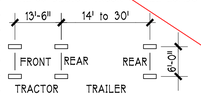
CITY OF KIRKLAND
REVIEWED BY TCHAN
11/17/2022

DESIGN CRITERIA

VERTICAL LOADS ON VAULT LID:

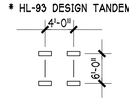
UNIFORM LIVE LOAD : = 150PSF

*** HL-93 DESIGN TRUCK WHEEL LOADS :**



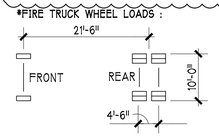
TRACTOR :
FRONT AXLE = 8,000 lb.
SINGLE REAR AXLE = 32,000 lb.
TRAILER :
SINGLE REAR AXLE = 32,000 lb.

*** HL-93 DESIGN TANDEM WHEEL LOADS :**



EACH AXLE = 25,000 lb.
TOTAL BOTH AXLE = 50,000 lb.

***FIRE TRUCK WHEEL LOADS :**



FRONT AXLE = 20,000 lb.
REAR AXLES (DUAL TANDEM) = 50,000 lb.

***OUTRIGGER PAD POINT LOAD:**
DISTRIBUTED OVER 18"x18" PAD @ 15'-0" o/c. = 45,000 lb.

DESIGN LIVE LOAD, TRUCK WHEEL LOADS, TANDEM WHEEL LOAD & OUTRIGGER TO BE APPLIED INDEPENDENTLY AND IN COMBINATION WITH THE SOIL COVER DEAD LOAD.

IMPACT & FATIGUE:
DUE TO THE LOW SPEEDS OF SERVICE VEHICLES OVER THE LID, AND THE SOIL COVER OVER THE LID, INCREASES IN VEHICLE LOADS TO ACCOUNT FOR IMPACT & FATIGUE ARE NOT REQUIRED.

SOIL COVER FOR SUBSTRUCTURE DESIGN:
THE SUBSTRUCTURE WAS DESIGNED FOR A SOIL COVER OF 1.5FT TYP OVER THE ENTIRE VAULT

RAISED GRATING:
100PSF UNIFORM PEDESTRIAN LIVE LOAD, EXCLUDING OUTRIGGER LOADING.

FOUNDATION DESIGN:
FOUNDATION DESIGN IS BASED ON THE FOLLOWING VALUES AS PROVIDED IN THE GEOTECHNICAL REPORT DATED 04-29-2020 BY THE RILEY GROUP.

ALLOWABLE BEARING PRESSURE: 4,000 PSF - ON DENSE NATIVE SOILS

LATERAL EARTH PRESSURES - DRAINED LEVEL BACKFILL:

ACTIVE CONDITION: 35 PCF EFW
AT REST CONDITION: 50 PCF EFW

SEISMIC PRESSURE COMPONENT: E = 14H PSF UNIFORM

SATURATED SOIL DENSITY: 125 PCF

SPECIAL INSPECTION PLAN

SPECIAL INSPECTION REQUIRED

GENERAL:
SPECIAL INSPECTION BY A QUALIFIED INSPECTOR IS REQUIRED IN ACCORDANCE WITH THE 2018 IBC.

QUALIFICATION:
THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL.

REQUIRED VERIFICATION & INSPECTION:
THE SPECIAL INSPECTOR SHALL PERFORM THE VERIFICATIONS & INSPECTIONS NOTED IN THE SCHEDULE BELOW

INSPECTION & TESTING SCHEDULE

TYPES OF WORK	FREQ.	2018 IBC SECTION
CAST IN PLACE CONC		
REINFORCING STEEL, PLACEMENT.	P	1705.3
INSTALLATION & FASTENING OF PRECAST PANELS	P	1705.3
PLACEMENT OF CONCRETE	C	1705.3
VERIFYING USE OF REQUIRED DESIGN MIX	P	1705.3
TESTING OF THE CONCRETE FOR SPECIFIED STRENGTH, AIR CONTENT AND SLUMP	C	1705.3
STRUCTURAL STEEL		
STRUCTURAL STEEL (GRATING) FABRICATION	P	1704.2.5
SOILS		
VERIFICATION OF SOIL-BEARING CAPACITY: INSTALLATION OF DRAINAGE SYSTEM:	P	1705.6
PLACEMENT & COMPACTION OF WALL BACKFILL:	P	1705.6

FREQUENCY LEGEND
C = CONTINUOUS P = PERIODIC
SEE REFERENCES AND STANDARDS LISTED WITHIN THE VERIFICATION & INSPECTION SCHEDULE FOR MEANING OF PERIODIC AND CONTINUOUS INSPECTIONS.

CERTIFICATE OF COMPLIANCE:
THE SPECIAL INSPECTION AGENCY SHALL PROVIDE A FINAL LETTER CERTIFICATE OF COMPLIANCE STATING THAT THE REVIEWED WORK WAS COMPLETED IN ACCORDANCE WITH THE PERMITTED DOCUMENTS.

SUBMITTAL OF REPORTS:
ALL SPECIAL INSPECTION REPORTS AND TESTING REPORTS SHALL BE SUBMITTED TO THE OWNER, SITE STRUCTURES AND THE BUILDING OFFICIAL BY THE AGENCY PERFORMING THE INSPECTION OR TESTING.

GENERAL CONSTRUCTION NOTES

CODE:
VAULT DESIGN AND CONSTRUCTION SHALL CONFORM TO THE PROVISIONS OF THE 2018 IBC AS ADOPTED BY THE CITY OF KIRKLAND, WASHINGTON.

GENERAL DETAILS:
CONSTRUCTION DETAILS NOT FULLY SHOWN OR NOTED SHALL BE SIMILAR TO DETAILS SHOWN FOR SIMILAR CONDITIONS.

DISCREPANCIES:
THE CONTRACTOR SHALL NOTIFY ENGINEER UPON FINDING ANY DISCREPANCY OR OMISSION IN THE DRAWINGS OR SPECIFICATIONS.

SHORING & EXCAVATION:
THE CONTRACTOR SHALL BE SOLEY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES, INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES.

WALL BACKFILL:
PRIOR TO BACKFILLING VAULT WALLS THE CONTRACTOR SHALL HAVE PLACED THE LID PLANKS AND PROVIDED A MINIMUM OF 5 DAYS OF CURE ON THE PLANK VOID FILL.

BACKFILL SOIL:
SEE THE GEOTECHNICAL REPORT FOR WALL BACKFILL MATERIAL REQUIREMENTS AND PLACEMENT AND COMPACTION REQUIREMENTS. ALL COMPACTION OCCURING WITHIN 5' OF THE WALL SHALL BE COMPLETED USING HAND OPERATED MACHINERY.

CONCRETE

CONCRETE REQUIREMENTS:

LOCATION	STRENGTH	MAX W/C RATIO
WALLS & C.I.P. LID	4000PSI @ 28 DAYS	0.50
FTGS & GRADE SLAB	4000PSI @ 56 DAYS	0.53
PLANK VOID FILL	TO MEET PLANK MFGR'S REQUIREMENTS*	
PLANK JOINT GROUT	TO MEET PLANK MFGR'S REQUIREMENTS*	

* MINIMUM STRENGTH SHALL BE 3000PSI @ 28 DAYS.

AIR CONTENT:
CONCRETE EXPOSED TO WEATHER SHALL CONTAIN 5% +/-1% ENTRAINED AIR.

MIX DESIGN:
SHALL BE BASED ON FIELD EXPERIENCE OR TRIAL MIXTURES IN CONFORMANCE WITH THE SPECIFICATIONS. SUBMIT MIX DESIGNS TO THE ENGINEER FOR REVIEW PRIOR TO PLACEMENT.

MATERIAL REQUIREMENTS:
CEMENT: ASTM C150. ADMIXTURES: ACI 301.
AGGREGATES: ASTM C33. WATER: ASTM C94.

EXPOSURE CATEGORIES:
FREEZING THAWING F0
SULFATE S0
IN CONTACT w/ WATER W1
CORROSION PROTECTION C1

PLACING REQUIREMENTS:

PLACING:
PLACE CONCRETE AS NEARLY AS PRACTICABLE TO ITS FINAL POSITION TO AVOID SEGREGATION.

DEBRIS:
REMOVE ALL DEBRIS FROM FORMS PRIOR TO PLACING CONCRETE.

CONSOLIDATION:
CONSOLIDATE CONCRETE BY SUITABLE MEANS. THOROUGHLY WORK CONCRETE AROUND EMBEDDED ITEMS AND INTO CORNERS OF FORMS.

CURING REQUIREMENTS:

CURING:
CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR A SUITABLE PERIOD OF TIME AFTER PLACEMENT.

WEATHER CONDITIONS:
ADEQUATE PRECAUTIONS SHALL BE TAKEN DURING HOT AND COLD WEATHER IN ACCORDANCE WITH THE SPECIFICATIONS.

LID PLANK PLACEMENT:
IN NO CASE SHALL THE LID PLANKS BE PLACED BEFORE THE WALLS HAVE BEEN ALLOWED A MINIMUM OF 3 DAYS OF CURE. WHEN AVERAGE AMBIENT TEMPERATURES ARE LESS THAN 50 DEGREES FAHRENHEIT, THE CONTRACTOR MUST ALLOW A MINIMUM CURE TIME OF 7 DAYS OR PROVIDE AN ADDITIONAL SET OF CYLINDERS TO BE BROKEN AT THE TIME OF LID PLACEMENT DEMONSTRATING A MINIMUM CONCRETE STRENGTH OF 1,000 PSI HAS BEEN REACHED.

REINFORCING BAR

MATERIAL REQUIREMENT:

REINFORCING BARS:
USE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60, EXCEPT AS NOTED ON THE DRAWINGS.

FABRICATION AND PLACING REQUIREMENTS:

BENDING:
BARS SHALL BE BENT COLD. BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS NOTED OR SHOWN OTHERWISE OR AUTHORIZED BY THE ENGINEER.

PLACING:
REINFORCEMENT SHALL BE SUPPORTED AND TIED TO PREVENT DISPLACEMENT BY CONSTRUCTION LOADS OR BY PLACING OF CONCRETE. MAXIMUM SPACING OF SUPPORTS SHALL BE 3'-6".

CONCRETE COVER:
MINIMUM CONCRETE COVER FOR REINF. SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

CONCRETE CAST AGAINST EARTH_____ 3"

CONCRETE CAST AGAINST FORMS AND EXPOSED TO EARTH_____ 2"

WET SETTINGS:
REINFORCEMENT ANCHOR BOLTS, OR ANY EMBEDDED ITEM WITHIN THE CONCRETE, MAY NOT BE SET INTO THE CONCRETE AFTER IT HAS BEEN POURED WITHIN THE FORMS.

LAP SPLICES:
LAP ALL BARS 24" MIN UNLESS SHOWN OTHERWISE ON THESE DRAWINGS.

HOLLOW CORE PLANK

SCOPE OF WORK:
THE WORK INCLUDED IS THE DESIGN, MANUFACTURE AND DELIVERY OF PRECAST PRESTRESSED CONCRETE UNITS. DESIGN PLANK FOR THE MOST CRITICAL OF THE LOADING CONDITIONS AS SHOWN WITHIN THE DESIGN CRITERIA NOTE.

THE MANUFACTURER SHALL SUBMIT STRUCTURAL CALCULATIONS AND PLACEMENT DRAWINGS SIGNED BY A WASHINGTON STATE REGISTERED CIVIL ENGINEER FOR REVIEW PRIOR TO FABRICATION.

THE MANUFACTURER SHALL INSTALL ALL BLOCK OUTS REQUIRED FOR STRUCTURAL CONNECTIONS AS INDICATED ON THESE DRAWINGS. NO OTHER PENETRATIONS ARE ALLOWED WITHOUT THE PRIOR APPROVAL OF THE PLANK MANUFACTURER.

ALL HOLLOW CORE JOINTS SHALL BE GROUTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

STRUCTURAL STEEL

MATERIALS:

a. STRUCTURAL STEEL SHAPES & PLATES SHALL CONFORM TO ASTM A36.
b. HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500 GRADE B, Fy=42,000PSI.

WELDING:
CONFORM TO AWS D1.1 "STRUCTRUAL WELDING CODE - STEEL". WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH WABO REQUIREMENTS. USE E70 ELECTRODES OF TYPE REQUIRED FOR MATERIALS TO BE WELDED.

GALVANIZING:
ALL STEEL SECTIONS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION CONFORMING TO ASM A-123. REPAIRS SHALL CONFORM TO ASTM A-780 USING ZINC RICH PAINT. THE COATING THICKNESS FOR THE PAINT MUST BE 50% MORE THAN THE SURROUNDING COATING THICKNESS, BUT NOT GREATER THAN 4.0 MILS.

OPEN METAL GRATING

TING AS
RATING
CRETE SHALL BE
TURAL STEEL

SUPPLIER SHALL PROVIDE ALL COMPONENTS NECESSARY TO INSTALL AND SECURE THE GRATING IN PLACE & SHALL PROVIDE SHOP DRAWINGS DETAILING ALL COMPONENTS OF THE INSTALLATION.

DEFERRED SUBMITTALS

THE FOLLOWING AREAS OF WORK SHALL BE CONSIDERED AS "DEFERRED SUBMITTALS" AS DEFINED IN THE 2018 IBC

PRECAST PRESTRESSED HOLLOW CORE PLANK

ALL DEFERRED SUBMITTALS SHALL BEAR THE STAMP AND SIGNATURE OF A CIVIL ENGINEER LICENSED TO PRACTICE IN THE STATE OF WASHINGTON WHO HAS CURRENT DESIGN EXPERIENCE IN THE TYPE OF WORK REVIEWED.

THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED BY THE ENGINEER OF RECORD.

COPIES OF THE APPROVED DEFERRED SUBMITTAL DOCUMENTS SHALL BE MAINTAINED ON SITE BY THE GENERAL CONTRACTOR AND MADE AVAILABLE FOR REVIEW AS REQUESTED.

48"ϕ PRECAST CATCH BASIN BASE

SPECIFICATIONS:
PRECAST CATCH BASIN BASE SHALL MEET ASTM C478 AND THE APWA/WSDOT STANDARD SPECIFICATION FOR PRECAST CONCRETE MANHOLE SECTIONS.

MATERIALS:

a. REINFORCING STEEL Fy=60KSI MINIMUM

b. CONCRETE f'c=4,000PSI MIN @ 28 DAYS

MINIMUM REQUIREMENTS::

CIRCUMFERENTIAL WALL THICKNESS SHALL BE NO LESS THAN 5" THICK SHALL HAVEA MINIMUM OF 0.12 SQ. IN/FT OF REINFORCING STEEL HORZ VERT PLACED AT THE CENTER OF THE WALL.

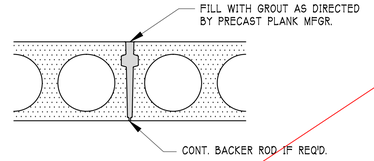
BASE THICKNESS SHALL BE NO LESS THAN 6" THICK AND SHALL HAVE A MINIMUM OF 0.15 SQ. IN/FT OF REINFORCING STEEL IN EACH ORTHOGONA DIRECTION PLACED AT THE CENTER OF THE SLAB.

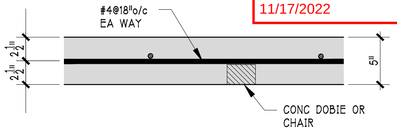
ALL Welding:

Is required to be done by a WABO certified welder and have Special Inspections by a WABO certified Inspection Agency or
Be done in a WABO certified fabrication shop.

Have either the special inspection report or the WABO fabrication shop certification available on site for the Building Inspector.

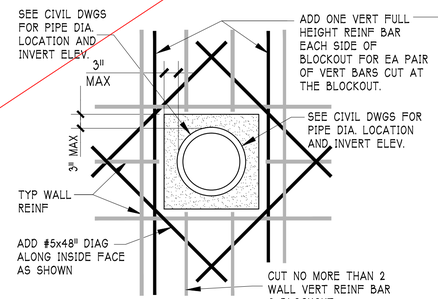
See Revised Sheet

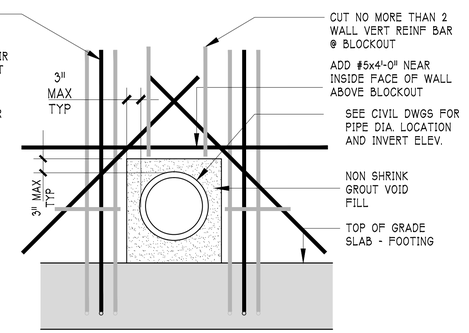




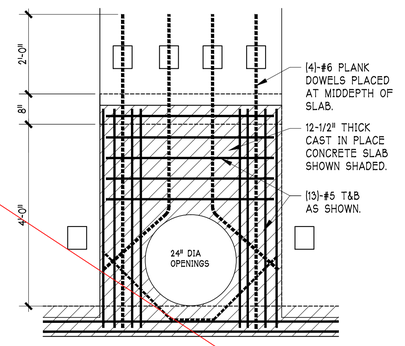
1 S1 TYP PLANK JOINT DETAIL
SCALE 1"=1'-0"

2 S1 TYP GRADE SLAB SECTION
SCALE 1-1/2"=1'-0"

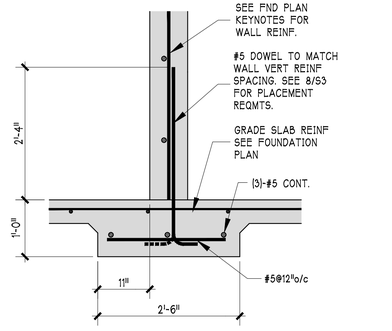




3 S1 WALL REINF @ PIPE PENETRATION
3/4"=1'-0"



AT PERIMETER WALL



5 S1 KNEEWALL FTG DETAIL

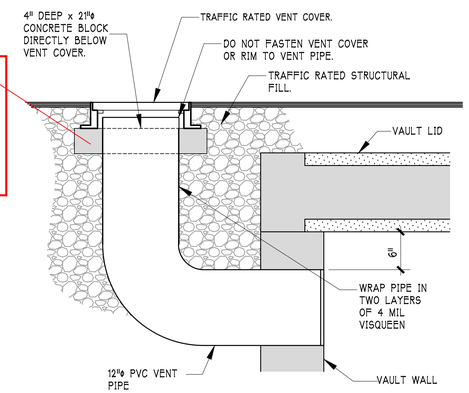
4 S1 LID REINF @ MANHOLE w/ KNEE-WALL
SCALE NTS

NOTICE
HOURS OF WORK: 7AM TO 8PM MON FRI
9AM TO 6PM SAT. NO WORK SUNDAYS & HOLIDAYS (PER KZC SEC. 115.25)
Exceptions must be approved in writing by Planning Official

DEFERRED SUBMITTALS:
DRAWINGS, CALCULATIONS AND PRODUCT DATA FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY OTHERS SHALL BE SUBMITTED TO THE EOR FOR APPROVAL PRIOR TO SUBMITTING TO THE BUILDING DEPARTMENT FOR REVIEW AND PRIOR TO FABRICATION.

City of Kirkland
Reviewed by:
David Aldridge III, PCD
Ryan Schauble, PW
Jason Chappell, FIRE

MUST REMAIN ON JOB SITE



6 S1 THRU WALL VENT PIPE DETAIL
SCALE 1"=1'-0"

DATE.	DESCRIPTION.	CLOUD.
05-05-2022	ISSUED FOR CONST. PERMIT APPLICATION	N/A
10-10-2022	INCORPORATE CIVIL REVISIONS	YES

Site Structures
A Division of Kosnik Engineering PC
10205 19th AVE SE, SUITE D
EVERETT, WASHINGTON 98208
PH: (425) - 357 - 9600 E-MAIL: DAN@KOSNIK.COM

10-10-2022 DANIEL J. KOSNIK STATE OF WASHINGTON 20744 PROFESSIONAL ENGINEER

WATERSHED COTTAGES
STORM WATER DETENTION VAULT
CITY OF KIRKLAND, WASHINGTON

STRUCTURAL NOTES
TYP DETAILS

SHEET:
S1 OF 4
S-22-028

SHEET SIZE 22x34

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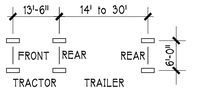

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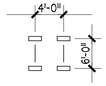

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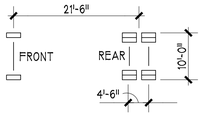

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ADEQUATE PRECAUTIONS SHALL BE TAKEN DURING HOT AND COLD WEATHER IN ACCORDANCE WITH THE SPECIFICATIONS.

LID PLANK PLACEMENT:
IN NO CASE SHALL THE LID PLANKS BE PLACED BEFORE THE WALLS HAVE BEEN ALLOWED A MINIMUM OF 3 DAYS OF CURE. WHEN AVERAGE AMBIENT TEMPERATURES ARE LESS THAN 50 DEGREES FAHRENHEIT, THE CONTRACTOR MUST ALLOW A MINIMUM CURE TIME OF 7 DAYS OR PROVIDE AN ADDITIONAL SET OF CYLINDERS TO BE BROKEN AT THE TIME OF LID PLACEMENT DEMONSTRATING A MINIMUM CONCRETE STRENGTH OF 1,000 PSI HAS BEEN REACHED.

REINFORCING BAR

MATERIAL REQUIREMENT:

REINFORCING BARS:
USE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60, EXCEPT AS NOTED ON THE DRAWINGS.

FABRICATION AND PLACING REQUIREMENTS:

BENDING:
BARS SHALL BE BENT COLD. BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS NOTED OR SHOWN OTHERWISE OR AUTHORIZED BY THE ENGINEER.

PLACING:
REINFORCEMENT SHALL BE SUPPORTED AND TIED TO PREVENT DISPLACEMENT BY CONSTRUCTION LOADS OR BY PLACING OF CONCRETE. MAXIMUM SPACING OF SUPPORTS SHALL BE 3'-6".

CONCRETE COVER:
MINIMUM CONCRETE COVER FOR REINF. SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

CONCRETE CAST AGAINST EARTH_____ 3"

CONCRETE CAST AGAINST FORMS AND EXPOSED TO EARTH_____ 2"

WET SETTINGS:
REINFORCEMENT ANCHOR BOLTS, OR ANY EMBEDDED ITEM WITHIN THE CONCRETE, MAY NOT BE SET INTO THE CONCRETE AFTER IT HAS BEEN POURED WITHIN THE FORMS.

LAP SPLICES:
LAP ALL BARS 24" MIN UNLESS SHOWN OTHERWISE ON THESE DRAWINGS.

HOLLOW CORE PLANK

SCOPE OF WORK:
THE WORK INCLUDED IS THE DESIGN, MANUFACTURE AND DELIVERY OF PRECAST PRESTRESSED CONCRETE UNITS. DESIGN PLANK FOR THE MOST CRITICAL OF THE LOADING CONDITIONS AS SHOWN WITHIN THE DESIGN CRITERIA NOTE.

THE MANUFACTURER SHALL SUBMIT STRUCTURAL CALCULATIONS AND PLACEMENT DRAWINGS SIGNED BY A WASHINGTON STATE REGISTERED CIVIL ENGINEER FOR REVIEW PRIOR TO FABRICATION.

THE MANUFACTURER SHALL INSTALL ALL BLOCK OUTS REQUIRED FOR STRUCTURAL CONNECTIONS AS INDICATED ON THESE DRAWINGS. NO OTHER PENETRATIONS ARE ALLOWED WITHOUT THE PRIOR APPROVAL OF THE PLANK MANUFACTURER.

ALL HOLLOW CORE JOINTS SHALL BE GROUTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

STRUCTURAL STEEL

MATERIALS:

a. STRUCTURAL STEEL SHAPES & PLATES SHALL CONFORM TO ASTM A36.
b. HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500 GRADE B, Fy=42,000PSI.

WELDING:
CONFORM TO AWS D1.1 "STRUCTRUAL WELDING CODE - STEEL". WELDERS SHALL BE CERTIFIED IN ACCORDANCE WITH WABO REQUIREMENTS. USE E70 ELECTRODES OF TYPE REQUIRED FOR MATERIALS TO BE WELDED.

GALVANIZING:
ALL STEEL SECTIONS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION CONFORMING TO ASM A-123. REPAIRS SHALL CONFORM TO ASTM A-780 USING ZINC RICH PAINT. THE COATING THICKNESS FOR THE PAINT MUST BE 50% MORE THAN THE SURROUNDING COATING THICKNESS, BUT NOT GREATER THAN 4.0 MILS.

OPEN METAL GRATING

OPEN METAL GRATING SHALL BE WELDED STEEL BAR GRATING AS SPECIFIED ON THE DRAWINGS. ALL STEEL GRATING AND GRATING COMPONENTS INCLUDING ITEMS EMBEDED WITHIN THE CONCRETE SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION. SEE STRUCTURAL STEEL NOTES FOR GALVANIZING REQUIREMENTS.

SUPPLIER SHALL PROVIDE ALL COMPONENTS NECESSARY TO INSTALL AND SECURE THE GRATING IN PLACE & SHALL PROVIDE SHOP DRAWINGS DETAILING ALL COMPONENTS OF THE INSTALLATION.

DEFERRED SUBMITTALS

THE FOLLOWING AREAS OF WORK SHALL BE CONSIDERED AS "DEFERRED SUBMITTALS" AS DEFINED IN THE 2018 IBC

PRECAST PRESTRESSED HOLLOW CORE PLANK

ALL DEFERRED SUBMITTALS SHALL BEAR THE STAMP AND SIGNATURE OF A CIVIL ENGINEER LICENSED TO PRACTICE IN THE STATE OF WASHINGTON WHO HAS CURRENT DESIGN EXPERIENCE IN THE TYPE OF WORK REVIEWED.

THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED BY THE ENGINEER OF RECORD.

COPIES OF THE APPROVED DEFERRED SUBMITTAL DOCUMENTS SHALL BE MAINTAINED ON SITE BY THE GENERAL CONTRACTOR AND MADE AVAILABLE FOR REVIEW AS REQUESTED.

48"ϕ PRECAST CATCH BASIN BASE

SPECIFICATIONS:
PRECAST CATCH BASIN BASE SHALL MEET ASTM C478 AND THE APWA/WSDOT STANDARD SPECIFICATION FOR PRECAST CONCRETE MANHOLE SECTIONS.

MATERIALS:

a. REINFORCING STEEL Fy=60KSI MINIMUM
b. CONCRETE f'c=4,000PSI MIN @ 28 DAYS

MINIMUM REQUIREMENTS::

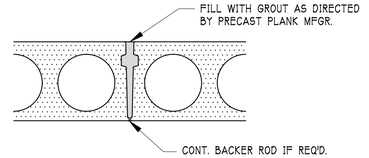
CIRCUMFERENTIAL WALL THICKNESS SHALL BE NO LESS THAN 5" THICK AND SHALL HAVEA MINIMUM OF 0.12 SQ. IN/FT OF REINFORCING STEEL HORZ AND VERT PLACED AT THE CENTER OF THE WALL.

BASE THICKNESS SHALL BE NO LESS THAN 6" THICK AND SHALL HAVE A MINIMUM OF 0.15 SQ. IN/FT OF REINFORCING STEEL IN EACH ORTHOGONAL DIRECTION PLACED AT THE CENTER OF THE SLAB.

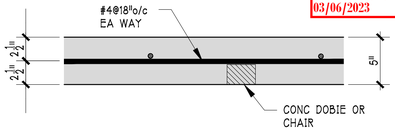
ALL Welding:

Is required to be done by a WABO certified welder and have Special Inspections by a WABO certified Inspection Agency or
Be done in a WABO certified fabrication shop.

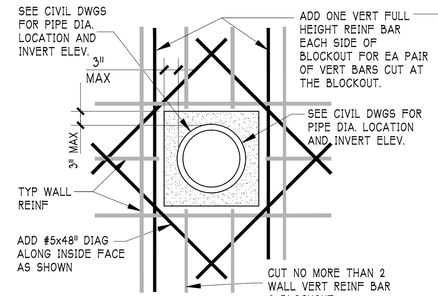
Have either the special inspection report or the WABO fabrication shop certification available on site for the Building Inspector.

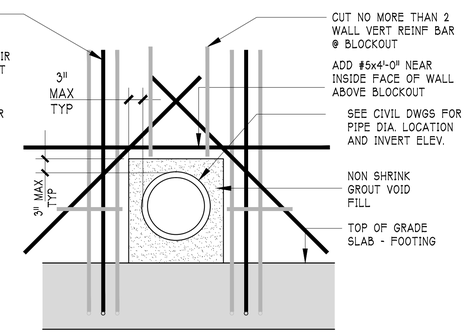


1 S1 TYP PLANK JOINT DETAIL
SCALE 1"=1'-0"

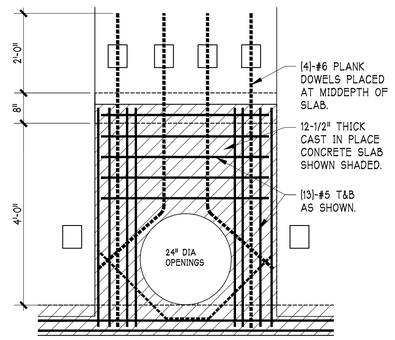


2 S1 TYP GRADE SLAB SECTION
SCALE 1-1/2"=1'-0"

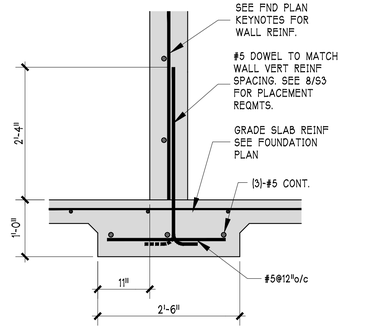




3 S1 WALL REINF @ PIPE PENETRATION
3/4"=1'-0"



AT PERIMETER WALL



5 S1 KNEEWALL FTG DETAIL

4 S1 LID REINF @ MANHOLE w/ KNEE-WALL
SCALE NTS

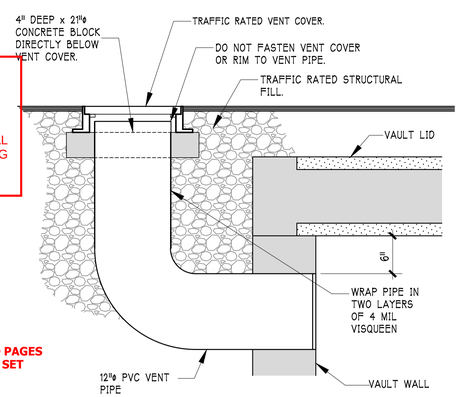
NOTICE
HOURS OF WORK: 7AM TO 8PM MON FRI
9AM TO 6PM SAT. NO WORK SUNDAYS & HOLIDAYS (PER KZC SEC. 115.25)
Exceptions must be approved in writing by Planning Official

DEFERRED SUBMITTALS:
DRAWINGS, CALCULATIONS AND PRODUCT DATA FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY OTHERS SHALL BE SUBMITTED TO THE EOR FOR APPROVAL PRIOR TO SUBMITTING TO THE BUILDING DEPARTMENT FOR REVIEW AND PRIOR TO FABRICATION.

City of Kirkland
Reviewed by:
David Aldridge III, PCD
Ryan Schauble, PW
Jason Chappell, FIRE

MUST REMAIN ON JOB SITE

INSERT REVISED PAGES INTO APPROVED SET 03/06/2023



6 S1 THRU WALL VENT PIPE DETAIL
SCALE 1"=1'-0"

City of Kirkland
Post Revision
Reviewed by cjones
03/06/2023

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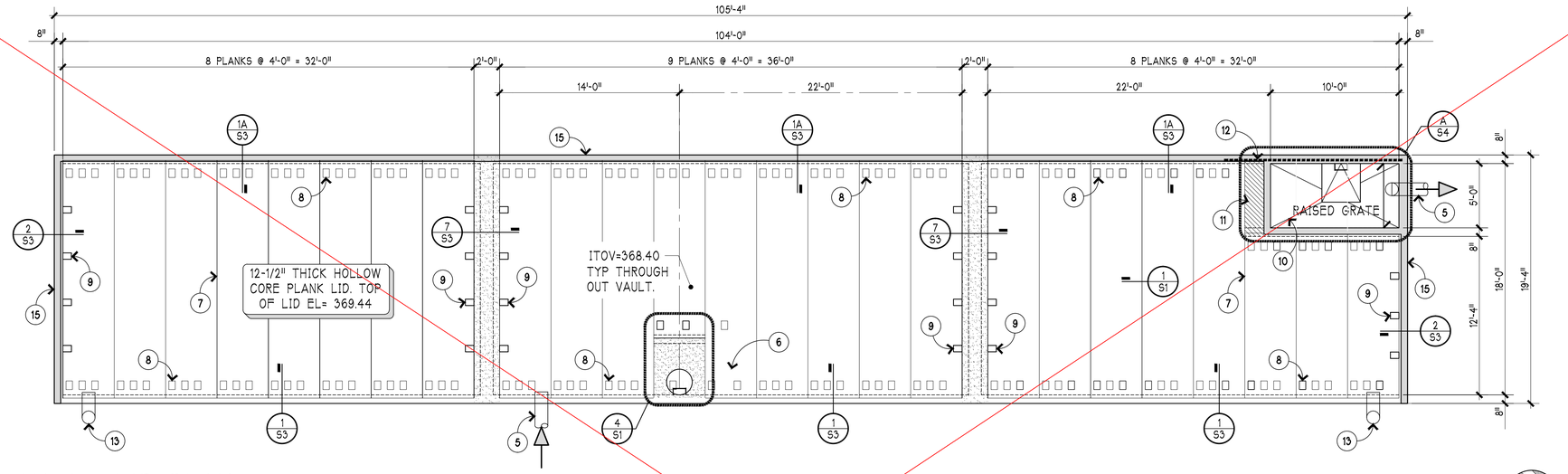
PH: (425) - 357 - 9500 E-MAIL: DAN@KOSNIK.COM

12-06-2022 DANIEL J. KOSNIK STATE OF WASHINGTON 20744 PROFESSIONAL ENGINEER

WATERSHED COTTAGES
STORM WATER DETENTION VAULT
CITY OF KIRKLAND, WASHINGTON

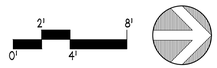
STRUCTURAL NOTES TYP DETAILS

SHEET: S1 OF 4
S-22-028

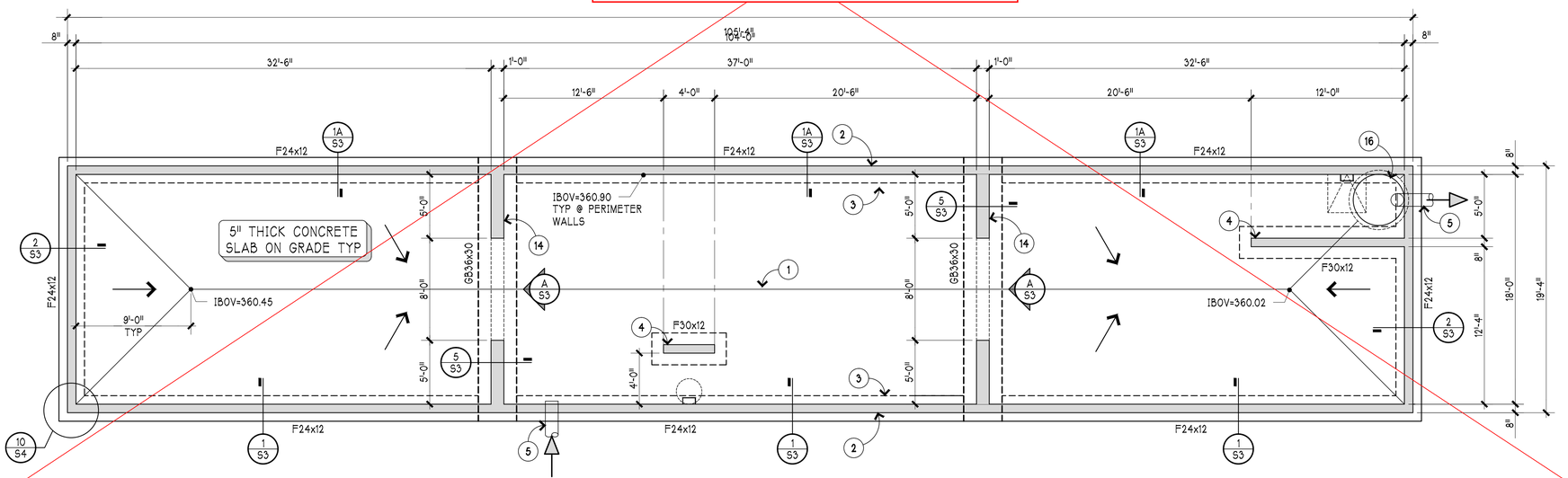


VAULT LID PLAN

SCALE 3/16" = 1'-0"

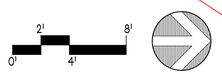


See Revised Sheet



VAULT FOUNDATION PLAN

SCALE 3/16" = 1'-0"



PLAN KEYNOTES

1. 5" THICK CONCRETE SLAB ON GRADE REINF WITH #4@18"o/c EA WAY. PLACE ALL REINF AT MID-DEPTH OF THE SLAB. SEE 2/S1 FOR REINF PLACEMENT. CAST GRADE SLAB IN A SINGLE POUR.
2. C.I.P. CONCRETE WALLS AT THE PERIMETER & INTERIOR OF THE VAULT. SEE WALL SECTIONS FOR THICKNESS & REINFORCING. SEE 10/S4 FOR REINF @ WALL CORNERS.
3. THICKENED SLAB FOOTINGS TO BE CAST WITH THE GRADE SLAB. SEE WALL SECTIONS FOR SIZE & REINF.
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10. 5'-0"x10'-0" OPNG TO RECEIVE OPEN METAL BAR GRATING w/ INTEGRAL 36"x36" HINGED ACCESS HATCH AND LADDER RUNGS. SET TOP OF GRATING 9" ABOVE HIGHEST ADJACENT FINISHED GRADE. SEE A/S4 FOR GRATING & CURB ASSEMBLY.
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LEGEND

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	CIP CONCRETE WALL
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F24x12	24" WIDE x 12" THICK FTG. SEE 1, 1A & 2/S3
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	GRATING SPAN DIRECTION
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CITY OF KIRKLAND
REVIEWED BY TCHAN
11/17/2022

DATE.	DESCRIPTION.	CLOUD.
05-05-2022	ISSUED FOR CONST. PERMIT APPLICATION	N/A
10-10-2022	INCORPORATE CIVIL REVISIONS	YES

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A Division of Kosnik Engineering PC
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PH: (425) - 357 - 9600 E-MAIL: DAN@KOSNIK.COM

10-10-2022
DANIEL J. KOSNIK
STATE OF WASHINGTON
20744
PROFESSIONAL ENGINEER

WATERSHED COTTAGES

STORM WATER DETENTION VAULT

CITY OF KIRKLAND, WASHINGTON

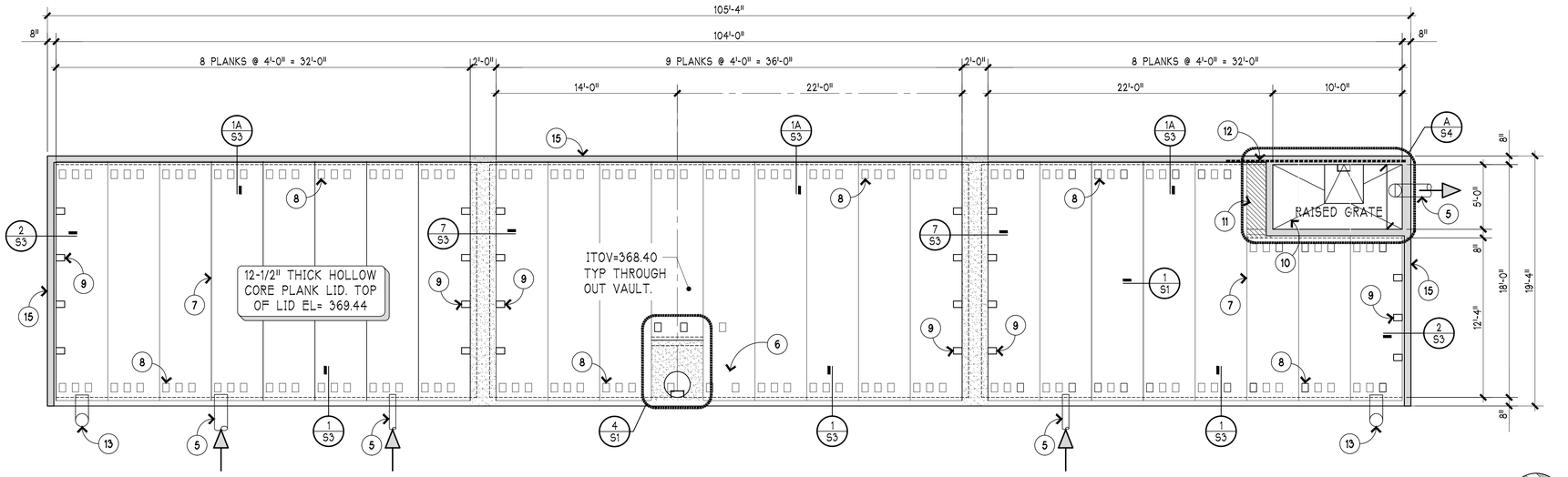
VAULT LID & FOUNDATION PLANS

SHEET:

S2 OF 4

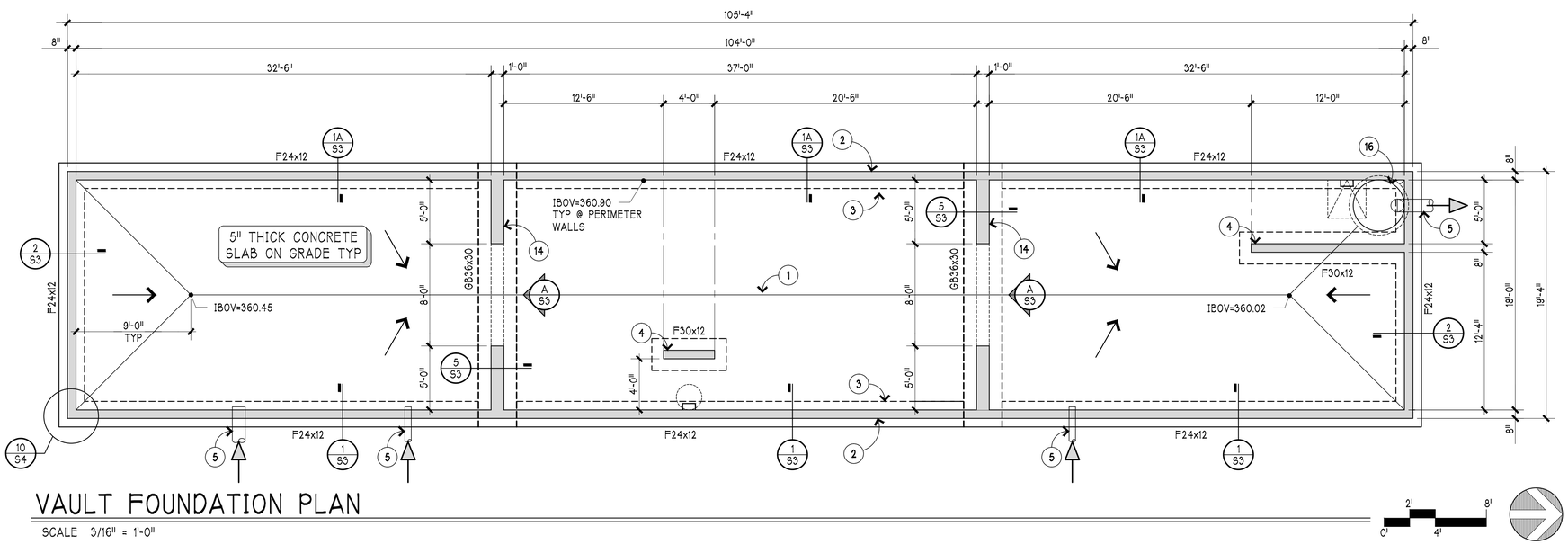
S-22-028

SHEET SIZE 22x34



VAULT LID PLAN

SCALE 3/16" = 1'-0"



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Post Revision
Reviewed by cjones
03/06/2023

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WATERSHED COTTAGES

STORM WATER DETENTION VAULT

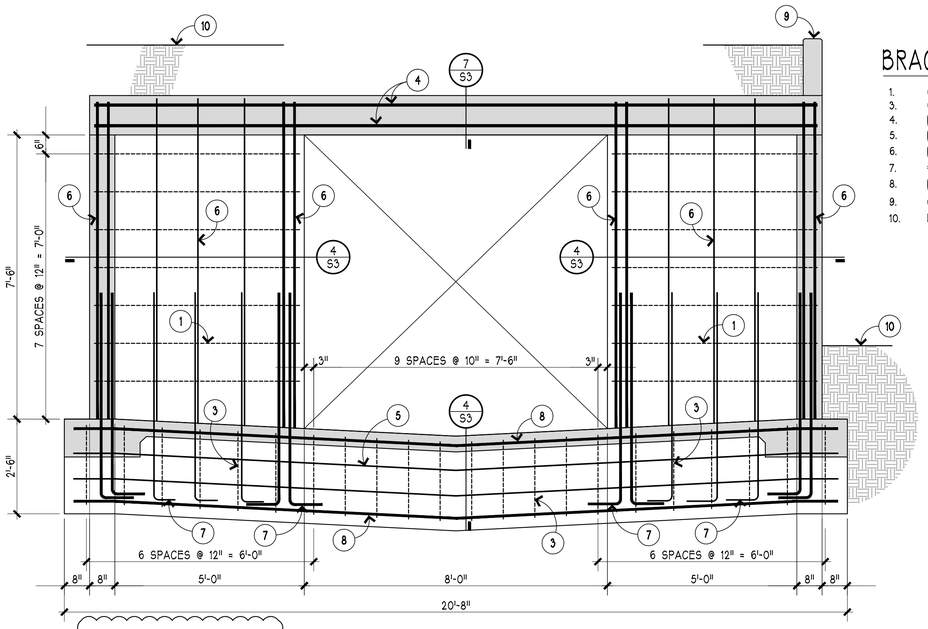
CITY OF KIRKLAND, WASHINGTON

VAULT LID & FOUNDATION PLANS

SHEET: S2 OF 4

S-22-028

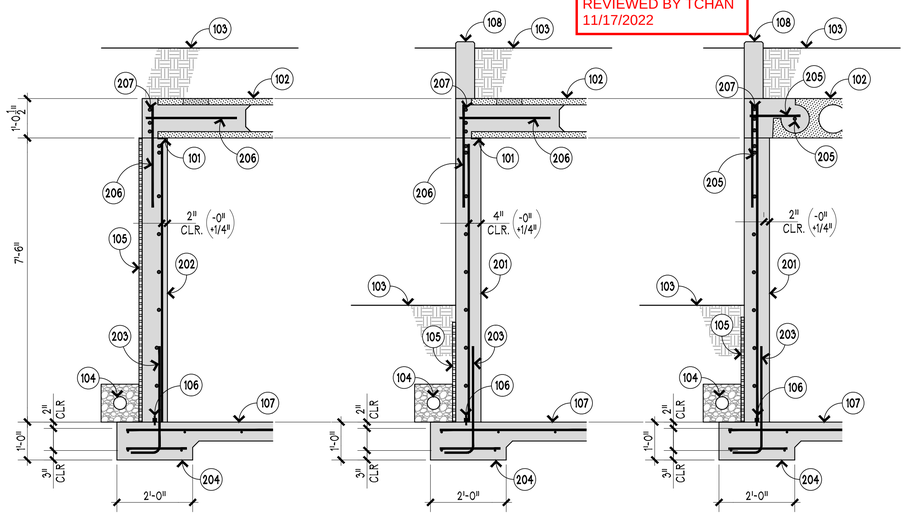
SHEET SIZE 22x34



BRACED FRAME KEYNOTES

1. #4 TIES @ 12"o/c @ PIERS TYP.
3. #5 TIES @ GRADE BM. SEE 5/S3 FOR CONFIGURATION.
4. (4)-#6 CONT T & B @ CLOSURE POUR. SEE 7/S3.
5. (2)-#6 CONT EA FACE OF GRADE BM.
6. (6)-#6 VERT EA FACE. SEE PIER.
7. #6 DOWEL @ EA #6 VERT.
8. (9)-#7 T & B OF GRADE BEAM.
9. 6" THK CURB AT EXPOSED WALL. SEE 5/S4 FOR REINF.
10. FINISHED GRADE OVER OR AROUND VAULT.

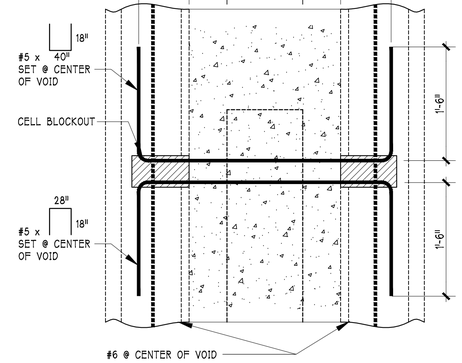
A/S3 WALL ELEVATION
SCALE 1/2"=1'-0"



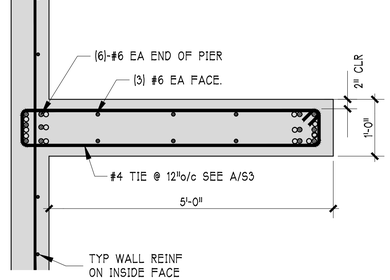
1/S3 TYP WALL SECT
SCALE 1/2"=1'-0"

1A/S3 TYP WALL SECT
SCALE 1/2"=1'-0"

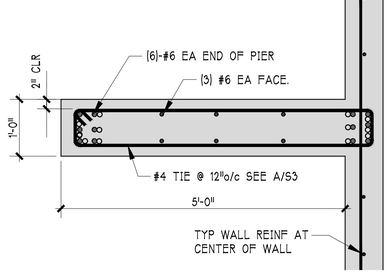
2/S3 TYP WALL SECT
SCALE 1/2"=1'-0"



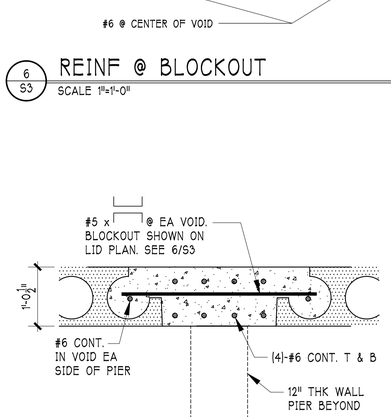
6/S3 REINF @ BLOCKOUT
SCALE 1"=1'-0"



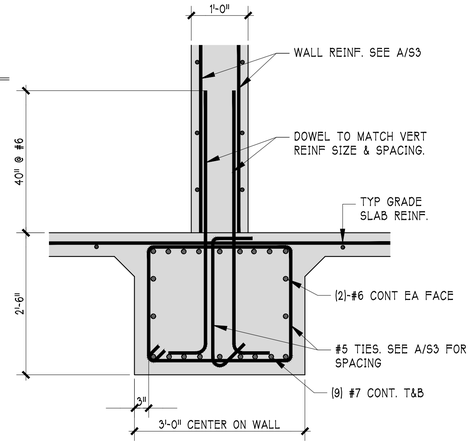
3/S3 JAMB SECTION
SCALE 3/4"=1'-0"



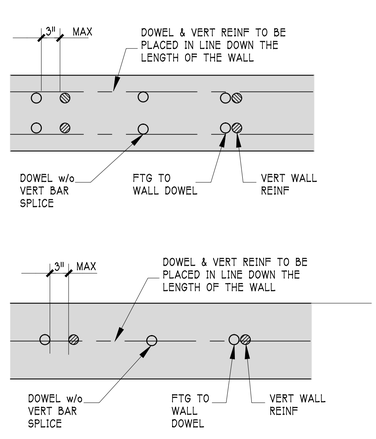
4/S3 JAMB SECTION
SCALE 3/4"=1'-0"



7/S3 HEADER SECTION
SCALE 3/4"=1'-0"



5/S3 GRADE BM SECTION
SCALE 3/4"=1'-0"



8/S3 TYP FTG DOWEL PLACEMENT DETAIL
SCALE 1"=1'-0"

WALL GENERAL KEYNOTES

101. PLANK TO BEAR 3" MINIMUM ONTO THE TOP OF THE CONCRETE WALL. SEE PLANK MANUFACTURER'S DRAWINGS FOR FINAL BEARING LENGTH. INSTALL BEARING PAD AS DETAILED ON THE PRECAST PLANK PLACEMENT DRAWINGS.
102. 12-1/2" THICK PRECAST HOLLOW CORE PLANK.
103. FINISHED GRADE. ELEVATION VARIES. SEE DESIGN CRITERIA ON SHEET S1 FOR APPROXIMATE SOIL DEPTHS OVER THE VAULT LID IN ADDITION TO THE CIVIL DWGS FOR FINAL GRADE ELEVATIONS.
104. 4"ø PERFORATED PVC FOOTING DRAIN SET IE 6" MAX ABOVE THE TOP OF THE FOOTING. SET INTO 16" SQUARE GRAVEL BED & WRAP IN FILTER FABRIC. ROUTE DRAIN TO DISCHARGE POINT AS SHOWN ON THE CIVIL DWGS.
105. PREENGINEERED DRAINAGE MATT TO EXTEND OVER THE HEIGHT OF THE WALL. SEE GEOTECHNICAL REPORT FOR MATERIAL SPECIFICATIONS.
106. 4" PVC RIBBED WATERSTOP w/ CENTER BULB AT ALL PERIMETER WALLS OF THE VAULT. INSTALL AT THE CENTER OF THE WALL, IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS.
107. SEE FOUNDATION PLAN FOR GRADE SLAB REINFORCING.
108. 6" THICK CURB. SEE 5/S4 FOR REINF DETAILS.

WALL REINFORCING KEYNOTES

201. 8" THICK CONCRETE WALL REINF w/ #5@12"o/c HORZ & VERT. PLACE VERT REINF @ THE CENTER OF THE WALL. PROVIDE (2)-#5 CONT HORZ BARS @ THE TOP OF THE WALL. EXTEND BARS 11" INTO LID CLOSURE.
202. 8" THICK CONCRETE WALL REINF w/ #5@12"o/c HORZ & VERT. PLACE VERT REINF NEAR THE INSIDE FACE OF THE WALL. PROVIDE (2)-#5 CONT HORZ BARS @ THE TOP OF THE WALL. EXTEND BARS 11" INTO LID CLOSURE POUR WHERE POSSIBLE.
203. #5 FOOTING TO WALL DOWELS TO MATCH WALL VERTICAL REINFORCING SPACING. PROVIDE STD HOOK @ END OF BAR CAST INTO FOOTING. DOWELS SHALL BE EMBEDDED A MINIMUM OF 9" INTO 12" THICK FTG. & SHALL EXTEND INTO THE WALL 24" MIN. SEE 8/S3 FOR DOWEL PLACEMENT REQUIREMENTS.
204. REINF FTG w/ (2)-#5 LONG & #5@18"o/c TRANSVERSE BOT.
205. LID & WALL TO CLOSURE POUR REINF. @ VOID BLOCKOUT. SEE 8/S4.
206. LID & WALL TO CLOSURE POUR REINF @ VOID END FILL. SEE 9/S4.
207. (3)-#6 CONT IN CLOSURE POUR. LAP 40" AT ALL SPLICE LOCATIONS.

DATE.	DESCRIPTION.	CLOUD.
05-05-2022	ISSUED FOR CONST. PERMIT APPLICATION	N/A
10-10-2022	INCORPORATE CIVIL REVISIONS	YES

site Structures
A Division of Kosnik Engineering PC
10205 19th AVE SE, SUITE D
EVERETT, WASHINGTON 98208
PH: (425) - 357 - 9500 E-MAIL: DAN@KOSNIK.COM

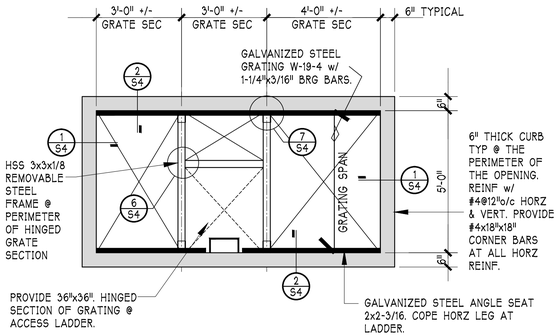
10-10-2022 DANIEL J. KOSNIK STATE OF WASHINGTON 20744 PROFESSIONAL ENGINEER

WATERSHED COTTAGES
STORM WATER DETENTION VAULT
CITY OF KIRKLAND, WASHINGTON

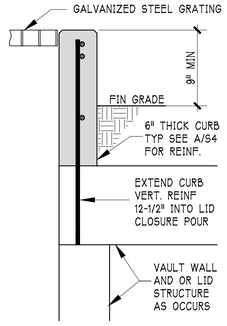
WALL SECTIONS
BRACED FRAME ELVATION
& DETAILS

SHEET:
S3 OF 4
S-22-028

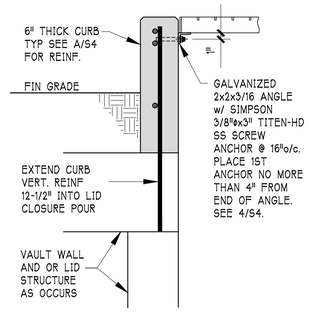
SHEET SIZE 22x34



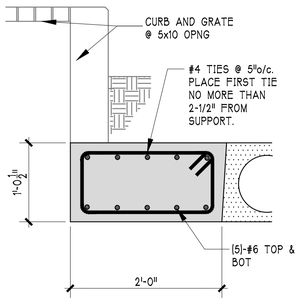
A/S4 GRATING & CURB @ RAISED 5'x10' OPNG
SCALE 3/8"=1'-0"



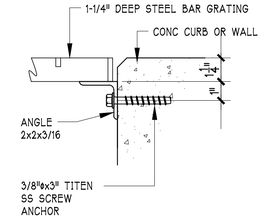
1/S4 TYP CURB @ OPNG
SCALE 1"=1'-0"



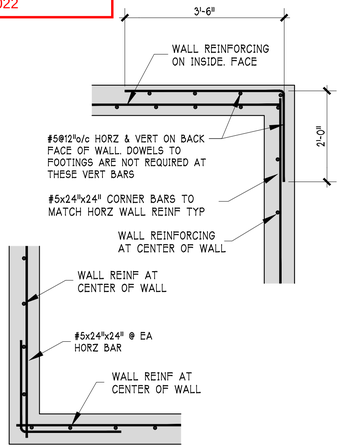
2/S4 TYP CURB @ OPNG
SCALE 1"=1'-0"

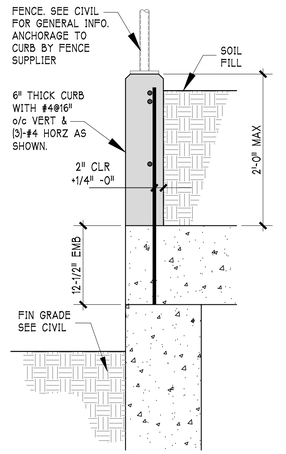


3/S4 SLAB BEAM @ OPNG
SCALE 1"=1'-0"

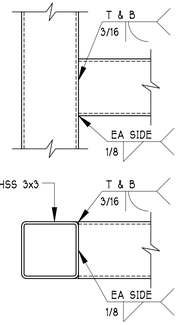


4/S4 LEDGER ANGLE DETAILS
SCALE 3"=1'-0"

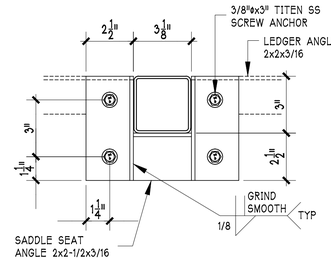




5/S4 CURB DETAIL
SCALE 1"=1'-0"



6/S4 HSS FRAME DETAIL
SCALE 3"=1'-0"

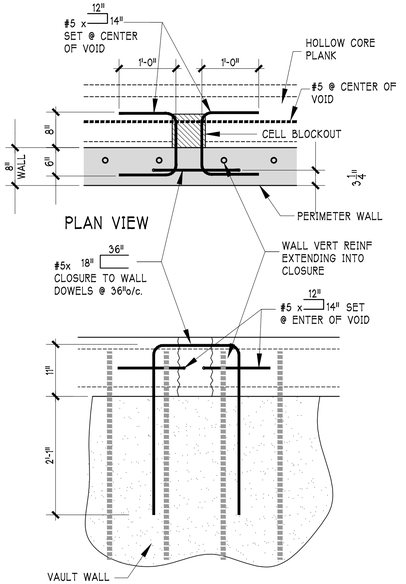


7/S4 HSS SEAT DETAIL
SCALE 3"=1'-0"

ALL Welding:

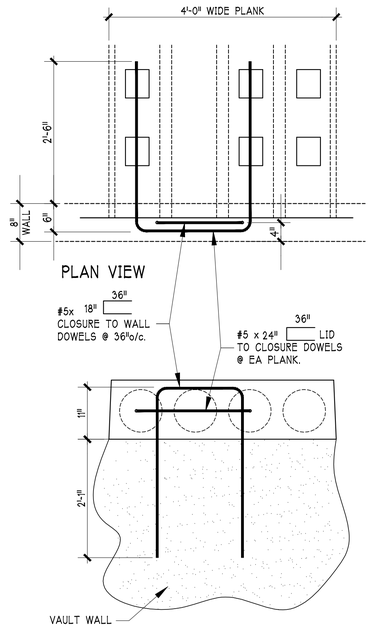
Is required to be done by a WABO certified welder and have Special Inspections by a WABO certified Inspection Agency or
Be done in a WABO certified fabrication shop.

Have either the special inspection report or the WABO fabrication shop certification available on site for the Building Inspector.



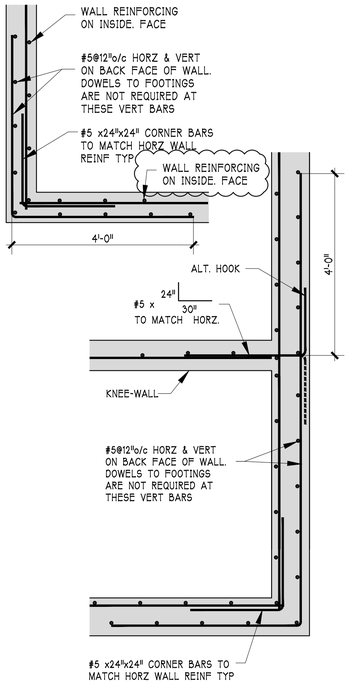
ELEVATION VIEW

8/S4 LID & WALL TO CLOSURE DOWELS AT VOID BLOCKOUTS - 8" WALL
SCALE 3/4"=1'-0"

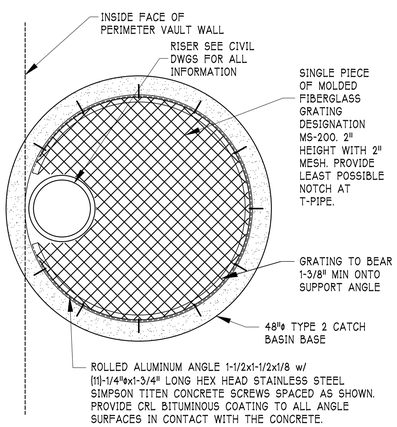


ELEVATION VIEW

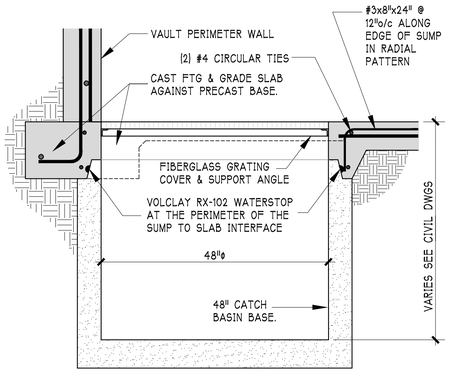
9/S4 LID & WALL TO CLOSURE DOWELS AT PLANK VOID END FILL - 8" WALL
SCALE 3/4"=1'-0"



10/S4 TYP WALL CORNER REINF.
NTS



GRATING @ SUMP



SECTION @ SUMP

11/S4 SUMP DETAIL
SCALE 3/4"=1'-0"

DATE.	DESCRIPTION.	CLOUD.
05-05-2022	ISSUED FOR CONST. PERMIT APPLICATION	N/A
10-10-2022	INCORPORATE CIVIL REVISIONS	YES

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A Division of Kosnik Engineering PC
10205 19th AVE SE, SUITE D
EVERETT, WASHINGTON 98208
PH: (425) - 357 - 9600 E-MAIL: DANIK@KSNIK.COM

10-10-2022 DANIEL J. KOSNIK STATE OF WASHINGTON 20744 PROFESSIONAL ENGINEER

WATERSHED COTTAGES
STORM WATER DETENTION VAULT
CITY OF KIRKLAND, WASHINGTON

DETAILS

SHEET:
S4 OF 4
S-22-028
SHEET SIZE 22x34