



FIRST ADDENDUM TO INVITATION TO BID
ROCK CREEK CLARIFIERS NO. 1-3 CONCRETE LAUNDER REPAIRS

PROJECT NO. 7297
CLEAN WATER SERVICES

ISSUED: JULY 7, 2026

Clean Water Services' Invitation to Bid for Invitation for Rock Creek Clarifiers No. 1-3 Concrete Launder Repairs Project No. 7297 dated June 22, 2026 (ITB) is hereby amended as follows:

Make the following changes to the ITB Documents:

Item # Volume Description

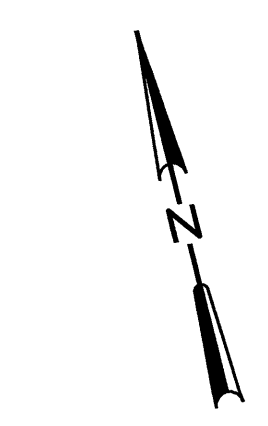
1.1		<u>Questions and Answers:</u> <u>Q1:</u> Bid item 4, Mortar Application, is measured by the "Sack." The specified repair mortar appears to be a packaged product (Sika MonoTop-4500 Geo Hybrid). Can the Owner confirm what a "Sack" represents for measurement and payment - is it one manufacturer's bag of the specified product, and what assumed application thickness was used to develop the 2,850 sack estimate? <u>A1:</u> Mortar Application is Bid Item 3. The questions are addressed in the Bid Item description below the Bid Tab. One sack is a "50-pound sack". The assumed thickness is a " .. 3-inch repair mortar thickness." <u>Q2:</u> Please confirm that the owners intent is to restore the full depth section of concrete as when the structure was new? For example if the concrete section loss is currently 2 inches you want to use the mortar to restore the full 2 inches of concrete section loss? <u>A2:</u> Yes, restore to a full depth section.
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		<u>Q3</u>: Sika MonoTop – 4500 can be extended with pea gravel once the repair section reaches 1 inch deep, please confirm rather the owner would like to extend the mortar and if so will the pea gravel bags be counted towards the pay item bag count? <u>A3</u>: The mortar may be extended with 3/8” angular aggregate but it will not count towards the pay item bag count. <u>Q4</u>: There appears to be a conflict on the support material. The work description and structural sheets call for Type 316 stainless steel supports, but Section 05500, Paragraph 2.03.F references galvanized material. Please confirm which governs for the truss wall supports and roof supports. <u>A4</u>: The truss wall and roof supports and anchors are to be Type 316 SS. Specification 0550, Section 2.03.F. makes reference to use galvanized material only if material type is not specified elsewhere for a product, and there are notations to use 316 SS for the truss and roof supports per the drawings, notes and details, and Specification 05500, Section 2.02.B.
1.2		REFERENCE ITEMS: <u>Q5</u>: Can you issue structural and civil drawings? <u>A5</u>: See attached drawings following this written addenda. <u>Q6</u>: During the pre-bid there was mention of more photos, please issue them. <u>A6</u>: See attached Photos.
1.3		<u>Questions and Answers (cont.):</u> <u>Q7</u>: I’m not finding any jointing details for the concrete restoration, please point me in the right direction or clarifier. <u>A7</u>: No expansion joints were observed in the Clarifiers. There appeared to only be 12 construction joints. There is no special detailing required for the wall joints. Mortar and coating would be continuous. <u>Q8</u>: Regarding Bid item 5 Rebar, Please confirm treating existing rebar with a corrosion inhibitor in Lieu of splicing or full replacement is excluded from

	this bid item and the only work included in this bid item is replacement of rebar in its entirety as well as the incidental items mentioned in description. <u>A8</u>: District is assuming placement of new rebar with payment on a lineal foot basis. The existing rebar may be removed or remain if cleaned of all corrosion and treated with corrosion inhibitor. Per Specification 03900 Section 2.03.B., EpoCem 110 is specified for anti-corrosion coating. <u>Q9</u>: Please confirm Hydrodemo water for purposes of surface prep can be disposed of through existing facilities. If its not possible to answer before bid date we kindly request a set of parameters that would need to be met in order for water to be disposed of through existing facilities not limited to PH testing surface prep water prior to discharge, Treating said water if needed prior to discharge or if full vacuum recovery will be required. <u>A9</u>: Contractor is to refer to the published Project Specifications. Primary Clarifier Cleaning: Per Specification 01140 Section 1.07.D.i.3)., <i>“Contractor can pump remaining fluid into an adjacent operational Primary Clarifier or use a vacuum truck and dispose of material in a designated manhole.”</i> The referenced manhole will be onsite at the Rock Creek WRRF. Per Specification 01140 Section 1.07.D.i.4)., <i>“Contractor will have access to adjacent hose bibs and one 1.5” fire hose for use during their work.”</i> Primary Clarifier Demo and repair work: Per Specification 03900 Section 3.01.G., <i>“Collect and dispose water from removal operations in manner and location acceptable to OWNER. Do not dispose via drainage or stormwater systems.”</i> Contractor is responsible for ensuring that NO concrete or other debris or aggregate is pumped out of the Primary Clarifier or deposited into any District owned facility or system. <u>Q10</u>: Please confirm contractor will have access to POTABLE water onsite by City/Owner or will contractor have to provide potable water onsite. <u>A10</u>: Per Specification 01140 Section 1.07.D.i.4)., <i>“Contractor will have access to adjacent hose bibs and one 1.5” fire hose for use during their work.”</i>
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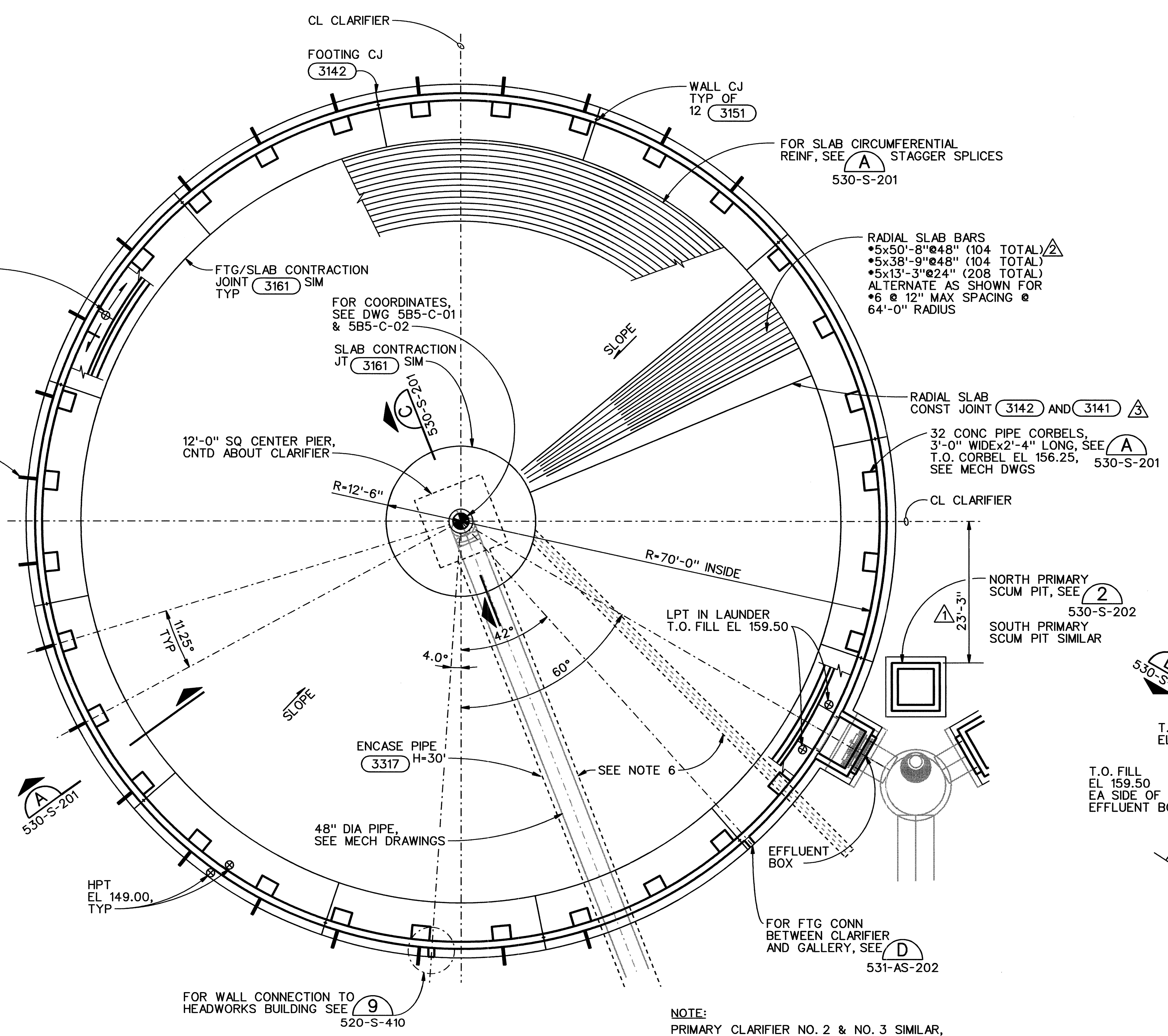
		Q11: Can the vertical concrete restoration be done segmental other than radiused? A11: This would be considered a means and methods submittal to be submitted and reviewed prior to acceptance of the proposed repair method. District expects to match existing configuration.
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Except as modified in this Addendum, the ITB will remain in effect as originally written.



HPT IN LAUNDER OPP
EFFLUENT PIPE.
T.O. FILL EL 161.83
SLOPE UNIFORMLY TO
LPT @ EFFLUENT BOX

22 STL FRAME
PIPE BRACKETS,
T.O. FRAME
EL 153.00,
SEE MECH DWGS

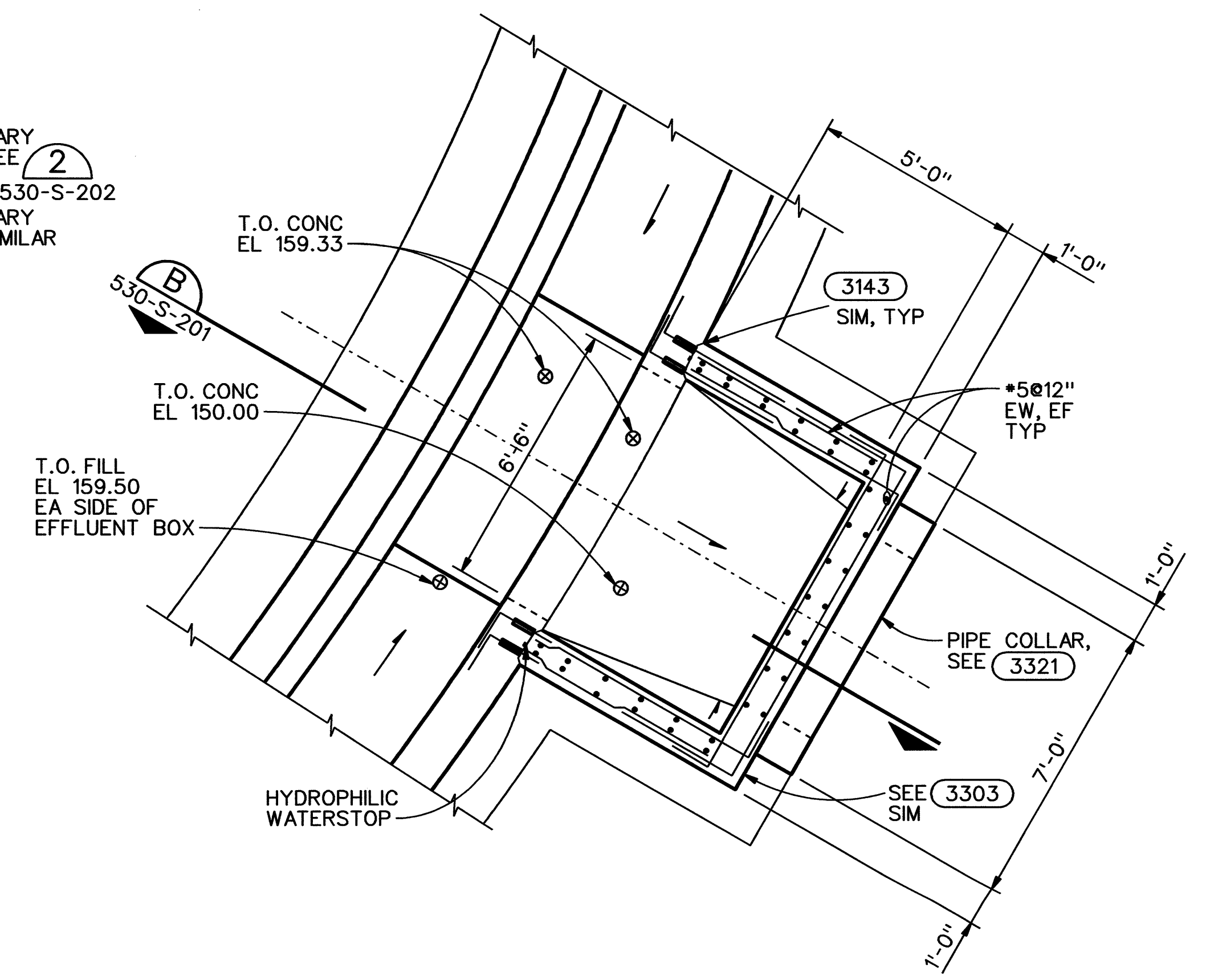


FOUNDATION PLAN - PRIMARY CLARIFIER NO. 1
3/32"=1'-0"

- NOTES:
- POUR BOTTOM SLAB IN ONE CONTINUOUS, MONOLITHIC POUR.
 - START SLAB POUR AT RADIAL CONSTRUCTION JOINT. BULKHEAD AND CONTINUE AROUND CENTER OF CLARIFIER KEEPING FRESH EDGE OF CONCRETE CONCRETE USING RADIAL SCREED. REMOVE BULKHEAD AND MATCH UP WITH START OF POUR.
 - POUR FOOTING AND WALL IN 12 EQUAL SEGMENTS EACH WITH VERTICAL CONSTRUCTION JOINTS. ALTERNATE CONCRETE POURS TO ALLOW 14 DAYS BETWEEN ADJACENT POURS. FOOTING, WALL, AND LAUNDER CONSTRUCTION JOINTS NEED NOT BE ALIGNED.
 - FOR SUGGESTED CONSTRUCTION SEQUENCE, SEE DWG 530-S-203.
 - WATER LEAKAGE TEST ELEVATION = 164.50
 - FOR ORIENTATION OF PIPES, SEE DRAWING 530-M-121 AND 530-M-131.

RECORD DRAWINGS

Revisions Drawn By C.R. COSBY Date MAY 2003
THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.



EFFLUENT BOX PLAN
3/8"=1'-0"

The Contract Document Drawings are printed documents dated July 1999, as subsequently amended, which define the scope, extent, and character of the work. The original document drawing was sealed & signed by Alex L. Firth, State of Oregon, P. E. No. 15977, dated July 21, 1992.

ADDITIONAL REVISION NOTATIONS				5/03 RECORD DRAWING		CRC LJP	
DSGN	DA JESSEP	4/02	CIR NO. 605	TGB	LJP	VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	
DR	EJ PUIG	4/02	CIR NO. 597	TGB	LJP		
CHK	SM FREY	1/02	CIR NO. 540	JAN	LJP		
APVD	J GOETZ	NO.	DATE	BY	APVD		

CH2MHILL

ROCK CREEK FACILITY
EXPANSION - PHASE 5
PACKAGE B
UNIFIED SEWERAGE AGENCY
WASHINGTON COUNTY, OREGON

PRIMARY TREATMENT
STRUCTURAL
PRIMARY CLARIFIER
FOUNDATION PLAN

SHEET	305
DWG	530-S-121
DATE	JULY 1999
PROJ	146190

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1 2 3 4 5 6

SIDE-MOUNT
HANDRAIL AT FULL
PERIMETER OF CLARIFIER

24" DIA
SEE NOTE 1

5'-0" x 5'-0"
ACCESS HATCH

530-S-201

24" DIA FLANGED
CONNECTION FOR OA,
66'-0" FROM CENTER.
TYP 3 PLACES, SEE NOTE 1

PRE-MANUFACTURED
AL COVER, SEE SPEC 13132

DESIGNATED WALKWAY
AREA, SEE SPECIFICATION
FOR DESIGN CRITERIA

24" DIA
SEE NOTE 1

5'-0"x5'-0"
SCUM BEACH
ACCESS HATCH

6" DIA FLANGED
CONNECTION FOR OA,
68'-6" FROM CENTER. SEE NOTE 1

PRIMARY CLARIFIER
EFFLUENT BOX

STAIR AND LANDING,
SEE
530-S-202

2'-0" WIDE x 4'-0" LONG (APPROX)
ACCESS HATCH, TYP OF 2, ALONG
RADIAL WALKWAY

28" DIA FLANGED
CONNECTION FOR OA,
68'-0" FROM CENTER
SEE NOTE 1

NOTE:
1. COORDINATE LOCATION OF OA CONNECTION
LOCATIONS WITH PRIMARY CLARIFIER COVER
MANUFACTURER.

ROOF FRAMING PLAN - PRIMARY CLARIFIER 1

3/32"=1'-0"

(SIMILAR FOR PRIMARY CLARIFIER 2 AND 3)
(FOR ROOF PENETRATIONS AND SCUM BEACH AT
PRIMARY CLARIFIER ROOF 2 AND 3, SEE DWG 530-M-121)

RECORD DRAWINGS

Revisions Drawn By C.R. COSBY Date MAY 2003

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TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE
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document drawing was sealed
& signed by Alex L. Firth,
State of Oregon, P. E. No.
15977, dated July 21, 1992.

DSGN	DA JESSEP	5/03	RECORD DRAWING
DR	EJ PUIG	4/01	CIR NO. 340.1
CHK	SM FREY	2/01	CIR NO. 340
APVD	J GOETZ	NO.	DATE

CRC	LJP	VERIFY SCALE
BRJ	LJP	BAR IS ONE INCH ON ORIGINAL DRAWING.
LJP	LJP	0 1"
BY	APVD	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

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ROCK CREEK FACILITY
EXPANSION - PHASE 5
PACKAGE B
UNIFIED SEWERAGE AGENCY
WASHINGTON COUNTY, OREGON

PRIMARY TREATMENT
STRUCTURAL
PRIMARY CLARIFIER
ROOF FRAMING PLAN

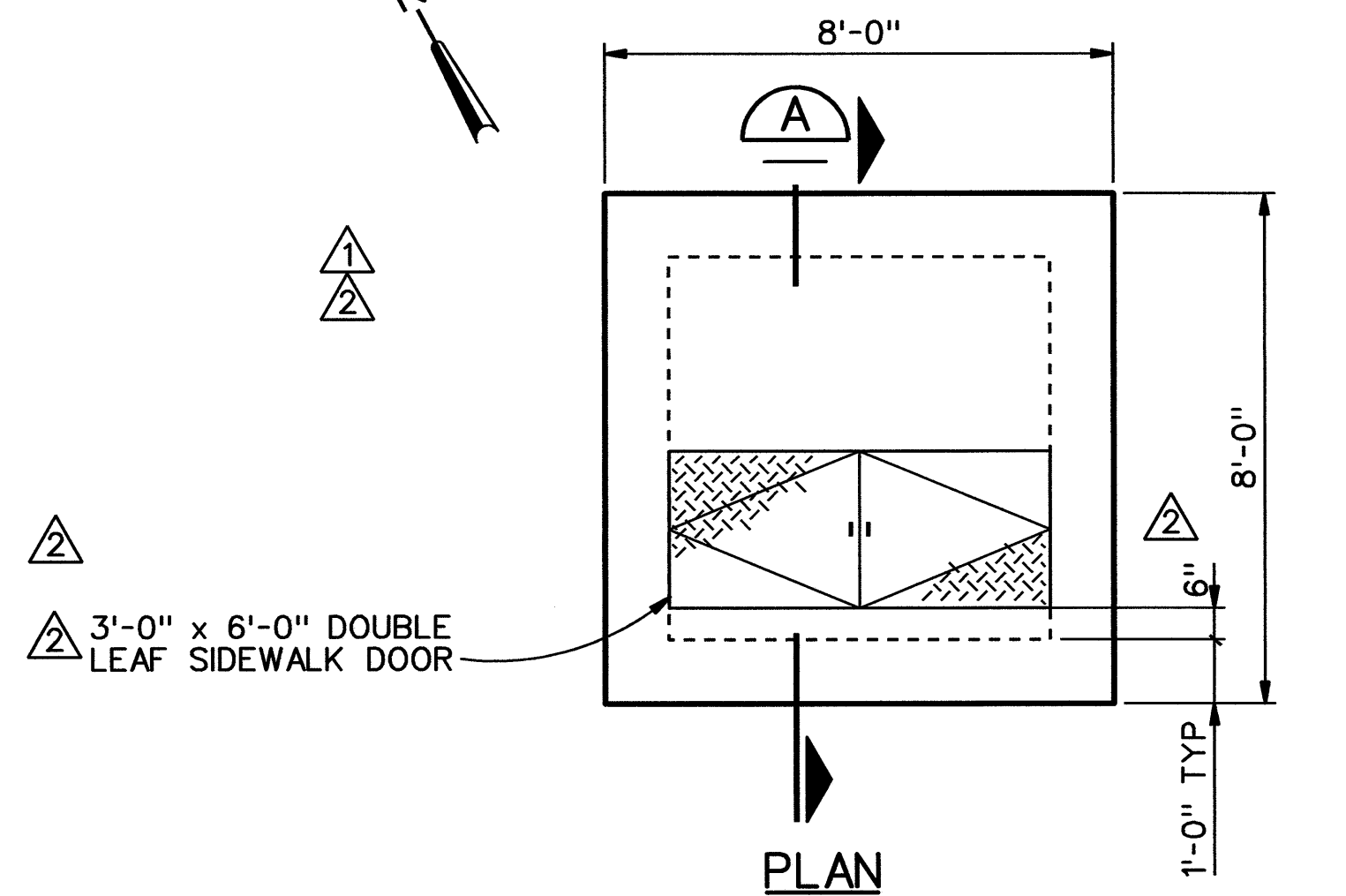
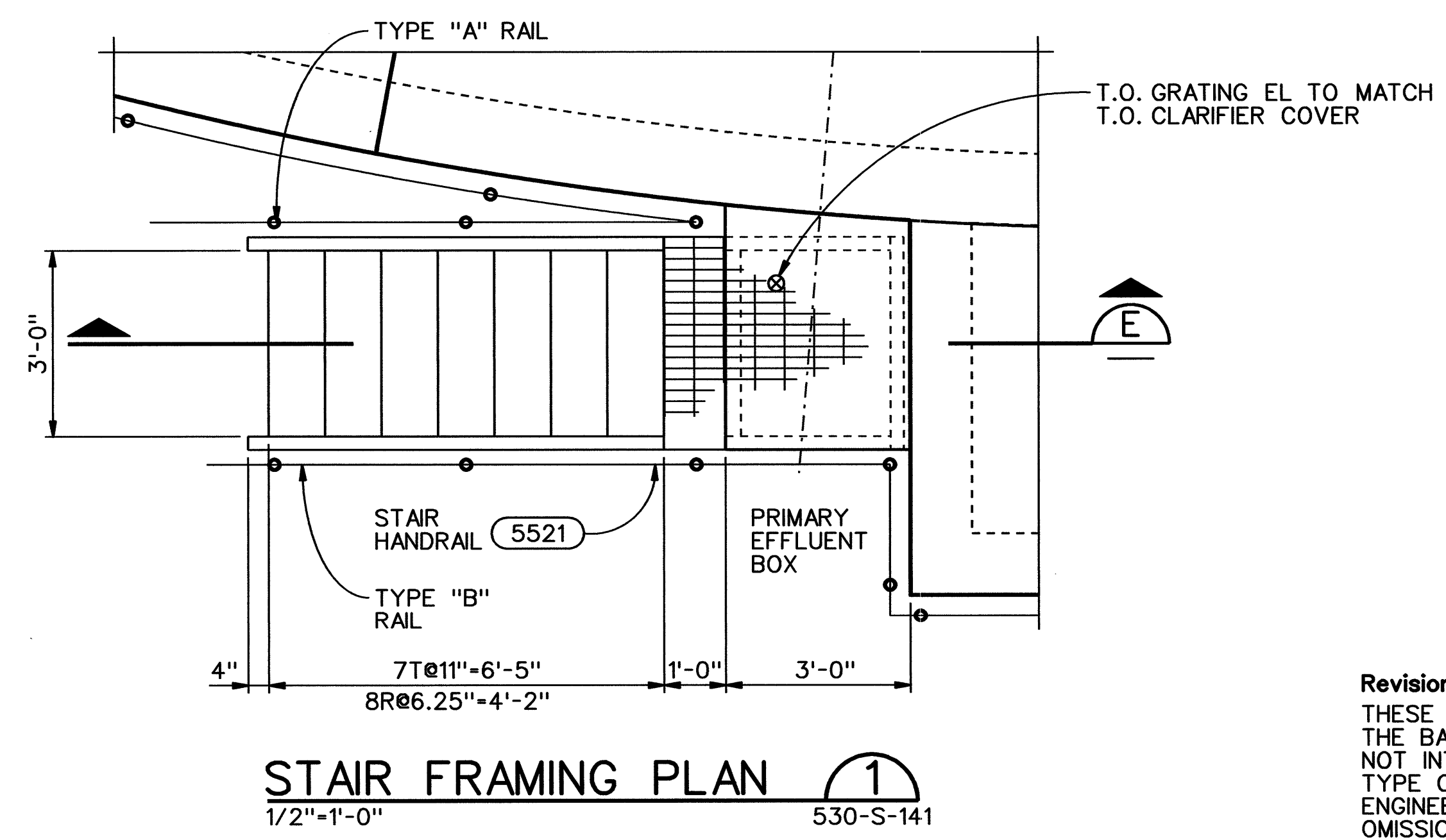
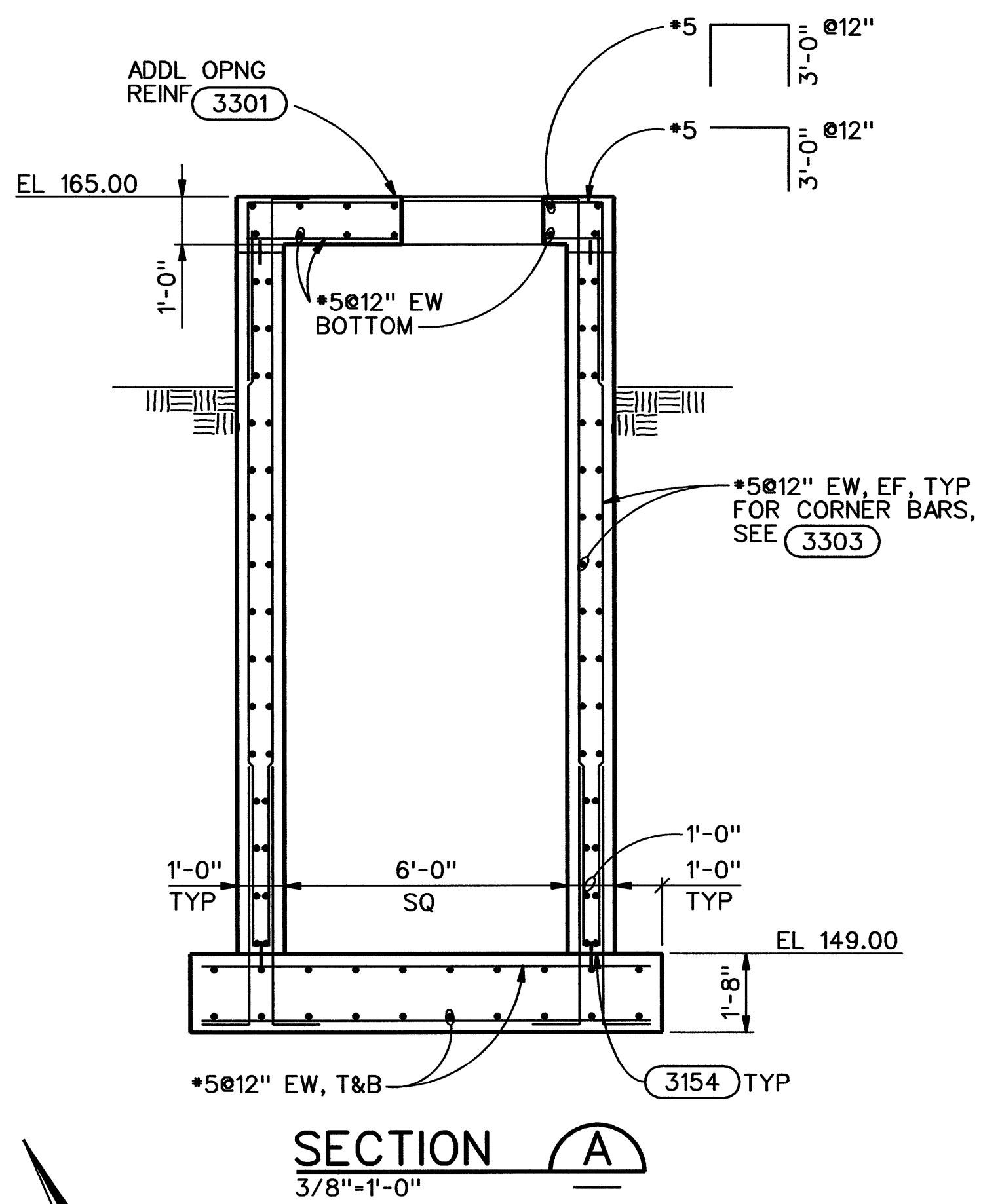
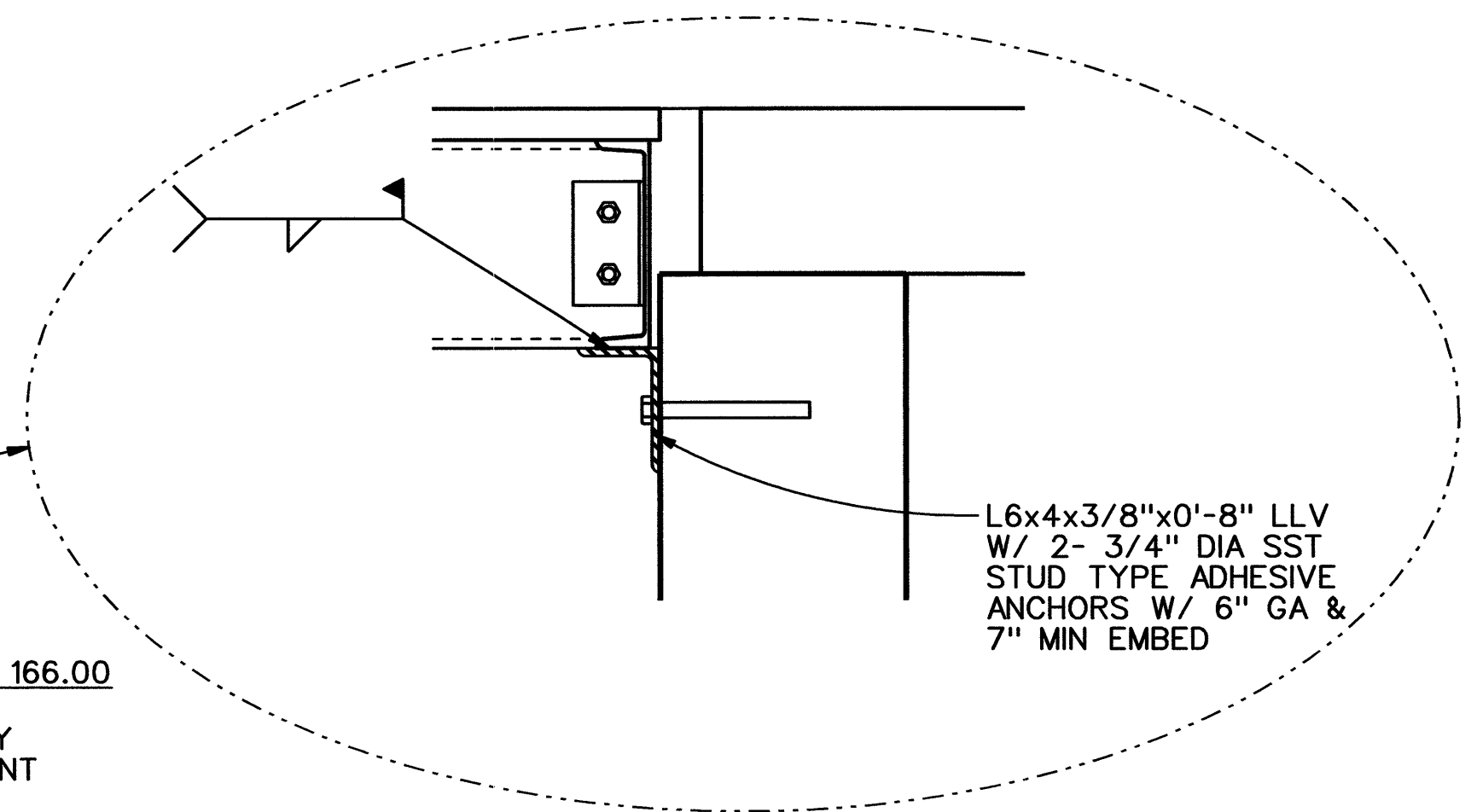
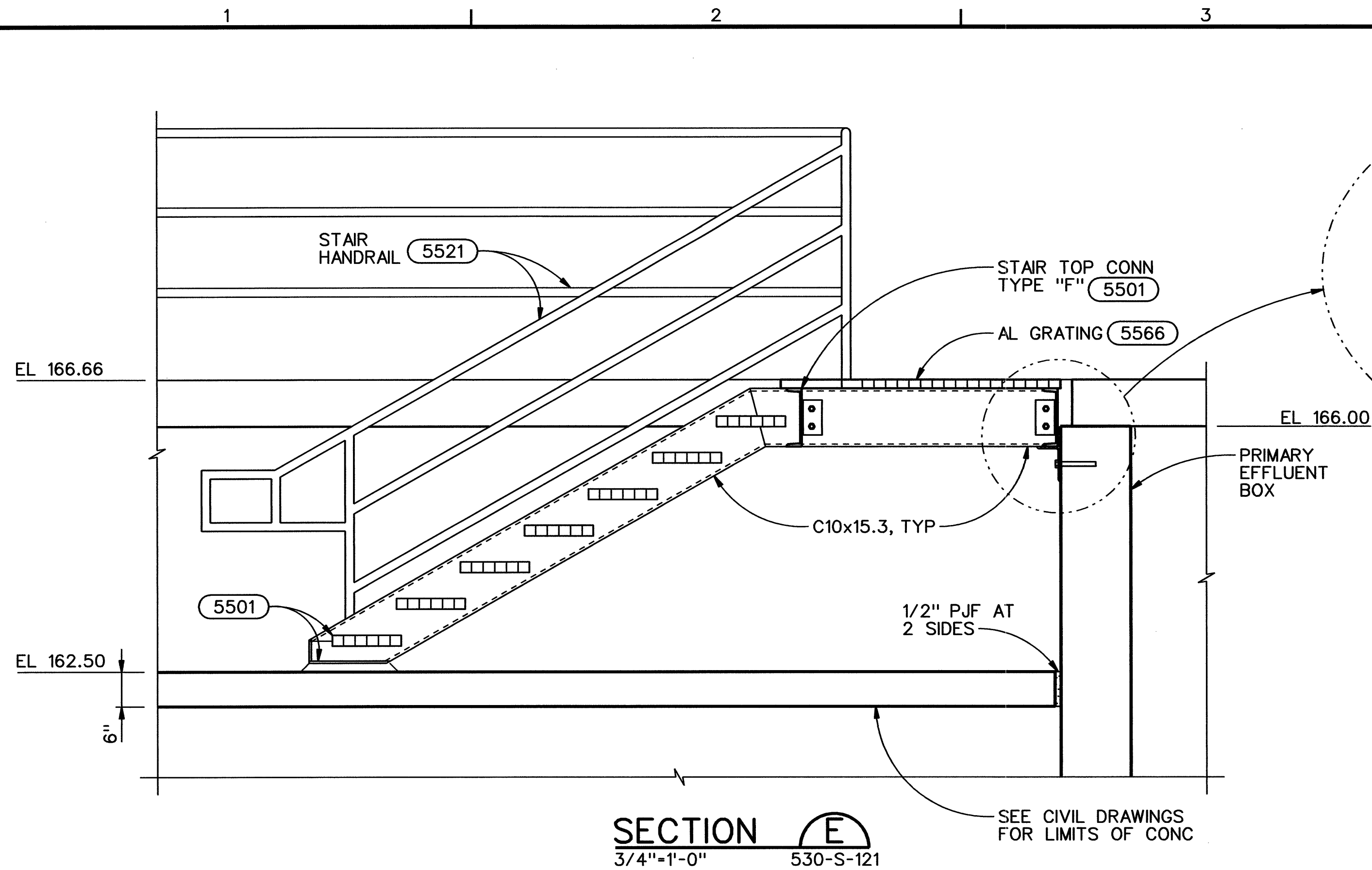
SHEET	306
DWG	530-S-141
DATE	JULY 1999
PROJ	146190

//CVONT1/prj/Unified Sewerage Agency/ROCK CREEK PHASE 5/design/CAD/drawings/r530s141.dwg

PLOT DATE: 03-JUN-2004

PLOT TIME: 12:09:53

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RECORD DRAWINGS

Revisions Drawn By C.R. COSBY Date MAY 2003

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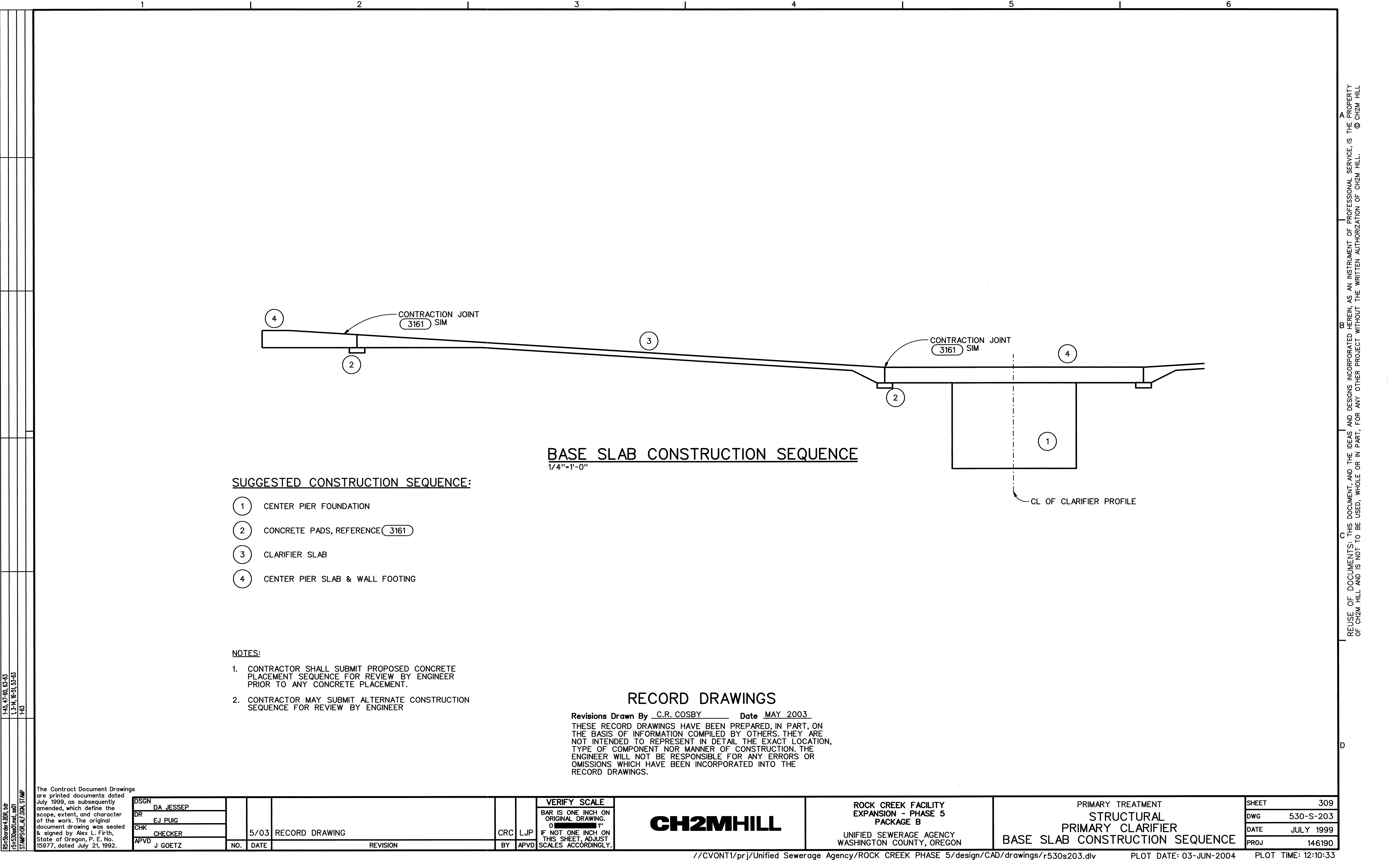
- NOTES:
1. NOT USED.
 2. SEE DRAWINGS 530-M-401, 530-M-402, & 530-E-401.

PRIMARY SCUM PIT 2
3/8\"=1'-0\" 530-S-121

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DSGN	DA JESSEP	5/03	RECORD DRAWING	CRC	LJP	VERIFY SCALE	CH2MHILL	ROCK CREEK FACILITY EXPANSION - PHASE 5 PACKAGE B UNIFIED SEWERAGE AGENCY WASHINGTON COUNTY, OREGON	PRIMARY TREATMENT STRUCTURAL PRIMARY CLARIFIER SECTIONS	SHEET	308
DR	EJ PUIG	5/02	CIR NO. 454.3	BAY	LJP	BAR IS ONE INCH ON ORIGINAL DRAWING.				DWG	530-S-202
CHK	SM FREY	4/02	CIR NO. 604	LJP	LJP	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.				DATE	JULY 1999
APVD	J GOETZ	NO.	REVISION	BY	APVD					PROJ	146190

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SUGGESTED CONSTRUCTION SEQUENCE:

- 1 CENTER PIER FOUNDATION
- 2 CONCRETE PADS, REFERENCE 3161
- 3 CLARIFIER SLAB
- 4 CENTER PIER SLAB & WALL FOOTING

NOTES:

- 1. CONTRACTOR SHALL SUBMIT PROPOSED CONCRETE PLACEMENT SEQUENCE FOR REVIEW BY ENGINEER PRIOR TO ANY CONCRETE PLACEMENT.
- 2. CONTRACTOR MAY SUBMIT ALTERNATE CONSTRUCTION SEQUENCE FOR REVIEW BY ENGINEER

RECORD DRAWINGS

Revisions Drawn By C.R. COSBY Date MAY 2003
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1-45, 47-50, 63-63
1-3-4, 6-51, 53-63
1-63
1575border4.dwg, bar
r530s203.dwg, seq1
STAMP: SEAL, DESIGN, STAMP

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DR	EJ PUIG								
CHK	CHECKER								
APVD	J GOETZ	NO.	DATE	REVISION	BY	APVD			

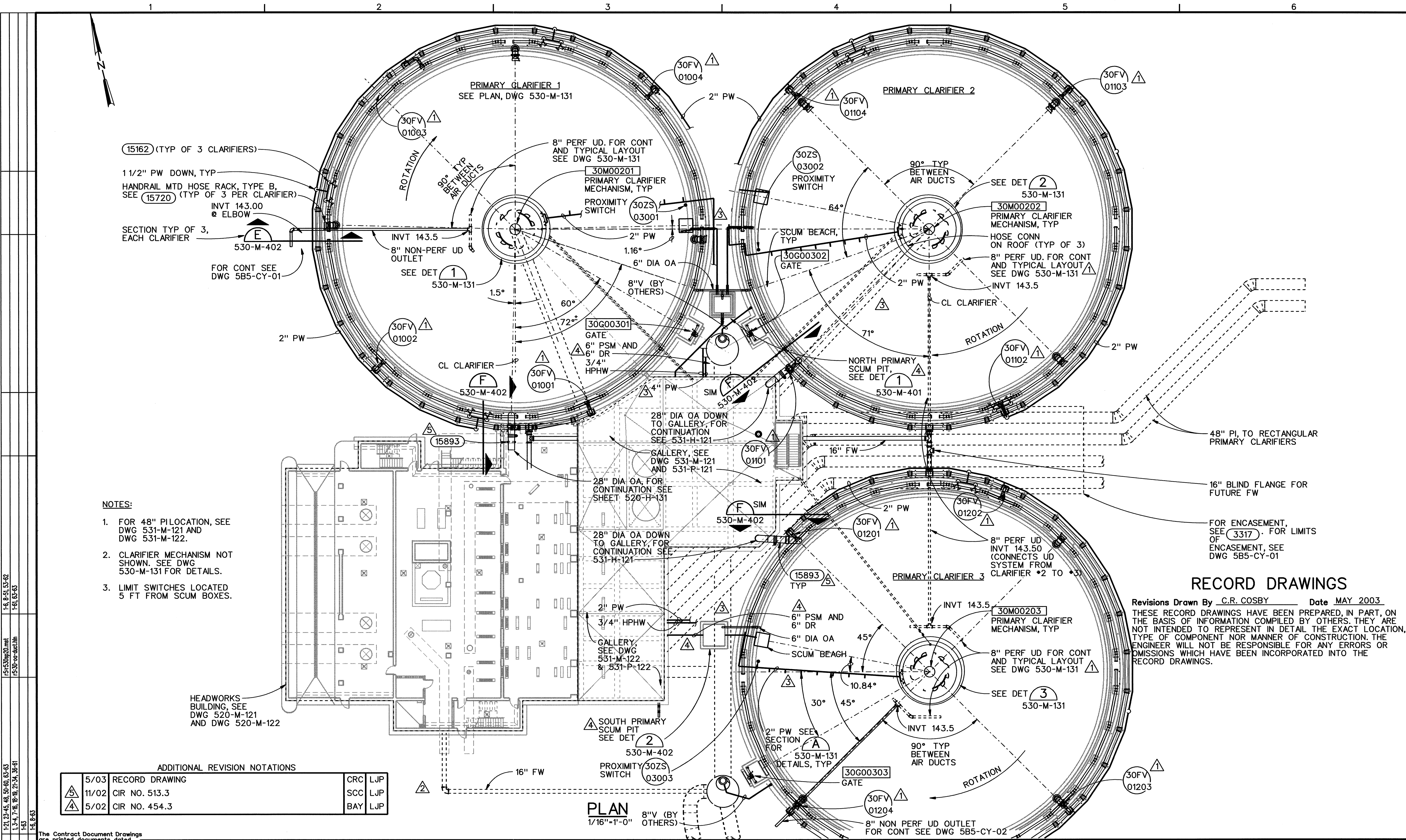
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

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ROCK CREEK FACILITY EXPANSION - PHASE 5 PACKAGE B
UNIFIED SEWERAGE AGENCY WASHINGTON COUNTY, OREGON

PRIMARY TREATMENT STRUCTURAL PRIMARY CLARIFIER BASE SLAB CONSTRUCTION SEQUENCE

SHEET	309
DWG	530-S-203
DATE	JULY 1999
PROJ	146190



- NOTES:
1. FOR 48" PLOCATION, SEE DWG 531-M-121 AND DWG 531-M-122.
 2. CLARIFIER MECHANISM NOT SHOWN. SEE DWG 530-M-131 FOR DETAILS.
 3. LIMIT SWITCHES LOCATED 5 FT FROM SCUM BOXES.

HEADWORKS BUILDING, SEE DWG 520-M-121 AND DWG 520-M-122

ADDITIONAL REVISION NOTATIONS

5/03	RECORD DRAWING	CRC	LJP
11/02	CIR NO. 513.3	SCC	LJP
5/02	CIR NO. 454.3	BAY	LJP

The Contract Document Drawings are printed documents dated July, 1999, as subsequently amended, which define the scope, extent, and character of the work. The original document drawing was sealed & signed by Robert M. Bracken, State of Oregon, P.E. No. 9299, dated July 22, 1977.

DSGN	DR	CHK	APVD	NO.	DATE	REVISION
B YOUKER/E LOUIE	KL McCOY	K ERICKSON	J GOETZ	4/01	12/99	8/99

4/01	CIR NO. 340.1
12/99	CIR NO. 026
8/99	ADDENDUM NO. 2

BRJ	LJP
BAY	LJP
AGO	BAY
BY	APVD

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

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ROCK CREEK FACILITY
EXPANSION - PHASE 5
PACKAGE B
UNIFIED SEWERAGE AGENCY
WASHINGTON COUNTY, OREGON

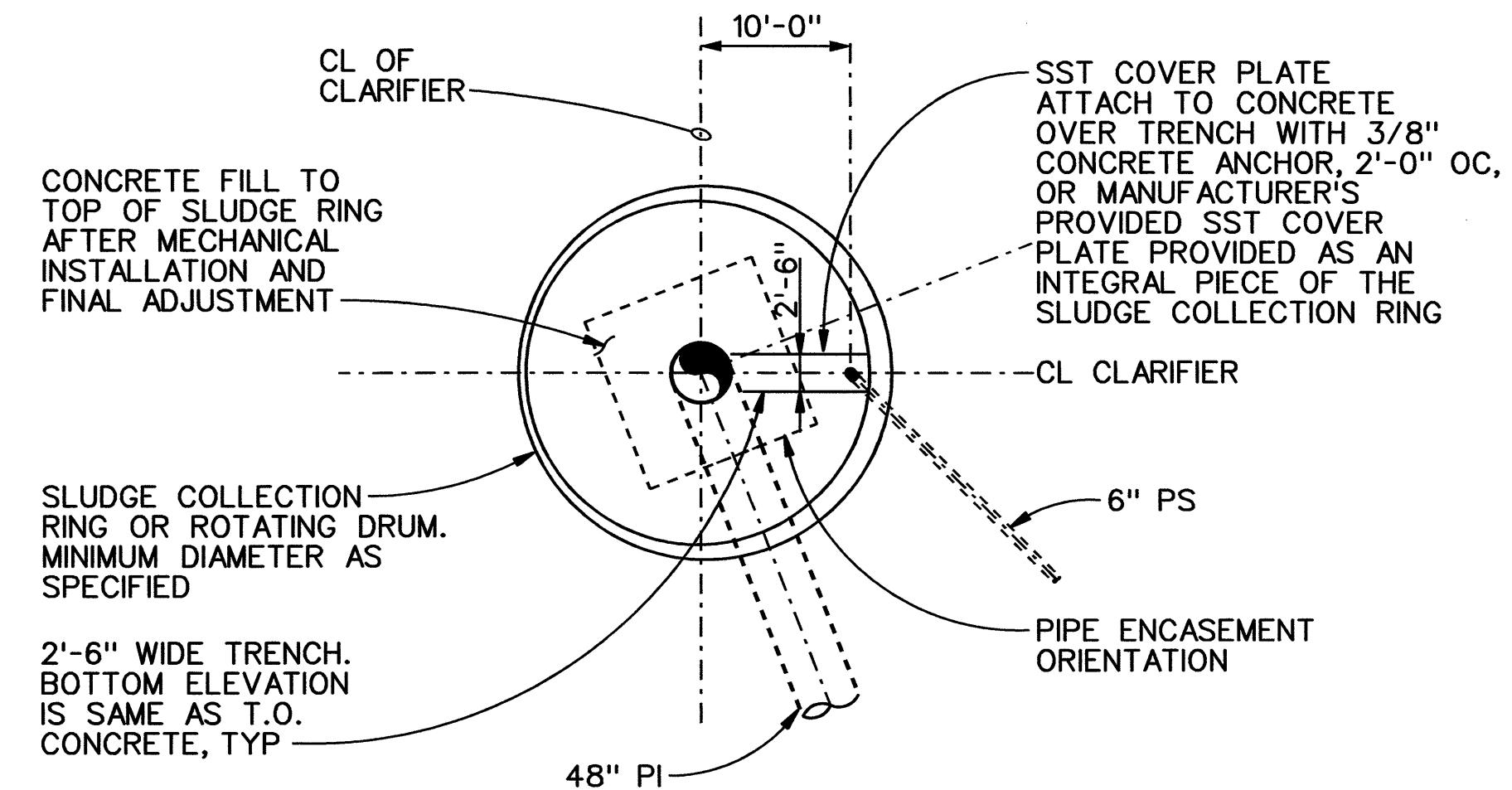
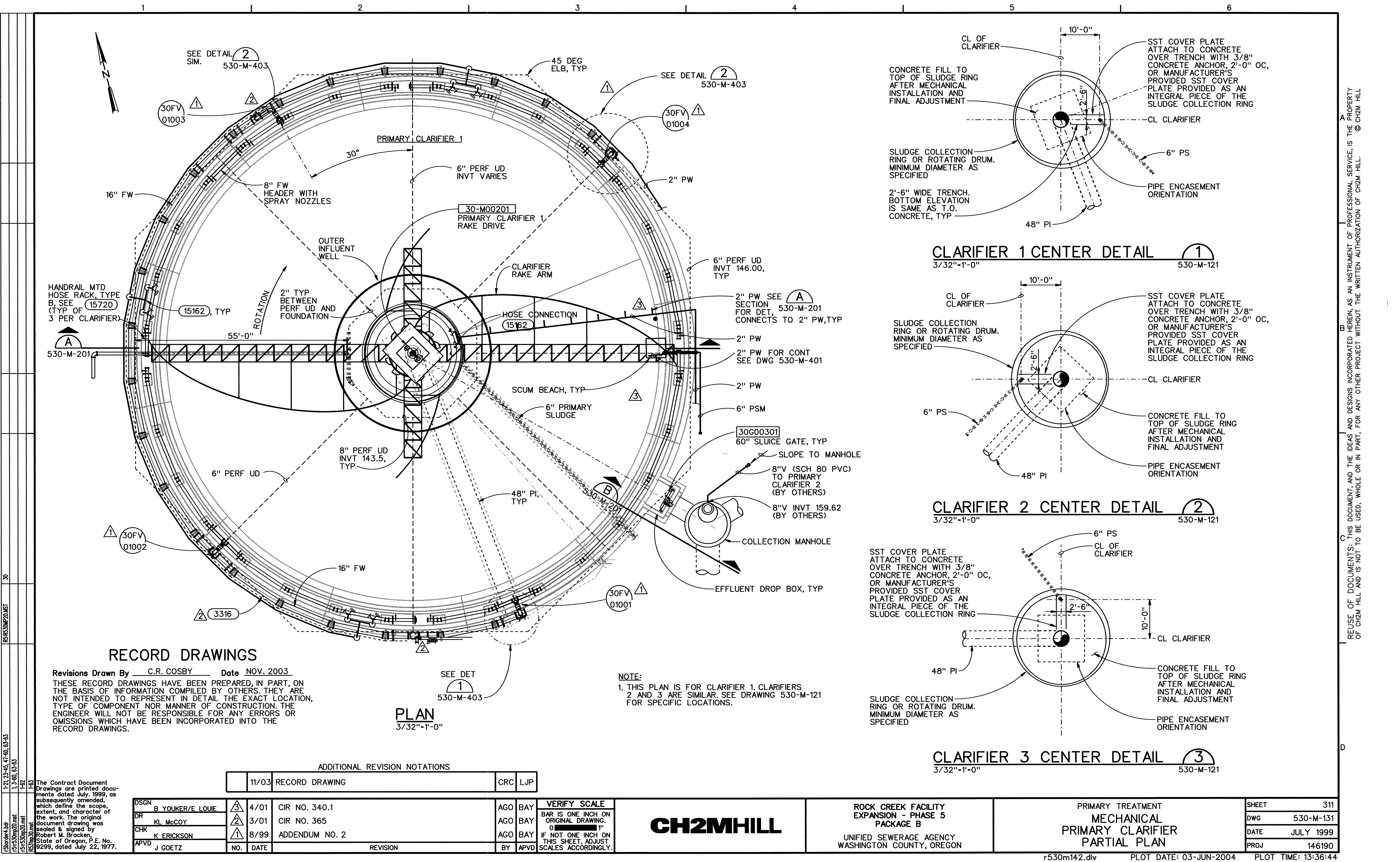
PRIMARY TREATMENT
MECHANICAL
PRIMARY CLARIFIERS
OVERALL PLAN

SHEET	310
DWG	530-M-121
DATE	JULY 1999
PROJ	146190

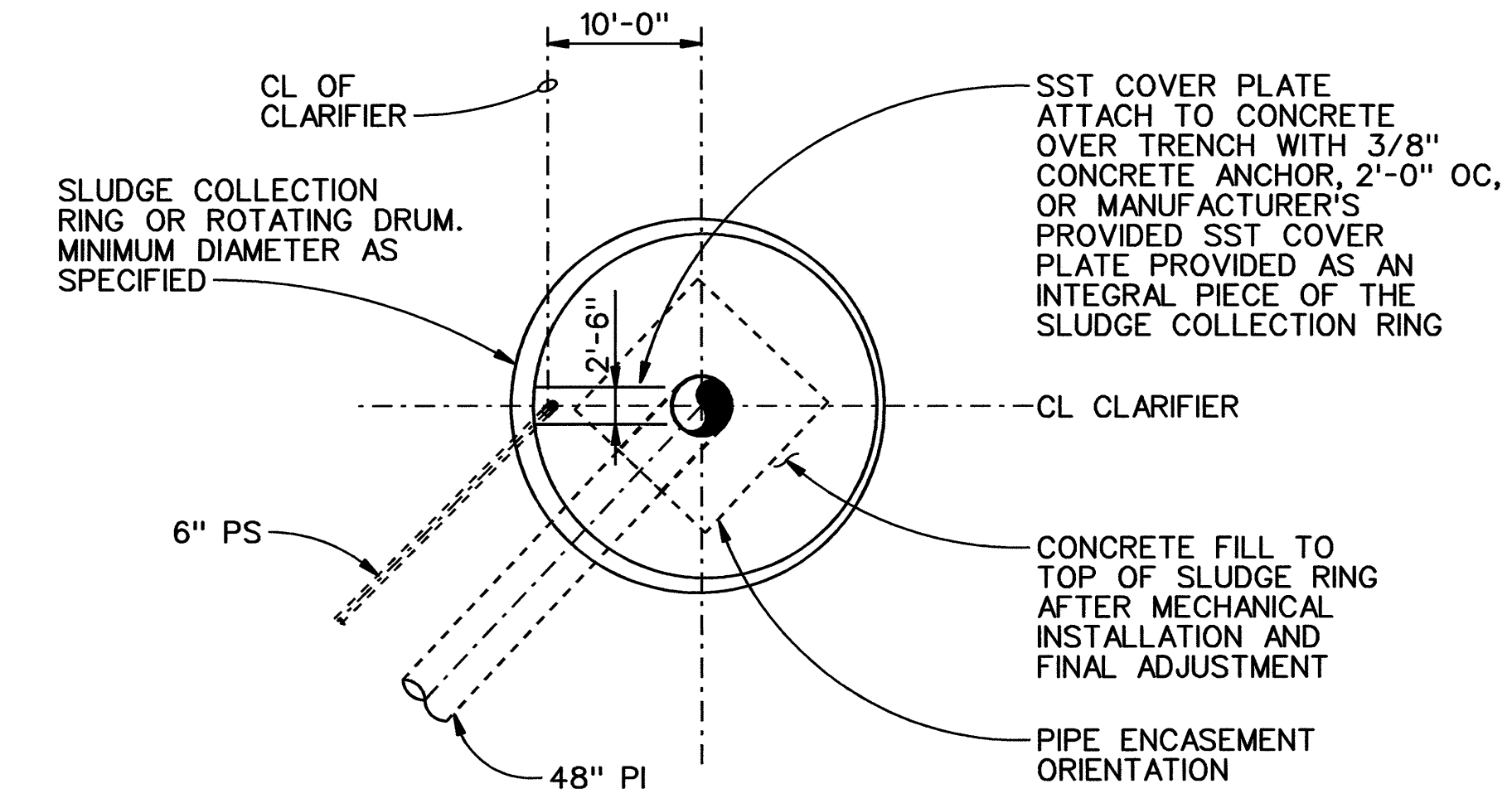
RECORD DRAWINGS

Revisions Drawn By C.R. COSBY Date MAY 2003
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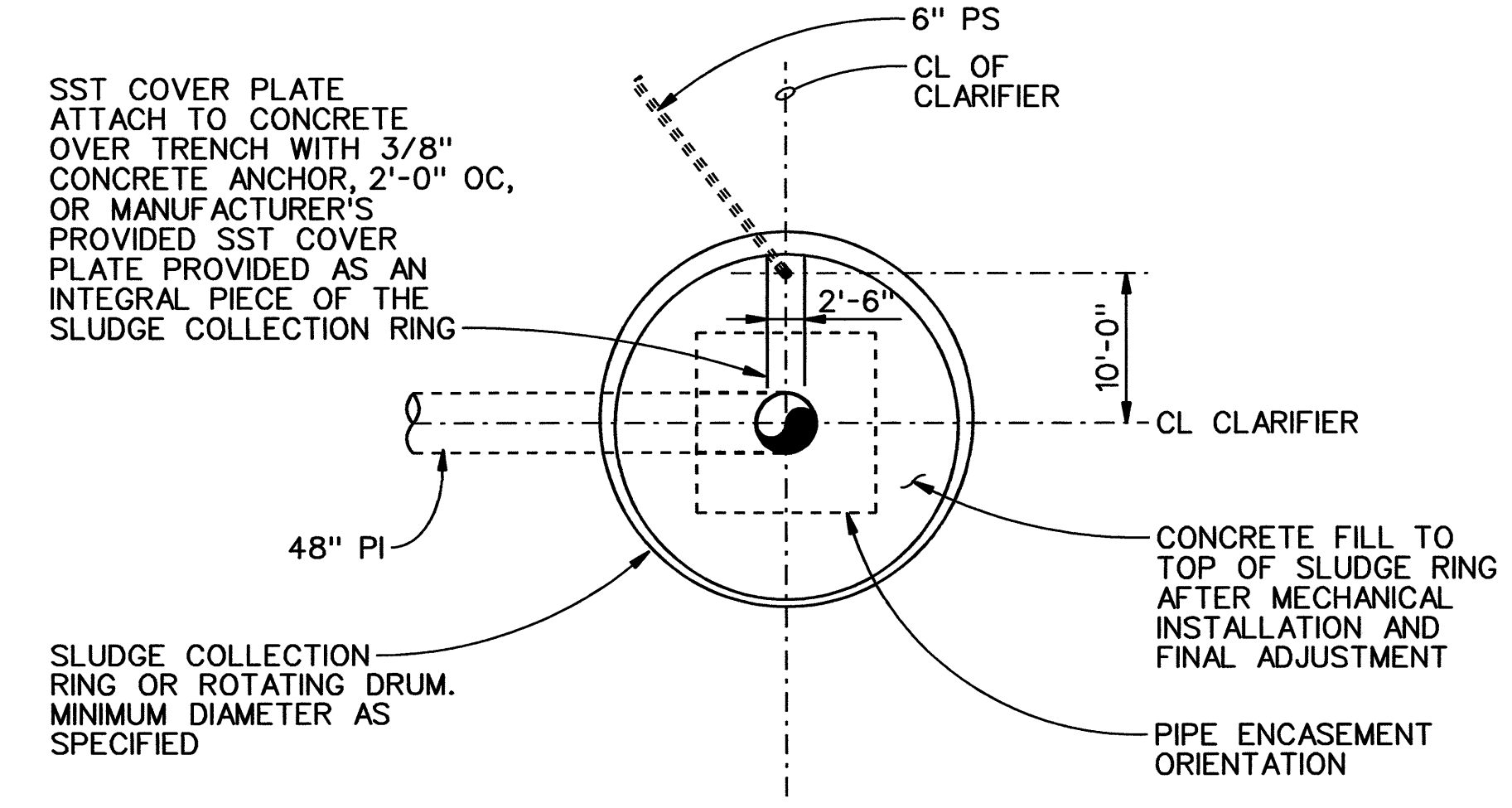
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CLARIFIER 1 CENTER DETAIL 1
3/32"=1'-0" 530-M-121



CLARIFIER 2 CENTER DETAIL 2
3/32"=1'-0" 530-M-121



CLARIFIER 3 CENTER DETAIL 3
3/32"=1'-0" 530-M-121

RECORD DRAWINGS

Revisions Drawn By C.R. COSBY Date NOV. 2003
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PLAN
3/32"=1'-0"

NOTE:
1. THIS PLAN IS FOR CLARIFIER 1. CLARIFIERS 2 AND 3 ARE SIMILAR. SEE DRAWING 530-M-121 FOR SPECIFIC LOCATIONS.

ADDITIONAL REVISION NOTATIONS

	11/03	RECORD DRAWING	CRC	LJP
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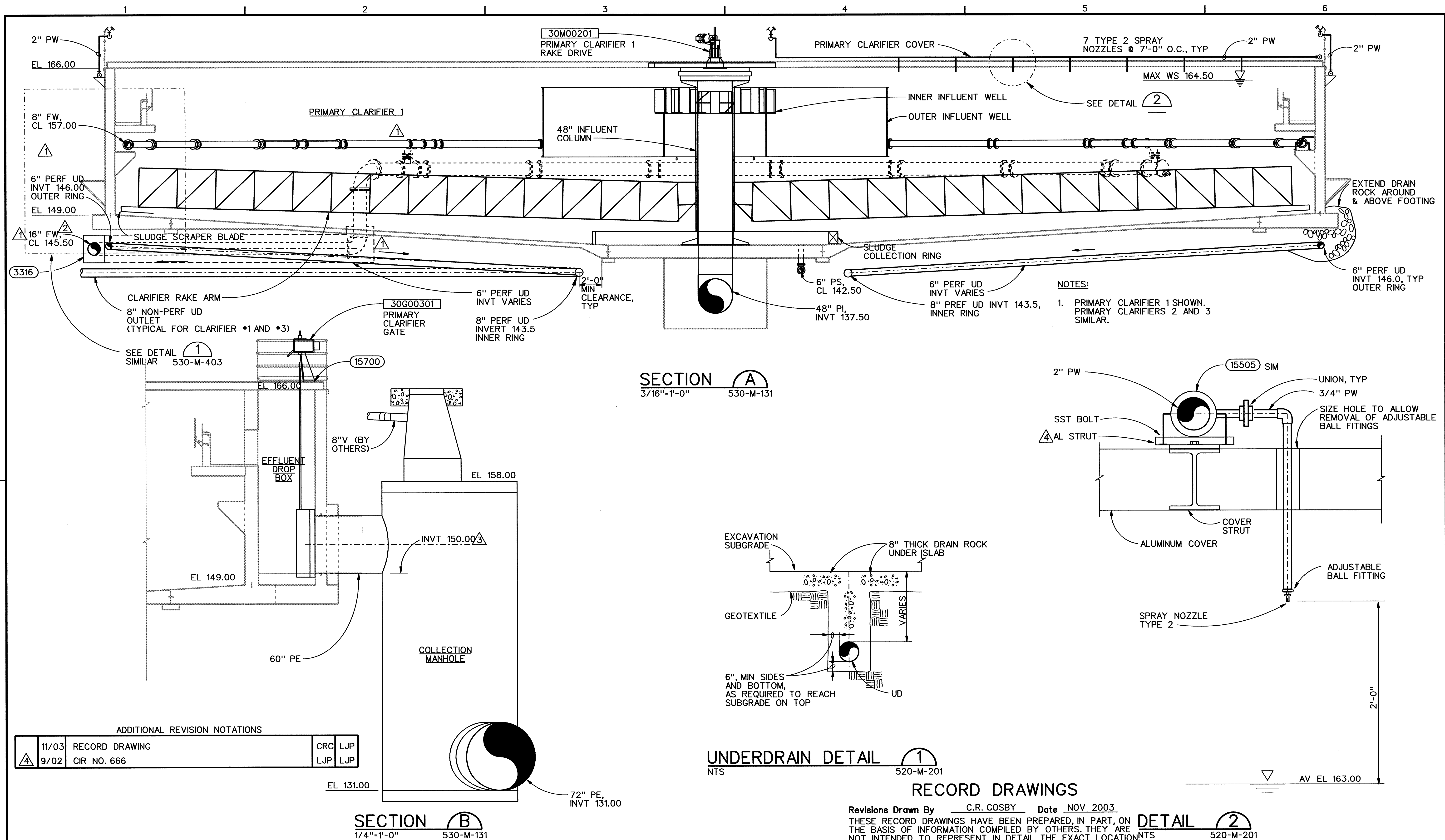
DSGN	B YOUKER/E LOUIE	4/01	CIR NO. 340.1	AGO	BAY	VERIFY SCALE
DR	KL McCOY	3/01	CIR NO. 365	AGO	BAY	BAR IS ONE INCH ON ORIGINAL DRAWING.
CHK	K ERICKSON	8/99	ADDENDUM NO. 2	AGO	BAY	0 1"
APVD	J GOETZ	NO.	DATE	BY	APVD	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

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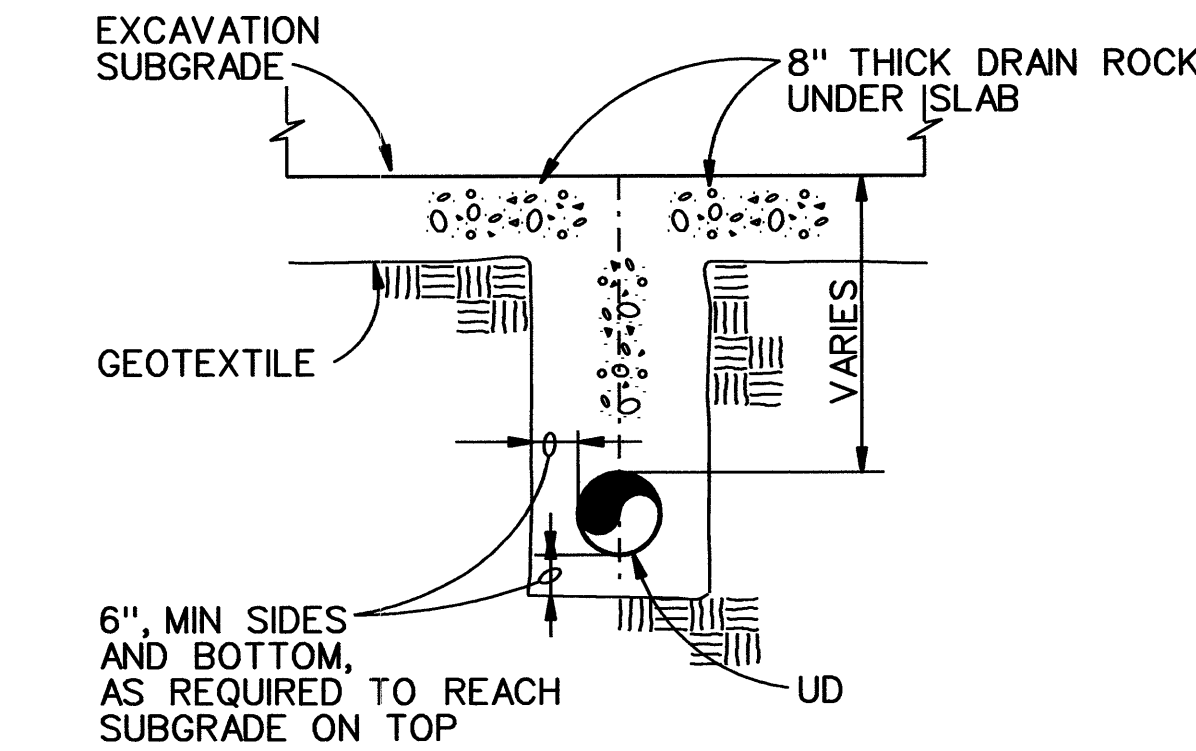
ROCK CREEK FACILITY
EXPANSION - PHASE 5
PACKAGE B
UNIFIED SEWERAGE AGENCY
WASHINGTON COUNTY, OREGON

PRIMARY TREATMENT
MECHANICAL
PRIMARY CLARIFIER
PARTIAL PLAN

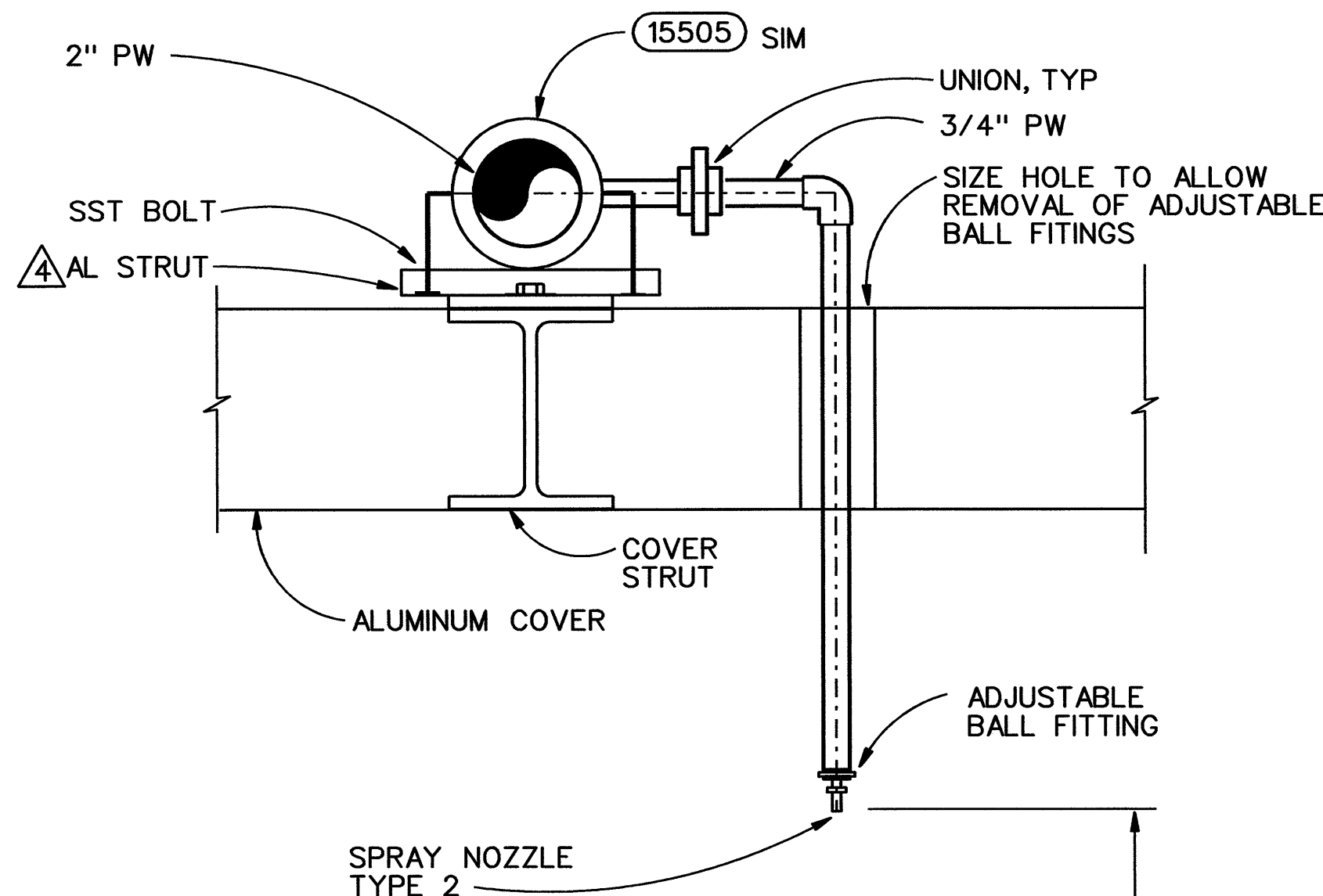
SHEET	311
DWG	530-M-131
DATE	JULY 1999
PROJ	146190



SECTION A
3/16"=1'-0" 530-M-131



UNDERDRAIN DETAIL 1
NTS 520-M-201



DETAIL 2
NTS 520-M-201

RECORD DRAWINGS

Revisions Drawn By C.R. COSBY Date NOV 2003
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ADDITIONAL REVISION NOTATIONS

11/03	RECORD DRAWING	CRC	LJP
9/02	CIR NO. 666	LJP	LJP

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DSGN	E LOUIE/B YOUKER	6/01	CIR NO. 417	LJP	LJP	VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
DR	KL McCOY	5/01	CIR NO. 403	LJP	LJP	
CHK	K ERICKSON	3/01	CIR NO. 365	BRJ	LJP	
APVD	J GOETZ	NO.	DATE	BY	APVD	

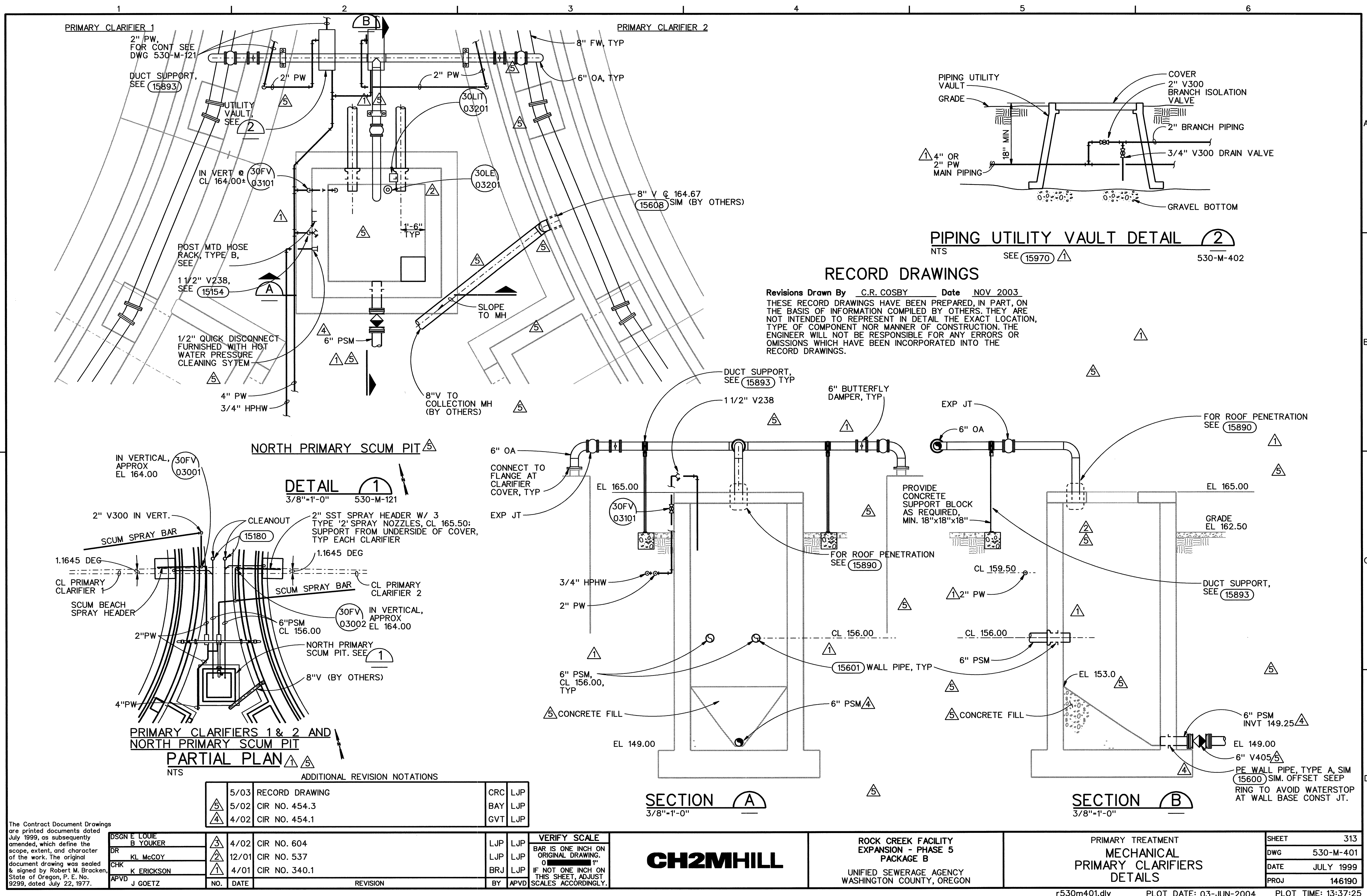
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ROCK CREEK FACILITY
 EXPANSION - PHASE 5
 PACKAGE B
 UNIFIED SEWERAGE AGENCY
 WASHINGTON COUNTY, OREGON

PRIMARY TREATMENT
 MECHANICAL
 PRIMARY CLARIFIERS
 SECTIONS

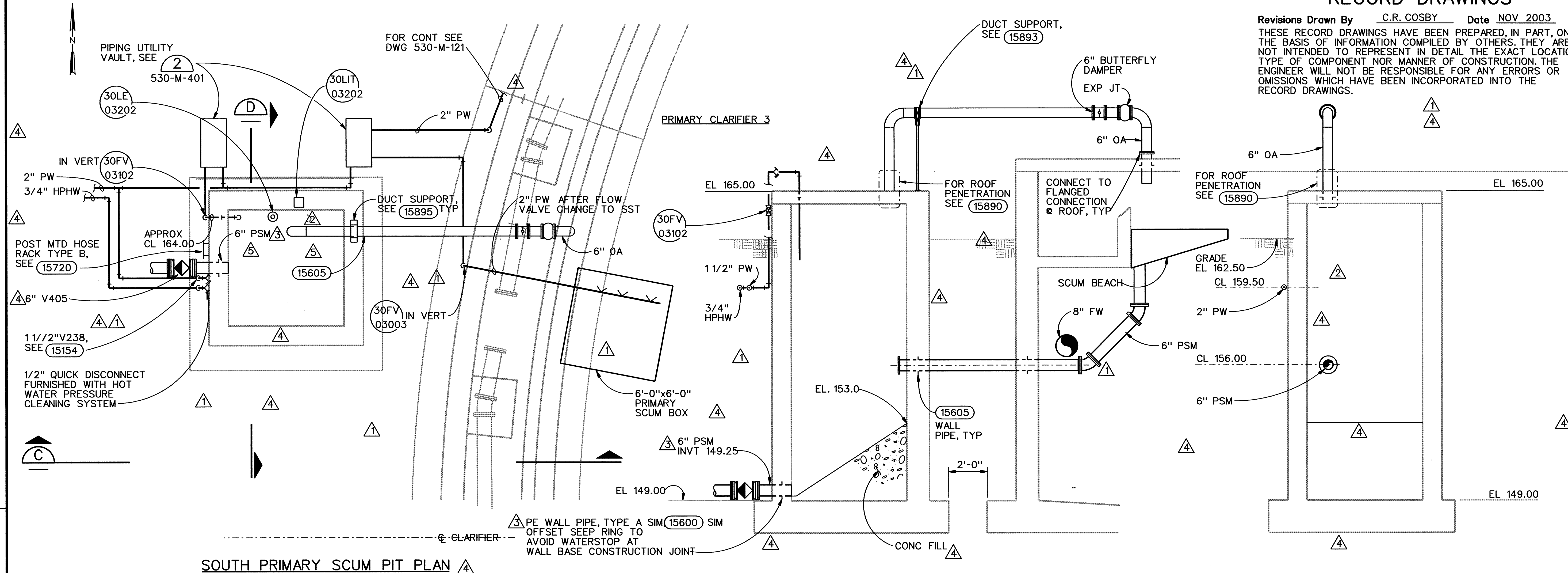
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DWG	530-M-201
DATE	JULY 1999
PROJ	146190

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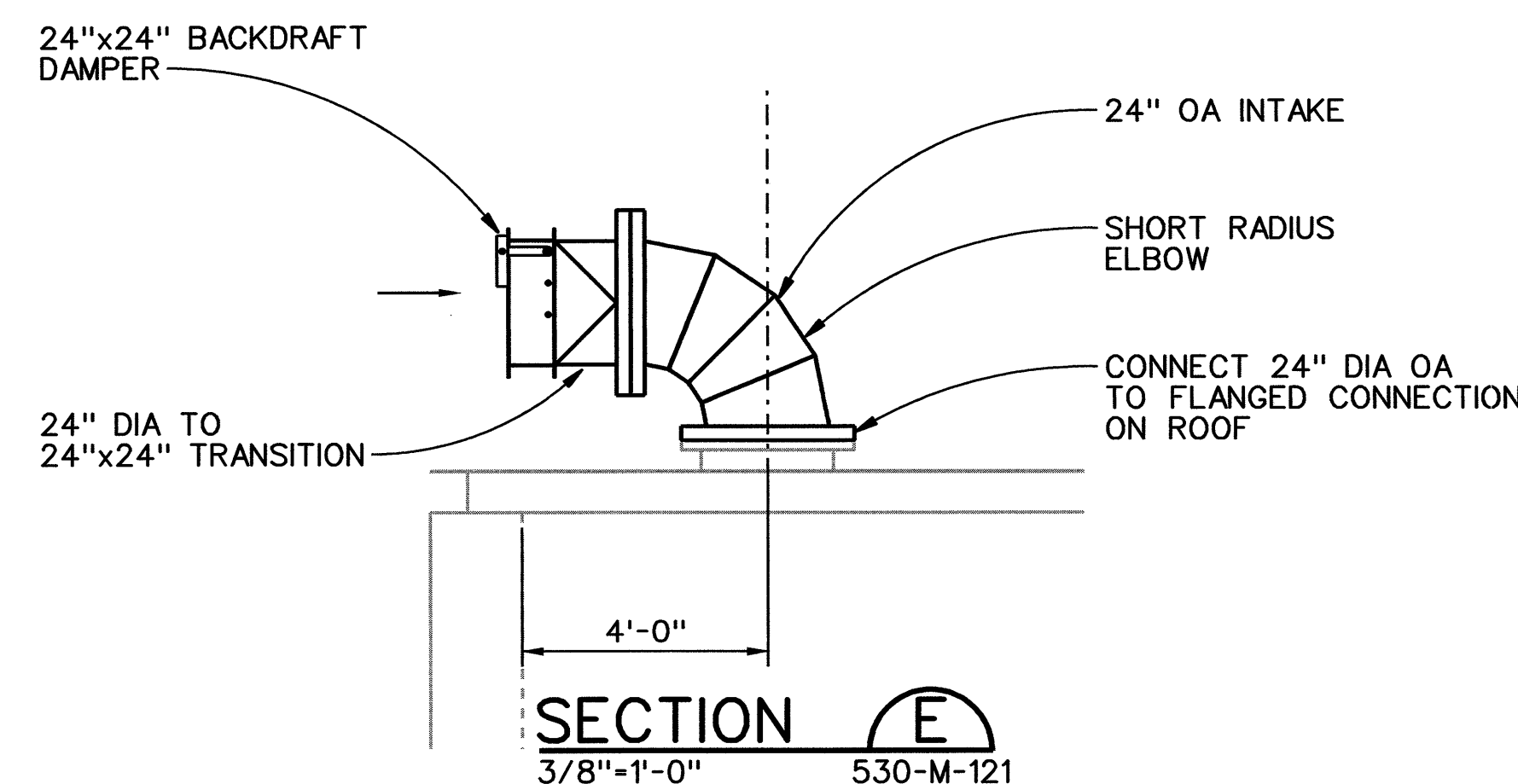
RECORD DRAWINGS

Revisions Drawn By C.R. COSBY Date NOV 2003
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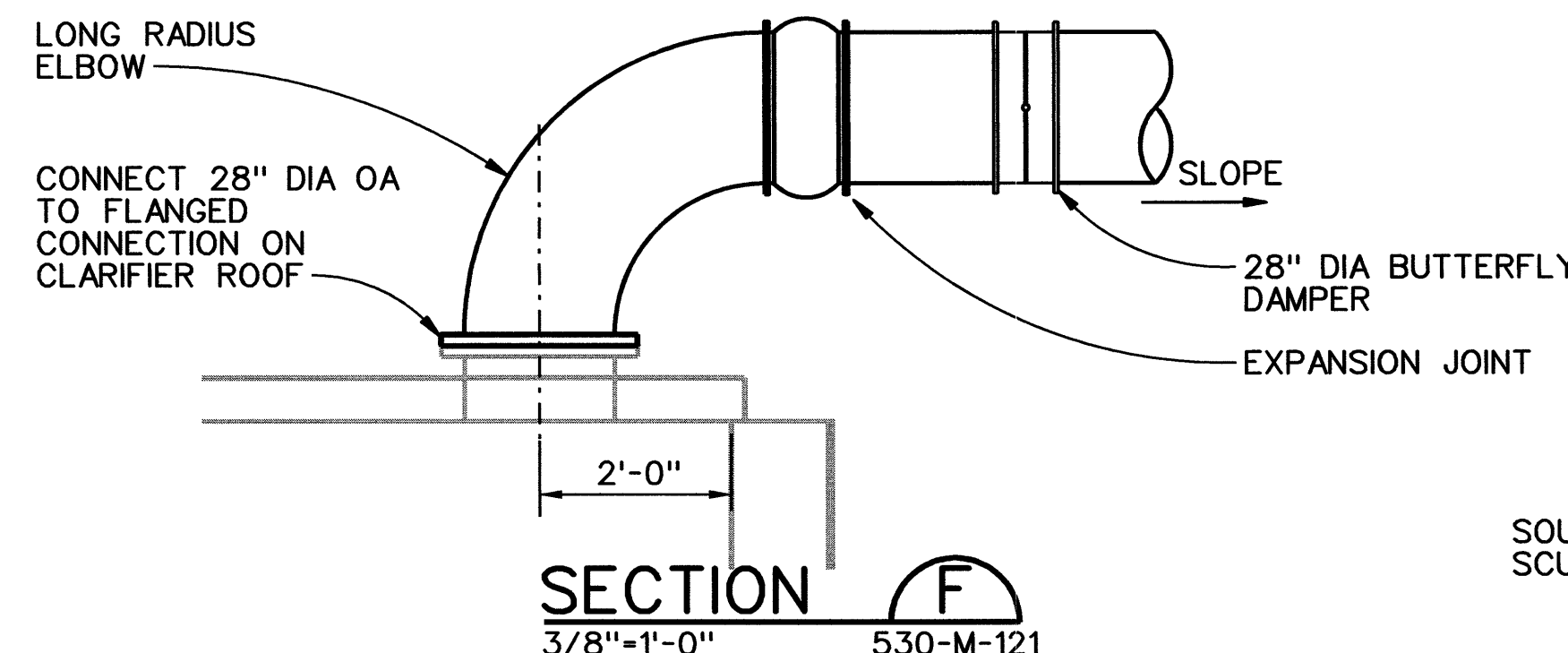


SOUTH PRIMARY SCUM PIT PLAN

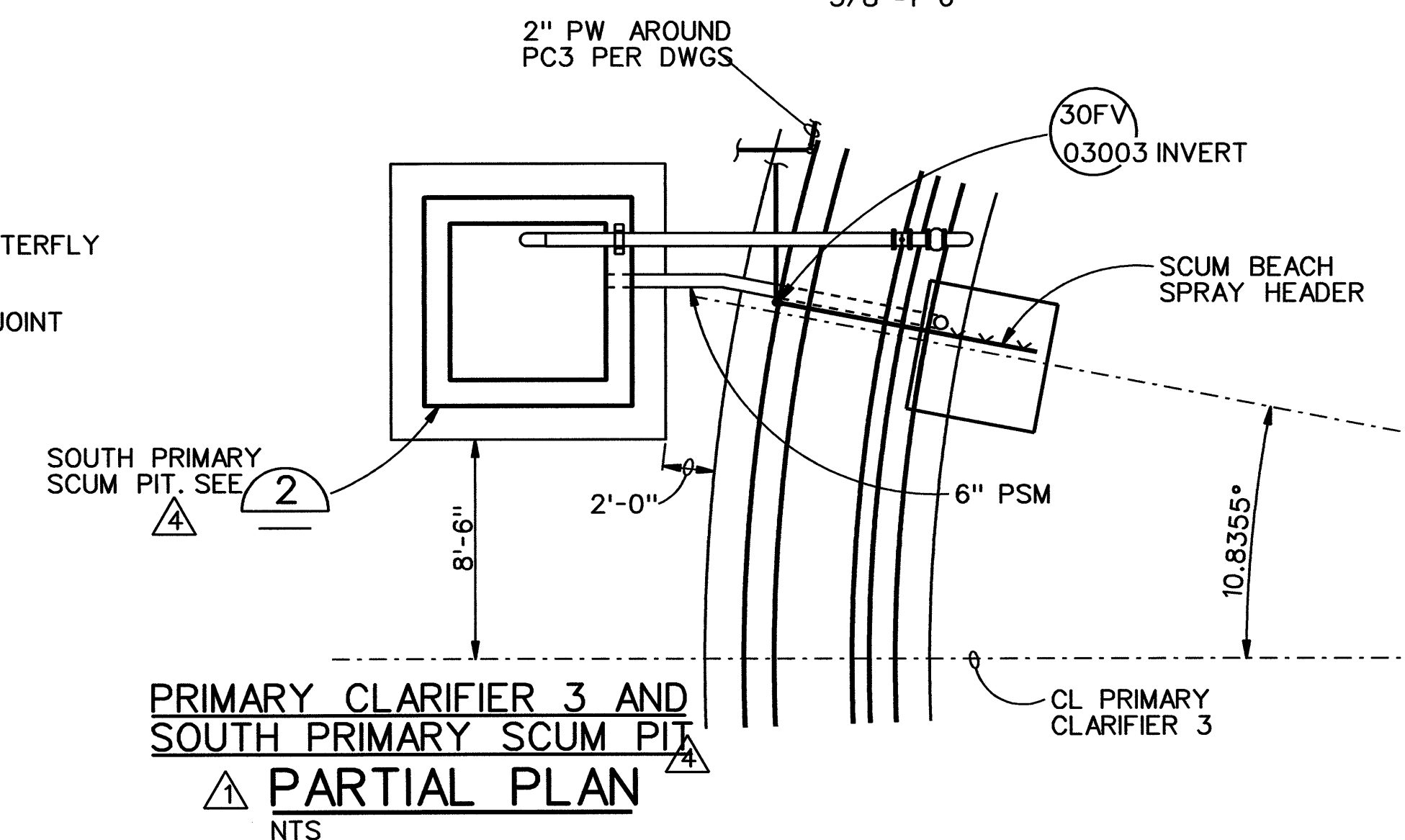
DETAIL 2
 3/8"=1'-0" 530-M-121



SECTION C
 3/8"=1'-0"



SECTION D
 3/8"=1'-0"



ADDITIONAL REVISION NOTATIONS

4	11/03	RECORD DRAWING	CRC	LJP
4	5/02	CIR NO. 454.3	BAY	LJP

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DSGN E LOUIE B YOUKER	4/02	CIR NO. 454.1	LJP	LJP	VERIFY SCALE
KL McCOY	12/01	CIR NO. 537	LJP	LJP	BAR IS ONE INCH ON ORIGINAL DRAWING.
K ERICKSON	4/01	CIR NO. 340.1	BRJ	LJP	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
APVD J GOETZ	NO.	DATE	BY	APVD	

CH2MHILL

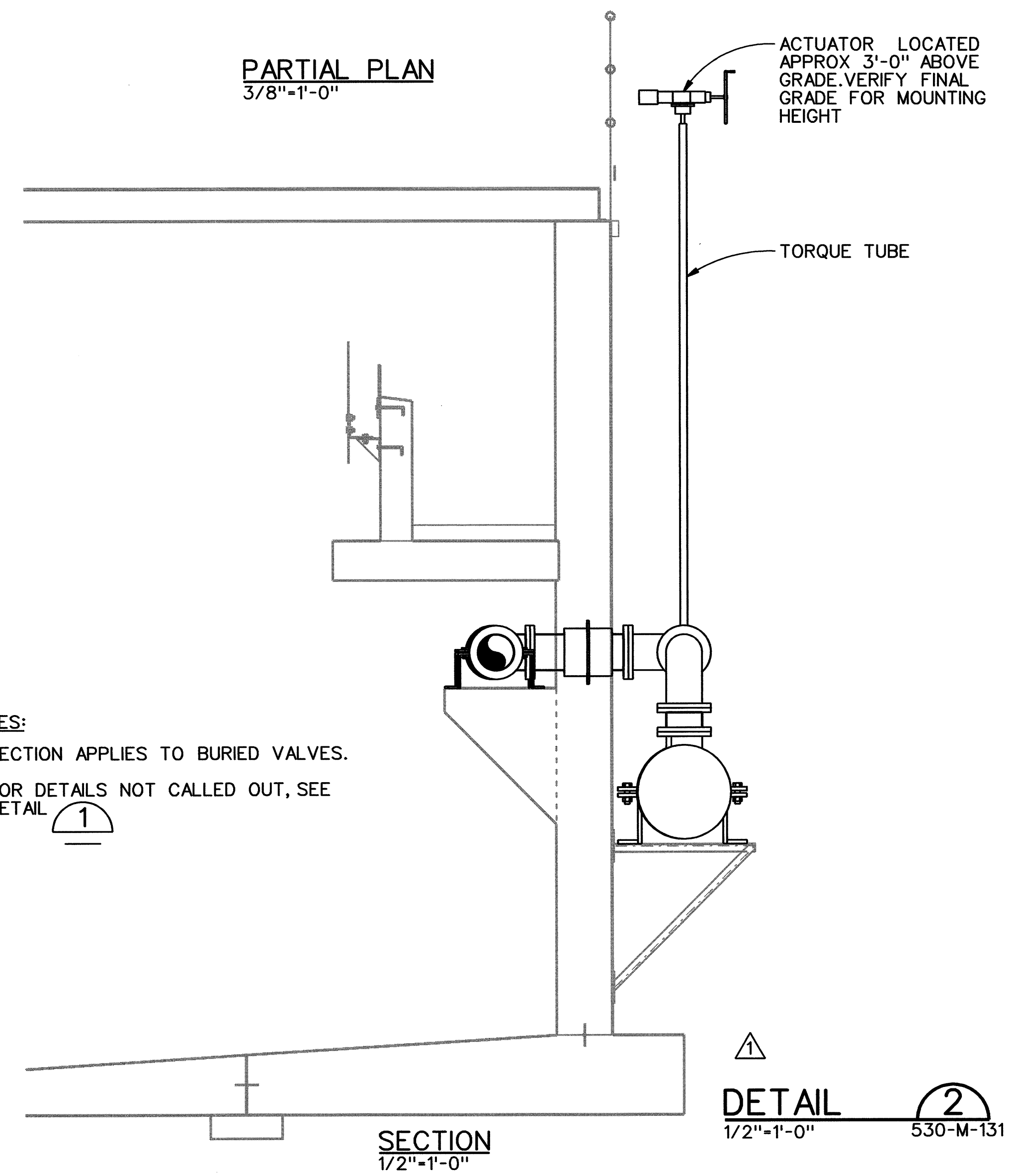
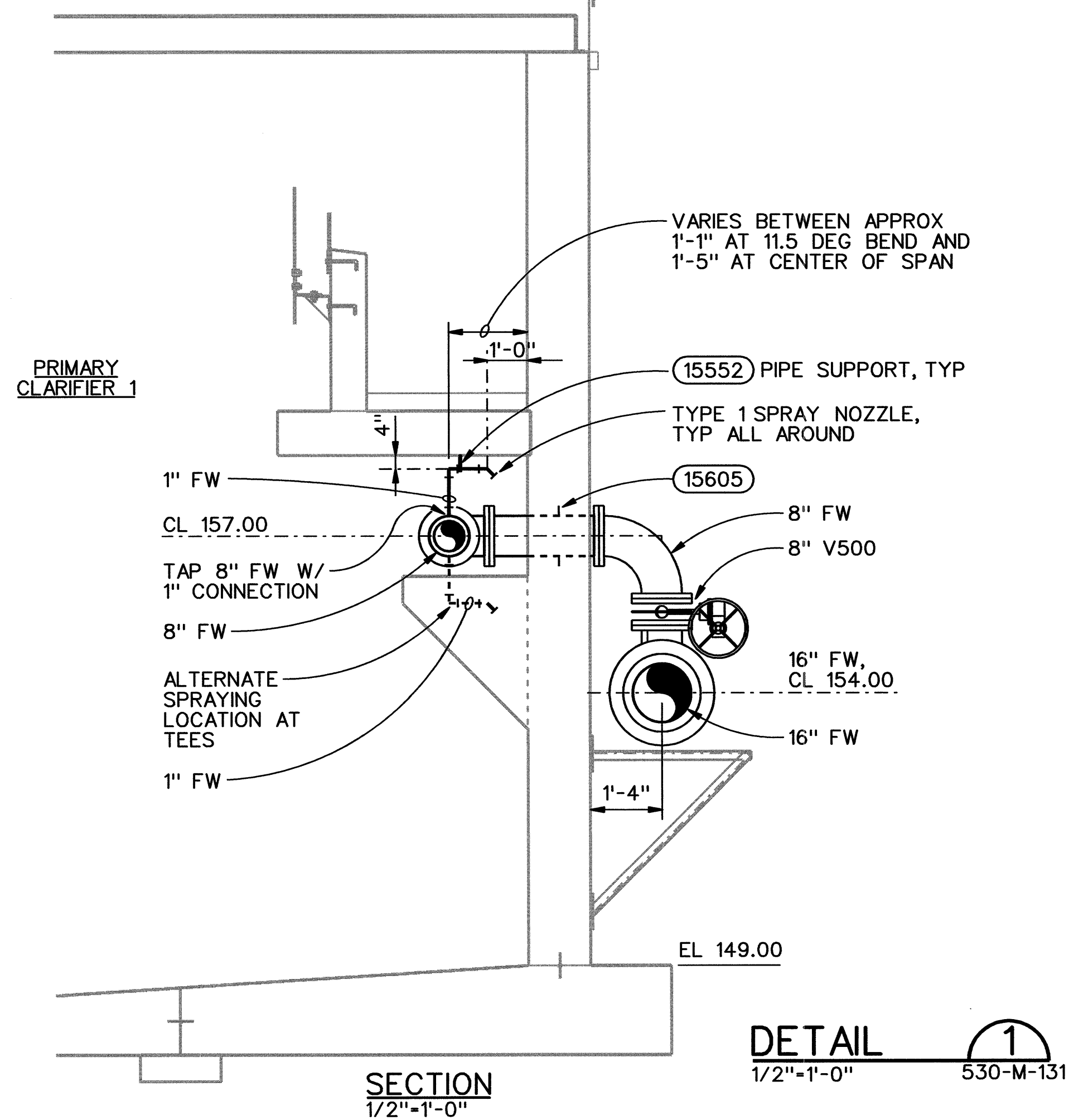
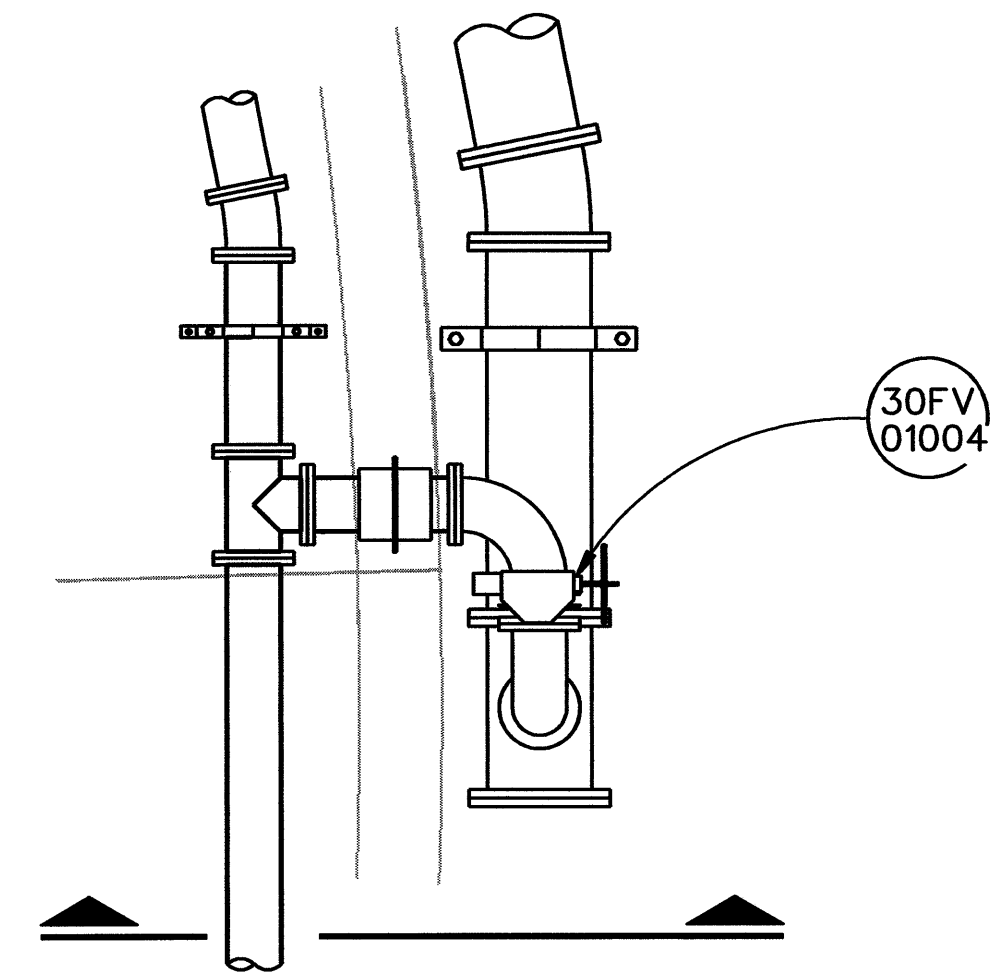
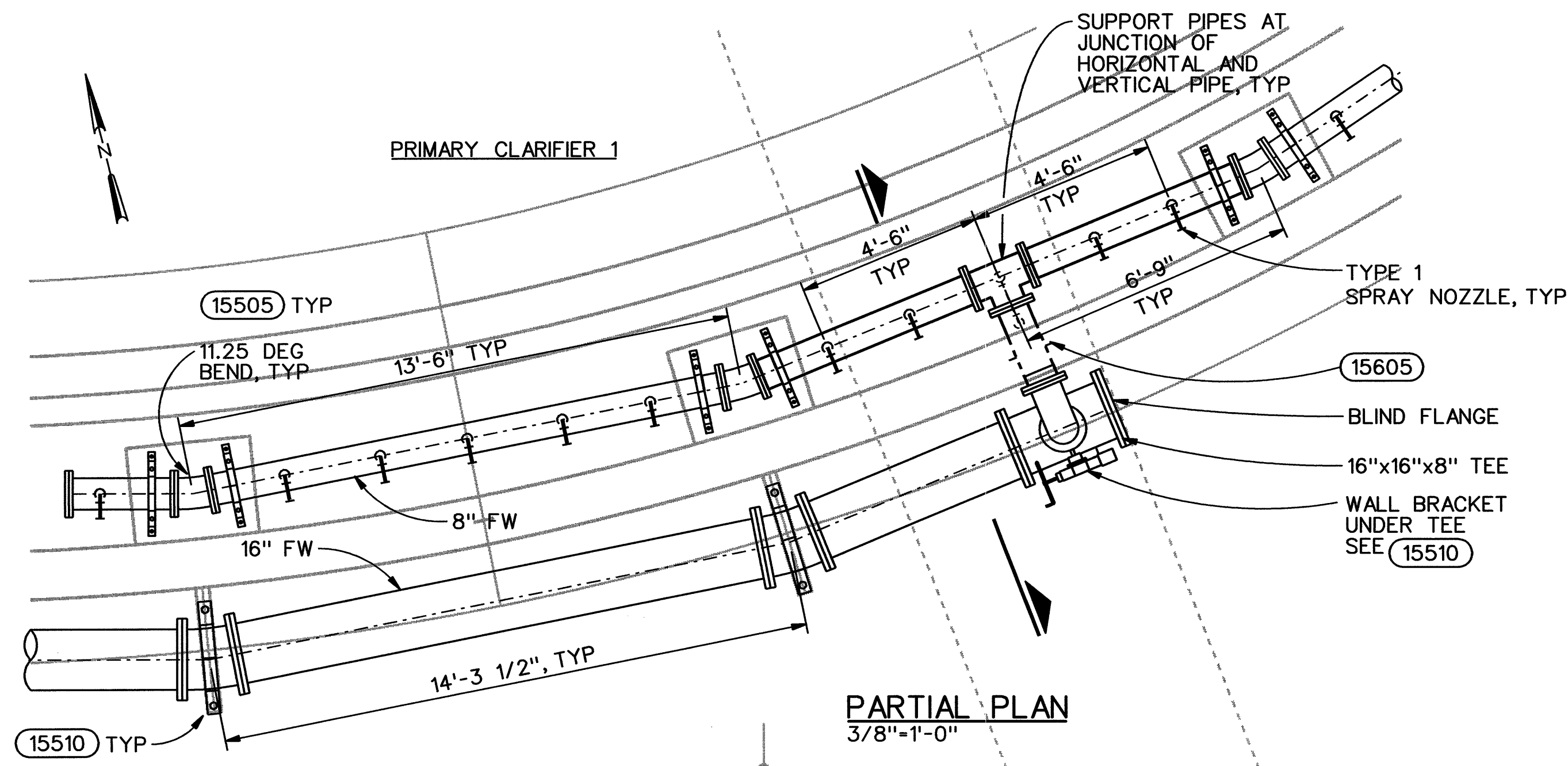
ROCK CREEK FACILITY
 EXPANSION - PHASE 5
 PACKAGE B
 UNIFIED SEWERAGE AGENCY
 WASHINGTON COUNTY, OREGON

PRIMARY TREATMENT
 MECHANICAL
 PRIMARY CLARIFIERS
 DETAILS

SHEET	314
DWG	530-M-402
DATE	JULY 1999
PROJ	146190

r530m402.dlv PLOT DATE: 03-JUN-2004 PLOT TIME: 13:37:41

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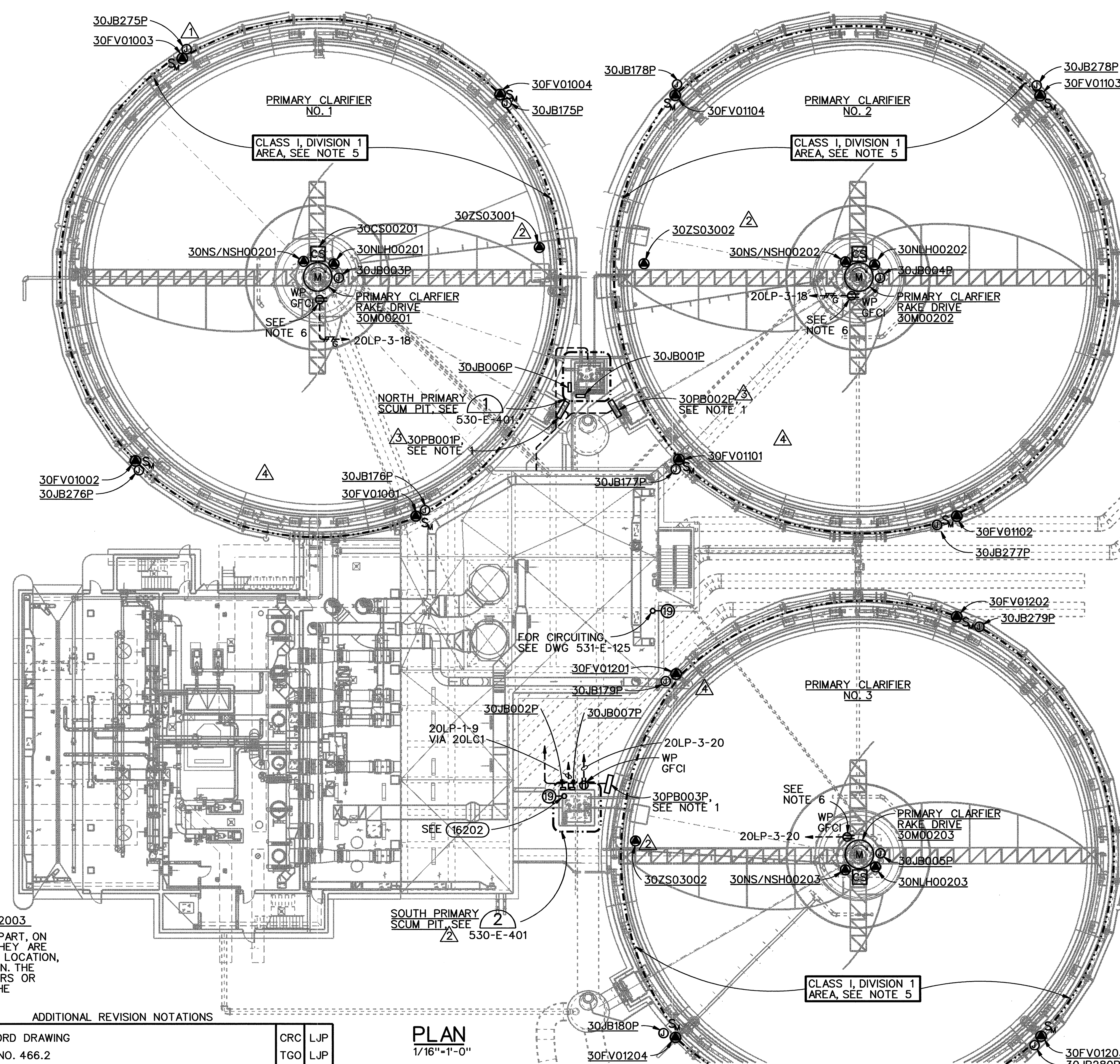
- NOTES:
1. SECTION APPLIES TO BURIED VALVES.
 2. FOR DETAILS NOT CALLED OUT, SEE DETAIL 1

RECORD DRAWINGS

Revisions Drawn By C.R. COSBY Date NOV 2003
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DSGN E LOUIE B YOUKER																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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- NOTES:**
1. MOUNT PULLBOX ON THE CLARIFIER EFFLUENT DROP BOX WALL. ROUTE CIRCUITS THROUGH PULLBOX AS SHOWN ON CIRCUIT 3 RACEWAY BLOCK DIAGRAMS AND THIS DWG. SIZE NEMA 4X BOX PER NEC AND SPECIFICATION. BOTTOM OF BOX SHALL BE 18" ABOVE GRADE, (MIN).
 2. FOR DETAILED INFORMATION ABOUT PULLBOXES 31PB003A, 31PB004P, 31PB002A, AND 31PB001P LOCATED IN THE GALLERY, SEE DWG 531-E-121 AND 531-E-122.
 3. ROUTE CONDUIT TO TOP OF ALUMINUM COVERS. ROUTE TO AVOID INTERFERENCE WITH WALKWAYS. COORDINATE WITH OTHER TRADES.
 4. FOR PROCESS EQUIPMENT CIRCUIT AND RACEWAY REQUIREMENTS, SEE CIRCUIT/RACEWAY BLOCK DIAGRAMS ON DWGS 530-E-501.
 5. THE AREA INSIDE OF THE ENCLOSED PRIMARY CLARIFIERS IS A CLASS I, DIVISION 1, GROUP D AREA PER NFPA 820. ALL WORK WITHIN THIS AREA SHALL BE RATED FOR THIS CLASSIFICATION AND SHALL CONFORM TO NEC AND THE SPECIFICATIONS.
 6. MOUNT RECEPTACLE ON PRIMARY CLARIFIER STRUCTURAL COVER SUPPORTS. COORDINATE WITH OTHER TRADES.

RECORD DRAWINGS

Revisions Drawn By C.R. COSBY Date NOV 2003

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ADDITIONAL REVISION NOTATIONS

11/03	RECORD DRAWING	CRC	LJP
8/02	CIR NO. 466.2	TGO	LJP

PLAN
1/16"=1'-0"

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DSGN	NO.	DATE	REVISION
KL MAESTRI	4/02	CIR NO. 609	
DW CLARK	4/01	CIR NO. 340.1	
D WAGNER	3/01	CIR NO. 365	
APVD J GOETZ	NO.	DATE	

MSM	LJP
BRJ	LJP
LJP	LJP
BY	APVD

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

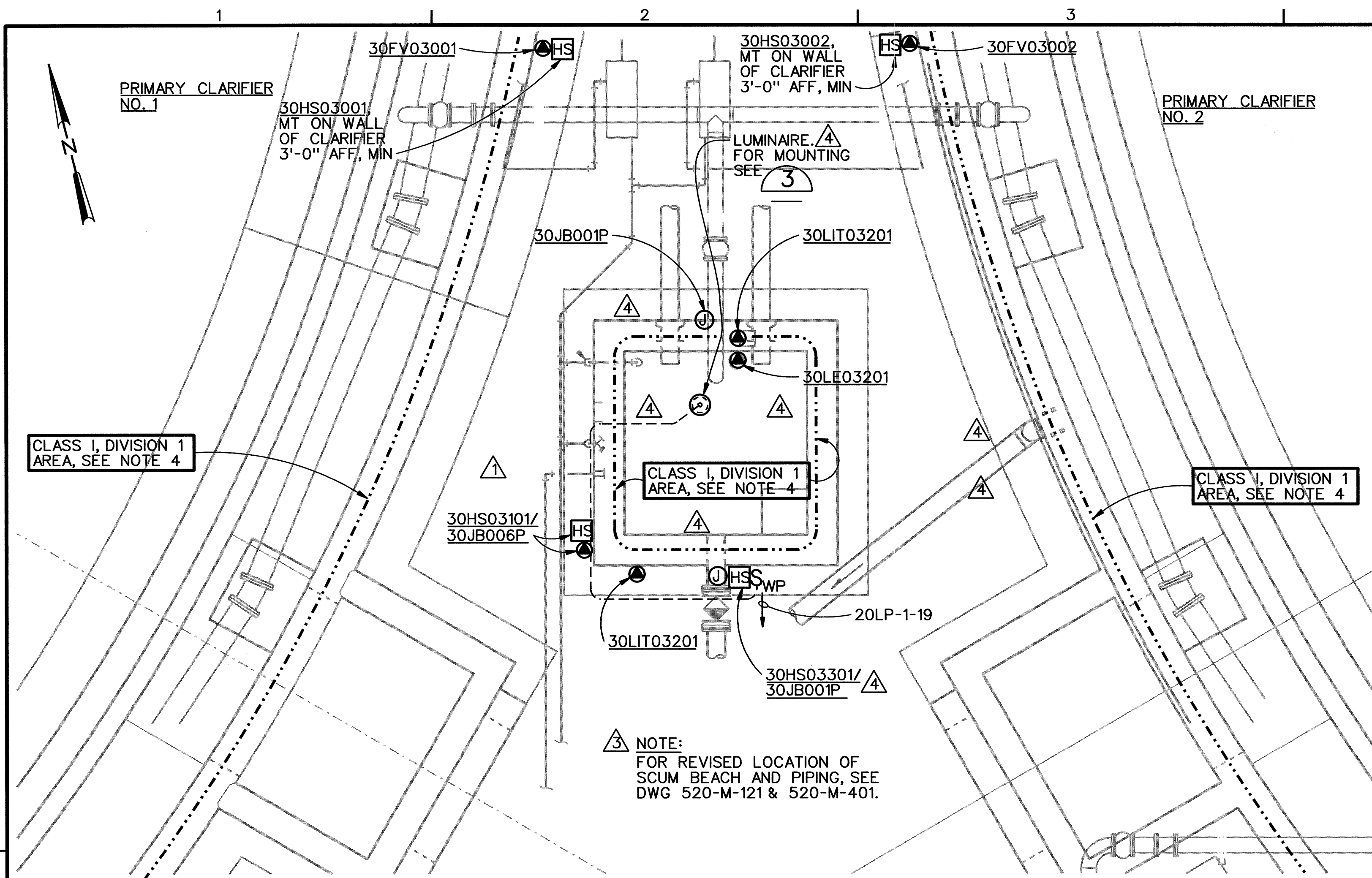


ROCK CREEK FACILITY
EXPANSION - PHASE 5
PACKAGE B
UNIFIED SEWERAGE AGENCY
WASHINGTON COUNTY, OREGON

PRIMARY TREATMENT
ELECTRICAL
PRIMARY CLARIFIERS
OVERALL PROCESS PLAN

SHEET	316
DWG	530-E-131
DATE	JULY 1999
PROJ	146190

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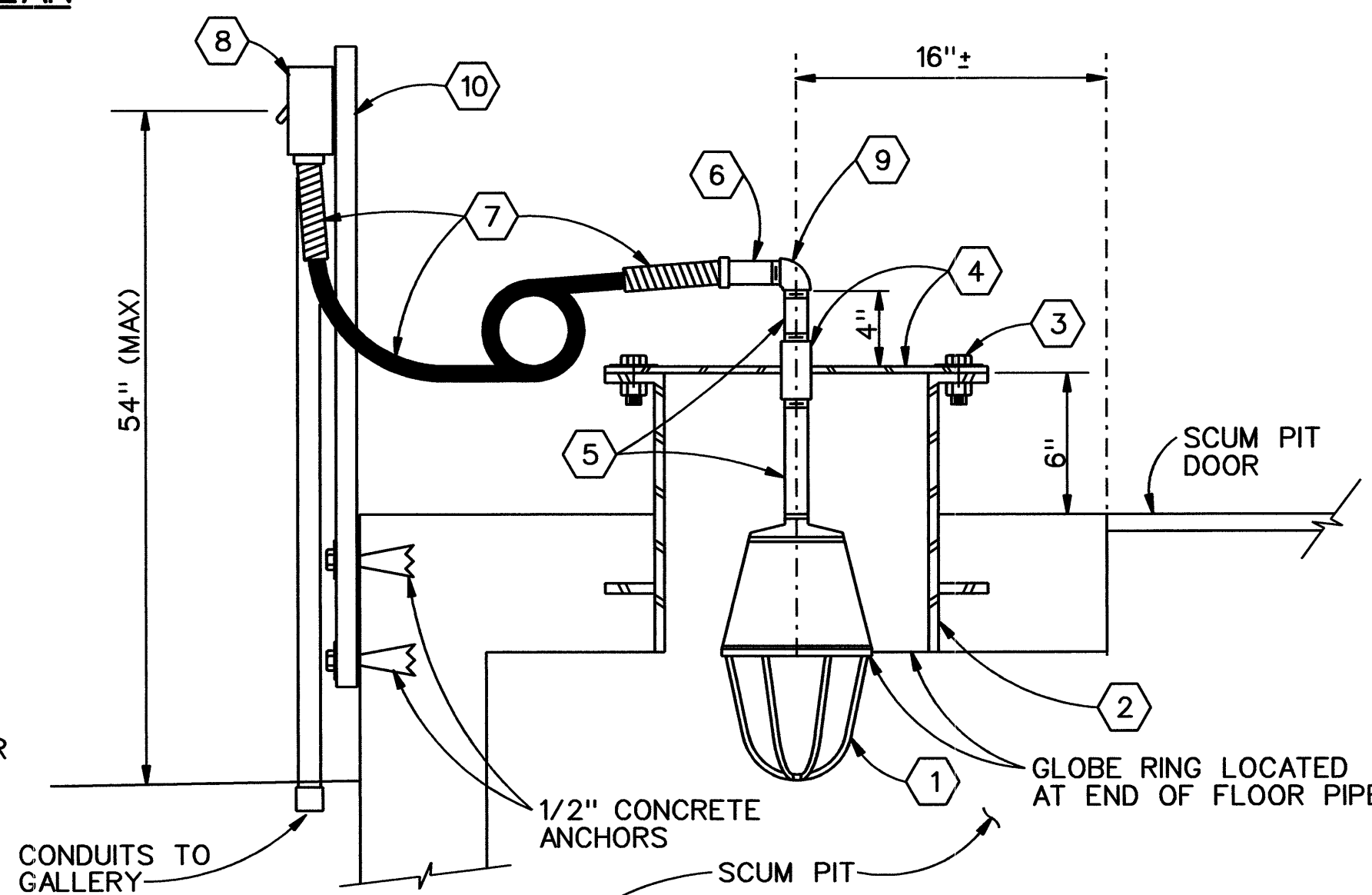
NORTH PRIMARY SCUM PIT PLAN

DETAIL 1
3/8"=1'-0" 530-E-131

NOTES:

- 1 LUMINAIRE - INCANDESCENT EXPLOSION-PROOF, FACTORY SEALED, SUITABLE FOR USE IN WET AND CLASS 1 DIV. 1 LOCATIONS. UL 1598 AND UL 844. COMPLIANT. RATED 120V, 150-300 WATT(AAU-15N), 3/4" HUB, PENDANT MOUNT. PROVIDE 200W LAMP. MANUFACTURER/CAT. NO.: APPLETON A-51, CAT. NO. AP1575 OR EQUAL.
- 2 12-INCH DUCTILE IRON FLOOR PIPE WITH INTEGRALLY CAST SEEP RING, CENTERED IN SLAB. GALVANIZED AFTER FABRICATION.
- 3 NYLON BOLTS AND NUTS. TYPICAL FOR FOUR, SPACED AT 90 DEG ON FLANGES.
- 4 3/4" CONDUIT COUPLING CENTERED ON OPENING AND WELDED TO TOP FLANGE PLATE. GALVANIZED AFTER FABRICATION.
- 5 3/4" PVC COATED CONDUIT NIPPLES. PVC COAT ALL EXPOSED THREADS AFTER INSTALLATION.
- 6 3/4" SEALING FITTING.
- 7 3/4" LIQUDTIGHT STRAIN RELIEF CORD CONNECTORS WITH STAINLESS STEEL WIRE MESH STRAIN RELIEF AND FLEXIBLE 2*12, 1*12G CORD. CORD AND INSTALLATION PER NEC ARTICLE 501-11. PROVIDE 24" COIL TO ALLOW LUMINAIRE REMOVAL.
- 8 LIGHT SWITCH, 20A, 120V, NEMA 4X ENCLOSURE.
- 9 90-DEGREE FEMALE 3/4" ELBOW. MALLEABLE IRON, EXPLOSION-PROOF.
- 10 4" STEEL CHANNEL/PLATE SIMILAR TO 16158 EXCEPT WALL MOUNTING. MOUNT SCUM PUMP ON/OFF SWITCH NEXT TO LIGHT SWITCH.

LUMINAIRE MOUNTING AT PRIMARY SCUM PITS



SOUTH PRIMARY SCUM PIT PLAN

DETAIL 2
3/8"=1'-0" 530-E-131

NOTES:

1. (NOTE DELETED)
2. FOR PROCESS EQUIPMENT CIRCUIT AND RACEWAY REQUIREMENTS, SEE CIRCUIT/RACEWAY BLOCK DIAGRAMS ON DWGS 530-E-501.
3. MOUNT CONTROL STATIONS AND HANDSWITCHES OFF OF CLARIFIER AND SCUM PIT WALLS. MOUNT BOTTOM OF ENCLOSURES 3'-0" AFF, MIN.
4. THE AREA INSIDE OF THE ENCLOSED SCUM PITS AND ENCLOSED CLARIFIERS IS A CLASS I, DIVISION 1, GROUP D AREA PER NFPA 820. ALL WORK WITHIN THIS AREA SHALL BE RATED FOR THIS CLASSIFICATION AND SHALL CONFORM TO NEC AND THE SPECIFICATIONS.

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ADDITIONAL REVISION NOTATIONS					
4	11/03	RECORD DRAWING	CRC	LJP	
	5/02	CIR NO. 454.3	JFM	LJP	
3	4/01	CIR NO. 340.1	LJP	LJP	
2	8/00	CIR NO. 178	MSM	LJP	
1	1/00	CIR NO. 025	BAY	LJP	
APVD	J GOETZ		BY	APVD	

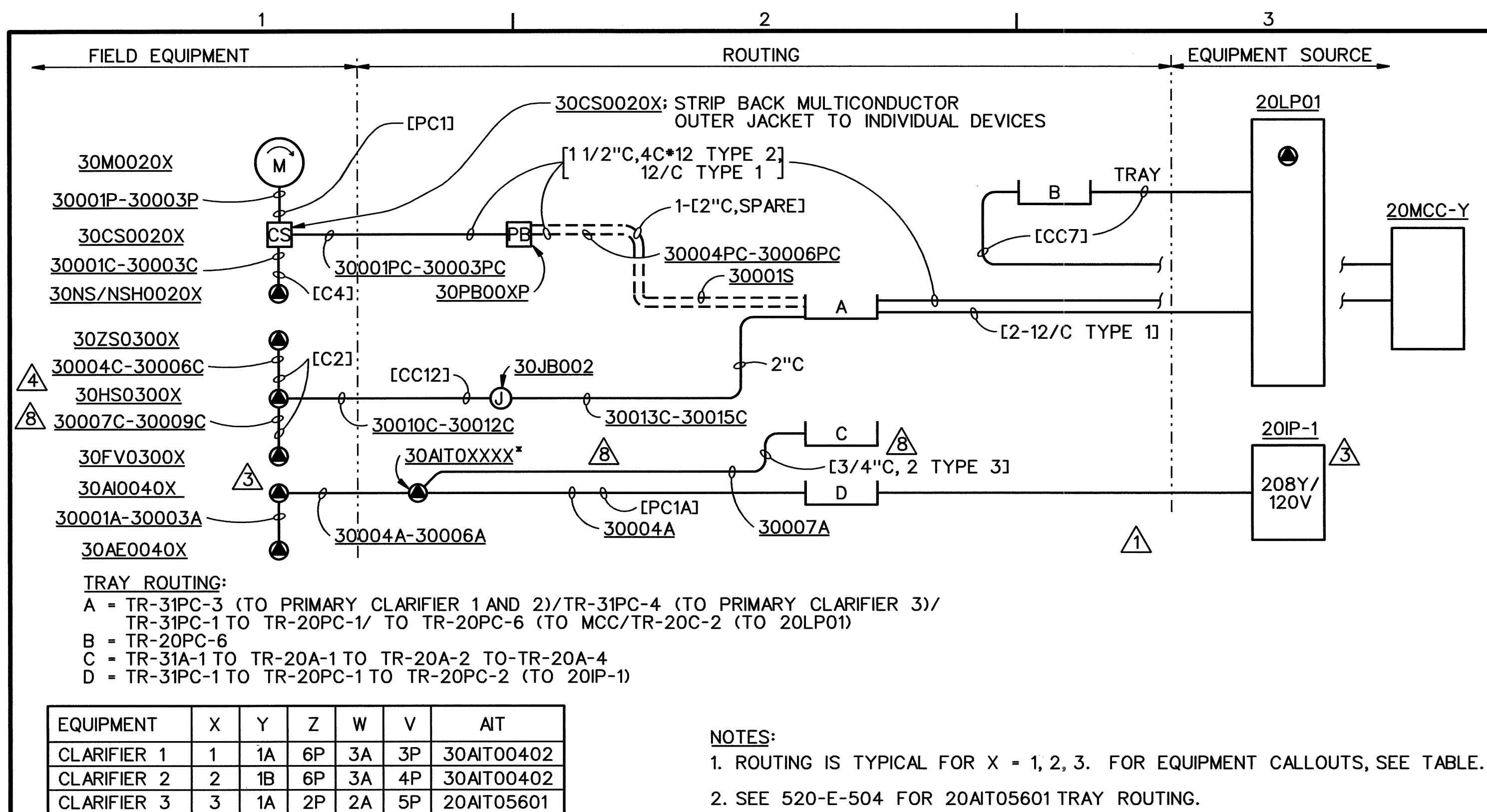
VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	

CH2MHILL

ROCK CREEK FACILITY
EXPANSION - PHASE 5
PACKAGE B
UNIFIED SEWERAGE AGENCY
WASHINGTON COUNTY, OREGON

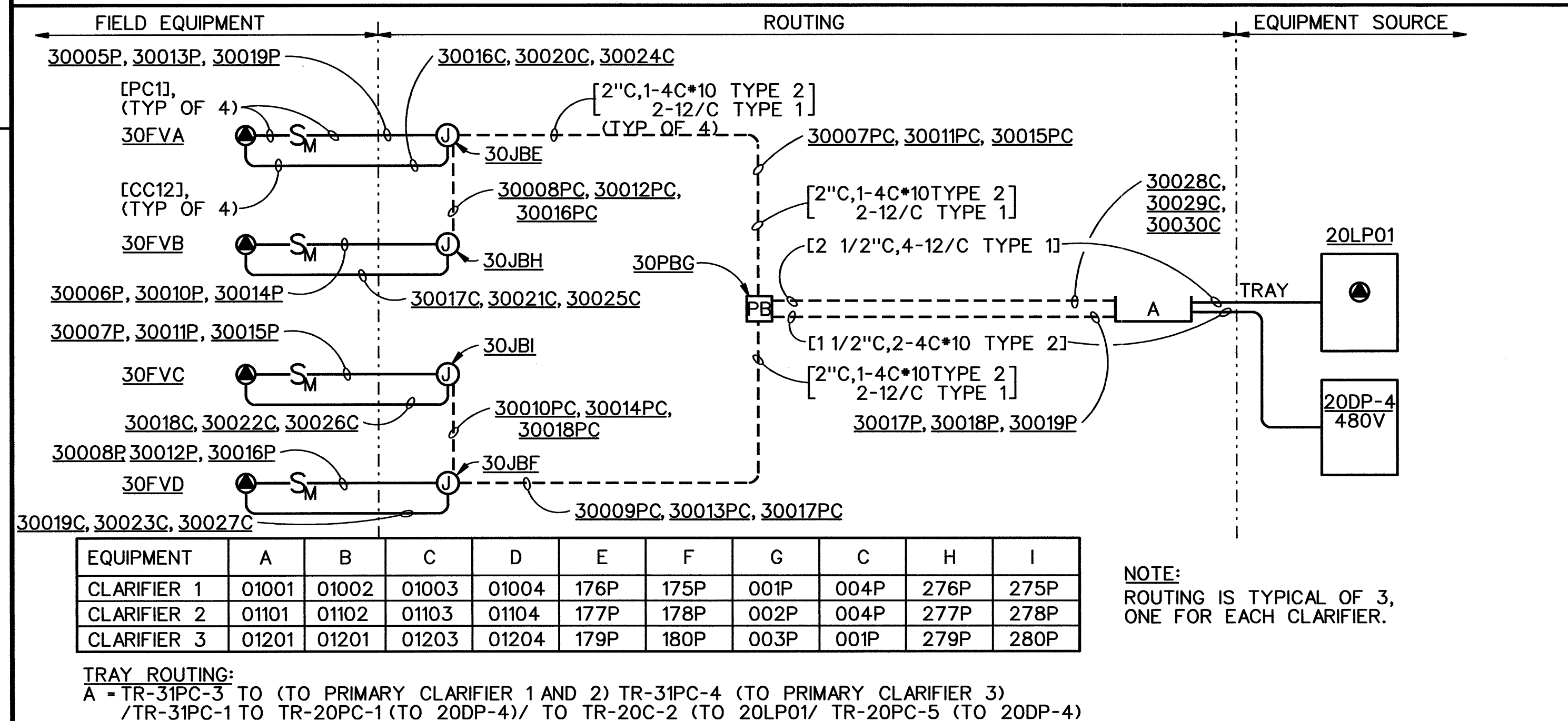
PRIMARY TREATMENT
ELECTRICAL
PRIMARY CLARIFIERS
DETAILS

SHEET	317
DWG	530-E-401
DATE	JULY 1999
PROJ	146190



PRIMARY CLARIFIERS AND ASSOCIATED EQUIPMENT

(P&ID 5B8-1-22,23 AND DWG 530-E-131)



FLUSHING WATER VALVES AT CLARIFIERS

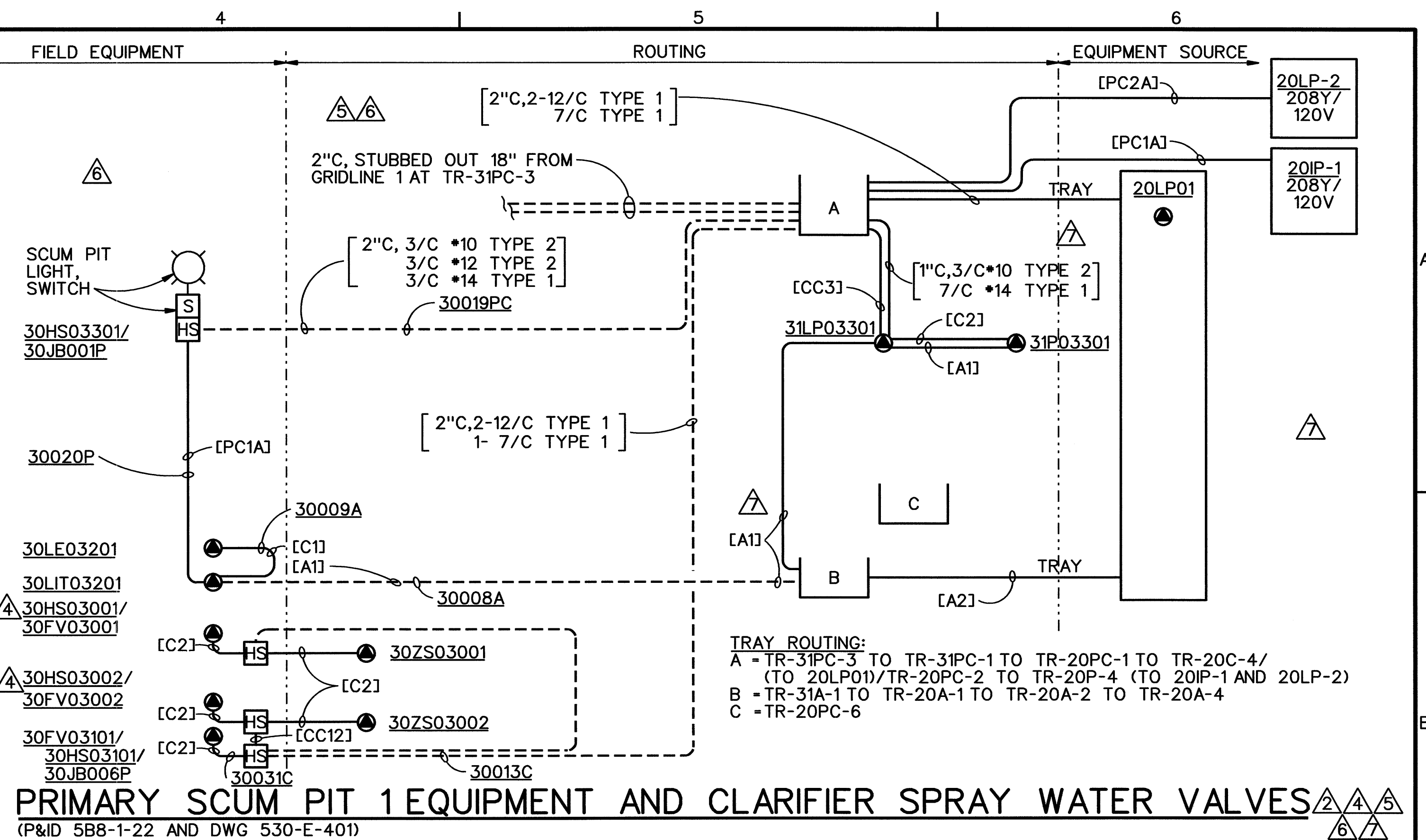
(P&ID 5B8-1-22,23 AND DWG 530-E-131)

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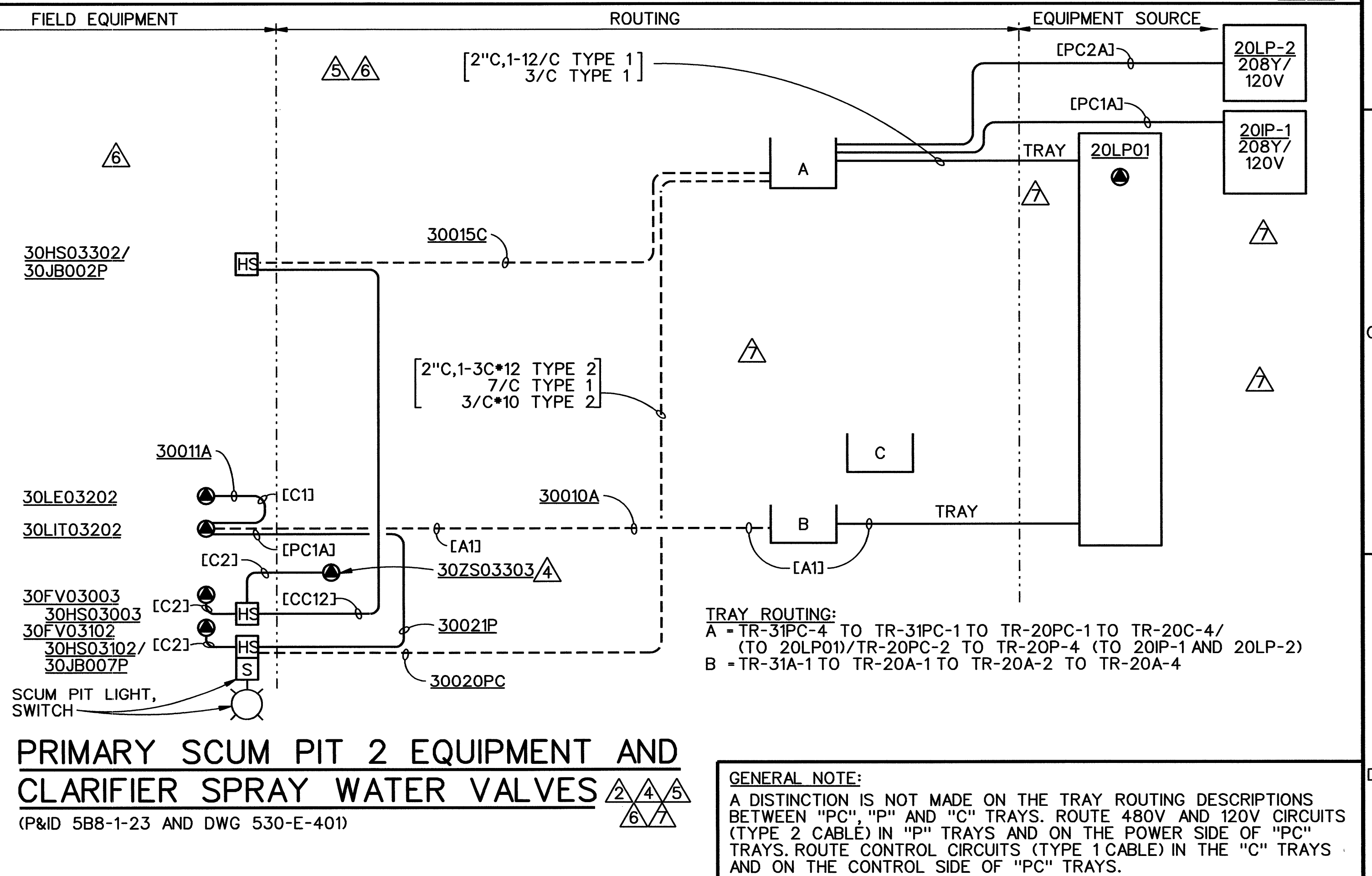
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DSGN	DR	CHK	APVD	NO.	DATE	REVISION	BY	APVD	VERIFY SCALE
KL MAESTRI	SE NELSON	D WAGNER	J GOETZ	10/01	CIR NO. 466		MSM	LJP	BAR IS ONE INCH ON ORIGINAL DRAWING.
				1/00	CIR NO. 025		BAY	LJP	0
				8/99	ADDENDUM NO. 3		JBM	BAY	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



PRIMARY SCUM PIT 1 EQUIPMENT AND CLARIFIER SPRAY WATER VALVES

(P&ID 5B8-1-22 AND DWG 530-E-401)



PRIMARY SCUM PIT 2 EQUIPMENT AND CLARIFIER SPRAY WATER VALVES

(P&ID 5B8-1-23 AND DWG 530-E-401)

CH2MHILL

ROCK CREEK FACILITY
EXPANSION - PHASE 5
PACKAGE B
UNIFIED SEWERAGE AGENCY
WASHINGTON COUNTY, OREGON

PRIMARY TREATMENT
ELECTRICAL
PRIMARY CLARIFIERS
CIRCUIT/RACEWAY BLOCK DIAGRAMS

SHEET	318
DWG	530-E-501
DATE	JULY 1999
PROJ	146190

Truss Strut Bill of Material

4B

Line	TOTAL Qty/CT	Qty.	Group Number	PC MK	Length	BP	Millback	BP	Millback	WT/CT	Ref. DWG No.
461 Strut Material:											
1	30	10	116	✓ BL	91 1/32	2	7 1/4	2	7 1/4	195	461-2
2	30	10	116	✓ BBR	94 23/32	2	5	2	5	203	
3	30	10	116	✓ BPK	94 9/16	2	5	2	5	202	
4	30	10	116	✓ BGY	93 7/16	2	6 1/2	2	6 1/2	200	
5	30	10	116	BGO	184 1/16	2	5	2	5	394	
6	30	10	116	BO	184 5/8	2	4 1/2	2	4 1/2	395	
7	30	10	116	BW	87 1/4	3	3 1/2	3	3 1/2	187	
8	30	10	116	GP	92 21/32	2	4 1/2	2	4 1/2	198	
9	30	10	116	GL	183 31/32	2	4 3/4	2	4 3/4	393	
467 Strut Material:											
10	30	10	114	GBR	190 5/16	12	8	12	8	843	
11	30	10	114	GPK	134 1/2	12	6.5	12	6.5	596	
467 Strut Material:											
12	30	10	110	GGY	164 17/32	12	9	12	9	729	
13	30	10	110	GGO	164 21/32	12	9.25	12	9.25	730	
14	30	10	110	GW	165 5/32	12	9	12	9	732	

Total Weight = 5995

Material: 6061-T6 Alum.

Protrusion Height Tolerance after Millback: -0.000/+0.020

Printed By: alf Date: 2/1/02

Contract Number: 199111-1-3

Checked By: MWL Date: 2/5/02

Issued By: are Date: 2/6/02

Tank Diameter: 140' AD

Bill Page: 4B Rev: 0

Hillsboro, OR

ALUMINUM TRUSS SUPPORTED COVERS FOR ROCK CREEK FACILITY HILLSBORO, OR

CONSTRUCTION DRAWINGS FOR (3) 140' - 0" PRIMARY CLARIFIERS

GENERAL NOTES:

1. ALUMINUM TRUSS SUPPORTED COVERS TO BE INSTALLED ON THREE (3) PRIMARY CLARIFIER TANKS.
2. UNLESS SPECIFICALLY NOTED, ALL ALUMINUM MATERIAL IS MIL FINISHED.
3. CLEAN SURFACES BEFORE APPLYING SEALANT. SCUL OFF EXCESS SEALANT.
4. ALL ALUMINUM SHEET MATERIAL TO BE STORED IN A VERTICAL POSITION AND KEPT DRY AND FREE OF STANDING WATER.
5. NO SUBSTITUTIONS, REPAIRS, OMISSIONS OR ALTERATIONS SHALL BE MADE TO PARTS FURNISHED WITHOUT WRITTEN APPROVAL FROM CONSERVATEK.
6. FASTENERS TO BE ALUMINUM OR 300 SERIES STAINLESS STEEL.
7. TRUSSES TO BE CRANE SET. USE SPREADER BAR TO LIFT TRUSSES.
8. ALL FASTENERS ARE TO BE FIELD INSTALLED.

ABBREVIATION KEY:

TYP. = TYPICAL ALUM. = ALUMINUM
CL = CENTER LINE HHB = HEX HEAD BOLT
w/ = WITH STS = SELF-TAPPING SCREW
MIN. = MINIMUM
THK. = THICK

DESIGN CRITERIA & WEIGHTS

DEAD LOAD COVER = 4.19 PSF
LIVE LOAD = 25 PSF
CONCENTRATED LOAD = 400 LB/FT

WIND LOAD UPLIFT = 11.92 PSF

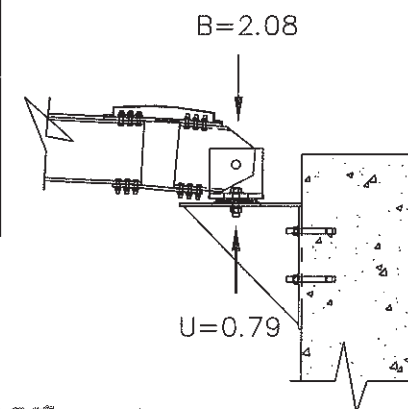
LOAD COMBINATIONS:
DEAD LOAD + LIVE LOAD
DEAD LOAD + WIND LOAD

TABLE OF CONTENTS

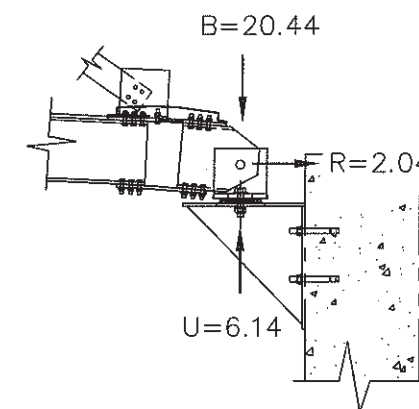
DWG NO.	REV. NO.	DRAWING TITLE
C1	0	COVER PAGE
E1	3	GENERAL PLAN
E1B	3	PLAN PRIMARY CLARIFIER #1
E1C	3	PLAN PRIMARY CLARIFIER #2
E1D	3	PLAN PRIMARY CLARIFIER #3
E2	2	TRUSS DETAILS I
E3	1	SUPPORT DETAILS
E5	1	TRUSS DETAILS III
E6	1	CLARIFIER COVER DETAILS
E7B	1	CENTER SUPPORT DETAILS
E8A	2	PLAN WALKWAY / FLASHING
E8B	2	RADIAL WALKWAY DETAILS
E9	1	APPURTENANCE LOCATION DETAILS
E10	1	NOZZLE DETAILS
E11	2	APPURTENANCE DETAILS
E12	2	EFFLUENT BOX AREA DETAILS

TABLE OF CONTENTS

DWG NO.	REV. NO.	DRAWING TITLE
E13	0	TRUSS PIECE MARKS & ASSY
E14	0	C.P. TRUSS PIECE MARKS & ASSY
E15	0	CLARIFIER #1 PIECE MARKS
E16	0	CLARIFIER #2 PIECE MARKS
E17	0	CLARIFIER #3 PIECE MARKS
E18	0	MISCELLANEOUS DETAILS 1
E18A	0	MISCELLANEOUS DETAILS 2



TYPICAL DOME SUPPORT



TYPICAL AT END OF TRUSS

CERTIFIED FOR
CONSTRUCTION

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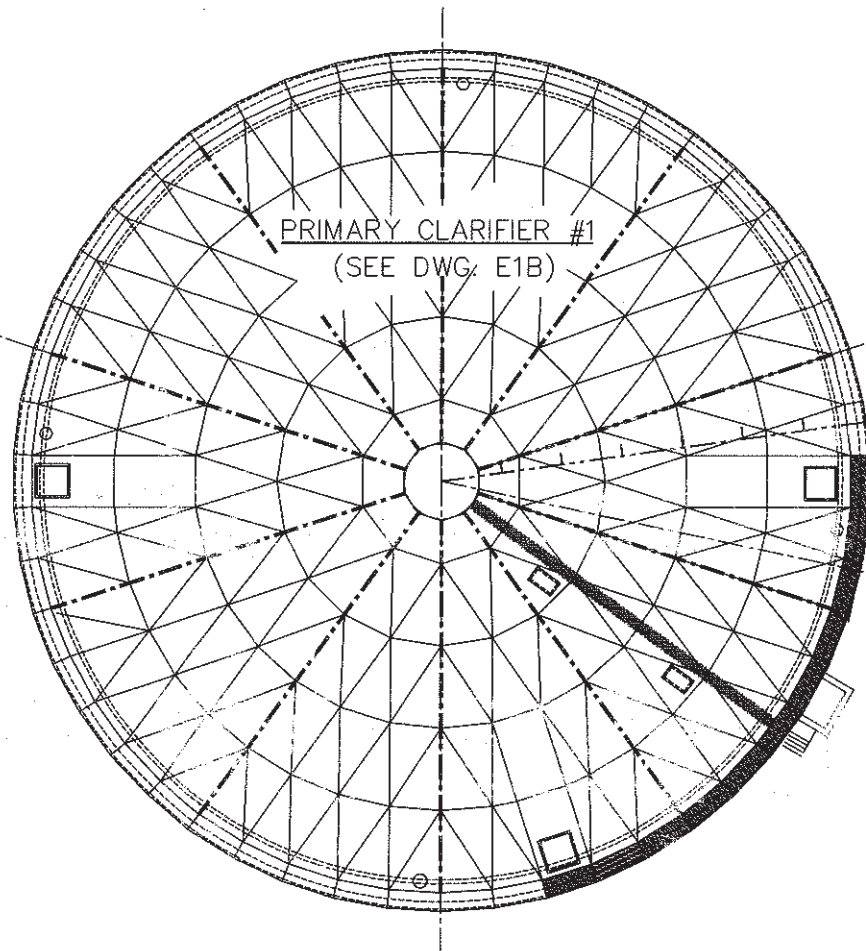
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DWG. NO.	199111-1-3 / C1
REV.	3
SCALE	NTS
DATE	2/18/00
CHK'D	JAP
APP'D	AT

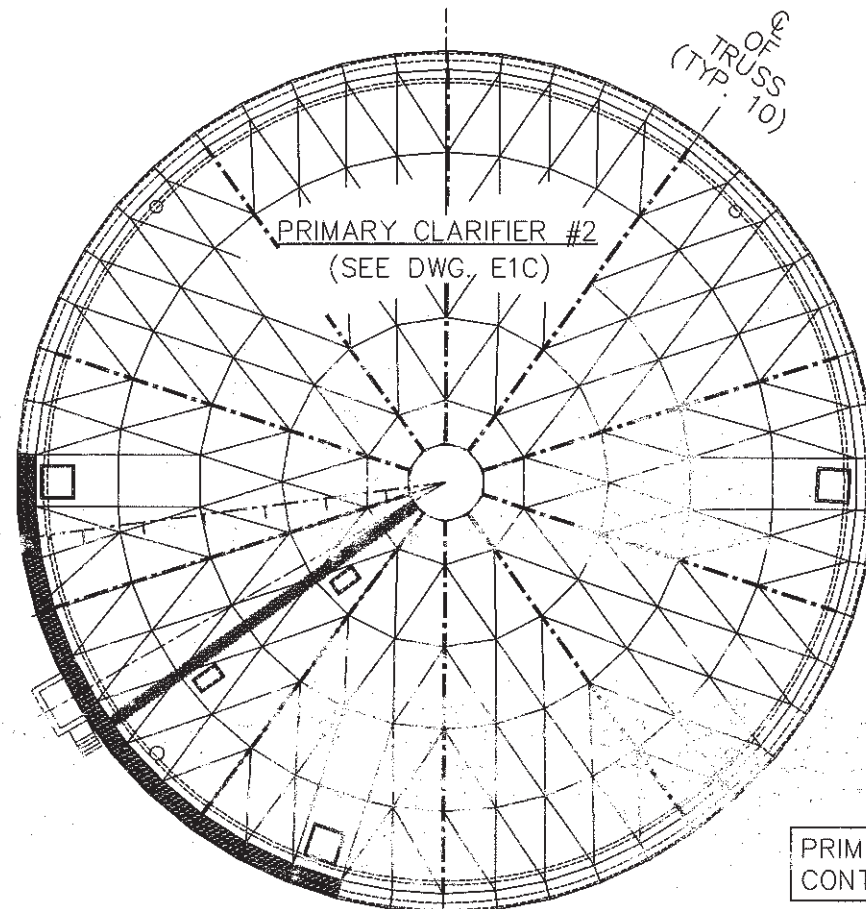
DWG. TITLE: 140' Ø CLARIFIER COVER COVER PAGE				LOCATION: ROCK CREEK FACILITY HILLSBORO, OR			
DATE	3/27/01	REVISION	GENERAL REVISIONS	DATE	4/7/00	REVISION	CHANGED REV. #
DATE	4/30/01	REVISION	CONSTRUCTION REVISION	DATE	3/16/02	REVISION	2 DENTS
DATE	3-5-02	REVISION	DRAWING ISSUED FOR	DATE		REVISION	9 PRINTS
DATE		REVISION	APPROVAL	DATE		REVISION	CONST.
DATE		REVISION	RECORD	DATE		REVISION	



Q
OF
TRUSS
(TYP. 10)

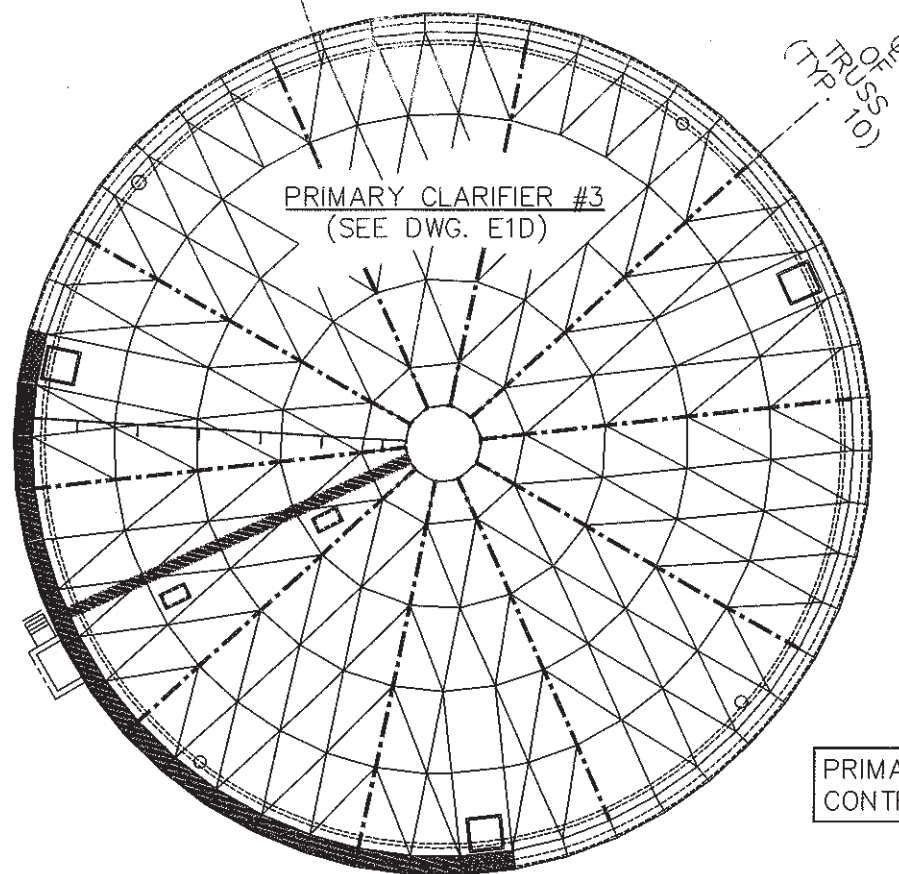


PRIMARY CLARIFIER #1
CONTRACT # 199111-1



TRUSS
(TYP. 10)

PRIMARY CLARIFIER #2
CONTRACT # 199111-2



TRUSS
(TYP. 10)

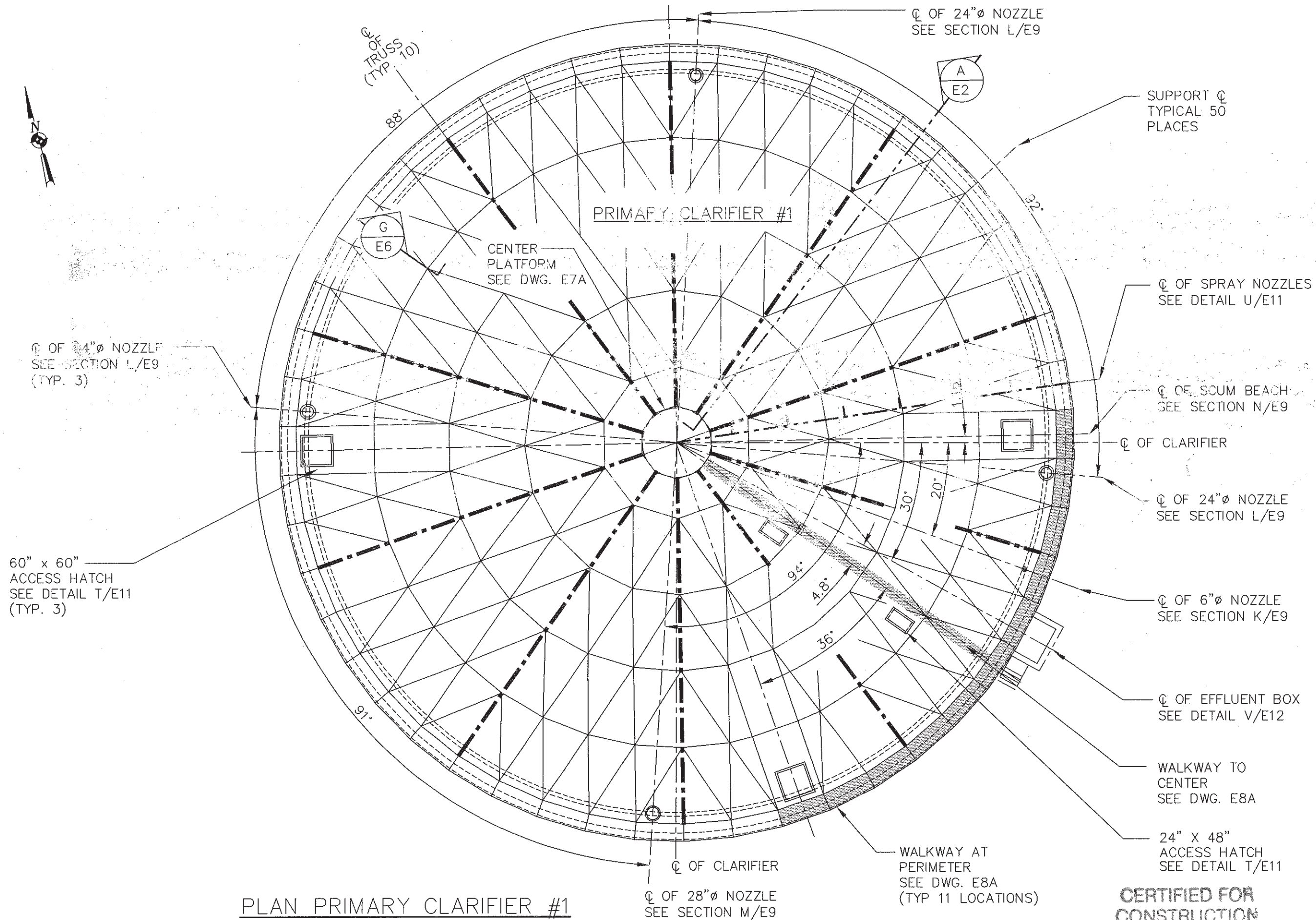
PRIMARY CLARIFIER #3
CONTRACT # 199111-3

PRIMARY CLARIFIERS GENERAL PLAN

CERTIFIED FOR
CONSTRUCTION

No. BY CHK		REVISION		DATE		DWG. TITLE:	
1	JAP	GENERAL	REVISIONS	3/23/01	140' Ø CLARIFIER COVERS		ROCK CREEK FACILITY HILLSBORO, OR
2	JAP	RELOCATED	SPRAY NOZZLES	4/30/01	GENERAL PLAN		
3	DG	CONSTRUCTION	DRAWING	3-5-02			
DRAWING ISSUED FOR				DATE		LOCATION:	
APPROVAL				9 PRINTS		ROCK CREEK FACILITY HILLSBORO, OR	
CONST.				2 PRINTS		HILLSBORO, OR	
RECORD							

CONSERVATEK		CONSERVATEK INDUSTRIES, INC.		498 LOOP 336 EAST • CONROE, TEXAS 77305											
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JAP		AUF		2/8/00		NTS		3		199111-1-3		E1A			



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DWG. BY	CHK'D	DATE	SCALE	REV.	CONTRACT No.	DWG. No.
JAP	AF	2/8/00	NTS	3	199111-1	E1B

DWG. TITLE:				LOCATION:	
140'Ø CLARIFIER COVERS				ROCK CREEK FACILITY	
PLAN CLARIFIER #1				HILLSBORO, OR	
NO. BY CHK		REVISION		DATE	
1	JAP	af	GENERAL REVISION	3/23/01	
2	JAP	I	RELOCATED SPRAY NOZZLES	4/30/01	
3	DG	↓	CONSTRUCTION REVISION	3-5-02	
DRAWING ISSUED FOR				DATE	
APPROVAL		9 PRINTS		4/7/00	
CONST.		2 PRINTS		3/7/02	
RECORD					

CERTIFIED FOR
CONSTRUCTION



CL OF 24"Ø NOZZLE
SEE SECTION L/E9
(TYP. 3)

CL OF 24"Ø NOZZLE
SEE SECTION L/E9

SUPPORT CL
TYPICAL 50
PLACES

60" X 60"
ACCESS HATCH
SEE DETAIL S/E11
(TYP. 3)

CL OF 24"Ø NOZZLE
SEE SECTION L/E9

60" X 60"
ACCESS HATCH
LOCATED OVER
SCUM BEACH
SEE DETAIL S/E11

CL OF SCUM BEACH
SEE SECTION N/E9

CL OF CLARIFIER

CL OF SPRAY NOZZLES
SEE DETAIL U/E11

CL OF 6"Ø NOZZLE
SEE SECTION K/E9

WALKWAY AT
PERIMETER
SEE DWG. E8A
(TYP 11 LOCATIONS)

CL OF EFFLUENT
SEE DETAIL V/E12

WALKWAY TO
CENTER
SEE DWG. E8A

24" X 48"
ACCESS HATCH
SEE DETAIL T/E11

CL OF 28"Ø NOZZLE
SEE SECTION M/E9

PLAN PRIMARY CLARIFIER #2

PRIMARY CLARIFIER #2

CL OF CLARIFIER

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OWN. BY CHK'D DATE SCALE REV. CONTRACT No. DWG. No.
JAP MF 2/8/00 NTS 3 199111-2 / E1C

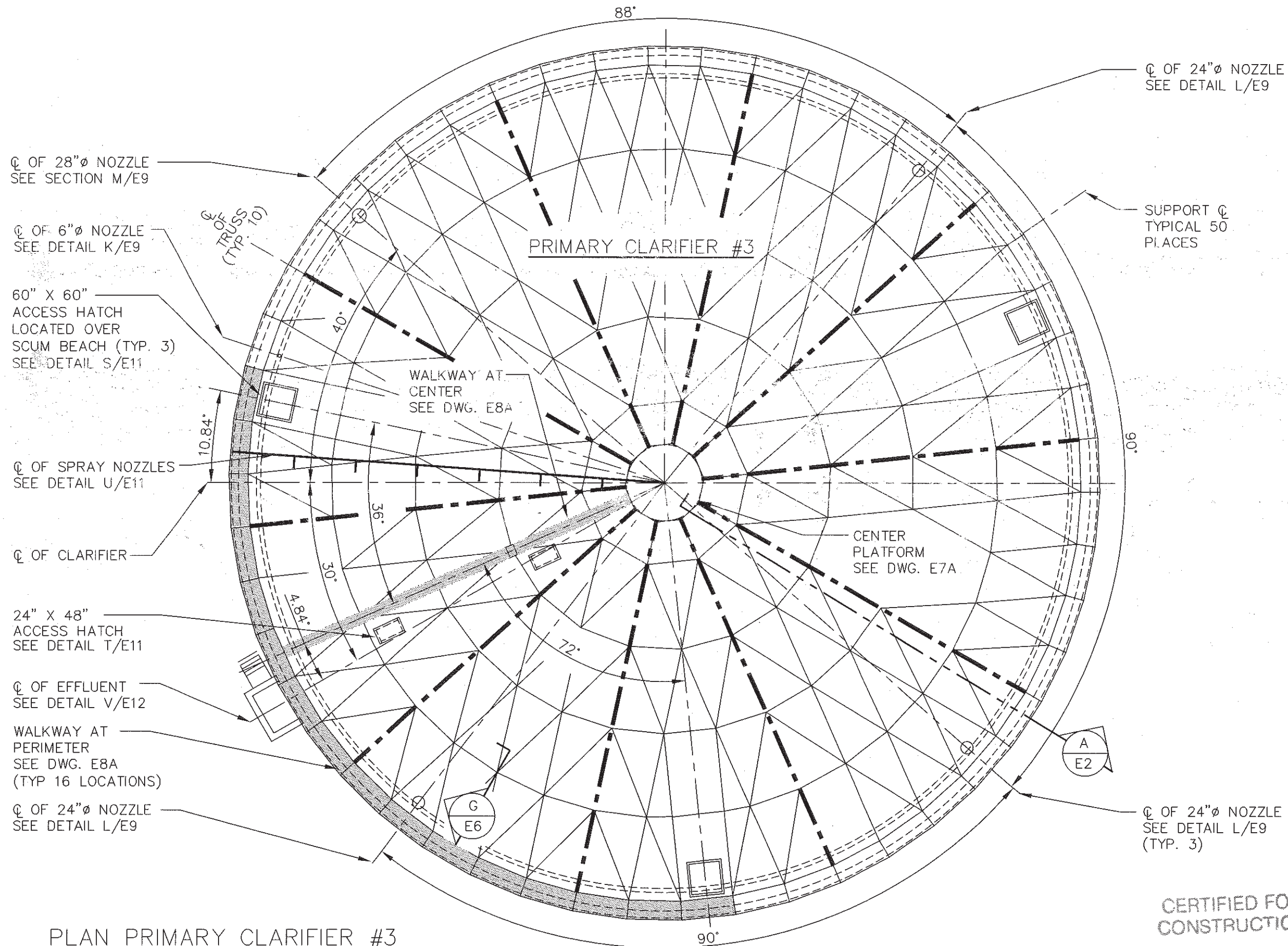
DWG. TITLE:

140'Ø CLARIFIER COVERS
PLAN CLARIFIER #2

LOCATION:

ROCK CREEK FACILITY
HILLSBORO, OR

No.	BY	CHK	REVISION	DATE
1	JAP	CK	GENRL REVISIONS	3/23/01
2	JAP		RELOCATED SPRAY NOZZLES	4/30/01
3	DG		CONSTRUCTION REVISION	3-5-02
DRAWING ISSUED FOR				DATE
APPROVAL				9 PRINTS
CONST.				2 Prints
RECORD				3/7/02



PLAN PRIMARY CLARIFIER #3

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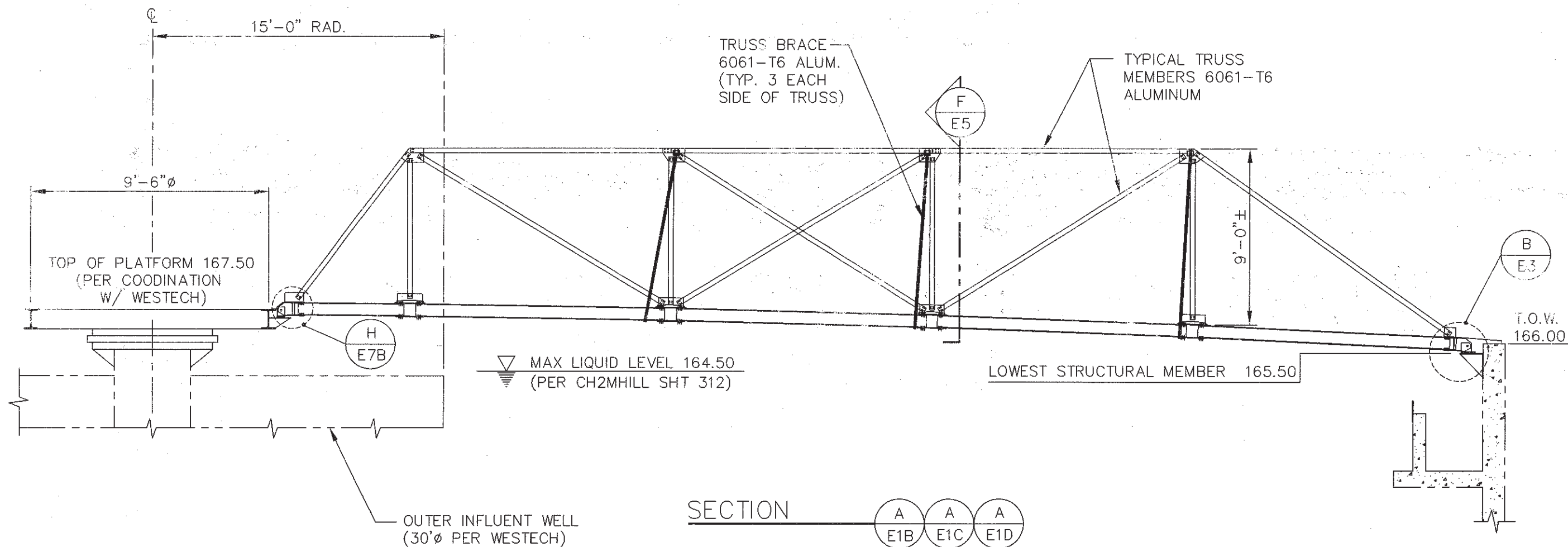
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DWG. No.	REV.	SCALE	DATE	CHK'D	BY
199111-3 / E1D	3	NTS	2/8/00	MF	JAP

DWG. TITLE:
140'Ø CLARIFIER COVERS
PLAN CLARIFIER #3

LOCATION:
ROCK CREEK FACILITY
HILLSBORO, OR

No.	BY	CHK	REVISION	DATE
1	JAP	✓	GENERAL REVISIONS	3/23/01
2	JAP	✓	RELOCATED SPRAY NOZZLES	4/30/01
3	DG	✓	CONSTRUCTION REVISION	3-5-02
DRAWING ISSUED FOR				
APPROVAL				
9 PRINTS				
DATE				
4/7/00				
CONST.				
2 DWGTS				
RECORD				
3/7/02				



FIELD NOTES:

1. SEE DWG E13 FOR TRUSS PIECE MARKS.
2. SEE DWG E14 FOR OUT-OF-PLANE BRACING PIECE MARKS

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CONSTRUCTION

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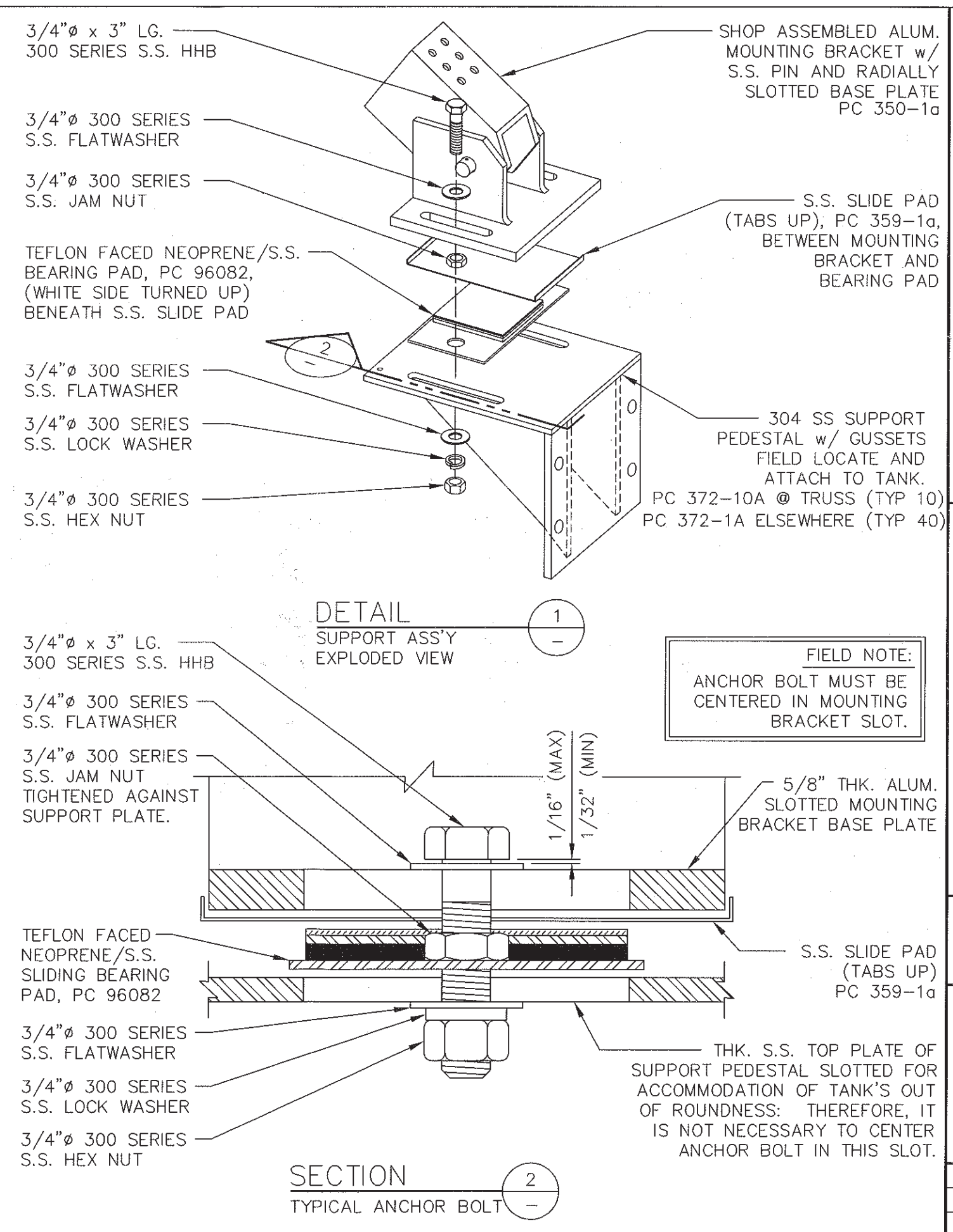
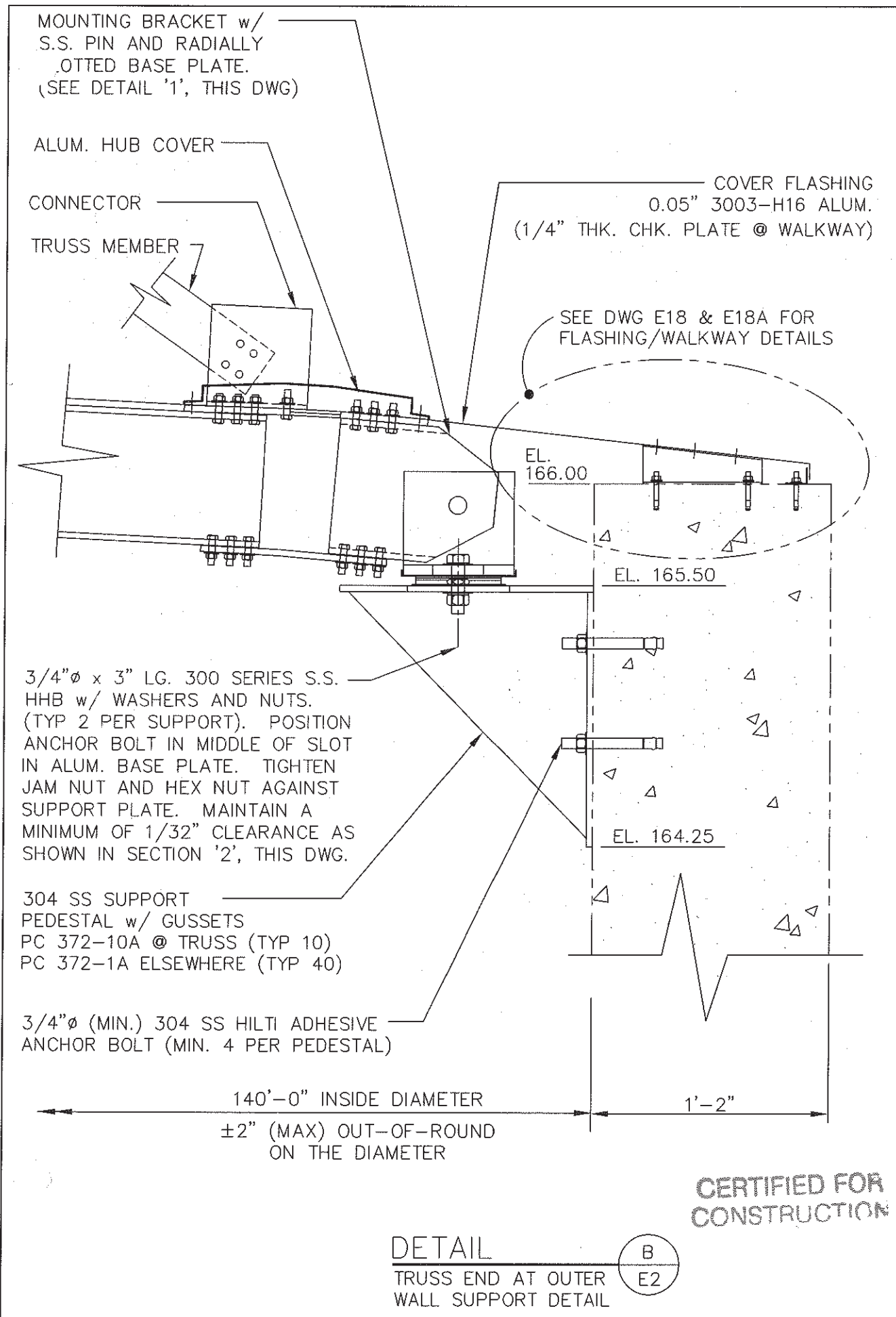
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DWN. BY JAP
CHK'D MF
DATE 2/8/00
SCALE NTS
REV. 2
CONTRACT No. 199111-1-3
DWG. No. E2

DWG. TITLE:
140' ϕ CLARIFIER COVERS
TRUSS DETAIL I

LOCATION:
ROCK CREEK FACILITY
HILLSBORO, OR

No.	BY	CHK	REVISION	DATE	DWG. TITLE	LOCATION
1	JAP	MF	GENERAL REVISIONS	3/23/01	140' ϕ CLARIFIER COVERS	ROCK CREEK FACILITY
2	DG	J	CONSTRUCTION REVISION	3-5-02	TRUSS DETAIL I	HILLSBORO, OR
DRAWING ISSUED FOR					DATE	
APPROVAL					4/7/00	
CONST.					3/7/02	
RECORD						



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DWG. No.	199111-1-3	REV.	1	DATE	2/8/00	SCALE	NTS
DWN. BY	JAP	CHK'D	AF	DATE	2/8/00	SCALE	NTS
DWG. No.	199111-1-3	REV.	1	DATE	2/8/00	SCALE	NTS
DWG. TITLE: 140'ø CLARIFIER COVERS SUPPORT DETAILS				LOCATION: ROCK CREEK FACILITY HILLSBORO, OR			
No.	1	CHK	1	DATE	3-5-02	REVISION	
APPROVAL		CONSTRUCTION		DATE	4/7/00	REVISION	
CONST.		9 PRINTS		DATE	3/7/02	REVISION	
RECORD		2 PRINTS		DATE		REVISION	

NOTE:
 QUANTITY AND CONFIGURATION
 OF CONNECTION BOLTS MAY
 VARY FROM THAT SHOWN

- FIELD NOTES:
1. SEE DWG. E13 FOR TRUSS PIECE MARKS.
 2. SEE DWG. E14 FOR OUT-OF-PLANE BRACING PIECE MARKS.

SEE DWG'S E13 & E19 FOR
 DETAILS OF MAIN TRUSS ASSY

TYPICAL 6061-T6
 ALUM. TRUSS BRACE

TYPICAL BRACE CONNECTION
 1/2"Ø S.S. X 6" HHB w/
 NUTS & WASHERS

4" 6061-T6 ALUM.
 CONNECTOR CHANNEL

FIELD APPLY SEALANT
 AROUND CUTOUT &
 PERIPHERY OF HUB
 COVERS.

STRUT

3/8"Ø S.S. x 1-1/2" HHB w/
 NUTS & WASHERS
 (TYP. f/ OUT-OF-PLANE KICKER CONNECTORS)

1/2"Ø S.S. X 6" HHB w/
 NUTS & WASHERS

TYPICAL 6061-T6
 ALUM. TRUSS MEMBER

TYPICAL TRUSS CONNECTION
 BOLTS w/ NUTS & WASHERS

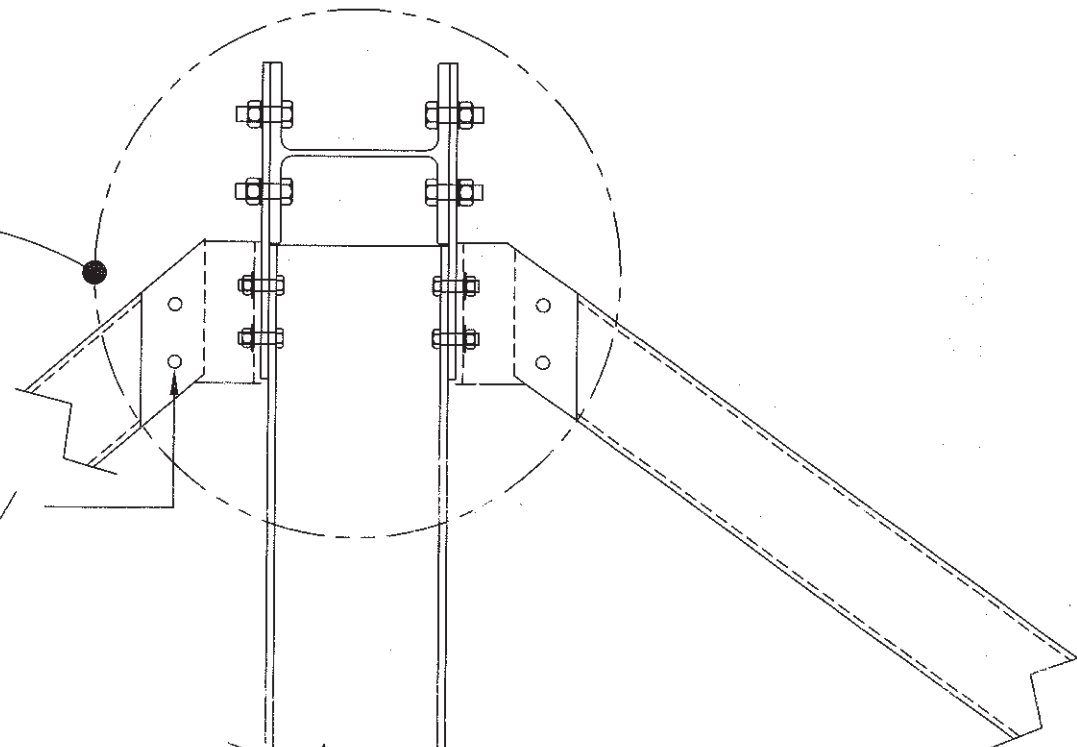
6061-T6 ALUM BOTTOM
 CHORD TRUSS BEAM

SECURE MODIFIED HUB COVERS
 W/ 1/4"Ø x 3/4" SS
 SELF TAPPING SCREWS
 IF NEEDED.
 FIELD LOCATE AND DRILL

STRUT

SECTION
 TYPICAL TRUSS
 SECTION

F
 E2



6" ALUM
 CONNECTOR CHANNEL

HUB COVER

FIELD APPLY SEALANT
 AROUND CUTOUT &
 PERIPHERY OF HUB
 COVERS.

CERTIFIED FOR
 CONSTRUCTION

1/2"Ø S.S. x 2" HHB w/
 NUTS & WASHERS
 (TYP. f/ MAIN TRUSS CONNECTORS)

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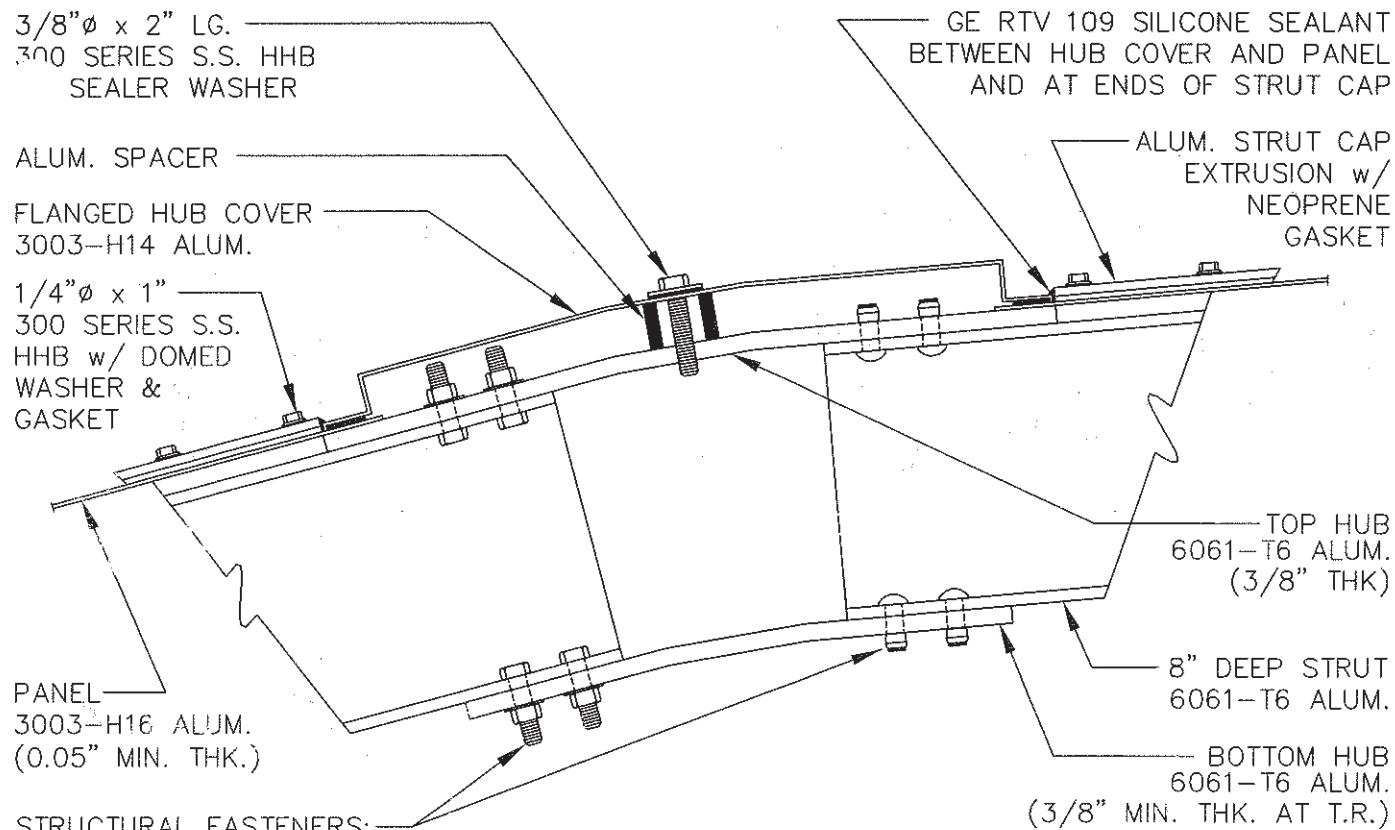
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DWN. BY	CHK'D	DATE	SCALE	REV.	CONTRACT No.	DWG. No.
JAP	AF	2/10/00	NTS	1	199111-1-3	E5

DWG. TITLE:
 140'Ø CLARIFIER COVERS
 TRUSS DETAILS III

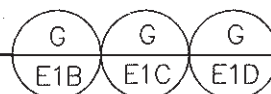
LOCATION:
 ROCK CREEK FACILITY
 HILLSBORO, OR

No.	BY	CHK	REVISION	DATE
1	DG	1/2	CONSTRUCTION REVISION	3-5-02
DRAWING ISSUED FOR				
APPROVAL	9 PRINTS			
CONST.	2 PRINTS			
RECORD	3/7/02			

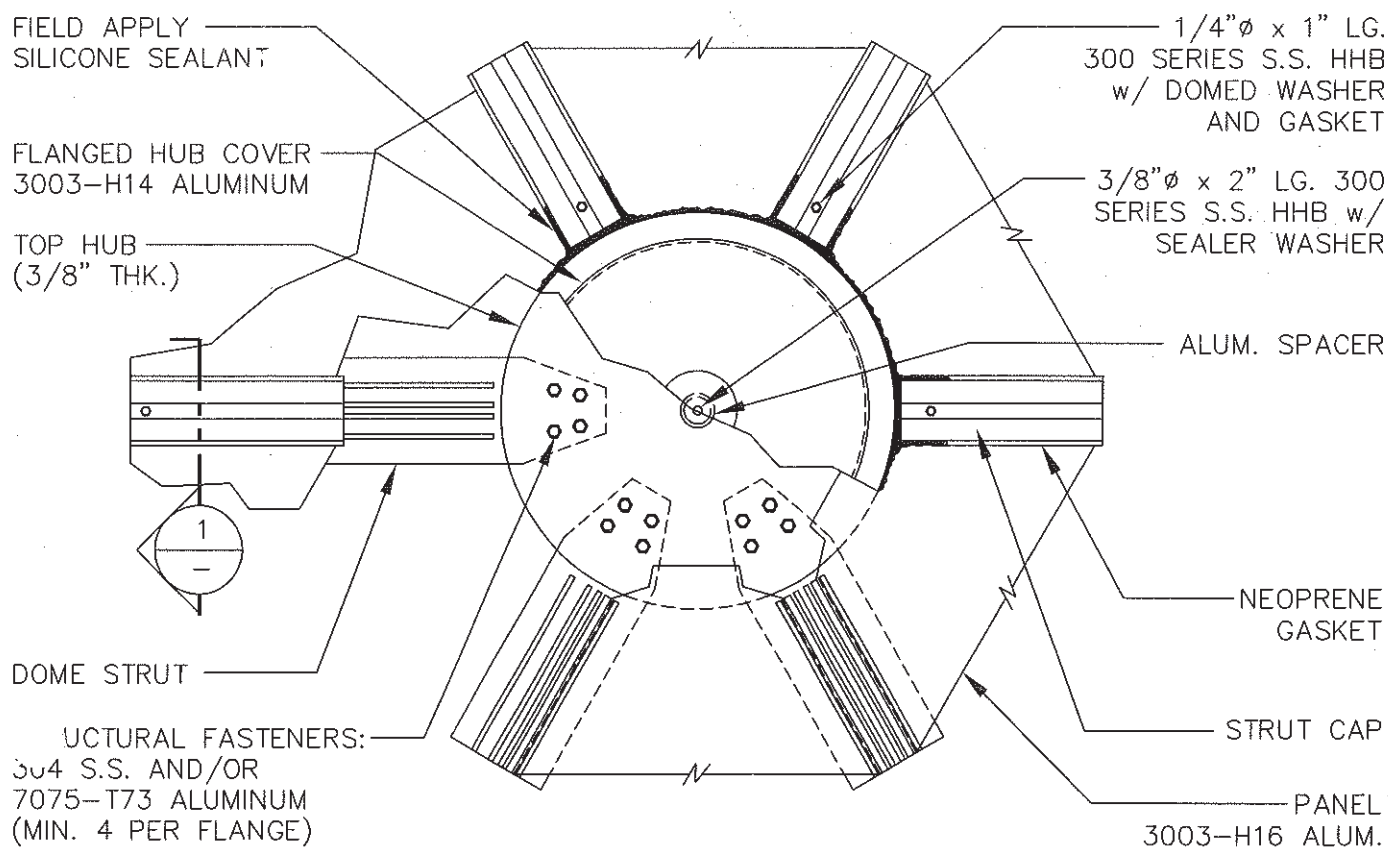


STRUCTURAL FASTENERS:
304 S.S. AND/OR
75-T73 ALUMINUM
(MIN. 4 PER FLANGE)

SECTION
TYPICAL HUB SECTION



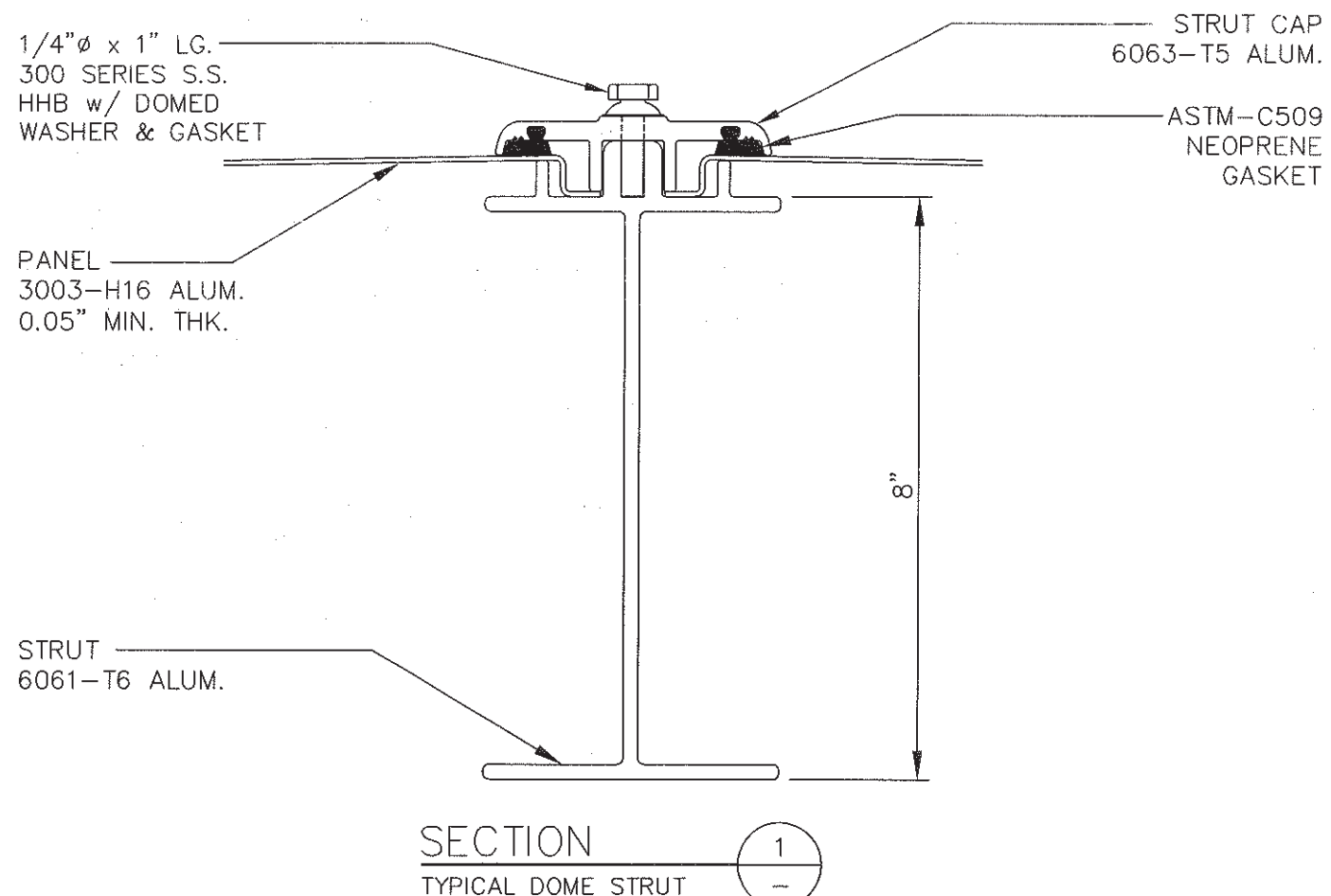
NOTE: ALL ALUMINUM
MATERIAL IS MILL FINISHED
UNLESS NOTED OTHERWISE



TYPICAL HUB DETAIL

TYPICAL DOME STRUCTURAL FASTENERS:

1. FOR $13/32"$ OR $7/16"$ HOLES USE $3/8"$ ALUM LOCKBOLTS.
2. FOR $17/32"$ OR $9/16"$ HOLES USE $1/2" \times 1 \ 3/8"$ HHBS.



SECTION
TYPICAL DOME STRUT



CERTIFIED FOR
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DWG. No.	199111-1-3 / E6
CONTRACT No.	1
REV.	NTS
DATE	2/8/00
CHK'D	AF
DWN. BY	JAP

DWG. TITLE:
140' CLARIFIER COVERS
CLARIFIER COVER DETAILS

LOCATION:
ROCK CREEK FACILITY
HILLSBORO, OR

No.	BY	CHK	REVISION	DATE
1	DG	CH	CONSTRUCTION	3-5-02
DRAWING ISSUED FOR				
APPROVAL	9 PRINTS			
CONST.	2 PRINTS			
RECORD	3/7/02			

TRUSS MEMBER
3003-H16 ALUM.

ALUM. CONNECTOR
CHANNEL

ALUM. HUB COVER

0.05" THK. FLASHING
3003-H16 ALUM.
PC 330-6a

MOUNTING BRACKET
w/ S.S. PIN AND
OVERSIZED HOLE
IN BASE PLATE
PC 350-5A
(SEE DETAIL 1)

6061-T6 ALUM. HUB
(TYP.)

3/4" ϕ x 3" HHB
(SEE DETAIL 1)

A36 C.S. PEDESTAL
(BY WESTECH)

A36 C.S. CENTER
PLATFORM FRAME
MC12
(BY WESTECH)

DETAIL
CENTER SUPPORT
(TYP. 10)

H
E2

SHOP ASSEMBLED ALUM.
MOUNTING BRACKET w/
S.S. PIN AND BASE PL
w/ OVERSIZED HOLE
PC 350-5A

OVERSIZED HOLE

S.S. SLIDE PAD
PC 359-1a, (TABS UP)
BETWEEN MOUNTING
BRACKET AND
BEARING PAD

PEDESTAL TOP PL
3/8" THK. C.S. (WESTECH)

FIELD NOTE:
FIELD LOCATE AND
DRILL HOLES IN
C.S. TOP PL

FIELD NOTE:
ANCHOR BOLT MUST BE
CENTERED IN OVERSIZED
MOUNTING BRACKET HOLE.

5/8" THK. ALUM.
SLOTTED MOUNTING
BRACKET BASE PLATE

S.S. SLIDE PAD
PC 359-1A
(TABS UP)

3/8" THK. C.S. PEDESTAL
TOP PL (BY WESTECH)
FIELD DRILL HOLES (BY CT)

CERTIFIED FOR
CONSTRUCTION

SECTION
TYPICAL ANCHOR BOLT

2
-

3/4" ϕ x 3" LG.
304 SERIES S.S. HHB

3" x 1 3/4" x 1/4"
THK. ALUM. WASHER PL
PC 372-15a

3/4" ϕ 304 SERIES
S.S. JAM NUT

TEFLON FACED NEOPRENE/S.S.
BEARING PAD
(WHITE SIDE TURNED UP)

3/4" ϕ 304 SERIES
S.S. FLATWASHER

3/4" ϕ 304 SERIES
S.S. LOCK WASHER

3/4" ϕ 304 SERIES
S.S. HEX NUT

DETAIL
SUPPORT ASS'Y
EXPLODED VIEW

1
-

3/4" ϕ x 3" LG.
304 SERIES S.S. HHB

3" x 1 3/4" x 1/4"
THK. ALUM. WASHER PL
PC 372-15a

3/4" ϕ 304 SERIES
S.S. JAM NUT
TIGHTENED AGAINST
SUPPORT PLATE.

TEFLON FACED
NEOPRENE/S.S.
SLIDING BEARING

3/4" ϕ 304 SERIES
S.S. FLATWASHER

3/4" ϕ 304 SERIES
S.S. LOCK WASHER

3/4" ϕ 304 SERIES
S.S. HEX NUT

CONSERVATEK

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DWG. No. 199111-1-3 / E7B
CONTRACT No. 1
REV. 1
SCALE NTS
DATE 2/10/00
CHK'D JAP
DWN. BY JAP

DWG. TITLE:

140' ϕ CLARIFIER COVERS
CENTER SUPPORT DETAILS

LOCATION:

ROCK CREEK FACILITY
HILLSBORO, OR

DATE

3-5-02

REVISION

CONSTRUCTION

No. BY CHK

1 DG

DRAWING ISSUED FOR

9 PRINTS

APPROVAL

CONST.

RECORD

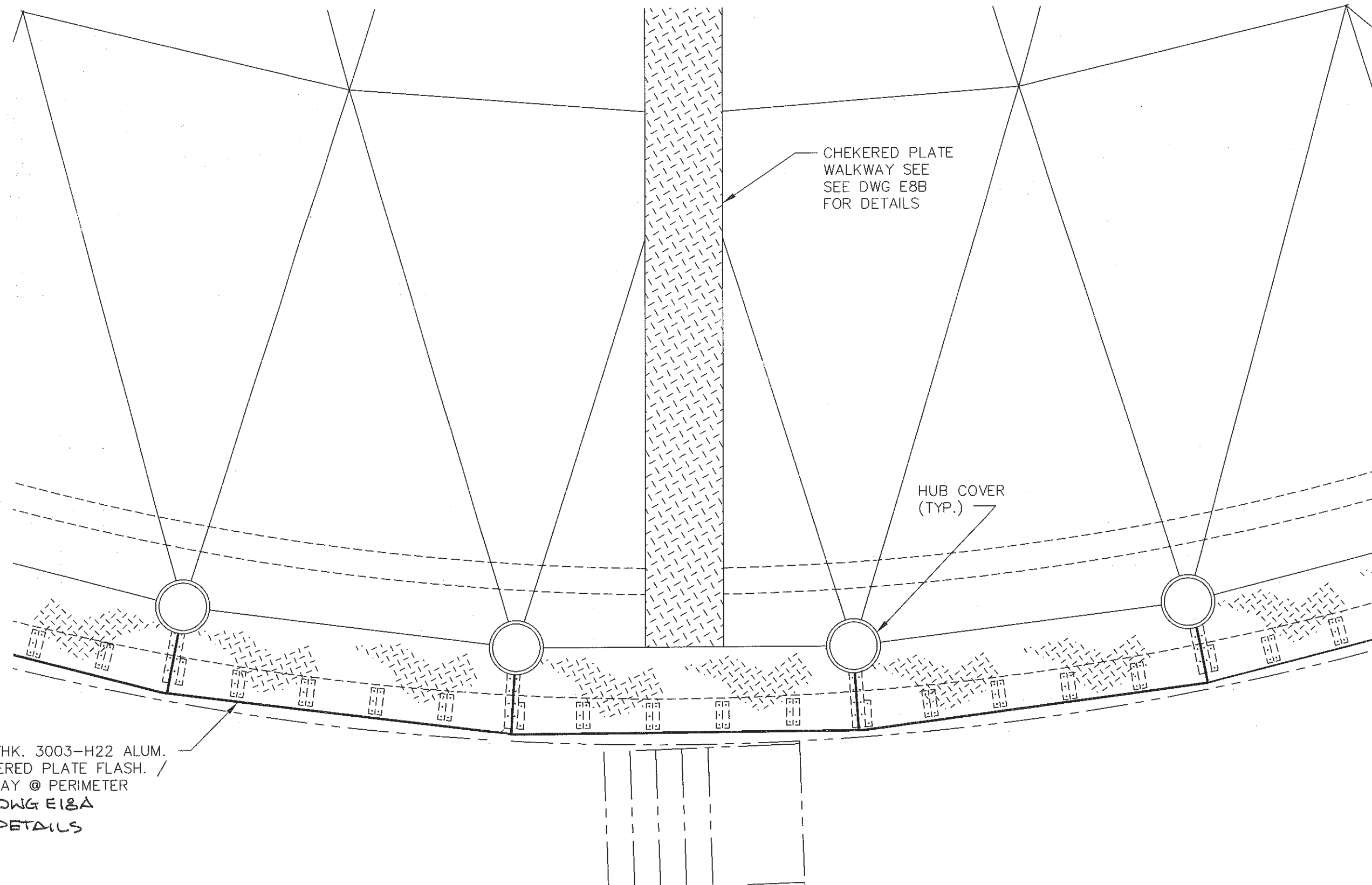
DATE

4/7/00

DATE

3/7/02

2 PRINTS



PLAN WALKWAY / FLASHING

CERTIFIED FOR
CONSTRUCTION

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498 LOOP 336 EAST • CONROE, TEXAS 77305

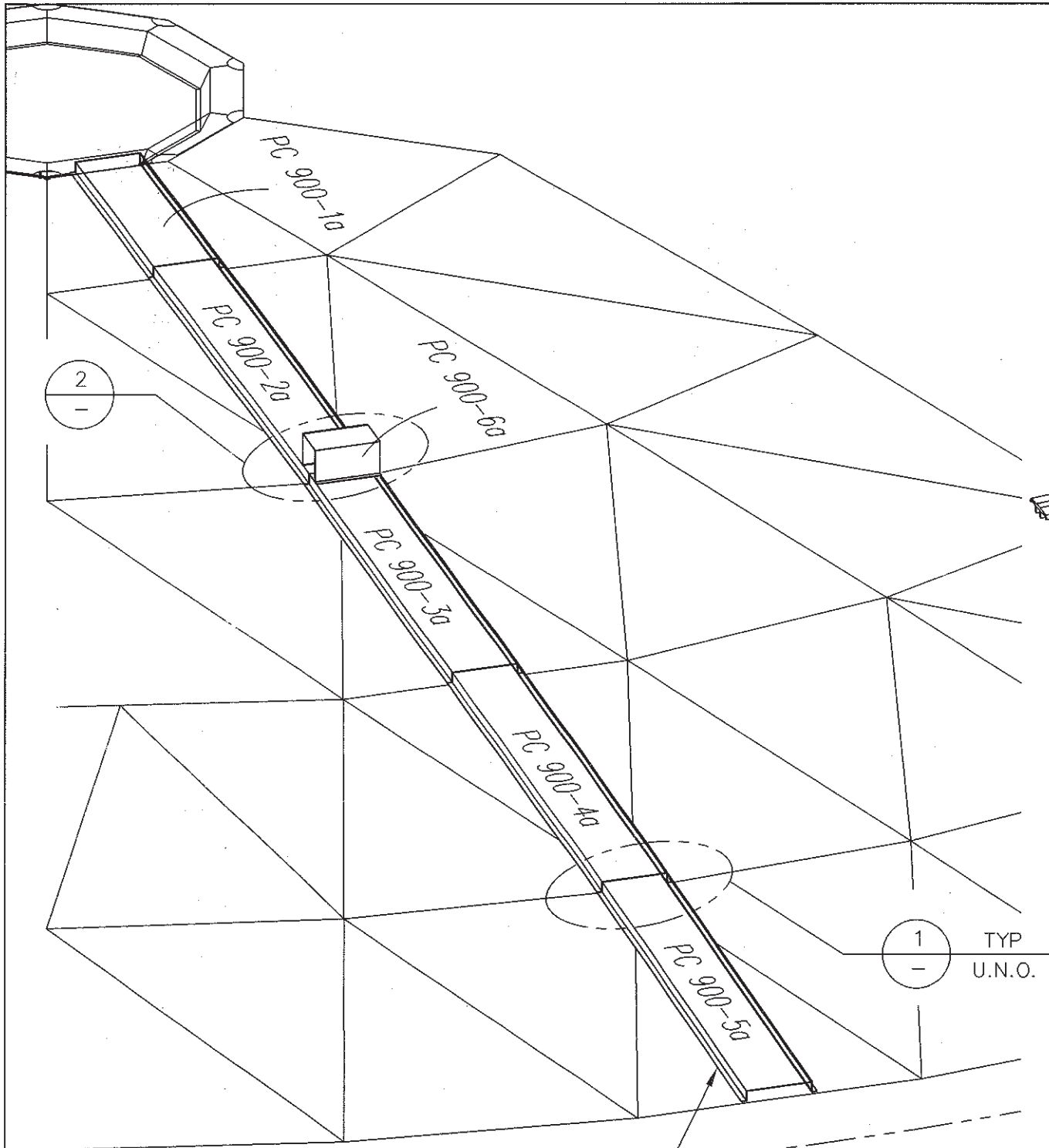
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DWN. BY	CHK'D	DATE	SCALE	REV.	CONTRACT No.	DWG. No.
JAP	AF	11/6/00	NTS	2	199111-1-3	E8A

DWG. TITLE:
140' Ø CLARIFIER COVERS
PLAN WALKWAY / FLASHING

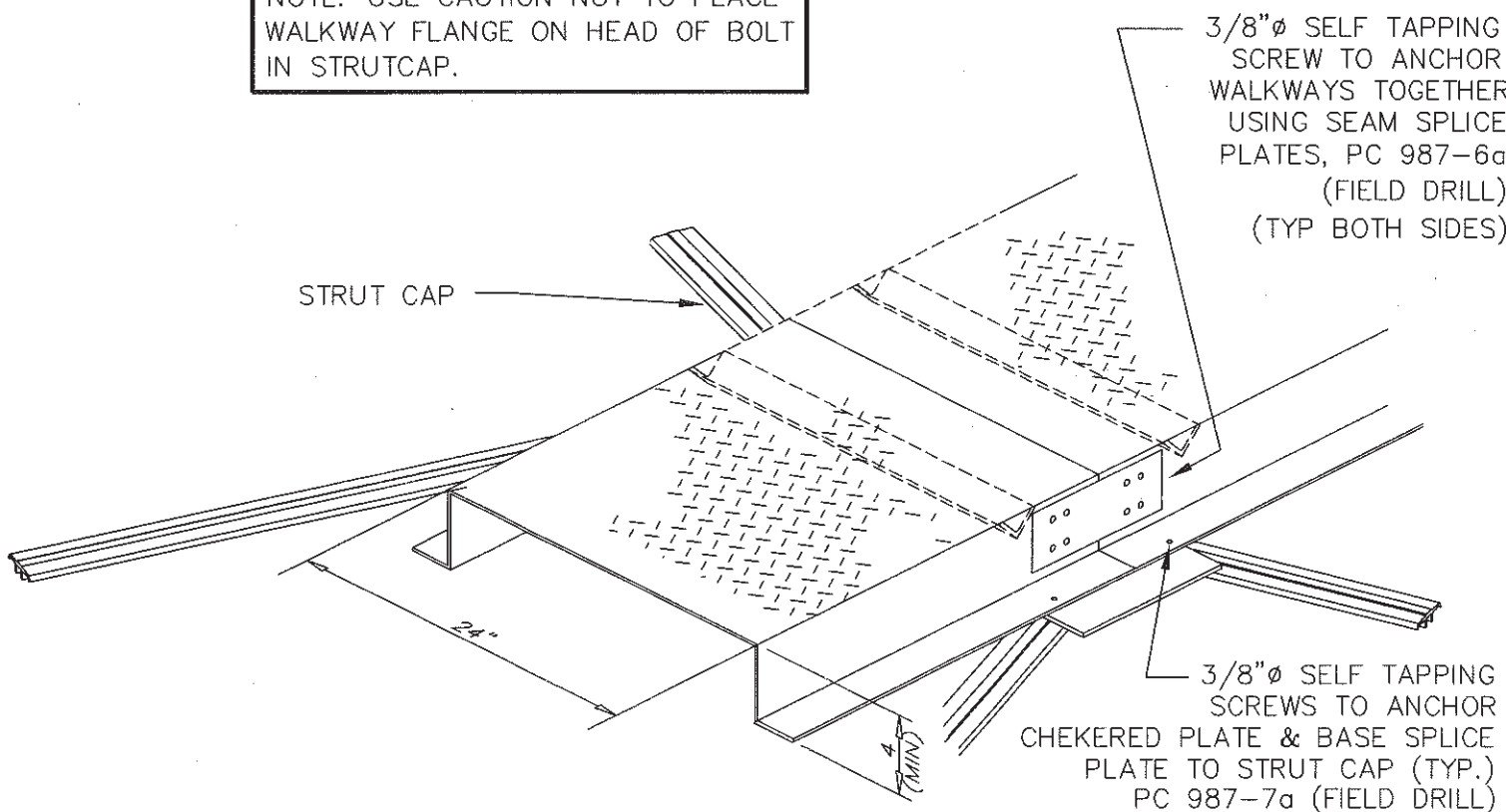
LOCATION:
ROCK CREEK FACILITY
HILLSBORO, OR

No.	BY	CHK	REVISION	DATE
1	JAP	AF	GENERAL REVISIONS	3/23/01
2	DG	↓	CONSTRUCTION REVISION	3-5-02
DRAWING ISSUED FOR				
APPROVAL				DATE
				4/7/00
CONST.				3/7/02
RECORD				



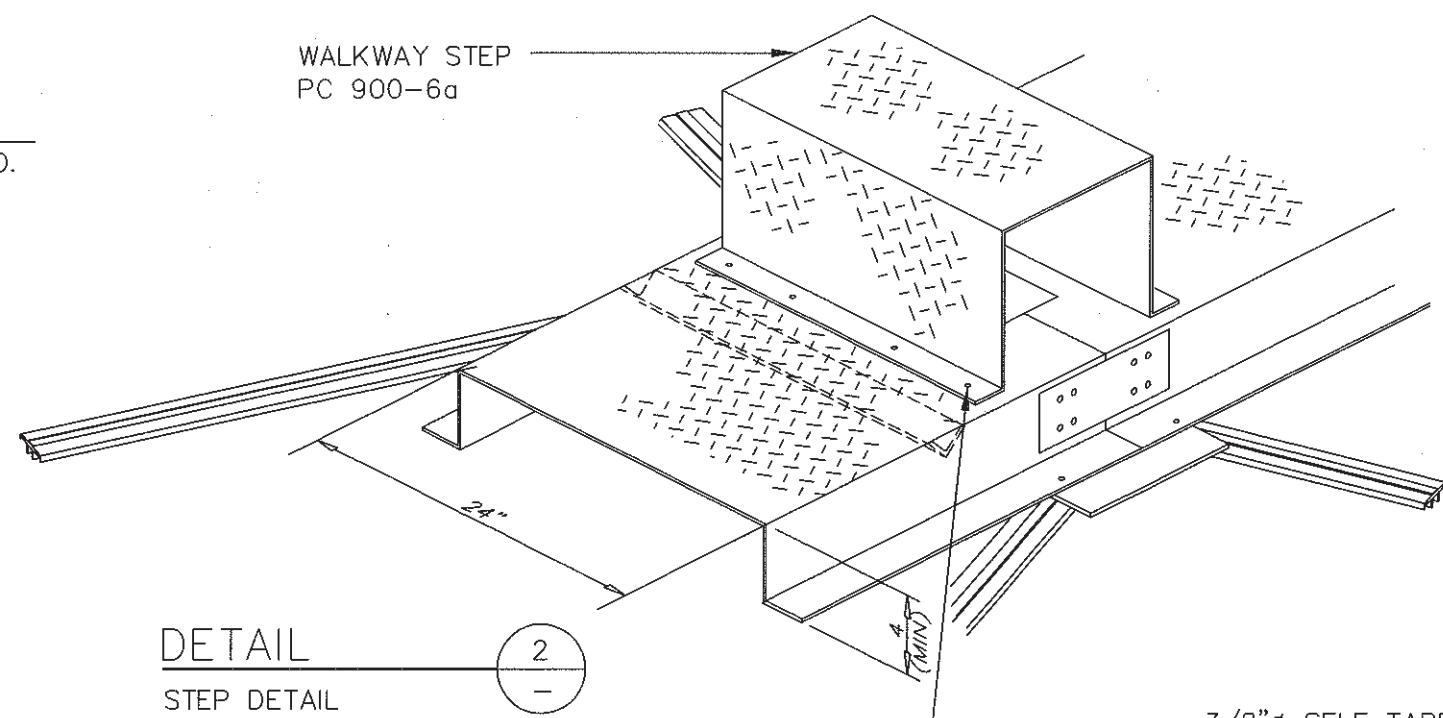
1/4" THK CHECKER
PLATE WALKWAY

NOTE: USE CAUTION NOT TO PLACE
WALKWAY FLANGE ON HEAD OF BOLT
IN STRUTCAP.



DETAIL
WALKWAY SPLICE

1
—



DETAIL
STEP DETAIL

2
—

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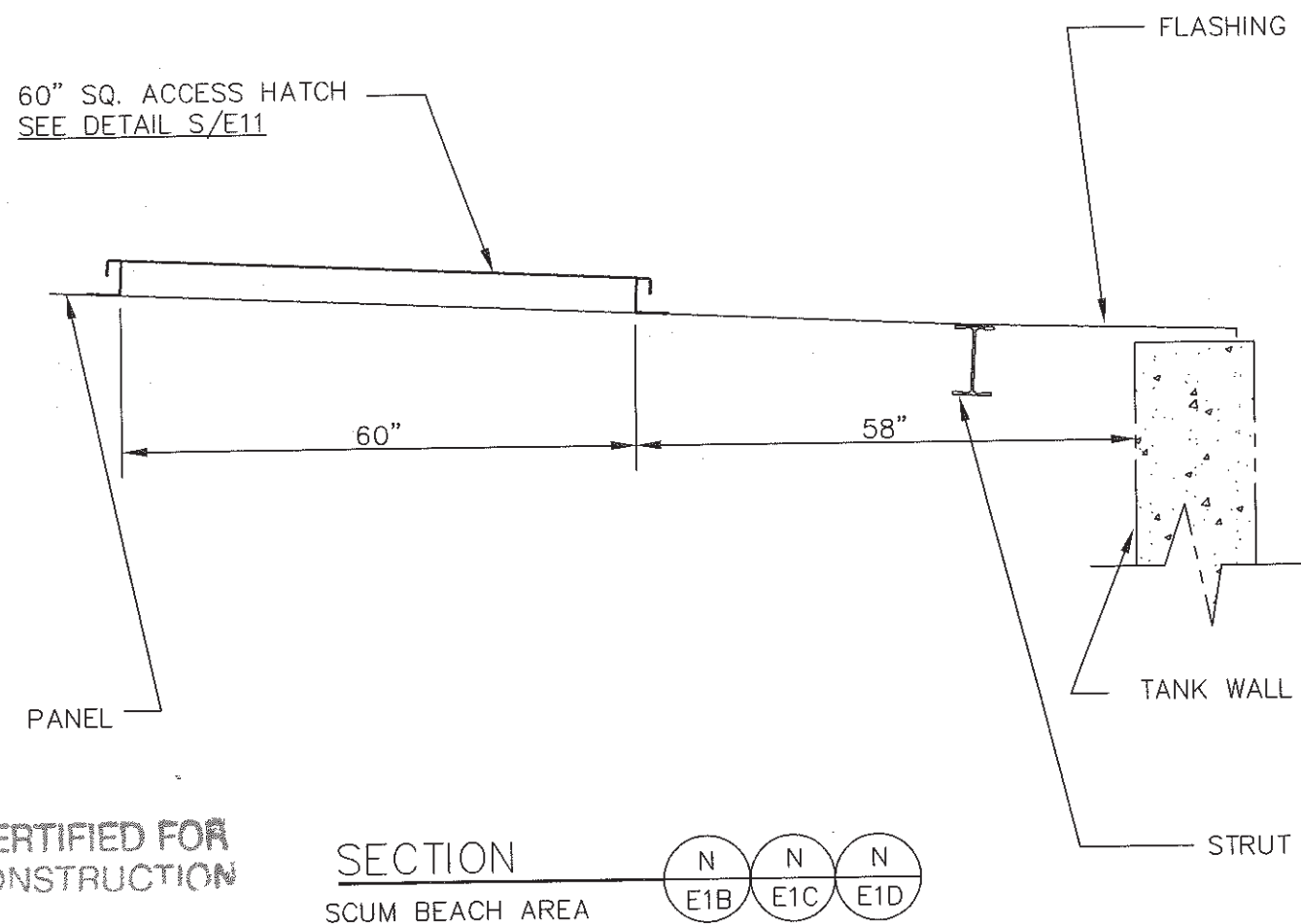
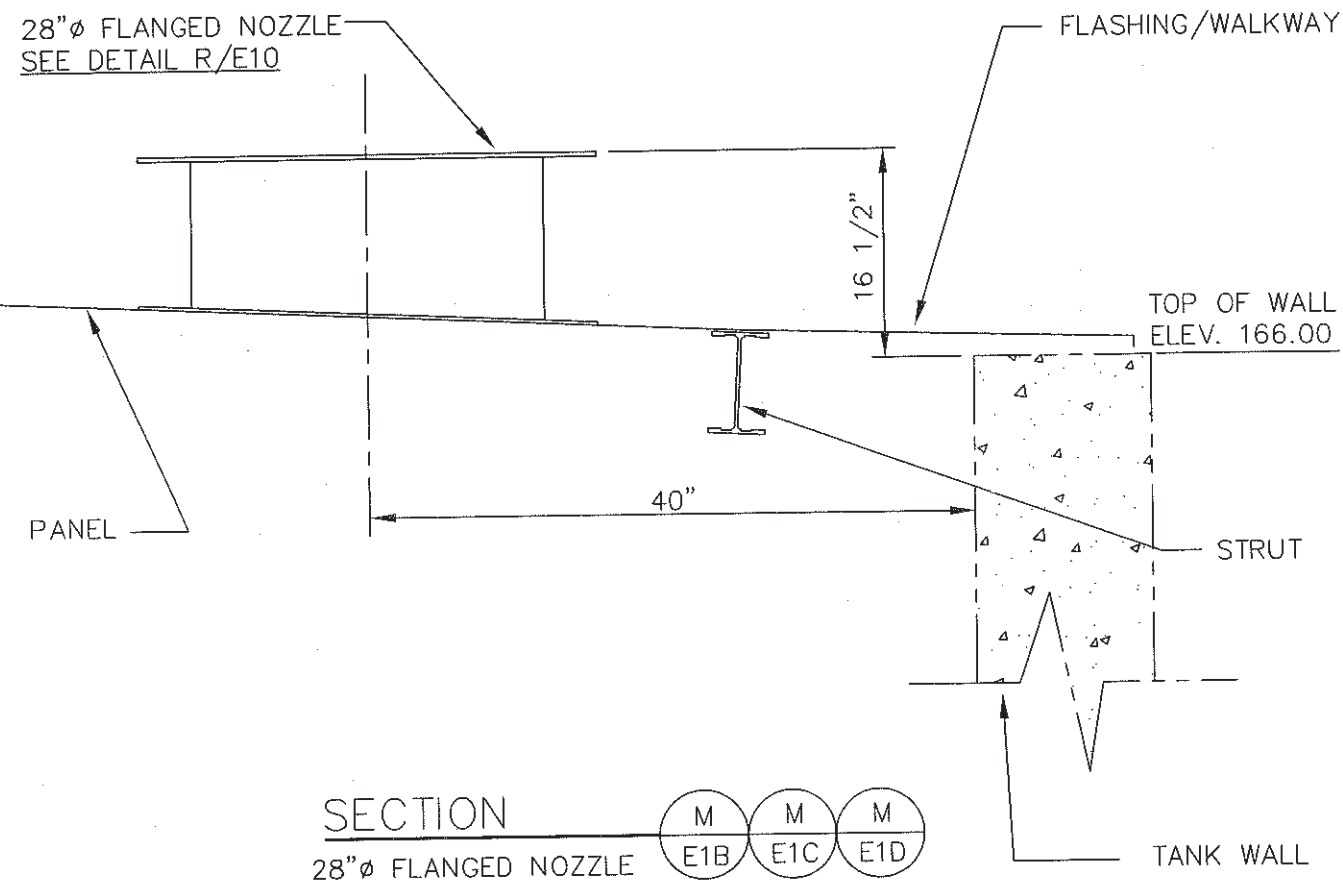
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DWG. No.	E8B
CONTRACT No.	199111-1-3
REV.	2
SCALE	NTS
DATE	11/6/00
CHK'D	JAP
DWN. BY	AF

DWG. TITLE:
140' CLARIFIER COVERS
RADIAL WALKWAY DETAILS

LOCATION:
ROCK CREEK FACILITY
HILLSBORO, OR

No.	BY	CHK	REVISION	DATE
1	JAP	AK	GENERAL REVISION	3/27/01
2	DG	AK	CONSTRUCTION REVISION	3-5-02
DRAWING ISSUED FOR				
APPROVAL				
CONST. 9 PRINTS				
RECORD 2 PRINTS				
DATE 4/7/00				
DATE 3/7/02				



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CONSTRUCTION**

SECTION _____
SCUM BEACH AREA

CONSERVATIK

[illegible]

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DWN. BY	CHK'D	DATE	SCALE	REV.	CONTRACT No.	DWG. No.
JAP	ALF	2/8/00	NTS	1	199111-1-3	E9

DWG. TITLE:
140' Ø CLARIFIER COVERS
APPURTENANCE LOCATION DETAILS

LOCATION: ROCK CREEK FACILITY
HILLSBORO, OR

No.	BY	CHK	REVISION	DATE
1	DG	SL	CONSTRUCTION	3-5-02
DRAWING ISSUED FOR				DATE
APPROVAL		9 PRINTS		4/7/00
CONST.		2 PRINTS		3/16/02
RECORD				

(BASED ON 150# FLANGE)
No. OF HOLES: 8
HOLE DIA.: 7/8" ϕ
BOLT CIR. DIA.: 9 1/2" ϕ
FLANGE DIA.: 11" ϕ
MATERIAL: 1/4" THK
6061-T6 ALUM. PLATE

1/4"Ø x 1 1/2" LG.—
300 SERIES S.S. HHB
w/ DOMED WASHER &
GASKET, FLATWASHER
AND HEX NUT (TYP)

3" x 3" x 1/4" THK-
6061-T6 ALUMINUM
BACK-UP ANGLE
(TYP. 2). SEE DETAIL
"1", THIS DWG.
FOR CONNECTION
TO STRUTS

DETAIL

6"Ø FLANGED NOZZLE
PC 983-1a
(TYP. 1 / COVER)

P
E9

(BASED ON 150# FLANGE)
FLANGE DIA.: 32" ϕ
MATERIAL: 1/4" THK
6061-T6 ALUM. PLATE

1/4"Ø x 1 1/2" LG.—
300 SERIES S.S. HHB
w/ DOMED WASHER &
GASKET, FLATWASHER
AND HEX NUT (TYP)

3" x 3" x 1/4" THK
6061-T6 ALUMINUM
BACK-UP ANGLE
2). SEE DETAIL
THIS DWG.
FOR CONNECTION
TO STRUTS

DETAIL

24"Ø FLANGED NOZZLE
PC 983-1a
(TYP. 3 / COVER)

Q
E9

(BASED ON 150# FLANGE)
FLANGE DIA.: 36 1/2" ϕ
MATERIAL: 1/4" THK
6061-T6 ALUM. PLATE

1/4"ø x 1 1/2" LG. —
300 SERIES S.S. HHB
w/ DOMED WASHER &
GASKET, FLATWASHER
AND HEX NUT (TYP)

3" x 3" x 1/4" THK
6061-T6 ALUMINUM
BACK-UP ANGLE
(TYP. 2). SEE DETAIL
"1", THIS DWG.
FOR CONNECTION
TO STRUTS

DETAIL

28"Ø FLANGED NOZZLE
PC 983-5a
(TYP. 1 / COVER)

R
E9

3/8"Ø x 1 1/2" LG. 300 SERIES—
S.S. PEM STUD w/ FLATWASHER
AND HEX NUT. FIELD MATCH
DRILL 3/8"Ø HOLE IN BRACING
ANGLE. MAINTAIN 3/4" MINIMUM
EDGE DISTANCE. (TYP 1 PER END)

1/4" THK —
ALUM. SPACER
PC. 90502

3" x 3" x 1/4" THK.
6061-T6 ALUMINUM
BRACING ANGLE
PC. 91106
(FIELD CUT)

5" x 3" x 1/2" THK.
6061-T6 ALUM. CLIP
ANGLE - PC. 90501
FIELD POSITION ON
STRUT.

DETAIL
BRACING ANGLE

**CERTIFIED FOR
CONSTRUCTION**

— 3/8"ø x 1 1/2" LG. 300
SERIES S.S. HHB w/
FLATWASHER AND HEX
NUT. FIELD MATCH DRILL
13/32"ø HOLES IN STRUT'S
WEB. (TYP 2 PER END)

NOTE:

FIELD POSITION CLIP ANGLE
AND BRACING ANGLE TO BE
APPROXIMATELY FLUSH WITH
UNDERSIDE OF PANEL.
DO NOT ALLOW BRACING
ANGLE TO BE POSITIONED
ABOVE UNDERSIDE OF PANEL.

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DWN. BY		CHK'D	DATE	SCALE	REV.	CONTRACT No.	DWG. No.
LAD		ME	2 / 8 / 00	NTS	1	199111-1-3	E10

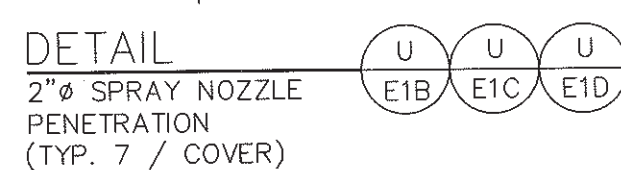
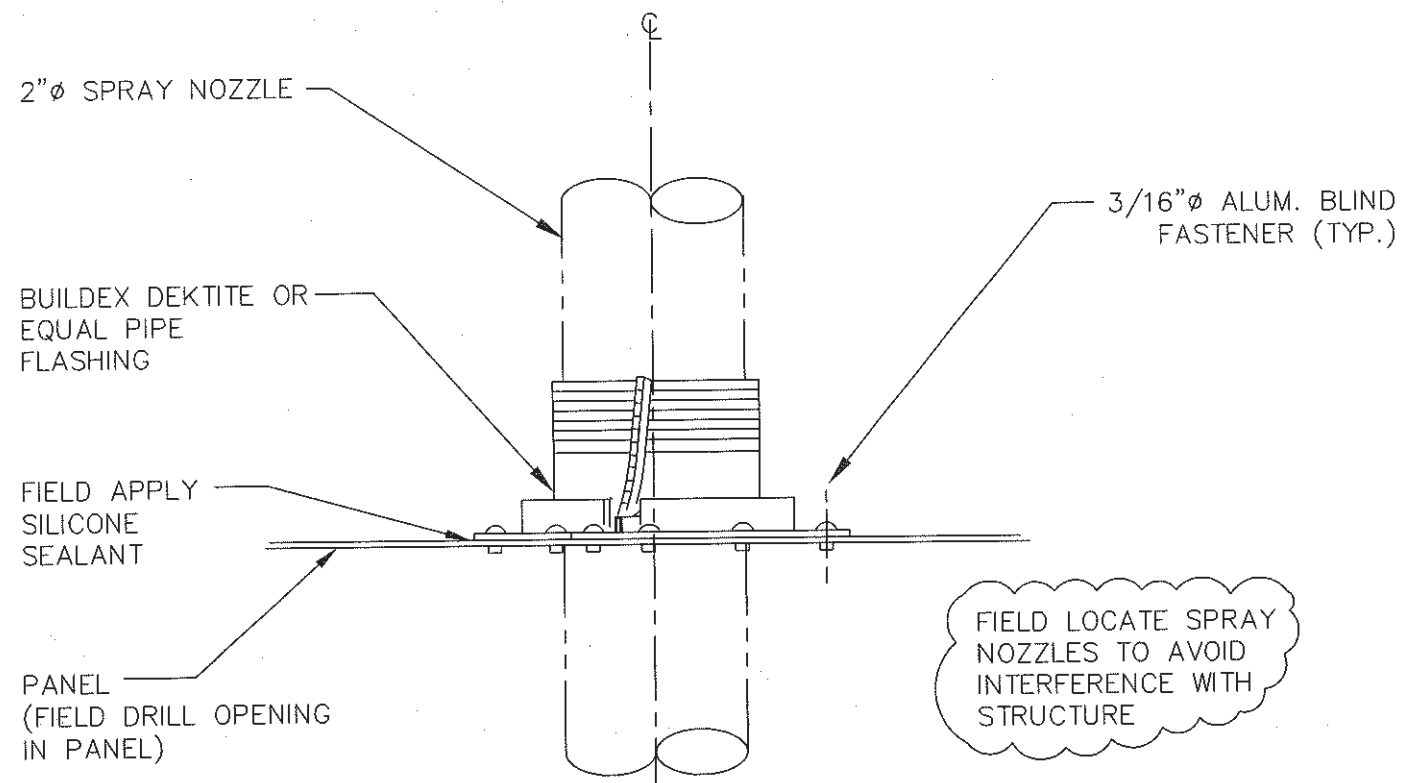
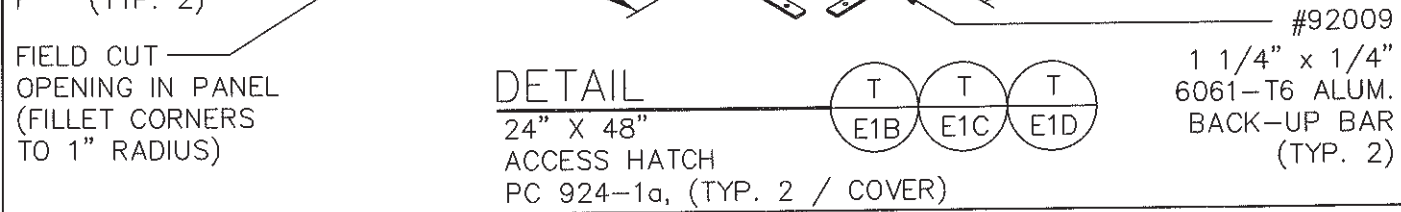
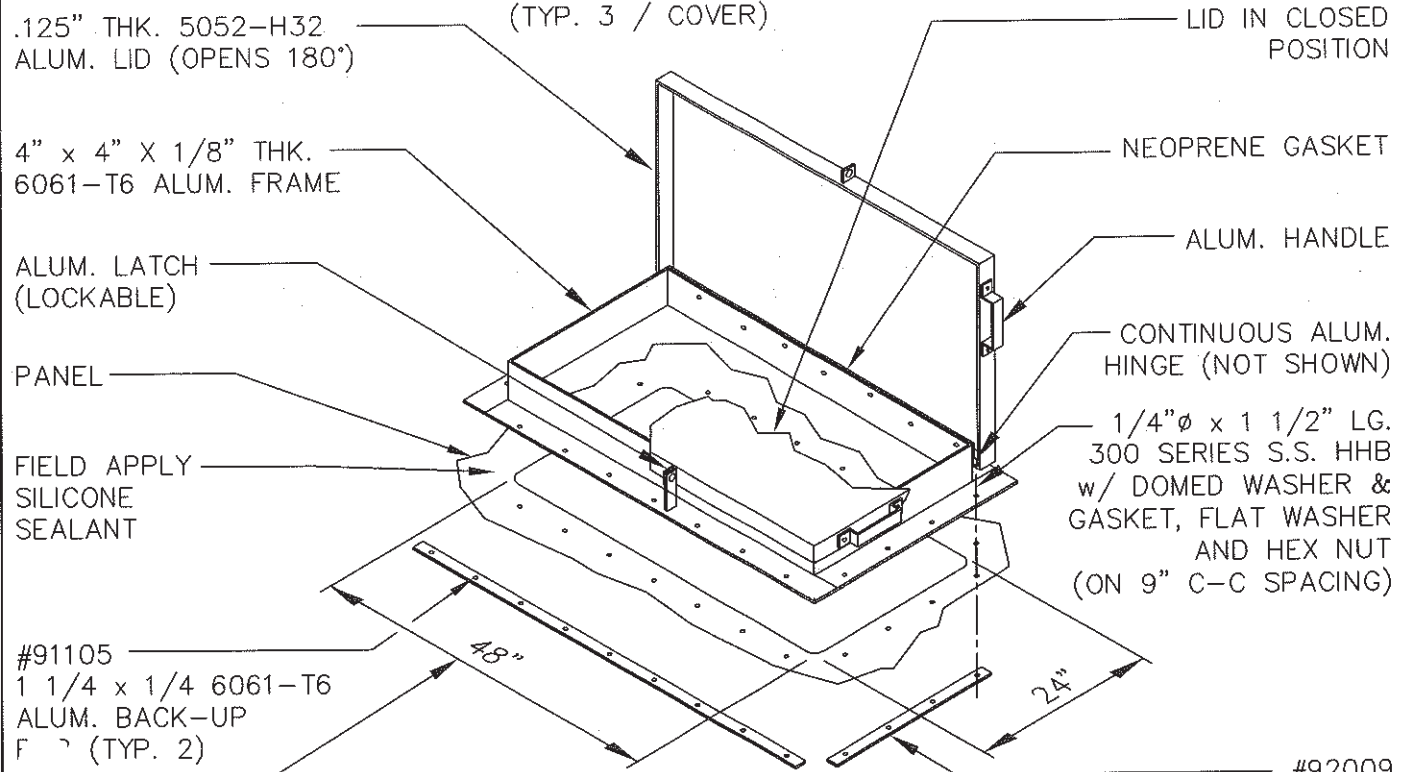
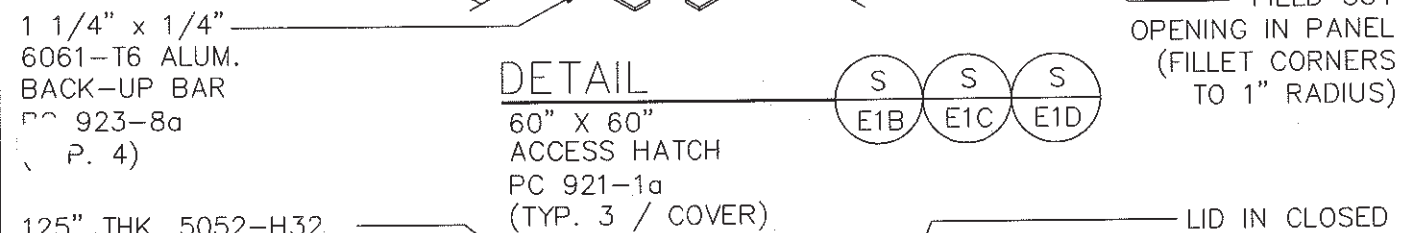
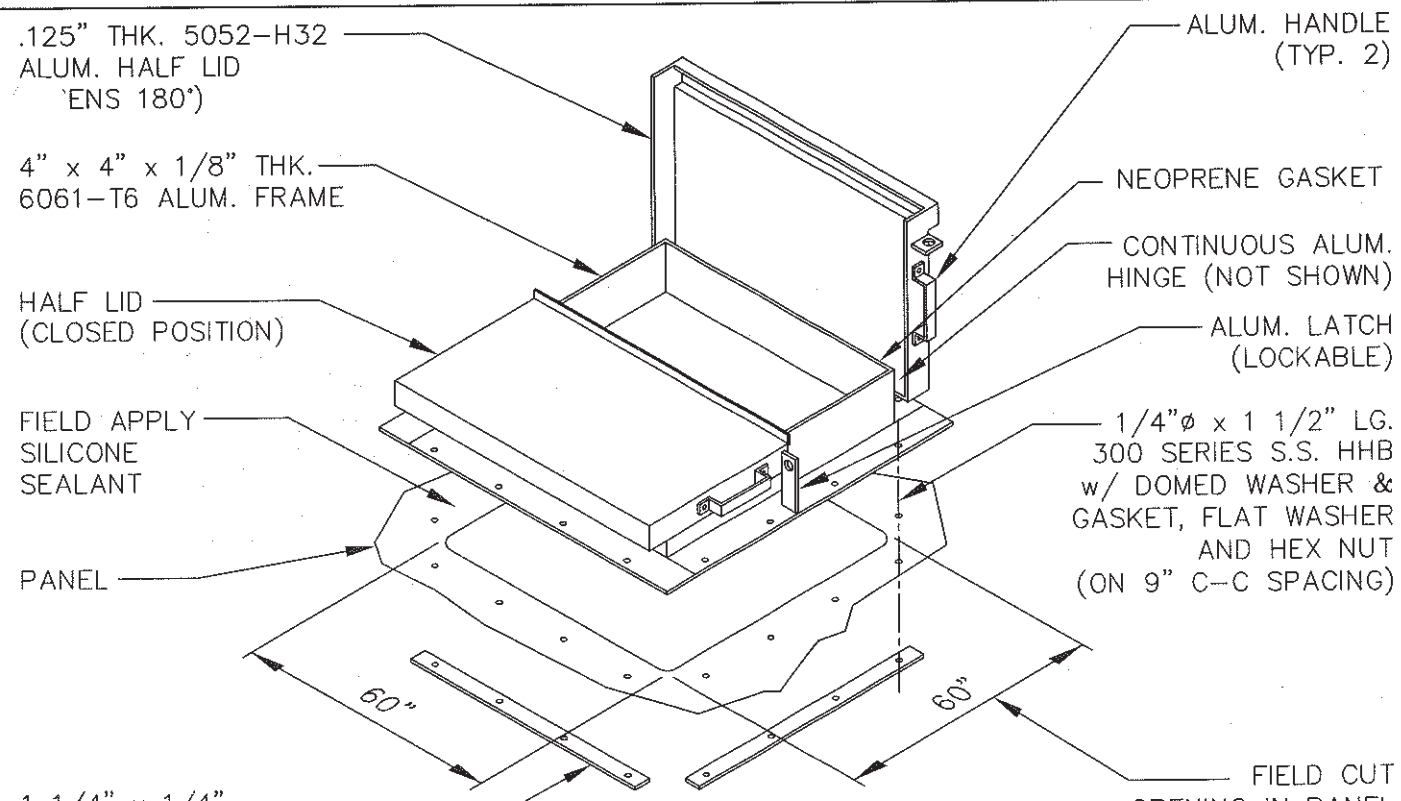
DWG. TITLE:
140'Ø CLARIFIER COVERS
NOZZLE DETAILS

LOCATION:

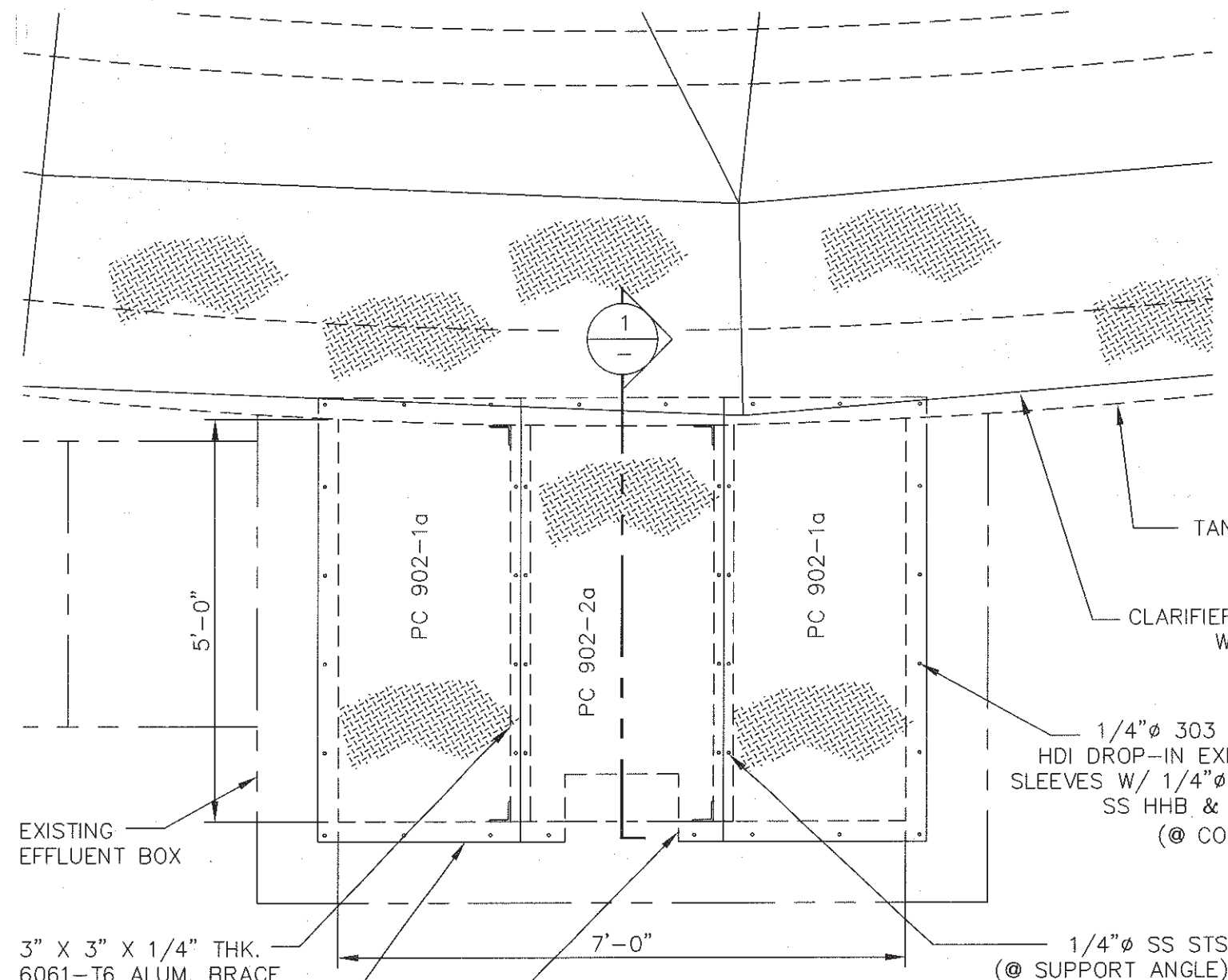
ROCK CREEK FACILITY
HILLSBORO, OR

No.	BY	CHECK	REVISION	DATE
1	DG	☒	CONSTRUCTION REVISION	3-5-02
		☐		
		☐		
		☐		
		☐		

DRAWING ISSUED FOR		DATE
APPROVAL	9 PRINTS	4/7/00
CONST.	2 PRINTS	3/7/02
RECORD		



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CONSTRUCTION**



3" X 3" X 1/4" THK.
6061-T6 ALUM. BRACE
ANGLE (TYP.)
PC 902-3a

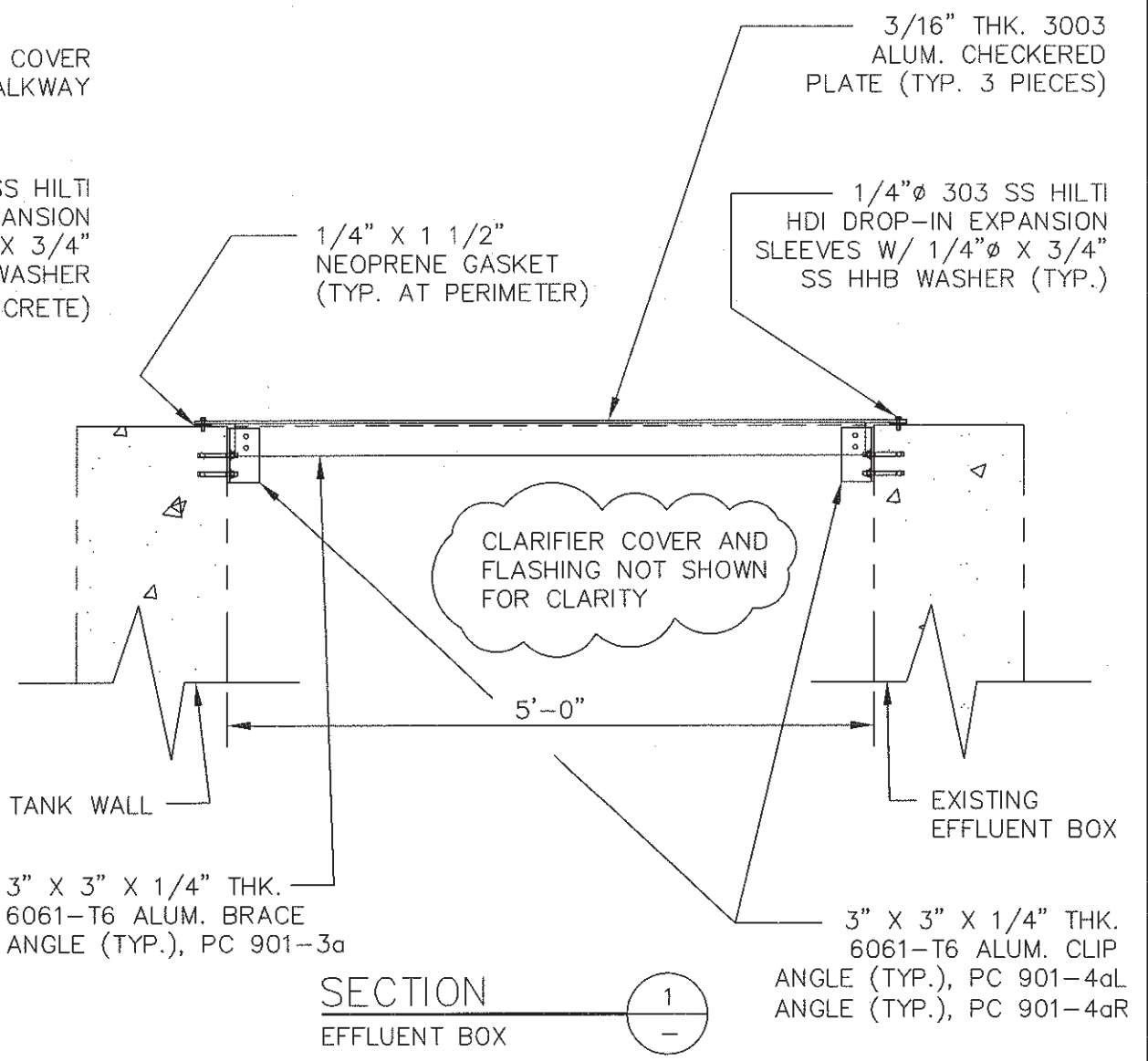
3/16" THK. 3003
ALUM. CHECKERED
PLATE (TYP. 3 PIECES)

FIELD CUT
CHECKERED
PLATE AS
REQUIRED
AT GATE
OPERATOR

DETAIL
EFFLUENT BOX

V E1B V E1C V E1D

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CONSTRUCTION**



SECTION
EFFLUENT BOX

1

3" X 3" X 1/4" THK.
6061-T6 ALUM. CLIP
ANGLE (TYP.), PC 901-4aL
ANGLE (TYP.), PC 901-4aR

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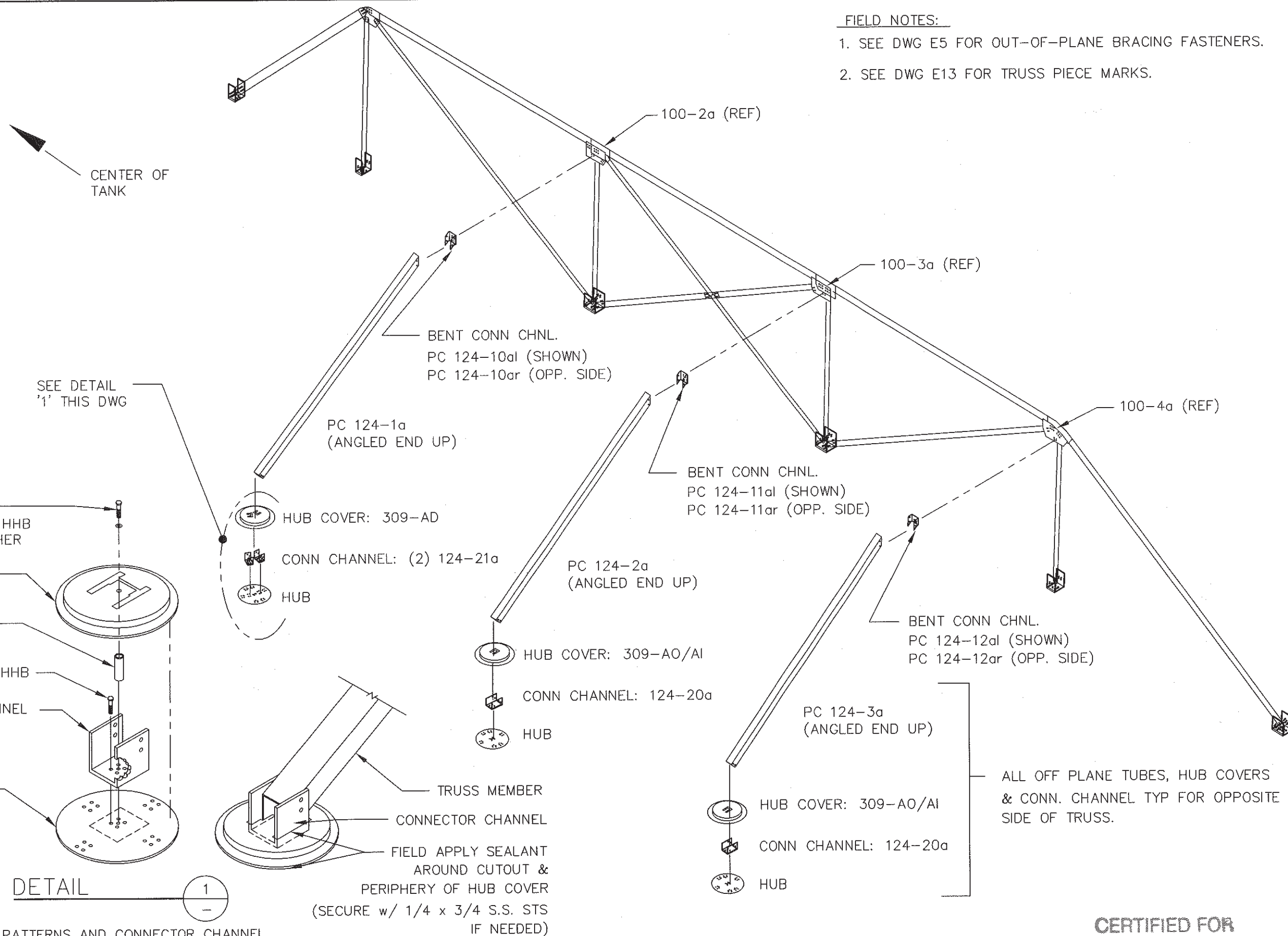
DWN. BY	CHK'D	DATE	SCALE	REV.	CONTRACT No.	DWG. No.
JAP	MF	2/8/00	NTS	2	199111-1-3	E12

DWG. TITLE:
**140' Ø CLARIFIER COVERS
EFFLUENT BOX AREA DETAILS**

LOCATION:
**ROCK CREEK FACILITY
HILLSBORO, OR**

No.	BY	CHK	REVISION	DATE
1	JAP	MF	GENERAL REVISIONS	3/27/01
2	DG	MF	CONSTRUCTION REVISION	3-5-02

APPROVAL	DRAWING ISSUED FOR	
	9 PRINTS	DATE
	2 Prints	4/7/00
CONST.	RECORD	3/7/02



FIELD NOTES:

1. SEE DWG E5 FOR OUT-OF-PLANE BRACING FASTENERS.
2. SEE DWG E13 FOR TRUSS PIECE MARKS.

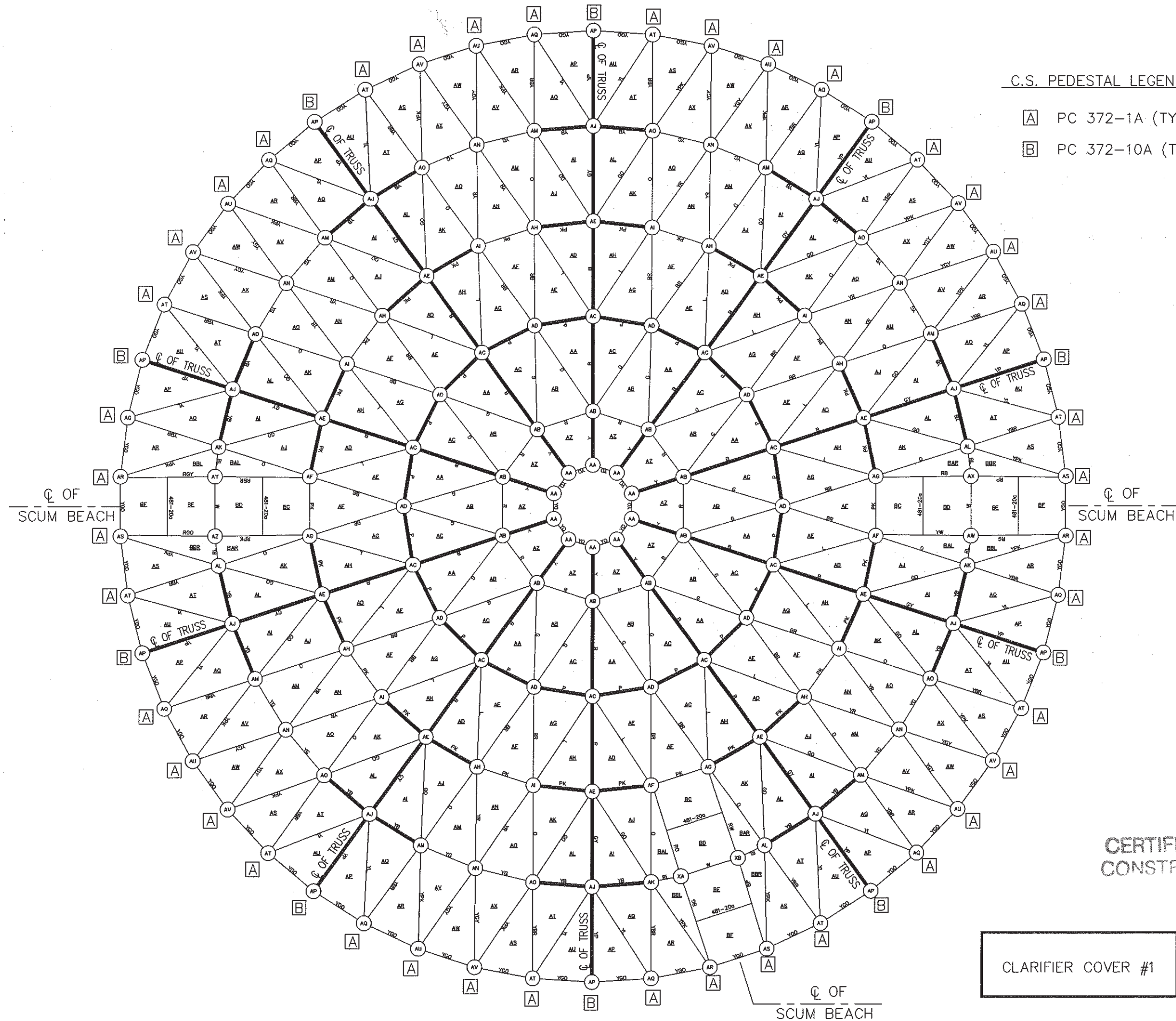
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DWG. No.	REV.	SCALE	DATE	CHK'D	DWG. No.
199111-1-3 / E14	0	NTS	3-5-02	DG	

DWG. TITLE:		LOCATION:	
140' ϕ CLARIFIER COVERS		ROCK CREEK FACILITY	
O.P. TRUSS PC MRK & ASSY		HILLSBORO, OR	
DATE	REVISION	DATE	REVISION
		3/7/02	
DRAWING ISSUED FOR		2 PRINTS	
APPROVAL	CONST.	RECORD	

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CONSTRUCTION



- C.S. PEDESTAL LEGEND
- [A] PC 372-1A (TYP 40)
 - [B] PC 372-10A (TYP 10)

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CLARIFIER COVER #1

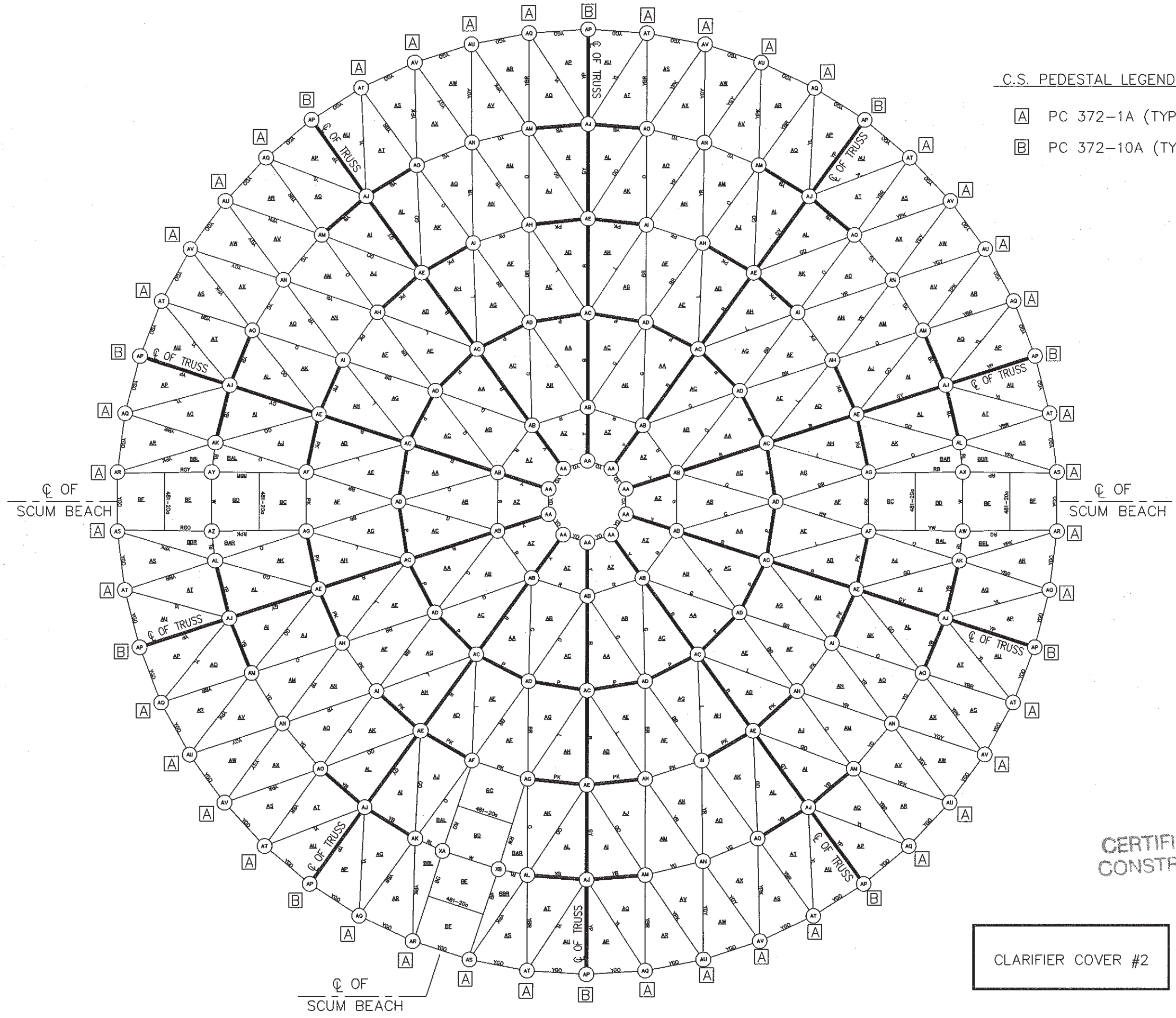
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DWN. BY	CHK'D	DATE	SCALE	REV	CONTRACT No.	DWG. No.

DWG. TITLE:		LOCATION:	
140' Ø CLARIFIER COVERS		ROCK CREEK FACILITY	
CLARIFIER #1 PC MRK		HILLSBORO, OR	
REVISION	DATE	DRAWING ISSUED FOR	DATE
		2 Prints	3/7/02
APPROVAL		CONST.	RECORD



C.S. PEDESTAL LEGEND

A PC 372-1A (TYP 40)

B PC 372-10A (TYP 10)

CERTIFIED FOR
CONSTRUCTION

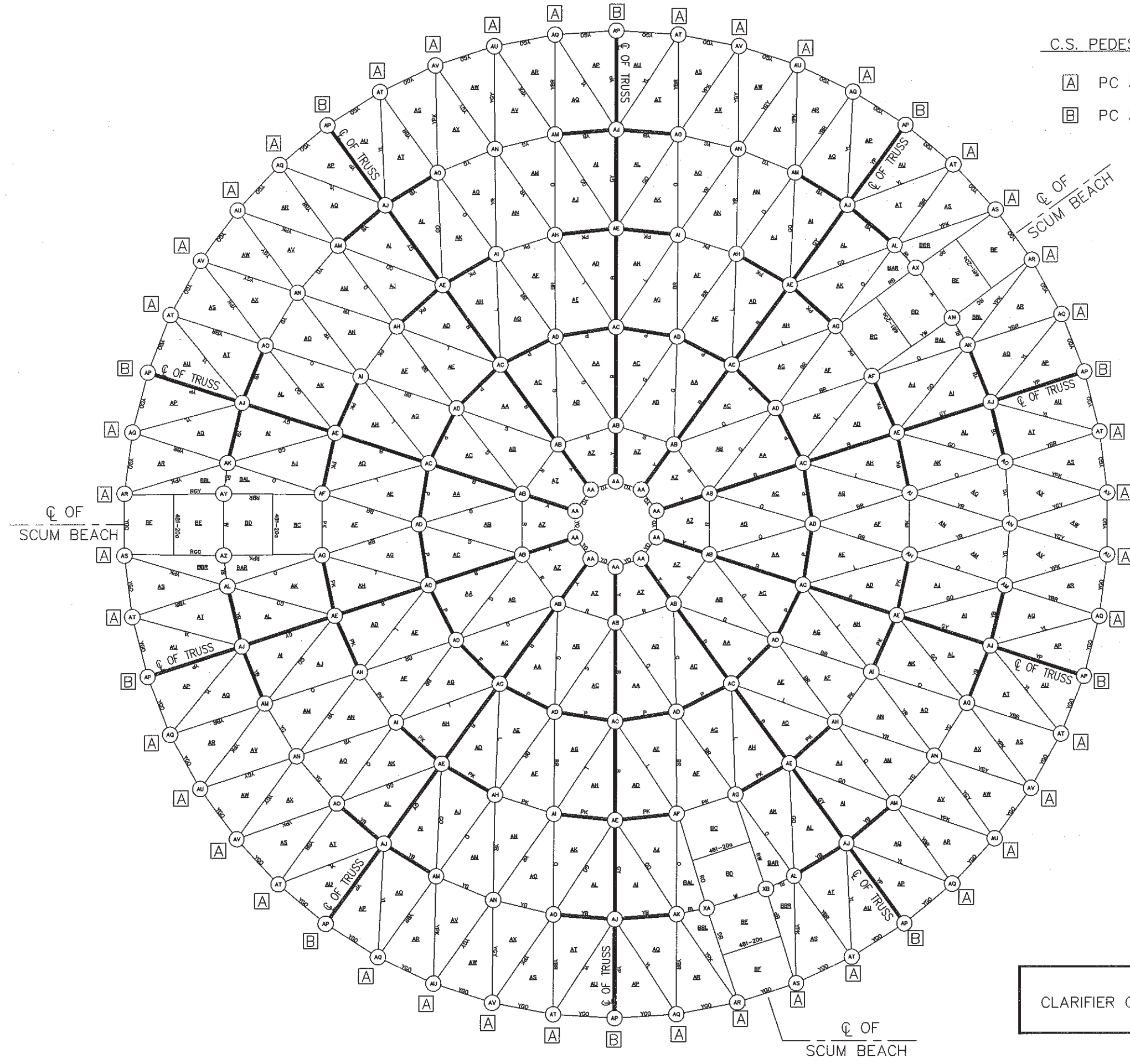
CLARIFIER COVER #2

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DWN. BY	CHK'D	DATE	SCALE	REV.	CONTRACT No.	DWG. No.
DG		3-5-02	NTS	0	199111-1-3	E16

DWG. TITLE:		LOCATION:	
140'Ø CLARIFIER COVERS		ROCK CREEK FACILITY	
CLARIFIER #2 PC MRK		HILLSBORO, OR	
No. BY	CHK	DATE	DATE
DRAWING ISSUED FOR		2 PRINTS	
APPROVAL		3/7/02	
CONST.			
RECORD			



- C.S. PEDESTAL LEGEND
- A PC 372-1A (TYP 40)
 - B PC 372-10A (TYP 10)

CERTIFIED FOR
CONSTRUCTION

No. BY

CHK

REVISION

DATE

DWG. TITLE:

140' Ø CLARIFIER COVERS
CLARIFIER #3 PC MRK

APPROVAL

CONST.

DRAWING ISSUED FOR

2 Pwnts

LOCATION:

ROCK CREEK FACILITY
HILLSBORO, OR

DATE

3/7/02

DATE

3-5-02

SCALE

NTS

REV.

0

CONTRACT No.

199111-1-3

DWG. No.

E17

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DWN. BY

CHK'D

DATE

3-5-02

SCALE

NTS

REV.

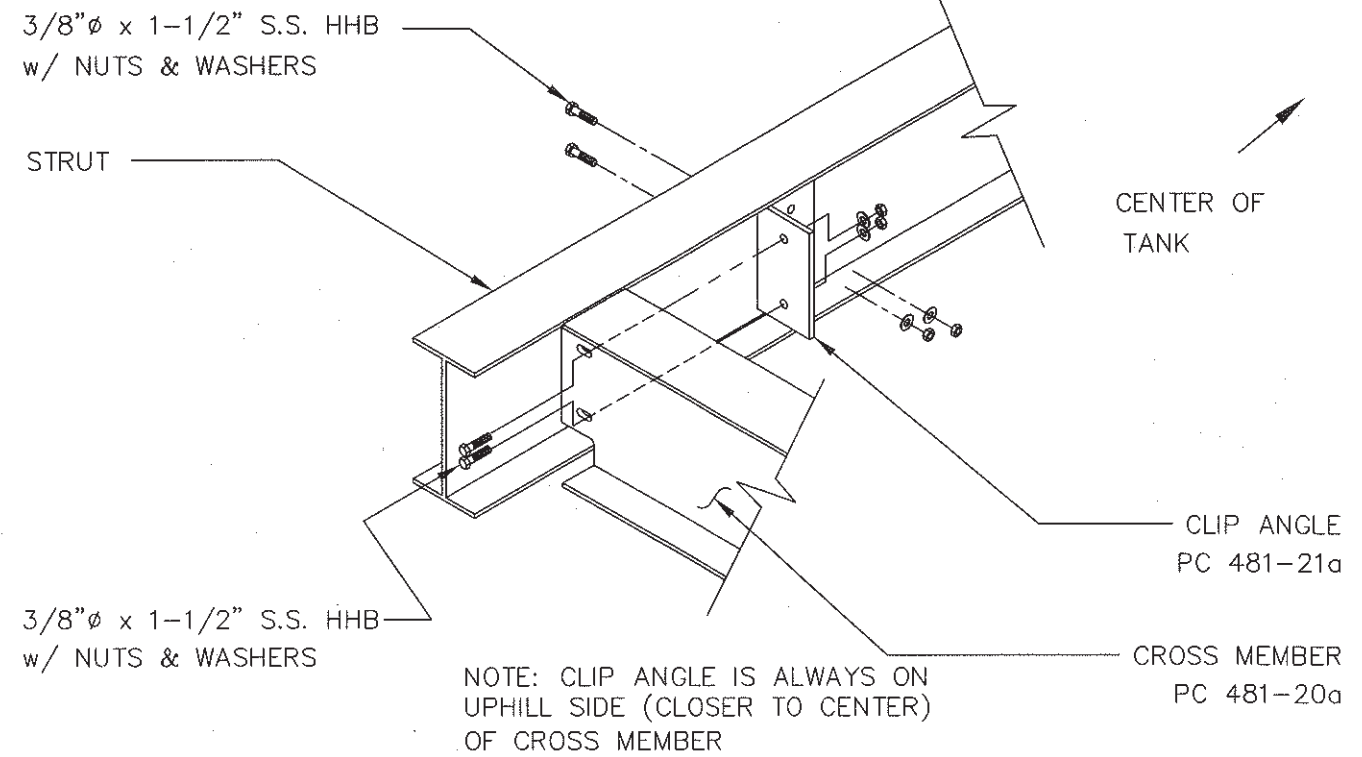
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CONTRACT No.

199111-1-3

DWG. No.

E17



3/16" ϕ ALUM RIVET

RAIN DAM
PC 330-4a

DOMES FLASHING
PC 330-1a

FLASHING SUPPORT
PC 330-2a
(TYP 3 @ FLASHING)

1/4" ϕ SS EXPANSION
ANCHOR

1/4" SS EXPANSION ANCHOR
(LEAVE NUT LOOSE BY 1/16"
AND SPOIL THREADS TO ALLOW
FOR FLASHING MOVEMENT).

**CERTIFIED FOR
CONSTRUCTION**

TYPICAL FLASHING DETAIL
(DOME SUPPORT NOT SHOWN FOR CLARITY)

NOTES:

1. FIELD APPLY SILICONE SEALANT AT ALL JOINTS.
2. FIELD TRIM FLASHING TO AVOID TANK OBSTRUCTIONS.

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IN. BT	CHK'D	DATE	SCALE	REV.	CONTRACT NO.	DWG. NO.
DG	<i>[Signature]</i>	3-5-02	NTS	0	199111-1-3	E18

DWG. TITLE:
140'Ø CLARIFIER COVERS
MISCELLANEOUS DETAILS 1

LOCATION: ROCK CREEK FACILITY
HILLSBORO, OR

No.	BY	CHK	REVISION	DATE
DRAWING ISSUED FOR				DATE
APPROVAL				
CONST.				3/7/02
RECORD				

STAAD SPACE 99111 HILLSBORO, OR
 UNIT IN KIP
 INPUT WIDTH 79
 OUTPUT WIDTH 72
 INPUT NODESIGN
 JOINT COORDINATES

1	.000	15692.433	83.782
2	.000	15691.790	164.330
3	48.295	15691.790	148.638
1003	48.450	15691.790	149.113
4	.000	15689.210	328.642
5	101.556	15689.210	312.557
1005	101.711	15689.210	313.033
6	.000	15684.910	492.918
7	102.483	15684.910	482.147
8	151.486	15684.910	466.225
1008	151.640	15684.910	466.700
9	.000	15678.890	657.140
10	102.799	15678.890	649.050
11	203.067	15678.890	624.977
1011	203.222	15678.890	625.453
12	.000	15671.150	821.290
13	102.935	15671.150	814.814
14	204.247	15671.150	795.488
15	253.292	15671.150	779.552
1015	253.446	15671.150	780.027
16	.000	15670.390	830.000
1016	.000	15670.390	832.000
17	104.027	15670.390	823.455
1017	104.277	15670.390	825.439
18	206.413	15670.390	803.924
1018	206.910	15670.390	805.861
19	24.623	15692.433	75.782
1019	24.778	15692.433	76.257
20	.000	15792.000	164.374
21	.000	15792.000	328.730
22	.000	15792.000	493.050
23	.000	15792.000	657.316
24	.000	15741.653	409.137
25	.000	15693.193	75.072
1025	.000	15693.193	77.072

MEMBER INCIDENCES

201	1	2
403	2	3
204	2	4
5	2	5
7	4	5
208	4	6
9	4	7
10	5	7
12	6	7

413	7	8
214	6	9
15	6	10
16	7	10
17	7	11
19	9	10
20	10	11
221	9	12
22	9	13
23	10	13
24	10	14
25	11	14
27	12	13
28	13	14
429	14	15
1001	3	1003
1002	5	1005
1003	8	1008
1004	11	1011
1005	15	1015
230	12	16
1006	16	1016
31	13	17
1007	17	1017
32	14	18
1008	18	1018
433	1	19
1009	19	1019
234	2	20
235	4	21
236	6	22
237	9	23
238	4	20
239	24	21
240	24	22
241	4	24
242	6	24
243	6	23
244	1	20
245	12	23
246	20	21
247	21	22
248	22	23
50	21	5
51	22	7
52	23	10
253	1	25
1010	25	1025

START USER TABLE
TABLE 1 TABLE1
TABLE 2 TABLE2

END

MEMBER PROPERTIES

201 403 204 5 7 208 9 10 12 413 214 15 16 17 19 20 UPT 1 4
81

221 22 23 24 25 50 51 52 UPT 1 481

27 28 429 433 UPT 1 481

234 TO 248 UPT 1 487

230 31 32 253 UPT 2 613

1001 TO 1010 PR AX 10. IX 1. IY 1000. IZ 1000.

CONSTANTS

E 10100 MEMB 403 5 7 9 10 12 413 15 16 17 19 20 22 23
24 25

E 10100 MEMB 27 28 429 433

POI .347 MEMB 403 5 7 9 10 12 413 15 16 17 19 20 22 23
24 25

POI .347 MEMB 27 28 429 433 50 51 52

E 5050 MEMB 201 204 208 214 221 50 51 52

POI .347 MEMB 201 204 208 214 221

E 5050 MEMB 234 TO 248

POI .347 MEMB 234 TO 248

E 10100 MEMB 31 32

POI .347 MEMB 31 32

E 5050 MEMB 230 253

POI .347 MEMB 230 253

E 100000 MEMB 1001 TO 1010

REF 0.0 0.0 0.0 MEMB 1001 TO 1010

REF 0.0 0.0 0.0 MEMB 201 403 204 5 7 208 9 10 12 413 214 15 1
6 17

REF 0.0 0.0 0.0 MEMB 19 20 221 22 23 24 25 27 28 429

REF 0.0 0.0 0.0 MEMB 230 31 32 253

REF 0.0 0.0 0.0 MEMB 234 TO 248

MEMBER RELEASES

1001 TO 1005 1009 START FX FY MZ

230 31 32 253 END MX MY MZ

1006 TO 1008 1010 START FX

50 TO 52 START MX MY MZ

50 TO 52 END MX MY MZ

SUPPORTS

1 2 4 6 9 12 FIXED BUT FY FZ MX

20 21 22 23 24 FIXED BUT FY FZ MX

1003 1005 1008 1019 1011 1015 1025 FIXED

1016 TO 1018 FIXED

LOADING 1 DL

MEMBER LOAD

201 UNI GY -.0002758

403 UNI GY -.0006646

204 UNI GY -.0002800

5 UNI GY -.0005493

7 UNI GY -.0006657

208 UNI GY -.0002808

9 UNI GY -.0005446

10	UNI	GY	-.0005572
12	UNI	GY	-.0006653
413	UNI	GY	-.0006646
214	UNI	GY	-.0002810
15	UNI	GY	-.0005422
16	UNI	GY	-.0005597
17	UNI	GY	-.0005526
19	UNI	GY	-.0006651
20	UNI	GY	-.0006646
221	UNI	GY	-.0002811
22	UNI	GY	-.0005409
23	UNI	GY	-.0005608
24	UNI	GY	-.0005494
25	UNI	GY	-.0005563
27	UNI	GY	-.0005274
28	UNI	GY	-.0005266
429	UNI	GY	-.0005263
433	UNI	GY	-.0002758
234	UNI	GY	-.0002811
235	UNI	GY	-.0002811
236	UNI	GY	-.0002811
237	UNI	GY	-.0002811
238	UNI	GY	-.0002811
239	UNI	GY	-.0002811
240	UNI	GY	-.0002811
241	UNI	GY	-.0002811
242	UNI	GY	-.0002811
243	UNI	GY	-.0002811
244	UNI	GY	-.0002811
245	UNI	GY	-.0002811
246	UNI	GY	-.0002811
247	UNI	GY	-.0002811
248	UNI	GY	-.0002811
50	UNI	GY	-.0005422
51	UNI	GY	-.0005422
52	UNI	GY	-.0005422

LOADING 2 LL

MEMBER LOAD

201	UNI	GY	-.0027948
403	UNI	GY	-.0095093
204	UNI	GY	-.0029382
5	UNI	GY	-.0055055
7	UNI	GY	-.0095468
208	UNI	GY	-.0029644
9	UNI	GY	-.0053402
10	UNI	GY	-.0057800
12	UNI	GY	-.0095312
413	UNI	GY	-.0095052
214	UNI	GY	-.0029725
15	UNI	GY	-.0052585
16	UNI	GY	-.0058647

17 UNI GY -.0056189
19 UNI GY -.0095191
20 UNI GY -.0095035
221 UNI GY -.0029751
22 UNI GY -.0052108
23 UNI GY -.0059002
24 UNI GY -.0055045
25 UNI GY -.0057447
27 UNI GY -.0047403
28 UNI GY -.0047122
429 UNI GY -.0047028
433 UNI GY -.0027948

LOADING 3 WL

MEMBER LOAD

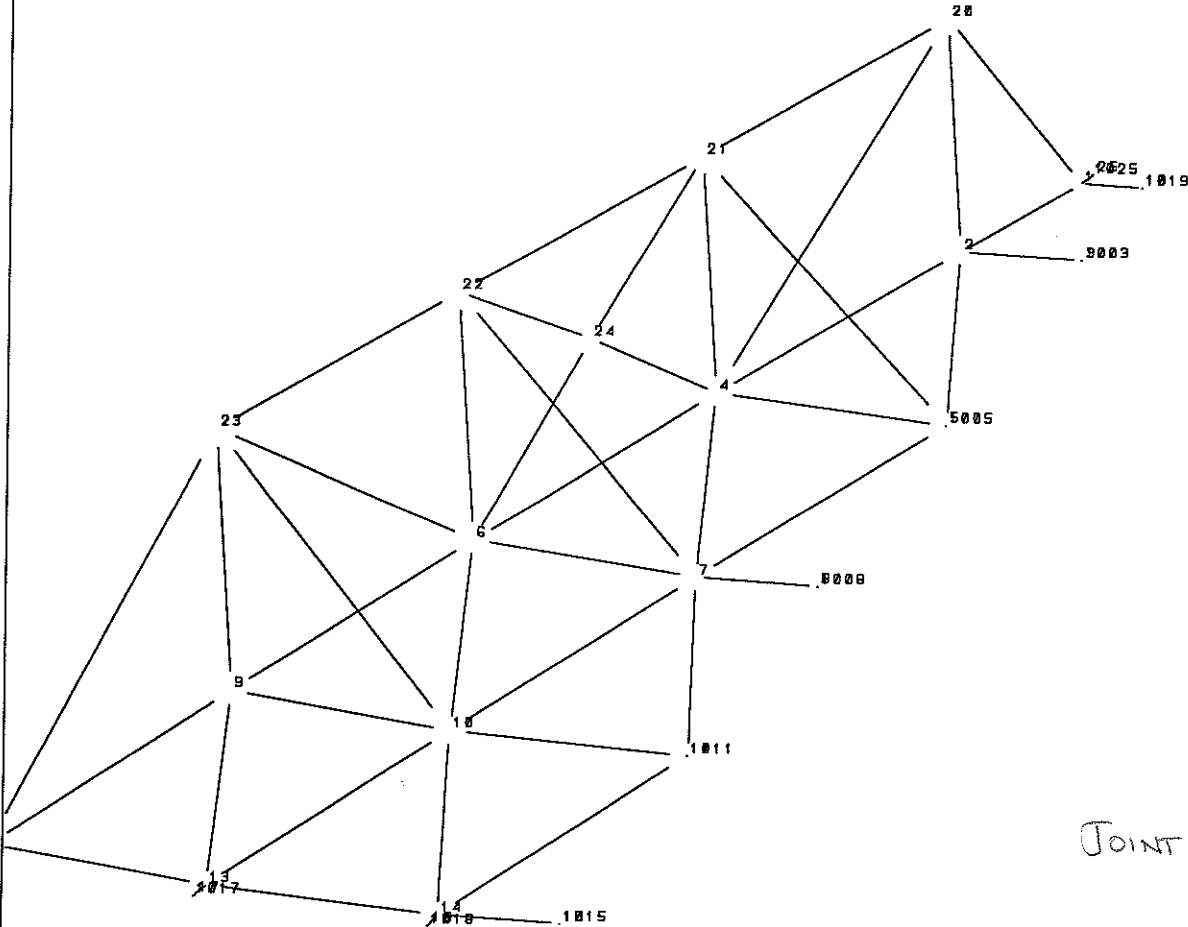
201 UNI Y -.0013415
403 UNI Y -.0045648
204 UNI Y -.0014105
5 UNI Y -.0026430
7 UNI Y -.0045835
208 UNI Y -.0014234
9 UNI Y -.0025642
10 UNI Y -.0027753
12 UNI Y -.0045773
413 UNI Y -.0045648
214 UNI Y -.0014278
15 UNI Y -.0025258
16 UNI Y -.0028170
17 UNI Y -.0026989
19 UNI Y -.0045732
20 UNI Y -.0045657
221 UNI Y -.0014297
22 UNI Y -.0025039
23 UNI Y -.0028352
24 UNI Y -.0026451
25 UNI Y -.0027605
27 UNI Y -.0022779
28 UNI Y -.0022644
429 UNI Y -.0022599
433 UNI Y -.0013415
234 UNI GX .001630
235 UNI GX .001630
236 UNI GX .001630
237 UNI GX .001630
238 UNI GX .001630
239 UNI GX .001630
240 UNI GX .001630
241 UNI GX .001630
242 UNI GX .001630
243 UNI GX .001630
244 UNI GX .001630
245 UNI GX .001630

246 UNI GX .001630
247 UNI GX .001630
248 UNI GX .001630
50 UNI GX .00326
51 UNI GX .00326
52 UNI GX .00326
LOADING 4 POINT LOAD
JOINT LOAD
11 FY -.4
LOAD COMB 5 DL + LL
1 1.0 2 1.0
LOAD COMB 6 DL + WL
1 1.0 3 1.0
PERFORM ANALYSIS PRINT STATICS CHECK
SECTION 0.01 0.5 0.99
PRINT ALL
LOAD LIST 5 6
PRINT JOINT DISP
PRINT SUPPORT REACTIONS
PRINT MEMBER FORCES
PRINT MEMBER SECTION FORCES
FINISH
□

MN/ELEM

STRUCTURE DATA

TYPE = SPACE
NJ = 35
NM = 57
NE = 0
NS = 0
NRJ = 21
NL = 6
XMAX = 253.4
YMAX = 121.6
ZMAX = 756.9



JOINT No

J=35,M=57

UNIT IN KIP

STAAD POST - PLOT (REV: 22.3a)
TITLE: 99111 HILLSBORO, OR

DATE: FEB 7, 2000

MN/ELEM

STRUCTURE DATA

TYPE = SPACE

NJ = 35

NM = 57

NE = 0

NS = 0

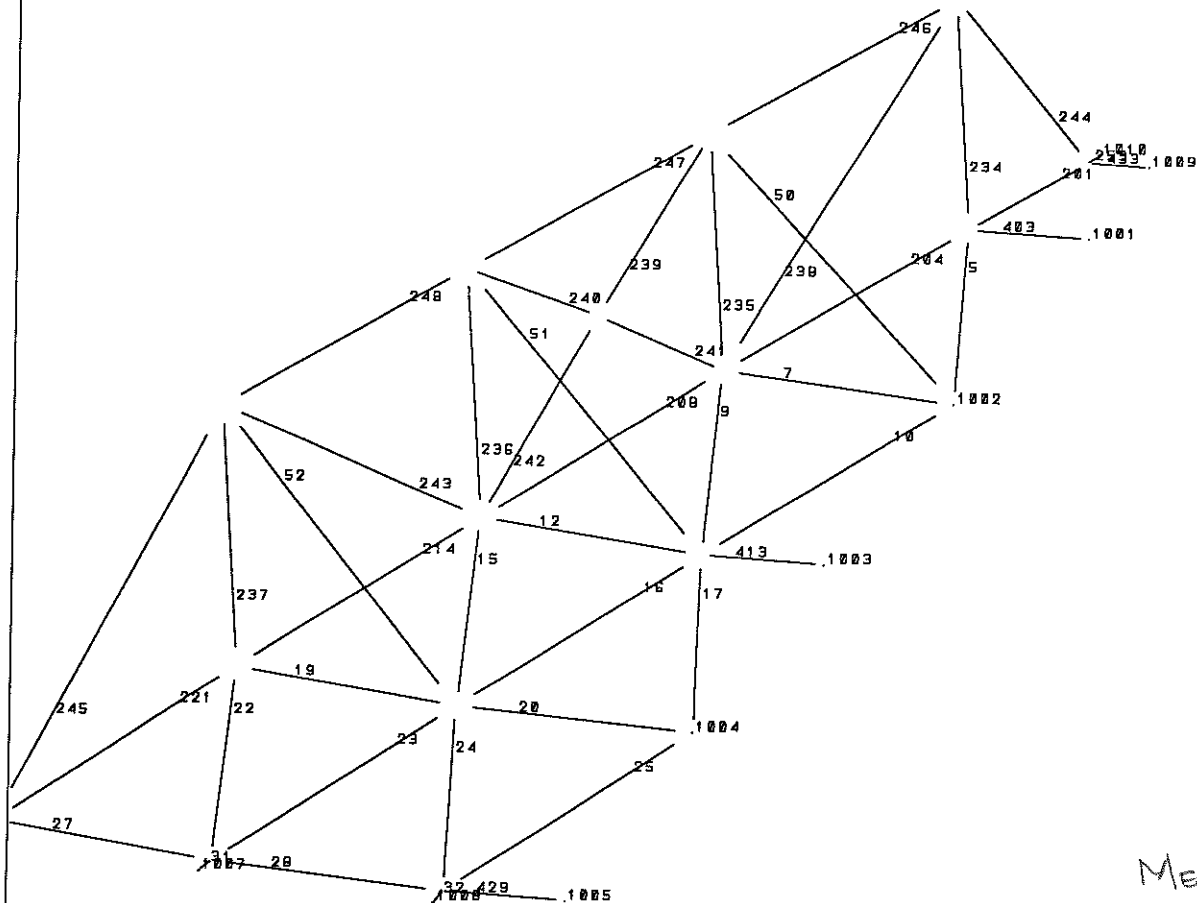
NRJ = 21

NL = 6

XMAX = 253.4

YMAX = 121.6

ZMAX = 756.9



J=35, M=57

MEMBER NO

UNIT IN KIP

STAAD POST - PLOT (REV: 22.3a)

TITLE: 99111 HILLSBORO, OR

DATE: FEB 7, 2000

MN/ELEM

STRUCTURE DATA

TYPE = SPACE

NJ = 35

NM = 57

NE = 0

NS = 0

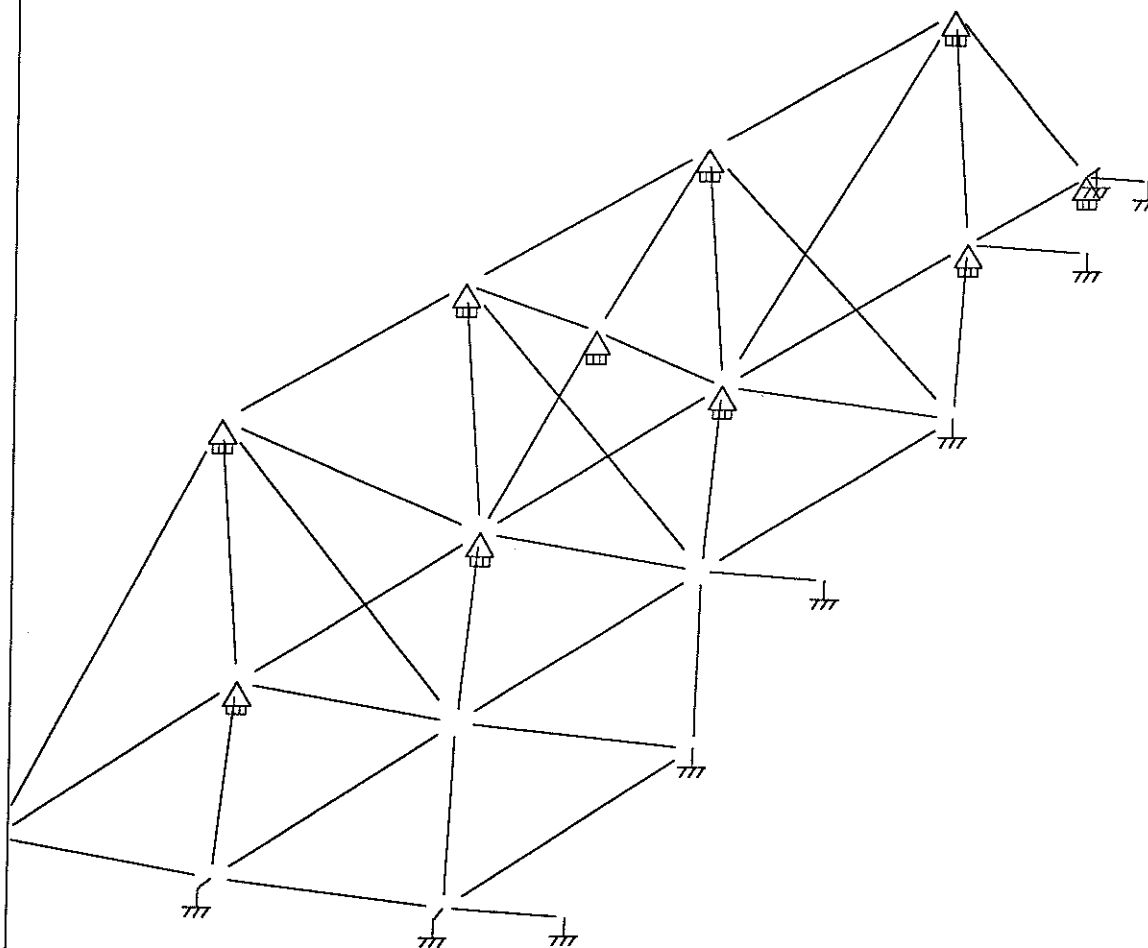
NRJ = 21

NL = 6

XMAX = 253.4

YMAX = 121.6

ZMAX = 756.9



J=35,M=57

SUPPORTS

UNIT IN KIP

STAAD POST - PLOT (REV: 22.3a)

TITLE: 99111 HILLSBORO, OR

DATE: FEB 7, 2000

STRUCTURE DATA

TYPE = SPACE

NJ = 35

NM = 57

NE = 0

NS = 0

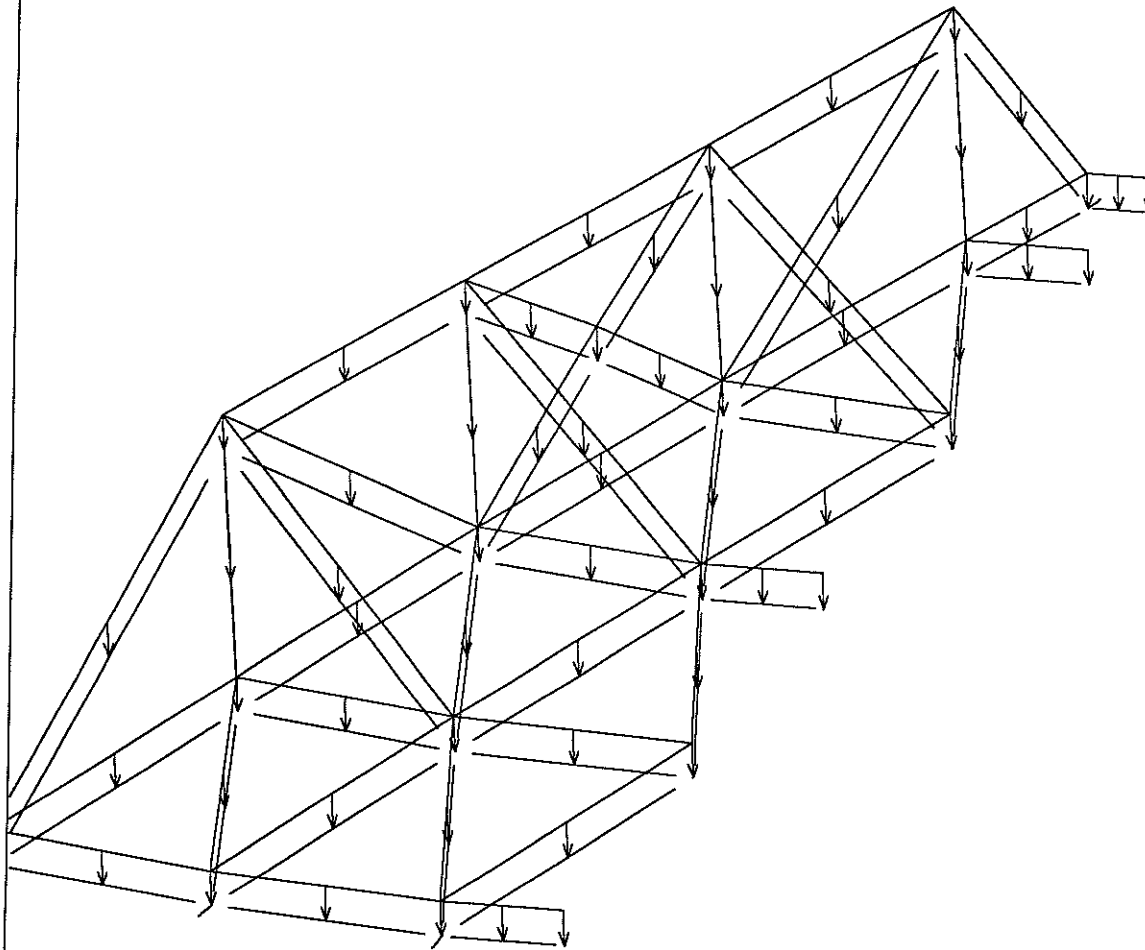
NRJ = 21

NL = 6

XMAX = 253.4

YMAX = 121.6

ZMAX = 756.9



LN= 1 MN/ELEM

J=35,M=57

DEAD LOADS

UNIT INC KIP

STAAD POST - PLOT (REV: 22.3a)

TITLE: 99111 HILLSBORO, OR

DATE: FEB 7, 2000

LN= 2 MN/ELEM

STRUCTURE DATA

TYPE = SPACE

NJ = 35

NM = 57

NE = 0

NS = 0

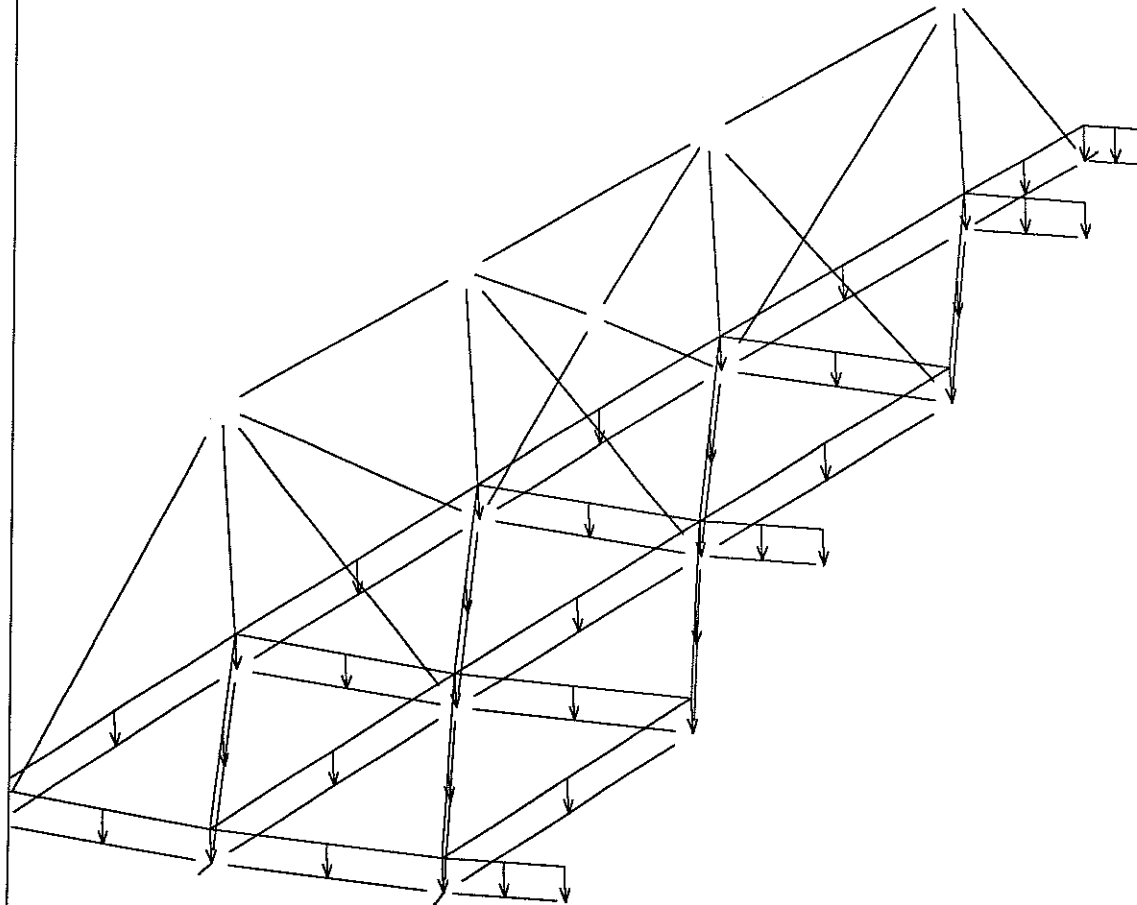
NRJ= 21

NL = 6

XMAX= 253.4

YMAX= 121.6

ZMAX= 756.9



LIVELOAD
25psf

J=35,M=57

UNIT INC KIP

STAAD POST - PLOT (REV: 22.3a)

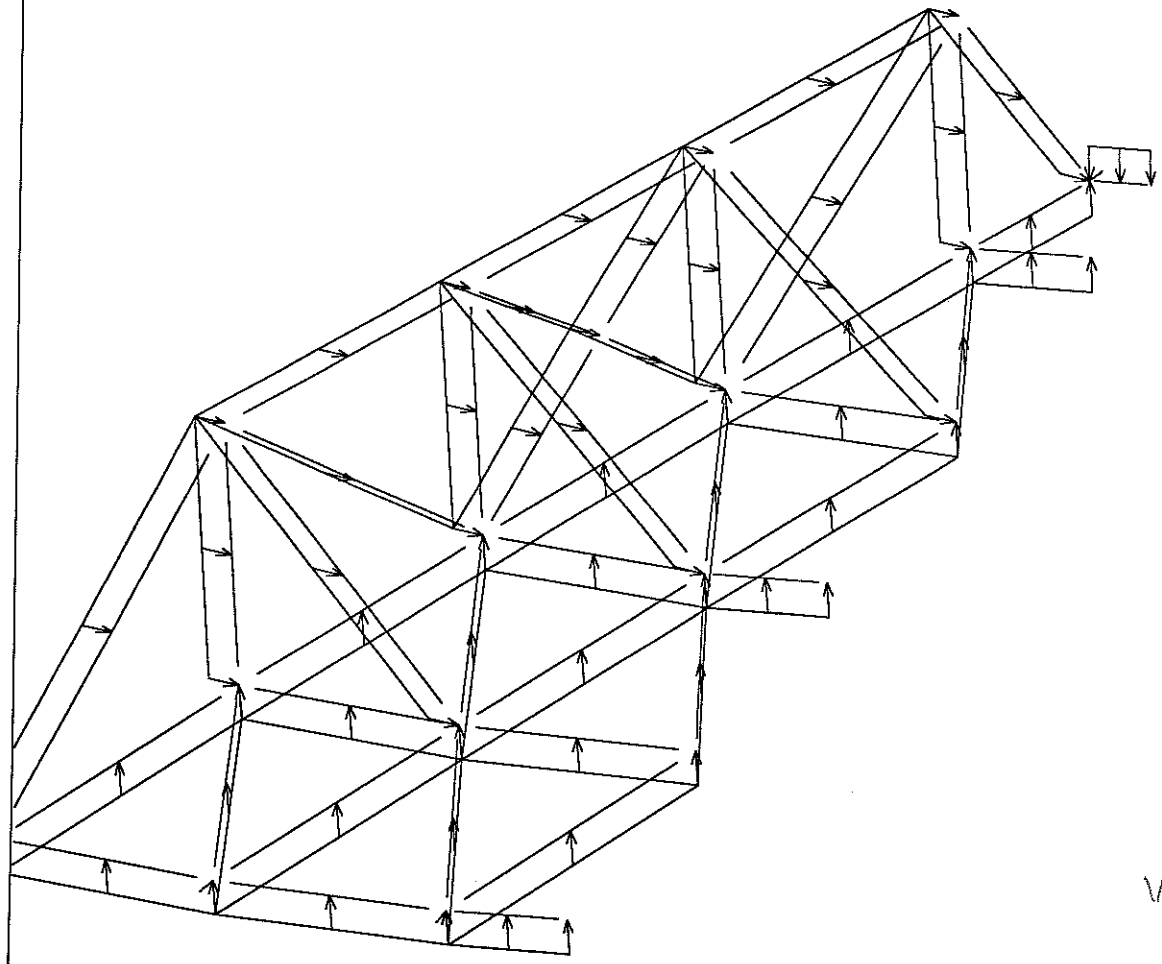
TITLE: 99111 HILLSBORO, OR

DATE: FEB 7, 2000

LN= 3 MN/ELEM

STRUCTURE DATA

TYPE = SPACE
NJ = 35
NM = 57
NE = 0
NS = 0
NRJ= 21
NL = 6
XMAX= 253.4
YMAX= 121.6
ZMAX= 756.9



WIND LOAD

J=35,M=57

UNIT INC KIP

STAAD POST - PLOT (REV: 22.3a)
TITLE: 99111 HILLSBORO, OR

DATE: FEB 7, 2000

LN= 4 MN/ELEM

STRUCTURE DATA

TYPE = SPACE

NJ = 35

NM = 57

NE = 0

NS = 0

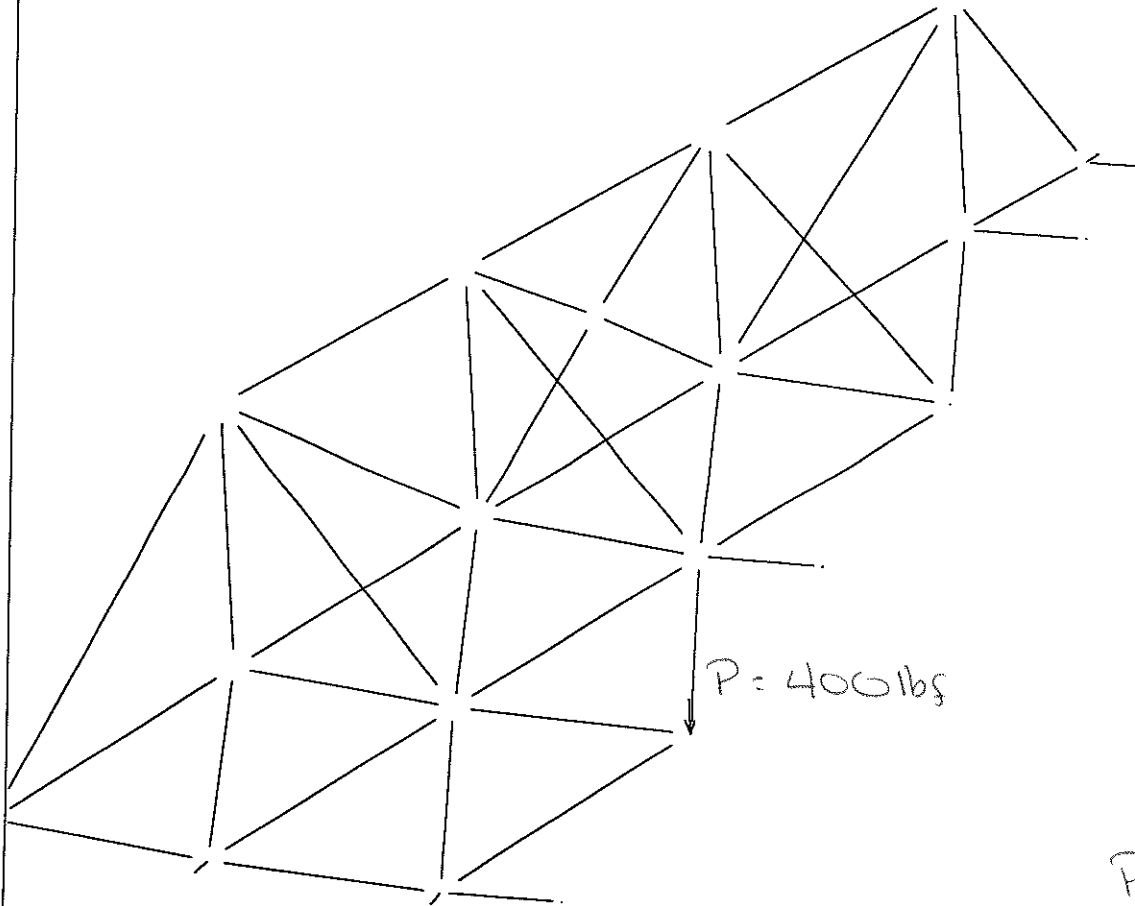
NRJ= 21

NL = 6

XMAX= 253.4

YMAX= 121.6

ZMAX= 756.9



J=35, M=57

POINT LOAD
400 lbs

UNIT INC KIP

STAAD POST - PLOT (REV: 22.3a)

TITLE: 99111 HILLSBORO, OR

DATE: FEB 7, 2000

```

*****
*
*           S T A A D - III
*       Revision 22.3a
*   Proprietary Progra  of
*   Research Engineers, Inc.
*       Date      FEB  3, 2000
*       Time      15: 3:23
*       Build No. 2434
*   USER ID: Conservatek Industries, Inc.
*****

```

```

1. STAAD SPACE 99111 HILLSBORO, OR
2. UNIT IN KIP
3. INPUT WIDTH 79
4. OUTPUT WIDTH 72
5. INPUT NODESIGN
6. JOINT COORDINATES
7.      1      .000 15692.433      83.782
8.      2      .000 15691.790      164.330
9.      3      48.295 15691.790      148.638
10. 1003      48.450 15691.790      149.113
11.      4      .000 15689.210      328.642
12.      5     101.556 15689.210      312.557
13. 1005     101.711 15689.210      313.033
14.      6      .000 15684.910      492.918
15.      7     102.483 15684.910      482.147
16.      8     151.486 15684.910      466.225
17. 1008     151.640 15684.910      466.700
18.      9      .000 15678.890      657.140
19.     10     102.799 15678.890      649.050
20.     11     203.067 15678.890      624.977
21. 1011     203.222 15678.890      625.453
22.     12      .000 15671.150      821.290
23.     13     102.935 15671.150      814.814
24.     14     204.247 15671.150      795.488
25.     15     253.292 15671.150      779.552
26. 1015     253.446 15671.150      780.027
27.     16      .000 15670.390      830.000
28. 1016      .000 15670.390      832.000
29.     17     104.027 15670.390      823.455
30. 1017     104.277 15670.390      825.439
31.     18     206.413 15670.390      803.924
32. 1018     206.910 15670.390      805.861
33.     19      24.623 15692.433      75.782
34. 1019      24.778 15692.433      76.257
35.     20      .000 15792.000      164.374
36.     21      .000 15792.000      328.730
37.     22      .000 15792.000      493.050
38.     23      .000 15792.000      657.316
39.     24      .000 15741.653      409.137
40.     25      .000 15693.193      75.072
41. 1025      .000 15693.193      77.072

```

42.	MEMBER	INCIDENCES
43.	201	1 2
44.	403	2 3
45.	204	2 4
46.	5	2 5
47.	7	4 5
48.	208	4 6
49.	9	4 7
50.	10	5 7
51.	12	6 7
52.	413	7 8
53.	214	6 9
54.	15	6 10
55.	16	7 10
56.	17	7 11
57.	19	9 10
58.	20	10 11
59.	221	9 12
60.	22	9 13
61.	23	10 13
62.	24	10 14
63.	25	11 14
64.	27	12 13
65.	28	13 14
66.	429	14 15
67.	1001	3 1003
68.	1002	5 1005
69.	1003	8 1008
70.	1004	11 1011
71.	1005	15 1015
72.	230	12 16
73.	1006	16 1016
74.	31	13 17
75.	1007	17 1017
76.	32	14 18
77.	1008	18 1018
78.	433	1 19
79.	1009	19 1019
80.	234	2 20
81.	235	4 21
82.	236	6 22
83.	237	9 23
84.	238	4 20
85.	239	24 21
86.	240	24 22
87.	241	4 24
88.	242	6 24
89.	243	6 23
90.	244	1 20
91.	245	12 23
92.	246	20 21
93.	247	21 22
94.	248	22 23
95.	50	21 5
96.	51	22 7
97.	52	23 10

```

98. 253 1 25
99. 1010 25 1025
100. START USER TABLE
101. TABLE 1 TABLE1
102. TABLE 2 TABLE2
103. END
104. MEMBER PROPERTIES
105. 201 403 204 5 7 208 9 10 12 413 214 15 16 17 19
106. 221 22 23 24 25 50 51 52 UPT 1 481
107. 27 28 429 433 UPT 1 481
108. 234 TO 248 UPT 1 487
109. 230 31 32 253 UPT 2 613
110. 1001 TO 1010 PR AX 10. IX 1. IY 1000. IZ 1000.
111. CONSTANTS
112. E 10100 MEMB 403 5 7 9 10 12 413 15 16 17 19
113. E 10100 MEMB 27 28 429 433
114. POI .347 MEMB 403 5 7 9 10 12 413 15 16 17 19
115. POI .347 MEMB 27 28 429 433 50 51 52
116. E 5050 MEMB 201 204 208 214 221 50 51 52
117. POI .347 MEMB 201 204 208 214 221
118. E 5050 MEMB 234 TO 248
119. POI .347 MEMB 234 TO 248
120. E 10100 MEMB 31 32
121. POI .347 MEMB 31 32
122. E 5050 MEMB 230 253
123. POI .347 MEMB 230 253
124. E 100000 MEMB 1001 TO 1010
125. REF 0.0 0.0 0.0 MEMB 1001 TO 1010
126. REF 0.0 0.0 0.0 MEMB 201 403 204 5 7 208 9 10 12 41
127. REF 0.0 0.0 0.0 MEMB 19 20 221 22 23 24 25 27 28 42
128. REF 0.0 0.0 0.0 MEMB 230 31 32 253
129. REF 0.0 0.0 0.0 MEMB 234 TO 248
130. MEMBER RELEASES
131. 1001 TO 1005 1009 START FX FY MZ
132. 230 31 32 253 END MX MY MZ
133. 1006 TO 1008 1010 START FX
134. 50 TO 52 START MX MY MZ
135. 50 TO 52 END MX MY MZ
136. SUPPORTS
137. 1 2 4 6 9 12 FIXED BUT FY FZ MX
138. 20 21 22 23 24 FIXED BUT FY FZ MX
139. 1003 1005 1008 1019 1011 1015 1025 FIXED
140. 1016 TO 1018 FIXED
141. LOADING 1 DL
142. MEMBER LOAD
143. 201 UNI GY -.0002758
144. 403 UNI GY -.0006646
145. 204 UNI GY -.0002800
146. 5 UNI GY -.0005493
147. 7 UNI GY -.0006657
148. 208 UNI GY -.0002808
149. 9 UNI GY -.0005446
150. 10 UNI GY -.0005572
151. 12 UNI GY -.0006653
152. 413 UNI GY -.0006646
153. 214 UNI GY -.0002810

```

154.	15	UNI	GY	- .0005422
155.	16	UNI	GY	- .0005597
156.	17	UNI	GY	- .0005526
157.	19	UNI	GY	- .0006651
158.	20	UNI	GY	- .0006646
159.	221	UNI	GY	- .0002811
160.	22	UNI	GY	- .0005409
161.	23	UNI	GY	- .0005608
162.	24	UNI	GY	- .0005494
163.	25	UNI	GY	- .0005563
164.	27	UNI	GY	- .0005274
165.	28	UNI	GY	- .0005266
166.	429	UNI	GY	- .0005263
167.	433	UNI	GY	- .0002758
168.	234	UNI	GY	- .0002811
169.	235	UNI	GY	- .0002811
170.	236	UNI	GY	- .0002811
171.	237	UNI	GY	- .0002811
172.	238	UNI	GY	- .0002811
173.	239	UNI	GY	- .0002811
174.	240	UNI	GY	- .0002811
175.	241	UNI	GY	- .0002811
176.	242	UNI	GY	- .0002811
177.	243	UNI	GY	- .0002811
178.	244	UNI	GY	- .0002811
179.	245	UNI	GY	- .0002811
180.	246	UNI	GY	- .0002811
181.	247	UNI	GY	- .0002811
182.	248	UNI	GY	- .0002811
183.	50	UNI	GY	- .0005422
184.	51	UNI	GY	- .0005422
185.	52	UNI	GY	- .0005422
186.	LOADING 2 LL			
187.	MEMBER LOAD			
188.	201	UNI	GY	- .0027948
189.	403	UNI	GY	- .0095093
190.	204	UNI	GY	- .0029382
191.	5	UNI	GY	- .0055055
192.	7	UNI	GY	- .0095468
193.	208	UNI	GY	- .0029644
194.	9	UNI	GY	- .0053402
195.	10	UNI	GY	- .0057800
196.	12	UNI	GY	- .0095312
197.	413	UNI	GY	- .0095052
198.	214	UNI	GY	- .0029725
199.	15	UNI	GY	- .0052585
200.	16	UNI	GY	- .0058647
201.	17	UNI	GY	- .0056189
202.	19	UNI	GY	- .0095191
203.	20	UNI	GY	- .0095035
204.	221	UNI	GY	- .0029751
205.	22	UNI	GY	- .0052108
206.	23	UNI	GY	- .0059002
207.	24	UNI	GY	- .0055045
208.	25	UNI	GY	- .0057447
209.	27	UNI	GY	- .0047403

210. 28 UNI GY -.0047122
211. 429 UNI GY -.0047028
212. 433 UNI GY -.0027948
213. LOADING 3 WL
214. MEMBER LOAD
215. 201 UNI Y -.0013415
216. 403 UNI Y -.0045648
217. 204 UNI Y -.0014105
218. 5 UNI Y -.0026430
219. 7 UNI Y -.0045835
220. 208 UNI Y -.0014234
221. 9 UNI Y -.0025642
222. 10 UNI Y -.0027753
223. 12 UNI Y -.0045773
224. 413 UNI Y -.0045648
225. 214 UNI Y -.0014278
226. 15 UNI Y -.0025258
227. 16 UNI Y -.0028170
228. 17 UNI Y -.0026989
229. 19 UNI Y -.0045732
230. 20 UNI Y -.0045657
231. 221 UNI Y -.0014297
232. 22 UNI Y -.0025039
233. 23 UNI Y -.0028352
234. 24 UNI Y -.0026451
235. 25 UNI Y -.0027605
236. 27 UNI Y -.0022779
237. 28 UNI Y -.0022644
238. 429 UNI Y -.0022599
239. 433 UNI Y -.0013415
240. 234 UNI GX .001630
241. 235 UNI GX .001630
242. 236 UNI GX .001630
243. 237 UNI GX .001630
244. 238 UNI GX .001630
245. 239 UNI GX .001630
246. 240 UNI GX .001630
247. 241 UNI GX .001630
248. 242 UNI GX .001630
249. 243 UNI GX .001630
250. 244 UNI GX .001630
251. 245 UNI GX .001630
252. 246 UNI GX .001630
253. 247 UNI GX .001630
254. 248 UNI GX .001630
255. 50 UNI GX .00326
256. 51 UNI GX .00326
257. 52 UNI GX .00326
258. LOADING 4 POINT LOAD
259. JOINT LOAD
260. 11 FY -.4
261. LOAD COMB 5 DL LL
262. 1 1.0 2 1.0
263. LOAD COMB 6 DL WL
264. 1 1.0 3 1.0
265. PERFORM ANALYSIS PRINT STATICS CHECK

P R O B L E M S T A T I S T I C S

NUMBER OF JOINTS/MEMBER ELEMENTS/SUPPORTS	35 /	57 /	21
ORIGINAL/FINAL BAND-WIDTH	33 /	8	
TOTAL PRIMARY LOAD CASES	4,	TOTAL DEGREES OF FREEDOM	
SIZE OF STIFFNESS MATRIX	4212	DOUBLE PREC. WORDS	
REQRD/AVAIL. DISK SPACE	12.11 /	2047.7 MB,	EXMEM 1965.8 M

***TOTAL APPLIED LOAD (KIP IN) SUMMARY (LOADING 1)
 SUMMATION FORCE-X .00
 SUMMATION FORCE-Y -2.48
 SUMMATION FORCE-Z -.01

SUMMATION OF MOMENTS AROUND THE ORIGIN-
 MX 1196.88 MY 1.96 MZ -187.84

***TOTAL APPLIED LOAD (KIP IN) SUMMARY (LOADING 2)
 SUMMATION FORCE-X .00
 SUMMATION FORCE-Y -18.18
 SUMMATION FORCE-Z .00

SUMMATION OF MOMENTS AROUND THE ORIGIN-
 MX 9873.23 MY .00 MZ -1534.10

***TOTAL APPLIED LOAD (KIP IN) SUMMARY (LOADING 3)
 SUMMATION FORCE-X 4.81
 SUMMATION FORCE-Y 8.66
 SUMMATION FORCE-Z .29

SUMMATION OF MOMENTS AROUND THE ORIGIN-
 MX -161.45 MY 2124.49 MZ -74955.43

***TOTAL APPLIED LOAD (KIP IN) SUMMARY (LOADING 4)
 SUMMATION FORCE-X .00
 SUMMATION FORCE-Y -.40
 SUMMATION FORCE-Z .00

SUMMATION OF MOMENTS AROUND THE ORIGIN-
 MX 249.99 MY .00 MZ -81.23

Processing Element Stiffness Matrix. 15: 3:23
 Processing Global Stiffness Matrix. 15: 3:23
 Processing Triangular Factorization. 15: 3:23
 Calculating Joint Displacements. 15: 3:23
 Calculating Member Forces. 15: 3:23

***TOTAL REACTION (KIP IN) SUMMARY

LOADING 1

SUM-X -.33 SUM-Y 2.48 SUM-Z .11

SUMMATION OF MOMENTS AROUND ORIGIN-

MX 431.03 MY -89.04 MZ 5296.03

LOADING 2

99111 HILLSBORO, OR

User ID: Conservatek Industries, I

- - PA

SUM-X -6.77 SUM-Y 18.18 SUM-Z 2.21

SUMMATION OF MOMENTS AROUND ORIGIN-

MX 24836.74 MY -3701.56 MZ 107619.30

LOADING 3

SUM-X -6.61 SUM-Y -8.66 SUM-Z .30

SUMMATION OF MOMENTS AROUND ORIGIN-

MX 9453.05 MY -1300.31 MZ 103308.70

LOADING 4

SUM-X .85 SUM-Y .40 SUM-Z -.28

SUMMATION OF MOMENTS AROUND ORIGIN-

MX -4583.96 MY 572.57 MZ -13216.87

***** END OF DATA FROM INTERNAL STORAGE *****

266. SECTION 0.01 0.5 0.99

267. PRINT ALL

JOINT COORDINATES

COORDINATES ARE IN UNIT

JOINT	X	Y	Z
1	.000	15692.430	83.782
2	.000	15691.790	164.330
3	48.295	15691.790	148.638
1003	48.450	15691.790	149.113
4	.000	15689.210	328.642
5	101.556	15689.210	312.557
1005	101.711	15689.210	313.033
6	.000	15684.910	492.918
7	102.483	15684.910	482.147
8	151.486	15684.910	466.225
1008	151.640	15684.910	466.700
9	.000	15678.890	657.140
10	102.799	15678.890	649.050
11	203.067	15678.890	624.977
1011	203.222	15678.890	625.453
12	.000	15671.150	821.290
13	102.935	15671.150	814.814
14	204.247	15671.150	795.488
15	253.292	15671.150	779.552
1015	253.446	15671.150	780.027
16	.000	15670.390	830.000
1016	.000	15670.390	832.000
17	104.027	15670.390	823.455
1017	104.277	15670.390	825.439
18	206.413	15670.390	803.924
1018	206.910	15670.390	805.861
19	24.623	15692.430	75.782
1019	24.778	15692.430	76.257
20	.000	15792.000	164.374
21	.000	15792.000	328.730
22	.000	15792.000	493.050
23	.000	15792.000	657.316
24	.000	15741.650	409.137
25	.000	15693.190	75.072
1025	.000	15693.190	77.072

MEMBER INFORMATION

MEMBER	START JOINT	END JOINT	LENGTH (IN)	BETA (DEG)	RELEASES
201	1	2	80.551	180.00	
403	2	3	50.780	180.00	
204	2	4	164.332	180.00	
5	2	5	179.698	180.00	
7	4	5	102.822	181.19	
208	4	6	164.332	180.00	
9	4	7	184.621	180.00	
10	5	7	169.647	180.00	
12	6	7	103.047	181.79	
413	7	8	51.525	181.79	
214	6	9	164.332	180.00	
15	6	10	187.032	180.99	
16	7	10	167.012	180.00	
17	7	11	174.796	180.00	
19	9	10	103.117	182.39	
20	10	11	103.117	182.39	
221	9	12	164.332	180.00	
22	9	13	188.458	181.31	
23	10	13	165.945	180.00	
24	10	14	178.313	181.04	
25	11	14	170.691	180.00	
27	12	13	103.139	182.99	
28	13	14	103.139	182.99	
429	14	15	51.569	182.99	
1001	3	1003	.500	180.00	110001000000
1002	5	1005	.501	180.00	110001000000
1003	8	1008	.499	180.00	110001000000
1004	11	1011	.501	180.00	110001000000
1005	15	1015	.499	180.00	110001000000
230	12	16	8.743	180.00	000000000111
1006	16	1016	2.000	180.00	100000000000
31	13	17	8.743	180.00	000000000111
1007	17	1017	2.000	180.00	100000000000
32	14	18	8.743	180.00	000000000111
1008	18	1018	2.000	180.00	100000000000
433	1	19	25.890	.00	
1009	19	1019	.500	180.00	110001000000
234	2	20	100.210	270.00	
235	4	21	102.790	270.00	
236	6	22	107.090	270.00	
237	9	23	113.110	270.00	
238	4	20	193.778	180.00	
239	24	21	94.870	180.00	
240	24	22	97.859	180.00	
241	4	24	96.070	180.00	
242	6	24	101.187	180.00	

MEMBER INFORMATION

MEMBER	START JOINT	END JOINT	LENGTH (IN)	BETA (DEG)	RELEASES
243	6	23	196.201	180.00	
244	1	20	128.099	180.00	
245	12	23	203.696	180.00	
246	20	21	164.356	180.00	
247	21	22	164.320	180.00	
248	22	23	164.266	180.00	
50	21	5	145.399	.00	000111000111
51	22	7	148.627	.00	000111000111
52	23	10	153.068	.00	000111000111
253	1	25	8.743	180.00	000000000111
1010	25	1025	2.000	180.00	100000000000

MATERIAL PROPERTIES.

ALL UNITS ARE - KIP IN

MEMBER	E	G	DEN	ALPHA
201	5050.0	1874.5	.000000000	.000000000
403	10100.0	3749.1	.000000000	.000000000
204	5050.0	1874.5	.000000000	.000000000
5	10100.0	3749.1	.000000000	.000000000
7	10100.0	3749.1	.000000000	.000000000
208	5050.0	1874.5	.000000000	.000000000
9	10100.0	3749.1	.000000000	.000000000
10	10100.0	3749.1	.000000000	.000000000
12	10100.0	3749.1	.000000000	.000000000
413	10100.0	3749.1	.000000000	.000000000
214	5050.0	1874.5	.000000000	.000000000
15	10100.0	3749.1	.000000000	.000000000
16	10100.0	3749.1	.000000000	.000000000
17	10100.0	3749.1	.000000000	.000000000
19	10100.0	3749.1	.000000000	.000000000
20	10100.0	3749.1	.000000000	.000000000
221	5050.0	1874.5	.000000000	.000000000
22	10100.0	3749.1	.000000000	.000000000
23	10100.0	3749.1	.000000000	.000000000
24	10100.0	3749.1	.000000000	.000000000
25	10100.0	3749.1	.000000000	.000000000
27	10100.0	3749.1	.000000000	.000000000
28	10100.0	3749.1	.000000000	.000000000
429	10100.0	3749.1	.000000000	.000000000
1001	100000.0	50000.0	.000000000	.000000000
1002	100000.0	50000.0	.000000000	.000000000
1003	100000.0	50000.0	.000000000	.000000000
1004	100000.0	50000.0	.000000000	.000000000
1005	100000.0	50000.0	.000000000	.000000000
230	5050.0	1874.5	.000000000	.000000000
1006	100000.0	50000.0	.000000000	.000000000
31	10100.0	3749.1	.000000000	.000000000
1007	100000.0	50000.0	.000000000	.000000000
32	10100.0	3749.1	.000000000	.000000000
1008	100000.0	50000.0	.000000000	.000000000
433	10100.0	3749.1	.000000000	.000000000
1009	100000.0	50000.0	.000000000	.000000000
234	5050.0	1874.5	.000000000	.000000000
235	5050.0	1874.5	.000000000	.000000000
236	5050.0	1874.5	.000000000	.000000000
237	5050.0	1874.5	.000000000	.000000000
238	5050.0	1874.5	.000000000	.000000000
239	5050.0	1874.5	.000000000	.000000000
240	5050.0	1874.5	.000000000	.000000000
241	5050.0	1874.5	.000000000	.000000000
242	5050.0	1874.5	.000000000	.000000000

MATERIAL PROPERTIES.

ALL UNITS ARE - KIP IN

MEMBER	E	G	DEN	ALPHA
243	5050.0	1874.5	.000000000	.000000000
244	5050.0	1874.5	.000000000	.000000000
245	5050.0	1874.5	.000000000	.000000000
246	5050.0	1874.5	.000000000	.000000000
247	5050.0	1874.5	.000000000	.000000000
248	5050.0	1874.5	.000000000	.000000000
50	5050.0	2525.0	.000000000	.000000000
51	5050.0	2525.0	.000000000	.000000000
52	5050.0	2525.0	.000000000	.000000000
253	5050.0	1874.5	.000000000	.000000000
1010	100000.0	50000.0	.000000000	.000000000

MEMBER PROPERTIES. UNIT - INCH

MEMB	PROFILE	AX / AY	IZ / AZ	IY / SZ
201	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
403	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
204	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
5	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
7	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
208	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
9	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
10	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
12	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
413	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
214	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
15	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
16	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
17	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
19	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
20	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
221	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
22	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
23	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
24	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
25	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
27	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
28	ST 481	3.25 1.40	30.56 1.53	1.65 7.64
429	ST 481	3.25 1.40	30.56 1.53	1.65 7.64

MEMBER PROPERTIES. UNIT - INCH

MEMB	PROFILE	AX/ AY	IZ/ AZ	IY/ SZ	
1001	PRISMATIC	10.00	1000.00	1000.00	
		.00	.00	200.20	20
1002	PRISMATIC	10.00	1000.00	1000.00	
		.00	.00	200.20	20
1003	PRISMATIC	10.00	1000.00	1000.00	
		.00	.00	200.20	20
1004	PRISMATIC	10.00	1000.00	1000.00	
		.00	.00	200.20	20
1005	PRISMATIC	10.00	1000.00	1000.00	
		.00	.00	200.20	20
230	ST 613	7.39	29.54	19.54	3
		5.54	1.39	9.85	
1006	PRISMATIC	10.00	1000.00	1000.00	
		.00	.00	200.20	20
31	ST 613	7.39	29.54	19.54	3
		5.54	1.39	9.85	
1007	PRISMATIC	10.00	1000.00	1000.00	
		.00	.00	200.20	20
32	ST 613	7.39	29.54	19.54	3
		5.54	1.39	9.85	
1008	PRISMATIC	10.00	1000.00	1000.00	
		.00	.00	200.20	20
433	ST 481	3.25	30.56	1.65	
		1.40	1.53	7.64	
1009	PRISMATIC	10.00	1000.00	1000.00	
		.00	.00	200.20	20
234	ST 487	4.91	48.90	5.07	
		2.00	2.59	12.23	
235	ST 487	4.91	48.90	5.07	
		2.00	2.59	12.23	
236	ST 487	4.91	48.90	5.07	
		2.00	2.59	12.23	
237	ST 487	4.91	48.90	5.07	
		2.00	2.59	12.23	
238	ST 487	4.91	48.90	5.07	
		2.00	2.59	12.23	
239	ST 487	4.91	48.90	5.07	
		2.00	2.59	12.23	
240	ST 487	4.91	48.90	5.07	
		2.00	2.59	12.23	
241	ST 487	4.91	48.90	5.07	
		2.00	2.59	12.23	
242	ST 487	4.91	48.90	5.07	
		2.00	2.59	12.23	
243	ST 487	4.91	48.90	5.07	
		2.00	2.59	12.23	
244	ST 487	4.91	48.90	5.07	
		2.00	2.59	12.23	

MEMBER PROPERTIES. UNIT - INCH

MEMB	PROFILE		AX/ AY	IZ/ AZ	IY/ SZ	
245	ST	487	4.91	48.90	5.07	
			2.00	2.59	12.23	
246	ST	487	4.91	48.90	5.07	
			2.00	2.59	12.23	
247	ST	487	4.91	48.90	5.07	
			2.00	2.59	12.23	
248	ST	487	4.91	48.90	5.07	
			2.00	2.59	12.23	
50	ST	481	3.25	30.56	1.65	
			1.40	1.53	7.64	
51	ST	481	3.25	30.56	1.65	
			1.40	1.53	7.64	
52	ST	481	3.25	30.56	1.65	
			1.40	1.53	7.64	
253	ST	613	7.39	29.54	19.54	3
			5.54	1.39	9.85	
1010	PRISMATIC		10.00	1000.00	1000.00	
			.00	.00	200.20	20

SUPPORT INFORMATION (1 FIXED, 0 RELEASED)

UNITS FOR SPRING CONSTANTS ARE KIP IN DEGREES

JOINT	FORCE-X/ KFX		FORCE-Y/ KFY		FORCE-Z/ KFZ		MOM-X/ KMX		MOM-Y/ KMY		MOM-Z/ KMZ
1	1		0		0		0		1		1
		.0		.0		.0		.0		.0	
2	1		0		0		0		1		1
		.0		.0		.0		.0		.0	
4	1		0		0		0		1		1
		.0		.0		.0		.0		.0	
6	1		0		0		0		1		1
		.0		.0		.0		.0		.0	
9	1		0		0		0		1		1
		.0		.0		.0		.0		.0	
12	1		0		0		0		1		1
		.0		.0		.0		.0		.0	
20	1		0		0		0		1		1
		.0		.0		.0		.0		.0	
21	1		0		0		0		1		1
		.0		.0		.0		.0		.0	
22	1		0		0		0		1		1
		.0		.0		.0		.0		.0	
23	1		0		0		0		1		1
		.0		.0		.0		.0		.0	

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24	1	0	0	0	0	1	1
	.0	.0	.0	.0	.0	.0	.0
1003	1	1	1	1	1	1	1
	.0	.0	.0	.0	.0	.0	.0
1005	1	1	1	1	1	1	1
	.0	.0	.0	.0	.0	.0	.0
1008	1	1	1	1	1	1	1
	.0	.0	.0	.0	.0	.0	.0
1019	1	1	1	1	1	1	1
	.0	.0	.0	.0	.0	.0	.0
1011	1	1	1	1	1	1	1
	.0	.0	.0	.0	.0	.0	.0
1015	1	1	1	1	1	1	1
	.0	.0	.0	.0	.0	.0	.0
1025	1	1	1	1	1	1	1
	.0	.0	.0	.0	.0	.0	.0
1016	1	1	1	1	1	1	1
	.0	.0	.0	.0	.0	.0	.0
1017	1	1	1	1	1	1	1
	.0	.0	.0	.0	.0	.0	.0
1018	1	1	1	1	1	1	1
	.0	.0	.0	.0	.0	.0	.0

***** END OF DATA FROM INTERNAL STORAGE *****

268. LOAD LIST 5 6
269. PRINT JOINT DISP

JOINT DISPLACEMENT (INCH RADIANS)				STRUCTURE TYPE		SPACE	
JOINT	LOAD	X-TRANS	Y-TRANS	Z-TRANS	X-ROTAN	Y-ROTAN	Z-R
1	5	.00000	-.08820	-.03002	.00805	.00000	.
	6	.00000	.02483	.00984	-.00228	.00000	.
2	5	.00000	-.41124	-.01642	.00384	.00000	.
	6	.00000	.11827	.00667	-.00117	.00000	.
3	5	-.00399	-.39215	-.01222	.00238	.00000	-. .
	6	.00162	.11344	.00496	-.00086	.00000	.
1003	5	.00000	.00000	.00000	.00000	.00000	.
	6	.00000	.00000	.00000	.00000	.00000	.
4	5	.00000	-1.03459	-.02548	.00267	.00000	.
	6	.00000	.30184	.01078	-.00083	.00000	.
5	5	-.00229	-1.04310	-.00702	.00246	.00000	-. .
	6	.00147	.30559	.00450	-.00072	.00000	.
1005	5	.00000	.00000	.00000	.00000	.00000	.
	6	.00000	.00000	.00000	.00000	.00000	.
6	5	.00000	-1.21474	.05766	-.00019	.00000	.
	6	.00000	.35831	-.01286	.00004	.00000	.
7	5	-.00783	-1.28878	.00143	.00113	.00005	-. .
	6	.00343	.38414	.00279	-.00045	-.00001	.
8	5	.00157	-1.32965	.00483	-.00064	.00000	.
	6	.00114	.39874	.00351	.00020	.00000	-. .
1008	5	.00000	.00000	.00000	.00000	.00000	.
	6	.00000	.00000	.00000	.00000	.00000	.
9	5	.00000	-.94764	.14067	-.00090	.00000	.
	6	.00000	.28402	-.03819	.00021	.00000	.
10	5	-.00584	-1.04634	.04486	-.00418	.00067	-. .
	6	.00319	.31913	-.00961	.00128	-.00021	.
11	5	-.00434	-1.73130	-.01334	-.00202	.00000	-. .
	6	.00304	.56490	.00935	.00050	.00000	.
1011	5	.00000	.00000	.00000	.00000	.00000	.
	6	.00000	.00000	.00000	.00000	.00000	.
12	5	.00000	-.16931	.31754	-.01686	.00000	.
	6	.00000	.05079	-.09188	.00505	.00000	.
13	5	.01314	-.09229	.12105	-.01023	.00027	.
	6	-.00346	.02920	-.03255	.00324	-.00008	-. .
14	5	.01607	-.12588	.06618	-.01409	.00021	.
	6	-.00383	.04162	-.01608	.00466	-.00007	-. .
15	5	.02111	-.18983	.06513	-.01643	.00000	.
	6	-.00447	.06321	-.01379	.00545	.00000	-. .
1015	5	.00000	.00000	.00000	.00000	.00000	.
	6	.00000	.00000	.00000	.00000	.00000	.
16	5	.00000	.00000	.33213	.00000	.00000	.
	6	.00000	.00000	-.09625	.00000	.00000	.
1016	5	.00000	.00000	.00000	.00000	.00000	.
	6	.00000	.00000	.00000	.00000	.00000	.
17	5	.01623	.00000	.12877	.00000	.00000	.
	6	-.00441	.00000	-.03500	.00000	.00000	.
1017	5	.00000	.00000	.00000	.00000	.00000	.
	6	.00000	.00000	.00000	.00000	.00000	.

JOINT DISPLACEMENT (INCH RADIANS)				STRUCTURE TYPE		SPACE	
JOINT	LOAD	X-TRANS	Y-TRANS	Z-TRANS	X-ROTAN	Y-ROTAN	Z-R
18	5	.01965	.00000	.07659	.00000	.00000	.
	6	-.00501	.00000	-.01952	.00000	.00000	.
1018	5	.00000	.00000	.00000	.00000	.00000	.
	6	.00000	.00000	.00000	.00000	.00000	.
19	5	-.00843	-.05300	-.02583	.00186	.00000	-.
	6	.00276	.01455	.00847	-.00047	.00000	.
1019	5	.00000	.00000	.00000	.00000	.00000	.
	6	.00000	.00000	.00000	.00000	.00000	.
20	5	.00000	-.40278	.27143	.00287	.00000	.
	6	.00000	.11550	-.07705	-.00078	.00000	.
21	5	.00000	-1.04126	.16463	.00240	.00000	.
	6	.00000	.30348	-.04607	-.00071	.00000	.
22	5	.00000	-1.22190	.05796	-.00034	.00000	.
	6	.00000	.36027	-.01489	.00007	.00000	.
23	5	.00000	-.94035	-.06968	-.00146	.00000	.
	6	.00000	.28162	.02309	.00039	.00000	.
24	5	.00000	-1.20132	.06485	.00104	.00000	.
	6	.00000	.35189	-.01611	-.00032	.00000	.
25	5	.00000	.00000	-.02248	.00000	.00000	.
	6	.00000	.00000	.00772	.00000	.00000	.
1025	5	.00000	.00000	.00000	.00000	.00000	.
	6	.00000	.00000	.00000	.00000	.00000	.

***** END OF LATEST ANALYSIS RESULT *****

270. PRINT SUPPORT REACTIONS

SUPPORT REACTIONS -UNIT KIP IN

STRUCTURE TYPE

SPACE

JOINT	LOAD	FORCE - X	FORCE - Y	FORCE - Z	MOM - X	MOM - Y	
1	5	11.22	.00	.00	.00	.20	2
	6	-3.78	.00	.00	.00	-1.47	-
2	5	1.53	.00	.00	.00	.14	2
	6	-.98	.00	.00	.00	-.05	-
4	5	-.74	.00	.00	.00	.16	1
	6	-.43	.00	.00	.00	3.31	-
6	5	2.47	.00	.00	.00	-.54	2
	6	-1.45	.00	.00	.00	-2.85	-
9	5	3.68	.00	.00	.00	-.12	
	6	-1.66	.00	.00	.00	.34	
12	5	-8.08	.00	.00	.00	-.93	-1
	6	2.11	.00	.00	.00	4.93	
20	5	.00	.00	.00	.00	.00	
	6	-.48	.00	.00	.00	-6.59	-
21	5	-1.48	.00	.00	.00	.00	
	6	-.19	.00	.00	.00	-1.03	-
22	5	-3.57	.00	.00	.00	.00	
	6	.55	.00	.00	.00	1.12	-
23	5	-4.91	.00	.00	.00	.00	
	6	.91	.00	.00	.00	3.51	-
24	5	.00	.00	.00	.00	.00	
	6	-.32	.00	.00	.00	-.18	
1003	5	-3.66	.00	1.20	-.84	1.93	-
	6	.44	.00	-.15	.16	-.44	
1005	5	.91	.00	-.30	-4.10	-.49	-1
	6	-.87	.00	.28	1.49	.05	
1008	5	4.35	.00	-1.41	3.06	-2.59	
	6	-1.40	.00	.45	-1.11	.92	-
1019	5	-13.35	.00	4.36	-8.14	7.26	-2
	6	1.27	.00	-.41	2.38	-2.00	
1011	5	5.97	.00	-1.94	23.74	-5.77	7
	6	-.72	.00	.24	-8.40	1.42	-2
1015	5	-1.28	.00	.42	4.28	-1.59	1
	6	.01	.00	.00	-1.45	.32	-
1025	5	.00	7.78	.00	15.55	.00	
	6	.00	-2.16	.00	-4.32	.00	
1016	5	.00	9.69	.00	19.38	.00	
	6	.00	-2.95	.00	-5.89	.00	
1017	5	-.23	1.63	.03	3.24	.56	
	6	.06	-.54	-.01	-1.06	-.08	
1018	5	.10	1.57	-.03	3.03	-.02	
	6	-.03	-.54	.01	-1.04	-.05	

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***** END OF LATEST ANALYSIS RESULT *****

271. PRINT MEMBER FORCES

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MEMBER END FORCES STRUCTURE TYPE SPACE

ALL UNITS ARE - - KIP IN

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y
201	5	1	-3.30	.38	.00	.00	.00
		2	3.29	-.62	.00	.00	.00
	6	1	.80	-.10	.00	.00	.00
		2	-.80	.19	.00	.00	.00
403	5	2	3.29	-.52	.00	.00	-.11
		3	-3.29	.00	.00	.00	-.11
	6	2	-1.34	.20	.00	.00	.04
		3	1.34	.00	.00	.00	.04
204	5	2	-.08	-.30	.00	.00	.00
		4	.07	-.23	.00	.00	.00
	6	2	-.12	.10	.00	.00	.00
		4	.12	.09	.00	.00	.00
5	5	2	-2.84	-.63	.00	.00	-.04
		5	2.83	-.46	.00	.00	-.03
	6	2	.67	.21	.00	.00	.01
		5	-.67	.16	.00	.00	.01
7	5	4	1.64	-.58	.01	.00	-.36
		5	-1.64	-.47	.01	.00	.02
	6	4	-.78	.22	.00	.00	.05
		5	.78	.18	.00	.00	.07
208	5	4	-8.78	-.26	.00	.00	.00
		6	8.76	-.28	.00	.00	.00
	6	4	2.51	.09	.00	.00	.00
		6	-2.51	.10	.00	.00	.00
9	5	4	-4.27	-.48	.00	.00	-.08
		7	4.24	-.61	.00	.00	-.08
	6	4	1.18	.16	.00	.00	.03
		7	-1.18	.21	.00	.00	.02
10	5	5	-2.85	-.49	.00	.00	-.02
		7	2.82	-.58	.00	.00	-.02
	6	5	.71	.17	.00	.00	.00
		7	-.72	.20	.00	.00	.00
12	5	6	.61	-.55	.01	.00	.23
		7	-.61	-.50	.03	.00	.79
	6	6	-.57	.21	.00	.00	-.16
		7	.57	.19	.00	.00	-.13

MEMBER END FORCES STRUCTURE TYPE SPACE

ALL UNITS ARE -- KIP IN

MEMBER	LOAD	JT	AXIAL	SHEAR - Y	SHEAR - Z	TORSION	MOM - Y
413	5	7	-5.02	-.52	.02	.01	-.37
		8	5.02	.00	.00	-.01	-.21
	6	7	1.53	.20	.00	.00	.01
		8	-1.53	.00	.00	.00	.02
214	5	6	-7.32	-.19	.00	.00	.00
		9	7.30	-.34	.00	.00	.00
	6	6	2.26	.07	.00	.00	.00
		9	-2.26	.12	.00	.00	.00
15	5	6	3.37	-.51	.01	.00	-.34
		10	-3.41	-.58	.01	.00	.11
	6	6	-1.01	.17	.00	.00	.03
		10	1.00	.20	.00	.00	.05
16	5	7	-6.83	-.54	.00	.00	-.09
		10	6.80	-.53	.00	.00	-.19
	6	7	1.97	.19	.00	.00	.02
		10	-1.98	.19	.00	.00	.06
17	5	7	-.99	-.83	.00	.00	.03
		11	.96	-.25	.00	.00	.05
	6	7	.20	.29	.00	.00	-.02
		11	-.21	.08	.00	.00	-.02
19	5	9	-.54	-.02	.01	.00	.34
		10	.54	-1.03	.03	.00	.94
	6	9	-.30	.02	.01	.00	-.24
		10	.30	.38	.00	.00	-.14
20	5	10	-4.79	-1.69	.02	.00	-.39
		11	4.79	.65	.02	.00	.51
	6	10	1.45	.62	.00	.00	-.02
		11	-1.45	-.22	.00	.00	-.02
221	5	9	-14.00	-.54	.00	.00	.00
		12	13.97	.01	.00	.00	.00
	6	9	4.26	.17	.00	.00	.00
		12	-4.26	.01	.00	.00	.00
22	5	9	7.71	-.61	.01	.00	-.33
		13	-7.75	-.48	.01	.00	.39
	6	9	-2.32	.21	.00	.00	-.05
		13	2.31	.16	.00	.00	.04
23	5	10	-6.28	-.72	.00	-.01	-.18
		13	6.23	-.35	.00	.01	-.17

99111 HILLSBORO, OR

-- PA

MEMBER END FORCES STRUCTURE TYPE SPACE

ALL UNITS ARE -- KIP IN

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y
	6	10	1.86	.25	.00	.00	.05
		13	-1.86	.12	.00	.00	.05
24	5	10	1.81	-.73	.01	.00	-.38
		14	-1.86	-.35	.01	.00	.19
	6	10	-.51	.26	.00	.00	.03
		14	.50	.12	.00	.00	.02
25	5	11	-1.33	-.37	.00	.00	.01
		14	1.28	-.71	.00	.00	-.05
	6	11	.33	.13	.00	.00	-.01
		14	-.33	.25	.00	.00	.02
27	5	12	-8.10	-.08	-.02	-.01	1.55
		13	8.10	-.46	.05	.01	1.91
	6	12	2.28	.04	.01	.00	-.57
		13	-2.28	.14	-.01	.00	-.48
28	5	13	-4.19	-.32	.01	.01	.00
		14	4.19	-.22	.02	-.01	.51
	6	13	1.10	.10	.00	.00	-.10
		14	-1.10	.08	.00	.00	-.06
429	5	14	-3.26	-.27	.02	.01	-.33
		15	3.26	.00	.00	-.01	-.14
	6	14	.84	.09	.00	.00	.00
		15	-.84	.00	.00	.00	-.01
1001	5	3	.00	.00	3.85	2.69	-.07
		1003	.00	.00	-3.85	-2.69	-1.93
	6	3	.00	.00	-.47	-.50	-.31
		1003	.00	.00	.47	.50	.44
1002	5	5	.00	.00	-.95	13.24	.14
		1005	.00	.00	.95	-13.24	.49
	6	5	.00	.00	.91	-4.83	-.17
		1005	.00	.00	-.91	4.83	-.05
1003	5	8	.00	.00	-4.57	-9.92	-.11
		1008	.00	.00	4.57	9.92	2.59
	6	8	.00	.00	1.47	3.59	.03
		1008	.00	.00	-1.47	-3.59	-.92
1004	5	11	.00	.00	-6.28	-76.67	-3.61
		1011	.00	.00	6.28	76.67	5.77
	6	11	.00	.00	.76	27.12	1.42
		1011	.00	.00	-.76	-27.12	-1.42

MEMBER END FORCES

STRUCTURE TYPE

SPACE

ALL UNITS ARE - - KIP IN

MEMBER	LOAD	JT	AXIAL	SHEAR - Y	SHEAR - Z	TORSION	MOM - Y
1005	5	15	.00	.00	1.35	-13.87	-1.21
		1015	.00	.00	-1.35	13.87	1.59
	6	15	.00	.00	-.01	4.70	.61
		1015	.00	.00	.01	-4.70	-.32
230	5	12	.84	9.65	.00	.00	.00
		16	-.84	-9.65	.00	.00	.00
	6	12	-.26	-2.93	.00	.00	.00
		16	.26	2.93	.00	.00	.00
1006	5	16	.00	9.69	.00	.00	.00
		1016	.00	-9.69	.00	.00	.00
	6	16	.00	-2.95	.00	.00	.00
		1016	.00	2.95	.00	.00	.00
31	5	13	.14	1.63	.25	.00	-2.22
		17	-.14	-1.63	-.25	.00	.00
	6	13	-.05	-.53	-.06	.00	.52
		17	.05	.53	.06	.00	.00
1007	5	17	.00	1.63	.23	.00	-.05
		1017	.00	-1.63	-.23	.00	-.56
	6	17	.00	-.54	-.06	.00	-.04
		1017	.00	.54	.06	.00	.08
32	5	14	.14	1.56	.02	.00	-.22
		18	-.14	-1.56	-.02	.00	.00
	6	14	-.05	-.54	.00	.00	-.02
		18	.05	.54	.00	.00	.00
1008	5	18	.00	1.57	-.10	.00	.07
		1018	.00	-1.57	.10	.00	.02
	6	18	.00	-.54	.03	.00	.05
		1018	.00	.54	-.03	.00	.05
433	5	1	11.81	.08	-.02	.03	.20
		19	-11.81	.00	.02	-.03	.20
	6	1	-3.87	.04	.00	-.01	-.06
		19	3.87	.00	.00	.01	-.06
1009	5	19	.00	.00	14.04	26.23	-.97
		1019	.00	.00	-14.04	-26.23	-7.26
	6	19	.00	.00	-1.33	-7.66	-.07
		1019	.00	.00	1.33	7.66	2.00
234	5	2	-2.08	-.13	.00	.00	.00
		20	2.11	.13	.00	.00	.00

99111 HILLSBORO, OR

-- PA

MEMBER END FORCES STRUCTURE TYPE SPACE

ALL UNITS ARE -- KIP IN

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y
	6	2	.70	.04	.08	.00	-1.36
		20	-.67	-.04	.08	.00	1.36
235	5	4	1.62	-.18	.00	.00	.00
		21	-1.59	.18	.00	.00	.00
	6	4	-.38	.06	.08	.00	-1.44
		21	.41	-.06	.08	.00	1.44
236	5	6	1.67	.06	.00	.00	.00
		22	-1.64	-.06	.00	.00	.00
	6	6	-.44	-.02	.09	.00	-1.56
		22	.47	.02	.09	.00	1.56
237	5	9	-1.58	-.15	.00	.00	.00
		23	1.62	.15	.00	.00	.00
	6	9	.54	.05	.09	.00	-1.74
		23	-.51	-.05	.09	.00	1.74
238	5	4	-10.66	.04	.00	.00	.00
		20	10.69	-.09	.00	.00	.00
	6	4	3.14	-.04	.16	.00	-5.10
		20	-3.11	.00	.16	.00	5.10
239	5	24	-.09	.07	.00	.00	.00
		21	.11	-.09	.00	.00	.00
	6	24	.08	-.04	.08	.00	-1.22
		21	-.07	.01	.08	.00	1.22
240	5	24	4.19	.05	.00	.00	.00
		22	-4.17	-.07	.00	.00	.00
	6	24	-1.35	-.03	-.08	.00	1.30
		22	1.37	.01	-.08	.00	-1.30
241	5	4	3.96	-.04	.00	.00	.00
		24	-3.95	.02	.00	.00	.00
	6	4	-1.23	-.01	-.08	.00	1.25
		24	1.24	-.02	-.08	.00	-1.25
242	5	6	-.38	-.09	.00	.00	.00
		24	.39	.06	.00	.00	.00
	6	6	.23	.01	.08	.00	-1.39
		24	-.21	-.03	.08	.00	1.39
243	5	6	-5.43	.03	.00	.00	.00
		23	5.46	-.08	.00	.00	.00
	6	6	1.50	-.04	-.16	.00	5.23
		23	-1.47	-.01	-.16	.00	-5.23

MEMBER END FORCES STRUCTURE TYPE SPACE

ALL UNITS ARE - - KIP IN

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y
244	5	1	10.63	.35	.00	.00	.00
		20	-10.61	-.37	.00	.00	.00
	6	1	-3.05	-.11	-.10	.00	2.23
		20	3.07	.08	-.10	.00	-2.23
245	5	12	17.76	.33	.00	.00	.00
		23	-17.72	-.37	.00	.00	.00
	6	12	-5.39	-.13	.17	.00	-5.64
		23	5.42	.08	.17	.00	5.64
246	5	20	16.11	-.16	.00	.00	.00
		21	-16.11	.11	.00	.00	.00
	6	20	-4.67	.02	-.13	.00	3.67
		21	4.67	-.07	-.13	.00	-3.67
247	5	21	16.10	-.03	.00	.00	.00
		22	-16.10	-.02	.00	.00	.00
	6	21	-4.71	-.02	-.13	.00	3.67
		22	4.71	-.03	-.13	.00	-3.67
248	5	22	19.27	.06	.00	.00	.00
		23	-19.27	-.11	.00	.00	.00
	6	22	-5.73	-.05	-.13	.00	3.67
		23	5.73	.00	-.13	.00	-3.67
50	5	21	-2.15	.03	.00	.00	.00
		5	2.09	.03	.00	.00	.00
	6	21	.49	-.14	-.04	.00	.00
		5	-.88	-.14	-.04	.00	.00
51	5	22	-5.21	.03	.00	.00	.00
		7	5.15	.03	.00	.00	.00
	6	22	1.59	-.15	-.03	.00	.00
		7	-1.98	-.15	-.03	.00	.00
52	5	23	-7.34	.03	.00	.00	.00
		10	7.28	.03	.00	.00	.00
	6	23	2.35	-.16	-.02	.00	.00
		10	-2.75	-.16	-.02	.00	.00
253	5	1	-.68	7.75	.00	.00	.00
		25	.68	-7.75	.00	.00	.00
	6	1	.19	-2.15	.00	.00	.00
		25	-.19	2.15	.00	.00	.00
1010	5	25	.00	7.78	.00	.00	.00
		1025	.00	-7.78	.00	.00	.00

MEMBER END FORCES STRUCTURE TYPE SPACE

ALL UNITS ARE -- KIP IN

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y
	6	25	.00	-2.16	.00	.00	.00
		1025	.00	2.16	.00	.00	.00

***** END OF LATEST ANALYSIS RESULT *****

272. PRINT MEMBER SECTION FORCES

MEMBER FORCES AT INTERMEDIATE SECTIONS

ALL UNITS ARE -- KIP IN

MEMB	LOAD	SEC	SHEAR-Y	SHEAR-Z	MOM-Y	MOM-Z
201	5	.01	.38	.00	.00	26.20
		.50	.50	.00	.00	8.91
		.99	.62	.00	.00	-13.17
	6	.01	-.10	.00	.00	-7.30
		.50	-.15	.00	.00	-2.40
		.99	-.19	.00	.00	4.15
403	5	.01	-.51	.00	-.10	-15.55
		.50	-.26	.00	.00	-5.97
		.99	-.01	.00	.10	-2.70
	6	.01	.20	.00	.04	5.43
		.50	.10	.00	.00	1.76
		.99	.00	.00	-.04	.50
204	5	.01	-.30	.00	.00	-8.61
		.50	-.04	.00	.00	4.72
		.99	.22	.00	.00	-2.82
	6	.01	.10	.00	.00	2.70
		.50	.01	.00	.00	-1.59
		.99	-.08	.00	.00	1.44
5	5	.01	-.62	.00	-.04	-21.24
		.50	-.08	.00	.00	9.46
		.99	.45	.00	.03	-6.77
	6	.01	.21	.00	.01	6.93
		.50	.02	.00	.00	-3.28
		.99	-.16	.00	-.01	2.74
7	5	.01	-.57	.01	-.35	-13.07
		.50	-.05	.00	.11	2.44
		.99	.46	-.01	.06	-7.97
	6	.01	.22	.00	.05	4.93
		.50	.02	.00	.02	-1.13
		.99	-.18	.00	.00	2.75
208	5	.01	-.25	.00	.00	-3.33
		.50	.01	.00	.00	6.34
		.99	.27	.00	.00	-5.02
	6	.01	.09	.00	.00	1.31
		.50	.00	.00	.00	-2.11
		.99	-.10	.00	.00	1.89
9	5	.01	-.47	.00	-.08	-9.11
		.50	.06	.00	.00	9.18
		.99	.60	.00	.08	-20.67
	6	.01	.16	.00	.02	3.15
		.50	-.02	.00	.00	-2.93

MEMBER FORCES AT INTERMEDIATE SECTIONS

ALL UNITS ARE -- KIP IN

MEMB	LOAD	SEC	SHEAR-Y	SHEAR-Z	MOM-Y	MOM-Z
		.99	-.21	.00	-.02	7.53
10	5	.01	-.48	.00	-.02	-8.21
		.50	.04	.00	.00	10.01
		.99	.57	.00	.02	-15.55
	6	.01	.17	.00	.00	3.25
		.50	-.02	.00	.00	-3.15
		.99	-.20	.00	.00	5.78
12	5	.01	-.54	.01	.23	-13.58
		.50	-.03	-.01	.17	.69
		.99	.49	-.02	-.65	-11.03
	6	.01	.20	.00	-.16	5.00
		.50	.01	.00	.04	-.36
		.99	-.19	.00	.24	4.25
413	5	.01	-.52	.02	-.36	-3.31
		.50	-.26	.01	.03	6.54
		.99	-.01	.00	.24	9.91
	6	.01	.20	.00	.01	1.48
		.50	.10	.00	.01	-2.30
		.99	.00	.00	.01	-3.59
214	5	.01	-.19	.00	.00	-.32
		.50	.07	.00	.00	4.33
		.99	.34	.00	.00	-12.11
	6	.01	.07	.00	.00	.49
		.50	-.02	.00	.00	-1.45
		.99	-.11	.00	.00	4.05
15	5	.01	-.49	.01	-.32	-11.24
		.50	.04	.01	.57	9.70
		.99	.57	.01	1.46	-18.04
	6	.01	.17	.00	.03	4.08
		.50	-.01	.00	-.01	-3.04
		.99	-.20	.00	-.05	6.51
16	5	.01	-.53	.00	-.09	-4.89
		.50	-.01	.00	.05	17.26
		.99	.52	.00	.19	-3.58
	6	.01	.19	.00	.02	1.98
		.50	.00	.00	-.02	-5.80
		.99	-.18	.00	-.06	1.53
17	5	.01	-.82	.00	.03	-33.73
		.50	-.29	.00	-.01	13.68
		.99	.24	.00	-.05	15.85
	6	.01	.29	.00	-.02	12.26

MEMBER FORCES AT INTERMEDIATE SECTIONS

ALL UNITS ARE -- KIP IN

MEMB	LOAD	SEC	SHEAR-Y	SHEAR-Z	MOM-Y	MOM-Z
		.50	.10	.00	.00	-4.50
		.99	-.08	.00	.02	-5.51
19	5	.01	-.01	.01	.35	2.19
		.50	.50	-.01	.30	-10.25
		.99	1.02	-.03	-.76	-48.67
	6	.01	.01	.01	-.23	-.64
		.50	-.18	.01	.03	3.64
		.99	-.38	.01	.28	17.89
20	5	.01	-1.68	.02	-.37	-52.90
		.50	-1.17	.00	.15	19.22
		.99	-.66	-.02	-.34	65.40
	6	.01	.62	.00	-.02	19.33
		.50	.42	.00	.07	-6.91
		.99	.22	.00	.16	-23.19
221	5	.01	-.54	.00	.00	-13.96
		.50	-.27	.00	.00	18.64
		.99	-.01	.00	.00	30.16
	6	.01	.17	.00	.00	4.32
		.50	.08	.00	.00	-5.83
		.99	-.01	.00	.00	-8.54
22	5	.01	-.60	.01	-.31	-7.54
		.50	-.06	.00	.28	22.94
		.99	.47	-.01	-.15	4.42
	6	.01	.21	.00	-.05	3.14
		.50	.03	.00	.06	-7.55
		.99	-.16	.00	.18	-1.49
23	5	.01	-.71	.00	-.18	-18.03
		.50	-.19	.00	-.01	18.66
		.99	.34	.00	.16	12.68
	6	.01	.25	.00	.05	6.64
		.50	.07	.00	.00	-6.26
		.99	-.12	.00	-.04	-4.12
24	5	.01	-.72	.01	-.36	-10.91
		.50	-.19	.01	.51	29.08
		.99	.33	.01	1.38	22.91
	6	.01	.25	.00	.03	4.10
		.50	.07	.00	.01	-10.04
		.99	-.11	.00	-.02	-8.18
25	5	.01	-.36	.00	.01	21.56
		.50	.17	.00	.03	29.51
		.99	.69	.00	.05	-6.58

MEMBER FORCES AT INTERMEDIATE SECTIONS

ALL UNITS ARE -- KIP IN

MEMB	LOAD	SEC	SHEAR-Y	SHEAR-Z	MOM-Y	MOM-Z
	6	.01	.12	.00	-.01	-7.53
		.50	-.06	.00	-.01	-10.21
		.99	-.24	.00	-.02	2.54
27	5	.01	-.08	-.02	1.53	11.94
		.50	.19	-.03	.22	9.04
		.99	.46	-.04	-1.72	-7.29
	6	.01	.03	.01	-.55	-3.24
		.50	-.05	.01	.03	-2.75
		.99	-.14	.01	.61	2.21
28	5	.01	-.31	.01	.01	-7.32
		.50	-.05	.00	.15	1.78
		.99	.22	-.02	-.35	-2.48
	6	.01	.10	.00	-.10	2.20
		.50	.01	.00	.05	-.62
		.99	-.08	.00	.20	1.01
429	5	.01	-.27	.02	-.32	7.08
		.50	-.13	.01	.00	12.14
		.99	.00	.00	.17	13.88
	6	.01	.09	.00	.00	-2.45
		.50	.04	.00	.02	-4.13
		.99	.00	.00	.05	-4.70
1001	5	.01	.00	3.85	-.05	.00
		.50	.00	3.85	.89	.00
		.99	.00	3.85	1.83	.00
	6	.01	.00	-.47	-.32	.00
		.50	.00	-.47	-.43	.00
		.99	.00	-.47	-.55	.00
1002	5	.01	.00	-.95	.14	.00
		.50	.00	-.95	-.10	.00
		.99	.00	-.95	-.33	.00
	6	.01	.00	.91	-.16	.00
		.50	.00	.91	.06	.00
		.99	.00	.91	.28	.00
1003	5	.01	.00	-4.57	-.13	.00
		.50	.00	-4.57	-1.25	.00
		.99	.00	-4.57	-2.37	.00
	6	.01	.00	1.47	.04	.00
		.50	.00	1.47	.40	.00
		.99	.00	1.47	.76	.00
1004	5	.01	.00	-6.28	-3.64	.00
		.50	.00	-6.28	-5.18	.00

MEMBER FORCES AT INTERMEDIATE SECTIONS

ALL UNITS ARE -- KIP IN

MEMB	LOAD	SEC	SHEAR - Y	SHEAR - Z	MOM - Y	MOM - Z
		.99	.00	-6.28	-6.72	.00
	6	.01	.00	.76	1.42	.00
		.50	.00	.76	1.61	.00
		.99	.00	.76	1.80	.00
1005	5	.01	.00	1.35	-1.20	.00
		.50	.00	1.35	-.87	.00
		.99	.00	1.35	-.54	.00
	6	.01	.00	-.01	.61	.00
		.50	.00	-.01	.60	.00
		.99	.00	-.01	.60	.00
230	5	.01	9.65	.00	.00	83.54
		.50	9.65	.00	.00	42.19
		.99	9.65	.00	.00	.84
	6	.01	-2.93	.00	.00	-25.40
		.50	-2.93	.00	.00	-12.83
		.99	-2.93	.00	.00	-.26
1006	5	.01	9.69	.00	.00	-.19
		.50	9.69	.00	.00	-9.69
		.99	9.69	.00	.00	-19.18
	6	.01	-2.95	.00	.00	.06
		.50	-2.95	.00	.00	2.95
		.99	-2.95	.00	.00	5.83
31	5	.01	1.63	.25	-2.20	14.07
		.50	1.63	.25	-1.11	7.10
		.99	1.63	.25	-.02	.14
	6	.01	-.53	-.06	.52	-4.62
		.50	-.53	-.06	.26	-2.33
		.99	-.53	-.06	.01	-.05
1007	5	.01	1.63	.23	-.05	-.03
		.50	1.63	.23	.18	-1.63
		.99	1.63	.23	.40	-3.23
	6	.01	-.54	-.06	-.04	.01
		.50	-.54	-.06	-.09	.54
		.99	-.54	-.06	-.15	1.06
32	5	.01	1.56	.02	-.22	13.50
		.50	1.56	.02	-.11	6.82
		.99	1.56	.02	.00	.14
	6	.01	-.54	.00	-.02	-4.64
		.50	-.54	.00	-.01	-2.34
		.99	-.54	.00	.00	-.05
1008	5	.01	1.57	-.10	.07	-.03

MEMBER FORCES AT INTERMEDIATE SECTIONS

ALL UNITS ARE -- KIP IN

MEMB	LOAD	SEC	SHEAR-Y	SHEAR-Z	MOM-Y	MOM-Z
		.50	1.57	-.10	-.03	-1.56
		.99	1.57	-.10	-.13	-3.10
	6	.01	-.54	.03	.05	.01
		.50	-.54	.03	.08	.54
		.99	-.54	.03	.11	1.07
433	5	.01	.08	-.02	.19	27.24
		.50	.04	-.02	.00	26.49
		.99	.00	-.02	-.19	26.23
	6	.01	.04	.00	-.06	-7.13
		.50	.02	.00	.00	-7.52
		.99	.00	.00	.06	-7.66
1009	5	.01	.00	14.04	-.90	.00
		.50	.00	14.04	2.54	.00
		.99	.00	14.04	5.98	.00
	6	.01	.00	-1.33	-.07	.00
		.50	.00	-1.33	-.40	.00
		.99	.00	-1.33	-.73	.00
234	5	.01	-.13	.00	.00	-8.85
		.50	-.13	.00	.00	-2.40
		.99	-.13	.00	.00	4.05
	6	.01	.04	.08	-1.28	2.84
		.50	.04	.00	.68	.96
		.99	.04	-.08	-1.28	-.91
235	5	.01	-.18	.00	.00	-9.68
		.50	-.18	.00	.00	-.64
		.99	-.18	.00	.00	8.39
	6	.01	.06	.08	-1.35	3.14
		.50	.06	.00	.72	.28
		.99	.06	-.08	-1.35	-2.57
236	5	.01	.06	.00	.00	3.05
		.50	.06	.00	.00	-.33
		.99	.06	.00	.00	-3.72
	6	.01	-.02	.09	-1.47	-.88
		.50	-.02	.00	.78	.05
		.99	-.02	-.09	-1.47	.99
237	5	.01	-.15	.00	.00	-9.44
		.50	-.15	.00	.00	-1.21
		.99	-.15	.00	.00	7.02
	6	.01	.05	.09	-1.63	3.32
		.50	.05	.00	.87	.39
		.99	.05	-.09	-1.63	-2.54
238	5	.01	.04	.00	.00	5.48

MEMBER FORCES AT INTERMEDIATE SECTIONS

ALL UNITS ARE -- KIP IN

MEMB	LOAD	SEC	SHEAR-Y	SHEAR-Z	MOM-Y	MOM-Z
		.50	.06	.00	.00	.62
		.99	.09	.00	.00	-6.39
	6	.01	-.04	.15	-4.80	-2.48
		.50	-.02	.00	2.55	.44
		.99	.00	-.15	-4.80	1.20
239	5	.01	.07	.00	.00	7.12
		.50	.08	.00	.00	3.63
		.99	.09	.00	.00	-.37
	6	.01	-.04	.08	-1.15	-2.35
		.50	-.03	.00	.61	-.92
		.99	-.01	-.08	-1.15	-.01
240	5	.01	.05	.00	.00	6.16
		.50	.06	.00	.00	3.57
		.99	.07	.00	.00	.44
	6	.01	-.03	-.08	1.22	-2.00
		.50	-.02	.00	-.65	-.88
		.99	-.01	.08	1.22	-.32
241	5	.01	-.04	.00	.00	2.47
		.50	-.03	.00	.00	4.28
		.99	-.02	.00	.00	5.56
	6	.01	-.01	-.08	1.18	-1.29
		.50	.00	.00	-.63	-1.21
		.99	.01	.08	1.18	-1.66
242	5	.01	-.09	.00	.00	-.85
		.50	-.07	.00	.00	3.11
		.99	-.06	.00	.00	6.49
	6	.01	.01	.08	-1.31	-.16
		.50	.02	.00	.70	-.79
		.99	.03	-.08	-1.31	-2.00
243	5	.01	.03	.00	.00	5.98
		.50	.05	.00	.00	1.97
		.99	.08	.00	.00	-4.21
	6	.01	-.04	-.16	4.92	-2.68
		.50	-.02	.00	-2.61	-.06
		.99	.01	.16	4.92	.39
244	5	.01	.35	.00	.00	32.33
		.50	.36	.00	.00	10.12
		.99	.37	.00	.00	-12.78
	6	.01	-.11	-.10	2.10	-9.11
		.50	-.10	.00	-1.11	-2.76
		.99	-.08	.10	2.10	2.89
245	5	.01	.33	.00	.00	52.79

MEMBER FORCES AT INTERMEDIATE SECTIONS

ALL UNITS ARE -- KIP IN

MEMB	LOAD	SEC	SHEAR-Y	SHEAR-Z	MOM-Y	MOM-Z
		.50	.35	.00	.00	19.06
		.99	.37	.00	.00	-16.91
	6	.01	-.13	.16	-5.30	-16.67
		.50	-.10	.00	2.82	-5.26
		.99	-.08	-.16	-5.30	3.90
246	5	.01	-.16	.00	.00	-10.63
		.50	-.13	.00	.00	1.01
		.99	-.11	.00	.00	10.84
	6	.01	.02	-.13	3.45	2.72
		.50	.04	.00	-1.83	.21
		.99	.07	.13	3.45	-4.12
247	5	.01	-.03	.00	.00	2.95
		.50	-.01	.00	.00	4.43
		.99	.02	.00	.00	4.09
	6	.01	-.02	-.13	3.45	-1.57
		.50	.00	.00	-1.83	-.85
		.99	.03	.13	3.45	-1.96
248	5	.01	.06	.00	.00	8.11
		.50	.09	.00	.00	2.00
		.99	.11	.00	.00	-5.94
	6	.01	-.05	-.13	3.45	-3.24
		.50	-.03	.00	-1.83	-.17
		.99	.00	.13	3.45	1.08
50	5	.01	.03	.00	.00	-.04
		.50	.00	.00	.00	-1.01
		.99	-.03	.00	.00	-.04
	6	.01	-.13	-.04	-.05	.20
		.50	.00	.00	-1.35	5.00
		.99	.13	.04	-.05	.20
51	5	.01	.03	.00	.00	-.04
		.50	.00	.00	.00	-1.04
		.99	-.03	.00	.00	-.04
	6	.01	-.14	-.03	-.04	.21
		.50	.00	.00	-.95	5.41
		.99	.14	.03	-.04	.21
52	5	.01	.03	.00	.00	-.04
		.50	.00	.00	.00	-1.07
		.99	-.03	.00	.00	-.04
	6	.01	-.15	-.02	-.03	.24
		.50	.00	.00	-.77	5.96
		.99	.15	.02	-.03	.24
253	5	.01	7.75	.00	.00	67.06

MEMBER FORCES AT INTERMEDIATE SECTIONS

ALL UNITS ARE -- KIP IN

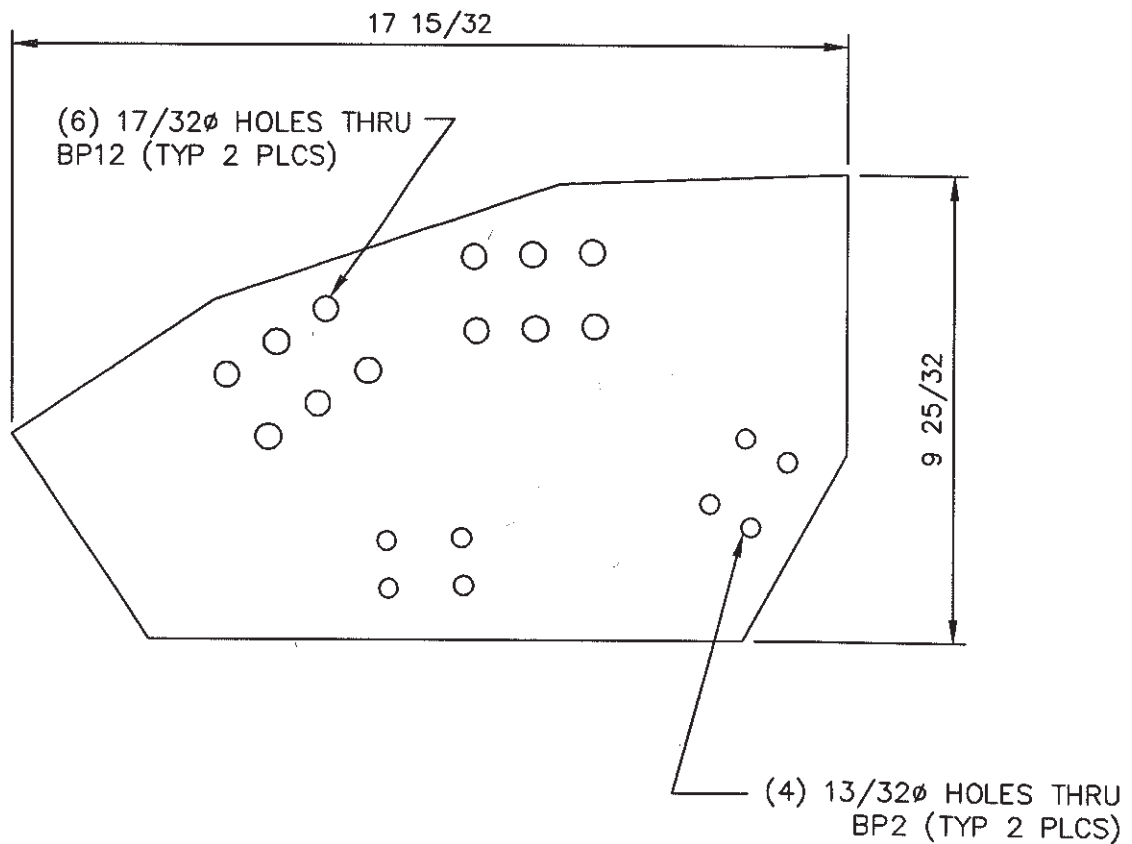
MEMB	LOAD	SEC	SHEAR-Y	SHEAR-Z	MOM-Y	MOM-Z
		.50	7.75	.00	.00	33.87
		.99	7.75	.00	.00	.68
	6	.01	-2.15	.00	.00	-18.65
		.50	-2.15	.00	.00	-9.42
		.99	-2.15	.00	.00	-.19
1010	5	.01	7.78	.00	.00	-.16
		.50	7.78	.00	.00	-7.78
		.99	7.78	.00	.00	-15.40
	6	.01	-2.16	.00	.00	.04
		.50	-2.16	.00	.00	2.16
		.99	-2.16	.00	.00	4.28

***** END OF LATEST ANALYSIS RESULT *****

273. FINISH

***** END OF STAAD-III *****

**** DATE FEB 3,20

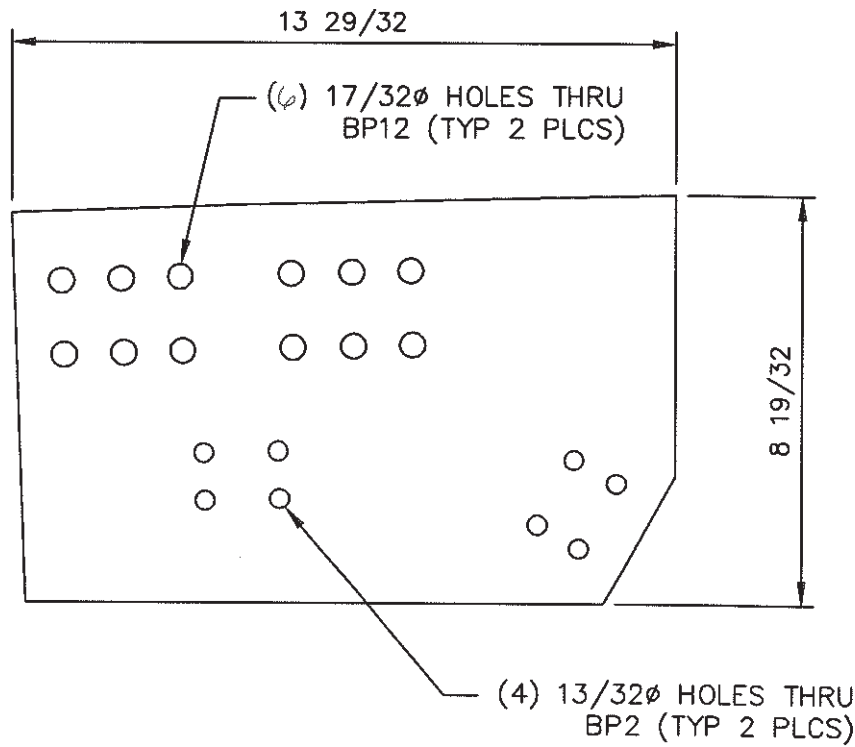


NOTES:

1. MATERIAL: 3/8" THK 6061-T6 ALUM FLAT BAR
2. BILL PAGE No.: 1C
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$
4. USE CAMFILE J: \ENGINEER\CAMFILES\99111\100.DWG
5. CHECK DIMENSIONS SHOWN.

PC. MK. : 100-1a
QTY. REQ'D. / CONT.: 20
TOTAL QTY. REQ'D.: 60

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305							
					☒ ALL HOLE SIZES CALLED OUT ☒ ALL DIMENSIONS SHOWN ☒ CORRECT MATERIAL CALLED OUT ☒ CAM FILES REFERENCED AND CHECKED					COVER: 140' ϕ TSAD			
DRAWING ISSUED TO					CHECK LIST FOR SHOP	PART: TRUSS TOP CHORD GUSSET							
					☐ THIS ITEM TO BE WELDED ☐ THIS ITEM IS PART OF AN ASSEMBLY ☒ THIS ITEM SHIPS LOOSE	LOCATION: HILLSBORO, OR							
CUST.	1 PRINT				2/4/02	DRAWN BY	DG	CHECKED BY	DK	DATE	2/1/02		
SHOP						DWG. NO.	100-1	SCALE	NTS	REV.	0	CONTRACT NO.	199111
FIELD													



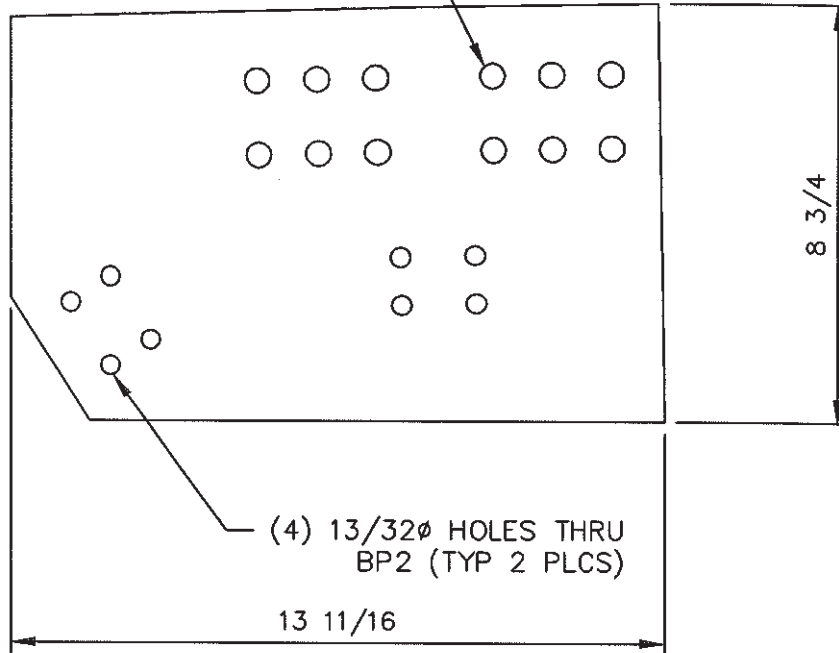
NOTES:

1. MATERIAL: 3/8" THK 6061-T6 ALUM FLAT BAR
2. BILL PAGE No.: 1C
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$
4. USE CAMFILE J:\ENGINEER\CAMFILES\99111\100.DWG
5. CHECK DIMENSIONS SHOWN.

PC. MK. : 100-2a
QTY. REQ'D. / CONT.: 20
TOTAL QTY. REQ'D.: 60

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					☒ ALL HOLE SIZES CALLED OUT	COVER: 140' ϕ TSAD			
					☒ ALL DIMENSIONS SHOWN	PART: TRUSS TOP CHORD GUSSET			
					☒ CORRECT MATERIAL CALLED OUT	LOCATION: HILLSBORO, OR			
					☒ CAM FILES REFERENCED AND CHECKED	DRAWN BY DG			
DRAWING ISSUED TO					CHECK LIST FOR SHOP	CHECKED BY <i>W</i>	DATE 2/1/02		
CUST.					☐ THIS ITEM TO BE WELDED	DWG. NO. 100-2	SCALE NTS	REV. 0	CONTRACT NO. 199111
SHOP	1 PRINT			2/4/02	☐ THIS ITEM IS PART OF AN ASSEMBLY				
FIELD					☒ THIS ITEM SHIPS LOOSE				

(6) 17/32 ϕ HOLES THRU
BP12 (TYP 2 PLCS)



NOTES:

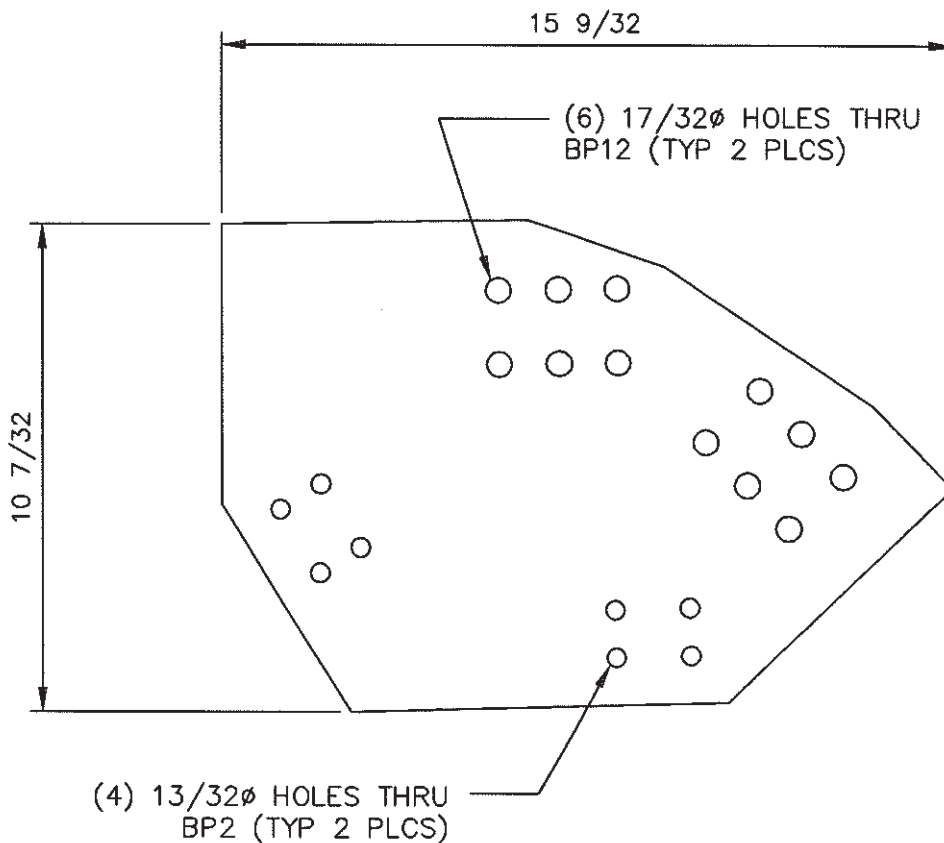
1. MATERIAL: 3/8" THK 6061-T6 ALUM FLAT BAR
2. BILL PAGE No.: 1C
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$
4. USE CAMFILE J: \ENGINEER\CAMFILES\99111\100.DWG
5. CHECK DIMENSIONS SHOWN.

PC. MK. : 100-3a

QTY. REQ'D. / CONT.: 20

TOTAL QTY. REQ'D.: 60

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					☒ ALL HOLE SIZES CALLED OUT ☒ ALL DIMENSIONS SHOWN ☒ CORRECT MATERIAL CALLED OUT ☒ CAM FILES REFERENCED AND CHECKED				
DRAWING ISSUED TO					CHECK LIST FOR SHOP	PART: TRUSS TOP CHORD GUSSET			
					☐ THIS ITEM TO BE WELDED ☐ THIS ITEM IS PART OF AN ASSEMBLY ☒ THIS ITEM SHIPS LOOSE	LOCATION: HILLSBORO, OR			
CUST.						DRAWN BY DG	CHECKED BY <i>WV</i>	DATE 2/1/02	
SHOP	1 PRINT			2/4/02		DWG. NO. 100-3	SCALE NTS	REV. 0	CONTRACT NO. 199111
FIELD									

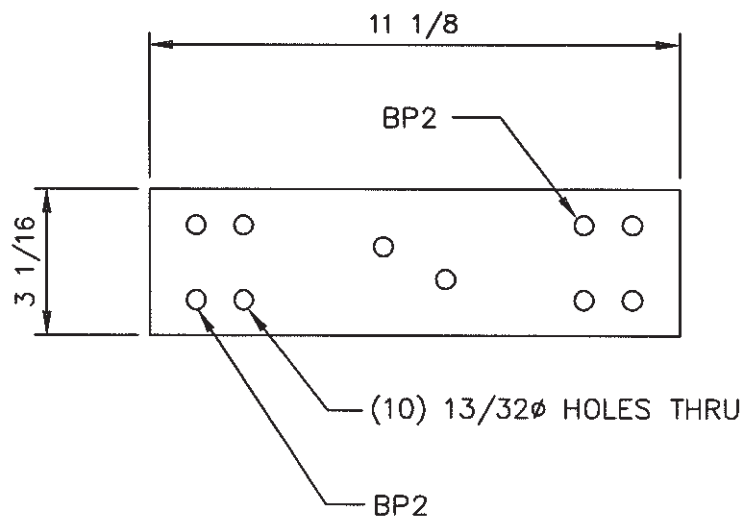


NOTES:

1. MATERIAL: 3/8" THK 6061-T6 ALUM FLAT BAR
2. BILL PAGE No.: 1C
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$
4. USE CAMFILE J:\ENGINEER\CAMFILES\99111\100.DWG
5. CHECK DIMENSIONS SHOWN.

PC. MK. : 100-4a
 QTY. REQ'D. / CONT.: 20
 TOTAL QTY. REQ'D.: 60

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					☒ ALL HOLE SIZES CALLED OUT	COVER: 140' Ø TSAD PART: TRUSS TOP CHORD GUSSET LOCATION: HILLSBORO, OR DRAWN BY DG CHECKED BY <i>WR</i> DATE 2/1/02 DWG. NO. 100-4 SCALE NTS REV. 0 CONTRACT NO. 199111			
					☒ ALL DIMENSIONS SHOWN				
					☒ CORRECT MATERIAL CALLED OUT				
					☒ CAM FILES REFERENCED AND CHECKED				
DRAWING ISSUED TO					CHECK LIST FOR SHOP				
CUST.					☐ THIS ITEM TO BE WELDED				
SHOP			1 PRINT	2/4/02	☐ THIS ITEM IS PART OF AN ASSEMBLY				
FIELD					☒ THIS ITEM SHIPS LOOSE				



NOTES:

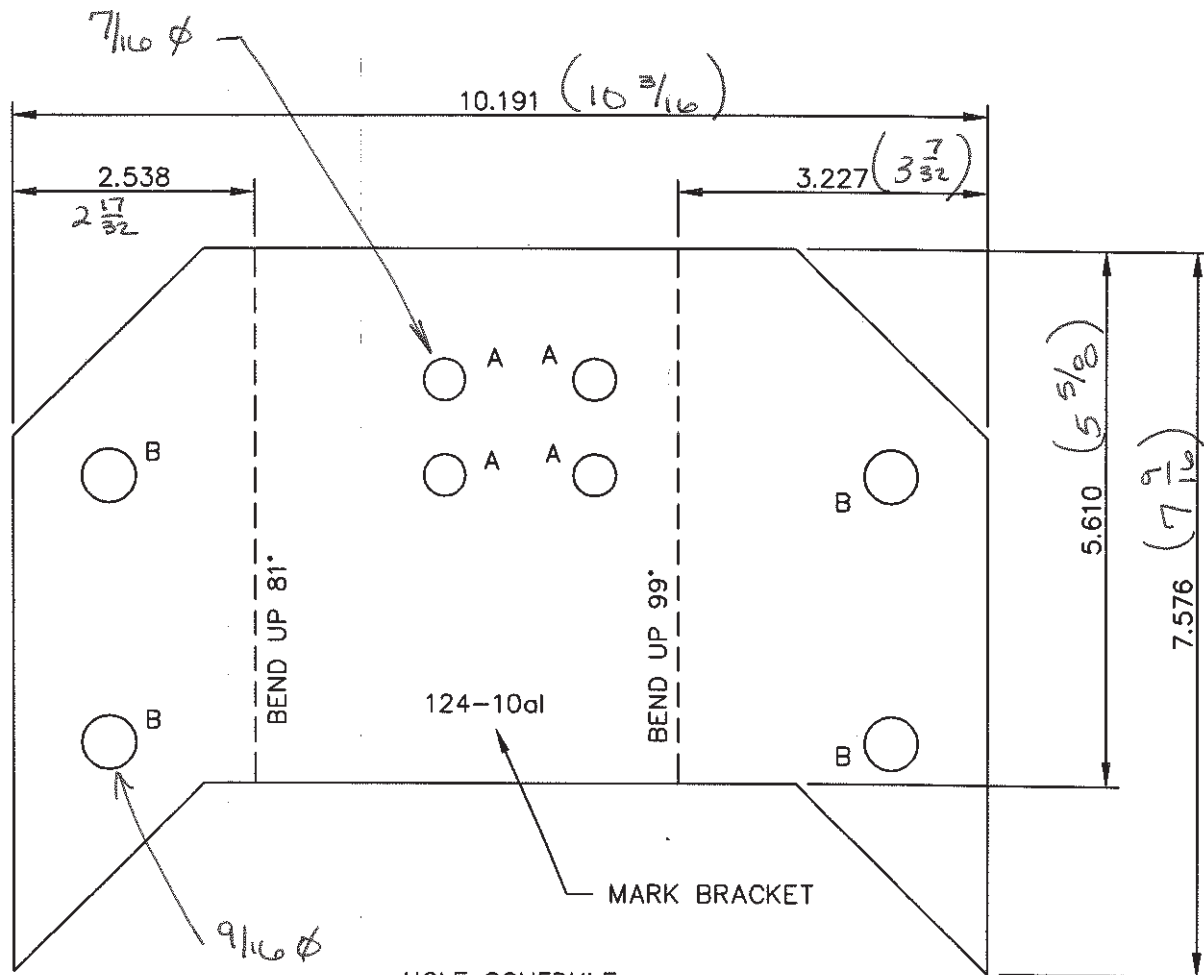
1. MATERIAL: 3/8" THK 6061-T6 ALUM FLAT BAR
2. BILL PAGE No.: 1C
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$
4. USE CAMFILE J: \ENGINEER\CAMFILES\99111\100.DWG
5. CHECK DIMENSIONS SHOWN.

PC. MK. : 100-5a

QTY. REQ'D. / CONT.: 20

TOTAL QTY. REQ'D.: 60

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					☒ ALL HOLE SIZES CALLED OUT	COVER: 140' Ø TSAD PART: TRUSS TOP CHORD GUSSET LOCATION: HILLSBORO, OR DRAWN BY: DG DWG. NO. 100-5 CHECKED BY: <i>Avf</i> SCALE: NTS REV. 0 CONTRACT NO. 199111			
					☒ ALL DIMENSIONS SHOWN				
					☒ CORRECT MATERIAL CALLED OUT				
					☒ CAM FILES REFERENCED AND CHECKED				
DRAWING ISSUED TO					CHECK LIST FOR SHOP				
CUST.					☐ THIS ITEM TO BE WELDED				
SHOP	1 PRINT			2/4/02	☐ THIS ITEM IS PART OF AN ASSEMBLY				
FIELD					☒ THIS ITEM SHIPS LOOSE				



HOLE SCHEDULE

A	7/16 $\varnothing$ HOLE THRU
B	9/16 $\varnothing$ HOLE THRU



TOP VIEW

SEE ISOMETRIC VIEW ATTACHED

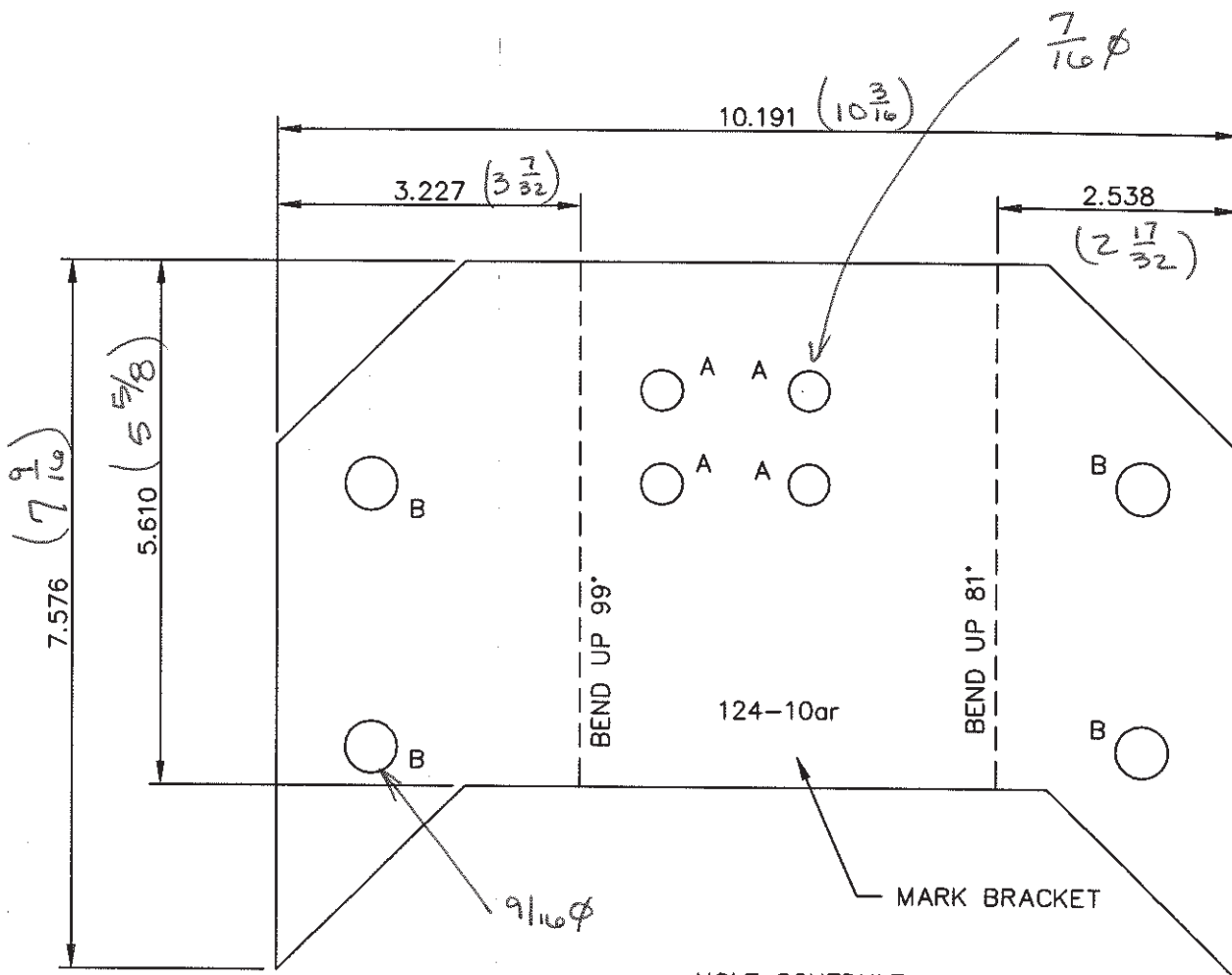
NOTES:

1. MATERIAL: 3/16" THK. 3003 ALUM. PLATE
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$
4. SEE CAM FILE "124-10".

J:\ENGINEER\ Cam files\199111\ 124-10.DWG

PC. MK. : 124-10al
QTY. REQ'D. / CONT.: 10
TOTAL QTY. REQ'D.: 30

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					☒ ALL HOLE SIZES CALLED OUT	COVER: 140 $\varnothing$ TSAD			
					☒ ALL DIMENSIONS SHOWN	PART: CONNECTOR CHANNEL			
					☒ CORRECT MATERIAL CALLED OUT	LOCATION: ROCK CREEK FACILITY			
					☒ CAM FILES REFERENCED AND CHECKED	DRAWN BY DG			
DRAWING ISSUED TO					CHECK LIST FOR SHOP	CHECKED BY <i>Avf</i>		DATE 2-7-02	
CUST.					☐ THIS ITEM TO BE WELDED	DWG. NO. 124-10al		SCALE NTS	CONTRACT NO. 199111
SHOP	1 PRINT			2/8/02	☐ THIS ITEM IS PART OF AN ASSEMBLY			REV. 0	
FIELD					☒ THIS ITEM SHIPS LOOSE				



HOLE SCHEDULE

A	7/16" HOLE THRU
B	9/16" HOLE THRU

SEE ISOMETRIC VIEW ATTACHED

NOTES:

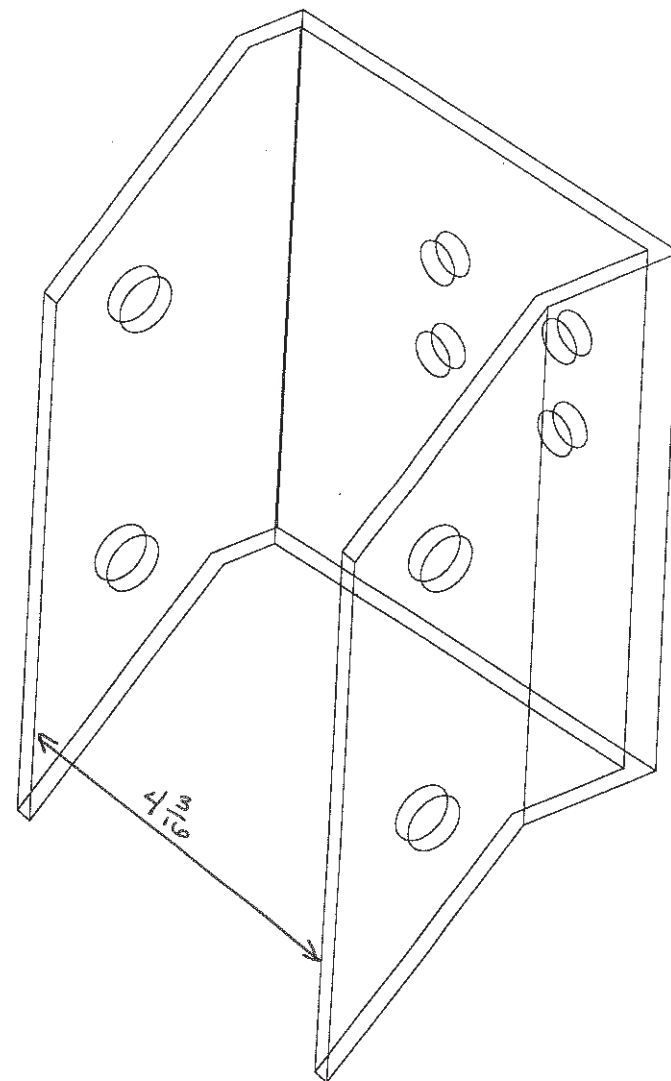
1. MATERIAL: 3/16" THK. 3003 ALUM. PLATE
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$
4. SEE CAM FILE "124-10".

PC. MK. : 124-10ar
QTY. REQ'D. / CONT.: 10
TOTAL QTY. REQ'D.: 30

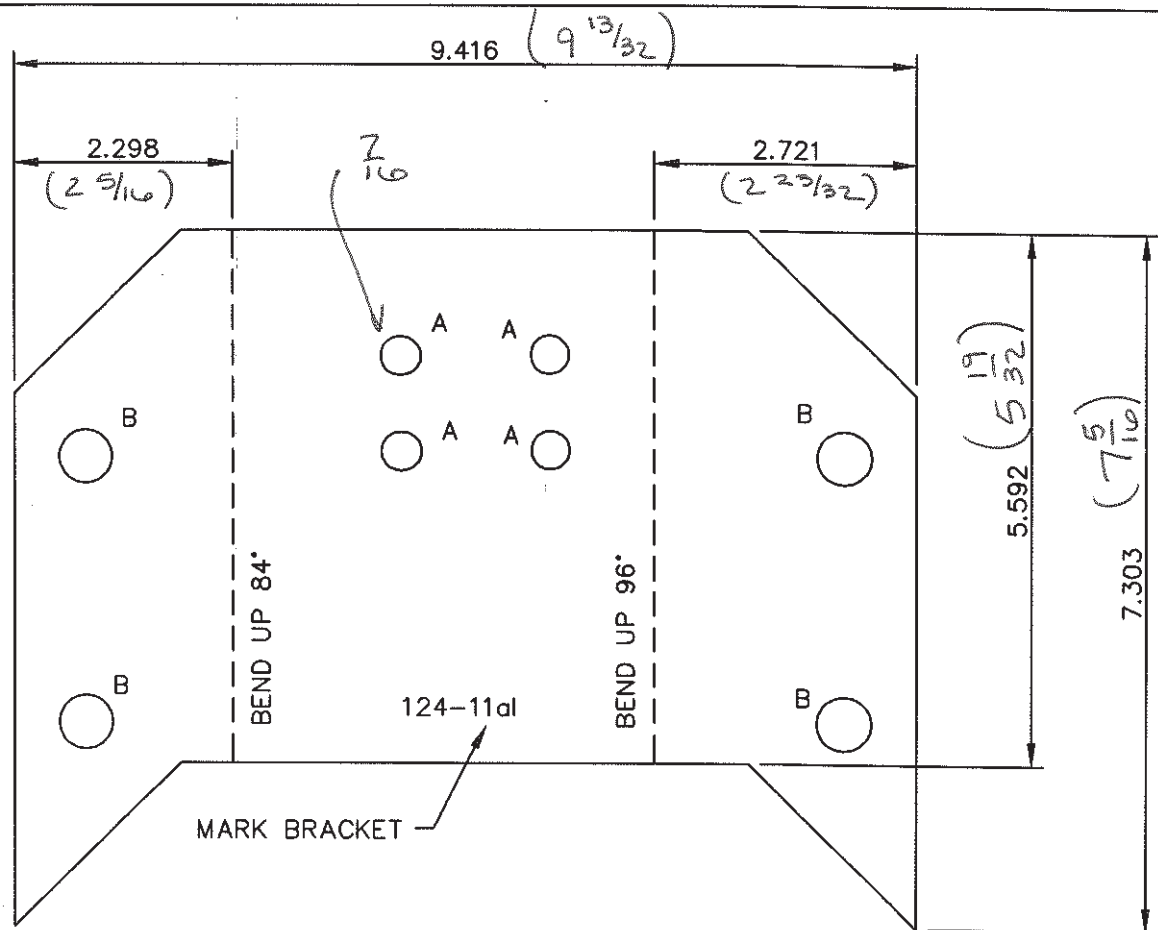
J. ENGINEER/CAMFILES/199111/124-10.DWG

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					☒ ALL HOLE SIZES CALLED OUT	COVER: 140' TSAD			
					☒ ALL DIMENSIONS SHOWN	PART: CONNECTOR CHANNEL			
					☒ CORRECT MATERIAL CALLED OUT	LOCATION: ROCK CREEK FACILITY			
					☒ CAM FILES REFERENCED AND CHECKED	DRAWN BY DG			
DRAWING ISSUED TO					CHECK LIST FOR SHOP	CHECKED BY ALF		DATE 2-7-02	
CUST.					☐ THIS ITEM TO BE WELDED	DWG. NO. 124-10ar		SCALE NTS	REV. 0
SHOP	1 PRINT		2/8/02		☐ THIS ITEM IS PART OF AN ASSEMBLY	CONTRACT NO. 199111			
FIELD					☒ THIS ITEM SHIPS LOOSE				

PIECE 124-10aR IS A
MIRROR IMAGE



VIEW AFTER BENDING,
124-10aI



TOP VIEW
AFTER BEND

HOLE SCHEDULE

A	7/16 Ø HOLE THRU
B	9/16 Ø HOLE THRU

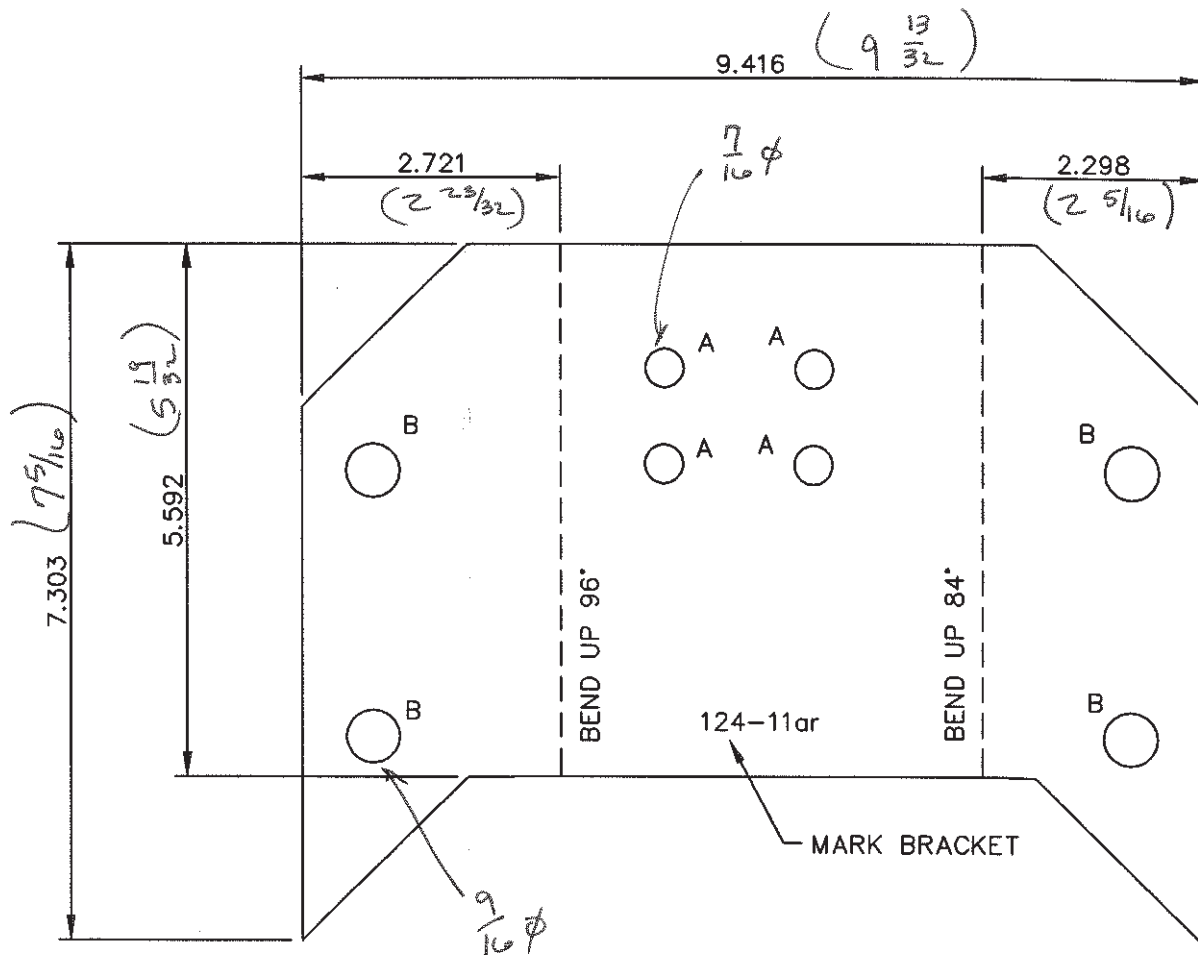
NOTES:

1. MATERIAL: 3/16" THK. 3003 ALUM. PLATE
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$
4. SEE CAM FILE "124-10".

J:ENGINEER/CAMFILES/199111/124-10.DWG

PC. MK. : 124-11al
QTY. REQ'D. / CONT.: 10
TOTAL QTY. REQ'D.: 30

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					☒ ALL HOLE SIZES CALLED OUT	COVER: 140' Ø TSAD			
					☒ ALL DIMENSIONS SHOWN	PART: CONNECTOR CHANNEL			
					☒ CORRECT MATERIAL CALLED OUT	LOCATION: ROCK CREEK FACILITY			
					☒ CAM FILES REFERENCED AND CHECKED	DRAWN BY DG			
DRAWING ISSUED TO					CHECK LIST FOR SHOP				
					☒ THIS ITEM TO BE WELDED ☒ THIS ITEM IS PART OF AN ASSEMBLY ☒ THIS ITEM SHIPS LOOSE				
CUST.					DATE		2-7-02		
SHOP	1 PRINT				DWG. NO.		SCALE	REV.	CONTRACT NO.
FIELD	2/8/02				124-11al		NTS	0	199111



TOP VIEW AFTER BEND

HOLE SCHEDULE

A	7/16" Ø HOLE THRU
B	9/16" Ø HOLE THRU

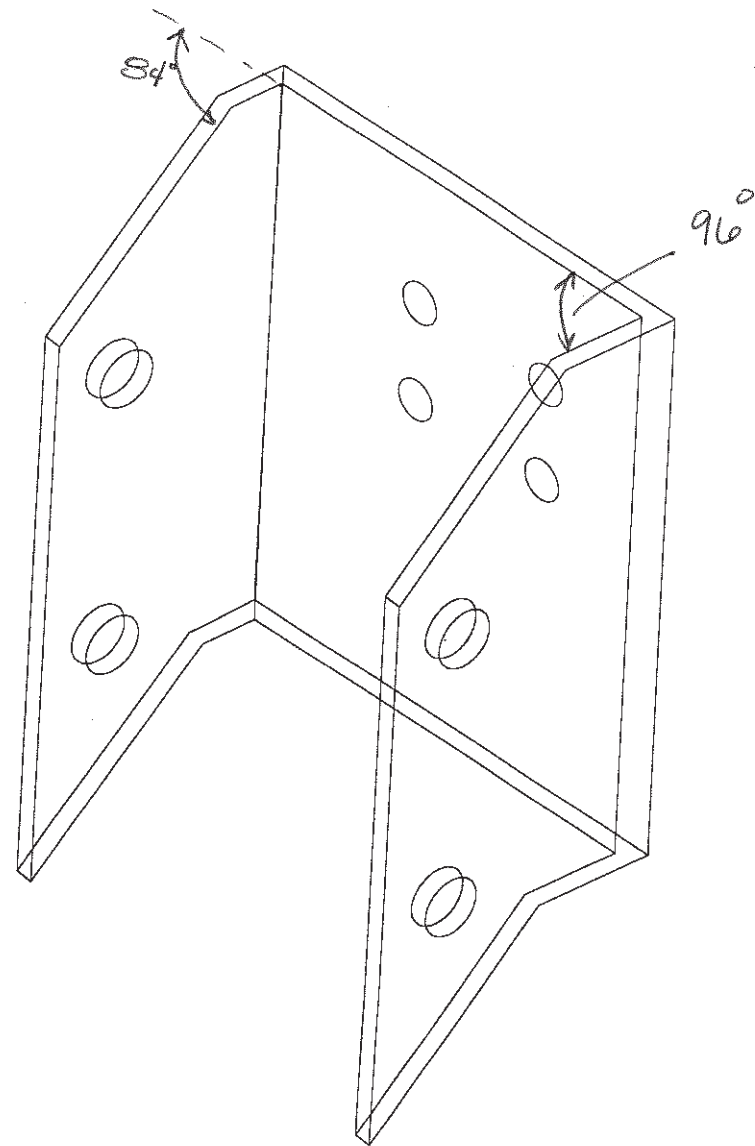
NOTES:

1. MATERIAL: 3/16" THK. 3003 ALUM. PLATE
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$
4. SEE CAM FILE "124-10".

J:ENGINEER/CAMFILES/199111/124-10.DWG

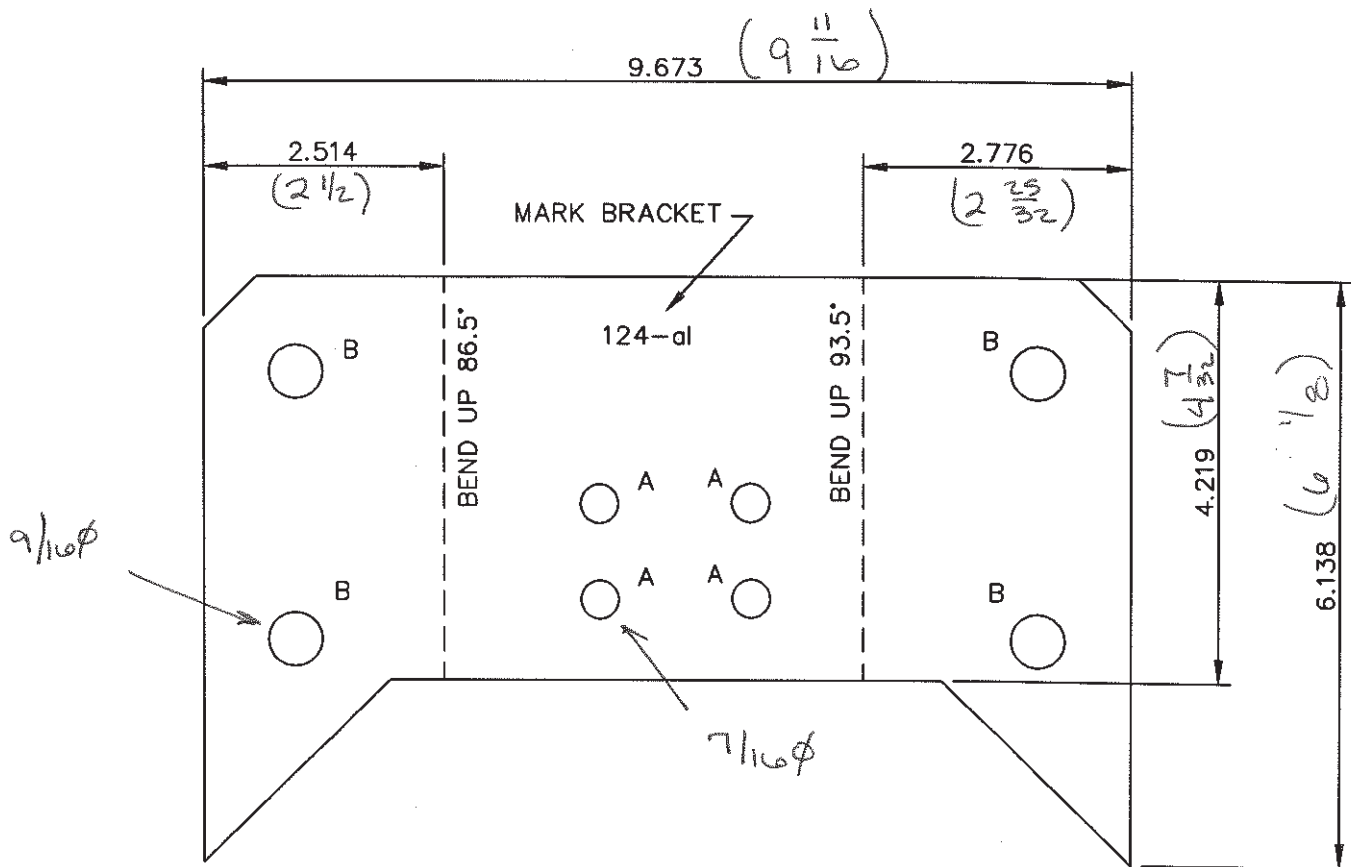
PC. MK. : 124-11ar
QTY. REQ'D. / CONT.: 10
TOTAL QTY. REQ'D.: 30

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					☒ ALL HOLE SIZES CALLED OUT	COVER: 140' Ø TSAD			
					☒ ALL DIMENSIONS SHOWN	PART: CONNECTOR CHANNEL			
					☒ CORRECT MATERIAL CALLED OUT	LOCATION: ROCK CREEK FACILITY			
					☒ CAM FILES REFERENCED AND CHECKED	DRAWN BY DG CHECKED BY <i>Avf</i> DATE 2-7-02			
DRAWING ISSUED TO					CHECK LIST FOR SHOP				
CUST.					☐ THIS ITEM TO BE WELDED	DWG. NO. 124-11ar			
SHOP 1 PRINT 2/8/02					☐ THIS ITEM IS PART OF AN ASSEMBLY	SCALE NTS			
FIELD					☒ THIS ITEM SHIPS LOOSE	REV. 0 CONTRACT NO. 199111			



PIECE 124-11a2
MIRROR IMAGE

VIEW AFTER BENDING
124-11a1



HOLE SCHEDULE

A	7/16" HOLE THRU
B	9/16" HOLE THRU



SEE ATTACHED ISOMETRIC VIEW

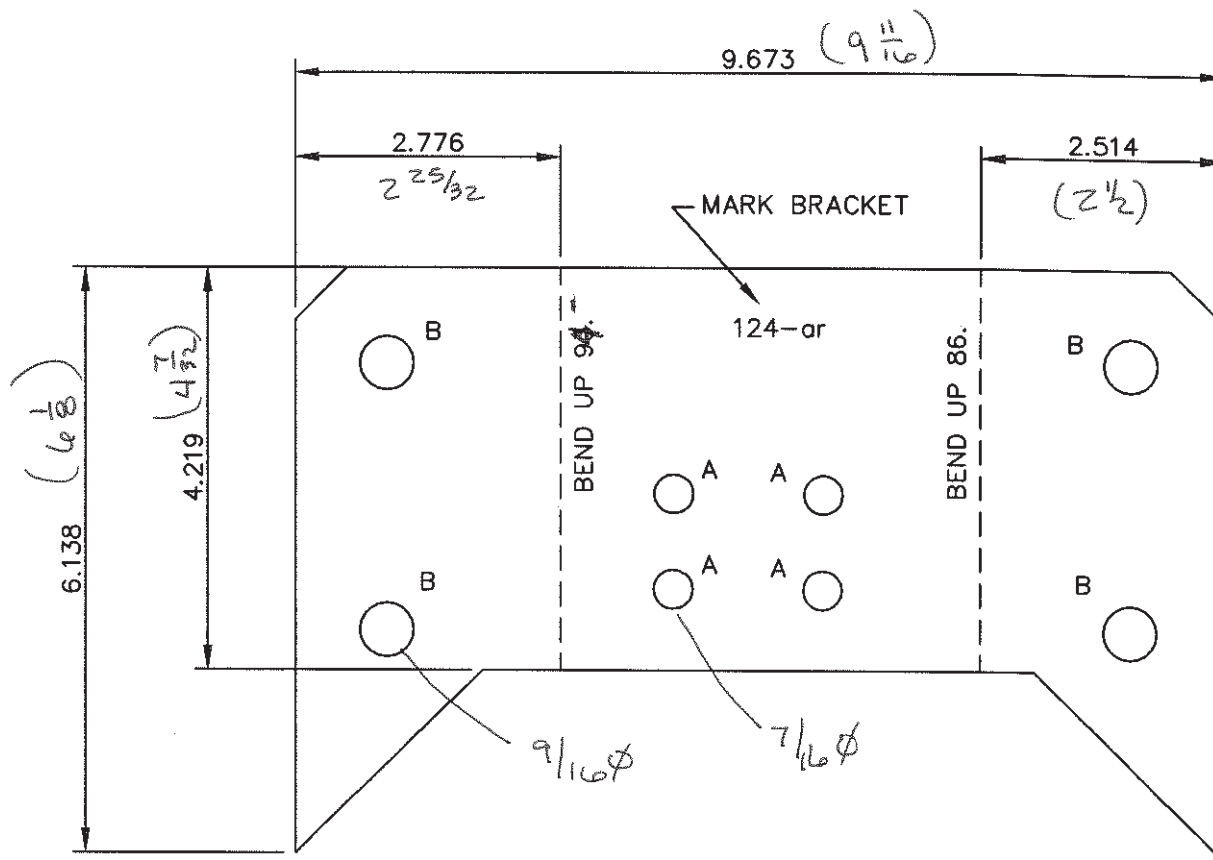
NOTES:

1. MATERIAL: 3/16" THK 3003 PLATE
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$
4. SEE CAM FILE "124-10".

J: ENGINEER \CAM FILES\199111\124-10.DWG

PC. MK. : 124-12al
QTY. REQ'D. / CONT.: 10
TOTAL QTY. REQ'D.: 30

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST		CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					✓	ALL HOLE SIZES CALLED OUT	COVER: 140" TSAD			
					✓	ALL DIMENSIONS SHOWN	PART: CONNECTOR CHANNEL			
					✓	CORRECT MATERIAL CALLED OUT	LOCATION: ROCK CREEK FACILITY			
					✓	CAM FILES REFERENCED AND CHECKED	DRAWN BY DG			
DRAWING ISSUED TO					CHECK LIST FOR SHOP		CHECKED BY <i>AW</i>		DATE 2-7-02	
CUST.					-	THIS ITEM TO BE WELDED	DWG. NO. 124-12al		SCALE NTS	REV. 0
SHOP	1 PRINT			2/8/02	-	THIS ITEM IS PART OF AN ASSEMBLY	CONTRACT NO. 199111-1-3			
FIELD					✓	THIS ITEM SHIPS LOOSE				



HOLE SCHEDULE

A	7/16 Ø HOLE THRU
B	9/16 Ø HOLE THRU



TOP VIEW

SEE ISOMETRIC VIEW ATTACHED

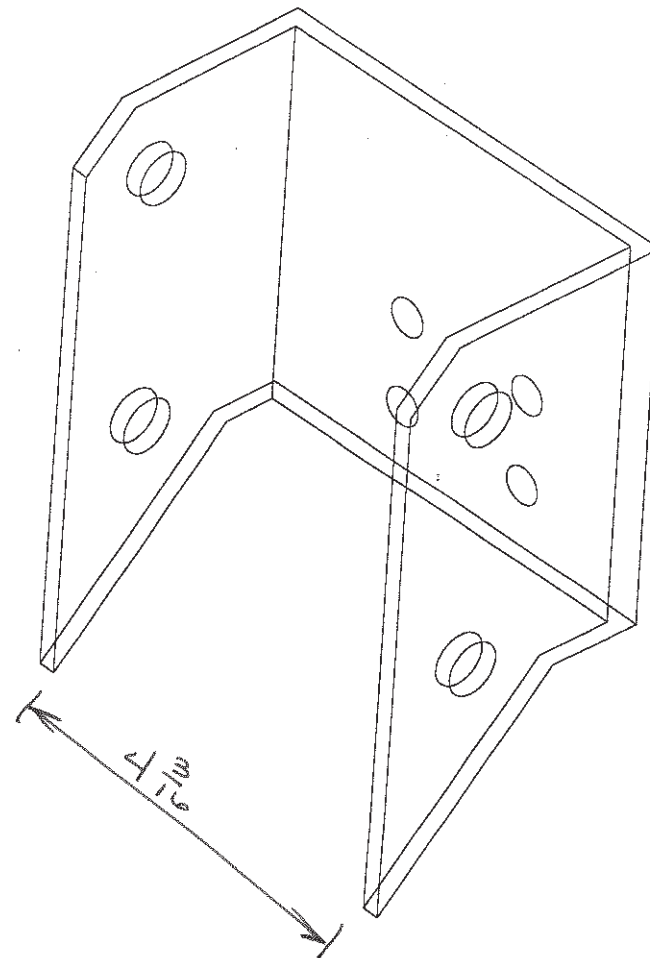
NOTES:

1. MATERIAL: 3/16" THK 3003 ALUM
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$
4. SEE CAM FILE "124-10".

J:ENGINEER/CAM/US/199111/124-10.DWG

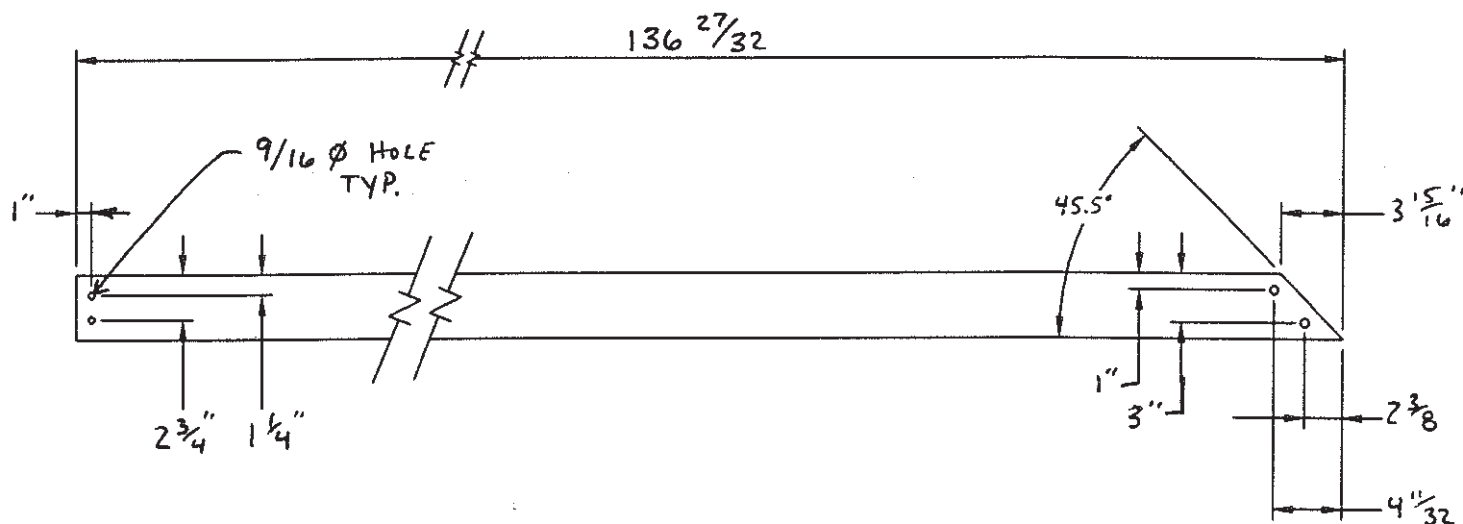
PC. MK. : 124-12ar
QTY. REQ'D. / CONT.: 10
TOTAL QTY. REQ'D.: 30

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					☒ ALL HOLE SIZES CALLED OUT	COVER: 140' Ø TSAD			
					☒ ALL DIMENSIONS SHOWN	PART: CONNECTOR CHANNEL			
					☒ CORRECT MATERIAL CALLED OUT	LOCATION: ROCK CREEK FACILITY			
					☒ CAM FILES REFERENCED AND CHECKED	DRAWN BY DG			
DRAWING ISSUED TO					CHECKED BY AUF				
CUST.					DATE 2-7-02				
SHOP 1 PRINT 2/8/02					DWG. NO. 124-12ar				
FIELD					SCALE NTS				
					REV. 0				
					CONTRACT NO. 199111-1-3				



PC MK 124-12aR
MIRROR IMAGE

PC 124-12a1
AFTER BEND



NOTES:

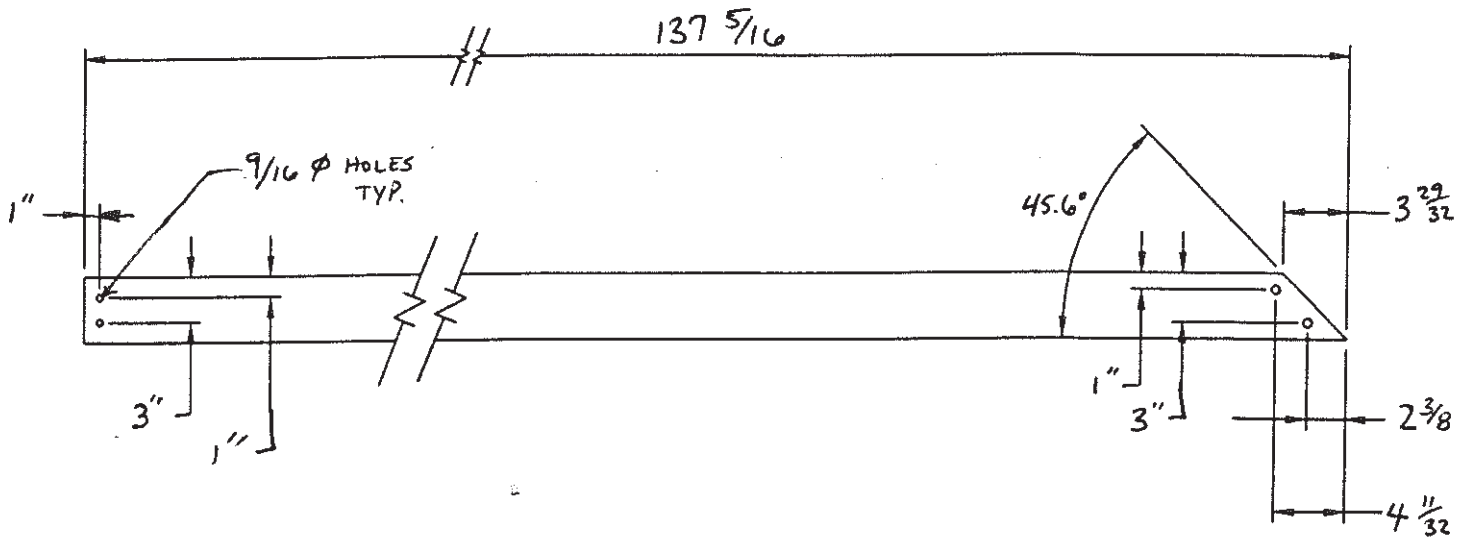
1. MATERIAL: 4" ALUM. TUBING 4x4 X.15THK 6061-T6 PO 28645-1
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$

PC. MK. : 124-1a

QTY. REQ'D. / CONT.: 20

TOTAL QTY. REQ'D.: 60

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305
					☒ ALL HOLE SIZES CALLED OUT	COVER: 140'Ø TSAD PART: OFF PLANE CONNECTOR TUBE LOCATION: ROCK CREEK FACILITY DRAWN BY: DG CHECKED BY: ALF DATE: 2-7-02 DWG. NO. 124-1a SCALE: NTS REV. 0 CONTRACT NO. 199111
					☒ ALL DIMENSIONS SHOWN	
					☒ CORRECT MATERIAL CALLED OUT	
					☐ CAM FILES REFERENCED AND CHECKED	
DRAWING ISSUED TO					CHECK LIST FOR SHOP	
					☐ THIS ITEM TO BE WELDED	
					☐ THIS ITEM IS PART OF AN ASSEMBLY	
					☒ THIS ITEM SHIPS LOOSE	
CUST. SHOP FIELD					1 PRINT 2/6/02	



NOTES:

1. MATERIAL: 4" ALUM. TUBING 4X4X.15 PO # 28645-1
2. BILL PAGE No.: 60061-76.
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$

PC. MK. : 124-2a
 QTY. REQ'D. / CONT.: 20
 TOTAL QTY. REQ'D.: 60

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST
					☒ ALL HOLE SIZES CALLED OUT
					☒ ALL DIMENSIONS SHOWN
					☒ CORRECT MATERIAL CALLED OUT
					☐ CAM FILES REFERENCED AND CHECKED
DRAWING ISSUED TO					CHECK LIST FOR SHOP
CUST.					☐ THIS ITEM TO BE WELDED
SHOP	1 PRINT		2/7/02		☐ THIS ITEM IS PART OF AN ASSEMBLY
					☐ THIS ITEM SHIPS

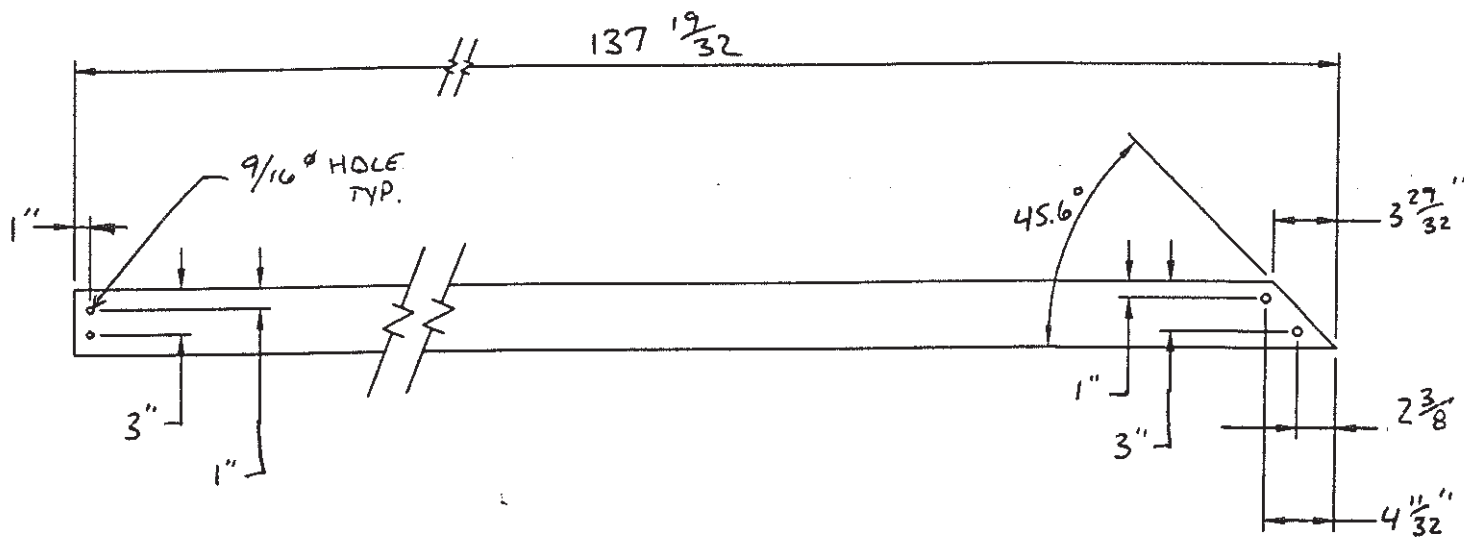
CONSERVATEK®
 CONSERVATEK INDUSTRIES, INC.
 498 LOOP 336 EAST • CONROE, TEXAS 77305

COVER: 140'Ø TSAD

PART: OFF PLANE CONNECTOR TUBE

LOCATION: ROCK CREEK FACILITY

DRAWN BY DG	CHECKED BY AUF	DATE 2-7-02
DWG. NO.	SCALE	REV.
		CONTRACT NO. 99111



NOTES:

1. MATERIAL: 4" ALUM. TUBING 4X4X.15 #6061-T6 ~~PO 28645-1~~
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$

PC. MK. : 124-3a
 QTY. REQ'D. / CONT.: 20
 TOTAL QTY. REQ'D.: 60

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST
					☒ ALL HOLE SIZES CALLED OUT
					☒ ALL DIMENSIONS SHOWN
					☒ CORRECT MATERIAL CALLED OUT
					☐ CAM FILES REFERENCED AND CHECKED
DRAWING ISSUED TO					CHECK LIST FOR SHOP
CUST.					☐ THIS ITEM TO BE WELDED
SHOP	1 PRINT		2/1/02		☐ THIS ITEM IS PART OF AN ASSEMBLY

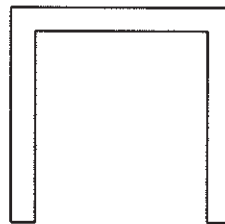
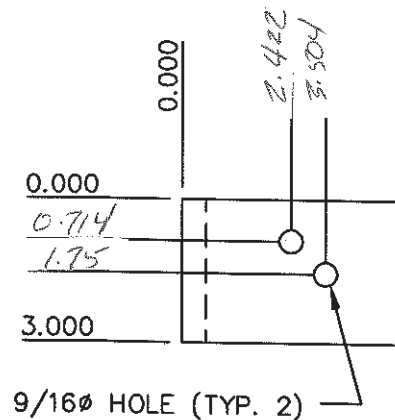
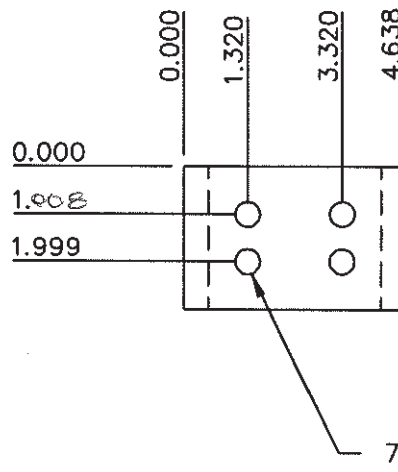
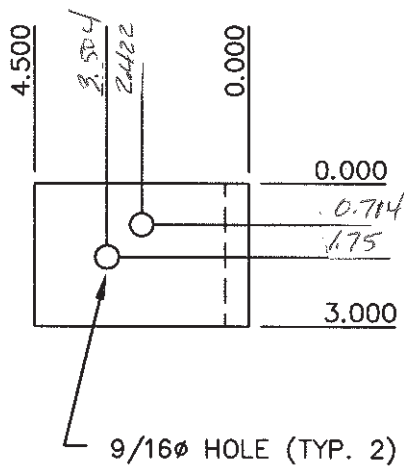
CONSERVATEK®
 CONSERVATEK INDUSTRIES, INC.
 498 LOOP 336 EAST • CONROE, TEXAS 77305

COVER: 140' TSAD

PART: OFF PLANE CONNECTOR TUBE

LOCATION: ROCK CREEK FACILITY

DRAWN BY DG	CHECKED BY <i>AK</i>	DATE 2-7-02
DWG. NO.	SCALE	REV.
CONTRACT NO. 99111		



NOTES:

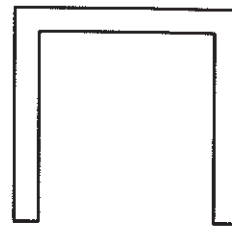
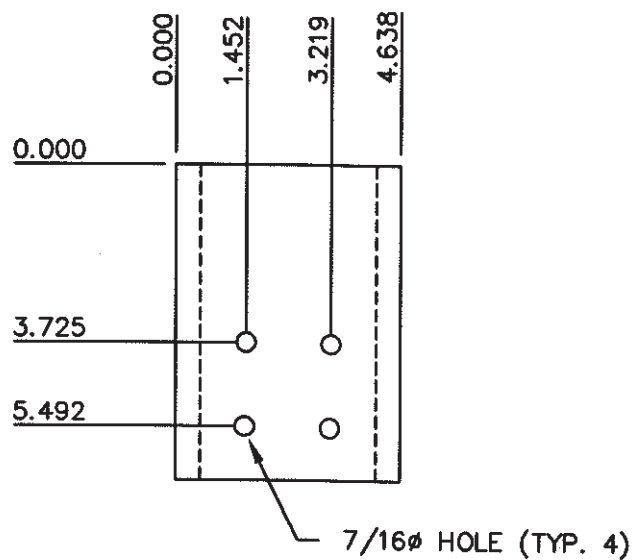
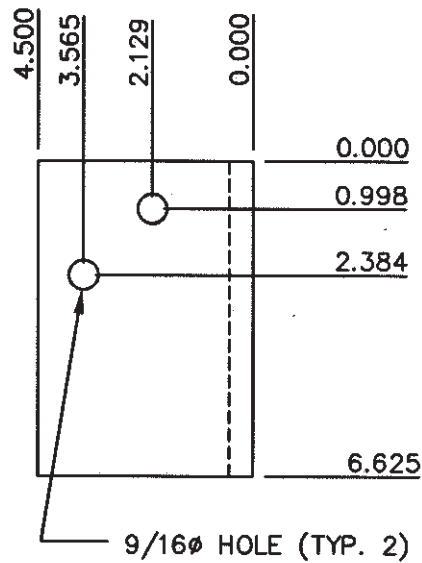
1. MATERIAL: 4" ALUM. CONNECTOR CHANNEL
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$

PC. MK. : 124-21a

QTY. REQ'D. / CONT.: 20

TOTAL QTY. REQ'D.: 60

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST		CONSERVATEK®	
					☒	ALL HOLE SIZES CALLED OUT	CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305 COVER: 140" TSAD PART: BOTTOM CONNECTOR CHANNEL LOCATION: ROCK CREEK FACILITY DRAWN BY: DG CHECKED BY: <i>AVF</i> DATE: 2-7-02 DWG. NO.: 124-21a SCALE: NTS REV.: 0 CONTRACT NO.: 199111	
					☒	ALL DIMENSIONS SHOWN		
					☒	CORRECT MATERIAL CALLED OUT		
					☐	CAM FILES REFERENCED AND CHECKED		
DRAWING ISSUED TO					CHECK LIST FOR SHOP			
CUST.					☐	THIS ITEM TO BE WELDED		
SHOP	1 PRINT		2/8/02		☐	THIS ITEM IS PART OF AN ASSEMBLY		
FIELD					☒	THIS ITEM SHIPS LOOSE		

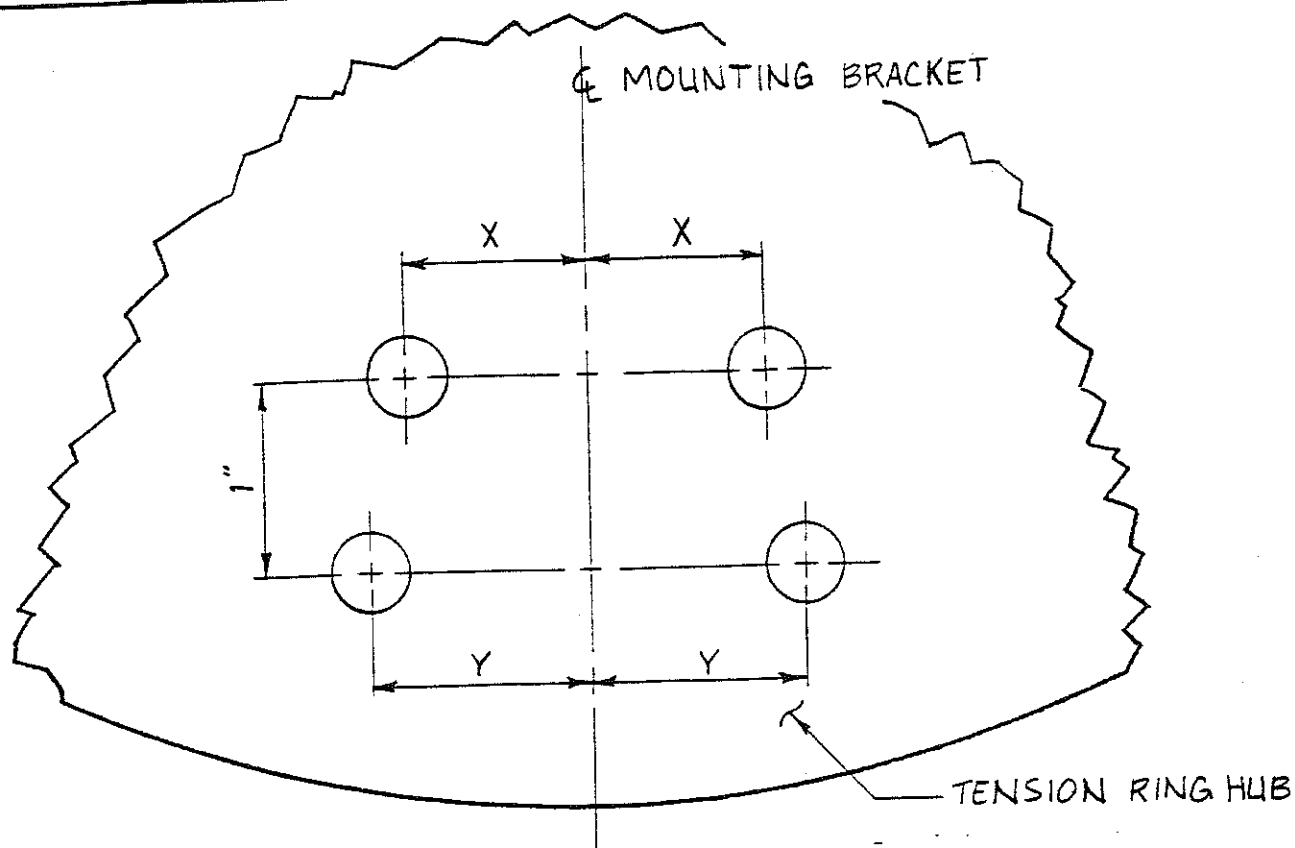


NOTES:

1. MATERIAL: 4" ALUM. CONNECTOR CHANNEL
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$

PC. MK. : 124-20a
 QTY. REQ'D. / CONT.: 40
 TOTAL QTY. REQ'D.: 120

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK® CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					☒ ALL HOLE SIZES CALLED OUT	COVER: 140" TSAD PART: BOTTOM CONNECTOR CHANNEL LOCATION: ROCK CREEK FACILITY DRAWN BY: DG CHECKED BY: <i>AVF</i> DATE: 2-7-02 DWG. NO. 124-20 SCALE: NTS REV. 0 CONTRACT NO. 199111			
					☒ ALL DIMENSIONS SHOWN				
					☒ CORRECT MATERIAL CALLED OUT				
					☐ CAM FILES REFERENCED AND CHECKED				
DRAWING ISSUED TO					CHECK LIST FOR SHOP				
CUST.					☐ THIS ITEM TO BE WELDED				
SHOP	1 PRINT				☐ THIS ITEM IS PART OF AN ASSEMBLY				
FIELD					☒ THIS ITEM SHIPS LOOSE				



DWG 612-2 MAT'L	420	421	430	440	441
X	$\frac{15}{16}$	$\frac{15}{16}$	$\frac{31}{32}$	$\frac{29}{32}$	$\frac{29}{32}$
Y	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{32}$	$\frac{3}{32}$

DRAFTING MUST CIRCLE DIMS. REQUIRED FOR THIS JOB.

- NOTES:
1. ALL HOLES $\frac{13}{32}$ " ϕ OR $\frac{7}{16}$ " ϕ
 2. TOLERANCE $\pm \frac{1}{32}$

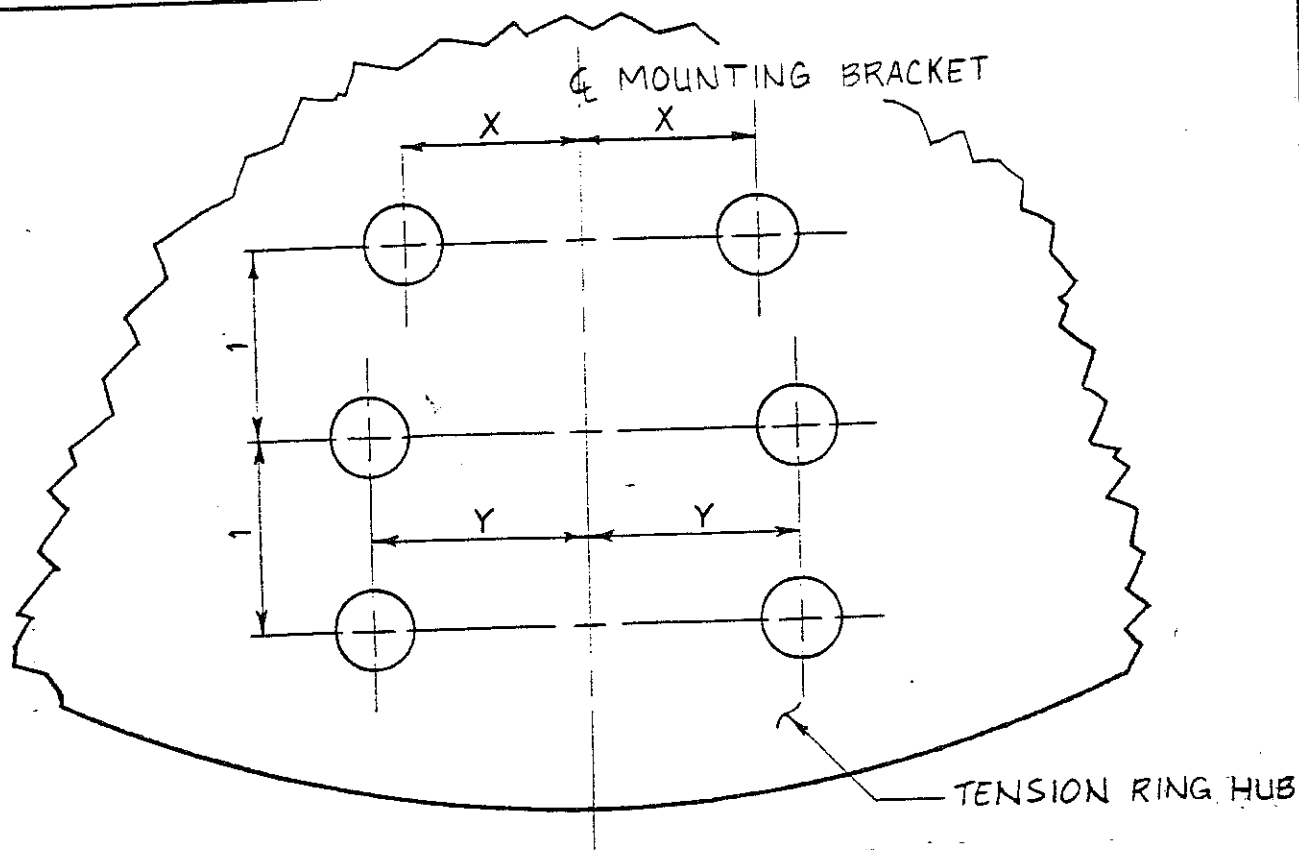
CONSERVATEK

' ϕ ALUMADOME

TENSION RING HUB BOLT PATTERN
FOR SINGLE-TEE PINNED MOUNTING BRACKET

Q	BY	CHK.	REVISION	DATE
ENG.				
CUST.				
SHOP	1 PRINT			
FIELD				
DRAWING ISSUED TO				DATE

DWN. BY	CHK'D BY	DATE	SCALE	DWG. NO.	REV.	CONTRACT NO.
RLK	MEK	5-6-84	NTS	1A1	0	



DWG 612-2 MAT'L	420	421	430	440	441
X	$\frac{15}{16}$	$\frac{15}{16}$	$\frac{31}{32}$	$\frac{29}{32}$	$\frac{29}{32}$
Y	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{32}$	$\frac{3}{32}$

DRAFTING MUST CIRCLE DIMS. REQUIRED FOR THIS JOB.

NOTES:

1. ALL HOLES $\frac{13}{32}$ " ϕ OR $\frac{7}{16}$ " ϕ .
2. TOLERANCE $\pm \frac{1}{32}$

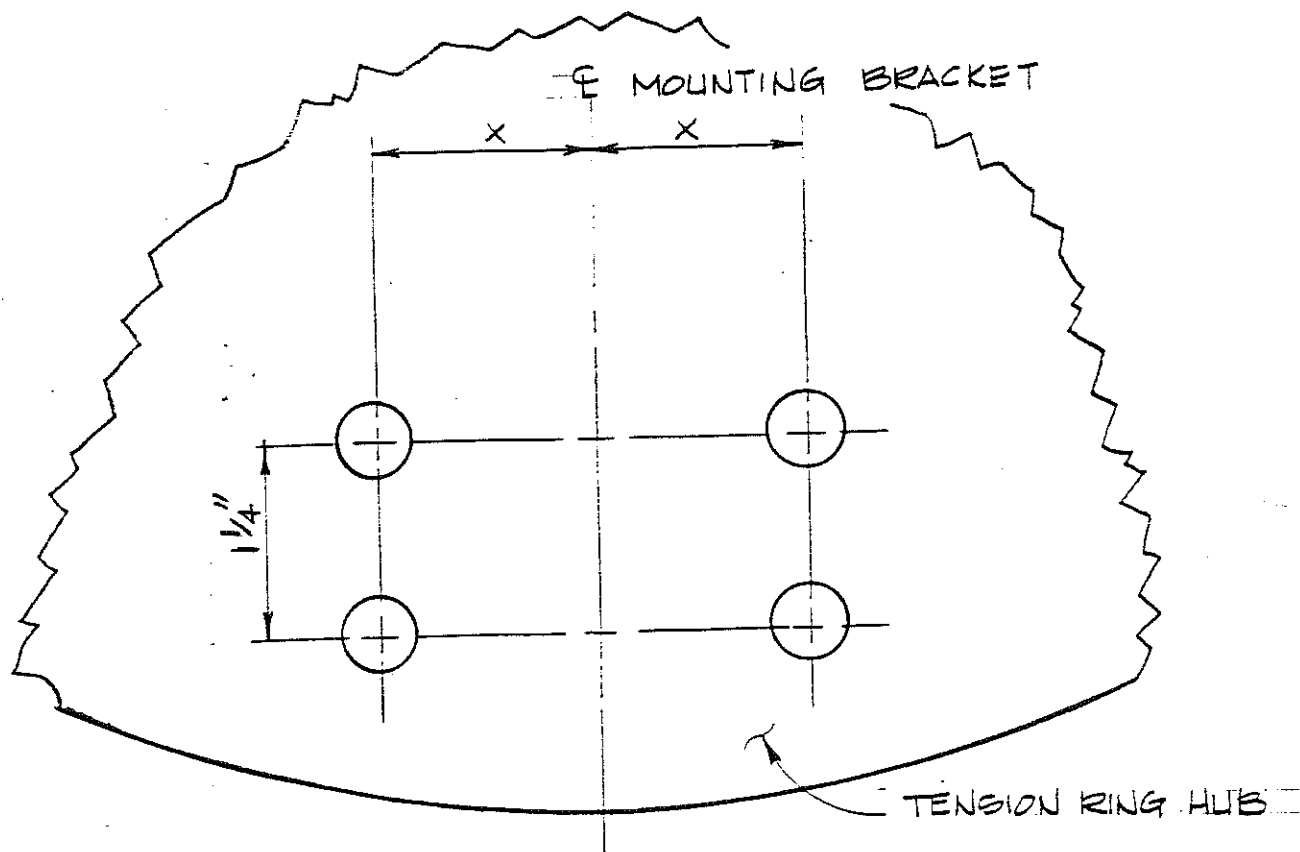
CONSERVATEK

' ϕ ALUMADOME

TENSION RING HUB BOLT PATTERN
FOR SINGLE-TEE PINNED MOUNTING BRACKET

NO.	BY	CHK.	REVISION	DATE
0			INITIAL ISSUE	
WG.				
JUST.				
SHOP			1 PRINT	
FIELD				
DRAWING ISSUED TO			DATE	

DWN. BY	CHK'D BY	DATE	SCALE	DWG. NO.	REV.	CONTRACT NO.
RLK	MEK	5-6-84	NTS	1A9	0	



DWG 612-2 MAT'L	420	421	430	440	441
X	1 1/8	1 1/8	1 5/32	1 3/32	1 3/32

DRAFTING MUST CIRCLE DIMS REQUIRED FOR THIS JOB.

NOTES:

1. ALL HOLES: $\frac{17}{32}$ " ϕ OR $\frac{9}{16}$ " ϕ
2. TOLERANCE $\pm \frac{1}{32}$

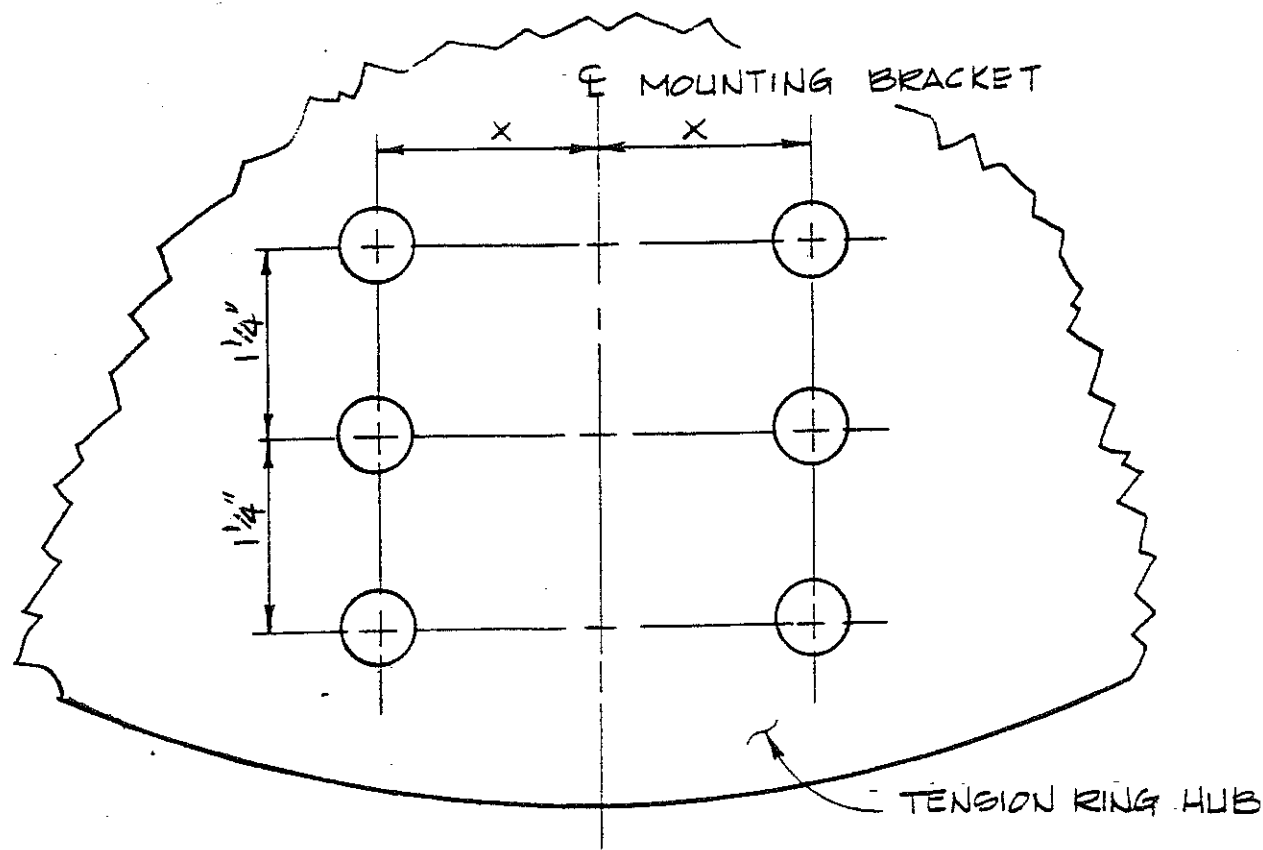
CONSERVATEK

'X ALUMADOME

TENSION RING HUB BOLT PATTERN
FOR SINGLE-TEE PINNED MOUNTING BRACKET

NO.	BY	CHK	REVISION	DATE
0			INITIAL ISSUE	
IG.				
JST.				
SHOP			1 PRINT	
FIELD				
DRAWING ISSUED TO			DATE	

DWN. BY	CHK'D BY	DATE	SCALE	DWG. NO.	REV.	CONTRACT NO.
CP	RK	5-21-84	NTS	1A11	0	



DWG 612-2 MAT'L	420	421	430	440	441
X	1/8	1/8	5/32	3/32	3/32

DRAFTING MUST CIRCLE DIMS REQUIRED FOR THIS JOB.

NOTES:

1. ALL HOLES: $\frac{17}{32}$ " ϕ OR $\frac{9}{16}$ " ϕ
2. TOLERANCE $\pm \frac{1}{32}$

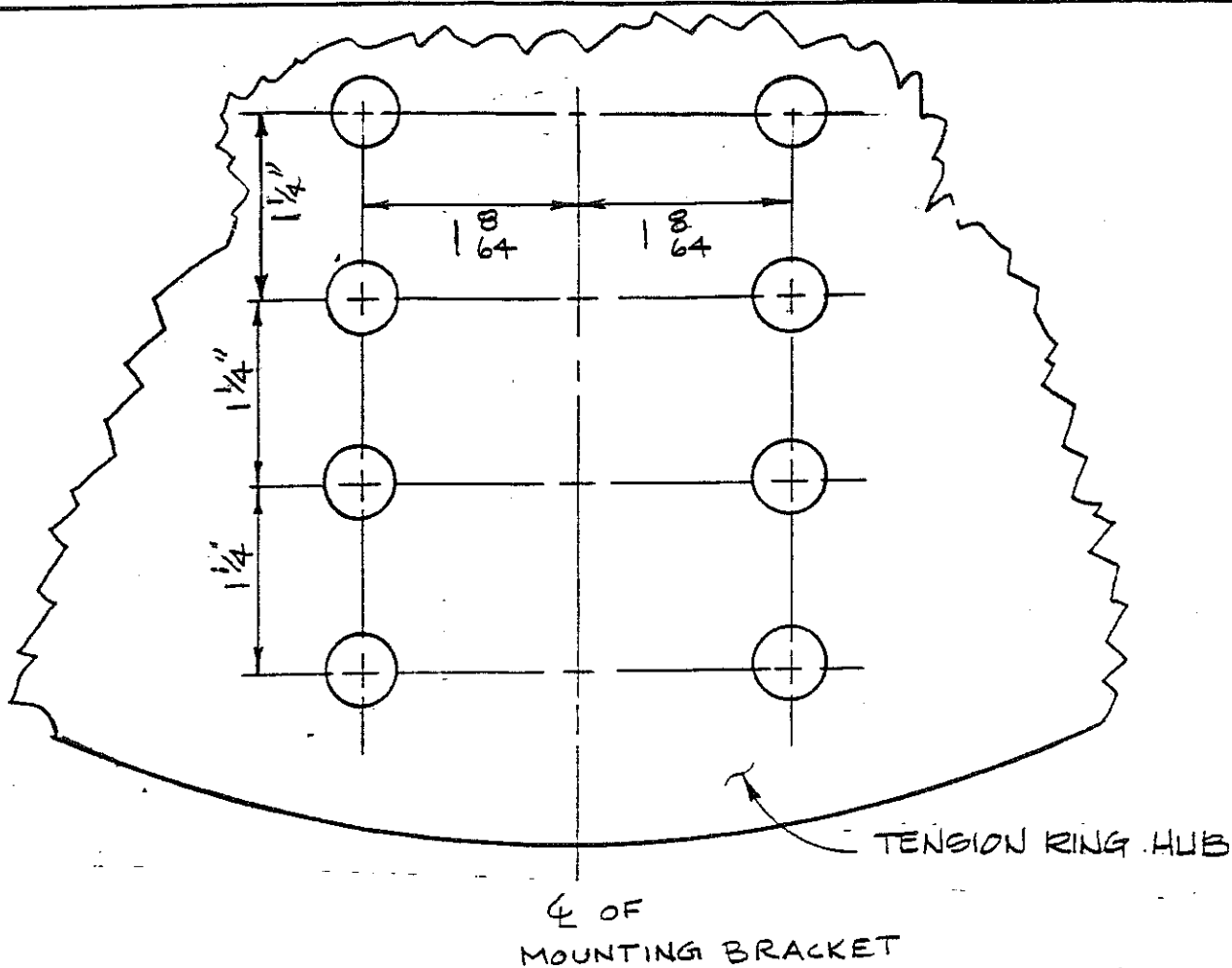
CONSERVATEK

'X ALUMADOME

TENSION RING HUB BOLT PATTERN
FOR SINGLE-TEE PINNED MOUNTING BRACKET

Q.	BY	CHK.	REVISION	DATE
0			INITIAL ISSUE	
1				
2				
3				
4				
5				
6				
7				
8				
9				
SHOP			1 PRINT	
FIELD				
DRAWING ISSUED TO			DATE	

DWN. BY	CHK'D BY	DATE	SCALE	DWG. NO.	REV.	CONTRACT NO.
CP	RK	5.21.84	NTS	1A!2	0	



NOTES:

1. ALL HOLES: $\frac{17}{32}$ " ϕ OR $\frac{9}{16}$ " ϕ
2. TOLERANCE $\pm \frac{1}{64}$

CONSERVATEK 

'X ALUMADOME

TENSION RING HUB BOLT PATTERN
FOR MOUNTING BRACKET W/ 481 STRUT STUB

0			INITIAL ISSUE		
BY	CHK.		REVISION		DATE
ENG.					
JUST.					
SHOP			1 PRINT		
FIELD					
DRAWING ISSUED TO				DATE	

DWN. BY	CHK'D BY	DATE	SCALE	DWG. NO.	REV.	CONTRACT NO.
ROL		1/11/89	NTS	1A13	0	

NOTES:

1. ALL HOLES ARE 13/32" Ø
2. TOLERANCE ON FAB DIMS ± 1/64.

[illegible]

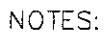
CONSERVATEK

CONSERVATEK INDUSTRIES, INC.
498 LOOP 336 EAST • P.O. BOX 1678, CONROE, TEXAS 77305

STANDARD

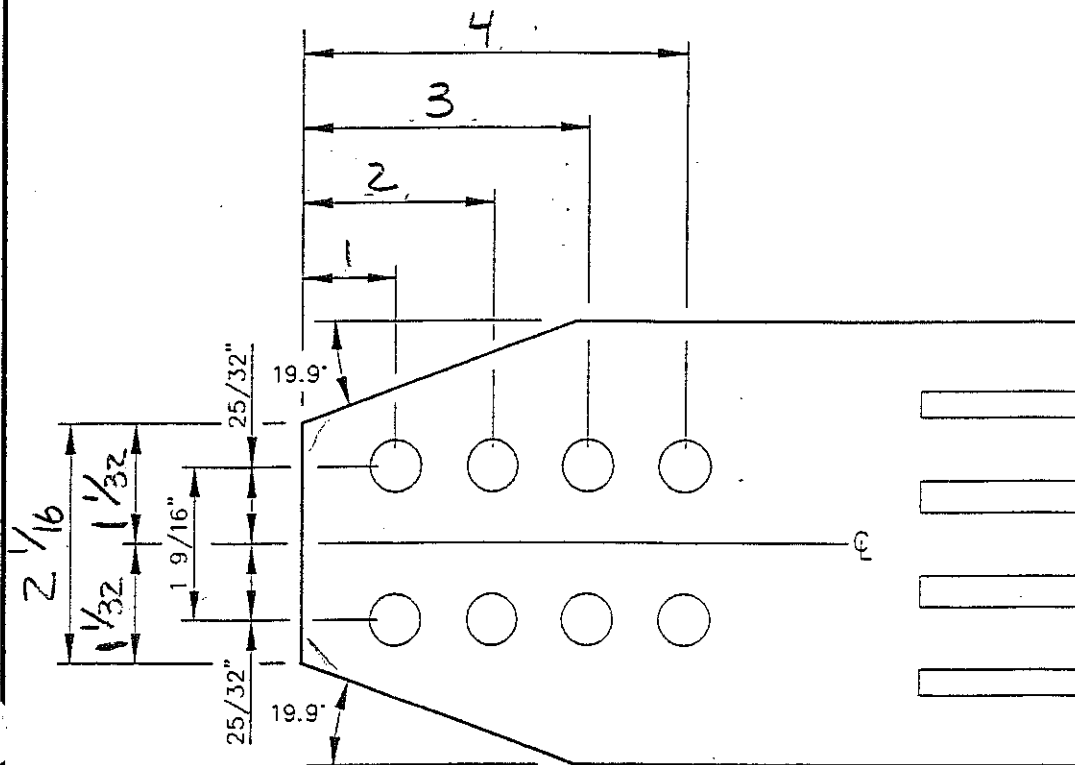
BOLT HOLE PATTERN 2

DWN. BY	CHK'D BY	DATE	SCALE	DWG. NO.	REV.	CONTRACT NO.
JEM	<i>Rue</i>	12/30/94	NTS	4A2	0	



- # CONSERVATEK

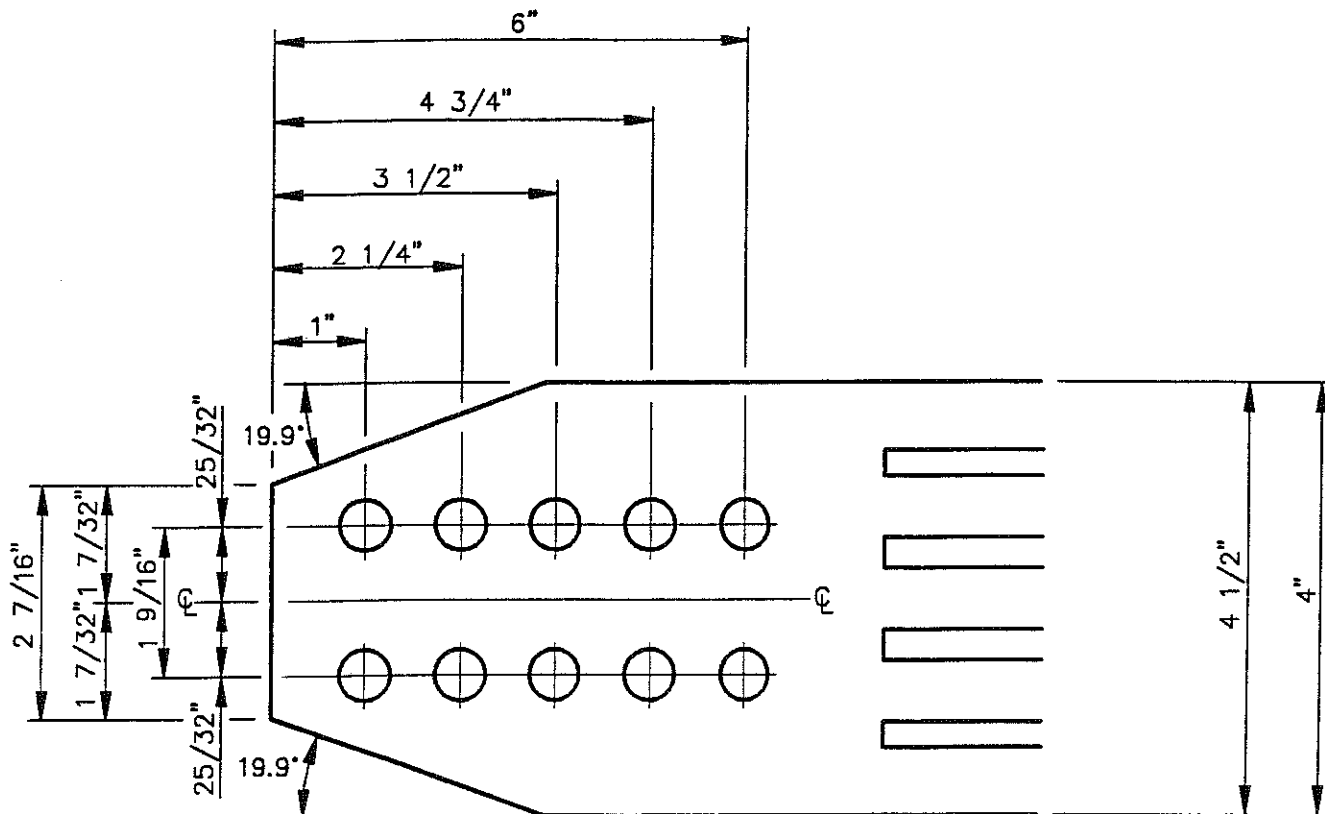
DWN. BY	CHK'D BY	DATE	SCALE	DWG. NO.	REV.	CONTRACT NO.
JEM	<i>Ben</i>	12/30/94	NFS	4A3	0	



NOTES:

1. ALL HOLES ARE $13/32"$ ϕ
2. TOLERANCE $\pm 1/64"$

				CONSERVATEK				
				'Ø ALUMADOME				
				BOLT PATTERN 8				
NO.	BY	CHK	REVISION	DATE				
ENG.								
CUST.								
SHOP	1 PRINT							
FIELD					DWN. BY	CHK'D BY	DATE	SCALE
					SMD	cm	6/25/00	NTS
					DWG. NO.	REV.	CONTRACT NO.	
					448	0		



NOTES:

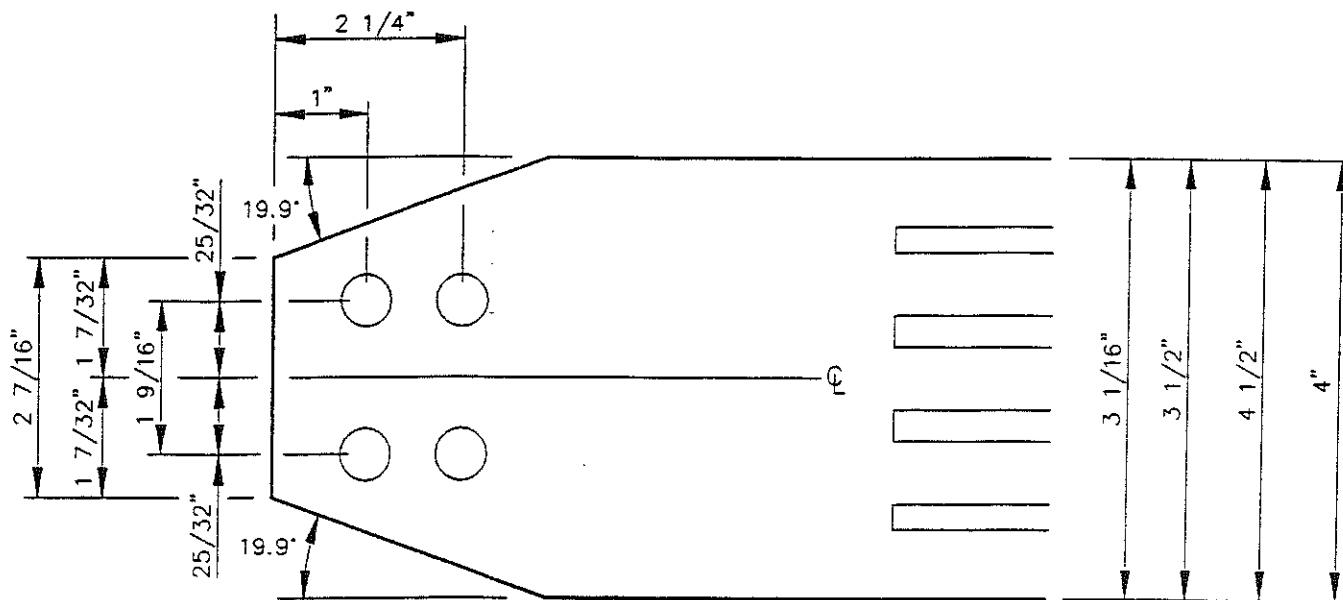
1. MATERIAL:
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/64$
4. ALL HOLES ARE $17/32\phi$

PC. MK. :
 QTY. REQ'D. / CONT.:
 TOTAL QTY. REQ'D.:

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST						
						ALL HOLE SIZES CALLED OUT					
						ALL DIMENSIONS SHOWN					
						CORRECT MAT'L CALLED OUT					
						CAM FILES REF'D AND CHECKED					
DRAWING ISSUED TO					COVER: ϕ ALUMADOME						
CUST.					PART: BOLT PATTERN 10						
SHOP					LOCATION:						
FIELD											
1 PRINT					DWN. BY	CHK'D BY	DATE	SCALE	DWG. NO.	REV.	CONTRACT NO.
								NTS	4A-10	0	

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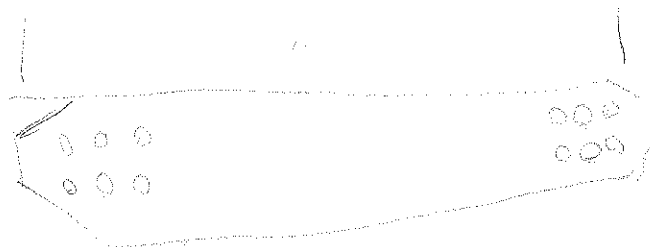
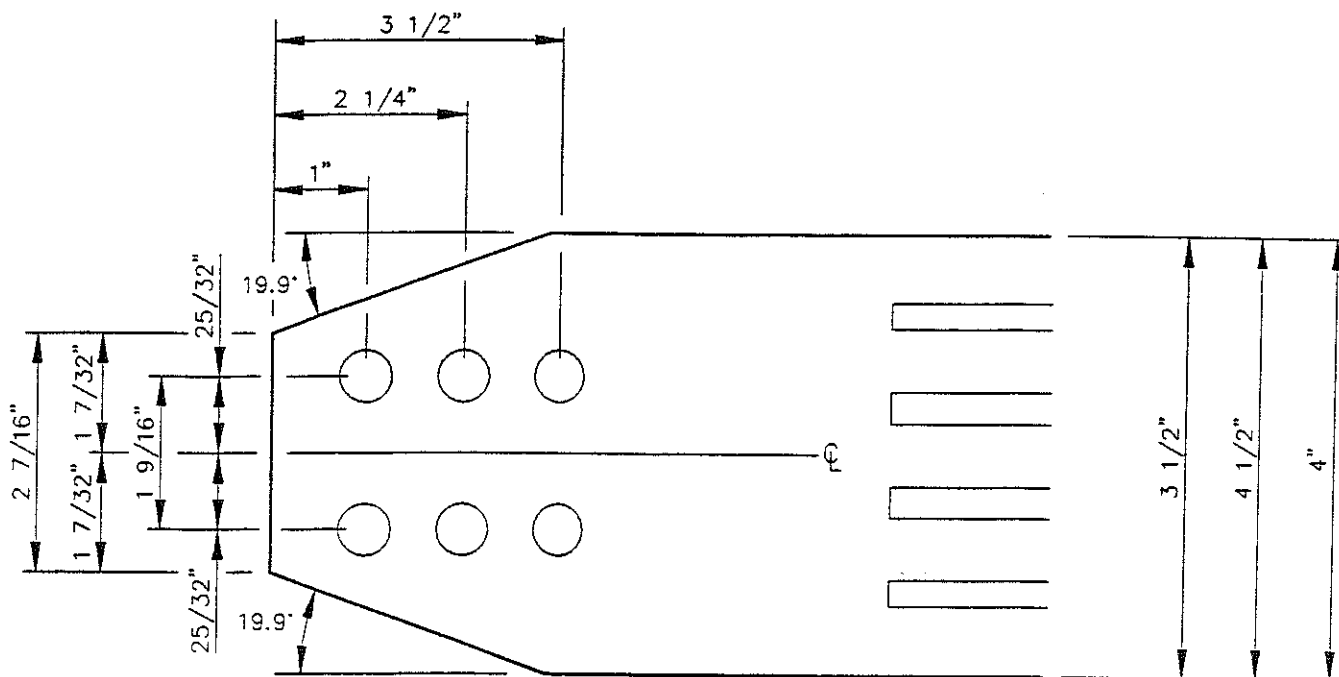
NOTES:

1. ALL HOLES ARE 17/32" ϕ .
2. TOLERANCE $\pm 1/64$ "

				CONSERVATEK						
BY	CHK	REVISION	DATE	' ϕ ALUMADOME BOLT PATTERN II						
ENG.										
CUST.										
SHOP		1 PRINT								
FIELD				DWN. BY	CHK'D BY	DATE	SCALE	DWG. NO.	REV.	CONTRACT NO.
				SMD	<i>RM</i>	6/25/90	NTS	4A11	0	

DRAWING ISSUED TO

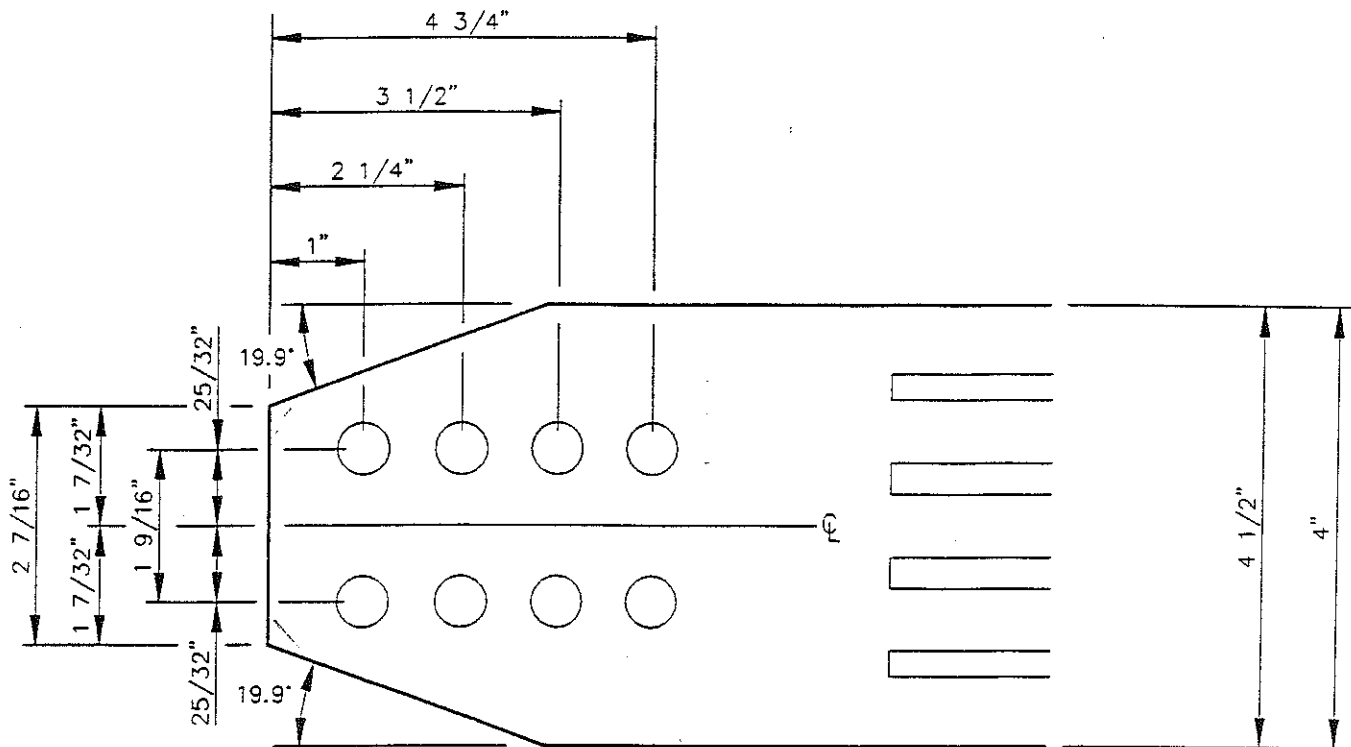
DATE



NOTES:

1. ALL HOLES ARE 17/32"Ø.
2. TOLERANCE ±1/64"

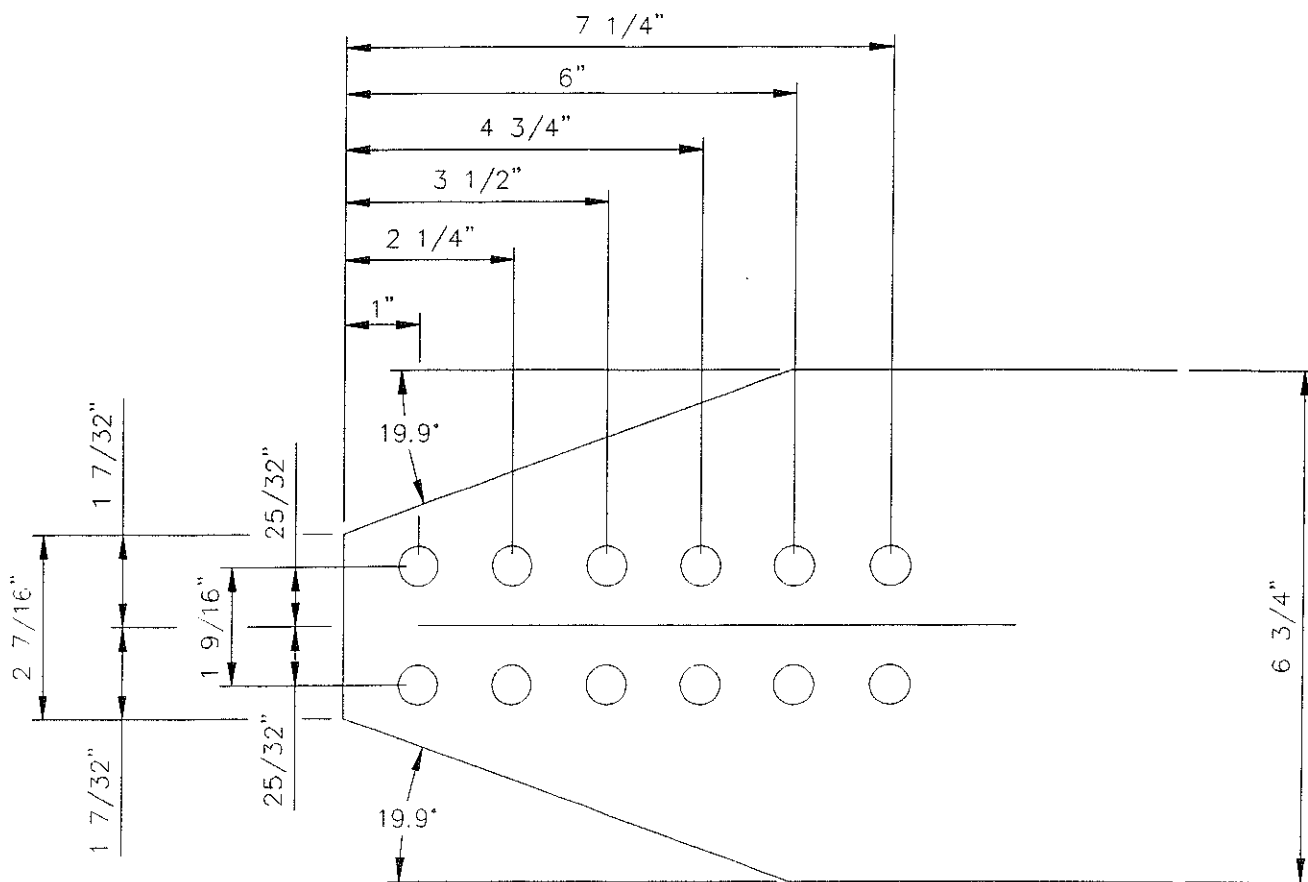
				CONSERVATEK				
				Ø ALUMADOME				
				BOLT PATTERN 12				
NO.	BY	CHK	REVISION	DATE				
ENG.								
CUST.								
SHOP			1 PRINT					
FIELD					DWN. BY	CHK'D BY	DATE	SCALE
					SMD	<i>run</i>	6/25/90	NTS
DRAWING ISSUED TO				DATE	DWG. NO.	REV.	CONTRACT NO.	
					4A12	0		



NOTES:

1. ALL HOLES ARE $17/32"$ ϕ .
2. TOLERANCE $\pm 1/64"$

				CONSERVATEK				
				'Ø ALUMADOME				
				BOLT PATTERN 13				
NO	BY	CHK	REVISION	DATE				
ENG.								
CUST.								
SHOP			1 PRINT					
FIELD					DWN. BY	CHK'D BY	DATE	SCALE
					SMD	<i>RM</i>	6/25/90	NTS
DRAWING ISSUED TO				DATE	DWG. NO.	REV.	CONTRACT NO.	
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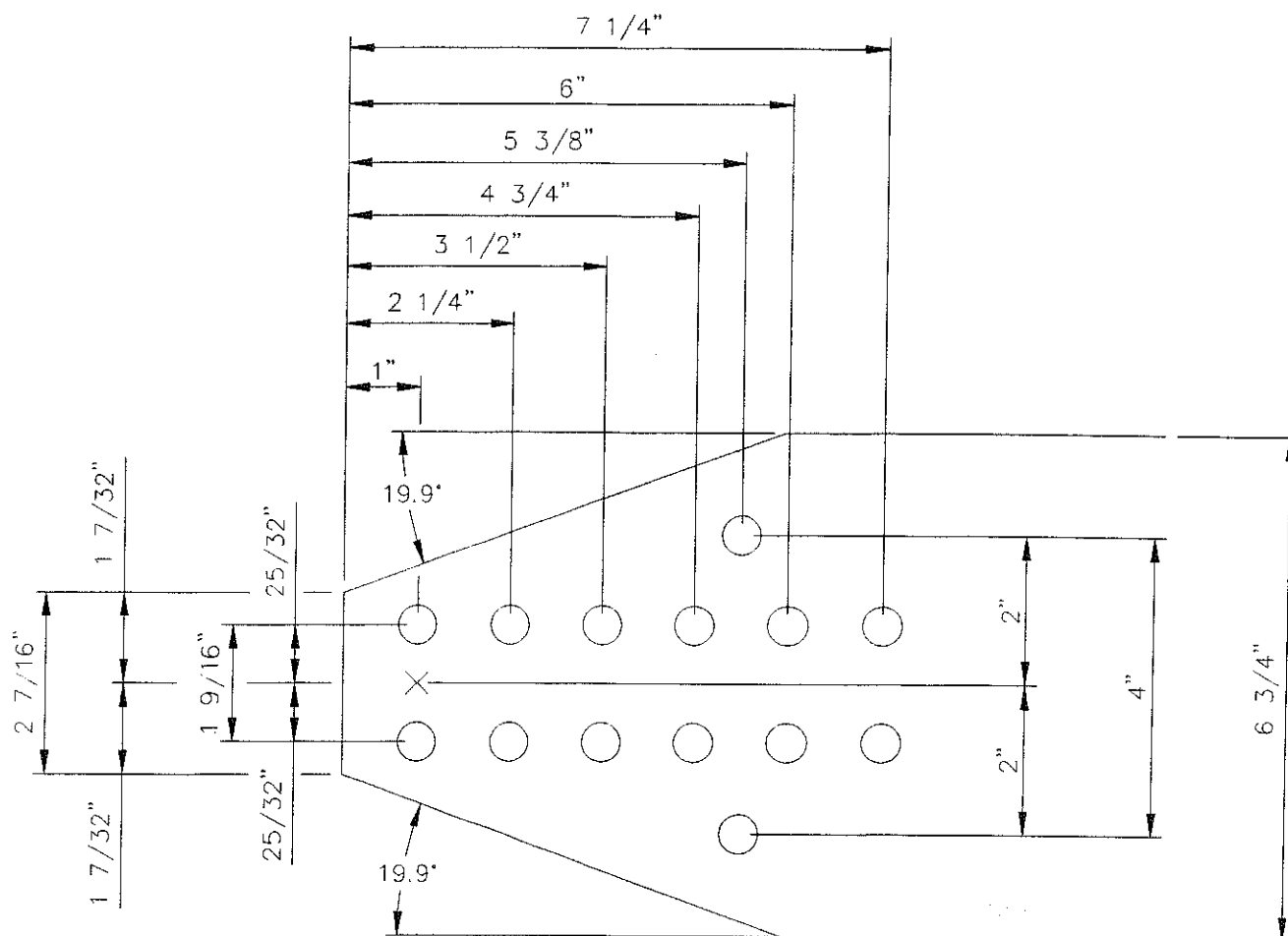


NOTES:

1. MATERIAL:
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/64"$
4. ALL HOLES ARE $17/32"$ Ø

PC. MK. :
 QTY. REQ'D. / CONT.:
 TOTAL QTY. REQ'D.:

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					ALL HOLE SIZES CALLED OUT	COVER: Ø ALUMADOME PART: BOLT PATTERN 14 LOCATION:			
					ALL DIMENSIONS SHOWN				
					CORRECT MATERIAL CALLED OUT				
					CAM FILES REFERENCED AND CHECKED				
DRAWING ISSUED TO					CHECK LIST FOR SHOP	DRAWN BY: _____ CHECKED BY: _____ DATE: _____ DWG. NO. 4A-14 SCALE NTS REV. 0 CONTRACT NO.			
CUST.					THIS ITEM TO BE WELDED				
SHOP	1 PRINT				THIS ITEM IS PART OF AN ASSEMBLY				
FIELD					THIS ITEM SHIPS LOOSE				



NOTES:

1. MATERIAL:
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/64"$
4. ALL HOLES ARE $17/32" \varnothing$

PC. MK. :
 QTY. REQ'D. / CONT.:
 TOTAL QTY. REQ'D.:

NO	BY	CHK	REVISION	DATE

FAB CHECK LIST	
	ALL HOLE SIZES CALLED OUT
	ALL DIMENSIONS SHOWN
	CORRECT MATERIAL CALLED OUT
	CAM FILES REFERENCED AND CHECKED
CHECK LIST FOR SHOP	
	THIS ITEM TO BE WELDED
	THIS ITEM IS PART OF AN ASSEMBLY
	THIS ITEM SHIPS LOOSE

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COVER: $\varnothing$ ALUMADOME

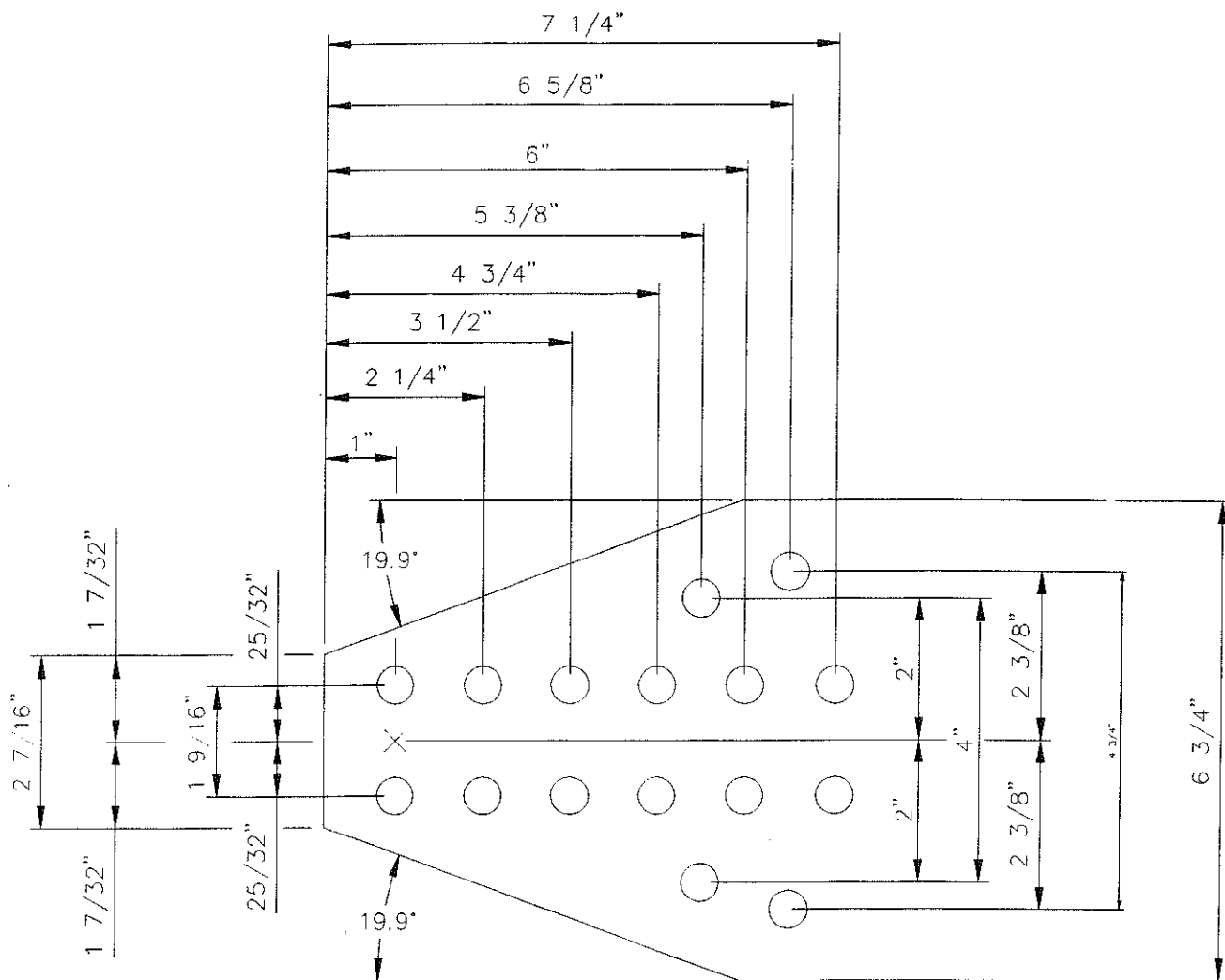
PART: BOLT PATTERN 15

LOCATION:

DRAWN BY	CHECKED BY	DATE

DWG. NO	SCALE	REV.	CONTRACT NO.
4A-15	NTS	0	

DRAWING ISSUED TO	
CUST.	
SHOP	1 PRINT
FIELD	



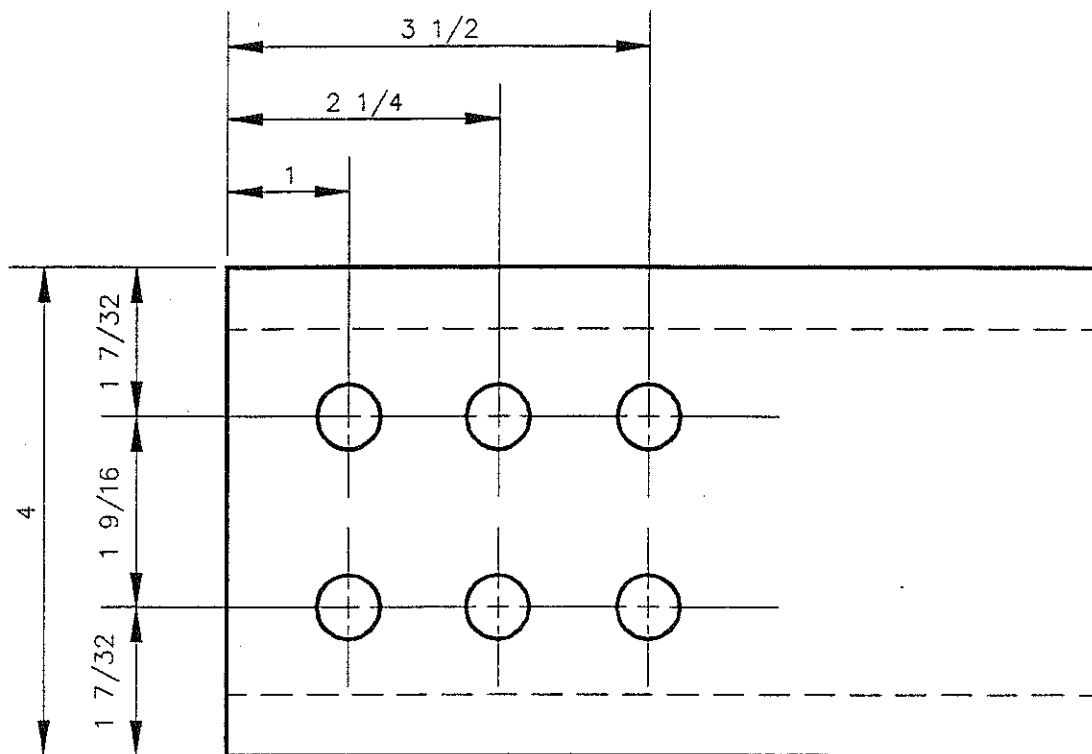
NOTES:

1. MATERIAL:
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/64$ "
4. ALL HOLES ARE $17/32$ " ϕ

PC. MK. :
 QTY. REQ'D. / CONT.:
 TOTAL QTY. REQ'D.:

NO.	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305		
					ALL HOLE SIZES CALLED OUT	COVER: ϕ ALUMADOME PART: BOLT PATTERN 16 LOCATION:		
					ALL DIMENSIONS SHOWN			
					CORRECT MATERIAL CALLED OUT			
					CAM FILES REFERENCED AND CHECKED			
DRAWING ISSUED TO					CHECK LIST FOR SHOP	DRAWN BY BY		
CUST.					THIS ITEM TO BE WELDED	CHECKED BY BY		
SHOP			1 PRINT		THIS ITEM IS PART OF AN ASSEMBLY	DATE		
FIELD					THIS ITEM SHIPS LOOSE	CONTRACT NO.		
						DWG. NO.	SCALE	REV.
						4A-16	NTS	0

DWN. BY	CHK'D BY	DATE	SCALE	DWG. NO.	REV.	CONTRACT NO.
			NTS	6A-11	0	



NOTES:

1. THIS DWG FOR USE w/ DOUBLE-TEE MOUNTING BRACKET
2. TYPICAL HOLE SIZE $17/32\phi$
3. TOLERANCE ON FAB. DIMENSIONS: $\pm 1/32$

NO	BY	CHK	REVISION	DATE

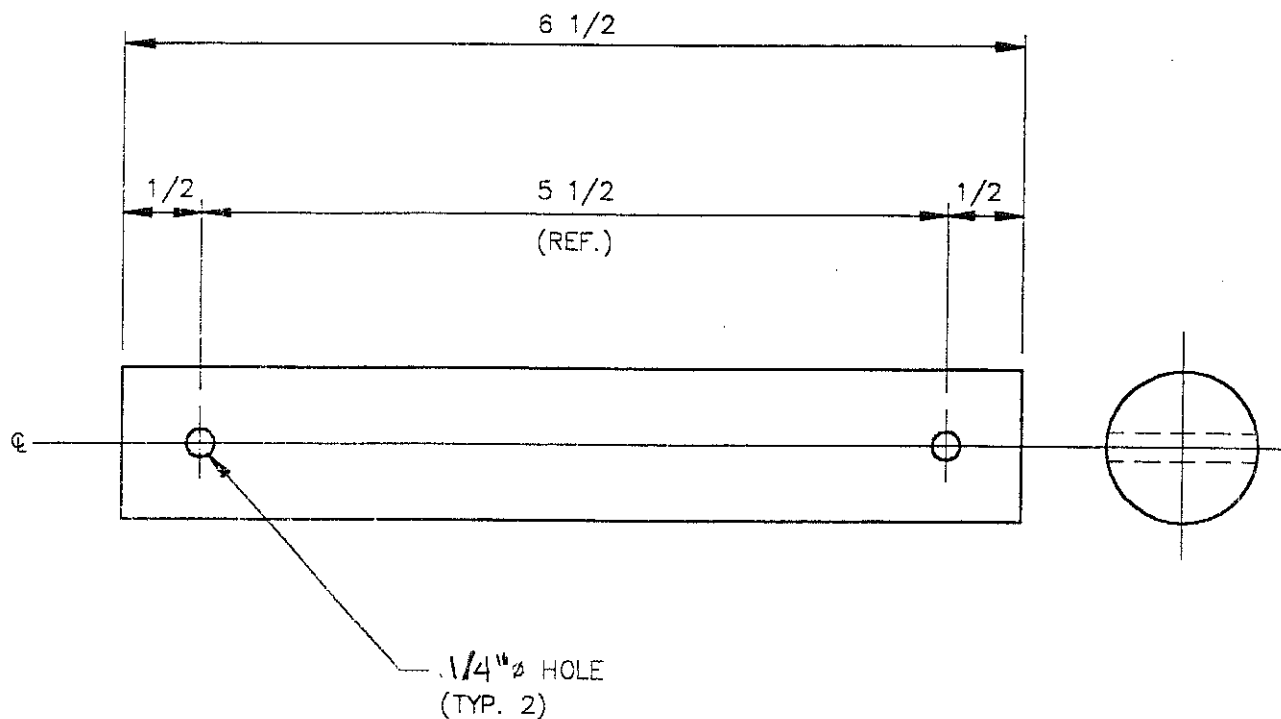
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Ø ALUMADOME				
BOLT PATTERN No. 12				

DRAWING ISSUED TO			CUST.		
1 PRINT			DWN. BY		
FIELD			CHK'D BY		
			DATE		
			SCALE		
			DWC. NO.		
			REV.		
			CONTRACT NO.		

DWN. BY	CHK'D BY	DATE	SCALE	DWG. NO.	REV.	CONTRACT NO.
			NTS	6A-13	0	

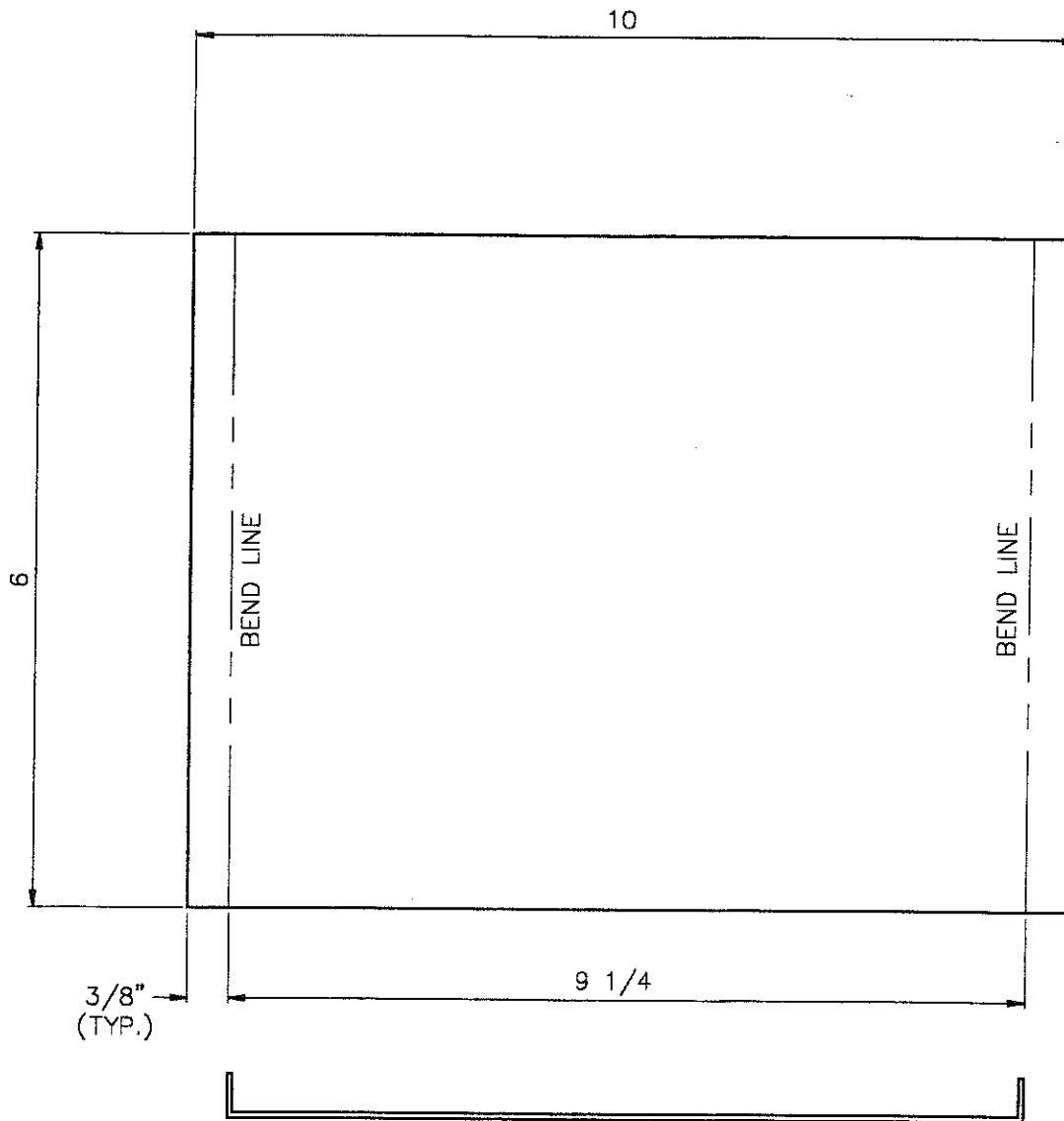


NOTES:

1. MATERIAL: 1"Ø S.S. PIN
2. BILL PAGE No.:
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$
4. WORK THIS DWG W/ DWG 613-1

PC. MK. : 613-4a
 QTY. REQ'D. / CONT.:
 TOTAL QTY. REQ'D.:

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305			
					ALL HOLE SIZES CALLED OUT				
					ALL DIMENSIONS SHOWN				
					CORRECT MATERIAL CALLED OUT	DRAWN BY CHECKED BY DATE			
					CAM FILES REFERENCED AND CHECKED				
DRAWING ISSUED TO					CHECK LIST FOR SHOP	DWG. NO. SCALE REV. CONTRACT NO.			
ST.	1 PRINT				THIS ITEM TO BE WELDED				
SHOP					THIS ITEM IS PART OF AN ASSEMBLY				
FIELD					THIS ITEM SHIPS LOOSE	613-4 NTS 0			



VIEW AFTER BEND

NOTES:

1. MATERIAL: 18 GA. 300 SERIES S.S. SHEET (0.05" THK.)
2. BILL PAGE No.: 6A
3. TOLERANCE ON FAB DIMENSIONS (UNLESS NOTED): $\pm 1/32$

PC. MK. : 603-1a
 QTY. REQ'D. / CONT.:
 TOTAL QTY. REQ'D.:

NO	BY	CHK	REVISION	DATE	FAB CHECK LIST	CONSERVATEK CONSERVATEK INDUSTRIES, INC. 498 LOOP 336 EAST • CONROE, TEXAS 77305						
					ALL HOLE SIZES CALLED OUT	COVER: Ø ALUMADOME PART: MOUNTING BRACKET SLIDE PAD LOCATION:						
					ALL DIMENSIONS SHOWN							
					CORRECT MATERIAL CALLED OUT							
					CAM FILES REFERENCED AND CHECKED							
DRAWING ISSUED TO					CHECK LIST FOR SHOP	DRAWN BY CHECKED BY DATE						
CUST.					THIS ITEM TO BE WELDED				DWG. NO.	SCALE	REV.	CONTRACT NO.
SHOP	1 PRINT				THIS ITEM IS PART OF AN ASSEMBLY				603-1	NTS	0	
FIELD					THIS ITEM SHIPS LOOSE							

Conservatek Industries, Inc.

Reference Manual

498 Loop 336 East

Conroe, Texas 77305

(409) 539-1747

6" Strut Section Properties (with new protrusions)

Properties	461	463	465	467
Gross Area with Protrusions (in ²)	2.13	2.56	3.41	4.41
Gross Area without Protrusions (in ²)	1.81	2.24	3.09	4.09
Weight per Foot with Protrusions (lb/ft)	2.55	3.07	4.10	5.29
Net Area with 4 1/2"Ø bolts (in ²)	1.46	1.79	2.57	3.57
Net Area with 4 3/8"Ø bolts (in ²)	1.54	1.89	2.69	3.68
Major Axis Moment of Inertia (gross) (in ⁴)	10.46	13.97	20.07	25.43
Major Axis Section Modules (gross) (in ³)	3.49	4.66	6.69	8.48
Major Axis Section Modules (net-1/2"Ø bolts) (in ³)	2.72	3.66	5.52	7.30
Major Axis Section Modules (net-3/8"Ø bolts) (in ³)	2.84	3.81	5.69	7.47
Major Axis Radius of Gyration (gross) (in)	2.40	2.50	2.55	2.49
Minor Axis Moment of Inertia (gross) (in ⁴)	0.75	1.43	3.05	5.07
Minor Axis Section Modules (gross) (in ³)	0.49	0.82	1.53	2.25
Minor Axis Section Modules (net-1/2"Ø bolts) (in ³)	0.41	0.72	1.43	2.16
Minor Axis Section Modules (net-3/8"Ø bolts) (in ³)	0.43	0.74	1.45	2.17
Minor Axis Radius of Gyration (gross) (in)	0.64	0.80	0.99	1.11
Effective Torsional Moment of Inertia (in ⁴)	0.01	0.02	0.04	0.07
Area of Web (in ²)	0.85	0.84	0.92	1.33

Notes:

- 1) Gross indicates that property is based on the full cross sectional area excluding protrusions.
- 2) Net indicates properties based on reduced area due to bolt holes at hubs.

Last Revision Date: June 27, 1996

Revision Number: Beta

Section: Structural

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Conservatek Industries, Inc.

Reference Manual

498 Loop 336 East

Conroe, Texas 77305

(409) 539-1747

8" Strut Section Properties (with new protrusions)

Properties	481	483	485	487
Gross Area with Protrusions (in^2)	3.25	3.82	4.35	4.91
Gross Area without Protrusions (in^2)	2.93	3.50	4.03	4.59
Weight per Foot with Protrusions (lb/ft)	3.90	4.58	5.23	5.89
Net Area with 4 1/2"Ø bolts (in^2)	2.41	2.94	3.52	4.07
Net Area with 4 3/8"Ø bolts (in^2)	2.53	3.06	3.63	4.18
Major Axis Moment of Inertia (gross) (in^4)	30.56	37.07	43.05	48.90
Major Axis Section Modules (gross) (in^3)	7.64	9.27	10.76	12.23
Major Axis Section Modules (net 1/2"Ø bolts) (in^3)	6.13	7.63	9.23	10.67
Major Axis Section Modules (net-3/8"Ø bolts) (in^3)	6.37	7.88	9.47	10.90
Major Axis Radius of Gyration (gross) (in)	3.23	3.25	3.27	3.26
Minor Axis Moment of Inertia (gross) (in^4)	1.65	2.67	4.15	5.07
Minor Axis Section Modules (gross) (in^3)	0.94	1.34	1.85	2.25
Minor Axis Section Modules (net-1/2"Ø bolts) (in^3)	0.84	1.23	1.76	2.16
Minor Axis Section Modules (net-3/8"Ø bolts) (in^3)	0.86	1.25	1.78	2.18
Minor Axis Radius of Gyration (gross) (in)	0.75	0.87	1.01	1.05
Effective Torsional Moment of Inertia (in^4)	0.04	0.06	0.07	0.08
Area of Web (in^2)	1.32	1.50	1.67	1.83

Notes:

- 1) Gross indicates that property is based on the full cross sectional area excluding protrusions.
- 2) Net indicates properties based on reduced area due to bolt holes at hubs.

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Revision Number: Beta

Section: Structural

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Conservatek Industries, Inc.

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Maximum Allowable Bolt Force (kips)			
Bolt Pattern	Bolt Diameter	Aluminum 7075-T73	Stainless Steel 304 Cold Finished
2, 3 and 8	3/8"Ø	1.93	1.99
10, 11, 12 and 13	1/2"Ø		See Table Below

Maximum Allowable Bolt Force (kips) Bolt Patterns 10, 11, 12, and 13				
Structural Member	3/16" Hub	1/4" Hub	5/16" Hub	3/8" Hub
461	2.65	2.65	2.65	2.65
463	3.19	3.40	3.40	3.40
465	3.19	3.93	3.93	3.93
467	3.19	3.93	3.93	3.93
481	3.19	3.91	3.91	3.91
483	3.19	3.93	3.93	3.93
485	3.19	3.93	3.93	3.93
487	3.19	3.93	3.93	3.93
[4" x 2.33 Channel	3.19	3.23	3.23	3.23
1/2" Thick Tube	3.19	3.93	3.93	3.93

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Revision Number: Beta

Section: Structural

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Reference Manual

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461 Strut Allowable Stresses (ksi)

461 Strut Allowable Stresses (ksi)				
Type of Stress	Gross Section	Flange Failure	Web Failure	Governing Allowable
Axial Tension	19.49			19.49
Axial Compression	Function of Slenderness Ratio	15.73	12.92	Function of Slenderness Ratio
		Weighted average = 14.41		
Tension, Major Axis Bending	19.49			19.49
Compression, Major Axis Bending	Function of Slenderness Ratio	18.62	28.00	Function of Slenderness Ratio
Tension, Minor Axis Bending	27.58			27.58
Compression, Minor Axis Bending		27.34		27.34
Shear			11.64	11.64
Bearing (bolts)	34.00			34.00
Bearing (pins & flat surfaces)	23.00			23.00

Last Revision Date: June 27, 1996

Revision Number: Beta

Section: Structural

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Conservatek Industries, Inc.

Reference Manual

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463 Strut Allowable Stresses (ksi)				
Type of Stress	Gross Section	Flange Failure	Web Failure	Governing Allowable
Axial Tension	19.49			19.49
Axial Compression	Function of Slenderness Ratio	16.48	13.13	Function of Slenderness Ratio
		Weighted average = 15.22		
Tension, Major Axis Bending	19.49			19.49
Compression, Major Axis Bending	Function of Slenderness Ratio	19.51	28.00	Function of Slenderness Ratio
Tension, Minor Axis Bending	27.58			27.58
Compression, Minor Axis Bending		28.00		28.00
Shear			11.64	11.64
Bearing (bolts)	34.00			34.00
Bearing (pins & flat surfaces)	23.00			23.00

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Revision Number: Beta

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Reference Manual

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465 Strut Allowable Stresses (ksi)				
Type of Stress	Gross Section	Flange Failure	Web Failure	Governing Allowable
Axial Tension	19.49			19.49
Axial Compression	Function of Slenderness Ratio	16.55	15.16	Function of Slenderness Ratio
		Weighted average = 16.14		
Tension, Major Axis Bending	19.49			19.49
Compression, Major Axis Bending	Function of Slenderness Ratio	19.59	28.00	Function of Slenderness Ratio
Tension, Minor Axis Bending	27.58			27.58
Compression, Minor Axis Bending		28.00		28.00
Shear			12.00	12.00
Bearing (bolts)	34.00			34.00
Bearing (pins & flat surfaces)	23.00			23.00

Last Revision Date: June 27, 1996

Revision Number: Beta

Section: Structural

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467 Strut Allowable Stresses (ksi)

Type of Stress	Gross Section	Flange Failure	Web Failure	Governing Allowable
Axial Tension	19.49			19.49
Axial Compression	Function of Slenderness Ratio	15.83	17.80	Function of Slenderness Ratio
		Weighted average = 16.47		
Tension, Major Axis Bending	19.49			19.49
Compression, Major Axis Bending	Function of Slenderness Ratio	18.74	28.00	Function of Slenderness Ratio
Tension, Minor Axis Bending	27.58			27.58
Compression, Minor Axis Bending		27.53		27.53
Shear			12.00	12.00
Bearing (bolts)	34.00			34.00
Bearing (pins & flat surfaces)	23.00			23.00

Last Revision Date: June 27, 1996

Revision Number: Beta

Section: Structural

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481 Strut Allowable Stresses (ksi)				
Type of Stress	Gross Section	Flange Failure	Web Failure	Governing Allowable
Axial Tension	19.49			19.49
Axial Compression	Function of Slenderness Ratio	17.39	11.37	Function of Slenderness Ratio
		Weighted average = 14.68		
Tension, Major Axis Bending	19.49			19.49
Compression, Major Axis Bending	Function of Slenderness Ratio	20.58	28.00	Function of Slenderness Ratio
Tension, Minor Axis Bending	27.58			27.58
Compression, Minor Axis Bending		28.00		28.00
Shear		11.07		11.07
Bearing (bolts)	34.00			34.00
Bearing (pins & flat surfaces)	23.00			23.00

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Revision Number: Beta

Section: Structural

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483 Strut Allowable Stresses (ksi)				
Type of Stress	Gross Section	Flange Failure	Web Failure	Governing Allowable
Axial Tension	19.49			19.49
Axial Compression	Function of Slenderness Ratio	17.10	13.07	Function of Slenderness Ratio
		Weighted average = 15.37		
Tension, Major Axis Bending	19.49			19.49
Compression, Major Axis Bending	Function of Slenderness Ratio	20.23	28.00	Function of Slenderness Ratio
Tension, Minor Axis Bending	27.58			27.58
Compression, Minor Axis Bending		28.00		28.00
Shear			11.64	11.64
Bearing (bolts)	34.00			34.00
Bearing (pins & flat surfaces)	23.00			23.00

Last Revision Date: June 27, 1996

Revision Number: Beta

Section: Structural

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Conservatek Industires, Inc.

Reference Manual

498 Loop 336 East

Conroe, Texas 77305

(409) 539-1747

485 Strut Allowable Stresses (ksi)

485 Strut Allowable Stresses (ksi)				
Type of Stress	Gross Section	Flange Failure	Web Failure	Governing Allowable
Axial Tension	19.49			19.49
Axial Compression	Function of Slenderness Ratio	15.79	14.82	Function of Slenderness Ratio
		Weighted average = 15.39		
Tension, Major Axis Bending	19.49			19.49
Compression, Major Axis Bending	Function of Slenderness Ratio	18.69	28.00	Function of Slenderness Ratio
Tension, Minor Axis Bending	27.58			27.58
Compression, Minor Axis Bending		27.45		27.45
Shear			12.00	12.00
Bearing (bolts)	34.00			34.00
Bearing (pins & flat surfaces)	23.00			23.00

Last Revision Date: June 27, 1996

Revision Number: Beta

Section: Structural

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Conservatek Industries, Inc.

Reference Manual

498 Loop 336 East

Conroe, Texas 77305

(409) 539-1747

487 Strut Allowable Stresses (ksi)

Type of Stress	Gross Section	Flange Failure	Web Failure	Governing Allowable
Axial Tension	19.49			19.49
Axial Compression	Function of Slenderness Ratio	15.83	15.80	Function of Slenderness Ratio
		Weighted average = 15.82		
Tension, Major Axis Bending	19.49			19.49
Compression, Major Axis Bending	Function of Slenderness Ratio	18.74	28.00	Function of Slenderness Ratio
Tension, Minor Axis Bending	27.58			27.58
Compression, Minor Axis Bending		27.53		27.53
Shear			12.00	12.00
Bearing (bolts)	34.00			34.00
Bearing (pins & flat surfaces)	23.00			23.00

Last Revision Date: June 27, 1996

Revision Number: Beta

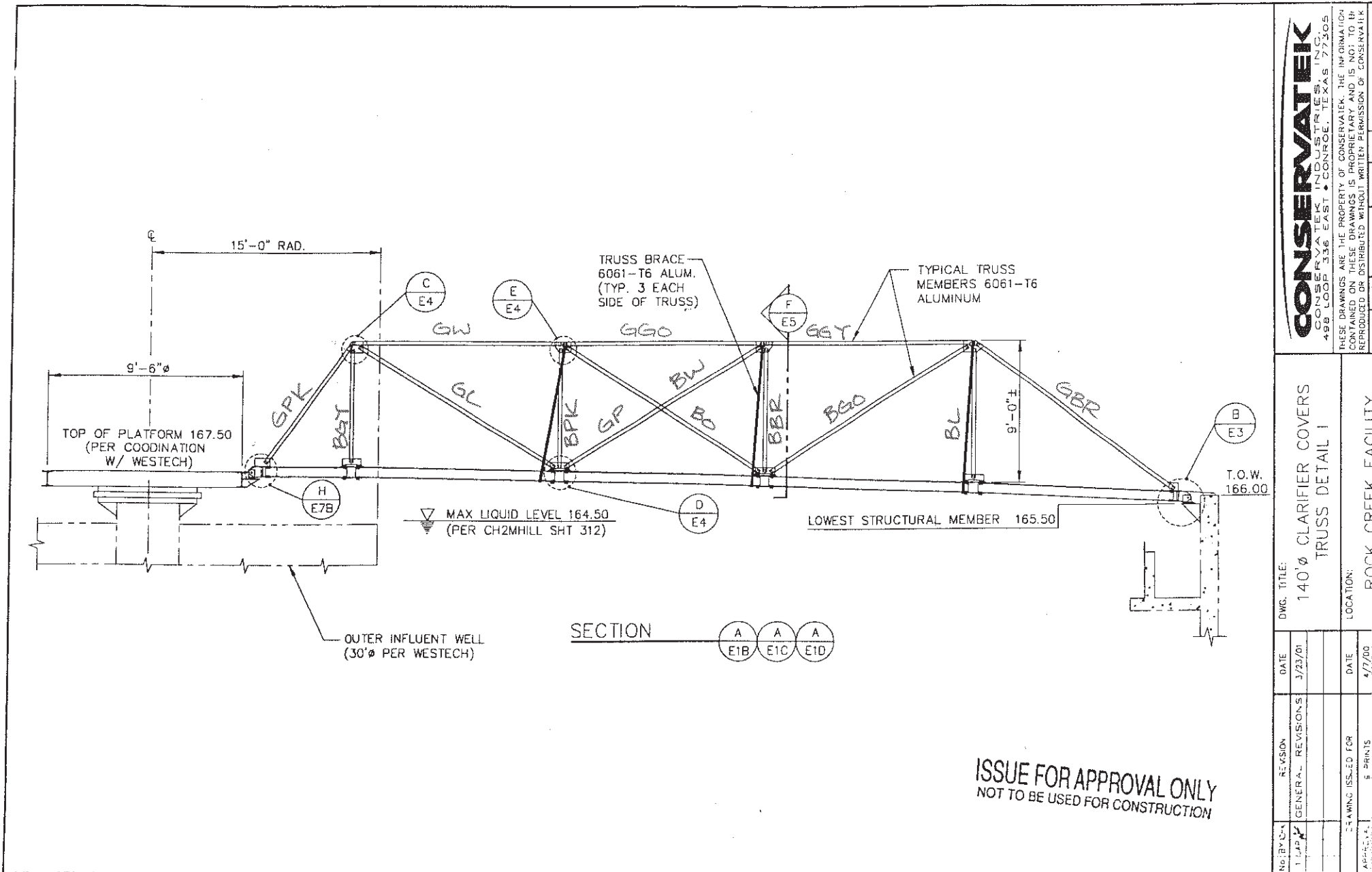
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Truss Member Properties (I-Beams)

	Strut Group Numbers		
Property/Item	454	457	458
Gross Area (A_{gross}) (in^2)	3.16	6.20	8.52
Net Area w/ ½" bolts (A_{net}) (in^2)	2.64	5.30	7.51
Weight per Foot (lbs)	3.79	7.44	10.23
Centroid (from top) (c) (in^2)	4.00	4.00	4.00
Moment of Inertia, Major (gross) (I_{x_major}) (in^4)	34.03	71.37	99.22
Moment of Inertia, Major (net ½" bolts) ($I_{x_major_net}$) (in^4)	27.92	60.88	87.56
Section Modulus, Major (gross) (S_{x_major}) (in^3)	8.51	17.84	24.81
Section Modulus, Major (net ½" bolts) ($S_{x_major_net}$) (in^4)	6.98	15.22	21.89
Radius of Gyration, Major (r_{x_major}) (in)	3.28	3.39	3.41
Moment of Inertia, Minor (gross) (I_{y_minor}) (in^4)	2.46	11.10	25.74
Moment of Inertia, Minor (net ½" bolts) ($I_{y_minor_net}$) (in^4)	2.26	10.79	25.24
Section Modulus, Minor (gross) (S_{y_minor}) (in^3)	1.23	4.04	7.36
Section Modulus, Minor (net ½" bolts) ($S_{y_minor_net}$) (in^4)	1.13	3.89	7.21
Radius of Gyration, Minor (r_{y_minor}) (in)	0.88	1.34	1.74
Allowable Stress (below)			
Axial, Tension (ksi)	19.49	19.49	19.49
Bending, Tension, Major Axis (ksi)	19.49	19.49	19.49
Bending, Tension, Minor Axis (ksi)	27.58	27.58	27.58
Axial, Compression Web (ksi)	11.93	16.40	17.93
Axial, Compression Flange (ksi)	17.13	18.41	17.78
Axial, Compression Weighted Average (F_{ao}) (ksi)	14.96	17.83	17.82
Bending, Compression Web, Major Axis (ksi)	28.00	28.00	28.00
Bending, Compression Flange, Major Axis (ksi)	20.27	21.00	21.00
Bending, Compression Flange, Minor Axis (ksi)	28.00	28.00	28.00
Shear (ksi)	11.33	12.00	12.00



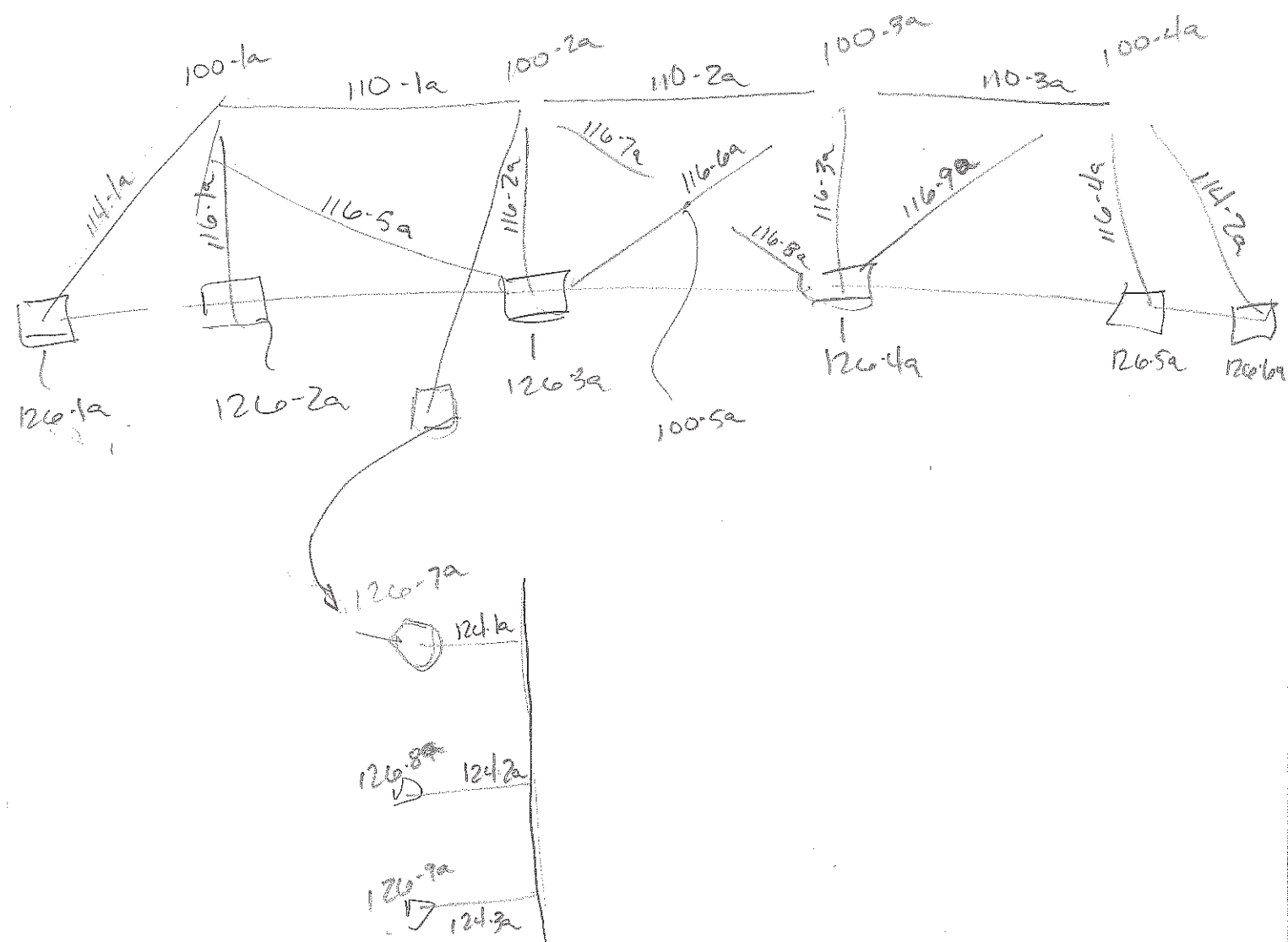
TRUSS MEMBER PC.MKS.

me 2/6/02

	<u>PC</u>	<u>LENGTH</u>	<u>BP</u>	<u>M.II BACK</u>
467	114-1a GBR	190.313	12	8.0"
	114-2a GPK	134.5012	12	6.5"
	110-1a GGY	164.5202	12	9.0"
	110-2a GGO	164.5509	12	9.25"
	110-3a GW	165.1705	12	8.750

461	116-1a BL	94.0361	2	7.25
	116-2a BBR	94.7120	2	5.00
	116-3a BPK	94.5767	2	5.00
	116-4a BGY	93.4356	2	6.50
	116-5a BGO	184.0671	2	5.00
	SPECIAL 116-6a BO	184.6276	2	4.5
	116-7a BW	87.2382	2	3.5
	116-8a GP	92.6451	2	4.5
	116-9a GL	183.9588	2	4.75

OUTSIDE



NEED TO FAS
Hubs ~~AF~~/~~AG~~/~~AL~~/~~AS~~
w/ DORMER STRUT
OFFSET ALSO CL
HUBX AW/AX/AY/AZ/XA/XB

	<u>PC</u>	<u>LENGTH</u>	<u>BP</u>	<u>M. 11 BACK</u>
461	114-1a	190.313	12	8.0"
	114-2a	134.5012	12	6.5"
	110-1a	164.5202	12	9.0"
	110-2a	164.6509	12	9.25"
	110-3a	165.1705	12	8.750

461	116-1a	94.0361	2	7.25
	116-2a	94.7120	2	5.00
	116-3a	94.5767	2	5.00
	116-4a	93.4356	2	6.50
	116-5a	184.0671	2	5.00
	SPECIAL ★ 116-6a	184.6276	2	4.5
	116-7a	87.2382	2	3.5
	116-8a	92.6451	2	4.5
	116-9a	183.9588	2	4.75

PC 1



PC 1



PC 1



PC 1



PC 2



PC 2



PC 2



PC 3



PC 3



PC 3



PC 3

