FARRIS ENGINEERING

ADDENDUM NO. 002

PROJECT NAME: Morrison Center Addition Project
UNL PROJECT NUMBER: **A126P003**
UNL BID INVITATION NUMBER: **909061-11**

CONSULTANT: Farris Engineering
ADDRESS: 11239 Chicago Circle

ADDENDUM DATE OF ISSUANCE: November 30, 2011
DATE OF BID OPENING: December 7, 2011

The bid documents dated May 26, 2011 for the above referenced project is amended by this addendum.

NOTICE: This Addendum is issued to all interested prospective bidders as an amendment to the project manual or other parts of the bidding (contract) documents for the above named project. Reference to this Addendum must be included in the Bid proposal. The information contained herein shall be fully incorporated into the contract documents as though originally included therein.

NOTICE: This addendum is applicable to the referenced project and is issued to all known planholders prior to receipt of proposals. The information contained herein shall be fully incorporated into the Bid Contract Documents as though originally incorporated. Failure to acknowledge all amendments may be cause for rejection of the bid.

TO: Bidders and Others Concerned

Changes to the Project Manual

1. SECTION TOC: Delete this section in its entirety and replace with the attached new section.

2. SECTION 07 95 00 - EXPANSION JOINT COVER ASSEMBLIES: Delete this section in its entirety and replace with the attached new section.

3. Section 07 52 00 - MODIFIED BITUMINOUS MEMBRANE ROOFING: Delete this section in its entirety and replace with the attached new section.

4. SECTION 11 53 43 - LABORATORY SERVICE FITTINGS AND FIXTURES: Delete this section in its entirety and replace with the attached new section.

5. SECTION 23 33 00 - DUCT ACCESSORIES: 3.1.H, Delete Items 2, 4, 5.

6. SECTION 26 05 33 - RACEWAYS: Paragraph 2.1 E.; EMT fittings shall be steel compression type.

Changes to the Drawings

1. SHEET NVA-2-E-, ARCHITECTURAL - LEVEL 2 SECTOR E FLOOR PLAN: Removed detail call-out that doesn't pertain to Phase 2. (Leftover from Phase 1) See attached drawing.

2. SHEET NVA-4-E-, ARCHITECTURAL - LEVEL 4 – MECHANICAL SECTOR E FLOOR PLAN: Added two fire-extinguishers in the hallways (common path of travel) per code. See attached drawing.

3. SHEET NVA-7501, ARCHITECTURAL - INTERIOR ELEVATIONS: Clarified detail call-out numbers. See attached drawing.

4. SHEET NVA-7502, ARCHITECTURAL - INTERIOR ELEVATIONS: Clarified detail call-out numbers. See attached drawing.

5. SHEET NVA-7609, ARCHITECTURAL - INTERIOR DETAILS: Added axon of lab entry (detail 20) See attached drawing.

6. SHEET NVMW1-E-, MECHANICAL - PLUMBING SECTOR E FORST LEVEL FLOOR PLAN: In Janitor Room 151, relocate the mop sink MSB-1 to the east three feet, and relocate corresponding water, waste, and vent piping serving the mop sink. Terminate the 1 ½' sump pump discharge and ½" tepid purge above the relocated mop sink per key notes.

7. SHEET NVMW0400, MECHANICAL - PLUMBING DOMESTIC WATER RISER DIAGRAM: Add 1 ¼" tepid water branch at first level to serve EWSS-1. See attached Plate SM-1.

8. SHEET NVEL1-E-, ELECTRICAL - LIGHTING SECTOR E FIRST LEVEL FLOOR PLAN: Lobby/Interaction 170; Show keynote '7' symbol by three-way switch at south doors.

9. SHEET NVEL2-E-, ELECTRICAL - LIGHTING SECTOR E SECOND LEVEL FLOOR PLAN: Lab 2F 271; Delete connection to Lab 2F 265 and connect all luminaires (except exit signs) in 271 to spare 20/1 breaker in existing panel 'H2'.

10. SHEET NVEL2-E-, ELECTRICAL - LIGHTING SECTOR E SECOND LEVEL FLOOR PLAN: Lab 2F 265; Delete connection to Lab 2F 271 and connect all luminaires (except exit signs) in 265 and 257 to spare 20/1 breaker in existing panel 'H2'.

11. SHEET NVEL2-E-, ELECTRICAL - LIGHTING SECTOR E SECOND LEVEL FLOOR PLAN: Lab 2F 257; Delete homerun and keynote '9' from south 'J' luminaire.

12. SHEET NVEL3-E-, ELECTRICAL - LIGHTING SECTOR E THIRD LEVEL FLOOR PLAN: Lab 3F 371; Delete connection to Lab 2F 265 and connect all luminaires (except exit signs) in 271 to spare 20/1 breaker in existing panel 'H2'.

13. SHEET NVEL3-E-, ELECTRICAL - LIGHTING SECTOR E THIRD LEVEL FLOOR PLAN: Lab 3F 365; Delete connection to Lab 3F 371 and connect all luminaires (except exit signs) in 265 and 257 to spare 20/1 breaker in existing panel 'H2'.

14. SHEET NVEL3-E-, ELECTRICAL - LIGHTING SECTOR E THIRD LEVEL FLOOR PLAN: Lab 3F 357; Delete homerun and keynote '9' from south 'J' luminaire.

15. SHEET NVEP0-E-, ELECTRICAL - POWER SECTOR E BASEMENT LEVEL FLOOR PLAN: Revise keynote '6' as follows: "Provide wall mounted 120V, 4 foot luminaire with wire guard and (2) F32/735 T8 lamps. Guard shall be grounded. Locate luminaire and controlling switch in trench. Field coordinate exact location of devices. Connect to existing lighting circuit serving the area.

16. SHEET NVEP0-E-, ELECTRICAL - POWER SECTOR E BASEMENT LEVEL FLOOR PLAN: Delete type 'A' luminaire and associated switch and circuiting.

17. SHEET NVEP1-E-, ELECTRICAL - POWER SECTOR E FIRST LEVEL FLOOR PLAN: Dock; Change keynote '5' to '16'.

18. SHEET NVEP1-E-, ELECTRICAL - POWER SECTOR E FIRST LEVEL FLOOR PLAN: Lab 1F 163; Special receptacles located in lab shall be NEMA L6-20R, except east special receptacle on north wall shall be NEMA L6-30R. Verify NEMA configurations with owner prior to installation.

19. SHEET NVEP1-E-, ELECTRICAL - POWER SECTOR E FIRST LEVEL FLOOR PLAN: Lab 1F 163; Special receptacle located at lab entrance shall be connected to EQA1-43 in lieu of EQA1-1.

20. SHEET NVEP2-E-, ELECTRICAL - POWER SECTOR E SECOND LEVEL FLOOR PLAN: Lab 2F; Special receptacles located in lab shall be NEMA L6-20R, except east special receptacles on south walls of 271, 265, and 257 shall be NEMA L6-30R. Verify NEMA configurations with owner prior to installation.

21. SHEET NVEP2-E-, ELECTRICAL - POWER SECTOR E SECOND LEVEL FLOOR PLAN: Glass Wash 251; Special receptacles on south wall shall be NEMA L6-20R. Verify NEMA configurations with owner prior to installation. Provide GFCI protection.

22. SHEET NVEP2-E-, ELECTRICAL - POWER SECTOR E SECOND LEVEL FLOOR PLAN: Glass Wash 251; Provide rough-in only for east future sterilizer as indicated in keynote '15'. Junction box shown at west sterilizer is for 120V controls connection.

23. SHEET NVEP2-E-, ELECTRICAL - POWER SECTOR E SECOND LEVEL FLOOR PLAN: Shared Equipment Room 253; South cord drop receptacle shall be NEMA L6-20R connected to EQA2-45 and north cord drop receptacles shall be (2) NEMA L2-20R connected as shown. Special receptacles located in room shall be NEMA L6-20R. Verify NEMA configurations with owner prior to installation.

24. SHEET NVEP2-E-, ELECTRICAL - POWER SECTOR E SECOND LEVEL FLOOR PLAN: Cell Culture Room 265A; All receptacles within 6 feet of sink shall be GFCI protected.

25. SHEET NVEP2-E-, ELECTRICAL - POWER SECTOR E SECOND LEVEL FLOOR PLAN: Cell Culture Room 271A; All receptacles within 6 feet of sink shall be GFCI protected.

26. SHEET NVEP2-E-, ELECTRICAL - POWER SECTOR E SECOND LEVEL FLOOR PLAN: Lab 2F 265; Special receptacle at lab entrance shall be connected to EQA2-61 in lieu of EQA2-1.

27. SHEET NVEP3-E-, ELECTRICAL - POWER SECTOR E THIRD LEVEL FLOOR PLAN: Lab 3F; Special receptacles located in lab shall be NEMA L6-20R, except east special receptacles on south walls of 371, 365, and 357 shall be NEMA L6-30R. Verify NEMA configurations with owner prior to installation.

28. SHEET NVEP3-E-, ELECTRICAL - POWER SECTOR E THIRD LEVEL FLOOR PLAN: Shared Equipment Room 353; South cord drop receptacle shall be NEMA L6-20R connected to EQA3-45 and north cord drop receptacles shall be (2) NEMA L2-20R connected as shown. Special receptacles located in room shall be NEMA L6-20R. Verify NEMA configurations with owner prior to installation.

29. SHEET NVEP3-E-, ELECTRICAL - POWER SECTOR E THIRD LEVEL FLOOR PLAN: Cell Culture Room 365A; All receptacles within 6 feet of sink shall be GFCI protected.

30. SHEET NVEP3-E-, ELECTRICAL - POWER SECTOR E THIRD LEVEL FLOOR PLAN: Cell Culture Room 371A; All receptacles within 6 feet of sink shall be GFCI protected.

31. SHEET NVEP3-E-, ELECTRICAL - POWER SECTOR E THIRD LEVEL FLOOR PLAN: Lab 3F 365; Special receptacle at lab entrance shall be connected to EQA2-61 in lieu of EQA2-1.

32. SHEET NVEP3-E-, ELECTRICAL - POWER SECTOR E THIRD LEVEL FLOOR PLAN: Revise keynote '10' as follows: "Provide empty junction box with blank cover plate and 1" empty conduit with pullstring to above panels in corridor 350.

33. SHEET NVEY1-E-, ELECTRICAL – SPECIAL SYSTEMS SECTOR E FIRST LEVEL FLOOR PLAN: Seminar 169; change fire alarm combination horn/visuals to combination speaker/visuals.

34. SHEET NVEY1-E-, ELECTRICAL – SPECIAL SYSTEMS SECTOR E FIRST LEVEL FLOOR PLAN: Office 160; delete magnetic door holders and keynote '20'.

35. SHEET NVEY1-E-, ELECTRICAL – SPECIAL SYSTEMS SECTOR E FIRST LEVEL FLOOR PLAN: Exterior assisted door operator shall be connected to junction box above door.

36. SHEET NVEY4-E-, ELECTRICAL – SPECIAL SYSTEMS SECTOR E PENTHOUSE LEVEL FLOOR PLAN: Mechanical Room 459; Provide fire alarm manual pull station by each door.

37. SHEET NVE-0100, ELECTRICAL –LEGEND AND SCHEDULES: Luminaire Schedule: Type F and FA: add Cooper Portfolio as acceptable manufacturer. Type H and H2: add Corelite as acceptable manufacturer. Type J, J2, JA, and JC: add Corelite as acceptable manufacturer. Type M2: add Corelite as acceptable manufacturer. Type N: add Metalux as acceptable manufacturer. Type P, P2, and PA: add Corelite as acceptable manufacturer. Type X and XA: add Surelites as acceptable manufacturer.

38. SHEET NVE-0101, ELECTRICAL –LEGEND AND SCHEDULES: Panel Schedule 'L1FA': change circuits 13 and 15 to a 30/2 breaker. Panel Schedule 'L2FA': change circuit 2 and 4 to a 30/2 breaker. Panel Schedule 'L3FA': change circuits 2 and 4 to a 30/2 breaker. Panel Schedule 'L2FB1': change circuits 9 and 11 to a 30/2 breaker.

39. SHEET NVE-0102, ELECTRICAL –LEGEND AND SCHEDULES: Panel Schedule 'L3FB1': change circuits 9 and 11 to a 30/2 breaker. Panel Schedule 'L2FC1': change circuits 2 and 4 to a 30/2 breaker. Panel Schedule 'L3FC1': change circuits 2 and 4 to a 30/2 breaker.

40. SHEET NVE-0103, ELECTRICAL –LEGEND AND SCHEDULES: Panel Schedule 'EQA1': change circuit 1 to a spare and change circuits 43 and 45 to a 20/2 breaker. Panel Schedule 'EQA2': change circuit 1 to a spare and change circuits 45 and 47 to a 20/2 breaker and change circuits 61 and 63 to a 20/2 breaker. Panel Schedule 'EQA3': change circuit 1 to a spare and change circuits 45 and 47 to a 20/2 breaker and circuits 59 and 61 to a 20/2 breaker. Panel Schedule 'M3A': delete feed-thru lugs.

41. SHEET NVE-0200 ELECTRICAL – ONE-LINE POWER RISER DIAGRAM: Provide 4 inch deep concrete pads under transformers TDPL3 and TDPLEQ2.

42. SHEET NVE-0200 ELECTRICAL – ONE-LINE POWER RISER DIAGRAM: Provide 30/3/30/N1 disconnect adjacent to transformer TELSL for disconnecting means.

43. SHEET NVE-7600 ELECTRICAL – DETAILS: Delete General Electrical Note 'T'. Add the following general notes: "Multi-wire branch circuits as defined by the National Electrical Code (circuits with common neutral) shall not be used. Exception: Where an equipment manufacturer requires a multi-wire branch circuit for only one utilization equipment and where all ungrounded conductors of that circuit are opened simultaneously by the branch circuit overcurrent device." "A cable or raceway type wiring method, installed in exposed or concealed locations near metal-corrugated sheet roof decking, shall be installed and supported so the nearest outer surface of the cable or raceway is not less than 6 inches from the nearest surface of the roof decking. Exception: Rigid metal conduit and intermediate

Clarifications

1. In spec section 00 72 13, paragraph. 11.3.1 states that "Optionally, The Owner may require the Contractor to purchase and maintain Project Management Protective Liability insurance…..". This would be in addition to our usual liability insurance. Please confirm if this coverage will be required by the Owner.

   Answer: The general contractor is not required to provide Project Management Protective Liability Insurance coverage for the A126P003 Morrison Center Addition Project.

2. Is termite treatment of the soil required?

   Answer: No requirement for termite treatment of the soil.

3. In spec section 11 53 43, LABORATORY CASEWORK, what changed from the original section, in addendum 1?

   Answer: There was a small change to section 2.13 HELP Stations. We changed the terminology so the cabinetry and hardware matches the "Wood" casework, not the metal as previously indicated.

4. Riser diagram on sheet NVMW0400 does not match what is shown on sheet NVMW1-E- for the tepid water. Please Clarify.

   Answer: The floor Plan is correct. See Addendum No. 2, Plate SM-1 for Changes to the Drawings.

5. Specification Section 23 33 00, Page 10, Paragraph 3.1 H please verify that access doors are required as stated in Par. H-2 'downstream from volume dampers, turning vanes and equipment' and Par. H-4 '… before and after each change in direction'. Par. H-5 asks for access doors 'On sides of ducts where adequate clearance is available'. What does that mean?

   Answer: Access doors will be clarified in Addendum No. 2.

Miscellaneous

1. See attached Information Needs Sheet with all Architectural questions and answers.

Attachments

1. Table of Contents
2. Specification Section 07 52 00 - Modified Bituminous Roofing
3. Specification Section 07 95 00 - Expansion Joint Cover
4. Specification Section 11 53 43 - Laboratory Service Fittings And Fixtures
5. IDC Information Needs Sheet
6. NVA-2-E
7. NVA-4-E
8. NVA-7501
9. Nva-7502
10. NVA-7609
11. Plate SM-1
12. Additional Architectural and Mechanical Approved Manufactures

ADDITIONAL ARCHITECTURAL APPROVED MANUFACTURERS		
Spec Sect.	**Equipment Type**	**Approved Manufacturer**
03 30 00	Stego Wrap (15 mil)	Insulation Solutions, Inc.

ADDITIONAL MECHANICAL APPROVED MANUFACTURERS		
Spec Sect.	**Equipment Type**	**Approved Manufacturer**
22 45 00	Combination Units	Encon
22 45 10	Fixture Supports	Jay R Smith
23 09 15	VFD's	NA - Supplied by UNL
23 05 13	HVAC Pumps	Patterson
23 05 13	Panel Radiator, Finned Tube	Rittling
23 05 13	Fan Coils, Unit Heaters	Rittling
23 05 13	Unit Heaters	Vulcan
23 05 13	Cabinet Unit Heaters	Vulcan
23 20 00	HVAC Pumps	Patterson
23 21 13	Suction Diffusers	Patterson
23 21 13	Expansion Tanks	Patterson
23 21 13	Pot Feeder	JL Wingert
23 21 13	Bypass Chemical Feeders	General Treatment Products
23 21 13	Venturi Flow Meters	Flow Design
23 25 00	Glycol Feed Systems	General Treatment Products
23 31 13	Metal Ducts	Spiral Pipe of Texas
23 31 13	Ductwork (Oval, Round Spiral)	Eastern Sheet Metal
23 33 00	Fire Dampers	Air Balance
23 33 00	Ceiling Radiation Dampers	Áir Balance
23 33 00	Sound Attenuators	IAC
23 33 00	Sound Attenuators	Commercial Accoustics
23 33 00	Louvers Dampers	Greenheck
23 34 00	Fans and Roof Curbs	Twin City Fans
23 34 10	Lab Exhaust	Twin City Fans
23 36 00	VAV's	Nailor Industries
23 37 13	Diffusers Registers and Grilles	Nailor
23 73 13	AHU's	TMI
23 84 13	Humidifiers	Pure Humidifier
23 84 13	Humidifiers	Neptronics
23 84 13	Fan Coils	Carrier

--END--

FE 102002 UNL Morrison Center Addition Addendum No. 2.doc

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Introductory Information

Procurement Requirements

Contracting Requirements

DIVISION 01 – GENERAL REQUIREMENTS

DIVISION 02 – EXISTING CONDITIONS

DIVISION 03 – CONCRETE

DIVISION 04 – MASONRY

DIVISION 05 – METALS

DIVISION 06 – WOOD AND PLASTIC

DIVISION 07 – THERMAL AND MOISTURE

DIVISION 08 – DOORS AND WINDOWS

DIVISION 09 – FINISHES

DIVISION 10 – SPECIALTIES

DIVISION 11 – EQUIPMENT

DIVISION 12 – FURNISHINGS

DIVISION 13 – SPECIAL CONSTRUCTION

DIVISION 14 – CONVEYING EQUIPMENT

DIVISION 20 – MECHANICAL COMMISSIONING

DIVISION 21 – FIRE SUPPRESSION

DIVISION 22 – PLUMBING

DIVISION 23 – HVAC

NIH TABLES

DIVISION 26 – ELECTRICAL

DIVISION 27 – COMMUNICATIONS

DIVISION 31 – EARTHWORK

DIVISION 32 – EXTERIOR IMPROVEMENTS

DIVISION 33 – UTILITIES

SECTION 07 52 00

MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes:

1. Substrate board.
2. Vapor retarder.
3. Insulation.
4. Modified bitumen membrane roofing.
5. Base flashings.
6. Roofing membrane expansion joints.
7. Cant strips.
8. Roof walk pads.

B. Related Sections include the following:

1. Division 03 Section “Cast-in-Place Concrete” for roof deck.

2. Division 05 Section “Steel Decking” for roof deck.

3. Division 06 Section “Miscellaneous Rough Carpentry” for curbs and blocking.

4. Division 07 Section “Sheet Metal Flashing and Trim” for metal flashings related to roofing.

5. Division 07 Section “Expansion Control Cover Assemblies” for roof expansion joint covers.

1.3 STANDARDS

A. The NRCA Roofing and Waterproofing Manual; National Roofing Contractors Association.

B. UL - Fire Resistance Directory; Underwriters Laboratories Inc.

1.4 SYSTEM DESCRIPTION

A. Modified Bitumen Conventional Roofing System: Multi-ply membrane system with substrate board where noted, vapor retarder, insulation, roofing membrane including mineral surfaced cap sheet or aggregate surface, and roof walk pads.

B. NRCA Specification Plates:

1. Roof Assembly A (Upper Roof): VR-C-G(1), except use specified vapor retarder sheet; MBS(1)-I-(M)-(1 with base sheet)-M.

2. Roof Assembly B (Lower Roofs): VR-C-G(1), except use specified vapor retarder sheet; MBS(1)-I-(M)-(1 with base sheet)-A.

3. Roof Assembly C (Mechanical Penthouse): VR-S-(Substrate Board) - G(1), except use specified vapor retarder sheet; MBS(1)-I-(M)-(1 with base sheet)-M.

1.5 WARRANTY

A. Two-Year Contractor Installation Warranty: At time of substantial completion, submit to Owner copies of agreement to maintain roofing work as defined in this Section, signed by the Contractor and the roofing subcontractor, stating the following:

1. For a period of 2 years after agreement execution date, make immediate emergency temporary repairs as required to stop leaks or correct other defects in the roofing work within 24 hours of notice received from the Owner by telephone, telegram, or letter. Make permanent repairs to restore the affected items to the standards of construction required by these Specifications within a reasonable time and as weather conditions permit.

2. Complete work required within the warranty period without cost to the Owner.

B. Manufacturer's Roofing Materials Guarantee: Upon final acceptance of roofing system, furnish the Owner the roofing materials manufacturer's standard printed guarantee which covers costs up to no dollar limit for repairs required to maintain roofing system, composition flashing, and expansion joint covers in watertight condition. The guarantee shall cover:

1. Defects due to faulty materials or workmanship during and after application. The guarantee shall be for a minimum period of 20 years from the date of final acceptance of the roofing system.

1.6 PERFORMANCE REQUIREMENTS

A. UL: Class A Fire Hazard Classification.

B. FM: Roof Assembly Classification, Class 1 metal roof deck Construction, windstorm classification of 1-60, in accordance with FM Loss Prevention Data Sheets (LPDS) 1-28. Installation shall comply with FM LPDS 1-29.

1.7 QUALITY ASSURANCE

A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

B. Qualifications:

1. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years documented experience.

2. Applicator: Company specializing in performing work of this section with minimum five years documented experience and approved by manufacturer.

C. Preconstruction Conference: participate in scheduled conference. Conference attendees shall include roofing installer, installer of each component of related work (including substrate construction and condition, roof equipment, roof penetrations, and other work integral with or adjacent to roofing), Architect\Engineer, the Owner; roofing membrane manufacturer's representative, Owner's insurer, independent testing agencies, and governing authorities.

1. Walk roof areas to review and discuss substrate preparation, including repair of unacceptable surfaces, roof drainage, penetrations, equipment curbs, and work performed by other trades which requires coordination with roofing system.

2. Examine roof substrate for proper flatness and slope. Review structural capability for supporting roofing system and methods of fastening.

3. Review Contract Document requirements and submittals for roofing system, including roofing schedule, inspection and testing, and environmental conditions. Identify what are considered unacceptable weather conditions for roofing and which governing regulations or insurance requirements will affect roofing system installation.

4. Review procedures for protection of roofing from damage due to work of other trades.

5. Document discussions in writing, including actions required, and distribute copy of report to each meeting participant.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in manufacturer's original containers, dry, undamaged, seals and labels intact.

B. Store products in weather protected environment, clear of ground and moisture.

C. Stand roll materials on end.

D. Labels or bill of lading for roofing asphalt shall indicated asphalt type, FP, FBT and EVT; that is, the temperature at which the viscosity is either 125 centistokes when tested in accordance with ASTM D2170 or 75 centipoise when tested in accordance with ASTM D4402.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Do not apply roofing membrane during inclement weather, or when ambient temperatures are below 40 degrees F without proper weather protection.

B. Do not apply roofing membrane to damp or frozen deck surface.

C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

1.10 COORDINATION

A. Coordinate installation of modified bituminous membrane roofing with wood nailers specified in Section 06 10 53, Miscellaneous Rough Carpentry, equipment curbs, metal flashing specified in Section 07 62 00, Sheet Metal Flashing and Trim, and roof expansion joint covers specified in Section 07 95 00, Expansion Joint Cover Assemblies.

1.11 SUBMITTALS

A. Provide the following:

1. Product Data: Submit membrane materials, base flashing materials, insulation, vapor retarder, and walk pads.

2. Submittals: Indicate setting plan for insulation, layout of seams, direction of laps, base flashing details.

3. Submittals: Provide layout plan of insulation thicknesses and calculations to demonstrate achievement of R-value requirements.

4. Samples: provide one-pound containers of roofing aggregate.

5. Manufacturer's Installation Instructions: include precautions required for seaming membrane.

6. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

B. Provide the following before the Date of Substantial Completion:

1. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, wind velocity during application, and observations about installation.

PART 2 - PRODUCTS

2.1 MODIFIED BITUMINOUS ROOFING

A. Roofing Assembly Summary:

1. Substrate: Concrete deck as specified in Section 03 30 00, Cast-in-Place Concrete and steel deck as specified in Section 05 31 00, Steel Decking.

2. Substrate board, as required by roof assembly type.

3. Vapor retarder, installed with adhesive.

4. Polyisocyanurate insulation: 1 layer.

5. Cover board, 1 layer, joints offset from insulation. Mechanically attach both layers of insulation to steel deck. Fully adhere both layers of insulation to concrete deck; embed insulation into adhesive with full contact.

6. Type III asphalt, 25 pounds per 100 square feet.

7. Asphalt bituminous base sheet, 1 ply.

8. Type III asphalt, 25 pounds per 100 square feet.

9. Asphalt bituminous ply sheet, 1 ply.

10. Type III asphalt, 25 pounds per 100 square feet.

11. SBS modified bitumen mineral cap sheet, 1 ply or aggregate embedded in flood coat of asphalt, per roof assembly type.

B. Sheet Materials:

1. Sheet Vapor Retarder: Manufacturer’s standard high-density polyethylene film laminated to polymer modified adhesive, nominal 40 mils thick; including compatible release paper; acceptable for use within FM approved roofing assembly. Acceptable Product: V-Force Vapor Barrier Membrane; Firestone Building Products.

2. Base Sheet: manufacturer’s recommended sheet for roofing assembly, substrate, and to meet performance and warranty requirements.

3. Ply-Sheet:

   a. Asphalt coated, reinforced with non-woven glass fiber; ASTM D2178, Type VI; smooth surfaced, or

   b. Asphalt and polymer modifiers of styrene-butadiene-styrene (SBS) type, reinforced with non-woven polyester (ASTM D6164) or fiberglass (ASTM D6163), smooth surface.

4. Mineral Cap Sheet: Asphalt and polymer modifiers of styrene-butadiene-styrene (SBS) type, reinforced with non-woven polyester (ASTM D6164) or fiber glass (ASTM D6163), ; Type 1, Grade G; minimum 160 mils thick; mineral granule surfaced. Granule color as selected by Architect/Engineer from manufacturer's standard colors.

C. Bituminous Materials:

1. Asphalt Bitumen: ASTM D312, Type III or IV.

2. Asphalt Primer: ASTM D41.

3. Plastic Cement: ASTM D4586 Type II, cutback asphalt type, asbestos free.

D. Insulation, Bottom Layer: rigid, cellular polyisocyanurate closed-cell foam core and manufacturer's standard class reinforced felt facing laminated to both sides, with the following characteristics:

1. Compressive strength: minimum 20 psi, per ASTM D1261.

2. Board Size: manufacturer's standard board size.

3. Board Thickness: as required to achieve R-24 roof assembly long term thermal resistance in combination with cover board insulation and roofing plys, calculated as an average R-value for each roof area.

4. Board Edges: square.

E. Cover Board Insulation, Top Layer - One of the following:

1. ASTM C728, homogenous expanded perlite board with surface coating and the following characteristics:

   a. Board Size: manufacturer's standard.

   b. Board Thickness: 3/4 inch.

   c. Thermal Resistance: R-value of 2.08 for ¾-inch thickness.

   d. Board Edges: Square.

2. Fiberboard Insulation: homogenous high density cellulosic wood fiberboard with surface coating; ASTM C208, Type II, Grade 2; and following characteristics:

   a. Board Size: manufacturer's standard.

   b. Thickness: ½-inch.

   c. Thermal Resistance: R-value of 1.4 for ½-inch thickness.

F. Flexible Roof Membrane Flashings: SBS modified bitumen flashing sheet with flexible glass/polyester reinforcing, surfaced with mineral granules to match mineral cap sheet; ASTM D6221, Type 1; for use as base flashings; manufactured by primary roofing materials manufacturer.

G. Self-Adhesive Flexible Roof Flashing: 40 mil thick self-adhesive sheet of rubberized asphalt with face layer of high density, cross-laminated polyethylene. Acceptable Product: Ice & Water Shield; Grace Construction Products.

H. Counterflashings: prefinished metal, as specified in Section 07 62 00, Sheet Metal Flashing and Trim.

2.2 ACCESSORIES

A. Cant Strip: formed, perlite insulation.

B. Insulation Fasteners: Appropriate for purpose intended and approved by Factory Mutual and system manufacturer; length required for thickness of material with metal washers.

C. Sealants: As recommended by membrane manufacturer.

D. Traffic Pads: Bituminous composition, minimum ¾-inch thick; non-slip textured finish.

PART 3 - EXECUTION

3.1 INSPECTION

A. Verify surfaces and site conditions are ready to receive work.

B. Verify deck is supported and secured.

C. Verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to drains.

D. Verify deck surfaces are dry and free of snow or ice. Verify flutes of metal deck are clean and dry.

E. Verify roof openings, curbs, pipes, conduit, sleeves, ducts, and vents through roof are solidly set, and wood cant strips, wood-nailing strips, and reglets are in place.

3.2 PREPARATION

A. Vapor Retarder Application - Metal Deck With Substrate Board:

1. Install substrate board with mechanical fasteners.

2. Apply vapor retarder to deck surface with adhesive per manufacturer’s instructions.

3. Extend vapor retarder under cant strips and blocking. Lap flexible flashings over vapor barrier of wall construction to provide continuity of vapor barrier envelope.

4. Glaze top surface of vapor barrier when insulation is not placed same day.

3.3 APPLICATION

A. Insulation Application:

1. Ensure vapor retarder is clean and dry.

2. Mechanically fasten insulation to deck at full roof area to meet FM fastening requirements.

3. Minimum Total Insulation Thickness: As required to achieve insulation R-Value of 24 in combination with cover board insulation and roofing plys, calculated as an average R-value for each roof area.

4. Place boards at right angles to deck flutes with edges over flute surface for bearing support.

5. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.

6. Install layer of cover board over insulation in hot asphalt at rate of 25 pounds per 100 square feet of roof area. Lay boards with joints offset from joints in insulation.

7. Lay tapered boards or cut boards to slope for distance of 24 inches back from roof drains for positive drainage.

8. Apply no more insulation than can be covered with membrane in same day.

B. Membrane Application:

1. Apply roof membranes (base sheet and ply sheet) in accordance with manufacturer's instructions.

2. Apply membrane; lap and seal edges and ends permanently waterproof.

3. Apply membrane smooth, free from air pockets, wrinkles, or tears. Ensure full bond of membrane to substrate.

4. Extend membrane up cant strips and minimum of 8 inches onto vertical surfaces.

5. Extend membrane over vapor barrier of wall construction and seal.

6. Mop and seal membrane around roof protrusions and penetrations.

7. Provide waterproof cut-off to membrane at end of day's operation. Remove cut-off before resuming roofing.

C. Flashings And Accessories:

1. Apply flexible sheet base flashings to seal membrane to vertical elements.

2. Secure to nailing strips at a 4 inches on center and reglets.

3. Install prefabricated roofing expansion joints as indicated on Drawings.

4. Coordinate installation of roof drains, curbs, and related flashings.

5. Seal flashings and flanges of items penetrating or protruding through membrane.

D. Surfacing:

1. Apply mineral cap sheet or aggregate in accordance with membrane manufacturer's written instructions.

2. Install traffic pads as indicated on Drawings by setting in hot bitumen or plastic cement. Set pads 6 inches apart.

3.4 FIELD QUALITY CONTROL

A. Correct identified defects or irregularities.

B. Require site attendance of roofing and insulation materials manufacturers during installation of the Work.

3.5 CLEANING

A. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.

B. Repair or replace defaced or disfigured finishes caused by work of this section.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Protect building surfaces against damage from roofing work.

B. Where traffic must continue over finished roof membrane, protect surfaces.

END OF SECTION

SECTION 07 95 00

EXPANSION JOINT COVER ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes expansion joint cover assemblies at following locations:

1. Floors.
2. Interior walls.
3. Interior ceilings.
4. Exterior walls.
5. Roof.

B. Related Sections include the following:
1. Division 07 Section “Modified Bituminous Membrane Roofing” for roof membranes.
2. Division 07 Section “Sheet Metal Flashing and Trim” for metal flashings.

1.3 DESIGN CRITERIA

A. Fire-Resistance-Rated Joint Cover Assemblies: fire-resistance rating of joint cover shall not be less than the fire rating of the construction in which the joint cover is installed.

B. Fire Barriers: Design joint covers in fire rated construction to accept structural loading, movement, and fire hose stream test without material degradation or fatigue when tested in accordance to UL 2079.

C. Design joint covers for dynamic structural movement without material degradation or fatigue in nonfire-rated construction as tested in accordance with ASTM E1399.

D. Floor Loading Characteristics:

1. Standard Floor Covers: design to withstand a minimum point load of 500 pounds without damage or permanent deformation.

2. Heavy-Duty Covers: design to withstand a minimum point load of 2,000 pounds without damage or permanent deformation.

1.4 QUALITY ASSURANCE

A. Single-Source Responsibility: Obtain expansion joint cover assemblies specified in this Section from one source from a single manufacturer.

B. Fire-Test-Response Characteristics: Where indicated provide expansion joint cover assemblies identical to those assemblies whose fire resistance has been determined per ANSI/UL 263, NFPA 251, or ASTM E119 and ASTM E814 including hose stream test at fire-rated period by UL. Fire rating shall not be less than the rating of adjacent construction.

1.5 SUBMITTALS

A. Refer to the Submittal Schedule at the end of Part 3 for a list of submittal requirements for this Section.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. C/S Group.

B. Balco Inc.

C. MM Systems Corporation.

D. Watson Bowman Acme Corporation.

2.2 MATERIALS

A. Aluminum: ASTM B221 alloy 6063-T5, extrusions; ASTM B308 alloy 6061-T6, sheet and plate.

B. Structural Steel Shapes: ASTM A36.

C. Steel Plates: ASTM A283, Grade C.

D. Rolled Steel Floor Plates: ASTM A786.

E. Stainless Steel: ASTM A666, Type 304, plates, sheet, and strips with 2B finish.

F. Extruded Bronze: ASTM B455, C38500 alloy.

G. Extruded Preformed Seals: Single or multilayered natural rubber or synthetic vulcanized products as classified under ASTM D2000, designed with or without continuous, longitudinal, internal baffles and formed to fit compatible frames.

H. Exterior Seals: Two single layered flexible extrusions, one interior PVC and one exterior thermoplastic rubber as classified under ASTM D2000, retained in a set of compatible frames.

I. Seismic Seals: Two single-layered elastomeric profiles, one interior and one exterior; Designated for structural seismic movement without degradation, as classified under ASTM D2000.

J. Fire Barriers:

1. Design joint covers for dynamic structural movement without material degradation or fatigue when tested according to ASTM E1399.

2. Provide joint cover assembly that has been tested in maximum joint width condition with a field splice as a component of an expansion joint cover per ANSI/UL 263, NFPA 251, and ASTM E119, including hose stream test of vertical wall assemblies.

3. Fire-resistance rating shall not be less than the rating of adjacent construction.

K. Moisture Barriers: continuous flexible vinyl moisture barrier under joint cover as indicated on Drawings.

L. Transitions, Base Closures, and End Caps: factory-fabricate transitions, base closures, and end caps with butt joints sealed using site-applied flexible splice covers.

M. Accessories: Manufacturer's standard anchors, fasteners, set screws, spacers, flexible moisture barrier and filler materials, drain tubes, lubricants, adhesive, and other accessories compatible with material in contact and as required for a complete installation.

N. Roof Joint Covers: composite construction of flexible neoprene flashing, each edge seamed to aluminum sheet metal flanges, designed for nominal building joint width of 6 inches to accommodate plus or minus 2-inches of movement. Include special formed corners, tees, and intersections, each sealed watertight and formed for project conditions.

2.3 FABRICATION

A. Provide expansion joint cover assemblies of design, basic profile, materials, and operation as scheduled.

B. Provide units comparable to those indicated or required to accommodate joint size, variations in adjacent surfaces, and dynamic structural movement without material degradation or fatigue when tested according to ASTM E1399.

C. Furnish units in longest practical lengths to minimize number of end joints. At exterior expansion joints, provide preformed seal materials in lengths equal to joint length without field splices.

D. Provide hairline, mitered corners where joints change directions or abut other materials. Include closure materials and transition pieces, tee-joints, corners, curbs, cross-connections, and other accessories as required to provide continuous joint cover assemblies.

E. Moisture Barrier: Provide manufacturer’s continuous, standard, flexible vinyl moisture barrier under covers at exterior locations.

F. Fire-Rated Joint Covers: Provide expansion joint cover assemblies with manufacturer’s continuous, standard, flexible fire barrier seals under covers at locations indicated to provide fire-resistive rating not less than the rating of adjacent construction.

G. Metal Floor-to-Floor Joint Cover Assemblies:

1. Provide continuous extruded metal frames of profile indicated with seating surface and raised floor rim or exposed trim strip to accommodate flooring and concealed bolt and anchors embedded in concrete.

2. Provide assemblies formed to receive aluminum cover plates of design indicated and to receive filler materials between raised rim of frame and edge of plate.

3. Furnish depth and configuration to suit type of construction and to produce a continuous flush wearing surface with adjoining finish floor surface.

2.4 FINISHES

A. Comply with NAAMM Metal Finishes Manual for finish designations and application recommendations, except as otherwise indicated. Apply finishes to products in factory after fabrication. Protect finishes on exposed surfaces before shipment.

B. Protect aluminum surfaces in contact with cementitious materials with zinc chromate primer or chromate conversion coating.

C. Exposed Metal Finishes:

1. Exterior Walls: Mill finish.

2. Interior Walls and Ceilings: Clear anodized; AA-C204R1 medium matte etched finish with 0.4 mil minimum thick anodic coating.
3. Floors: Mill finish.

D. Expansion Joint Seals:

1. Exterior Walls: Black.
2. Interior Walls and Ceilings: Manufacturer's standard color Gray.
3. Floors: Manufacturer's standard color Gray.

PART 3 - EXECUTION

3.1 PREPARATION

A. Verify measurements and dimensions at the job site.

B. Coordinate and furnish anchorages, setting drawings, templates, and instructions for installation of expansion joint cover assemblies to be embedded in or anchored to concrete or to have recesses formed into edges of concrete slab for later placement and grouting-in of frames.

3.2 INSTALLATION

A. Install components and accessories in accordance with manufacturer's instructions.

B. Fastening to In-Place Construction:

1. Provide anchorage devices and fasteners where necessary to secure expansion joint cover assemblies to in-place construction, including threaded fasteners with drilled-in expansion shields for concrete where anchoring members are not embedded in concrete.

2. Provide metal fasteners of type and size as recommended by the manufacturer to suit construction indicated and to provide for secure attachment of expansion joint cover assemblies.

C. Perform cutting, drilling, and fitting required to install expansion joint covers. Provide hairline joints between adjacent joint cover components.

D. Install joint cover assemblies in true alignment and proper relationship to expansion joints and adjoining finished surfaces measured from establishment lines and levels. Allow adequate free movement for thermal expansion and contraction of metal to avoid buckling.

E. Set floor covers flush with adjacent finished floor materials. If necessary, shim to level, but ensure base frames have continual support to prevent rocking and vertical deflection.

F. Locate wall, ceiling, roof and soffit covers in continuous contact with adjacent surfaces. Securely attach in place with required accessories.

G. Maintain continuity of expansion joint cover assemblies with a minimum number of end joints and align metal members mechanically using splice joints. Cut and fit ends to produce joints that accommodate thermal expansion and contraction of metal to avoid buckling of frames.

H. Locate anchors at intervals recommended by the manufacturer, but not less than 3 inches from each end and not more than 24 inches on center.

I. Extruded Preformed Seals: Install seals complying with manufacturer's instructions and with minimum number of end joints. For straight sections preform seals in continuous lengths. The installation shall include factory, heat-welded transitions to ensure a watertight system. Apply adhesive, epoxy, or lubricant adhesive approved by manufacturer to both frame interfaces before installation performed seal. Seal transitions according to manufacturer's instructions.

J. Seismic Seals: Install interior seals in continuous lengths; vulcanize or heat-weld field splice joints in interior seal material to provide watertight joints using manufacturer's recommended procedures. Install exterior seals in maximum lengths possible with hairline end joints.

K. Fire Barriers: Install fire barriers, including transitions and end joints, in accordance to manufacturer's instructions so that fire-rated construction is continuous.

L. Coordinate roofing membrane and base flashings specified in Section 075200, Modified Bituminous Membrane Roofing and related sheet metal flashings specified in Section 076200, Sheet Metal Flashing and Trim, with installation of components of this section.

3.3 PROTECTION

A. Provide removable strippable coating to protect finished surfaces.

B. Do not remove protective covering until finish work in adjacent areas is complete. When protective covering is removed, clean exposed surfaces in accordance with the manufacturer's instructions

3.4 SCHEDULE

A. Expansion Joint Cover Schedule: The design is based on the manufacturer's model numbers indicated. Products provided by other manufacturers listed in acceptable manufacturers are also acceptable, provided the products meet the design intent and criteria.

EXPANSION JOINT COVER SCHEDULE

Joint No. Designation	Joint			Finish and Color		Acceptable Product Model No. (C/S Group No.)
	Type	Size	Movement	Seals	Exposed Metal	
J-1	Wall Fire Barrier (2 Hour)	6"	+/- 2 inches	Gray; Fire Barrier (Concealed)	Clear Anodized Aluminum	FWF-600 / SSF-600 & MFX-6W
J-2	Wall	6"	+/- 2 inches	Gray	Clear Anodized Aluminum	FWFC-600
J-3	CMU Wall Fire Barrier (2 Hour)	6"	+/- 2 inches	Gray; Fire Barrier (Concealed)	Clear Anodized Aluminum	FWF-600M / SSF-600 & MFX-6W
J-4	CMU Wall	6"	+/- 2 inches	Gray	Clear Anodized Aluminum	FWF-600M
J-5	Floor	6"	+/- 2 inches	--	Aluminum Mill Finish	SJ-600 HD
J-6	Ceiling	6"	+/- 2 inches	Gray	Clear Anodized Aluminum	FWF-600
J-7	Exterior Wall	6"	+/- 2 inches	Black	Aluminum Mill	SF-600

Joint No. Designation	Joint			Finish and Color		Acceptable Product Model No. (C/S Group No.)
	Type	Size	Movement	Seals	Exposed Metal Finish	
J-8	Wall Fire Barrier (2 Hour)	6”	+/- 2 inches	Gray; Fire Barrier (Concealed)	Clear Anodized Aluminum	FWFC-600 / SSF-600 & MFX-6W
J-9	Floor	6”	+/- 2 inches	--	Aluminum Mill Finish	SJW-600 HD
J-10	Ceiling	6”	+/- 2 inches	Gray	Clear Anodized Aluminum	FWFC-600
J-11	Ceiling Fire Barrier (2 Hour)	6”	+/- 2 inches	Gray; Fire Barrier (Concealed)	N/A	SSF & MFX-6W
J-20	Roof to Wall	6”	+/- 2 inches	Black EPDM	Aluminum Mill Finish	SRJW-1200
J-21	Roof	6”	+/- 2 inches	Black EPDM	Galvanized Steel	BRJ-600 WC

3.5 SUBMITTAL SCHEDULE

A. Provide the submittals listed in the below Submittal Schedule:

ITEM NO.	SUBMITTAL REQUIREMENT	WITH BID	NO. OF WEEKS AFTER AWARD	AS INDICATED
07 95 00-01	Product data for each type of expansion joint cover specified, including manufacturer product specifications, and installation instructions.		4	
07 95 00-02	NOT USED			
07 95 00-03	Shop Drawings: Indicate joint device profiles, dimensions, installation details in relation to adjacent building construction, locations in the work, affected adjacent construction, anchorage devices and locations of splices.		4	
07 95 00-04	Three samples 6 inches long, illustrating profile, dimension, color, and finish specified.		4	
07 95 00-05	Test Reports: from qualified independent testing laboratory, indicating performance relative to compliance with fire-resistance design criteria.		4	

END OF SECTION

SECTION 11 53 43

LABORATORY SERVICE FITTINGS AND FIXTURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Laboratory service fittings, valves, and related components.

B. Laboratory sink units.

1.2 RELATED SECTIONS

A. General and Supplementary Conditions and Division 01.

B. Division 23 - Mechanical.

C. Division 22 – Plumbing.

D. Division 26 - Electrical.

1.3 REFERENCES

A. Comply with requirements of general and supplementary conditions and Division 01 as part of this specification.

B. Conform to the recommended practices for laboratory service fittings and fixtures published by the Scientific Equipment and Furniture Association, SEFA 7-1996: Laboratory and Hospital Fixtures.

1.4 DESCRIPTION

A. Work includes but is not necessarily limited to furnishing to the project site for installation by Division 22, all laboratory fixtures, fittings, and emergency plumbing fixtures described herein and shown on the Drawings.

1.5 SUBMITTALS

A. Materials List/Product Data: Submit complete materials list, including catalogue data, of all materials, equipment, and products for Work in this Section.

B. Submittals: Submit complete shop fabrication and installation drawings, including plans, elevations, sections, details and schedules. Show relationship to adjoining materials and construction. Shop Drawings shall be in the form of reproducibles or photocopies, not to exceed 11" x 17" in size. Blueline prints are not acceptable.

C. Samples: Submit two (2) samples of each type of specified finish and color range available.

D. Operations/Maintenance Manuals: Submit under provisions of Section 01 77 00 complete operating and maintenance manuals that describe proper operating procedures, maintenance and replacement schedules, components parts list, and nearest local factory representative for components and repairs.

1.6 PRODUCT HANDLING

A. Protection: Refer to Section 01 60 00.

B. Replacements: In the event of damage, immediately make all repairs and replacements necessary for the approval of the Architect and at no additional cost to the Owner.

1.7 QUALITY ASSURANCE

A. Contractor for Work specified in this Section shall have an established organization and production facility with five years documented experience specializing in the manufacture of the type of equipment specified, with an experienced Engineering Department. Each shall have demonstrated ability to produce the specified equipment of the required quality and quantity for complete installation in a project of this type and size within the required time limits.

B. Work in this Section requires close coordination with Work in electrical and mechanical Sections. Coordinate all Work to assure an orderly progress in the Project, without removal of previously installed Work, and so as to prevent damage to finishes and products.

C. Review conditions of installation, procedures and coordination with related Work.

D. Carefully inspect the installed Work specified in other Sections and verify that all such Work is complete and ready for the installation of this Work to properly commence.

E. Verify that all Work may be installed in complete accordance with the original design, reviewed submittals and manufacturer's recommendations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In addition to meeting the specified technical requirements, products from the following manufacturers, or from an approved substitution manufacturer, shall comply with the Buy American Contract Clause specified in Section 01 60 00, Product Requirements. If a manufacturer cannot demonstrate compliance with technical and Buy America requirements, that manufacturer will not be approved for the project.

B. Manufacturer’s Certification: Written certification that materials meet the specified technical requirements and Buy American Contract Clause.

2.2 GENERAL

A. All service fittings and emergency plumbing fixtures shall be specifically designed for laboratory use.

B. Service fittings shall be furnished and delivered to point of use for installation as specified in other Sections of the Specifications.

C. All service fittings shall be factory pre-assembled including the assembly of valves to turrets, mounting shanks to turrets, etc., and individually factory tested.

D. All laboratory service fittings shall be the product of one service fitting manufacturer to assure ease of replacement and maintenance.

E. All service valves, fittings, and accessories shall be of cast brass with a minimum copper content of 85%, except for items which are to be brass forging or bar stock.

F. Provide fittings in the fume hoods to correspond to the utilities connected to the new fume hoods. See the plumbing drawings for those utilities.

G. Assembly components and operating parts such as valve stems, renewable units, packing nuts, outlet nozzles and straight serrated hose ends shall be made from solid brass stock.

H. Replaceable seats, needle cones, valve disc screws and other accessories shall be Monel or stainless steel alloys especially selected for use intended.

I. Fittings shall be factory tested and shall be supplied with nipples, lock nuts, shanks, etc.

J. Serrated tip fittings shall have 3/8 inch. IPS thread with the hose end being tapered. Diameter of orifice in serrated tip shall be 1/8 inch, except where otherwise specified.

K. Turrets shall be brass drop forging of design indicated in details shown elsewhere in the Section and shall be one or two-way, as required, with 3/8 inch IPS female inlet thread for connections. Units shall be furnished with brass shanks, brass locknuts, and washers.

L. Fittings located on the same plane shall have their handles project the same distance from the plane of reference to present a uniform related appearance, regardless of valve type construction.

M. Flanges shall be brass forging of approved design with 3/8 inch IPS female inlet and outlet.

N. All goosenecks shall provide full thread for attachment of antisplash outlet fittings, serrated tips, and filter pumps.

O. Hot water/cold water gooseneck mixers and wall-mounted cold water goosenecks shall swivel. Swivel point shall be at turret or at valve level if wall mounted. Swing joints shall have heavy Teflon type packings; "0" rings will not be permitted. Cold water goosenecks at cup sinks shall be rigid.

P. All fittings shall have plastic colored service index buttons as specified in this Section.

Q. Provide vacuum breakers for all potable hot and cold water fittings including hand held eyewash drench.

R. All exposed traps and pipe work beneath emergency eyewash fittings and ADA sinks shall be enclosed with insulating material to protect the wheelchair user.

2.3 LABORATORY SERVICE FITTINGS

A. Manufacturers:

1. Products, which comply with this specification section as judged and approved by the Architect, may be provided by the following manufacturers. All products specified in this section shall be provided by a single manufacturer.

    a. Water Saver Faucet Co., 701 West Erie Street, Chicago, IL 60610 Tel: 312 666-5500.

    b. Chicago Faucet Company, 2100 S. Clearwater Drive, Des Plaines, IL 60018 Tel: 847 803-5000.

    c. Broen Lab, 4401 S. Kansas Avenue, St. Francis WI 53235 Tel: 414 744-1000.

B. Pattern: All service fittings shall have cylindrical profiles.

C. Handles:

1. ADA faucets shall be fitted with "wrist-blade" handles.

2. Laboratory gas, air and vacuum valves at ADA accessible workstations shall be ball valves fitted with lever-type handles.

3. Other fittings shall be fitted with color-coded hooded type handles with screwon index discs.

D. Finish: Satin chrome, with clear, acid-resistant coating.

E. Water Valves:

1. Water valves shall include a renewable unit containing all the working parts which are subject to wear, including stainless steel or monel seat, monel screw and heavy duty seat disk and Teflon packing, and an integral adjustable volume control.

2. Unit shall be capable of being readily converted from compression to self-closing, and vice versa, without disturbing faucet body proper and shall also be capable of being readily converted from water construction to needle valve or steam valve construction having outside packing gland without disturbing faucet body.

3. Unit shall be sealed in valve body with special composition gasket. Metal-to-metal or ground joint type of sealing is not acceptable.

4. Water fixtures shall be fully assembled and factory tested at 80 psi water pressure.

F. Needle Valves: All needle valve assemblies shall be fully assembled and factory tested at 225 psi air pressure. Gas, air, vacuum and steam needle valve fittings shall have stainless steel replaceable floating cone that is precision ground and self-centering which shall seat against a stainless steel or monel renewable valve seat. Action of valve shall be slow compression for fine control under pressure up to 150 psi and shall have subject-to-wear parts easily replaceable.

G. Laboratory Ball Valves: All ball valves shall be suitable for laboratory gas, air and vacuum and be supplied fully assembled and factory tested at 125 psi air pressure. Ball valves shall be of quarter-turn (closed to fully open) design, be fitted with lever handle requiring less than 5 lbf

force to operate, and shall have subject-to-wear parts easily replaceable. Ball valves shall be AGA/CGA certified for gas service.

H. Service Fitting Color Index:

Service Name	Disc Color	Letters	Letter Color
Lab Air	Orange	AIR	Black
Compressed Air	Orange	AIR60,90,100	White
Gas	Dark Blue	GAS	White
Vacuum	Yellow	VAC	Black
Industrial Cold Water	Dark Green	ICW	White
Industrial Hot Water	Red	IHW	White
Cold Water	Dark Green	CW	White
Hot Water	Red	HW	White
High Purity Water	White	DI	Black
Carbon Dioxide	Pink	COZ	Black
CWS/R	White	CWS/CWR	Black
Steam	Black	STM symbol	White

2.4 FINISHES

A. Satin Chrome finish with clear, acid-resistant coating:

1. All laboratory service fittings.

2. Satin Chrome finish: All exposed surfaces shall be polished and buffed, then electroplated with one layer of nickel and one layer of chrome. Each layer of plating shall completely cover all visible areas. Total plating thickness shall be not less than 0.4 mil. Chrome finish shall be treated to provide a satin finish.

   a. Satin (AISI No. 6 brushed finish)

3. Clear epoxy coating: Following plating, clear epoxy coating shall be applied to all exposed surfaces and then baked to permit curing. Surfaces shall have a minimum coating thickness of 2 mils.

B. Colored Coating:

1. All laboratory service fittings and emergency plumbing fixtures.

2. Fume hood service fittings.

3. Preparation: Surfaces to be coated shall be polished or sandblasted to produce a uniform fine-grained surface and immersed in a phosphoric acid cleaning solution to remove thoroughly all oil, grease and other foreign substances.

4. Epoxy finish: Following cleaning, coating material shall be electrostatically applied to all exposed surfaces. After application, coating shall be fully baked to permit curing.

Coating material shall be free-flowing epoxy powder with particle size of 1.4 to 2.8 mils. Surfaces shall have a minimum finished coating thickness of 2 mils.

5. Color:

a. Fittings inside fume hoods shall have a colored finish color-coded to match the fitting service index color.

C. Performance requirements for coated finishes:

1. Chemical resistance:

a. Fume Test: Suspend coated samples in a container at least 6 cu. ft. capacity, approximately 12 inches above open beakers, each containing 100 mL of 70% nitric acid, 94% sulfuric acid and 35% hydrochloric acid, respectively. After exposure to these fumes for 150 hours, the finish on the samples shall show no discoloration, disintegration or other effects.

b. Direct Application Test: Subject coated samples to the direct action of the following reagents and solvents at a temperature of 25°C dropping from a burette at the rate of 60 drops per minute for ten minutes. Finish on samples shall not rupture, though slight discoloration or temporary softening is permissible.

Reagent	Concentration
Acetic Acid	98% Acetone
Ammonium Hydroxide	28% Amyl
Acetate	
Amyl Alcohol	
Benzene	
Butyl Alcohol	
Calcium Hypochlorite Carbon	
Disulfide	
Carbon Tetrachloride	
Chloroform	
Chromic Trioxide Acid Cresol	

Reagent	Concentration
Crude Oil	
Dioxane	
Distilled Water	
Ether	
Ethyl Acetate	
Ethyl Alcohol	
Ethyl Ester	
Formaldehyde	37%
Formic Acid	90%
Gasoline	
Glacial Acetic Acid	99.5%
Glycerine	
Hydrochloric Acid	38%
Hydrofluoric Acid	48%

Hydrogen Peroxide	5%
Isopropyl Alcohol	
Lactic Acid	10%
Kerosene	
Methanol	
Methyl Alcohol	
Methyl Ethyl Ketone	
Methylene Chloride	
Mineral Oil	
Monochlor Benzene	
N-Hexane	
Naphthalene	
Nitric Acid	70%
Perchloric Acid	70%
Phenol	
Phosphoric Acid	75%
Sea Water	
Silver Nitrate	30%
Sodium Bichromate	saturated
Sodium Carbonate	10%
Sodium Chloride	20%
Sodium Hydroxide	50%
Sodium Hypochlorite	
Sodium Sulfide	
Sulfuric Acid	87%
Toluene	
Trichlorethylene	
Turpentine	
Urea	
Xylene	
Zinc Chloride	saturated

2. Mar and abrasion resistance: Coating material shall have a pencil hardness of 2H - 4H with adhesion substantial enough to withstand both direct and reverse impacts of 160 inch-pounds. Coating shall have excellent mar resistance and be capable of withstanding scuffing, marring and other ordinary wear.

3. Repairability: Scratches and other localized surface damage shall be field-repairable.

2.5 LABORATORY SINKS

A. Cup Sink: Provide cup sinks at fume hoods as described in Section 11 60 10.

B. Cup Sink: Epoxy, color to match work surface, raised lip pattern, sizes per drawings, as manufactured by Laboratory Tops, Inc., Epoxyn, Durcon, or equal.

C. Cup Sink: Epoxy, color to match work surface, to be set flush with work surface, sizes per drawings, as manufactured by Laboratory Tops, Inc., Epoxyn, Durcon, or equal.

D. Provide strainer, outlet and tailpiece for all cup sinks.

E. Provide tailpieces compatible with waste piping system for all sinks unless otherwise specified. See Division 22 for piping requirements.

PART 3 - EXECUTION

3.1 SITE CONDITIONS

A. Inspection:

1. Prior to delivery of fittings specified in this Section, carefully inspect the installed Work specified in other Sections and verify that all such Work is complete to the point where this installation may properly commence.

2. Verify that all Work has been installed in complete accordance with the original design, approved submittals, and the manufacturer's recommendations.

B. Discrepancy:

1. In the event of discrepancy, immediately notify the Architect.

3.2 PACKING AND DELIVERY

A. Deliver all fittings and fixtures to job site in recommended packaging, with each fitting individually packaged, marked, and scheduled for point of use.

B. Inventory fittings, at job site, verify that type and quantity are correct, and re-package until installed.

C. Store in clean, dry location.

3.3 INSTALLATION

A. Set internal volume control on cup sink water fittings so water does not splash out of sink.

END OF SECTION

IDC ARCHITECTS

INFORMATION NEEDS

Subject:	**Bidder Questions**	Date:	November 30, 2011
Project Name:	UNL CV2	Project Number:	402195
To:	UNL	From:	E. Staley

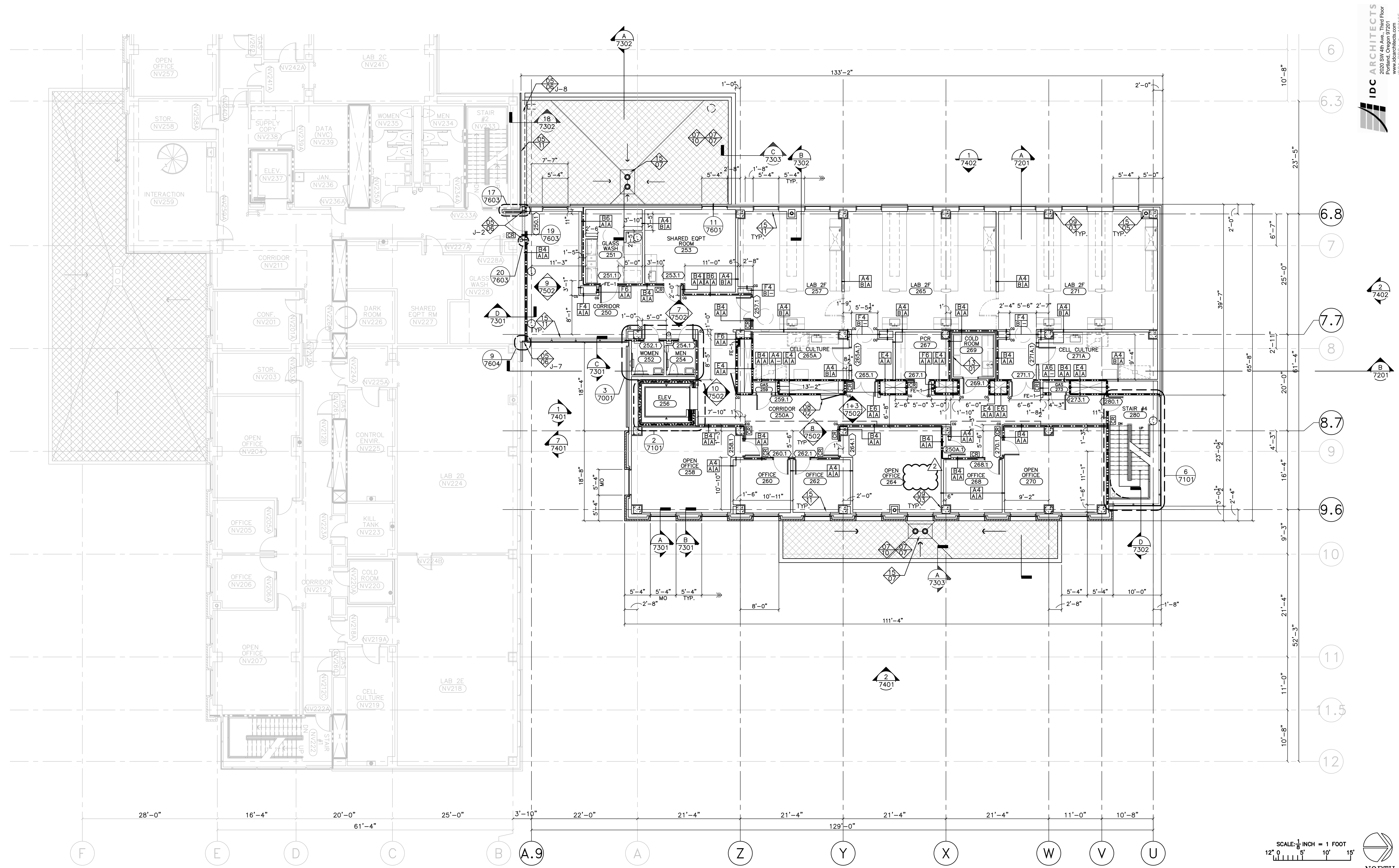
Item No.	Needed By	Question	Design Disc	Response
A-23	*ILS*	*Sheet NVAL0101 shows sink type LS02 with a designated fixture R1. The list of fixtures on the same sheet fails to identify R1. Please indicate what fixture R1 is supposed to represent. Thanks*	*A*	*R1 is not required per the table.*
A-24	*Lund-Ross*	*On sheet NVA-1-E it shows expansion joint J-1 at the east side of corridor 150 near door 150.2. Is the expansion joint at the west side of this door opening also a J-1?*	*A*	*NVA-1-E states the EJ at the west side is a J-3 since it will be installed in an existing CMU wall*
A-25	*Lund-Ross*	*On Detail 2/NVA-7501* *a. The casework is referenced to cuts 6 & 7/7600. Details 6 & 7 on 7600 refer to exterior details. Should these be 6 & 7/7609?* *b. The wingwall is referenced to detail 13/7609 which is a soffit detail. Please clarify these details.*	*A*	*a. Correct* *b. Detail call-out 13/7609 should be 20/7609 which will be included in Addendum 02. 1&10/7502 reference 5/7609 should be 20/7609.*
A-26	*Lund-Ross*	*For Doors 169A.1 & 169B.1 the drawings show 3 door panels and calls them out as 5'x10'-6" (General Note 08/07 sheet NVA-7503). The Door Schedule calls for 2 panels 4'-6"x7'-0". Please clarify the desired size and configuration for these doors.*	*A*	*See response to item A-12.*
A-27	*Lund-Ross*	*Sheet NVA-2-E references detail 2/7606 for what appears to be a riser in room 264. There is no detail 2/7606. Please advise*	*A*	*Disregard callout tag 2/7606. There is no corresponding detail.*
A-28	*Lund-Ross*	*There are no fire extinguishers shown on level 4. Please verify none are required.*	*A*	*A FE-3 Extinguisher is required in Hallway 450B as well as in Hallway 450A. Revised drawing issued in*

Item No.	Needed By	Question	Design Disc	Response
				Addendum 2.
A-29	ILS	For Addendum 001: Item 10 on page 2 indicates that Section 123553 should be deleted in its entirety and replaced with attached new section. A complete page by page review of the attached new section indicates that it is identical to the deleted section.	A	Revisions were made to section 2.13 HELP Stations. Cabinet materials and Hardware shall match "Wood" Laboratory Casework (not metal as previously noted)
A-30	Kiewit	In spec section 115213, para. 2.2.A.4 says the size of the projection screen is "TBD". Please provide us with a size for this item.	A	Screen is 13'-8" x 7'-8"
A-31	Kiewit	Plan sheet NVA-1-E, note "08-04" says the operable partition wall in room 169 to be "future". Does that mean that spec section 102227 is not in this contract? Also, if it is not in this contract, will the pocket doors noted "08-06" be part of the base bid? They are not noted as "future".		The operable partition is future scope. The support for the partition as well as the pocket doors that will hide the partition, shall be included in Phase 2.
A-32	Kiewit	Spec section 101100, para. 2.5.B calls for an aluminum marker board rail. Details 8/NVA-7609 and 3/NVA-7611 show hardwood trays. Please clarify.		Marker rails are hardwood per details 8/NVA-7609 and 3/NVA-7611
A-33	Kiewit	In spec section 102227, para. 2.2.G.1 calls for the pocket door panels to match WPL-1 in section 064000. Section 064000, para. 2.2.G calls for WPL-1 to be a fiber/resin composite product. On plan sheet NVA-1-E, note "08-06" calls for these pocket doors to match the sliding wood storage doors. Spec section 081400 calls for wood doors to be white maple. Please clarify.		Pocket door panels, custom closet door panels, as well as the adjacent walls shall all be WPL-1 per the interior elevation 2/NVA-7503 East.
A-34	Kiewit	Elevations 4 and 6 on plan sheet NVA-7503 call for item "10-13 Wall Shelf WS-1" that is not included in spec section 102810. Please clarify.		WS-1 is a surface-mounted stainless steel shelf by Gamco/Bobrick. Model no. S-6 x 60"
A-35	Kiewit	Section 090610, the Room Finish Schedule, General Note D calls for paint P-XXX-XX. This paint type is not included in		Black out color and finish to match Phase 1.

INFORMATION NEEDS

Item No.	Needed By	Question	Design Disc	Response
		section 099126. Please clarify.		
A-36	*Kiewit*	*Section 090610, the Room Finish Schedule, Keyed Note 3 calls for maple wood base where WPL-2 occurs. Detail 8/NVA-7611 calls for rubber base. Please clarify.*		*Use rubber base per Detail 8/NVA-7611*
A-37	*Kiewit*	*Wall section D/NVA-7301 and detail 20/NVA-7602 call for a J-21 expansion joint cover. This item is not contained in the expansion joint cover schedule in spec section 079500, nor is it called out in roofing specs. Please clarify this item.*		*J-20 & J-21 have been added to spec section 079500. Revised spec issued in Addendum 02.*
A-38	*Kiewit*	*The expansion joint cover schedule in spec section 079500 includes a J-4 product number FWF-600M and a J-5 product number SJ-600 HD. In a search of the C/S Group website, these two product numbers apparently do not exist. Please clarify.*		*SJ-600 HD is on the website (under Allway Seismic Metal Floor Covers). I did not see FWF-600M (only -600). Substitute with FWF-700M if 600M is not available.*
S-4	*Drake-Williams*	*The general structural note regarding augercast pile reinforcing indicates only a full length #9 bar. Most details also indicate only a full length bar as well. However, detail 8 on Sheet NVS-7630 has a note regarding a "rebar cage", although not showing a cage. The specification for augercast pile does not address the amount or size of reinforcing.* *The basic question, is there more reinforcing in these pile than the just the full length #9?*	*S*	*The auger cast piles require just the single bar. References to a cage are general and do not imply additional reinforcing not specifically called for in the drawings."*

cc: Sent Via: Other



SCALE: 1/8 INCH = 1 FOOT
12" 0 5' 10' 15'

NORTH

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01 CONCRETE CURB
02 HOUSEKEEPING PAD
03 CONCRETE PLATFORM
04 EQUIPMENT PAD
05 CONCRETE COLUMN
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05 – METALS
01 ALUM COMPOSITE PANEL (ACP)
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03 STEEL HANDRAIL/GUARDRAIL
04 LOUVER
05 STEEL ACCESS LADDER
06 EXPANSION JOINT COVER
07 METAL GRATING W/ GUARD RAIL PROVIDED FOR ACCESS TO UTILITY DUCT
08 STEEL GATE
09 PROFILE METAL PANEL SCREEN AT EXISTING MECHANICAL PENTHOUSE
10 CATWALK FOR MECH FAN ACCESS
11 REINSTALL SALVAGED AND MODIFIED ACP
12 NEW COPING
13 STRUCTURAL SUPPORT FOR PMP LOUVER. SEE DETAIL 12/NVA-7606 FOR PENETRATION FLASHING
14 2 HOUR RATED JOINT IN RATED HORIZONTAL SEPARATION ABOVE; J-11

06 – WOOD AND PLASTICS
01 WOOD SHELF
02 CASEWORK

07 – THERMAL AND MOISTURE PROTECTION
01 ROOF HATCH
02 ROOF WALKWAY PADS
03 ROOFING ASSEMBLY A; SEE DETAIL 13/NVA-7600
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05 PROVIDE 6" THICK ACOUSTICAL INSULATION ABOVE CEILING
06 INSTALL FIRESAFING (FSM-2) TO EXTEND 2 HR FIRE RATED ENCLOSURE TO OUTSIDE WALL
07 TAPERED ROOF INSULATION TO SLOPE 1/4" PER FOOT. VALLEYS TO SLOPE MIN. 1/16" PER FOOT.
08 TAPERED INSULATION TO MEET SLOPE OF ROOF DECK. PROVIDE POSITIVE DRAINAGE
09 TAPER ROOF INSULATION TO SLOPE 1/4" PER FOOT, THIS AREA SEE DETAIL 1/NVA-7601. VALLEYS TO SLOPE MIN. 1/16" PER FOOT.
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14 GWB OVER SHEET VAPOR RETARDER OVER METAL Z-FURRING @ 24" OC W/2" RIGID INSULATION
15 3/8" SEALANT JOINT SET BACK 3/8" FROM FACE OF FINISH MATERIAL; RETURN UP VERTICAL FACE

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02 48"x48" FLUSH 2HR RATED ACCESS PANEL
03 24"x24" FLUSH 2HR RATED ACCESS PANEL @ 11'-0" A.F.F.
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11 PAINT CONC CURB OR PLATFORM OSHA SAFETY YELLOW

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ARCHITECT · F. JEFFREY MURRAY · A-3526 · STATE OF NEBRASKA

REVISIONS
1 ADDM 1 11-21-2011
2 ADDM 2 11-29-2011

KEN MORRISON LIFE SCIENCES RESEARCH CENTER ADDITION

UNIVERSITY OF Nebraska Lincoln

DESIGNED BY:

DRAWN BY:

CHECKED BY:

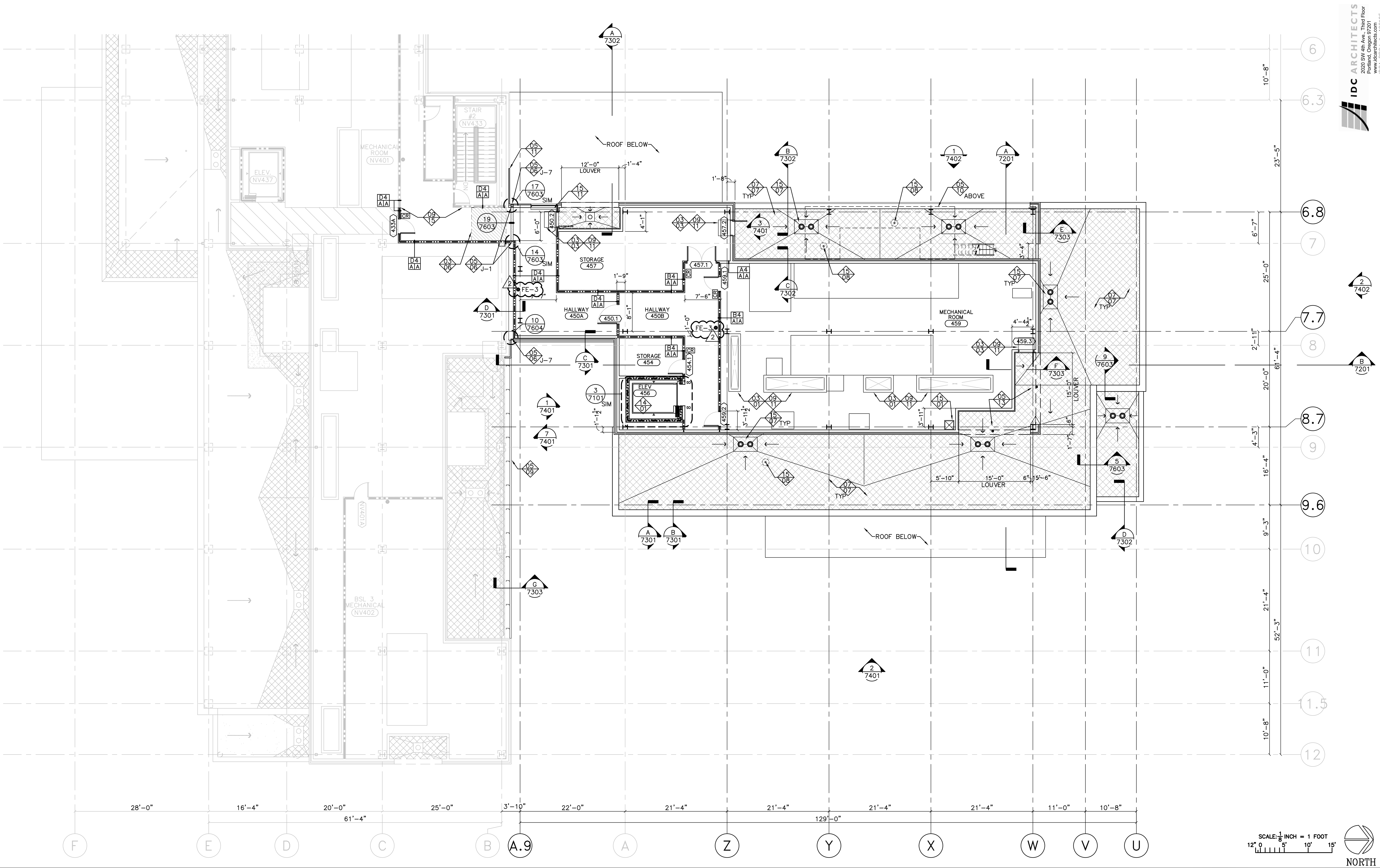
DATE: MAY 26, 2011

PROJECT NO: 102002

SHEET TITLE: ARCHITECTURAL LEVEL 2 SECTOR E FLOOR PLAN

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

SHEET NO: NVA-2-E-



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02 LAVATORY
03 DRINKING FOUNTIAN
04 FLOOR DRAIN
05 OVERFLOW DRAIN; 8" DIA. MAX. SLEEVED PIPE
06 MECHANICAL EQUIPMENT
07 ROOF DRAIN & OVERFLOW, SEE DETAIL 1/NVA-7606
08 VENT STACK, SEE DETAIL 9/NVA-7606
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10 ROOF DRAIN ONLY @ AIR INTAKE OPENING
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ARCHITECT F. JEFFREY MURRAY A-2526 STATE OF NEBRASKA

REVISIONS
1 ADDM 1 11-21-2011
2 ADDM 2 11-29-2011

KEN MORRISON LIFE SCIENCES RESEARCH CENTER ADDITION

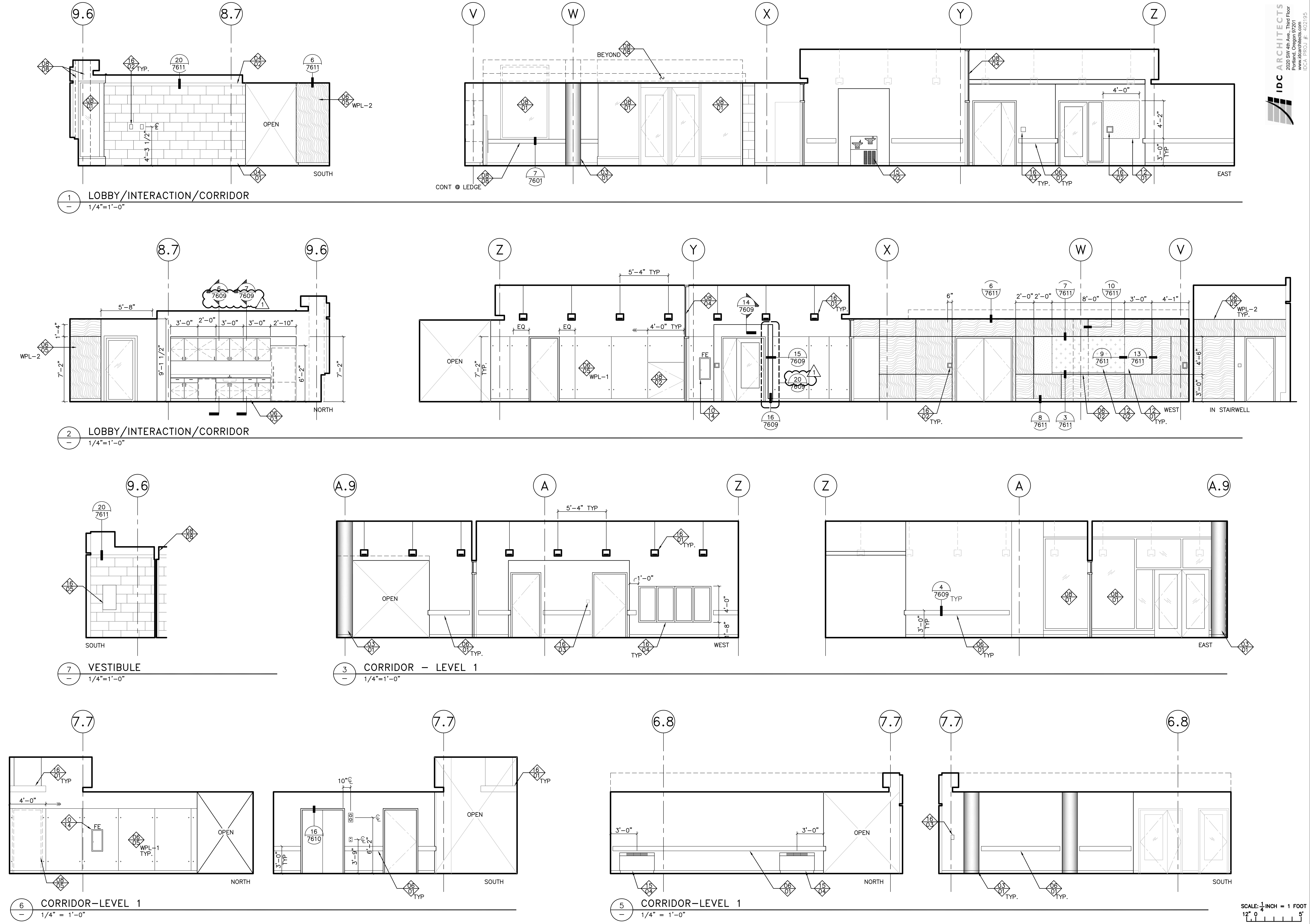
UNIVERSITY OF Nebraska Lincoln

DESIGNED BY:
DRAWN BY:
CHECKED BY:
DATE: MAY 26, 2011
PROJECT NO: 102002

SHEET TITLE: ARCHITECTURAL LEVEL 4 - MECHANICAL SECTOR E FLOOR PLAN

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

SHEET NO: NVA-4-E-



GENERAL NOTES

1. SEE SHEET NVA-0001 FOR ADDITIONAL GENERAL NOTES AND LEGEND.

KEYNOTE TAG

XX-1 — SPECIFICATION DIVISION NUMBER / KEYNOTE NUMBER / SPECIFICATION TAG

KEYED NOTES

03 – CONCRETE
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04 – MASONRY
01 CAST STONE VENEER; 1/3 RUNNING BOND
02 CAST STONE HEAD SILL

06 – WOOD AND PLASTICS
01 WALL GUARD
02 MARKER TRAY
03 CASEWORK
04 4" BASEBOARD
05 WALL PANEL
06 WOOD BENCH
07 CONTINUOUS CUSTOM WALL PANEL SCREEN IN FRONT OF MECHANICAL RETURN

08 – DOORS AND WINDOWS
01 GLASS (G-4)
02 48"X48" FLUSH 2HR RATED ACCESS PANEL CLAD WITH WALL PANEL.
03 RECESSED 2HR RATED DOOR ON MAGNETIC HOLD OPEN
04 TRANSLUCENT GLAZING (G-7)
05 FUTURE 3'-0" X 7'-0" DOOR
06 MOVEABLE PARTITION WALL POCKET DOOR W/WPL-1
07 CLOSET DOOR PANEL WPL-1
08 ALUMINUM CLOSURE PANEL. MATCH COLOR AND FINISH OF GAF.

09 – FINISHES (CONT)
01 WALL TILE
02 BASE TILE
03 NOT USED
04 PAINTED GWB PANEL
05 PAINTED PLASTER
06 GLASS TILE: (ALTERNATE TILES TYP. GT-1, GT-2, GT-3, GT-4)
07 BULLNOSE TILE

10 – SPECIALTIES
01 ROBE HOOK
02 TOILET PARTITION

10 – SPECIALTIES (CONT)
03 TOILET PAPER DISPENSER (TPD); OFOI
04 COMBINATION PAPER TOWEL DISPENSER-RECEPTACLE (PTD-1)
05 COMBINATION PAPER TOWEL DISPENSER-RECEPTACLE (PTD-2)
06 NAPKIN DISPENSER (NV-1)
07 RECESSED NAPKIN DISPOSAL (ND-1)
08 PARTITION MOUNTED NAPKIN DISPOSAL (ND-2)
09 SOAP DISPENSER (SD-1); OFOI
10 GRAB BAR (GB)
11 ADA MIRROR (MIR-1)
12 MIRROR (MIR-2)

10 – SPECIALTIES (CONT)
13 WALL SHELF (WS-1)
14 FIRE EXTINGUISHER
15 FULLY RECESSED MOTORIZED PROJECTION SCREEN
16 PROJECTOR, OFCI
17 WALL GUARDS

12 – FURNISHINGS
01 ACOUSTIC WALL PANEL (AWT-1)
02 MARKER BOARD (MB-1)

14 – CONVEYING SYSTEMS
01 ELEVATOR CONTROL PANEL

15 – MECHANICAL (CONT)
01 LAVATORY
02 DRINKING FOUNTIAN
03 CONTINUOUS LINEAR DIFFUSER
04 FCU; SEE MECHANICAL

16 – ELECTRICAL
01 LUMINAIRE
02 ELECTRICAL DEVICE. COORDINATE HOLE IN WALL PANEL
03 ELECTRICAL DEVICE
04 ELECTRICAL PANEL
05 ANNUNCIATOR PANEL

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REVISIONS
1 ADDM 2 11-29-2011

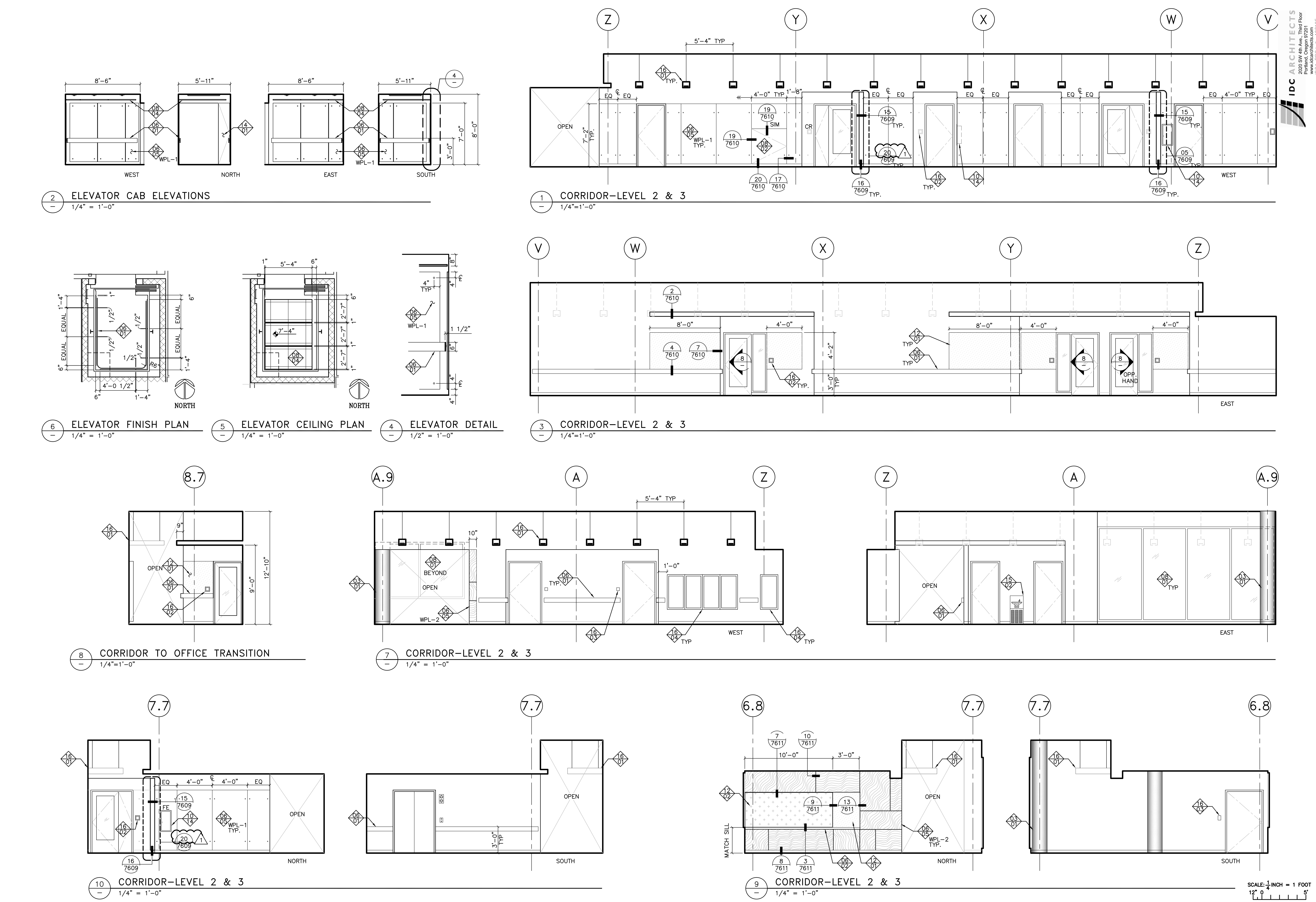
UNIVERSITY OF Nebraska Lincoln

KEN MORRISON LIFE SCIENCES RESEARCH CENTER ADDITION

DESIGNED BY:
DRAWN BY:
CHECKED BY:
DATE: MAY 26, 2011
PROJECT NO: 102002

SHEET TITLE: ARCHITECTURAL INTERIOR ELEVATIONS

SHEET NO: NVA-7501



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02 DRINKING FOUNTIAN
03 CONTINUOUS LINEAR DIFFUSER
04 FCU; SEE MECHANICAL

16 – ELECTRICAL
01 LUMINAIRE
02 ELECTRICAL DEVICE. COORDINATE HOLE IN WALL PANEL
03 ELECTRICAL DEVICE
04 ELECTRICAL PANEL
05 ANNUNCIATOR PANEL

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ARCHITECT F. JEFFREY MURRAY A-3526 STATE OF NEBRASKA

REVISIONS
ADDM 2 11-29-2011

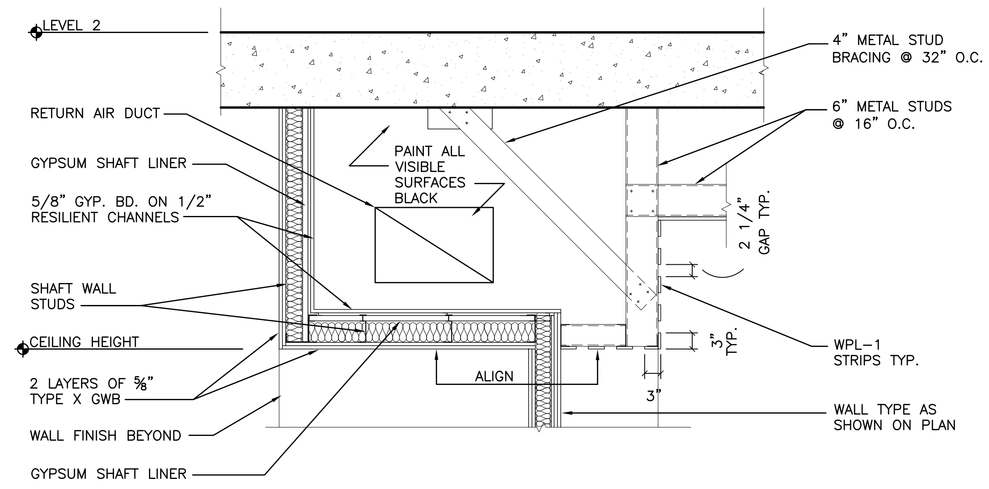
UNIVERSITY OF Nebraska Lincoln

KEN MORRISON LIFE SCIENCES RESEARCH CENTER ADDITION

DESIGNED BY:
DRAWN BY:
CHECKED BY:
DATE: MAY 26, 2011
PROJECT NO: 102002

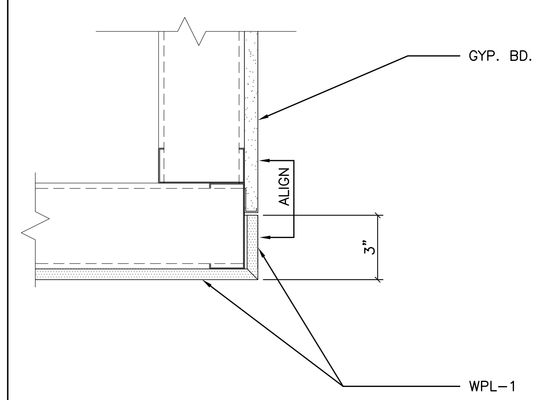
SHEET TITLE: ARCHITECTURAL INTERIOR ELEVATIONS

SHEET NO: NVA-7502

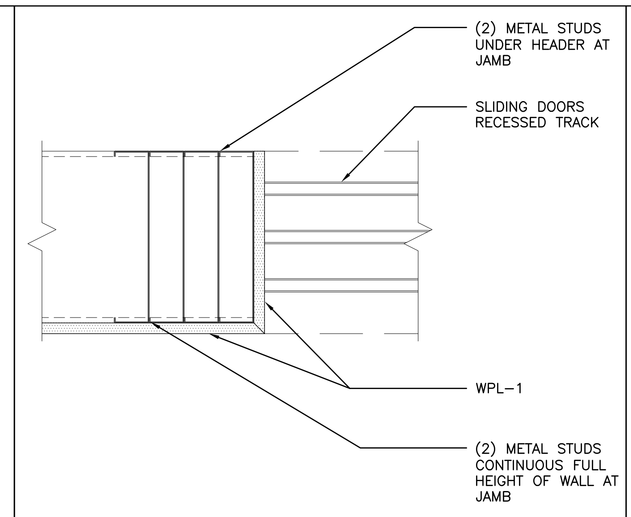


13 — 2HR FIRE RATED SOFFIT DETAIL
3/4" = 1'-0"

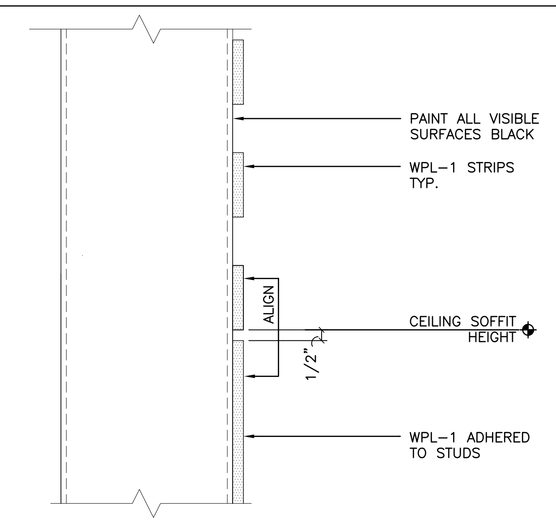
UL DESIGN U437



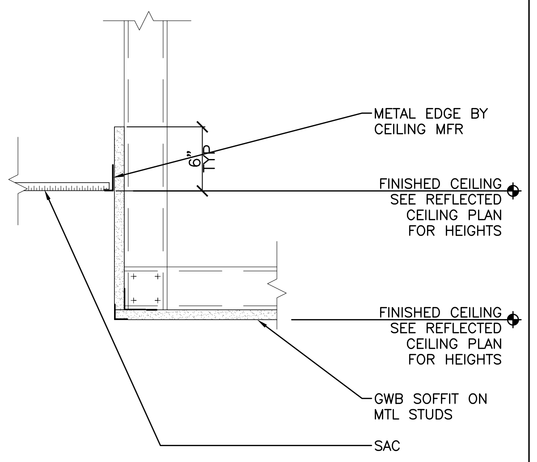
9 — SEMINAR ROOM CORNER CONDITION
3" = 1'-0"



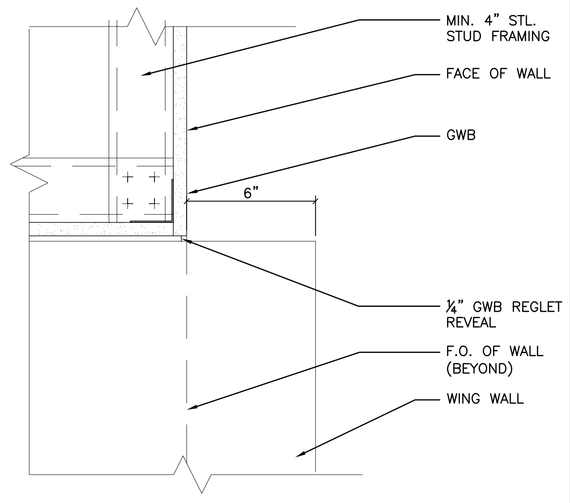
5 — SLIDING DOORS JAMB
3" = 1'-0"



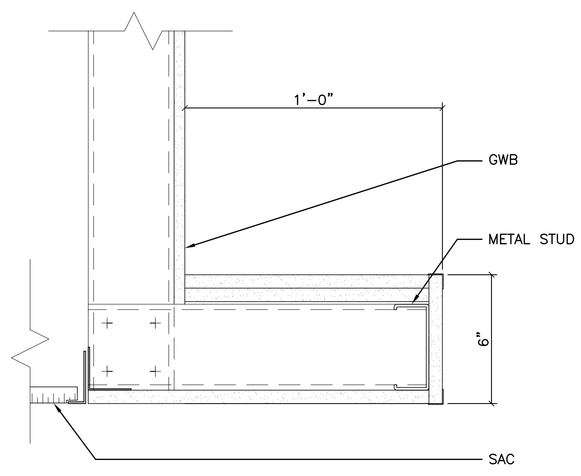
1 — WPL-1 SCREEN TRANISTION
3" = 1'-0"



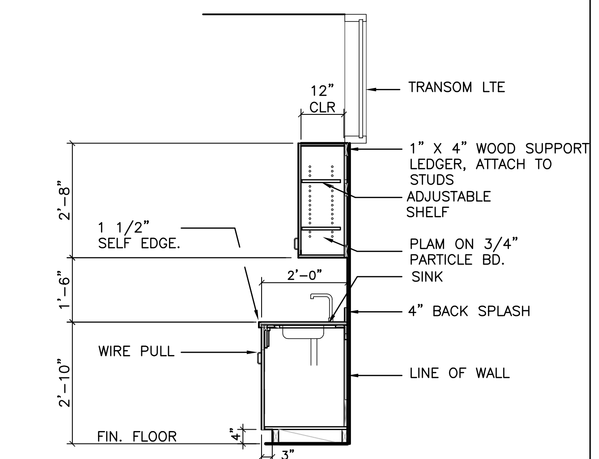
18 — GWB SOFFIT TO SAC TRANSITION
1 1/2" = 1'-0"



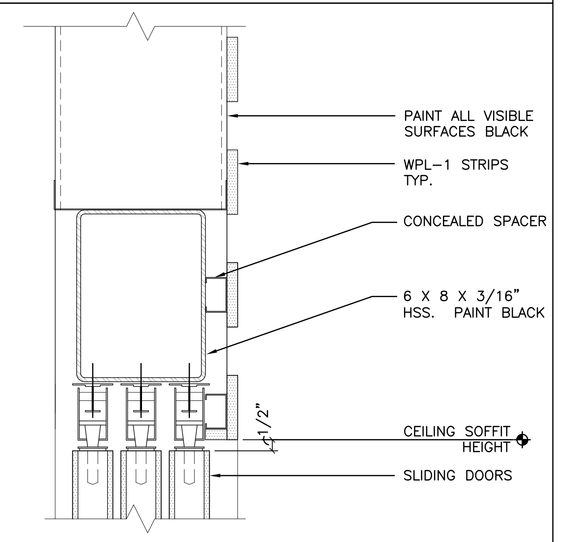
14 — "WING WALL" HEAD @ CORRIDOR
3" = 1'-0"



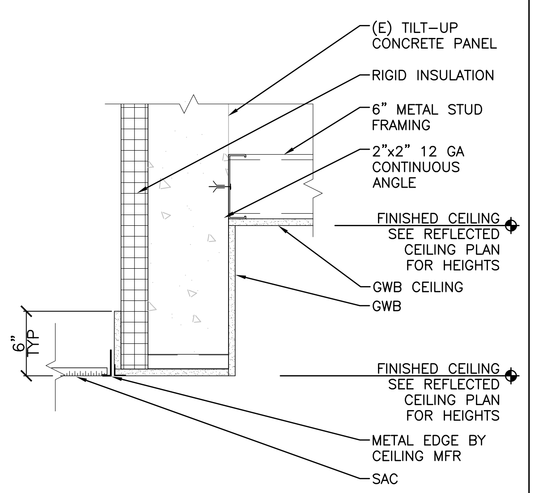
10 — COVE DETAIL @ SAC
3" = 1'-0"



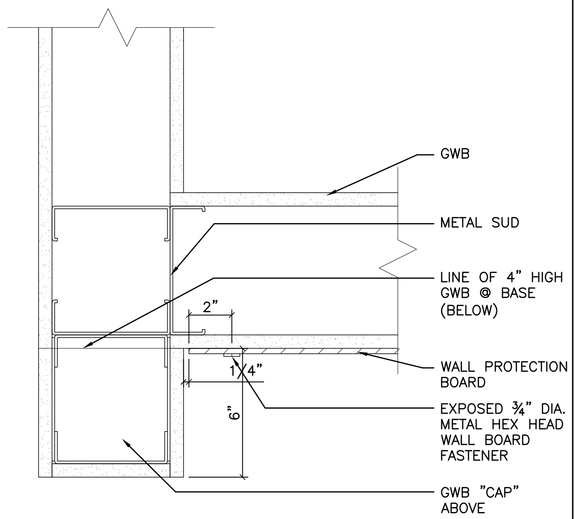
6 — CASEWORK @ SINK
1/2" = 1'-0"



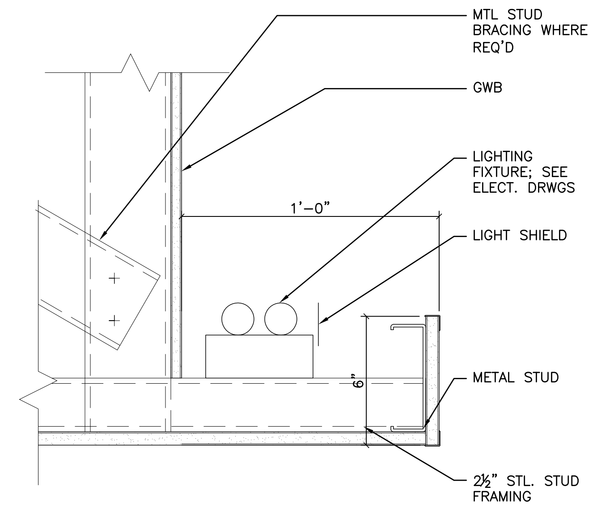
2 — SLIDING DOORS HEAD
3" = 1'-0"



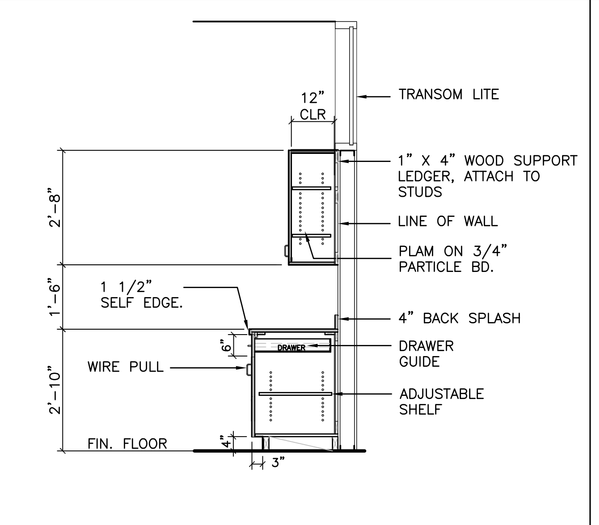
19 — SAC TO GWB TRANSITION @ CONC
1 1/2" = 1'-0"



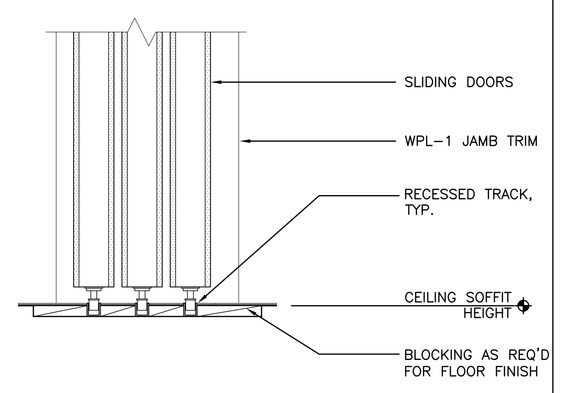
15 — "WING WALL" @ CORRIDOR
3" = 1'-0"



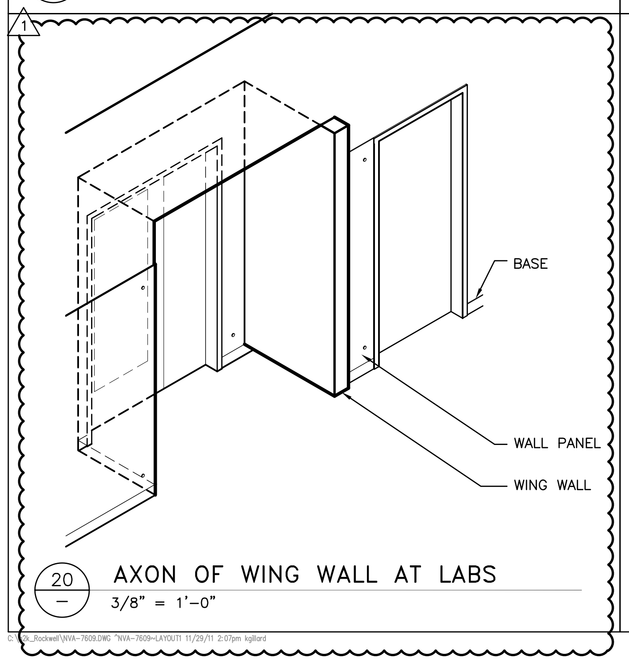
11 — DETAIL SECT. @ COVE LIGHT
3" = 1'-0"



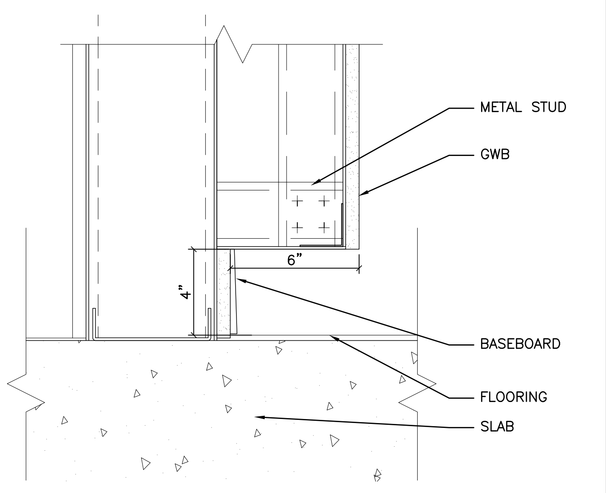
7 — BREAK ROOM/SEMINAR ROOM CABINETS
1/2" = 1'-0"



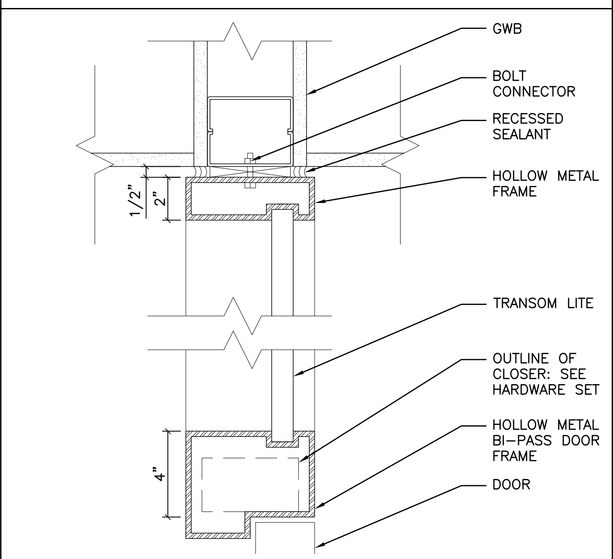
3 — SLIDING DOORS RECESSED TRACK
3" = 1'-0"



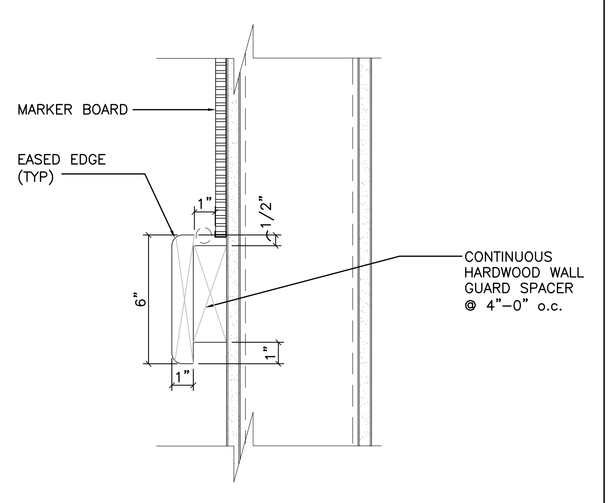
20 — AXON OF WING WALL AT LABS
3/8" = 1'-0"



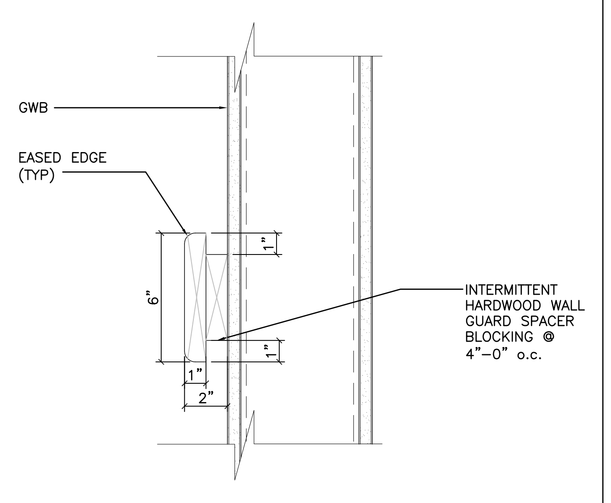
16 — "WING WALL" BASE @ CORRIDOR
3" = 1'-0"



12 — DETAIL SECT. @ LAB WING ENTRY
3" = 1'-0"



8 — WALL GUARD/ MARKER TRAY
3" = 1'-0"



4 — WALL GUARD
3" = 1'-0"

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REVISIONS
ADDM 2 11-29-2011

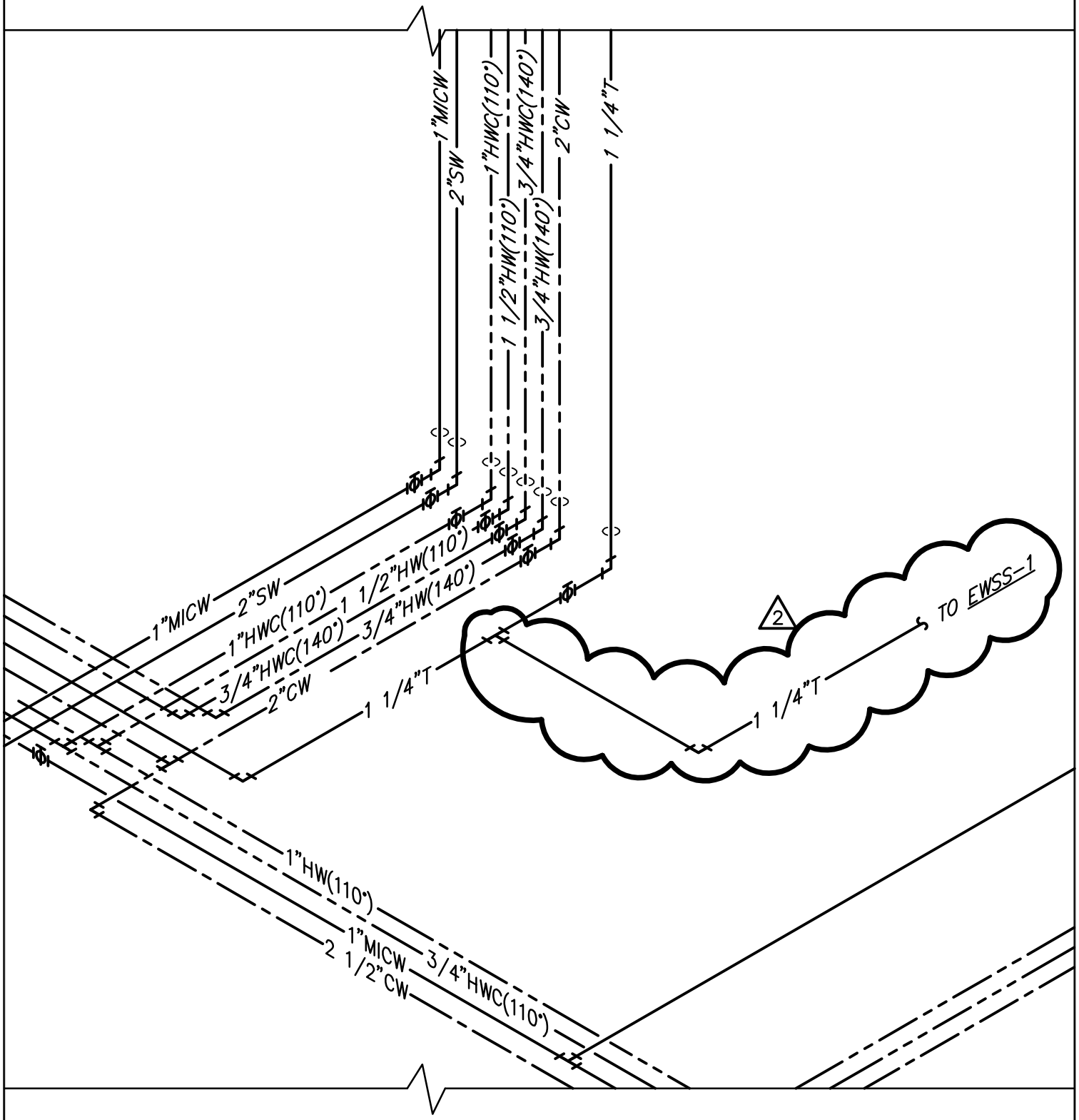
UNIVERSITY OF Nebraska Lincoln

KEN MORRISON LIFE SCIENCES
RESEARCH CENTER ADDITION

DESIGNED BY:
DRAWN BY:
CHECKED BY:
DATE: MAY 26, 2011
PROJECT NO: 102002

SHEET TITLE
ARCHITECTURAL INTERIOR DETAILS

SHEET NO
NVA-7609



DOMESTIC WATER RISER DIAGRAM

NO SCALE

Project: Morrison Life Sciences Research Center	Project No: 102002	Addenda No: 002	Dwg Ref No: NVMW0400
Sheet Title: DOMESTIC WATER RISER DIAGRAM	Date: 11/30/2011	Checked By: JMM	Addenda Sht: SM-1 / Drawn By: DMM

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