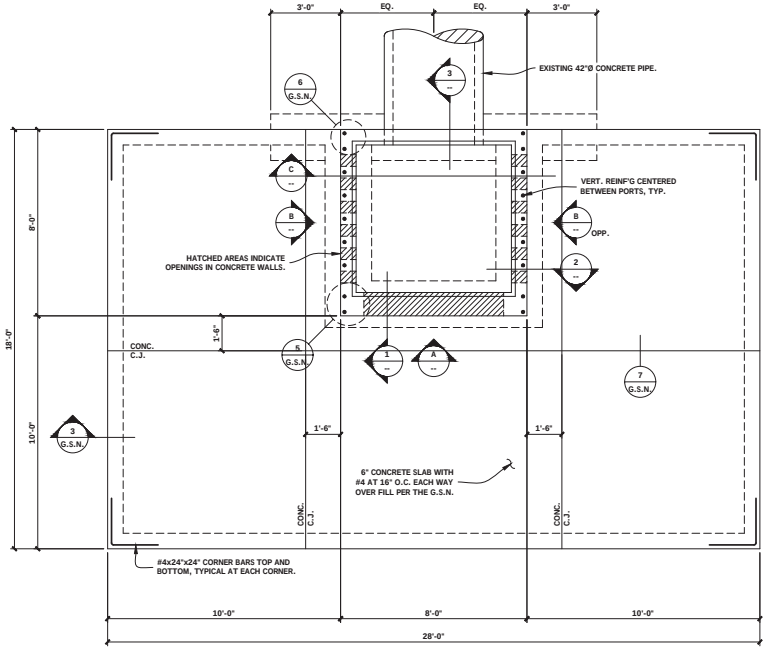
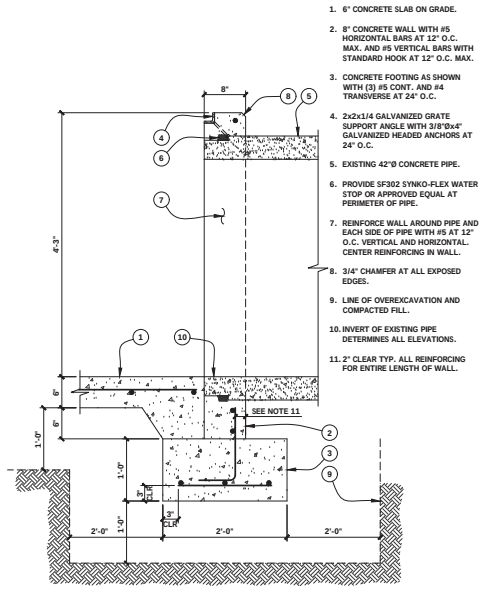


PLAN VIEW

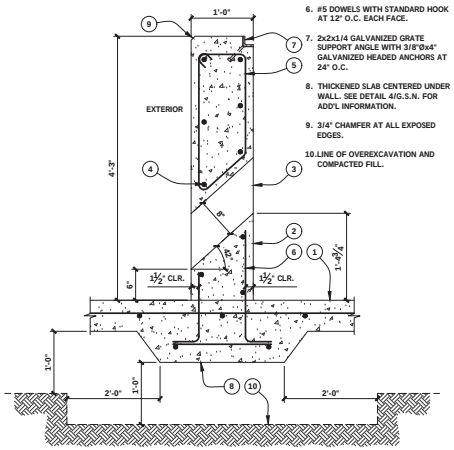
SCALE: 3/8"=1'-0"



1. 6" CONCRETE SLAB ON GRADE.
2. 8" CONCRETE WALL WITH #5 HORIZONTAL BARS AT 12" O.C. MAX. AND #5 VERTICAL BARS WITH STANDARD HOOK AT 12" O.C. MAX.
3. CONCRETE FOOTING AS SHOWN WITH (3) #5 CONT. AND #4 TRANSVERSE AT 24" O.C.
4. 2x2x1/4 GALVANIZED GRATE SUPPORT ANGLE WITH 3/8"Øx4" GALVANIZED HEADED ANCHORS AT 24" O.C.
5. EXISTING 42"Ø CONCRETE PIPE.
6. PROVIDE SF302 SYNKO-FLEX WATER STOP OR APPROVED EQUAL AT PERIMETER OF PIPE.
7. REINFORCE WALL AROUND PIPE AND EACH SIDE OF PIPE WITH #5 AT 12" O.C. VERTICAL AND HORIZONTAL. CENTER REINFORCING IN WALL.
8. 3/4" CHAMFER AT ALL EXPOSED EDGES.
9. LINE OF OVEREXCAVATION AND COMPACTED FILL.
10. INVERT OF EXISTING PIPE DETERMINES ALL ELEVATIONS.
11. 2" CLEAR TYP. ALL REINFORCING FOR ENTIRE LENGTH OF WALL.

3 SECTION AT REINFORCED CONCRETE PIPE

RCP(3)-TYP



1. 6" CONCRETE SLAB ON GRADE.
2. 12" CONCRETE WALL.
3. 8" WEIR OPENING. SEE ELEVATION "A" FOR LENGTH.
4. #5 HORIZONTAL BARS AT 12" O.C. MAX. EACH FACE.
5. #3 TIES AT 12" O.C.
6. #5 DOWELS WITH STANDARD HOOK AT 12" O.C. EACH FACE.
7. 2x2x1/4 GALVANIZED GRATE SUPPORT ANGLE WITH 3/8"Øx4" GALVANIZED HEADED ANCHORS AT 24" O.C.
8. THICKENED SLAB CENTERED UNDER WALL. SEE DETAIL 4/G.S.N. FOR ADD'L INFORMATION.
9. 3/4" CHAMFER AT ALL EXPOSED EDGES.
10. LINE OF OVEREXCAVATION AND COMPACTED FILL.

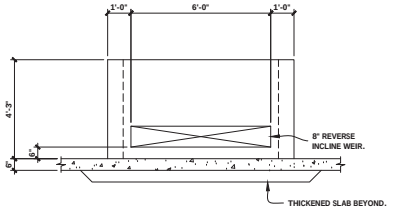
1 SECTION AT REVERSE INCLINE WEIR

RIW(3)-TYP

NOTES:

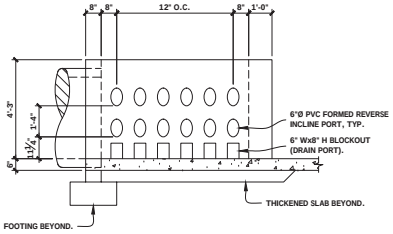
1. THIS DESIGN IS TO BE ISSUED ALONG WITH THE G.S.N. SHEET AND GRATES SHEET.
2. SEE THE G.S.N. SHEET FOR FOR THE GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.
3. THIS DESIGN IS TO HAVE THE APPROPRIATE GRATE COVER INSTALLED.
4. THIS DESIGN IS TO HAVE MESH OVER ALL PORT OPENINGS PER DETAIL 3 THE ON GRATES SHEET.

MATERIAL QUANTITIES	
CONCRETE	14.6 CU.YD.
GRATES	583.3 LBS.
STRUCTURAL STEEL	160.0 LBS.
REBAR	1117.0 LBS.



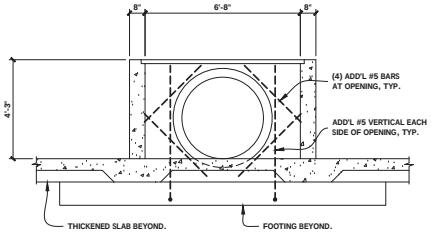
ELEVATION A

SCALE: 3/8"=1'-0"



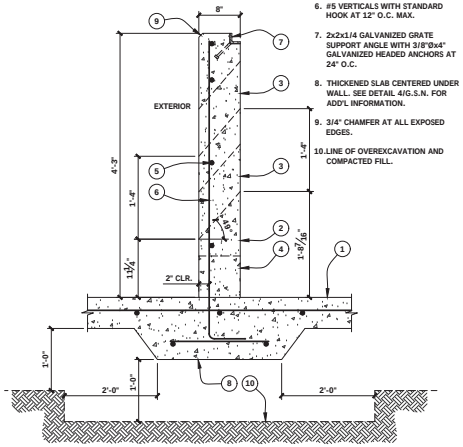
ELEVATION B

SCALE: 3/8"=1'-0"



SECTION C

SCALE: 3/8"=1'-0"



1. 6" CONCRETE SLAB ON GRADE.
2. 8" CONCRETE WALL.
3. 6"Ø PVC FORMED REVERSE INCLINE PORT OPENING BEYOND.
4. 6" Wx8" H OPENING BEYOND.
5. #5 HORIZONTAL BARS AT 12" O.C. MAX.
6. #5 VERTICALS WITH STANDARD HOOK AT 12" O.C. MAX.
7. 2x2x1/4 GALVANIZED GRATE SUPPORT ANGLE WITH 3/8"Øx4" GALVANIZED HEADED ANCHORS AT 24" O.C.
8. THICKENED SLAB CENTERED UNDER WALL. SEE DETAIL 4/G.S.N. FOR ADD'L INFORMATION.
9. 3/4" CHAMFER AT ALL EXPOSED EDGES.
10. LINE OF OVEREXCAVATION AND COMPACTED FILL.

2 SECTION AT REVERSE INCLINE PORTS

PR(3)-TYP

CHARLES W. STIBBS NEW MEXICO 11704 03/21/19

TYPE #2
DESIGN #9

NO.	REVISION DESCRIPTION	DATE	BY
5			
4			
3			
2	ISSUED FOR CONSTRUCTION	5/26/19	CS
1			

CITY OF ALBUQUERQUE
PORTED RISER PRINCIPAL SPILLWAYS

42"Ø HORIZONTAL CULVERT - 8'-0"x8'-0" - NO WINGWALLS

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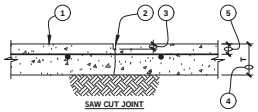
SMITH ENGINEERING

PROJECT NO:
117106-07

DATE:
MARCH 2019

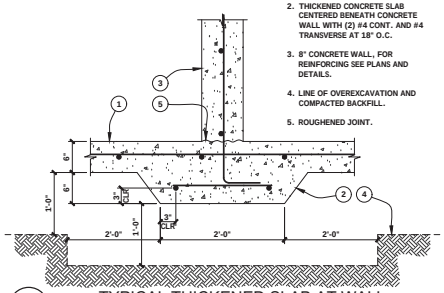
SHEET NO:
2-9



1. CONCRETE SLAB OVER STRUCTURAL FILL PER THE G.S.N.
2. SAWCUT SLAB AFTER CONCRETE IS HARD ENOUGH TO AVOID SPALLING AND DAMAGE BUT NOT LATER THAN 12 HOURS AFTER CONCRETE PLACEMENT.
3. DEPTH OF CUT=T/4.
4. SEE PLANS FOR (T) SLAB THICKNESS.
5. 2" MINIMUM COVER.

7 TYPICAL CONTRACTION JOINT IN SLAB

FN100



1. 6" CONCRETE SLAB ON GRADE.
2. THICKENED CONCRETE SLAB CENTERED BENEATH CONCRETE WALL WITH (2) #4 CONT. AND #4 TRANSVERSE AT 18" O.C.
3. 8" CONCRETE WALL, FOR REINFORCING SEE PLANS AND DETAILS.
4. LINE OF OVEREXCAVATION AND COMPACTED BACKFILL.
5. ROUGHENED JOINT.

4 TYPICAL THICKENED SLAB AT WALL

M124

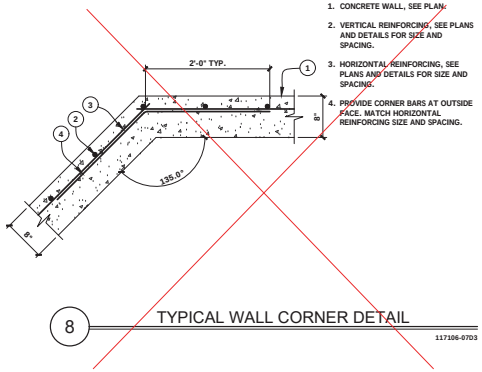
1. TABULATED VALUES ARE BASED ON GRADE 60 UNCOATED REINFORCING BARS, NORMAL WEIGHT CONCRETE AND MIN. COVER OF d_b WITH MIN. CLEAR SPACING OF $2d_b$.
2. TENSION LAP SPLICES ARE CALCULATED PER ACI 318 SECTIONS 12.2 AND 12.15.
3. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
4. FOR GRADE 40 REINFORCING BARS MULTIPLY THE TABULATED VALUES BY 0.67 (12" MIN. LAP).
5. FOR LIGHT WEIGHT CONCRETE MULTIPLY THE TABULATED VALUES BY 1.3.
6. ALL LAP SPLICES ARE CLASS B SPLICES PER ACI 318 SECTION 12.15.

LAP SPLICE LENGTHS (IN.)

BAR SIZE	LENGTHS (IN.) 3000 PSI		4000 PSI		5000 PSI	
	TOP BARS[3]	OTHER BARS	TOP BARS[3]	OTHER BARS	TOP BARS[3]	OTHER BARS
#3	28	21	24	18	22	17
#4	37	28	32	25	29	22
#5	46	36	40	31	36	28
#6	56	43	48	37	43	33
#7	81	62	70	54	63	48
#8	93	71	80	62	72	55
#9	104	80	90	70	81	62
#10	118	90	102	78	91	70
#11	131	100	113	87	101	78

1 LAP-SPLICE SCHEDULE FOR CONC. REINF'G

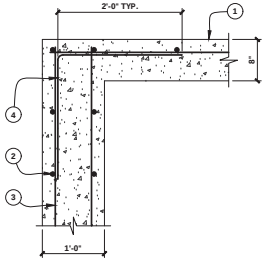
C2



1. CONCRETE WALL, SEE PLAN.
2. VERTICAL REINFORCING, SEE PLANS AND DETAILS FOR SIZE AND SPACING.
3. HORIZONTAL REINFORCING, SEE PLANS AND DETAILS FOR SIZE AND SPACING.
4. PROVIDE CORNER BARS AT OUTSIDE FACE. MATCH HORIZONTAL REINFORCING SIZE AND SPACING.

8 TYPICAL WALL CORNER DETAIL

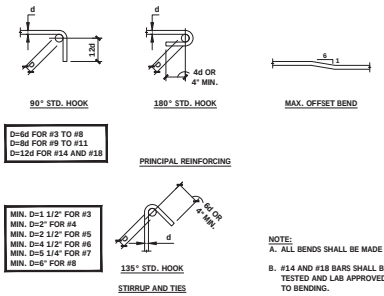
117106-07D3



1. CONCRETE WALL, SEE PLAN.
2. VERTICAL REINFORCING, SEE PLANS AND DETAILS FOR SIZE AND SPACING.
3. HORIZONTAL REINFORCING, SEE PLANS AND DETAILS FOR SIZE AND SPACING.
4. PROVIDE CORNER BARS AT OUTSIDE FACE. MATCH HORIZONTAL REINFORCING SIZE AND SPACING.

5 TYPICAL WALL CORNER DETAIL

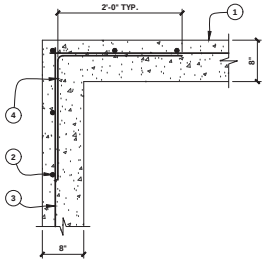
117106-07D1



NOTE:
A. ALL BENDS SHALL BE MADE COLD.
B. #14 AND #18 BARS SHALL BE BEND TESTED AND LAB APPROVED PRIOR TO BENDING.

2 TYPICAL BAR BENDS

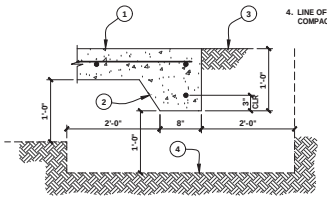
S1



1. CONCRETE WALL, SEE PLAN.
2. VERTICAL REINFORCING, SEE PLANS AND DETAILS FOR SIZE AND SPACING.
3. HORIZONTAL REINFORCING, SEE PLANS AND DETAILS FOR SIZE AND SPACING.
4. PROVIDE CORNER BARS AT OUTSIDE FACE. MATCH HORIZONTAL REINFORCING SIZE AND SPACING.

6 TYPICAL WALL CORNER DETAIL

117106-07D2



1. 6" CONCRETE SLAB ON GRADE.
2. CONTINUOUS THICKENED EDGE AS SHOWN WITH (1) #4 CONT.
3. FINISH GRADE AS OCCURS.
4. LINE OF OVEREXCAVATION AND COMPACTED FILL.

3 TYPICAL SLAB EDGE

FN118

GENERAL STRUCTURAL NOTES

APPLY UNLESS NOTED ON STRUCTURAL DRAWINGS. IN CASE OF CONFLICT BETWEEN GSN, DETAILS AND PLANS, THE GREATER REQUIREMENTS GOVERN.

CODE:

ALL CONSTRUCTION SHALL CONFORM TO "CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION". DESIGN IS IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE (IBC) 2015.

DESIGN LOADS:

GRATE LIVE LOADS: 100 PSF

FOUNDATIONS:

FOOTINGS SHALL BEAR ON A MINIMUM OF 12 INCHES OF ADEQUATELY PLACED AND COMPACTED STRUCTURAL FILL. SOIL BENEATH FOOTINGS SHALL BE SCARIFIED TO A DEPTH OF 12 INCHES, MOISTURE CONDITIONED TO OPTIMUM MOISTURE CONTENT ±2% AND COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM-D-698. ALL STRUCTURAL FILL SHALL BE CLASS I OR II SOILS IN ACCORDANCE WITH STD. SPEC. SEC. 501.

ALL EARTHWORK, FOOTING DEPTHS, AND EXCAVATIONS FOR FOUNDATIONS SHALL BE INSPECTED TO VERIFY ASSUMED ALLOWABLE SOIL BEARING AND LOW SETTLEMENT AND SWELL POTENTIAL. ASSUMED ALLOWABLE BEARING = 2000 PSF.

CONCRETE:

UNLESS NOTED OTHERWISE, CONCRETE SHALL BE IN ACCORDANCE WITH STD. SPEC. SEC. 510 AND SEC. 101 FOR HYDRAULIC CONCRETE WITH MIN. COMP. STRENGTH Fc=4000 PSI AT 28 DAYS. ALL REINFORCING STEEL SHALL BE BLACK, GRADE 60 CONFORMING TO ASTM A615.

MAXIMUM SLUMP:.....4" - 7"
MAXIMUM AGGREGATE SIZE:.....1"
AIR CONTENT:.....6% ± 1 1/2%
MAXIMUM W/C RATIO:.....0.45

FINISH SHALL BE ORDINARY SURFACE FINISH IN ACCORDANCE WITH STD. SPEC. SEC. 510.

MINIMUM STRENGTH FOR REMOVAL OF FORMS AND SHORING SHALL BE 75% OF SPECIFIED STRENGTH AT 28 DAYS.

BACKFILL (WHERE OCCURS) SHALL NOT BE PLACED BEHIND HEADWALLS UNTIL CONCRETE HAS ATTAINED 100% OF DESIGN STRENGTH.

REINFORCING:

LATEST ACI CODE AND DETAILING MANUAL APPLY. ALL REINFORCING BARS DEFORMED.

ALL REINFORCING SHALL BE ASTM A-615 GRADE 60.

CLEAR CONCRETE COVER TO REINFORCING ARE AS FOLLOWS, UNLESS NOTED OTHERWISE:

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.....3"

EXPOSED TO EARTH OR WEATHER:
#6 THROUGH #18.....2"
#5 AND SMALLER.....1 1/2"

LAP SPLICES IN CONCRETE SHALL BE CLASS B TENSION LAPS PER DETAIL 1 THIS SHEET. SPLICE BOTTOM BAR OVER SUPPORTS AND TOP BAR AT MIDSPAN ONLY.

FOR TYPICAL BAR BENDS, SEE DETAIL 2 THIS SHEET.

PROVIDE SHOP DRAWINGS AND FABRICATE AFTER REVIEW. PLACE REBAR PER CRSI STANDARDS.

REBAR SPACING GIVEN IS MAXIMUM ON CENTER AND ALL REBAR IS CONTINUOUS UNLESS OTHERWISE NOTED. PROVIDE BENT CORNER REBAR TO MATCH AND LAP WITH HORIZONTAL REBARS AT CORNERS AND INTERSECTIONS OF WALLS. DOWEL ALL VERTICAL WALL REBAR TO FOTIONS. SECURELY TIE ALL REBAR, INCLUDING DOWELS, IN LOCATION BEFORE PLACING CONCRETE.

STRUCTURAL STEEL:

FOR ALL STRUCTURAL STEEL FABRICATION AND CONSTRUCTION, STD. SPEC. SEC. 520, LATEST AISC HANDBOOKS AND CODES SHALL APPLY. ALL STEEL FABRICATION IS REQUIRED TO BE COMPLETED BY AN APPROVED STEEL FABRICATOR RECOGNIZED BY THE BUILDING DEPARTMENT.

ASTM A-36, EXCEPT AS FOLLOWS: WIDE FLANGE SECTIONS, ASTM A992 GRADE 50.

HIGH STRENGTH BOLTS, A-325-X OR A-325-SC.

WELDING:

ALL CONSTRUCTION AND TESTING PER AMERICAN WELDING SOCIETY CODES AND RECOMMENDATIONS. ALL WELDING SHALL BE BY WELDERS HOLDING CURRENT VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN TYPE OF WELD CALLED FOR. WELDING RODS SHALL BE LOW HYDROGEN TYPE, E70.

ALL WELDING OF STRUCTURAL STEEL SHALL CONFORM TO THE "STRUCTURAL WELDING CODES-STEEL" AWS D1.1, CURRENT EDITION.

RECTANGULAR BAR GRATING:

MATERIAL DESIGN AND MANUFACTURE SHALL BE BY McNICHOLS OR APPROVED EQUAL.

PREFABRICATED RECTANGULAR BAR PANELS AS FOLLOWS:

MATERIAL: HOT-DIPPED GALVANIZED STEEL BEARING BARS AND 1/4" SQUARE GALVANIZED STEEL TWISTED CROSS BARS.
BEARING BAR SIZE: 3/16"x1 3/4"
BAR SPACING: 1 3/16" BEARING BAR CENTERS AND 4" CROSS BAR CENTERS.

NUMBER OF PANELS: 8'-0"x8'-0" = 3, 10'-0"x10'-0" = 4
PANEL LENGTH: 8'-0"x8'-0" = 6'-11", 10'-0"x10'-0" = 8'-11" (a)
PANEL WIDTHS: 8'-0"x8'-0" = (1) PANEL 32 1/4", (2) PANELS 25 1/8" (a)
10'-0"x10'-0" = (1) PANEL 32 1/4", (2) PANELS 25 1/8", (1) PANEL 23 15/16" (a)
WEIGHT: 12.5 LBS./SQ. FT. (a)
TOTAL WEIGHT: 8'-0"x8'-0" = 583.3 LBS., 10'-0"x10'-0" = 975.0 LBS. (a)

(a) CONTRACTOR TO VERIFY PANEL LENGTHS, WIDTHS AND WEIGHTS WITH ACTUAL FIELD MEASUREMENTS AND MANUFACTURER.

CHARLES W. STIBBS NEW MEXICO 11704 PROFESSIONAL ENGINEER
03/21/19

NO	REVISION DESCRIPTION	DATE	BY
5			
4			
3			
2	ISSUED FOR CONSTRUCTION	5/26/19	CS
1			

G.S.N. / TYPICAL DETAILS

CITY OF ALBUQUERQUE
PORTED RISER PRINCIPAL SPILLWAYS

GENERAL STRUCTURAL NOTES / TYPICAL DETAILS

Solutions for Today... Vision for Tomorrow
2201 San Pedro Dr NE
Building 4, Suite 200
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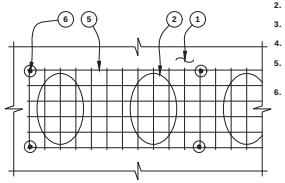
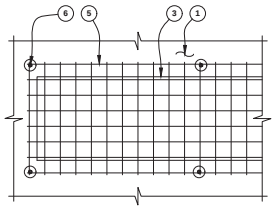
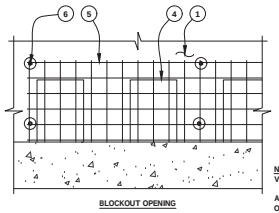
SMITH ENGINEERING

PROJECT NO: 117106-07
DATE: MARCH 2019
SHEET NO: G.S.N.







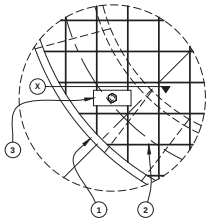
1. CONCRETE WALL, SEE PLANS.
2. REVERSE INCLINE PORT OPENING.
3. REVERSE INCLINE WIER OPENING.
4. BLOCKOUT (DRAIN PORT) OPENING.
5. 2"x2"x0.160 GAUGE GALVANIZED WELDED WIRE MESH.
6. 1/4"Ø x1 1/2" GALVANIZED TAPCON SCREWS WITH 1 1/2"Ø GALVANIZED FENDER WASHERS IN EACH CORNER AND 24" O.C. ELSEWHERE. INSTALL TAPCON SCREWS PER MANUFACTURERS RECOMMENDATIONS.

NOTES:
VIEWS ARE FROM INSIDE STRUCTURE.

ALL MESH SHALL BE INSTALLED ON INSIDE OF STRUCTURE.

3 TYPICAL MESH AT OPENINGS

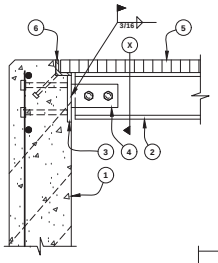
117106-07D12



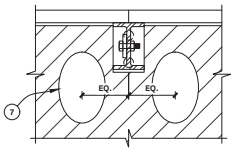
1. DOUBLE CORRUGATED METAL PIPE ENCLOSURE AS OCCURS.
2. #4 REBAR AT 4" O.C. EACH WAY, WELDED TO FORM GALVANIZED GRATE. WELD TO BE PER AWS D1.4. GALVANIZE AFTER WELDING.
3. 1/4x2xLENGTH REQUIRED GALVANIZED SADDLE PLATE FORMED AS SHOWN WITH 5/8"Ø x6" EXPANSION BOLT. SADDLE PLATE SHALL OCCUR IN (4) LOCATIONS AS CLOSE TO 45° LOCATIONS AND AS CLOSE TO CENTER OF CONCRETE FILL AS POSSIBLE.

4 DETAIL AT GRATE SADDLE CLIP

117106-07D13



1. CONCRETE WALL, SEE PLANS.
2. GALVANIZED STEEL BEAM, SEE PLANS.
3. 3/8"x4x0'-6" GALVANIZED EMBED PLATE WITH (2) 5/8"Ø x6" GALVANIZED HEADED ANCHORS AT 3 1/2" O.C.
4. 3/8"x3x0'-6" GALVANIZED SHEAR PLATE WITH (2) 5/8"Ø GALVANIZED A325 BOLTS.
5. GALVANIZED GRATE, SEE PLANS.
6. 2x2x1/4 GALVANIZED GRATE SUPPORT ANGLE WITH 3/8"Ø x4" GALVANIZED HEADED ANCHORS AT 24" O.C.
7. 6"Ø REVERSE INCLINE PORT OPENING.

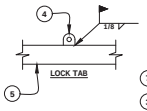


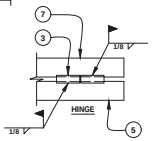
NOTES:
AT CONTRACTORS OPTION, SHEAR TAB MAY BE SHOP WELDED AND GALVANIZED OR FIELD WELDED AND FINISH REPAIRED.

REPAIR ALL FIELD WELDS USING ZINC-RICH GALVANIZING PAINT.

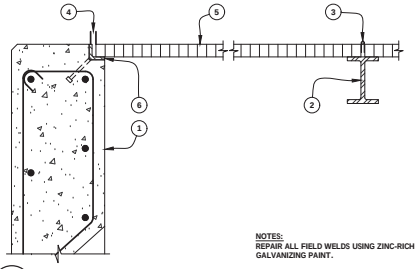
1 STEEL BEAM AT CONCRETE WALL

117106-07D10





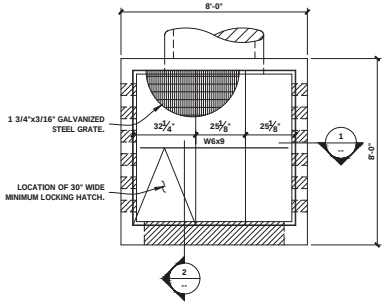
1. CONCRETE WALL, SEE PLANS.
2. GALVANIZED STEEL BEAM, SEE PLANS.
3. (2) HEAVY DUTY BARREL TYPE GALVANIZED HINGES PER HATCH WITHIN 2" OF END OF HATCH.
4. 3/16x1x0'-1" GALVANIZED BAR AS SHOWN WITH 3/8"Ø HOLE FOR PADLOCK WELDED TO GRATING AND SUPPORT ANGLE.
5. GALVANIZED GRATE, SEE PLANS.
6. 2x2x1/4 GALVANIZED GRATE SUPPORT ANGLE WITH 3/8"Ø x4" GALVANIZED HEADED ANCHORS AT 24" O.C.
7. GALVANIZED HATCH, SEE PLANS.



NOTES:
REPAIR ALL FIELD WELDS USING ZINC-RICH GALVANIZING PAINT.

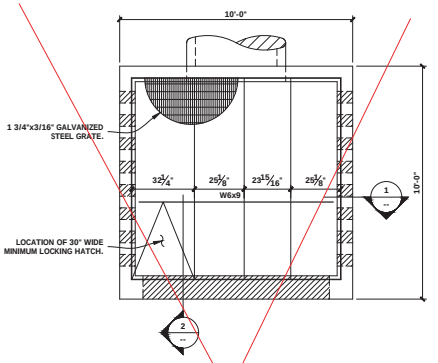
2 SECTION AT ACCESS HATCH

117106-07D11



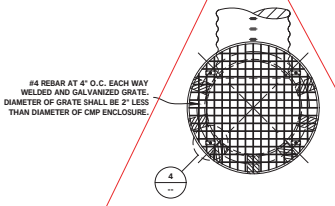
8'-0"x8'-0" GRATE PLAN VIEW

SCALE: 3/8"=1'-0"



10'-0"x10'-0" GRATE PLAN VIEW

SCALE: 3/8"=1'-0"



DOUBLE CMP GRATE PLAN VIEW

SCALE: 3/8"=1'-0"

CHARLES W. STIBBS NEW MEXICO 11704 03/21/19

GRATES / GRATE DETAILS

NO.	REVISION	DESCRIPTION	DATE	BY
5				
4				
3				
2		ISSUED FOR CONSTRUCTION	5/26/19	CS
1				

CITY OF ALBUQUERQUE
PORTED RISER PRINCIPAL SPILLWAYS

GRATING PLAN VIEWS / DETAILS

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Albuquerque, NM 87110
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www.smithengineering.pro

SMITH ENGINEERING

PROJECT NO: 117106-07
DATE: MARCH 2019
SHEET NO: GRATES


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