brewer REG. NO. 19917 5/20 2004
LICENSED PROFESSIONAL ENGINEER

S.P. 55-598-53

Sheet No. 3 of 18 Sheets



AS-BUILT

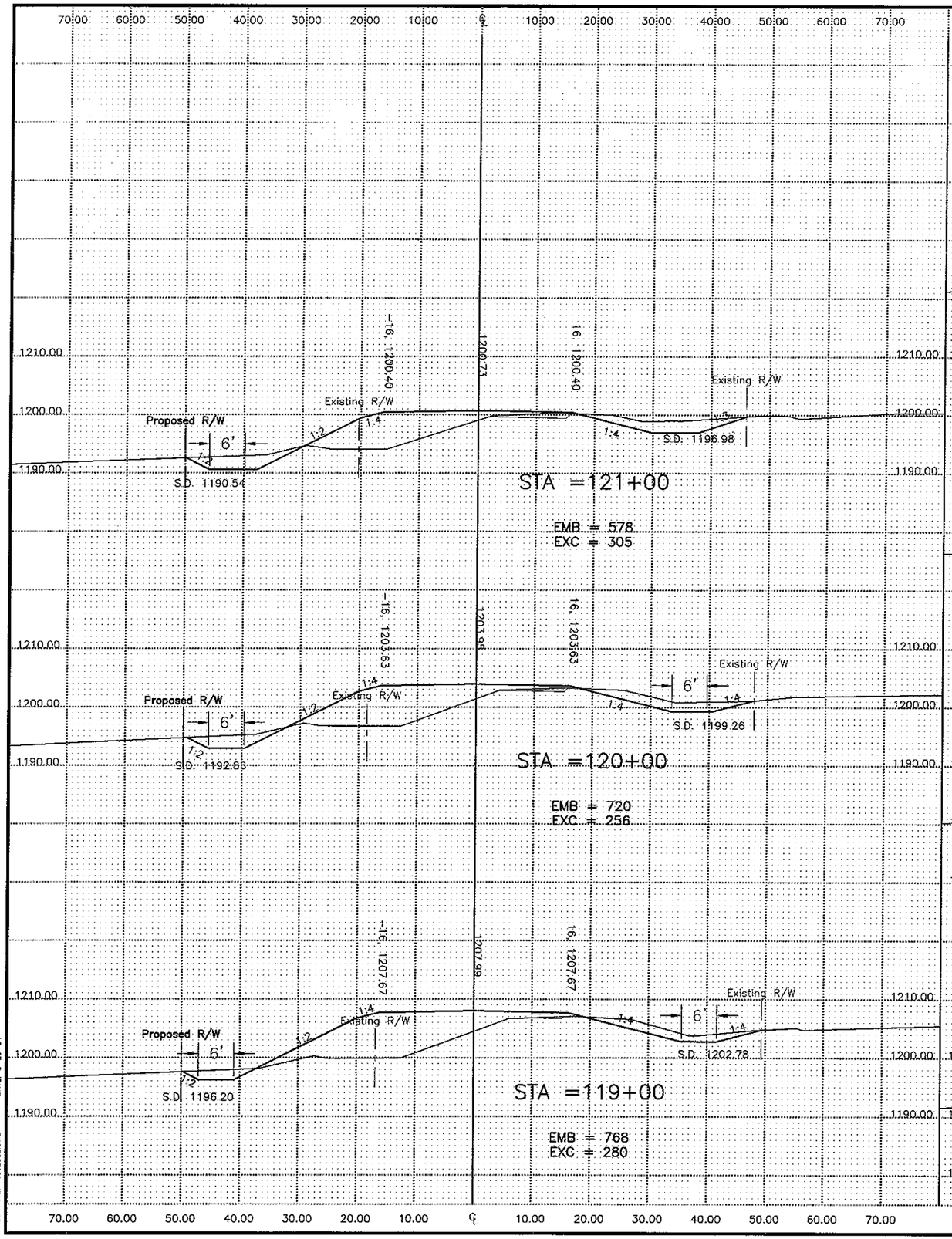
MAR 01 2006

ENGINEERING

DATE: 5-19-04

FILE NAME: rc001002.DWG

Co. Rd. 120	S.P. 55-598-53	Sheet No. 5 of 18 Sheets



AS-BUILT

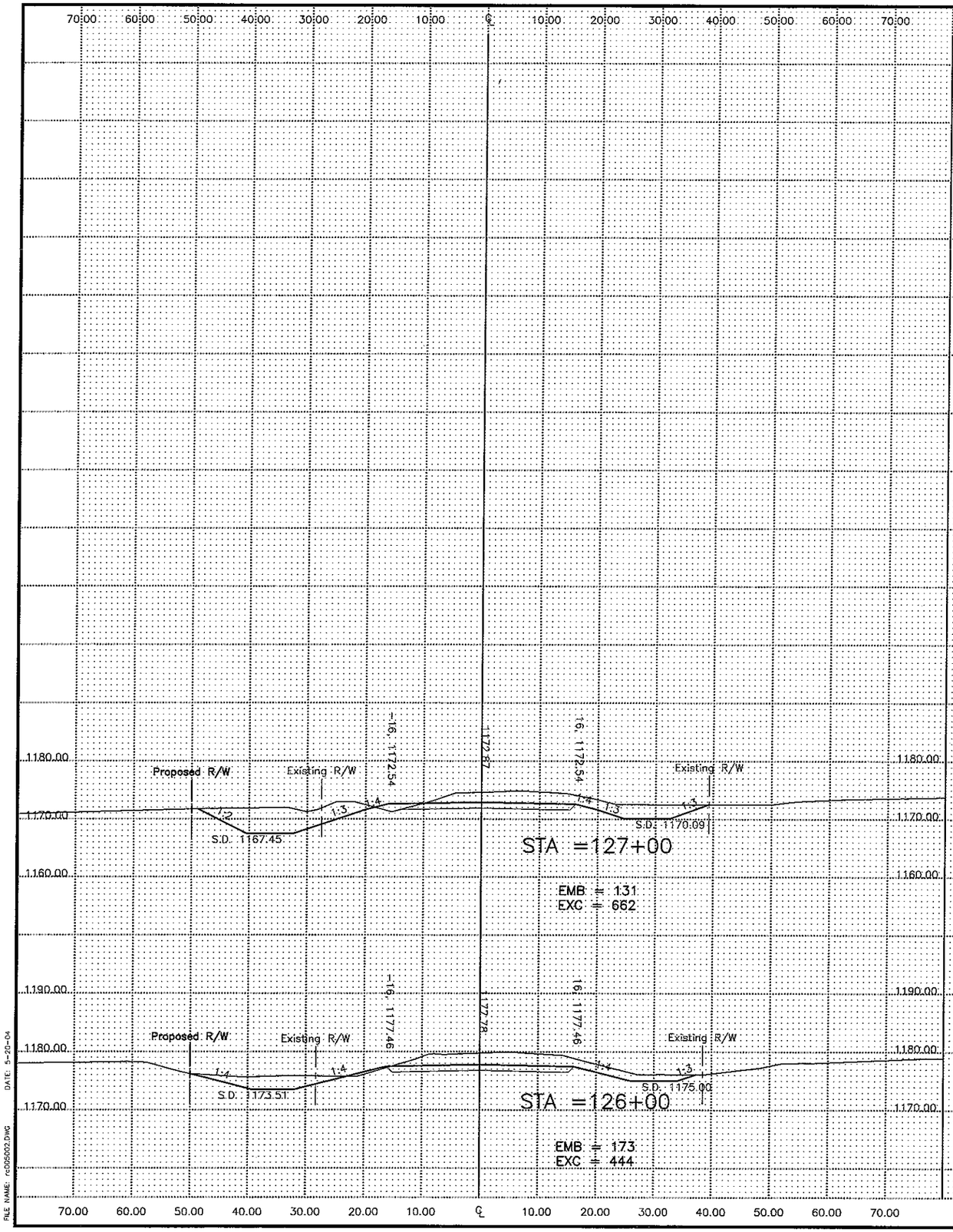
MAR 01 2006

ENGINEERING

DATE: 5-20-04

FILE NAME: rc002002.DWG

Co. Rd. 120	S.P. 55-598-53	Sheet No. 6 of 18 Sheets



AS-BUILT

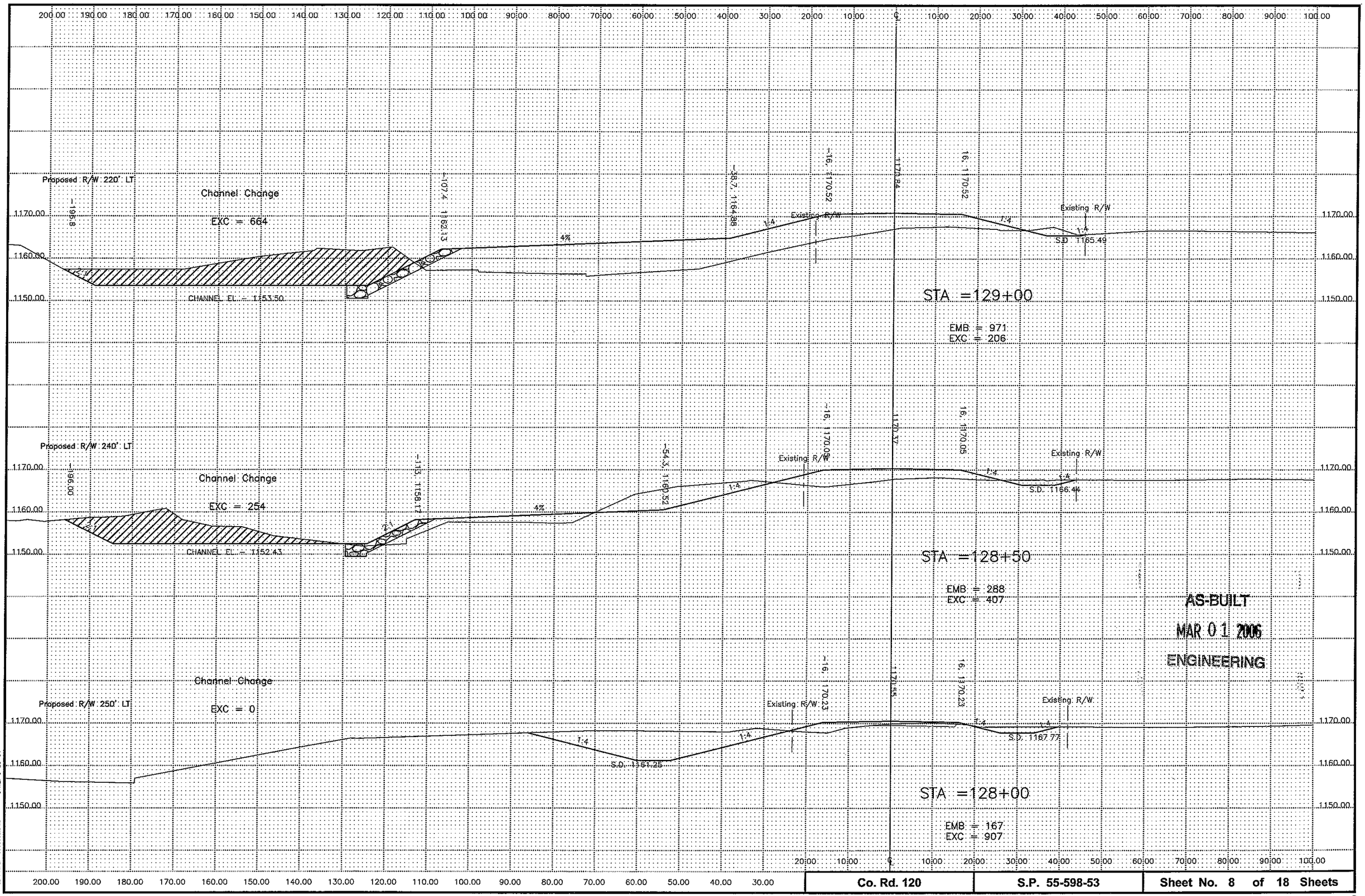
MAR 01 2006

ENGINEERING

DATE: 5-20-04

FILE NAME: rc005002.DWG

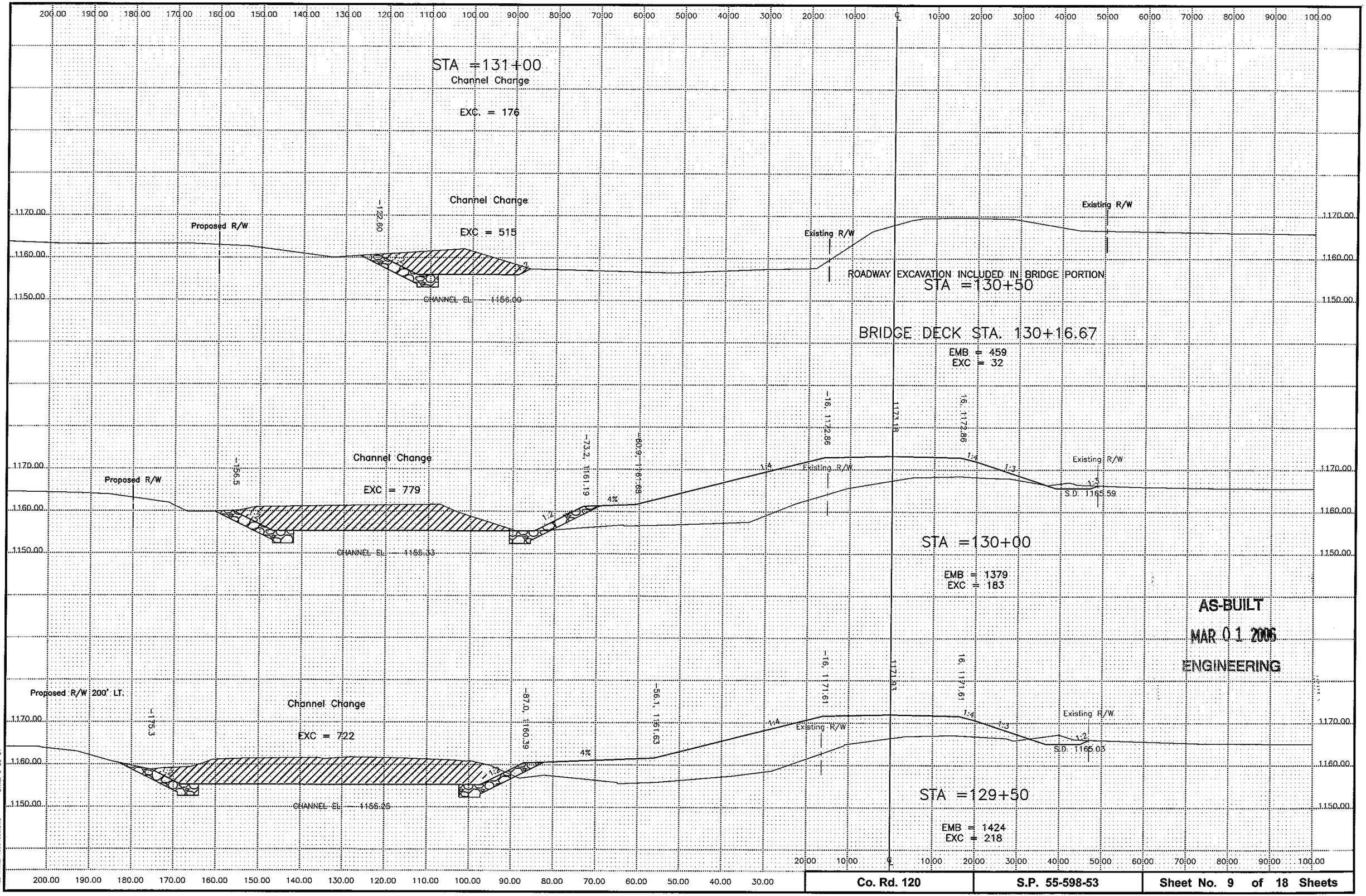
Co. Rd. 120	S.P. 55-598-53	Sheet No. 7 of 18 Sheets



AS-BUILT
MAR 01 2006
ENGINEERING

DATE: 5-20-04
FILE NAME: c903002.DWG

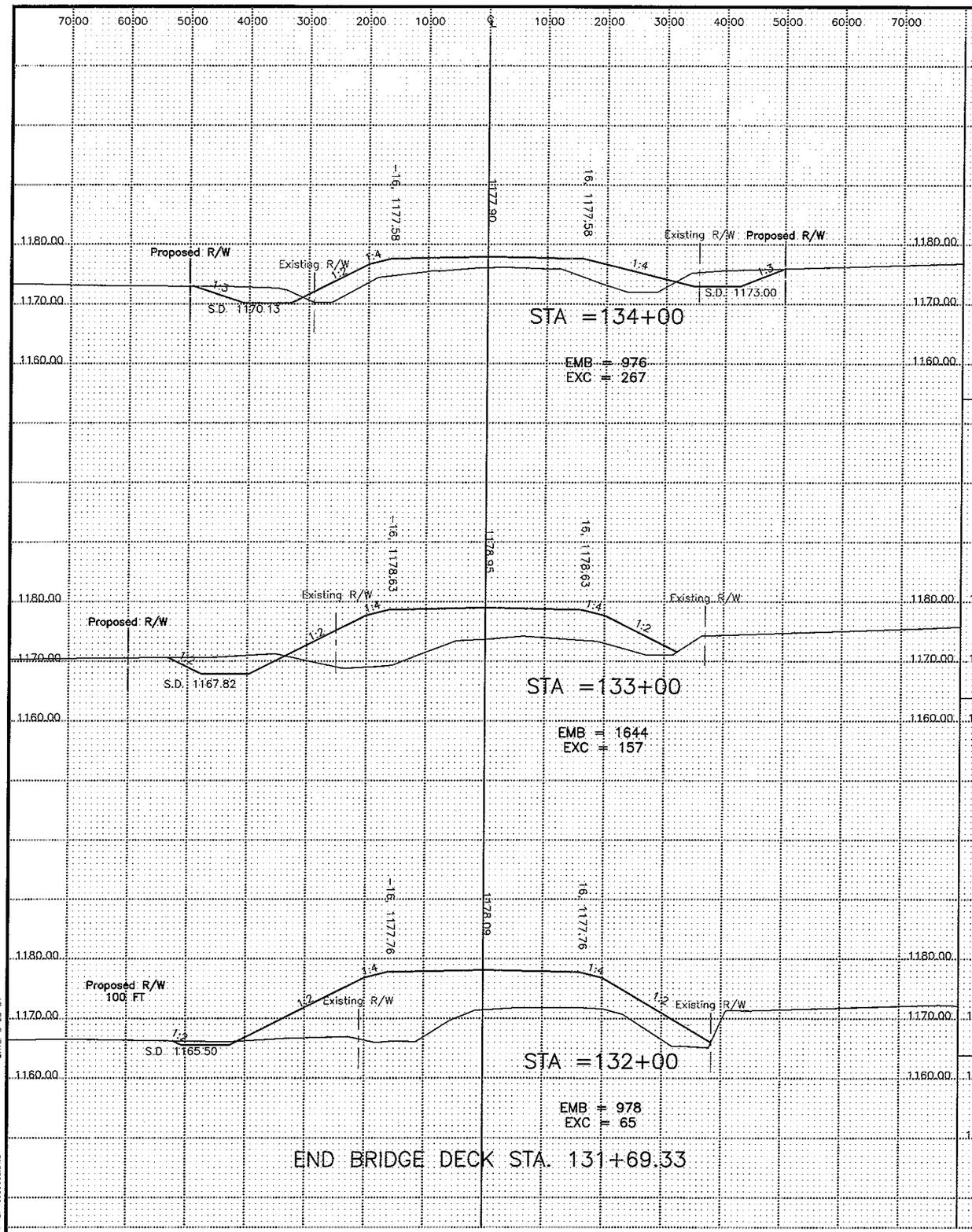
Co. Rd. 120	S.P. 55-598-53	Sheet No. 8 of 18 Sheets



DATE: 5-20-04

FILE NAME: rc004002.DWG

Co. Rd. 120	S.P. 55-598-53	Sheet No. 9 of 18 Sheets



EARTHWORK SUMMARY

UNCLASSIFIED EXCAVATION	9,027 CU. YDS.
EMBANKMENT	14,411 CU. YDS.
COMMON CHANNEL EXCAVATION	3,110 CU. YDS.
COMMON BORROW	4,954 CU. YDS.
TOPSOIL	2,063 CU. YDS.

AS-BUILT

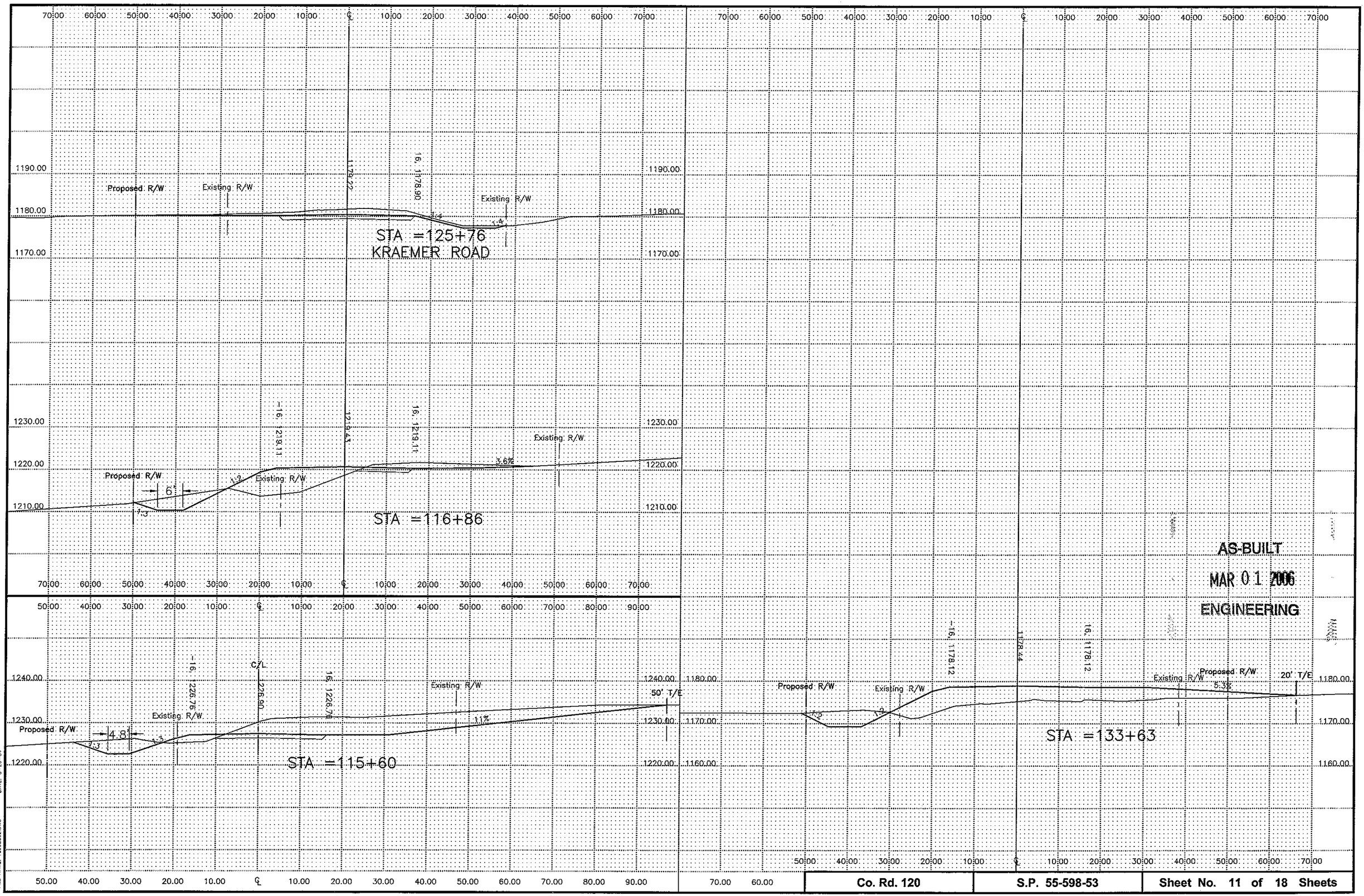
MAR 0 1 2006

ENGINEERING

DATE: 5-20-04

FILE NAME: rc006002.DWG

Co. Rd. 120	S.P. 55-598-53	Sheet No. 10 of 18 Sheets



AS-BUILT

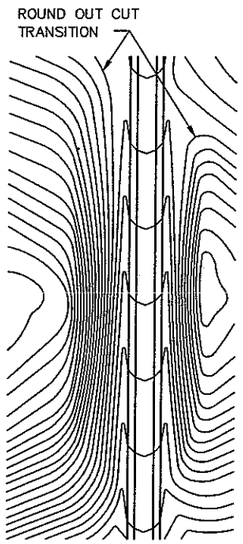
MAR 01 2006

ENGINEERING

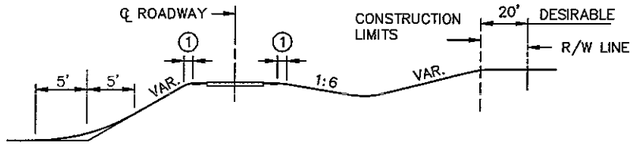
DATE: 5-20-04

FILE NAME: rc0080002.DWG

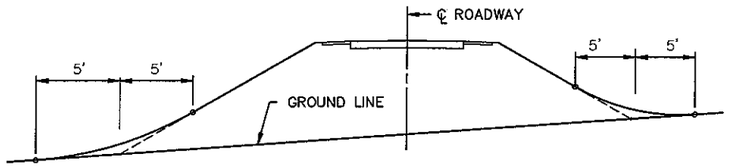
Co. Rd. 120	S.P. 55-598-53	Sheet No. 11 of 18 Sheets



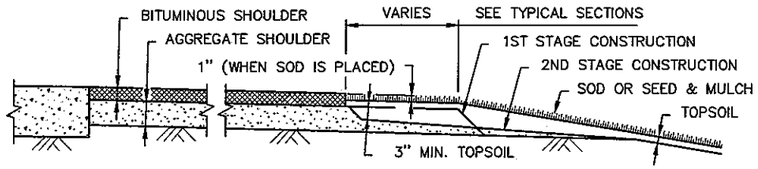
CONTOURING ROAD CUTS



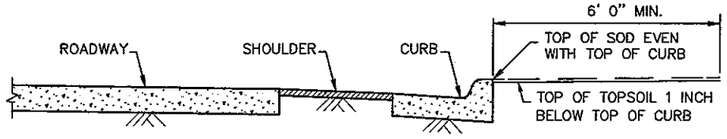
ROUNDING SHOULDERS AND BACKSLOPES



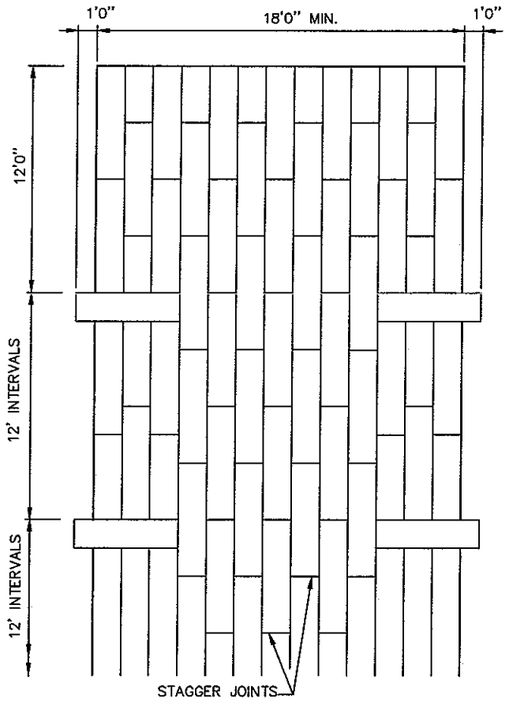
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



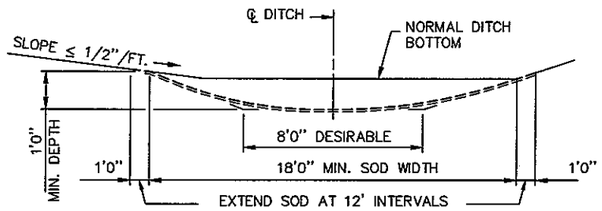
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

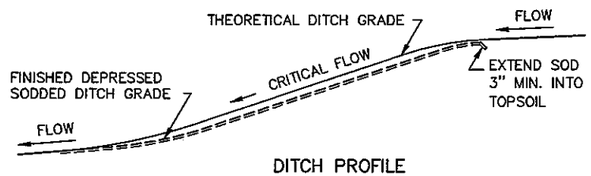


PLAN VIEW



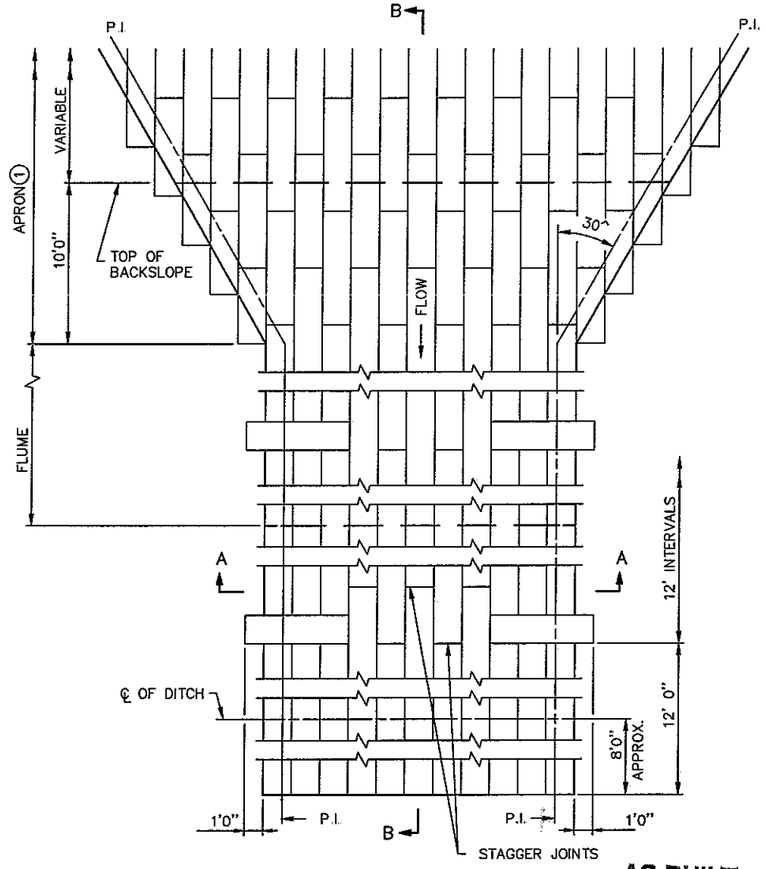
SODDED DITCH CROSS SECTION

WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.

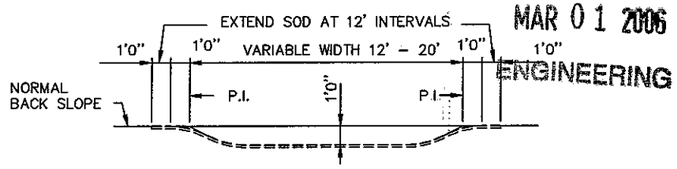


DITCH PROFILE

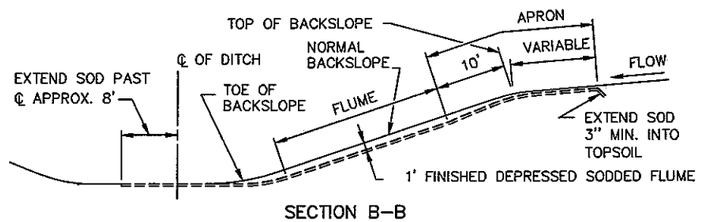
SODDED DITCH DETAILS



PLAN VIEW



SECTION A–A



SECTION B–B

SODDED FLUME DETAILS

AS-BUILT

MAR 0 1 2006

ENGINEERING

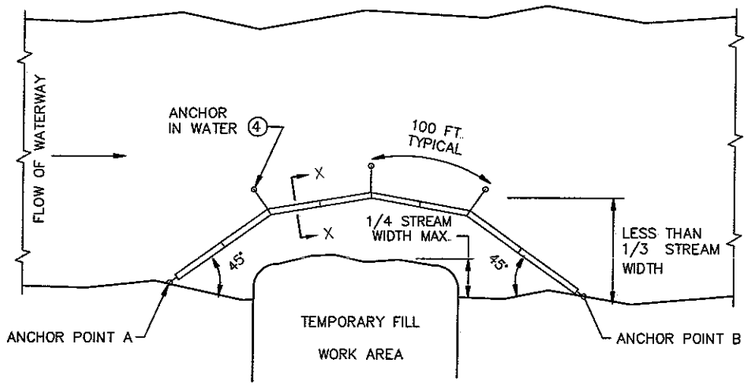
NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

① CONSTRUCT TAPER AS DIRECTED BY ENGINEER.

STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES	
STANDARD APPROVED: NOVEMBER 20, 2002		
STATE PROJ NO 55-598-53	C.R. 120	SHEET NO. 12 OF 18 SHEETS

FILE NAME: 139-ERO1.DWG



PLAN VIEW

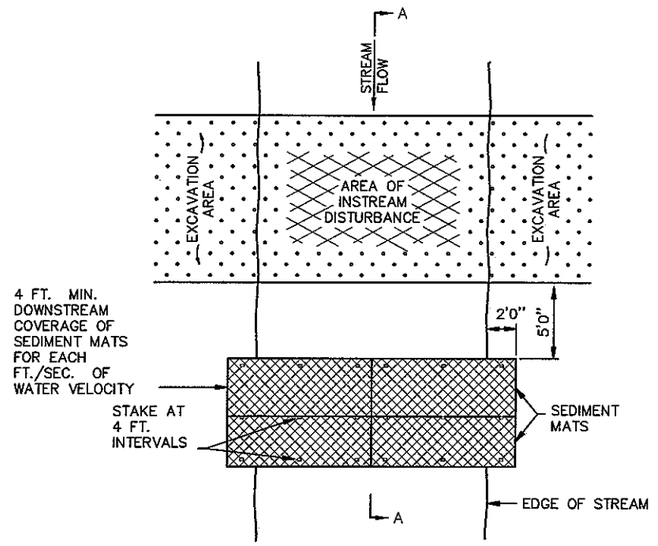
FLOTATION SILT CURTAIN – TYPE WORK AREA

(SPEC. 3887)

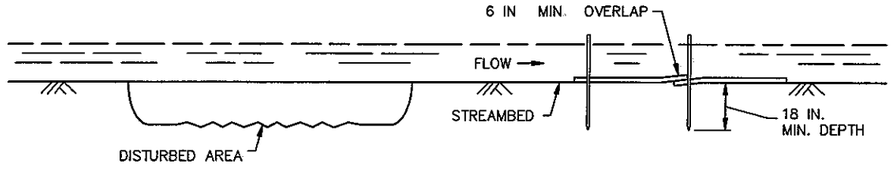
FOR CONTAINING OVERFLOWS FROM WEIRS, STANDPIPES, SETTLING PONDS

DESIGN GUIDELINES:

WHEN TEMPORARY FILL ENCROACHES LESS THAN 1/4 OF THE WIDTH OF THE STREAM
MAXIMUM WATER VELOCITY: 5 FT./SEC.
MAXIMUM WATER DEPTH: 11 FT.



PLAN VIEW



SECTION A–A

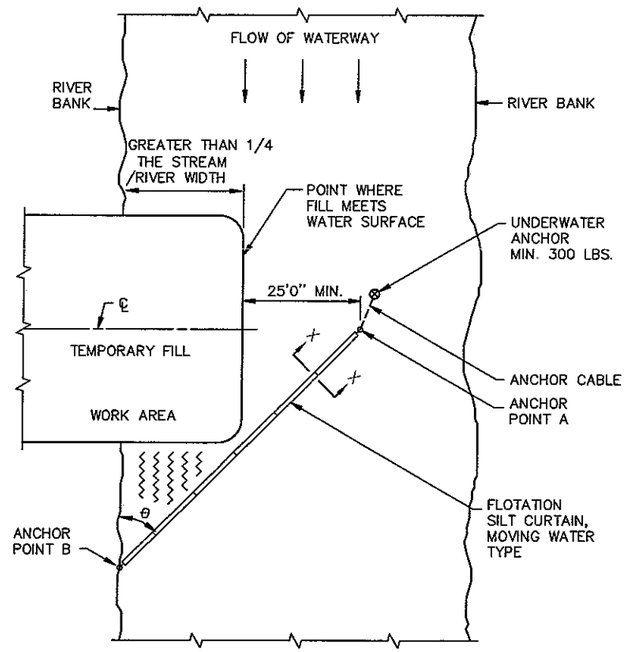
SEDIMENT MAT

(SPEC. 3894)

TYPICAL STREAMBED INSTALLATION

DESIGN GUIDELINES:

MAXIMUM FLOW VELOCITY: 5 FT./SEC.
MAXIMUM FLOW DEPTH: 2 FT.



∠ θ	RIVER VELOCITY
45°	SLOW, LESS THAN 3 FT./SEC.
35°	MODERATE, 3 – 5 FT./SEC.

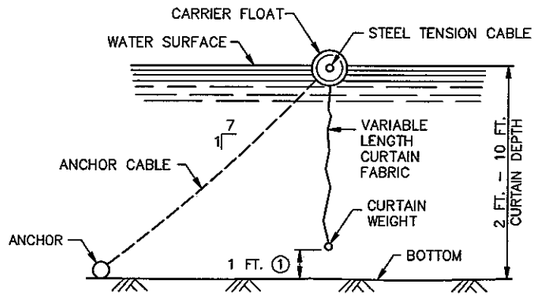
PLAN VIEW

FLOTATION SILT CURTAIN – TYPE MOVING WATER

(SPEC. 3887)

DESIGN GUIDELINES:

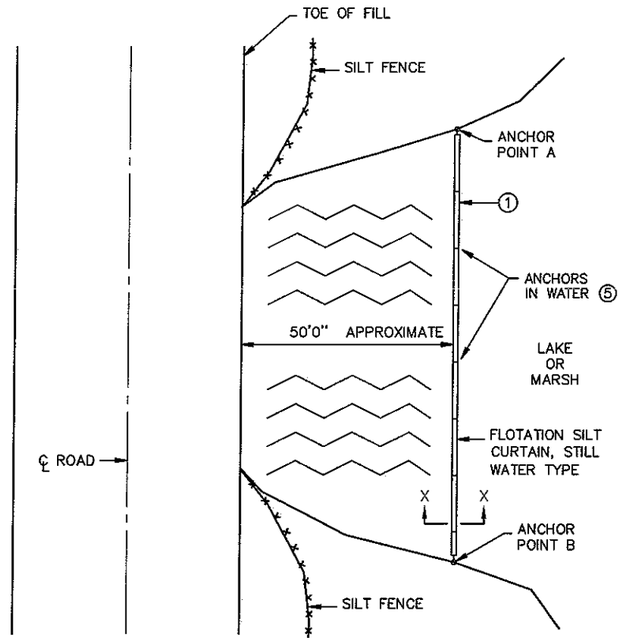
WHEN TEMPORARY FILL ENCROACHES MORE THAN 1/4 BUT LESS THAN 1/3 WIDTH OF THE STREAM
MAXIMUM WATER DEPTH: 11 FT. (1)
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.



SECTION X–X

FLOTATION SILT CURTAINS

(SPEC. 3887)



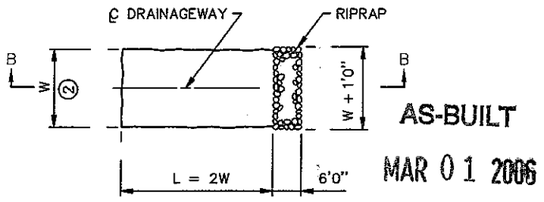
PLAN VIEW

FLOTATION SILT CURTAIN – TYPE STILL WATER

(SPEC. 3887)

DESIGN GUIDELINES:

MAXIMUM WATER DEPTH: 11 FT. (1)
MINIMUM WATER DEPTH: 3 FT

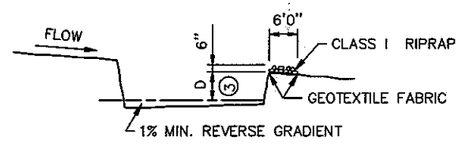


AS-BUILT

MAR 0 1 2006

ENGINEERING

PLAN



SECTION B–B

SEDIMENT TRAP DETAIL

(SPEC. 2573)

NOTES:

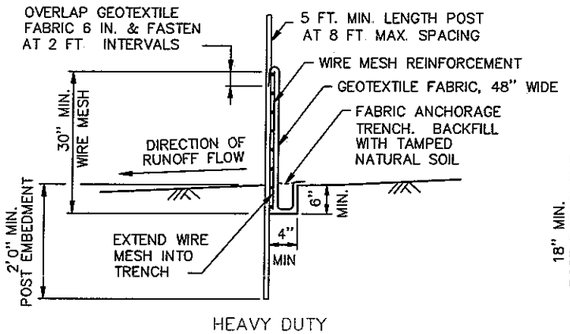
SEE SPECS. 2573, 3887 & 3894.

(1) CURTAIN 1 FT. FROM BOTTOM
(2) W = 10 FT. MIN., 20 FT. MAX.
(3) D = 2 FT.
(4) 100 FT. MAX. SPACING BETWEEN ANCHORS, MIN. 40 LBS.
(5) USE ENOUGH ANCHORS TO HOLD SILT CURTAIN IN PLACE.

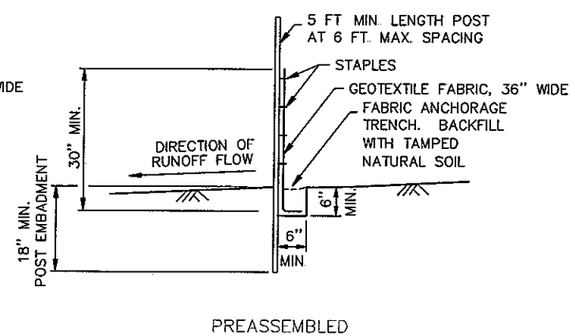
STANDARD SHEET NO. 5–297.405 (1 of 4)	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: JULY 30, 2001	
State Proj. No. 55-598-53	Sheet No. 13 of 18 Sheets

DATE: 2-11-04

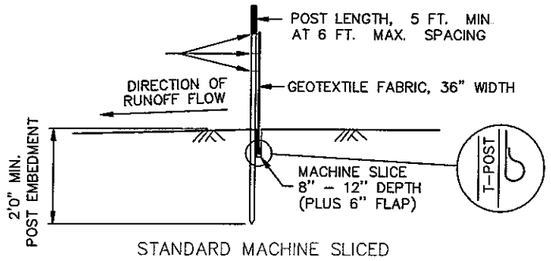
FILE NAME: 120-ER02.DWG



HEAVY DUTY



PREASSEMBLED

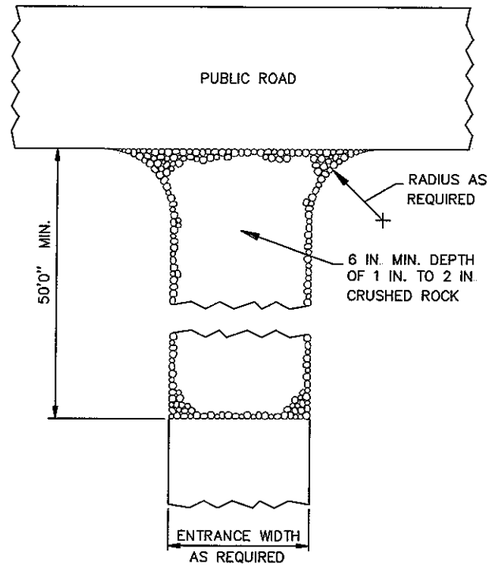


STANDARD MACHINE SLICED

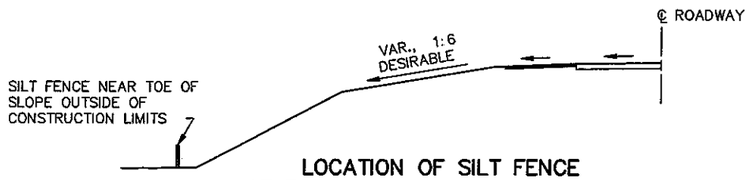
DESIGN GUIDELINES:
MAXIMUM CONTRIBUTING AREA: 3 ACRES

SILT FENCE DETAILS

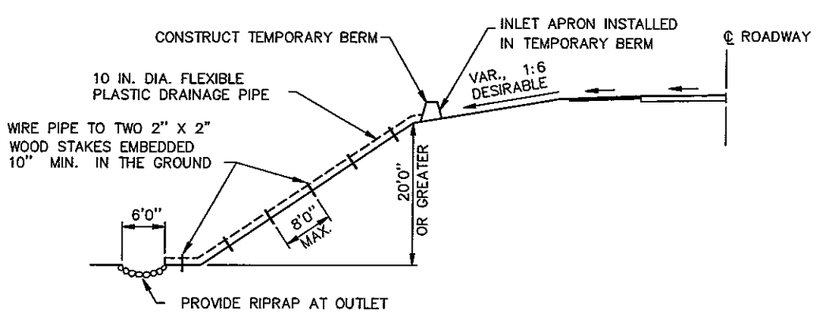
TO PROTECT AREAS FROM SHEET FLOW
(SEE SPEC. 3886)



ROCK CONSTRUCTION ENTRANCE ①

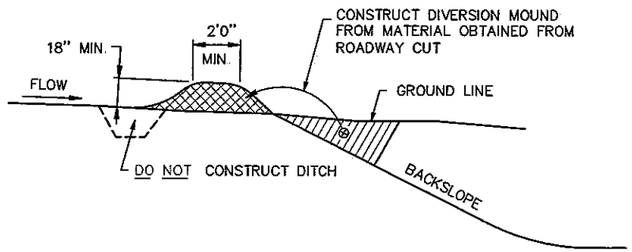


LOCATION OF SILT FENCE AT TOE OF ROADWAY EMBANKMENT



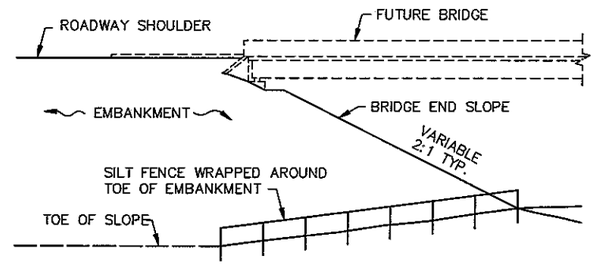
TEMPORARY DRAIN ON FILL SLOPE

DESIGN GUIDELINES:
STORM FREQUENCY: 2 YEAR – 24 HOUR
MAXIMUM DRAINAGE AREA: 3 ACRES



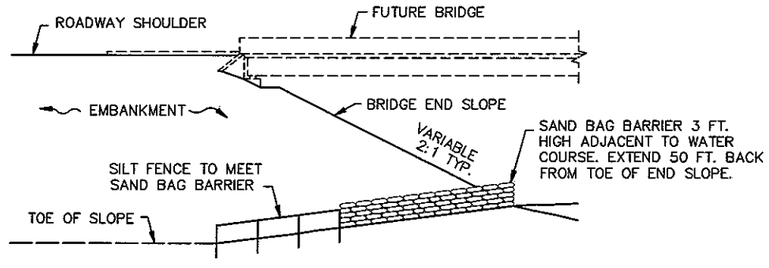
DIVERSION MOUND

DESIGN GUIDELINES:
STORM FREQUENCY: 10 YEAR – 24 HOUR
MAXIMUM DRAINAGE AREA: 5 ACRES
MAXIMUM DIVERSION: GRADE 5%



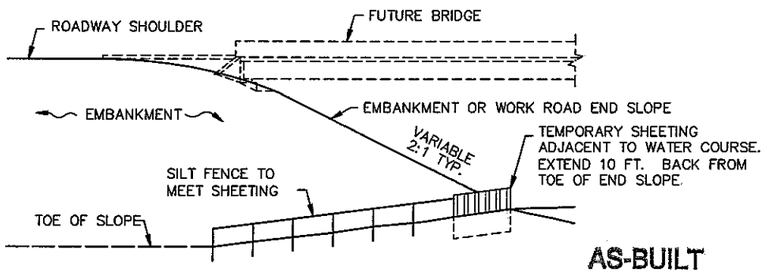
BRIDGE FILL

DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: STAGNANT
CONTRIBUTING SLOPE AREA: 1/2 ACRE



BRIDGE FILL

DESIGN GUIDELINES:
MAX. WATER COURSE FLOW VELOCITY: 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1 ACRE



EMBANKMENT OR WORK ROAD FILL

DESIGN GUIDELINES:
MAX. WATER COURSE FLOW VELOCITY: 15 FT./SEC.
CONTRIBUTING SLOPE AREA: 3 ACRES

SILT FENCE AT BRIDGE EMBANKMENT

AS-BUILT
MAR 01 2006
ENGINEERING

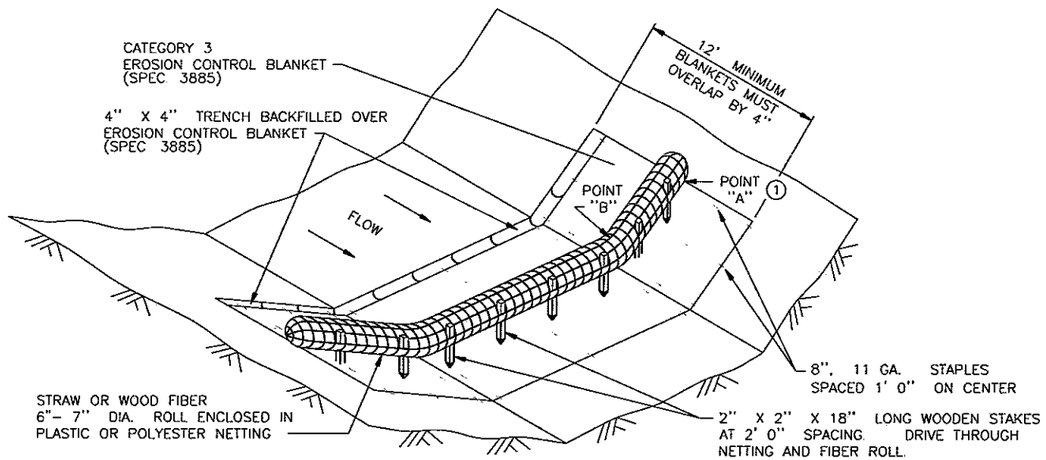
NOTES:

SEE SPECS. 2573 & 3886.

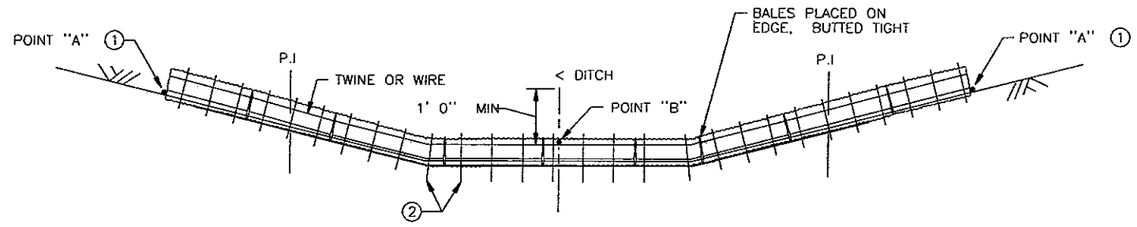
① ROCKS AT ENTRANCE CLEAN WORKSITE MUD OFF OF TRUCK TIRES BEFORE DRIVING ON MAIN ROAD. THIS WILL PREVENT AUTO DAMAGE. WE NEED TO KEEP CONSTRUCTION SEDIMENT OUT OF DRAINAGE SYSTEMS AND WETLANDS.

STANDARD SHEET NO. 5-297.405 (2 of 4)	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: JULY 30, 2001	
State Proj. No. 55-598-48	Sheet No. 14 of 18 Sheets

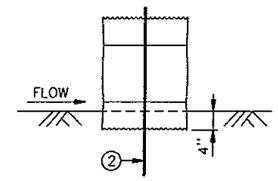
FILE NAME: 120-ERO3.DWG DATE: 3-09-04



BIOROLL BLANKET SYSTEM
(TYPE 3 SPEC. 3889)

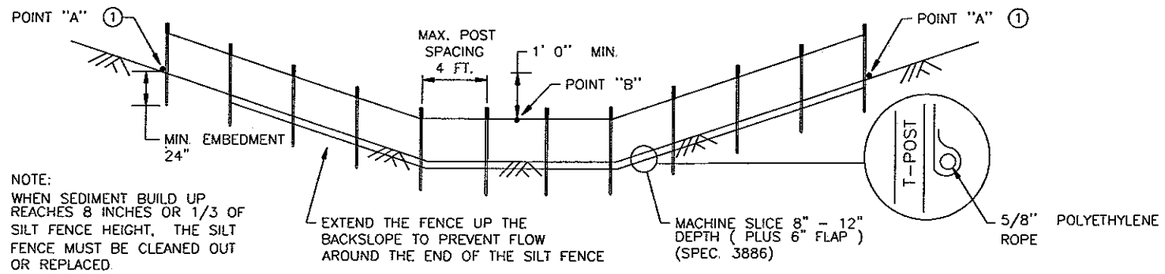


BALE DITCH CHECK
(USED ON ROUGH GRADED SOIL. REMOVE AFTER ROUGH GRADING IS COMPLETED. CAN BE USED AT WETLAND PERIMETERS ANYTIME)



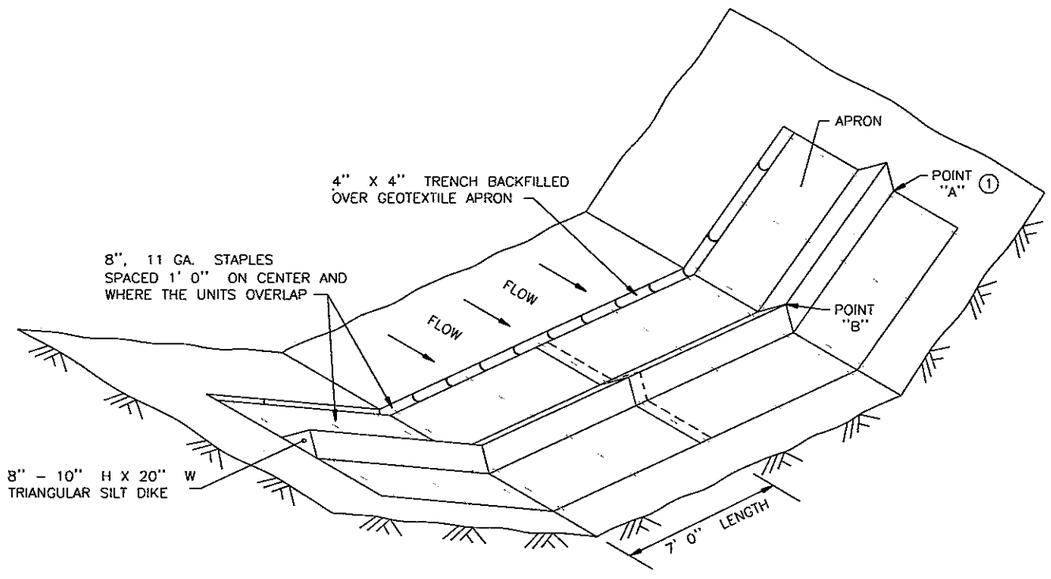
EMBEDMENT METHOD

BALE CHECK DETAIL

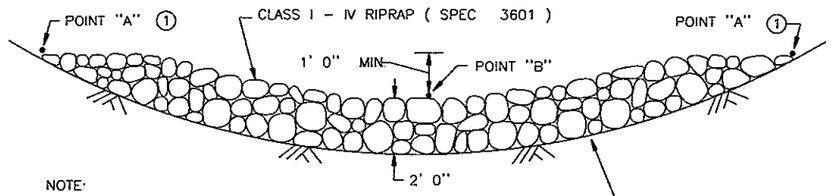


NOTE:
WHEN SEDIMENT BUILD UP REACHES 8 INCHES OR 1/3 OF SILT FENCE HEIGHT, THE SILT FENCE MUST BE CLEANED OUT OR REPLACED.

MACHINE SLICED SILT FENCE
(TYPE 1 SPEC. 3889)

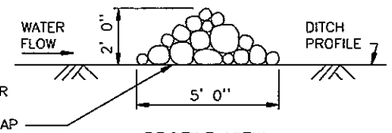


GEOTEXTILE TRIANGULAR DIKE
(TYPE 6 SPEC. 3889)



NOTE:
ROCK DITCH CHECK SHALL BE REMOVED FROM THE CLEAR ZONE AFTER SEEDING OR TURF IS ESTABLISHED AND PRIOR TO FINAL ACCEPTANCE.

CROSS SECTION



PROFILE VIEW

ROCK CHECK
(TYPE 7 SPEC. 3889)

AS-BUILT

MAR 0 1 2006

ENGINEERING

NOTES:

SEE SPECS. 2573, 3882, 3885, 3886 & 3889

SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM SPACING FORMULA:

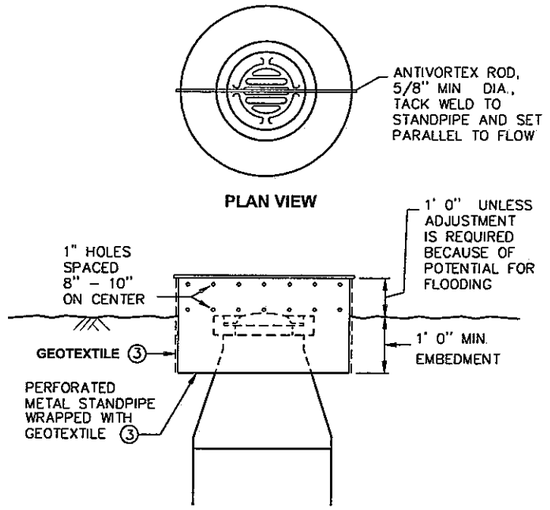
$$\text{SPACING OF DITCH CHECKS (FT)} = \frac{\text{HEIGHT OF DITCH CHECK (FT) X 100}}{\text{DITCH GRADE IN PERCENT}}$$

(1) POINT A MUST BE 1' 0" MIN. HIGHER THAN POINT B TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

(2) TWO 2 IN. X 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 10 IN. MINIMUM.

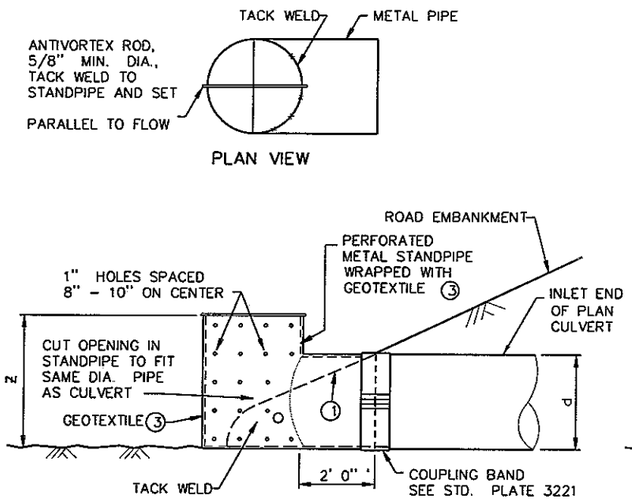
STANDARD SHEET NO. 5-297.405 (3 of 4)	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: NOVEMBER 5, 2002	DITCH CHECKS
State Proj. No. 55-598-53	Sheet No. 15 of 18 Sheets

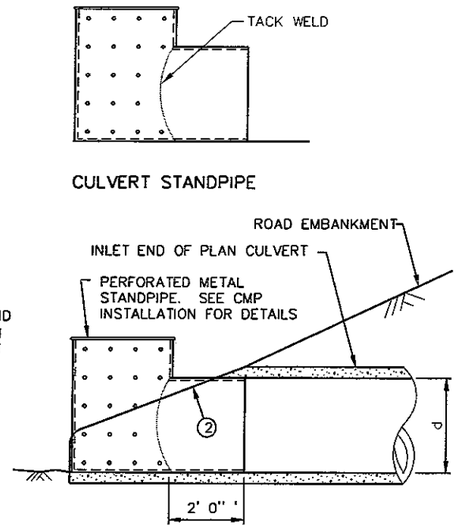
FILE NAME: 120-ER04.DWG DATE: 3-08-04



RISER STANDPIPE
TO PROTECT DROP INLET

DESIGN GUIDELINES:
STORM FREQUENCY: 10 YEAR. - 24 HOUR.

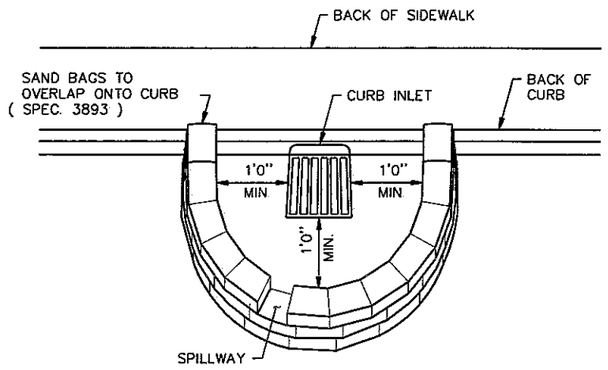




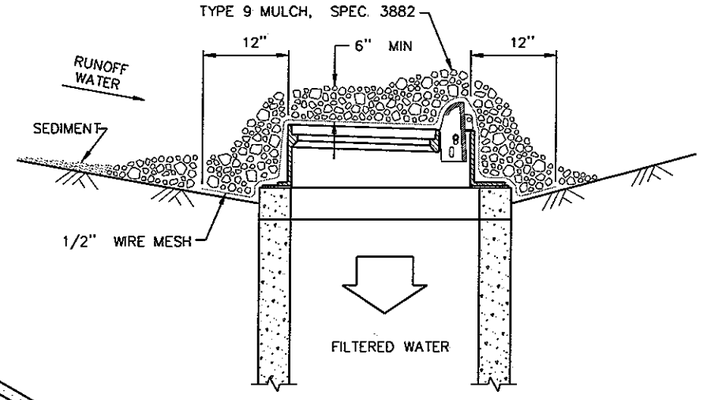
RISER STANDPIPE
FOR SEDIMENT CONTROL ON CULVERT INLET
(TYPE D SPEC. 3891)

d = DIA. OF STANDPIPE EQUAL TO DIA. OF PLAN CULVERT
Z = LENGTH OF PERFORATED STANDPIPE d + (12")

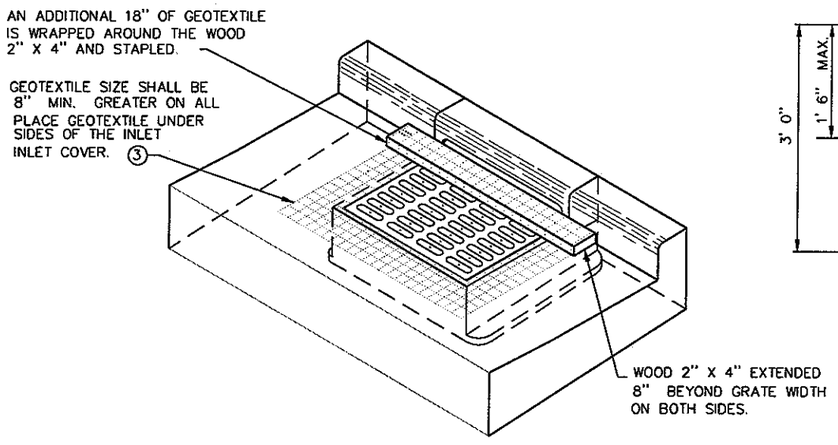
DESIGN GUIDELINES:
CULVERT SIZE: 12" - 36"
STORM FREQUENCY: 10 YR - 24 HR



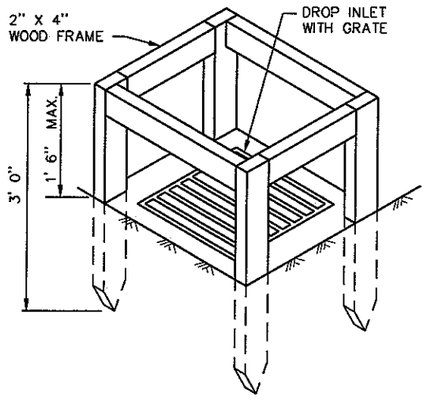
SANDBAG BARRIER AT STREET INLET
THIS INLET PROTECTION IS USED DURING ROUGH GRADING ONLY USE BEFORE ROAD IS OPEN TO TRAFFIC OR IS PAVED.
(TYPE B OR C SPEC. 3893)

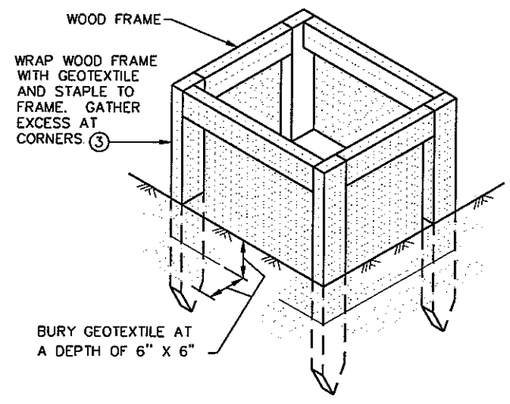


AGGREGATE FILTER AT CURB INLET
(TYPE B WITHOUT CURB SPEC. 3891)
(TYPE C WITH CURB SPEC. 3891)



GEOTEXTILE FILTER AT STREET INLET WITH CURB BOX
(TYPE A SPEC. 3891)





SILT FENCE BOX TO PROTECT DROP INLETS
USE WHERE INLET DRAINS AN AREA WITH SLOPES AT 1:3 or LESS
(TYPE A SPEC. 3891)

AS-BUILT

MAR 0 1 2006

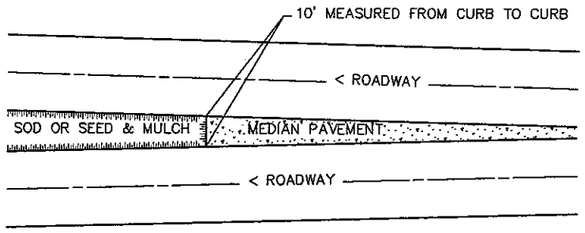
ENGINEERING

NOTES:
SEE SPECS. 2573, 3891 & 3893.
MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.

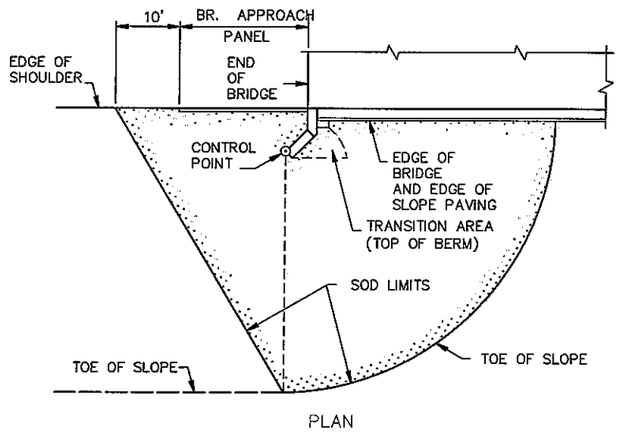
(1) FOR CMP, REMOVE TEMPORARY STANDPIPE AND INSTALL CULVERT APRON AFTER VEGETATION IS ESTABLISHED
(2) FOR RCP, INSTALL CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO RCP. AFTER VEGETATION IS ESTABLISHED REMOVE TEMPORARY STANDPIPE.
(3) ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONO/MONO, MEETING SPEC. 3886 FOR MACHINE SLICED. SLICED.

STANDARD SHEET NO. 5-297.405 (4 OF 4)	TITLE: TEMPORARY EROSION CONTROL TEMPORARY INLET PROTECTION
STANDARD APPROVED: NOVEMBER 5, 2002	
STATE PROJ NO 55-598-53	C.R. 120 SHEET NO. 16 OF 18 SHEETS

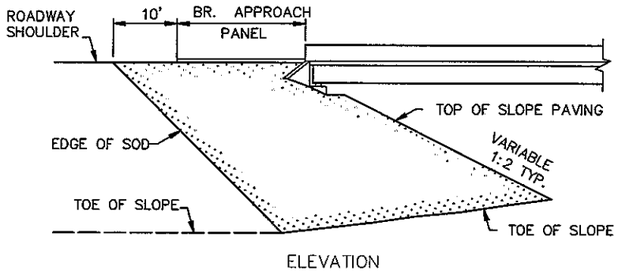
FILE NAME: 120-ER05.DWG



SODDING LIMITS AT GORE AREA

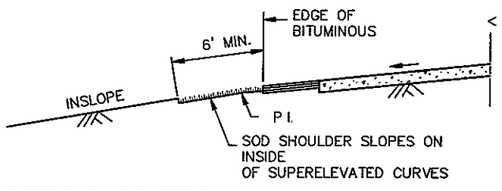


PLAN

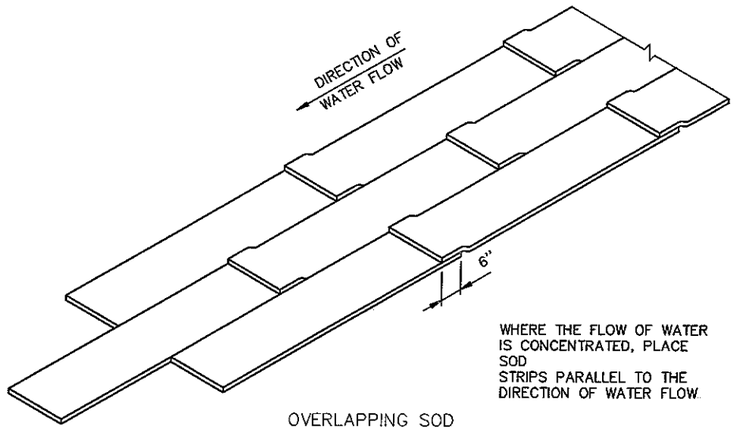


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

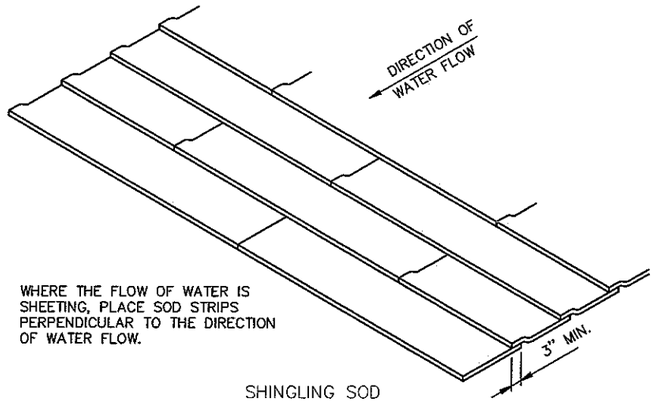


SODDING INSLOPES OF SUPERELEVATED CURVES



OVERLAPPING SOD

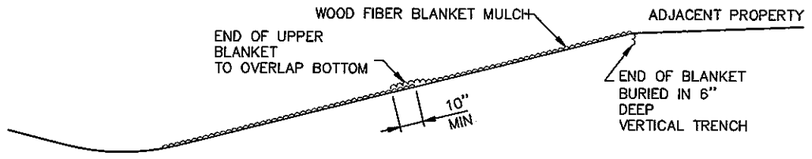
WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.



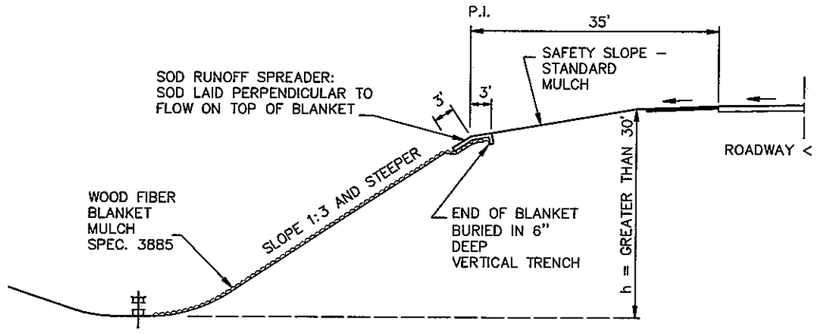
SHINGLING SOD

WHERE THE FLOW OF WATER IS SHEETING, PLACE SOD STRIPS PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

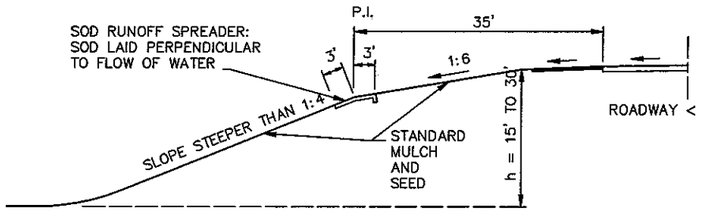
SPECIAL SOD PLACEMENT TECHNIQUES



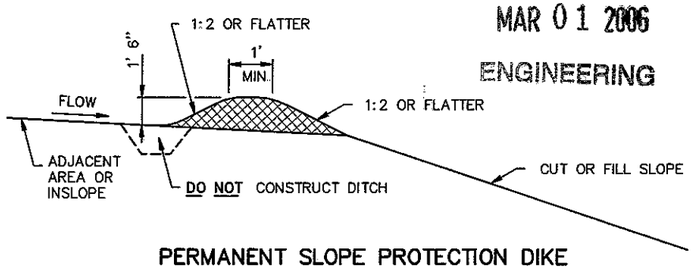
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)



BROKEN–BACK SAFETY FILL SLOPE



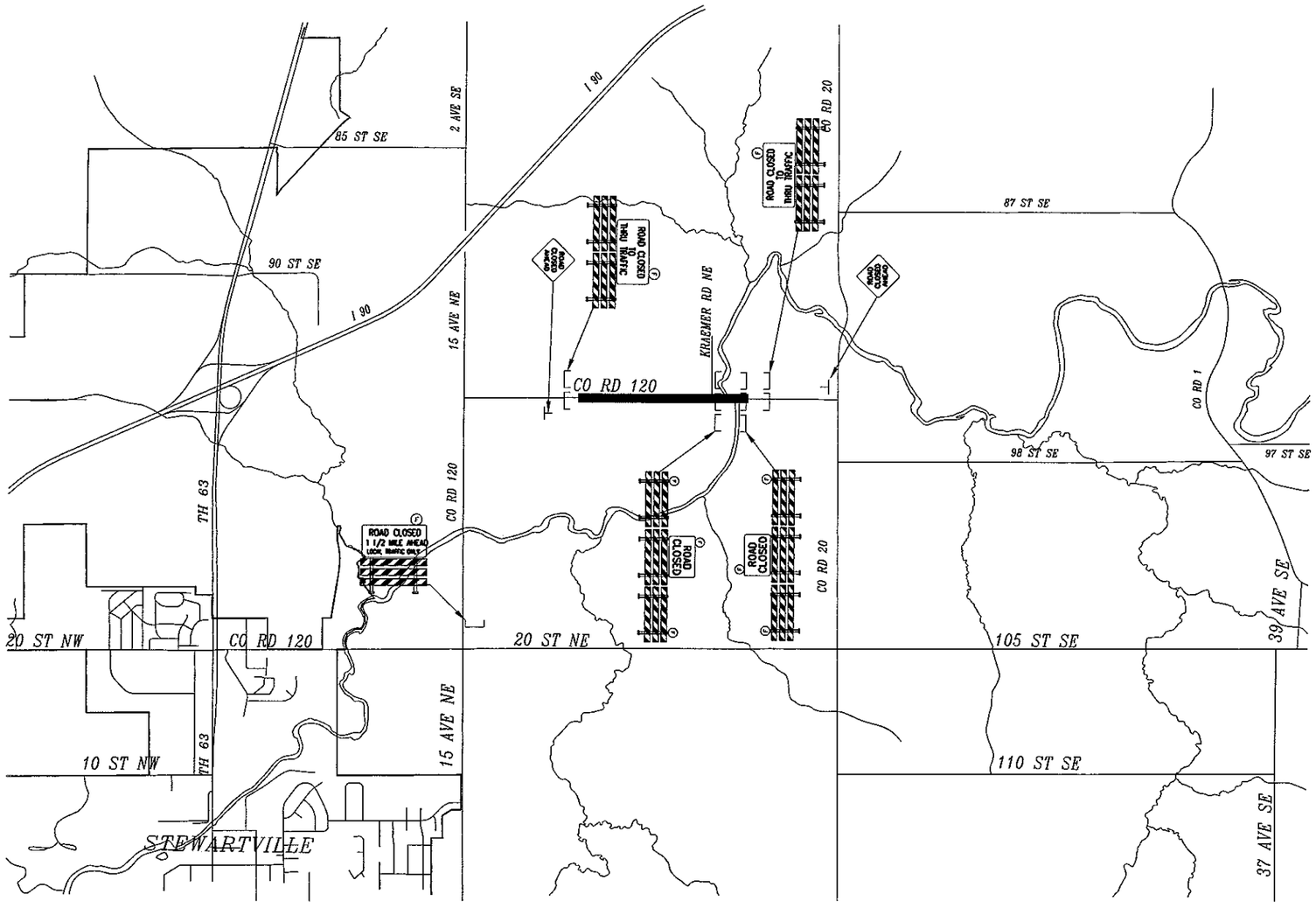
PERMANENT SLOPE PROTECTION DIKE

AS-BUILT
MAR 0 1 2006
ENGINEERING

STANDARD SHEET NO. 5–297.406	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS
STANDARD APPROVED: JANUARY 31, 1985	
REVISION DATE 10–26–2000	State Proj. No. 55-598-53 — Sheet No. 17 of 18 Sheets

FILE NAME: 120-ER06.DWG DATE: 3-08-04

ESTIMATE OF TRAFFIC CONTROL DEVICES									
DEVICE	NUMBER	SIZE	COLOR	QUANTITY	DEVICE	NUMBER	SIZE	COLOR	QUANTITY
ROAD CLOSED	R11-2	48 x 30	BLK/WH	2		TYPE III	MIN. 6'	OR & WH	11
ROAD CLOSED 1 1/2 MILE AHEAD LOCAL TRAFFIC ONLY	R11-3A	60 x 30	BLK/WH	1	(F)	TYPE A	FLASHING LAMP	AMBER	10
ROAD CLOSED AHEAD	W20-3	48 x 48	BLK/OR	2	ROAD CLOSED TO THRU TRAFFIC	R11-4	60 x 30	BLK/WH	2



TRAFFIC CONTROL LEGEND

- ⊥ POST OR STAND MOUNTED SIGN
- ⌊⌋ TYPE III BARRICADE
- (F) TYPE "A" AMBER FLASHING LAMP

AS-BUILT

MAR 0 1 2006

ENGINEERING

TRAFFIC CONTROL NOTES

1. THE LOCATION OF SIGNS AND DEVICES WILL BE STAKED BY THE ENGINEER IN THE FIELD.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL ON THIS PROJECT
3. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL DATED, JANUARY 2004.
4. CONSTRUCTION ZONE SIGNING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL INCLUDE, BUT NOT BE LIMITED TO, SIGNS FOR LANE CLOSURE, BUMP, DIP, LOOSE GRAVEL, ETC.. THE NUMBER AND LOCATION WILL BE DETERMINED BY THE CONTRACTORS OPERATION.
5. ALL BARRICADES ON THIS PROJECT SHALL BE REFLECTORIZED ON BOTH SIDES.

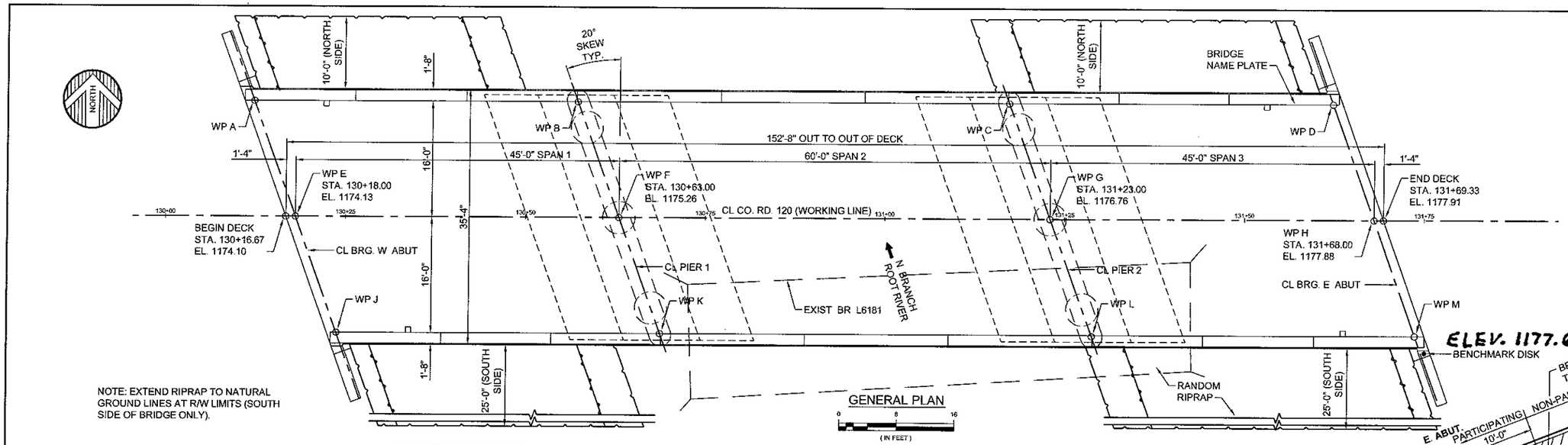
CERTIFIED BY Kaye M Bienick REG. NO. 19917 5/20 20 04
LICENSED PROFESSIONAL ENGINEER

S.P. 55-598-53

Sheet No. 18 of 18 Sheets

DATE: 5-20-04

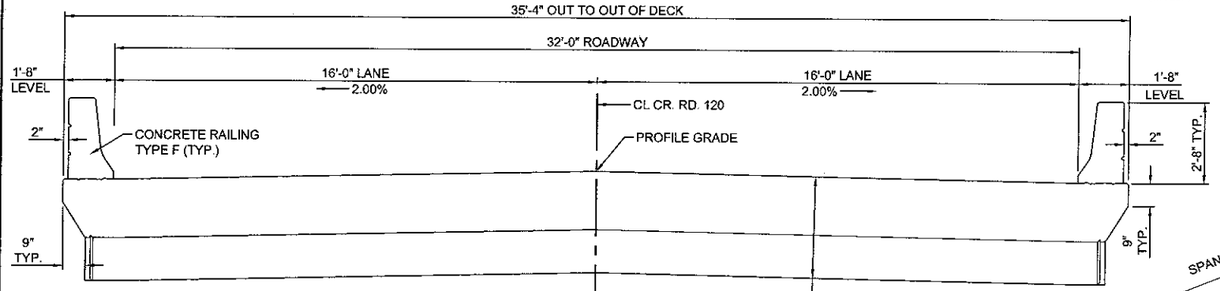
FILE NAME: Traffic.dwg



GENERAL PLAN

0 8 16 (IN FEET)

NOTE: EXTEND RIPRAP TO NATURAL GROUND LINES AT R/W LIMITS (SOUTH SIDE OF BRIDGE ONLY).



TYPICAL TRANSVERSE SECTION

0 2.5 5 (IN FEET)

GENERAL ELEVATION

0 8 16 (IN FEET)

AS-BUILT

MAR 0 1 2006

ENGINEERING

CONSTRUCTION OF EACH ABUTMENT SHALL NOT BE STARTED UNTIL AT LEAST 72 HOURS AFTER THE APPROACH FILL AT THAT ABUTMENT HAS BEEN CONSTRUCTED TO THE FULL HEIGHT AND CROSS SECTION. THE APPROACH FILL CONSTRUCTION SHALL EXTEND A DISTANCE OF AT LEAST 50 FEET BEHIND THE ABUTMENT AS MEASURED ALONG THE CENTERLINE OF THE ROADWAY

SEE SURVEY SHEET FOR APPROX. LIMITS OF RIPRAP

WSN 460A451

① BRIDGE NO. L6181 STA. 131+00± (NON-PARTICIPATING)

② SELECT GRANULAR BORROW BEHIND ABUTEMENTS WITH 1:1 SLOPE TO DAYLIGHT SELECT GRANULAR MATERIAL SHALL COMPLY WITH SPEC. 3149.2B INCLUDES APPROX. 314 C.Y (C.V.) PART / 198 C.Y (C.V.) NON-PART

DESIGN DATA

2002 AND CURRENT INTERIM A.A.S.H.T.O. DESIGN SPECIFICATIONS
LOAD FACTOR DESIGN METHOD. HS 25 LOADING

DEAD LOAD INCLUDES:
17 PSF ALLOWABLE FOR FUTURE WEARING COURSE

MAXIMUM ALLOWABLE DESIGN STRESSES:

REINFORCED CONCRETE:
f'c = 4000 p.s.i. n = 8 fy = 60,000 p.s.i. Reinf.

STRUCTURAL STEEL:
fy = 36,000 p.s.i. Spec. 3306

DESIGN SPEED 30 MPH

DECK AREA: 5394 SQ.FT

CURRENT ADT 57 (2004)

BRIDGE OPERATING RATING HS 64

CONSTRUCTION NOTES

THE 2000 EDITION OF THE MINNESOTA DEPT. OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE IN MILLIMETERS. BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH 3301

B.M. ELEV. 1172.76 (M.S.L. 1929 Adj) SPK IN POWER POLE STA. 127+21.26, 26.7 FT LT

COUNTY APPROVAL

5/20/04 Michael K Kruse
DATE COUNTY ENGINEER, OLMSTED CO.

WIDSETH SMITH NOLTING
ENGINEERS
ARCHITECTS
LAND SURVEYORS
PROJECT MANAGERS
ALEXANDRIA, MN.
PHONE 320-762-8149 FAX 320-762-0263
www.wsn-mn.com

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

PROFESSIONAL ENGINEER / TIMOTHY J. MOE

DATE 3/2/2004 LICENSE NO. 14280

CO. RD. 120 OLMSTED COUNTY

MINNESOTA DEPARTMENT OF TRANS.

Bridge No. 55579

CO. RD. 120 OVER NORTH BRANCH ROOT RIVER, 0.4 MILES WEST OF C.S.A.H. 20

45.0' - 60.0' - 45.0', CONTINOUS CONCRETE SLAB SPAN 32.0' ROADWAY, CAST-IN-PLACE CONCRETE RAILING TYPE F 20° SKEW.

SPAN IDENT. NO. 209

GENERAL PLAN AND ELEVATION

SEC. 24 T 105 N R 14 W

HIGH FOREST TOWNSHIP OLMSTED COUNTY

APPROVED

Ronald L Wenum 6/2/04
STATE BRIDGE ENGINEER DATE

STATE PROJ NO. 55-598-53

DES. BY	T.J.M.	DR. BY	J.A.K.
CHK. BY	K.A.R.	CHK. BY	T.J.M.

SHEET NO. B1 OF B17 SHEETS

INDEX

SHEET NO.	DESCRIPTION
B1	GENERAL PLAN & ELEVATION
B2	BRIDGE LAYOUT
B3	ABUTMENT LAYOUT
B4	ABUTMENT REINFORCEMENT
B5	ABUTMENT DETAILS
B6	PIER LAYOUT
B7	PIER REINFORCEMENT
B8	PIER DETAILS
B9	SUPER STRUCTURE LAYOUT
B10	SUPER STRUCTURE REINFORCEMENT
B11	SUPER STRUCTURE DETAILS
B12	CONCRETE RAILING TYPE "F"
B13-B15	STANDARD BRIDGE DETAILS
B16	BRIDGE SURVEY
B17	BRIDGE SURVEY PLAN & PROFILE

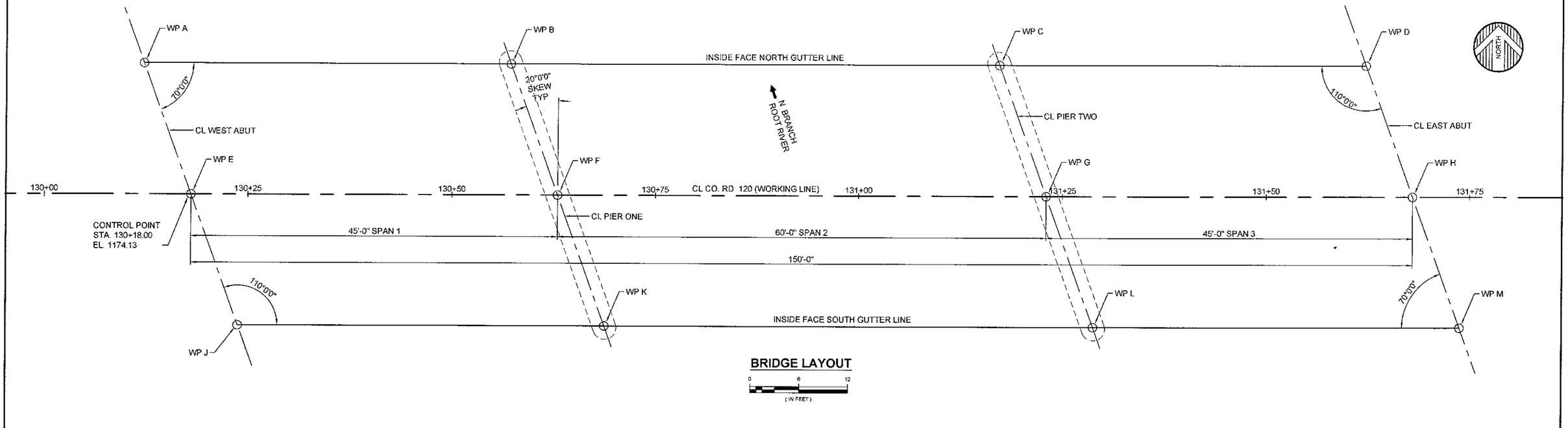
THIS PLAN CONTAINS 17 SHEETS

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

ITEM NO.		2105.522	2401.501	2401.501	2401.512	2401.513	2401.541	2401.601	2401.601	2401.601	2401.601
ITEM		SELECT GRANULAR BORROW (CV) ②	STRUCTURAL CONCRETE (3X46)	STRUCTURAL CONCRETE (3Y43)	BRIDGE SLAB CONCRETE (3Y33A)	TYPE F RAILING CONCRETE (3Y46A)	REINFORCEMENT BARS (EPOXY COATED)	STRUCTURE EXCAVATION	SLOPE PREPARATION	FOUNDATION PREPARATION PIER 1	FOUNDATION PREPARATION PIER 2
UNIT		CU. YD.	CU. YD.	CU. YD.	SQ. FT.	LIN. FT.	POUND	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM
QUANTITY		512 (P)	43 (P)	156 (P)	5394 (P)	305 (P)	137,030 (P)	1	1	1	1

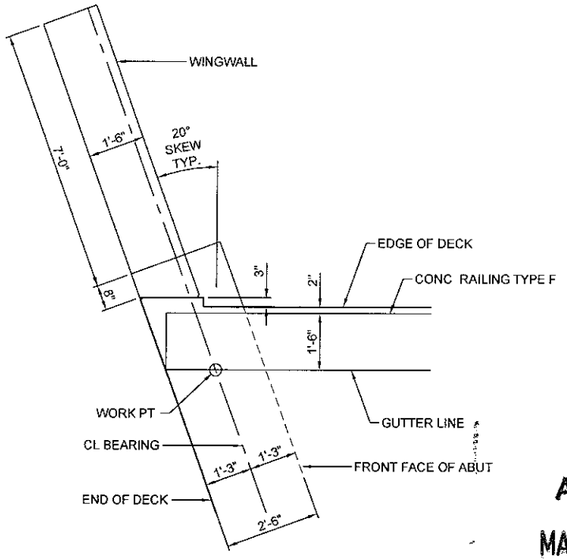
ITEM NO.	2402.521	2402.546	2442.501	2452.510	2452.511	2452.520	2452.602	2452.604	2452.604	2511.501	
ITEM	STRUCTURAL STEEL (3306)	FLOOR DRAIN TYPE B702 MODIFIED	REMOVE OLD BRIDGE ①	STEEL H-PILING DRIVEN 10"	STEEL H-PILING DELIVERED 10"	STEEL H-TEST PILES 30 FT LONG 10"	PILE TIP PROTECTION 10"	54" DIA. DRILLED SHAFTS (EARTH)	54" DIA. DRILLED SHAFTS (ROCK)	RANDOM RIPRAP CLASS IV	
UNIT	POUND	EACH	LUMP SUM	LIN. FT.	LIN. FT.	EACH	EACH	LIN. FT.	LIN. FT.	CU. YD.	
QUANTITY	560 (P)	4	1	200	200	2	12	12	60	486	

H:\Job\460BRIDGH451\cadd\CoRd120\C-BR-PE.dwg, PE Sheet, 4/21/2004 2:12:19 PM, Gary, HP8550 PCL5C.pc3, 1:2



BRIDGE LAYOUT

0 6 12
(IN FEET)



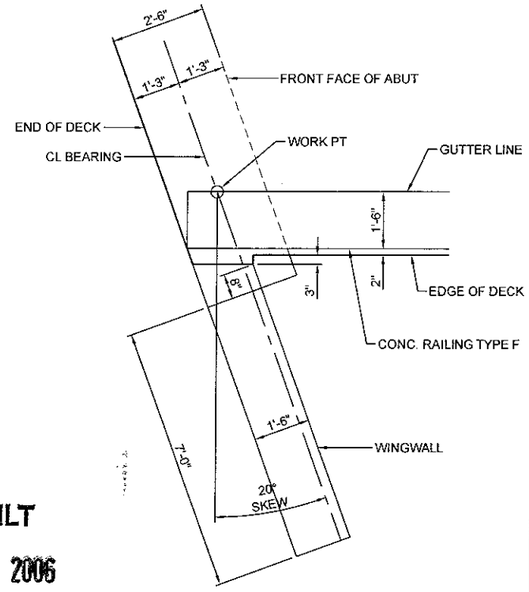
TYP. CORNER DETAIL SOUTHEAST & NORTHWEST

0 2 4
(IN FEET)

AS-BUILT

MAR 01 2006

ENGINEERING



TYP. CORNER DETAIL SOUTHWEST & NORTHEAST

0 2 4
(IN FEET)

DIMENSIONS BETWEEN WORKING POINTS														ELEVATIONS			
POINT	STATION	A	B	C	D	E	F	G	H	J	K	L	M	TOP OF SLAB EL.	TOP OF SLAB TO BR. SEAT	BRIDGE SEAT EL.	POINT
A	130+12.18		45.00			17.03	53.28				65.06	120.96		1173.66	2.42	1171.24	A
B	130+57.18			60.00			17.03	67.74		46.22		78.47	120.96	1174.79	3.42	1171.37	B
C	131+17.18				45.00			17.03	53.28	98.69	57.98		65.06	1176.29	3.42	1172.87	C
D	131+62.18								17.03		98.69	46.22		1177.41	2.42	1174.99	D
E	130+18.00						45.00			17.03	53.28			1174.13	2.42	1171.71	E
F	130+63.00							60.00			17.03	67.74		1175.26	3.42	1171.84	F
G	131+23.00								45.00			17.03	53.28	1176.76	3.42	1173.34	G
H	131+68.00												17.03	1177.88	2.42	1175.46	H
J	130+23.82										45.00			1173.96	2.42	1171.54	J
K	130+68.82											60.00		1175.08	3.42	1171.66	K
L	131+28.82												45.00	1176.58	3.42	1173.16	L
M	131+73.82													1177.71	2.42	1175.29	M

© 2002 WIDSETH SMITH NOLTING

CERTIFIED BY: _____ PROFESSIONAL ENGINEER TIMOTHY J. MOE LICENSE NO. 14280 DATE: 1/30/2004

JOB NUMBER: 460A451 S.P. NO. 55-598-53 SHEET NO. B2 OF B17 SHEETS

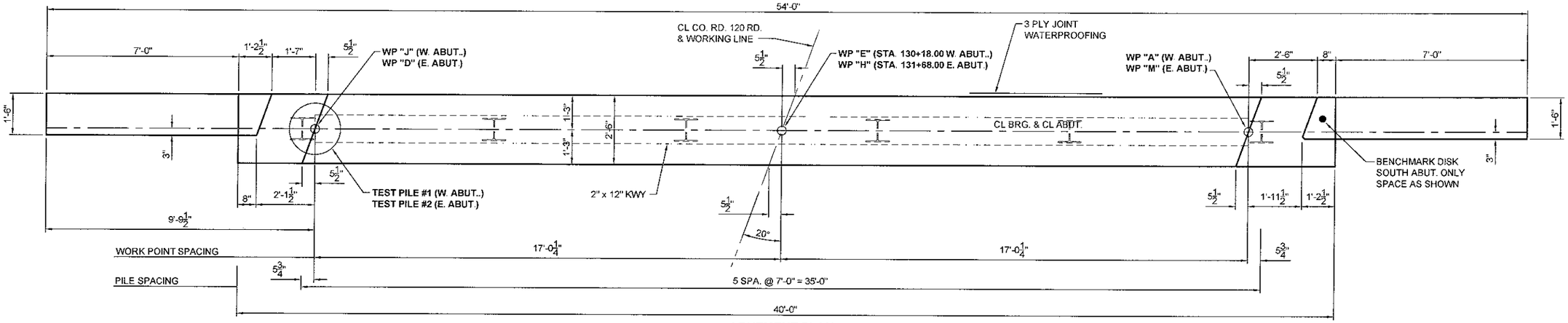
WIDSETH SMITH NOLTING
ENGINEERS ALEXANDRIA
ARCHITECTS BEMIDJI
LAND SURVEYORS BRAINERD
ENVIRONMENTAL SERVICES CROOKSTON
GRAND FORKS
WWW.WSNMN.COM

BRIDGE LAYOUT

APPROVED

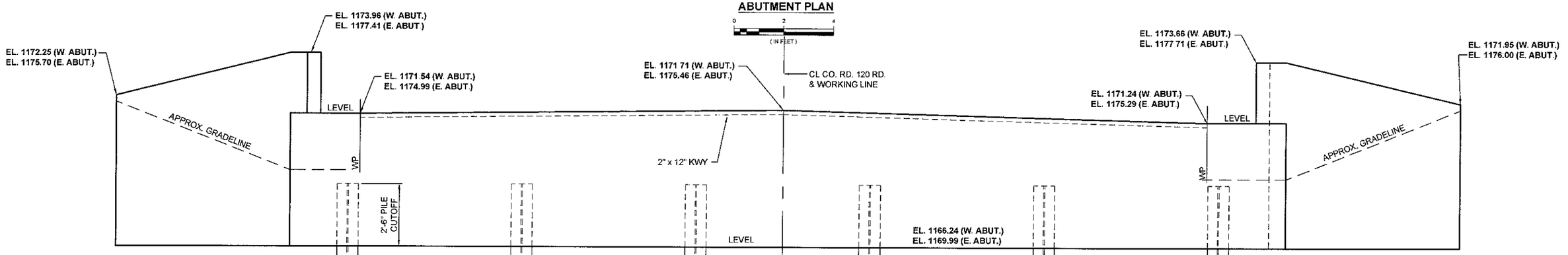
DES. BY T.J.M.	DR. BY J.A.K.	BRIDGE NO.
CHK. BY K.A.R.	CHK. BY T.J.M.	55579

H:\Job\460BRIDG\451\cadd\CoRd120\C-BR-LAYOUT.dwg, Bridge Layout, 1/15/2004 9:19:11 AM



ABUTMENT PLAN

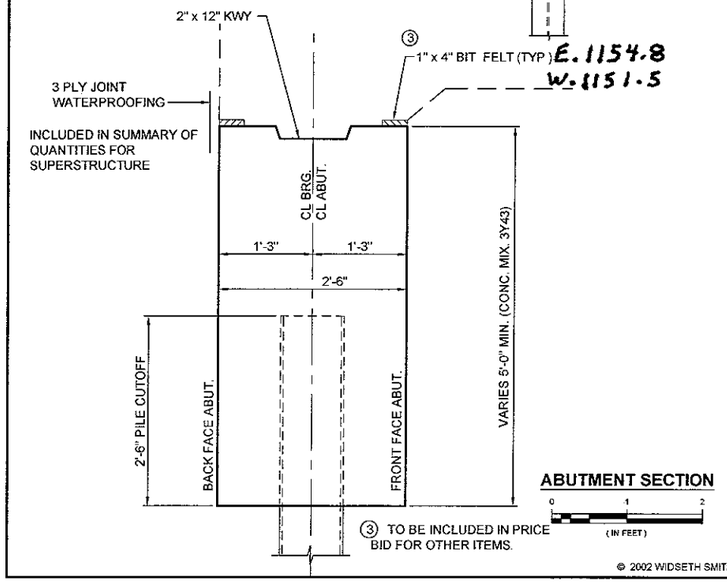
0 2 4 (IN FEET)



ABUTMENT ELEVATION

0 2 4 (IN FEET)

E. 1154.8 W. 1151.5 | E. 1154.6 W. 1151.7 | E. 1154.8 W. 1151.5 | E. 1155.5 W. 1151.6 | E. 1155.5 W. 1151.7 | E. 1155.5 W. 1151.8



ABUTMENT SECTION

0 1 2 (IN FEET)

③ TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

SUMMARY OF QUANTITIES FOR EAST & WEST ABUTMENT		
STRUCTURAL CONCRETE (3Y43)	50	CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	7900	POUND
② BENCH MARK DISK (STD PL NO.9300) Elev. 1177.68	1	EACH
① HP 10 X 42 PILING DEL'D. 10"	200	LIN.FT.
① HP 10 X 42 PILING DRIVEN 10"	200	LIN.FT.
HP 10 X 42 -TEST PILES 30' LONG	2	EACH
PILE TIP PROTECTION	12	EACH

① DOES NOT INCLUDE TEST PILES

② COUNTY WILL FURNISH DISK. PAYMENT FOR PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS. SEE STD. PLATE NO.9301 FOR PLACING.

COMPUTED PILE LOADS - TONS/PILE	
DEAD LOAD *	35
LIVE LOAD	11
DESIGN LOAD	46

* 10/TONS PER PILE INCLUDED FOR DOWNDRAG.

PILE NOTES:

ALL PILES TO BE HP 10 X 42 PILES, SEE DETAIL B202 FOR PILE SPLICES

FOR TEST PILE LOCATIONS, SEE SURVEY SHEET

1 - HP 10 X 42 TEST PILE, ESTIMATED LENGTH 30 FT (WEST ABUT.)
1 - HP 10 X 42 TEST PILE, ESTIMATED LENGTH 30 FT (EAST ABUT.)

5 - HP 10 X 42 PILES, ESTIMATED LENGTH 20 FT. (WEST ABUT.)
5 - HP 10 X 42 PILES, ESTIMATED LENGTH 20 FT. (EAST ABUT.)
12 - HP 10 X 42 PILES REQUIRED FOR BOTH ABUTMENTS

AS-BUILT
MAR 0 1 2006
ENGINEERING

© 2002 WIDSETH SMITH NOLTING

CERTIFIED BY: PROFESSIONAL ENGINEER TIMOTHY V. MOE LICENSE NO. 14280 DATE: 1/30/ 2004

WIDSETH SMITH NOLTING
ENGINEERS ALEXANDRIA BEMIDJI
ARCHITECTS BRAINERD
LAND SURVEYORS CROOKSTON
ENVIRONMENTAL SERVICES GRAND FORKS WWW.WSN-MN.COM

JOB NUMBER: 460A451

ABUTMENT LAYOUT

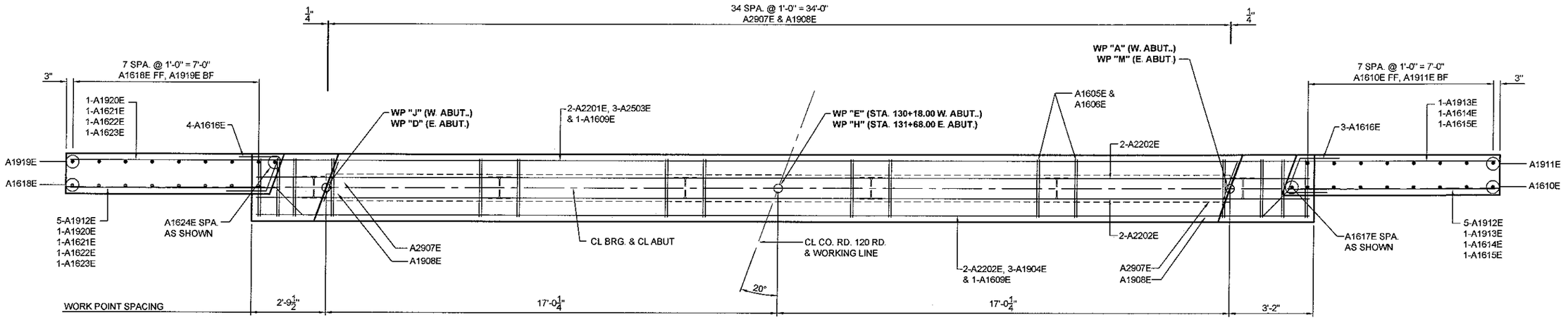
APPROVED

DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO
CHK. BY K.A.R.	CHK. BY T.J.M.	55579

S.P. NO. 55-598-53

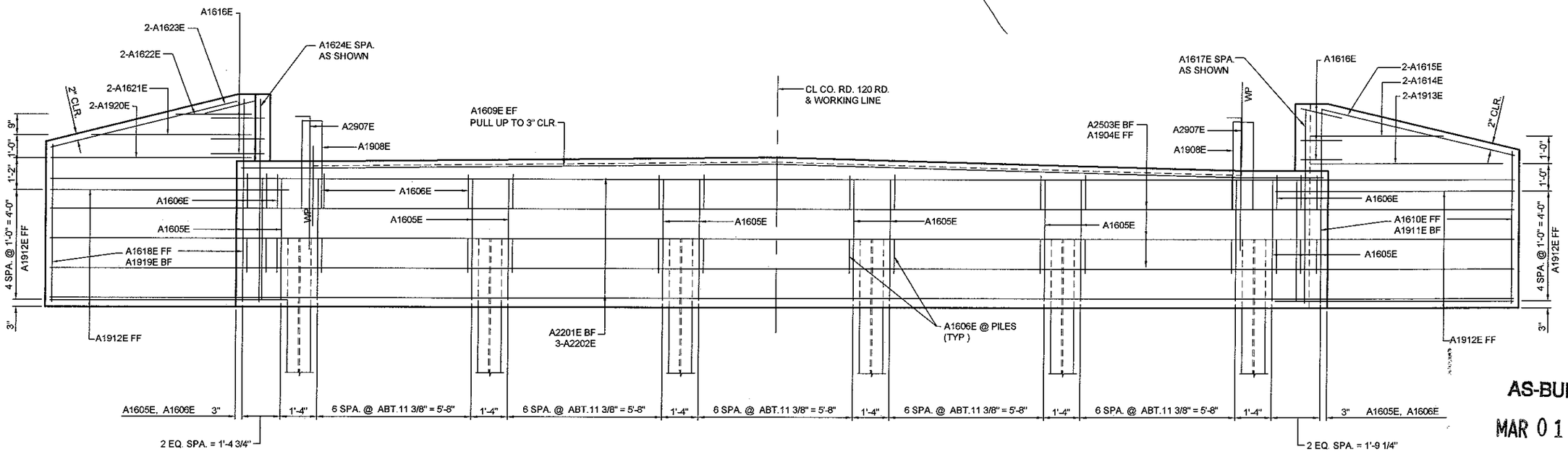
SHEET NO. B3 OF B17 SHEETS

H:\Job\460BRIDGW451\caddi\CoRd120\c-br-abut.dwg, ABUT-LAYOUT, 1/15/2004 9:25:23 AM



ABUTMENT PLAN

0 2 4
(IN FEET)



ABUTMENT ELEVATION

0 2 4
(IN FEET)

AS-BUILT
MAR 0 1 2006
ENGINEERING

NOTES:

1 SEE ABUTMENT DETAILS SHEET FOR SECTION THRU ABUTMENT, BAR LIST AND QUANTITIES.

H:\Job\460BRIDG\451\cadd\CoRd120\lc-br-abut.dwg, ABUT-STEEL, 1/21/2004 10:16:36 AM

© 2002 WIDSETH SMITH NOLTING

CERTIFIED BY: _____ PROFESSIONAL ENGINEER: TIMOTHY J. MOE LICENSE NO. 14280 DATE: 1/30/ 2004

JOB NUMBER: 460A451

S.P. NO. 55-598-53

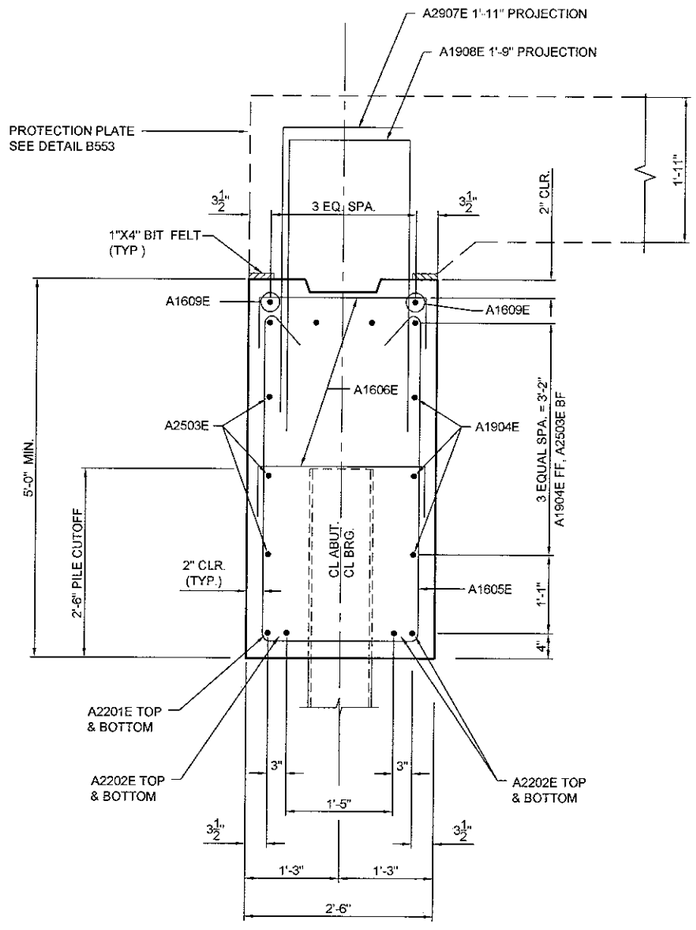
SHEET NO. B4 OF B17 SHEETS

WIDSETH SMITH NOLTING
ENGINEERS ALEXANDRIA BEMIDJI
ARCHITECTS BRAINERD
LAND SURVEYORS CROOKSTON
ENVIRONMENTAL SERVICES GRAND FORKS WWW.WSN-MN.COM

ABUTMENT REINFORCEMENT

APPROVED

DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO
CHK. BY K.A.R.	CHK. BY T.J.M.	55579



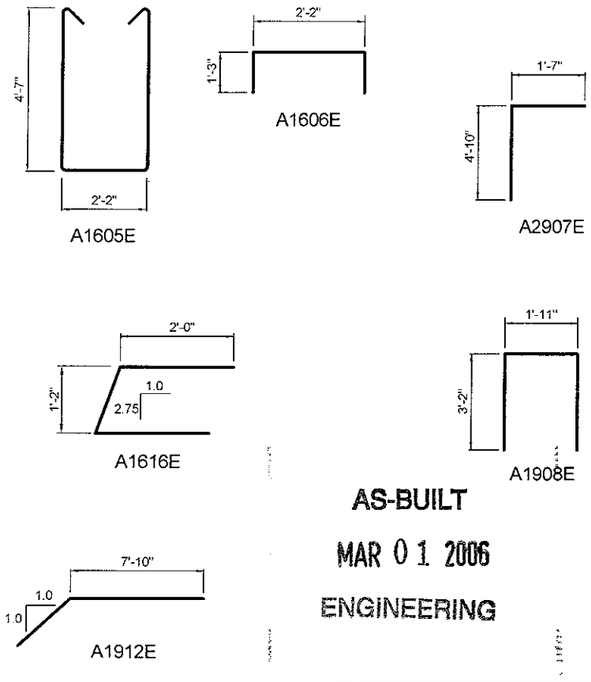
ABUTMENT SECTION

0 1 2
(IN FEET)

BILL OF REINFORCEMENT
FOR 2 ABUTMENTS & WINGWALLS

BAR	WEST ABUT.	EAST ABUT.	LENGTH	SHAPE	LOCATION
A2201E	2	2	53'-8"	STRAIGHT	HORZ. CAP
A2202E	6	6	39'-8"	STRAIGHT	HORZ. CAP
A2503E	3	3	53'-8"	STRAIGHT	HORZ. CAP
A1904E	3	3	39'-8"	STRAIGHT	HORZ. CAP
A1605E	41	41	12'-3"	BENT	STIRRUP
A1606E	57	57	4'-8"	BENT	ABUT. TIE
A2907E	35	35	6'-5"	BENT	SLAB TIE
A1908E	35	35	8'-3"	BENT	SLAB TIE
A1609E	2	2	39'-7"	STRAIGHT	HORZ. CAP
A1610E	1 SETS OF 8	1 SETS OF 8	5'-5" TO 7'-1"	STRAIGHT	VERT. WINGWALL FF
A1911E	1 SETS OF 8	1 SETS OF 8	5'-5" TO 7'-1"	STRAIGHT	VERT. WINGWALL BF
A1912E	10	10	9'-2"	BENT	HORZ. WINGWALL FF
A1913E	2	2	7'-0"	STRAIGHT	HORZ. WINGWALL
A1614E	2	2	4'-10"	STRAIGHT	HORZ. WINGWALL
A1615E	2	2	7'-2"	STRAIGHT	HORZ. WINGWALL
A1616E	7	7	5'-2"	BENT	WINGWALL TOP
A1617E	1	1	7'-0"	STRAIGHT	VERT. WINGWALL
A1618E	1 SETS OF 8	1 SETS OF 8	5'-8" TO 7'-4"	STRAIGHT	VERT. WINGWALL FF
A1919E	1 SETS OF 8	1 SETS OF 8	5'-8" TO 7'-4"	STRAIGHT	VERT. WINGWALL BF
A1920E	2	2	7'-4"	STRAIGHT	HORZ. WINGWALL
A1621E	2	2	5'-10"	STRAIGHT	HORZ. WINGWALL
A1622E	2	2	2'-9"	STRAIGHT	HORZ. WINGWALL
A1623E	2	2	7'-0"	STRAIGHT	HORZ. WINGWALL
A1624E	1	1	7'-4"	STRAIGHT	VERT. WINGWALL

BAR SHAPES:



AS-BUILT

MAR 0 1 2006

ENGINEERING

© 2002 WIDSETH SMITH NOLTING

CERTIFIED BY: _____ PROFESSIONAL ENGINEER TIMOTHY J. MOE LICENSE NO. 14280 DATE: 1/30/2004

JOB NUMBER: 460A451

S.P. NO. 55-598-53

SHEET NO. B5 OF B17 SHEETS

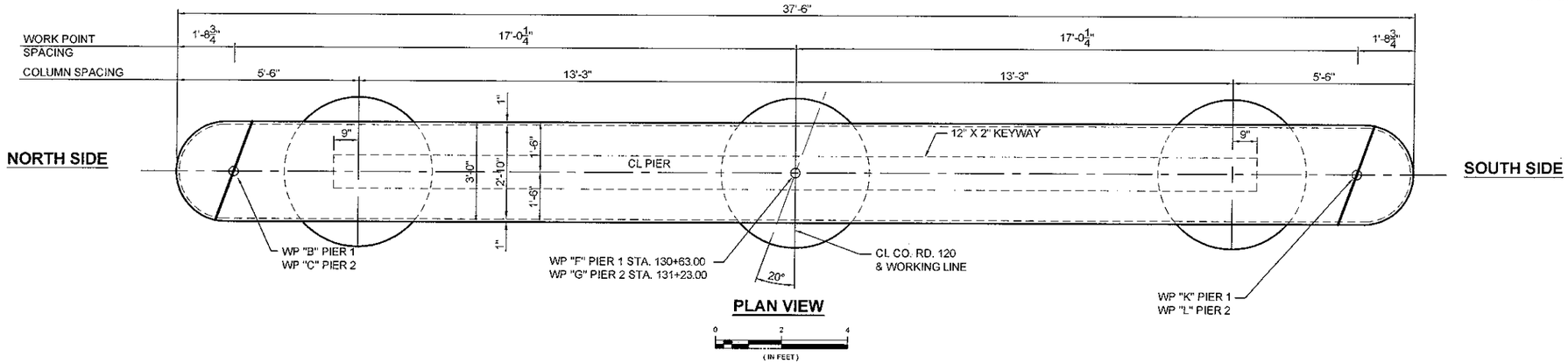
WIDSETH SMITH NOLTING
ENGINEERS ALEXANDRIA BISMARCK
ARCHITECTS BRAINERD
LAND SURVEYORS CROOKSTON GRAND FORKS
ENVIRONMENTAL SERVICES WWW.WSN-MN.COM

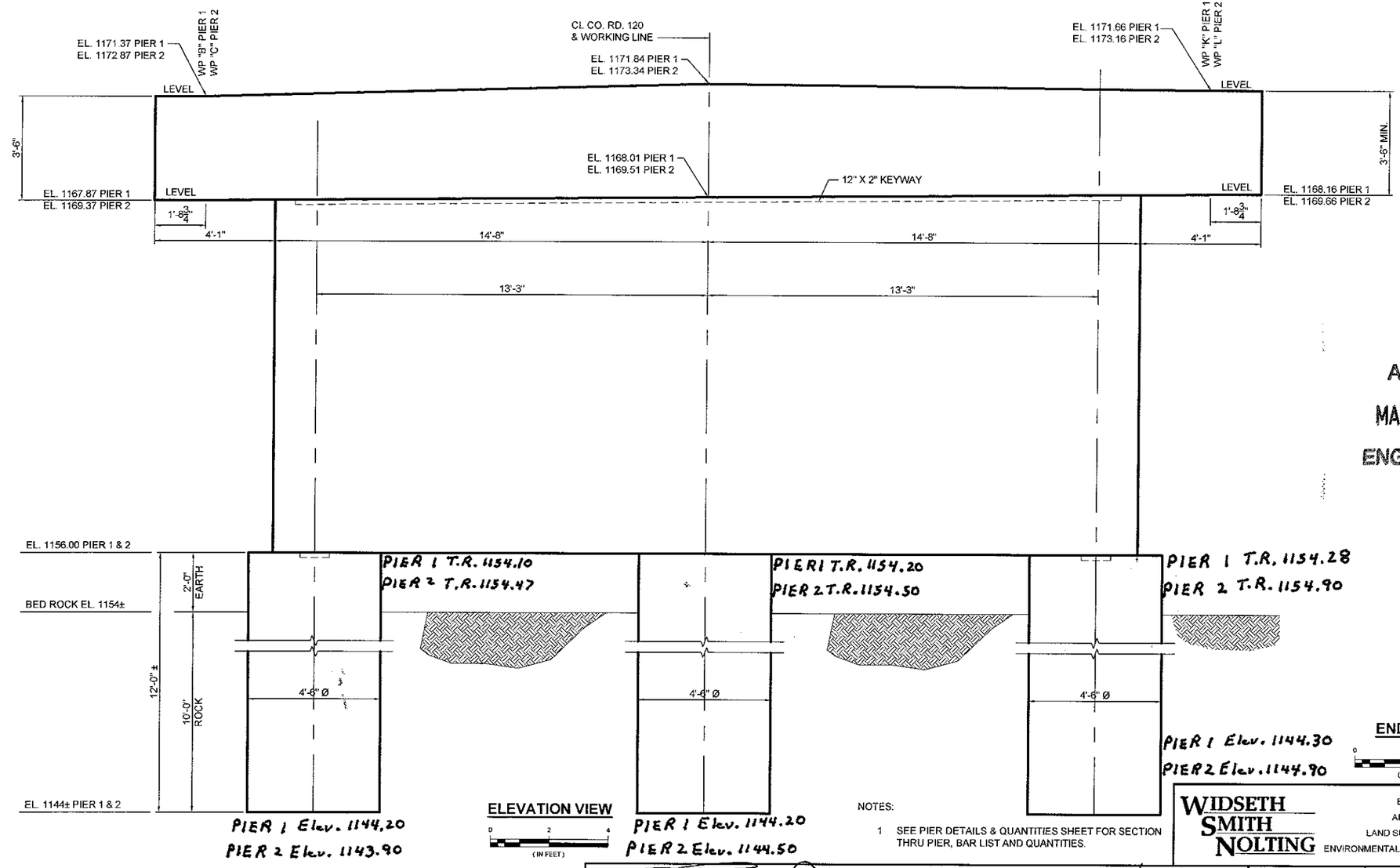
ABUTMENT DETAILS

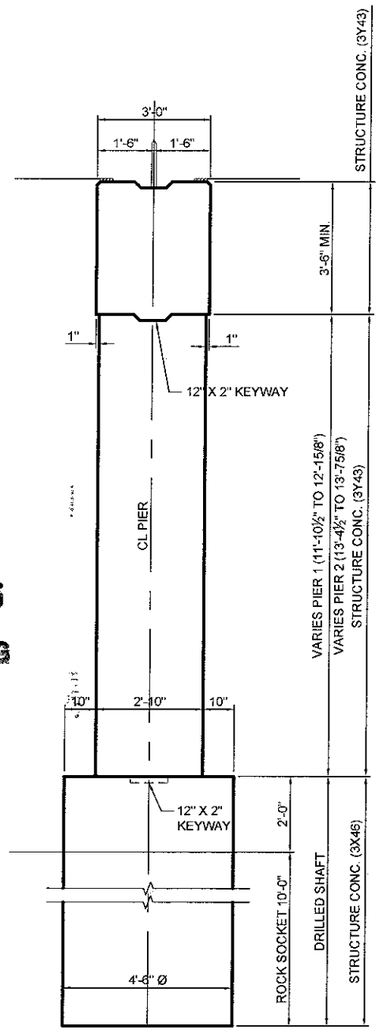
APPROVED

DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO
CHK. BY K.A.R.	CHK. BY T.J.M.	55579

H:\Job\460BRIDG\451\cadd\CoRd120\c-br-abut.dwg, ABUT-DETAILS, 1/15/2004 9:13:58 AM







AS-BUILT

MAR 0 1 2006

ENGINEERING

NOTES:

1 SEE PIER DETAILS & QUANTITIES SHEET FOR SECTION THRU PIER, BAR LIST AND QUANTITIES.

© 2002 WIDSETH SMITH NOLTING

CERTIFIED BY: _____ PROFESSIONAL ENGINEER TIMOTHY J. MOE LICENSE NO. 14280 DATE: 1/30/2004

WIDSETH SMITH NOLTING

ENGINEERS ALEXANDRIA BEMIDJI
ARCHITECTS BRAINERD CROOKSTON
LAND SURVEYORS GRAND FORKS
ENVIRONMENTAL SERVICES WWW.WSN-MN.COM

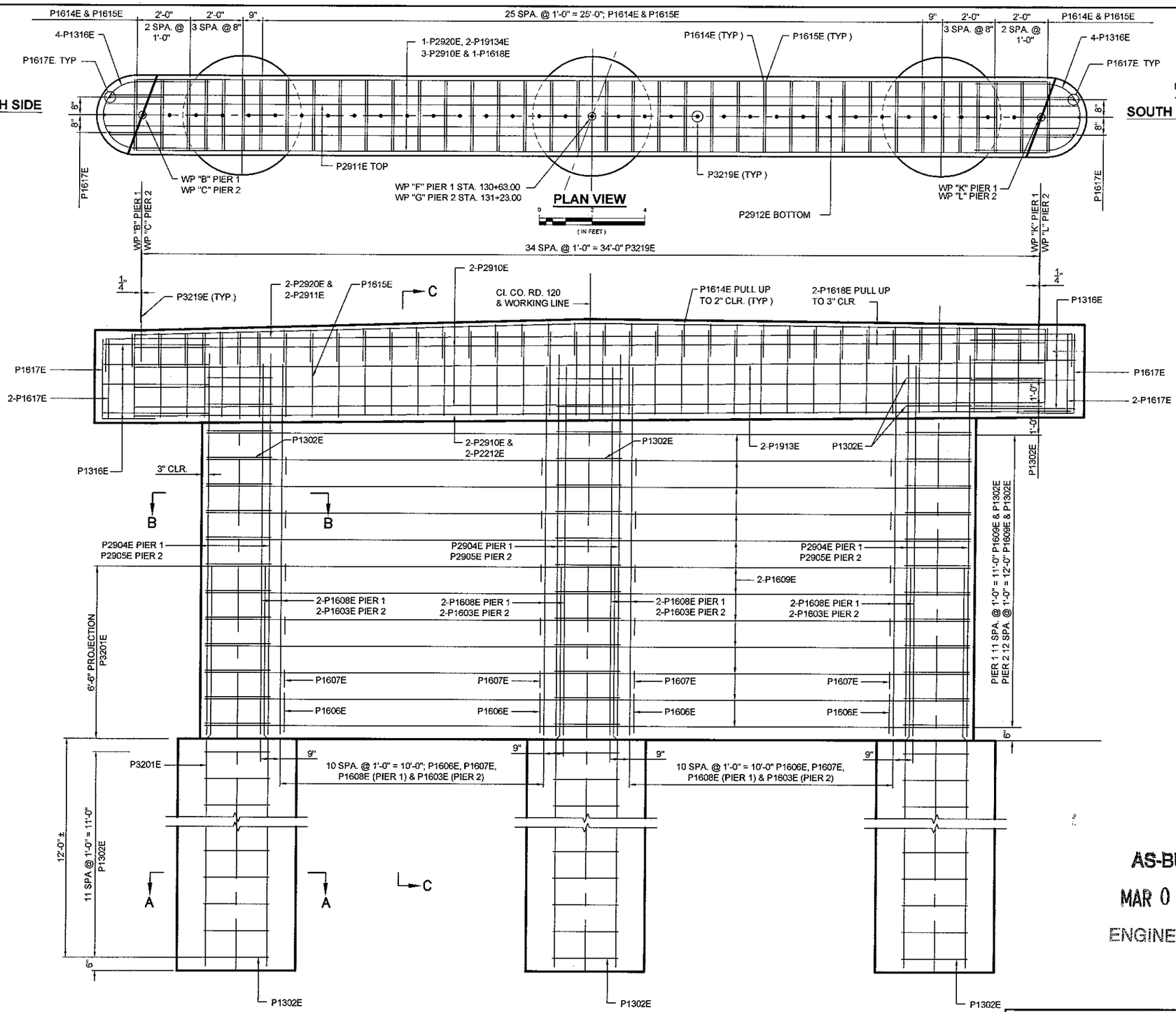
PIER LAYOUT

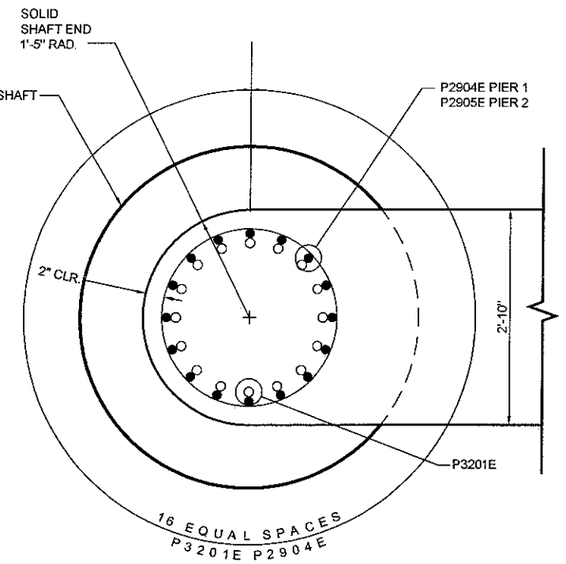
APPROVED

DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO
CHK. BY K.A.R.	CHK. BY T.J.M.	55579

JOB NUMBER: 460A451 S.P. NO. 55-598-53 SHEET NO. B6 OF B17 SHEETS

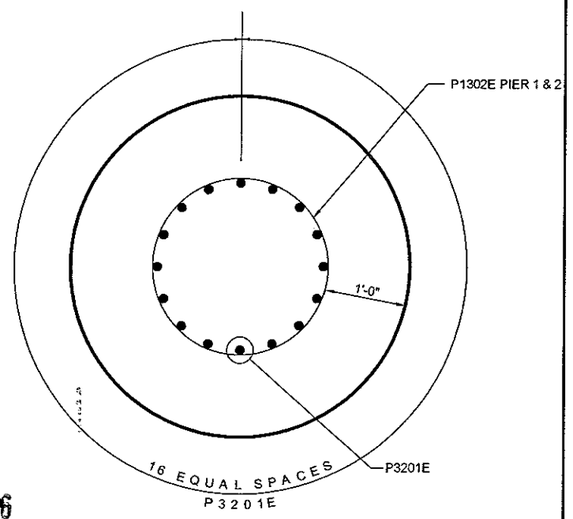
H:\Job\460BRIDGW451\cadd\CoRd120\C-BR-PIER.dwg, PIER-CASION-PLAN, 1/15/2004 9:32:11 AM





SECTION B-B

0 1 2
(IN FEET)



AS-BUILT

MAR 0 1 2006

ENGINEERING

SECTION A-A

0 1 2
(IN FEET)

NOTES:

1 SEE PIER DETAILS SHEET FOR SECTIONS, BAR LIST AND QUANTITIES.

© 2002 WIDSETH SMITH NOLTING

CERTIFIED BY: _____ PROFESSIONAL ENGINEER: TIMOTHY J. MOE LICENSE NO. 14280 DATE: 1/30/2004

WIDSETH SMITH NOLTING

ENGINEERS ALEXANDRIA BISMARCK
ARCHITECTS BRAINERD CROOKSTON
LAND SURVEYORS GRAND FORKS
ENVIRONMENTAL SERVICES WWW.WSN-MN.COM

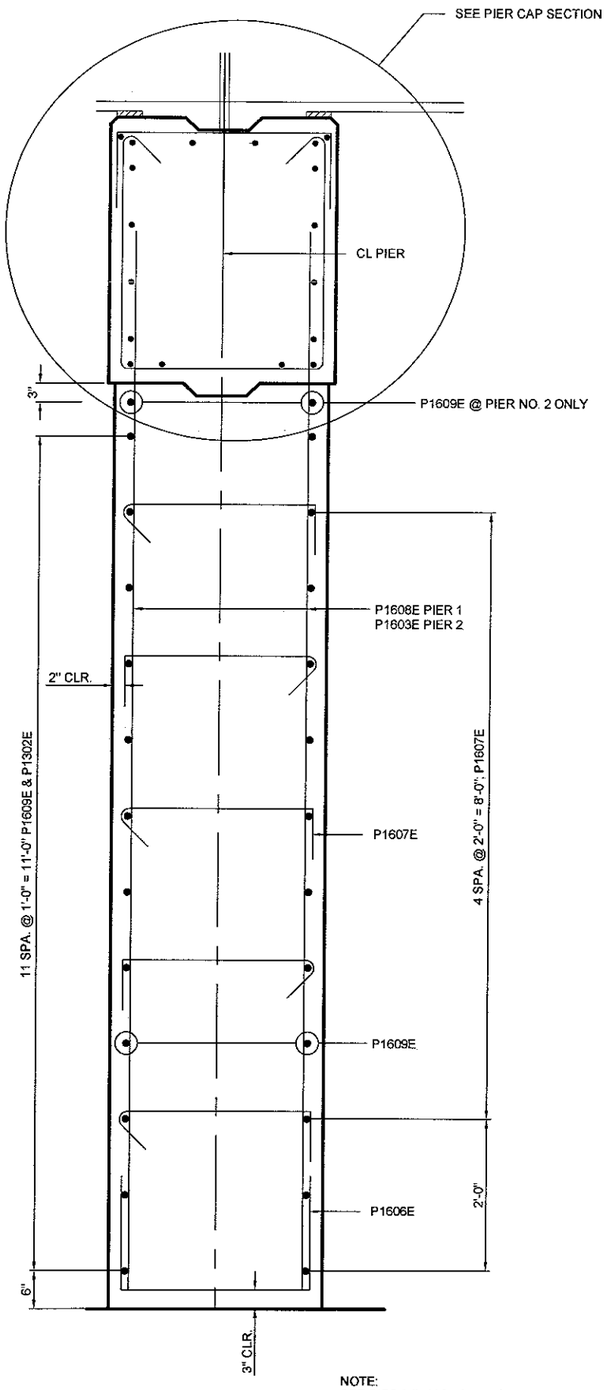
PIER REINFORCEMENT

APPROVED

DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO
CHK. BY K.A.R.	CHK. BY T.J.M.	55579

JOB NUMBER: 460A451 S.P. NO. 55-598-53 SHEET NO. B7 OF B17 SHEETS

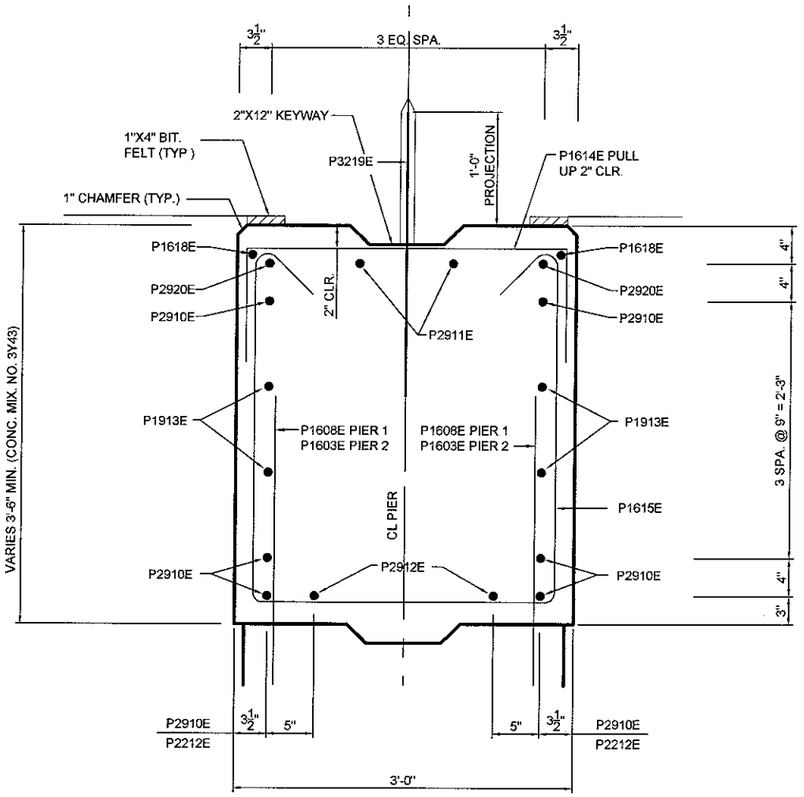
H:\Job\460BRIDG\451\cadd\CoRd120\C-BR-PIER.dwg, PIER-CASION-REINFORCE, 1/21/2004 10:20:09 AM



SECTION C–C

0 1 2
(IN FEET)

NOTE:
SEE PIER REINFORCEMENT SHEET
FOR SECTION CUT LOCATION.



PIER CAP SECTION

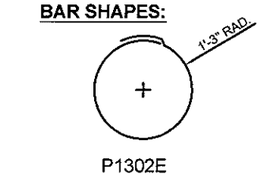
0 1 2
(IN FEET)

SUMMARY OF QUANTITIES FOR PIER 1 & 2		
① STRUCTURAL CONCRETE (3X46)	43	CU. YD.
STRUCTURAL CONCRETE (3Y43)	106	CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	23,060	POUND
54" DIAMETER DRILLED SHAFT (EARTH)	12	LIN. FT.
54" DIAMETER DRILLED SHAFT (ROCK)	60	LIN. FT.

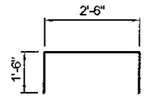
① SEE SPECIAL PROVISIONS.

BILL OF REINFORCEMENT PIER 1 & 2					
BAR	PIER 1	PIER 2	LENGTH	SHAPE	LOCATION
P3201E	48	48	18'-3"	STRAIGHT	DRILLED SHAFT VERT.
P1302E	81	81	9'-1"	BENT	SHAFT TIE
P1603E	-	52	15'-6"	STRAIGHT	WALL VERT.
P2904E	48	-	14-4"	STRAIGHT	COLUMN VERT. PIER 1
P2905E	-	48	15'-10"	STRAIGHT	COLUMN VERT. PIER 2
P1606E	22	22	5'-6"	BENT	STIRRUP
P1607E	110	110	3'-8"	BENT	WALL TIE
P1608E	52	-	14'-0"	STRAIGHT	WALL VERT.
P1609E	24	26	26'-0"	STRAIGHT	WALL HORZ.
P2910E	6	6	34'-4"	STRAIGHT	HORZ. CAP
P2911E	2	2	39'-4"	BENT	HORZ. CAP
P2912E	2	2	36'-6"	STRAIGHT	HORZ. CAP
P1913E	4	4	34'-4"	STRAIGHT	HORZ. CAP
P1614E	38	38	4'-10"	BENT	CAP TIE
P1615E	38	38	9'-9"	BENT	STIRRUP
P1316E	8	8	9'-5"	BENT	CAP TIE AT ENDS
P1617E	6	6	5'-0"	BENT	CAP TIE AT ENDS
P1618E	2	2	34'-6"	STRAIGHT	HORZ. CAP
P3219E	35	35	2'-6"	STRAIGHT	DOWELS
P2920E	2	2	37'-0"	BENT	HORZ. CAP

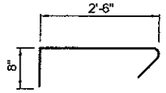
BAR SHAPES:



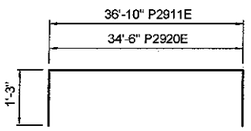
P1302E



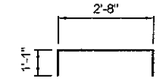
P1606E



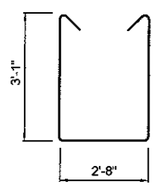
P1607E



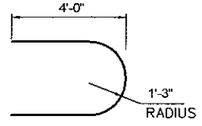
P2911E, P2920E



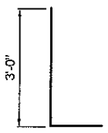
P1614E



P1615E



P1316E



P1617E

AS-BUILT

MAR 0 1 2006

ENGINEERING

© 2002 WIDSETH SMITH NOLTING

CERTIFIED BY: PROFESSIONAL ENGINEER: TIMOTHY J. MOE LICENSE NO. 14280 DATE: 1/30/2004

JOB NUMBER: 460A451

S.P. NO. 55-598-53

SHEET NO. B8 OF B17 SHEETS

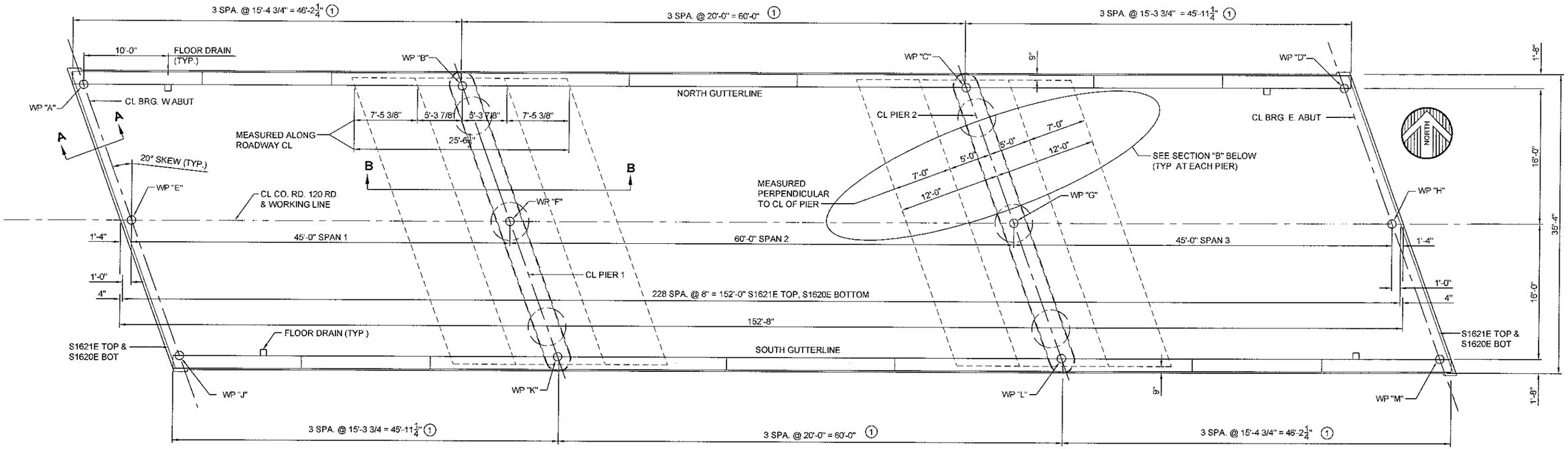
WIDSETH SMITH NOLTING
ENGINEERS ALEXANDRIA BEMIDJI
ARCHITECTS BRAINERD
LAND SURVEYORS CROOKSTON
ENVIRONMENTAL SERVICES GRAND FORKS
WWW.WSN-MN.COM

PIER DETAILS

APPROVED

DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO
CHK. BY K.A.R.	CHK. BY T.J.M.	55579

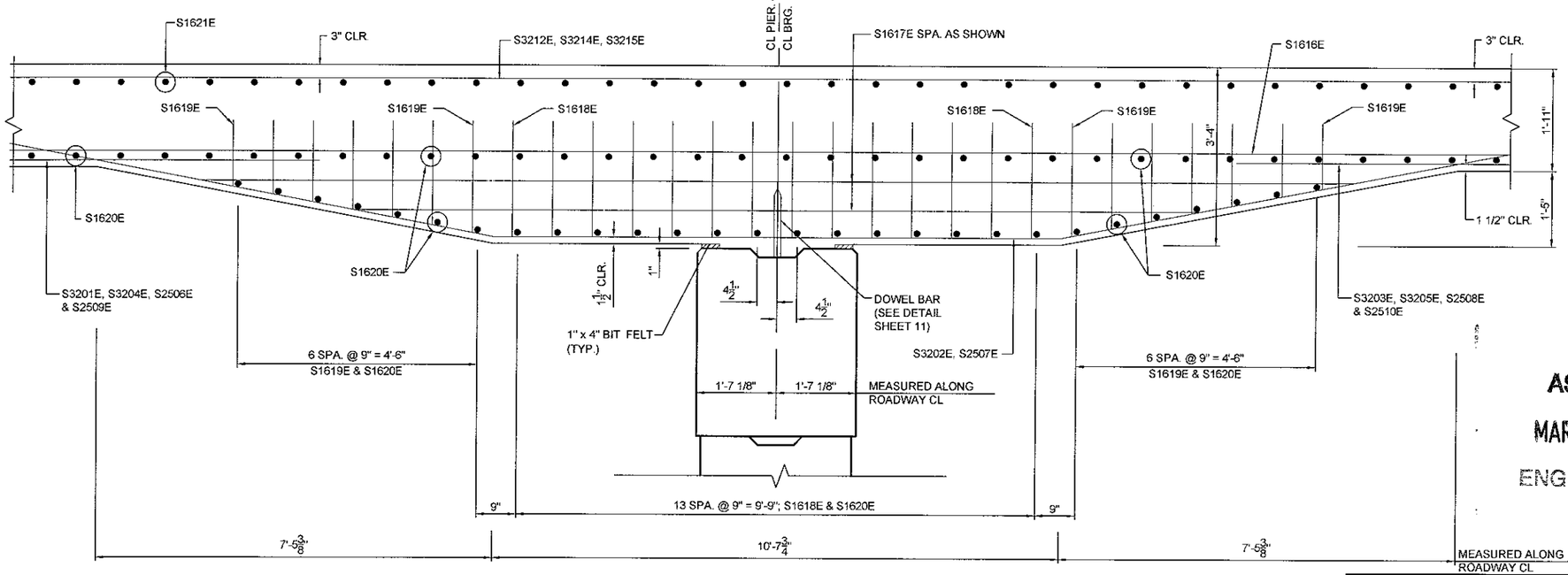
H:\Job\460BRIDGI\451\cadd\CoRd120\C-BR-PIER.dwg, pier-details, 1/21/2004 10:27:45 AM



DECK PLAN

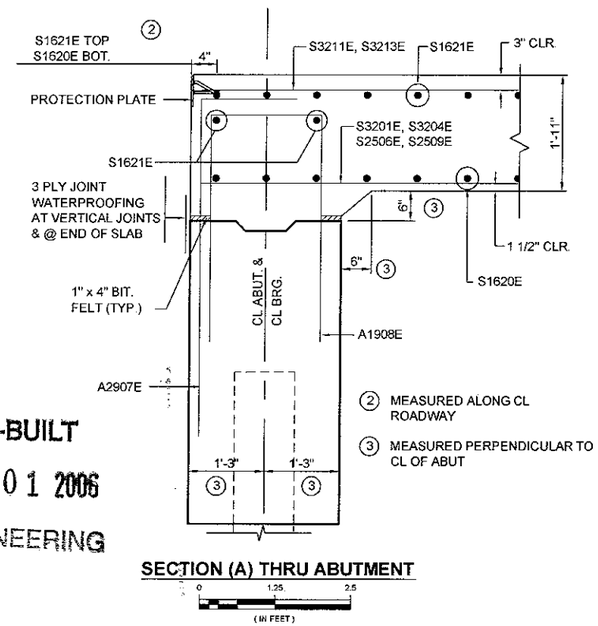
0 6 12 (IN FEET)

(1) RAILING DEFLECTION JOINT SPACING MEASURED ALONG BACK FACE OF RAILING. RAIL JOINT SPACING TYPICAL EACH SIDE OF BRIDGE.



SECTION (B) THRU PIER

0 1.25 2.5 (IN FEET)



(2) MEASURED ALONG CL ROADWAY

(3) MEASURED PERPENDICULAR TO CL OF ABUT

SECTION (A) THRU ABUTMENT

0 1.25 2.5 (IN FEET)

AS-BUILT
MAR 0 1 2006
ENGINEERING

H:\Job\460BRIDG\451\cadd\CoRd120\C-BR-DECK.dwg, deck-layout, 1/15/2004 9:26:18 AM

© 2002 WIDSETH SMITH NOLTING

CERTIFIED BY: _____ PROFESSIONAL ENGINEER: TIMOTHY J. MOE LICENSE NO. 14280 DATE: 1/30/2004

JOB NUMBER: 460A451

S.P. NO. 55-598-53

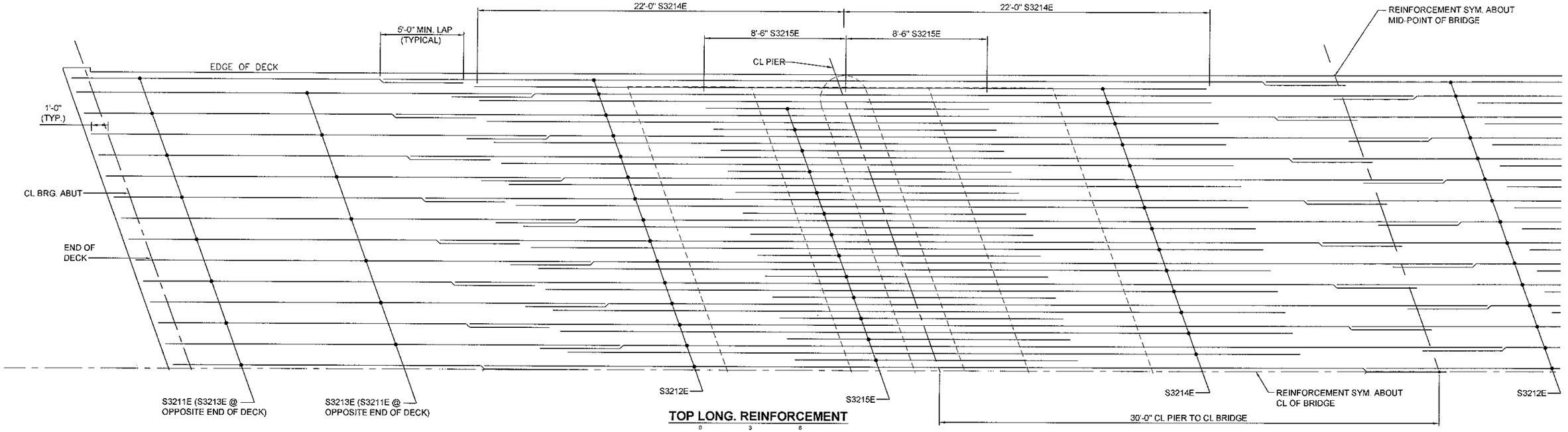
SHEET NO. B9 OF B17 SHEETS

WIDSETH SMITH NOLTING
ENGINEERS ALEXANDRIA BEMIDJI
ARCHITECTS BRAINERD
LAND SURVEYORS CROOKSTON
ENVIRONMENTAL SERVICES GRAND FORKS WWW.WSN-MN.COM

SUPERSTRUCTURE LAYOUT

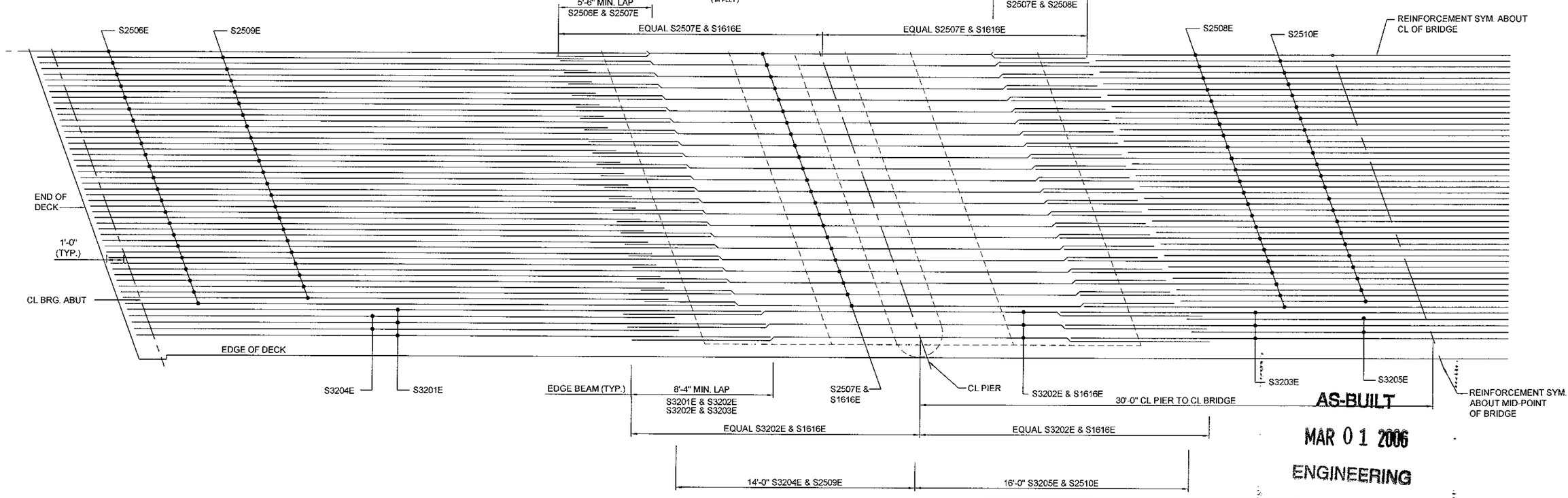
APPROVED

DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO
CHK. BY K.A.R.	CHK. BY T.J.M.	55579



TOP LONG. REINFORCEMENT

0 3 6
(IN FEET)



BOTTOM LONG. REINFORCEMENT

0 3 6
(IN FEET)

AS-BUILT

MAR 0 1 2006

ENGINEERING

© 2002 WIDSETH SMITH NOLTING

CERTIFIED BY: _____ PROFESSIONAL ENGINEER TIMOTHY J. MAUS

LICENSE NO. 14280 DATE: 1/30/2004

WIDSETH SMITH NOLTING

ENGINEERS ALEXANDRIA BEMIDJI
ARCHITECTS BRAINERD
LAND SURVEYORS CROOKSTON
ENVIRONMENTAL SERVICES GRAND FORKS
WWW.WSN-MN.COM

JOB NUMBER: 460a451

S.P. NO. 55-598-53

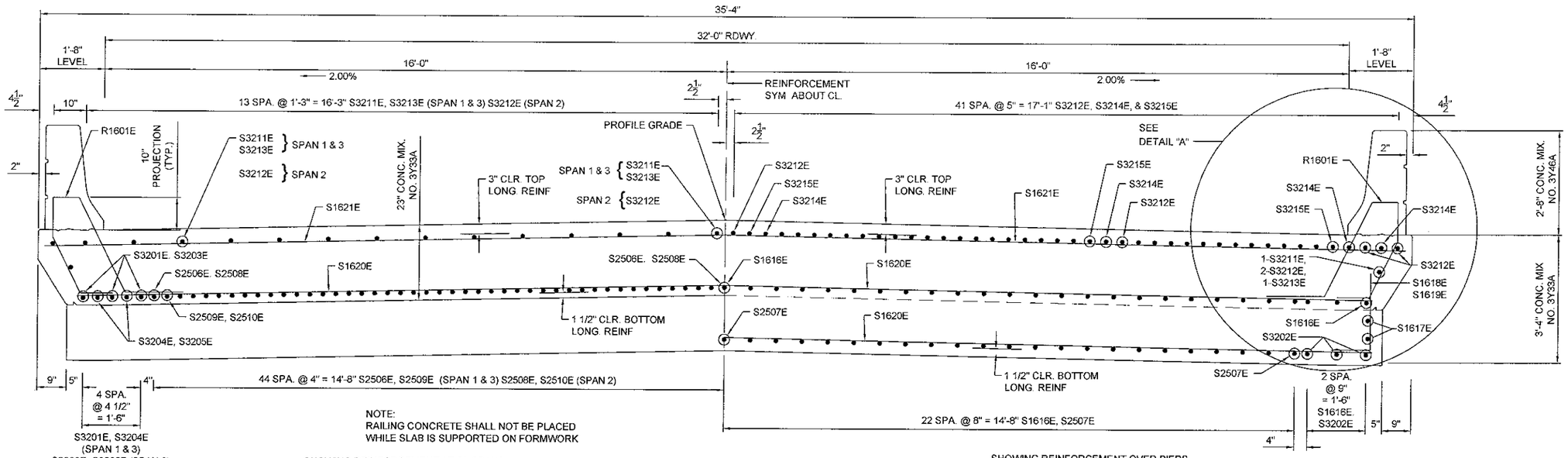
SHEET NO. B10 OF B17 SHEETS

SUPERSTRUCTURE REINFORCEMENT

APPROVED

DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO
CHK. BY K.A.R.	CHK. BY T.J.M.	55579

H:\Job\460BRIDG\451\cadd\CoRd120\tc-br-deck-reinf.dwg, Stand. Plan Sheet, 1/15/2004 9:14:46 AM



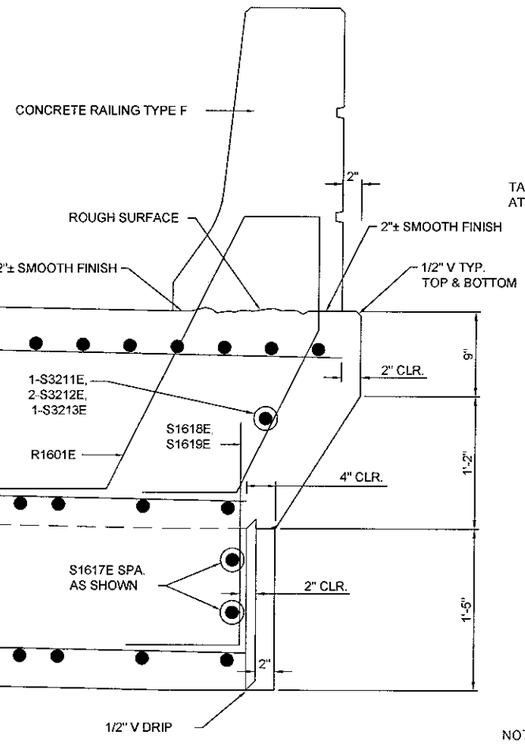
NOTE:
RAILING CONCRETE SHALL NOT BE PLACED WHILE SLAB IS SUPPORTED ON FORMWORK

SHOWING REINFORCEMENT AT CL SPANS

SHOWING REINFORCEMENT OVER PIERS

TRANSVERSE SECTION THRU DECK

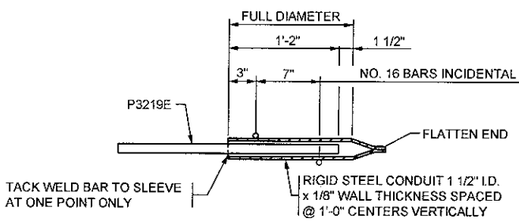
0 1.5 3 (IN FEET)



DETAIL "A"

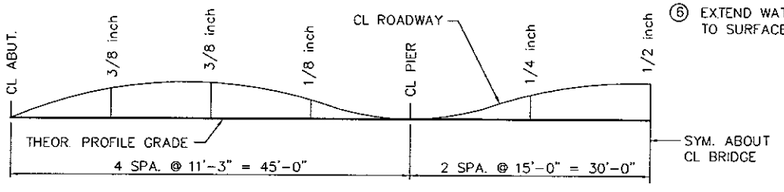
0 8" 1'-4"

STOP V-DRIP GROOVE 1 FT FROM FACE OF ABUTMENT AND PIER.



DOWEL BAR ASSEMBLY

MATERIAL AND PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS. ALL MATERIAL TO BE EPOXY COATED.



NOTE:
THE ABOVE DIAGRAM SHOWS THE CAMBER REQUIRED FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THESE FIGURES DO NOT INCLUDE ANY ALLOWANCE FOR SETTLEMENT OF FORMS.

CAMBER DIAGRAM

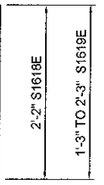
NO SCALE

LIST OF PREFORMED JOINT FILLER			
TYPE	LIN. FT.	SIZE	LOCATION
CORK	29'-4"	1" x 10"	RAIL DEFLECTION JT.
BIT. FELT	144'-0"	1" x 4"	PIER
BIT. FELT	153'-0"	1" x 4"	ABUT.

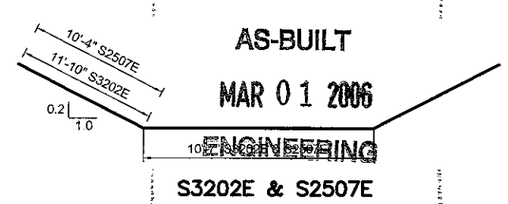
SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE		
① BRIDGE SLAB CONC. (3Y33A)	5,394	SQ. FT.
② REINFORCEMENT BARS (EPOXY COATED)	106,070	POUND
⑤ TYPE F RAILING CONCRETE (3Y46A)	305	LIN. FT.
④③ BRIDGE NAME PLATE (DETAIL B101)	1	EACH
⑥③ 3 PLY JOINT WATERPROOFING	90	LIN. FT.
④③ PREFORMED JOINT FILLER (SEE LIST)		
FLOOR DRAINS TYPE B702 MODIFIED	4	EACH
STRUCTURAL STEEL	560	POUND

① APPROX. VOLUME 450 CU YD.
② INCLUDES RAILING REINFORCMENT
③ TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS
④ SEE SPECIAL PROVISIONS
⑤ APPROX VOLUME 33 CU YD
⑥ EXTEND WATERPROOFING FOR VERTICAL JOINTS TO SURFACE OF DECK

BILL OF REINFORCEMENT FOR SUPERSTRUCTURE				
BAR	NO.	LENGTH	SHAPE	LOCATION
S3201E	12	37'-5"	STRAIGHT	BOTTOM LONG.
S3202E	12	34'-3"	BENT	BOTTOM LONG.
S3203E	6	42'-10"	STRAIGHT	BOTTOM LONG.
S3204E	8	32'-0"	STRAIGHT	BOTTOM LONG.
S3205E	4	28'-0"	STRAIGHT	BOTTOM LONG.
S2506E	90	36'-0"	STRAIGHT	BOTTOM LONG.
S2507E	90	31'-3"	BENT	BOTTOM LONG.
S2508E	45	40'-0"	STRAIGHT	BOTTOM LONG.
S2509E	88	32'-0"	STRAIGHT	BOTTOM LONG.
S2510E	44	28'-0"	STRAIGHT	BOTTOM LONG.
S3211E	32	23'-0"	STRAIGHT	TOP LONG.
S3212E	64	58'-0"	STRAIGHT	TOP LONG.
S3213E	32	28'-0"	STRAIGHT	TOP LONG.
S3214E	56	44'-0"	STRAIGHT	TOP LONG.
S3215E	52	17'-0"	STRAIGHT	TOP LONG.
S1616E	102	31'-0"	STRAIGHT	BOTTOM LONG.
S1617E	4 SETS OF 2	15'-6" TO 21'-3"	STRAIGHT	BOTTOM LONG.
S1618E	56	3'-0"	BENT	VERT. EDGE AT PIERS
S1619E	8 SETS OF 7	2'-1" TO 3'-1"	BENT	VERT. EDGE AT PIERS
S1620E	285	35'-3"	STRAIGHT	BOTTOM TRANS
S1621E	233	37'-2"	STRAIGHT	TOP TRANS.



S1618E, S1619E



S3202E & S2507E

AS-BUILT
MAR 01 2006
ENGINEERING

© 2002 WIDSETH SMITH NOLTING

CERTIFIED BY: PROFESSIONAL ENGINEER TIMOTHY J. MOE LICENSE NO. 14280 DATE: 1/30/2004

JOB NUMBER: 460A451

S.P. NO. 55-598-53

SHEET NO. B11 OF B17 SHEETS

WIDSETH SMITH NOLTING
ENGINEERS ALEXANDRIA BEMIDJI
ARCHITECTS BRAINERD
LAND SURVEYORS CROOKSTON
ENVIRONMENTAL SERVICES GRAND FORKS WWW.WSN-MN.COM

SUPERSTRUCTURE DETAILS

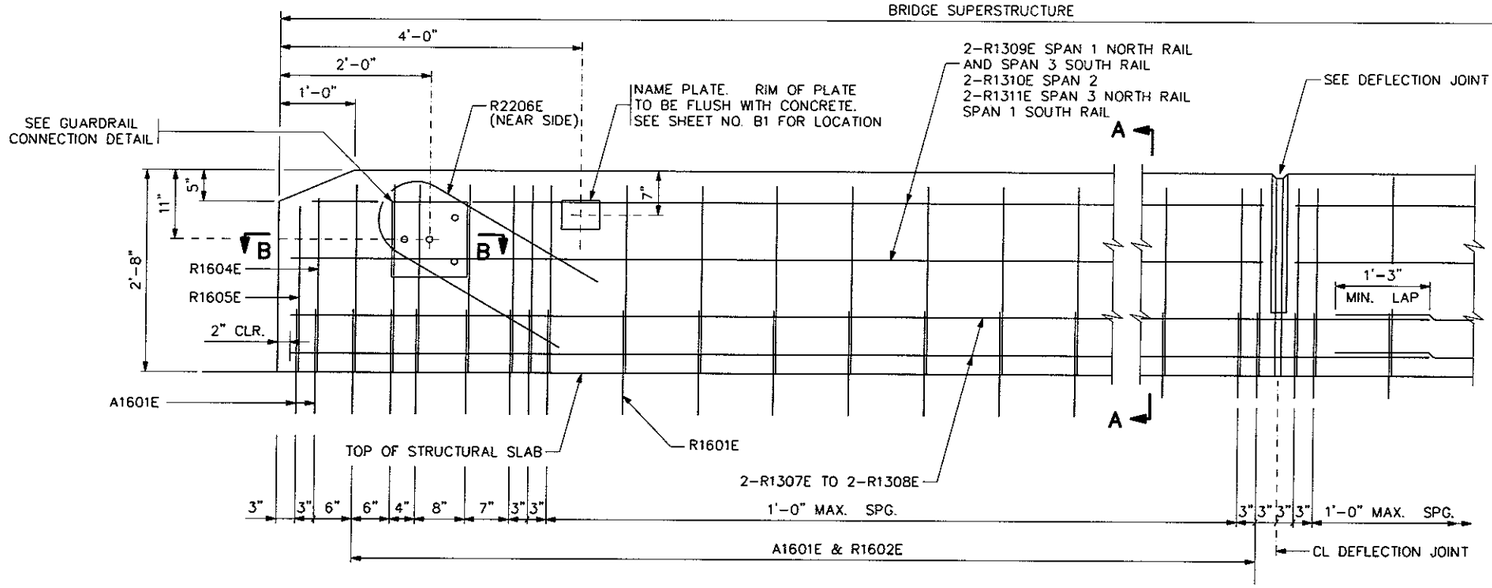
APPROVED

DES. BY T.J.M. DR. BY G.A.M.

CHK. BY K.A.R. CHK. BY T.J.M.

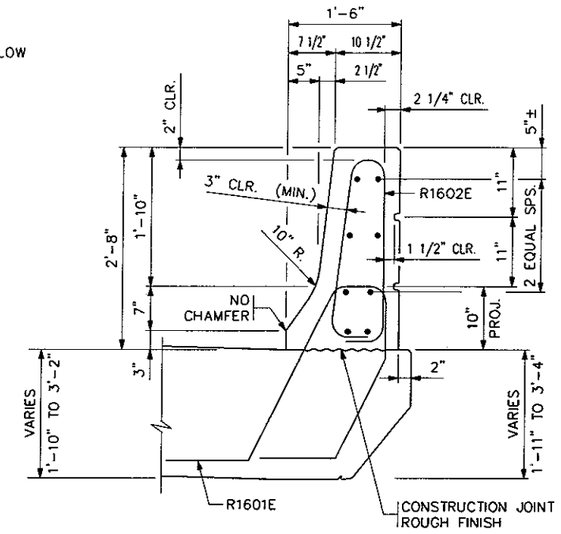
BRIDGE NO 55579

H:\Job\460BRIDG\451\cadd\CoRd120\C-BR-DECKSECT.dwg, Stand. Plan Sheet, 1/15/2004 9:15:09 AM



INSIDE ELEVATION OF RAILING

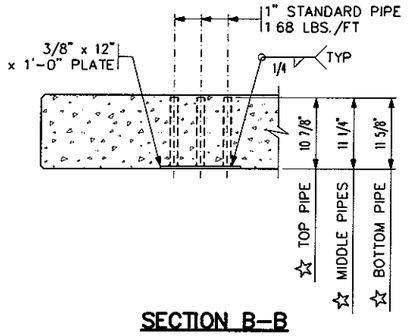
DEFLECTION JOINT



SECTION A–A

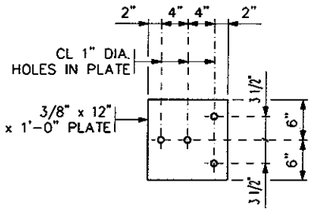
BILL OF REINFORCEMENT FOR RAILING

BAR	NO.	LENGTH	SHAPE	LOCATION
R1601E	364	8'-5"		RAIL DOWEL
R1602E	356	6'-2"		RAIL VERTICAL
R1604E	4	5'-8"		RAIL VERTICAL
R1605E	4	5'-6"		RAIL VERTICAL
R2206E	4	6'-6"		RAIL VERTICAL
R1307E	24	40'-0"		RAIL LONGITUDINAL
R1308E	8	35'-6"		RAIL LONGITUDINAL
R1309E	24	15'-0"		RAIL LONGITUDINAL
R1310E	24	19'-7"		RAIL LONGITUDINAL
R1311E	24	14'-11"		RAIL LONGITUDINAL



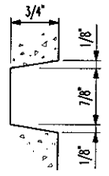
SECTION B–B

(REINFORCEMENT NOT SHOWN)
☆ DIMENSIONS INCLUDE 3/8" PLATE

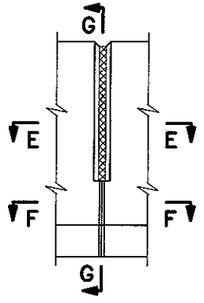


GUARDRAIL CONNECTION DETAIL

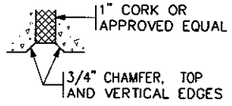
GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394
ESTIMATED WEIGHT = 22 LBS



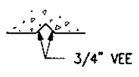
RAIL RUSTICATION



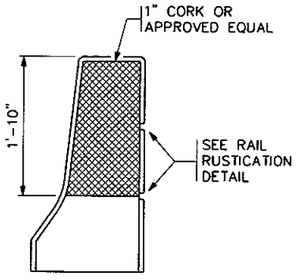
ELEVATION



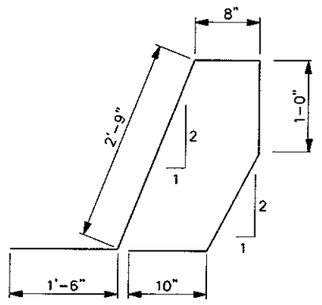
SECTION E–E



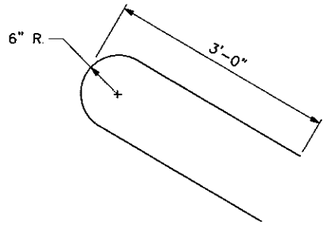
SECTION F–F



SECTION G–G



R1601E

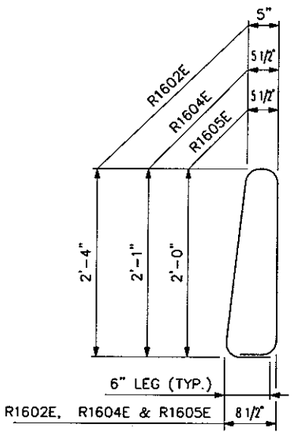


R2206E

AS-BUILT

MAR 0 1 2006

ENGINEERING



R1602E, R1604E & R1605E

GENERAL NOTES

LENGTH OF "TYPE F RAILING CONCRETE (3Y46A)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAIL.

CONCRETE RAILING = 439 LBS./FT. (0.108 CU. YDS./FT.)

FINISH ALL EDGES OF RAIL WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.

MAXIMUM SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT

SEE SUPERSTRUCTURE SHEET FOR JOINT SPACING.

GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, Mn/DOT SPEC. 3306.

GUARDRAIL CONNECTION TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

RAIL QUANTITIES ARE INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

DEFLECTION JOINT DETAILS

WSN 460A451

S.P. 55–598–53

FIG. 5–397.115

REVISION: 08–20–02

APPROVED: AUGUST 31, 1991
Donald J. Flemming
STATE BRIDGE ENGINEER

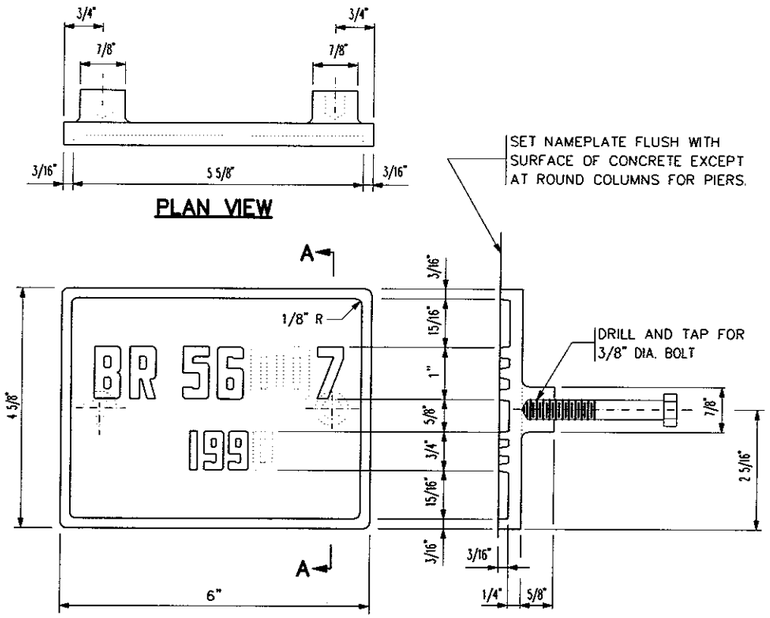
CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER 1/30/04 DATE
NAME: TIMOTHY J. MOE LIC. NO. 14280

TITLE: CONCRETE RAILING (TYPE F) WITH INTEGRAL END POST (WITHOUT CONCRETE WEARING COURSE)

DES:	T.J.M.	DR:	G.A.M.	APPROVED: MODIFIED	BRIDGE NO. 55579
CHK:	K.A.R.	CHK:	T.J.M.		

SHEET NO. B12 OF B17 SHEETS

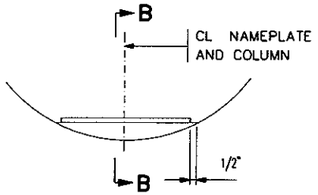
H:\Job\460BRIDG\451\caddl\CoRd120397155.DWG, Model, 1/15/2004 9:15:29 AM



THE DASHED NUMBERS SHOWN ABOVE ARE FOR ILLUSTRATION. DATA TO BE SHOWN ON NAMEPLATE IS AS FOLLOWS:

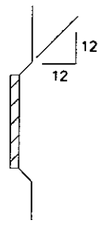
BRIDGE 55579

YEAR 2004



NAMEPLATE PLACEMENT

(ROUND CONCRETE PIER COLUMNS)



SECTION B–B



NUMBERS FOR NAMEPLATE

NOTES:

NO SHOP DRAWING REQUIRED.

MATERIAL SHALL COMPLY WITH Mn/DOT SPEC. 3327

LETTERS AND NUMBERS SHALL CONFORM TO THOSE SHOWN.

DRAFT ON LETTERS AND NUMBERS SHALL NOT BE MORE THAN 3" IN 12"

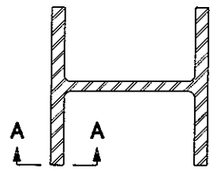
HORIZONTAL SPACING OF LETTERS AND NUMBERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN.

TOP SURFACE OF LETTERS, NUMBERS AND FRAMES SHALL BE BURNISHED.

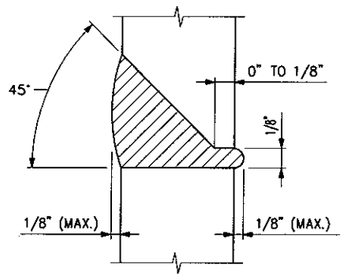
FURNISH 2 STEEL BOLTS 3/8" DIA. x 3" LONG WITH EACH PLATE.

ALL DIMENSIONS FOR 3/4" HIGH LETTERS AND NUMBERS SHALL BE IN DIRECT PROPORTION TO THOSE SHOWN FOR THE 1" HIGH LETTERS AND NUMBERS.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel J. Hegeman STATE BRIDGE ENGINEER	**BRIDGE NAMEPLATE** (FOR NEW BRIDGES)		**B101**



SECTION AT JOINT



SECTION A–A

100% BUTT WELDED PILE SPLICE

AS-BUILT

MAR 0 1 2006

ENGINEERING

NOTES:

CELLULOSIC TYPE ELECTRODES E–6010 OR E–6011 SHALL BE USED FOR 100% BUTT WELDED SPLICES.

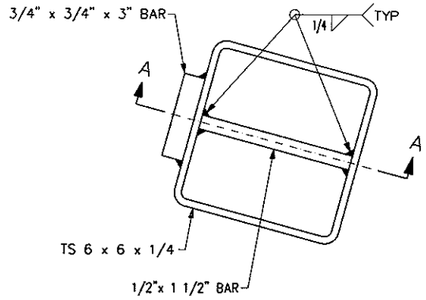
ELECTRODES WHICH HAVE BECOME WET, SOILED OR DAMAGED SHALL NOT BE USED

WELDING SHALL NOT BE DONE WHEN THE AMBIENT TEMPERATURE IS LOWER THAN 0° F OR WHEN THE PILE IS WET OR EXPOSED TO FALLING RAIN OR SNOW. WHEN THE PILE METAL TEMPERATURE IS BELOW 32° F, THE PILE METAL IN THE AREA OF THE WELD SHALL BE HEATED TO A MINIMUM TEMPERATURE OF 70° F. AND MAINTAINED AT THIS TEMPERATURE DURING WELDING.

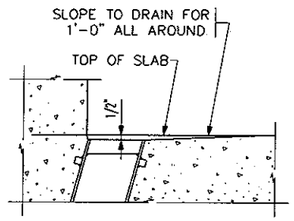
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel J. Hegeman STATE BRIDGE ENGINEER	**PILE SPLICE** (STEEL H BEARING PILES 10" TO 14")		**B202**

CERTIFIED BY: LICENSE NO 14280 1/30 2004 PROFESSIONAL ENGINEER / TIMOTHY J. MOE	DES: T.J.M.	DR:	APPROVED:	TITLE: DETAILS 460A451	STATE PROJ. NO. 55-598-53	Sheet No. B13 of B17 Sheets	Bridge No. 55579
	CHK: K.A.R.	CHK: T.J.M.					

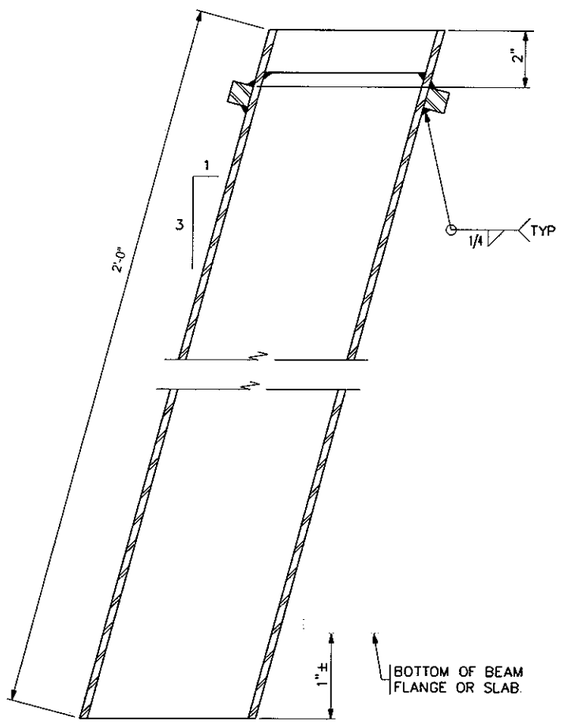
H:\Job\460BRIDG\4511cadd\CoRd120\C-BR-DETAILS.dwg, Detail Sheet, 1/15/2004 9:16:00 AM



PLAN VIEW



PLACEMENT DIAGRAM



SECTION A–A

NOTES:

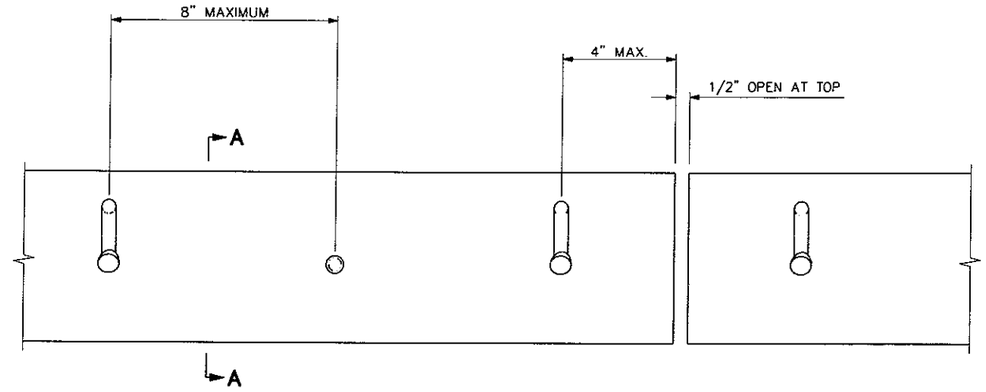
MATERIAL TO BE STRUCTURAL STEEL PER Mn/DOT SPEC. 3306.

GALVANIZE BOLTS AND WASHER PER Mn/DOT SPEC. 3392

GALVANIZE OTHER MATERIALS PER Mn/DOT SPEC. 3394 AFTER FABRICATION

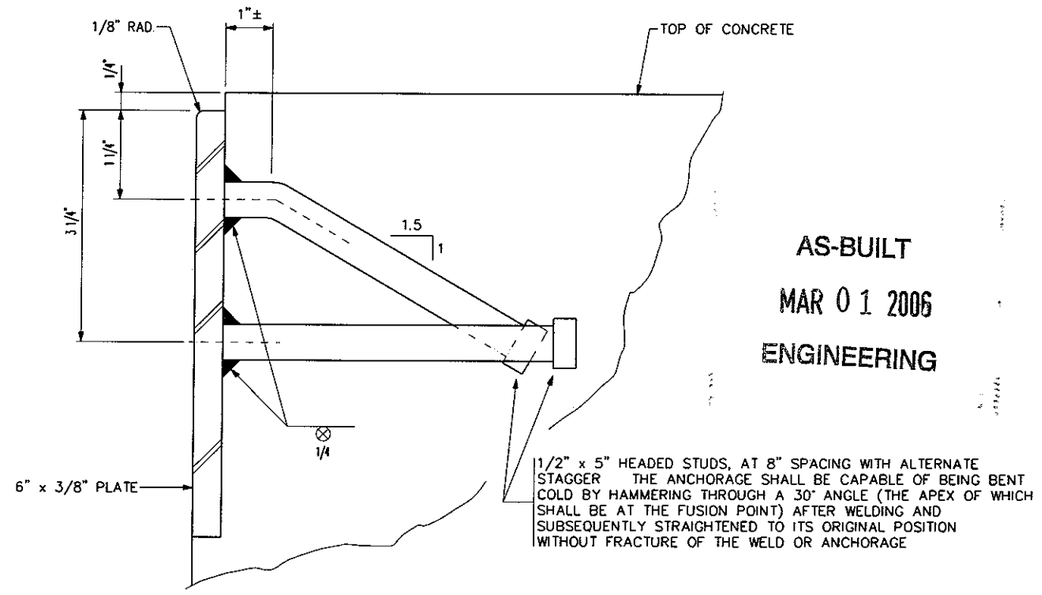
PAYMENT FOR FLOOR DRAIN TYPE SHALL INCLUDE ALL MATERIAL SHOWN ON THIS DETAIL.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO. MODIFIED
Daniel D Morgan STATE BRIDGE ENGINEER	**BRIDGE FLOOR DRAIN** (STRUCTURAL TUBE)		**B702**



ELEVATION

CONCRETE NOT SHOWN



SECTION A–A

AS-BUILT
MAR 0 1 2006
ENGINEERING

NOTES:

PLATES SHALL EXTEND FULL WIDTH OF ROADWAY BETWEEN GUTTER LINES WITH A 1/2" OPEN JOINT AT EACH BREAK IN CROWN PROFILE. MAX. LENGTH 22 FT

MATERIALS: STRUCTURAL STEEL PER Mn/DOT SPEC. 3306. GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394

SET PLATE TO PROPER GRADE AND CROWN.

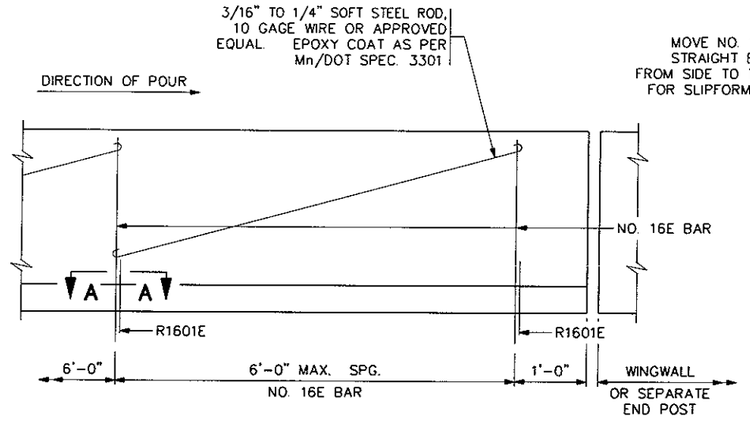
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel D Morgan STATE BRIDGE ENGINEER	**PROTECTION PLATE** (FOR END OF SLAB)		**B553**

CERTIFIED BY: PROFESSIONAL ENGINEER / TIMOTHY J. MOE LICENSE NO 14280 1/30/2004

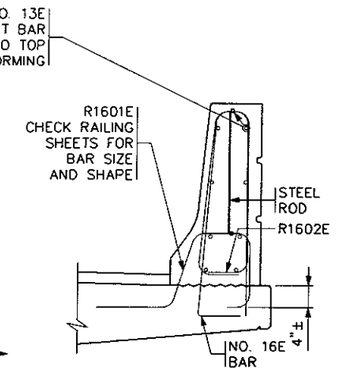
DES: T.J.M. DR: CHK: K.A.R. CHK: T.J.M. APPROVED:

TITLE: DETAILS 460A451 | STATE PROJ. NO 55-598-53 | Sheet No. B14 of B17 Sheets | Bridge No. 55579

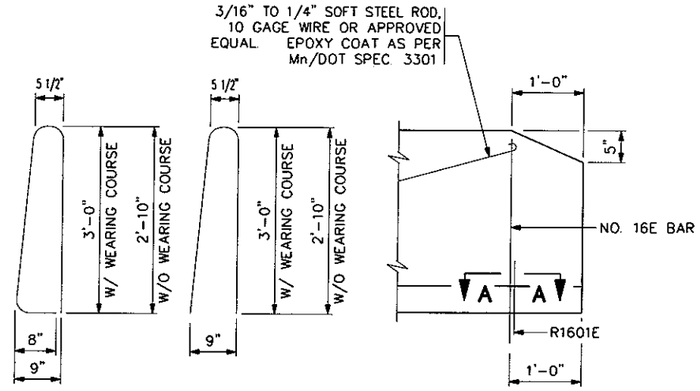
H:\Job\460BRIDG\451\cadd\CoRd120\C-BR-DETAILS.dwg, Detail Sheet (2), 1/15/2004 9:15:56 AM



INSIDE ELEVATION OF RAILING



RAILING SECTION

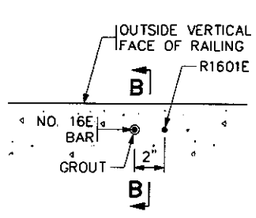


NO. 16E BAR NO. 16E BAR

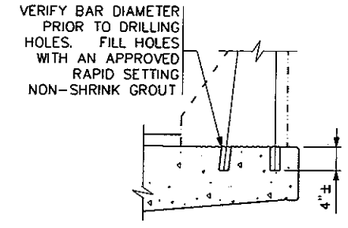
DRILLED IN ALTERNATE

INSIDE ELEVATION OF RAILING

AT END OF WINGWALL



SECTION A–A



SECTION B–B

INSTALLATION DETAILS FOR NO. 16E (DRILLED IN ALTERNATE)

AS-BUILT

MAR 0 1 2006

ENGINEERING

NOTES:

CONTRACTOR WILL TOOL V-GROOVE AT DEFLECTION JOINTS AT TIME RAIL IS CAST AND SHALL EXTEND V-GROOVE AROUND ENTIRE PERIMETER OF RAIL.

FOR ADDITIONAL DIMENSIONS, DETAILS, REINFORCEMENT AND NOTES SEE RAILING SHEET

FORM RAIL FOR A MINIMUM OF 2' ON EACH SIDE OF EXPANSION DEVICES, LIGHT STANDARDS AND DECK DRAIN BOX OUTS.

PAY QUANTITIES WILL NOT BE ADJUSTED AS A RESULT OF SELECTING THIS ALTERNATE.

USE A SIMILAR METHOD FOR TALLER RAILINGS OR MODIFIED VERSIONS OF THIS RAILING.

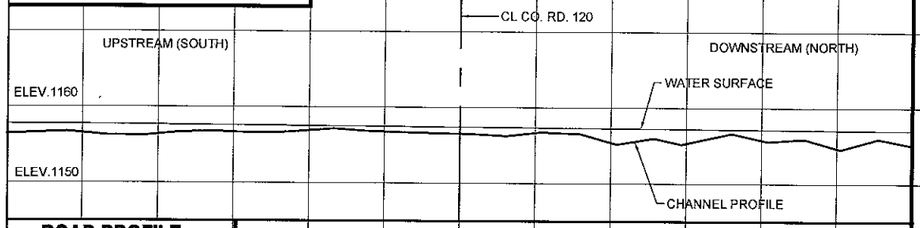
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel D Dorgan STATE BRIDGE ENGINEER	CONCRETE RAILING (TYPE F) (SLIPFORM ALTERNATE)		B830

CERTIFIED BY: PROFESSIONAL ENGINEER / TIMOTHY J. MOE LICENSE NO 14280 1/30/2004	DES: T.J.M.	DR:	APPROVED:	TITLE: DETAILS 460A451	STATE PROJ. NO. 55-598-53	Sheet No. B15 of B17 Sheets	Bridge No. 55579
	CHK: K.A.R.	CHK: T.J.M.					

H:\Job\460BRIDG\451\cadd\CoRd120\C-BR-DETAILS.dwg, Detail Sheet (3), 1/15/2004 9:15:58 AM

CHANNEL PROFILE

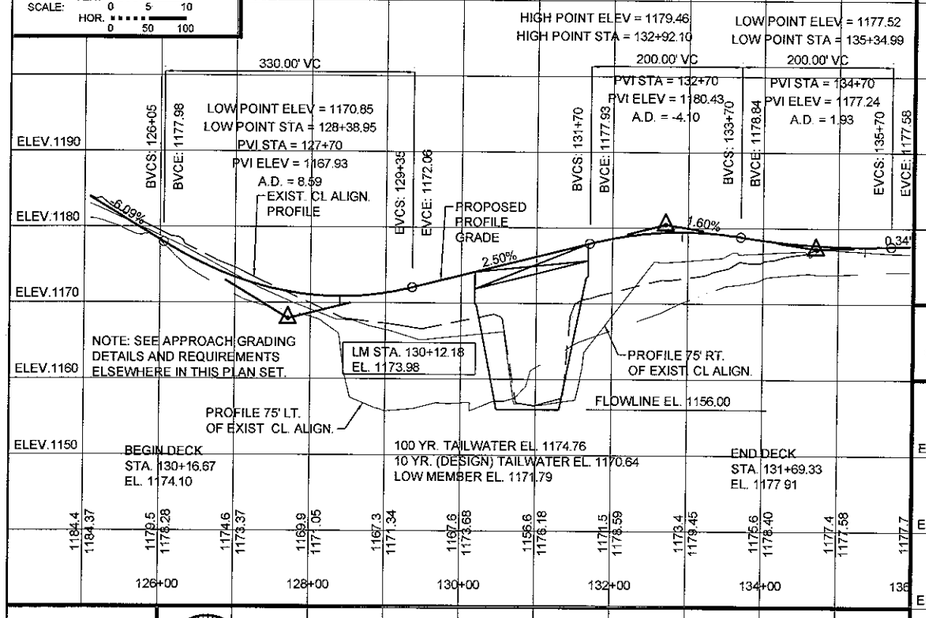
SCALE: HOR. 0 50 100 VERT 0 5 10



ROAD PROFILE

SCALE: VERT 0 5 10 HOR. 0 50 100

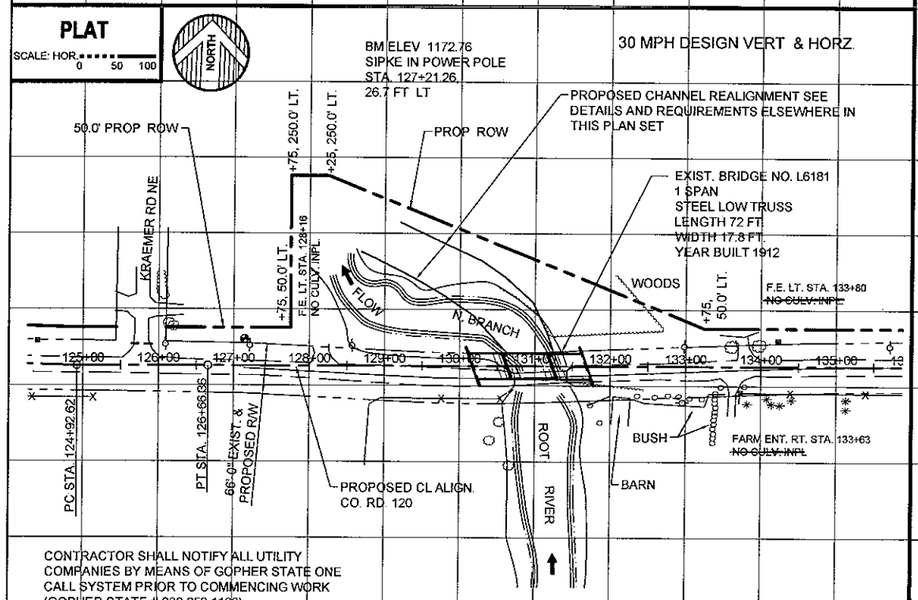
30 MPH DESIGN VERT & HORZ



PLAT

SCALE: HOR. 0 50 100

30 MPH DESIGN VERT & HORZ

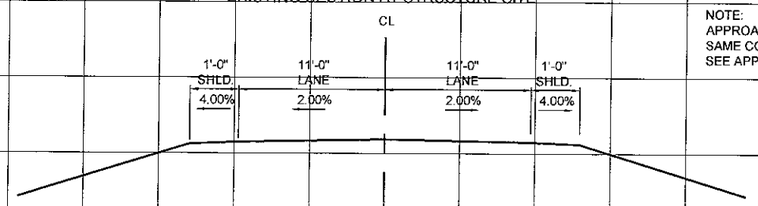


CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES BY MEANS OF GOPHER STATE ONE CALL SYSTEM PRIOR TO COMMENCING WORK (GOPHER STATE # 800-252-1166).

TYPICAL SECTIONS & PERTINENT DATA

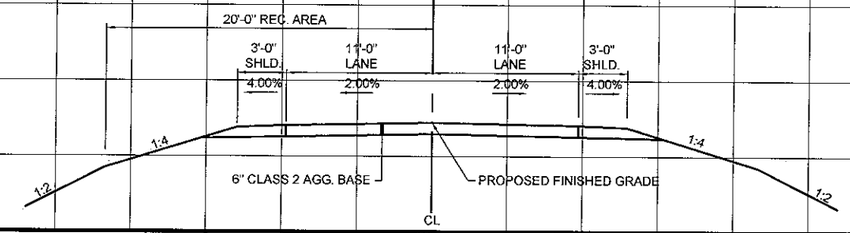
SCALES AS SHOWN

EXISTING SECTION AT STRUCTURE SITE



NOTE:
APPROACH GRADING UNDER SAME CONTRACT.
SEE APPROACH GRADING DETAILS

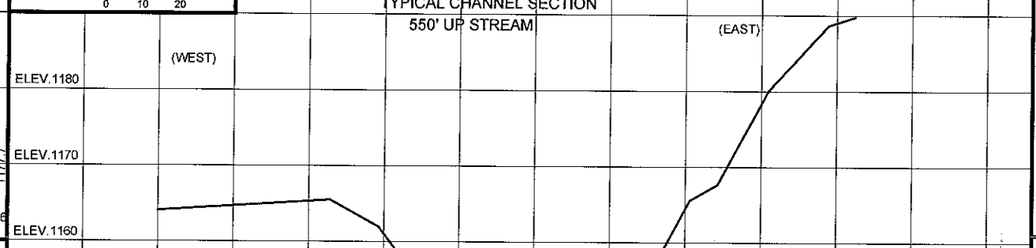
PROPOSED SECTION AT STRUCTURE SITE



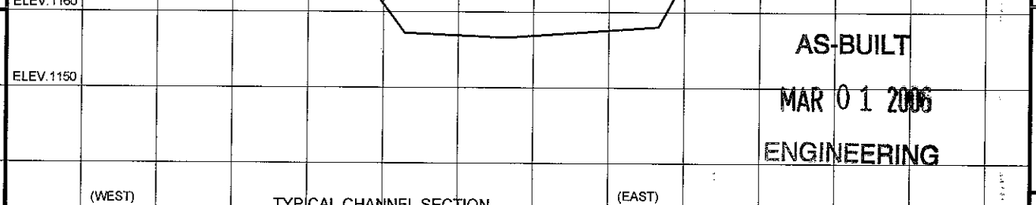
CHANNEL X-SEC

SCALE: VERT 0 5 10 HOR. 0 10 20

TYPICAL CHANNEL SECTION
550' UP STREAM

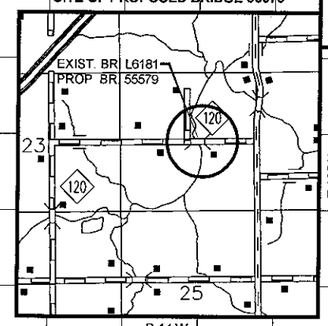


TYPICAL CHANNEL SECTION
750' DOWN STREAM



AS-BUILT
MAR 01 2006
ENGINEERING

SITE OF PROPOSED BRIDGE 55579



Fed. Proj. No.

LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

1. Special Features: Waterfalls,dams,floods,ice,debris,sliding banks,recreational boating.

2. Other bridges or culverts over the same stream (particularly structures which carry high water without overflow of roadway) :Given location,type length,height above high water,cross-sectional area etc.

3. Apparent highwater elevation Obtained from

4. Other data: Approx. velocity of water at time of survey

HYDRAULIC ENGINEERS RECOMMENDATION

DATE NOV. 11, 2003

Stream or ditch designation NORTH BRANCH OF THE ROOT RIVER

Drainage area 136.9 SQ. MI. Max. flood on record UNKNOWN Design flood(10 yr.freq.) 11,361 C.F.S.

Max. observed highwater elevation 1172.5 Design tailwater elevation 1170.64

Design mean velocity through structure 7.3 F.P.S.

Low superstructure at or above elevation 1171.64

Flowline elevation 1156.0 Skew angle 20°

Waterway area req'd. below elevation 1170.64 = 1550 Sq.Ft.at Rt.angles to channel

The basic flood (100yr.freq) is 20,110 C.F.S. at stage 1174.76 and mean velocity of 6.9* F.P.S. with 0.41* Ft.swellhead.

The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Dept. of Natural Resources.

POTENTIAL CONTRACTION SCOUR MINIMAL
ESTIMATED PIER SCOUR DEPTH 5 FT
APPROXIMATE SCOUR ELEVATION 1151.0

ABUTMENT SCOUR - NEGLIGIBLE - CLASS IV RIPRAP PROTECTION REQUIRED ON INSLOPES.

SCOUR CODE L

FOUNDATION ENGINEERS RECOMMENDATION

DATE

* BASED ON 1065 SQ. FT. OF ROADWAY OVERFLOW AREA ABOVE SAG POINT AND BELOW EL. 1175.17.
45' - 60' - 45' CONTINOUS CONCRETE SLAB SPAN BRIDGE,
32' CLEAR ROADWAY

Bridge survey sheets made from:
SURVEY CONDUCTED BY OLMSTED COUNTY

Bench mark elevation 1172.76 (M.S.L. 1929 Adj.)

Location SPK. IN POWER POLE, STA. 127+21.26, 26.7' LT.

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT ON CO. RD. 120

PROPOSED BRIDGE LOCATED 0.4 MILES WEST OF C.S.A.H. 20

SEC. 24 TWP 105 N R. 14 W

TOWNSHIP HIGH FOREST COUNTY OLMSTED

BRIDGE NO. L6181 (EXISTING)

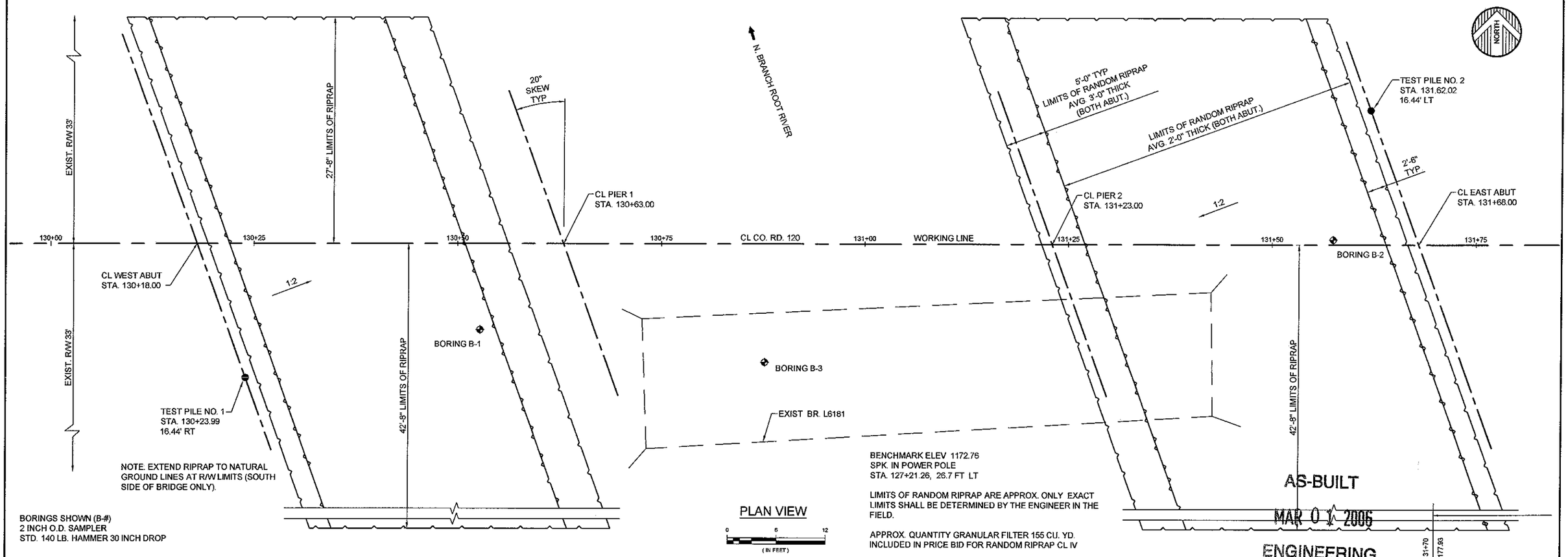
BRIDGE NO. 55579 (PROPOSED)

© 2002 WIDSETH SMITH NOLTING

CERTIFIED BY: PROFESSIONAL ENGINEER: TIMOTHY J. MOE LICENSE NO. 14280 DATE: 3/2/2004

JOB NUMBER: 460A451 S.P. NO. 55-598-53 SHEET NO. B16 OF B17 SHEETS

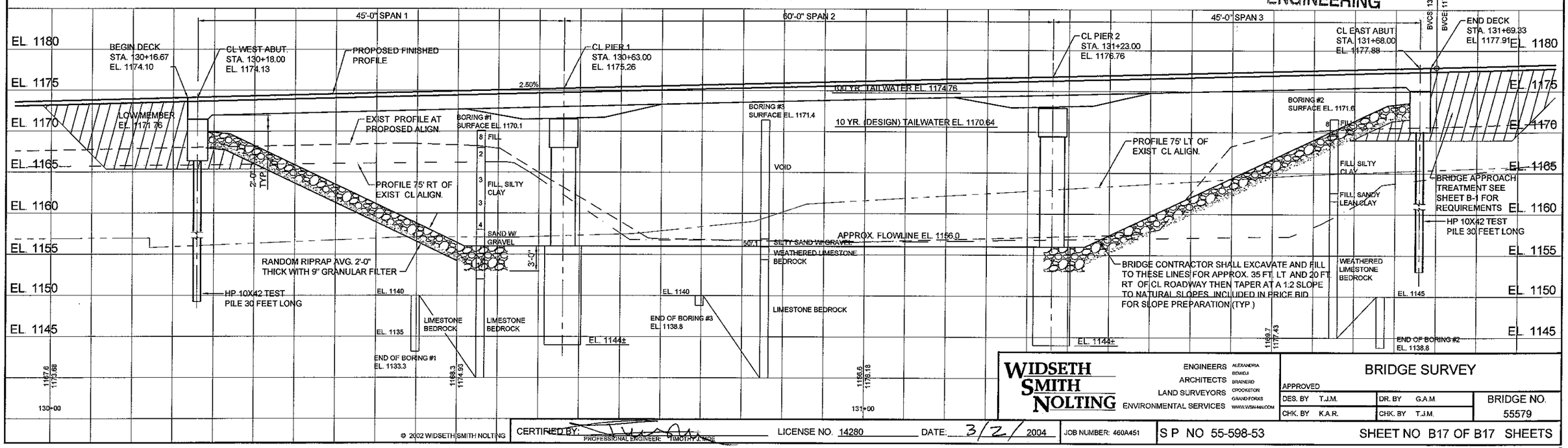
H:\Job\460BRIDGW451\caddd\CoRd120\c-br-plat.dwg, Plat Sheet, 3/30/2004 10:25:08 AM, Gary, HP8550 PCL5C.pc3, 1:200



AS-BUILT

MAR 0 1 2006

ENGINEERING



© 2002 WIDSETH SMITH NOLTING

CERTIFIED BY: _____ PROFESSIONAL ENGINEER TIMOTHY A. NOE LICENSE NO. 14280 DATE: 3/2/2004

JOB NUMBER: 460A451

S P NO 55-598-53

SHEET NO B17 OF B17 SHEETS

WIDSETH SMITH NOLTING

ENGINEERS ALEXANDRIA, BEMIDJI
ARCHITECTS BRAINERD, CROOKSTON
LAND SURVEYORS GRAND FORKS
ENVIRONMENTAL SERVICES WWW.WSN-MN.COM

BRIDGE SURVEY

APPROVED

DES. BY T.J.M.	DR. BY G.A.M.	BRIDGE NO.
CHK. BY K.A.R.	CHK. BY T.J.M.	55579

H:\Job\460BRIDG\451\cadd\CoRd120\C-BR-SURVEY.dwg, SURVEY SHEET, 3/2/2004 11:32:39 AM, Bob, HP8550 PCL5C.pc3, 1:2