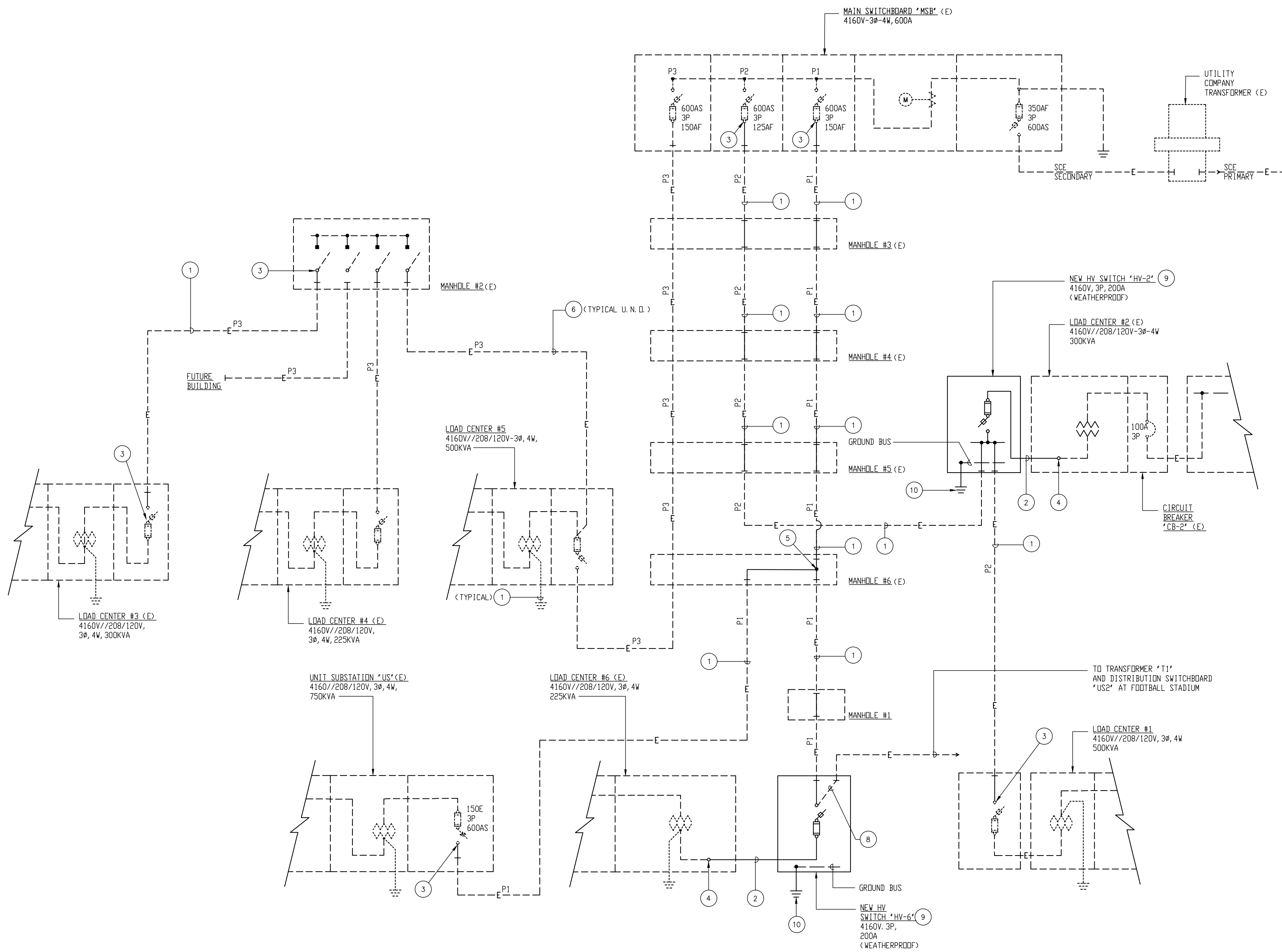


PLAN NOTES

- 1 DISCONNECT AND REMOVE EXISTING 5KV COPPER CONDUCTORS FROM EXISTING UNDERGROUND CONDUIT. CLEAN-OUT AND MANDREL EXISTING CONDUITS FOR THE INSTALLATION OF THE NEW CONDUCTORS. PROVIDE NEW 3 # 4/0 5KV. COPPER, 133% EPR INSULATION, COPPER TAPE SHIELDED POWER CABLE AND 1 # 2 GROUND CONDUCTOR AND PULL THROUGH EXISTING CONDUITS AND MANHOLES AND TERMINATE AS INDICATED.
- 2 PROVIDE 3 # 4/0 5KV. COPPER, 133% INSULATION, COPPER TAPE SHIELDED POWER CABLE AND 1 # 2 GROUND CONDUCTORS IN 4" CONDUIT.
- 3 TERMINATE NEW CONDUCTORS ON EXISTING 5KV SWITCH LUGS.
- 4 TERMINATE NEW CONDUCTORS ON EXISTING TRANSFORMER LUGS.
- 5 PROVIDE NEW WATERPROOF SPLICE INSIDE EXISTING MANHOLE.
- 6 EXISTING 5KV CONDUIT AND CONDUCTORS TO REMAIN.
- 7 EXISTING GROUNDING SYSTEM TO REMAIN.
- 8 DISCONNECT EXISTING 5KV CONDUCTORS FROM EXISTING 5KV OIL FUSE CUT-OUT SWITCH BEING REPLACED. EXTEND EXISTING CONDUCTORS AND RE-TERMINATE ON TO NEW 5KV SWITCH.
- 9 DISCONNECT AND REMOVE EXISTING 5KV OIL FUSE CUT-OUT SWITCH. PROVIDE NEW 5KV SWITCH AND CONNECT AS INDICATED TO RESTORE POWER TO EXISTING 5KV TRANSFORMER EQUIPMENT.
- 10 PROVIDE 1 # 2 GROUND AND BOND TO EXISTING TRANSFORMER GROUNDING SYSTEM.



NOTE:
ALL WORK SHOWN DASHED IS EXISTING. ALL ELSE SHALL BE PROVIDED AS PART OF THIS CONTRACT.

SINGLE LINE DIAGRAM SCALE: NONE 1



Rev. #	Description	Date

studlow
ARCHITECTURE + ENGINEERING
516 Encinitas Blvd. Ste. 201, Encinitas, California 92024
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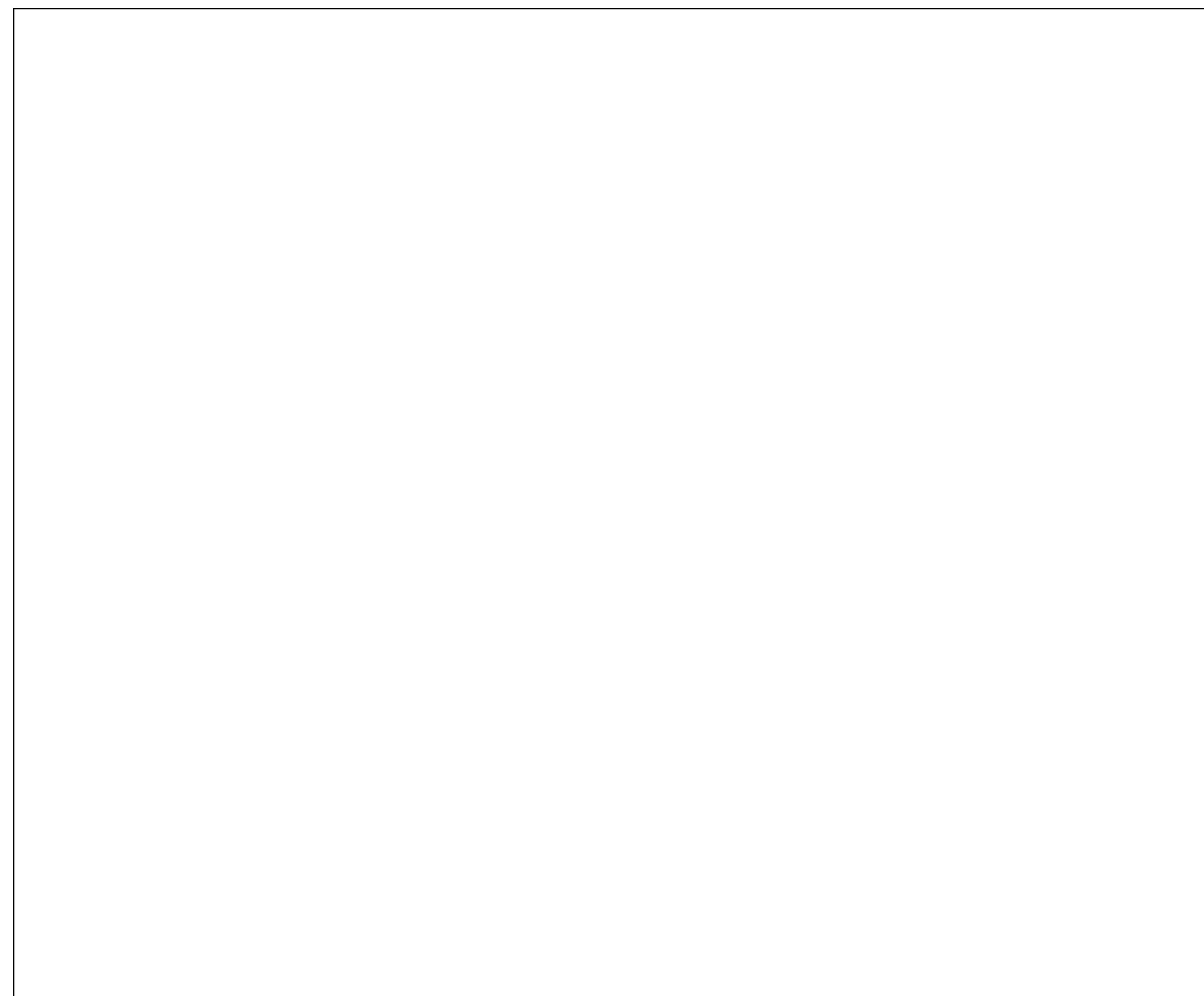
UNIVERSITY HIGH SCHOOL
HIGH VOLTAGE REPLACEMENT
IRVINE UNIFIED SCHOOL DISTRICT

SINGLE LINE
DIAGRAM

Drawn:
FBA
Checked:
FBA
Date:

Job:

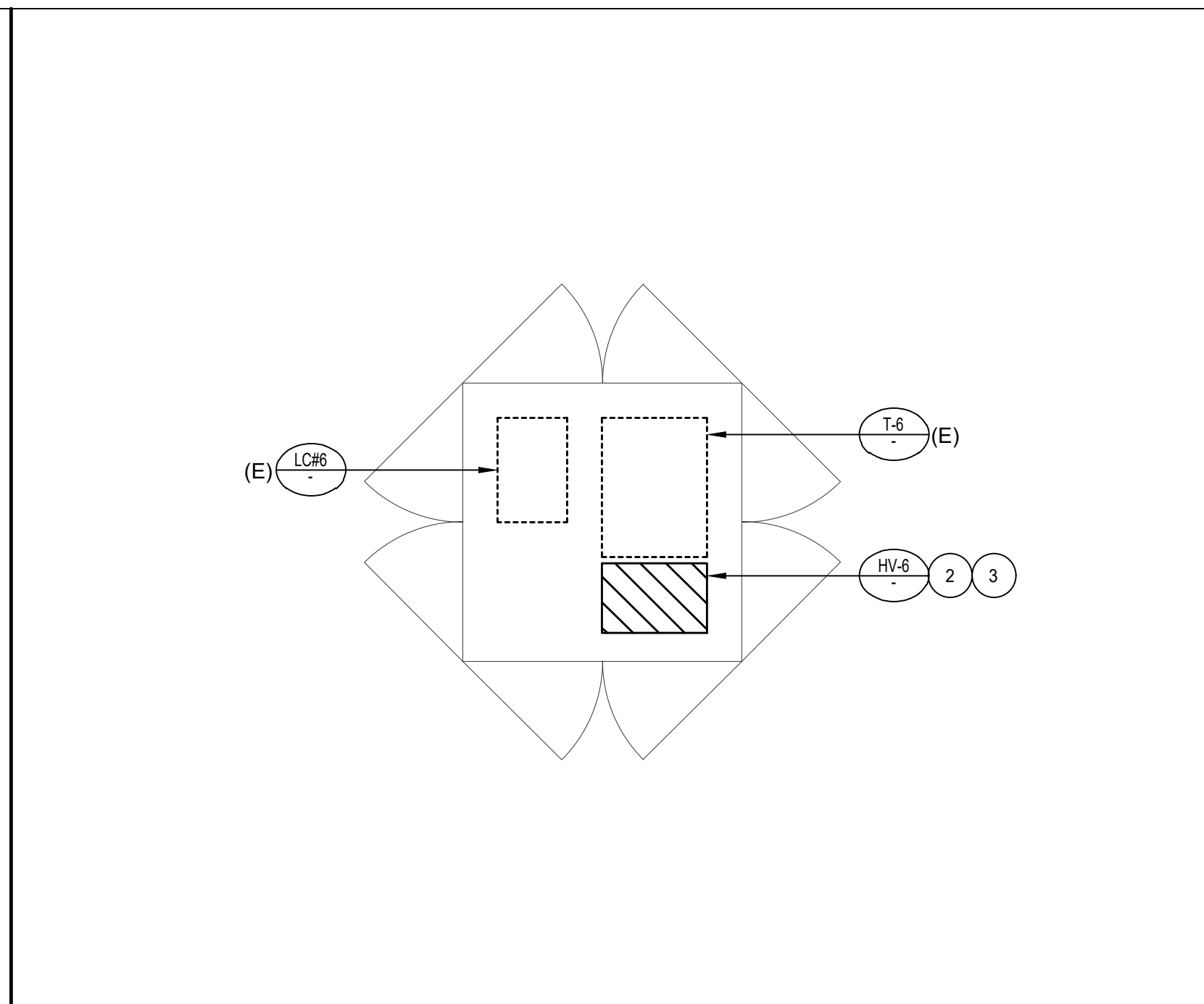
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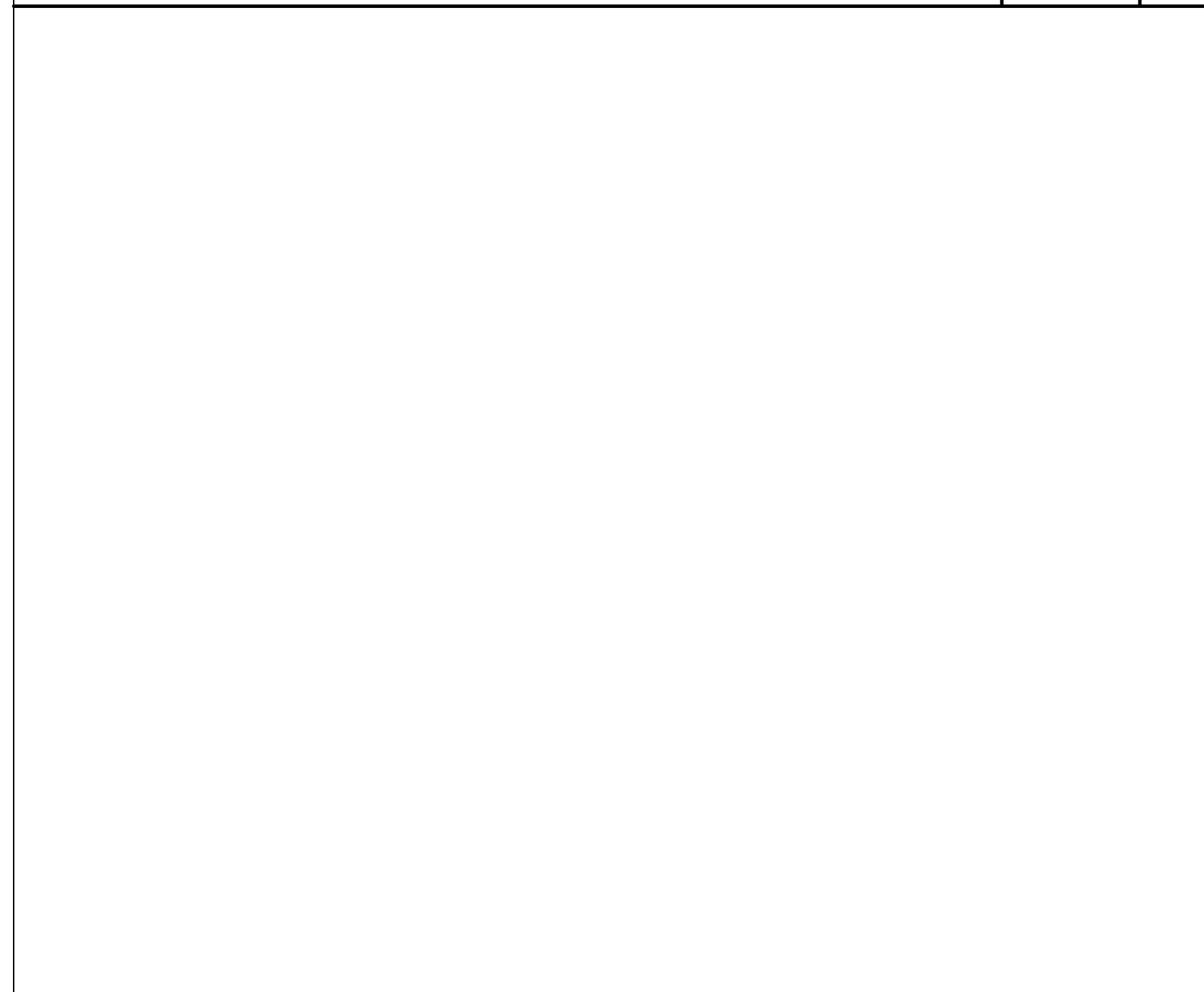
NOT USED SCALE: NONE 9



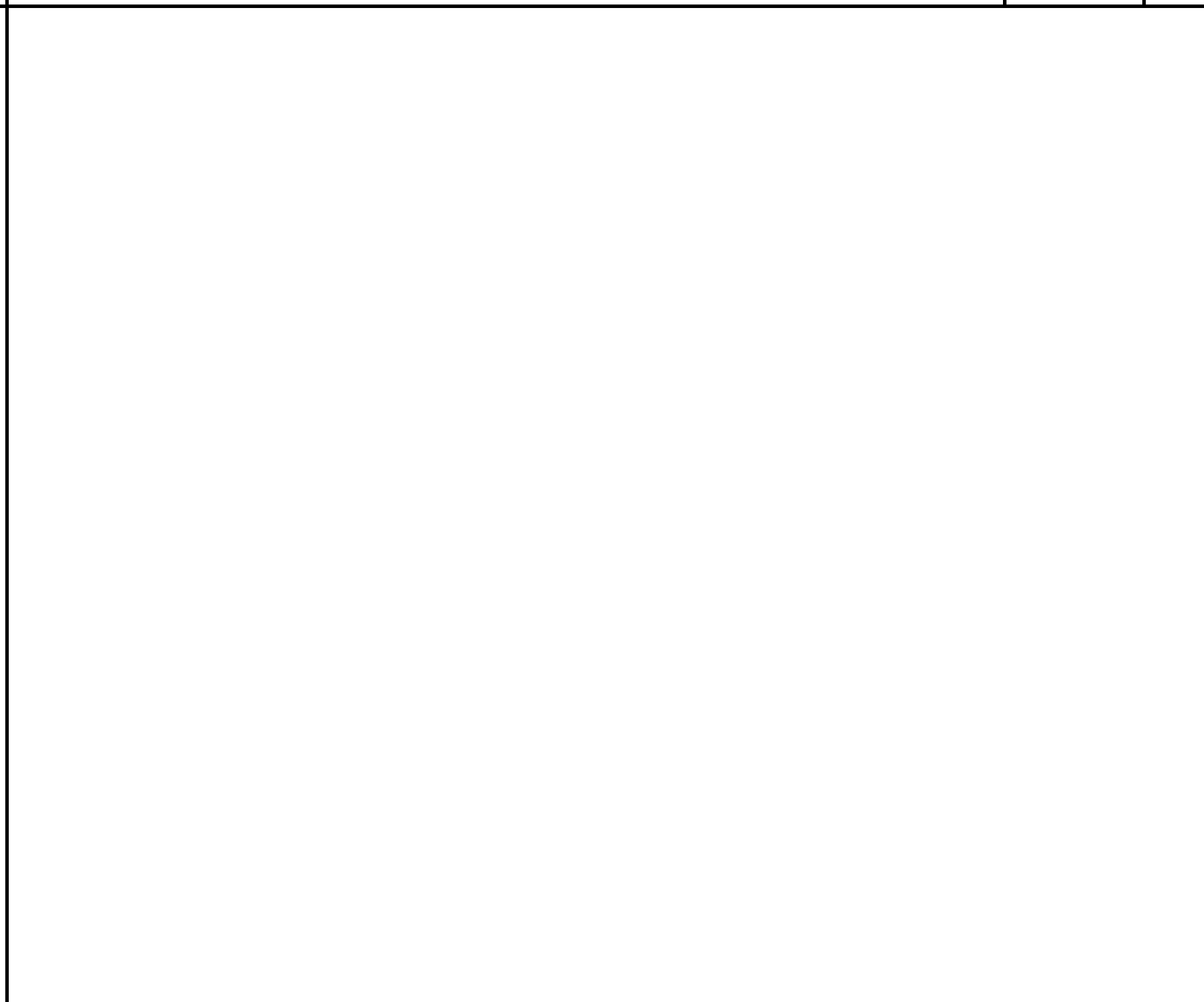
NOT USED SCALE: NONE 6



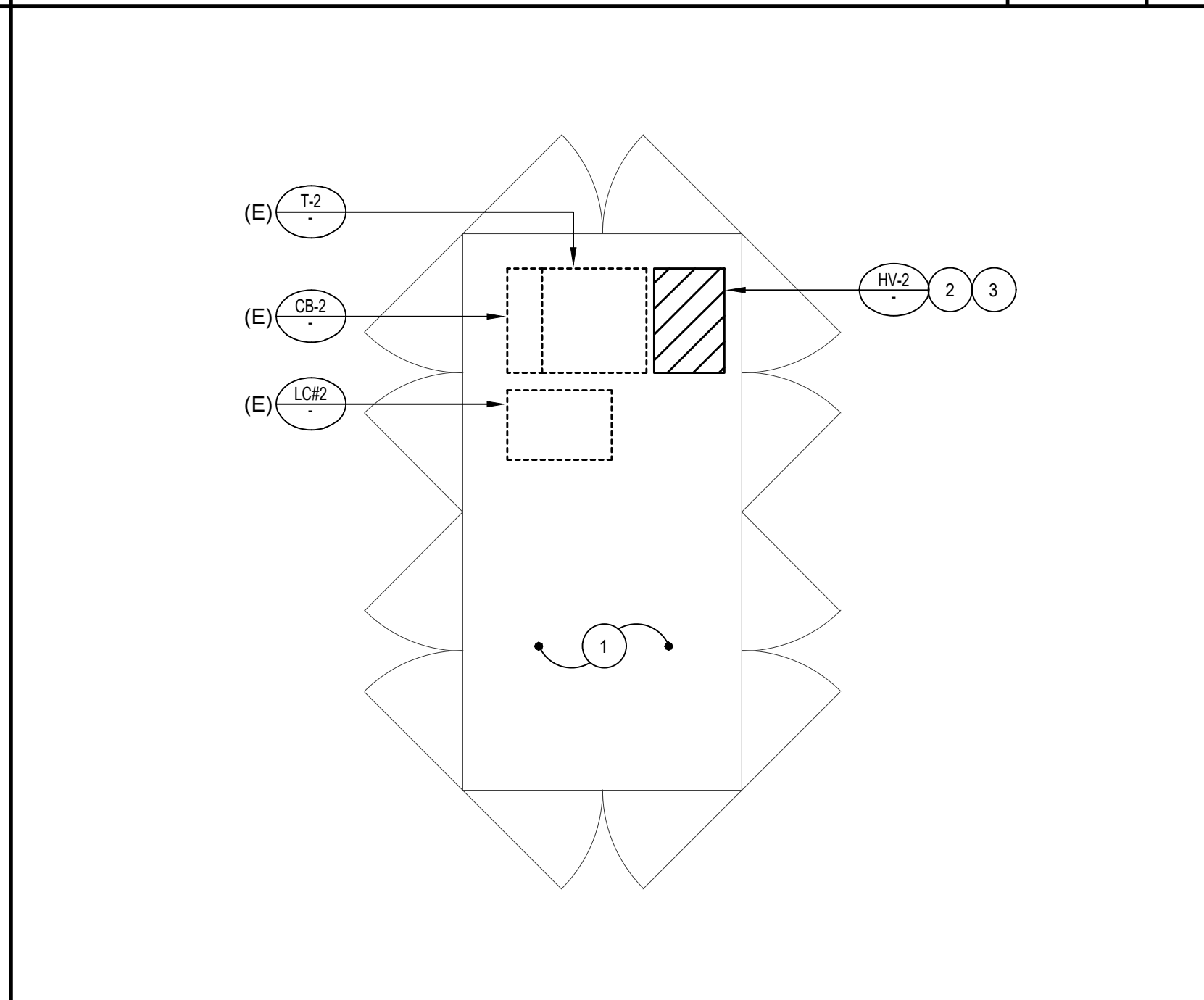
LOAD CENTER #6 SCALE: 1/4"=1'-0" 3



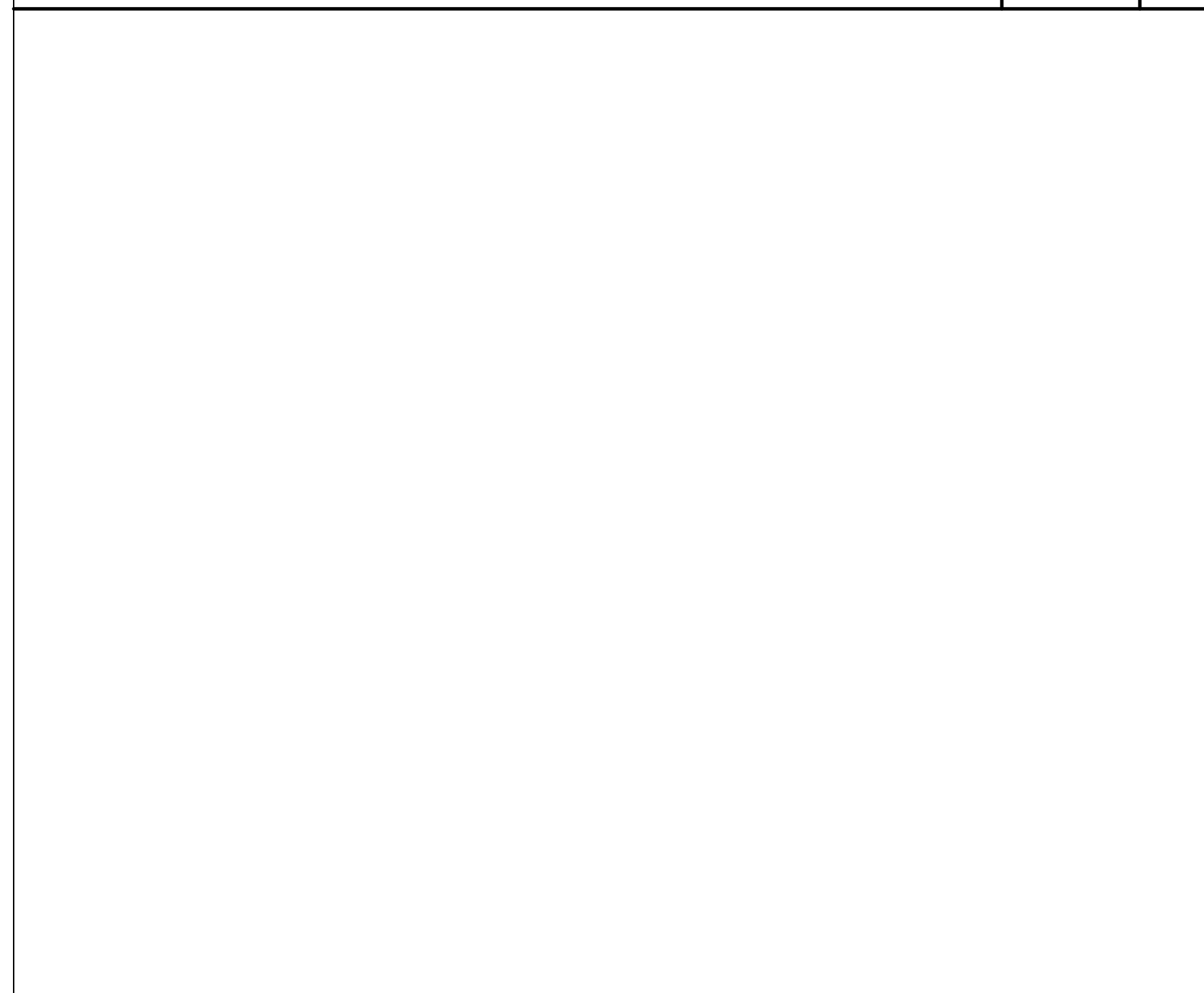
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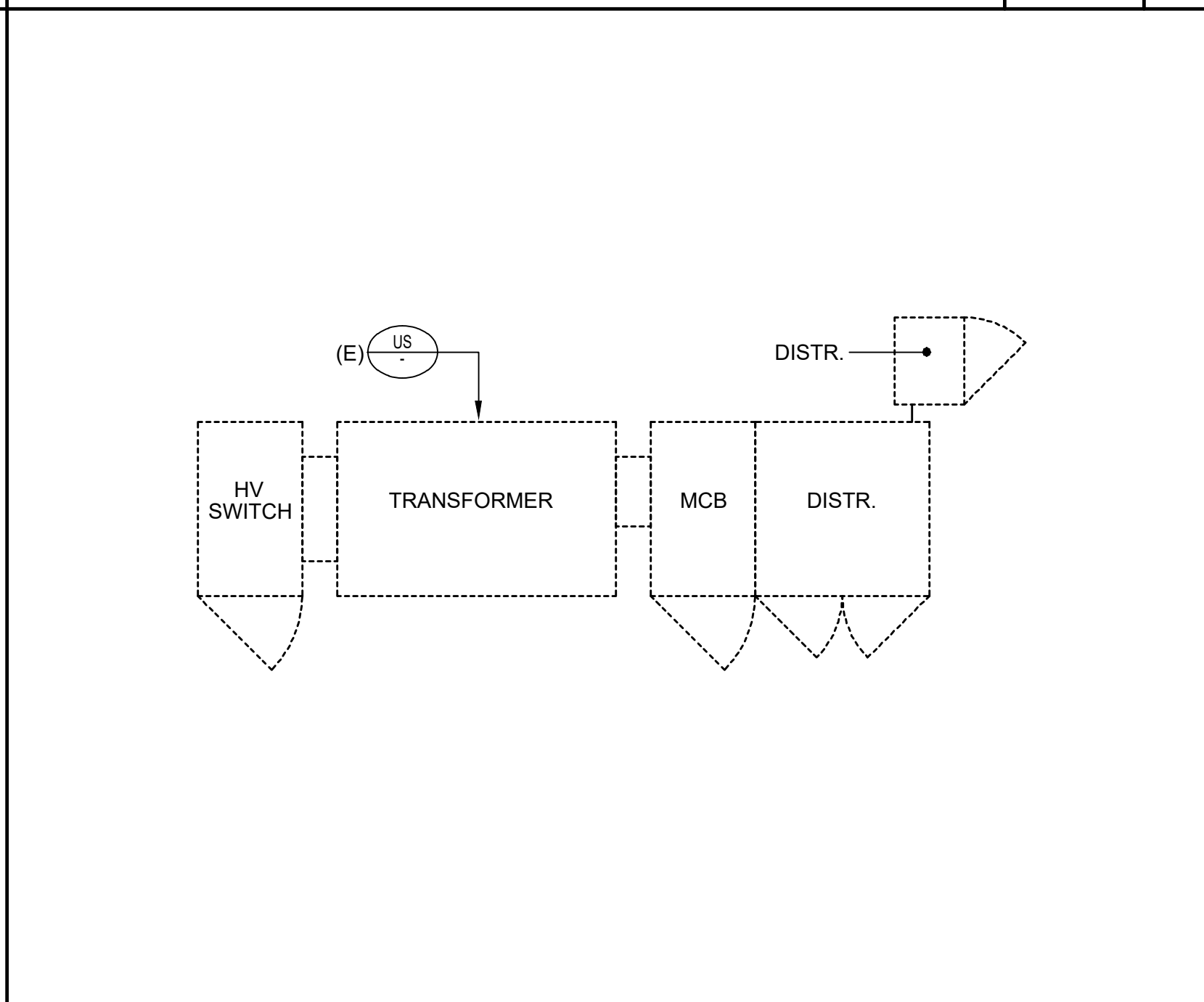
NOT USED SCALE: NONE 5



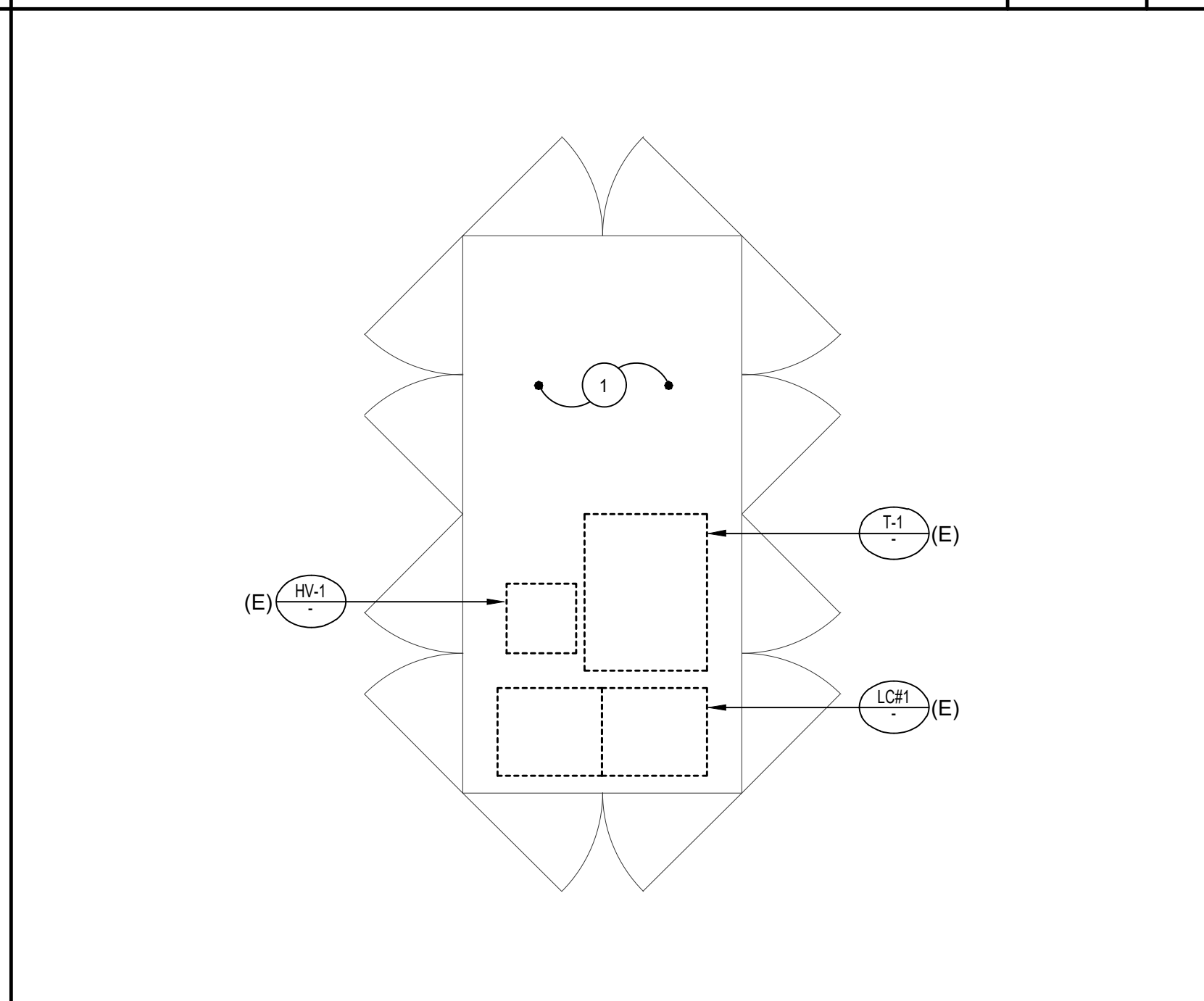
LOAD CENTER #2 SCALE: 1/4"=1'-0" 2



NOT USED SCALE: NONE 7



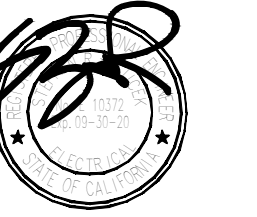
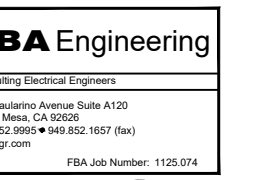
UNIT SUBSTATION "US" SCALE: 1/4"=1'-0" 4



LOAD CENTER #1 SCALE: 1/4"=1'-0" 1

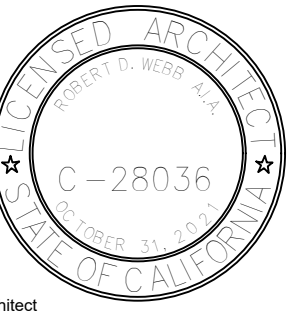
PLAN NOTES

- 1 EXISTING PHOTOVOLTAIC SYSTEM DISTRIBUTION EQUIPMENT TO REMAIN. PROTECT IN PLACE.
- 2 DISCONNECT AND REMOVE EXISTING 5KV OIL FUSE CUT-OUT SWITCH. REPLACE WITH NEW 5KV SWITCH AND CONNECT TO EXISTING TRANSFORMER.
- 3 PROVIDE 6" THICK REINFORCED CONCRETE HOUSEKEEPING PAD EXTENDING 4" BELOW GRADE, 2" ABOVE GRADE AND 2" BEYOND ALL FOUR SIDES OF EQUIPMENT.



Rev. #	Description	Date

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Architect

UNIVERSITY HIGH SCHOOL
HIGH VOLTAGE REPLACEMENT
IRVINE UNIFIED SCHOOL DISTRICT

**ELECTRICAL
DETAILS**

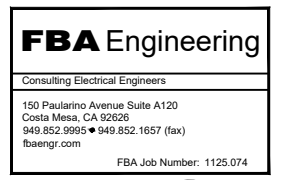
Drawn: FBA
Checked: FBA
Date:

Job:

E0.3

PLAN NOTES

- 1 ...
- 2 ...
- 3 ...



Rev. #	Description	Date

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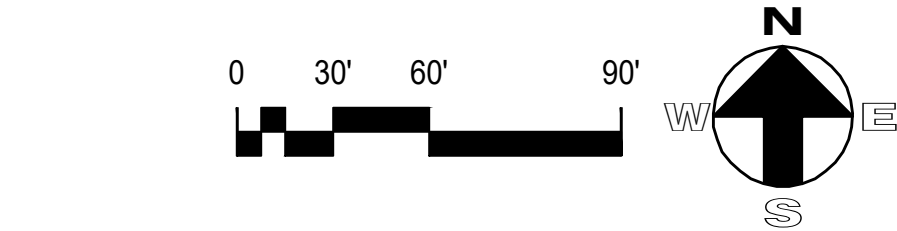
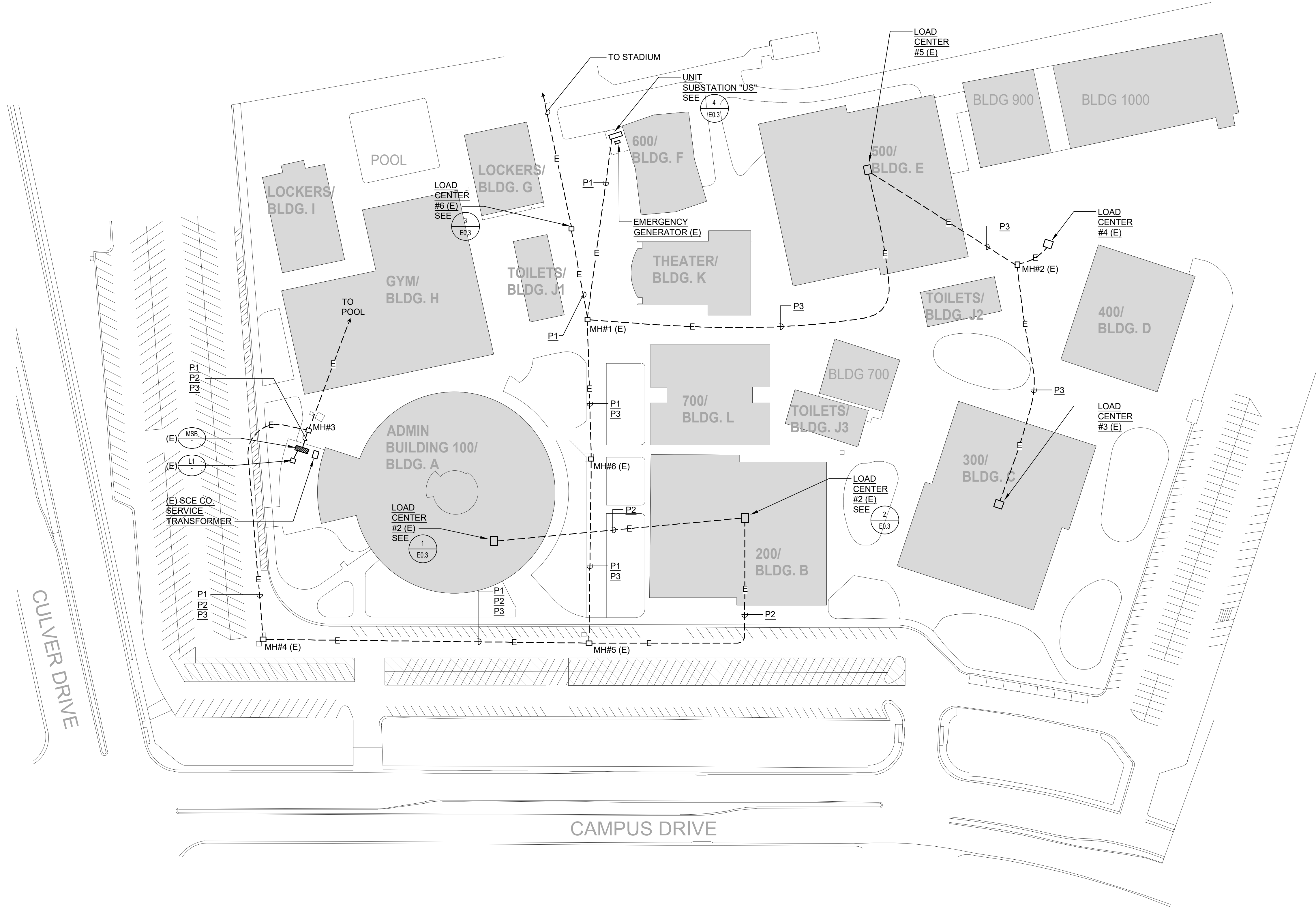
UNIVERSITY HIGH SCHOOL
HIGH VOLTAGE REPLACEMENT
IRVINE UNIFIED SCHOOL DISTRICT

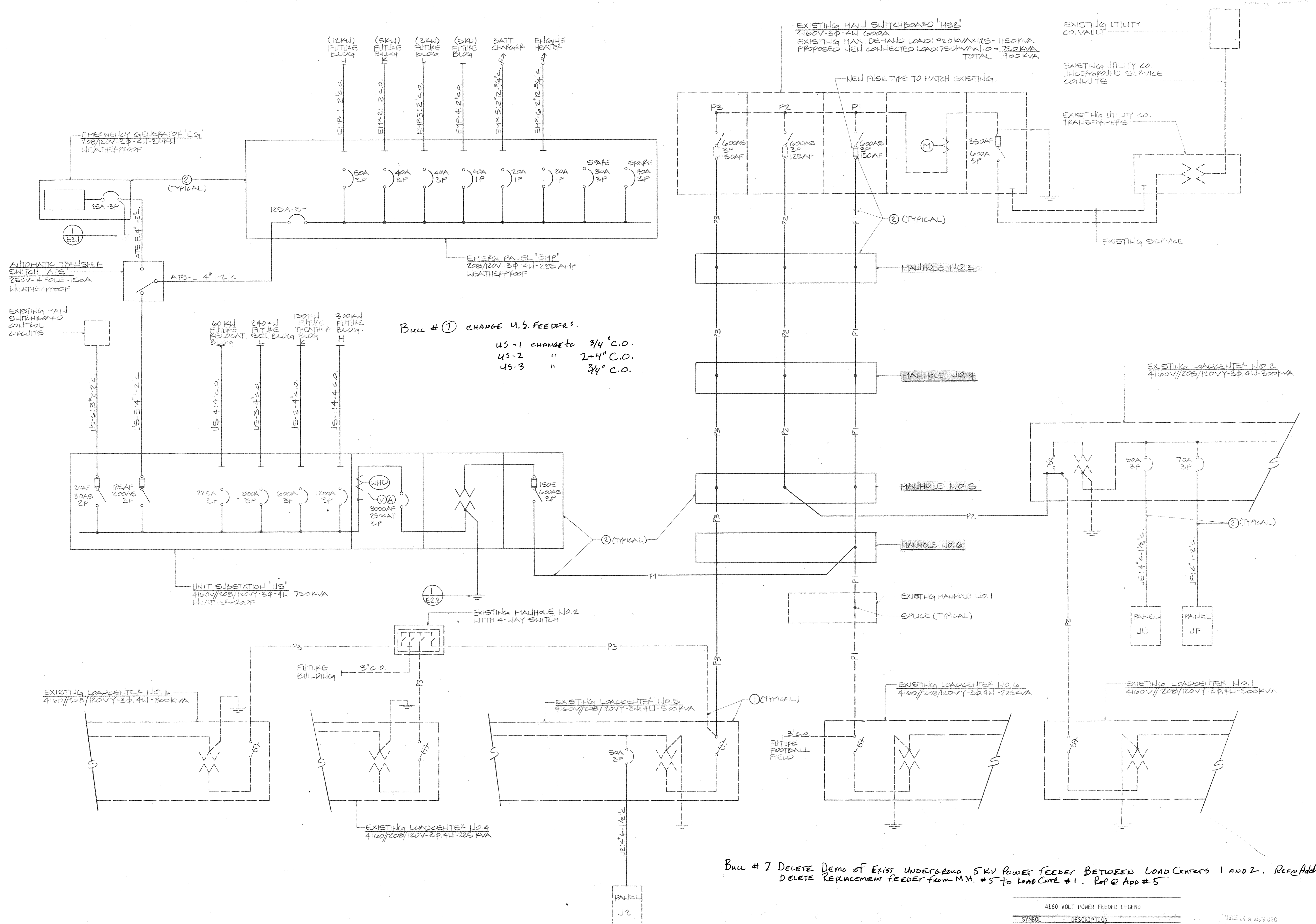
SITE ELECTRICAL PLAN

Drawn: FBA
Checked: FBA
Date:

Job:

E1.0





Bull # 7 CHANGE U.S. FEEDERS.
 US-1 CHANGE TO 3/4" C.O.
 US-2 " 2-4" C.O.
 US-3 " 3/4" C.O.

Bull # 7 DELETE DEMO OF EXIST UNDERGROUND 5KV POWER FEEDER BETWEEN LOAD CENTERS 1 AND 2. Ref @ Add # 5
 DELETE REPLACEMENT FEEDER FROM M.H. #5 TO LOAD CTR #1. Ref @ Add # 5

SHEETS E1.1 and E2.1
 Remove existing underground 5KV power conductors between existing Loadcenter No. 1 and Loadcenter No. 2. Remove existing underground conduit between Loadcenters No. 1 and No. 2 to the extent that it interferes with the specified over-excavation in that area.
 Provide new 5KV power feeder "P2" underground from existing Loadcenter No. 1 to new Manhole No. 5 to re-establish service to Loadcenter No. 1.

4160 VOLT POWER FEEDER LEGEND

SYMBOL	DESCRIPTION
—P1—	3#2/0 5KV - 3" C.
---P1---	EXISTING 3#1/0 5KV - 3" C.
---P2---	3#1/0 5KV - 3" C.
---P3---	3#3/0 5KV - 4" C.
---P3---	EXISTING 3#2/0 - 3" C.
---P2---	EXISTING 3#1/0 - 3" C.

NOTES
 1 ALL ITEMS SHOWN DASHED ARE EXISTING.
 2 ALL ITEMS SHOWN SOLID ARE TO BE PROVIDED NEW UNDER THIS CONTRACT.

Revisions

No.	Date	Description

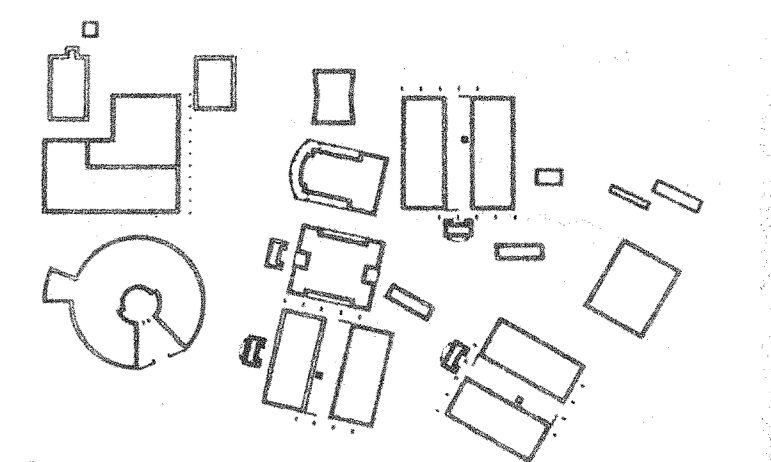
By: _____ Date: _____ To: _____
 Issues: _____

The Blurock Partnership
 ARCHITECTS AND PLANNERS
 2300 NEWPORT BEACH BOULEVARD
 NEWPORT BEACH, CALIF. 92663
 TEL: (714) 436-3700 FAX: (714) 436-3300

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 FBA #12,916

REGISTERED PROFESSIONAL ENGINEER
 R. BROWN
 No. 0073
 ELECTRICAL
 STATE OF CALIFORNIA

IRVINE UNIFIED SCHOOL DISTRICT
UNIVERSITY HIGH SCHOOL



FOR INFORMATION ONLY

SINGLE LINE DIGRAM

Scale: NONE
 Date: FEB. 12, 1991
 Issue Date: _____
 Drawn By: HCRB
 Checked By: _____
 Job No.: _____
 Drawing No.: _____

E 1.1 (PORTION III)
SITE WORK

APPROVED FOR PERMIT
 DEC 27 1990
 STATE FIRE MARSHAL
 SOUTHERN REGION

APPROVED FOR PERMIT
 FIRE AND PANIC ONLY
 DEC 27 1990

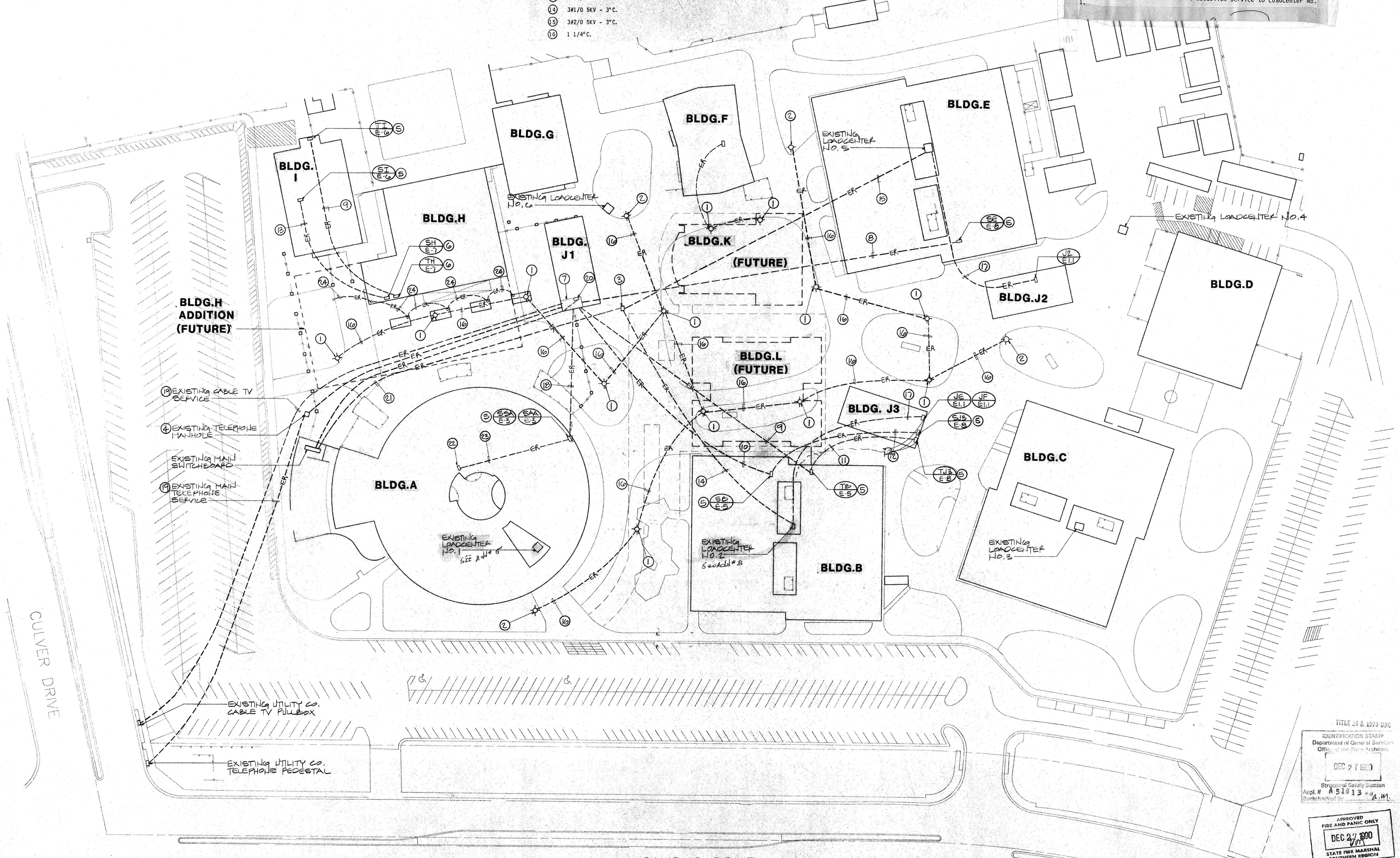
SHEET E2.1; Add the following to Reference Note 1:
 Except where noted otherwise, dispose of concrete bases and turn light standard over to the School District. Stack light standards on-site at location selection by the District.

REFERENCE NOTES

- 1 REMOVE EXISTING LIGHT STANDARD AND CONCRETE BASE.
- 2 EXISTING LIGHT STANDARD AND CONCRETE BASE TO BE RECONNECTED PER SHEET E2.2.
- 3 EXISTING MANHOLE NO. 1 TO BE RECONDITIONED AND REUSED.
- 4 EXISTING TELEPHONE MANHOLE TO BE REMOVED.
- 5 EXISTING TERMINAL CABINET(S) TO BE RECONNECTED PER SHEET E2.3.
- 6 EXISTING TERMINAL CABINET TO BE DEMOLISHED.
- 7 EXISTING CENTRAL SIGNAL SYSTEM ROOM AND EQUIPMENT.
- 8 2-2"C.; 1 1/4"C.
- 9 2"C.
- 10 1"C.; 2 - 1 1/2"C.; 3"C.
- 11 1"C.
- 12 1"C.; 1 1/4"C.
- 13 2"C.; 2 - 1 1/4"C.
- 14 3#1/0 SKV - 3"C.
- 15 3#2/0 SKV - 3"C.
- 16 1 1/4"C.
- 17 SEE SHEET E1.1 FOR CONDUIT AND WIRE SIZES.
- 18 2"C.; 3-3"C.
- 19 REMOVE CABLING; ABANDON 2"C. BELOW PARKING LOT.
- 20 EXISTING PANELBOARD "JA". SEE SHEET E2.2.
- 21 2 - 3"C WITH 3#1/0 SKV IN EACH AND 1-3"C. WITH 3#2/0 SKV.
- 22 EXISTING FIRE ALARM CONTROL PANEL AND MASTER CLOCK CONTROL PANEL TO BE REMOVED.
- 23 REMOVE EXISTING FIRE ALARM AND CLOCK SYSTEM CONDUCTORS AND RE-PULL NEW FIRE ALARM CONDUCTORS PER NOTES 2 AND 3 SHEET E-4.
- 24 REMOVE EXISTING CATHODE PROTECTION SYSTEM.

DEMOLITION LEGEND
 SYMBOL DESCRIPTION
 --ER-- EXISTING UNDERGROUND CONDUITS AND CONDUCTORS. REMOVE CONDUCTORS. REMOVE EXISTING UNDERGROUND CONDUITS OVER THEIR ENTIRE LENGTH EXCEPT UNDER EXISTING BUILDINGS. INTERCEPT AND REUSE EXISTING CONDUITS WHERE INDICATED ON SHEETS E2.2 AND E2.3. RESTORE DISTURBED AREAS TO MATCH EXISTING CONDITIONS UNLESS SPECIFIED OTHERWISE.

SHEETS E1.1 and E2.1 *See Add # 5*
 Remove existing underground SKV power conductors between existing Loadcenter No. 1 and Loadcenter No. 2. Remove existing underground conduit between Loadcenters No. 1 and No. 2 to the extent that it interferes with the specified over-excavation in that area.
 Provide new SKV power feeder "P2" underground from existing Loadcenter No. 1 to new Manhole No. 5 to re-establish service to Loadcenter No. 1.



- 10 EXISTING CABLE TV SERVICE
- 4 EXISTING TELEPHONE MANHOLE
- EXISTING MAIL SWITCHBOARD
- 10 EXISTING MAIL TELEPHONE SERVICE

CULVER DRIVE

CAMPUS DRIVE

FOR INFORMATION ONLY

north
 DATE: 11-6-90
 SCALE: 1" = 40'

SPECIAL NOTE:
 LOCATIONS OF ALL UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID INTERCEPTING EXISTING PIPING OR CONDUITS. THE ARCHITECT IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.

TITLE 24 & 2579 USG
 IDENTIFICATION STAMP
 Department of General Services
 Office of the State Architect
 DEC 27 1990
 Structural Safety Section
 Asst. M. A. 51813
 Branch: 1011
 APPROVED
 FIRE AND PANIC ONLY
 DEC 27 1990
 STATE FIRE MARSHAL
 SOUTHERN REGION

Revisions	Date	Description

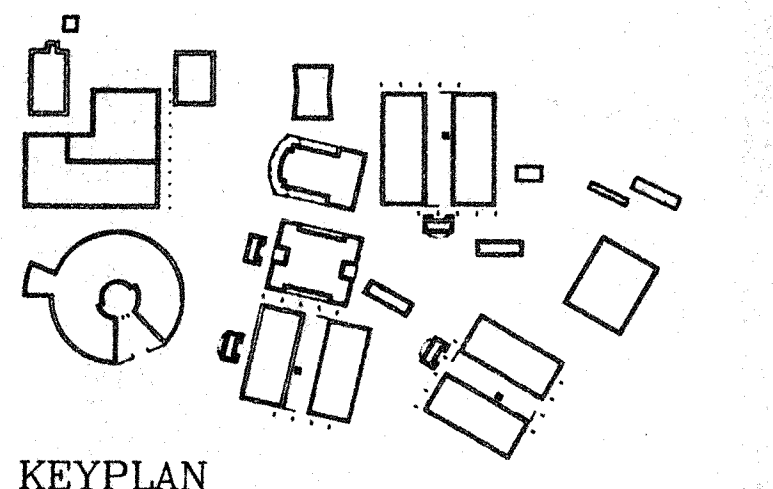
By: _____ Date: _____ To: _____
 Issues: _____

The Blurock Partnership
 ARCHITECTS AND PLANNERS
 2300 NEWPORT BEACH BOULEVARD
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 Facsimile (714) 861-9955
 FEBA # 112 916

REGISTERED PROFESSIONAL ENGINEER
 ELECTRICAL
 STATE OF CALIFORNIA
 NO. 51918

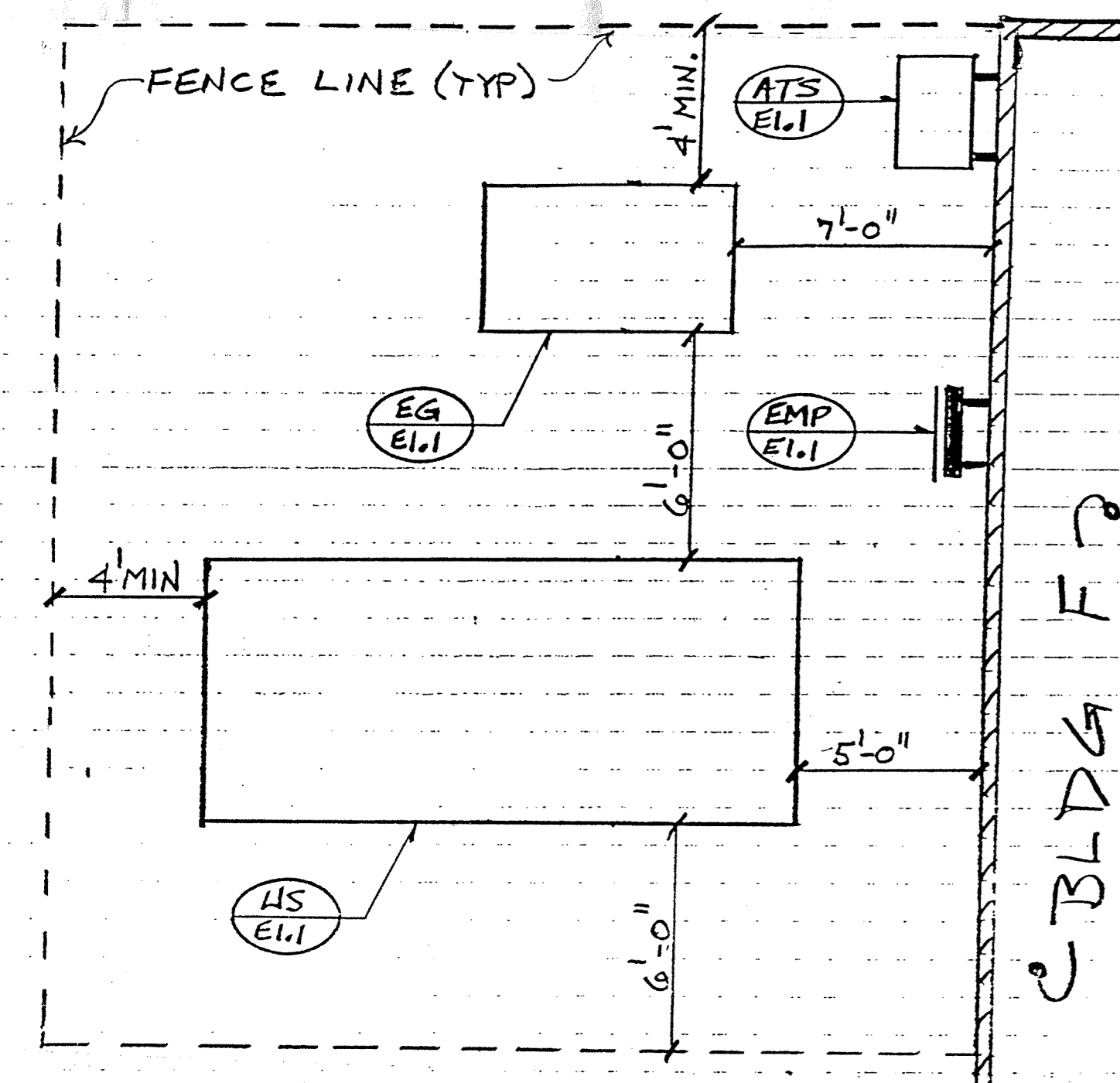
IRVINE UNIFIED
 SCHOOL DISTRICT
 UNIVERSITY
 HIGH SCHOOL



SITE ELECTRICAL
 DEMOLITION PLAN

Scale: 1" = 40'
 Issue Date: FEB. 12, 1991
 Drawn By: HGPB
 TBP E2.1
 Job No.:
 Checked By: EKF
 Drawing No.:
E2.1 (PORTION III)
 SITE WORK

51813 DEC 17 90



Add attached detail "1/E2.2" showing enlarged plan of electrical equipment near Building F. Provide 2-inch high raised concrete pad under the generator and unit substation extending 4-inches beyond all sides of each respective equipment. Use preformed steel channels to support "ATS" and "EMP" from existing split-face block wall of Building F.

UNIVERSITY HS
COMP. A PORTION III
3-18-91
The Blurock Partnership
2300 Newport Blvd./Newport Beach, CA 92663/Telephone (714)673-0300/FAX (714)673-9267
Architects and Planners

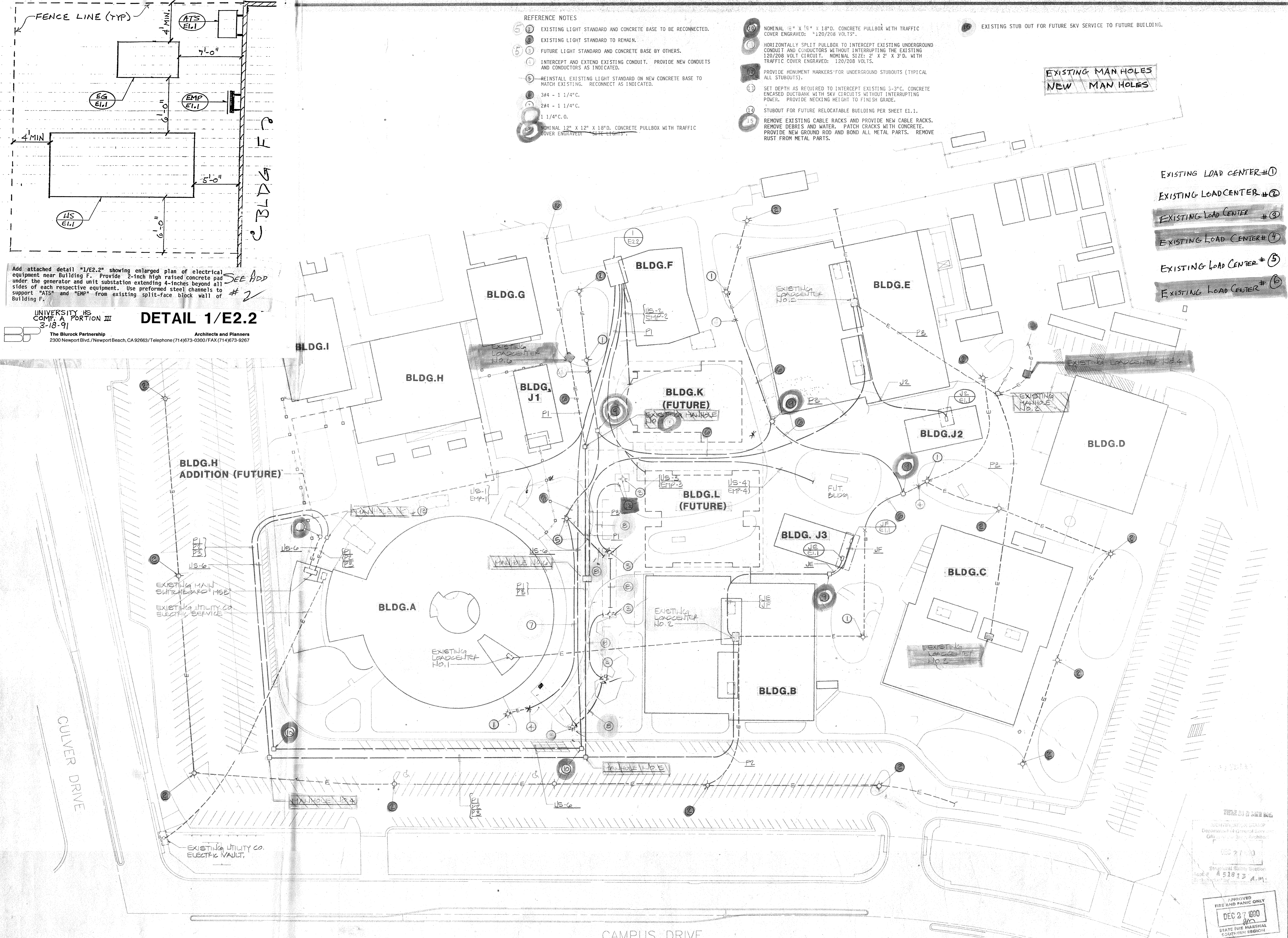
DETAIL 1/E2.2

- REFERENCE NOTES
- 1 EXISTING LIGHT STANDARD AND CONCRETE BASE TO BE RECONNECTED.
 - 2 EXISTING LIGHT STANDARD TO REMAIN.
 - 3 FUTURE LIGHT STANDARD AND CONCRETE BASE BY OTHERS.
 - 4 INTERCEPT AND EXTEND EXISTING CONDUIT. PROVIDE NEW CONDUITS AND CONDUCTORS AS INDICATED.
 - 5 REINSTALL EXISTING LIGHT STANDARD ON NEW CONCRETE BASE TO MATCH EXISTING. RECONNECT AS INDICATED.
 - 6 3/4" - 1 1/4" C.
 - 7 2#4 - 1 1/4" C.
 - 8 1 1/4" C. O.
 - 9 NOMINAL 12" X 12" X 18" D. CONCRETE PULLBOX WITH TRAFFIC COVER ENGRAVED: "SITE LIGHTS".

- 10 NOMINAL 8" X 16" X 18" D. CONCRETE PULLBOX WITH TRAFFIC COVER ENGRAVED: "120/208 VOLTS".
- 11 HORIZONTALLY SPLIT PULLBOX TO INTERCEPT EXISTING UNDERGROUND CONDUIT AND CONDUCTORS WITHOUT INTERRUPTING THE EXISTING 120/208 VOLT CIRCUIT. NOMINAL SIZE: 2' X 2' X 3' D. WITH TRAFFIC COVER ENGRAVED: 120/208 VOLTS.
- 12 PROVIDE MONUMENT MARKERS FOR UNDERGROUND STUBOUTS (TYPICAL ALL STUBOUTS).
- 13 SET DEPTH AS REQUIRED TO INTERCEPT EXISTING 3-3" C. CONCRETE ENCASED DUCTBANK WITH 5KV CIRCUITS WITHOUT INTERRUPTING POWER. PROVIDE NECKING HEIGHT TO FINISH GRADE.
- 14 STUBOUT FOR FUTURE RELOCATABLE BUILDING PER SHEET EI.1.
- 15 REMOVE EXISTING CABLE RACKS AND PROVIDE NEW CABLE RACKS. REMOVE DEBRIS AND WATER. PATCH CRACKS WITH CONCRETE. PROVIDE NEW GROUND ROD AND BOND ALL METAL PARTS. REMOVE RUST FROM METAL PARTS.

EXISTING MAN HOLES
NEW MAN HOLES

- EXISTING LOAD CENTER #1
- EXISTING LOAD CENTER #2
- EXISTING LOAD CENTER #3
- EXISTING LOAD CENTER #4
- EXISTING LOAD CENTER #5
- EXISTING LOAD CENTER #6

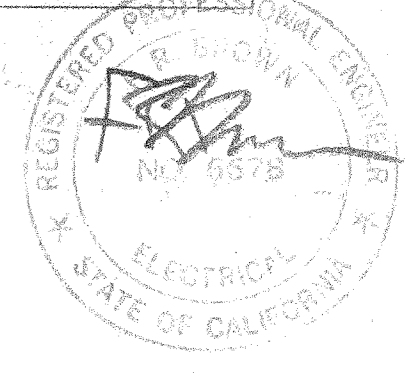


DATE: 11-6-90
SCALE: 1" = 40'

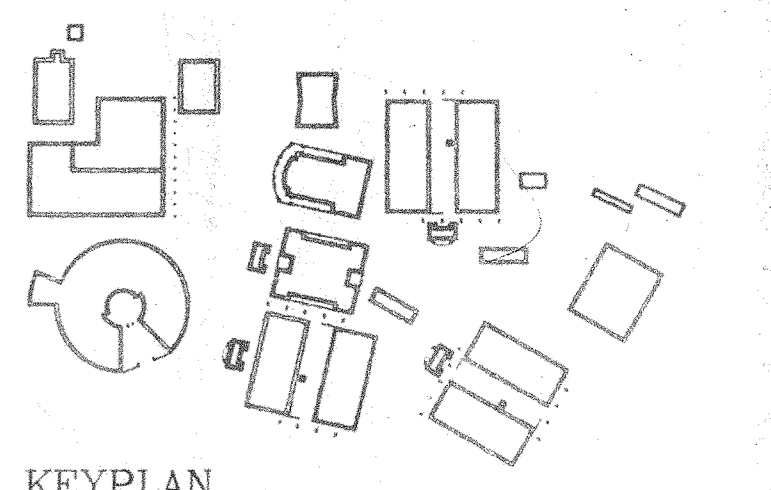
SPECIAL NOTE:
LOCATIONS OF ALL UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID INTERCEPTING EXISTING PIPING OR CONDUITS. THE ARCHITECT IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.

Revisions	No.	Date	Description

The Blurock Partnership
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FBA # 112,912



IRVINE UNIFIED
SCHOOL DISTRICT
**UNIVERSITY
HIGH SCHOOL**



**SITE ELECTRICAL
POWER PLAN**

Scale: 1" = 40'
Issue Date: FEB. 12, 1991
Drawn By: MGS
Checked By: [Signature]
Job No. [Blank] Drawing No. [Blank]

**E2.2 (PORTION III)
SITE WORK**

FOR INFORMATION ONLY

ES-101 WALL WELLA

SEE ADD #4

REVISED REFERENCE NOTES SHEET E2.3

SEE ADD #4

- 1 4" C. WITH 50-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" CABLE (NEW TELEPHONE SERVICE).
- 2 3" C. WITH COMMSCOPE #P3-500JCSS COAXIAL CABLE (NEW CABLE TV SERVICE).
- 3 3' X 5' X 4" D. CONCRETE PULLBOX WITH TRAFFIC COVER ENGRAVED: "TELEPHONE".
- 4 2' X 3' X 4" D. CONCRETE PULLBOX WITH TRAFFIC COVER ENGRAVED: "CABLE TV".
- 5 NOT USED.
- 6 REMOVE CONDUCTORS FROM EXISTING 1.5" C. AND PROVIDE 2#8 AND 2#10 FOR FIRE ALARM SYSTEM.
- 7 THRU 17 NOT USED.
- 18 FIVE (5) WEATHERPROOF 6"W X 8"H X 4"D. JUNCTION BOXES, ONE EACH FOR FIRE ALARM, CLOCK, DATA, EMS, AND INTRUSION DETECTION SYSTEMS. ALSO PROVIDE TWO (2) WEATHERPROOF 12"W X 24"H X 6"D. JUNCTION BOXES, ONE EACH FOR TELEVISION AND INTERCOM/TELEPHONE SYSTEMS. TERMINATE ALL CONDUCTORS IN BOXES USING SCREW-TYPE TERMINAL BLOCKS AND/OR PUNCH-DOWN BLOCKS.
- 19 WEATHERPROOF-TAMPERPROOF DOUBLE-SIDED LOCKING SIGNAL SYSTEM PEDESTAL SET ON CONCRETE BASE EXTENDING 24 INCHES BELOW GRADE AND 4 INCHES ABOVE GRADE. NOMINAL PEDESTAL SIZE: 60"W X 18"D X 50"H AS MANUFACTURED BY 3M TELECOM SYSTEMS GROUP #4200-6 SERIES OR EQUAL. PROVIDE INTERIOR FRAMES, TERMINAL/PUNCH BLOCKS, BACKBOARDS, AND BARRIERS BETWEEN SYSTEMS. ALL CABLES ENTERING AND LEAVING PEDESTAL SHALL BE TERMINATED.
- 20 4#8, 4#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 4 WEST PENN #S392-1" C. (INTRUSION DETECTION); 1 COMMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 2" C. WITH 50-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 21 6#8, 4#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. O. (DATA); 2" C. O. (EMS); 6 WEST PENN #S392-2" C. (INTRUSION DETECTION); 1 COMMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 3" C. WITH 75-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).

Sketches ESK-4, ESK-5, and ESK-6: In "REVISED REFERENCE NOTES SHEET E2.3", change all Essex "Sealpic-FSF" multi-pair intercom/telephone cables referenced in Notes 20, 21, 23 through 26, 28, 30, and 32 through 39 as follows:

- All 25-pair cables shall be changed to 10-West Penn #CL2369.
- All 50-pair cables shall be changed to 20-West Penn #CL2369.
- All 75-pair cables shall be changed to 30-West Penn #CL2369.
- All 100-pair cables shall be changed to 50-West Penn #CL2369.
- All 200-pair cables shall be changed to 100-West Penn #CL2369.

SEE ADD #4

SK-4

The Blurock Partnership 3-21-91 Architects and Planners
 2300 Newport Blvd./Newport Beach, CA 92663/Telephone (714)673-0300/FAK (714)673-9267

REVISED REFERENCE NOTES SHEET E2.3 (CONTINUED)

SEE ADD #4 ESK-5

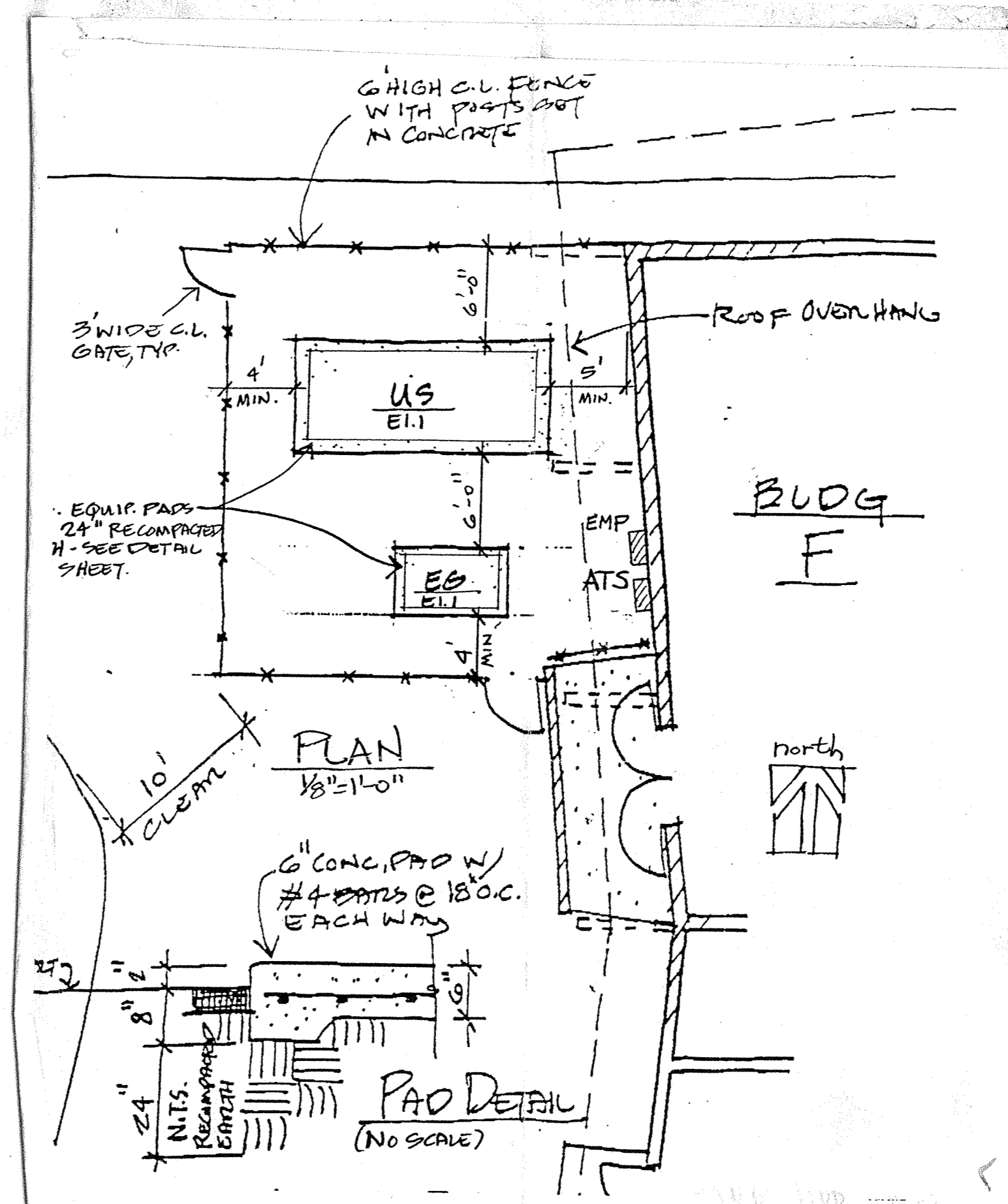
- 22 2" C. O. (FIRE ALARM); 1" C. O. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 1" C. O. (INTRUSION DETECTION); 3" C. O. (TELEVISION); 3" C. O. (INTERCOM/TELEPHONE).
- 23 6#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 30 WEST PENN #S392-2" C. (INTRUSION DETECTION); 1 COMMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 2" C. WITH 25-PAIR REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 24 6#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 2 WEST PENN #S392-1" C. (INTRUSION DETECTION); 1 COMMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 2" C. WITH 50-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 25 6#10-2" C. (FIRE ALARM); 3#10-2" C. (CLOCK); 2" C. O. (DATA); 2" C. O. (EMS); 8 WEST PENN #S392-2" C. (INTRUSION DETECTION); 1 COMMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 4" C. WITH 200-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 26 4#8, 30#10-2" C. (FIRE ALARM); 3#10-2" C. (CLOCK); 2" C. O. (DATA); 2" C. O. (EMS); 2 WEST PENN #S392-1" C. (INTRUSION DETECTION); 2" C. O. (SPARE INTRUSION DETECTION); 1 COMMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 3-3" C. WITH 200-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" IN EACH (INTERCOM/TELEPHONE).
- 27 4" C. O. (FIRE ALARM); 1" C. O. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 1" C. O. (INTRUSION DETECTION); 2" C. O. (TELEVISION); 2" C. O. (INTERCOM/TELEPHONE).
- 28 3#10-1" C. (CLOCK); 2 WEST PENN #S392-1" C. (INTRUSION DETECTION); 3" C. WITH 75-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 29 8#10-2" C. (FIRE ALARM); 2" C. O. (DATA); 1" C. O. (EMS); 1 COMMSCOPE #P3-500JCSS COAXIAL CABLE-2" C. (TELEVISION).
- 30 6#10-2" C. (FIRE ALARM); 3#10-2" C. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 4 WEST PENN #S392-2" C. (INTRUSION DETECTION); 1 COMMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 3" C. WITH 100-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).

REVISED REFERENCE NOTES SHEET E2.3 (CONTINUED)

SEE ADD #4

- 31 1" C. O. (FIRE ALARM); 1" C. O. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 1" C. O. (INTRUSION DETECTION); 2" C. O. (TELEVISION); 2" C. O. (INTERCOM/TELEPHONE).
- 32 8#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 2 WEST PENN #S392-1" C. (INTRUSION DETECTION); 1 COMMSCOPE #P3-500JCSS COAXIAL CABLE-2" C. (TELEVISION); 3" C. WITH 75-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 33 6#10-1" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 2 WEST PENN #S392-1" C. (INTRUSION DETECTION); 1 COMMSCOPE #P3-500JCSS COAXIAL CABLE-2" C. (TELEVISION); 2" C. WITH 25-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 34 16#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 2 WEST PENN #S392-1" C. (INTRUSION DETECTION); 2" C. O. (TELEVISION); 2" C. WITH 25-PAIR 22 AWG REA SPEC #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 35 6#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 2 WEST PENN #S392-1" C. (INTRUSION DETECTION); 1 COMMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 3" C. WITH 75-PAIR REA SPEC #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 36 16#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 2 WEST PENN #S392-1" C. (INTRUSION DETECTION); 2" C. O. (TELEVISION); 2" C. WITH 25-PAIR 22 AWG REA SPEC #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 37 4#12-1" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 4 WEST PENN #S392-1" C. (INTRUSION DETECTION); 2" C. O. (TELEVISION); 3" C. WITH 75-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 38 4#12-1" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 4 WEST PENN #S392-1" C. (INTRUSION DETECTION); 2" C. O. (TELEVISION); 3" C. WITH 75-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 39 4#12-1" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. O. (DATA); 1" C. O. (EMS); 4 WEST PENN #S392-1" C. (INTRUSION DETECTION); 2" C. O. (TELEVISION); 2" C. WITH 25-PAIR, 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).

Bulletin # 16 CHANGE WIRE FOR Intrusion System from West Penn to Remco Products.
 See Bulletin # 17C CHANGE QUANTITIES of Intrusion CABLE RUNS.



FOR INFORMATION ONLY

1. PROVIDE SURFACE-MOUNTED CLOCK, SPEAKER, AND INTERCOM STAFF STATION HANDSET IN EACH OF TWELVE (12) RELOCATABLE CLASSROOM BUILDINGS AT THE NORTHEAST AREA OF THE PROJECT. PROVIDE 1 WEST PENN #CL2369 CABLE-0.5" CONDUIT FROM JUNCTION BOX AT REAR OF EACH RELOCATABLE BUILDING TO SERVE SPEAKER AND HANDSET. PROVIDE 3/12-0.5" CONDUIT FROM JUNCTION BOX AT REAR OF EACH RELOCATABLE BUILDING TO SERVE CLOCK. POSITION CLOCK AND SPEAKER OVER EACH CHALKBOARD AND POSITION HANDSET AT SIDE OF EACH CHALKBOARD. RUN CONDUITS CONCEALED ABOVE ACCESSIBLE CEILING AND IN SURFACE MOUNTED WIREMOLD PAINTED TO MATCH WALLS. PENETRATE EXTERIOR WALLS ABOVE CEILING LINE.
2. PROVIDE A TOTAL OF SEVEN (7) SURFACE-MOUNTED WEATHERPROOF SPEAKER HORNS ON RELOCATABLE BUILDINGS AT NORTHEAST AREA OF THE PROJECT WITH 1 WEST PENN #CL2292 CABLE-0.5" TO JUNCTION BOX AT REAR OF EACH RESPECTIVE BUILDING.
3. PROVIDE 8/12-0.5" FROM JUNCTION BOX AT EACH OF TWELVE (12) RELOCATABLE CLASSROOM BUILDINGS AT THE NORTHEAST AREA OF THE PROJECT TO FIRE ALARM DEVICES SHOWN IN EACH BUILDING. RUN CONDUITS CONCEALED ABOVE ACCESSIBLE CEILING AND IN SURFACE MOUNTED WIREMOLD PAINTED TO MATCH WALLS. PENETRATE EXTERIOR WALLS ABOVE CEILING LINE.
4. REMOVE EXISTING CONDUCTORS FROM EXISTING 2" C. AND 1.25" C. BETWEEN TERMINAL CABINETS "50" AND "52" IN BUILDINGS B AND C, RESPECTIVELY. REMOVE EXISTING CONDUCTORS FROM EXISTING 2" C. BETWEEN TERMINAL CABINETS "18" AND "1C" IN BUILDINGS B AND C, RESPECTIVELY.
5. REMOVE EXISTING CONDUCTORS FROM TWO (2) EXISTING 1.25" CONDUITS BETWEEN TERMINAL CABINETS "51" AND "55" IN BUILDINGS I AND G, RESPECTIVELY. PROVIDE 6 WEST PENN #CL2369 (INTERCOM/TELEPHONE) PLUS 2 WEST PENN #5369 (INTRUSION DETECTION) IN ONE EXISTING 1.25" C. AND 3/10 IN THE OTHER EXISTING 1.25" C. (CLOCK).
6. REMOVE EXISTING CONDUCTORS FROM EXISTING 2" C. BETWEEN TERMINAL CABINETS "1C" AND "1D" IN BUILDINGS C AND D, RESPECTIVELY. REMOVE CONDUCTORS FROM EXISTING 2" C. AND 1.5" C. BETWEEN TERMINAL CABINETS "52" AND "5D" IN BUILDINGS C AND D, RESPECTIVELY.
7. CONNECT INTRUSION DETECTION SYSTEM CONDUCTORS TO EXISTING INTRUSION DETECTION SYSTEM CONTROL PANEL IN BUILDING J-1 AS REQUIRED TO RESTORE SERVICE TO EXISTING ACTIVE OUTLETS. TAPE OFF AND TAG ALL SPARE CONDUCTORS.
8. PROVIDE A REMOTE FIRE ALARM SIGNAL/TRANSPONDER PANEL IN BUILDING J2 CONSISTING OF SEVEN (7) SIGNAL CIRCUITS CONNECTED TO AUDIO AND VISUAL ALARM DEVICES IN BUILDINGS D, E, J2, EXISTING RELOCATABLE BUILDINGS, AND SPARE PER "VOLTAGE DROP CALCULATIONS" SUMMARY SHEET E-1. FIRE ALARM SIGNAL/TRANSPONDER PANEL SHALL CONNECT TO THE MAIN FIRE ALARM CONTROL PANEL IN BUILDING A AND SHALL CAUSE ALL ITS RESPECTIVE ALARM DEVICES TO ACTIVATE ON ANY FIRE ALARM. PROVIDE INTEGRAL 12 AMP-HOUR BATTERY BACK-UP POWER SUPPLY. PROVIDE 2#12-0.5" C. TO 20 AMP 120 VOLT DEDICATED CIRCUIT AT POWER PANEL IN BUILDING J2.
9. PROVIDE CONDUITS AND CONDUCTORS BETWEEN NEW AND EXISTING TERMINAL CABINETS AT EACH RESPECTIVE BUILDING AS REQUIRED FOR COMPLETE AND OPERABLE NEW SYSTEMS AS SPECIFIED AND TO RESTORE SERVICES TO EXISTING SYSTEMS.

SHEET E2.3
 Add GENERAL NOTES SHEET E2.3 per attached page ESK-3.
 Delete REFERENCE NOTES as shown on Drawing and add REVISED REFERENCE NOTES SHEET E2.3 per attached pages ESK-4, ESK-5 and ESK-6.
 Provide 3' x 5' x 4"D. concrete pullbox, with traffic cover engraved TELEPHONE, on the main telephone service conduit east of Building A, positioned to facilitate the wire pull into Building A.
 Provide 2' x 3' x 4"D. concrete pullbox, with traffic cover engraved TELEVISION, on the main television service conduit east of Building A, positioned to facilitate the wire pull into the Building A.

- 1 4" C. WITH 50-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" CABLE (NEW TELEPHONE SERVICE).
- 2 3" C. WITH COMSCOPE #P3-500JCSS COAXIAL CABLE (NEW CABLE TV SERVICE).
- 3 3' x 5' x 4"D. CONCRETE PULLBOX WITH TRAFFIC COVER ENGRAVED: "TELEPHONE".
- 4 2' x 3' x 4"D. CONCRETE PULLBOX WITH TRAFFIC COVER ENGRAVED: "CABLE TV".
- 5 NOT USED.
- 6 REMOVE CONDUCTORS FROM EXISTING 1.5" C. AND PROVIDE 2#8 AND 2#10 FOR FIRE ALARM SYSTEM.
- 7 THRU 17 NOT USED.
- 18 FIVE (5) WEATHERPROOF 6" W X 8" H X 4" D. JUNCTION BOXES, ONE EACH FOR FIRE ALARM, CLOCK, DATA, EMS, AND INTRUSION DETECTION SYSTEMS. ALSO PROVIDE TWO (2) WEATHERPROOF 12" W X 24" H X 6" D. JUNCTION BOXES, ONE EACH FOR TELEVISION (2) WEATHERPROOF 12" W X 24" H X 6" D. JUNCTION BOXES, ONE EACH FOR CONDUCTORS IN BOXES USING AND INTERCOM/TELEPHONE SYSTEMS. TERMINATE ALL CONDUCTORS IN BOXES USING SCREW-TYPE TERMINAL BLOCKS AND/OR PUNCH-DOWN BLOCKS.
- 19 WEATHERPROOF-TAMPERPROOF DOUBLE-SIDED LOCKING SIGNAL SYSTEM PEDESTAL SET ON CONCRETE BASE EXTENDING 24 INCHES BELOW GRADE AND 4 INCHES ABOVE GRADE. NOMINAL PEDESTAL SIZE: 60" W X 18" D X 50" H AS MANUFACTURED BY 3M TELECOM SYSTEMS GROUP #4200-G SERIES OR EQUAL. PROVIDE INTERIOR FRAMES, TERMINAL/PUNCH BLOCKS, BACKWARDS, AND BARRIERS BETWEEN SYSTEMS. ALL CABLES ENTERING AND LEAVING PEDESTAL SHALL BE TERMINATED.
- 20 4#8, 4#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 1" C. (INTRUSION DETECTION); 1 COMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 2" C. WITH 50-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 21 6#8, 4#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 2" C. (EMS); 6 WEST PENN #5392-1" C. (INTRUSION DETECTION); 1 COMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 3" C. WITH 75-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).

- 22 2" C. (FIRE ALARM); 1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 1" C. (INTRUSION DETECTION); 3" C. (TELEVISION); 3" C. (INTERCOM/TELEPHONE).
- 23 6#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 30 WEST PENN #5392-1" C. (INTRUSION DETECTION); 1 COMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 2" C. WITH 25-PAIR REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 24 6#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 2 WEST PENN #5392-1" C. (INTRUSION DETECTION); 1 COMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 3" C. WITH 50-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 25 6#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 2" C. (EMS); 8 WEST PENN #5392-2" C. (INTRUSION DETECTION); 1 COMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 4" C. WITH 200-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 26 4#8, 30#10-2" C. (FIRE ALARM); 3#10-2" C. (CLOCK); 2" C. (DATA); 2" C. (EMS); 2 WEST PENN #5392-1" C. (INTRUSION DETECTION); 1 COMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 1 COMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 3" C. WITH 200-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 27 1" C. (FIRE ALARM); 1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 1" C. (INTRUSION DETECTION); 2" C. (TELEVISION); 2" C. (INTERCOM/TELEPHONE).
- 28 3#10-1" C. (CLOCK); 2 WEST PENN #5392-1" C. (INTRUSION DETECTION); 3" C. WITH 75-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 29 8#10-2" C. (FIRE ALARM); 2" C. (DATA); 1" C. (EMS); 1 COMSCOPE #P3-500JCSS COAXIAL CABLE-2" C. (TELEVISION).
- 30 6#10-2" C. (FIRE ALARM); 3#10-2" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 4 WEST PENN #5392-2" C. (INTRUSION DETECTION); 1 COMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 2" C. WITH 100-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).

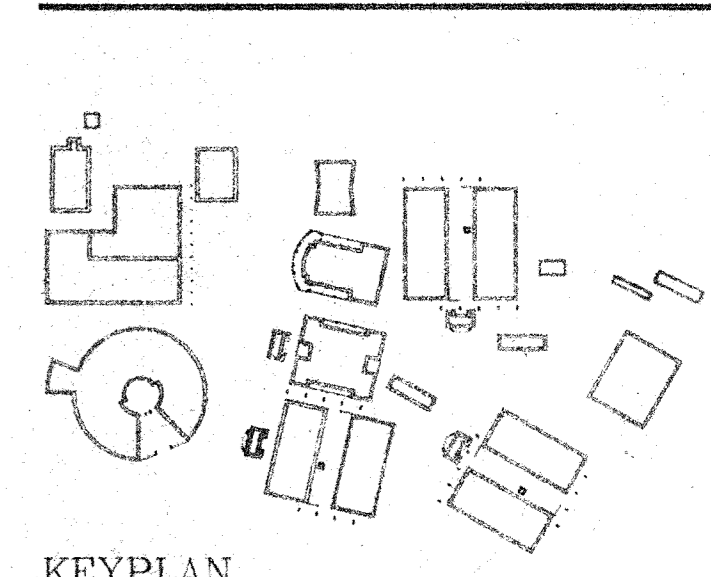
Sketches ESK-4, ESK-5, and ESK-6: In "REVISED REFERENCE NOTES SHEET E2.3", change all Essex "Sealpic-FSF" multi-pair intercom/telephone cables referenced in Notes 20, 21, 23 through 26, 28, 30, and 32 through 39 as follows:
 All 25-pair cables shall be changed to 10-West Penn #CL2369.
 All 50-pair cables shall be changed to 20-West Penn #CL2369.
 All 75-pair cables shall be changed to 30-West Penn #CL2369.
 All 100-pair cables shall be changed to 50-West Penn #CL2369.
 All 200-pair cables shall be changed to 100-West Penn #CL2369.

Revision No.	Date	Description

By	Date	To

BDP The Blurook Partnership
 ARCHITECTS AND PLANNERS
 2300 BOWEN BLVD., SUITE 200
 TELEPHONIC, CALIFORNIA 92660
 Frederick Brown
 Associate
 Consulting Engineer
 3420 Solis Avenue
 Newport Beach, CA 92660
 Telephone (714) 835-3955
 Facsimile (714) 835-3956
 FEB 11 2 1996
 REGISTERED PROFESSIONAL ENGINEER
 NO. 6678
 ELECTRICAL
 STATE OF CALIFORNIA

IRVINE UNIFIED SCHOOL DISTRICT
UNIVERSITY HIGH SCHOOL



SITE ELECTRICAL SIGNAL PLAN

Scale: 1" = 40'
 Date: FEB. 12, 1991
 Issue Date:

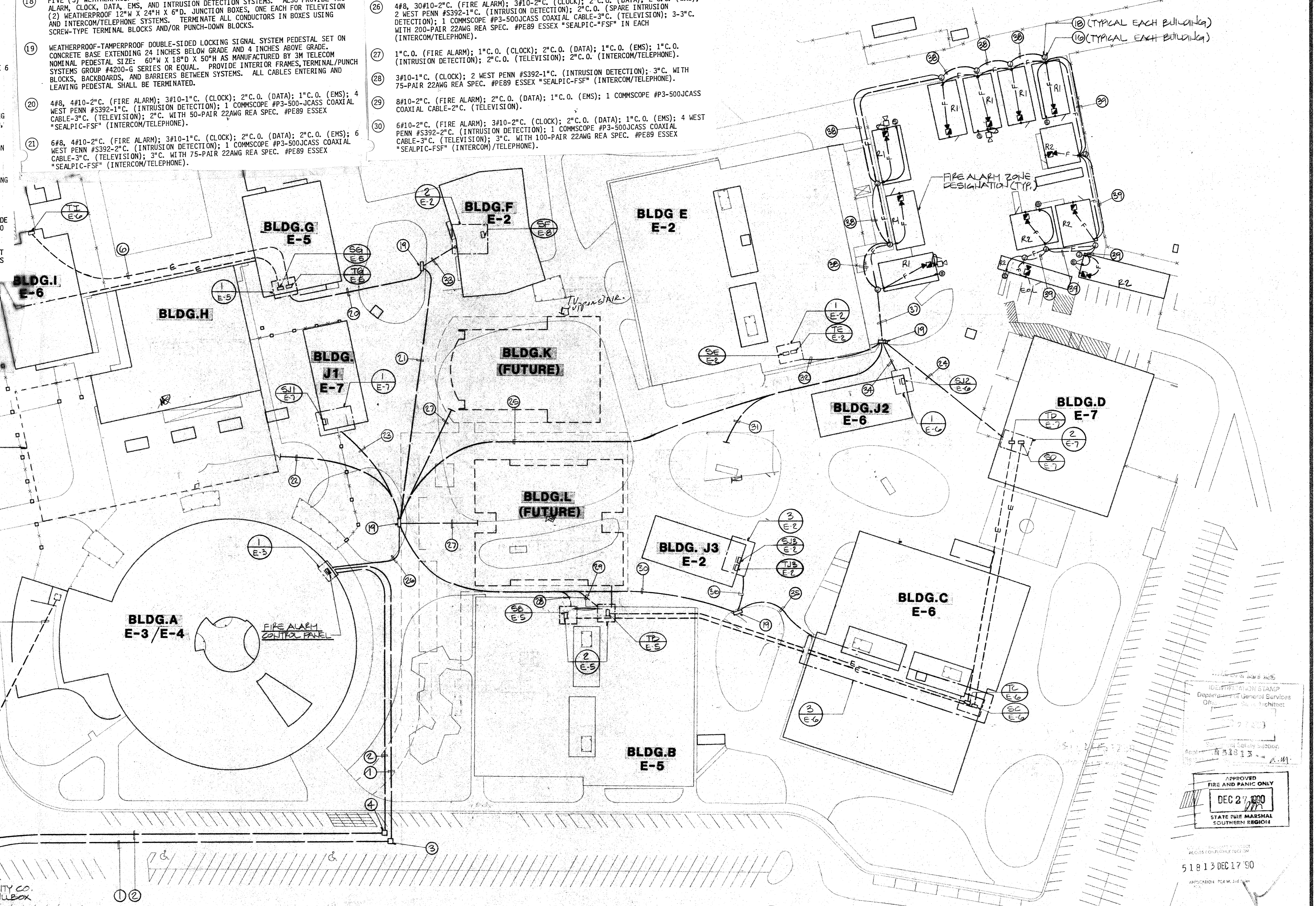
Drawn By: TEP E2.3
 Checked By:

Job No.:

E2.3 (PORTION II)
A

SITE WORK

- 31 1" C. (FIRE ALARM); 1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 1" C. (INTRUSION DETECTION); 2" C. (TELEVISION); 2" C. (INTERCOM/TELEPHONE).
- 32 8#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 2 WEST PENN #5392-1" C. (INTRUSION DETECTION); 1 COMSCOPE #P3-500JCSS COAXIAL CABLE-2" C. (TELEVISION); 3" C. WITH 75-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 33 6#10-1" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 2 WEST PENN #5392-1" C. (INTRUSION DETECTION); 1 COMSCOPE #P3-500JCSS COAXIAL CABLE-2" C. (TELEVISION); 2" C. WITH 25-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 34 16#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 2 WEST PENN #5392-1" C. (INTRUSION DETECTION); 2" C. (TELEVISION); 2" C. WITH 25-PAIR 22 AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 35 6#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 2 WEST PENN #5392-1" C. (INTRUSION DETECTION); 1 COMSCOPE #P3-500JCSS COAXIAL CABLE-3" C. (TELEVISION); 3" C. WITH 75-PAIR REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 36 16#10-2" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 2 WEST PENN #5392-1" C. (INTRUSION DETECTION); 2" C. (TELEVISION); 2" C. WITH 25-PAIR 22 AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 37 4#12-1" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 4 WEST PENN #5392-1" C. (INTRUSION DETECTION); 2" C. (TELEVISION); 3" C. WITH 75-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 38 4#12-1" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 4 WEST PENN #5392-1" C. (INTRUSION DETECTION); 2" C. (TELEVISION); 3" C. WITH 75-PAIR 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).
- 39 4#12-1" C. (FIRE ALARM); 3#10-1" C. (CLOCK); 2" C. (DATA); 1" C. (EMS); 4 WEST PENN #5392-1" C. (INTRUSION DETECTION); 2" C. (TELEVISION); 2" C. WITH 25-PAIR, 22AWG REA SPEC. #PE89 ESSEX "SEALPIC-FSF" (INTERCOM/TELEPHONE).



APPROVED
 FIRE AND PANIC ONLY
 DEC 27 1990
 STATE FIRE MARSHAL
 SOUTHERN REGION
 51813 DEC 17 90

SIGNAL SYSTEM CABLE LEGEND

INDICATES CONDUIT SIZE
 INDICATES QUANTITY OF GAUGE CONDUCTORS FOR CLOCK
 INDICATES QUANTITY OF GAUGE CONDUCTORS FOR FIRE ALARM LOOP CIRCUIT
 INDICATES QUANTITY OF GAUGE CONDUCTORS FOR FIRE ALARM SIGNAL CIRCUIT

INDICATES QUANTITY OF WEST PENN #CL2369 CABLES FOR INTERCOM.
 INDICATES WEST PENN #CL2369 COAXIAL CABLE FOR TELEVISION.
 INDICATES QUANTITY OF WEST PENN #8708 CABLES FOR SECURITY ALARM SYSTEM.
 INDICATES QUANTITY OF WEST PENN #225 CABLES FOR EXTERIOR SPEAKERS.

OMIT

SPECIAL NOTE:
 LOCATIONS OF ALL UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID INTERCEPTING EXISTING PIPING OR CONDUITS. THE ARCHITECT IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES, WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.

north
 DATE: 11-6-90
 SCALE: 1" = 40'

FOR INFORMATION ONLY

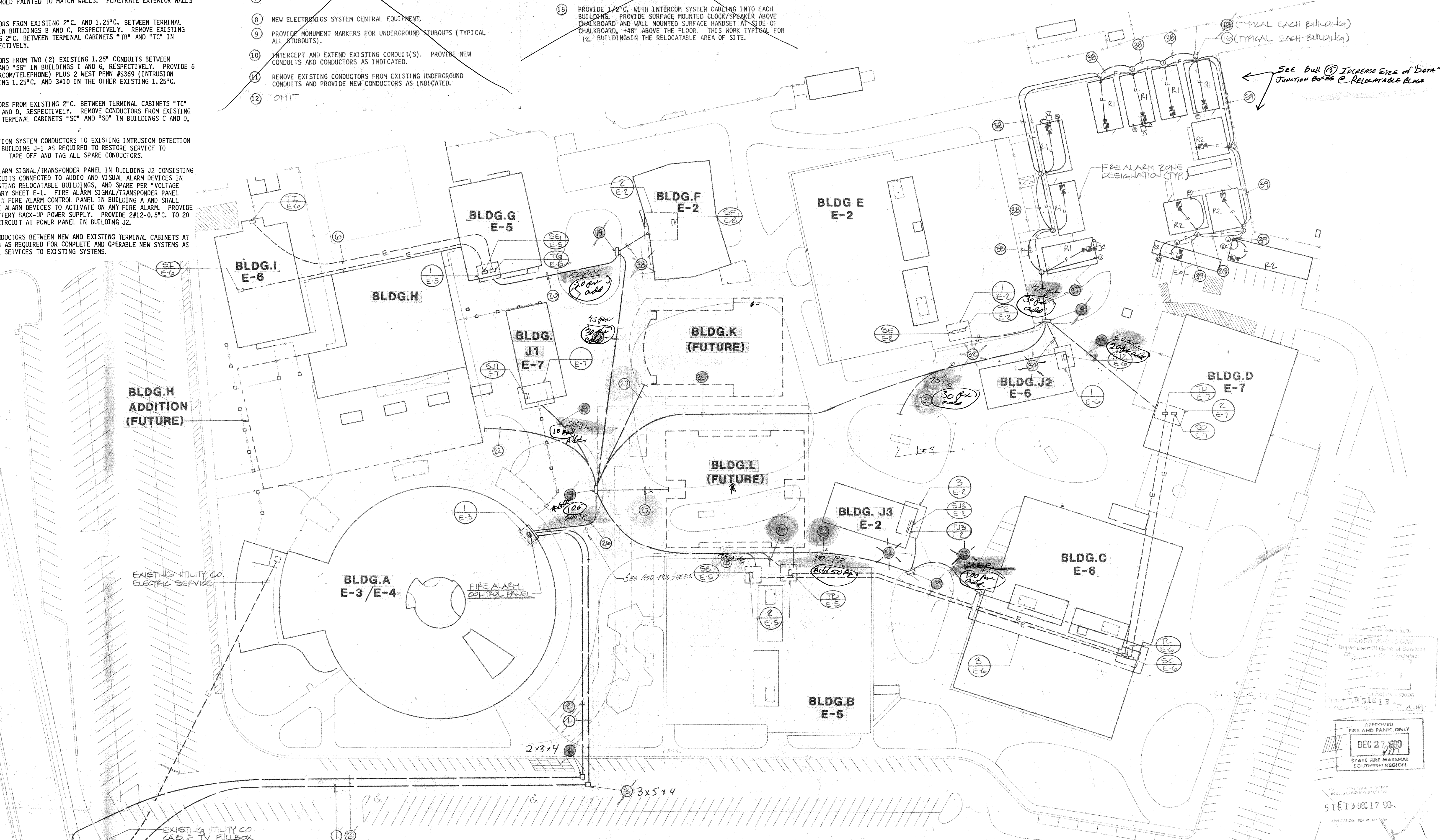
1. PROVIDE SURFACE-MOUNTED CLOCK, SPEAKER, AND INTERCOM STAFF STATION HANDSET IN EACH OF TWELVE (12) RELOCATABLE CLASSROOM BUILDINGS AT THE NORTHEAST AREA OF THE PROJECT. PROVIDE 1 WEST PENN #CL2299 CABLE-0.5" CONDUIT FROM JUNCTION BOX AT REAR OF EACH RELOCATABLE BUILDING TO SERVE SPEAKER AND HANDSET. PROVIDE 3/12-0.5" CONDUIT FROM JUNCTION BOX AT REAR OF EACH RELOCATABLE BUILDING TO SERVE CLOCK. POSITION CLOCK AND SPEAKER OVER EACH CHALKBOARD AND POSITION HANDSET AT SIDE OF EACH CHALKBOARD. RUN CONDUITS CONCEALED ABOVE ACCESSIBLE CEILING AND IN SURFACE MOUNTED WIREMOLD PAINTED TO MATCH WALLS. PENETRATE EXTERIOR WALLS ABOVE CEILING LINE.
2. PROVIDE A TOTAL OF SEVEN (7) SURFACE-MOUNTED WEATHERPROOF SPEAKER HORNS ON RELOCATABLE BUILDINGS AT NORTHEAST AREA OF THE PROJECT WITH 1 WEST PENN #CL2292 CABLE-0.5" TO JUNCTION BOX AT REAR OF EACH RESPECTIVE BUILDING.
3. PROVIDE 3/12-0.5" FROM JUNCTION BOX AT EACH OF TWELVE (12) RELOCATABLE CLASSROOM BUILDINGS AT THE NORTHEAST AREA OF THE PROJECT TO FIRE ALARM DEVICES SHOWN IN EACH BUILDING. RUN CONDUITS CONCEALED ABOVE ACCESSIBLE CEILING AND IN SURFACE MOUNTED WIREMOLD PAINTED TO MATCH WALLS. PENETRATE EXTERIOR WALLS ABOVE CEILING LINE.
4. REMOVE EXISTING CONDUCTORS FROM EXISTING 2" C. AND 1.25" C. BETWEEN TERMINAL CABINETS "SB" AND "SC" IN BUILDINGS B AND C, RESPECTIVELY. REMOVE EXISTING CONDUCTORS FROM EXISTING 2" C. BETWEEN TERMINAL CABINETS "TB" AND "TC" IN BUILDINGS B AND C, RESPECTIVELY.
5. REMOVE EXISTING CONDUCTORS FROM TWO (2) EXISTING 1.25" CONDUITS BETWEEN TERMINAL CABINETS "SI" AND "SJ" IN BUILDINGS I AND G, RESPECTIVELY. PROVIDE 6 WEST PENN #CL2369 (INTERCOM/TELEPHONE) PLUS 2 WEST PENN #5369 (INTRUSION DETECTION) IN ONE EXISTING 1.25" AND 3/16" IN THE OTHER EXISTING 1.25" C. (CLOCK).
6. REMOVE EXISTING CONDUCTORS FROM EXISTING 2" C. BETWEEN TERMINAL CABINETS "TC" AND "TD" IN BUILDINGS C AND D, RESPECTIVELY. REMOVE CONDUCTORS FROM EXISTING 2" C. AND 1.5" C. BETWEEN TERMINAL CABINETS "SC" AND "SD" IN BUILDINGS C AND D, RESPECTIVELY.
7. CONNECT INTRUSION DETECTION SYSTEM CONDUCTORS TO EXISTING INTRUSION DETECTION SYSTEM CONTROL PANEL IN BUILDING J-1 AS REQUIRED TO RESTORE SERVICE TO EXISTING ACTIVE OUTLETS. TAPE OFF AND TAG ALL SPARE CONDUCTORS.
8. PROVIDE A REMOTE FIRE ALARM SIGNAL/TRANSPONDER PANEL IN BUILDING J2 CONSISTING OF SEVEN (7) SIGNAL CIRCUITS CONNECTED TO AUDIO AND VISUAL ALARM DEVICES IN BUILDINGS D, E, J2, EXISTING RELOCATABLE BUILDINGS, AND SPARE PER "VOLTAGE DROP CALCULATIONS" SUMMARY SHEET E-1. FIRE ALARM SIGNAL/TRANSPONDER PANEL SHALL CONNECT TO THE MAIN FIRE ALARM CONTROL PANEL IN BUILDING A AND SHALL CAUSE ALL ITS RESPECTIVE ALARM DEVICES TO ACTIVATE ON ANY FIRE ALARM. PROVIDE INTEGRAL 12 AMP-HOUR BATTERY BACK-UP POWER SUPPLY. PROVIDE 2#12-0.5" C. TO 20 AMP 120 VOLT DEDICATED CIRCUIT AT POWER PANEL IN BUILDING J2.
9. PROVIDE CONDUITS AND CONDUCTORS BETWEEN NEW AND EXISTING TERMINAL CABINETS AT EACH RESPECTIVE BUILDING AS REQUIRED FOR COMPLETE AND OPERABLE NEW SYSTEMS AS SPECIFIED AND TO RESTORE SERVICES TO EXISTING SYSTEMS.

- REFERENCE NOTES ~~DELETE SEE ADD #4~~
- 1 4" C. (NEW TELEPHONE SERVICE).
 - 2 2" C. (NEW CABLE TV SERVICE).
 - 3 3' X 5' X 4" D. CONCRETE PULLBOX WITH TRAFFIC COVER ENGRAVED: TELEPHONE.
 - 4 2' X 3' X 4" D. CONCRETE PULLBOX WITH TRAFFIC COVER ENGRAVED: CABLE TV.
 - 5 OMIT
 - 6 OMIT
 - 7 OMIT
 - 8 NEW ELECTRONICS SYSTEM CENTRAL EQUIPMENT.
 - 9 PROVIDE MONUMENT MARKERS FOR UNDERGROUND STUBOUTS (TYPICAL ALL STUBOUTS).
 - 10 INTERCEPT AND EXTEND EXISTING CONDUIT(S). PROVIDE NEW CONDUITS AND CONDUCTORS AS INDICATED.
 - 11 REMOVE EXISTING CONDUCTORS FROM EXISTING UNDERGROUND CONDUITS AND PROVIDE NEW CONDUCTORS AS INDICATED.
 - 12 OMIT

- ~~DELETE SEE ADD #4~~
- 13 1" C. O. (FIRE ALARM); 1" C. O. (CLOCK); 3" C. O. (IC/PA/S/TV); 2" C. O. (SPARE).
 - 14 1" C. O. (FIRE ALARM); 1" C. O. (CLOCK); 2" C. O. (IC/PA/S/TV); 1" C. O. (SPARE).
 - 15 8#14-1/2" C. (TYPICAL INSIDE RELOCATABLE BUILDINGS WITH HORNS - 4#14 FOR BUILDINGS WITHOUT HORNS).
 - 16 TWO (2) WEATHERPROOF 6" X 8" X 4" D. JUNCTION BOXES - ONE FOR FIRE ALARM, ONE FOR CLOCK. ONE (1) WEATHERPROOF 10" X 12" X 6" D. JUNCTION BOX FOR IC/PA/S/TV.
 - 17 4#14-1/2" C. (TYPICAL BETWEEN SMOKE DETECTOR AND HORN IN RELOCATABLE BUILDINGS).
 - 18 PROVIDE 1/2" C. WITH INTERCOM SYSTEM CABLEING INTO EACH BUILDING. PROVIDE SURFACE MOUNTED CLOCK/SPEAKER ABOVE CHALKBOARD AND WALL MOUNTED SURFACE HANDSET AT SIDE OF CHALKBOARD, 48" ABOVE THE FLOOR. THIS WORK TYPICAL FOR 12 BUILDINGS IN THE RELOCATABLE AREA OF SITE.

SEE BULL (B) PROVIDE THE FOLLOWING ADDITIONAL DEVICES TO REPLACE THOSE DISCOVERED AS EXISTING ON THE CAMPUS.

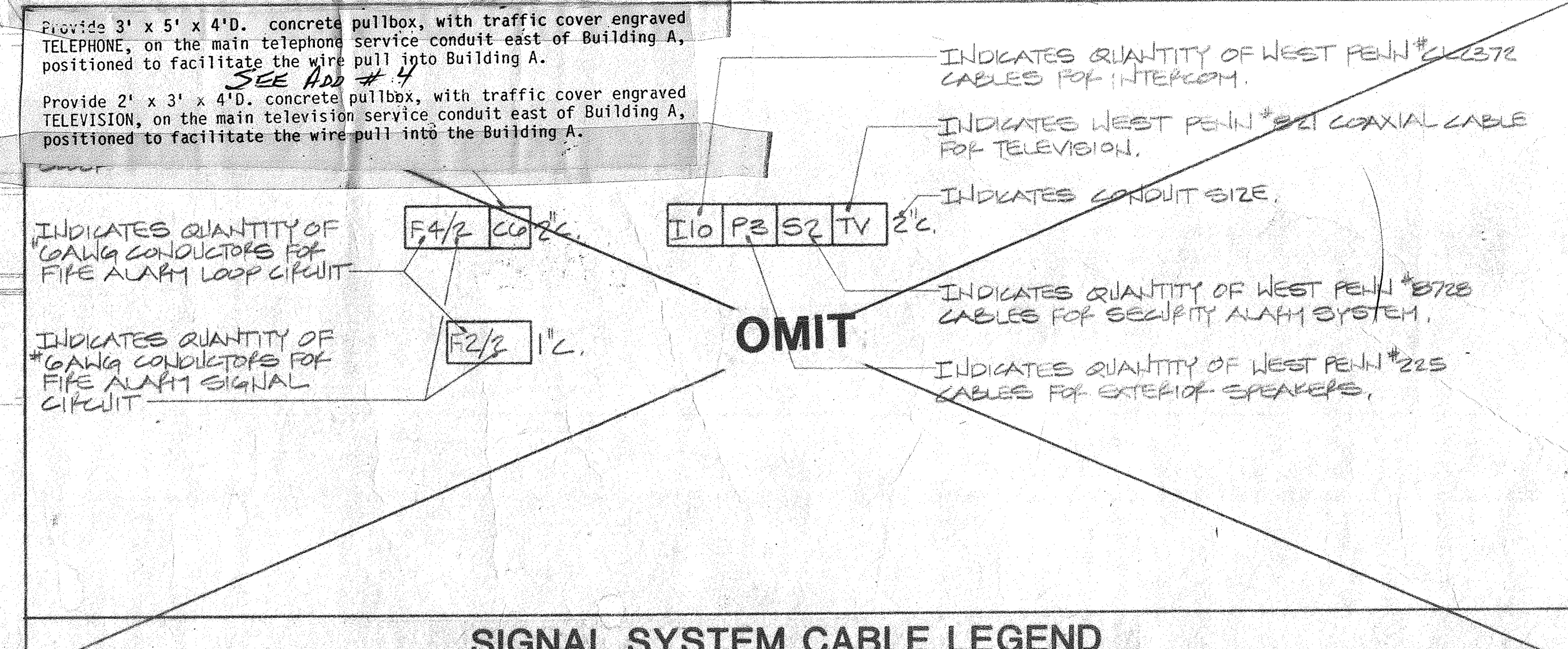
- A) BLDG - 10. SPEAKERS, 1. CLOCK
- B) " - 2. HANDSETS
- C) " - 1. SPEAKER, 1. CLOCK
- D) " - 1. SPEAKER, 1. CLOCK
- E) " - 4. SPEAKERS, 1. CLOCK
- F) " - 1. SPEAKER, 1. CLOCK
- G) " - 1. SPEAKER, 1. CLOCK



FOR INFORMATION ONLY

SPECIAL NOTE:
 LOCATIONS OF ALL UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID INTERCEPTING EXISTING PIPING OR CONDUITS. THE ARCHITECT IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILLED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.

north
 DATE: 11-6-90
 SCALE: 1" = 40'



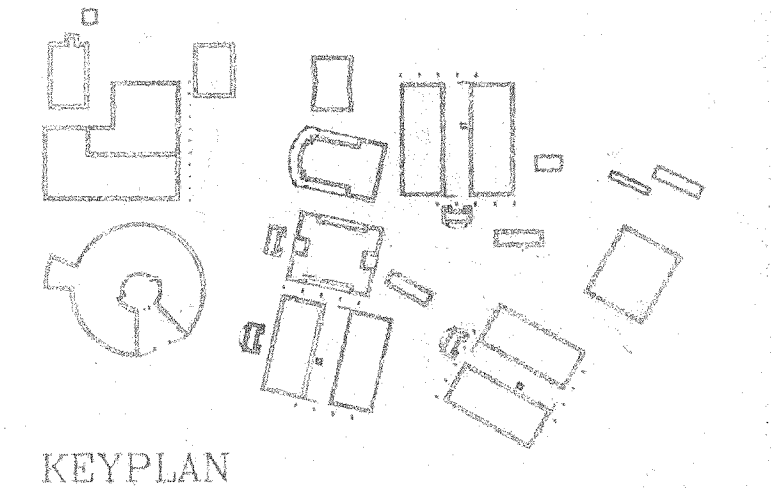
Revisions	Date	Description

BP The Blurock Partnership
 ARCHITECTS AND PLANNERS
 2300 SERRA DEL MAR BOULEVARD
 SERRA DEL MAR, CA 92078
 Telephone: (949) 451-1000
 Fax: (949) 451-1001
 FEA # 112,916

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REGISTERED PROFESSIONAL ENGINEER
 R. BROWN
 NO. 6678
 ELECTRICAL
 STATE OF CALIFORNIA

IRVINE UNIFIED
 SCHOOL DISTRICT
**UNIVERSITY
 HIGH SCHOOL**



**SITE ELECTRICAL
 SIGNAL PLAN**

Scale: 1" = 40'
 Date: FEB. 12, 1991
 Issue Date:

Drawn By: TBP 2076
 Checked By:

Job No.

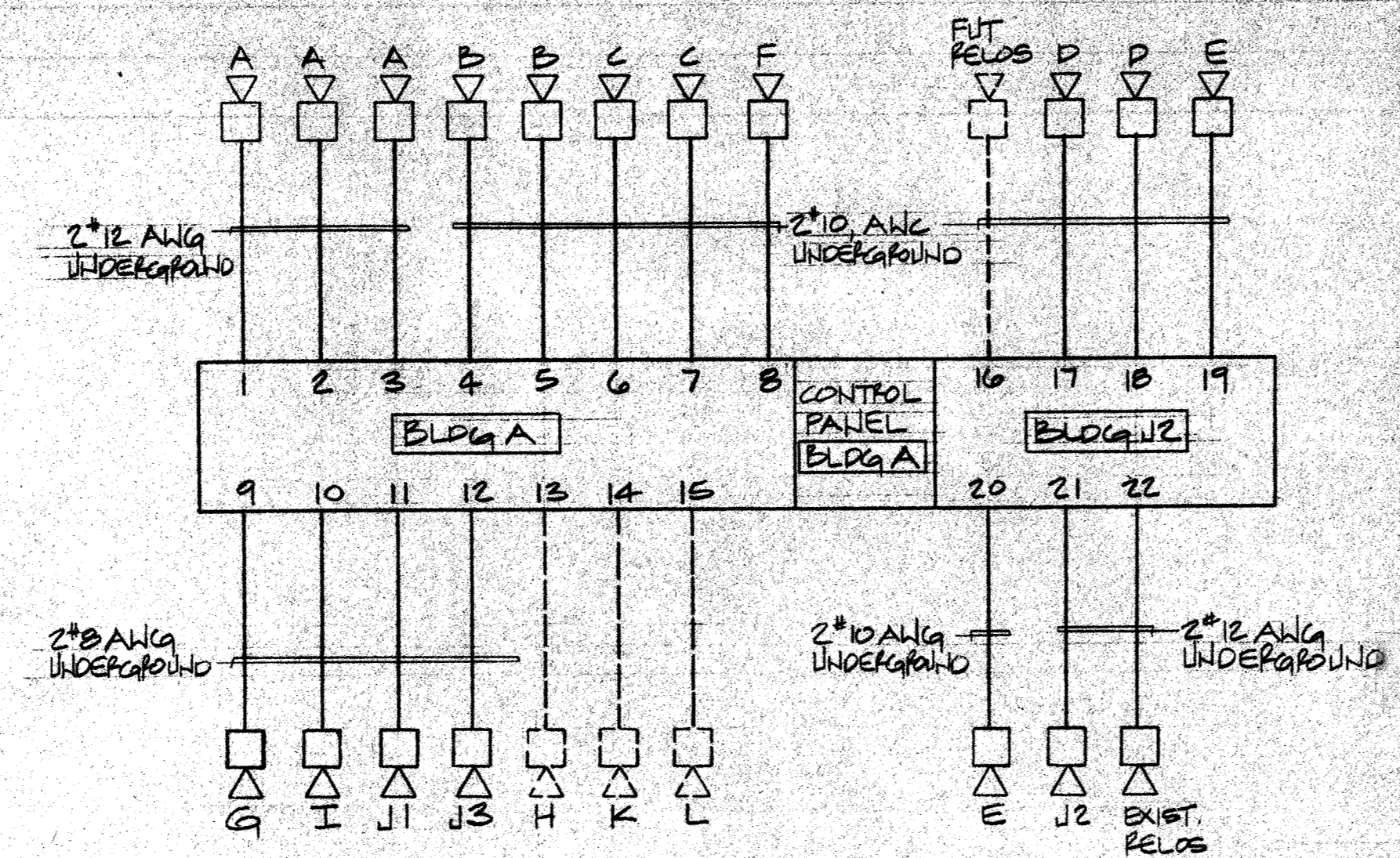
Drawing No. **E2.3 (PARTION II)**
SITE WORK

SYSTEM WIRING NOTES

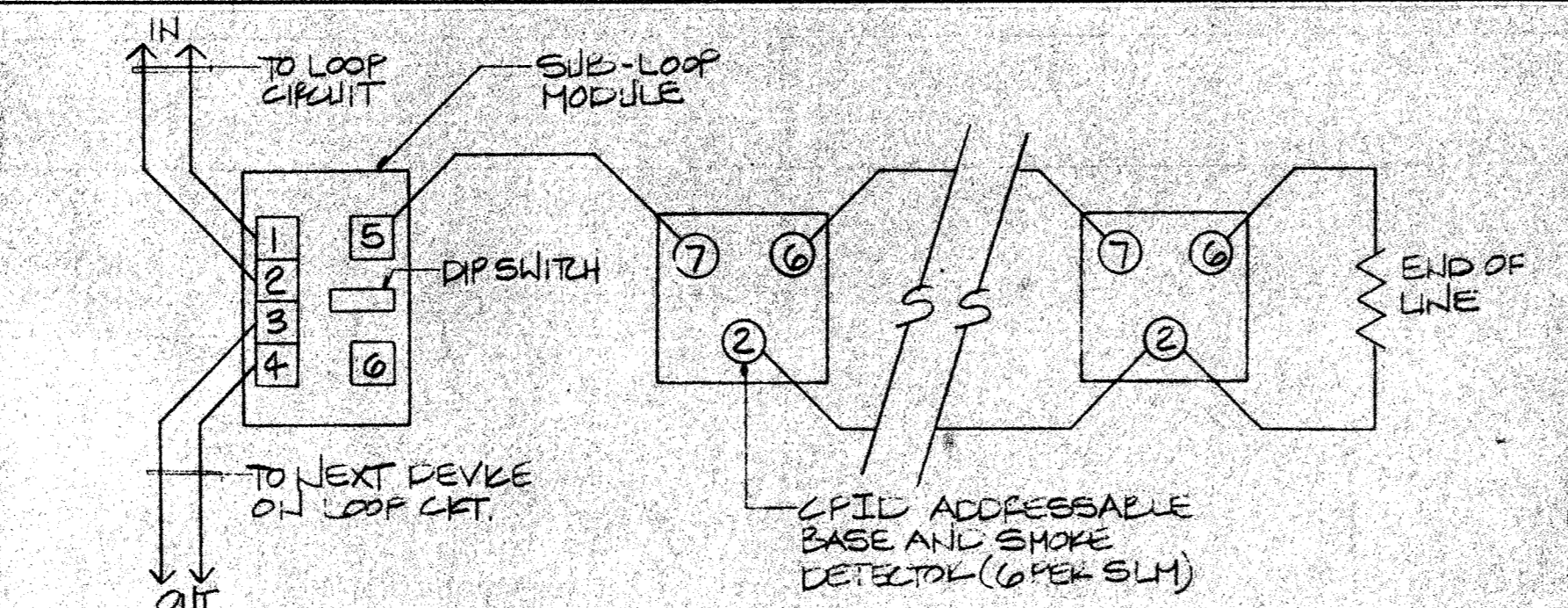
- REMOVE EXISTING CLOCKS, SPEAKERS, AND HANDSETS FROM THEIR RESPECTIVE BACKBOXES AND TURN OVER TO THE SCHOOL DISTRICT. PROVIDE NEW CLOCKS, SPEAKERS, AND HANDSETS IN EXISTING BACKBOXES. VERIFY IN FIELD THE ROUTING OF EXISTING CONDUITS CONNECTING BACKBOXES AND DEVICE OUTLETS TO THEIR RESPECTIVE TERMINAL CABINETS. REMOVE EXISTING CABLING AND PROVIDE NEW CABLING IN EXISTING CONDUITS AS REQUIRED TO SERVE NEW DEVICES.
- REMOVE EXISTING INTERCOM, SPEAKER, AND CLOCK SYSTEM CABLING AND TERMINAL BLOCKS FROM EXISTING SOUND SYSTEM TERMINAL CABINETS. PROVIDE NEW CABLING AND TERMINAL BLOCKS AS REQUIRED TO SERVE NEW DEVICES. TAG ALL CONDUCTORS INCLUDING SPARES.
- WHERE ACTIVE TELEPHONE, TELEVISION, AND INTRUSION DETECTION OUTLETS EXIST, RECONNECT NEW UNDERGROUND CABLES TO EXISTING USING TERMINAL BLOCKS, SPLITTERS, AND/OR CONNECTORS AS REQUIRED TO RESTORE SERVICE.

4. SHEET E-1 SEE REF #
Add "System Wiring Notes" per attached Sketch ESK-1.

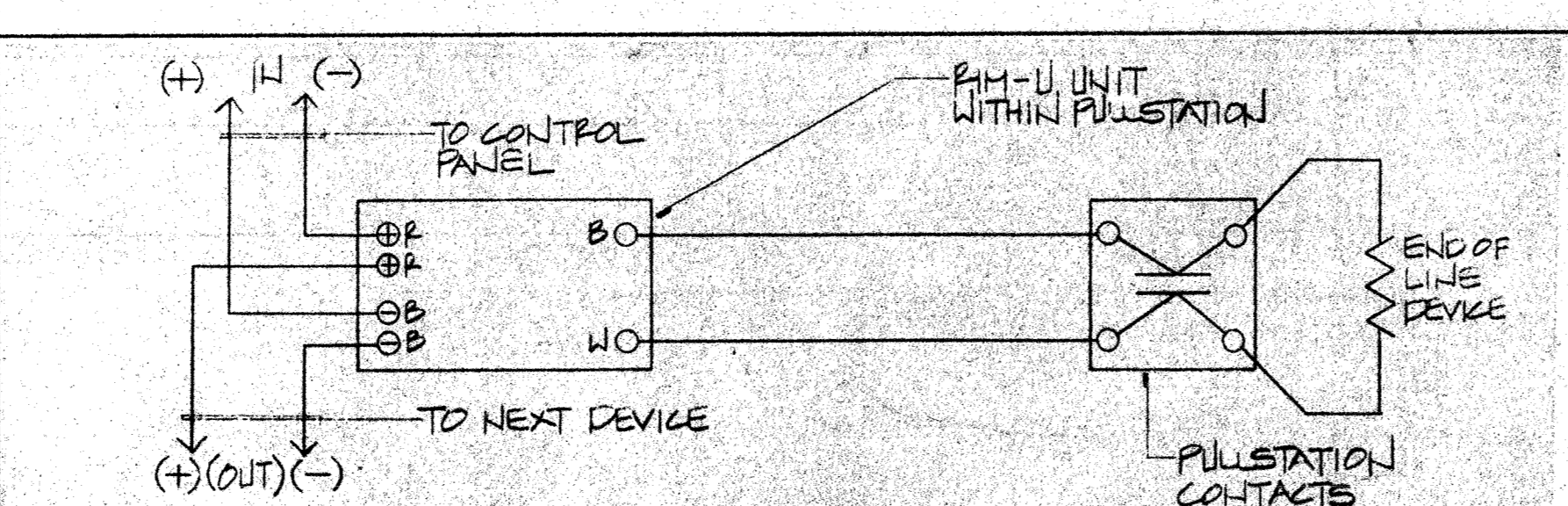
ESK-1
The Blurock Partnership
2300 Newport Blvd./Newport Beach, CA 92663/Telephone (714)673-0300/FAX (714)673-9267
Architects and Planners



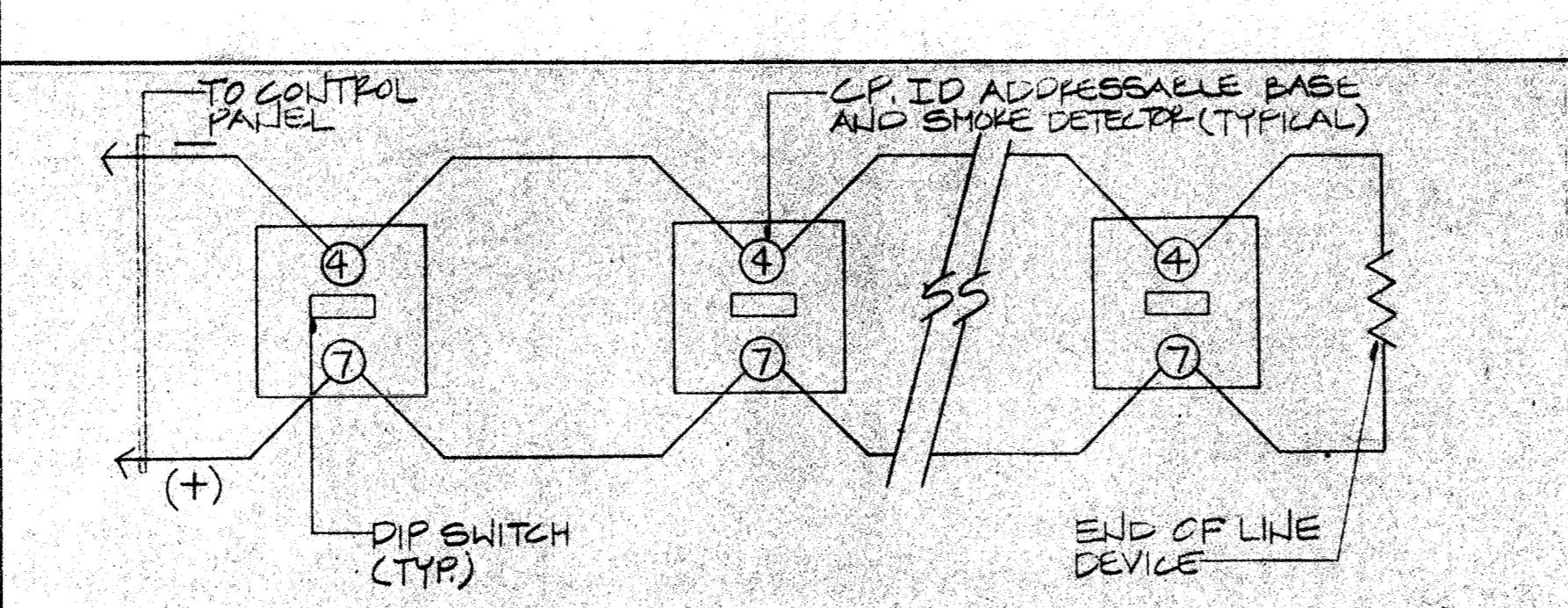
FIRE ALARM SIGNAL CIRCUIT SINGLE LINE DIGRAM



TYPICAL SUB-LOOP MODULE



TYPICAL MANUAL PULLSTATION



FIRE ALARM WIRING DIAGRAM

FIRE ALARM SYSTEM EQUIPMENT SCHEDULE

DESCRIPTION	MOUNTING	SYMBOL	MODEL NUMBER	CSFM LISTING #
MANUAL PULLSTATION	+4'	☐	FCI#MS-2	7150-694:107
VISUAL ALARM FOR HEARING IMPAIRED	+8'	☐	FCI#FSL	7300-694:110
COMBINATION HORN AND VISUAL ALARM FOR HEARING IMPAIRED	+8'	☐	FCI#FSL/HP-24	7135-694:004
MANUAL PULLSTATION AND MINI-HORN	+4'	☐	FCI#MS-2	7150-694:107
MANUAL PULLSTATION W/COMBINATION HORN AND VISUAL ALARM FOR HEARING IMPAIRED	+8'	☐	FCI#MS-2	7150-694:107
DUCT-TYPE SMOKE DETECTOR WITH SAMPLING TUBES	+8'	☐	FCI#SD-7129/DH-22	7257-694:140 3240-694:133
CONTROL PANEL	+4'	☐	FCI#FCLD-2000R4	7165-694:141
ANNUNCIATOR	+4'	☐	STANDARD ELECT. TIME #SAN2000	7120-044:53
WEATHERPROOF HORN	+8'	☐	FCI#HP-24WB	7135-694:004

SHEET E-1; Revise CSFM listing number for FCI#MS-2 mini-horn to 7135-694:113.

FIRE ALARM BATTERY CALCULATIONS

DEVICE	STANDBY CURRENT	ALARM CURRENT
CONTROL PANEL	0.28 AMPS	0.40 AMPS
ANNUNCIATOR PANEL	0.01 AMPS	7.0 AMPS
HORNS (75 TOTAL)	0.00 AMPS	2.63 AMPS
R4H-U MODULES	0.02 AMPS	0.26 AMPS
MINI-HORNS (75 TOTAL)	0.00 AMPS	1.50 AMPS
STROBES (135 TOTAL)	0.00 AMPS	4.46 AMPS
SUB LOOP MODULES	0.06 AMPS	0.26 AMPS
TOTAL	0.37 AMPS	16.51 AMPS

BATTERIES SHALL PROVIDE BACKUP EMERGENCY POWER FOR 60 HOURS OF STANDBY OPERATION FOLLOWED IMMEDIATELY BY 10 MINUTES OF ALARM PLUS 25% OF SPARE CAPACITY FOR FUTURE EXPANSION.

TOTAL STANDBY CURR. X 60 HOURS = (0.37A) X (60)	= 22.2A-HR
TOTAL ALARM CURR. X 1.67 HOURS = (16.51A) X (1.67)	= 2.76A-HR
SUBTOTAL	= 24.96A-HR
25% SPARE	= 6.24
TOTAL	31.2A-HR

BATTERIES SHALL BE RATED 35 AMP-HOURS. BATTERIES IN REMOTE SIGNAL/TRANSPONDER PANEL SHALL BE RATED 12 AMP-HOURS.

VOLTAGE DROP CALCULATIONS

SIGNAL CIRCUIT	SERVICE TO LENGTH (FEET)	UNDERGROUND LENGTH (FEET)	UNDERGROUND CONDUCTOR SIZE	INTERIOR LENGTH (FEET)	INTERIOR CONDUCTOR SIZE	LOAD CURRENT (AMPS)	PERCENT VOLTS DROPPED
1	A (NORTH)	-	-	300	#12AWG	0.92	4.7%
2	A (SOUTH)	-	-	400	#12AWG	0.48	3.3%
3	A (SOUTH)	-	-	400	#12AWG	0.48	3.37%
4	B (EAST)	280	#10AWG	250	#14AWG	0.42	4.1%
5	B (WEST)	280	#10AWG	250	#14AWG	0.43	4.1%
6	C (EAST)	480	#10AWG	250	#14AWG	0.32	3.7%
7	C (WEST)	480	#10AWG	250	#14AWG	0.32	3.7%
8	F	350	#10AWG	150	#14AWG	0.49	3.2%
9	G	425	#8AWG	125	#14AWG	0.57	2.8%
10	I	725	#8AWG	150	#14AWG	0.53	4.7%
11	J-1	200	#10AWG	75	#14AWG	0.13	0.8%
12	J-3	430	#10AWG	75	#14AWG	0.13	0.8%
13	H (FUTURE)	-	-	-	-	-	-
14	K (FUTURE)	-	-	-	-	-	-
15	L (FUTURE)	-	-	-	-	-	-
16	FUTURE RELOS	-	-	-	-	-	-
17	D	200	#10AWG	400	#12AWG	0.50	4.5%
18	D	200	#10AWG	400	#12AWG	0.50	4.5%
19	E (NORTH)	150	#10AWG	250	#12AWG	0.81	4.7%
20	E (SOUTH)	150	#10AWG	250	#12AWG	0.81	4.7%
21	J-2	-	-	75	#14AWG	0.13	0.2%
22	EXISTING RELOS	100	#12AWG	500	#12AWG	0.34	3.6%

NOTE: CIRCUITS 16-22 ARE LOCATED IN A REMOTE SIGNAL/TRANSPONDER PANEL LOCATED PER PLANS.

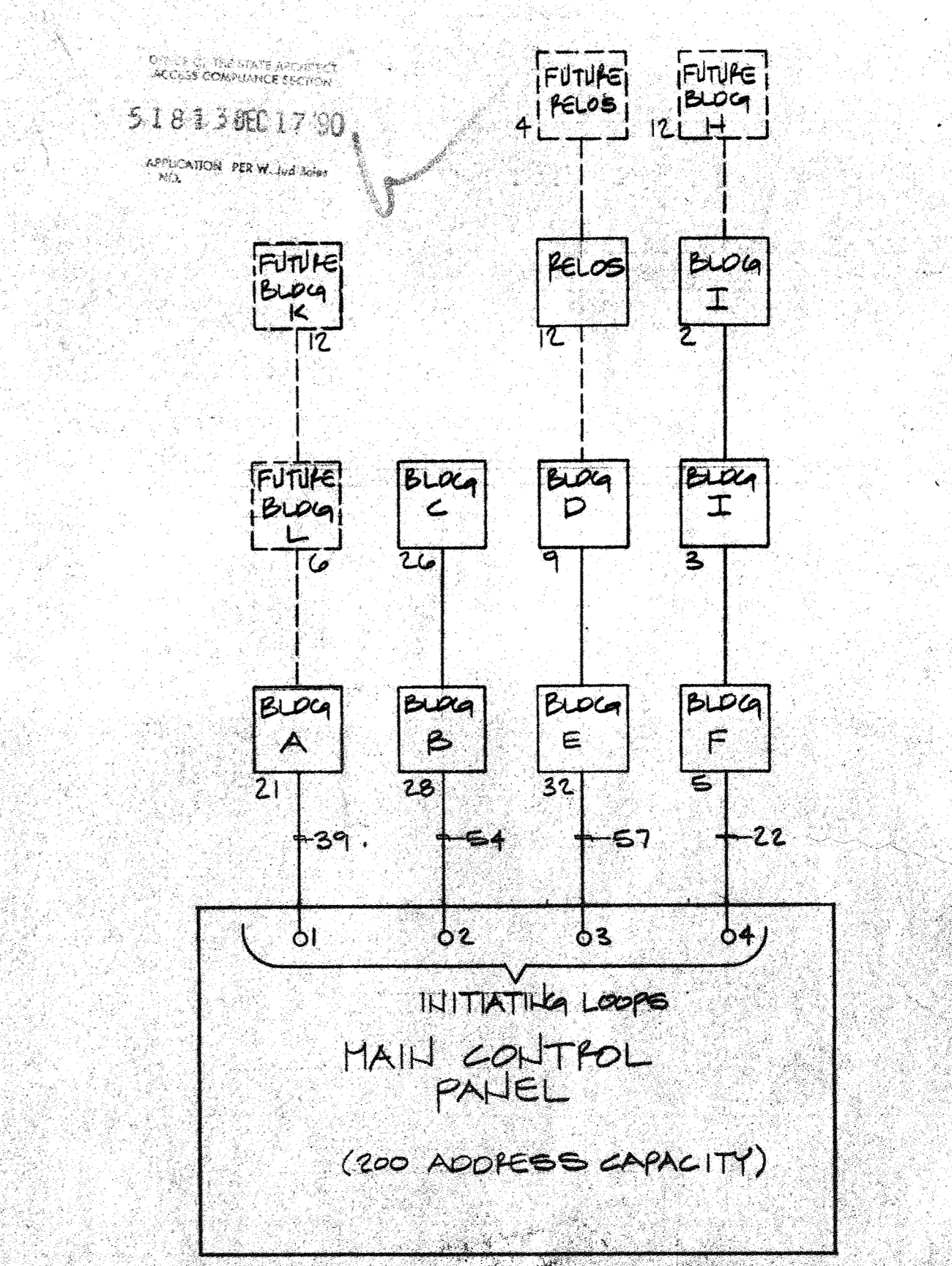
SYMBOL LIST

- ☐ FIRE ALARM DUCT-TYPE DETECTOR WITH SAMPLING TUBE TO BE MOUNTED ON EXISTING HVAC SYSTEM SUPPLY DUCT.
- ☐ FIRE ALARM MANUAL PULLSTATION - SURFACE MOUNTED TO EXISTING WALL AT +48" ABOVE FLOOR.
- ☐ FIRE ALARM INDOOR HORN AND FLASHING VISUAL STROBE - SURFACE MOUNTED TO EXISTING WALL AT +8" ABOVE FLOOR.
- ☐ FIRE ALARM OUTDOOR WEATHERPROOF HORN - SURFACE MOUNTED AT +10" ABOVE GRADE.
- ☐ FIRE ALARM MANUAL PULLSTATION FLUSH MOUNTED TO EXISTING WALL AT +48" ABOVE FLOOR WITH ALARM HORN/STROBE UNIT FLUSH MOUNTED AT +8" ABOVE FLOOR. PROVIDE 1/2" C. AND FIRE ALARM SYSTEM WIRING CONCEALED IN WALL BETWEEN DEVICES.
- ☐ FIRE ALARM SYSTEM FLASHING VISUAL ALARM SURFACE MOUNTED TO EXISTING WALL AT +8" ABOVE FLOOR.
- ☐ EXISTING FIRE ALARM MANUAL PULLSTATION TO BE REMOVED.
- E --- EXISTING CONDUIT AND CONDUCTORS BELOW GRADE #8/12 - 3/4" C. FOR FIRE ALARM.
- ☐ NEW ELECTRONICS SYSTEM SPEAKER IN EXISTING CEILING-MOUNTED BACKBOX. SEE SYSTEM NOTES SHEET E-1.
- ☐ NEW ELECTRONICS SYSTEM CLOCK AND SPEAKER IN EXISTING WALL-MOUNTED CLOCK/SPEAKER ENCLOSURE. SEE SYSTEM WIRING NOTES SHEET E-1.
- ☐ NEW WALL-MOUNTED ELECTRONICS SYSTEM STAFF STATION HANDSET IN EXISTING OUTLET BOX AT +48" ABOVE FLOOR. SEE SYSTEM WIRING NOTES SHEET E-1.
- ☐ NEW DESK-MOUNTED ELECTRONICS SYSTEM ADMINISTRATIVE HANDSET SERVED FROM EXISTING OUTLET BOX. SEE SYSTEM WIRING NOTES SHEET E-1.
- ☐ NEW ELECTRONICS SYSTEM CLOCK AND SPEAKER SURFACE MOUNTED IN NEW CLOCK/SPEAKER ENCLOSURE AT +8" ABOVE FLOOR.
- ☐ NEW ELECTRONICS SYSTEM STAFF STATION HANDSET FLUSH MOUNTED AT +48" ABOVE FLOOR.
- ☐ NEW DESK-MOUNTED ELECTRONICS SYSTEM ADMINISTRATIVE HANDSET SERVED FROM NEW FLUSH-MOUNTED OUTLET BOX AT +12" ABOVE FLOOR.
- ☐ TERMINAL CABINET.
- ☐ EXISTING TERMINAL CABINET.
- ☐ FIRE ALARM MANUAL PULLSTATION FLUSH-MOUNTED IN EXISTING WALL AT +48" ABOVE FLOOR WITH ALARM HORN/STROBE UNIT FLUSH-MOUNTED AT +8" ABOVE FLOOR. PROVIDE 1/2" C. AND FIRE ALARM SYSTEM WIRING CONCEALED IN WALL BETWEEN DEVICES.

On the Symbol List, add "(E)" to the symbol for new electronics system clock and speaker in existing wall-mounted clock/speaker enclosure. SEE REF # 2

FIRE ALARM SYSTEM NOTES

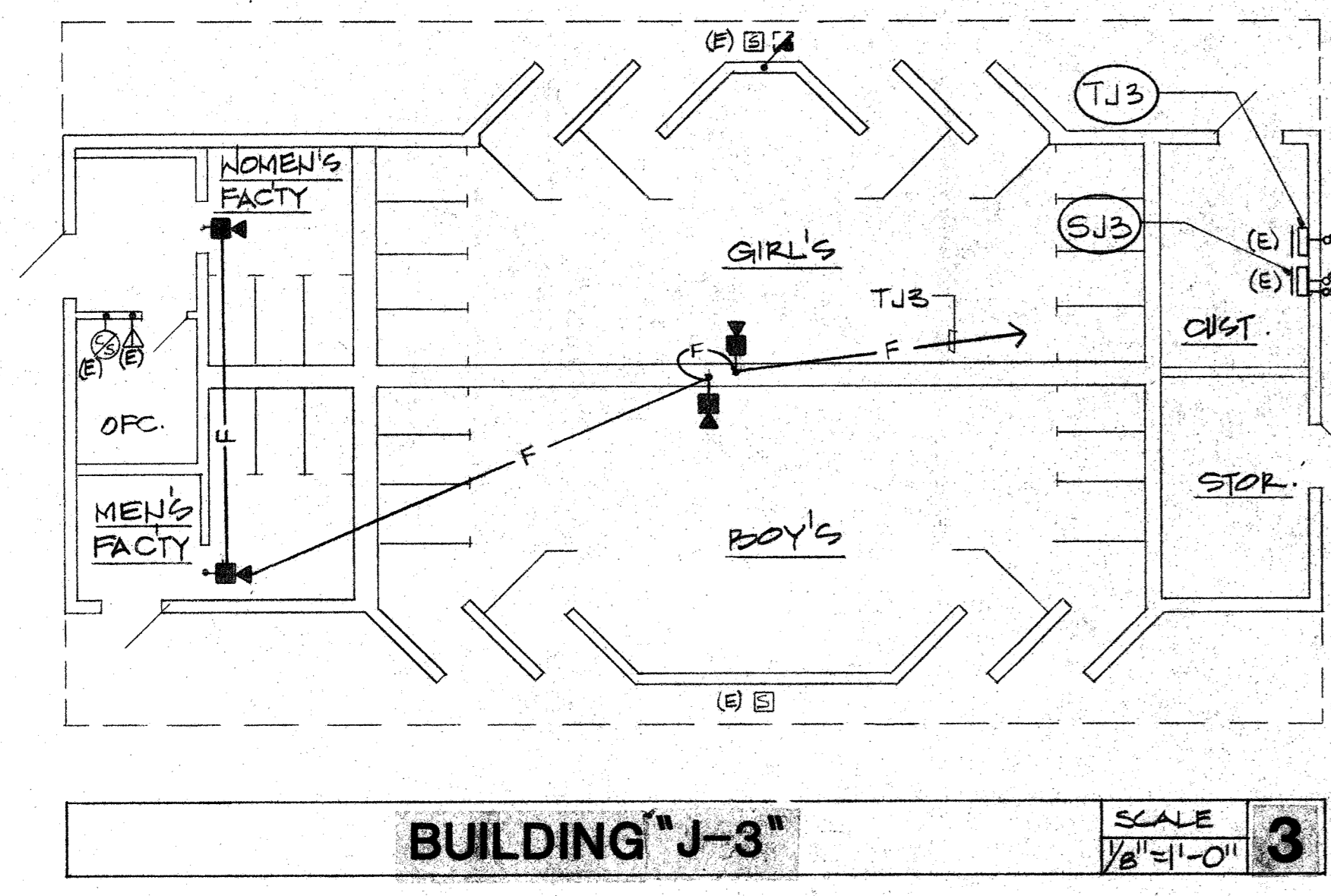
- THE FIRE ALARM SYSTEM SHALL COMPLY WITH TITLE 24, PART 2, SECTION 2-809 AND PART 3, ARTICLE 760 OF THE CALIFORNIA CODE OF REGULATIONS.
- THE FIRE ALARM SYSTEM SHALL BE POWER-LIMITED INDEPENDENT LOCAL PROTECTIVE SIGNALING SYSTEM IN ACCORDANCE WITH NFPA-72A.
- THE FIRE ALARM SYSTEM SHALL INCLUDE EMERGENCY WARNING SYSTEMS FOR THE HEARING-IMPAIRED PER TITLE 24 SECTION 2-7204(a).
- THE EXISTING FIRE ALARM SYSTEM SHALL BE COMPLETELY DISCONNECTED AND REMOVED SO THAT ONLY THE NEW FIRE ALARM SYSTEM SERVES THE ENTIRE SCHOOL CAMPUS.
- FIRE ALARM SYSTEM WIRING SHALL BE #14AWG OR LARGER AS INDICATED ON THE PLANS. WIRING SHALL BE IN COMPLIANCE WITH NFPA ARTICLE 760-16(b) AND ARTICLE 310. ALL WIRING SHALL BE INSTALLED IN CONDUIT OR OTHER UL-LISTED RACEWAY.
- FIRE ALARM SYSTEM SHALL SOUND THE CALIFORNIA UNIFORM FIRE CODE SIGNAL WITH CONTINUOUS SOUND.
- ALL AUDIBLE SIGNALING DEVICES SHALL PRODUCE THE SAME HORN-TYPE SOUND.



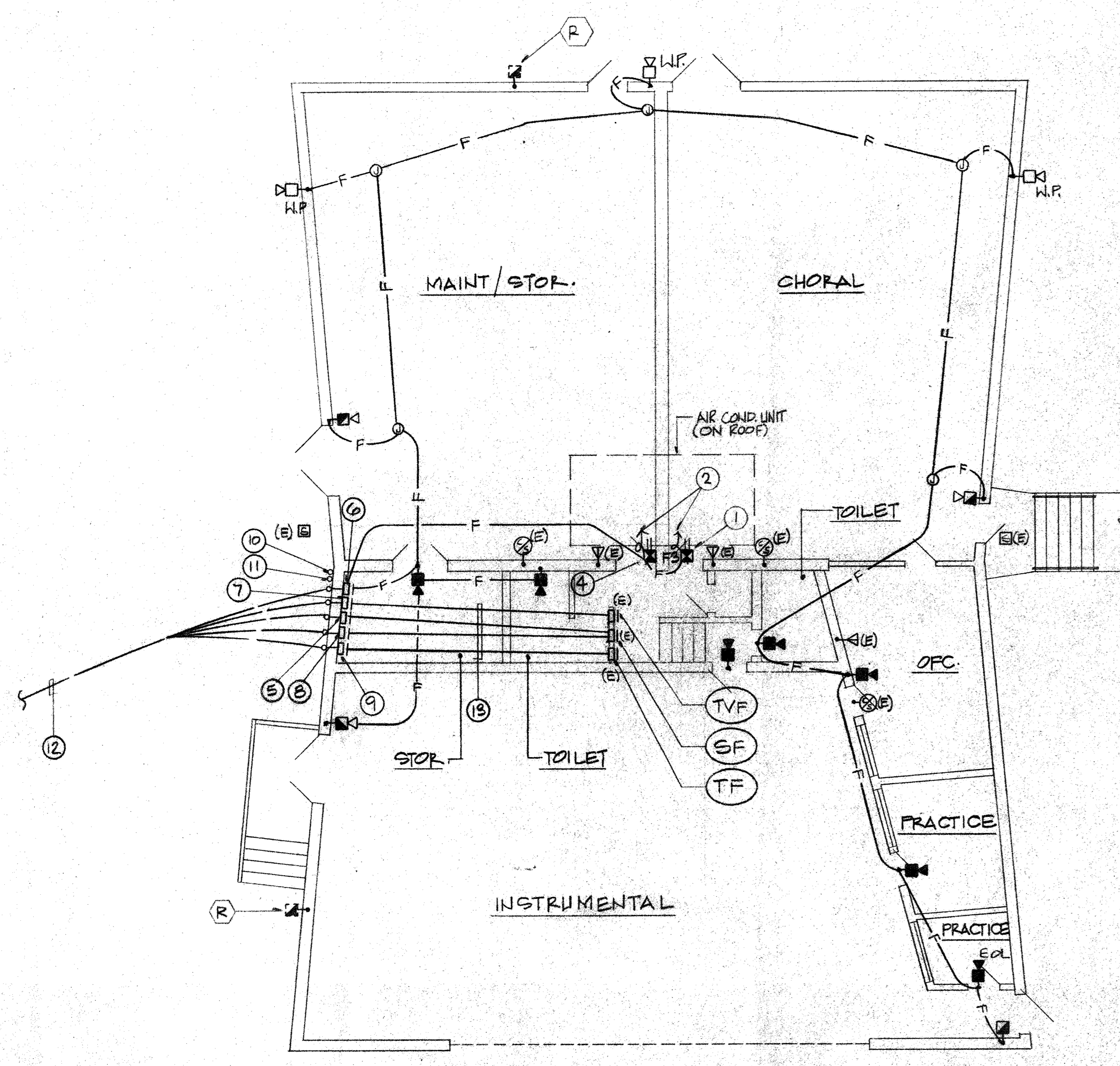
FIRE ALARM SIGNAL CIRCUIT RISER DIAGRAM

FOR INFORMATION ONLY

ALTERNATE BID NO. 1
 UNIVERSITY HIGH SCHOOL
 4771 CAMPUS DRIVE IRVINE CALIFORNIA
 UPGRADE SIGNAL SYSTEMS
 SHEET E-1
 NO. DATE
 REVISIONS
 OF

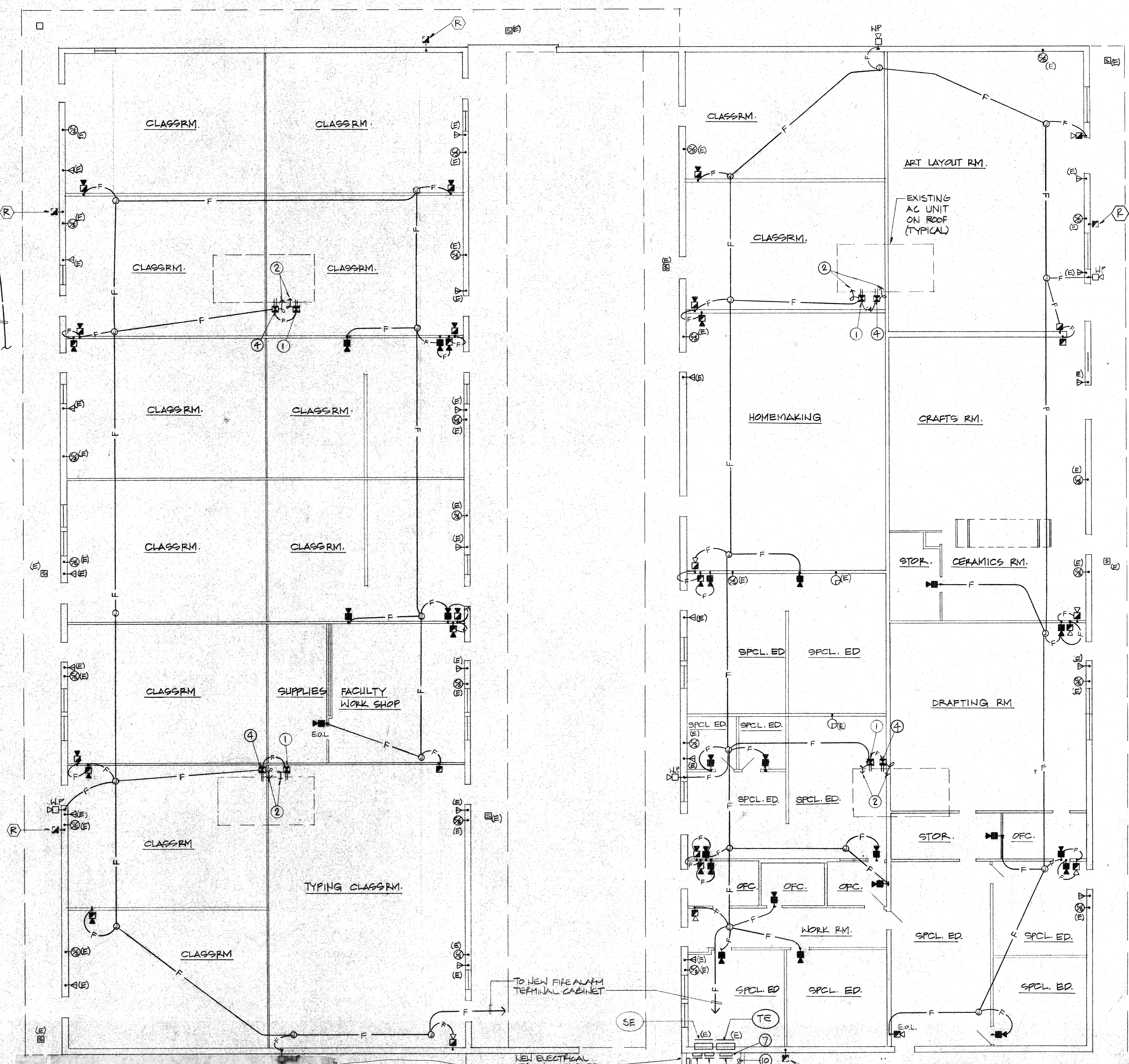


BUILDING "J-3" SCALE 1/8"=1'-0" **3**



BUILDING "F" SCALE 1/8"=1'-0" **2**

- REFERENCE NOTES**
- 1 PROVIDE DUCT-TYPE SMOKE DETECTOR AND SAMPLING TUBE IN MAIN SUPPLY DUCT ON AIR-HANDLING/AIR-CONDITIONING UNIT.
 - 2 CONNECT SMOKE DETECTOR AUXILIARY CONTACTS TO LOW VOLTAGE CONTROL CIRCUIT SO THAT AIR SUPPLY SHUTS OFF WHEN SMOKE IS DETECTED. PROVIDE CONTROL POINT MODULE IN OUTLET BOX.
 - 3 OMIT
 - 4 PROVIDE DUCT-TYPE SMOKE DETECTOR AND SAMPLING TUBE IN MAIN RETURN AIR DUCT ON AIR HANDLING/AIR-CONDITIONING UNIT.



5. SHEET E-2
Delete "New Electrical Terminal Closet" at Building E. New terminal cabinets referenced by Notes 5, 6, 7, 8 and 9 at Building E shall be weatherproof and positioned so that a closet can be built around them in the future by others.
See Add #2

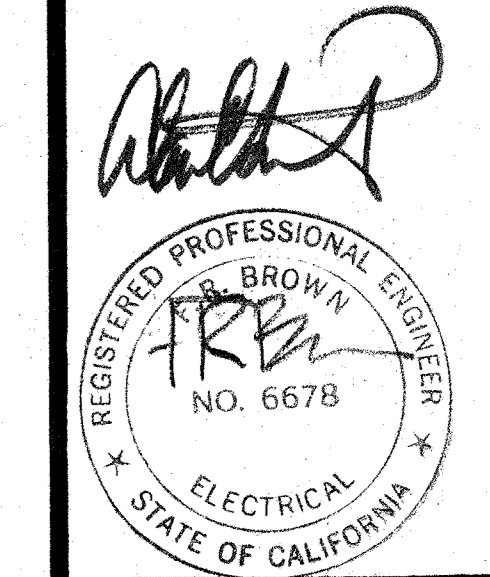
- 5 2" WIDE X 4" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "INTERCOM/PA AND TELEPHONE".
- 6 18" WIDE X 3" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "FIRE ALARM".
- 7 18" WIDE X 3" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "TELEVISION".
- 8 1" WIDE X 2" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "CLOCK".
- 9 1" WIDE X 2" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "INTRUSION ALARM".
- 10 STUB LOCATION AT +6" FOR DATA CONDUIT.
- 11 STUB LOCATION AT +6" FOR ENERGY MANAGEMENT SYSTEM CONDUIT.
- 12 SIGNAL SYSTEM CONDUITS. SEE SHEET E2.3 FOR CONTINUATION. TERMINATE EACH CONDUIT AT ITS RESPECTIVE TERMINAL CABINET.
- 13 2" CONDUIT WITH RESPECTIVE SIGNAL SYSTEM CABLING. RUN CONDUIT EXPOSED ALONG HIGH CEILING AND DOWN TO TERMINAL CABINETS. CUT, PATCH, AND FINISH EXISTING WALLS ABOVE EXISTING FLUSH TERMINAL CABINETS AS REQUIRED TO CONCEAL NEW CONDUITS IN WALL.
- 14 CONDUITS RISE UP EXPOSED ON BUILDING EXTERIOR FACE AND PENETRATE BUILDING WALL INTO EXISTING TERMINAL CABINETS.

BUILDING "E" SCALE 1/8"=1'-0" **1**

FOR INFORMATION ONLY

51813 DEC 17 90
APPROXIMATE PER W. J. 5-84

NO.	DATE	REVISIONS	BY



FREDERICK BROWN ASSOCIATES
CONSULTING ENGINEERS

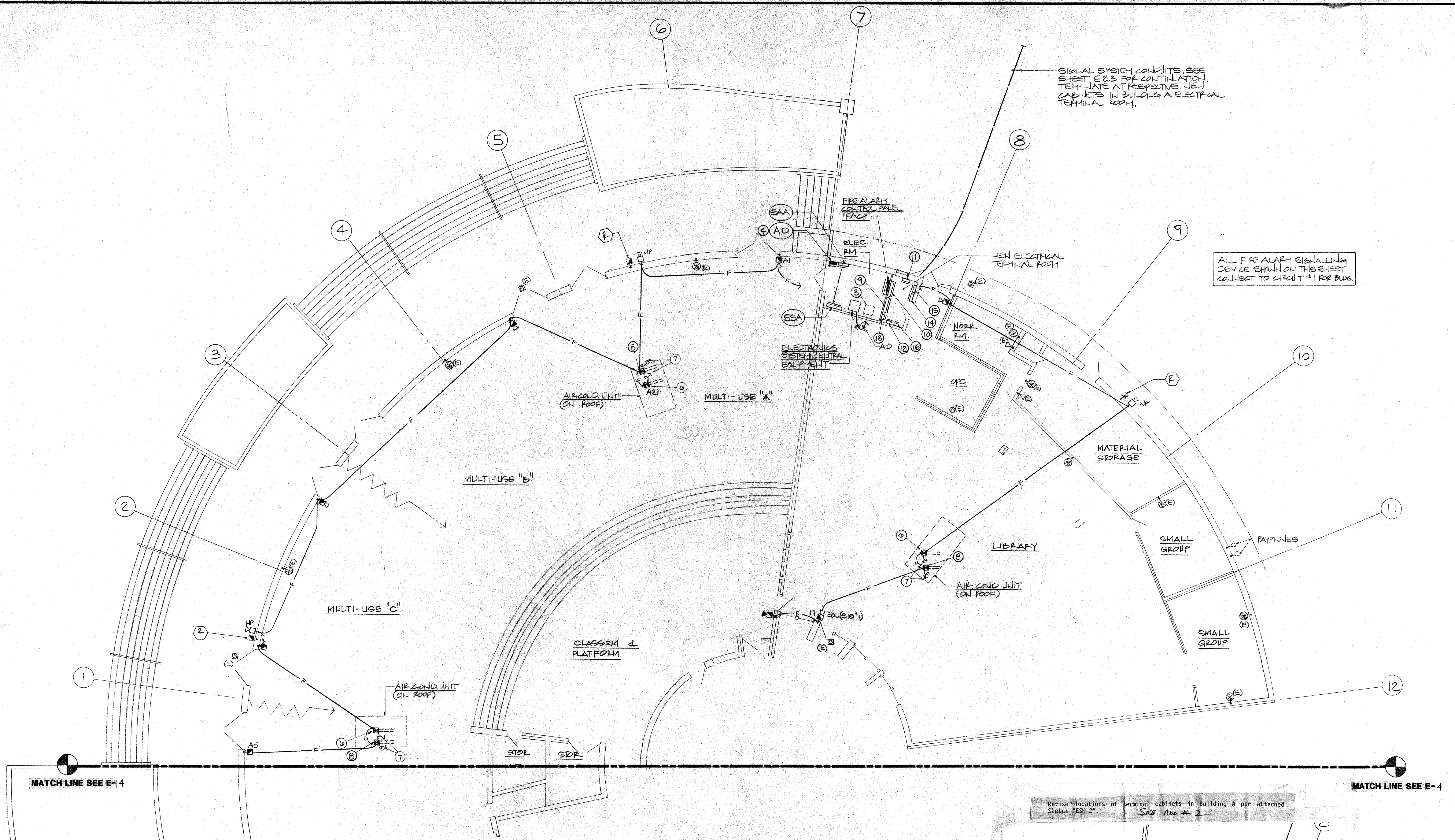
3420 Irvine Avenue
Newport Beach, CA 92660
(714) 852-9995

UNIVERSITY HIGH SCHOOL
4771 CAMPUS DRIVE IRVINE, CALIFORNIA

UPGRADE SIGNAL SYSTEMS

ALTERNATE BID NO. _____

Drawn By: RW
Checked By: SRZ
Scale: 1/8"=1'-0"
Date: FEB. 12, 1991
Project Number: FBA # 529.022
SHEET: BLDGS. "E", "F", & "J-3"
F-2
OF

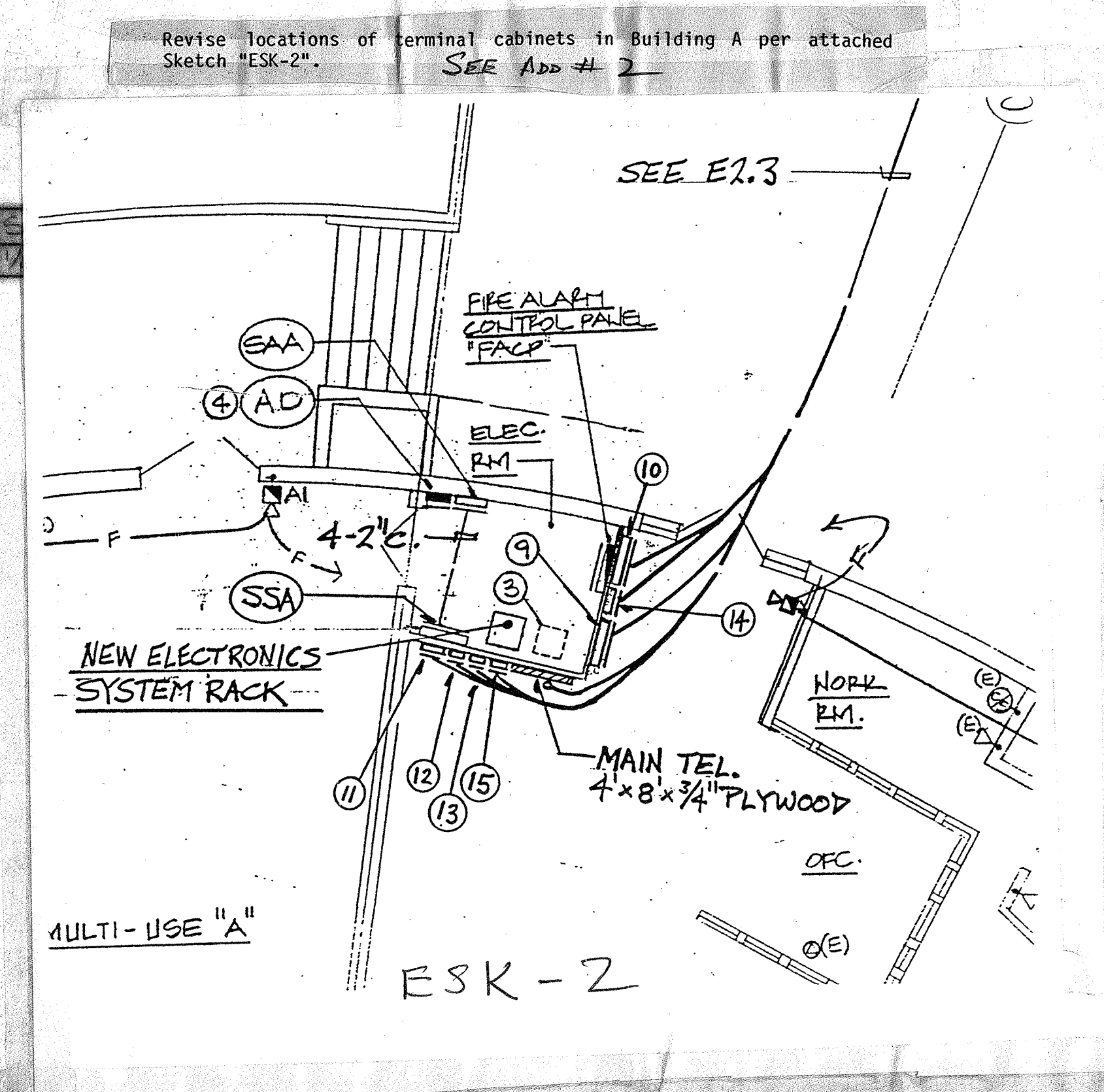


ADMINISTRATION BUILDING A (NORTH)

REFERENCE NOTES:

- ① OMIT
- ② NEW 4" C. BETWEEN TERMINAL CABINETS IF REQUIRED FOR CABLE INTERCONNECTION. VERIFY WHICH CABINET CONTAINS EXISTING SITE CONDUITS FOR RESPECTIVE SYSTEMS AND PROVIDE CONDUITS TO CENTRAL CONTROL EQUIPMENT.
- ③ EXISTING CENTRAL SOUND SYSTEM EQUIPMENT RACK TO BE REMOVED.
- ④ EXISTING 120VOLT PANELBOARD. PROVIDE NEW 20A-1P CIRCUIT BREAKERS AS REQUIRED FOR POWER TO NEW FIRE ALARM AND ELECTRONICS SYSTEM.
- ⑤ HOMERUN FOR SIGNAL CIRCUIT #1 AND LOOP CIRCUIT #4.
- ⑥ PROVIDE DUCT-TYPE SMOKE DETECTOR AND SAMPLING TUBE IN MAIN SUPPLY DUCT ON AIR-HANDLING/AIR CONDITIONING UNIT.
- ⑦ CONNECT SMOKE DETECTOR AUXILIARY CONTACTS TO LOW VOLTAGE CONTROL CIRCUIT SO THAT AIR SUPPLY SHUTS OFF WHEN SMOKE IS DETECTED. PROVIDE CONTROL POINT MODULE IN OUTLET BOX.
- ⑧ PROVIDE DUCT-TYPE SMOKE DETECTOR AND SAMPLING TUBE IN MAIN RETURN AIR DUCT ON AIR-HANDLING/AIR CONDITIONING UNIT.
- ⑨ 3" WIDE X 5" HIGH X 8" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "INTERCOM/PA AND TELEPHONE".
- ⑩ 3" WIDE X 5" HIGH X 8" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "FIRE ALARM".
- ⑪ 2" WIDE X 4" HIGH X 8" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "TELEVISION".
- ⑫ 1" WIDE X 4" HIGH X 8" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "DATA".
- ⑬ 1" WIDE X 2" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "ENERGY MANAGEMENT".
- ⑭ 18" WIDE X 3" HIGH X 5" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "CLOCK".
- ⑮ 18" WIDE X 3" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "INTRUSION DETECTION".
- ⑯ 2" WIDE X 4" HIGH X 8" DEEP TERMINAL CABINET ENGRAVED: "TELEPHONE SERVICE".

FOR INFORMATION ONLY



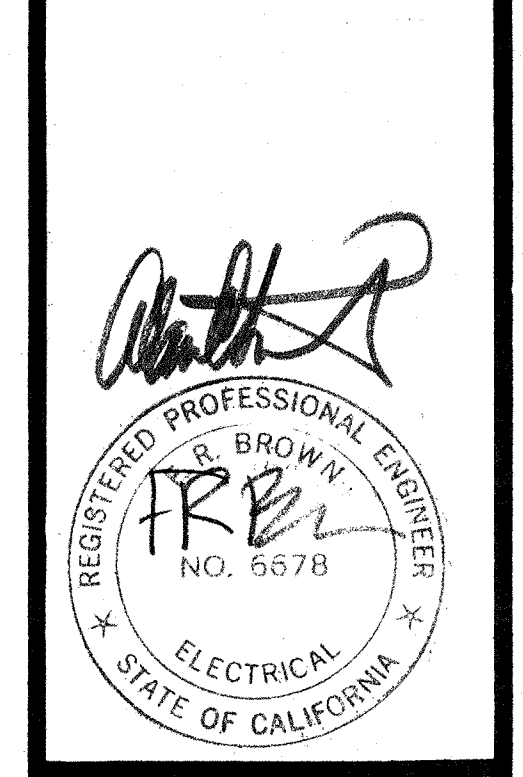
SHEET E-3 See Add # 4

Provide conduits and conductors between terminal cabinets referenced by Notes 9 through 15 and respective equipment and/or terminal cabinets in existing electrical room as required for complete and operable new systems and to restore services to existing systems. Conduit sizes and conductor quantities and types shall be same as specified in revised Note 26, Sheet E2.3.

Remove existing recessed wall display cabinet in library where new terminal cabinets for fire alarm and intercom are to be positioned. Fill in wall cavity as required to support new construction.

Provide 4" C. and 50-pair 22AWG REA SPEC. #PE89 ESSEX SEALPIC-FSE cable between new main telephone backboard and existing AT&T telephone PBX in Building A South Electrical Equipment Room.

NO.	DATE	REVISIONS	BY



FREDERICK BROWN ASSOCIATES
CONSULTING ENGINEERS

3420 Irvine Avenue
Newport Beach, CA 92660
(714) 852-9995

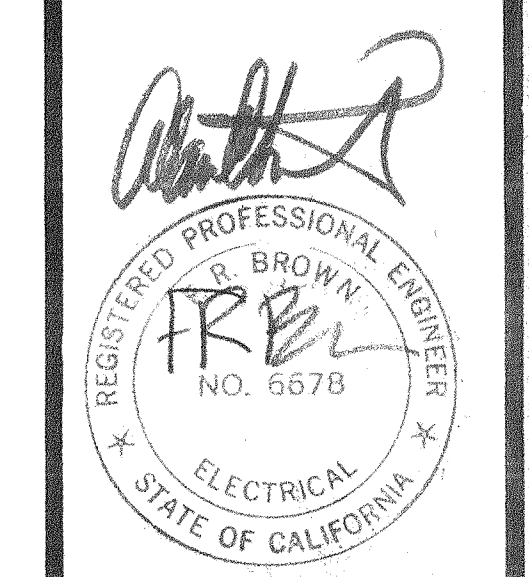
UNIVERSITY HIGH SCHOOL
4771 CAMPUS DRIVE IRVINE, CALIFORNIA

UPGRADE SIGNAL SYSTEM

Down By: MGB
Checked By: SRZ
Scale: 1/8" = 1'-0"
Date: FEB 12, 1991
Project Number: PBA # 529.012
SHEET: BLDG A (NORTH)
E-3 A

51813 DEC 17 90

NO.	DATE	REVISIONS	BY



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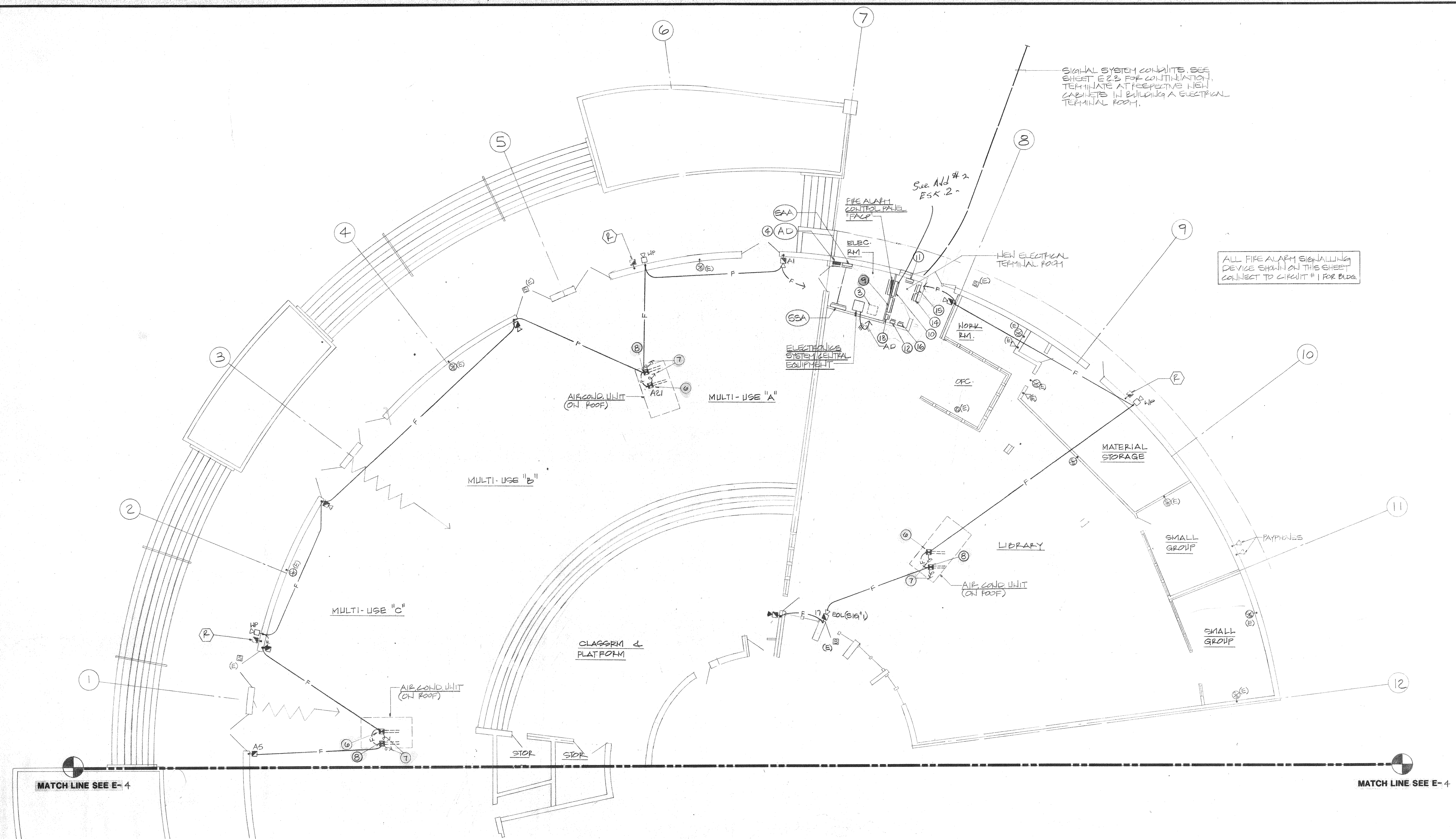
3420 Irvine Avenue
Newport Beach, CA 92660
(714) 852-9995

UNIVERSITY HIGH SCHOOL
4771 CAMPUS DRIVE IRVINE, CALIFORNIA

UPGRADE SIGNAL SYSTEM

Drawn By: MGB
Checked By: SRZ
Scale: 1/8" = 1'-0"
Date: FEB 12, 1991
Project Number: PBA # 529,022

SHEET
BLDG A (NORTH)
E-3 B



ADMINISTRATION BUILDING A (NORTH)

SCALE
1/8" = 1'-0" **1**

REFERENCE NOTES:

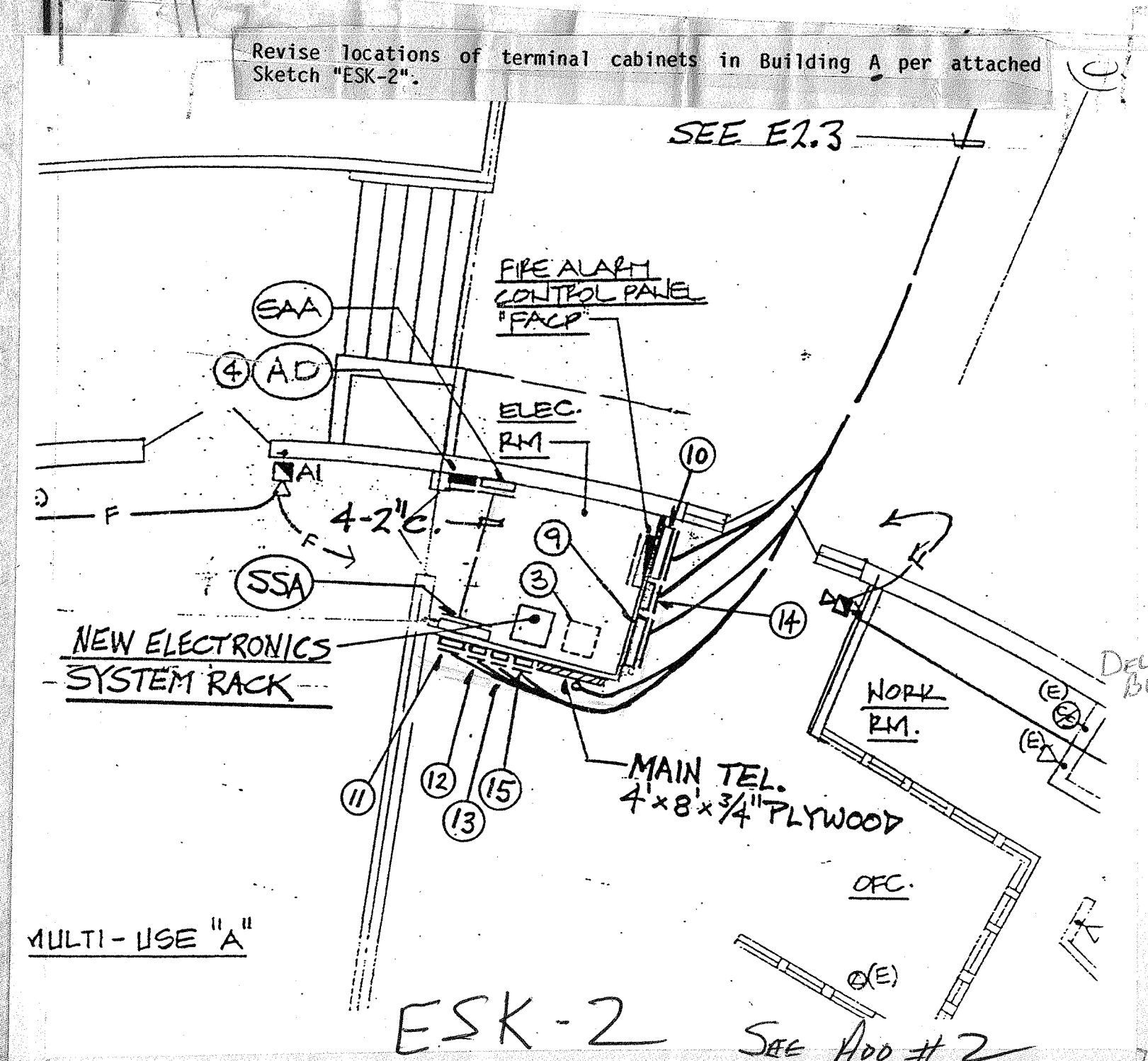
1. OMIT
2. NEW 4" C. BETWEEN TERMINAL CABINETS IF REQUIRED FOR CABLE INTERCONNECTION. VERIFY WHICH CABINET CONTAINS EXISTING SITE CONDUITS FOR RESPECTIVE SYSTEMS AND PROVIDE CONDUCTORS TO CENTRAL CONTROL EQUIPMENT.
3. EXISTING CENTRAL SOUND SYSTEM EQUIPMENT PACK TO BE REMOVED.
4. EXISTING 120VOLT PANELBOARD. PROVIDE NEW 20A-1P CIRCUIT BREAKERS AS REQUIRED FOR POWER TO NEW FIRE ALARM AND ELECTRONICS SYSTEM.
5. HOMERUN FOR SIGNAL CIRCUIT #1 AND LOOP CIRCUIT #4.
6. PROVIDE DUCT-TYPE SMOKE DETECTOR AND SAMPLING TUBE IN MAIN SUPPLY DUCT ON AIR-HANDLING/AIR CONDITIONING UNIT.
7. CONNECT SMOKE DETECTOR AUXILIARY CONTACTS TO LOW VOLTAGE CONTROL CIRCUIT SO THAT AIR SUPPLY SHUTS OFF WHEN SMOKE IS DETECTED. PROVIDE CONTROL POINT MODULE IN OUTLET BOX.
8. PROVIDE DUCT-TYPE SMOKE DETECTOR AND SAMPLING TUBE IN MAIN RETURN AIR DUCT ON AIR-HANDLING/AIR CONDITIONING UNIT.
9. 3' WIDE X 5' HIGH X 8" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "INTERCOM/PA AND TELEPHONE".
10. 3' WIDE X 5' HIGH X 8" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "FIRE ALARM".
11. 2' WIDE X 4' HIGH X 8" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "TELEVISION".
12. 1' WIDE X 4' HIGH X 8" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "DATA".
13. 1' WIDE X 2' HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "ENERGY MANAGEMENT".
14. 18" WIDE X 3' HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "CLOCK".
15. 18" WIDE X 3' HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "INTRUSION DETECTION".
16. 2' WIDE X 4' HIGH X 8" DEEP TERMINAL CABINET ENGRAVED: "TELEPHONE SERVICE".

SHEET E-3 SEE ADD # 4

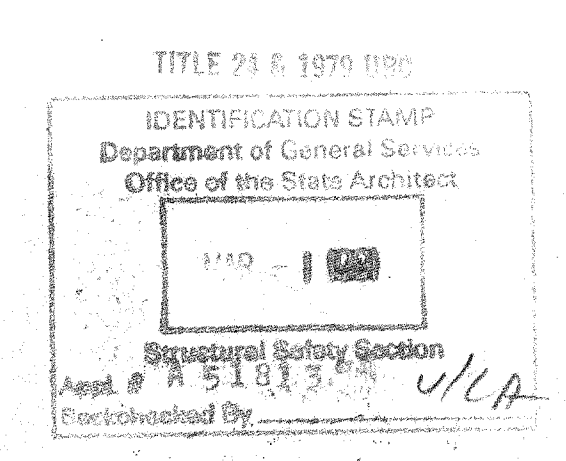
Provide conduits and conductors between terminal cabinets referenced by Notes 9 through 15 and respective equipment and/or terminal cabinets in existing electrical room as required for complete and operable new systems and to restore services to existing systems. Conduit sizes and conductor quantities and types shall be same as specified in revised Note 26, Sheet E2.3.

Remove existing recessed wall display cabinet in library where new terminal cabinets for fire alarm and intercom are to be positioned. Fill in wall cavity as required to support new construction.

Provide 4" C. and 50-pair 22AWG REA SPEC. #PE89 ESSEX SEALPIC-PSF cable between new main telephone backboard and existing AT&T telephone PBX in Building A South Electrical Equipment Room.



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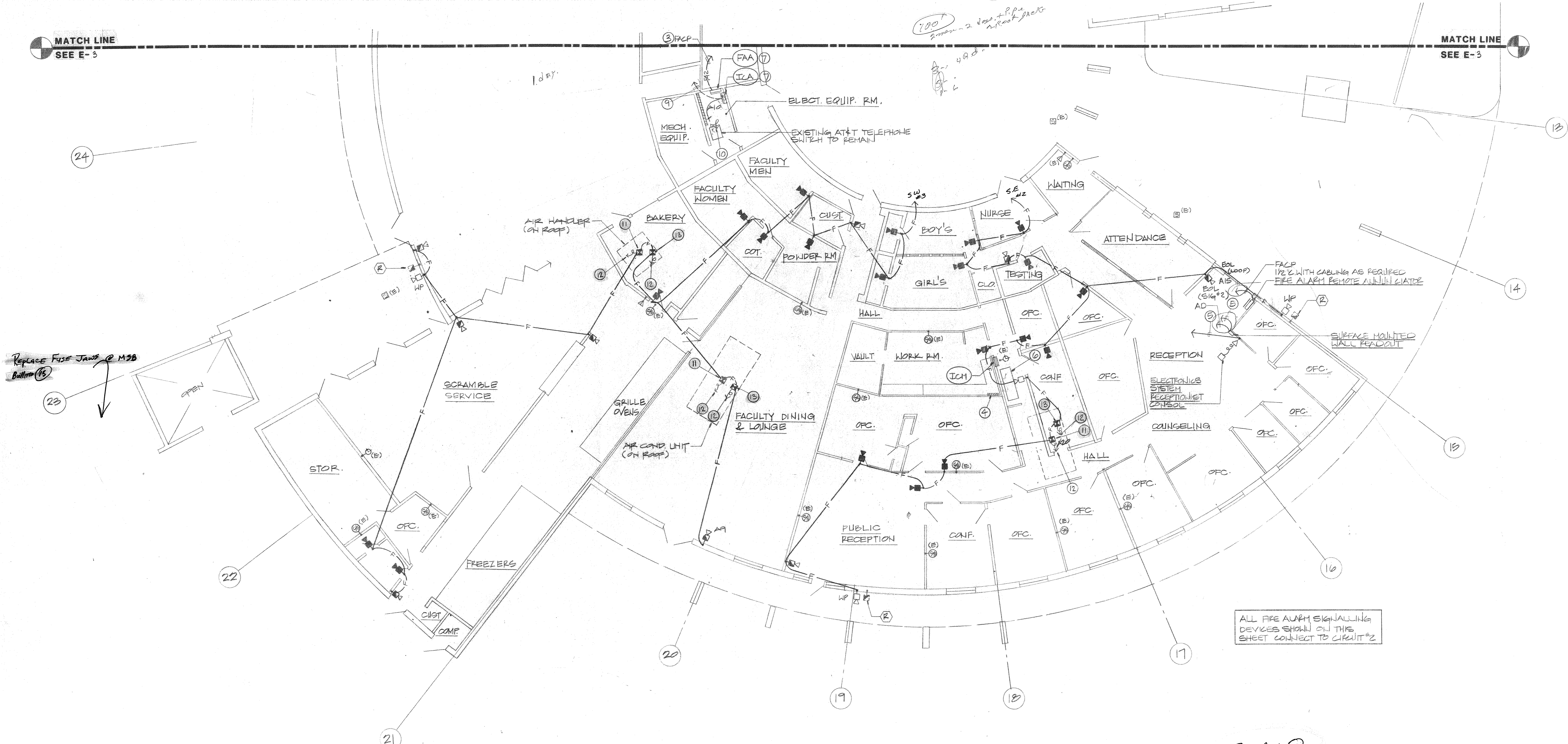
5.18.13 DEC 17 '90



ALTERNATE BID NO. 1

MATCH LINE
SEE E-3

MATCH LINE
SEE E-3



ALL FIRE ALARM SIGNALLING DEVICES SHOWN ON THIS SHEET CONNECT TO CIRCUIT #2

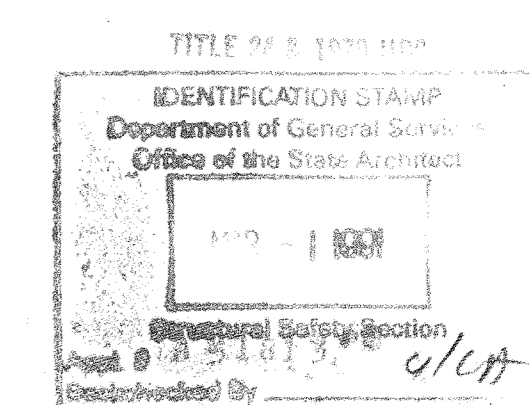
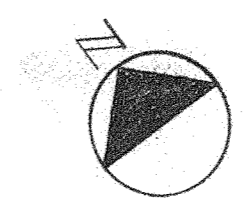
SEE BULL. (15) PROVIDE LABOR & MATERIALS NECESSARY TO CORRECT THE EXISTING ANSEL FIRE SUPPRESSION SYSTEM DISCOVERED IN BLDG A FOOD SERVICE TO THE NEW FIRE ALARM SYSTEM.
SEE BULL. (15) PROVIDE LABOR AND MATERIALS NECESSARY TO CORRECT EXISTING FLOW SWITCHES ON AUTOMATIC FIRE SPRINKLER SYSTEM. DISCOVERED IN BLDGS A & D.

REFERENCE NOTES:

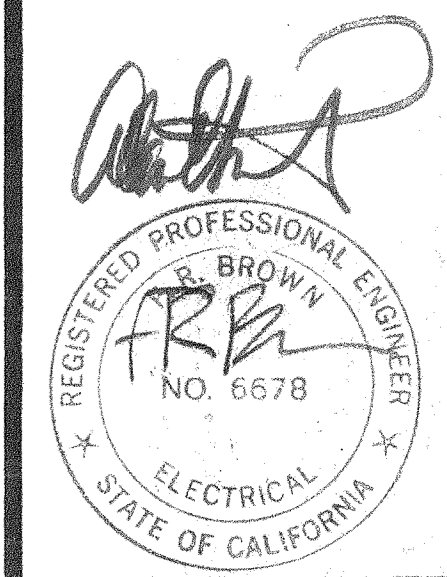
- 1 OMIT
- 2 HOMERUN FOR SIGNAL CIRCUIT #2 TO FACP. SEE NOTE 18 SHEET E-2 AND NOTE 3 THIS SHEET.
- 3 PROVIDE FIRE ALARM SIGNAL CIRCUIT #2 CONDUCTORS TO FACP UTILIZING EXISTING CONDUIT. SEE NOTE 18 SHEET E-2 AND NOTE 2 THIS SHEET.
- 4 EXISTING SATELLITE TELEPHONE BACKBOARD AND EQUIPMENT TO REMAIN.
- 5 1" C. WITH CABLING TO TERMINAL CABINET "ICA".
- 6 DISCONNECT AND REMOVE EXISTING INTERCOM CONTROL CONSOLE AND TURN OVER TO DISTRICT.
- 7 PROVIDE NEW TERMINAL CABINET INDICATED.
- 8 RATE-OF-RISE DETECTOR ONLY IN COOKING AREA.
- 9 PROVIDE ELECTRONICS SYSTEM CONDUCTORS TO NEW CENTRAL EQUIPMENT UTILIZING EXISTING CONDUIT.
- 10 2" C. WITH ELECTRONICS SYSTEM CONDUCTORS. INTERFACE WITH AT&T SYSTEM TO PERMIT INTERCOMMUNICATION AND TELEPHONE FUNCTIONS IN BOTH SYSTEMS.
- 11 ~~BULL. (15) DELETE~~ PROVIDE DUCT-TYPE SMOKE DETECTOR AND SAMPLING TUBE IN MAIN SUPPLY DUCT ON AIR-HANDLING/AIR CONDITIONING UNIT.
- 12 CONNECT SMOKE DETECTOR AUXILIARY CONTACTS TO LOW VOLTAGE CONTROL CIRCUIT SO THAT AIR SUPPLY SHUTS OFF WHEN SMOKE IS DETECTED. PROVIDE CONTROL POINT MODULE IN OUTLET BOX.
- 13 ~~BULL. (15) DELETE~~ PROVIDE DUCT-TYPE SMOKE DETECTOR AND SAMPLING TUBE IN MAIN RETURN AIR DUCT ON AIR-HANDLING/AIR CONDITIONING UNIT.

ADMINISTRATION BUILDING A (SOUTH)

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



NO.	DATE	REVISIONS	BY



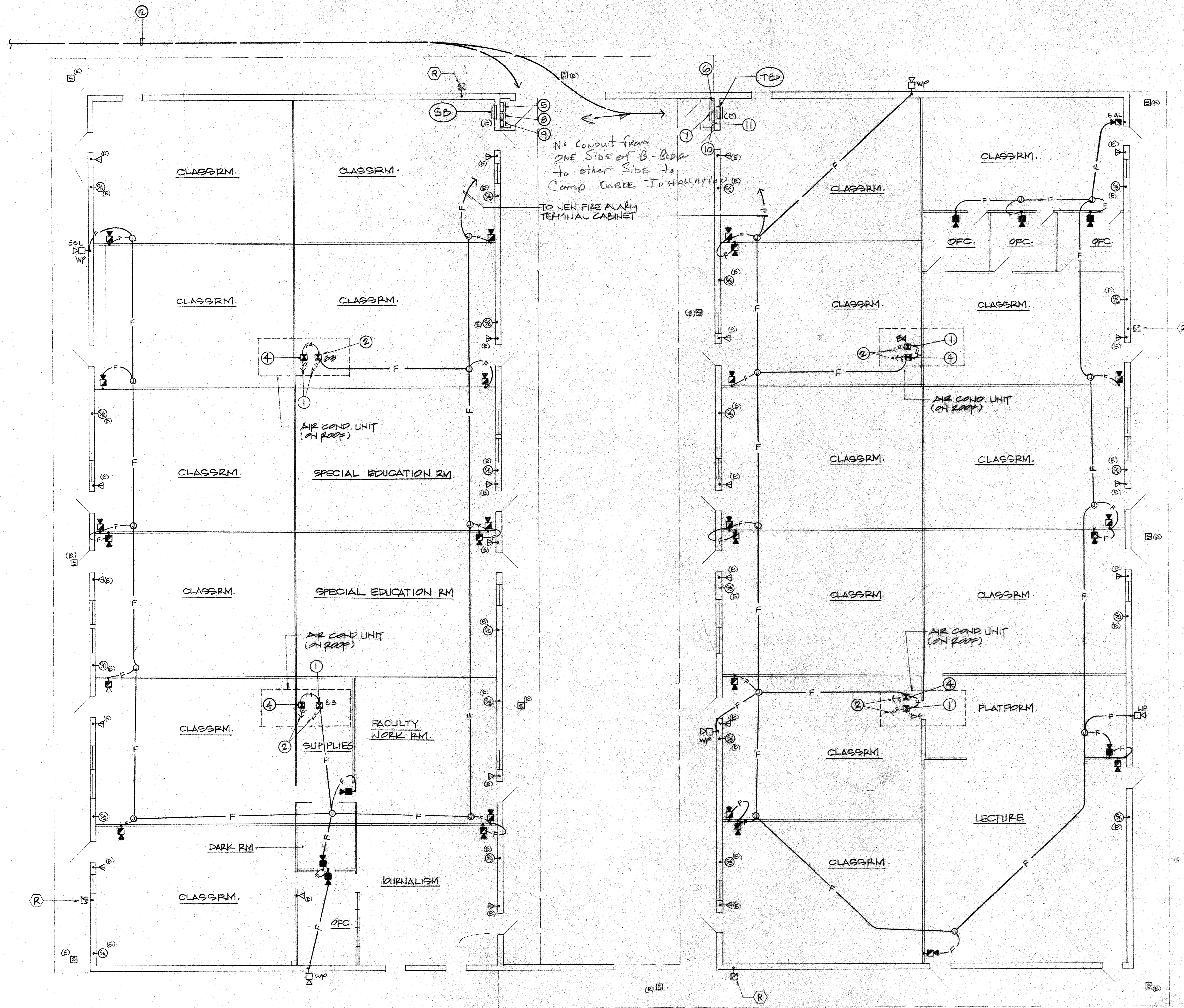
FREDERICK BROWN ASSOCIATES
CONSULTING ENGINEERS
3420 Irvine Avenue
Newport Beach, CA 92660
(714) 852-9995

UNIVERSITY HIGH SCHOOL
4771 CAMPUS DRIVE IRVINE, CALIFORNIA
UPGRADE SIGNAL PLAN

Drawn By: HGB
Checked By: SRZ
Scale: 1/8" = 1'-0"
Date: FEB. 12, 1991
Project Number: FBA # 829.022

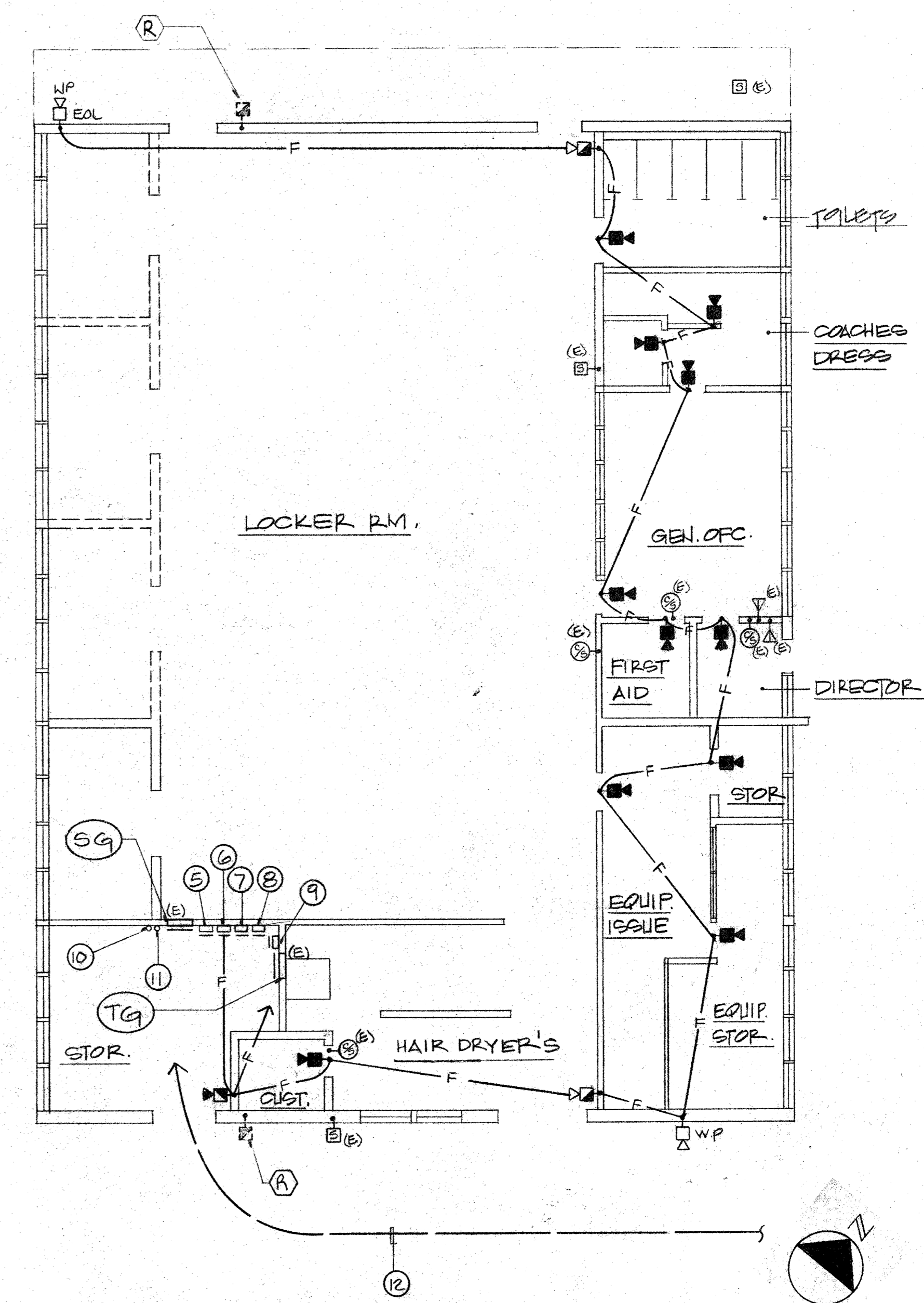
SHEET
BLDG A (SOUTH)
E-4
OF

FOR INFORMATION ONLY



BUILDING 'B'

SCALE 1/8"=1'-0" **2**



BUILDING 'G'

SCALE 1/8"=1'-0" **1**

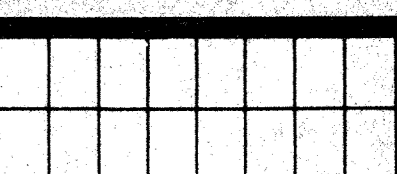
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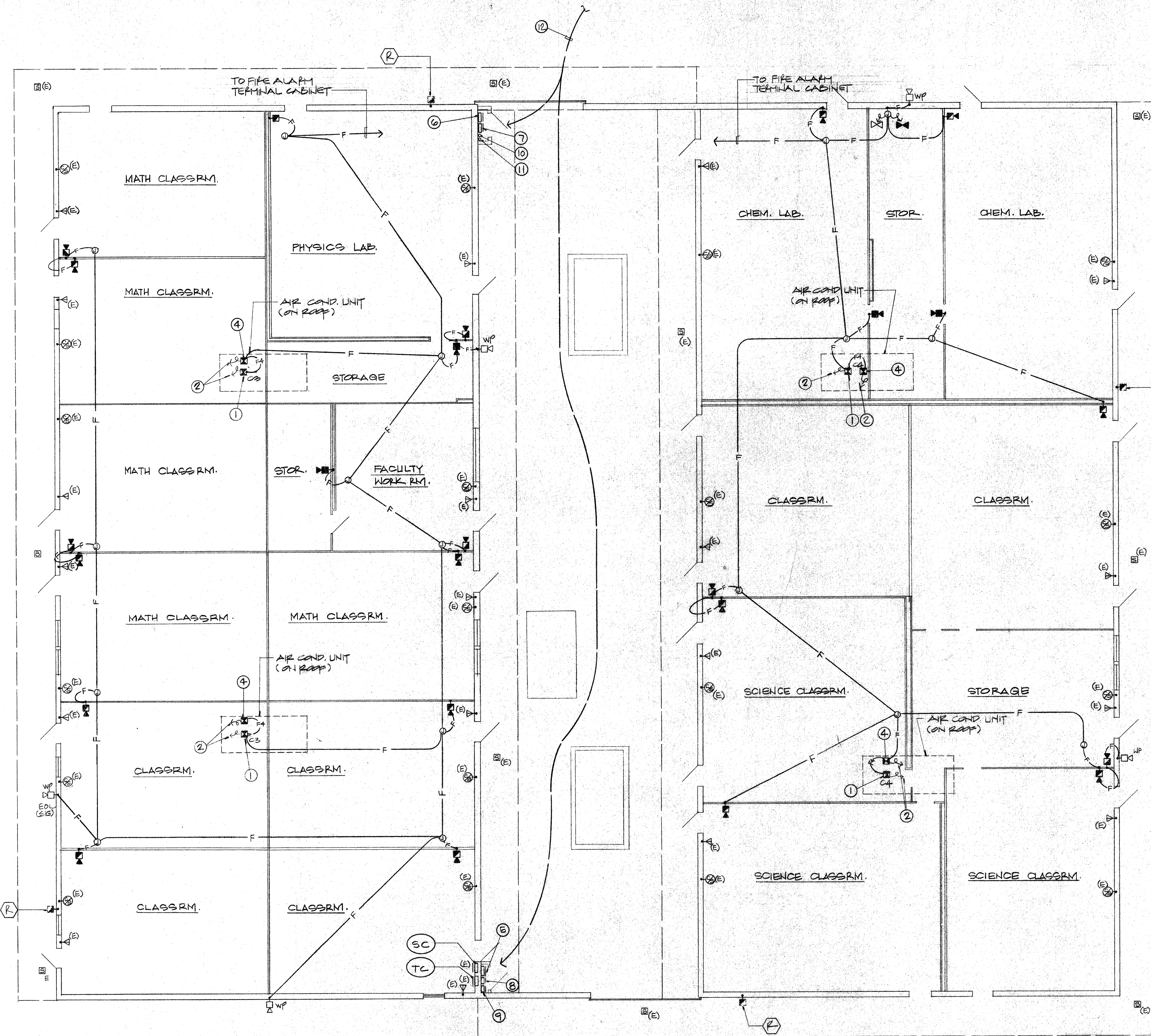
- ① PROVIDE DUCT-TYPE SMOKE DETECTOR AND SAMPLING TUBE IN MAIN SUPPLY DUCT ON AIR-HANDLING/AIR CONDITIONING UNIT.
 - ② CONNECT SMOKE DETECTOR AUXILIARY CONTACTS TO LOW VOLTAGE CONTROL CIRCUIT SO THAT AIR SUPPLY SHUTS OFF WHEN SMOKE IS DETECTED. PROVIDE CONTROL PAINT MODULE IN OUTLET BOX.
 - ③ OMIT
 - ④ PROVIDE DUCT-TYPE SMOKE DETECTOR AND SAMPLING TUBE IN MAIN RETURN AIR DUCT ON AIR HANDLING/AIR CONDITIONING UNIT.
 - ⑤ SHEETS E-5 and E-6
- New terminal cabinets referenced by Notes 5, 6, 7, 8 and 9 at Buildings B and C shall be weatherproof. Remove lockers as required to install cabinets at Building B. See 510 # 2
- Omit Reference Notes 13 and 14.

- ⑤ 2" WIDE X 4" HIGH X 8" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "INTERCOM/PA AND TELEPHONE."
- ⑥ 18" WIDE X 3" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "FIRE ALARM."
- ⑦ 18" WIDE X 3" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "TELEVISION."
- ⑧ 1" WIDE X 2" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "CLOCK."
- ⑨ 1" WIDE X 2" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "INTRUSION ALARM."
- ⑩ STUB LOCATION AT +6" FOR DATA CONDUIT.
- ⑪ STUB LOCATION AT +6" FOR ENERGY MANAGEMENT SYSTEM CONDUIT.
- ⑫ SIGNAL SYSTEM CONDUITS. SEE SHEET E2.3 FOR CONTINUATION. TERMINATE EACH CONDUIT AT ITS RESPECTIVE TERMINAL CABINET.
- ⑬ 2" CONDUIT WITH RESPECTIVE SIGNAL SYSTEM CABLEING. RUN CONDUIT EXPOSED ALONG HIGH-CEILING AND DOWN TO TERMINAL CABINETS. CUT, PATCH, AND REFINISH EXISTING WALLS ABOVE EXISTING FLUSH TERMINAL CABINETS AS REQUIRED TO CONCEAL NEW CONDUITS IN WALL.
- ⑭ CONDUITS RISE UP EXPOSED ON BUILDING EXTERIOR FACE AND PENETRATE BUILDING WALL INTO EXISTING TERMINAL CABINETS.

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51813 DEC 17 '90
APPROXIMATE 100% DEVELOPMENT

 <p>FREDERICK BROWN ASSOCIATES CONSULTING ENGINEERS</p> <p>3420 Irvine Avenue Newport Beach, CA 92660 (714) 852-9995</p>	<p>UNIVERSITY HIGH SCHOOL 4771 CAMPUS DRIVE IRVINE, CALIFORNIA</p> <p>UPGRADE SIGNAL SYSTEMS</p>
<p>REGISTERED PROFESSIONAL ENGINEER FREDERICK BROWN NO. 6678 ELECTRICAL STATE OF CALIFORNIA</p>	<p>ALTERNATE BID NO. 1</p> <p>SHEET BLDG. "B" & "G"</p> <p>OF</p>
<p>NO. DATE</p> <p>REVISIONS</p>	<p>Drawn By: MC</p> <p>Checked by: GRL</p> <p>Scale: 1/8"=1'-0"</p> <p>Date: FEB. 12, 1991</p> <p>Project Number: FB # 529.022</p>



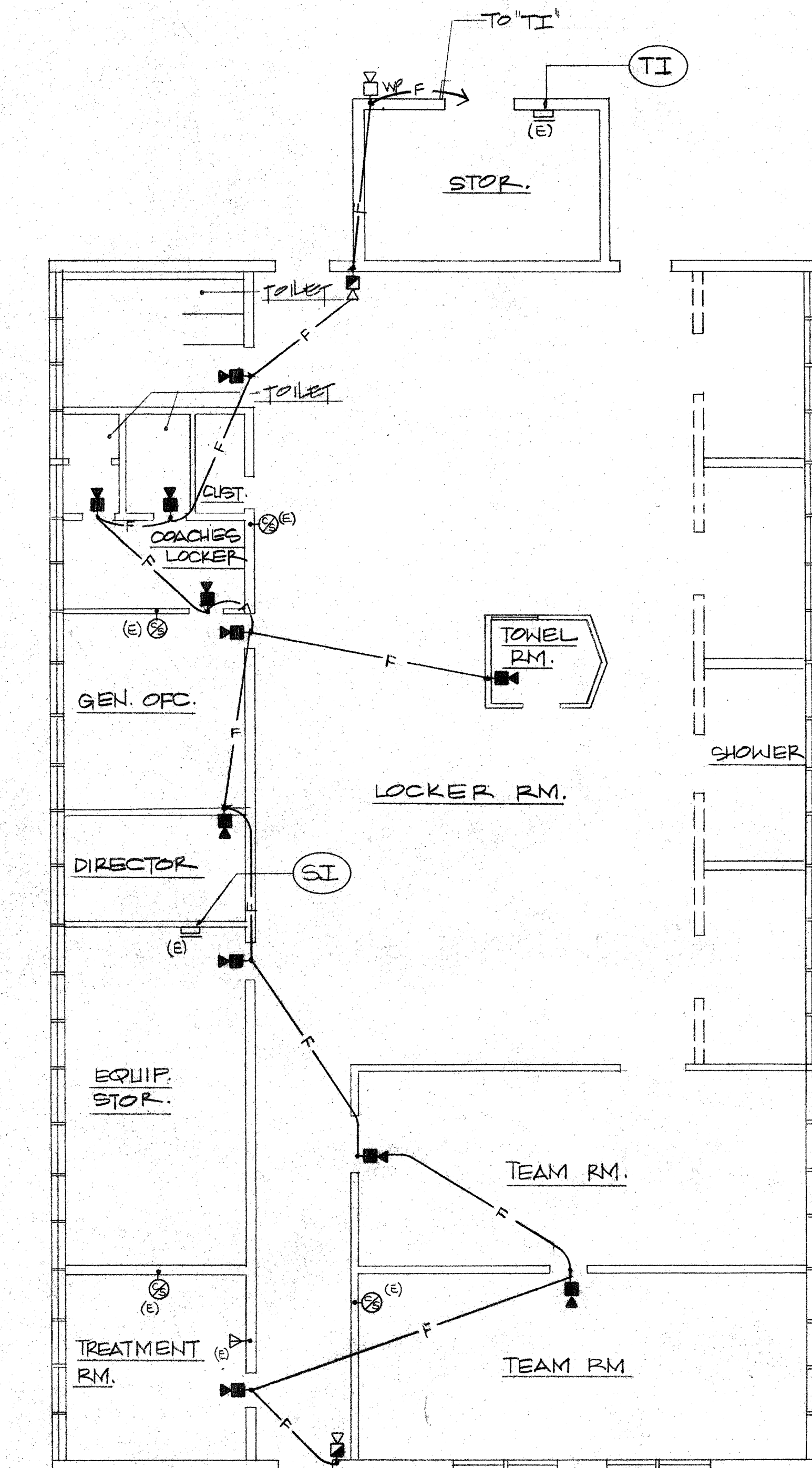
BUILDING "C"

SCALE
3/8" = 1'-0"

REFERENCE NOTES:

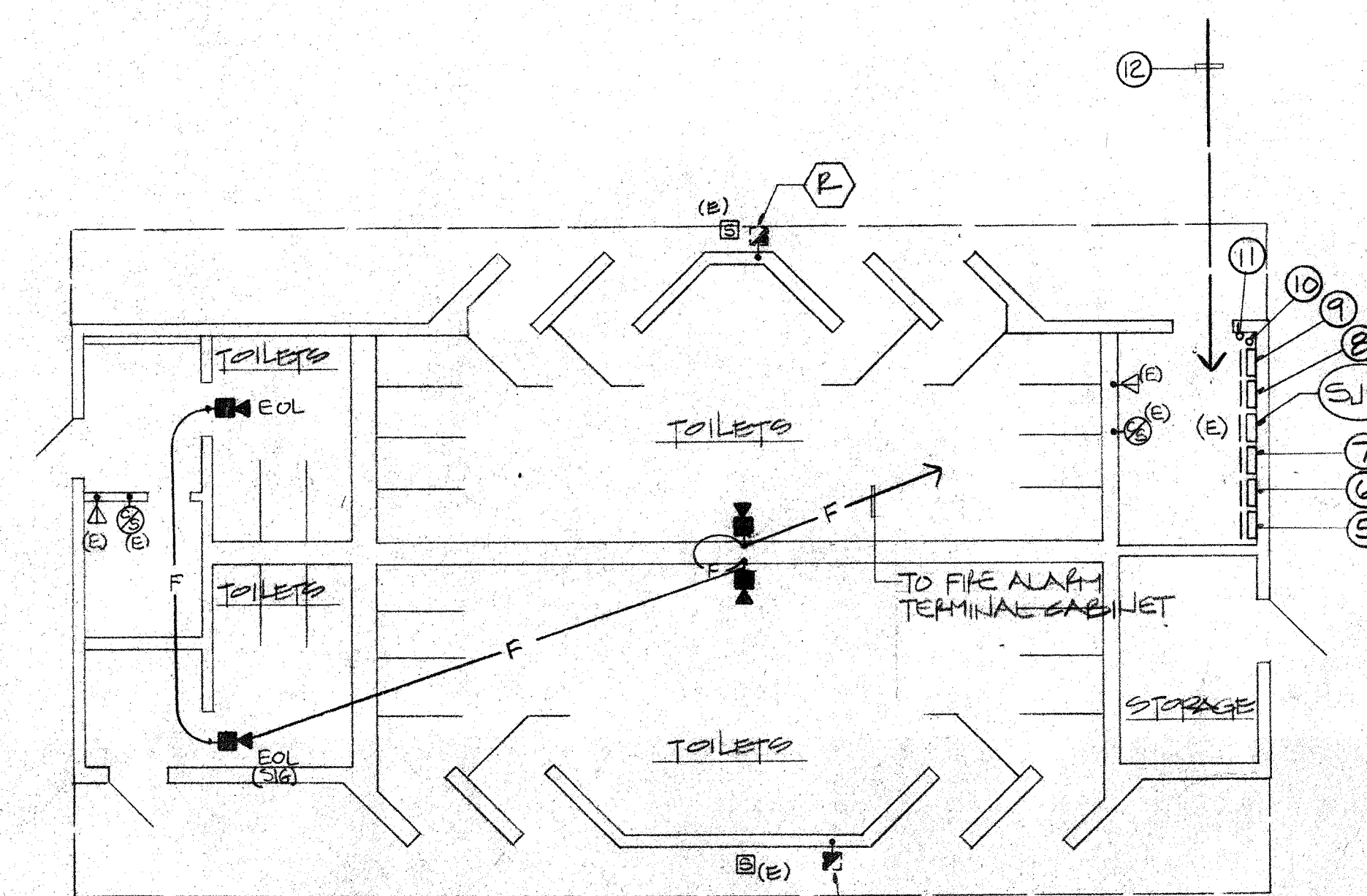
- ① PROVIDE DUCT-TYPE SMOKE DETECTOR AND SAMPLING TUBE IN MAIN SUPPLY DUCT ON AIR-HANDLING/AIR CONDITIONING UNIT.
- ② CONNECT SMOKE DETECTOR AUXILIARY CONTACTS TO LOW VOLTAGE CONTROL CIRCUIT SO THAT AIR SUPPLY SHUTS OFF WHEN SMOKE IS DETECTED. PROVIDE CONTROL RENT MODULE IN OUTLET BOX.
- ③ OMIT
- ④ PROVIDE DUCT-TYPE SMOKE DETECTOR AND SAMPLING TUBE IN MAIN RETURN AIR DUCT ON AIR HANDLING/AIR CONDITIONING UNIT.

- ⑤ 2" WIDE X 4" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "INTERCOM/PA AND TELEPHONE".
- ⑥ 18" WIDE X 3" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "FIRE ALARM".
- ⑦ 18" WIDE X 3" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "TELEVISION".
- ⑧ 1" WIDE X 2" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "CLOCK".
- ⑨ 1" WIDE X 2" HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "INTRUSION ALARM".
- ⑩ STUB LOCATION AT +6" FOR DATA CONDUIT.
- ⑪ STUB LOCATION AT +6" FOR ENERGY MANAGEMENT SYSTEM CONDUIT.
- ⑫ SIGNAL SYSTEM CONDUITS. SEE SHEET E2.3 FOR CONTINUATION. TERMINATE EACH CONDUIT AT ITS RESPECTIVE TERMINAL CABINET.
- ⑬ 2" CONDUIT WITH RESPECTIVE SIGNAL SYSTEM CABLING. RUN CONDUIT EXPOSED ALONG HIGH CEILING AND DOWN TO TERMINAL CABINETS. CUT, PATCH, AND REFINISH EXISTING WALLS ABOVE EXISTING FLUSH TERMINAL CABINETS AS REQUIRED TO CONCEAL NEW CONDUITS IN WALL.
- ⑭ CONDUITS RISE UP EXPOSED ON BUILDING EXTERIOR FACE AND PENETRATE BUILDING WALL INTO EXISTING TERMINAL CABINETS.



BUILDING "I"

SCALE
2/8" = 1'-0"



BUILDING "J-2"

SCALE
1/8" = 1'-0"

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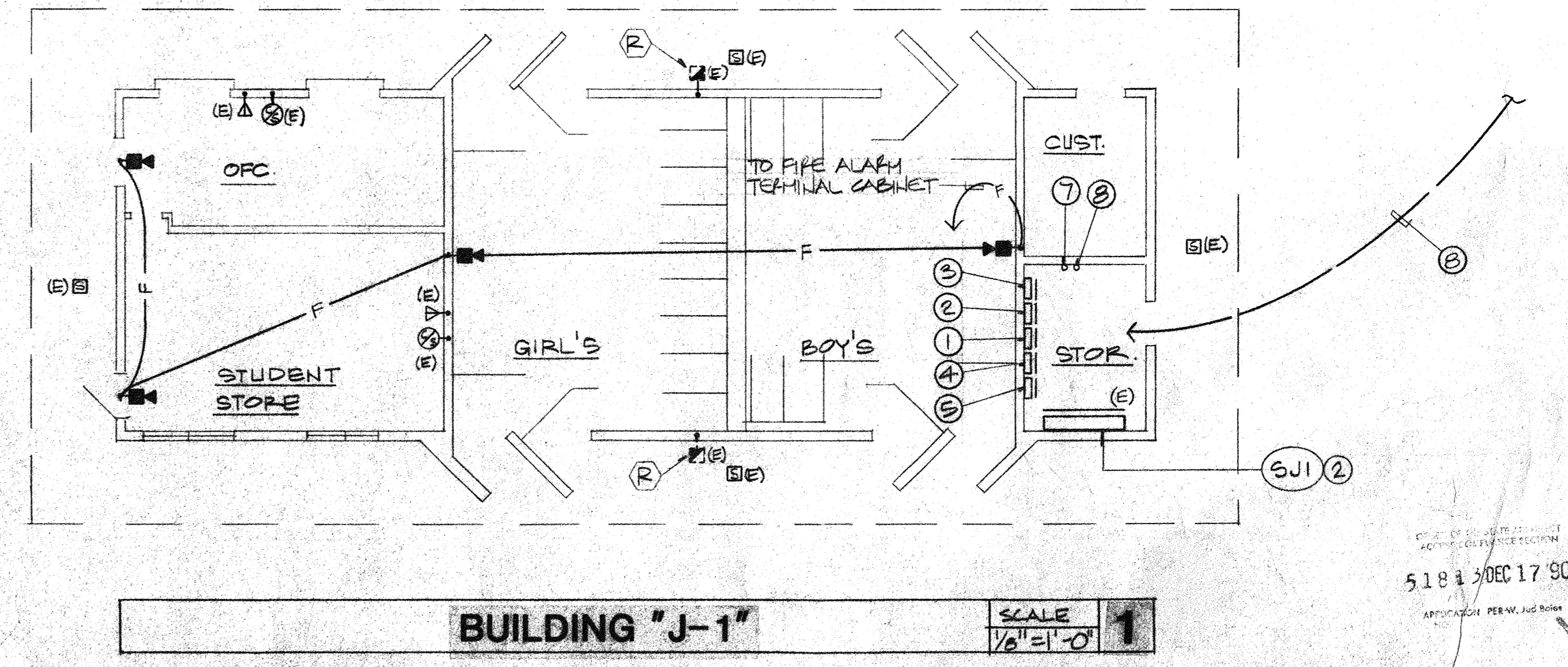
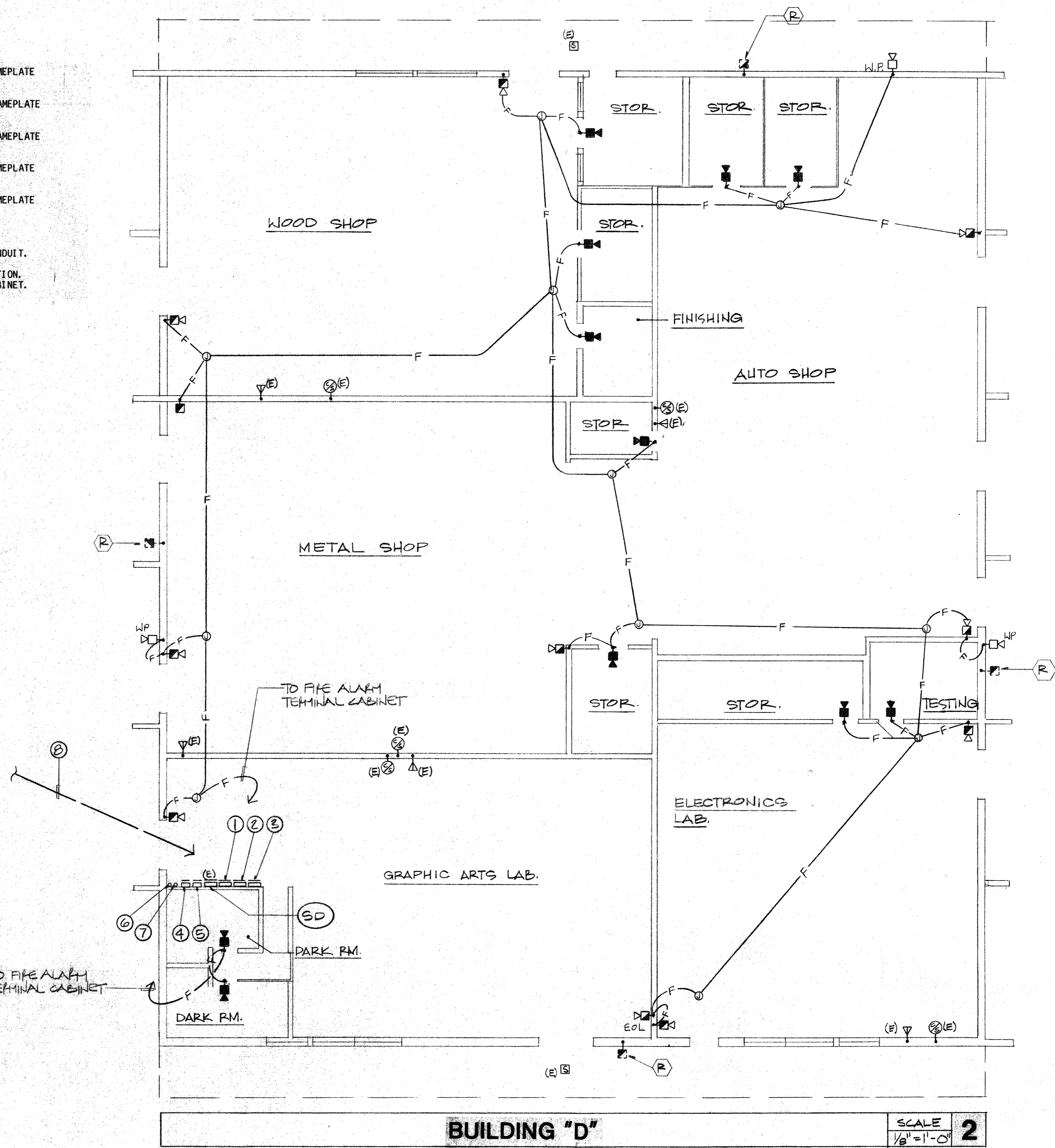
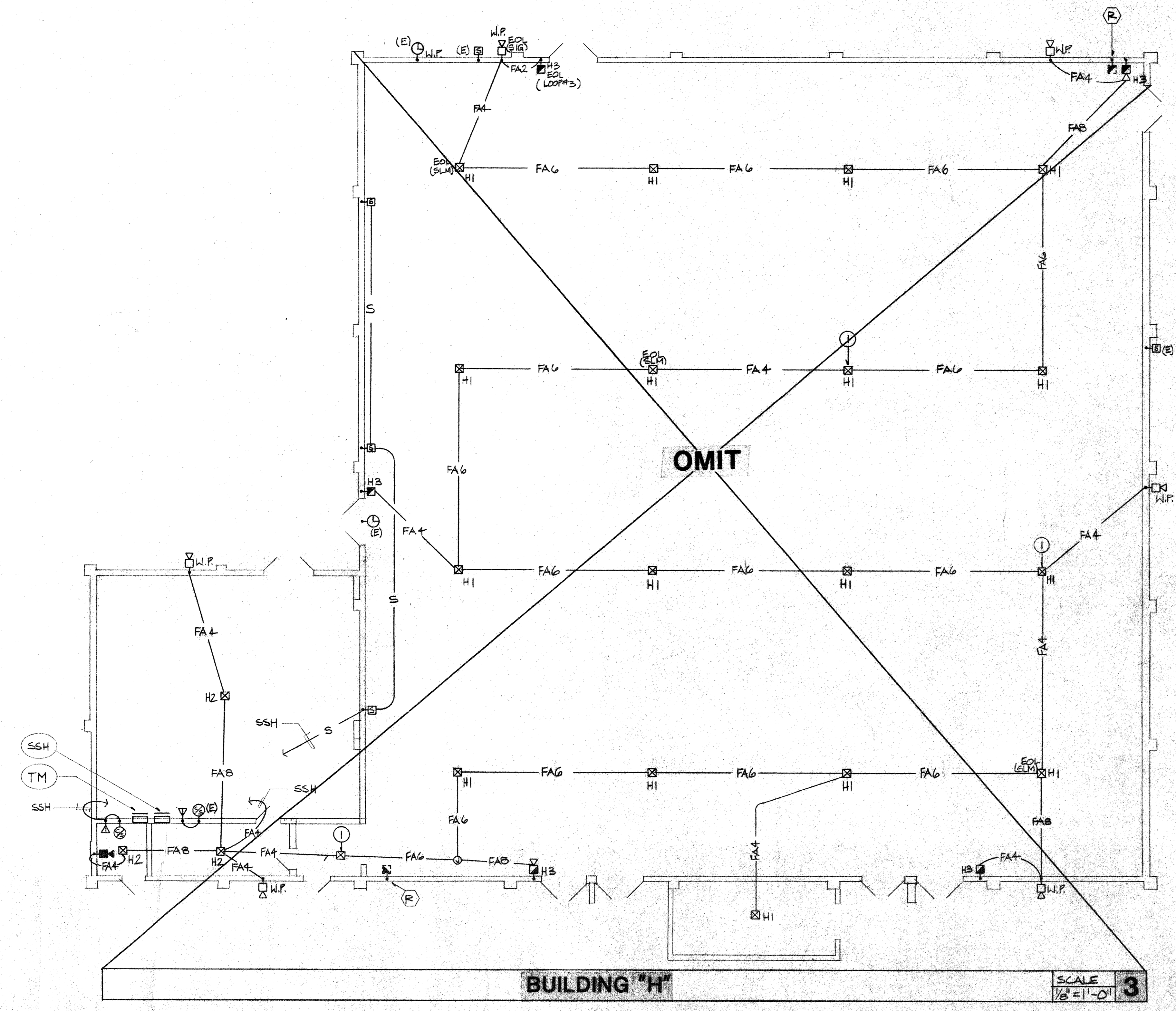
51813 DEC 17 90

	NO. DATE
	REVISIONS
FREDERICK BROWN ASSOCIATES CONSULTING ENGINEERS	
3420 Irvine Avenue Newport Beach, CA 92860 (714) 852-9995	
UNIVERSITY HIGH SCHOOL 4771 CAMPUS DRIVE IRVINE, CALIFORNIA	
UPGRADE SIGNAL SYSTEMS	
Drawn By: L.M.C. Checked By: S.R.Z. Scale: 1/8" = 1'-0" Date: FEB. 12, 1991 Project Number: PBA # 829.022	
SHEET BLDGS "C", "I", & "J-2" F-6	
OF	

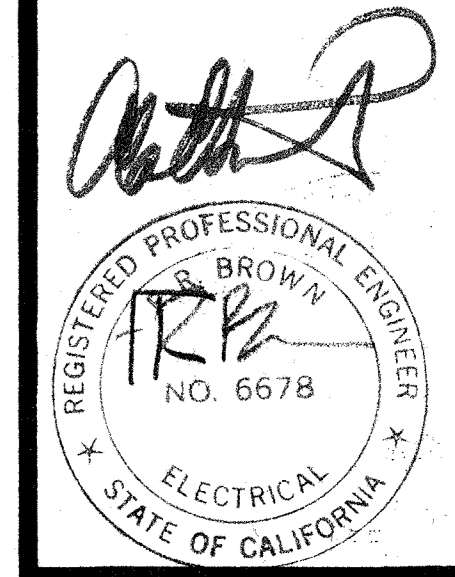
NO.	DATE	BY

REFERENCE NOTES

- ① 2' WIDE X 4' HIGH X 8" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "INTERCOM/PA AND TELEPHONE".
- ② 18" WIDE X 3' HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "FIRE ALARM".
- ③ 18" WIDE X 3' HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "TELEVISION".
- ④ 1' WIDE X 2' HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "CLOCK".
- ⑤ 1' WIDE X 2' HIGH X 6" DEEP TERMINAL CABINET WITH NAMEPLATE ENGRAVED: "INTRUSION ALARM".
- ⑥ STUB LOCATION AT +6" FOR DATA CONDUIT.
- ⑦ STUB LOCATION AT +6" FOR ENERGY MANAGEMENT SYSTEM CONDUIT.
- ⑧ SIGNAL SYSTEM CONDUITS. SEE SHEET E2.3 FOR CONTINUATION. TERMINATE EACH CONDUIT AT ITS RESPECTIVE TERMINAL CABINET.



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CONSULTING ENGINEERS

3420 Irvine Avenue
Newport Beach, CA 92660
(714) 852-9995

UNIVERSITY HIGH SCHOOL
4771 CAMPUS DRIVE IRVINE, CALIFORNIA

UPGRADE SIGNAL SYSTEMS

ALTERNATE E.D. No 1

Drawn By: R.W.
Checked By: SRZ
Scale: 1/8"=1'-0"
Date: FEB. 12, 1991
Project Number: FBA # 919.022

SHEET
BLDG'S 'D' 'H' & 'J-1'
E-7

5183 DEC 17 '90
APPROVED PER W. L. HARRIS