

DESIGN NOTES

DESIGN SPECIFICATIONS

IN ACCORDANCE WITH: AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" 1996 EDITION AND CURRENT INTERIM REVISIONS.

DESIGN PROCEDURES

PILE BEARING LOADS AND FOOTINGS DESIGNED USING SERVICE LOAD DESIGN. THE REMAINING PORTIONS OF THE STRUCTURE DESIGNED USING LOAD FACTOR. GIRDERS DESIGNED AS SIMPLE SPANS.

DESIGN LOADS

DEAD LOAD:	REINFORCED CONCRETE	23.6 kN/m ³
LIVE LOAD:	PEDESTRIAN	4.1 kN/m ²
EARTH:	BACKFILL AT ABUTMENTS	20.42 kN/m ³
FLUID PRESSURE:	ABUTMENTS & WINGWALLS	
	ACTIVE	5.5 kN/m ³
THERMAL FORCES:	-7°C TO 38°C, MEAN TEMP 18°C	
WIND:	VELOCITY	130 km/h

UNIT STRESSES

REINFORCED CONCRETE:	CLASS 27.5	$f'_c = 27.5 \text{ MPa}$	$f_c = 11 \text{ MPa}$
PRESTRESS CONCRETE:	INITIAL: COMPRESSION	0.60 f'_c	
	TENSION	$0.25 \sqrt{f'_c} \leq 1.38 \text{ MPa}$	
	FINAL: COMPRESSION	0.60 f'_c	
	c. ALL LOAD COMBINATIONS	0.60 f'_c	
	b. EFFECTIVE PRESTRESS + PERMANENT (DEAD) LOADS	0.40 f'_c	
	c. LIVE LOAD + 0.5 (PRESTRESS + DEAD LOADS)	0.40 f'_c	
	TENSION	$0.25 \sqrt{f'_c}$	

NON-PRESTRESSING METAL REINFORCEMENT:
AASHTO M31M (ASTM A615M): GRADE 420..... $F_y = 420 \text{ MPa}$ $F_s = 168 \text{ MPa}$

PRESTRESSING REINFORCEMENT:
12.7 mm ϕ 7 WIRE STRAND, AASHTO M203 (ASTM A416) LOW RELAXATION STRAND
 $f_s = 1860 \text{ MPa}$ (MAX. ULTIMATE STRENGTH)

PILE DESIGN LOADS

MAXIMUM SERVICE LOADS FOR PILES:

LOCATION	ALLOWABLE		COMPUTED	
	VERTICAL (kN/pile)	LATERAL (kN/pile)	VERTICAL (kN/pile)	LATERAL (kN/pile)
PIER	355	204.6 (STRONG AXIS) 106.7 (WEAK AXIS)	264.4	0

FOOTING DESIGN LOADS

MAXIMUM FOOTING PRESSURES:

LOCATION	ALLOWABLE	COMPUTED
ABUTMENT 1	203.5 kPa	203.2 kPa
ABUTMENT 2	203.5 kPa	150.2 kPa

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS

MATERIALS, CONSTRUCTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE STATE OF IDAHO TRANSPORTATION DEPARTMENT "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", 1999 EDITION, THE PROJECT PLANS AND SUPPLEMENTAL SPECIFICATIONS UNLESS NOTED OTHERWISE. THE INTERNATIONAL SYSTEM UNITS OF MEASUREMENT SHALL BE USED AS STANDARD.

MATERIAL

CONCRETE:

CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.

CONCRETE STRENGTH IS SPECIFIED IN MEGAPASCALS (MPa).

CLASS 27.5A - DECK SLAB, ENDWALLS, PIER DIAPHRAGM, CURB.

CLASS 27.5B - ABUTMENTS, PIER CAP, WINGWALLS.

PRESTRESS GIRDERS - SEE SHEET 11.

METAL REINFORCEMENT:

BAR SHALL CONFORM TO AASHTO M31M, GRADE 420 (ASTM A615M).

METRIC BAR LENGTHS SHOWN ON THE PLANS SHALL BE SUPPLIED TO THE NEAREST 20 mm IN LENGTH.

BID ITEMS 503-010A, 503-015A, AND 503-020A ARE SOFT CONVERTED TO MASS IN KILOGRAMS USING THE TABLE ON THE METAL REINFORCEMENT SHEET.

PRESTRESSING REINFORCEMENT:

PRESTRESSING STRAND SHALL BE 12.7 mm DIA., GRADE 1860 LOW RELAXATION STRAND AND CONFORM TO AASHTO M203 (ASTM A416).

PLAN DIMENSIONS AND ELEVATIONS

ALL EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 20 mm UNLESS NOTED OTHERWISE.

ALL DIMENSIONS TO REINFORCING STEEL ARE TO CENTERLINE OF BAR UNLESS NOTED OTHERWISE. CONCRETE COVER MEASURED FROM THE FACE OF THE CONCRETE TO THE FACE OF ANY REINFORCING BAR SHALL BE 50 mm, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

REINFORCING STEEL SPLICE LENGTHS SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATIONS.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

ALL ELEVATIONS ARE IN METERS.

CONSTRUCTION

THE TOP MAT OF METAL REINFORCEMENT IN THE SLAB SHALL BE EPOXY COATED.

ALL CURB REINFORCEMENT SHALL BE EPOXY COATED.

ALL REINFORCING STEEL TO BE EPOXY COATED IS DESIGNATED BY AN "E" AFTER THE BAR MARK. CONSTRUCTION JOINTS WILL BE PERMITTED ONLY AT THE LOCATIONS SHOWN ON THE PLANS OR AS APPROVED BY THE ENGINEER.

FOR PILE NOTES SEE SHEET 4.

THE CONTRACTOR SHALL SUBMIT A WRITTEN PROCEDURE TO THE ENGINEER FOR APPROVAL SHOWING REMOVAL OPERATIONS OF PORTION OF THE EXISTING STRUCTURE.

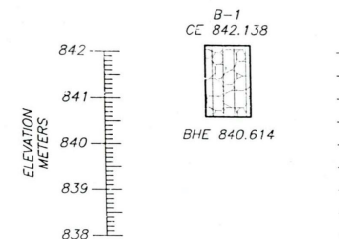
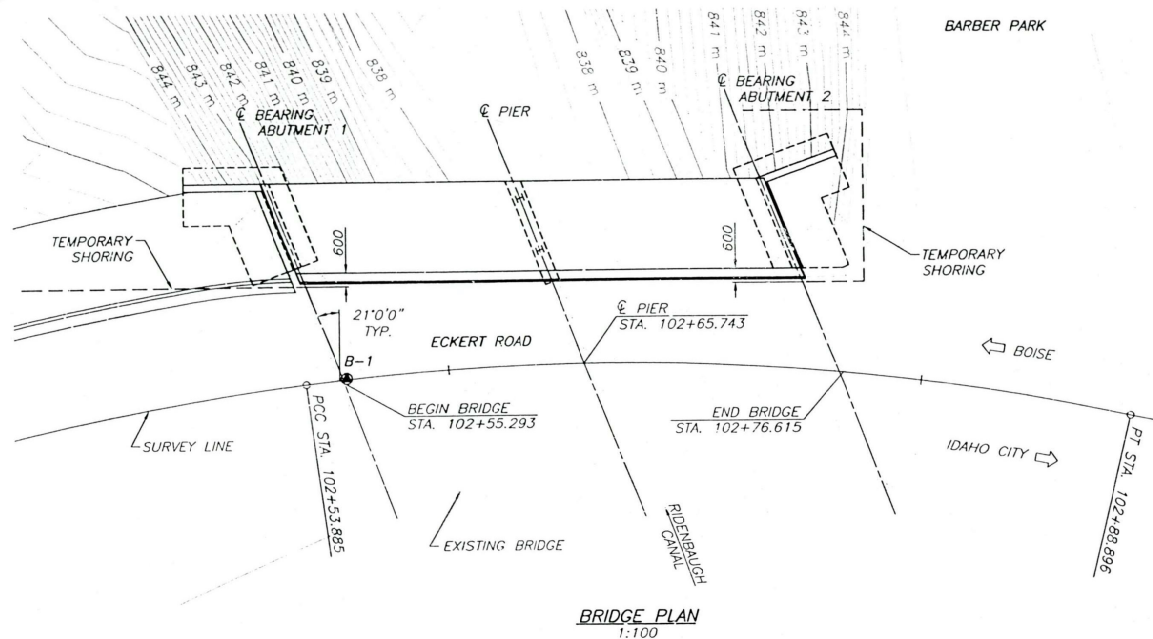
WHEN GALVANIZING IS SPECIFIED, THE GALVANIZING SHALL BE IN ACCORDANCE WITH AASHTO M-111.

THE CONTRACTOR SHALL VERIFY DIMENSIONS IN THE FIELD BEFORE ORDERING MATERIAL.

INCIDENTAL ITEMS

ALL ITEMS SHOWN OR NOTED ON PLANS WHICH ARE NOT SPECIFICALLY BID ITEMS ARE CONSIDERED INCIDENTAL ITEMS. THE COST OF FURNISHING AND INSTALLING INCIDENTAL ITEMS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS, UNLESS NOTED OTHERWISE.

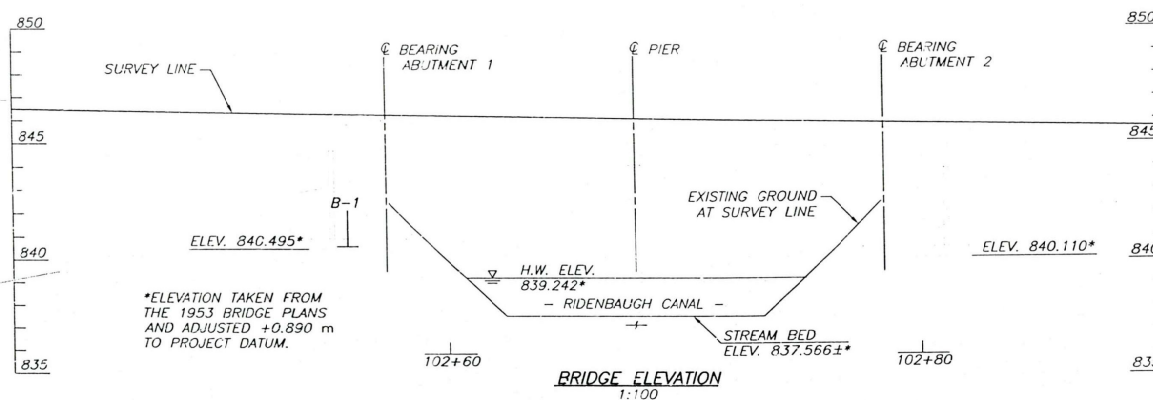
REVISIONS				IDaho TRANSPORTATION DEPARTMENT	metric	GENERAL AND DESIGN NOTES		BRIDGE PLANS	
NO.	DATE	BY	DESCRIPTION						
1			DESIGNED Don Vander Boegh	FOR 864mm X 559mm PRINTS ONLY		22 m CONCRETE BRIDGE SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL STA. 102+65.743		BRIDGE WICE NO. 12805	KEY NO. 6546
2			DESIGN CHECKED Joe Keller/Dwight Utz						
3			DETAILED Tracy Chan	CADD FILE NO. 818352 Eckert/AutoCAD 654602.dwg					
4			DWG. CHECKED Don Vander Boegh	DRAWING DATE January 2002					
5			CORRECTIONS					BRIDGE DRAWING NO. 6404-B	SHEET 2 of 21



TEST HOLE DATA

SYMBOL	DESCRIPTION
	SILT, SAND AND GRAVEL
CE	COLLAR ELEV.
BHE	BOTTOM OF HOLE ELEV.

ALL FOUNDATION INVESTIGATION INFORMATION IS TAKEN FROM THE 1953 BRIDGE PLANS, DRAWING NO. 6413. ALL ELEVATIONS HAVE BEEN ADJUSTED +0.890 m FOR PROJECT DATUM.



REVISIONS				DESIGNED	SCALES SHOWN ARE		IDAHO TRANSPORTATION DEPARTMENT		metric	FOUNDATION INVESTIGATION		BRIDGE PLANS	
NO.	DATE	BY	DESCRIPTION	FOR 864mm x 559mm PRINTS ONLY	BRIDGE UTCE. NO.								
				Don Vander Boegh						22 m CONCRETE BRIDGE	12805		
				DESIGN CHECKED						PROJECT NO.		COUNTY	KEY NO.
				Joe Keiser/Dwight Utz						CM-7243(101)		ADA	6546
				CADD FILE NO.									
				Tracy Chan	818352 (Eckert/ArtoCAD)								
				DWG. CHECKED	65488r03.dwg								
				Don Vander Boegh	DRAWING DATE								
				CORRECTIONS	January 2002								

PILE NOTES

MATERIAL SPECIFICATIONS

1. H-BEAM PILES SHALL BE HP310x79 AND CONFORM TO ASTM A-36M.
2. SPLICE PLATES SHALL CONFORM TO ASTM A-36M.
3. BACKUP PLATES SHALL CONFORM TO ASTM A-36M OR BE OF THE SAME MATERIAL AS THE PILES. THE BACKUP PLATE SHALL BE AT LEAST 10 mm THICK.
4. ALL PILES SHALL HAVE PILE POINTS. PILE POINTS SHALL BE AS FOLLOWS OR AN APPROVED EQUAL:

APF 75750
DFP H-777
ICE HPH SERIES

5. AT THE CONTRACTOR'S OPTION, THE FOLLOWING PREFABRICATED SPLICERS MAY BE USED IN PLACE OF THE BUTT WELDED SPLICE WITH PLATES:

APF HP-30000
DFP HP-300
ICE HSA SERIES

WELDING

6. QUALIFICATION OF WELDERS, MATERIALS, AND PROCEDURES FOR WELDING SHALL CONFORM TO THE CURRENT EDITION OF AASHTO/AWS D1.5.

7. WELDING OF PILE POINTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

DRIVING DATA

8. THE CONTRACTOR SHALL FURNISH THE TYPE AND ALL OPERATION SPECIFICATIONS OF THE HAMMER TO THE ENGINEER 15 DAYS PRIOR TO PILE DRIVING.
9. ALL PILING SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 355 kN PER PILE AS DETERMINED BY A WAVE EQUATION ANALYSIS PERFORMED BY THE GEOTECHNICAL ENGINEER UPON RECEIPT OF THE HAMMER SPECIFICATIONS.
10. THE HAMMER USED FOR DRIVING PILING SHALL HAVE A RATED ENERGY BETWEEN 27,000 AND 54,000 J.
11. IF MINIMUM PENETRATIONS ARE NOT OBTAINED, THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER BEFORE FURTHER PILE DRIVING.

MISCELLANEOUS

12. TEST PILING SHALL BE DRIVEN TO REFUSAL AT THE LOCATIONS SHOWN AND SHALL BECOME A PART OF THE COMPLETED STRUCTURE.
13. PILE TIP ELEVATIONS SHOWN ARE FOR ESTIMATING PURPOSES ONLY.

PILE SCHEDULE

LOCATION	NO.	ELEVATION		ESTIMATED PILE LENGTH
		CUT OFF	PILE TIP	
PIER 1	2	844.140	828.400	15.740 m

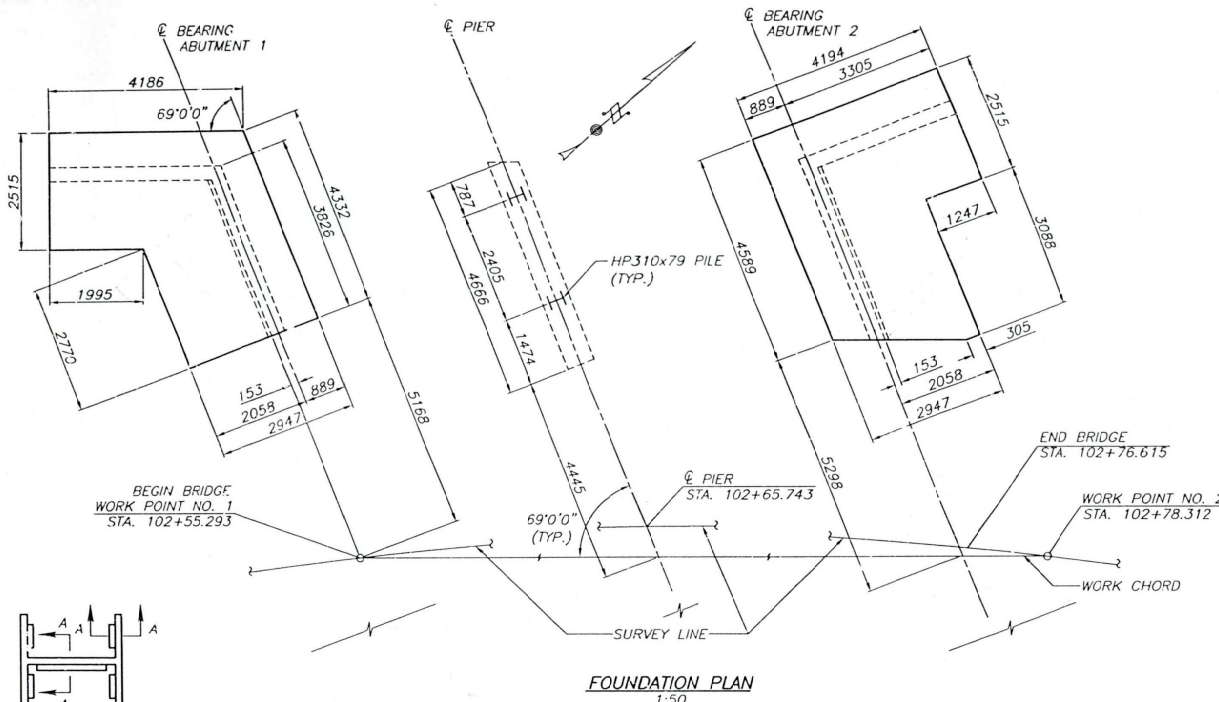
DENOTES TEST PILE



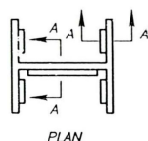
DENOTES VERTICAL PILING



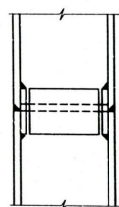
DENOTES PILING, BATTERED 3:12 IN DIRECTION SHOWN.



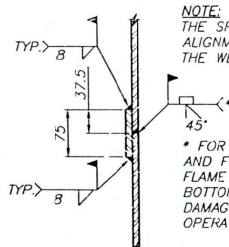
FOUNDATION PLAN
1:50



PLAN



ELEVATION

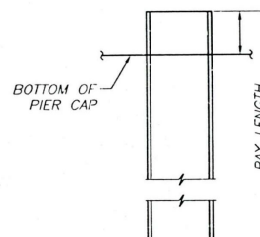


SECTION A-A

H-BEAM PILE BUTT WELDED SPLICE DETAIL
N.T.S.

NOTE:
THE SPLICE IS MADE BY USING 75x10 ALIGNMENT PLATES AND BUTT WELDING THE WEB AND FLANGES.

* FOR BEVEL, FLAME CUT WEB AND FLANGES OF UPPER SECTION. FLAME CUT WEB AND FLANGES OF BOTTOM SECTION TO REMOVE ANY DAMAGE TO PILE FROM THE DRIVING OPERATION.

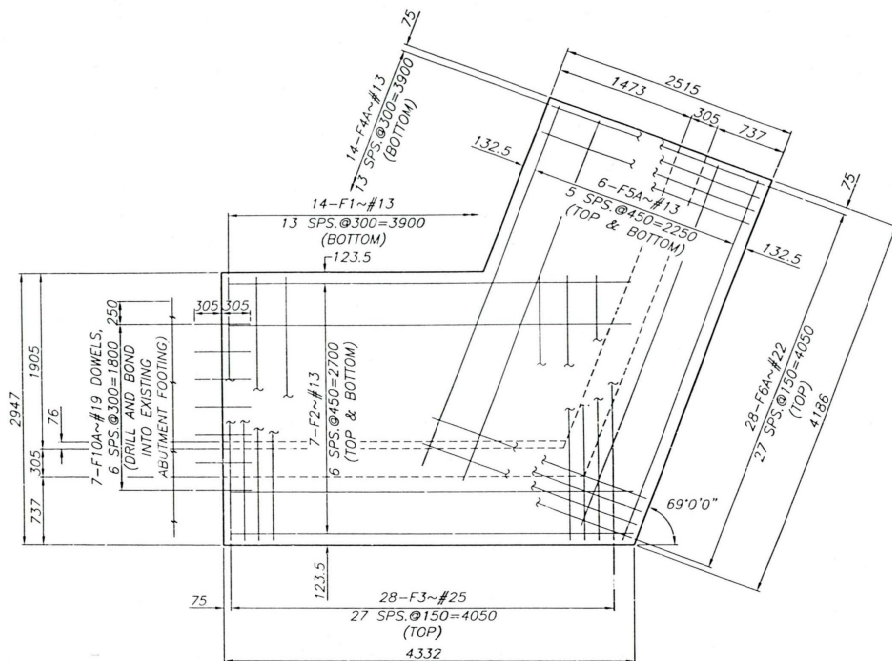


BOTTOM OF
PIER CAP

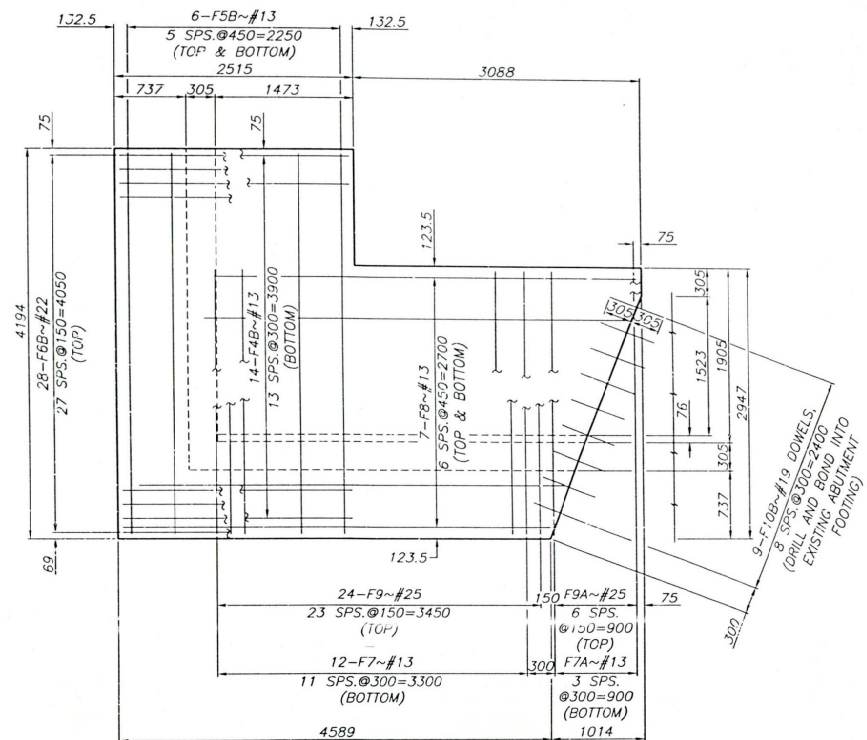
PILE LENGTH

REVISIONS				DESIGNED Dan Vander Boegh	SCALES SHOWN ARE FOR 864mm X 559mm PRINTS ONLY	DESIGN CHECKED Joe Keller/Dwight Utz	DETAILED Tracy Ghan	DWG. CHECKED Dan Vander Boegh	CORRECTIONS	CADD FILE NO. 818332 Eckert/Aut-CAD 654804.dwg	DRAWING DATE January 2002	DATE	IDaho TRANSPORTATION DEPARTMENT W&H Pacific Boise, Idaho	metric PROJECT NO. CM-7243(101)	FOUNDATION LAYOUT AND PILE NOTES 22 m CONCRETE BRIDGE SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL STA. 102+65.743	BRIDGE PLANS
NO.	DATE	BY	DESCRIPTION													

BRIDGE WTC. NO. 12805	KEY NO. 6546
COUNTY ADA	BRIDGE DRAWING NO. 6404-B
SHEET 4	OF 21



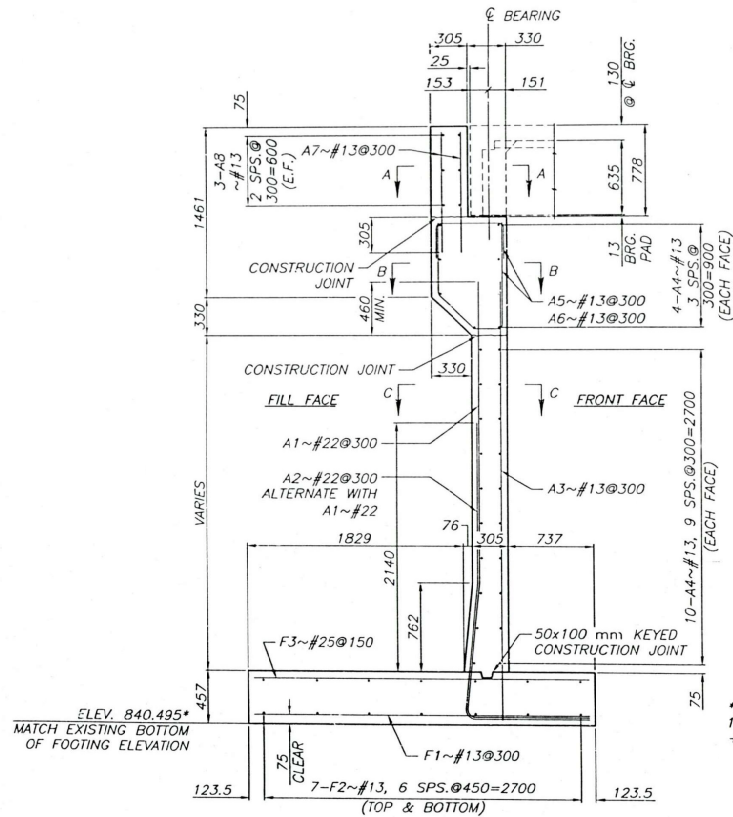
ABUTMENT 1 FOOTING PLAN
1:25



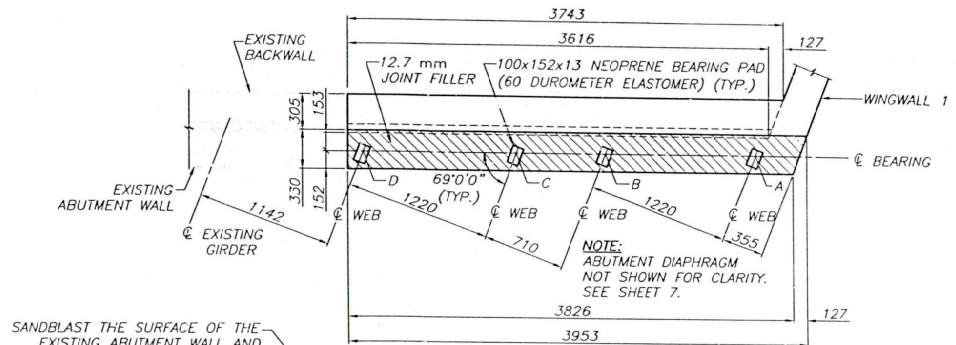
ABUTMENT 2 FOOTING PLAN
1:25

REVISIONS				DESIGNED Don Vander Boegh	SCALES SHOWN ARE FOR 864mm X 559mm PRINTS ONLY		IDAHO TRANSPORTATION DEPARTMENT		PROJECT NO. CM-7243(101)	FOOTING DETAILS 22 m CONCRETE BRIDGE SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL STA. 102+65.743	BRIDGE PLANS	
NO.	DATE	BY	DESCRIPTION								BRIDGE MISC. NO. 12805	KEY NO. 6546
1			DESIGN CHECKED Joe Keller/Dwight Utz	DETAILS Tracy Ghon	CADD FILE NO. 818312 Eckert.ktd/CAO 6546v20.dwg	DRAWING DATE January 2002	W&H Pacific Boise, Idaho				BRIDGE DRAWING NO. 6404-B	SHEET 5 of 21

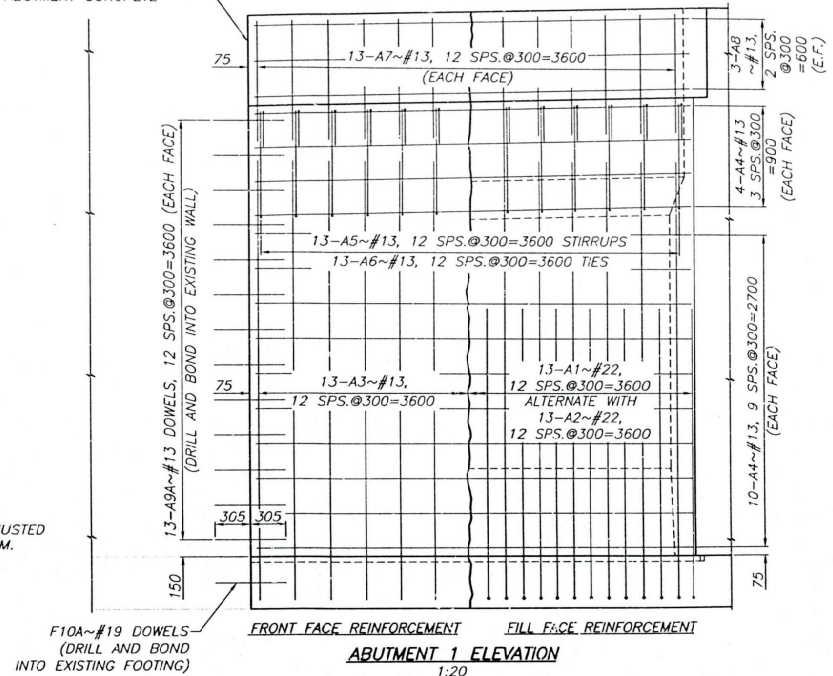
LOCATION	BEARING ELEVATION
A	844.921
B	844.889
C	844.870
D	844.837



*ELEVATION TAKEN FROM THE
1953 BRIDGE PLANS AND ADJUSTED
+0.890 m TO PROJECT DATUM.



SANDBLAST THE SURFACE OF THE
EXISTING ABUTMENT WALL AND
FOOTING FACE AND APPLY EPOXY
RESIN PRIOR TO PLACING NEW
ABUTMENT CONCRETE

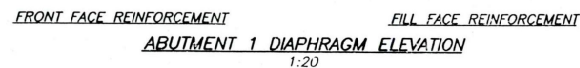
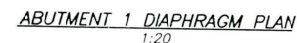
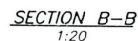
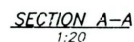


R E V I S I O N S				DESIGNED	SCALES SHOWN ARE FOR 36x48mm X 155mm PRINTS ONLY
NO.	DATE	BY	DESCRIPTION	Don Vancder Boegh	
				DESIGN CHECKED	CADD FILE NO. 818132 (Eden)/Amc20 5/4/98/05.dwg
				Joe Keller/Dwight Utz	
				DETAILED	
				Tracy Chan	
				DWG. CHECKED	
				Don Vancder Boegh	DRAWING DATE
				CORRECTIONS	January, 2002

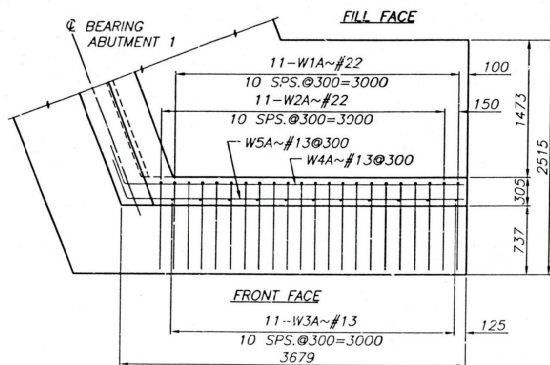
metric
PROJECT NO.
CM-7243(101)

ABUTMENT: 1
22 m CONCRETE BRIDGE
SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL
STA. 102+65.743

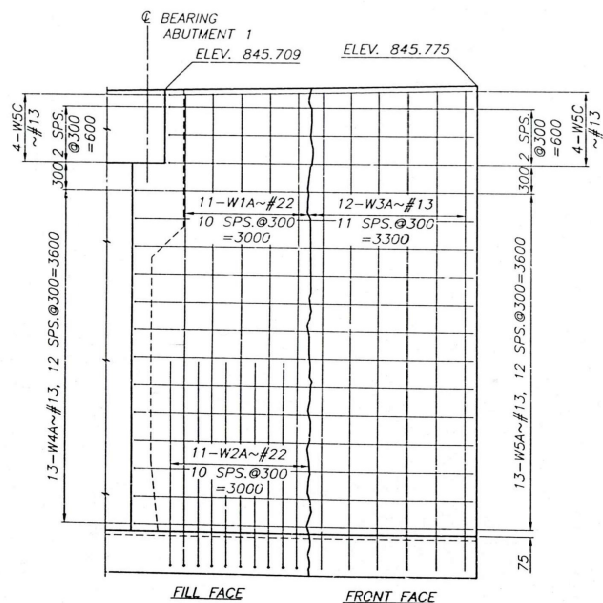
BRIDGE PLANS	
BRIDGE WTCE. NO. 12805	
COUNTY ADA	KEY NO. 6546
BRIDGE DRAWING NO. 6404-B	SHEET 6 of 21



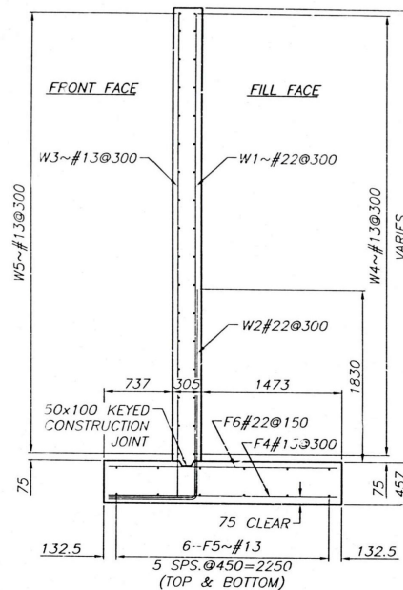
REVISIONS NO. DATE BY DESCRIPTION			DESIGNED Dan Vander Boegh DESIGN CHECKED Jose Kellner/Dwight Utz DETAILED Tracy Ghan DMC CHECKED Dan Vander Boegh CORRECTIONS		SCALES SHOWN ARE FOR 864mm x 559mm PRINTS ONLY CADD FILE NO. 818352 Ector\AutoCAD 0546821.dwg DRAWING DATE January 2002				IDAHO TRANSPORTATION DEPARTMENT W&H Pacific Boise, Idaho				metric PROJECT NO. CM-7243(101)				ABUTMENT 1 DETAILS 22 m CONCRETE BRIDGE SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL STA. 102+65.743				BRIDGE PLANS BRIDGE MILE NO. 12805 COUNTY ADA KEY NO. 6846 BRIDGE DRAWING NO. 6404-B SHEET 7 of 21			
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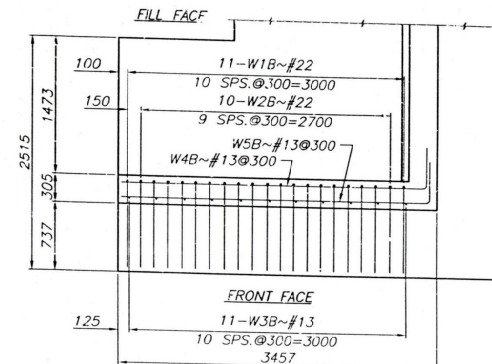
WINGWALL 1 PLAN
1:25



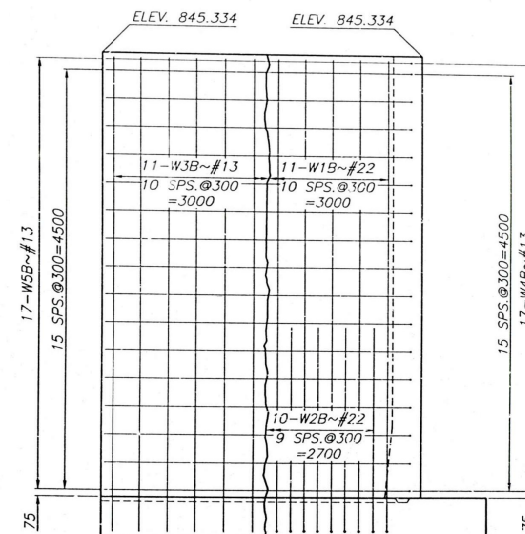
WINGWALL 1 ELEVATION
1:25



TYPICAL WINGWALL SECTION
1:25



WINGWALL 2 PLAN
1:25



WINGWALL 2 ELEVATION
1:25

REVISIONS			
NO.	DATE	BY	DESCRIPTION
1			
2			
3			
4			

DESIGNED
Don Vander Boegh
DESIGN CHECKED
Joe Keller/Dwight Utz
DETAILED
Tracy Ghan
DWC CHECKED
Don Vander Boegh
CORRECTIONS

SCALES SHOWN ARE
FOR 364mm X 559mm
PRINTS ONLY
CADD FILE NO.
818352 Eckert/AutoCAD
654607.dwg
DRAWING DATE
January 2002



IDAHO
TRANSPORTATION
DEPARTMENT



W&H Pacific Boise, Idaho

metric

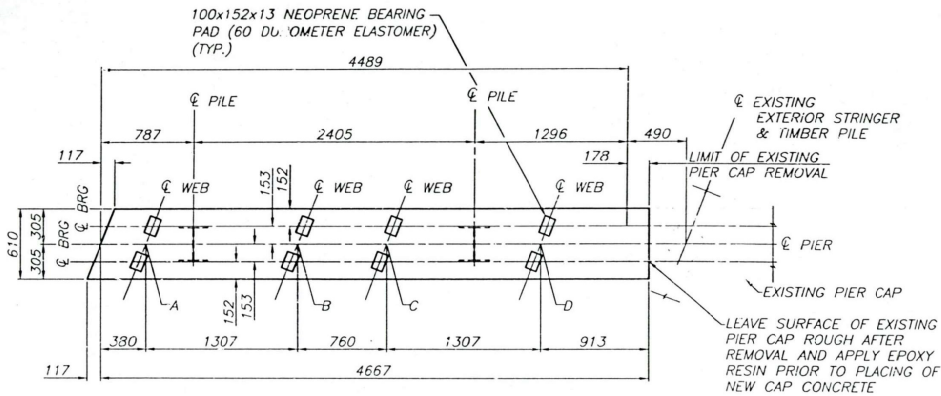
PROJECT NO.
CM-7243(101)

WINGWALL DETAILS

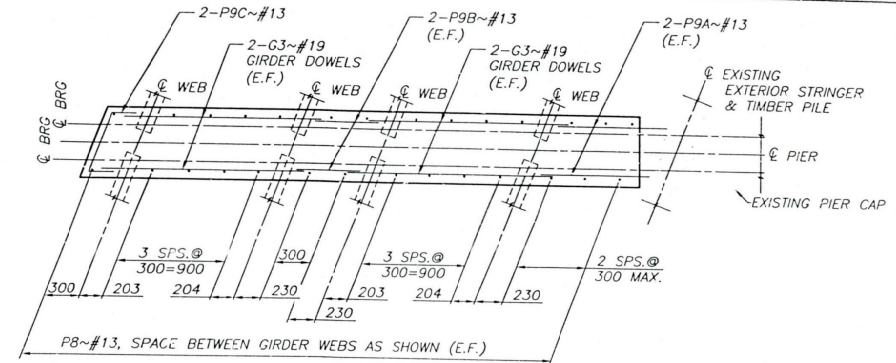
22 m CONCRETE BRIDGE
SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL
STA. 102+65.743

BRIDGE PLANS

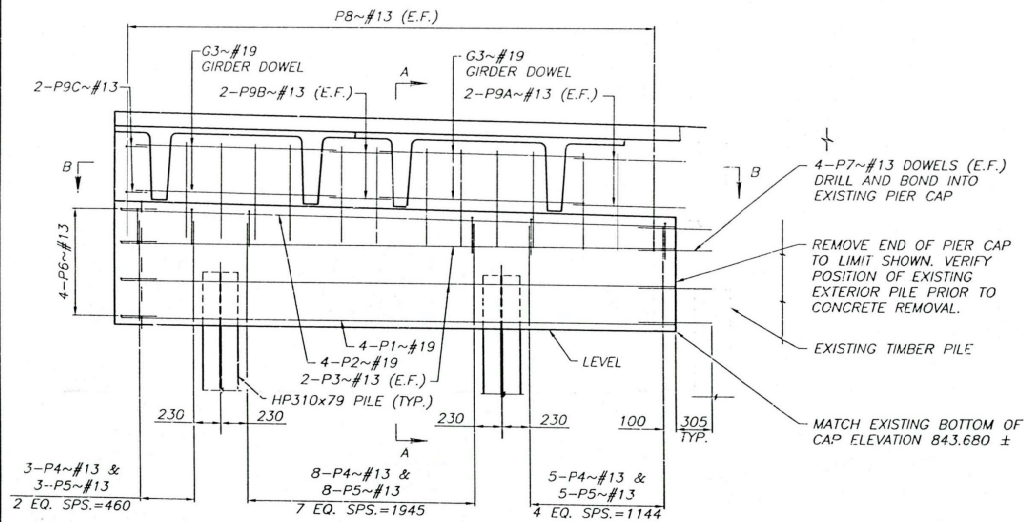
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12805
COUNTY
ADA
KEY NO.
6546
BRIDGE DRAWING NO.
6404-B
SHEET
9 of 21



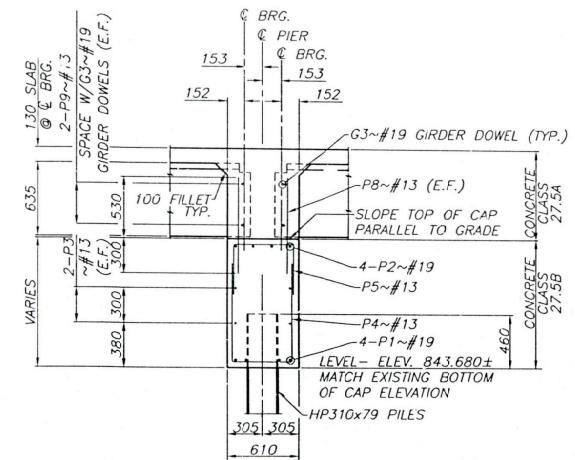
TYPICAL PIER PLAN
1:20



SECTION B-B
1:20



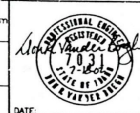
TYPICAL PIER ELEVATION
1:20



SECTION A-A
1:20

GIRDER BEARING ELEVATIONS	
LOCATION	BEARING ELEVATION
A	844.734
B	844.702
C	844.683
D	844.650

REVISIONS			
NO.	DATE	BY	DESCRIPTION
1			DESIGNED
2			DESIGN CHECKED
3			DETAILED
4			CHKD. CHECKED
5			CORRECTIONS



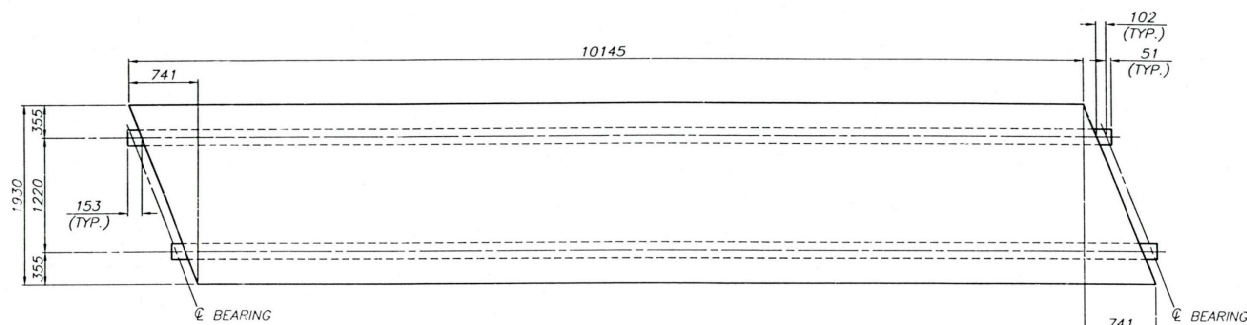
IDAHO
TRANSPORTATION
DEPARTMENT
W&H Pacific Boise, Idaho



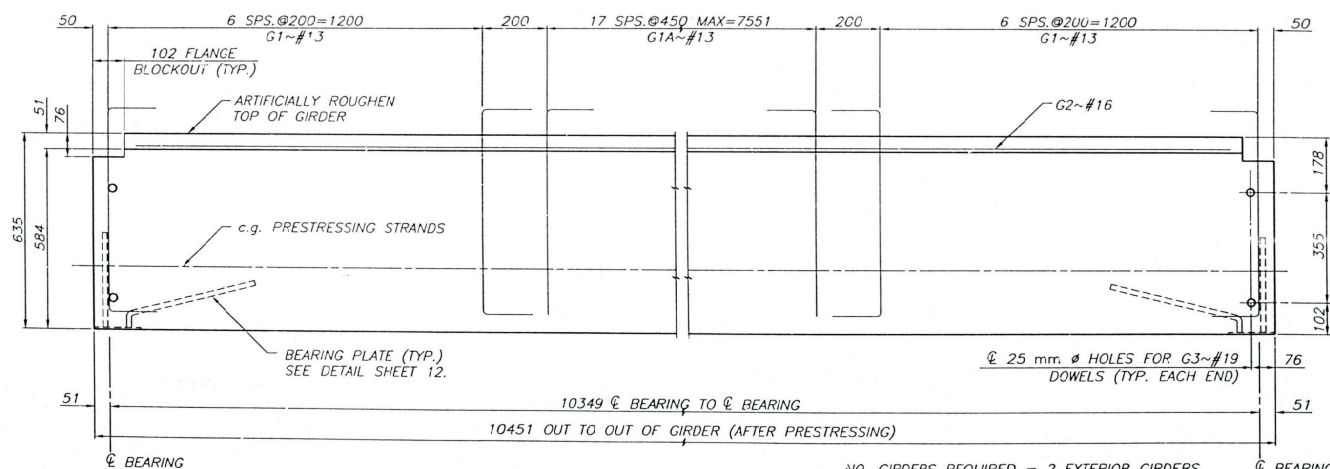
metric
PROJECT NO.
CM-7243(101)

PIER DETAILS
22 m CONCRETE BRIDGE
SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL
STA. 102+65.743

BRIDGE PLANS
BRIDGE MTCE. NO.
12805
COUNTY
ADA
KEY NO.
6546
BRIDGE DRAWING NO.
404-B
SHEET
10 of 21



GIRDER PLAN
1:25



GIRDER ELEVATION
1:7.5

NO. GIRDERS REQUIRED = 2 EXTERIOR GIRDERS
+ 2 INTERIOR GIRDERS
= 4 TOTAL GIRDERS

PRESTRESS GIRDER NOTES

CONCRETE

1. REQUIRED CONCRETE STRENGTH = 27,579 MPa AT TRANSFER, AND 34,474 MPa AT 28 DAYS.

REINFORCEMENT

- PRESTRESS REINFORCEMENT SHALL CONFORM TO ASTM A-416, SUPPLEMENT 1, FOR 12.7 mm ϕ 1860 MPa LOW RELAXATION STRAND.
- ALL BARS SHALL CONFORM TO AASHTO M-31M, GRADE 420.
- STEEL CLEARANCE FROM FORMS SHALL BE MAINTAINED BY STAYS, TIES, HANGERS, OR METAL CHAIRS. ALL METAL CHAIRS TO HAVE STAINLESS STEEL LEGS OR BE GRAY PLASTIC COATED. STIRRUPS AND TIES SHALL HAVE A MINIMUM 25 mm COVER OUTSIDE OF BARS. WELDED WIRE FABRIC SHALL HAVE A MINIMUM 15 mm COVER.
- PRESTRESSING STEEL AT THE ENDS OF THE GIRDER SHALL HAVE A MINIMUM CLEAR SPACING OF 38 mm.
- #16 BARS SHALL HAVE A MINIMUM 410 mm LENGTH FOR LAP SPLICES.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185 OR A-497.
- MORTAR AND CONCRETE SHALL BE CLEANED FROM ALL REINFORCING STEEL WHICH PROTRUDES FROM ANY SURFACE OF THE GIRDER.

LOSSES

- DESIGN IS FOR PRETENSIONING ONLY.
- ALL STRANDS TO BE INITIALLY TENSIONED TO 0.75 X ULTIMATE (1395 MPa).
- REQUIRED TOTAL INITIAL STRAND TENSIONING FORCE = 826,902 kN.
- GIRDERS DESIGNED USING PRESTRESS LOSS OF 30,544 MPa AT TRANSFER OF PRESTRESS FORCE TO CONCRETE, AND 151,409 MPa TOTAL LOSS UNDER SERVICE CONDITION.

FINISH

- BOTTOMS AND SIDES OF ALL GIRDERS SHALL HAVE A RUBBED SURFACE FINISH. ENDS OF GIRDERS MAY BE LEFT ROUGH.
- CUT OFF ENDS OF PRESTRESSING STRANDS AT THE END FACE OF GIRDERS UNLESS SHOWN OTHERWISE. ENDS OF ALL PRESTRESSING STRANDS SHALL BE PAINTED WITH AN APPROVED EPOXY.

DOWELS

- DOWELS MAY BE PROVIDED BY ANY OF THE FOLLOWING METHODS:
 - CAST IN PLACE.
 - HOLES MAY BE PROVIDED DURING FABRICATION, AS SHOWN, AND DOWELS GROUTED IN PLACE AFTER DELIVERY TO THE JOB SITE.
- DOWELS SHALL BE PLACED PARALLEL TO ϕ BEARING.

SHOP DRAWINGS

- SHOP DRAWING DETAILS SHALL CONFORM TO CURRENT AASHTO SPECIFICATIONS. DETENSIONING SEQUENCE AND GIRDER LIFT POINTS SHALL BE SHOWN ON THE SHOP DRAWINGS.
- LIFTING DEVICES OF ADEQUATE STRENGTH TO SAFELY LIFT THE SECTION SHALL BE PROVIDED. THEY SHALL BE SHOWN ON THE SHOP DRAWINGS.

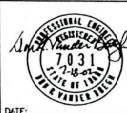
MISCELLANEOUS GIRDER DETAILS

- END OF GIRDERS SHALL BE PLUMB WHEN GIRDERS ARE SET TO GRADE.
- GIRDER LENGTH SHOWN IS A HORIZONTAL DIMENSION, AFTER PRESTRESSING. FINISHED LENGTH OF GIRDER SHALL BE CORRECTED FOR GRADE AND ALLOWANCE MADE FOR BEAM SHORTENING.
- TOP FLANGE OF TEE GIRDERS SHALL BE BLOCKED OUT TO ALLOW PLACEMENT OF CONCRETE FOR THE END DIAPHRAGMS.

REVISIONS		
NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		

DESIGNED
Don Vander Boegh
DESIGN CHECKED
Joe Keller/Dwight Utz
DETAILED
Tracy Chon
DWG. CHECKED
Don Vander Boegh
CORRECTIONS

SCALES SHOWN ARE
FOR 854mm X 559mm
PRINTS ONLY
CADD FILE NO.
818132 Eckert/AutoCAD
254807.dwg
DRAWING DATE
January 2002



IDAHO
TRANSPORTATION
DEPARTMENT

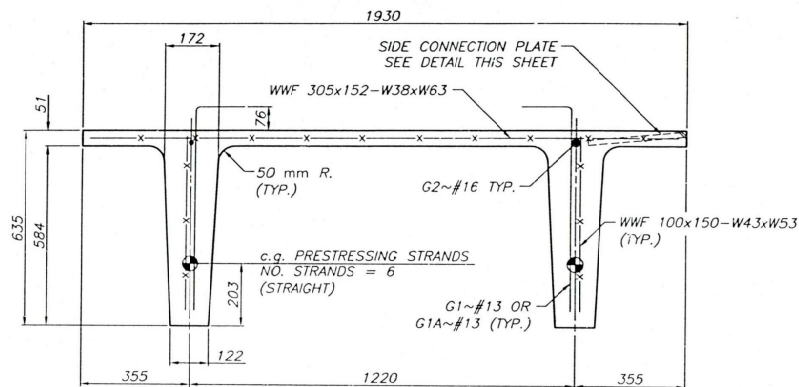
W&H Pacific Boise, Idaho



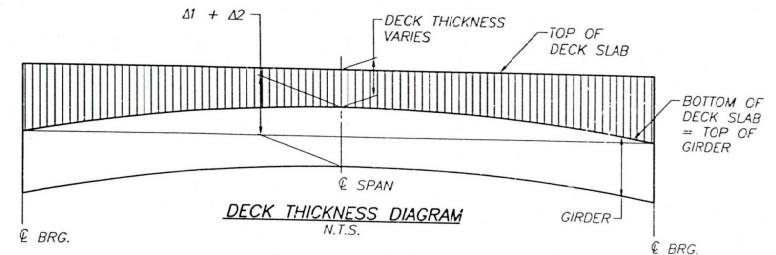
metric
PROJECT NO.
CM-7243(101)

DOUBLE TEE PRESTRESSED GIRDER DETAILS
22 m CONCRETE BRIDGE
SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL
STA. 102+65.743

BRIDGE WTC. NO.
12805
COUNTY
ADA
KEY NO.
6546
BRIDGE DRAWING NO. SHEET
6404-B 11 of 21



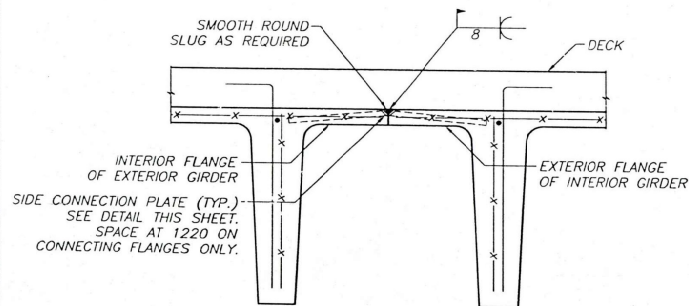
TYPICAL SECTION
1:7.5



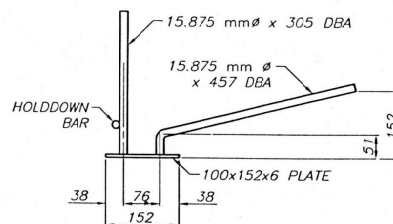
DECK THICKNESS												
LOCATION	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	SPAN (TENTH POINTS)
ALL GIRDERS	130	128	127	126	125	125	125	126	127	128	130	DECK THICKNESS ~ mm

DEFLECTION DATA ~ mm							
LOCATION	ΔP PRESTRESS	ΔG GIRDER	$\Sigma \Delta^*$ $\Delta P + \Delta G$	$\Delta 1^{**}$ $\Sigma \Delta \times (1.5)$	ΔS SLAB	ΔC CURB + FWS	$\Delta 2$ $\Delta S + \Delta C$
ALL GIRDERS	8↓	3↓	5↓	8↓	3↓	0	3↓

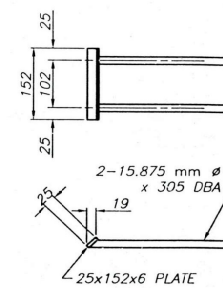
* ESTIMATED DEFLECTION OF PRESTRESSED GIRDER AT RELEASE
** ESTIMATED DEFLECTION OF PRESTRESSED GIRDER AT ERECTION



SIDE CONNECTION DETAIL
1:7.5



BEARING PLATE
1:5



SIDE CONNECTION PLATE
1:5

GIRDER REINFORCEMENT			
MARK	SIZE	GRADE	SKETCH
G1	#13	420	152 660
G1A	#13	420	152 660
G2	#16	420	10200
G3	#19	420	1630

ALL BEND DETAILS TO BE ACCORDING TO LATEST ACI STANDARD PRACTICE.

* STIRRUP AND TIE HOOK BEND DIMENSIONS.

GIRDER WEIGHT ----- 648.9395 kg/m

REVISIONS			
NO.	DATE	BY	DESCRIPTION
1			
2			
3			
4			
5			

DESIGNED Don Vander Boegh	SCALES SHOWN ARE FOR 864mm X 559mm PRINTS ONLY
DESIGN CHECKED Joe Keller/Dwight Utz	CADD FILE NO. 918352 Eckert/Aulocad 6546v13.dwg
DETAILS Tracy Chan	DRAWING DATE January 2002
OWS CHECKED Don Vander Boegh	
CORRECTIONS	

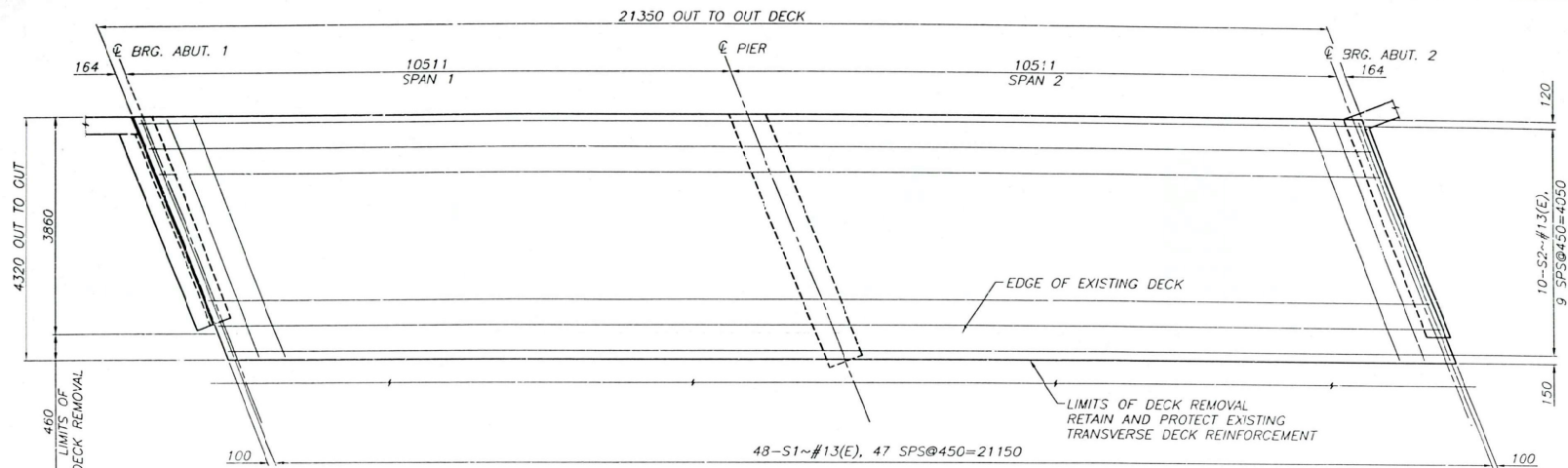


IDAHO
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W&H Pacific Boise, Idaho

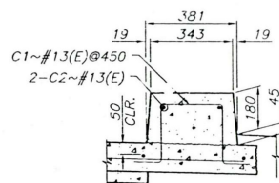
metric
PROJECT NO.
CM-7243(101)

PRESTRESSED GIRDER DETAILS
22 m CONCRETE BRIDGE
SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL
STA. 102+65.743

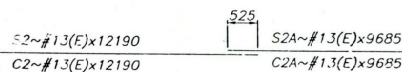
BRIDGE PLANS
BRIDGE UTILITY NO.
12805
COUNTY
ADA
KEY NO.
6546
BRIDGE DRAWING NO. SHEET
6404-B 12 of 21



DECK REINFORCEMENT PLAN
1:40



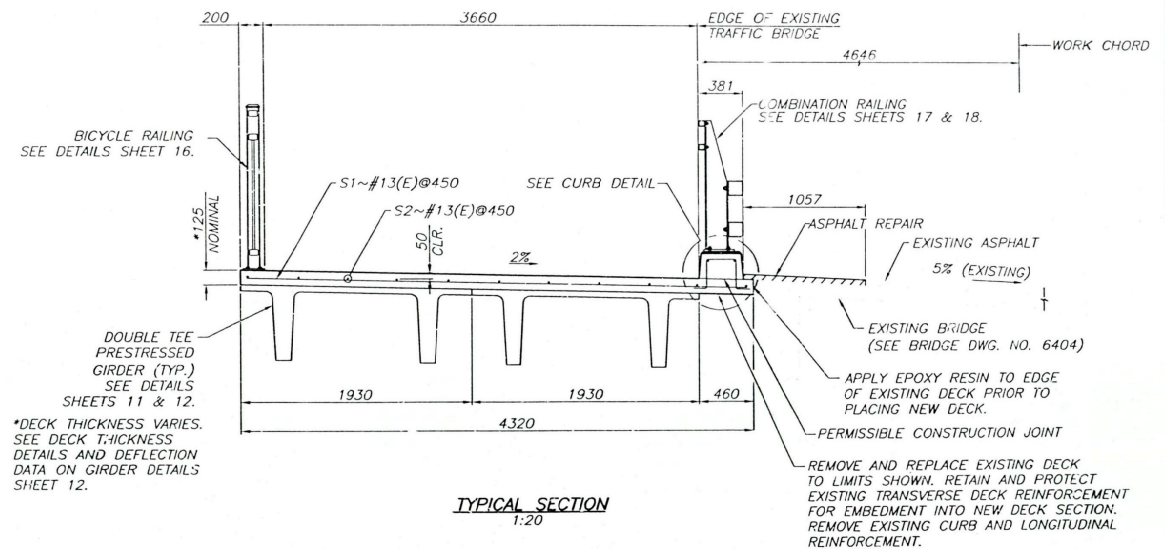
CURB DETAIL
1:10



DECK REINFORCEMENT SPLICE DIAGRAM**

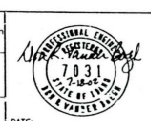
N.T.S.

**ALTERNATE ADJACENT ROWS OF REINFORCING
BARS TO STAGGER SPLICES.



TYPICAL SECTION
1:20

REVISIONS			DESIGNED	SCALES SHOWN ARE
NO.	DATE	BY	DESCRIPTION	FOR 864mm X 559mm
1			Don Vander Boegh	PRINTS ONLY
2			Joe Keler/Dwight Utz	
3			ERLAND SANDEEN	CADD FILE NO.
4			Don Vander Boegh	818352 Ecker/AutoCAD
5				2540x111.dwg
6				DRAWING DATE
7				January 2002

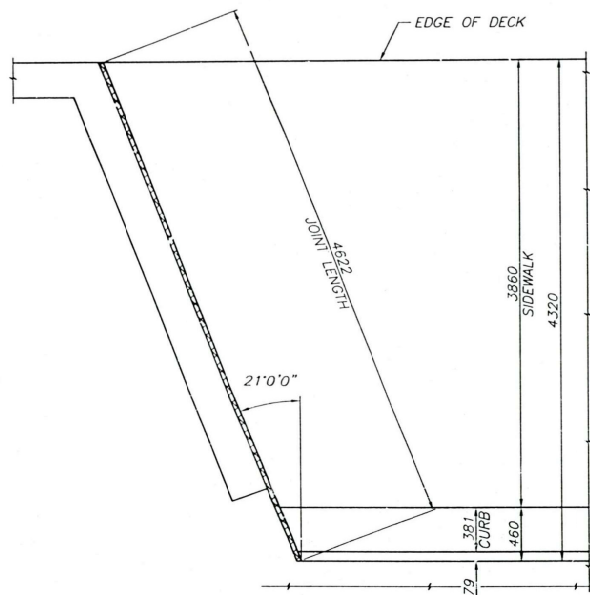


IDAHO
TRANSPORTATION
DEPARTMENT
W&H Pacific Boise, Idaho

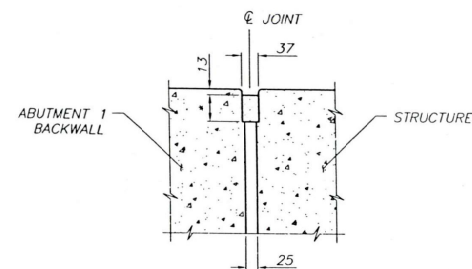
metric
PROJECT NO.
CM-7243(101)

DECK DETAILS
22 m CONCRETE BRIDGE
SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL
STA. 102+65.743

BRIDGE PLANS
BRIDGE MTCE. NO.
12805
COUNTY
ADA
KEY NO.
6546
BRIDGE DRAWING NO.
6404-B
SHEET
13 of 21



DECK JOINT PLAN
1:20

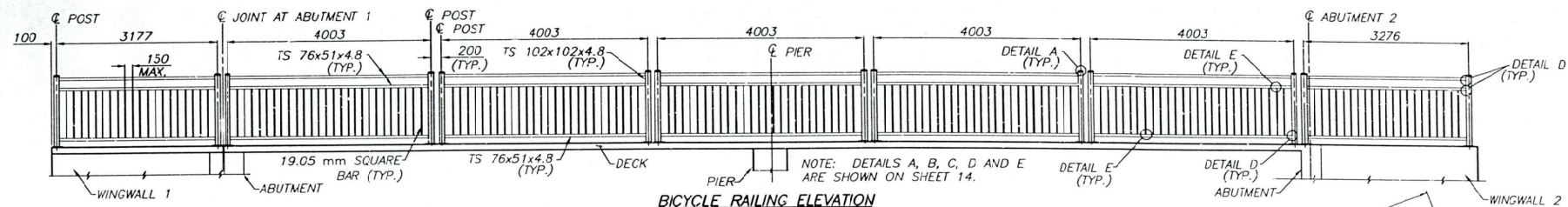


DECK JOINT SECTION
1:5

JOINT SEAL NOTES

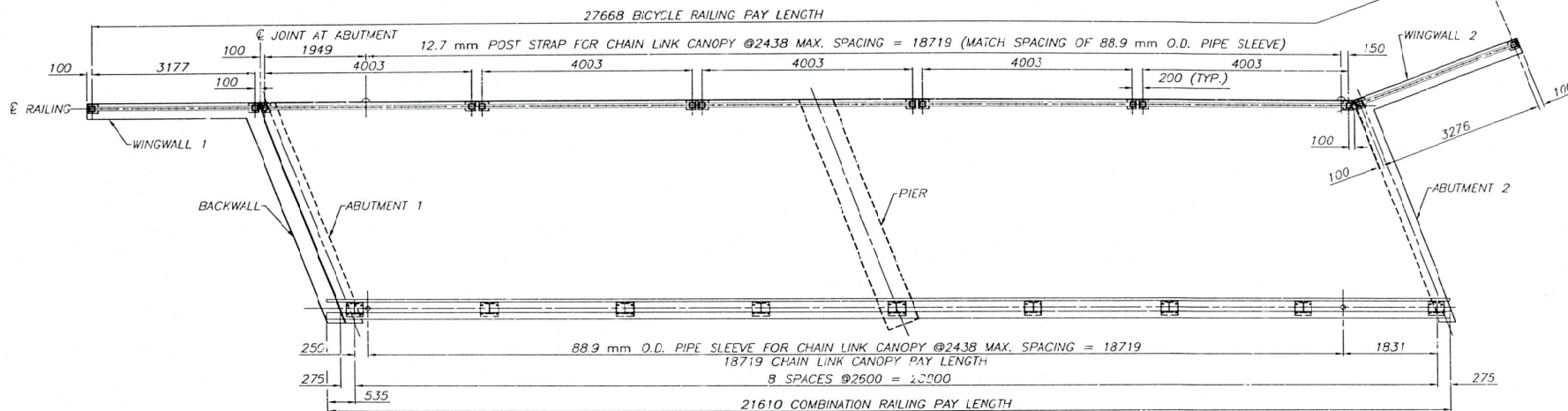
1. THE UNCOMPRESSED WIDTH OF THE COMPRESSION JOINT SEAL SHALL BE 57 mm.
2. THE SAW CUT JOINT WIDTH SHALL BE 37 mm.
3. THE MAXIMUM JOINT MOVEMENT ANTICIPATED IS 7 mm.
4. THE FOLLOWING ARE RECOMMENDED MANUFACTURERS OF COMPRESSION JOINT SEALS:
D.S. BROWN
WATSON, BOWMAN & ACME
5. DIMENSIONS MARKED "*" ARE PER MANUFACTURER'S RECOMMENDATIONS.
6. PREFORMED EXPANSION JOINT SEAL SHALL CONFORM TO AASHTO M-220.
7. THE SEAL SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS USING AN ADHESIVE LUBRICANT. ADHESIVE SHALL MEET THE REQUIREMENTS OF ASTM D-4070.
8. JOINT SEAL SHALL BE CONTINUOUS.

REVISIONS				DESIGNED Don Vander Boegh	DESIGN CHECKED Joe Keller/Dwight Ulz	DETAILED Erland Sandeen	DWG. CHECKED Don Vander Boegh	CORRECTIONS	SCALES SHOWN ARE: FOR 814mm X 559mm PRINTS ONLY	CADD FILE NO. S18J352 Eckert/Autocad 6546b12.dwg	DRAWING DATE January 2002	DATE:		IDAHO TRANSPORTATION DEPARTMENT W&H Pacific Boise, Idaho		JOINT DETAILS		BRIDGE PLANS	
NO.	DATE	BY	DESCRIPTION													22 m CONCRETE BRIDGE		BRIDGE MISC. NO. 12805	
																SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL		COUNTY ADA	KEY NO. 6546
																STA. 102+65.743		BRIDGE DRAWING NO. 6404-B	SHEET 14 of 21



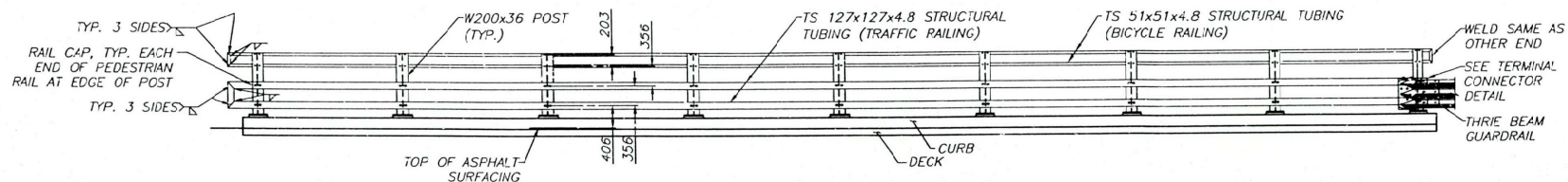
BICYCLE RAILING ELEVATION

1:40



BICYCLE & COMBINATION RAILING PLAN

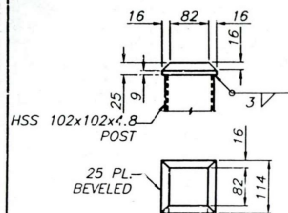
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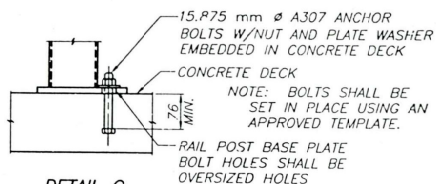
COMBINATION RAILING ELEVATION

1:40

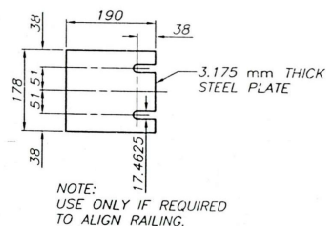
REVISIONS			DESIGNED		SCALES SHOWN ARE		RAILING LAYOUT		BRIDGE PLANS	
NO.	DATE	BY	DESCR PTION		FOR 554mm X 558mm		PROJECT NO.		BRIDGE WTC. NO.	
					PRINTS ONLY		CM-7243(101)		12805	
					CADD FILE NO.		SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL		KEY NO.	
					818302 Edm/Amc/AD		STA. 102+65.743		6546	
					DRAWING DATE				BRIDGE DRAWING NO. SHEET	
					January 2002				6404-B 15 OF 21	



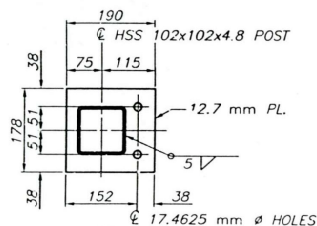
DETAIL A
1:5



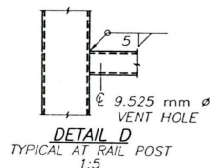
DETAIL C
OPTIONAL RAIL POST BASE ATTACHMENT
1:5



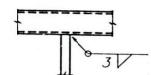
RAIL POST BASE SHIM DETAIL
1:5



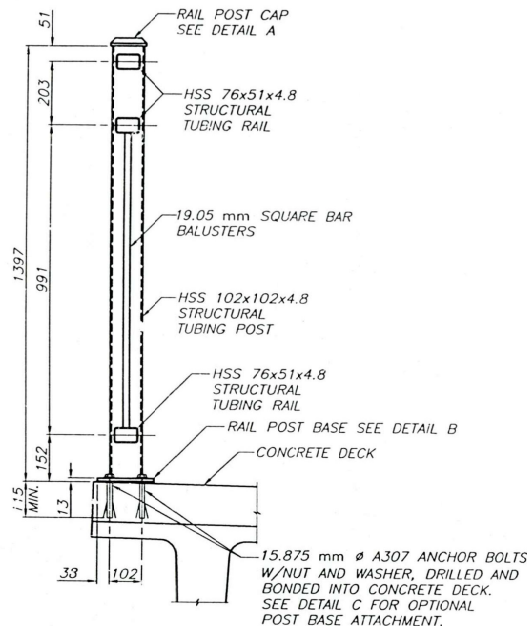
DETAIL B
TYPICAL RAIL POST BASE
1:5



DETAIL D
TYPICAL AT RAIL POST
1:5



DETAIL E
TYPICAL TOP AND BOTTOM OF BALUSTERS
1:5



TYPICAL RAILING SECTION
1:7.5

BICYCLE RAILING NOTES

MATERIALS

1. STRUCTURAL STEEL SHALL CONFORM WITH AASHTO M270, M GRADE 250.
2. STRUCTURAL STEEL TUBING SHALL CONFORM WITH ASTM A-500, GRADE B OR ASTM A-501.
3. BOLTS, NUTS AND WASHERS SHALL CONFORM WITH ASTM A-307.
4. HEXAGONAL BOLTS AND NUTS SHALL CONFORM WITH ANSI B18.2.1 AND B18.2.2.
5. EPOXY RESIN FOR ADHESIVE ANCHORS SHALL CONFORM WITH ASTM C-881.

PAINTING

6. ALL STEEL PARTS SHALL BE SHOP PRIMED (FORMULA NO. 15) AND TOP COATED (FORMULA NO. 16) IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
7. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE CLEANED, PRIMED (FORMULA NO. 15) AND TOP COATED (FORMULA NO. 16) IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
8. ALL WELDED AREAS SHALL BE THOROUGHLY CLEANED PRIOR TO PAINTING TO REMOVE ALL SLAG OR OTHER MATERIAL THAT WOULD INTERFERE WITH THE ADHERENCE OF THE PAINT.
9. ALL PAINTED SURFACES SHALL BE FREE OF FINES, ABRASIONS, ROUGH OR SHARP EDGES, OR OTHER SURFACE DEFECTS.

FABRICATION AND ERECTION

10. FABRICATION AND ERECTION OF THE RAILING SHALL CONFORM TO THE REQUIREMENTS OF THE AASHTO SPECIFICATIONS FOR HIGHWAY BRIDGES AND ITS STANDARD SPECIFICATIONS.
11. THE RAILING SHALL BE FABRICATED IN A PLANT EXPERIENCED IN PRODUCING RAILINGS AND ARCHITECTURAL METAL WORK AND SHALL BE ERECTED BY SKILLED WORKMEN EXPERIENCED IN THIS TYPE OF WORK.
12. SHOP DRAWINGS SHALL BE PREPARED AND SUBMITTED TO THE ENGINEER IN ACCORDANCE WITH SECTION 504 AND SHALL INCLUDE COMPLETE DIMENSIONS AND DETAILS OF FABRICATION INCLUDING AN ERECTION DIAGRAM. MATERIALS BEING USED SHALL BE CLEARLY SPECIFIED. BEFORE PROJECT COMPLETION, THE CONTRACTOR SHALL FURNISH THE ENGINEER A 559 mm x 864 mm REPRODUCIBLE MYLAR COPY OF THE SHOP DRAWINGS.
13. BASE PLATES TO BE SAWED OR MILLED. CUT ENDS TO BE TRUE, SMOOTH AND FREE FROM BURRS OR RAGGED EDGES.
14. ALL POSTS AND BALUSTERS SHALL BE PLUMB.
15. VENT HOLES SHALL BE PLACED AT THE END OF ALL POSTS AND RAILS IN ACCORDANCE WITH ASTM A-385.
16. THE EPOXY FOR DRILLED AND BONDED ANCHORS SHALL BE CAPABLE OF RESISTING A 21.6 kN WORKING TENSILE LOAD PER BOLT WHEN INSTALLED.

METHOD OF MEASUREMENT

17. BICYCLE RAILING WILL BE MEASURED BY THE METER, COMPLETE IN PLACE. THIS INCLUDES MATERIALS, FABRICATION, AND INSTALLATION.

APPROXIMATE QUANTITIES

RAILS, POSTS, BALUSTERS, PLATE
BICYCLE RAILING ----- 215.5 kg PER 4.00 m SECTION

REVISIONS			
NO.	DATE	BY	DESCRIPTION
1		Don Vander Boegh	DESIGNED
2		Don Vander Boegh	DESIGN CHECKED
3		Don Vander Boegh	DESIGNED
4		Don Vander Boegh	DESIGNED
5		Don Vander Boegh	DESIGNED
6		Don Vander Boegh	DESIGNED
7		Don Vander Boegh	DESIGNED
8		Don Vander Boegh	DESIGNED
9		Don Vander Boegh	DESIGNED
10		Don Vander Boegh	DESIGNED

DESIGNED	Don Vander Boegh
DESIGN CHECKED	Don Vander Boegh
DESIGNED	Don Vander Boegh
DESIGNED	Don Vander Boegh
DESIGNED	Don Vander Boegh
DESIGNED	Don Vander Boegh
DESIGNED	Don Vander Boegh
DESIGNED	Don Vander Boegh
DESIGNED	Don Vander Boegh
DESIGNED	Don Vander Boegh

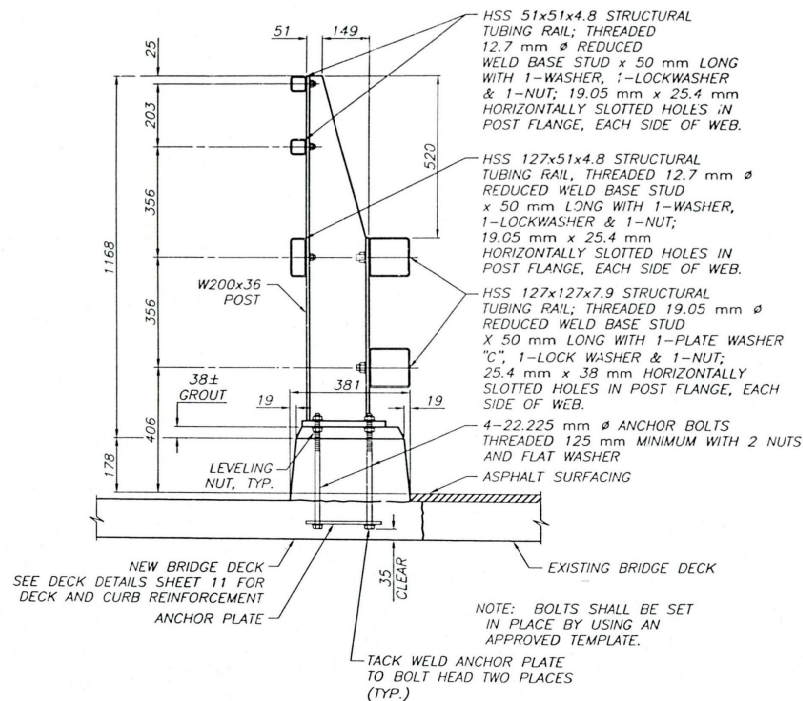


IDAHO
TRANSPORTATION
DEPARTMENT
W&H Pacific Boise, Idaho

metric
PROJECT NO.
CM-7243(101)

BICYCLE RAILING DETAILS
22 m CONCRETE BRIDGE
SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL
STA. 102+65.743

BRIDGE PLANS	
BRIDGE MTCE. NO.	12805
COUNTY	ADA
KEY NO.	6546
BRIDGE DRAWING NO.	6404-B
SHEET	16 of 21



TYPICAL RAILING SECTION
1:7.5

COMBINATION RAILING NOTES

MATERIALS

1. STRUCTURAL STEEL SHALL CONFORM WITH AASHTO M270, M GRADE 250.
2. STRUCTURAL STEEL TUBING SHALL CONFORM WITH ASTM A-500, GRADE B, ASTM A-618, OR ASTM A-501.
3. BOLT, NUTS AND WASHERS SHALL CONFORM WITH ASTM A-325.
4. GROUT SHALL CONFORM TO TYPE B CLASS 1 AS SPECIFIED IN SUBSECTION 505.03 PART 1.

PAINTING

5. ALL STEEL PARTS SHALL BE SHOP PRIMED (FORMULA NO. 15) AND TOP COATED (FORMULA NO. 16) IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
6. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE CLEANED, PRIMED (FORMULA NO. 15) AND TOP COATED (FORMULA NO. 16) IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
7. ALL WELDED AREAS SHALL BE THOROUGHLY CLEANED PRIOR TO PAINTING TO REMOVE ALL SLAG OR OTHER MATERIAL THAT WOULD INTERFERE WITH THE ADHERENCE OF THE PAINT.
8. ALL PAINTED SURFACES SHALL BE FREE OF FINS, ABRASIONS, ROUGH OR SHARP EDGES, OR OTHER SURFACE DEFECTS.

FABRICATION AND ERECTION

9. FABRICATION AND ERECTION OF THE RAILING SHALL CONFORM TO THE REQUIREMENTS OF THE AASHTO SPECIFICATIONS FOR HIGHWAY BRIDGES AND ITD STANDARD SPECIFICATIONS.
10. THE RAILING SHALL BE FABRICATED IN A PLANT CERTIFIED UNDER THE AISC QUALITY CERTIFICATION PROGRAM, CONVENTIONAL STEEL BUILDINGS CATEGORY.
11. SHOP DRAWINGS SHALL BE PREPARED AND SUBMITTED TO THE ENGINEER IN ACCORDANCE WITH SECTION 504 AND SHALL INCLUDE COMPLETE DIMENSIONS OF FABRICATION INCLUDING AN ERECTION DIAGRAM. MATERIALS BEING USED SHALL BE CLEARLY SPECIFIED. BEFORE PROJECT COMPLETION THE CONTRACTOR SHALL FURNISH THE ENGINEER A 3 MIL, 559 mm x 864 mm REPRODUCIBLE MYLAR COPY OF THE SHOP DRAWINGS.
12. BASE PLATES AND ENDS OF TUBE SECTIONS AT SPLICES TO BE SAWED OR MILLED. CUT ENDS TO BE TRUE, SMOOTH AND FREE FROM BURRS OR RAGGED EDGES.
13. ALL POSTS SHALL BE PLUMB.
14. EACH RAIL SYSTEM SHALL BE ATTACHED TO A MINIMUM OF TWO POSTS, BUT PREFERABLY THREE OR MORE. RAILING SYSTEM SHALL BE CONTINUOUS. EACH JOINT IN A RAIL LENGTH SHALL BE LOCATED AT THE SAME POSITION IN THE SECTION AND SHALL BE SPLICED AS DETAILED OR AN ALTERNATE SPLICE DETAIL MAY BE SUBMITTED FOR APPROVAL ON SHOP DRAWINGS.

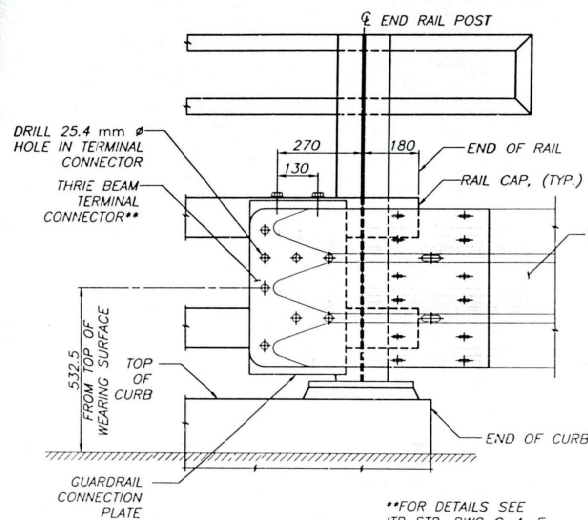
METHOD OF MEASUREMENT

15. COMBINATION RAILING WILL BE MEASURED BY THE METER, COMPLETE IN PLACE. THIS INCLUDES MATERIALS, FABRICATION, AND INSTALLATION. CURB CONCRETE AND REINFORCEMENT IS NOT INCLUDED IN THIS BID ITEM.

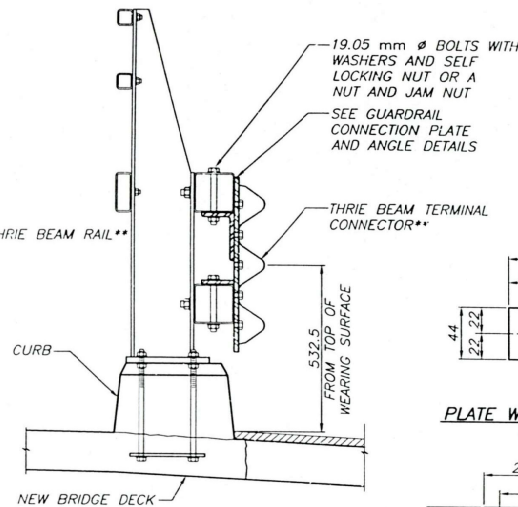
APPROXIMATE QUANTITIES

STRUCTURAL STEEL.....105 kg/m

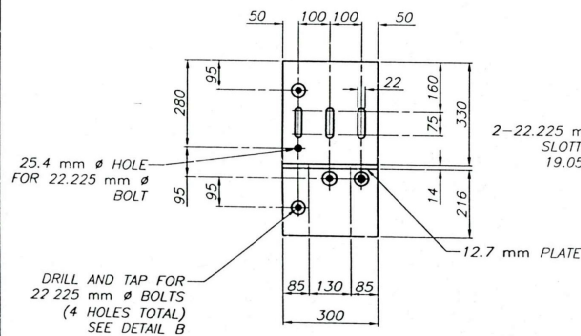
REVISIONS				DESIGNED	SCALES SHOWN ARE	IDaho TRANSPORTATION DEPARTMENT	metric	COMBINATION RAILING DETAILS (1 OF 2)		BRIDGE PLANS	
NO.	DATE	BY	DESCRIPTION	Don Vander Boegh	FOR 864mm X 559mm PRINTS ONLY			22 m CONCRETE BRIDGE		BRIDGE MISC. NO. 12805	
				DESIGN CHECKED Joe Keller/Dwight Utz		W&H Pacific Boise, Idaho	PROJECT NO. CM-7243(101)	SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL		COUNTY ADA	
				DETAILED Tracy Ghan	CADD FILE NO. 818352 Eckert/AutoCAD 6546br15.dwg			STA. 102+65.743		KEY NO. 6546	
				FWG CHECKED Don Vander Boegh	DRAWING DATE January 2002	DATE:				BRIDGE DRAWING NO. 6404-B	
				CORRECTIONS						SHEET 17 of 21	



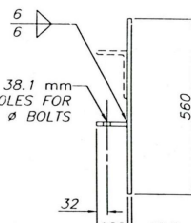
TERMINAL CONNECTOR
1:7.5



GUARDRAIL CONNECTION DETAIL
1:7.5

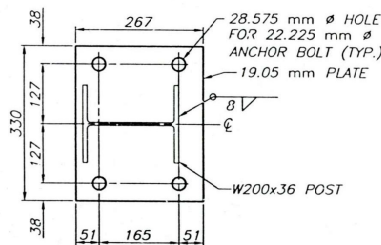


GUARDRAIL CONNECTION PLATE
1:7.5

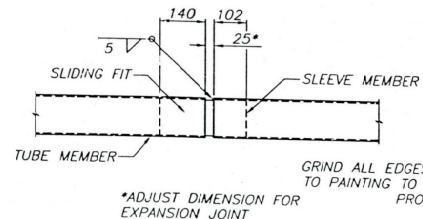


NOTE: USE ONLY IF REQUIRED TO ALIGN RAILING.

RAIL POST BASE SHIM
1:7.5



RAIL POST BASE PLATE
1:5



ELEVATION

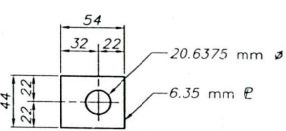
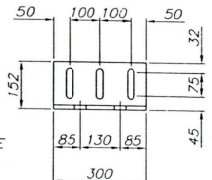
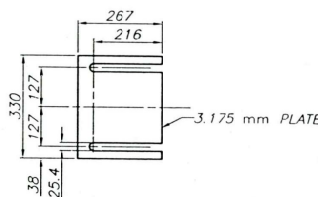
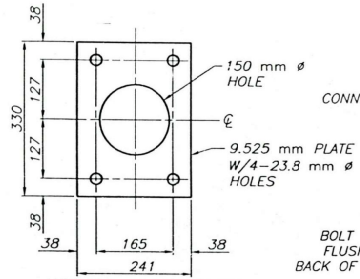
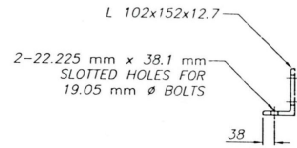


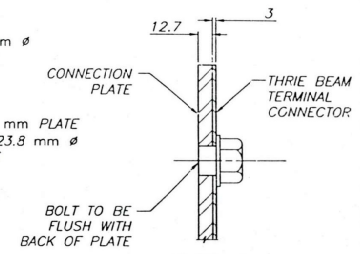
PLATE WASHER "C"
1:2



GUARDRAIL CONNECTION ANGLE
1:7.5

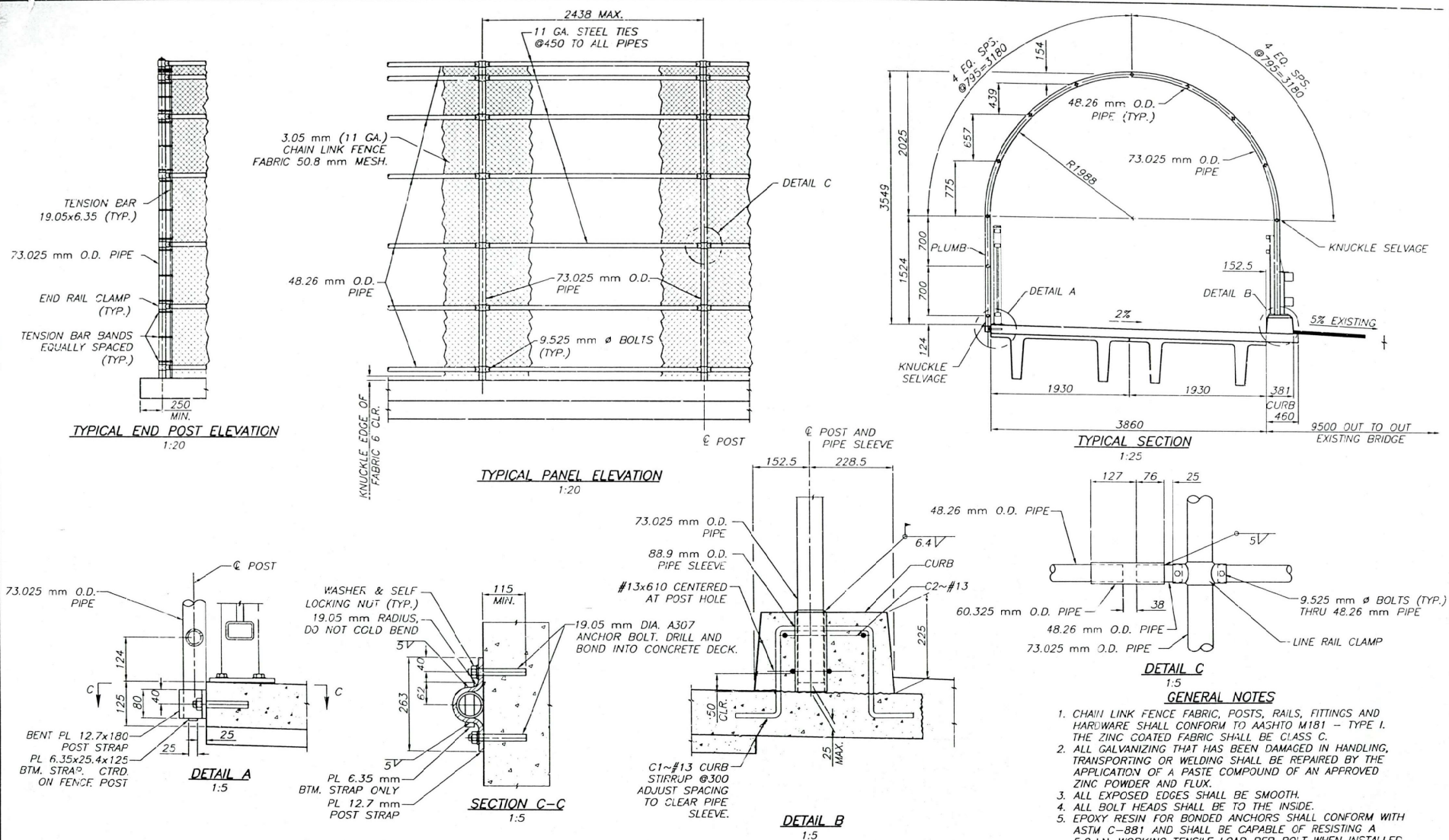


ANCHOR PLATE DETAIL
1:5



DETAIL B
1:2

REVISIONS				DESIGNED Dan Vander Boegh	SCALES SHOWN ARE FOR 854mm x 559mm PRINTS ONLY	CADD FILE NO. 818352 Eder/AdricAD 6546r16.dwg	DRAWING DATE January 2002	DATE	IDaho TRANSPORTATION DEPARTMENT W&H Pacific Boise, Idaho	metric PROJECT NO. CM-7243(101)	COMBINATION RAILING DETAILS (2 OF 2)		BRIDGE PLANS	
NO.	DATE	BY	DESCRIPTION								22 m CONCRETE BRIDGE SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL STA. 102+65.743		BRIDGE WTC. NO. 12805	KEY NO. 6546
1				DESIGN CHECKED Joe Keller/Dwight Utz									COUNTY ADA	SHEET 18 of 21
2				DETAILS Tracy Ghan									BRIDGE DRAWING NO. 6404-B	
3				DWG. CHECKED Dan Vander Boegh										
4				CORRECTIONS										



REVISIONS				DESIGNED	SCALES SHOWN ARE		IDAHO TRANSPORTATION DEPARTMENT		metric	CHAIN LINK CANOPY DETAILS		BRIDGE PLANS	
NO.	DATE	BY	DESCRIPTION		FOR 864mm X 559mm PRINTS ONLY					CADD FILE NO.	PROJECT NO.	22 m CONCRETE BRIDGE	BRIDGE WTC. NO.
				Don Vander Boegh							12805		
				DETALD Joe Keller/Dwight Utz								COUNTY	
				DETALD Erland Sandeen								ADA	KEY NO.
				DWG. CHECKED Don Vander Boegh								6546	
				CORRECTIONS								BRIDGE DRAWING NO.	SHEET
					DRAWING DATE January 2002							6404-B	19 of 21

MARK	LOCATION	BAR SIZE	COAT (E)	NO. OF BARS	BAR TYPE	BARS/SET	LENGTH a	LENGTH b	LENGTH c	LENGTH d	LENGTH e	ANGLE f	ANGLE v	TOTAL LENGTH
F1	ABUT 1 FTNG	13		14	1		2.845							39.830
F2	"	13		14	1		4.280							59.920
F3	"	25		28	1		2.845							79.660
F4A	WING 1 FTNG	13		14	1		2.415							33.810
F4B	WING 2 FTNG	13		14	1		2.415							33.810
F5A	WING 1 FTNG	13		12	1		4.135							49.620
F5B	WING 2 FTNG	13		12	1		4.090							49.080
F6A	WING 1 FTNG	22		29	1		2.415							67.620
F6B	WING 2 FTNG	22		28	1		4.090							114.520
F7	ABUT 2 FTNG	13		12	1		2.845							34.140
F7A	"	13		4	30	4	0.310	2.650						5.920
F8	"	13		14	1		4.485							62.790
F9	"	25		24	1		2.845							68.280
F9A	"	25		7	30	7	0.310	2.650						10.360
F10A	ABUT 1 FTNG	19		6	1		0.610							3.660
F10B	ABUT 2 FTNG	19		7	1		0.610							4.270
A1	ABUTMENT 1	22		13	41		1.065	1.145	2.650			85°		63.180
A2	"	22		13	41		1.065	1.145	1.380			85°		46.670
A3	"	13		13	1		3.800							49.400
A4	"	13		20	9		3.750	0.300						81.000
A5	"	13		13	43		0.255	0.395	0.630	0.910		45°		28.470
A6	"	13		13	4		0.535	0.300	0.300					14.755
A7	"	13		26	1		1.035							26.910
A8	"	13		6	9		3.900	0.300				69°		25.200
A9A	"	13		26	1		0.610							15.860
A9B	ABUTMENT 2	13		26	1		0.610							15.860
A10	"	22		14	42	14	1.065	1.14	3.080	3.165		85°		74.060
A11	"	22		14	41		1.065	1.145	1.380			85°		50.260
A12	"	13		14	30	14	4.225	4.310						59.780
A13	"	13		28	2		3.950	0.300						119.000
A14	"	13		14	1		1.000							14.000
P1	PIER CAP	19		4	30	4	4.470	4.710						18.360
P2	"	19		4	30	4	4.470	4.710						18.360
P3	"	13		4	30	2	4.470	4.710						18.360
P4	"	13		16	4		0.510	0.840	0.840					35.040
P5	"	13		16	4		0.510	0.430	0.430					21.920
P6	"	13		4	40		0.545	0.300	0.300			69°	69°	4.580
P7	"	13		8	1		0.610							4.880
W1A	WINGWALL 1	22		11	31	11	5.090	5.150	0.940	0.940				66.660
W1B	WINGWALL 2	22		11	2		5.100	0.940						66.440
W2A</														

BANK BEND DIAGRAMS			
1 	2 	4 	5
30 	31 	40 	41
42	43		

Diagram illustrating three types of bends and their corresponding dimensioning rules:

- 180° BEND:** LENGTH GIVEN, ADD "A" IN SKETCH
- 90° BEND:** LENGTH GIVEN, ADD "B" IN SKETCH
- 135° BEND:** LENGTH GIVEN, ADD "C" IN SKETCH

"L" = LENGTH GIVEN IN SKETCH

STANDARD END HOOK DIMENSIONS				STIRRUP AND TIE HOOK DIMENSIONS		
BAR SIZE	ALL GRADES			ALL GRADES		
	D (mm)	A (mm)	B (mm)	D (mm)	B (mm)	C (mm)
#10	60	125	150	40	105	105
#13	80	150	200	50	115	115
#16	95	175	250	65	155	140
#19	115	200	300	115	305	205
#22	135	250	375	135	355	230
#25	155	275	425	155	410	270
#29	240	375	475			
#32	275	425	550			
#36	305	475	600			
#43	465	675	775			
#57	610	925	1050			

1. ALL BEND DETAILS TO BE ACCORDING TO THE LATEST A.C.I. STANDARD PRACTICE AND AASHTO SPECIFICATIONS.
2. DIMENSIONS SHOWN IN THE "BAR BEND DIAGRAMS" ARE OUT TO OUT OF BEND POINTS OR HOOKS AND/OR END OF BARS UNLESS NOTED OTHERWISE. PIN DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.
3. NO DEDUCTIONS FOR CURVATURE AT BENDS ARE MADE EXCEPT FOR THE ADJUSTMENTS INCLUDED IN THE ABOVE "ADD LENGTH" DIMENSIONS.
4. * INDICATES STIRRUP OR TIE BAR.
5. ALL BARS SHALL CONFORM TO AASHTO M31M, GRADE 420.
6. BARS DESIGNATED "E" IN THE "COAT (E)" COLUMN SHALL BE EPOXY COATED.
7. ONLY REINFORCING STEEL TO BE PAID FOR UNDER THE BID ITEMS 503-005A, 503-010A, 503-015A & 503-020A IS SHOWN ON THIS SHEET. SEE OTHER SHEETS FOR REINFORCING STEEL INCLUDED IN OTHER PAY ITEMS.
8. THE CONTRACTOR SHALL VERIFY THE QUANTITY, SIZE, AND SHAPE OF THE BAR REINFORCEMENT AGAINST THE STRUCTURE DRAWINGS AND MAKE ANY NECESSARY CORRECTIONS BEFORE ORDERING, AS PER SUBSECTION 503.03 OF THE STANDARD SPECIFICATIONS.

[illegible]

SCALES SHOWN ARE FOR 864mm X 559mm PRINTS ONLY CADD FILE NO. 818352 Ecker\AutoCAD 65466r18.dwg DRAWING DATE January 2002

W&H Pacific Boise, Idaho

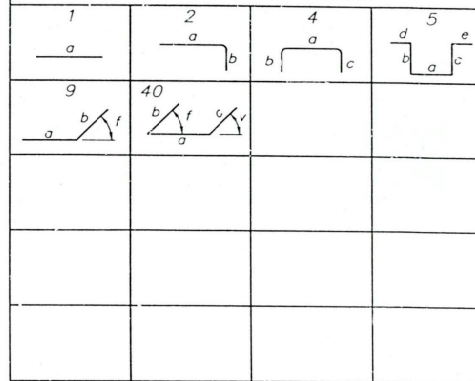
22 m CONCRETE BRIDGE
SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL
STA. 102+65.743

BRIDGE MTCE. NO. 12805	
COUNTY ADA	KEY NO. 6546
BRIDGE DRAWING NO. 6404-B	SHEET 20 of 21

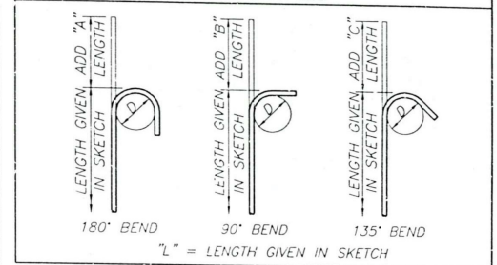
SUPERSTRUCTURE

MARK	LOCATION	BAR SIZE	COAT (E)	NO. OF BARS	BAR TYPE	BARS/SET	LENGTH a	LENGTH b	LENGTH c	LENGTH d	LENGTH e	ANGLE f	ANGLE v	TOTAL LENGTH
C1	CURB	13	E	48	5		0.265	0.285	0.285	0.115	0.115			51.120
C2	"	13	E	2	1		12.190							24.380
C2A	"	13	E	2	1		9.685							19.370
D1	ABUT 1 DPGM	13		3	1		4.760							14.280
D2	"	13		17	1		0.690							11.730
D3	"	13		16	1		0.530							8.480
D4A	"	13		2	1		0.520							1.040
D4B	"	13		2	9		0.210					69°		0.840
D4C	"	13		2	1		0.960							1.920
D5	ABUT 2 DPGM	13		3	1		4.670							14.610
D6	"	13		16	4		0.200	0.610	0.530					21.440
D7A	"	13		2	1		0.520							1.040
D7B	"	13		2	1		0.960							1.920
D7C	"	13		2	2		0.235	0.300						1.070
P8	PIER DPGM	13		28	1		0.830							23.240
P9A	"	13		4	1		1.050							4.200
P9B	"	13		4	1		0.460							1.840
P9C	"	13		2	40		0.545	0.300	0.300			69°	69°	2.290
S1	DECK	13	E	48	1		4.550							218.400
S2	"	13	E	10	1		12.190							121.900
S2A	"	13	E	10	1		9.685							96.850

BAR BEND DIAGRAMS



BEND DETAILS



STANDARD END HOOK DIMENSIONS

BAR SIZE	ALL GRADES			STIRRUP AND TIE HOOK DIMENSIONS		
	D (mm)	A (mm)	B (mm)	D (mm)	B (mm)	C (mm)
#10	60	125	150	40	105	105
#13	80	150	200	50	115	115
#16	95	175	250	65	155	140
#19	115	200	300	115	305	205
#22	135	250	375	135	355	230
#25	155	275	425	155	410	270
#29	240	375	475			
#32	275	425	550			
#36	305	475	600			
#43	465	675	775			
#57	610	925	1050			

SUBSTRUCTURE BAR MASS

BAR SIZE	LINEAR METERS	KILOGRAMS PER METER	TOTAL MASS
#10		0.560	
#13	1274.825	0.994	1267.18
#16		1.552	
#19	44.650	2.235	99.79
#22	615.665	3.042	1872.85
#25	158.300	3.973	628.93
#29		5.060	
#32		6.404	
#36		7.907	
#43		11.380	
#57		20.240	
TOTAL MASS			3868.75

SUPERSTRUCTURE BAR MASS

BAR SIZE	LINEAR METERS	KILOGRAMS PER METER	TOTAL MASS
#13	109.940	0.994	109.28
#16		1.552	
#19		2.235	
#22		3.042	
TOTAL MASS			109.28

EPOXY COATED BAR MASS

BAR SIZE	LINEAR METERS	KILOGRAMS PER METER	TOTAL MASS
#13	532.020	0.994	528.83
#16		1.552	
#19		2.235	
#22		3.042	
TOTAL MASS			528.83

REINFORCEMENT NOTES

- ALL BEND DETAILS TO BE ACCORDING TO THE LATEST A.C.I. STANDARD PRACTICE AND AASHTO SPECIFICATIONS.
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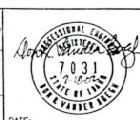
REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGNED
Don Vander Boegh
DESIGN CHECKED
Joe Keller/Dwight Lutz
DETAILED
Erlend Sandeen
DIV. CHECKED
Don Vander Boegh
CORRECTIONS

SCALES SHOWN ARE
OR 864mm X 559mm
PRINTS ONLY

CADD FILE NO.
S18352 Eckert/Artoad
5540922.dwg
DRAWING DATE
January 2002



IDAHO
TRANSPORTATION
DEPARTMENT

W&H Pacific Boise, Idaho



metric

PROJECT NO.
CW-7243(101)

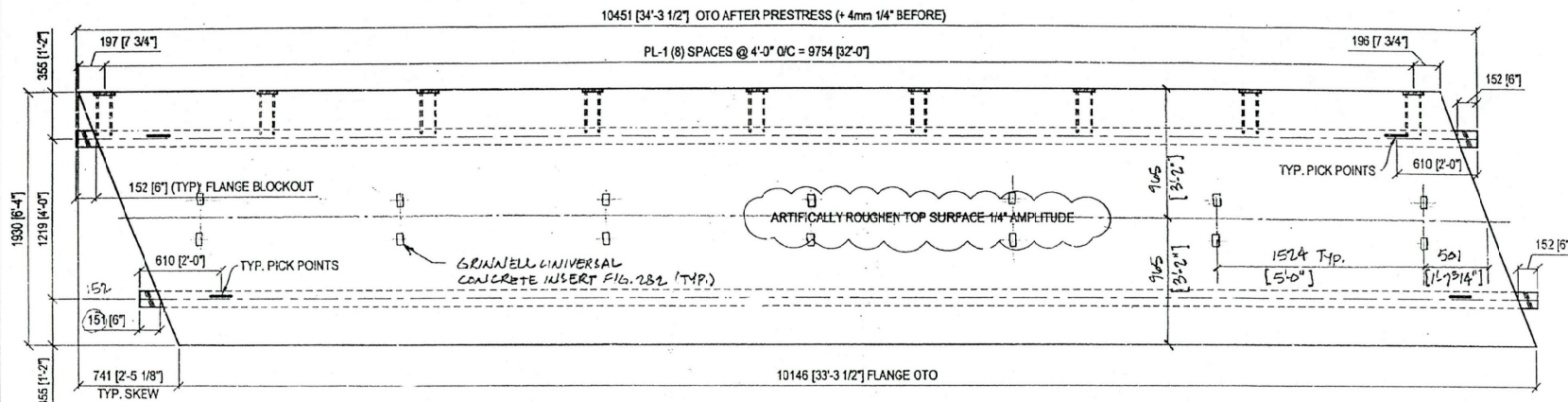
METAL REINFORCEMENT (2 OF 2)

22 m CONCRETE BRIDGE
SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL
STA. 102+65.743

BRIDGE PLANS

BRIDGE METE. NO. 12805	KEY NO. 6546
CONTRACT ADA	SHEET 6404-B 21 of 21



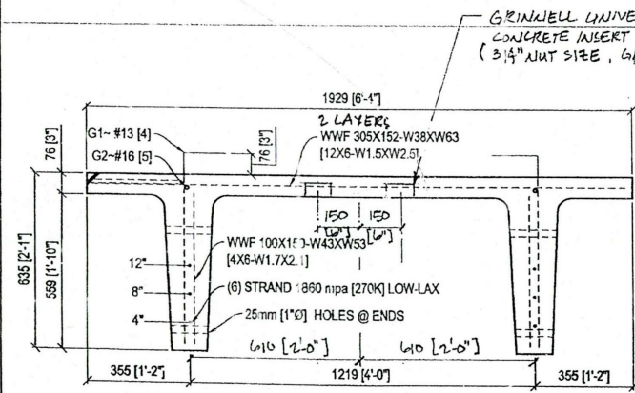
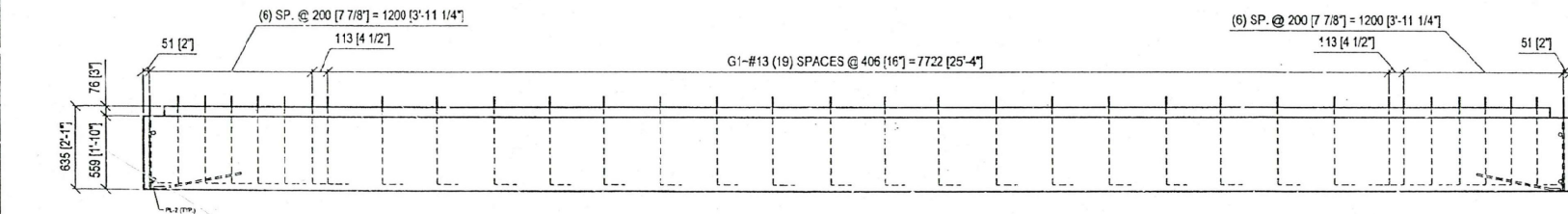


STR. REINF.	REQ'D
G2-#5	2/8

BENT REINF.	REQ'D
G1-#4	68/272

PLATES	REQ'D
PL-1	9/36
PL-2	4/16

OTHER	REQ'D
SINGLE STRAND PICKS	4/16



TYP. SECTION

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS. NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS.

NO EXCEPTIONS TAKEN	
MAKE CORRECTIONS NOTED	X
AMEND & RESUBMIT	
REJECTED - SEE REMARKS	

W & H PACIFIC, INC.
3130 S. OWYHEE ST.
BOISE, IDAHO 83705

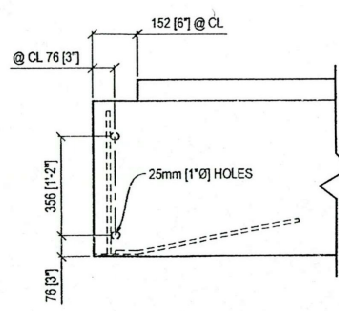
Date 9-15-03 By Don VanderBoeg

SUBMITTED FOR APPROVAL

EAGLE PRECAST (208) 939-6831

P.O. BOX 1580
EAGLE, ID 83616

JUL 17 2003



END DETAIL

GENERAL NOTES

f'ci: 4000psi f'c: 5000 psi

MIX DESIGN: 4545800 AIR: 0

WEIGHT: 17433# CU.YD.: 4.3

FINISH: 1/4 AMP. @ TOP/SACK BOTTOM/SIDE



JOB NAME:

ECKERT PATHWAY OVER RIDENBAUGH

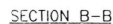
CONTRACTOR:

HESS CONSTRUCTION

DOWN BY: HH CHK BY: TM DATE: 07/03

NOS. NO. 3-664 QUANT. 4 MARK NO./DWG. DT-1

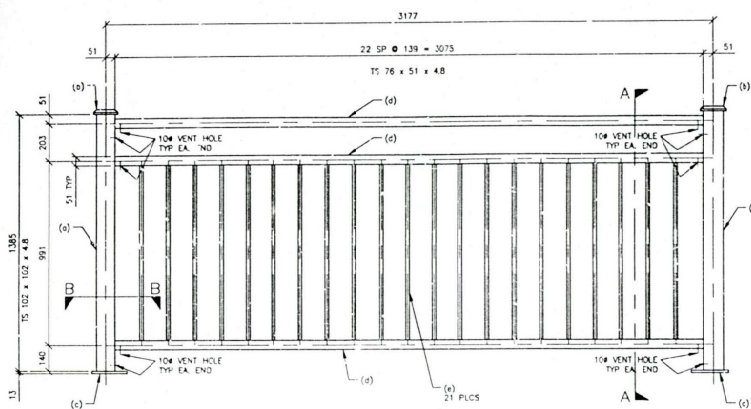
6404B-JD Jhr 2.1P.16



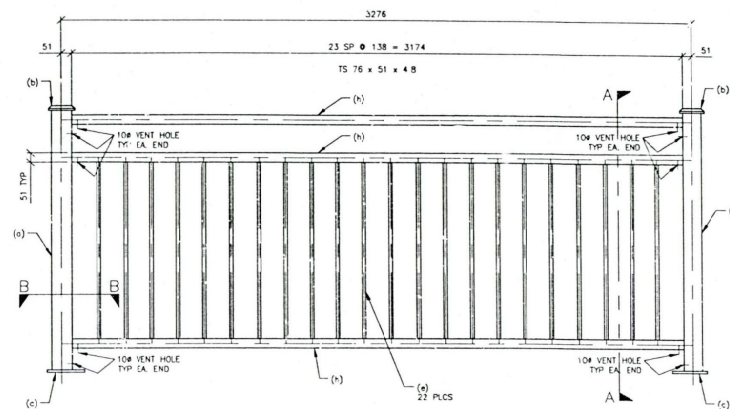
NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS.

1	REVISED PER COMMENTS.		1750P
MATERIAL, SPECS.			
SCALE NONE			
NOTES			
COATING PER COATING PROCEDURE ON DWG E1			
BRKE/PEDESTRIAN STEEL RAIL			
SH-21, ECKERT PATHWAY EXTENSION OVER RIDENBAUGH CANAL, STA 102+55.743			
UNIVERSAL INDUSTRIAL SALES P.O. BOX 869 PULSAUNT GROVE, ILLIN 60402 PHONE: 801-785-0005			
DRAWN BY L. MCINULINE		DATE 2/3/JUN/3	
CHECKED BY T.P.		DATE 18SEP03	
CONTRACTOR CORAL SALES COMPANY			
OWNER ID&O TRANSPORTATION DEPARTMENT			
P.O. NO. B21408		PROJECT NO. CM-7243(101)	
JOB NO. 23261		DRAWING NUMBER 5	

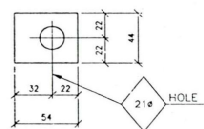
64AB-51 Sheet 3 of 16



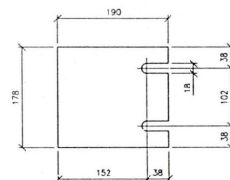
(ONE) BICYCLE RAIL ~ MK A1



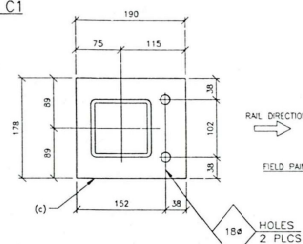
(ONE) BICYCLE RAIL ~ MK C1



(36) PLATE WASHERS ~ MK E1
(REQUIRES SHOP PAINT)

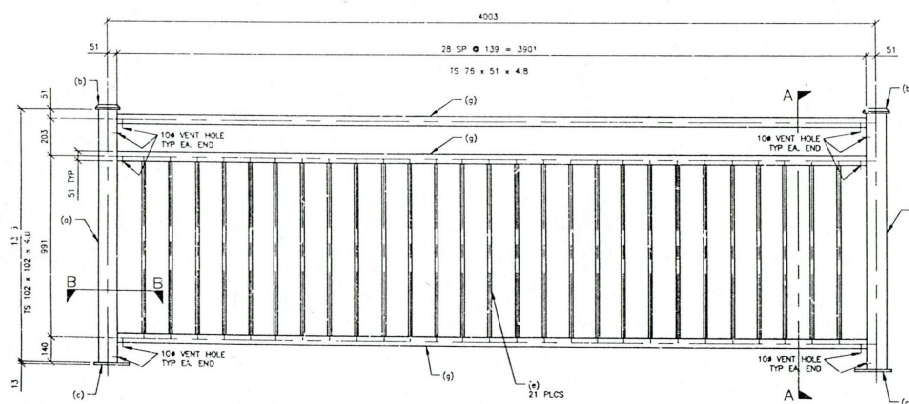


(14) POST SHIMS ~ MK D1
(REQUIRES SHOP PAINT)

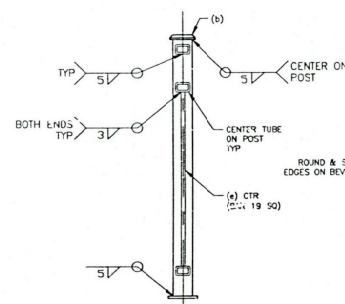


SECTION B-B

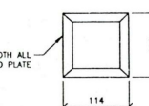
SHOP NOTE:
BOTTOM OF ALL BASE PL'S TO BE
SHOP PRIME COATED.



(5) BICYCLE RAILS ~ MK B1



SECTION A-A



DETAIL ~ MK b

BILL OF MATERIAL

Mark	No. Req'd	P/C	DESCRIPTION	MILLIMETERS	Remarks	Weight
A1	ONE		BICYCLE RAIL			
a	2		TS 102 X 102 X 4.8	1385	S2E	
b	2		PL 25 X 114	114	BEVEL	
c	2		PL 12.7 X 178	190		
d	3		TS 76 X 51 X 4.8	3075	S2E	
e	21		BAR 19 SQ	940	S2E	
B1	5		BICYCLE RAIL			
a	10		TS 102 X 102 X 4.8	1385	S2E	
b	10		PL 25 X 114	114	BEVEL	
c	10		PL 12.7 X 178	190		
d	135		BAR 19 SQ	940	S2E	
e	15		TS 76 X 51 X 4.8	3901	S2E	
C1	ONE		BICYCLE RAIL			
a	2		TS 102 X 102 X 4.8	1385	S2E	
b	2		PL 25 X 114	114	BEVEL	
c	2		PL 12.7 X 178	190		
d	22		BAR 19 SQ	940	S2E	
e	3		TS 76 X 51 X 4.8	3174	S2E	
D1	14		POST SHIMS			
			SHIT 3.2 GA X 178	190	PAINT	
E1	36		PLATE WASHERS			
			PL 6.4 X 44	54	PAINT	
			ANCHOR BOLTS (GALVANIZED)			
			M16 HEX HEAD BOLT	140	A307	
			M16 FLAT WASHER		F844	
			PAINT			
			TOUCH UP PAINT			

MATERIAL SPECS. ASTM A36, A500 GR B (DOMESTIC MATERIAL)

SCALE NONE

HOLES AS NOTED

COATING PER COATING PROCEDURE ON DWG E1

BIKE/PEDESTRIAN STEEL RAIL

SH-21, ECKERT PATHWAY EXTENSION
OVER RIDENBAUGH CANAL STA 102+65.743

UNIVERSAL INDUSTRIAL SALES

P.O. BOX 999

PLEASANT GROVE, UTAH 84062

PHONE: 801-785-0553

DRAWN BY L. HOLYNEUX DATE 25JUN03

CHECKED BY T.P. DATE 18SEP03

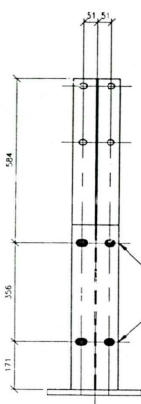
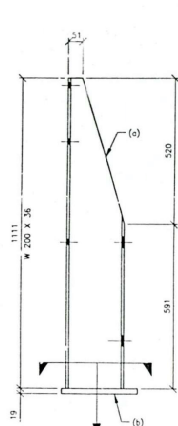
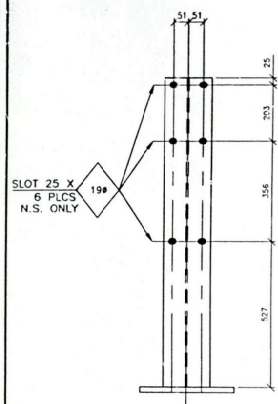
CONTRACTOR CORAL SALES COMPANY

OWNER IDAHO TRANSPORTATION DEPARTMENT

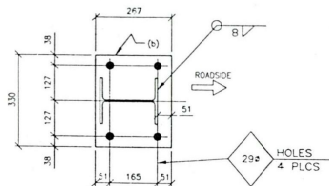
P.O. NO. B21408 PROJECT NO. CU-7243(101)

JOB NO. 23261 DRAWING NUMBER 1

6404B-JD Sheet 4 of 16

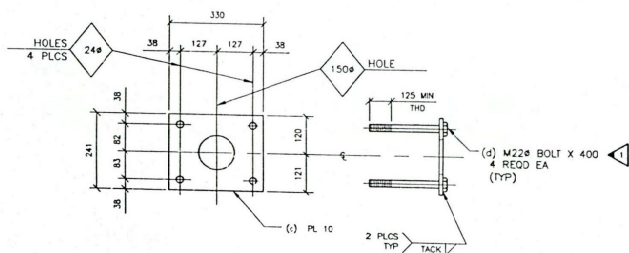


25# X 38 SLOT
4 PLCS
N.S. ONLY

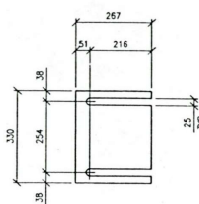


(9) POSTS ~ MK A2

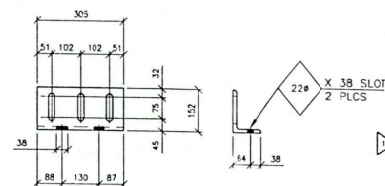
SHOP NOTE:
BOTTOM OF ALL BASE PL'S TO BE
SHOP PRIME COATED.



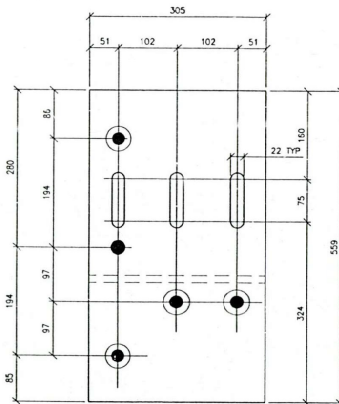
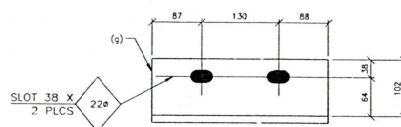
(9) ANCHOR PLATES ~ MK B2



(9) POST SHIMS ~ MK C2
(REQUIRES SHOP PAINT)

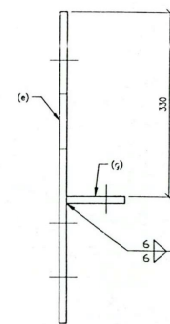


(ONE) CONNECTION ANGLE ~ MK D2
(REQUIRES SHOP PAINT)



4 HOLES 19# ~ DRILL & TAP FOR M22# BOLT
1 HOLE 25# ~ FOR M22# BOLT

(ONE) CONNECTION PLATE ~ MK E2
(REQUIRES SHOP PAINT)



NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS.

BILL OF MATERIAL

Mark	No. Req'd	P/C	DESCRIPTION	MILLIMETERS	Remark	Weight
A2	9		POSTS			
a	9		W 200 X 36	1111	BC1E	
b	9		PL 19 X 267	330		
B2	9		ANCHOR PLATES			
c	9		PL 10 X 241	330		
d	36	F321	M22# HEX HD BOLT 125 MIN. THD	400	A325	
			POST SHIMS			
C2	9		SHIT 3.2 GA X 267	330	PAINT	
			CONNECTION ANGLE			
D2	ONE		L 152 X 102 X 12.7	305	PAINT	
E2	ONE		CONNECTION PLATE		PAINT	
e	1		PL 13 X 305	559		
g	1		PL 13 X 102	305		
			FIELD BOLTS (GALVANNEAL)			
MOORS	76	F156	M22# HEX NUT		A563 GDN	
	14	F193	M22 FLAT WASHER		F436	
PLATE	4	F297	M19# HEX BOLT	180	A325	
	4	F400	M19 HEX LOCK NUT			
	8	F192	M19 FLAT WASHER		F436	
	4	F404	M22# HEX BOLT	20	FULL THD	
	4	F358	M22# HEX BOLT	50	A325	
WASHER	54	F153	M13# HEX NUT		A563 GDN	
	54	F199	M13 FLAT WASHER		F436	
	54	F374	M13 LOCK WASHER			
	36	F155	M19# HEX NUT		A563 GDN	
	36	F376	M19 LOCK WASHER			

1 REVISED PER COMMENTS.

17SEP03

MATERIAL SPECS. ASTM A36, A500 GR B (DOMESTIC MATERIAL)

SCALE: NONE

HOLES AS NOTED

COATING: PER COATING PROCEDURE ON DWG E1

BIKE/PEDESTRIAN STEEL RAIL

SH-21, ECKERT PATHWAY EXTENSION
OVER RIDENBAUGH CANAL, STA 102+65.743

UNIVERSAL INDUSTRIAL SALES

P.O. BOX 889
PLEASANT GROVE, UTAH 84062
PHONE: 801-785-0055

DRAWN BY: L. MOLYNEUX

DATE: 26JUN03

CHECKED BY: J.P.

DATE: 18SEP03

CONTRACTOR: CORAL SALES COMPANY

OWNER: IDAHO TRANSPORTATION DEPARTMENT

P.D. NO. B21408

PROJECT NO. CM-7243(101)

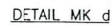
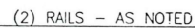
JOB NO.

23261

DRAWING NUMBER

2

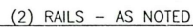
6404B-JD Sheet 5 of 16



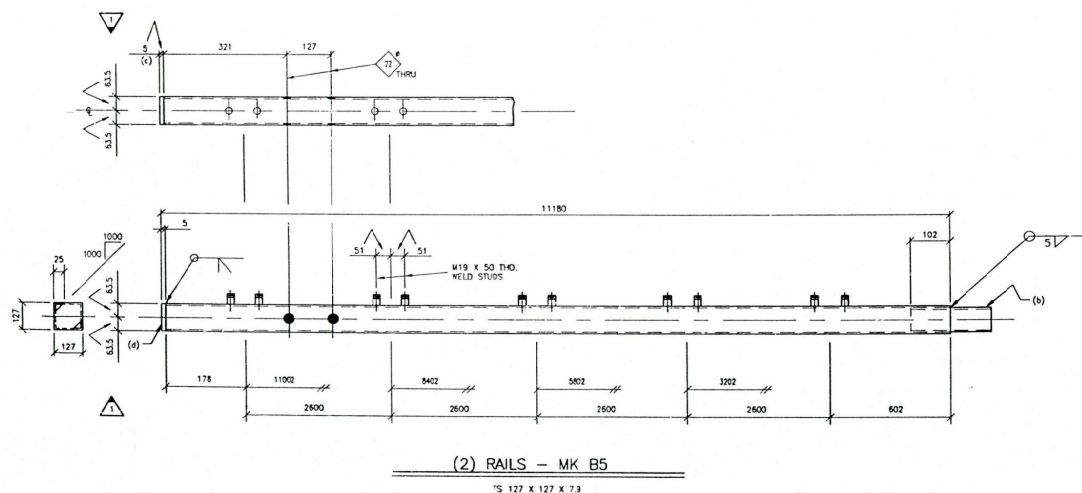
NOTE:
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[illegible]

6404B-5D sheet 6 of 16

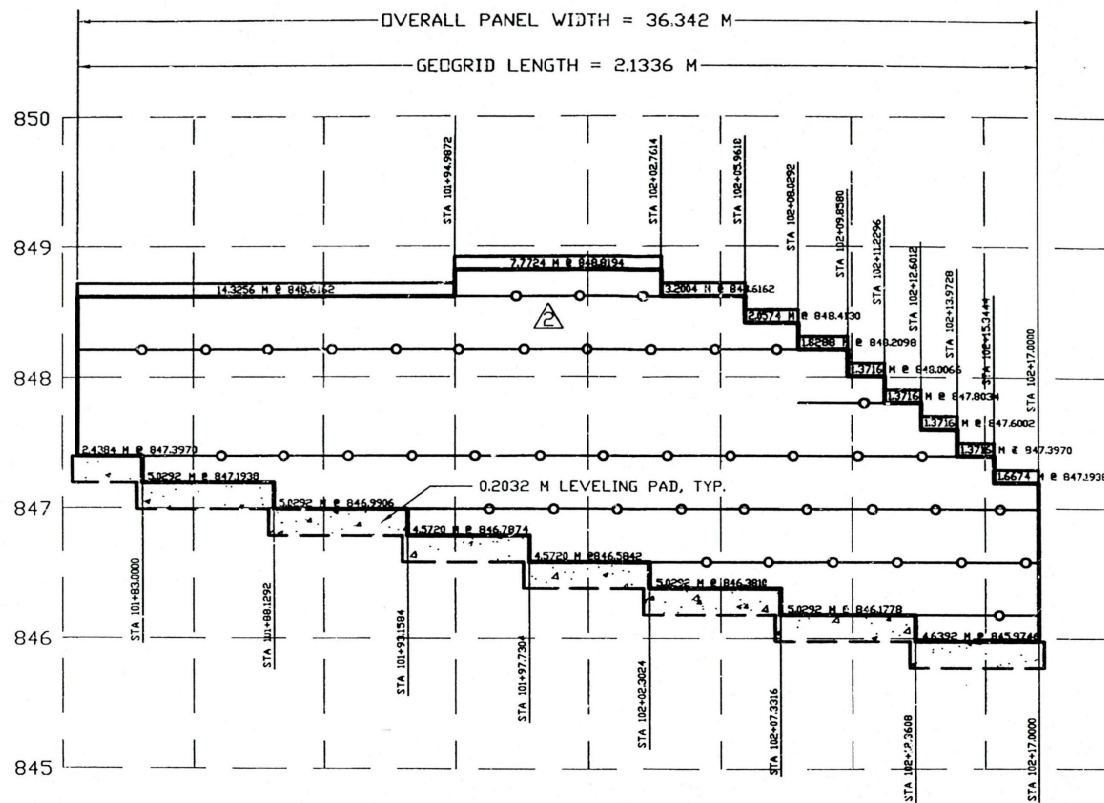


6404B-5D Sheet 7 of 16



NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS.

6404B-5D Sheet 8 of 16



KEY

- LEVELING PAD
- ===== WALL
- o---o---o--- GEOGRID
- ===== CAP

△ Revision #2

ECKERT PATHWAY EXTENSION
CLIENT: BASALITE CONCRETE PRODUCTS
OWNER: CITY OF BOISE

WALL PROFILE

SHEET 1 OF 8



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64048-JD Sheet 9 of 16

LIMITS OF EXCAVATION

2.3 M

101+83.1000
9.351 LT

101+88.1292
9.061 LT

101+93.1584
8.991 LT

101+97.7304
8.991 LT

102+02.3024
8.991 LT

102+07.3316
8.991 LT

102+12.6308
8.991 LT

102+17.0000
8.991 LT

RETAINING WALL

ECKERT ROAD

CL

ECKERT PATHWAY EXTENSION
CLIENT: BASALITE CONCRETE PRODUCTS
OWNER: CITY OF BOISE



WALL PLAN - BOTTOM OF WALL
STATION AND OFFSET FOR ELEVATION BREAKS

SHEET 2 OF 8

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	JOB NUMBER	SCALE
BTH	BTH	RDY	11/21/03	01269	VERT: 1:30 HOR: 3:500

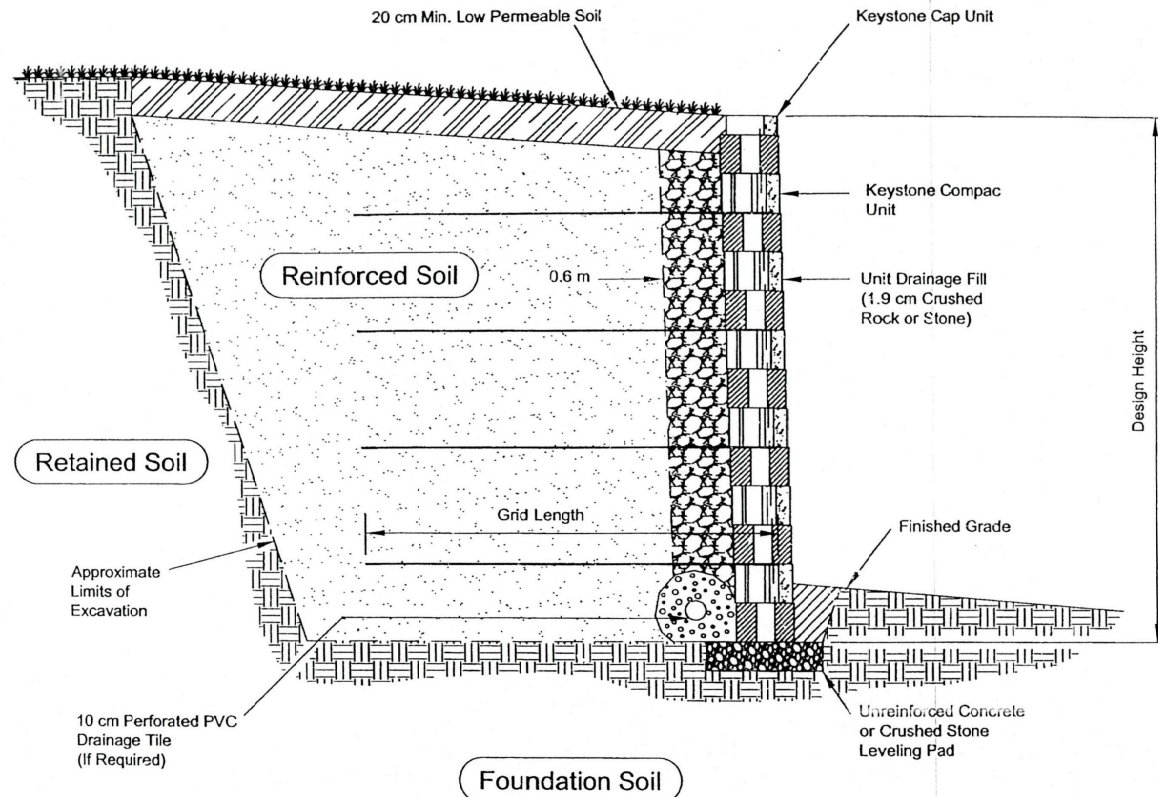


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6404B-JD Sheet 10 of 16



ECKERT PATHWAY EXTENSION
 CLIENT: BASALITE CONCRETE PRODUCTS
 OWNER: IDAHO TRANSPORTATION DEPARTMENT

TYPICAL REINFORCED WALL SECTION

SHEET 3 OF 8



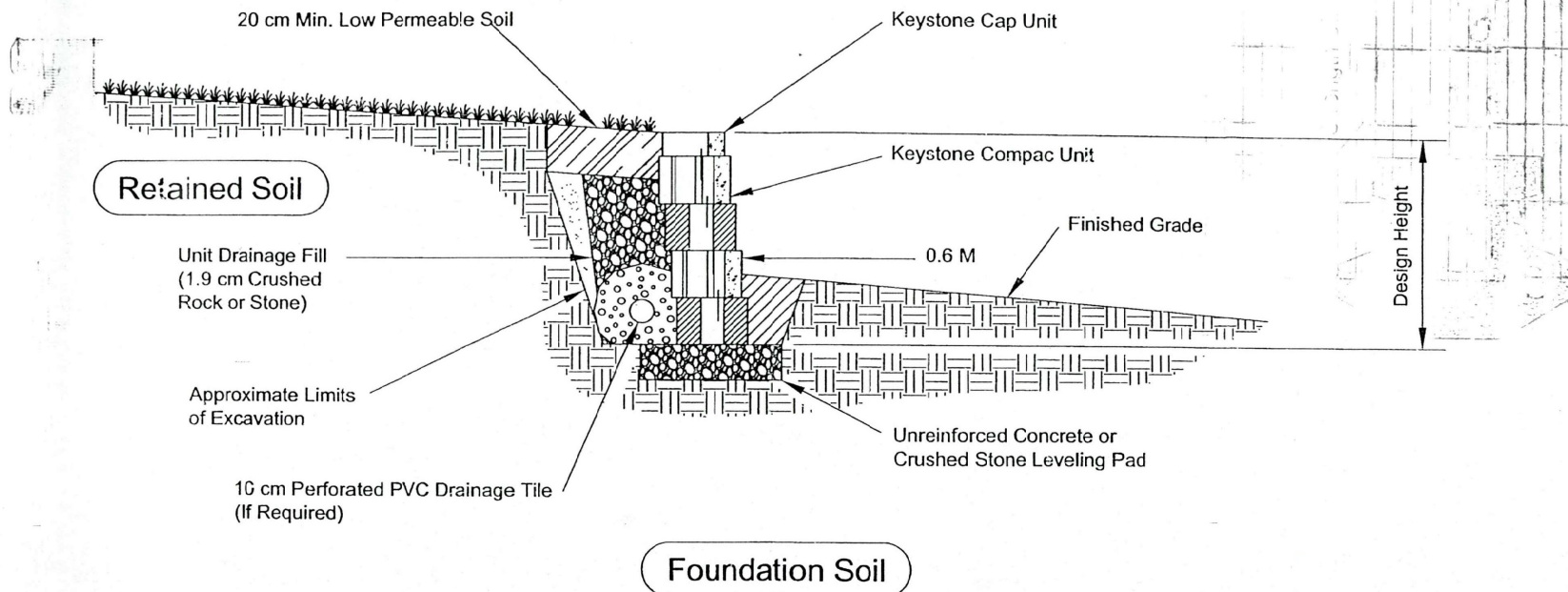
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6404 B-5D Sheet 11 of 16



ECKERT PATHWAY EXTENSION
 CLIENT: BASALITE CONCRETE PRODUCTS
 OWNER: IDAHO TRANSPORTATION DEPARTMENT

TYPICAL GRAVITY WALL SECTION

SHEET 4 OF 8

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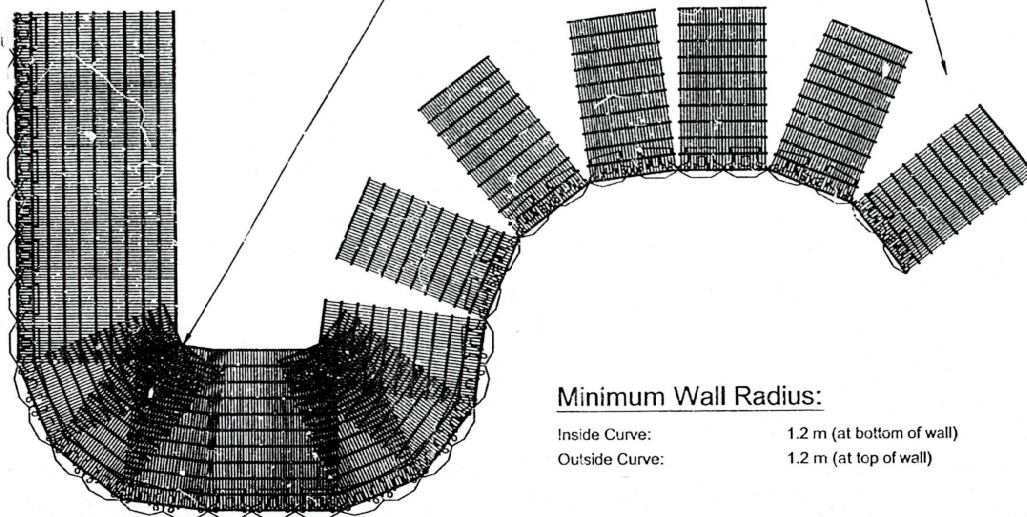
6404B-3D Sheet 12 of 16

Note:

Check with manufacturer specifications on correct direction of orientation for geogrid to obtain proper strength.

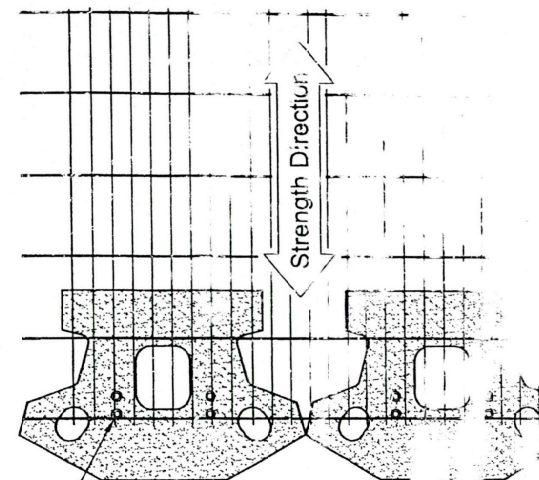
7.6 cm of Soil Fill is Required Between Overlapping Geogrid for Proper Anchorage

Place Additional Pieces of Geogrid When Angle Exceeds 20°



Minimum Wall Radius:

Inside Curve: 1.2 m (at bottom of wall)
Outside Curve: 1.2 m (at top of wall)



Geogrid is to be Placed on Level Backfill and Extended Over the Fiberglass Pins. Place Next Unit. Pull Grid Taught and Backfill. Stake as required.

Geogrid Installation on Curves

ECKERT PATHWAY EXTENSION
CLIENT: BASALITE CONCRETE PRODUCTS
OWNER: IDAHO TRANSPORTATION DEPARTMENT



GEOGRID INSTALLATION

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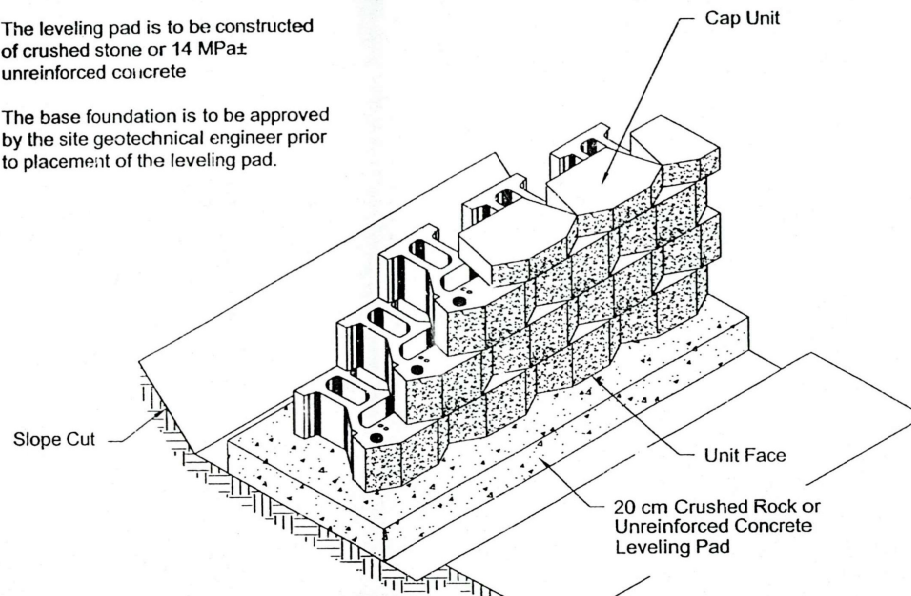
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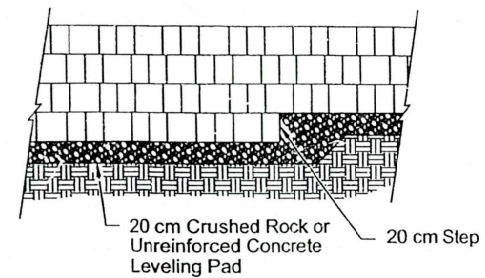
6404B-JD Sheet 13 of 16

Base Leveling Pad Notes:

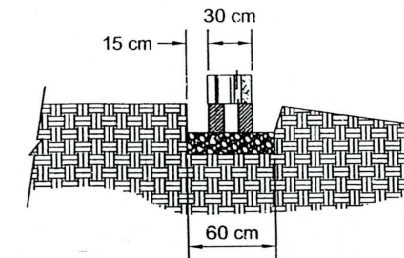
1. The leveling pad is to be constructed of crushed stone or 14 MPa± unreinforced concrete
2. The base foundation is to be approved by the site geotechnical engineer prior to placement of the leveling pad.



Compac Unit/Base Pad Isometric View



Elevation



Section

Leveling Pad Detail

ECKERT PATHWAY EXTENSION
CLIENT: BASALITE CONCRETE PRODUCTS
OWNER: IDAHO TRANSPORTATION DEPARTMENT

LEVELING PAD DETAILS

SHEET 6 OF 8

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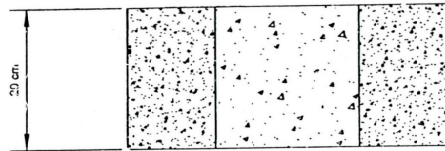
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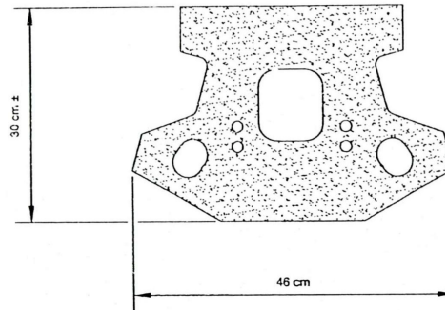
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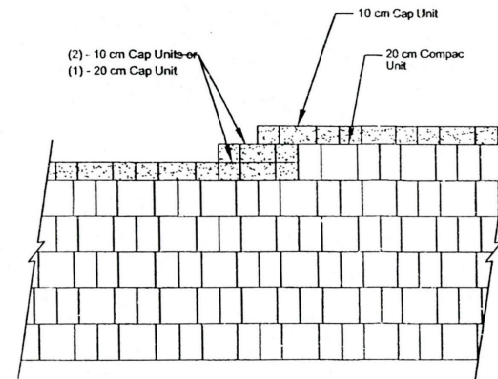


Compac Elevation



Compac Plan

Compac Unit



Top of Wall Steps

ECKERT PATHWAY EXTENSION
CLIENT: BASALITE CONCRETE PRODUCTS
OWNER: IDAHO TRANSPORTATION DEPARTMENT



BLOCK DETAILS

SHEET 7 OF 8

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NOTES:

1. REINFORCING ZONE - COMPACTED STRUCTURAL BACKFILL WITH AN EFFECTIVE FRICTION ANGLE NOT LESS THAN 32 DEGREES, MOIST UNIT WT. = 15.8 kN/M³, COHESION = 0.9 kN/M³.
2. LEVELING PAD - MINIMUM 8" THICK CRUSHED STONE PAD, MINIMUM 24" WIDE.
3. FOUNDATION ZONE - ON-SITE UNDISTURBED HARD, STABLE NATIVE SOIL WITH AN EFFECTIVE FRICTION ANGLE = 26 DEGREES, MOIST UNIT WEIGHT = 19.6 kN/M³, COHESION = 0 kN/M³.
4. RETAINED ZONE - ON-SITE UNDISTURBED OR COMPACTED NATIVE SOIL WITH AN EFFECTIVE FRICTION ANGLE = 26 DEGREES, MOIST UNIT WT. = 19.6 kN/M³, COHESION = 0 kN/M³.
5. MINIMUM WALL EMBEDMENT - 0.5 METERS.
6. ALL SOIL PROPERTIES MUST BE VERIFIED BY THE INSTALLER AND THE WALL DESIGNER NOTIFIED IMMEDIATELY IF SOILS DIFFER THAN THOSE NOTED HEREIN.
7. WALL BATTER WILL BE 1.27 CM PER BLOCK COURSE.
8. THE TOP AND BOTTOM OF WALL ELEVATIONS AND SLOPES IN THE VICINITY OF THE WALL MUST BE VERIFIED BEFORE BEGINNING WALL CONSTRUCTION. THE WALL DESIGNER MUST REVIEW ANY CHANGES TO THE WALL DIMENSIONS OR SLOPES AROUND THE WALLS.
9. THE WALL DESIGNER ASSUMES NO LIABILITY FOR INFORMATION PROVIDED BY OTHERS OR NOT VERIFIED.
10. MAXIMUM WALL BEARING PRESSURE = 7 kPa.
11. THE LONG-TERM STATIC GROUNDWATER LEVEL IS ASSUMED TO BE GREATER THAN 0.6 M BELOW THE BOTTOM OF THE WALLS.
12. ALL QUANTITIES DO NOT INCLUDE ANY WASTE OR OVERLAP REQUIRED AND ARE BASED ON IN-PLACE COMPACTED VOLUMES. THE INSTALLER MUST VERIFY ALL QUANTITIES.
13. WALL HEIGHTS SHOWN MUST NOT BE EXCEEDED WITHOUT THE CONSULTATION AND APPROVAL OF THE WALL DESIGNER.
14. ALL FACIA BLOCK MUST BE KEYSTONE COMPAQ UNITS.
15. ALL REINFORCING GEOGRID MUST BE TENSAR UX 1400 GEOGRID AS NOTED IN THE ENGINEERING CALCULATIONS.
16. ALL UTILITIES BEHIND, IN FRONT AND UNDER THE WALLS SHOULD BE INSTALLED BEFORE COMMENCING WALL CONSTRUCTION TO LIMIT DISTURBANCE AND DAMAGE TO THE GRID AND UNDERMINING OF THE WALL. THE COMPACTION OF ALL UTILITY BACKFILL UNDER THE BLOCK AND GRID ZONES MUST BE VERIFIED TO BE AT LEAST 95 % AASHTO T-99.
17. MAXIMUM SLOPE BEHIND AND IN FRONT OF THE WALLS ARE SHOWN IN THE ENGINEERING CALCULATIONS AND SHALL NOT BE EXCEEDED WITHOUT THE CONSULTATION AND APPROVAL OF THE WALL DESIGNER.
18. CARE MUST BE TAKEN WHEN INSTALLING ANY UTILITIES, STRUCTURES OR LANDSCAPING BEHIND THE WALLS SO AS NOT TO DAMAGE THE GEOGRID OR WALL FACE. ANY DAMAGED GEOGRIDS OR WALL FACE DISTORTION MUST BE REPLACED.
19. ALL SURFACE WATER MUST BE ROUTED AROUND OR PIPED THROUGH THE WALL FACE. NO SURFACE WATER SHALL BE ALLOWED TO FLOW OVER THE WALL FACE DURING OR AFTER WALL CONSTRUCTION.
20. ANY SPRINGS, SEEPS OR OTHER WATER SOURCES NOTED IN THE WALL EXCAVATION MUST BE IMMEDIATELY REPORTED TO THE WALL DESIGNER FOR REMEDIAL ACTION.
21. ALL FILTER FABRIC MUST BE ENKADRAIN FILTER FABRIC OR APPROVED EQUIVALENT.
22. INSTALLER SHALL BE RESPONSIBLE FOR THE GLOBAL STABILITY, BEARING CAPACITY AND LONG TERM SETTLEMENT OF THE WALL.

MATERIALS ESTIMATE

BLOCK	52 M ²
GRAVEL	19.5 M ³
LEVELING PAD	4.5 M ³
GEOGRID	150 M ²
REPLACEMENT SOIL	112 M ³

ECKERI PATHWAY EXTENSION
CLIENT: BASALITE CONCRETE PRODUCTS
OWNER: IDAHO TRANSPORTATION DEPARTMENT

NOTES & MATERIAL ESTIMATE

SHEET 8 OF 8

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6404B-SD Sheet 16 of 16