

NVSL CVB BUILDING 21 ELECTRICAL SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE
ARS, NATIONAL ANIMAL DISEASE CENTER
AMES, IOWA

PROJECT WAS NOT COMPLETED AS SHOWN ON ORIGINAL CONSTRUCTION DOCUMENTS. THE FOLLOWING WORK AND ANTICIPATED TIME REQUIREMENTS ARE STATED BELOW TO COMPLETE PROJECT AS SHOWN ON DRAWINGS.

DAY 1
MOBILIZE AND CONFIRM ALL CABLES THAT WERE INSTALLED AS PART OF THIS CONTRACT ARE READY FOR TERMINATIONS TO BE MADE.

DAY 2
COORDINATE ELECTRICAL TRANSFER TO SHUTDOWN 'B' FEEDER AT MEDIUM VOLTAGE SWITCH IN FRONT OF BUILDING 20 AS SHOWN ON DRAWING E03 AND EU1.
TERMINATE MEDIUM VOLTAGE CABLE AT BUILDING 20 SWITCH ON DRAWING EU1, AND BUILDING 21 MEDIUM VOLTAGE TRANSFORMER IN PENTHOUSE OF BUILDING 21. ('B' SIDE OF TRANSFORMER) DRAWINGS E03 AND EP3.
CHANGE VOLTAGE TAPS ON 'B' TRANSFORMER IN PENTHOUSE OF BUILDING 21 AS REQUIRED.

DAY 3
NOTIFY CITY OF AMES FOR DISCONNECT OF SERVICE AT UTILITY POLE ALONG DAYTON AVE PER DRAWING E01.
COORDINATE OUTAGE WITH USDA FOR BUILDING 21 AS REQUIRED.
DISCONNECT CITY OF AMES UTILITY FEED AT TRANSFORMER IN PENTHOUSE OF BUILDING 21 CURRENTLY SERVING 'A' TRANSFORMER. POSITION MAIN-TIE-MAIN BREAKER AT SWITCHGEAR IN PENTHOUSE TO FEEDER 'B' SEE DRAWING E01.
ENERGIZE 'B' FEEDER TO BUILDING 21 SWITCHGEAR.
VERIFY PHASE ROTATION AND VOLTAGE AT BUILDING 21 SWITCHGEAR.

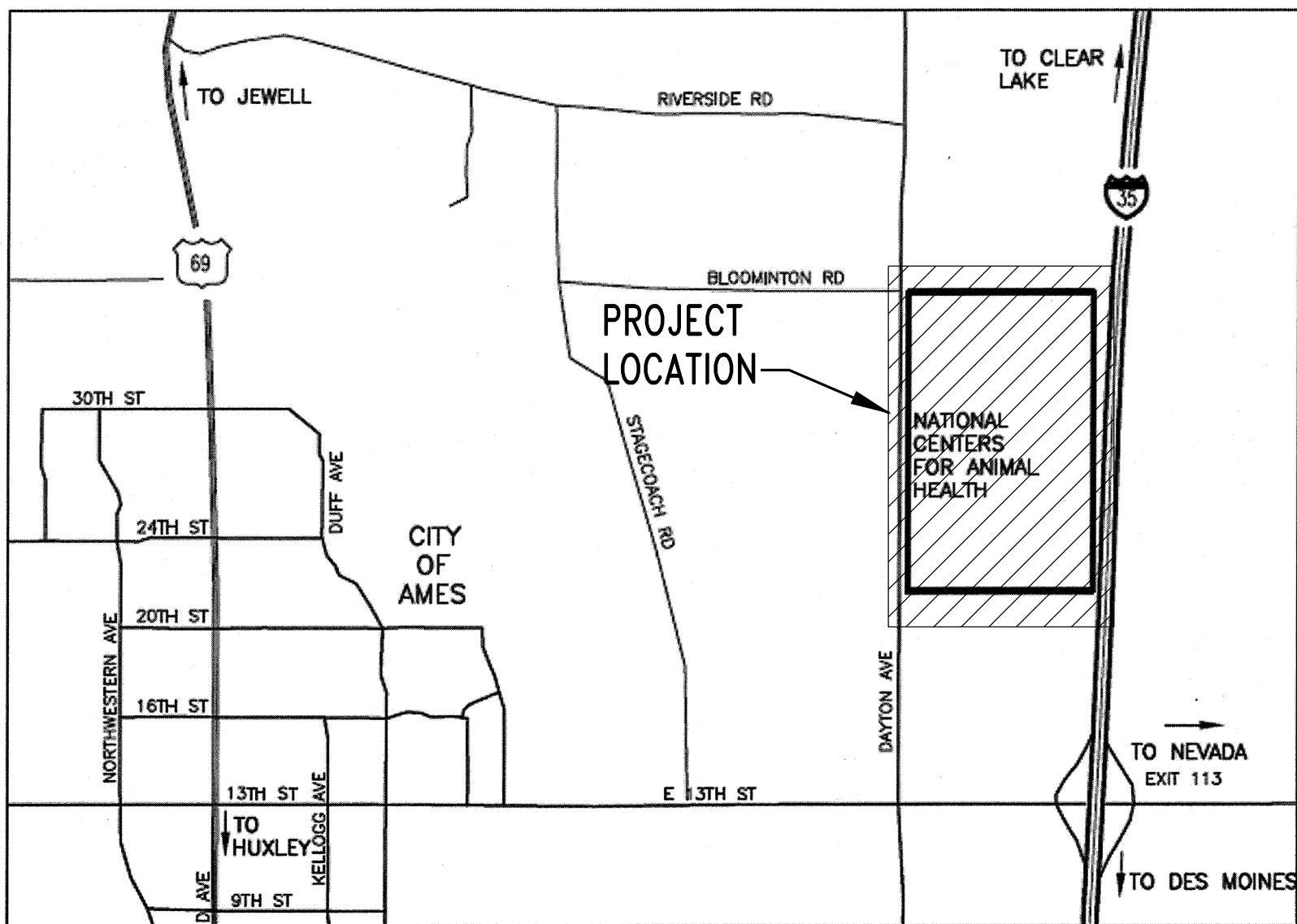
DAY 4 AND 5
COORDINATE ELECTRICAL TRANSFER TO SHUT DOWN 'A' FEEDER AT MEDIUM VOLTAGE SWITCH IN FRONT OF BUILDING 20. DRAWING E03 AND EU1.
TERMINATE MEDIUM VOLTAGE CABLE AT BUILDING 20 SWITCH AND BUILDING 21 MEDIUM VOLTAGE TRANSFORMER IN PENTHOUSE. ('A' SIDE OF TRANSFORMER) DRAWINGS E03 AND EP3.
REMOVE CITY OF AMES UTILITY FEEDER FROM TRANSFORMER AT PENTHOUSE. DRAWING E01.
CHANGE VOLTAGE TAPS ON 'A' TRANSFORMER IN PENTHOUSE.
ENERGIZE 'A' FEEDER TO BUILDING 21.
VERIFY PHASE ROTATION AND VOLTAGE AT BUILDING 21.
ENABLE GENERATOR AT BUILDING 22.

DAY 6
COORDINATE OUTAGE FOR REWORK OF FEEDER TO PANEL OSD4-P1 THAT WAS FED FROM GENERATOR THROUGH ATS#1 AS SHOWN ON DRAWING E01 AND E02.

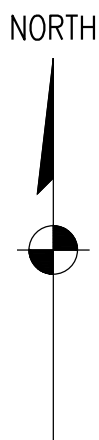
DAY 7 AND 8
REMOVE CONTROL WIRING AND FEEDER ADJACENT TO GENERATOR AT BUILDING 22 AS SHOWN ON DRAWING E02 THAT SERVES ATS #1 AND ONTO PANEL OSD4-P1.

REMOVE ATS#1 AND MOVE TO ADJACENT ROOM FOR OWNER TO REMOVE.

DAY 9 AND 10
TESTING OF PMCS AT SWITCHGEAR IN PENTHOUSE.
PROVIDE REQUIRED PROGRAMMING PARAMETERS PER DOCUMENTS AND E01 NOTE 6.



VICINITY MAP
NO SCALE



DRAWING INDEX		
DRAWING NUMBER	TITLE	REVISION
GG1	COVER SHEET, VICINITY MAP, AND DRAWING INDEX	1
GG2	ELECTRICAL LEGEND AND NOTES	1
E01	BUILDING 21 ONE LINE DIAGRAM MODIFICATIONS	1
E02	BUILDING 21 POWER RISER DIAGRAM	1
E03	BUILDING 153 ONE LINE DIAGRAM	1
EU1	SITE PLAN	1
EU2	SITE PLAN DETAILS	1
EP1	BUILDING 21 FIRST FLOOR PLAN	1
EP2	BUILDING 21 PENTHOUSE FLOOR PLAN	1
EP3	BUILDING 21 ENLARGED PENTHOUSE PLAN	1
REFERENCE DRAWINGS		
C2.01	CIVIL UTILITY SITE PLAN	
C2.02	CIVIL UTILITY SITE PLAN	
C4.01	CIVIL DETAILS	

THE ORIGINAL OF THIS DRAWING WAS
SIGNED, SEALED, AND CERTIFIED BY:
REV. D. GEORGE G. GARDNER 08-26-11
A. REG. NO. 14176 EXP. DATE 12-31-12
GG1, GG2, E01, E02, E03, EU1, EU2, EP1, EP2,
AND EP3

1

RECORD DRAWING

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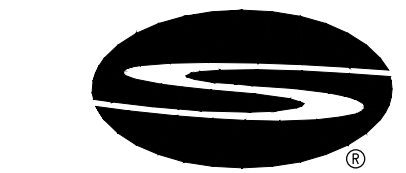
REVISIONS

DSGN

CHKD

APVD

DATE



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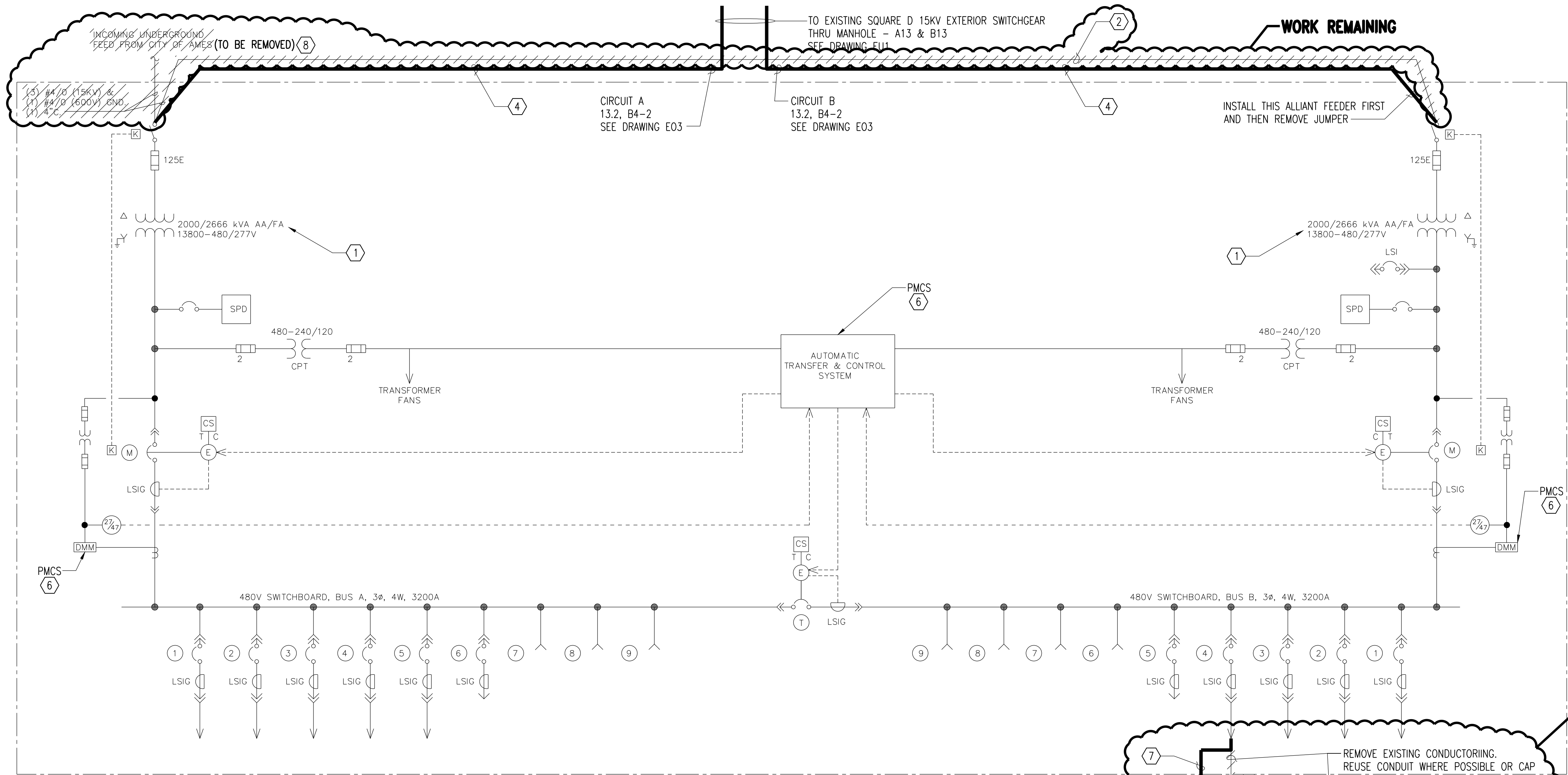
UNITED STATES DEPARTMENT OF AGRICULTURE
NVSL CVB BUILDING 21 ELECTRICAL SERVICE
AMES, IOWA

COVER SHEET,
VICINITY MAP, AND DRAWING INDEX

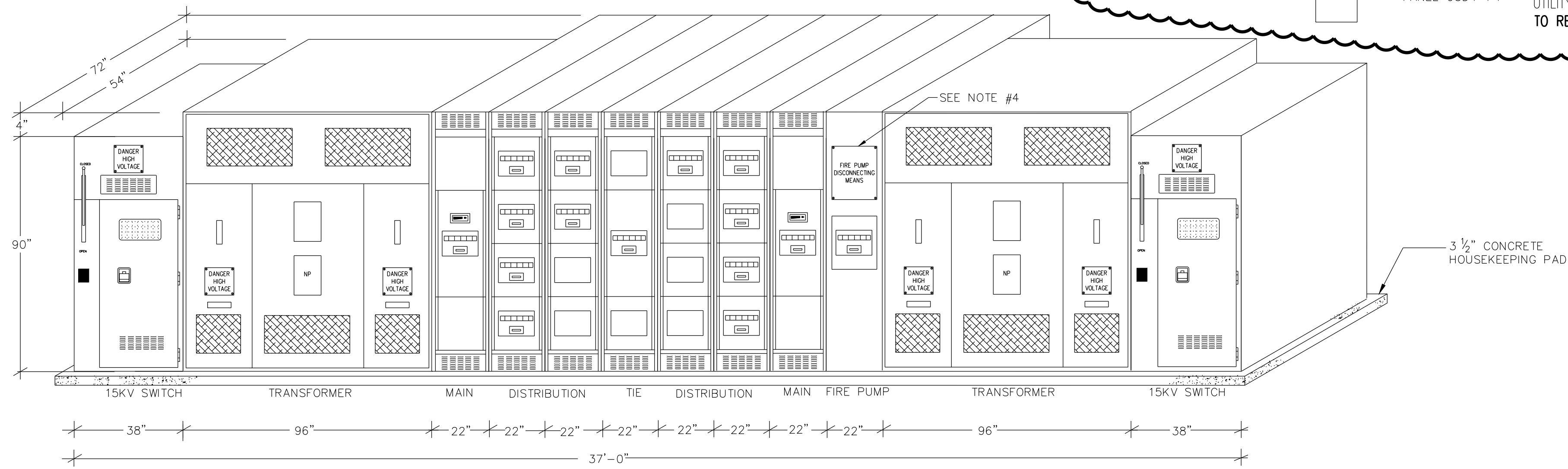
DESIGNED D.L. MORITZ
DRAWN S.R. JOHNSON
CHECKED L.E. INGRAM
APPROVED G.G. GARDNER
DATE AUGUST 26, 2011

SCALE: NONE
NO. 20162.09
REV. 1

K
J
H
G
F
E
D
C
B
A



UNIT SUBSTATION "USS-1" ONE-LINE DIAGRAM
SCALE: NONE



UNIT SUBSTATION "USS-1" ELEVATION - FRONT VIEW
SCALE: NONE

EXISTING UNIT SUBSTATION "USS-1"													
BUS A							BUS B						
480/277 VOLT, 3ø, 4W. 3200 MAIN BUS AMPS 65k AIC							480/277 VOLT, 3ø, 4W. 3200 MAIN BUS AMPS 65k AIC						
KEY NO.	DESCRIPTION	OVERCURRENT PROTECTION				REMARKS	KEY NO.	DESCRIPTION	OVERCURRENT PROTECTION				REMARKS
		FRAME	TRIP	POLE	AIC				FRAME	TRIP	POLE	AIC	
(M)	MAIN CIRCUIT BREAKER	3200A	3200A	3	65k		(M)	FIRE PUMP FEEDER	800A	150A	3	65k	
(1)	CHILLER CH-1.1	800A	800A	3	65k		(1)	MAIN CIRCUIT BREAKER	3200A	3200A	3	65k	
(2)	CHILLER CH-1.2	800A	800A	3	65k		(2)	DISTRIBUTION PANEL "D4-P1"	800A	800A	3	65k	
(3)	CHILLER CH-1.3	800A	800A	3	65k		(3)	LAB DISTRIBUTION PANEL "DX2-P1" VIA XFMR	800A	400A	3	65k	
(4)	PANEL "P4-G3"	800A	150A	3	65k		(4)	LAB DISTRIBUTION PANEL "DX2-P2" VIA XFMR	800A	300A	3	65k	
(5)	MOTOR CONTROL CENTER "OSMCC4-G1" VIA ATS #2	800A	400A	3	65k		(5)	OPTIONAL STANDBY DISTRIBUTION PANEL "OSD4-P1" VIA ATS #1	1600A	1600A	3	65k	
(6)	SPARE	800A	-	3	65k		(6)	SPARE	800A	-	3	65k	
(7)	SPACE AND HARDWARE						(7)	SPACE AND HARDWARE					
(8)	SPACE AND HARDWARE						(8)	SPACE AND HARDWARE					
(9)	SPACE AND HARDWARE						(9)	SPACE AND HARDWARE					
(T)	BUS A-B TIE BREAKER	3200A	3200A	3	65k								

FOR REFERENCE ONLY

GENERAL NOTES

KEYNOTES:

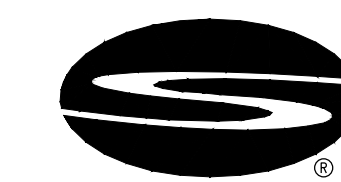
- CHANGE THE TAP SETTINGS AT TRANSFORMER TO 13,111V BY CHANGING TAPS IN EXISTING UNIT SUBSTATION USS-1 TRANSFORMERS. TRANSFORMER CURRENTLY HAS 13.8KV SERVICE FROM THE CITY OF AMES AND THE NEW ALLIANT ENERGY SERVICE VOLTAGE IS 13.2KV.
- REMOVE EXISTING 13.8KV JUMPER FROM THE LINE SIDE OF INCOMING PRIMARY SWITCH TO PARALLEL PRIMARY SWITCH AFTER FIRST OF NEW ALLIANT 13.2KV CIRCUITS ARE INSTALLED AND READY TO BE TERMINATED TO MINIMIZE OUTAGE TIME.
- DISCONNECT THE GENERATOR INPUT FROM PANEL OSD4-P1 AND INPUT FROM AUTOMATIC TRANSFER SWITCH ATS #1. ATS #1 SHALL BE REMOVED. SEE NOTE 7.
- PROVIDE NEW 3- 500KCMIL 1/C 15KV CABLE WITH A 4/0 INSULATED COPPER GROUND CABLE IN DUCTBANK ROUTING SHOWN FROM EXISTING SQUARE D OUTDOOR SWITCHGEAR TO EXISTING PRIMARY SWITCHES AT USS-1. SEE DRAWING E01.
- USS-1 IS THE EXISTING BUILDING SERVICE UNIT SUBSTATION FOR BUILDING 21 AND LOCATED IN THE PENTHOUSE AS SHOWN ON DRAWING EP2.
- CONTRACTOR IS TO PROVIDE THE REQUIRED EATON PMCS PROGRAMMING, INTEGRATION, AND CONTROL FUNCTIONS TO CONNECT THE EXISTING SITE PMCS SYSTEM TO THE TWO (2) EXISTING 480V SQUARE D POWERLOGIC FEEDER METERS AND THE AUTOMATIC TRANSFER AND CONTROL SYSTEM PROCESSOR IN THE CENTER SECTION OF THE SUBSTATION. PROVIDE ALL REQUIRED CONDUITS, CATEGORY 6 CABLEING, AND REQUIRED INTERFACES, (MODBUS OR ETHERNET AS REQUIRED) FROM THE DOUBLE ENDED SUBSTATION, REMOTE 4 OR 8 PORT SWITCH AT DOUBLE ENDED SUBSTATION, AND ETHERNET CATEGORY 6 CABLE IN 1 INCH CONDUIT TO EXISTING CONDUIT SLEEVES THROUGH FLOOR AS SHOWN ON DRAWINGS TO EXISTING SWITCH IN RACK IN COMM ROOM. SEE DRAWING EP1 AND EP2 FOR ROUTING OF CATEGORY 6 CABLEING TO SWITCH FROM SUBSTATION.
- REMOVE THE AUTOMATIC TRANSFER SWITCH ATS#1 AND INSTALL 4 SETS OF 4- 1/C # 600KCMIL PHASE CONDUCTORS AND 4 #4/0 GROUNDS IN 4 -4 INCH RGS CONDUITS DIRECTLY FROM PANEL OSD4-P1 TO FEEDER BREAKER NUMBER 4 ON USS1 BUS B AS SHOWN. REMOVE THE EXISTING GENERATOR CONDUCTORING, 12 # 600KCMIL PHASE CONDUCTORS AND 3 #4/0 GROUNDS IN 4 -4 INCH RGS CONDUITS FROM THE 1,200 AMP BREAKER AT THE GENERATOR TO ATS#1 AND THE EXISTING CONDUITS SHALL BE CAPPED AT BOTH LOCATIONS.
- REMOVE EXISTING 13.8KV SERVICE FROM THE CITY OF AMES AFTER FIRST NEW 13.2 KV FEEDER HAS BEEN PLACED, TRANSFORMER TAP SETTING CHANGED, AND RELAY SETTINGS UPDATED. CONTRACTOR MAY SALVAGE CABLE BUT CABLE SHALL BE REMOVED.

LEGEND

- ////// TO BE REMOVED
- NEW WORK AS PART OF CONTRACT

FOR REFERENCE ONLY

NO.	REVISIONS	DSGN	CHKD	APVD	DATE
1	RECORD DRAWING	DLM	GGG	GGG	12-06-2013

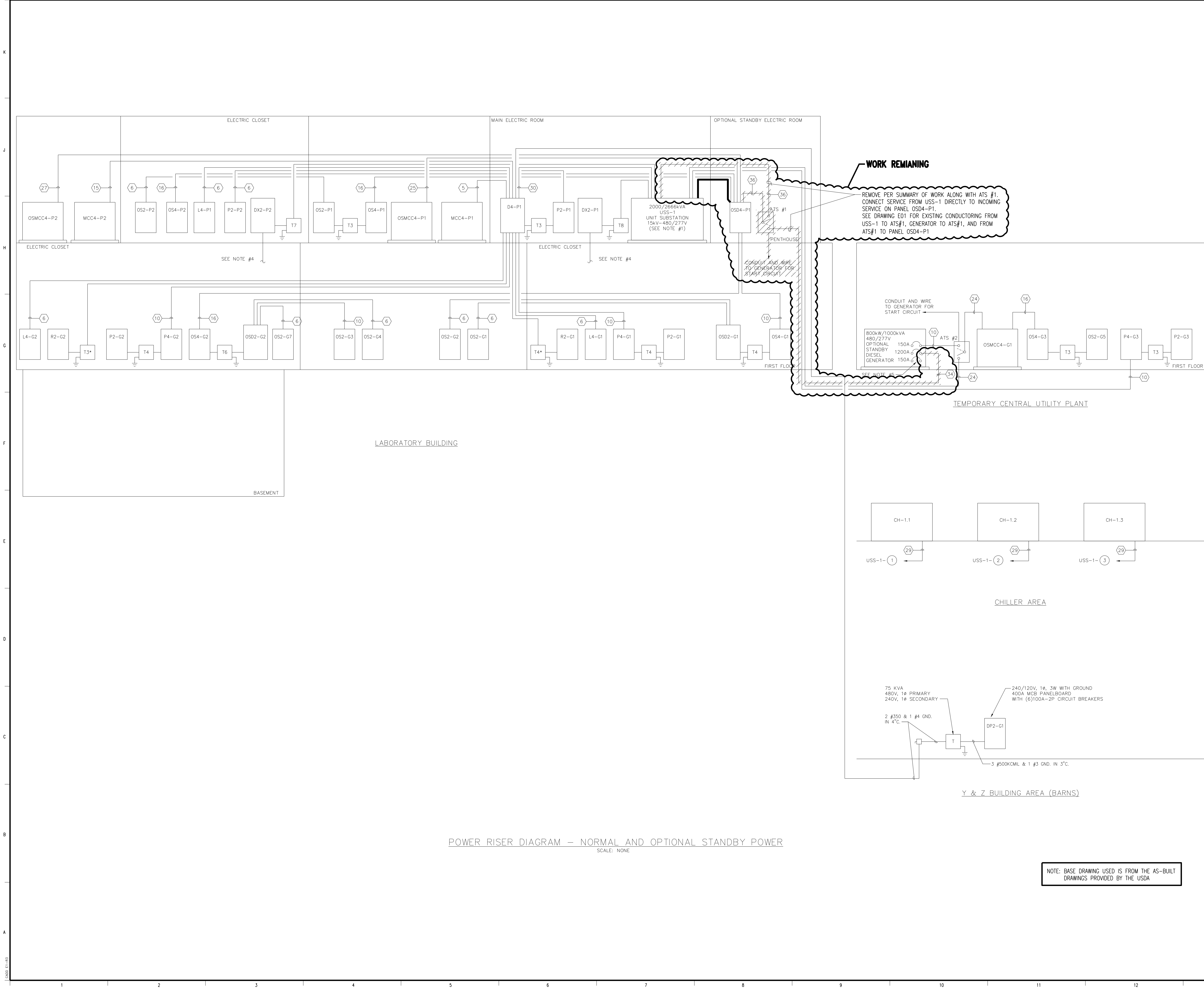


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UNITED STATES DEPARTMENT OF AGRICULTURE
NVSL CVB BUILDING 21 ELECTRICAL SERVICE
AMES, IOWA

BUILDING 21
ONE LINE DIAGRAM MODIFICATIONS

DESIGNED D.L. MORITZ	SCALE: NONE	
DRAWN S.R. JOHNSON	NO. 20162.09	REV.
CHECKED L.E. INGRAM		
APPROVED G.G. GARDNER		
DATE AUGUST 26, 2011	E01	1



GENERAL NOTES

LEGEND

//////

TO BE REMOVED

————

NEW WORK AS PART OF CONTRACT

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1	RECORD DRAWING	DLM	GGG	GGG	12-06-2013
NO.	REVISIONS	DSGN	CHKD	APVD	DATE

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UNITED STATES DEPARTMENT OF AGRICULTURE

NVSL CVB BUILDING 21 ELECTRICAL SERVICE

AMES, IOWA

BUILDING 21

POWER RISER DIAGRAM

DESIGNED D.L. MORITZ

DRAWN S.R. JOHNSON

CHECKED L.E. INGRAM

APPROVED G.G. GARDNER

DATE AUGUST 26, 2011

SCALE: NONE

NO. 20162.09

REV.

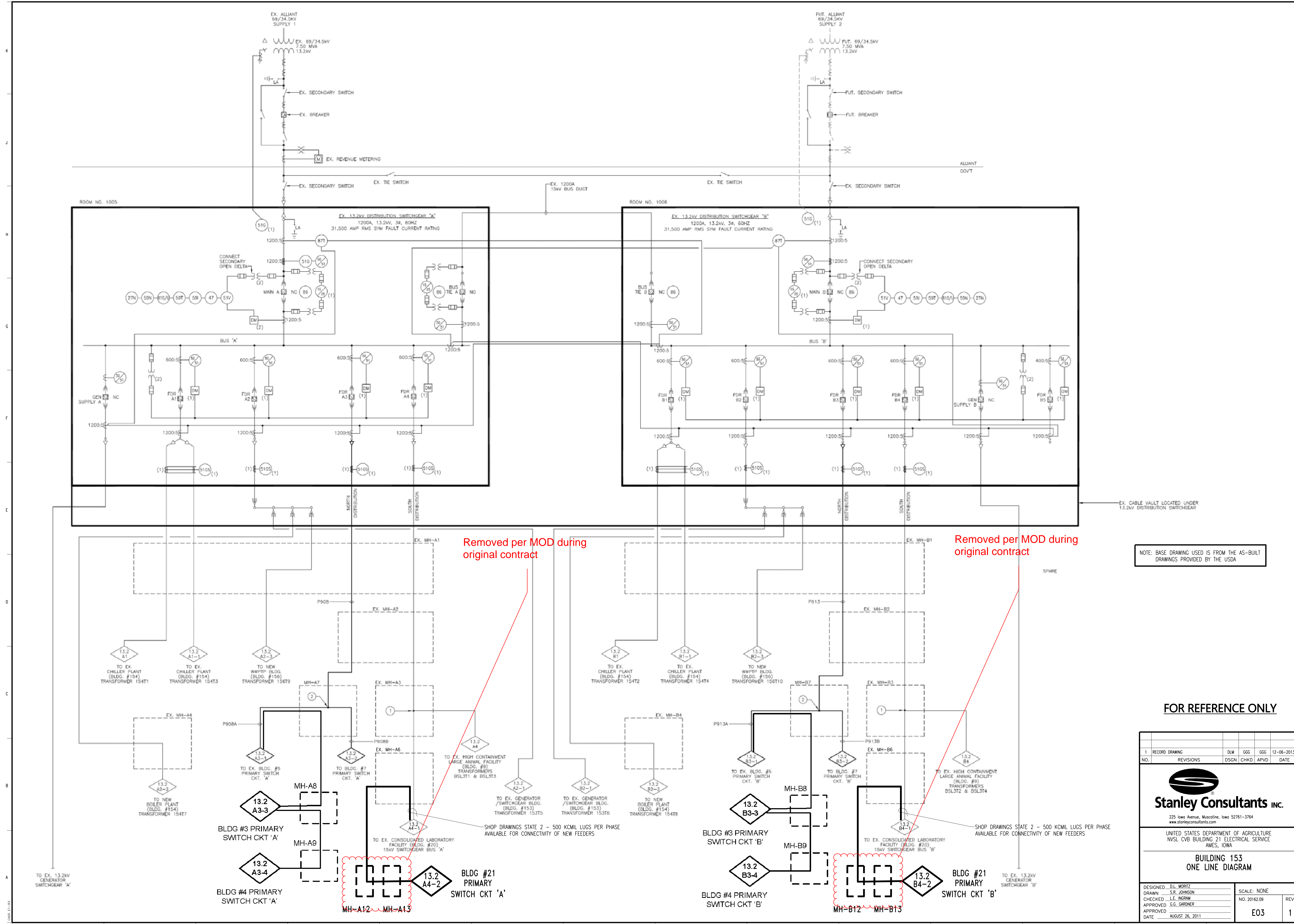
E02

1

1300 11-83

130 STANLEY CONSULTANTS

14



NOTE: BASE DRAWING USED IS FROM THE AS-BUILT DRAWINGS PROVIDED BY THE USDA

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NO.	REVISIONS	DSGN	CHKD	APVD	DATE

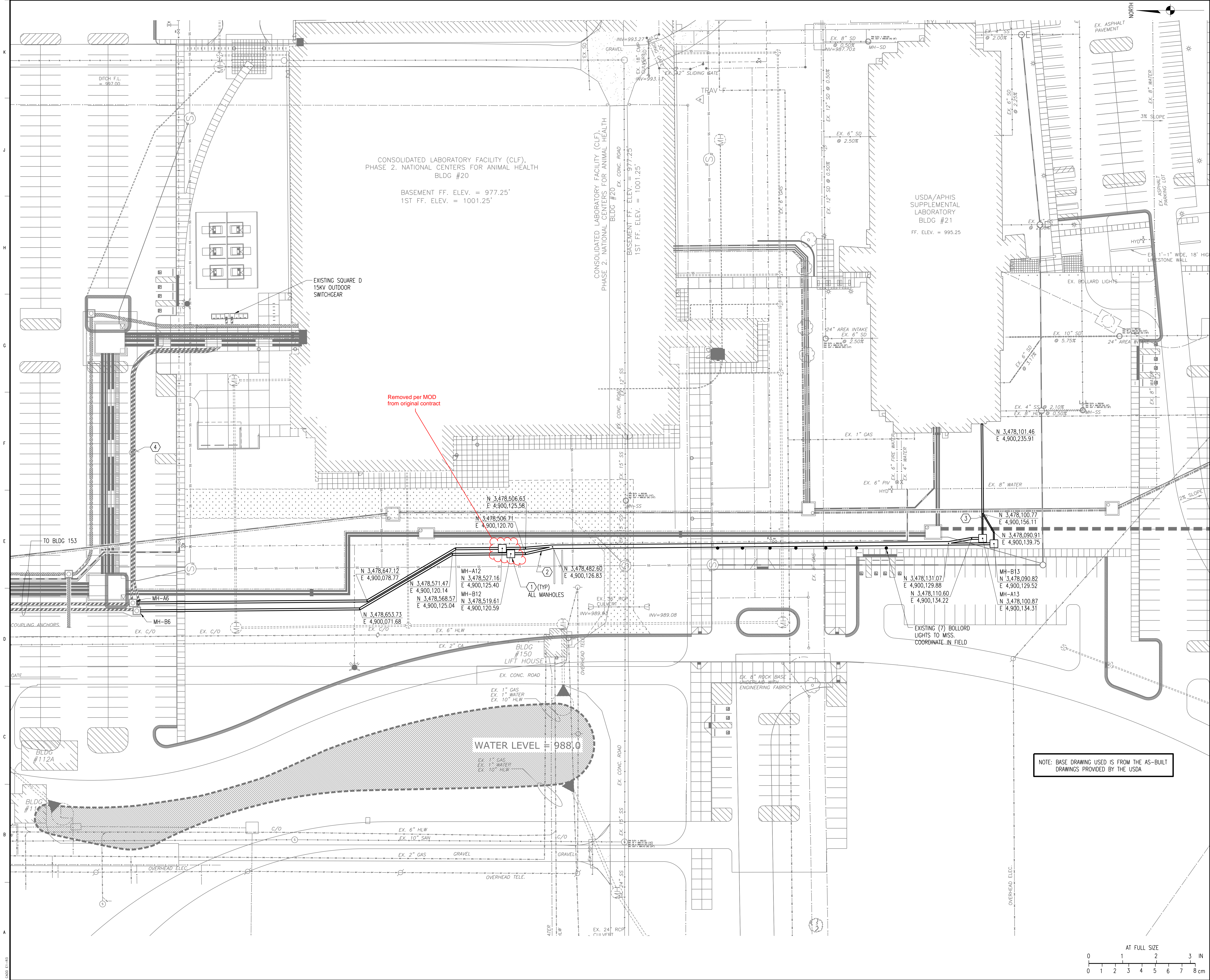
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UNITED STATES DEPARTMENT OF AGRICULTURE
NVSL CVB BUILDING 21 ELECTRICAL SERVICE
AMES, IOWA

**BUILDING 153
ONE LINE DIAGRAM**

DESIGNED: D.L. MORITZ	SCALE: NONE	REV. E03
DRAWN: S.R. JOHNSON	NO. 20162.09	
CHECKED: L.E. INGRAM		
APPROVED: G.G. GARDNER		
DATE: AUGUST 26, 2011		1

12-06-2013 12:43



GENERAL NOTES

SEE DRAWING GG2 FOR ELECTRICAL GENERAL NOTES

KEYNOTES:

- COORDINATES SHOWN FOR MANHOLE LOCATIONS ARE TO CENTER OF MANHOLE COVER. SEE DRAWING EU2 FOR MANHOLE SIZE AND COVER LOCATION ON MANHOLE. EXACT BURIAL DEPTH WILL NEED TO BE DETERMINED IN THE FIELD BASED ON DUCTBANKS ENTRANCE DEPTHS.
- DUCT BANKS LEAVING MANHOLES ARE 4 WAY (2 X 2) WITH 5 INCH CELLS AND JOIN EACH OTHER TO BECOME 8 WAY (4 X2) WITH 5 INCH CELLS AT APPROXIMATE LOCATIONS SHOWN. CONTRACTOR MAY MOVE CONNECTION POINTS AS REQUIRED BASED ON ACTUAL UTILITY LOCATIONS AFTER UTILITIES HAVE BEEN MARKED IN THE FIELD BEFORE CONSTRUCTION.
- DUCTBANKS FROM MANHOLES MH-A13 AND MH-B13 ARE EACH 1 WAY WITH A 4 INCH CELL AND JOIN INTO A 2 WAY DUCTBANK WITH 4 INCH CELLS. ONE CONDUIT WILL BE JOINED INTO THE SPARE 4 INCH CONDUIT FROM BUILDING 21 AND THE DUCTBANK WILL HAVE TO BE FINISHED AFTER THE SECOND CELL CAN BE JOINED FOR THE SECOND NEW 13.2KV CIRCUIT. PROVIDE 4" RGS CONDUITS FROM MH-A13 AND MH-B13 TO EXISTING RGS CONDUITS SHOWN ON DRAWING EP1 NOTE 1. BOND CONDUITS TO 4/0 BARE COPPER GROUND IN DUCTBANK FROM MH-A12 AND MH-B12. 4" RGS TO BE GOUND PATH INTO USS-1 IN BUILDING 21. SEE DRAWING EU2.
- EXISTING DUCTBANK FROM SQUARE D OUTDOOR 15 KV SWITCHGEAR TO EXISTING MANHOLES MH-A6 AND MH-B6. INSTALL NEW 13.2KV CIRCUITS TO BUILDING 21 UNIT SUBSTATION USS-1 IN EXISTING SPARE 5" CONDUITS.

FOR REFERENCE ONLY

1	RECORD DRAWING	DLM	GGG	GGG	12-06-2013
NO.	REVISIONS	DSGN	CHKD	APVD	DATE



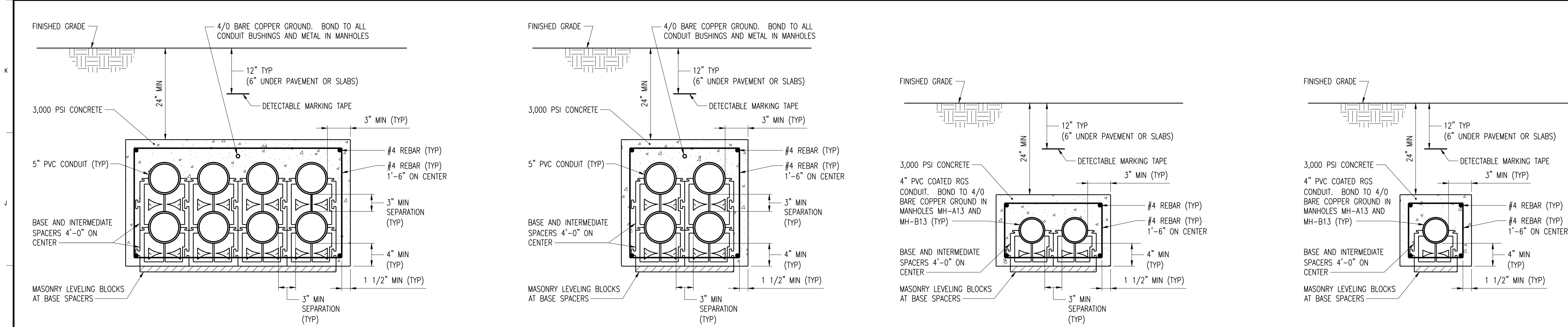
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NVSL CVB BUILDING 21 ELECTRICAL SERVICE
AMES, IOWA

SITE PLAN

DESIGNED	D.L. MORITZ	SCALE: 1" = 30'	REV. EU1 1
DRAWN	S.R. JOHNSON	NO. 20162.09	
CHECKED	L.E. INGRAM		
APPROVED	G.G. GARDNER		
APPROVED	G.G. GARDNER		
DATE	AUGUST 26, 2011		

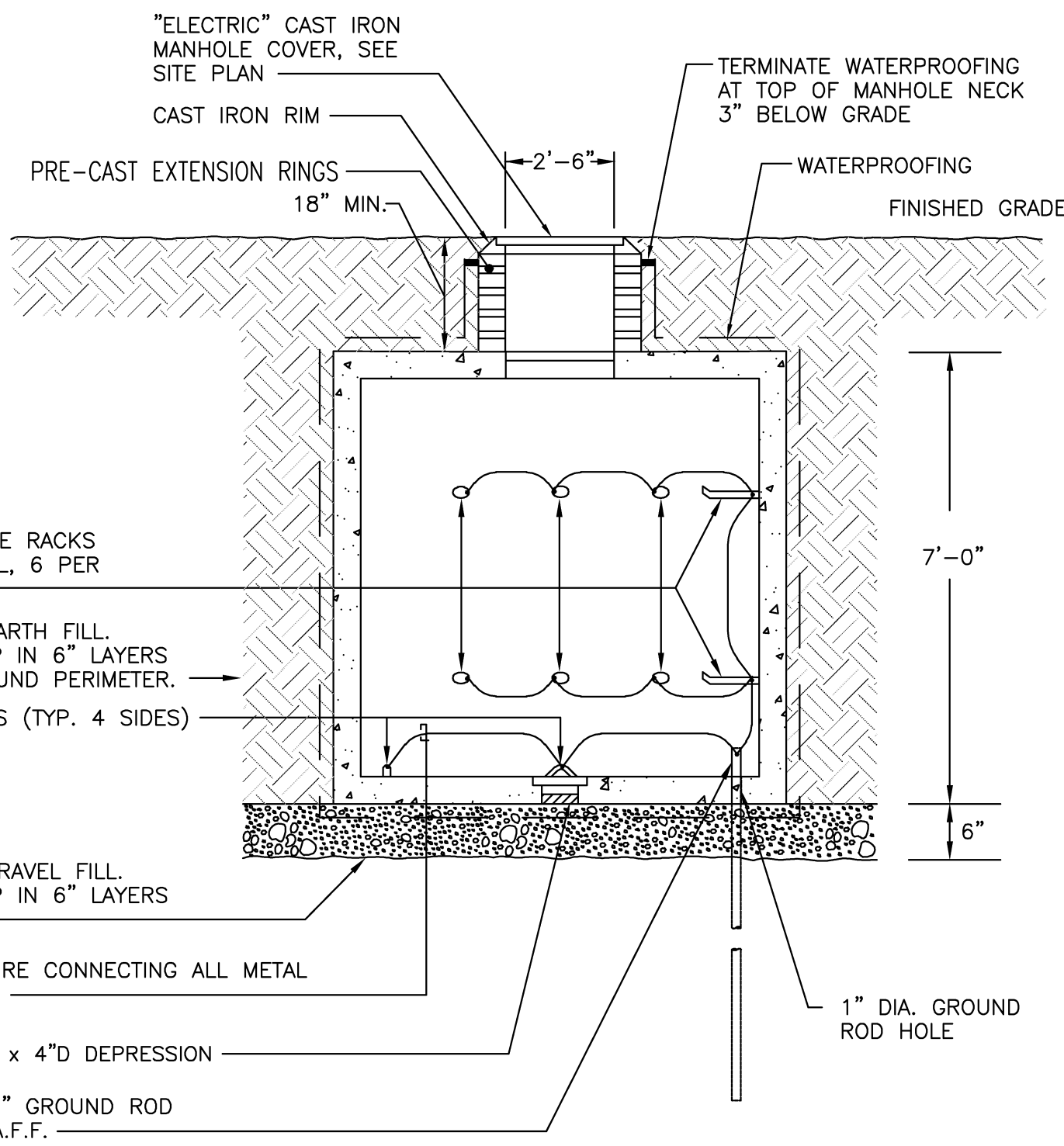
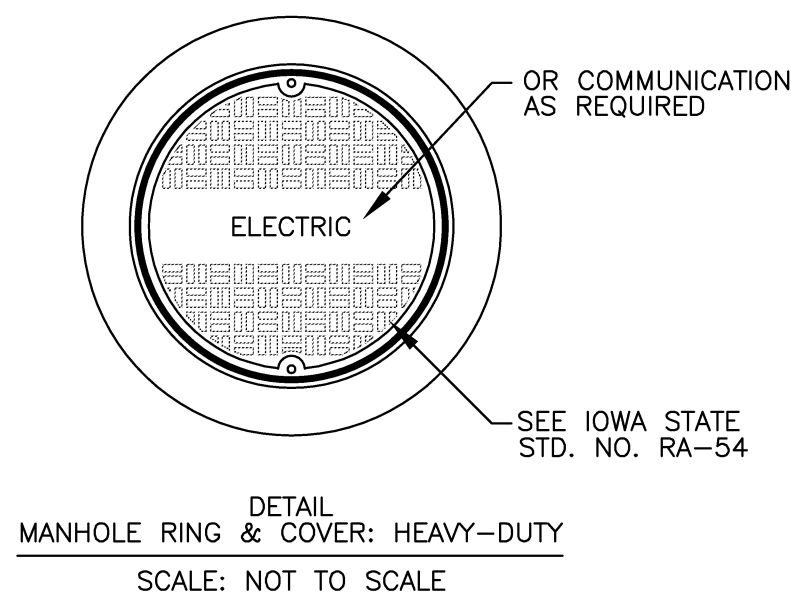
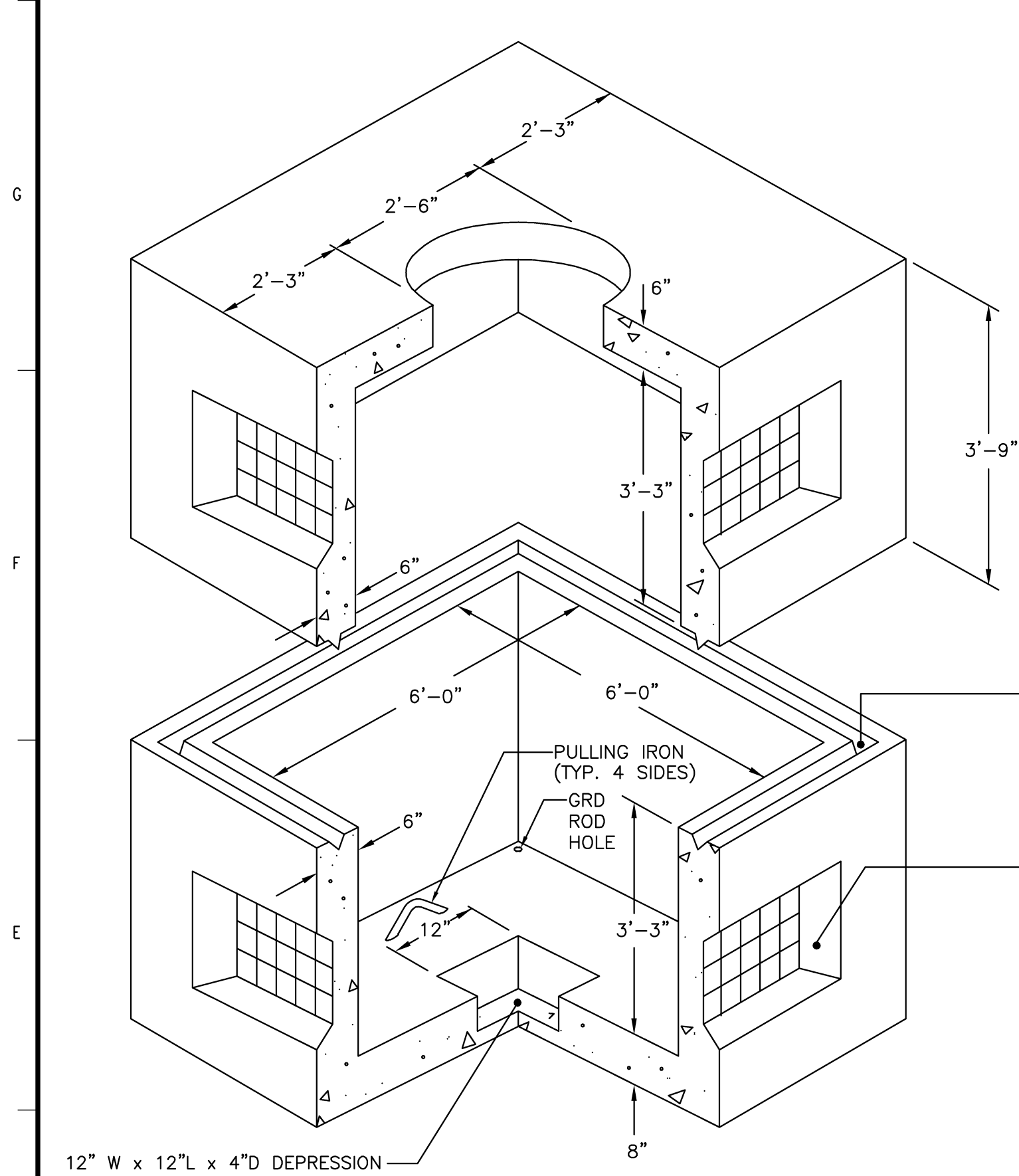


8-WAY (4x2) 5" ELECTRICAL DUCTBANK
NO SCALE

4-WAY (2x2) 5" ELECTRICAL DUCTBANK
NO SCALE

2-WAY (2x1) 4" ELECTRICAL DUCTBANK
NO SCALE

1-WAY 4" ELECTRICAL DUCTBANK
NO SCALE



- NOTES:
1. REINFORCEMENT: H-20 BRIDGE LOADING.
 2. CONCRETE STRENGTH @ 28 DAYS: 4000 P.S.I.
 3. CONTRACTOR SHALL PROVIDE LADDER AND BOLTING INSERTS FOR CABLE RACKS INSIDE MANHOLE AS SPECIFIED IN SPECIFICATION.

PRECAST 6'W x 6'L x 6.5'D (INSIDE DIMENSIONS) ELECTRICAL/COMMUNICATION MANHOLE
SCALE: NOT TO SCALE

FOR REFERENCE ONLY

GENERAL NOTES

1	RECORD DRAWING	DLM	GGG	GGG 12-06-2013	
NO.	REVISIONS	DSGN	CHKD	APVD DATE	
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DESIGNED	D.L. MORITZ	SCALE: NONE		REV.	
DRAWN	S.R. JOHNSON	NO. 20162.09			
CHECKED	L.E. INGRAM				
APPROVED	G.G. GARDNER				
APPROVED					
DATE	AUGUST 26, 2011				
E02				1	

GENERAL NOTES

TEMPORARY CONTROL UTILITY PLANT LOCATION.
GENERATOR IS LOCATED INSIDE. SEE DRAWING E02



KEYNOTES:

- CONTRACTOR SHALL HAND EXCAVATE AT END OF EXISTING DUCTBANK TO INTERCEPT 2- 4 INCH CONDUITS OF WHICH ONE THE EXISTING 13.8KV SERVICE IS ROUTED INTO BUILDING 21.
- INSTALL ONE NEW 13.2KV ELECTRIC SERVICE IN EMPTY CONDUIT, REMOVE EXISTING SERVICE, THEN INSTALL SECOND NEW SERVICE IN THAT CONDUIT AS SHOWN ON ONE LINE DIAGRAM ON DRAWING E01. THE CIRCUIT INSTALLED FIRST WILL BE DETERMINED BY THE ORIENTATION OF EXISTING 13.8KV FEEDER CONDUIT TO PREVENT CROSSING OF CONDUITS FROM MH-A13 AND MH-B13.
- REPRESENTS EXISTING UNDERFLOOR DUCTBANK ROUTE THAT INCLUDES THE 2-4 INCH CONDUITS THAT WILL BE USED FOR THE NEW 13.2KV CIRCUITS TO BE USED TO SERVE BUILDING 21.
- LOCATION THAT EXISTING UNDERFLOOR DUCTBANK IS ROUTED VERTICALLY THROUGH BUILDING 21 UP TO PENTHOUSE.
- THERE ARE FOUR EXISTING 2 INCH CONDUIT SLEEVES FROM THE PENTHOUSE INTO THE DATA/COMM ROOM 1101 ON FIRST FLOOR. USE CONDUIT SLEEVES TO ROUTE A 1 INCH RGS CONDUIT FROM THE UNIT SUBSTATION "USS1" IN THE PENTHOUSE TO AN EXISTING RACK IN THE DATA/COMM ROOM WITH AN EXISTING SWITCH FOR PMCS INTERFACE.
- EXISTING SWITCH LOCATED IN EXISTING RACK FOR PMCS TIE IN OF UNIT SUBSTATION "USS1" COORDINATE WITH OWNER FOR SWITCH PORT TO USE FOR TIE IN AND PMCS INTEGRATOR AS PART OF THIS CONTRACT.

NOTE: BASE DRAWING USED IS FROM THE AS-BUILT DRAWINGS PROVIDED BY THE USDA

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UNITED STATES DEPARTMENT OF AGRICULTURE
NVSL CVB BUILDING 21 ELECTRICAL SERVICE
AMES, IOWA

BUILDING 21
FIRST FLOOR PLAN

DESIGNED: D.L. MORITZ
DRAWN: S.R. JOHNSON
CHECKED: L.E. INGRAM
APPROVED: G.G. GARDNER
DATE: AUGUST 26, 2011

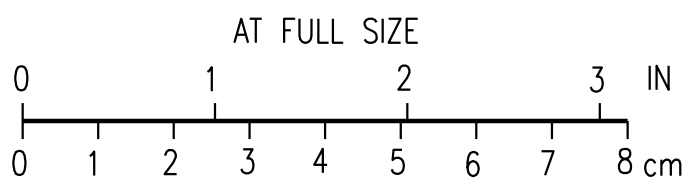
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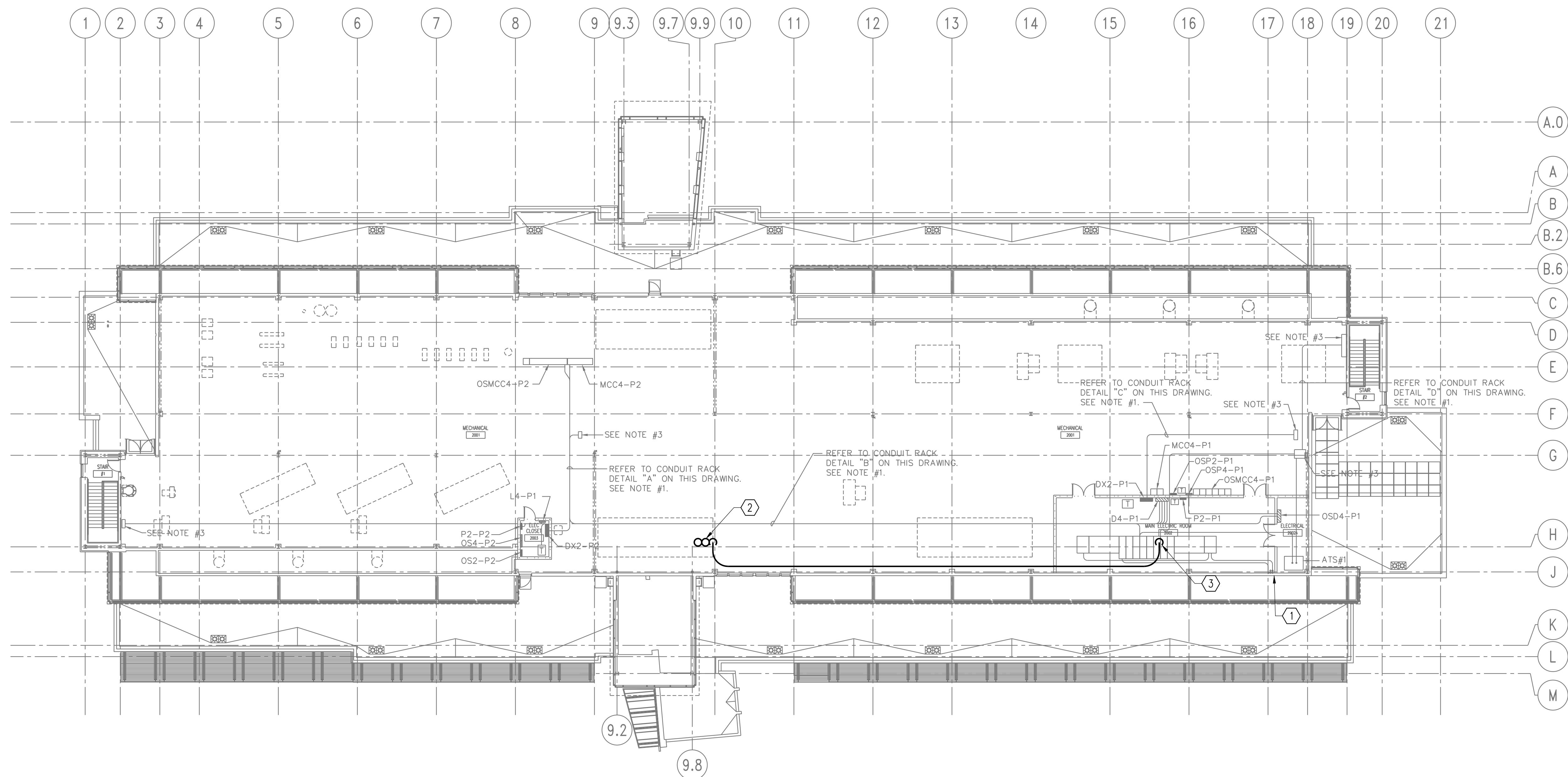
NO. 20162.09

REV.

EP1

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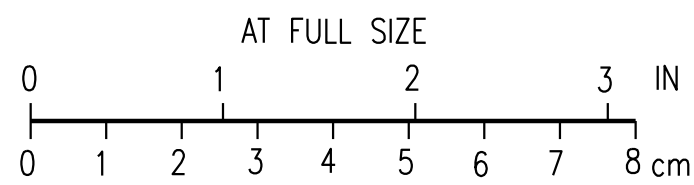




NOTE: BASE DRAWING USED IS FROM THE AS-BUILT DRAWINGS PROVIDED BY THE USDA

- KEYNOTES:**
- LOCATION OF VERTICAL CONDUIT ROUTING FROM DUCTBANK BELOW BASEMENT FLOOR WHERE ROUTING OF EXISTING 2 - 4 INCH CONDUITS COME THROUGH FLOOR. ONE OF THE CONDUITS IS CAPPED AND CONTRACTOR IS TO REMOVE CAP AND EXTEND 4 INCH CONDUIT TO SECOND PRIMARY SWITCH ON UNIT SUBSTATION USS-1 FOR 13.2KV CIRCUIT AS SHOWN ON DRAWING E01.
 - LOCATION OF FOUR EXISTING 2 INCH CONDUIT SLEEVES FROM THE PENTHOUSE INTO THE DATA/COMM ROOM 1101 ON FIRST FLOOR. USE CONDUIT SLEEVES TO ROUTE A 1 INCH CONDUIT FROM THE UNIT SUBSTATION 'USS1' IN THE PENTHOUSE TO AN EXISTING RACK IN THE DATA/COMM ROOM WITH AN EXISTING SWITCH FOR PMCS INTERFACE.
 - SEE DRAWING EP-3 FOR CONTINUATION OF PMCS CONDUIT TO UNIT SUBSTATION AND ONE LINE DIAGRAM DRAWING E0-1 FOR PMCS MONITORING REQUIREMENTS.

FOR REFERENCE ONLY

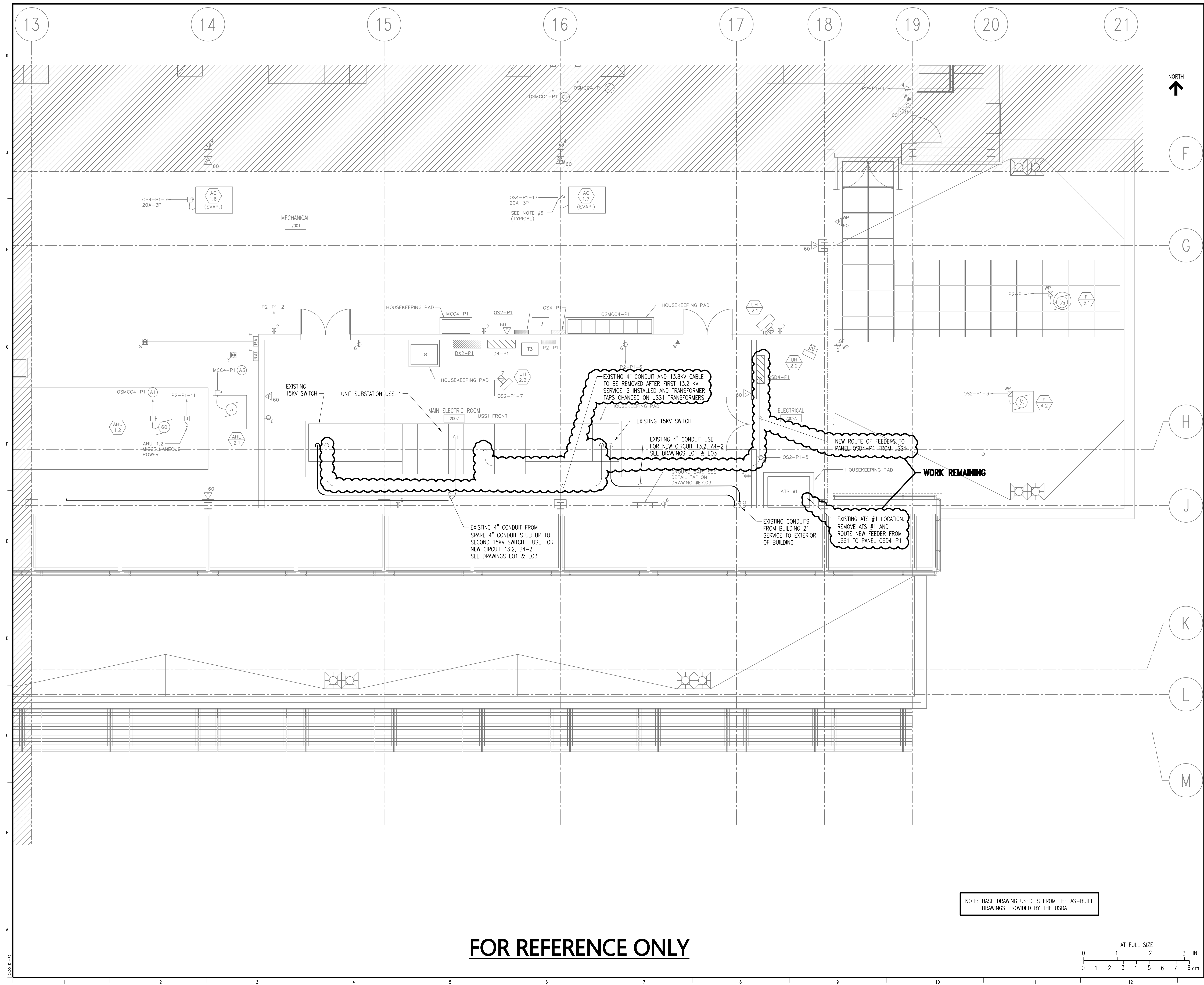


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UNITED STATES DEPARTMENT OF AGRICULTURE
NVSL CVB BUILDING 21 ELECTRICAL SERVICE
AMES, IOWA

**BUILDING 21
PENTHOUSE FLOOR PLAN**

DESIGNED D.L. MORITZ	SCALE: 1/16" = 1'-0"	REV.
DRAWN S.R. JOHNSON	NO. 20162.09	REV.
CHECKED L.E. INGRAM	EP2	1
APPROVED G.G. GARDNER		
DATE AUGUST 26, 2011		



GENERAL NOTES



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1	RECORD DRAWING	DLM	GGG	GGG	12-06-2013
NO.	REVISIONS	DSGN	CHKD	APVD	DATE



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UNITED STATES DEPARTMENT OF AGRICULTURE
WSL CVB BUILDING 21 ELECTRICAL SERVICE
AMES, IOWA

BUILDING 21
ENLARGED PENTHOUSE PLAN

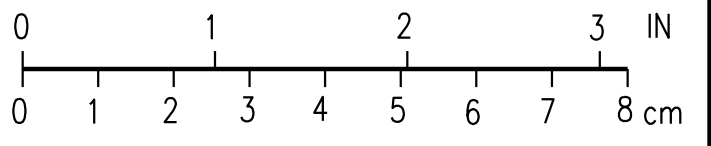
DESIGNED D.L. MORITZ
DRAWN S.R. JOHNSON
CHECKED L.E. INGRAM
APPROVED G.G. GARDNER
APPROVED _____
DATE AUGUST 26, 2011

SCALE: 1/4" = 1'-0"	
D. 20162.09	REV.
EP3	1

NOTE: BASE DRAWING USED IS FROM THE AS-BUILT
DRAWINGS PROVIDED BY THE USDA

FOR REFERENCE ONLY

AT FULL SIZE



H

G

F

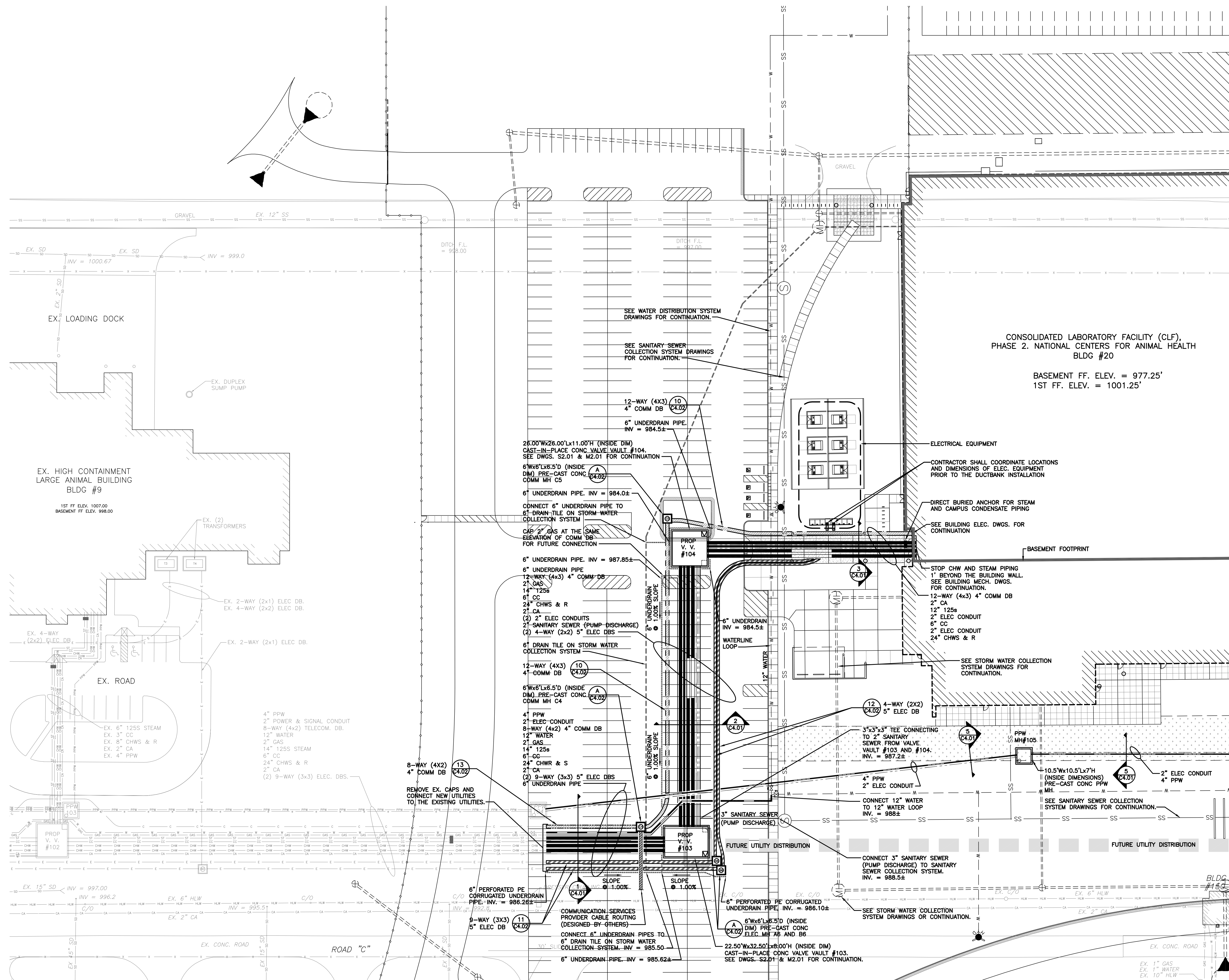
E

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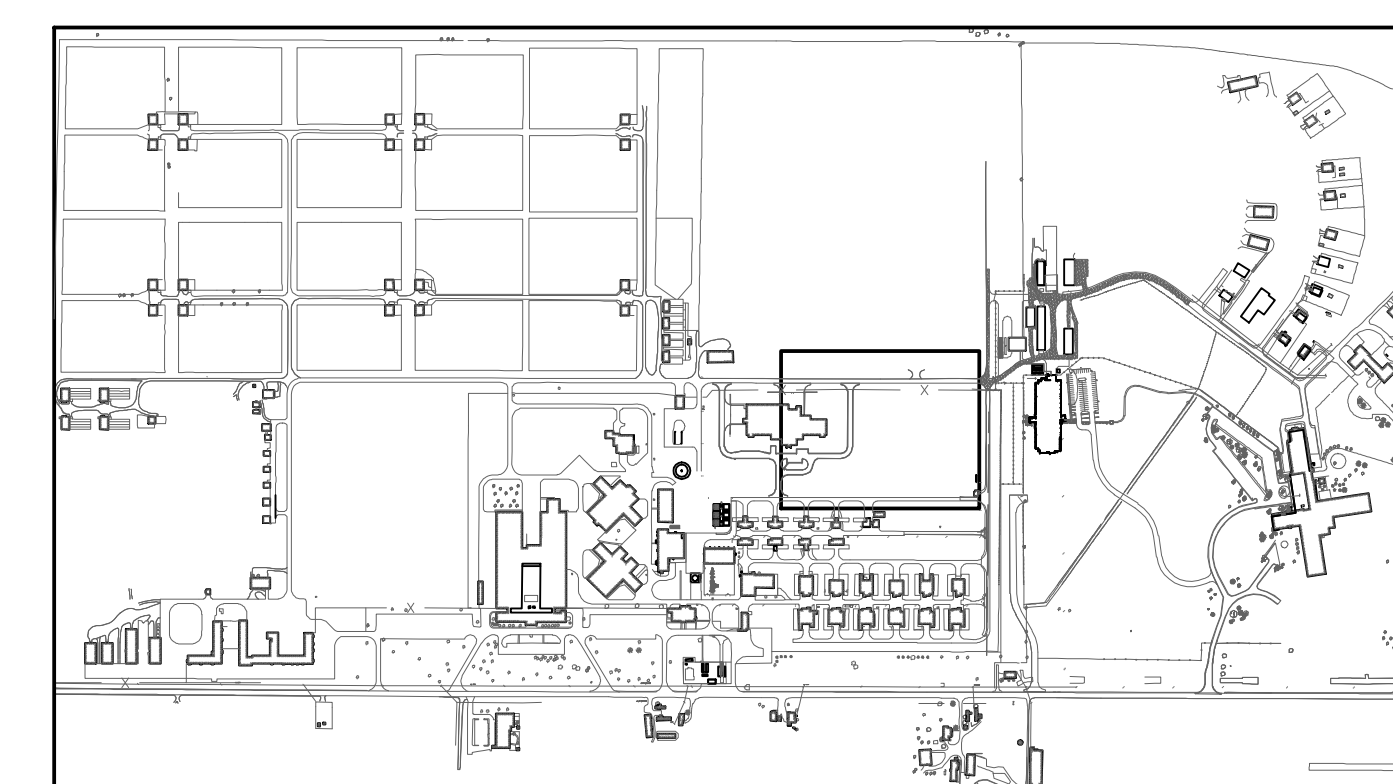


MATCHLINE FOR CONTINUATION SEE SHEET C2.02

NOTES:

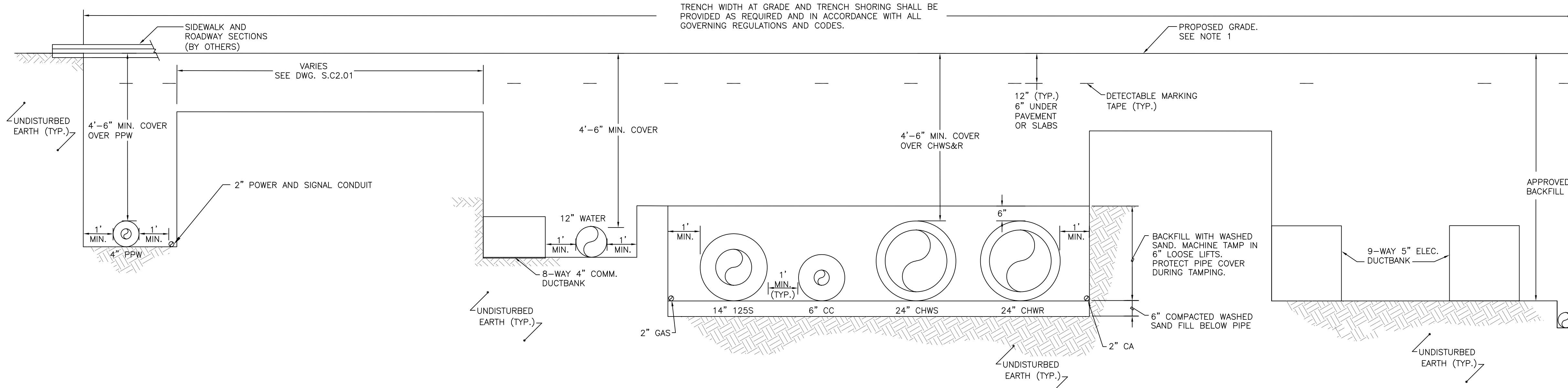
1. SEE DRAWING C3.01 FOR STEAM DISTRIBUTION AND SANITARY SEWER PROFILES.
2. SEE DRAWING C3.02 FOR ELECTRICAL AND TELECOMMUNICATION PROFILES.
3. SEE DRAWINGS C3.03 AND C3.04 FOR PUMPED PRETREATMENT WASTE PROFILES.
4. SEE DRAWING C3.05 FOR WATER DISTRIBUTION PROFILES.

FOR REFERENCE ONLY

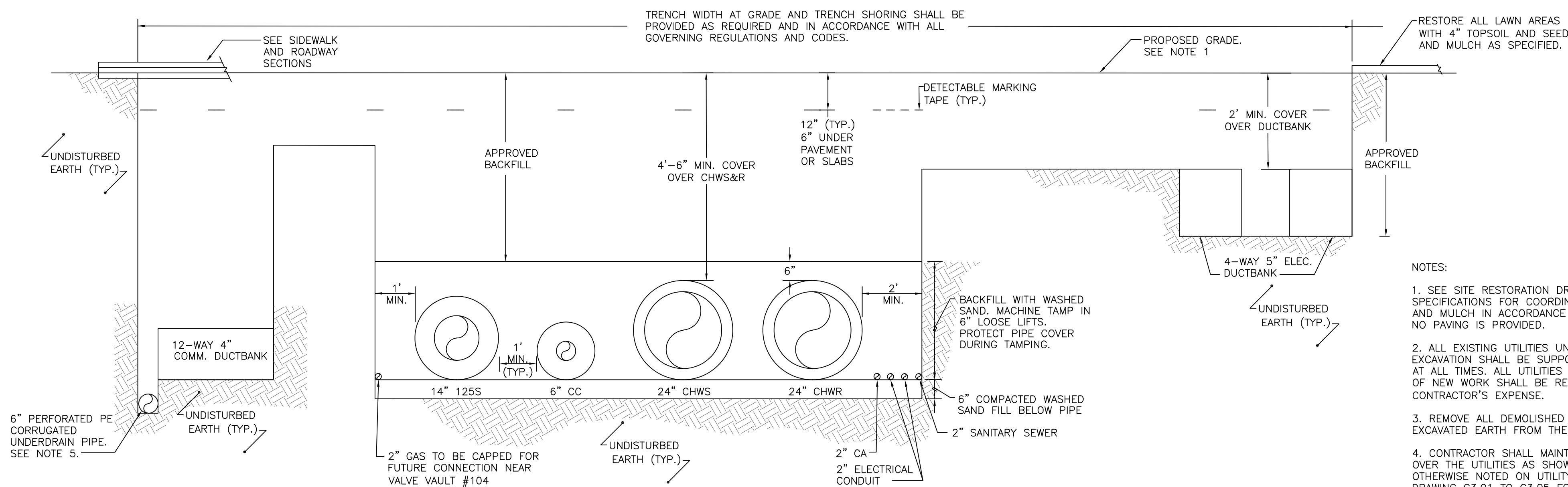


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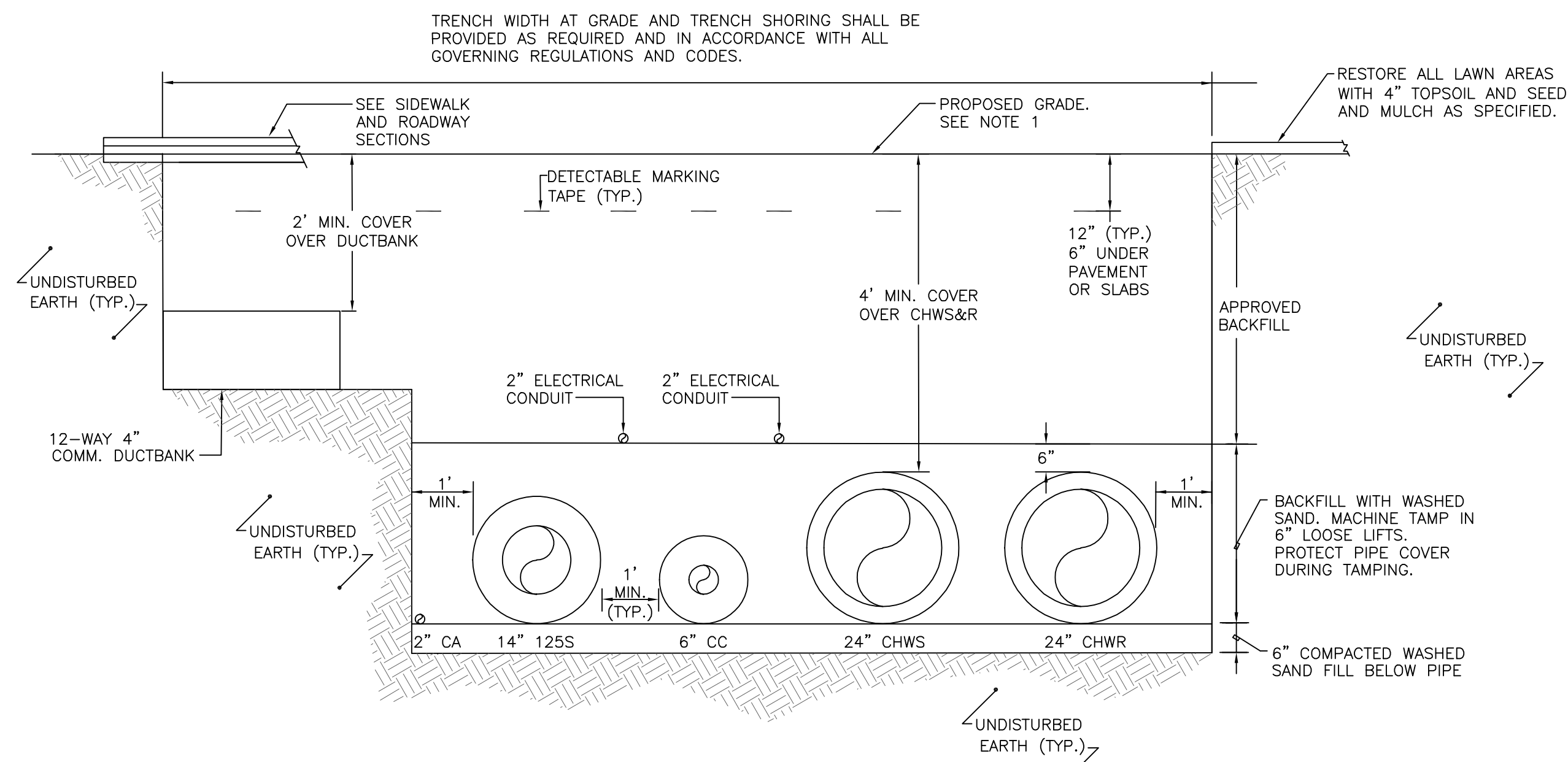
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		REVISIONS				
A-E FIRM		USDA		Agricultural Research Service		
PROJECT MANAGER		KJB		SOUTH UTILITY EXTENSION		
DESIGNER		KKS		CIVIL UTILITY SITE PLAN		
CHECKED BY		SAFETY & HEALTH		DWG C2.01		
CONTRACT NO.		REAL PROPERTY		SHEET 011		
50-3K15-2-2710				OF 040		
PROJECT NO.		04-1036		FACILITIES DIVISION		
				5601 SUNNYSIDE AVENUE		
				BELTSVILLE, MD. 20705-5100		
				DATE 28 APR 06		



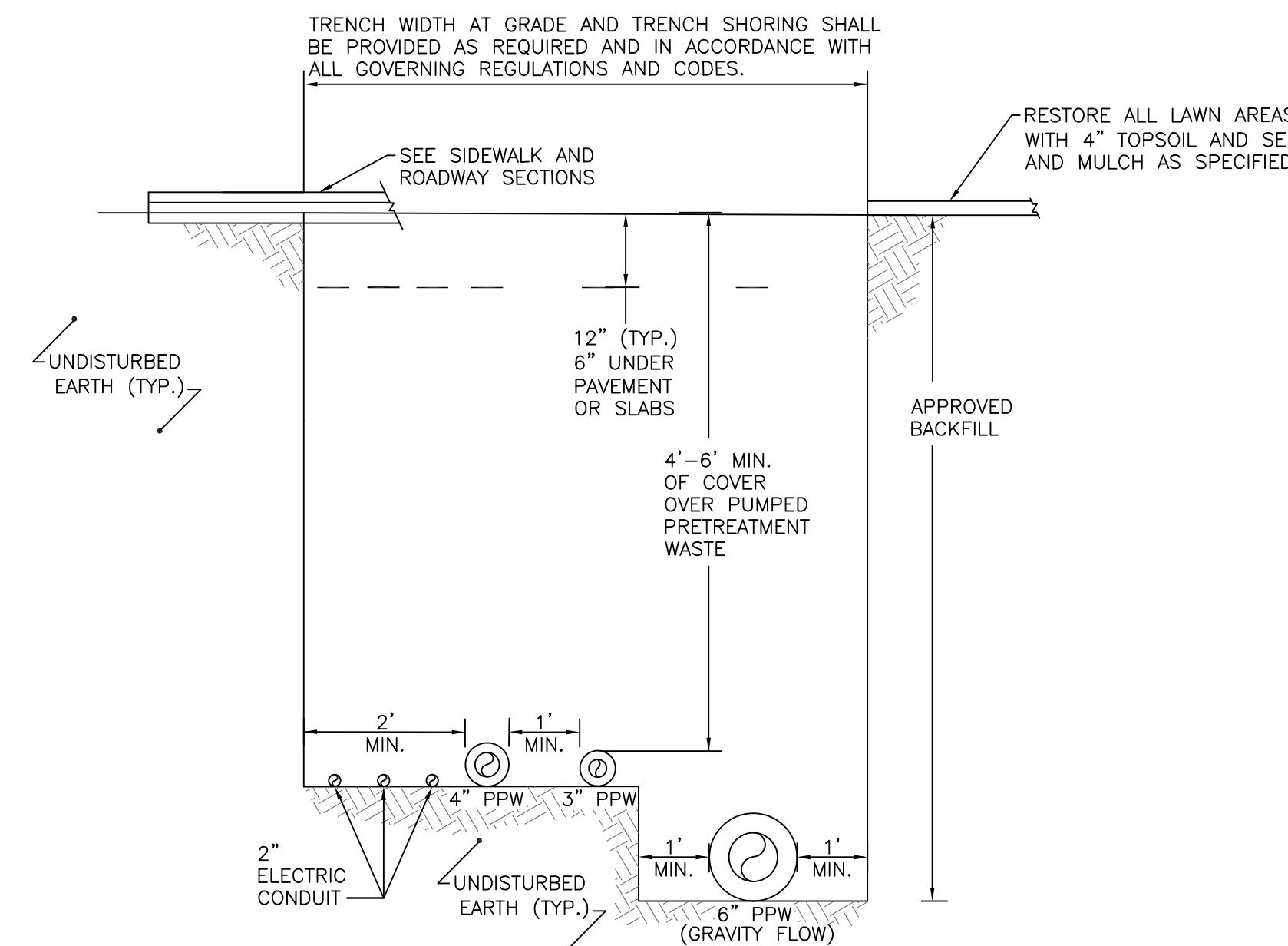
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C4.01
**UTILITY TRENCH SECTION FROM THE
EXISTING END CAPS TO VALVE VAULT #103**
SCALE: NOT TO SCALE



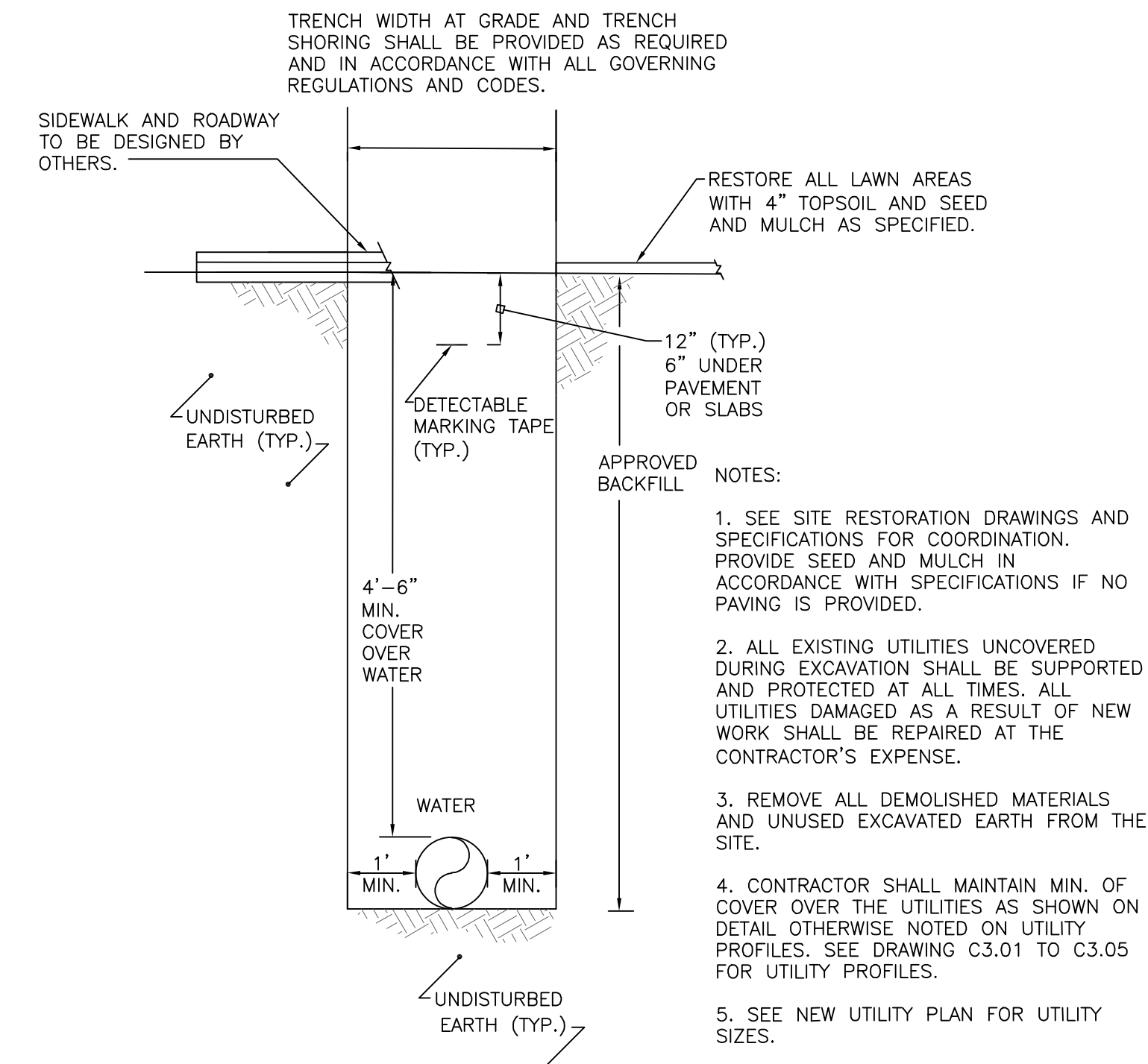
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C4.01
**UTILITY TRENCH SECTION FROM
VALVE VAULT #103 TO PROPOSED VALVE VAULT #104**
SCALE: NOT TO SCALE



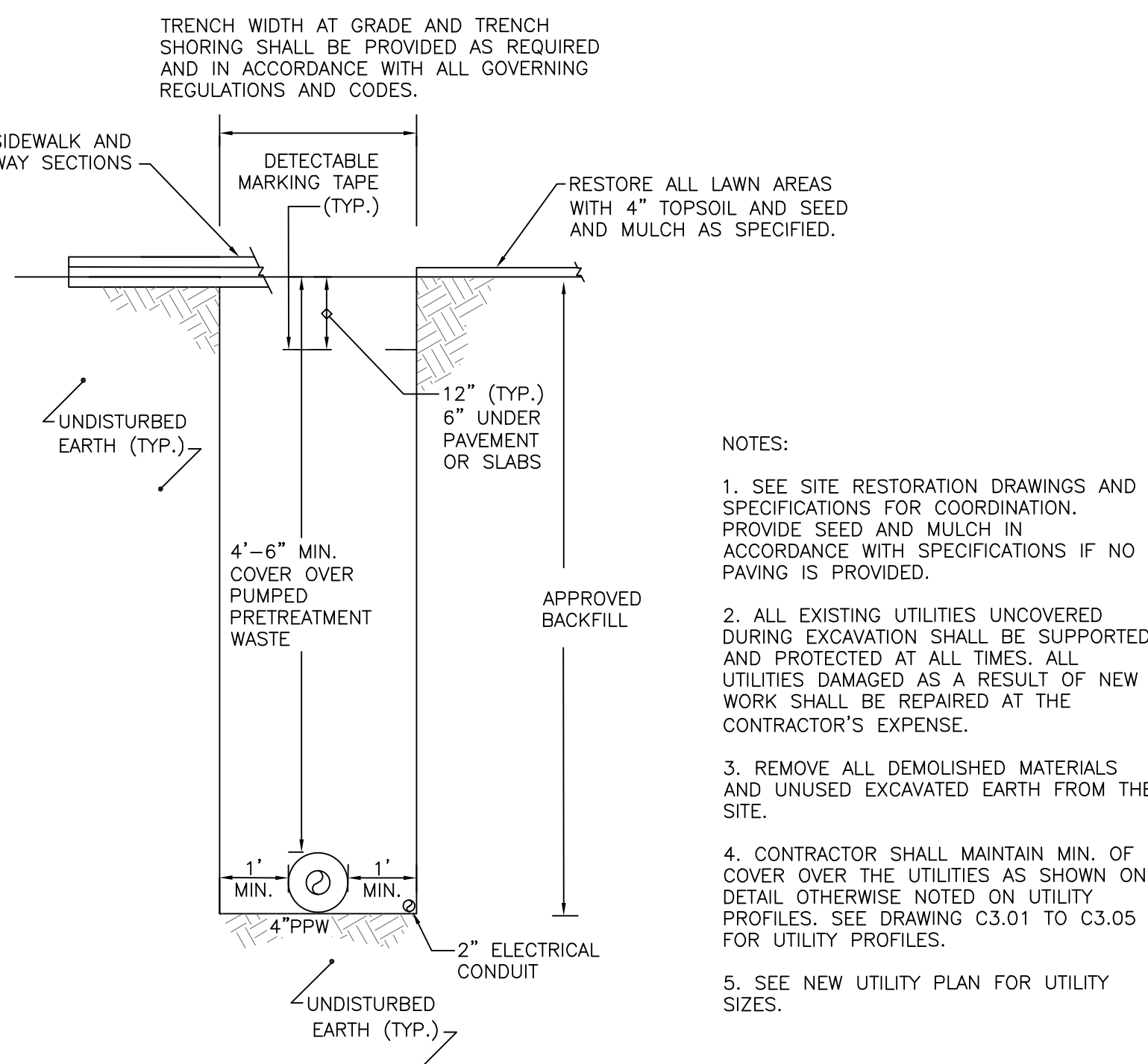
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C4.01
**UTILITY TRENCH SECTION FROM CONSOLIDATION LABORATORY
FACILITY VALVE VAULT 104 TO BUILDING #20**
SCALE: NOT TO SCALE



6
C4.01
**PUMPED PRETREATMENT WASTE TRENCH
SECTION @ PUMPED PRETREATMENT
WASTE MANHOLE 106**
SCALE: NOT TO SCALE




4
C4.01
TYPICAL WATER TRENCH SECTION
SCALE: NOT TO SCALE



5
C4.01
**PUMPED PRETREATMENT WASTE TRENCH
SECTION BETWEEN EXISTING PUMPED
PRETREATMENT WASTE MANHOLE 104 AND 105; 105 TO 100**
SCALE: NOT TO SCALE

FOR REFERENCE ONLY

 RFI ENGINEERING, INC. 170 WEST GLENVIEW STREET BALTIMORE, MARYLAND 21230		NO. DATE BY DESCRIPTION	
A-E FIRM		REVISIONS	
PROJECT MANAGER		USDA	
DESIGNER		EPW	
CHECKED BY		PPW	
CONTRACT NO.		SAFETY & HEALTH	
50-3K15-2-2710		KJB	
REAL PROPERTY		PROJECT NO.	
		04-1036	
		DATE	
		28 APR 06	
		FACILITIES DIVISION	
		5601 SUNNYSIDE AVENUE	
		BELTSVILLE, MD. 20705-5100	
		SHEET	
		022	
		OF	
		040	



- | No. | Issue Description | Date |
|-----|-------------------------|----------|
| 1 | ISSUED FOR BID | 11/11/02 |
| 2 | Addendum #1 | 11/20/02 |
| 3 | Addendum #3 | 12/19/02 |
| 4 | Issued for Construction | 1/20/03 |
| | Record Drawings | 12/17/04 |

Sheet Titles:

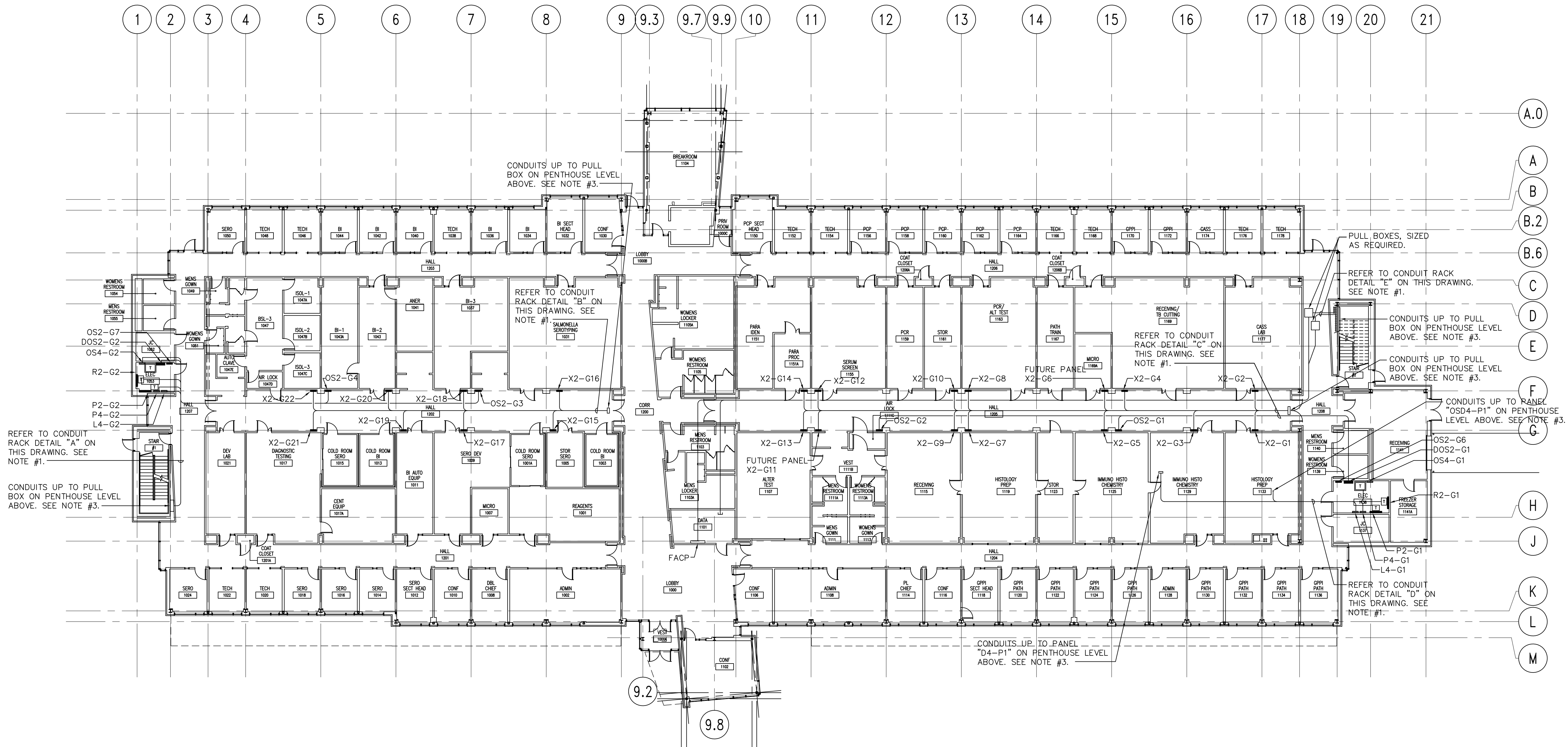
FLOOR PLAN-
UNDERGROUND-
GROUNDING AND
CONDUIT ROUTING

Original drawing is 30" x 42". Scale entities accordingly if reduced

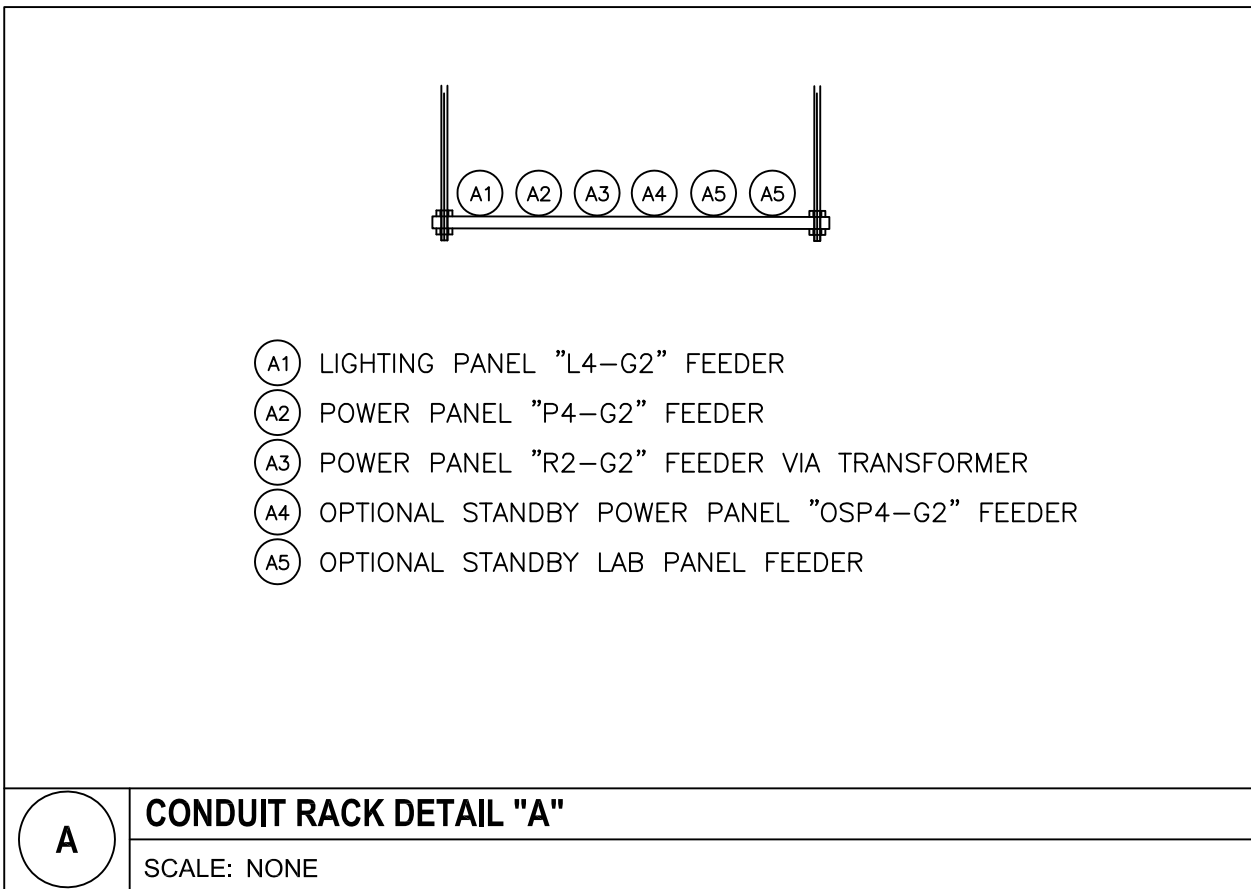
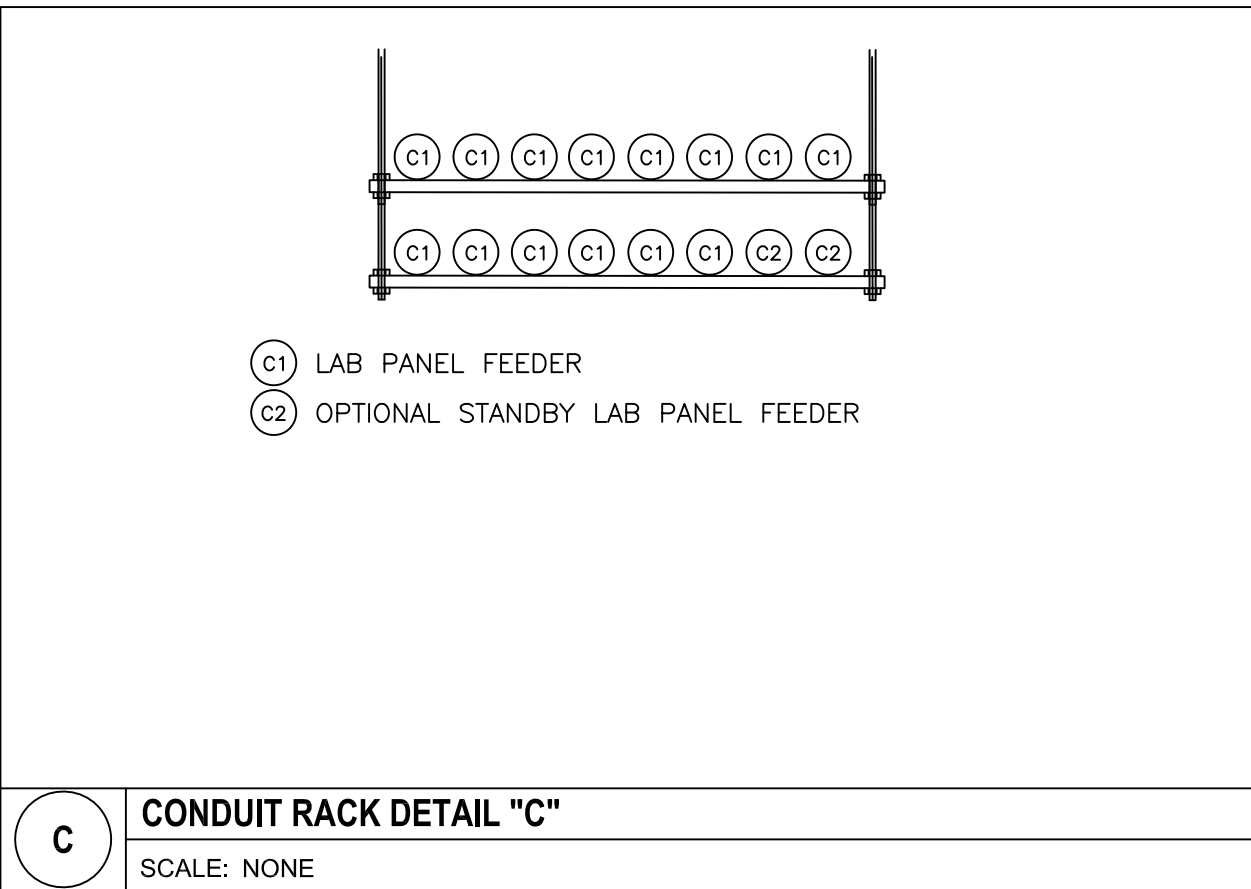
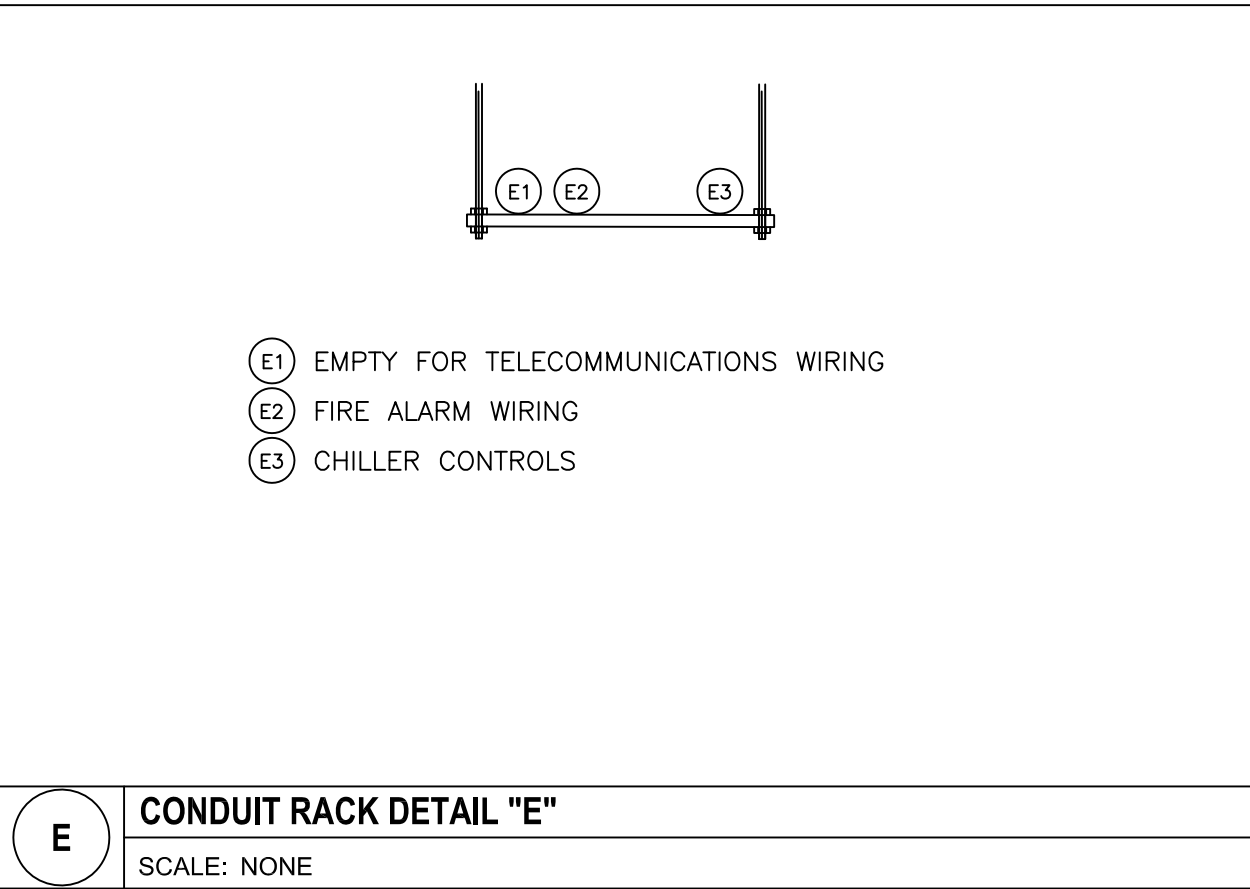
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E1-0-1

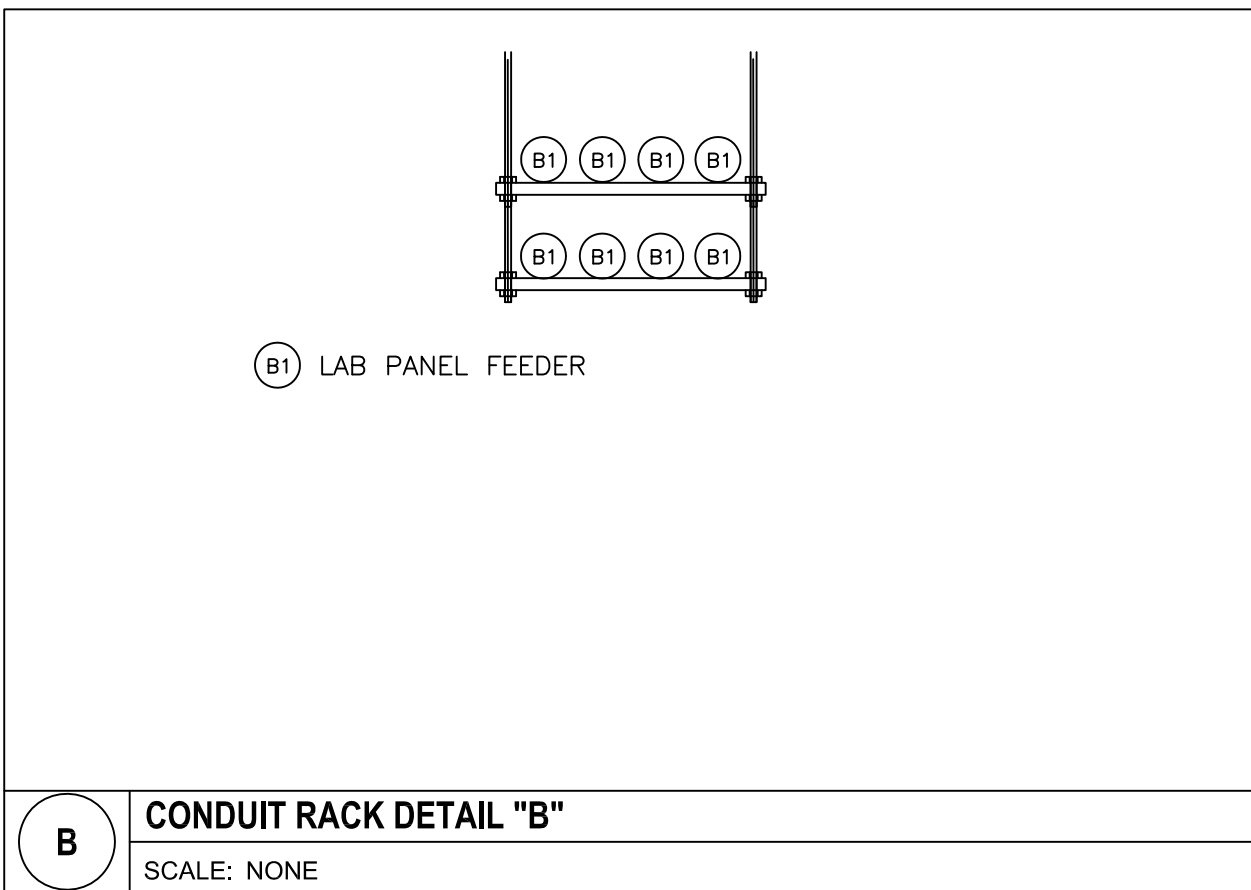
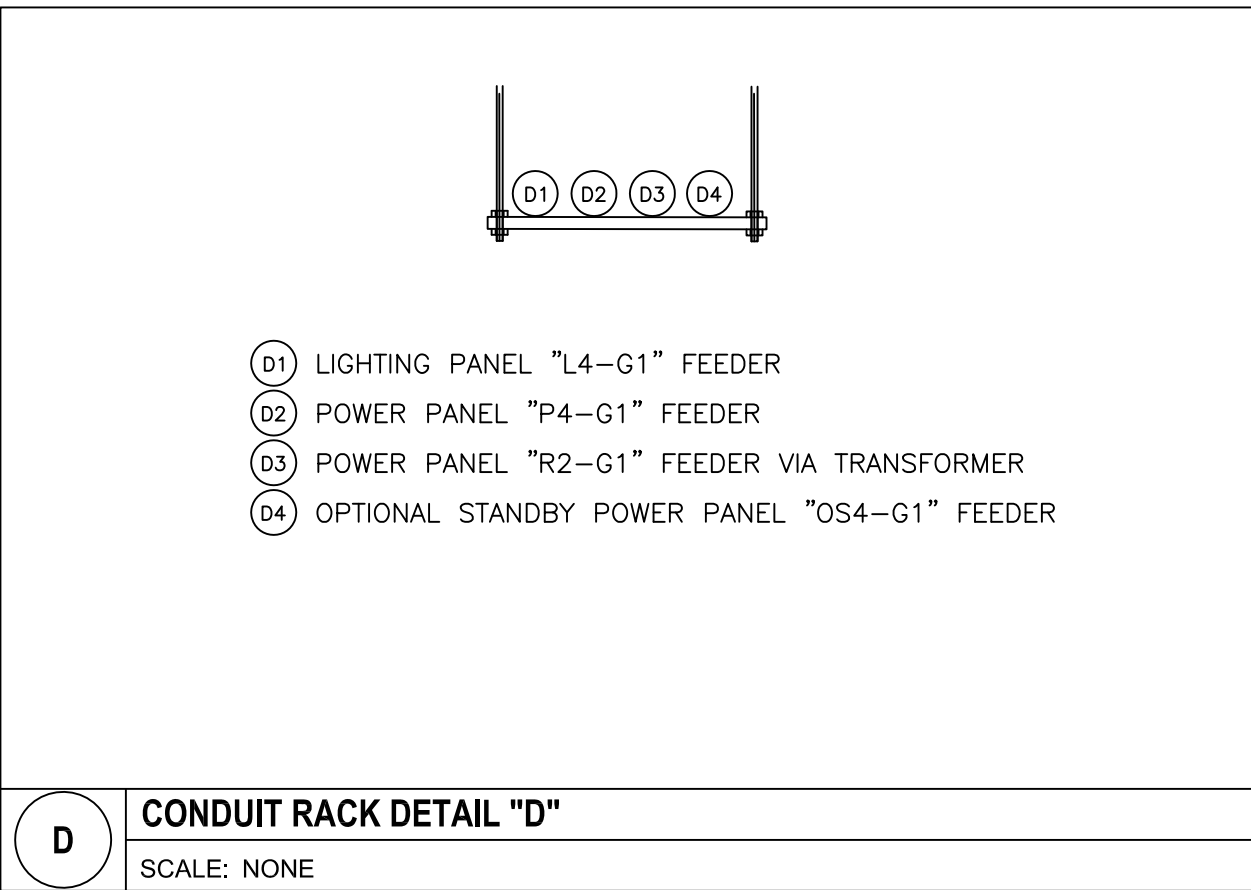
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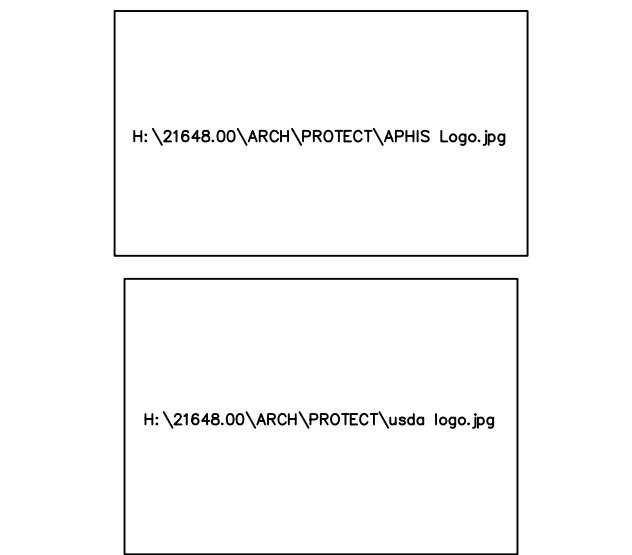
A FLOOR PLAN-GROUND LEVEL-CONDUIT ROUTING
1/16"=1'-0"



- NOTES:**
1. CONDUIT RACK DETAILS ARE INDICATED FOR COORDINATION PURPOSES ONLY. THE RACK DETAILS ARE INTENDED TO SHOW A GENERAL ARRANGEMENT OF CONDUITS AND THE INTENDED ROUTING. EXACT ROUTING AND ARRANGEMENT OF CONDUIT RACKS SHALL BE BY THE ELECTRICAL CONTRACTOR.
 2. REFER TO DRAWING E1.0.1 FOR CONTINUATION OF CONDUITS UNDERGROUND.
 3. REFER TO DRAWING E1.2.1 FOR CONTINUATION OF CONDUITS IN THE PENTHOUSE LEVEL.



FOR REFERENCE ONLY



Project Scope
**USDA APHIS
Supplemental Laboratory**
1800 Dayton Avenue
Ames, IA 50010

Prepared for
**USDA, APHIS, VS,
NVSL, DBL**
1800 Dayton Avenue
Ames, IA 50010

Contract No: 53-3K15-2-1700

hok ARCHITECTURE, ENGINEERING, PLANNING,
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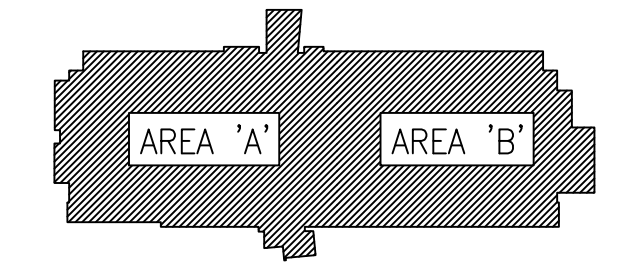
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Purchase, New York 10577

Key Plan



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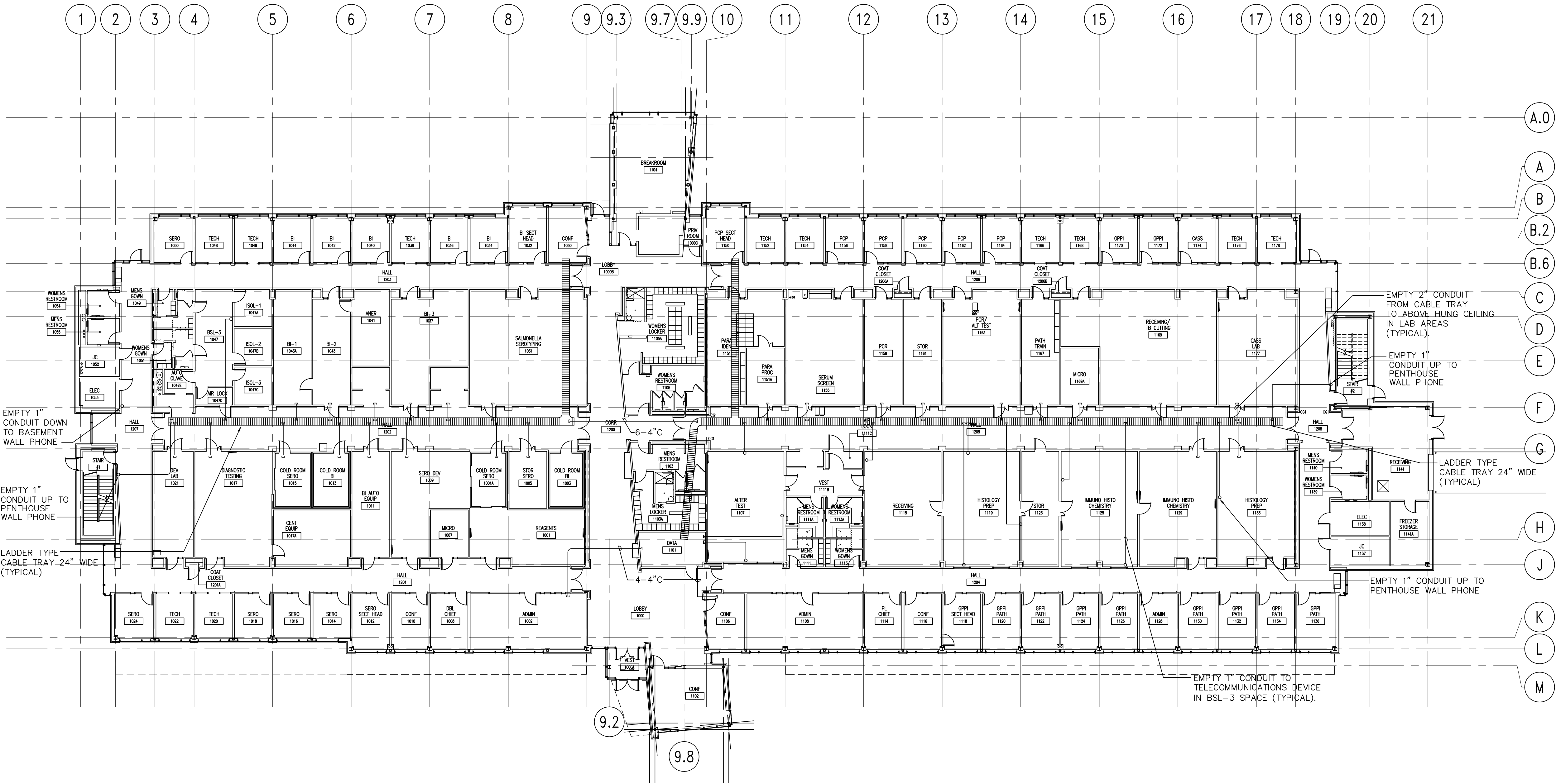
No.	Issue Description	Date
1	Issued for Bid	1/20/03
2	Record Drawings	12/17/04

Drawn by: AP Reviewed by: BW
Project No: 21648.00

Sheet Titles:
**FLOOR PLAN-
GROUND LEVEL-
CONDUIT ROUTING**

Original drawing is 30" x 42". Scale entities accordingly if reduced
Sheet Number:

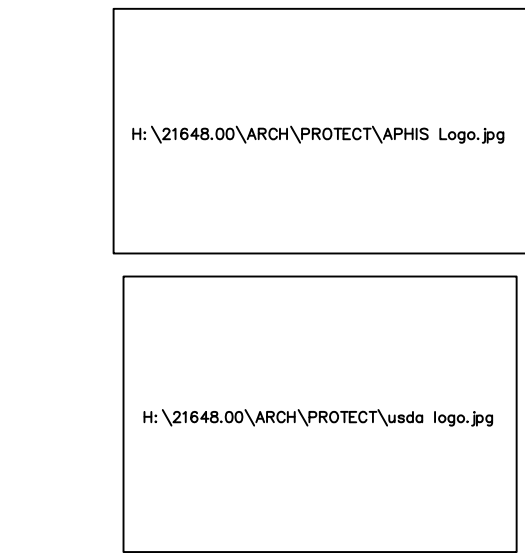
E1.1.1



**FLOOR PLAN—GROUND LEVEL—
TELECOMMUNICATIONS CABLE TRAY ROUTING**
1/16"=1'-0"

- NOTES:
- CABLE TRAY AND CONDUITS ARE INTENDED FOR COORDINATION PURPOSES ONLY. THE CABLE TRAY AND CONDUITS SHOW A GENERAL ARRANGEMENT AND INTENDED ROUTING FOR THE MAJOR TELECOMMUNICATIONS RACEWAYS. EXACT ROUTING AND ARRANGEMENT SHALL BE BY THE ELECTRICAL CONTRACTOR. THE PLAN DOES NOT INDICATE CONDUITS DROPS TO TELECOMMUNICATIONS DEVICES INSTALLED IN AREAS WITH ACCESSIBLE CEILING.
 - REFER TO THE ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF TELECOMMUNICATIONS DEVICES IN BSL-3 LAB AREAS.

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Ames, IA 50010

Prepared for
**USDA, APHIS, VS,
NVSL, DBL**
1800 Dayton Avenue
Ames, IA 50010

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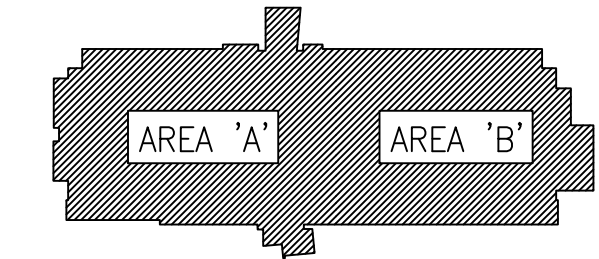
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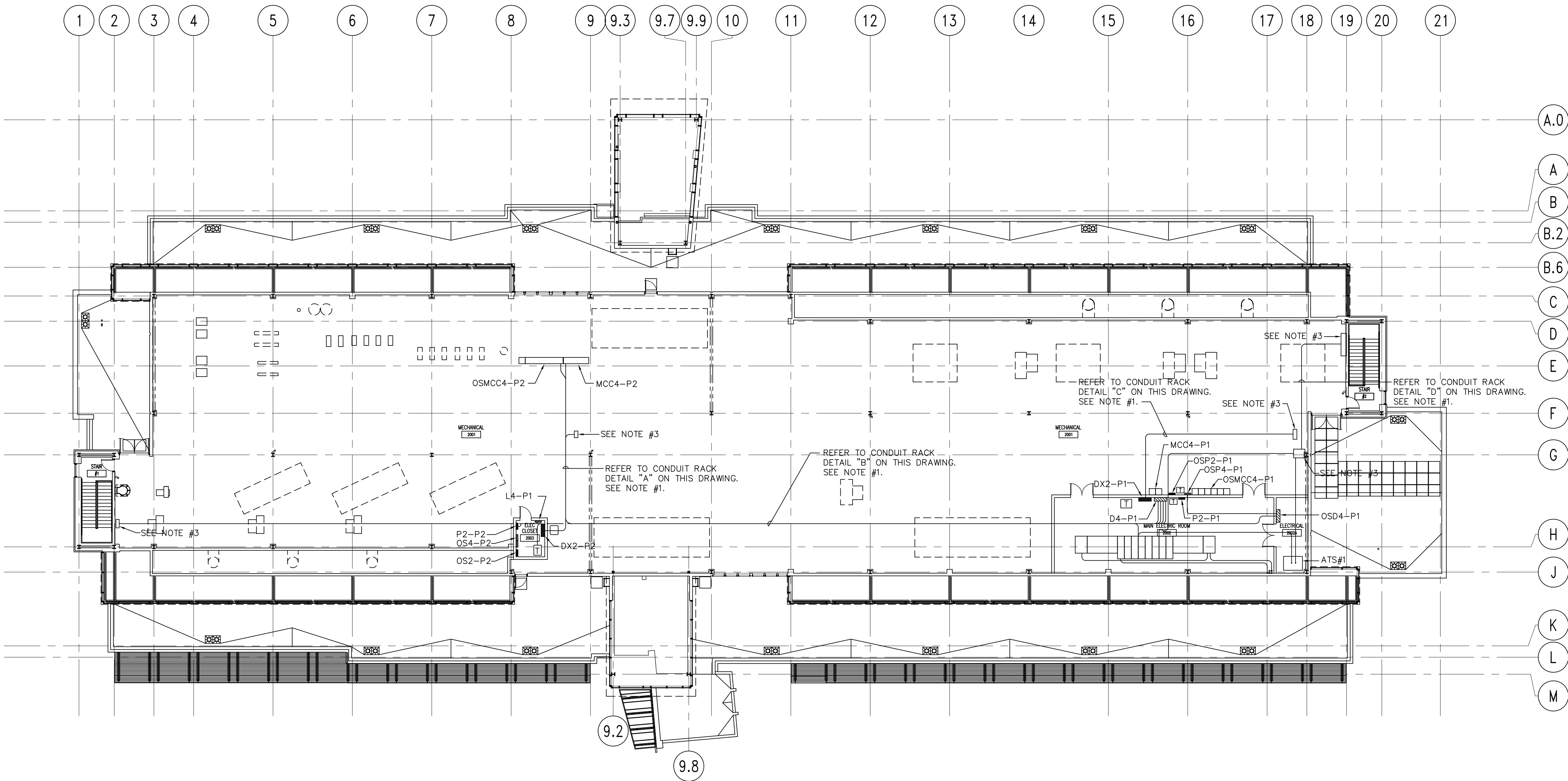
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No.	Issue Description	Date
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2	Record Drawings	12/17/04

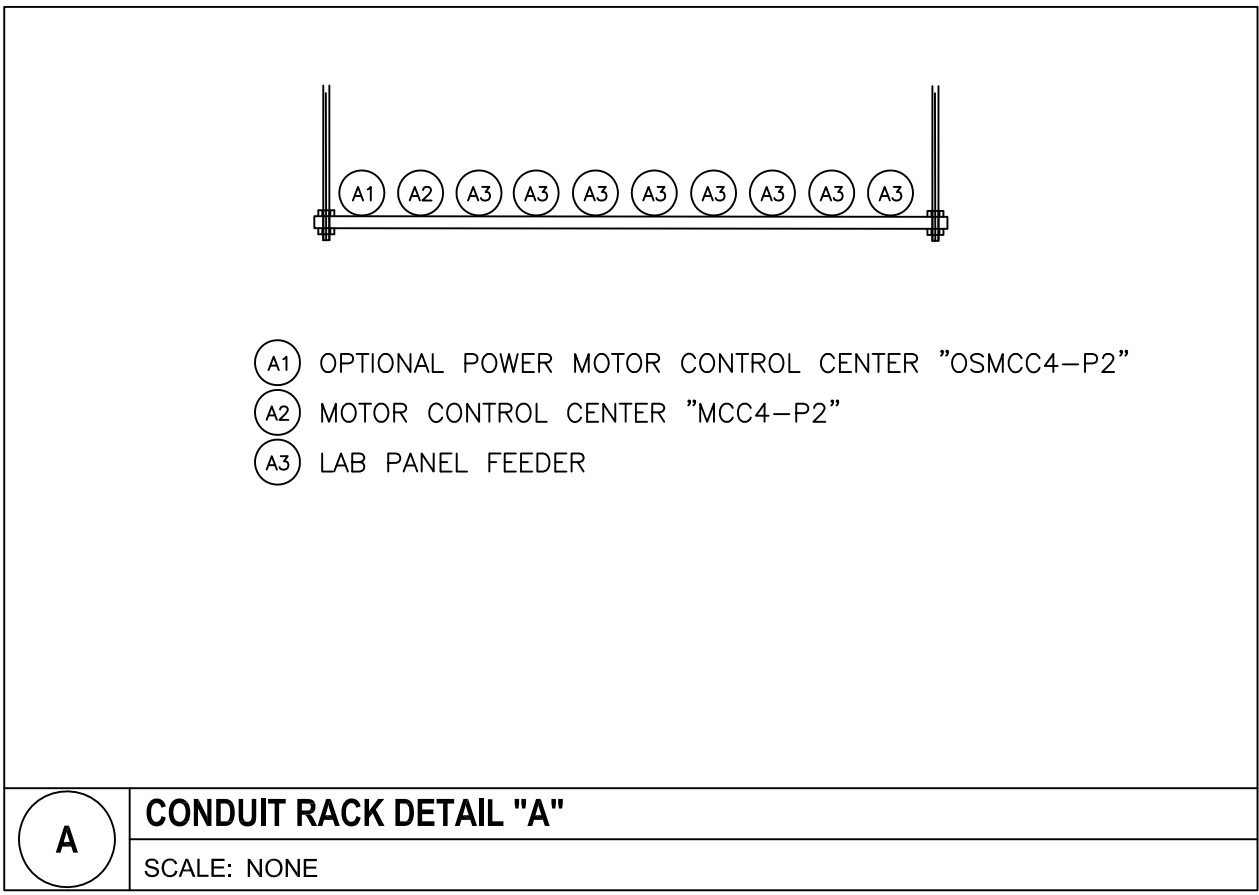
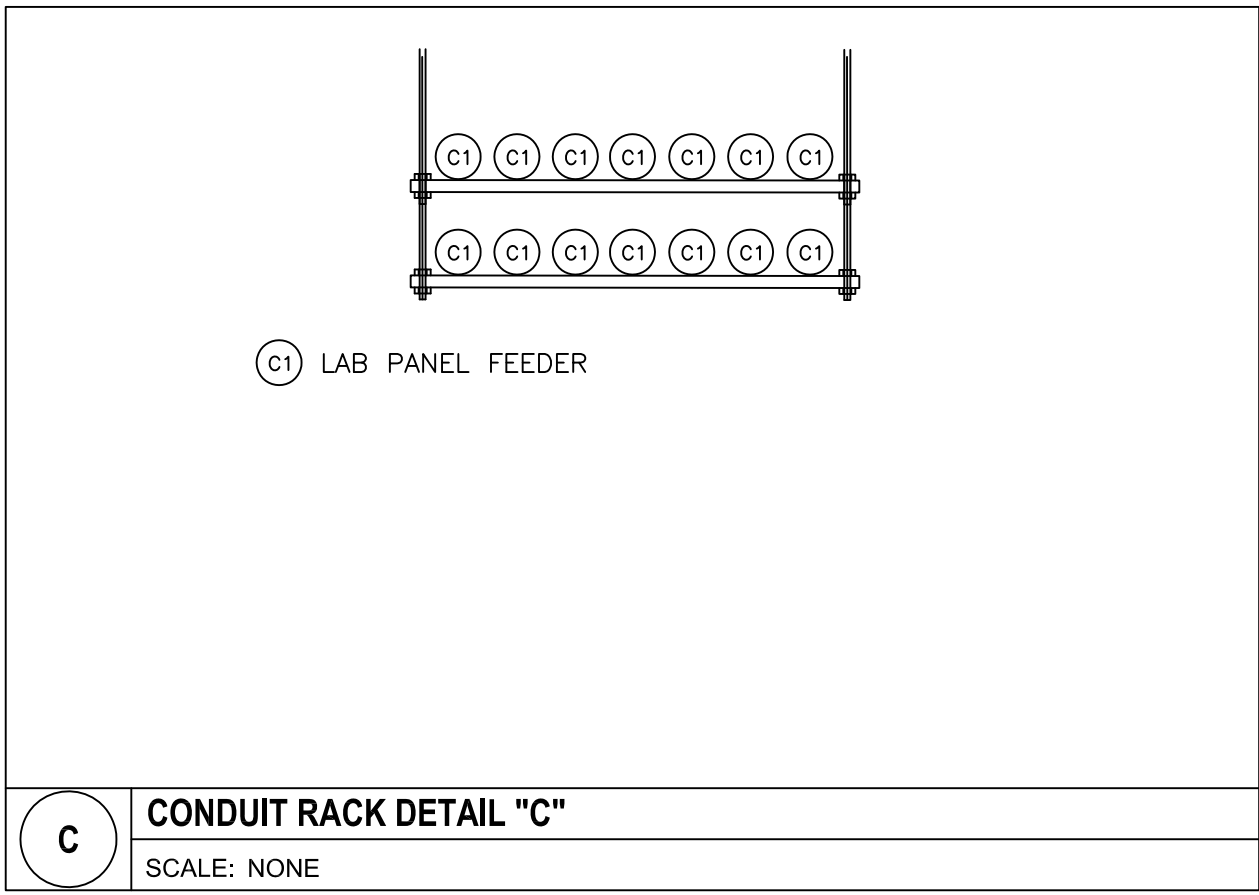
Drawn by: AP Reviewed by: BW
Project No: 21648.00

Sheet Titles:
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GROUND LEVEL-
TELECOMMUNICATIONS
CABLE TRAY ROUTING**
Original drawing is 30" x 42". Scale entities accordingly if reduced
Sheet Number:

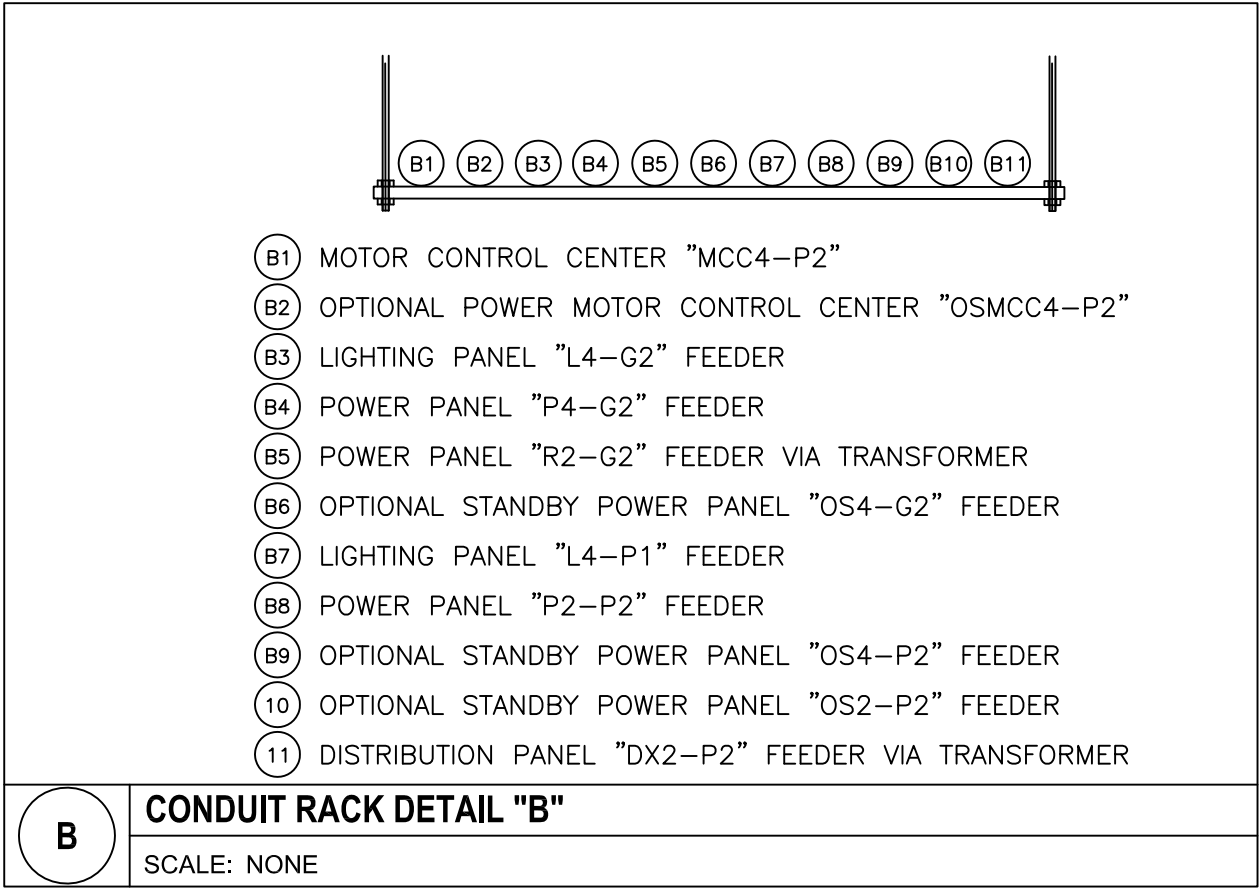
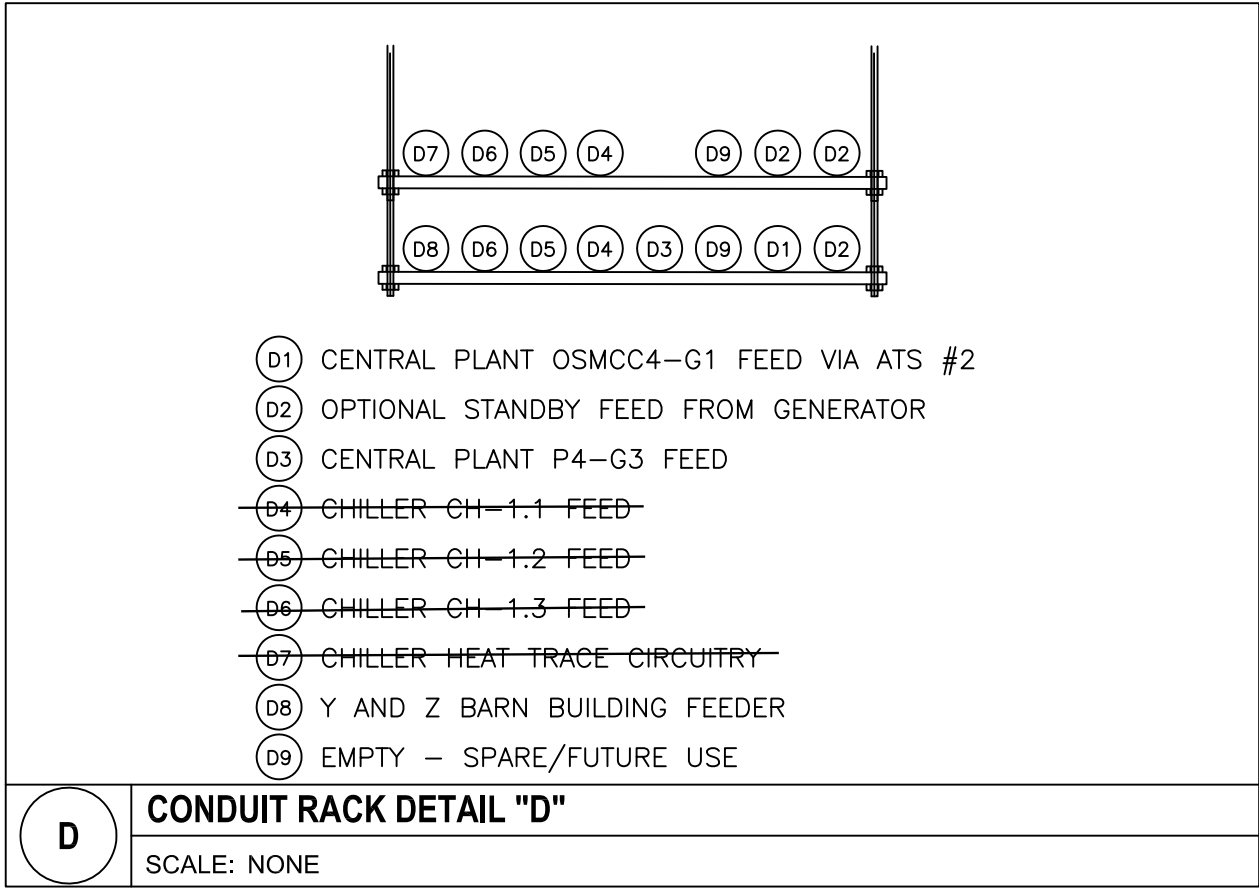
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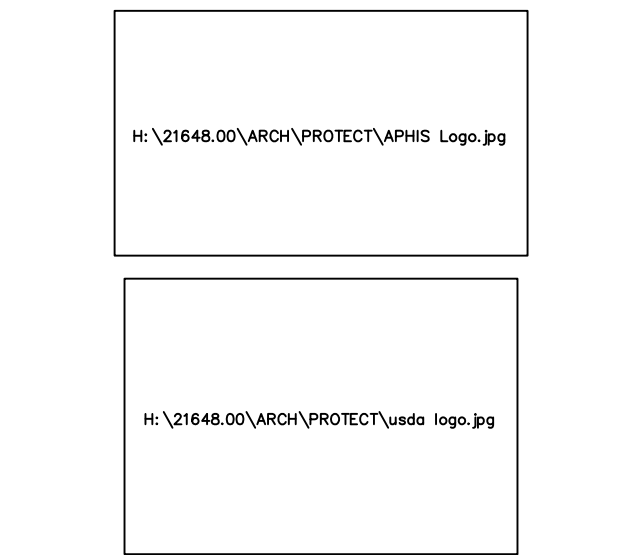
A FLOOR PLAN-PENTHOUSE LEVEL-CONDUIT ROUTING
1/16"=1'-0"
0 8 16 32 FT
N



- NOTES:**
- CONDUIT RACK DETAILS ARE INDICATED FOR COORDINATION PURPOSES ONLY. THE RACK DETAILS ARE INTENDED TO SHOW A GENERAL ARRANGEMENT OF CONDUITS AND THE INTENDED ROUTING. EXACT ROUTING AND ARRANGEMENT OF CONDUIT RACKS SHALL BE BY THE ELECTRICAL CONTRACTOR.
 - REFER TO DRAWING #E1.1.1 FOR CONTINUATION OF CONDUITS ON THE GROUND FLOOR LEVEL.
 - PROVIDE PULL BOXES, SIZED AS REQUIRED.



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Project Scope
**USDA APHIS
Supplemental Laboratory**
1800 Dayton Avenue
Ames, IA 50010

Prepared for
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NVSL, DBL**
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Ames, IA 50010

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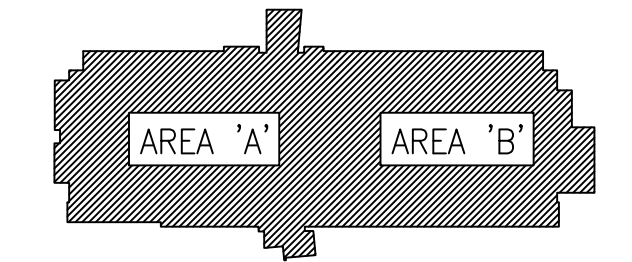
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Key Plan



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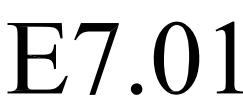
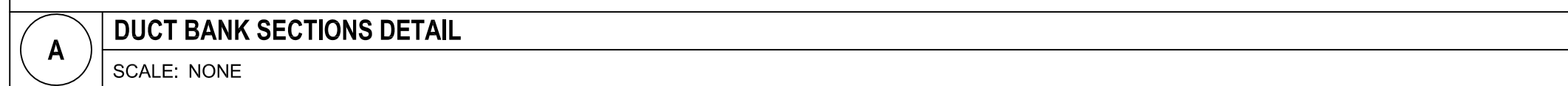
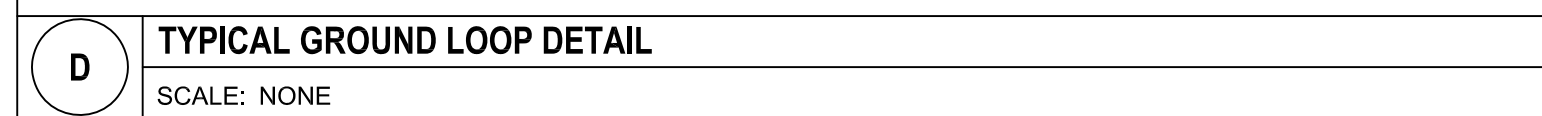
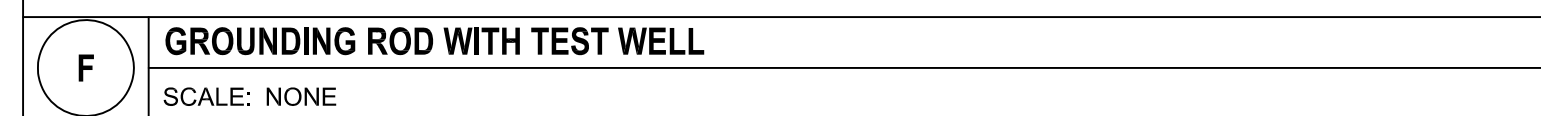
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2	Record Drawings	12/17/04

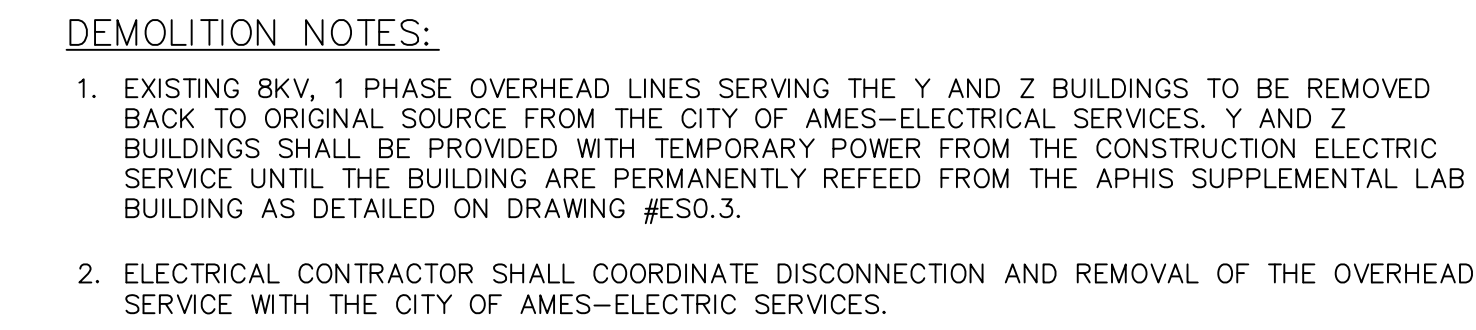
Drawn by: AP Reviewed by: BW
Project No: 21648.00

Sheet Titles:
**FLOOR PLAN-
PENTHOUSE LEVEL-
CONDUIT ROUTING**

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Sheet Number:

E1.2.1





Contract No: 53-3K15-2-1700

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No.	Issue Description	Date
	Issued for Bid	1/20/03
	Drawing not issued	10/??/03
	Record Drawings	12/17/04

Sheet Titles:

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Sheet Number:

ES0.1



1. EXACT LOCATION OF ALL DUCTBANKS, MANHOLES, HANDHOLES SHALL BE COORDINATED WITH SITE CIVIL WORK. REFER TO CIVIL DRAWINGS FOR EXISTING UNDERGROUND UTILITY SERVICES AND ADDITIONAL SITE GENERAL NOTES.
2. REFER TO DETAIL "A" ON DRAWING #E7.01 FOR ALL DUCTBANK SECTIONS.
3. REFER TO DETAIL "E" ON DRAWING #E7.02 FOR ELECTRIC MANHOLE DETAIL.
4. ELECTRICAL CONTRACTOR SHALL BOND BARE COPPER GROUND WIRE WITHIN DUCTBANK TO GROUND RING IN MANHOLE EMH-1.
5. REFER TO DRAWING #E4.02 FOR FEEDER SIZES.
6. REFER TO DRAWING #E2.1.3 FOR CONTINUATION AND BRANCH CIRCUITY.
7. REFER TO DETAIL "H" ON DRAWING #E7.02 FOR HENNESSEY ENCLOSURE DETAILS.
8. REFER TO DETAIL "A" ON DRAWING #E7.02 FOR ELECTRIC HANDHOLE DETAIL.
9. EXISTING PANELBOARDS SHALL BE MODIFIED SO THAT BUILDING BONDING OF THE NEUTRAL AND GROUND ORIGINATES AT THE HENNESSEY ENCLOSURE.

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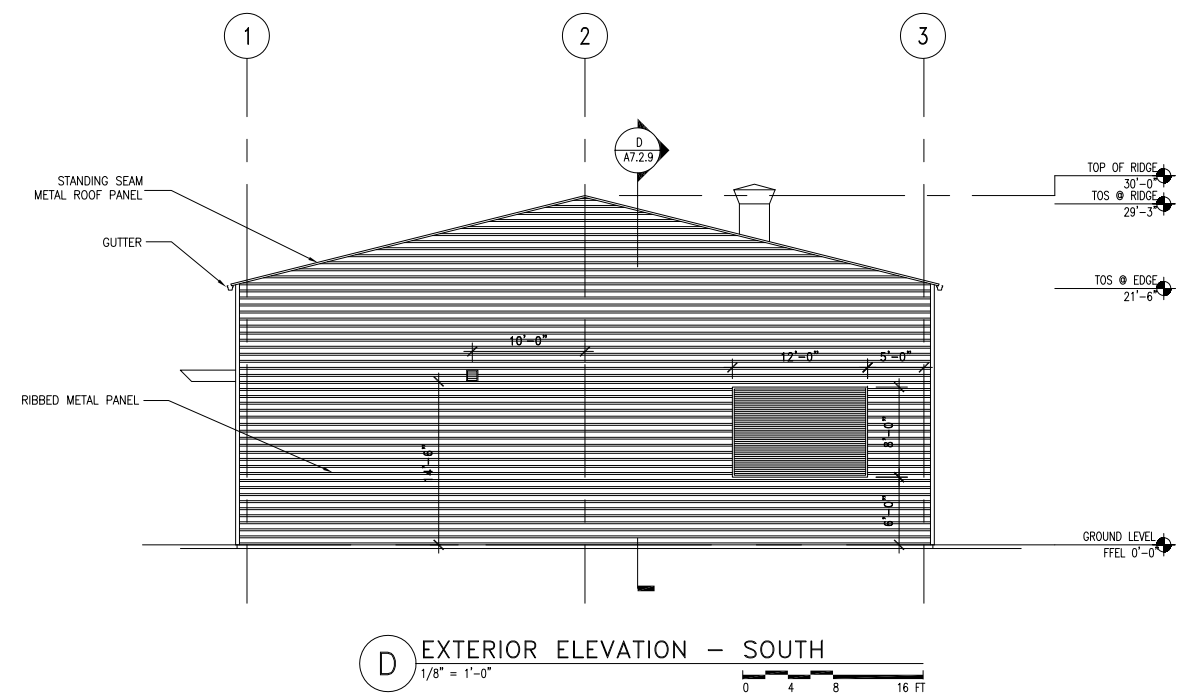
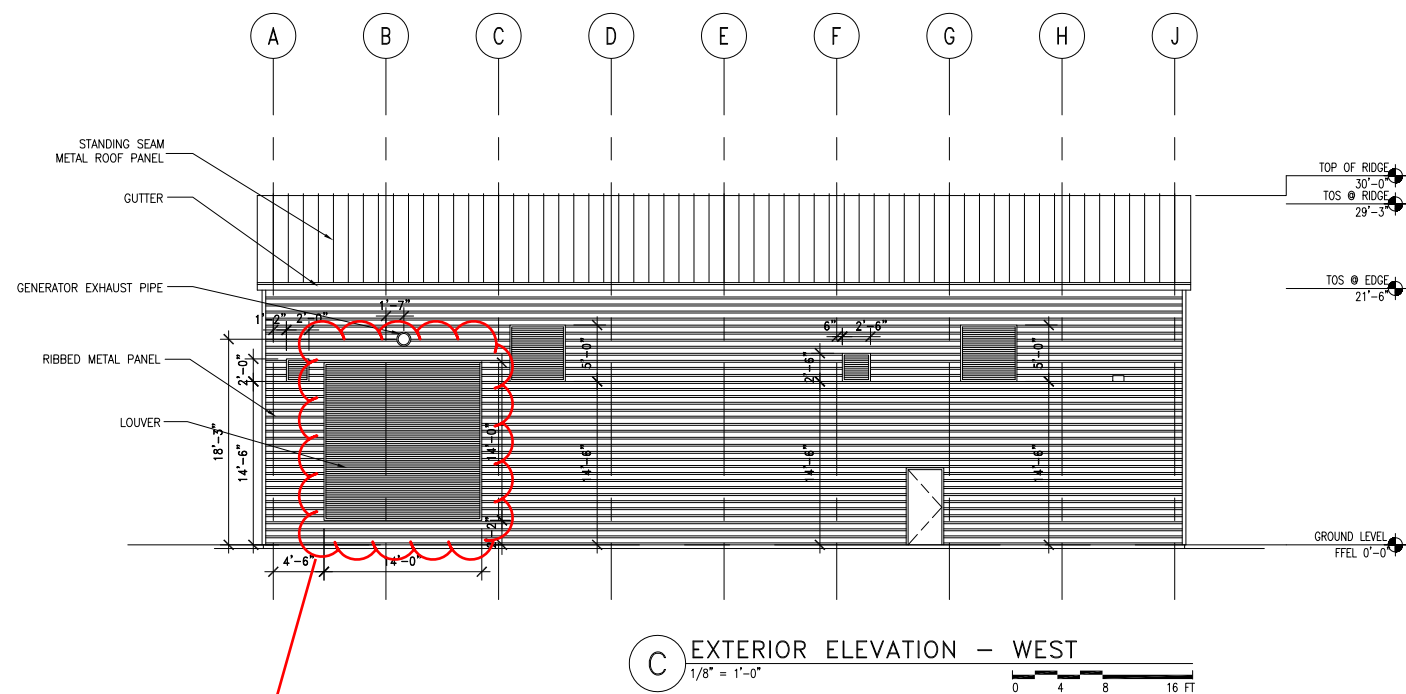
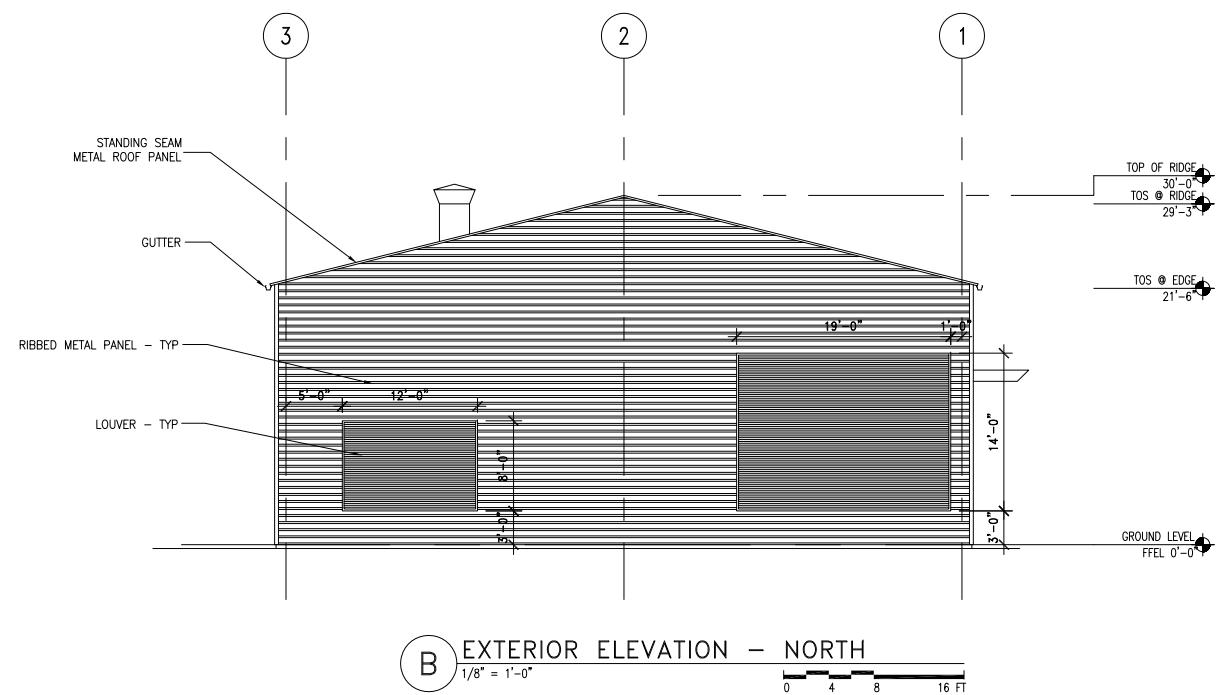
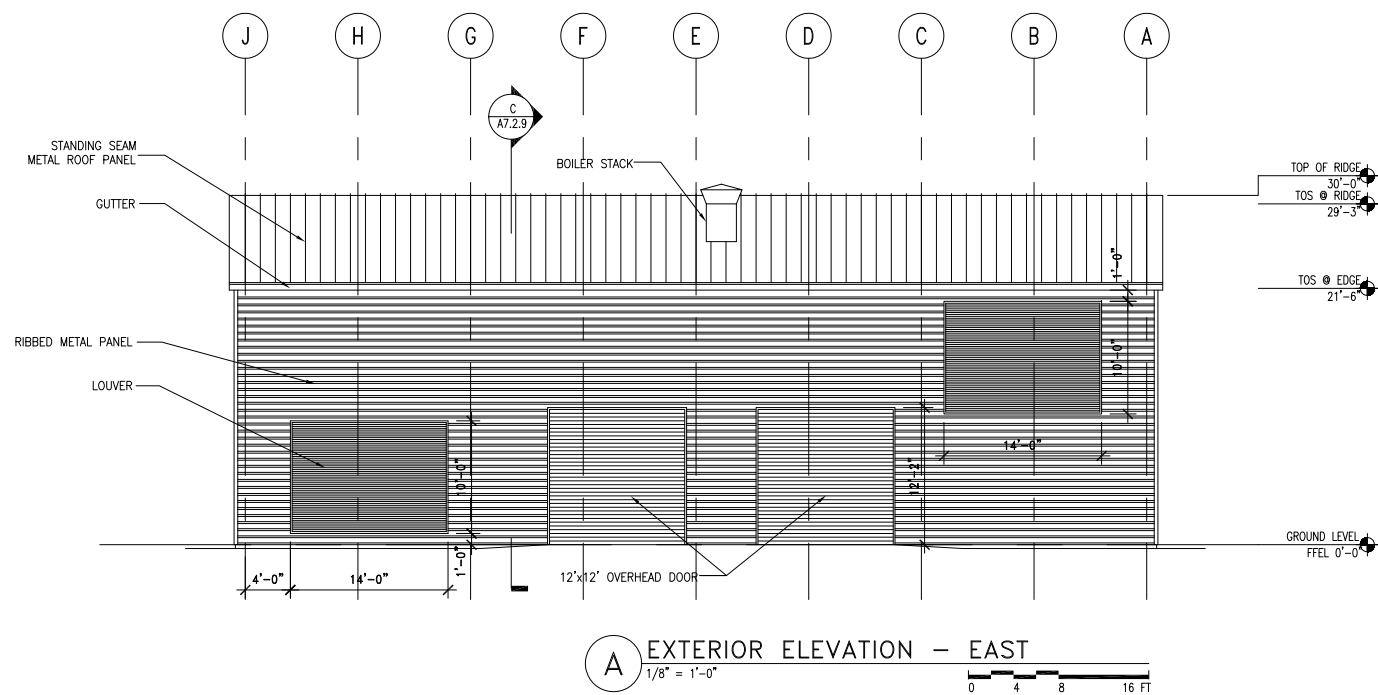
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No.	Issue Description	Date
	Issued for Bid	1/20/03
	Record Drawings	12/17/03

ES0.3

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z:\2_Buidling Information [Bldg 02] Laboratory Building [Bldg 2] As-Built [Architectural] [dwg] A5.0.2.dwg Mar 07, 2022 08:03am Brandon Keith



Generator can be removed through this opening once this section is removed.

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Project Scope
USDA APHIS
Supplemental Laboratory
1800 Dayton Avenue
Ames, IA 50010

Prepared for
USDA, APHIS, VS,
NVSL, DBL
1800 Dayton Avenue
Ames, IA 50010

Contract No: 53-3K15-2-1700

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Key Plan

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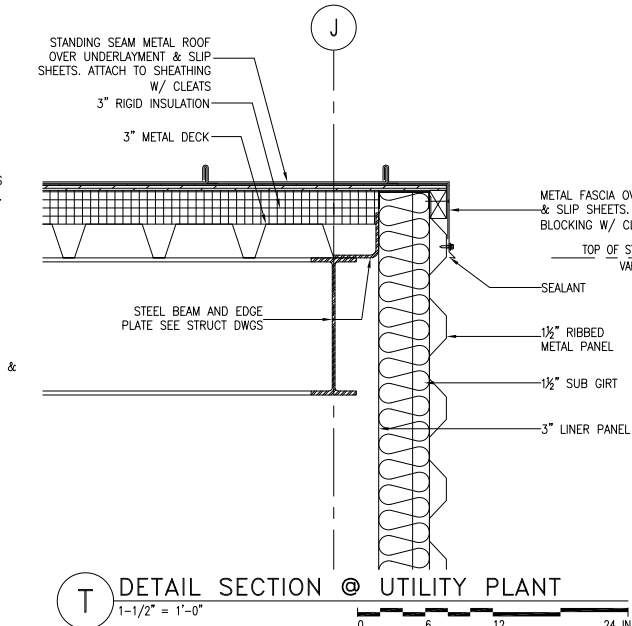
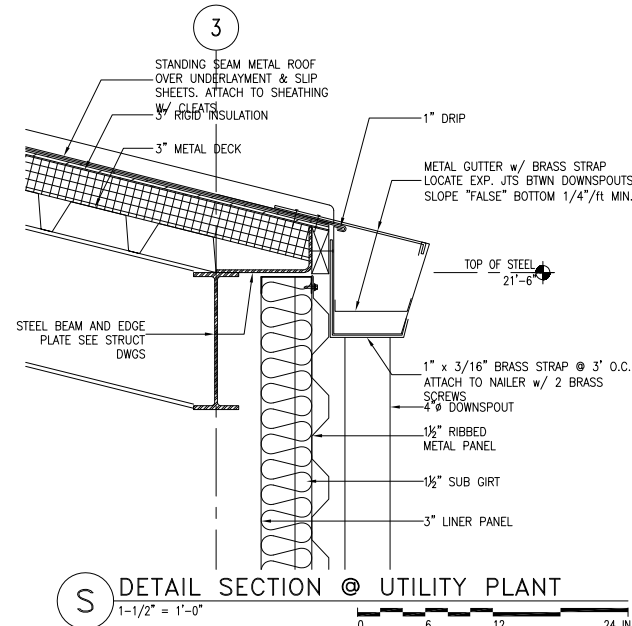
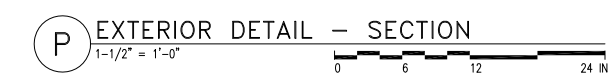
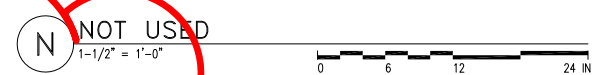
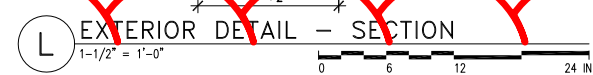
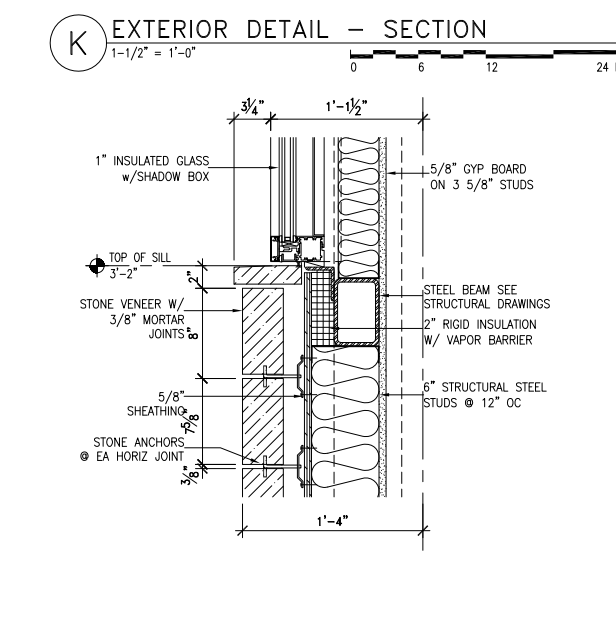
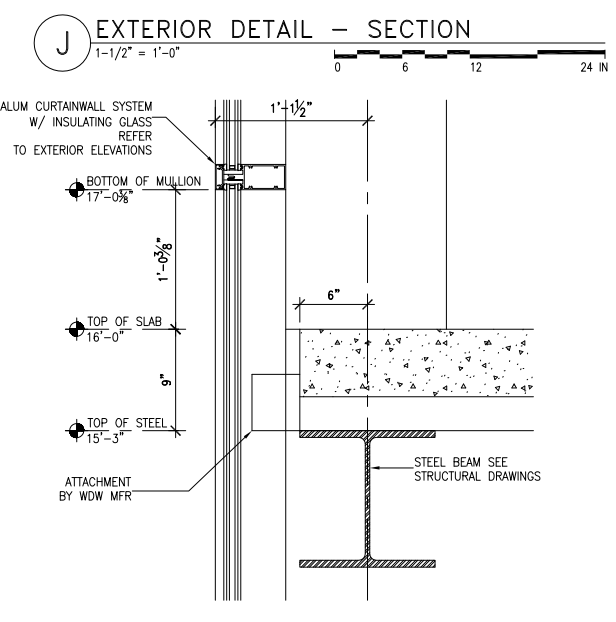
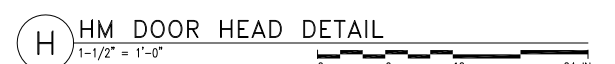
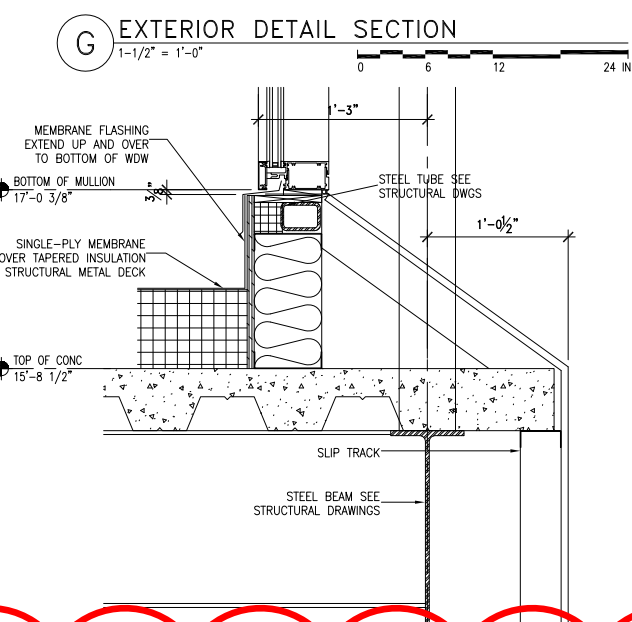
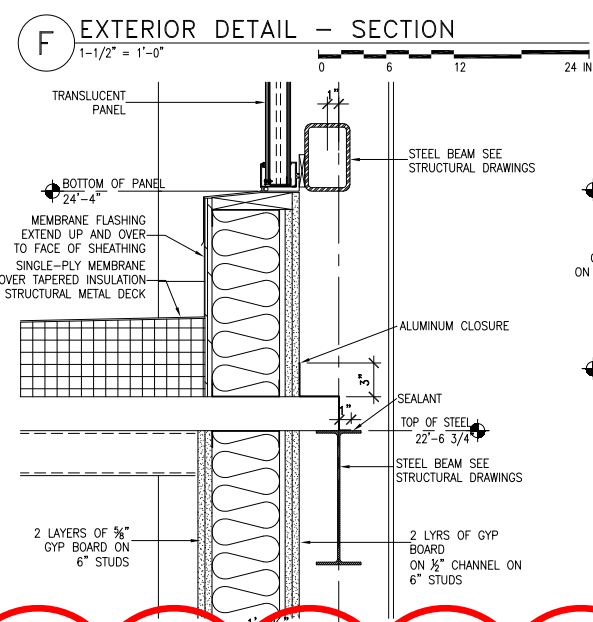
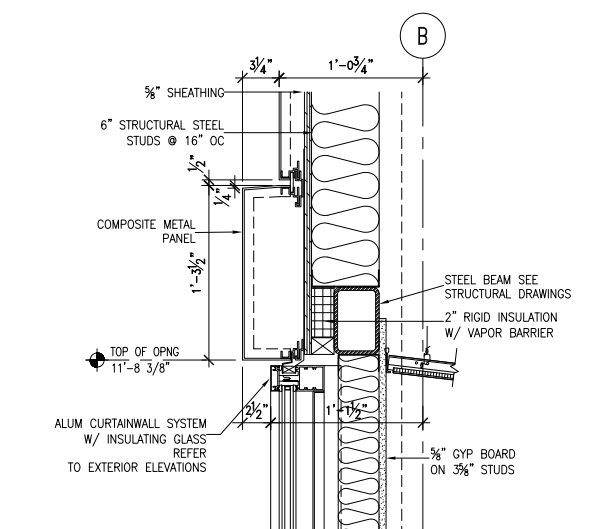
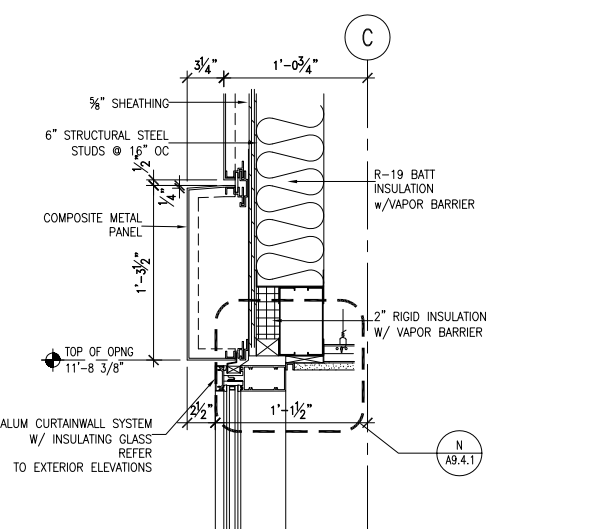
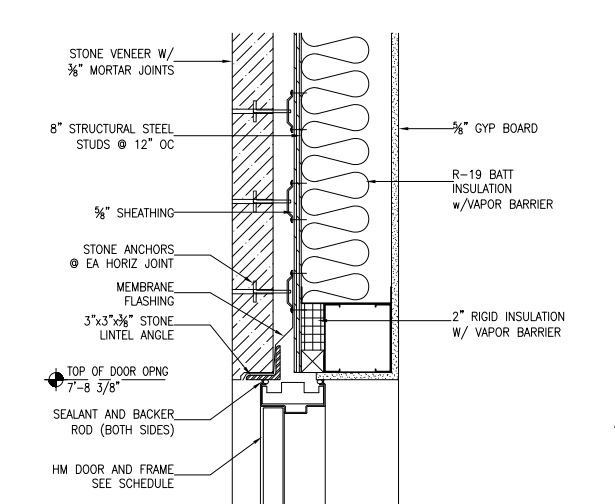
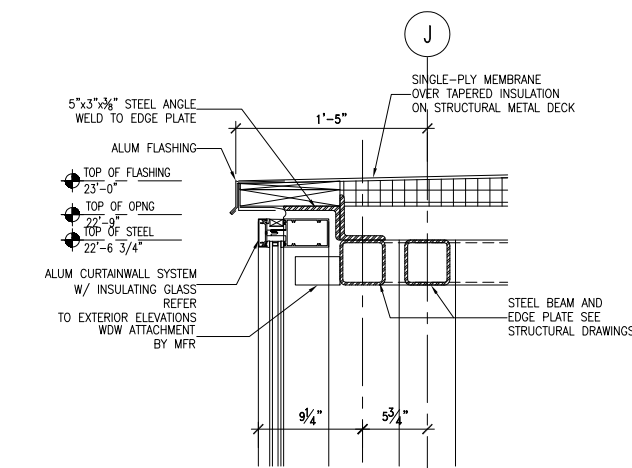
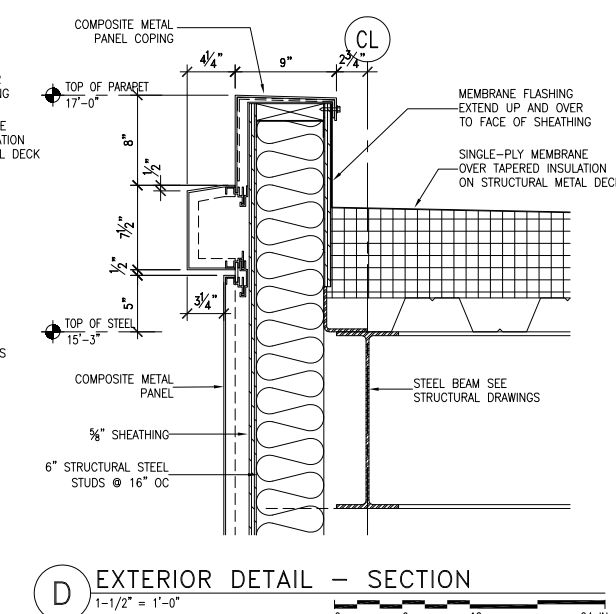
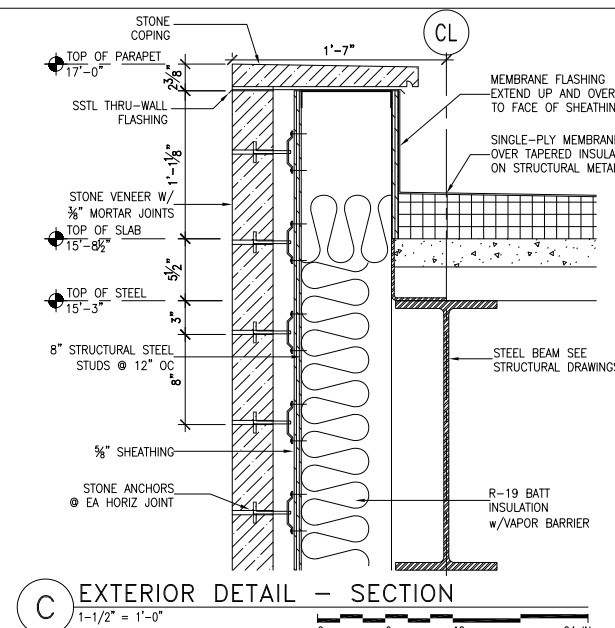
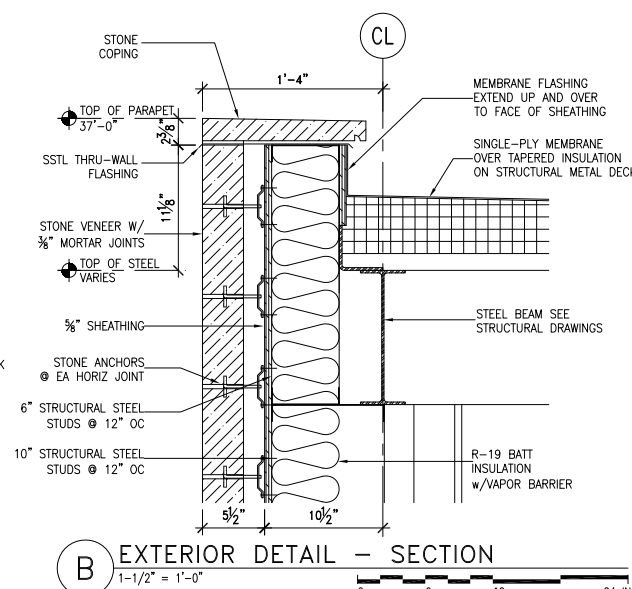
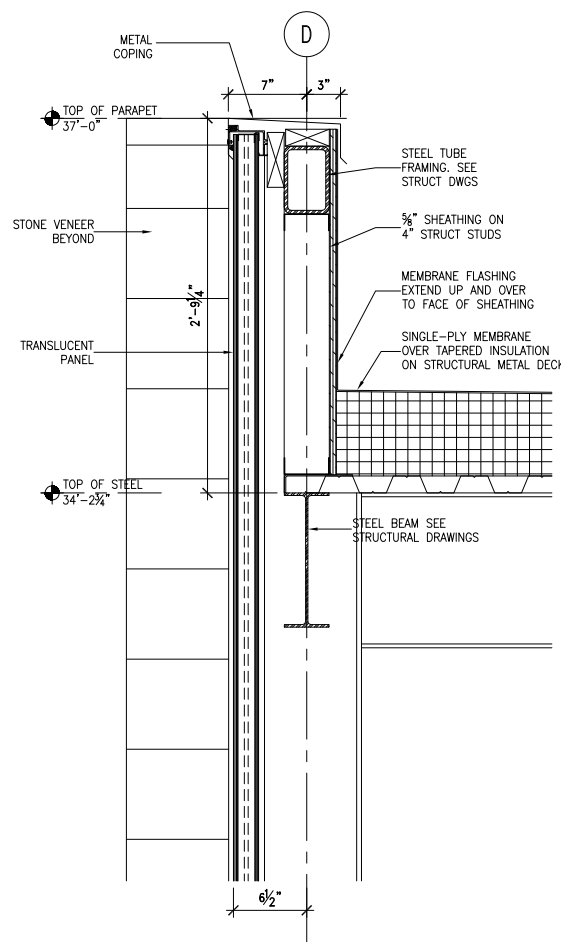
No.	Issue Description	Date
1	Issued for Bid	1/20/2003
2	Bulletin #7	6/9/2003

RECORD SET 1/6/2005
Drawn by: b. powers Reviewed by:
Project No: 02-0350-00

Sheet Titles:
EXTERIOR ELEVATIONS -
TEMPORARY CENTRAL
UTILITY PLANT

Original drawing is 30" x 42". Scale entities accordingly if reduced
Sheet Number:

A5.0.2




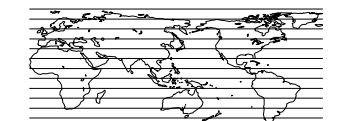
FOR REFERENCE ONLY

A8.2.4

Project Scope
USDA APHIS
Supplemental Laboratory
1800 Dayton Avenue
Ames, IA 50010

Prepared for
USDA, APHIS, VS,
NVSL, DBL
1800 Dayton Avenue
Ames, IA 50010

Contract No: 53-3K15-2-1700



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Key Plan

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No.	Issue Description	Date
	Issued for Bid	1/20/2003
1	Bulletin #7	6/9/2003

RECORD SET	1/6/2005
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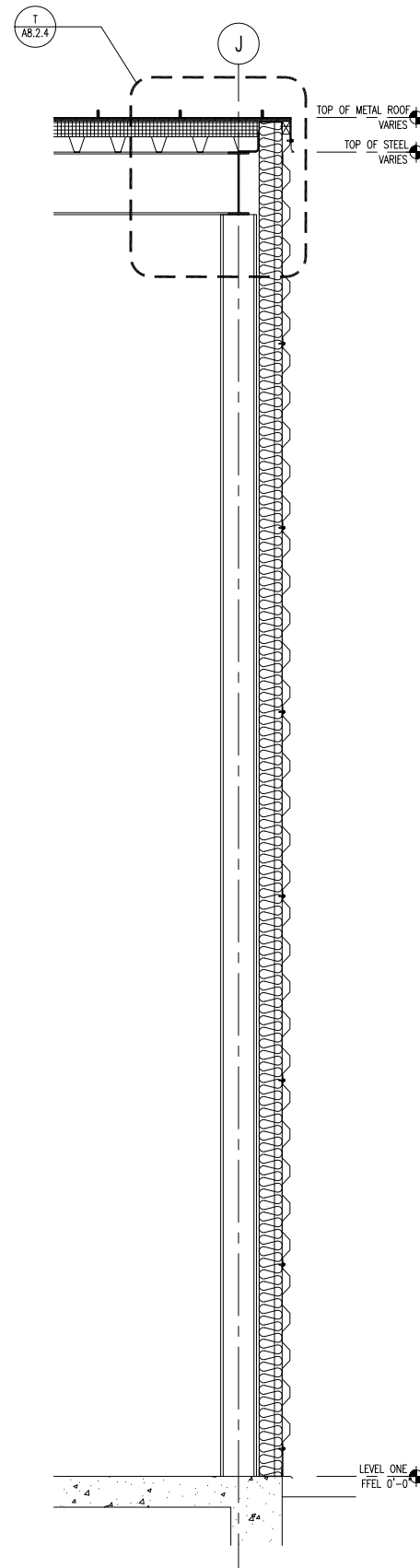
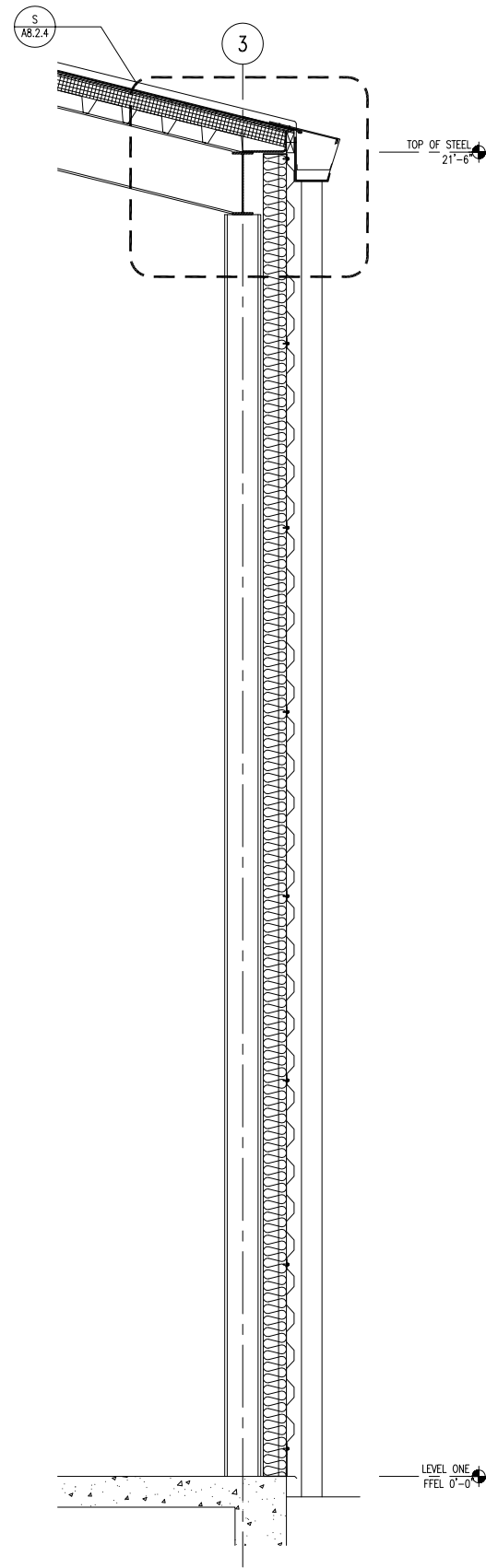
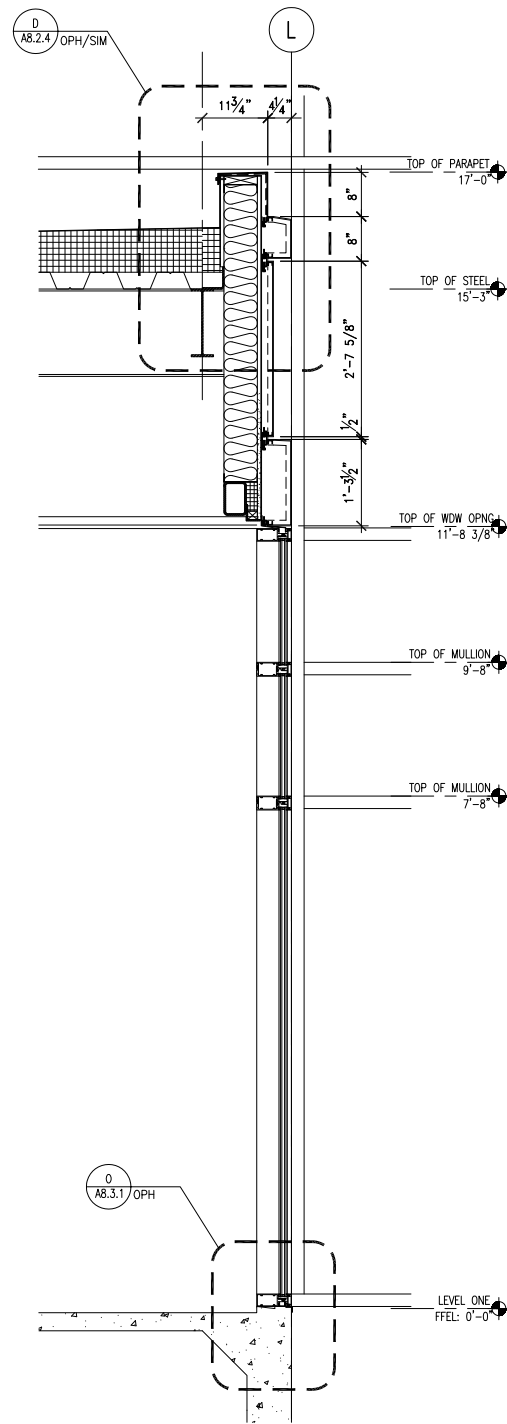
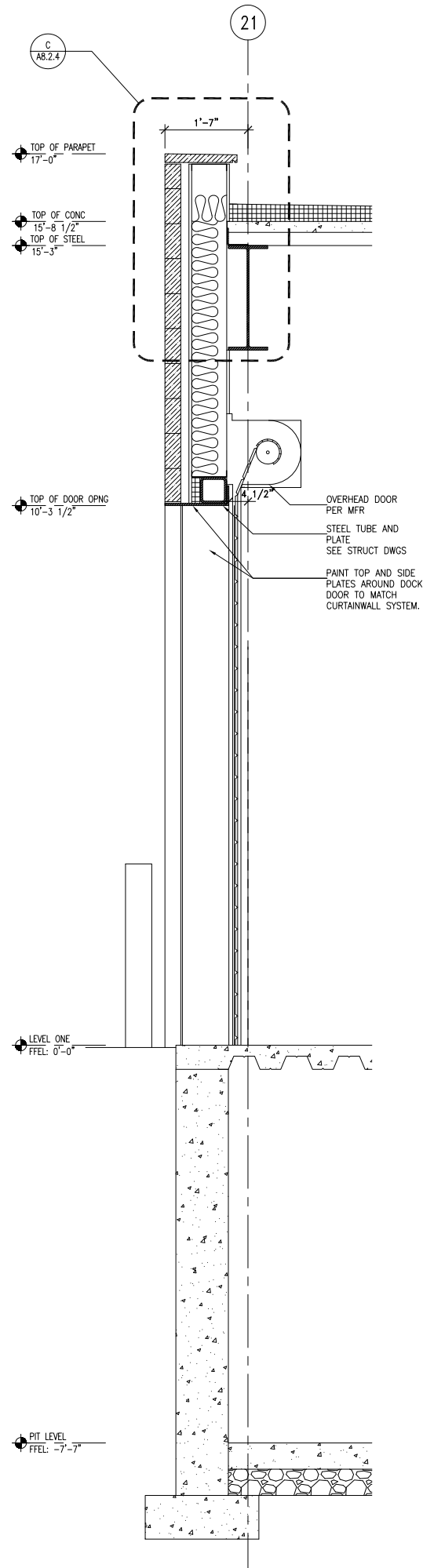
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Project No: 02-0350-00

Sheet Titles:

EXTERIOR DETAILS -
SECTION

Original drawing is 30" x 42". Scale entities accordingly if reduced

z:\2. Building Information [Bldg 021 Laboratory Building [Bldg 21 As-Built [Architectural [dwg] A7.2.2.dwg Mar 07, 2022 08:08am Brandon Keith



A WALL SECTION
3/4" = 1'-0"

B WALL SECTION
3/4" = 1'-0"

C WALL SECTION AT
TEMPORARY CENTRAL UTILITY PLANT
3/4" = 1'-0"

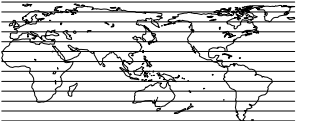
D WALL SECTION AT
TEMPORARY CENTRAL UTILITY PLANT
3/4" = 1'-0"

FOR REFERENCE ONLY

Project Scope
USDA APHIS
Supplemental Laboratory
1800 Dayton Avenue
Ames, IA 50010

Prepared for
USDA, APHIS, VS,
NVSL, DBL
1800 Dayton Avenue
Ames, IA 50010

Contract No: 53-3K15-2-1700



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Key Plan

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No.	Issue Description	Date
Issued for Bid		1/20/2003
1	Bulletin #4	4/24/2003
2	Bulletin #7	6/9/2003

RECORD SET 1/6/2005

Drawn by: a. andersonReviewed by:

Project No: 02-0350-00

Sheet Titles:
WALL SECTIONS

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A7.2.9