COLORADO
Parks and Wildlife
Department of Natural Resources

Oak Ridge SWA - Bel Aire Shop Replacement
BIDDING AND CONTRACT INFORMATION

PROJECT NO. **C26NW1**
IFB1: **2026*129**

NON-MANDATORY PRE-BID CONFERENCE: **February 25, 2026 at 11:00am**

BID OPENING: **March 11, 2026 at 1:00pm**

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C26NW1

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INVITATION FOR BIDS

Oak Ridge SWA - Bel Aire Shop Replacement

The Colorado Division of Parks and Wildlife is accepting sealed bids for the complete removal and disposal of the existing shop and hay barn, and installation of the new pre-engineered metal shop building in accordance with these Specifications and Construction Drawings.

Sealed bids will be received by Colorado Parks and Wildlife, **711 Independent Ave Grand Junction, 81505 until March 11, 2026 at 1:00pm**, after which the bids will be made public. Bids shall be submitted using the form provided in the project specifications. Online bid submittals are not accepted.

A five-percent (5%) Bid Bond, certified check, or cashier's check is required with bid proposals of $50,000.00 or more.

Non-Mandatory Pre-bid conference: February 25, 2026 at 11:00am at the project site.

Project Address: Oak Ridge SWA
42421 CR-17
Meeker, CO 81641
Rio Blanco County

Project Coordinates: Latitude: 39°58'42" N
Longitude: 107°37'50" W
VIEW GOOGLE MAP LOCATION

Contractor Questions: All questions related to the project shall be submitted via e-mail to the Design Engineer, Jordan Hasz at jordan.hasz@state.co.us. The deadline for questions is **March 4, 2026 at 5:00 PM**. Questions submitted after the deadline will not be addressed. All questions and answers will be posted as solicitation amendments on the Vendor Self Service (VSS) website. Bidders may not automatically be notified of the existence of a modification or addendum. It is the responsibility of the bidder to check the VSS website periodically to see if any modifications have been issued. Failure to retrieve such modifications and include their provisions in your bid response may result in your bid being deemed non-responsive.

Plans and specifications are available for all bidders on the web at: www.colorado.gov/vss

The following is a tentative project schedule, which will be revised and expanded by the selected Contractor and submitted to the Project Manager for review:

NON-MANDATORY PRE-BID CONFERENCE	February 25, 2026 at 11:00am
WRITTEN QUESTIONS DUE	March 4, 2026 at 5:00 PM
BID OPENING	March 11, 2026 at 1:00pm
NOTICE OF INTENT TO AWARD	March 16, 2026 (Tentative)
NOTICE TO PROCEED	May 11, 2026 (Tentative)
SUBSTANTIAL COMPLETION	September 8, 2026 (Tentative)

BID SCHEDULE

Oak Ridge SWA - Bel Aire Shop Replacement

DEPARTMENT OF NATURAL RESOURCES
COLORADO PARKS AND WILDLIFE
STATE OF COLORADO

_____**Proposes to furnish all labor, equipment, materials, and incidentals needed to complete the Oak Ridge SWA - Bel Aire Shop Replacement. The work shall be completed in 120 calendar days from the date of the Notice to Proceed. We have read and made, the "Instructions to Bidders", the "General Conditions for Capital Construction", the Written Specifications, and the Construction Drawings part of this bid.**

Technical Specifications related to construction materials and methods for work embraced under this Contract shall consist of references to, but not limited to, the **Colorado Department of Transportation Most Current Standard Specifications for Roads and Bridge Construction**. Special attention should be given to these references and revisions noted within.

UNITS: CY= cubic yard, HRS= hours, LF= linear foot, LS= lump sum, SF= square feet, TON= tons

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Service Disabled Veteran Owned Small Business Statement (SDVOSB): The undersigned bidder shall certify by **checking** below that the corporation, partnership, or sole proprietorship **IS or IS NOT** claiming a 5% bid preference in accordance with C.R.S. 24-103-211. SDVOSB certification must be included with your bid.

Is: ☐ **Is Not:** ☐

_____-
_____

Colorado Labor: The undersigned bidder shall certify by **indicating the percentage** of Colorado labor of the total workforce to be utilized for this project in accordance with C.R.S. 8-17-101. Colorado Labor shall be employed to perform at least 80% of the work on a public works project greater that $500,000.00. A written justification for not meeting this percentage must be included with your bid.

% of Colorado Labor: _____

_____
_____

Addendum Inclusion Statement: The undersigned bidder shall certify by **listing** below that all Addendums have been considered and included as part of the Contractor's proposal. The Addendum numbers that the Contractor has included as part of his proposal shall be listed in the space provided.

Addendums:_____ **Initials:**_____

_____

BID SCHEDULE

Oak Ridge SWA - Bel Aire Shop Replacement

Base Bid: Furnish and install all materials and labor for the completion of the Base Bid Improvements per the Construction Drawings and Specifications.

Base Bid Items:	Quantity	Unit	Unit Cost	Total Item Cost
1. Perform Mobilization	1	LS	$	$
2. Demolition and Disposal of Existing Structures	1	LS	$	$
3. Site Grading and Earthwork	1	LS	$	$
4. Compacted ABC	300	TON	$	$
5. Concrete Foundation	29.3	CY	$	$
6. Subgrade Drainage System	200	LF	$	$
7. 40' x 80' Pre-Engineered Metal Building	1	LS	$	$
8. Interior Concrete Slab	3,200	SF	$	$
9. Utilities to New Building, Complete	1	LS	$	$

Base Bid AMOUNT $ _____

Base Bid AMOUNT (PLEASE WRITE OUT)

$ _____ DOLLARS

Additional Bid Items: Furnish and install all materials and labor for the completion of Optional Bid Items per the Construction Drawings and Specifications. These items are to be completed by the bidder and may be added by the Owner in any combination to arrive at the selection of the lowest responsible bidder. They are NOT to be included in the BASE BID.

Additional Bid Items:	Quantity	Unit	Unit Cost	Total Item Cost
10. Slab Drain System	1	LS		
11. 40' x 20' 3-Sided Extension	1	LS		
12. Exterior Concrete Slab	2,120	SF		
13. Restroom, Complete	1	LS		
14. Mini Excacator Equipment Time	120	HRS		
15. General Laborer Time	120	HRS		

Optional Bid Total AMOUNT $ _____

Optional Bid Total AMOUNT (PLEASE WRITE OUT)

$ _____ DOLLARS

BID SCHEDULE

Oak Ridge SWA - Bel Aire Shop Replacement

(A Corporate Signature Block)

_____

Company Name

A _____Corporation

Date_____, 20____

Colorado VSS Vendor ID# (if available) _____

By _____
President

Attested to by _____
Secretary

(A Partnership Signature Block)

A limited partnership of _____, general partner;

_____ doing business as (dba)

_____.

Company Name

Colorado VSS Vendor ID# (if available) _____

by _____
General Partner

(A Sole Proprietorship Signature Block)

A Sole Proprietorship of _____(dba)

_____.

Colorado VSS Vendor ID# (if available) _____

by_____Owner

MEASUREMENT AND PAYMENT

Oak Ridge SWA - Bel Aire Shop Replacement

The following descriptions delineate the Work, materials, and how measurements of completed Work will be made and paid for, for each bid item in the Bid Schedule. The Bidder is to read these definitions and price their proposal accordingly.

Bid Item 1 – Mobilization
Measurement and payment for mobilization will be in accordance with SECTION 02050 – MOBILIZATION.

Bid Item 2 – Demolition and Disposal of Existing Structures
This bid item includes all labor, materials, equipment, and incidental costs required to completely demolish and dispose of the existing shop, the shop foundation, hay shed and fencing in accordance with these bid documents. Individual items shall not be measured separately but shall be included in the total unit cost. Payment will be made at the lump sum bid price as reported on the Bid Schedule.

Bid Item 3 – Site Grading and Earthwork
This bid item includes all labor, materials, equipment, independent testing services, and incidental costs required to perform earthwork in accordance with these bid documents. This includes but is not limited to: any costs for preparatory earthwork, clearing and grubbing, excavation including footing excavation, backfill, compaction, soil testing, finish grading, and disposal of excess material on site. Individual items shall not be measured separately but shall be included in the total unit cost. Payment will be made at the lump sum bid price as reported on the Bid Schedule.

Bid Item 4 – Compacted ABC
This bid item includes all labor, materials, equipment, independent testing services and incidental costs required to furnish and place Class 6 road base at the locations indicated on the plans in accordance with these bid documents. Road base shall be placed at optimum moisture content and compacted to a minimum 95% of standard proctor density. The method to bring mixture to optimum moisture and density will not be measured or paid for separately, but shall be included in the unit price for this item. Measurement for this item will be according to load tickets delivered to the site, and paid at the unit price per ton as reported on the Bid Schedule. The load tickets shall be submitted by the Contractor with the pay application.

Bid Item 5 – Concrete Foundation
This bid item includes all labor, materials, equipment, independent testing services and incidental costs required to furnish and install concrete foundations in accordance with these bid documents. This includes but is not limited to: formwork, reinforcement, inserts and fastening devices, rigid foam board insulation, and all other supplies necessary for installation as described in the drawings and specifications. These additional items shall not be measured separately but shall be included in the total unit cost. Quantities shall be measured according to the neat lines of the Foundation Plan, and paid at the unit price per cubic yard as reported on the Bid Schedule.

Bid Item 6 – Subgrade Drainage System
This bid item includes all material, labor, equipment, and incidental costs associated with the complete installation of the subgrade drainage system in accordance with these bid documents. This pay item includes but is not limited to: trenching, grading, filter fabric, perforated piping, fittings, filter and coarse aggregates, backfill, compaction and any additional supplies

necessary for the complete installation. Individual items shall not be measured separately but shall be included in the total unit cost. Quantities shall be measured and paid for based on the unit price in linear feet as reported on the Bid Schedule.

Bid Item 7 – 40' x 80' Pre-Engineered Metal Building
This bid item includes all material, labor, equipment, submittals, independent testing services and incidental costs required to construct the Shop Building at the location shown on the plans in accordance with these bid documents. This includes, but is not limited to:

- A complete pre-engineered metal building system, erected on the site as shown in the plans. The Contractor's Colorado licensed Engineer shall submit building reactions to CPW. Foundation design may be revised by CPW based on submittal.
- All structural systems, building insulation, interior OSB, overhead doors, entry doors, windows, flashing, trim, gutters, downspouts incidental hardware required for a completely functional building.
- Fine grading and cleanup around the structure upon completion.

This bid item also includes all required shop drawings, submittals, certifications, permits, and inspections. The building will be measured and paid as a completed building unit in place. Progress payments will be made based on a percentage of the completed work, at the lump sum price as reported on the Bid Schedule.

Bid Item 8 – Interior Concrete Slab
This bid item includes all labor, materials, equipment, submittals, independent testing services and incidental costs required to furnish and install the interior concrete slab in accordance with these bid documents. This includes but is not limited to: formwork, reinforcement, sealants, joint fillers, finishing, and all other supplies necessary for the installation as described in the drawings and specifications. These additional items shall not be measured separately but shall be included in the total unit cost. Quantities shall be measured and paid for at the unit price per square foot as reported on the Bid Schedule.

Bid Item 9 – Utilities to New Building, Complete
This bid item includes all labor, materials, equipment and incidental costs required to bring utilities from the indicated connection points to the new building and fully functional electrical, gas, water and sewer services within the building in accordance with these bid documents. This includes but is not limited to:

- Electrical service including service panel, C.T. cabinet, meter socket, disconnect panels, overhead wiring, ties, system grounding, and connection testing.
- Electrical distribution and fixtures including conduit, wiring, switches, outlets, lights, exhaust fans, overhead door operators, and unit heater wiring.
- Water supply including trenching, interior and exterior pipe up to and including building rough-ins, placement of pipe, connections, fittings, valves, and system testing.
- Sanitary sewer connection including trenching, pipe, placement of pipe, cleanouts, connections, and fittings.
- Propane gas distribution and fixtures including trenching, interior and exterior piping, fittings, control valves, and unit heaters.

Individual items shall not be measured separately but shall be included in the total unit cost. Payment will be made at the lump sum bid price as reported on the Bid Schedule.

The following bid items are to be completed by the bidder, and are additional items which are NOT to be included in the Base Bid. They may be added in any combination to arrive at the selection of the lowest responsible bidder. All bid items shall include costs associated with

additional mobilization and insurance required above that which is necessary to complete the base bid.

Optional Bid Item 10: Slab Drain System
This bid item includes all labor, materials, equipment and incidental costs required to install the slab drain system in accordance with these bid documents. This includes but is not limited to:

- Additional concrete, formwork, reinforcement above that which is required to complete the interior concrete slab.
- Drain grates, pipe, placement of pipe, cleanouts, fittings, and any additional plumbing costs above that which is required to complete the base bid.
- Furnishing and installation of the 320 gallon precast sand-oil interceptor complete as specified.
- Individual items shall not be measured separately but shall be included in the total unit cost. If selected, payment will be made at the lump sum bid price as reported on the Bid Schedule.

Optional Bid Item 11: 40' x 20' 3-Sided Extension
This bid item includes all labor, materials, equipment and incidental costs required to install the 40' x 20' 3-sided building extension in accordance with these bid documents. This includes but is not limited to concrete foundations, additional road base, building members, siding, flashing, trim, fasteners and any building costs required to install the extension above that which is required to complete the base bid building. Individual items shall not be measured separately but shall be included in the total unit cost. If selected, payment will be made at the lump sum bid price as reported on the Bid Schedule.

Optional Bid Item 12 – Exterior Concrete Slab
This bid item includes all labor, materials, equipment, submittals, independent testing services and incidental costs required to furnish and install the exterior concrete slab in accordance with these bid documents. This includes but is not limited to: formwork, reinforcement, sealants, joint fillers, finishing, and all other supplies necessary for the installation as described in the drawings and specifications. These additional items shall not be measured separately but shall be included in the total unit cost. If selected, quantities will be measured and paid for at the unit price per square foot as reported on the Bid Schedule.

Optional Bid Item 13: Restroom, Complete
This bid item includes all labor, materials, equipment and incidental costs required to construct the interior restroom in accordance with these bid documents. This includes but is not limited to:

- Interior framing, doors, trim, and wall and ceiling finishes.
- Plumbing fixtures including hot water heater, utility sink, water closet, grab bars, lavatory, mirror, toilet paper holder, pipe, fittings, and any additional plumbing costs above that which is required to complete the base bid.
- Electrical fixtures including bathroom exhaust fan, LED lights, switches, outlets, cover plates and any additional electrical costs above that which is required to complete the base bid.

Individual items shall not be measured separately but shall be included in the total unit cost. If selected, payment will be made at the lump sum bid price as reported on the Bid Schedule.

Optional Bid Items 14 - 15: Time & Equipment
These bid items will only apply to additional construction requests by the Project Manager that are not included in other bid items. Payment will be made at the Contract unit price for the

number of hours operated or worked and includes operator, fuel, labor, tools and all support necessary for operation. A total of two hours for mobilization/demobilization will be paid on each piece of equipment requested not already located at the job site. The number of hours to be paid under these items will be discussed and agreed to in advance by the Contractor and the Project Manager. Bid Item pricing shall be based on the following types of equipment:

Bid Item 14: Mini Excavator – Cat 330D series or equivalent

Bid Item 15: General Laborer

As a footnote to the bid items, the following items have NOT been included as specific pay items and ARE to be considered incidental to the construction for which they are required:

- Testing
- Water, watering, and dust control
- Temporary facilities and utilities
- Traffic control
- Barricades and other required safety provisions

This concludes the bid items listed in the proposal. The only payments made under this contract are for the bid items listed herein, and no additional payments will be made to the Contractor for work specified or shown in these Contract Documents. If any discrepancies exist, the Contractor shall notify the Project Manager in writing, requesting clarification.

END OF SECTION

INSTRUCTIONS TO BIDDERS

PROJECT: **Oak Ridge SWA - Bel Aire Shop Replacement**
PROJECT NO: **C26NW1**

1. Bidders must review the plans and specifications, construction site and conditions in their entirety, and determine the problems that may be encountered in performing the work. The bidder shall include any costs associated with his/her findings in the prices quoted in the proposal. Documents will be available on the State of Colorado VSS website **www.colorado.gov/vss**. No additional copies of the drawings and specifications will be provided by the Division of Parks and Wildlife at any time before or after the bid opening.

2. All work must conform to the requirements stated in the "General Conditions for Capital Construction".

3. All questions concerning this project shall be in writing directed to the Design Engineer identified in the Invitation for Bids. The Invitation for Bids also identifies important dates and deadlines for this project.

4. BID SCHEDULE:
   A. The bidder shall include on the signature page, their Vendor ID (if available) obtained from registration on the Colorado VSS website.
   B. The bidder shall complete the Minority Business, Service Disabled Veteran Owned Small Business and Colorado Labor statements as well as acknowledge addendum(s) on the first page of the Bid Schedule.
   C. All bid items shall include a unit and extended price or the bid will be disqualified. The bidder shall write in words and numerically the total base bid and add/alternate (if applicable) amounts on the included Bid Schedule. If conflicts exist between the written words and the numerical amount, the actual line item unit cost shall take precedence.
   D. The Bid Schedule shall be signed manually in ink:
      1) If the bidder is a corporation, use the corporate signature block, insert the name of the state in which the company was incorporated, and include the Employer Identification Number (E.I.N.) in the appropriate spaces. The bid must be signed by an officer (President or Vice President), and the title indicated. The signature of the officer shall be attested to by the Secretary and properly sealed. Cross out incorrect titles and insert correct ones, if necessary.
      2) If the bidder is a partnership, use the partnership signature block. Cross out the word "Limited" if the partnership is a general one. Print each partner's name and note the proportion of the partnership that each partner has. The majority or general partner must sign the proposal. The same person must sign the contract, if awarded. Print the company name in the appropriate space.
      3) If the bidder is a proprietorship, use the sole proprietorship signature block, print in the owner's name, Social Security number, and the business name in the blanks provided, and the owner signs the owner blank.

5. BID BOND: A bid bond is required for all competitive sealed bids when the price exceeds $50,000. A bid guarantee in an amount not less than five percent (5%) of the total bid price must be submitted in the form of a firm commitment, such as a bid bond, bank money order, certified check or cashier's check. Checks or money orders should be made payable to the Treasurer, State of Colorado. An irrevocable letter of credit is not acceptable as a bid guarantee. Failure to furnish a bid guarantee in the proper form and amount by the time

set for opening of bids may be cause for rejection of the bid.

6. PERFORMANCE BOND, LABOR AND MATERIAL BOND: The successful bidder shall furnish a bond in the amount of 100% of the contract price for performance and for material and labor payment when bid is equal to or exceeds $150,000. The bond shall be executed on the standard State of Colorado form. The State requests that the Surety and Contractor leave the date of the Contract found on the first page of each bond form, blank and we will 'pen' in the date after the Controller executes the Contract. These bonds will be submitted along with the standard State Agreement form within 10 days of the "Notice of Award."

7. VENDOR BOND ASSISTANCE: Any vendors that need support responding to solicitations may contact the Colorado Supplier Diversity Navigator at the Statewide Equity Office of Supplier Diversity dhr.colorado.gov/statewide-equity-office/supplier-diversity. Services provided include assistance with responding to solicitations, interpretation of solicitation documents, technical assistance referrals, availability of resources, and bond assistance under the Construction Statewide Bond Assistance Program dhr.colorado.gov/statewide-equity-office/supplier-diversity/construction-and-bond-assistance , through which eligible contractors can apply for assistance in securing the required bonding. The office can be reached during normal business hours by calling 303-866-5765 or emailing DPA_SupplierDiversityHelp@state.co.us.

8. RESIDENT BIDDER PREFERENCE: When a contract for commodities or services is to be awarded to a bidder (projects >$500,000), a resident bidder shall be allowed a preference against a nonresident bidder equal to the preference given or required by the state in which the nonresident bidder is a resident. (§24-103-906 C.R.S.) A resident bidder is authorized to transact business in the State of Colorado, maintains a place of business in Colorado and pays unemployment compensation taxes.

9. SERVICE DISABLED VETERAN OWNED SMALL BUSINESSES (SDVOSB's): SDVOSB's, who are incorporated or organized in Colorado or maintain a place of business or have an office in Colorado and who are officially registered and verified as a SDVOSB by the Center for Veteran Enterprise within the U.S. Department of Veterans Affairs. (www.vip.vetbiz.gov), may receive a 5% preference on their bid. This preference applies only to the price, and the SDVOSB's must still meet all other qualifications required in the bid. SDVOSB's claiming this preference shall submit documentation of SDVOSB certification Issued through the U.S. Department of Veterans Affairs in their response to the solicitation. Bid submissions without this documentation will not be given a preference.

10. COLORADO LABOR: Colorado Labor shall be employed to perform at least eighty percent (80%) of the work on a public works project **(>$500,000)** per CRS 8-17-101. BIDS/CORE notice to require bidder to indicate 80% Colorado labor in bid or proposal and provide written justification if the 80% Colorado labor is not included in the bid. The justification is a requirement of the bid or proposal submittal. State Agency shall waive the 80% requirement and post justification on its web site; if there is reasonable evidence to demonstrate insufficient Colorado labor to perform the work and, if compliance with the 80% would create an undue burden that would substantially prevent a project from proceeding to completion. Posting of the agency's written waiver should include but not be limited to contractor's justification for insufficient available Colorado labor and the agency's determination that there is an undue burden negatively impacting the project schedule, budget/appropriation, quality/standards of care or any other specific requirement of the project due to compliance with the 80% Colorado labor requirement. The posting of rational should be made on the date of the award and remain for not less than thirty (30) calendar days in a conspicuous web site

location of the state agency under the title – "Reporting Requirements for Public Projects as per HB13-1292".

11. FINAL REPORTING FOR IRON, STEEL, OR RELATED MANUFACTURED ITEMS: This requirement only applies when a contract for a public works project is to be awarded to a bidder (projects >$500,000), for a project that does not receive any federal moneys. At the completion of the project, the Contractor shall provide an accounting of the value and origin of the five most costly manufactured goods incorporated into the project. For the purposes of this reporting, "manufactured goods" contain over fifty percent iron or steel content when it is delivered to the job site for installation. If all the manufacturing processes for the final product take place in the United States, the product shall be considered as originating there.

12. APPRENTICESHIP UTILIZATION CERTIFICATION (Contracts >$1,000,000): In order to comply with CRS 24-92-115 regarding statutorily required utilization of apprenticeship programs for certain trades, the awarded bidder will be required to complete a copy of the compliance form available at <https://drive.google.com/file/d/1J4MSGuLyZTO3FgTcvgKrybAoalDkC8am/view> prior to execution of the contract. Please indicate on the Apprenticeship Utilization Survey document attached to the solicitation. Please review the "Special Considerations for Public Projects" section of the Contract Sample for additional details regarding applicable apprenticeship utilization statutes.

13. SUBMITTAL OF BID: The completed Bid must be received by the deadline identified in the Invitation for Bids. You must include as part of your bid the following items:

    A. Provide completed Bid Schedule as described above.
    B. Provide Bid Bond (if required) as described above.
    C. SDVOSB certification issued through the U.S Department of Veterans Affairs (if applicable).
    D. Colorado Labor Justification if not using 80% Colorado Labor (if applicable).
    E. Apprenticeship Utilization Survey. (Bids >$1,000,000)

    This information is to be enclosed in a sealed envelope marked "SEALED BID". Include the bid opening date and time.

    The envelope shall be addressed to:

    ATTN: Kendal Bergman

    Northwest Region
    Colorado Parks and Wildlife
    711 Independent Ave.
    Grand Junction, CO 81505

    Bidders Name and Address should appear in the Upper Left Corner of the envelope.

14. METHOD OF AWARD: The lowest responsible bid, taking into account the Colorado resident bidder preference provision of Colorado Law, will be determined by and the purchase order or contract will be issued, to the extent that the total dollar amount is within available funds to finance the construction. If all bids exceed such amount, the right is reserved to reject all bids. The Division of Parks and Wildlife reserves the right to reject any or all proposals, to waive informalities, and to accept any proposal deemed desirable.

Additive alternates will be used in determining the lowest responsible bidder within the amount available to finance the contract, added in any order at CPW's discretion. An equal number of alternates shall be added to the base bid of each bidder within funds available to finance the contract for purposes of determining the lowest responsible bidder.

The bidder must be registered to do business in the State of Colorado with the Secretary of State www.sos.state.co.us. A Certificate of Good Standing will be required to process the Agreement.

15. UNIT COST: The price quoted in the proposal shall include the costs of labor, materials, equipment, and incidentals required to provide a fully complete and functioning unit as shown and described in the plans and specifications. The price stated in the proposal shall be complete, and represent total payment for each item in the proposal. No additional payment will be made for the work presented in the proposal.

16. INSURANCE: The successful bidder will be required to submit proof of insurance at the time of executing the agreement. Proof of insurance must be submitted on certificates showing the minimum coverage amounts.
    A. The Contractor is required to procure and maintain at all times during the term of this contract the insurance coverage listed below:
        1) Workers' Compensation and Employer's Liability Insurance, as required by state statute, including occupational disease, covering all of contractor or subcontractor employees acting within the course and scope of their employment.
        2) Commercial General Liability Insurance written on ISO occurrence form CG 00 01 10/93 or equivalent, covering premises operations, fire damage, independent contractors, products and completed operations, blanket contractual liability, personal injury, and advertising liability with minimum limits as follows:
            a. $1,000,000 combined single limit written on an occurrence basis;
            b. $1,000,000 general aggregate;
            c. $1,000,000 products and completed operations aggregate; and
            d. $50,000 any one fire.
            e. If any aggregate limit is reduced below $1,000,000 because of claims made or paid, the contractor shall immediately obtain additional insurance to restore the full aggregate limit and furnish to the State a certificate or other document satisfactory to the State showing compliance with this provision.
        3) Automobile Liability Insurance covering any auto (including owned, hired and non-owned autos) with a minimum limit as follows: $1,000,000 each accident combined single limit.
        4) Builder's Risk Insurance if the Contractor will construct a new or substantially renovate an existing building.
        5) Pollution liability policy with minimum limits of $1,000,000 each occurrence and $1,000,000 Annual Aggregate covering any environmental damage caused by the contractor or subcontractor during the Work with the State included as an additionally insured party.
    B. **The State of Colorado shall be named as an *Additional Insured* on the Commercial General Liability, Automobile Liability, and Builder's Risk policy insurance certificates and Colorado Parks and Wildlife must be named as the certificate holder for all coverages 1-4 noted above** (leases and construction contracts will require the additional insured coverage for completed operations on endorsements CG 2010 11/85, CG 2037, or equivalent). Coverage required of the contract will be primary over any insurance or self-insurance program carried by the State of Colorado.
    C. The Insurance shall include provisions preventing cancellation or non-renewal without

at least 45 days prior notice to the State by certified mail.

D. The Insurance shall include a waiver of subrogation for all coverages.
E. The contractor will require all insurance policies in any way related to the contract and secured and maintained by the contractor to include clauses stating that each carrier will waive all rights of recovery, under subrogation or otherwise, against the State of Colorado, its agencies, institutions, organizations, officers, agents, employees and volunteers.
F. All policies evidencing the insurance coverage required hereunder shall be issued by insurance companies satisfactory to the State. No later than 15 days prior to the expiration date of any such coverage, the contractor shall deliver the State certificates of insurance evidencing renewals thereof.

17. BUILDER'S RISK INSURANCE: The Contractor shall effect and maintain, at their own expense, during the life of the contract, All Risk Builder's Risk Completed Value Insurance if the work is for an entirely new structure, or All Risk Insurance if the work is for an existing structure. The coverage shall be in the dollar amount of the total project for the contract.

    The insurance shall remain in effect until all contract work has been completed and a Notice of Final Acceptance has been issued, whether or not the building or some part thereof is occupied in any manner prior to final acceptance of the project. Such insurance shall be in an amount equal to the aggregate total insurable value of the construction contract entered in with permissible deductions of the cost of the excavations, foundations below the lowest basement floor, underground construction, underground pipes, underground wiring, sidewalks, driveways, curbs and gutters, street improvements, and fences.

    Upon request, the amount of such fire insurance shall be increased to include the cost of any additional work to be done on the project, or materials or equipment to be incorporated in the project, under other independent contracts let or to be let. In such event, the Contractor shall be reimbursed for the cost of their share of the insurance in the same ratio of the insurance represented by such independent contracts let or to be let to the total insurance carried.

    All such insurance shall insure the State of Colorado acting by and through the Division, the Contractor and their subcontractors as their interest may appear, but the loss, if any shall be payable to the State Controller, as Trustee. The certificate of insurance shall specifically state the inclusion of provisions herein above. The Division with the approval of the State Controller will have the power to adjust and settle any loss. Unless it is agreed otherwise, all moneys received will be applied on rebuilding or repairing the destroyed or injured work.

18. If the successful bidder, upon acceptance of his bid by the OWNER, fails to execute such further contractual documents, and give such bond(s) (including any necessary coinsurance or reinsurance agreements) as may be required within ten (10) days after receipt of the Notice of Award, the contract may be terminated for default. In such event the CONTRACTOR shall be liable for any cost of procuring the work which exceeds the amount of his bid, and the bid guarantee shall be available toward offsetting such difference.

19. The bidder is not to give any information concerning his proposal to any other bidder or receive any information concerning another proposal.

20. SALES TAX: The Division of Parks and Wildlife is exempt from paying Colorado sales tax. Any materials and supplies purchased for this contract are exempt. The Contractor will need to obtain an exemption number from the Department of Revenue for this project and

each subcontractor is required to obtain one under the general contractor.

21. QUANTITIES: Quantities stated in the bid schedule and construction documents are estimates only and may increase or decrease during construction. The contractor will perform the required quantity of work based on the unit prices stated in the Bid Schedule except as provided in Section 4.2 of the "General Conditions for Capital Construction."

22. WORK STOPPAGE: Work stoppage is a possibility. The contractor must request all shutdowns or stoppages in writing. If a shutdown is granted, the Division will pay for only work that has been totally completed. No advanced payment of mobilization will be made.

23. CONSTRUCTION SCHEDULE: The Contractor shall submit a written project schedule and supporting data to the Project Manager as soon as possible after the receipt of the Notice of Award. The schedule shall describe key milestones and duration of project activities. The supporting data for the schedule shall include a complete list of anticipated submittals and due dates, and the key ordering and delivery lead times. The Contractor shall schedule the sequence of construction to consider the delivery of long lead-time items. It shall be the Contractor's responsibility to notify the Project Manager of any problem in conforming to the Contract Documents, Specifications, and Construction Drawings for any element of the proposed improvements prior to its construction.

24. SCHEDULE OF VALUES/WORK SCHEDULE: The Contractor shall provide the Project Manager for review and acceptance, and prior to the commencement of any Work, a breakdown of the Contract cost proposal into values representing the various distinct stages, or units of the whole project, as a basis for making partial and final payments. Stages or specialty items shall be described in terms of a percentage to the whole. The schedule of values shall be shown on a proposed time line estimating the actual Work schedule. The schedule shall indicate starting and completion dates for the various stages of Work and shall be in a format acceptable to the Project Manager.

25. SCHEDULE OF SUBCONTRACTORS, MAJOR EQUIPMENT AND MATERIALS SUPPLIERS: The Contractor shall provide the Owner, prior to the commencement of any Work, a detailed listing of subcontractors and major equipment and materials suppliers indicating their name, address, description of service or equipment and materials being provided, if they are a woman owned or minority owned business enterprise (WBE/MBE), and their vested monetary interest in the contract. The Contractor shall not award any Work to a subcontractor, transfer or assign any portion of the Contract Work, without the written approval of the Owner. Records shall be maintained throughout the duration of the Contract and periodically submitted at the time the Contractor submits progress payment applications. The Owner will use these records to verify the Contractor’s level of indebtedness prior to making final payment.

26. DIVISION APPROVAL OF INDEPENDENT TESTING LABORATORY: The Contractor shall submit the name and qualifications of the independent testing laboratory to the Project Manager as soon as possible after the receipt of the Notice of Award. The Division may request personal interviews, and retains the right to reject the proposed candidates without reservation. If a candidate is rejected, the Contractor shall provide an alternative that is acceptable, and work shall not begin until approval is obtained.

27. CONSTRUCTION CONTROL PLAN: A traffic, excavation, and construction access control plan shall be submitted by the Contractor and approved by the Owner prior to the commencement of work. The disruption to project area visitors shall be kept to a minimum.

The plan shall take into consideration all users, including motorists, cyclists, and pedestrians. The Contractor shall provide all lights, signs, barricades, flagmen, or other devices necessary to provide for public safety in accordance with the current United States Department of Transportation's Manual of Uniform Traffic Control Devices.

28. STORMWATER MANAGEMENT PLAN: This project will not disturb more than 1 acre of ground, so a State stormwater control permit is not required.

29. Colorado Parks and Wildlife shall not be obligated or liable for any cost incurred by any company or individual reviewing this proposed project or prior to the issuance of a contract approved by the Controller of the State of Colorado or such assistant as he may designate. Any and all costs, to review the project, inspect the proposed construction site, prepare and or submit bids will be the sole responsibility of the bidder.

30. A submission in response to the solicitation acknowledges acceptance by the proposer of all unaltered terms and conditions, as set forth herein. Any proposed exception taken to the State's Terms and Conditions must be clearly and thoroughly identified and supported and acceptable alternatives must be proposed. Failure to do so shall be deemed a waiver of any rights to subsequently raise exception and/or request modification, except as outlined or specified in this solicitation. Submission of exceptions does not guarantee their acceptance, however, and such submittal will be taken into consideration during proposal review and scoring by the evaluation team. The state reserves the right to reject any changes suggested to PO or Contact terms and conditions and award to the next most advantageous qualified responsive vendor.

31. PROTESTED SOLICITATIONS AND AWARDS: An aggrieved party may file a protest concerning a material issues(s), at any phase of solicitation, including but not limited to, specifications, award or a disclosure of information marked confidential in the bid. The protest shall be submitted via email to the DNR Procurement Official as noted below within ten (10) business days after such aggrieved person knows, or should have known, of the facts giving rise thereto. Reference CRS 24-109-102, as amended, and Procurement Rule R-24-109-102-01, et seq.

    DNR Procurement Official: Ion Cotsapas, ion.cotsapas@state.co.us

    The written protest shall include, as a minimum, the following:
    A. The name and address of the protestor;
    B. Appropriate identification of the procurement by bid or award number;
    C. A statement of the reasons for the protest, and any available exhibits, evidence, or documents substantiating the protest.

32. ACH/EFT PAYMENTS: Contractors are highly encouraged to consider signing up for ACH/EFT payments. ACH/EFT payments provide the advantage of ensuring quick and secure payments for the goods and services that vendors provide to the State. ACH/EFT payments help avoid the unnecessary, and sometimes inevitable delays in mail, and the possibility of lost warrants which will further delay vendor payment. DNR's goal is to pay vendors as soon as possible - signing up for the ACH/EFT is an important step in making this happen. For additional information about signing up for ACH/EFT payments, please contact the Project Manager identified in the Invitation for Bids.

33. In accordance with procurement code and CRS 24-103-904 titled "Purchasing Preference for Environmentally Preferable Products", bidders responding to this solicitation may seek to

qualify for the preference and governmental bodies conducting this solicitation shall award a contract to a bidder who offers environmentally preferable products subject to the condition in the code and procurement rules.

34. In accordance with procurement code and CRS 24-103-904 titled "Purchasing Preference for Environmentally Preferable Products", bidders responding to this solicitation may seek to qualify for the preference and governmental bodies conducting this solicitation shall award a contract to a bidder who offers environmentally preferable products subject to the condition in the code and procurement rules.

35. ALTERNATIVE PRODUCTS: Certain materials and equipment have been specified by manufacturers' trade names. This was done to establish the minimum quality and type of product desired. Alternatives to the manufacturers' products may be used if the Project Manager determines they are equal. The Award will be based on the products identified in the plans.

36. DAVIS-BACON WAGE LAW:

    The subject Project is not a Federal prevailing wage rate project so Davis-Bacon Wage Rates do not apply. The State of Colorado prevailing wage requirements do apply; see below.

37. PREVAILING WAGES: A public construction project in the amount of five hundred thousand dollars or more shall be subject to the State prevailing wage rate, of the regular, holiday, and overtime wages paid and the general prevailing payments on behalf of employees to lawful welfare, pension, vacation, apprentice training, and educational funds in the State, for each employee needed to execute the contract. Payments to the funds must constitute an ordinary business expense deduction for federal income tax purposes by contractors and subcontractors. Contractors are required to pay their employees at weekly intervals and shall comply with the enforcement provisions of C.R.S. §24-92-209. Contractors awarded a project of this size will be required to utilize the LCPTracker cloud-based labor compliance and certified payroll application. Upon award, the Contractor will need to return a completed copy of this form for LCPTracker enrollment: https://drive.google.com/file/d/13Xvu5GttmOerEViwQsXInbVI40YwslID/view.

    The applicable prevailing wages for this project are attached in Appendix B. Please review the "Special Considerations for Public Projects" section of the Contract Sample for additional details regarding compliance with the prevailing wages statutes.

38. NOTICE OF CONTRACTOR'S SETTLEMENT: If the project exceeds $150,000.00, a Final Settlement will be advertised via electronic media on the Colorado VSS website at www.colorado.gov/vss.

39. CONTRACT CLOSE OUT: Final Payment Statement: In addition to submittals required by the conditions of the Contract, provide submittals required by governing authorities and submit a final statement of accounting giving total adjusted Contract Sum, previous payments and sum remaining due. Provide a final summary of the cost and origin of the five most costly manufactured items containing more than fifty percent iron or steel that were installed on the project. The Contractor shall submit lien waivers for all subcontractors and material suppliers as part of the final payment statement.

40. LIQUIDATED DAMAGES: The parties agree that time is of the essence of the Contract and of the Specifications wherever a definite and certain length of time is fixed for the

performances of any act. A daily charge will be made against the Contractor for each calendar day that any work remains uncompleted after the elapse of contract time. This daily charge will be deducted from any money due to the Contractor. This deduction will not be considered a penalty, but as liquidated damages.

The liquidated damages set forth is an amount, agreed to by the Contractor and the Division, as reasonably representing additional project construction administration costs incurred by the Division and projected loss of revenue to the Park if the Contractor fails to complete performance within the contract time. For this project, the **Liquidated Damages will be $307.07 per day**.

Due account shall be taken of any adjustment of the contract time for completion of the work granted under the provisions of subsection 8.5 of the General Conditions for Capital Construction. Permitting the Contractor to continue and finish the work or any part thereof after elapse of contract time will not operate as a waiver on the part of the Division on any of its rights under the Contract.

Any deduction assessed as liquidated damages under this section shall not relieve the Contractor from liability for any damages or costs resulting from delays to other contractors on the project or other projects caused by a failure of the assessed Contractor to complete the work according to contract times.

41. WORK HOURS ON PROJECT SITE: All work on this project site will be allowed as follows: 8am to 6pm or otherwise approved by the Project Manager.

42. PERFORMANCE MONITORING CRS §§ 24-106-107:

A. PERFORMANCE MEASURES AND STANDARDS:
Performance measures and Standards as defined in the General Conditions for Capital Construction shall be the basis for this Contract. This includes but is not limited to the following:
1) The Contractor shall prepare a project schedule at project startup and continue to update the schedule throughout construction providing detailed justifications for construction delays and schedule changes.
2) The Contractor shall submit all required product information as defined in the Construction Drawings & Specifications. In turn, the State's Project Manager shall review and comment within 10 days of receipt.
3) The State's Project Manager and the Contractor shall conduct Construction Progress Meetings and Quantity Verification Inspections at least monthly or as otherwise determined necessary during Construction activities.

B. ACCOUNTABILITY:
Project and Contract administration will provide accountability by documenting and evaluating the progression of construction and the ability to follow the agreed upon construction schedule. The Contractor shall report regularly on achievement of the performance measures and standards specified above and failure to do so allows the governmental body to withhold payment until successful completion of all or part of the contract and the achievement of established performance standards. Payment by the State to the Contractor shall be made without delay upon successful completion of all or any part of the contract in accordance with the payment schedule specified in the contract or as otherwise agreed upon by the parties.

C. MONITORING REQUIREMENTS:
The State will evaluate the Contractor's performance by preparing monthly progress reports and monthly construction schedule updates provided by the Contractor as well as performing site visits to verify quantities based on the Bid Schedule, inspections to verify quality of work, and reviews of performance data as construction progresses to ensure that the results, objectives and obligations of the contract are met.

D. NONCOMPLIANCE RESOLUTION:
Methods and mechanisms as defined in the General Conditions for Capital Construction shall be used to resolve any situation in which the State's monitoring assessment determines noncompliance, including termination of the contract.

END OF SECTION

Apprenticeship Utilization Survey

Pursuant to CRS 24-92-115

The bidder acknowledges that they have reviewed Apprenticeship Utilization provisions contained in the Sample Contract and the Apprenticeship Utilization Certification form available at: https://drive.google.com/file/d/1J4MSGuLyZTO3FgTcvgKrybAoalDkC8am/view

If awarded the project, the bidder (choose one):

- ☐ Reasonably expects to be able to comply with the requirements outlined in the Apprenticeship Utilization Certification form and should be able to supply a completed version of that form prior to contract execution.
- ☐ Does not expect to be able to comply with the requirements outlined in the Apprenticeship Utilization Certification form. Please use the space provided below to explain this expectation.

COLORADO
Parks and Wildlife
Department of Natural Resources

Oak Ridge SWA - Bel Aire Shop Replacement
SPECIFICATIONS

PROJECT I.D. NO. **C26NW1**
IFB1: **2026*129**

PRE-BID CONFERENCE: **February 25, 2026 at 11:00am**

BID OPENING: **March 11, 2026 at 1:00pm**

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C26NW1

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DIVISION 1 - GENERAL REQUIREMENTS

GENERAL CONDITION:

Please read the most current "General Conditions for Capital Construction" in your possession. They apply to all Divisions of these specifications, accompanying drawings and to this proposed project.

SECTION 01010 - SUMMARY OF WORK

1. LOCATION:

Non-Mandatory Pre-bid conference: February 25, 2026 at 11:00am at the project site.

Project Address: Oak Ridge SWA
42421 CR-17
Meeker, CO 81641
Rio Blanco County

Project Coordinates: Latitude: 39°58'42" N
Longitude: 107°37'50" W

2. DESCRIPTION OF THE WORK:

The project consists of the complete removal and disposal of the existing shop and hay barn, and installation of the new pre-engineered metal shop building in accordance with these Specifications and Construction Drawings.

3. CONSTRUCTION COMMENCEMENT:

The Contractor shall be allowed from the date of approval of contract documents through the CONTRACT START DATE (as indicated on the Notice to Proceed letter) to submit shop drawings and product approvals and order and delivery of materials.

4. ADDITIONAL PROVISIONS:

The work and the compensation, therefore, shall be as covered by these specifications consisting of furnishing all plant, labor, equipment and materials required to perform the work shown on the drawings and listed in the bid schedule, unless otherwise stipulated or approved in writing by the Capital Development Program Manager.

Division field engineering personnel are authorized to supervise the construction of this project in accordance with the previously approved plans and specifications and change orders. All changes in the work shall be approved in writing by the Capital Development Program Manager before being activated in accordance with Section 4, Item 4.2 of the General Conditions for Capital Construction.

The specifications included herein are the Specifications for this project. If there should be a difference between the Specifications and the drawings, the Specifications shall govern.

5. CONTRACTOR RESPONSIBILITY:

Visit the site and determine to your own satisfaction the amount and type of work to be performed to complete the project in accordance with the drawings, specifications and Contract Documents before submitting your bid.

Furnish sufficient qualified help to the Project Manager for setting construction controls.

Before final payment will be made on the completed contract, submit to the Owner all specified warranties, and other product warranties.

6. SUBCONTRACTED WORK:

Contractor shall not subcontract any portion of the work without written consent of the Project Manager, which consent shall not unreasonably be withheld. In cases where such consent is given, the Contractor shall perform with his own organization work amounting to not less than 50 percent of the total contract cost, as determined by the Project Manager, except that any items agreed to by the Project Manager as "specialty items" may be performed by subcontract and the cost of any such specialty items so performed by subcontractor may be deducted from the total cost before computing the amount of work required to be performed by the Contractor with his own organization. However, under no circumstances shall less than 20 percent of the total contract cost be performed by the Contractor's organization after deduction of specialty items.

7. SITE LAYOUT AND STAKING:

Location points for the work will be defined with stakes and/or other means of identification prior to the start of construction. These location points, grades, and elevations are shown on the drawings. The drawings indicate existing and proposed elevations, but may be modified on the site by the Project Manager.

8. CONSTRUCTION LIMITS:

At the commencement of construction, the Project Manager will designate the area allowed for the construction process. Restrict work to that designated area. Any changes deemed necessary shall be discussed with and approved by the Project Manager.

9. MARSHALLING AND ACCESS:

Limits and access to the site for use: before taking possession and use of the site, meet with the Project Manager to determine the marshalling area(s) and access points to be used to execute the work. Limit access and marshalling areas agreed to at that meeting. Obtain written permission from the Division of any changes other than first agreed upon. Upon completion of all work, restore all areas to original or improved conditions.

10. JOB CONDITIONS:

Examine the site, determine the nature of conditions to be encountered and accept the site as found upon the examination. Examination must be made prior to bidding as no

additional compensation will be considered after receipt of bids for existing conditions which are required to be worked, adapted, or modified to these specifications.

11. BUILDING CODES:

Local city or county building codes shall be used for all construction. Where there is no local authority and/or code, the current codes required by the Office of the State Architect, State Electrical Board or State Plumbing Board shall be utilized. Appropriate inspections and certificates shall be obtained from the state or local inspector. See relative specification section(s) for additional detail.

12. PROTECTION AND SAFETY PRACTICE:

I. General:

All work shall be carried out in a safe manner in accordance with local codes and the safety requirements of the Colorado State Division of Labor.

II. Provide shoring, sheeting, barricading, bracing to prevent caving, erosion and gullying of side of excavation. The design, engineering, construction and maintenance of all temporary protection, including its adequacy and safety shall be the Contractor's responsibility and shall comply with the Occupational Safety and Health Administration (OSHA).

III. Contactor shall be required to conform to all industry standard safety requirements as well as OSHA requirements (i.e. Confined Space Entry, etc.) in effect at the time of construction.

IV. Existing Utilities:

Colorado SB 93-155 requires that anyone that engages in any type of excavation must provide advance notice to the underground facility owners. Prior to any moving or excavating of earth, the Contractor shall call the Utility Notification Center of Colorado (UNCC) or "Common Ground Alliance" (CGA) – the "Call Before You Dig" number – at 811. Utility owners have three business days to perform locates. If facilities are not marked within the three business days, you are required to call back to UNCC and process a Second Notice Request. UNCC encourages both Contractors and Sub-Contractors to obtain a locate ticket. A "no response" from the utility owner does not allow the Contractor to start digging. Notify the Project Manager when working near utility lines or appurtenances.

V. Surface Drainage:

Provide for surface drainage during the construction period in a manner to avoid creating a nuisance to adjacent properties.

VI. Location Markers:

Carefully maintain and protect all bench marks, corner monuments and other points. If disturbed or destroyed, replace at no cost to the Owner as directed by the Project

SECTION 01023 - MINOR CONTRACT REVISION

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required as additional work for completion of the project.

2. WORK INCLUDED:

   The work shall include unanticipated extra work in excess of the quantities included in the bid schedule.

3. PAYMENT:

   Payment for minor contract revisions shall be made at the contract unit price, negotiated basis or force account in accordance with Section 9.4 of the General Conditions for Capital Construction.

SECTION 01100 - ALTERNATE PRODUCTS

Manufacturer's products listed in the Specifications and on the drawings are intended to show the results and standard of quality. Other products may be submitted for approval. Submittals are required for specified products and alternate products in accordance with Section 6 of the General Conditions for Capital Construction, Control of Material.

SECTION 01200 - CONSTRUCTION MEETINGS

1. PRECONSTRUCTION CONFERENCE:

   The Contractor or his representative after award of the contract shall attend a preconstruction conference to be held at the Colorado Parks and Wildlife regional office, Denver office or other office in proximity to the project as designated by the Project Manager.

SECTION 01300 - SUBMITTALS

1. Provide the manufacturer's literature for products specified or approved equal products as stated in Section 6 of the General Conditions for Capital Construction.

2. The following is the list of required submittals for this Contract. Refer to each Contract Section for any additional requirements for each submittal.

SECTION	TITLE	SUBMITTAL DESCRIPTION
01310	CONSTRUCTION SCHEDULES	Schedule of Construction

SECTION	TITLE	SUBMITTAL DESCRIPTION
01720	AS-CONSTRUCTED AND RECORD DOCUMENTS	Construction drawings and technical specifications indicating changes to the original project design
02200, 02221, 02545	EARTHWORK, TRENCHING AND BACKFILLING, AGGREGATE BASE COURSE	Gradations, proctor moisture-density relationship curves, and relative density curves for all soil and aggregate materials used on the work
		Compaction tests for all fill placed on the project
02275	GEOTEXTILE FABRIC	Manufacturer's Descriptive Literature and Recommended Methods of Installation
		Manufacturer's Certification that Products Meet Specifications
		Samples
02610, 02640	PIPE AND FITTINGS, VALVES AND GATES	Manufacturer's Descriptive Literature and Recommended Methods of Installation
		Manufacturer's Certification that Products Meet Specification Requirements
02620	SUBGRADE DRAINAGE SYSTEMS	Manufacturer's Certification that Products Meet Specifications
		Certified Gradation of Aggregates
03200	CONCRETE REINFORCEMENT	Placing Drawings, Bending and Cut Sheet Schedules
		Mill Test Reports for Each Shipment of Reinforcement
		Manufacturer's Certification that Products Meet Specification Requirements
03252	INSERTS AND FASTENING DEVICES	Welder Qualifications and Certification by Testing Laboratory
		Manufacturer's data sheets on anchor bolts, dowels, epoxy, and joint filler
		Complete Shop Drawings of All Weld Locations, Intersection Details, Support and Forming Details
03300	CAST-IN-PLACE STRUCTURAL CONCRETE	Firm name, address and phone number for testing agency
		Certified Concrete Design Mix
		Laboratory Test Results
		Aggregate: Gradation Analysis and Specific Gravity
03600	GROUT	Manufacturer's Application Instructions

SECTION	TITLE	SUBMITTAL DESCRIPTION
06100	CARPENTRY	Shop Drawings
		I-Joist Data Sheet
07200	INSULATION	Manufacturer's Written Certification that Product Meets Specified Requirements
		Testing Agency Reports Verifying Proper Density, Distribution and Placement in Proper Thickness
07250	WEATHER BARRIERS	Manufacturer’s Data Sheets for weather barrier, seam tape, flashing, and fasteners
		Manufacturer’s Written Instruction
07900	SEALANTS AND JOINT FILLERS	Manufacturer’s Data Sheet
08100	METAL DOORS AND FRAMES	Shop Drawings
		Manufacturer’s Data Sheets
		Executed Warranty
08200	WOOD DOORS AND FRAMES	Manufacturer’s Data Sheet
08360	OVERHEAD DOORS AND OPERATORS	Shop Drawings
		Manufacturer’s Data Sheet
		Selection Samples of Metal Finishes
		Installation Instructions
		Installer Qualifications (minimum 2 years experience installing similar doors)
		Executed Warranty
08700	HARDWARE AND SPECIALTIES	Manufacturer's Data Sheets on All Hardware
		Templates
09250	GYPSUM WALL BOARD	Manufacturer’s data sheets on all wallboard, joint, and corner materials for all types provided
09900	PAINTING	Color Samples
		Manufacturer's Application Recommendations
10200	LOUVERS AND VENTS	Manufacturer’s Data Sheet
10800		Manufacturer’s Data Sheet

SECTION	TITLE	SUBMITTAL DESCRIPTION
	TOILET AND BATH ACCESSORIES	Installation Requirements
13121	PRE-ENGINEERED METAL BUILDINGS	Colorado Registered P.E. Stamped Shop Drawings with Reactions and Calculations
		Anchor Bolt Plan
		Drawing for Fabrication and Installation of Windows, Doors and Door Frames
		Manufacturer's Certificate that Materials Meet Specification Requirements
		Design Data and Certification
		Erection Plans and Manual
		Color Samples
15010	GENERAL PROVISIONS	Shop Drawings - Submit shop drawings for all scheduled and required equipment showing the dimensions and details and include confirmation that the items fit into the space provided. Indicate the requirements for roughing in the utilities and show the locations, extensions and dimensions. Drawings shall include all fuel, ductwork, vent and electrical connections and schedule of required equipment.
		Manufacturer’s Operations and Maintenance Manuals for all Mechanical Equipment
15400	PLUMBING SYSTEMS	Manufacturer's Data Sheets
		Maintenance Information
		Pressure Test and Disinfection Test Results
15440	PLUMBING FIXTURES AND TRIM	Manufacturer’s Data Sheets
15453	TANKLESS WATER HEATER	Manufacturer’s Data Sheets
		Executed Warranty
15500	HEATING AND AIR CONDITIONING	Manufacturer’s Data Sheet
		Executed Warranty
15872	POWERED WALL EXHAUSTERS	Manufacturer’s Data Sheet
16000	ELECTRICAL	Electrical submittals according to the Drawings

SECTION 01310 - CONSTRUCTION SCHEDULES

1. CONSTRUCTION SCHEDULE SUBMITTAL:

Submit to the Project Manager, 15 calendar days before commencing construction, a schedule of construction. The schedule shall include provisions for time necessary to acquire and provide shop drawings and product submittals, the allowed period for submittal review, time required for ordering and delivery of materials, a normal time period allowed based on climate, location of project, season of year, weather patterns for temperature, and precipitation conditions which reasonably will hinder or prevent construction progress.

The construction schedule shall be updated within 7 calendar days after starting work or upon issuance of any Contract Modification which substantially affects the scheduling, and monthly thereafter until completion.

Newly updated construction schedules shall be forwarded to the Project Manager, as directed, immediately upon preparation.

2. PRODUCT DELIVERY:

Order products in a timely, properly sequenced manner so that delivery schedule of products corresponds with anticipated installation periods of these products.

SECTION 01410 - LABORATORY TESTS

1. REQUIRED TESTS:

I. Concrete Testing - provided and paid for by the Contractor.

II. Compaction Tests - provided by the Contractor as specified. Compaction test reports shall be provided to Owner upon completion of tests.

III. Proctor Tests - the Contractor shall provide samples and tests of on-site material from locations determined by the Project Manager.

SECTION 01500 - TEMPORARY UTILITIES AND CONTROLS

1. TEMPORARY ELECTRIC FACILITIES:

Contractor shall provide and maintain during the course and progress of the contract work all electrical power and wiring requirements to facilitate the work of all trades and services associated with the contract work.

2. FIRE PROTECTION:

Fire Plan:

I. Maintain, at least, two all purpose 10 lb. fire extinguishers at each work zone at the construction site. Maintain the site in an orderly condition to prevent fire hazards.

II. The Contractor (hereafter referred to as the operator) shall do everything reasonable within its power and shall require its employees, contractors and employees of contractors to do everything reasonable within their power to prevent and suppress fires on or near the lands to be occupied under this project. The operator is responsible for all suppression costs and resource damage for any fire resulting from its operations and practices.

III. The operator is responsible to insure that each employee, subcontractor, or any other individual or company working on the project site is aware of the provisions of this fire plan, is familiar with the location and proper use of firefighting equipment, and conducts themselves in a fire safe manner.

IV. Exhaust systems of vehicles and engine generators shall have an acceptable muffler and shall be in proper working condition. All motorized equipment and machinery shall be equipped with the spark arresters.

V. Fire extinguishers required, Type ABC:

One 2 lbs. Per pickup, or one 5 lb. For trucks over 1 Ton GW.

One 10 lb. per dozer, motor patrol, scraper or other earthmoving equipment.

VI. Vehicles shall be parked only in cleared, approved areas.

VII. All smoking shall be done only inside of vehicles or in areas cleared of flammable material.

VIII. Welding: Welding is herein used to mean: electric arc welding; arc or gas cutting or heating; gas welding; grinding of metal; use of any flammable gas, carbon or hydrocarbon fuel for heating or forging metal.

No welding shall be conducted within 100 feet of fuel storage areas.

All welding shall be done within an area cleared of all flammable vegetation and materials for a minimum radius of 30 feet from the welding operation.

IX. Blasting: Use of explosives is not authorized.

X. Refueling:

Special care will be taken to prevent fires when refueling tractors and other equipment. Preferably, equipment should be moved to an area of mineral soil before refueling.

XI. Oil Filters, Cartridges and Oily Rags:

Used and discarded oil filters, cartridges and oil rags or waste will be removed from the site. Glass jugs or bottles will not be used for gas, oil or water containers.

XII. Storage of Inflammables:

Fuels, lubricants and/or other highly inflammable material will be stored either in a separate building, or "job box" type container and/or approved containers. If

materials are not stored in a separate building there must be a basin to catch spills. Storage buildings or sites shall be a minimum distance of 50 feet from other structures. Storage buildings shall be adequately posed to warn of the inflammables and to prohibit smoking in or around the building.

XIII. Burning of material is not permitted.

3. HERITAGE RESOURCES:

All persons associated with operations under this authorization must be informed that any objects or sites of cultural, paleontological, or scientific value such as historic or prehistoric resources, graves or grave markers, human remains, ruins, cabins, rock art, fossils, or artifacts shall not be damaged, destroyed, removed, moved, or disturbed. If in connection with operations under this authorization any of the above resources are encountered, the proponent shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the Project Manager of the findings. The discovery must be protected until notified in writing to proceed by the Project Manager. (36 CFR 800.110 &112, 43 CFR 10.4)

4. TEMPORARY SANITARY FACILITIES:

Contractor shall provide adequate temporary sanitary conveniences for the use of all employees and persons engaged on the work, including subcontractors, Owner, Project Manager, and their employees, as required by law, ordinances, or regulations of public authorities having jurisdiction.

Toilet facilities shall be enclosed chemical toilets, or water closets and urinals connected to a holding tank, and shall meet with the approval of State and County authorities. Open pit or trench latrines will not be permitted.

5. TEMPORARY WATER:

Well water will be available for light construction use. Commercial water quantities shall be provided by the contractor.

6. TEMPORARY HEAT:

Contractor shall provide, at his own expense, all temporary heat as necessary for the proper installation of all work, equipment, and materials and for the protection of all work and materials against injury from dampness, cold, and freezing. Fuel, equipment, and methods of heating shall be in accordance with federal, state, and local regulations.

7. EXTERIOR STORAGE:

All operations of the Contractor, including storage of materials, shall be confined to areas approved by the Project Manager. Contractor shall be liable for any and all damage caused by him during such use by him of property of the Owner or other parties. Contractor shall save the Owner, its officers and agents, and the Project Manager and his employees free and harmless from liability of any nature or kind arising from any use, trespass, or damage occasioned by his operations on premises of third persons or parties.

8. TEMPORARY TELEPHONE SERVICE:

The Contractor shall maintain an operating cell phone and be available by phone during work hours assuming available cell phone service.

9. SECURITY:

The Contractor shall make all necessary provisions and be responsible for the security of the contract work and the work site until final inspection and acceptance of the contract work.

SECTION 01710 - PROJECT CLEANING

All areas shall be cleared and cleaned upon completion of work at all construction site locations. All debris and construction materials scattered and blown about the site shall be gathered, returned and secured to their proper location or disposed of during the construction process and upon completion.

SECTION 01720 – AS-CONSTRUCTED AND RECORD DOCUMENTS

1. SCOPE OF WORK:

Maintaining and providing As-Constructed and Record documents for the work described in project drawings and specifications.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to, maintaining a clear and concise set of construction documents clearly indicating changes to the original project design. Contractor shall provide all necessary measurements, survey, and product changes to indicate As-Constructed conditions for the each element of the project.

3. PAYMENT:

Payment for As-Constructed and Record documents shall not be made as a line item but shall be included in Mobilization.

4. SUBMITTALS:

Refer to Section 01300 – Submittals, for requirments. Final payment will not be made until As-Constructed and Record documents are received and accepted as complete by the Project Manager.

5. MAINTENANCE OF DOCUMENTS:

I. Store documents in clean, dry area seperate from documents used for construction.

II. Documents shall be made available for inspection by Project Manager upon request.

6. RECORDING:

I. The Project Manager will provide the contractor one set of design drawings and specifications to record information.

II. Label each drawing sheet "AS-CONSTRUCTED" and cover sheet of specifications in neat large printed letters.

III. Record information concurrently with construction progress.

A. Do not backfill work until required information is recorded.

B. Use dark pen or pencil. Ink shall not be water based and lettering shall be legible and not subject to easy smearing.

IV. Mark drawings to record actual construction.

A. Field dimensions, elevations, and details.

B. Changes made by Project Manager in approved modifications.

C. Details not on original drawings.

D. Horizontal and vertical locations of underground facilities (pipelines, electric line, valves, fittings, etc.) and appurtenances referenced to a minimum of two permanent surface improvements or project coordinates/datum.

End of Section

End of General Requirements

SECTION 02050 - MOBILIZATION

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to moving onto and off the site all the equipment and personnel required. It also includes cleaning up the site upon completion of the Contract and other items as identified in this section. Shipping/freight charges for materials covered by other specifications sections shall not be paid under this item.

3. PAYMENT:

I. Payment for mobilization will be made on a contract lump sum basis as shown in the Bid Schedule. The lump sum price bid will be paid once only and shall include complete mobilization and demobilization regardless of the number of times the equipment is moved or additional equipment transported to the construction site.

Of the lump sum price bid, 60% will be paid on the first month's pay estimate. The remaining 40% will be paid when the equipment is removed from the site and after the final cleanup has been completed, and as-built documents have been submitted and approved.

II. Mobilization shall include the obtaining of all permits, insurance, and bonds, and the moving onto the site of all plant and equipment; for furnishing and erecting plants, temporary buildings, and other construction facilities; all as required for the proper performance and completion of the work. Such work shall include but not be limited to the following principal items:

A. Moving onto the site of all the Contractor's plant and equipment required.

B. Installing temporary construction power and wiring.

C. Establish fire protection system.

D. Provide on-site sanitary facilities as specified.

E. Arrange for and erect the Contractor's work and storage area.

F. Submit all required insurance certificates and bonds.

G. Obtain all required permits. Contractor is responsible for providing all additional drawings and documentation as may be required to obtain these permits.

1. State Electrical Permit
2. State Plumbing Permit

H. Have the Contractor's superintendent at job site at least 50% of the time and available full time via phone.

I. Construction schedule.

J. List of subcontractors and their scope of work.

K. Perform Onsite Utility Locates (Contractor Responsible for hiring private utility locator to locate private utility lines as shown on the drawings prior to construction.)

L. General cleanup of the project area.

M. Shop drawings and product submittals.

N. Maintaining and submitting As-Constructed and Record documents per specifications.

End of Section

SECTION 02070 - DEMOLITION AND REMOVAL

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include but is not limited to the complete removal of the items as noted on the drawings and in the Bid Schedule to allow for installation of the new building and utilities as required.

3. EXTENT OF REMOVAL:

   The existing building, adjacent structures shall be demolished and disposed of in an approved landfill.

   Other items to be demolished and removed include the following: The portions of the existing utilities that will be relocated shall be demolished. The soil excavated from the building footprint shall be removed for offsite disposal or use by the contractor. The portions of existing fence shall be removed and replaced as necessary to complete construction.

4. DISPOSAL OF MATERIAL:

   The removed items shall be disposed of by the Contractor off the work site and in a manner approved by the Project Manager.

End of Section

SECTION 02200 - EARTHWORK

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to, earthwork which shall include excavating, filling, compacting, grading and related items.

Excavate and fill to elevations and dimensions indicated on the drawings and on the site. Allow additional space as required for construction operations.

3. SUBMITTALS:

Refer to Section 01300 - Submittals, for requirements.

4. QUALITY ASSURANCE:

I. Classification of Soils: ASTM D 2487 and ASTM D 2488.

II. Density Relations of Soils: Maximum Dry Density as determined by ASTM D 698 or AASHTO T 99 (Standard Proctor).

III. Density for Sands and Gravels: Relative Density Method ASTM D 4253 and ASTM D 4254.

IV. In-place Density Determination: Nuclear Method ASTM D 2922.

5. FIELD QUALITY CONTROL:

Quality control for earthwork shall be provided by the Contractor's independent laboratory. The Project Manager may, at any time, access the work area to perform quality control testing. Contractor shall allow access for such testing. No payment or claim will be granted for lost production during testing activities.

I. A qualified soil testing lab shall be retained to perform density testing, with field technicians working under the supervision of a Colorado registered professional Project Manager.

II. Denisty and moisture content testing shall be performed for every 50 cubic yards of in place fill, or at least one test on the north end, and one test on the south end of the proposed building.

III. Soil within the failed area shall be subjected to additional compaction, moisture conditioning with additional compaction, or other corrective measures, and shall be retested. Implementation of corrective measures and retesting shall continue until the effected soil meets specification.

IV. All test results, description of corrective measures, and retest results shall be

provided to the Project Manager in writing via e-mail within 48 hours of testing.

V. Any failed areas for which corrective measures and retesting do not document that the material meets specification shall be removed and replaced to specification at the contractors expense.

6. MATERIALS:

I. Select Material:

A. Class I: Angular, ¼ to 1½ inches, graded stone including slag, cinders and crushed stone.

B. Class II: Coarse sand and gravels with maximum particle size of ½ inch with no more than 12% passing a No. 200 sieve. Soil Types GW, GP, SW and SP are included.

C. Class III: Fine sand and clayey gravels including sands, sand-clay and gravel-clay mixtures. Soil Types GM, GC, SM and SC are included.

II. Imported Material:

Imported material is defined as material imported by the Contractor for use in place of native material.

III. Relative Density:

Where Class I or Class II select material is used, compaction shall be measured by relative density to the percentages as follows corresponding to the specified Standard Proctor values in these Specifications.

A. 95% Standard Proctor - 75% Relative Density: Required beneath all structures and slabs.

90% Standard Proctor - 70% Relative Density: Landscaped areas 10' and greater from structures and slabs.

7. STRIPPING:

I. General:

Stripping includes removal of topsoil and organic materials, existing subsurface debris and abandoned construction materials.

II. Stripping and Obstructions:

A. Remove the materials and obstructions described within the designated clearing limits identified on the drawings to a maximum depth of six (6) inches below the existing natural grade.

B. The stripped topsoil and other organic materials (roots, etc.) shall be stockpiled where designated, on the site.

C. Replace and spread the topsoil on those areas subjected to earthwork operations. Compact with two passes of equipment over the surface after being uniformly spread.

8. EXCAVATION:

I. General:

Excavation shall be open-cut, except as shown or approved.

Excavation may be sloped or kept vertical where sloping of the excavation does not endanger any existing utility or structure.

Excavation shall be performed in accordance with applicable federal, state or local safety codes.

Control grading around the structure so that the ground is pitched to prevent water from flowing into excavated areas or damaging the foundation. Provide pumping to keep excavations clear of water.

II. Underground Obstructions:

Locate utilities prior to excavating. Unless otherwise specified, preserve intact pipe or utilities encountered during construction. If utilities or structures are accidentally damaged, replace immediately to their original condition.

A. Unsuitable Bearing:

Excavate such that uniform bearings are obtained throughout. If suitable bearing is not obtained at the depth indicated on the drawings for the foundations, immediately notify the Project Manager. Do not proceed until further instructions are given.

Completely remove subsurface debris and abandoned construction materials including broken pieces of concrete. Remove such materials within construction lines to 6 inches below the excavation. Dispose of materials where designated.

B. Freezing:

When freezing temperatures are expected, do not excavate to the full depth indicated unless the work can be performed immediately after the excavation has been completed.

C. Dimensions:

Excavate to elevations and dimensions where shown. Allow additional space as required for construction operations and inspection.

III. Shoring:

Shore, sheet pile and brace excavations as required to maintain them secure. Remove shoring as backfilling progresses, but only when banks are safe against caving or collapse.

IV. Classification of Excavation:

Excavation shall be classified as common unless otherwise specified.

A. Common Excavation:

Common excavation consists of grass, sod, humus, peat, earth, clay, sand, silt, gravel, hard and compacted materials, such as hardpan, loosely cemented gravel, soft or disintegrated rock and similar materials that can be removed by hand, heavy ripping equipment such as tracked equipment with a single ripper with a 15,000 pound pry-out force or a hydraulic excavator with a weight in excess of 50,000 pounds and a drawbar pull in excess of 40,000 pounds. Boulders and loose rock less than 1 cu. yd. are also classified as common excavation.

V. Overexcavation:

Excavate so that uniform bearing shall be obtained for the foundation. Do not excavate below the depth specified. If over excavation occurs, backfill with select material.

VI. Unsuitable Foundation:

The foundation is considered unsuitable when after dewatering, the existing soils are unstable. Unstable soils are those that are too soft, provide low load bearing or are otherwise inadequate. Unstable soils include organic soils, fine grain soils saturated with water in excess of their liquid limit, low density fine sands or silts, and expansive soils. Cohesive soils or granular cohesive soils with shear strength measured using ASTM D 2166 or ASTM D 2573 of less than 500 psf or sands with penetration resistance measured using ASTM D 1586 of less than 8 blows per foot are unsuitable.

Where excavation is in shale or rock, or broken concrete occurs, excavate six inches below grade. No rock, shale or broken concrete shall be within 6 inches of the structure.

VII. Dewatering:

Where running water, quicksand, or unsuitable foundation conditions are encountered, push the work with the utmost vigor. Drain water to sumps through well points, underdrains or other approved methods, providing a completely dry foundation. Ensure that subsurface water does not interfere with maintaining proper soil moisture for proper compaction of backfill.

9. BACKFILLING FOR STRUCTURES:

I. General:

Backfill against the structure only after approval. Place and compact backfill materials to minimize settlement and to avoid damage to the structure, waterproofing and connecting construction. Before placing backfill, remove debris subject to rot or corrosion and other detrimental materials.

Water shall not be allowed to rise until the concrete has set a minimum of 24 hours, and the forms have been removed. Water shall not be allowed to rise unequally against unsupported structural walls.

Do not place brush, sod, frozen material or other perishable or unsuitable materials in the fill. Distribute material to avoid lenses differing substantially from the surrounding material.

Deliver material to achieve well and uniformly compacted backfill.

II. Placement:

Place and spread backfill material in 4 in. layers. Compact backfill to a minimum of 95% of maximum dry density as determined by ASTM D 698 or AASHTO T 99 (Standard Proctor).

III. Concrete Structures:

Do not backfill or place loads against concrete (including patched areas) before the concrete has developed at least 70% of the specified strength, or before 7 days after placing the concrete.

From 7 days to 14 days after placing concrete, backfill operations may be initiated, but no rolling or hauling equipment will be permitted within 2 feet of the structure. At this time, backfill may be placed against concrete surfaces to a thickness of not more than 2 feet if compaction is accomplished by power tampers.

IV. Imported Backfill:

Notify the Project Manager when imported material is to be used and indicate where material is to be placed. Do not place imported fill until approved by the Project Manager.

Imported fill shall have the following gradation:

Sieve size or designation	Percentage by Weight passing square mesh sieve sizes
2 inch	100
No. 4	30-100
No. 50	10-60
No. 200	5-20

In addition, this material shall have a liquid limit not exceeding 35 and a plasticity index of not over 6 when determined in accordance with AASHTO T 89 and AASHTO T 90 respectively.

The material shall be Class III or better: fine sand and clayey gravels including sands, sand-clay and gravel-clay mixtures. Soil Types GM, GC, SM and SC are included.

V. Compacted Fill:

A. Lines and Grades:

Construct fills to the lines, grades, and cross sections as staked. Finished surfaces shall be generally smooth and pleasing in appearance.

B. Quality Assurance:

Maintain and protect fill in a satisfactory condition until completion of work. Replace fill material rendered unsuitable after being placed before final acceptance of the work. No material shall be placed until the foundation has been inspected and approved.

VI. Blading and Shaping:

Blading and shaping consists of grading along existing contours by filling of low areas and removing high spots. Finished surfaces shall be graded to drain, free of abrupt or irregular surface changes, generally smooth and pleasing in appearance.

VII. Density:

Place compacted fill in layers and compact by rolling and tamping to a minimum of ninety-five percent (95%) of maximum dry density as determined by ASTM D 698 or AASHTO T 99 (Standard Proctor).

VIII. Soil Content:

Material shall be free of sod, brush roots, other perishable material, and stones larger than 6 inches. Should any undesirable material be placed in the fill, remove prior to compaction. No frozen material shall be accepted or used.

IX. Placement:

Maintain the foundation free of water or unacceptable materials.

The distribution of material throughout a fill shall be such that there will be no lenses, pockets, streaks or layers of material differing substantially in texture or gradation from the surrounding material in the fill. After placement, spread the fill materials by approved equipment in layers before compaction of not more than 8 inches.

Material placed by dumping in piles or windrows shall be moved and spread by blading or other approved methods.

Compacted fill shall not be placed against a slope steeper than one horizontal to one vertical unless otherwise shown on the plans or approved. Do not place fill upon frozen surfaces or coverings of snow and ice.

X. Moisture Control:

During the compaction operations the surface of the fill, and the material being placed shall be maintained within the moisture content range required to permit proper compaction to the specified density.

XI. Compaction Process:

Prior to fill placement, the subgrade shall be scarified to a depth of 6 inches, moisture adjusted to +/- 2% of optimum, and recompacted to a minimum of 95% Standard Proctor density. Soft areas shall be overexcavated, removed, and replaced with suitable material that is properly compacted.

After each layer of material has been placed, spread, and the required moisture content obtained, compact by passing a roller over the entire layer to the specified density.

Place in 4 inch layers and compact to the specified density with power tampers portions of the fill not accessible to rollers.

10. FINISH GRADING:

Perform finish grading for smooth transitions between lines. Grades shall be free of abrupt or irregular changes.

Grade between existing and final grades not otherwise shown to a uniform slope. Round abrupt change in slopes.

End of Section

SECTION 02210 - FINISH GRADING

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to, all cutting, filling, compacting of fills and rough grading required to bring project areas to grade.

3. FILLS:

   Where fill is required to raise the existing grades to the new subgrade elevation indicated on drawings, such fill shall be of earth placed and compacted as specified. The quality of fill material shall be approved.

4. MATERIALS:

   Material for fill shall be reasonably free from roots, wood and other organic material. Fill under surfaced areas shall not contain more than 15 percent clay or loam and no humus. Stones larger than 4 inches, maximum dimension, shall not be used in the upper 6 inches of fill or embankment. Place the material in successive horizontal layers in loose depths as specified, for the full width of the cross section. Deposit fill layers not more than 8 inches thick under surface areas.

5. FINISH GRADING:

   Perform finish grading for transition between lines. Grades shall be free of abrupt or irregular changes.

   Grade between existing and finished grades. Round abrupt change in slopes.

   Stockpiled topsoil shall be used in the areas used for backslopes and other areas exposed through construction and equipment damage.

End of Section

SECTION 02221 - TRENCHING AND BACKFILLING

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The earthwork for the pipe installations shall include excavation, trenching, backfilling, compacting and grading.

3. SUBMITTALS:

Refer to Section 01300 - Submittals, for requirements.

4. QUALITY ASSURANCE:

I. Classification of Soils: ASTM D 2487 and ASTM D 2488.

II. Density Relations of Soils: Maximum Dry Density as determined by ASTM D 698 or AASHTO T 99 (Standard Proctor).

III. Density for Sands and Gravels: Relative Density Method ASTM D 4253 and ASTM D 4254.

IV. In-place Density Determination: Nuclear Method ASTM D 2922.

V. Pipe Embedment Materials: ASTM D 2321.

5. MATERIALS:

I. Select Material:

A. Class I: Angular, 1/4 to 1-1/2 inches, graded stone including slag, cinders and crushed stone.

B. Class II: Coarse sand and gravels with maximum particle size of 1-1/2 inch with no more than 12% passing a No. 200 sieve. Soil Types GW, GP, SW and SP are included.

C. Class III: Fine sand and clayey gravels including sands, sand-clay and gravel-clay mixtures. Soil Types GM, GC, SM and SC are included.

D. Class IV: Inorganic silts or clays, silty or clayey fine sands, gravelly or silty clays. Soil Types ML, CL, MH and CH are included.

II. Imported Material:

Imported material is defined as material imported by the Contractor for use as backfill material when used in place of native material or material used for pipe embedment where select material is not required by the Plans and Specifications.

III. Relative Density:

Where Class I or Class II select material is used, compaction shall be measured by relative density or Standard Proctor to the percentages as follows corresponding to the specified Standard Proctor values in these Specifications.

6. EXCAVATION:

I. General:

Excavation shall be open-cut, except as shown or approved.

Trenches may be sloped or kept vertical where sloping of the trench does not endanger any existing utility or structure.

Trench excavation shall be performed in accordance with applicable federal, state and local safety codes.

Perform grading necessary to prevent surface water from causing damage to the work. Place material compactly on the sides of the excavation so as not to endanger the work. Dispose of surplus material as directed on the site.

II. Dewatering:

Where running water, quicksand, or unsuitable foundation conditions are encountered, push the work with the utmost vigor. Drain water in the trench to sumps through well points, underdrains or other approved methods, providing a suitable foundation with no running or standing water for pipe laying operations. Ensure that subsurface water does not interfere with maintaining proper soil moisture for a suitable foundation and proper compaction of backfill.

Maintain dewatering until the pipe has been installed and backfill has been placed to a height above the water table.

III. Trench Width:

Minimum trench width shall be as shown on the drawings. Use the minimum width only when it provides adequate space for workers to place and join the pipe properly. Use additional width where required for compaction equipment.

IV. Dimensions:

Excavate to elevations and dimensions shown. Allow additional space as required for construction operations and inspection.

V. Obstructions:

Completely remove subsurface debris and abandoned construction materials including broken pieces of concrete. Remove such materials within construction lines to 6 inches below excavation. Dispose of the materials where designated. No blasting will be permitted.

Locate utilities prior to excavating. Unless otherwise specified, preserve intact pipe or utilities encountered. If utilities or structures are damaged, replace immediately to their original condition.

VI. Shoring:

Shore, sheet pile and brace excavations as required to maintain them secure for protection of workmen or work. Remove shoring as work progresses, but only when banks are safe from caving or collapse.

VII. Classification of Excavation:

Excavation shall be classified as common unless otherwise specified. Common excavation consists of grass, sod, humus, peat, earth, clay, sand, silt, gravel, hard and compacted materials, such as hardpan, loosely cemented gravel, soft or disintegrated rock and similar materials that can be removed by hand, heavy ripping equipment such as tracked equipment with a single ripper with a 15,000 pound pry-out force or a hydraulic excavator with a weight in excess of 50,000 pounds and a drawbar pull in excess of 40,000 pounds. Boulders and loose rock less than 1 cu. yd. are also classified as common excavation.

VIII. Overexcavation:

Excavate so that uniform bearing shall be obtained for the length of the pipe. Do not excavate below the depth specified. If over excavation occurs, backfill with select material.

IX. Disturbed Foundation:

Where excavation results in the foundation being disturbed, scarify to a depth of 6 inches and compact to a density equal to that of the surrounding earth or a minimum of 95% of maximum dry density, whichever is greater.

X. Unsuitable Foundation:

The trench bottom is considered unsuitable when after dewatering, the existing soils are unstable. Unstable soils are those that are too soft, provide low load bearing or are otherwise inadequate. Unstable soils include organic soils, fine grain soils saturated with water in excess of their liquid limit, low density fine sands or silts, and expansive soils. Cohesive soils or granular cohesive soils with shear strength measured using ASTM D 2166 or ASTM D 2573 of less than 500 psf or sands with penetration resistance measured using ASTM D 1586 of less than 8 blows per foot are unsuitable.

Where the trench is excavated in shale or rock, or broken concrete occurs, excavate six inches below grade. No rock, shale or broken concrete shall be within 6 inches of the pipe.

XI. Tunneling:

Tunneling will be allowed under water, gas or other pipe when approved.

The width of the excavation, tunnels and subgrade preparation shall be the same as that specified for open trench excavation.

XII. Utilization of Excavated Material:

Suitable material removed from the excavations shall be used, as practical, in the backfill and at other places as directed.

XIII. Disposal of Surplus and/or Waste Material:

Dispose of surplus and waste material where designated.

Grade areas for draining and a uniform appearance, blending into the surrounding grade.

7. BACKFILL:

I. General:

Do not place brush, sod, frozen material or other perishable or unsuitable materials in the fill. Distribute the material to avoid lenses differing substantially from the surrounding material.

Place the material to achieve a well and uniformly compacted fill.

II. Inspection and Approval:

Do not backfill until tests and inspections have been made on work to be covered and approved. Clear areas to receive backfill of rubbish and debris.

III. Imported Backfill:

Notify the Project Manager when imported material is to be used and indicate where material is to be placed. Do not place imported fill until approved by the Project Manager. Provide laboratory tests for the material.

IV. Moisture Control:

During compaction operations the material being placed shall be maintained within the moisture content range required to permit proper compaction to the specified density.

V. Placement and Methods:

A. General:

Because of varying trench conditions, the materials used and methods applied may vary. Individual trench requirements are specified as follows or shown on the drawings. Backfill only after approval. Maximum depth of lifts shall be 8 inches unless otherwise specified.

B. Foundation:

Where the trench bottom is unsuitable for pipe foundation, remove and replace material with select material. Compact to a minimum of 85% of maximum dry density.

C. Pipe Embedment:

1. Bedding: Place select material from the bottom of the trench to a minimum of 4 inches or the depth shown on the drawings. Mechanically tamp to a minimum of 85% of maximum dry density.

2. Haunching: Shape the trench bottom to provide firm, stable and uniform support for the full length of the pipe and joints. Dig bell holes to provide a minimum of 1 inch clearance between the bell and the material. Adjust pipe for line and grade and make the joint. Place material carefully and tamp under the haunches of the pipe and in bell holes and sling holes. Place select material from the bottom of the trench to the springline by hand. Tamp thoroughly and equally along each side of the pipe to avoid displacement or damage to the pipe. Compact to a minimum of 95% of maximum dry density.

   Backfill methods shall be approved.

   Haunching material shall be the same material as that used for bedding where Class I or Class II select material is used.

3. Initial Backfill: Compact select material to a minimum (85%) of maximum dry density. Do not drop material or perform compaction directly over the top of the pipe. Place initial backfill from the springline to a minimum depth of 6 inches over the pipe.

4. Compacted Final Backfill: Mechanically compact lifts to a minimum of 95 percent of maximum dry density. Perform in roadways, dikes, or where otherwise shown on the drawings.

VI. Settlement:

Within one year after final acceptance of the project, utilities or other improvements adversely affected by settlement, repair the settled areas to proper grade and condition at no expense to the Owner.

VII. Surface Restoration:

A. Unsurfaced Areas: All surface cuts shall be, as a minimum, restored to a condition equal to that prior to construction. All streets shall be restored in accordance with the regulations and requirements of the agency having control or jurisdiction over the street, roadway, or right-of-way.

B. Surfaced Areas: All surface cuts shall be, as a minimum, restored to a condition equal to that prior to construction. All gravel or paved streets shall be restored in accordance with the regulations and requirements of the agency having control or jurisdiction over the street, roadway, or

right-of-way.

VIII. Grading:

Perform finish grading for smooth transitions between lines. Grades shall be free of abrupt or irregular changes.

Grade between existing and final grades not otherwise shown to a uniform slope. Round abrupt change in slopes.

End of Section

SECTION 02275 - GEOTEXTILE FABRIC

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to, placement of a geotextile fabric membrane upon the prepared foundation.

3. SUBMITTALS:

   Refer to SECTION 01300 – SUBMITTALS.

4. MATERIALS:

   I. Fibers used in the manufacture of geotextiles, and the threads used in joining geotextiles by sewing, shall consist of long chain synthetic polymers composed of at least 85% by weight polyolefins, polyesters, or polyamides. They shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including selvedges.

   II. Geotextile rolls shall be furnished with suitable wrapping for protection against moisture and extended ultraviolet exposure prior to placement. Each roll shall be labeled or tagged to provide product identification sufficient for inventory and quality control purposes. Rolls shall be stored in a manner which protects them from the elements. If stored outdoors, they shall be elevated and protected with a waterproof cover.

   III. All geotextiles shall be Class A.

5. SPECIFIC FABRIC PROPERTIES:

   I. General:

      Drainage fabric shall be Mirafi 140N or approved equivalent. The property values are not design values but represent the minimum accepted physical characteristics of the geotextile required. The number represents a value to be confirmed by the manufacturer. These values represent minimum average roll values (i.e., any roll tested should meet or exceed the minimum values in the table). Manufactured and field seams shall also meet the tabulated values.

II. Drainage Fabric:

PROPERTY	CLASS A	TEST METHOD
Grab Strength, lbs.	120	ASTM D 4632
Elongation, (%)	50	ASTM D 4632
Puncture Strength, lbs.	310	ASTM D 4833
Trapezoid Tear Strength, lbs.	50	ASTM D 4533
Apparent Opening Size, U.S. Standard Sieve	Soil with more than 50% particles by weight passing U.S. No. 200 sieve, AOS less than 0.212 mm (greater than #50 U.S. sieve).	ASTM D 4751
Permittivity	$\Psi > 1.7\ sec^{-1}$	ASTM D 4491
Ultraviolet Degradation at 150 Hours	70 % Strength retained for all classes	ASTM D 4355

6. GENERAL REQUIREMENTS:
The fabric shall have complete resistance to deterioration from ambient temperatures, acid, and alkaline conditions, and shall be indestructible to microorganisms and insects. The material shall be resistant to short-term (until placement) deterioration by ultraviolet light or protected until placement, as recommended by the manufacturer, such that no deterioration occurs. During shipment and storage, the rolls of fabric shall be protected against deterioration from the sun, mud, dirt, dust, and other deleterious conditions at all times.

7. CONSTRUCTION REQUIREMENTS:
Grade the slope to provide a smooth, even surface. If minor natural soil caving occurs, as determined by the Project Manager, fill areas with granular material so that the geotextile will not be distorted or torn during material placement. The prepared surface shall be inspected prior to fabric placement.

For placement of the material, care should be taken to avoid puncturing or tearing the geotextile. The material shall be placed over the fabric in sufficient time to prevent UV damage to the fabric as specified by the manufacturer. However, in no case will the fabric remain uncovered or exposed to the elements more than 14 days. Placement of the material should start at the base of the required blanket area, moving up the slope. The material should be placed from the center outward.

I. Repair:

A geotextile patch shall be placed over the damaged area and extend 3 feet beyond the perimeter of the tear or damage.

II. Placement:

The geotextile shall be joined by either sewing or overlapping. All seams shall be subject to approval.

Overlapped seams shall have a minimum overlap of 12 inches except where placed under water where the overlap shall be a minimum of 3 feet.

Pin overlaps may be used using steel security pins, normally 3/16 inch diameter, 18 inches long, and pointed at one end, and fitted with 1.5 inch diameter metal washer on the other end. Space pins along all overlap alignments at a distance of approximately 3 ft. center to center. No wrinkles or folds will be allowed in the fabric. If seamed, seam strength shall meet the minimum required fabric grab strength criteria listed.

Overlap successive fabric in such a manner that the upstream sheet is placed over the downstream sheet and/or upslope over downslope. In underwater applications, place the geotextile and required thickness of backfill material the same day. Begin backfill placement at the toe and proceed up the slope.

Riprap and heavy stone filling shall not be dropped onto the geotextile from a height of more than 1 foot. Slope protection and smaller sizes of stone filling shall not be dropped onto the geotextile from a height exceeding 3 feet. Replace geotextile damaged during placement as directed.

End of Section

SECTION 02545 - AGGREGATE BASE COURSE

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to, placement of compacted aggregate upon the previously prepared surface.

3. SUBMITTALS:

Refer to Section 01300 - Submittals, for requirements.

4. QUALITY ASSURANCE:

Work covered in this Section shall be in accordance with these Specifications and applicable sections of the Colorado Department of Transportation Standard Specifications specified herein.

I. Density for Sands and Gravels: Relative Density Method ASTM D 4253 and ASTM D 4254.

II. In-place Density Determination: Nuclear Method ASTM D 2922.

5. MATERIALS:

Aggregates for base courses shall be crushed stone, crushed slag, crushed gravel or natural gravel conforming to AASHTO M 147 except that the requirements for the ratio of minus No. 200 sieve fraction to the minus No. 40 sieve fraction shall not apply. Aggregates for base material shall meet the grading requirements of the following table and shall also be for material identification.

The liquid limit shall not be greater than 30 and the plasticity index shall not exceed 6 when the aggregate is tested in accordance with AASHTO T 89 and AASHTO T 90 respectively.

The grading requirements of the material, Colorado Department of Transportation, Section 703.03, Aggregate Base Course, are as follows:

I. Class 6:

Sieve size or designation	Percentage by Weight passing square mesh sieve sizes
¾ in.	95-100
No. 4	30-65
No. 8	25-55
No. 200	3-12

Quality control for earthwork shall be provided by the contractor's independent testing laboratory. The Project Manager may, at any time, access the work area to perform quality control testing. Contractor shall allow access for such testing. No payment or claim will be granted for lost production during testing activities.

I. A qualified soil testing lab shall be retained to perform density testing, with field technicians working under the supervision of a Colorado registered professional engineer.

II. Denisty and moisture content testing shall be performed for every 50 cubic yards of in place fill, or at least two (2) tests per site.

III. Tests which fail density specification shall be reported verbally to the Project Manager within four (4) hours, either in person or via telephone.

IV. Base course within the failed area shall be subjected to additional compaction, moisture conditioning with additional compaction, or other corrective measures, and shall be retested. Implementation of corrective measures and retesting shall continue until the affected base coursel meets specification.

V. All test results, description of corrective measures, and retest results shall be provided to the engineer by e-mail within 48 hours of testing.

VI. Any failed areas for which corrective measures and retesting do not document that the material meets specification shall be removed and replaced to specification at the contractors expense.

6. EXECUTION:

I. Preparation:

Grade and compact the subgrade surface to receive aggregate base course to the elevations staked on the site.

Subgrade for all gravel shall be previously prepared to lines, grades and elevations shown on the drawing or as adjusted by the Project Manager, and compacted to a minimum of 95% of maximum dry density in accordance with AASHTO T 99 prior to placing gravel.

Do not place material when the prepared grade is wet, frozen, or in the Project Manager's opinion, the prevailing conditions are not favorable.

The prepared surface coarse shall be in a plane, pitched and sloped as shown on the drawings.

II. Placement:

Place all aggregate in a single lift for the compacted thickness.

III. Mixing:

When the material used is acquired from two or more sources, the materials shall be mixed while at optimum moisture by approved equipment until the mixture is uniform throughout.

IV. Shaping and Compacting:

Continue compaction until a density of not less than 95 percent of the maximum density determined in accordance with AASHTO T 99 has been achieved. Maintain the surface during the compaction operations such that a uniform texture is produced and the aggregates firmly keyed. Water shall be uniformly applied during compaction in the amount necessary for proper consolidation.

Back dragging of a bucket is not an acceptable method of preparing the surface for compaction and is not allowed. Wheel rolling or the use of passes of loaded equipment is not an acceptable method of compaction.

End of Section

SECTION 02610 - PIPE AND FITTINGS

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to, the furnishing and installation of all components required for a complete installation.

   Refer to Section 15400 for interior water system piping materials.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

4. PIPE INSPECTION AND INSTALLATION:

   I. Alignment:

      Alignment of pipe shall be maintained to the staked lines and grades.

   II. Placement:

      Lay pipe, fittings and accessories with proper equipment and in a manner to prevent damage.

      Any defective pipe materials found during the inspection, prior to placing within the trench, shall be replaced.

      All foreign matter or dirt shall be removed from the interior of the pipe before lowering into position in the trench. Pipe shall be kept clean during and after completion of laying.

      Clean the sealing surfaces of the pipe immediately before assembly, and assembly shall be made as recommended by the manufacturer. Check the completed piping to assure joints are intact.

      Prior to the placement of earthfill or other material around the pipe, observe pipe for leakage. Repair any leaks. Repeat the procedure until the pipe is watertight (The pipe joints shall show no leakage).

      When pipe laying is not in progress, seal the open ends of installed pipe to prevent entrance of water into the line. Whenever water is excluded from the interior of the pipe, place enough backfill on the pipe to prevent floating. Remove any pipe that has floated from the trench and restore the bedding. No pipe shall be laid when the trench conditions or the weather are unsuitable for proper installation as determined by the Project Manager.

III. Handling:

Haul and handle the pipe in a manner that will avoid damage.

Remove any damaged pipe from the project site and replace. Pipe shall not be repaired for installation unless approved.

IV. Pressure Testing:

A. Perform testing in the presence of the Project Manager prior to backfilling. Furnish water for testing.

B. Place sufficient backfill prior to filling with water and testing to prevent lifting of the pipe. If it is necessary to partially backfill the line prior to testing to hold the line in place, the initial backfill shall cover only the body of the pipe with joints and connections left uncovered for inspection. When local conditions require that the trenches be backfilled immediately after the pipe has been laid, the testing may be carried out after backfilling has been completed, but before placement of permanent surface.

C. Fill each section of the pipe slowly with water and expel air by means of taps at high points. Apply the specified test pressure by means of pump connected to the pipe in an approved manner. Maintain the test pressure by additional pumping if necessary for the specified time during which the system and exposed pipe, valves and fittings, shall be carefully examined for leakage. Repair or remove and replace all defective elements and repeat the test until all visible leakage has been stopped and the allowable leakage requirements have been met. Monitor pressure drops and inspect the pipeline in its entirety while the maximum working pressure is maintained.

D. Simultaneous pressure and leakage tests may be conducted, or separate pressure and leakage tests may be performed on the installed system on the criteria specified in Table I.

TABLE 1 -- WATER SYSTEM TEST METHODS

Procedure	Pressure	Duration of Test
Simultaneous pressure and leakage tests	Normal operating pressure * at lowest elevation plus 50 psi or Pressure rating of pipe plus 50 psi, whichever is least	Two hours
Separate pressure test	Normal operating pressure at lowest elevation plus 50 psi or Pressure rating of pipe plus 50 psi, whichever is least	One hour
Separate leakage test	Average test pressure of segment tested	`Two hours

*Highest normal operating pressure for this water line will be 100 psi.

E. Furnish the gauges and measuring device for the leakage test, pump, pipe,

connections and all other necessary apparatus, and furnish the necessary personnel to conduct the test. The duration of each leakage test shall be two hours, unless otherwise specified, and during the test the main shall be subjected to the quantity of water that must be supplied into the newly laid pipe, or any specified leakage test pressure after the pipe has been filled with water and the air in the pipeline has been expelled. No installation will be accepted if the leakage is greater than determined by the formula:

$$L = \frac{N\,D\sqrt{P}}{7400}$$

L is the allowable leakage, in gallons per hour; N is the number of joints in the length of pipeline tested; D is the nominal diameter of the pipe, in inches; and P is the average test pressure during the leakage test, in pounds per square inch gauge.

F. Filling:

The line shall be slowly filled with water with adequate provision made for the release of air to bleed all entrapped air during the process. The pressure shall be slowly built up to the maximum design working pressure. Pressurization should take a minimum of ten (10) minutes for pipes four (4) inches and smaller in a test section of 1,000 feet and proportionally longer for increased diameters and lengths.

5. MATERIALS AND INSTALLATION:

I. PVC Pipe:

A. General:

PVC pipe shall be manufactured by Certainteed, Diamond Plastics Corp., J-M Manufacturing, Ipex Inc., or approved equal.

1. Pressure Pipe:

Pipe and fittings shall be made from Class 12454-A or 12454-B virgin compounds in accordance with ASTM D 1784.

2. Sewer Pipe:

Pipe and fittings shall be made from Class 12454-B, 12454-C, or 13364-B virgin compounds in accordance with ASTM D 1784.

B. Joints:

1. Bell and Spigot: Pipe joints, complying with ASTM D 3139, shall be made using an integral bell with an elastomeric gasket push-on type joint or using machined couplings of a sleeve type with rubber ring gaskets and machined pipe ends to form a push-on type joint. Rubber ring gaskets shall conform to ASTM F 477. Adequate gasket lubricant shall be furnished for all of the pipe and fittings connections.

2. Solvent Weld: The joints shall meet ASTM D 2672. Only for approved indoor applications.

C. Schedule PVC Pipe:

Schedule pipe requirements shall meet ASTM D 1785 using PVC 1120, 1220 or 2120. Socket type fittings for solvent welded joints shall conform to ASTM D 2467 for Schedule 80, ASTM D 2466 for Schedule 40 and ASTM D 2464 for the threaded type. The solvent cement shall comply with ASTM D 2564.

D. PVC Sewer:

PVC sewer pipe and fittings manufactured by Certainteed, or approved equal, shall conform to ASTM D 3034 and ASTM F 679, SDR-35. Joints shall comply with ASTM D 3212 for bell and spigot joints using flexible elastomeric seals.

Pressure pipe joints shall have elastomeric seals that comply with ASTM F 477.

II. Associated Fittings and Adapters:

A. Adapter Flange: Adapter flanges shall be ductile iron complying with ASTM A 536. The flange shall meet ANSI B16.1 125 lb. flanges and with cast iron flanges (ANSI B16.1), forged steel flanges (ANSI B16.5), and steel plate flanges (C207).

1. PVC: Uni-Flange Corp. Series 900, EBAA Iron Series 8500, or approved equal.

2. Ductile Iron: Uni-Flange Corp. Series 400, EBAA Iron Series 1000 "EZ", or approved equal.

Set screws shall comply with AISI 4140 steel tensile, 190,000 psi minimum heat treated and zinc plated.

B. Blind Flanges: All blind flanges shall be manufactured of ductile iron in compliance with AWWA C 110 (ANSI A21.10), drilled and faced in accordance with ANSI B16.1 Class 125.

Handles for removal of blind flange shall be 5/8-inch diameter reinforcing bars (two in all) welded in place.

C. Flange Hardware: Flange gaskets shall comply with ANSI A21.10 and AWWA requirements. The 1/8-inch thick gaskets shall be of SBR or neoprene rubber complying with ANSI requirements.

Flange bolts and nuts of high carbon, heat treated steel shall comply with ANSI B18.2.1 standard and be zinc chromate plated.

D. Compression Couplings: APAC, Dresser, Romac compression coupling, or approved equal. The coupling shall be of the type necessary for connecting

the type and diameters of pipe required.

E. Modular Water Seals: Concrete penetration seals shall be "Link Seal" from Thunderline Corporation, (www.linkseal.com), supplied by HD Supply, (www.hdsupply.com).

F. Compact Ductile Iron Fittings: Mechanical joint, transition gasket shall comply with AWWA C 104 (ANSI A21.4), NAPPCO, Class 350 or approved equal.

G. PIP to IPS Adapter: Gasketed adapter by Head, 125 psi, or approved equal.

H. PVC Fittings: Unless otherwise noted on drawings or in the specifications, fittings for PVC pipe shall be PVC and certified for the pressure rating of the associated pipe. Elbow fittings shall be standard angles, a combination of standard angles, or angles fabricated to the nearest one degree for PIP, IPS, and sewer pipes.

III. Miscellaneous:

A. Unions: Unions shall be rated for Schedule 80 PVC materials and fittings and comply with ASTM D 1784 for PVC Type 1, Grade 1. Threaded fittings shall conform to ASTM D 2464.

6. PIPELINE MARKERS:

I. Place markers at all angle points and intersections.

II. Stamp:

A. Waterline: The pipe cap shall be stamped "W" and painted blue.

B. Sewer: The pipe cap shall be stamped "S" and painted yellow.

C. Gas: The pipe cap shall be stamped "G" and painted red.

III. Buried Detection Tape:

The detection tape shall be "Magnatex" detectable underground warning tape by Empire Level (www.empirelevel.com), or approved equal. The tape shall consist of a flexible plastic sheath, permanently color coded (impregnated) containing a solid aluminum foil core. The tape legend shall read "Buried type of utility Below" upon the 2-inch wide material.

End of Section

SECTION 02620 – SUBGRADE DRAINAGE SYSTEMS

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to, the furnishing and installation of all components required for a complete installation.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

4. MATERIALS:

   I. PVC Drain:

      Drain pipe and fittings shall conform to ASTM F758 (pipe stiffness 46), ASTM D3034 (SDR 35), or ASTM F949 (PS 46), with circular perforations not exceeding 5/8" diameter at approximately 120 degree angle, 2 rows about 3 inches apart.

   II. Filter Aggregates:

      Filter aggregates shall be sand, gravel, or crushed stone or mixtures thereof. Aggregates shall be composed of clean, hard, durable, mineral particles free from organic matter, clay balls, soft particles, or other substances that would interfere with the free-draining properties of the aggregates.

   III. Course Aggregate:

      Coarse aggregate may be crushed limestone or other material that has limestone particles included. Aggregates from crushed limestone shall be thoroughly washed and screened to remove limestone dust, limestone fines, and fine soil particles. For coarse aggregate containing limestone, the total portion finer than the No. 4 sieve shall not contain more than 3 percent by weight of limestone. Limestone shall not be used for fine aggregates except in combination with other material, such that not more than 5 percent of the portion finer than the No. 4 sieve shall be limestone.

5. PIPE INSPECTION AND INSTALLATION:

   I. Alignment:

      Alignment of pipe shall be maintained to the lines and grades indicated in the drawings.

   II. Placement:

      Install PVC pipe in accordance with manufacturer's instructions and ASTM D2321 (Standard for Underground Installation of Thermoplastic Pipe).

Unless otherwise indicated, excavate trench and backfill in accordance with Section 02221.

Line excavated trench with drainage fabric, as shown on the Contract Drawings.

Lay pipes in the upstream direction to the lines and grades shown, with the bell point upgrade, and with perforations down.

Unless otherwise indicated on the contract drawings, place Filter aggregate for bedding uniformly along each side of the pipe in minimum widths of 6 inches, and a minimum depth of 12 inches above the top of pipe, after compaction. Space each layer to eliminate voids.

Any defective pipe materials found during the inspection, prior to placing within the trench, shall be replaced.

III. Handling:

Haul and handle the pipe in a manner that will avoid damage.

Remove any damaged pipe from the project site and replace. Pipe shall not be repaired for installation unless approved.

Filter aggregates shall be stored and handled by methods that prevent segregation of particle sizes or contamination by mixing with other material.

III. Field Quality Control:

Notify and obtain the Project Manager's approval of pipes and accessories before lowering pipe into the trenches. Replace defective, damaged, or unsatisfactory pipes and accessories.

After pipe is laid and joined, notify and obtain the Project Manager's approval prior to backfilling. Take up and re-lay or replace, any pipe found to be out of alignment, unduly settled, or damaged.

End of Section

02640 – VALVES AND GATES

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to the furnishing and installation of specified items.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

4. MATERIALS AND INSTALLATION:

   I. Valve Boxes:

      Valve boxes shall be Tyler, Series 6500 for 2 inch and smaller or approved equal. The valve box for the 2 inch and smaller valves shall be supported with bricks or other items next to the valve on both sides.

   II. Furnish an extension key for two inch square operating nuts.

   III. Curb Stops and Valves:

      A. Cast bronze valves with a tee head, ¾" to 2" shall be Mueller, or approved equal.

      B. Extension Service Box: Tyler Series 6500 with enlarged base, screw adjustment extension tube and cover lid, or approved equal.

         An operation rod with guide ring shall be attached to the curb stop tee and project within the box to a point near the lid.

         Furnish a combination key for removing lid and valve operation.

End of Section

SECTION 03100 - STRUCTURAL CONCRETE FORMWORK

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to, the construction of formwork for concrete structures.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

4. QUALITY ASSURANCE:

   I. Standards:

      A. “Recommended Practice for Concrete Formwork", ACI 347

      B. “Building Code Requirements for Structural Concrete”, ACI 318

      C. "Chapter 19", International Building Code.

      D. U.S. Product Standard PS 1-74 for Plywood.

      E. Standard Grading and Dressing Rules No. 167 of the West Coast Lumber Inspection Bureau.

5. MATERIALS:

   I. Plywood:

      Plywood shall be new or in new condition "B-B Plyform Class 1 Exterior" grade plywood, 5/8 inch minimum thickness.

   II. Steel Panels:

      Steel panels shall be flat steel sheet or plate of sufficient thickness, or braced sufficiently, to prevent noticeable deflection from pressure of concrete. Steel forms shall be galvanized and/or coated to prevent rust and staining.

   III. Framing, Studding, and Bracing:

      Framing, studding and bracing shall be "Standard" or "Construction" grade West Coast Species lumber.

IV. Cylindrical Column Forms:

Use metal, fiberglass-reinforced plastic, or paper or fiber tubes. Provide paper or fiber tubes of laminated piles with water-resistant adhesive and wax-impregnated exterior for weather and moisture protection. Provide units with sufficient wall thickness to resist wet concrete loads without deformation.

V. Form Ties:

A. Form ties shall be of a cone-type snap-tie configuration type or as approved by the Project Manager. They shall have a minimum working strength when fully assembled of 3,000 pounds. Ties shall be adjustable in length permitting complete tightening of forms and of a type that leaves no metal closer than 1 inch to the surface. Wire ties will not be permitted.

B. Ties used in structures designed to contain water shall be Superior Concrete Specialties, Inc., 3M Waterseal Snap Tie or approval equal.

VI. Form Coatings:

Coat surfaces of formwork prior to each pour with "Symons Magic Kote" form coating, by Symons Manufacturing Company, Des Plaines, Illinois, or approved equal, compatible with the forming system. Do not place concrete in forms until inspected and approved.

VII. Chamfer Strips:

Chamfer strips shall be (for all exposed edges) ¾ inch, 45° bevel wood strips or reusable plastic triangular strips.

6. FORM CONSTRUCTION:

I. Construct forms to slopes, lines and dimensions shown, plumb, straight and sufficiently tight to prevent leakage, ACI 347, Chapter 2, Construction.

II. Securely brace, frame and shore forms to prevent displacement and to safely support construction loads, APA Form V 345.

III. Provide temporary openings in formwork, when needed, for concrete placement.

IV. All exposed external corners shall have chamfers of ¾ inch.

7. EXECUTION:

I. Defective Work:

Any form movement or deflection during construction or finished surface variations in excess of the tolerances specified will be basis for rejection of cast-in-place product and requirement for replacement of same.

II. Removal of Forms:

A. Do not remove forms and supports until concrete has attained sufficient strength to support anticipated loads.

B. The listing below serves only as a guide in determining the minimum length of time required before removal of forms and is based on the use of Type II Portland Cement. When high early strength Portland Cement is used, the length of time listed below may be reduced to not less than one-third time listed, but not less than 1 day. Unless otherwise indicated the minimum length of time prior to removal of forms shall be 48 hours.

C. Use methods of form removal which will not cause overstressing of the concrete. Remove supports to permit the concrete to uniformly and gradually take the stress due to its own weight. Do not use high impact methods to remove supports.

D. Break back ties after concrete has cured sufficiently to maintain unbroken bond with steel rod.

III. Reuse of Forms:

A. Reused forms for exposed concrete work shall be reconditioned to "like new" condition. Reused forms shall be cleaned, repaired, and recoated before each reuse.

IV. Blockouts:

A. Where pipes, castings, or conduits pass through the walls, place such pipes or castings in the forms before pouring the concrete, or in special cases, with the express consent of the Engineer or as specified, build accepted boxes in the forms to make cored openings for subsequent insertion of such pipes, castings or conduits. Provide boxes or cores with continuous keyways and waterstop all the way around, and with slight flare to facilitate grouting and the escape of entrapped air during grouting.

End of Section

SECTION 03200 - CONCRETE REINFORCEMENT

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to, the furnishing and placement of reinforcing for structural concrete.

3. SUBMITTALS:

Refer to Section 01300 - Submittals, for requirements.

4. QUALITY ASSURANCE CONTROL:

I. Manual of Standard Practice for Detailing Reinforced Concrete Structures, ACI 315.

II. Manual of Standard Practices, Concrete Reinforcing Steel Institute.

5. PRODUCT DELIVERY, STORAGE AND HANDLING:

I. Deliver reinforcement to project site in bundles marked to coordinate with placement drawings.

II. Handle and store to prevent contamination from dirt, oil and other materials which will affect bond.

III. Store a minimum of 6" above ground and in locations where the material will not be subject to abuse.

6. PRODUCTS:

I. Reinforcing Bars:

Bars shall be deformed in accordance with ASTM A 615, ASTM A 616 and ASTM A 617 and formed of either intermediate or hard grades of steel unless otherwise specified. Steel shall have a 60,000 psi minimum yield point. Reinforcement shall be clean and free from loose rust, scale or other coatings that will reduce bond.

II. Tie Wire: Steel, black, annealed, 16-gauge minimum.

III. Metal Accessories:

Include all spacers, chairs, bolsters, ties, and other devices necessary for properly placing, spacing, supporting and fastening reinforcement in place.

Metal accessories shall be galvanized or plastic coated where legs will be exposed in finished concrete surfaces. Accessories shall conform to requirements of the

Concrete Reinforcing Steel Institute (CRSI) *"Manual of Standard Practice for Reinforced Concrete Construction."*

Chairs and other accessories fabricated from concrete, ceramic or plastic may be used in place of metal accessories when approved by the Project Manager.

7. EXECUTION:

I. Splices:

A. Do not splice bars except at locations shown or noted on the shop drawings or as otherwise approved.

B. All effort shall be made to minimize the number of splices on the project. When splices are used, splices shall meet Type B, ACI 318 requriements.

C. Tie lap splices securely with wire to prevent displacement of splices during placement of concrete.

D. Perform welded splices in accordance with AWS 12.1.

II. Remove dirt, grease, oil, loose mill scale, excessive rust, and foreign matter that may reduce bond with concrete.

III. Keep reinforcing in proper position during concrete placement.

IV. Maintain minimum concrete cover over reinforcement as specified in ACI 318 or as noted.

End of Section

SECTION 03252 - INSERTS AND FASTENING DEVICES

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to, the furnishing and placement of all inserts and fastening devices in structural concrete.

3. GENERAL:

   Sufficient time between erection of forms and placing of concrete shall be given to the various trades to permit the proper installation of their work. See drawings and other Sections of the Specifications for extent, location and details of items to be embedded or placed in the concrete. Inserts shall be cast into the concrete with care to avoid misalignment or damage.

   All inserts shall be maintained in position and protected until the concrete placement is completed.

4. SUBMITTALS:

   Refer to Section 01300- Submittals for requirements.

5. MATERIALS:

   I. Joint Filler

      Isolation joint filler shall be cellulose fibers securely bonded together with a uniform impregnation of bituminous binder and preformed into strips. The joint filler shall comply with ASTM D 1751.

   II. Anchor Bolts:

      Bolts and nuts shall comply with ASTM A 307 and ASTM A 563 for bolt and nut materials. All nuts, bolts and washers shall be galvanized.

6. EXECUTION:

   I. Embedded Materials:

      A. Coordinate the location and placement of all items to be embedded in concrete.

      B. Coat any embedded aluminum with asphalt paint.

      C. Cadmium or aluminum coated steel materials shall be coated with asphalt paint.

II. Drilled In Grouted Anchors and Dowels:

In lieu of embedding anchor bolts and when approved (Contractor shall be responsible for providing submittals identifying loads and embedment depth requirements), drill holes in hardened concrete and install the anchor bolts and other items with special mortars. Drill with diamond boring or coring bits. Bonding mortar shall be epoxy grout type. Blow holes clean and dry before installation of embedded items. Before insertion, coat both hole and the item to be embedded with bonding compound. Studs of equal size and length may be substituted for anchor bolts if nut fasteners are used. Drilled in studs or anchors utilizing mechanical expansion locking in any process areas shall not be used.

End of Section

SECTION 03300 - CAST-IN-PLACE STRUCTURAL CONCRETE

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to, the construction of concrete structures.

3. SUBMITTALS:

Refer to Section 01300 - Submittals, for requirements.

4. COMPLIANCE WITH STANDARD AND INDUSTRY SPECIFICATIONS:

Concrete work shall conform to all requirements of ACI 301, Specifications for Structural Concrete for Buildings, except as modified below.

5. QUALITY ASSURANCES:

I. Allowable Tolerances:

A. Variations from the plumb in lines and surfaces of columns, piers and walls for a height of up to 10 feet shall not be greater than ¼ inch per location and a cummulative of one inch maximum for entire length.

B. Variation from the level and grades of floors and slabs in any 10 foot of length shall not be greater than ¼ inch and cummulative of ¾ inch maximum for entire length.

Variation in thickness of slabs:

Minus	¼ inch
Plus	½ inch

II. Control Tests:

A. Testing Laboratory: Retain the services of a testing laboratory under the direction of a professional engineer and pay all costs to take samples, make tests. The testing laboratory shall be independent of both the contractor and the supplier.

Field technicians shall be ACI certified as a Concrete Field Testing Technician. Laboratory technicians shall be ACI certified as either Concrete Strength Testing Technician or Concrete Laboratory Testing Technician.

B. Extent of Tests: Take samples and make tests for each 25 cubic yards of fresh concrete or fractional amount placed, but not less than one set for

each day's concreting. Take air entrainment and slump tests for each batch or truck of concrete delivered.

1. Compression and Strength Tests: Each test shall consist of four standard cylinders (either 6"x12" or 4"x8"). Cylinder diameter shall be at least three (3) times the nominal maximum size of the coarse aggregate. One cylinder to be tested at the age of 7 days and two cylinders at the age of 28 days. Test one cylinder at 56 days if the other two 28 day cylinders do not meet the required strength. Secure samples for compression test specimens in accordance with ASTM C 172. Cure specimens in accordance with ASTM C 31. Additional test of specimens cured entirely under field conditions may be utilized to check the adequacy of curing and protection of the concrete as directed. Strength tests shall be made in accordance with ASTM C 39. Core tests may be required in the event that compression tests fail to meet the specifications. Core testing shall be in accordance with ASTM C 42 and evaluated in accordance with ACI 301, Chapter 17.

2. Slump Tests: Tests shall be made in accordance with ASTM C 143.

3. Air Entrainment Tests: Tests shall be in accordance with ASTM C 231, ASTM C 173, or ASTM C 138 for normal weight concrete.

4. Temperature: Determine temperature for each set of slump and air entrainment tests.

5. Unit Weight Tests: Tests shall be in accordance with ASTM C 138.

C. Acceptance of Concrete:

1. Cylinders: The average of all sets of three consecutive strength tests shall equal or exceed the specified strength f_c', and no individual strength test result shall be less than the specified strength f_c' by more than 500 psi.

2. Core Tests: The average compressive strength must be equal to or greater than 85 percent of specified strength f_c' and no single core shall be less than 75 percent of the specified strength f_c'.

D. Enforcement of Strength Requirements: When the compressive strength of cylinder falls below the specified strength, the Project Manager may order additional curing for that portion of the structure where the concrete has been placed.

If such additional curing does not give the strength required, the defective parts shall be removed and replaced.

Submit ready-mix delivery tickets per ASTM C 94 if requested.

III. Environmental Requirements:

A. Concrete when deposited shall have a temperature not below 40°F. and

not above 90°F. During periods not defined as cold weather but when freezing temperatures are foreseen or occur provide suitable means for protecting the concrete from freezing the first 24 hours after placing.

B. The methods and recommended practice as described in Standard Specification for Cold Weather Concreting, ACI 306.1 and ACI Report 306R shall be followed for cold weather concreting.

C. Cold weather is a period when for more than 3 successive days the average daily outdoor temperature drops below 40°F. The average daily temperature is the average of the highest and lowest temperature during the period from midnight to midnight. When temperatures above 50°F occur during more than half of any 24 hour duration, the period shall no longer be regarded as cold weather.

D. The methods and recommended practice as described in ACI Report 305R shall be followed for hot weather concreting.

E. Hot weather is defined as any combination of high air temperature, low relative humidity, and wind velocity at which the evaporation rate exceeds 0.2 lb/ft²/hr. In excess of this rate, precautions against plastic shrinkage cracking are required. Minimum precautions require the application of an evaporation retardant.

F. The use of salt, chemicals or other foreign materials shall not be mixed with the concrete without approval.

G. Prevent the discharge of wet concrete into any stream or lake.

IV. Delivery and Placement:

A. Concrete that is completely mixed in a truck mixer shall receive 70 to 100 revolutions at the mixing speed prior to placement.

B. Discharge of the concrete shall be completed within 1½ hours, or before the drum has revolved 300 revolutions, whichever comes first, after the introduction of the mixing water to the cement and aggregates or the introduction of the cement to the aggregates. These limitations may be waived by the Project Manager if the concrete is of such slump after the 1½ hours or 300-revolution limit has been reached that it can be placed, without the addition of water, to the batch.

C. Concrete delivered in cold weather shall have the following minimum temperature as placed and maintained during the protection period. The period shall be for a minimum of 3 days.

	Section Size, Min. Dimension (inches)			
	12 or less	12 to 36	36 to 72	72 and greater
Min. Temp.	55°F	50°F	45°F	40°F

D. Termination of Protection: At the end of the protection period, the concrete shall be allowed to cool gradually. The maximum decrease in temperature measured at the surface of the concrete in a 24 hour period shall be as follows:

	Section Size, Min. Dimension (inches)			
	12 or less	12 to 36	36 to 72	72 and greater
Max. Temp. Drop	50°F	40°F	30°F	20°F

6. INSPECTION:

I. Assure that excavations and form work are completed, and that ice and excess water are removed from all surfaces.

II. Check that reinforcement is secured in place and forms are thoroughly wetted or oiled.

III. Verify that anchors and other embedded items are secured in position.

IV. Inspection and approval shall be attained before any concrete is placed.

7. PRODUCTS:

Concrete materials shall conform to the requirements of Section 700 of the latest version of the Colorado Department of Transportation Standard Specifications for Road and Bridge Construction, and subsequent revisions thereto.

I. Portland Cement:

Type II, low to moderate alkali, shall conform to CDOT 701.01 (ASTM C 150).

Low to moderate alkali cement will not be required upon approval of submittals certifying the use of non-reactive aggregate.

II. Blended Hydraulic Cement:

Type IL, (MS and HS), Portland-Limestone Cement, shall conform to CDOT 701.01 (ASTM C 595).

III. Admixtures:

A. Air-entraining admixture shall meet CDOT section 711.02 (AASHTO M 154).

B. Water reducing admixtures shall meet CDOT section 711.03 (AASHTO M 194).

C. Permeability reducing admixture for hydrostatic conditions shall meet CDOT section 711.03 (AASHTO M 194) and ACI 212.3.

D. Approved fly ash may be substituted for portland cement up to a maximum of 10 percent Class C or 10 percent Class F by weight. Fly ash shall conform to ASTM C 618. Fly ash must be a pre-approved product from a source listed on the Colorado Department of Transportation's Approved Products List.

IV. Aggregate:

A. Fine Aggregate:

Shall conform to CDOT 703.01 (AASHTO M 6).

B. Coarse Aggregate:

Shall conform to CDOT 703.02 (AASHTO M 80), except crushed hydraulic-cement concrete shall not be allowed.

Regular, CDOT Class D, concrete shall be made with ¾ inch nominal sized course aggregate.

V. Mix Proportioning:

Concrete materials shall conform to the requirements of the Section 600 of the latest version of the Colorado Department of Transportation (CDOT) Standard Specifications for Road and Bridge Construction, and subsequent revisions thereto.

Concrete shall meet all of the following:

A. Regular Concrete:

1. CDOT Class D - Except as otherwise specified, concrete shall have a 28 day compressive strength of 4,500 psi, minimum.

2. Minimum cement content: 615 to 660 pounds of cement per cubic yard.

3. Maximum water to cement ratio, including aggregate surface moisture but excluding water of absorption of aggregate: 0.44.

4. Air entrainment content: 5 to 8 percent. Air content of trowel-finished interior concrete floors shall not exceed 3.0 percent

5. Slump: The maximum slump of the delivered concrete shall be the slump of the approved concrete mix design plus 1.5 inches.

B. Patching Mixture:

The patching mixture shall be made of the same materials and of approximately the same proportions as used for the concrete, except that the coarse aggregate shall be omitted and the mortar shall consist of not more than 1 part cement to 2½ parts sand by damp, loose volume. The

quantity of mixing water shall be no more than necessary for handling and placing. The patching mortar shall be mixed in advance and allowed to stand with frequent manipulation with a trowel, without addition of water, until it has reached the stiffest consistency that will permit placing.

VI. Water Quality:

Mixing water shall be clean and free of oil, acid and injurious amounts of vegetable matter, alkalies and other impurities.

VII. Joint Sealant:

The material shall be Sikaflex 1-A, Mameco weatherproofing sealant Vulkem 116 or approved equal. The material shall be a one-part moisture curing, gun-grade polyurethane sealant suitable for continual immersion in water of a limestone color conforming to ASTM C 920. Vulkem primer 171 or Sikaflex primer 429 shall be applied to the concrete when joint will be immersed in water.

VIII. Joint Backer: extruded closed-cell polyethylene foam by Hercules, or approved equal.

IX. Evaporation Retardant:

SikaFilm, "ConFilm", or approved equal.

X. Isolation Joint:

Isolation joint expansion filler shall be closed cell superior grade polyethylene or non-extruding PVC such as "Foamjoint" or "Conflex" available from Sweeney Materials, Inc. or approved equal.

Joint Spacing (feet)	10-20	20-30	30-50	50-70	70-100
Filler Thickness (inches)	½	3/8	½	¾	1

8. INSTALLATION:

I. Placing Concrete:

A. Place concrete only in the presence of the Project Manager. Remove and replace concrete placed in his absence unless otherwise accepted.

B. Convey concrete from mixer to final position by method which will prevent separation or loss of material.

C. Maximum height of concrete free fall 5 feet unless otherwise allowed.

D. Regulate rate of placement so concrete remains plastic and flows into position.

E. Deposit concrete in continuous operation until section is completed.

F. Place concrete in horizontal layers 18 inches maximum thickness.

G. Do not retemper or use set concrete.

H. Water shall not be added to concrete after test samples have been taken.

I. Prevent the discharge of wet concrete into any stream or lake.

II. Consolidating Concrete:

A. Use mechanical vibrating equipment for consolidation. Contractor is encouraged to have a spare vibrator in case of failure.

B. Do not use vibrators to transport concrete in forms.

C. Insert vibrators vertically and quickly. Withdraw slowly to remove entrapped air pockets.

D. Vibration spacing shall be such that the radius of action overlaps that of previously vibrated concrete.

E. Special attention and effort shall be used next to hardened concrete, embedded items and corners.

F. Unreinforced slabs less then 8-inches thick do not require consolidation.

III. Repairing Formed Surfaces of New Concrete:

A. After removal of forms inspect all concrete surfaces, repair any joints, voids, stone pockets, tie holes or other defective areas before the concrete is thoroughly dry. Defective areas shall be chipped away to a depth of not less than one inch with the edges undercut to the surface. The area to be repair and a space at least 6 ins. wide entirely surrounding it shall be wetted to prevent absorption of water from the patching mortar. Do not repair any concrete in freezing weather.

B. Unexposed formed surfaces of concrete shall be repair as directed.

C. Where approved, the bonding of the patching mortar to the acceptable concrete after necessary cutting and removal of porous or otherwise unacceptable concrete is completed may be done by the use of an approved bonding agent applied in accordance with the printed directions of the manufacturer. Filling and finishing of the patch shall be completed as herein specified.

IV. Slabs On Subgrade:

Place the concrete slab over material compacted to a minimum of 95% of maximum dry density as determined by ASTM or AASHTO T 99 (Standard Proctor). Place concrete of the required thickness and strike off at the proper levels.

V. Control Joints:

Control joints shall be provided at spacing as noted on the drawings.

Floor joints shall be a maximum ¼ inch wide. Wall joints can use chamfer strips with a maximum width of ¾ inch. Depth shall be ¼ the thickness of the wall or slab.

Timing of joint creation is critical and depends on the method used. Conventional saw-cut joints should be made as soon as possible without raveling the concrete -- 4 to 12 hours after placement is common, but never more than 24-hours after placement. Soft-cut joints are normally made one to four hours after completion of finishing operations. Tooled joints should be run early in the finishing process and repeated later to provide esthetically-pleasing joints and eliminate any possibility of groove bond.

All joints shall be filled with flexible liquid joint filler within 7 days of concrete placement. Refer to Section 07900 – Sealants and Joint Fillers for additional information.

9. CONCRETE FINISHES AND TOLERANCE:

I. General Finish:

A. Finish surfaces to conform with the following table unless otherwise noted on the drawings.

B. Formed Surfaces: System:

1. Exterior - Below Grade F1

2. Exterior - Exposed, Rough.....F2

C. Unformed Surfaces: System:

1. Top of Forms U1

2. Interior Slabs U2

3. Driving and Exterior Walking Surface U7

II. Formed Surfaces:

Finishes for formed surfaces shall be as designated below:

A. Finishing for F1 and F2 finishes consists of concrete repairing within 48 hours after forms are removed.

B. Finish F1: Rough formed surface with defective concrete repaired and form tie holes and other holes over ½ inch deep filled. Forms may be built with a minimum of refinement and form sheathing may be any material

that will not leak mortar or yield beyond specified tolerances when the concrete is vibrated.

C. Finish F2: Smooth, formed concrete surface with all fins, projections and loose material removed, and defective concrete, form tie holes, air bubble holes, surface pits, holes from defective forms, nail head holes and similar surface defects repaired and filled. Forms in contact with concrete shall be plywood or steel.

III. Unformed Surfaces:

A. Working on unformed surfaces in various finishing operations shall be held to the minimum required to produce the desired finish. Use of any finishing tool in areas where water has accumulated will not be allowed. Work in these areas shall be delayed until the water has been absorbed, evaporated, or removed by draining, mopping, dragging off with a loop of hose, or other means. In no case, shall cement or mixture of cement and sand be spread on the surface to absorb excess moisture or shall such materials or water be added to facilitate troweling. Joints and edges, unless specified otherwise, shall be carefully finished with edging tools.

Finishes for unformed surface shall be as designated below:

B. Finish U1: Even, uniform finish. Consolidate, level, screed, and bull-float (darby) concrete for an even, uniform surface. Concrete shall be removed immediately after consolidated by striking with a sawing motion of a straightedge or template across wood or metal strips, set as guides. When the surface is curved, use screed strips at approved intervals. For long, narrow stretches of curved surfaces such as on invert paving, a heavy slip form may be used. In the case of extensive flat paving, a paving and finishing machine is preferred. Use the bull-float or darby to fill in voids and eliminate ridges. Use magnesium or aluminum on air-entrained concrete. Bull-float immediately after screeding and before bleed water appears on the surface. Do not perform any finish operation while there is bleed water or excess water on the surface.

C. Finish U2: Steel Trowel finish. Follow treatment for U1 by steel troweling by hand, or power driven equipment. Troweling to be started after some stiffening has taken place in the surface concrete and the bleed water, excess moisture and "shine" has disappeared. Work the concrete no more than necessary to produce a surface known as "Steel Trowel Finish" that is uniform in texture and free of screed marks. Do any necessary cutting and filling during the floating operations. Use a magnesium or aluminum float on air-entrained concrete.

D. Finish U7: Drive and Exterior Walking Surface. Immediately after the concrete has been placed and consolidated, strike off the surface with a finishing machine or hand-operated screed until the required surface is obtained. The use of "jitterbugs" or similar devices is not permitted. The strike-off method and equipment shall be approved. Approval shall be withdrawn for unsatisfactory performance. The equipment shall be capable of finishing within the specified surface tolerances. Improper

adjustment and operation that results in unsatisfactory consolidated and smoothness shall be corrected immediately. Unsatisfactory performance may be cause for rejection of the equipment and removal of the concrete.

Following completion of the strike-off, float the slab surface to a smooth, uniform surface using floats 10 feet or longer. Use adequate floats to remove roughness and minor irregularities left by the strike board or finishing machine and to seal the concrete surface. Excessive working of the concrete surface will not be permitted. All floats shall be used so that each transverse pass overlaps the previous pass by at least one-half the length of the float.

When hand-operated float boards are used they shall be from 12 feet to 16 feet long, ribbed and trussed as necessary to provide a rigid float, with adjustable handles at each end. The float shall be wood at least 1 inch thick and 8 inches wide. Provide adjusting screws between the float and the rib no more than 24 inches apart. Maintain the float board free of twist and true.

Operate hand-operated float boards from transverse finishing bridges. The finishing bridges shall completely span the area being floated, and a sufficient number of finishing bridges shall be provided to permit operation of the floats without undue delay. Not less than two transverse finishing bridges shall be provided when hand-operated float boards are used. When a finishing machine is used for longitudinal floating, one finishing bridge equivalent to the transverse finishing bridge specified herein shall be furnished for use by the Engineer.

All finishing bridges shall be of rigid construction, free of wobble and spring when used by the operators of longitudinal floats, and easily moved.

After floating is complete, but while the concrete is still plastic, test the surface of the concrete for trueness with a 10-foot straightedge. The straightedge shall be held in contact with the surface in successive positions parallel to the slab centerline and the whole area gone over from one side of the slab to the other. Advancement along the slab shall be in successive stages of not more than one-half of the length of the straightedge. Any depressions found shall be filled immediately with freshly mixed concrete, and any high areas shall be cut down. The surface shall be struck off, consolidated, and refinished. Special attention shall be given to ensure that the surface across joints fully meets the requirements for smoothness. The straightedge testing and refloating shall continue until the entire surface is found to be free from observable departures from the straightedge and the slab has the required grade and crown.

As soon as the concrete has hardened sufficiently, the surfaces shall be given a further test for trueness using a 10-foot straightedge or other specified device. Areas showing high spots of more than 1/8 inch shall be marked and immediately ground down with a diamond-faced, saw-type cutting machine, capable of cutting through mortar and aggregate without breaking or dislodging the aggregate or causing spalls, to an elevation

where the area or spot will not show surface deviations in excess of 1/8 inch when tested with a 10-foot straightedge.

Provide the 10-foot straightedge and perform the straightedge testing while the Project Manager is present.

IV. Tolerances:

A. Unless otherwise required, allowable tolerances for concrete surfaces shall be in accordance with the following table. Surface irregularities are classified as either "abrupt" or "gradual".

Offsets caused by displaced or misplaced form sheathing, lining, or form section or by defective form lumber shall be considered as abrupt irregularities. All others are classed as gradual irregularities. Gradual irregularities shall be measured with a template consisting of a straight edge for plane surfaces and its equivalent for curved surfaces.

B. The length of the template for testing formed surfaces is 5 feet. The length of the template for unformed surfaces is 10 feet. Maintain a 5-foot length and 10-foot length steel template on the site.

C. Maximum allowable irregularities in concrete:

Finish Designation	Irregularity in Inches	
	Gradual	Abrupt
F1	1	½
F2	½	¼
U1 through U8	¼	¼

10. CURING:

I. Apply curing and sealing compound, BASF "MasterKure CC 180 WB" or approved equal, to the concrete by spraying. Apply one coat for curing (apply a second coat for sealing and dustproofing). For vertical surfaces application shall be made as soon as the forms have been stripped, the surfaces have been rubbed and patched, if applicable. Store and handle the curing compound and apply in recommended surface coverages in compliance with the Manufacturer's printed instructions. Curing compound shall be a liquid membrane and meet ASTM C 309, Type I-D and applied at a rate of not greater than 200 square feet per gallon for the first coat unless otherwise approved. Coating shall be kept undamaged or repaired for 7 consecutive days.

II. Curing Compound Effect:

If curing compound will interfere with any sealers, grouts or other materials to be placed on the concrete, obtain approval of another curing method from the Project Manager.

11. STRUCTURE BONDING:

I. Materials:

A. Hardened Concrete and Other Materials to Hardened Concrete:

The material shall meet ASTM C 881, Type I with a minimum bond strength of 1,500 psi, be of a grade suitable for the required temperature and of the lowest suitable viscosity. An acceptable product is KEMCO by ChemCo Systems, Inc. or approved equal.

B. New Concrete to Hardened Concrete:

The material shall meet ASTM C 881, Type II with a minimum bond strength of 1,500 psi, be of a grade suitable for the required temperature and of the lowest suitable viscosity. An acceptable product is BASF "EPOGRIP" or approved equal.

II. Installation:

A. General:

Follow the manufacturer's printed instructions to obtain the proper blend and consistency when mixing the resin and hardener together.

B. Hardened Concrete and Other Materials to Hardened Concrete:

Apply bonding agent to surfaces of hardened concrete and materials to be bonded. Hold the bonded pieces in place with weights, clamps or other suitable methods until the epoxy has hardened.

C. New Concrete to Hardened Concrete:

Thoroughly cover the entire surface to be bonded. Immediately place the concrete. If the bonding agent is allowed to set, remove and reapply.

12. BOND BREAKER:

I. Materials:
The material shall meet ASTM C 309, Type I. An acceptable product is Burke "Super Tilt Bond Breaker" or approved equal.

II. Installation:

Apply in a uniform manner by spraying or rolling at a rate of 200 square feet per gallon.

13. CONCRETE PATCHING:

Patching Mortar:

The mortar mixture shall be composed of a two component system polymer-modified Portland cement appropriate to the thickness required. The mortar shall be Sika "MonoTop 611", BASF "ALL-CRETE 5", or approved equal.

Sand shall be clean and graded with 100 percent passing a No. 8 standard sieve; not more than 5 percent retained on a No. 16 standard sieve; from 10 to 30 percent passing a No. 100 standard sieve; and not more than 5 percent passing a No. 200 standard sieve.

End of Section

SECTION 03600 - GROUT

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to, the placement of nonshrink grout beneath building columns and anchor bolt installation as approved by the Project Manager.

3. INSPECTION:

Assure that all of the items have been leveled, plumbed, centered and that all the nuts have been completely tightened.

Inspection and approval by the Project Manager shall be obtained before the grouting begins.

4. SUBMITTALS:

Refer to Section 01300 - Submittals, for requirements.

5. DELIVERY, STORAGE AND HANDLING:

Deliver the material in the original unopened containers and store under cover.

6. PRODUCTS:

I. Pumps and Mechanical Equipment:

A. The non-shrink, hydraulic cement-based aggregate grout shall be Masterflow 928 by BASF Building Systems.

B. Volume change requirements shall comply with ASTM C 1107.

C. Compressive Strength:

The material shall have a 28 day minimum compressive strength at a fluid consistency cured laboratory samples) of 8,000 psi complying with ASTM C 109.

D. Material Yield:

One 55 lb. bag of packaged grout mixed with 10 lbs. of water will produce approximately .43 cubic feet of grout.

E. Setting Time:

The grout shall be workable for a period of 5.5 hours (prior to initial set of the material) in compliance with ASTM C 191.

F. Tensile Strength:

Tensile strength developed after 3 days shall be 300 psi in accordance with ASTM C 190.

II. Anchor Bolts:

A. The two-component liquid epoxy grout shall be BASF Building Systems, or approved equal.

B. Anchor Bolt dimensions and locations shall be as indicated in the drawings.

7. INSTALLATION:

I. General:

Non-shrink grout shall be placed between building column base plates and concrete foundations once building installation is complete. Non-shrink grout shall be placed such that is completely fills the voide between baseplate and concrete foundation.

II. Preparation:

Locate all tools and materials as close as possible to the area to be grouted. All surfaces in contact with the grout shall be entirely free of oil, grease, laitance, and other foreign substances. Roughen the concrete surfaces to insure good bond of grout to the existing concrete. Clean thoroughly with liberal quantities of water, leaving the surface wet but free of excess water.

III. Mixing and Placing:

Mix the grout according to the manufacturer's recommendations.

Place the grout from one side of a base plate only, to avoid entrapping air.

IV. Protection and Curing:

Protect the placed cementitious grout from rapid drying. Spray apply a curing compound to the exposed surfaces complying with ASTM C 309, Type I, such as Master Builders MB-429 curing and sealing compound, or approved equal.

End of Section

SECTION 06100 - CARPENTRY

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to framing and finish carpentry.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

4. QUALITY ASSURANCE:

   Store materials in such a manner as to insure proper ventilation and drainage and to protect against damage and the weather with tarpaulin.

   Keep all material clearly identified with all grade marks legible; keep all damaged material clearly identified as damaged and separately store to prevent its inadvertent use.

   Do not allow installation of damaged or otherwise noncomplying material.

   Use all means necessary to protect the installed work and materials of all other trades.

   Do such work as is necessary to cover and protect all carpentry work or materials from damage of any kind.

5. MATERIALS:

   I. General:

      All materials to be used shall be consistent with grade specified. Lumber shall be protected from weather until actually used. All lumber shall be of a quality equal to or superior to the minimum required for the specified grade.

   II. Standards:

      A. General:

         All pieces shall bear the official manufacturer's association grade mark. For rough sawn lumber, lot grading certifications are acceptable. All lumber for finish millwork, trim, etc., to be properly kiln-dried to a maximum of seven (7) percent moisture content. For rough sawn lumber greater than two inches thick, "S-Grn" accepted. For 2 inch thick rough sawn and S4S lumber, the moisture content shall be a maximum of nineteen (19) percent, (S-Dry) unless otherwise noted.

B. Western Wood Products Association (WWPA)

C. Standard Grading Rules, California Redwood Association (CRA)

D. Standard Grading Rules and the American Plywood Association (APA)

III. Wood Types:

A. Structural Framing:

Structural framing includes studs, posts, beams, joists, purlins, rafters, etc.

B. General Framing:

1. Stud Wall Framing (2" to 4" thick, 2" to 4" wide)
Douglas Fir-Larch or Hem-Fir
Grade: Stud, Standard or better
F_b = 550 psi
F_c = 800 psi

2. Structural Light Framing (2" to 4" thick, 2" to 4" wide)
Douglas Fir-Larch or Hem-Fir
Grade: No. 2 or better
F_b = 850 psi
F_c = 825 psi

3. Structural Joists and Planks (2" to 4" thick, 5" and wider)
Douglas Fir-Larch or Hem-Fir
Grade No. 1 or better
F_b = 1,000 psi

4. Beams and Stringers (5" and thicker, width more than 2" greater than thickness)
Douglas Fir-Larch or Hem-Fir
Grade No. 2
F_b = 850 psi

C. General Purpose Boards:

Common boards shall be WWPA, all species, (1" and thicker), Grade 3 Common or better.

D. Plywood:

1. Wall sheathing shall be Douglas Fir conforming to APA CD grade.

2. Floor sheathing or sub-floor shall be tongue and groove Douglas Fir conforming to APA C-D interior grade with exterior glue.

E. Oriented Strand Board (OSB):

Shall be "inner-seal OSB" sheathing as manufactured by Louisiana-Pacific, or approved equal. The sheathing shall be back stamped with American Plywood Association Performance Rating Standard PRP108 or HUD/FHA Material Release 1060 Structural Requirements. Structural 1 rated sheathing shall conform to National Evaluation Report NERQA397. Installation shall conform to the manufacturer's instructions and to A.P.A. procedures.

F. Trim and Mouldings:

Baseboard Moldings and Interior Door Trim shall be hardwood (i.e. basswood) with a basic radiused corner top and bottom. Trim shall be a minimum 5/8" thick by 5" tall. Trim shall be stained and clear coated prior to installation. Stain color to be approved by Project Manager.

6. I-JOISTS:

Roof I-Joists are designed for the loading indicated in the project drawings. Size and type to be as identified on the construction drawings. Acceptable manufacturer's include TJI, Louisiana Pacific, Boise Cascade or approved equivalent.

All joists shall be clearly stamped with the manufacturer's information including joist classification.

Intermediate bracing/blocking shall be provided in accordance with manufacturer's recommendations.

7. TEMPORARY BRACING:

Provide and maintain all temporary bracing for door frames. Furnish and maintain all necessary scaffolding, ladders, etc.

8. METAL FRAMING CONNECTORS:

Metal framing connectors shall be furnished and installed where specified or as necessary for completion of work to anchor carpentry and millwork to adjoining construction.

I. Products:

Structural framing connectors shall be by Simpson Strong-Tie., or approved equal.

Install in accordance with the manufacturer's recommendations.

II. Fasteners:

Fasteners shall be provided and of the type recommended by the manufacturer,

A. Column cap and base bolts, complying with ASTM A 307 for bolt and nut materials. All hardware shall be galvanized or plated with another acceptable corrosion resistant material.

B. Nails shall have a corrosion resistant coating.

C. Fasteners for treated lumber shall be hot dipped galvanized, ASTM 153, or stainless steel, Type 316L. Electro-platted fasteners shall not be used. Use only hot dipped galvanized or stainless steel connectors and fasteners. Do not use hot dipped galvanized with stainless steel.

9. WORKMANSHIP AND INSTALLATION:

Woodwork shall be properly framed, closely fitted and accurately set to required lines and levels and shall be rigidly secured in place. Panels shall be set loose and so secured as to prevent checks and warps.

Caulk the perimeter of moldings.

No carpentry work shall be covered until inspection has been made.

10. EXECUTION:

I. Selection of Lumber Pieces:

A. Carefully select all members; select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing or making proper connections.

B. Cut out and discard all defects which will render a piece unable to serve its intended function, lumber may be rejected whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.

II. General Framing:

A. At a minimum all framing shall be done in accordance with the current International Building Code.

B. Top plates shall be doubled on all stud walls.

C. Cripples under headers shall be continuous to sill plate.

D. Block all stud walls as required for sheathing.

E. Beams, girders, and joists supporting bearing walls or other concentrated loads, shall not be notched. Joists, except as above, may be notched no deeper than ¼ the depth, at top edge only, provided such notch is located within $^1/_8$ to ¼ of span from face of support. Sawcuts for notches shall not overrun depth of notch. Holes in joists, beams and girders shall not be larger in diameter than 1/10 the depth of member and shall be located within center half of the span. All holes shall be centered within depth of member. Holes and notches in studs shall be located within 1/3 of height from either top or bottom but no closer than 3″ from plates. Holes and notches in studs shall not exceed 1″ in diameter or depth. Studs in exterior walls shall not be notched.

F. Joists, rafters, and decking shall not be cut and headed or displaced to provide for openings in roofs or floors, except as detailed on drawings.

G. Install all horizontal members with crown up.

H. All members in bearing shall be accurately cut and aligned so that full bearing is provided without use of shims. Bearing posts shall have full blocking or support under.

I. All rafters shall be notched for full bearing at all supports.

J. All joists shall have a minimum of 3½″ bearing on wood or metal supports. Lapping joints shall have 6″ laps centered over interior supports.

K. Stud wall sill plates shall be pressure treated and shall be adhered to the concrete slab with a continuous application of construction adhesive and powder actuated fasteners at a maximum of 32" O.C. A powder actuated fastener shall be installed within 12 inches of the end of each wall section.

L. All plywood and OSB wall sheathing shall be applied as follows: Center vertical joints over studs and center horizontal joints over 2″ blocking or plate. Nail top of panels to double top plate, and nail bottom of panels to anchored sill plate.

Plywood and OSB sub-floor and roof sheathing: Install with face grain at right angles to supports, continuous over two (2) or more spans. Allow minimum space 1/16-inch between end joints and $^{1}/_{8}$ inch at edge joints for expansion and contraction of panels.

III. Fasteners:

A. General:

All structural timber connections using bolts, lag screws, nails, spikes and wood screws shall have a pilot hole bored into the timber joint prior to the connector insertion in accordance with the National Design Specification for Wood Construction. Nails and spikes may not be pre-bored unless the integrity of the joint is not damaged in any way. All fasteners exposed to weather shall be noncorrosive.

B. Nailing:

1. Rough Framing: Use only common nails or spikes as required to properly fasten members. Avoid nailing into end grain of wood and use toe nailing whenever possible.

2. Wood Stops and Trim: Nail with appropriate size non-corrosive finish nails.

3. Plywood and OSB: Use only non-corrosive coated common nails to

properly fasten panels. Nail 6 inches o.c. along panel edges and 12 inches at the intermediate supports, except that when supports are spaced at 48 inches o.c. or more, space nails 6 inches o.c. at all supports.

C. Bolts:

Bolts shall be ASTM A 307. Bolt threads must not bear on wood; use washer under head and nut where both bear on wood; use washers under all nuts. All bolts and associated hardware shall be galvanized.

D. Screws:

Lag screws shall be ASTM A 307 and wood screws shall be of sufficient strength to cause failure in the wood rather than in the screw. Screw, do not drive, all lag screw and wood screws.

IV. Powder Actuated Fasteners:

For masonry or concrete, powder actuated fasteners shall be Ramset or approved equal.

11. TRIM INSTALLATION:

Finished woodwork shall be dressed and sanded, free from machine and tool marks, abrasions, raised grain or other defects on surfaces exposed to view in the finished work. Joints shall be tight and so formed as to conceal shrinkage. All nail heads in finished work shall be sunk with nail punch and holes filled with putty similar to the finish color. Woodwork shall be properly framed, closely fitted and accurately set to required lines and levels and shall be rigidly secured in place. Insure that the completed work will remain in place without warping, splitting or opening of joints.

End of Section

SECTION 07200 - INSULATION

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to furnishing, installation and application of insulation materials.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

4. PRODUCT DELIVERY, STORAGE AND HANDLING:

   I. Delivery:

      Deliver material to the site in unopened packages, with identification labels intact. Identify contents, manufacturer, brand name, thermal values and applicable standards. Use all means necessary to protect insulation before, during, and after installation and to protect the installed work and materials of all other trades.

   II. Storage:

      Insulation must be stored under water resistant cover, protected from weather and direct sunlight or sparks and stacked on pallets. Material not stored in this manner will be immediately removed from job site at the Contractor's expense and not used.

5. QUALITY CONTROL:

   All work of this Section shall be done in accordance with manufacturer’s recommendations and in such a manner as to avoid gaps or voids at the insulation plane.

6. PRODUCTS:

   I. Extruded Polystyrene Insulation:

      A. Masonry and Concrete Surfaces (Foundations):

         Material shall be "STYROFOAM SM" brand extruded polystyrene insulation board manufactured by the Dow Chemical Company or approved equivalent meeting ASTM C578 Type X, with a compressive strength of 30 psi.

      B. Attachment:

         Material shall be fastened with DOW “GREAT STUFF PRO” FOR WALL APPLICATIONS as specified below, or shall be mechanically fastened as per the manufacturer's recommendation.

II. Fibrous Insulation:

Provide fibrous glass insulation batts complying with ASTM C 665, Type II, Class C, by Owens Corning, Johns-Manville, Certainteed, or approved equal. Thermal resistance shall be of the thickness or R-value shown on the drawings.

Two part insulation systems utilizing thermal blocks (R3.5 continuous minimum) for roofing and white painted, galvanealed banding, white vapor barrier support fabric and two layers of unfaced fiberglass blanket insulation laid perpendicular to each other with the upper layer placed between the secondary support members and the building wall/roof panels and the lower layer placed between the framing members.

Vapor retarder (perm rating of 0.02 or lower) shall consist of polypropylene film, fiberglass reinforcing yarn and a metalized polyester film laminated together with flame retardant adhesive.

Material shall meet the following standards:

Mold and mildew resistance ASTM D-2020
Flammability UL 723
NAIMA 202-96 (Rev. 2000)

Insulation Rolls delivered to the job site shall have the NAHB certification label for metal buildings clearly marked on the packaging.

III. Vapor Barrier:

Vapor barrier shall be 6 mil polyethylene film. The sheets shall be overlapped 12" minimum and taped at all joints and perimeter taped according to manufacturer recommendation.

7. EXECUTION:

I. Polystyrene:

A. Adhesive Application:

Apply adhesive to insulation in $^3/_8$ inch diameter ribbons on 6 inch centers. Press insulation in place with a rocking motion.

B. Panel Installation:

Abut each piece of insulation against adjoining pieces.

Fit the insulation panels closely around penetrations.

Stagger all vertical joints.

C. Masonry and Concrete Surfaces:

1. Do not install "Styrofoam SM" foam insulation on concrete building surfaces with a cementitious adhesive when out-door temperatures are 32°F or below.

2. Fins and projections left after removal of concrete forms shall be removed to provide an even surface.

3. Waxes, oily films and other residue left on poured concrete surfaces from form release agents must be removed.

II. Fibrous Insulation:

Install insulation according to manufacturer's specifications and NAIMA's "Recommendations for installing Fiber Glass Insulation in Metal Buildings".

Fit the insulation batts snugly between framing members per the manufacturer's specification.

Install vapor barrier to the interior of the building.

Maintain integrity of insulation over entire area to be insulated.

Insulate small areas between closely spaced framing members.

Carefully cut and fit insulation around pipes, conduits and other obstructions.

Do not install insulation on top of or within 3 inches of recessed light fixtures, unless the fixtures are approved for such use.

III. Vapor Retarder:

A. Vapor retarder shall not be torn or damaged. Any sections that have been damaged shall be removed from the jobsite.

B. Vapor retarder shall be placed continuously on the interior side of the building. The vapor barrier shall not be placed between the secondary steel and wall or roof panels but shall pass across the interior face of all secondary framing members. Joints shall be sealed in accordance with the manufacturer's recommendations to provide a continuous vapor retarding barrier.

C. Strapping shall be placed in accordance with manufacturer's recommendations to adequately support the vapor retarder and insulation. Additional strapping may be required by the Project Manager if there are areas of unacceptable sagging of the vapor retarder.

D. Pentrations through the vapor retarder shall be adequately sealed using sealing tapes provided by the vapor retarder manufacturer.

8. CLEANUP:

I. Remove adhesive splatters and smears.

II. Remove and dispose of excess materials, litter, and debris; leaving work areas in a clean condition.

End of Section

SECTION 07250 – WEATHER BARRIER

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to furnishing, installation and application of weather barrier membrane, seam tape, flashing and fasteners.

3. SUBMITTALS:

Refer to Section 01300 - Submittals, for requirements.

4. PRODUCT DELIVERY, STORAGE AND HANDLING:

I. Delivery:

Deliver material to the site in unopened packages, with identification labels intact. Identify contents, manufacturer, brand name and applicable standards. Use all means necessary to protect weather barrier before, during, and after installation and to protect the installed work and materials of all other trades.

II. Storage:

Store weather barrier materials as recommended by system manufacturer.

5. QUALITY CONTROL:

All work of this Section shall be done in accordance with manufacturer's recommendations and in such a manner as to avoid gaps or voids.

6. MATERIALS:

I. Weather Barrier Membrane: DuPont Commercial Wrap or approved equivalent with the following properties:

A. Air Penetration: 001 cfm/ft^2 at 75 Pa, when tested in accordance with ASTM E2178.
B. Water Vapor Transmission: 23 perms, when tested in accordance with ASTM E96-00, Method A
C. Water Penetration Resistance: 280 cm when tested in accordance with AATCC Test Method 127.
D. Basis Weight: 2.7 oz/yd^2, when tested in accordance with TAPPI Test Method T-410.
E. Air Resistance: >1,500 sec/100cc, when tested in accordance with TAPPI Test Method T-460.
F. Tensile Strength: 38/35 lbs/in., when tested in accordance with ASTM D882.

G. Tear Resistance: 12/10 lbs, when tested in accordance with ASTM D1117.
H. Surface Burning Characteristics: Class A, when tested in accordance with ASTM E84. Flame Spread: 10, Smoke Developed: 10.

II. Fasteners:

DuPont™ Tyvek® Wrap Cap staples as manufactured by DuPont Building Innovations.

III. Sealants:

Refer to Section 07900 – SEALANTS AND JOINT FILLERS, Section 5.III.

IV. Adhesive:

Provide Liquid Nails "LN-910" adhesive or as recommended by the weather barrier manufacturer.

V. Flashing:

Provide DuPont "FlexWrap," as manufactured by DuPont Building Innovations or approved equal.

7. INSPECTION:

I. Before Installation:

Assure that surfaces to receive weather barrier are in accordance with the manufacturers recommended tolerances prior to installation of weather barrier and accessories.

II. During Installation:

Verify that materials are undamaged when installed.

Examine areas to receive insulation to insure protection against inclement weather and other hazards until work of preceding trades is completed.

Examine space for insulation for proper depth to receive material.

Check that insulation is closely fitted around obstructions and openings.

8. EXECUTION:

I. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer recommendations.

II. Start weather barrier installation at a building corner, leaving 6-12 inches of weather barrier extended beyond corner to overlap.

III. Install weather barrier in a horizontal manner starting at the lower portion of the wall surface. Maintain weather barrier plumb and level.

IV. Extend bottom roll edge over sill plate interface 2" to 3" minimum. Seal weather barrier with sealant or tape. Shingle weather barrier over back edge of thru-wall flashings and seal weather barrier with sealant or tape. Ensure weeps are not blocked.

V. Subsequent layers shall overlap lower layers a minimum of 6 inches horizontally in a shingling manner.

Window and Door Openings: Extend weather barrier completely over openings.

VI. Weather Barrier Attachment:

A. Attach weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturer recommended fasteners, spaced 12 -18 inches vertically on center along stud line, and 24 inch on center, maximum horizontally.

VII. Seaming:

A. Seal seams of weather barrier with seam tape at all vertical and horizontal overlapping seams.

B. Seal any tears or cuts as recommended by weather barrier manufacturer.

VIII. Opening Preparation:

A. Cut weather barrier membrane in a modified "I-cut" pattern.

B. Cut weather barrier horizontally along the bottom of the header.

C. Cut weather barrier vertically 2/3 of the way down from top center of window opening.

D. Cut weather barrier diagonally from bottom of center vertical cut to the left and right corners of the opening.

E. Fold side and bottom weather barrier flaps into window opening and fasten.

F. Cut a head flap at 45-degree angle in the weather barrier membrane at window head to expose 8 inches of sheathing. Temporarily secure weather barrier membrane flap away from sheathing with tape.

IX. Flashing:

A. Cut flashing a minimum of 12 inches longer than width of sill rough opening. Apply primer as recommended by the manufacturer.

B. Cover horizontal sill by aligning flashing edge with inside edge of sill. Adhere to rough opening across sill and up jambs a minimum of 6 inches. Secure flashing tightly into corners by working in along the sill before adhering up the jambs.

C. Fan flashing at bottom corners onto face of wall. Firmly press in place. Mechanically fasten fanned edges.

D. On exterior, apply continuous bead of sealant to wall or backside of window mounting flange across jambs and head. Do not apply sealant across sill.

E. Install window according to manufacturer's instructions.

F. Apply 4-inch wide strips of flashing at jambs overlapping entire mounting flange. Extend jamb flashing 1-inch above top of rough opening and below bottom edge of sill flashing.

G. Apply 4-inch wide strip of flashing as head flashing overlapping the mounting flange. Head flashing should extend beyond outside edges of both jamb flashings.

H. Position weather barrier head flap across head flashing. Adhere using 4-inch wide flashing over the 45-degree seams.

I. Tape head flap in accordance with manufacturer recommendations.

J. On interior, install backer rod in joint between frame of window and flashed rough framing. Apply sealant around entire window to create air seal. Apply sealant in accordance with sealant manufacturer's instructions and ASTM C1193.

9. CLEANUP:

I. Remove and dispose of excess materials, litter, and debris; leaving work areas in a clean condition.

End of Section

SECTION 07900 - SEALANTS AND JOINT FILLERS

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to furnishing, installation and application of construction sealants and joint fillers.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

4. GENERAL:

   The color shall closely match that of the material being caulked where it is not to be painted. Seal around all foundation, wall, ceiling and roof penetrations.

5. MATERIALS:

   I. Silicone Caulking (Waterproofing):

      Provide a waterproof silicone caulking General Electric "Silicone II Gutter and Flashing Caulk" or approved equal. The material shall meet ASTM C 920.

   II. Acrylic Latex:

      Provide an acrylic latex caulk Pecora AC-20 or approved equal for general purpose interior and exterior applications where slight to moderate movement may be expected. The caulk shall be suitable for latex paint and meet ASTM C 834.

6. INSTALLATION:

   The surfaces receiving the sealant (joint filler) shall be thoroughly cleaned before the application of the sealant.

   Apply the sealant with a caulking gun or air pressure equipment. There shall be no voids throughout the entire joint cross section. Remove the excess sealant from the surfaces and clean off all smears and streaks before the material sets.

End of Section

SECTION 08100 - METAL DOORS AND FRAMES

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to the furnishing and installation of flush metal doors and metal door frame for the building.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

4. FLUSH METAL DOORS AND FRAMES:

   I. Materials:

      Framing members, adapters and mountings shall be steel. All screws, miscellaneous fastening devices and internal components shall be corrosion-resistant materials of sufficient strength to perform the functions for which they are used.

      The door shall be reinforced, stiffened, sound-deadened and insulated with a fiberglass, polyurethane, polystyrene, or kraft honeycomb core completely filling the inside.

   II. Manufacturer:

      Shall be Steelcraft, Model F-16 (16 gauge) steel frames or approved equal and Model L-18 (18 gauge), galvanealed, 1-¾" flush exterior steel door (Doors to exterior shall have polyurethane insulation).

      The door frame shall have unitized weather stripping of synthetic rubber.

   III. Steel Frame Performance Under Uniform Loading:

      When tested in accordance with ASTM E 330, the maximum deflection of the head member shall not exceed 1/175 of its span and when the load is removed, there shall be no evidence of permanent deformation or damage when tested under a load of 30 psf.

   IV. Finish:

      Shall be painted. All exposed framing members shall be free of scratches and other surface blemishes. Submit paint color and product for approval by Project Manager. All door frames shall be trimmed using wood trim on interior section (see Section 06100 – Carpentry) of frame and metal trim (provided by building manufacturer) on exterior.

V. Erection:

The door shall be set in its correct locations as shown in details and shall be level, square, plumb and at proper elevations and in alignment with other work.

All joints shall be tightly caulked in order to ensure a watertight job. All materials shall be screwed in placed using backfilling, masonry plugs, or anchor straps as required. When frame members are joined, they shall be accurately cut and fitted to result in a tightly closed joint.

After erection adequately protect exposed portions of framing from damage by plaster, lime, acid, cement, or other harmful compounds.

VI. Cleaning:

Remove protective materials and clean with plain water, or water with soap or household detergent. The area shall be cleaned of all debris and left in an acceptable condition as determined by the Project Manager.

End of Section

SECTION 08200 - WOOD DOORS AND FRAMES

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to the furnishing and installation of a pre-hung, flush wood door and frame with hardware.

3. SUBMITTALS:

Refer to Section 01300 - Submittals, for requirements.

4. QUALITY ASSURANCE:

I. Qualified to affix each door with National Woodwork Manufacturers' Association (NWMA) Seal of Approval or quality certification stamp.

II. Testing Requirements:

A. Adhesives: NWMA 1.S.1. certificate of compliance.

1. Waterproof bond test for Type I exterior doors.

2. Water resistant bond test for Type II interior doors.

B. Warp: NWMA 1.S.I. compliance.

III. Allowable Tolerances For Fabrication:

A. Size: Prefit: ±1/32 inch overall dimensions.

B. Maximum Warp: ¼"

C. Squareness:

The length of the diagonal measured on the face of the door from the upper right corner to the lower left corner between the length of the diagonal measured on the upper left corner to the lower right corner: maximum difference of 1/4 inch.

D. Prefitting and Premachining For Hardware:

NWMA Standard Procedures and Recommendations for Factory Machining Architectural Wood and Plastic Faced Flush Doors for Hardware.

E. Factory Finish Thickness: Minimum 1 mil, cured.

F. Show-through (Photographing):

1/100 inch deviation from the true plane in any 3-inch span on the door face.

5. PRODUCT DELIVERY, STORAGE AND HANDLING:

I. Delivery:

Deliver prefinished doors in manufacturer's original unopened protective material or container, clearly marked with the manufacturer's name, brand name, size, thickness and identifying symbol on covering.

II. Storage:

Store door in area where there will be no great variations in heat, dryness, and humidity.

III. Handling:

Do not drag doors across any surface.

6. MATERIALS:

I. Door Standards: NWMA I.S.1 and AWI Flush Door Standards.

II. Wood: Species: Oak.

III. Adhesives: CS 171. Type II interior.

IV. Core: Solid wood core, framed block, unglued.

V. Water Repellent Preservatives: CS 262 or NWMA 1.S.4.

7. FABRICATION:

I. Moisture Content: For all wood material, 12% maximum at time of fabrication.

II. Thickness: 1-3/4 in. minimum.

III. Solid Core:

Framed block, unglued core type: Core blocks 2½" maximum width, not bonded together, end joints staggered in adjacent rows.

IV. Frames:

A. Depth: 4-9/16 in. at head and jambs unless greater depth required.

B. Finish: All wood components are kiln-dried oak, toxic treated, and unfinished for custom finishing after installation.Each side of the frame shall be constructed of a single piece of wood, finger joints shall not be used. Frames shall be stained to match doors and trim and sealed with a polyurethane.

V. Hardware Preparations:

Rout the hinge edge for three hinges symmetrical on center lines and 29¾" on center. Steel reinforcement security plates shall be factory installed. A standard cover plate shall be furnished for the second strike mortise if a deadbolt is not used.

VI. Door:

A. Doors shall be trimmed with oak trim on both sides and along header. Oak trim shall be stained to match door and finsihed with a polyurethane coating.

VII. Factory Preparations:

A. Prefitting:

1. Swinging doors: Standard clearance allowances of 1/8 inch at top, 1/8 inch at each side, and ½" from bottom to finished floor.

2. Bottom clearance allowance of doors with threshold: ¼" from bottom of door to top of threshold.

B. Premachining:

1. Bevel on vertical edges of single door: 1/8 inch in 2 inches.

2. Locate hinge mortise from top of door to top of hinge, 1/32 inch clearance in height and width, with depth sufficient to provide a flush surface when installed.

3. Locate locks mortise from top of door to center line of knob.

4. Mortise for face plates: 1/64 in. larger in width and height, depth to provide a flush surface when installed.

C. Lock clearances:

1. Mortise and integral locks: 1/16 inch overall height and width, and 1/8 inch depth.

2. Unit, mono, or slot-type locks: ¼ inch overall.

3. Bored lock: 1/16 inch clearance for bore diameter for latch bolt.

4. Bored lock: 1/8 inch clearance for bore diameter for lock case.

8. INSPECTION:

Verify that door frames are of the type required for the door and are installed as required for proper installation of doors.

9. INSTALLATION OF DOORS:

I. Install in accordance with requirements of NWMA Standard Door Guarantee.

II. Clearances: Maximum of 3/16 inch at the jamb and head for prefit doors.

III. Adjust and Clean:

A. Replace or rehang doors which are hingebound and do not swing or operate freely.

B. Refinish or replace job finished doors damaged during installation.

10. HARDWARE:

Provide and install hardware and accessories as specified in Section 08700 - Hardware and Specialties.

I. Installation:

Installation shall be in compliance with manufacturer's instructions to insure proper operation. Center line of door pulls shall be installed 3'-2" above finished floor.

II. Protection:

Trim plates and door stops shall not be installed until after painting is completed. Other hardware shall be loosened prior to painting and retightened after painting is completed. All hardware shall be masked or otherwise protected during painting operations.

11. FINISH:

The door and frame shall be finished on all faces and edges as specified in Section 09900 - Painting. All exposed framing members shall be free of scratches and other surface blemishes.

End of Section

SECTION 08360 - OVERHEAD DOORS AND OPERATORS

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to furnishing and installation of new insulated sectional overhead steel doors, automatic operators and all associated hardware.

3. SUBMITTALS:

Refer to Section 01300 – Submittals, for requirements.

4. MATERIALS AND INSTALLATION:

I. Manufacturer and Supplier:

A. Sectional Steel Overhead Door:

The doors shall be a commercial sectional steel overhead door, type "Insulated", "Series 593" as manufactured by Overhead Door Company, "Series 3715" as manufactured by Clopay Garage Doors (www.clopay.com), or approved equal.

B. Automatic Garage Door Operator:

The automatice garage door operator shall be manufactured by LiftMaster MT5011, or approved equal. Door operators shall be supplied with an exterior keypad remote entry at each door location and 3-button station control on the interior at each door. Operators shall also include two remote openers.

II. Overhead Sectional Door Fabrication:

A. Insulated:

Panel thickness shall be $1^{5}/_{8}$" thick (minimum), roll formed from commercial quality hot dip galvanized steel per ASTM A 525 and ASTM A 526. Door sections constructed of 0.016" galvanized steel interior and exterior skins mechanically interlocked and pressure bonded with an expanded polyurethane or polystyrene core that shall have a minimum R-value rating of 11. End stiles shall be minimum 16 gauge; hinges and fixtures will be galvanized steel.

III. Door Finish:

Exterior and interior of door sections shall be pre-coated prior to roll forming with a two coat process of baked on polyester enamel finish over epoxy primer, color

to match exterior of building. Submit paint color and product for approval by the Project Manager.

IV. Weatherstripping:

Doors shall be furnished with a complete weatherstripping system to reduce air infiltration. The top of the door shall be provided with adjustable EPDM rubber sealing strip. The bottom of the door shall have flexible U-shape vinyl seal encased in extruded aluminum retainer to conform to irregularities in the floor. Weatherstripping shall be replaceable without removal of track, angle mounting, or door hardware.

V. Overhead Sectional Door Tracks:

The tracks shall be 2". Tracks shall be continuous angle mounted and fully adjustable for sealing door to jamb. Track Rollers: diameter consistent with track size, with hardened steel ball bearings.

VI. Hardware: All hinges and brackets shall be made from galvanized steel. Track rollers shall have ten ¼" diameter hardened steel balls per roller.

VII. Overhead Sectional Door Spring Counterbalance:

Heavy duty oil tempered wire torsion springs on continuous ball bearing cross header steel shaft. Galvanized aircraft type lifting cables with minimum safety factor of 5 to 1.

VIII. Locks: An interior dead bolt shall be provided with a hole to receive a padlock. (padlock by others)

IX. Wind Load: Doors shall withstand minimum of 20 lbs. per square foot.

5. WARRANTY:

Warranty Document (10-year minimum on delamination).

End of Section

SECTION 08700 - HARDWARE AND SPECIALTIES

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to, the furnishing and delivery of finish hardware, and templates for the doors.

3. SUBMITTALS:

   Refer to Section 01300 – Submittals for requirements

4. PRODUCT HANDLING:

   The supplier shall furnish all hardware items to the Contractor with tags attached indicating manufacturer, catalog number and specific intended location within the building.

5. INSTALLATION:

   Installation shall be in compliance with manufacturer's instructions to insure proper operation.

   Center line of door pulls shall be installed 3'-2" above finished floor.

6. PROTECTION:

   Trim plates and door stops shall not be installed until after painting is completed. Other hardware shall be loosened prior to painting and retightened after painting is completed. All hardware shall be masked or otherwise protected during painting operations.

7. PRODUCTS:

   See Division II - Drawings – Sheet 5 for all hardware items. Alternative products may be approved by the Project Manager.

End of Section

SECTION 09250 - GYPSUM WALLBOARD

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to, the furnishing, fabrication and installation of gypsum wallboard.

3. ACCEPTABLE MANUFACTURER AND STANDARDS:

All materials and products shall be similar to United States Gypsum, Gold Bond or approved equal. All installation and finish criteria shall conform to their specifications and recommendations. U.S.G. is specified to indicate the quality standard and to identify compatible components. Any other system used shall maintain the component compatibility as specified.

All work shall meet the requirements and recommendations of the applicable portions of the standards listed.

I. American Society for Testing and Materials - ASTM C 840 (for application and workmanship).

II. Gypsum Association - GA 216.

III. Gypsum Drywall Contractor's International - GDCI.

4. HANDLING:

All products shall be delivered to the site in original, unopened containers and stored in a place protected from exposure to the elements.

5. MATERIALS:

I. Glass Mat Water-Resistant Gypsum Backing Panel:

A. Walls in areas subject to moist conditions shall be formed with glass mat water resistant gypsum backing panels. The panels shall be 5/8" thick and come in 8 or 12 foot lengths, and comply with the following standards:

ASTM C1178 Standard Specification for Glass Mat Water-Resistant Gypsum Backing Panel

ASTM D3273 Standard Test Method for Resistance to Growth of Mold, 10 or better

ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials, <3 Perm

B. Water resistant panels shall be installed in accordance with the manufacturer's guidance, including approved fasteners, seam taping, and sealants. Example products include USG Durock, GP DensShield, or approved equivalent.

II. Fasteners:

Fasteners shall be metal buglehead, Type "W", corrosion resistant screws specially designed for application of gypsum panels to wood framework or dry wall nails, GWB-54 or cooler type, and shall be the length and pattern recommended by the manufacturer of the gypsum panels used.

III. Metal Cornerbead and Trim:

A. Corner bead: USG "Dur A Bead" No. 103, galvanized steel.

B. End Trim: USG No. 400, galvanized steel as required.

IV. Joint Compound: As recommended by manufacturer.

V. Topping Compound: As recommended by manufacturer.

VI. Reinforcing Tape: USG "Perf-A-Tape" per manufacturer's recommendations.

VII. Other Materials:

All other materials, not specifically described but required for a complete and proper installation of gypsum wallboard, shall be approved.

6. EXECUTION:

I. Installation:

A. General:

Install all panels plumb, level and with all vertical joints on support members.

B. Cutting:

1. When cutting gypsum wallboard is required, cut by scoring and breaking or by sawing, working from the face side.

2. Smooth all cut ends and edges of panels as necessary to obtain a smooth joint.

3. For cutouts in panels for pipes, fixtures, and other small openings, make holes and cut outs by sawing or by such other methods as will not fracture the core or tear the covering and with such accuracy that plates, escutcheons, or trim will cover the edges.

4. For moisture-resistant board, coat all raw edges with approved water resistant adhesive.

5. Repair Areas:

Accurately cut and place gypsum wallboard within the properly framed and blocked repair areas. Shim as required to bring surface of wallboard in proper plane with existing wall surface.

C. Fastening:

Properly space all fasteners with heads driven slightly below the surface for proper cementing but without breaking the paper cover. Stagger all end joints and the joints between panels to achieve a maximum of bridging and a minimum of continued joints.

1. Nailing: Double nailing shall be used in the field with a maximum spacing between sets of 12 inches. The second nail shall be within 1½" to 2" of the first. Perimeter nailing shall be spaced at a maximum of 7" on ceilings and 8" on side walls with a minimum of 3/8" and a maximum of ½" from edges.

2. Screws:

a. Screws shall be spaced a maximum of 12" on ceilings and 16" on walls for framing spacing of up to 12 inches.

b. Screws shall be spaced a maximum of 12" for framing spacing of up to 24 inches.

II. Installing Metal Trim:

A. The drawings do not show nor was there intent to show all metal trim required; verify with the Project Manager locations and types of trim to be used, if there is any question.

B. Install all trim in strict accordance with manufacturer's recommendations, paying particular attention to make all trim installation plumb, level and true to line, with firm attachment to supporting members.

III. Taping and Finishing:

A. Environmental Conditions:

Control heating and ventilating during finishing operations to insure the maintenance of 50°F minimum temperature.

B. Tape Application (Hand Application):

1. Spread compound evenly over all joints, using suitable tools designed for the purpose.

2. Center the reinforced tape on the joint and press into the fresh compound wiping down with sufficient pressure to remove excess compound but leaving sufficient compound under the tape for proper bond.

3. Fold reinforcing tape along its centerline and apply to all interior angles following the same procedure as for joints. Leave surface free from blisters or tape wrinkles.

C. First Coat:

1. Apply joint compound to all joints over the tape approximately 3" on each side of the tape and feathering out at the edges.

2. Fill all joint recesses and metal trim.

3. Apply compound to all fastener recesses, leaving flush with the adjacent surfaces.

D. Second Coat:

1. Lightly sand the dry compound with fine sandpaper to remove all irregularities.

2. Apply a second coat of compound to all joints, feathering approximately four inches beyond the preceding coat.

E. Third Coat:

1. Sand to remove ridges and apply third coat of topping compound and feather to a smooth uniform surface.

2. Over taped edges do not allow finished joint to protrude beyond the plane of the surface.

3. Recoat fastener recesses to assure complete fill. No dimples shall remain.

4. Lightly sand to provide a smooth surface ready for painting.

F. Prime Coating:

Apply primer seal coating prior to texturing operations according to Section 09900 - Painting, for interior gypsum wallboard.

G. Texturing:

1. Upon completion of the taping and finishing operations, apply a textured finish over the entire area using a ready mixed texturing compound to obtain a light orange peel effect.

2. The finished pattern shall be uniform, with no heavy concentrations of

texture or open areas not covered.

3. Repair areas shall match the texture of the existing wall surfaces. Walls containing numerous repair areas may require retexturing of the entire wall if a satisfactory texture match cannot be obtained.

7. COMPLETION:

At the completion of the wallboard installation, clean the area of all debris leaving it in an acceptable condition determined by the Project Manager.

End of Section

SECTION 09900 - PAINTING

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   Complete painting, staining, finishing of wood, unfinished metal or other surfaces as specified.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

4. GENERAL:

   I. Related Work Described Elsewhere:

      Section 07900 - Sealants and Joint Fillers.

   II. Product Handling:

      A. Delivery:

         Deliver all paint materials to the job site in their original unopened containers with all labels intact and legible at the time of their use.

      B. Protection:

         1. Store only the approved materials at the job site, and store only in a suitable and designated area restricted to the storage of paint materials and related equipment. Protect floor with drop cloths or building paper during execution of the work.

         2. Use all means necessary to insure the safe storage and use of paint materials and the prompt and safe disposal of waste.

   III. Extra Stock:

      Upon completion of this portion of the work, deliver to the Project Manager an extra stock of paint equaling approximately 10% of each color used and each coating material used, with all such extra stock tightly sealed in clearly labeled containers.

   IV. Equipment:

      Furnish tools, ladders, scaffolding, other equipment necessary for work completion.

V. Specifications:

Examine specifications for various other trades; become familiar with their provisions regarding their painting; paint or finish surfaces that are left unfinished by requirements of other Sections.

VI. Methods:

If woodwork, metal or any other surface to be finished cannot be put in proper condition for finishing by customary cleaning, sanding, puttying operations, notify the Project Manager in writing; or assume responsibility for and rectify the unsatisfactory finish resulting.

5. MATERIALS:

I. Manufacturer's Standards:

All application and finish criteria shall conform to the manufacturer's specifications and recommendations.

II. Compatibility:

All paint materials and equipment shall be compatible in use: finish coats shall be compatible with prime coats; prime coats shall be compatible with the surface to be coated; all tools and equipment shall be compatible with the coating to be applied. Thinners, when used, shall be only those thinners recommended for that purpose by the manufacturer of the material to be thinned.

III. Paint and Material:

Paint materials shall be of the highest quality for the appropriate use as recommended by the manufacturer. The application of second and third coats shall be made at the time intervals recommended by the manufacturer. The paint, unthinned, shall not be applied in excess of the rate specified on the label.

6. EXECUTION:

I. Surface Conditions:

Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that such work is complete to the point where this installation may properly commence.

II. Preparation of Surfaces:

A. Protection:

Prior to all surface preparation and painting operations, completely mask, remove or otherwise adequately protect all hardware, accessories, machined surfaces, plates, lighting fixtures, and similar items that may come in contact with painted surfaces or may be subject to overspray, but not scheduled to receive paint.

B. Metal:

For steel surfaces, all surfaces must be free of dirt, rust, oil, grease, water, mill scale or other observed contamination. Make certain that the substrate is dry.

Rusted or new metal surfaces must be cleaned and primed properly.

Follow Steel Structures Painting Council Specifications SSPC SP 2-63 for hand cleaning (especially wire brushing, scraping, chipping, and sanding).

C. Wood:

The substrate must be dry (also the moisture content must be below 5%). Cover knots and resinous areas with shellac before painting. Putty nail holes flush with the surface. Exposed wood surfaces to be painted or stained shall be sanded, free of raised grain, hammer marks or sanding swirls.

D. Gypsum Wallboard:

Surfaces to be coated must be dry and clean, free of dirt, oil and grease. Cracks, gouges, or other surface imperfections shall be repaired by spackling or puttying, depending on the surface.

Remove oil or grease with Pittsburgh "Leptyne" Paint Thinner or any other high quality paint thinner.

III. Painting, Steel for Non-Immersion:

A. Products:

Use Tnemec "Series 35 Vinoline" vinyl copolymer coating system 35-4, or approved equal .

B. Surface Preparation:

Prepare surfaces in accordance with SSPC-SP6 "Commercial Blast Cleaning".

C. Prime Painting:

Prime prepared steel surface with 1 coat of Tnemec series 33-1211 Vinoline Primer with a dry film thickness of 1.5 to 2.5 mils per coat for steel, and Tnemec series 32-1210 "Theme-Grip" with a dry film thickness of 0.3 to 0.5 mils per coat for galvanized steel.

D. Intermediate Coats:

Apply one coat of Tnemec series 53-Color Hi-Build Vinoline with a dry film thickness of 4 to 6 mils per coat.

E. Finish Coats:

Apply 1 coat of Tnemec series 35-Color Vinoline with a dry film thickness of 1.5 to 2.5 mils per coat.

IV. Painting, Interior Gypsum MR Wallboard:

A. Prime Coating:

Apply 1 coat of Pittsburgh, "Speedhide" Quick-Drying Emulsion Sealer.

B. Finish Coatings and Application:

Apply 2 coats of Pittsburgh Quick Dry Alkyd Enamel an alkyd resin type.

V. Paint Touch-Up:

Upon completion of all work and before occupancy, touch up paint surfaces that are marred or damaged.

7. COMPLETION:

I. Atmospheric Conditions:

Paints other than water-thinned coatings shall be applied only to surfaces that are completely free of surface moisture as determined by sight or touch. While painting is being done, the temperature of the surfaces to be painted and of the atmosphere in contact therewith shall be maintained at or above 50°F for water-thinned coatings and 45°F for other coatings or as permitted by the Project Manager.

II. Cleanup:

Cleaning cloths and other waste that might constitute a fire hazard shall be placed in closed metal containers or destroyed at the end of each day. Upon completion of the work, staging, scaffolding, and containers shall be removed from the site or destroyed in an approved manner. Paint spots, oil, or other stains on adjacent surfaces shall be removed and the entire job left clean and acceptable.

End of Section

SECTION 10200 - LOUVERS AND VENTS

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to, the furnishing and installation of the items specified below and shown on the drawings.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

4. MATERIALS AND INSTALLATION:

   I. Bathroom Ventalation Fan

      Bathroom exhaust fan shall be a Broan “Ultra Silent”, Panasonic “WhisperGreen” bath fan or approved equal having a minimum capacity of 75 cfm.

   II. Stationary Wall Intake Louver:

      Wall louvers shall be 36”H x 18”W minimum with maximum air intake of 2,000 cfm. Louvers shall be equipped with drainable blades. Louvers shall include a ½” flattened aluminum birdscreen.

End of Section

SECTION 10800 - TOILET AND BATH ACCESSORIES

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to, the furnishing and installation of toilet accessories.

3. SUBMITTALS:

Refer to Section 01300 - Submittals, for requirements.

4. PRODUCT DELIVERY, STORAGE, AND HANDLING:

I. Deliver items in manufacturer's original unopened protective packaging.

II. Store materials in original protective packaging to prevent soiling, physical damage, or wetting.

III. Handle so as to prevent damage to finished surfaces.

IV. Maintain protective covers on all units until installation is complete. Remove protective covers at final cleanup of installation.

5. PRODUCTS (TOILET ACCESSORIES):

I. Toilet Paper Holder:

Bobrick, "B-2740", satin, www.bobrick.com, Tubular Specialities, "802S", www.call-tsm.com or approved equivalent.

II. Toilet Grab Bars:

All grab bars shall be shaped on a mandrel insuring a uniform measurement and diameter at all bends and curves. All center posts, joints, and supports shall be contour sheared and then heliarc welded in a continuous seamless unit. End flanges shall be passed over tubing and heliarc welded to form one continuous structural member. Each grab bar shall withstand a force in excess of 1,000 pounds sustained weight when installed strictly in accordance with manufacturer's instructions.

Manufacturers:

A. Bobrick "B-6897" (Two-Wall Toilet Compt) or "B-5806", www.bobrick.com or approved equivalent.

B. Tubular Specialties "Q-2040/CS-1" (Horizontal Corner Bar) or "Basic

Straight Bar", www.call-tsm.com or approved equivalent.

C. American Specialties, Inc., 3100 series (Type-57 or Type-01), www.americanspecialties.com or approved equivalent.

III. Mountings:

Stud walls require Type 7002C concealed through wall anchorage mountings.

IV. Accessories:

A. Accessory Type: Where indicated on the drawings, provide and install medicine cabinets, mirrors, etc., approved by the Project Manager.

B. Acceptable Manufacturers: Bobrick, Tubular Specialties, American Specialties, Jensen, Donner, Cweco, or approved equivalent.

C. Mirror: Bobrick, "B-290 2436" series with stainless steel ground and polished or approved equal. Mirror shall be warranted for 15 years against silver spoilage.

6. EXECUTION:

I. Preparation:

A. Check openings scheduled to receive recessed units for correct dimensions, plumbness of blocking or frames, preparation that would affect installation of accessories.

B. Check areas to receive surface mounted units for conditions that would affect quality and execution of work.

C. Verify spacing that affects installation of accessories.

D. Do not begin installation of washroom accessories until openings and surfaces are acceptable.

E. Install wood blocking between studs in drywall partitions at all accessories.

II. Installation:

A. Toilet Risers:

Drill holes to correct size for the masonry anchors for the flange fastening of the toilet risers. Set concrete riser extension ring in construction adhesive.

B. Accessories:

Fasten all accessories rigidly and securely to walls using methods and materials recommended by the manufacturer. After completion of installation, clean and polish all exposed surfaces.

III. Adjust and Clean:

A. Adjust accessories for proper operation.

B. After completion of installation, clean and polish all exposed surfaces.

End of Section

SECTION 13121 - PRE-ENGINEERED METAL BUILDINGS

1. SCOPE OF WORK:

   Furnish all labor, material and equipment to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   The work shall include, but is not necessarily limited to, furnishing and erection of a pre-engineered metal building. The building shall be furnished with all materials and accessories required for a complete and weathertight building.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

   The contractor shall submit a Schedule of Values prior to the first payment application. The Schedule of Values shall subdivide the work in this Section into component parts, in sufficient detail to permit the project manager to evaluate requests for progress payments. The Schedule of Values shall be listed in tabular form and conform with the following:

   I. List name of Project, location, Owner, date of submission, and name of Contractor
   II. List estimated quantities and total estimated costs
   III. Component parts shall not exceed $100,000 per item except for documented deliveries of equipment or materials
   IV. List installation labor separate from products
   V. List spare parts, testing, inspection, training, operation and maintenance manuals, and commissioning expenses separately
   VI. Allocate overhead and profit in an amount proportional to each item

4. COMPLIANCE WITH STANDARD AND INDUSTRY SPECIFICATIONS:

   Any material or operation specified by reference to the published specifications of a manufacturer, The American Society for Testing and Materials (ASTM), the American Iron and Steel Institute (AISI), The American Institute of Steel Construction (AISC), The American Hot Dip Galvanizers Association (AHDGA), The American Welding Society (AWS), the Metal Building Manufacturers Association (MBMA), or other published standard shall comply with the requirements of the current specification or standard listed. In case of conflict between the referenced specification and the project specifications, the project specifications shall govern unless written approval is obtained from the Project Manager.

5. ACCEPTABLE MANUFACTURERS:

   Alliance Steel, INC., American Buildings Company, Armco Building Systems, Braemar Building Systems, Butler, Chief Industries, Inc., Liberty Building Systems, Star Manufacturing Company and Varco-Pruden or any manufacturer that meets the criteria outlined in the Specifications and Drawings.

6. SYSTEM DESCRIPTION:

Buildings shall be a pre-engineered, clear-span, metal building system with a rigid steel frame. System design shall incorporate the specified doors, windows and accessories.

Doors, windows, louvers and other openings shall be formed and framed by the building framing.

The completed building shall be free of rattles, noise due to thermal movement, and wind whistles.

7. QUALITY ASSURANCE:

I. Design: The building system shall be a system designed in accordance with the latest MBMA Low Rise Building Systems Manual. The framing and panel systems shall support the design loads in accordance with MBMA Recommended Design Practices. The structure systems design is to be certified by a qualified Professional Engineer registered to practice in the State of Colorado.

Finished building design shall meet or exceed all local and state building codes and requirements.

II. Design Loads: Structural engineering shall meet or exceed all current City and County design loads (as well as those identified on the construction drawings) applicable to the structure and location. Building deflections shall be limited to L/180 or local jurisdictional requirements which ever is more restrictive.

III. Fabrication of materials shall meet or exceed the fabrication tolerances specified in the MBMA Common Industry Practices.

IV. Welding of structural steel shall be in accordance with the AWS Structural Welding Code.

V. Building erector shall be authorized by the manufacturer to erect the building system.

8. MATERIALS:

I. Steel Framing:

All Steel framing shall be factory primed with the manufacturer's standard priming paint.

II. Roof and Wall Panel Systems:

A. Roof panels shall be 24 gauge. Wall panels shall be 26 gauge. All panels shall be galvalume A792 AZ50.

B. Exterior Patterns:

Roof panels may have a standing seam or overlapping rib design. Wall panels may have a vertical groove, flush, or architectural ribbed pattern.

C. Texture:

Exterior face may have an embossed or smooth texture.

D. Exterior Finish:

1. Manufacturer's exterior grade, factory-applied, oven-cured, silicone-polyester or polyvinylidene-fluoride, finish system with a minimum 35-year film integrity and 30-year fading and chalking warranty.

2. Colors to be selected from manufacturer's standard color chart during the submittal phase. Color should closely match existing structures with red roofing and tan siding.

E. Interior Finish:

Manufacturer's interior grade, factory-applied, oven-cured, white polyester finish.

F. Flashings and Trim:

Metal flashings, trim, closures, and similar items shall be the manufacturer's standard items for matching the panel systems.

G. Fasteners:

Exposed fasteners shall be prefinished to match the building component surface with cup head washers.

III. Windows:

A. Window and frame units shall meet the requirements and recommendations of the Aluminum Window Association and Architectural Aluminum Manufacturer's Association designed for the building.

B. Product Delivery:

Deliver windows in manufacturer's original unopened protective material or container, clearly marked with the manufacturer's name, size, and symbol on covering.

C. Structural Members: 24 gauge galvanized steel

D. Glazing: 1/8 in. thick, double pane

E. Screen Cloth: 16-18 mesh, plastic coated fibrous glass

F. Hardware:

Windows shall be complete with all hardware and weatherstripping. Windows shall be equipped with integral head and sill flashing with jamb fins specially designed to match the wall panel profile and insure complete weathertightness.

IV. Accessories:

Building accessories, including door shoes, threshold and weather stripping for exterior doors shall be the building manufacturer's standard product.

Contractor shall provide a clamp-mounted snow guard system constructed of aluminum clamps and brackets, compatible with the specified roof system.

9. FABRICATION:

Panel units shall be fabricated in continuous vertical lengths to match the building dimensions. Horizontal seams in installed roof or wall panel systems will not be permitted.

10. ERECTION:

The building shall be erected in accordance with the approved drawings and the erection plans and manual. Components shall be installed in the correct position and alignment.

The finished building shall be trimmed, closed, and sealed weathertight.

Materials which are loose, improperly fitted, or damaged shall be repaired or replaced.

End of Section

SECTION 15010 - GENERAL PROVISIONS

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. GENERAL:

   The drawings indicate the general arrangement of the proposed work. Details of departures due to actual field conditions or other causes shall be provided for by the Contractor as no extras will be paid for correcting faulty or poorly arranged and coordinated work.

3. COMPLETE INSTALLATION:

   Furnish and install all incidental parts and wiring required for the proper function of all component parts. The complete installation shall function smoothly and noiselessly to the full extent of the specifications and drawings. Complete the installation as rapidly as general construction permits. All safety devices shall be properly installed before starting equipment.

4. ORDINANCES AND CODES:

   All work shall be executed and inspected in accordance with all Underwriter's, Public Utililties, local and state codes and regulations applicable to the trade affected. Recommendations of ASTM, NFPA and ASHRAE shall be rigidly followed.

   Arrange and pay for all permits in connection with the work hereinafter specified and at completion of the work, furnish the Owner with the final certificate of inspection.

5. PERMITS AND INSPECTIONS:

   The contractor shall get both Colorado State Plumbing and Electrical Permits prior to beginning the work. The work shall be inspected and approved. Make all changes, if any, directed to be made by the State Inspectors and accept and incur all expenses within the scope of the project to attain permanent approval.

6. COORDINATION:

   Before any equipment is purchased or fabricated and before running and/or fabricating any lines or piping, mechanical contractor or his subcontractors shall assure themselves that they can be run as contemplated.

   Because of the small scale of the drawings, it is not possible to indicate all offsets, fittings, and accessories that may be required. The mechanical contractor and his subcontractors shall carefully investigate all other mechanical and electrical drawings and the structural and finish conditions affecting all their work accordingly. Furnish such fittings, valves, offsets and accessories as may be required to meet such conditions, at no additional cost.

End of Section

SECTION 15050 - BASIC MATERIALS AND METHODS

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. MATERIALS:

   Materials shall be new and of the best grades specified. Receive and be responsible for all owner-furnished equipment and provide rough-in and final connections for all mechanical equipment furnished under this Contract or by others.

3. WORKMANSHIP:

   Work throughout shall be performed by persons skilled in the installation of the various parts of the work herein specified.

4. CURBS, BASES, SUPPORTS:

   Major curbs, openings, and equipment supports will be provided under the General Section of this Contract only where shown on the drawings. All other supports, anchors, and bases shall be provided by the mechanical contractor for all mechanical equipment. Equipment shall be supported per manufacturer's written recommendations for noise-free operations.

5. ANCHORS, HANGERS AND SLEEVES:

   Provide and arrange for installation of required bolts, anchors, hangers, inserts, sleeves, etc., properly located for the work. Tape or wire hangers are not acceptable. Refer to Section 05500 - Metal Fabrications.

6. ELECTRICAL WIRING:

   All line voltage wiring including switches, disconnects, conduits and starters will be as scheduled herein.

   Automatic control wiring and interlock wiring for Mechanical Equipment shall be as scheduled herein, and shall be inserted into conduit.

7. FINAL APPROVAL:

   Before final acceptance, all mechanical equipment shall operate without objectionable noise or vibration. All equipment shall be adjusted to capacities shown on drawings. Make all corrections for above conditions to provide a completely acceptable system.

End of Section

SECTION 15400 - PLUMBING SYSTEMS

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work shall include, but is not necessarily limited to, furnishing and installing material and equipment, to satisfactorily complete the plumbing systems as shown on the drawings.

3. SUBMITTALS:

Refer to Section 01300 - Submittals, for requirements.

4. QUALITY ASSURANCE:

Unless otherwise specified, plumbing systems shall be in accordance with the requirements of the Uniform Plumbing Code available from the International Association of Plumbing and Mechanical Officials, 5032 Alhambra Avenue, Los Angeles, CA 90032.

5. MATERIALS:

I. Copper Pipe:

A. Aboveground: Type "L" with 95-5 solder.

B. Buried: Type "K" with silver solder.

II. PEX Tubing:

PEX tube may be used in place of Copper Pipe for both interior and exterior installations. For interior installations red PEX tubing shall be used for the hot water and blue PEX tubing shall be used for the cold water.

PEX tubing for interior use shall meet ASTM F 876 and AWWA C904 for exterior underground application. All piping shall have a minimum pressure rating of 160 psi at 74°F and 100 psi at 180°F. Tubing shall be tested in accordance with ASTM E84 for a flame spread/smoke developed index of 25/50 or less.

Fittings shall be certified by the manufacturer for use with their specific product.

All tubing and fittings shall be handled and stored in accordance with Manufacturer's recommendations.

All tubing used shall have the following information marked clearly on the pipe:

1. The manufacturer's name or trademark
2. The standard to which it conforms (ASTM F876 and/or AWWA C904)
3. Tube size and CTS

4. Material designation code (PEX0006)

5. Pressure/temperature rating(s)

6. SDR9

7. A laboratory seal or mark attesting to suitability for potable water

8. ASTM fittings designations approved for use by the tubing manufacturer

All underground installations shall have a tracer tape installed within the trench in accordance with these Standards and Specifications.

III. Black Iron and Galvanized Pipe:

Black iron (carbon steel), rated for 150 psi shall comply with ANSI B16.3 for dimensions, ASTM A 197 for material, ASTM A 153 for galvanizing and ANSI B2.1 for pipe threads.

Malleable iron fittings, 150 psi rated, shall comply with the industry standards for the pipe specified above.

Flange unions and companion flanges rated for 150 psi shall meet ANSI B16.1 for dimension and drilling, ASTM A 153 for galvanizing and ASTM A 126, Class A, for material. Flange gaskets shall meet ANSI A21.10 and AWWA requirements. The 1/8 inch thick gaskets shall be of SBR or neoprene rubber meeting ANSI requirements.

Flange bolts and nuts of high carbon, heat treated steel shall comply with ANSI B18.2.1 standard and be zinc chromate plated.

IV. PVC Pipe:

A. General:

Materials for PVC pipe shall comply with ASTM D 1784, Class 12454-B, (Type 1, Grade 1) by Certainteed, Diamond Plastics, or approved equal.

B. PVC Sewer and Vent Pipe:

PVC sewer and vent pipe and fittings shall conform to ASTM D 3034 and F 679, SDR-35. Joints shall comply with ASTM D 3212 for bell and spigot joints using flexible elastomeric seals.

Pressure joints shall have elastomeric seals meeting ASTM F 477.

C. Schedule PVC Pipe:

1. Schedule pipe shall meet ASTM D 1785.

2. Socket type fittings for solvent welded joints shall conform to ASTM D 2467 for Schedule 80 and ASTM D 2465 for threaded type.

3. Socket type fittings for solvent welded joints shall conform to ASTM D 2466 for Schedule 40 and ASTM D 2464 for the threaded type.

4. The solvent cement shall comply with ASTM D 2564.

5. Joints shall be made according to ASTM D 2855.

V. Supply Stop Valve:

A. Copper: NIBCO No. 725 or approved equal.

B. Threaded: NIBCO No. 75 or approved equal.

VI. Fixture Shutoff Valve: Chromium-plated by Brass Craft, American Standard or approved equal. Valves may be angled or straight.

VII. Sillcock:

A. Frost-proof: NIBCO No. 52 or approved equal.

B. Angle Sillcock:

1. Copper Pipe: NIBCO No. 763 or approved equal.

2. Threaded Pipe: NIBCO No. 63 or approved equal.

VIII. Insulating Bushings:

Install EPCO or approved equal dielectric type insulation bushings where piping connects to dissimilar metals.

IX. Joints:

Apply an approved teflon sealing tape on all threaded joints.

X. Escutcheons: Provide hinged or normal solid type for all penetrations.

XI. Accessories:

A. Floor Drains:

Cast iron drain, adjustable (utilizing multiple thread interconnections) nickel bronze strainer and top, "P" trap. Provide ½" primer tapping. Drain outlet size to be the same as connecting pipe size shown on the drawings.

B. Floor Drain Trap Seals:

Provide waterless trap seals for all floor drains. Floor drain trap seals shall be constructed of commercial grade UV and ozone resistant ABS plastic housing and EPDM rubber diaphragm with a soft rubber sealing gasket.

C. P-Traps:

Exposed P-traps, drain lines, wall flanges and accessories for fixture connections shall be chromium-plated, heavy-duty type, of an approved manufacturer. Furnish P-traps with cast brass nuts and cleanout plugs.

6. INSTALLATION:

I. General:

Unless otherwise specified, install plumbing systems and test in accordance with the International Plumbing Code.

Soldered joints for copper tubing shall be made with suitable fittings. Clean surfaces to be soldered bright by approved mechanical means such as fine sandpaper, steel wool, or special steel brushes. Properly flux joints with a noncorrosive acidless flux. Perform installation of copper tubing only by experienced workmen.

Install piping without undue strains and stresses and make provisions for expansion, contraction, and structural settlement. Hangers, supports, and anchors shall be adequate in design and spaced at sufficiently close intervals to keep the pipe in alignment and to carry the load of the pipe and contents. Floor cleanout covers shall be level with the finished floor.

Provide ground joint unions at plumbing fixtures where union supply fittings are not part of the fixture trim at equipment connections.

Pitch all piping to drain at low points with hose end drain valves.

Threaded joints in chromium-plated pipe shall be made up neatly so that no threads are exposed. Make joints and connections in accordance the International Plumbing Code.

Take care to ensure that the pipe and fittings are kept clean during the work. Should any pipe become partially or wholly clogged before final acceptance, clean it out in a satisfactory manner or replace. Correct leakage or other defects in the work which may be disclosed at any time prior to acceptance.

Conceal supply, drain, and vent piping plumbing systems from view where feasible. Where exposed pipes pass through walls, floors, or finished ceilings, fit pipes with appropriate plates and escutcheons.

Insulate water service and distribution piping and traps installed in locations subject to freezing.

All work to be concealed or covered shall be tested and accepted before being concealed or covered.

All connections between copper tubing and steel pipe shall be made with dielectric insulating fittings. Dielectric unions shall be installed in the cold and hot-water pipelines near water heaters.

II. Pipe Insulation:

A. General:

All lines passing through exterior areas shall be insulated in accordance with this section. Lines within the office area do not require insulation.

B. Preassembled Lines: Apply insulation prior to assembling the line. Slip the full length of the tubing over the end of the pipe. Brush a light, even coat of adhesive, on butt ends. Allow the adhesive to set until dry to the touch but tacky under slight pressure, then butt the joints together firmly.

C. Fittings: The most commonly used fittings, tees, elbows and crosses, require only 45° and 90° cuts.

Insulation for sweat and threaded fittings shall be the same wall thickness as for all adjacent line insulation.

1. Sweated Fittings: On preassembled lines, push back the insulation a sufficient distance from fittings to prevent burning. Apply clamps to pipes, not insulation, to hold in place while soldering fittings. Remove clamps when fittings and pipes are cool.

Fabricate insulation for fittings, and join sections with adhesive. After the adhesive is dry, slit insulation and snap over the fittings. Follow the same procedure for preassembled or existing lines. Slits and joints should be carefully bonded with adhesive after lines have been tested.

2. Threaded Fittings: Cut line insulation long enough to press against threaded fitting. Inside diameter of fitting insulation should be approximately the same as outside diameter of line insulation to cover overlap surface snugly. Allow a minimum of 1 in. overlap on line insulation. Follow the same fabricating and bonding procedures as for insulating sweated fittings and apply adhesive on overlap surfaces between fitting insulation and line insulation.

D. Appearance: The smooth outer surface shall have a neat finished appearance (and at the joints). No decorative or protective coatings shall be required for the indoor installations.

7. HYDROSTATIC TESTING:

I. Furnish equipment and qualified personnel to accomplish hydrostatic testing.

II. Test pressure piping in the presence of the Project Manager. Hydrostatic testing shall consist of maintaining the piping at 100 psi a minimum of one hour after all leaks, including seepage, have been stopped. Thoroughly examine piping under test for leakage. Repair or replace defective elements and retest.

End of Section

SECTION 15440 - PLUMBING FIXTURES AND TRIM

1. SCOPE OF WORK:

Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

The work within this Section consists of furnishing materials, equipment and labor necessary to satisfactorily complete the installation of plumbing fixtures.

3. SUBMITTALS:

Refer to Section 01300 - Submittals, for requirements.

4. GENERAL PROVISIONS:

All fixtures shall be securely bolted and screwed to walls and floor in accordance with manufacturer's rough-in and setting requirements. Make proper provisions for hanging fixtures during building construction. Steel backing plates shall be used to rigidly secure the fixtures. Set all metal fixtures' frames or bases in putty or waterproof mastic.

After fixtures have been set, they shall be carefully protected until the building has been finally accepted. Any damage or defect developing before acceptance shall be replaced or situation resolved at the Contractor's expense. All metal trimmings on fixtures and exposed piping to fixtures shall be chrome plated, with chrome plated escutcheons.

5. PRODUCTS AND EXECUTION:

I. Lavatory (LA):

A. ADA Compliant wall mounted sink, Kohler “Greenwich”, or approved equal.

B. Hardware: ADA Compliant centerset lavatory faucet, Kohler “Sculpted commercial bathroom sink faucet with Insight™ touchless technology”, or approved equal.

II. Toilet (WC):

The toilet shall be an ADA Compliant Kohler “Highline w/tank locks” pressure assisted, or approved equal vitreous china elongated siphon toilet or approved equal. Color shall be white. Provide an elongated, quiet close style, with integrated handle commercial toilet seat.

Alternative products that meet these standards as well as ADA requirements may be approved by Project Manager.

III. Service Sink (SSI):

A. The sink shall be a stainless steel one-compartement utility sink with galvanized tubular legs and adjustable bullet feet. Eagle Group “One-

Compartement Utility Sink with Square Corner Construction" Model #2424-1-16/3 or approved equal.

B. Options / Accessories: Include manufacturer's optional faucet or approved equal.

End of Section

SECTION 15453 - TANKLESS WATER HEATERS

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED

   The work within this Section consists of furnishing materials, equipment and labor necessary to satisfactorily complete the installation of a tankless water heater.

3. SUBMITTALS:

   Refer to Section 01300 – Submittals, for requirements.

4. QUALITY ASSURANCE:

   The water heater shall meet efficiency performance criteria set by HUD, ASHRAE 90A-1980, or subsequent revisions thereto, and state performance codes when tested according to D.O.E. procedures.

5. DELIVERY, STORAGE AND HANDLING:

   Deliver, store, and handle the equipment to prevent damage and disfigurement.

   Protect all items from damage during transit and installation.

6. MATERIALS AND INSTALLATION:

   Gas High Efficiency Water Heater (TWH)

   The electric tankless water heater shall be a Rinnai, V65iN, or approved equivalent.

   I. Voltage: 120/240 Volt

   II. Uniform Energy Factor: 0.81 minimum

   III. Activation Water Flow: Maximum of 0.4 gallons per minute required to activate water flow maximum.

   IV. Temperature Rise: Must raise the ambient temperature of the water 75 degrees Fahrenheit minimum at 3.2 gallons per minute flow rate.

7. INSPECTION

   I. Upon Delivery:

      Check for damage that may have occurred in shipment. Reject equipment that will not satisfactorily function.

II. During Installation:

Check for the proper location of the unit. Check that the water heater unit is installed plumb and level.

End of Section

SECTION 15500 - HEATING AND AIR CONDITIONING

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK INCLUDED:

   Work within this Section consists of furnishing materials, equipment and labor necessary to satisfactorily complete the installation of heating and cooling systems, and associated equipment.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

4. QUALITY ASSURANCE:

   I. Regulatory Agency Requirements:

      The units shall be American Gas Association (AGA) design certified, shall be rated and tested in accordance with U.S. Department of Energy test procedures and Federal Trade Commission labeling regulations.

   II. Reference Standards:

      Except as modified by governing codes and by the Contract, comply with the applicable provisions and recommendations of the following:

      A. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE).

      B. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA).

      C. National Fire Protection Association (NFPA).

5. DELIVERY, STORAGE AND HANDLING:

   Deliver, store, and handle the equipment to prevent damage and disfigurement.

   Protect all items from damage during transit and installation.

6. GUARANTEE:

   Promptly repair or replace any defective material or faulty workmanship that becomes apparent prior to the final inspection.

7. MATERIALS AND INSTALLATION

I. Unit Heater:

A. Heaters shall be REZNOR Unit Heaters Model "NUDX125" 120,000 BTUH input or approved equal.

B. Installation:

The unit shall be installed in accordance with manufacturer's recommendations for natural gas delivery system.

Venting piping shall be stainless steel or galvanized steel installed through the walls and terminated with weather/insect proof vent caps on the exterior of the building. Venting pipe shall be supported with galvanized strapping. The vent shall be sloped at ¼" per foot maximum.

A listed thimble shall be installed through the wall and insulation.

Adjust gas pressure as required by the manufacturer accounting for supply pressure and altitude.

II. Gas Piping:

All materials used in the installation shall be in accordance with Heater Manufacturer's recommendations and the 2009 International Mechanical and Fire Gas codes. All work shall be permitted through the State Plumbing Inspector. Gas piping shall not be installed within enclosed wall cavities except through wall penetration.

III. Commercial Thermostat:

Thermostat shall be compatible with the Unit Heater and be a weekday/weekend programmable thermostat with a minimum of four time periods per day. The thermostat shall have a minimum heat set point of 40°F. Install isolation relay as recommended by unit heater manufacturer.

8. INSPECTION:

I. Upon Delivery:

Check for damage that may have occurred in shipment. Reject equipment that will not satisfactorily function.

II. During Installation:

Check for the proper location of the units. Check that the furnace unit is installed plumb and level.

III. After Installation:

Check the operation of all components and each component's correct function during its period of operation within the operating sequence.

9. ADJUST AND CLEAN:

Adjust and lubricate moving parts for smooth, quiet operation.

As work progresses, remove the crating and packing materials from the premises.

End of Section

SECTION 15872 - POWERED WALL EXHAUSTERS

1. SCOPE OF WORK:

   Furnish all labor, materials and equipment required to complete the work of the noted Sections of this Division described herein and on the drawings.

2. WORK SCHEDULED:

   The work shall include, but is not necessarily limited to the installation of a direct drive wall exhauster for an end wall mounting where shown on the drawings.

3. SUBMITTALS:

   Refer to Section 01300 - Submittals, for requirements.

4. MATERIALS AND INSTALLATION:

   I. Exhauster:

      Furnish and install, where noted on the drawings, a direct drive wall ventilation fan.

      Construct the ventilator housing of heavy gauge spun aluminum. The finished housing shall be weatherproof.

      Fan blades shall be 24" diameter of aluminum construction and completely enclosed in an OSHA approved spiral enclosure.

      Provide a direct drive motor operating between 3,000 and 4,000 rpm with a minimum of 3,000 cfm capacity.

   II. Wall Mounted Backdraft Damper:

      Install a prefabricated aluminum, counterbalanced backdraft damper, used with through the wall exhaust unit, of the size required to match the ventilation fan.

      Carefully size the opening upon the building wall prior to cutting and removal to obtain an installed snug fit.

      Necessary framing, trim sections, weather stripping and other equipment necessary for the complete installation shall be provided by the building manufacturer of contractor as needed.

5. COMPLETION:

   At the completion of the work, clean the affected areas of all debris, building and packing materials, having them in acceptable condition as determined by the Project Manager.

End of Section

COLORADO
Parks and Wildlife
Department of Natural Resources

Oak Ridge SWA - Bel Aire Shop Replacement
CONSTRUCTION DRAWINGS

PROJECT I.D. NO. **C26NW1**
IFB1: **2026*129**

PRE-BID CONFERENCE: **February 25, 2026 at 11:00am**

BID OPENING: **March 11, 2026 at 1:00pm**

TABLE OF CONTENTS – CONSTRUCTION DRAWINGS

Oak Ridge SWA - Bel Aire Shop Replacement
C26NW1

CONSTRUCTION DRAWINGS

SHEET 1 ..... COVER SHEET
SHEET 2 ..... EXISTING CONDITIONS
SHEET 3 ..... PROPOSED SITE PLAN
SHEET 7 ..... BUILDING PLAN
SHEET 9 ..... ELEVATIONS
SHEET 10 ..... SECTIONS & DETAILS
SHEET 11 ..... FOUNDATION PLAN
SHEET 12 ..... FOUNDATION DETAILS
SHEET 13 ..... FRAMING PLAN
SHEET 15 ..... PLUMBING PLAN
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SHEET E1.01 ..... ELECTRICAL SITE PLAN - DEMOLITION
SHEET E1.02 ..... ELECTRICAL SITE PLAN - PROPOSED
SHEET E1.03 ..... ELECTRICAL POWER PLAN
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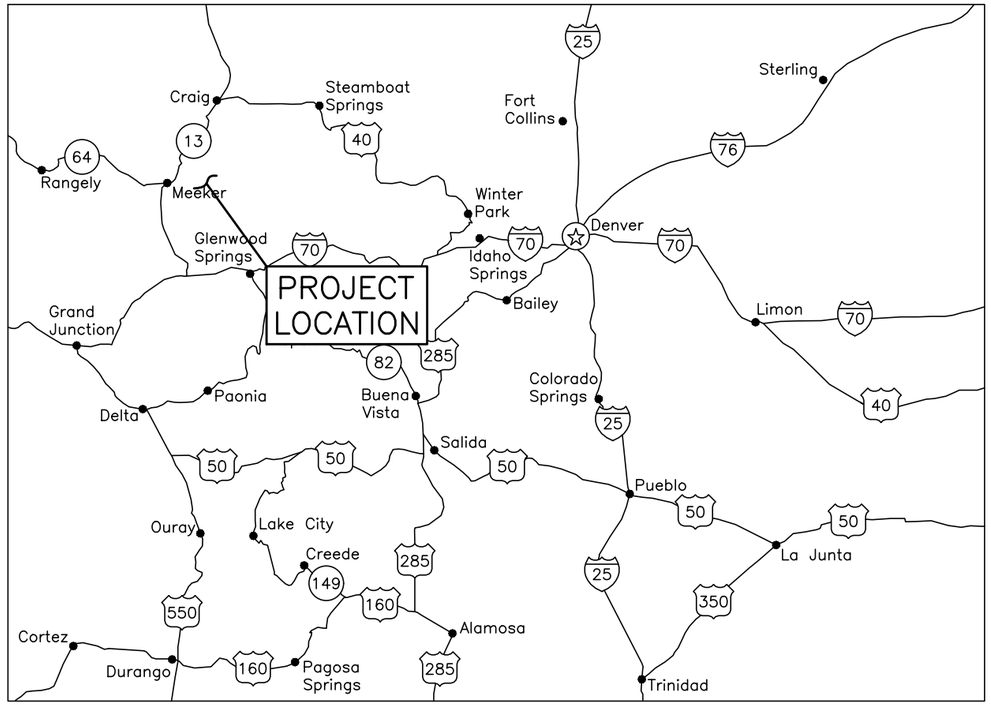
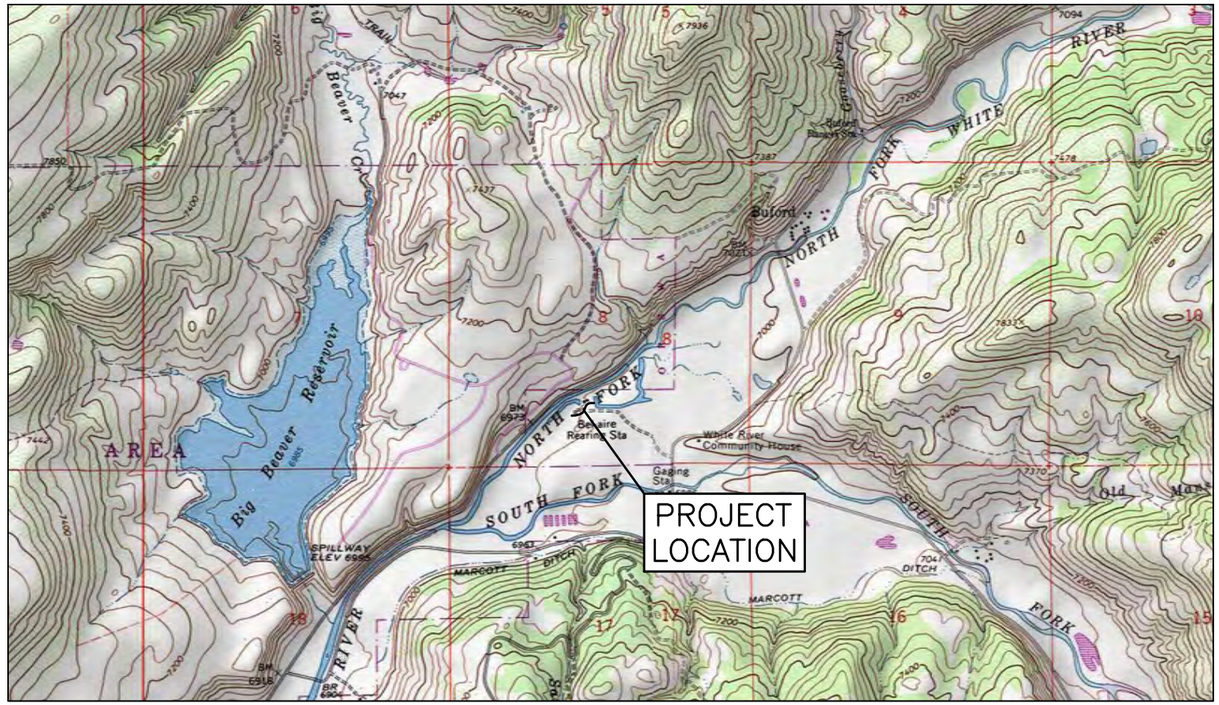
SHEET E6.01 ..... ELECTRICAL LIGHTING SCHEDULES
SHEET E6.02 ..... ELECTRICAL PANEL SCHEDULES
SHEET E6.03 ..... ELECTRICAL SCHEDULES
SHEET E7.01 ..... ELECTRICAL SPECIFICATIONS
SHEET E7.02 ..... ELECTRICAL SPECIFICATIONS



STATE MAP

30 0 30 60

SCALE IN MILES



PROJECT LOCATION MAP

.25 0 .25 .5

SCALE IN MILES

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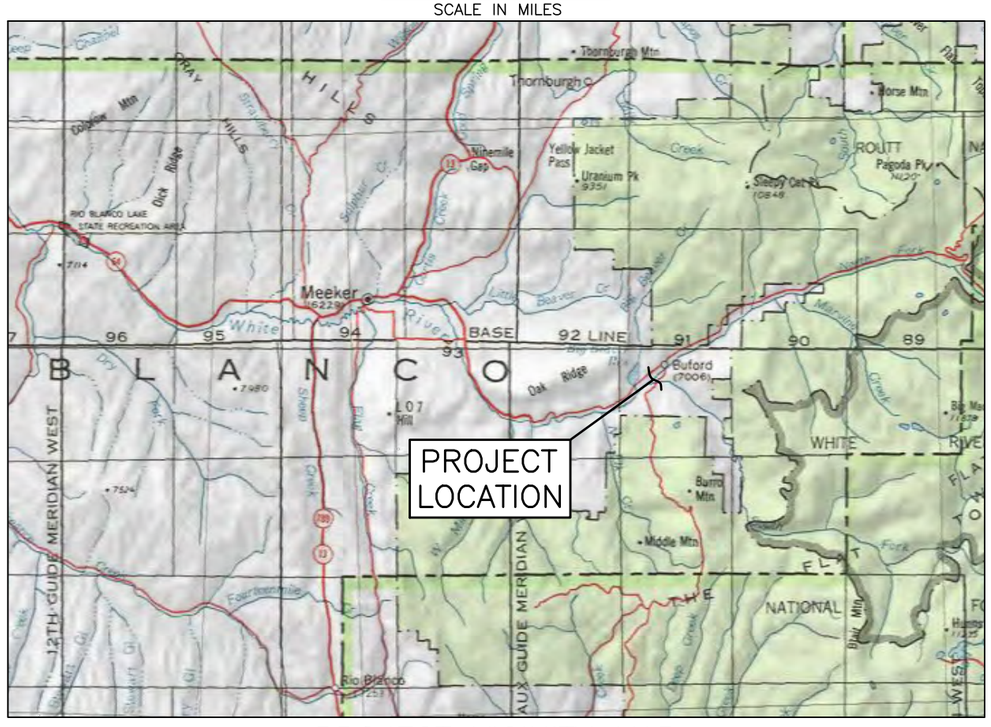


PROJECT VICINITY MAP

4 0 4 8

SCALE IN MILES

OAK RIDGE SWA – 2021–22 BEL AIRE SHOP

PROJECT ADDRESS:
OAK RIDGE SWA – BELAIRE UNIT
42421 CR–17
MEEKER, CO 81641
COUNTY OF RIO BLANCO

PROJECT LOCATION:
LATITUDE: 39°58'42"N
LONGITUDE: 107°37'50"W

Sheet List Table	
Sheet Number	Sheet Title
1	Cover Sheet
2	Existing Conditions
3	Proposed Site Plan
4	Building Plan
5	Elevations
6	Sections & Details
7	Foundation Plan
8	Foundation Details
9	Framing Plan
10	Plumbing Plan

DESIGN CODES (IBC, IPC, ETC)	DESIGN DEAD LOAD (PSF)	DESIGN LIVE LOAD (PSF)	ROOF SNOW LOAD (PSF)	WIND DESIGN		SEISMIC DESIGN CATEGORY	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP (°F)	ICE BARRIER UNDERLAYMENT REQUIRED	FLOOD HAZARDS	AIR FREEZING INDEX	MEAN ANNUAL TEMP (°F)
				SPEED (MPH)	TOPOGRAPHIC EFFECTS		WEATHERING	FROST LINE DEPTH	TERMITE					
2006	10	20	60	90	–	B	SEVERE	42"	NONE	–10	YES	245 RBC	2307	40.3

PARKS & WILDLIFE PROJECT CONTACTS

KENDAL BERGMAN – PROJECT MANAGER	970–902–7946
JORDAN HASZ – DESIGN ENGINEER	303–291–7393

FOR BURIED UTILITY INFORMATION
CALL 811
TWO BUSINESS DAYS BEFORE YOU DIG
UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) OR COMMON GROUND ALLIANCE (CGA)

OAK RIDGE SWA

BEL AIRE SHOP

COLORADO PARKS & WILDLIFE

REVISIONS: BY | DATE

DESIGNER: JH 01/26
DRAFTER: JH 01/26
CHECKED BY:
APPROVED:
CHIEF ENGR.:

DATE
PROJECT NO. C22–NW4
SHEET NO. 1 OF 10

FINAL FOR BID

COVER SHEET

LEGEND

E(OH)	EXISTING OVERHEAD ELECTRIC
SS	EXISTING SANITARY SEWER
W(EX)	EXISTING WATER LINE
GAS	EXISTING PROPANE GAS
	EXISTING FENCE
100.0	ELEVATION CONTOUR

A 2|2 PHOTO: EXISTING SHOP EAST EXTERIOR

B 2|2 PHOTO: HAY BARN EAST EXTERIOR

CONTROL POINT INDEX

POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
CP 1	REBAR	10000.000'	10000.000'	1000.00'
CP 2	REBAR	10100.472'	9817.412'	997.81'
CP 3	REBAR	9996.918'	9841.837'	998.06'

N

EXISTING CONDITIONS

32 0 32 64

SCALE IN FEET

OAK RIDGE SWA

BEL AIRE SHOP

COLORADO PARKS & WILDLIFE

REVISIONS:	BY	DATE

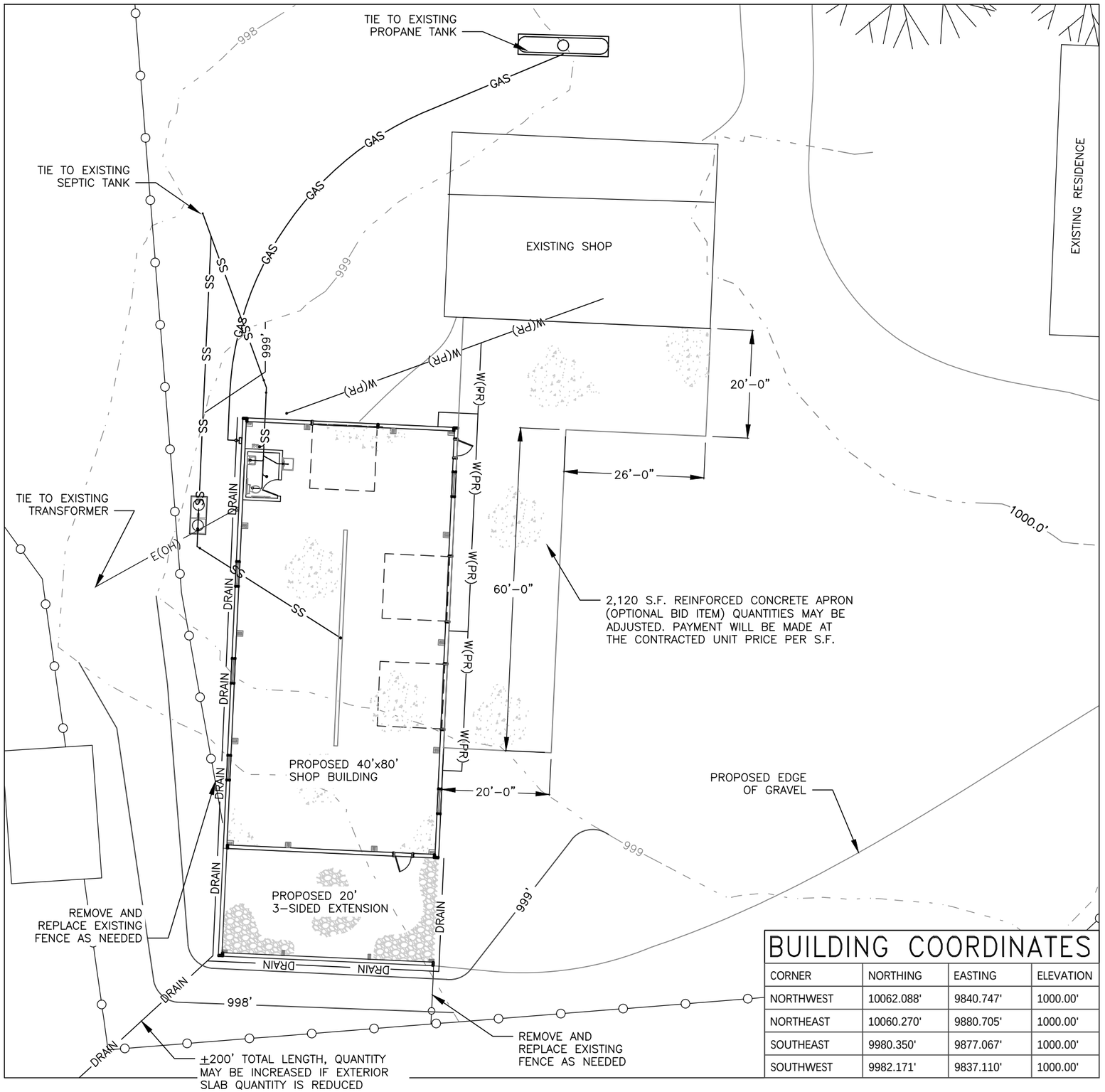
DESIGNER:	JH
DRAFTER:	JH
CHECKED BY:	
APPROVED:	
CHIEF ENGR.:	

	01/26	01/26

DATE:	
PROJECT NO.	C22-NW4
SHEET NO.	2
	OF 10

FINAL FOR BID

EXISTING CONDITIONS



LEGEND

- E(OH) — PROPOSED OVERHEAD ELECTRIC
- SS — SS — PROPOSED SANITARY SEWER
- W(PR) — PROPOSED WATER LINE
- GAS — PROPOSED PROPANE GAS
- DRAIN — PROPOSED SUBGRADE DRAINAGE SYSTEM
- EXISTING FENCE
- 100.0' EXISTING ELEVATION CONTOUR
- 100.0' PROPOSED ELEVATION CONTOUR

GENERAL NOTES:

- THE BUILDING LOCATION MAY BE ADJUSTED ON SITE BY THE PROJECT MANAGER.
- DISPOSE OF EXCESS SOIL IN A LOCATION APPROVED BY THE PROJECT MANAGER.
- NO WORK SHALL BE BACKFILLED UNTIL THE CONSTRUCTION HAS BEEN INSPECTED AND APPROVED FOR BACKFILLING BY THE PROJECT MANAGER.
- CONTRACTOR SHALL NOT IMPEDE PUBLIC ACCESS TO THE SITE OR NORMAL CPW OPERATIONS DURING CONSTRUCTION.
- CONTRACTOR SHALL AT ALL TIMES COORDINATE WORK WITH THE PROJECT MANAGER, WHEN IT IS NECESSARY TO CLOSE THE EXISTING PORTIONS OF THE WATER OR SEWER SYSTEM DUE TO CONSTRUCTION OPERATIONS, AT LEAST 48 HOURS PRIOR NOTIFICATION MUST BE GIVEN TO THE PROJECT MANAGER.
- THE CONTRACTOR SHALL NOTIFY ALL PUBLIC UTILITY COMPANIES AND DETERMINE THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO PROCEEDING WITH CONSTRUCTION. ALL WORK PERFORMED IN THE AREA OF PUBLIC UTILITIES SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS OF THESE AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ANY EXISTING UTILITY (INCLUDING DEPTH), WHICH MAY CONFLICT WITH THE PROPOSED CONSTRUCTION, PRIOR TO COMMENCEMENT OF THE IMPROVEMENTS DESCRIBED IN THE PROJECT. THE CONTRACTOR SHALL PROTECT, AT HIS OWN EXPENSE, ALL EXISTING UTILITIES AND BE RESPONSIBLE FOR THEIR REPAIR IF THEY ARE DAMAGED DURING CONSTRUCTION.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT MANAGER OF ANY PROBLEM IN CONFORMING TO THE APPROVED PLANS OR ANY ELEMENT OF THE PROPOSED IMPROVEMENTS PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE PROJECT MANAGER AT LEAST 48 HOURS PRIOR TO START OR RESTART OF ANY CONSTRUCTION.

BUILDING COORDINATES

CORNER	NORTHING	EASTING	ELEVATION
NORTHWEST	10062.088'	9840.747'	1000.00'
NORTHEAST	10060.270'	9880.705'	1000.00'
SOUTHEAST	9980.350'	9877.067'	1000.00'
SOUTHWEST	9982.171'	9837.110'	1000.00'

N

PROPOSED SITE PLAN

10 0 10 20

SCALE IN FEET

OAK RIDGE SWA

BEL AIRE SHOP

COLORADO PARKS & WILDLIFE

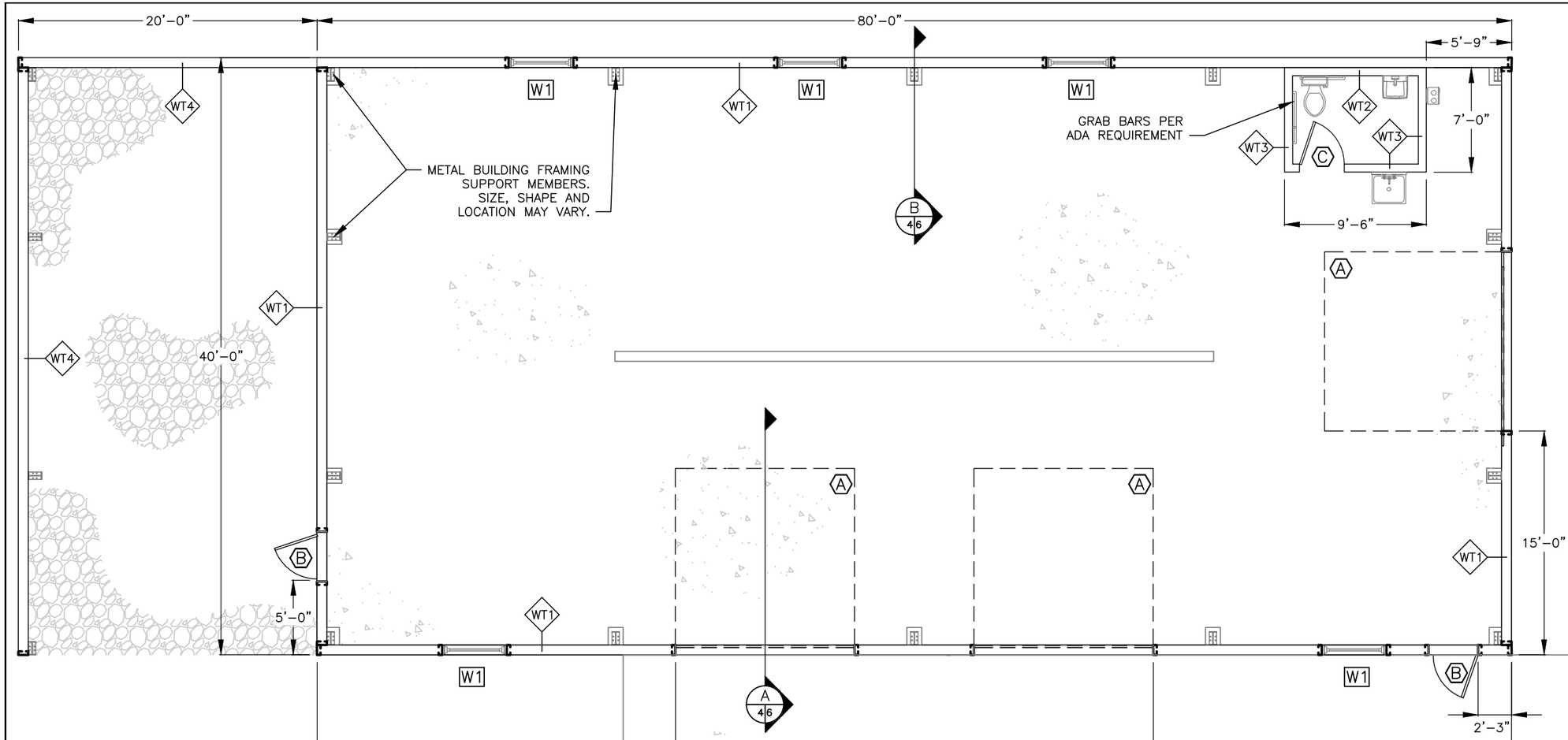
REVISIONS:	DATE	BY

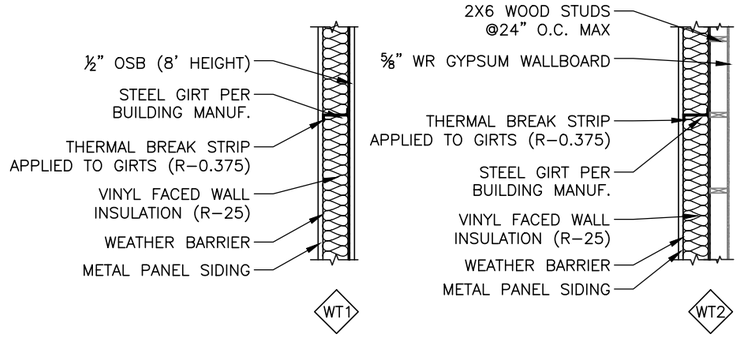
DESIGNER:	JH
DRAFTER:	JH
CHECKED BY:	
APPROVED:	
CHIEF ENGR.:	
DATE	01/26
	01/26

DATE	
PROJECT NO.	C22-NW4
SHEET NO.	3 OF 10

FINAL FOR BID

PROPOSED SITE PLAN





WALL TYPES

2 0 2 4
SCALE IN

N

BUILDING PLAN

4 0 4 8
SCALE IN FEET

OAK RIDGE SWA
BEL AIRE SHOP

REVISIONS:	DATE	BY

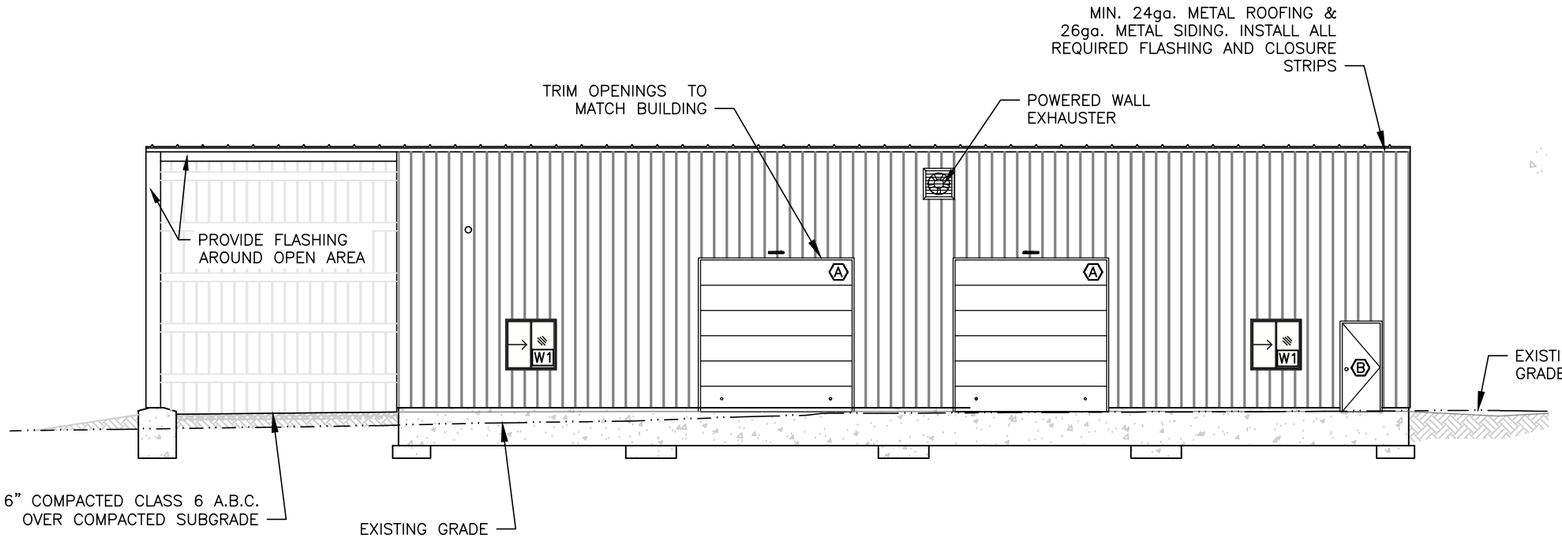
DESIGNER:	JH
DRAFTER:	JH
CHECKED BY:	
APPROVED:	
APPROVED:	
CHIEF ENGR.:	

DATE	01/26
	01/26

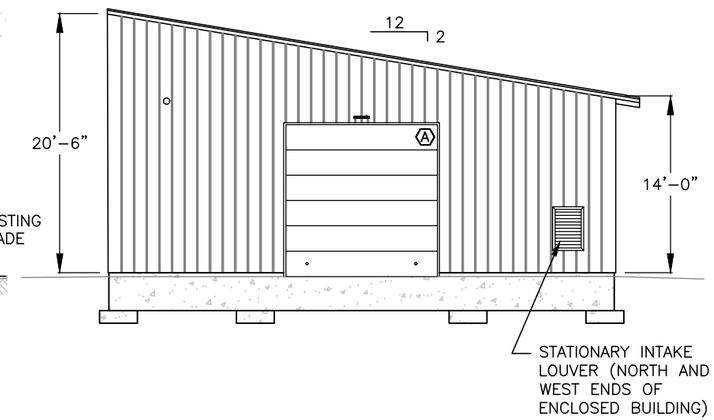
PROJECT NO.	
C22–NW4	
SHEET NO.	
4	
OF 10	

FINAL FOR BID

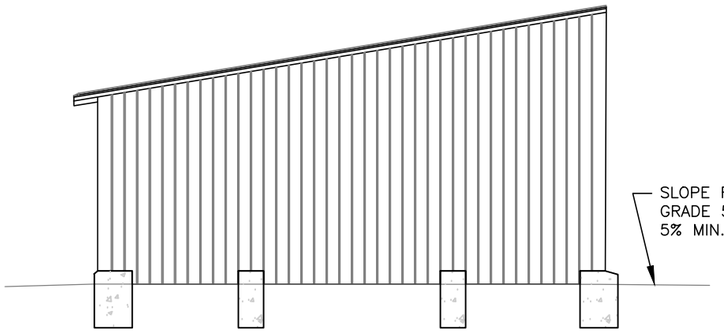
BUILDING PLAN



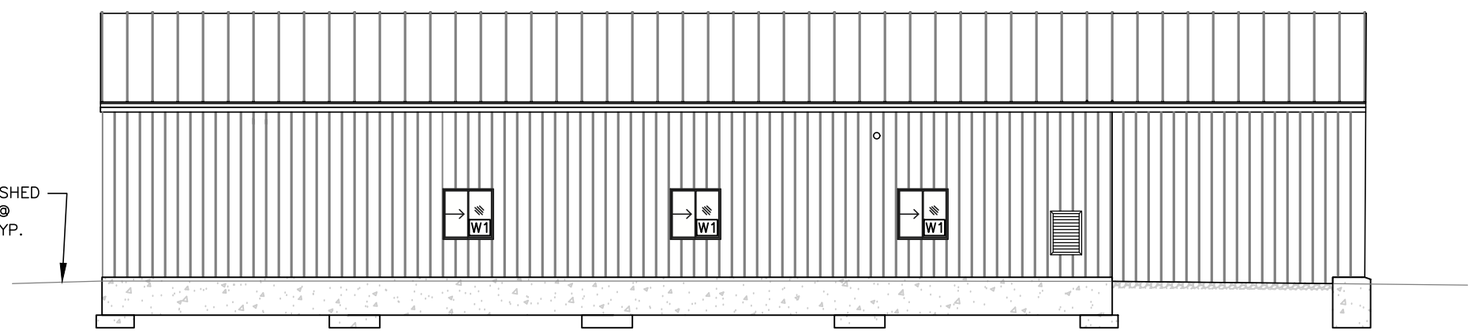
EAST ELEVATION



NORTH ELEVATION



SOUTH ELEVATION



WEST ELEVATION

WINDOW SCHEDULE

ID	SIZE (WxH)	WINDOW			FRAME		QUANTITY	REMARKS
		DESCRIPTION	MATERIAL	FINISH	MATERIAL	FINISH		
W1	4'-0" X 4'-0"	SIDE SLIDER	GLASS	FACTORY	ALUMINUM	FACTORY	5	WITH SCREEN

DOOR SCHEDULE

ID	SIZE (WxH)	QTY.	DOOR				FRAME		HARDWARE		
			DESCRIPTION	MATERIAL	LOUVER	FINISH	MATERIAL	FINISH	HINGE	LOCK	MISC.
A	12'-0" X 12'-0"	3	OVERHEAD	STEEL		PAINT	METAL RAILS	PAINT			
B	3'-0" X 7'-0"	2	TYPE I	HOLLOW METAL		PAINT	HOLLOW METAL	PAINT	1	R1/M2	1
C	3'-0" X 6'-8"	1	TYPE III	WOOD	2.3 SF	STAIN	WOOD	PAINT	2	F76	2

MISCELLANEOUS HARDWARE

GENERAL – DOOR SILENCERS: GLYNN–JOHNSON SR64 (OR EQUAL)

DOOR SILENCERS FOR ALL HOLLOW METAL FRAMES, 3 PER STRIKE JAMB

1 – WEATHERSTRIPPING: PEMKO 303AS (OR EQUAL) AT HEAD AND JAMBS, PEMKO 18100CNB (OR EQUAL) SWEEPS AT SILL, PEMKO 176A THRESHOLD AND PEMKO 346C RAIN DRIP AT EXTERIOR DOORS. PEMKO S88 FIRE/SMOKE SEAL AT DOUBLE DOOR.

2 – WALL STOPS: BALDWIN 4273.264 (OR EQUAL) CONCAVE BUMPER, SATIN CHROME FINISH CONCEALED MOUNTING AND ATTACHMENT

LOCKSETS

DESIGNATIONS INDICATED ARE ANSI A156.2 FUNCTIONS BEST ACCESS SYSTEM 9K SERIES

F76 – PRIVACY LATCH

M2 – MECHANICAL LOCK, UNICAN 8100 WITH KEY OVERRIDE FOR EXTERIOR DOORS

R1 – VON DUPRIN 996L RIM DEVICE

BUTT HINGES

1 – HEAVY STAINLESS STEEL SPRING HINGE

2 – STD WEIGHT STEEL HINGE

ELEVATIONS

6 0 6 12

SCALE IN FEET

OAK RIDGE SWA

BEL AIRE SHOP

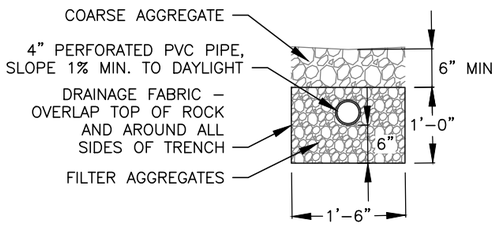
COLORADO WILDLIFE PARKS

REVISIONS:		
DESIGNER:	JH	01/26
DRAFTER:	JH	01/26
CHECKED BY:		
APPROVED:		
CHIEF ENGR.:		

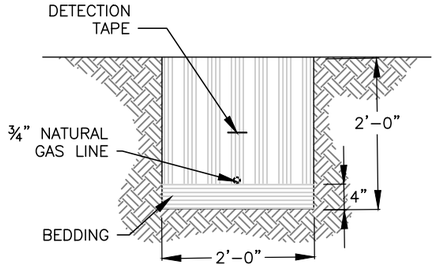
DATE:	
PROJECT NO.	C22-NW4
SHEET NO.	5
	OF 10

FINAL FOR BID

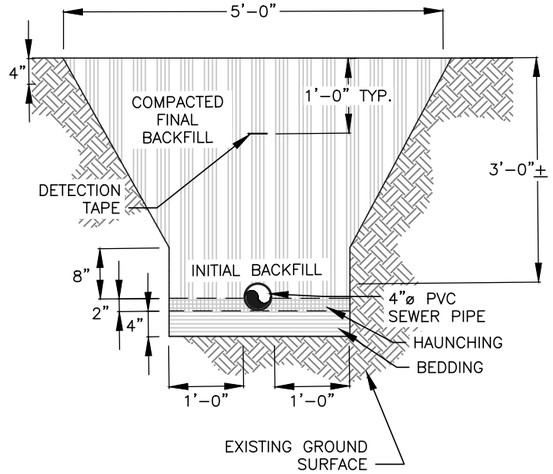
ELEVATIONS



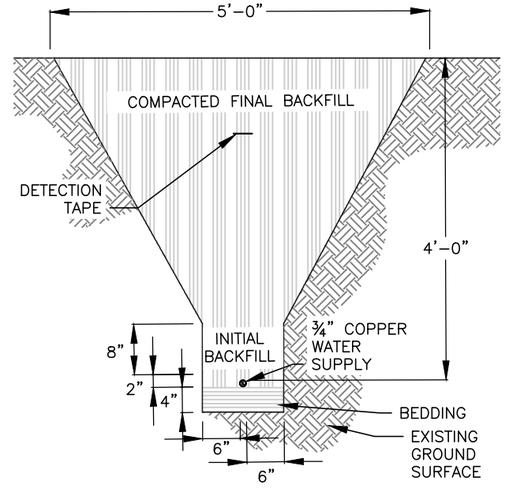
SUBGRADE DRAINAGE SYSTEM DETAIL



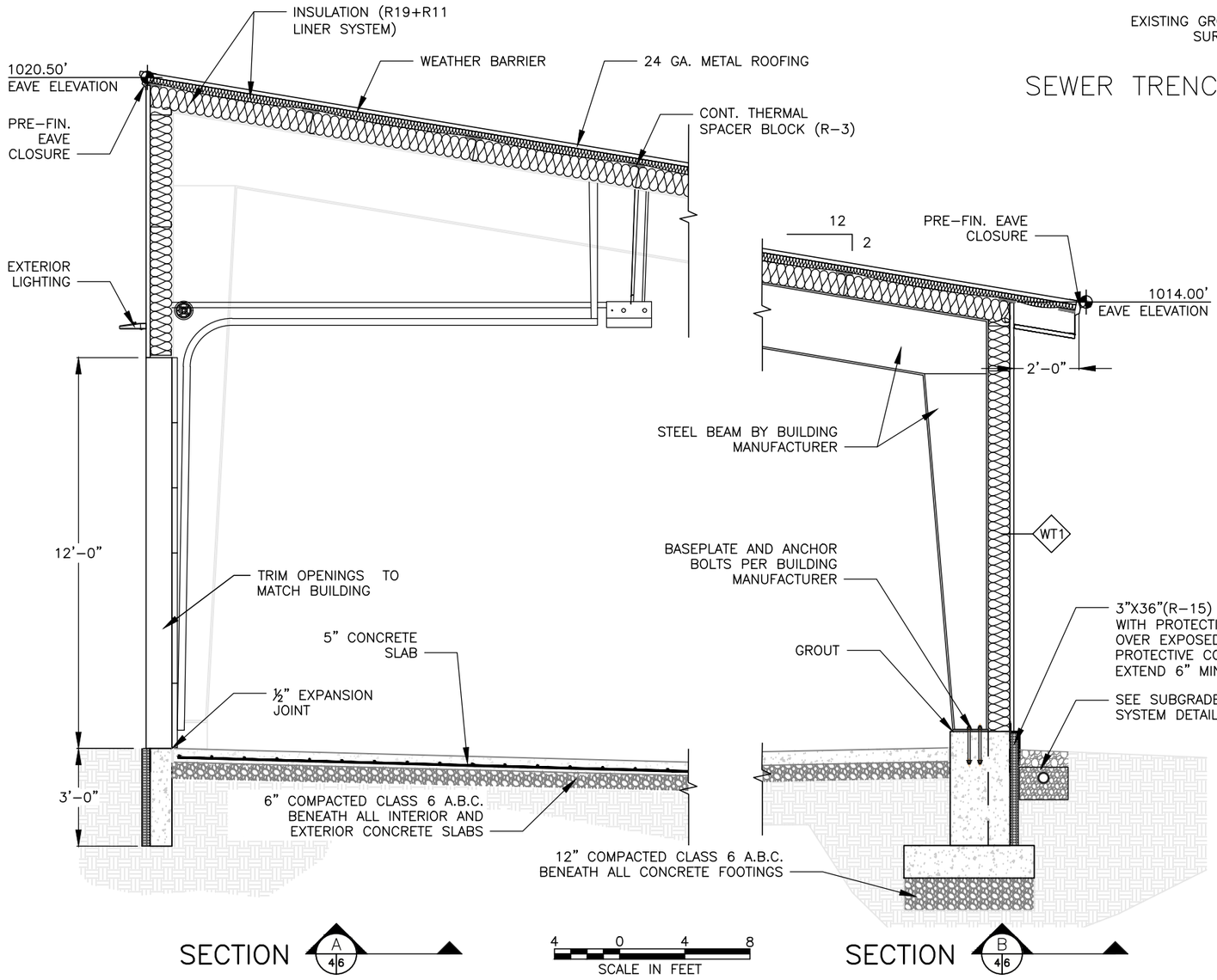
GAS TRENCH DETAIL



SEWER TRENCH DETAIL



WATER TRENCH DETAIL

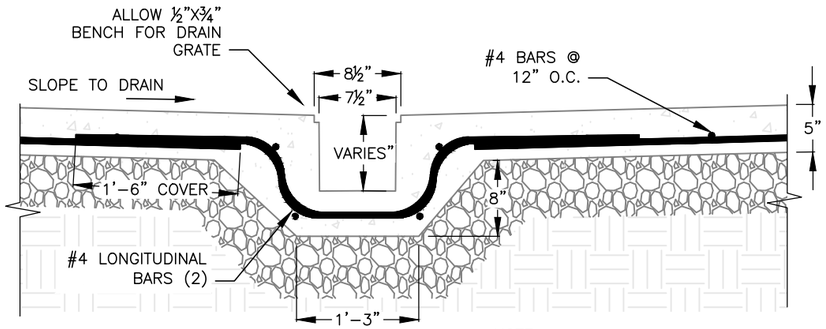


SECTION A 4/6

SECTION B 4/6

4 0 4 8
SCALE IN FEET

1 0 1 2
SCALE IN FEET



TRENCH DRAIN DETAIL C 4/6

8" 0 8" 16"
3/4" = 1'

NOTE:
- DRAIN GRATE SHALL BE McNICHOLS GW–75 19–W–4 GALVANIZED STEEL GRATING OR APPROVED EQUIVALENT

SECTIONS & DETAILS

OAK RIDGE SWA

BEL AIRE SHOP

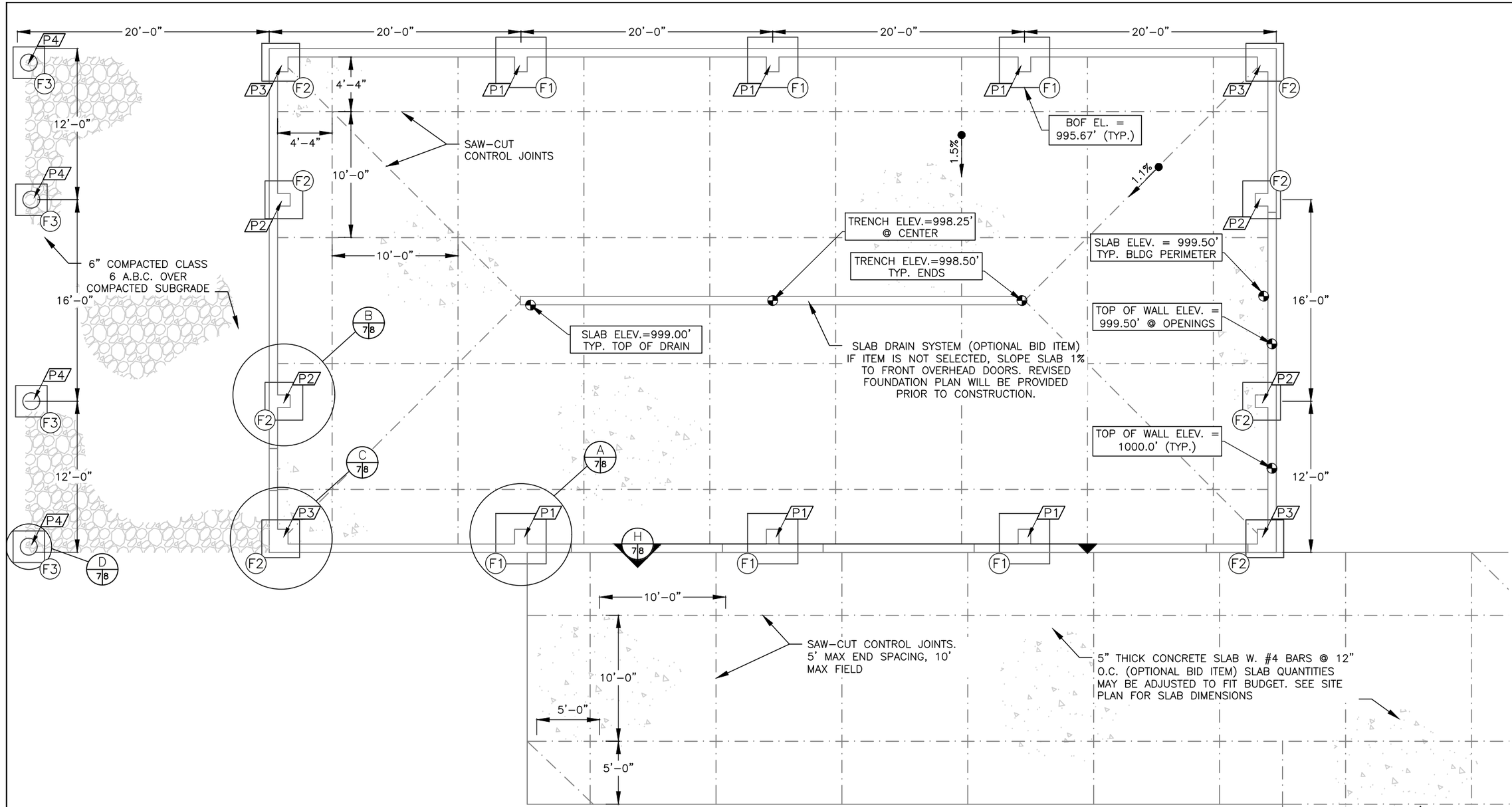
REVISIONS:	DATE	BY

DESIGNER:	JH
DRAFTER:	JH
CHECKED BY:	
APPROVED:	
CHIEF ENGR.:	
DATE	01/26
	01/26

PROJECT NO.	C22–NW4
SHEET NO.	6 OF 10

FINAL FOR BID

SECTIONS & DETAILS



FOOTING SCHEDULE

ID	SIZE (W x L x H)	HORIZ. REINF.	VERT. REINF.	QTY.	VOL (CY)
F1	4'–0" x 4'–0" x 0'–10"	(4)#5 EW	(4)#5 HOOKED	5	3.75
F2	3'–0" x 3'–0" x 0'–10"	(4)#5 EW	(4)#5 HOOKED	4	2.22
F3	2'–6" x 2'–6" x 0'–10"	(3)#5 EW	(4)#5 HOOKED	2	0.77

PEDESTAL SCHEDULE

ID	SIZE (W x L x H)	HORIZONTAL REINF.	VERT. REINF.	QTY.	VOL (CY)
P1	1'–0" x 1'–2" x 3'–6"	(6)10"x12" #3 TIE RINGS	(4)#5 HOOKED	6	0.91
P2	1'–0" x 1'–0" x 3'–6"	(6)6"x12" #3 TIE RINGS	(4)#5 HOOKED	4	0.52
P3	10" x 1'–2" x 3'–6"	(6)6"x12" #3 TIE RINGS	(4)#5 HOOKED	4	0.50
P4	1'–4"Ø x 3'–6"	(8)12"Ø #3 TIE RINGS	(4)#5 HOOKED	4	0.72

STEM WALL SCHEDULE

SIZE (T x H x TOTAL LENGTH)	HORIZONTAL REINF.	VERTICAL REINF.	VOL (CY)
8" x 3'–6" 194'–8"	#5@12"O.C. MAX	#5@12"OC MAX.	16.82
8" x 3'–0" x 42'–0"	#5@12"OC MAX.	#5@12"OC MAX.	3.11
TOTAL FOUNDATION VOLUME			29.3

NOTE:
- DIMENSIONS AND LOCATIONS OF CONCRETE FOUNDATIONS MAY BE ADJUSTED UPON PRE–ENGINEERED BUILDING SUBMITTAL.

FOUNDATION PLAN

4 0 4 8
SCALE IN FEET

OAK RIDGE SWA
BEL AIRE SHOP

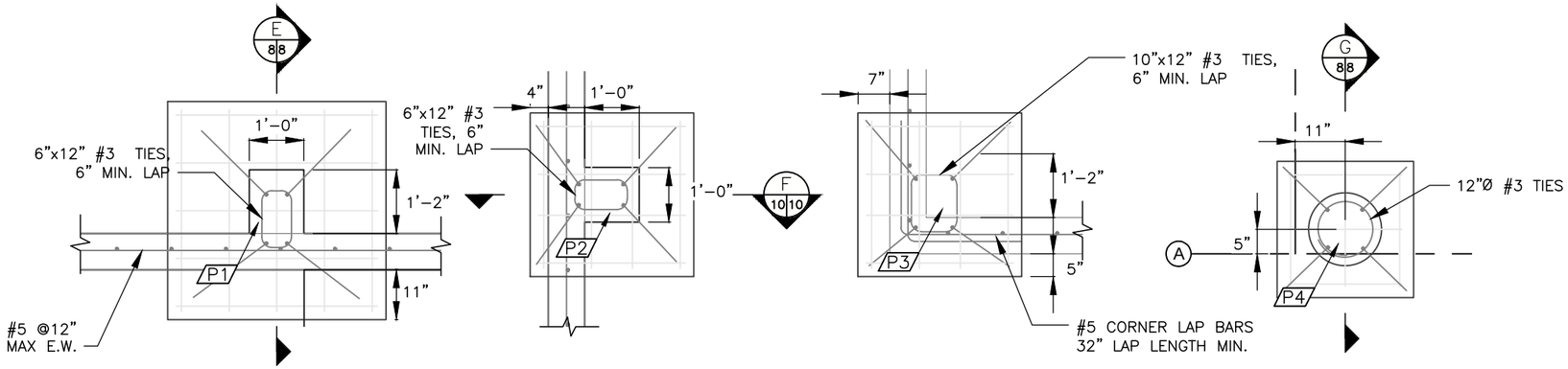
REVISIONS: | BY | DATE |

DESIGNER: JH 01/26
DRAFTER: JH 01/26
CHECKED BY:
APPROVED:
CHIEF ENGR.:

DATE
PROJECT NO. C22–NW4
SHEET NO. 7 OF 10

FINAL FOR BID

FOUNDATION PLAN

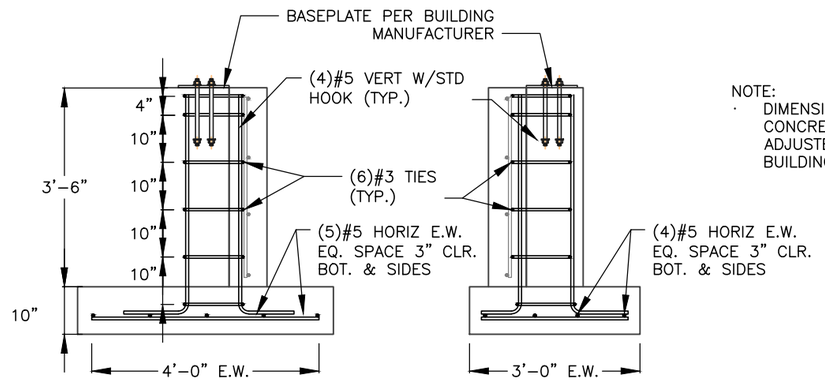


PEDESTAL 1 PLAN (A 7|8)

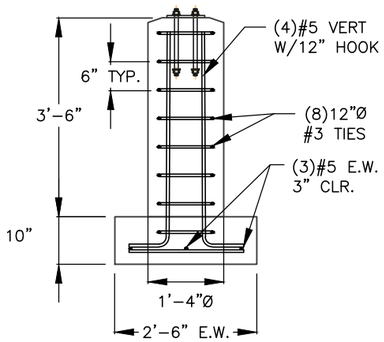
PEDESTAL 2 PLAN (B 7|8)

PEDESTAL 3 PLAN (C 7|8)

PEDESTAL 4 PLAN (D 7|8)



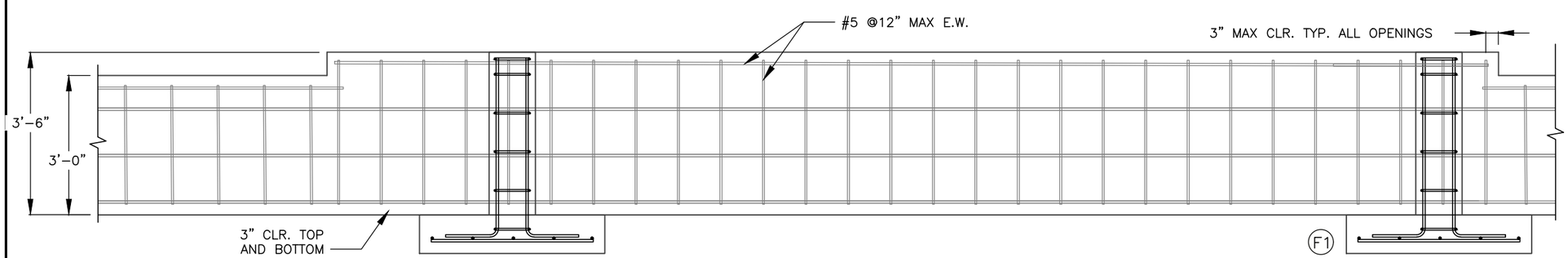
NOTE:
- DIMENSIONS AND LOCATIONS OF CONCRETE FOUNDATIONS MAY BE ADJUSTED UPON PRE-ENGINEERED BUILDING SUBMITTAL.



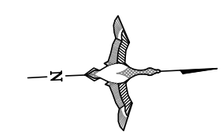
FOOTING 1 PROFILE (E 8|8)

FOOTING 2 PROFILE (F 8|8)

FOOTING 3 PROFILE (G 8|8)



SECTION (H 7|8)



FOUNDATION DETAILS

16" 0 16" 32"

3/8" = 1'

OAK RIDGE SWA

BEL AIRE SHOP

COLORADO WILDLIFE PARKS

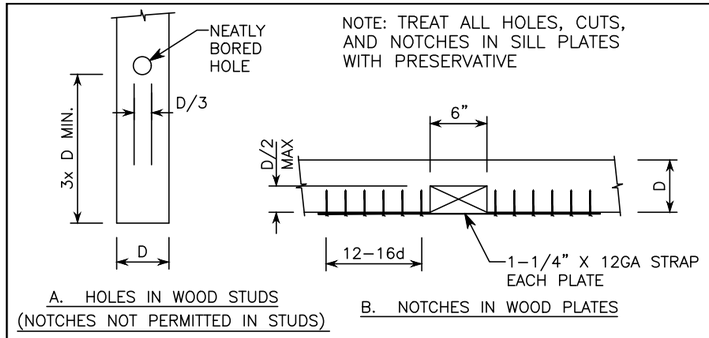
BY	DATE	REVISIONS:

DESIGNER:	JH	01/26
DRAFTER:	JH	01/26
CHECKED BY:		
APPROVED:		
APPROVED:		
CHIEF ENGR.:		

DATE	
PROJECT NO.	C22-NW4
SHEET NO.	8 OF 10

FINAL FOR BID

FOUNDATION DETAILS



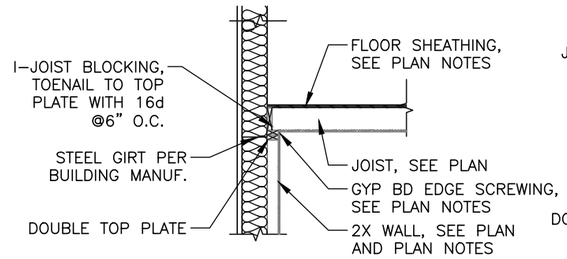
A. HOLES IN WOOD STUDS (NOTCHES NOT PERMITTED IN STUDS)

B. NOTCHES IN WOOD PLATES

TYP. REQ. FOR HOLES & NOTCHES IN WOOD MEMBERS (A/9)

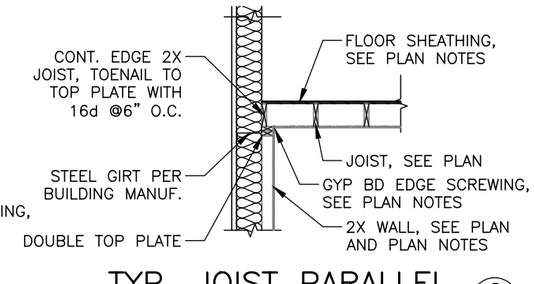
TYPICAL MINIMUM NAILING REQUIREMENTS, U.N.O.		
	CONNECTION	COMMON NAILS
1.	Joist to sill or girder, toenail	3–8d
2.	Bridging to joist, toenail each end	2–8d
3.	1"x6" subfloor or less to each joist, face nail	2–8d
4.	Wider than 1"x6" subfloor to each joist, face nail	3–8d
5.	2" subfloor to joist or girder, blind and face nail	2–16d
6.	Sole plate to joist or blocking, face nail	16d @16" o.c.
7.	Top plate to stud, end nail	2–16d
8.	Stud to sole plate	4–8d toenail or 2–16d end nail
9.	Double studs, face nail	16d@24"
10.	Double top plates, face nail	16d@16"
11.	Blocking btwn joists or rafters to top plate, toenail	3–8d
12.	Rim joist to top plate, toenail	8d@6"
13.	Top plates, laps and intersections, face nail	2–16d
14.	Continuous header, two pieces	16d @16" o.c. along each edge
15.	Ceiling joists to plate, toenail	3–8d
16.	Continuous header to stud, toenail	4–8d
17.	Ceiling joists, laps over partitions, face nail	3–16d
18.	Ceiling joists to parallel rafters, face nail	3–16d
19.	Joist or rafters at all bearings, toenail	3–8d
20.	1" brace to each stud and plate, face nail	2–8d
21.	1"x8" sheathing or less to each bearing, face nail	3–8d
22.	Wider than 1"x8" sheathing to ea bearing, face nail	3–8d
23.	Built–up corner studs	16d @24" o.c.
24.	Built–up girder and beams	20d @32" o.c. at top and bottom, staggered on opposite faces 2–20d at ends and at each splice
25.	2" planks	2–16d at each bearing
26.	Collar tie to rafter, face nail	3–10d
27.	Jack rafter to hip	2–10d toenail 2–16d face nail
28.	Roof rafter to 2X ridge beam	2–16d toenail 2–16d face nail
29.	Joist to band joist, face nail	3–16d
30.	Ledger strip, face nail	3–16d
31.	Plywood sheathing	See typical wood panel shear wall construction detail

TYP. MIN. NAILING REQ.



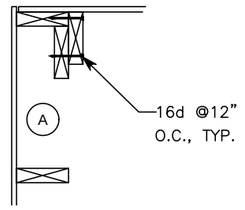
TYP. JOIST PERP. TO WALL (B/9)

2 0 2 4
SCALE IN FEET



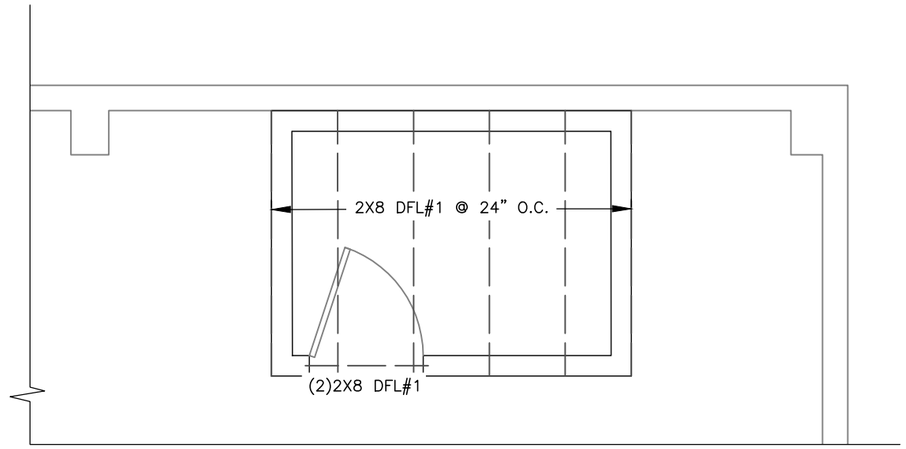
TYP. JOIST PARALLEL TO WALL (C/9)

2 0 2 4
SCALE IN FEET



TYP. BEARING WALL (D/9)

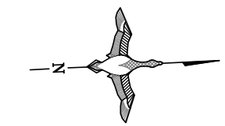
(N.T.S.)



FLOOR FRAMING CONSTRUCTION:
¾" T&G OSB OVER 2X8 DFL#1 @24" O.C. ORIENT SHEATHING WITH LONG DIMENSION PERP. TO JOISTS. STAGGER SHORT DIMENSION JOINTS BY HALF OF SHEATHING LENGTH. GLUE AND NAIL FLOOR SHEATHING WITH 8d @6" O.C. AT ALL SUPPORTED PANEL EDGES AND WITH 8d @12" O.C. IN THE FIELD.

WALL FRAMING:
WALLS TO BE CONSTRUCTED OF 2X6 DFL#2 @24" O.C. MAX, U.N.O. UNLESS NOTED OTHERWISE. ATTACH GYP. BD. TO STUDS WITH #6 X 1⅝" DRYWALL SCREWS AT 8" O.C. AT PANEL EDGES AND AT 12" IN THE FIELD.

OPENING FRAMING:
HEADERS ARE AS CALLED OUT ON PLAN. HEADER TO BEAR ON (1) TRIMMER STUD WITH (1) KING STUD ADJACENT TO TRIMMER STUD.



FRAMING PLAN

2 0 2 4
SCALE IN FEET

OAK RIDGE SWA

BEL AIRE SHOP

COLORADO • WILDLIFE • PARKS

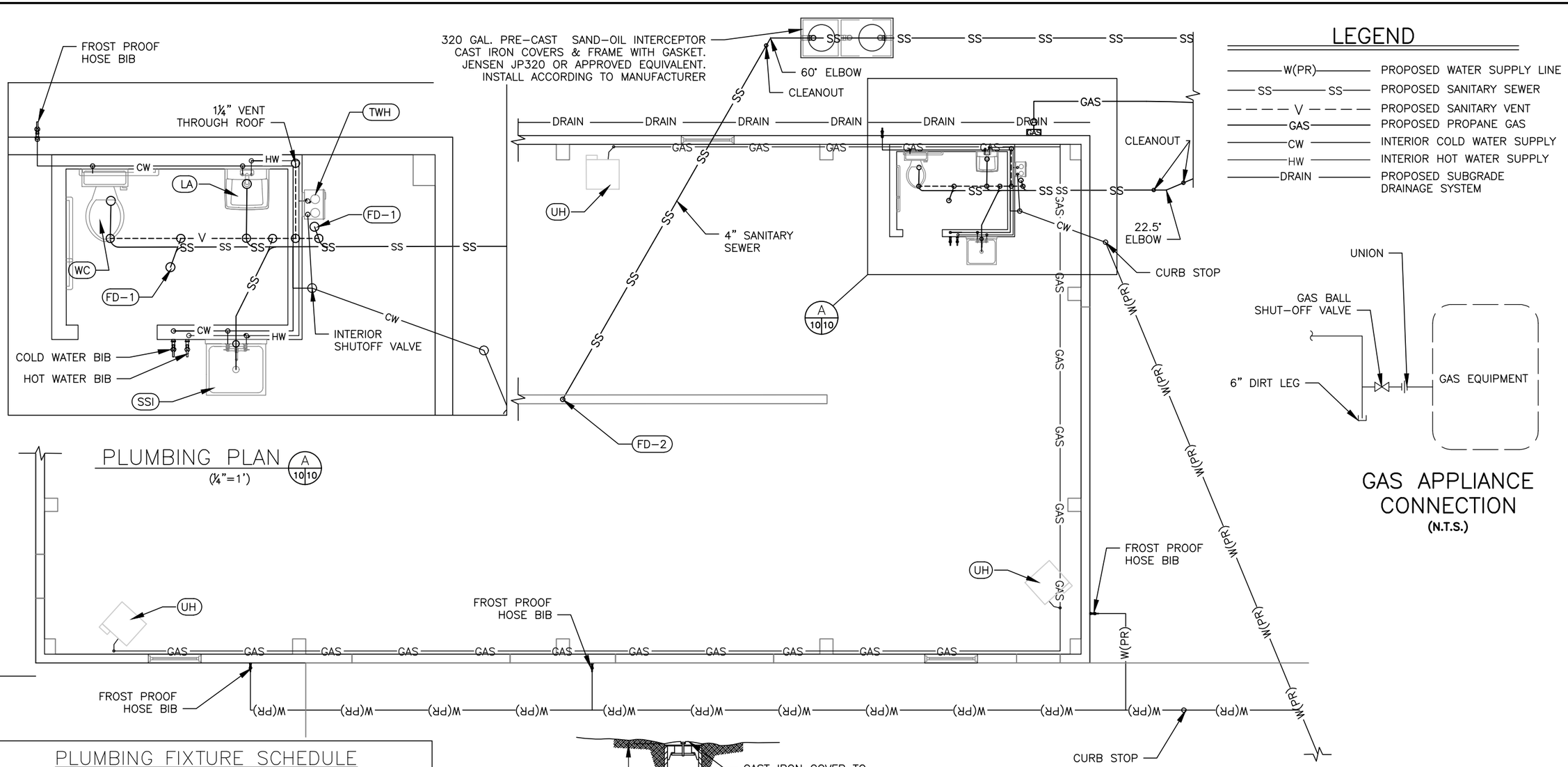
REVISIONS:	DATE	BY
	01/26	JH
	01/26	JH

DESIGNER:	JH
DRAFTER:	JH
CHECKED BY:	
APPROVED:	
APPROVED:	
CHIEF ENGR.:	

DATE	
PROJECT NO.	C22–NW4
SHEET NO.	9
	OF 10

FINAL FOR BID

FRAMING PLAN



PLUMBING PLAN

(¼"=1')

A 10|10

LEGEND

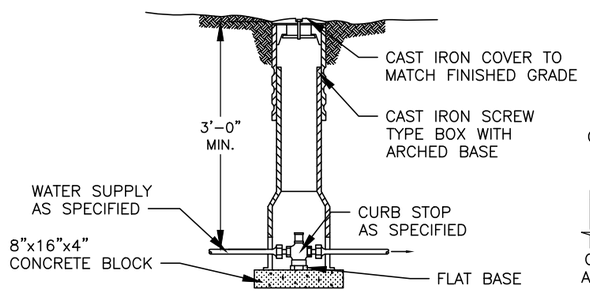
W(PR)	PROPOSED WATER SUPPLY LINE
SS	PROPOSED SANITARY SEWER
V	PROPOSED SANITARY VENT
GAS	PROPOSED PROPANE GAS
CW	INTERIOR COLD WATER SUPPLY
HW	INTERIOR HOT WATER SUPPLY
DRAIN	PROPOSED SUBGRADE DRAINAGE SYSTEM

GAS APPLIANCE CONNECTION

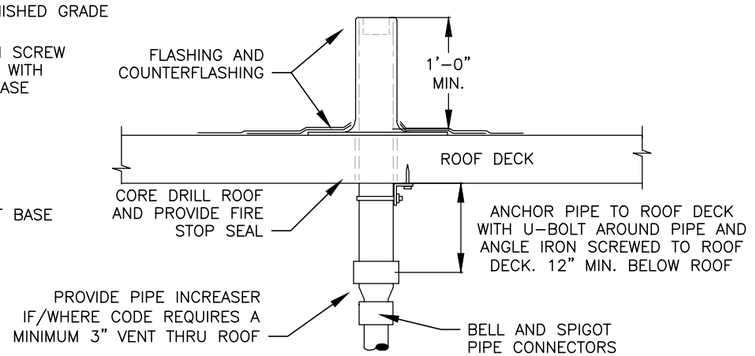
(N.T.S.)

PLUMBING FIXTURE SCHEDULE

ID	FIXTURE DESCRIPTION	INDIVIDUAL LINE SIZES			
		COLD WATER	HOT WATER	WASTE	VENT
FD-1	FLOOR DRAIN-1	N/A	N/A	2"	1-1/4"
FD-2	FLOOR DRAIN-2	N/A	N/A	4"	N/A
LA	LAVATORY	1/2"	1/2"	1-1/2"	1-1/4"
SSI	SERVICE SINK	1/2"	1/2"	3"	1-1/4"
WC	WATER CLOSET	1/2"	N/A	3"	2"



CURB STOP DETAIL

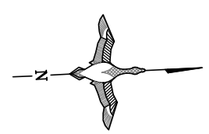


VENT THROUGH ROOF DETAIL

(N.T.S.)

PLUMBING EQUIPMENT SCHEDULE

ID	FIXTURE DESCRIPTION	MANUF.	MODEL	INDIVIDUAL LINE SIZES					
				COLD WATER	HOT WATER	GAS	ELEC. (V)	AIR INTAKE	VENT
UH	UNIT HEATER	REZNOR	NUDX125	N/A	N/A	1/2	120	4"	4"
TWH	TANKLESS WATER HEATER	RINNAI	V65iN	3/4"	3/4"	3/4"	120	3"	3"



PLUMBING PLAN

4 0 4 8

SCALE IN FEET

OAK RIDGE SWA

BEL AIRE SHOP

DESIGNER:	JH
DRAFTER:	JH
CHECKED BY:	
APPROVED:	
APPROVED:	
CHIEF ENGR.:	
DATE	01/26
REVISIONS:	
BY	
DATE	
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SHEET NO.	10
OF	10

FINAL FOR BID

PLUMBING PLAN

01/23/2023

ELECTRICAL SYMBOL LEGEND

ANNOTATION SYMBOLS

- ## — KEYNOTE TAG
- ## — REVISION TAG
- AA-#-### — EQUIPMENT EQUIPMENT TAG
  REFER TO EQUIPMENT SCHEDULE
- AA-#-### — ELECTRICAL CONNECTION TAG
  (EQUIP. SPECIFIED BY OTHERS)
  REFER TO CONNECTION SCHEDULE
- A### — FEEDER TAG
  REFER TO FEEDER SCHEDULE
- AA - #,#,# — CIRCUIT TAG (HOME RUN)
  REFER TO PANEL SCHEDULE
- A## a — LIGHTING FIXTURE TAG
  UPPERCASE TAG IS FIXTURE TYPE
  LOWERCASE LETTER IS SWITCH ID
- C## — LIGHTING CONTROL TAG
  REFER TO LIGHTING CONTROL
  SCENARIO SCHEDULE FOR
  REQUIREMENTS FOR THIS SPACE

LINETYPES / PHASING

- SOLID DARK LINES INDICATE
  NEW OR MODIFIED ITEMS
- DASHED DARK LINES INDICATE
  ITEMS TO BE DEMOLISHED
- SOLID LIGHT LINES INDICATE
  EXISTING ITEMS TO REMAIN

reference info

COMMUNICATION DEVICES

- ▽ — DIGITAL DATA OUTLET
  SINGLE PORT

COMMUNICATION SYMBOL MODIFIERS:

- ▽ — SQUARE INDICATES
  FLOOR MOUNT
- H ▽ — "H" INDICATES HDMI
  PORT TYPE (SEE KEYNOTES)

SINGLE LINE DIAGRAM SYMBOLS

- CIRCUIT BREAKER
- FUSE
- DISCONNECT SWITCH
- NT — NEUTRAL BUS
- GR — GROUND BUS
- BOND
- GROUNDING ELECTRODE
  (SEE KEYNOTE FOR TYPE)
- VFD — VARIABLE FREQUENCY DRIVE
- M — METER

LIGHTING FIXTURES

- GENERAL LIGHT FIXTURE
  DRAWN TO APPROX. SIZE AND SHAPE

LIGHT FIXTURE SYMBOL MODIFIERS:

- HALF FILL INDICATES
  EMERGENCY BACKUP
- DIAGONAL LINE INDICATES
  RECESSED MOUNTING
- DOT INDICATES
  SUSPENDED MOUNTING
- SIDE LINES INDICATE
  WALL MOUNTING

EXIT AND EGRESS TYPES:

- EXIT SIGN
  FILLED QUARTERS INDICATE FACES
- EXIT SIGN WITH INTEGRAL LIGHTS

RECEPTACLES

- STANDARD WALL MOUNTED
  DUPLEX RECEPTACLE

RECEPTACLE SYMBOL MODIFIERS:

- CROSS LINES INDICATE
  QUADRUPLEX
- SINGLE LINE
  INDICATES SIMPLEX
- TRIANGLE INDICATES SPECIAL
  NEMA TYPE (SEE KEYNOTES)
- CENTER FILL INDICATES ABOVE
  COUNTER (16" TO BOTTOM)
- OUTER CIRCLE INDICATES
  CEILING MOUNT (FLUSH)
- OUTER SQUARE INDICATES
  FLOOR MOUNT
- G — "G" INDICATES PROVIDE GFCI
  PROTECTION AT DEVICE OR BREAKER
- W — "W" INDICATES WEATHERPROOF
  IN-USE COVER AND GFCI PROTECTION
- TV — "TV" INDICATES
  TV RECEPTACLE (SEE KEYNOTE)
- a — LOWER CASE LETTER
  INDICATES SWITCHING ZONE

CONTROL DEVICES

- $ a — WALL SWITCH
  LOWER CASE LETTER
  INDICATES CONTROL ZONE
- $3 a — THREE WAY SWITCH
- $W a — WEATHERPROOF SWITCH
  WET LOCATION LISTED
- $D a — DIMMING SWITCH, 0-10V
  UNLESS OTHERWISE NOTED
- DO — DOOR OPENER
  (PER DOOR MANUFACTURER)

SGM
118 West Sixth Street, Suite 200
Glenwood Springs, CO 81601
970.945.1004 www.sgm-inc.com

Oak Ridge SWA - 2021-22
Bel Aire Shop
42421 CR-17
Meeker, CO 81641

Status: Construction Documents
Print Date: 01/23/2023
Engineer: PB
Drawn By: PB
Quality Control: AH
SGM Project No. 2021-271-003

Sheet Revisions

Rev.	Date	Init.	Comments

ELECTRICAL LEGEND AND SYMBOLS

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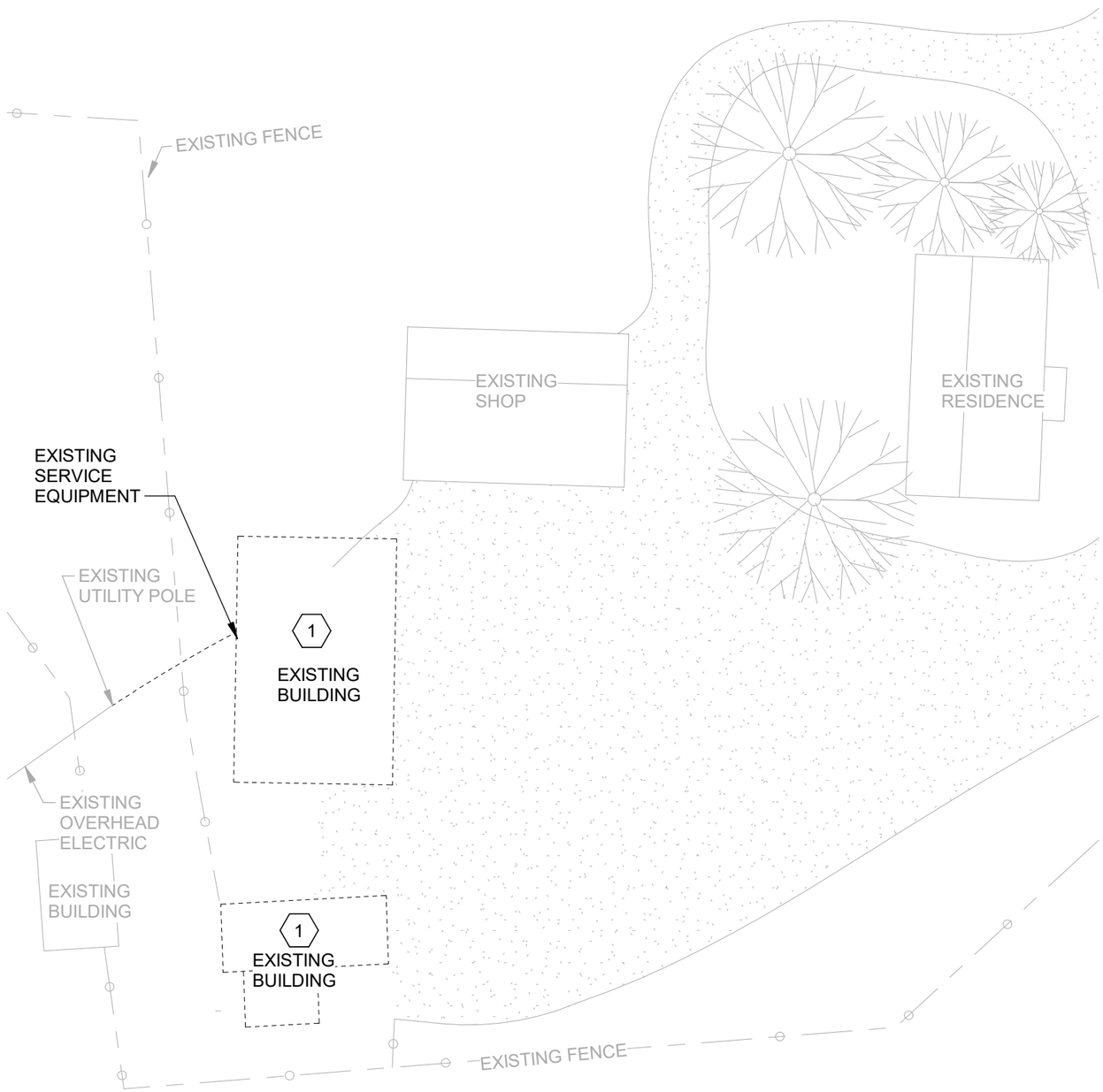

1 DEMOLITION SITE PLAN

SCALE: 1" = 30'-0"

NORTH

GENERAL SITE PLAN NOTES

1	SEE CIVIL SITE PLANS FOR SITE LAYOUT AND UTILITIES.
2	COORDINATE DEMO WITH ELECTRIC UTILITY.

KEYNOTES

1	COORDINATE WITH THE ELECTRIC UTILITY TO DISCONNECT POWER FROM THE EXISTING STRUCTURE. REMOVE AND DISPOSE OF ALL ELECTRICAL EQUIPMENT IN THE EXISTING BUILDING.

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PROFESSIONAL ENGINEER

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ELECTRICAL SITE PLAN - DEMOLITION

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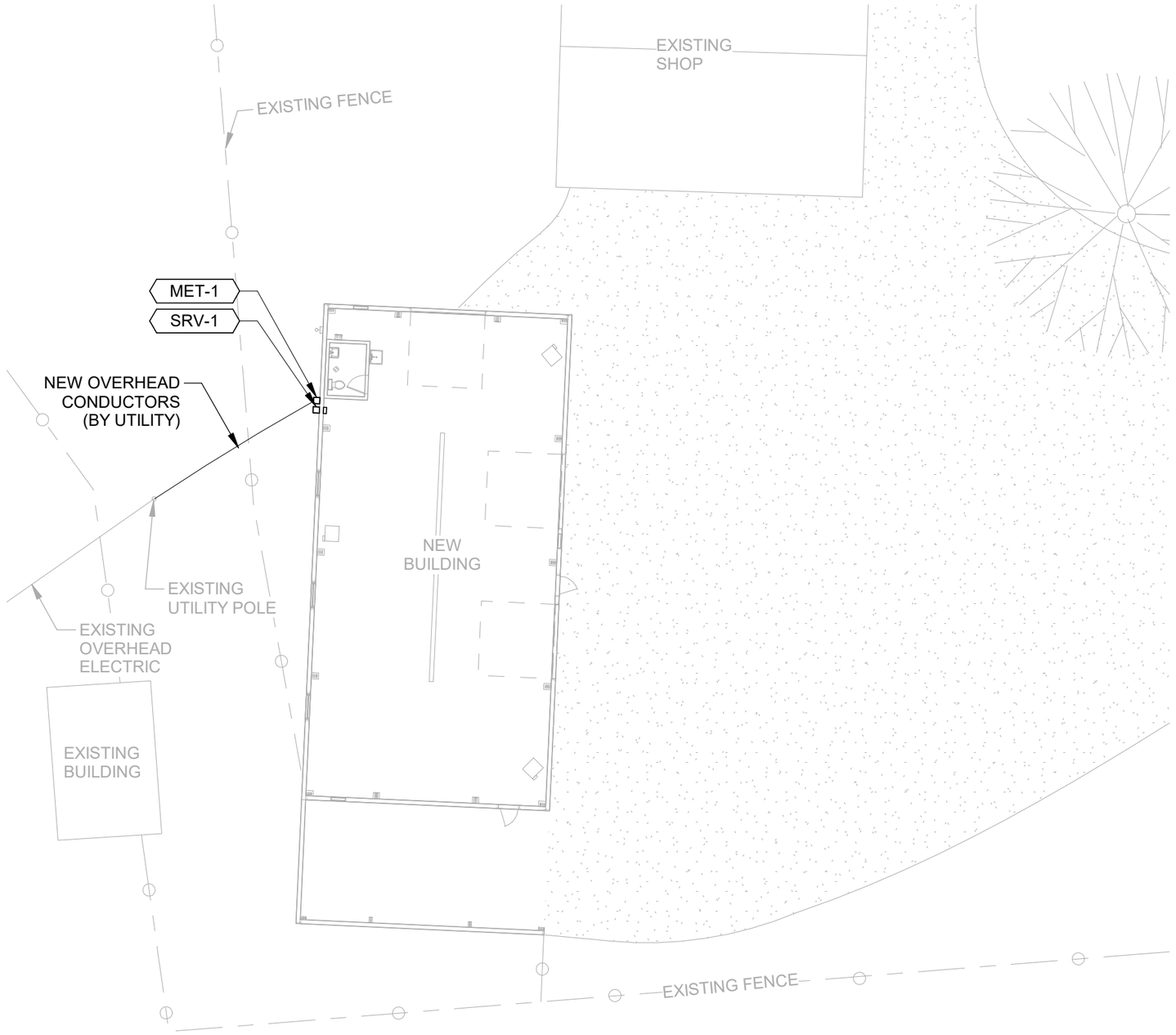

1 PROPOSED SITE PLAN

SCALE: 1" = 20'-0"

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ELECTRICAL SITE PLAN - PROPOSED

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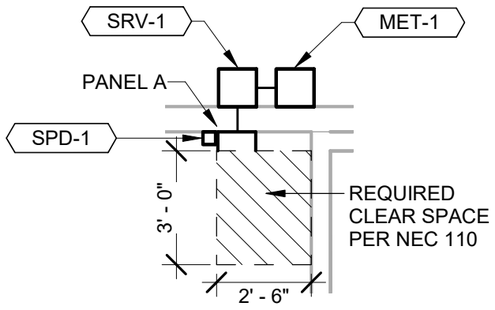


GENERAL PLAN NOTES

1	MOUNT ALL RECEPTACLES IN GARAGE AREAS AT 48" AFF.

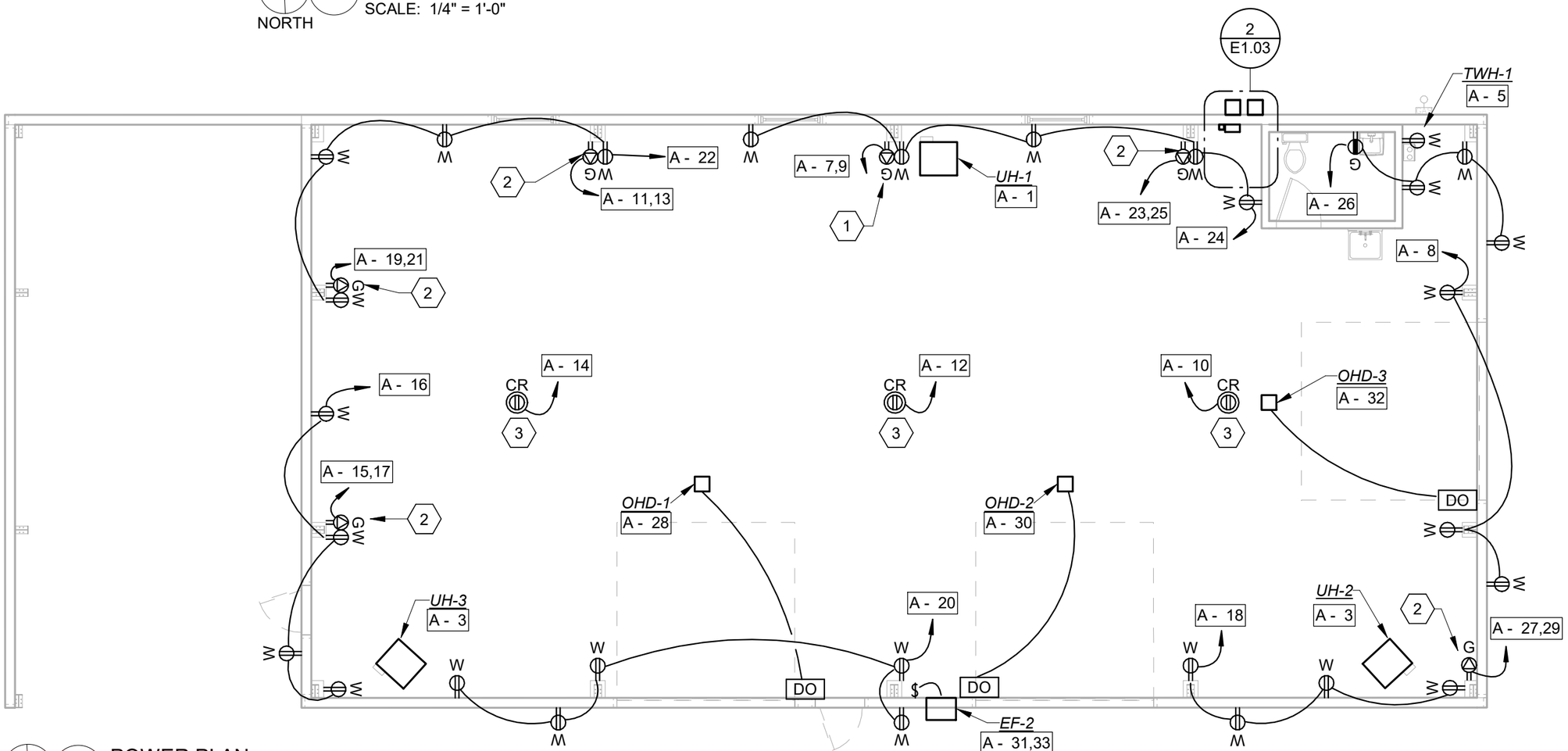
KEYNOTES

1	PROVIDE 50A, 240V RECEPTACLE. COORDINATE NEMA TYPE WITH OWNER'S EXISTING EQUIPMENT.
2	PROVIDE 30A, 240V RECEPTACLE. COORDINATE NEMA TYPE WITH OWNER'S EXISTING EQUIPMENT.
3	PROVIDE 120V, GFCI, 50 FOOT, HEAVY DUTY, NON-MOTORIZED DUPLEX RECEPTACLE CORD REELS MOUNTED TO STRUCTURE FOR GENERAL-USE LOADS. COORDINATE EXACT LOCATION PRIOR TO ROUGH-IN.

2 ENLARGED PLAN

NORTH

SCALE: 1/4" = 1'-0"



1 POWER PLAN

NORTH

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

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ELECTRICAL POWER PLAN

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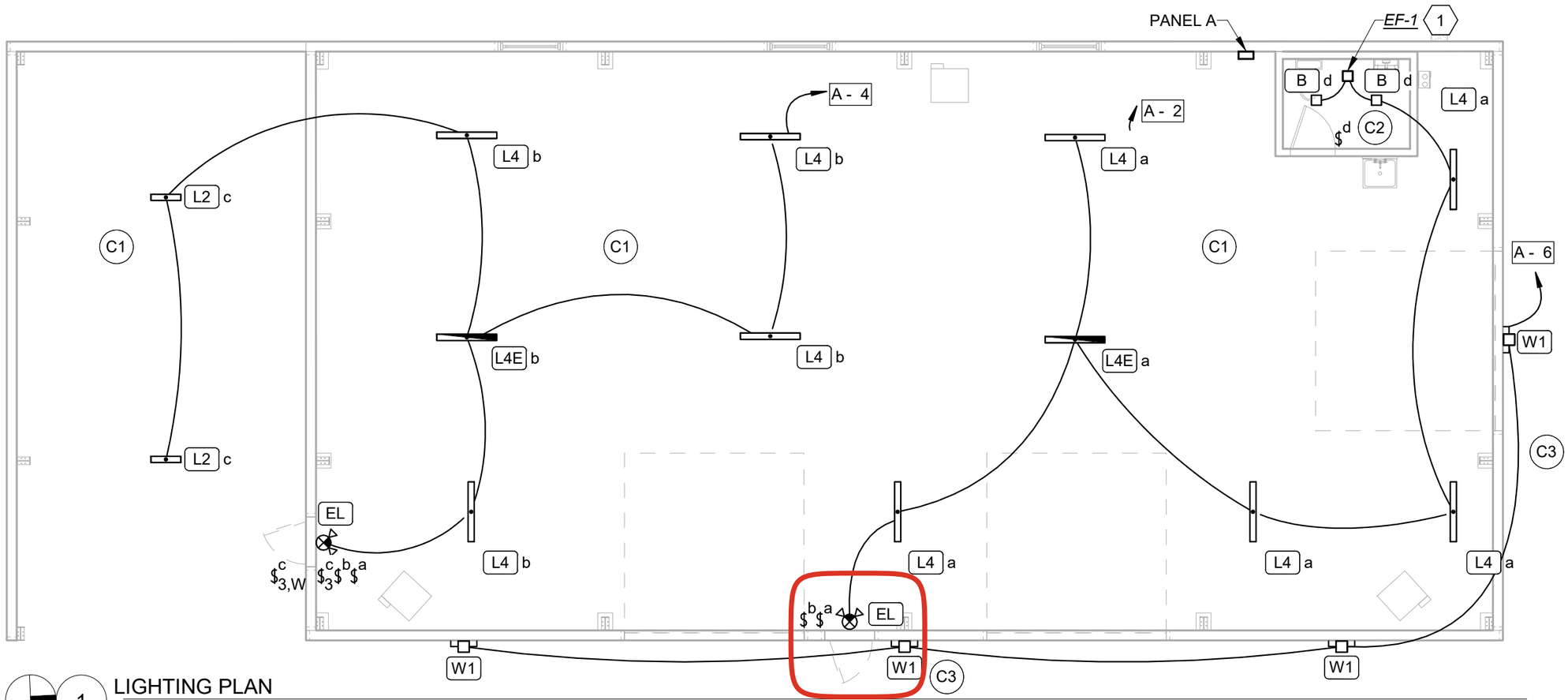
KEYNOTES	
1	COORDINATE LOCATION, POWER, AND WALL SWITCH FOR EXHAUST FAN.



1 LIGHTING PLAN
NORTH
SCALE: 1/8" = 1'-0"

DOOR, SWITCH AND EXIT SIGN LOCATIONS ACCORDING TO ARCHITECTURAL DRAWINGS (SHIFTED NORTH)

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ELECTRICAL LIGHTING PLAN

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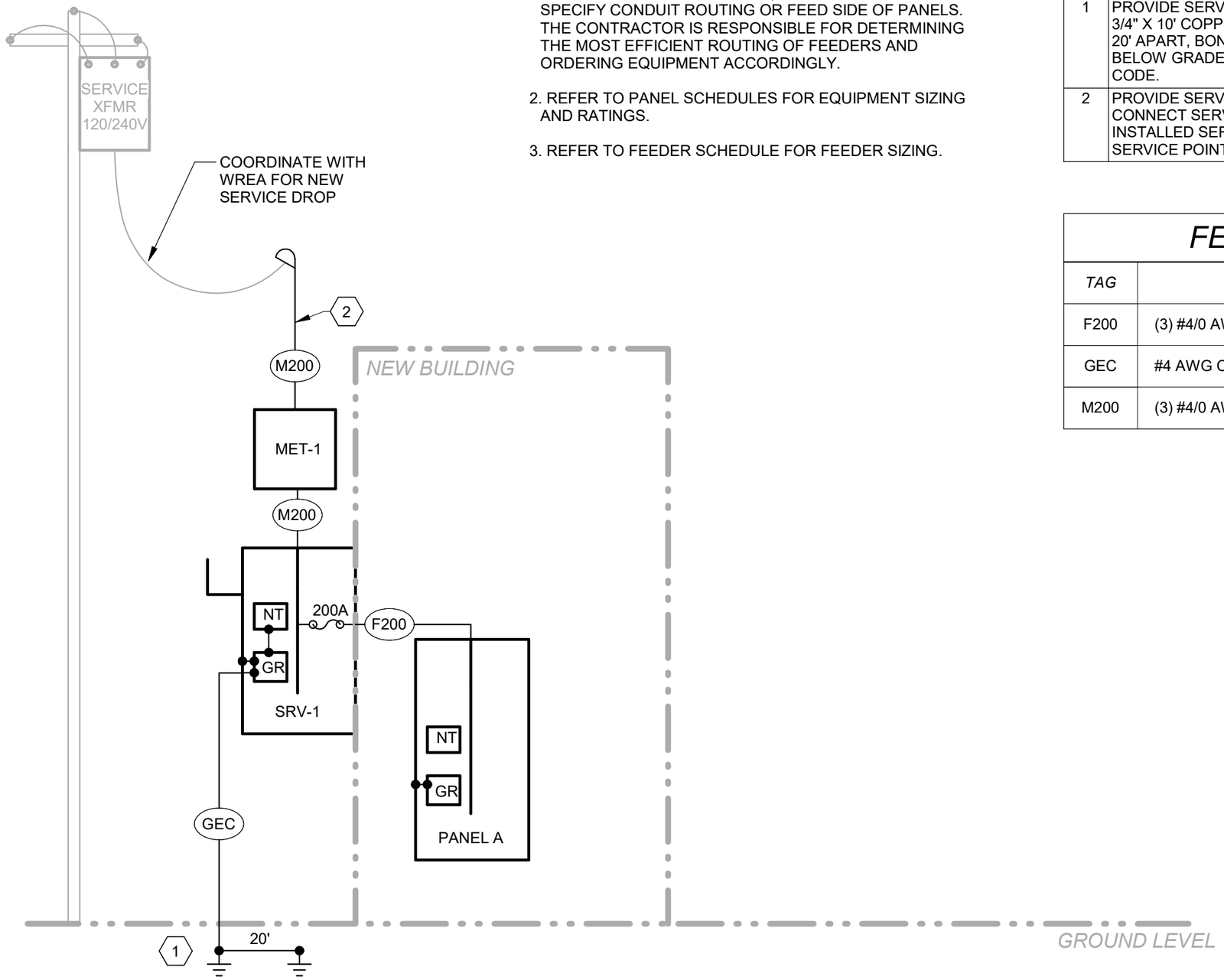

1 SHOP SINGLE LINE DIAGRAM

NO SCALE

SINGLE LINE DIAGRAM GENERAL NOTES:

1. THIS DIAGRAM IS SCHEMATIC, AND IS NOT INTENDED TO SPECIFY CONDUIT ROUTING OR FEED SIDE OF PANELS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE MOST EFFICIENT ROUTING OF FEEDERS AND ORDERING EQUIPMENT ACCORDINGLY.

2. REFER TO PANEL SCHEDULES FOR EQUIPMENT SIZING AND RATINGS.

3. REFER TO FEEDER SCHEDULE FOR FEEDER SIZING.

KEYNOTES

1	PROVIDE SERVICE GROUNDING ELECTRODE CONSISTING OF TWO 3/4" X 10' COPPER CLAD STEEL GROUND RODS SPACED AT LEAST 20' APART, BONDED TOGETHER, AND DRIVEN WITH TOPS AT 30" BELOW GRADE. BOND TO OTHER AVAILABLE ELECTRODES PER CODE.
2	PROVIDE SERVICE WEATHERHEAD. COORDINATE WITH WREA TO CONNECT SERVICE DROP CONDUCTORS TO CONTRACTOR INSTALLED SERVICE CONDUCTORS AT THE WEATHERHEAD SERVICE POINT.

FEEDER SCHEDULE

TAG	*FEEDER*
F200	(3) #4/0 AWG AL & #4 AWG AL EGC IN 2" EMT
GEC	#4 AWG CU (IN PVC CONDUIT WHERE EXPOSED)
M200	(3) #4/0 AWG AL IN 2" RMC

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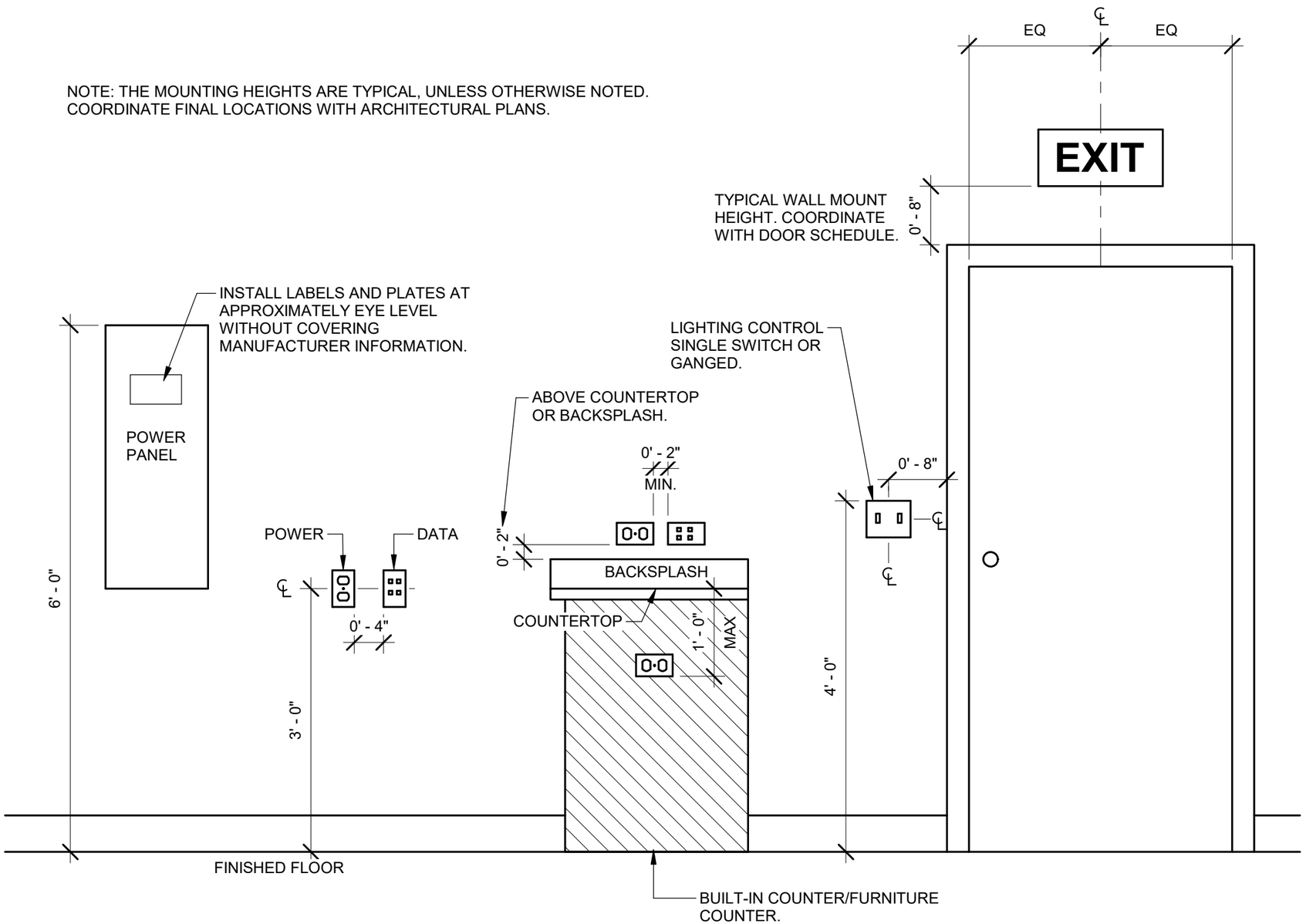
ELECTRICAL
SINGLE-LINE
DIAGRAM

E5.01

NOTE: THE MOUNTING HEIGHTS ARE TYPICAL, UNLESS OTHERWISE NOTED.
COORDINATE FINAL LOCATIONS WITH ARCHITECTURAL PLANS.



1 TYPICAL MOUNTING HEIGHT DIAGRAM

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ELECTRICAL DETAILS

E5.02

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1/8" TEXT
1/4" TEXT

SERVES
CH-1
FED FROM: PNL A

DISCONNECT SWITCH

3/8" TEXT
1/4" TEXT
1/8" TEXT

PANEL A
FED FROM: SRV-1
120/240V,1Ø,3W
10,000A SCCR
PHASE A: BLACK NEUTRAL: WHITE
PHASE B: RED GROUND: GREEN
PHASE C: BLUE

DISTRIBUTION PANEL

NOTE: INFORMATION PROVIDED AS AN EXAMPLE ONLY. UPDATE INFORMATION TO MATCH EQUIPMENT.

1 TYPICAL IDENTIFICATION PLATES
NO SCALE

1/8" TEXT
1/4" TEXT
1/8" TEXT

AVAILABLE FAULT CURRENT:
18,324 AMPS
DATE: JAN 01, 2022

AVAILABLE FAULT LABEL

NOTE: INFORMATION PROVIDED AS AN EXAMPLE ONLY. UPDATE INFORMATION TO MATCH EQUIPMENT.

2 TYPICAL IDENTIFICATION LABELS
NO SCALE

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ELECTRICAL DETAILS

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LUMINAIRE SCHEDULE

REMARKS:

1. Interior fixtures shall be 3500K, and 80 CRI minimum.
2. Exterior fixtures shall be 3000K, and 70 CRI minimum.

TAG	DESCRIPTION	ACCESSORIES	MOUNTING	MANUFACTURER	MODEL#	VOLTS	WATTS	LAMP	REMARKS
B	SURFACE MOUNT EDGE-LIT SQUARE		SURFACE	PRESCOLITE	LBSE-4SQD-35K8-WH	120	10 VA	LED	1
EL	EXIT SIGN WITH LIGHTS	BATTERY PACK	UNIVERSAL	COMPASS	CCRG	120	3 VA	LED	1
L2	2' LED STRIPLIGHT WITH DIFFUSING LENS, 2000 LUMEN, 30K, EXTRUDED ALUMINUM HOUSING		SURFACE	LUX DYNAMICS	BASE-2-830-U10-SM-WA-CFO2000-SM-3/10	120	20 VA	LED	2
L4	4' LED STRIPLIGHT WITH DIFFUSING LENS, 10000 LUMEN, EXTRUDED ALUMINUM HOUSING		SUSPENDED AT HEIGHT OF OVERHEAD DOOR TRACK	LUX DYNAMICS	BASE-4-835-U10-HM-WA-2P10-3/10	120	78 VA	LED	1
L4E	4' LED STRIPLIGHT WITH DIFFUSING LENS, 5500 LUMEN, EXTRUDED ALUMINUM HOUSING	BATTERY PACK	SUSPENDED AT HEIGHT OF OVERHEAD DOOR TRACK	LUX DYNAMICS	BASE-4-835-U10-HM-WA-EM10-2P10-3/10	120	78 VA	LED	1
W1	WALLPACK WITH GLARE REDUCTION LENS	PHOTOCELL, MOTION SENSOR	WALL, 14' 6" AFG	LEOTEK	ES1-24H-MV-WW-W-DB-350-PC-MSL3	120	29 VA	LED	2

LIGHTING CONTROL SCENARIO SCHEDULE

REMARKS:

1. Where occupancy sensing is required, contractor is responsible for determining the quantity, type, and exact locations of sensors for each space in order to achieve complete coverage of the space per the sensor manufacturer's recommendations. Any combination of switch height, high wall, or ceiling sensors may be used (subject to shop drawing approval in submittal stage). Ensure that sensors are located so that they are not triggered by occupants in adjacent spaces when doors are left open, or by airflow from HVAC systems.

2. Auto off by occupancy sensors shall be set at 15 minutes.
3. Coordinate dimming control devices with the dimming protocols required by the specified luminaires.

TAG	APPLIES TO	CONTROL BY	OCCUPANCY SENSING	MOTION COVERAGE	SWITCHING	MANUAL DIMMING	DAYLIGHT SENSING	ZONES	NOTES	REMARKS
C1	Electrical / Mechanical Rooms, Workshop	Local Devices	No	N/A	Manual switch for each zone at each entrance.	No	No	Multiple, Per Plan	Automatic shutoff not provided due to safety risk.	All
C2	Single Occupant Restrooms	Local Devices	Auto On / Auto Off	Major	Manual override at entrance.	No	No	Single		All
C3	Exterior Wallpacks	Local Devices	Auto On / Auto Off	Major	None	No	Yes	N/A	Control by fixture integral devices only. Auto on when motion sensed, auto off when daylight detected.	All

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ELECTRICAL LIGHTING SCHEDULES

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FAULT AND VOLTAGE DROP CALCULATIONS

FAULT POINT	DESCRIP.	SOURCE POINT	SOURCE Isc	PHASE	# PARALLEL SETS	WIRE SIZE	MATERIAL	L-L VOLTAGE	LENGTH *	VOLT. DROP - SEGMENT	VOLT. DROP - CUMULATIVE	AVAILABLE FAULT**
1	SERVICE	At the secondary of the utility transformer. (Assumes infinite bus with low %Z transformer, pending utility selection)										6100
2	Service Disc.	1	6100	1	1	4/0	AL	240	60	1.0%	1.0%	5092
3	Panel A	2	5092	1	1	4/0	AL	240	5	0.1%	1.1%	4993

* Length shown is an estimate for calculation purposes. Do not use this length for bidding. If field conditions require feeder to be more than 20% different from this length, notify engineer for direction before proceeding.
** Service available fault assumes a 25kVA, single phase utility transformer.

PANEL SCHEDULE: A

Enclosure: NEMA 3R **Volts:** 120/240 Single **A.I.C. Rating:** 10,000
Mounting: SURFACE **Phases:** 1 **Mains Type:** MLO
Notes: **Wires:** 3 **Mains Rating:** 200 A

CKT	Load	Trip	Pole	A		B		Pole	Trip	Load	CKT
1	UH-1	15	1	354	540			1	20	LTG - North	2
3	UH-2, UH-3	15	1			708	433	1	20	LTG - South	4
5	TWH-1	15	1	76	116			1	20	LTG - Exterior	6
7	REC - 240V, 50A, W2	50	2			4320	540	1	20	REC - Shop Northeast	8
9	--	--	--	4320	800			1	20	REC - Cable Reel 1	10
11	REC - 240V, 30A, W3	30	2			400	800	1	20	REC - Cable Reel 2	12
13	--	--	--	400	800			1	20	REC - Cable Reel 3	14
15	REC - 240V, 30A, S1	30	2			400	720	1	20	REC - Southeast	16
17	--	--	--	400	720			1	20	REC - Shop East 2	18
19	REC - 240V, 30A, S2	30	2			2880	900	1	20	REC - Shop East 1	20
21	--	--	--	2880	720			1	20	REC - Shop Southwest	22
23	REC - 240V, 30A, W1	30	2			400	900	1	20	REC - Shop West	24
25	--	--	--	400	720			1	20	REC - Shop Northwest	26
27	REC - 240V, 30A, N	30	2			400	1152	1	20	OHD-1	28
29	--	--	--	400	1152			1	20	OHD-2	30
31	EF-2	20	2			1200	1152	1	20	OHD-3	32
33	--	--	--	1200	0			1	20	Spare	34
35	Spare	20	2			0	0	1	20	Spare	36
37	--	--	--	0	0			1	20	Spare	38
39	SPD-1	20	2			0	0	1	20	Spare	40
41	--	--	--	0	0			1	20	Spare	42
	Total Load:			15995 VA		17305 VA					
	Total Amps:			133 A		144 A					

LEGEND: *[EX] = EXISTING [GFI] = GFCI BREAKER [AFI] = AFCI BREAKER*

Load Classification	Connected Load	Factor	Demand	Panel Totals	
Motor	3456 VA	100.00%	3456 VA		
Other	76 VA	100.00%	76 VA	**Conn. Load: :**	33300 VA
HVAC	3512 VA	100.00%	3512 VA	**Demand Load:**	34589 VA
Receptacle	10820 VA	96.21%	10410 VA	**Conn. Amps:**	139 A
Lighting	1036 VA	125.00%	1296 VA	**Demand Amps:**	144 A
Motor - Largest	5760 VA	125.00%	7200 VA		

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ELECTRICAL PANEL SCHEDULES

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ELECTRICAL EQUIPMENT SCHEDULE

REMARKS:
1. Ensure that WREA's metering requirements are met.
2. Mount near OCPD on panel. Minimize cable length.

TYPE	DESCRIPTION	AMPACITY	VOLTS	PHASE	ENCLOSURE	MOUNTING	REMARKS
MET-1	METER	200 A	240 V	1	NEMA 3R	SURFACE	1
SRV-1	SERVICE DISCONNECT - FUSED SWITCH	200 A	240 V	1	NEMA 3R	SURFACE	
SPD-1	SURGE PROTECTIVE DEVICE. 150V CLAMPING VOLTAGE. 36KA PEAK SURGE CURRENT. SQUARE D SDSA1175 OR EQUAL.	0 A	240 V	1	NEMA 1	PANEL SURFACE	2

ELECTRICAL CONNECTION SCHEDULE

REMARKS:
1. For equipment specification and detail, see drawing set indicated in "refer to" column.

TAG	DESCRIPTION	REFER TO	CB SIZE	CONDUCTORS / CONDUIT	DISCONNECT	VOLTS	PHASE	VA	REMARKS
EF-1	RR EXHAUST FAN	HVAC INSTALLER	20 A	(2) #12 AWG CU & #12 AWG CU GND IN 1/2" EMT	PROVIDE WALL SWITCH	120 V	1	50 VA	1
EF-2	LARGE EXHAUST FAN, ASSUMED 1.5 HP	HVAC INSTALLER	20 A	(2) #12 AWG CU & #12 AWG CU GND IN 1/2" EMT	PROVIDE TOGGLE SWITCH BELOW FAN	240 V	1	2400 VA	1
OHD-1	OVERHEAD DOOR	ARCHITECTURAL PLANS	20 A	(2) #12 AWG CU & #12 AWG CU GND IN 1/2" EMT	CB WITHIN SIGHT	120 V	1	1152 VA	1
OHD-2	OVERHEAD DOOR	ARCHITECTURAL PLANS	20 A	(2) #12 AWG CU & #12 AWG CU GND IN 1/2" EMT	CB WITHIN SIGHT	120 V	1	1152 VA	1
OHD-3	OVERHEAD DOOR	ARCHITECTURAL PLANS	20 A	(2) #12 AWG CU & #12 AWG CU GND IN 1/2" EMT	CB WITHIN SIGHT	120 V	1	1152 VA	1
TWH-1	TANKLESS WATER HEATER	PLUMBING INSTALLER	20 A	(2) #12 AWG CU & #12 AWG CU GND IN 1/2" EMT	PROVIDE GFCI RECEPTACLE	120 V	1	76 VA	1
UH-1	UNIT HEATER	ARCHITECTURAL PLANS	15 A	(2) #12 AWG CU & #12 AWG CU GND IN 1/2" EMT	CB WITHIN SIGHT	120 V	1	354 VA	1
UH-2	UNIT HEATER	ARCHITECTURAL PLANS	15 A	(2) #12 AWG CU & #12 AWG CU GND IN 1/2" EMT	CB WITHIN SIGHT	120 V	1	354 VA	1
UH-3	UNIT HEATER	ARCHITECTURAL PLANS	15 A	(2) #12 AWG CU & #12 AWG CU GND IN 1/2" EMT	CB WITHIN SIGHT	120 V	1	354 VA	1

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GENERAL NOTES

DEFINITIONS:

1. CONTRACTOR: THE ENTITY BINDED BY THE PRIME AGREEMENT WITH THE CLIENT TO PERFORM THE TASKS INDICATED IN THE CONTRACT DOCUMENTS. THE TERM CONTRACTOR INCLUDES AND IMPLIES ANY RELEVANT SUB-CONTRACTOR THAT MAY BE PERFORMING THE ACTUAL TASK UNDER THE CONTRACTOR'S DIRECTION.

2. CONTRACT DOCUMENTS: THE COMPLIMENTARY COLLECTION OF DRAWINGS AND SPECIFICATIONS, DIRECTED TO THE CONTRACTOR, UNDER THE PRIME AGREEMENT.

3. FURNISH: TO SUPPLY, DELIVER, UNLOAD, AND INSPECT FOR DAMAGE.

4. INSTALL: TO UNPACK, ASSEMBLE, ERECT, APPLY, PLACE, FINISH, CURE, PROTECT, CLEAN, START UP, AND MAKE READY FOR USE.

5. PROVIDE: TO FURNISH AND INSTALL.

6. SUPPLY: SAME AS FURNISH.

7. PRODUCT: MATERIAL, MACHINERY, COMPONENTS, EQUIPMENT, FIXTURES, AND SYSTEMS FORMING THE WORK RESULT. NOT MATERIALS OR EQUIPMENT USED FOR PREPARATION, FABRICATION, CONVEYING, OR ERECTION AND NOT INCORPORATED INTO THE WORK RESULT. PRODUCTS MAY BE NEW, NEVER BEFORE USED, OR RE-USED MATERIALS OR EQUIPMENT.

NATURE AND USE OF CONTRACT DOCUMENTS:

1. IF ANY DISCREPANCY IS FOUND WITHIN THE CONTRACT DOCUMENTS DURING CONSTRUCTION, SUBMIT AN RFI TO THE ENGINEER FOR DIRECTION BEFORE PROCEEDING. IF A DISCREPANCY IS FOUND DURING BIDDING, AND THE DESIGN TEAM DOES NOT PROVIDE A RESOLUTION BY THE FINAL ADDENDUM, BASE THE BID ON THE MORE COSTLY INTERPRETATION. FAILING TO DO SO WILL NOT BE CONSIDERED A VALID BASIS FOR CHANGE ORDERS DURING CONSTRUCTION.

2. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING COMPLETE CONTRACT DOCUMENTS TO ALL TRADES, AND FOR COORDINATING BETWEEN ALL TRADES TO ENSURE PROPER INSTALLATION OF COMPLETE AND FUNCTIONAL SYSTEMS AS SHOWN ON THE CONTRACT DOCUMENTS.

3. THE CONTRACTOR IS RESPONSIBLE FOR ALL SCOPES OF WORK, COMPLETENESS OF BIDS, AND PRICING EXERCISES. FURTHER, COORDINATION AND DIVISION OF SCOPE AMONGST SUB-CONTRACTORS IS THE RESPONSIBILITY OF THE CONTRACTOR.

4. DO NOT SCALE DRAWINGS FOR ROUGH-IN MEASUREMENTS OR USE AS SHOP DRAWINGS. WHERE DRAWINGS ARE REQUIRED FOR THESE PURPOSES OR HAVE TO BE MADE FROM FIELD MEASUREMENTS, TAKE THE NECESSARY MEASUREMENTS AND PREPARE THE DRAWINGS.

5. DRAWINGS ARE DIAGRAMATIC IN NATURE AND DO NOT SHOW EVERY SYSTEM OFFSET REQUIRED. COORDINATE WITH THE EXISTING AND NEW STRUCTURE, ELECTRICAL, PLUMBING, FIRE PROTECTION AND CEILING TO PROVIDE OFFSETS AS REQUIRED AND APPROPRIATE.

CODES, INSPECTIONS, AND PERMITS:

1. PERFORM ALL WORK IN ACCORDANCE WITH THE CODES, REGULATIONS, AND LOCAL AMENDMENTS, AS CURRENTLY ADOPTED BY THE AUTHORITY HAVING JURISDICTION (AHJ).

2. IF ANY DISCREPANCIES ARE FOUND BETWEEN CONTRACT DOCUMENTS AND ANY APPLICABLE CODE OR LEGAL REQUIREMENT, SUBMIT AN RFI TO ENGINEER FOR DIRECTION BEFORE PROCEEDING.

3. OBTAIN ALL PERMITS AND INSPECTIONS, AND PAY FOR ALL UTILITY METERS AND UTILITY CONNECTIONS, REQUIRED BY THE AHJ FOR PROJECT COMPLETION.

SUBMITTALS AND SUBSTITUTIONS:

1. MEET THE CRITERIA DESCRIBED HEREIN, PRIOR TO ENGINEER'S REVIEW OF THE SUBMITTAL.

2. CLEARLY INDICATE THE INTENDED PRODUCT TYPE, MODE, OPTIONS, ACCESSORIES (FACTORY AND FIELD INSTALLED), AND ANY OTHER OPTIONS OF ANY KIND.

3. INDICATE THE PLAN ISSUANCE AND DATE ON WHICH SUBMITTAL IS BASED.

4. IF PROPOSING A SUBSTITUTION IN PLACE OF THE BASIS OF DESIGN EQUIPMENT, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SPATIAL REQUIREMENTS, ACOUSTICAL, THERMAL, PHOTOMETRIC, AND ELECTRICAL PERFORMANCE CHARACTERISTICS, AND COORDINATION OF ALL INSTALLATION REQUIREMENTS. REVIEW AND APPROVAL BY THE DESIGN TEAM DOES NOT ALTER OR MITIGATE THIS RESPONSIBILITY. CLEARLY MARK SUBSTITUTIONS AS SUCH.

5. DESCRIBE ANY IMPACT TO OTHER DIVISIONS CREATED BY A PRODUCT SUBSTITUTION ON THE SUBSTITUTION REQUEST FOR CONSIDERATION BY THE DESIGN TEAM. PROVIDE AN ESTIMATE OF ASSOCIATED COST IMPACT TO OTHER DIVISIONS WHERE APPLICABLE.

6. RE-SUBMITTALS MUST CONTAIN MARKUPS THAT CLEARLY DELINEATE THE CHANGED ITEMS. ENGINEER WILL NOT RE-REVIEW THE ENTIRE SUBMITTAL PACKAGE IN ORDER TO FIND THE CHANGES.

7. ALL DATA REQUIRED FOR REVIEW MUST BE CONTAINED IN THE FILES PROVIDED TO THE ENGINEER. LINKS TO MANUFACTURER'S WEBSITES WILL NOT BE ACCEPTED.

STRUCTURAL MODIFICATIONS:

1. DO NOT DRILL, NOTCH, CUT, OR ALTER STRUCTURAL MEMBERS IN ANY MANNER EXCEPT AS PERMITTED BY THE MATERIAL SPECIFIC SECTIONS OF THE BUILDING CODE, MANUFACTURER'S GUIDELINES FOR ENGINEERED PRODUCTS, OR THE RECOMMENDATION OF THE STRUCTURAL ENGINEER OF RECORD.

ACCESS AND CLEARANCES:

1. MAINTAIN ALL SERVICE AND ACCESS CLEARANCES REQUIRED BY CODE OR MANUFACTURER FOR ALL EQUIPMENT.

2. PROVIDE ACCESS FOR ALL EQUIPMENT, ETC. LOCATED ABOVE NON-ACCESSIBLE CEILINGS OR IN CONCEALED AREAS. PROVIDE SUFFICIENT ACCESS FOR SERVICING AND MAINTENANCE.

PROJECT CLOSEOUT REQUIREMENTS:

1. COMPLETE ALL REQUIRED AHJ INSPECTIONS. MAKE COPIES OF PERMITS AND ISPECTION REPORTS AVAILABLE.

2. PROVIDE A COMPLETE SET OF AS-BUILT PLANS AT THE COMPLETION OF THE PROJECT WITH ALL CHANGES NOTED.

3. CONDUCT A TRAINING SESSION FOR OWNER'S DESIGNATED STAFF FOR ALL CONTROLS SYSTEMS AND MAJOR EQUIPMENT. PRODUCE A SIGN IN SHEET FOR THIS SESSION SHOWING ATTENDEES, DATE, LIST OF EQUIPMENT AND SYSTEMS COVERED.

4. CLEAN JOB SITE OF ALL CONSTRUCTION DEBRIS, REPAIR ALL DAMAGED FINISHES. REMOVE ALL EXISTING EQUIPMENT LABELS THAT ARE NO LONGER ACCURATE, AND INSTALL NEW LABELING FOR NEW EQUIPMENT AND SYSTEMS.

5. DELIVER EQUIPMENT MANUALS AND ANY REQUIRED SPARE PARTS TO OWNER.

WARRANTY:

1. UNCONDITIONALLY GUARANTEE ALL LABOR AND MATERIAL ON ALL WORK AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR, FOLLOWING FINAL ACCEPTANCE.

COLORADO LICENSED
AMBER HAYNES
51258
PROFESSIONAL ENGINEER

01/23/2023

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118 West Sixth Street, Suite 200
Glenwood Springs, CO 81601
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Oak Ridge SWA - 2021-22
Bel Aire Shop
42421 CR-17
Meeker, CO 81641

Status: Construction Documents
Print Date: 01/23/2023
Engineer: PB
Drawn By: PB
Quality Control: AH
SGM Project No. 2021-271-003

Sheet Revisions

Rev.	Date	Comments	Init.

ELECTRICAL SPECIFICATIONS

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ELECTRICAL SPECIFICATIONS

SCOPE AND PERFORMANCE OF WORK:

1. COORDINATE ALL LINE VOLTAGE WIRING AND CONDUIT SYTEMS REQUIRED BY ALL DIVISIONS AND ENSURE THAT THEY ARE CAPTURED IN THE ELECTRICAL SUBCONTRACTOR'S SCOPE OF WORK. EVERY ATTEMPT WILL BE MADE TO REFLECT THESE REQUIREMENTS ON THE ELECTRICAL SHEETS, BUT ENSURE THAT THE ELECTRICAL SUBCONTRACTOR RECIEVES A COMPLETE DRAWING SET, AND UNDERSTANDS THE COMPLETE PROJECT SCOPE.

2. PROVIDE TEMPORARY CONSTRUCTION POWER AS REQUIRED BY THE GENERAL CONTRACTOR.

3. WHEN INSTALLING OR MODIFYING SERVICE OR METERING EQUIPMENT, COORDINATE WITH UTILITY COMPANY TO ENSURE THAT THEIR CURRENT STANDARDS ARE MET. IF ANY DISCREPANCY IS FOUND BETWEEN UTILITY STANDARDS AND CONTRACT DOCUMENTS, SUBMIT RFI TO ENGINEER FOR DIRECTION.

4. PROVIDE COMPLETE AND FUNCTIONAL ELECTRICAL AND LIGHTING SYSTEMS. INCLUDE ALL REQUIRED LABOR AND MATERIALS, REGARDLESS OF WHETHER SUCH MTERIALS ARE SPECIFICALLY CALLED OUT ON THE DRAWINGS, UNLESS THE DRAWINGS EXPLICITLY DESIGNATE CERTAIN ITEMS AS BEING PROVIDED BY OTHERS.

5. ELECTRICAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER, AS DEFINED BY THE NECA 1 STANDARD.

6. COORDINATE WITH OTHER TRADES FOR CUTTING, PATCHING, DRILLING, ROOF FLASHING, OR OTHER PENETRATION REQUIREMENTS CREATED BY ELECTRICAL WORK.

7. OBTAIN AND FOLLOW MANUFACTURER'S WIRING DIAGRAMS.

ELECTRICAL COMMISSIONING:

1. PERFORM FUNCTIONAL PERFORMANCE TESTING ON ALL INSTALLED SYSTEMS AS REQUIRED TO VERIFY INTENDED OPERATION.

EXISTING CONDITIONS AND DEMOLITION:

1. WHERE ITEMS TO BE DISPOSED OF CONTAIN HAZARDOUS MATERIALS (SUCH AS FLUORESCENT TUBES AND BALLASTS WITHOUT "NO PCB" LABELS), DISPOSE OF SUCH MATERIALS IN A LEGAL AND RESPONSIBLE MANNER. HANDLE AND TRANSPORT BULBS CAREFULLY SO THAT THEY ARE NOT CRUSHED.

EXACT LOCATIONS:

1. ELECTRICAL PLANS ARE DIAGRAMATIC EXCEPT WHERE SPECIFIC DIMENSIONAL REQUIREMENTS ARE CALLED OUT ON PLAN. COORDINATE EXACT PLACEMENT OF EQUIPMENT AND ROUTING OF CONDUIT.

2. VERIFY FINAL LOCATIONS OF ALL SINKS PRIOR TO ROUGH-IN OF NEARBY ELECTRICAL DEVICES.

3. COORDINATE THE EXACT LOCATIONS OF EQUIPMENT PRIOR TO ROUGH IN OF ELECTRICAL CONNECTIONS.

4. IF DISCREPANCIES ARE FOUND IN EQUIPMENT LOCATIONS BETWEEN ARCHITECTURAL AND ELECTRICAL PLANS, SUBMIT RFI FOR DIRECTION BEFORE PROCEEDING.

RACEWAY AND CONDUCTORS:

1. ALL CONDUIT SIZES SHOWN ON DRAWINGS ARE MINIMUMS.

2. FLEXIBLE METALLIC CABLE (MC) IS ACCEPTABLE ONLY IN CONCEALED OR UNFINISHED LOCATIONS, AND ONLY FOR CIRCUITS 20 AMPS OR LESS. MC RUNS SHALL BE NEATLY GROUPED, SECURED, AND ROUTED PARALLEL TO BUILDING LINES WHEREVER PRACTICAL.

3. FLEXIBLE NONMETALLIC CABLE (AKA "ROMEX") IS NOT ACCEPTABLE.

4. USE ONLY CONDUIT SUPPORT DEVICES RATED FOR THE SPECIFIC APPLICATION. VERIFY THE ADEQUACY OF ALL CUSTOM SUPPORT STRUCTURES FOR CONDUIT. DESIGN CUSTOM SUPPORT STRUCTURES TO SUPPORT 125% OF THE ACTUAL WEIGHT OF THE STRUCTURE AND ITS CONTENTS.

BRANCH CIRCUITS AND DEVICES:

1. PROVIDE DEDICATED NEUTRAL CONDUCTORS FOR ALL CIRCUITS, OF SAME SIZE AS PHASE CONDUCTOR(S). SHARED NEUTRALS ARE NOT ACCEPTABLE.

2. DETERMINE THE MOST EFFICIENT GROUPING OF HOME RUNS IN THE FIELD, AND COMPLY WITH RESULTING CONDUIT FILL AND WIRE DERATING REQUIREMENTS.

3. GFCI OUTLETS SHALL INCLUDE INDICTOR LIGHTS THAT ILLUMINATE WHEN TRIPPED.

4. WHERE WEATHERPROOF DEVICE COVERS ARE REQUIRED, USE ONLY HEAVY DUTY, WHILE-IN-USE TYPE.

5. MOUNT ALL OUTDOOR RECEPTACLES WITH BOTTOM OF ENCLOSURE AT LEAST 16" ABOVE FINISHED GRADE.

GROUNDING AND BONDING:

1. INSTALL WIRE-TYPE EQUIPMENT GROUNDING CONDUCTORS WITH ALL FEEDERS AND ALL BRANCH CIRCUITS. CONDUIT IS NOT AN ACCEPTABLE EQUIPMENT GROUNDING MEANS UNLESS EXPLICITLY ALLOWED IN CONSTRUCTION DRAWINGS FOR A PARTICULAR LOCATION.

2. FOR ALL GROUNDING AND BONDING CONNECTIONS, USE ONLY PRODUCTS UL LISTED FOR THE SPECIFIC APPLICATION, MATERIALS, AND ENVIRONMENT INVOLVED.

3. BOND SERVICE ENTRANCE GROUNDING ELECTRODE SYSTEMS TO AVAILABLE METALLIC PIPE, EXPOSED METAL STRUCTURE, REBAR, ETC AS REQUIRED BY THE NEC.

IDENTIFICATION:

1. PROVIDE NEW TYPED SCHEDULES FOR ALL PANELS AFFECTED.

2. PROVIDE PERMANENT, ENGRAVED PLASTIC NAMEPLATES FOR ALL DISTRIBUTION EQUIPMENT REFLECTING THE NAMES SHOWN ON THE CONSTRUCTION DOCUMENTS.

3. PROVIDE ADHESIVE PRINTED PLASTIC LABELS FOR ALL RECPTACLES, JUNCTION BOXES, AND DISCONNECT SWITCHES SHOWING PANEL AND CIRCUIT NUMBER (AND EQUIPMENT TAG IF APPLICABLE).

4. INSTALL WARNING TAPE WITH ALL UNDERGROUND CONDUIT AND CABLE, AT 12" BELOW GRADE.

5. COLOR CODE ALL POWER CONDUCTORS USING FACTORY APPLIED COLORS. FOR 120/208 AND 240 SYSTEMS, USE BLACK/RED/BLUE FOR PHASES A/B/C. FOR 277/480 SYSTEMS, USE BROWN/ORANGE/YELLOW FOR PHASES A/B/C. FOR GROUNDED (NEUTRAL) CONDUCTORS USE WHITE OR GRAY. FOR GROUNDING CONDUCTORS USE GREEN. FOR ISOLATED GROUNDING CONDUCTORS USE GREEN WITH WHITE STRIPE.

6. USE ONLY PERMANENT LABELING METHODS. PENCIL, MASKING TAPE, OR PAPER TAPED TO SURFACES ARE NOT ACCEPTABLE. HAND WRITTEN LABELS ARE ONLY ACCEPTABLE FOR CONDUIT AND JUNCTION BOXES IN UNFINISHED AREAS, AND MUST BE PRINTED IN A NEAT AND LEGIBLE MANNER USING INK.

7. IN LOCATIONS EXPOSED TO SUNLIGHT, MOISTURE, OR CORROSIVE GASES, USE ONLY LABELING PRODUCTS RATED FOR THAT ENVIRONMENT AND GUARANTEED NOT TO FADE, DEGARADE, OR DETATCH.

8. PROVIDE ALL REQUIRED SAFETY PLACARDS CONFORMING TO NEC STANDARDS.

ELECTRICAL SUBMITTAL REQUIREMENTS:

1. VERIFY THAT THE SUBMITTED DISTRIBUTION EQUIPMENT WILL ACCEPT THE SPECIFIED CONDUCTOR SIZES.

LIGHTING CONTROL SUBMITTALS MUST INCLUDE ONE LINE DIAGRAMS OF ANY CENTRAL CONTROL SYSTEMS, SHOP DRAWINGS SHOWING SPECIFIC DEVICE LOCATIONS ON A BUILDING FLOORPLAN, DEVICE CUTSHEETS AND MODEL NUMBERS, AND WIRING DIAGRAMS FOR EACH CONTROL SCENARIO LISTED ON THE CONTRACT DOCUMENTS.

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01/23/2023

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Oak Ridge SWA - 2021-22
Bel Aire Shop
42421 CR-17
Meeker, CO 81641

Status: Construction Documents
Print Date: 01/23/2023
Engineer: PB
Drawn By: PB
Quality Control: AH
SGM Project No. 2021-271-003

Sheet Revisions

Rev.	Date	Comments	Init.

ELECTRICAL SPECIFICATIONS

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COLORADO
Parks and Wildlife
Department of Natural Resources

Oak Ridge SWA - Bel Aire Shop Replacement
APPENDICES

PROJECT I.D. NO.: **C26NW1**
IFB1: **2026*129**

PRE-BID CONFERENCE: **February 25, 2026 at 11:00am**

BID OPENING: **March 11, 2026 at 1:00pm**

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C26NW1

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APPENDIX A – GEOTECHNICAL INVESTIGATION REPORT

Oak Ridge SWA - Bel Aire Shop Replacement
C26NW1

NorthWest Colorado Consultants, Inc.
Geotechnical / Environmental Engineering • Materials Testing

December 30, 2020

Colorado Parks and Wildlife
Northwest Region Capital Projects Office
P.O. Box 700
Clifton, CO 81520

Attn: Mike Havens, P.E.

Job Number: 20-12025

Subject: Subsoil and Foundation Investigation, Proposed Bel Aire Shop Building, 42421 County Road 17, Rio Blanco County, Colorado.

Mike,

This report presents the results of a Subsoil and Foundation Investigation for the proposed Bel Aire Shop Building to be constructed at 42421 County Road 17 in Rio Blanco County, Colorado. The approximate location of the project site is shown in Figure #1.

NWCC, Inc. (NWCC) scope of our work included obtaining data from cursory observations made at the site, the logging of one test pit, sampling of the probable foundation soils and laboratory testing of the samples obtained. This report presents recommendations for economically feasible and safe type foundations, as well as allowable soil pressures and other design and construction considerations that are advisable, but not necessarily routine to quality design and building practices.

Proposed Construction: NWCC understands, based on conversations with you, that the existing shop building will be demolished and a new shop building will be constructed at the site. NWCC understands the shop building will consist of 60 feet by 40 feet metal structure. NWCC has assumed the shop will be constructed with a concrete slab-on-grade floor system placed near or above the existing ground surface.

For design purposes, we have assumed that the building loads will be light to moderate typical of this type of construction. If loadings or conditions are significantly different from those above, NWCC should be notified to reevaluate the recommendations in this report.

Site Conditions: The Bel Aire Complex is situated northwest of County Road 17 in Rio Blanco County, Colorado. The existing shop building is located at the west end of an existing gravel driveway. Several other structures are situated to the south and northeast of the existing shop building. The surrounding vegetation consists of grasses. The White River flows from east to west to the north of the building site.

Topography at the building site is relatively flat. The building site generally slopes gently down to the northwest on the order of 1 to 2 percent. It appears that an elevation difference of less than 1 foot exists across the proposed building site.

Subsurface Conditions: To investigate the subsurface conditions at the site, one test pit was advanced on November 5, 2020 with a backhoe provided by the client. The test pit location is shown in Figure #2.

The subsurface conditions encountered were variable and generally consisted of a layer of topsoil and organic fill materials overlying sand and gravel fill materials and natural sands and gravels that extended to the maximum depth investigated, 5½ feet below the existing ground surface (bgs). A graphic log of the exploratory test pit, along with the associated Legend and Notes, are presented in Figure #3.

A layer of topsoil and organic fill materials was encountered at the ground surface and was 3 to 6 inches in thickness. Sand and gravel fill materials were encountered below the topsoil and organic materials and extended to a depth of 2½ feet bgs. The sand and gravel fill materials were clayey, fine to coarse grained, very low to non-plastic, loose to medium dense, moist and brown in color.

Natural sands and gravels were encountered below the fill materials and extended to the maximum depth investigated. The sands and gravels were silty to slightly clayey, fine to coarse grained with cobbles, non-plastic, dense, moist to very moist and brown to gray in color. A sample of the natural sands and gravels classified as a GP soil in accordance with the Unified Soil Classification System (USCS).

Based on anticipated geologic conditions, NWCC recommends a **Soil Site Class C** designation be used in the structural design calculations in accordance with Table 20.3-1 in Chapter 20 of ASCE 7.

Groundwater seepage was encountered at a depth of 5 feet bgs in the test pit at the time of excavation. It should be noted that the groundwater conditions at the site can be expected to fluctuate with changes in precipitation and runoff and flows in the White River.

Foundation Recommendations: Based on the soils encountered in the test pit, the results of the field and laboratory investigations and the proposed construction, NWCC believes an economically feasible type of foundation system for proposed residence is spread footings or individual pads with grade beams founded on the natural sands and gravels, or on properly compacted structural fill materials placed over the natural sands and gravels.

1) Footings placed on the natural sands and gravels or properly compacted structural fill materials placed over the natural sands and gravels should be designed using an allowable soil bearing pressure of 3,000 psf. A minimum dead load is not required for footing placed on the natural sands and gravels or structural fill materials placed over the natural sands and gravels.

2) Footings or pad sizes should be computed using the above soil pressures and placed on the natural undisturbed sands and gravels found below the existing fill materials or on properly compacted structural fill materials placed over the natural sands and gravels.

3) Any existing fill materials, topsoil and organic materials, silts, loose or soft natural soils encountered within the foundation excavations, should be removed and the excavations extended to competent natural sands and gravels prior to structural fill or concrete placement. Any fill materials placed beneath the footings should be a non-expansive granular soil approved by this office. Fill materials placed under the footings should be uniformly placed in 6 to 8 inch loose lifts and compacted to at least 100% of the maximum standard Proctor density and within 2% of the optimum moisture content determined in accordance with ASTM D-698. If clean gravels are used as structural fill, they should be compacted to at least 80% of the maximum relative density determined in accordance with ASTM D-4253/4254. Structural fill materials should extend out from the edge of the footings on a 1(horizontal) to 1(vertical) or flatter slope.

4) Foundation walls should be designed and reinforced to span an unsupported distance of 10 feet or the length between pads, whichever is greater.

5) Footings or pads should be placed well enough below final backfill grades to protect them from frost heave. Forty-eight (48) inches is typical for this location considering normal snow cover and other winter factors.

6) Based on experience, NWCC estimates total settlement for footings and pads designed and constructed as discussed in this section will be approximately 1 inch. Additional bearing capacity values along with the associated settlements are presented in Figure #4.

7) NWCC recommends the client retain our firm to observe the foundation excavations when they are near completion to identify the bearing soils and confirm the recommendations in this report, as well as test the structural fill materials for compaction.

Floor Slabs: The natural sands and gravels, exclusive of the existing fill materials and any topsoil and organic materials or natural silts, are capable of supporting lightly to moderately loaded slab-on-grade construction. The floor slabs should be provided with control joints placed a maximum of 10 to 12 feet on center in each direction, depending on slab configuration, to help control shrinkage cracking. The location of the joints should be carefully checked to assure that the natural, unavoidable cracking will be controlled. The depth of the control joints should be a minimum of ¼ the thickness of the slab.

Any fill materials placed beneath the floor slabs should be a non-expansive granular soil approved by NWCC prior to placement. The fill should be placed in 6 to 8 inch loose lifts and be compacted to at least 95% of the maximum standard Proctor density and within 2% of the optimum moisture content. The on-site sands and gravels should be suitable for use as fill materials beneath the floor slabs after any cobbles and boulders are removed and they are properly moisture conditioned. We recommend that all of the

existing topsoil and organic materials and any natural silts, encountered be removed from underneath the floor slabs prior to concrete or fill placement.

Perimeter Drainage System: To enhance site drainage and improve foundation and interior slab-on-grade performance, NWCC recommends a perimeter drainage system be installed around the building perimeter. Localized perched water or runoff can infiltrate the structure at the foundation level. This water can be one of the primary causes of differential foundation and slab movement.

The drainage system should be located around the entire building perimeter and be placed and at least 12 inches below interior slab or crawl space grades and a minimum of 24 inches below final grades to provide frost protection. Ideally, the drainage system should be centered along roof drip-line locations. In locations where roof drip-lines are not present, the drainage system may be located within 24 inches of foundation walls. Drains should be insulated using 2-inches of rigid polystyrene insulation board in locations higher than 42 inches below final grade to provide protection against freezing.

Perimeter drainage system piping should he constructed using perforated PVC pipe that meets or exceeds ASTM D-3034/SDR 35 requirements to provide satisfactory long-term function and rapid runoff of water. The holes in the drainpipes should be oriented down between 4 o'clock and 8 o'clock to promote rapid runoff of the water. The drainpipes should be covered with at least 12 inches of free draining gravel and be protected from contamination by a geotextile filter fabric covering of Mirafi 140N subsurface drainage fabric or an equivalent product. The drainpipes should have a minimum slope of 1 percent and be daylighted at positive outfalls that are protected from freezing. If the drainpipes cannot be daylighted, the drains should be led to sumps where the water can be pumped. Multiple daylights or sumps are recommended for the proposed structures. A typical perimeter/underdrain detail is shown in Figure #5.

Caution should be taken when backfilling so as not to damage or disturb the installed drains. NWCC recommends the drainage piping include cleanouts provided at minimum 100-foot intervals, be protected against intrusion by animals at the outfalls and be tested prior to backfilling. NWCC should be retained to provide periodic observations of underdrain construction to verify installation has been accomplished in general accordance with these recommendations. Flow testing of the system is recommended.

Foundation Walls and Retaining Structures: Foundation walls and retaining structures, which are laterally supported and can be expected to undergo only a moderate amount of deflection, may be designed for a lateral earth pressure computed on the basis of an equivalent fluid unit weight of 45 pcf for imported, free draining granular backfill and 50 pcf for the on-site sands and gravels.

Cantilevered retaining structures on the site can be expected to deflect sufficiently to mobilize the full active earth pressure condition. Therefore, cantilevered structures may be designed for a lateral earth pressure computed on the basis of an equivalent fluid unit weight of 35 pcf for imported free draining granular backfill and 50 pcf for the on-site sands and gravels.

Foundation walls and retaining structures should be designed for appropriate hydrostatic and surcharge pressures such as adjacent buildings, traffic and construction materials. An upward sloping backfill and/or natural slope will also significantly increase the earth pressures on foundation walls and retaining structures

and the structural engineer should carefully evaluate these additional lateral loads when designing the foundation and retaining walls.

The lateral resistance of retaining wall foundations placed on undisturbed natural soils at the site will be a combination of the sliding resistance of the footings on the foundation materials aud the passive pressure against the sides of the footings. Sliding friction can be taken as 0.4 times the vertical dead load. Passive pressure against the sides of the footing can be calculated using an equivalent fluid pressure of 250 pcf. The fill placed against the sides of the footings to resist lateral loads should be compacted to at least 100% of the maximum standard Proctor density and near the optimum moisture content.

NWCC recommends imported granular soils for backfilling foundation walls and retaining structures because their use results in lower lateral earth pressures. Imported granular materials should be placed to within 2 to 3 feet of the ground surface, be free draining and have less than 5 percent passing the No. 200 sieve. Granular soils behind foundation and retaining walls should be sloped from the base of the wall at an angle of at least 45 degrees from the vertical. Upper 2 to 3 feet of fill should be a relatively impervious soil or pavement structure to prevent surface water infiltration into the backfill.

Wall backfill should be carefully placed in uniform lifts and compacted to at least 95 percent of the maximum standard Proctor density and near the optimum moisture content. Care should be taken not to overcompact the backfill since this could cause excessive lateral pressure on the walls. Some settlement of deep foundation wall backfill materials will occur even if the material is placed correctly.

Surface Drainage: Proper surface drainage at this site is of paramount importance for minimizing the infiltration of surface drainage into the wall backfill and bearing soils, which could result in increased wall pressures, differential foundation and slab movement. The following drainage precautions should be observed during construction and at all times after the structures have been completed:

1) Ground surface surrounding the structures should be sloped (minimum of 1.0 inch per foot) to drain away from the structures in all directions to a minimum of 10 feet. Ponding must be avoided. If necessary, raising the top of foundation walls to achieve a better surface grade is advisable.

2) Non-structural backfill placed around the structures should be compacted to at least 95% of the maximum standard Proctor density at or near the optimum moisture content in order to minimize future settlement of the fill. The backfill should be placed immediately after the braced foundation walls are able to structurally support the fill. Puddling or sluicing must be avoided.

3) Top 2 to 3 feet of soil placed within 10 feet of the foundations should be impervious in nature to minimize infiltration of surface water into the wall backfill.

4) Roof downspouts aud drains should discharge well beyond the limits of all backfill. Roof overhangs, which project two to three feet beyond the foundations, should be considered if gutters are not used.

5) Landscaping, which requires excessive watering and lawn sprinkler heads, should be located a minimum of 10 feet from the foundation walls of the structures.

6) Plastic membranes should not be used to cover the ground surface adjacent to foundation walls.

Limitations: The recommendations provided in this report are based on the soils encountered at this site and NWCC's understanding of the proposed construction. We believe that this information gives a high degree of reliability for anticipating the behavior of the proposed structures; however, our recommendations are professional opinions and cannot control nature, nor can they assure the soils profiles beneath those or adjacent to those observed. No warranties expressed or implied are given on the content of this report.

This report is based on the investigation at the described site and on the specific anticipated construction as stated herein. If either of these conditions is changed, the results would also most likely change. Therefore, NWCC strongly recommends that our firm be contacted prior to finalizing the construction plans so that we can verify that our recommendations are being properly incorporated into the construction plans. Man-made or natural changes in the conditions of a property can also occur over a period of time. In addition, changes in requirements due to state of the art knowledge and/or legislation do from time to time occur. As a result, the findings of this report may become invalid due to these changes. Therefore, this report is subject to review and not considered valid after a period of 3 years or if conditions as stated above are altered.

It is the responsibility of the owner or their representative to insure the information in this report is incorporated into the plans and/or specifications and construction of the project. It is advisable that a contractor familiar with construction details typically used to dealing with the local subsoils and climatic conditions be retained to build the structures.

If you have any questions regarding this report or if we may be of further service, please do not hesitate to contact us.

Sincerely,
NWCC, INC.

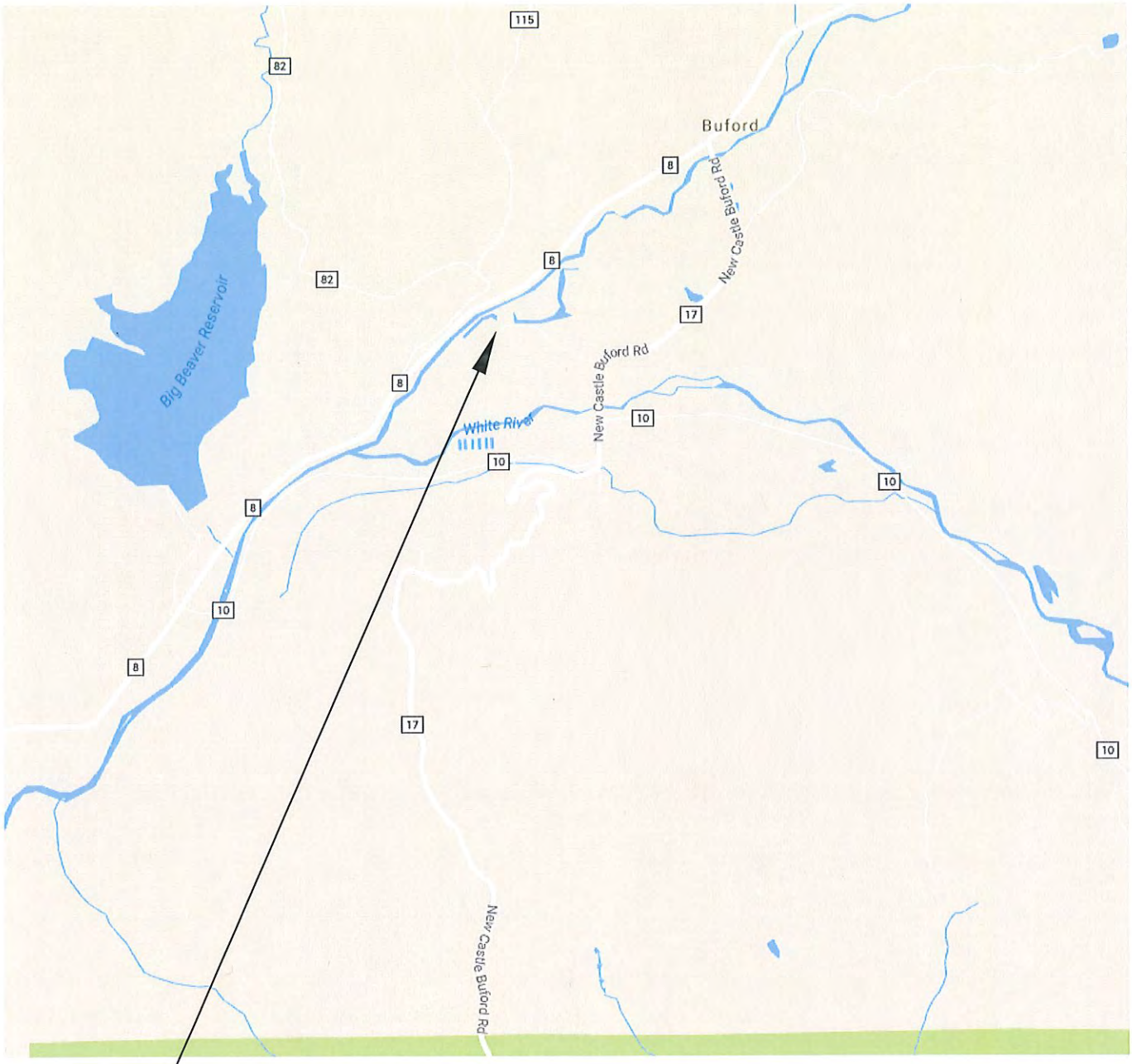
Timothy S. Travis, P.E.
Senior Project Engineer

COLORADO LICENSED
BRIAN D. LEN
25750
PROFESSIONAL ENGINEER
12/30/20

Reviewed by Brian D. Len, P.E.
Principal Engineer

N

NOT TO SCALE



Title: VICINITY MAP		**Date:** 12/17/2020
Job Name: Proposed Bel Aire Shop Building		**Job No.** 20-12025
Location: 42421 County Road 17, Rio Blanco County, Colorado		**Figure** #1

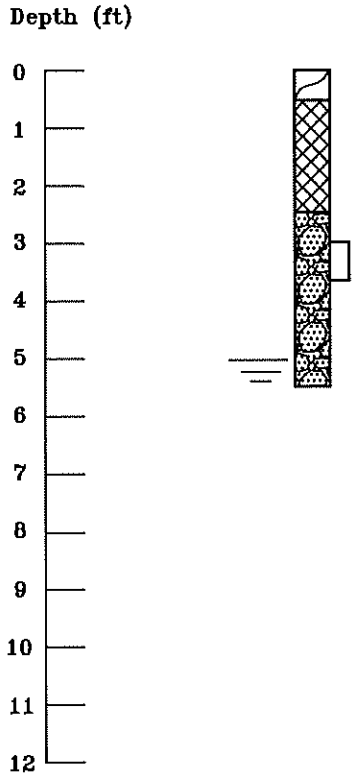
NWCC
North West Colorado Consultants, Inc.
Geotechnical / Environmental Engineering - Materials Testing
(970)879-7888 - Fax (970)879-7891
2580 Copper Ridge Drive
Steamboat Springs, Colorado 80487

N

NOT TO SCALE

Title: SITE PLAN–LOCATION OF TEST PITS	Date: 12/17/2020	NWCC North West Colorado Consultants, Inc. Geotechnical / Environmental Engineering · Materials Testing
Job Name: Proposed Bel Aire Shop Building	Job No. 20–12025	(970)879-7888 · Fax (970)879-7891 2580 Copper Ridge Drive Steamboat Springs, Colorado 80487
Location: 42421 County Road 17, Rio Blanco County, Colorado	Figure #2	

Test Pit 1



LEGEND:

FILL–Topsoil and organics.

FILL: Sands and gravels, clayey, fine to coarse grained, very low to non–plastic, loose to medium dense, moist and brown to gray in color.

SANDS AND GRAVELS: Silty to slightly clayey, fine to coarse grained with cobbles, non–plastic, dense, moist to very moist and brown to gray in color.

Small Disturbed Sample.

Indicates depth of groundwater seepage at the time of excavation.

NOTES:

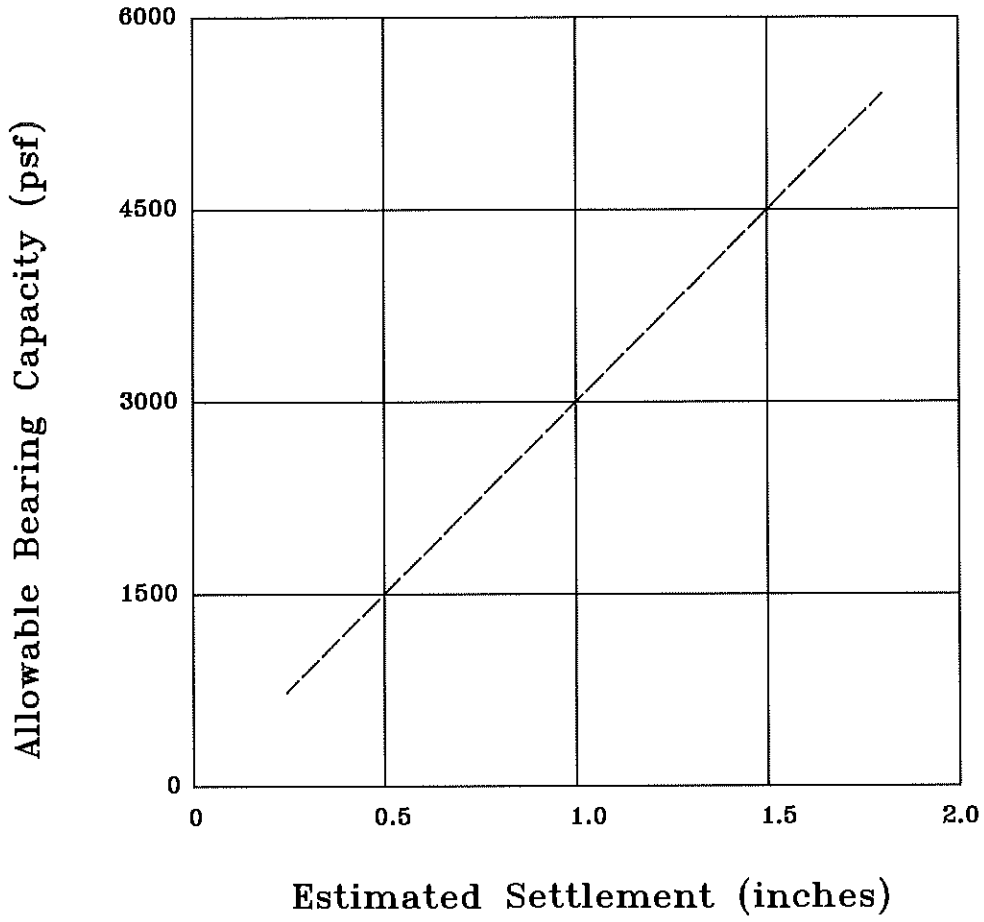
1) Test pit was excavated on November 5, 2020 with a backhoe.

2) Test pit location was determined by pacing from the existing shop building.

3) The elevation of the test pit was not measured and the log is drawn to the depth investigated.

4) The lines between materials shown on the test pit log represent the approximate boundaries between material types and transitions may be gradual.

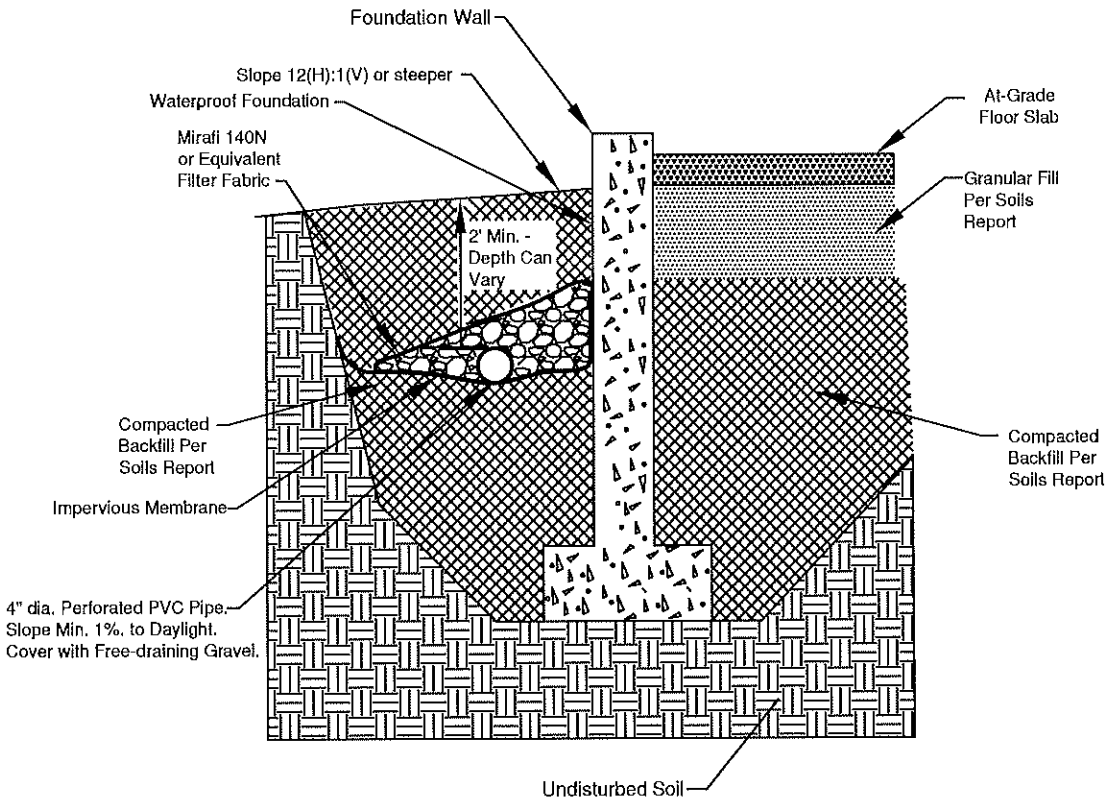
Title: LOGS, LEGEND AND NOTES	Date: 12/17/2020	NWCC North West Colorado Consultants Inc Geotechnical / Environmental Engineering - Materials Testing (970)879-7888 - Fax (970)879-7891 2580 Copper Ridge Drive Steamboat Springs, Colorado 80487
Job Name: Proposed Bel Aire Shop Building	Job No. 20–12025	
Location: 42421 County Road 17, Rio Blanco County, Colorado	Figure #3	



Note: These values are based on footing widths of 1 to 4 feet. If the footing width is to be greater than 4 feet in width, then we should be notified to re-evaluate these recommendations.

Title: BEARING CAPACITY CHART	Date: 12/17/2020	NWCC North West Colorado Consultants, Inc. Geotechnical / Environmental Engineering - Materials Testing
Job Name: Proposed Bel Aire Shop Building	Job No. 20-12025	(970)879-7868 - Fax (970)879-7891 2580 Copper Ridge Drive Steamboat Springs, Colorado 80487
Location: 42421 County Road 17, Rio Blanco County, Colorado	Figure #4	

Slab-on-Grade



Title: PERIMETER/UNDERDRAIN DETAIL	**Date:** 12/17/2020	NWCC North West Colorado Consultants, Inc. Geotechnical / Environmental Engineering - Materials Testing
Job Name: Proposed Bel Aire Shop Building	**Job No.** 20-12025	(970)879-7888 - Fax (970)879-7891 2580 Copper Ridge Drive Steamboat Springs, Colorado 80487
Location: 42421 County Road 17, Rio Blanco County, Colorado	**Figure** #5	

NWCC, Inc.

TABLE 1

SUMMARY OF LABORATORY TEST RESULTS

SAMPLE LOCATION		NATURAL MOISTURE CONTENT (%)	NATURAL DRY DENSITY (pcf)	ATTERBERG LIMITS		GRADATION		PERCENT PASSING No. 200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH (psf)	SOIL or BEDROCK DESCRIPTION	UNIFIED SOIL CLASS.
TEST PIT	DEPTH (feet)			LIQUID LIMIT (%)	PLASTICITY INDEX (%)	GRAVEL (%)	SAND (%)				
1	3	6.0		nv	np	53	39	8		Slightly Silty Sands and Gravels	GP

JOB NUMBER: 20-12025

APPENDIX B – STATE PREVAILING WAGE DETERMINATIONS

Oak Ridge SWA - Bel Aire Shop Replacement
C26NW1

"General Decision Number: CO20250001 12/12/2025

Superseded General Decision Number: CO20240001

State: Colorado

Construction Type: Building

Counties: Alamosa, Archuleta, Baca, Bent, Chaffee, Cheyenne, Conejos, Costilla, Crowley, Custer, Delta, Dolores, Eagle, Fremont, Garfield, Grand, Gunnison, Hinsdale, Huerfano, Jackson, Kiowa, Kit Carson, La Plata, Lake, Las Animas, Lincoln, Logan, Mineral, Moffat, Montezuma, Montrose, Morgan, Otero, Ouray, Phillips, Pitkin, Prowers, Rio Blanco, Rio Grande, Routt, Saguache, San Juan, San Miguel, Sedgwick, Summit, Washington and Yuma Counties 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	01/03/2025
1	02/07/2025
2	03/14/2025
3	03/28/2025
4	05/16/2025
5	07/11/2025
6	07/18/2025
7	07/25/2025
8	08/08/2025
9	08/15/2025
10	09/05/2025
11	09/12/2025
12	12/05/2025
13	12/12/2025

ASBE0028-004 07/01/2025

ALL COUNTIES EXCEPT ARCHULETA, CONEJOS, COSTILLA, LA PLATA AND MONTEZUMA

	Rates	Fringes
Asbestos Workers/Insulator (Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems	$ 36.98	16.82

ASBE0076-002 01/01/2025

ARCHULETA, CONEJOS, COSTILLA, LA PLATA AND MONTEZUMA

	Rates	Fringes
Asbestos Workers/Insulator (Includes application of all insulating materials,		

protective coverings,
coatings and finishes to
all types of mechanical
systems).....$ 36.60 11.83

BRCO0007-003 05/01/2024

ALAMOSA, ARCHULETA, BACA, BENT, CHAFFEE, CHEYENNE, CONEJOS, COSTILLA, CROWLEY, CUSTER, DOLORES, FREMONT, HINSDALE, HUERFANO, KIOWA, KIT CARSON, LA PLATA, LAS ANIMAS, LINCOLN, MINERAL, MONTEZUMA, PROWERS, SAGUACHE & SAN JUAN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 32.93	14.29

BRCO0007-009 05/01/2024

DELTA, GARFIELD, GRAND, GUNNISON, JACKSON, LAKE, LOGAN, MOFFAT, MONTROSE, MORGAN, OTERO, OURAY, PHILLIPS, RIO BLANCO, RIO GRANDE, SAN MIGUEL, SEDGWICK, WASHINGTON & YUMA COUNTIES

	Rates	Fringes
BRICKLAYER	$ 32.93	14.29

BRCO0007-010 01/01/2024

EAGLE, PITKIN, ROUTT & SUMMIT COUNTIES

	Rates	Fringes
BRICKLAYER	$ 42.37	15.21

CARP9901-006 05/01/2024

Baca, Bent, Chaffee, Cheyenne, Clear Creek, Crowley, Custer, Delta, Eagle, Elbert, Fremont, Garfield, Gilpin, Grand, Gunnison, Huerfano, Jackson, Kiowa, Kit Carson, Lake, Las Animas, Lincoln, Logan, Moffat, Montrose, Morgan, Otero, Ouray, Park, Phillips, Pitkin, Prowers, Rio Blanco, Routt, Saguache, Sedgwick, Summit, Teller, Washington and Yuma Counties, Colorado

	Rates	Fringes
Carpenters: Formbuilding/Formsetting, Drywall Hanging/Framing and Metal Stud Work	$ 33.11	12.17

CARP9901-007 05/01/2024

	Rates	Fringes
CARPENTER Formbuilding/Formsetting, Drywall Hanging/Framing and Metal Stud Work	$ 33.11	12.17

ELEC0012-010 09/01/2025

ALAMOSA, ARCHULETA, BACA, BENT, CHAFFEE, CONEJOS, COSTILLA,

CROWLEY, CUSTER, FREMONT, HUERFANO, KIOWA, LAS ANIMAS, MINERAL, OTERO, PROWERS, RIO GRANDE AND SAGUACHE COUNTIES

	Rates	Fringes
Electricians:.....	$ 35.40	16.06

ELEC0068-007 06/01/2025

EAGLE, GRAND, JACKSON, LAKE, LOGAN, MORGAN, PHILLIPS, SEDGWICK, SUMMIT, WASHINGTON AND YUMA COUNTIES

	Rates	Fringes
ELECTRICIAN.....	$ 46.80	19.53
(Including low voltage wiring and installation of fire alarms, telephones, computers and temperature controls		

ELEC0111-006 01/01/2025

DELTA,GARFIELD,MONTROSE,and RIO BLANCO COUNTIES in COLORADO.

	Rates	Fringes
ELECTRICIAN.....	$ 31.75	13.25
(Including low voltage wiring and installation of fire alarms, telephones, computers and temperature controls)		

ELEC0111-009 01/01/2025

DOLORES, GUNNISON, HINSDALE, LA PLATA, MOFFAT, MONTEZUMA, OURAY, PITKIN, ROUTT, SAN JUAN and SAN MIGUEL COUNTIES in COLORADO.

	Rates	Fringes
ELECTRICIAN.....	$ 36.95	14.41
(Including low voltage wiring and installation of fire alarms, telephones, computers and temperature controls)		

ELEC0111-013 01/01/2025

DELTA, GARFIELD, MONTROSE, and RIO BLANCO COUNTIES in COLORADO.

	Rates	Fringes
ELECTRICIAN.....	$ 31.75	13.25
(Including low voltage wiring and installation of fire alarms, telephones, computers and temperature controls)		

ELEC0113-003 06/01/2025

CHEYENNE, KIT CARSON & LINCOLN COUNTIES

	Rates	Fringes
ELECTRICIAN (Including low voltage wiring and installation of fire alarms, telephones, computers and temperature controls).....	$ 40.70	18.47

ELEV0025-002 01/01/2025

	Rates	Fringes
ELEVATOR MECHANIC	$ 56.57	38.435+a+b

FOOTNOTE:
a.Vacation: 6%/under 5 years based on regular hourly rate for all hours worked. 8%/over 5 years based on regular hourly rate for all hours worked.
b. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

IRON0024-002 11/01/2024

	Rates	Fringes
Ironworker, reinforcing and structural	$ 39.21	12.50

LABO0720-003 05/01/2021

	Rates	Fringes
LABORER		
Concrete/Mason Tenders	$ 21.10	7.89

PAIN0930-001 07/01/2025

	Rates	Fringes
GLAZIER	$ 37.26	13.15

PLAS0577-001 05/01/2025

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 34.73	15.15

PLUM0003-006 06/01/2025

GRAND, JACKSON, LAKE, LOGAN, MORGAN, PHILLIPS, SEDGWICK, SUMMIT, WASHINGTON, AND YUMA. PARTS OF ELBERT, EAGLE, KIT CARSON & LINCOLN COUNTIES

	Rates	Fringes
PLUMBER		
(Including HVAC Work)	$ 47.23	21.68

PLUM0058-009 07/01/2025

ALAMOSA, BACA, BENT, CHAFFEE, CHEYENNE, CONEJOS, COSTILLA, CROWLEY, CUSTER, FREMONT, HUERFANO, KIOWA, KIT CARSON (Including towns of Dfalgler, Seibert, Vona, Stratton and Bethune), LAS ANIMAS, LINCOLN (Including towns of Geona and Arriba in the southern portion of the county), MINERAL, OTERO, PROWERS, RIO GRANDE, AND SAGUACHE COUNTIES

	Rates	Fringes

PLUMBER/PIPEFITTER
(Plumbers include HVAC work)
(Pipefitters exclude HVAC work).....$ 47.60 18.10

PLUM0145-001 07/01/2025

ARCHULETA, DELTA, DOLORES, EAGLE (Eagle County is divided from where Pitkin and Lake Counties join on the north, and in a straight line to and including the town of Edwards and northerly to the south east corner of Routt County), GARFIELD, GUNNISON, HINSDALE, LA PLATA, MOFFAT, MONTEZUMA, MONTROSE, OURAY, PITKIN, RIO BLANCO, ROUTT, SAN JUAN AND SAN MIGUEL COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER PLUMBERS (Including HVAC work) & PIPEFITTERS (Excluding HVAC work).....	$ 41.32	16.01

PLUM0208-005 06/01/2025

CLEAR CREEK, GILPIN, GRAND, JACKSON, LAKE, LOGAN, MORGAN, PHILLIPS, SEDGWICK, SUMMIT, WASHINGTON, YUMA. PARTS OF ELBERT, EAGLE, KIT CARSON, LINCOLN, AND PARK COUNTIES

	Rates	Fringes
PIPEFITTER (Excluding HVAC pipe).....	$ 45.40	22.11
(Excluding HVAC work).....	$ 43.40	22.11

ROOF0058-001 05/01/2025

	Rates	Fringes
ROOFER.....	$ 32.90	6.18

SHEE0009-001 07/01/2025

	Rates	Fringes
Sheet metal worker (Includes HVAC duct and installation of HVAC systems).....	$ 43.05	22.65

SUCO2001-008 12/20/2001

	Rates	Fringes
Carpenters: Acoustical.....	$ 15.69	3.15
All other Work.....	$ 15.94	3.41
Drywall Finisher/Taper.....	$ 14.44	2.19
Laborer, common.....	$ 9.75	
PAINTER.....	$ 15.19	

(Excluding drywall finishing/taping) Brush, Roller, Spray

Power equipment operators:.....$ 13.41
Backhoe

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 is available at www.dol.gov/whd/govcontracts.

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) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 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, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an

internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

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

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

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

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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END OF GENERAL DECISION"

APPENDIX C – GENERAL CONDITIONS FOR CAPITAL CONSTRUCTION

Oak Ridge SWA - Bel Aire Shop Replacement
C26NW1

General Conditions for Capital Construction

July 18, 2018

State of Colorado
Department of Natural Resources

Colorado Parks and Wildlife

TO ALL CONTRACTORS

The General Conditions for Capital Construction dated 2018 are a part of all contracts.

It shall be the responsibility of the Contractor to possess and retain this document for bidding purposes for all Colorado Parks and Wildlife projects.

GENERAL CONDITIONS
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SECTION 1 - DEFINITIONS AND TERMS

1.1 ABBREVIATIONS:

Wherever the following abbreviations are used in these Specifications or on the Plans they shall be construed the same as the respective expressions represented:

AAN	American Association of Nurserymen
AAR	Association of American Railroads
AASHTO	American Association of State Highway Officials
ACI	American Concrete Institute
AGC	Associated General Contractors of America
AGA	American Gas Association
AI	Asphalt Institute
AIEE	American Institute of Electrical Engineers
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ANSI	American National Standards Institute, Inc.
ARA	American Railway Association
AREA	American Railway Engineering Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating Refrigeration and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
AWG	American Wire Gauge
AWPA	American Wood Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Health and Environment
CRS	Colorado Revised Statutes, 1973, as amended
CRSI	Concrete Reinforcing Steel Institute
DFPA	Douglas Fir Plywood Association
DIPRA	Ductile Iron Pipe Research Association
EIA	Electronic Industries Association
FHWA	Federal Highway Administration
FSS	Federal Specifications and Standards
GC	General Conditions for Capital Construction
GSA	General Services Administration
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineers Society
IMSA	International Municipal Signal Association
IPCEA	Insulated Power Cable Engineers Association
ITE	Institute of Transportation Engineers
NBS	National Bureau of Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturers' Association
OSHA	Occupation Safety and Health Association
IPC	International Plumbing Code
IBC	International Building Code
UL	Underwriters' Laboratories Incorporated

ADVERTISEMENT: A public announcement inviting Proposals for work to be performed or materials to be furnished.

AWARD: The acceptance by the Division of a Proposal.

BASIS OF PAYMENT: The terms under which "work" is paid, designated as a "Pay Item," which is paid for in accordance with the quantity measured and the "Pay Unit."

BID DOCUMENTS: All documents, whether attached or incorporated by reference, utilized for soliciting Proposals. The advertisement will indicate with reasonable accuracy the quantity and location of the work to be done or the character and quantity of the material to be furnished and the time and place of the opening of Proposals. These documents may be called Invitation for Bid (IFB), Documented Quotation (DQ) or Request for Proposal (RFP).

BIDDER: An individual, firm, corporation, or other legal entity submitting a Proposal for the advertised work. A contractor intending to contract with the Division for performance of prescribed work.

CALENDAR DAY: Each and every day shown on the calendar, beginning and ending at midnight.

CAPITAL PROGRAM MANAGER: The Capital Program Manager of the Division authorized by the Director to represent the Division in the functions of carrying out the capital construction program acting either directly or through authorized representatives.

CERTIFIED INVOICE: An invoice from a supplier which has been endorsed by the Contractor guaranteeing that the material, service or labor was purchased and received for the project and establishing the value of same for which reimbursement is to be made.

CHANGE ORDER: A written order issued to the Contractor by the Division covering contingencies, extra work, increases or decreases in contract quantities, and additions, deletions, or other alterations to the Bid Documents within the scope of the Contract, and establishing the basis of payment and time adjustments for the work affected by the changes. The Change Order is the only method authorized for changing the Contract.

CITY OR TOWN: A subdivision of the county used to designate or identify the location of the proposed work.

CONSTRUCTION REQUIREMENT: Specifications covering performance of work required for proper completion and acceptance.

CONTRACT: The written agreement between the Division and the Contractor setting forth the rights and obligations of the parties thereunder, including but not limited to the performance of the work, the furnishing of labor and materials and the basis of payment. The Contract Documents which may include but not limited to Purchase Order, Bid Documents, General Conditions for Capital Construction, Contract Proposal, Agreement, Bid Schedule, Contract Bond, Certificate of Insurance, Specifications, Special Conditions, general and detailed Plans, Letter of Award and Notice to Proceed, and any Change Orders and Amendments that are required to complete the construction of the work in an acceptable manner, including authorized extensions thereof, all of which constitute one instrument.

CONTRACT BOND: The approved form of security, executed by the Contractor and the Contractor Surety or Sureties, guaranteeing complete performance of the Contract and all Change Orders pertaining thereto and the payment of all legal obligations pertaining to the construction of the project.

CONTRACT ITEM (PAY ITEM): A specifically described unit of work for which a price is provided in the Contract.

CONTRACT TERM: The time from execution of the contract to the completion of the warranty period.

CONTRACTOR: The individual, firm, or corporation, or other legal entity contracting with the State of Colorado through the Colorado Parks and Wildlife for performance of prescribed work.

COUNTY: The county in which the work is to be done.

DEPARTMENT: State Department of Natural Resources, which is a department within the executive branch of the State of Colorado.

DIRECTOR: The Director of Colorado Parks and Wildlife.

DIVISION: Colorado Parks and Wildlife, which is a Division within the State Department of Natural Resources.

EQUIPMENT: All machinery and equipment, together with the necessary supplies for upkeep and maintenance, and also tools and apparatus necessary for the proper construction and acceptable completion of the work.

EXECUTIVE DIRECTOR: The Executive Director of the Colorado Department of Natural Resources.

EXPRESSION BY OR TO THE PROJECT MANAGER: In order to avoid cumbersome and confusing repetition of expressions in these Specifications, it is provided that whenever anything is, or is to be done, if, as, of, when, or where "contemplated, required, determined, directed, specified, interpretation, interpreted, authorized, ordered, given, designated, indicated, considered necessary, deemed necessary, permitted, reserved, suspended, established, approval, approved, disapproved, acceptable, unacceptable, suitable, accepted, satisfactory, unsatisfactory, sufficient, insufficient, rejected, or condemned" it shall be understood as if the expression were followed by the words "by the Project Manager" or "to the Project Manager."

EXTRA WORK: Work not provided for in the Contract as awarded but found by the Project Manager to be essential or appropriate to the satisfactory completion of the Contract within its intended scope.

HOLIDAYS: Holidays recognized by the State of Colorado are:

- New Year's Day
- Dr. Martin Luther King Jr.'s Birthday
- President's Day
- Memorial Day
- Independence Day
- Labor Day
- Columbus Day
- Veterans Day
- Thanksgiving Day
- Christmas Day

When New Year's Day, Independence Day, Veterans Day or Christmas Day fall on Saturday or Sunday, the following Monday or preceding Friday shall be considered a holiday.

Additional legal holidays, when designated by the Governor or the President of the United States, will also be recognized by the State.

INSPECTOR: The Project Manager's authorized representative assigned to make detailed inspections of contract performance.

LABORATORY: A testing laboratory certified or having expertise in the area of testing required and acceptable to the Project Manager.

MATERIALS: All components required for use in the construction of the project.

METHOD OF MEASUREMENT: The manner in which a "pay item" or "bid item" is measured to conform with the "Pay Unit."

NOTICE TO PROCEED: Written notice to the Contractor to proceed with the contract work including the date of beginning of contract time.

PERFORMANCE TIME: The number of calendar days allowed or specified date for completion of the Project as identified in the Bid Documents, including authorized time extensions. Where a calendar date of completion is specified, the Project shall be completed on or before that date.

PLANS: The drawings or reproductions provided by the Division which show the location, character, dimensions, and details of the work to be done.

PROJECT: The specific area of work together with all appurtenances and construction to be performed thereon under the Contract.

PROJECT MANAGER: The Director's duly authorized representative who is in direct charge of the work and is responsible for the administration and completion of the project under contract. The Project Manager is also responsible for acting on written appeals made by the Contractor relating to contract claims for additional compensation or extension of contract time.

PROPOSAL: The offer of a Bidder, on the prescribed form, to perform the work at the prices quoted. Also called Bid or Schedule.

PROPOSAL FORM: The documents furnished by the Division on which the offer of a Bidder is submitted. Also called Bid Proposal.

PROPOSAL GUARANTY (BID SURETY): The security furnished with a Proposal to guarantee that the Bidder will enter into the Contract if the Contractor's Proposal is accepted.

PURCHASE ORDER: A document, in a form prescribed by the Colorado State Controller, prepared and approved by an authorized employee of the State for the purpose of encumbering funds and securing construction services from the Contractor.

QUESTIONNAIRE: The specified forms on which the Contractor shall furnish required information as to the Contractor's ability to perform and finance the work.

SALVAGEABLE MATERIAL: Material that can be saved or salvaged. Unless designated or directed by the Project Manager or shown on the Plans, all salvageable materials shall remain the property of the Division.

SHUTDOWN: The authorized period of time when work is suspended.

SPECIAL CONDITIONS: Specifications covering conditions peculiar to an individual project.

SPECIFICATIONS: A general term applied to all directions, provisions and requirements pertaining to performance of the work.

SPECIFIED COMPLETION DATE: The date on which the contract work is specified to be completed.

STATE: The State of Colorado acting through its authorized representative.

STRUCTURES: Bridges, dams, culverts, catch basins, drop inlets, retaining walls, raceways, cribbing, manholes, buildings, sewers, service pipes, underdrains, foundation drains, and other features which may be encountered in the work.

SUBCONTRACTORS: An individual or entity to whom the Contractor sublets part of the Contract.

SUPERINTENDENT: The Contractor's authorized representative in responsible charge of the work.

SURETY: The corporation, partnership or individual, other than the Contractor, executing a Bond furnished by the Contractor.

TITLES OR HEADINGS: The titles or headings of the sections and subsections herein are intended for convenience of reference and shall not be considered as having any bearing on their interpretation.

WORK: The furnishing of all labor, materials, equipment, and incidentals necessary to successfully complete the project according to all duties and obligations imposed by the Contract.

WORKING DAY: Any day, exclusive of Saturdays, Sundays and holidays, on which weather and other conditions not under the control of the Contractor will permit construction operations to proceed with the normal working force engaged in performing those items controlling the completion of the work.

WORKING DRAWINGS: Stress sheets, shop drawings, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel, or any other supplementary plans or similar data which the Contractor is required to submit to the Project Manager for review and approval.

End of

DEFINITIONS AND TERMS

SECTION 2 - BIDDING REQUIREMENTS AND CONDITIONS

2.1 QUALIFICATIONS OF BIDDERS

Prior to Award to the low Bidder, when requested by the Division, the Bidder must file an experience questionnaire and a confidential financial statement. The statement shall include a complete report of the Bidder's financial resources and liabilities, equipment, past record and personnel.

2.2 PROPOSAL

(a) Contents of Proposal shall include those documents defined in the Bidding Documents as required in order for the bid to be considered responsive.

(b) The Plans, Specifications, GCs and other documents designated in the Proposal will be considered a part of the Proposal whether attached or not. None of these documents shall be modified by the Bidder.

2.3 DISQUALIFICATION OF PROPOSALS

The Division reserves the right to disqualify or refuse to accept a Proposal if in the opinion of the Division a Bidder is in default for any of the following reasons:

(1) Lack of competency and/or adequate machinery, plant and/or other equipment.

(2) Uncompleted work which, in the judgment of the Division, might hinder or prevent the prompt completion of additional work if awarded.

(3) Failure to pay or satisfactorily settle all bills due for labor and material on former contracts.

(4) Failure to comply with any qualification or regulation of the Division.

(5) Default under previous contracts.

(6) Unsatisfactory performance on previous work.

(7) Failure to make timely submittal of required forms per contract provisions on previous contract(s).

(8) More than one Proposal for the same work from an individual, firm or corporation under the same or different name.

(9) Evidence of collusion among the Bidders. Participants in such collusion will not receive recognition as Bidders for any future work of the Division.

2.4 INTERPRETATION OF QUANTITIES IN BID PROPOSAL

(a) Except as otherwise provided in this section and the method of measurement for individual items, the quantities appearing in the Bid proposal are estimates prepared for the comparison of Proposals. Payment to the Contractor will be made in accordance with the following procedures except as set out in Section 4.2 for variances from such estimates.

(b) Payment will be made for actual quantities measured and accepted.

(c) The estimated quantities of work to be performed and materials to be furnished may be increased, decreased, or omitted at the sole discretion of the Division.

2.5 EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL CONDITIONS AND SITE OF WORK

(a) The Bidder is expected to examine the site of the proposed work, the Proposal, Plans, Specifications, Special Conditions, and contract forms before submitting a Proposal. The submission of a Proposal will be considered conclusive evidence that the Bidder has made this examination and is aware of the conditions to be encountered in performing the work according to the Contract.

(b) Boring logs and other records of subsurface investigations (when existing) are available for inspection by Bidders. These logs and records are made available so that all Bidders have access to identical subsurface information that is available to the Division and is not intended as a substitute for personal investigation, interpretation and judgment of the Bidders.

(c) The Division does not warrant the adequacy of boring logs and other records of subsurface investigations, and such information is not considered to be a part of the Contract. When a log of testing borings is included in the subsurface investigation record, the data shown in the individual log of each test boring apply only to that particular boring and are not intended to be conclusive as to the character of any material between or around test borings. If Bidders use this information in preparing a Proposal it is used at their own risk, and Bidders are responsible for all conclusions, deductions, and inferences drawn from such information.

(d) Bidders may conduct subsurface investigations at the project site at Bidder's expense. The Division will afford them this opportunity prior to public opening of Proposals. The Contractor shall notify the Division of the Contractor's intention to investigate the site. The Project Manager shall review and approve the Contractor's plan (including insurance) prior to commencement of the investigation. Bidder is responsible for restoration of the site at the direction of the Project Manager.

(e) If a Bidder discovers an apparent error or omission in the Proposal form, estimated quantities, Plan, or Specifications, the Bidder shall immediately notify the Project Manager to enable the Division to make any necessary revisions.

2.6 PREPARATION OF PROPOSAL

(a) The Bidder shall submit their Proposal upon the forms furnished by the Division and shall include all required documentation as identified in the Bidding Documents. The Bidder shall specify a unit price for each pay item for which a quantity is given and shall also show the products of the respective unit price and quantities in the column provided for that purpose. The total amount of the Proposal obtained by adding the amounts of the several items shall be specified in words and figures. All the words and figures shall be in ink or typed. In cases of a discrepancy between the unit price multiplied by the quantity and the total amount, the result of the unit price multiplied by the quantity shall govern.

(b) When an item in the Proposal contains a choice to be made by the Bidder, the Bidder shall indicate the Contractor's choice in accordance with the Specifications for that particular item, and thereafter no further choice will be permitted.

The Bidder's Proposal must be signed by any agent of the Contractor legally qualified and acceptable to the State.

2.7 IRREGULAR PROPOSALS

Proposals (Bids) will be considered irregular and may be rejected for any of the following reasons:

(1) If the Proposal is on a form other than that prescribed by the Division, or if the form is altered or any part thereof is detached, or if the form does not contain original signatures.

(2) If there are unauthorized additions, conditional or alternate proposals, or irregularities of any kind that tend to make the Proposal incomplete, indefinite, or ambiguous.

(3) If the Bidder fails to acknowledge in the Proposal receipt of all addendums current on the date of opening of Proposals.

(4) If the Proposal does not contain a unit price for each pay item listed, except in the case of authorized alternative pay items, the mathematical products of the respective unit prices and the estimated quantities, and the total amount of the Bid obtained by adding such mathematical products.

(5) If the Division determines that any of the unit bid prices are materially unbalanced to the potential detriment of the Division. There are two types of unbalanced Bids: (1) mathematically unbalanced and, (2) materially unbalanced. The mathematically unbalanced Bid is a Bid containing lump sum or unit pay items which do not reflect reasonable actual costs plus a reasonable proportionate share of the Bidder's anticipated profit, overhead costs, and other indirect costs, but not necessarily to the detriment of the Division. These costs should all relate to the performance of the items in question. The materially unbalanced Bid is a Bid which the Division determines leaves reasonable doubt that award will result in the lowest ultimate cost to the Division, or that award is in the public interest.

(6) If the contractor submitting the Bid is affiliated with another contractor that has submitted a Bid on the same public project.

(7) If the Bidder has been found in default or asked in writing to show why it should not be found in default on a State contract.

(8) The Division reserves the right to reject any or all Bids, to waive technicalities or to advertise for new Bids, if in the judgment of the Division it is in the State's best interest.

2.8 PROPOSAL GUARANTY

A Proposal may be rejected if not accompanied by a guaranty (if applicable) and in an amount not less than the amount indicated in the Bidding Documents.

2.9 DELIVERY OF PROPOSALS

For projects identified as sealed bids, each Proposal not submitted through the State's electronic bid system shall be submitted in a sealed envelope. The envelope shall be marked to clearly indicate it iss a "SEALED BID" and identified by the bid number. When sent by mail the sealed Proposal shall be addressed to the Division at the address and in care of the official in whose office the Bids are to be received and enclosed in a separate outside envelope clearly to indicate its contents. All Proposals shall be filed prior to the time and at the place specified in the Bidding Documents. Proposals received after the time for opening of Bids will be returned to the Bidder unopened.

2.10 WITHDRAWAL OR REVISION OF PROPOSALS

A Bidder may withdraw or revise a Proposal after it has been deposited with the Division, but prior to the time set for opening of Bids. Withdrawal of Bids may be made either in writing or in person; however, any Bid withdrawn for the purpose of revision must be redeposited before the time set for opening of Bids.

2.11 COMBINATION OR CONDITIONAL PROPOSALS

(a) If Proposal forms are issued for projects in combination and separately, the Bidder may submit Proposals either on the combination or on separate units of the combination. The Division reserves the right to make awards on combination or separate Proposals to the advantage of the Division. Combination Proposals will be considered, only when specified.

(b) The Division may choose to add, reduce, or eliminate any bid item or combination of bid items so the construction contract shall not exceed the budgeted funds allocated for this project. The contract shall be awarded to the low bidder of the bid items selected by the Division.

(c) **DEDUCTIBLE ALTERNATES:** The lowest responsible Bid, taking into account the Colorado resident bidder preference provision of Colorado law, will be determined by and the contract will be awarded on the base bid combined with deductible alternates, deducted in numerical order in which they are listed in the alternates bid form provided by the Principal Representative. The subtraction of alternates shall result in a sum total within available funds. If this bid exceeds such amount, the right is reserved to reject all bids. An equal number of alternates shall be subtracted from the base bid of each bidder within funds available for purposes of determining the lowest responsible bidder.

(d) **ADDITIVE ALTERNATES:** The lowest responsible Bid, taking into account the Colorado resident bidder preference provision of Colorado law, will be determined by and the contract will be awarded on the base bid plus all additive alternates added in the numerical order in which they are listed in the alternates bid form provided by the Principal Representative. The addition of alternates shall result in a sum total within available funds. If this bid exceeds such amount, the right is reserved to reject all bids. An equal number of alternates shall be added to the base bid of each bidder within funds available for purposes of determining the lowest responsible bidder.

(e) BEST VALUE ALTERNATES: The State may, at its discretion award alternates in any order, if the award of the alternate items does not change the lowest successful base bidder.

(f) **DEDUCTIBLE AND ADDITIVE ALTERNATES:** Additive alternates will not be used if deductible alternates are used and deductible alternates will not be used if additive alternates are used.

2.12 PUBLIC OPENING OF PROPOSALS

Proposals will be opened and read publicly at the time and place indicated in the Bidding Documents. Bidders, their authorized agents, and other interested parties are invited to attend the bid opening.

2.13 MATERIAL GUARANTY

The successful Bidder may be required to furnish a complete statement of the origin, composition, and manufacture of materials used in the construction of the work together with samples, which have been tested for conformance with contract provisions.

End of

BIDDING REQUIREMENTS AND CONDITIONS

SECTION 3 - AWARDS AND EXECUTION OF CONTRACT

3.1 CONSIDERATION OF PROPOSALS

(a) After the Proposals are opened and read, they will be compared on the basis of the summation of the products of the quantities shown in the Bid proposal by the unit bid prices. The results of such comparison will be available to the public. In the event of a discrepancy between said unit prices and extensions, the unit bid price shall govern.

(b) The right is reserved to reject any or all Proposals, to waive technicalities or to advertise for new Proposals, if in the judgment of the awarding authority, the best interests of the Division will be promoted.

(c) The Division reserves the right to settle Bid discrepancies and irregularities as defined in this subsection and in Section 2.7 that occur in the low Bidder's Proposal at the time the Contract is awarded. Bid discrepancies will be settled with the understanding that the low Bidder waives any claims against the Division because of the Bidder's mistakes in the Bid Proposal.

3.2 AWARD OF CONTRACT

If the Contract is awarded, the Award will be made with reasonable promptness after the opening of Proposals to the lowest Bidder whose Proposal complies with all the requirements prescribed. The successful Bidder will be notified in writing of the acceptance of the Proposal and the Award of the Contract.

3.3 CANCELLATION OF AWARD

The Division reserves the right to cancel the Award of any Contract at any time before the signing of said Contract by all parties without any liability against the Division.

3.4 RETURN OF PROPOSAL GUARANTY

(a) All Proposal guaranties consisting of Bid Bonds will be retained by the Division.

(b) All Proposal guaranties consisting of certified checks or cashier's checks will be treated as follows:

(1) For the two lowest Bidders, the Proposal guaranty will be held until the successful Bidder has provided satisfactory Performance Bond. Proposal guaranty will then be returned immediately to the second lowest Bidder. The Proposal guaranty will not be returned to the successful Bidder until the Performance Bond has been furnished and the Contract has been executed.

(2) For all other Bidders, the Proposal guaranty will be returned promptly after the opening of Bids and verification of the Proposals.

3.5 BOND AND INSURANCE REQUIREMENTS

(a) If the Award is for more than one hundred and fifty thousand dollars ($150,000), the Contractor shall, duly execute and deliver to and file with the Division a good and sufficient Bond or other acceptable Surety approved by the Division in a penal sum equal to one-hundred percent of the total amount payable by the terms of the Contract. Such Bond shall be duly executed by a qualified corporate surety, conditioned for the due and faithful performance of the Contract, and in addition shall provide that if the Contractor or the Contractor's subcontractors fail to duly pay for any labor, materials, team hire, sustenance, provisions, provender or other supplies used or consumed by such Contractor or the Contractor's subcontractor in performance of the work contracted to be done, the Surety will pay the same in an amount not exceeding the sum specified in the Bond, together with interest at the rate of eight percent per annum. If the scope of work is changed resulting in an increase in the contract price, the amount of the Bond required shall be increased by a like amount. If

the change results in a decrease in the contract price, the amount of the Bond required may be decreased by a like amount.

(b) The Contractor shall deliver to the Division a Certificate of Insurance in the amounts designated on the Bid Documents.

3.6 EXECUTION AND APPROVAL OF CONTRACT

The Contract shall be signed and returned by the successful Bidder together with the Contract Bonds and certificate(s) of insurance within 15 calendar days after the date of Award. If the signed Contract, Bonds, and insurance certificate(s) are returned by the successful Bidder within 15 calendar days after award, and are technically correct, and if the Contract is not executed by the Division within 60 calendar days from date of receipt of a complete and accurate Contract Documents accepted by the Division, the Bidder shall have the right to withdraw the Proposal without penalty. The Contract will not be considered effective until it has been fully executed by all of the parties to the Contract.

3.7 FAILURE TO EXECUTE CONTRACT

Failure to execute the Contract and file acceptable Bonds and/or provide requisite Certificates of Insurance within 15 calendar days after the date of Award shall be just cause for the cancellation of the Award and the forfeiture of the Proposal guaranty, which shall become the property of the Division, not as a penalty, but in liquidation of damages sustained. Award may then be made to the next lowest responsible Bidder, or the work may be re-advertised or otherwise as the Division may decide.

End of

AWARDS AND EXECUTION OF CONTRACT

SECTION 4 - SCOPE OF WORK

4.1 INTENT OF CONTRACT

The intent of the Contract is to provide for the construction and completion in every detail of the work described. The Contractor shall furnish all labor, materials, equipment, tools, transportation and supplies required to complete the work in accordance with the Special Conditions, Plans, Specifications and terms of the Contract.

4.2 ALTERATIONS OF PLANS OR CHARACTER OF WORK AND VARIATIONS IN PLAN QUANTITIES

(a) Differing Site Conditions. During the progress of work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the Contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before the site is disturbed and before the affected work is performed.

Upon written notification, the Project Manager will investigate the conditions, and if the Project Manager determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment, excluding loss of anticipated profits, will be made and the Contract modified in writing accordingly. The Project Manager will notify the Contractor of the determination whether or not an adjustment of the Contract is warranted. No contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

(b) Suspensions of Work Ordered by the Project Manager. If the performance of all or any portion of the work is suspended or delayed by the Project Manager in writing for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the Contractor believes that additional compensation and/or contract time is due as a result of such suspension or delay, the Contractor shall submit to the Project Manager in writing a request for adjustment within seven calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.

(1) Upon receipt, the Project Manager will evaluate the Contractor's request. If the Project Manager agrees that the cost and/or time required for the performance of the Contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the Contractor, its suppliers, or subcontractors, and not caused by the weather, the Project Manager will make an adjustment (excluding profit) and modify the Contract in writing accordingly. Weather or climatic conditions are not justifiable reasons for contract price adjustments unless the Division has altered or increased the quantities as designated in Section 4.2(c) and 4.3 where the extension of time has delayed the Contactor in work completion. The Project Manager will notify the Contractor of the determination whether or not an adjustment of the Contract is warranted. No contract adjustment will be allowed unless the Contractor has submitted the request for adjustment within seven calendar days of receipt of the notice to resume work.

(2) No contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any other term or condition of this Contract.

(3) No contract adjustment will be allowed if the suspension was caused or based in whole or in any part by the Contactor.

(c) Significant Changes in the Character of Work. The Project Manager reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall

not invalidate the Contract nor release the Surety, and the Contractor agrees to perform the work as altered.

(1) If the alterations or changes in quantities significantly change the character of the work under the Contract, whether such alterations or changes are in themselves significant changes to the character of the work, or by affecting other work cause such other work to become significantly different in character, an adjustment, excluding loss of anticipated profit, will be made to the Contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the Contractor in such amount as the Project Manager may determine to be fair and equitable.

(2) If the alterations or changes in quantities do not significantly change the character of the work to be performed under the Contract, the altered work will be paid for as provided elsewhere in the Contract. The term "significant change" shall be construed to apply only to the following circumstances:

I. When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction, or

II. When the alterations increase or decrease the scope of the total project by more than 25 percent unless agreed by the Contractor.

4.3 EXTRA WORK

The Contractor shall perform unforeseen work, for which there is no price included in the Contract, whenever it is deemed necessary or desirable in order to complete fully the work as contemplated when authorized in writing by the Project Manager. Such work shall be performed in accordance with the Contract and as directed, and will be paid for as provided under Section 9.4 or at a price agreed upon in advance of the performance of the work.

4.4 RIGHTS IN AND USE OF MATERIALS FOUND ON THE WORK

The Project Manager may authorize the Contractor's use of materials found in the excavation for completing pay items other than excavation. Payment will be made for both the excavation of such materials at the corresponding contract unit price, and for the pay item for which the excavated material is used, unless otherwise negotiated and approved through a Change Order. The Division will not charge the Contractor royalty or additional cost of select material for the removed material. The Contractor shall not excavate or remove any material from within the construction area which is not within the grading limits, as indicated by the slope and grade lines, without written authorization from the Project Manager.

4.5 FINAL CLEANING UP

Before final acceptance, the work area and all ground occupied by the Contractor in connection with the work shall be cleaned of all rubbish, excess materials, temporary structures and equipment, and all parts of the work shall be left in an acceptable condition. The cost of final cleanup will not be paid for separately but shall be included in the work.

End of

SCOPE OF WORK

SECTION 5 - CONTROL OF WORK

5.1 AUTHORITY OF THE PROJECT MANAGER

(a) The Project Manager will decide all questions regarding the quality and acceptability of materials furnished, work performed, and the rate of progress of the work; all interpretation of the Plans and Specifications; and the acceptable fulfillment of the Contract.

(b) The Project Manager will, in writing, suspend the work, wholly or in part when the Contractor fails to correct conditions unsafe for the workers or the general public; for failure to carry out contract provisions; for failure to carry out orders; for periods of unsuitable weather; for conditions unsuitable for the prosecution of the work, or for any other condition or reason determined to be in the public interest.

5.2 PLANS AND SHOP DRAWINGS

(a) Plans will show details of construction lines, grades, typical cross sections, location and design of all structures. Only general features will be shown for steel and prestressed concrete structures.

(b) The Plans shall be supplemented by shop drawings as necessary to adequately control the work. Shop drawings may consist of drawings, diagrams, illustrations, schedules, calculations, and other data prepared by the Contractor, subcontractor, manufacturer, supplier, or distributor, which will illustrate how specific portions of the work shall be fabricated and/or installed in accordance with the Contract.

(c) Shop drawings are not part of the Contract Documents.

(d) The Contractor shall approve shop drawings prior to submission to the Project Manager for review. The Contractor's approval shall be recorded by an appropriate stamp with the date and signature on each drawing. Where design notes and catalog cuts are submitted, only the first sheet will require the approval stamp. Shop drawings received directly from fabricators or suppliers or from contractors without Contractor's approval will be returned without action for resubmittal in accordance with these Specifications.

(e) Shop drawings shall be submitted to the state electronically. After checking and review by the - Project Manager, will be returned for use by the Contractor and the fabricator or supplier.

(f) Shop drawings returned to the Contractor will be stamped and the stamp marked to indicate one of the following:

(1) NO EXCEPTION TAKEN - Signifies material or equipment represented by the Submittal conforms with the design concept and complies with the information given in the Contract Documents. Contractor is to proceed with fabrication or procurement of the items and with related work.

(2) MAKE CORRECTIONS NOTED - Signifies material or equipment represented by the submittal conforms with the design concept and complies with the information given in the Contract Documents and in accordance with Project Manager's notations. Contractor is to proceed with the Work in accordance with Project Manager's notations.

(3) REVISE AND RESUBMIT - Signifies material or equipment represented by the submittal conforms with the basic design concept, however, it does not comply with the information given in the Contract Documents. Contractor is to submit a revised submittal responsive to the notations marked on the returned submittal and to the information in the Contract Documents.

(4) REJECTED - Signifies material or equipment represented by the submittal does not conform with the design concept or comply with the information given in the Contract Documents and is not acceptable for use in the Work. Contractor is to submit material or equipment responsive to the

Contract Documents.

(g) Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for: dimensions which shall be confirmed and correlated at the job site; fabrication processes and techniques of construction; coordination of the Contractor's work with that of all other trades and the satisfactory performance of the Contractor's work. Changes to the reviewed shop drawings required additional review by the Project Manager.

(h) Review of the shop drawings shall not relieve the Contractor of the obligation to meet all requirements of the Contract and shall not relieve the Contractor of the responsibility for the correctness of the shop drawings. Changes to the approved shop drawings requires re-approval.

(i) The time required for the Division's approval of each submittal will not exceed four weeks after shop drawings are received by the Project Manager.

(j) If the Contractor's controlling operations are delayed or interfered with by reason of the Division's failure to return shop drawings within the specified four weeks' time, an extension of contract completion time commensurate with the delay in completion of the work thus caused will be granted.

(k) All shop drawings shall be submitted electronically, the Contractor may be required to submit hard copies of submittals at the Project Manager's discretion.

(l) Any work performed on the project, regarding work requiring shop drawings, will not be accepted until after the shop drawings have been reviewed by the Project Manager and the work is in conformance with the drawings and the provisions of the Contract.

(m) The Contractor shall keep one set of Plans and shop drawings available on the project site at all times.

(n) Payment for preparing and furnishing all shop drawings will not be paid for separately but shall be included in the work.

5.3 CONFORMITY WITH PLANS AND SPECIFICATIONS

(a) All work performed and all materials furnished shall conform to the lines, grades, cross sections, dimensions, and material requirements, including tolerances, shown in the Contract.

(b) For those items of work where working tolerances are not specified, the Contractor shall perform the work in a manner consistent with reasonable and customary manufacturing and construction practices.

(c) When the Project Manager finds that the materials furnished, the work performed, or the finished product does not conform with the Contract but that reasonably acceptable work has been produced, the Project Manager will determine the extent the work will be accepted and remain in place. If accepted, the Project Manager will (1) document the basis for acceptance by Change Order which will provide for an appropriate adjustment in the contract price for such work or materials not otherwise provided for in this subsection or (2) notify the Contractor in writing that the Contract unit price will be adjusted; (3) in lieu of a price adjustment, permit correction or replacement of the finished product provided the correction or replacement does not adversely affect the work.

(d) When the Project Manager finds the materials furnished, work performed, or the finished product are not in conformity with the Contract and has resulted in an inferior or unsatisfactory product, the work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor. The Project Manager shall promptly notify the Contractor of such unacceptable materials, work or finished product.

5.4 COORDINATION OF PLANS, SPECIFICATIONS, AND SPECIAL CONDITIONS

(a) The Specifications, the Plans, Special Conditions, these GC's, and all supplementary documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work.

(b) In case of discrepancy the order of precedence is as follows:

(1) Contract or Purchase Order, Change Orders or Amendments
(2) Purchase Order
(3) Special Conditions
(4) Specifications
(5) Detailed Plans
(6) Standard Plans
(7) Calculated dimensions will govern over scaled dimensions
(8) GCs

(c) If the manufacturer of an approved product's specifications is more stringent than those contained in the Contract, the manufacturer's specification shall govern.

(d) The Contractor shall not take advantage of any apparent error or omission in the Contract. If the Contractor discovers an error or omission, the Project Manager shall immediately be notified. The Project Manager will make corrections and interpretations as necessary to fulfill the intent of the Contract.

5.5 COOPERATION BY CONTRACTOR

(a) The Contractor shall give the work the constant attention necessary to facilitate the progress thereof, and shall cooperate with the Project Manager, the Division's inspectors, and other contractors in every way possible.

(b) The Contractor shall have on the site at all times, as the Contractor's agent, a competent superintendent capable of reading and thoroughly understanding the Plans and Specifications and thoroughly experienced in the type of work being performed. The superintendent shall have full authority to execute orders or directions of the Project Manager without delay, and to promptly supply such materials, equipment, tools, labor and incidentals as may be required. Such superintendent shall be furnished regardless of the amount of work sublet.

(c) When circumstances dictate that the Superintendent cannot physically be at the work site the Contractor shall provide the Project Manager with a minimum 2 days notice of the method, times and places where the Superintendent can be contacted or alternatively provide an individual who has the authority to act in the Superintendent's absence for the Project Manager's approval.

5.6 PROTECTION OF UTILITIES

(a) The Contractor's attention is directed to the importance of protecting all utilities encountered on all projects. These may include, but are not limited to, communication and power lines, water lines, sewer lines, gas lines, railroad tracks and other overhead and underground utilities.

(b) Before any excavation is begun in the vicinity of the water lines, railroad tracks, structures, sewer lines, gas lines, or other conduits, each utility company concerned must be notified in advance of such excavation, and such excavation shall not be made until an authorized representative or the owner of the utility is on the site and has designated the location of their facilities.

(c) The Contractor shall be responsible for all damages to any and all public utilities encountered on a project, which damages are due to the Contractor's negligence. Such damages shall include all physical damages to utilities and also all damages due to interruption of service of such utilities, when such damages and interruptions are caused by Contractor's negligence.

(d) Where alterations or moving of utilities is not required to permit construction of the project, the Contractor shall take such measures as necessary in properly protecting these utilities throughout the Contractor's construction operations, and shall cooperate at all times with the proper authorities and owners in maintaining service on railroads, conduits, pole lines, transmission lines, pipelines, sewers, etc., affected by the project.

(e) The cost of damages due to Contractor's non-negligent operation, or cost of protecting utilities where alteration or moving is not required to permit construction of the project, shall be included in the original contract prices for the project.

(f) Should pipe lines, water lines, or gas mains, electrical conduits, sewer pipes, overhead wiring, telephone lines, telegraph lines, power lines or any other such utilities not specifically mentioned and provided for elsewhere as a part of this Contract, have to be moved, repaired, reconditioned or revised due to the construction, or moved temporarily to permit construction of the project, the party or parties owning or operating such utilities shall perform the actual work of moving, repairing, reconditioning or revising such utilities. The cost of this work shall be borne by the Division or the utility companies involved unless the Contract provides otherwise. The Division will make the determination as to whether the Division or the utility company will be responsible.

5.7 COOPERATION BETWEEN CONTRACTORS

(a) The Division reserves the right to contract for and perform other or additional work on or near the work covered by the Contract.

(b) When separate contracts are let within the limits of any one project, each contractor shall conduct the work without interfering or hindering the progress or completion of the work being performed by other contractors. Contractors working on the same project shall cooperate with each other as directed.

(c) Each contractor involved shall assume all liability, financial or otherwise, in connection with the Contract and shall protect and save harmless the Division from any and all damages or claims that may arise because of inconvenience, delay, or loss because of the presence and operations of contractors working within the limits of the same or adjacent project.

5.8 CONSTRUCTION STAKES, LINES AND GRADES

(a) Construction work shall not be performed until adequate lines and grades have been established by the Division or by the Contractor.

(b) Contractor Surveying: Unless otherwise state the Division will provide control points and bench marks as described in the Contract. The Contractor shall furnish and set construction stakes establishing lines and grades. The Project Manager may order extra surveying which will be paid for at an agreed upon rate.

(c) Division Surveying: If identified in the contract documents that the Division will provide surveying, then the Division will furnish one set of construction stakes and marks establishing lines and grades for proper prosecution of the work.

(d) The Contractor shall be responsible for the accuracy of all the vertical and horizontal control it transfers and establishes. The Contractor shall be held responsible for the preservation of all stakes and marks, and if any are destroyed, disturbed or removed by the Contractor, subcontractors, or suppliers, the cost of replacing them will be charged against the Contractor.

(e) A minimum of five working days will be required as advance notice to the Project Manager to provide project control staking.

5.9 AUTHORITY AND DUTIES OF PROJECT MANAGER

(a) As the direct representative of the Division, the Project Manager has immediate charge of the details of each construction project. The Project Manager is responsible for the administration and completion of the project. The Project Manager has the authority to reject defective material and to suspend any work that is being improperly performed, and to otherwise accept or reject work in accordance with Sections 5.12 and 5.16.

(b) The Project Manager is responsible for initial decisions relating to Contractor claims for additional compensation or extension of contract time.

5.10 AUTHORITY AND DUTIES OF THE INSPECTOR

(a) Inspectors employed by the Division are authorized to inspect all work done and materials furnished. This inspection may extend to all or any part of the work and to the preparation, fabrication or manufacture of the materials to be used.

(b) The inspector is not authorized to alter or waive the provisions of the Contract. The inspector is not authorized to issue instructions contrary to the provisions of the Contract or to act as foreman for the Contractor. The inspector is not authorized to accept or reject work.

5.11 INSPECTION OF WORK

(a) All materials and each part of detail of the work shall be subject to inspection by the Project Manager or their delegate. The Project Manager shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

(b) If the Project Manager requests it, the Contractor at any time before acceptance of the work, shall remove or uncover portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the Specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing and the replacing of the covering or making good of the parts removed, will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the covering or removing and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

(c) Any work done or materials used without supervision or inspection by an authorized Division representative may be ordered removed and replaced at the Contractor's expense unless the Division's representative failed to inspect after having been given reasonable notice in writing that the work was to be performed.

(d) When any third party is to pay a portion of the cost of the work covered by the Contract, its representative shall have the right to inspect the work. Such inspection shall not make any unit of that third party a party to the Contract, and shall not interfere with the rights of either party to the Contract.

(e) All inspections and all tests conducted by the Division are for the convenience and benefit of the Division. These inspections and tests do not constitute acceptance of the materials or work tested or inspected, and the Division may reject or accept any work or materials at any time prior to the inspection pursuant to Section 5.16 whether or not previous inspections or tests were conducted by the Project Manager or authorized representative.

5.12 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK

(a) Unacceptable work is work that does not conform to the requirements of the Contract.

(b) Unacceptable work, resulting from any cause, found to exist prior to the final acceptance of the work, shall be removed and replaced in an acceptable manner at the Contractor's expense. The fact

that the Project Manager or an inspector may have overlooked the unacceptable work shall not constitute an acceptance of any part of the work.

(c) Unauthorized work is work that was done without adequate lines and grades having been established by the Project Manager or by the Contractor, work done contrary to the instructions of the Project Manager, work done beyond the lines shown on the Plans, or extra work done without the Project Manager's written authorization. Unauthorized work will not be paid for under the provisions of the Contract, and may be ordered removed or replaced at the Contractor's expense.

(d) If the Contractor fails to comply with any order of the Project Manager made under the provisions of this subsection, the Project Manager will have authority to cause unacceptable work to be remedied or removed and replaced, and unauthorized work to be removed. The Project Manager will deduct the costs from any monies due or to become due the Contractor.

5.13 LOAD RESTRICTIONS

(a) The Contractor shall comply with all legal load restrictions in the hauling of equipment or materials on public roads beyond the limits of the project. A special permit will not relieve the Contractor of liability for damage resulting from the moving of equipment or material.

(b) The operation of equipment or hauling loads which cause damage to structures, the roadway or any other construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited by the Contractor to methods and equipment that will prevent damage to the pavement structure. Loads will not be permitted on a concrete pavement or structure before the expiration of the curing period. The Contractor shall be responsible for the repair of all damage and related expense resulting from hauling equipment and construction operations.

(c) If a vehicle's gross weight exceeds the legal limit, and the material transported by the vehicle is delivered to the project, the material and the scale ticket (certificate of correct weight) will not be accepted, except a 500 lbs tolerance will be allowed for overweight loads.

5.14 MAINTENANCE DURING CONSTRUCTION

The Contractor shall maintain the site during construction (including daily clean-up) and until the project is accepted or the Division takes possession. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces to the end that the project or structure is kept in satisfactory condition at all times. All cost of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various pay items and the Contractor will not be paid an additional amount for such work.

5.15 FAILURE TO MAINTAIN PROJECT OR STRUCTURE

If the Contractor, at any time, fails to comply with the provisions of Section 5.14, the Project Manager will immediately notify the Contractor of such non-compliance. If the Contractor fails to remedy unsatisfactory maintenance within 24 hours after receipt of such notice, the Project Manager may immediately proceed to maintain the project, and the entire cost of this maintenance will be deducted from monies due or to become due the Contractor on the contract.

5.16 ACCEPTANCE

(a) Substantial Completion:

The terms “Substantial Completion” or “Substantially Complete” mean the stage in the progress of the work when the construction is sufficiently complete, in accordance with the Contract Documents as modified by any Change Orders, so that the Work, or at the discretion of the Project Manager, any designated portion thereof, is available for its intended use by the Division and a Notice of Substantial Completion can be issued. Portions of the Project may, at the discretion of the Project Manager, be designated as Substantially Complete.

(b) Partial Acceptance: If at any time during prosecution of the project the Contractor completes a unit or portion of the project, such as a structure, or a section of road that can be used advantageously, s/he may request the Project Manager to make final inspection of that unit. If the Project Manager finds upon inspection that in the Project Manager's judgment the unit has been completed in compliance with the Contract, s/he may accept that unit as being completed and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance shall in no way void or alter any of the terms of the Contract.

(c) Final Acceptance:

(1) Upon due notice from the Contractor of presumptive completion of the entire project, the Project Manager will make an inspection. If all construction provided for and contemplated by the Contract is found completed to the Contractor's satisfaction, that inspection shall constitute the final inspection and the Project Manager will make the final acceptance as of the date of the final inspection as specified in Section 9.8.

(2) If any Change Orders are necessary, the Project Manager will prepare the final forms as specified in Section 9.8.

(3) If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the Project Manager will give the Contractor the necessary instruction for correction of same, and the Contractor shall immediately comply with and execute such instructions. Upon correction of the work another inspection will be made which shall constitute the final inspection provided the work has been corrected as required and no Change Orders are necessary. In such event, the Project Manager will make the final acceptance.

5.17 CLAIMS FOR ADJUSTMENT AND DISPUTES

(a) All claims filed by the Contractor based upon:

(1) Work or materials not clearly defined in the Contract,

(2) Extra work not ordered by the Project Manager in accordance with Section 4.3

(3) Extensions of time made pursuant to Section 8.5, or

(4) Any other cause, resulting in requests for additional compensation or time, or in the suspension or termination of the Contract, shall be governed by this subsection.

(b) Upon discovery of any facts which formulate the basis of a potential claim, the Contractor shall give immediate oral and written notice to the Project Manager prior to commencing with work to enable the Division to obtain its independent evidence of these facts.

(c) Within seven calendar days after the discovery of the facts giving rise to a claim, the Contractor shall formally notify the Project Manager in writing of the intent to file a claim as defined in Section 5.17(a). The Contractor's formal notification of intent to file a claim shall describe the contractual and legal basis of the claim and factual evidence supporting the claim.

(d) If immediate and formal notifications are not properly given by the Contractor according to these GC's, the Contractor shall not be entitled to any additional compensation or extension of time for any cause related to the claim, including any act or failure to act by the state, and the Contractor shall not be entitled to any claim. Any claim based upon any cause, for which prior and formal notifications to file a claim are not properly given by the Contractor, will be considered invalid and will be denied by the Project Manager on the basis that proper notifications as required herein, were not given. The Contractor's prior and formal notifications of intent to file a claim and subsequent Division acknowledgement of those notifications shall not be construed as proving or substantiating the validity of the Contractor's claim as related to the contractual basis of the claim, factual information

related to the claim, or cost, or amount of time extension related to the claim.

(e) When the Contractor provides immediate and formal notifications of intent to file a claim pursuant to Section 5.17(b), the claim will be reviewed by the Project Manager who will render a written decision to the Contractor to either affirm the claim as valid or deny the claim, in whole or in part, in accordance with all Contract Documents and the following procedure:

(1) At any time prior to final acceptance of the project, made pursuant to Section 5.16(c), and regardless of what correspondence or documents have been previously transmitted, the Contractor shall formally submit to the Project Manager a complete claim package including a quantification of all alleged costs and time impacts, and all supporting documents which represent the final position the Contractor wishes to have considered by the Division. The time period within which the Contractor is to provide such written documentation may be extended by the Project Manager if requested by the Contractor and if the Project Manager determines an extension would enhance the claim record and improve the potential for resolution of the claim. If the Contractor fails to provide such written documentation prior to final acceptance of the project, or within an extended time period authorized by the Project Manager, the Project Manager will base the decision upon the information previously submitted in the Contractor's notification of intent to file a claim and pertinent Specification and Contract Documents.

(2) It will be the responsibility of the Contractor to keep full and complete records of the costs and additional time incurred for any claim. The Contractor shall permit the Project Manager to examine and copy those records and any other records as may be required by the Project Manager to determine the facts or contentions involved in the claim. The Contractor shall retain those records until there is a final resolution of the claim or for three years after final acceptance of the project, whichever is longer.

(3) The Project Manager:

I. Will review the information in the Contractor's written notification of intent to file a claim,

II. Will review all written documents as submitted by the Contractor in support of the claim, and may consider any other information available in rendering a decision.

III. Will assemble and maintain a claim record comprised of all written documents submitted by the Contractor in support of the claim and all other written documents considered by the Project Manager in reaching a decision. All documentation the Contractor wants considered shall be made available to the Project Manager and will be made a part of the claim record during the review of the claim. Once the claim record has been assembled by the Project Manager, the submission of additional information, other than clarification and data supporting previously submitted documentation, at any subsequent levels of review by anyone, will not be permitted.

IV. Will provide a copy of the complete claim record along with the written decision to the Contractor describing the contractual basis and factual information considered by the Project Manager in reaching a decision.

(4) The Project Manager will render a written decision to the Contractor within 60 days from the receipt of the Contractor's submission of all written documentation supporting the claim. If more than one claim has been filed by the Contractor on the project, the Project Manager will have the right to consolidate claims and issue one decision on all such claims provided that consolidation of claims does not extend the time period within which the Project Manager is to render a decision. If the Project Manager fails to render a written decision to the Contractor within the specified 60 day time period, or within any extended time period as agreed to by both parties, the Contractor must either (1) accept this as a denial of the claim, or file a contract dispute in accordance with C.R.S. 24-109-106.

(f) If the Contractor disagrees with the written decision of the Project Manager, the Contractor must

either:

(1) Accept the Project Manager's decision as final,

(2) File a contract dispute in accordance with C.R.S. 24-109-106.

End of

CONTROL OF WORK

SECTION 6 - CONTROL OF MATERIAL

6.1 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS

(a) The materials used on the work shall meet all quality requirements of the Contract. In order to expedite the inspection and testing of materials, the Contractor shall notify the Project Manager of the Contractor's proposed sources of materials prior to delivery. At the option of the Project Manager, materials may be approved at the source of supply before delivery is started. If it is found after trial that sources of supply for previously approved materials do not produce uniform and satisfactory products, or if the product from any source proves unacceptable at any time, the Contractor shall furnish materials from other sources.

(b) When alternative materials are permitted for an item in the Contract, the Contractor will be required to state in writing the material s/he intends to furnish for that item.

(c) Reference on the Plans and/or Specifications to a particular product, or to the product of a specific manufacturer, followed by the phrase "or approved equal" is intended only to establish a standard of quality, durability and design, and shall not be construed as limiting competition. Products of other manufacturers will be acceptable provided such products, in the Project Manager's judgment, are equal to that specified; the burden of proof shall be the Contractor's responsibility. Product availability and date of delivery will be a factor in determining the acceptance of an approved equal.

(d) Product submittal shall require approval for specified manufacturers' products as well as approved "or equal" products.

6.2 SAMPLES, TESTS, CITED SPECIFICATIONS

(a) It is the intent of the Division and these GC's that all materials or the finished product in which the materials are used will be inspected and tested. Any work in which untested and unacceptable materials are used without approval or written permission of the Project Manager, shall be performed at the Contractor's risk and may be considered as unacceptable and unauthorized and will not be paid for.

(b) Unless otherwise designated, when ACI, ASTM or other specifications or other methods are cited, the reference shall be to latest edition as revised or updated by approved supplements or interim editions published and issued prior to the date of Bidding Documents.

6.3 PLANT INSPECTION

(a) The Project Manager may inspect the materials at the source. In the event plant inspection is made, the following conditions shall be met:

(1) The Project Manager shall have the cooperation and assistance of the Contractor and the producer with whom s/he has contracted for materials.

(2) The Project Manager shall have full entry at all times to such parts of the plant as may concern the manufacture or reproduction of the materials being furnished.

(3) Adequate safety measures shall be provided and maintained.

(b) It is understood that the Division reserves the right to retest all materials prior to incorporation into the work which have been tested and accepted as the source of supply after the same have been delivered and to reject all materials which, when retested, do not meet the requirements of these GC's or those established for the specific project.

6.4 STORAGE OF MATERIALS

Materials shall be stored to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located so as to facilitate their prompt inspection. Approved portions of the project may be used for storage purposes and for placing of the Contractor's plant and equipment, but any additional space required therefore must be provided by the Contractor at the Contractor's expense. Private property shall not be used for storage purposes without written permission of the owner or lessee, and if requested by the Project Manager, copies of such written permission shall be furnished him/her. All storage sites shall be restored to their original conditions by the Contractor at the Contractor's expense. This shall not apply to the stripping or storing of topsoil, or other materials salvaged from the work.

6.5 HANDLING MATERIALS

All materials shall be handled in such manner as to preserve their quality and fitness for the work. Aggregates shall be transported from the storage site to the work in vehicles so constructed as to prevent loss or segregation of materials.

6.6 UNACCEPTABLE MATERIALS

All materials not conforming to the requirements of the Specifications at the time they are used shall be considered as unacceptable and all such materials will be rejected and shall be removed immediately from the site of the work unless otherwise instructed by the Project Manager. Rejected material, the defects of which have been corrected, shall not be used until approval has been given.

6.7 DIVISION FURNISHED MATERIALS

(a) Material furnished by the Division will be made available to the Contractor at the points specified in the Contract.

(b) The cost of handling and placing materials after they are made available to the Contractor shall be included in the contract price for the item.

(c) The Contractor will be held responsible for all material received until it is incorporated in the work and accepted.

(d) Any charges resulting from the Contractor's failure to accept the material at the designated time and point of delivery will be deducted from monies due the Contractor.

End of

CONTROL OF MATERIAL

SECTION 7 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

7.1 LAWS TO BE OBSERVED

The Contractor shall keep fully informed of all federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction of authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the State and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by the Contractor or the Contractor's employees. Preferences for Colorado labor are applicable to the Contract if public works are undertaken thereunder and financed in whole or in part with State funds, in accordance with the provisions of 8-17-101 and 102, CRS.

7.2 PERMITS, LICENSES, AND TAXES

(a) Licenses, Permits, and Other Authorizations Contractor shall secure, prior to the Effective Date, and maintain at all times during the term of the Contract, at its sole expense, all licenses, certifications, permits, and other authorizations required to perform its obligations under the Contract, and shall ensure that all employees, agents and Subcontractors secure and maintain at all times during the term of their employment, agency or subcontract, all license, certifications, permits and other authorizations required to perform their obligations in relation to the Contract.

(b) Prior to beginning work on the project, the Contractor shall furnish the Project Manager a written list of all permits required for the proper completion of the project. The list shall clearly identify the type of permit or permits that must be obtained before work on any particular phase or phases of work can be started. Copies of the fully executed permits shall be furnished to the Project Manager.

(c) The State is exempt from federal excise taxes under I.R.C. Chapter 32 (26 U.S.C., Subtitle D, Ch. 32) (Federal Excise Tax Exemption Certificate of Registry No. 84-730123K) and from Colorado state and local government sales and use taxes under §§39-26-704(1), et seq. C.R.S. (Colorado Sales Tax Exemption Identification Number 98-02565). The State shall not be liable for the payment of any excise, sales, or use taxes, regardless of whether any political subdivision of the state imposes such taxes on Contractor. Contractor shall be solely responsible for any exemptions from the collection of excise, sales or use taxes that Contractor may wish to have in place in connection with this Contract.

7.3 PATENTED DEVICES, MATERIALS AND PROCESSES

If the Contractor employs any design, device, material or process covered by letters of patent or copyright and not specifically required by the Contract, s/he shall provide for such use by suitable legal agreement with the patentee or owner. The Contractor and the Surety shall indemnify and save harmless the State, any affected third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or trademark or copyright, and shall indemnify the State for any costs, expenses and damages which it may be obligated to pay by reason of any infringement, at any time during the prosecution or after the completion of the work.

7.4 FEDERAL AID PROVISIONS

(a) When the United States government participates in the cost of a project, the federal laws and the rules and regulations made pursuant to such laws must be observed by the Contractor, and the work shall be subject to the inspection of the appropriate federal agency.

(b) Such inspection shall not make the United States government a party to the Contract and shall not interfere with the rights of the parties to the Contract.

7.5 SANITARY PROVISIONS

The Contractor shall observe all rules and regulations of federal, state and local health officials. The Contractor shall not require any worker to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to health or safety.

7.6 PUBLIC CONVENIENCE AND SAFETY

The Contractor shall at all times so conduct the work as to assure the least possible obstruction to traffic. The safety and convenience of the general public and the residents adjacent to the project and the protection of persons and property shall be provided for by the Contractor.

7.7 BARRICADES AND WARNING SIGNS

The Contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient lights, danger signals, signs and other traffic control devices, and shall take all necessary precautions for the protection of the work and safety of the public in accordance with applicable regulations and guidelines. Access closed to traffic shall be protected by effective barricades, and obstructions shall be illuminated during hours of darkness. Suitable warning signs shall be provided to properly control and direct traffic.

7.8 USE OF EXPLOSIVES

(a) When explosives are utilized in the prosecution of the work, the Contractor shall not endanger life, property, or new work. The Contractor shall be responsible for all damage resulting from the use of explosives.

(b) The Contractor's explosives shall be stored in a secure manner in compliance with laws and ordinances, and storage places shall be clearly marked. When electric blasting caps are used, stored or moved in the vicinity of the work, warning signs prohibiting the use of radio transmitters and mobile telephones shall be posted on all roads within 350 feet of the blasting operation.

(c) The Contractor shall notify property owners and public utility companies having structures in the proximity of the work of the intention to use explosives. Notice shall be given sufficiently in advance to enable them to protect their property.

(d) In advance of doing any blasting work involving the use of electric blasting caps within 200 feet of any railroad's track or structures, the Contractor shall notify the proper authority of the company as to the location, date, time and approximate duration of such blasting operations.

(e) At the conclusion of each day of blasting, all spent surface blasting components shall be removed. At the conclusion of blasting and excavation work, the Contractor shall properly dispose of all spent blasting components. At the completion of final grading, the Contractor shall inspect the project and remove all exposed blasting components.

7.9 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE

(a) The Contractor shall preserve private and public property and protect it from damage. Land monuments and property marks shall not be disturbed or moved until their location has been witnessed or referenced and their removal approved.

(b) The Contractor shall be responsible for the damage or injury to property resulting from (1) the Contractor's neglect, misconduct, or omission in the manner or method of execution or non-execution of the work, or (2) the Contractor's defective work or the use of unacceptable materials.

(c) The Contractor's responsibility shall not be released until the work has been completed in compliance with the Contract. The Contractor shall restore damaged or injured property, at the Contractor's expense, to a condition similar or equal to that existing before the damage or injury occurred, by repairing, rebuilding, or restoring the property.

(d) Existing trees, shrubs, bushes or grass outside the designated work areas but inside project limits that are damaged due to the Contractor's operations shall be replaced in kind at the Contractor's expense.

7.10 FOREST PROTECTION

(a) The Contractor shall comply with all regulations of the State Department of Natural Resources, the National Forest Supervisor, or other authority having jurisdiction governing the protection of forests, and shall observe all sanitary laws and regulations with respect to the performance of work within or adjacent to State or National Forests. The Contractor shall keep the areas in an orderly condition, dispose of all refuse, obtain permits for the construction and maintenance of all construction camps, stores, warehouses, residences, latrines, cesspools, septic tanks, and other structures in accordance with the regulations and instructions issued by the Forest Supervisor.

(b) The Contractor shall take all reasonable precaution to prevent forest fires, and shall make every possible effort to notify a forest official at the earliest possible moment of the location and extent of any fire seen by the Contractor. The Contractor, subcontractors, and their employees shall prevent and suppress forest fires and provide assistance in this effort as directed by forest officials.

7.11 RESPONSIBILITY FOR DAMAGE CLAIMS

(a) The Contractor shall indemnify and save harmless the Division, its officers, and employees from suits, actions, or claims of any type or character brought because of any and all injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or failure to comply with the provisions of the Contract; or on account of or in consequence of neglect of the Contractor in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of the Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright, unless the design, device, material or process involved is specifically required by the Contract; or from any claims or amounts arising or recovered under the Worker's Compensation Act, or other law, ordinance, order, or decree. The Division may retain as much of any monies due the Contractor under the Contract as may be determined by the Division to be in the public interest.

(b) The Contractor shall procure and maintain, until final acceptance of the project, insurance as directed by the Division.

7.12 CONTRACTOR'S RESPONSIBILITY FOR WORK

Until final written acceptance of the project by the Project Manager, the Contractor shall be responsible and shall protect the work against injury or damage from all causes whether arising from the execution or the non-execution of the work, including but not limited to action of the elements, traffic, fire, theft, vandalism, or third party negligence. The Contractor shall rebuild, repair, restore or replace all work that is injured or damaged prior to final acceptance at no cost to the Division. Loss, injury, or damage to the Work due to unforeseeable causes beyond the control of and without fault or negligence of the Contractor, including but not restricted to acts of God, such as earthquakes, tornado, or other cataclysmic phenomenon of nature, or acts of the public enemy or of governmental authorities, shall be restored by the Contractor under the provision of Section 4.2 or 4.3, as applicable. During periods that work is suspended, the Contractor shall be responsible for the work under the Contract and shall prevent damage to the project, provide for drainage, and shall erect necessary temporary structures, signs, or other facilities required to maintain the project. During the suspension period, the Contractor shall maintain in a growing condition all newly established plantings, seeding, and sodding furnished under the Contract, and shall protect new tree growth and other vegetative growth against injury.

7.13 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES

(a) At points where the Contractor's operations are adjacent to properties of railways, communication and power companies or are adjacent to other property, damage to which might result in considerable expense, loss or inconvenience, work shall not be commenced until all arrangements

necessary for the protection thereof have been made.

(b) The Contractor shall cooperate with the owners of any underground or overhead utility lines in removal and rearrangement operations in order that these operations may progress in a reasonable manner that duplication of rearrangement work may be reduced to a minimum, and that services rendered by those parties will not be unnecessarily interrupted.

(c) In the event of interruption to water or utility services as a result of accidental breakage or as a result of being exposed or unsupported, the Contractor shall promptly notify the proper authority and shall cooperate with the said authority in the restoration of service. If water service is interrupted, repair work shall be Continuous until the service is restored.

7.14 FURNISHING RIGHT OF WAY

The Division will be responsible for the securing of all necessary right-of-way in advance of construction. Any exceptions will be indicated in advance in the Contract.

7.15 PERSONAL LIABILITY OF PUBLIC OFFICIALS

The Project Manager or authorized representatives are acting solely as agents and representatives of the Division when carrying out and exercising the power or authority granted to them under the Contract. There shall not be any liability on them either personally or as employees of the Division.

7.16 NO WAIVER OF LEGAL RIGHTS

(a) Upon completion of the Project, the Division will make final inspection and notify the Contractor of acceptance. Final acceptance shall not preclude the Division from correcting any measurement, estimate, or certificate made before or after completion of the Contract, nor from recovering from the Contractor or Surety or both, overpayment sustained because the Contractor failed to fulfill the obligations under the Contract. A waiver on the part of the Division of any breach of any part of the Contract shall not be held to be a waiver of any other or subsequent breach.

(b) The Contractor, without prejudice to the terms of the Contract, shall be liable to the Division, for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Division's rights under any warranty or guaranty.

7.17 AFFIDAVIT RELATIVE TO COLLUSION

The Contractor may be required to file a sworn statement executed by, or on behalf of, the person, firm, association or corporation to whom such Contract is to be awarded, certifying that such person, firm, association or corporation has not, either directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such Contract. This sworn statement shall be by the successful Bidder before such persons as are authorized by the laws of the State to administer oaths. The original of such sworn statement shall be filed with the Division prior to award of the Contract or at any time thereafter.

7.18 ARCHAEOLOGICAL AND PALEONTOLOGICAL DISCOVERIES

When the Contractor's operations encounter plant or animal fossils, remains of prehistoric or historic structures, prehistoric or historic artifacts (bottle dumps, charcoal from subsurface hearths, old pottery, potsherds, stone tools, arrowheads, etc.), the Contractor's affected operations shall immediately cease. The Contractor shall notify the Project Manager of the discovery of these materials. When ordered to proceed, the Contractor shall conduct operations in the vicinity of the discoveries as directed. The work will be paid for by the Division as provided in Section 4.2 when contract unit prices exist, or as extra work as provided in Section 4.3 when no unit prices exist. Delays to the Contractor because of the materials encountered may be cause for extension of contract time in accordance with Section 8.5.

7.19 AIR AND WATER POLLUTION

In accordance with the requirements pertaining to "Legal Relations and Responsibility to the Public," the Contractor's attention is directed to the "Colorado Air Quality Control Act," Title 25, Article 7 CRS and regulations promulgated thereunder and to the "Colorado Water Quality Control Act," Title 25, Article 8 CRS and regulations promulgated thereunder. The Contractor will be required to comply with these acts and to the following additional requirements in connection therewith:

(a) If the Contractor anticipates, or if construction activities result in any change from or noncompliance with permits or certifications, then the Contractor shall detail the anticipated changes or noncompliance in a written report to the Project Manager, and revise existing permits or certifications or obtain new permits or certifications as necessary. The report shall be submitted within two days from the time the Contractor becomes aware of the change or noncompliance. Within five days after receipt of the report, the Project Manager will approve or reject the request for change in writing, or detail a course of action.

(b) Unless called for on the Plans, excavation from the roadway, channel changes, cofferdams, etc., shall not be deposited in or near to rivers, streams or impoundments, so that it will be washed away by high water runoff.

(c) The Contractor shall comply with the "Protection of Fishing Streams," Title 33, Article 5 CRS; "Clean Water Act," 33 USC 1344 and regulations promulgated; certifications issued.

(d) Frequent fording of live streams with construction equipment will not be permitted. Temporary bridges or other structures shall be used wherever stream crossings are deemed necessary. Unless otherwise approved in writing, mechanized equipment shall not be operated in live streams except as may be required to construct channel changes and structures.

(e) Rivers, streams and impoundments shall be promptly cleared of all falsework, piling, debris, or other obstructions placed therein or caused by the construction operations.

(f) The Contractor may be legally required to obtain permits associated with specific activities within, or off the project site, such as borrow pits, concrete or asphalt plant sites, waste disposal sites, or other facilities. It is the Contractor's responsibility to obtain these permits. The Contractor shall consult with the Project Manager, or contact the Colorado Department of Public Health and Environment or other appropriate federal, state, or local agency to determine the need for any permit, but it is the Contractor’s sole responsibility to make the final determination as to the need for such permits.

(g) The Contractor shall conduct the work in a manner that minimizes pollution of any waters, including wetlands.

(h) Required dewatering of excavations shall be conducted in a manner that avoids pollution and erosion. Water from dewatering operations shall not be directly discharged into any state waters including wetlands, irrigation ditches, canals, or storm sewers, unless allowed by a permit. Discharge into sanitary sewers will not be allowed unless written permission is obtained from the owner or controlling authority and this disposal method is approved in writing by the Project Manager. Unless prohibited by law or otherwise specified in the Contract, the water from dewatering operations shall be contained in basins for dissipation by infiltration or evaporation, shall be hauled away from the project for disposal in accordance with applicable laws and regulations, or shall be land applied to approved non-wetland vegetated areas and allowed to soak into the soil. Depending upon the quality of the water, land application of water to vegetated areas may require a written concurrence or permit from CDPHE. Based on guidelines and criteria from CDPHE, the Contractor shall determine the quality of the water, obtain applicable concurrences or permits, and furnish copies of the concurrences or permits obtained to the Project Manager.

(i) At least 15 days prior to commencing dredging or fill operations in a watercourse, the Contractor shall provide written notification to owners or operators of domestic or public water supply intakes or diversion facilities, if these facilities are within five miles downstream from the dredging or fill

operations.

(j) Upon completion of wetland or in-stream construction activities, all temporary fills shall be removed in their entirety and disposed of in an upland location outside of flood plains unless otherwise specified in the Contract. Affected areas shall be returned to their pre-existing elevation unless otherwise specified in the Contract.

(k) Construction operations in state waters, including wetlands, shall be restricted to:

(1) Channel change areas designated in the Contract.

(2) Areas designated in the Contract which must be entered to construct structures.

(3) Areas where water must be forded no more than four times per day to facilitate construction. Fording waters more than four times per day will not be permitted. Whenever fording waters more than four times per day is necessary, a temporary bridge or other structure shall be used.

(4) Areas authorized by the Corps of Engineers.

(l) Work in, or near, wetlands shall be performed in a manner that will minimize harm to the wetlands. Wetland areas outside of the project site shall not be used for storage, parking, waste disposal, access, borrow material, or any other construction support activity.

(m) Pollutant by-products of construction, plastic concrete, asphalt, solids, sludges, pollutants removed in the course of treatment of wastewater, excavation or excess fill material, and material from sediment traps shall be handled, stockpiled, and disposed of in a manner that prevents entry into state waters, including wetlands.

(n) The use of chemicals such as soil stabilizers dust palliatives, herbicides, growth inhibitors, fertilizers, deicing salts, etc., during construction shall be in accordance with the manufacturer's recommended application rates, frequency, and instructions. These chemicals shall not be used, stored, or stockpiled within 50 horizontal feet (15 m) of the ordinary high water line of any state waters, including wetlands, except when otherwise specified in the Contract.

(o) Construction waste or salvable material, excess excavated material, fill material, construction equipment, fuels, lubricants, and other petroleum distillates shall not be stored or stockpiled within 50 horizontal feet (15 m) of any wetland, state waters, or the ordinary high water line of any state waters. Equipment fueling and servicing shall occur only within accepted designated areas.

(p) The quantity of materials stored on the project shall be limited, as much as practical, to that quantity required to perform the work in an orderly sequence. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with the original manufacturer's label. Materials shall not be stored in a location where they may be carried into a state water at any time.

(q) Spill prevention and containment measures shall be used at storage, and equipment fueling and servicing areas to prevent the pollution of any state waters, including wetlands. All spills shall be cleaned up immediately after discovery, or contained until appropriate cleanup methods can be employed. Manufacturer's recommended methods for spill cleanup shall be followed, along with proper disposal methods.

(r) Use of heavy equipment in or around state waters, including wetlands, will not be allowed, except as specified in the Contract and permits, unless otherwise directed by the Project Manager. If any such work is allowed, the equipment shall be of such type that will produce minimal environmental damage. For allowed work in wetlands, the equipment shall be on fiber, wooden, earthen, or metallic mats to prevent undue disturbance and damage to the wetlands area. Where practical, equipment shall be operated from banks or shoulder above riparian and wetland areas.

(s) The Contractor shall prevent grass or brush fires that will expose areas of soil to erosion.

(t) The construction activity shall not block the movement of those species of aquatic life indigenous to the waterbody.

(u) The construction activities shall not impair Indian tribal rights, including, but not limited to, water rights, and treaty fishing and hunting rights.

(v) Discharges of pollutants into breeding areas of migratory waterfowl, or into fish spawning areas during spawning seasons shall not be permitted unless allowed by permits from appropriate regulatory agencies.

(w) The Contractor shall be liable for any penalty (including monetary fines) charged to the Division caused by the Contractor's noncompliance with any water quality permit or certification. Monetary fines shall be deducted from any money due to the Contractor. If the monetary fine is in excess of all the money due to the Contractor, then the Contractor shall pay to the Division the amount of such excess.

(x) The Contractor will not receive additional compensation, or time extensions, for any disruption of work or loss of time caused by any actions brought against the Contractor for failure to comply with water quality controls.

(y) In the event that a spill occurs as a direct result of the Contractor's actions or negligence, the clean-up of such spill shall be performed by the Contractor at the Contractor's expense.

(z) The Contractor shall be liable for any monitoring or testing as required in the permits.

7.20 ANTI DISCRIMINATION

The Contractor agrees to comply with the letter and spirit of the Colorado Anti-discrimination Act of 1957, as amended, and other applicable laws respecting discrimination and unfair employment practices (24-34-402, CRS, as amended), and as required by Executive Orders, Equal Opportunity and Affirmative Action, and other legislation.

7.21 GENERAL

(a) The laws of the State of Colorado and rules and regulations issued pursuant thereto shall be applied in the interpretation, execution and enforcement of this Contract. Any provisions of this Contract whether or not incorporated herein by reference which provides for arbitration by an extra-judicial body or person or which is otherwise in conflict with said laws, rules and regulations shall be considered null and void. Nothing contained in any provision incorporated herein by reference which purports to negate this or any other Special Provision in whole or in part shall be valid or enforceable or available in any action at law whether by way of complaint, defense or otherwise. Any provision rendered null and void by the operation of this provision will not invalidate the remainder of this Contract to the extent that the Contract is capable of execution.

(b) The signatories to the Contract Document aver that they are familiar with 18-8-301, et seq., (Bribery and Corrupt Influences) and 18-8-401, et seq., (Abuse of Public Office), CRS as amended, and that no violation of such provisions is present.

(c) The signatories aver that to their knowledge, no State employee has any personal or beneficial interest whatsoever in the service or property described in the Contract Documents.

(d) CORA Disclosure: To the extent not prohibited by federal law, the Contract and the performance measures and standards required under Section 24-103.5-101 CRS, if any, are subject to public release through the CORA.

End of

LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

SECTION 8 - PROSECUTION AND PROGRESS

8.1 SUBLETTING OF CONTRACT

(a) Contractor's rights and obligations under the Contract are personal and may not be transferred or assigned without the prior, written consent of the State. Any attempt at assignment or transfer without such consent shall be void. Any assignment or transfer of Contractor's rights and obligations approved by the State shall be subject to the provisions of the Contract

(b) The Contractor shall not subcontract any portion of the Contract without written notification to the Project Manager. No subcontract, shall release the Contractor of liability under the Contract and Bonds.

8.2 NOTICE TO PROCEED

(a) The "Notice to Proceed" will stipulate the date on which it is expected the Contractor will begin the construction and from which date Performance Time will be charged. Commencement of work on the site by the Contractor will be deemed and taken as a waiver on the Contractor's part of this notice and contract time will commence.

(b) The Contractor shall commence work under the Contract on or prior to the 10th day following the date of Notice to Proceed, or in accordance with the selected start date allowed in the Contract.

8.3 PROSECUTION AND PROGRESS

The Contractor shall furnish the Project Manager with a schedule for approval in accordance with the Bid Documents.

8.4 CHARACTER OF WORKERS, METHODS AND EQUIPMENT

(a) The Contractor shall employ resources for completing work to full completion in the manner and time required by the Contract.

(b) All workers shall have skill and experience to perform the work assigned to them.

(c) Any person employed by the Contractor or by any subcontractor who does not perform the work in a proper and skillful manner shall, at the written request of the Project Manager, be removed by the Contractor or subcontractor and shall not be employed on the project without the approval of the Project Manager.

(d) Should the Contractor fail to remove this person or persons or fail to furnish skilled and experienced personnel for the proper prosecution of the work, the Project Manager may suspend the work by written notice until compliance is achieved.

(e) All equipment used on the project shall be of size and mechanical condition to meet requirements of the work and to produce a satisfactory quality of work. Equipment used shall not cause injury to roadways, adjacent property, or other structures.

(f) When the methods and equipment to be used are not prescribed in the Contract, the Contractor shall use any methods or equipment that will accomplish the contract work in conformity with the Contract requirements.

(g) When the methods and equipment to be used are specified in the Contract, other methods and equipment shall not be used in the performance of the work unless the Contractor receives written authorization from the Project Manager.

(h) If the Contractor desires to use a method or equipment other than specified in the Contract, the Con-

tractor may request approval from the Project Manager. The request shall include a full description of the methods and equipment proposed to be used and the Contractor's explanation for the proposed change. The Contractor will be fully responsible for producing work in conformity with Contract requirements. If the substituted methods or equipment do not produce results conforming to Contract requirements, the Contractor shall complete the remaining construction with the originally specified methods and equipment. Deficient work shall be removed, repaired, or replaced to conform to the specified quality by and at the Contractor's expense. No increase will be made in the basis of payment for the construction items involved nor in contract time when a change in methods or equipment is authorized.

8.5 DETERMINATION AND EXTENSION OF PERFORMANCE TIME

(a) The number of calendar days allowed or specified date for the completion of the work included in the Contract will be stated in the Bid Documents.

(b) No extension of time will be granted for any adverse weather conditions unless in the sole discretion of the Project Manager the weather conditions in question prevented safe and workmanlike prosecution of work.

(c) The Contractor shall not carry on construction operations on Saturdays, Sundays, or Holidays unless previously arranged with Project Manager, except for pre-wetting, making emergency repairs and providing proper protection of the work. Saturdays, Sundays and Holidays will be counted against the Performance Time.

(d) The Performance Time in the Contract as awarded is based on the original quantities as defined in Section 2.4. If satisfactory fulfillment of the Contract requires performance of work in greater quantities than those set forth in the Proposal, the Performance Time allowed for the Project may be increased on a basis commensurate with the amount and difficulty of the added work after written request by the Contractor.

(e) If the Contractor finds it impossible for reasons beyond the Contractor’s control to complete the work within the Performance Time as specified or as extended, the Contractor may at any time prior to the expiration of the Performance Time, make a written request to the Project Manager for an extension of time setting forth therein the Contractor’s reasons which the Contractor believes will justify the granting of the Contractor’s request.

(f) The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the Project Manager finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, the Project Manager may extend the time for completion in such amount as the conditions justify and approved in accordance with these GC’s. The extended time for completion shall then be in full force and affect the same as though it were the original time for completion.

(g) Delays due to slow delivery of materials or of fabrication scheduling for reasons of late ordering, financial considerations or other causes which could have been foreseen and prevented, will be considered as within the Contractor's control, and each day of such delay will count against Performance Time. However, delay in the delivery of materials to the Contractor, due to some unusual market condition such as those caused by industry-wide strike, national disaster, area-wide shortage or other reason beyond the control of the Contractor, which affects the completion time shall be considered a basis for extension of contract time.

(h) Certified copies of correspondence between the Contractor and the Contractor’s supplier, pertinent to the delay claimed by the Contractor will be considered in determining extension of contract time. All such correspondence shall be submitted by the Contractor in sufficient time so that time adjustments can be made concurrently with the delay.

(i) When Final Acceptance has been duly made by the Project Manager as prescribed in Section 5.16(c) the daily time charge will cease.

(j) If flooding, unusual water conditions, or unanticipated construction problems beyond the Contractor's control alter the work schedule or work conditions in such a manner that prosecution of work would cause harm to the site or construction, the Contractor may request that work be temporarily Shutdown (the duration of an authorized shutdown is not assessed against the contract time) until the conditions which precluded prosecution of the work no longer exist.

(k) The Contractor's request shall set forth the reasons s/he believes the work should be temporarily halted and the estimate of the time of work suspension.

(l) The Contractor shall not suspend the work until s/he has received written approval from the Project Manager and shall resume with the work promptly when notified to resume operations.

(m) The Division shall have the authority to suspend the work, either in whole or in part for such period or periods as may be deemed necessary due to unsuitable weather, faulty workmanship, improper superintendence, Contractor's failure to carry out orders or to perform provisions of the Bid Documents, or other legal items or circumstances as directed by the Project Manager.

8.6 FAILURE TO COMPLETE WORK ON TIME

(a) The parties agree that time is of the essence of the Contract and of the Specifications wherever a definite and certain length of time is fixed for the performance of any act. A daily charge will be made against the Contractor for each working day, or calendar day, that any work remains uncompleted after the elapse of contract time. This daily charge will be deducted from any money due the Contractor. This deduction will not be considered a penalty but as liquidated damages.

(b) The liquidated damages set forth below is an amount, agreed to by the Contractor and the Division, as reasonably representing additional construction engineering and administration costs incurred by the Division, if the Contractor fails to complete the Project within the Performance Time. The liquidated damages set forth do not include any additional actual loss or damage that the Division might incur as a result of the Contractor's delay, such as but not limited to increased costs to other contractors.

(c) Refer to the Special Conditions for the amount of liquidated damages. If an amount of liquidated damages does not appear in the Special Conditions, liquidated damages shall be charged at $150 per day, which is a reasonable estimate of the additional expense incurred by the Division. The Special Conditions may specify higher liquidated damages amounts due to the particular circumstances of the Project, such as but not limited to the potential loss of revenue to the Division.

(d) Due account shall be taken of any adjustment of the Performance Time for completion of the work granted under the provisions of Section 8.5.

(e) Permitting the Contractor to continue and finish the work or any part thereof after elapse of Performance Time will not operate as a waiver on the part of the Division of any of its rights under the Contract.

(f) Any deduction assessed as liquidated damages under this subsection shall not relieve the Contractor from additional liability for any actual damages or costs resulting from delays to other contractors on the project or other projects caused by a failure of the assessed Contractor to complete the work according to Performance Time.

8.7 DEFAULT OF CONTRACT

(a) If the Contractor:

(1) Fails to begin the work under the Contract within the time specified in the Notice to Proceed, or

(2) Fails to perform the work with sufficient workers and equipment or with sufficient materials to

assure the prompt completion of said work, or

(3) Fails to perform the work in accordance with Contract requirements or refuses to remove and replace rejected materials or unacceptable work, or

(4) Discontinues the prosecution of the work, or

(5) Fails to resume work which has been discontinued within a reasonable time after notice to do so, or

(6) Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or

(7) Allows any final judgment to remain unsatisfied for a period of 10 days, or

(8) Makes an assignment for the benefit of creditors, or

(9) Fails to comply with Contract requirements regarding minimum wage payments or EEO requirements, or

(10) Is a party to fraud, or

(11) For any other cause whatsoever, fails to carry on the work in an acceptable manner;

(b) The Project Manager will give notice in writing to the Contractor and the Surety of such delay, neglect or default.

(c) If the Contractor or Surety does not correct such default and proceed with the Contract within 10 days after the date of the Project Manager's notice, the Division will have full power and authority, without violating the Contract, to take the prosecution of the work from the Contractor. The Division may appropriate or use the Contractor's materials and equipment, and may enter into an agreement for the completion of the Contract according to the terms and provisions thereof, or use other methods as, in the opinion of the Project Manager, will be required for the completion of the Contract.

(d) All costs and charges incurred by the Division, together with the cost of completing the work under contract, will be deducted from any monies due or which may become due said Contractor. If such expense exceeds the sum which would have been payable under the Contract, then the Contractor and the Surety shall be liable and shall pay to the Division the amount of such excess.

8.8 TERMINATION OF CONTRACT

(a) Termination Notice: The Division may terminate work under the Contract in whole or in part if the Project Manager determines that termination is in the Division's best interest. Contract termination will be initiated by the Project Manager's written Contract Termination Notice to the Contractor. The notice will specify the effective date.

(b) Cancelled Commitments: The Contractor, after receiving the Contract Termination Notice, shall cancel any outstanding commitments for procurement of materials, supplies, equipment, and miscellaneous items. In addition, the Contractor shall use reasonable effort to cancel or divert any outstanding subcontract commitments to the extent they relate to any work terminated. With respect to such cancelled commitments the Contractor shall:

(1) Settle all outstanding liabilities and all claims arising out of these canceled commitments. Such settlements will be approved by the Project Manager and shall be final; and

(2) Assign to the Division all of the rights, title and interest of the Contractor under the terminated orders and subcontracts, as directed by the Project Manager. The Division will then have the right to settle or pay any or all claims arising out of the termination of these commitments.

(c) Termination Claim: The Contractor shall submit the termination claim to the Project Manager within 90 days after the termination notice effective date. During the 90 day period, the Contractor may make a written request for a time extension in preparing the claim. Any time extension must be approved by the Project Manager. If the Contractor fails to submit the termination claim within the time allowed, the Project Manager may determine the amount due the Contractor by reason of the termination.

(d) Payment:

(1) Subject to paragraph (c) above, the Contractor and Project Manager may agree upon the whole or any part of the amount to be paid to the Contractor because of the termination. The amount may include reasonable cancellation charges incurred by the Contractor. The amount may also include any reasonable loss upon outstanding commitments for subcontracts which the Contractor is unable to cancel, provided the Contractor has made reasonable effort to divert the commitments to other activities. The amount agreed upon shall be embodied in a Contract Amendment and the Contractor shall be paid that amount.

(2) Payments claimed and agreed to pursuant to termination shall be based on the contract unit prices. Payment for partially completed lump sum items may be made in the proportion that the partially completed work is to the total lump sum item. Where work performed is of a nature that it is impossible to separate the costs of uncompleted work from completed units, the Contractor will be paid the actual cost incurred for the necessary preparatory work and other work accomplished.

(3) The Division may, from time to time, under terms and conditions it may prescribe, make partial payments against costs incurred by the Contractor in connection with the Contract termination. The total of such payments shall not exceed the amount, as determined by the Project Manager, the Contractor will be entitled to hereunder.

(e) Disposition of Work and Inventory: The Contractor shall transfer title and deliver to the Division, as directed by the Project Manager, such items which, if the Contract had been completed, would have been furnished to the Division including:

(1) Completed and partially completed work; and

(2) Materials or equipment produced or in process or acquired in connection with the performance of the work terminated by the notice.

(f) Other than the above, any termination inventory resulting from the Contract termination may, with written approval of the Project Manager, be sold or acquired by the Contractor under the conditions prescribed by and at prices approved by the Project Manager. The proceeds of any such disposition shall be applied to reduce any payments to the Contractor under the Contract, or shall otherwise be credited to the cost of work covered by the Contract, or paid in a manner as directed by the Project Manager. Until final disposition, the Contractor shall protect and preserve all the material related to the Contract which is in the Contractor's possession and in which the Division has or may acquire an interest.

(g) Cost Records: The Contractor agrees to make cost records available to the extent necessary to determine the validity and amount of each item claimed.

(h) Contractual Responsibilities: Termination of a Contract or portion thereof shall not relieve the Contractor of contractual responsibilities for the work completed, nor shall it relieve the Surety of its obligation for and concerning any just claim arising out of the work performed.

End of

PROSECUTION AND PROGRESS

SECTION 9 - MEASUREMENT AND PAYMENT

9.1 MEASUREMENT OF QUANTITIES

(a) All work completed under the Contract will be measured by the Project Manager according to United States standard measure.

(b) A station when used as a definition or terms of measurement will be 100 linear feet.

(c) A method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.

(d) Unless otherwise specified, longitudinal measurements for area computations will be made horizontally. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the Plans or as altered by the Project Manager to fit field conditions.

(e) All items which are measured by the linear foot, such as pipe, culverts, guardrail, underdrains, etc., will be measured parallel to the base of foundation upon which such structures are placed unless otherwise shown on the Plans.

(f) In computing volumes of excavation, the average end area method or other acceptable methods will be used.

(g) The term "gage" when used in connection with the measurement of plates, will mean the U.S. Standard Gage.

(h) When the term "gage" refers to the measurement of wire, it will mean the wire gage specified in AASHTO M 32.

(i) The term "ton" will mean the short ton consisting of 2,000 lbs.

(j) Trucks used to haul material being paid for by weight shall be weighed empty at such times as the Project Manager directs, and each truck shall bear a plainly legible identification mark.

(k) Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Project Manager, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity and loads shall be leveled when the vehicle arrives at the point of delivery.

(l) The weight of inherent moisture in the material will not be deducted. Water added for the Contractor's convenience will not be paid for.

(m) Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the project unless special equipment has been ordered by the Project Manager in connection with force account work, in which case travel time and transportation to the project will be measured. If equipment has been ordered held on the job on a standby basis by the Project Manager, standby rental rates will be paid for the equipment.

(n) When requested by the Contractor and approved by the Project Manager in writing, material specified to be measured by the cubic yard may be weighed and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement and vice versa will be determined by the Project Manager and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

(o) The term "lump sum" when used as an item of payment will mean complete payment for the work de-

scribed in the Contract.

(p) When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will include all necessary fittings and accessories.

(q) When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these are identified by gage, unit weight, section dimensions, etc., such identification shall be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited Specifications, manufacturing tolerances established by the industries involved will be accepted.

9.2 SCOPE OF PAYMENT

(a) The Contractor shall receive and accept compensation provided for in the Contract as full payment for furnishing all materials and for performing all work under the Contract in a complete and acceptable manner and for all risk, loss, damage or expense of whatever character arising out of the nature of the work or the prosecution thereof, subject to the provisions of Section 7.16.

(b) Work or materials for which there are pay items and which are to be paid for separately will be included in the appropriate pay item. Work or materials that are essential to the project but for which there are no pay items will not be measured and paid for separately but shall be included in the appropriate pay item. Payment for any pay item listed in the Bid proposal of approximate quantities in the Contract Documents include all work necessary for their proper completion.

(c) The State shall pay each invoice within 45 days following the State's receipt of that invoice, so long as the amount invoiced correctly represents work completed by the Contractor and previously accepted by the State during the term that the invoice covers. Receipt of an invoice shall not constitute acceptance of any Work performed or deliverables provided under the Contract.

(d) Amounts not paid by the State within 45 days of the State's acceptance of the invoice shall bear interest on the unpaid balance beginning on the 45th day at the rate of 1% per month, as required by Section 24-30-202(24)(a), CRS, until paid in full; provided, however, that interest shall not accrue on unpaid amounts that the State disputes in writing. Contractor shall invoice the State separately for accrued interest on delinquent amounts, and the invoice shall reference the delinquent payment, the number of day's interest to be paid and the interest rate.

(e) The State is prohibited by law from making commitments beyond the term of the current State fiscal year. Payment to Contractor beyond the current State fiscal year is contingent on the appropriation and continuing availability of contract funds in any subsequent year (as provided in the Colorado Special Provisions). If federal funds or funds from any other non-State funds constitute all or some of the contract funds the State's obligation to pay Contractor shall be contingent upon such non-State funding continuing to be made available for payment. Payments to be made pursuant to this Contract shall be made only from contract funds, and the State's liability for such payments shall be limited to the amount remaining of such contract funds. If State, federal or other funds are not appropriated, or otherwise become unavailable to fund this Contract, the State may, upon written notice, terminate this Contract, in whole or in part, without incurring further liability. The State shall, however, remain obligated to pay for Services and Goods that are delivered and accepted prior to the effective date of notice of termination, and this termination shall otherwise be treated as if the Contract were terminated in the public interest as described in Section 8.8.

(f) If the State determines that the amount of any invoice is not correct, then the invoice shall be corrected prior to payment. The State may recover, at the State's discretion, payments made to Contractor in error for any reason, including, but not limited to, overpayments or improper payments, and unexpended or excess funds received by Contractor. The State may recover such payments by deduction from subsequent payments under this Contract, deduction from any payment due under any other contracts, grants or agreements between the State and Contractor, or by any other appropriate method for collecting debts owed to the State.

9.3 COMPENSATION FOR ALTERED QUANTITIES

(a) When the accepted quantities of work vary from the quantities in the Bid Documents, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract prices for the accepted quantities of work done. Allowance, except as provided in Section 4.2, will not be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor resulting either directly from such alterations or indirectly from unbalanced allocation among the contract items of overhead expense on the part of the Bidder and subsequent loss of expected reimbursements therefore or from any other cause.

(b) Should any such alteration directly cause the loss of any work or materials already furnished by the Contractor under the terms of the original Contract, s/he will be reimbursed for the actual cost of such work or of salvaging such materials. Any such materials may, at the option of the Division, be purchased at the actual cost to the Contractor, as evidenced by certified invoices.

9.4 EXTRA AND FORCE ACCOUNT WORK

(a) Extra work performed in accordance with the requirements and provisions of Section 4.3 will be paid for at the unit prices or lump sum stipulated in the order authorizing the work, or the Division may require the Contractor to do such work on a force account basis to be compensated in the following manner:

(1) Labor: For all labor and foremen in direct charge of the specific operations, the Contractor shall receive the rate of wage (or scale) paid and agreed upon in writing before beginning work for each and every hour that said labor and foreman are actually engaged in the work.

(2) The Contractor shall receive the actual costs paid to, or in behalf of, workers by reason of subsistence and travel allowances as evidenced by receipts but not to exceed State of Colorado per diem rates or other employment contract generally applicable to the classes of labor employed on the work.

(3) An amount equal to 67 percent of the sum of the above items will also be paid the Contractor to cover overhead, general superintendence, additional bond, property damage and liability insurance, workmen's compensation insurance premiums, unemployment insurance contributions, and social security.

(4) Should the Contractor allow the Superintendent to engage in the physical performance of construction work the Superintendent shall be compensated at the rate at which s/he is performing (laborer, operator, etc.), however, the 67 percent multiplier rate as designated above will not be applied.

(b) In addition to the 67 percent stated above, the actual amount of fringe benefits will be paid to the Contractor for those work classifications which may carry fringe benefits, as certified in writing by the Contractor. (Fringe benefits are those payments made by the Contractor to a third party or trustee to cover such things as, but not limited to, health and welfare, pensions, vacations and apprenticeship programs, etc.).

(c) The Project Manager shall have the authority to approve the manpower as to type and numbers.

(d) Materials: For materials accepted by the Project Manager and used, the Contractor or subcontractor shall receive the actual cost of such materials delivered on the work, including transportation charges paid by him/her, exclusive of machinery rentals as hereinafter set forth, to which cost 15 percent will be added.

(e) Subcontractor: When extra work on a force account basis is performed by a subcontractor on the project, in accordance with the provisions of an extra work order, a percentage based on the

following table will be allowed as additional to the percentages in (a) and (b) above, to reimburse the prime Contractor for the administrative expenses incurred in connection with the work. Bid items in the original Contract are not to be considered.

(1)	To $1,000	10 percent
(2)	Over $1,000 to $10,000	$100 plus 5 percent of excess over $1,000
(3)	Over $10,000	$550 plus 3 percent of excess over $10,000

Approval of this additional percentage will be made after receipted invoices are furnished by the Contractor.

(f) Equipment: For any machinery or special equipment (other than small tools) including fuel and lubricants, plus transportation costs, the use of which has been authorized by the Project Manager, the Contractor shall receive the rental rates agreed upon in writing before such work is begun for the actual time that such equipment is in operation on the work.

(g) Miscellaneous: No additional allowance will be made for general superintendence, the use of small tools or other costs for which no specific allowance is herein provided.

(h) Compensation: The Contractor's representative and the Project Manager shall compare records of the cost of work done as ordered on a force account basis.

(i) Statements: No payment will be made for work performed on force account basis until the Contractor has furnished the Project Manager with itemized statements of cost of such force account work including certified payrolls.

Statements shall be accompanied and supported by certified invoices for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from the Contractor's stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

9.5 ELIMINATED ITEMS

Should any items contained in the Contract be found unnecessary for the proper completion of the work, the Project Manager will notify the Contractor in writing to eliminate the item. Such action will not invalidate the Contract. The Contractor, by Change Order, will be reimbursed for actual work done and all costs incurred, including mobilization of materials and equipment prior to the elimination of the items.

9.6 PARTIAL PAYMENTS

(a) Standard Amount Retained:

(1) Requests for partial payment will be accepted from the Contractor once each month as the work progresses. Said payments will be based upon estimates prepared by the Project Manager of the value of the work performed and materials placed in accordance with Section 9.7. The Division will deduct money from the partial payments in amounts considered necessary to protect the interests of the State (pursuant to Section 24-91-103 CRS), and will retain this money until after completion of the entire Contract.

(2) If the total Contract Amount exceeds $150,000.00 then the State will retain a portion of each payment to the Contractor. Unless it is determined that a larger amount is necessary to protect the interests of the State, the amount to be retained from partial payments will be five percent (5%) of the value of the work performed to date. If the State fails to retain 5% of any payment the State may withhold a higher amount of a subsequent payment in order to offset such omission.

(3) The withheld percentage of the contract price of any such work, improvement, or construction shall be retained until the Contract is completed satisfactorily and finally accepted by the Project Manager.

(b) Subcontractor and Supplier Claims:

The Division may withhold, in addition to the standard amount, funds for all claims against the Contractor filed by subcontractors and suppliers, pursuant to Sections 38-26-107 and 24-91-103, CRS.

9.7 PAYMENT FOR MATERIAL ON HAND

(a) Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work as evidenced by certified invoices, when produced on the project, delivered on the project or stored in acceptable storage places in the State of Colorado in which case the Contractor must furnish evidence to the Project Manager that such materials are stored subject to or under the control of the Division. Payment for such materials will not relieve the Contractor of responsibility for loss or damage of the stored materials.

(b) Partial payment will not be made on living or perishable plant materials until planted on the project.

9.8 ACCEPTANCE AND FINAL PAYMENT

(a) When the project has been accepted as provided in Section 5.16, the Project Manager will prepare the final estimate (pay application) of the quantities of the various classes of work performed. After acceptance of such final estimate by the Contractor and all appropriate State officials and receipt of proof of advertisement in accordance with notice provisions contained in 38-26-107, CRS, s/he will be paid the entire sum found to be due after deducting all previous payments and all amounts to be retained or deducted under the provisions of the Contract and the appropriate statutes.

(b) All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

(c) Final payment, based on the final estimate and subject to all provisions of the Contract, shall be made after the Contractor has indicated, by signature or other written acknowledgement of the final estimate form. The Contractor's signature or other written acknowledgement indicates that the Project is full and complete, and the Contractor releases the Division and Department from all claims or damages arising from the prosecution of work under the Contract.

9.9 CORRECTION OF WORK AFTER FINAL PAYMENT (WARRANTY PERIOD)

Neither the final advertisement, nor payment nor any provisions in the Contract shall relieve the Contractor of responsibility for faulty materials or workmanship. Contractor shall be liable for defects in concrete work which appear within a period of two years from the date of final acceptance of the project and one year for all other construction work from the date of final acceptance (unless otherwise indicated in the Bid Documents) unless defects are discovered after the one or two year period which are the result of faulty materials or workmanship, in which case the provisions of the first sentence of this paragraph shall apply. The Project Manager will give notice to the Contractor of observed defects with reasonable promptness.

End of

MEASUREMENT AND PAYMENT

APPENDIX D – SAMPLE CONSTRUCTION CONTRACT

Oak Ridge SWA - Bel Aire Shop Replacement
C26NW1

STATE OF COLORADO CONSTRUCTION CONTRACT

PROJECT SUMMARY TABLE

State Agency
Department of Natural Resources
Colorado Parks and Wildlife, ("CPW")

Contractor
Insert Contractor's Full Legal Name, including "Inc.", "LLC", etc...
Address

Assistance Listing Number
Insert ALN (if applicable)

Contract Maximum Amount
Total for All State Fiscal Years: $

Contract Number
Insert Solicitation Number
Insert CMS Number
Insert CORE Number

Performance Time
120 Calendar Days

Project Name and Purpose
5706, Oak Ridge SWA – Bel Aire Shop Replacement and the purpose of the contract is to demolish the existing shop and construct a new 3,200 s.f. shop building with 800 s.f. three sided extension.

SIGNATURE PAGE

THE PARTIES HERETO HAVE EXECUTED THIS CONTRACT
Each person signing this Contract represents and warrants that he or she is duly authorized to execute this Contract and to bind the Party authorizing his or her signature

CONTRACTOR
Insert Contractor's Full Legal Name, including "Inc.", "LLC", etc...

Signature:_____

Printed Name:_____

Title: _____

Date:_____

STATE OF COLORADO
Jared S. Polis, Governor
Colorado Department of Natural Resources
Dan Gibbs, Executive Director
Colorado Parks and Wildlife

Signature:_____

Printed Name:_____

Title: _____

Date: _____

In accordance with §24-30-202 C.R.S., this Contract is not valid until signed and dated below by the State Controller or an authorized delegate.

STATE CONTROLLER
Robert Jaros, CPA, MBA, JD

Signature: _____

Printed Name: _____

Title: _____

Effective Date: _____

1. PARTIES

This Contract is entered into by and between Contractor named above and on the Signature Page for this Contract (the "Contractor"), and the State of Colorado acting by and through the State agency named above and on the Project Summary Table for this Contract (the "State" or "CPW"). Contractor and the State agree to the terms and conditions in this Contract.

2. TERM AND EFFECTIVE DATE

a. The Effective Date for this Contract is the date on which this Contract is approved and signed by the Colorado State Controller or designee, as shown on the Signature Page for this Contract.
b. This Contract shall not be valid or enforceable until the Effective Date. The State shall not be bound by any provision of this Contract before the Effective Date, and shall have no obligation to pay Contractor for any work performed or expense incurred before the Effective Date or after the expiration or earlier termination of this Contract.
c. Contractor's performance under this Contract will not begin until the issuance of the Notice to Proceed as specified in the General Conditions (the "GCs").
d. The State is entering into this Contract to serve the public interest of the State of Colorado as determined by its Governor, General Assembly, or Courts. If this Contract ceases to further the public interest of the State, the State, in its discretion, may terminate this Contract in whole or in part.

3. AUTHORITY

Authority for the State to enter into this Contract exists in 33-10-107(1)(c) C.R.S. The Contractor was selected under the procurement code, 24-103-202 C.R.S.

4. CONTRACT DOCUMENTS

The General Conditions and the Contract Documents described therein are all incorporated by reference and made a part of this Contract.
In the event of a conflict or inconsistency between this Contract and any Exhibit or attachment, such conflict or inconsistency shall be resolved by reference to the documents in the following order of priority

1. The Colorado Special Provisions included in Section 9 of this agreement
2. The provisions of the other sections of the main body of this Contract.
3. General Conditions for Construction

a. Documents incorporated in the General Conditions for Construction are subject to the Order of Precedence established in the General Conditions.

4. Exhibit __, Prevailing Wages

5. CONTRACTOR PERFORMANCE

a. Contractor shall perform its obligations under this Contract in accordance with the professional standards of care, skill and diligence in Contractor's industry, trade, or profession to the satisfaction of the State and its Project Manager in strict accordance with the provisions of the Contract Documents.

b. The Contractor shall furnish all the work, labor, and materials and perform all the work required for the complete and prompt execution of everything described or shown in, or reasonably implied from the Contract Documents above described project.

c. The Contractor shall complete the entire project within the Performance Time as shown in the Project Summary Table. The Contractor shall begin work within the time specified in the Notice to Proceed or ten days from the Notice to Proceed if a time is not specified and to prosecute the work with due diligence to completion. The Contractor agrees that the completion of the project within the Performance Time is an essential feature of this Contract and agrees to proceed with due diligence, taking all precautions and making all necessary arrangements to ensure the completion of the work within the prescribed time.

d. The Contractor agrees that failure to complete the work within the time allowed shall be considered as a breach of the Contract and entitle the State to collect liquidated damages for delay in completion, in accordance with the bid documents.

6. PAYMENT

The State shall pay the Contractor an amount not to exceed the Contract Maximum Amount specified in the Project Summary Table for performance of this Contract, subject to any additions or deductions as provided in the Contract Documents. Payments under this Contract are subject to the terms and conditions outlined in the General Conditions.

The State is prohibited by law from making commitments beyond the term of the current State Fiscal Year. Payment to Contractor beyond the current State Fiscal Year is contingent on the appropriation and continuing availability of Contract Funds in any subsequent year (as provided in the Colorado Special Provisions). If federal funds or funds from any other non-State funds constitute all or some of the Contract Funds, the State's obligation to pay Contractor shall

be contingent upon such non-State funding continuing to be made available for payment. Payments to be made pursuant to this Contract shall be made only from Contract Funds, and the State's liability for such payments shall be limited to the amount remaining of such Contract Funds. If State, federal, or other funds are not appropriated, or otherwise become unavailable to fund this Contract, the State may, upon written notice, terminate this Contract, in whole or in part, without incurring further liability. The State shall, however, remain obligated to pay for Services and Goods that are delivered and accepted prior to the effective date of notice of termination, and this termination shall otherwise be treated as if this Contract were terminated in the public interest as contemplated in **§ 2.d** above.

Funding under this Contract may be provided via a funding source that, at the time of Effective Date, is not currently valid through the maximum potential term of this Contract. All payments beyond the currently valid funding end date are contingent upon the State receiving additional anticipated and budgeted appropriated or nonappropriated funding. Should the State not receive such appropriated or nonappropriated funding and also be unable to substitute valid replacement funding, which is not anticipated, the State will notify the Contractor that it has not received additional and necessary appropriated or nonappropriated funding. If Contractor is unsure if funding has been received for any period, Contractor should verify the availability of funding with the State prior to performing any Work for that period as the State shall not be liable for, and shall not make any payment to Contractor for, any Work performed during a period for which it has not received sufficient appropriated or nonappropriated funding, regardless of whether Contractor has performed Work during that period.

7. INSURANCE

Contractor shall obtain and maintain, and ensure that each Subcontractor shall obtain and maintain, insurance as specified in this section at all times during the term of this Contract. All insurance policies required by this Contract shall be issued by insurance companies as approved by the State.

A. Workers' Compensation

Workers' compensation insurance as required by state statute, and employers' liability insurance covering all Contractor or Subcontractor employees acting within the course and scope of their employment.

B. General Liability

Commercial general liability insurance covering premises operations, fire damage, independent contractors, products and completed operations, blanket contractual liability, personal injury, and advertising liability with minimum limits as follows:

i. $1,000,000 each occurrence;

ii. $1,000,000 general aggregate;

iii. $1,000,000 products and completed operations aggregate; and

iv. $50,000 any one fire.

C. Automobile Liability

Automobile liability insurance covering any auto (including owned, hired and non-owned autos) with a minimum limit of $1,000,000 each accident combined single limit.

D. Pollution Liability Insurance

Pollution liability policy with minimum limits of $1,000,000 each occurrence and $2,000,000 Annual Aggregate covering any environmental damage caused by the contractor or subcontractor during the Work with the State included as an additionally insured party.

E. Additional Insured

The State shall be named as additional insured on all commercial general liability policies (construction contracts require additional insured coverage for completed operations) required of Contractor and Subcontractors.

F. Primacy of Coverage

Coverage required of Contractor and each Subcontractor shall be primary and noncontributory over any insurance or self-insurance program carried by Contractor or the State.

G. Cancellation

The above insurance policies shall include provisions preventing cancellation or non-renewal, except for cancellation based on non-payment of premiums, without at least 30 days prior notice to Contractor, and Contractor shall forward such notice to the State in accordance with **§14** within seven days of Contractor's receipt of such notice.

H. Subrogation Waiver

Except with respect to Professional Liability Insurance, all insurance policies secured or maintained by Contractor or its Subcontractors in relation to this Contract shall include clauses stating that each carrier shall waive all rights of recovery under subrogation or otherwise against Contractor or the State, its agencies, institutions, organizations, officers, agents, employees, and volunteers.

I. Public Entities

If Contractor is a "public entity" within the meaning of the Colorado Governmental Immunity Act, §§24-10-101, *et seq.*, C.R.S. (the "GIA"), Contractor shall maintain, in lieu of the liability insurance requirements stated above, at all times during the term of this Contract such liability insurance, by commercial policy or self-insurance, as is necessary to meet its liabilities under the GIA. If a Subcontractor is a public entity within the meaning of the GIA, Contractor shall ensure that the Subcontractor maintains at all times during the terms of this Contract, in lieu of the liability insurance requirements stated above, such liability insurance, by commercial policy or self-insurance, as is necessary to meet the Subcontractor's obligations under the GIA.

J. Certificates

Contractor shall provide to the State certificates evidencing Contractor's insurance coverage required in this Contract within seven Business Days following the Effective Date. Contractor shall provide to the State certificates evidencing Subcontractor insurance coverage required under this Contract within seven Business Days following the Effective Date, except that, if Contractor's subcontract is not in effect as of the Effective Date, Contractor shall provide to the State certificates showing Subcontractor insurance coverage required under this Contract within seven Business Days following Contractor's execution of the subcontract. No later than 15 days before the expiration date of Contractor's or any Subcontractor's coverage, Contractor shall deliver to the State certificates of insurance evidencing renewals of coverage. At any other time during the term of this Contract, upon request by the State, Contractor shall, within seven Business Days following the request by the State, supply to the State evidence satisfactory to the State of compliance with the provisions of this section.

8. GENERAL PROVISIONS

a. Assignment

Contractor's rights and obligations under this Contract are personal and may not be transferred or assigned without the prior, written consent of the State. Any attempt at assignment or transfer without such consent shall be void. Any assignment or transfer of Contractor's rights and obligations approved by the State shall be subject to the provisions of this Contract.

b. Subcontracts

Contractor shall not enter into any subcontract in connection with its obligations under this Contract without the prior, written approval of the State. Contractor shall submit to the State a copy of each such subcontract upon request by the State. All subcontracts entered into by Contractor in connection with this Contract shall comply with all applicable federal and state laws and regulations, shall provide that they are governed by the laws of the State of Colorado, and shall be subject to all provisions of this Contract.

c. Binding Effect

Except as otherwise provided in the General Conditions, all provisions of this Contract, including the benefits and burdens, shall extend to and be binding upon the Parties' respective successors and assigns.

d. Authority

Each Party represents and warrants to the other that the execution and delivery of this Contract and the performance of such Party's obligations have been duly authorized.

e. Captions and References

The captions and headings in this Contract are for convenience of reference only, and shall not be used to interpret, define, or limit its provisions. All references in this Contract to sections (whether spelled out or using the § symbol), subsections, exhibits or other attachments, are references to sections, subsections, exhibits or other attachments contained herein or incorporated as a part hereof, unless otherwise noted.

f. Counterparts

This Contract may be executed in multiple, identical, original counterparts, each of which shall be deemed to be an original, but all of which, taken together, shall constitute one and the same agreement.

g. Entire Understanding

This Contract represents the complete integration of all understandings between the Parties related to the project, and all prior representations

and understandings related to the project, oral or written, are merged into this Contract. Prior or contemporaneous additions, deletions, or other changes to this Contract shall not have any force or effect whatsoever, unless embodied herein.

h. Digital Signatures

If any signatory signs this Contract using a digital signature in accordance with the Colorado State Controller Contract, Grant and Purchase Order Policies regarding the use of digital signatures issued under the State Fiscal Rules, then any agreement or consent to use digital signatures within the electronic system through which that signatory signed shall be incorporated into this Contract by reference.

i. Modification

Except as otherwise provided in this Contract, any modification to this Contract shall only be effective if agreed to in a formal amendment to this Contract, properly executed and approved in accordance with applicable Colorado State law and State Fiscal Rules. Modifications permitted under this Contract, other than contract amendments, shall conform to the policies issued by the Colorado State Controller.

j. Statutes, Regulations, Fiscal Rules, and Other Authority

Any reference in this Contract to a statute, regulation, State Fiscal Rule, fiscal policy or other authority shall be interpreted to refer to such authority then current, as may have been changed or amended since the Effective Date of this Contract.

k. External Terms and Conditions

Notwithstanding anything to the contrary herein, the State shall not be subject to any provision included in any terms, conditions, or agreements appearing on Contractor's or a Subcontractor's website or any provision incorporated into any click-through or online agreements related to the Work unless that provision is specifically incorporated by reference into this Contract.

l. Severability

The invalidity or unenforceability of any provision of this Contract shall not affect the validity or enforceability of any other provision of this Contract, which shall remain in full force and effect, provided that the Parties can continue to perform their obligations under this Contract in accordance with the intent of the Contract.

m. Survival of Certain Contract Terms

Any provision of this Contract that imposes an obligation on a Party after termination or expiration of the Contract shall survive the termination or expiration of the Contract and shall be enforceable by the other Party.

n. Third Party Beneficiaries

Except for the Parties' respective successors and assigns described in this §8, this Contract does not and is not intended to confer any rights or remedies upon any person or entity other than the Parties. Enforcement of this Contract and all rights and obligations hereunder are reserved solely to the Parties. Any services or benefits which third parties receive as a result of this Contract are incidental to the Contract, and do not create any rights for such third parties.

o. Waiver

A Party's failure or delay in exercising any right, power, or privilege under this Contract, whether explicit or by lack of enforcement, shall not operate as a waiver, nor shall any single or partial exercise of any right, power, or privilege preclude any other or further exercise of such right, power, or privilege.

p. CORA Disclosure

To the extent not prohibited by federal law, this Contract and the performance measures and standards required under §24-106-107, C.R.S., if any, are subject to public release through the CORA.

q. Licenses, Permits, and Other Authorizations

Contractor shall secure, prior to the Effective Date, and maintain at all times during the term of this Contract, at its sole expense, all licenses, certifications, permits, and other authorizations required to perform its obligations under this Contract, and shall ensure that all employees, agents and Subcontractors secure and maintain at all times during the term of their employment, agency or subcontract, all license, certifications, permits and other authorizations required to perform their obligations in relation to this Contract.

r. Indemnification

i. General Indemnification

Contractor shall indemnify, save, hold harmless, and assume liability on behalf of the State, its officers, employees, agents and assignees (the "Indemnified Parties"), against any and all costs, expenses, claims, damages, liabilities, court awards and other amounts (including attorneys'

fees and related costs) incurred by any of the Indemnified Parties in relation to any act or omission by Contractor, or its employees, agents, Subcontractors, or assignees in connection with this Contract.

ii. Confidential Information Indemnification

Disclosure or use of State Confidential Information by Contractor in violation of **§8** may be cause for legal action by third parties against Contractor, the State, or their respective agents. Contractor shall indemnify, save, hold harmless, and assume liability on behalf of the Indemnified Parties, against any and all claims, damages, liabilities, losses, costs, expenses (including attorneys' fees and costs) incurred by the State in relation to any act or omission by Contractor, or its employees, agents, assigns, or Subcontractors in violation of **§8**.

iii. Intellectual Property Indemnification

Contractor shall indemnify, save, hold harmless, and assume liability on behalf of the Indemnified Parties, against any and all costs, expenses, claims, damages, liabilities, and other amounts (including attorneys' fees and costs) incurred by the Indemnified Parties in relation to any claim that any Deliverable, Good or Service, software, or Work Product provided by Contractor under this Contract (collectively, "IP Deliverables"), or the use thereof, infringes a patent, copyright, trademark, trade secret, or any other intellectual property right. Contractor's obligations hereunder shall not extend to the combination of any IP Deliverables provided by Contractor with any other product, system, or method, unless the other product, system, or method is **(a)** provided by Contractor or Contractor's subsidiaries or affiliates; **(b)** specified by Contractor to work with the IP Deliverables; **(c)** reasonably required in order to use the IP Deliverables in its intended manner and the infringement could not have been avoided by substituting another reasonably available product, system, or method capable of performing the same function; or **(d)** is reasonably expected to be used in combination with the IP Deliverables.

iv. Accessibility Indemnification

Contractor shall indemnify, save, hold harmless, and assume liability on behalf of the state, its officers, employees, agents and assignees (collectively, the "Indemnified Parties"), for any and all costs, expenses, claims, damages, liabilities, court awards, attorney fees and related costs, and other amounts incurred by any of the Indemnified Parties in relation to Contractor's noncompliance with §§24-85-101, et seq., C.R.S., or the Accessibility Standards for Individuals with a Disability as established by the Office of Information Technology pursuant to Section §24-85-103, C.R.S. State employees are considered third parties for the purposes of this section.

s. Accessibility

i. Contractor shall comply with the *Accessibility Standards for Individuals with a Disability,* as adopted by the Office of Information Technology pursuant to §24-85-103 C.R.S

ii. The State may require that the Contractor's compliance with the *Accessibility Standards for Individuals with a Disability* adopted by the Office of Information Technology pursuant to §24-85-103 C.R.S. is determined and tested by a qualified third party selected by the State. The State may ask the Contractor to review the selection of the third party. Contractor shall be responsible for all costs associated with the third-party vendor's assessment. If Contractor is not in compliance as determined by the third-party vendor, at the State's request and at the State's direction, Contractor shall promptly take all necessary actions to come into compliance using a State-approved vendor, at no additional cost to the State.

9. COLORADO SPECIAL PROVISIONS (COLORADO FISCAL RULE 3-3)

These Special Provisions apply to all contracts except where noted in italics.

A. STATUTORY APPROVAL. §24-30-202(1), C.R.S.

This Contract shall not be valid until it has been approved by the Colorado State Controller or designee. If this Contract is for a Major Information Technology Project, as defined in §24-37.5-102(2.6), then this Contract shall not be valid until it has been approved by the State's Chief Information Officer or designee.

B. FUND AVAILABILITY. §24-30-202(5.5), C.R.S.

Financial obligations of the State payable after the current State Fiscal Year are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available.

C. GOVERNMENTAL IMMUNITY.

Liability for claims for injuries to persons or property arising from the negligence of the State, its departments, boards, commissions committees, bureaus, offices, employees and officials shall be controlled and limited by the provisions of the Colorado Governmental Immunity Act, §24-10-101, et seq., C.R.S.; the Federal Tort Claims Act, 28 U.S.C. Pt. VI, Ch. 171 and 28 U.S.C. 1346(b), and the State's risk management statutes, §§24-30-1501, et seq. C.R.S. No term or condition of this Contract shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions, contained in these statutes.

D. INDEPENDENT CONTRACTOR.

Contractor shall perform its duties hereunder as an independent contractor and not as an employee. Neither Contractor nor any agent or employee of Contractor shall be deemed to be an agent or employee of the State. Contractor shall not have authorization, express or implied, to bind the State to any agreement, liability or understanding, except as expressly set forth herein. **Contractor and its employees and agents are not entitled to unemployment insurance or workers compensation benefits through the State and the State shall not pay for or otherwise provide such coverage for Contractor or any of its agents or employees. Contractor shall pay when due all applicable employment taxes and income taxes and local head taxes incurred pursuant to this Contract. Contractor shall (i) provide and keep in force workers' compensation and unemployment compensation insurance in the amounts required by law, (ii) provide proof thereof when requested by the State, and (iii) be solely responsible for its acts and those of its employees and agents.**

E. COMPLIANCE WITH LAW.

Contractor shall comply with all applicable federal and State laws, rules, and regulations in effect or hereafter established, including, without limitation, laws applicable to discrimination and unfair employment practices.

F. CHOICE OF LAW, JURISDICTION, AND VENUE.

Colorado law, and rules and regulations issued pursuant thereto, shall be applied in the interpretation, execution, and enforcement of this Contract.

Any provision included or incorporated herein by reference which conflicts with said laws, rules, and regulations shall be null and void. All suits or actions related to this Contract shall be filed and proceedings held in the State of Colorado and exclusive venue shall be in the City and County of Denver.

G. PROHIBITED TERMS.

Any term included in this Contract that requires the State to indemnify or hold Contractor harmless; requires the State to agree to binding arbitration; limits Contractor's liability for damages resulting from death, bodily injury, or damage to tangible property; or that conflicts with this provision in any way shall be void ab initio. Nothing in this Contract shall be construed as a waiver of any provision of §24-106-109 C.R.S.

H. SOFTWARE PIRACY PROHIBITION.

State or other public funds payable under this Contract shall not be used for the acquisition, operation, or maintenance of computer software in violation of federal copyright laws or applicable licensing restrictions. Contractor hereby certifies and warrants that, during the term of this Contract and any extensions, Contractor has and shall maintain in place appropriate systems and controls to prevent such improper use of public funds. If the State determines that Contractor is in violation of this provision, the State may exercise any remedy available at law or in equity or under this Contract, including, without limitation, immediate termination of this Contract and any remedy consistent with federal copyright laws or applicable licensing restrictions.

I. EMPLOYEE FINANCIAL INTEREST/CONFLICT OF INTEREST. §§24-18-201 and 24-50-507, C.R.S.

The signatories aver that to their knowledge, no employee of the State has any personal or beneficial interest whatsoever in the service or property described in this Contract. Contractor has no interest and shall not acquire any interest, direct or indirect, that would conflict in any manner or degree with the performance of Contractor's services and Contractor shall not employ any person having such known interests.

J. VENDOR OFFSET AND ERRONEOUS PAYMENTS. §§24-30-202(1) and 24-30-202.4, C.R.S.

[*Not applicable to intergovernmental agreements*] Subject to §24-30-202.4(3.5), C.R.S., the State Controller may withhold payment under the State's vendor offset intercept system for debts owed to State agencies for: **(i)** unpaid child support debts or child support arrearages; **(ii)** unpaid balances

of tax, accrued interest, or other charges specified in §§39-21-101, *et seq.*, C.R.S.; **(iii)** unpaid loans due to the Student Loan Division of the Department of Higher Education; **(iv)** amounts required to be paid to the Unemployment Compensation Fund; and **(v)** other unpaid debts owing to the State as a result of final agency determination or judicial action. The State may also recover, at the State's discretion, payments made to Contractor in error for any reason, including, but not limited to, overpayments or improper payments, and unexpended or excess funds received by Contractor by deduction from subsequent payments under this Contract, deduction from any payment due under any other contracts, grants or agreements between the State and Contractor, or by any other appropriate method for collecting debts owed to the State.

10. SPECIAL CONSIDERATIONS FOR PUBLIC PROJECTS

a. Applicable Prevailing Wages §24-92-203 CRS

i. The general prevailing rate of the regular, holiday, and overtime wages paid and the payments on behalf of employees to the welfare, pension, vacation, apprentice training, and education funds are attached to this Contract as **Exhibit __, Prevailing Wages**. These rates shall remain the same for the duration of the work of this Project.

b. Posting of Prevailing Wage Rates §24-92-207 CRS

i. The Contractor and each subcontractor who performs work on this Project shall post in conspicuous places on the project site, where employees are employed, posters that contain the current prevailing rate of wages and the current prevailing rate of payments to the funds required to be paid for each employee employed to execute this Contract, and the rights and remedies of any employee described in §24-92-210 CRS for nonpayment of any wages earned pursuant to this section. The posters shall be furnished to the Contractor and subcontractors by the Colorado Department of Personnel and Administration in a form and manner to be determined by that department.

ii. Failure of the Contractor or subcontractor to comply with this section shall be deemed guilty of a petty offense and shall pay to the State one hundred dollars for each calendar day of noncompliance as determined by the State.

c. Payment of Wages and Unclaimed Prevailing Wages Special Trust Fund §24-92-204 CRS

i. The Contractor and any subcontractors shall pay all the employees employed directly on the site of the work, unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment computed at wage rates not less than those stated in the competitive solicitation, regardless of any contractual relationships that may be alleged to exist between the Contractor or subcontractor and the employees.

ii. The Contractor and any subcontractors shall prepare and submit payroll reports to the State on a monthly basis that disclose all relevant payroll information, including the name and address of any entities to which fringe benefits are paid, and that the State is required to review the certified payroll reports in a timely manner as required by this Contract.

iii. The Contractor and any subcontractors shall maintain on the site where this public project is being constructed a daily log of employees employed each day on the public project. The log shall include, at a minimum, for each employee his or her name, primary job title, and employer, and shall be kept on a form prescribed by the State through the Colorado Department of Personnel and Administration. The log shall be available for inspection on the site at all times by the State.

iv. If the Contractor or any subcontractor fails to pay wages as are required by this Contract, the State shall not approve a warrant or demand for payment to the Contractor until the Contractor furnishes the State with evidence satisfactory to the State that such wages so required by this Contract have been paid; except that the State shall approve and pay any portion of a warrant or demand for payment to the Contractor to the extent the State has been furnished evidence satisfactory to the State that the Contractor or one or more subcontractors has paid such wages required by this Contract, even if the Contractor has not furnished evidence that all of the subcontractors have paid wages as required by this Contract. Any Contractor or subcontractor may use the following procedure in order to satisfy the requirements of this section:

1. The Contractor or subcontractor may submit to the State, for each employee to whom such wages are due, a check as

required by the State. Such check shall be payable to that employee or to the State so it is negotiable by either of those parties. Each such check shall be in an amount representing the difference between the accrued wages required to be paid to that employee by this Contract and the wages actually paid by the Contractor or subcontractor

2. If any check submitted as described above cannot be delivered to the employee within a reasonable period as determined by the State, then it shall be negotiated by the State and the proceeds deposited in the unclaimed property trust fund created in section §38-13-116.6 CRS. Nothing in this section shall be construed to lessen the responsibility of the Contractor or subcontractor to attempt to locate and pay any employee to whom wages are due.

d. Apprenticeship Contributions §24-92-208 CRS

i. The apprenticeship contribution rate and fringe benefit requirements applicable to this Contract have been established in accordance with the apprenticeship contribution of the collective bargaining agreement of the applicable trade in the geographic locality of the Project. The Colorado Department of Personnel and Administration, Office of the State Architect publishes copies of the applicable rates and has made them available at <https://drive.google.com/file/d/1ZrsbxqMOdrcmx6yYe-QAs61ImqRJ7zfN/view>.

ii. In order to comply with the applicable apprenticeship contribution statutes, the Contractor must do one of the following:

1. If the Contractor is signatory to the applicable collective bargaining agreement, the Contractor shall pay at least the apprenticeship contribution rates available above; or,
2. If the Contractor is not signatory to a collective bargaining agreement but is a member of a multi-employer trade association that sponsors an apprenticeship program registered with the United States Department of Labor's Employment and Training Administration or a State apprenticeship agency recognized by the United States Department of Labor or directly sponsor such a program for their own employees, the Contractor shall pay the determined apprenticeship contribution to that program or

to a state apprenticeship council registered with the United States Department of Labor; or,

3. If the Contractor does not qualify for either option specified above, the Contractor shall be required to pay the amount of the apprenticeship contribution to affected workers in cash payments in addition to the other components of the required prevailing wage and fringe benefit package.

iii. The apprenticeship contribution rate shall be deducted from the prevailing wage rate package to avoid double payment by the Contractor or subcontractor.

e. Apprenticeship Utilization §24-92-115 CRS

i. The Contractor shall submit to the State documentation in a form substantially similar to the template available at https://osa.colorado.gov/sites/osa/files/documents/SBP-2.1%20Apprenticeship%20Certification.pdf that the Contractor and each subcontractor used for mechanical, sheet metal, fire suppression, sprinkler fitting, electrical, and plumbing work participates in apprenticeship programs registered with the United States Department of Labor's Employment and Training Administration or state apprenticeship agency recognized by the United States Department of Labor and have a proven record of graduating apprentices as follows:

1. Beginning July 1, 2021, through June 30, 2026, a minimum of fifteen percent of its apprentices for at least three of the past five years;
2. Beginning July 1, 2026, through June 30, 2031, a minimum of twenty percent of apprentices for at least three of the past five years; and
3. Beginning July 1, 2031, and each year thereafter, a minimum of thirty percent of apprentices for at least three of the past five years.

ii. The Contractor shall supply supporting documentation from the United States Department of Labor's Office of Apprenticeship or a State apprenticeship agency recognized by the United States Department of Labor verifying the information provided. The Contractor agrees to provide additional documentation to the State regarding affected apprenticeship training programs relating to the requirements of this section as requested.

iii. If the States determines that a subcontractor subject to this section has willfully falsified documentation or willfully misrepresented their qualifications required to comply with this section, the State shall direct the Contractor to terminate the subcontractor contract immediately and the subcontractor will be immediately removed from the Public Project. At the discretion of the director of the Colorado Department of Personnel and Administration, the State may initiate the process to debar the Contractor pursuant to §24-109-105 CRS, and may pursue any other remedy provided by law.

APPENDIX E – PERFORMANCE BOND TEMPLATE

Oak Ridge SWA - Bel Aire Shop Replacement
C26NW1

STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAM

PERFORMANCE BOND

Institution/Agency: Colorado Parks and Wildlife Department of Natural Resources
Project No./Name: C26NW1 5706, Oak Ridge SWA – Bel Aire Shop Replacement

BONDING COMPANY: DO NOT MAKE ANY CHANGES TO THE LANGUAGE IN THIS BOND.

KNOW ALL PERSONS BY THESE PRESENTS:

That the Contractor

as Principal and hereinafter called "Principal,"

and

as Surety and hereinafter called "Surety," a corporation organized and existing under the laws of

_____ are held and firmly bound unto **the STATE OF COLORADO** acting by and through the Institution/Agency identified above hereinafter called the "Principal Representative", in the sum of:

_____ Dollars ($_____)
(Written Amount) (Numerical Amount)

for the payment whereof the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly, by these presents.

WHEREAS, the Principal and the State of Colorado acting by and through the Principal Representative have entered into a certain Contract, hereinafter called "Contract," dated

_____ for the construction of a PROJECT
(Leave blank, to be completed by Institution/Agency)

identified above, which Contract is hereby by reference made a part hereof;

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION, is such that, if the Principal shall promptly, fully and faithfully perform all the undertakings, covenants, terms, conditions and agreements of said Contract during the original term of said Contract any extensions thereof that may be granted by the Principal Representative with or without notice to the Surety, and during the life of any guaranty required under the Contract, and shall also well and truly perform and fulfill all undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

AND THE SAID SURETY, for value received hereby stipulates and agrees that whenever the Principal shall be, and declared by the Principal Representative to be in default under said Contract, the State of Colorado having performed its obligations thereunder, the Surety may promptly remedy the default or shall promptly (1) Complete the Contract in accordance with its terms and conditions, or (2) Obtain a bid or bids for submittal to the Principal Representative for completing the Contract in accordance with its terms and conditions, and upon determination by the Principal Representative and Surety of the lowest responsible bidder, arrange for a contract between such bidder and the State of Colorado acting by and through the Principal Representative and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion, less the balance of the contract price but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount hereinbefore set forth. The term "balance of the contract price" as herein used shall mean the total amount payable to the Principal under the Contract and any amendments thereto, less the amount properly paid by the State of Colorado to the Contractor.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the State of Colorado.

IN WITNESS WHEREOF said Principal and Surety have executed this Bond, on

_____
(If left blank, the Institution/Agency will date this bond to match the Contract date)

(Corporate Seal)

THE PRINCIPAL

_____

ATTEST:

By: _____

_____ Title: _____
Secretary

(Corporate Seal)

SURETY

_____

By: _____
Attorney-in-fact

THIS BOND MUST BE ACCOMPANIED BY POWER OF ATTORNEY, EFFECTIVELY DATED

Note: This bond is issued simultaneously with another bond conditioned for the full and faithful payment for all labor and material of the contract.

APPENDIX F – LABOR AND MATERIALS BOND TEMPLATE

Oak Ridge SWA - Bel Aire Shop Replacement
C26NW1

STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAM

LABOR AND MATERIAL BOND

Institution/Agency: Colorado Parks and Wildlife Department of Natural Resources
Project No./Name: C26NW1 5706, Oak Ridge SWA – Bel Aire Shop Replacement

BONDING COMPANY: DO NOT MAKE ANY CHANGES TO THE LANGUAGE IN THIS BOND.

KNOW ALL PERSONS BY THESE PRESENTS:

That the Contractor

as Principal and hereinafter called “Principal,”

and

as Surety and hereinafter called “Surety,” a corporation organized and existing under the laws of

_____ are held and firmly bound unto **the STATE OF COLORADO** acting by and through the Institution/Agency identified above hereinafter called "Principal Representative," and to all subcontractors and any others who have supplied or furnished or shall supply or furnish materials, rental machinery, tools, or equipment actually used in the performance of the hereinafter identified Contract, or who have performed or shall perform labor in the performance of or in connection with said Contract, hereinafter called "Obligees" in the sum of:

_____ Dollars ($_____)
(Written Amount) (Numerical Amount)

together with interest at the rate of eight per cent (8%) per annum on all payments becoming due in accordance with said Contract, from the time such payments shall become due until such payment shall be made, for the payment of which, well and truly made to the Obligees, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly, by these presents.

WHEREAS, the Principal and the State of Colorado acting by and through the Principal Representative have entered into a certain Contract, hereinafter called "Contract," dated

_____ for the construction of a PROJECT
(Leave blank, to be completed by Institution/Agency)

identified above, which Contract is hereby by reference made a part hereof;

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal and the Surety shall fully indemnify and save harmless the State of Colorado and the Principal Representative from and against any and all costs and damages, including patent infringements, which either may suffer by reason of any failure or failures of the Principal promptly and faithfully to perform all terms and conditions of said Contract and shall fully reimburse and repay the State of Colorado and the Principal Representative all outlay and expense which the State of Colorado and the Principal Representative may incur in making good any such failure or failures, and further, if the Principal and his subcontractors shall duly and promptly pay for any and all labor, materials, team hire, sustenance, provisions, provender, rental machinery, tools, or equipment and other supplies which have been or shall be used or consumed by said Principal or his subcontractors in the performance of the work of said Contract , and it said Principal shall duly and promptly pay all his subcontractors the sums due them for any and all materials, rental machinery, tools, or equipment and labor that have been or shall be furnished, supplied, performed or used in connection with performance of said Contract, and shall also fully indemnify and save harmless the State of Colorado and the Principal Representative to the extent of any and all expenditures which either or both of them may be required to make by reason of any failures or defaults by the Principal or any subcontractor in connection with such payments; then this obligation shall be null and void, otherwise it shall remain in full force and effect.

It is expressly understood and agreed that any alterations which may be made in the terms of said Contract or in the work to be done under said Contract, or any extension(s) of time for the performance of the Contract, or any forebearance on the part of either the State of Colorado or the Principal to any of the others, shall not in any way release the Principal and the Surety, or either of them, their heirs, executors, administrators, successors or assigns from their liability hereunder, notice to the Surety of any such alteration, extension or forbearance being hereby waived.

IN WITNESS WHEREOF, the Principal and the Surety have executed this Bond, , on

_____
(If left blank, the Institution/Agency will date this bond to match the Contract date)

(Corporate Seal)

THE PRINCIPAL

_____

ATTEST:

By: _____

_____ Title: _____
Secretary

(Corporate Seal)

SURETY

_____

By: _____
Attorney-in-fact

THIS BOND MUST BE ACCOMPANIED BY POWER OF ATTORNEY, EFFECTIVELY DATED

Note: This bond is issued simultaneously with another bond conditioned for the full and faithful performance of the contract.