

A G R E E M E N T

THIS AGREEMENT by and between the **CITY AND COUNTY OF DENVER**, a municipal corporation of the State of Colorado (the “City”) and **BURST COMMUNICATIONS, INC.**, a Colorado corporation, registered to do business in Colorado, whose address is 8201 S. Akron Suite 108, Englewood, CO 80112 (“Contractor”).

1. SERVICES TO BE PERFORMED AND HARDWARE TO BE DELIVERED: Contractor, under the general direction of, and in coordination with, the City’s Chief Information Officer or other designated supervisory personnel (the “Manager”) agrees to deliver the hardware and perform the services described on attached **Exhibit A** (the “Statement of Work” or “SOW”).

2. DELIVERY AND ACCEPTANCE:

A. If the City is not satisfied with the Contractor’s performance of the services described in the SOW, the City will so notify Contractor within thirty (30) days after Contractor’s performance thereof. Contractor will, at its own expense, re-perform the service within fifteen (15) days after receipt of City’s notice of deficiency. The foregoing procedure will be repeated until City accepts or finally rejects the service in its sole discretion. In the event that City finally rejects any service, Contractor will refund to City all fees paid by City with respect to such service.

3. TERM: The term of the Agreement is from January 31, 2012 through December 31, 2014.

4. COMPENSATION AND PAYMENT:

A. Fee: The fee for the services described in the SOW is \$1,049,714.00 (the “Fee”). The Fee shall be paid pursuant to the City’s Prompt Payment Ordinance and in accordance with the following schedule set out in the SOW.

B. Reimbursement Expenses: The fees specified above include all expenses, and no other expenses shall be separately reimbursed hereunder.

C. Invoicing: Contractor must submit an invoice which shall include the City contract number, clear identification of the deliverable that has been completed, and other information reasonably requested by the City. Payment of all uncontested amounts shall be made in accordance with the City’s Prompt Payment Ordinance.

D. Maximum Contract Liability:

(i) Any other provision of this Agreement notwithstanding, in no event shall the City be liable for payment for services rendered and expenses incurred by Contractor under the terms of this Agreement for any amount in excess of the sum of ONE MILLION ONE HUNDRED AND SIXTY EIGHT THOUSAND SEVEN HUNDRED EIGHTY

ONE DOLLARS (\$1,168,781.00). Contractor acknowledges that any work performed by Contractor beyond that specifically authorized by the City is performed at Contractor's risk and without authorization under this Agreement.

(ii) It is understood and agreed that any payment obligation of the City hereunder, whether direct or contingent, shall extend only to funds appropriated by the Denver City Council for the purpose of this Agreement, encumbered for the purpose of the Agreement and paid into the Treasury of the City. Contractor acknowledges that (a) the City does not by this Agreement, irrevocably pledge present cash reserves for payments in future fiscal years, and (b) this Agreement is not intended to create a multiple-fiscal year direct or indirect debt or financial obligation of the City.

5. STATUS OF CONTRACTOR: It is understood and agreed that the status of Contractor shall be that of an independent contractor and a person retained on a contractual basis to perform professional or technical services for limited periods of time as described in Section 9.1.2(C) of the Charter of the City; and it is not intended, nor shall it be construed, that Contractor or its employees are employees or officers of the City under Chapter 18 of the Denver Revised Municipal Code or for any purpose whatsoever. Contractor agrees that during the term of this Agreement it shall fully coordinate all services that it has been directed to proceed upon and shall make every reasonable effort to fully coordinate all such services as directed by the Manager with any City agency, or any person or firm under contract with the City doing work which affects Contractor's work.

6. TERMINATION:

A. The City has the right to terminate this Agreement, with or without cause, on thirty (30) days written notice. However, nothing herein shall be construed as giving Contractor the right to perform services under this Agreement beyond the time when such services become unsatisfactory to the Manager.

B. If this Agreement is terminated by the City, Contractor shall be compensated for, and such compensation shall be limited to, (1) the sum of the amounts contained in invoices which it has submitted and which have been approved by the City; (2) the reasonable value to the City of the work which Contractor performed prior to the date of the termination notice, but which had not yet been approved for payment; and (3) the cost of any work which the Manager approves in writing which he determines is needed to accomplish an orderly termination of the work. The City shall be entitled to an immediate prorated refund of any prepaid fees for services not provided as of the date of termination.

C. Upon termination of this Agreement by the City, Contractor shall have no claim of any kind whatsoever against the City by reason of such termination or by reason of any act incidental thereto, except for compensation for work satisfactorily performed as described herein.

7. EXAMINATION OF RECORDS: Contractor agrees that any duly authorized representative of the City, including the City Auditor, shall, until the expiration of three (3) years

after the final payment under this Agreement, have access to and the right to examine any books, documents, papers and records of Contractor, involving transactions related to this Agreement. Such examination shall be limited to Contractor's normal business hours, at Contractor's premises, and upon reasonable prior notice to Contractor.

8. WHEN RIGHTS AND REMEDIES NOT WAIVED: In no event shall any action by either Party hereunder constitute or be construed to be a waiver by the other Party of any breach of covenant or default which may then exist on the part of the Party alleged to be in breach, and the non-breaching Party's action or inaction when any such breach or default shall exist shall not impair or prejudice any right or remedy available to that Party with respect to such breach or default; and no assent, expressed or implied, to any breach of any one or more covenants, provisions or conditions of the Agreement shall be deemed or taken to be a waiver of any other breach.

9. INSURANCE:

A. General Conditions: Contractor agrees to secure, at or before the time of execution of this Agreement, the following insurance covering all operations, goods or services provided pursuant to this Agreement. Contractor shall keep the required insurance coverage in force at all times during the term of the Agreement, or any extension thereof, during any warranty period, and for three (3) years after termination of the Agreement. The required insurance shall be underwritten by an insurer licensed or authorized to do business in Colorado and rated by A.M. Best Company as "A-"VIII or better. Each policy shall contain a valid provision or endorsement requiring notification to the City in the event any of the required policies be canceled or non-renewed before the expiration date thereof. Such written notice shall be sent to the parties identified in the Notices section of this Agreement. Such notice shall reference the City contract number listed on the signature page of this Agreement. Said notice shall be sent thirty (30) days prior to such cancellation or non-renewal unless due to non-payment of premiums for which notice shall be sent ten (10) days prior. If such written notice is unavailable from the insurer, contractor shall provide written notice of cancellation, non-renewal and any reduction in coverage to the parties identified in the Notices section by certified mail, return receipt requested within three (3) business days of such notice by its insurer(s) and referencing the City's contract number. If any policy is in excess of a deductible or self-insured retention, the City must be notified by the Contractor. Contractor shall be responsible for the payment of any deductible or self-insured retention. The insurance coverages specified in this Agreement are the minimum requirements, and these requirements do not lessen or limit the liability of the Contractor. The Contractor shall maintain, at its own expense, any additional kinds or amounts of insurance that it may deem necessary to cover its obligations and liabilities under this Agreement.

B. Proof of Insurance: Contractor shall provide a copy of this Agreement to its insurance agent or broker. Contractor may not commence services or work relating to the Agreement prior to placement of coverage. Contractor certifies that the certificate of insurance attached as Exhibit B preferably an ACORD certificate, complies with all insurance requirements of this Agreement. The City requests that the City's contract number be referenced on the Certificate. The City's acceptance of a certificate of insurance or other proof of insurance

that does not comply with all insurance requirements set forth in this Agreement shall not act as a waiver of Contractor's breach of this Agreement or of any of the City's rights or remedies under this Agreement. The City's Risk Management Office may require additional proof of insurance, including but not limited to policies and endorsements.

C. Additional Insureds: For Commercial General Liability, Auto Liability and Excess Liability/Umbrella, Contractor and subcontractor's insurer(s) shall name the City and County of Denver, its elected and appointed officials, employees and volunteers as additional insured.

D. Waiver of Subrogation: For all coverages, Contractor's insurer shall waive subrogation rights against the City.

E. Subcontractors and Subconsultants: All subcontractors and subconsultants (including independent contractors, suppliers or other entities providing goods or services required by this Agreement) shall be subject to all of the requirements herein and shall procure and maintain the same coverages required of the Contractor. Contractor shall include all such subcontractors as additional insured under its policies (with the exception of Workers' Compensation) or shall ensure that all such subcontractors and subconsultants maintain the required coverages. Contractor agrees to provide proof of insurance for all such subcontractors and subconsultants upon request by the City.

F. Workers' Compensation/Employer's Liability Insurance: Contractor shall maintain the coverage as required by statute for each work location and shall maintain Employer's Liability insurance with limits of \$100,000 per occurrence for each bodily injury claim, \$100,000 per occurrence for each bodily injury caused by disease claim, and \$500,000 aggregate for all bodily injuries caused by disease claims. Contractor expressly represents to the City, as a material representation upon which the City is relying in entering into this Agreement, that none of the Contractor's officers or employees who may be eligible under any statute or law to reject Workers' Compensation Insurance shall effect such rejection during any part of the term of this Agreement, and that any such rejections previously effected, have been revoked as of the date Contractor executes this Agreement.

G. Commercial General Liability: Contractor shall maintain a Commercial General Liability insurance policy with limits of \$1,000,000 for each occurrence, \$1,000,000 for each personal and advertising injury claim, \$2,000,000 products and completed operations aggregate, and \$2,000,000 policy aggregate.

H. Business Automobile Liability: Contractor shall maintain Business Automobile Liability with limits of \$1,000,000 combined single limit applicable to all owned, hired and non-owned vehicles used in performing services under this Agreement

I. Additional Provisions:

(a) For Commercial General Liability and Excess Liability, the policies must provide the following:

- (i) That this Agreement is an Insured Contract under the policy;
 - (ii) Defense costs are in excess of policy limits;
 - (iii) A severability of interests or separation of insureds provision (no insured vs. insured exclusion); and
 - (iv) A provision that coverage is primary and non-contributory with other coverage or self-insurance maintained by the City.
- (b) For claims-made coverage:
- (i) The retroactive date must be on or before the contract date or the first date when any goods or services were provided to the City, whichever is earlier
- (c) Contractor shall advise the City in the event any general aggregate or other aggregate limits are reduced below the required per occurrence limits. At their own expense, and where such general aggregate or other aggregate limits have been reduced below the required per occurrence limit, the Contractor will procure such per occurrence limits and furnish a new certificate of insurance showing such coverage is in force.

10. REPRESENTATION AND WARRANTY: Contractor represents and warrants that:

- A.** All services will be performed by qualified personnel in a professional and workmanlike manner, consistent with industry standards;
- B.** all services will conform to applicable specifications and the Exhibits attached hereto;

11. DEFENSE AND INDEMNIFICATION:

A. Contractor hereby agrees to defend, indemnify, and hold harmless City, its appointed and elected officials, agents and employees against all liabilities, claims, judgments, suits or demands for damages to persons or property arising out of, resulting from, or relating to the work performed under this Agreement (“Claims”), unless and until such Claims have been specifically determined by the trier of fact to be due to the sole negligence or willful misconduct of the City. This indemnity shall be interpreted in the broadest possible manner to indemnify City for any acts or omissions of Contractor or its sub-contractors either passive or active, irrespective of fault, including City’s concurrent negligence whether active or passive, except for the sole negligence or willful misconduct of City.

B. Contractor’s duty to defend and indemnify City shall arise at the time written notice of the Claim is first provided to City regardless of whether Claimant has filed suit on the Claim. Contractor’s duty to defend and indemnify City shall arise even if City is the only party sued by claimant and/or claimant alleges that City’s negligence or willful misconduct was the sole cause of claimant’s damages.

C. Contractor will defend any and all Claims which may be brought or threatened against City and will pay on behalf of City any expenses incurred by reason of such Claims including, but not limited to, court costs and attorney fees incurred in defending and investigating such Claims or seeking to enforce this indemnity obligation. Such payments on behalf of City shall be in addition to any other legal remedies available to City and shall not be considered City's exclusive remedy.

D. Insurance coverage requirements specified in this Agreement shall in no way lessen or limit the liability of the Contractor under the terms of this indemnification obligation. The Contractor shall obtain, at its own expense, any additional insurance that it deems necessary for the City's protection.

E. This defense and indemnification obligation shall survive the expiration or termination of this Agreement.

F. To the extent the Contractor is providing software to the City, the Contractor will, at Contractor's expense, indemnify, defend and hold harmless the City, its officers, agents and employees from and against any loss, cost, expense or liability (including but not limited to attorney's fees and awarded damages) arising out of a claim that the software, services, or their use by the City, infringe, violate or misappropriate a patent, copyright, trademark, trade secret or other intellectual property or proprietary right of any third party. The City will promptly notify Contractor in writing of any claim and cooperate with Contractor and its legal counsel in the defense thereof. In addition to its indemnification obligations, Contractor may in its discretion (i) contest, (ii) settle, (iii) procure for the City the right to continue using the Software, or (iv) modify or replace the infringing Software so that it no longer infringes, as long as the functionality and performance are not degraded as reasonably determined by the City. The City may participate in the defense of such action at its own expense. If Contractor concludes in its reasonable judgment that none of the foregoing options are commercially reasonable, then Contractor will refund a pro rata portion (based on a 5 year straight line depreciation running from City's final acceptance of the Software) of the Software license fee(s) paid by the City under this Agreement and reimburse the City for all reasonable expenses for removal and replacement of the Software.

12. COLORADO GOVERNMENTAL IMMUNITY ACT: The parties hereto understand and agree that the City is relying upon, and has not waived, the monetary limitations and all other rights, immunities and protection provided by the Colorado Governmental Act, § 24-10-101, et seq., C.R.S. (2003).

13. TAXES, CHARGES AND PENALTIES: The City shall not be liable for the payment of taxes, late charges or penalties of any nature other than the compensation stated herein, except for any additional amounts which the City may be required to pay under D.R.M.C. § 20-107 to § 20-115.

14. ASSIGNMENT: Contractor covenants and agrees that it will not assign or transfer its rights hereunder without first obtaining the written consent of the Manager. Any attempts by Contractor to assign or transfer its rights hereunder without such prior written

consent of the Manager shall, at the option of said Manager, automatically terminate this Agreement and all rights of Contractor hereunder. Such consent may be granted or denied at the sole and absolute discretion of said Manager. A change in control of Contractor shall not constitute and assignment hereunder.

15. NO THIRD PARTY BENEFICIARY: It is expressly understood and agreed that enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to the City and Contractor, and nothing contained in this Agreement shall give or allow any such claim or right of action by any other or third person on such Agreements. It is the express intention of the City and Contractor that any person other than the City or Contractor receiving services or benefits under this Agreement shall be deemed to be an incidental beneficiary only.

16. NO AUTHORITY TO BIND CITY TO CONTRACTS: Contractor has no authority to bind the City on any contractual matters. Final approval of all contractual matters which obligate the City must be by the City, as required by Charter and ordinance.

17. AGREEMENT AS COMPLETE INTEGRATION-AMENDMENTS: This Agreement, including any exhibit attached hereto (each of which is specifically incorporated herein) is intended as the complete integration of all understandings between the parties. No prior contemporaneous or subsequent addition, deletion, or other amendment hereto shall have any force or effect, unless embodied herein in writing, and executed in the same manner as this Agreement.

18. SEVERABILITY: The parties agree that if any provision of this Agreement or any portion thereof is held to be invalid, illegal, or unenforceable by a court of competent jurisdiction, the validity of the remaining portions or provisions shall not be affected.

19. CONFLICT OF INTEREST:

A. The parties agree that no employee of the City shall have any personal or beneficial interest whatsoever in the services or property described herein; and Contractor further agrees not to hire or contract for services any employee or officer of the City which would be in violation of the Denver Revised Municipal Code, Chapter 2, Article IV, Code of Ethics, or Denver City Charter §§ 1.2.8, 1.2.9, and 1.2.12.

B. Contractor agrees that it will not engage in any transaction, activity or conduct which would result in a conflict of interest under this Agreement. Contractor represents that it has disclosed any and all current or potential conflicts of interest. A conflict of interest shall include transactions, activities or conduct that would affect the judgment, actions or work of Contractor by placing Contractor's own interests, or the interests of any party with whom Contractor has a contractual arrangement, in conflict with those of the City. The City, in its sole discretion, shall determine the existence of a conflict of interest and may terminate this Agreement in the event such a conflict exists after it has given Contractor written notice which describes the conflict. Contractor shall have thirty (30) days after the notice is received to eliminate or cure the conflict of interest in a manner which is acceptable to the City.

20. NOTICES: All notices required by the terms of the Agreement must be hand delivered, sent by overnight courier service, mailed by certified mail, return receipt requested, or mailed via United States mail, postage prepaid, if to Consultant at the address first above written, and if to the City at:

Denver 8
8269 East 23rd Ave., #100
Denver, CO 80238

With a copy of any such notice to:

Denver City Attorney's Office
1437 Bannock St., Room 353
Denver, Colorado 80202

Notices hand delivered or sent by overnight courier are effective upon delivery. Notices sent by certified mail are effective upon receipt. Notices sent by mail are effective upon deposit with the U.S. Postal Service. The parties may designate substitute addresses where or persons to whom notices are to be mailed or delivered. However, these substitutions will not become effective until actual receipt of written notification.

21. DISPUTES: All disputes of whatever nature between the City and Contractor regarding this Agreement shall be resolved by administrative hearings pursuant to the procedure established by Denver Revised Municipal Code, § 56-106(b), et seq. For the purposes of that procedure, the City official rendering a final determination shall be the City representative identified in Paragraph 1 hereof.

22. GOVERNING LAW; VENUE: This Agreement shall be construed and enforced in accordance with the laws of the State of Colorado, the Charter and Revised Municipal Code of the City and County of Denver, and the ordinances, regulations and Executive Orders enacted and/or promulgated pursuant thereto, including any amendments. The Charter and Revised Municipal Code of the City and County of Denver, as the same may be amended from time to time, are hereby expressly incorporated into this Agreement as if fully set out herein by this reference. Venue for any legal action relating to this Agreement shall lie in the District Court in and for the City and County of Denver.

23. NO DISCRIMINATION IN EMPLOYMENT: In connection with the performance of work under this Agreement, Contractor agrees not to refuse to hire, discharge, promote or demote, or to discriminate in matters of compensation against any person otherwise qualified, solely because of race, color, religion, national origin, gender, age, military status, sexual orientation, marital status, or physical or mental disability; and Contractor further agrees to insert the foregoing provision in all subcontracts hereunder.

24 USE, POSSESSION OR SALE OF ALCOHOL OR DRUGS: While present on City property for purposes of this Agreement Contractor shall cooperate and comply with the provisions of Executive Order 94 and its Attachment A thereto concerning the use, possession or

sale of alcohol or drugs. Violation of these provisions or refusal to cooperate with implementation of the policy can result in the City barring Contractor from City facilities or participating in City operations.

25. CONFIDENTIAL INFORMATION; OPEN RECORDS:

A. City Information: Contractor acknowledges and accepts that, in performance of all work under the terms of this Agreement, Contractor may have access to Proprietary Data or confidential information that may be owned or controlled by the City, and that the disclosure of such Proprietary Data or information may be damaging to the City or third parties. Contractor agrees that all Proprietary Data, confidential information or any other data or information provided or otherwise disclosed by the City to Contractor shall be held in confidence and used only in the performance of its obligations under this Agreement. Contractor shall exercise the same standard of care to protect such Proprietary Data and information as a reasonably prudent contractor would to protect its own proprietary or confidential data. “Proprietary Data” shall mean any materials or information which may be designated or marked “Proprietary” or “Confidential”, or which would not be documents subject to disclosure pursuant to the Colorado Open Records Act or City ordinance, and provided or made available to Contractor by the City. Such Proprietary Data may be in hardcopy, printed, digital or electronic format.

B. Use and Protection of Proprietary Data or Confidential Information:

(i) Except as expressly provided by the terms of this Agreement, Contractor agrees that it shall not disseminate, transmit, license, sublicense, assign, lease, release, publish, post on the internet, transfer, sell, permit access to, distribute, allow interactive rights to, or otherwise make available any data, including Proprietary Data or confidential information or any part thereof to any other person, party or entity in any form of media for any purpose other than performing its obligations under this Agreement. Contractor further acknowledges that by providing data, Proprietary Data or confidential information, the City is not granting to Contractor any right or license to use such data except as provided in this Agreement. Contractor further agrees not to disclose or distribute to any other party, in whole or in part, the data, Proprietary Data or confidential information without written authorization from the Manager and will immediately notify the City if any information of the City is requested from the Contractor from a third party.

(ii) Contractor agrees, with respect to the Proprietary Data and confidential information, that: (1) Contractor shall not copy, recreate, reverse engineer or decompile such data, in whole or in part, unless authorized in writing by the Manager; (2) Contractor shall retain no copies, recreations, compilations, or decompilations, in whole or in part, of such data; and (3) Contractor shall, upon the expiration or earlier termination of the Agreement, destroy (and, in writing, certify destruction) or return all such data or work products incorporating such data or information to the City.

(iii) Contractor shall develop, implement, maintain and use appropriate administrative, technical and physical security measures to preserve the confidentiality, integrity

and availability of all electronically maintained or transmitted data received from, or on behalf of City. It is the responsibility of the Contractor to ensure that all possible measures have been taken to secure the computers or any other storage devices used for City data. This includes industry accepted firewalls, up-to-date anti-virus software, controlled access to the physical location of the hardware itself.

C. Employees and Sub-Contractor: Contractor will inform its employees and officers of the obligations under this Agreement, and all requirements and obligations of Contractor under this Agreement shall survive the expiration or earlier termination of this Agreement. Contractor shall not disclose Proprietary Data or confidential information to subcontractors unless such subcontractors are bound by non-disclosure and confidentiality provisions at least as strict as those contained in this Agreement.

D. Disclaimer: Notwithstanding any other provision of this Agreement, the City is furnishing Proprietary Data and confidential information on an “as is” basis, without any support whatsoever, and without representation, warranty or guarantee, including but not in any manner limited to, fitness, merchantability or the accuracy and completeness of the Proprietary Data or confidential information. Contractor is hereby advised to verify its work. The City assumes no liability for any errors or omissions herein. Specifically, the City is not responsible for any costs including, but not limited to, those incurred as a result of lost revenues, loss of use of data, the costs of recovering such programs or data, the cost of any substitute program, claims by third parties, or for similar costs. If discrepancies are found, Contractor agrees to contact the City immediately.

E. Contractor’s Information: To the extent applicable in this Agreement, the City understands and agrees that the Contractor’s software and documentation including, but not limited to, source code, object code, the interface requirements document(s), acceptance test procedures, the Statement of Work, the software design, structure and organization, software screens, the user interface and the engineering know-how implemented in the software (collectively “Contractor Confidential Information”) constitute the valuable properties and trade secrets of Contractor, embodying substantial creative efforts which are secret, confidential, and not generally known by the public, and which secure to Contractor a competitive advantage. The City agrees during the term of this Agreement and any license granted hereunder, and thereafter, to hold the Contractor Confidential Information including any copies thereof and any documentation related thereto, in strict confidence and to not permit any person or entity to obtain access to it except as required for the City’s exercise of the license rights granted hereunder, and except as required by the parties understand that all the material provided or produced under this Agreement may be subject to the Colorado Open Records Act., § 24-72-201, et seq., C.R.S. (2003). In the event of a request to the City for disclosure of such information, the City shall advise Contractor of such request in order to give Contractor the opportunity to object to the disclosure of any of its Contractor Confidential Information and take necessary legal recourse. In the event of the filing of a lawsuit to compel such disclosure, the City will tender all such material to the court for judicial determination of the issue of disclosure and Contractor agrees to intervene in such lawsuit to protect and assert its claims of privilege against disclosure of such material or waive the same. Contractor further agrees to defend, indemnify and save and hold harmless the City, its officers, agents and employees, from any claim, damages, expense, loss or costs arising out of

Contractor's intervention to protect and assert its claim of privilege against disclosure under this Article including but not limited to, prompt reimbursement to the City of all reasonable attorney fees, costs and damages that the City may incur directly or may be ordered to pay by such court.

26. LEGAL AUTHORITY:

A. Contractor assures and guarantees that it possesses the legal authority, pursuant to any proper, appropriate and official motion, resolution or action passed or taken to enter into this Agreement.

B. The person signing and executing this Agreement on behalf of Contractor does hereby warrant and guarantee that he has been fully authorized by Contractor to execute this Agreement on behalf of Contractor and to validly and legally bind Contractor to all the terms, performances and provisions herein set forth.

C. The City shall have the right, at its option, to either temporarily suspend or permanently terminate this Agreement, if there is a dispute as to the legal authority of either Contractor or the person signing the Agreement to enter into this Agreement.

27. NO CONSTRUCTION AGAINST DRAFTING PARTY: Each of the Parties acknowledge that they and their respective counsel have had the opportunity to review this Agreement, and that this Agreement shall not be construed against any party merely because this Agreement or any of its provisions have been prepared by a particular party.

28. CONTRACT DOCUMENTS; ORDER OF PRECEDENCE: In the event of any conflicts between the language of this Agreement and the exhibits, the language of the Agreement shall control

29. SURVIVAL OF CERTAIN PROVISIONS: The parties understand and agree that all terms and conditions of this Agreement together with the exhibits and attachments hereto which, by reasonable implication, contemplate continued performance or compliance beyond the termination of this Agreement (by expiration of the term or otherwise) shall survive such termination and shall continue to be enforceable as provided herein. Without limiting the generality of the foregoing, the Contractor's obligations for the provision of insurance and to indemnify the City shall survive for a period equal to any and all relevant statutes of limitation, plus the time necessary to fully resolve any claims, matters, or actions begun within that period.

30. INUREMENT: The rights and obligations of the parties herein set forth shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns permitted under this Agreement.

31. TIME IS OF THE ESSENCE: The parties agree that in the performance of the terms, conditions, and requirements of this Agreement, time is of the essence.

32. FORCE MAJEURE: Neither party shall be responsible for failure to fulfill its obligations hereunder or liable for damages resulting from delay in performance as a result of war,

fire, strike, riot or insurrection, natural disaster, unreasonable delay of carriers, governmental order or regulation, complete or partial shutdown of plant, unreasonable unavailability of equipment or software from suppliers, default of a subcontractor or vendor (if such default arises out of causes beyond their reasonable control), the actions or omissions of the other party or its officers, directors, employees, agents, vendors or elected officials and/or other substantially similar occurrences beyond the party's reasonable control ("Excusable Delay") herein. In the event of any such Excusable Delay, time for performance shall be extended for a period of time as may be reasonably necessary to compensate for such delay.

33. PARAGRAPH HEADINGS: The captions and headings set forth herein are for convenience of reference only, and shall not be construed so as to define or limit the terms and provisions hereof.

34. CITY EXECUTION OF AGREEMENT: This Agreement is expressly subject to and shall not be or become effective or binding on the City until it has been fully executed by all signatories of the City and County of Denver.

35. COUNTERPARTS OF THIS AGREEMENT: This Agreement may be executed in counterparts, each of which shall be deemed to be an original of this Agreement.

36. ELECTRONIC SIGNATURES AND ELECTRONIC RECORDS: Contractor consents to the use of electronic signatures by the City. The Agreement, and any other documents requiring a signature hereunder, may be signed electronically by the City in the manner specified by the City. The Parties agree not to deny the legal effect or enforceability of the Agreement solely because it is in electronic form or because an electronic record was used in its formation. The Parties agree not to object to the admissibility of the Agreement in the form of an electronic record, or a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature, on the ground that it is an electronic record or electronic signature or that it is not in its original form or is not an original.

37. PREVAILING WAGES:

A. Employees of the Contractor or the Contractor's subcontractors are subject to the payment of prevailing wages pursuant to § 20-76 *et seq.*, D.R.M.C.

B. The Contractor shall pay every Covered Worker, as defined in § 20-76(a) D.R.M.C., a living wage as provided in § 20-76, D.R.M.C. Prevailing Wage schedule incorporated herein as Exhibit C.

C. In accordance with § 20-76(b) and (d), D.R.M.C., the following mandatory provisions are included:

1. The minimum wages to be paid for every Covered Worker shall be not less than the scale of wages from time to time determined under § 20-76(b) and (c) to be the prevailing wages.

2. The Contractor or its subcontractor shall pay Covered Workers employed directly upon the site of the work the full amounts accrued at time of payment,

computed at wage rates not less than those stated or referenced in the specifications, and any addenda thereto, on the actual date of bid or proposal opening, or in effect on the date of grant of permit for performance of such work under D.R.M.C. Section 49-171 et seq., or on the date of the written purchase order for contracts let by informal procedure under D.R.M.C. Section 20-63(b), regardless of any contractual relationship which may be alleged to exist between the contractor or subcontractor and the Covered Workers. Increases in prevailing wages subsequent to the date of the contract for a period not to exceed one (1) year shall not be mandatory on either the Contractor or subcontractors. Future increases in living wages on contracts whose period of performance exceeds one (1) year shall be mandatory for the Contractor and subcontractors only on the yearly anniversary date of the contract. Decreases in prevailing wages subsequent to the date of the contract for a period not to exceed one (1) year shall not be permitted. Decreases in prevailing wages on contracts whose period of performance exceed one (1) year shall not be effective except on the yearly anniversary date of the contract.

3. The Contractor and its subcontractors shall pay all Covered Workers at least once a week the full amounts of wages accrued at the time of payment, except that the contractor and subcontractor shall make such payments to non-construction workers such as janitorial or custodial workers at least twice per month.

4. The Contractor shall post in a prominent and easily accessible place at the site of the work the scale of wages to be paid by the Contractor and all subcontractors working under the Contractor.

5. If the Contractor or any subcontractor shall fail to pay such wages as are required by the contract, the Auditor shall not approve any warrant or demand for payment to the Contractor until the Contractor furnishes the Auditor evidence satisfactory to the Auditor that such wages so required by the contract have been paid.

6. The Contractor shall furnish to the Auditor each week during which work is in progress under the contract, a true and correct copy of the payroll records of all Covered Workers employed under the contract, either by the Contractor or subcontractors. Such payroll records shall include information showing the number of hours worked by each Covered Worker employed under the contract, the hourly pay of such Covered Worker, any deductions made from pay, and the net amount of pay received by each Covered Worker for the period covered by the payroll.

7. The copy of the payroll record shall be accompanied by a sworn statement of the Contractor that the copy is a true and correct copy of the payroll records of all Covered Workers working under the contract either for the Contractor or subcontractors, that payments were made to the Covered Workers as set forth in the payroll records, that no deductions were made other than those set forth in such records, and that all Covered Workers employed on work under the contract, either by the Contractor or by any subcontractor, have been paid the prevailing wages as set forth in the contract specifications.

8. If any Covered Worker employed by the Contractor or any subcontractor under the contract has been or is being paid a rate of wages less than the rate of

wages required by the contract to be paid as aforesaid, the City may, by written notice to the Contractor, suspend or terminate the Contractor's right to proceed with the Work, or such part of the Work as to which there has been a failure to pay the required wages, and in the event of termination may prosecute the Work to completion by contract or otherwise, and the Contractor and any sureties shall be liable to the City for any excess costs occasioned the City thereby.

EXHIBITS

A-SCOPE OF WORK

B-CERTIFICATE OF INSURANCE

C-PREVAILING WAGE SCHEDULE

Exhibit A

SUMMARY OF SCOPE OF WORK:

Burst Communications, Inc. (Burst) will install new systems migrating Denver 8 television production systems from its current analog infrastructure to a digital television (HDTV) environment. This new system infrastructure involves design, procurement, installation, interconnectivity and testing of systems and equipment in the following City and County Building, Denver 8 new constructed facility locations:

- A. Master Control (Room 055)
- B. Technical Area (Room 054)
- C. Edit Bays - Technical layout, connectivity and installation of 4 existing FCP Editing Systems, sound systems, monitors, and other electrical equipment in 3 Edit Bays as itemized in the Burst (Rooms 051, 052, 059)
- D. Denver 8 IDF Room (Room 061)
- E. Engineering Office (Room 053)
- F. Denver 8 Lower Level Control Rooms (these are several years old and not a part of the new construction) – Require interconnectivity Burst installed systems
- G. Voice Over Room (Room 050)
- H. Studio Control Technical Area (Room 101)
- I. Studio Control Room (Room 102)
- J. Studio (Room 103)

Once Burst has completed the outlined scope of work, the implemented architecture for the entire C&C Denver 8 facility will be HD-SDI signal format with various cross conversions incorporating current and repurposed electronic equipment. All solutions shall be compatible with the current SD-SDI infrastructure located at the City & County building and its associated building locations.

- Denver 8 accepts and approves Burst's **Denver 8 TV Equipment List** submission which itemizes the equipment Burst will utilize to get the Denver 8 television technical operations identified within this scope of work completely functional. No alterations to the included **Denver 8 TV Equipment List** shall be made unless changes are requested by Denver 8 division Director or Deputy Director, or if changes are proposed by Burst to the scope, approval to initiate change must be given by Denver 8 division Director or Deputy Director. Changes in specifications and or equipment may necessitate a change order. Burst will discuss and obtain approval of these changes with the client in advance of any work occasioned by the change taking place.

A. CITY & COUNTY BUILDING DENVER 8 MASTER CONTROL (ROOM 055)

Currently installed in the newly constructed Denver 8 Master Control Room 055 is the required infrastructural items which include: electrical, HVAC, low voltage wiring runs (coax cables, fiber, CAT6, etc.), and faceplates with appropriate connectors. Attached are PDF documents of the 100% Construction Documents which includes the Telecom, Audio Visual, electrical and HVAC infrastructure diagrams.

Exhibit A

Burst shall research, design, procure, install, establish interconnectivity, test, and provide training to ensure the identified Master Control systems and associated equipment identified and itemized below in the **Denver 8 TV Equipment List (RFP-ID/Room 055 MC)** are fully functional and integrated into the Denver 8 technical operations structure. The basic Master Control functional requirements that Burst will deliver include but not limited to:

- a) Simultaneous play out of 4 HD-SDI (1080i) video with embedded AES audio
- b) 2 channels of ingest audio and video using applicable format
- c) Must be file-type agnostic using MPEG2, QuickTime and DVC Pro file types
- d) Records audio and video from multiple locations within the City's video infrastructure
- e) Capable of retrieving, viewing, recording, and scheduling programming from multiple outside sources
- f) Satellite downlinks will be manageable, accessible, viewable via two Master Control operator stations
- g) Capable of controlling and scheduling graphic branding for 2 of the four output channels. Branding capabilities must include font, logo, and full frame still generation as well as 3 layers with Alpha channel and animation options.
- h) External graphic creation integration capabilities (i.e. ticker "coming up next")
- i) Ability to control and schedule Digital Video Effects (DVE) in coordination with branding and programming
- j) Programs can be played and routed for streaming and encoding through existing server/encoder systems
- k) Master Control system to be controlled by a multi-input computerized scheduling and playback system
- l) Provide two Master Control operator stations and operating systems with identical interface for dual user operation
- m) Master Control automation and storage will reside in Technical Area (Room 054)
- n) Burst will provide 5 days (40 hours) during regular business hours of on-site training
- o) Master Control Console with two work stations for two operators
- p) Master Control Operator Workspace
- q) Character generation system

Burst will ensure Master Control systems meet or exceed the following technical requirements remaining within the approved project budget:

- 1) Video Format: HD-SDI, 1080 **(i)**.
- 2) Audio formats: AES (Embedded and Non Embedded), analog and stereo
- 3) Broadcast Transport streams: quantity of 4 at 19.34MHZ ASI no more compression beyond 19.34 MHZ
- 4) Storage: 150 hours per channel of HD programming for immediate play-out
- 5) Near-line storage for available-to-schedule programs: 500 hrs
- 6) Storage: business continuity redundancy: 75 hrs
- 7) Cross conversion as necessary, with network connectivity to edit LAN for file transfer
- 8) Embedding and de-embedding as necessary
- 9) Monitoring: All A/V sources via Multi-viewer, speakers, and technical monitors

Exhibit A

- 10) Machine Control: of assigned equipment (decks, DVD recorder, satellite dishes etc.) in Tech Area (number to be determined in accordance with what clients requires)
- 11) Channel 8 LAN connectivity
- 12) DVD Duplicator, (see section 7.O)
- 13) Operation of Harris Channel One (connectivity to NVerzion automation)
- 14) Digital Music: interface from Comcast Digital Box

Burst to provide schematic drawings of design, systems, cabling, and installation in CAD and PDF versions and drawings must be approved by Denver 8 prior to installation of systems and equipment.

Burst provided a project schedule for completion of the Master Control project. This project will commence when there is a fully executed contract and will run through July 31, 2012. Denver 8 accepts this timeline for completion.

B. CITY & COUNTY BUILDING DENVER 8 TECHNICAL AREA (ROOM 054)

Currently installed in the newly constructed Denver 8 Technical Area 054 are the required infrastructural items which include: electrical, low voltage wiring runs (coax cables, fiber, CAT6, etc.), faceplate with appropriate connectors, UPS, and HVAC. Attached are PDF documents of the 100% Construction Documents which includes the Telecom, Audio Visual, electrical and HVAC infrastructure diagrams.

The Tech Area will house all of the electronics that will be used on a daily basis for live, edited and recorded cablecasting; except for those essential to remain in identified and approved rooms for functionality. These components include the following items but are not limited to this list. Items below marked "Vendor Supplied" are items itemized (or comparable) and accounted for on the **Denver 8 TV Equipment List** submitted by Burst.

Burst shall research, design, procure, install, establish interconnectivity, test, and provide training to ensure the identified Technical Area systems and associated equipment identified and itemized below in the **Denver 8 TV Equipment List (RFP-ID/Room 054 Tech)** are fully functional and integrated into the Denver 8 technical operations structure. The basic Technical Area functional requirements that Burst will deliver include but not limited to:

- a) Intercom mainframe – Vendor Supplied RTS
- b) Router mainframe – Vendor Supplied
- c) Patch Panels (fiber, audio {analog & AES}, video {digital & analog}, RF, ASI, IT, RS422, etc.), interconnectivity to existing and new C&C Control Rooms – Vendor Supplied
- d) IT routers for the Edit LAN and Denver 8 LAN – Vendor Supplied
- e) Decks (6-D9's & 3-Betas), DVD burners Vendor Supplied (burners only)
- f) Air (~2), storage (~3), edit (1), archival (1) video Servers Vendor Supplied (no edit servers to purchase, need to be installed and connected only)
- g) Automation computers (New Master Control Systems – TBA) - Vendor Supplied

Exhibit A

- h)** Storage computers (Edit Server: Promise 32 TB RAID, X Serves and associated Fiber/Ethernet Switches) – Need to be installed and connected only
- i)** Conversion gear – Vendor Supplied
- j)** Technical Monitoring equipment – Vendor Supplied
- k)** Interconnect gear to the satellite farm on 303 W. Colfax – Vendor Supplied
- l)** Outbound broadcast gear – modulator provided by Comcast
- m)** The RS-422 patches are for control of the edit decks that are not used for MC – Vendor Supplied
- n)** Granicus web streaming application and components Installed and Connected only (vendor may need to provide converter from HD to analog)
- o)** Duplicators (Tied to D8-LAN) – repurpose existing equipment
- p)** Satellite control via MC – RS422 switch Vendor Supplied
- q)** Channel 58 Harris Channel One playback system – Installed and Connected
- r)** A linear editing rack is required in Tech Area (Room 054) that will allow users to route video and audio from any of # decks or any of # burners and other sources to the other. This rack will live in the last row of racks (D1) and will not be connected to any backup power sources. These connections will include a router control panel (KP-16), audio, video and deck control patching. Each unit will have an A/V source from the router and to the router that gives us complete flexibility. Also each A/V source & destination will be patchable. The monitoring station will also have A/V confirmation and QC gear to use for both audio and video.

The new intercom system will be required to interface with our current system or the current system will need to be upgraded. The mainframe of this system will be located in the Technical Area (Room 054) and from this point will fan out as follows:

- a)** Tech Area: Main Frame & Main controller (054), 1-KP-32
- b)** Edit Bays (051, 052, 059): 1-KP-12 panel each
- c)** VO Booth (060): 1-BKP-4 – Need RTS audio into VO booth headphones. No RTS panel, just destination for program audio and RTS override into headphones.
- d)** Studio Control Room (SCR or 102): 1-KP-32 (Director) & 4-KP-12's
- e)** Studio Cameras will require interface with this system (103)
- f)** Studio: 2 belt pack connections from the I/O panel for the floor director & lighting DMX panel (103), stage announce and IFB
- g)** Master Control (055): 2-kp-32's

Burst will provide a 128x 128 HD Router with the ability to interface with our existing router; update our existing system(s); or to take a SD-SDI video and analog audio feed from our current system for air play. This router will also have the ability to interface with all automation and multi viewers as required. There is also a requirement for the remote connectivity of the studio via fiber for live broadcasts. Fiber must be routed from the existing terminal room between the City and County Denver 8 Lower Level Control Rooms A & B, to the new Studio Control Room 101/102/103 to allow for recording in HD from the Wellington Webb building, the City & County Building, and other future to be identified locations.

Exhibit A

The list below gives some of the required router connectivity but is not necessarily a complete list. The router installation shall include all cross conversion, distribution, reference and audio as necessary.

- a) Tech Area (054): Main panel and router tied to UPS backup.
- b) 6 D-9 decks Master Control (3) and Edit Rooms (3)
- c) 3 Beta decks Master Control (1) Edit Rooms (2)
- d) 1 MiniDV (for use in dubbing area)
- e) Editing connectivity
 - a. All edit bays are networked to each other and Edit Server (Edit LAN)
 - b. Edit Server networks to Master Control LAN
 - c. MM Fiber network audio and video to Edit Server and all Edit Rooms
- f) Studio Connectivity
- g) Audio and video via SM Fiber between Studio Tech Area and Tech Area (Room 054) Existing PCR's connectivity audio and video via Copper RG59
- h) 4 channels of outbound broadcast video and audio (SD and HD-SDI)
- i) 2 channels of ingest
- j) Routing & control: 128X128 HD-SDI router that is also connected to our current infrastructure

The new intercom system Burst is to install must interface with our current system or the current system will need to be upgraded. The mainframe of this system will be located in the Technical Area (Room 054) and from this point will fan out as follows:

- a) Tech Area: Main Frame & Main controller (054), 1-KP-32
- b) Edit Bays (051, 052, 059): 1-KP-12 panel each
- c) VO Booth (060): 1-BKP-4 – Need RTS audio into VO booth headphones. No RTS panel, just destination for program audio and RTS override into headphones.
- d) Studio Control Room (SCR or 102): 1-KP-32 (Director) & 4-KP-12's
- e) Studio Cameras will require interface with this system (103)
- f) Studio: 2 belt pack connections from the I/O panel for the floor director & lighting DMX panel (103), stage announce and IFB
- g) Master Control (055): 2-kp-32's

Burst to provide schematic drawings of design, systems, cabling, and installation in CAD and PDF versions and drawings must be approved by Denver 8 prior to installation of systems and equipment.

Burst provided a project schedule for completion of the Technical Area project. This project will commence when there is a fully executed contract and will run through July 31, 2012. Denver 8 accepts this timeline for completion.

C. CITY & COUNTY BUILDING DENVER 8 EDIT BAYS (ROOMS 051, 052, 059)

Exhibit A

Currently installed in the newly constructed Denver 8 Edit Bays Areas 051, 052, 059 are the required infrastructural items which include: required electrical, HVAC, low voltage wiring runs (coax cables, fiber, CAT6, etc.), faceplate with appropriate connectors, and HVAC. Attached are PDF documents of the 100% Construction Documents which includes the Telecom, Audio Visual, electrical and HVAC infrastructure diagrams.

Burst shall research, design, procure, install, establish interconnectivity, test, and provide training to ensure the identified Edit Bays systems and associated equipment identified and itemized below in the **Denver 8 TV Equipment List (RFP-ID/Room 051, 052, 059 Edits 1, 2, & 3)** are fully functional and integrated into the Denver 8 technical operations structure as outlined in the technical requirements below. Items below marked “Vendor Supplied” are equipment itemized (or comparable) and accounted for on the **Denver 8 TV Equipment List** submitted by Burst. The Edit Bay functional requirements that Burst will deliver include but not limited to:

- a) All edit bays will have connectivity to the main router via a router control panel, intercom, interconnect between each of them, microphone connectivity to the VO booth and full A/V monitoring Edit bays (Rooms 052,051 & 059) will all have intercom connections part of RTS - Vendor Supplied
- b) Edit Bays 1&2 (Rooms 051, 052) will have stereo monitors in order to monitor audio ingest, record and playback repurpose existing equipment – Vendor Supplied
- c) Edit 3 (Room 059) will have Dolby 5.1 surround audio for clients to monitoring edits, ingest, record and playback – Vendor Supplied
- d) Every Edit Bay (Rooms 051, 052 & 059) will have 2 routable microphone connections to the VO Booth (Room 060) -Vendor Installed
- e) Router panel interface - Vendor Supplied
- f) Amplifiers for audio monitoring (repurpose existing gear) - Vendor Installed
- g) Large flat panel display with connections for edit, cable television, ingest, record, etc. repurposed existing gear - Vendor Installed (Rooms 051, 052)
- h) Large flat panel display with connections for edit, cable television, ingest, record, etc. -Vendor Supplied (Room 059)
- i) Editing systems (repurpose existing system) -Vendor Install and Integrated
- j) Editing connectivity
 - a. All edit bays are networked to each other and Edit Server (Edit LAN)
 - b. Edit Server networks to Master Control LAN
 - c. MM Fiber network audio and video to Edit Server and all Edit Rooms
- k) Edit 1 & 2 (rooms 051 & 052) - Repurpose existing Winsted Desks, Final Cut Pro Computer Systems
- l) Edit 1 & 2 (rooms 051 & 052) – Require 20” monitor for quality control, RTS, Router, Amp, AV, Fiber & Ethernet connectivity
- m) Edit 3 (room 059) – Repurpose existing Final Cut Pro Computer System and Monitor
- n) Edit 3 (room 059) – Require Edit Desk,, 20” HD CRT (for QC), RTS, Router, WF/V Scope, Amp, A/V, Fiber & Ethernet connectivity, Near-field Speakers, Producer Desk, Client Furniture, 60” HDTV and stand, Blu-Ray Disc player, 5.1 Surround Sound Amp & Speakers

Exhibit A

Burst to provide schematic drawings of design, systems, cabling, and installation in CAD and PDF versions and drawings must be approved by Denver 8 prior to installation of systems and equipment.

Burst provided a project schedule for completion of the Edit Bays project. This project will commence when there is a fully executed contract and will run through July 31, 2012. Denver 8 accepts this timeline for completion.

D.CITY & COUNTY BUILDING DENVER 8 IDF (ROOM 061)

Currently installed in the newly constructed Denver 8 IDF ROOM 061 are the required infrastructural items which include: electrical, racks, HVAC, low voltage wiring runs (coax cables, fiber, CAT6, etc.), faceplate with appropriate connectors, and HVAC. Attached are PDF documents of the 100% Construction Documents which includes the Telecom, Audio Visual, electrical and HVAC infrastructure diagrams.

Burst shall research, design, procure, install, establish interconnectivity, test, and provide training to ensure the IDF connectivity to the associated equipment identified and itemized below in the **Denver 8 TV Equipment List** are fully functional and integrated into the Denver 8 technical operations structure as outlined in the technical requirements throughout this scope of work.

Burst to provide schematic drawings of design, systems, cabling, and installation in CAD and PDF versions and drawings must be approved by Denver 8 prior to installation of systems and equipment.

Burst provided a project schedule for completion of the IDF connectivity requirements. This project will commence when there is a fully executed contract and will run through July 31, 2012. Denver 8 accepts this timeline for completion.

E. CITY & COUNTY BUILDING DENVER 8 ENGINEERING OFFICE (RM 053)

The Denver 8 engineering dept will have a routable coax cable destination so that we can test repaired gear using a live video and audio source, which will also be used for reference for any problems that may arise.

Burst to provide schematic drawings of design, systems, cabling, and installation in CAD and PDF versions and drawings must be approved by Denver 8 prior to installation of systems and equipment.

Burst provided a project schedule for completion of the Engineering connectivity. This project will commence when there is a fully executed contract and will run through July 31, 2012. Denver 8 accepts this timeline for completion.

Exhibit A

F. CITY & COUNTY BUILDING DENVER 8 LOWER LEVEL CONTROL ROOMS

Currently installed in the newly constructed Denver 8 Lower Level Control Rooms are the required infrastructural items which include: electrical, racks, HVAC, low voltage wiring runs (coax cables, fiber, CAT6, etc.), faceplate with appropriate connectors, and HVAC.

Burst shall research, design, procure, install, establish interconnectivity, and test, to ensure the required connectivity to the associated equipment identified and itemized below in the **Denver 8 TV Equipment List** are fully functional and integrated into the Denver 8 technical operations structure as outlined in the technical requirements throughout this scope of work.

Burst to provide schematic drawings of design, systems, cabling and installation in CAD and PDF versions and drawings must be approved by Denver 8 prior to installation of systems and equipment.

Burst provided a project schedule for completion of the Lower Level Control Room interconnectivity. This project will commence when there is a fully executed contract and will run through July 31, 2012. Denver 8 accepts this timeline for completion.

G. CITY & COUNTY BUILDING DENVER 8 VOICE OVER ROOM (ROOM 060)

Currently installed in the newly constructed Denver 8 Voice Over Room 060 are the required infrastructural items which include: electrical, HVAC, low voltage wiring runs (coax cables, fiber, CAT6, etc.), faceplate with appropriate connectors, and HVAC. Attached are PDF documents of the 100% Construction Documents which includes the Telecom, Audio Visual, electrical, and HVAC infrastructure diagrams.

Burst shall research, design, procure, install, establish interconnectivity, test, and provide training to ensure the identified Voice Over Room connectivity and associated equipment identified and itemized below in the **Denver 8 TV Equipment List (RFP-ID/Room 060 VO)** are fully functional and integrated into the Denver 8 technical operations structure as outlined in the technical requirements below. Items below marked "Vendor Supplied" are equipment itemized (or comparable) and accounted for on the **Denver 8 TV Equipment List** submitted by Burst.

The new Denver 8 VO booth (Room 060) will have the following connections completed by Burst in this room. The connections mentioned below will allow Denver 8 the ability to take the VO booth live to air as a second audio source while also allowing the talent to hear cues from directors in any location of the facility. We will also have the ability to send video into the VO booth for talent reference. The booth will also have multiple microphone connections for multiple users if the case should arise.

- a) 2 microphone XLR connections tied to the router - Vendor to supply XLR connectors and Installed,
- b) Intercom monitoring system – Vendor Supplied and Installed
- c) Video return from router - Vendor Supplied and Installed (cable only, not monitor)

Exhibit A

- d) Existing equipment to repurpose - Mic Stand & Neumann Mic
- e) Required - 20" Monitor
- f) Required - A/V & Ethernet Connectivity

Burst to provide schematic drawings of design, systems, cabling, and installation in CAD and PDF versions and drawings must be approved by Denver 8 prior to installation of systems and equipment.

Burst provided a project schedule for completion of the Voice Over Room project. This project will commence when there is a fully executed contract and will run through July 31, 2012. Denver 8 accepts this timeline for completion.

H. CITY & COUNTY BUILDING DENVER 8 STUDIO CONTROL TECHNICAL AREA (ROOM 101); STUDIO CONTROL ROOM (ROOM 102); STUDIO (ROOM 103)

Currently installed in the newly constructed Denver 8 Studio wing rooms 101, 102, & 103 are the required infrastructural items which include: electrical, cable trays, I/O panels, HVAC, low voltage wiring runs (coax cables, fiber, CAT6, etc.), faceplate with appropriate connectors, and HVAC. Attached are PDF documents of the 100% Construction Documents which includes the Telecom, Audio Visual, electrical, and HVAC infrastructure diagrams.

Burst shall research, design, procure, install, establish interconnectivity, test, and provide training to ensure that all Studio areas are connected and associated equipment identified and itemized below in the **Denver 8 TV Equipment List (RFP-ID/Rooms 101 ST Tech, 102 ST CR, and 103 Studio)** are fully functional and integrated into the Denver 8 technical operations structure as outlined in the technical requirements below. Items below marked "Vendor Supplied" are equipment itemized (or comparable) and accounted for on the **Denver 8 TV Equipment List** submitted by Burst.

The Denver 8 new studio (Room 103), shall include 3 new HD-SDI Panasonic camera packages or approved equal and all of the associated gear as required. The Studio Tech Area (Room 101) is where all of the associated gear will be stored in sound proof racks. The I/O panels that are located in the Studio (Room 103) and its associated conduit should already be installed in the Studio area but all cabling will be installed by Burst. Burst will incorporate fiber optic transport architecture for multiple cameras in the new studio and final cut pro interconnectivity. Below is the list of gear to date that will be required in the Studio Tech Area (Room 101). Next to the gear is a notation that identifies what the awarded vendor will supply and/or relevant details.

- a) 3 racks that give a minimum of 28db of sound attenuation – Vendor Supplied
- b) Interconnected via fiber to the main Tech Area (Room 054). Fiber will be in place and ready. End gear establishing connectivity (fiber to video) must be Vendor Supplied
- c) 3 fiber camera packages including camera RTS, return video, CCU, etc. – Vendor Supplied
- d) 1 HD-SDI switcher mainframe – Vendor Supplied

Exhibit A

- e) 1 audio mixing console (repurposed) that can do analog as well as AES audio Conversion gear as required - Vendor Supplied if necessary for AES Gear only
- f) RTS system interconnect to existing C&C production control rooms, Room 103 Studio, new edit suites (Rooms 051, 052, 059), new master control and Voice Over booth (Room 60) - Vendor Supplied
- g) A/V connections – Vendor Supplied
- h) Server system for tapeless recording of 1 source and 2 playback sources simultaneously and 1 recorder that is connected to the main router – Vendor Supplied (need to determine what type of server we require, not dead set on 360)
- i) Router system extension and control (live) for director Vendor Supplied
- j) 3-IFB interconnections from the Studio Control (Room 102) to the Studio (Room 103); these can be tied to the RTS as long as there is complete isolation –Vendor Supplied, wireless headsets existing at Stapleton (currently copper connection),
- k) 16 Microphone XLR connections at the I/O panel –Vendor Supplied
- l) Return audio & video to the I/O panel – Vendor Supplied
- m) Fiber patching as necessary and required- Vendor Supplied
- n) A/V Patch panels as required – Vendor Supplied
- o) Would like one- 3 Phone line Interface to mixer – Vendor Supplied
- p) Audio Connectivity for an MP3 player
- q) 1 D-9 deck integrated – repurpose existing, need to integrate by vendor
- r) 1 DVD burner integrated – repurposing existing, need to integrate by vendor
- s) I/O panel will be located on the Studio (Room 103) west wall near the south corner - Will be in place & ready for awarded vendor
- t) MM Fiber, Edit LAN, and City LAN network connectivity for Final Cut Pro Ingest Workstation, audio and video from program DA connection (Vendor to connect)
- u) I/O panels to be located on North and West walls of Studio (102) – Will be in place & ready for awarded vendor
- v) Studio announce speakers (Client Provided Equipment) and control room monitoring speakers (Vendor provided) and vendor to connect all
- w) Network connectivity from Studio Control Server from Studio Tech Area (Room 101) to Denver 8 LAN
- x) Camera Specifications - Panasonic Cameras (300 Series) or approved equal to work with our current 300 series Panasonic Field Cameras. Telecast RCUs. Must be compatible with Intercom and Telecast Copperheads
- y) Signal routing panel requirements - 4x16 Router (16 sources, 4 destinations)
- z) Studio Video Switching and Monitoring Requirements - Panasonic Switcher AV-HS 450 (1-1.5 ME) or equivalent; Possibly MultiView built-in to switcher (or Harris, Miranda, etc.)
- aa) Audio Mixing and Monitoring Requirements - Audio signal converted into AES for embedding; Using existing stereo speakers
- bb) Video and Audio Recording Requirements:
 - 1 pro-quality DVD recorder/player and necessary conversion gear (HMDI? SDI?)
 - 1 Existing D9 recorder (SD-SDI) for temporary legacy needs
- cc) “Call-in” phone equipment
- dd) Character Generation Requirements - Inscrubber G5

Exhibit A

- ee) Operator Intercom and IFB Requirements - RTS and Wireless IFB as mentioned above
- ff) Production Control Console Requirements - (2 units)
Winsted, Middle Atlantic, etc. Need to fine-tune layout of crew positions and equipment – including Director, Producer, Audio, Graphics, Shader/Camera (Server keyboard, ingest keyboard, switcher, mixer, CG keyboard, Producer PC, RCU's)
- gg) Production Servers - For video playback and record
- hh) Existing Final Cut Pro Ingest Systems - For video ingest and editing
- ii) Dimmer Pack and Dimmer Control Panel
- jj) Lighting Grid System (48 circuits)
- kk) Cyc Curtain track w/Grey and Black Cyc Curtains
- ll) 20' Hard Cyc Green Screen (West wall)

Burst intends to subcontract to Barbizon Light of the Rockies, Inc. for the truss and lighting work. Denver 8 has reviewed Barbizon Light of the Rockies, Inc. proposal and accepts the proposal and is a scope of work requirement within this project. The following is language extracted from Burst's official bid submission to Denver 8.



*Systems Integrators
for Stage and Studio
Lighting, Control and
Rigging Systems*

**Barbizon Light of
the Rockies, Inc.**
8269 East 23rd, Ave.
Suite 111.
Denver, CO 80238
Ph: (303)394-9875
Fax: (303)355-5996

Scope of Work for RFP No. 6800 KDTV Channel 8 Television Studio

Nov. 14, 2011

Bid Name: RFP No. 6800; Denver 8 TV Acquisition/Engineering/
Integration Proposal

BID Date: 11/14/2011 5:00pm MT

Barbizon is pleased to submit pricing for the above referenced project on
the following scope of work:

Scope of Work:

Section B.4 – 4: Studio (101, 102, 103)

- a) Dimmer Pack and Dimmer Control Panel
- b) Lighting Grid (48 circuits)
- c) Cyc Curtain track w/Grey and Black Cyc Curtains
- d) 16' Hard Cyc Green Screen (West wall)

Acknowledgement

Receipt of Addendum #1, 2, 3, 4, 5, 6, 7

Exhibit A

Atlanta

Boston

Charlotte

Chicago

Dallas

Denver

Miami

Inclusions:

- ↓ Provide all Studio Equipment & Installation specified per Section B.4 – 4.
- ↓ 2 Dimensional Submittal Drawings, Data Sheets, and fabric samples for owner's approval.
- ↓ Project Management, Jobsite. Contractor and Consultant Coordination
- ↓ Provide coordination between owner, architect, and other trades.
- ↓ Inspect site prior to equipment delivery to insure intent of new rigging and studio systems.
- ↓ Provide dimming cabinet and distribution.
- ↓ Provide Control System.
- ↓ Low Voltage terminations.
- ↓ Mechanical Installation of Truss Grid and associated hardware.
- ↓ Install Studio, Drapery Tracks and new Drapes.
- ↓ Install 16' long floor covered hard cyc, painting by others (paint provided by Barbizon)
- ↓ Provide training on the use & maintenance of the studio lighting & rigging systems.
- ↓ Provide rental lift for use with installation of above equipment.
- ↓ Owner Training
- ↓ O&Ms and Closeout Documents

Orlando

New York City

Tempe

Washington, D.C.

The following items are specifically excluded:

- ↓ We exclude any material or work listed outside of Section B.4 – 4: Studio (101, 102, 103)
- ↓ Conduit for the routing of low voltage and or data cable
- ↓ Line voltage wiring, including materials, pulls through conduit and terminations.
- ↓ Electrical Installation of Distribution Strips.



*Systems Integrators
for Stage and Studio
Lighting, Control and
Rigging Systems*

**Barbizon Light of
the Rockies, Inc.**
8269 East 23rd, Ave.
Suite 111.
Denver, CO 80238
Ph: (303)394-9875
Fax: (303)355-5996

- ↓ Structural Engineering, Electrical Engineering
- ↓ Painting of the Hard Cyc
- ↓ Any demolition of existing theatrical curtains, rigging hardware, lighting fixtures, or other theatrical material not stated in the specification as being salvaged for reinstallation by the specification.
- ↓ The attachment or installation of any structural or support steel not listed in sections RFP 6800.
- ↓ Emergency Lighting
- ↓ No Performance Bonding, job permits, or fees have been included in this quotation.
 - o Our bonding Rate is an adder of 1.5% of total, if required
- ↓ Barbizon's standard insurance applies, certificates available upon request.
- ↓ Sales Tax is not included in this Bid.

The following items are by the GC or Structural Contractor

- ↓ Cutting / Patching
- ↓ Structural Inspection and verification
- ↓ Masonry Work
- ↓ Removal / Abatement of Asbestos / PCBs, Hazardous Materials

Important Notes:

- ↓ Barbizon priced this job using the "Prevailing Wage" scale provided in addendum 1.
- ↓ Barbizon is available to complete this work in the timeframe allotted

Exhibit A

Narrative:

A) Dimmer Pack and Dimmer Control Panel

Atlanta We are proposing the use of two ETC DRD-12 Unison Dimming Racks, with 12
Boston new D20 dual dimming modules and 12 provided by **OWNER**. For control we are
Charlotte proposing an ETC Element 40/250 console. We feel this system offers the best
Chicago value to the city. The Unison dimming and Element control console will provide
Dallas more than enough dimming and control at an affordable cost. Our cost includes
Denver system commissioning and system training for the owner.

B) Lighting Grid (48 circuits)

Chicago Please see included sketch of our proposed truss grid layout. We are
Dallas proposing a 20' W x 41' L x 11' H truss grid built with Totalite 1' box
Denver truss. The bottom of the grid will be 10' AFF and the lighting positions can
Miami be set as high as 11' AFF. The grid will be supported by six (6) 10' posts.
Orlando Our design takes into account the HVAC ducts that run along the east and
New York City west wall at 18" below the ceiling, all doorways are unobstructed, and
Tempe allows for the installation of the 16' hard cyc along the west wall as well as
Washington, D.C. a u-shaped curtain track installation that will provide coverage along the
west, south, and east walls of the room. We will provide 8' and 12' long
aluminum pipe battens with swivel clamps that can be used to supplement
the grid lighting positions on the north-south grid.

Exhibit A



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Atlanta
Boston
Charlotte

While it would be possible to engineer the truss as asked about in addendum 7, we feel the added costs and production time involved would not be in the best interest of the city. An installation such as this would greatly reduce the loading capacity of the grid and considering the cost would not provide much value. Something that is difficult to see in the photo provided in addendum 7 are the guide wires that are employed to stabilize that unique truss structure. A similar guide system would also need to be employed in the KDTV studio and would potentially cause accessibility and structural issues.

The answer to the second question the maximum distance between supports would be 40', however, at 40' the loading capacity is reduced by half of what our design allows for, especially with the cross sections of truss that run east-west. This is why we are including the two center support posts in our proposal.

We will provide a total of 48 stage pin circuits in a combination of truss mounted and wall mounted distribution.

C) Cyc Curtain track w/Grey and Black Cyc Curtains

We will provide approximately 110' of H&H 300 series track with two 90 degree corners. The curtain track will run along the outside edge of the west, south, and east runs of the truss at 11' AFF. We will also provide four new black curtains and one new grey Leno cyc. Please see BOM for dimensions.

D) 16' Hard Cyc Green Screen (West wall)

Our proposal includes a 16' long permanently installed floor cove cyc built by Pro Cyc. Our pricing includes material and installation of the cyc except *for the final painting*. We can provide the paint, but feel the painting contractor would be better suited to perform the work.

Barbizon submits these additional clarifications:

76.0 Services Provided By Barbizon

77.0 * Provide two dimensional submittal drawings, data sheets, and fabric samples for owners approval

78.0 * Provide coordination between, owner, architect, and other trades

79.0 * Inspect Site prior to equipment deliver to insure intent of new rigging and studio systems

152.0 * Install Studio Truss Grid including all required accessories and associated hardware.

153.0 * Install ProCyc

153.0 * Install Studio track systems, new curtains including all required accessories.

154.0 * Return (6) and (11) months after date of substantial completion for adjustments.

155.0 * Terminate all low voltage control wiring.

156.0 * Commission dimming system & test to ensure accuracy of installation.

Exhibit A

157.0 * Provide training on the use & maintenance of the TV Studio lighting systems.

158.0 * Provide training on the use & maintenance of the TV Studio rigging system.

159.0 * Provide rental material lifts for use with installation of above equipment

160.0 * O&Ms and closeout documents

160.0 Provided By Others (Not Burst Communications, Inc.)

161.0 * Installation of electrical service.

162.0 * Installation of dimmer racks.

163.0 * Electrical distribution, including mounting and termination of line voltage wiring.

164.0 * All conduit systems including materials, installation in walls and wiring pulls.

165.0 * Line voltage wiring, including materials, pulls through conduit and terminations.

166.0 * Branch circuit breakers and feeder cable including materials, installation and terminations.

167.0 * Low Voltage control wiring, including materials and pulls through conduit.

168.0 * Structural Engineering and Permitting

169.0 * Structural steel to support curtain system / dead hung rigging / motorized rigging.

170.0* Emergency lighting transfer relays.

Burst to provide schematic drawings of design, systems, cabling, and installation in CAD and PDF versions and drawings must be approved by Denver 8 prior to installation of systems and equipment.

Burst provided a project schedule for completion of the Studio Rooms 101, 102, and 103 Project. This project will commence when there is a fully executed contract and will run through October 31, 2012. Denver 8 accepts this timeline for completion.

BURST COMMUNICATIONS, INC. ALLOCATED PROJECT STAFF AND PERFORMANCE MANAGEMENT COMMITMENTS

Burst will adhere to the following performance metrics. This is in addition to and consistent with the elements described in the included *Burst's Quality Assurance Project Management System*.

- 1) Adherence to agreed to schedules
- 2) Project milestones completed on time as proposed or modified
- 3) Coordination with City of Denver with sufficient notice in advance of on-site work
- 4) Guarantee quality of Installation Work
- 5) Electrical installation complies with applicable codes and standards

Exhibit A

- 6) All Burst installed cables correctly labeled and neatly dressed
- 7) Equipment neatly racked and labeled
- 8) Provide complete documentation
- 9) Drawings are complete and accurate
- 10) Sufficient detail provided for operational maintenance and troubleshooting
- 11) Dedicated project management support
- 12) Schedule and coordination information provided to City on a timely basis
- 13) All project requirements met
- 14) City of Denver personnel informed of project details; approvals sought as appropriate.

Burst will provide all the necessary materials, supplies, equipment, tools, labor, overhead, engineering services, testing, fuel, transportation, installation, incidentals, temporary facilities, insurance, warranties, maintenance agreements, supervision, clean up and to fully perform and complete this project. Burst uses a quality assurance project approach to constantly accomplish this as described below.

Existing Denver 8 equipment to be repurposed from the current Stapleton facility will be moved by others to the Denver 8 City & County facility. Denver 8 will coordinate with Burst for the moving of the equipment to meet the project timeline. List of repurposed equipment is attached (Exhibit D).

Burst's Quality Assurance Project Management System

A.1.a.1 Objective

The objective of the Burst Quality Assurance Project Management System is Customer Satisfaction.

This is accomplished by:
Meeting, then exceeding our client's expectations
Being innovative and proactive
Doing the right thing

The following specifics each contribute to our Customer Satisfaction objective.

A.1.a.2 Design

All Burst projects utilize a team approach. A Burst design engineer will work collaboratively with the end user and other appropriate parties to review all system requirements. Burst does internal reviews including our VP of Engineering, project manager and a project foreman. This information is used to create top level design specification. This is followed by detailed engineering drawings of the total system. The next step is an Implementation Plan and Project Schedule. All of these steps are done in an open and collaborative environment with regular reviews including all appropriate parties.

A.1.a.3 Project Management

Burst believes project management is a key element to the success of any project. All the items detailed below are affected by project management. As such, Burst will provide a

Exhibit A

full time dedicated project manager familiar with both broadcast systems and project management experience. The Project Manager's involvement in the project begins with site visits, estimating labor, materials, expenses, etc. and does not end until Burst receives acceptance. This creates a high level of understanding of the project and continuity.

We require consistent feedback from the designers, crew, management and ownership to the project manager. This typically comes in the form of internal progress meetings scheduled as required by the level of activity at any given time. Typically we follow up with the client immediately after our internal meeting with a consecutive meeting that includes the client and others as required to review progress to date. The goal is to provide regular and consistent feedback to the client.

It is worth noting that the Project Manager is copied on all relevant communication. This creates a single point of cross reference so that each discipline is made aware of changes and can act accordingly. For example a design change may require new products and materials to be ordered. This may affect the cable fabrication and/or the construction schedule. Our view is the project manager must coordinate all these efforts in order to create a quality system.

Burst will provide daily/weekly reports to our client as a way to keep the lines of communication flowing. This report consists of progress made since the last report; goals for the upcoming period as well as any obstacles Burst may be having that could affect the project's schedule.

A.1.a.4 Logistics

Burst's logistics group is headed by an Administration Manager, who controls all purchases and coordinates with the vendors and project team to assure equipment and material are available at the right time in the right place. This group also reconciles orders with receiving documents to guaranty accuracy of shipments, invoicing and inventory.

A.1.a.5 Offsite Construction

Burst maintains a construction site at our headquarters in suburban Denver. The site offers up to 10,000 square feet of space enabling us to build and test in an organized fashion.

Burst will fabricate most cables off site. All fabricated cables are fully tested. Burst employs custom made testing benches based on industry standard testing equipment.

We sub-divide the construction process into smaller more manageable tasks in order to better track progress. Periodic reviews of construction progress are performed by both the project manager and the design team. This ensures consistency in terms of the quality of construction and minimizes any remedial efforts into smaller more manageable tasks. It also allows us to track budget to actual results against our timeline.

Exhibit A

A.1.a.6 Shipping

Burst controls the shipping process. All equipment and materials will ship to Denver from the manufacturers via carriers who understand the fragile nature of broadcast equipment. Our receiving process includes inspection of all equipment for physical damage and the collection of all applicable serial numbers. We personally pack the freight and build crates as required. Then all items are shipped to the construction site using “white glove” point-to-point freight service. Upon delivery at the construction site we personally unpack the shipment and set items in place. All shipments are insured via our insurance company.

A.1.a.7 Onsite Construction

Burst will employ highly qualified installers and engineers for this phase of the project. These may be Burst employees and/or contract individuals. There is always an interest in involving local engineers to enable support of the client after the project is finished. Once they have received the shipment from Burst and have placed the racks in position they will begin the process of installing the wiring between racks and the control rooms as well as other interconnections to other subcontractors.

A.1.a.8 Site Safety Policies

Burst maintains a Site Safety Policy and has an exemplary safety history. It is managed by a full time safety professional, who is responsible for monitoring the safety procedures of our crews at the jobsite.

A.1.a.9 Testing and Commissioning

Burst will provide a senior engineer and lead technician to perform system testing and commissioning. Burst will work in conjunction with the owner’s staff and others to perform system testing. We will also provide manufacturer personnel, as needed, to commission key pieces of equipment. Training Requirements for each project/specific systems are specifically outlined in the attached Denver 8 TV Equipment list. The training terms outlined by Burst in this document are accepted by Denver 8.

Our commission effort will be divided in two parts. First we will commission in phases based on sub-systems. Second we will provide staff with specific skill sets in video, audio, control and IT. We believe these two methods of commissioning offer the best results. Burst encourages any local engineers who are intended to maintain and operate the system to be involved. Commissioning for each project/specific systems are specifically outlined in the attached Denver 8 TV Equipment list. The commissioning terms outlined by Burst in this document are accepted by Denver 8.

A.1.a.10 Training

Burst will provide training from our engineering staff and manufacturer-based experts. This training will be coordinated with all appropriate parties, especially the end users.

A.1.a.11 Warranty

Burst will provide warranty service for one (1) year from final system completion through our staff in conjunction with our vendors. The support staff will be well

Exhibit A

educated in the system based on participation in design, installation, and commissioning, training and actual operations. Burst will combine this with our long standing relationships with the manufacturers to provide excellent support.

A.1.a.12 Event Support

When required, event support is performed by Burst's engineering and installation teams.

A.1.a.13 Schedule

Burst uses Gantt charts developed with Microsoft Project to design and maintain a schedule. This schedule is designed and coordinated with all appropriate parties to fulfill the project.

A.1.a.14 Documentation

Burst produces high quality system documentation that includes AutoCAD drawings, Microsoft Excel equipment lists and cable databases, and Microsoft Project schedules. At the conclusion of the project Burst provides a complete set of "As Built" drawings, lists and databases in editable electronic form as well as hardcopy.

A.1.a.15 Standards

Burst conforms, where applicable, to the standards published by IEEE, SMPTE, EIA, the National Electrical Code and OSHA.

Burst submits this proposal and accepts the use of the Section D: Sample Contract for the execution of an agreement to perform the Work of this proposal based on the information gathered from the proposal, site visits, Q&A addendum, various email correspondence/attachments the included Project Schedule and the following:

Burst Assumptions and Clarifications

- Bond is included.
- No taxes are included.
- No high voltage electrical is included.
- The Client will identify and provide a single point of contact for this project that will be available to answer questions from Burst's engineer, installation supervisor or project manager.
- Customer is responsible for the proper working condition of all customer furnished equipment (CFE). Burst will not repair or troubleshoot any CFE that is not in proper working condition.
- Burst assumes its crews will have unrestricted access to all of the areas involved with this project 24/7.
- The client is requested to provide a small office area with adequate space for two computers and two printers, along with full internet access, for the installation supervisor, test engineers and project manager while on site.
- Customer and Burst will coordinate the commissioning & training schedules to insure the affected systems are operational for these sessions.
- Changes requested by the client to the scope, specifications and or equipment list may necessitate a change order. Burst will discuss these changes with the client in advance of

Exhibit A

any work occasioned by the change taking place. Approval to initiate change must be given by Denver 8 division Director or Deputy Director.

Burst Required Site Preparations

Prior to Burst Communications, Inc. commencing work the following should have occurred:

- Pathways from the loading dock/rear entrance to the areas where Burst will install equipment must be clear and capable of handling heavy loads.
- Adequate and properly grounded electrical power must be available at all specified locations.
- Adequate HVAC for Burst installed equipment must be fully operational.
- Burst recommends that new HVAC ducting should be capped during construction to keep dust out of the system.
- Any required fire suppression equipment in the Burst construction area must be fully operational and tested.
- Room locations containing Burst installed equipment must be clean prior to Burst commencing work.
- All drop tile ceiling must be completely installed.

Extended Warranty - Master Control

Covers Master Control (Rooms 051 to 061)

Year 1	Included
Year 2	
Compusat	\$1,277.00
Evertz	\$5,959.00
Nverzion	\$2,401.00
Other (Burst)	\$5,384.00
Year 2 Total	\$15,021.00

Year 3	
---------------	--

Exhibit A

Compusat	\$1,277.00
Evertz	\$5,959.00
Nverzion	\$4,001.00
Other (Burst)	\$8,076.00
Year 3 Total	\$19,313.00

Year 4	
Compusat	\$1,277.00
Evertz	\$5,959.00
Nverzion	\$6,401.00
Other (Burst)	\$10,750.00
Year 4 Total	\$24,387.00

The extended warranty support includes:

- Telephone support from both Burst and manufacturers
- Responses as detailed below
- Extension of manufacturers' warranties as detailed below

Burst may employ service technicians directly or on a subcontracted basis at its discretion to complete support duties. Burst may also contract with manufacturers as required to provide services not available elsewhere.

Denver 8 accepts the following Extended Warranty Master Control options:

Year 1
Included

Year 2
Evertz \$5,959.00
Nverzion \$2,401.00

Year 3
Evertz \$5,959.00
Nverzion \$4,001.00

Year 3 Total \$18,320.00

Exhibit A

Responses to Service Calls

Burst will answer service calls within 8 hours, and correct the problem within forty eight hours. Other response levels are available.

Manufacturers' Warranty Extension

A manufacturer's warranty is supplied for each piece equipment. These vary in terms of the length and breadth of their coverage. Generally both hardware and software are covered. All are depot service which by definition is service at the manufacturers' facility. The warranty provision included in this proposal offers to extend the manufacturer's warranty in its exact and original form.

Contract Period: Immediately after Fully Executed Contract Distributed through 10-31-2012.

Extended Warranty Contract Term: the 3 year extended warranty term to start with Denver 8's "Final Acceptance" of the Master Control Installation

Terms of Payment:

Burst Communications, Inc. proposes the following terms of payment.

10% with executed contract

45% upon beginning of off-site phase of MCR, Tech Room, and Edit

- The Off-Site phase is that stage of the project when majority of the equipment ships to the site.

10% upon substantial completion of MCR, Tech Room, and Edit

- Substantial completion is that stage of the project when the system is operational and available for beneficial use. Punch list, training and final acceptance may not have been completed as part of substantial completion.

25% upon beginning of off-site phase of Studio and Control Room

- The off-Site phase is that stage of the project when majority of the equipment ships to the site.

5% upon substantial completion of Studio and Control Room Substantial completion is that stage of the project when the system is operational and available for beneficial use. Punch list, training and final acceptance may not have been completed as part of substantial completion.

5% upon final acceptance

In the case where the project schedule is extended then progress payments based on percentage of project completion will be approved.

Burst Communications, Inc.
8200 S. Akron St.
Suite 108
Centennial, CO 80112

Budgetary Proposal



Denver 8 TV System

Project Number: 3386
Date: 3/7/2012

	<u>Ext Price</u>
Equipment Total	\$ 853,472.00
Labor Total	\$ 124,120.00
Materials Total	\$ 41,178.00
Expenses Total	\$ 2,000.00
Shipping Total	\$ 15,166.00
Sub-Total	\$ 1,035,936.00
Bonding	\$ 13,778.00
Total Excluding Tax	\$ 1,049,714.00

Post Bid #1 w/o Bond \$ 1,036,118.00
Difference w/o Bond \$ (182.00)

**Denver 8 TV
Equipment**

RFP-ID /Room	Qty	Mfr.	Model #	Equipment Description	Customer Price	Ext. Customer Price
Rooms 051 to 061						
055 MC				055 Master Control Room		
055 MC				Intercom		
055 MC	2	RTS	KP32GRY-4F	32 position keypanel with menus and programming keypad, DSP functions, fluorescent displays, uses OPTIONAL MCP-90 microphone. 2RU	\$ 2,844.00	\$ 5,688.00
055 MC				Consoles		
055 MC				Master Control Console for (2) people		
055 MC	3	Middle Atlantic	VC-7219-DT34	Viewpoint Bay 72" W 19"D F/R Access Panels, 34" Desktop	\$ 2,924.00	\$ 8,772.00
055 MC	1	Middle Atlantic	VC-2419-DT34	VIEWPOINT BAY, 24"W, 19"D, F/R ACCESS PANELS, 34" DESKTOP	\$ 1,360.00	\$ 1,360.00
055 MC	1	Middle Atlantic	VC-PEN-3624	VIEWPOINT PENINSULA TOP, 24"W, 36" DEEP WORK SURFACE EXTENSION	\$ 395.00	\$ 395.00
055 MC	1	Middle Atlantic	VC-SP1-19	Viewpoint Side Panel Pair, Design 1, for 19" Deep Bays	\$ 427.00	\$ 427.00
055 MC	1	Middle Atlantic	VC-TR2419-4	Viewpoint Desktop Turret Rack, 24"W, for 19"D Bay 4 Rack Spaces	\$ 532.00	\$ 532.00
055 MC	3	Middle Atlantic	VC-MM1X1	Viewpoint Monitor Mount, 1 Vesa Mount, Articulating, Black	\$ 208.00	\$ 624.00
055 MC				Master Control System and Automation		
055 MC				Automation		
055 MC	1	Nverzion	NCONTROLMC-PKG	NCONTROL MC Master Control Switcher Hardware/Software Package: Includes: EMC-NT/8 Ethernet Machine Control Computer System, controls up to 8 serial devices.	\$ 29,039.00	\$ 29,039.00
055 MC						
055 MC	1	Nverzion	NTIME	NTIME Timed Event Scheduler:	\$ 2,231.00	\$ 2,231.00
055 MC	1	Nverzion	NTIME/SC	NTIME Satellite Control Extension:	\$ 1,114.00	\$ 1,114.00
055 MC	1	Nverzion	NCONTROLMC	NCONTROLMC On-Air Master Control Playlist:	\$ 8,188.00	\$ 8,188.00
055 MC	1	Nverzion	EMC-NT-16UK	Ethernet Machine Control Upgrade to (16 Ports):	\$ 5,210.00	\$ 5,210.00
055 MC				Upgrades EMC-NT/8 to a EMC-NT/16 in the NCONTROL(MC) Package		
055 MC	1	Nverzion	EMC-NT-16	Ethernet Machine Control (16 Port): Controls up to sixteen serial devices (VTRs, server I/Os, routers, etc.) through Ethernet protocols	\$ 15,635.00	\$ 15,635.00
055 MC						
055 MC	1	Nverzion	Additional Computers	COMPUTER SYSTEM, 2 RU rack mount chassis w/rear mount brackets	\$ 2,231.00	\$ 2,231.00
055 MC	1	Nverzion	DUAL VGA ADAPTER	Matrox Dualhead2go EDI Video Converter for 2 VGA outputs	\$ 295.00	\$ 295.00
055 MC	1	Nverzion	TIME CODE CARD	Adrienne Electronics Time Code reader card	\$ 518.00	\$ 518.00
055 MC	1	Nverzion	GPI/O CARD-16	Sealevel DIO.16 digital relay card	\$ 444.00	\$ 444.00
055 MC				Provides 8-GPI/8-GPO functions for triggering downstream devices		
055 MC	1	Nverzion	RS422 CARD	PCI RS-422 Card (4-Port)	\$ 444.00	\$ 444.00
055 MC				Typically used when interfacing to multiple Master Control switchers from a single computer		
055 MC	1	Nverzion	RED/PS	Redundant Power Supply option for Computer including EMC:	\$ 518.00	\$ 518.00
055 MC	1	Nverzion	XPLORER	XPANSION XPLORER (Site License):		
055 MC	1	Nverzion	FILE SYSTEM BROKER	XPANSION File System Broker:	\$ 5,210.00	\$ 5,210.00
055 MC	1	Nverzion	TERASTORE-8T	TeraStore Digital Storage, 3 RU rackmount chassis:	\$ 8,933.00	\$ 8,933.00
055 MC	1	Nverzion	INSTALL/TRAINING-1	On Site Installation/Commissioning and Training:	\$ 2,235.00	\$ 2,235.00
055 MC	4	Nverzion	INSTALL/TRAINING-N	Additional On Site Installation/Commissioning and Training:	\$ 745.00	\$ 2,980.00

**Denver 8 TV
Equipment**

RFP-ID /Room	Qty	Mfr.	Model #	Equipment Description	Customer Price	Ext. Customer Price
054 Tech				054 Technical Area		
054 Tech				Satellite Control		
054 Tech	1	Compusat		CompuSat Earth Station Automation Software. Base software with no drivers.	\$ 4,252.00	\$ 4,252.00
054 Tech	2	Compusat		External Automation Interface	\$ 2,979.00	\$ 5,958.00
054 Tech	2	Compusat		Research Concepts 2000 Antenna Controller Driver	\$ 762.00	\$ 1,524.00
054 Tech	2	Compusat		Cisco D9854 HD Receiver Driver	\$ 932.00	\$ 1,864.00
054 Tech	1	Compusat		2 RU CompuSat Earth Station Controller server. Intel dual Core G620B, dual NIC, dual monitor rack mount system	\$ 2,554.00	\$ 2,554.00
054 Tech	1	Compusat		8 RU 19" LCD Rack Mount Monitor 8 RU. 1 RU Keyboard with Optical Mouse.	\$ 1,649.00	\$ 1,649.00
054 Tech	1	Compusat		16 TCP/IP Enabled Surge protected RS232/422/485 serial ports	\$ 1,809.00	\$ 1,809.00
054 Tech	1	Compusat		Miscellaneous Hardware - connectors, wires etc.	\$ 4,256.00	\$ 4,256.00
054 Tech	1	Compusat		Installation - Commissioning - Customization not to exceed 2 days (Travel and Expenses Included	\$ 1,277.00	\$ 1,277.00
054 Tech	1	Compusat		1 Year's Software maintenance with satellite database updates	\$ 1,277.00	\$ 1,277.00
054 Tech	1	CFE	Harris One	Playback System	\$ 4,341.00	\$ 8,682.00
054 Tech	2	Evertz	CP-2272E	Multi-buss (RS SM)	\$ 4,341.00	\$ 8,682.00
054 Tech	2	RTS	F01U118768	Half of Cronus is located in C&C A&B CRONUS W/ PWR SUPPLY & COAX	\$ 3,736.00	\$ 7,472.00
054 Tech	2	RTS	F01U117967	POWER SUPPLY(INCLUDED IN LINE 1)	\$ -	\$ -
054 Tech	2	RTS	F01U148566	MASTER CONTROLLER CARD KIT	\$ 2,332.00	\$ 4,664.00
054 Tech	8	RTS	F01U118857	CRONUS AIO CARD KIT (1 FRT & 1 REAR)	\$ 1,870.00	\$ 14,960.00
054 Tech	2	RTS	F01U118869	CONFIGURATION SOFTWARE AZEDIT	\$ 426.00	\$ 852.00
054 Tech	1	Ross	SMSMD-3024-22	SMSMD-3024-22 2 In/4 Out Multi-Definition Video Server with 14 x 1	\$ 46,832.00	\$ 46,832.00
054 Tech	1	CFE	Promise	Edit Servers & X Server & Switches		
054 Tech	1	CFE	TBD	Streaming Encoder		
054 Tech				Routing Switcher		
054 Tech				96x96 Xenon Router Comprises of:		
054 Tech				64x64 HD/SD I/O		
054 Tech				32x32 Analog Audio I/O		
054 Tech				expandable upto 128x128 I/O		
054 Tech	1	Evertz	XE8-3232HX	32x32 Hi-Def Video Router. 8RU Frame supporting both HD and SD	\$ 17,235.00	\$ 17,235.00
054 Tech				video formats with front access modular design		
054 Tech				expandable in blocks of		
054 Tech				32 inputs or outputs to 128x128 with two non-redundant power supplies,		
054 Tech				single controller and single reference module.		
054 Tech				Output monitoring		
054 Tech				standard. Includes relocking option for 32 HD/SD outputs.		
054 Tech	1	Evertz	+2PS	Redundant Power Supply.	\$ 1,724.00	\$ 1,724.00
054 Tech	1	Evertz	+FU	Redundant Controller Module.	\$ 703.00	\$ 703.00
054 Tech	1	Evertz	XE-IP32HX	32 High Definition Inputs	\$ 4,149.00	\$ 4,149.00
054 Tech	1	Evertz	XE-OP32HX	32 HD / SD outputs (non-relocking)	\$ 4,788.00	\$ 4,788.00
054 Tech	1	Evertz	XE-IP32-AA	Analog Audio input - 32 Channel Stereo	\$ 3,830.00	\$ 3,830.00
054 Tech	1	Evertz	XE-OP32-AA	Analog Audio output - 32 Channel Stereo	\$ 3,830.00	\$ 3,830.00
054 Tech	1	Evertz	CP-3201E	Remote Panel, multimode, 40 BPS - 1RU unit, fully programmable e.g.	\$ 926.00	\$ 926.00
054 Tech				32 sources, 4 destinations, 3 levels of breakaway and lock, panel		
054 Tech				supports QLINK for connection to Legacy routers and Ethernet for		
054 Tech				connection to Magnum router control.		
054 Tech				Master Control Switcher Control Panels		
054 Tech				EMC Master Control Switcher		
054 Tech	1	Evertz	EMX6-FR+6PS	Modular frame that provides platform for system wide functionality, front	\$ 2,586.00	\$ 2,586.00
054 Tech				cooled 6RU frame with expandability, supports redundant frame		

**Denver 8 TV
Equipment**

RFP-ID /Room	Qty	Mfr.	Model #	Equipment Description	Customer Price	Ext. Customer Price
054 Tech				controller. Includes redundant power supply. (Frame controllers not included)		
054 Tech	2	Evertz	3025EMC-HDSD+DVE-2D	HD/SD Master control and branding channel. This channel includes: video/audio mixer engines, support for 16 channels of embedded audio, audio shuffling and mono-mixing, 3 external keyers and 4 layers of internal branding. The internal branding engine allows for static and animated logos, time and temperature. The channel comes with 2GB playout cache and 2GB compact for internal branding. Fits into a 3000FR, EMX6-FR, EMX3-FR. Single DVE (2 channel) squeezeback with full preview.	\$ 11,426.00	\$ 22,852.00
054 Tech	2	Evertz	3025EMC-IO-BNC	BNC I/O rear module for 3025EMC-HD or 3G	\$ 575.00	\$ 1,150.00
054 Tech	2	Evertz	QMC-CP-1000E	Master Control control surface QMC Auxiliary Control Panel. Fully programmable panel using buttons with integral LCD ten character displays. 1RU rack-mount.	\$ 1,692.00	\$ 3,384.00
054 Tech	4	Evertz	7721AE-A4-HD+3RU	HD/SD Analog Audio Embedder	\$ 2,043.00	\$ 8,172.00
054 Tech	1	CFE	Nevion VD6464	SD-SDI Router		
054 Tech	2	CFE	Nevion A6464	Analog Audio Router		
054 Tech				Multiviewer		
054 Tech	2	Apantac	DL-4+12	Accepts 4 Multimedia (DVI-D, VGA and, with optional adapters, HDMI with HDCP Support, YPbPr, Composite, YC) inputs and 12 Broadcast (Composite, SD / HD 3G SDI, auto detect) inputs . 48 GPI for tally/presets. RS232 for 3rd party interface. 30 internal presets. Supports AXP API. Built-in CATx extenders. Output up to 1600x1200 / 1920x1080 / 1920x1200 / 2048x1080 @ 50/60Hz. 2 RU. With standard redundant power supplies.	\$ 8,712.00	\$ 17,424.00
054 Tech	2	Apantac	SPP	Simple Presets Panel. 8 Configurable & Relegendable backlighted buttons. Connects to the control board GPI input port (Dsub 9) of any Tahoma series multiviewer. Magnetic base with mounting plate. Comes with 5 VDC power supply	\$ 139.00	\$ 278.00
054 Tech	2	Apantac	HDMI Adapter	Optional HDMI Adapter for DE and DL Series - One per input	\$ 28.00	\$ 56.00
054 Tech	2	Apantac	SDI-OUT	HD-SDI Output Option for LE, LX, LI, DE and DL series. One HD-SDI out per module (HD -SDI copy of the last HDMI/DVI output). Supports 1080i50 and 720p50 (when DVI output is set set for 1080p50 and 720p50, respectively) - Order with the multiviewer	\$ 277.00	\$ 554.00
054 Tech	1	Apantac	UIM	Universal Interface Module - Embedded PC. Small footprint router protocol translator that acts as a bridge between the Tahoma family of multiviewers and other third party router, tally and UMD protocols. Supports TCP/IP, UDP and Serial protocols. Also used for running the SNMP Proxy agent for the multiviewers.	\$ 745.00	\$ 745.00
054 Tech	2	Apantac	HDMI-1-R	HDMI Receiver over CAT 5e/6 up to 115 feet (35 meters) at 1920x1080p. Built-in EQ for image quality adjustment. HDMI 1.3 compliant.	\$ 88.00	\$ 176.00
054 Tech				Conversion		
054 Tech	1	CFE	AJA FS2	Frame Sync		
054 Tech	1	Ensemble	BEM-1	Brighteye Mitto 3G / HD / SD Broadcast Scan Converter	\$ 4,389.00	\$ 4,389.00
054 Tech	1	Ensemble	BERKMT	BrightEye™ Rack Mount (holds 3 to 6 BrightEyes) 1RU	\$ 64.00	\$ 64.00
054 Tech	2	Ensemble	BEBPD	BrightEye Blank Panel, Double Height	\$ 40.00	\$ 80.00
054 Tech	1	Ensemble	BEPS	Brighteye Individual Power Supply	\$ 40.00	\$ 40.00

**Denver 8 TV
Equipment**

RFP-ID /Room	Qty	Mfr.	Model #	Equipment Description	Customer Price	Ext. Customer Price
054 Tech				Distribution & Sync		
054 Tech	1	Ross	Dashboard	Configuration and Control Software		
054 Tech	2	Ross	FBK-8321-CN	Distribution Gear Card Frame (FR)	\$ 626.00	\$ 1,252.00
054 Tech	2	Ross	PS-8300	Power Supply - 150 Watt	\$ 380.00	\$ 760.00
054 Tech	4	Ross	DEA-8205-R2	Type 1 Serial Equalizing Amp (SDA1)	\$ 351.00	\$ 1,404.00
054 Tech	4	Ross	SEA-8203A-R2	Type 2 Serial Equalizing Amp (SDA2)	\$ 281.00	\$ 1,124.00
054 Tech	2	Ross	TEA-8207-R2	Type 3 Serial Equalizing Amp (SDA3)	\$ 421.00	\$ 842.00
054 Tech	4	Ross	UDA-8705A-R2	Type 1 Analog Video Distribution Amp (VDA1)	\$ 197.00	\$ 788.00
054 Tech	2	Ross	HDC-8222A-R2	Type 1 Digital to Analog Composite (DAC1)	\$ 1,812.00	\$ 3,624.00
054 Tech	2	Ross	MUX-8258-4C-R2	Type 1 AES Audio Multiplexer (MUX1)	\$ 2,093.00	\$ 4,186.00
054 Tech	2	Ross	DMX-8259-4C-R2C	Type 1 AES Audio Demultiplexer (DEMUX1)	\$ 1,952.00	\$ 3,904.00
054 Tech	2	Ross	ADC-8733A	Component to Serial Digital Converter Type 2 (ADC2)	\$ 1,053.00	\$ 2,106.00
054 Tech				Clocks and Timing System		
054 Tech	2	Evertz	5600MSC	Master SPG / Master Clock Combo	\$ 6,891.00	\$ 13,782.00
054 Tech	0	Evertz	+2PS	Redundant Power Supply for 5600MSC	\$ 1,724.00	\$ -
054 Tech	0	Evertz	+GP	GPS Antenna Option	\$ 894.00	\$ -
054 Tech	0	Evertz	+HTG	HD SDI Test Generator with 2 HD SDI test signals and 2 HDSDI black	\$ 2,426.00	\$ -
054 Tech	1	Evertz	5600ACO2	Dual Automatic Changeover system	\$ 3,511.00	\$ 3,511.00
054 Tech				QC/test/monitoring equipment		
054 Tech	1	Tektronix	WVR-5200	3G/HD/SD Rasterizer for Camera Shading: 4 SDI Inputs (3G, HD and SD-SDI support on the same inputs-auto detect) Base unit includes HD, SD and Dual-Link signal formats support Option 3G required for 3G-SDI support	\$ 4,532.00	\$ 4,532.00
054 Tech	1	Tektronix	VTSRACK-L1	Full rack (19), full depth, 1RU adapter (with 1.75 rack space) to fit one WVR5200, WVR5000, WVR4000, or SPG300	\$ 322.00	\$ 322.00
054 Tech	1	Samsung	S22A200B	Type 10 Color Video Monitor (CPXM10) 22" (This is a 21.5" LED Widescreen Monitor)	\$ 175.00	\$ 175.00
054 Tech	1	WINSTED	F8153	LCD MONITOR RACKMOUNT	\$ 228.00	\$ 228.00
054 Tech	2	Viewsonic	CD4232	42" Video Display 1920X1080 LCD	\$ 1,564.00	\$ 3,128.00
054 Tech	2	Chief	CHSMTR	Medium Display Tilt wall mount	\$ 141.00	\$ 282.00
054 Tech	2	TV Logic	PRM-702A	Dual 7" HD/SD Multifformat LCD Rack Monitor	\$ 2,454.00	\$ 4,908.00
054 Tech	2	Samsung	S22A200B	Type 10 Color Video Monitor (CPXM10) 22" (This is a 21.5" LED Widescreen Monitor)	\$ 175.00	\$ 350.00
054 Tech	1	Chief	Fusion FTR	Wall Mount	\$ 213.00	\$ 213.00
054 Tech	1	Wohler	AMP2-SDA	2-channel SDI, AES and analog audio monitor with metering that selects between the first 2 subgroups of SDI or an AES pair.	\$ 2,112.00	\$ 2,112.00
054 Tech				Intercom		
054 Tech	1	RTS	KP32GRY-4F	32 position keypad with menus and programming keypad, DSP functions, fluorescent displays, uses OPTIONAL MCP-90 microphone. 2RU	\$ 2,844.00	\$ 2,844.00
054 Tech	1	RTS	SAP612	Intercom Source Assignment Panel (SAP)	\$ 740.00	\$ 740.00
054 Tech	1	RTS	PS-20	Intercom Power Supply (ICOM PS)	\$ 773.00	\$ 773.00
054 Tech	1	RTS	MCP1	Rack Mount Adapter	\$ 104.00	\$ 104.00
054 Tech				Fiber Intercom Interface to Studio CR		
054 Tech	1	Telecast	A2-B3-MD-RG-SW2	Base-3RU, incl MUX/Data engine	\$ 2,554.00	\$ 2,554.00
054 Tech	2	Telecast	A2-882I-0-30V	Adder II 8-channel Intercom Transceiver I/O strip; houses 4 ea. ADDR-AUX modules, wet. Includes ADAP-AC30V-X4.	\$ 2,043.00	\$ 4,086.00
054 Tech					\$ -	\$ -
054 Tech					\$ -	\$ -
054 Tech	5	Telecast	ADDR-AUX-RTS	Intercom module RTS each end; for Adders, Vipers, and CopperHead G2/INF Base Stations, 2 channels each	\$ 315.00	\$ 1,575.00
054 Tech					\$ -	\$ -
054 Tech	1	Telecast	ADAP-AC-04	AC Power Adapter (Indoor); 120/240 VAC in; 4-pin XLR; 4A; 15 VDC	\$ 81.00	\$ 81.00
054 Tech					\$ -	\$ -
054 Tech	1	Telecast	ADAP-AC-04	AC Power Adapter (Indoor); 120/240 VAC in; 4-pin XLR; 4A; 15 VDC REDUNDANT POWER	\$ 81.00	\$ 81.00
054 Tech				HD-SDI and router control		
054 Tech	1	Telecast	V2FRAME-1	Viper II chassis, 16 slots, 3RU	\$ 592.00	\$ 592.00
054 Tech	1	Telecast	PS5000	Power supply module for Viper II,	\$ 575.00	\$ 575.00

RFP-ID /Room	Qty	Mfr.	Model #	Equipment Description	Customer Price	Ext. Customer Price
054 Tech	1	Telecast	TR6292-A	HD/SDI Video Rack mount HD/SDI bi-directional transceiver, WDM single fiber, 0 to -3dBm 1300nm output, -22dBm 1550nm input One bi-directional TR in each room different Wavelengths	\$ 2,124.00	\$ 2,124.00
054 Tech	1	Telecast	TX6080-A	NTSC Video + 4 Analog Audio (Line Level) Rack mount 8-channel audio multiplexer, transmitter, -7 dBm@1300 nm	\$ 1,064.00	\$ 1,064.00
054 Tech	1	Telecast	RX6080	Rack mount 8-channel audio receiver, demultiplexer; -4 to -30 dBm input	\$ 1,064.00	\$ 1,064.00
054 Tech	1	Telecast	TR5900-AA	10/100 Ethernet 10/100Base Ethernet rack mount module, dual fiber, single- or multimode; -10 dBm output and -30 dBm input @1300nm; SC dual	\$ 762.00	\$ 762.00
054 Tech	6	ADC	PPE2232-MVJT-BK	Patching Patch Panel, MVJT, Econ, 2 RU	\$ 829.00	\$ 4,974.00
054 Tech	20	ADC	B4V-STM	Patch Cord, HD ST Mid-Mid Blue 4'	\$ 14.00	\$ 280.00
054 Tech	6	ADC	BK6V-STS-B	Video Patch Cord w/ patch panel plug connector @ 1 end & BNC male connector on the other; 1.8m long.	\$ 14.00	\$ 84.00
054 Tech	8	Audio Acc	WEP-962-SH	2x48x2RU Audio Patchbay	\$ 843.00	\$ 6,744.00
054 Tech	20	ADC	G3B	Bantam Audio Patch Cord	\$ 16.00	\$ 320.00
054 Tech	1	ADC	PPH	Patch Cord Holder OPTION	\$ 24.00	\$ 24.00
054 Tech	1	BTX	PD-CAT624	Cat 6 Patch Panel, 24 Ports -110 Punched	\$ 93.00	\$ 93.00
054 Tech	20	Cables to Go	22801 - order 1 ea. 29003	Category 6 Patch Cable, 3 ft	\$ 8.00	\$ 160.00
054 Tech	4	Cables to Go	22807	Category 6 Patch Cable, 25 ft	\$ 16.00	\$ 64.00
				Decks		
054 Tech	5	CFE	D9	Tape Deck		
054 Tech	6	CFE	TBD	Beta Decks		
054 Tech	1	JVC	SR-HD1500US	Type 2 DVD (DVD2) Recorder	\$ 2,022.00	\$ 2,022.00
054 Tech	1	Middle Atlantic	RSH4S2RJVCXXX-C	Rack Mount Shelf with Clamp	\$ 83.00	\$ 83.00
				Network & Software		
054 Tech	1	Extreme Networks	16201	Summit X350-24t - 24 10/100/1000BASE-T	\$ 1,445.00	\$ 1,445.00
054 Tech	1	Stealth	SR-2501	Computer Type 2	\$ 2,224.00	\$ 2,224.00
054 Tech	1	Dell	TBD	General PC	\$ 479.00	\$ 479.00
054 Tech	1	Norton	Ghost	Ghost S/W	\$ 62.00	\$ 62.00
				Utility, KVM, Ethernet		
054 Tech	1	Middle Atlantic	RM-KB	1 SPACE (1 3/4") RACKMOUNT COMPUTER KEYBOARD WITH TOUCHPAD	\$ 653.00	\$ 653.00
054 Tech	1	Black Box	ACU5501A	KVM	\$ 641.00	\$ 641.00
				Interfaces & Extenders		
054 Tech	1	Telecast	V2FRAME-1	Interface to Sat Farm 303 W Colfax Viper II chassis, 16 slots, 3RU located at Sat Farm	\$ 592.00	\$ 592.00
054 Tech	2	Telecast	PS5000	Power supply module for Viper II, 120/240VAC input	\$ 575.00	\$ 1,150.00
054 Tech	1	Telecast	TX6292-A	Rack mount HD/SDI transmitter, 19.4Mbps to 1.5Gbps, -7.5 dBm 1300 nm output Sat Farm	\$ 1,188.00	\$ 1,188.00
054 Tech	1	Telecast	RX6292	Rack mount HDTV/SDI receiver, 19.4Mbps to 1.5Gbps, -2 to -22 dBm input range	\$ 1,188.00	\$ 1,188.00
054 Tech	2	Telecast	TR5900-AA	In existing MC Frame 10/100Base Ethernet rack mount module, dual fiber, single- or multimode; -10 dBm output and -30 dBm input @1300nm; SC dual	\$ 762.00	\$ 1,524.00
054 Tech	1	Black Magic	HDLEXT-DVI-DEMO	DVI Extender	\$ 217.00	\$ 217.00
054 Tech	1	Black Box	IC254A	USB-CAT5 USB Extender	\$ 353.00	\$ 353.00
				UPS		
054 Tech	0	APC	SMT1000RM2U	UPS for Router & Sync	\$ 502.00	\$ -
054 Tech	0	APC	SMT1000RM2U	UPS for Production Switcher	\$ 502.00	\$ -
				Racks		
054 Tech	27	Middle Atlantic	MW-VT	MRK/WRK Vent Top	\$ 15.00	\$ 405.00
054 Tech	27	Middle Atlantic	BB-G52-1	COPPER BUSS BAR,52SPX1"	\$ 27.00	\$ 729.00
054 Tech	6	Middle Atlantic	WL-60	Magnetic Work Light	\$ 20.00	\$ 120.00

**Denver 8 TV
Equipment**

RFP-ID /Room	Qty	Mfr.	Model #	Equipment Description	Customer Price	Ext. Customer Price
054 Tech	5	Middle Atlantic	SS	Sliding Shelf	\$ 41.00	\$ 205.00
054 Tech	27	Middle Atlantic	VRR-54	ADD.PR.54SPZRAIL, 10-32 THD	\$ 55.00	\$ 1,485.00
054 Tech	15	Middle Atlantic	EB1-CP12	12PC. EB1 Contract Pack	\$ 57.00	\$ 855.00
054 Tech	15	Middle Atlantic	VT1-CP12	12PC. VT1 Contract Pack	\$ 91.00	\$ 1,365.00
054 Tech	27	Middle Atlantic	PDT-2X1020	PD Thin, 2-20A CIR, 20 OUT, 1/2KO	\$ 141.00	\$ 3,807.00
054 Tech	1	Evertz		Training Requirements: Commissioning and Training - Travel and Expenses Included - 2 days	\$ 3,745.00	\$ 3,745.00
054 Tech	1	Ross		Commissioning and Training - Travel and Expenses Included - 1 day	\$ 2,804.00	\$ 2,804.00
054 Tech	1	Nverzion		Commissioning and Training - Travel and Expenses Included - 5 days	\$ 7,447.00	\$ 7,447.00
061 IDF				061 IDF		
061 IDF						
051 Edit 1				051 Edit 1		
051 Edit 1	1	RTS	KP12LKGRY-4F-USA	12 Talk/Listen Lever Keys, Fully Programmable. 1RU	\$ 1,962.00	\$ 1,962.00
051 Edit 1	1	CFE		Audio Monitor (AM1)		
051 Edit 1	1	Evertz	CP-1604e	Routing Switcher Control Panel (RS CP)	\$ 703.00	\$ 703.00
051 Edit 1	1	JVC	DT-R24L41DU	24-inch Professional Picture Monitor	\$ 2,500.00	\$ 2,500.00
051 Edit 1	1	CFE		Large Picture Monitor		
051 Edit 1	1	CFE		FCP Edit System		
051 Edit 1	1	CFE	Winsted	Desk		
051 Edit 1	1	DDI	Custom	Broadcast Service Panel	\$ 306.00	\$ 306.00
052 Edit 2				052 Edit 2		
052 Edit 2	1	RTS	KP12LKGRY-4F-USA	12 Talk/Listen Lever Keys, Fully Programmable. 1RU	\$ 1,962.00	\$ 1,962.00
052 Edit 2	1	CFE		Audio Monitor (AM1)		
052 Edit 2	1	Evertz	CP-1604e	Routing Switcher Control Panel (RS CP)	\$ 703.00	\$ 703.00
052 Edit 2	1	JVC	DT-R24L41DU	24-inch Professional Picture Monitor	\$ 2,500.00	\$ 2,500.00
052 Edit 2	1	CFE		Large Picture Monitor		
052 Edit 2	1	CFE		FCP Edit System		
052 Edit 2	1	CFE	Winsted	Desk		
052 Edit 2	1	DDI	Custom	Broadcast Service Panel	\$ 306.00	\$ 306.00
059 Edit 3				053 Edit 3		
059 Edit 3	1	RTS	KP12LKGRY-4F-USA	12 Talk/Listen Lever Keys, Fully Programmable. 1RU	\$ 1,962.00	\$ 1,962.00
059 Edit 3				Dolby 5.1		
059 Edit 3	1	Genelec	8020.LSE™Espresso	5.1 System - Five 8020s & one 7050B subwoofer	\$ 2,762.00	\$ 2,762.00
059 Edit 3	1	Evertz	CP-1604e	Routing Switcher Control Panel (RS CP)	\$ 703.00	\$ 703.00
059 Edit 3	1	Samsung	UN60D6000	60" Large LED Picture Monitor	\$ 2,077.00	\$ 2,077.00
059 Edit 3	1	CFE		FCP Edit System		
059 Edit 3	1	JVC	DT-R24L41DU	24-inch Professional Picture Monitor	\$ 2,500.00	\$ 2,500.00
059 Edit 3	1	Pioneer	BDP-V6000	Type 1 DVD Blu-Ray Disc Device (DVD1).	\$ 1,075.00	\$ 1,075.00
059 Edit 3	1	Middle Atlantic	RSH4S2R BDP-V6000-C	rack mount	\$ 112.00	\$ 112.00
059 Edit 3				Edit 3 Consoles		
059 Edit 3	1	Winsted	E4606	94" Digital Desk	\$ 1,757.00	\$ 1,757.00
059 Edit 3	3	Middle Atlantic	CHAIR-CF1-B	CONTOUR FREEDOM, GEL SEAT/ARMS, 15 YR WARRANTY	\$ 1,011.00	\$ 3,033.00
059 Edit 3	1	DDI	Custom	Broadcast Service Panel	\$ 306.00	\$ 306.00
060 VO				060 Voice Over		
060 VO	1	RTS	BKP-4	4 position desktop keypanel with full function intercom keys, alphanumeric call waiting window. Use with headset (A4M) or gooseneck microphone.	\$ 820.00	\$ 820.00
060 VO	1	TBD	TBD	RTS Ovderride	\$ 320.00	\$ 320.00
060 VO	1	Samsung	LN19C350D	19 inch Television	\$ 272.00	\$ 272.00
060 VO	2	Henry Engineering	MATCHBOX-HD	Bi-directional analog interface	\$ 180.00	\$ 360.00
060 VO	1	Studio Tech	Model 230	Announcer's Console	\$ 1,026.00	\$ 1,026.00
060 VO	1	CFE	CFE	Suspension Shock Mount		
060 VO	1	CFE	CFE	Microphone Boom, Black		
060 VO	1	CFE	CFE	Table Mount Base for O.C.White Mic Boom, Black		
060 VO	1	RDL	RU-SH1	Stereo Headphone Amplifier	\$ 127.00	\$ 127.00

**Denver 8 TV
Equipment**

RFP-ID /Room	Qty	Mfr.	Model #	Equipment Description	Customer Price	Ext. Customer Price
060 VO	1	RDL	WDG-1	Table Top Chassis for RU, ST and TX Series	\$ 82.00	\$ 82.00
060 VO	1	RDL	PS-24AS	24 VDC Switching Power Supply, 500 mA	\$ 19.00	\$ 19.00
060 VO	1	Beyer	421.022	DT100 Stereo Headphone, Gray, 400 Ohm	\$ 152.00	\$ 152.00
060 VO	1	Beyer	482.153	Cord with 1/4" Stereo Plug K100.07-3-0	\$ 31.00	\$ 31.00
060 VO	1	Evertz	CP-1604e	Routing Switcher Control Panel (RS CP)	\$ 703.00	\$ 703.00
060 VO	1	DDI	Custom	Broadcast Service Panel	\$ 306.00	\$ 306.00
Rooms 051 to 061 Sub-Total					\$	464,293.00

**Rooms 100 to 108
Studio Area**

101 Studio Technical Area						
Racks						
101 St Tech	3	US Rack	42U Active, UC1-4292-AA	racks that give a minimum of 28db of sound attenuation	\$ 6,212.00	\$ 18,636.00
Interface to Room 054						
10 channels RTS Intercom						
101 St Tech	1	Telecast	A2-B3-MD-RG-SW2	Base-3RU, incl MUX/Data engine	\$ 2,554.00	\$ 2,554.00
101 St Tech	2	Telecast	A2-8821-0-30V	Adder II 8-channel Intercom Transceiver I/O strip; houses 4 ea. ADDR-AUX modules, wet. Includes ADAP-AC30V-X4.	\$ 2,043.00	\$ 4,086.00
101 St Tech	5	Telecast	ADDR-AUX-RTS	Intercom module RTS each end; for Adders, Vipers, and CopperHead G2/INF Base Stations, 2 channels each	\$ 315.00	\$ 1,575.00
101 St Tech	1	Telecast	ADAP-AC-04	AC Power Adapter (Indoor); 120/240 VAC in; 4-pin XLR; 4A; 15 VDC	\$ 81.00	\$ 81.00
101 St Tech	1	Telecast	ADAP-AC-04	AC Power Adapter (Indoor); 120/240 VAC in; 4-pin XLR; 4A; 15 VDC REDUNDANT POWER	\$ 81.00	\$ 81.00
101 St Tech	1	Telecast	V2FRAME-1	HD-SDI and router control	\$ 592.00	\$ 592.00
101 St Tech	1	Telecast	PS5000	Viper II chassis, 16 slots, 3RU Power supply module for Viper II,	\$ 575.00	\$ 575.00
HD/SDI Video						
One bi-directional TR in each room different Wavelengths						
101 St Tech	1	Telecast	TR6292-E	Rack mount HD/SDI bi-directional transceiver, WDM single fiber, 0 to - dBm 1550nm DFB output, -22dBm 1310nm input	\$ 2,294.00	\$ 2,294.00
101 St Tech	1	Telecast	TX6080-A	NTSC Video + 4 Analog Audio (Line Level) Rack mount 8-channel audio multiplexer, transmitter, -7 dBm@1300 nm	\$ 1,064.00	\$ 1,064.00
101 St Tech	1	Telecast	RX6080	Rack mount 8-channel audio receiver, demultiplexer; -4 to -30 dBm input	\$ 1,064.00	\$ 1,064.00
101 St Tech	1	Telecast	TR5900-AA	10/100Base Ethernet rack mount module, dual fiber, single- or multimode; -10 dBm output and -30 dBm input @1300nm; SC dual	\$ 762.00	\$ 762.00
101 St Tech	3	Panasonic	AG-EC4GPJ	RCU	\$ 2,211.00	\$ 6,633.00
101 St Tech	3	Telecast	CHG3-BS-3200-95VD-NEU-RTS	Base Station vs 3200 series	\$ 6,358.00	\$ 19,074.00
101 St Tech	1	AJA	FS2	Dual Channel Universal 3G/HD/SD Audio/Video Frame Sync/Converter, 1RU	\$ 3,986.00	\$ 3,986.00
101 St Tech	3	Telecast	CHBR-PAN-AJ3-10	Base Station remote cable for Panasonic	\$ 162.00	\$ 486.00
101 St Tech	1	RTS	PS-20	Intercom Power Supply (ICOM PS)	\$ 773.00	\$ 773.00
101 St Tech	1	RTS	MCP1	Rack Mount Adapter	\$ 104.00	\$ 104.00
101 St Tech	1	Ross		Switcher Main Frame - Included		
Production Servers:						
Production Servers: For Video Playback and Record 1 in x 2 out, 18Hrs HD at Raid 0						
101 St Tech	1	Grass Valley	T2-iDDR-RAID	SD/HD pro AV intelligent video disk recorder	\$ 12,750.00	\$ 12,750.00
101 St Tech	1	Evertz	CP-2402E	Simple X-Y Routing Switch Control Panel (RS XY)	\$ 1,054.00	\$ 1,054.00

**Denver 8 TV
Equipment**

RFP-ID /Room	Qty	Mfr.	Model #	Equipment Description	Customer Price	Ext. Customer Price
101 St Tech	1	Tektronix	WVR-5200	3G/HD/SD Rasterizer for Camera Shading: 4 SDI Inputs (3G, HD and SD-SDI support on the same inputs-auto detect) Base unit includes HD, SD and Dual-Link signal formats support Option 3G required for 3G-SDI support	\$ 4,532.00	\$ 4,532.00
101 St Tech	1	Tektronix	VTSRACK-L1	Full rack (19), full depth, 1RU adapter (with 1.75 rack space) to fit one WVR5200, WVR5000, WVR4000, or SPG300	\$ 322.00	\$ 322.00
101 St Tech	1	TV Logic	LVM-172W	17-inch Professional Picture Monitor	\$ 2,071.00	\$ 2,071.00
101 St Tech	1	TV Logic	PRM-702A	Dual 7" HD/SD Multifformat LCD Rack Monitor	\$ 2,454.00	\$ 2,454.00
				Distribution Gear Card Frame (FR)		
101 St Tech	1	Ross	Dashboard	Configuration and Control Software		
101 St Tech	1	Ross	FBK-8321-CN	Distribution Gear Card Frame (FR)	\$ 626.00	\$ 626.00
101 St Tech	1	Ross	PS-8300	Power Supply - 150 Watt	\$ 380.00	\$ 380.00
101 St Tech	2	Ross	DEA-8205-R2	Type 1 Serial Equalizing Amp (SDA1)	\$ 351.00	\$ 702.00
101 St Tech	2	Ross	SEA-8203A-R2	Type 2 Serial Equalizing Amp (SDA2)	\$ 281.00	\$ 562.00
101 St Tech	0	Ross	TEA-8207-R2	Type 3 Serial Equalizing Amp (SDA3)	\$ 421.00	\$ -
101 St Tech	1	Ross	SEA-9203	Serial Distribution Amp (SDA)	\$ 316.00	\$ 316.00
101 St Tech	2	Ross	UDA-8705A-R2	Type 1 Analog Video Distribution Amp (VDA1)	\$ 197.00	\$ 394.00
101 St Tech	1	Ross	HDC-8222A-R2	Type 1 Digital to Analog Composite (DAC1)	\$ 1,812.00	\$ 1,812.00
101 St Tech	2	Ross	MUX-8258-4C-R2	Type 1 AES Audio Multiplexer (MUX1)	\$ 2,093.00	\$ 4,186.00
101 St Tech	2	Ross	DMX-8259-4C-R2C	Type 1 AES Audio Demultiplexer (DEMUX1)	\$ 1,952.00	\$ 3,904.00
101 St Tech	2	Ross	ADC-8733A	Component to Serial Digital Converter Type 2 (ADC2)	\$ 1,053.00	\$ 2,106.00
				Patching		
101 St Tech	1	ADC	PPI2232-MVJT	Patch Panel, MVJT, Econ, 2 RU	\$ 829.00	\$ 829.00
101 St Tech	6	ADC	B4V-STM	Patch Cord, HD ST Mid-Mid Blue 4'	\$ 14.00	\$ 84.00
101 St Tech	2	ADC	BK6V-STS-B	Video Patch Cord w/ patch panel plug connector @ 1 end & BNC male connector on the other; 1.8m long.	\$ 14.00	\$ 28.00
101 St Tech	1	Audio Acc	WEP-962-SH	2x48x2RU Audio Patchbay	\$ 843.00	\$ 843.00
101 St Tech	10	ADC	G3B	Bantam Audio Patch Cord	\$ 16.00	\$ 160.00
101 St Tech	2	ADC	MBNC-3	Conversion Adapter	\$ 12.00	\$ 24.00
101 St Tech		CFE	?	CFE Exisiting Final Cut Pro Ingest System: for video ingest and editing		
101 St Tech	1	CFE	D9	Tape Deck		
101 St Tech	1	CFE	TBD	DVD Burner		
102 St CR				102 Studio Control Room		
102 St CR	2	Samsung	520DX	52"Pro LCD Display Black (40 -47" replacement)	\$ 2,546.00	\$ 5,092.00
102 St CR	2	Chief	CHSMTR	Medium Display Tilt wall mount	\$ 141.00	\$ 282.00
102 St CR	1	Evertz	CP-1604e	Routing Switcher Control Panel (RS CP)	\$ 703.00	\$ 703.00
102 St CR	1	CFE	FCP	FCP System		
				Audio		
102 St CR	1	CFE	Soundcraft LX-II-24	AUDIO MIXER		
102 St CR						
102 St CR	1	SM PRO AUDIO	NANO PATCH	Volume Control	\$ 75.00	\$ 75.00
102 St CR	3	Henry Engineering	MATCHBOX-HD	Bi-directional analog interface	\$ 180.00	\$ 540.00
102 St CR	1	Henry Engineering	RACK SHELF	Mounts 3 units, w/ 2 filler panels	\$ 48.00	\$ 48.00
102 St CR	1	Wohler	AMP2-SDA	2-channel SDI, AES and analog audio monitor with metering	\$ 2,112.00	\$ 2,112.00
102 St CR	1	Apple	MC746LL/A	Apple Universal Dock	\$ 56.00	\$ 56.00
102 St CR	1	Crown	D75	2 CH Amplifier	\$ 786.00	\$ 786.00
102 St CR	1	Samsung	S22A200B	21.5" Ultra-Sharp Monitor	\$ 175.00	\$ 175.00
102 St CR				Character Generation Requirements:		
102 St CR				CFE HD (any upgrade path fro existing)		
102 St CR	1	Samsung	S22A200B	21.5" Ultra-Sharp Monitor	\$ 175.00	\$ 175.00
102 St CR	1	Chief	Fusion FTR	Desk Mount	\$ 213.00	\$ 213.00
102 St CR	1	JVC	DT-R17L4DU	17" Monitor	\$ 1,485.00	\$ 1,485.00
102 St CR	1	RTS	KP32GRY-4F	32 position keypad with menus and programming keypad, DSP functions, fluorescent displays, uses OPTIONAL MCP-90 microphone. 2RU	\$ 2,844.00	\$ 2,844.00

**Denver 8 TV
Equipment**

RFP-ID /Room	Qty	Mfr.	Model #	Equipment Description	Customer Price	Ext. Customer Price
102 St CR	4	RTS	KP12LKGRY-4F-USA	12 Talk/Listen Lever Keys, Fully Programmable. 1RU	\$ 1,962.00	\$ 7,848.00
102 St CR	6	Telex	PH-88	Lightweight	\$ 137.00	\$ 822.00
102 St CR	2	Sony	MDRNC500D	Headset	\$ 249.00	\$ 498.00
Production Control Consoles						
102 St CR	2	Middle Atlantic	VC-7219-DT34	VIEWPOINT BAY, 72"W, 19"D, F/R ACCESS PANELS, 34" DESKTOP	\$ 2,924.00	\$ 5,848.00
102 St CR	2	Middle Atlantic	VC-3619-DT34	VIEWPOINT BAY, 36"W, 19"D, F/R ACCESS PANELS, 34" DESKTOP	\$ 1,840.00	\$ 3,680.00
102 St CR	3	Middle Atlantic	VC-MM1X1	VIEWPOINT MONITOR MOUNT, 1 VESA MOUNT, ARTICULATING, BLACK	\$ 208.00	\$ 624.00
102 St CR	2	Middle Atlantic	VC-SP1-19	VIEWPOINT SIDE PANEL PAIR, STYLE 1, FOR 19" DEEP BAYS	\$ 427.00	\$ 854.00
102 St CR	4	Middle Atlantic	VC-TR2419-4	Viewpoint Desktop Turret Rack, 24"W, for 19"D Bay 4 Rack Spaces	\$ 532.00	\$ 2,128.00
103 Studio						
103 Studio	3	Panasonic	AG-HPX370	300 Series Cameras	\$ 5,930.00	\$ 17,790.00
103 Studio	3	Panasonic	SHAN-TM700	Mounting plate	\$ 414.00	\$ 1,242.00
103 Studio	3	Panasonic	MS-01	Rear lens controls	\$ 1,532.00	\$ 4,596.00
103 Studio	3	Panasonic	BTLH910GJ	9" HD viewfinder	\$ 2,953.00	\$ 8,859.00
103 Studio	3	Panasonic	YOKE910	Mounting yoke for viewfinder	\$ 407.00	\$ 1,221.00
103 Studio	3	Telecast	CHG3-CAM-3200-NEU-AB	Camera Unit	\$ 4,775.00	\$ 14,325.00
103 Studio	3	Telecast	CHCR-PAN-AJ3-10-0	Copperhead camera interface cable for Pansonic	\$ 179.00	\$ 537.00
103 Studio	3	Telecast	CAXXX-50-S311M-NOC2P-NOC2P	Cable assembly 50 ft. of SMOTE311MHybrid OpticalCon Duo	\$ 911.00	\$ 2,733.00
103 Studio	3	Telecast	CH3BS-3200-BO-GPI-DAT	Breakout for Data and Tally	\$ 86.00	\$ 258.00
103 Studio	3	Telecast	CHG3-PW-95V-EGG-AB	CopperHead G32oo Power Wafer Camera Power Adapter	\$ 1,371.00	\$ 4,113.00
Intercom						
103 Studio	2	RTS	BP-319 A4F	1 Channel portable metal backpack w/call light, programmable mic kill detect and tone alert, dynamic mic only, 3pin m/f XLR loop through connectors. (A4F).	\$ 228.00	\$ 456.00
103 Studio	2	RTS	PS-15	1 amp power supply for 15 stations, features 2 channel operation one "wet" channel at 24vdc and one "dry" channel w/o voltage. Can be coupled together for increased powering capability. 1RU by 1/2 rack wide.	\$ 365.00	\$ 730.00
103 Studio	2	David Clark	H8532	Dual Muff	\$ 291.00	\$ 582.00
103 Studio	2	Canare	StarQuad	Mic Cable - 25 ft Red	\$ 88.00	\$ 176.00
Stage Announce						
103 Studio	2	JBL	CONTROL 5	Compact Size Two-Way, 6.5" Low Frequency Speaker	\$ 244.00	\$ 488.00
103 Studio	1	JBL	MTC-52	Ceiling-Mount Bracket, Polymer Ball and Clamp Design,	\$ 112.00	\$ 112.00
103 Studio	1	Crown	D75	2 CH Amplifier	\$ 786.00	\$ 786.00
103 Studio	2	DDI	Custom	Broadcast Service Panel	\$ 306.00	\$ 612.00
Studio Truss and Dimmer Package						
103 Studio	1	Barbizon		DIMMING & CONTROL		
103 Studio	1	Barbizon		20 x 41 TRUSS GRID & CURTAIN TRACK		
103 Studio	1	Barbizon		STUDIO DRAPERY		
103 Studio	1	Barbizon		DISTRIBUTION		
103 Studio	1	Barbizon		20' Hard Cyc Green Screen (West Wall)		
103 Studio	1	Barbizon		INSTALLATION AND SERVICES		
103 Studio	1	Barbizon		Total for Studio Truss and Dimmer Package	\$ 82,357.00	\$ 82,357.00
Rooms 100 to 108 Sub-Total					\$	283,420.00
SUBTOTAL					\$	747,713.00

**Denver 8 TV
Equipment**

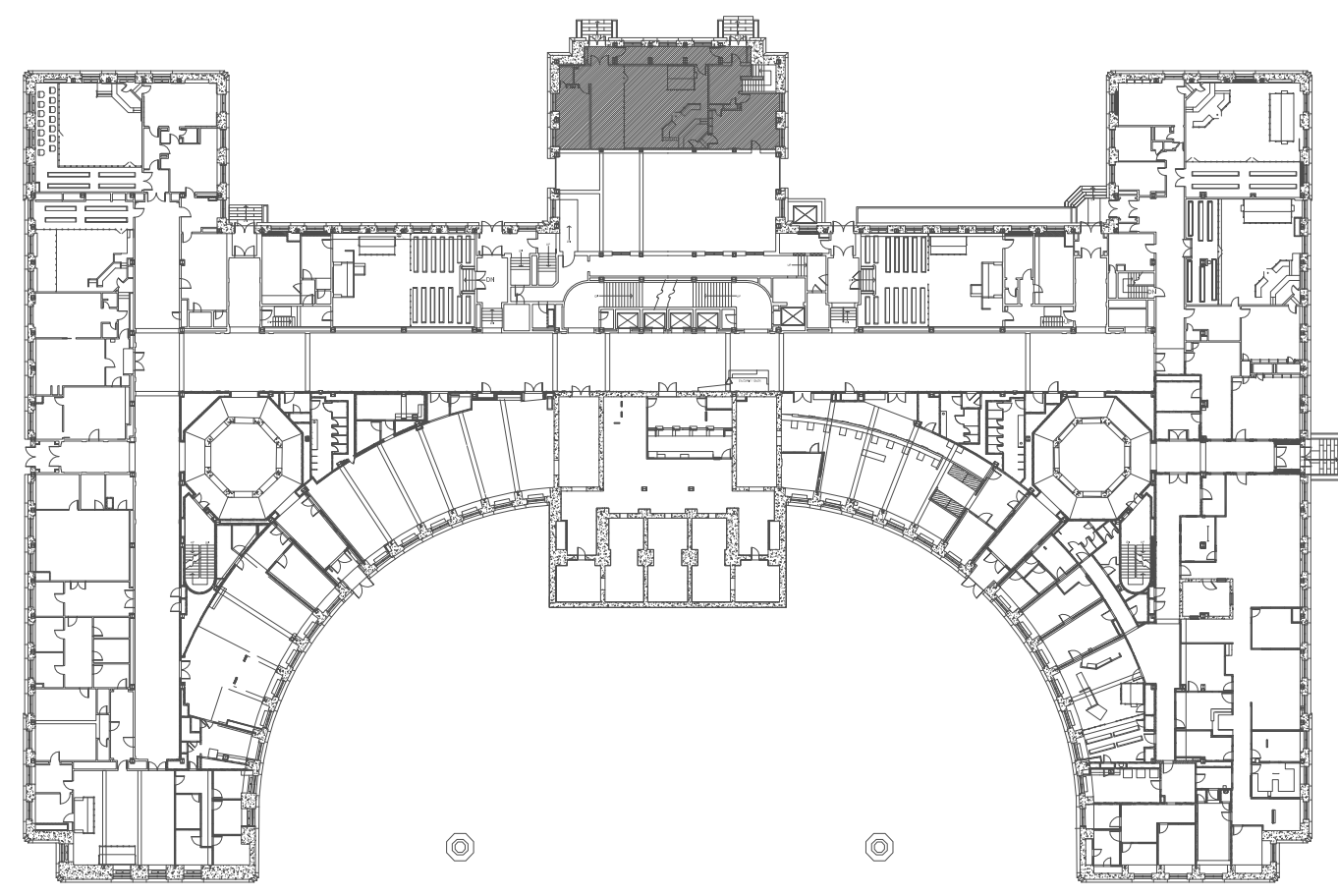
RFP-ID /Room	Qty	Mfr.	Model #	Equipment Description	Customer Price	Ext. Customer Price
Delete						
059 Edit 3	-2	Middle Atlantic	VC-4819-DT34	VIEWPOINT BAY, 24"W, 19"D, F/R ACCESS PANELS, 34" DESKTOP	\$ 2,333.00	\$ (4,666.00)
059 Edit 3	-2	Middle Atlantic	VC-3619-DT34	VIEWPOINT BAY, 36"W, 19"D, F/R ACCESS PANELS, 34" DESKTOP	\$ 1,840.00	\$ (3,680.00)
059 Edit 3	-2	Middle Atlantic	VC-W2219-DT34	VIEWPOINT WEDGE, 22 DEGREE, 19"D, 34" DESKTOP	\$ 445.00	\$ (890.00)
059 Edit 3	-2	Middle Atlantic	VC-SP1-19	Viewpoint Side Panel Pair, Design 1, for 19" Deep Bays	\$ 427.00	\$ (854.00)
059 Edit 3	-2	Middle Atlantic	VC-TR2419-4	Viewpoint Desktop Turret Rack, 24"W, for 19"D Bay 4 Rack Spaces	\$ 532.00	\$ (1,064.00)
059 Edit 3	-5	Middle Atlantic	VC-MM1X1	Viewpoint Monitor Mount, 1 Vesa Mount, Articulating, Black	\$ 208.00	\$ (1,040.00)
102 St CR	-1	Ross	CPS-1016-001	CrossOver 16 1M/E Live Production Switcher with Source and Keyer Mnemonics	\$ 14,358.00	\$ (14,358.00)
102 St CR	-2	Apantac	DL-4+12	Accepts 4 Multimedia (DVI-D, VGA and, with optional adapters, HDMI with HDCP Support, YPbPr, Composite, YC) inputs and 12 Broadcast (Composite, SD / HD 3G SDI, auto detect) inputs . 48 GPI for tally/presets. RS232 for 3rd party interface. 30 internal presets. Supports AXP API. Built-in CATx extenders. Output up to 1600x1200 / 1920x1080 / 1920x1200 / 2048x1080 @ 50/60Hz. 2 RU. With standard redundant power supplies.	\$ 8,712.00	\$ (17,424.00)
102 St CR	-2	Apantac	SPP	Simple Presets Panel. 8 Configurable & Relegendable backlighted buttons. Connects to the control board GPI input port (Dsub 9) of any Tahoma series multiviewer. Magnetic base with mounting plate. Comes with 5 VDC power supply	\$ 139.00	\$ (278.00)
102 St CR	-2	Apantac	HDMI Adapter	Optional HDMI Adapter for DE and DL Series - One per input	\$ 28.00	\$ (56.00)
102 St CR	-2	Apantac	SDI-OUT	HD-SDI Output Option for LE, LX, LI, DE and DL series. One HD-SDI out per module (HD -SDI copy of the last HDMI/DVI output). Supports 1080i50 and 720p50 (when DVI output is set set for 1080p50 and 720p50, respectively) - Order with the multiviewer	\$ 277.00	\$ (554.00)
102 St CR	-2	Apantac	UIM	Universal Interface Module - Embedded PC. Small footprint router protocol translator that acts as a bridge between the Tahoma family of multiviewers and other third party router, tally and UMD protocols. Supports TCP/IP, UDP and Serial protocols. Also used for running the SNMP Proxy agent for the multiviewers. Also required	\$ 745.00	\$ (1,490.00)
102 St CR	-2	Apantac	HDMI-1-R	HDMI Receiver over CAT 5e/6 up to 115 feet (35 meters) at 1920x1080p. Built-in EQ for image quality adjustment. HDMI 1.3 compliant.	\$ 88.00	\$ (176.00)
102 St CR	-1	360 Systems	DCEM-3000	Digicart/E Network Audio Re/Play	\$ 3,707.00	\$ (3,707.00)
102 St CR	-1	360 Systems	DCEM-PC-320	Full Function Remote Control	\$ 636.00	\$ (636.00)
102 St CR	-3	Comrex	DH30	Digital Telephone Hybrid - Room 102	\$ 1,624.00	\$ (4,872.00)
102 St CR	-1	Harris	INSTOXTH3100	Titleone XT-H SD/HD Character Generator	\$ 12,660.00	\$ (12,660.00)
102 St CR	-1	Harris	INSTO-OP-WEB	Title One Web Training	\$ 724.00	\$ (724.00)
103 Studio	-1	RTS	TT-16	16 channel synthesized wireless IFB transmitter with 3pin XLR input, 1/4" unbalanced line level signal output jack. Audiocom/Radiocom/RTS TW compatible.	\$ 665.00	\$ (665.00)
103 Studio	-3	TBD	TR-16	16 channel synthesized wireless talent receiver. Uses two AA batteries.	\$ 223.00	\$ (669.00)
103 Studio	-1	RTS	RM-S	Single rack mount for 1/2 rack wireless components - RE-2, FMR-500, ST-300, and TT-16.	\$ 35.00	\$ (35.00)
103 Studio	-5	TBD	CES-2	Complete earset - includes RTV-04,CMT-98, ET-4. 125 ohm, 5' (1.5M) cord, and 1/8" plug.	\$ 53.00	\$ (265.00)

**Denver 8 TV
Equipment**

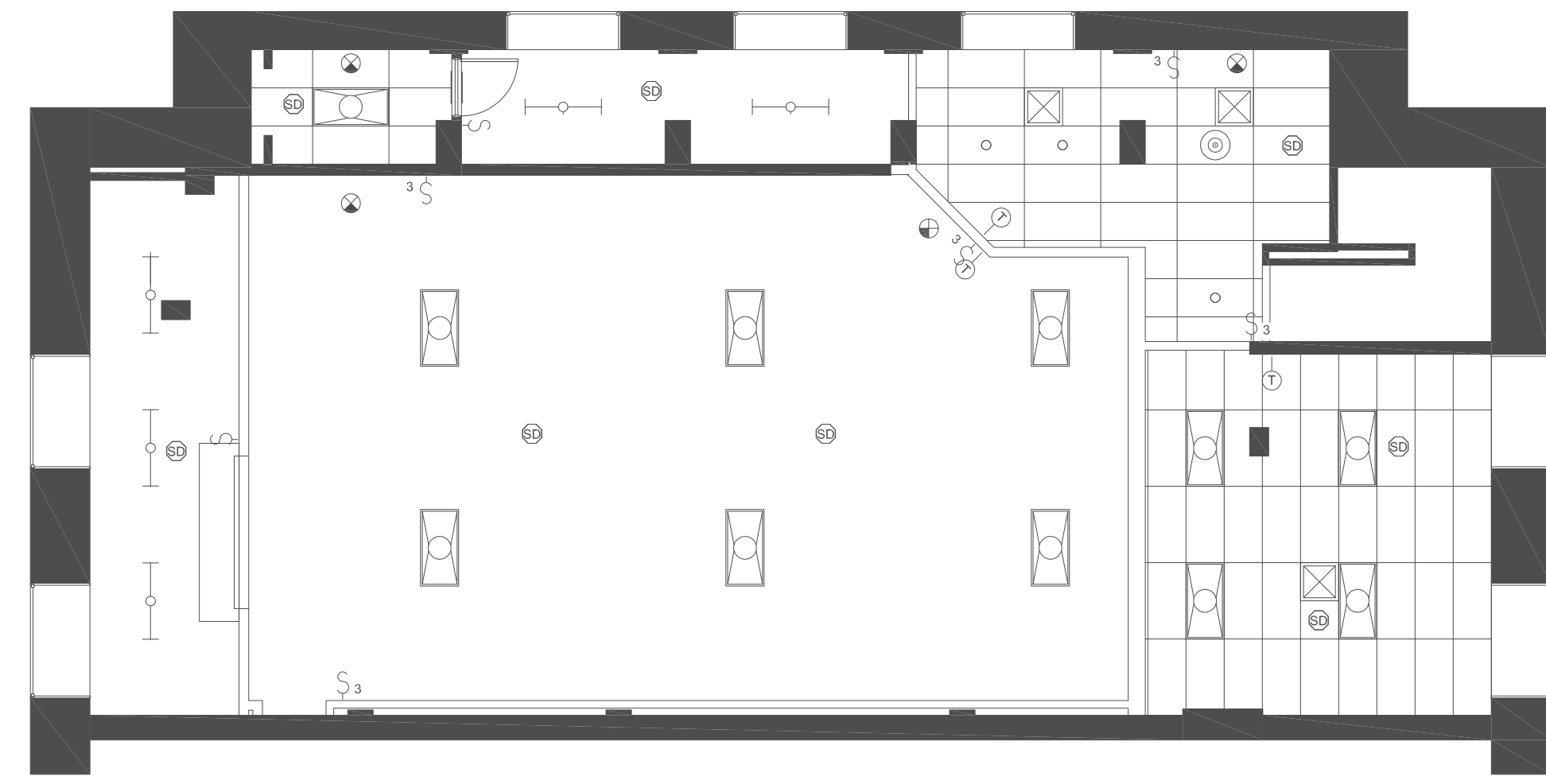
RFP-ID /Room	Qty	Mfr.	Model #	Equipment Description	Customer Price	Ext. Customer Price
103 Studio	-1	RTS	TW-A	Telescoping 1/4 wave replacement antenna for ST-200, ST-300.	\$ 21.00	\$ (21.00)
054 Tech	-27	Middle Atlantic	VRK-40-31HLRD	Rack	\$ 802.00	\$ (21,654.00)
054 Tech	-27	Middle Atlantic	MW-VRD-40	Rack Door	\$ 108.00	\$ (2,916.00)
054 Tech	-6	Middle Atlantic	SPN-40-312	Side Panels	\$ 395.00	\$ (2,370.00)
054 Tech	-1	Samsung	B1940ER	19" LCD Monitor/VGA Input	\$ 201.00	\$ (201.00)
Deletions Sub-Total					\$	(97,925.00)
Add						
051 Edit 1	2	Genelec	8030B	Near Field Speakers	\$ 619.00	\$ 1,238.00
051 Edit 1	2	Genelec	8000-425-B	Speaker desk Stands	\$ 79.00	\$ 158.00
52 Edit 1	2	Genelec	8030-480B	8030 plate for desk stands	\$ 38.00	\$ 76.00
052 Edit 2	2	Genelec	8030B	Near Field Speakers	\$ 619.00	\$ 1,238.00
052 Edit 2	2	Genelec	8000-425-B	Speaker desk Stands	\$ 79.00	\$ 158.00
53 Edit 2	2	Genelec	8030-480B	8030 plate for desk stands	\$ 38.00	\$ 76.00
051 Edit 1	1	Sony	SRPX100	Analog Audio Mixer 1RU	\$ 531.00	\$ 531.00
052 Edit 2	1	Sony	SRPX100	Analog Audio Mixer 1RU	\$ 531.00	\$ 531.00
059 Edit 3	1	Sony	SRPX100	Analog Audio Mixer 1RU	\$ 531.00	\$ 531.00
102 St CR	2		CFE?	Speakers	\$ 2,112.00	\$ 4,224.00
102 St CR	2	Omni Mount	30.0WB-IFK BLACK	Speaker Wall Mounts	\$ 47.00	\$ 94.00
102 St CR	1	Ross	C1-116-001	Carbonite 1 One MLE Live Production Switcher. 16 Input 1 MLE Rack Frame Processing Engine and 16 Source Button 1 MLE Panel including all Standard System boards.	\$ 18,348.00	\$ 18,348.00
102 St CR	1	Ross	CPS-INDESK16	In Desk secure mounting kit for the CrossOver 16 and Carbonite 1 Panels	\$ 319.00	\$ 319.00
102 St CR	1	Ross	CPS-INDESK16	Redundant Power for Carbonite 1 Frame and Panel	\$ 798.00	\$ 798.00
102 St CR	1	Ross	Carbonite 16 1ME	Carbonite 16 1ME	\$ 18,352.00	\$ 18,352.00
102 St CR	1	Comrex	STAC VIP	Digital Telephone Hybrid - Room 102	\$ 4,070.00	\$ 4,070.00
102 St CR	1	Samsung	S20A350B	20" LED monitor, 1600 X 900, 250 brightness, 5m, VGA, DVI & composite inputs	\$ 168.00	\$ 168.00
102 St CR	1	Harris	INSG5XT3100	Inscriber G5 XT production graphics system, featuring G-Scribe, media store, integrated clip playback and 2D DVE	\$ 26,061.00	\$ 26,061.00
102 St CR	1	Harris	INSG5XT2C	Second channel option for Inscriber G5 XT. Includes Altitude Express IO board, NVIDIA GPU, and required hardware.	\$ 7,444.00	\$ 7,444.00
055 MC	1	Harris	INSG5XT3100	Inscriber G5 XT production graphics system, featuring G-Scribe, media store, integrated clip playback and 2D DVE	\$ 26,061.00	\$ 26,061.00
055 MC	1	Harris	INSG5XT2C	Second channel option for Inscriber G5 XT. Includes Altitude Express IO board, NVIDIA GPU, and required hardware.	\$ 7,444.00	\$ 7,444.00
055 MC	1	Harris	G5XT-QS	1-DAY ONSITE G5 XT QUICK START COMMISSIONING G5XT-QS	\$ 1,317.00	\$ 1,317.00
055 MC	2	Harris	G5XT-OPS-WEB	4 HOUR ONLINE TRAINING SESSION FOR G5 XT SYSTEMS G5XT-OPS-WEB	\$ 639.00	\$ 1,278.00
103 Studio	3	Telex	PH-88	Lightweight Headset	\$ 137.00	\$ 411.00
101 St Tech	2	TBD	TBD	ARCHIVE RAID - 8TB - NAS	\$ 2,000.00	\$ 4,000.00
101 St Tech	2	TBD	TBD	ARCHIVE RAID - 8TB - NAS - INTERFACE	\$ 1,000.00	\$ 2,000.00
102 St CR	2	Dorough	40-A	loudness meter	\$ 405.00	\$ 810.00
102 St CR	1	Dorough	40-B2	Custom Desktop Box for Two 40-A Meters	\$ 103.00	\$ 103.00
101 St Tech	3	Telecast	CHG3-CAM-3200-2 MX-AB-AB	CopperHead G3200 camera unit, 2 SM fibers, MX Swivel, Anton/Bauer mount both sides	\$ 5,524.00	\$ 16,572.00
101 St Tech	3	Telecast	CHG3-BS-3200-2STRTS	CopperHead G3200 Base Station, dry fiber only, two ST connectors. Reqs 12VDC power supply (ADAP-AC-04). RTS Intercom	\$ 4,835.00	\$ 14,505.00
101 St Tech	3	Telecast	ADAP-AC-04-US	iAnCte Prfoawcee.r Adapter (Indoor); Input: 120/240 VAC; AC plug: Type B (three-prong North America).	\$ 81.00	\$ 243.00
101 St Tech	3	Telecast	CHCR-PAN-AJ3-10-0	Camera remote cable for Panasonic AJ3-style cameras (using RC10-control), such as HDX900, HPX500/2000/2700/3000/3700	\$ 179.00	\$ 537.00

**Denver 8 TV
Equipment**

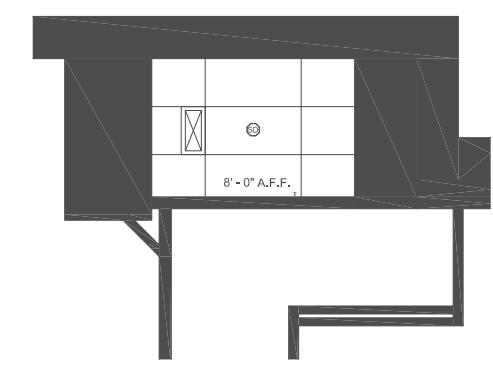
RFP-ID /Room	Qty	Mfr.	Model #	Equipment Description	Customer Price	Ext. Customer Price
101 St Tech	3	Telecast	CHBR-PAN-AJ3-10	Base station remote cable for Panasonic AJ3-style remotes, such as AJRC10G.	\$ 162.00	\$ 486.00
101 St Tech	3	Telecast	CH3BS-3200-BO-GP I-DATA	CopperHead 3200 Base Station Breakout Cable	\$ 86.00	\$ 258.00
101 St Tech	3	Telecast	CH3BA-DB25-I-5XL3F	CopperHead 3200 Base Station Audio Input Breakout Cable: DB25 to 5 XLR3F.	\$ 213.00	\$ 639.00
101 St Tech	3	Telecast	CH3BA-DB25-O-2XL3M	OPTIONAL CopperHead 3200 Base Station Audio Output Breakout Cable: DB25 to 2 XLR3M.	\$ 145.00	\$ 435.00
101 St Tech	3	Telecast	CAXXX-3-T4S-MX4P-ST4	Cable Assembly, Breakout, no reel , 3 feet, (0.9 m)of TFS Single Mode Tac4 cable: End #1: MX4 MiniExp Plug. End #2: 4 ST Plugs.	\$ 839.00	\$ 2,517.00
101 St Tech	1	Telecast	CASMM-330-T4S-MX4P-MX4P	Cable Assembly on SM reel w/MX hub door, 330 feet, (100.6 m) of TFS Single Mode Tac4 cable: End #1 (hub) : MX4 MiniExp Plug. End #2 (loose) : MX4 MiniExp Plug.	\$ 2,565.00	\$ 2,565.00
101 St Tech	3	Telecast	CAXXX-75-T4S-MX4P-MX4P	Cable Assembly, no reel , 75 feet, (22.9 m) of TFS Single Mode Tac4 cable: End #1: MX4	\$ 1,465.00	\$ 4,395.00
101 St Tech	2	Ross	LDP-8242-R2	Multi-Definition Embedded Loudness Processor with 4 Wide Rear Module, Linear Acoustic AEROMAX	\$ 5,099.00	\$ 10,198.00
101 St Tech	1	Ross	FBK-8321-CN	Distribution Gear Card Frame (FR)	\$ 626.00	\$ 626.00
101 St Tech	1	Ross	PS-8300	Power Supply - 150 Watt	\$ 380.00	\$ 380.00
102 St Tech	3	Anton Bauer	Tandem 150	150 watt power supply and battery charger (includes QR-TM / PSU 150)	\$ 797.00	\$ 2,391.00
054 Tech	27	Middle Atlantic	MRK-3731	Rack with rear door	\$ 616.00	\$ 16,632.00
054 Tech	6	Middle Atlantic	SPN-40-312	Side Panels	\$ 383.00	\$ 2,298.00
054 Tech	1	Samsung	S20A350B	20" LED monitor, 1600 X 900, 250 brightness, 5m, VGA, DVI & composite inputs	\$ 168.00	\$ 168.00
Additions Sub-Total					\$	203,684.00
Equipment Net TOTAL					\$	853,472.00



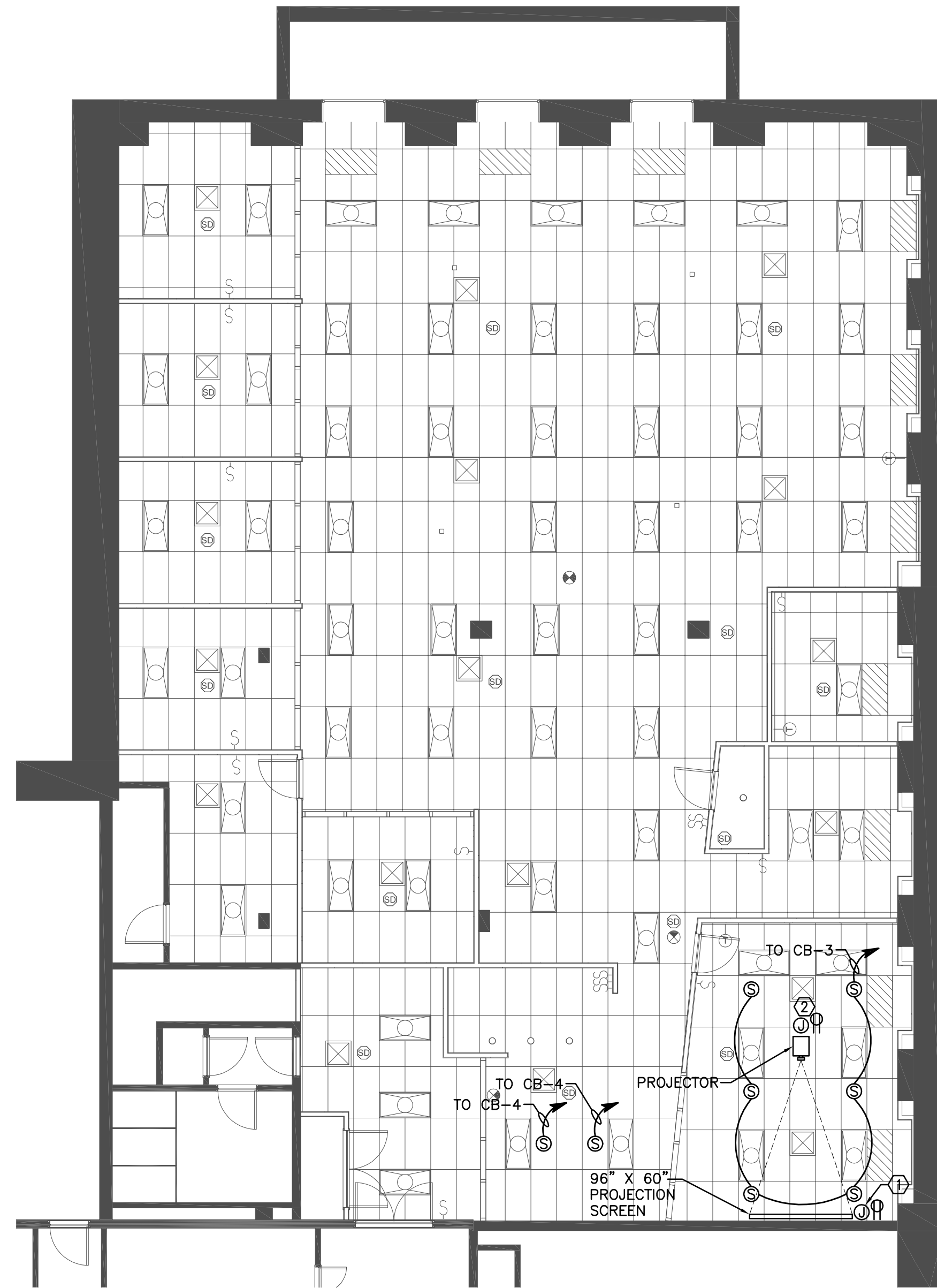
LEVEL 1 KEY PLAN
SCALE: 1/8" = 1'-0"



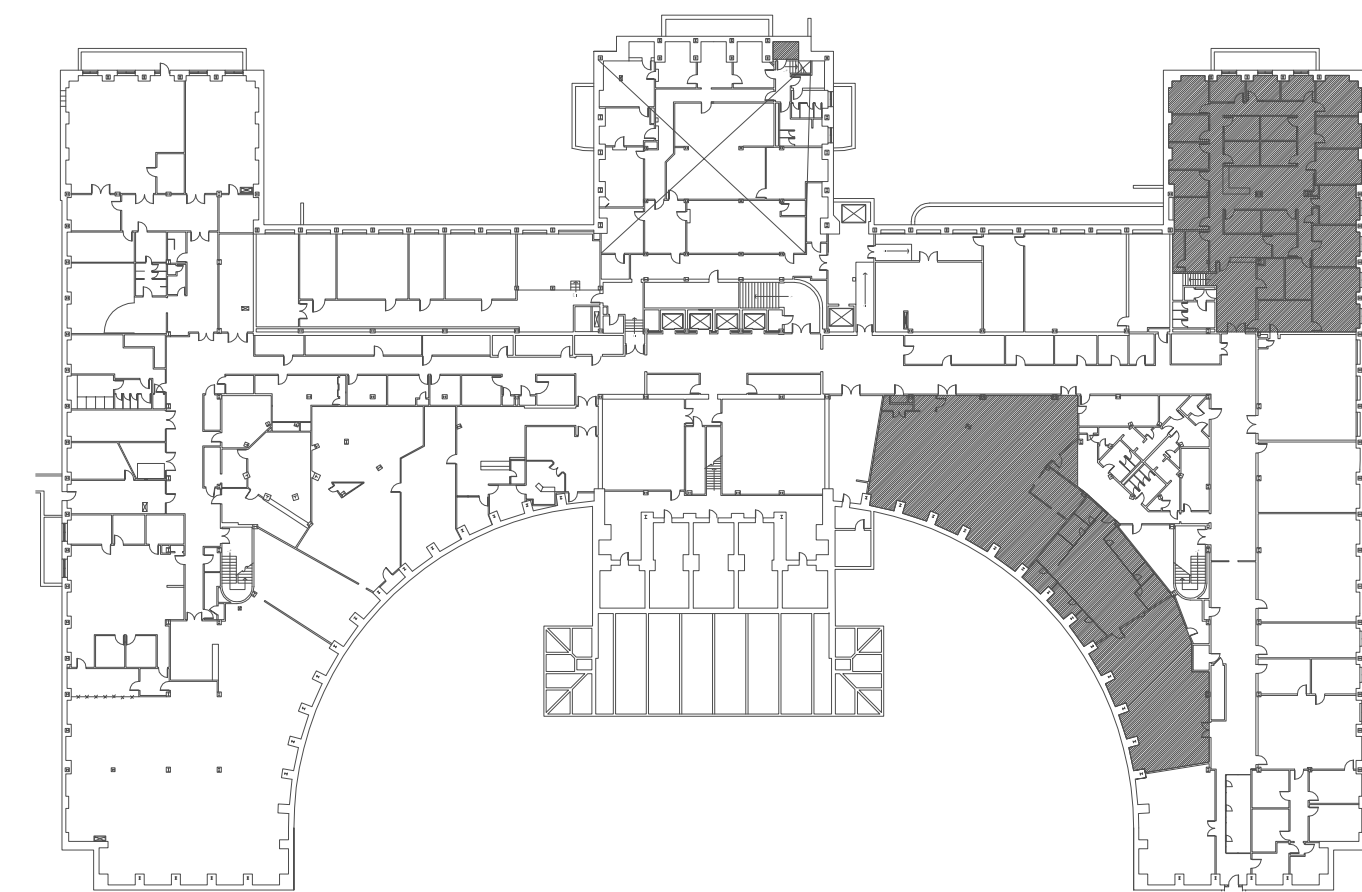
4 STUDIO SPACE FLOOR RCP
SCALE: 1/8" = 1'-0"



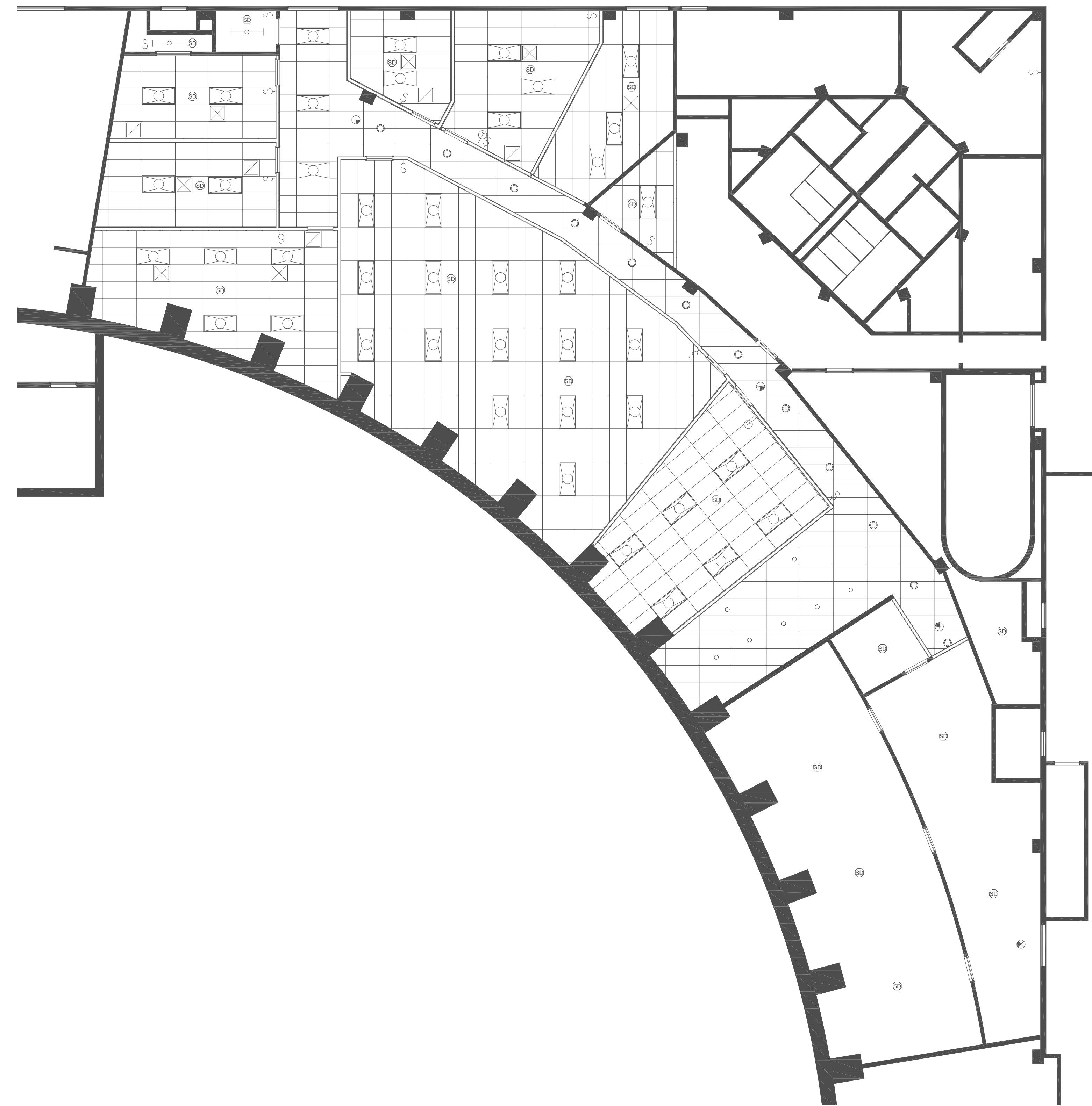
3 MAKEUP ROOM FLOOR RCP
SCALE: 1/8" = 1'-0"



2 OFFICE SPACE FLOOR RCP
SCALE: 1/8" = 1'-0"



LOWER LEVEL KEY PLAN
SCALE: 1/8" = 1'-0"



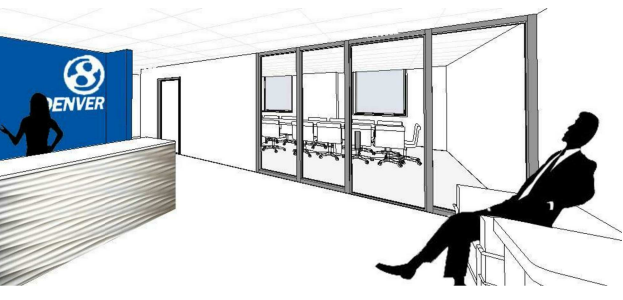
1 CONTROL-EDIT-TECH SPACE RCP
SCALE: 1/8" = 1'-0"

AUDIO VISUAL EQUIPMENT
LEGEND

- ⊕ J-BOX LOCATED ABOVE CEILING
- ⊙ CEILING MOUNTED SPEAKER

SHEET KEY NOTES:

1. PROVIDE 6 FOOT WHIP FROM J-BOX FOR PROJECTOR SCREEN POWER.
2. PROVIDE 6 FOOT WHIP FROM J-BOX FOR PROJECTOR POWER.



Denver 8 Relocation

Date	Description	Date Issued
1	Revision 1	08-15-11
2	CCD #3	10-25-11

Technology Plus
INCORPORATED
COMMUNICATIONS TECHNOLOGY PLANNING
Aurora, Colorado 80014
Ph: 303-340-8228
Fax: 303-340-8233

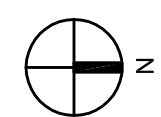
HUMPHRIES POLI ARCHITECTS
All reports, plans, specifications, computer files, field data, notes and other documents and instruments prepared by the Architect as instruments of service shall remain the property of the Architect. The Architect shall retain all common law, statutory and other reserved rights, including copyright therein.

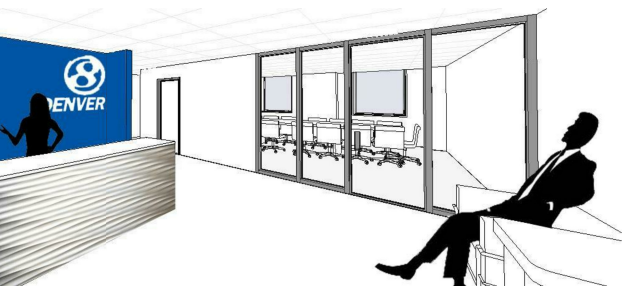
AUDIOVISUAL
REFLECTED CEILING
PLANS

100% Construction Documents
AUGUST 2, 2011

PROJECT No.	PROJECT MNGR	DRAWN BY	CHECKED BY
30033	AA	BC	RB/HS

SHEET No.
TA3.01





Denver 8 Relocation

LEGEND:

- XF = FIBER OPTIC
- X = NUMBER OF FIBER STRANDS
- C & CB = CITY AND COUNTY BUILDING

SHEET KEY NOTES:

1. NUMBER OF CAT6 CABLES AS SHOWN ROUTED AND TERMINATED IN IDF ROOM 03.
2. (1) CAT6 CABLE CEILING MOUNTED FOR WIRELESS ACCESS POINT (WAP) ROUTED AND TERMINATED IN IDF ROOM 03. LEAVE 20' SERVICE COIL.
3. NOT USED.
4. NUMBER OF CAT6 CABLES AS SHOWN. ROUTE CABLES TO EQUIPMENT CABINETS. VERIFY TERMINATION LOCATIONS AT CABINET WITH OWNER. ROUTE AND TERMINATE IN IDF ROOM 03.
5. 12-STRAND SM FIBER BETWEEN TECH ROOM 101 AND STUDIO CB-2 BOX ON WEST WALL. VERIFY TERMINATION LOCATION WITH OWNER. ALSO SEE SHEET TAZ.01 FOR CB-2 DETAIL.
6. NUMBER OF CAT6 CABLES AS SHOWN PER DESK LOCATION ROUTED THROUGH POWER POLE. SEE CAT6 CABLE NOTES THIS SHEET FOR SPECIFIC ROUTING OF CABLING.
7. NUMBER OF CAT6 CABLES AS SHOWN. SEE CAT6 CABLE NOTES THIS SHEET FOR SPECIFIC ROUTING OF CABLING.
8. COMBINATION POWER/AV/TELECOM FLOOR BOX WITH (2) CAT6 CABLES. SEE CAT6 CABLE NOTES THIS SHEET FOR SPECIFIC ROUTING OF CABLING.
9. (1) CAT6 CABLE CEILING MOUNTED FOR WIRELESS ACCESS POINT (WAP). ROUTE CABLE TO IDF ROOM 061. CITY AND COUNTY NETWORK. LEAVE 20' SERVICE COIL.
10. NOT USED.
11. (1) RG-6 COAX CABLE FOR CEILING MOUNTED FLAT PANEL. ROUTE CABLE TO IDF ROOM 03.
12. (3) RG-6 COAX CABLE FOR WALL MOUNTED FLAT PANELS. ROUTE CABLE TO ROOM 061.
13. 4-STRANDS MM FIBER TERMINATED ON LC CONNECTORS ROUTED TO TECH ROOM 054. VERIFY TERMINATION LOCATION AT CABINETS WITH OWNER.
14. NOT USED.

SHEET KEY NOTES (CON'T):

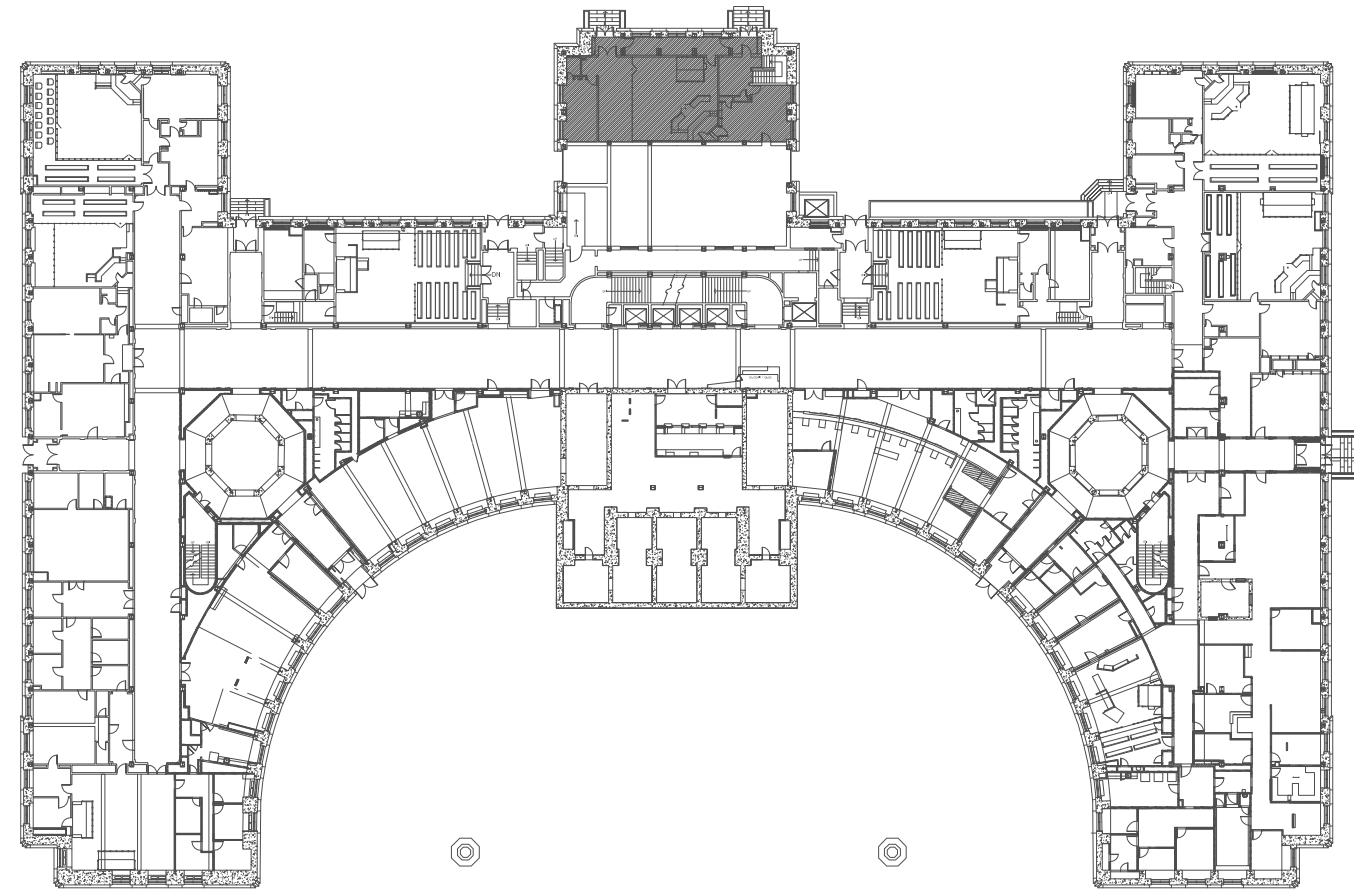
15. (3) CAT6 CABLES TERMINATED IN A 4-PORT BISCUIT (DETAIL 12 ON TCS.01). ONE CAT 6 CABLES SHALL ROUTE TO 061 FOR CONNECTION TO DENVER LAN. (2) CAT 6 CABLES SHALL BE TERMINATED IN BISCUIT WITH A FEMALE RJ-45. OPPOSITE END OF CABLE SHALL BE ABLE TO REACH OPPOSITE END OF ROW WITH 10'-0" SLACK. DO NOT TERMINATE THIS END.
16. 12-STRAND SM FIBER BETWEEN TECH ROOM 054 AND EXISTING CONTROL AREA ROOM. ROUTE FROM TECH 054 SHALL FOLLOW SAME PATHWAY AS CAT6 CABLE TO IDF 061 THEN PASS THROUGH TO VERTICAL SHAFT AREA. IF POSSIBLE USE EXISTING COMMUNICATION PATHWAY.
17. (3) CAT6 CABLES ROUTED AND TERMINATED IN A SURFACE MOUNT 4-PORT BOX MOUNTED UNDER TABLE. (1) CAT6 CABLE TO IDF 061. (2) CAT6 CABLES TO TECH 054. VERIFY TERMINATION LOCATION IN TECH 054 WITH OWNER.
18. FURNISH AND INSTALL (3) 4' CONDUIT SLEEVES WITH BUSHINGS FOR ROUTING OF COMMUNICATION CABLING AS SHOWN ON DRAWING. LOCATION OF SLEEVES MAY NEED TO BE ADJUSTED DUE TO CONGESTION IN CEILING.
19. NOT USED.
20. (1) RG-6 COAX CABLE AT AV CONSOLIDATION BOX. ROUTE CABLE TO IDF ROOM 03.
21. (1) RG-6 COAX CABLE FOR WALL MOUNTED FLAT PANEL. ROUTE CABLE TO IDF ROOM 061.
22. OUTLETS TO BE MOUNTED AS HIGH AS POSSIBLE ON WALL.
23. (1) CEILING MOUNTED CAT6 CABLE FOR COMMUNICATION CABLING AS SHOWN ON DRAWING. LOCATION OF SLEEVES MAY NEED TO BE ADJUSTED DUE TO CONGESTION IN CEILING.
24. (1) RG-6 COAX CABLE AT AV CONSOLIDATION BOX. ROUTE CABLE TO IDF ROOM 061.
25. (4) CAT6 CABLES TERMINATED ABOVE CEILING FOR FUTURE CONNECTIVITY. LEAVE 20' SERVICE COIL ABOVE CEILING FOR FUTURE ROUTING.
26. (1) RG-6 COAX CABLE. ROUTE CABLE TO IDF ROOM 061.

SHEET KEY NOTES (CON'T):

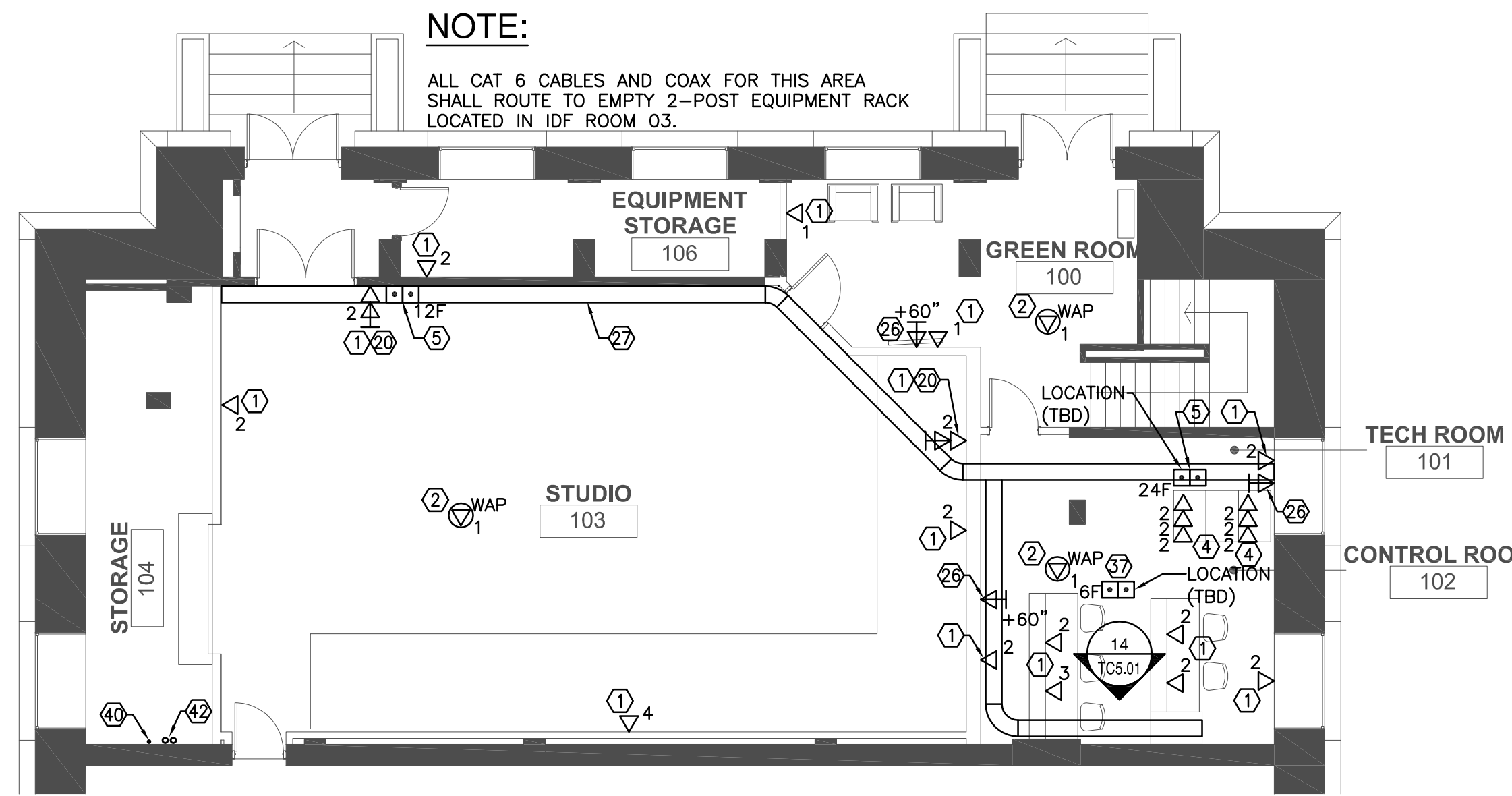
27. 12" BLACK WIRE BASKET CABLE TRAY WITH BOTTOM LINER AND DIVIDER, SURFACE MOUNTED TO WALL AS INDICATED, AND ABOVE EQUIPMENT RACKS IN TECH ROOM 101. LADDER RACK TO BE INSTALLED ON SOUTH WALL IN TECH ROOM 101 & ROOM 102, & EAST EAST WALL IN ROOM 102. SURFACE MOUNTED TO WALL TO PROVIDE PATHWAY FOR CABLES.
28. 6-STRAND LASER OPTIMIZED MULTI-MODE FIBER BETWEEN CONTROL ROOM 102 AND TECH ROOM 054. VERIFY TERMINATION WITH OWNER.
29. (1) 4" CONDUIT WITH BUSHINGS TO TRANSITION CABLING FROM VERTICAL SHAFT TO IDF ROOM 061.
30. (1) 2" CONDUIT STUBBED ABOVE CEILING SPACE IN STORAGE ROOM 104 FOR ROUTING OF BACKBONE COMMUNICATION CABLING. LOCATION IN ROOM TO BE DETERMINED BY G.C. AND E.C. CONDUIT PATH FROM STORAGE ROOM 104 SHALL FOLLOW SAME PATH FROM THE LOWER LEVEL AS ELECTRICAL CONDUIT TO BE INSTALLED. SUGGESTED ROUTE WOULD BE THROUGH THE JANITORS STORAGE ROOM IN THE LOWER LEVEL THEN FOLLOW SAME PATH ACROSS HALL THROUGH EMERGENCY MANAGEMENT AS THE ALREADY INSTALLED CONDUITS AND UP TO THE LEVEL 1 STORAGE ROOM 104. COORDINATE THE ROUTING OF THIS CONDUIT WITH THE NEW ELECTRICAL CONDUIT FEED TO STORAGE ROOM 104. FOR EVERY (2) 90 DEGREE BENDS AN APPROPRIATE SIZED PULL BOX WITH SCREW ON COVER SHALL BE INSTALLED. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL NOTES REGARDING PATHWAY.
31. BROADCAST INTEGRATOR TO FURNISH AND INSTALL BASKET TRAY TO TECH ROOM 054 RACKS. PATHWAYS TO AND FROM BASKET TRAYS TO BE DETERMINED.
32. G.C. PROVIDED CORES WITH E.C. PROVIDED SLEEVING FOR ROUTING OF COMMUNICATION CABLING.

GENERAL SHEET NOTES:

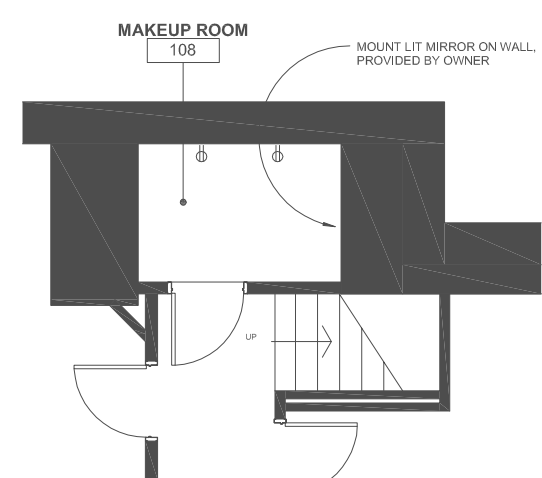
1. EC TO PROVIDE ALL CONDUITS, CORES, CONDUIT SLEEVES, OUTLET BOXES, FLOOR BOXES, POKE-THRU'S, PULL BOXES AND OTHER RACEWAY COMPONENTS REQUIRED FOR SCC TO INSTALL COMMUNICATIONS CABLE. INSTALL PULL STRINGS IN ALL CONDUITS. INSTALL BUSHINGS ON ALL CONDUIT AND SLEEVE ENDS.
2. WHERE NEW OUTLETS ARE SHOWN SCC TO INSTALL THE NUMBER OF CABLES INDICATED. INSTALL CATEGORY 6 CABLE UNLESS OTHERWISE NOTED. ALL CABLING SHALL TERMINATE ON CATEGORY 6 JACKS AT OUTLET LOCATION AND CATEGORY 6 PATCH PANEL AT OPPOSITE END.
3. SCC SHALL PROVIDE ALL HORIZONTAL CABLE SUPPORT.
4. COORDINATE ALL AV DATA DEVICE LOCATIONS WITH AV DRAWINGS.
5. FOR ROUTING OF COMMUNICATION CABLING SEE TCS.01 DETAILS OF FACEPLATE CONFIGURATIONS.
6. E.C. TO PROVIDE CONDUIT SLEEVING AS REQUIRED FROM ROOM 03 ACROSS HALLWAY WEST AS REQUIRED FOR ROUTING OF COMMUNICATION CABLING TO AND FROM 1ST FLOOR CHANNEL 8 SPACE.



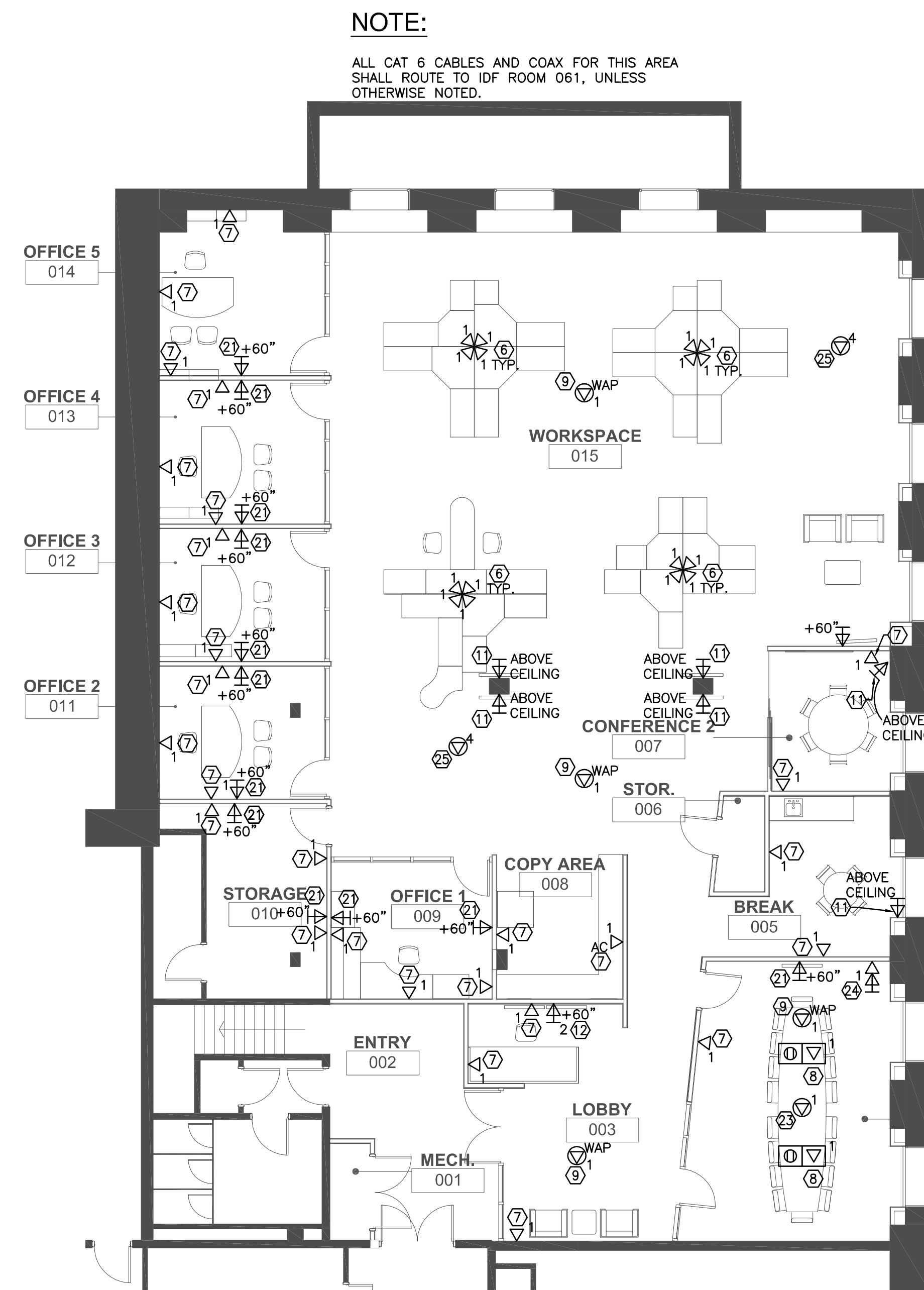
LEVEL 1 KEY PLAN
SCALE: 1/64" = 1'-0"



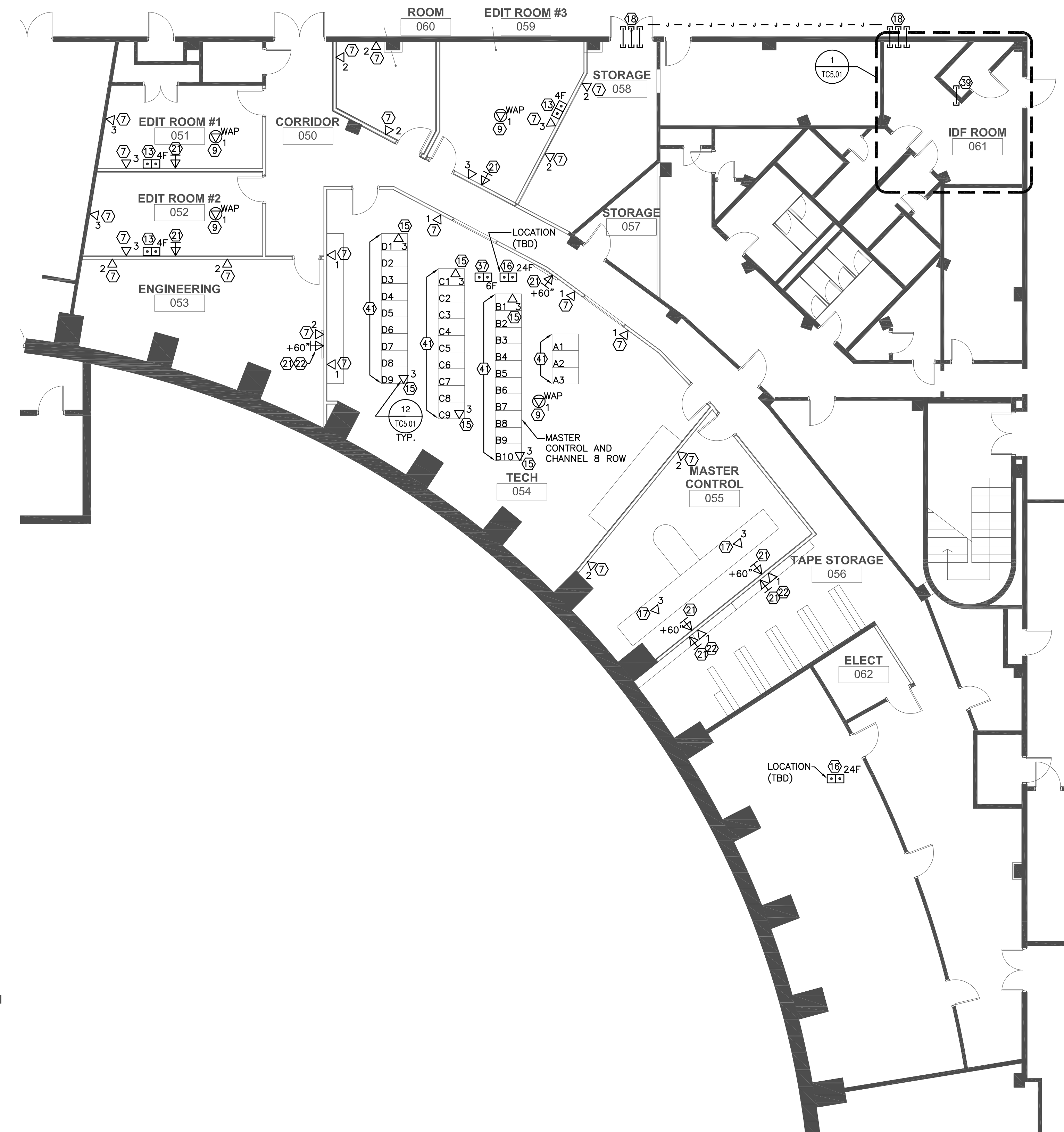
4 STUDIO SPACE FLOOR PLAN
SCALE: 1/8" = 1'-0"



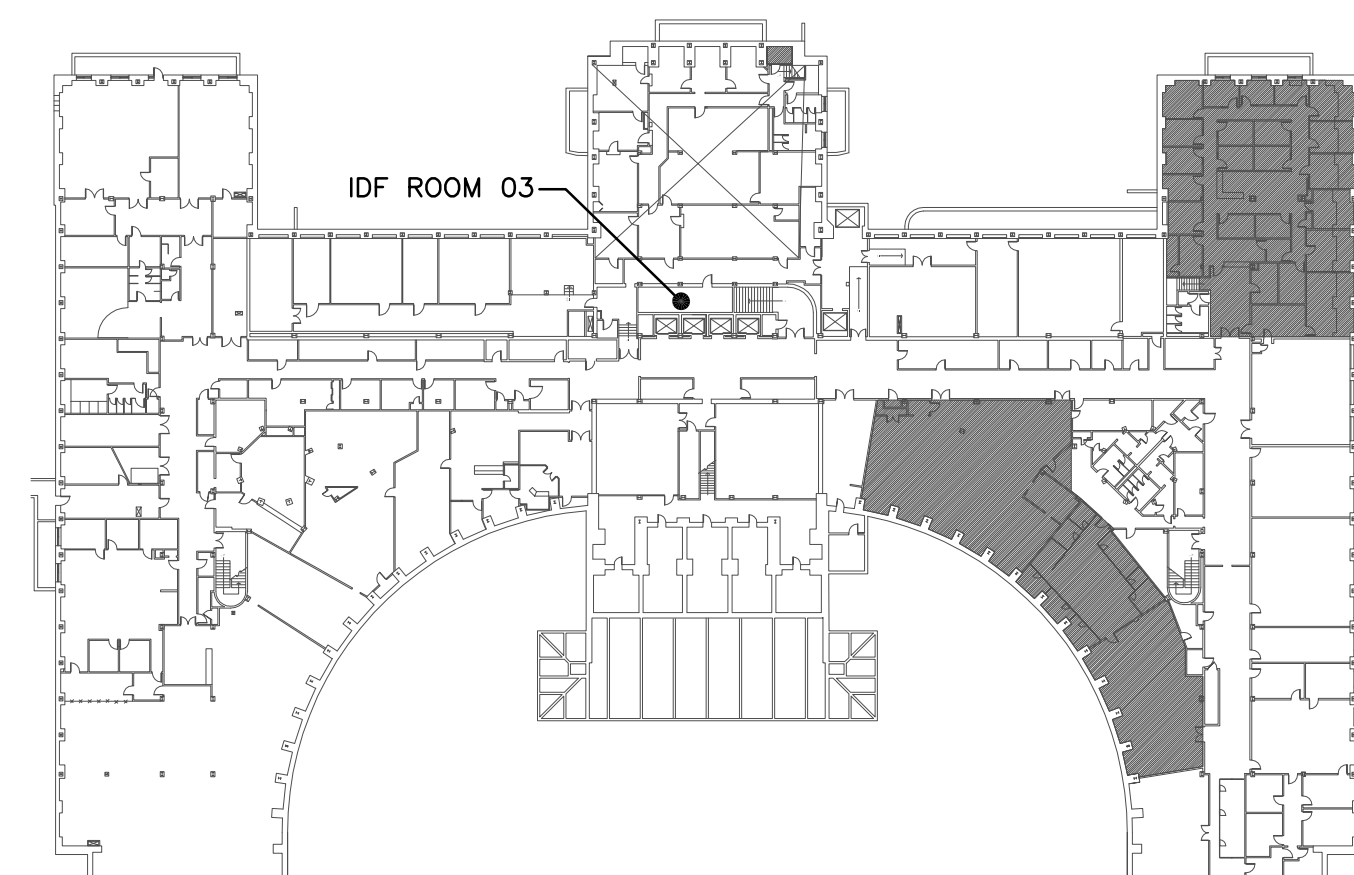
3 MAKEUP ROOM FLOOR PLAN
SCALE: 1/8" = 1'-0"



2 OFFICE SPACE FLOOR PLAN
SCALE: 1/8" = 1'-0"



1 CONTROL-EDIT-TECH SPACE FLOOR PLAN
SCALE: 1/8" = 1'-0"



LOWER LEVEL KEY PLAN
SCALE: 1/64" = 1'-0"

Date	Description	Date Issued
1	Revision 1	08-15-11
2	CCD #3	10-25-11

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HUMPHRIES POLI ARCHITECTS

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TELECOM FLOOR PLANS

100% Construction Documents
AUGUST 2, 2011

PROJECT No.	PROJECT MNGR	DRAWN BY	CHECKED BY
30033	AA	BC	RBHS

SHEET No.
TC2.01



Denver 8 Relocation

Section 27 0100 - OPERATION AND MAINTENANCE OF COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 RECORD DOCUMENTATION SHALL INCLUDE:

- A. Complete set of as-built drawings for Record (Electronic and Hard Copy).
- B. Operation and Maintenance (O&M) Manuals (Hard Copy).
- C. Complete reports of all test results (Electronic and Hard Copy).
- D. All warranty documents (Hard Copy).
- E. Spare Parts:
 - The Owner will be responsible for procuring and maintaining all spare parts after the project is complete.
 - Spare quantities of copper and fiber patch cords as called out in Section 27 16 00.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 27 0100

SECTION 27 1000 - STRUCTURED CABLING GENERAL REQUIREMENTS

PART 4 - GENERAL

4.01 RELATED DOCUMENTS

- A. Division 26 - Electrical.

4.02 PROJECT OVERVIEW

- A. Channel 8 relocation project will include the building out of a one (1) Telecommunication Rooms (TR) on the lower level floor, installation of a wall mount communication cabinet in the 1st floor storage room 104. Installation of fiber and copper backbone cable and installation of station cable as noted on drawings.
- B. Backbone cable shall consist of category 3 cable for voice communications and fiber for data communications from the 5th floor of the City and County building and category 3 cable and laser optimized multi-mode fiber to various other rooms (see drawing TC5-01) for backbone connectivity and cabling requirements.

4.03 APPROVED STRUCTURED CABLING MANUFACTURER

- A. The following structured cabling manufacturer is approved for the project.
 - Comscape SYSTIMAX

- B. Only full and complete structured cabling systems shall be installed. All cable and components shall be from the manufacturer specified.

4.04 CONTRACTOR REQUIREMENTS AND CABLING SYSTEM WARRANTY

- A. The Structured Cabling Contractor (SCC) shall have attended and provide evidence of completion of the appropriate Comscape installation course.
- B. The SCC shall provide a one year materials and labor warranty covering the installed structured cabling system. Warranty period shall commence upon owner acceptance.

4.05 SYSTEM DESCRIPTION

- A. Furnish and install a data cabling infrastructure system that will support a multi-product, multi-vendor environment.
- B. The structured cabling plan shall be designed, installed and administered according to the TIA/EIA telecommunications infrastructure standards and shall be equipment and cable vendor independent.
- C. The mechanical properties and transmission categories of all components used, including all wire/cable and all connecting hardware shall be Category 6 compliant for all horizontal voice and data cable links.
- D. The data communications for the project shall consist of Owner furnished network equipment. The SCC shall furnish and install a structured cabling system able to support up to and including Gigabit Ethernet.
- E. The voice communications equipment for the project will be provided by owner. The SCC shall furnish and install a structured cabling system able to support the Owners voice requirements including VoIP.

4.6. Horizontal Cabling

- 1. Furnish and install Category 6, 4-pair UTP cables for all horizontal data links from the telecommunications outlet to the patch panel located in the Telecommunications Room (TR) or Communication Cabinet. Drawings note the quantity to provide at the outlet.
- 2. Provide cable rated for the installation space. Where cables pass through more than one type of rated space (e.g. non-plenum and plenum), provide the highest rated cable to meet code requirements.
- 3. The maximum horizontal cable distance from the telecommunications outlet to the horizontal cross-connect within the telecommunications room shall be 295 feet.
- 4. Unless otherwise noted, all outlet boxes, floor boxes and conduits will be provided by the Electrical Contractor (EC).

4.7. Telecommunications Outlets

- 1. All telecommunications outlets shall consist of 8-position, 8-wire modular RJ-45 Category 6 jacks/4 at noted locations on drawings. Drawings note the quantity to provide at the outlet.
- 2. Telecommunications outlets may be located in walls, floors, ceilings or in systems furniture. Drawings note the type of outlet at each location throughout the facility.
- 3. Terminate all horizontal data and/or voice cables according to the TIA/EIA 568B wiring scheme unless otherwise noted.
- 4. Wall mounted facelates shall be a 4-port configuration unless otherwise noted. Coordinate color with architect. Provide blank inserts to match facelates for unused ports where required.
- 5. Wall phone facelates shall be a single port configuration with two mounting studs.

4.8. Telecommunications Room (TR)

- 1. The primary function of the Telecommunications Room is the location of data network equipment and the distribution of copper horizontal data and/or voice cables and termination of copper and fiber backbone cables.
- 2. Furnish and install freestanding equipment racks that will contain horizontal and backbone copper patch panels and owner supplied and installed equipment. Verify locations and requirements with the Technology Consultant, Architect/Engineer and Owner prior to installation.
- 3. Telecommunications Rooms shall be designed and provisioned according to the requirements in TIA/EIA Standard 569B and the construction documents.
- 4. Modular to IDC termination patch panels will be used to terminate voice backbone cable at the TR. Patch panels shall be rated Category 5e and provide the mechanical termination of the voice backbone cabling and the associated cross-connection of the cable to the horizontal cable patch panels via contractor furnished and owner installed patch cables. Voice backbone cable will terminate in the TR on the backbone patch panel using two pairs per port unless otherwise noted.
- 5. Category 6 modular to IDC termination patch panels comprise the horizontal cross-connect portion of the data cables. Patch panels shall provide the mechanical terminations of the horizontal cabling from the telecom outlets and the associated cross-connection of the cable to network hardware via contractor furnished and owner installed patch cables.
- 6. Category 6 modular jacks used in the patch panels shall be unkeyed 4-pair. The jacks shall be color coded for both T568A and T568B wiring. Modular jacks shall be UL listed and meet or exceed the requirements of TIA/EIA 568B-2-A.

4.06 SCOPE OF WORK

- A. The work covered under this section of the specifications consists of furnishing all labor, materials, consumables, tools, services and facilities and in performing all operations, including installation of wire and cable, telecommunications outlets and facelates, patch panels, wiring blocks, racks, horizontal and vertical wire management, wire raceways and cable support, grounding and bonding, testing and labeling and all other functions necessary for the complete installation of a structured cabling system supporting data networking, telecommunications, distribution of CATV signals and connection of IP based security devices in accordance with the specifications and drawings, except as specifically noted otherwise.
- B. The SCC shall coordinate with other trades and vendors prior to the start of work.
- C. The work of this section shall include, but not be limited to furnishing and installation of the following:
 - Category 6 unshielded twisted-pair horizontal cables.
 - R6A and/or RG11 Coax cables.
 - Category 3 multi-pair backbone cables.
 - Telecommunications outlets/connectors, mounting strips and facelates.
 - Category 6 Modular-to-IDC patch panels (data and voice horizontal cable).
 - Category 5e Modular-to-IDC patch panels (voice backbone cable).
 - Build out of Telecommunications Rooms.
 - As required: basket tray, ladder rack, and J-hooks including all necessary support hardware and fittings.
 - Grounding and bonding.
 - Firestopping of telecommunications pathways that penetrate fire-rates walls, floors, and ceilings.
 - Category 6 patch cables for voice/data cross-connections in telecommunications rooms.
 - Multimode fiber optic jumper cables.
 - Single mode fiber optic jumper cables.
 - All materials necessary for complete and proper cable management.
 - Testing all copper and fiber cabling.
 - Labeling all copper and fiber cabling, facelates and patch panels.
 - Furnishing as-built documentation including floor plans showing outlet labels and test reports.

4.07 WORK SPECIFICALLY EXCLUDED AND PROVIDED BY OTHERS ARE AS FOLLOWS:

- A. Fire Alarm cabling.
- Network hardware such as core switches, workgroup switches, routers, firewalls and other Customer Premise Equipment.
- Telephone system hardware such as telephone hand-sets, PBX/Remote Shorelines, servers, software, termination blocks, toll cards, and other associated telephone equipment hardware.
- Computer systems and peripherals such as servers, workstation computers and printers.
- Outlet boxes for data/cable and CATV outlets shall be furnished and installed by the EC under applicable sections of Division 26 and the drawings.
- F. Conduits and raceways necessary to provide complete Structured Cable System pathways, in conformance with applicable sections of Division 26 and the drawings.
- G. Floor ones and conduit sleeves shall be furnished and installed by the EC under other Division 26 sections and the drawings.
- H. 120 volt AC power for telecommunication equipment as specified in and in accordance with applicable sections of Division 26 and the drawings.
- I. Grounding bus bar in Telecommunication Rooms shall be furnished and installed by the EC under Division 26 and the drawings.
- J. HVAC required providing conditional air or other means of proper cooling for Technology equipment and spaces.

4.08 REFERENCES, REGULATIONS AND CODE COMPLIANCE

- A. All workmanship and materials shall conform to and be installed, inspected and tested in accordance with the governing rules and regulations of federal, state and local government agencies.
- B. All workmanship and materials shall conform to the latest industry standards and publications referenced in this section as applicable:
 - National Electric Code (NEC), NFPA 70
 - ANSI/TIA/EIA - 568B - Commercial Building Telecommunications Cabling Standard
 - ANSI/TIA/EIA - 569B - Commercial Building Standard for Telecommunications Pathways and Spaces
 - ANSI/TIA/EIA - 606-A - Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
 - ANSI-JSTD - 607-A - Joint Standard for Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
 - TIA TSB-140 Additional Guidelines for Field-Testing Length, Loss and Polarity of Optical Fiber Cabling Systems
 - BICSI - Telecommunications Distribution Methods Manual, 11th Edition, 2006
 - ASTM E-814 - Fire Tests of Through Penetration Fire Stops
 - UL 179 - Fire Tests of Through Penetration Fire Stops
 - Underwriters Laboratory (UL)
 - Federal Communications Commission (FCC)
 - National Electrical Manufacturers Association (NEMA)
 - City and County of Denver Technology Standards Section 1 "Technology Cabling, Infrastructure and Installation", Revision 1.0, dated September 24, 2009.

4.09 INTENT OF DRAWINGS

- A. The drawings are diagrammatic unless detailed dimensions are included. Drawings show close approximate locations of equipment and devices based upon current conditions. Exact locations are subject to final field coordination and the approval of Owner and Owner's representative.

4.10 REVIEW OF CONTRACT DOCUMENTS

- A. The SCC shall carefully study the Contract Documents and report to the consultant and project manager any error, inconsistency, or omission they may discover. If contractor performs any construction activity knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the consultant or project manager, the contractor shall assume appropriate responsibility for such performance and shall bear an appropriate amount of the attributable cost for correction.
- B. The SCC must verify all dimensions locating the work and its relation to any existing work, all existing conditions and their relation to the work, and all man-made obstructions and conditions, etc., affecting the completion and proper execution of the work as indicated by the Contract Documents.

4.11 EXAMINATION OF THE PREMISES

- A. The SCC shall visit the site to familiarize themselves with the local conditions under which the work is to be performed and correlate observations with the requirements of the Contract Documents. No allowance will be made for claims of concealed conditions which contractor, in exercise of reasonable diligence in the observation of the site and the review of the local conditions under which the work is to be performed, has learned or should have learned, unless otherwise specifically agreed by owner and consultant in writing.
- B. Before ordering any materials or performing any work, the contractor shall verify all measurements. No extra charge or allowance will be allowed for duplicate work or material required because of an unverified difference between an actual dimension and the measurement indicated in the drawings. Any discrepancies shall be submitted in writing to the Project Manager and Consultant for consideration before proceeding with the work.

4.12 SUBMITTALS

- A. Submittals shall include product data literature and adequate descriptive literature, catalog cut sheets, and other data necessary for the Technology Designer and Architect/Engineer to ascertain that the proposed equipment and materials comply with the specification requirements.
- B. Product data submittals shall consist of technical data sheets, manufacturer's specifications, illustrations, standard schedules, performance charts, instructions, brochures, diagrams and test data furnished to illustrate a product, material or system for the work to be performed. Product data literature is required on all items, material and equipment and shall be clearly marked, identifying by specific items proposed.
- C. Clearly indicate on each submittal set the items being submitted by marking or highlighting each item to clearly indicate to the reviewer which items are being submitted.
- D. Prior to assembling or installing the work, shop drawings shall be submitted for review and approval.
- E. The SCC shall not purchase any materials or equipment for incorporation into the project prior to receipt of reviewed submittals from the Technology Designer and/or Architect/Engineer.
- F. Review of product data shall not relieve the SCC from responsibility for deviations from the drawings or specifications, unless the Contractor has, in writing, called attention to such deviations at the time of submission and secured written approval.
- G. The SCC shall develop and submit complete Submittals and do so in a timely manner. By failing to do so, the contractor agrees to be fully responsible for any and all damages, which might be incurred through the failure to do so.

4.13 QUALITY ASSURANCE

- A. All equipment shall equal or exceed the minimum requirements of NEMA, ASME, ANSI and Underwriters Laboratories.
- B. All material and equipment furnished shall be new, unused, and free from defects. Equipment shall be clean and free of damage and corrosion, and shall be of the best quality obtainable for the purpose intended.
- C. Where more than one of any specified item of equipment or material is required, such items shall be the product of one manufacturer throughout the facility.
- D. All materials used shall bear labels attesting to Underwriters Laboratory approval, providing a standard is established for the material in question.
- E. All materials shall conform strictly to the standards and specifications set forth in this document. Unless otherwise specified, all products furnished shall be designed, built and installed in accordance with the latest and best practices of the electrical and telecommunications industry, and shall conform to the standards of the NEMA, ANSI, TIA/EIA, ICEA, IEEE, NEC and this Specification wherever they apply.

4.14 CONTRACTOR QUALIFICATIONS

- A. The SCC shall have a full working knowledge of low voltage applications such as, but not limited to, data and voice, wireless, and CATV distribution systems. The contractor shall have the following qualifications:
 - Possess those licenses/permits required to perform telecommunications and other low voltage installations in the specified jurisdiction.
 - Have personnel trained and certified in the design and installation of the manufacturer's structured cabling system and equipment.
 - The SCC shall provide proof of current certification in the design and installation of the manufacturer's structured cabling system and equipment.
 - The SCC shall provide the resume of the project manager assigned to oversee the installation.
 - The SCC shall have a minimum of five (5) years of experience and five (5) years in business in this specialized field and shall have completed a minimum of three (3) projects similar in scope and size to this project.
 - Have personnel knowledgeable in local, state and national codes and the latest BICSI and Telecommunications Standards.
 - Provide proof of insurance for liability and worker's compensation for all personnel on the jobsite.
 - Contractor personnel will be required to provide and use the proper tools in the performance of each activity. The tools must be in good working order. The Owner reserves the right to review the tool lists and tool maintenance procedures of the Contractor.
 - Other contractor qualifications as described in Division 01.

4.15 COORDINATION

- A. The SCC shall contact the General Contractor and the Technology Consultant once project is awarded prior to construction to discuss project approach, schedule and coordination.
- B. The SCC shall provide and submit a weekly progress report once installation has begun. This report shall be provided to the General Contractor and copy sent directly to the Technology Consultant.
- C. The SCC shall coordinate the work of this Section with that of other Sections and Divisions as required ensuring that the entire work of this project will be carried out in a complete and coordinated fashion.
- D. The SCC shall supply all necessary supervision and coordination of information to any subcontractor or installer who is performing related work to this project.
- E. The SCC shall coordinate the installation of cabling, technology devices, and wireways with the work of other Divisions to ensure complete and proper installation of technology pathways, spaces and outlets. Coordinate telecommunications room requirements such as plywood, panel, power, grounding, flooring and room security with the General Contractor so as not to impede the installation schedule.
- F. The SCC shall be responsible for performing interconnections unless noted otherwise. Both the Owner and SCC shall coordinate "as-built", circuit identification and labeling information for complete project records.
- G. The locations of technology devices and equipment are diagrammatically expressed on drawings. Exact locations of items of work shall be field coordinated. The SCC shall report any discrepancies between locations of devices on the drawings and work performed by the other trades to the General Contractor using the approved procedures within three days of discovery.

4.16 CLEANUP

- A. The SCC will endeavor to keep telecommunications rooms clean and free of debris particularly when terminating fiber optic cables.
- B. The SCC will clean-up work areas at the end of each day and remove trash or other debris.
- C. Food and drink containers will not be permitted in telecommunications room at any time.

4.17 PERMITS, LICENSES AND INSPECTIONS

- A. The SCC shall furnish file with the proper authorities all drawings required by them in connection with this work. The SCC, if required, shall obtain all official permits, licenses and inspections and shall pay all legal and proper fees and charges.
- B. The SCC shall, at inception of the work, provide the Project Engineer with copies of all required building and code permits.
- C. The SCC shall be responsible for arranging all inspections and for securing all required signatories. Upon completion of the work, properly completed permits shall be returned to the Project Coordinator, if any are required.

4.18 PROTECTION OF MATERIALS AND EQUIPMENT

- A. Materials and equipment shall be protected from damage during shipment, storage at the site and throughout the construction period. No damaged items shall be installed and immediate steps shall be taken to obtain replacement so as not to interrupt construction schedule.
- B. Coordinate site storage of materials and equipment with the General Contractor or Owner.
- C. If required by the General Contractor, provide a lockable container for material and equipment storage.

4.19 SITE SAFETY AND ACCESS

- A. Determine from General Contractor all job site requirements such as access, parking and material storage areas.
- B. Telecommunications technicians working on the job shall follow all safety procedures set by the General Contractor. Technicians must furnish their own safety equipment including but not limited to hard hats, safety glasses, proper footwear (confirm if steel toe boots/shoes are required), fall arrest equipment and safety vests.

- All safety equipment must be in good working order.
- C. If required by General Contractor, attend all safety orientations and meetings.
- D. Provide to General Contractor up to date MSDS information in a 3-ring binder listing materials planned for use on the job site that require MSDS information. Provide the number of copies requested.

PART 5 - PRODUCTS

5.01 EQUIPMENT AND MATERIALS MINIMUM REQUIREMENTS

- A. Provide materials that meet the following minimum requirements:
 - Cabling and components shall be by the manufacturer specified, no substitutions are allowed.
 - Electrical equipment and systems shall meet UL standards and requirements of the NEC. This listing requirement applies to the entire assembly. Any modifications to equipment to suit the intent of the specifications shall be performed in accordance with these requirements.
 - Equipment shall meet all applicable FCC regulations.
 - All materials, unless otherwise specified, shall be new, unused and the standard products of the manufacturer. Used equipment or damaged material will be rejected.
 - All equipment and systems must conform to the Specifications and meet the quality of the design make.
 - Where applicable all material and equipment shall bear the label and listing of Underwriters Laboratory or Factory Mutual. Approval and installation of all equipment and materials shall be in accordance with such labeling and listing.

5.02 WORKMANSHIP, SUBSTITUTIONS AND WARRANTY

- A. Materials and workmanship shall meet or exceed industry standards and be fully eligible for the maximum guarantee offered by the manufacturer. All components, material and workmanship not covered by the manufacturer's system warranty shall be guaranteed for one year after the date of final acceptance. Cable integrity and associated terminations shall be thoroughly inspected, fully tested, and guaranteed as free from defects, transpositions, opens, shorts, kinks, damaged jacket insulation, or similar conditions that may compromise system performance.
- B. All labor must be thoroughly competent and skilled, and all work shall be executed in strict accordance with the best practice of the trades.
- C. The SCC shall be responsible for and make good, without expense to the Owner, any and all defects arising during this warranty period that are due to imperfect materials, appliances, improper installation or poor workmanship.
- D. The SCC shall provide the manufacturer's warranty for both parts and labor for the warranty period upon final acceptance of the system by Owner. The SCC shall provide a copy of the warranty certificate to the Architect/Engineer and Owner for review.

PART 6 - EXECUTION

6.01 STRUCTURED CABLING

- A. All material and equipment shall be installed in a neat and workmanlike manner.
- B. All material and equipment shall be installed per manufacturer's specifications using methods and tools approved by the manufacturer.
- C. All material and equipment shall be installed per the drawings and specifications.
- D. The installation shall be in compliance with the requirements of the NEC, OSHA and the rules, regulations and requirements of the FCC.
- E. The installation shall be in compliance with federal, state, county and city laws, regulations, ordinances and codes applicable to the installation.
- F. The locations of conduits, conduit sleeves, outlet boxes, floor boxes, stub-up/downs, panels, equipment racks and other related equipment as indicated on the drawings are approximate and are understood to be subject to change and may be found necessary at the time of installation. The SCC should have exact and definite locations accepted by the Owner before proceeding with the installation.
- G. For telecommunications outlets in wall mounted applications, the Electrical Contractor shall furnish and install 4" square by 2-1/8" deep gang box with a single-gang mid ring reducer for flush mounting single gang facelates in the wall space along with a 1" conduit from the gang box to wireways located in accessible spaces. Provide pull strings in all conduits for the SCC.
- H. For telecommunications outlets in floor mounted applications, the Electrical Contractor shall furnish and install floor boxes including cover and hardware suitable for installation of telecommunications outlets within the floors and any floor duct or conduits necessary to convey cable to wireways in accessible spaces. Conduits shall be sized appropriately to handle planned cable counts and sizes. Provide adapters designed to mount the IDC type connectors and 8-position, modular RJ-45 jacks.
- I. The SCC shall furnish and install wire raceways to fully support all installed cable. Raceways may consist of J-hooks or adjustable cable support (slings) rated for Category 6 cable, basket tray or ladder rack as called out in the drawings and/or specifications. The SCC shall coordinate wire raceway installation with other trades so as not to impede their work.
- J. The SCC shall furnish and install ladder rack and wire raceways within the Telecommunications Room as shown on the drawings. The ladder rack and wire raceways shall include all accessories for a complete routing system.
- K. The SCC shall furnish and install equipment racks, frames or cabinets as called out in the drawings and/or specifications.
- L. The SCC shall furnish and install all cable hangers, horizontal and vertical wire managers, cross-connect hardware and all other cable management hardware for a neat and orderly installation.
- M. Horizontal cabling shall not be spliced and must be continuous from the cross-connect to the workstation outlets. SCC will neatly dress all horizontal cable from point of entry in Telecommunications Rooms to the termination point. Provide cable slack as specified. Where cable slack is specified, neatly support slack with cable slings or similar methods. Do not store cable slack on ladder racks.
- N. All copper backbone cabling shall not be spliced but must be continuous from termination point to termination point.
- O. The proximity of horizontal and backbone cabling to electrical facilities that generate high levels of electromagnetic interference (EMI) shall be taken into account. These facilities include, but are not limited to copiers, motors, transformers and fluorescent lighting. TIA/EIA 569-B standards shall provide separation requirements.

6.02 GROUNDING AND BONDING

- A. Grounding shall meet the requirements and practices of applicable authorities and codes. In addition, telecommunications grounding and bonding shall conform to ANSI-JSTD-607-A.
- B. A telecommunications grounding system shall be installed by the electrical contractor in the TR 06 and storage room 104. The system shall consist of a Telecommunications Grounding Busbar (TGB) located in the TR 06 and storage room 104. Each TGB shall be connected to the main building ground system.
- C. The SCC shall ground all equipment racks, frames, cabinets, ladder rack and basket tray to room TGB using minimum #6 AWG stranded wire with green jacket. Use bonding jumpers between each section of ladder rack or basket tray and between ladder racks or basket trays and equipment racks, frames and cabinets. Use 2-hole, long-barrel lugs where ground bonds are fastened to equipment racks, ladder racks and busbars. Lugs shall be made of copper and compression type fittings and be designed for the purpose of bonding equipment to ground. Use factory made bonding conductors where possible. Use proper crimping tools and dies when field installing lugs. Mechanical lugs with screw connections are not permitted. Scrape paint or powder coat from equipment racks and ladder racks to bare metal before attaching lugs.

6.03 FIRESTOPPING

- A. All telecommunications pathways that penetrate fire-rated walls, floors or ceilings shall be properly firestopped, per the applicable codes and shall be the responsibility of the SCC unless otherwise noted.
- B. Provide fire-resistant UL approved firestopping systems to restore fire ratings to all wall, floor or ceiling penetrations. Firestopping systems must be UL classified and meet NEC and local codes.
- C. All penetrations through fire rated floors and walls shall be sealed to prevent the passage of smoke, fire, toxic gas or water through the penetration, before, during or after a fire. The fire rating of the penetration seal shall be at least that of the floor/wall into which it is installed, so the original fire rating of the floor or wall is maintained as required by Article 300.2-1 of the NEC.
- D. No flammable material may be used in the chase or hole in which the firestop material is to be installed.
- E. All firestopping material shall be installed in accordance with the manufacturer's directions and recommendations.
- F. The sealant shall remain resilient and pliable to allow for the removal and/or addition of cable without the necessity of drilling holes. It shall adhere to itself in order to allow and all parts to be made with the same material. It shall allow for vibration, expansion and/or contraction without any cracking, crazing, crumbling and spalling.
- G. The firestop sealant shall comply with the fire-resistance and hose-stream endurance requirements of ASTM E-119.

6.04 LABELING

- A. Cable labels shall provide a unique identification scheme that shall ease cable tracing. The SCC shall coordinate with the Owner to determine any Owner required labeling schemes prior to labeling cables and termination equipment. If Owner does not furnish a cabling administration scheme, the SCC shall submit intended labeling scheme to the Technology Consultant, Architect/Engineer and Owner for approval.
- B. Labels shall be permanent, waterproof, and readable from one foot with permanent labeling and shall not be removable by normal cable handling or normal operations. As part of the final installation, no hand written labels will be allowed. All labels shall be typed or computer generated.
- C. Verify labeling for all cables, facelates, floor boxes, termination blocks, patch panels and racks with Owner prior to installation.
- D. All cables shall be labeled at each end. For proper administration, additional cable labeling may be required on the cable at intermediate locations such as conduit ends and along cable and cable support runs.

6.05 TESTING

- A. The SCC shall test 100% of all cables installed. Telecommunications cables shall meet or exceed the current ANSI/TIA/EIA-568 specifications for the category of cable installed. All test reports shall be printed and included in the final record documentation package.
 - UTP Copper Cable
 - The SCC shall be responsible for recording all test data.
 - Copies of all test results are to be submitted to the Owner or authorized representative for review as part of the final record documentation package and remain with the Owner for their records.
 - Category 6 cabling systems shall be performance verified using an automated test set. Test results shall be automatically evaluated by the equipment, using the most up-to-date criteria from the ANSI/TIA/EIA-568 standard, and the result shown on a pass/fail. Test results shall be printed directly from the test unit or from a download file using an application from the test equipment manufacturer. The printed test results shall include all tests performed, the expected test result and the actual test result achieved. The test shall be a permanent link test, unless otherwise specified by the manufacturer.
 - Intra-building Fiber Optic Backbone Cable
 - Follow procedures described in TIA/EIA TSB-140 for Tier 1 test when testing intrabuilding fiber optic backbone cables. Multimode links are to be tested at 150 m and 1300 m in accordance with ANSI/TIA/EIA-526-14-A, Method B, One Reference Jumper. Singlemode links are to be tested at 110 m and 150 m in accordance with ANSI/TIA/EIA-526-7, Method A.1, One Reference Jumper. Test replacement so as not to interrupt construction schedule.
 - Test for system attenuation using a power meter and light source set to the same wavelength. Power meter must be calibrated and traceable to the National Institute for Standards and Technologies (NIST).
 - Test for system attenuation using a power meter and light source set to the same wavelength. Power meter must be calibrated and traceable to the National Institute for Standards and Technologies (NIST).
 - Test jumpers must be of the same optical fiber core size as the cabling system (e.g. test 50/125µm systems using 50/125 µm jumpers).
 - Test 100% of installed fiber. Provide printed test reports for inclusion in final record documentation package. Test reports will show measured loss for each fiber in dB and length of each fiber in feet.
 - End to end testing is considered to be for the equipment end through the cross-connect to the terminal end.

6.06 CABLE MANAGEMENT

- A. Vertical Cable Manager
 - Double-sided design for cable management front and rear.
 - 1 RMU cable guides on the front and rear for managing patch cords.
 - Shall include a front and rear cover that can be opened right or left or removed entirely.
 - Available in 6" widths.
 - Design Make:
 - Chatsworth Products (CP) 30995-703 (6")
 - No substitutions
- B. Horizontal Cable Manager
 - Available in 1U and 2U high wire managers.

D. Coaxial Cables

- 1. Test all coaxial cables for continuity, shorts and opens.

END OF SECTION 27 1000

SECTION 27 1100 - COMMUNICATIONS EQUIPMENT ROOM FITTINGS

PART 7 - GENERAL

7.01 RELATED DOCUMENTS

- A. Division 26 Electrical

7.02 SUMMARY

- A. This section includes Telecommunication Room (TR) equipment including: copper patch panels and termination blocks; fiber optic enclosures, panels, adapters and connectors; equipment racks, frames and cabinets; vertical and horizontal wire managers; ladder rack and mounting hardware; and grounding for telecommunications rooms.

7.03 WORK INCLUDED

- A. The Structured Cabling Contractor (SCC) shall provide all labor, materials and equipment for the complete installation of work called for in the Contract Documents unless otherwise noted.

7.04 SUBMITTALS

- A. Product data for each type of product indicated.

7.05 QUALITY ASSURANCE

- A. Communication grounding and bonding shall be in accordance with applicable codes and regulations. The requirements of IEC 10005-2 and ANSI-JSTD-607-A shall be observed throughout the entire cabling system.
- B. Materials and work specified herein shall comply with all applicable requirements of the following codes and standards. All codes and standards are to be construed as current, latest, as amended or as adopted:
 - ANSI/TIA/EIA - 568-B Commercial Building Telecommunications Cabling Standard, 2000-2004
 - ANSI/TIA/EIA - 569-B Commercial Building Standard for Telecommunications Pathways and Spaces, 2004
 - ANSI/TIA/EIA - 606-A Administration Standard for the Telecommunications Infrastructure of Commercial Buildings, 2002
 - ANSI-JSTD - 607-A Joint Standard for Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications, 2002
 - NFPA 70 - National Electric Code, 2005
 - BICSI - Telecommunications Distribution Methods Manual, 11th Edition, 2006
 - NEMA - V12 - Metal Cable Tray Installation Guidelines, 2001
 - City and County of Denver Technology Standards Section 1 "Technology Cabling, Infrastructure and Installation", Revision 1.0, dated September 24, 2009.

PART 8 - PRODUCTS

8.01 COPPER PATCH PANELS AND TERMINATION BLOCKS

- A. Category 6 Patch Panels
 - The patch panels shall be designed for optimum performance; interfacing multi-vendor equipment rated and labeled Category 6 and meets or exceeds Category 6 Class E requirements of ISO/IEC 11801, CENELEC EN50173-1 and TIA/EIA-568-B-2.1.
 - Patch panel design shall consist of Modular-to-IDC Type construction. The patch panel shall provide insulation displacement contacts (IDC) on printed circuit boards (PCB) for mechanical termination of horizontal data cabling. The printed circuit board shall be utilized as the interconnection method between the IDC Type connectors and 8-position, modular RJ-45 jacks.
 - The patch panels shall be universal and support both T568-A and T568-B wiring schemes for both the IDC Type connectors and the modular RJ-45 jacks.
 - Utilizes 110 punch-down terminations on back panel.
 - Write-on designation labels with protective clear plastic covers, or equivalent, shall be provided on both the front and rear of the patch panels for circuit identification.
 - Patch panels shall be supplied with cable management hardware facilitating proper installation and cable management techniques. Accessories supplied shall be designed to provide strain relief on cables, maintain the wire pair twists as close as possible to the termination points and support the proper bend radius of the cables.
 - Patch panels shall be modular in nature and shall be factory pre-assembled. Patch panels shall be rack mountable and comply with EIA 19" rack mounting standards.
 - Be available in 24- and 48-port configurations.



6800 - DENVER 8 TV SYSTEM
ACQUISITION/ENGINEERING/ INTEGRATION

City of Denver
RFP 6800 Denver 8TV Master Control Warranty Clarification

Automation System Support: Does the manufacturers support pricing include phone support, remote access for troubleshooting and onsite support?

NVersion includes 24/7 phone support and remote access. Onsite support will be provided by Burst.

NVersion Warranty Statement is attached; additionally here is their comment on remote access:

Typically we use "Team Viewer" or "Join.me" since they support FTP. All the Automation PC's are configured and shipped with VNC client and therefore we can remotely connect to each workstation.

Can we get a list of this support from the manufacturers?

Burst will support all manufactures included in this project. In addition NVersion, and Evertz would be contracted for Extended Warranty Support. CompuSat would be contracted for software and data base updates.

Evertz Warranty Statement is attached; additionally here are specific comments on phone support and remote access:

24/7 is supported. This is for emergency situations direct to a service resource, not for routine or planned functions under the standard maintenance agreement.

Keep in mind, that our other offices such as UK and Singapore are hours ahead of us, and are also available to help.

The Remote access under remote or extended warranty is done through two methods.

The first, is to be able to get into the system on the 'front door', into the OS which we do using SSH. If you provide direct access via VPN or hosted access to a

Master Control Warranty Clarification

machine that is connected to the same subnet that we can use SSH that would cover the front door.

Backdoor is IPMI (intelligent protocol management interface) which allows us to KVM to the machine without the operating system to be functioning. If we have to update BIOS or the operating system has issues, we can still fix the system by getting there with the IPMI. IPMI is a TCP/IP routable protocol and usually put on a management network separate from the media network, has controlled login and is secure. This could be put out to the internet via DMZ or also via VPN.

We will work together with your security folks to make sure they are satisfied with any security concerns to make this happen.

CompuSat Earth Station Automation Software.

Software maintenance with satellite database updates.

Hardware support by Burst

Integrators support: Does the integrators support pricing include phone support, remote access for troubleshooting and onsite support?

Yes, to the extent of the project warranty and the extended warranty obligations. This includes phone support, remote access and onsite support. Onsite support is systems troubleshooting and the coordination of manufactures support.

Does this type of support increase the annual maintenance fees?

No, these services are included. The proposed Extended Warranty is attached.

If so, what is the new pricing cost?

Not applicable.

12. SERVICE

A. Standard Service.

NVERZION provides the following standard service (“Standard Service”) to LICENSEE’s and PURCHASER’s during the applicable Software and Hardware Warranty Periods, depending on the NVERZION product purchased:

- i. Telephone support available 24 hours each day, 7 days each week;
- ii. Technical support telephone number: 1-801-293-8420;
- iii. Email technical support: Support@nverzion.com;
- iv. Notification of product releases, enhancements, software updates and service bulletins;
- v. Software upgrades for specific product and application provided to the LICENSEE at no charge; and
- vi. Hardware repair or replaced as determined by an NVERZION technician, and pursuant to the RMA, shipped within five (5) business days by a method at NVERZION’s discretion.

B. Extended Standard Service Cost.

NVERZION will extend providing the Standard Service (“Extended Service”) for NVERZION Hardware and/or Software, based upon the following payment schedule:

- i. Year two of Standard Service costs 3% of the NVERZION price for all components stated on the original Quotation or at MSRP, whichever is less;
- ii. Year three of Standard Service costs 5% of the NVERZION price of all components stated in the original Quotation or at MSRP, whichever is less; and
- iii. Additional years of Standard Service costs 8% of the NVERZION price for all components stated in the original Quotation or at MSRP, whichever is less, for each additional year.

Payment for Extended Service is due on the date when the one-year period of Extended Service commences. Extended services commence, for each year of Extended Services purchased, on the annual calendar date on which the applicable Warranty Period began, depending on the product. Each year of Extended Service runs consecutively from the end date of the applicable Software or Hardware Warranty Period. Failure to timely purchase Extended Service disqualifies a PURCHASER or LICENSEE from obtaining further Extended Service.

Evertz Warranty

Evertz Warranty Statement

Evertz provides a standard one year warranty on all of its products, as detailed below.

Evertz warrants all of its products manufactured by Evertz against defects in materials and workmanship for a period of one year from the date of original purchase. If you transfer ownership, this warranty is automatically transferred to the new owner and remains in effect for the original one year period.

During the warranty period, we will repair or at our option replace at no charge any unit that proves to be defective, provided it is returned after proper authorization, with shipping prepaid to an identified Evertz repair center.

This warranty is expressed in lieu of all other warranties including implied warranties of merchantability or fitness. In no event will Evertz be liable for any special incidental or consequential damages.

Evertz liability under this warranty shall be limited solely to the cost of any necessary repairs to replacements of or refunds of Buyer's purchase price for, the Products, components thereof or replacement parts thereof, and Evertz assumes no risk, and shall not in any case be liable, for any special, incidental or consequential damages, or any other indirect damages arising from breach of warranty or contract, negligence or any other legal theory, including, without limitation, loss of good-will, profits or revenue, loss of use of the Products or any associated equipment, cost of capital, cost of any substitute, facilities or services, down-time costs, or claims of any party dealing with Buyer for such damages.

Anything outside of defect or material workmanship is not covered. Extended warranty is available for purchase, upon request.

Evertz Extended Warranty

Evertz offers a standard one year warranty for free. The chart below details the cost of extended warranty. If further extended warranty is required, please contact the factory.

Warranty Type	Description of Warranty
Extended Warranty 1	Additional 1 year of extended warranty (for a total of 2 years of warranty) 3.5% of list price
Extended Warranty 2	Additional 2 year of extended warranty (for a total of 3 years of warranty) 7% of list price
Extended Warranty 3	Additional 3 year of extended warranty (for a total of 4 years of warranty) 10% of list price
Extended Warranty 4	Additional 4 year of extended warranty (for a total of 5 years of warranty) 12% of list price

**Warranties are based on the list price quoted.*



PROPRIETARY AND CONFIDENTIAL
Evertz Microsystems Ltd. 5288 John Lucas Drive, Burlington, Ontario, Canada, L7L 5Z9



6800 - DENVER 8 TV SYSTEM
ACQUISITION/ENGINEERING/ INTEGRATION

PROPOSED
Extended Warranty Support Statement for the City of Denver
January 5, 2012

Contract period: TBD

Extended Warranty Support for Master Control System Only

The extended warranty support includes:

- Telephone support from both Burst and manufacturers
- Responses as detailed below
- Extension of manufacturers' warranties as detailed below

Burst may employ service technicians directly or on a subcontracted basis at its discretion to complete support duties. Burst may also contract with manufacturers as required to provide services not available elsewhere.

Responses to Service Calls

Burst will answer service calls within 8 hours, and correct the problem within forty eight hours. Other response levels are available.

Manufacturers' Warranty Extension

A manufacturer's warranty is supplied with each piece equipment. These vary in terms of the length and breadth of their coverage. Generally both hardware and software are covered. All are depot service which by definition is service at the manufacturers' facility. The warranty provision included in this proposal offers to extend the manufacturers warranty in its exact and original form.

**6800 - DENVER 8 TV SYSTEM
ACQUISITION/ENGINEERING/ INTEGRATION**

Extended Warranty

Budgetary Pricing for Master Control (Rooms 051 to 061)

Final pricing is dependant on final equipment complement and configuration.

Extended Warranty		
Year 1	Year 1	Included
Year 2	Year 2	
Year 2 Total	\$ 16,443.00	
Year 3	Year 3	
Year 3 Total	\$ 25,030.00	
Year 4	Year 4	
Year 4 Total	\$ 33,830.00	



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
1/23/2012

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Sunflower Insurance Group, Inc. 2090 S. Ohio P.O. Box 1213 Salina KS 67402-1213	CONTACT NAME: Shyla DeFrancesco PHONE (A/C, No, Ext): (800) 563-1871 E-MAIL ADDRESS: sdefrancesco@sunflowerinsurance.com PRODUCER CUSTOMER ID #: 00032487	FAX (A/C, No): (785) 825-5098													
	<table border="1"> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> <tr> <td>INSURER A: Travelers Property Casualty Co</td> <td>25674</td> </tr> <tr> <td>INSURER B: Travelers</td> <td></td> </tr> <tr> <td>INSURER C:</td> <td></td> </tr> <tr> <td>INSURER D:</td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </table>		INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Travelers Property Casualty Co	25674	INSURER B: Travelers		INSURER C:		INSURER D:		INSURER E:		INSURER F:
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INSURER C:															
INSURER D:															
INSURER E:															
INSURER F:															
INSURED Burst Communications, Inc. 8200 South Akron Street Suite #108 Centennial CO 80112															

COVERAGES CERTIFICATE NUMBER: 11-12 Renewal REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC		TT06303168	11/1/2011	11/1/2012	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS		BA1681P367	11/1/2011	11/1/2012	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ Uninsured motorist combined \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DEDUCTIBLE <input checked="" type="checkbox"/> RETENTION \$ 10,000		TT06303169	11/1/2011	11/1/2012	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A				<input type="checkbox"/> WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
The certificateholder and its elected and appointed officials, employees and volunteers are named as an additional insured and a waiver of subrogation is made a part of the general liability and automobile liability and umbrella liability insurance if required by written contract. If required by written contract the general liability coverage is primary and noncontributory.

CERTIFICATE HOLDER (720) 913-8101 City and County of Denver Dept of General Services, Purchasing Div 201 West Colfax Ave Dept 304, 11th Fl Denver, CO 80202	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE S DeFrancesco/SDEFRA
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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
01/23/2012

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

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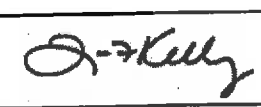
PRODUCER LOCKTON COMPANIES, LLC 5847 SAN FELIPE, SUITE 320 HOUSTON, TX 77057	CONTACT NAME: PHONE (A/C, No, Ext): _____ FAX (A/C, No): _____ E-MAIL ADDRESS: _____	
	INSURER(S) AFFORDING COVERAGE	
INSURED INSPERITY, INC. 19001 CRESCENT SPRINGS DRIVE KINGWOOD, TX 77339 * SEE BELOW	INSURER A: ACE American Insurance Company NAIC # 22667	
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** 2DA54NN4 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADD'L INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						EACH OCCURRENCE	\$
							DAMAGE TO RENTED PREMISES (Ea occurrence)	\$
							MED EXP (Any one person)	\$
							PERSONAL & ADV INJURY	\$
							GENERAL AGGREGATE	\$
							PRODUCTS - COMP/OP AGG	\$
								\$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS						COMBINED SINGLE LIMIT (Ea accident)	\$
							BODILY INJURY (Per person)	\$
							BODILY INJURY (Per accident)	\$
							PROPERTY DAMAGE (Per accident)	\$
								\$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> EXCESS LIAB DED <input type="checkbox"/> RETENTION \$						EACH OCCURRENCE	\$
							AGGREGATE	\$
								\$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			C4702674A	10/01/2011	10/01/2012	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER	
							E.L. EACH ACCIDENT	\$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE	\$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	\$ 1,000,000
								\$
								\$
								\$
								\$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
* BURST COMMUNICATIONS, INC. (599300) IS INCLUDED FOR COVERAGE THROUGH ENDORSEMENT FOR ALL EMPLOYEES UNDER CLIENT SERVICE AGREEMENT.
WAIVER OF SUBROGATION IN FAVOR OF CERTIFICATE HOLDER INCLUDED WHEN REQUIRED BY CONTRACT.
RE: DENVER 8 TV SYSTEM. ends.

CERTIFICATE HOLDER CITY AND COUNTY OF DENVER ATTN: RISK MANAGEMENT 201 WEST COLFAX AVENUE, DEPT 1105 DENVER, CO 80202	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE 

Workers' Compensation and Employers' Liability Policy

Named Insured INSPERITY, INC. 19001 CRESCENT SPRINGS DRIVE KINGWOOD TX 77339	Endorsement Number
	Policy Number Symbol: RWC Number: C4702674A
Policy Period 10-01-2011 TO 10-01-2012	Effective Date of Endorsement 01-23-2012
Issued By (Name of Insurance Company) INDEMNITY INS. CO. OF NORTH AMERICA	
Insert the policy number. The remainder of the information is to be completed only when this endorsement is issued subsequent to the preparation of the policy.	

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.

This agreement shall not operate directly or indirectly to benefit any one not named in the Schedule.

Schedule

CITY AND COUNTY OF DENVER
201 WEST COLFAX AVENUE, DEPT 1105
DENVER, CO 80202

RE: DENVER 8 TV SYSTEM.

For the states of CA, UT, TX, refer to state specific endorsements.
This endorsement is not applicable in KY, NH, and NJ.



Authorized Agent

Workers' Compensation and Employers' Liability Policy

Named Insured INSPERITY, INC. 19001 CRESCENT SPRINGS DRIVE KINGWOOD TX 77339	Endorsement Number
	Policy Number Symbol: RWC Number: C4702674A
Policy Period 10-01-2011 TO 10-01-2012	Effective Date of Endorsement 01-23-2012
Issued By (Name of Insurance Company) INDEMNITY INS. CO. OF NORTH AMERICA	
Insert the policy number. The remainder of the information is to be completed only when this endorsement is issued subsequent to the preparation of the policy.	

NOTICE TO OTHERS ENDORSEMENT - SPECIFIC PARTIES

- A. If we cancel this Policy prior to its expiration date by notice to you or the first Named insured for any reason other than nonpayment of premium, we will endeavor, as set out below, to send written notice of cancellation, via such electronic or other form of notification as we determine, to the persons or organizations listed in the schedule set out below (the "Schedule"). You or your representative must provide us with both the physical and e-mail address of such persons or organizations, and we will utilize such e-mail address or physical address that you or your representative provided to us on such Schedule.
- B. We will endeavor to send or deliver such notice to the e-mail address or physical address corresponding to each person or organization indicated in the Schedule at least 30 days prior to the cancellation date applicable to the Policy.
- C. The notice referenced in this endorsement is intended only to be a courtesy notification to the person(s) or organization(s) named in the Schedule in the event of a pending cancellation of coverage. We have no legal obligation of any kind to any such person(s) or organization(s). Our failure to provide advance notification of cancellation to the person(s) or organization(s) shown in the Schedule shall impose no obligation or liability of any kind upon us, our agents or representatives, will not extend any Policy cancellation date and will not negate any cancellation of the Policy.
- D. We are not responsible for verifying any information provided to us in any Schedule, nor are we responsible for any incorrect information that you or your representative provide to us. If you or your representative does not provide us with the information necessary to complete the Schedule, we have no responsibility for taking any action under this endorsement. In addition, if neither you nor your representative provides us with e-mail and physical address information with respect to a particular person or organization, then we shall have no responsibility for taking action with regard to such person or entity under this endorsement.
- E. We may arrange with your representative to send such notice in the event of any such cancellation.
- F. You will cooperate with us in providing, or in causing your representative to provide, the e-mail address and physical address of the persons or organizations listed in the Schedule.
- G. This endorsement does not apply in the event that you cancel the Policy.

SCHEDULE

Name of Certificate Holder	E-Mail Address	Physical Address
CITY & COUNTY OF DENVER ATTN: RISK MANAGEMENT		201 W COLFAX AVE, DEPT 1105, DENVER, CO 80202

All other terms and conditions of this Policy remain unchanged.



Authorized Representative



DENVER
THE MILE HIGH CITY

Career Service Authority

Denver's Human Resource Agency

201 W. Colfax, Department 412

Denver, CO 80202

p: 720.913.5751

f: 720.913.5720

www.denvergov.org/csa

TO: All Users of the City of Denver Prevailing Wage Schedules
FROM: Seth Duhon-Thornton, Staff Human Resources Professional
DATE: Friday March 2, 2012
SUBJECT: Latest Change to Prevailing Wage Schedules

Please be advised, prevailing wage rates for some building, heavy, and highway construction trades have not been updated by the United States Department of Labor (DOL) since March 1, 2002. The Career Service Authority Board, in their meeting held on April 21, 2011, approved the use of the attached supplemental wage rates until prevailing wage rates for these classifications of work are again published by the United States Department of Labor in accordance with the Davis-Bacon Act. The rates will be provided as a supplemental to the Davis-Bacon Building rates issued by CSA.

The attached Prevailing Wage Schedule is effective as of **Friday March 2, 2012** and applies to the City and County of Denver for **BUILDING CONSTRUCTION PROJECTS** (does not include residential construction consisting of single family homes and apartments up to and including 4 stories) in accordance with the Denver Revised Municipal Code, Section 20-76(c).

General Wage Decision No. CO120004
Superseded General Decision No. CO20100004
Modification No. 3
Publication Date: 02-24-2012
(6 pages)

Unless otherwise specified in this document, apprentices shall be permitted only if they are employed pursuant to, and individually registered in, a bona fide apprenticeship program registered with the U.S. Department of Labor (DOL). The employer and the individual apprentice must be registered in a program, which has received prior approval, by the DOL. Any employer, who employs an apprentice and is found to be in violation of this provision, shall be required to pay said apprentice the full journeyman scale.

For questions call (720) 913-5009

Attachments as listed above.

General Decision Number: CO120004 02/24/2012 CO4

Superseded General Decision Number: CO20100004

State: Colorado

Construction Type: Building

County: Denver County in Colorado.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	01/06/2012
1	01/13/2012
2	01/27/2012
3	02/24/2012

ASBE0028-001 07/01/2010

	Rates	Fringes
Asbestos Workers/Insulator (Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems).....	\$ 30.23	11.53

BRCO0007-001 01/01/2011

	Rates	Fringes
BRICKLAYER.....	\$ 22.13	9.89

BRCO0007-005 06/01/2011

	Rates	Fringes
TILE SETTER.....	\$ 25.15	9.18

CARP0001-004 05/01/2009

	Rates	Fringes
Carpenters: Acoustical, Drywall Hanging/Framing and Metal Stud, Form Building/Setting.	\$ 26.60	8.89

CARP2834-001 05/01/2009

Rates Fringes

MILLWRIGHT.....\$ 27.60 10.65

ELEC0068-002 06/01/2011

Rates Fringes

ELECTRICIAN

(Includes Low Voltage
Wiring and Installation of
Fire alarms, Security
Systems, Telephones,
Computers and Temperature
Controls).....\$ 31.60

12.52

ELEV0025-002 01/01/2012

Rates Fringes

Elevator Constructor.....\$ 39.34

23.535

FOOTNOTE:

a. Employer contributes 8% of basic hourly rate for over 5
years' service and 6% basic hourly rate for 6 months' to 5
years' service as Vacation Pay Credit.

PAID HOLIDAYS: New Year's Day; Memorial Day; Independence
Day; Labor Day; Veterans Day; Thanksgiving Day; Friday
after Thanksgiving Day; and Christmas Day.

ENGI0009-003 05/01/2011

Rates Fringes

Power equipment operator -
crane

141 tons and over.....\$ 24.88
50 tons and under.....\$ 23.82
51 to 90 tons.....\$ 23.97
91 to 140 tons.....\$ 24.12

9.22
9.22
9.22
9.22

IRON0024-001 07/01/2011

Rates Fringes

IRONWORKER, STRUCTURAL.....\$ 23.80

10.91

LABO0720-003 05/01/2009

Rates Fringes

Laborers:

Concrete/Mason Tenders.....\$ 16.52

6.84

PAIN0079-002 08/01/2010

Rates Fringes

Drywall Finisher/Taper		
Hand.....	\$ 18.69	6.11
Tool.....	\$ 19.04	6.11
Painters:.....	\$ 17.99	6.11
PAPERHANGER.....	\$ 18.69	6.11

* PAIN0930-001 01/01/2012

	Rates	Fringes
GLAZIER.....	\$ 27.95	7.28

PLAS0577-001 05/01/2010

	Rates	Fringes
Cement Mason/Concrete Finisher...	\$ 24.60	10.10

PLUM0003-001 01/01/2012

	Rates	Fringes
PLUMBER (Excluding HVAC work).....	\$ 32.68	11.44

PLUM0208-001 01/01/2012

	Rates	Fringes
PIPEFITTER (Including HVAC pipe).....	\$ 32.60	11.52

SFCO0669-001 04/01/2011

	Rates	Fringes
SPRINKLER FITTER.....	\$ 32.76	16.90

SHEE0009-001 01/01/2011

	Rates	Fringes
Sheet metal worker (Includes HVAC duct and installation of HVAC systems).....	\$ 31.66	10.98

SUCO2001-011 12/20/2001

	Rates	Fringes
Carpenters: All Other Work.....	\$ 16.12	2.84
Ironworkers: Reinforcing.....	\$ 18.49	3.87

Laborers:
 Brick Finisher/Tender.....\$ 12.78 1.41
 Common.....\$ 10.62 2.09

Power equipment operators:
 Mechanic.....\$ 18.48

 WELDERS - Receive rate prescribed for craft performing
 operation to which welding is incidental.

=====
 Unlisted classifications needed for work not included within
 the scope of the classifications listed may be added after
 award only as provided in the labor standards contract clauses
 (29CFR 5.5 (a) (1) (ii)).

 The body of each wage determination lists the classification
 and wage rates that have been found to be prevailing for the
 cited type(s) of construction in the area covered by the wage
 determination. The classifications are listed in alphabetical
 order of "identifiers" that indicate whether the particular
 rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with
 characters other than "SU" denotes that the union
 classification and rate have found to be prevailing for that
 classification. Example: PLUM0198-005 07/01/2011. The
 first four letters , PLUM, indicate the international union and
 the four-digit number, 0198, that follows indicates the local
 union number or district council number where applicable ,
 i.e., Plumbers Local 0198. The next number, 005 in the
 example, is an internal number used in processing the wage
 determination. The date, 07/01/2011, following these
 characters is the effective date of the most current
 negotiated rate/collective bargaining agreement which would be
 July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any
 changes in the collective bargaining agreements governing the
 rate.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived
 from survey data by computing average rates and are not union
 rates; however, the data used in computing these rates may
 include both union and non-union data. Example: SULA2004-007

5/13/2010. SU indicates the rates are not union rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Career Service Authority
Supplemental to the Davis-Bacon *Building* Construction Project rates
(Specific to the Denver projects)
Supp #100, Date: 03-02-2012

<u>Classification</u>		<u>Base</u>	<u>Fringe</u>
Boilermakers		\$30.97	\$21.45
Power Equipment Operators (Concrete Mixers):			
	Less than 1 yd	\$23.67	\$10.67
	1 yd and over	\$23.82	\$10.68
	Drillers	\$23.97	\$10.70
	Loaders over 6 cu yd	\$23.82	\$10.68
	Oilers	\$22.97	\$10.70
Soft Floor Layers		\$16.70	\$9.81
Ironworkers (Ornamental)		\$24.80	\$10.03
Plasters		\$24.60	\$12.11
Plaster Tenders		\$10.79	-
Laborers: Concrete Saw		\$13.89	-
Power Equipment Operators:			
	Backhoe	\$23.67	\$10.67
	Loader up to and incl 6 cu yd	\$23.67	\$10.67
	Motor Grader	\$23.97	\$10.70
	Roller	\$23.67	\$10.67
Truck Drivers (Dump Trucks):			
	6 to 14 cu yds	\$19.14	\$10.07
	15 to 29 cu yds	\$19.48	\$10.11
	Flatbed	\$19.14	\$10.07
	Semi	\$19.48	\$10.11

- To determine the Tile Setters-Marble Mason-Terrazzo mechanic rates—Use Davis Bacon-Building rates adopted by the Career Service Board.
- To determine the Tile Finisher-Floor Grinder-Base Grinder—Use current Career Service Prevailing Wage Schedules.
- Caulkers—Receive rate prescribed for craft performing operation to which caulking is incidental .i.e. glazier, painter, brick layer, cement mason.
- Use the “Carpenters—All Other Work” rates published by the federal Davis Bacon rates for batt insulation, pre-stress concrete and tilt up concrete walls, Roofers (including foundation waterproofing).
- Use the “Laborer—Common”, rates published by the federal Davis Bacon rates for General Housekeeping, Final Cleanup and Fence Installer.

Contract Control Number:

IN WITNESS WHEREOF, the parties have set their hands and affixed their seals at Denver, Colorado as of

SEAL

CITY AND COUNTY OF DENVER

ATTEST:

By _____

APPROVED AS TO FORM:

REGISTERED AND COUNTERSIGNED:

By _____


By _____

By _____



Contract Control Number: TECHS-201204498-00

Contractor Name: BURST COMMUNICATIONS INC

By:  _____

Name: Robin Heywood
(please print)

Title: VA
(please print)

ATTEST: [if required]

By: _____

Name: _____
(please print)

Title: _____
(please print)

