#### **DESIGN SPECIFICATIONS:**

- 1. FABRICATION AND WORKMANSHIP SHALL CONFORM TO: STANDARD SPECIFICATIONS STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION.
- 2. ANSI / AASHTO / AWS "BRIDGE WELDING CODE, CURRENT EDITION" D1.5:2015.
- 3. CALTRANS AND NV5 CONTRACT PLANS, PROPOSAL AND ADDENDUMS.
- 4. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

### CONSTRUCTION SPECIFICATIONS:

- 1. MATERIAL AND CONSTRUCTION SHALL CONFORM WITH STANDARD SPECIFICATIONS STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, WITH ANSI / AASHTO / AWS "BRIDGE WELDING CODE CURRENT EDITION" D1.5:2015 AND WITH STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION AND NV5 CONTRACT PLANS, PROPOSAL AND ADDENDUMS.
- 2. U-BEAMS ARE MANUFACTURED PER PRESS BRAKE FORMED TUB GIRDER METHOD.
- 3. TOLERANCES ARE PER STANDARD SPECIFICATIONS STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION SECTION 55.

#### LOADS:

1. THE DESIGN OF THIS STRUCTURE IS BASED ON AASHTO LRFD BRIDGE DESIGN SPEC. HL-93 LOADING.

LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE DEFLECTION DOES NOT EXCEED 1/800 OF SPAN LENGTH. THE LOAD AND RESISTANCE FACTOR METHOD OF DESIGN WAS USED FOR THIS STRUCTURE.

## MATERIALS:

- 1. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A709 GRADE 50 AND ASTM A709 GRADE 36 AS NOTED.
- 2. STRUCTURAL STEEL NOTED "CVN" INDICATES MATERIAL WHICH IS TO BE SUBJECT TO CHARPY V-NOTCH TESTING ZONE 2 (15ft-lbf @ 40°f). CVN SAMPLING AND TESTING MUST BE PERFORMED IN ACCORDANCE WITH STANDARD SPECIFICATIONS STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION SECTION 55-1.01D(3)(b)(ii).
- 3. ALL BOLTS TO BE HEAVY HEX ASTM F3125 / F3125M, GRADE A325 TYPE 1 GALVANIZED. ALL HEAVY HEX NUTS TO BE ASTM A563, GRADE DH, OR AASHTO M 292 GRADE 2H. ALL HARDENED FLAT WASHERS TO BE ASTM F436. ALL HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE PER THE REQUIREMENTS OF ASTM A563 AND LUBRICATED PER S1 AND S2, LUBRICATED PER S1 AND S2 AND S
- 4. ALL HIGH STRENGTH BOLTS SHALL BE ROTATIONAL CAPACITY TESTED PRIOR TO USE. DO NOT MIX NUTS AND BOLTS FROM DIFFERENT LOTS.
- 5. ALL SHEAR STUDS SHALL CONFORM AASHTO M169, ASTM A109, Fy = 50 KSI.
- 6. HATCH COVER PLATE TO BE ASTM A709 GRADE 36 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.
- 7. BEARING PAD ELASTOMER HARDNESS TO BE 50 AND STEEL REINFORCING TO BE GRADE 36 IN ACCORDANCE WITH AASHTO M251.

#### WELDING:

- 1. ALL WELDING SHALL BE IN ACCORDANCE WITH ANSI / AASHTO / AWS "BRIDGE WELDING CODE, CURRENT EDITION" D1.5:2015.
- 2. ALL WELD INSPECTION TO BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION SECTION 11
- 3. ASTM A709 GR50 GROOVE WELDS PER WPS# W-FC(SP)-BRIDGE-GROOVE-01
- 4. ASTM A 709 GR50 FILLET WELDS < 5/16IN WPS # W-FC(SP)-BRIDGE-SP FILLETS-01
- 5. ASTM A709 GR50 FILLET WELDS > 5/16IN WPS # W-FC(SP)-BRIDGE-MP FILLETS-01
- 6. STUD WELDS WPS# W-SM-BRIDGE-STUD-01 FOR ALL ASTM A709 GR50 MATERIAL.

## **INSPECTION:**

- 1. NON-DESTRUCTIVE WELD INSPECTION SHALL BE IN ACCORDANCE WITH CHAPTER 6 OF THE ANSI /AASHTO / AWS "BRIDGE WELDING CODE, CURRENT EDITION" D1.5:2015 AND THE STANDARD SPECIFICATIONS STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION SECTION 11.
- 2. "VT" INDICATES VISUAL INSPECTION. VT ON 100% OF WELDS.
- 3. "MT" INDICATES MAG-PARTICLE INSPECTION. MT PRIMARY MEMBER FILLET WELDS: 100% FOR ≤ 10", 10% FOR > 10".
- 4. "RT" INDICATES RADIOGRAPHIC INSPECTION. RT PRIMARY MEMBER WEB & FLANGE SPLICES. WELDS ON FASCIA BEAMS SHALL ONLY BE GROUND ON THE INSIDE (NON FASCIA SIDE) FOR TESTING.
- 5. "PT" INDICATES DYE-PENETRANT INSPECTION. PT PRIMARY MEMBER WEB AND FLANGE SPLICE TERMINATIONS.

## CAMBER:

- 1. FABRICATION AND WORKMANSHIP SHALL CONFORM TO: STANDARD SPECIFICATIONS STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
- 2. THE NEW BEAM SHALL HAVE A PARABOLIC CAMBER WITH ORDINATES AS SHOWN ON THE CAMBER DIAGRAM.
- 3. THE CAMBER SHOWN IS TO BE MEASURED WITH THE BEAM LYING ON ITS SIDE.
- 4. CAMBER SHALL BE PROVIDED BY MECHANICAL COLD ROLLING PROCESS.

## CLEANING AND COATING:

- 1. ALL STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED ACCORDING TO STANDARD SPECIFICATIONS STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION SECTION 75-1.02B.(AASHTO M111M / M111, ASTM A123).
- 2. REMOVE WELD SPATTER BY GRINDING BEFORE GALVANIZING.
- 3. PREPARE STEEL COMPONENTS FOR GALVANIZING IN ACCORDANCE WITH SSPC-SP 8.
- 4. ALL STRUCTURAL STEEL MEMBERS (UNLESS NOTED ON THE DETAIL DRAWINGS) SHALL BE HOT DIP GALVANIZED PER AASHTO M111M / M111, ASTM A123 INCLUDING ALL FAYING SURFACES INTERNAL TO SLIP CRITICAL CONNECTIONS.
- 5. HOT-DIP GALVANIZED COATING MUST MEET THE MINIMUM AVERAGE COATING THICKNESS OF 3.9 MILS IN ACCORDANCE WITH AASHTO M111.
- 6. GALVANIZING REPAIRS ARE PER STANDARD SPECIFICATIONS STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION SECTION 75-1.02B.

# UNIT WEIGHT. CHAINS MAY BE USED, PROVIDED THAT ADEQUATE PADDING OR OTHER MEANS OF PROTECTION IS **USED IN ORDER TO PREVENT** TIMBER BLOCKING DAMAGE TO THE U-BEAM. SPAN G **BASKET LIFT** U-BEAM SPAN/4 MIN. | SPAN/4 MIN. TIMBER BLOCKING UNDER TOP FLANGE - U-BEAM NYLON SLING SIZED PER UNIT WEIGHT. CHAINS MAY BE USED, PROVIDED THAT ADEQUATE PADDING OR OTHER MEANS OF PROTECTION IS **BASKET LIFT** USED IN ORDER TO PREVENT SECTION DAMAGE TO THE U-BEAM. U-BEAM LIFTING DETAIL

# SHEET INDEX

3111	LI INDLA				<u> </u>						
1	COVER SHEET	10	B1-1 SHEET 2	19	C1-3 SHEET 1	28	E1-1 SHEET 2	37	F1-3 SHEET 1	46	H1-1 SHEET 2
2	LAYOUT PLAN	11	B1-2 SHEET 1	20	C1-3 SHEET 2	29	E1-2 SHEET 1	38	F1-3 SHEET 2	47	H1-2 SHEET 1
3	A1-1 SHEET 1	12	B1-2 SHEET 2	21	D1-1 SHEET 1	30	E1-2 SHEET 2	39	G1-1 SHEET 1	48	H1-2 SHEET 2
4	A1-1 SHEET 2	13	B1-3 SHEET 1	22	D1-1 SHEET 2	31	E1-3 SHEET 1	40	G1-1 SHEET 2	49	H1-3 SHEET 1
5	A1-2 SHEET 1	14	B1-3 SHEET 2	23	D1-2 SHEET 1	32	E1-3 SHEET 2	41	G1-2 SHEET 1	50	H1-3 SHEET 2
6	A1-2 SHEET 2	15	C1-1 SHEET 1	24	D1-2 SHEET 2	33	F1-1 SHEET 1	42	G1-2 SHEET 2	51	SUBMITTAL DETAILS
7	A1-3 SHEET 1	16	C1-1 SHEET 2	25	D1-3 SHEET 1	34	F1-1 SHEET 2	43	G1-3 SHEET 1	52	SUBMITTAL DETAILS
8	A1-3 SHEET 2	17	C1-2 SHEET 1	26	D1-3 SHEET 2	35	F1-2 SHEET 1	44	G1-3 SHEET 2	53	SUBMITTAL DETAILS
9	B1-1 SHEET 1	18	C1-2 SHEET 2	27	E1-1 SHEET 1	36	F1-2 SHEET 2	45	H1-1 SHEET 1		

				SOLD TO :	
				SHIPPED TO :	
				CONTRACTOR :	
1	04.06.22	04.06.22		BUILD FACILITY :	
REV	DRAWN BY-DATE	CHECK BY-DATE	DESCRIPTION		

IMPERIAL CO., CA.
DOGWOOD ROAD OVER CENTRAL MAIN CANAL
BRIDGE NO: 58C-0226 / COUNTY PROJECT 6222

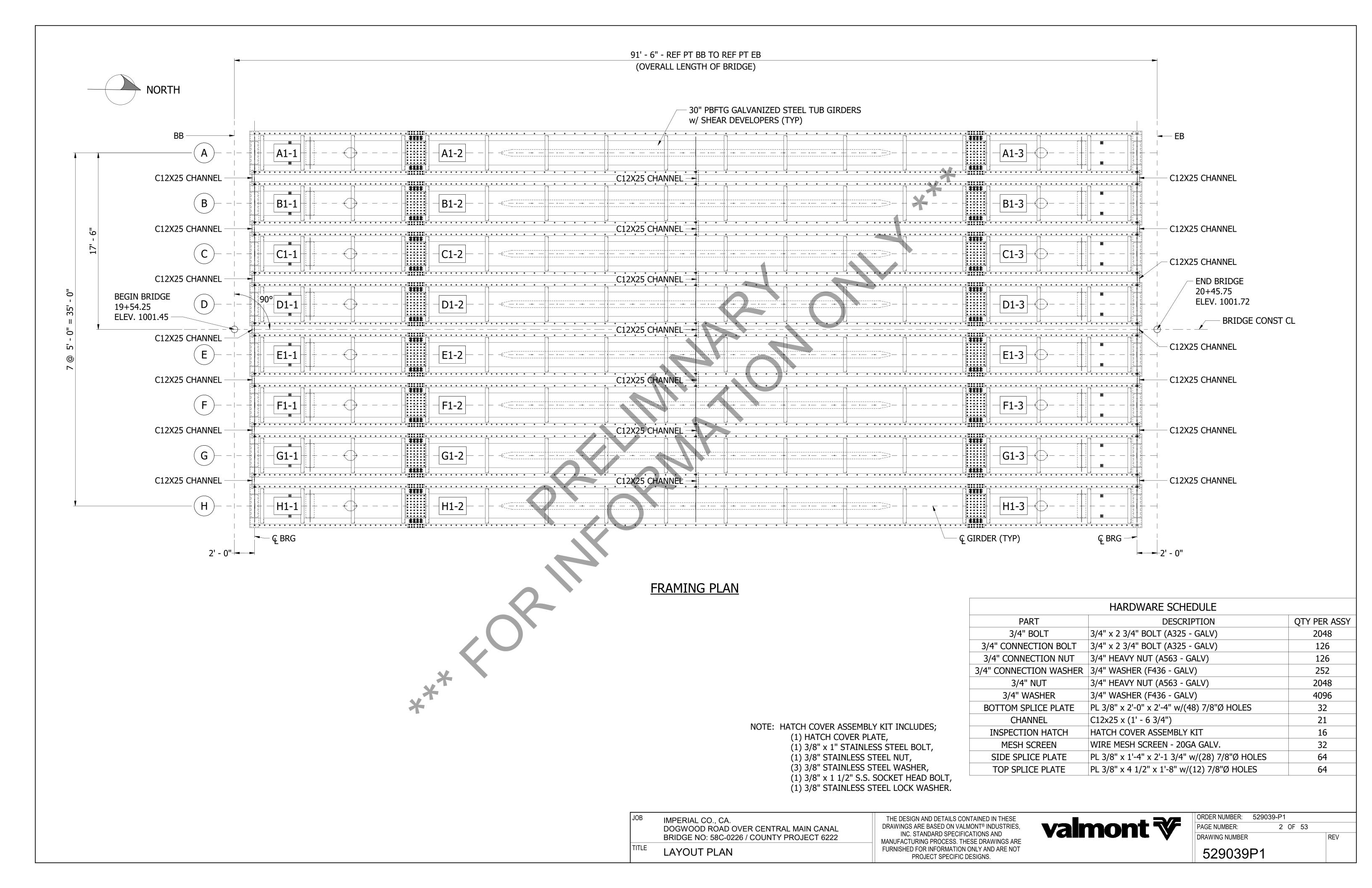
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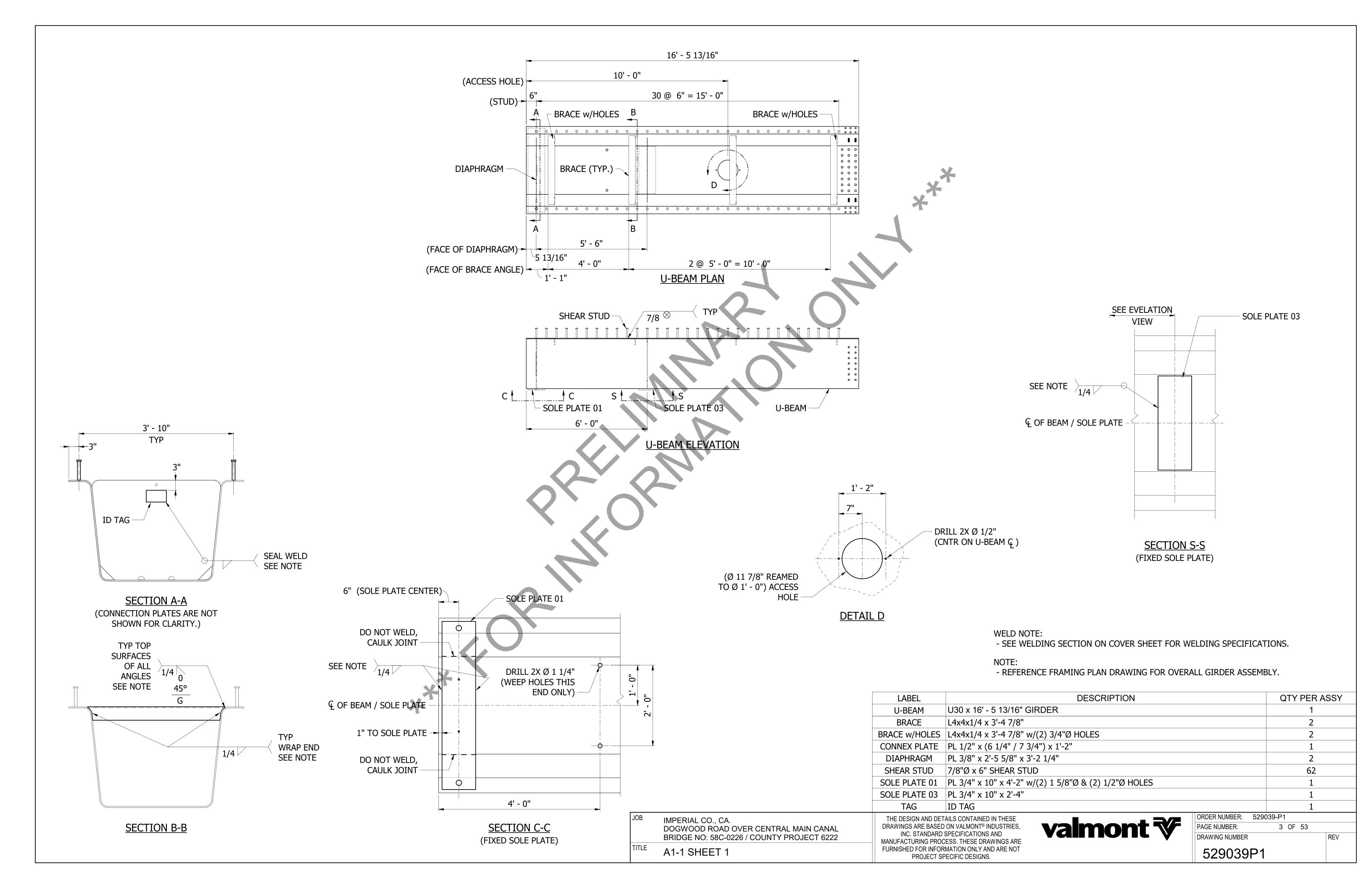
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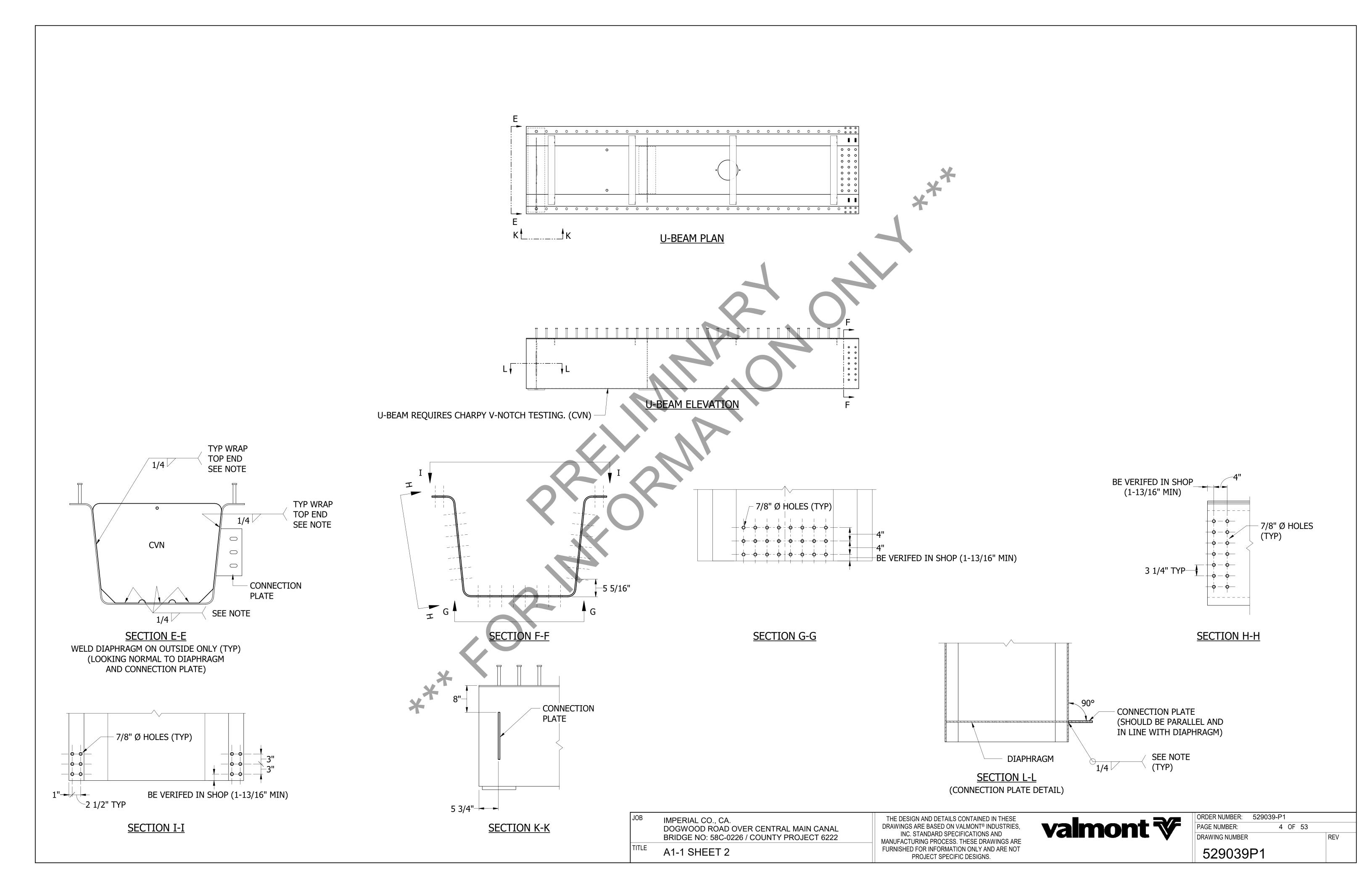
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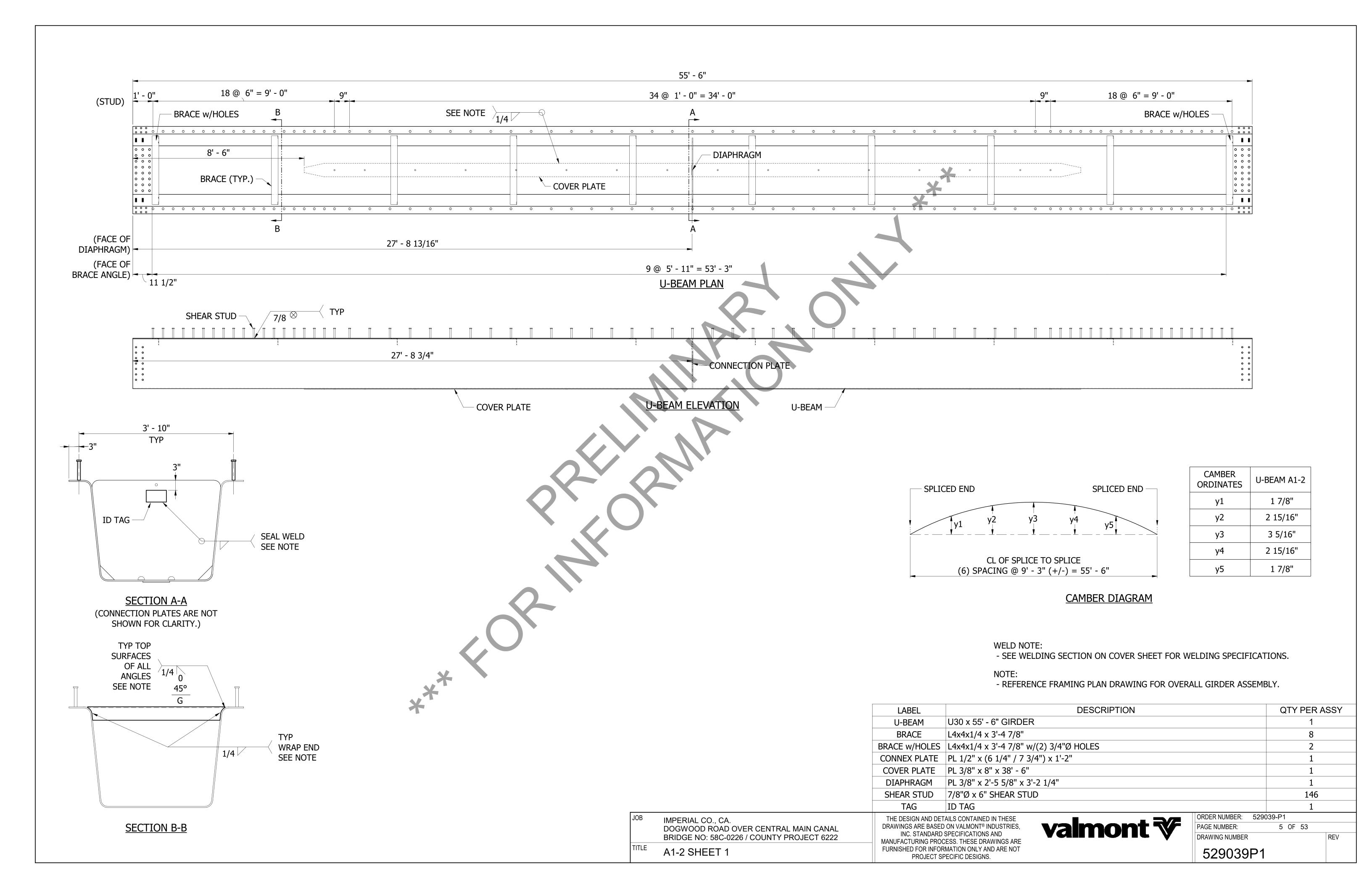
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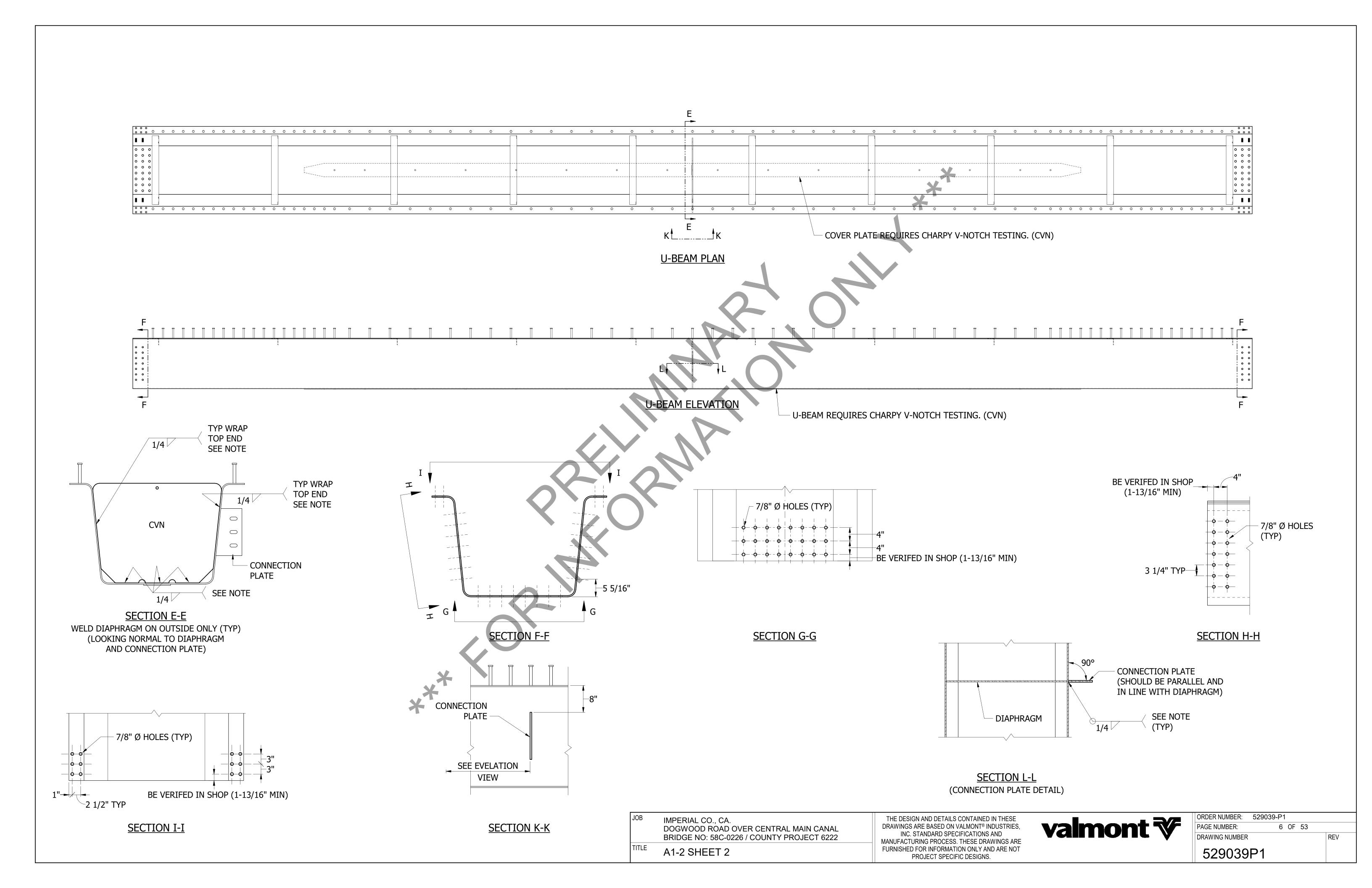
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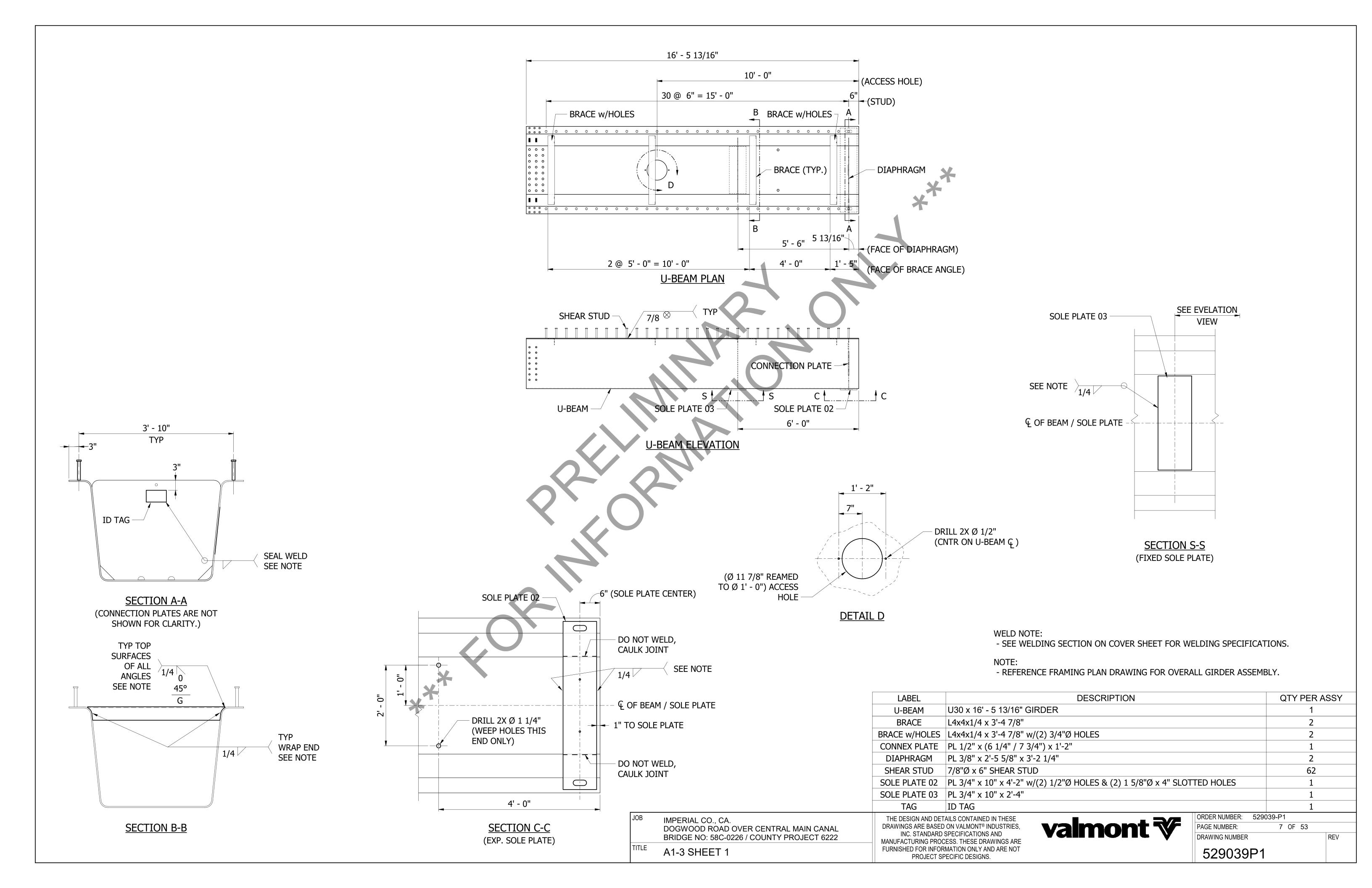


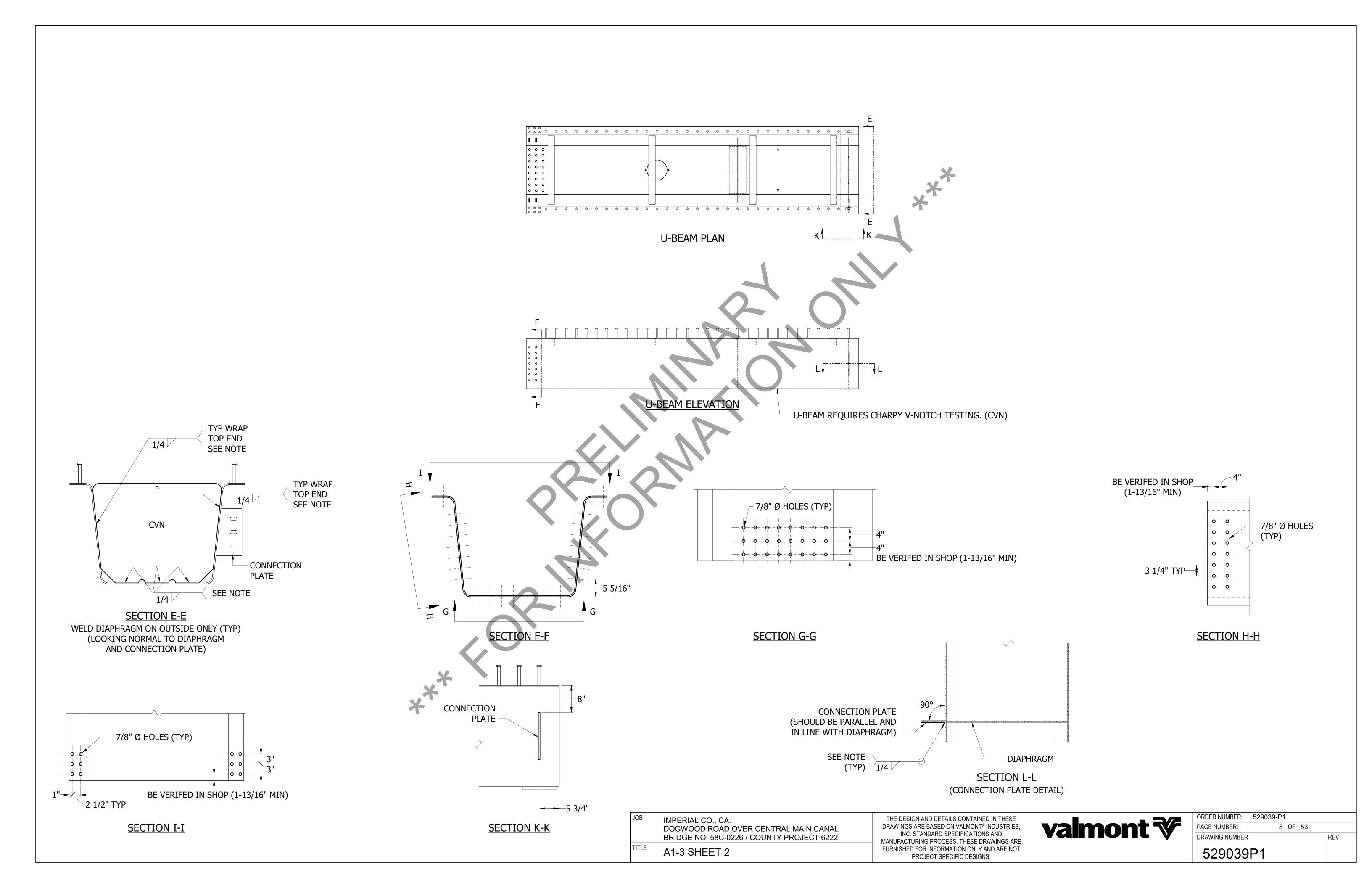


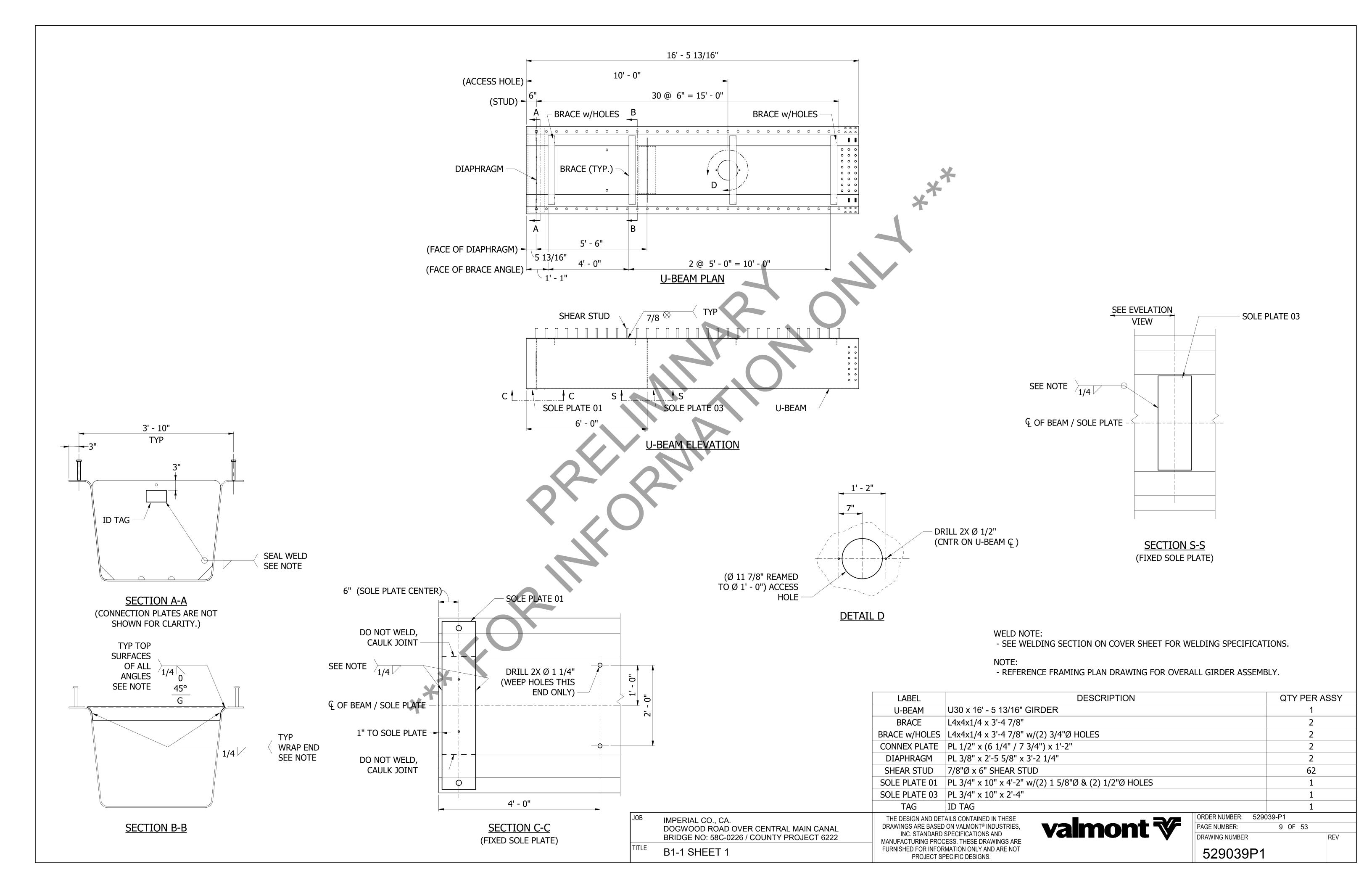


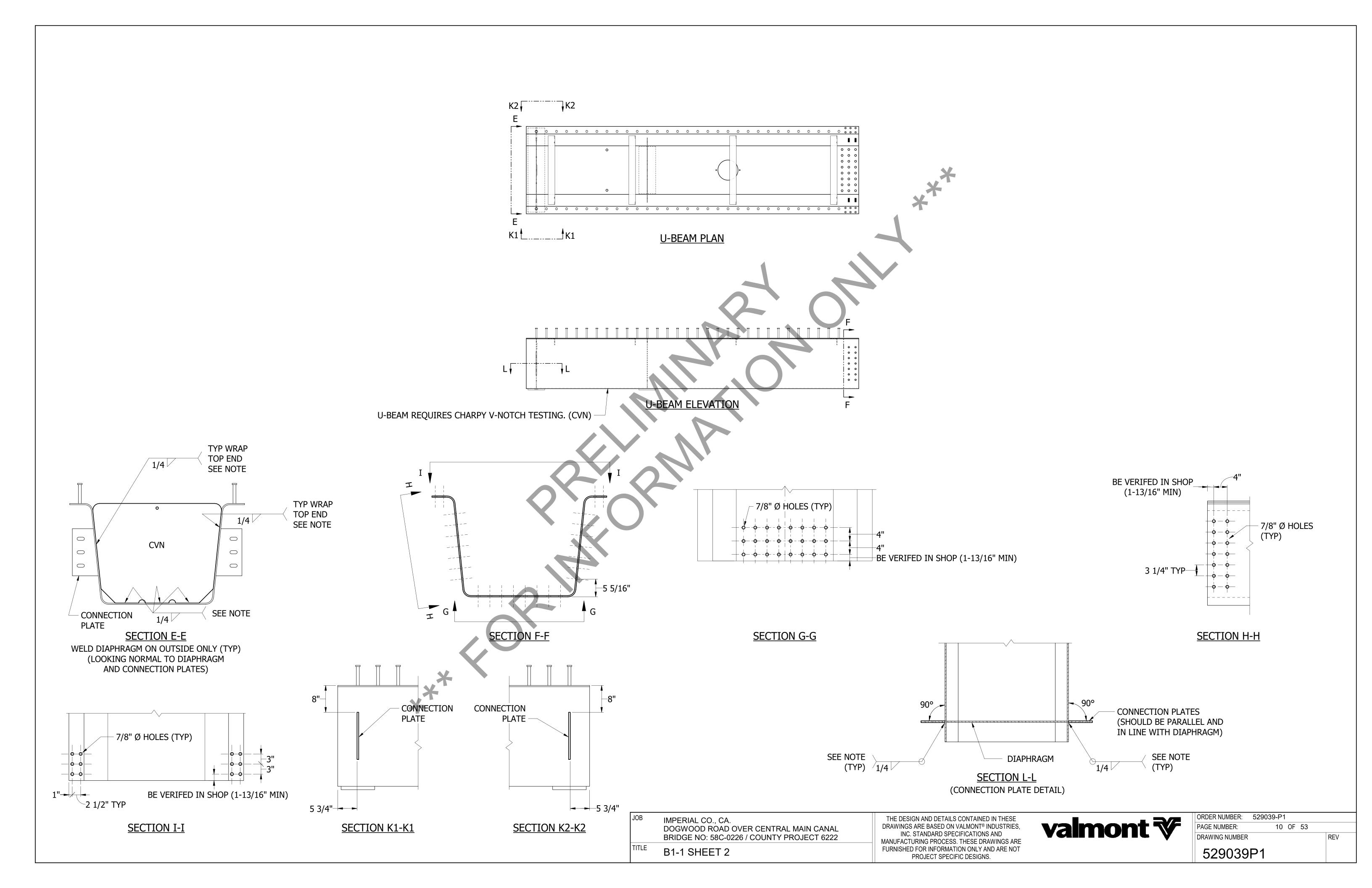


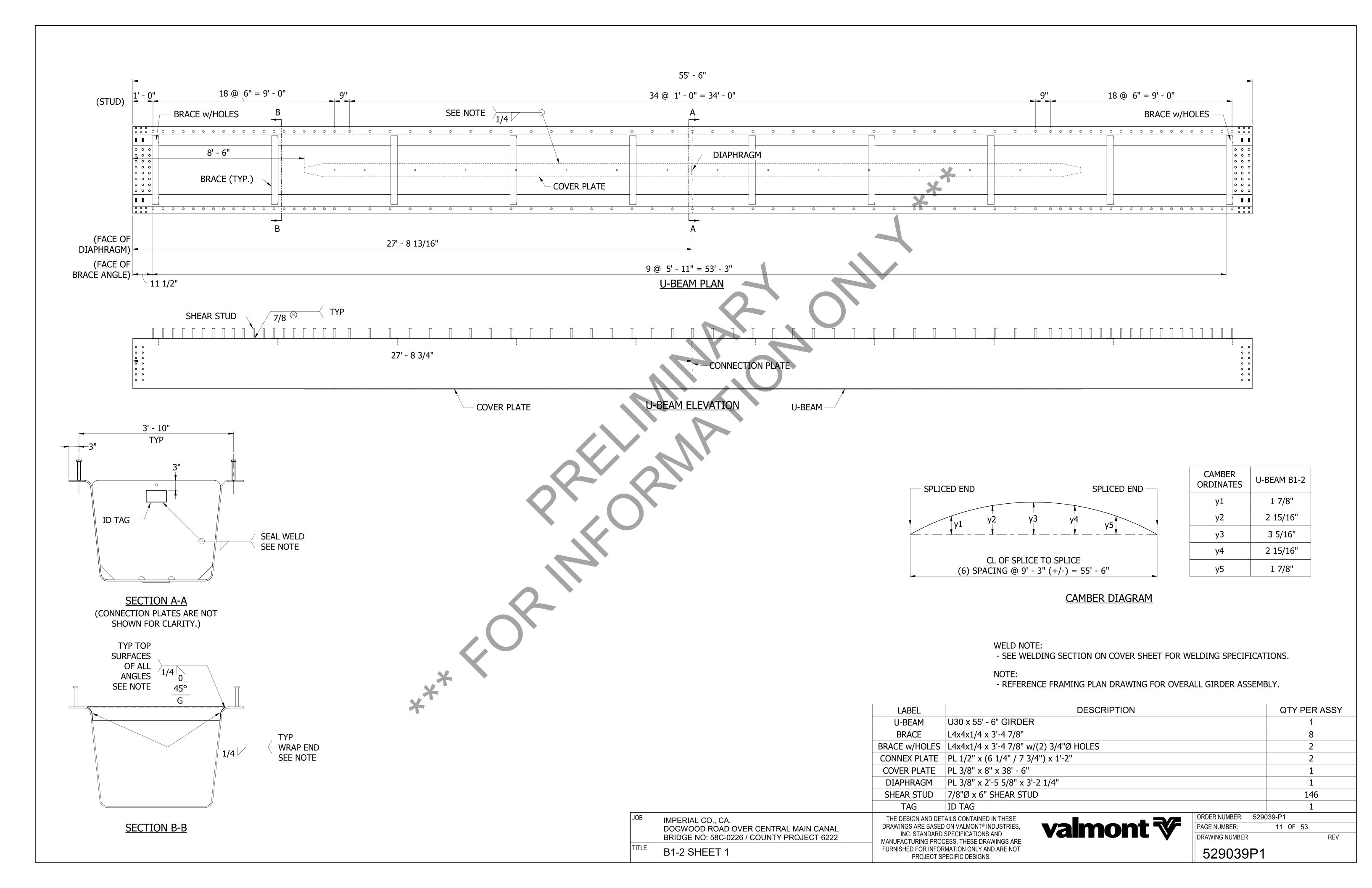


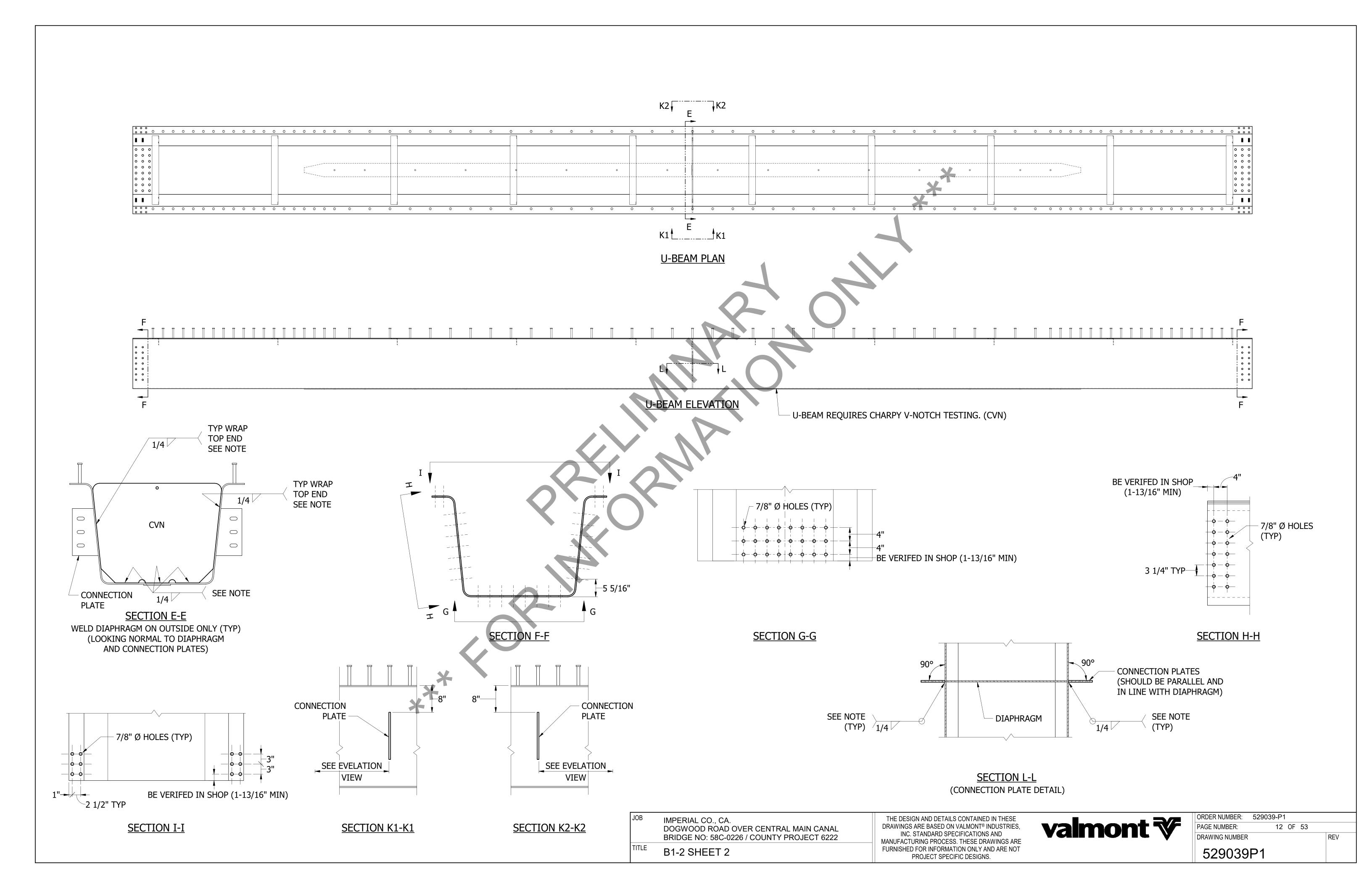


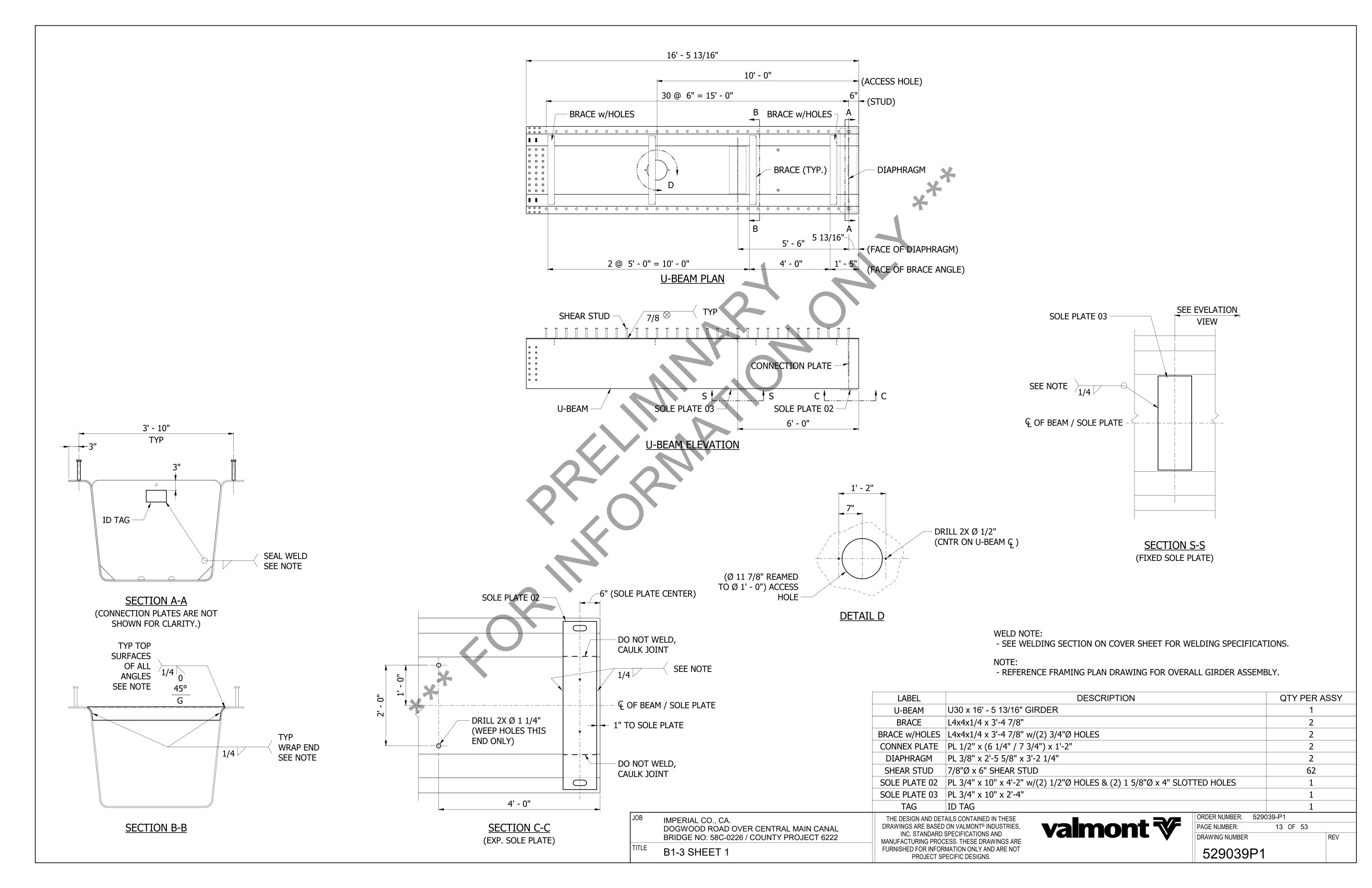


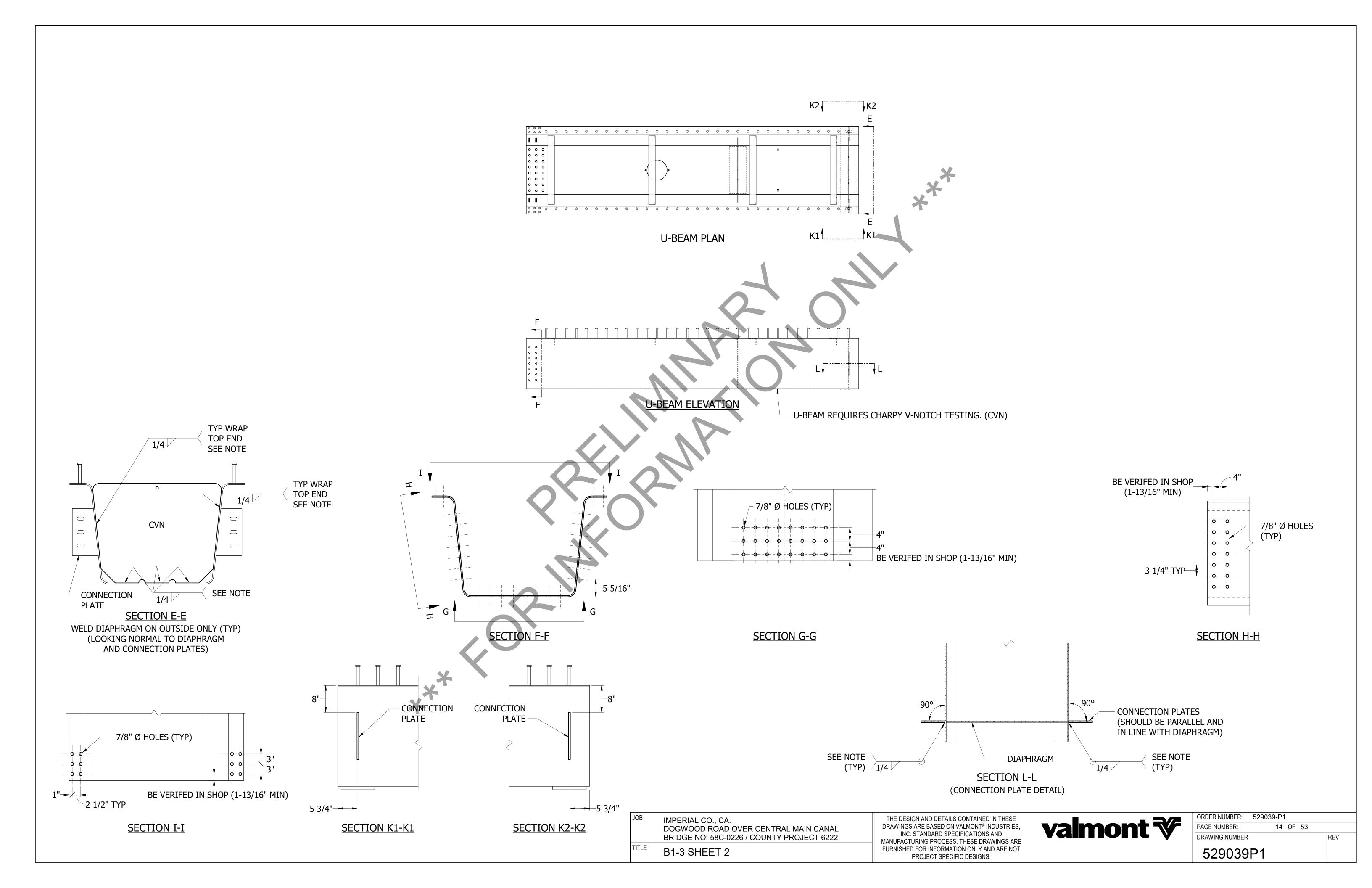


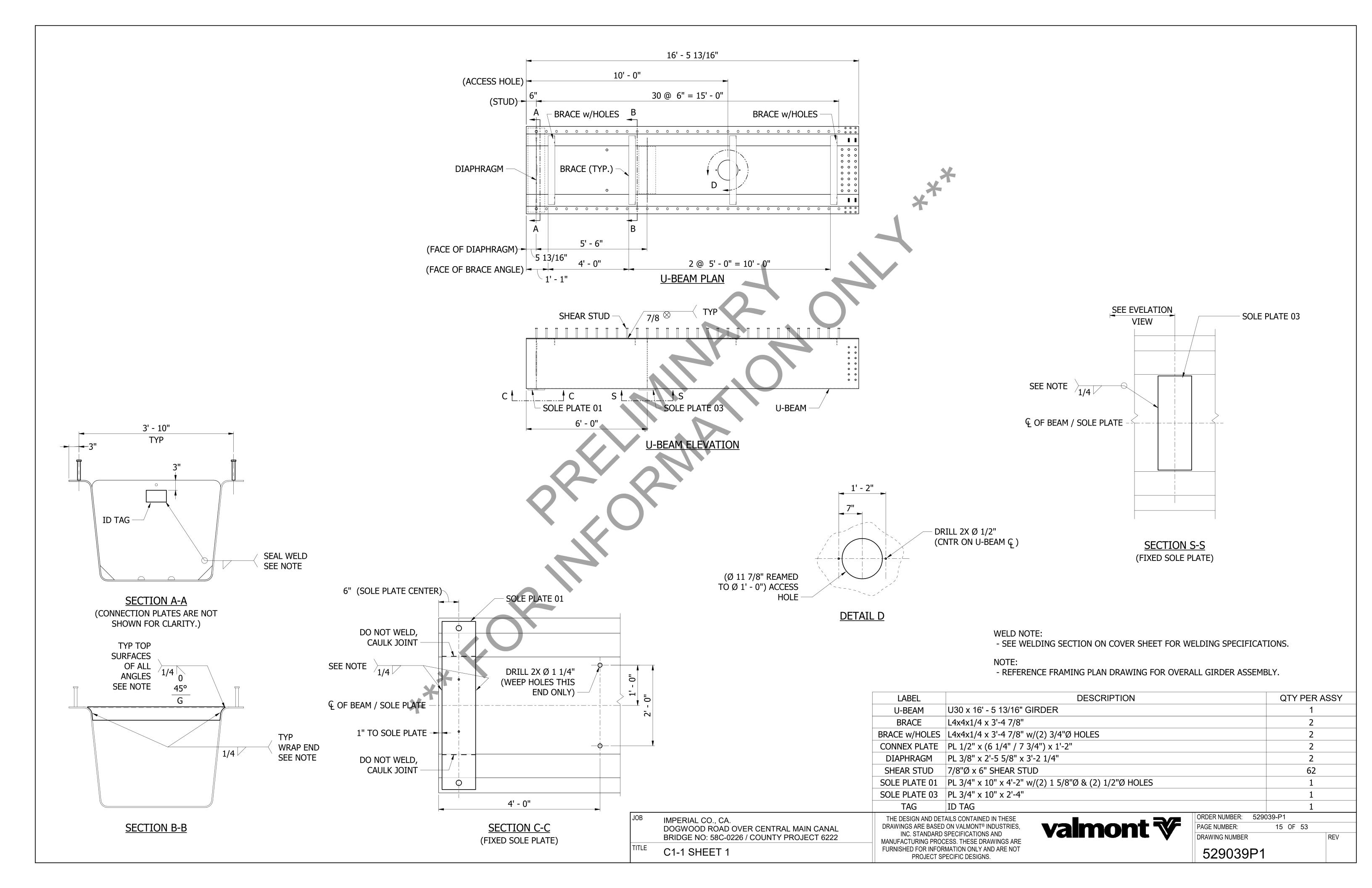


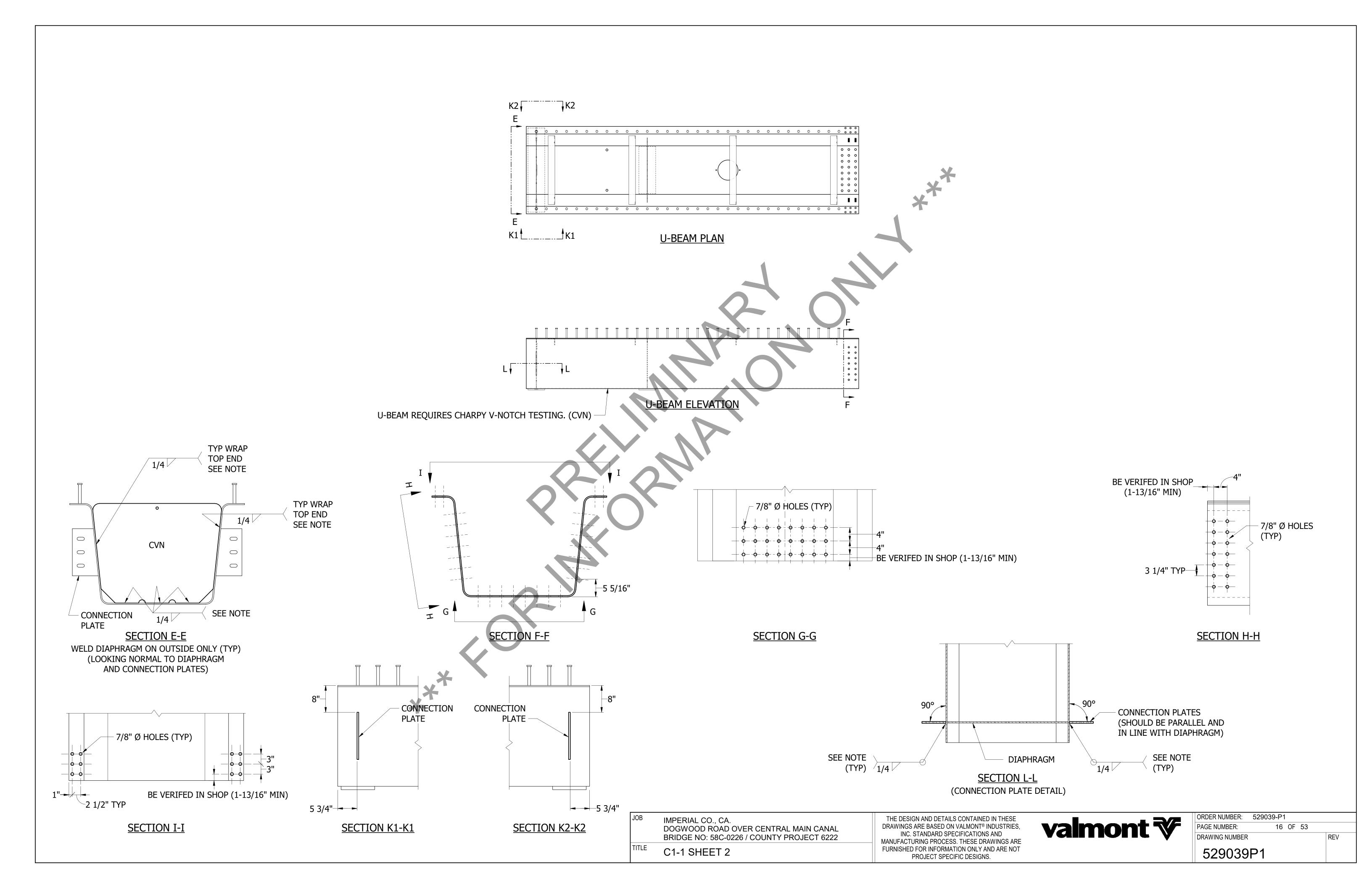


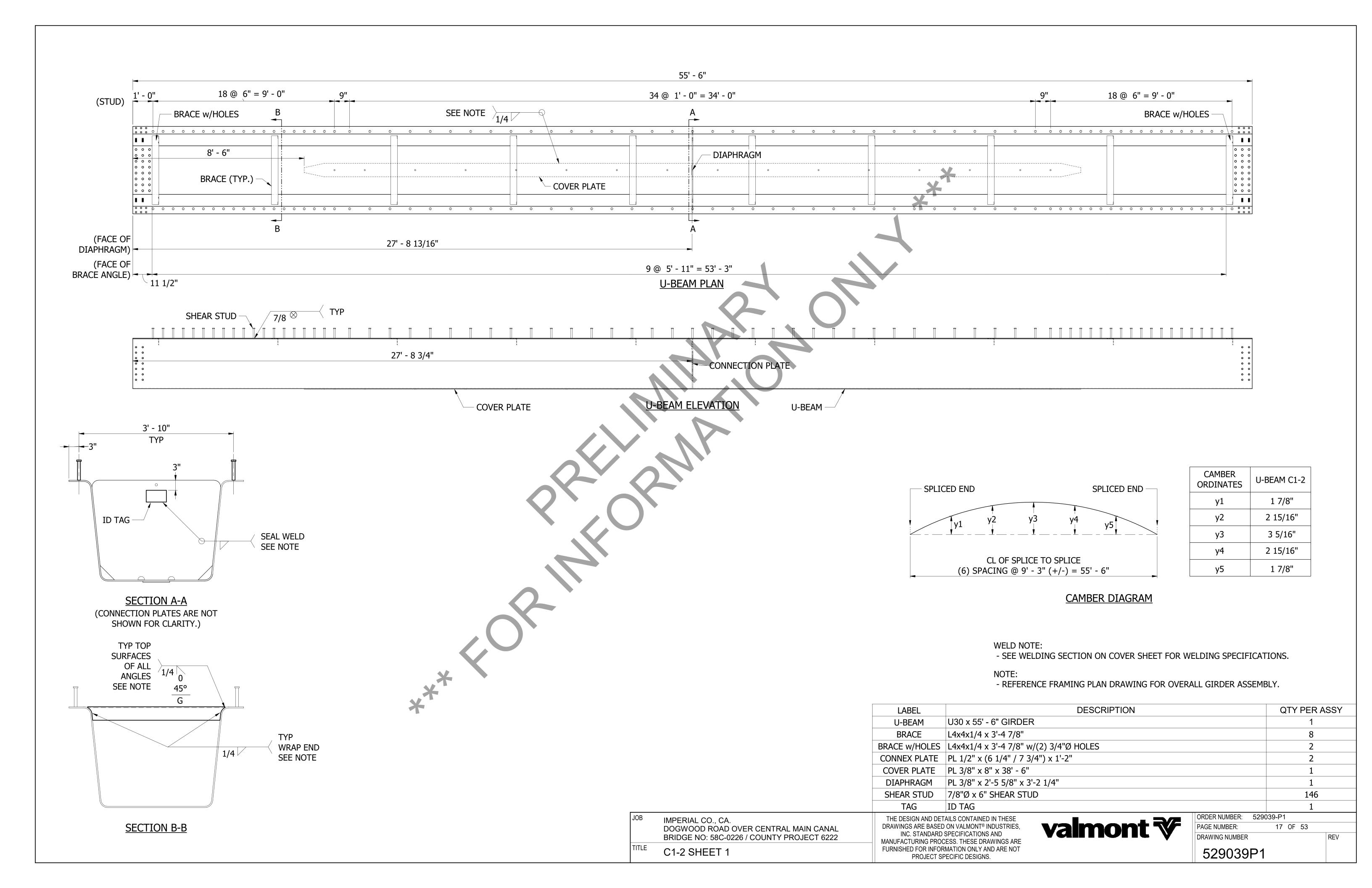


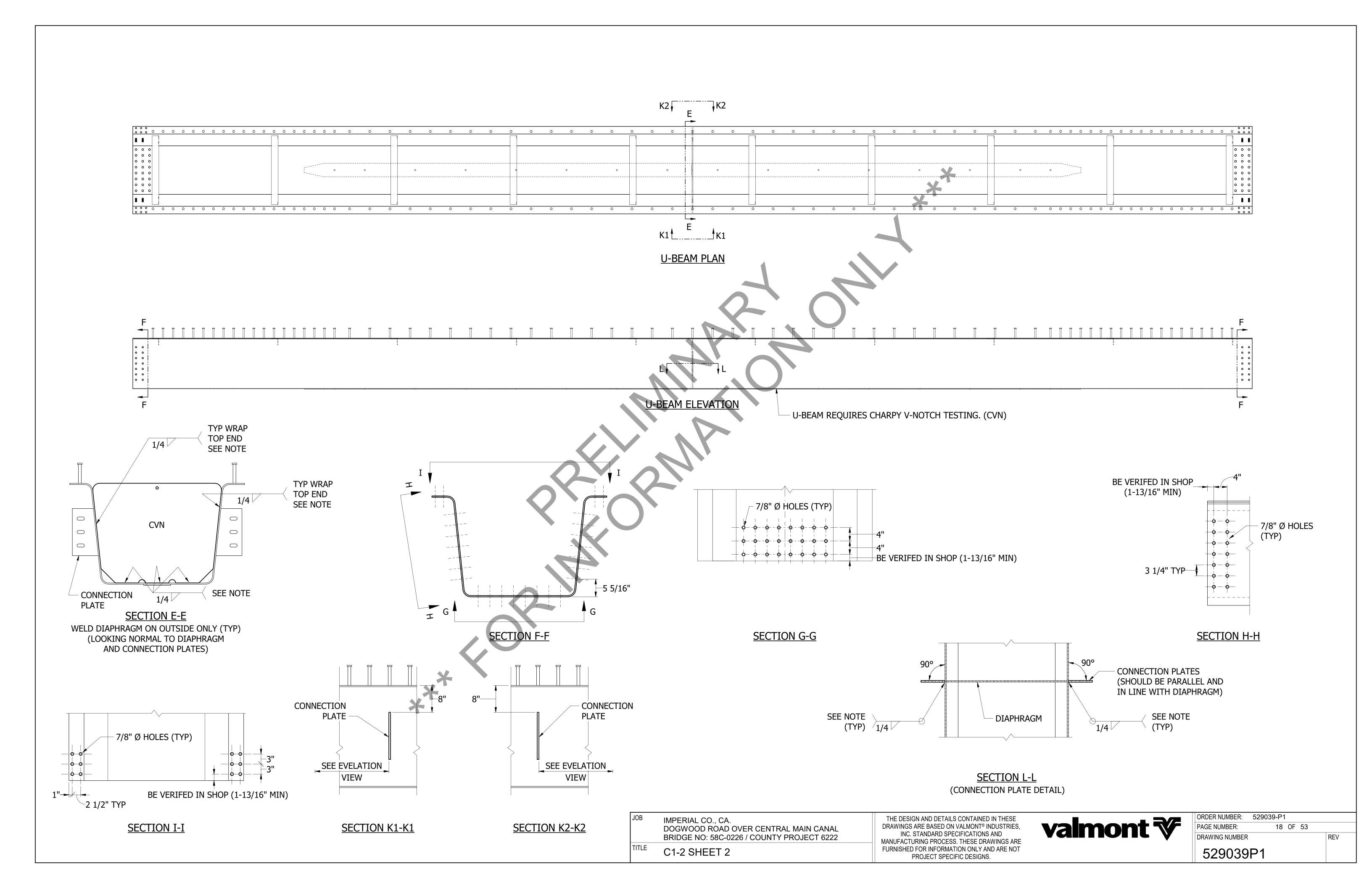


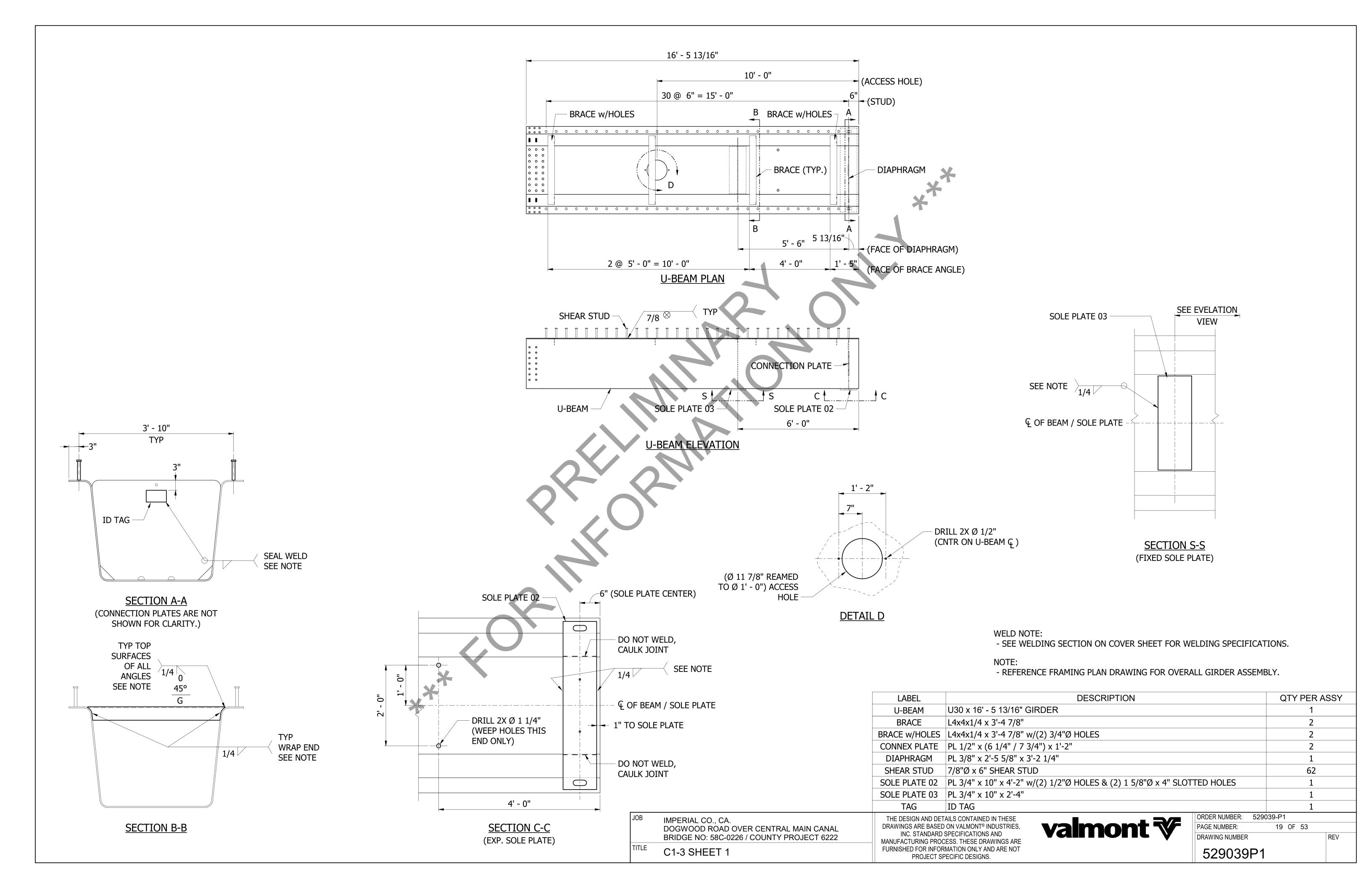


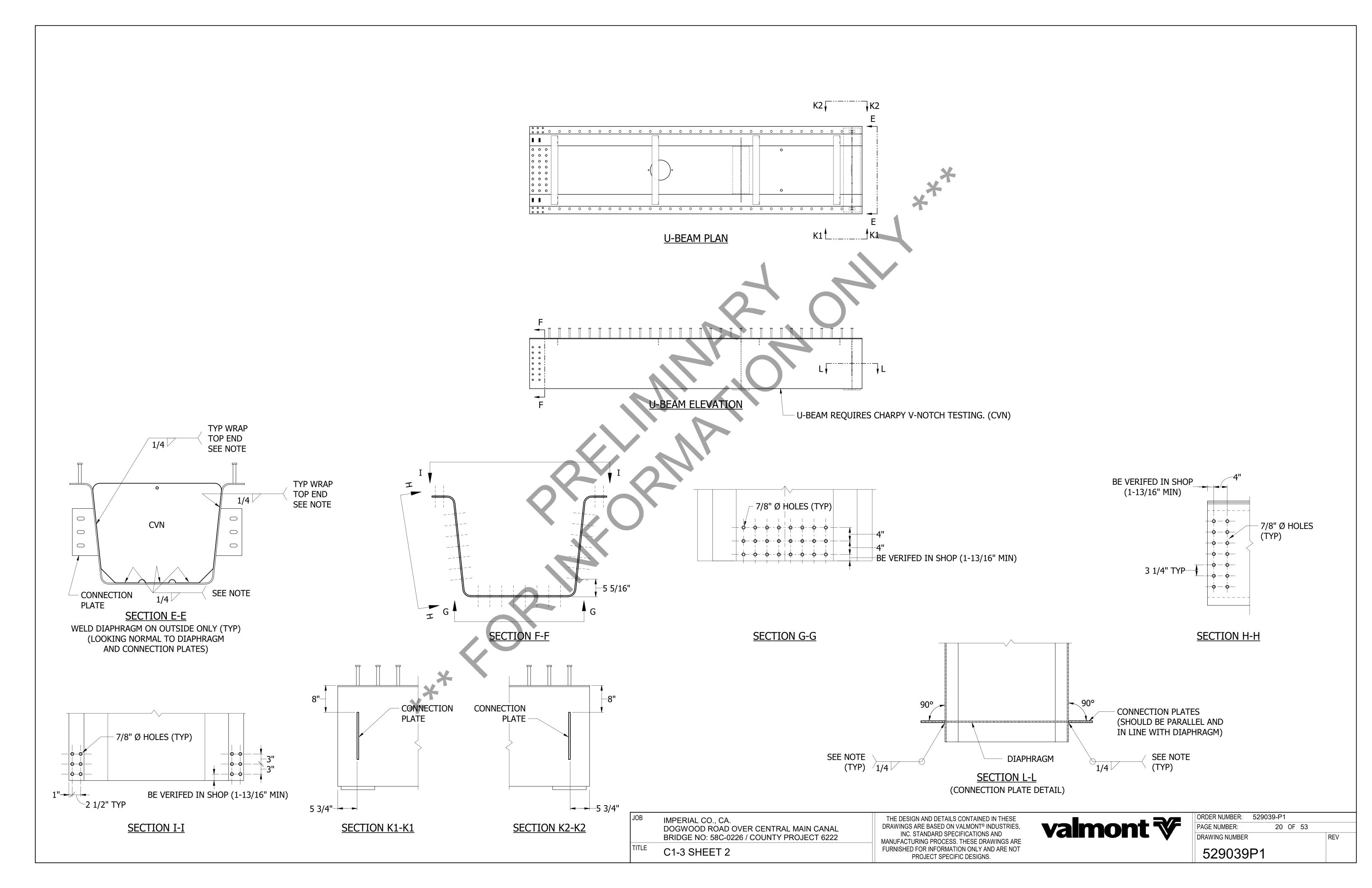


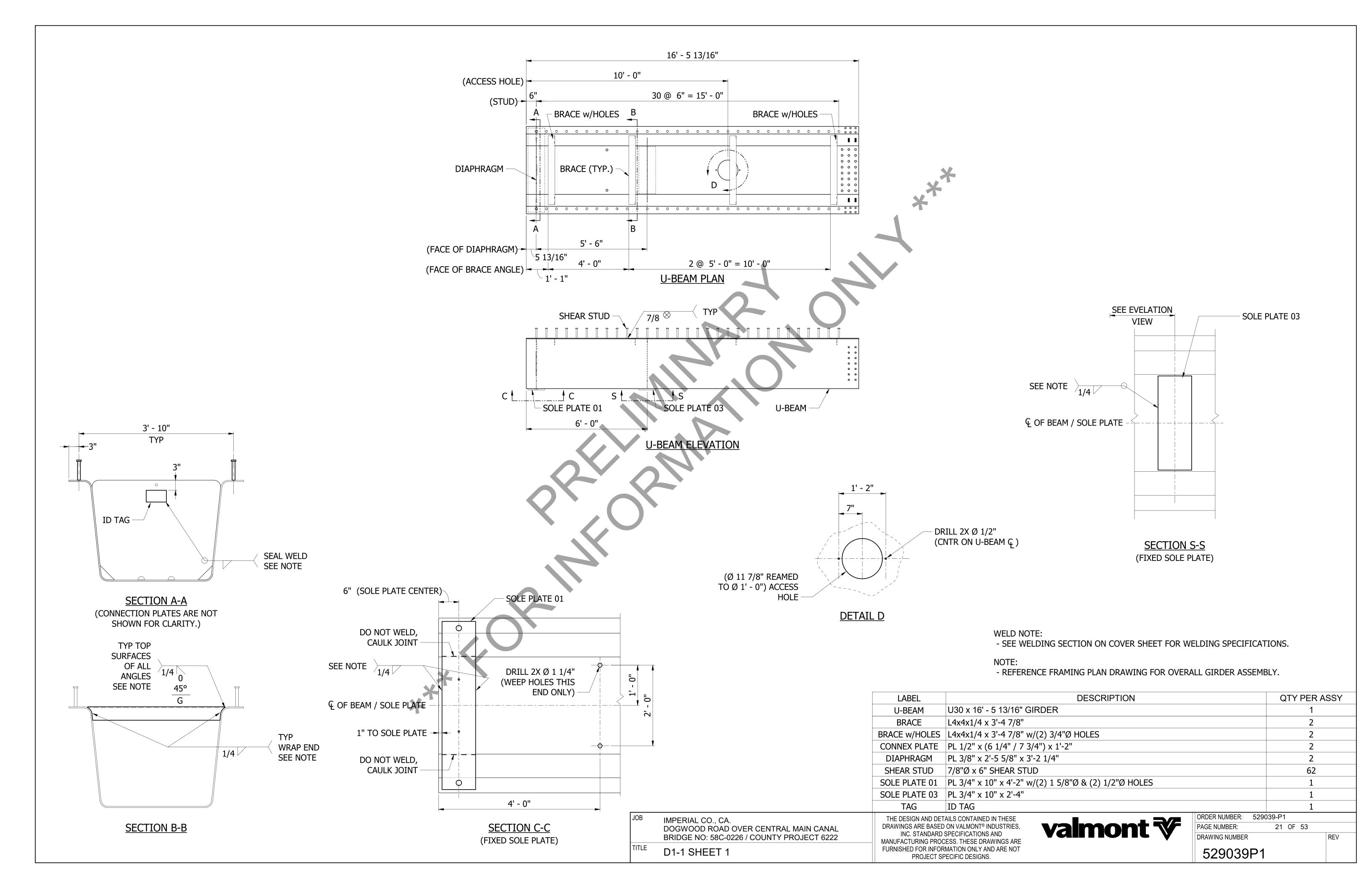


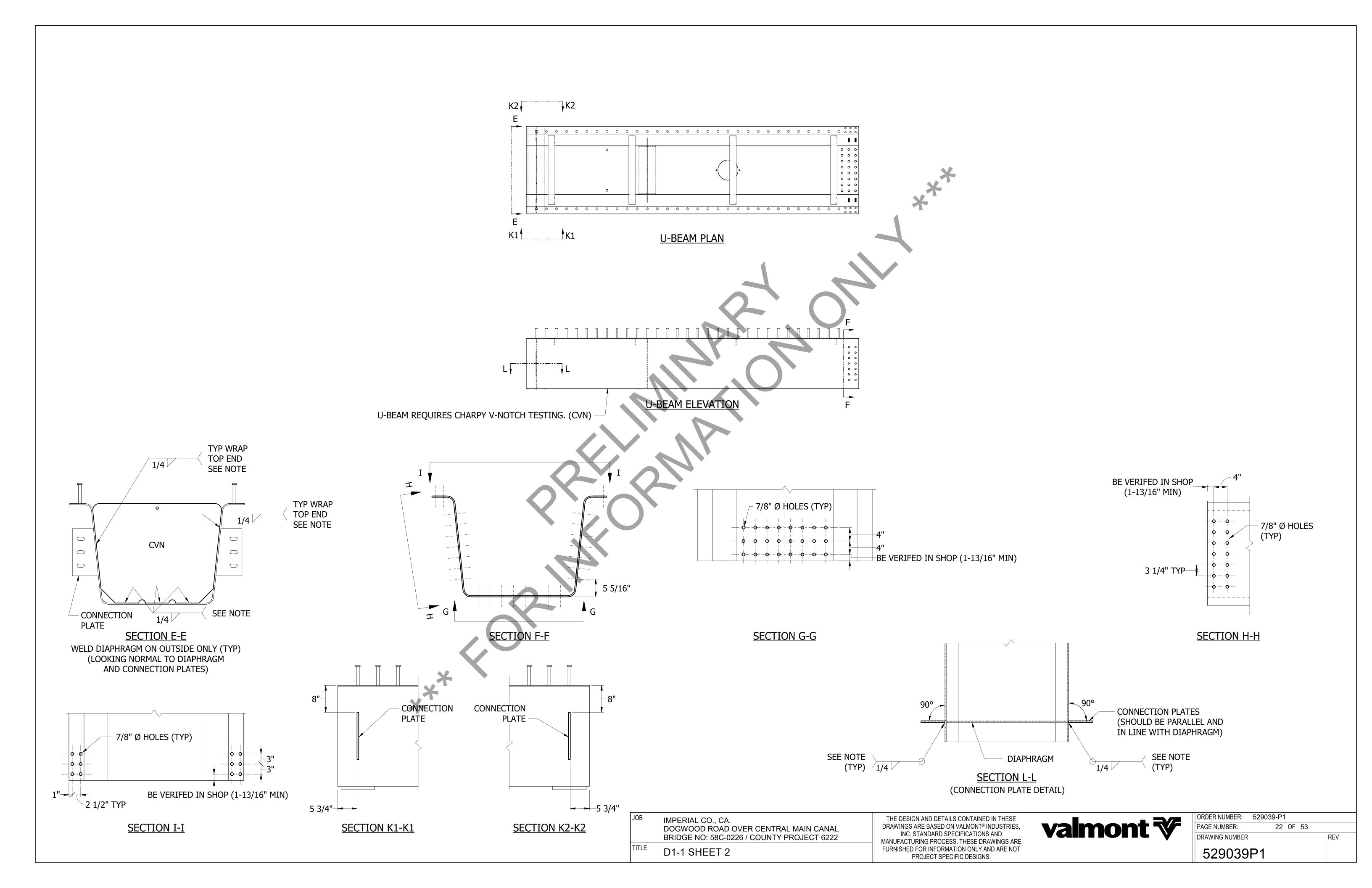


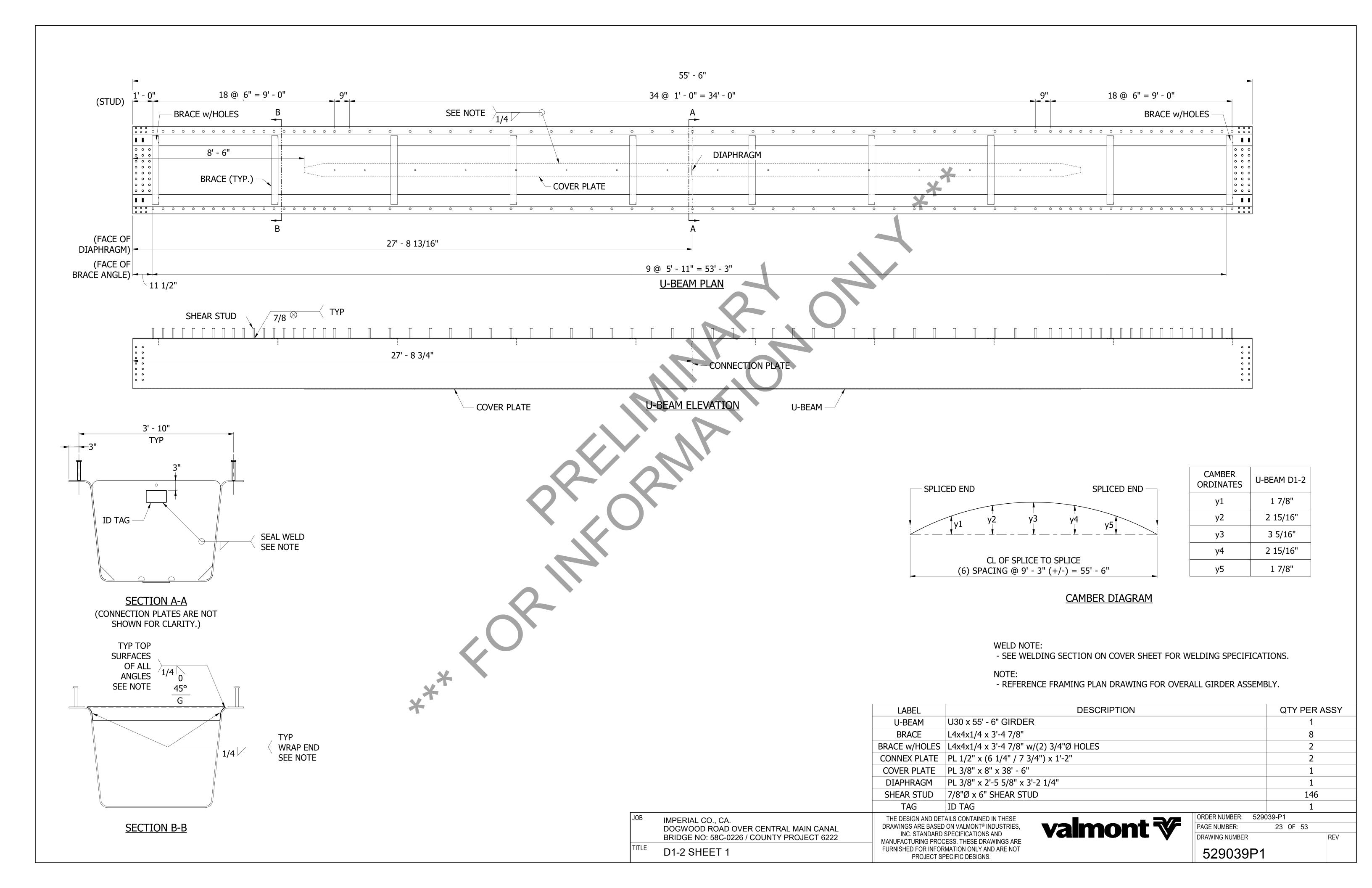


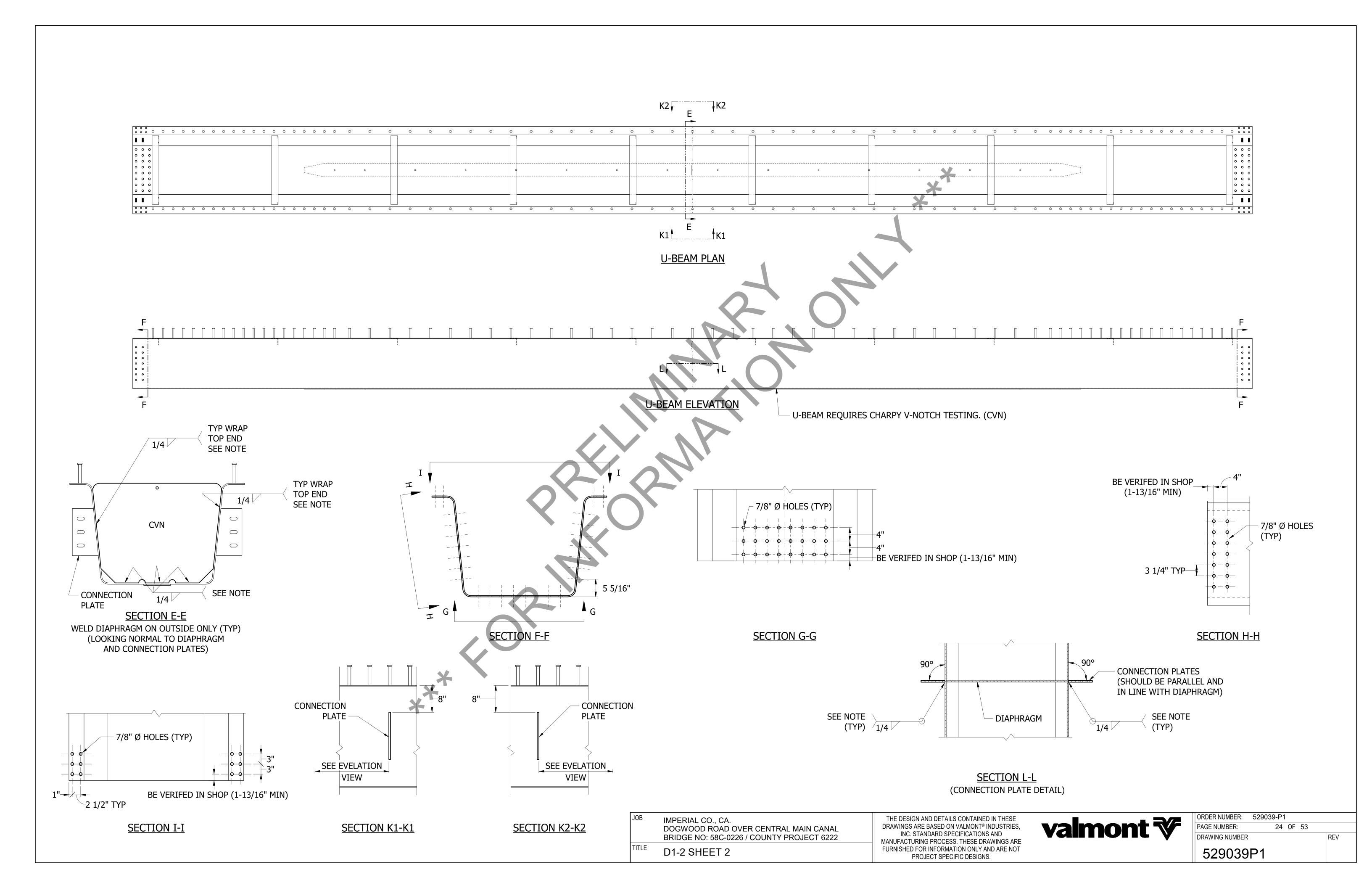


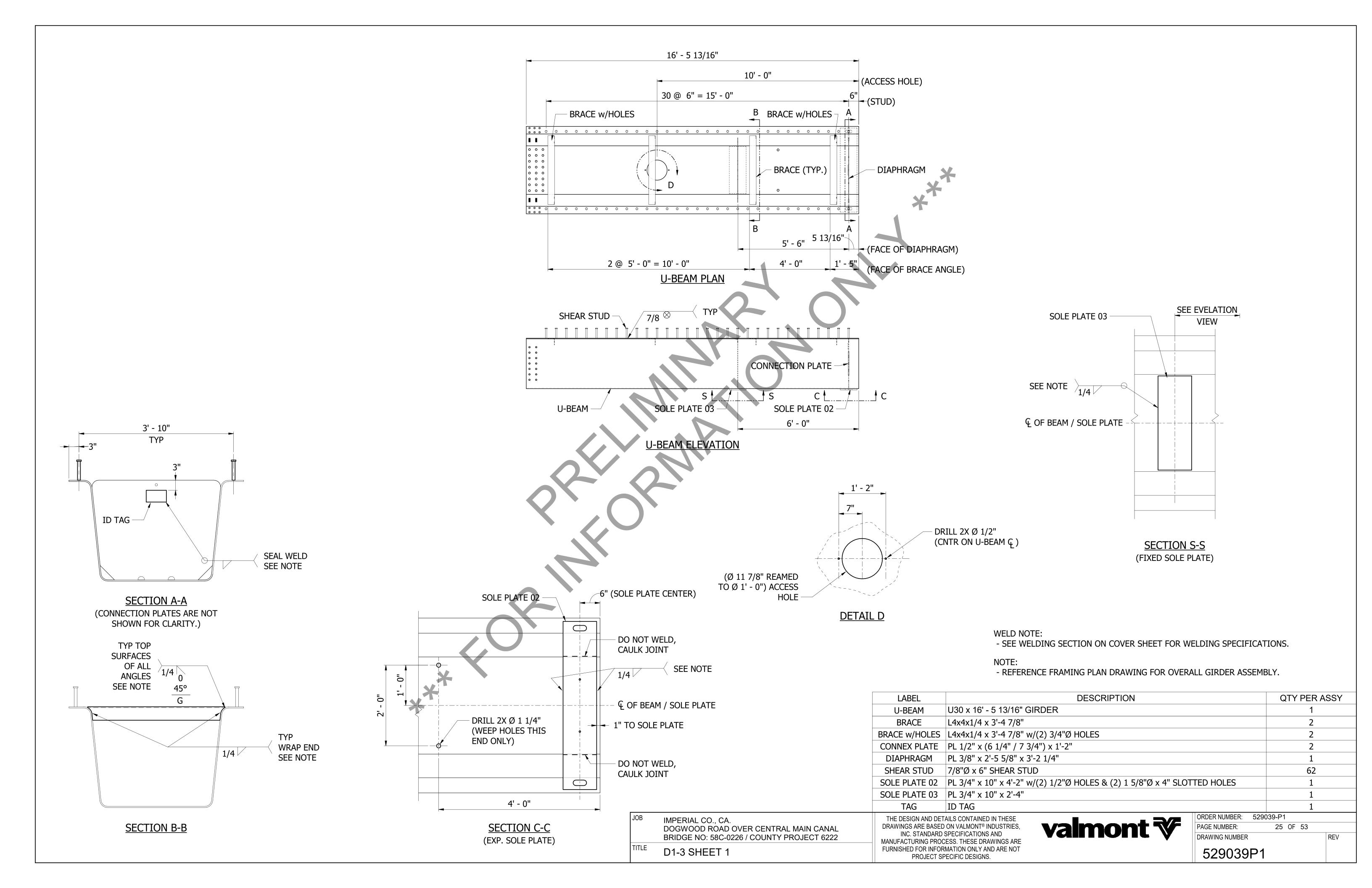


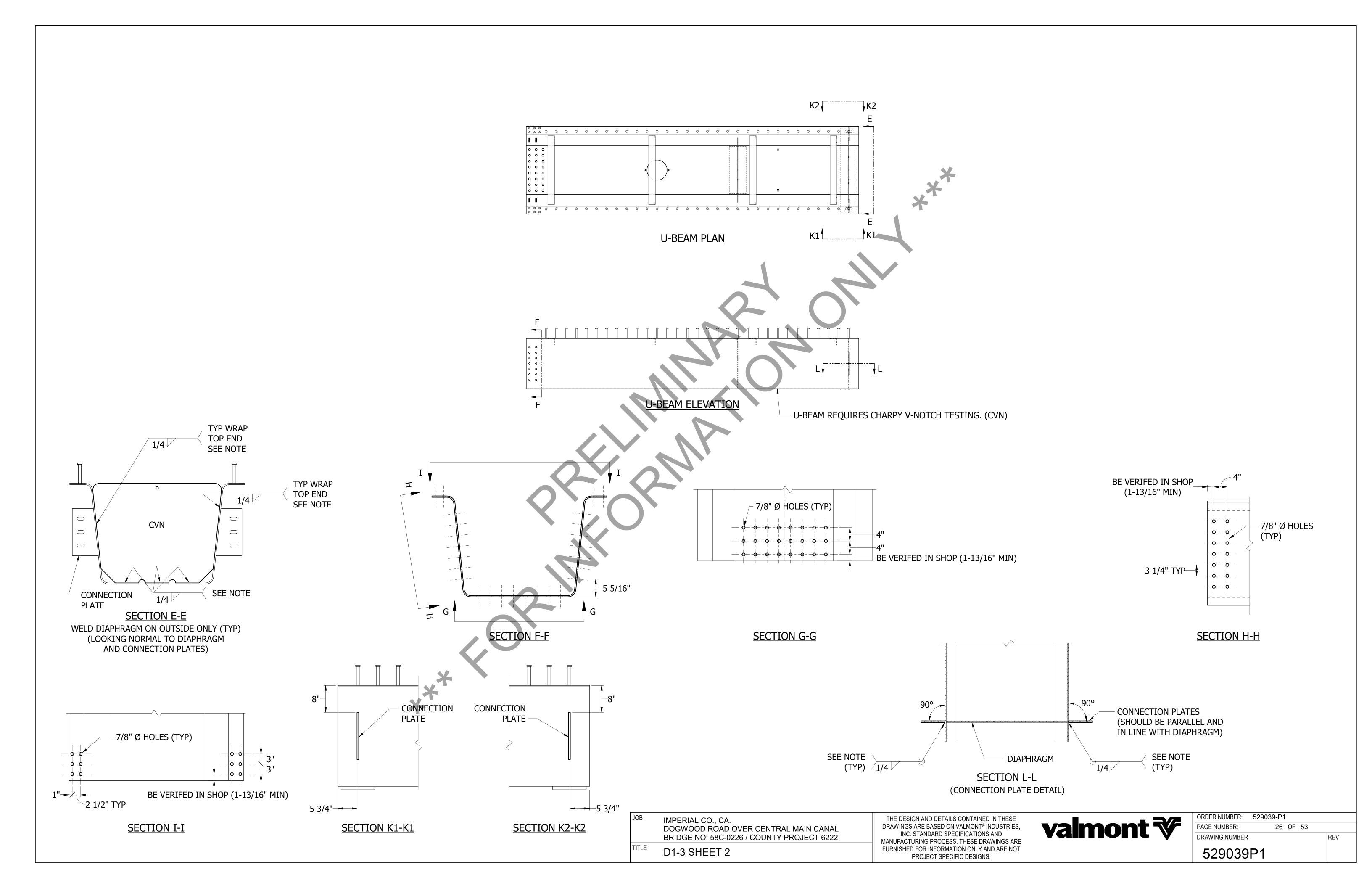


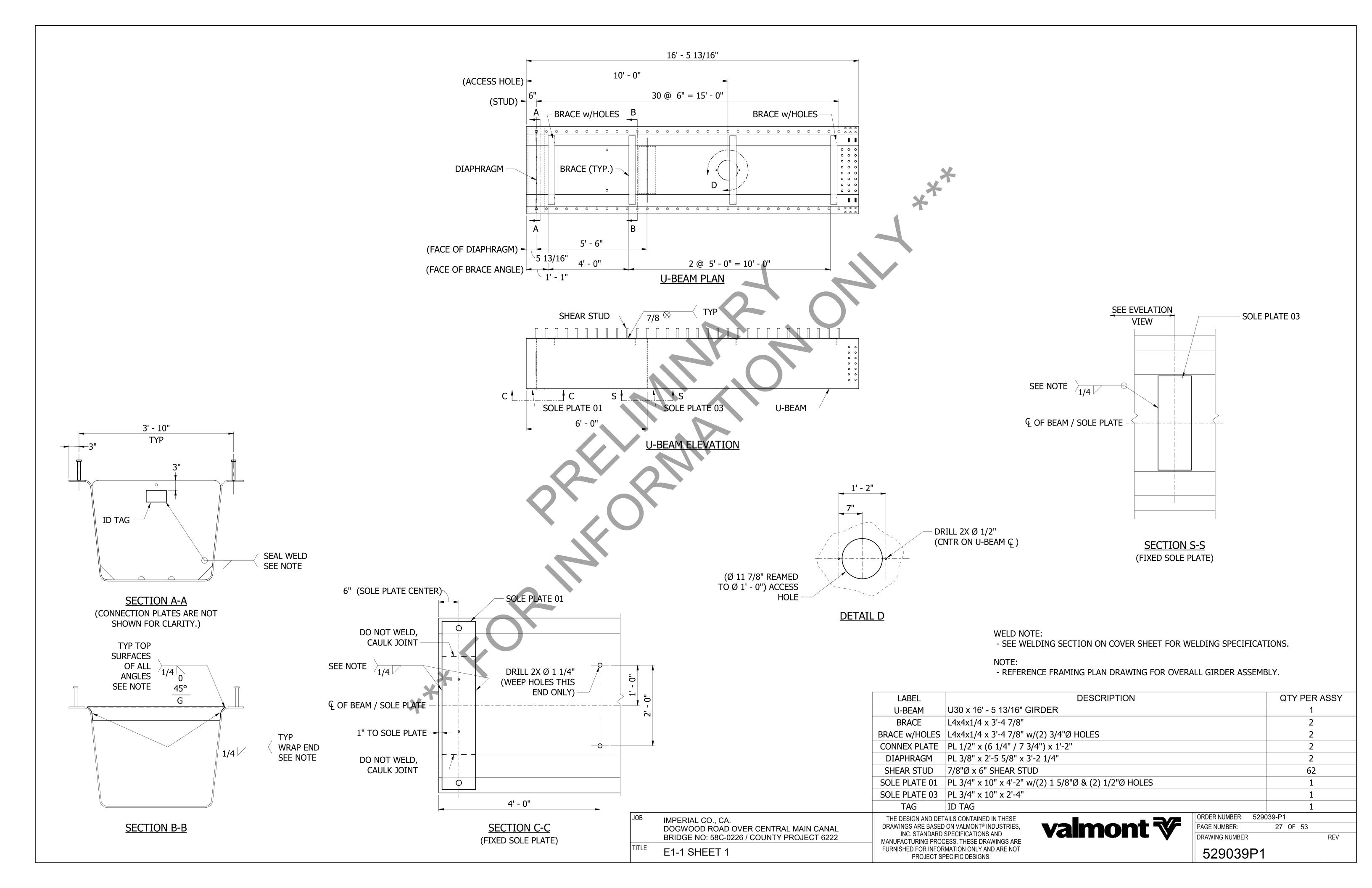


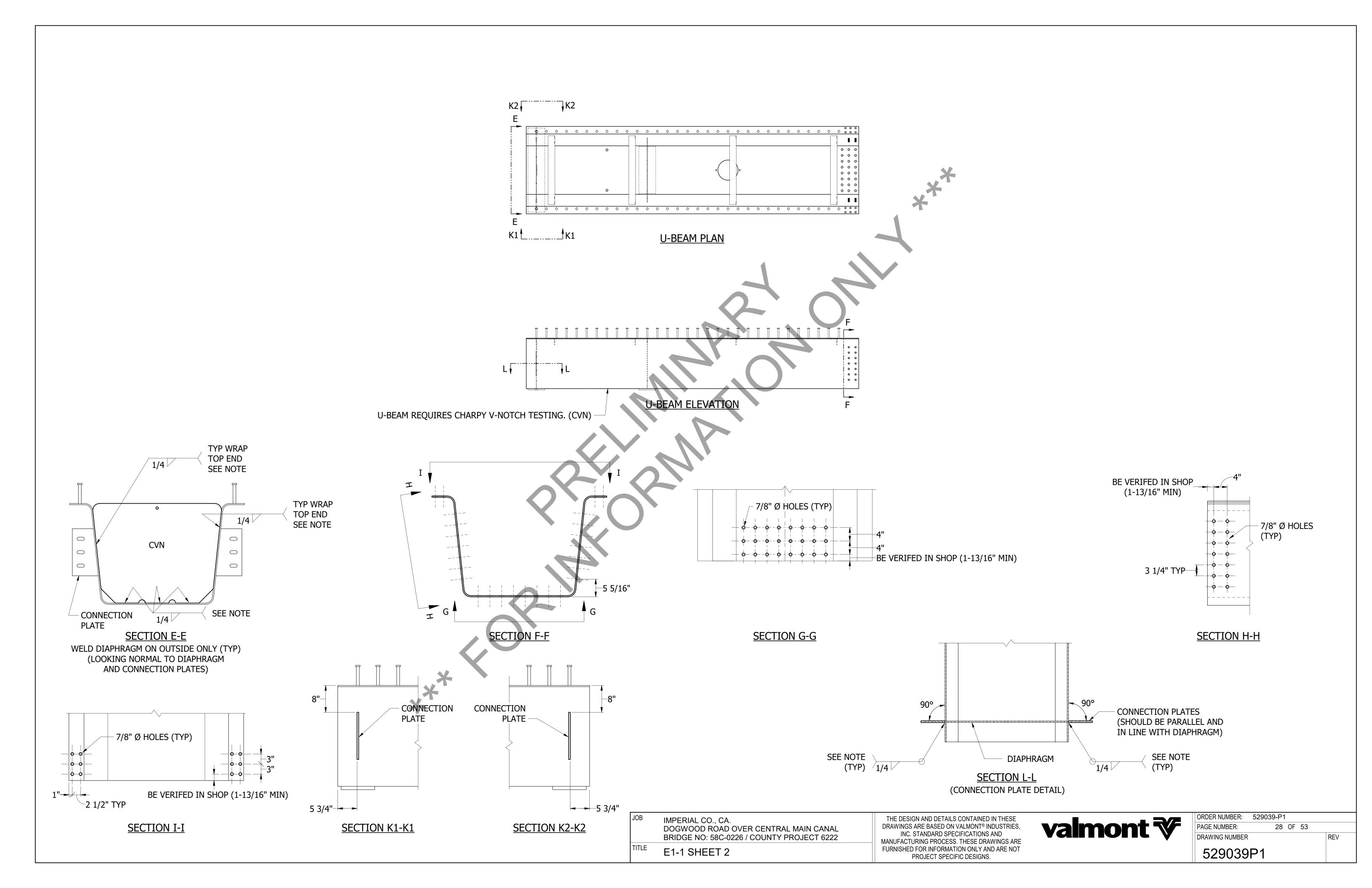


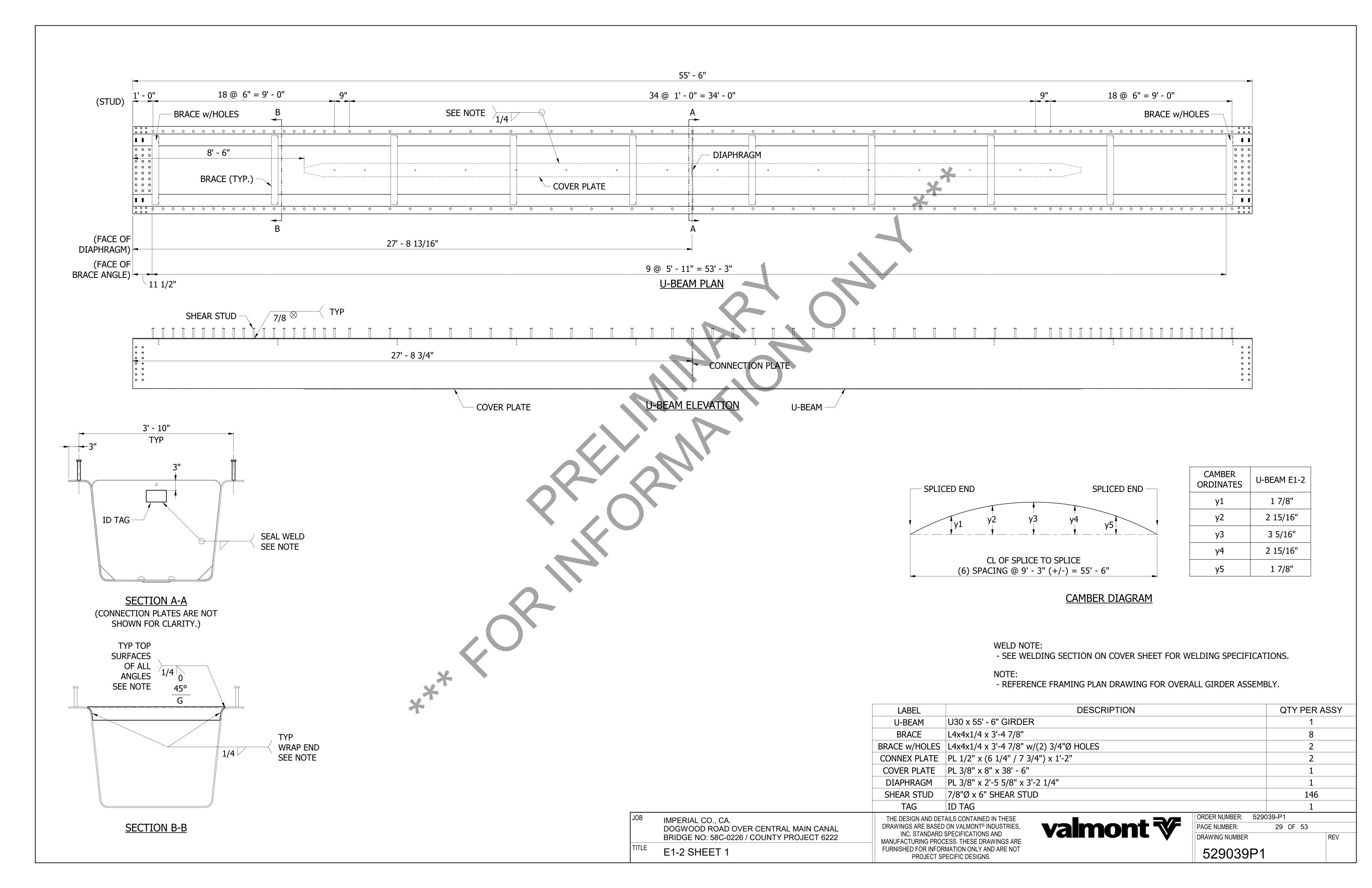


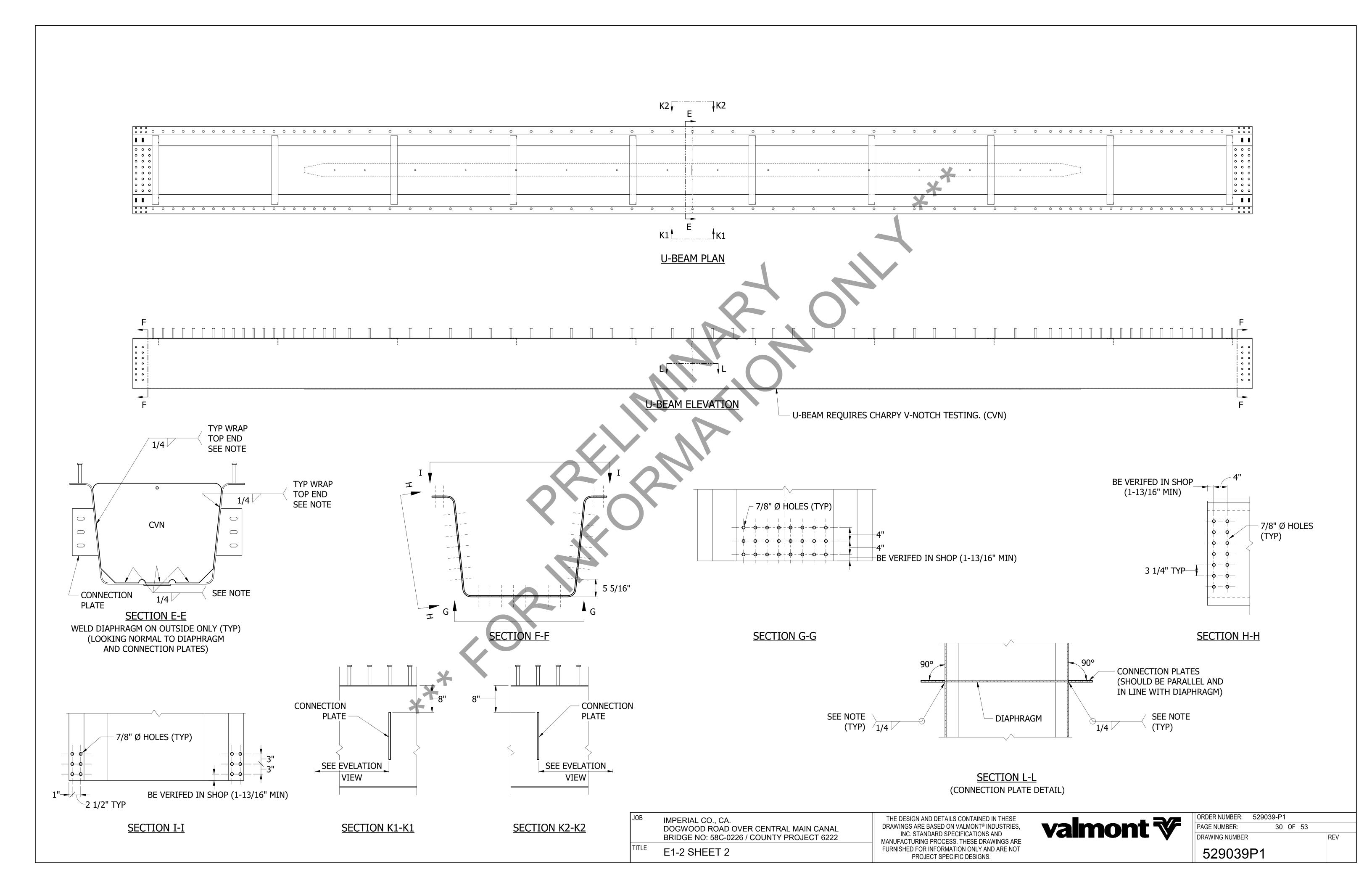


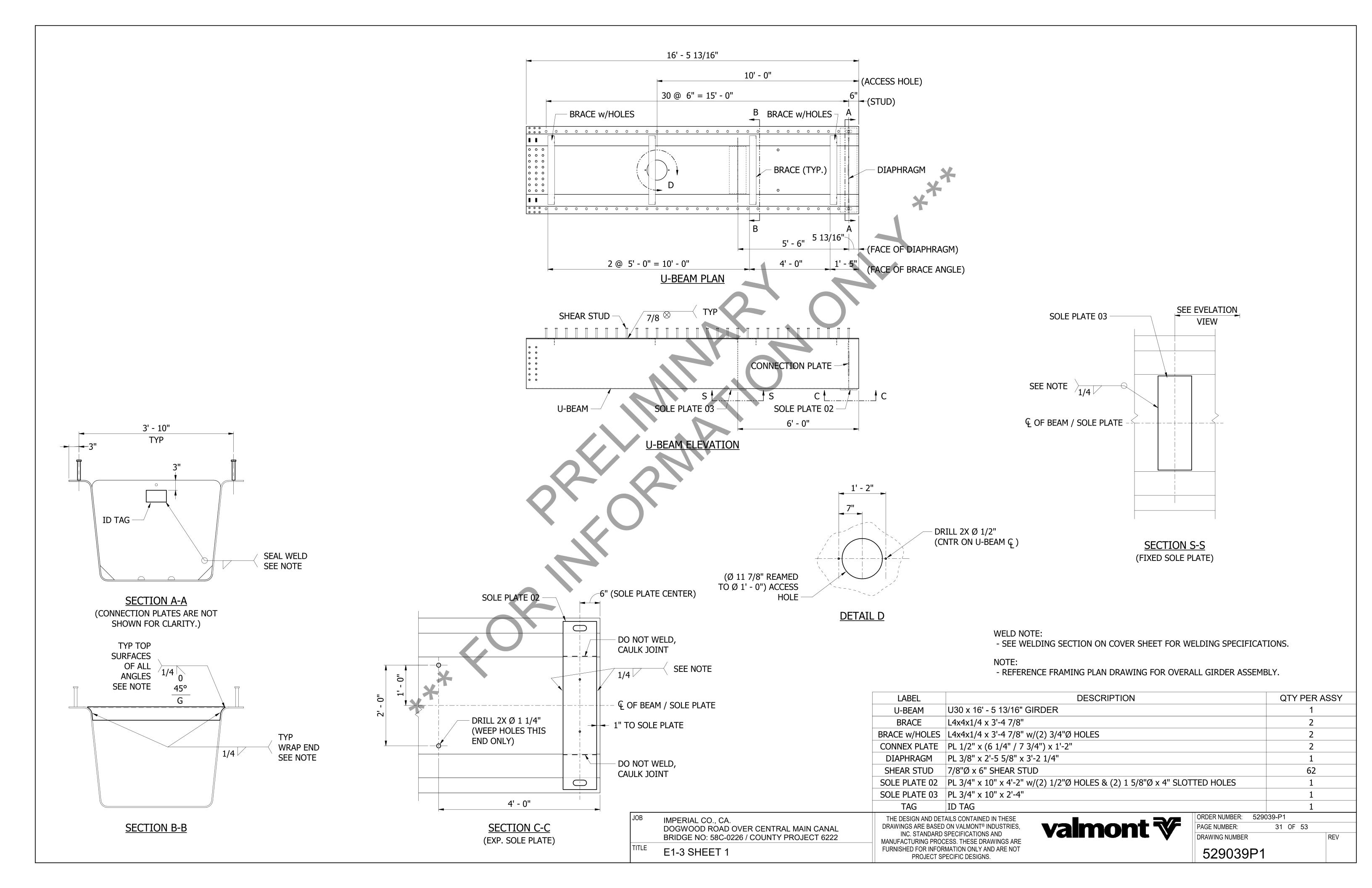


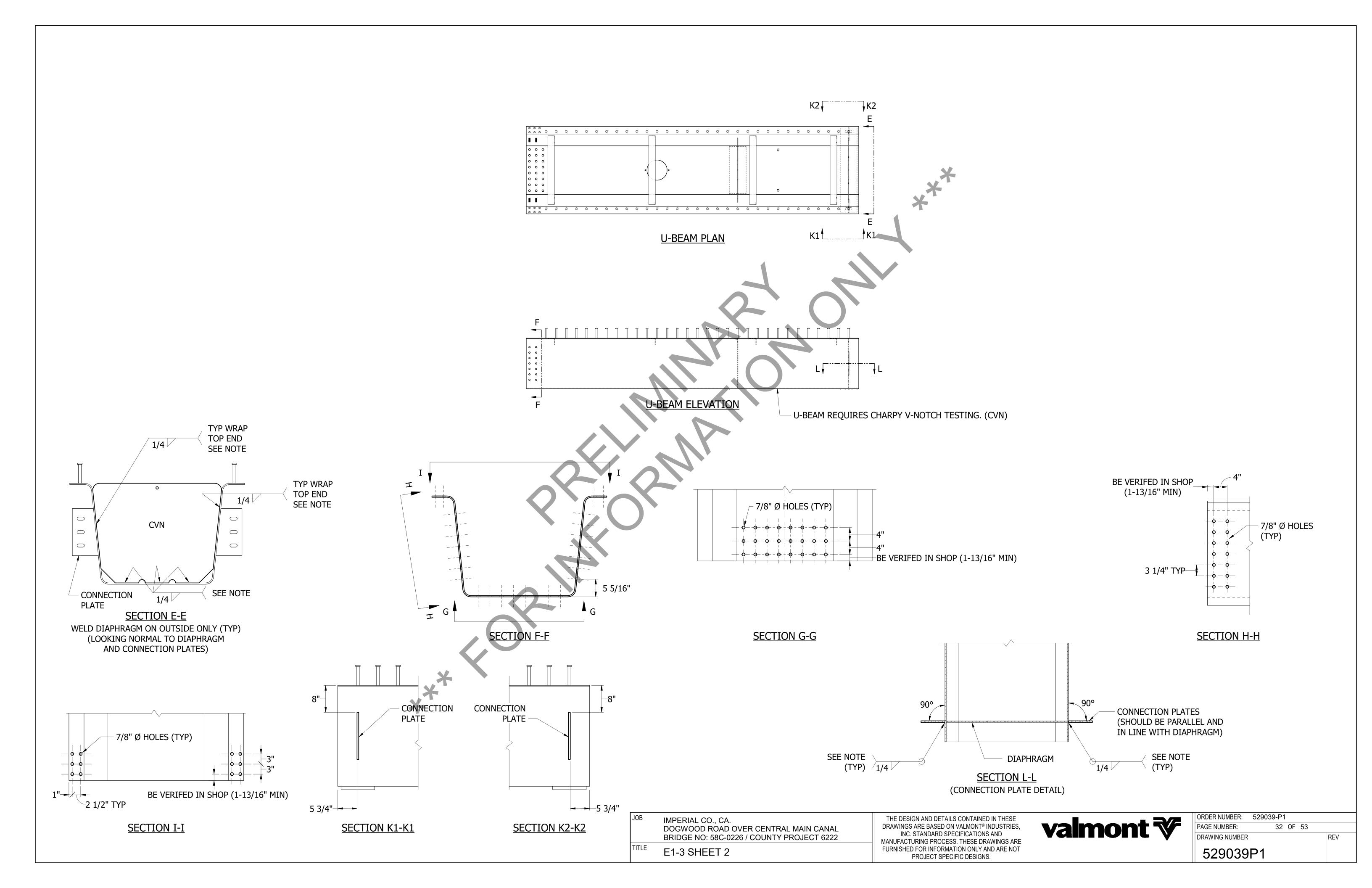


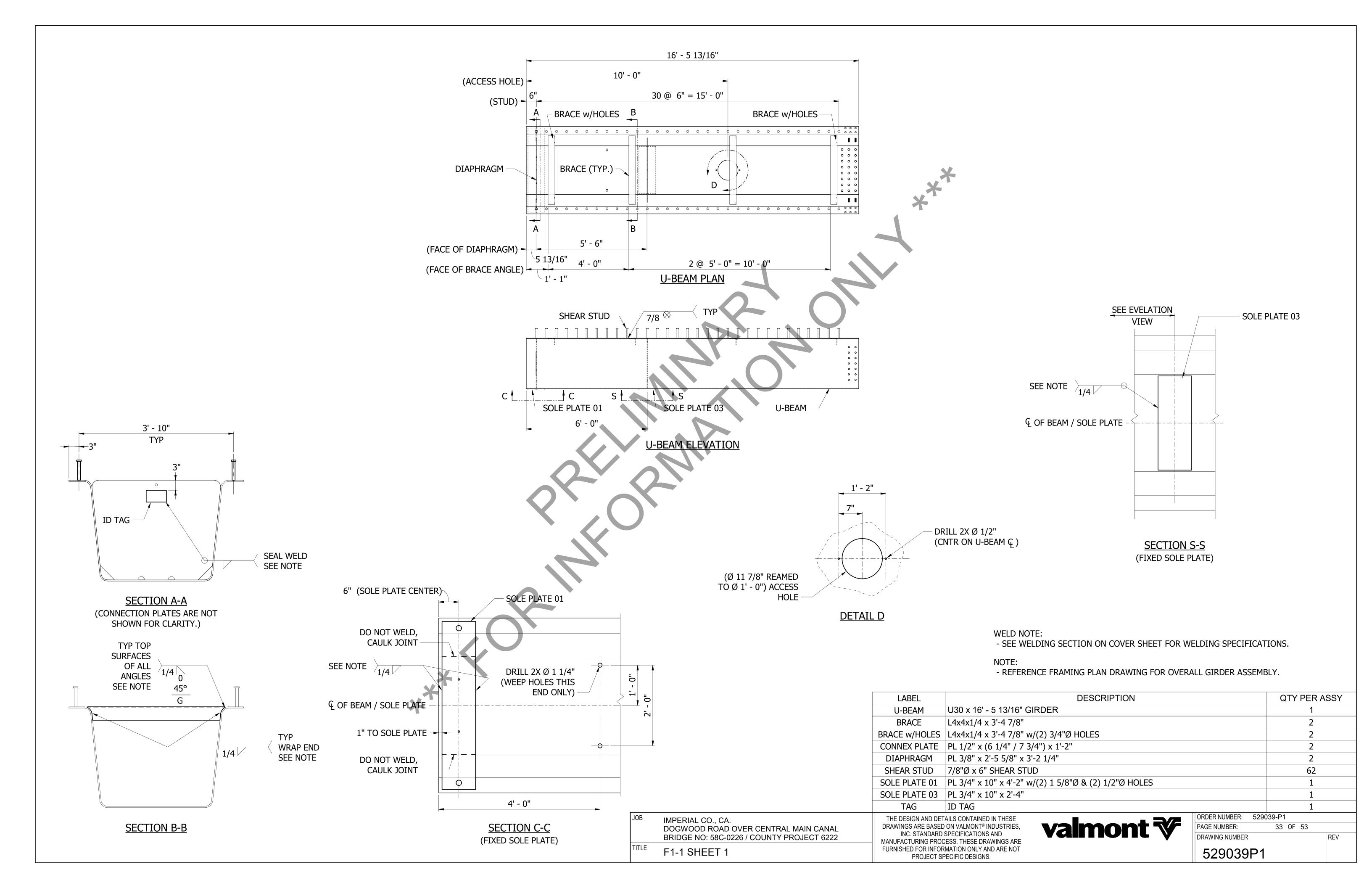


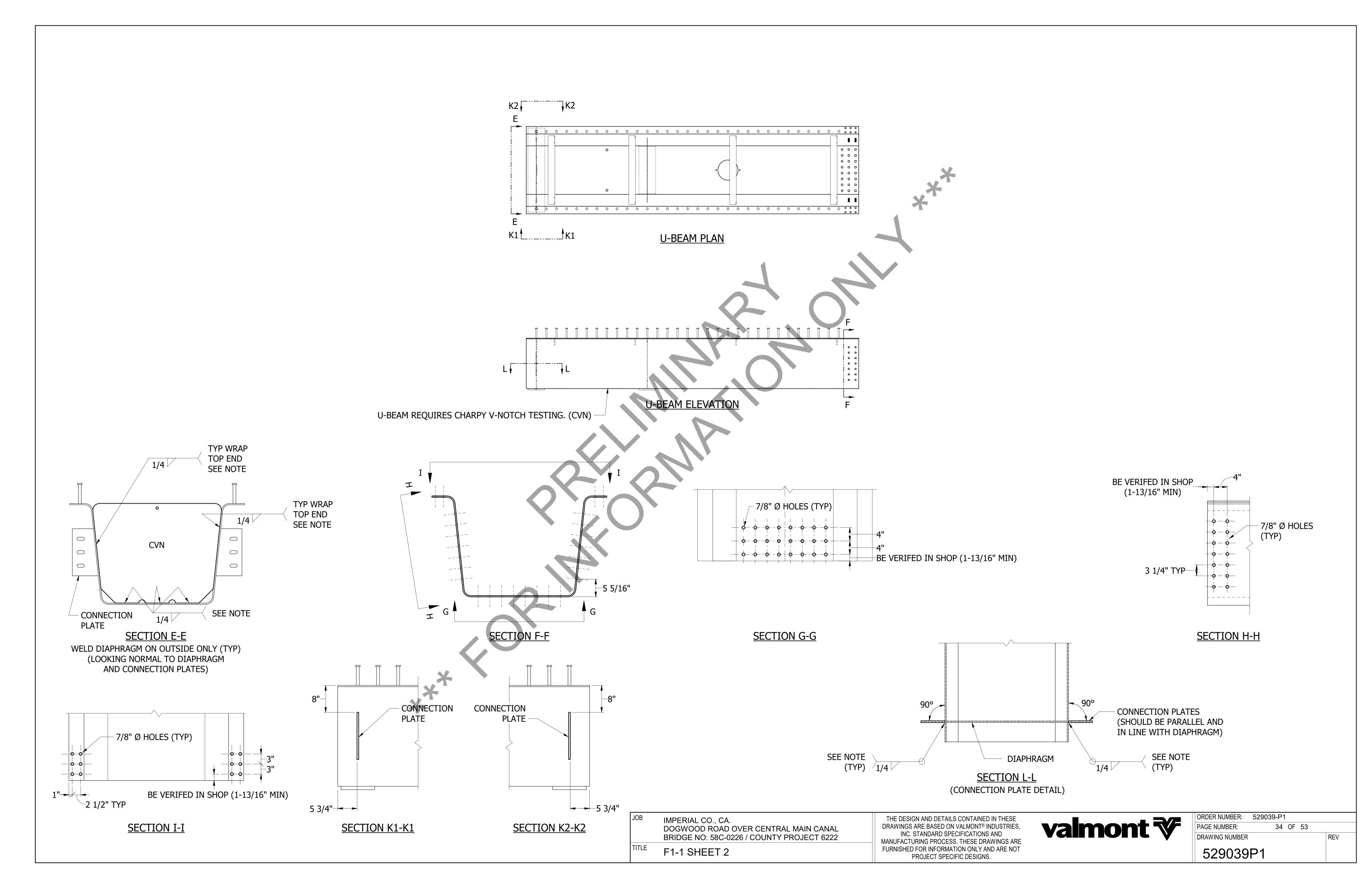


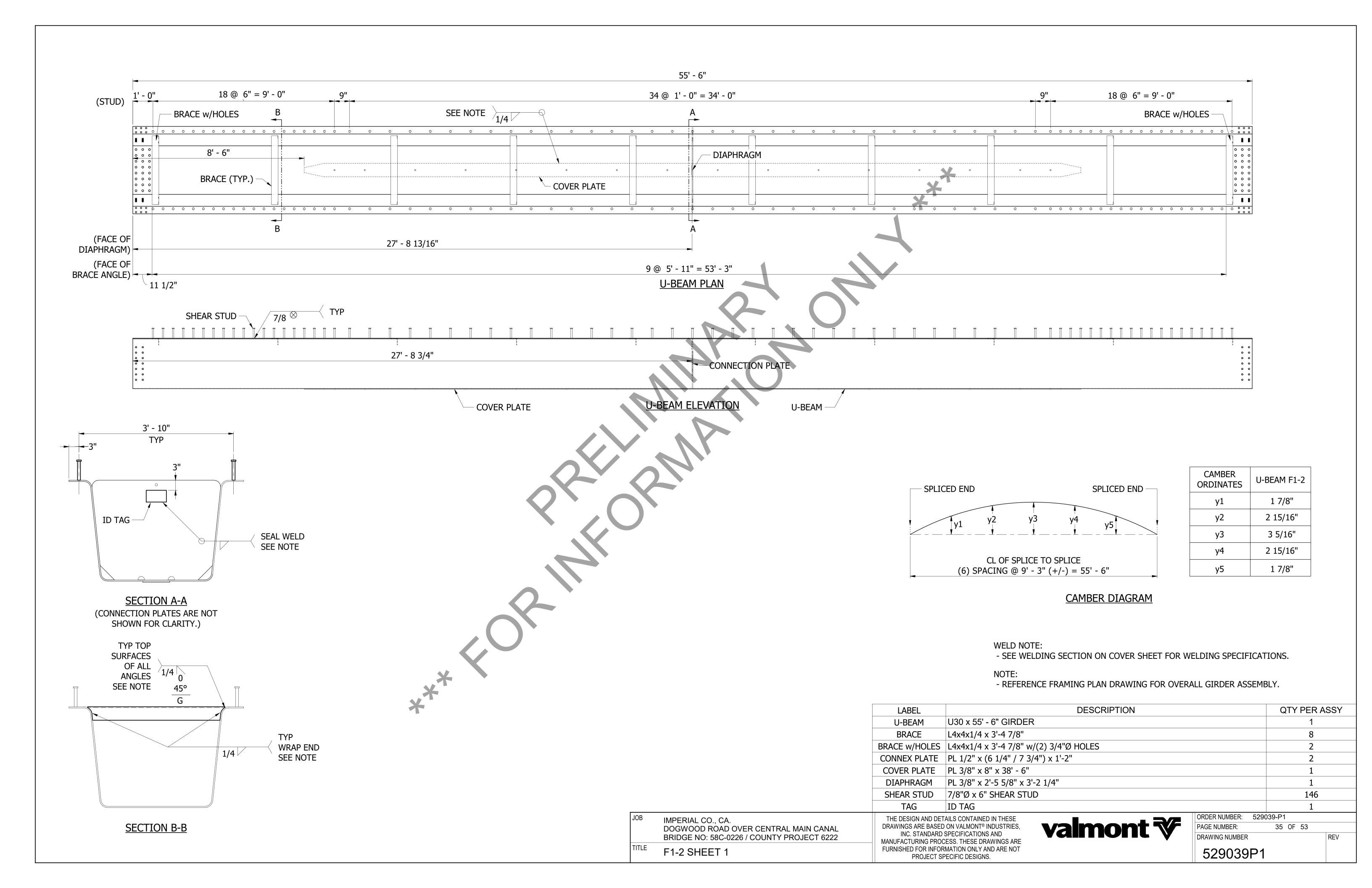


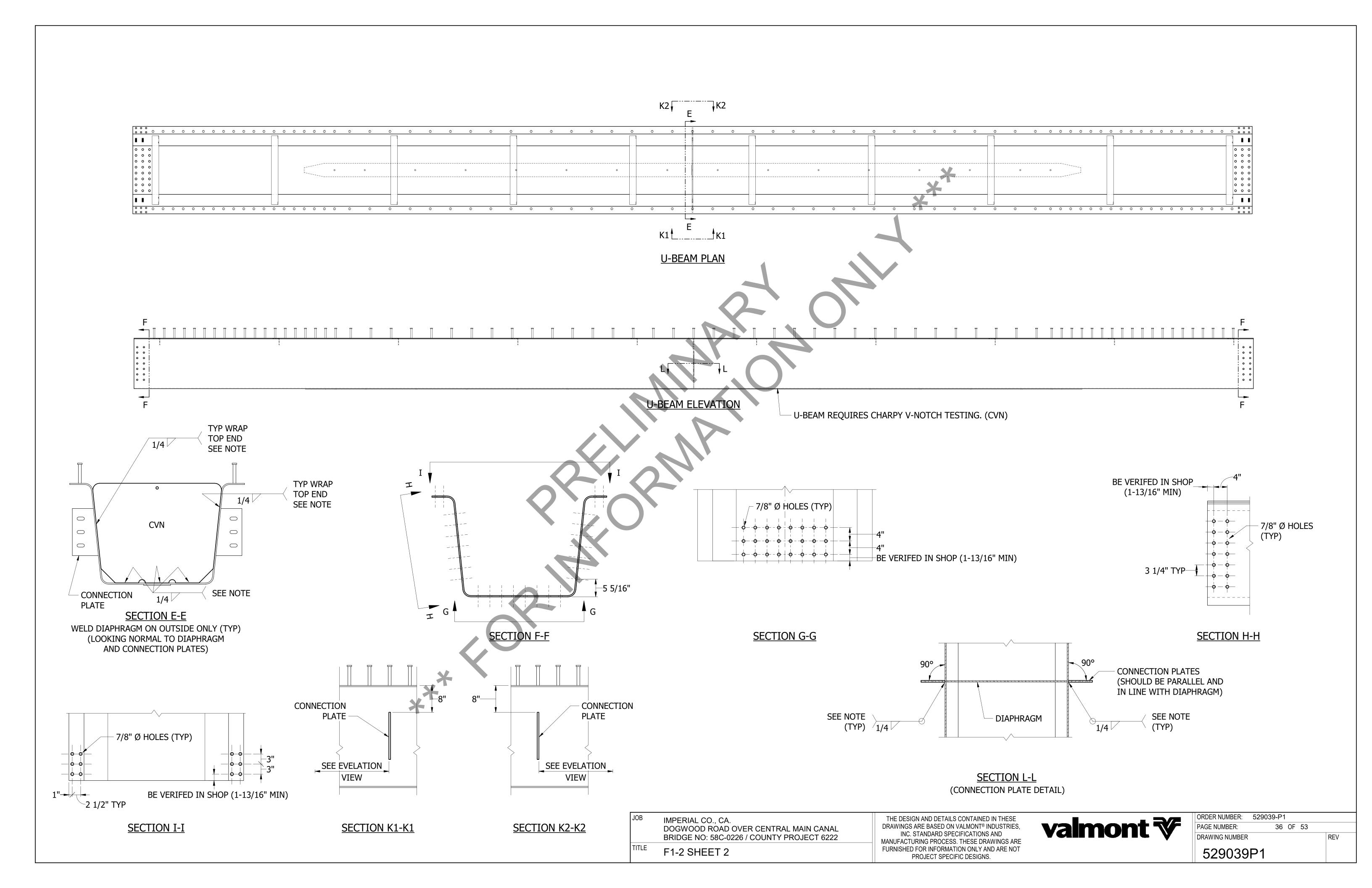


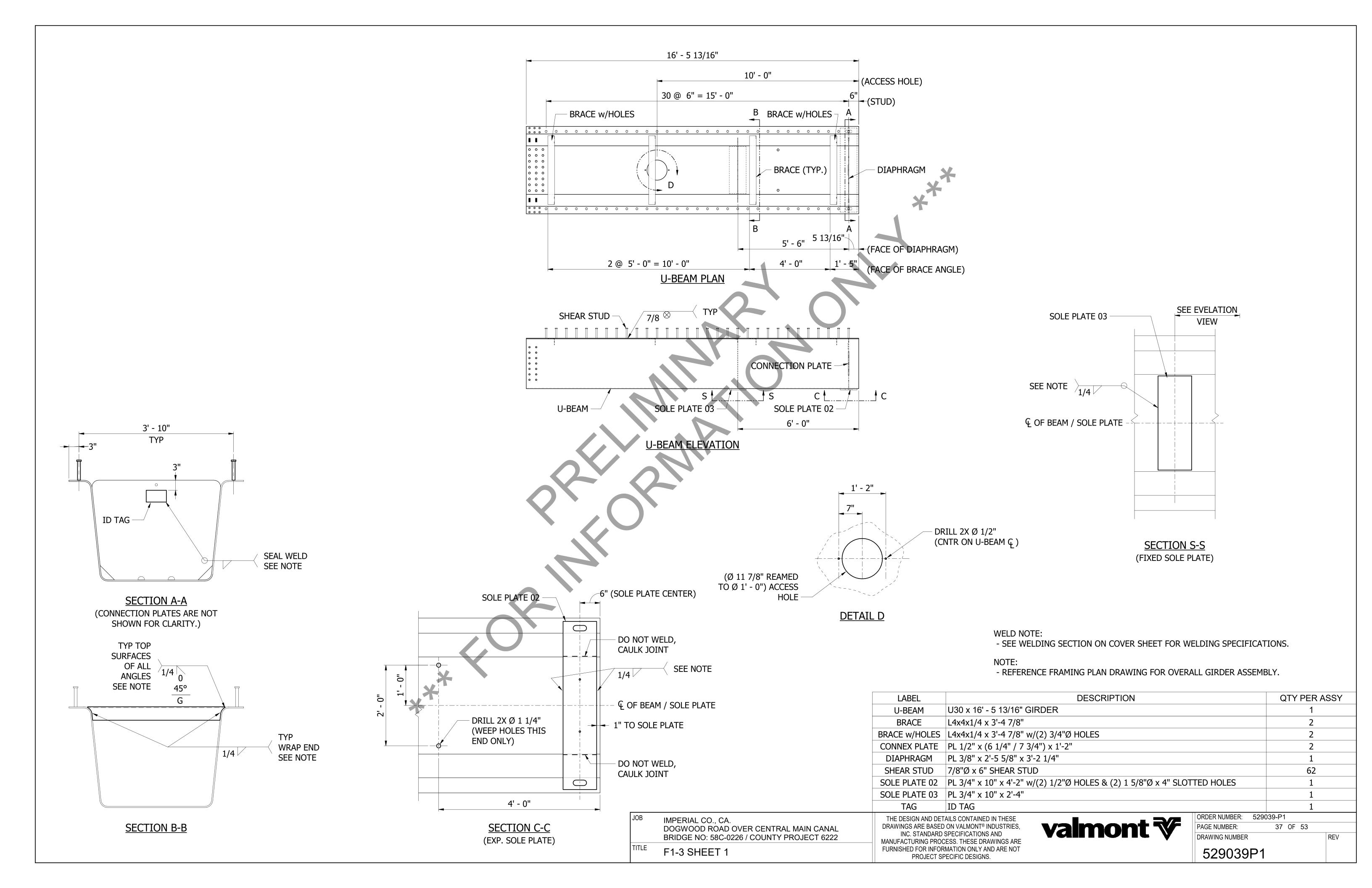


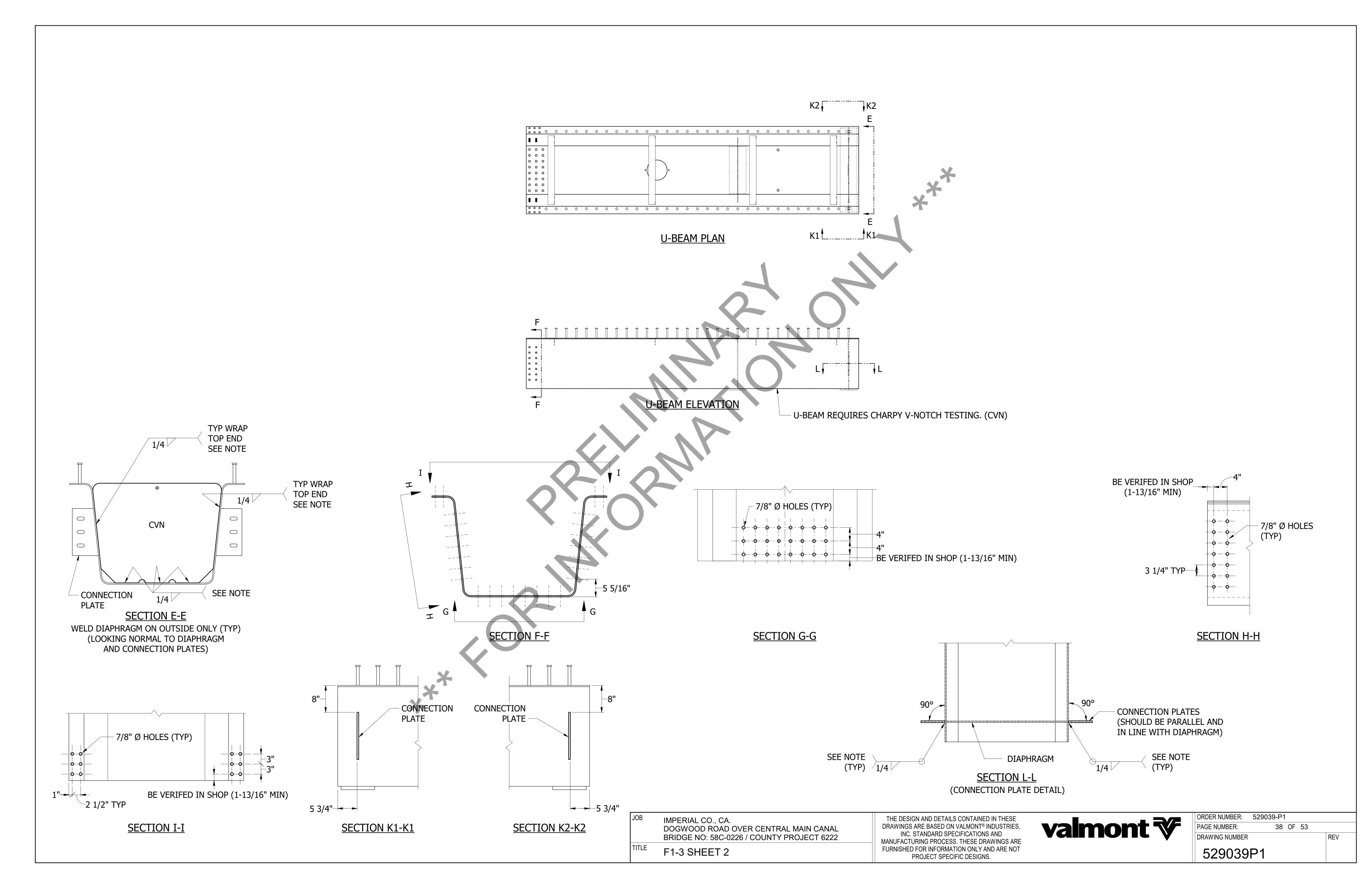


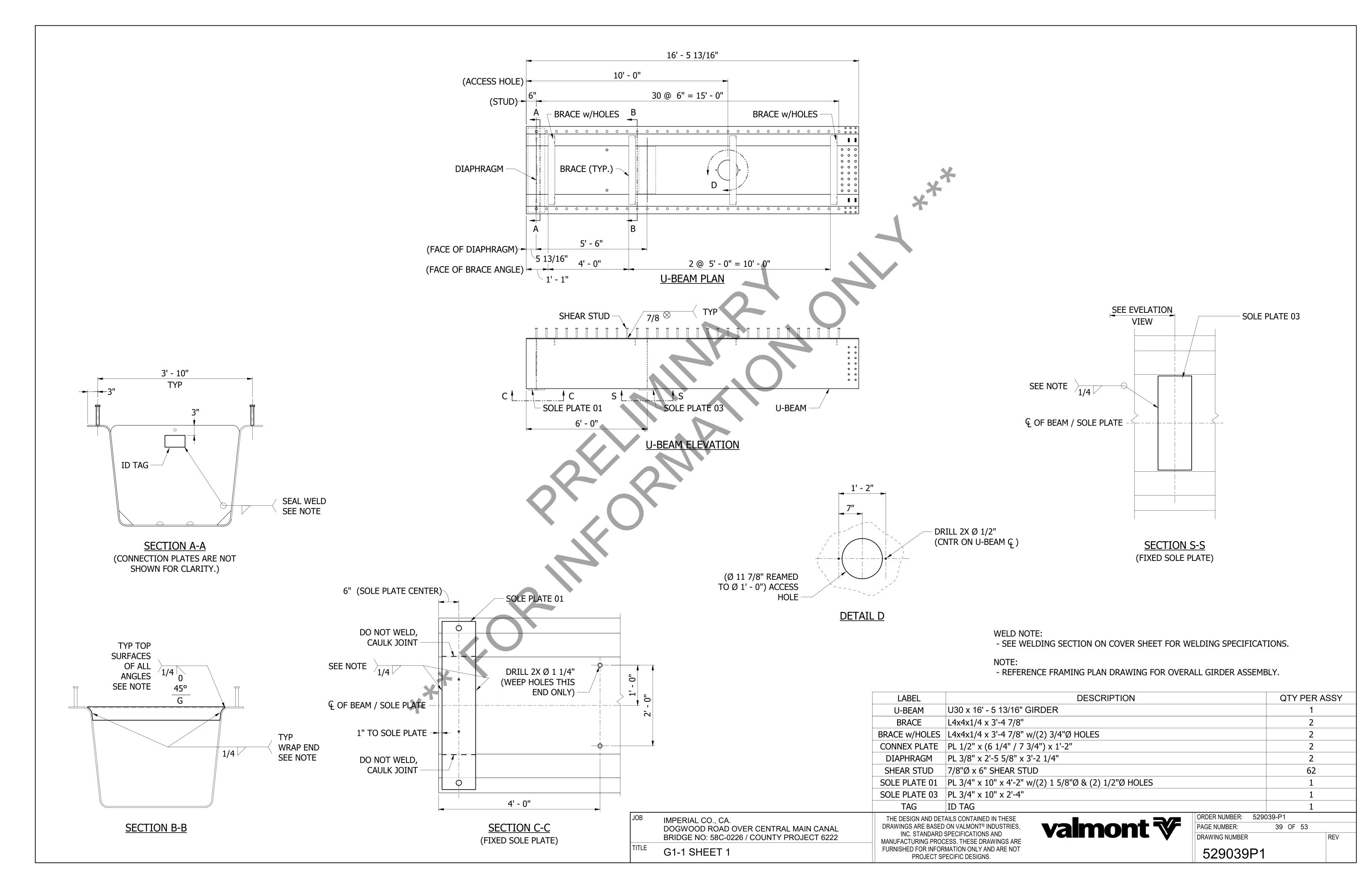


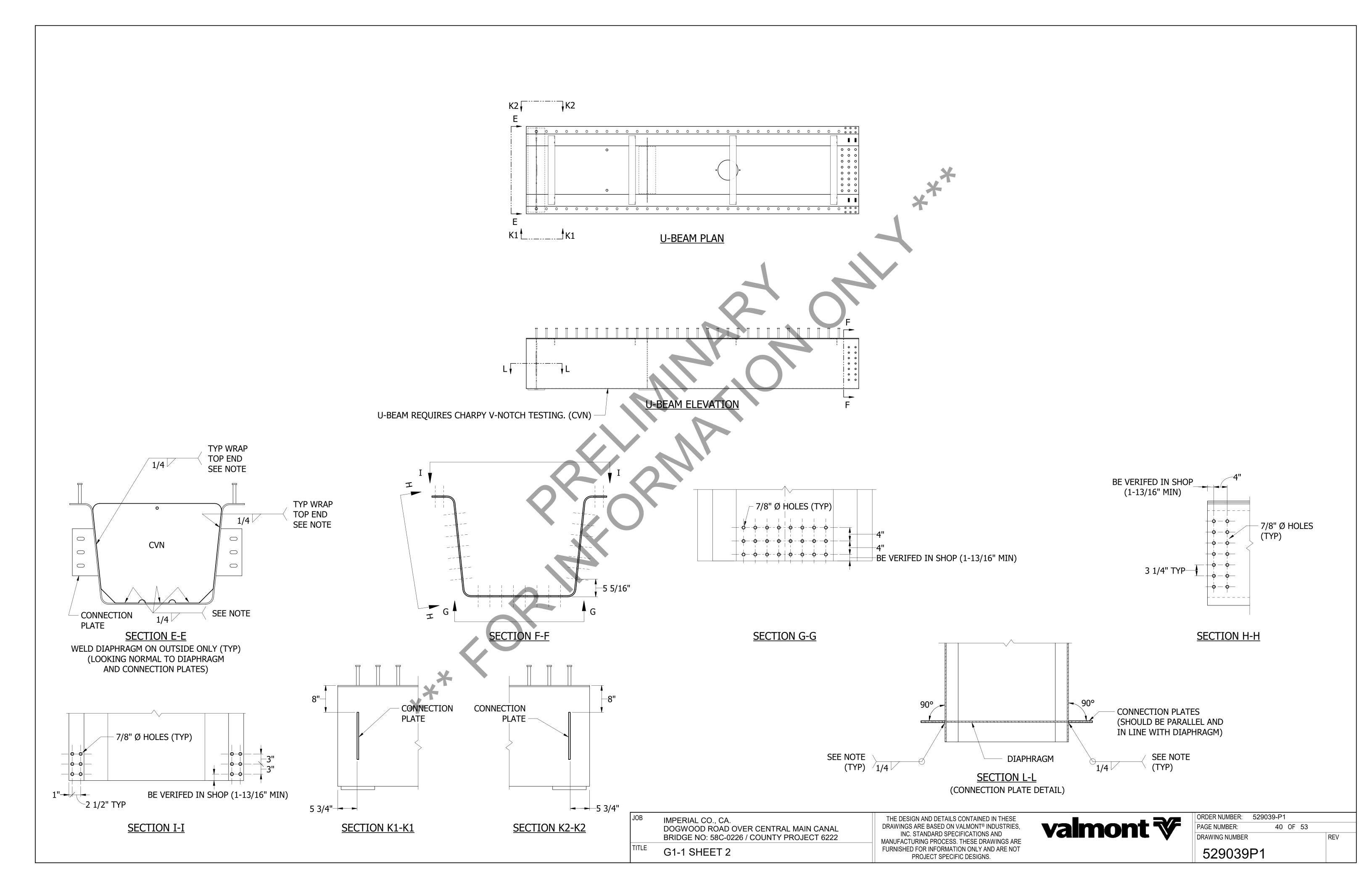


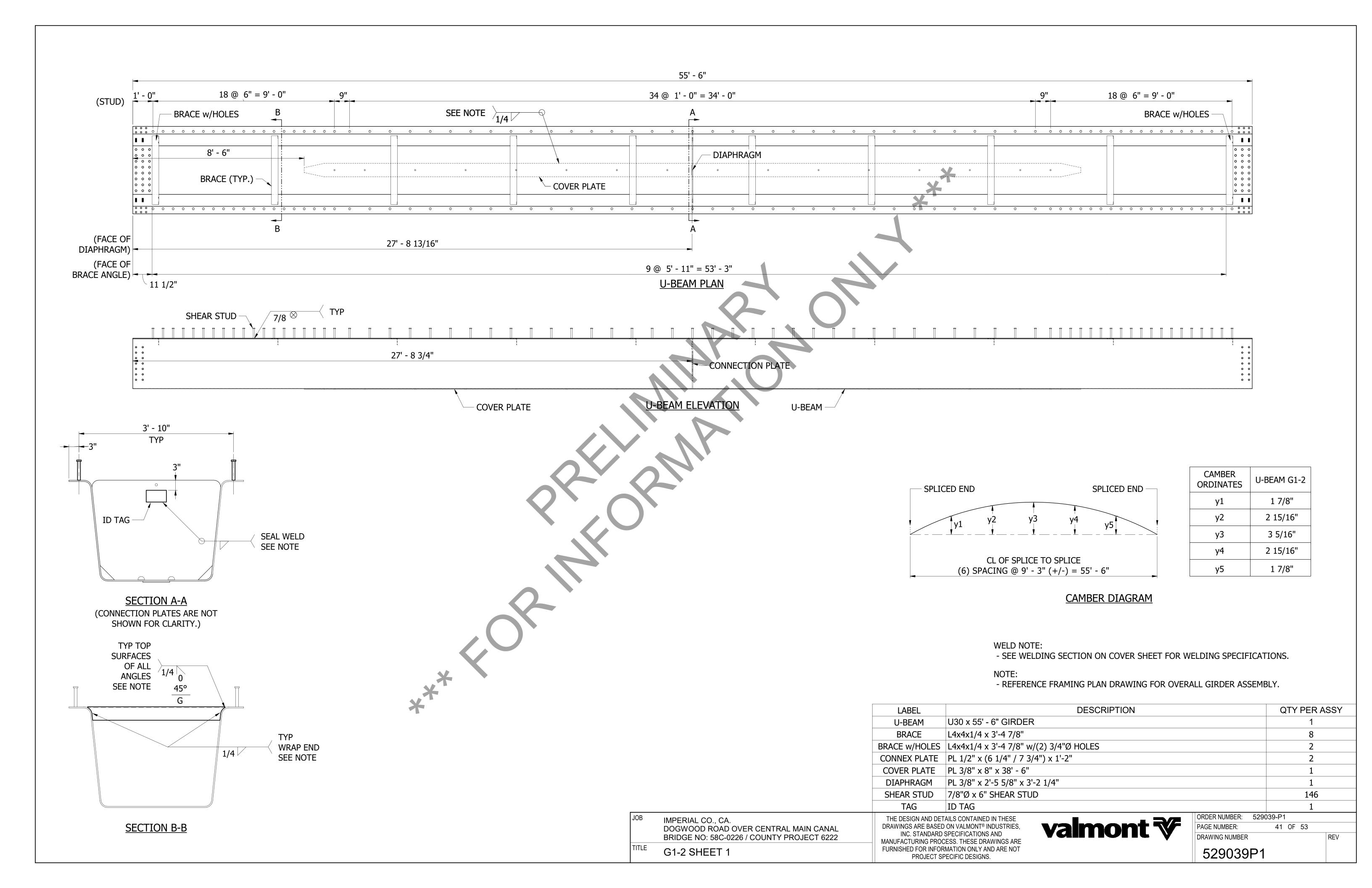


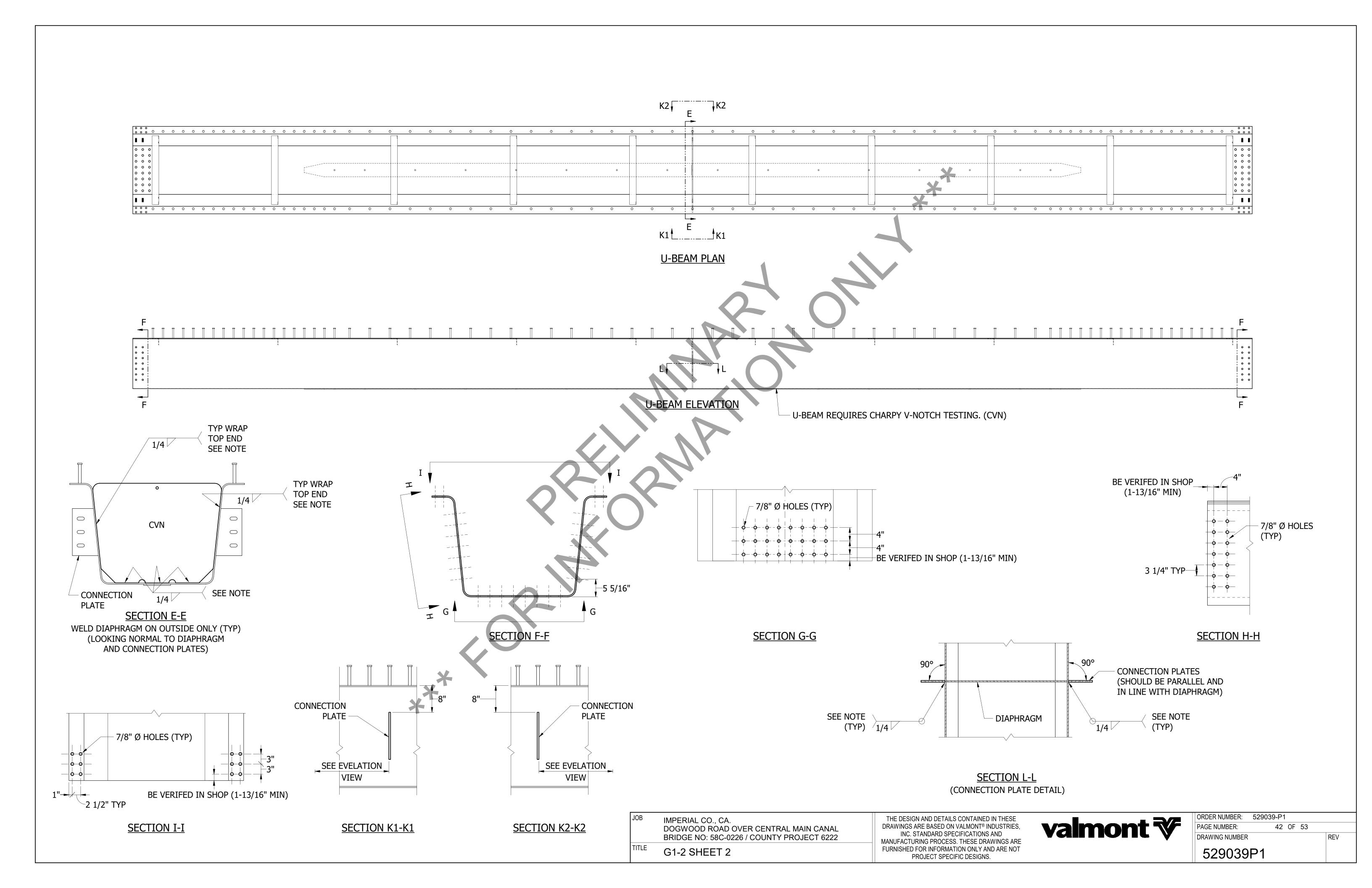


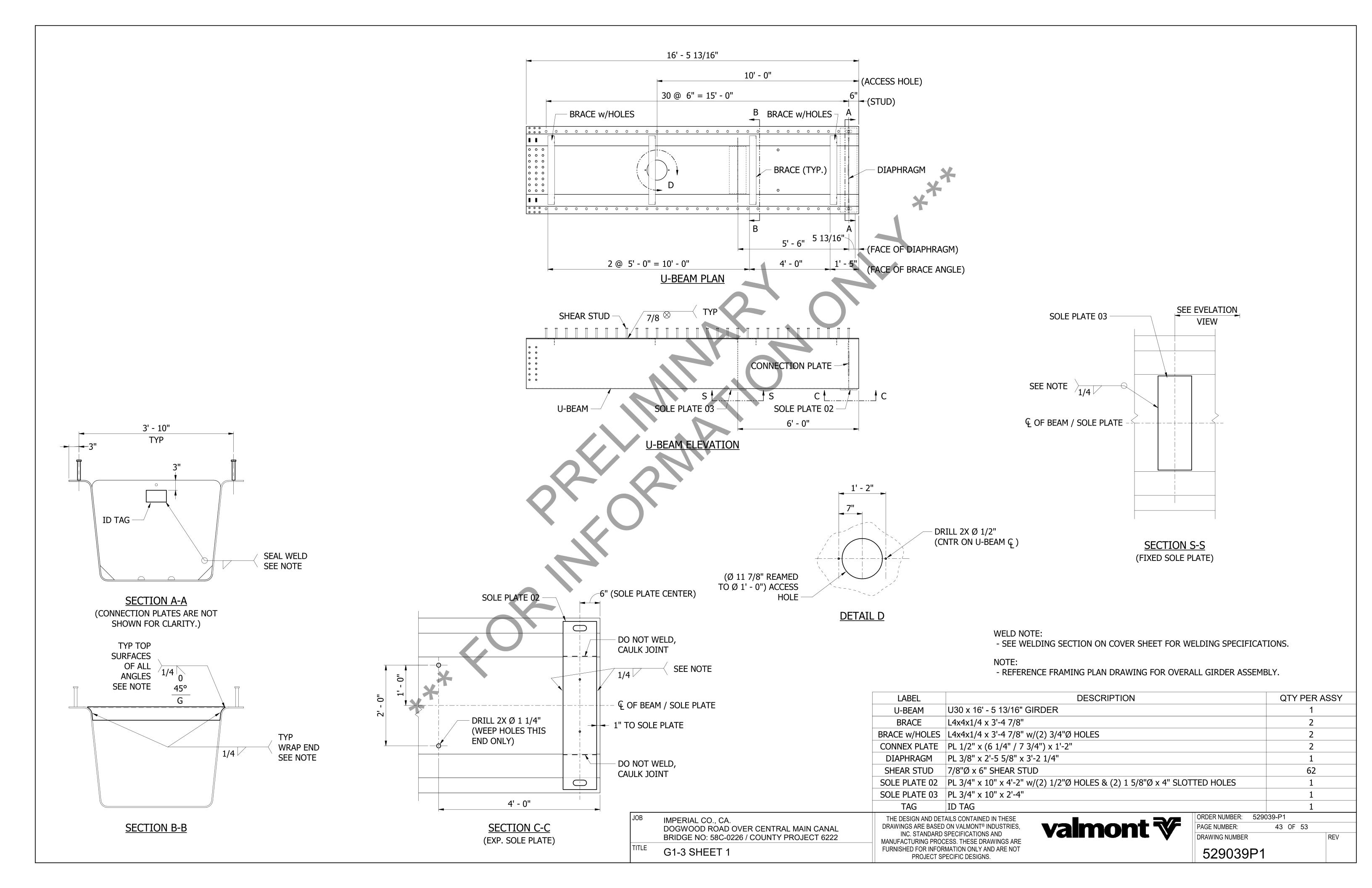


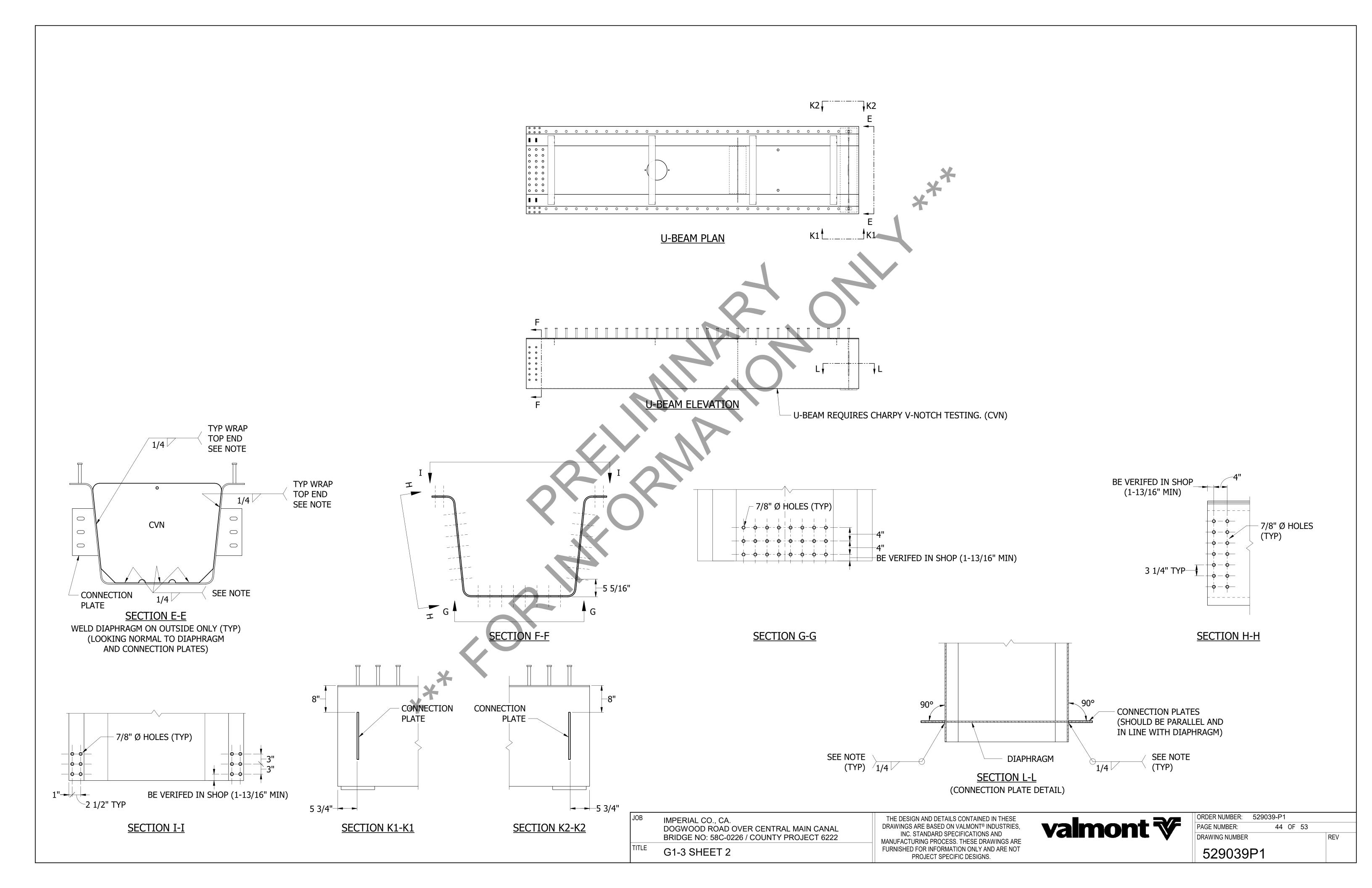


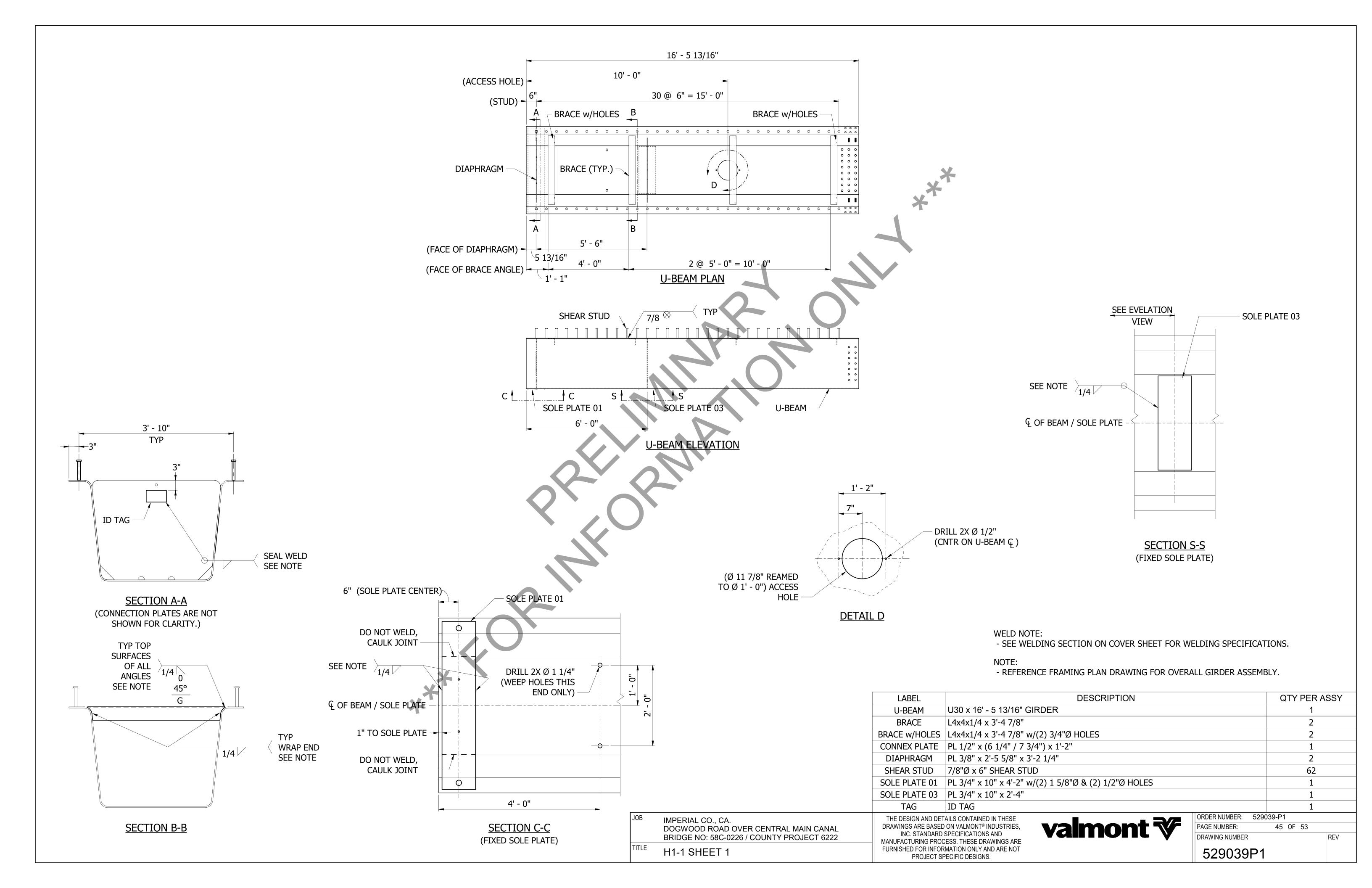


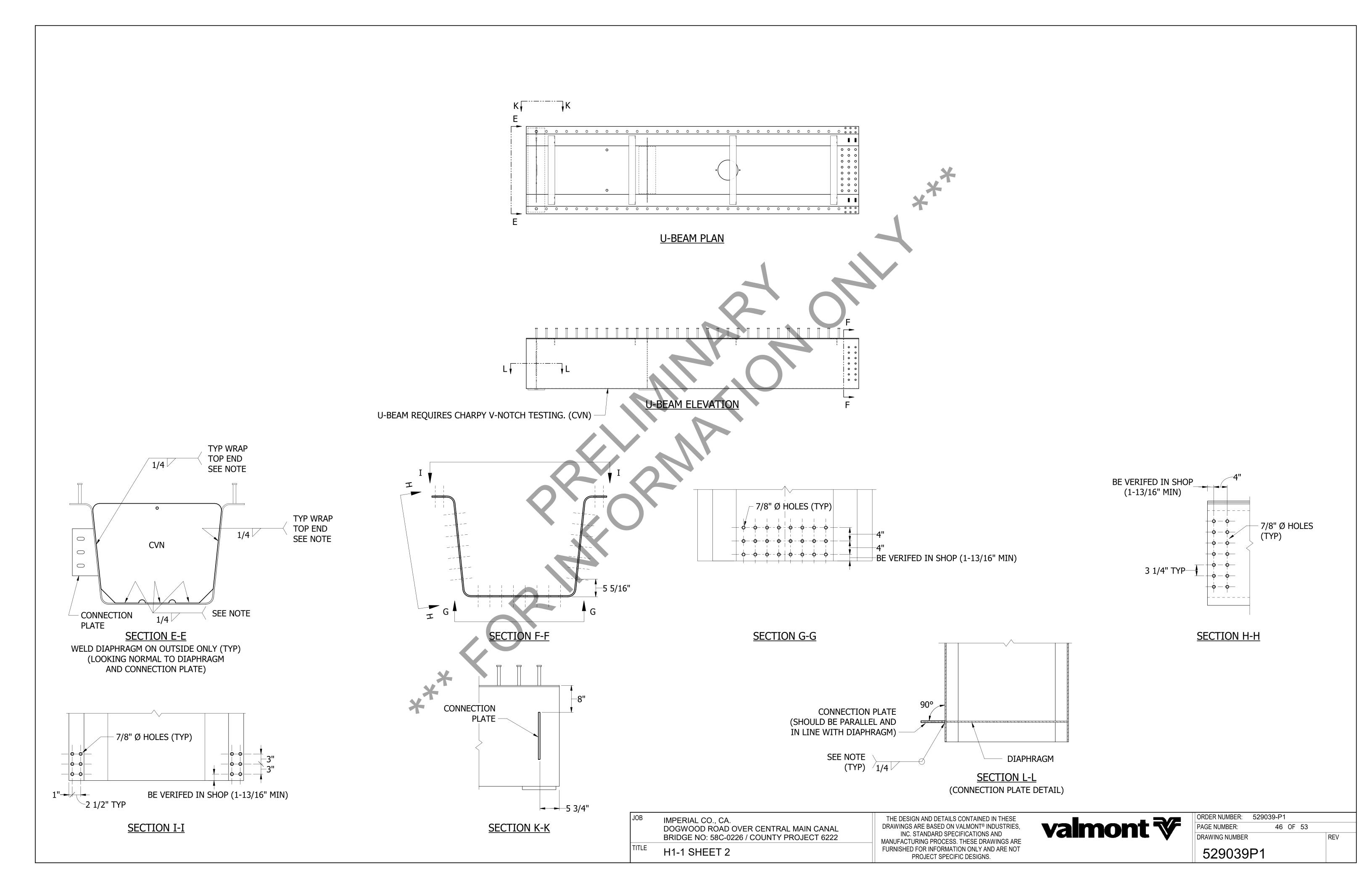


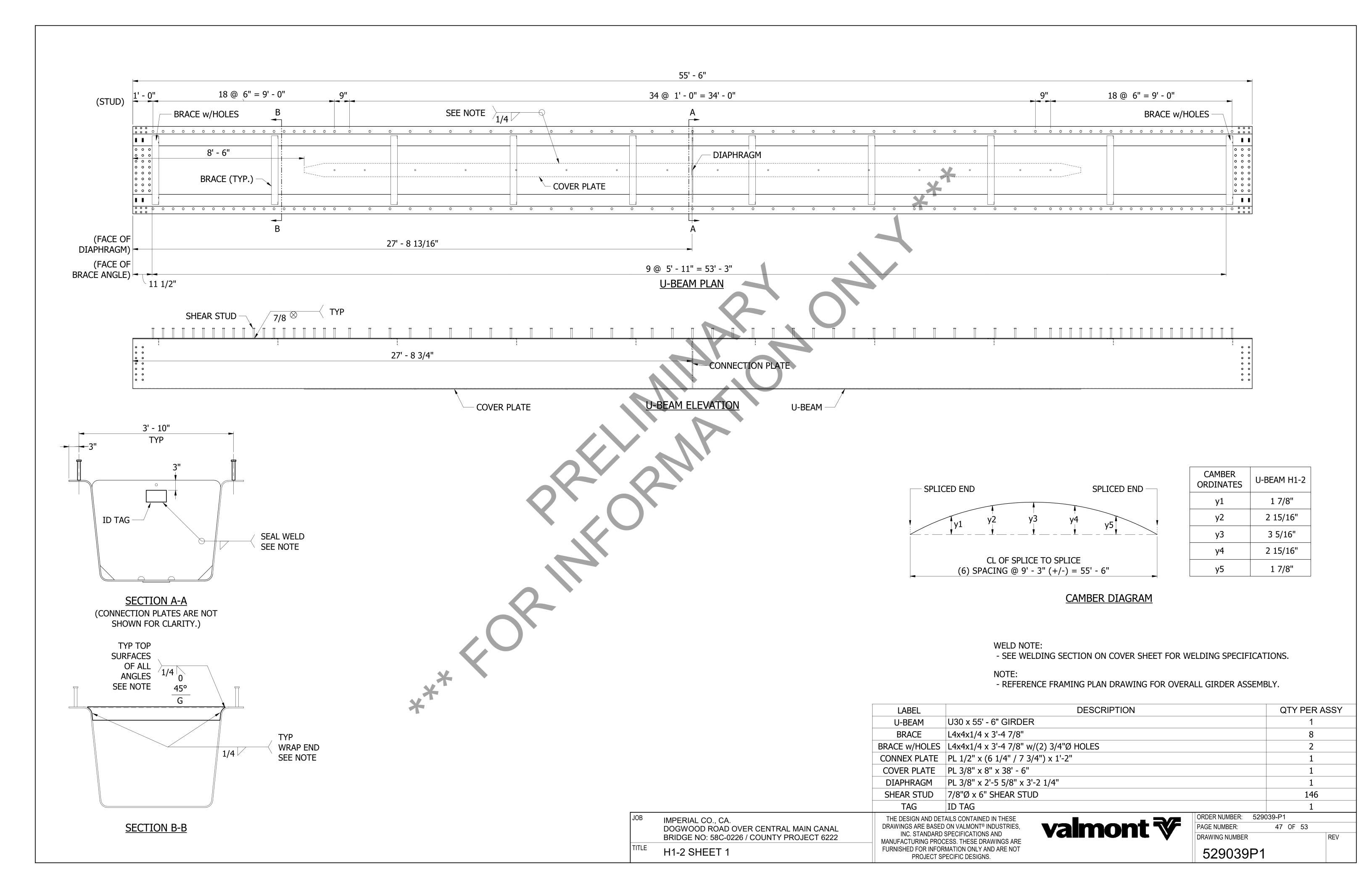


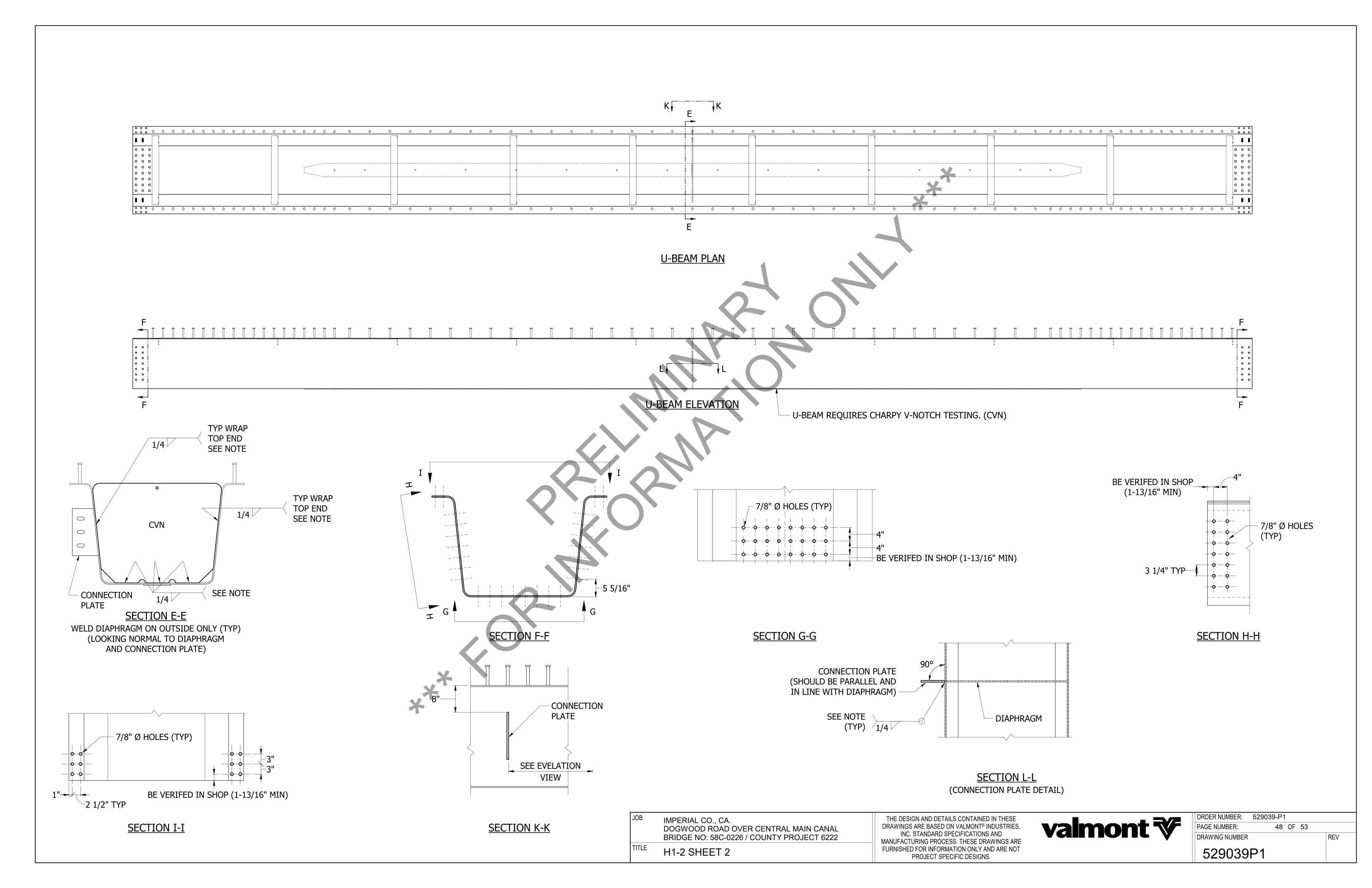


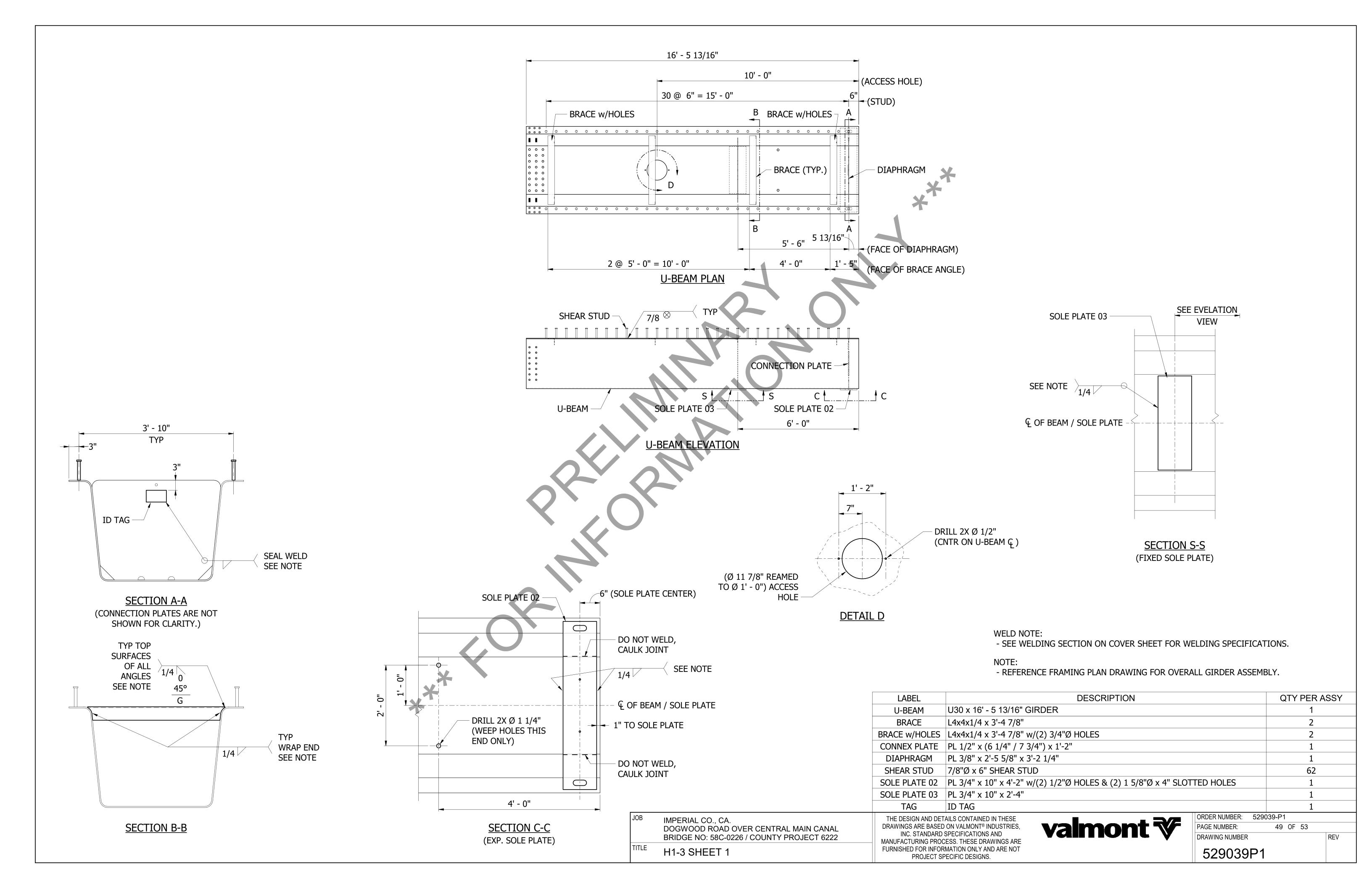


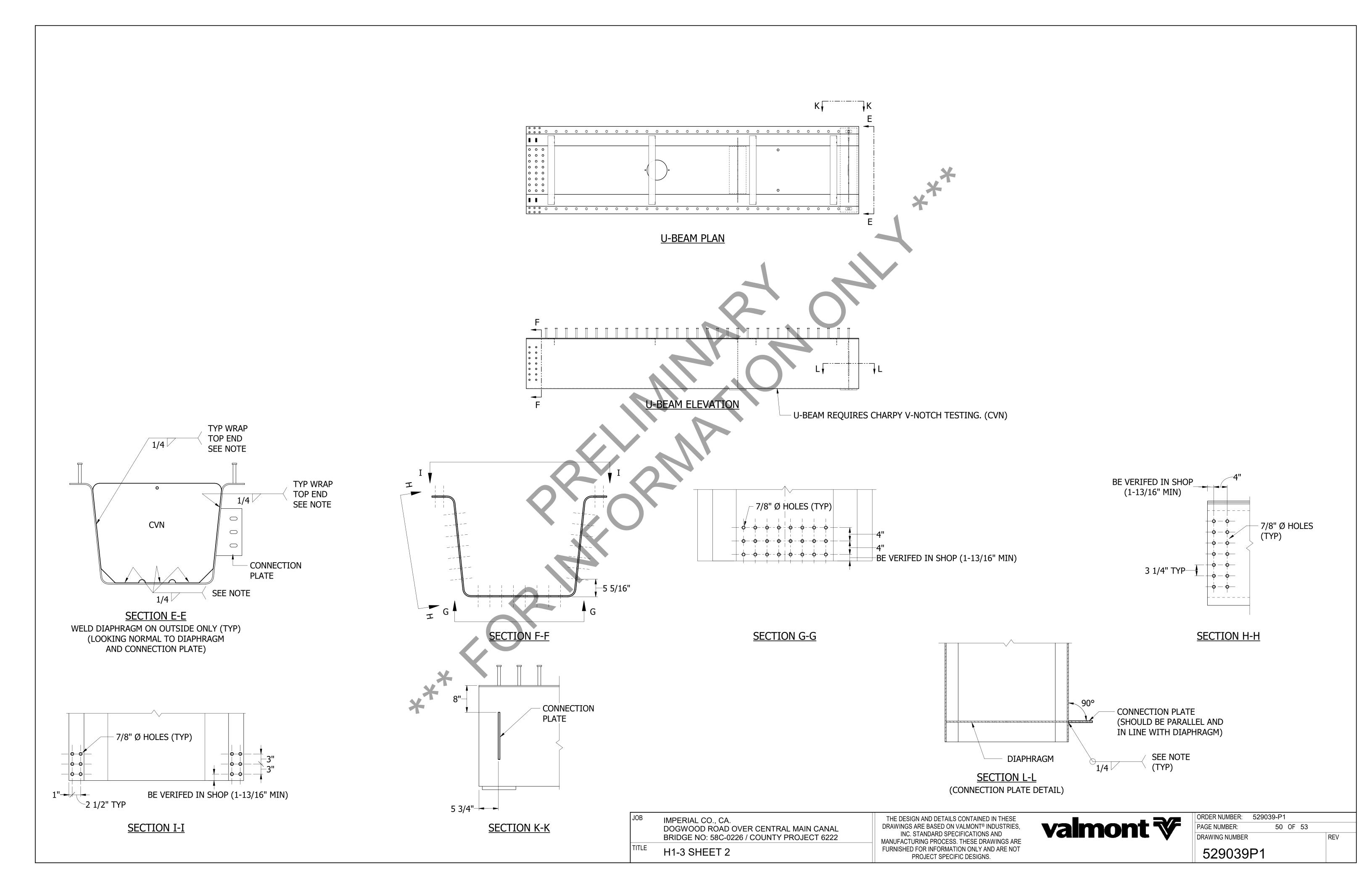


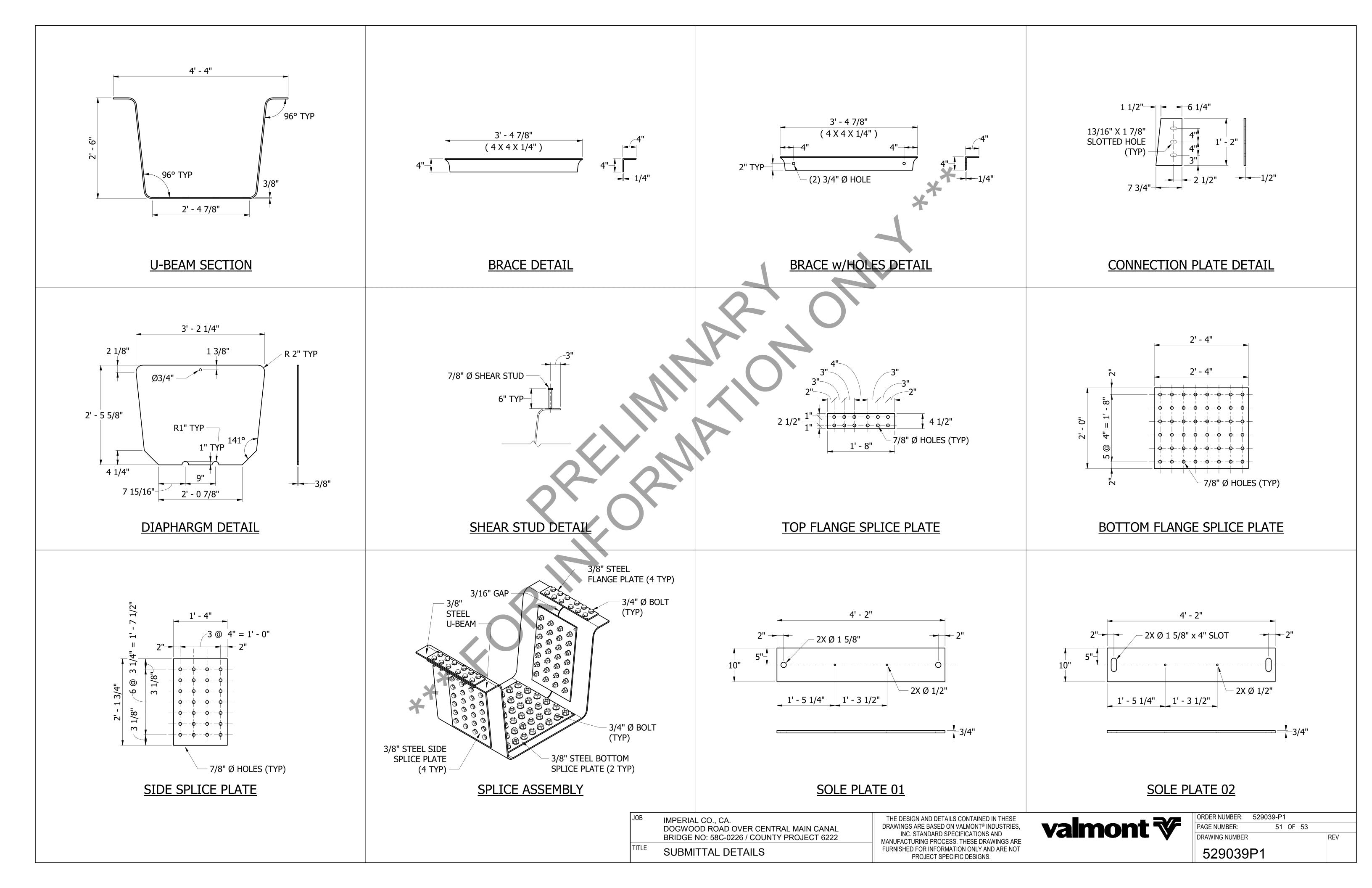


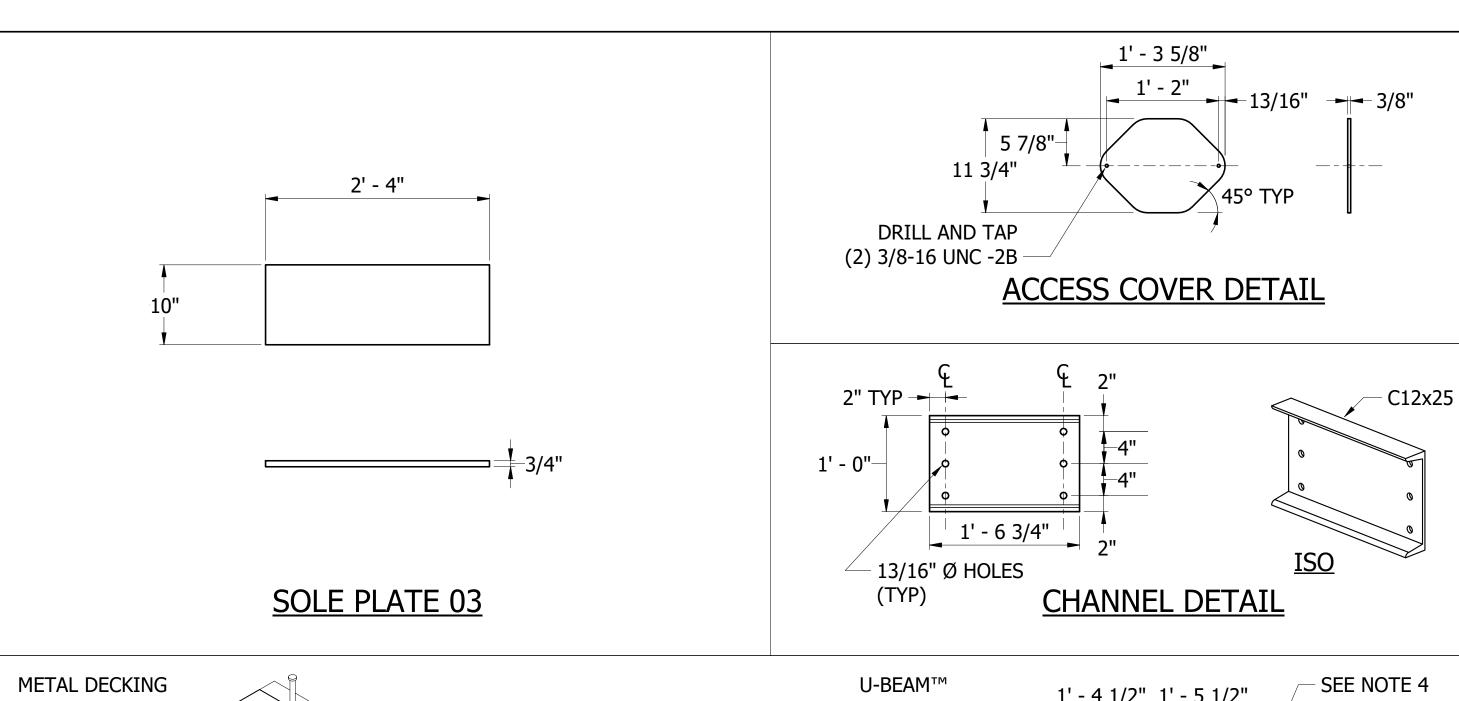


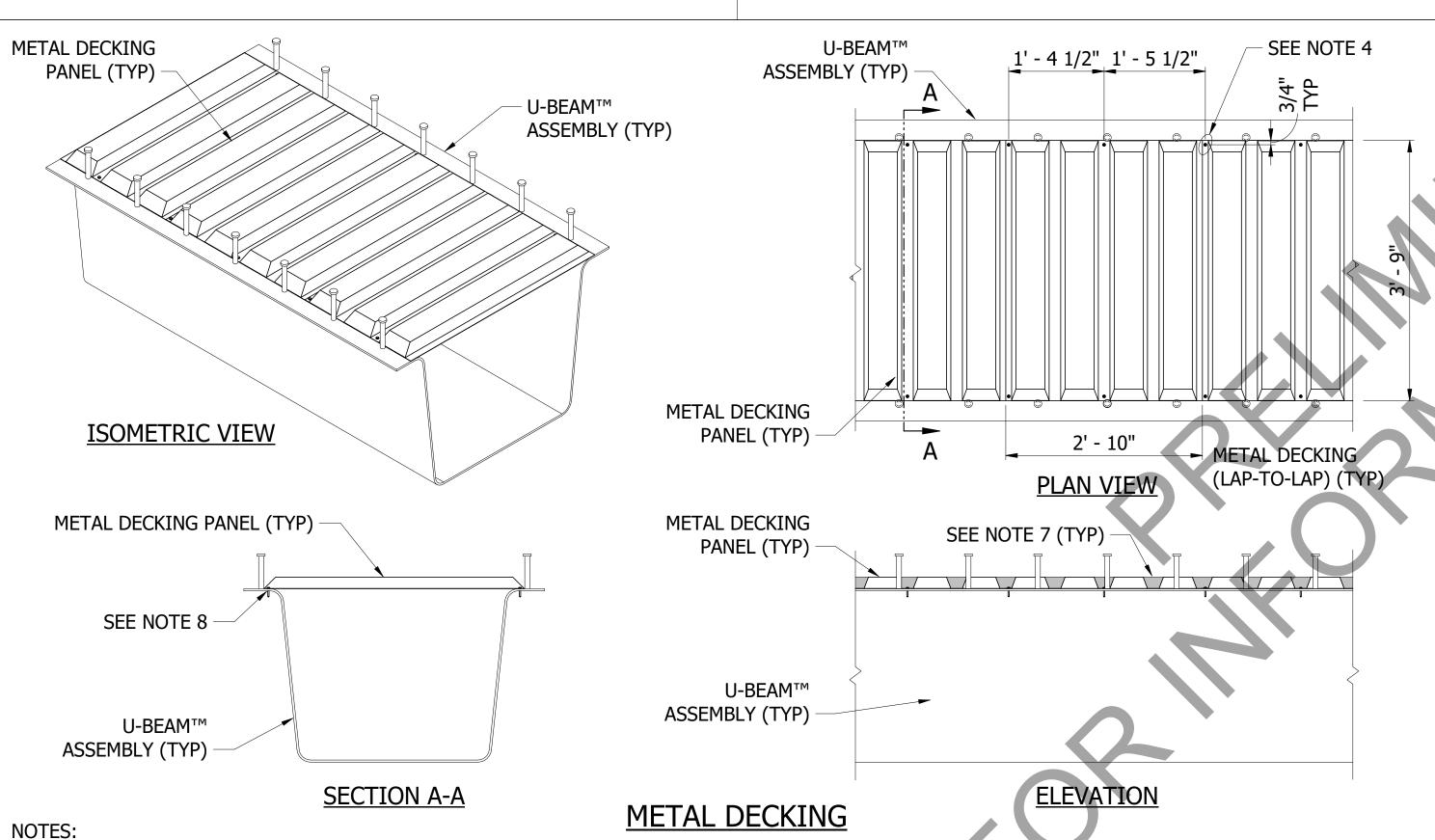




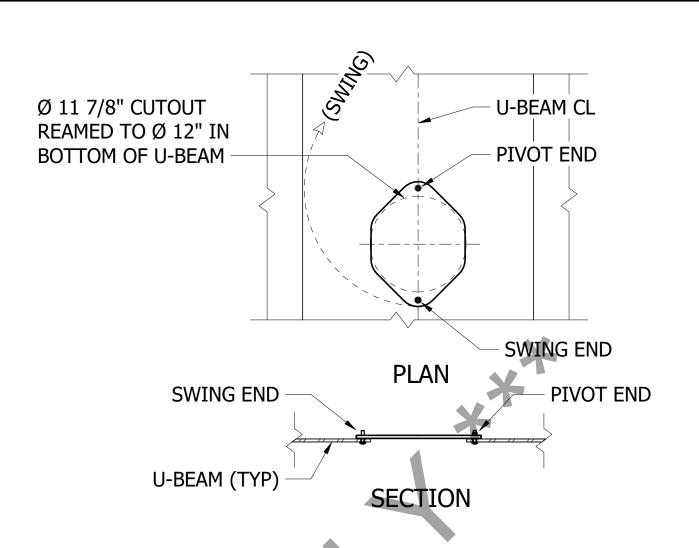




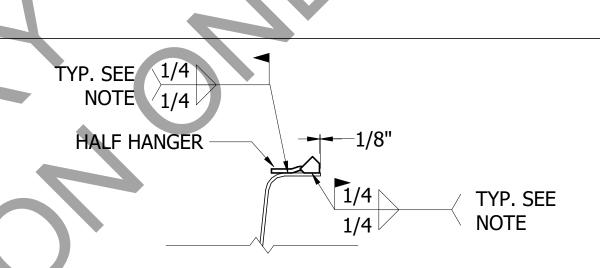




- 1) METAL DECKING PANELS AND FASTENERS ARE DESIGNED AS A TEMPORARY LATERAL BRACING SYSTEM FOR TOP FLANGES TO RESIST ANY LATERAL BENDING AND TORSIONAL LOADS DEVELOPED DURING CONSTRUCTION.
- 2) METAL DECKING PANELS SHALL BE FASTENED TO TOP FLANGES PRIOR TO APPLYING ANY KIND OF CONSTRUCTION LOADS.
- 3) METAL DECKING IS ASSUMED TO BE 22 GAGE 2" x 8 1/2" PROFILE PER ASTM SPEC. A-653/A653M GRADE 80. ALTERNATE SYSTEMS AVAILABLE. VERIFY WITH VALMONT REPRESENTATIVE.
- 4) FASTENERS ARE ASSUMED TO BE 12-24 X 1 ½ TEK SCREWS TO BE PLACED ALONG SUPPORTS AT MID-WIDTH & AT SIDELAPS (3 SCREWS PER PANEL). ALTERNATE SYSTEMS AVAILABLE. VERIFY WITH VALMONT REPRESENTATIVE.
- 5) ALL HARDWARE TO BE GALVANIZED PER ASTM A-924/A924M, COATING G210.
- 6) METAL DECKING PANELS SHALL BEAR A MINIMUM 1" ON ALL SUPPORTS.
- 7) STYROFOAM SHALL BE PLACED IN CORRUGATIONS.
- 8) BOTTOM OF THE TOP FLANGES SHALL BE SEALED AT EACH SCREW LOCATION WITH APPROPRIATE METHOD AND MATERIAL FOLLOWING THE SCREW INSTALLATIONS.

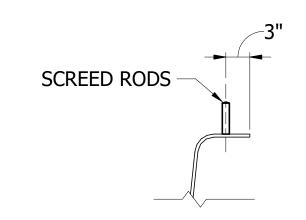


## HATCH DETAIL



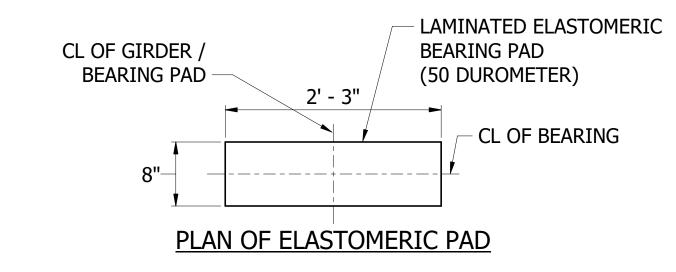
## HALF HANGER DETAIL

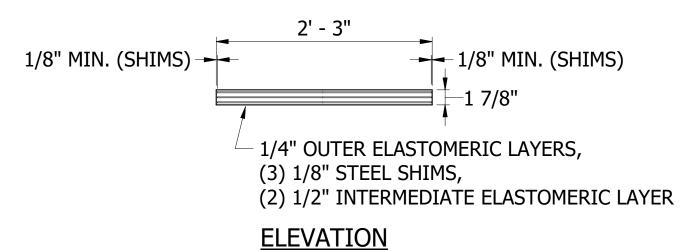
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## **NBL STUD DETAIL**

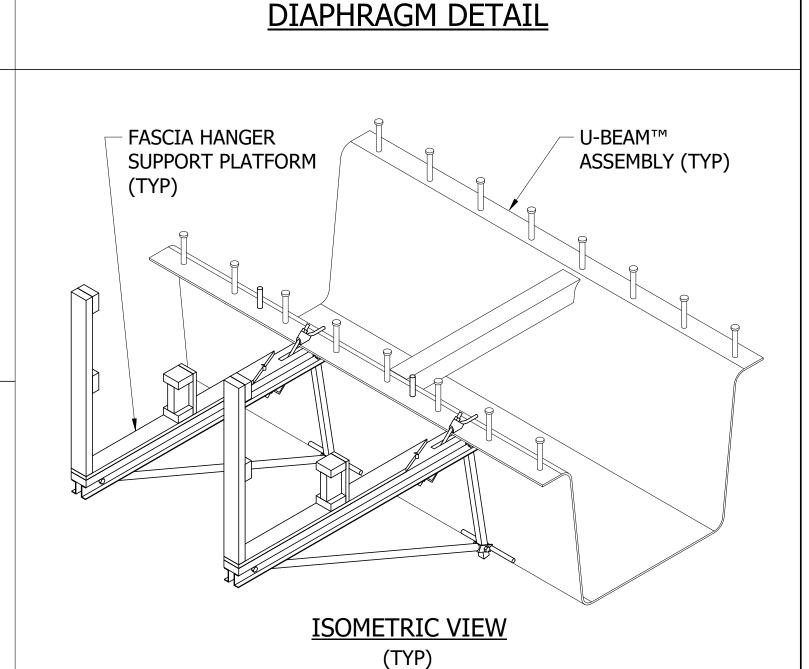
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## **BEARING PAD DETAIL**

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- C12x25

U-BEAM (TYP)

2 1/2" TYP

PL 1/2" (TYP)

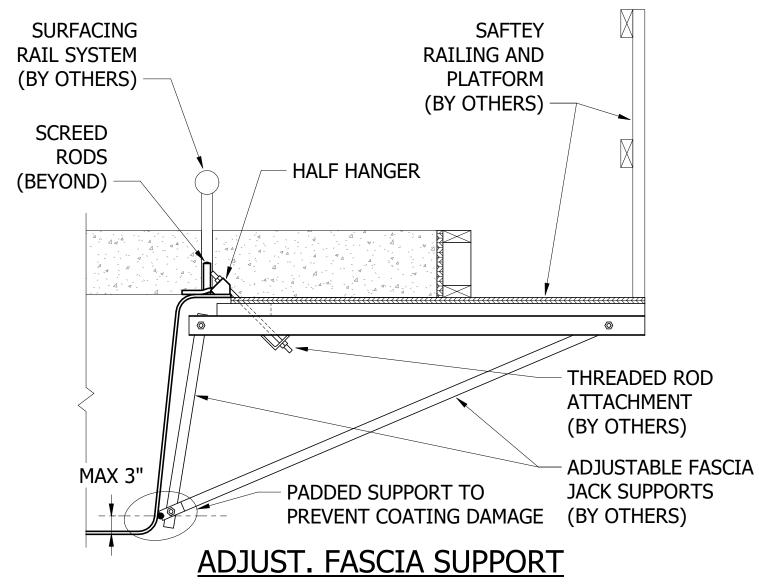
U-BEAM (TYP)

1' - 6 3/4"

C12x25

13/16" Ø HOLES FOR

3/4" Ø H.S. BOLTS



(RECOMMENDED ASSEMBLY - ALTERNATE SYSTEMS AVAILABLE)



ORDER NUMBER: 529039-P1 PAGE NUMBER: 52 OF 53 DRAWING NUMBER 529039P1

IMPERIAL CO., CA. DOGWOOD ROAD OVER CENTRAL MAIN CANAL BRIDGE NO: 58C-0226 / COUNTY PROJECT 6222

SUBMITTAL DETAILS

