

CITY OF GRESHAM
PROJECT NO. CIPWW00047
WWTP BELT PRESS REPLACEMENT

CITY OF
GRESHAM

DEPARTMENT OF ENVIRONMENTAL SERVICES
1333 N.W. EASTMAN PARKWAY
GRESHAM, OREGON 97030-3813
503-618-2525

100% DESIGN
ISSUED FOR CONSTRUCTION

STANDARD DETAILS

**DESIGN DETAILS
SEALS PAGE**

DETAILS

0300 SERIES
0500 SERIES
0600 SERIES



Digitally Signed on

March 5, 2026

Kristina Milaj

**DESIGN DETAILS
SEALS PAGE**

DETAILS

1300 SERIES



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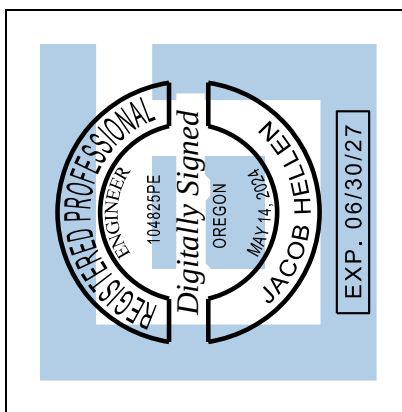
March 5, 2026

Scott Mizée

**DESIGN DETAILS
SEALS PAGE**

DETAILS

2600 SERIES



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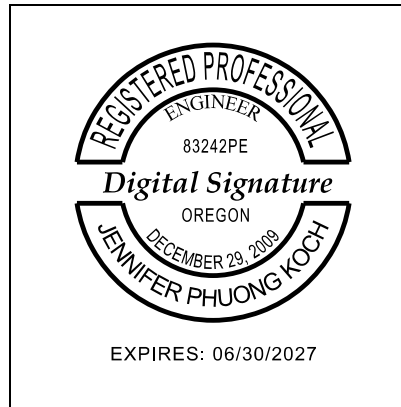
March 5, 2026

Jacob Hellen

**DESIGN DETAILS
SEALS PAGE**

DETAILS

3200 SERIES
LS SERIES



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Jennifer Koch

**DESIGN DETAILS
SEALS PAGE**

DETAILS

4000 SERIES
4020 SERIES



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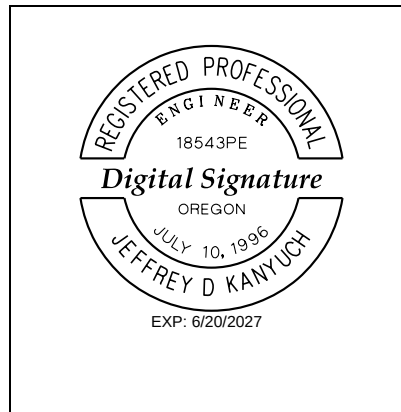
March 5, 2026

David Furrer

**DESIGN DETAILS
SEALS PAGE**

DETAILS

4090 SERIES



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March 5, 2026

Jeffrey Kanyuch

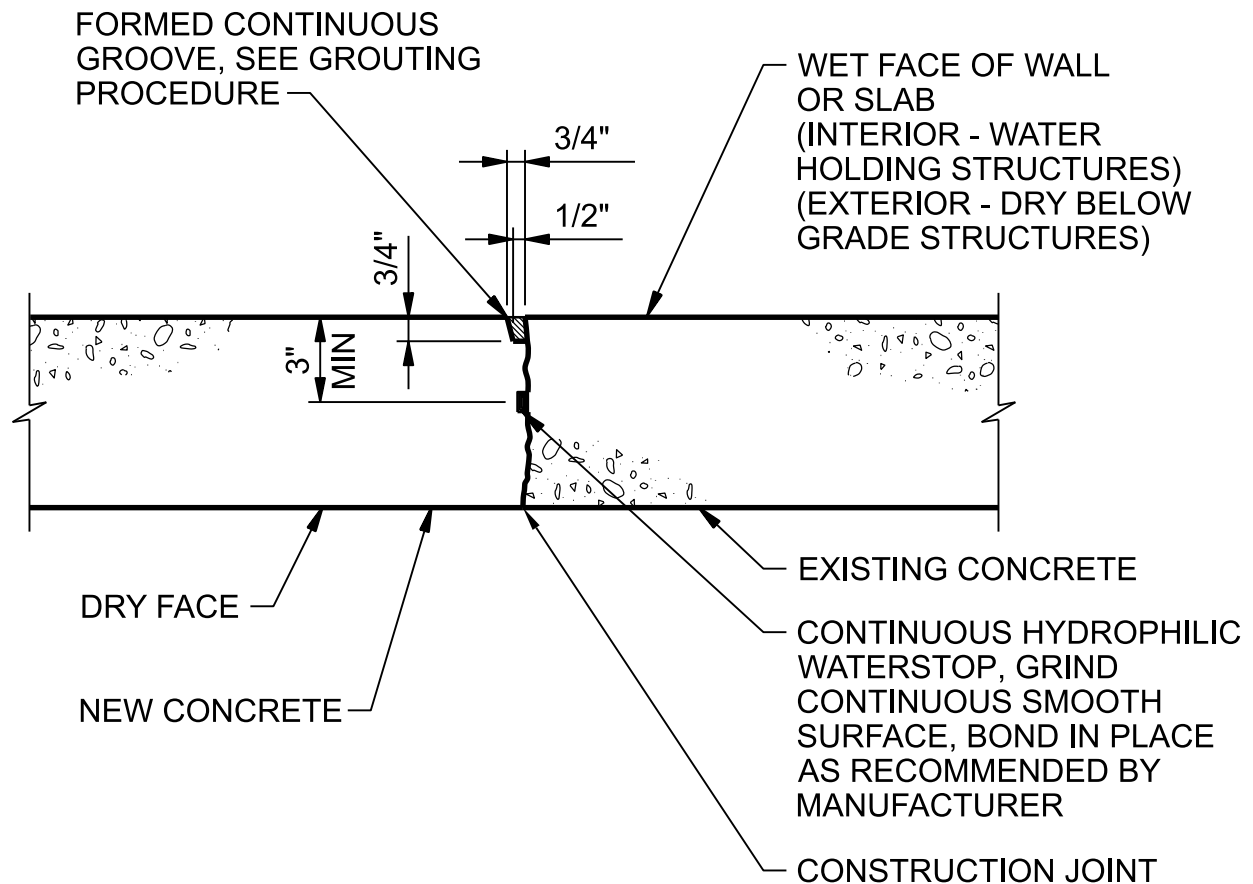
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0330-050	CONCRETE STAIR - ON GRADE
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0551-001	STAIRS DETAILS - ALUMINUM (2 OF 5)
0551-001	STAIRS DETAILS - ALUMINUM (3 OF 5)
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4091-384	WALL MOUNTED PANEL AND INSTRUMENT INSTALLATION
LS 100A	TREE PROTECTION (1 OF 2)
LS 100B	TREE PROTECTION (2 OF 2)



NOTE:

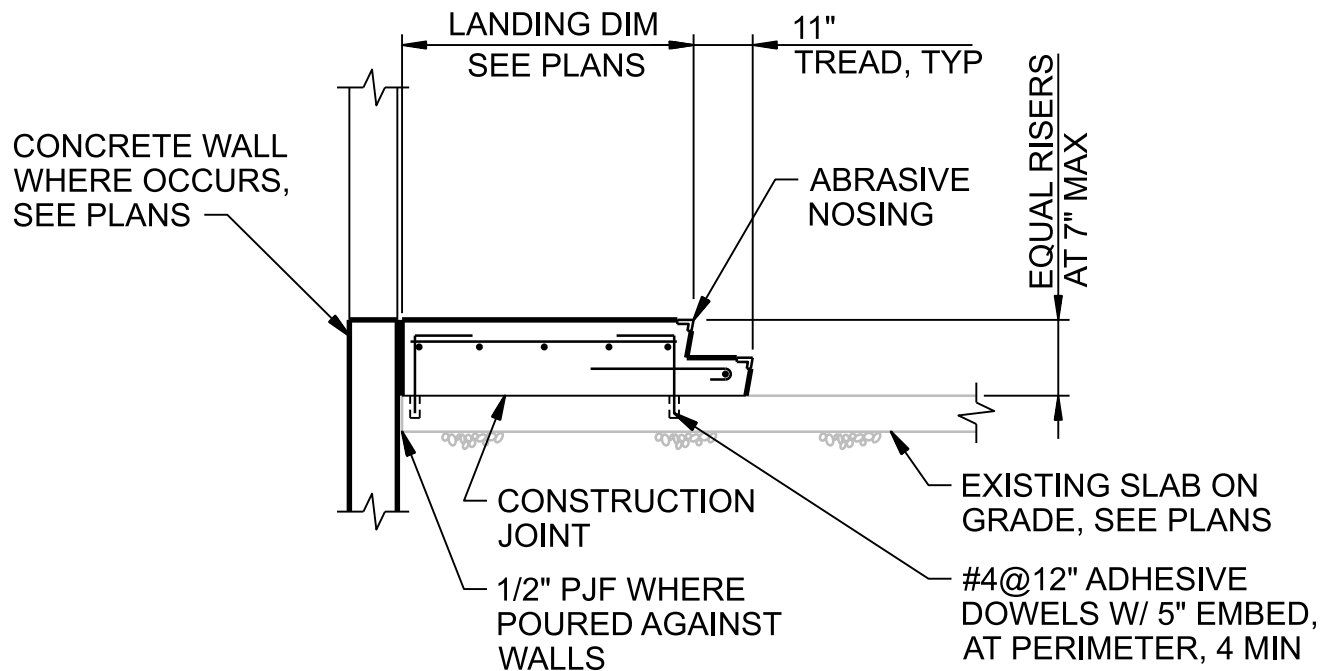
FOR USE IN NON-MOVING CONSTRUCTION JOINTS AND ONLY WHERE SPECIFICALLY INDICATED ON PLANS.

GROUTING PROCEDURE:

1. WAIT UNTIL NEW CONCRETE MINIMUM 28 DAYS OLD PRIOR TO GROUTING GROOVE.
2. ROUGHEN AND CLEAN SURFACES OF GROOVE WITH POWER WIRE BRUSH OR SANDBLASTING.
3. SATURATE AREA FOR 24 HOURS PRIOR TO GROUTING.
4. DRY PACK WITH TYPE II NON-SHRINK GROUT.
5. USE STEEL HAMMER AND STEEL TOOL TO DENSELY PACK GROUT INTO GROOVE.
6. WATER CURE GROUT FOR 4 DAYS MINIMUM.

HYDROPHILIC/GROOVE WATERSTOP

NTS



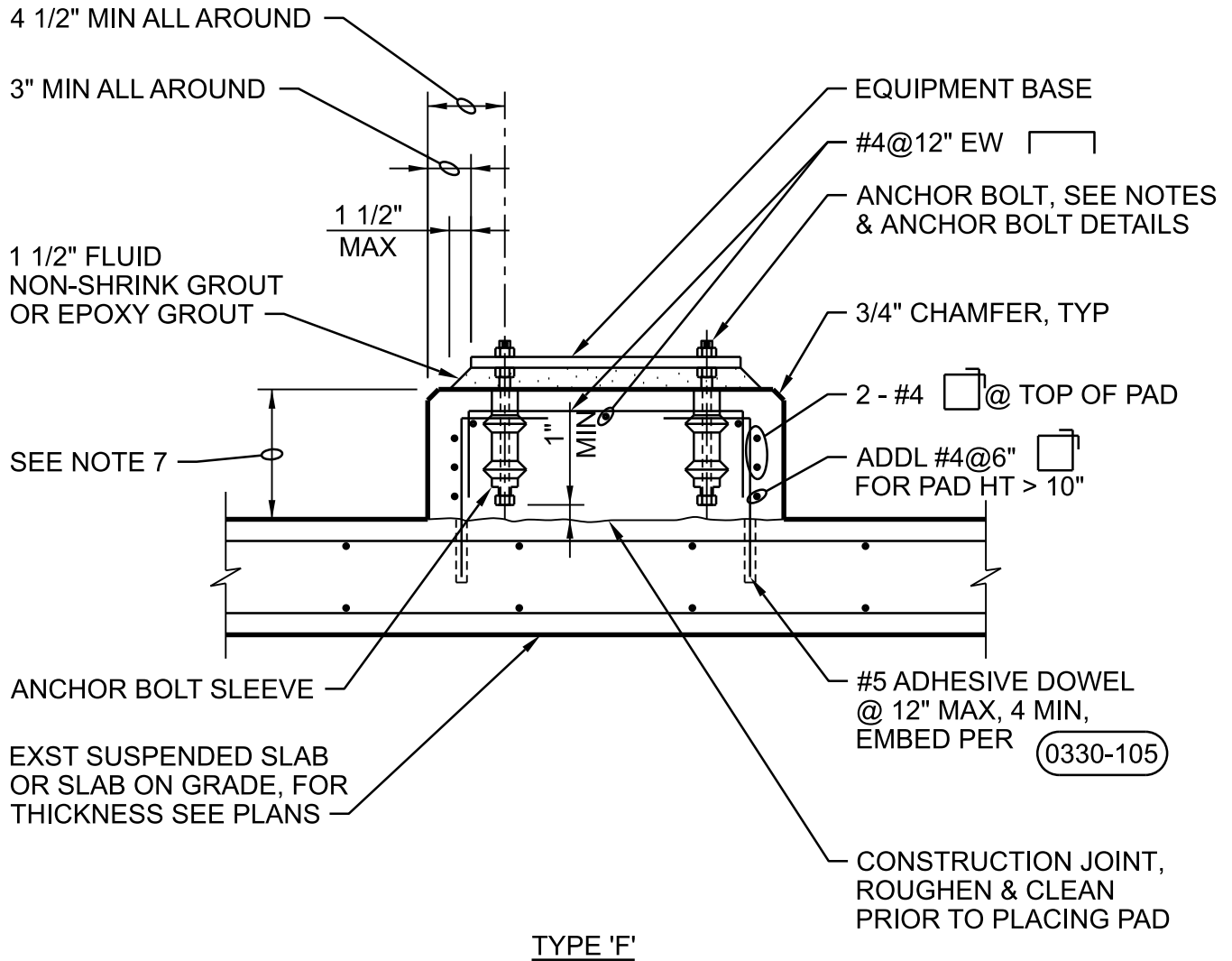
TYPE 'A' - INTERIOR

NOTE:

REINFORCE WITH #5 @12",
UNLESS OTHERWISE NOTED.

CONCRETE STAIR - ON GRADE

NTS



GENERAL NOTE:

FOR GENERAL NOTES SEE DETAIL 2 OF 2.

CONCRETE EQUIPMENT PAD - TYPE 'F'

NTS

DETAIL 1 OF 2

CITY OF GRESHAM
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CIPWW00047

0330-056

Jacobs

NOTES:

1. PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE PLANS OR AS INDICATED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.
2. THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER AND AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE OR OTHER ACCEPTABLE MEANS, MATCHING THE BASE PLATE, WHILE PAD IS BEING PLACED.
3. ANCHOR BOLT SLEEVES SHALL BE USED TO PROVIDE MINIMUM ANCHOR BOLT MOVEMENT OF 1/2" IN ALL HORIZONTAL DIRECTIONS. THE MINIMUM SLEEVE LENGTH SHALL BE 8 TIMES THE BOLT DIAMETER.
4. ANCHOR BOLT SLEEVES SHALL HAVE A MINIMUM INTERNAL DIAMETER 1" GREATER THAN BOLT DIAMETER AND A MAXIMUM INTERNAL DIAMETER 3" GREATER THAN ANCHOR BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT AFTER BOLTS ARE ALIGNED. SEE (0330-057)
5. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS INDICATED OTHERWISE.
6. WEDGES, SHIMS, OR LEVELING NUTS SHALL BE USED TO SUPPORT THE BASE WHILE THE GROUT IS PLACED. WEDGES OR SHIMS SHALL BE REMOVED AFTER GROUT IS SET AND PACK VOID WITH GROUT.
7. HEIGHT OF PADS SHALL BE MINIMUM REQUIRED FOR ANCHOR BOLT CLEARANCE TO KEEP ANCHOR BOLT ABOVE SUPPORTING SLAB (SEE TABLE BELOW). WHERE EQUIPMENT OR PIPING ELEVATION REQUIRE A PAD HEIGHT LESS THAN THE MINIMUM SHOWN, USE TYPE "B" EQUIPMENT PAD WITH BLOCKOUT.
8. TYPE "D" PAD SHALL BE USED ONLY WHERE SPECIFICALLY INDICATED. PLACE THE SURROUNDING FLOOR SLAB AFTER THE EQUIPMENT PAD.
9. AT CONTRACTOR'S OPTION, CONCRETE ANCHORS MAY BE USED IN LIEU OF CAST-IN-PLACE ANCHOR BOLTS FOR EQUIPMENT ANCHOR BOLTS LESS THAN 3/4" DIAMETER WHEN APPROVED BY THE EQUIPMENT MANUFACTURER AND APPROVED BY THE ENGINEER. ANCHORS SHALL BE INSTALLED WITH 4" MINIMUM EDGE DISTANCE IN EACH DIRECTION.

AB DIA (IN.)	1/2	5/8	3/4	7/8	1	1 1/4	1 3/8	1 1/2	1 3/4	2
MIN PAD HT (IN.)	7	8 1/2	10	11	12 1/2	15	16 1/2	18	21	24

CONCRETE EQUIPMENT PAD - NOTES

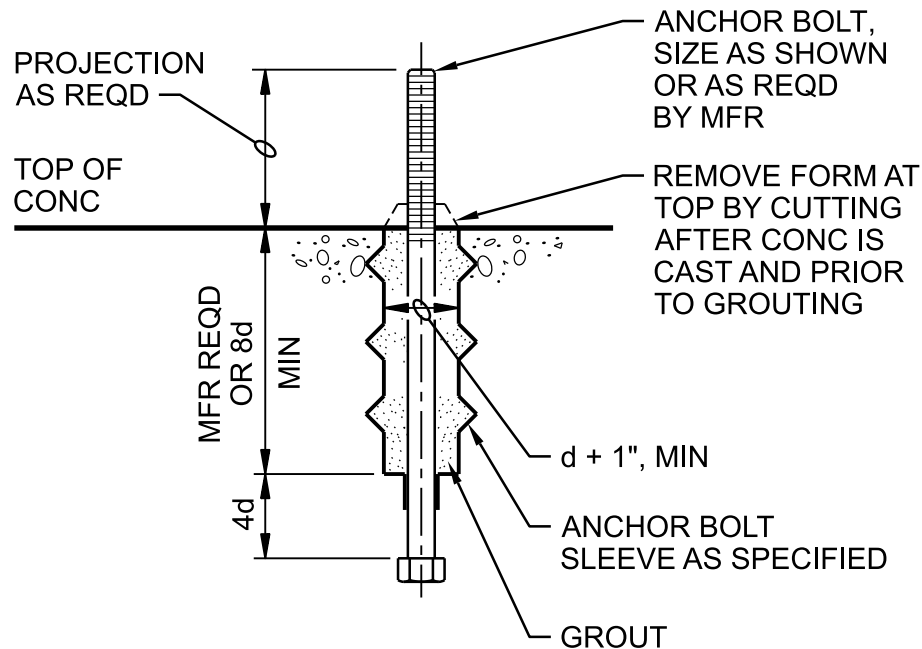
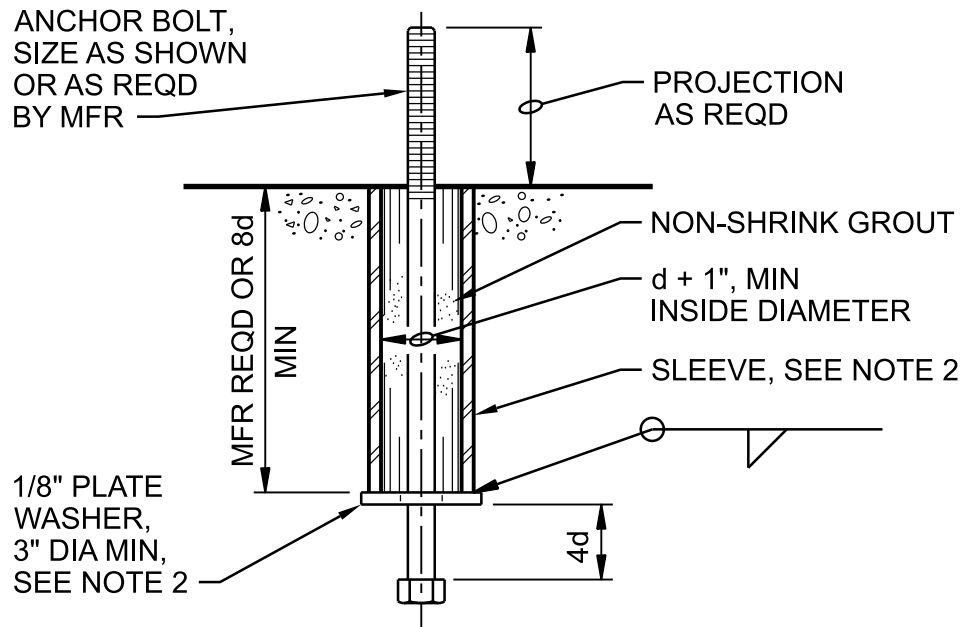
NTS

DETAIL 2 OF 2

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

(0330-056)

Jacobs



MACHINERY ANCHOR BOLT DETAIL

NOTES:

1. FOR CONCRETE EQUIPMENT PAD DETAILS AND NOTES NOT SHOWN SEE 0330-056
2. MATERIAL TO MATCH BOLT.

ANCHOR BOLT DETAILS

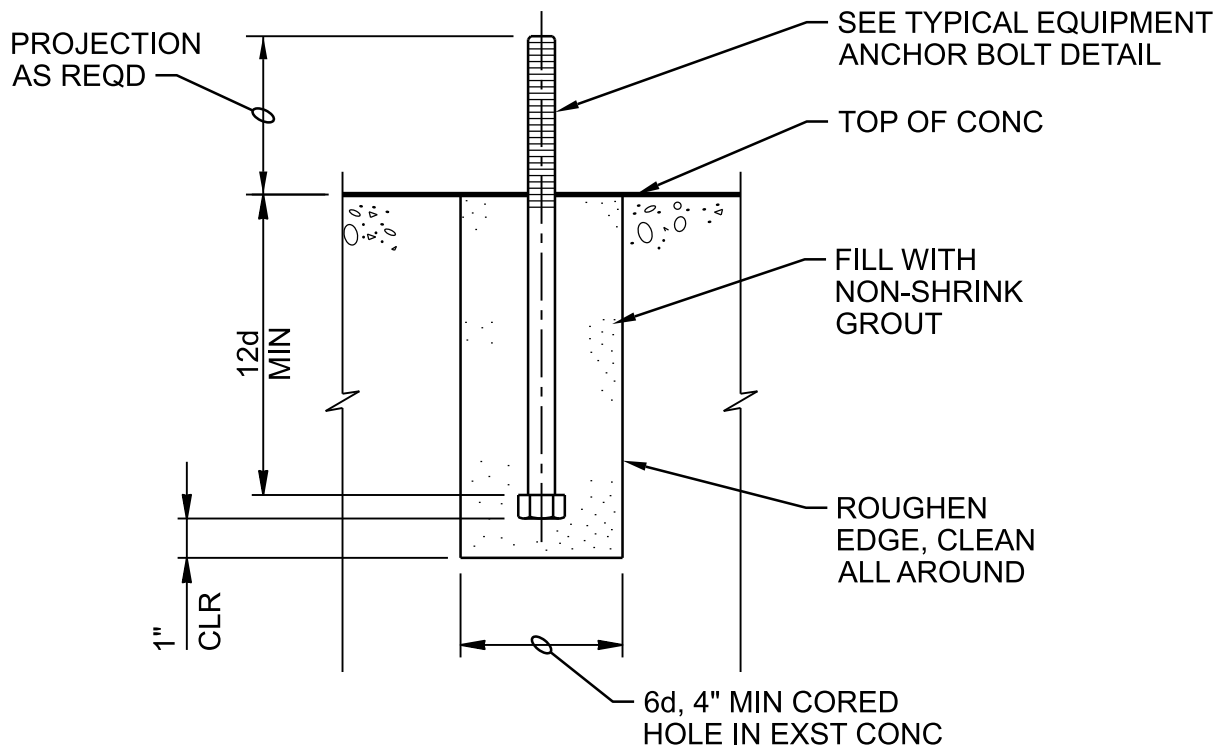
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DETAIL 1 OF 2

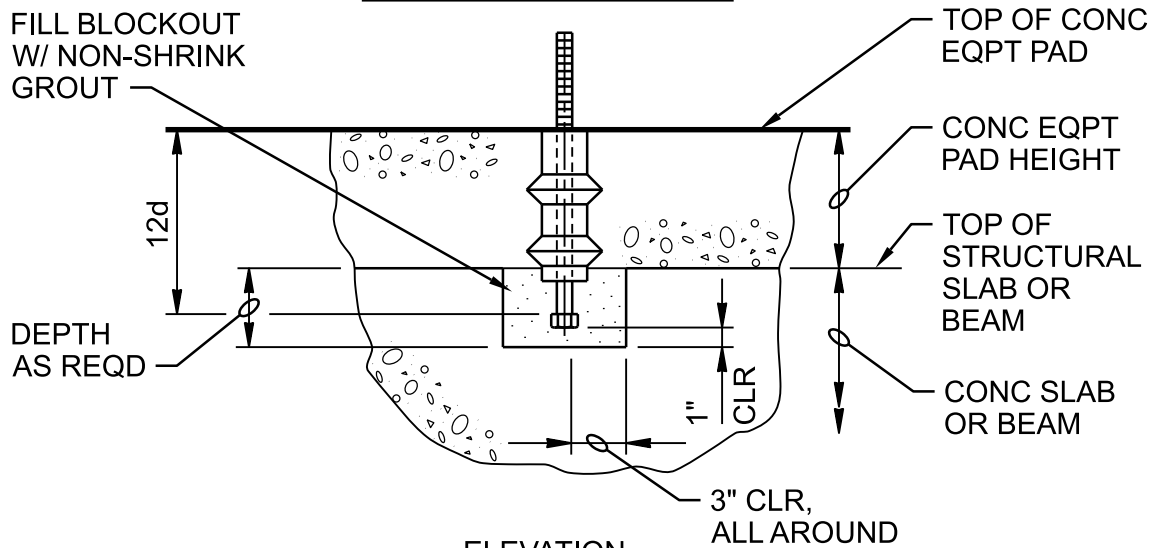
CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0330-057

Jacobs



ANCHOR BOLT RETROFIT



ELEVATION

ANCHOR BOLT BLOCKOUT

NOTES:

1. FOR CONCRETE EQUIPMENT PAD DETAILS AND NOTES NOT SHOWN SEE 0330-056
2. MATERIAL TO MATCH BOLT.

ANCHOR BOLT DETAILS

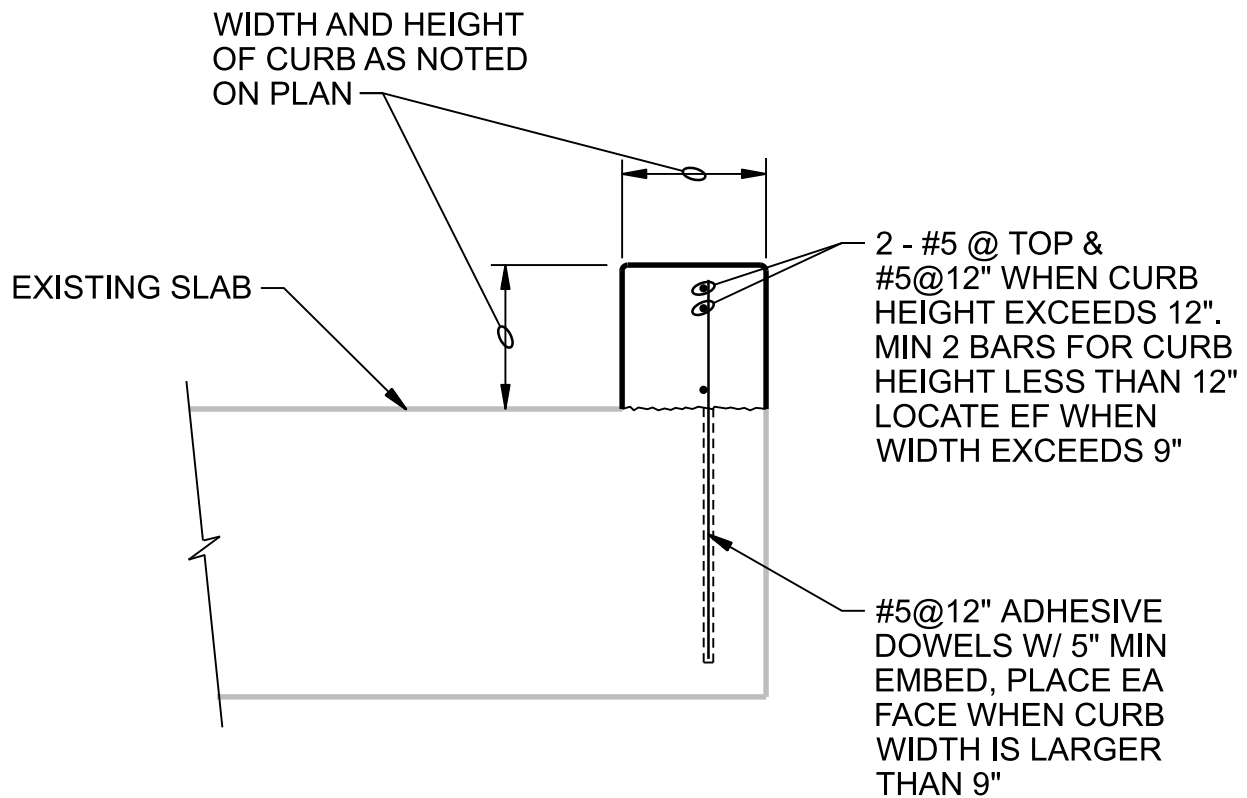
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DETAIL 2 OF 2

0330-057

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

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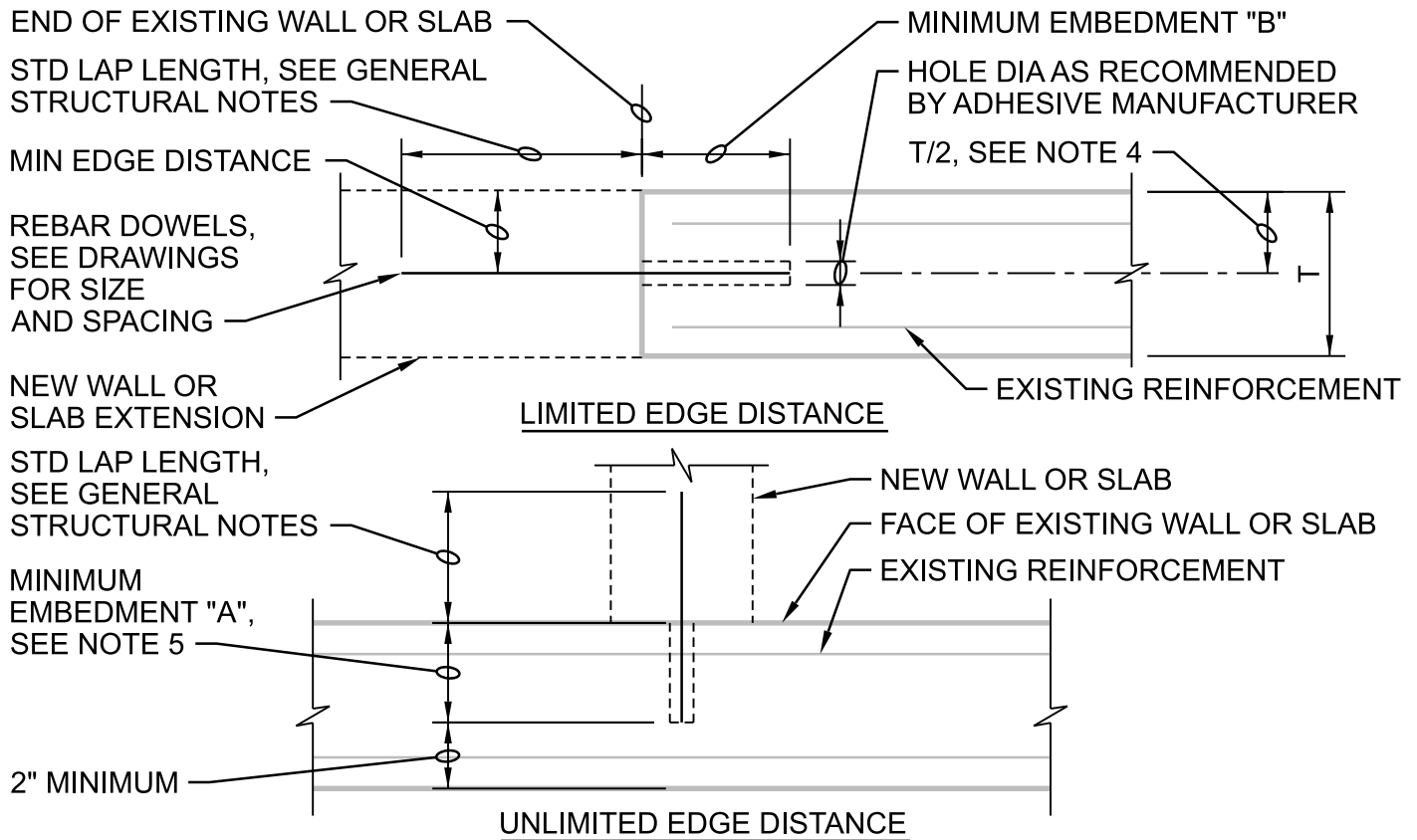
CONCRETE CURB

NTS

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0330-080

Jacobs



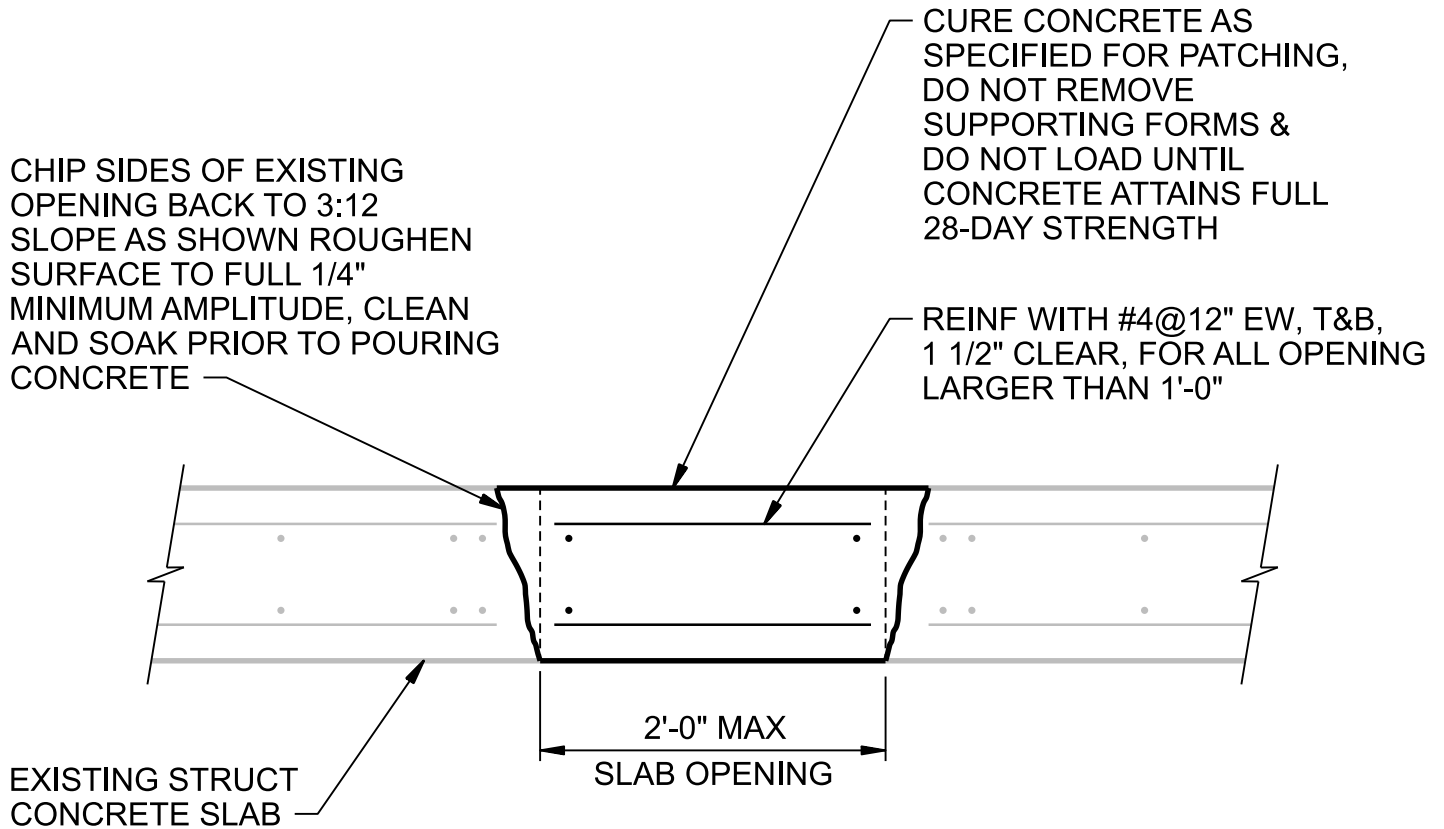
DOWEL SIZE	MINIMUM EDGE DISTANCE	MINIMUM EMBEDMENT "A"	MINIMUM EMBEDMENT "B"
#3	2 1/2"	5"	8"
#4	3 1/2"	7"	11"
#5	4"	8"	13"
#6	5"	10 1/2"	16"
#7	6"	12 1/2"	20"
#8	7"	14"	22"
#9	7 1/2"	15"	24"

NOTES:

1. CONFORM TO REQUIREMENTS OF SPECIFICATION SECTION 03 63 00, CONCRETE DOWELING.
2. FOLLOW ADHESIVE MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
3. USE MINIMUM EMBEDMENTS SHOWN, EXCEPT USE MANUFACTURER'S MINIMUM RECOMMENDED EMBEDMENT IF GREATER.
4. LOCATE DOWELS CENTERED IN WALL OR SLAB UNLESS OTHERWISE NOTED ON DRAWINGS. WHERE 2 ROWS OF DOWELS INDICATED, STAGGER SPACING & LOCATE ALTERNATING DOWELS AT MINIMUM EDGE DISTANCE FROM OPPOSITE FACES.
5. PROVIDE MINIMUM EMBEDMENT "A" SHOWN IN TABLE UNLESS SHORTER EMBEDMENT DEPTH IS CALLED OUT ON DRAWINGS.

ADHESIVE DOWEL

NTS



EXISTING SLAB OPENING REPAIR

NTS

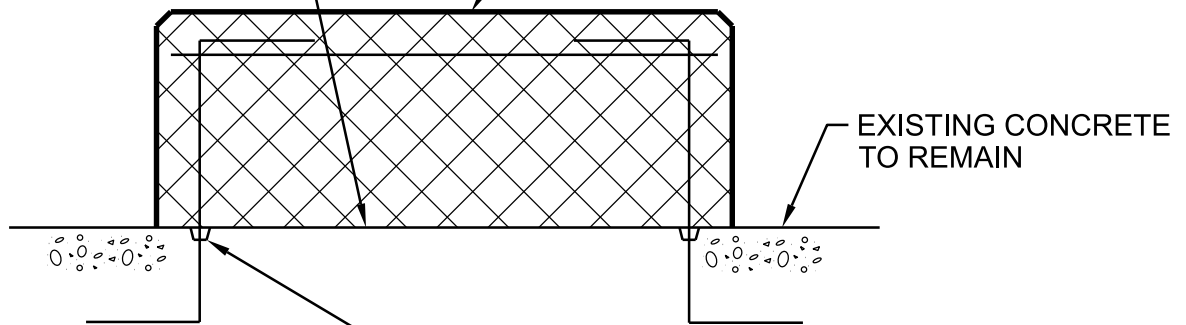
CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0330-142

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FINISH SLAB OR WALL UNDER REMOVED CONCRETE TO MATCH EXISTING ADJACENT CONCRETE FINISH, REPAIR ROUGH OR DAMAGED SURFACES AS NOTED

SAW-CUT AND CHIP TO REMOVE EXISTING CONCRETE TO BE REMOVED, USE CARE NOT TO DAMAGE EXISTING ADJACENT CONCRETE SURFACES TO REMAIN



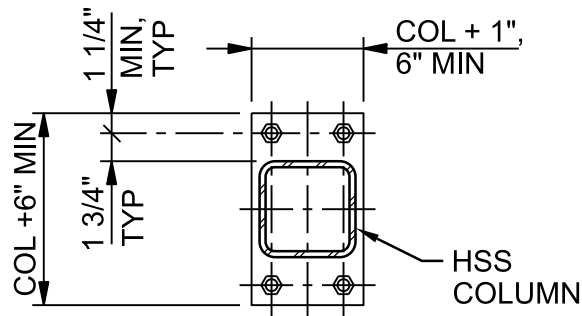
CORE DRILL 2" DIAMETER HOLE, 1 1/2" DEEP, CHIP, AND REMOVE EXISTING REINFORCEMENT AND EQUIPMENT ANCHORS TO 1 1/2" MIN BELOW TOP OF EXISTING CONCRETE TO REMAIN, CLEAN AND SOAK, AND PATCH WITH REPAIR MATERIAL

NOTES:

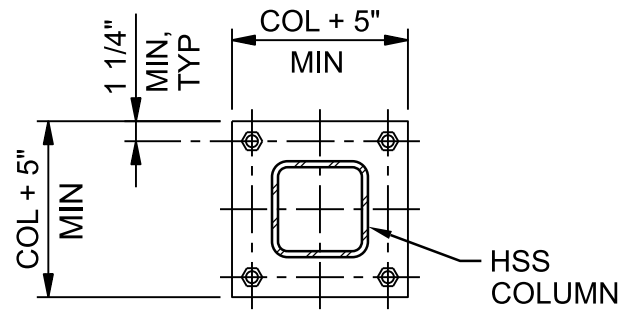
1. REMOVE CONCRETE OUT TO SOUND CONCRETE.
2. IF CHIPPING INTO THE SURFACE OF THE EXISTING SLAB OR WALL TO REMAIN IS REQUIRED, MAKE EDGES PERPENDICULAR TO THE SURFACE. DO NOT FEATHER EDGES.
3. FILL DEFECTIVE AREA WITH AN APPROVED PREPACKAGED REPAIR MATERIAL TO MATCH APPEARANCE OF ADJACENT CONCRETE SURFACES.
4. USE APPROVED BONDING AGENT ON SURFACES TO BE PATCHED PRIOR TO PLACING REPAIR MATERIAL.
5. DEMONSTRATE METHODS FOR REPAIR USING ACTUAL MATERIALS, METHODS, AND CURING PROCEDURES REQUIRED BY MATERIAL MANUFACTURERS. CONSULT WITH BONDING AGENT MANUFACTURER AND REPAIR MATERIAL MANUFACTURER ON TECHNIQUES.

CONCRETE DEMOLITION

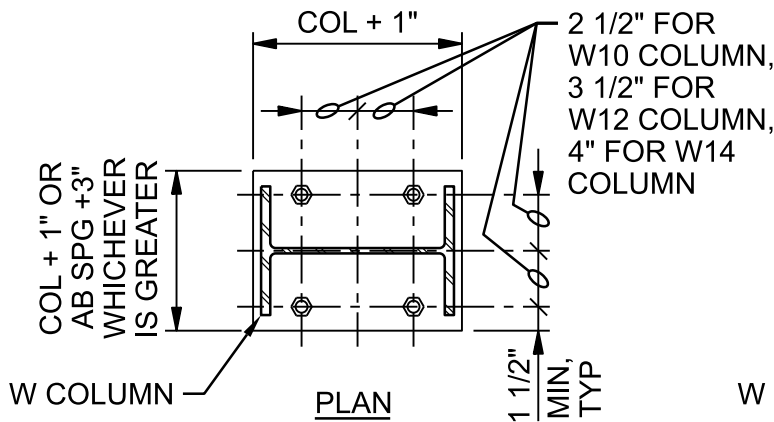
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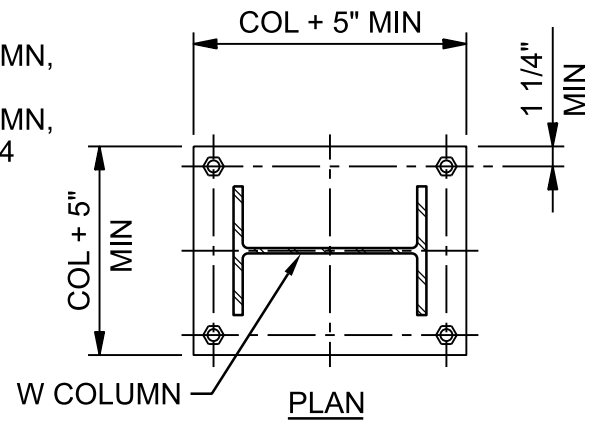
PLAN



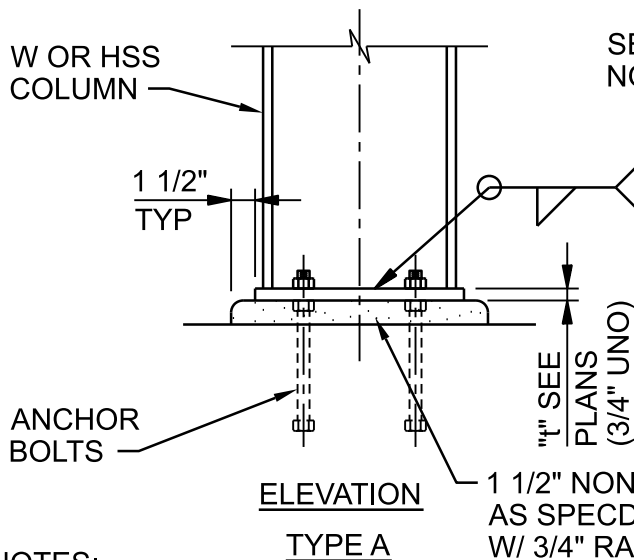
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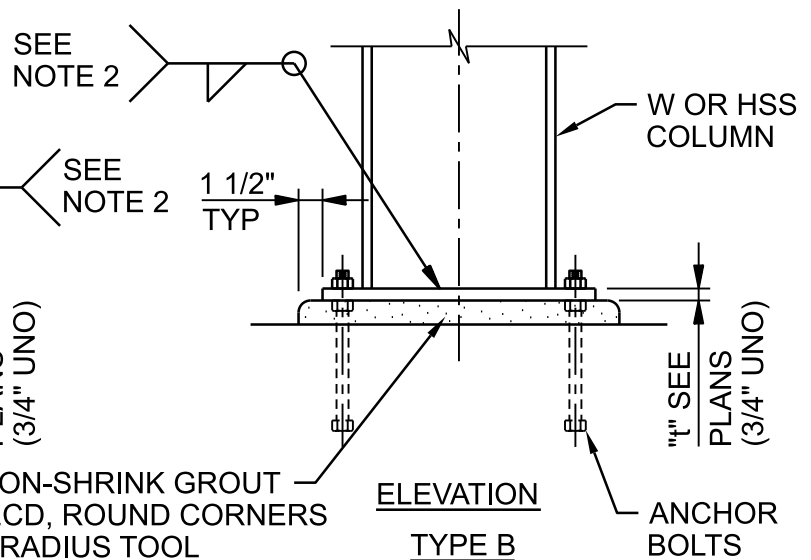
PLAN



PLAN



ELEVATION
TYPE A



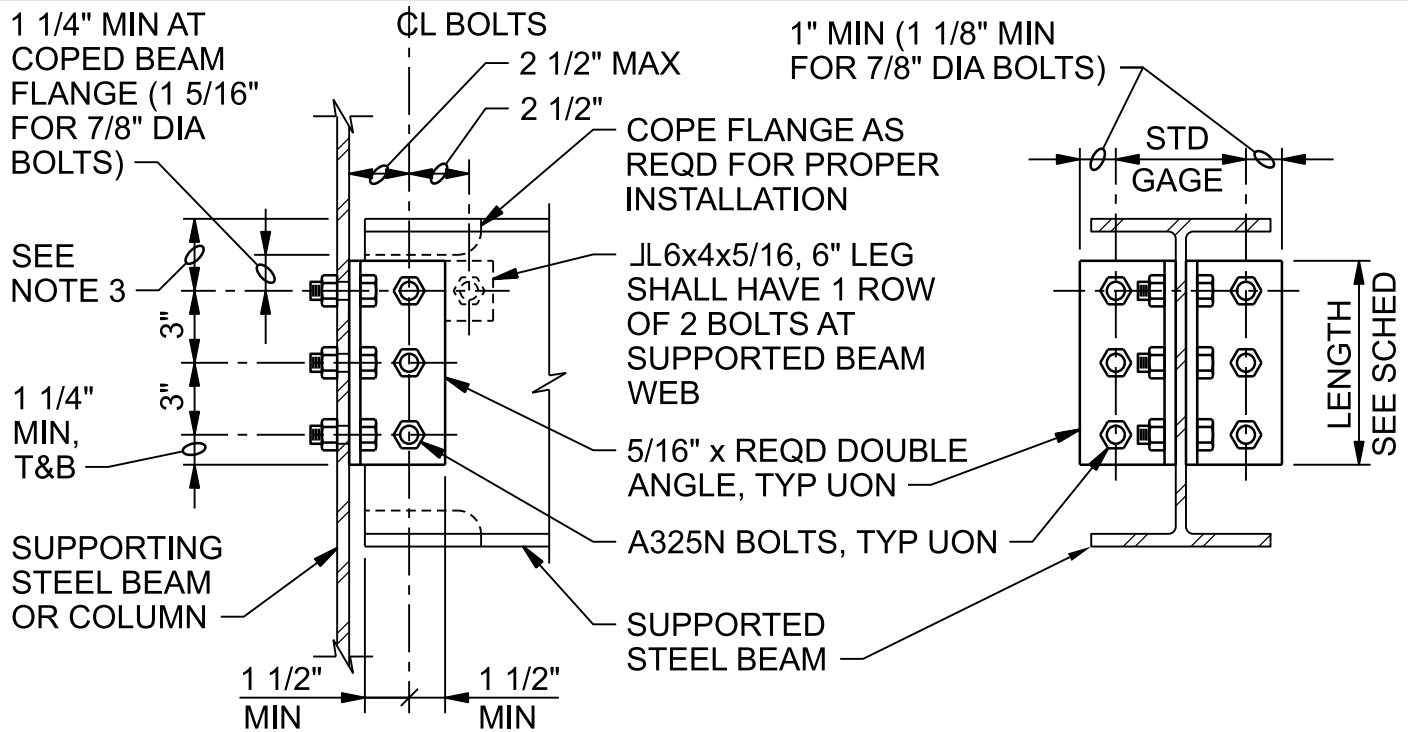
ELEVATION
TYPE B

NOTES:

1. UNLESS OTHERWISE NOTED, ANCHOR BOLTS SHALL BE 3/4" DIA x REQUIRED WITH LEVELING NUTS AND 1'-0" MINIMUM EMBED AND BASEPLATES SHALL BE CENTERED ON COLUMN.
2. WELD SIZE SHALL BE DETERMINED BY THE THICKEST MEMBER JOINED; MINIMUM WELD SIZE SHALL BE 3/16" FILLET FOR MATERIAL THICKNESSES UP TO AND INCLUDING 1/2", 1/4" FILLET FOR THICKNESSES OVER 1/2" TO 3/4", AND 5/16" FILLET FOR MATERIAL THICKNESSES OVER 3/4". ALL WELDS SHALL BE SINGLE-PASS WELDS.

COLUMN BASE - STEEL

NTS



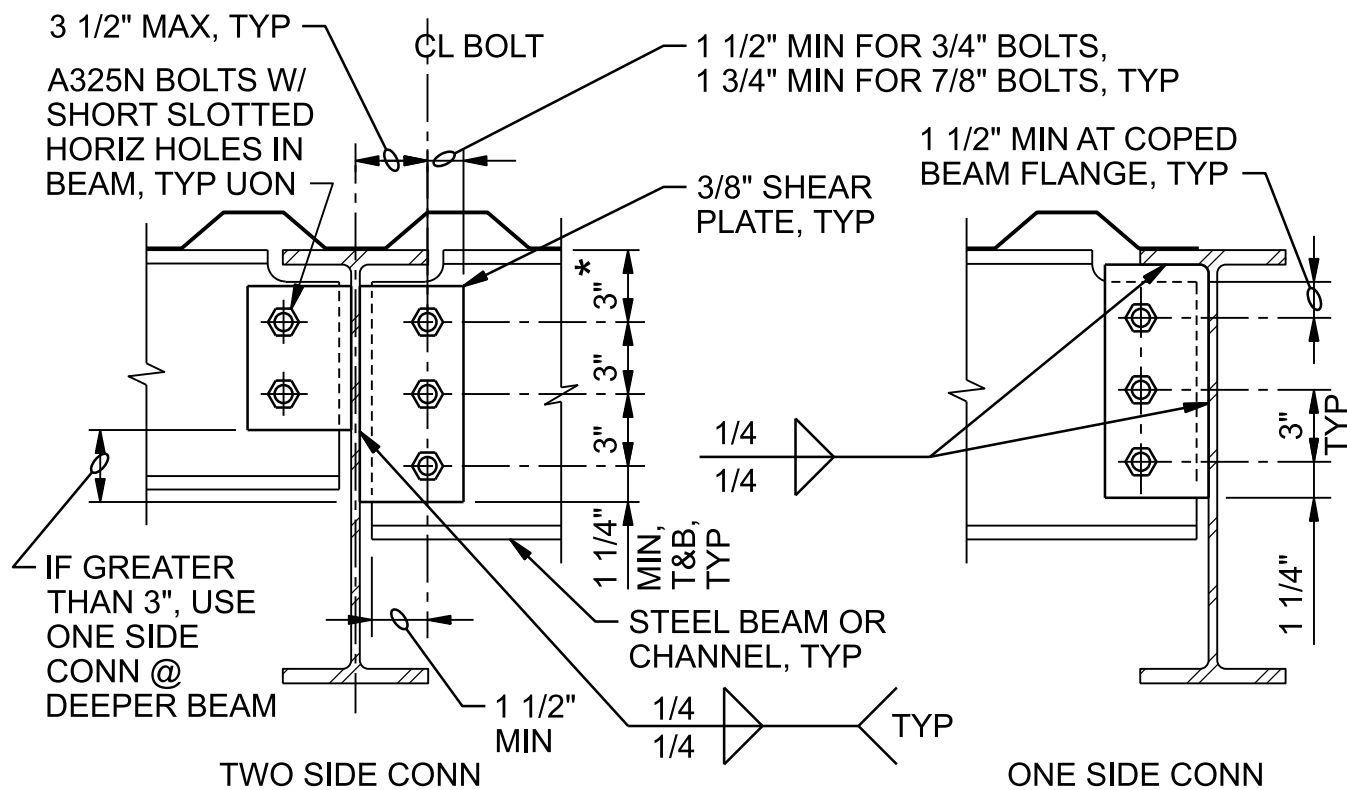
NOMINAL BEAM DEPTH, INCHES	ROWS OF BOLTS	BOLT DIA, INCHES	DOUBLE ANGLE, LENGTH, INCHES	COMMENTS
36	10	7/8"	2'-6"	ANGLE THK = 3/8"
33	9	7/8"	2'-3"	ANGLE THK = 3/8"
30	8	7/8"	2'-0"	ANGLE THK = 3/8"
27	7	3/4"	1'-8 1/2"	-
24	6	3/4"	1'-5 1/2"	-
21	5	3/4"	1'-2 1/2"	-
16-18	4	3/4"	0'-11 1/2"	-
12-15	3	3/4"	0'-8 1/2"	-
8-10	2	3/4"	0'-5 1/2"	-
6	1	3/4"	0'-3"	JL 6"x4"x5/16"
4	1	3/4"	0'-2 1/2"	JL 6"x4"x5/16"

NOTES:

1. ALL BEAM FRAMING CONNECTIONS SHALL CONFORM TO THIS DETAIL UNLESS SPECIFICALLY NOTED OTHERWISE OR APPROVED IN WRITING BY THE ENGINEER.
2. PROVIDE ADDITIONAL 1 1/2" LENGTH TO DOUBLE ANGLE FOR STAGGERED BOLT CONNECTIONS WHEN REQUIRED OR USED.
3. DIMENSION SHALL BE 3" UNLESS OTHERWISE REQUIRED FOR PROPER FABRICATION.

TYPICAL BEAM CONNECTION - STEEL

NTS



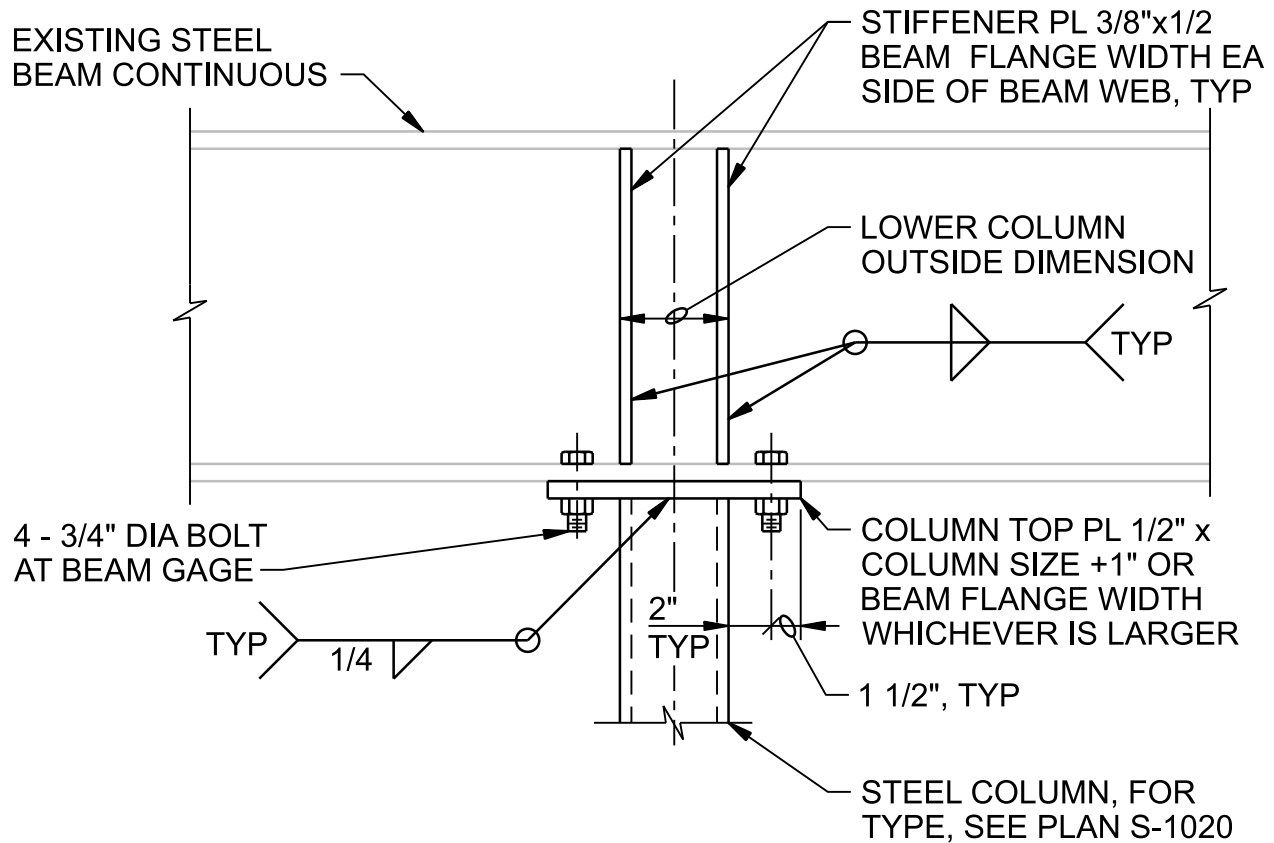
NOMINAL BEAM DEPTH, INCHES	ROWS OF BOLTS	BOLT DIA, INCHES	LENGTH OF SHEAR PLATE
27	8	7/8"	2'-0"
24	7	3/4"	1'-8 1/2"
21	6	3/4"	1'-5 1/2"
18	5	3/4"	1'-2 1/2"
16	4	3/4"	11 1/2"
12-15	3	3/4"	8 1/2"
8-10	2	3/4"	5 1/2"

NOTES:

1. THIS DETAIL APPLIES ONLY WHERE SPECIFICALLY SHOWN ON DRAWINGS.
2. CONNECTION DETAIL SHOWN APPLICABLE ONLY TO BEAMS BRACED BY METAL DECK (COMPOSITE OR NON-COMPOSITE); FOR OTHER BEAM FRAMING CONDITIONS, SEE DETAIL (0512-020)
3. (*) DIMENSION SHALL BE 3" UNLESS OTHERWISE REQUIRED FOR PROPER FABRICATION.

BEAM SINGLE PLATE SHEAR CONNECTION - STEEL

NTS



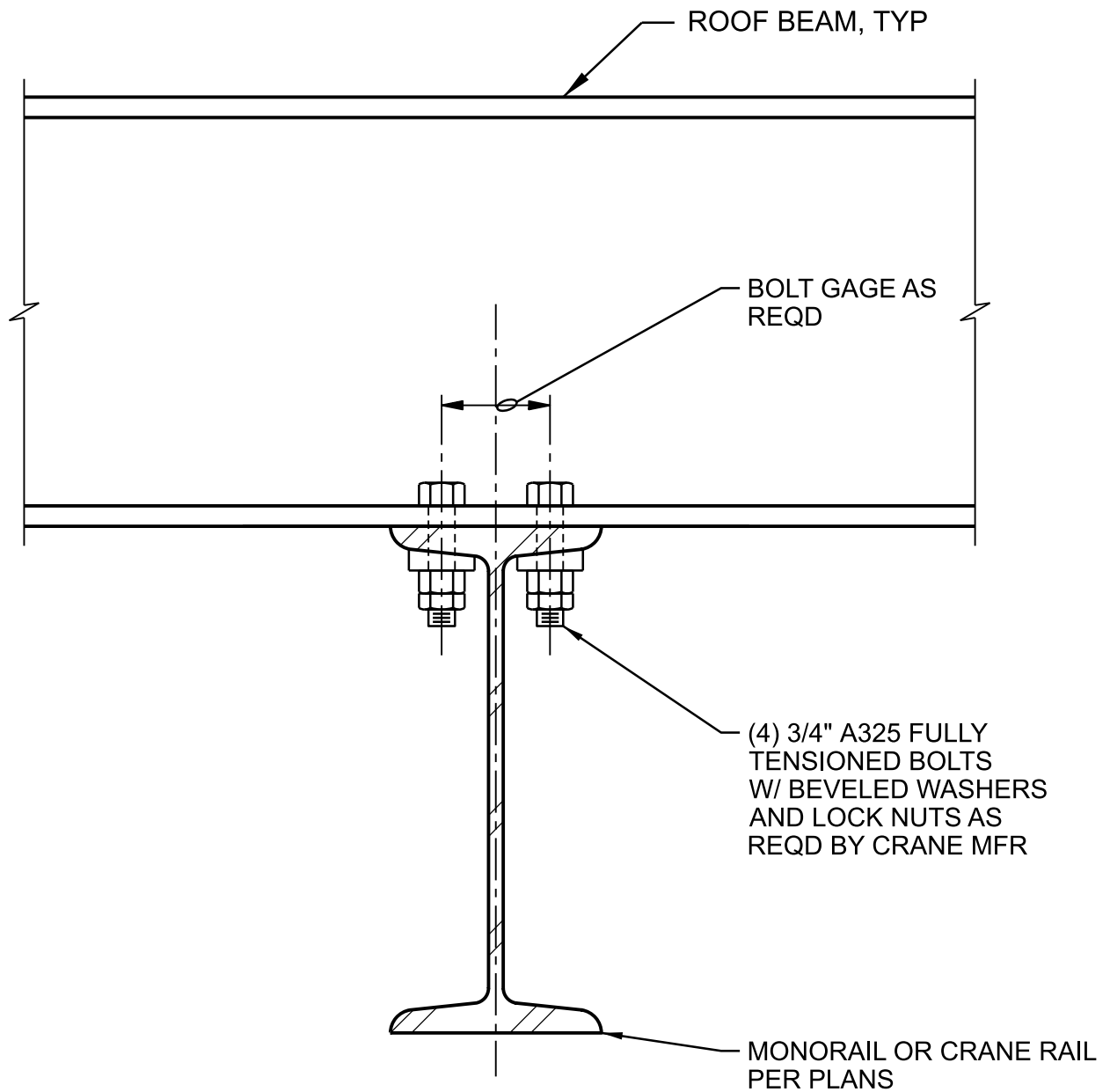
CONTINUOUS BEAM - COLUMN CONNECTION - STEEL

NTS

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0512-042

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MONORAIL CONNECTION

MONORAIL DETAILS

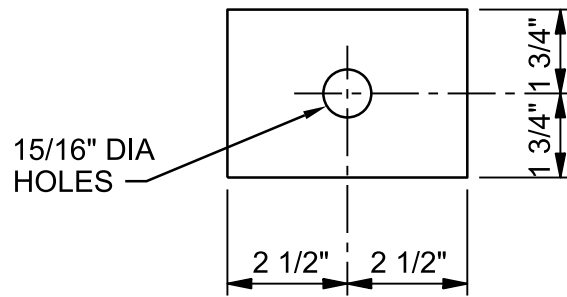
NTS

DETAIL 1 OF 2

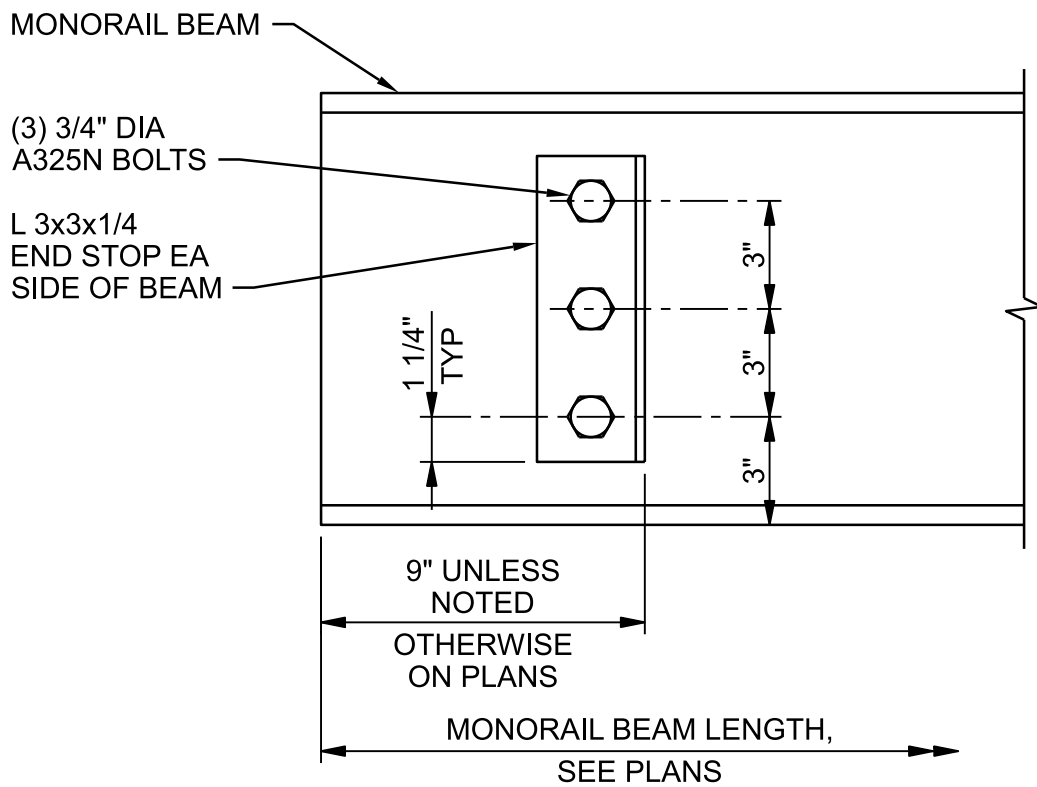
0512-101

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

Jacobs



SPACER DETAIL



MONORAIL STOP

MONORAIL DETAILS

NTS

DETAIL 2 OF 2

0512-101

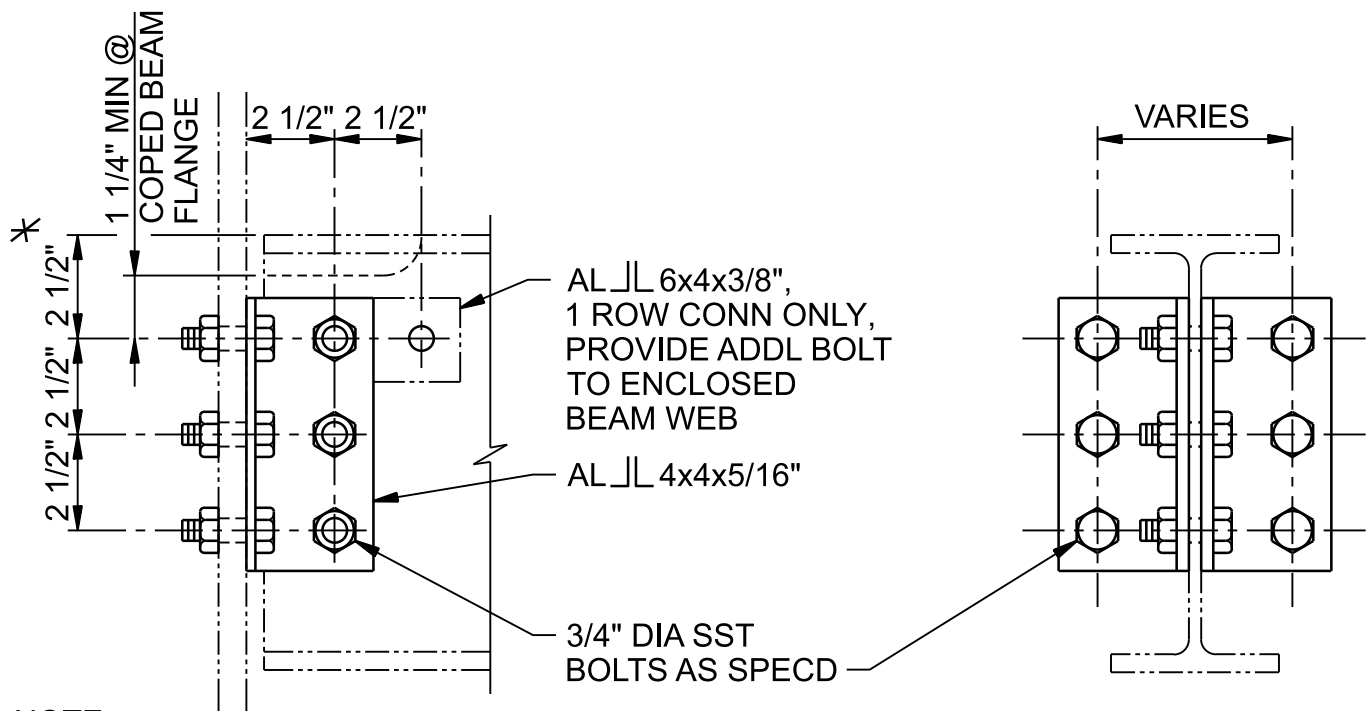
CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

Jacobs

ALUMINUM		
NOMINAL BEAM DEPTH, INCHES	ROWS OF BOLTS	LENGTH OF ANGLE
10	3	7 1/2"
7-8-9	2	5"
5-6	1	3"
4	1	2 3/4"

NOTES:

1. NUMBER OF ROWS IS EQUAL TO NUMBER OF BOLTS TO ENCLOSED WEB.
2. ALL FRAMING CONNECTIONS SHALL CONFORM TO SCHEDULE UNLESS DETAILED OTHERWISE ON FRAMING PLANS.



NOTE:

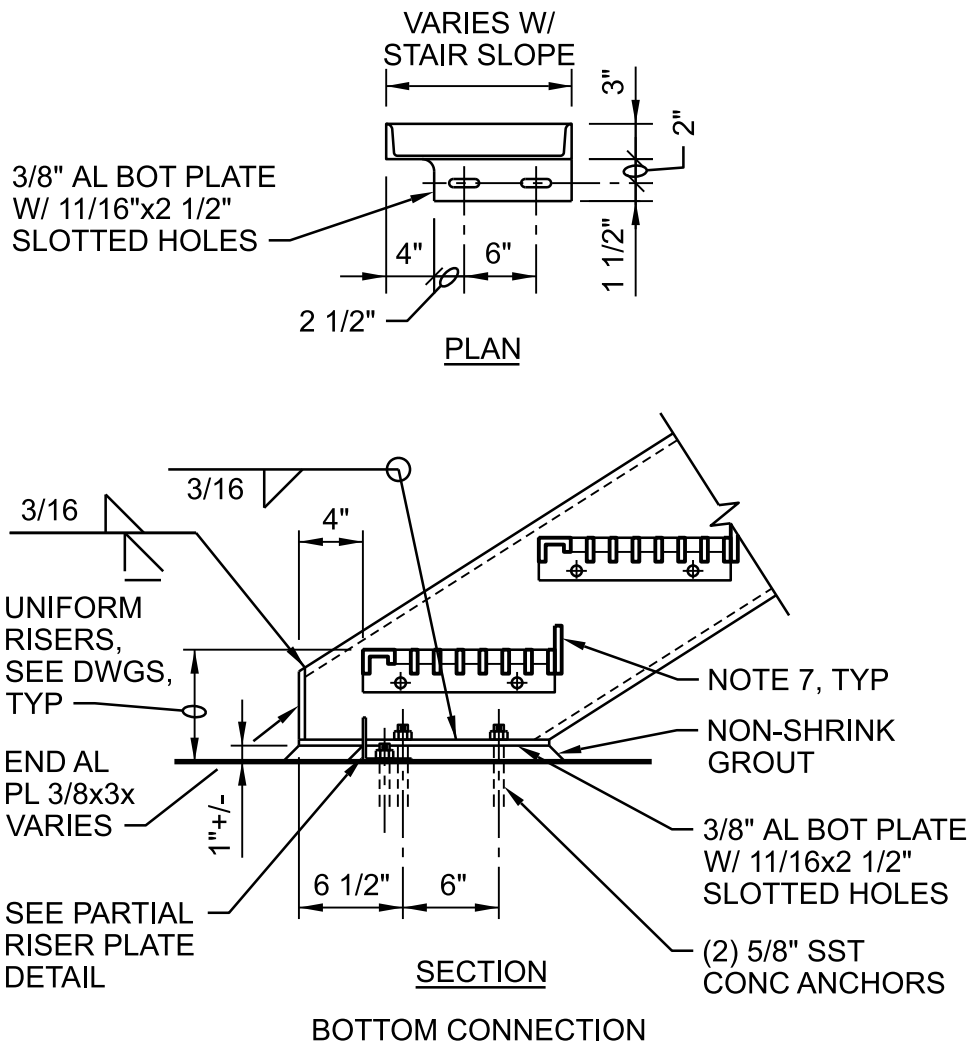
* 2 1/2" DIMENSION TYPICAL EXCEPT 2" FOR 4" BEAM.

TYPICAL BEAM CONNECTION - ALUMINUM

NTS

NOTES:

1. PROVIDE PROTECTION FOR DISSIMILAR METALS AND FOR ALUMINUM IN CONTACT WITH CONCRETE PER SPECIFICATIONS.
2. AMERICAN STANDARD C12x7.41 ALUMINUM STRINGERS TYPICAL EXCEPT WHERE OTHERWISE NOTED ON PLANS.
3. STAIR RAILING NOT SHOWN.
4. STAIR MANUFACTURER TO COORDINATE BOLTED TREADS AND RAILING CONNECTIONS.
5. ALL FASTENERS SHALL BE STAINLESS STEEL.
6. FIELD VERIFY DIMENSIONS AND ELEVATIONS PRIOR TO FABRICATION.
7. FOR RISER PLATE SEE PARTIAL RISER PLATE DETAIL UNLESS NOTED OTHERWISE. CLEARANCE BETWEEN TOP OF RISER PLATE AND BOTTOM OF TREAD TO BE 3 3/4" MAXIMUM. FOR STAIRS WITH PICKET RAILING EXTEND RISER PLATE PER FULL RISER PLATE DETAIL.



STAIR DETAILS - ALUMINUM

NTS

DETAIL 1 OF 5

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0551-001

Jacobs

INSTALL FIRST
TREAD FLUSH
W/ T.O. GRATING

SEAL
TYP

G

3/16

11"

TREAD,
TYP

EDGE OF
PLATFORM

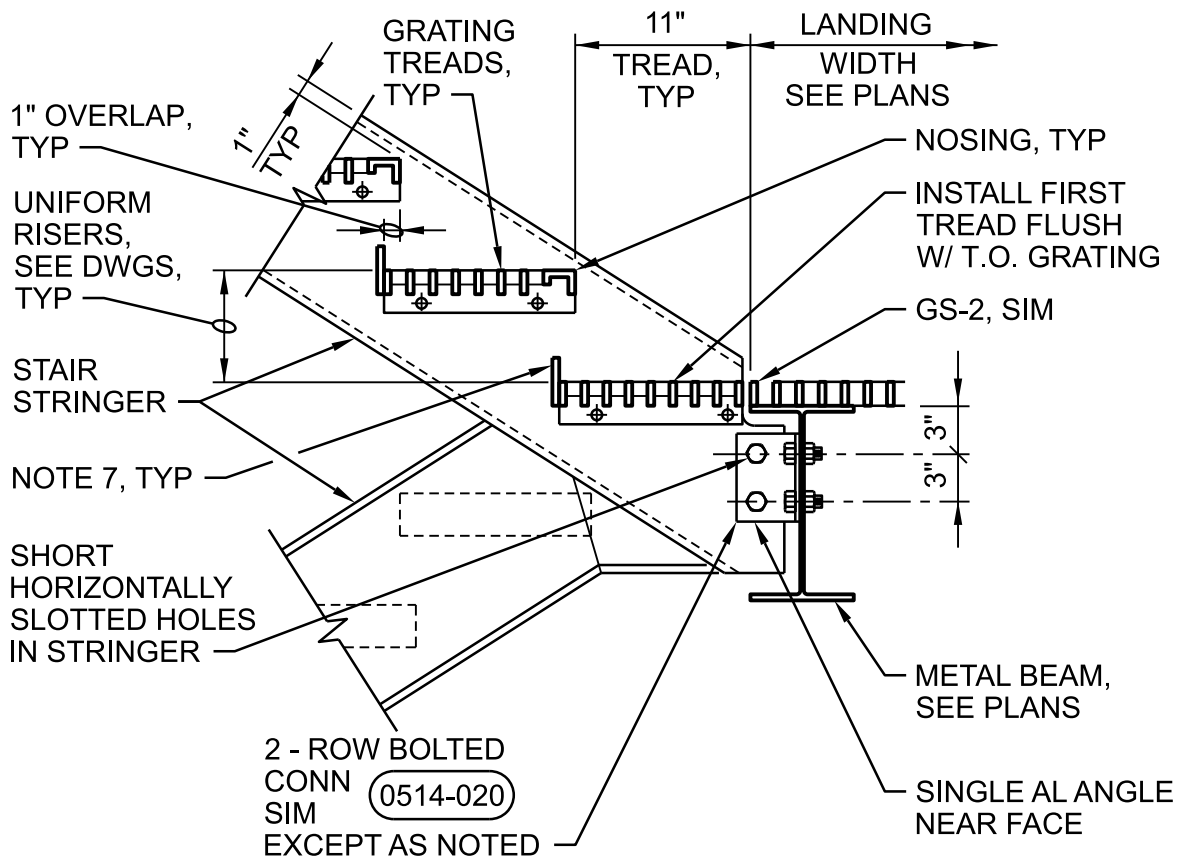
GS-2, SIM
GRATING

3"

3"

NOTE:
FOR NOTES NOT SHOWN
SEE LANDING CONNECTION.

TOP CONNECTION - ALUMINUM



LANDING CONNECTION - ALUMINUM

STAIR DETAILS - ALUMINUM

NTS

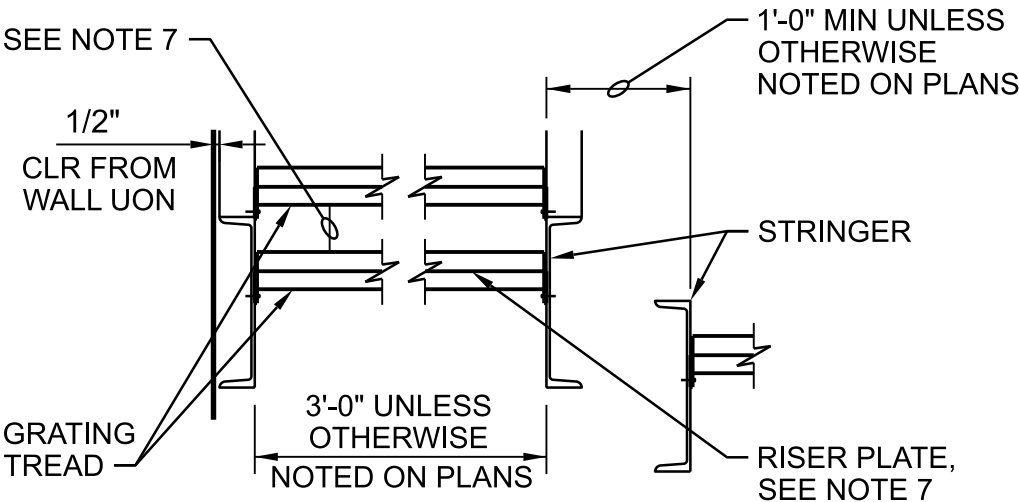
DETAIL 2 OF 5

0551-001

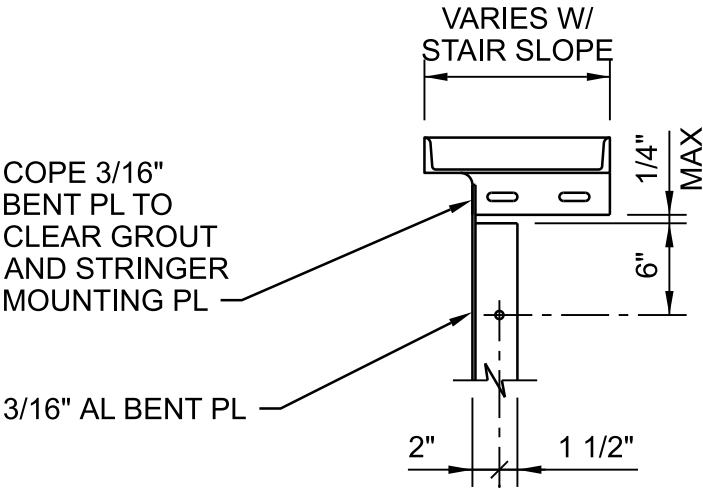
CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

Jacobs

STAIRWAY WIDTH	TREAD BEARING BARS
	ALUMINUM TREAD
2'-3" OR LESS	1" x 3/16"
2'-9" OR LESS	1 1/4" x 3/16"
3'-3" OR LESS	1 1/2" x 3/16"
4'-7" OR LESS	1 3/4" x 3/16"



STAIR TREADS



PLAN

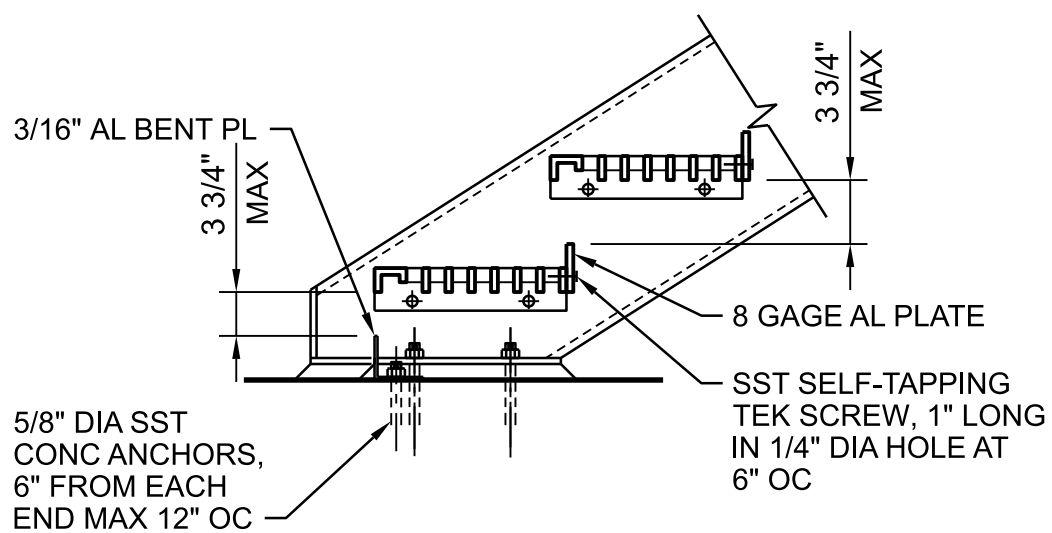
BOTTOM CLOSURE PLATE

STAIR DETAILS - ALUMINUM

NTS

DETAIL 3 OF 5

0551-001



PARTIAL RISER PLATE

STAIR DETAILS - ALUMINUM

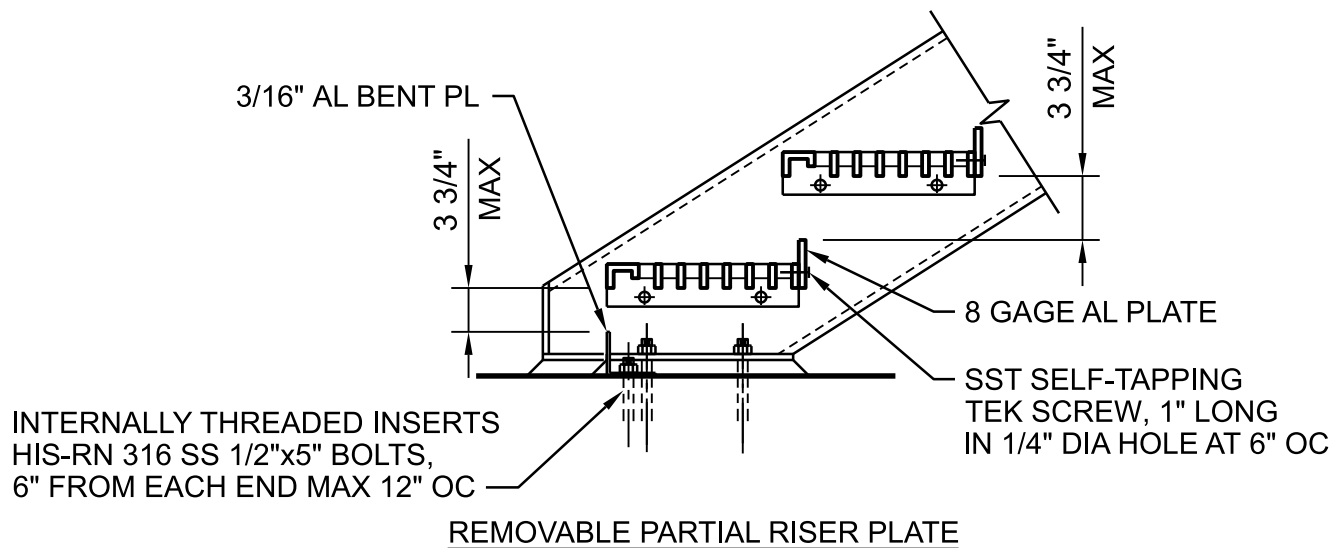
NTS

DETAIL 4 OF 5

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

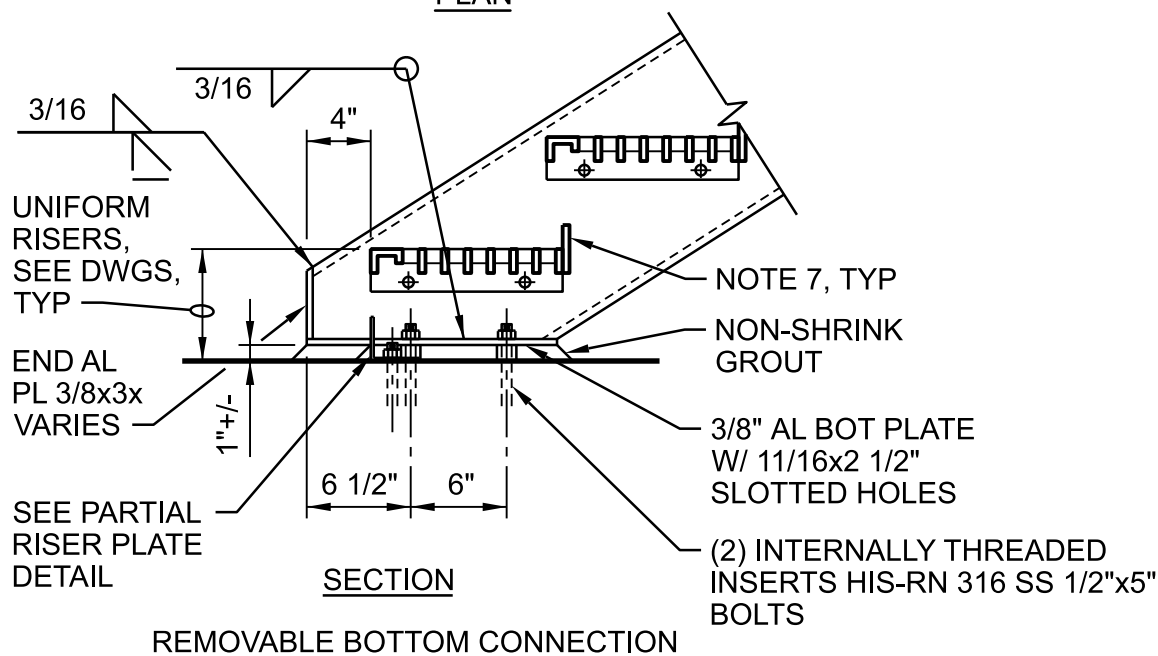
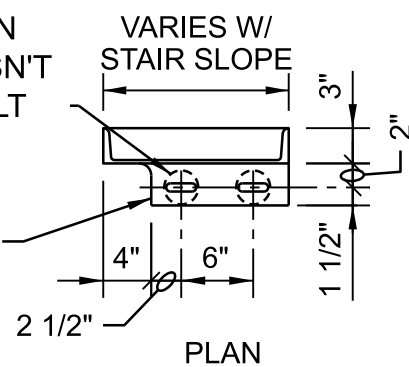
0551-001

Jacobs



2 1/2" CIRCULAR BLOCKOUT IN THE GROUT SO GROUT DOESN'T BOND TO THE THREADED BOLT

3/8" AL BOT PLATE W/ 11/16"x2 1/2" SLOTTED HOLES



STAIR DETAILS - ALUMINUM

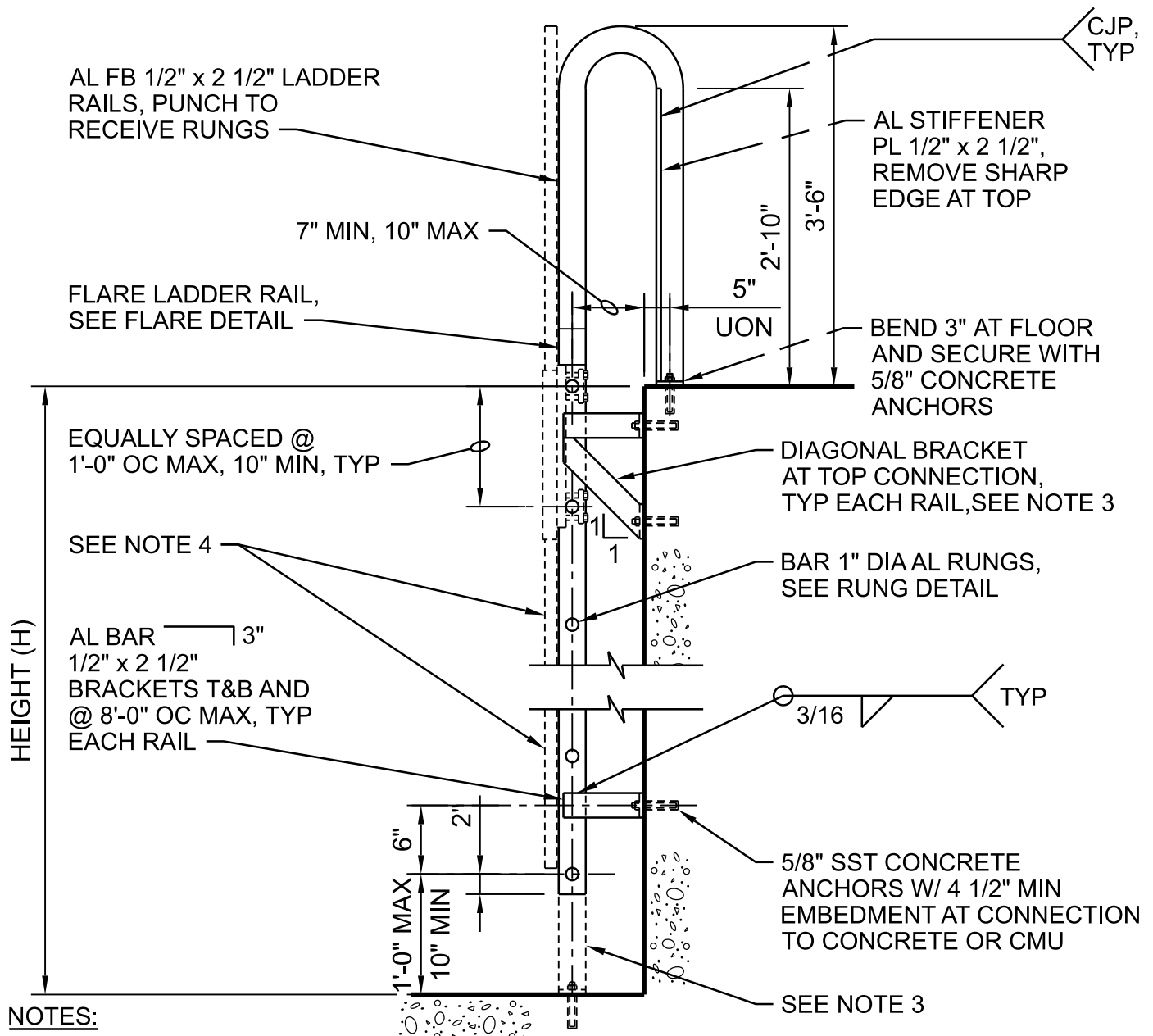
NTS

DETAIL 5 OF 5

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0551-001

Jacobs



NOTES:

1. PROVIDE PROTECTION FOR ALUMINUM IN CONTACT WITH CONCRETE PER SPECIFICATIONS.
2. AT CONTRACTOR'S OPTION, PRE-ENGINEERED PIPE LADDER AS SPECIFIED MAY BE USED IN LIEU OF FLAT BAR LADDERS.
3. AT INTERIOR DRY AREAS, EXTEND RAILS AND BEND 3" AT FLOOR. SECURE WITH 5/8" SST CONCRETE ANCHORS. DIAGONAL BRACKET NOT REQUIRED IF BASE OF LADDER EXTENDS TO SLAB BELOW.
4. FOR H GREATER THAN 24'-0" PROVIDE SAFETY CLIMB DEVICE.

LADDER - ALUMINUM - FLAT BAR WITH EXTENSION - TYPE 'B'

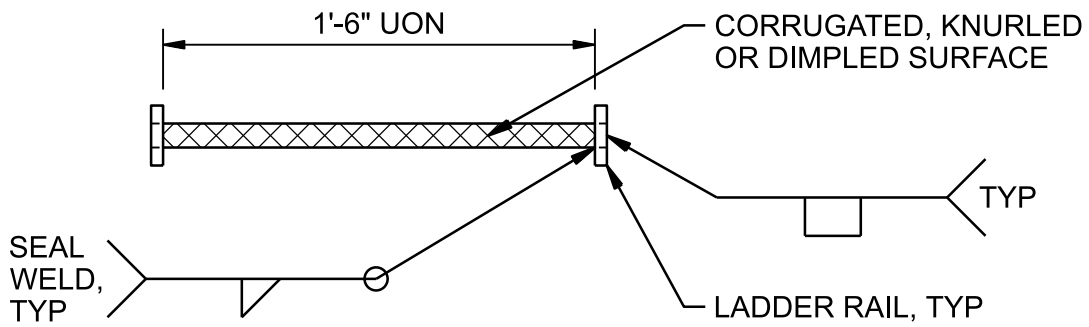
NTS

DETAIL 1 OF 3

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

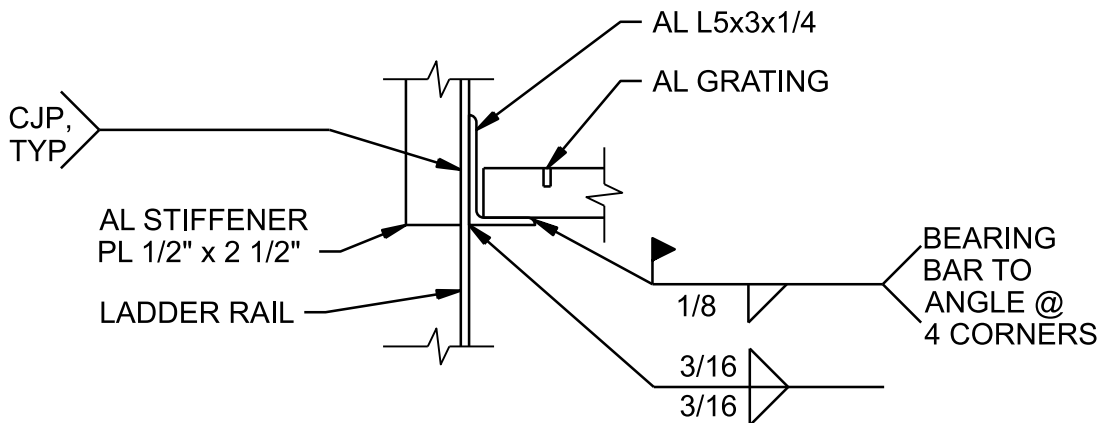
0551-101

Jacobs



PLAN

RUNG DETAIL



SECTION

GRATING CONNECTION DETAIL

LADDER - ALUMINUM - FLAT BAR DETAILS

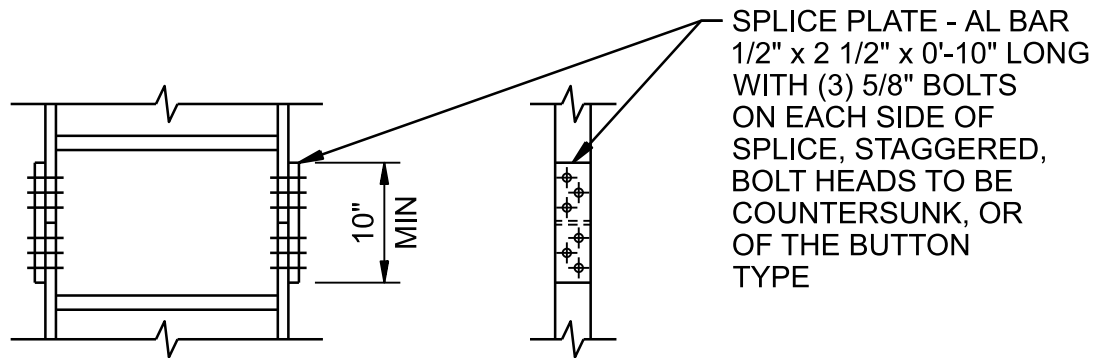
NTS

DETAIL 2 OF 3

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0551-101

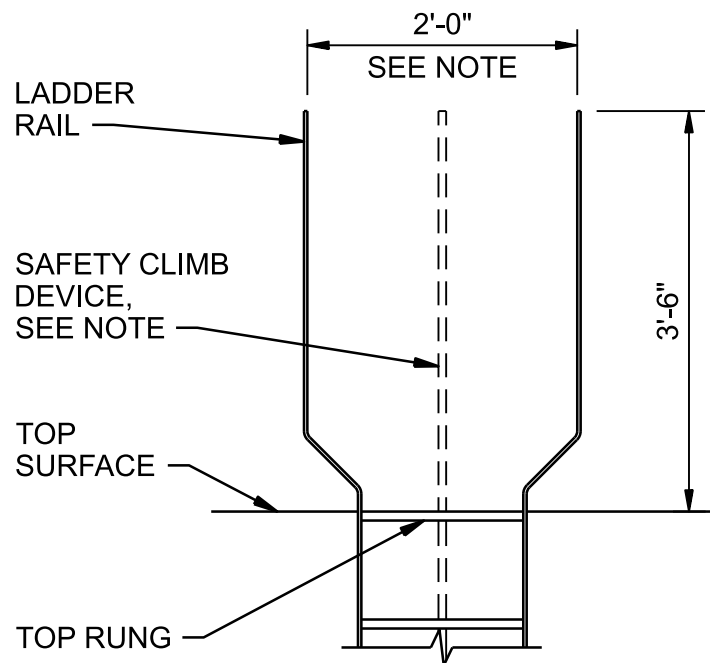
Jacobs



FRONT ELEVATION

SIDE ELEVATION

RAIL SPLICE DETAIL



ELEVATION

FLARE DETAIL

NOTE:

INCREASE WIDTH OF FLARE TO 2'-6" WHEN LADDER SAFETY CLIMB DEVICE IS USED.

LADDER - ALUMINUM - FLAT BAR DETAILS

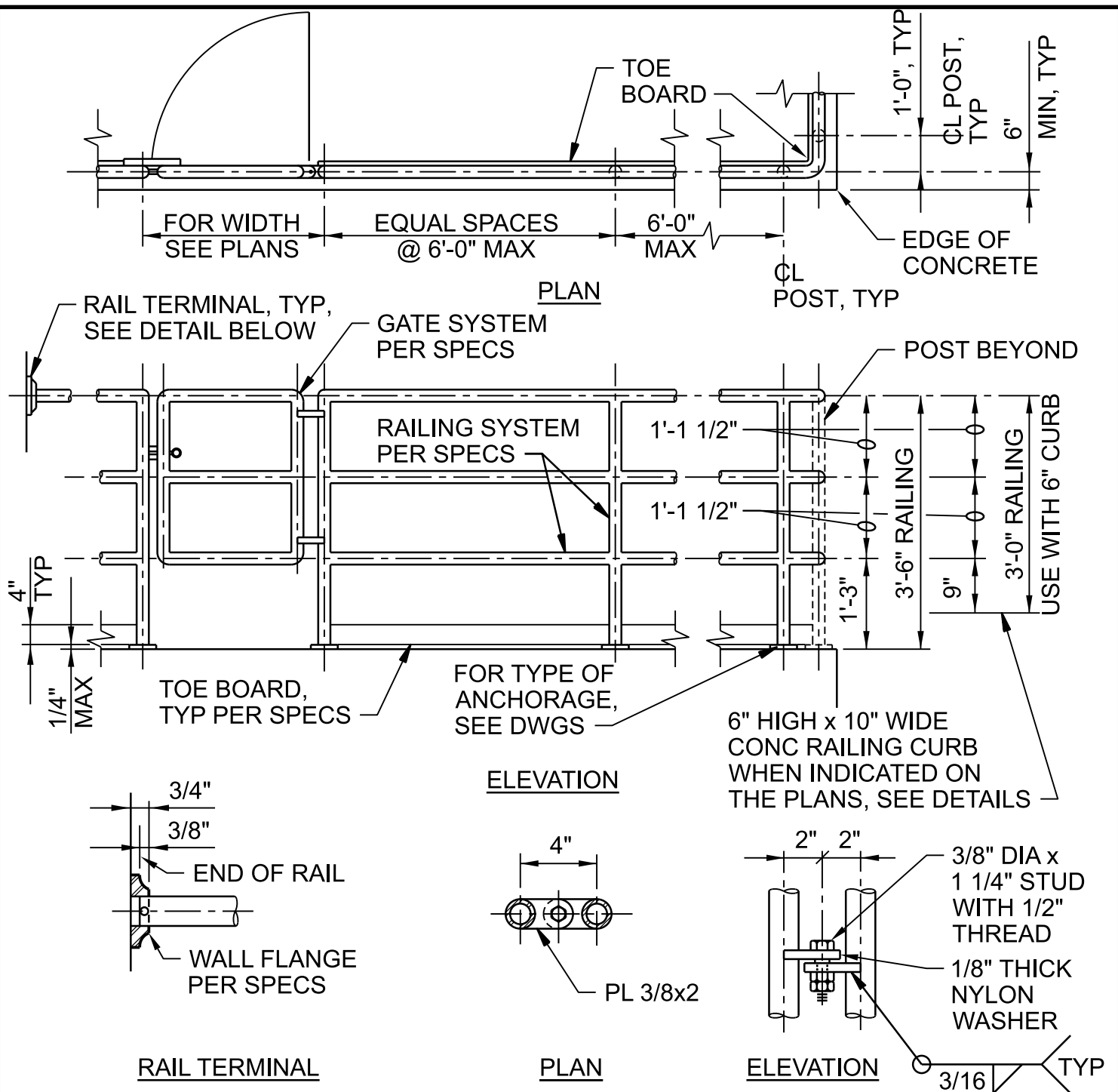
NTS

DETAIL 3 OF 3

0551-101

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

Jacobs



NOTES:

1. FASTEN RAIL TO WALL FLANGE PER MANUFACTURER'S RECOMMENDATIONS.
2. WALL FLANGE TO BE MOUNTED TO WALL WITH (2) 3/8" DIA SST WEDGE ANCHORS.
3. AT CONTRACTOR'S OPTION FABRICATE HINGES OR PROVIDE OTHER HINGES PER SPECIFICATIONS. ANODIZE FINISH AFTER ALL WELDING PER SPECIFICATIONS.

RAILING - 3 RAIL - ALUMINUM

NTS

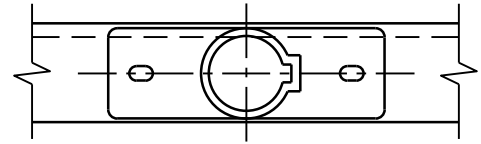
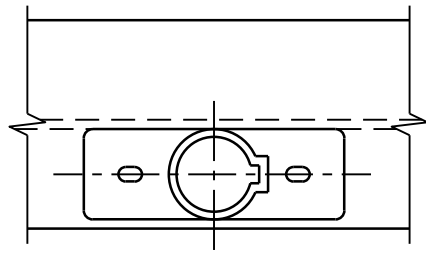
HINGE

DETAIL 1 OF 2

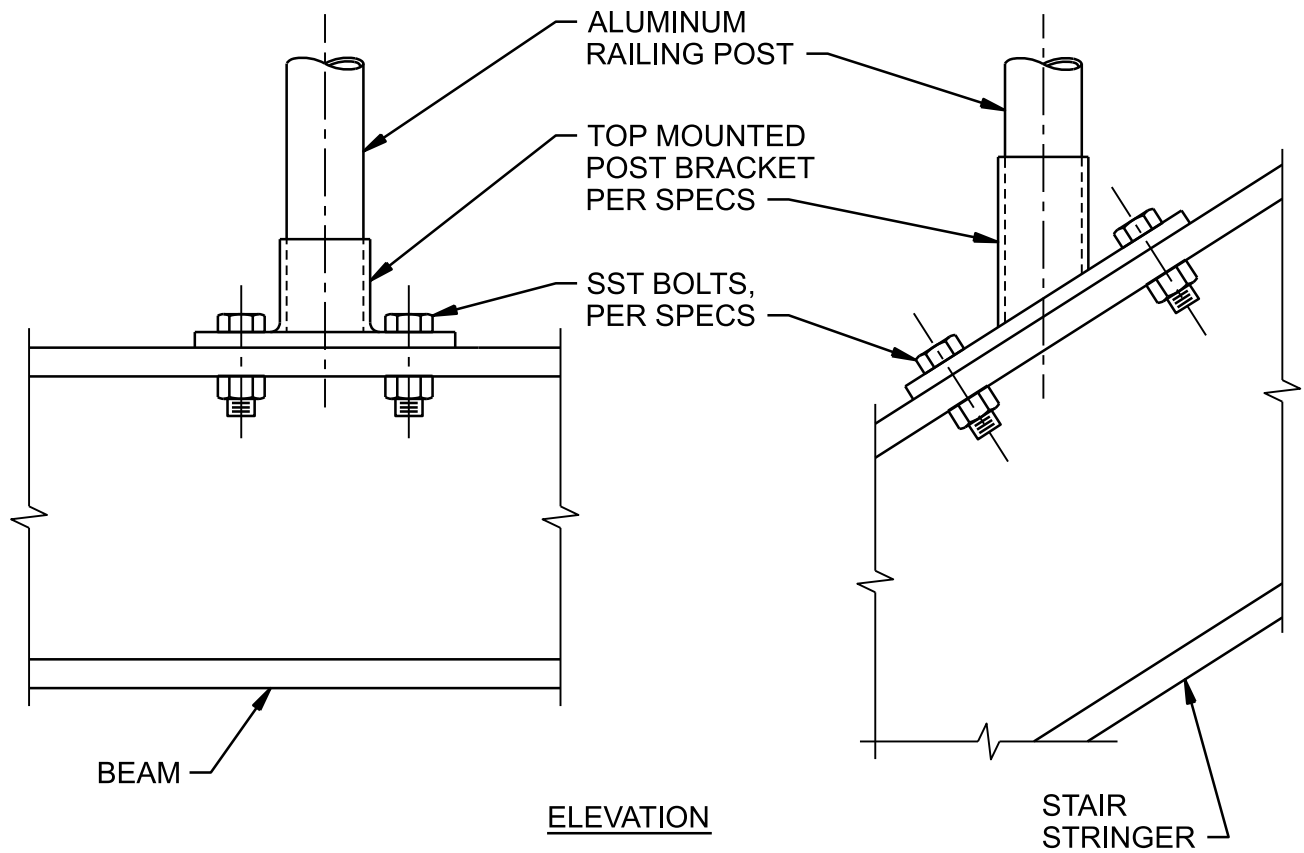
0552-001

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

Jacobs



PLAN



ELEVATION

TYPE 'C'

NOTE:

PROVIDE PROTECTION FOR DISSIMILAR METALS PER SPECIFICATIONS.

RAILING POST ANCHORAGE TYPE 'C' - ALUMINUM

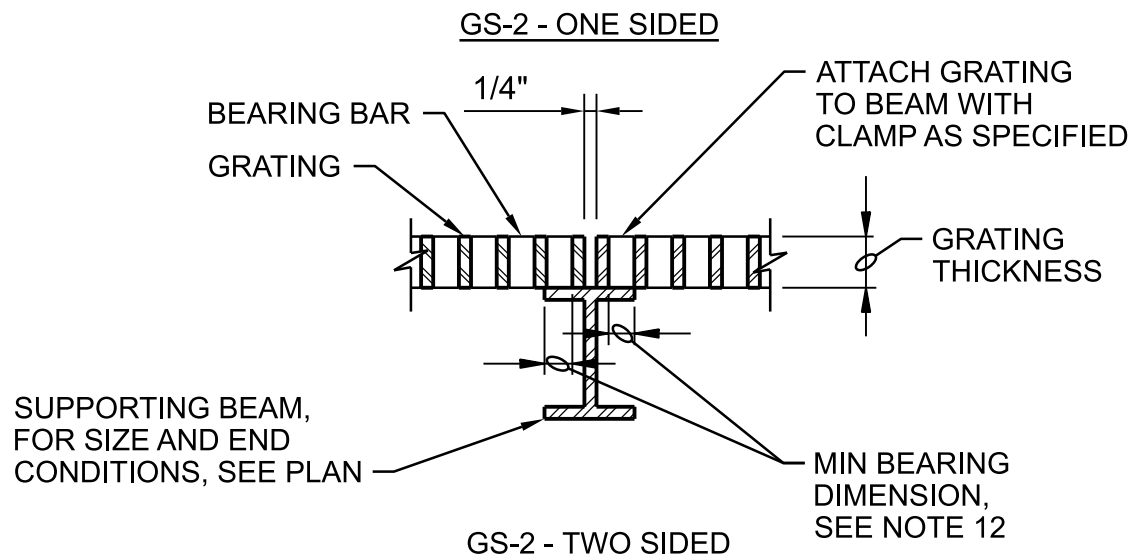
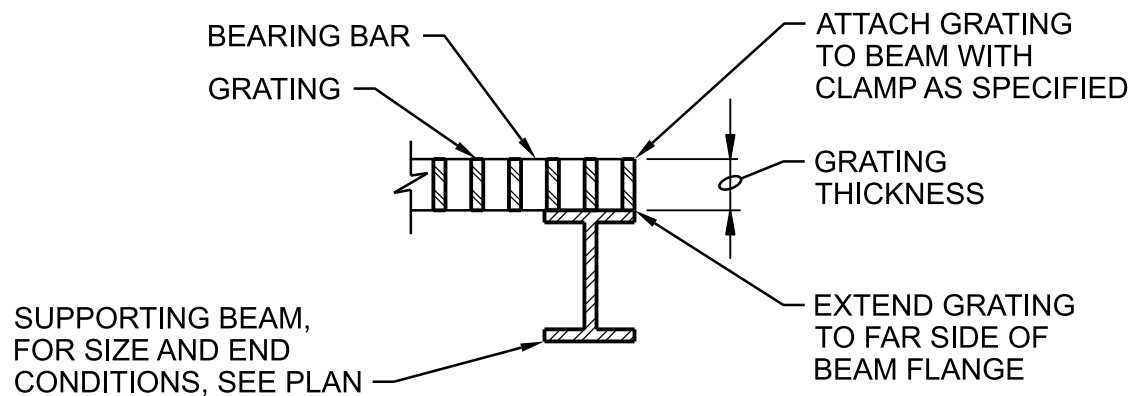
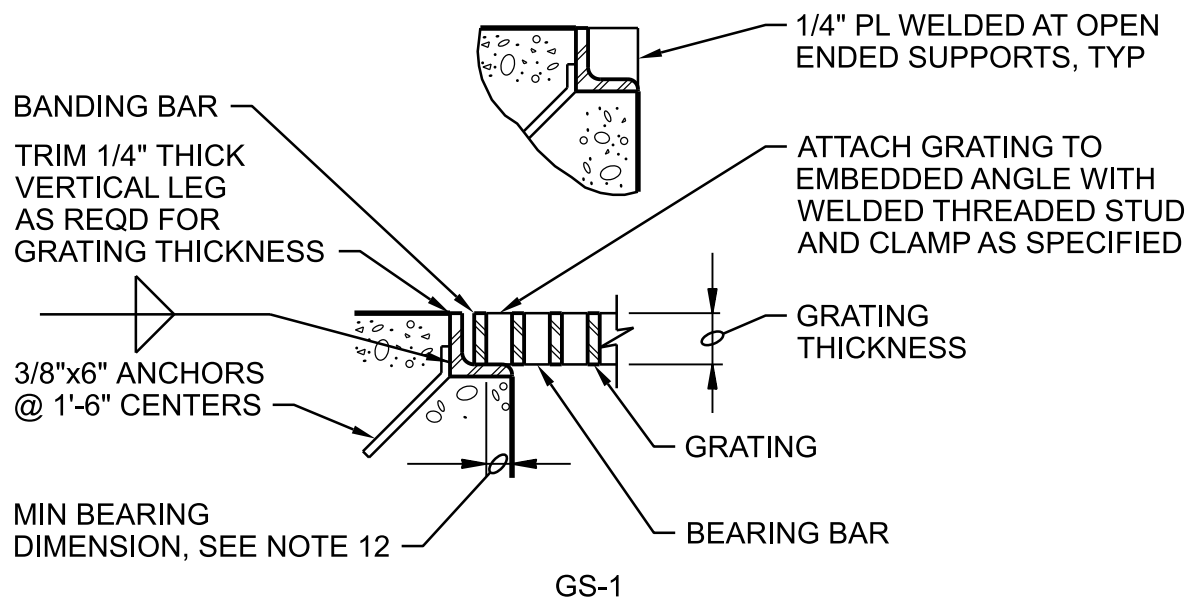
NTS

DETAIL 2 OF 2

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0552-001

Jacobs



STANDARD GRATING

NTS

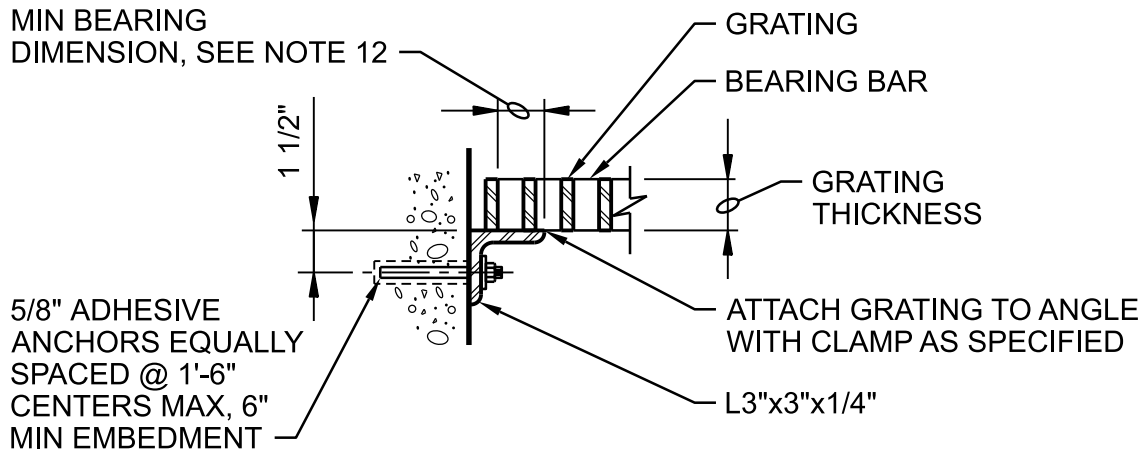
DETAIL 1 OF 4

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0553-001

Jacobs

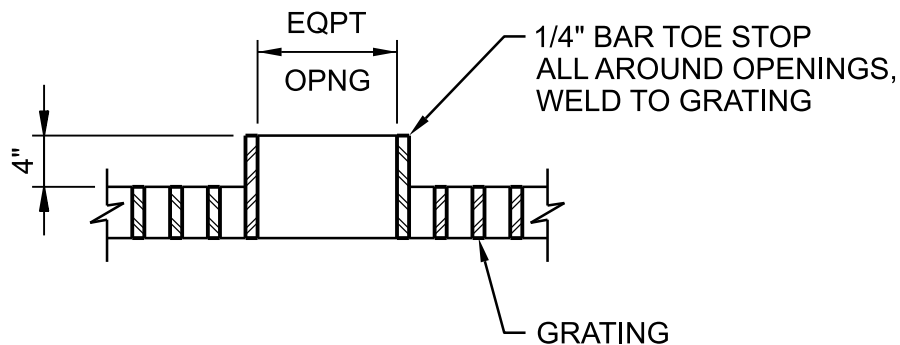
MIN BEARING
DIMENSION, SEE NOTE 12



NOTES:

1. USE GS-3 ONLY FOR LIGHT DUTY GRATING, TYPE 'A'.
2. INSTALL ANCHORS MAXIMUM 4" FROM EACH END.
3. WHEN ANCHOR IS WITHIN 4" OF A CONCRETE EDGE, UTILIZE MANUFACTURER'S LOW-TORQUE INSTALLATION PROCEDURES.

GS-3



EQUIPMENT OPENINGS

STANDARD GRATING

NTS

DETAIL 2 OF 4

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0553-001

Jacobs

GENERAL NOTES:

1. GRATING SHALL BE LIGHT DUTY GRATING UNLESS OTHERWISE NOTED ON DRAWINGS.
2. GRATING SPAN IS INDICATED BY , SEE PLAN.
3. INDIVIDUAL GRATING SECTIONS SHALL NOT EXCEED 3'-0" IN WIDTH OR WEIGH MORE THAN 150 POUNDS, UNLESS INDICATED OTHERWISE, FOR TYPES 'A' & 'B' GRATING. TYPE 'C' GRATING SHALL HAVE A MINIMUM WIDTH OF 2'-0" REGARDLESS OF WEIGHT.
4. SHOP DRAWINGS BASED ON FIELD DIMENSIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
5. MATERIAL FOR SUPPORTS OF STEEL AND ALUMINUM GRATING TO BE SAME AS GRATING, EXCEPT METAL SUPPORTS THAT ARE TO BE EMBEDDED IN CONCRETE SHALL BE TYPE 316 STAINLESS STEEL.
6. UNLESS NOTED OTHERWISE ON PLANS, GRATING THICKNESS SHALL BE AS TABULATED IN "GRATING THICKNESS TABLE" FOR APPLICABLE GRATING TYPE.
7. FOR SERRATED BEARING BARS, INCREASE GRATING THICKNESSES SHOWN IN TABLES BY 1/4".
8. BEARING BAR THICKNESS FOR GRATING TO BE 3/16" MINIMUM. SEE SPECIFICATIONS FOR SPACING OF BEARING AND CROSS BARS.
9. BAND ALL EDGES. MATCH DEPTH OF BEARING BAR.
10. TYPE OF MATERIAL USED SHALL BE AS SHOWN ON PLANS OR AS SPECIFIED. THIS STANDARD DETAIL INCLUDES 2 TYPES, ALTHOUGH BOTH MAY NOT BE INCLUDED IN PROJECT.
11. THE HORIZONTAL CLEARANCE BETWEEN THE GRATING AND GRATING SUPPORTS SHALL NOT BE LESS THAN 1/4" NOR GREATER THAN 1/2" AND AS SPECIFIED.
12. MINIMUM BEARING HORIZONTAL DIMENSION = 1" FOR GRATING DEPTH 2 1/4" OR LESS. MINIMUM BEARING HORIZONTAL DIMENSION = 2" FOR GRATING DEPTH GREATER THAN 2 1/4"

STANDARD GRATING

NTS

DETAIL 3 OF 4

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0553-001

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LIGHT DUTY GRATING

TYPE 'A'
(100 PSF)

GRATING THICKNESS TABLE		
MAXIMUM SPAN	STEEL	ALUMINUM
3'-6"	1"	1 1/4"
4'-0"	1"	1 1/2"
4'-6"	1"	1 3/4"
5'-0"	1 1/4"	1 3/4"
5'-6"	1 1/4"	2"
6'-0"	1 1/2"	2 1/4"
6'-6"	1 1/2"	2 1/4"
7'-0"	1 3/4"	2 1/2"

MEDIUM DUTY GRATING

TYPE 'B'
(500 PSF)

GRATING THICKNESS TABLE		
MAXIMUM SPAN	STEEL	ALUMINUM
< 2'-0"	1"	1"
2'-6"	1"	1 1/4"
3'-0"	1 1/4"	1 1/2"
3'-6"	1 1/4"	1 3/4"
4'-0"	1 1/2"	2"
4'-6"	1 3/4"	2 1/4"
5'-0"	1 3/4"	2 1/2"
5'-6"	2"	DO NOT USE ALUMINUM GRATING
6'-0"	2 1/4"	
6'-6"	2 1/2"	

HEAVY DUTY GRATING

TYPE 'C'
(H 20 WHEEL LOAD)

GRATING THICKNESS TABLE		
MAXIMUM SPAN	STEEL	ALUMINUM
1'-0"	2"x3/16"	DO NOT USE ALUMINUM GRATING
1'-8"	2 1/2"x1/4"	
2'-0"	2 1/2"x3/8" OR 3"x1/4"	
2'-6"	3"x3/8" OR 4"x1/4"	
3'-3"	3 1/2"x3/8"	
4'-0"	4"x3/8"	
5'-0"	4 1/2"x3/8"	

STANDARD GRATING

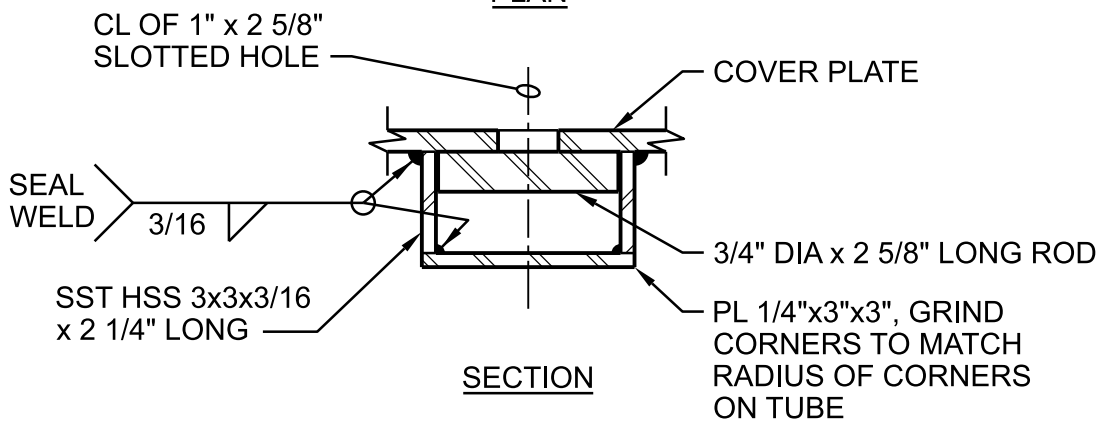
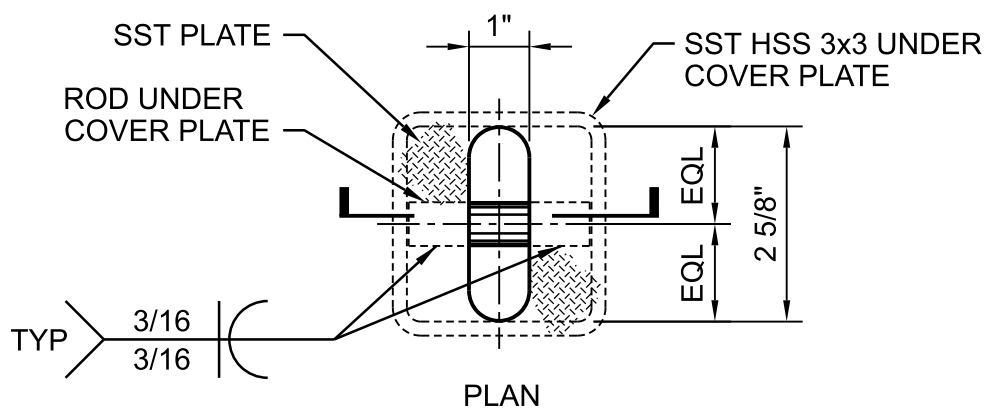
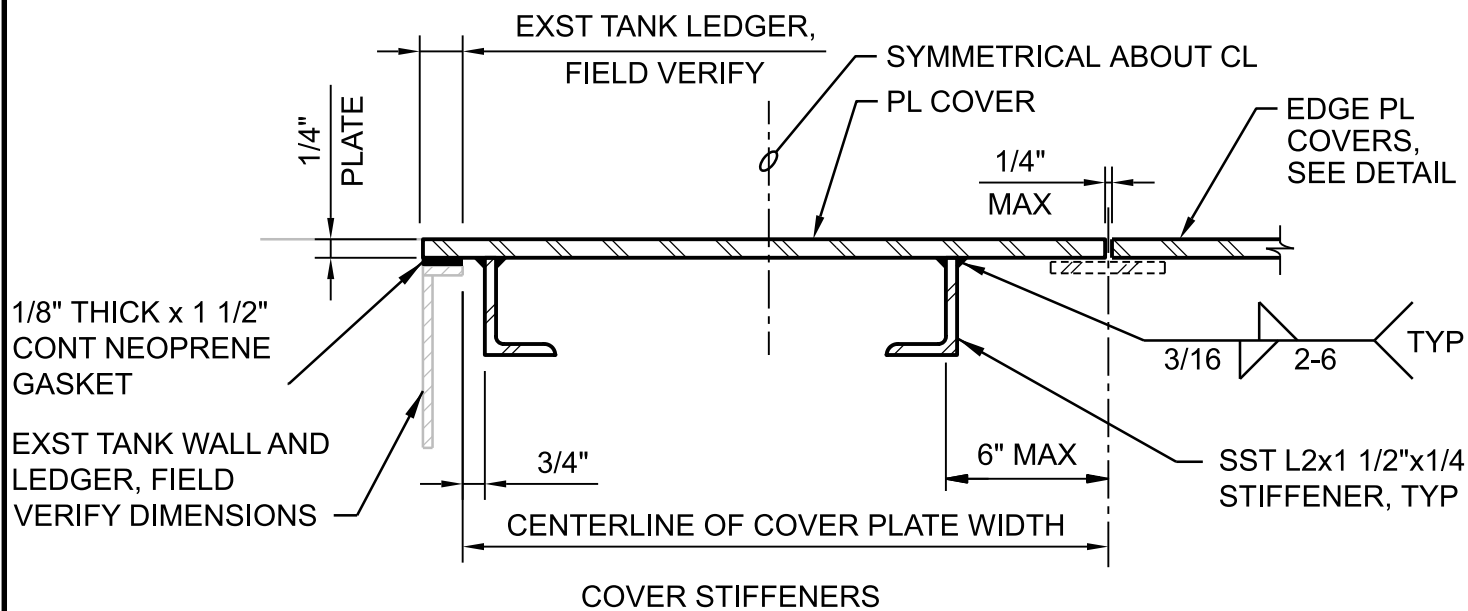
NTS

DETAIL 4 OF 4

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0553-001

Jacobs



LIFTING EYE

COVER PLATE - SST

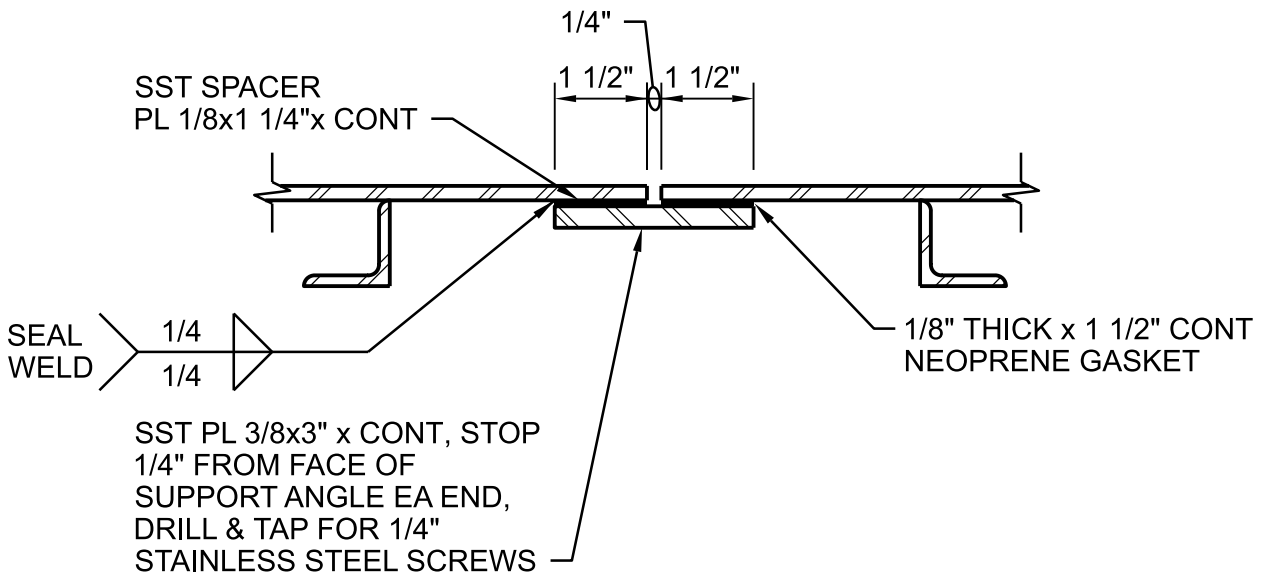
NTS

DETAIL 1 OF 2

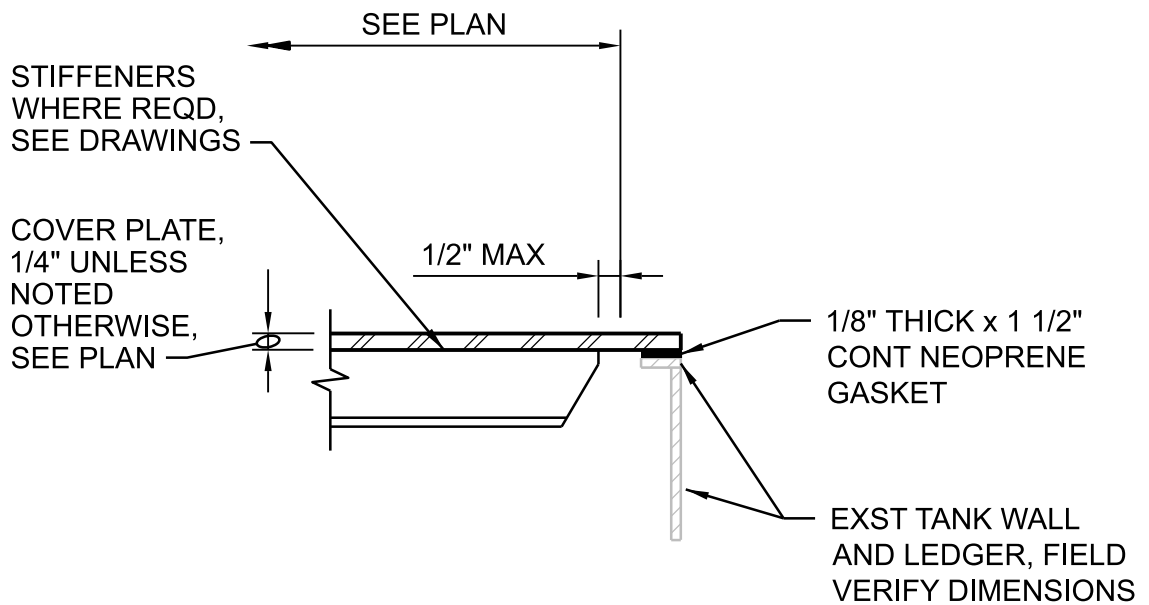
0554-001

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

Jacobs



EDGE PLATE DETAIL



COVER

COVER PLATE - SST

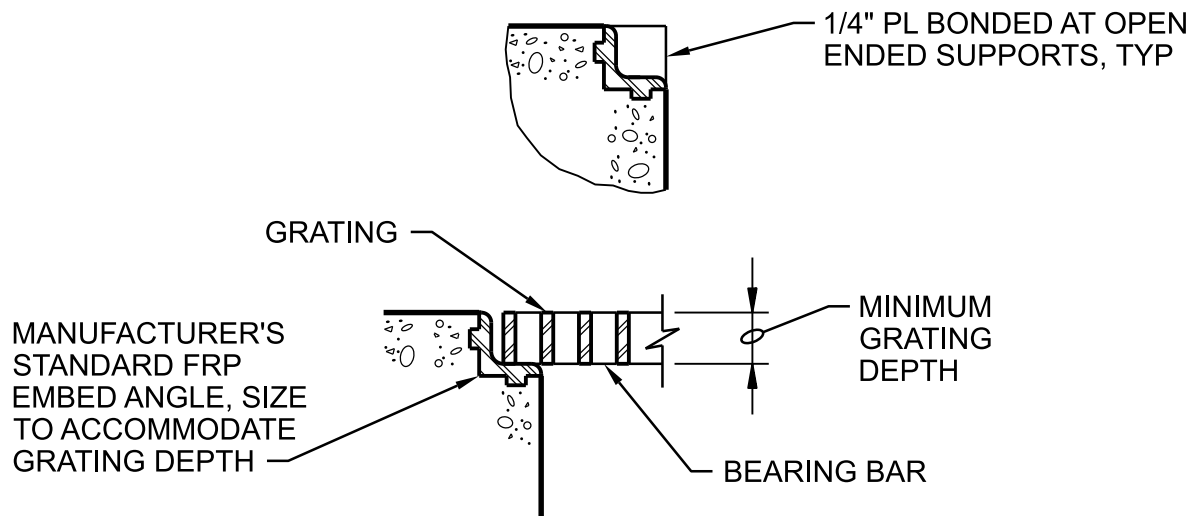
NTS

DETAIL 2 OF 2

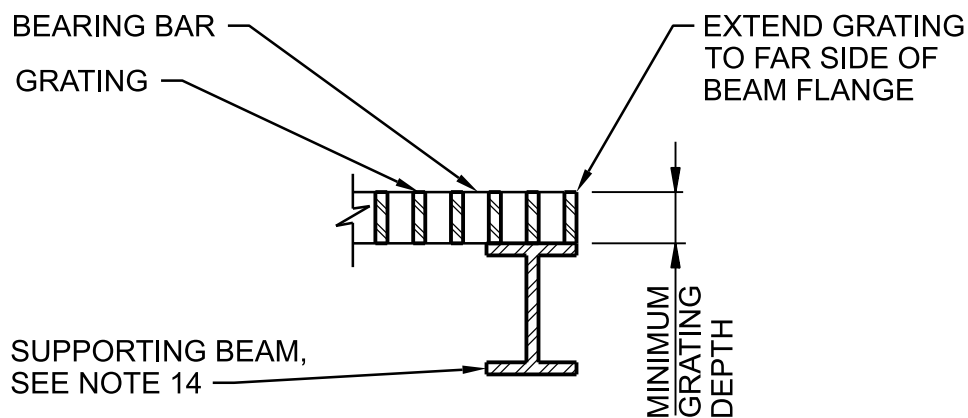
CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0554-001

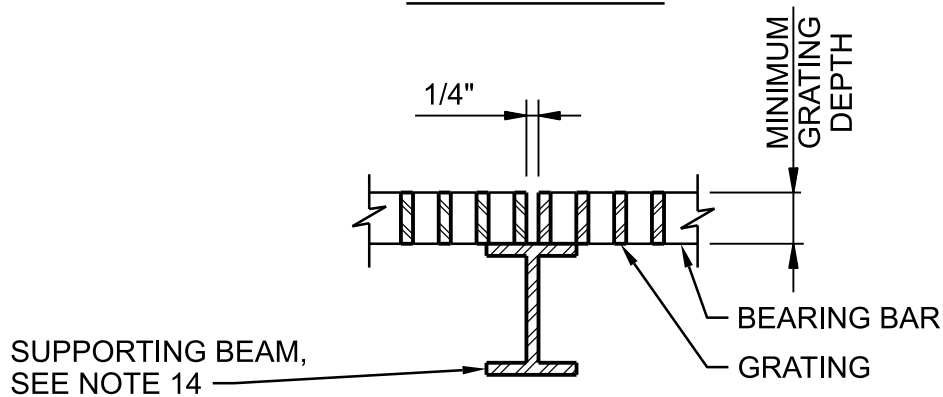
Jacobs



GS-1



GS-2 - ONE SIDED



GS-2 - TWO SIDED

STANDARD FIBERGLASS GRATING

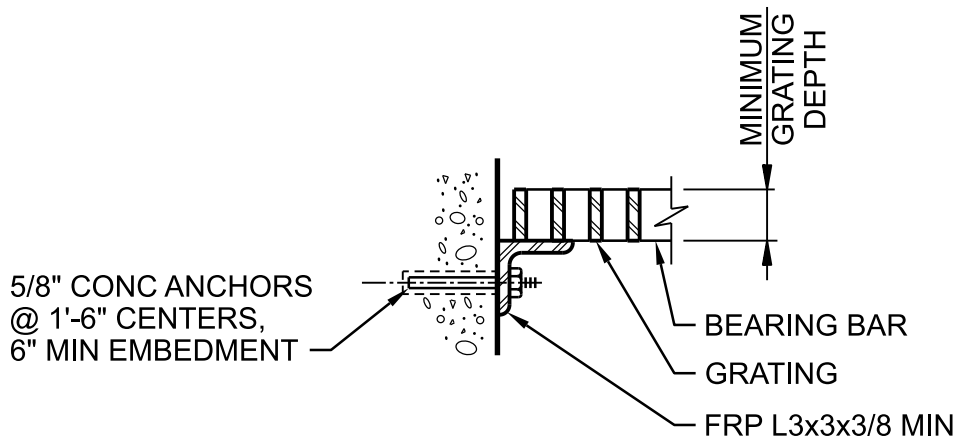
NTS

DETAIL 1 OF 3

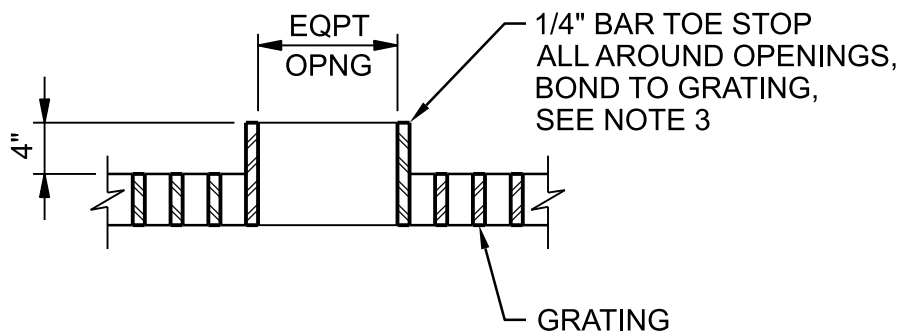
CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0682-030

Jacobs



GS-3



EQUIPMENT OPENINGS

STANDARD FIBERGLASS GRATING

NTS

DETAIL 2 OF 3

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0682-030

Jacobs

GENERAL NOTES:

1. MOLDED FRP GRATING DETAILS SHOWN, PULTRUDED DETAILS SIMILAR.
2. EXTEND GRATING CONTINUOUSLY OVER GATE GUIDES AND GATES.
3. NOTCH GRATING AS REQUIRED FOR PENETRATIONS. FRP MANUFACTURER TO PROVIDE REINFORCEMENT AROUND OPENINGS TO ENSURE STRUCTURAL INTEGRITY.
4. BAND ALL EDGES, MOLDED GRATING ONLY.
5. GRATING SPAN , SEE PLAN.
6. WIDTH OF GRATING SECTIONS SHALL NOT EXCEED 3'-0".
7. SHOP DRAWINGS BASED ON FIELD DIMENSIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
8. UNLESS OTHERWISE NOTED ON PLANS, MINIMUM GRATING THICKNESS SHALL BE AS TABULATED IN TABLE BELOW.
9. DESIGN LL = 100 PSF, UNLESS OTHERWISE NOTED.
10. PROVIDE GRATING FASTENERS AS SPECIFIED.
11. THE HORIZONTAL CLEARANCE BETWEEN THE GRATING AND GRATING SUPPORTS SHALL NOT BE LESS THAN 1/4" NOR GREATER THAN 1/2".
12. ALL GRATING SECTIONS, WHEN IN PLACE, SHALL BE ANCHORED TO THEIR SUPPORTS.
13. PROVIDE MINIMUM 1 1/2" BEARING FOR ALL FIBERGLASS GRATING.
14. SUPPORTING FRP MEMBERS AND CONNECTIONS THEREOF, SHALL BE DESIGNED AND DETAILED BY CONTRACTOR'S LICENSED DESIGN PROFESSIONAL, UNLESS OTHERWISE NOTED.

FOOT TRAFFIC		
MAXIMUM SPAN	MINIMUM GRATING DEPTH	* GRATING TYPE
3'-6"	1 1/2"	M OR P
4'-0"	1 1/2"	M OR P
4'-6"	1 1/2"	M OR P
5'-0"	2"	P
5'-6"	2"	P

* M = MOLDED GRATING, P = PULTRUDED GRATING

STANDARD FIBERGLASS GRATING

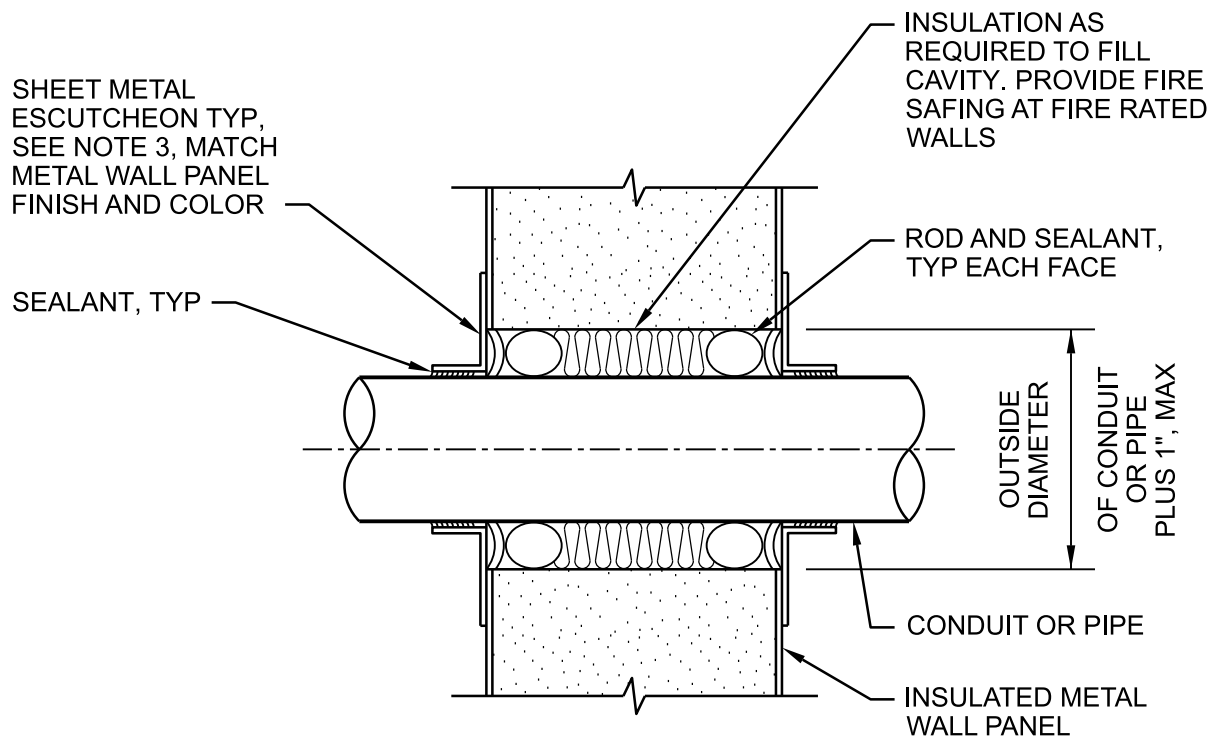
NTS

DETAIL 3 OF 3

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

0682-030

Jacobs

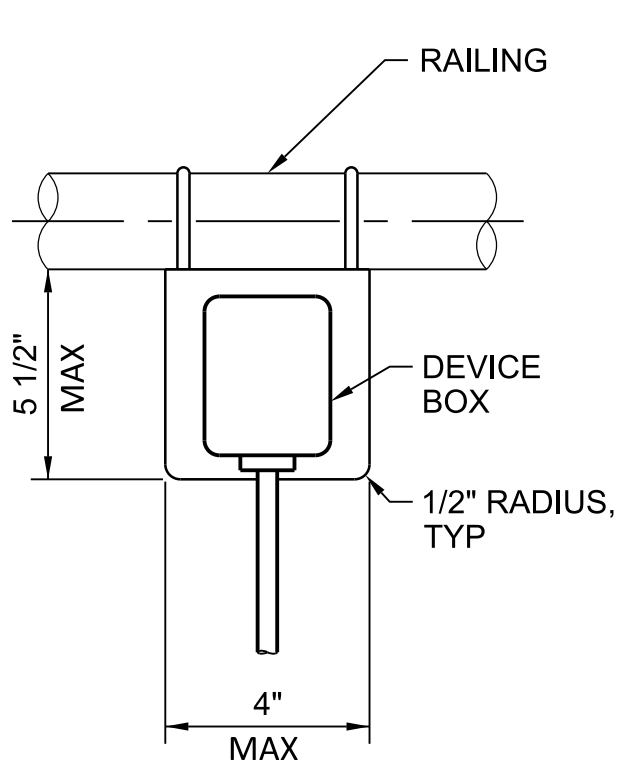


NOTES:

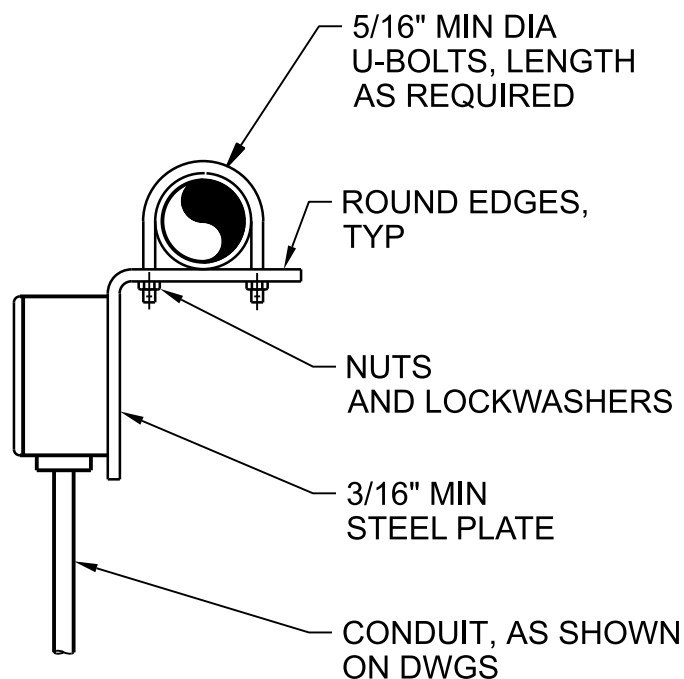
1. DRILL INSULATED METAL WALL PANEL TO PROVIDE WALL PENETRATIONS UP TO 6" DIAMETER.
2. OVER SIZE PENETRATION TO PROVIDE 1/2" ANNULAR SPACE FOR ROD AND SEALANT.
3. PROVIDE ISOLATION TAPE WHERE SHEET METAL IS IN CONTACT WITH CONDUIT OR PIPE.

EXTERIOR WALL PENETRATION

NTS



FRONT



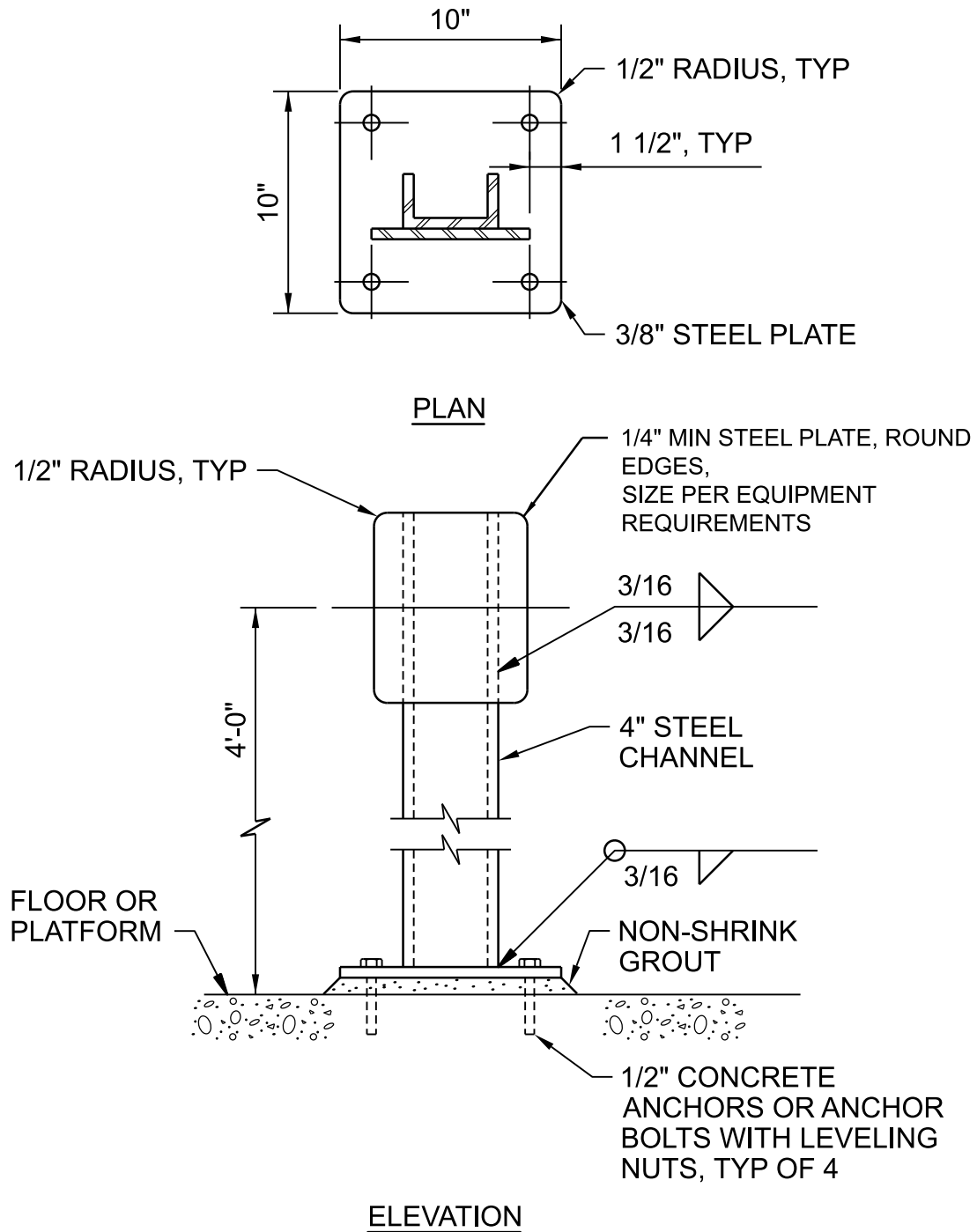
SIDE

NOTES:

1. REFER TO DWG G-0085 FOR THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE.
2. PROVIDE PROTECTION BETWEEN DISSIMILAR METALS AT CONTACT POINTS AND CONNECTIONS FOR PER SPECIFICATIONS.

DEVICE MOUNTING, AT RAILING

NTS

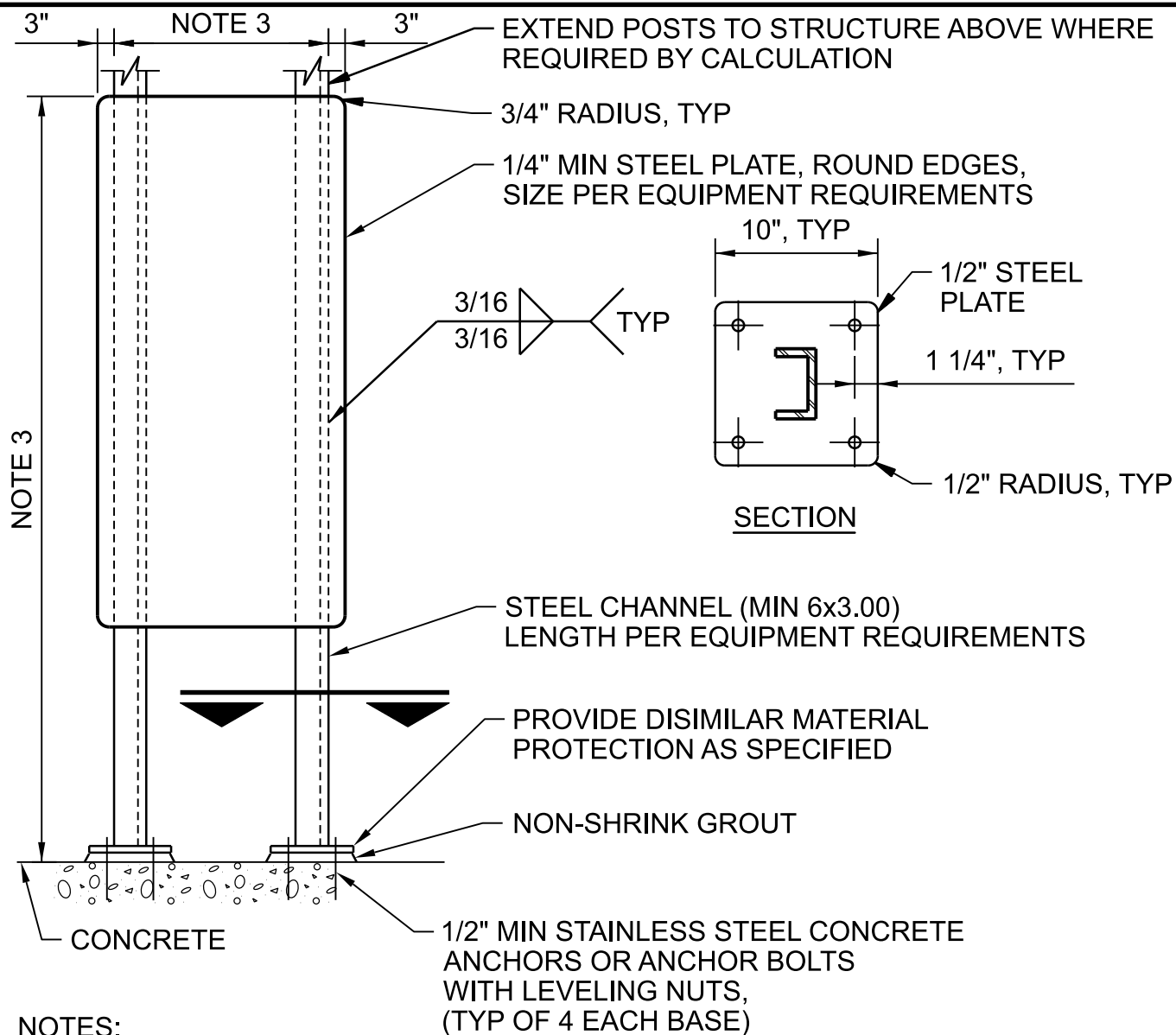


NOTES:

1. REFER TO DWG G-0085 FOR THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE.
2. USE WASHERS AND SPLIT-LOCK WASHERS UNDER ALL NUTS AND BOLTS.

DEVICE MOUNTING, CONTROL STATION PEDESTAL

NTS



NOTES:

1. USE WASHER AND SPLIT LOCK WASHER UNDER ALL NUTS.
2. MINIMUM COMPONENT AND CONNECTION SIZES SHOWN. FURNISH LARGER SIZES AS REQUIRED BY CALCULATIONS.
3. SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED.
4. REFER TO DWG G-0085 FOR THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE.
5. DETAIL SHOWN AS ALTERNATIVE TO 2605-005 WHERE COMBINED EQUIPMENT MOUNTING IS REQUIRED.

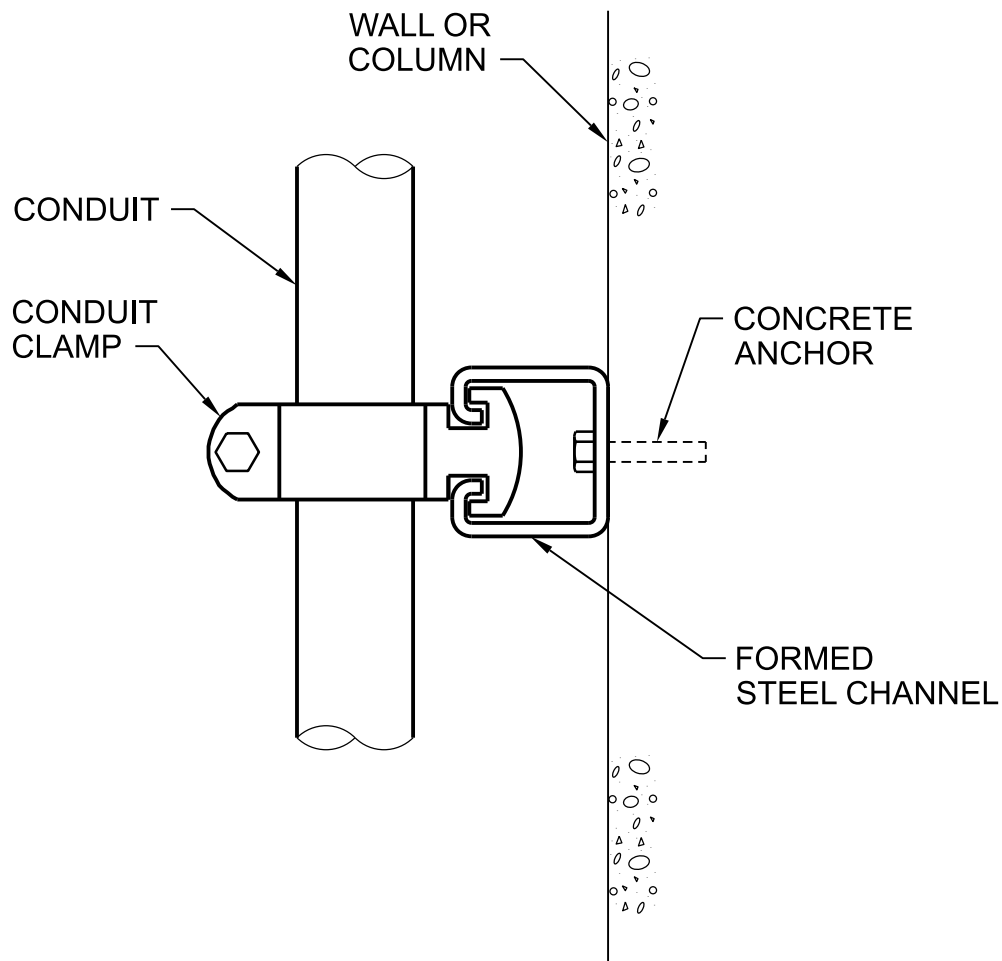
DEVICE MOUNTING, SIDE MOUNTED PEDESTAL

NTS

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

2605-008

Jacobs

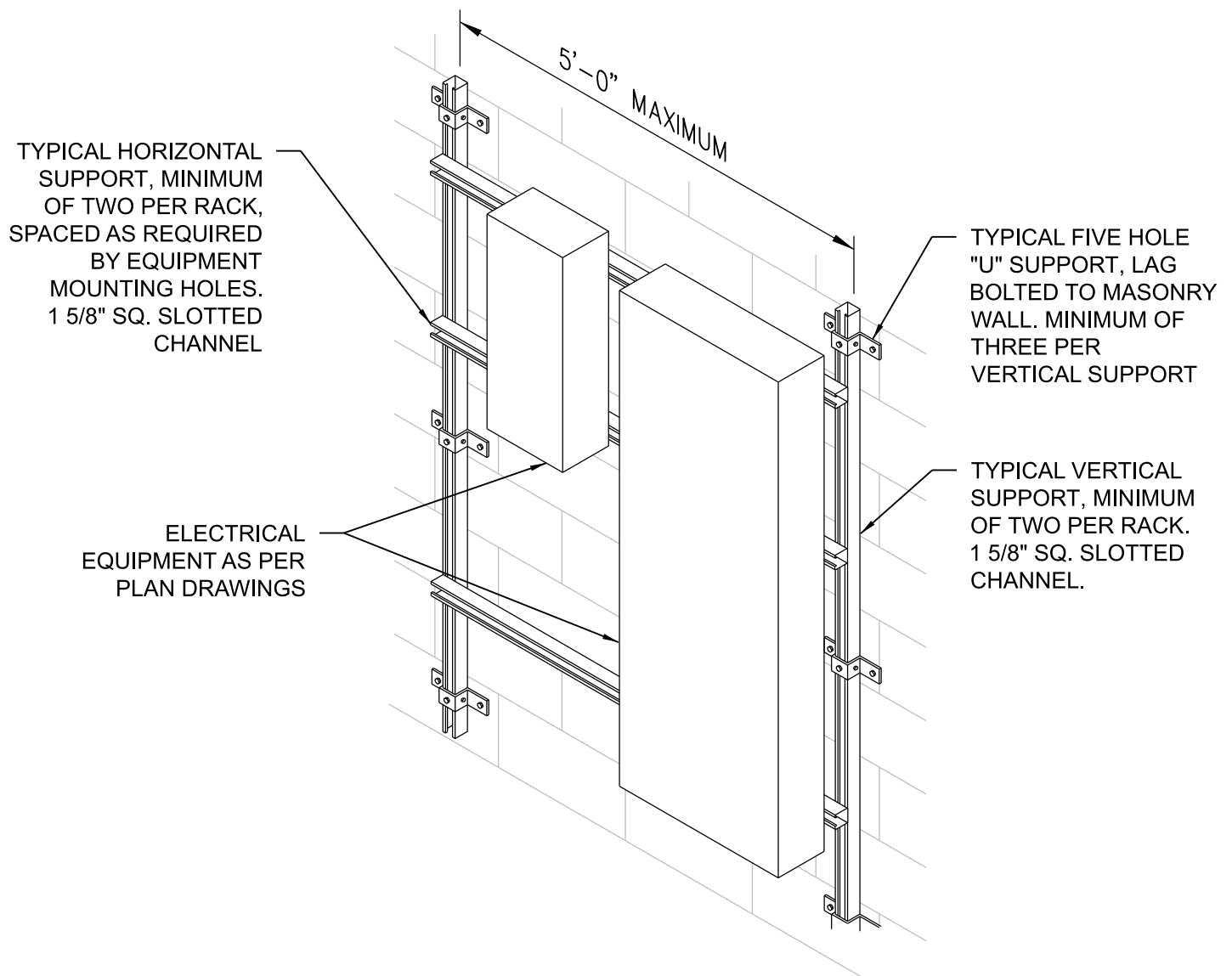


NOTES:

1. SUPPORT ALL EXPOSED CONDUITS ON FORMED STEEL CHANNELS.
2. SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED.
3. REFER TO DWG G-0085 FOR THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE.

CONDUIT SUPPORT ON STRUCTURE

NTS

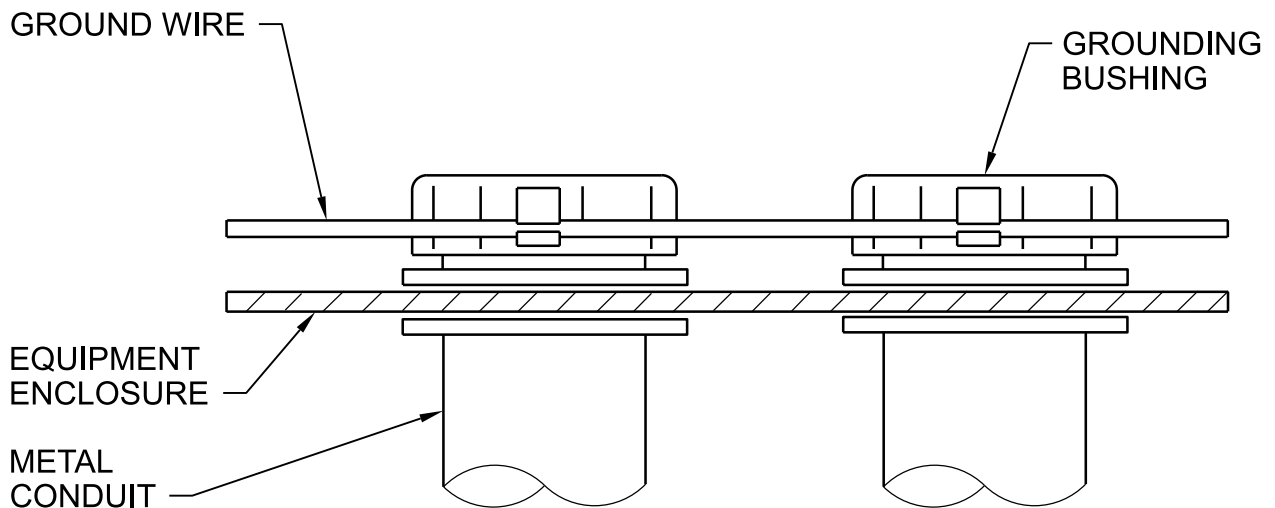


NOTES:

1. USE CHANNEL NUTS AND HARDWARE BY CHANNEL MANUFACTURER TO SECURE EQUIPMENT TO CHANNEL.
2. REFER TO DWG G-0085 FOR THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE.

MASONRY WALL EQUIPMENT RACK CONSTRUCTION

NTS

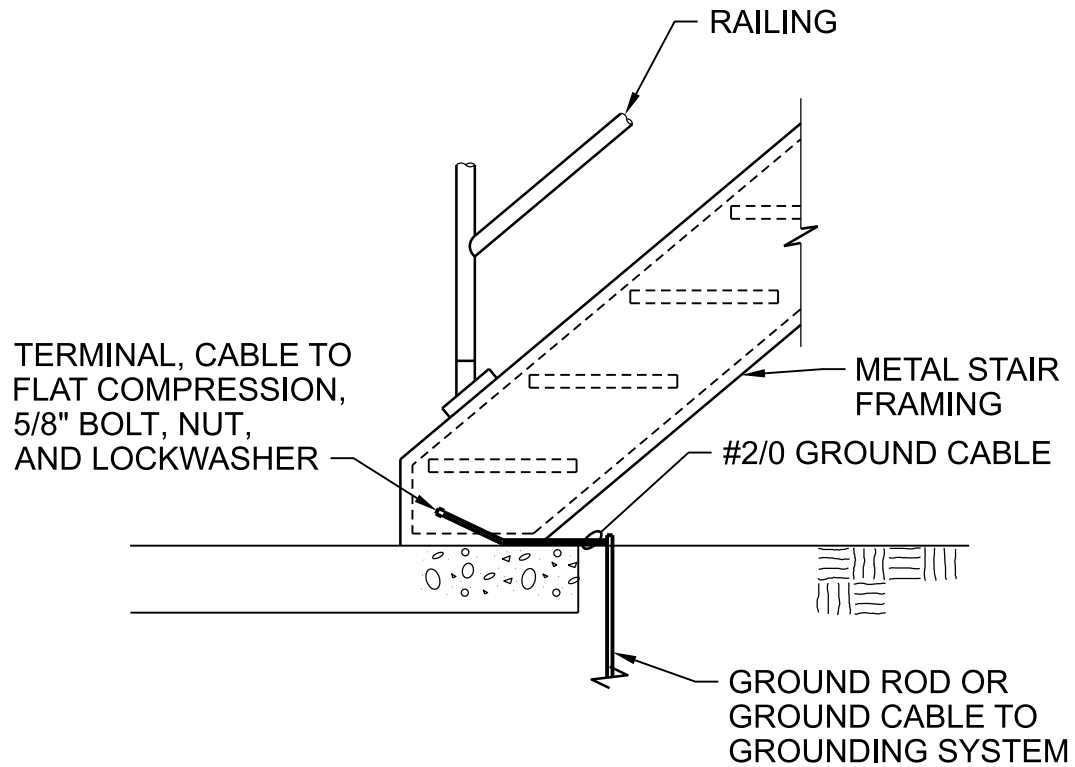


NOTES:

1. THE ENDS OF ALL CONDUITS REQUIRED TO BE GROUNDED BY THE SPECIFICATIONS SHALL BE GROUNDED IN ACCORDANCE WITH THIS DETAIL.

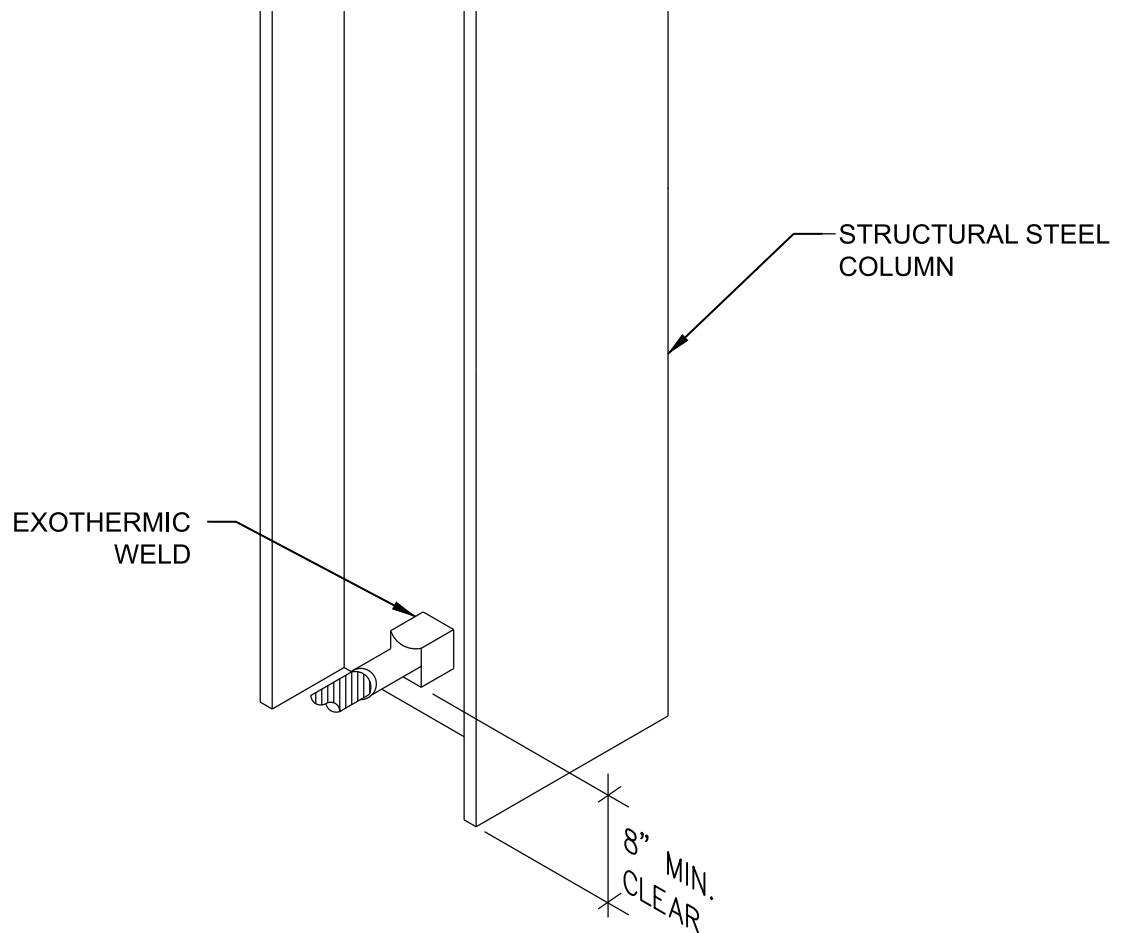
CONDUIT GROUNTING

NTS



GROUNDING, GENERAL STAIRWAY

NTS



NOTES:

1. PREFERRED OVER COMPRESSION TYPE CONNCTION.

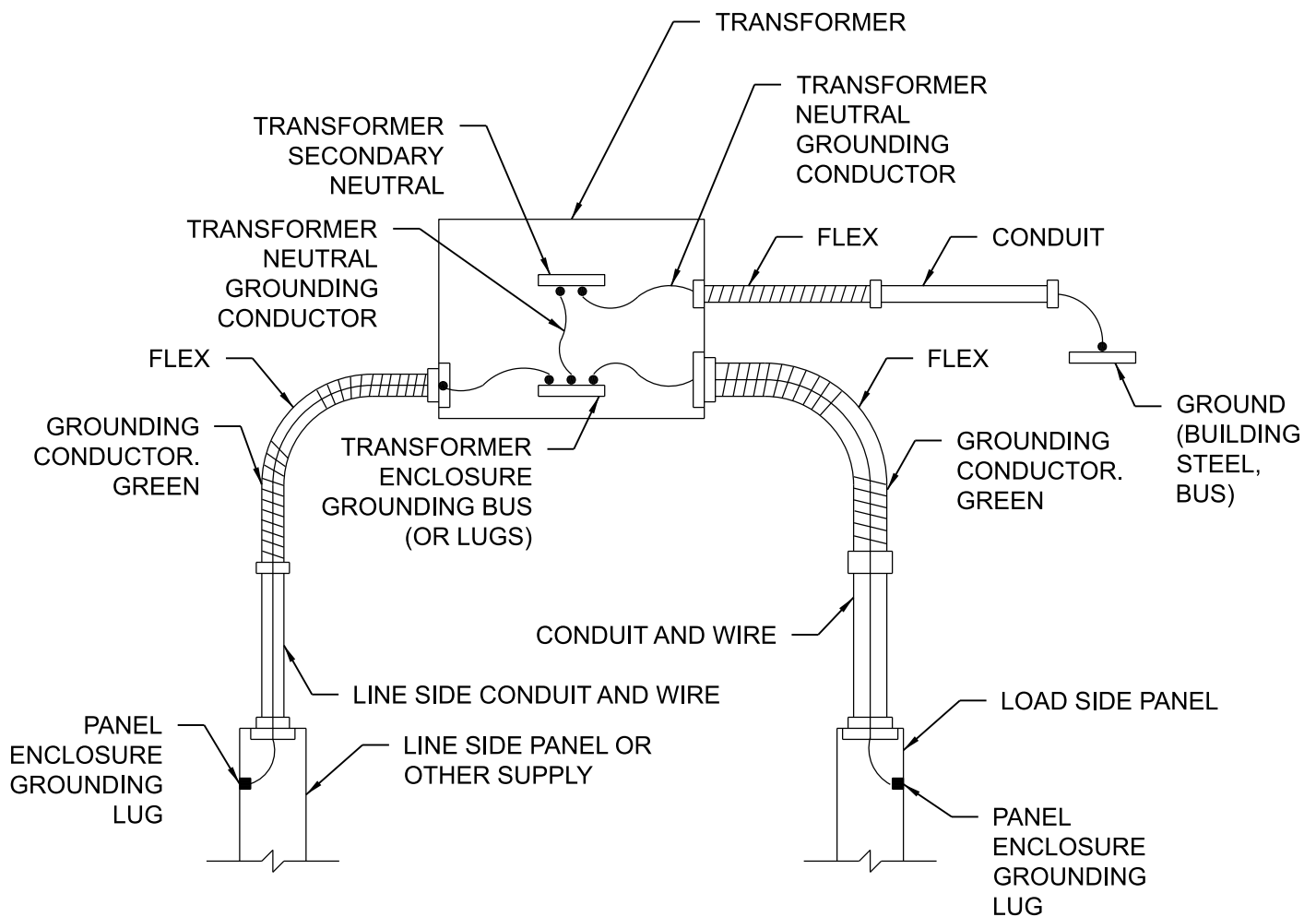
EXOTHERMIC WELD TO STEEL COLUMN

NTS

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

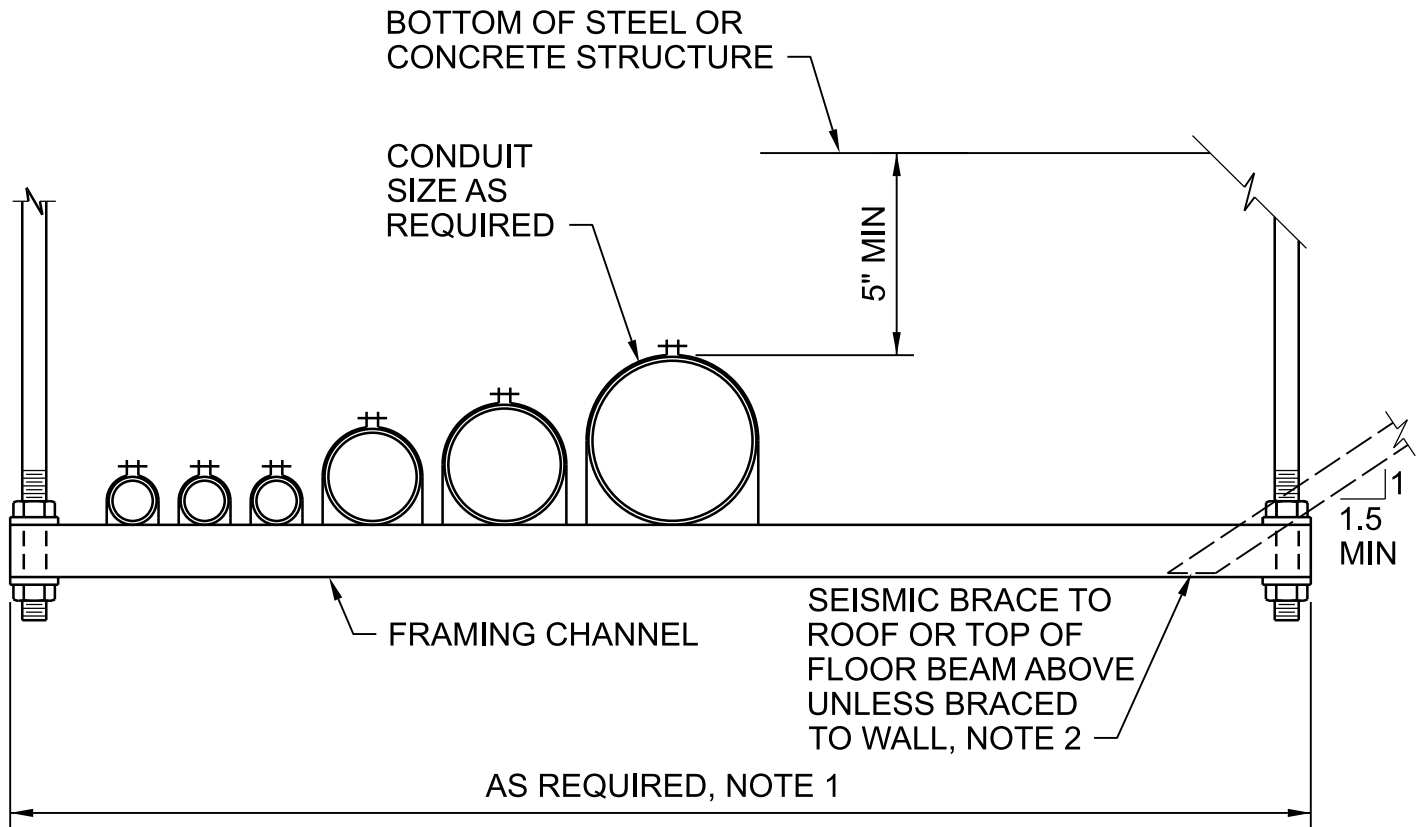
2605-215

Jacobs



TRANSFORMER GROUNDING

NTS



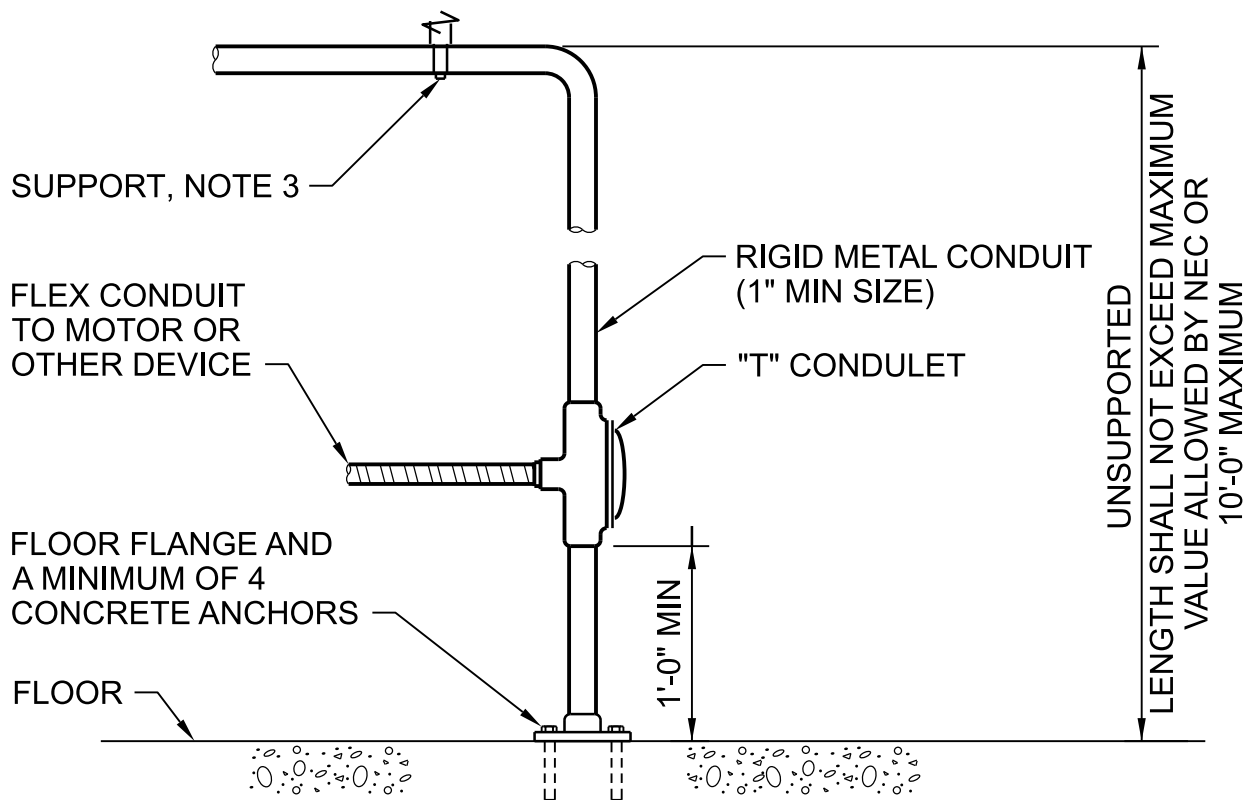
SINGLE RACK

NOTES:

1. LENGTH VARIES WITH NUMBER OF CONDUITS TO BE SUPPORTED AND SPACING BETWEEN CONDUITS.
2. SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED.
3. REFER TO DWG G-0085 FOR THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE.
4. SPACE CONDUIT SUFFICIENTLY TO ALLOW REMOVAL OF ONE CONDUIT WITHOUT DISTURBING ADJACENT CONDUITS.

CONDUIT RACKING SYSTEM

NTS



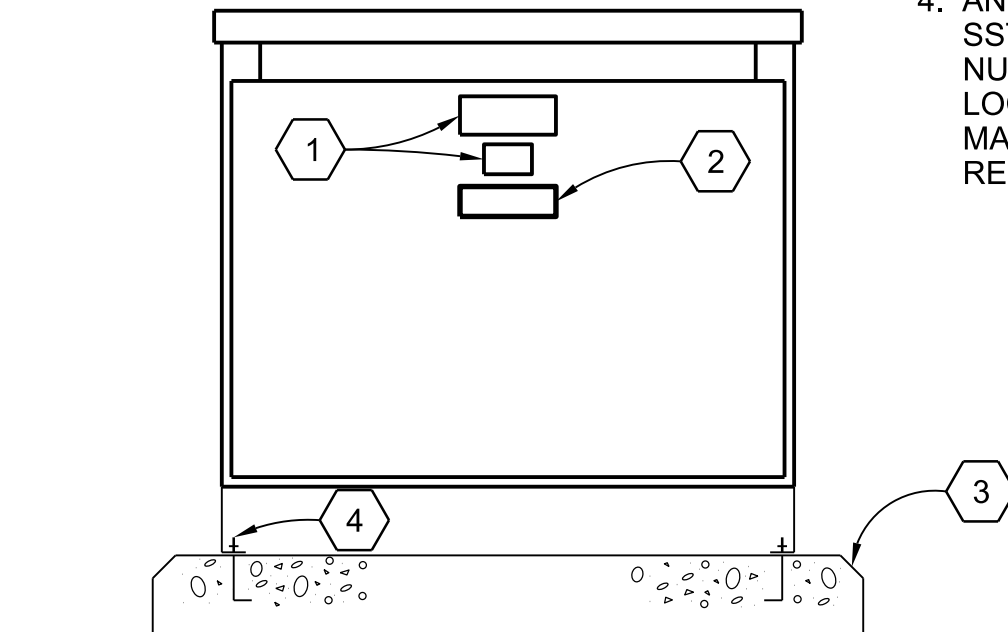
NOTES:

1. INSTALLATION OF CONDUIT TO A MOTOR OR OTHER DEVICE WHERE A FLEXIBLE CONNECTION IS REQUIRED AND NO JUNCTION BOXES OR CONTROL DEVICES ARE REQUIRED SHALL BE MADE IN ACCORDANCE WITH THIS DETAIL.
2. REFER TO DWG G-0085 FOR THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE.
3. SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED.

CONDUIT TO EQUIPMENT FROM CEILING

NTS

1. MANUFACTURER'S NAMEPLATE.
2. OSHA/NEC PLACARD.
3. EQUIPMENT PAD, SEE STRUCTURAL DETAIL 0330-056 .
4. ANCHOR BOLTS WITH SST NUTS. INSTALL NUMBER, SIZE, AND LOCATIONS, PER MANUFACTURER'S RECOMMENDATIONS.



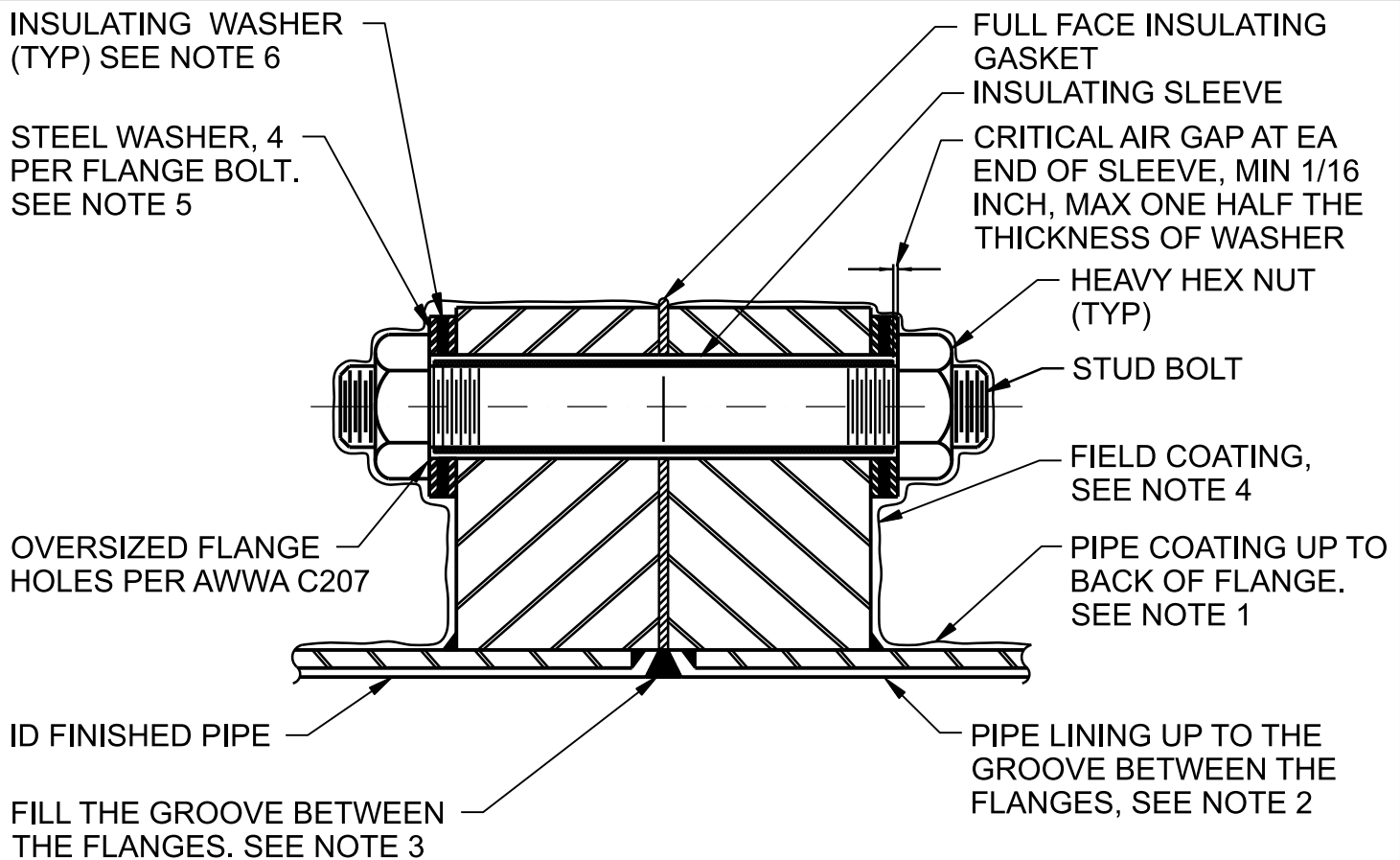
TRANSFORMER MOUNTING

NTS

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

2622-006

Jacobs

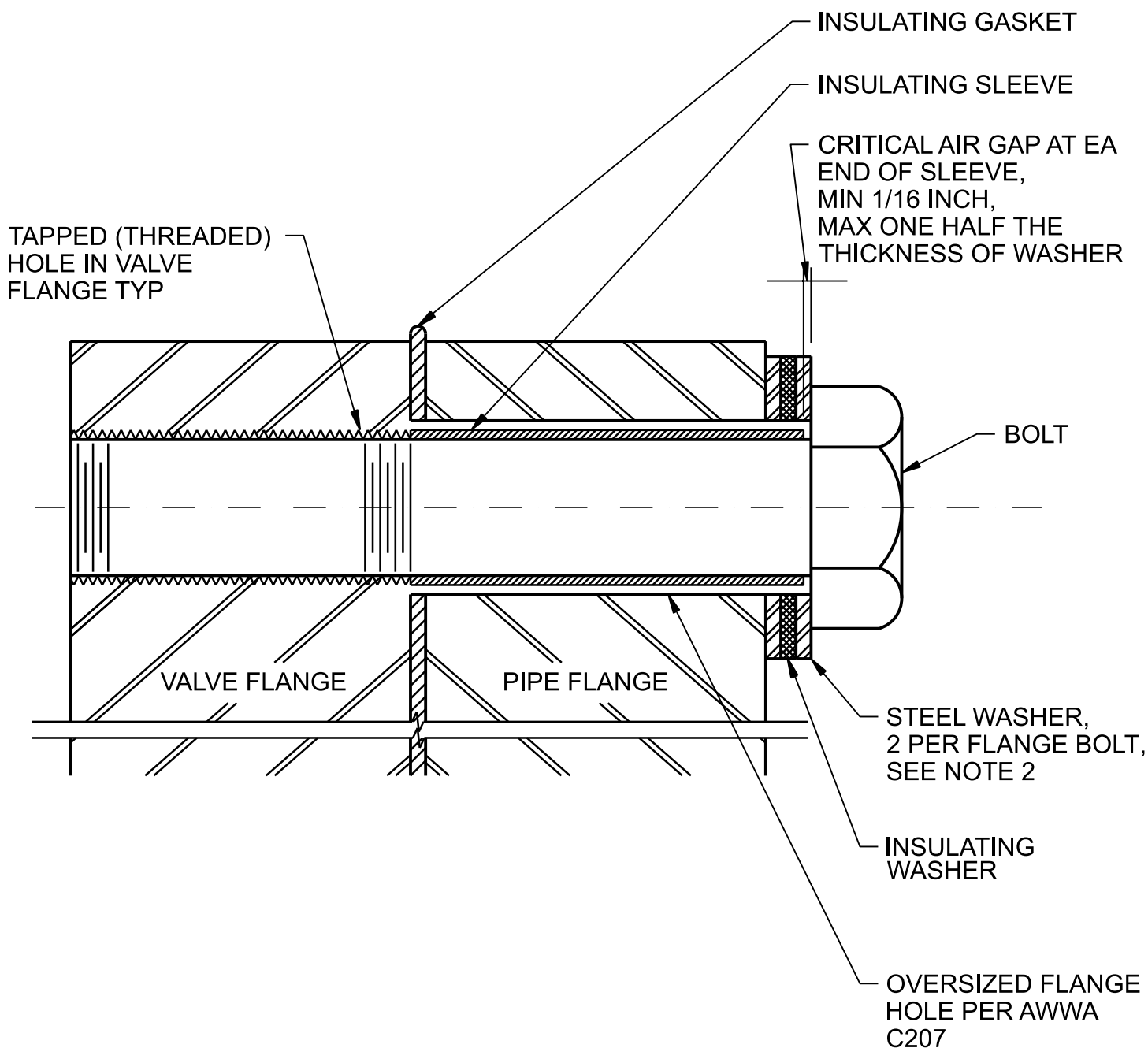


NOTES:

1. THE PIPE COATING ON EACH SIDE OF THE INSULATED FLANGE SHALL BE THE SAME IN TYPE, THICKNESS, AND QUALITY UP TO THE BACK SIDE OF THE RESPECTIVE FLANGE.
2. THE LINING ON THE PIPE SHALL BE THE SAME IN TYPE, THICKNESS, AND QUALITY UP TO THE INSULATED FLANGE JOINT.
3. FOR PIPE LARGER THAN 24 INCH DIAMETER , FILL THE INSULATED FLANGE'S INTERNAL GAP WITH A MATERIAL COMPATIBLE WITH THE PIPE LINING.
4. COAT JOINTS AS SPECIFIED AFTER INSTALLATION.
5. SEE (2642-932) FOR INSULATED BOLTS AT TAPPED VALVE FLANGES.
6. FOR PIPE SMALLER THAN 36 INCH DIAMETER, DELETE INNER STEEL WASHERS.
7. FOR BURIED OR SUBMERGED INSULATING FLANGE, DO NOT INSTALL INSULATING WASHER ON PROTECTED SIDE OF FLANGE.

INSULATED FLANGES

NTS

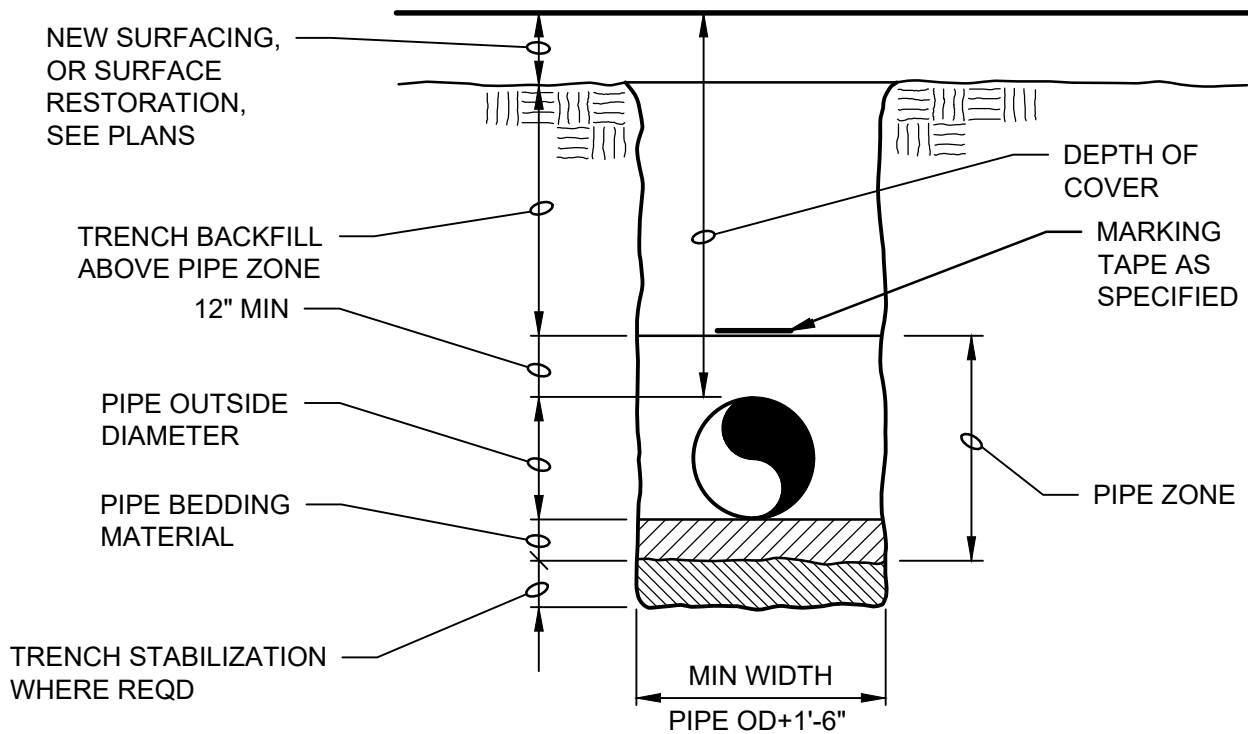


NOTES:

1. COAT COMPLETED JOINT AS SPECIFIED AFTER INSULATION.
2. FOR PIPE SMALLER THAN 36 INCH DIAMETER, DELETE INNER STEEL WASHER.

INSULATED BOLTS AS TAPPED VALVE FLANGES

NTS



TYPICAL TRENCH

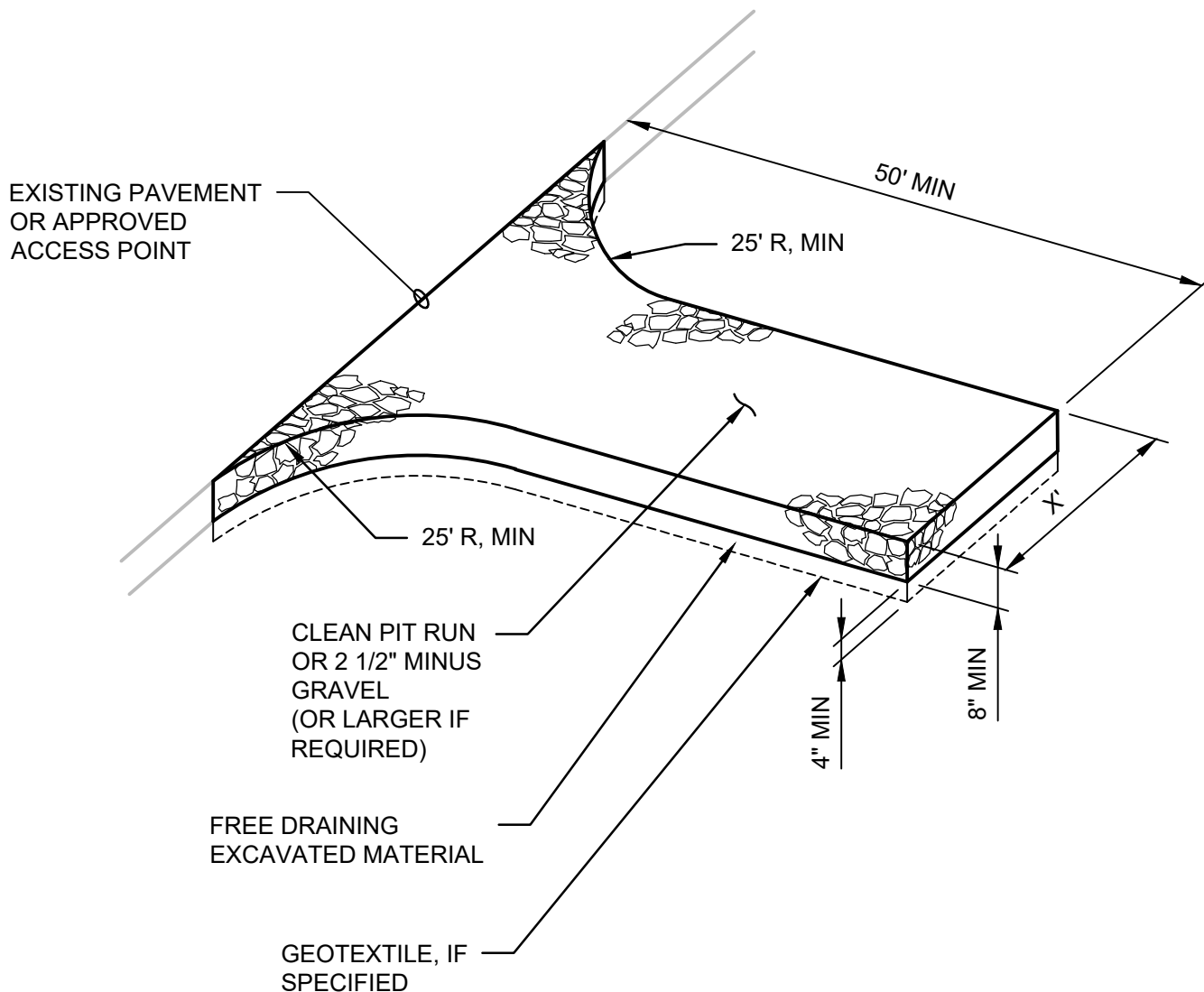
NTS

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CIPWW00047

3123-110

Jacobs

Jacobs

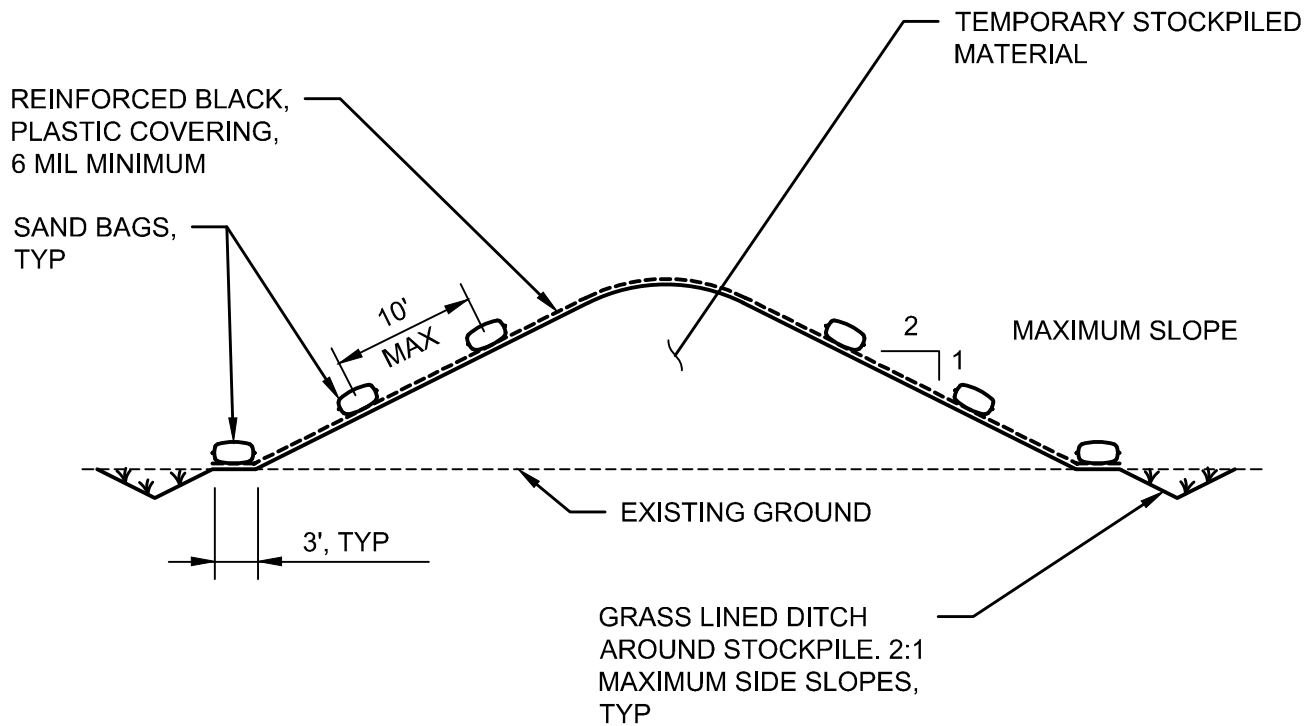


NOTES:

1. ADDITIONAL GRAVEL MAY HAVE TO BE ADDED PERIODICALLY TO MAINTAIN PROPER FUNCTION OF THE PAD.
2. REMOVE GRAVEL ENTRANCE AND REPLACE WITH NEW BASE COURSE PRIOR TO COMPLETION OF ACCESS ROAD.

GRAVEL CONSTRUCTION ENTRANCE

NTS

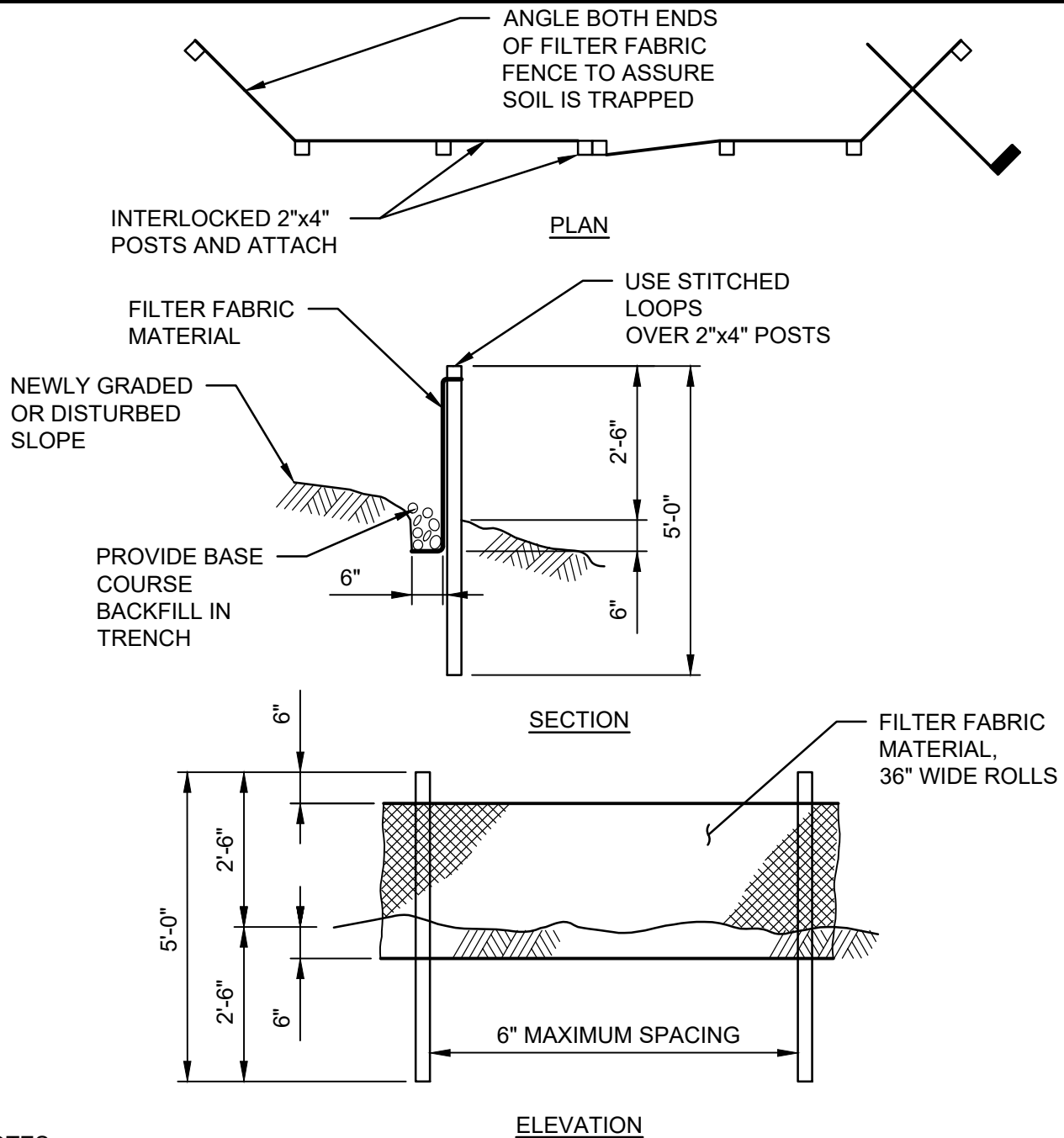


NOTES:

1. ALL SEAMS SHALL BE TAPED OR WEIGHTED DOWN FULL LENGTH. ALL SEAMS SHALL HAVE A MINIMUM 12" OVERLAP.
2. SEAMS PARALLEL TO THE SLOPE CONTOUR SHALL HAVE THE UPHILL SHEET OVERLAP THE DOWN HILL SHEET.
3. NO SURFACE RUN-OFF SHALL BE ALLOWED TO RUN UNDER THE PLASTIC COVERING.
4. DRAINAGE FROM AREAS COVERED BY REINFORCED PLASTIC SHEETING SHALL BE CONTROLLED SUCH THAT NO DISCHARGE OCCURS DIRECTLY ONTO UNCONTROLLED DISTURBED AREAS OF THE CONSTRUCTION SITE.
5. ALL SAND BAGS SHALL BE MAINTAINED IN PLACE WITH ROPE.

TEMPORARY STOCKPILE COVERING

NTS

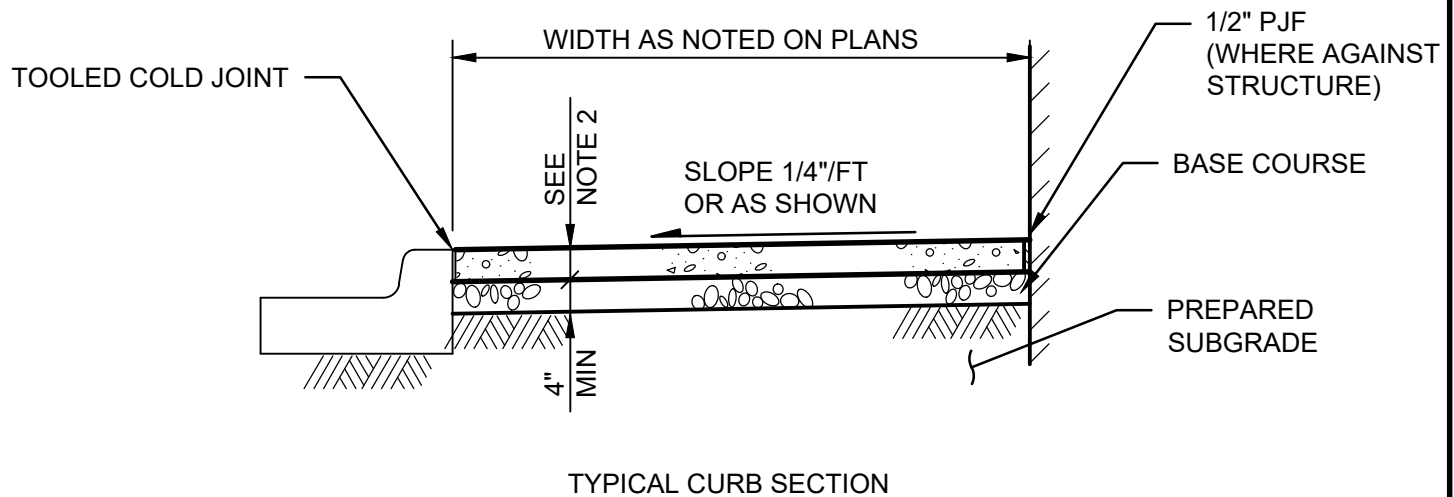
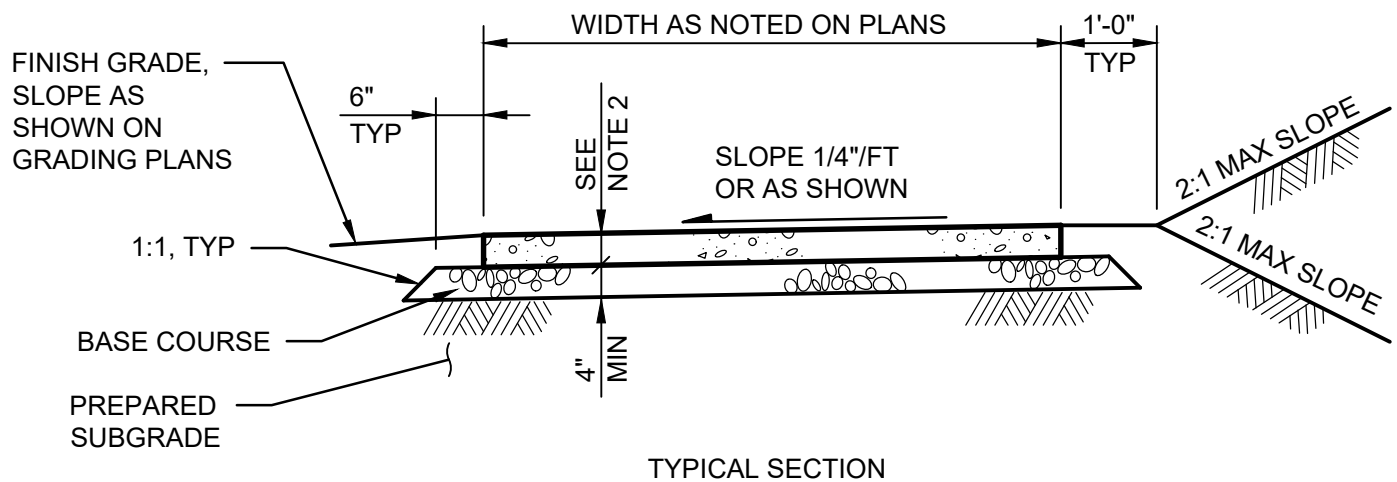


NOTES:

1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. 2"x4" DOUGLAS FIR OR STEEL FENCE POSTS.
3. STITCHED LOOPS TO BE INSTALLED DOWNHILL SIDE OF SLOPE.
4. COMPACT ALL AREAS OF FILTER FABRIC TRENCH.

SEDIMENT FENCE

NTS



NOTES:

1. SIDEWALKS 8 FEET AND WIDER SHALL HAVE A LONGITUDINAL CONTRACTION JOINT AT THE MIDPOINT.
2. CONCRETE DEPTH FOR STANDARD SIDEWALKS SHALL BE NOMINAL 4" MINIMUM, THICKNESS IN DRIVEWAY SHALL BE 6" MINIMUM.

TYPICAL CONCRETE SIDEWALK

NTS

PRE-ENGINEERED
U-BOLT

2 1/2" THRU 24" PIPE

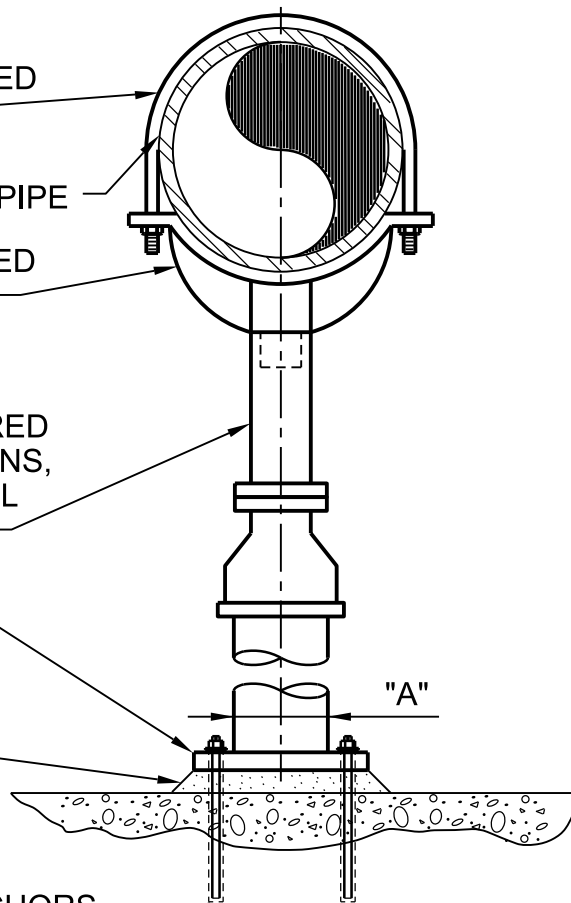
PRE-ENGINEERED
PIPE SUPPORT

SIZE AS REQUIRED
BY CALCULATIONS,
STANDARD WALL
PIPE MINIMUM

STANDARD
PIPE FLANGE

MINIMUM 1 1/2"
NON-SHRINK
GROUT

CONCRETE ANCHORS,
SIZE AND NUMBER
AS REQUIRED BY
CALCULATION



DIMENSION TABLE

PIPE SIZE	"A" MINIMUM NOMINAL PIPE SIZE
6"	3"
8"	3"

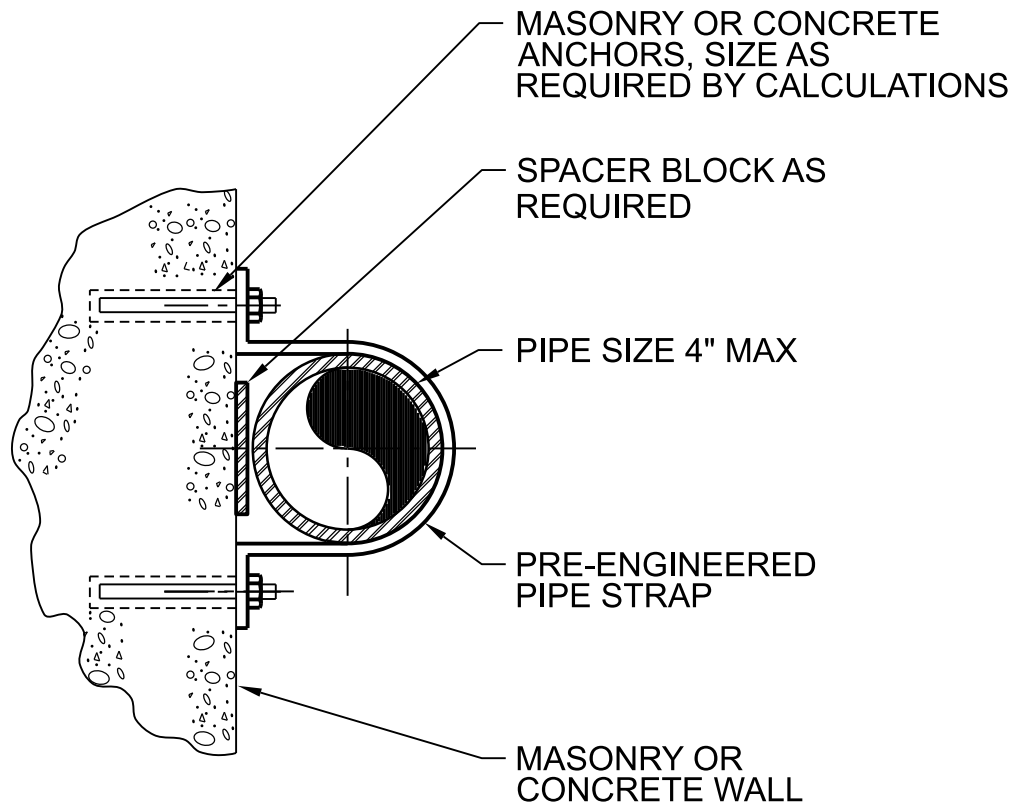
NOTES:

1. SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED.
2. ALL MATERIALS SHALL CONFORM TO AREA CLASSIFICATION AND MATERIALS SELECTION TABLE. LOCATED ON DRAWINGS.
3. ALL MATERIALS SHALL CONFORM TO THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE LOCATED ON THE DRAWINGS.

PIPE SUPPORT SADDLE

SUPPORT PEDESTAL TYPE - ADJUSTABLE

NTS

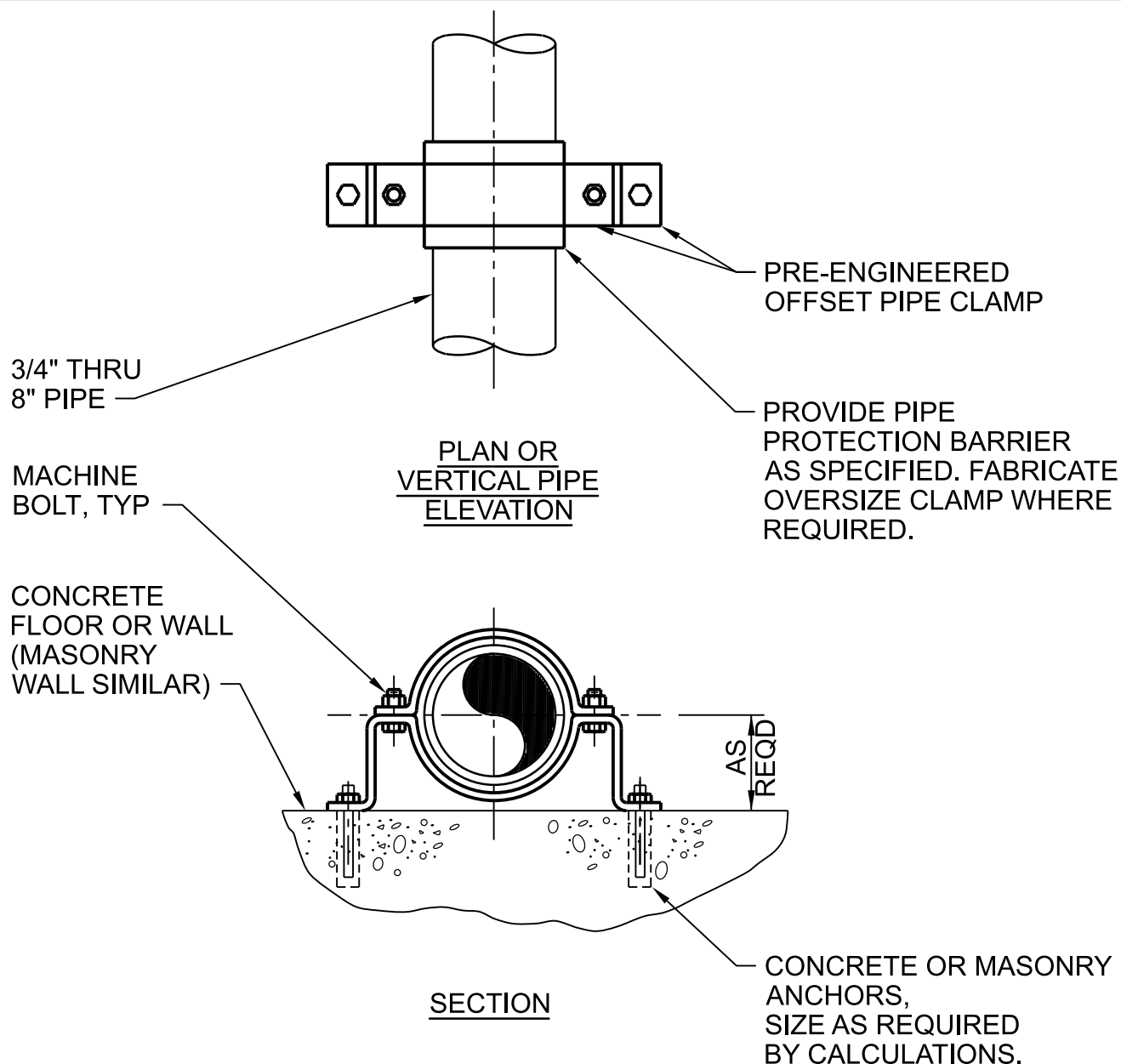


NOTES:

1. ONLY FOR VERTICAL PIPES.
2. NOT FOR USE ON CEILINGS OR BOTTOMS OF BEAMS.
3. PROVIDE PIPE PROTECTION BARRIER AS SPECIFIED. FABRICATE OVERSIZE STRAP WHERE REQUIRED.
4. SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED.
5. ALL MATERIALS SHALL CONFORM TO THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE LOCATED ON THE DRAWINGS.

PIPE SUPPORT - WALL MOUNT

NTS

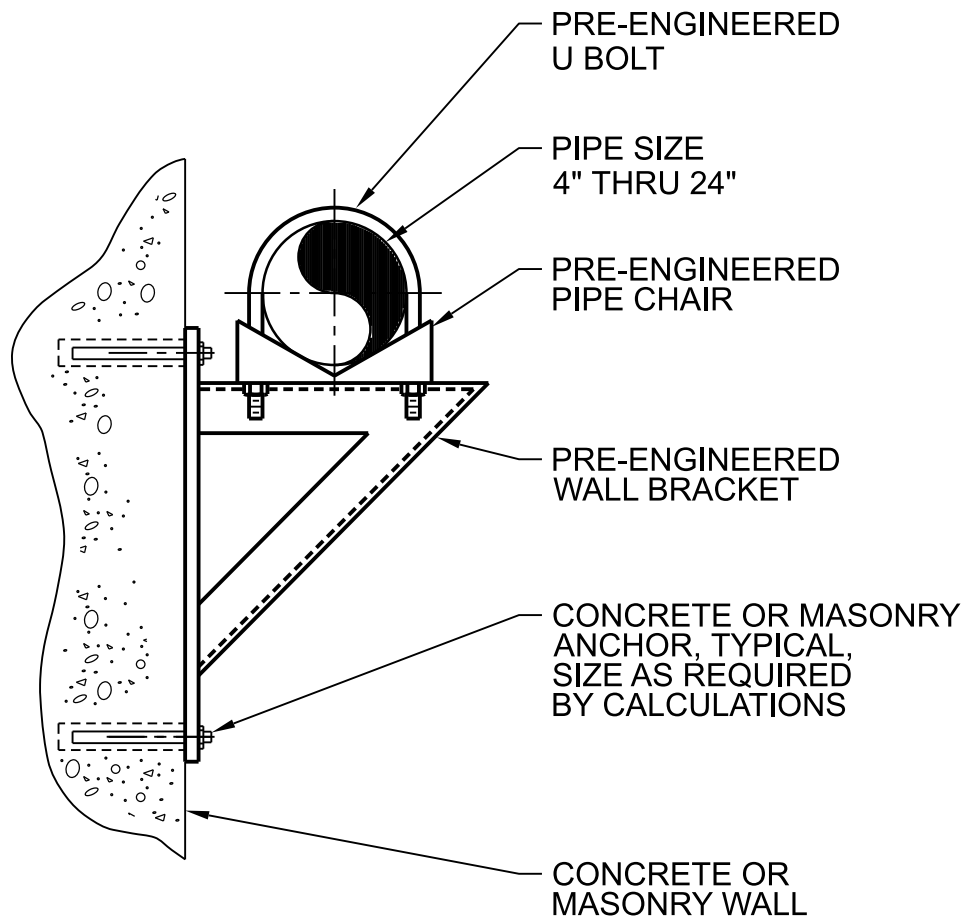


NOTES:

1. ONLY FOR VERTICAL OR FLOOR MOUNTED PIPES.
2. SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED.
3. ALL MATERIALS SHALL CONFORM TO THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE LOCATED ON THE DRAWINGS.

PIPE SUPPORT - WALL MOUNTED

NTS

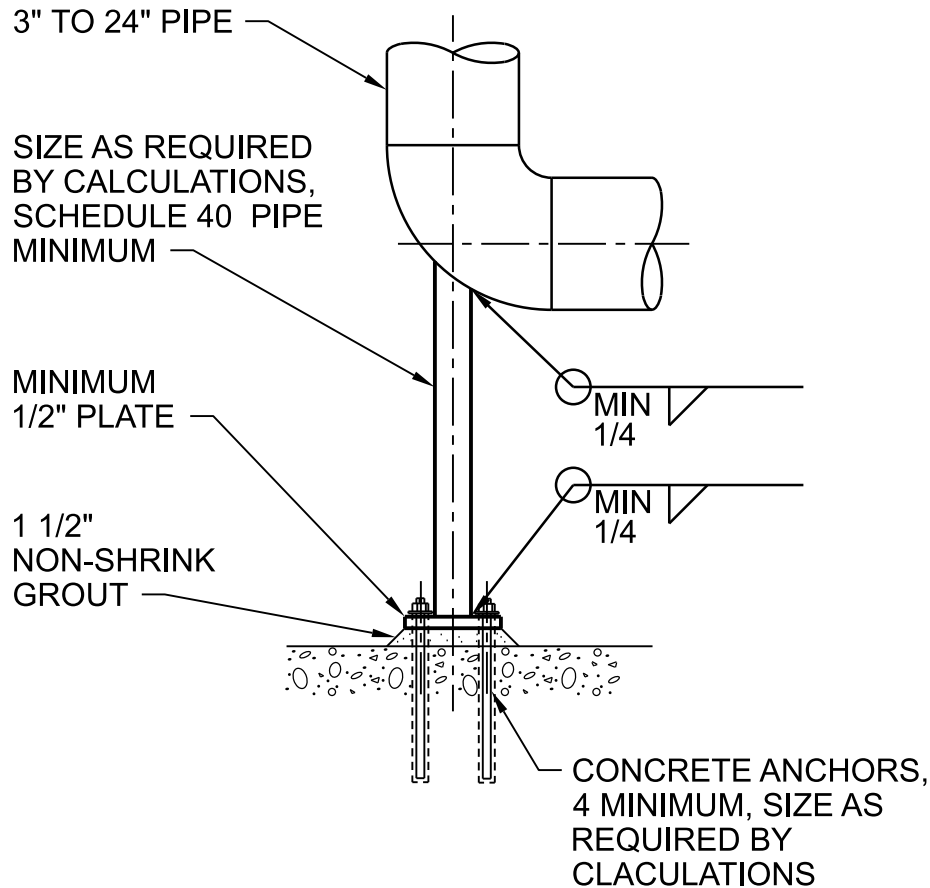


NOTES:

1. WALL BRACKET SHALL BE MEDIUM HEAVY DUTY AS REQUIRED BY CALCULATIONS.
2. SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED.
3. ALL MATERIALS SHALL CONFORM TO THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE LOCATED ON THE DRAWINGS.

PIPE SUPPORT - WALL MOUNTED MEDIUM

NTS

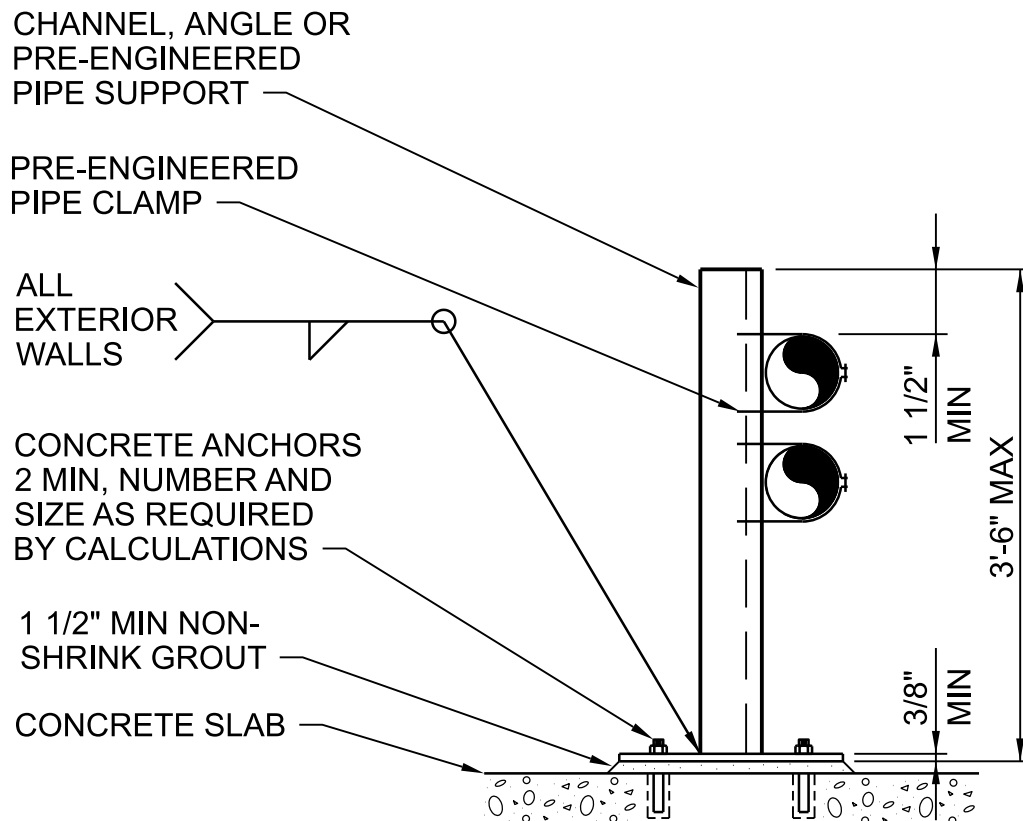


NOTES:

1. MINIMUM COMPONENT AND CONNECTION SIZES SHOWN. FURNISH LARGER SIZES IF REQUIRED BY CALCULATIONS.
2. SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED.
3. ALL MATERIALS SHALL CONFORM TO THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE LOCATED ON THE DRAWINGS.

PIPE SUPPORT

NTS



NOTES:

1. SUBMIT FINAL DESIGN DRAWINGS AND CALCULATIONS OF SUPPORTS AND ANCHORAGES AS SPECIFIED.
2. MAXIMUM PIPE SIZE: 2" DIAMETER.
3. MATERIAL TYPE SHALL BE AS SHOWN ON DRAWINGS OR AS SPECIFIED.
4. PROVIDE PIPE PROTECTION BARRIER AS SPECIFIED.
5. ALL MATERIALS SHALL CONFORM TO THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE LOCATED ON THE DRAWINGS.

FLOOR PIPE SUPPORT

NTS

CONCRETE
SLAB

ROD STIFFENER
AS REQUIRED

4" DIA TO
24" DIA PIPE

UNDERCUT
CONCRETE ANCHORS
AS SPECIFIED, TYP

TRANSVERSE BRACE, SIZE
AND TYPE AS REQUIRED
BY CALCULATIONS

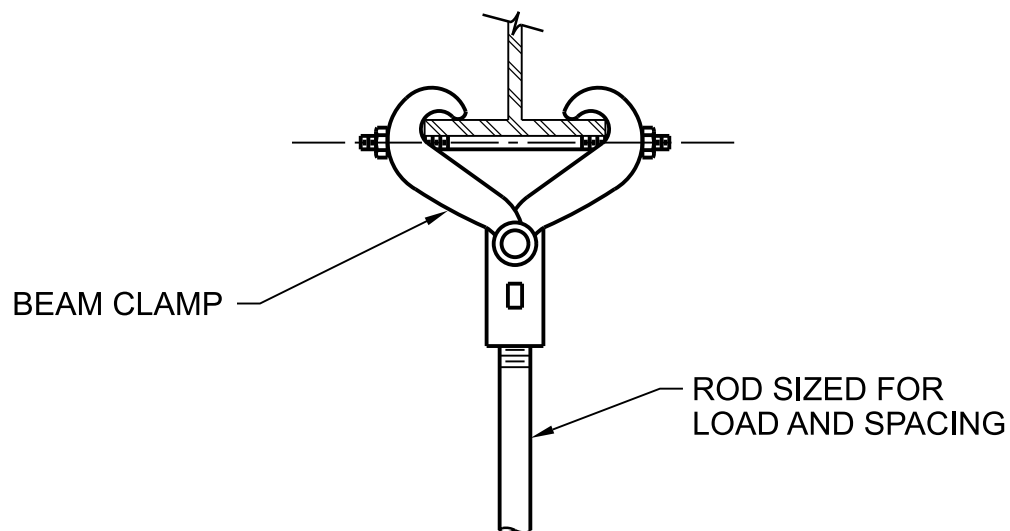
PRE-ENGINEERED PIPE STRAP
OR U-BOLT, CLEVIS ROD AND
EMBED ASSEMBLY, ADAPT ASSEMBLY
AS REQUIRED TO RECEIVE TRANSVERSE
AND LONGITUDINAL BRACES

NOTES:

1. SUBMIT FINAL DESIGN DRAWINGS AND CALCULATIONS OF SUPPORTS AND ANCHORS AS SPECIFIED.
2. LONGITUDINAL BRACE BEYOND (NOT SHOWN) AS REQUIRED BY CALCULATIONS.
3. ALL MATERIALS SHALL CONFORM TO THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE LOCATED ON THE DRAWINGS.

OVERHEAD PIPE HANGER

NTS

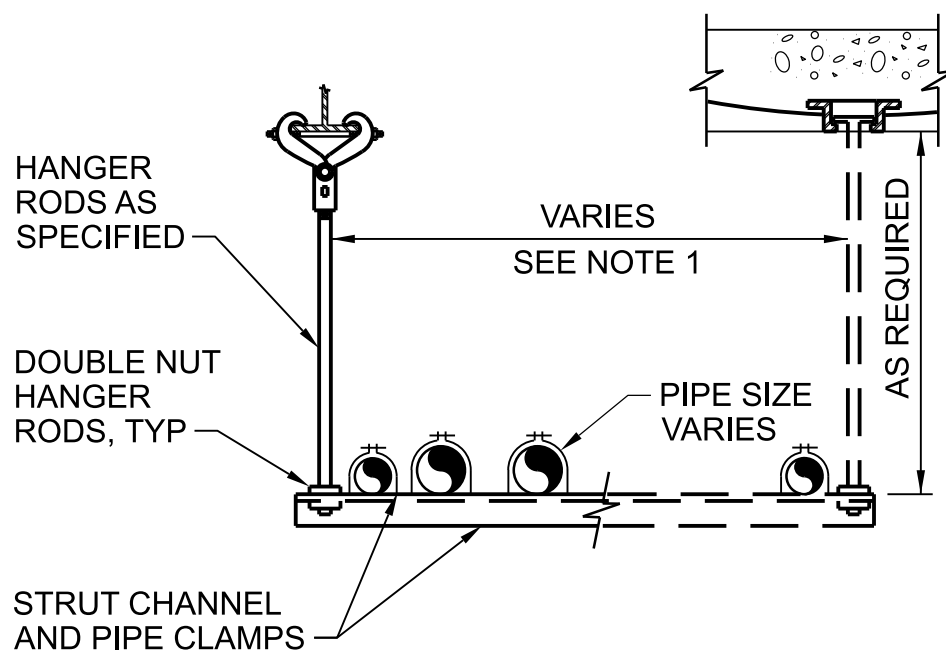


NOTES:

1. ALL MATERIALS SHALL CONFORM TO THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE LOCATED ON THE DRAWINGS.

BEAM CLAMP

NTS

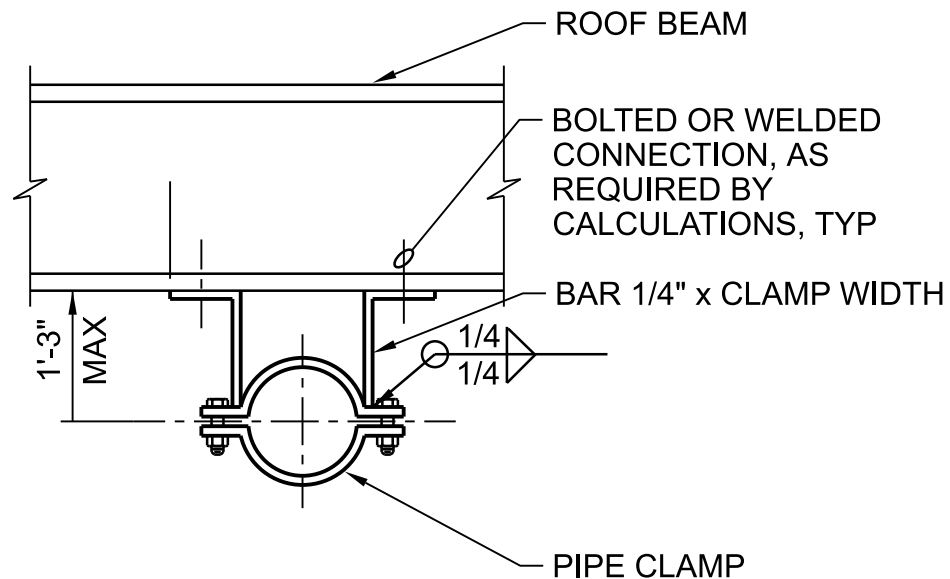


NOTES:

1. LENGTH VARIES WITH NUMBER OF PIPES TO BE SUPPORTED, AND SPACING BETWEEN PIPES.
2. ALL MATERIALS SHALL CONFORM TO THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE LOCATED ON THE DRAWINGS.

TRAPEZE PIPE HANGER

NTS



NOTES:

1. SUBMIT FINAL DESIGN DRAWINGS AND CALCULATIONS OF SUPPORTS AND ANCHORS AS SPECIFIED. VERIFY ALL SIZES AND DIMENSION SHOWN.
2. ALL MATERIALS SHALL CONFORM TO THE AREA CLASSIFICATION AND MATERIALS SELECTION TABLE LOCATED ON THE DRAWINGS.

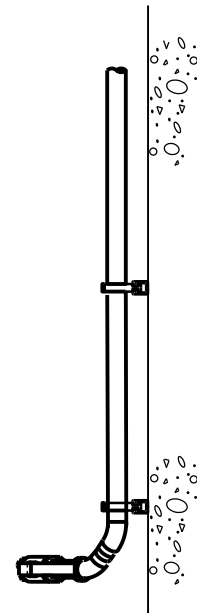
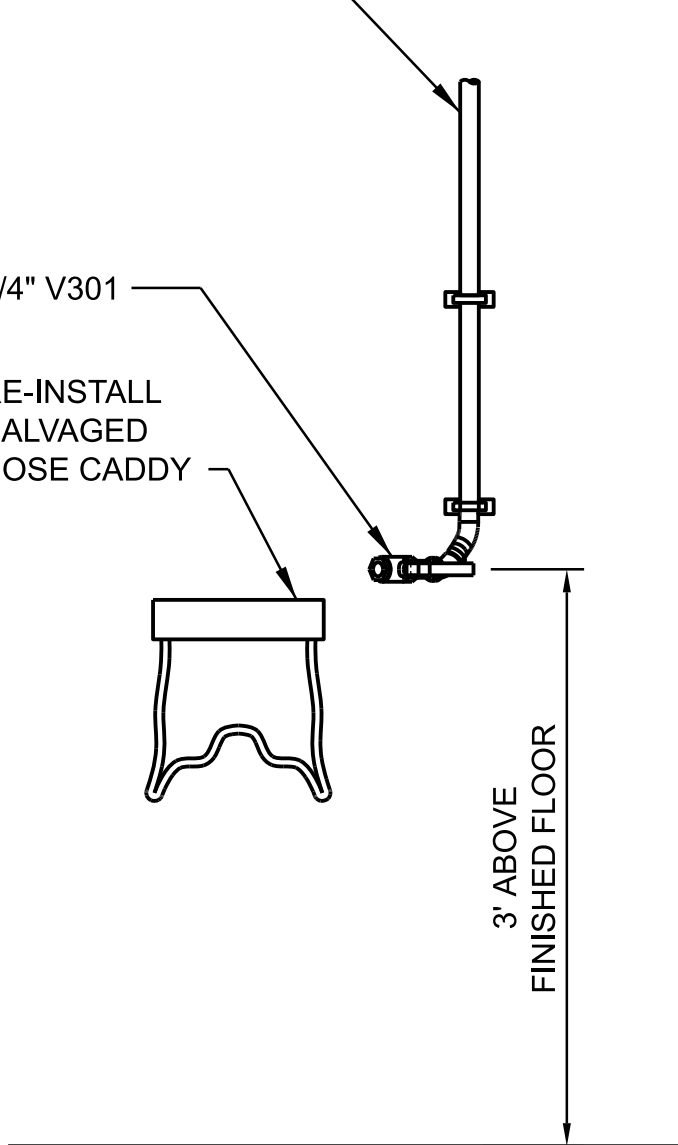
TYPE B PIPE SWAY BRACE

NTS

WATER SUPPLY

3/4" V301

RE-INSTALL
SALVAGED
HOSE CADDY



SECTION VIEW

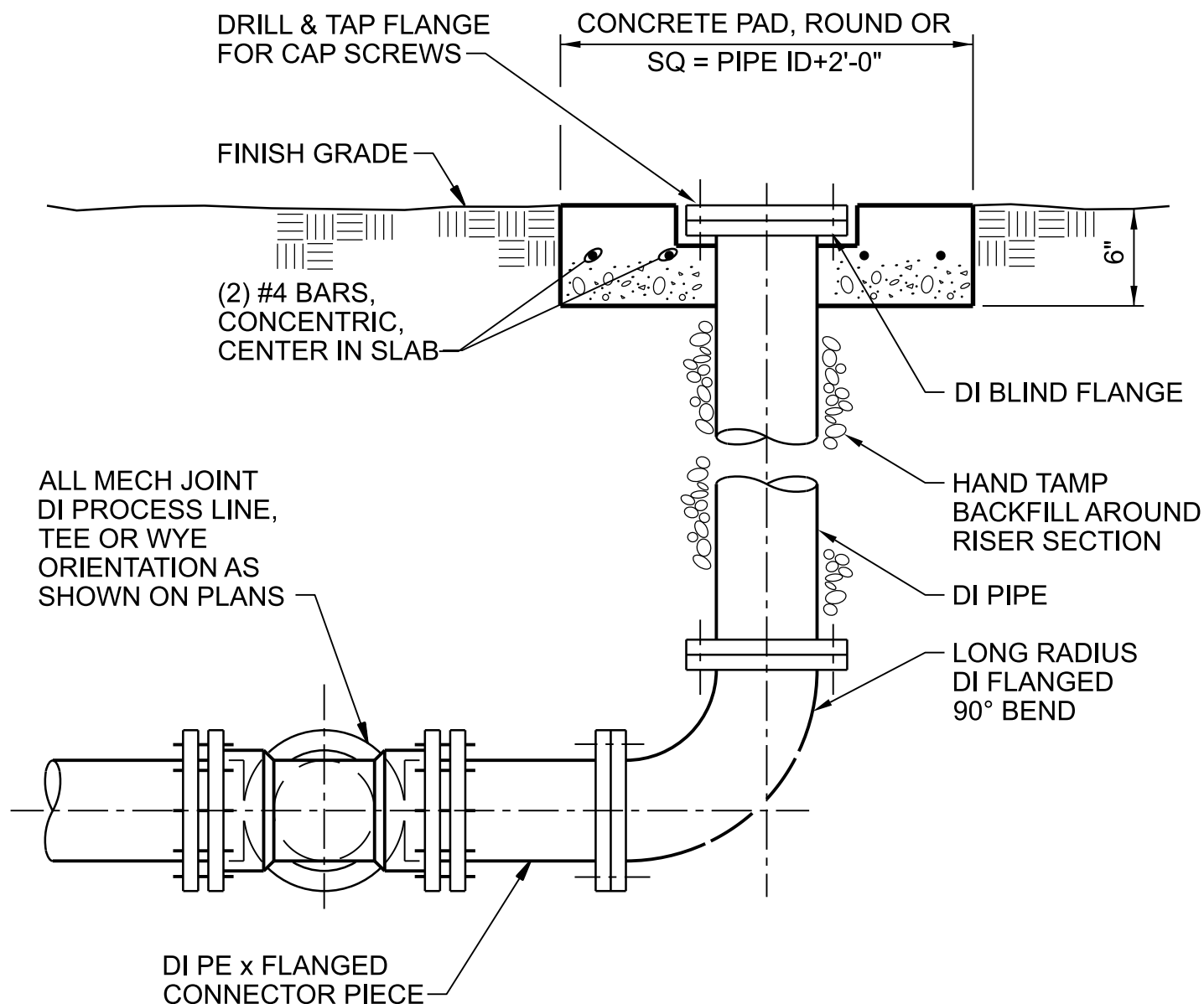
HOSE STATION

NTS

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

4027-165

Jacobs

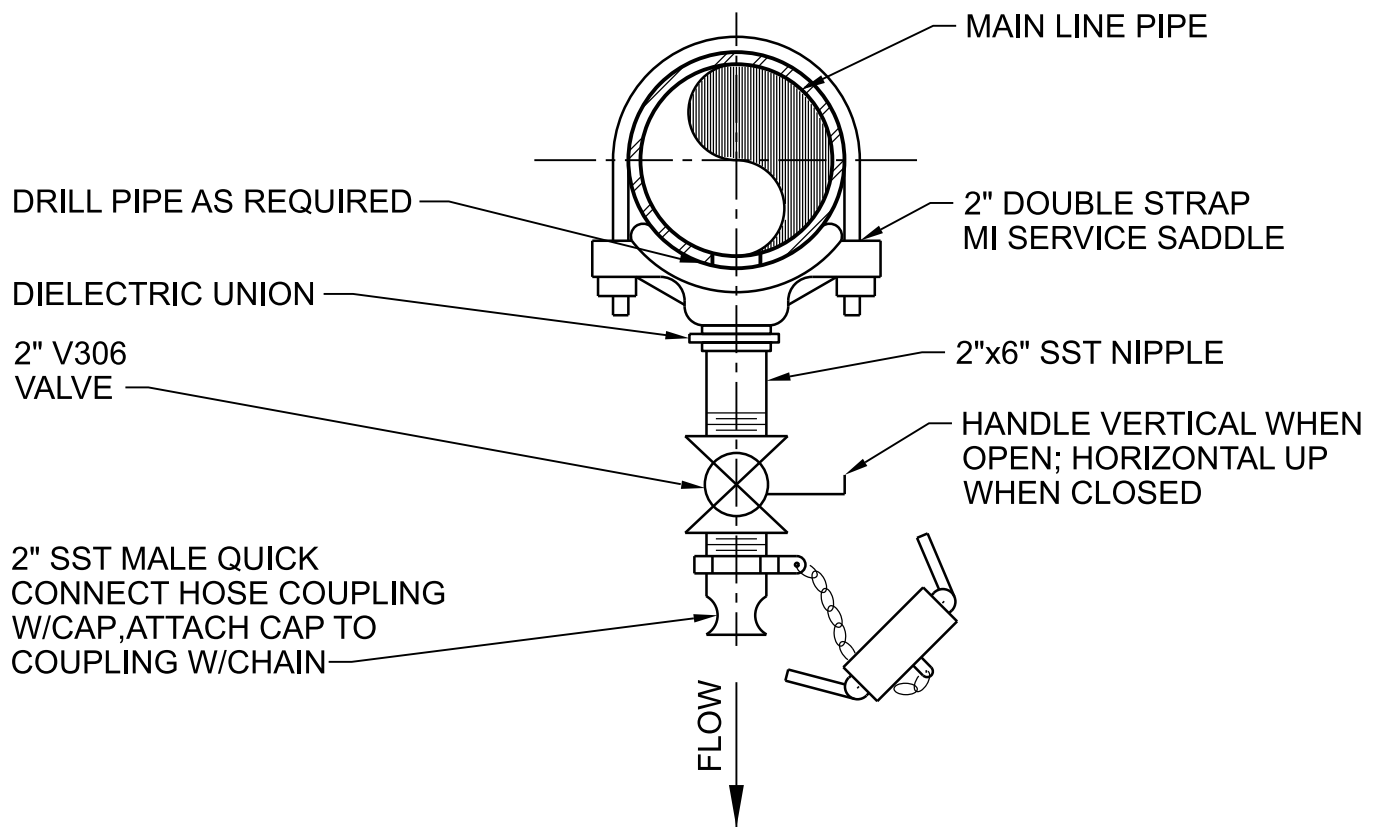


NOTES:

1. RISER SECTION AND ELBOW SAME SIZE AS PROCESS LINE, UNLESS NOTED OTHERWISE.

PROCESS LINE CLEAN-OUT SETTING

NTS



NOTES:

1. FOR LINE SIZE 2" AND SMALLER, FITTINGS AND VALVES SHALL BE SAME SIZE AS LINE.
2. BRANCH CONNECTIONS FROM GLASS-LINED PIPE SHALL BE MADE WITH GLASS-LINED TEE. MODIFICATIONS TO GLASS-LINED PIPE SHALL NOT BE ALLOWED IN THE FIELD.

LINE DRAIN VALVE INSTALLATION

NTS

1" STAINLESS STEEL
VENT PIPE UNLESS
NOTED OTHERWISE

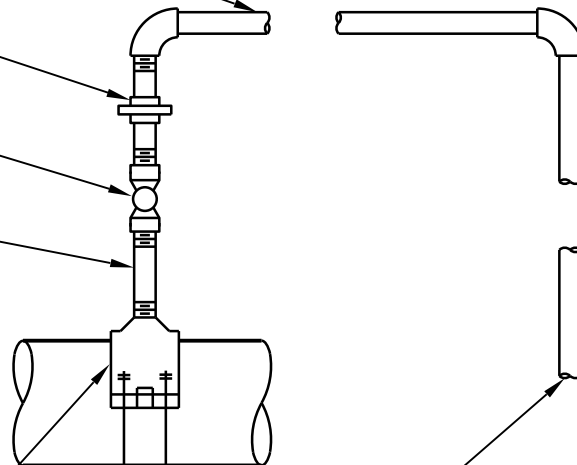
UNION

1" V306
BALL VALVE

SST
NIPPLE

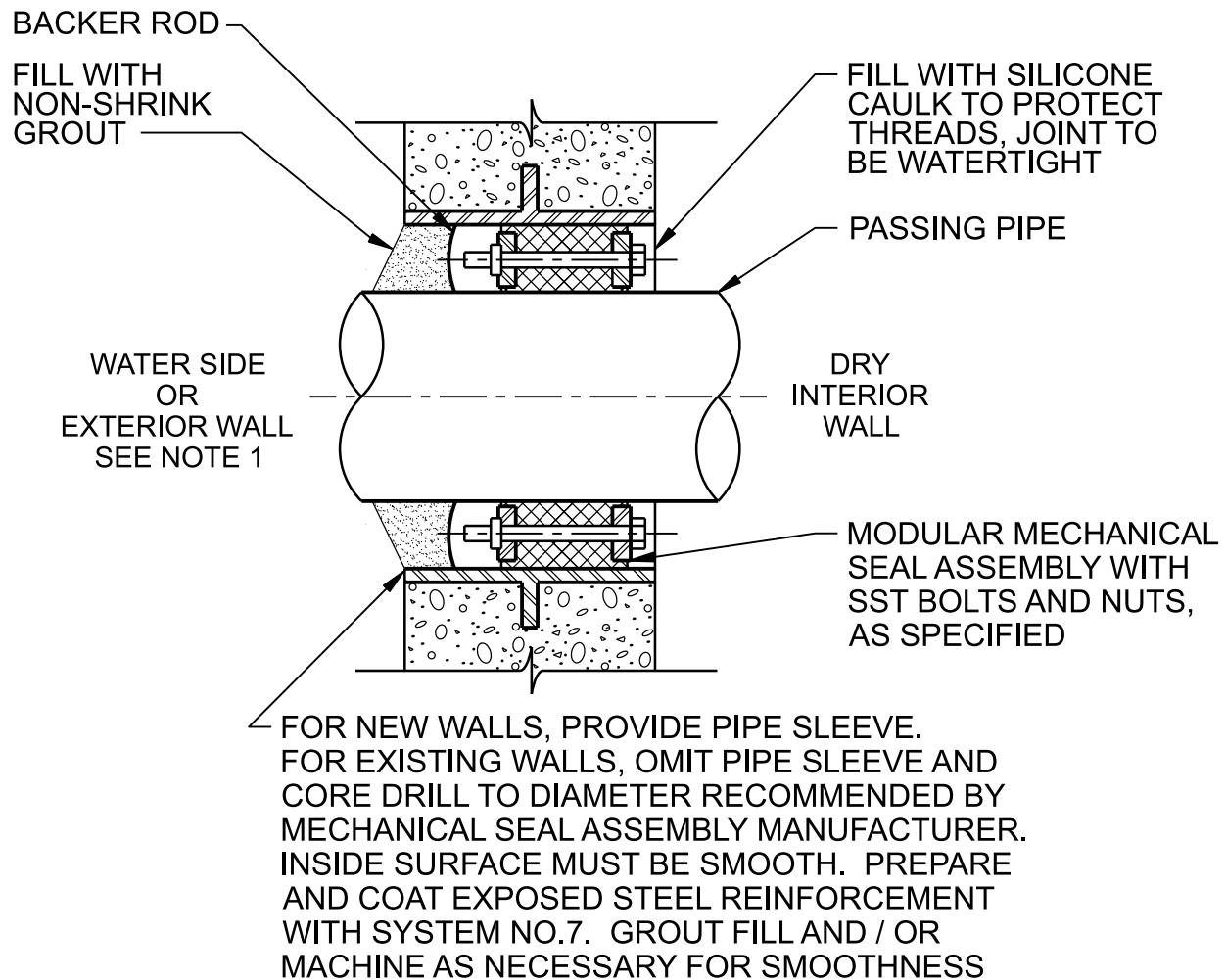
DOUBLE STRAP SERVICE
SADDLE AND DIELECTRIC
UNION FOR DI PIPE,
OR THRED-O-LET
WELDED TO STEEL PIPE

ROUTE TO HUB DRAIN OR
SCUPPER IF WITHIN 20-FEET,
IF FURTHER THAN 20-FEET
HORIZONTAL DISTANCE
FROM VENT CONNECTION
TERMINATE 3'-0" ABOVE FLOOR



PIPE HIGH POINT VENT

NTS

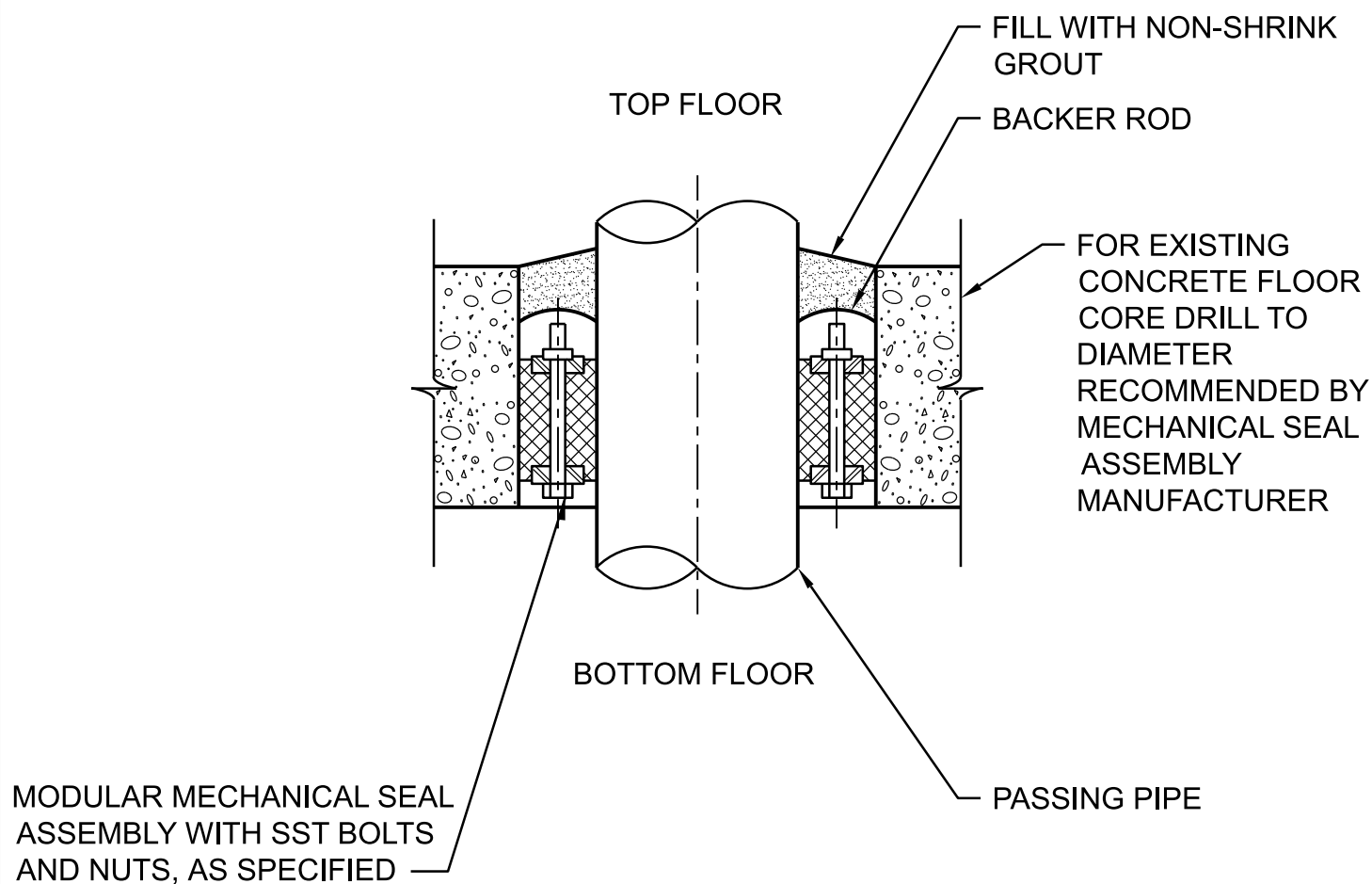


NOTES:

1. WHERE PIPE PASSES THROUGH INTERIOR WALL, GROUT IS NOT REQUIRED.
2. ALL MATERIALS SHALL BE PER THE AREA CLASSIFICATION AND MATERIALS OF CONSTRUCTION TABLE LOCATED ON DRAWINGS.
3. FOR EXISTING WALLS, FIELD X-RAY AND LOCATE CONCEALED REINFORCEMENT OR CONDUITS PRIOR TO CORING NEW HOLE. LOCATE NEW PIPE IN AREAS FREE OF REINFORCEMENT OR CONDUIT. CORE DRILL TO DIAMETER RECOMMENDED BY MECHANICAL SEAL ASSEMBLY MANUFACTURER.

WALL PIPE PENETRATION SEAL

NTS

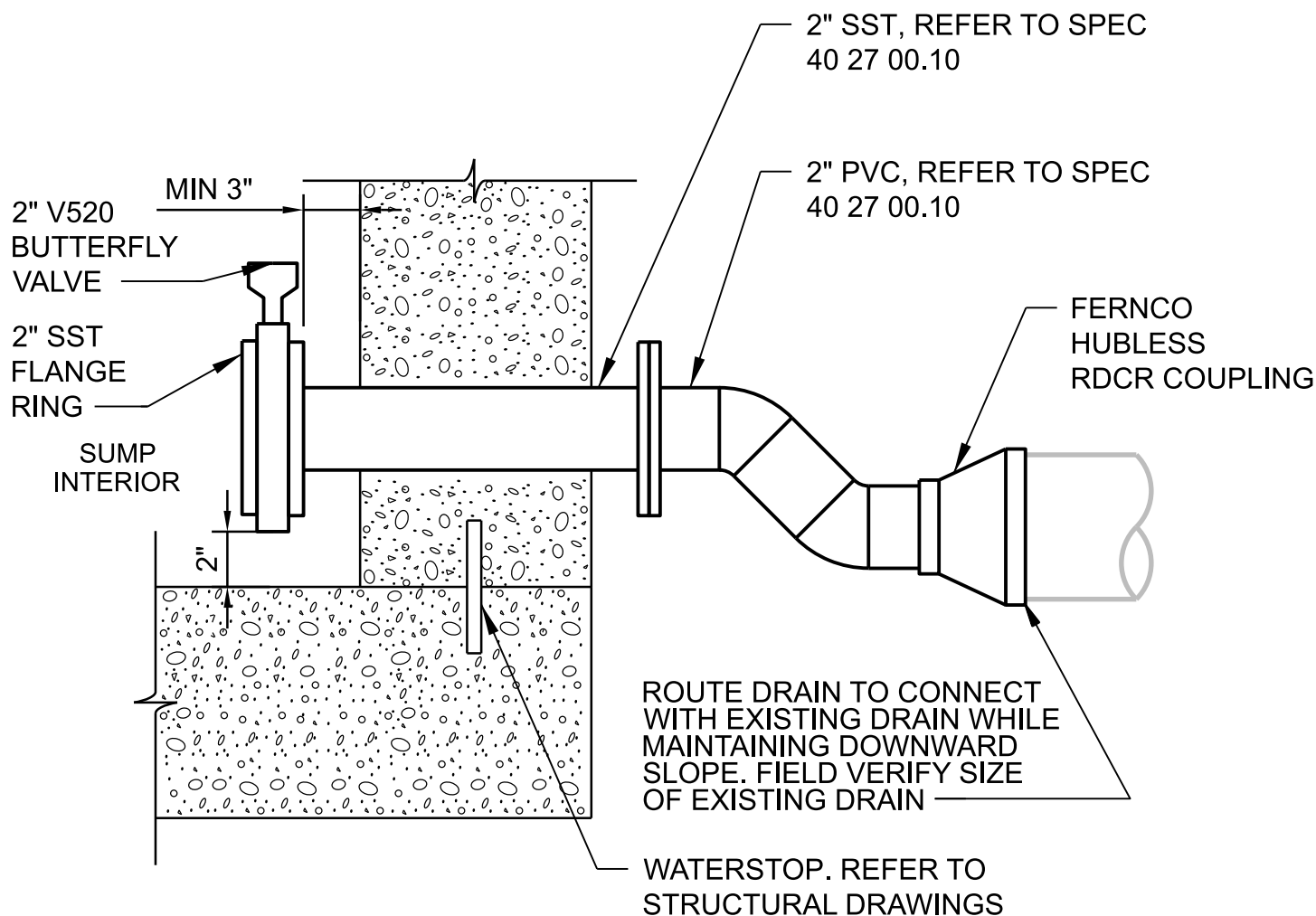


NOTES:

1. WHERE EXISTING CONCRETE STRUCTURE IS TO BE CORE DRILLED, ULTRASONIC TEST OR X-RAY THE AREA FOR EMBEDDED ITEMS BEFORE CORE DRILLING. IF EMBEDDED ITEMS ARE FOUND, NOTIFY THE ENGINEER IMMEDIATELY.

PIPE PENETRATION SEAL

NTS

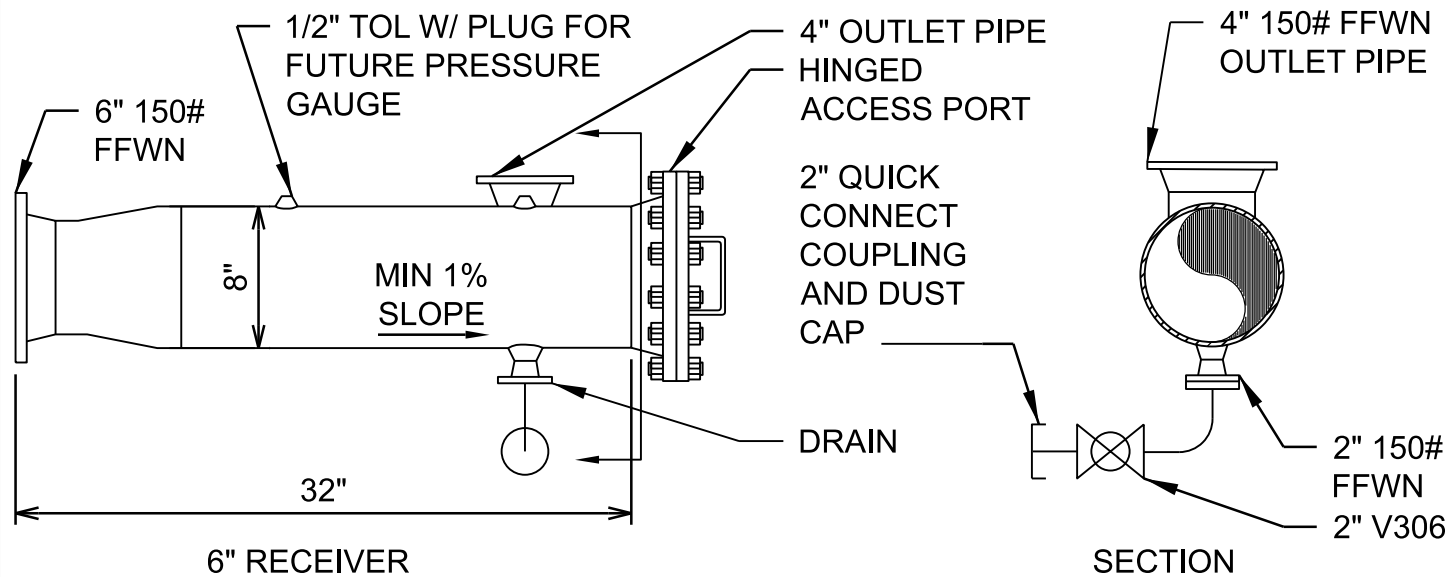
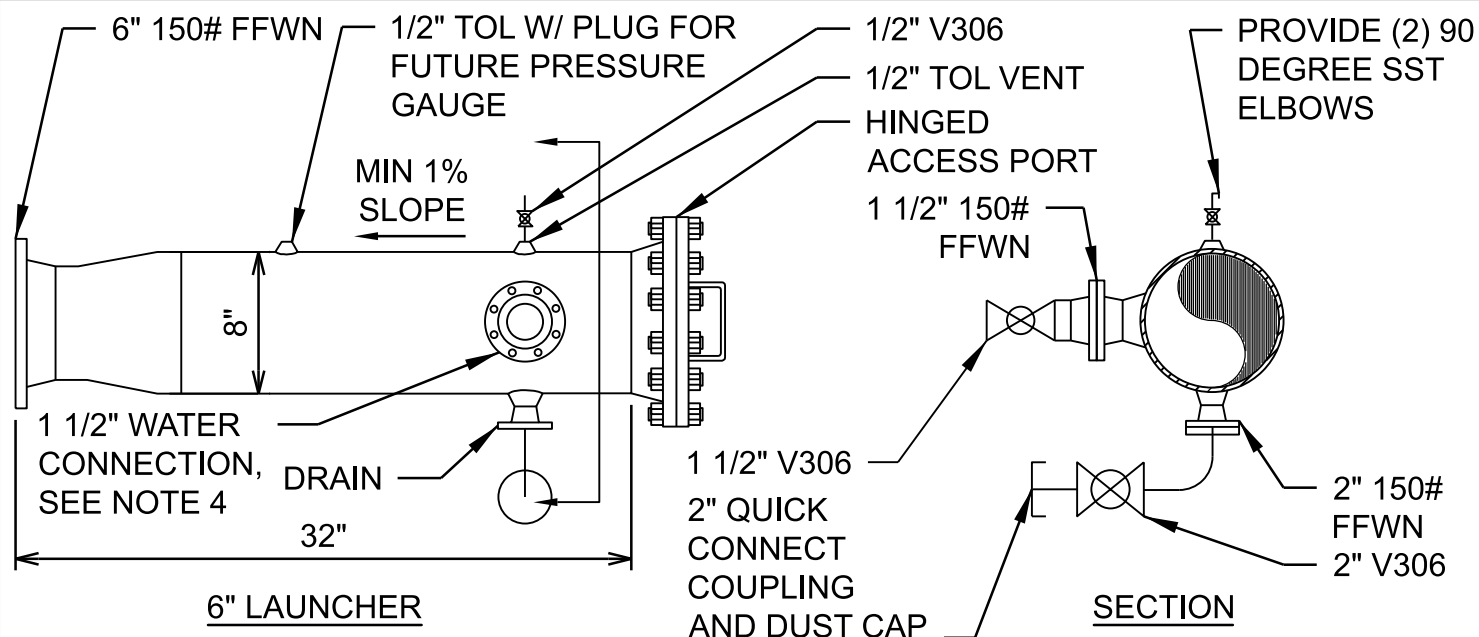


NOTES:

1. INSTALL 2" PENETRATION AS LOW AS POSSIBLE WITHOUT INTERFERING WITH SUMP WATERSTOP.
2. VERIFY SUFFICIENT CLEARANCE FOR OPERATION OF VALVE HANDLE.

SUMP DRAIN CONNECTION

NTS

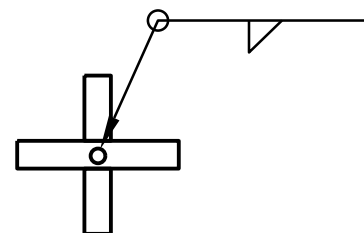
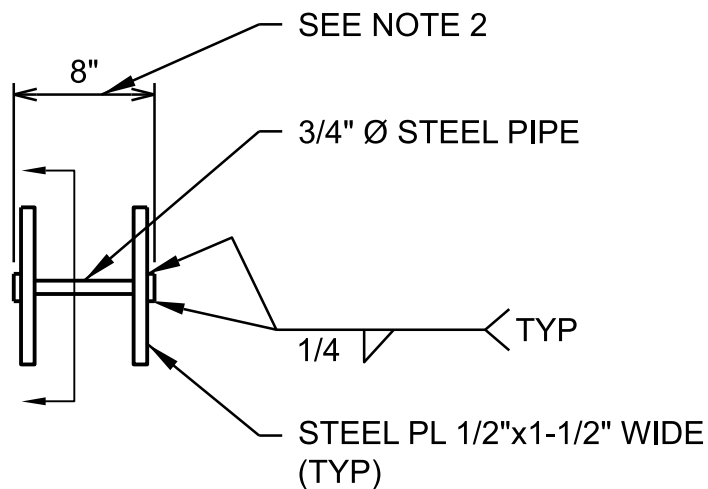


NOTES:

1. REFER TO SPECIFICATION SECTION 40 27 01 PROCESS PIPING SPECIALITIES FOR PIG LAUNCHER SPECIFICATION AND ADDITIONAL REQUIREMENTS.
2. REFER TO STANDARD DETAIL 4005-501 FOR PROPER SUPPORT OF PIG LAUNCHERS AND RECEIVERS.
3. PROVIDE ONE PIG SNUBBED AT EACH LAUNCHER AND RECEIVER. REFER TO DETAIL 4027-955.
4. CONTRACTOR TO FIELD VERIFY LEFT-HAND OR RIGHT-HAND WATER CONNECTIONS AS SHOWN ON THE DRAWINGS.

PIG LAUNCHER AND RECEIVERS

NTS



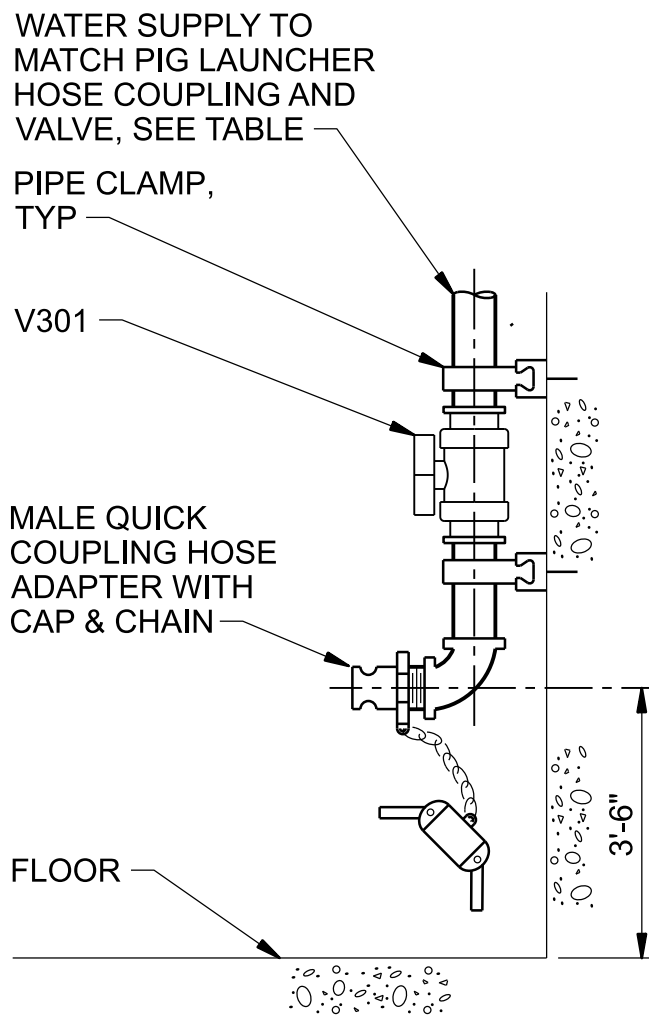
SECTION VIEW

NOTES:

1. HOT DIP GALVANIZE AFTER FABRICATION.
2. COORDINATE WITH PIG LAUNCHER/RECEIVER, SEE DETAIL 4027-954. FOR PIG LAUNCHERS, THE SNUBBER LENGTH MUST BE 2" LONGER THAN THE DISTANCE FROM HINGED ACCESS PORT TO WATER INLET. FOR PIG RECIEVERS, THE SNUBBER LENGTH MUST BE 2" LONGER THAN THE DISTANCE FROM THE HINGED ACCESS PORT TO THE FAR EDGE OF THE OUTLET PIPE.

PIG SNUBBER

NTS



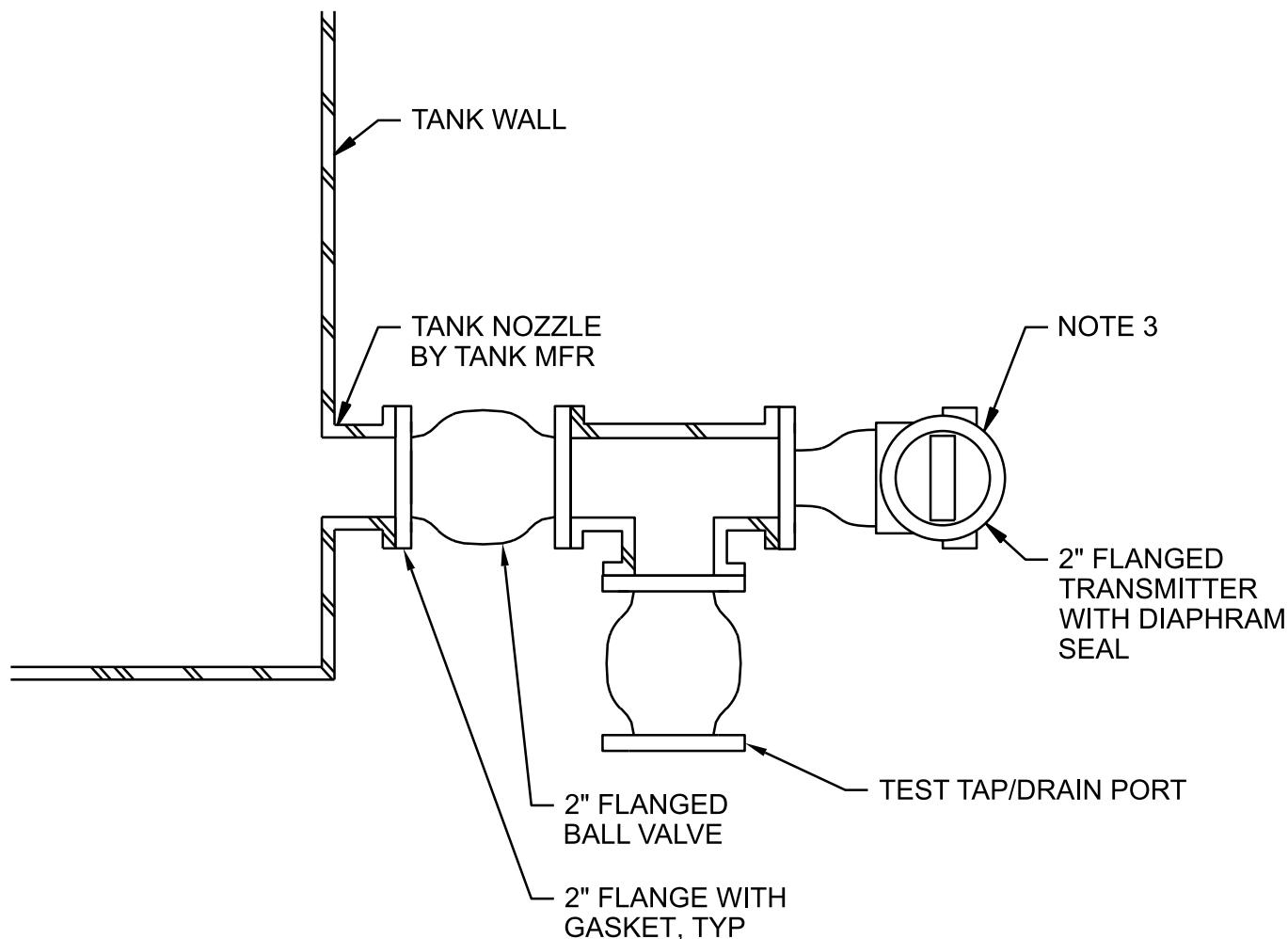
PIG LAUNCHER WATER SUPPLY

NTS

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

4027-956

Jacobs

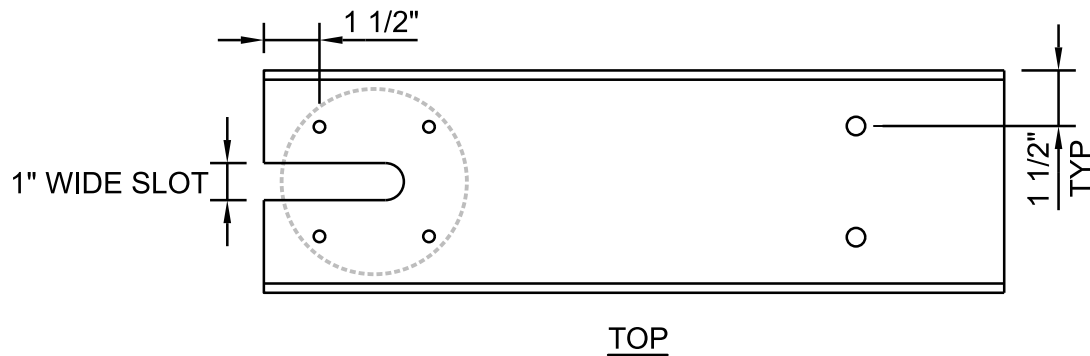
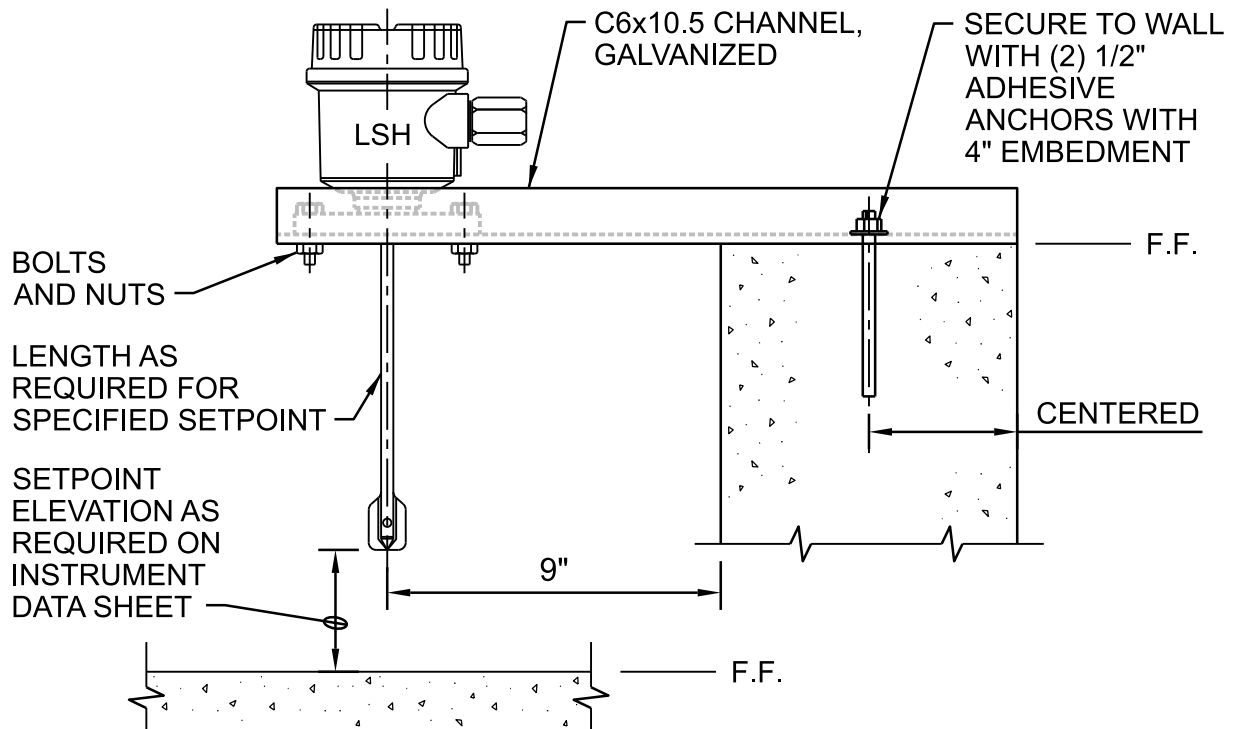


NOTES:

1. REFER TO MATERIAL SELECTION TABLE AND VALVE SCHEDULE ON DRAWINGS FOR MATERIAL AND VALVE TYPES NOT OTHERWISE SPECIFIED.
2. IF OUTSIDE, MOUNT INSTRUMENT TRANSMITTER SCREEN FACING AWAY FROM DIRECTION OF SUN AS MUCH AS POSSIBLE.
3. SUPPORT INSTRUMENT AS NECESSARY, FOR PIPE MOUNTING, SEE FOR WALL MOUNTING, SEE (4091-384). MOUNTING BRACKET IS (4091-381).

HYDROSTATIC LEVEL TRANSMITTER INSTALLATION FOR VENTED TANK MEASUREMENT

NTS

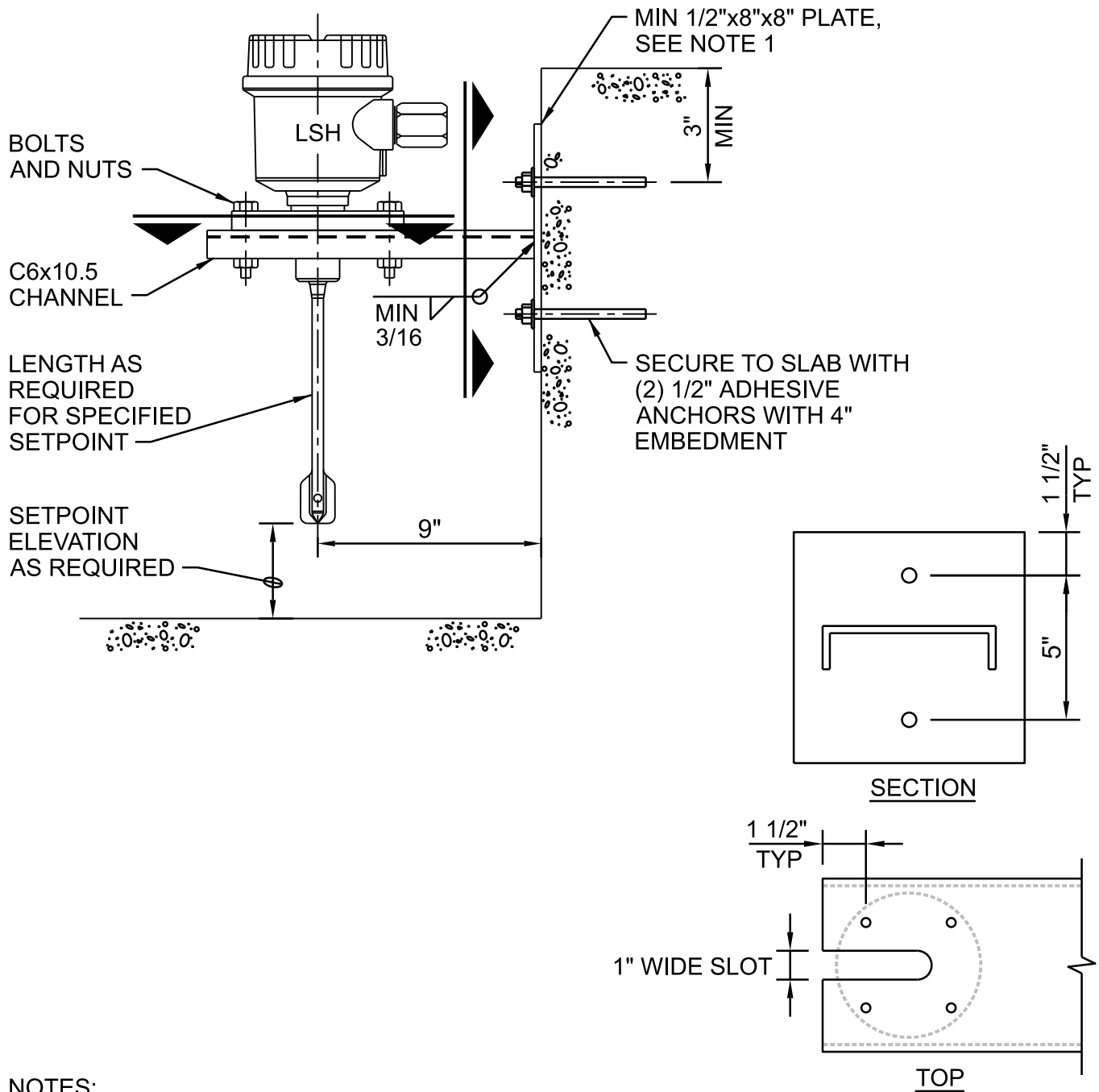


NOTES:

1. REFER TO MATERIAL SELECTION TABLE ON DRAWINGS FOR MATERIAL TYPES NOT OTHERWISE SPECIFIED.
2. PAINT METAL IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING (EXCEPT SST).
3. ROUND OFF ALL EXPOSED EDGES AND CORNERS.

LEVEL SWITCH - TUNING FORK TOP WALL MOUNT

NTS



NOTES:

1. REFER TO MATERIAL SELECTION TABLE ON DRAWINGS FOR MATERIAL TYPES NOT OTHERWISE SPECIFIED.
2. PAINT METAL IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING (EXCEPT SST).
3. ROUND OFF ALL EXPOSED EDGES AND CORNERS.

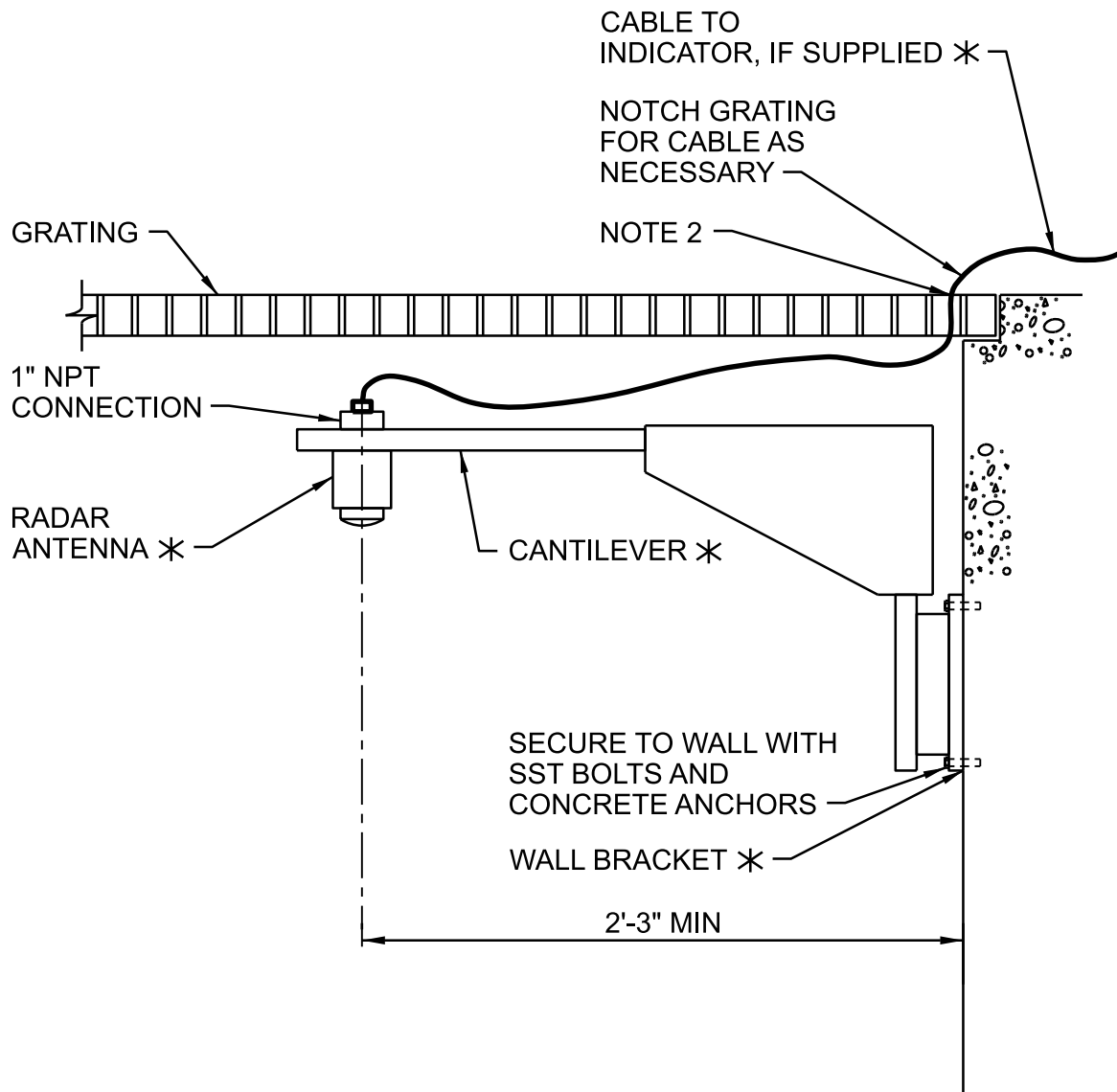
LEVEL SWITCH - TUNING FORK WALL MOUNT

NTS

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

4091-257

Jacobs

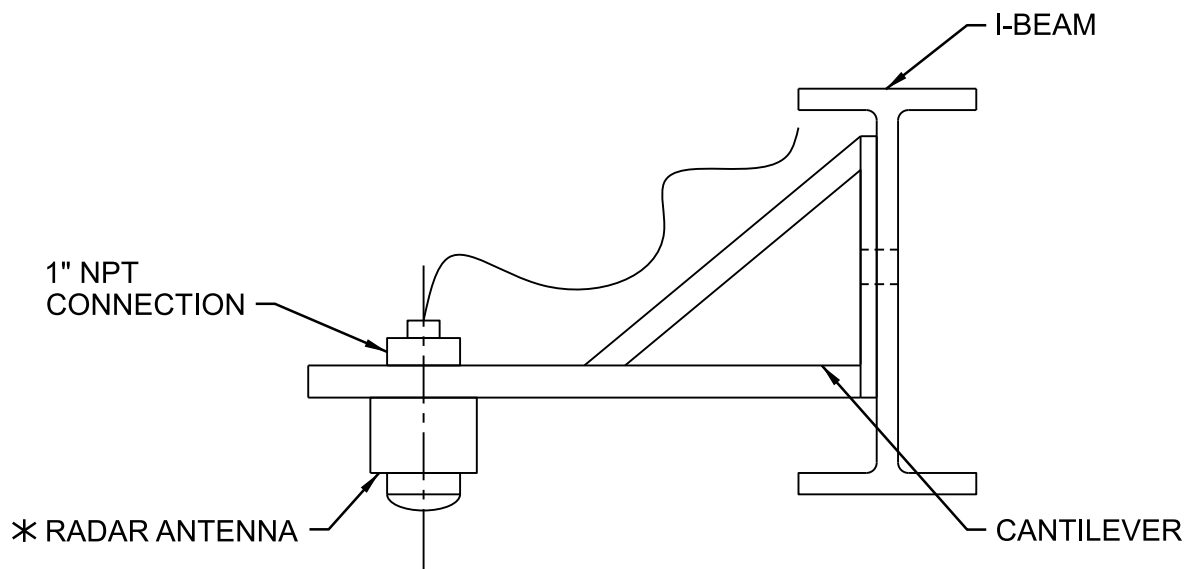


NOTES:

1. COMPONENTS DESIGNATED BY * ARE SUPPLIED BY INSTRUMENT MANUFACTURER.
2. PROTECT CABLE AS NECESSARY FROM SHARP EDGES ON GRATING.

LEVEL TRANSMITTER - RADAR WALL MOUNT INSTALLATION

NTS



NOTES:

1. COMPONENTS DESIGNATED BY * ARE SUPPLIED BY INSTRUMENT MANUFACTURER.

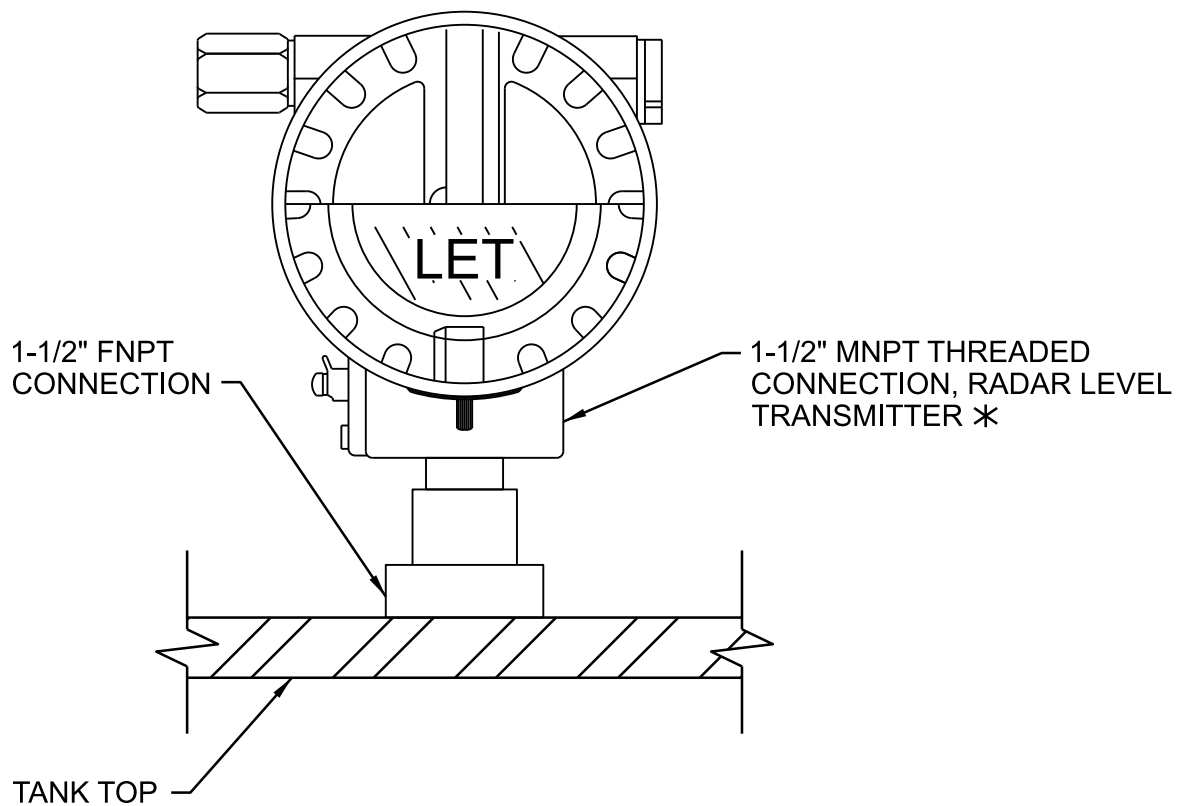
LEVEL TRANSMITTER - RADAR - BEAM MOUNT

NTS

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

4091-262

Jacobs



NOTES:

1. COMPONENTS DESIGNATED BY * ARE SUPPLIED BY INSTRUMENT MANUFACTURER.

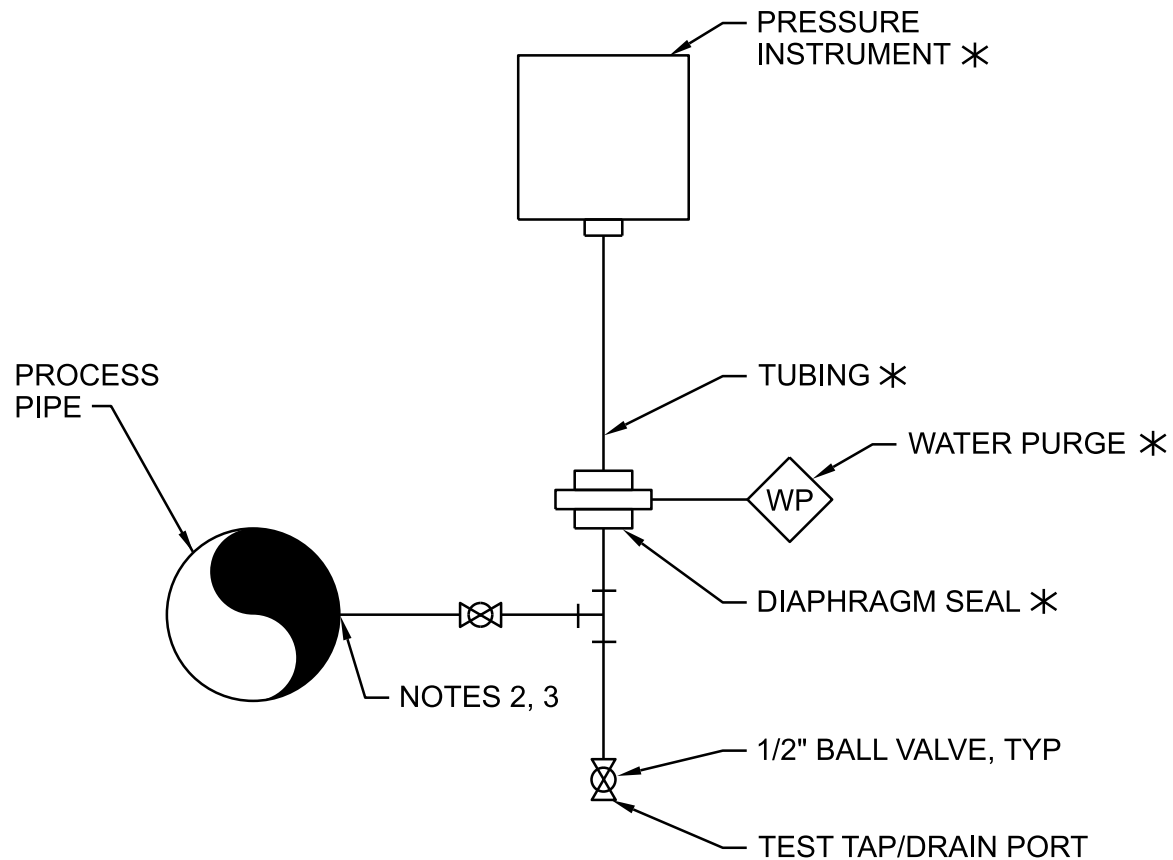
LEVEL TRANSMITTER - RADAR - TANK MOUNT

NTS

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

4091-264

Jacobs

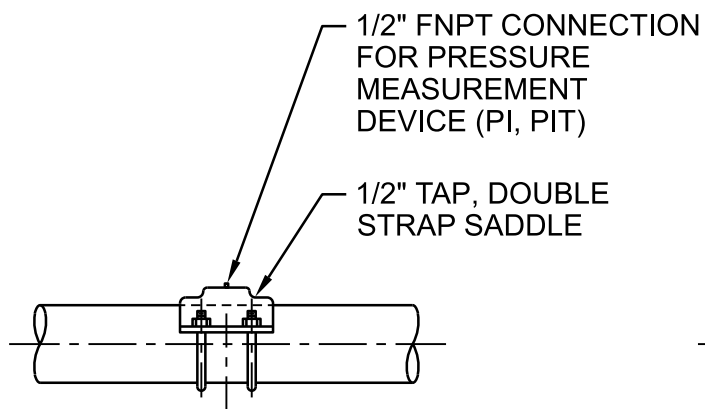


NOTES:

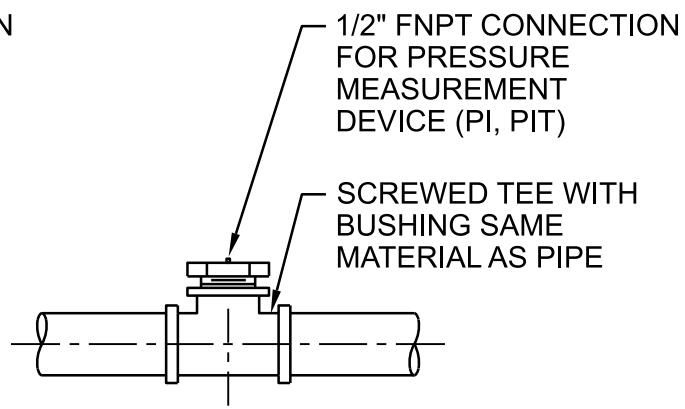
1. COMPONENTS DESIGNATED BY * ARE SUPPLIED BY INSTRUMENT MANUFACTURER.
2. LOCATE PROCESS TAP ON SIDE OF PIPE FOR LIQUIDS SERVICE.
LOCATE PROCESS TAP ON TOP OF PIPE FOR AIR/GAS SERVICE.
3. SEE (4091-305) FOR PROCESS CONNECTION.
4. INSTALL INSTRUMENT IN A VERTICAL ORIENTATION FOR VIEWING EASE.

PRESSURE INSTRUMENT INSTALLATION - DIAPHRAGM SEAL

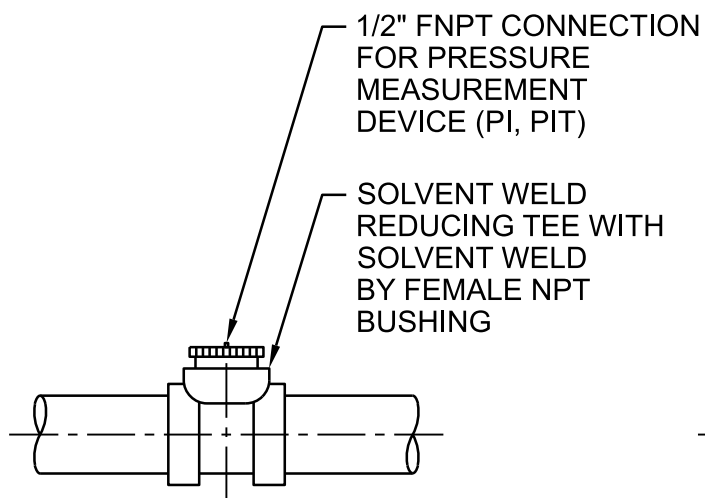
NTS



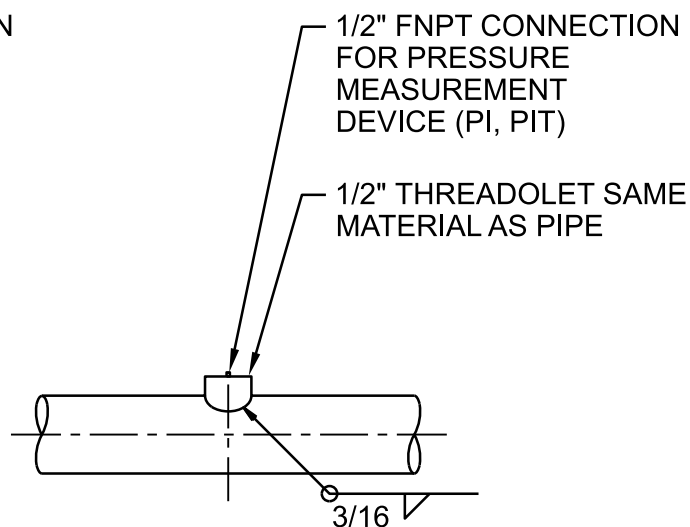
CEMENT LINED STEEL PIPE,
CAST IRON PIPE
AND DUCTILE IRON PIPE



STEEL & SST PIPE
3 1/2" & SMALLER



PVC PIPE



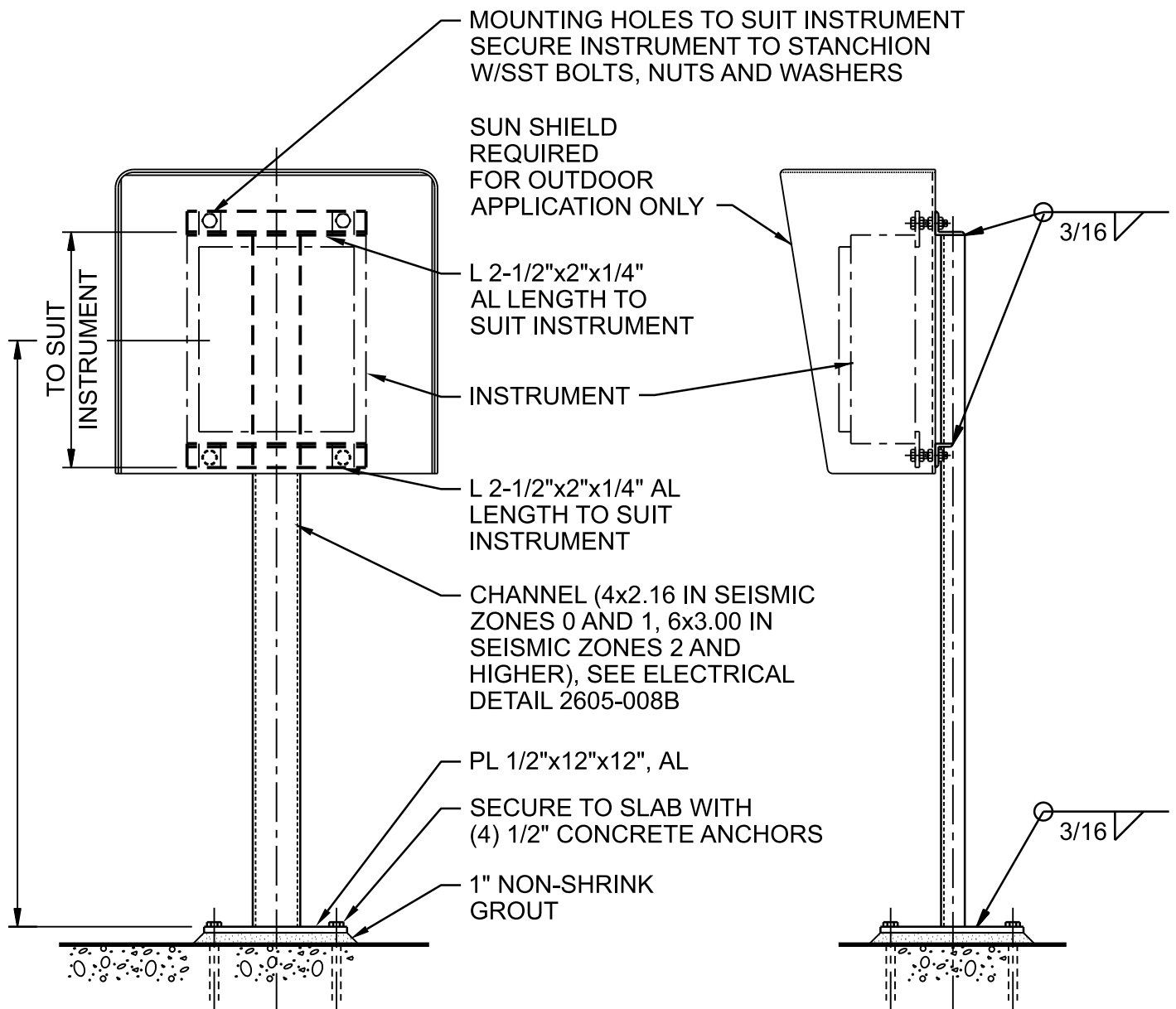
STEEL & SST PIPE
4" & LARGER

NOTES:

1. REFER TO PIPING SCHEDULE FOR SPECIFIC PIPING MATERIALS.

PRESSURE CONNECTION INSTALLATION

NTS



NOTES:

1. ROUND OFF ALL EXPOSED EDGES AND CORNERS.
2. PAINT ALUMINUM IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.
3. REFER TO AREA CLASSIFICATION TABLES FOR ANCHOR MATERIAL REQUIREMENTS.
4. ORIENT INSTRUMENT MOUNTING STANCHION SO THE OPEN SIDE OF THE SUN SHIELD FACES NORTH.

CASE MOUNTED INSTRUMENTS - STANCHION

NTS

DETAIL 1 OF 2

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

4091-382

Jacobs

BACK FORMED OF SINGLE
SHEET 10 GA ALUMINUM,
TACK WELD TO TOP AND
SIDES AS REQUIRED

TOP AND
SIDES FORMED OF
SINGLE SHEET
14 GA ALUMINUM

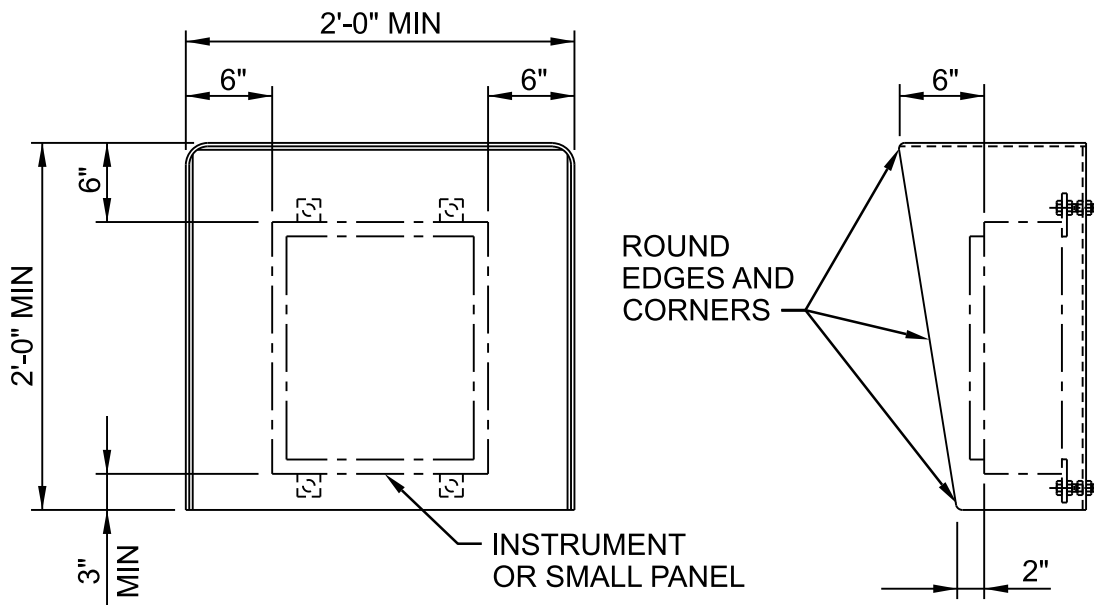
3/8" SST STUD BOLT
WITH SST NUTS AND
WASHERS, TYP OF 4

INSTRUMENT/HOOD
SUPPORT ANGLE OR
UNISTRUT (SHOWN)
AS APPLICABLE

SUN SHIELD
BACK PLATE

INSTRUMENT
MOUNTING
FOOT

INSTRUMENT
ENCLOSURE



NOTES:

1. ROUND OFF ALL EXPOSED EDGES AND CORNERS.
2. PAINT ALUMINUM IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.
3. REFER TO AREA CLASSIFICATION TABLES FOR ANCHOR MATERIAL REQUIREMENTS.
4. ORIENT INSTRUMENT MOUNTING STANCHION SO THE OPEN SIDE OF THE SUN SHIELD FACES NORTH.

CASE MOUNTED INSTRUMENTS - STANCHION

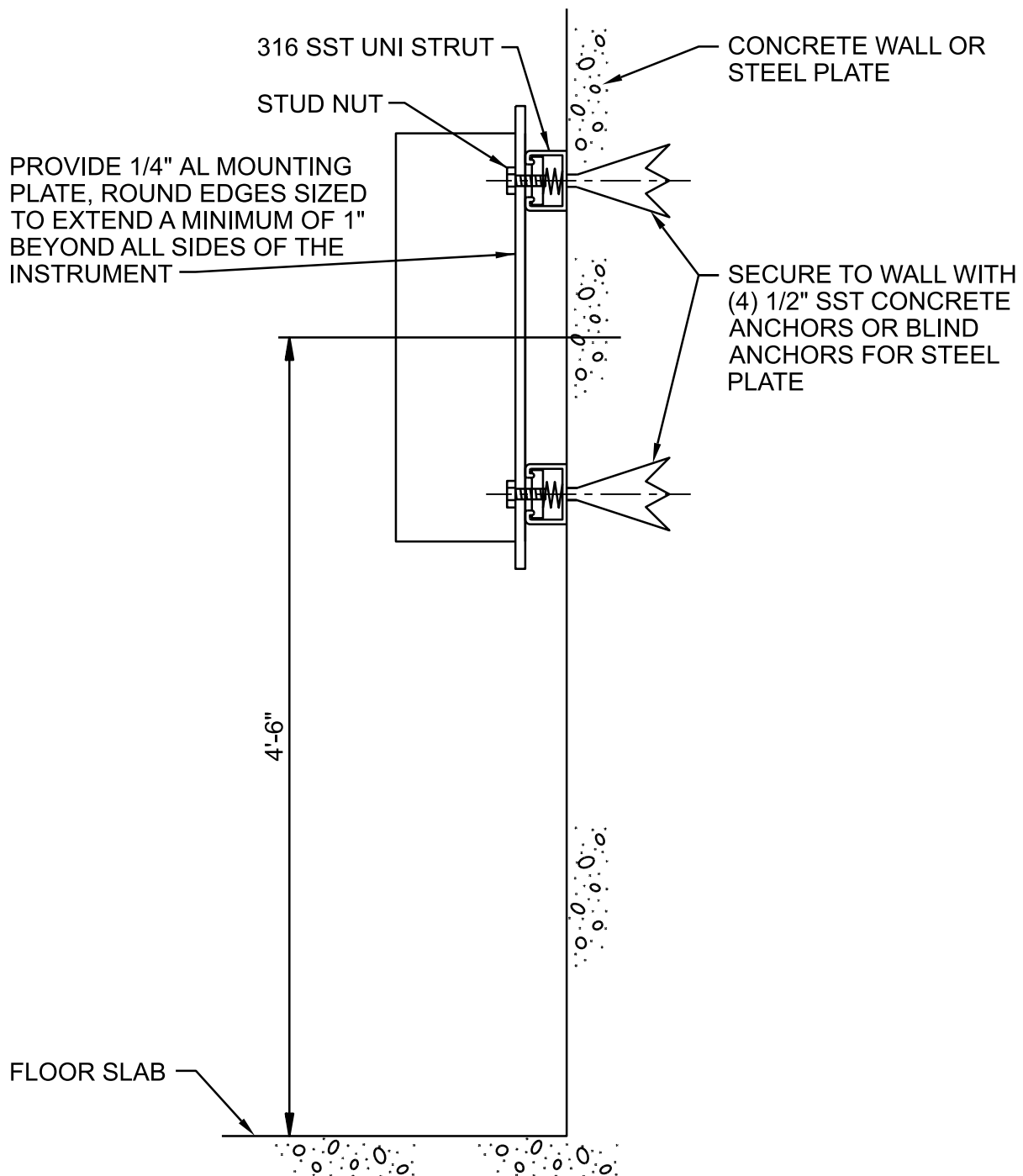
NTS

DETAIL 2 OF 2

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

4091-382

Jacobs

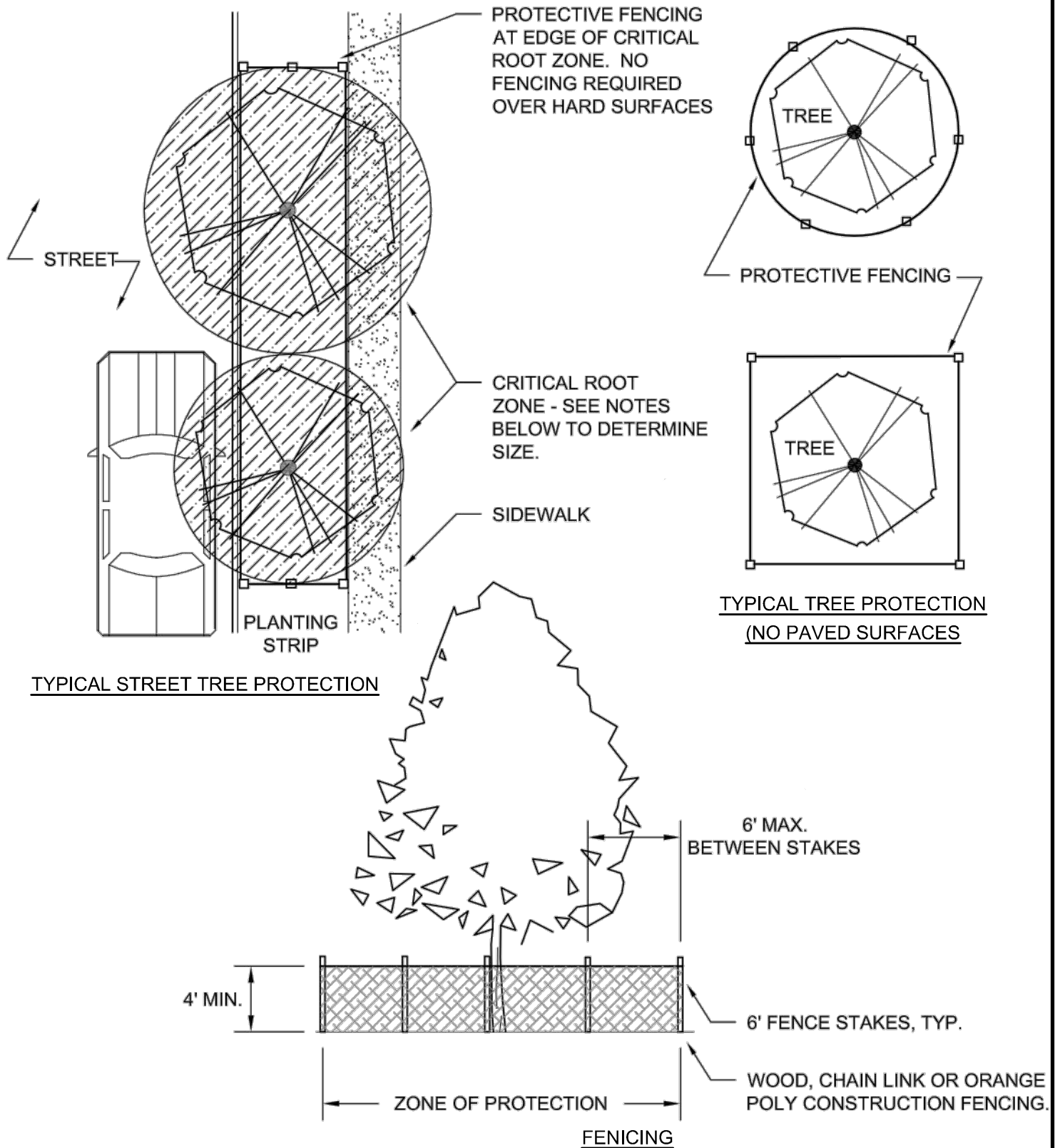


NOTES

1. ALL INSTRUMENTS AND PANELS LOCATED OUTDOORS SHALL HAVE A SUN SHIELD, SEE (4091-382).

WALL MOUNTED PANEL AND INSTRUMENT INSTALLATION

NTS



TREE PROTECTION

NTS

CITY OF GRESHAM
WWTP BELT PRESS REPLACEMENT
CIPWW00047

1 OF 2

LS-100A

Jacobs

NOTES:

1. THE CRITICAL ROOT ZONE (CRZ) FOR TREES 4" DIAMETER AT BREAST HEIGHT (DBH) OR SMALLER SHALL BE AN AREA WITH A RADIUS AT LEAST 6' FROM THE TRUNK.
2. THE CRZ FOR TREES OVER 4" DBH SHALL BE AN AREA WITH A RADIUS OF AT LEAST 1' 6" FROM THE TRUNK FOR EVERY 1" OF DIAMETER SIZE.
3. NO SOIL GRADE CHANGES OR COMPACTION SHALL TAKE PLACE WITHIN THE CRZ, EXCEPT AS APPROVED.
4. NO STORAGE OF MATERIAL SHALL BE ALLOWED WITHIN THE CRZ.
5. IF WORK IS DONE WITHIN THE CRZ, CARE MUST BE TAKEN TO MINIMIZE ROOT DISTURBANCE. SPECIAL CARE SHALL BE TAKEN DURING EXCAVATION TO AVOID DAMAGE TO TREE ROOTS. LOCATE EXISTING TREE ROOTS USING HAND TOOLS, AN AIRSPADE, VACUUM EXCAVATION, OR OTHER APPROVED METHODS.
6. PROTECTIVE FENCING IS REQUIRED WHEN THE WORK AREA IS WITHIN THE CRZ OF TREES, EXCEPT WHERE PORTIONS OF THE CRZ ARE COVERED WITH PAVEMENT SUCH AS STREETS OR WALKS.
7. NO ROOT OVER 2" SHALL BE CUT WITHOUT APPROVAL OF THE URBAN FORESTER (OR AN APPROVED ARBORIST). ROOTS SHALL BE CUT WITH APPROVED SAWS. NO ROOTS OVER 2" SHALL BE CUT OR TORN DURING TRENCHING WITH POWER EQUIPMENT SUCH AS BACKHOES AND TRENCHERS.

TREE PROTECTION

NTS