Thanks to You
A BETTER ZOO
OREGON ZOO
A SERVICE OF METRO

ADDENDUM NO. 4
Penguin Life Support System Upgrade
REQUEST FOR BIDS #11-1717
September 3, 2010

Acknowledge receipt of this addendum by inserting its number in the Proposal Form. The contents of this addendum are to be covered in the bids and in closing the Contract will become a part thereof. Changes noted herein affect only the specific words in paragraphs mentioned and the balance of the Drawings and/or Specifications remains in full force.

THE FOLLOWING ARE CHANGES TO THE CONTRACT DOCUMENTS

PROJECT MANUAL:

I. SPECIFICATION SECTIONS ADDED:

None

II. MODIFICATIONS TO SPECIFICATIONS:

A. SECTION 004100 - BID FORMS (Replacement forms are attached to this Addendum)

1. Page 3; Schedule of Bid Prices; REPLACE:

Minor revisions.

2. Page 5: First Tier Subcontractor Disclosure Form; REPLACE

Revised Bid Closing date and Disclosure Deadline date (per Addendum #3).

B. SECTION 007200 - GENERAL CONDITIONS

1. Page 32; Paragraph 8.3.1, REVISE:

"Overhead and Profit for the entity performing the work with its own crews shall not exceed ~~fifteen~~ **ten** percent (~~15%~~ **10%**) of the Direct Cost of the changed work."

AND

"If the Work is performed by a second-tier Subcontractor, the total Overhead and Profit for all tiers shall in no event exceed twenty~~-five~~ percent (~~25%~~ **20%**) of the Direct Cost of the changed work. Distribution of this Overhead and Profit among the tiers is the responsibility of Contractor."

C. SECTION 007300 - SUPPLEMENTARY CONDITIONS

1. Page 3; Paragraph 1.05.A.1, REVISE:

"1. Protection of existing trees is critical. Refer to Section 01 56 39 - Temporary Tree and Plant Protection. **It is the General Contractor's responsibility to protect trees to remain for continued health during construction and from long-term negative impacts caused by construction. Should the health of a preserved tree be**

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compromised due to construction activities, the Contractor is responsible for the cost of that impact. The attached table states the assessed values of the trees.

Tree Value Table

Tree No.	Description	Appraised Value*
1	Douglas Fir, *Pseudotsuga menziesii*, 20" DBH Located east of proposed skimmer sump	$10,000
2	Douglas Fir, *Pseudotsuga menziesii*, 16" DBH Located east of 20" Douglas Fir	$7,500
3	Maple, *Acer platinoides*, 'Crimson King', 8" DBH Located south of basement access stairs	$2,530

* - The method used is called the Trunk Formula Method, a recognized method for calculating the value of trees, by the International Society of Arboriculture (ISA). The references used were the 'Guide for Plant Appraisal, 9th Edition, by the Council of Trees & Landscape Appraisers and the ISA, and the 'Species Evaluation List', by the Northwest Chapter of the ISA, 2000. Aspects that are taken into consideration using this method are species, size, condition, location, and tree replacement."

2. Page 4; Paragraph 1.05.A.4, REPLACE:

"4. Owner's representative will inspect the ongoing construction and consult with the Contractor regarding proposed or observed Work within the tree protection zone to evaluate the impact on the health of the trees."

3. Page 4; Paragraph 1.05.A.5 & 6, ADD:

"5. An arborist will determine if tree damage, due to construction activities, will have a detrimental effect on the life expectancy of the tree.
   a. If damage will necessitate removal of the tree within three years, then the Contractor will reimburse the Owner, in the amount designated on the table above.
   b. If damage will reduce the life expectancy for the tree, then the arborist will review the damage and assess a reasonable amount for the Contractor to pay.

6. Payment for tree damage will be negotiated through a deductive Change Order."

D. SECTION 087100 - DOOR HARDWARE

1. Page 4: Paragraph 2.1.C.1, REVISE:

"1. Best Access Systems: www.bestaccess.com ~~www.bestlock.com~~. Locksets will be keyed and provided by Owner for Contractor final installation."

2. Page 4; Paragraph 2.1.E, REVISE:

"E. **Mortise** ~~Cylindrical~~ Locksets:
   1. Best Access Systems: www.bestaccess.com ~~www.bestlock.com~~. Locksets will be keyed and provided by Owner for Contractor final installation.
   2. **Provide Best Access Systems 45H7D12MV626 for doors as modified to meet requirements of paragraph 3.6 of Section 087100**.
   3. No substitutions allowed."

E. SECTION 230590 - TESTING, ADJUSTING & BALANCING

1. Page 2; Paragraph 1.4.A, REVISE:

"A. Balancer shall be contracted to ~~commissioning agent~~ **the Contractor**."

F. SECTION 236000 - CENTRAL COOLING EQUIPMENT
1. Page 2; Paragraph 2.2.C, REVISE:

"C. Tie bars and hardware shall be ~~stainless~~ steel. **Any wetted components to be stainless steel.**"

DRAWINGS:

I. NEW DRAWINGS ISSUED:

NONE

II. REVISIONS TO DRAWINGS:

A. DRAWING RC03 NAME: C4.0 CIVIL DETAILS, DETAIL 5, REVISION MADE:

1. As shown on drawing.

B. DRAWING RC04 NAME: C4.0 CIVIL DETAILS, DETAIL 4, REVISION MADE:

1. As shown on drawing.

C. DRAWING RC05 NAME: C4.1 CIVIL DETAILS, DETAIL 5, ADD:

1. ADD detail 5 as shown on drawing.

D. DRAWING RS01 NAME: S2.1 FRAMING PLANS, DETAIL 1, REVISION MADE:

1. As shown on drawing.

E. DRAWING RS02 NAME: S2.1 FRAMING PLANS, DETAIL 2, REVISION MADE:

1. As shown on drawing.

F. DRAWING RS03 NAME: S2.1A ADD ALTERNATE 2 FRAMING PLANS, DETAIL 1, REVISION MADE:

1. As shown on drawing.

G. DRAWING RS04 NAME: S2.1A ADD ALTERNATE 2 FRAMING PLANS, DETAIL 2, REVISION MADE:

1. As shown on drawing.

H. DRAWING RS05 NAME: S5.1 CONCRETE DETAILS, DETAIL 1, REVISION MADE:

1. As shown on drawing.

I. DRAWING RS06 NAME: S5.1 CONCRETE DETAILS, DETAIL 9, REVISION MADE:

1. As shown on drawing.

J. DRAWING RS07 NAME: S5.3A ADD ALTERNATE 2 - STAIR DETAILS, DETAIL 1, REVISION MADE:

1. As shown on drawing.

K. DRAWING RS08 NAME: S5.3A ADD ALTERNATE 2 - STAIR DETAILS, DETAIL 2, REVISION MADE:

1. As shown on drawing.

L. DRAWING RS09 NAME: S5.3A ADD ALTERNATE 2 - STAIR DETAILS, DETAIL 3, REVISION MADE:

1. As shown on drawing.

M. DRAWING RE02 NAME: E1.0 ELECTRICAL SITE PLAN, NOTES, REVISION MADE:

1. REVISE note 1 as shown on drawing

N. DRAWING RE03 NAME: E5.1 ELECTRICAL ONE-LINE DIAGRAM, REVISION MADE:

1. REVISE main feeder type feeder type from '17' to '47' to clarify that a neutral conductor is required for the main service to the penguin building.

2. REVISE detail references as shown on drawing.

O. DRAWING RE04 NAME: C5.2 ELECTRICAL DETAILS, REVISION MADE

1. REVISE detail references as shown on drawing.

SUBSTITUTION REQUESTS:

I. THE FOLLOWING MANUFACTURERS ARE ACCEPTABLE:

A. SECTION 230590 - TESTING, ADJUSTING & BALANCING, 1.1.C.2 Balancing Organization

1. Accurate Balancing Agency, Inc.

CONTRACTOR QUESTIONS / CLARIFICATIONS:

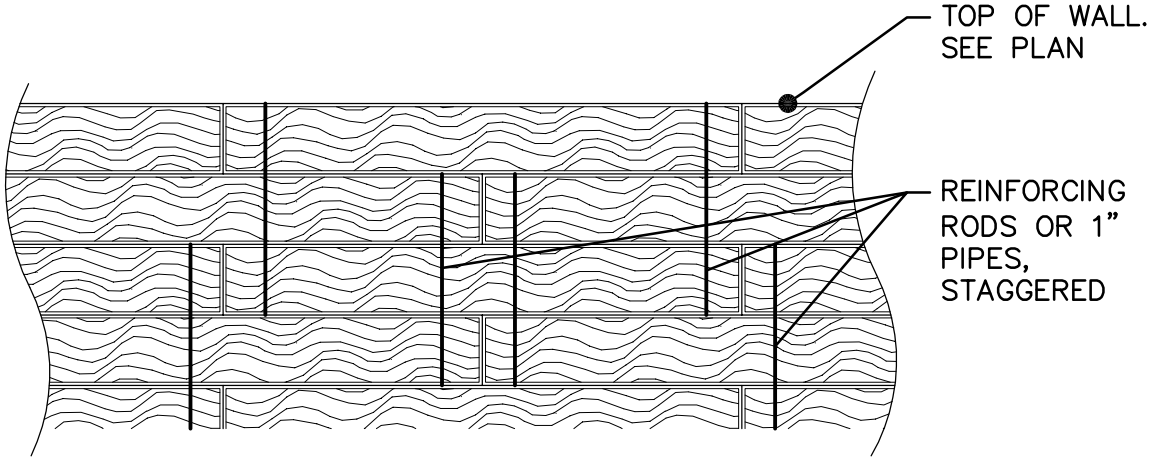
1. Clarification: Artificial Rockwork Restoration is incidental to the life support system installation and as indicated on the drawings and should be included as part of the base bid. Artificial Rockwork Repair is allocated to repair damage and breaches in the existing pool not impacted by the life support system components and will be paid per the Unit Price.

2. Clarification: The bid forms do not need to be originals out of the project manual, as long as the signatures on the forms are not photocopied. The bid form was revised, via Addendum # 1 and again via this last Addendum #4. The forms are all available, electronically, from the Ford Graphics web site.

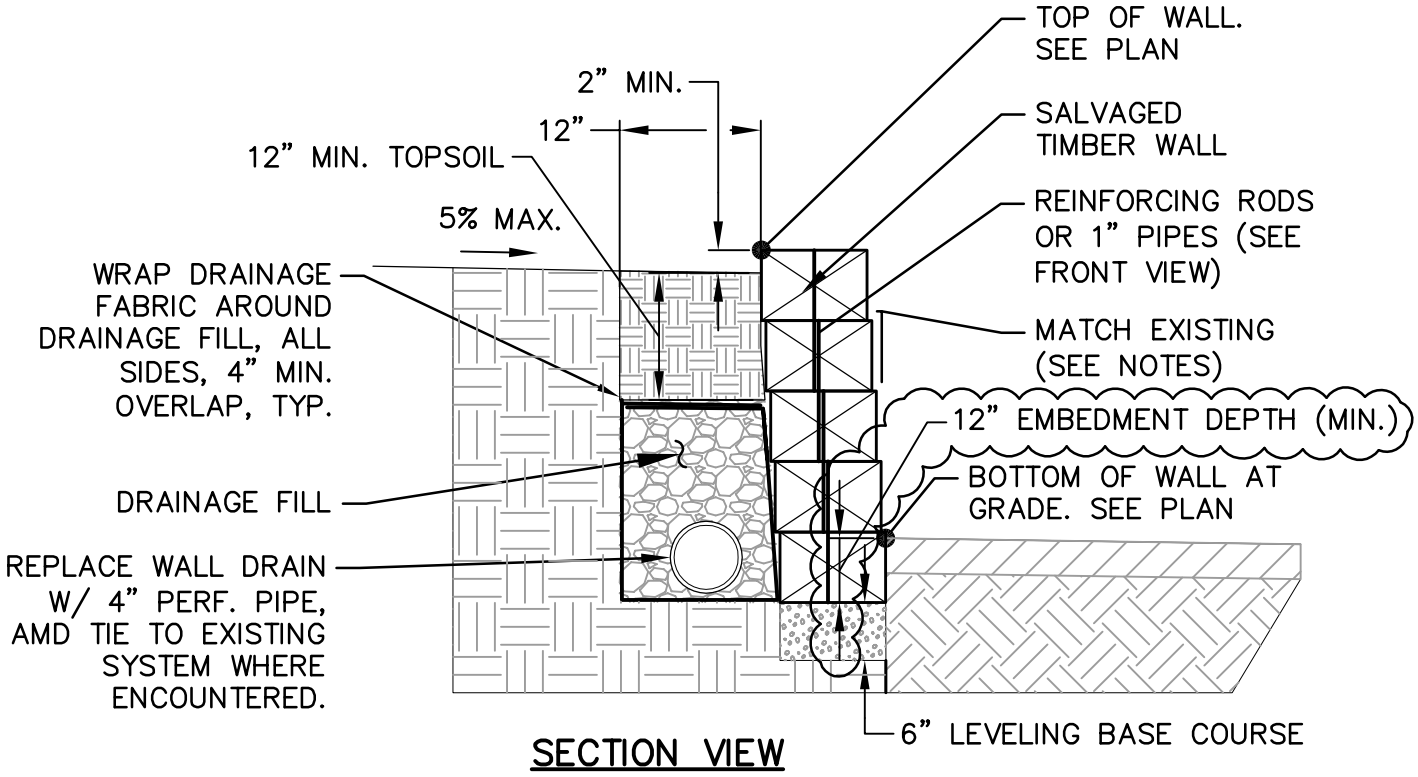
ATTACHED DOCUMENTS:

- Revised Drawing RC 03
- Revised Drawing RC 04
- Revised Drawing RC 05
- Revised Drawing RC 06
- Revised Drawing RS 01
- Revised Drawing RS 02
- Revised Drawing RS 03
- Revised Drawing RS 04
- Revised Drawing RS 05
- Revised Drawing RS 06
- Revised Drawing RS 07
- Revised Drawing RS 08
- Revised Drawing RS 09
- Revised Drawing RE 02
- Revised Drawing RE 03
- Revised Drawing RE 04
- First Tier Subcontractor Disclosure Form
- Revised Bid Form

END OF ADDENDUM NO. 4



FRONT VIEW



SECTION VIEW

NOTES:

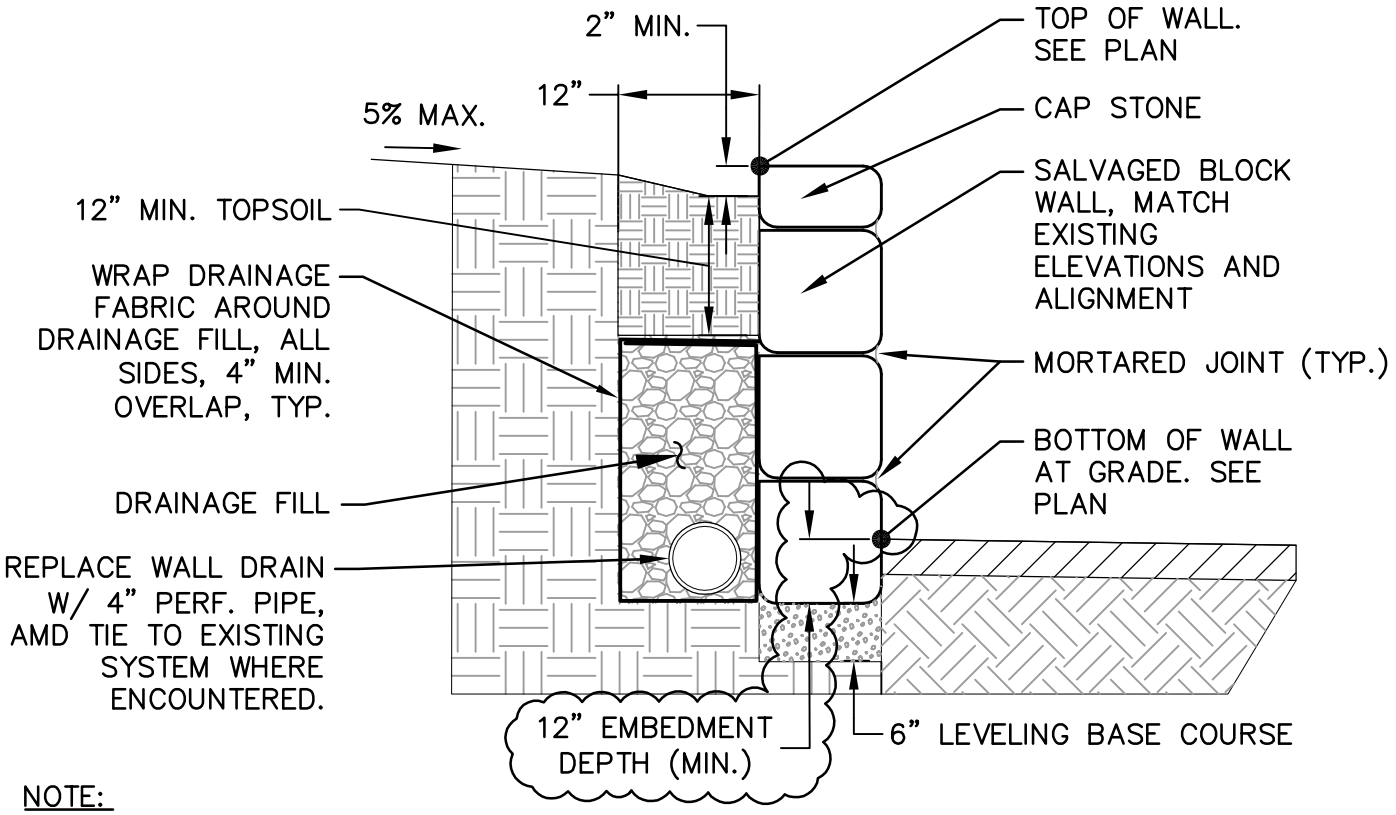
1. CONTRACTOR TO INSPECT EXISTING CONDITION OF THE TIMBER WALL AND VERIFY WITH ARCHITECT THAT THE TIMBERS ARE SUITABLE FOR REUSE.
2. CONTRACTOR TO INSPECT THE EXISTING WALL CONSTRUCTION AND MATCH THE EXISTING BATTER.

5 TIMBER RAIL RETAINING WALL

SCALE: NTS

kpff Consulting Engineers
111 S.W. Fifth Avenue
Suite 2400
Portland, Oregon 97204
(503) 227-3251
STRUCT. FAX (503) 227-7980
CIVIL FAX (503) 274-4681

SCALE: NTS	TITLE: ADDENDUM 4 - TIMBER RETAINING WALL		SHEET NO.: RC 03
JOB NO.: 309265	PROJECT: PENGUIN LIFE SUPPORT SYSTEM OREGON ZOO		REFERENCE SHEET NO.: C4.0
DATE: 09/02/2010			



NOTE:

1. CONTRACTOR TO VERIFY AND MATCH EXISTING WALL CONSTRUCTION.

4 CONCRETE BLOCK RETAINING WALL

SCALE: NTS

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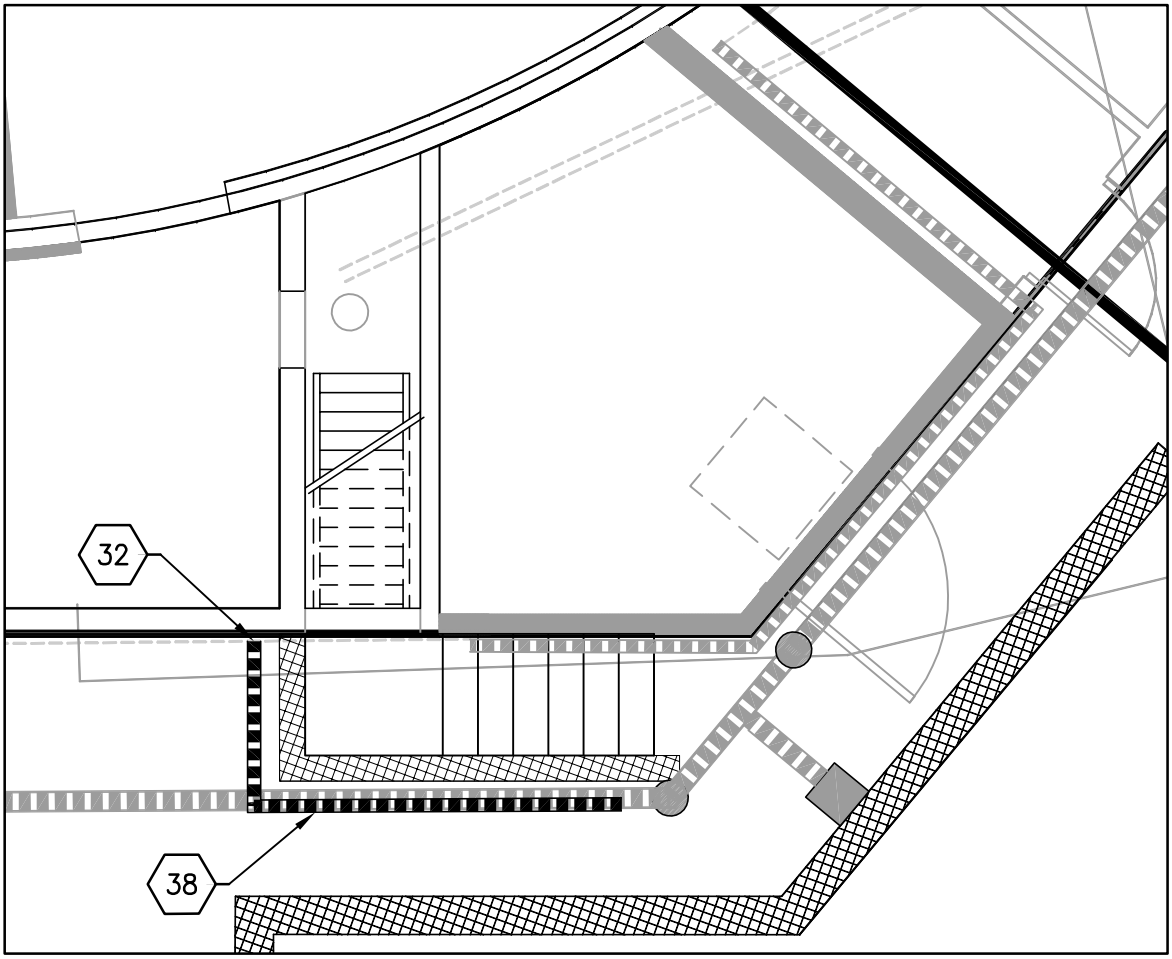
SCALE: NTS	TITLE: ADDENDUM 4 - CONCRETE BLOCK RET. WALL		SHEET NO.: RC 04
JOB NO.: 309265	PROJECT: PENGUIN LIFE SUPPORT SYSTEM OREGON ZOO		REFERENCE SHEET NO.: C4.0
DATE: 09/02/2010			



STORM DRAIN KEY NOTES

32 INTERCEPT EXISTING **FOUNDATION DRAIN**

38 INSTALL 14 LF OF 4" PVC FOUNDATION DRAIN PER WALL ASSEMBLY — W4 / A1.1

SCALE 1 INCH = 5 FEET

5 0 5 10

N

5 ADD ALTERNATE 2 WALL DRAIN

SCALE: 1" = 5'

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CIVIL FAX (503) 274-4681

SCALE: 1"=5'	TITLE: ADDENDUM 4 - ADD ALTERNATE 1: STAIR FND. DRAIN		SHEET NO.: RC 05
JOB NO.: 309265	PROJECT: PENGUIN LIFE SUPPORT SYSTEM OREGON ZOO		REFERENCE SHEET NO.: C4.1
DATE: 09/02/2010			

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CIVIL FAX (503) 274-4681

SCALE: NTS
JOB NO.: 309265
DATE: 09/02/2010

TITLE: ADDENDUM 2 - WALL DRAIN REFERENCE

PROJECT: PENGUIN LIFE SUPPORT SYSTEM
OREGON ZOO

SHEET NO.: RC 06

REFERENCE SHEET NO.: C1.0

8.5X11RC File: I:\c\p\2009\309265-Oregon-Zoo-Penguin-Exhibit\CAD\PLOT\100% CD\309265_C1.0_S1.dwg TAB: RC 06

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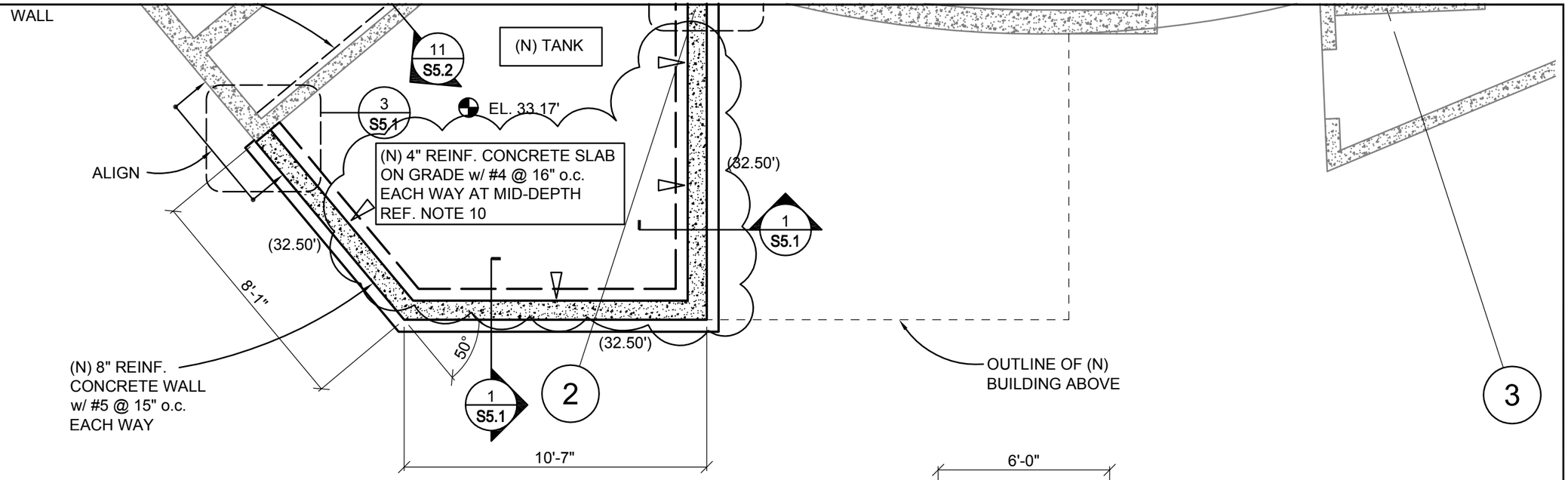

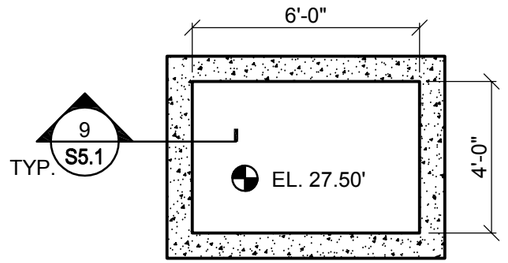

NOTES:

1. FOR GENERAL STRUCTURAL NOTES REF S0.1 AND S0.2.

2. CONTRACTOR TO VERIFY ALL (E) CONDITIONS. DIMENSIONS AND ELEVATIONS PRIOR TO FABRICATION AND CONSTRUCTION. NOTIFY DESIGN TEAM OF ANY SIGNIFICANT DISCREPANCIES FROM THAT SHOWN ON THE DRAWINGS.

3. VERIFY ALL (N) DIMENSIONS, ELEVATIONS, FINISH SURFACE SLOPES, DRAINS, ETC. WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION.

4. INDICATES (E) CONCRETE WALL.

5. INDICATES (N) CONCRETE WALL.

6 INDICATES (N) FRP OVERLAY.

7. EL. XX.XX' INDICATES TOP OF CONCRETE.

8. (XX.XX') INDICATES BOTTOM OF FOOTING.

9. REF. 12/S5.2 FOR HOUSEKEEPING PADS BENEATH M/E/P AND/OR LS UNITS. PADS SHALL BE AS INDICATED ON THE M/E/P AND LS DRAWINGS, BUT SHALL EXTEND NO FURTHER THAN 6" BEYOND THE EXTENTS OF THE UNIT ALONG ANY EDGE.

10. PROVIDE 8" BLANKET OF CLEAN GRAVEL IN ACCORDANCE WITH GEOTECHNICAL REPORT BY GRI, DATED APRIL 12, 2010,

11. INDICATES LOCATION OF 2" DIAMETER WEEP HOLE.

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111 SW 5th Avenue, Suite 2500
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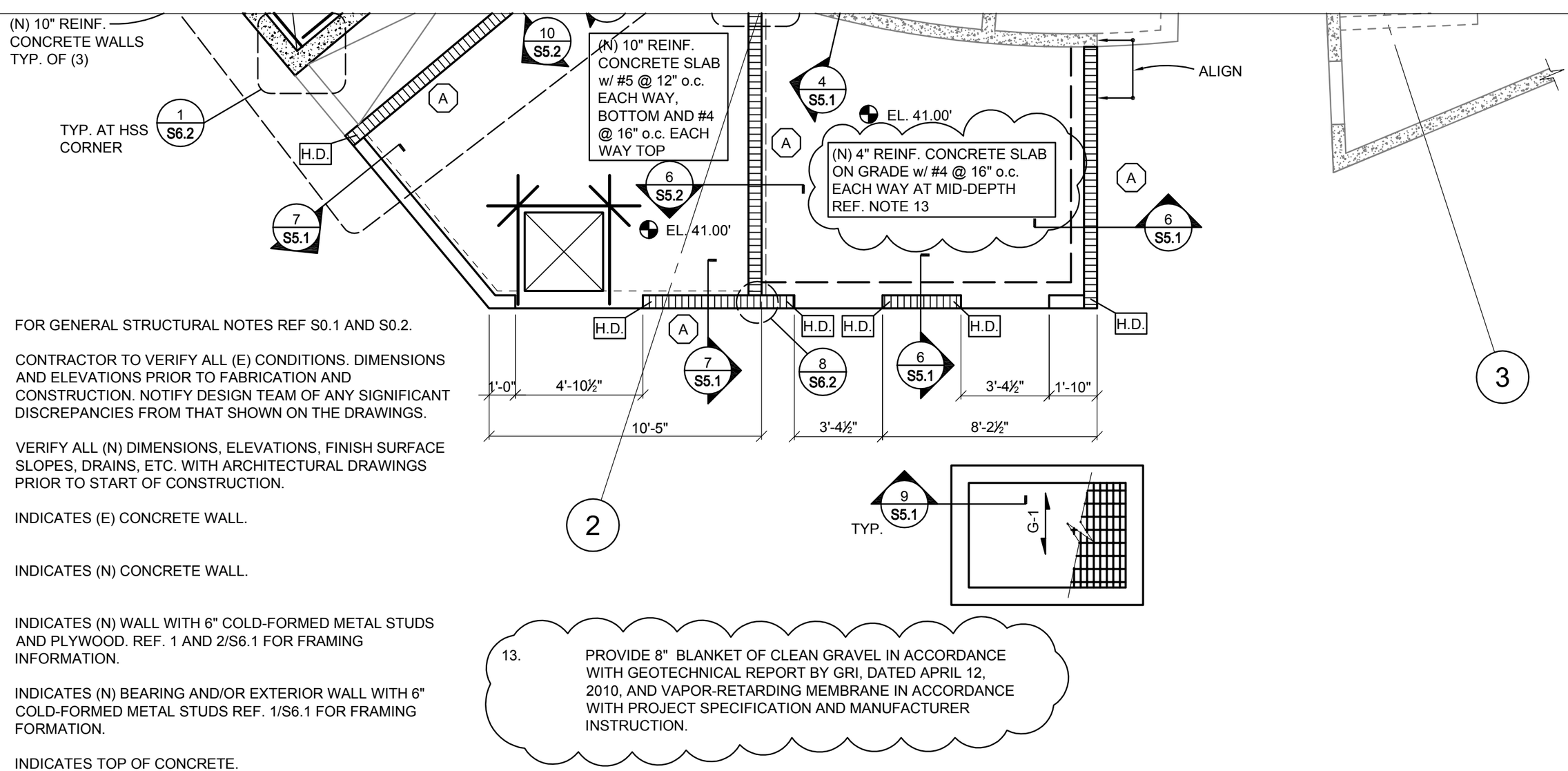
O: (503) 227-3251 F: (503) 227-7980

SCALE: 1/4"=1'-0"	TITLE: BASEMENT PLAN		SHEET NO.: RS01
JOB NO.: 309265	PROJECT: PENGUIN LIFE SUPPORT SYSTEM UPGRADE OREGON ZOO		REFERENCE SHEET NO.: 1/S2.1
DATE: 09/02/2010			



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5. INDICATES (N) CONCRETE WALL.

6. INDICATES (N) WALL WITH 6" COLD-FORMED METAL STUDS AND PLYWOOD. REF. 1 AND 2/S6.1 FOR FRAMING INFORMATION.

7. INDICATES (N) BEARING AND/OR EXTERIOR WALL WITH 6" COLD-FORMED METAL STUDS REF. 1/S6.1 FOR FRAMING FORMATION.

8. EL. XX.XX' INDICATES TOP OF CONCRETE.

9. H.D. INDICATES COLD-FORMED METAL STUD SHEAR WALL HOLD DOWN. REF. 1, 2 AND 5/S6.1.

10. A INDICATES SHEAR WALL DESIGNATION, REF. 2/S6.1.

11. G-1 INDICATES SPAN DIRECTION OF 1½" PULTRUDED FIBERGLASS GRATING CAPABLE OF WITHSTANDING 100 PSF LIVE LOAD WITH A DEFLECTION NO GREATER THAN 0.133".

12. REF. 12/S5.2 FOR HOUSEKEEPING PADS BENEATH M/E/P AND/OR LS UNITS. PADS SHALL BE AS INDICATED ON THE M/E/P AND LS DRAWINGS, BUT SHALL EXTEND NO FURTHER THAN 6" BEYOND THE EXTENTS OF THE UNIT ALONG ANY EDGE.

13. PROVIDE 8" BLANKET OF CLEAN GRAVEL IN ACCORDANCE WITH GEOTECHNICAL REPORT BY GRI, DATED APRIL 12, 2010, AND VAPOR-RETARDING MEMBRANE IN ACCORDANCE WITH PROJECT SPECIFICATION AND MANUFACTURER INSTRUCTION.

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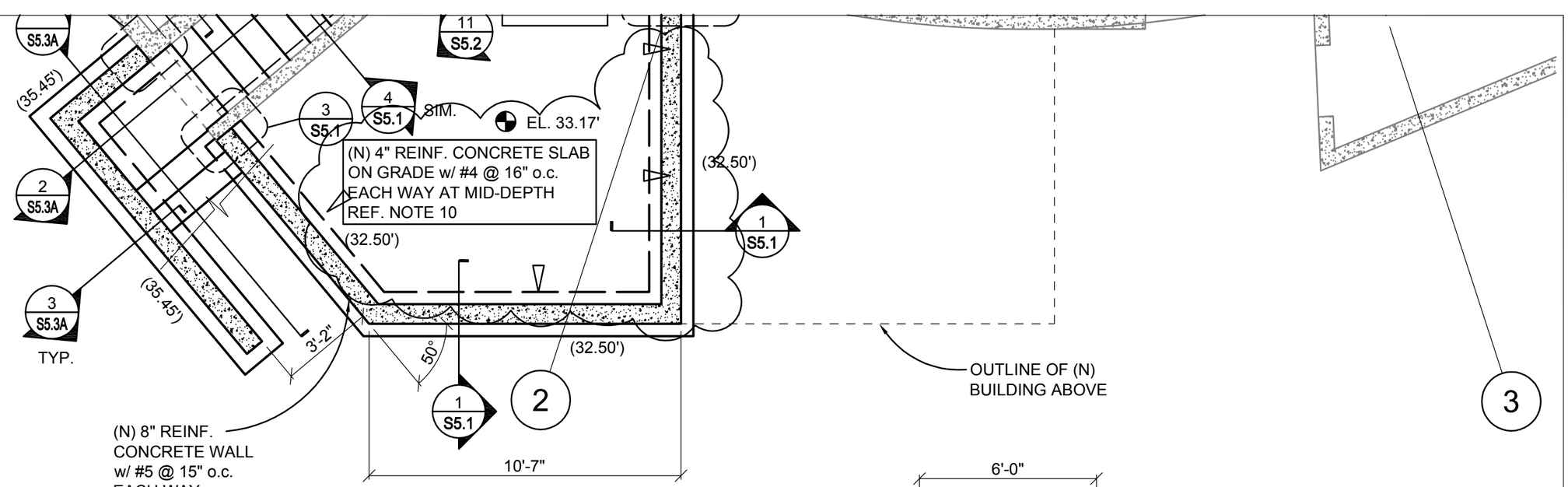
SCALE: 1/4"=1'-0"
JOB NO: 30926
DATE: 09/02/2010

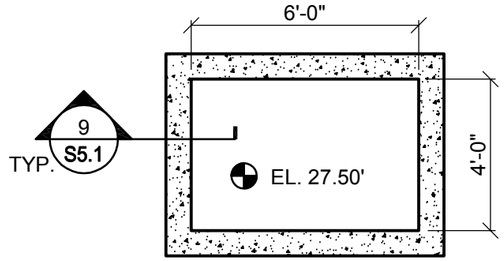
TITLE: GROUND FLOOR PLAN

PROJECT: PENGUIN LIFE SUPPORT SYSTEM UPGRADE OREGON ZOO

SHEET NO.: RS02

REFERENCE SHEET NO.: S2.1





NOTES:

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3. VERIFY ALL (N) DIMENSIONS, ELEVATIONS, FINISH SURFACE SLOPES, DRAINS, ETC. WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION.
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11. INDICATES LOCATION OF 2" DIAMETER WEEP HOLE.

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Portland, Oregon 97204
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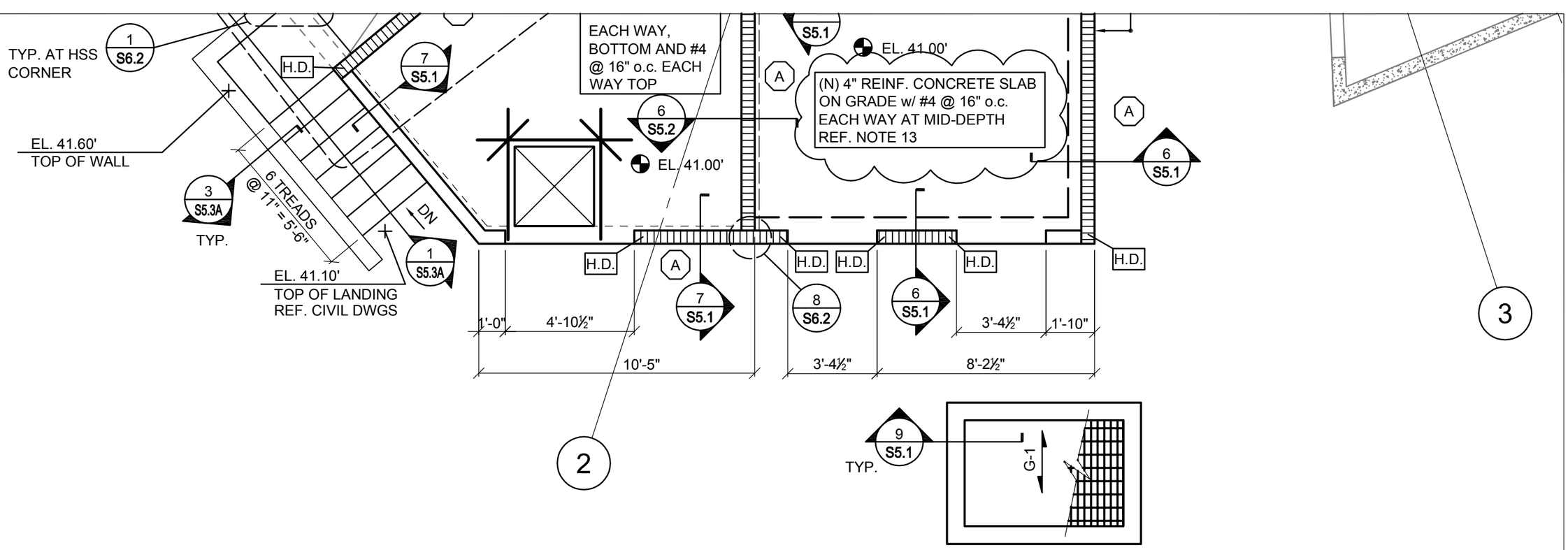
SCALE: 1/4"=1'-0"
JOB NO.: 309265
DATE: 09/02/2010

TITLE: ADD ALTERNATE 2–BASEMENT PLAN
PROJECT: PENGUIN LIFE SUPPORT SYSTEM UPGRADE OREGON ZOO

SHEET NO.: RS03
REFERENCE SHEET NO.: 1/S2.1A



NOTES:

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7. INDICATES (N) BEARING AND/OR EXTERIOR WALL WITH 6" COLD-FORMED METAL STUDS REF. 1/S6.1 FOR FRAMING FORMATION.
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10. A INDICATES SHEAR WALL DESIGNATION, REF. 2/S6.1.
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13. PROVIDE 8" BLANKET OF CLEAN GRAVEL IN ACCORDANCE WITH GEOTECHNICAL REPORT BY GRI, DATED APRIL 12, 010, AND VAPOR-RETARDING MEMBRANE IN ACCORDANCE WITH PROJECT SPECIFICATION AND MANUFACTURER INSTRUCTION.

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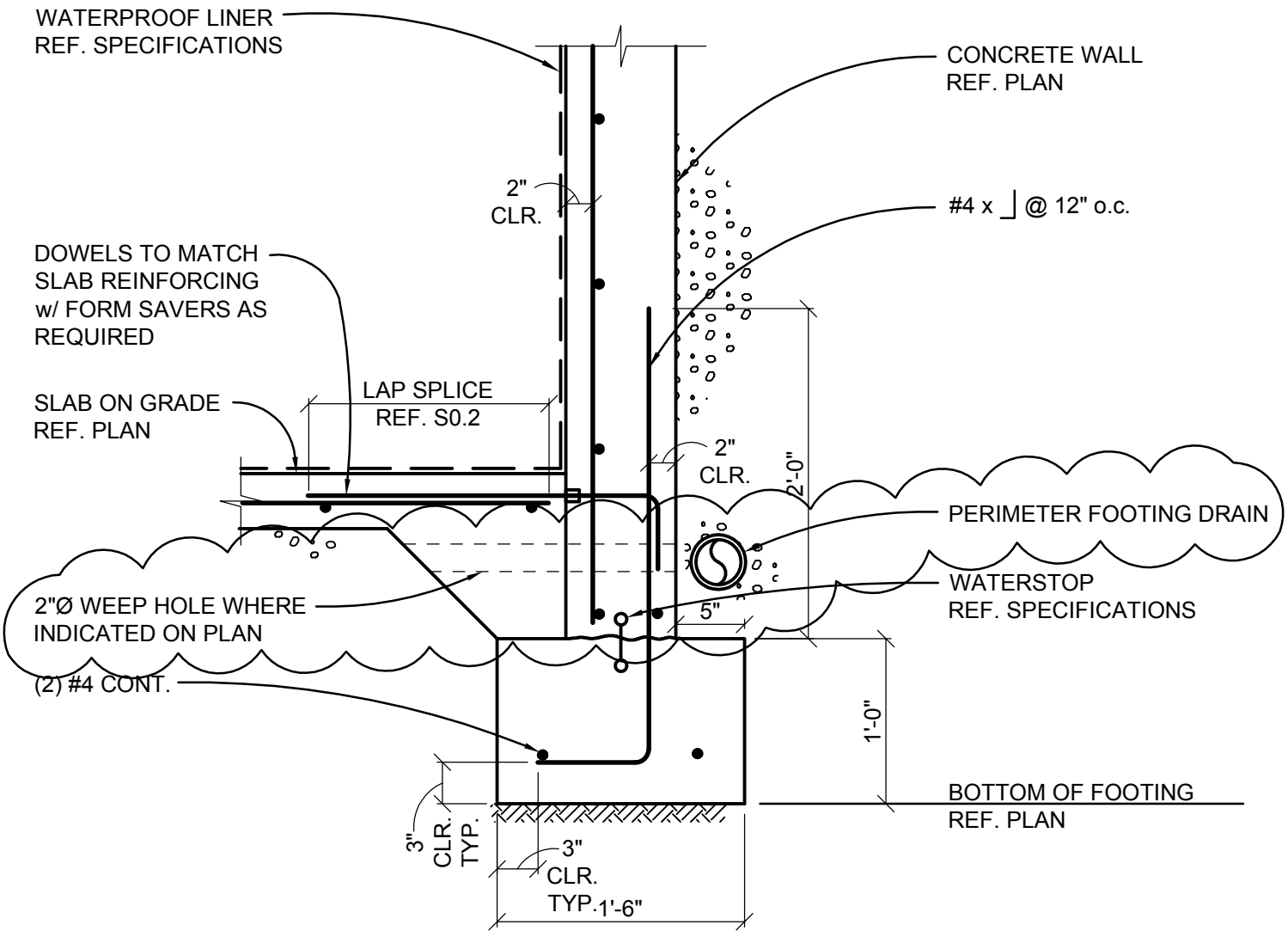
SCALE: 1/4"=1'-0"
JOB NO.: 309265
DATE: 09/02/2010

TITLE: ADD ALTERNATE 2–GROUND FLOOR PLAN
PROJECT: PENGUIN LIFE SUPPORT SYSTEM UPGRADE OREGON ZOO

SHEET NO.: RS04
REFERENCE SHEET NO.: 2/S2.1A



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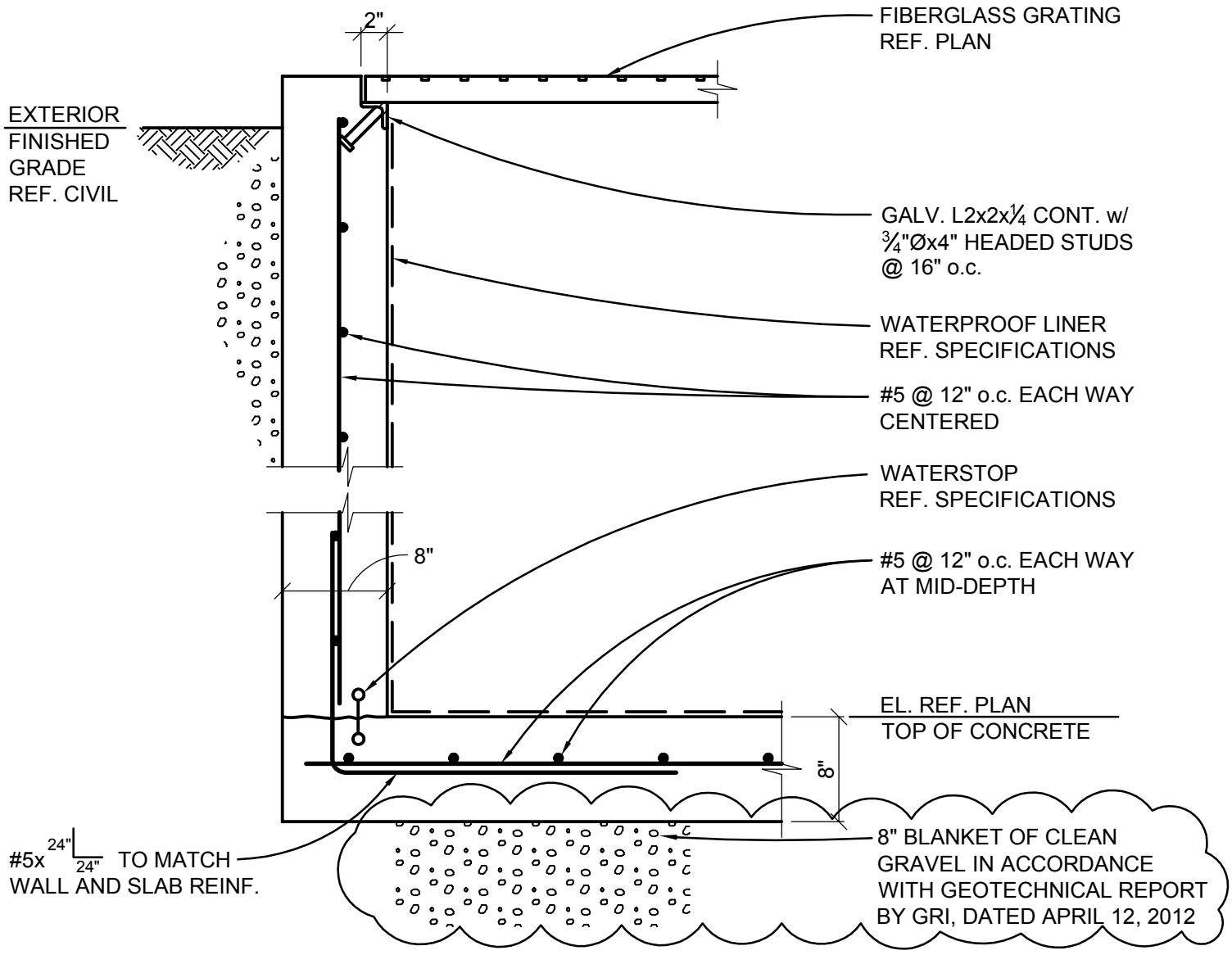
111 SW 5th Avenue, Suite 2500
Portland, Oregon 97204
O: (503) 227-3251 F: (503) 227-2980

SCALE: 1"=1'-0"	TITLE: (N) TANK WALL FOOTING	SHEET NO.: RS05
JOB NO.: 309265	PROJECT: PENGUIN LIFE SUPPORT SYSTEM OREGON ZOO	REFERENCE SHEET NO.: 1/S5.1
DATE: 09/02/2010		



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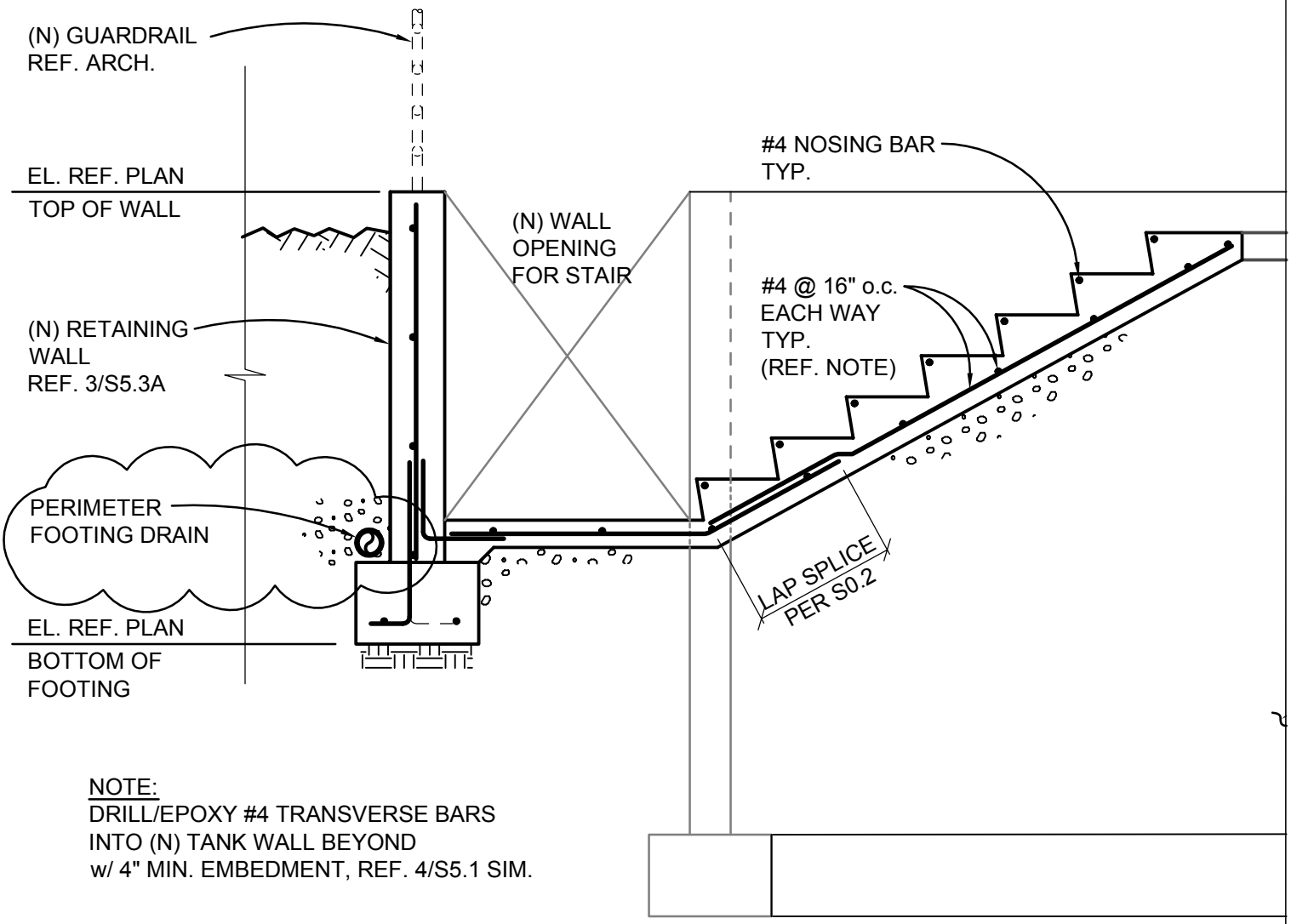
Portland, Oregon 97204
O: (503) 227-3251 F: (503) 227-2980

SCALE: 1"=1'-0"	TITLE: SECTION THRU SKIMMER SUMP	SHEET NO.: RS06
JOB NO.: 309265	PROJECT: PENGUIN LIFE SUPPORT SYSTEM OREGON ZOO	REFERENCE SHEET NO.: 9/S5.1
DATE: 09/02/2010		



NOTE:
DRILL/EPOXY #4 TRANSVERSE BARS
INTO (N) TANK WALL BEYOND
w/ 4" MIN. EMBEDMENT, REF. 4/S5.1 SIM.

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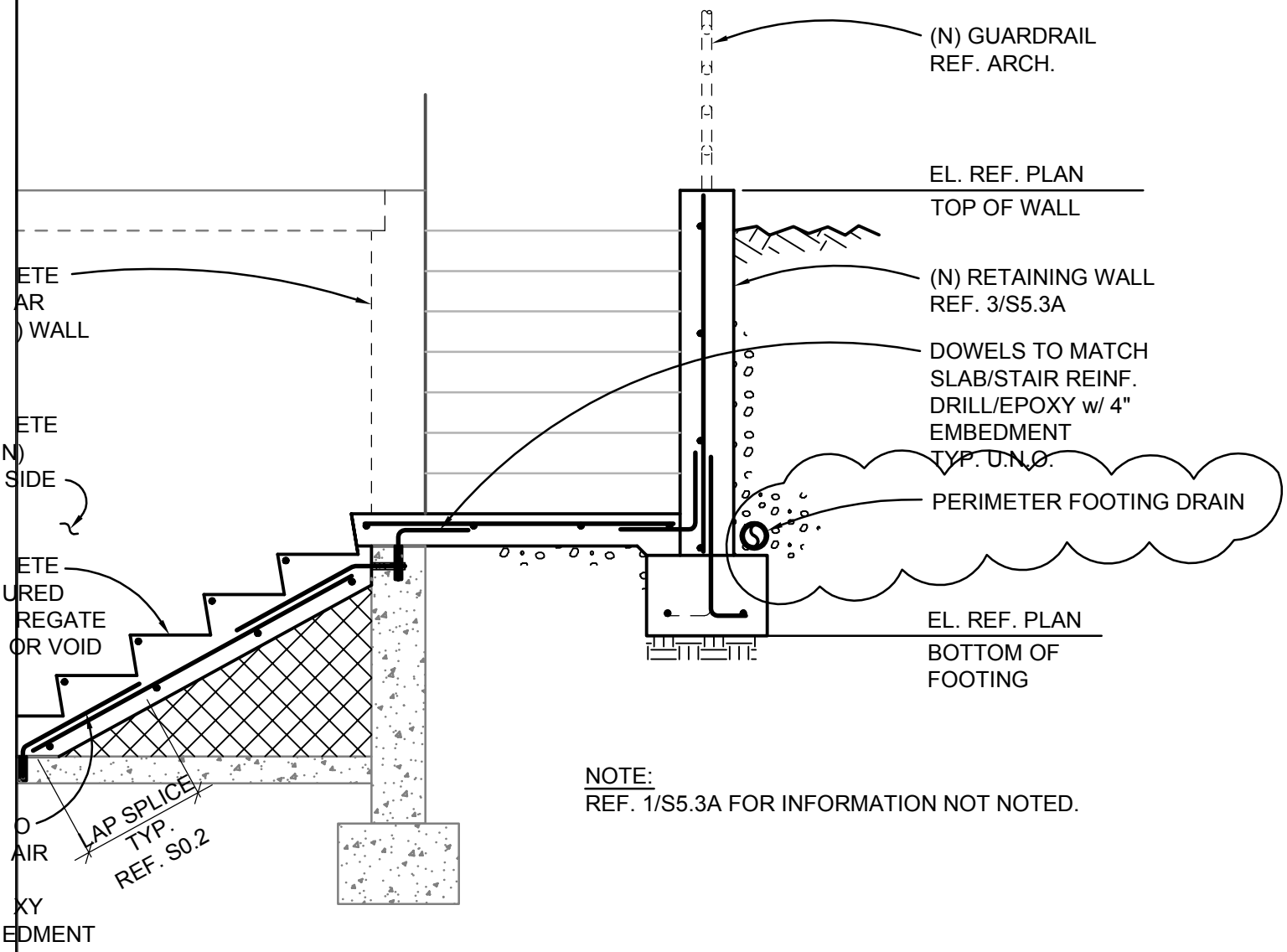
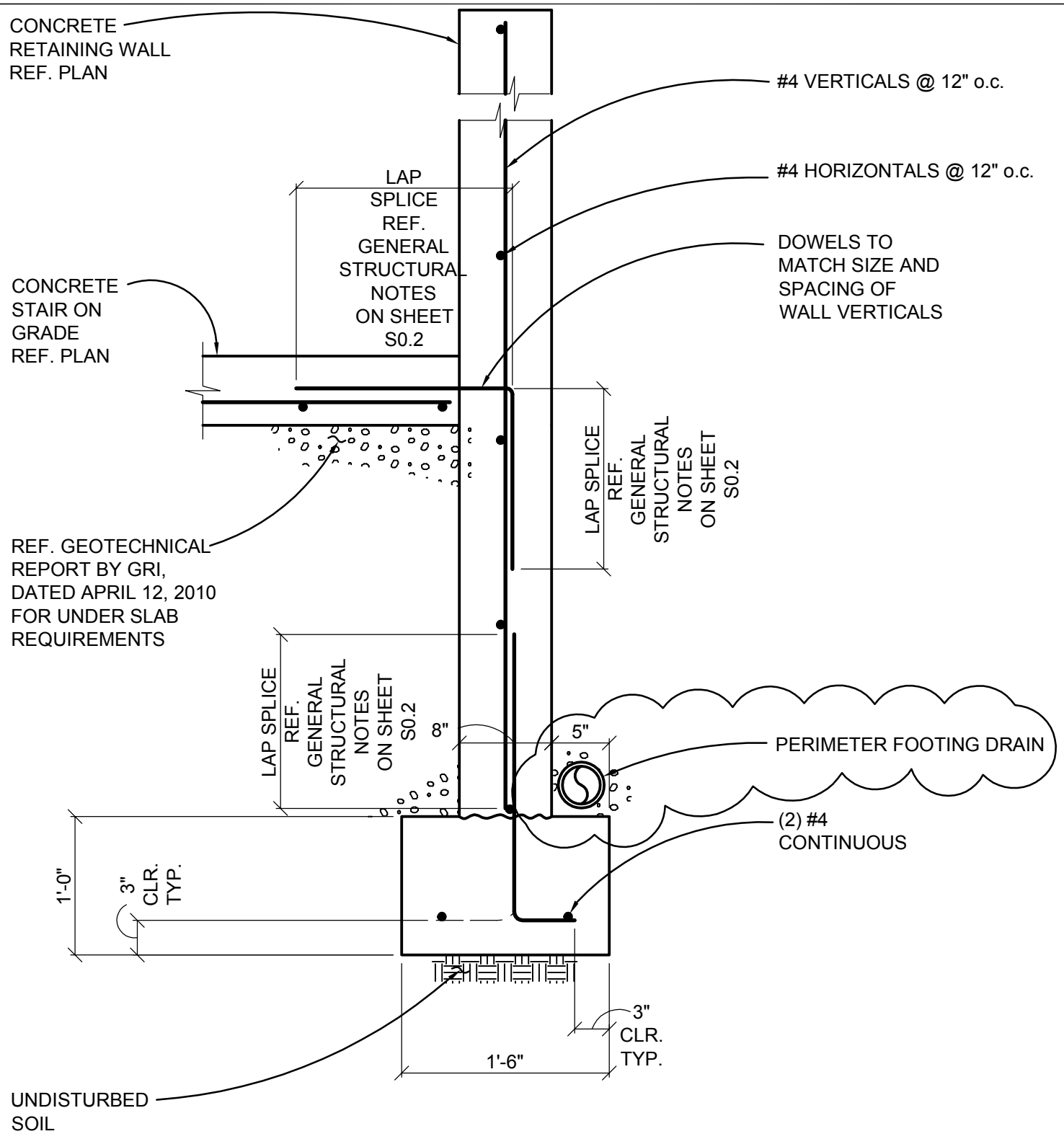
SCALE: 1"=1'-0"	TITLE: ADD ALTERNATE 2-STAIR SECTION	SHEET NO.: RS07
JOB NO.: 309265	PROJECT: PENGUIN LIFE SUPPORT SYSTEM OREGON ZOO	REFERENCE SHEET NO.: 1/S5.3A
DATE: 09/02/2010		



NOTE:
REF. 1/S5.3A FOR INFORMATION NOT NOTED.

50 YEARS kpff Consulting Engineers
111 SW 5th Avenue, Suite 2500
Portland, Oregon 97204
O: (503) 227-3251 F: (503) 227-2980

SCALE: 1"=1'-0"	TITLE: ADD ALTERNATE 2-STAIR SECTION	SHEET NO.: RS08
JOB NO.: 309265	PROJECT: PENGUIN LIFE SUPPORT SYSTEM OREGON ZOO	REFERENCE SHEET NO.: 2/S5.3A
DATE: 09/02/2010		



50 YEARS kpff Consulting Engineers
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SCALE: 1"=1'-0"	TITLE: ADD ALTERNATE 2–STAIR SECTION	SHEET NO.: RS09
JOB NO.: 309265	PROJECT: PENGUIN LIFE SUPPORT SYSTEM OREGON ZOO	REFERENCE SHEET NO.: 3/S5.3A
DATE: 09/02/2010		

NOTES:

1. INTERCEPT EXISTING ELECTRICAL FEEDER TO PENGUIN BUILDING AND REROUTE TO NEW 400A DISCONNECT. PROVIDE NEW CONDUIT AND FITTINGS AS REQUIRED. PROVIDE NEW CONDUCTORS BACK TO NEW 400A CIRCUIT BREAKER IN EMERGENCY GENERATOR DISTRIBUTION PANEL VIA EXISTING CONDUIT AND VAULTS. SEE ONE-LINE DIAGRAM. 1

2. INTERCEPT EXISTING ELECTRICAL FEEDER TO LORIKEET BUILDING AND REROUTE TO NEW PENGUIN BUILDING ELECTRICAL ROOM. PROVIDE NEW CONDUCTORS, CONDUIT AND FITTINGS AS REQUIRED. PROVIDE TEMPORARY POWER AS REQUIRED FOR THE DURATION OF ANY SHUTDOWN REQUIRED TO REROUTE THE ELECTRICAL FEEDER TO THIS BUILDING. COORDINATE ANY SHUTDOWNS WITH OWNER. SEE ONE-LINE DIAGRAM.

3. INTERCEPT EXISTING ELECTRICAL FEEDER TO INSECT BUILDING AND REROUTE TO NEW PENGUIN BUILDING ELECTRICAL ROOM. PROVIDE NEW CONDUCTORS, CONDUIT AND FITTINGS AS REQUIRED. PROVIDE TEMPORARY POWER AS REQUIRED FOR THE DURATION OF ANY SHUTDOWN REQUIRED TO REROUTE THE ELECTRICAL FEEDER TO THIS BUILDING. COORDINATE ANY SHUTDOWNS WITH OWNER. SEE ONE-LINE DIAGRAM.

4. THE PENGUIN, HOOFSTOCK AND HIPPO/RHINO BUILDINGS ARE FED FROM AN EXISTING SHARED 4"C. 3-500KCML FEEDER FROM AN EXISTING 400A CIRCUIT BREAKER LOCATED IN THE DISTRIBUTION PANEL PROTECTED BY THE EXISTING EMERGENCY GENERATOR. THE CONDUCTORS ARE TAPPED IN EACH ELECTRICAL VAULT ADJACENT TO THE HOOFSTOCK AND HIPPO/RHINO BUILDINGS.

5. CONTRACTOR TO VERIFY THE INTEGRITY AND AVAILABILITY OF THE EXISTING SPARE UNDERGROUND CONDUIT TO BE USED FOR THE NEW FEEDER FOR THE PENGUIN BUILDING. CLEAN AND/OR REPAIR SPARE CONDUIT AS REQUIRED TO INSTALL NEW FEEDER.

6. DISCONNECT EXISTING CONDUCTORS FEEDING PENGUIN BUILDING AT THE SPLICE/TAP IN ELECTRICAL VAULT ADJACENT TO HIPPO/RHINO BUILDING. CONDUCTORS FEEDING HIPPO/RHINO BUILDING ARE TO REMAIN IN USE.

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SCALE: NTS	TITLE: ADDENDUM#4-ELECTRICAL_SITE_PLAN		SHEET NO.: RE 02
JOB NO.: 309265	PROJECT: PENGUIN LIFE SUPPORT SYSTEM UPGRADE OREGON ZOO		REFERENCE SHEET NO.: E1.0
DATE: 09/02/2010			

MECHANICAL EQUIPMENT SCHEDULE

ENT NAME	HP/KW	VOLTS	PH	AMPS	CONDUIT	WIRE	GND	CIRCUIT
ATING FILTER PUMP #1	15HP	480V	3	21 A	1/2"C.	3-#10	#10	4A-1,3,5
ATING FILTER PUMP #2	15HP	480V	3	21 A	1/2"C.	3-#10	#10	4A-7,9,11
BOOSTER PUMP	5HP	480V	3	7.6 A	1/2"C.	3-#12	#12	4A-19,21,23
WN BOOSTER PUMP	2HP	480V	3	3.4 A	1/2"C.	3-#12	#12	4A-31,33,35
RY SUPPLY PUMP #1	2HP	480V	3	3.4 A	1/2"C.	3-#12	#12	MCP-1
RY SUPPLY PUMP #2	2HP	480V	3	3.4 A	1/2"C.	3-#12	#12	MCP-2
SH RECOVERY PUMP #1	3HP	480V	3	4.8 A	1/2"C.	3-#12	#12	MCP-3
SH RECOVERY PUMP #2	3HP	480V	3	4.8 A	1/2"C.	3-#12	#12	MCP-4
GENERATOR	3.1KW	480V	1	6.5 A	1/2"C.	2-#12	#12	4A-25,27
	35KW	480V	3	42 A	1"C.	3-#4	#10	MDP-5
ATER	15KW	480V	3	18 A	1/2"C.	3-#10	#10	4A-13,15,17
ATER	3KW	208V	1	14 A	1/2"C.	2-#12	#12	2A-5,7
ATER	3KW	208V	1	14 A	1/2"C.	2-#12	#12	2A-9,11
T FAN 1	50W	120V	1	0.62 A	1/2"C.	2-#12	#12	2A-2 (PC)
T FAN 2	50W	120V	1	0.62 A	1/2"C.	2-#12	#12	2A-2 (PC)
T FAN 3	50W	120V	1	0.5 A	1/2"C.	2-#12	#12	2A-2 (PC)
T FAN 4	50W	120V	1	0.5 A	1/2"C.	2-#12	#12	2A-2 (PC)
T FAN 5	50W	120V	1	0.5 A	1/2"C.	2-#12	#12	2A-2 (PC)
T FAN 6	3/4HP	120V	1	13.8 A	1/2"C.	2-#12	#12	2A-4

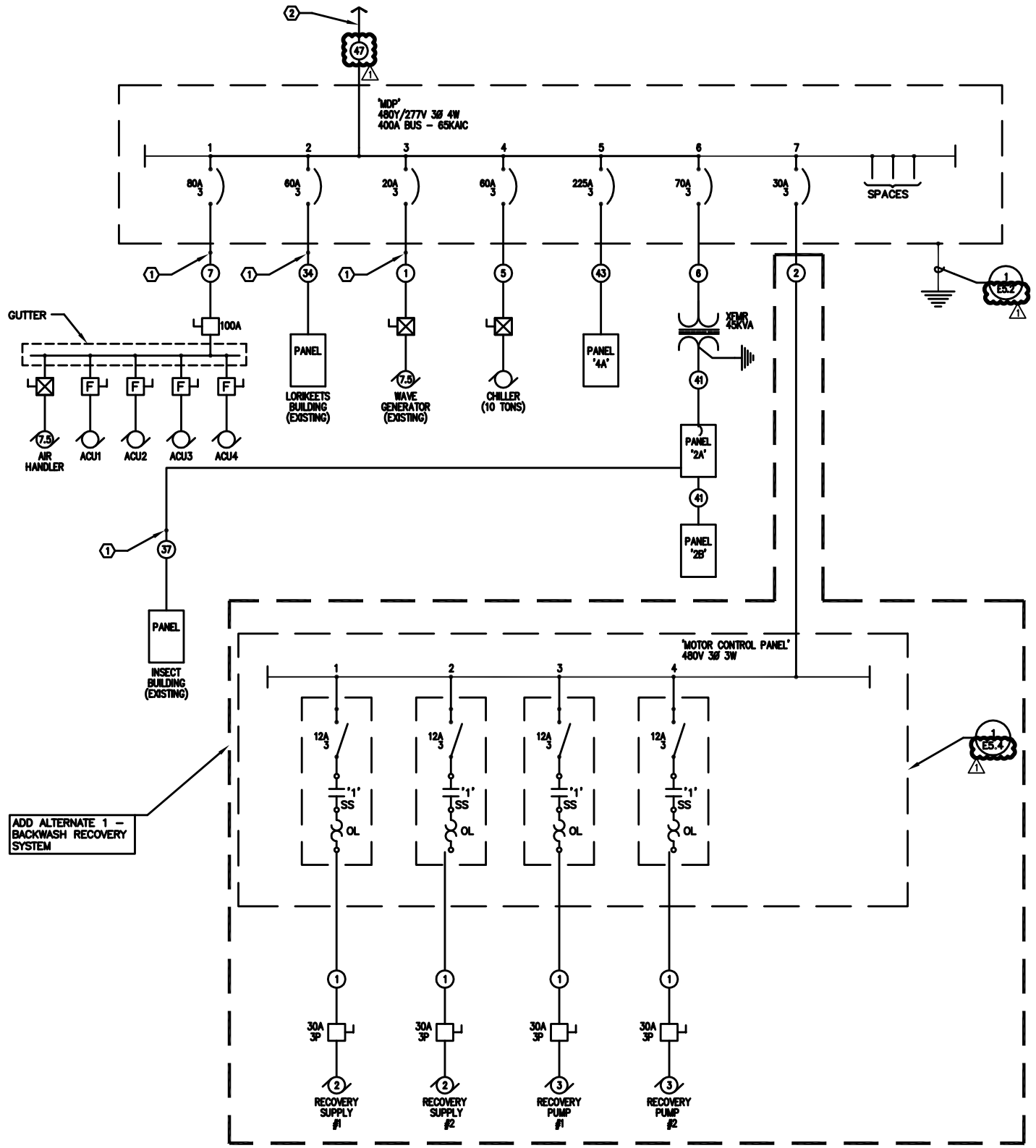
FEEDER SCHEDULE

ONDUIT	CONDUCTOR		NO.	AMPS	CONDUIT	CONDUCTOR	
/2"	(3) #12	& (1) #12 GND	30	20A	1/2"	(4) #12	& (1) #12 GND
/2"	(3) #10	& (1) #10 GND	31	30A	1/2"	(4) #10	& (1) #10 GND
/4"	(3) #8	& (1) #10 GND	32	40A	3/4"	(4) #8	& (1) #10 GND
/4"	(3) #6	& (1) #10 GND	33	50A	1"	(4) #6	& (1) #10 GND
	(3) #4	& (1) #10 GND	34	60A	1-1/4"	(4) #4	& (1) #10 GND
	(3) #4	& (1) #8 GND	35	70A	1'-1/4'	(4) #4	& (1) #8 GND
-1/4"	(3) #3	& (1) #8 GND	36	80A	1-1/4"	(4) #3	& (1) #8 GND
-1/2"	(3) #2	& (1) #8 GND	37	90A	1-1/4"	(4) #2	& (1) #8 GND
-1/2"	(3) #1	& (1) #8 GND	38	100A	1-1/2"	(4) #1	& (1) #8 GND
-1/2"	(3) #1	& (1) #6 GND	39	125A	1-1/2"	(4) #1	& (1) #6 GND
-1/2"	(3) #1/0	& (1) #6 GND	40	150A	2"C	(4) #1/0	& (1) #6 GND
	(3) #3/0	& (1) #6 GND	41	175A	2"	(4) #2/0	& (1) #6 GND
	(3) #4/0	& (1) #4 GND	42	200A	2"	(4) #3/0	& (1) #6 GND
-1/2"	(3) #250kcmil	& (1) #4 GND	43	225A	2-1/2"	(4) #4/0	& (1) #4 GND
	(3) #350kcmil	& (1) #4 GND	44	250A	2-1/2"	(4) #250kcmil	& (1) #4 GND
	(3) #500kcmil	& (1) #3 GND	45	300A	3"	(4) #350kcmil	& (1) #4 GND
	(3) #500kcmil	& (1) #3 GND	46	350A	3-1/2"	(4) #500kcmil	& (1) #3 GND
)3"	(3) #350kcmil ea	& (1) #1 GND	47	400A	3-1/2"	(4) #500kcmil	& (1) #3 GND
)3-1/2"	(3) #500kcmil ea	& (1) #1/0 GND	48	600A	(2)3"	(4) #350kcmil ea	& (1) #1 GND
)3-1/2"	(3) #600kcmil ea	& (1) #1/0 GND	49	700A	(2) 3-1/2"	(4) #500kcmil ea	& (1) #1/0 GND
		& GND	50	800A	(2)4"	(4) #600kcmil ea	& (1) #1/0 GND
		& GND	51	1200A	(3)4"	(4) #600kcmil ea	& (1) #3/0 GND
		& GND	52	1600A	(4)4"	(4) #600kcmil ea	& (1) #4/0 GND
		& GND	53	2000A	(5)4"	(4) #600kcmil ea	& (1) #250 GND
		& GND					& GND
		& GND					& GND

) CONDUCTORS FOR PARALLEL FEEDERS AS REQUIRED 250-95 OF THE NEC. INCREASE SIZE OF CONDUIT AS ADDITIONAL GROUNDING.

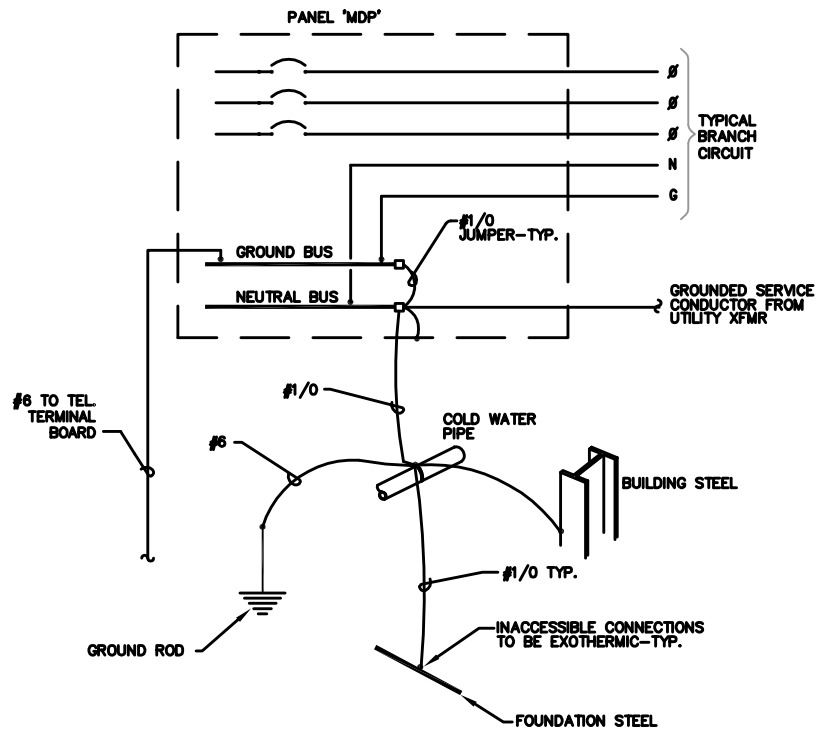
S INDICATED ARE BASED ON COPPER CONDUCTORS WITH ULATION ON CONDUCTORS BELOW 100A AND 75 C THHN

3. FEEDERS LISTED IN SCHEDULE MAY OR MAY NOT BE A PART OF THIS PROJECT. REFER TO ONE-LINE DIAGRAM FOR FEEDERS REQUIRED.

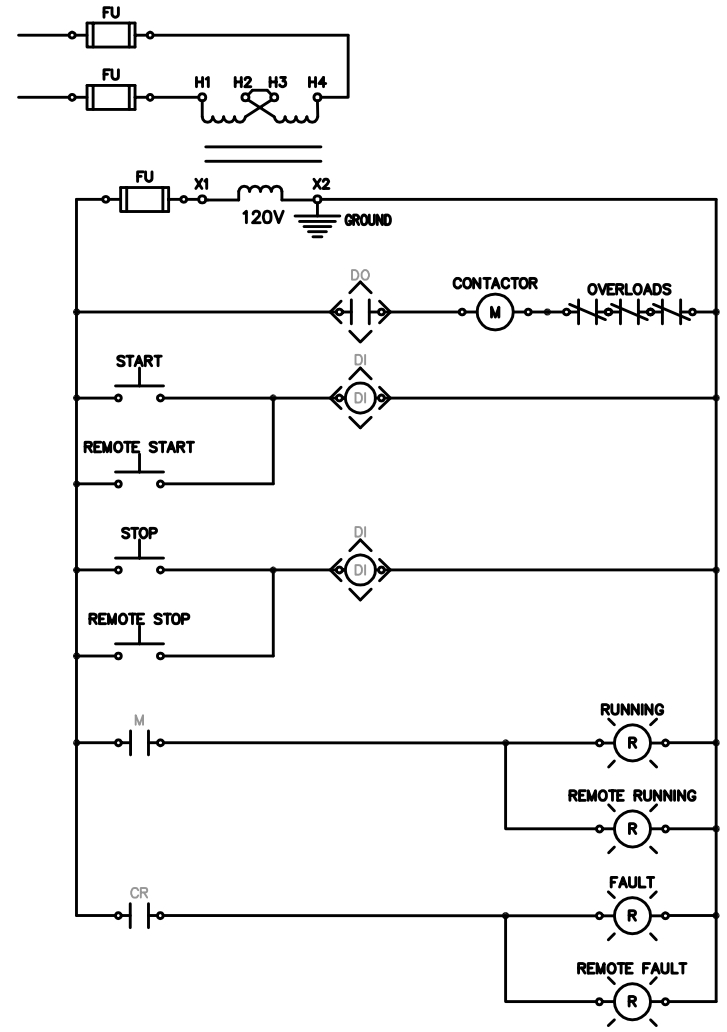


1 E5.1 ELECTRICAL ONE-LINE DIAGRAM
480Y/277V 3Ø 4W

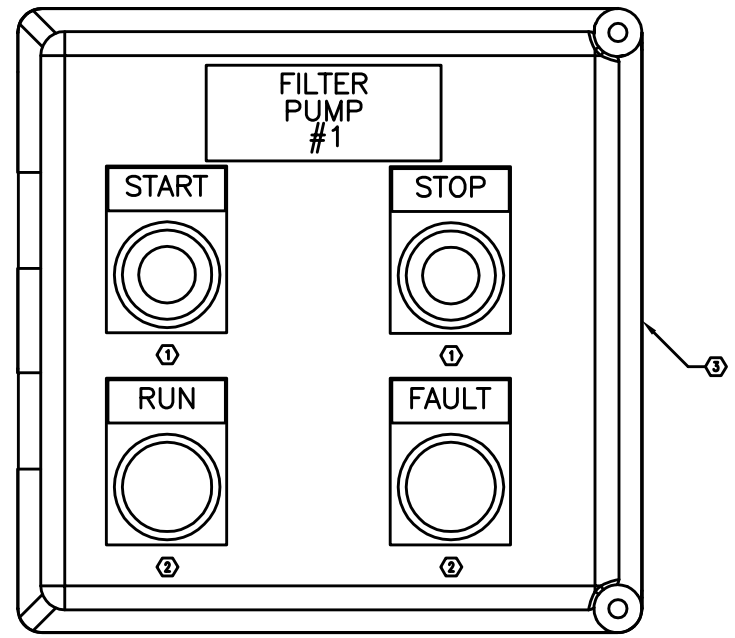
kpff Consulting Engineers 111 SW Fifth Avenue Suite 2400 Portland Oregon 97204 (503) 227-3251 STRUCT. FAX (503) 227-7920 CIVIL FAX (503) 274-4991	SCALE: NTS JOB NO.: 309265 DATE: 09/02/2010	TITLE: ADDENDUM#4-ELECTRICAL_ONE-LINE_DIAGRAM PROJECT: PENGUIN LIFE SUPPORT SYSTEM UPGRADE OREGON ZOO	SHEET NO.: RE 03 REFERENCE SHEET NO.: E5.1



1 ELECTRIC SERVICE GROUNDING/BONDING DIAGRAM
E5.2
NO SCALE



2 TYPICAL MOTOR ELEMENTARY DIAGRAM
E5.2
NO SCALE



KEYED NOTES:

1. 33mm RED NORMALLY OPEN PUSHBUTTON. SQUARE D 900KR1RH5 OR APPROVED EQUAL.
2. 33mm RED PILOT LIGHT. SQUARE D 9001KT(1)R31 OR APPROVED EQUAL.
3. 6"W X 6"H X 4"D FIBERGLASS ENCLOSURE. HOFFMAN ENCLOSURES A664CHQRFG OR APPROVED EQUAL.

3 TYPICAL REMOTE MOTOR CONTROLS
E5.2
NO SCALE

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SCALE: NTS	TITLE: ADDENDUM#4-ELECTRICAL_DETAILS
JOB NO.: 309265	PROJECT: PENGUIN LIFE SUPPORT SYSTEM UPGRADE OREGON ZOO
DATE: 09/02/2010	
	SHEET NO.: RE 04
	REFERENCE SHEET NO.: E5.2

name File: G:\KPFF\8155_Oregon Zoo Penguin Exhibit\Elect\8155_E50.dwg TAB:RE 04
Plotted: 9/2/10 at 9:45am By: adam.ritenour

METRO
600 NE Grand Avenue
Portland, OR 97232-2736
(503) 797-1700

BID FORMS

FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM

PROJECT NAME: OREGON ZOO PENGUIN LIFE SUPPORT SYSTEM UPGRADE

RFB # 11-1717 **BID CLOSING:** **Date: September 9, 2010 Time: 2:00 pm**

DISCLOSURE DEADLINE: Date: September 9, 2010 Time: 4:00 pm

This form must be submitted at the address specified in Section 00 11 16–Invitation to Bid within two working hours of the advertised proposal closing date and time, but no later than the **DISCLOSURE DEADLINE** stated above.

List below the Name, Address, Dollar Value, Contact Name, Telephone Number, Construction Contractor Board (CCB) number (if required), and public works bond number (if public improvement) of each Subcontractor that will be furnishing labor and materials that are required to be disclosed. Enter "NONE" if there are no subcontractors that need to be disclosed. **(ATTACH ADDITIONAL SHEETS IF NEEDED.)**

Name, Address, Phone, CCB#, Public Works Bond #	Dollar Value	Category of Work

The above listed First-Tier Subcontractor(s) are providing labor or labor and material with a dollar value equal to or greater than:

a) Five percent of the total Contract price, but at least $15,000 of the proposal price.
b) $350,000 regardless of the percentage of the total proposal price.

Failure to submit this form in a separate envelope by the disclosure deadline will result in a submitted proposal becoming non-responsive, and such proposal shall not be considered for award.

Form Submitted By (Proposer Name): _____

Contact Name: _____ Telephone: _____

METRO

600 NE Grand Ave.
Portland, OR 97232-2736
(503) 797-1700

Bid Form

SCHEDULE OF BID PRICES

Bidder to reference Specifications of Division 01, Section 01 11 00–Summary of Work; Section 00 11 16–Invitation to Bid.

PART A –PENGUIN LIFE SUPPORT SYSTEM UPGRADE

Item	Description	Qty	Unit	Unit Cost	Total Amount
1	**Complete Base Bid Project Less Artificial Rockwork Repair**	**NA**	**NA**	**NA**	
2	**Artificial Rockwork Repair**	**150**	**SF**		
				Total Base Bid	

(_____ DOLLARS)
BASE BID (in words)

(_____ DOLLARS)
ADD ALTERNATE #1 BID – BACKWASH RECOVERY SYSTEM (in words)

(_____ DOLLARS)
ADD ALTERNATE #2 BID – MECHANICAL ROOM STAIR MODIFICATIONS (in words)

(_____ DOLLARS)
ADD ALTERNATE #3 BID TOTAL – AIR QUALITY IN VISITOR VIEWING AREA (in words)

a) REPLACE TWO EXISTING FURNACE UNITS AND ASSOCIATED DUCTWORK **$**_____

b) SEAL OFF WALL PENETRATIONS WITH GLASS **$**_____

(_____ DOLLARS)
ADD ALTERNATE #4 BID – EXHIBIT ROCKWORK LIGHTING (in words)

(_____ DOLLARS)
ADD ALTERNATE #5 BID – EXHIBIT VIEWING WINDOW SOFFIT LIGHTING (in words)

(_____ DOLLARS)
BID ALTERNATE #6 BID –EXHIBIT POOL COATING (in words)

(_____ DOLLARS)
ADD ALTERNATE #7 BID – RUBBERIZED SURFACING TOTAL (in words)

a) EXHIBIT ROCKWORK **$**_____

b) KEEPER KITCHEN **$**_____