



State of Utah

GARY R. HERBERT
Governor

GREGORY S. BELL
Lt. Governor

Department of Administrative Services

KIMBERLY K. HOOD
Executive Director

Division of Facilities Construction and Management

DAVID G. BUXTON
Director

ADDENDUM NO. 1

Date: January 6, 2010

To: Pre-Qualified General Contractors

From: Wayne Smith – Project Manager

Reference: Brigham City Armory Upgrade
Utah National Guard – Brigham City, Utah
DFCM Project No. 09226470

Subject: **Addendum No. 1**

Pages	Addendum Cover Sheet	1 page
	Revised Bid Form	2 pages
	<u>Architect's Addendum</u>	<u>33 pages</u>
	Total	36 pages

Note: *This Addendum shall be included as part of the Contract Documents. Items in this Addendum apply to all drawings and specification sections whether referenced or not involving the portion of the work added, deleted, modified, or otherwise addressed in the Addendum. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to Disqualification.*

While we contend that SB220 should only be potentially applicable to a contract issued after the effective date of said bill, this is to clarify that for purposes of this contract, regardless of the execution or effective dates of this contract, the status of Utah Law and remedies available to the State of Utah and DFCM, as it relates to any matter referred to or affected by said SB220, shall be the Utah law in effect at the time of the issuance of this Addendum.

1.1 **SCHEDULE CHANGES:** No Project Schedule changes.

1.2 **GENERAL ITEMS:**

- 1.2.1 See attached Revised Bid Form adding another alternate.
- 1.2.2 See attached Architect's Addendum #1.



**BID FORM – REVISED
PER ADDENDUM NO. 1 DATED JANUARY 6, 2010**

NAME OF BIDDER _____ DATE _____

To the Division of Facilities Construction and Management
4110 State Office Building
Salt Lake City, Utah 84114

The undersigned, responsive to the "Invitation to Bid" and in accordance with the Request for Bids for the **BRIGHAM CITY ARMORY UPGRADE – UTAH NATIONAL GUARD – BRIGHAM CITY, UTAH DFCM PROJECT NO. 09226470** and having examined the Contract Documents and the site of the proposed Work and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of labor, hereby proposes to furnish all labor, materials and supplies as required for the Work in accordance with the Contract Documents as specified and within the time set forth and at the price stated below. This price is to cover all expenses incurred in performing the Work required under the Contract Documents of which this bid is a part:

I/We acknowledge receipt of the following Addenda: _____

BASE BID: For all work shown on the Drawings and described in the Specifications and Contract Documents, I/we agree to perform for the sum of:

_____ DOLLARS (\$_____)

(In case of discrepancy, written amount shall govern)

ADDITIVE ALTERNATE #1: For all work shown on the Drawings and described in the Specifications and Contract Documents to enlarge asphalt parking lot, I/we agree to perform for the sum of:

_____ DOLLARS (\$_____)

(In case of discrepancy, written amount shall govern)

ADDITIVE ALTERNATE #2: For all work shown on the Drawings and described in the Specifications and Contract Documents to resurface the existing asphalt parking area, I/we agree to perform for the sum of:

_____ DOLLARS (\$_____)

(In case of discrepancy, written amount shall govern)

ADDITIVE ALTERNATE #3: For all work shown on the Drawings and described in the Specifications and Contract Documents to place gravel on west area of property, I/we agree to perform for the sum of:

_____ DOLLARS (\$_____)

(In case of discrepancy, written amount shall govern)

ADDITIVE ALTERNATE #4: For all work shown on the Drawings and described in the Specifications and Contract Documents to provide Palladin slab and canopy, I/we agree to perform for the sum of:

_____ DOLLARS (\$_____)
(In case of discrepancy, written amount shall govern)

I/We guarantee that the Work will be Substantially Complete by **September 30, 2010**, should I/we be the successful bidder, and agree to pay liquidated damages in the amount of **\$750.00** per day for each day after expiration of the Contract Time as stated in Article 3 of the Contractor's Agreement.

This bid shall be good for 45 days after bid opening.

Enclosed is a 5% bid bond, as required, in the sum of _____

The undersigned Contractor's License Number for Utah is _____.

Upon receipt of notice of award of this bid, the undersigned agrees to execute the contract within ten (10) days, unless a shorter time is specified in Contract Documents, and deliver acceptable Performance and Payment bonds in the prescribed form in the amount of 100% of the Contract Sum for faithful performance of the contract. The Bid Bond attached, in the amount not less than five percent (5%) of the above bid sum, shall become the property of the Division of Facilities Construction and Management as liquidated damages for delay and additional expense caused thereby in the event that the contract is not executed and/or acceptable 100% Performance and Payment bonds are not delivered within time set forth.

Type of Organization: _____ (Corporation, Partnership, Individual, etc.)

Any request and information related to Utah Preference Laws: _____

Respectfully submitted,

Name of Bidder

ADDRESS:

Authorized Signature

Addendum #1
Brigham City Armory Renovation
985 North 500 West
Brigham City, Utah
DFCM Project # 09226470

GL001

Replace Sheet GL001 with attached Sheet GL001

Civil Drawings

Replace sheets C101, D101, ER101, and ER102 with attached sheets C101, D101, ER101, ER102 and ER103.

L102

Replace Sheet L102 with attached Sheet L102

AS100

Replace Sheet AS100 with attached Sheet AS100

AD100

Replace Sheet AD100 with attached Sheet AD100

AE101

Replace Sheet AE101 with attached Sheet AE101

AE201

Delete note #12 shown on North Elevation A1/AE201

AE211

Replace Sheet AE211 with attached Sheet AE211

AE401

Replace Sheet AE401 with attached Sheet AE401

STRUCTURAL DRAWINGS

Add sheet S002 Special Inspections Form

Replace sheets S001, S101, and S102 dated 12/15/09 with attached sheets S001, S101, and S102 dated 1/6/2010

SHEET – M101

A. Key note 12 shall apply to the louvers at the cabinet heaters outside air openings.

SHEET – M201

1. Add General Note 6: "All HVAC Control work shall be coordinated with Ricey Jones, UTNG, (801)432-4459, (801)699-6397 (cell)."
2. Add General Note 7: "M.C. shall perform grease duct leakage test per IMC 506.3.3.1."

3. Add Key Note 19: "Hood exhaust fan/make-up air unit control panel. Hood fire suppression system emergency switch location." Locate near exist door to Drill Hall.

M202

- B. Re-locate roof top equipment per revised accompanying plan. Coordinate exact locations with structural drawings.

SHEET – P201

1. Re-locate grease interceptor and sampling manhole per revised accompanying plan. Coordinate location with electrical contractor and site features.

SHEET – P202

1. Relocate rooftop equipment per the mechanical plans and re-route gas piping per revised accompanying plan.
2. Add gas piping schematic per state plan review.

SHEET – P303

1. Add General Note: "The location of plumbing fixtures in the kitchen shall be coordinated with MSG. Peterson, UTNG (801) 432-4465."

SHEET – P501

1. Revised Gas Schedule per accompanying plan.

PRIOR APPROVALS

The following manufacturers, trade names and products are allowed to bid on a name brand only basis with the provision that they completely satisfy all and every requirement of the drawings, specifications and all addenda shall conform to the design, quality and standards specified, established and required for the complete and satisfactory installation and performance of the building and all its respective parts.

<u>Item</u>	<u>Manufacturer</u>	<u>Comments</u>
Cabinet Unit Heater	Airtherm, Beacon Morris, Trane	
Check Valves & Strainers	IFC	
Circuit Balancing Valves	Gerand & Danfoss	
Convactor Units	Beacon Morris, Sigma, WallFin	
Ductles Split Systems	Daikin AC, Fujitsu	
Flex Duct	Thermafex	
Grilles Registers & Diffusers	Anemostat	
HET's or Spin In's	Hercules	
Indoor Air Handling Units	McQuay	
Kitchen Hoods	Kees	
Louvers	Greenheck, NCA	
Make-up Air Units	Greenheck, Modine, Trane	
Manual Volume Dampers	NCA	
Motorized Dampers	NCA	

Roof Mounted Exhaust Fans	Breidert
Roof Mounted Kitchen Exhaust Fan	Breidert
Rooftop Units	McQuay
Seismic	Vibration Management Corp.

Electrical Drawings

The following note shall be added to all ET sheets as a general note;

1. Contractor shall coordinate all telecommunication and data work with Mike Hansen with the Utah National Guard (801) 432-4118 prior to work being performed.

Specifications

Section 283111 Digital, Addressable Fire-Alarm System

2.1 Manufactures

Under A - Delete all listed manufactures except:

3. Fire lite Alarms; a Honeywell Company and
7. Silent Knight; A Honeywell Company.

Section 238242 Terminal Units

1. Add Section

Section 237330

1. Paragraph 2.1.4.b.4 – Delete Heresite coil coating requirement.

Section 329300

Revise 3.5 C to read:

C. Organic Mulching: Apply 3-inch average thickness of organic mulch. Do not place mulch with 2 inches of trunks or stems.

Miscellaneous Clarifications

1. This project is not tax exempt.
2. There will be a permit fee to the city for the new approach on the south if the Addendum #1 is accepted. The contractor should also check with Brigham City to see if licensing is required.
3. Where topsoil is being place the topsoil shall be a minimum depth of 2”.

STATE OF UTAH - DEPARTMENT OF ADMINISTRATIVE SERVICES

DIVISION OF FACILITIES & CONSTRUCTION AND MANAGEMENT
 4110 STATE OFFICE BUILDING SALT LAKE CITY, UTAH 84111 801.538.3018

CONSULTANT INFORMATION

CODE ANALYSIS

APPLICABLE CODES

YEAR	YEAR
INTERNATIONAL BUILDING CODE 2006	NATIONAL ELECTRICAL CODE 2008
INTERNATIONAL MECHANICAL CODE 2006	ADA ACCESSIBILITY GUIDELINES 1994
INTERNATIONAL FUEL GAS CODE 2006	
INTERNATIONAL PLUMBING CODE 2006	
INTERNATIONAL FIRE CODE 2006	
INTERNATIONAL ENERGY CONSERVATION CODE 2006	

- A. OCCUPANCY AND GROUP: A-3 B S-1
 CHANGE IN USE: YES NO X MIXED OCCUPANCY: YES X NO
 SPECIAL USE AND OCCUPANCY (E.G. HIGH RISE, COVERED MALL): NO
- B. SEISMIC DESIGN CATEGORY: D DESIGN WIND SPEED: 90 MPH
- C. TYPE OF CONSTRUCTION (CIRCLE ONE):
 I A I B II A II B III A III B IV HT V A V B
- D. FIRE RESISTANCE RATING REQUIREMENTS FOR THE EXTERIOR WALLS BASED ON THE FIRE SEPARATION DISTANCE (IN HOURS):
 NORTH: 0 SOUTH: 0 EAST: 0 WEST: 0
- E. MIXED OCCUPANCIES: NONSEPARATED USES: X
- F. SPRINKLERS:
 REQUIRED: NO* PROVIDED: NO
 *REASON: THE STATE BUILDING OFFICIAL HAS DETERMINED THAT THE ALTERATION WILL NOT TRIGGER A REQUIREMENT FOR INSTALLING A NEW AUTOMATIC SPRINKLER SYSTEM THROUGHOUT THE EXISTING BUILDING. ALTHOUGH THE FIRE AREA IN THE EXISTING BUILDING EXCEEDS THE CURRENT ALLOWABLE AREAS FOR THE MOST RESTRICTIVE NON-SEPARATED OCCUPANCY (A-3), A NEW AUTOMATIC SPRINKLER SYSTEM WOULD NOT BE JUSTIFIED OR REQUIRED DUE TO THE LIMITED IMPACT OF THE ALTERATION ON THE EXISTING BUILDING.
 TYPE OF SPRINKLER SYSTEM (IBC 903.3.1): N/A
- G. NUMBER OF STORIES: 1 BUILDING HEIGHT: 23
- H. ACTUAL AREA PER FLOOR (SQUARE FEET): B = 618 (EXIST) L1 = 13,080 (EXIST)
- I. TABULAR AREA: (TABLE 503): 9,500 A-3 MOST RESTRICTIVE
- J. AREA MODIFICATIONS:
 A) $A_g = \{A_1 + [A_2 \times I_1] + [A_3 \times I_2]\}$ $I_1 = [F/P - 0.25] W/90$
 9,500 + 7125 = 16,625 512/512 - 0.25 X 1 = 0.75
 B) SUM OF THE RATIO CALCULATIONS FOR MIXED OCCUPANCIES:
 ACTUAL AREA / ALLOWABLE ≤ 1 NA (NON-SEPARATED OCCUPANCIES)
 C) TOTAL ALLOWABLE AREA FOR:
 1) ONE STORY: 16,625
 2) TWO STORY: A_g(2) N/A
 3) THREE STORY: A_g(3) N/A
 D) UNLIMITED AREA BUILDING: YES NO X CODE SECTION:
- K. FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS).

ELEMENT	HOURS	ASSEMBLY LISTING	ELEMENT	HOURS	ASSEMBLY LISTING
EXTERIOR BEARING WALLS	2	EXIST*	FLOORS - CEILING FLOORS	0	N/A
INTERIOR BEARING WALLS	0	N/A	ROOFS - CEILING ROOFS	0	N/A
EXTERIOR NON-BEARING WALLS	0	N/A	SHAFT ENCLOSURES	0	N/A
STRUCTURAL FRAME	0	N/A	FIRE WALLS	0	N/A
PARTITIONS - PERMANENT	0	N/A	FIRE BARRIERS	0	N/A
FIRE BARRIERS	0	N/A	SMOKE PARTITIONS	0	N/A
EXTERIOR DOORS AND WINDOWS	0	N/A			

* 2 HOUR ASSUMED FOR EXISTING BRICK/CMU WALLS

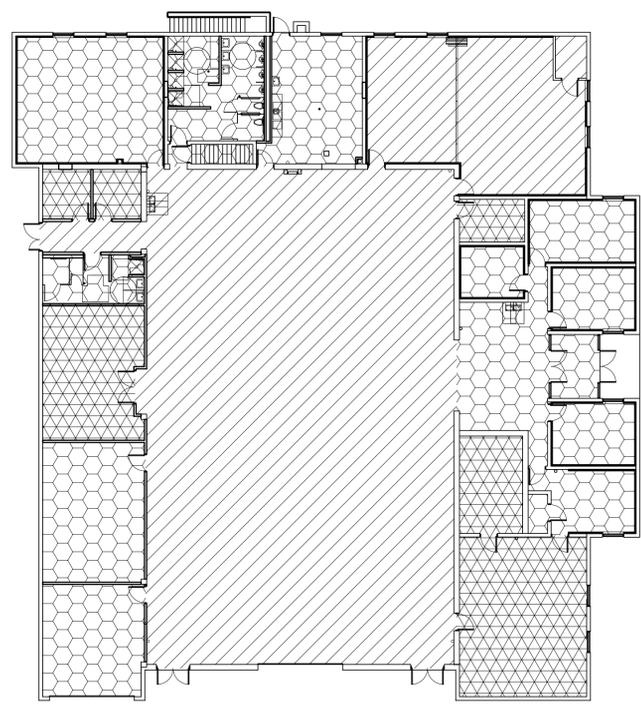
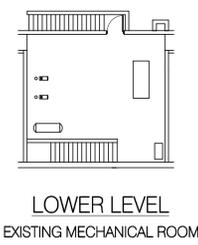
- L. DESIGN OCCUPANT LOAD: EXIST
 EXIT WIDTH REQUIRED: EXIST
 EXIT WIDTH PROVIDED: EXIST 1 57" NEW

- M. MINIMUM NUMBER OF REQUIRED PLUMBING FACILITIES:
 A) WATER CLOSETS - REQUIRED (M) 2 EX (F) 2 EX PROVIDED (M) 2 (N) (F) 2 (N)
 B) URINALS - REQUIRED (M) 2 EX (F) N/A PROVIDED (M) 4 (N) (F) N/A
 C) LAVATORIES - REQUIRED (M) 3 EX (F) 2 EX PROVIDED (M) 3 (N) (F) 2 (N)
 D) BATH TUBS OR SHOWERS: (M) 3 EX (F) 0 EX PROVIDED (M) 4 (N) (F) 1 (N)
 E) DRINKING FOUNTAINS: 2 EX 4 (N) SERVICE SINKS: 1 (E)
 (E) = EXISTING (TO BE REMOVED) 3 MEN, 1 WOMEN
 (N) = NEW

- FOOTNOTES:
 1) IN CASE OF CONFLICT WITH THE U.S. DEPARTMENT OF JUSTICE FEDERAL REGISTERS PARTS 1 THROUGH XX - ADA GUIDELINES AND SPECIFIC REFERENCE TO THE INTERNATIONAL BUILDING CODE ACCESSIBILITY CHAPTERS, THE MORE RESTRICTIVE REQUIREMENT SHALL GOVERN.
 2) ADDITIONAL CODE INFORMATION SHALL BE PROVIDED AT THE DISCRETION OF THE BUILDING OFFICIAL FOR COMPLEX BUILDINGS, INCLUDING, BUT NOT LIMITED TO:
 A) HIGH RISE REQUIREMENTS.
 B) ATRIUMS.
 C) PERFORMANCE BASED CRITERIA.
 D) MEANS OF EGRESS ANALYSIS.
 E) FIRE ASSEMBLY LOCATOR SHEET.
 F) EXTERIOR AND INTERIOR ACCESSIBILITY ROUTE.
 G) FIRE STOPPING, INCLUDING TESTED DESIGN NUMBER.

DRAWING INDEX

GENERAL	ARCHITECTURAL	MECHANICAL	ELECTRICAL
GL 001 COVER SHEET	AS100 SITE PLAN	M000 MECH SYMBOLS & ABBREVIATIONS	EE101 ELEC SYMBOL LEGEND/GEN NOTES
	AD100 SITE DEMOLITION PLAN	M101 MECHANICAL DEMOLITION PLAN	EE501 ELECTRICAL DETAILS
	AD101 MAIN LEVEL DEMO. PLAN	M201 MECHANICAL PLAN	EE502 ELECTRICAL DETAILS
	AD201 EXTERIOR ELEV. DEMO.	M202 MECHANICAL ROOF PLAN	EE503 PAD VAULT DETAIL
CIVIL	AE101 MAIN LEVEL PLAN	M301 MECHANICAL DETAILS	ES101 ELECTRICAL SITE DEMOLITION PLAN
C101 GRADING PLAN	AE111 MAIN RCP PLAN	M302 MECHANICAL DETAILS	ES102 ELECTRICAL SITE PLAN
ER101 SWPPP PLAN	AE 201 EXTERIOR ELEVATIONS	M303 KITCHEN HOOD DETAILS	ED101 ELECTRICAL DEMOLITION PLAN
ER102 BMP DETAILS	AE 211 INTERIOR ELEVATIONS	M304 KITCHEN HOOD DETAILS	EP101 POWER PLAN
ER103 SWPPP DETAILS	AE 212 INTERIOR ELEVATIONS	M305 MECHANICAL DETAILS	EP102 ROOF POWER PLAN
D101 DETAILS	AE 301 SECTIONS & DETAILS	M401 MECHANICAL SCHEDULES	EP501 ELECTRICAL SCHEDULE
	AE 401 ENLARGED PLANS	P100 PLUMBING DEMO. PLAN	EP502 ELECTRICAL SCHEDULE
LANDSCAPE	AE 402 LOADING DOCK	P201 PLUMBING PLAN	EP601 ONE-LINE DIAGRAM
L101 LANDSCAPE PLAN	AE 701 SCHEDULES	P202 PLUMBING PLAN	EL101 LIGHTING PLAN
L102 IRRIGATION PLAN		P301 ENLARGED PLUMB. PLANS	EL501 LIGHTING CONTROL DIAGRAMS
L103 LANDSCAPE DETAILS		P302 ENLARGED PLUMB. PLANS	EL601 LIGHTING FIXTURE SCHEDULE
	STRUCTURAL	P303 ENLARGED PLUMB. PLANS	ET101 TECHNOLOGY PLAN
	S001 GENERAL STRUCTURAL NOTES	P401 PLUMBING DETAILS	ET601 TECHNOLOGY DETAILS
	S002 SPECIAL INSPECTION	P501 PLUMBING SCHEDULES	ET602 VOICE DATA ROUGH-IN
	S101 FOUNDATION PLAN & SCHEDULES		FA101 FIRE PROTECTION PLAN
	S102 ROOF PLAN & DETAILS		FA601 FIRE ALARM RISER



PALADIN CANOPY CODE ANALYSIS

OCCUPANCY: S-1
 TYPE OF CONSTRUCTION: IIB
 TABULAR ALLOWABLE AREA: 17,500 S.F.
 ACTUAL AREA: 8,000 S.F.
 FIRE RESISTANCE OF EXTERIOR WALLS: NONE REQUIRED. FIRE SEPARATION DISTANCE GREATER THAN 10 FT ALL SIDES (TABLE 601 AND 602)
 PROTECTION OF OPENINGS AT PERIMETER: UNLIMITED UNPROTECTED OPENINGS PERMITTED (TABLE 704.8 FOOTNOTE)
 J. FIRE SEPARATION DISTANCE GREATER THAN 10 FT ALL SIDES.
 ALLOWABLE HEIGHT: 3 STORIES, 65 FT. (TABLE 503)
 ACTUAL HEIGHT: 1 STORY, 25 FT.
 AUTOMATIC SPRINKLER SYSTEM REQUIRED: NO.

DEFERRED SUBMITTALS	ESTIMATED SUBMITTAL DATE
FIRE ALARM	FEBRUARY 2010
MECHANICAL & ELECTRICAL	FEBRUARY 2010
SEISMIC BRACING	FEBRUARY 2010
FIRE SUPPRESSION SYSTEM FOR KITCHEN HOOD	FEBRUARY 2010

SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS

DESIGN AND INSTALLATION OF SEISMIC RESTRAINTS SYSTEMS FOR NONSTRUCTURAL COMPONENTS (E.G. ARCHITECTURAL, MECHANICAL, AND ELECTRICAL) IS TO COMPLY WITH THE 2006 INTERNATIONAL BUILDING CODE (IBC), ASCE 7-05 AS REFERENCED IN THE IBC, SEISMIC CONTROL SPECIFICATIONS, DETAILS ON THE DRAWINGS. CALCULATIONS ARE TO BE PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN STATE OF UTAH.



UTAH NATIONAL GUARD
 BRIGHAM CITY ARMORY
 RENOVATION
 985 NORTH 500 WEST
 BRIGHAM CITY, UTAH 84302-1540

SHEET TITLE
INDEX & CODE SHEET

DATE	BY	DESCRIPTION
1/6/10		ADDENDUM #1

DRAWN BY: **CRO** CHECKED BY: **ERT**
 PROJECT NO: **09226470** DRAWING NO: **GL001**
 DATE: **12.15.09**

Utah National Guard - Brigham City Armory - Renovation



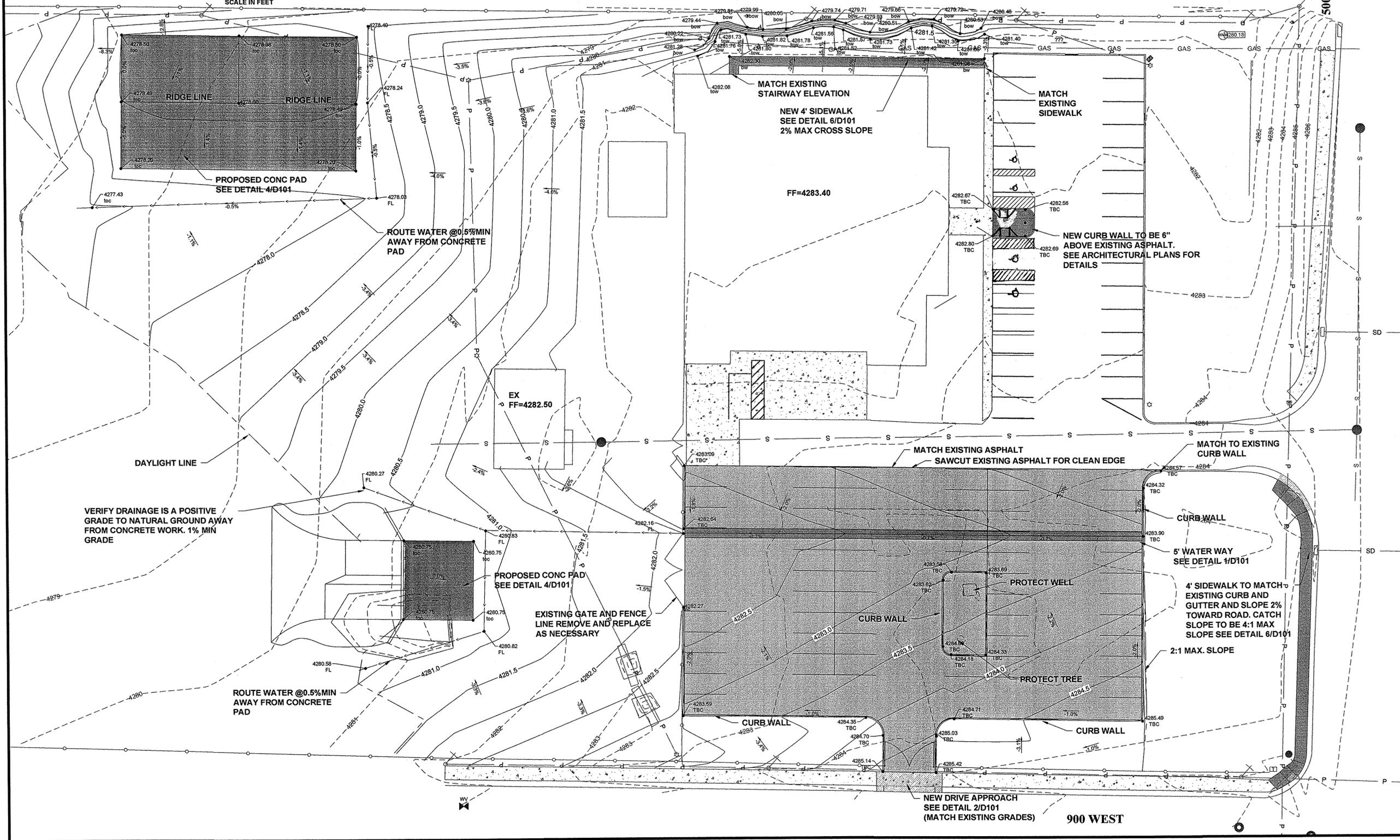
SCALE IN FEET
0 20 40

NOTES:

1. PROOF ROLL THE EXPOSED NATIVE SOILS PRIOR TO THE PLACEMENT OF ROADBASE. CONTACT ENGINEER IF PUMPING OR HEAVING IS OBSERVED.
2. SEE D101 FOR DETAILS ON PAVEMENT CROSS SECTIONS. SEE GEOTECHNICAL REPORT BY GSH GEOTECHNICAL FOR MORE INFORMATION.
3. ALL GRADES REPRESENT TBC UNLESS NOTED OTHERWISE.
4. PROTECT ALL EXISTING POWER POLES AND LIGHT POLES.

PROMONTORY DRIVE

500 WEST



CONSULTING ENGINEERS AND SURVEYORS
GILSON
 ENGINEERS INC.



REV. DATE	BY	COMMENTS

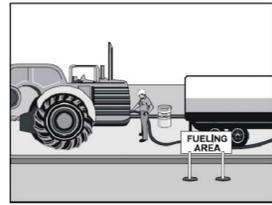
DATE: 12-10-09
 DRAWING NAME: EFT 101 BRIGHAM GUARD RENOVATION
 DESIGNED BY: JMC
 CHECKED BY: JMC
 APPROVED BY: JMC

GRADING PLAN
 UTAH NATIONAL GUARD
 BRIGHAM CITY ARMY RENOVATION
 985 NORTH 500 WEST BRIGHAM CITY, UTAH 84302-1540

REVISION: **B**
 PROJ. # **EFT.010**

C.101

BMP: VEHICLE AND EQUIPMENT FUELING



DESCRIPTION:
PREVENT FUEL SPILLS AND LEAKS, AND REDUCE THEIR IMPACTS TO STORM WATER BY USING OFF-SITE FACILITIES, FUELING IN DESIGNATED AREAS ONLY, ENCLOSING OR COVERING STORED FUEL, IMPLEMENTING SPILL CONTROLS, AND TRAINING EMPLOYEES AND SUBCONTRACTORS.

INSTALLATION / APPLICATION:

- USE OFF-SITE FUELING STATIONS AS MUCH AS POSSIBLE. FUELING VEHICLES AND EQUIPMENT OUTDOORS OR IN AREAS WHERE FUEL MAY SPILL/LEAK ONTO PAVED SURFACES OR INTO DRAINAGE PATHWAYS CAN POLLUTE STORM WATER. IF YOU FUEL A LARGE NUMBER OF VEHICLES OR PIECES OF EQUIPMENT, CONSIDER USING AN OFF-SITE FUELING STATION. THESE BUSINESSES ARE BETTER EQUIPPED TO HANDLE FUEL SPILLS PROPERLY. PERFORMING THIS WORK OFF-SITE CAN ALSO BE ECONOMICALLY BY ELIMINATING THE NEED FOR A SEPARATE FUELING AREA AT YOUR SITE.
- IF FUELING MUST OCCUR ON-SITE, USE DESIGNATED AREAS, LOCATED AWAY FROM DRAINAGE COURSES, TO PREVENT THE RUN-ON OF STORM WATER AND THE RUNOFF OF SPILLS. DISCOURAGE "TOPPING-OFF" OF FUEL TANKS.
- ALWAYS USE SECONDARY CONTAINMENT, SUCH AS A DRAIN PAN OR DROP CLOTH WHEN FUELING TO CATCH SPILLS/LEAKS. PLACE A STOCKPILE OF SPILL CLEANUP MATERIALS WHERE IT WILL BE READILY ACCESSIBLE. USE ADSORBENT MATERIALS ON SMALL SPILLS RATHER THAN WIPING DOWN OR BURNING THE SPILL. REMOVE THE ADSORBENT MATERIALS PROMPTLY AND DISPOSE OF PROPERLY.
- CARRY OUT ALL FEDERAL AND STATE REQUIREMENTS REGARDING STATIONARY ABOVE GROUND STORAGE TANKS (40 C.F.R. 261.11) AVOID MOBILE FUELING OF MOBILE CONSTRUCTION EQUIPMENT AROUND THE SITE. RATHER, TRANSPORT THE EQUIPMENT TO DESIGNATED FUELING AREAS. WITH THE EXCEPTION OF TRACKED EQUIPMENT SUCH AS BULLDOZERS AND PERHAPS FORKLETS, MOST VEHICLES SHOULD BE ABLE TO TRAVEL TO A DESIGNATED AREA WITH LITTLE TO NO TIME TRAFFIC EMPLOYEES AND SUBCONTRACTORS IN PROPER FUELING AND CLEANUP PROCEDURES.

LIMITATIONS:

- SENDING VEHICLES/EQUIPMENT OFF-SITE SHOULD BE DONE IN CONJUNCTION WITH STABILIZED CONSTRUCTION ENTRANCE.

MAINTENANCE:

- KEEP AMPLE SUPPLIES OF SPILL CLEANUP MATERIALS ON-SITE.
- INSPECT FUELING AREAS AND STORAGE TANKS ON A REGULAR SCHEDULE.

OBJECTIVES

- HOUSEKEEPING PRACTICES
- CONTAIN WASTE
- MINIMIZE DISTURBED AREAS
- STABILIZE DISTURBED AREAS
- PROTECT SLOPE/CHANNELS
- CONTROL SITE PERIMETER
- CONTROL INTERNAL EROSION

TARGETED POLLUTANTS

- SEDIMENT
- NUTRIENTS
- TOXIC MATERIALS
- OIL & GREASE
- FLOATABLE MATERIALS
- OTHER WASTE

- HIGH IMPACT
- MEDIUM IMPACT
- LOW OR UNKNOWN IMPACT

IMPLEMENTATION REQUIREMENTS

- CAPITAL COSTS
- O&M COSTS
- MAINTENANCE
- TRAINING

- HIGH MEDIUM LOW

BMP: PRESERVATION OF EXISTING VEGETATION



GENERAL DESCRIPTION:
CAREFULLY PLANNED PRESERVATION OF EXISTING VEGETATION MINIMIZES THE POTENTIAL OF REMOVING OR INJURING EXISTING TREES, VINES, SHRUBS, AND/OR GRASSES THAT SERVE AS EROSION CONTROLS.

APPLICATIONS:

- THIS TECHNIQUE IS APPLICABLE TO ALL TYPES OF SITES. AREAS WHERE PRESERVING VEGETATION CAN BE PARTICULARLY BENEFICIAL ARE FLOODPLAINS, WETLANDS, STREAM BANKS, STEEP SLOPES, AND OTHER AREAS WHERE EROSION CONTROLS WOULD BE DIFFICULT TO ESTABLISH, INSTALL, OR MAINTAIN.

INSTALLATION / APPLICATION CRITERIA:

- CLEARLY MARK, FLAG OR FENCE VEGETATION OR AREAS WHERE VEGETATION SHOULD BE PRESERVED.
- PREPARE LANDSCAPING PLANS WHICH INCLUDE AS MUCH EXISTING VEGETATION AS POSSIBLE AND STATE PROPER CARE DURING AND AFTER CONSTRUCTION.
- DEFINE AND PROTECT WITH BERMS, FENCING, SIGNS, ETC. A SETBACK AREA FROM VEGETATION TO BE PRESERVED.
- PROPOSE LANDSCAPING PLANS WHICH DO NOT INCLUDE PLANT SPECIES THAT COMPETE WITH THE EXISTING VEGETATION.
- DO NOT LOCATE CONSTRUCTION TRAFFIC ROUTES, SPOIL PILES, ETC. WHERE SIGNIFICANT ADVERSE IMPACT ON EXISTING VEGETATION MAY OCCUR.

LIMITATIONS:

- REQUIRES FORWARD PLANNING BY THE OWNER/DEVELOPER, CONTRACTOR AND DESIGN STAFF.
- FOR SITES WITH DIVERSE TOPOGRAPHY, IT IS OFTEN DIFFICULT AND EXPENSIVE TO SAVE EXISTING TREES WHILE GRADING THE SITE SATISFACTORILY FOR THE PLANNED DEVELOPMENT.
- MAY NOT BE COST EFFECTIVE WITH HIGH LAND COSTS.

MAINTENANCE:

- INSPECTION AND MAINTENANCE REQUIREMENTS FOR PROTECTION OF VEGETATION ARE LOW.
- MAINTENANCE OF NATIVE TREES OR VEGETATION SHOULD CONFORM TO LANDSCAPE PLAN SPECIFICATIONS.

OBJECTIVES

- HOUSEKEEPING PRACTICES
- CONTAIN WASTE
- MINIMIZE DISTURBED AREAS
- STABILIZE DISTURBED AREAS
- PROTECT SLOPE/CHANNELS
- CONTROL SITE PERIMETER
- CONTROL INTERNAL EROSION

TARGETED POLLUTANTS

- SEDIMENT
- NUTRIENTS
- TOXIC MATERIALS
- OIL & GREASE
- FLOATABLE MATERIALS
- OTHER WASTE

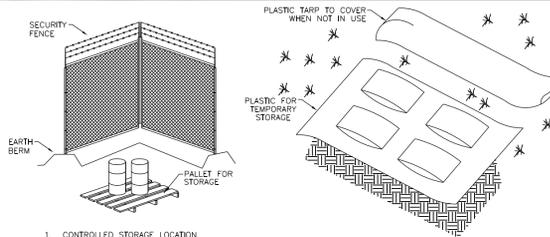
- HIGH IMPACT
- MEDIUM IMPACT
- LOW OR UNKNOWN IMPACT

IMPLEMENTATION REQUIREMENTS

- CAPITAL COSTS
- O&M COSTS
- MAINTENANCE
- TRAINING

- HIGH MEDIUM LOW

BMP: MATERIALS STORAGE



- CONTROLLED STORAGE LOCATION
- BERM AROUND PERIMETER IMPOUNDMENT
- STORAGE OFF GROUND
- COVER WHEN NOT IN USE

DESCRIPTION:

CONTROLLED STORAGE OF ON-SITE MATERIALS.

APPLICATION:

- STORAGE OF HAZARDOUS, TOXIC, AND ALL OTHER CHEMICAL SUBSTANCES.
- ANY CONSTRUCTION SITE WITH OUTSIDE STORAGE OF MATERIALS.

INSTALLATION/APPLICATION CRITERIA:

- DESIGNATE A SECURED AREA WITH LIMITED ACCESS AS THE STORAGE LOCATION.
- ENSURE NO WATERWAYS OR DRAINAGE PATHS ARE NEARBY.
- CONSTRUCT COMPACTED EARTHEN BERM (SEE EARTH BERM BARRIER INFORMATION SHEET OR SIMILAR PERIMETER CONTAINMENT AROUND STORAGE LOCATION FOR IMPOUNDMENT IN THE CASE OF SPILLS).
- ENSURE ALL ON-SITE PERSONNEL UTILIZE DESIGNATED STORAGE AREA. DO NOT STORE EXCESSIVE AMOUNTS OF MATERIAL THAT WILL NOT BE UTILIZED ON SITE.
- FOR ACTIVE USE OF MATERIALS AWAY FROM THE STORAGE AREA ENSURE MATERIALS ARE NOT SET DIRECTLY ON THE GROUND AND ARE COVERED WHEN NOT IN USE. PROTECT STORM DRAINAGE DURING USE.

LIMITATIONS:

- DOES NOT PREVENT CONTAMINATION DUE TO MISHANDLING OF PRODUCTS.
- SPILL PREVENTION AND RESPONSE PLAN STILL REQUIRED.
- ONLY EFFECTIVE IF MATERIALS ARE ACTIVELY STORED IN CONTROLLED LOCATION.

MAINTENANCE:

- INSPECT DAILY AND REPAIR ANY DAMAGE TO PERIMETER IMPOUNDMENT OR SECURITY FENCING.
- VERIFY THAT ALL MATERIALS ARE BEING CORRECTLY STORED (I.E. STANDING UPRIGHT, IN LABELED CONTAINERS, TIGHTLY CAPPED) AND THAT NO MATERIALS ARE BEING STORED AWAY FROM THE DESIGNATED LOCATION.

OBJECTIVES

- HOUSEKEEPING PRACTICES
- CONTAIN WASTE
- MINIMIZE DISTURBED AREAS
- STABILIZE DISTURBED AREAS
- PROTECT SLOPE/CHANNELS
- CONTROL SITE PERIMETER
- CONTROL INTERNAL EROSION

TARGETED POLLUTANTS

- SEDIMENT
- NUTRIENT
- TOXIC MATERIALS
- OIL & GREASE
- FLOATABLE MATERIALS
- OTHER WASTE

LIMITATIONS:

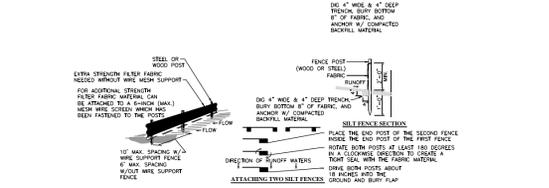
- HIGH IMPACT
- MEDIUM IMPACT
- LOW OR UNKNOWN IMPACT

IMPLEMENTATION REQUIRED

- CAPITAL COSTS
- O&M COSTS
- MAINTENANCE
- TRAINING

- HIGH MEDIUM LOW

BMP: SILT FENCE



DESCRIPTION:
A TEMPORARY SEDIMENT BARRIER CONSISTING OF ENTRENCHED FILTER FABRIC STRETCHED ACROSS AND SECURED TO SUPPORTING POSTS.

APPLICATION:

- PERIMETER CONTROL: PLACE BARRIER AT DOWNGRADIENT LIMITS OF DISTURBANCE
- SEDIMENT BARRIER: PLACE BARRIER AT TOE OF SLOPE OR SOIL STOCKPILE
- PROTECTION OF EXISTING WATERWAYS: PLACE BARRIER NEAR TOP OF STREAM BANK
- INLET PROTECTION: PLACE FENCE SURROUNDING CATCHBASINS

INSTALLATION / APPLICATION CRITERIA:

- PLACE POSTS 6 FEET APART ON CENTER ALONG CONTOUR (OR USE PREASSEMBLED UNIT) AND DRIVE 1 FOOT MINIMUM INTO GROUND. EXCAVATE AN ANCHOR TRENCH IMMEDIATELY UPSTREAM OF POSTS.
- SECURE WIRE MESH (1/4 GAGE MIN. WITH 6 INCH OPENINGS) TO UPSLOPE SIDE OF POSTS. ATTACH WITH HEAVY DUTY 1 INCH LONG WIRE STAPLES, THE WIRES OR ROD RINGS.
- CUT FABRIC TO REQUIRED WIDTH. UNROLL ALONG LENGTH OF BARRIER AND DRAPE OVER BARRIER. SECURE FABRIC TO MESH WITH TWINE, STAPLES, OR SIMILAR, WITH TRAILING EDGE EXTENDING INTO ANCHOR TRENCH.
- BACKFILL TRENCH OVER FILTER FABRIC TO ANCHOR.

LIMITATIONS:

- RECOMMEND MAXIMUM DRAINAGE AREA OF 0.5 ACRE PER 100 FEET OF FENCE
- RECOMMEND MAXIMUM UPGRADIENT SLOPE LENGTH OF 150 FEET
- RECOMMEND MAXIMUM UPROLL GRADE OF 2:1 (50%)
- RECOMMEND MAXIMUM FLOW RATE OF 0.5 CFS
- PONDING SHOULD NOT BE ALLOWED BEHIND FENCE

MAINTENANCE:

- INSPECT IMMEDIATELY AFTER ANY RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
- LOOK FOR RUNOFF BYPASSING ENDS OF BARRIERS OR UNDERCUTTING BARRIERS.
- REPAIR OR REPLACE DAMAGED AREAS OF THE BARRIER AND REMOVE ACCUMULATED SEDIMENT.
- REANCHOR FENCE AS NECESSARY TO PREVENT SHORTCUTTING.
- REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.

APPLICATIONS

- HOUSEKEEPING PRACTICES
- CONTAIN WASTE
- MINIMIZE DISTURBED AREAS
- STABILIZE DISTURBED AREAS
- PROTECT SLOPE/CHANNELS
- CONTROL SITE PERIMETER
- CONTROL INTERNAL EROSION

TARGETED POLLUTANTS

- SEDIMENT
- NUTRIENTS
- TOXIC MATERIALS
- OIL & GREASE
- FLOATABLE MATERIALS
- OTHER WASTE

LIMITATIONS:

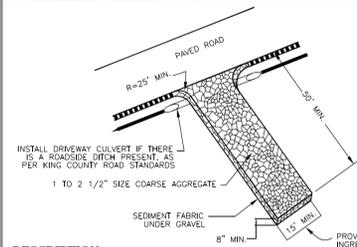
- HIGH IMPACT
- MEDIUM IMPACT
- LOW OR UNKNOWN IMPACT

IMPLEMENTATION REQUIREMENTS

- CAPITAL COSTS
- O&M COSTS
- MAINTENANCE
- TRAINING

- HIGH MEDIUM LOW

BMP: STABILIZED CONSTRUCTION ENTRANCE AND WASH AREA



DESCRIPTION:
A STABILIZED PAD OF CRUSHED STONE LOCATED WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES THE SITE FROM OR TO THE PAVED SURFACE. THE AREA CAN BE USED TO SPRAY OFF VEHICLES BEFORE THEY LEAVE THE SITE.

APPLICATION:

- AT ANY POINT OF INGRESS OR EGRESS AT A CONSTRUCTION SITE WHERE ADJACENT TRAVELED WAY IS PAVED. GENERALLY APPLIES TO SITES OVER 2 ACRES UNLESS SPECIAL CONDITIONS EXIST.

INSTALLATION/APPLICATION CRITERIA:

- CLEAR AND GRUB AREA AND GRADE TO PROVIDE MAXIMUM SLOPE OF 2%.
- COMPACT SUB GRADE AND PLACE FILTER FABRIC IF DESIRED (RECOMMENDED FOR ENTRANCES TO REMAIN FOR MORE THAN 3 MONTHS).
- PLACE COARSE AGGREGATE, 1 TO 2 1/2 INCHES IN SIZE, TO A MINIMUM DEPTH OF 8 INCHES.
- PROVIDE WATER TO THE AREA THAT CAN BE USED TO SPRAY OFF VEHICLES AS NEEDED TO PREVENT THE TRACKING OF MUD OFF OF THE CONSTRUCTION SITE. THIS MAY NOT BE NEEDED DURING DRY PERIODS OF WORK BUT IS NEEDED WHEN CONSTRUCTION IS PROCEEDING UNDER WET CONDITION.
- PROVIDE BERMS NEEDED TO PREVENT SEDIMENT LAZEN WASH WATER FROM ENTERING STORM WATER FACILITIES OR OTHER WATER BODIES, OR LEAVING THE SITE.

LIMITATIONS:

- REQUIRES PERIODIC TOP DRESSING WITH ADDITIONAL STONES.
- SHOULD BE USED IN CONJUNCTION WITH STREET SWEEPING ON ADJACENT PUBLIC RIGHT-OF-WAY.
- MUST BE SITUATED SUCH THAT WASTE WATER DOES NOT RUN OFF SITE.

MAINTENANCE:

- INSPECT DAILY FOR LOSS OF GRAVEL OR SEDIMENT BUILDUP.
- INSPECT ADJACENT ROADWAY FOR SEDIMENT DEPOSIT AND CLEAN BY SHOVELING AND SWEEPING.
- REPAIR ENTRANCE AND REPLACE GRAVEL AS REQUIRED TO MAINTAIN CONTROL IN GOOD WORKING CONDITION.
- EXPAND STABILIZED AREA AS REQUIRED TO ACCOMMODATE TRAFFIC AND PREVENT EROSION AT DRIVEWAYS.

OBJECTIVES

- HOUSEKEEPING PRACTICES
- CONTAIN WASTE
- MINIMIZE DISTURBED AREAS
- STABILIZE DISTURBED AREAS
- PROTECT SLOPE/CHANNELS
- CONTROL SITE PERIMETER
- CONTROL INTERNAL EROSION

TARGETED POLLUTANTS

- SEDIMENT
- NUTRIENTS
- TOXIC MATERIALS
- OIL & GREASE
- FLOATABLE MATERIALS
- OTHER CONSTRUCTION WASTE

LIMITATIONS:

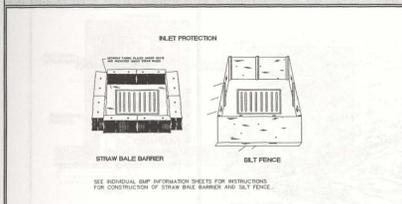
- HIGH IMPACT
- MEDIUM IMPACT
- LOW OR UNKNOWN IMPACT

IMPLEMENTATION REQUIRED

- CAPITAL COSTS
- O&M COSTS
- MAINTENANCE
- TRAINING

- HIGH MEDIUM LOW

BMP: Inlet Protection - Silt Fence or Straw Bale



DESCRIPTION:
Sediment barrier erected around storm drain inlet.

APPLICATION:
Construct of storm drainage inlets located downgradient of areas to be disturbed by construction (for inlets in paved areas see other information sheets for inlet protection).

INSTALLATION/APPLICATION CRITERIA:

- Provide upgradient sediment controls, such as silt fence during construction of inlet.
- When construction of inlet is complete, erect straw bale barrier or silt fence surrounding perimeter of inlet. Follow instructions and guidelines on individual BMP information sheets for straw bale barrier and silt fence construction.

LIMITATIONS:

- Recommended maximum contributing drainage area of one acre.
- Limited to inlets located in open unpaved areas.
- Requires shallow slopes adjacent to inlet.

MAINTENANCE:

- Inspect inlet protection following storm event and at a minimum of once monthly.
- Remove accumulated sediment when it reaches 4-inches in depth.
- Repair or realign barrier/fence as needed.
- Look for bypassing or undercutting and recompact soil around barrier/fence as required.

OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

TARGETED POLLUTANTS

- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

LIMITATIONS:

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- MAINTENANCE
- TRAINING

- High Medium Low

1545 SOUTH 1500 WEST
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REV. DATE	BY	COMMENTS

DATE: 12-10-09
DRAWING NAME: DIRECTORY
DESIGNED/DRAWN BY: JMC
CHECKED: JJC
APPROVED: JJC

1" SCALE MEASURES 1" ON FULL SIZE SHEETS
ADJUST ACCORDINGLY FOR HALF SIZE SHEETS

BMP DETAILS
UTAH NATIONAL GUARD
BRIGHAM CITY ARMYORY INNOVATION
985 NORTH 500 WEST BRIGHAM CITY, UTAH 84302-1540

REVISION: B
PROJ. # EFT.010

ER.102

EROSION CONTROL NOTES

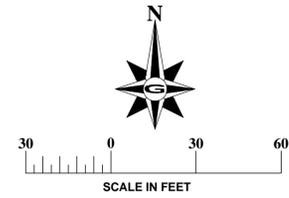
1. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING THE EROSION CONTROL FACILITIES SHOWN ON THE PLAN.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED. STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
3. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLES WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY, AND REMOVED WHEN THE SITE IS PAVED.
4. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLETS BECOMING FUNCTIONAL.
5. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
6. FUGITIVE DUST AREAS SHALL BE CONTROLLED BY SPRAYING WATER ON THE DRY AREAS OF THE SITE.
7. NO RUBBISH, TRASH, GARBAGE OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
8. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES OR OTHER UNFORESEEN CONDITIONS DURING DEVELOPMENT OF THE PROJECT.

LEGEND

-  -BMP SILT FENCE ER.102
-  -BMP INSPECTION AND MAINTENANCE, BMP STABILIZED CONSTRUCTION ENTRANCE AND WASH AREA ER.102
-  -TOPSOIL STOCKPILE AREA (OR AS DIRECTED BY OWNER) BMP EARTH BERM BARRIER ER.102
-  -BMP MATERIALS STORAGE, BMP VEHICLE AND EQUIPMENT FUELING, BMP CONCRETE WASTE MANAGEMENT, BMP PORTABLE TOILETS, BMP EARTH BERM BARRIER ER.102
-  -CURB AND INLET PROTECTION SEE DETAIL 4/ER.102

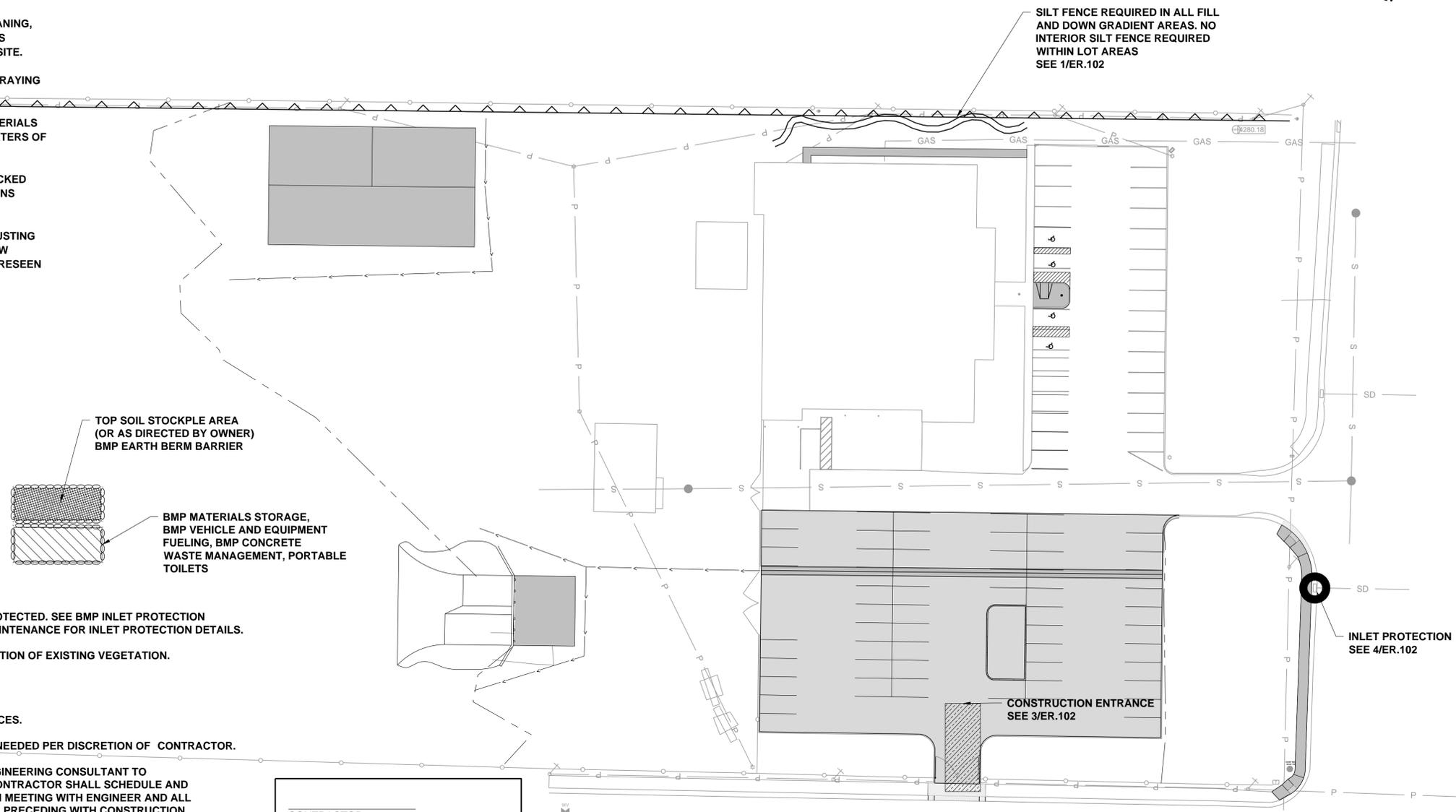
NOTE:

SILT FENCE SHOWN IS FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE TO PLACE SILT FENCES AT THE CORRECT LOCATIONS TO PREVENT POLLUTION OF STORM WATER PER PROJECT SWPPP.



500 WEST

PROMONTORY DRIVE



NOTES:

- 1 - ALL PROPOSED AND EXISTING INLETS ARE TO BE PROTECTED. SEE BMP INLET PROTECTION BMP CATCH BASIN CLEANING, BMP INSPECTION AND MAINTENANCE FOR INLET PROTECTION DETAILS.
- 2 - EXISTING GROUND COVER = 50% SEE BMP PRESERVATION OF EXISTING VEGETATION.
- 3 - SEQUENCE OF CONSTRUCTION

PHASE I

1. INSTALL STABILIZED CONSTRUCTION ENTRANCES.
2. CONSTRUCT SILT FENCES ON THE SITE.
3. CONSTRUCT SEDIMENTATION PONDS WHERE NEEDED PER DISCRETION OF CONTRACTOR. SIZE TO BE DETERMINED BY ENGINEER.
4. HALT ALL ACTIVITIES AND CONTACT CIVIL ENGINEERING CONSULTANT TO PERFORM INSPECTION OF BMP'S. GENERAL CONTRACTOR SHALL SCHEDULE AND CONDUCT STORM WATER PRE-CONSTRUCTION MEETING WITH ENGINEER AND ALL GROUND DISTURBING CONTRACTORS BEFORE PRECEDING WITH CONSTRUCTION.
5. PREPARE TEMPORARY PARKING AND STORAGE AREAS.
6. START CONSTRUCTION OF BUILDING PAD AND STRUCTURES. STORM DRAIN WATER DURING CONSTRUCTION WILL BE LOCATED IN RETENTION POND.
7. BEGIN GRADING THE SITE.

PHASE II

1. MAINTAIN SILT FENCE, INLET PROTECTION AND STABILIZED CONSTRUCTION EXITS INSTALLED DURING PHASE #1.
2. COMPLETE PERMANENT DETENTION POND CONSTRUCTION.
3. BEGIN CONSTRUCTION OF UNDERGROUND UTILITIES.
4. INSTALL INLET PROTECTION AT NEW STORM DRAIN INLETS, AS INSTALLED.
5. INSTALL PERMANENT VEGETATION AND PLANT MATERIALS.
6. REMOVE ALL TEMPORARY EROSION & SEDIMENTATION CONTROL DEVICES (ONLY AFTER FINAL STABILIZATION HAS BEEN ACHIEVED).
- 4 - DETAILS AND BMP'S ON DRAWINGS C.54-C.56 ARE INCORPORATED INTO THIS PLAN BY REFERENCE.

CONTRACTOR AND APPROVED THE STORMWATER PROTECTION PLAN ITEMS CONTAINED HEREIN AND WILL COMPLY WITH IT'S PROVISIONS.

CONTRACTOR'S REPRESENTATIVE

NOTE: SIGNED COPIES OF THIS PLAN AND STATE NOI SHALL BE KEPT ON SITE AT ALL TIMES.

CONSULTING ENGINEERS AND SURVEYORS

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DATE	REVISIONS
12-10-09	REVISIONS
	BY COMMENTS
	REV. DATE
	BY COMMENTS
	REV. DATE
	BY COMMENTS
	REV. DATE
	BY COMMENTS
	REV. DATE
	BY COMMENTS

DATE: 12-10-09
DRAWING NAME: EFT FOR PLAN SET FOR 10 BLDG
DESIGNED/DRAWN BY: JMC
CHECKED: JJC
APPROVED: JJC

1" SCALE MEASURES 1" ON FULL SIZE SHEETS
ADJUST ACCORDINGLY FOR HALF SIZE SHEETS

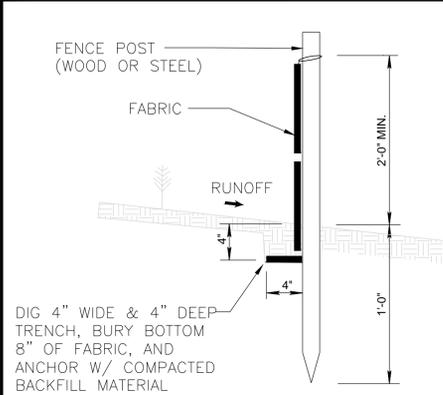
SWPPP PLAN

UTAH NATIONAL GUARD
BRIGHAM CITY ARMYORY RENOVATION
985 NORTH 500 WEST BRIGHAM CITY, UTAH 84302-1540

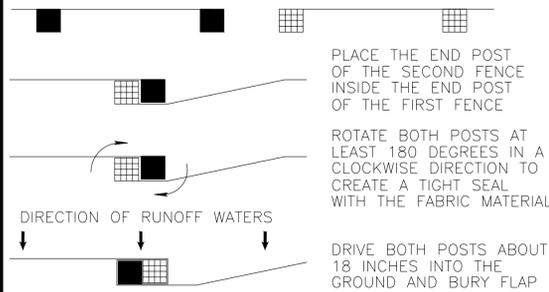
REVISION: **B**

PROJ. # EFT.010

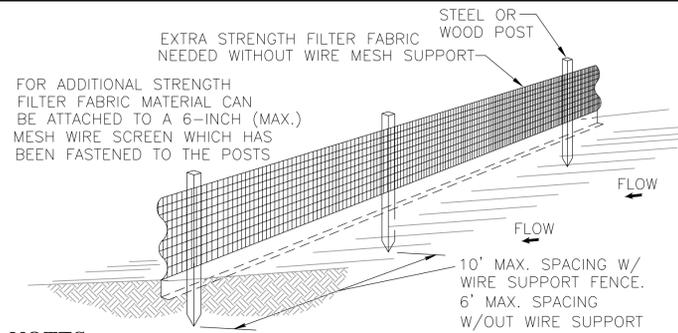
ER.101



SILT FENCE SECTION



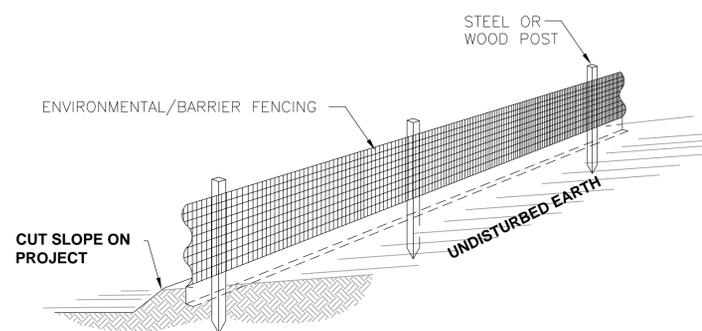
ATTACHING TWO SILT FENCES



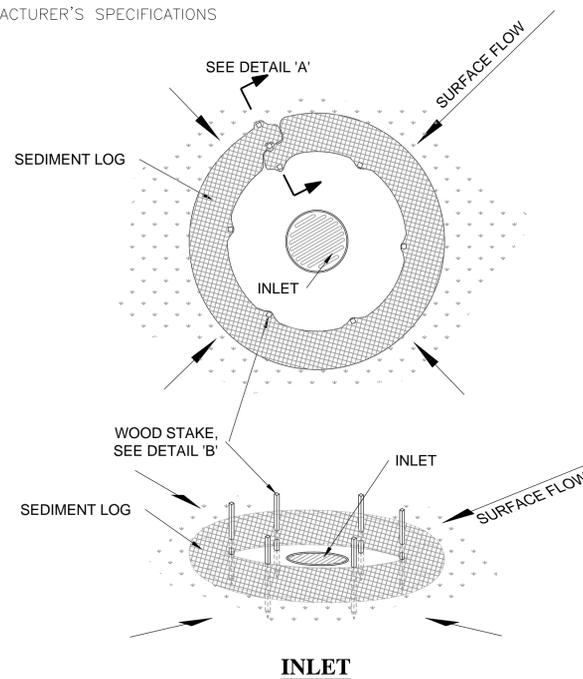
NOTES

1. THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES (90 CM).
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS.
3. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET (3 M) APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 12 INCHES (30 CM). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET (1.8 M).
4. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES (10 CM) WIDE AND 4 INCHES (10 CM) DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
5. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH (25 MM) LONG, TIE WIRES, OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES (5 CM) AND SHALL NOT EXTEND MORE THAN 36 INCHES (90 CM) ABOVE THE ORIGINAL GROUND SURFACE.
6. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8 INCHES (20 CM) OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES (90 CM) ABOVE THE ORIGINAL GROUND SURFACE.
7. THE TRENCH SHALL BE BACK FILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
8. INSTALL PER MANUFACTURER'S SPECIFICATIONS

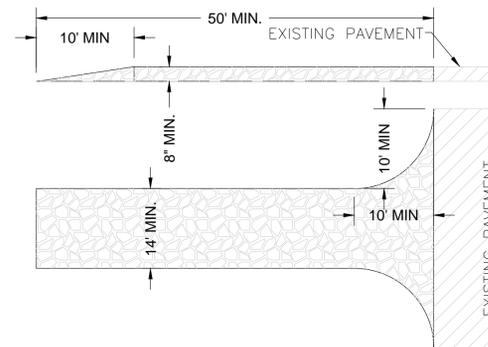
SILT FENCE
SCALE: NTS



LIMITS OF DISTURBANCE BARRIER FENCE
SCALE: NTS



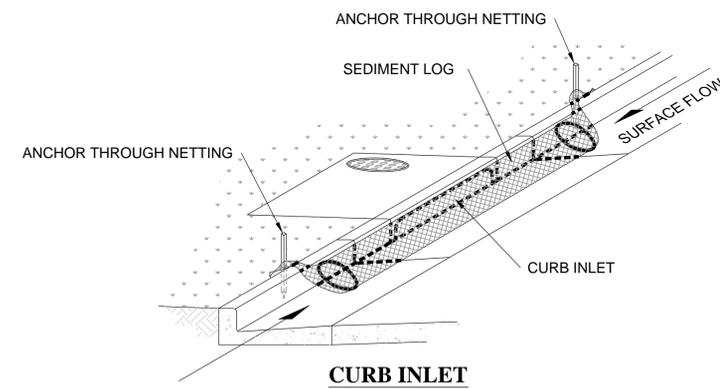
INLET PROTECTION
SCALE: NTS



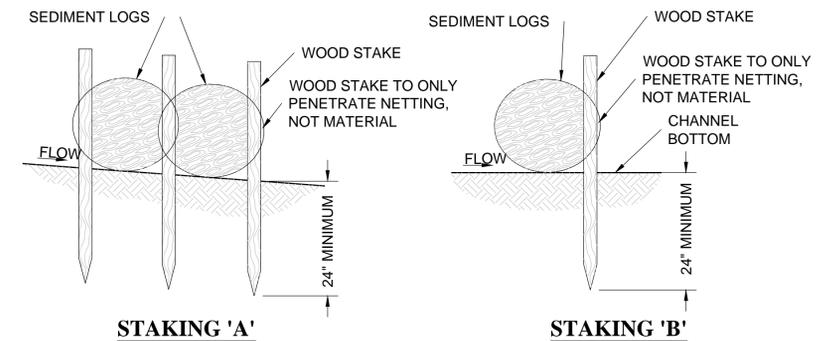
CONSTRUCTION ENTRANCE
SCALE: NTS



1. STONE SIZE- USE 2"-3" STONE OR RECLAIMED CONCRETE EQUIVALENT.
2. LENGTH- AS REQUIRED, BUT NOT LESS THAN 50 FEET.
3. THICKNESS- NOT LESS THAN EIGHT INCHES.
4. WIDTH- TEN FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OF EGRESS OCCURS.
5. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SIDE SLOPES WILL BE PERMITTED.
6. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT INTO THE PUBLIC R.O.W. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC R.O.W.S MUST BE REMOVED IMMEDIATELY.
7. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVED AFTER EACH RAINFALL.
8. GEOTEXTILE UNDERLINER WILL BE INSTALLED UNDER STONE.



CURB INLET



STAKING 'A'

STAKING 'B'

EROSION CONTROL DETAILS

UTAH NATIONAL GUARD
BRIGHAM CITY ARMYORY RENOVATION
985 NORTH 500 WEST BRIGHAM CITY, UTAH 84302-1540

REVISION: **B**

PROJ. # EFT.010

ER.103

CONSULTING ENGINEERS AND SURVEYORS
GILSON
ENGINEERS INC.

UTAH NATIONAL GUARD
ARMYORY RENOVATION

DATE	REVISIONS	BY	COMMENTS
12-10-09			
DRAWING NAME: EFT.010 - PLAN SET (C10) BOLDING			
DESIGNED/DRAWN BY: JMC	CHECKED: JJC	APPROVED: JJC	

1" SCALE MEASURES 1" ON FULL SIZE SHEETS
ADJUST ACCORDINGLY FOR HALF SIZE SHEETS

CONSULTANT INFORMATION

1. REMOVE CONCRETE SIDEWALK
2. REMOVE PARKING STRIPING
3. REMOVE CURB (ONLY WITH ALTERNATE #1)
4. REMOVE ASPHALT PAVING
5. REMOVE EXISTING DOCK
6. REMOVE CONCRETE SLAB AROUND FLAG POLE
7. REMOVE FLAG POLE AND CONCRETE BASE
8. REMOVE CONCRETE WALL AROUND WELL. PROTECT CONCRETE WELL ENCLOSURE.
9. EXISTING TREE TO REMAIN, PROTECT
10. DEMO CURB AND SIDEWALK AS NEEDED FOR NEW PARKING ENTRANCE.

GENERAL NOTES:

1. ALL LANDSCAPING, SPRINKLER SYSTEMS, ASPHALT, CONCRETE WALKS, WALLS, FLOOR STRIPING, ECT. DAMAGED OR REMOVED TO MAKE SPACE FOR CONSTRUCTION TO BE REPAIRED OR REPLACED.
2. CONCRETE REMOVED, SHOULD BE REMOVED TO THE NEAREST EXPANSION JOINT

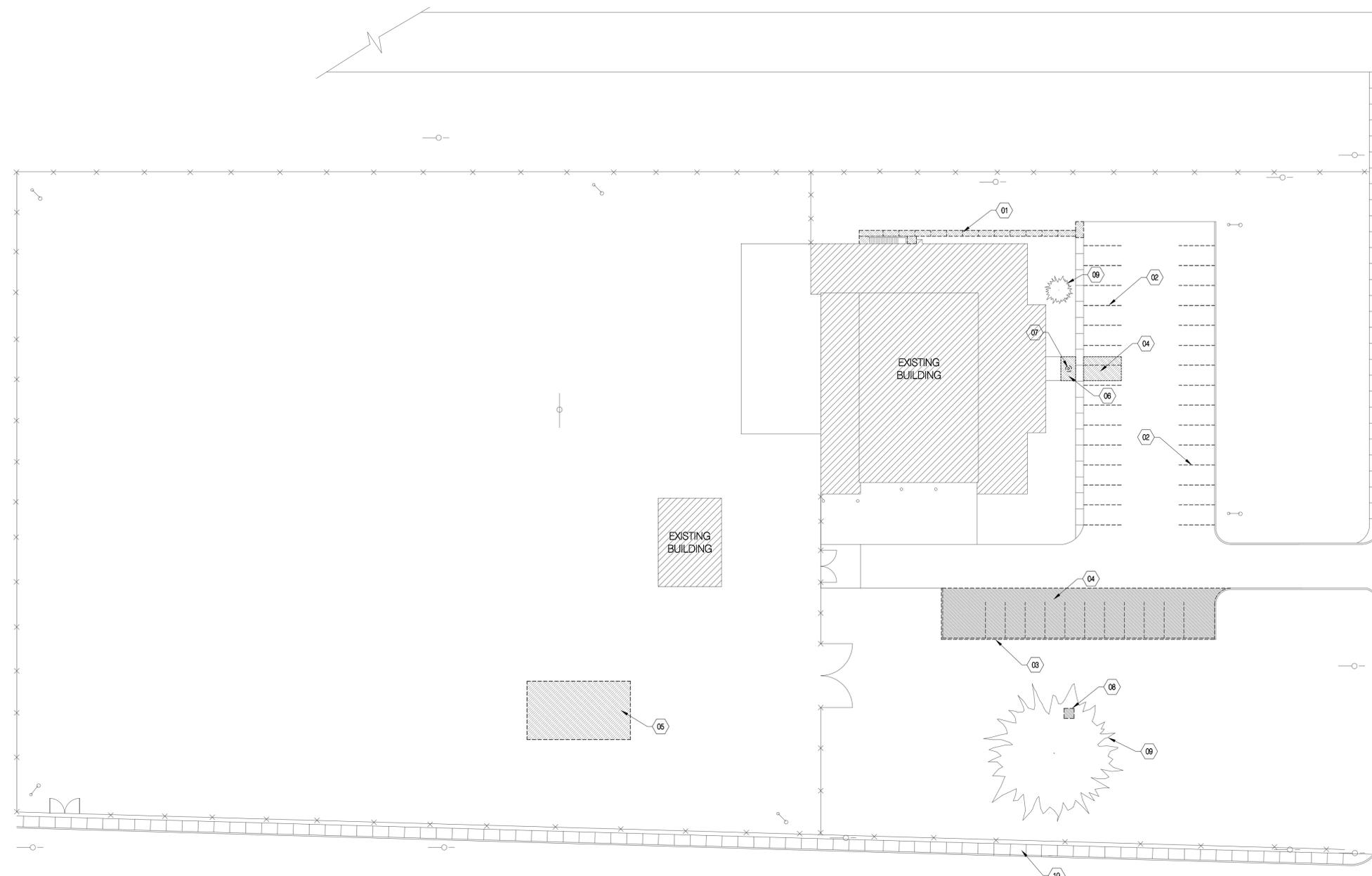


UTAH NATIONAL GUARD
 BRIGHAM CITY ARMORY
 RENOVATION
 985 NORTH 500 WEST
 BRIGHAM CITY, UTAH 84302-1540

SHEET TITLE
SITE DEMO PLAN

DATE	BY	DESCRIPTION
△	-	-
△	-	-
△	-	-
△	-	-

DRAWN BY: **CRO** CHECKED BY: **ERT**
 PROJECT NO: **09226470** DRAWING NO: **AD100**
 DATE: **12.15.09**



DEMO SITE PLAN (A1)
 SCALE: 1"=30'
 0 7.5 15 30 60'

Utah National Guard - Brigham City Armory - Renovation

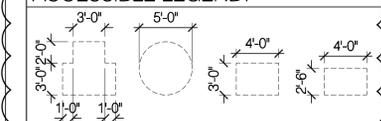
CONSULTANT INFORMATION

- EXISTING OWNER FURNISHED MILITARY EQUIPMENT STORAGE LOCKERS TO BE PROTECTED DURING CONSTRUCTION.
- VOLLEYBALL SLEEVE
- PAINT VOLLEYBALL COURT TO BE DASHED AS SHOWN
- REFINISH DRILL HALL FLOOR, REPAINT BASKETBALL COURT - NEW LOGO CONSULT WITH GUARD UNIT ON DESIGN
- REPLACE ALUMINUM TRIM AROUND DRILL HALL FLOOR SEE DETAIL C5/AE301
- FILL IN FORMER DOOR OPENING W/ C.M.U. TO MATCH EXISTING
- FILL IN BOTTOM OF FORMER DOOR WAY W/ C.M.U. TO FORM NEW PASS THRU WINDOW
- LCD FLAT SCREEN TV
- NOT USED
- NOT USED
- 16" DEEP METAL SHELVING
- BOX IN ROOF DRAIN W/ GYP BD. METAL STUD FRAMING
- KITCHEN EXHAUST HOOD W/ ANSUL FIRE SUPPRESSION SYSTEM
- NOT USED
- FLOOR SINK
- SOUND ATTENUATION BATTS
- MOP AND BROOM HOLDER: TBA #12
- EXISTING FIRE EXTINGUISHER
- RELOCATED FIRE EXTINGUISHER, TYPE "K" TO BE USED IN KITCHEN
- FIRE EXTINGUISHER
- THREE COMPARTMENT SINK
- FUR OUT WALLS USING 2" Z-FURRING STUDS W/ 1 1/2" RIDGED INSULATION ON EXTERIOR WALLS.
- 5/8" GYP. BOARD ADHERED TO CMU WALL.
- DUAL STATION DRINKING FOUNTAIN, SEE 01/AE212 FOR MOUNTING HEIGHTS, AND PLUMBING DRAWINGS
- STEEL COLUMN SEE STRUCTURAL

DRAWING LEGEND:

◁ ACCESSIBLE MEANS OF EGRESS

ACCESSIBLE LEGEND:



GENERAL NOTES:

- REPAIR AND FILL CRACKS AND HOLES IN C.M.U. WALLS
- REPAIR REFINISH AND PAINT ALL EXISTING DOOR FRAMES
- ROOF BEAMS FOR MECHANICAL EQUIPMENT ADDED TO ROOMS 113, 114, 116 AND 122, SEE STRUCTURAL

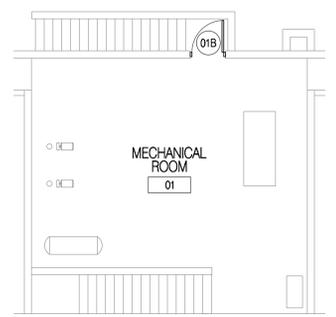


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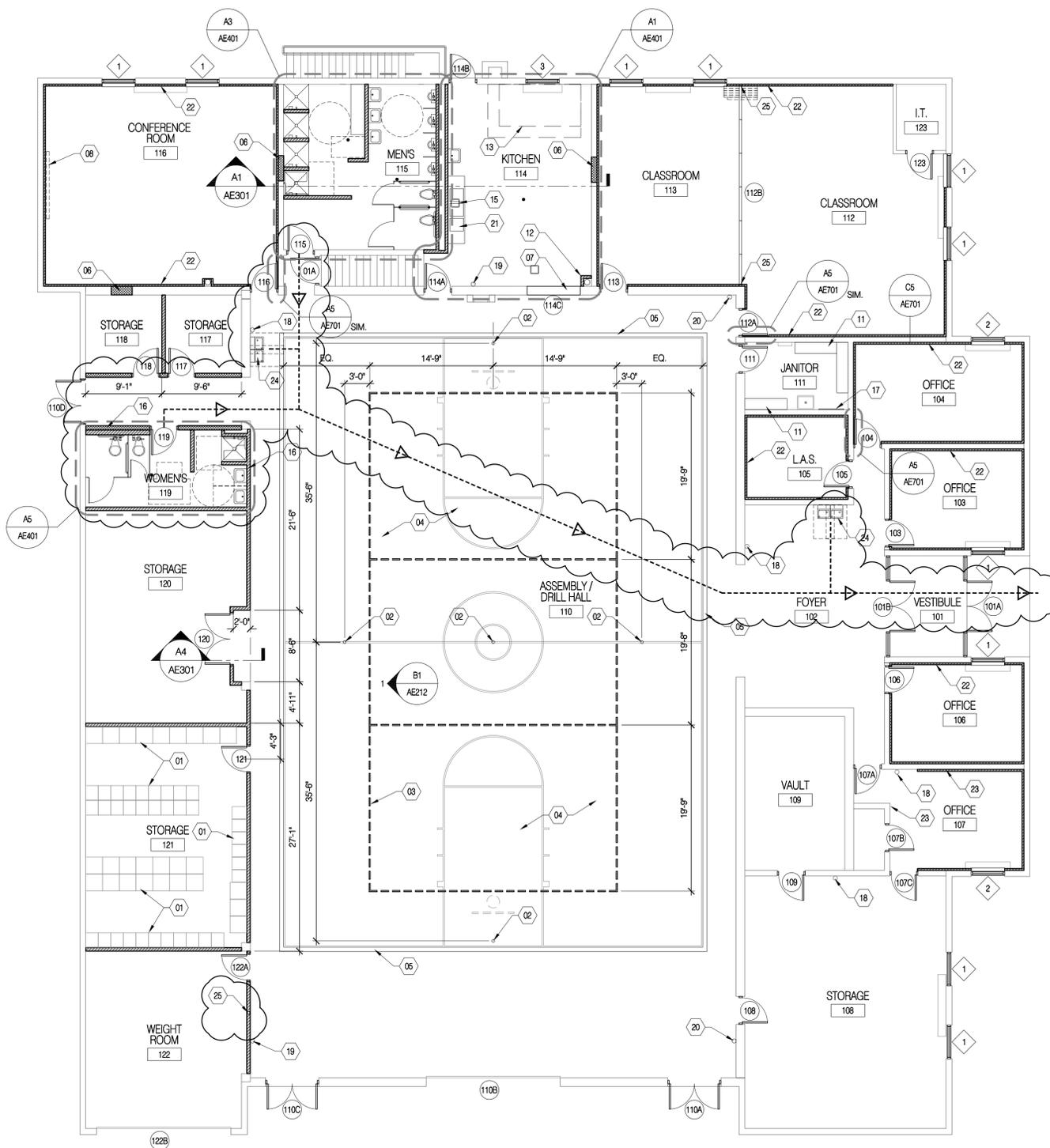
SHEET TITLE
MAIN LEVEL PLAN

DATE	BY	DESCRIPTION
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DRAWN BY: **CRO** CHECKED BY: **ERT**
 PROJECT NO: **09226470** DRAWING NO: **AE101**
 DATE: **12.15.09**



LOWER LEVEL PLAN
 SCALE: 1/8" = 1'-0"
 0 2' 4' 8' 16'



MAIN LEVEL PLAN
 SCALE: 1/8" = 1'-0"
 0 2' 4' 8' 16'

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CONSULTANT INFORMATION

1. 18 W X 36 H MIRROR - TBA #6
2. WALL HUNG HAND SINK W/ UNDER LAVATORY GUARD TBA #11
3. ACCESSIBLE KNEE SPACE - KEEP CLEAR OF ALL OBSTRUCTIONS.
4. P-TRAP WITH UNDER LAVATORY GUARD - TBA #11
5. 2 X 8 CERAMIC TILE TRIM.
6. SHOWER CURB AT STANDARD SHOWER - 4" HIGH.
7. 6" X 6" CERAMIC TILE - CT-3
8. 6" METAL STUD
9. CEMENT BOARD
10. CERAMIC TILE
11. BLOCK OUT CONCRETE FLOOR AT SHOWER FOR CONCRETE MORTAR BASE SHOWER PAN LINER
12. CONCRETE FLOOR
13. ADJUSTABLE DRAIN
14. LOCKING RING
15. DRAIN BODY
16. SHOWER PAN LINER
17. SHOWER CURB AT ACCESSIBLE SHOWER - MAX 1/2" HIGH.
18. LIQUID SOAP DISPENSER - TBA #3
19. ACCESSIBLE FLOOR MOUNTED TOILET
20. ACCESSIBLE WALL MOUNTED TOILET
21. GRAB BAR - TBA #4
22. TOILET TISSUE DISPENSER - TBA #1
23. SANITARY NAPKIN DISPOSAL - TBA #5
24. CURTAIN ROD - TBA #7
25. SOAP DISH
26. SHOWER CURTAIN - TBA #8
27. FOLDING SHOWER SEAT - TBA #9
28. ACCESSIBLE URINAL
29. TOILET PARTITION
30. ROBE HOOK - TBA #10
31. PAPER TOWEL DISPENSER - TBA #2
32. ACCESSIBLE BENCH
33. PAINTED GYP BOARD

GENERAL NOTES:

1. SEE D1/AE212 FOR TYPICAL MOUNTING LOCATION OF RESTROOM FIXTURES AND EQUIPMENT.



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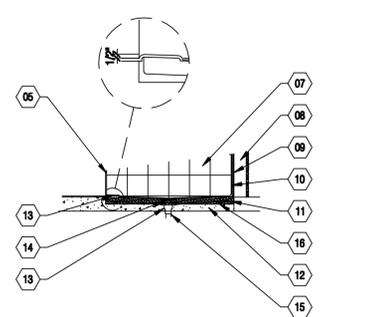
SHEET TITLE
INTERIOR ELEVATIONS

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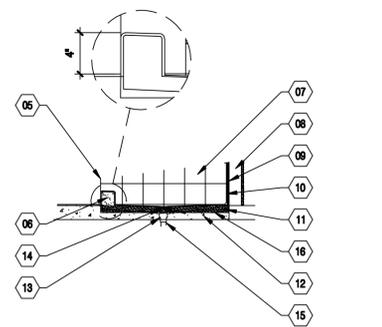
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PROJECT NO. **09226470** DRAWING NO. **AE211**

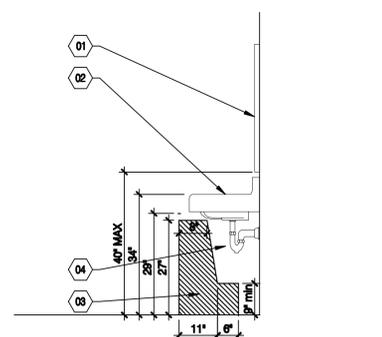
DATE **12.15.09**



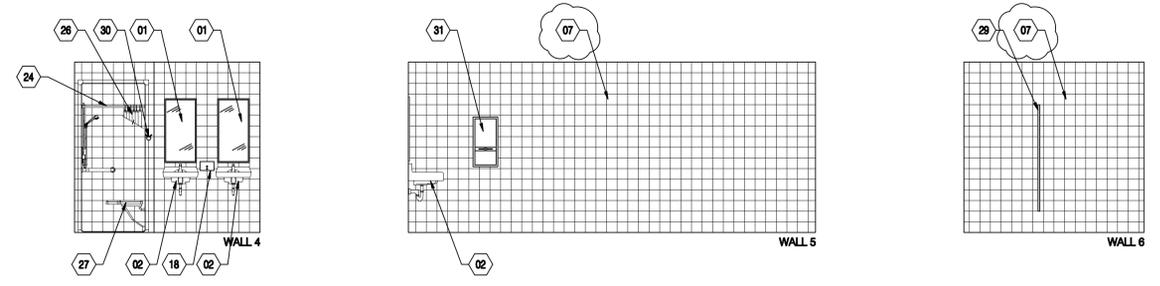
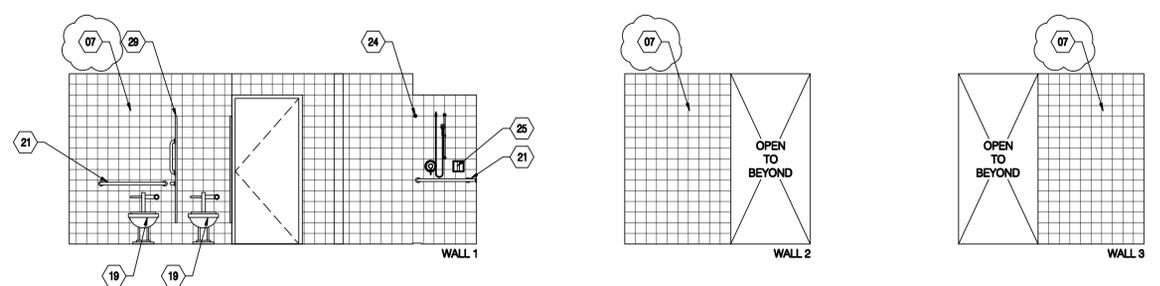
ACCESSIBLE SHOWER BASE
 SCALE: 1/2"=1'-0"
C5



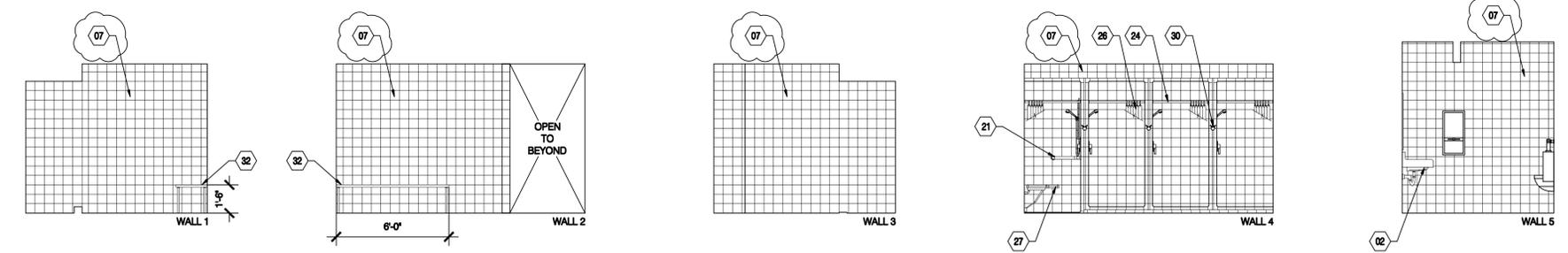
STANDARD SHOWER BASE
 SCALE: 1/2"=1'-0"
C5



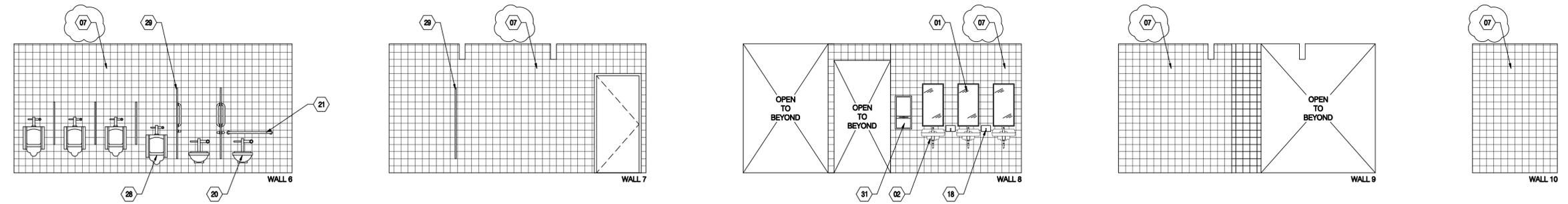
WALL MOUNTED SINK
 SCALE: 1/2"=1'-0"
B5



WOMEN'S RESTROOM ELEVATIONS
 SCALE: 1/4"=1'-0"
C1



MEN'S RESTROOM ELEVATIONS
 SCALE: 1/4"=1'-0"
A1



D

C

B

A

D

C

B

A

5

4

3

2

1

5

4

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2

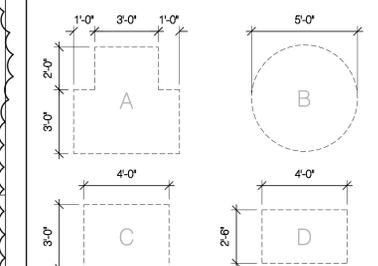
1

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CONSULTANT INFORMATION

1. WALL HUNG HAND SINK W/ UNDER LAVATORY GUARD TBA #11
2. ACCESSIBLE FLOOR MOUNTED TOILET
3. ACCESSIBLE WALL MOUNTED TOILET
4. GRAB BAR - TBA #4
5. FOLDING SHOWER SEAT - TBA #9
6. CERAMIC TILE FLOOR
7. ACCESSIBLE URINAL
8. TOILET PARTITION
9. ACCESSIBLE SHOWER
10. FLOOR DRAIN SLOPE FLOOR TO DRAIN, FLOOR SURFACE IN FRONT OF SHOWER SHALL NOT SLOPE MORE THAN 1/8" PER FOOT.
11. HATCHED AREA TO HAVE CONCRETE TOPPING TO FILL FORMER THICKSET FLOOR RECESS
12. BLOCK OUT SHOWER AREA FROM TOPPING SLAB
13. GYP BOARD WALL W/ 3/8" STUDS
14. STEEL COLUMN
15. ROOF LINE ABOVE
16. GALVANIZED STEEL BOLLARD, PAINTED, SEE STRUCTURAL
17. ACCESSIBLE BENCH
18. THREE COMPARTMENT SINK
19. FLOOR SINK - SEE MECHANICAL
20. FIRE EXTINGUISHER BC TYPE

ACCESSIBLE LEGEND:



GENERAL NOTES:

1. SEE D1/AE212 FOR TYPICAL MOUNTING LOCATION OF RESTROOM FIXTURES AND EQUIPMENT.
2. SEE MECHANICAL & ELECTRICAL FOR PLUMBING AND ELECTRICAL HOOKUPS FOR KITCHEN EQUIPMENT.
3. PAINT ALL EXPOSED METAL ON PALADIN SHED ROOF.
4. LOCATION OF PLUMBING FIXTURES IN KITCHEN SHALL BE COORDINATED WITH MSG. PETERSON, UTNG (801) 432-4465

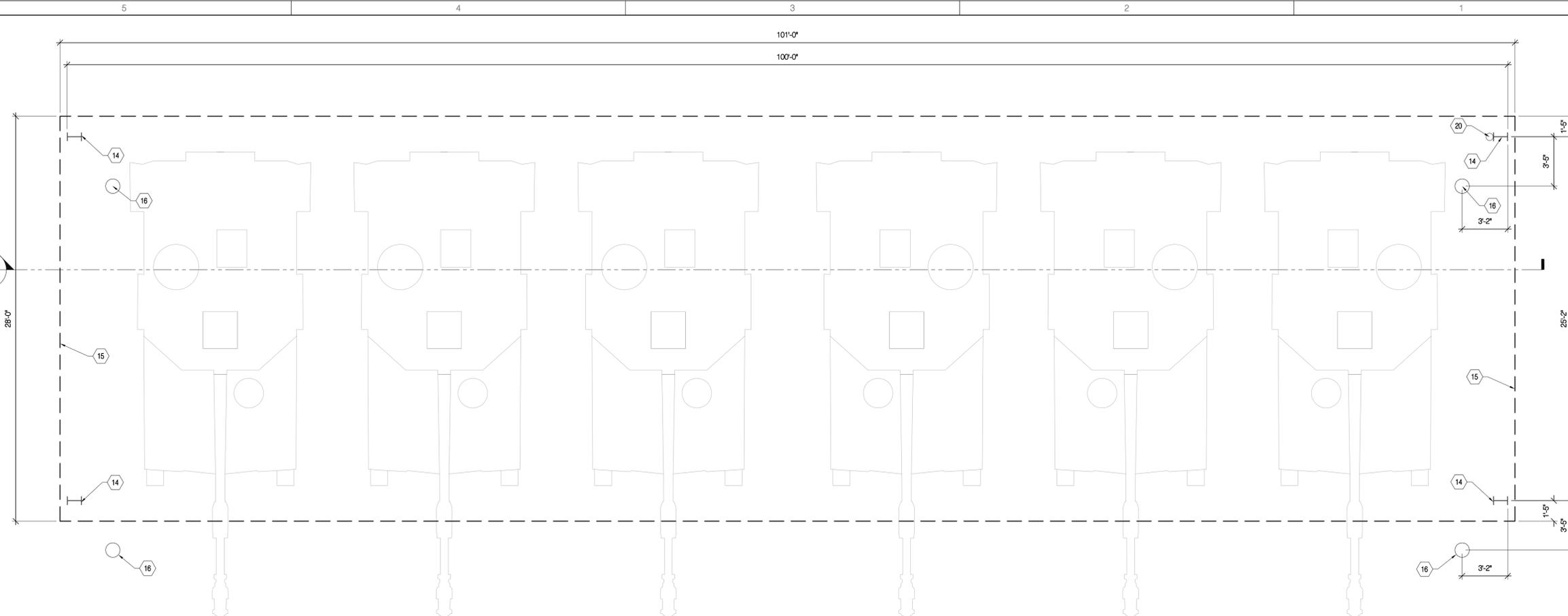


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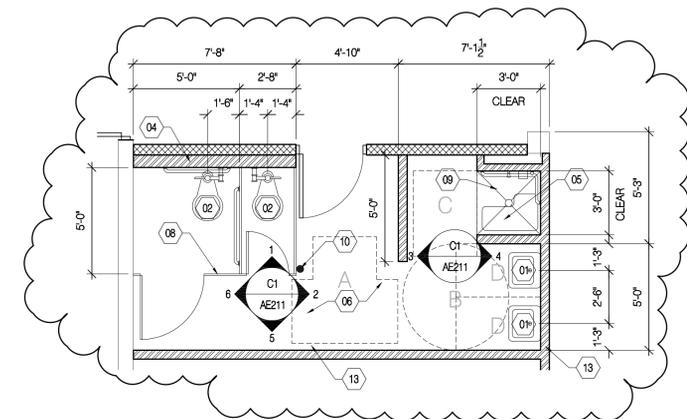
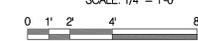
SHEET TITLE ENLARGED PLANS SECTIONS

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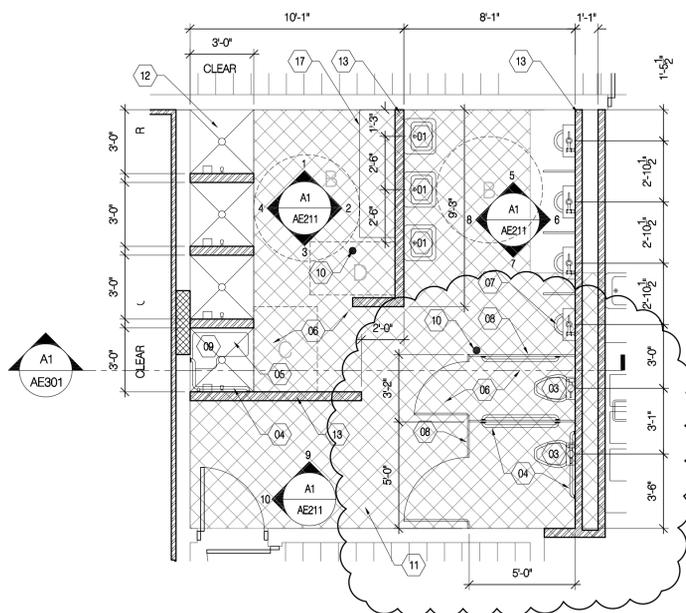
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 DATE: **12.15.09**



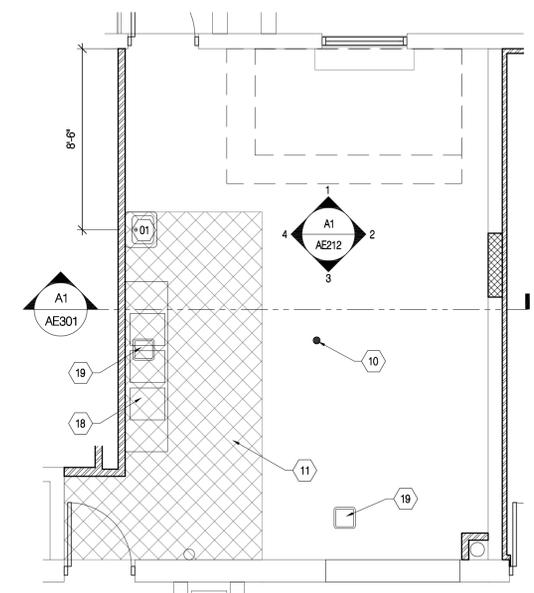
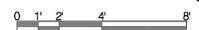
ENLARGED PALADIN SHED ROOF (ALTERNATE #4) (C1)
 SCALE: 1/4" = 1'-0"



ENLARGED WOMEN'S RESTROOM - 119 (A5)
 SCALE: 1/4" = 1'-0"



ENLARGED MEN'S RESTROOM - 115 (A3)
 SCALE: 1/4" = 1'-0"



ENLARGED KITCHEN PLAN - 114 (A1)
 SCALE: 1/4" = 1'-0"



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CONSULTANT INFORMATION

1. ROAD BASE OR CRUSHED AGGREGATE.
2. CONCEALED FULL FLAG POLE AND CONCRETE BASE TOP TO BE FLUSH WITH CONCRETE ISLAND.
3. CONCRETE SIDEWALK
4. CONCRETE SLAB W/ 27 TON CAPACITY.
5. LOADING DOCK, CENTER DOCK ON ACCESS GATE, SEE AE402
6. CONCRETE CURB (ALTERNATE #1)
7. ASPHALT PAVING (ALTERNATE #1)
8. LOCKABLE CHAINLINK GATE TIE INTO EXISTING FENCE. (ALTERNATE #1)
9. EXISTING FENCE
10. EXISTING GATE REPAIR OR REPLACE DAMAGED PARTS
11. ADA SIGNAGE SEE AS/AE301
12. EXISTING SIDEWALK
13. EXISTING CONCRETE SLAB
14. EXISTING ASPHALT PAVING TO BE RESURFACED (ALTERNATE #2)
15. EXISTING CURB TO REMAIN
16. CONCRETE SIDEWALK, MATCH WIDTH OF EXISTING SIDEWALK TO THE NORTH ALONG THE ROAD.
17. ACCESSIBLE CURB CUT
18. STRIPE PARKING AS SHOWN
19. EXISTING ASPHALT PAVING
20. PALADIN SHED ROOF AND CONCRETE SLAB (ALTERNATE #4)
21. CONCRETE CURB INSTALLED TO FENCE LINE. (IF ALTERNATE #1 IS NOT PERFORMED)
22. 4" AGG. ON 8" BASE MATERIAL, 3/4" MINUS PER UDOT (ALTERNATE #3)
23. CONCRETE ISLAND
24. SITTING WALL, SEE LANDSCAPE DRAWINGS
25. PLANTING AREA, SEE LANDSCAPE DRAWINGS
26. CURB HEIGHT TO MATCH EXISTING APPROX. 3"
27. FIRE HYDRANT
28. SLIP RESISTANT SURFACE

DRAWING LEGEND:

- ASPHALT PAVING (ALTERNATE #1)
- 4" AGGREGATE ON 8" BASE
- 4" AGGREGATE ON 8" BASE (ALTERNATE #3)
- ACCESSIBLE MEANS OF EGRESS

GENERAL NOTES:

1. REPLACE EXISTING MAILBOX AT ROAD
2. ALL LANDSCAPING, SPRINKLER SYSTEMS, ASPHALT, CONCRETE WALKS, WALLS, FLOOR STRIPING, ECT. DAMAGED OR REMOVED TO MAKE SPACE FOR CONSTRUCTION TO BE REPAIRED OR REPLACED.
3. CONCRETE REMOVED, SHOULD BE REMOVED TO THE NEAREST EXPANSION JOINT
4. SITE VERIFY ALL DIMENSIONS.

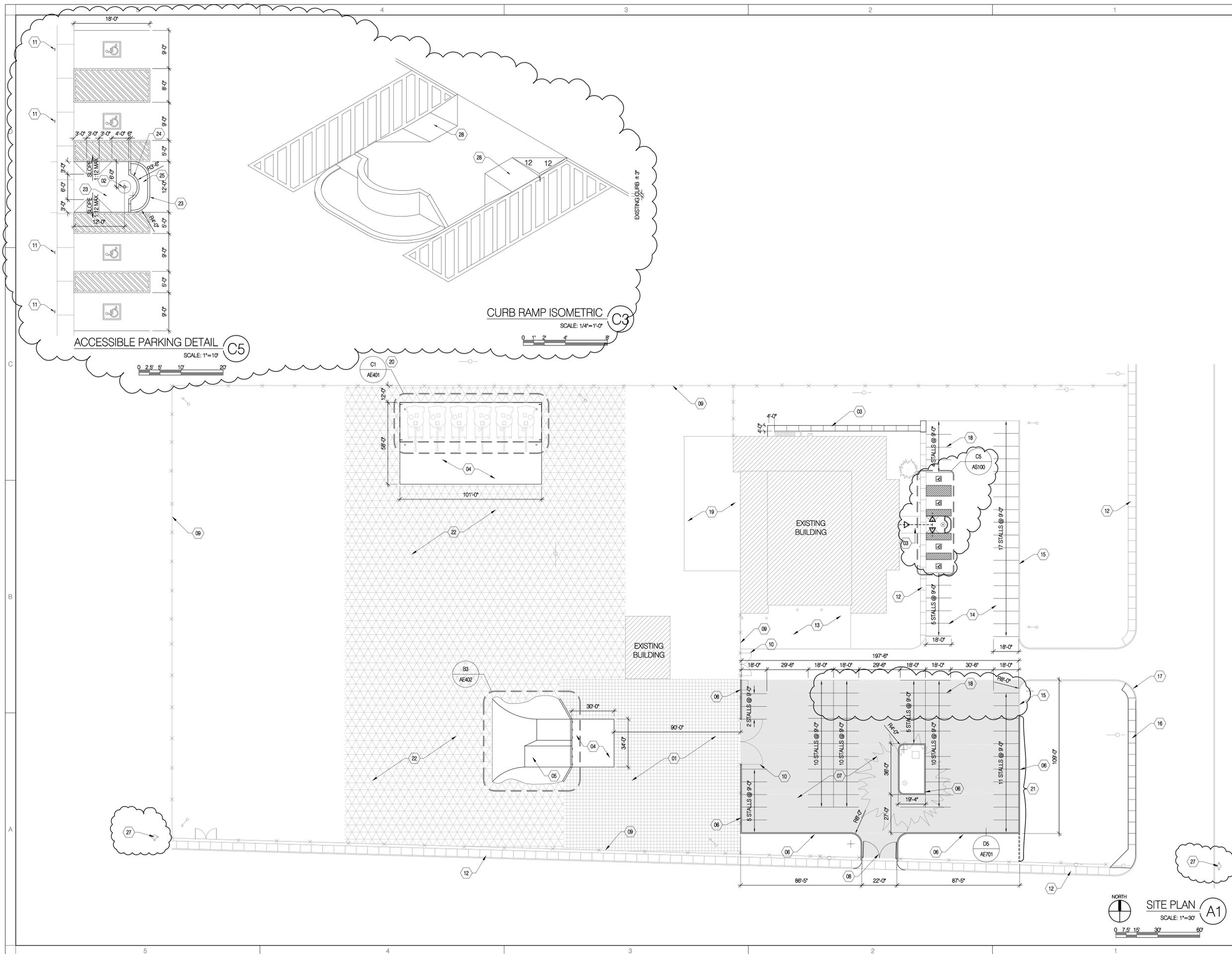


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SHEET TITLE
 SITE PLAN

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 DATE: **12.15.09**



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CONSULTANT INFORMATION

IRRIGATION EQUIPMENT LEGEND

SYMBOL	DESCRIPTION	MANUFACTURER	MODEL	SIZE
	POINT-OF-CONNECTION, SECONDARY WATER SYSTEM SHUT-OFF VALVE LOCATION TO BE DETERMINED BY BIDDER FIELD VERIFY LOCATION. PROVIDE FILTER WITH MANUAL FLUSH VALVE INSIDE RECESSED VALVE BOX. HUNTER ICC - 1600-PL OUTDOOR MODULAR CONTROLLER WITH WIRELESS RAIN-CLIK, RAIN SENSOR, INSTALLED, COMPLETE			
	REMOTE CONTROL VALVE	HUNTER	PEB-NP-HAN1	1"
	DRIP ZONE VALVE KIT	HUNTER	XCZ-100	1"
	HOSE BIB			
	PVC MAINLINE	EXISTING	SCHEDULE 40	1-1/4"
	PVC LATERAL LINE	---	SCHEDULE 40	VARIES
	INLINE EMITTER TUBING	NETAFIM	TLDL9-12	SEE IRRIGATION NOTES
	SLEEVE UNDER PAVED AREAS		SCHEDULE 40	3"
	DRIP ZONE BOUNDARY FOR SHRUBS			
	SEPARATE DRIP ZONE FOR TREES ONLY			
	VALVE # VALVE FLOW VALVE SIZE			

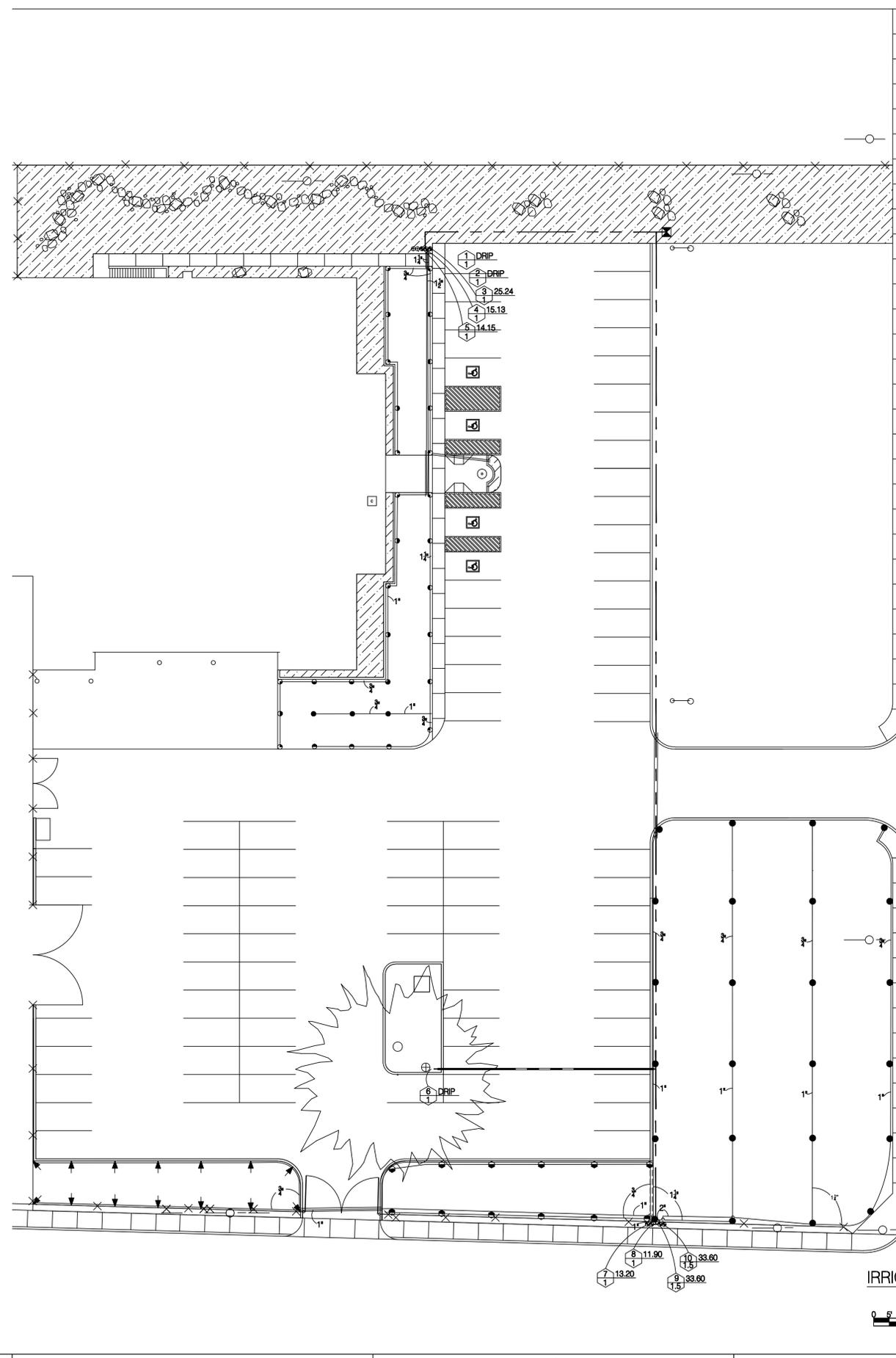
IRRIGATION HEAD LEGEND

SYMBOL/NOZ.	MANUFACT.	DESCRIPTION	MODEL	NOZZLE	MAX. r.	G.P.M.	P.S.I.	PATTERN
	HUNTER	PGJ SERIES ROTOR	PGJ-06-V	1.0	19'	1.10	50	40 - 360 DEGREES
	HUNTER	PGJ SERIES ROTOR	PGJ-06-V	.75	17'	.85	50	40 - 360 DEGREES
	HUNTER	PGJ SERIES ROTOR	PGJ-06-V	2.5	28'	2.80	50	40 - 360 DEGREES
	HUNTER	PRO SERIES SPRAY	PROS-06-CV-15Q	15Q	15'	0.97	30	QUARTER CIRCLE
	HUNTER	PRO SERIES SPRAY	PROS-06-CV-15H	15H	15'	1.86	30	HALF CIRCLE
	HUNTER	PRO SERIES SPRAY	PROS-06-CV-15TQ	15TQ	15'	2.92	30	THREE QUARTERS CIRCLE
	HUNTER	PRO SERIES SPRAY	PROS-06-CV-15F	15F	15'	3.75	30	FULL CIRCLE

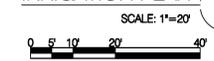
PIPE SIZING CHART PVC SCHED. 40

CALCULATED AT 5.0 fps (FLOW IN GPM)

UP TO 08.0 GPM THROUGH 3/4" PIPE
 UP TO 13.0 GPM THROUGH 1" PIPE
 UP TO 23.0 GPM THROUGH 1 1/4" PIPE
 UP TO 32.0 GPM THROUGH 1 1/2" PIPE
 UP TO 53.0 GPM THROUGH 2" PIPE



IRRIGATION PLAN L1



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IRRIGATION PLAN		
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DATE		
12.15.09		

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GENERAL

- 1. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE DRAWINGS OF ALL OTHER DISCIPLINES AND THE SPECIFICATIONS FOR THIS PROJECT. THE CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO SLEEVES, CHANGES, HANGERS, INSERTS, ANCHORS, HOLES AND OTHER ITEMS TO BE PLACED OR SET IN THE STRUCTURAL WORK. THE CONTRACTOR SHALL COORDINATE WITH ALL TRADES ALL ITEMS THAT ARE TO BE INTEGRATED INTO THE STRUCTURAL SYSTEM. ORDER OF CONSTRUCTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR. HE SHALL PROVIDE ALL ITEMS NECESSARY FOR HIS CHOSEN PROCEDURE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL SAFETY PRECAUTIONS AND REGULATIONS DURING THE WORK. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE STANDARDS OF OSHA, CHAPTER 33 OF THE IBC 2006, AND LOCAL ORDINANCES AND CODES. THE ENGINEER WILL NOT ADVISE ON WORK ISSUE DIRECTLY AS TO SAFETY PRECAUTIONS AND PROGRAMS.
3. THE STRUCTURAL DRAWINGS REPRESENT THE FINISH STRUCTURE. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY GUTTING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL ALL STRUCTURAL WORK AND CONNECTIONS HAVE BEEN COMPLETED. THE INVESTIGATION, DESIGN, SAFETY, ADEQUATE AND INSPECTION OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC. IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
4. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE METHODS, TECHNIQUES AND SEQUENCES OF PROCEDURES TO PERFORM THE WORK. THE SUPERVISION OF THE WORK IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT BE CONSTRUED AS INSPECTION, NOR AS APPROVAL OF CONSTRUCTION.
5. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO APPROVAL BY THE ENGINEER.
6. ALL STRUCTURAL SYSTEMS WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH THE SUPPLIER'S INSTRUCTIONS AND REQUIREMENTS.
7. LOADING APPLIED TO THE STRUCTURE DURING THE PROCESS OF CONSTRUCTION SHALL NOT EXCEED THE SAFE LOAD-CARRYING CAPACITY OF THE STRUCTURAL MEMBERS. THE LIVE LOADINGS USED IN THE DESIGN OF THIS STRUCTURE ARE INDICATED IN THE SECTION GENERAL NOTES. DO NOT APPLY ANY CONSTRUCTION LOADS UNTIL STRUCTURAL FRAMING IS PROPERLY CONNECTED TOGETHER AND UNTIL ALL TEMPORARY BRACING IS IN PLACE.
8. ALL ASTM AND OTHER REFERENCES ARE PER THE LATEST EDITIONS OF THESE STANDARDS, UNLESS OTHERWISE NOTED. SHOP DRAWINGS AND OTHER ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. ALL SHOP DRAWINGS SHALL BE REVIEWED BY THE GENERAL CONTRACTOR BEFORE SUBMITTAL. THE ENGINEER'S REVIEW IS TO BE FOR CONFORMANCE WITH THE DESIGN CONCEPTS AND GENERAL COMPLIANCE WITH THE RELEVANT CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW, CHECK AND COORDINATE THE SHOP DRAWINGS PRIOR TO SUBMISSION. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, DIMENSION, ETC.
9. SUBMIT SHOP DRAWINGS IN THE FORM OF TWO SETS OF PRINTS AND ONE SET OF REPRODUCIBLE DRAWINGS TO BE USED AS SHOP DRAWINGS. AS A MINIMUM, SUBMIT THE FOLLOWING ITEMS FOR REVIEW:
9.1. CONCRETE MIX DESIGNS.
9.2. REINFORCING STEEL SHOP DRAWINGS.
9.3. STRUCTURAL STEEL SHOP DRAWINGS.
9.4. PRE-ENGINEERED METAL BUILDING SYSTEM.
OTHER SUBMITTALS WILL BE REQUIRED PER THE "SPECIAL INSPECTION" NOTES CONTAINED HEREIN.
10. CONTRACTORS SHALL VISIT THE SITE PRIOR TO BID TO ASCERTAIN CONDITIONS WHICH MAY ADVERSELY AFFECT THE WORK OR COST THEREOF.

DESIGN LOADS & CRITERIA

Table with columns: DESIGN CODES, BUILDING CODE, REINFORCED CONCRETE, STRUCTURAL STEEL, WOOD FRAMING, OCCUPANCE CATEGORY, IBC SEISMIC IMPORTANCE FACTOR, HAPPED SPECTRAL RESPONSE ACCELERATION, LIMIT MAX S, LIMIT MAX S TO 1.5 PER ASCE 7-05 9.5.5.2.1, LIMIT MAX S TO 0.60 PER ASCE 7-05 9.5.5.2.1, SITE CLASS, PIER ASCE 7-05 USE CLASS D UNLESS OTHER INFORMATION IS PROVIDED, DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS, SEISMIC DESIGN CATEGORY, WIND, WIND SIMPLIFIED METHOD PER SECTION 1609.6, EXPOSURE CATEGORY, WIND IMPORTANCE FACTOR, ROOF, ROOF SNOW LOAD, LIVE LOAD, SOIL BEARING.

EXISTING CONSTRUCTION

- 1. BEFORE PROCEEDING WITH ANY WORK WITHIN THE EXISTING FACILITY, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH EXISTING STRUCTURAL AND OTHER CONDITIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL NECESSARY BRACING, SHORING AND OTHER SAFEGUARDS TO MAINTAIN ALL PARTS OF THE EXISTING WORK IN A SAFE CONDITION DURING THE PROCESS OF DEMOLITION AND CONSTRUCTION AND TO PROTECT FROM DAMAGE THOSE PORTIONS OF THE EXISTING WORK WHICH ARE TO REMAIN.
2. THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS, ELEVATIONS, ETC. NECESSARY FOR THE PROPER CONSTRUCTION AND ALIGNMENT OF THE NEW PORTIONS OF THE WORK TO THE EXISTING WORK. THE CONTRACTOR SHALL MAKE ALL MEASUREMENTS NECESSARY FOR FABRICATION AND ERECTION OF STRUCTURAL MEMBERS. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER OF RECORD.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND ERECTION OF ALL SHORING NECESSARY TO SAFEGUARD THE EXISTING STRUCTURE. THE SHORING SHOWN IS A PARTIAL AND SCHEMATIC REPRESENTATION OF THAT REQUIRED. THE CONTRACTOR SHALL SUBMIT A DETAILED PLAN FOR SHORING, BRACING AND PROTECTION OF THE EXISTING CONSTRUCTION. THE PLAN SHALL INCLUDE A CONSTRUCTION SEQUENCE, BEAR THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE THE PROJECT IS TO BE CONSTRUCTED IN AND BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW PRIOR TO BEGINNING THE WORK.

EARTHWORK

- 1. STRIP THE TOP 12" TO 18" OF TOP SOIL AND REMOVE ANY AND ALL UNSUITABLE FILL, DEBRIS AND VEGETATION. ANY UNSUITABLE SOILS SHALL BE STRIPPED DOWN TO NATURAL UNDISTURBED SOILS AND REPLACED WITH STRUCTURAL FILL AS REQUIRED.
2. ALL EXISTING FOUNDATIONS SHALL BE REMOVED.
3. ALL SOFT SPOTS SHALL BE REMOVED AND REPLACED WITH COMPACTED STRUCTURAL FILL.
4. STRUCTURAL FILL SHALL BE WELL GRADED GRANULAR MATERIAL WITH A MINIMUM SIZE LESS THAN #4 AND WITH NOT MORE THAN 1% PASSING A NO. 200 SIEVE. FILL SHALL BE COMPACTED TO 98% OF THE MAXIMUM LABORATORY DENSITY AS DETERMINED BY ASTM D 1557. THE CONTRACTOR SHALL HAVE ALL FILL TESTED.
5. ALL INTERIOR CONCRETE SLABS-ON-GRADE SHALL BE UNDERLAIN WITH #4 OF FREE DRAINING GRANULAR FILL.

FOUNDATIONS

- 1. ALL FOOTINGS HAVE BEEN DESIGNED BASED UPON AN ASSUMED SOIL BEARING PRESSURE OF 1500 psf. ALL FOOTINGS SHALL BEAR ON UNDISTURBED, FIRM NATURAL SOIL OR COMPACTED FILL. ALL FOUNDATION EXCAVATIONS SHALL BE EVALUATED BY THE GEOTECHNICAL ENGINEER/ TESTING AGENCY PRIOR TO POURING FOUNDATION CONCRETE.
2. TOP OF FOOTING ELEVATION SHALL BE AS SHOWN ON THE FOUNDATION PLAN. THESE ELEVATIONS ARE A MAXIMUM AND SHALL BE LOWERED AS REQUIRED TO OBTAIN THE REQUIRED DESIGN BEARING PRESSURE.
3. THE BOTTOM OF ANY FOOTINGS EXPOSED TO THE FREEZE THAW CYCLE SHALL BE PLACED A MINIMUM OF 30 INCHES BELOW GRADE FOR FROST PROTECTION.
4. NO UNBALANCED BOLD FILLING SHALL BE DONE AGAINST FOUNDATION WALLS UNLESS WALLS ARE SECURELY BRACED AGAINST OVERTURNING, EITHER BY TEMPORARY BRACING OR BY PERMANENT CONSTRUCTION.
5. PRIOR TO COMMENCING ANY FOUNDATION WORK, COORDINATE WORK WITH ANY EXISTING UTILITIES. FOUNDATIONS SHALL BE LOWERED WHERE REQUIRED TO AVOID UTILITIES.

CONCRETE

- 1. CONCRETE SHALL HAVE THE FOLLOWING MATERIALS UNLESS NOTED OTHERWISE.
1.1. CEMENT: CEMENT SHALL CONFORM TO "SPECIFICATION FOR PORTLAND CEMENT," (ASTM C150). CEMENT SHALL BE TYPE ONE UNLESS EXPOSED TO SULFATES. WHERE CEMENT IS EXPOSED TO SULFATES, CEMENT SHALL MEET THE REQUIREMENTS OF ACI 308 SECTION 4.3.
1.2. NORMAL WEIGHT AGGREGATE: ASTM C-33.
1.3. REINFORCING STEEL: ASTM A-615, 13.0. GRADE 60, 13.8. GRADE 40, 13.9. GRADE 40.
1.4. DEFORMED BAR ANCHORS (DBA): ASTM A-706.
1.5. HEADED STUD ANCHORS (HAS): ASTM A-108.
2. ANCHOR BOLTS:
2.1. GRAVITY BOLTS: ASTM A-307.
2.2. HEAVY HEX NUTS & WASHERS: ASTM A-563.
3. ADMIXTURES:
3.1. AIR ENTRAINMENT: ASTM C-260 (provide as specified in ACI 308 SECTION 4.2)
3.2. CALCIUM CHLORIDE: NOT PERMITTED.
3.3. ALUMINUM PRODUCTS: NOT PERMITTED.
4. CONCRETE SHALL HAVE THE FOLLOWING COMPRESSIVE STRENGTHS:
CONCRETE: MINIMUM Fc (28 DAYS) SLURRY: W/C RATIO
COLUMNS: 4000 psi 3" TO 5" 0.46
FOOTINGS: 4000 psi 3" TO 5" 0.46
SLAB-ON-GRADE: 3500 psi 3" TO 5" 0.50
SLURRY: CONCRETE w/o ADMIXTURES SHALL HAVE A MAXIMUM SLURRY OF 0.50.
5. AT THE CONTRACTOR'S OPTION, AN APPROVED ADMIXTURE MAY BE USED TO PRODUCE FLOWABLE CONCRETE. MAXIMUM SLURRY SHALL NOT EXCEED 8 INCHES. THE CONTRACTOR SHALL SUBMIT TEST RESULTS OF THE PROPOSED CONCRETE MIXES ALONG WITH THE MANUFACTURER'S TECHNICAL DATA FOR APPROVAL PRIOR TO POURING CONCRETE. SEE ACI 301-05 4.2.2.2 FOR SPECIFIC SLURRY REQUIREMENTS.
6. THE CONTRACTOR IS ALLOWED TO HAVE ONLY ONE TYPE OF CONCRETE ON THE JOB SITE AT ONE TIME.
7. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE".
8. HOT WEATHER CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 305. COLD WEATHER CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 306.
9. WELDING OF REINFORCING BARS IS NOT PERMITTED. REBAR SHALL NOT BE SUBSTITUTED FOR ANY OTHER TYPE OF REINFORCEMENT. SUBSTITUTION OF REINFORCING BARS OF ANY KIND SHALL BE AT THE ENGINEER OF RECORD'S WRITTEN CONSENT.
10. ALL REINFORCING STEEL SHALL BE SET AND TIED IN PLACE PRIOR TO POURING OF CONCRETE, EXCEPT THAT VERTICAL DONNELS FOR MASONRY WALL REINFORCING MAY BE "FLOATED" IN PLACE. DO NOT FIELD BEND BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE UNLESS SPECIFICALLY INDICATED OR APPROVED BY THE ENGINEER OF RECORD.
11. REINFORCING STEEL, INCLUDING HOOKS AND BENDS, SHALL BE DETAILED IN ACCORDANCE WITH ACI 318. ALL REINFORCING STEEL INDICATED AS BEING CONTINUOUS (CONT.) SHALL BE LAPPED WITH A TYPE 2 LAP SPLICE UNLESS OTHERWISE NOTED. ALL WELDED WIRE FABRIC SHALL LAP AT LEAST ONE FULL MESH.
12. UNLESS NOTED OTHERWISE, THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:
12.1. CONCRETE EXPOSED TO EARTH OR WEATHER:
12.1.a. #6 THROUGH #8 BARS: 2"
12.1.b. #9 BAR, #10 OR #11 WIRE & SMALLER: 1 1/2"
12.2. CONCRETE NOT EXPOSED TO THE EARTH OR WEATHER:
12.2.a. WALLS, ELEVATED SLABS (JOISTS): 3/4"
12.2.b. BEAMS AND COLUMNS: 1 1/2"
12.3. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO THE EARTH: 3"
13. BAR SUPPORTS AND HOLDING BARS SHALL BE PROVIDED FOR ALL REINFORCING STEEL TO INSURE MINIMUM CONCRETE COVER. BAR SUPPORTS SHALL BE PLASTIC TYPED OR STAINLESS STEEL.
14. UNLESS OTHERWISE APPROVED, ALL WELDED WIRE FABRIC SHALL BE BLOCKED INTO THE POSITION INDICATED WITH PRECAST CONCRETE BLOCKS HAVING A COMPRESSIVE STRENGTH EQUAL TO THAT OF THE SLAB.
15. FORM WORK SHALL COMPLY WITH THE REQUIREMENTS OF ACI STANDARD PUBLICATION #347 AND SHALL REMAIN IN PLACE UNTIL CONCRETE HAS OBTAINED AT LEAST 90% OF ITS 28-DAY COMPRESSIVE STRENGTH. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, DETAIL PLACEMENT AND REMOVAL OF ALL FORM WORK, SHORING AND RE-SHORING.
16. SLABS TO BE PERMANENTLY EXPOSED TO WEATHER SHALL BE AIR ENTRAINED AS SPECIFIED ABOVE.
17. CONSTRUCTION AND CONTROL JOINTS SHALL BE INSTALLED IN THE SLABS ON GRADE SO THAT THE LENGTH TO WIDTH RATIOS IS NOT MORE THAN 1/25 TO 1. CONTROL JOINTS SHALL BE COMPLETED WITHIN 12 HOURS OF THE PLACEMENT OF THE CONCRETE. CONTROL JOINTS SHALL BE CUT INTO THE SLABS OR TOoled IN THE SLABS A DEPTH OF 1/4 THE DEPTH OF THE SLAB. INSTALL JOINTS IN THE SLABS ON GRADE AT A SPACING NOT TO EXCEED 30 TIMES THE SLAB THICKNESS OF THE SLAB IN ANY DIRECTION UNLESS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS. CONSTRUCTION JOINTS SHALL BE LIMITED TO A SPACING OF NOT MORE THAN 25'-0" IN ANY DIRECTION.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT AND LOCATION OF ANY AND ALL EMBED ITEMS INCLUDING PLATES, BOLTS, AND OTHER INSERTS SPECIFIED IN THE DRAWINGS. REINFORCING STEEL FOR PRECAST CONCRETE PANELS SHOWN ON THE DRAWINGS ARE FOR THE GRAVITY, SEISMIC AND WIND LOADS ONLY. LIFTING PROCEDURES OF ALL PRECAST PANELS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL SUBMIT A COPY OF THE DESIGN CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER OF RECORD FOR ALL PRECAST CONCRETE REINFORCEMENT AND LIFTING HARDWARE ASSOCIATED WITH HIS CHOSEN INSTALLATION PROCEDURE.
19. REFER TO THE "SPECIAL INSPECTION" SECTION OF THE GENERAL STRUCTURAL NOTES FOR INSPECTION REQUIREMENTS.

EPOXY

- 1. USE SIMPSON SET HIGH STRENGTH EPOXY-TIE ANCHORING SYSTEMS FOR ANY EPOXY ANCHORING INTO MASONRY OR USE SIMPSON SET-XP HIGH STRENGTH EPOXY-TIE ANCHORING SYSTEMS FOR ANY EPOXY ANCHORING INTO CONCRETE. J-ANCHOR OR INSTALLS, OR EQUIVALENT EPOXY TESTING ASTM C-881.
2. HOLES SHALL BE DRILLED TO THE REQUIRED DEPTHS LISTED ABOVE USING ROTARY MATHIER DRILLS AND CARBIDE-TIPPED DRILL BITS, COMPLYING W/ ANSI B021.15-1994. THE BIT DIAMETERS MUST COMPLY WITH THOSE LISTED ON SHEET 5001.
3. USE MINIMUM GRADE A307 THREADED ANCHORS UNO., AND ALL ROD THREADS MUST COMPLY W/ ANSI B11-7A.
4. THE MINIMUM INSTALLATION TEMPERATURE FOR THESE SYSTEMS IS 0 DEGREES FAHRENHEIT.
5. AFTER DRILLING, ALL HOLES MUST BE CLEANED FROM THE BOTTOM W/ FORCED AIR. A WIRE BRUSH SHALL THEN BE USED TO CLEAN DUST AND SLURRY FROM THE HOLE. FOLLOW THIS BY ANOTHER CLEANING W/ FORCED AIR, ENSURING THAT THERE ARE NO LOOSE DEBRIS NOR MATERIALS IN THE HOLE.
6. ADHESIVE SHALL THEN BE PUMPED INTO THE HOLE AND ANCHORS OR BARS INSTALLED, PER MANUFACTURER'S SPECIFICATIONS. ANCHORS OR BARS SHALL BE INSERTED BY ROTATING A MINIMUM OF TWO TURNS TO EVENLY DISTRIBUTE EPOXY.
7. CURE TIMES SHALL BE DETERMINED PER MANUFACTURER'S RECOMMENDATIONS. REFER TO ICC EVALUATION REPORT ESR 1772.
8. PER ICC REQUIREMENTS, CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR ALL ADHESIVE ANCHOR INSTALLATIONS. THE SPECIAL INSPECTOR SHALL RECORD AND SUBMIT COMPLIANCE OF THE FOLLOWING:
A. DRILL BIT TYPE AND SIZE, PER ANSI B021.15-1994
B. HOLE DEPTH AND CLEANNESS
C. PRODUCT DESCRIPTION, INCLUDING PRODUCT NAME, ROD DIAMETER, AND LENGTH
D. ADHESIVE EXPIRATION DATE
E. VERIFICATION OF ANCHOR INSTALLATION PER THE MANUFACTURER'S PUBLISHED INSTRUCTIONS
9. THESE CONDITIONS ONLY APPLY WHEN ANCHORS OR BARS ARE INSTALLED IN NORMAL-WEIGHT CONCRETE OR GROUT - FILLED CONCRETE MASONRY WALLS.

PRE-ENGINEERED METAL BUILDING

- 1. THE DESIGN, FABRICATION, AND ERECTION OF ALL PREFABRICATED ELEMENTS WITH THEIR ASSOCIATED HARDWARE SHALL COMPLY WITH THE LATEST REQUIREMENTS OF THE IBC, AISI, SDC, AND AISI.
2. PRIOR TO FABRICATION AND INSTALLATION OF ANCHOR BOLTS, THE METAL BUILDING SUPPLIER SHALL SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS INCLUDING REACTIONS BEARING THE STAMP OF A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN THE SAME STATE AS THE BUILDING IS TO BE BUILT.
3. DO NOT MODIFY ANY STRUCTURAL ELEMENT OF THE PREFABRICATED METAL BUILDING WITHOUT WRITTEN CONSENT AND DIRECTION FROM THE MANUFACTURER. SEND COPIES OF THE CONSENT AND MODIFICATIONS TO THE ARCHITECT-ENGINEER.
4. ALL OF THE ANCHOR BOLTS AND BASE PLATE CONNECTION OF THE PREFABRICATED COLUMNS, AND MISCELLANEOUS FRAMING MEMBERS TO THE FOUNDATIONS, SHALL BE OF THE NUMBER, MATERIAL, DIAMETER AND LAYOUT SHOWN IN THE PREFABRICATED METAL BUILDING DESIGNER/SUPPLIER/MANUFACTURER'S DRAWINGS. THE DEPTH OF EMBEDMENT FOR THE ANCHOR BOLTS AND ANY OTHER MODIFICATIONS REQUIRED ARE SHOWN IN THESE STRUCTURAL CONTRACT DRAWINGS.
5. THE FOUNDATION PLAN AND ASSOCIATED FOUNDATION DETAILS ON SHEETS 501 ARE BASED SOLELY UPON COLUMN AND WALL LOADS PROVIDED FOR THEIR DESIGN. INTERMOUNTAIN STRUCTURAL ENGINEERING IS RESPONSIBLE ONLY FOR SUPPORTING THE LOADS PROVIDED BY THE PREFABRICATED BUILDING MANUFACTURER AND ACCEPTS NO RESPONSIBILITY FOR THE DESIGN OF MEMBERS AND CONNECTIONS OF THE SUPERSTRUCTURE.

STRUCTURAL STEEL

- 1. STRUCTURAL STEEL SHALL HAVE THE FOLLOWING MATERIALS UNLESS NOTED OTHERWISE. OTHER ROLLED SHAPES AND PLATES: ASTM A36. STRUCTURAL STEEL PIPES: ASTM A53, TYPE E or S GRADE B. STRUCTURAL STEEL TUBES: ASTM A500 GRADE B (46 KS). HEADED STUD ANCHORS (HAS): ASTM A307 WITH ASTM A563 HEAVY HEX. DEFORMED BAR ANCHORS (DBA): ASTM A706. THREADED ROD: ASTM A307. ANCHOR BOLTS: ASTM A307. NUTS: ASTM A563 (heavy hex). WASHERS: GRADE A (hardened).
2. THE FABRICATION AND CONSTRUCTION OF ALL STRUCTURAL STEEL SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING CODES:
IBC 2006 SECTION 2005
AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS.
AISC CODE OF STANDARD PRACTICE EXCLUDING SECTIONS 3.4, 4.4, AND 4.4.1.
AISC SPECIFICATIONS FOR STRUCTURAL JOINTS.
AISC WELDING CODE.
AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS.
PROVIDE SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. ALL SHOP FABRICATION BE BY AISC-APPROVED FABRICATORS.
3. ALL STRUCTURAL WELDING SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS:
WELDING RODS: E-70 XX (typical)
STRUCTURAL CUTTING: AWS D1.1 (performed by AWS certified welder)
STRUCTURAL WELDING: AWS D11 (performed by AWS certified welder)
REINFORCING BARS (REBAR): DO NOT WELD REBAR
ANCHOR BOLTS: DO NOT WELD ANCHOR BOLTS (including lock washers)
4. ANY SUBSTITUTION OF ANY MEMBERS SHALL BE AT THE WRITTEN CONSENT OF THE STRUCTURAL ENGINEER.
5. HARDENED WASHERS SHALL BE PROVIDED AT ALL TURNED EDITIONS OF BOLTED CONNECTIONS. IF THE CONNECTION IS SLOPED OR SIGNED THEN PROVIDE BEVELLED WASHERS AS REQUIRED. PROVIDE WASHERS THAT COMPLETELY COVER ANY OVERSIZED HOLES OR SLOTS EX E-70 XX.
6. BOLTS MUST BE LONG ENOUGH FOR THREADS TO BE FLUSH WITH THE OUTSIDE FACE OF THE BOLT AFTER TIGHTENING. NO MORE THAN 5 THREADS OF "STICKOUT" ARE PERMITTED. THE "TURN OF THE NUT" METHOD IS DESCRIBED BELOW (THIS IS FOR PERPENDICULAR SURFACES ONLY):
6.1. THE TURN OF THE NUT METHOD IS NOT TO BE USED FOR BOLTS LONGER THEN 12 BOLT DIAMETERS. TIGHTEN ALL BOLTS IN THE CONNECTION TO THE SNUG, TIGHT CONDITION. FROM THE SNUG, TIGHT CONDITION, TIGHTEN EACH BOLT AS SPECIFIED BELOW:
BOLT LENGTH: AMOUNT OF TURN APPLIED TO NUT.
UP TO AND INCLUDING 1/3 TURN OF THE NUT
4 DIAMETERS
OVER 4 DIAMETERS 1/2 TURN OF THE NUT
8 DIAMETERS
BUT NOT EXCEEDING 8 DIAMETERS
OVER 8 DIAMETERS 2/3 TURN OF THE NUT
BUT NOT EXCEEDING 12 DIAMETERS
7. DO NOT REUSE BOLTS, NUTS OR WASHERS.
8. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED.
9. THE STRUCTURAL STEEL ERECTOR SHALL PROVIDE ANY REQUIRED TEMPORARY GUTTING AND BRACING REQUIRED. COLUMNS, ANCHOR BOLTS, BASE PLATES, ETC. HAVE BEEN DESIGNED FOR THE FINAL COMPLETED CONDITION AND HAVE NOT BEEN INVESTIGATED FOR POTENTIAL LOADINGS ENCOUNTERED DURING STEEL ERECTION AND CONSTRUCTION. ANY INVESTIGATION OF THE COLUMNS, ANCHOR BOLTS, BASE PLATES, ETC. FOR ADEQUACY DURING THE STEEL ERECTION AND CONSTRUCTION PROCESS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. REFER TO THE "SPECIAL INSPECTION" SECTION OF THE GENERAL STRUCTURAL NOTES FOR ANY INSPECTION REQUIREMENTS.

SPECIAL INSPECTION

- SPECIAL INSPECTION AND QUALITY ASSURANCE, AS REQUIRED BY SECTION 104 OF THE IBC, SHALL BE PROVIDED BY AN INDEPENDENT EMPLOYED BY THE OWNER UNLESS HAVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE REQUIRED INSPECTIONS. ALL TESTING AND INSPECTION REPORTS SHALL BE SENT TO THE ENGINEER OF RECORD FOR REVIEW. ITEMS REQUIRING SPECIAL INSPECTION AND QUALITY ASSURANCE ARE:
1. SOILS PER IBC SECTION 1704.7
1.1. SPECIAL INSPECTION SHALL BE PROVIDED PRIOR TO POURING CONCRETE FOOTINGS.
1.2. SPECIAL INSPECTION SHALL BE PROVIDED PRIOR TO PLACEMENT OF FILL AND DURING PLACEMENT OF FILL.
2. CONCRETE PLACEMENTS PER IBC SECTION 1704.4
2.1. CONTINUOUS SPECIAL INSPECTION SHALL BE PROVIDED
2.2. COLUMNS, SLIPUP AND AIR-ENTRAINMENT TEST SHALL BE PERFORMED FOR EVERY 50 CYCIC YARDS OR EACH DAY'S PRODUCTION IF LESS THAN 50 CYCIC YARDS. TEST SHALL BE PERFORMED IN ACCORDANCE WITH ASTM C31 AND C39.
3. A-BOLTS INSTALLED IN CONCRETE SECTION 1704.4
3.1. ALL A-BOLTS SHALL BE INSPECTED PRIOR TO AND DURING CONCRETE PLACEMENT.
4. CONCRETE REINFORCING STEEL PLACEMENT IBC SECTION 1704.4
4.1. REINFORCING SHALL BE INSPECTED PRIOR TO CONCRETE PLACEMENT.
5. STRUCTURAL WELDING IBC SECTION 1704.3
5.1. PERIODIC SPECIAL INSPECTION OF SINGLE PASS FILLET HELDS LESS THAN OR EQUAL TO 5/16".
5.2. CONTINUOUS SPECIAL INSPECTION OF SINGLE PASS FILLET HELDS GREATER THAN 5/16" AND MULTI-PASS FILLET HELDS.
5.3. CONTINUOUS SPECIAL INSPECTION OF COMPLETE AND PARTIAL PENETRATION HELDS.
6. STRUCTURAL MASONRY SHALL HAVE LEVEL 1 SPECIAL INSPECTION PER IBC SECTION 1705.2
6.1. PERIODIC SPECIAL INSPECTION SHALL BE PERFORMED FOR:
6.1.1. PROPORTIONS OF SITE-PREPARED MORTAR, CONSTRUCTION OF MORTAR JOINTS.
6.1.2. LOCATION OF REINFORCEMENT AND CONNECTIONS.
6.1.3. SIZE AND LOCATION OF STRUCTURAL ELEMENTS.
6.1.4. TYPE, SIZE AND LOCATION AND PLACEMENT OF ANCHORS.
6.1.5. SIZE, GRADE, TYPE AND PLACEMENT OF REINFORCEMENT.
6.1.6. VERIFY GROUT SPACE IS CLEAN PRIOR TO GROUTING.
6.1.7. PROTECTION OF MASONRY DURING COLD AND HOT WEATHER.
6.2. CONTINUOUS SPECIAL INSPECTION SHALL BE PROVIDED FOR GROUT PLACEMENT AND PREPARATION OF ANY REQUIRED GROUT SPECIMENS, MORTAR SPECIMENS AND PRISMS.
6.3. QUALITY ASSURANCE SHALL BE ACCORDING TO LEVEL 2 QUALITY ASSURANCE AS NOTED IN TABLE 104.2 OF ACI 530/ACI 530.5/ACI 530.5.2.
6.3.1. PRIOR TO CONSTRUCTION, A LETTER OF STRENGTH CERTIFICATION FROM THE SUPPLIERS OF THE MASONRY UNITS AND GROUT SHALL BE SUBMITTED.
6.3.2. DURING CONSTRUCTION, THE GROUT AND MORTAR SHALL BE TESTED FOR EVERY 5,000 SQUARE FEET OF MASONRY CONSTRUCTED.
6.3.3. THE CONTRACTOR HAS THE OPTION OF USING THE "MASONRY PRISM TEST METHOD" PER IBC SECTION 205.2.2.2 IN LEAD OF THE "UNIT STRENGTH METHOD".
7. EPOXY ANCHORS, IBC SECTION 1703.13
7.1. SPECIAL INSPECTIONS SHALL VERIFY ALL DRILLED HOLES SIZE AND DEPTH PRIOR TO INSTALLATION OF EPOXY AND ANCHOR ROD.
8. SIMPSON TITEN HD SCREW ANCHORS, IBC SECTION 1704.13.3 & ESR-2713
8.1. SPECIAL INSPECTIONS SHALL VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, ALL DRILLED HOLES SIZE, DEPTH AND HOLE CLEANNESS, DRILL BIT DIAMETER/ANCHOR SPACING AND EDGE DISTANCE, INSTALLATION TORQUE AND MAX. IMPACT WRENCH TORQUE RATING PRIOR TO AND DURING INSTALLATION OF THE ANCHOR ROD.
9. DEFERRED SUBMITTALS
FOR THE PURPOSE OF THIS SECTION, DEFERRED SUBMITTALS ARE DEFINED AS PER SECTION 103.3.2 OF THE IBC. SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER/ARCHITECT FOR THEIR REVIEW FOR GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. DEFERRED STRUCTURAL SUBMITTALS FOR THIS PROJECT ARE:
1. PREFABRICATED METAL BUILDING.

DEFERRED SUBMITTALS

- 1. PREFABRICATED METAL BUILDING.

MASONRY

- 1. MASONRY SHALL HAVE THE FOLLOWING MATERIALS UNLESS NOTED OTHERWISE:
1.1. CONCRETE MASONRY UNITS (CMU): LIGHT WEIGHT GRADE N, TYPE I
1.2. MORTAR: TYPE "M" (minimum unit strength of 1,900 psi) f'm = 1,500 psi.
1.3. GROUT: MINIMUM COMPRESSIVE STRENGTH OF 2,000 psi AT 28 DAYS.
1.4. REINFORCING STEEL: ASTM A-615, fy = 60 ksi.
1.5. GRADE 60: ASTM A-615, fy = 60 ksi.
1.6. ANCHOR BOLTS: ASTM A-307.
1.7. HEAVY HEX NUTS & WASHERS: ASTM A-563.
2. UNLESS NOTED OTHERWISE, THE FOLLOWING MINIMUM COVER SHALL BE PROVIDED FOR REINFORCEMENT:
2.1. MASONRY EXPOSED TO THE SOIL 1 1/2"
2.2. TYPICAL MASONRY ONE BAR DIAMETER OR 3/4" MINIMUM.
3. MASONRY CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530).
4. UNLESS NOTED OTHERWISE, ALL WALLS SHALL BE LAID IN A RUNNING BOND. BOND CORNERS AND INTERSECTIONS OF LOAD-BEARING WALLS, AND OTHER WALLS INDICATED IN THE CONTRACT DOCUMENTS. ALL UNITS SHALL BE LAID WITH A FULL MORTAR BEDS ON THE FACE SHELL CELLS, WHICH ARE TO BE GROUTED, SHALL HAVE FULL HEAD JOINTS. HEAD JOINTS SHALL BE FILLED SOLIDLY WITH MORTAR FOR A DISTANCE IN FROM THE FACE OF THE UNITS NOT LESS THAN THE THICKNESS OF THE LONGITUDINAL FACE SHELL.
5. FILL ALL BOLD BEAMS, REINFORCING CELLS, ANCHOR BOLTS, EMBEDS, ETC. SOLIDLY WITH GROUT PLACED BY MECHANICAL VIBRATION AT THE TIME OF PLACEMENT AND REVIBRATED AFTER 15 MINUTES. POSITIVE HAS BEEN ABSORBED BUT BEFORE WORKABILITY HAS BEEN LOST. FLOODING OR ROODING OF GROUT IS NOT PERMITTED.
6. HORIZONTAL BOND BEAMS WITH CONTINUOUS VERTICAL REINFORCING AS INDICATED SHALL TERMINATE AT CONTROL JOINTS EXCEPT BOND BEAMS AT BEARING ELEVATIONS. INTERMEDIATE BOND BEAMS SHALL BE PROVIDED PER THE SCHEDULE ON STEEL 501.
7. GROUT POURS SHALL BE LIMITED TO 4'-0" LIFTS UNLESS HIGH LIFT GROUTING PROCEDURES ARE FOLLOWED. CONTACT THE ARCHITECT & ENGINEER PRIOR TO ANY HIGH LIFT GROUTING PROCEDURES TO DISCUSS QUALIFICATIONS AND PROCEDURES.
8. ALL MASONRY LOCATED BELOW GRADE SHALL BE GROUTED SOLIDLY.
9. VERTICAL CELLS TO BE FILLED WITH GROUT SHALL HAVE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A CLEAR, UNOBSTRUCTED VERTICAL CELL NOT LESS THAN 2" BY 3". ALL STEEL REINFORCEMENT SHALL BE LOCATED WITH AN APPROVED LOCATOR AT 10'-0" O.C. MAXIMUM INTERVALS OR AT BAR SPLICE LOCATIONS. ALL VERTICAL WALL REINFORCING SHALL BE LOCATED AT THE CENTER OF THE WALL UNLESS NOTED OTHERWISE.
10. ALL VERTICAL REINFORCING SHALL TERMINATE IN THE SAME VERTICAL CELL FOR WHICH IT BEGAN IN. STEPPING REINFORCEMENT IS NOT PERMITTED. PROVIDE REBAR DONNELS FROM THE FOUNDATIONS TO MATCH THE VERTICAL REINFORCEMENT SIZE AND SPACINGS. FOUNDATION DONNELS SHALL HAVE STANDARD 90-DEGREE HOOKS AND LAP WITH THE FIRST LIFT REINFORCING.
11. REINFORCING BARS SHALL NOT BE WELDED OR SUBSTITUTED FOR ANY OTHER FORM OF REINFORCING WITH OUT WRITTEN CONSENT FROM THE ENGINEER.
12. DETAIL ALL MASONRY REINFORCING SUCH THAT ALL LAP SPLICES ARE AS INDICATED IN THE REINFORCING BAR LAP SPLICE SCHEDULE. HORIZONTAL REINFORCEMENT SHALL BE CONTINUOUS AT ALL INTERSECTING WALLS AND CORNERS. CORNER BARS SHALL BE PROVIDED AT STANDARD LAP LENGTHS TO MAKE WALLS CONTINUOUS. VERTICAL REINFORCEMENT SHALL START AND STOP ABOVE AND BELOW OPENINGS AS SHOWN IN THE CONTRACT DOCUMENTS. VERTICAL JAMB COLUMNS SHALL EXTEND PAST THE TOP OF THE OPENING UP THRU THE NEXT SUPPORTING FLOOR OR ROOF BEARING BOND BEAM. HORIZONTAL REINFORCEMENT ABOVE AND BELOW OPENINGS SHALL EXTEND 8 BAR DIAMETERS PAST THE OPENING WHERE POSSIBLE. WHERE NOT POSSIBLE, TERMINATE HORIZONTAL REINFORCEMENT IN A STANDARD ACI 90 DEGREE HOOK.
13. HORIZONTAL WALL REINFORCING SHALL TERMINATE AT ALL OPENINGS, CONTROL JOINTS (EXCEPT AT FLOORS AND ROOF LEVELS), LINTELS, BEAMS AND AT THE TOP OF THE PARAPETS IN A STANDARD 180-DEGREE HOOK PLUS 6 BAR DIAMETER EXTENSION.
14. ALL MASONRY COLUMN TIES SHALL TERMINATE IN A 135 DEGREE HOOK PLUS 6 BAR DIAMETERS (4" MINIMUM).
15. MASONRY STRENGTH (Fm) SHALL BE VERIFIED USING THE UNIT STRENGTH METHOD PER THE IBC 2006 CODE SECTION 205.3.2.2 AND AS DESCRIBED BELOW:
15.1. PRIOR TO CONSTRUCTION, THE SUPPLIER'S CERTIFICATE OF STRENGTH OF THE MASONRY UNITS AND GROUT SHALL BE SUBMITTED.
15.2. THE GROUT AND MORTAR SHALL BE TESTED, DURING CONSTRUCTION, FOR EVERY 5,000 SQUARE FEET OF MASONRY CONSTRUCTED.
16. THE CONTRACTOR HAS THE OPTION OF USING THE "MASONRY PRISM TEST METHOD" AS SPECIFIED IN SECTION 205.2.2.2 OF THE IBC 2006 CODE IN LIEU OF THE "UNIT STRENGTH METHOD".

MARKS AND ABBREVIATIONS

Table with columns: MARKS AND ABBREVIATIONS, MARKS AND ABBREVIATIONS, MARKS AND ABBREVIATIONS. Includes items like ANCHOR BOLT, AMERICAN CONCRETE INSTITUTE, ALTERNATE, AMERICAN PLYWOOD ASSOCIATION, ARCHITECT, AMERICAN SOCIETY OF TESTING MATERIALS, AMERICAN WELDING SOCIETY, BRACED FRAME MARK, BUILDING, BELUM, BEAM, BOTTOM, BEARING, BETWEEN, CONCRETE BEAM MARK, CONCRETE COLUMN MARK, CONCRETE GRADE BEAM MARK, CONST. OR CONTROL JOINT, CONCRETE LATEL MARK, CONCRETE MASONRY UNIT, COLUMN, CONCRETE, CONTINUOUS, CONCRETE PIER MARK, CONCRETE RETAINING WALL MARK, CONCRETE SHEAR WALL MARK, CONCRETE WALL MARK, DEFORMED BAR ANCHOR, DECK BEARING ELEVATION, DOUBLE, DETAIL, DIAMETER, DIMENSION, DEAD LOAD, DWG. DRIVING, DONEL, EXISTING, EACH FACE, EXPANSION JOINT, EARTH QUAKE LOAD, ELEVATION, EQUAL, EACH WAY, EXPANSION, EXTERIOR, FOOTING CONTINUOUS MARK, FOUNDATION FLOOR, MAT FOOTING MARK, RECTANGULAR FOOTING MARK, SQUARE FOOTING MARK, THICKENED SLAB FOOTING MARK, GAUGE, GALVANIZED, GLUE LAMINATED BEAM, GRADE, GENERAL STRUCTURAL NOTES, HORIZONTAL BRIDGING, HOT DIP GALVANIZED, HORIZONTAL, HEADED STUD ANCHOR, INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS, INTERNATIONAL BUILDING CODE, INTERIOR FACE, INCH, INTERIOR, LINTEL, BEAMS AND AT THE TOP OF THE PARAPETS IN A STANDARD 180-DEGREE HOOK PLUS 6 BAR DIAMETER EXTENSION, MASONRY STRENGTH (Fm) SHALL BE VERIFIED USING THE UNIT STRENGTH METHOD PER THE IBC 2006 CODE SECTION 205.3.2.2 AND AS DESCRIBED BELOW, THE GROUT AND MORTAR SHALL BE TESTED, DURING CONSTRUCTION, FOR EVERY 5,000 SQUARE FEET OF MASONRY CONSTRUCTED, THE CONTRACTOR HAS THE OPTION OF USING THE "MASONRY PRISM TEST METHOD" AS SPECIFIED IN SECTION 205.2.2.2 OF THE IBC 2006 CODE IN LIEU OF THE "UNIT STRENGTH METHOD".

EFT ARCHITECTS 265 EAST 100 SOUTH SUITE 350 SALT LAKE CITY, UTAH 84111-1604 801.521.8564 WWW.EFTARCH.COM

CONSULTANT INFORMATION I SE INTERMOUNTAIN STRUCTURAL ENGINEERING 4625 S. 2300 E., Ste 105 Holladay, UT 84147 Phone: 801-274-2031 Fax: 801-274-2032 www.ise.com info@ise.com

Table with columns: MARKS AND ABBREVIATIONS, MARKS AND ABBREVIATIONS, MARKS AND ABBREVIATIONS. Includes items like ANCHOR BOLT, AMERICAN CONCRETE INSTITUTE, ALTERNATE, AMERICAN PLYWOOD ASSOCIATION, ARCHITECT, AMERICAN SOCIETY OF TESTING MATERIALS, AMERICAN WELDING SOCIETY, BRACED FRAME MARK, BUILDING, BELUM, BEAM, BOTTOM, BEARING, BETWEEN, CONCRETE BEAM MARK, CONCRETE COLUMN MARK, CONCRETE GRADE BEAM MARK, CONST. OR CONTROL JOINT, CONCRETE LATEL MARK, CONCRETE MASONRY UNIT, COLUMN, CONCRETE, CONTINUOUS, CONCRETE PIER MARK, CONCRETE RETAINING WALL MARK, CONCRETE SHEAR WALL MARK, CONCRETE WALL MARK, DEFORMED BAR ANCHOR, DECK BEARING ELEVATION, DOUBLE, DETAIL, DIAMETER, DIMENSION, DEAD LOAD, DWG. DRIVING, DONEL, EXISTING, EACH FACE, EXPANSION JOINT, EARTH QUAKE LOAD, ELEVATION, EQUAL, EACH WAY, EXPANSION, EXTERIOR, FOOTING CONTINUOUS MARK, FOUNDATION FLOOR, MAT FOOTING MARK, RECTANGULAR FOOTING MARK, SQUARE FOOTING MARK, THICKENED SLAB FOOTING MARK, GAUGE, GALVANIZED, GLUE LAMINATED BEAM, GRADE, GENERAL STRUCTURAL NOTES, HORIZONTAL BRIDGING, HOT DIP GALVANIZED, HORIZONTAL, HEADED STUD ANCHOR, INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS, INTERNATIONAL BUILDING CODE, INTERIOR FACE, INCH, INTERIOR, LINTEL, BEAMS AND AT THE TOP OF THE PARAPETS IN A STANDARD 180-DEGREE HOOK PLUS 6 BAR DIAMETER EXTENSION, MASONRY STRENGTH (Fm) SHALL BE VERIFIED USING THE UNIT STRENGTH METHOD PER THE IBC 2006 CODE SECTION 205.3.2.2 AND AS DESCRIBED BELOW, THE GROUT AND MORTAR SHALL BE TESTED, DURING CONSTRUCTION, FOR EVERY 5,000 SQUARE FEET OF MASONRY CONSTRUCTED, THE CONTRACTOR HAS THE OPTION OF USING THE "MASONRY PRISM TEST METHOD" AS SPECIFIED IN SECTION 205.2.2.2 OF THE IBC 2006 CODE IN LIEU OF THE "UNIT STRENGTH METHOD".

UTAH NATIONAL GUARD BRIGHAM CITY ARMYORY RENOVATION 985 NORTH 500 WEST BRIGHAM CITY, UTAH 84302-1540

SHEET TITLE GENERAL STRUCT NOTES DATE BY DESCRIPTION DRAWN BY NAT CHECKED BY DMF PROJECT NO. 09226470 DRAWING NO. 5001 DATE 01.06.2010

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SPECIAL INSPECTION AND TESTING UNDER THE PROVISIONS OF IBC 1704 AND FOR MISCELLANEOUS AREAS

Indicate required special inspections for project by checking the appropriate boxes and provide specific instructions as to the inspection requirements and the expectations of the architect, engineer and owner:

FABRICATORS (IBC 1704.2)

Approved Fabricator Fabricators Name: _____
 Unapproved Fabricator Fabricators Name: _____
 In-plant inspections
 Steel Construction Welding Details

STEEL (IBC 1704.3)

Item	Detailed Instructions and Frequencies:	
High Strength Bolting (1704.3.3)	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
WELDING (1704.3.1)		
Details (1704.3.2)		
Complete & partial penetration groove welds	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Multipass fillet welds	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Single-pass fillet welds $\geq 5/16"$	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Single-pass fillet welds $\leq 5/16"$	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Floor & roof deck welds	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
REINFORCEMENT STEEL		
Verification of weldability	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Shear wall and shear reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Other reinforcement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Steel frame joint details	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

CONCRETE CONSTRUCTION (IBC 1704.4)

Item	Detailed Instructions and Frequencies:	
Materials (1704.4.1)	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Steel placement	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Steel welding	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Bolts prior & during placement	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Use of required design mix	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Concrete sampling for strength test, slump, air content, and temperature of concrete	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Concrete & shotcrete placement	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Curing temperature and techniques	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Pre-stressed concrete	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Pre-cast concrete	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Post-tensioned concrete	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Form work	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

MASONRY CONSTRUCTION (IBC 1704.5)

Item	Detailed Instructions and Frequencies:	
As masonry construction begins:		
Site prepared mortar	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Construction of mortar joints	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Location of reinforcement, connectors, pre-stressing tendons and anchors	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Pre-stressing technique	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Grade and size of pre-stressing tendons and anchors	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Inspection program verify:		
Size and location of structural elements	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Type, size and location of anchors	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Size, grade and type of reinforcement	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Welding of reinforcement	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Cold and hot weather protection	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Application and measurement of pre-stressing force	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Prior to grouting verify:		
Clean grout space	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Placement of reinforcement	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Grout mix	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Mortar joints	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Grout placement	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Grout and mortar specimens and prisms	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Construction and submittal compliance verification	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Empirical masonry - Cat. I-III (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Empirical masonry - Cat. IV (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Engineered masonry - Cat. I-III (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Engineered masonry - Cat. IV (1708.1.1)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Engineering & pre-stressing steel (1708.3)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Structural steel (1708.4)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Qualification of mechanical & electrical equipment (1708.5)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Seismically isolated structures (1708.6)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Testing for seismic resistance is	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

WOOD CONSTRUCTION (IBC 1704.6)

Item	Detailed Instructions and Frequencies:	
Prefabricated elements & assembly	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

Installation	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
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Special inspection for seismic resistance (IBC 1707)

Item	Detailed Instructions and Frequencies:	
Structural Steel (1707.2)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Structural Wood (1707.3)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Cold-formed steel framing (1707.4)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Pier foundations (1707.5)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Storage racks & access floors (1707.6)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Architectural components (1707.7)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Mechanical & electrical items (1707.8)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Designated systems verification (1707.9)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Seismic isolation systems (1707.10)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

MISCELLANEOUS AREAS

Item	Detailed Instructions and Frequencies:	
These inspections are recommended by the Architect/Engineer and approved by DFCM.		
Suspended Ceiling Grid Clips	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Suspended Ceiling wire spacing (Seismic)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Soils backfill (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Soils for curb and gutter (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Soils for parking lots (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Soils for utility trench backfill	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Reinforcement for slab on grade sidewalks and drive approaches (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Reinforcement for interior slab on grade (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Concrete testing for slab on grade sidewalks and drive approaches (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Concrete testing for interior slab on grade (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Masonry Veneer (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Asphalt inspections (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Asphalt testing (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Inspection of seismic resistance (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Steam and water line welding (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Seismic supports for duct work and sealing of joints for duct work	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

SOILS CONSTRUCTION (IBC 1704.7)

Item	Detailed Instructions and Frequencies:	
Site preparation	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Structural fill material	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Structural fill lift thickness	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic
Structural fill soil densities	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Backfill soils materials	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Backfill soil densities	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

PILE FOUNDATIONS (IBC 1704.8)

Item	Detailed Instructions and Frequencies:	
Observe driving operation and reporting	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Verify placement & installation data	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

PIER FOUNDATIONS (IBC 1704.9)

Item	Detailed Instructions and Frequencies:	
Observe drilling operation and reporting	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Verify placement & installation data	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

SPRAYED FIRE-RESISTANT MATERIALS (IBC 1704.10)

Item	Detailed Instructions and Frequencies:	
Structural member surface conditions	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Material application	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Material thickness	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Material density	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Bonding strength	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

MASTIC AND INTUMESCENT FIRE-RESISTANT COATINGS (IBC 1704.11)

Item	Detailed Instructions and Frequencies:	
Material and installation	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) (IBC 1704.12)

Item	Detailed Instructions and Frequencies:	
Material and installation	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

ALTERNATIVE CONSTRUCTION METHODS OR MATERIALS (IBC 1704.13)

Item	Detailed Instructions and Frequencies:	
Material and installation	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

EPOXY (IBC 1704.13)

Item	Detailed Instructions and Frequencies:	
Material and installation (specify locations)	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

SMOKE CONTROL (IBC 1704.14)

Item	Detailed Instructions and Frequencies:	
Material	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic

Seismic supports for electrical raceways, cable trays and lights	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Seismic supports for plumbing lines including gas, water and steam and condensation	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Seismic bracing for mechanical units both on slab and suspended	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
Concrete screw anchors	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic
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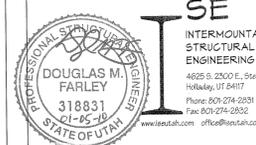
Special Inspectors Shall:

- Be approved by the Building Official prior to performing any duties;
- Provide proof of licensure as a special inspector by the State of Utah for each type of inspection;
- Inspection reports are to meet the requirements of IBC 1704.1.2 and DFCM standards;
- Inspection reports are to be submitted to the code consultant, architect, DFCM project manager, and the State of Utah Building Official within 48 hrs. of inspection;
- A final inspection report shall be submitted following completion of the project documenting the types of special inspections performed and a statement indicating that the structure is in compliance with the drawings, specifications and applicable codes, IBC 1704.1.2

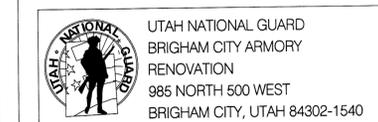
Updated October 8, 2009

STEEL FABRICATORS MUST BE ON THE DFCM'S APPROVED FABRICATORS LIST.

CONSULTANT INFORMATION

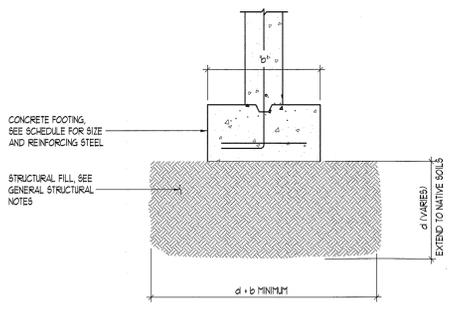


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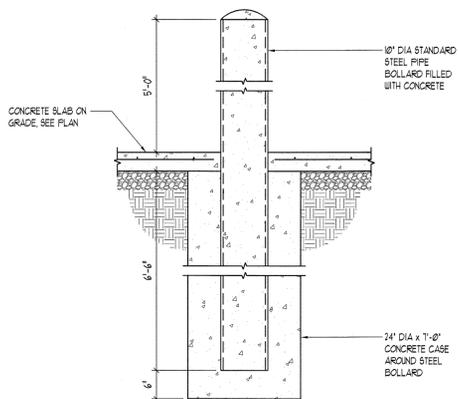


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SHEET TITLE		
SPECIAL INSPECTION		
DATE	BY	DESCRIPTION
△		
△		
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△		
DRAWN BY	CHECKED BY	
NAT	DMF	
PROJECT NO.	DRAWING NO.	
09226470	S002	
DATE		
01.06.2010		

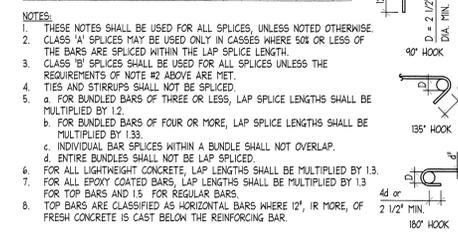


1 STRUCTURAL FILL DETAIL
 NO SCALE



3 PIPE BOLLARD DETAIL
 NO SCALE

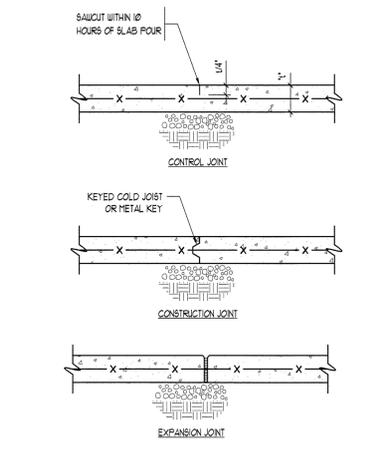
BAR SIZE	f _c = 3000 PSI		f _c = 4000 PSI		f _c = 5000 PSI		f _c = 6000 PSI	
	REG. CLASS	TOP CLASS						
#3	13"	17"	17"	21"	16"	21"	12"	16"
#4	18"	24"	24"	31"	19"	25"	14"	19"
#5	22"	29"	29"	38"	19"	25"	17"	22"
#6	27"	36"	36"	46"	24"	31"	21"	27"
#7	34"	44"	44"	56"	31"	39"	27"	34"
#8	42"	54"	54"	68"	38"	48"	34"	42"
#9	51"	64"	64"	82"	47"	58"	42"	51"
#10	62"	80"	80"	104"	57"	70"	51"	62"
#11	76"	102"	102"	132"	68"	86"	61"	76"



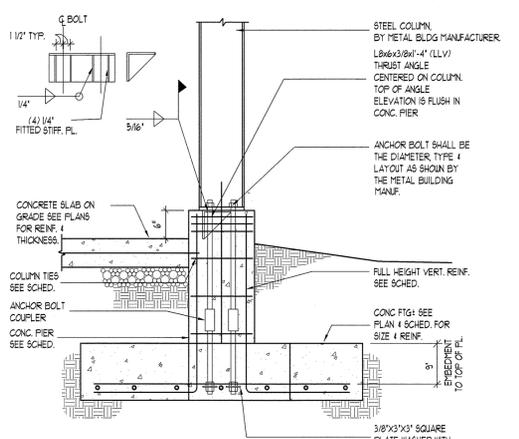
5 CONCRETE REBAR LAP SPLICE SCHEDULE
 NO SCALE

EPOXY ANCHORING SCHEDULE			
THREAD ROD ANCHOR	GRADE 60 REINFORCING BAR	BAR DIAMETER	REQUIRED EMBEDMENT DEPTH
3/8"	7/8"	NO. 3 (0.375")	3 1/2"
1/2"	1 1/8"	NO. 4 (0.5")	4 1/2"
5/8"	1 3/8"	NO. 5 (0.625")	5 1/2"
3/4"	1 3/4"	NO. 6 (0.75")	6 3/4"
7/8"	1 7/8"	NO. 7	8"
1"	1 7/8"	NO. 8 (1.0")	9"
1 1/4"	1 5/8"	NO. 10 (1.27")	11 1/4"

8 EPOXY Dowel Embedment Schedule
 NO SCALE



2 CONST./CONTROL JT. IN CONC. S.O.G.
 NO SCALE



4 CONCRETE PIER DETAIL
 NO SCALE

MARK	WIDTH	LENGTH	THICKNESS	CROSSWISE REINFORCING		LENGTHWISE REINFORCING		REMARKS				
				NO.	SIZE	NO.	SIZE					
FS0.0	8'-0"	8'-0"	18"	7	#6	7'-6"	15"	7	#6	7'-6"	15"	T & B

NOTES:
 1. PLACE ALL FOOTING REINFORCING IN BOTTOM OF FOOTING WITH 3" CLEAR CONCRETE COVER UNO.
 2. TOP REINFORCING, WHERE SPECIFIED, SHALL BE PLACED IN THE TOP OF THE FOOTING W/ 2" CLEAR CONCRETE COVER.
 3. THE SCHEDULED FOOTINGS ARE NOT NECESSARILY ALL USED.
 4. FS-SQUARE FOOTING

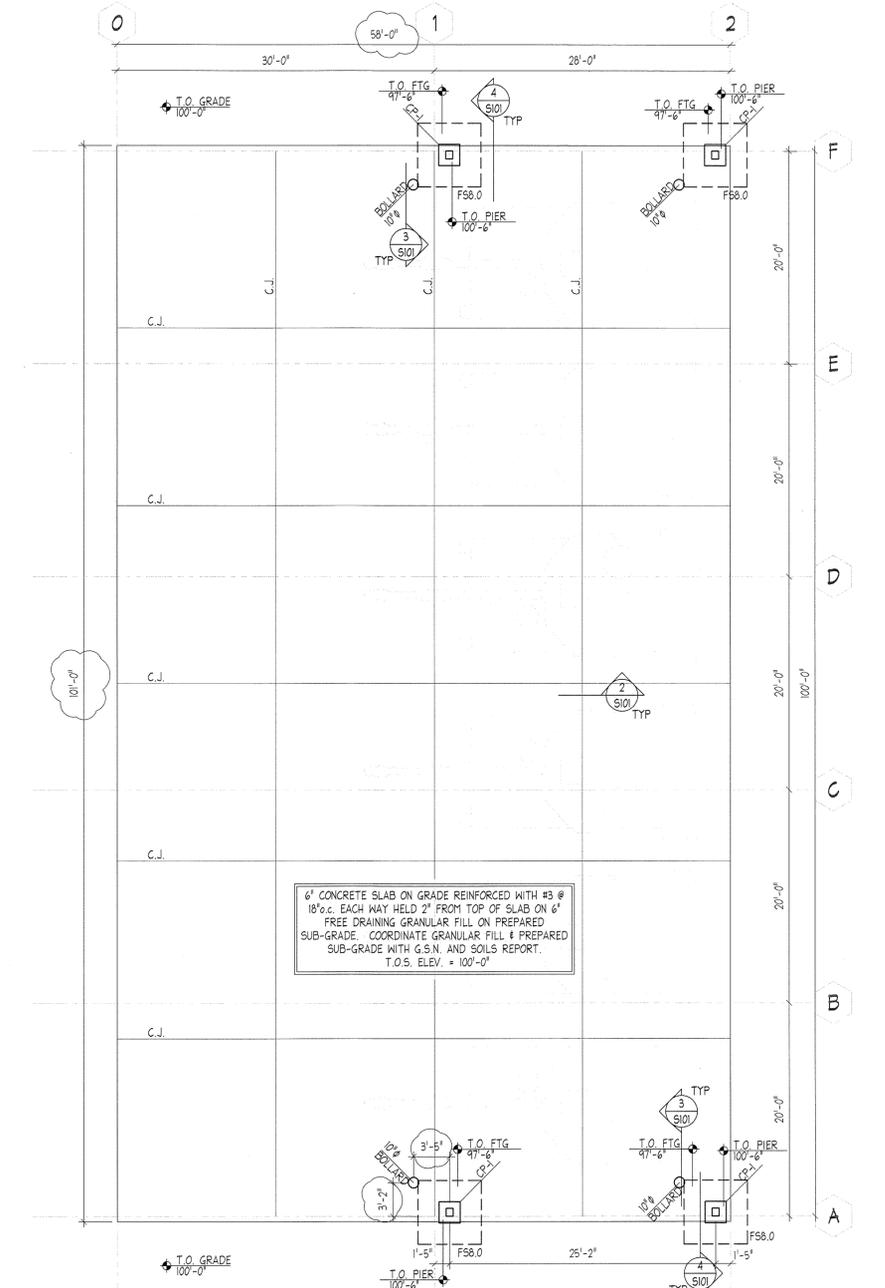
6 CONCRETE FOOTING SCHEDULE
 NO SCALE

MARK	DIMENSIONS	f _c psi	VERT REIN	DOWELS TO FOOTING	TIE REIN	TIES AT TOP
CP-1	24"x24"	4000	-	(8) #8 (FULL HEIGHT)	#4 AT 8" o.c. (3) #4 AT 2" o.c.	

RUN ALL FOUNDATION WALL REINFORCEMENT THRU ALL CONCRETE PIERS.



7 CONCRETE PIER SCHEDULE
 NO SCALE



FOOTING & FOUNDATION PLAN NOTES

- COORDINATE LOCATION OF SLOPED SLABS W/ ARCH DRAWINGS.
- SEE ARCHITECTURAL DRAWINGS AND CIVIL DRAWINGS FOR EXTERIOR CONCRETE WORK AT DOORS, SIDENALKS, ETC.
- SEE DETAIL 1/5501 FOR FILL BENEATH FOOTINGS.
- COORDINATE ALL SLAB CONTROL JOINTS & CONSTRUCTION JOINTS W/ DETAIL 2/5501. SEE ARCHITECTURAL DRAWINGS FOR SPACINGS.

LEGEND

○ DETAIL MARK SHEET NUMBER

C.J. INDICATES CONTROL/CONSTRUCTION JOINT. SEE DETAILS 6/5501 & 7/5501

FS-x INDICATES SPOT FOOTING SEE SCHEDULE ON SHEET S301

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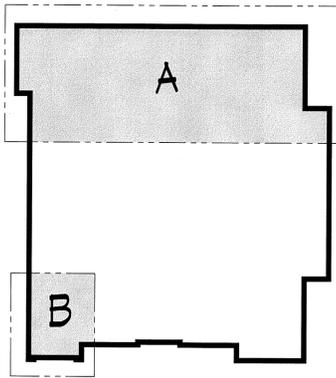
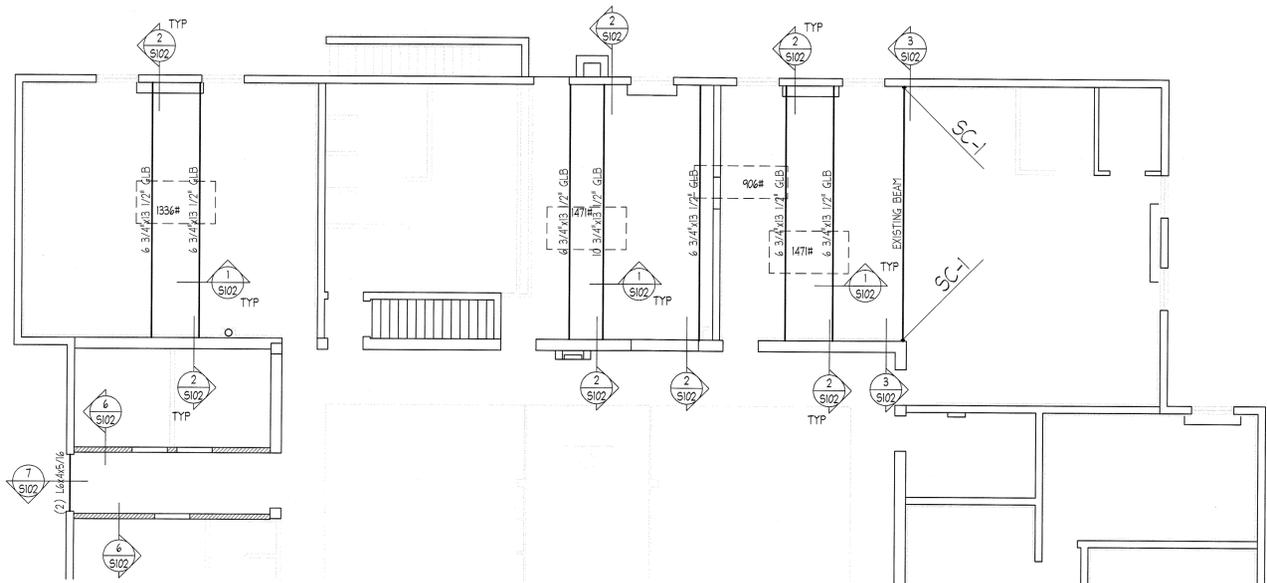
SHEET TITLE
FDN PLAN & SCHEDULES

DATE	BY	DESCRIPTION

DRAWN BY: NAT CHECKED BY: DMF

PROJECT NO: 09226470 DRAWING NO: S101

DATE: 01.06.2010



LEGEND

GLB GLUED LAMINATED BEAM

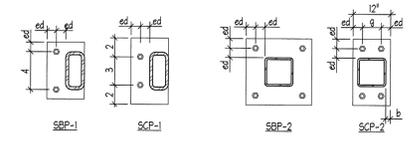
ROOF PLAN NOTES

1. VERIFY ROOF SLOPES, DRAINS, AND DECK BEARING ELEVATIONS WITH ARCH DRAWINGS.
2. COORDINATE NEW GLULAM BEAM LOCATIONS UNDER NEW MECHANICAL UNITS SUCH THAT THE BEAM DOES NOT BEAR OVER AN EXISTING WINDOW.

A ROOF FRAMING PLAN -- AREA 'A'
 SCALE: 1/8" = 1'-0"

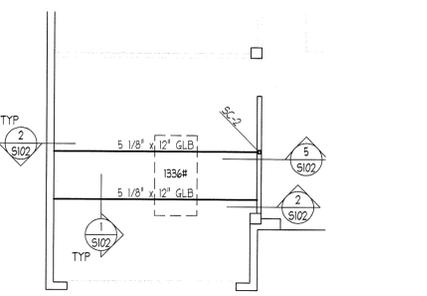
MARK	COLUMN SIZE	STEEL BASE PL	STEEL CAP PL	COMMENTS
SC-1	HSS 4x4x1/4"	1/2" SBP-1	1/2" SCP-1	
SC-2	HSS 4x4x3/8"	3/4" SBP-2	3/4" SCP-2	

NOTES:
 1. SEE "GENERAL STRUCTURAL NOTES" (GSN) FOR GRADES AND OTHER SPECIFICATIONS.

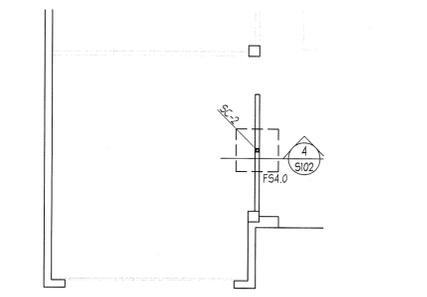


BASE & CAP PLATE DIMENSIONS
 ed = EDGE DISTANCE 1 1/2" MIN.

9 STEEL COLUMN SCHEDULE
 NO SCALE



B ROOF FRAMING PLAN -- AREA 'B'
 SCALE: 1/8" = 1'-0"

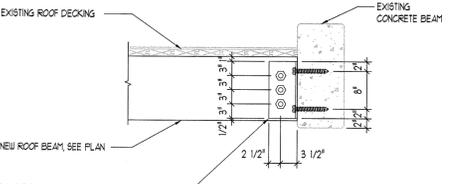


B FOOTING & FOUNDATION PLAN -- AREA 'B'
 SCALE: 1/8" = 1'-0"

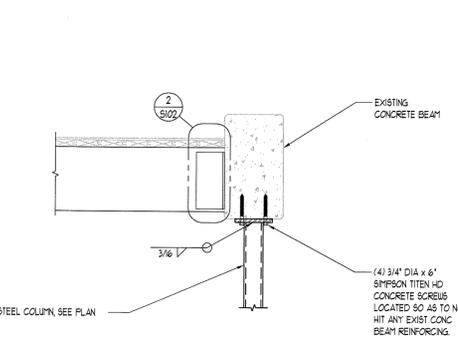
MARK	WIDTH	LENGTH	THICKNESS	CROSSWISE REINFORCING			LENGTHWISE REINFORCING		
				NO.	SIZE	LENGTH SPACE	NO.	SIZE	LENGTH SPACE
FS4.0	4'-0"	4'-0"	12"	4	#5	3'-6" 14"	4	#5	3'-6" 14"

NOTES:
 1. PLACE ALL FOOTING REINFORCING IN BOTTOM OF FOOTING WITH 3" CLEAR CONCRETE COVER U.N.O.
 2. TOP REINFORCING, WHERE SPECIFIED, SHALL BE PLACED IN THE TOP OF THE FOOTING W/ 2" CLEAR CONCRETE COVER.
 3. THE SCHEDULED FOOTINGS ARE NOT NECESSARILY ALL USED.
 4. FS-SQUARE FOOTING

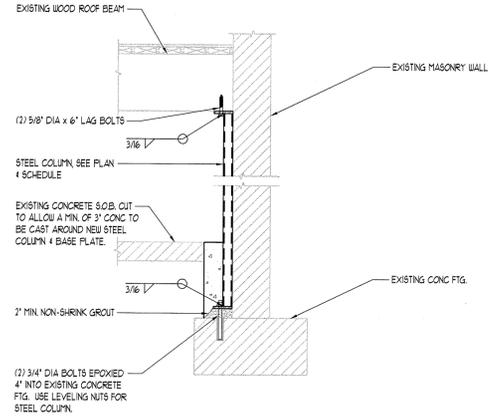
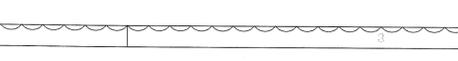
8 CONCRETE FOOTING SCHEDULE
 NO SCALE



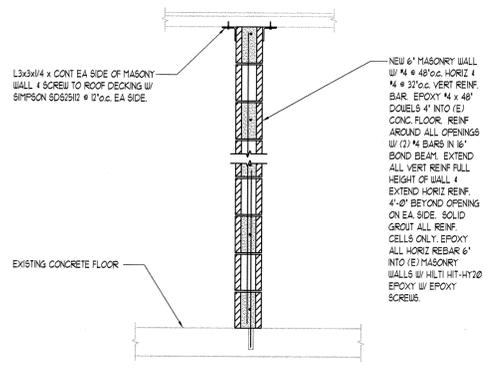
2 NEW ROOF BEAM CONNECTION TO EXISTING CONCRETE BEAM
 NO SCALE



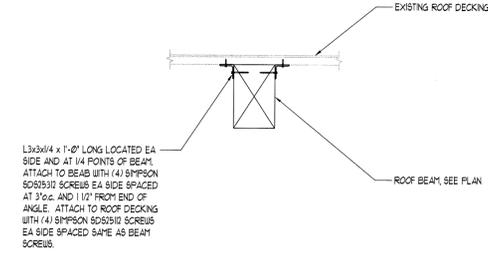
5 NEW STEEL COLUMN TO EXISTING CONCRETE BEAM
 NO SCALE



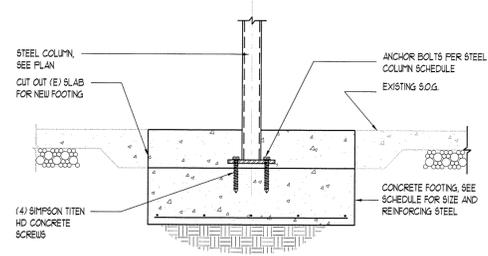
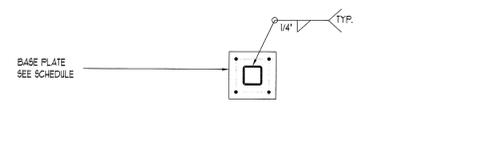
3 NEW STEEL COLUMN CONNECTION
 NO SCALE



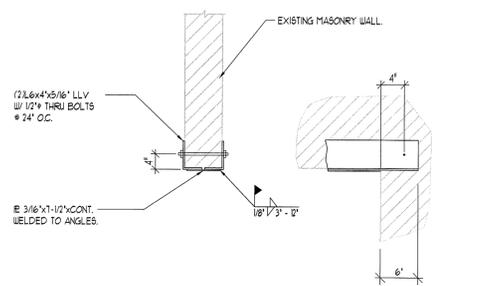
6 NEW MASONRY WALL
 NO SCALE



1 NEW ROOF BEAM CONNECTION TO EXISTING DECKING
 NO SCALE



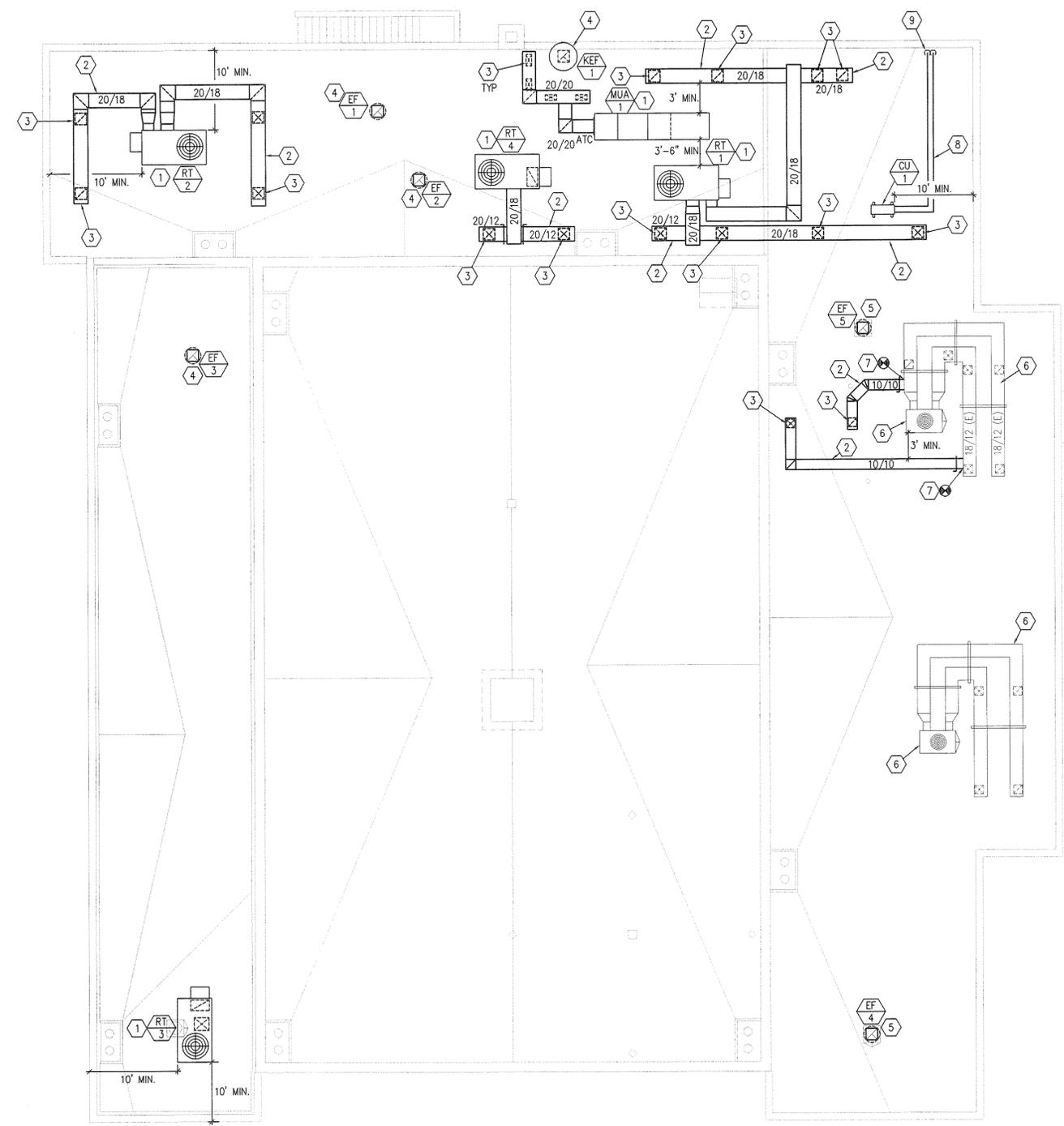
4 STEEL COLUMN TO FOOTING
 NO SCALE



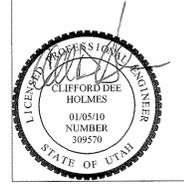
7 MAN DOOR STEEL LINTEL
 NO SCALE

KEYED NOTES

1. MOUNT ROOF TOP UNIT ON MANUFACTURERS CURB.
2. RUN NEW DUCTWORK ON ROOF PER SPECIFICATIONS.
3. DROP THRU ROOF WITH DUCT TO DIFFUSER/RA GRILLE BELOW. PROVIDE BALANCING DAMPER AT ROOF. SEAL ROOF PENETRATION PER ROOFING CONTRACTOR.
4. INSTALL NEW EXHAUST FAN IN NEW LOCATION. SEAL ROOF PENETRATION PER ROOFING CONTRACTOR. PROVIDE NEW MANUFACTURER'S CURB.
5. INSTALL NEW EXHAUST FAN IN SAME LOCATION AS EXISTING. CONFIRM EXACT LOCATION.
6. EXISTING ROOF MOUNTED AIR CONDITIONING UNIT AND ASSOCIATED DUCTWORK TO REMAIN.
7. MAKE CONNECTION TO EXISTING DUCT ON ROOF WITH NEW DUCT IN THIS AREA AND EXTEND AS INDICATED. FIELD VERIFY EXACT LOCATION.
8. ROUTE NEW REFRIGERANT PIPING ON ROOF TO DROP TO INDOOR UNIT. PROVIDE PIPE SUPPORTS SUCH AS MANUFACTURED BY MIRO INDUSTRIES.
9. DROP THRU ROOF TO INDOOR MINI-SPLIT SYSTEM BELOW. SEAL ROOF PENETRATION PER ROOFING MANUFACTURER.



MECHANICAL PLAN
M202 SCALE: 1/8" = 1'-0"
0' 8' 16'



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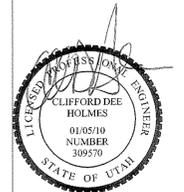
SHEET TITLE		
MECHANICAL ROOF PLAN		
DATE	BY	DESCRIPTION
DRAWN BY TJ		CHECKED BY CDH
PROJECT NO. 09226470	DRAWING NO. M202	
DATE DEC. 22, 2008		

KEYED NOTES

1. SEE LARGE SCALE PLUMBING PLANS FOR PIPING IN THIS AREA.
2. EXTEND AND MAKE CONNECTION TO EXISTING SANITARY SEWER LINE IN THIS AREA. CONFIRM EXACT LOCATION AND ELEVATION BEFORE INSTALLING ANY PIPING.
3. GREASE INTERCEPTOR AND SAMPLING MANHOLE. SEE DETAIL. COORDINATE LOCATION WITH EXISTING UTILITIES AND ROOF DRAIN PIPING IN THIS AREA. FIELD VERIFY BEST LOCATION.
4. MAKE CONDENSATE DRAIN CONNECTION TO MINI SPLIT INDOOR UNIT. DROP DOWN WALL TO 6" AFF, TURN, PENETRATE EXTERIOR WALL & DISCHARGE THRU 90° ELBOW TO GROUND. PROVIDE HEAT TAPE IN LINE TO PREVENT FREEZING. SEAL WALL PENETRATION.

GENERAL NOTES

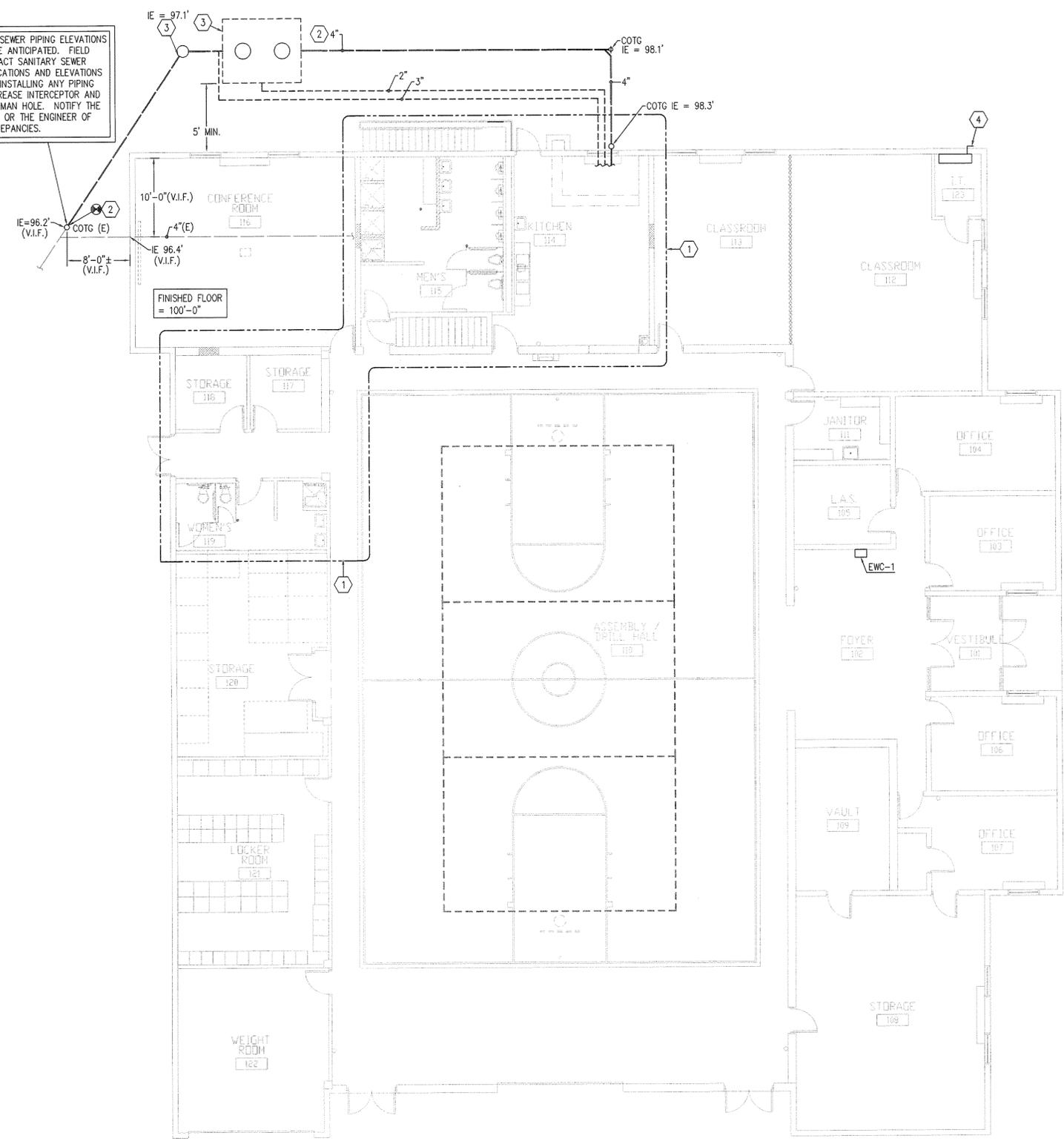
1. SANITARY SEWER PIPING ELEVATIONS NOTED ARE ANTICIPATED. FIELD VERIFY EXACT SANITARY SEWER PIPING LOCATIONS AND ELEVATIONS PRIOR TO INSTALLING ANY PIPING OR THE GREASE INTERCEPTOR AND SAMPLING MAN HOLE. NOTIFY THE ARCHITECT OR THE ENGINEER OF ANY DISCREPANCIES.



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SHEET TITLE		
PLUMBING PLAN		
DATE	BY	DESCRIPTION
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DRAWN BY	TJ	CHECKED BY CDH
PROJECT NO.	09226470	DRAWING NO.
DATE	DEC. 22, 2008	P201

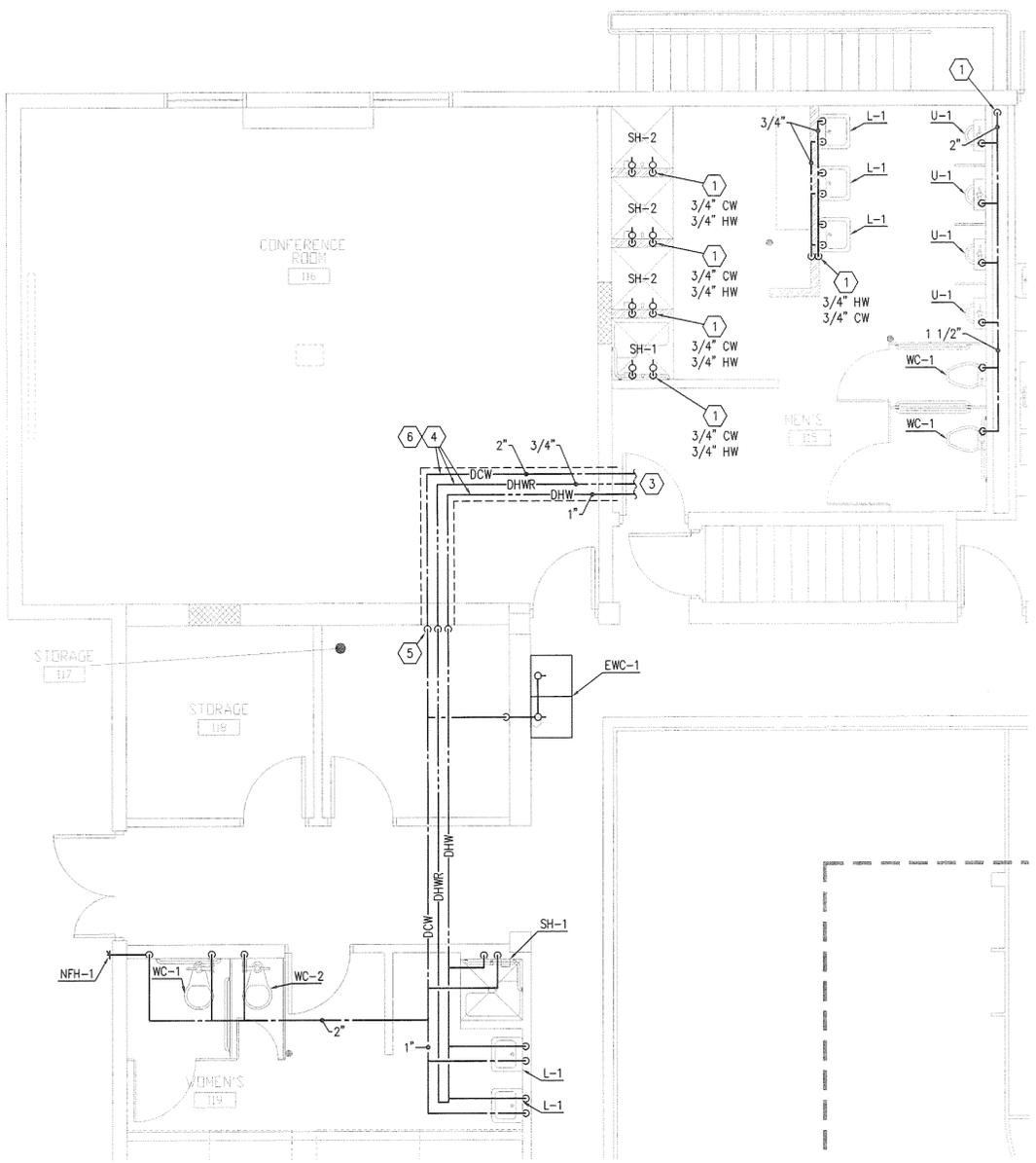
SANITARY SEWER PIPING ELEVATIONS NOTED ARE ANTICIPATED. FIELD VERIFY EXACT SANITARY SEWER PIPING LOCATIONS AND ELEVATIONS PRIOR TO INSTALLING ANY PIPING OR THE GREASE INTERCEPTOR AND SAMPLING MAN HOLE. NOTIFY THE ARCHITECT OR THE ENGINEER OF ANY DISCREPANCIES.



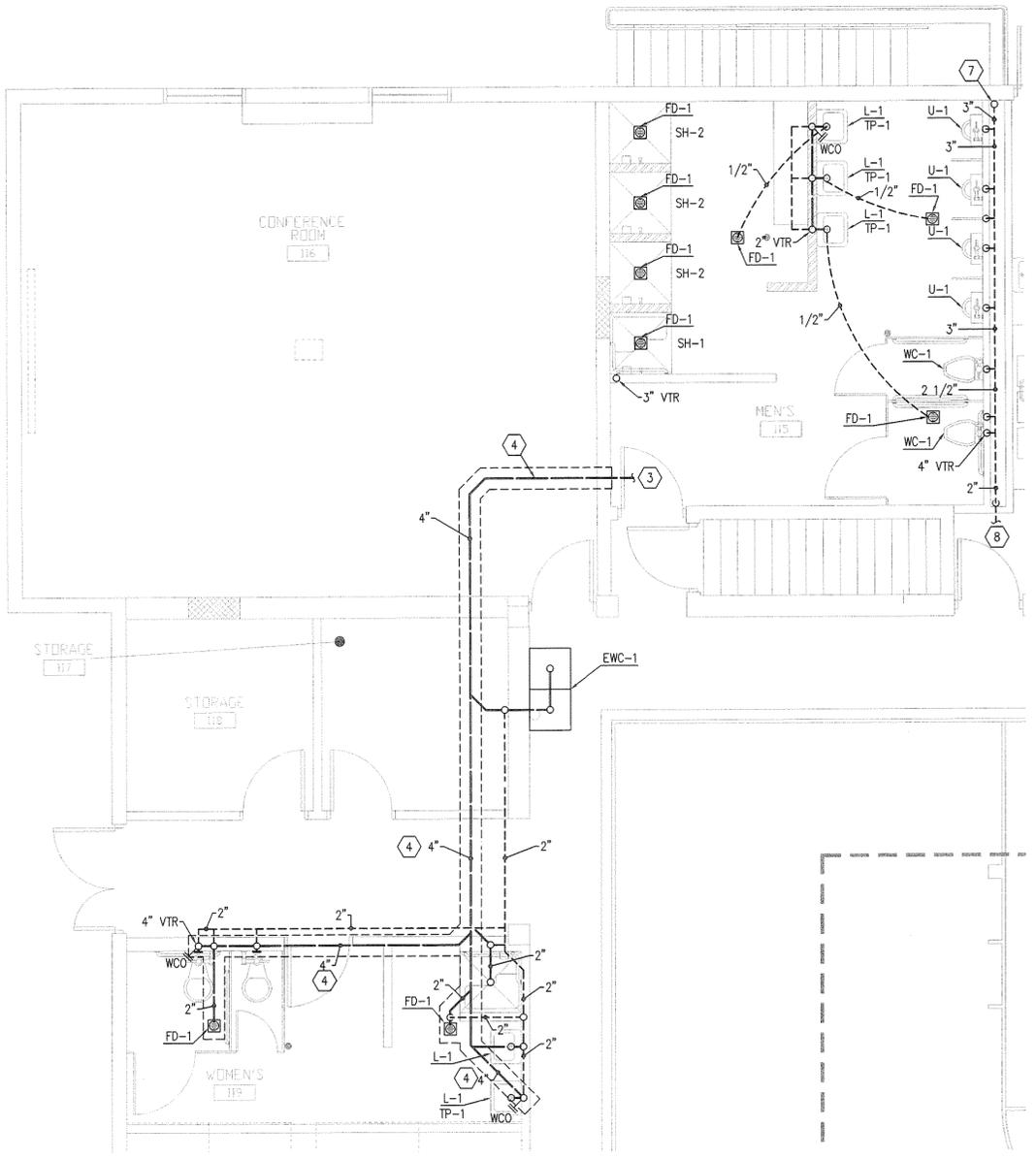
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KEYED NOTES

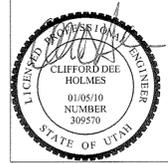
1. RISE THROUGH FLOOR WITH DOMESTIC HOT AND/OR COLD WATER LINES FROM BOILER ROOM BELOW.
2. RISE FROM BELOW FLOOR WITH DOMESTIC HOT AND/OR COLD WATER LINES.
3. CONTINUED ON BASEMENT LEVEL MECHANICAL PLAN.
4. SAW CUT FLOOR TO INSTALL DOMESTIC WATER PIPING AND WASTE AND VENT PIPING.
5. RISE FROM BELOW FLOOR WITH HOT, HOT RETURN AND COLD WATER LINES. RISE TO CEILING SPACE AND ROUTE AS INDICATED.
6. RUN DOMESTIC WATER PIPING ABOVE THE SANITARY SEWER PIPING A MIN. OF 12".
7. RISE FROM BELOW WITH SANITARY VENT.
8. CONTINUED KITCHEN WATER PLAN.



1 LARGE SCALE WATER PLAN
P301 SCALE: 1/4" = 1'-0"
0' 4' 8'



2 LARGE SCALE WASTE AND VENT PLAN
P301 SCALE: 1/4" = 1'-0"
0' 4' 8'



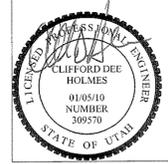
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SHEET TITLE		
ENLARGED PLUMBING PLANS		
DATE	BY	DESCRIPTION
DRAWN BY	TJ	CHECKED BY CDH
PROJECT NO.	092226470	DRAWING NO. P301
DATE	DEC. 22, 2008	

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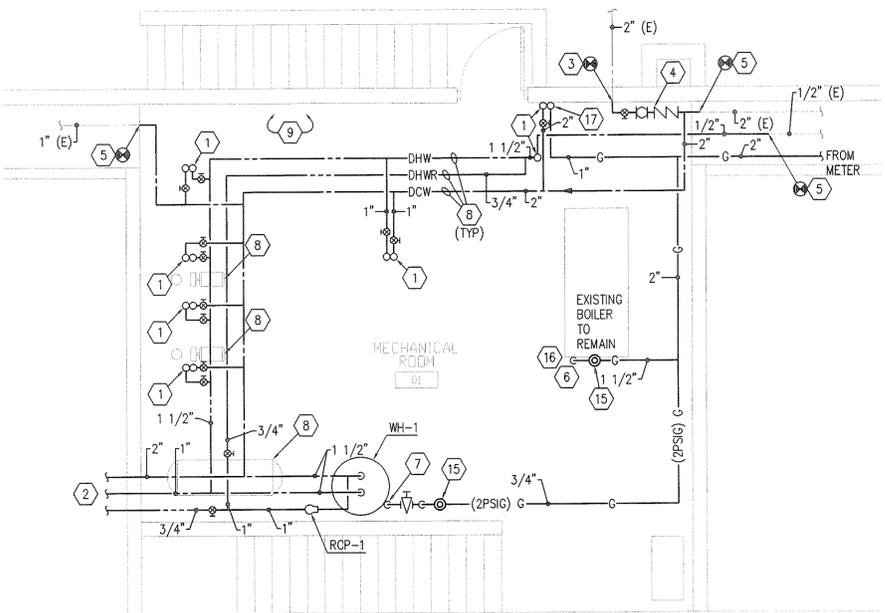
KEYED NOTES

1. RISE TO LEVEL ABOVE WITH DOMESTIC HOT AND/OR COLD WATER LINES. PROVIDE BALL SHUT OFF ISOLATION VALVES IN THIS ROOM.
2. EXTEND DOMESTIC WATER PIPING THROUGH WALL, UNDER FLOOR, TO FIXTURES BEYOND. SEE MAIN LEVEL PLUMBING PLANS FOR CONTINUATION.
3. MAKE CONNECTION TO EXISTING DOMESTIC WATER SUPPLY PIPING AT BASEMENT WALL IN THIS AREA. CONFIRM EXACT LOCATION.
4. INSTALL NEW BUILDING MAIN SHUT OFF VALVE. DOUBLE CHECK BACK FLOW DEVICE AND PRESSURE REGULATOR. SEE DETAIL.
5. MAKE CONNECTION TO EXISTING DOMESTIC WATER PIPING IN THIS AREA. CONFIRM EXACT LOCATION.
6. MAKE CONNECTION TO EXISTING GAS PIPING IN THIS AREA WITH NEW GAS PIPING. EXTEND TO FIXTURE INDICATED.
7. MAKE GAS CONNECTION TO GAS APPLIANCE THROUGH GAS SHUT OFF VALVE UNION AND FLEX CONNECTOR. CONFIRM EXACT LOCATION.
8. COORDINATE PIPE ROUTING WITH EXISTING HEATING WATER PIPING AND EQUIPMENT IN THIS AREA. CONFIRM EXACT LOCATIONS.
9. DO NOT RUN WATER OR WASTE PIPING OVER ELECTRICAL PANELS IN THIS AREA. CONFIRM EXACT LOCATIONS. MAINTAIN CODE REQUIRED CLEARANCES. COORDINATE WITH ELECTRICAL CONTRACTOR.
10. MAKE CONNECTION TO EXISTING SANITARY SEWER PIPING IN THIS AREA. CONFIRM EXACT LOCATION.
11. WASTE THROUGH FLOOR FROM FIXTURE ABOVE. CONFIRM EXACT LOCATION.
12. RISE TO LEVEL ABOVE WITH SANITARY SEWER VENT.
13. WATER HEATER P & T ROUTED TO DRAIN INDIRECTLY INTO EXISTING SUMP. CONFIRM EXACT ROUTING AND LOCATION.
14. EXTEND SANITARY SEWER LINE UNDER FLOOR TO FIXTURES INDICATED.
15. GAS PRESSURE REGULATOR TO REGULATE GAS PRESSURE FROM 2PSI TO 4"W.C.
16. ADJUST GAS TRAIN PRESSURE REGULATORS TO HANDLE 2PSI INCOMING GAS PRESSURE.
17. RISE IN WALL ABOVE WITH GAS LINE TO ROOF. CONFIRM EXACT LOCATION.
18. EXISTING SUMP AND SUMP PUMP TO REMAIN.



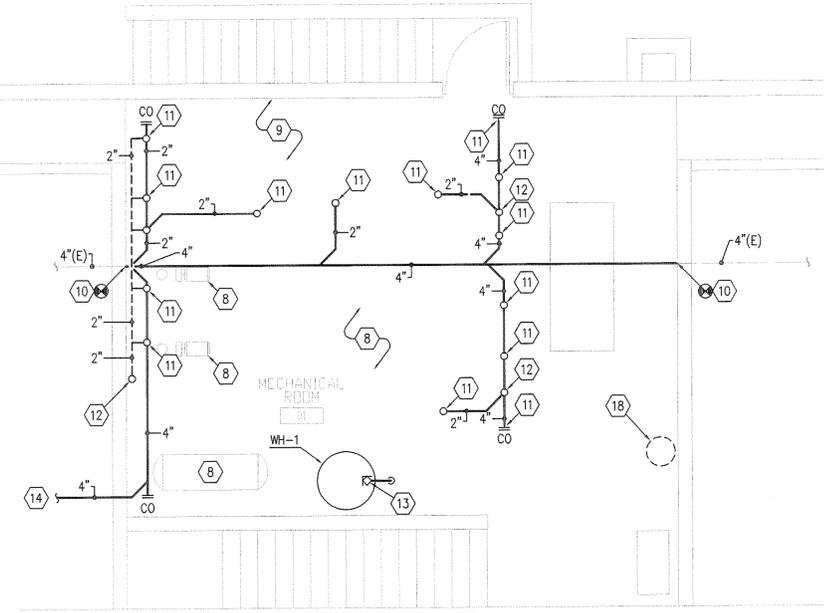
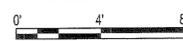
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SHEET TITLE		
ENLARGED PLUMBING PLANS		
DATE	BY	DESCRIPTION
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DRAWN BY	TJ	CHECKED BY CDH
PROJECT NO.	09226470	DRAWING NO. P302
DATE	DEC. 22, 2008	



1 LARGE SCALE BOILER ROOM WATER PLAN

P302 SCALE: 1/4" = 1'-0"



2 LARGE SCALE BOILER ROOM WASTE & VENT PLAN

P302 SCALE: 1/4" = 1'-0"



Utah National Guard - Brigham City Armory - Renovation



Salt Lake City - Logan - St. George - Pocatello
330 South 300 East 801.530.3148 T
Salt Lake City, UT 84111 801.530.3150 F
VBFA Project Number: 9344

KEYED NOTES

ID	DESCRIPTION	GAS	GAS LOAD BTUH	CW	HW	WASTE	VENT	INDIRECT WASTE	NOTES
K4	PORTABLE STEAM TABLE	--	--	--	--	--	--	1"	1
K5	S.S. THREE COMP. SINK	--	--	2 1/2"	2 1/2"	--	--	1 1/2"	1, 2
K9	HAND SINK	--	--	1/2"	1/2"	1-1/2"	1-1/2"	--	4
K10	FLOOR DRAIN	--	--	--	--	2"	2"	--	4
K11	FLOOR SINK	--	--	--	--	2"	2"	--	4
K12	ICE MACHINE	--	--	1/2"	--	--	--	1"	1, 2
K14	STACKED CONVECTION OVEN	3/4"	120,000	--	--	--	--	--	3
K15	4-BURNER STOVE	3/4"	230,000	--	--	--	--	--	3

- INDIRECT WASTE TO FLOOR SINK THROUGH LEGAL AIR GAP.
- MAKE WATER CONNECTIONS THROUGH STOPS AND FLEXIBLE CONNECTORS SPECIFIED FOR PLUMBING FIXTURES.
- MAKE GAS CONNECTION THROUGH GAS SHUT OFF VALVE AND FLEXIBLE CONNECTOR.
- SEE PLUMBING FIXTURE SCHEDULE FOR SPECIFICATION.

ID	MANUFACTURER AND MODEL NUMBER	SYSTEM SERVED	TYPE	WORKING FLUID	TANK SIZE (GAL)	RELIEF VALVE (PSIG)	DIA/ HEIGHT (IN)	NPT FITTING (IN)	NOTES
DET-1	AMTROL ST-25V	DOMESTIC	BLADDER	WATER	10.3	125	16/20	1	1

- TANK LINER SUITABLE FOR POTABLE WATER

EQUIP ID	EQUIPMENT DESCRIPTION	LOAD (BTU)	LOAD (CFH)
WH-1	WATER HEATER	199,000	224
K11	4-BURNER STOVE	230,000	258
K13	CONVECTION OVEN	120,000	135
MUA-1	MAKE-UP AIR UNIT	170,000	191
RT-1	GAS ROOF TOP UNIT	75,000	84
RT-2	GAS ROOF TOP UNIT	75,000	84
RT-3	GAS ROOF TOP UNIT	75,000	84
RT-4	GAS ROOF TOP UNIT	75,000	84
	EXISTING BOILER	1,500,000	1685
TOTALS		2,519,000	2830

- ANTICIPATED DEVELOPED LENGTH = 250'
- GAS CAPACITY DERATION FOR PROJECT = 890 BTU/CFH
- METER SET AT 2 PSI.

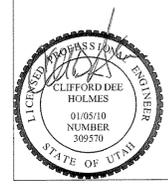
ID	FIXTURE	CW (IN)	HW (IN)	W (IN)	V (IN)	NOTES	SPECIFICATIONS
EWC-1	ELECTRIC WATER COOLER	1/2	1/2	1 1/2	1 1/2	ADA, DUAL STATION	ELECTRIC WATER COOLER: ELKAY EZTLR8C DUAL STATION, WALL MOUNTED, BARRIER FREE, ADA ELECTRIC WATER COOLER WITH FLEXIBLE BUBBLER GUARD AND STAINLESS STEEL BOWLS. COMPRESSOR TO BE 115V, 60 HZ WITH CAPACITY TO DELIVER AT LEAST 8.0 GPH OF 50F WATER. 1-7" CAST BRASS CHROME-PLATED P-TRAPS. PROVIDE GLASS FILLER OPTION. ADA SIDE TO BE ON THE LEFT. PROVIDE LKAPREZL APRON INSTALLED UNDER UPPER UNIT.
FD-1	FLOOR DRAIN	--	--	2	2	--	FLOOR DRAIN: SMITH FIGURE 2010-BP CAST IRON BODY AND FLASHING COLLAR WITH SQUARE NICKEL BRONZE ADJUSTABLE STRAINER HEAD WITH SECURED SQUARE HOLE GRATE AND TRAP PRIMER CONNECTION.
FS-1	FLOOR SINK	--	--	2	2	--	FLOOR SINK: SMITH FIGURE 3100Y CAST IRON FLANGED RECEPTOR WITH ACID RESISTANT INTERIOR COATING, NICKEL BRONZE RIM, SECURED HALF GRATE AND ALUMINUM DOME BOTTOM STRAINER.
HB-1	HOSE BIB	3/4	--	--	--	RESTROOM HOSE BOX	HOSE BIBB BOX: ACORN 8141 STAINLESS STEEL HOSE VALVE BOX WITH HOSE BIBB WITH VACUUM BREAKER, 3/4" MALE HOSE THREAD AND LOOSE KEY HANDLE.
L-1	LAVATORY	1/2	1/2	1 1/2	1 1/2	WALL HUNG, SENSOR FAUCET	LAVATORY (WALL HUNG): KOHLER K-2032 GREENWICH 20" X 18", "D" SHAPED BOWL, VITREOUS CHINA, WALL-MOUNT LAVATORY WITH DUAL FRONT OVERFLOW, 4" FAUCET CENTERS; K-7715 OPEN GRID STRAINER; TECHNICAL CONCEPTS 500484 MILANO BATTERY POWERED SENSOR FAUCET. FAUCET TO BE PROVIDED WITH FACTORY MIXING VALVE WITH 3/8" COMPRESSION CONNECTIONS AND IN-LINE CHECKS. PROVIDE WATTS NO. 7 DUAL CHECKS IN HOT AND COLD SUPPLIES. PROVIDE VANDAL RESISTANT AERATOR. PROVIDE LOOSE KEY ANGLE STOPS AND CHROME PLATED COPPER SUPPLIES AND 17 GA. CAST BRASS, CHROME PLATED "P" TRAP. COVER ALL EXPOSED PIPING WITH WHITE "HAND-LAV GUARD" PROTECTOR TO MEET ADA REQUIREMENTS.
NFH-1	NON FREEZE WALL HYDRANT	3/4	--	--	--	--	NON-FREEZE HYDRANT: SMITH 5609OT NON-FREEZE WALL HYDRANT FOR WALL THICKNESS SHOWN ON PLAN. BRONZE HYDRANT, 3/4-INCH CONNECTION WITH BRASS CASING, INTEGRAL SELF-DRAINING VACUUM BREAKER, AND LOOSE KEY.
SH-1	SHOWER	1/2	1/2	2	2	ADA	SHOWER: SYMMONS BP-500-830-V TEMPTRIL II SHOWER SYSTEM WITH PRESSURE BALANCING MIXING VALVE WITH LEVER HANDLE. ADJUSTABLE STOP SCREW, INTEGRAL SERVICE STOPS, LEVER DIVERTER VALVE, WALL HANG SHOWER WITH FLEXIBLE METAL HOSE, IN-LINE VACUUM BREAKER, WALL CONNECTION AND FLANGE, 30" SLIDE BAR FOR HAND SHOWER AND OXYGENICS MODEL 630 1.5 GPM SHOWER HEAD; SMITH 2005Y-A-NB ROUND TOP DRAIN WITH 8" NICKEL BRONZE STRAINER, CAST-IRON BODY, 2" OUTLET AND NO-HUB CONNECTION.
SH-2	SHOWER	1/2	1/2	2	2	--	SHOWER: SYMMONS BP-56-1 TEMPTRIL II SHOWER SYSTEM WITH PRESSURE BALANCING MIXING VALVE WITH LEVER HANDLE. ADJUSTABLE STOP SCREW, INTEGRAL SERVICE STOPS AND 2.5 GPM CLEAR-FLO SHOWER HEAD WITH ARM AND FLANGE; SMITH FIGURE 2005Y FLOOR DRAIN WITH CAST IRON BODY AND FLASHING COLLAR WITH ROUND NICKEL BRONZE ADJUSTABLE STRAINER HEAD WITH SECURED GRATE.
S-1	SINK	1/2	1/2	2	1 1/2	SINGLE AND 3-COMPARTMENT	CHICAGO 786-GN2FC FAUCET, NO. 317 4" WRIST BLADES, GN2 RIGID/SWING CONVERTIBLE GOOSE NECK WITH 1.6 GPM FC LAMINAR FLOW CONTROL AND PLAIN END SPOUT RING. FLEXIBLE STAINLESS STEEL SUPPLIES WITH LOOSE KEY ANGLE STOPS. JUST J-35 STAINLESS STEEL CUP STRAINER AND CAST BRASS P-TRAP WITH CLEAN-OUT PLUG.
SS-1	SERVICE SINK	3/4	3/4	3	2	--	KOHLER K6710, WHITBY, 28 X 28-INCH, ENAMELED CAST IRON FLOOR-MOUNTED CORNER MODEL, K9146-3" DRAIN WITH STRAINER, NO. K8940 REMOVABLE VINYL-COATED RIM GUARD; KOHLER K-8905 FAUCET WITH VACUUM BREAKER, SCREWDRIVER STOPS IN SHANKS, 5 FOOT RUBBER HOSE AND WALL HOOK, 853.
TP-1	TRAP PRIMER	1/2	--	--	--	--	PRECISION PLUMBING PRODUCTS, INC. (PPP) PR-500 SERIES AUTOMATIC TRAP PRIMING MANIFOLD. PROVIDE DISTRIBUTION UNITS AS NEEDED FOR THE NUMBER OF TRAPS CONNECTED. 7" DIAMETER COPPER TUBE CONNECTION TO P-TRAP. INSTALL PER MANUFACTURER'S INSTRUCTIONS. PROVIDE ACCESS COVER.
U-1	URINAL	3/4	--	2	2	WALL HUNG, SENSOR FLUSH VALVE	URINAL: KOHLER K-5016-ET VITREOUS CHINA ADA URINAL WITH 7" TOP SPUD; SLOAN OPTIMA SMO REGAL MODEL 186-0.5-SMO EXPOSED, BATTERY POWERED, SIDE MOUNT SENSOR OPERATED, 0.5 GPF FLUSH VALVE. SMITH 0637 URINAL SUPPORT. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS.
WC-1	WATER CLOSET	1	--	4	2	WALL HUNG, SENSOR FLUSH VALVE, ADA	KOHLER K-4330 KINGSTON VITREOUS CHINA, WALL MOUNTED, ELONGATED BOWL, WITH K-4670-C LUSTRA OPEN FRONT SEAT, SLOAN REGAL OPTIMA SMO MODEL 111-SMO LOW CONSUMPTION EXPOSED, BATTERY POWERED, SIDE MOUNT SENSOR OPERATED, 1.8 GPF FLUSH VALVE; SMITH 0210 HORIZONTAL (LEFT OR RIGHT HAND AS REQUIRED) OR SMITH 0230 VERTICAL ADJUSTABLE CARRIER WITH FOOT SUPPORT; INSTALL ACTUATOR ON WIDE SIDE OF STALL TO MEET ADA REQUIREMENTS; SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS.
WC-2	WATER CLOSET	1	--	4	2	WALL HUNG, SENSOR FLUSH VALVE	KOHLER K-4330 KINGSTON VITREOUS CHINA, WALL MOUNTED, ELONGATED BOWL, WITH K-4670-C LUSTRA OPEN FRONT SEAT; SLOAN REGAL OPTIMA SMO MODEL 111-SMO LOW CONSUMPTION EXPOSED, BATTERY POWERED, SIDE MOUNT SENSOR OPERATED, 1.8 GPF FLUSH VALVE; SMITH 0210 HORIZONTAL (LEFT OR RIGHT HAND AS REQUIRED) OR SMITH 0230 VERTICAL ADJUSTABLE CARRIER WITH FOOT SUPPORT; SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS.

- ALL UNDER GROUND WASTE AND VENT SHALL BE 2" OR GREATER PER DRAWINGS.

ID	MANUFACTURER AND MODEL NUMBER	SERVICE	EFFICIENCY (%)	TYPE	GAS RATING (BTU)	RECOVERY RATE @ 100 F DELTA T	TANK SIZE (GAL)	FLUE/ CA INTAKE SIZE (IN)	LENGTH/ WIDTH/ HEIGHT (IN)	ELECTRICAL (AMP)	V/PH	NOTES
WH-1	AO SMITH BTH-199	DOMESTIC HOT WATER	90%	GAS FIRED	199,999	230	100	4/4	28/75	10	120/1	1

- PROVIDE VERTICAL CONCENTRIC VENT KIT THROUGH ROOF.

ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	FLUID			ELECTRICAL				NOTES
				FLOW RATE (GPM)	WORKING FLUID	HEAD LOSS (FT)	MOTOR SIZE (W)	MOTOR SIZE (HP)	MOTOR SPEED (RPM)	VOLT/PH/Hz	
RCP-1	GRUNDFOS UPS 40-80/4	MECHANICAL ROOM	KITCHEN RECIRCULATION	3.0	DOMESTIC WATER	20.0	485	1/2	1587	120/160	--



UTAH NATIONAL GUARD
BRIGHAM CITY ARMORY
RENOVATION
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BRIGHAM CITY, UTAH
84302-1540

SHEET TITLE: **PLUMBING SCHEDULES**

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Utah National Guard - Brigham City Armory - Renovation

SECTION 238240 - TERMINAL UNITS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. Division-23 Basic Mechanical Materials and Methods sections apply to work of this section.

1.2 DESCRIPTION OF WORK

- A. Extent of terminal unit work is indicated by drawings and schedules, and by requirements of this section.
- B. Types of terminal units required for project include the following:
 - 1. Hydronic Cabinet Convectors.
 - 2. Cabinet heaters.
- C. Refer to other Division-23 sections for piping; ductwork; and testing, adjusting and balancing of terminal units.
- D. Refer to Division-26 sections for the following work.
 - 1. Power supply wiring from power source to power connection on terminal unit. Include starters, disconnects, and required electrical devices, except where specified as furnished, or factory-installed, by manufacturer.
- E. Provide the following electrical work as work of this section, complying with requirements of Division-26 sections:
 - 1. Control wiring between field-installed controls, indicating devices, and terminal unit control panels.
 - a. Control wiring specified as work of Division-23 for Automatic Temperature Controls is work of that section.

1.3 QUALITY ASSURANCE

- A. Codes and Standards:
 - 1. I=B=R Compliance: Test and rate baseboard and finned tube radiation in accordance with I=B=R, provide published ratings bearing emblem of I=B=R.
 - 2. ARI Compliance: Provide coil ratings in accordance with ARI Standard 410 "Forced-Circulation Air-Cooling and Air-Heating Coils".
 - 3. ASHRAE Compliance: Test coils in accordance with ASHRAE Standard 33 "Methods of Testing Forced Circulation Air Cooling and Heating Coils".
 - 4. ARI Compliance: Test and rate fan-coil units in accordance with ARI Standard 440 "Room Fan-Coil Air Conditioners".

5. UL Compliance: Construct and install fan-coil units in compliance with UL 883 "Safety Standards for Fan Coil Units and Room Fan Heater Units".
6. ARI Compliance: Test and rate unit ventilators in accordance with ARI Standard 330 "Unit Ventilators".
7. UL Compliance: Provide electrical components for terminal units which have been listed and labeled by UL.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications for terminal units showing dimensions, capacities, ratings, performance characteristics, gages and finishes of materials, and installation instructions.
- B. Shop Drawings: Submit assembly-type shop drawings showing unit dimensions, construction details, and field connection details.
- C. Wiring Diagrams: Submit manufacturer's electrical requirements for power supply wiring to terminal units. Submit manufacturer's ladder-type wiring diagrams for interlock and control wiring. Clearly differentiate between portions of wiring that are factory-installed and portions to be field-installed.
- D. Samples: Submit 3 samples of each type of cabinet finish furnished.
- E. Maintenance Data: Submit maintenance instructions, including lubrication instructions, filter replacement, motor and drive replacement, and spare parts lists. Include this data, product data, shop drawings in maintenance manuals.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Handle terminal units and components carefully to prevent damage, breaking, denting and scoring. Do not install damaged terminal units or components; replace with new.
- B. Store terminal units and components in clean dry place. Protect from weather, dirt, fumes, water, construction debris, and physical damage.
- C. Comply with Manufacturer's rigging and installation instructions for unloading terminal units, and moving them to final location.

PART 2 - PRODUCTS

2.1 HYDRONIC CABINET CONVECTORS

- A. General: Provide hydronic cabinet convectors of lengths and in locations as indicated; and of capacities, style, and having accessories as scheduled.
- B. Cabinets: Minimum 18-ga cold-rolled steel full backplate, minimum 14-ga front. Cabinets shall be braced and reinforced.
- C. Elements: Copper tube and aluminum fins, with tube mechanically expanded into fin collars to eliminate noise and insure durability and performance at scheduled ratings.
- D. Finish: Flat black heat resisting paint for backplate; factory finished baked enamel, colors as directed by Architect, on fronts and accessories.

- E. Headers shall be cast brass with NPT top or bottom tapings.
- F. A damper assembly shall cover the entire outlet area of the enclosure. The damper shall be manufactured of a 20-gauge cold rolled steel.
- G. Cabinet shall have "pencil proof" louvered inlets and outlets.
- H. Accessories:
 - 1. End panels, inside and outside corners, and enclosure extension.
 - 2. Access panels in front of valves, balancing cocks, and traps.
 - 3. Factory-mounted dampers.
- I. Manufacturer: Subject to compliance with requirements, provide finned tube radiation of one of the following:
 - 1. Airtherm Mfg. Co.
 - 2. Dunham-Bush, Inc.
 - 3. Edwards Engineering Corp.
 - 4. Slant/Fin Corp.
 - 5. Standard Fin-Pipe Radiator Corp.
 - 6. Sterling Radiator; Div. of Reed National Corp.
 - 7. Rittling by Hydro-Aire Components, Inc.
 - 8. Ted Reed Thermal, Inc.
 - 9. Trane (The) Co.
 - 10. Vulcan Radiator Co.

2.2 CABINET HEATERS

- A. General: Provide cabinet heaters having cabinet sizes and in location as indicated, and of capacities, style, and having accessories as scheduled. Include in basic unit chassis, coil, fanboard, fan wheels, housings, motor, and insulation.
- B. Chassis: Galvanized steel wrap-around structural frame with edges flanged.
- C. Insulation: Faced, heavy density glass fiber.
- D. Cabinet: 14-ga removable front panel, 16-ga top and side panels. Insulate front panel over entire coil section. Provide access door on coil connection side. Cabinet parts shall be cleaned, bonderize, phosphatize, before painting with epoxy powder coating.
- E. Water Coils: Construct of 1/2" seamless copper tubes mechanically bonded to aluminum fins. Design for 350 psi and leak test at 300 psi under water.
- F. Provide same end connections for supply and return.
- G. Fans: Provide centrifugal, forward curved double width fan wheels constructed of non-corrosive, molded, fiberglass- reinforced thermo-plastic material. Construct fan scrolls of galvanized steel.
- H. Motors: Provide permanent split capacitor motors, permanently lubricated with integral thermal over-load protection, and motor cords for plug-in to junction box in unit.
- I. Filters: Provide 1" thick throwaway type filters in fiberboard frames.

- J. Accessories: Provide the following accessories as indicated and1 or scheduled.
 - 1. Wall Boxes: Provide aluminum wall boxes with integral eliminators and insect screen.
 - 2. Recessing Flanges: Provide 18-ga steel flanges for recessing cabinet heaters into wall or ceiling.

- K. Manufacturer: Subject to compliance with requirements, provide cabinet heaters of one of the following:
 - 1. Airtherm Mfg. Co.
 - 2. Dunham-Bush, Inc.
 - 3. McQuay Inc.
 - 4. Rittling by Hydro-Aire Components, Inc.
 - 5. Ted Reed Thermal, Inc.
 - 6. Trane (The) Co.
 - 7. Young Radiator Co.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine areas and conditions under which terminal units are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

3.2 INSTALLATION OF HYDRONIC CABINET CONVECTORS

- A. General: Install hydronic cabinet convectors as indicated, and in accordance with manufacturer's installation instructions.
- B. Install end caps where units butt against walls. Install access panels centered in front of each shutoff valve, balancing cock, steam trap, or temperature control valve.

3.3 INSTALLATION OF CABINET HEATERS

- A. General: Install cabinet heaters as indicated, and in accordance with manufacturer's installation instructions.
- B. Locate cabinet heaters as indicated, coordinate with other trades to assure correct recess size for recessed units.
- C. Install piping as indicated.
- D. Protect units with protective covers during balance of construction.

3.4 ELECTRICAL WIRING

- A. General: Install electrical devices furnished by manufacturer but not specified to be factory-mounted. Furnish copy of manufacturer's wiring diagram submittal to Electric Installer.

1. Verify that electrical wiring installation is in accordance with manufacturer's submittal and installation requirements of Division-26 sections. Do not proceed with equipment start-up until wiring installation is acceptable to equipment installer.

3.5 ADJUSTING AND CLEANING

- A. General: After construction is completed, including painting, clean unit exposed surfaces, vacuum clean terminal coils and inside of cabinets.
- B. Retouch any marred or scratched surfaces of factory-finished cabinets, using finish materials furnished by manufacturer.
- C. Install new filter units for terminals requiring same.

END OF SECTION 238240