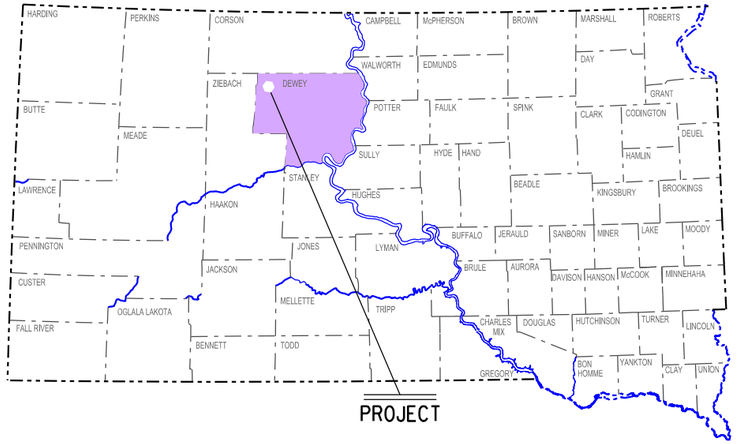
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	OSE #T2205-37X/DEL	1	30



SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

ISABEL DOT MAINTENANCE YARD

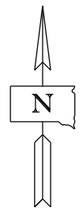
PARTIAL BUILDING/APPROACH SLAB FLOOR REMOVAL/REPLACEMENT

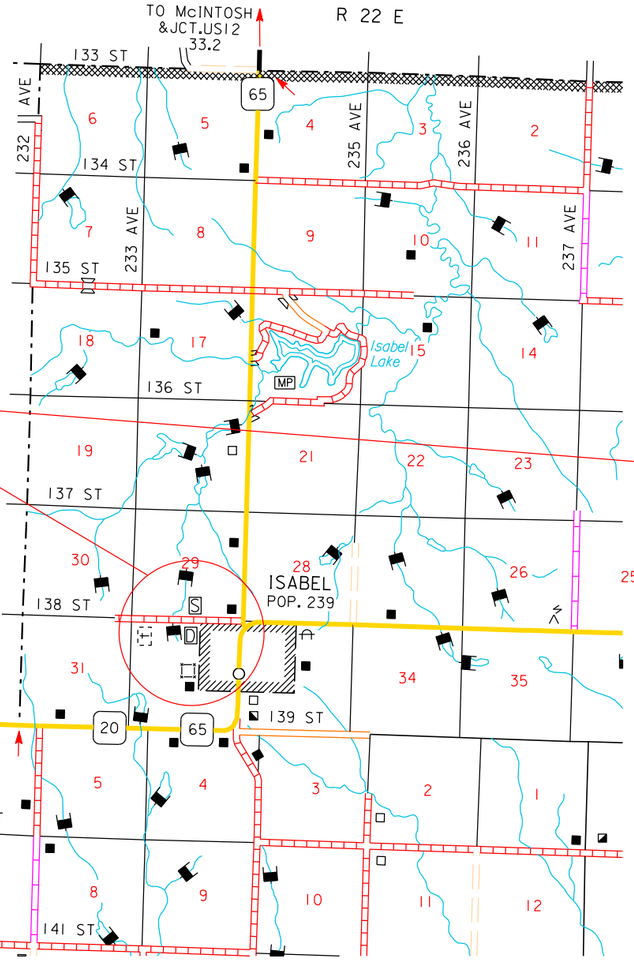
ISABEL, SOUTH DAKOTA

OSE #T2205—37X/DEL

JUNE 2016

INDEX OF SHEETS





PROJECT SITE
Isabel Shop Site
Site 3250
NE 1/4 SEC 32 T17N R22E

STORM WATER PERMIT
None Required

Plans Prepared By
State of South Dakota
Department of Transportation

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E1100	Remove Concrete Pavement	169.1	SqYd
120E0100	Unclassified Excavation, Digouts	17	CuYd
380E1030	8" Miscellaneous PCC Pavement	169.1	SqYd
380E6000	Dowel Bar	24	Each
460E0380	Install Dowel in Concrete	67	Each

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

SCOPE OF WORK

The work to be done in the Isabel Maintenance Yard includes, but is not limited to, the following items, not listed in order of execution.

1. Remove and dispose of a portion of the concrete approach/building slab at the Maintenance Shop
2. Inspect base material and perform dig-outs
3. Excavate grade to proper elevations
4. Compact Subgrade
5. Furnish and Install Dowels and Reinforcing Steel as detailed
6. Remove asphalt concrete around approach slab to accommodate form placement
7. Furnish and place all new Class M6 Concrete

The Contractor is encouraged to inspect the project site prior to bidding to evaluate the extent of work that will be required for construction.

COORDINATION OF WORK

The Contractor shall cooperate/coordinate with the SDDOT (State) during construction operations to minimize conflicts and facilitate owner usage of the shop.

The Contractor will only be able to work Monday through Thursday between the hours of 7 am and 5:30 pm.

PERMITS AND LICENSES

The Contractor shall obtain all necessary Tribal, State and/or City Permits and/or Licenses in accordance with Section 7.2 of the Specifications.

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49 7A and Administrative Rule Article 20:25, the Contractor shall contact the Engineer to determine modifications that will be necessary to avoid utility impacts.

GENERAL NOTES

Once work at the site has started it shall proceed in a continuous manner until the project is complete. All work must be complete on or before September 30, 2016. The Contractor shall notify the Mobridge Area Office two weeks prior to starting of their operation.

Where new concrete is placed adjacent to existing concrete, the existing asphalt/concrete shall be sawed full depth to a true line with a vertical face. There will not be a separate payment made for sawing. All costs associated with sawing existing concrete shall be incidental to various contract items.

The Contractor shall exercise care when breaking out the concrete slab so no damage occurs to the buildings footings, hairpins, tracks on overhead doors and/or concrete guard posts. The Contractor is responsible for salvaging the hairpin bars and the dowels tying the door slabs as detailed in the plans. Any damage to the building or components shall be repaired by the Contractor at no expense to the State. The disposal of the asphalt/concrete shall be incidental to the contract unit price per square yard for “Remove Concrete Pavement”.

There has been a quantity setup for dig-outs under the concrete removal areas assuming there will be material that is unacceptable. The location and extent of the dig-out areas will be determined by the Engineer. The grading required to accommodate the increased thickness of the slab shall be incidental to various contract items.

It is Contractor’s responsibility to remove contaminated base material, shape and compact excavated/removal areas to the proper elevations. If any additional granular material is required due to removal or dig-out areas, it will be furnished on site by the State.

Compaction of the excavated/removal areas and all additional granular material placed shall be to the satisfaction of the Engineer.

The Contractor shall refer to the “Special Provision for Indian Employment and Contracting on the Cheyenne River Sioux Reservation” found in the Contract Proposal for requirements of this project.

CONCRETE SLAB

Concrete used to construct the removed portions of approach/building slab shall be Class M6. The supplier shall complete the DOT-57 form and return it to the Engineer prior to furnishing any concrete.

The Contractor will be required to remove enough asphalt concrete around the concrete approach slab to accommodate their formwork.

Concrete slab shall be reinforced with # 4 reinforcing steel bars spaced 24 inches on center each way. The Contractor shall use a minimum 2 1/2” clear cover on all reinforcing steel.

It is the Contractor’s responsibility to shape and compact the excavated areas to the elevations necessary to provide an 8 inch concrete slab.

The finish of the new concrete on the inside of the building will match what is in place. The concrete outside shall match the existing concrete approach slab.

The State will be responsible for replacing asphalt concrete between the existing asphalt concrete and the new Portland cement concrete approach slab.

The Contractor shall protect all building components inside and out to ensure no concrete gets on them.

All costs associated with furnishing and placing the concrete, protecting building and components, reinforcing steel, expansion joint filler, sealant, and all other incidentals to complete the necessary work in the contract shall be incidental to the contract unit price per square yard for “8” Miscellaneous PCC Pavement”.

WATER FOR GRANULAR MATERIAL

The moisture content for compaction of the granular base shall be approximately optimum moisture for the material or as directed by the Engineer. The quantity for Water for Granular Material is based on 4% of the quantity of the aforementioned material. All costs for furnishing and placing the water shall be incidental to various contract items.

STEEL BAR INSERTION

The Contractor shall insert the Steel Bars (½” diameter x 18” deformed tie bars) into drilled holes in the existing concrete approach/building slab. The bars shall be spaced every 24 inches as detailed in the plans. The diameter of the drilled holes shall not be less than 1/8 inch nor more than 3/8 inch greater than the overall diameter of the steel bar. Drilled holes in the existing slab shall be 9 inches deep. Holes drilled into the existing concrete shall be located at mid-depth of the slab and true and normal. Care shall be taken to not damage the existing 6” slab. Any damage to the slab shall be repaired by the Contractor at no expense to the State.

Steel bars shall not be placed closer than 6 inches to any joint.

Prior to installing steel bars, the drilled holes shall be blown out with compressed air using a device that will reach to the back of the hole to ensure that all debris or loose material has been removed prior to epoxy injection.

An epoxy resin adhesive must be used to anchor the steel bars in the drilled holes. The epoxy adhesive resin shall be of the type intended for horizontal applications and shall conform to the requirements of ASTM C881, Type IV, Grade 3 (equivalent to AASHTOM235, Type IV, Grade 3).

Mix the epoxy resin as recommended by the manufacturer and apply by an injection method approved by the Engineer. Fill the drilled holes ⅓ to ½ full of epoxy or as recommended by the manufacturer, prior to insertion of the steel bar. Care shall be taken to prevent any epoxy from running out of the horizontal holes prior to bar insertion. Rotate the steel bar during installation to eliminate voids and ensure complete bonding for the bar. Insertion of the bars by dipping method will not be allowed.

STEEL BAR INSERTION (Continued)

The Contractor shall not place concrete until the epoxy has set enough to prevent steel bar movement during concrete placement as determined by the Engineer.

Cost for the epoxy resin adhesive, steel bars, drilling of holes, applying the adhesive, inserting the steel bars into the drilled holes and all other items incidental to the insertion of the steel bars shall be incidental to the contract unit price per Each for “Install Dowel in Concrete”.

ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor’s primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the Public ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating “No Dumping Allowed”.

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

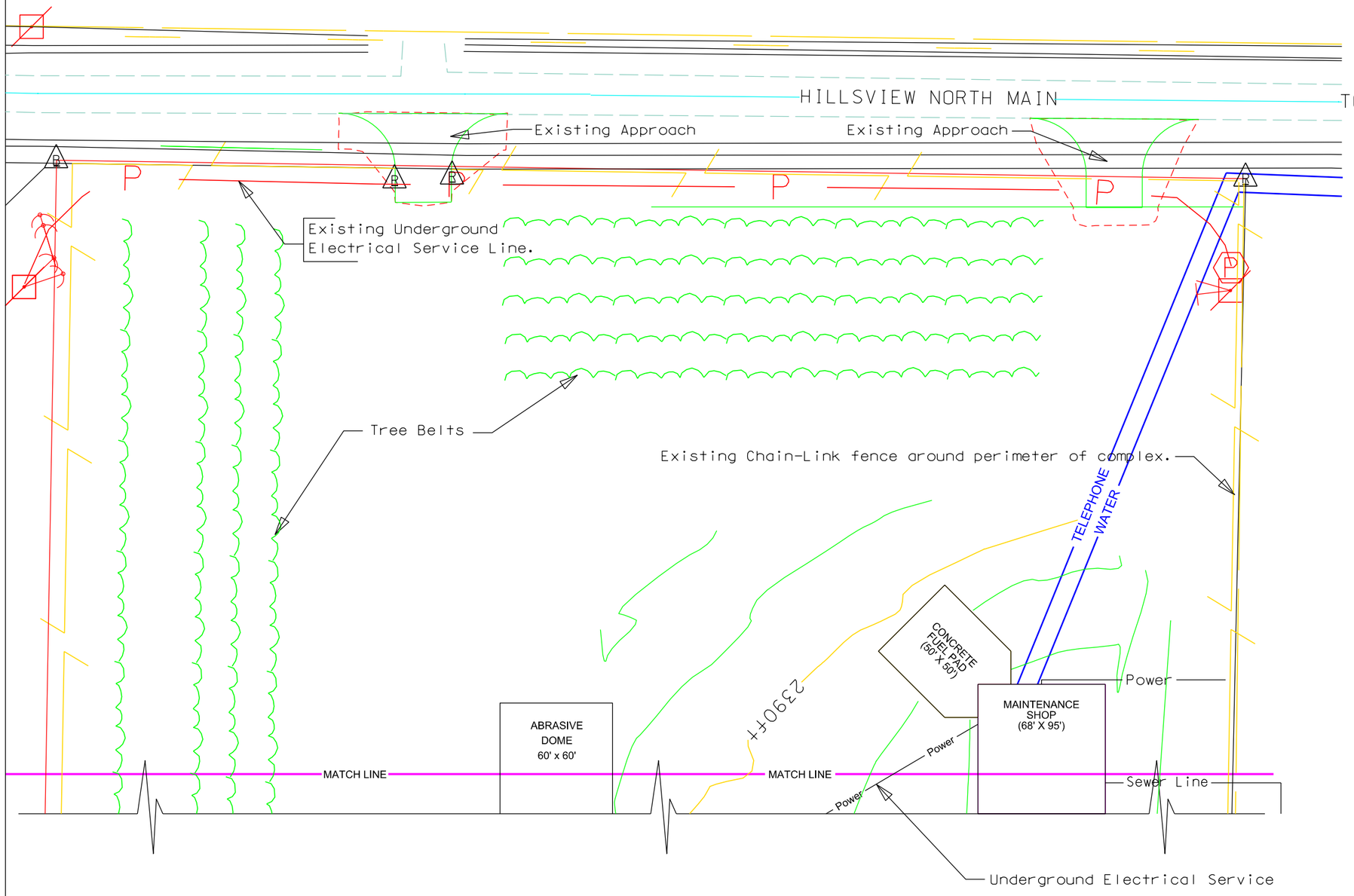
If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

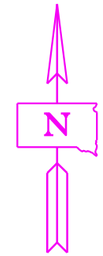
SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

Plotting Date: 06/03/2016

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	OSE# T2205--37X/DEL	4	30

SITE LAYOUT





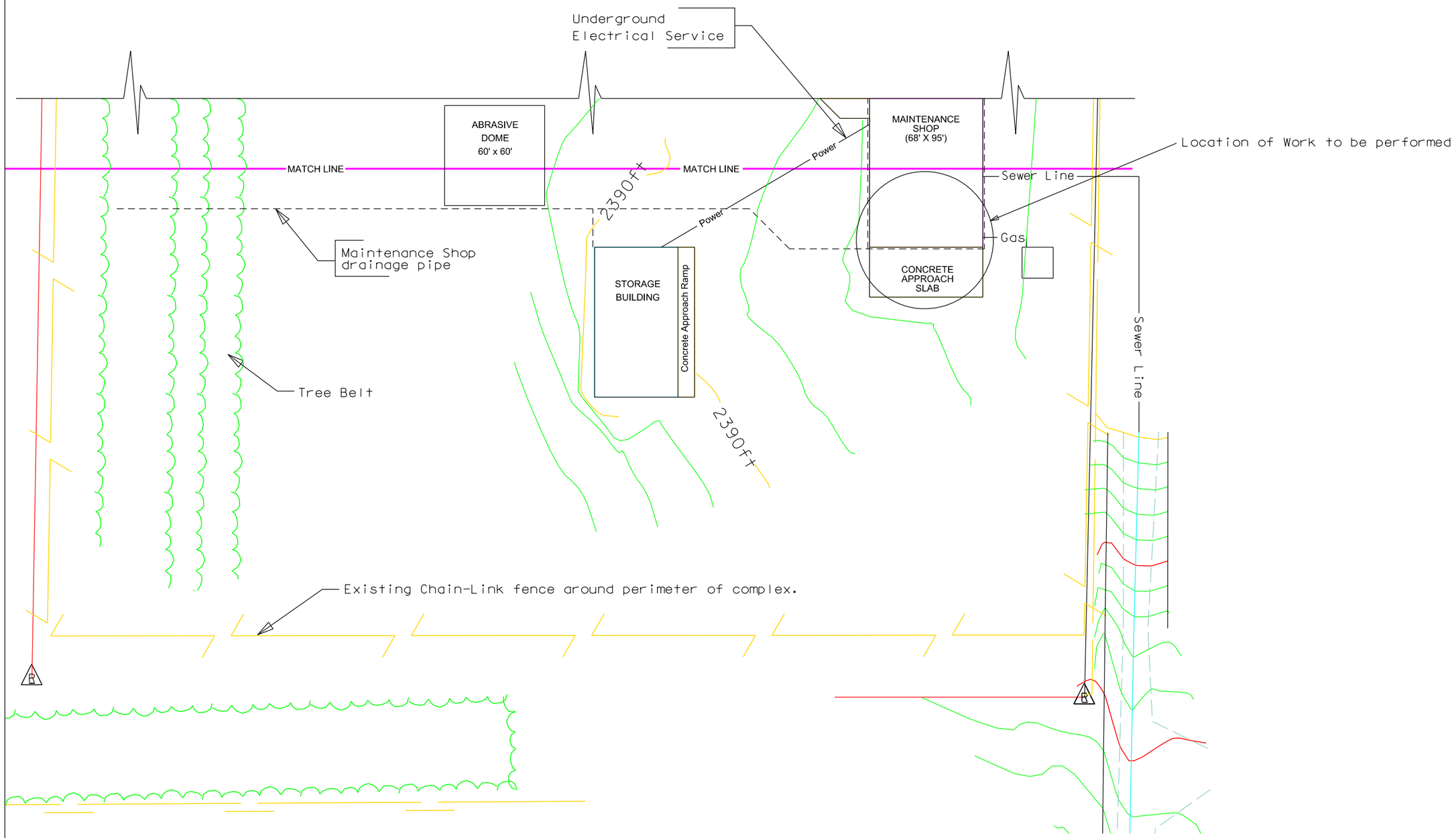
NOTES:

1. Contour elevations shown are existing.
2. The plan illustrates existing utilities in their approximate location. The contractor shall verify exact location of existing utilities prior to excavation.

Plotting Date: 06/03/2016

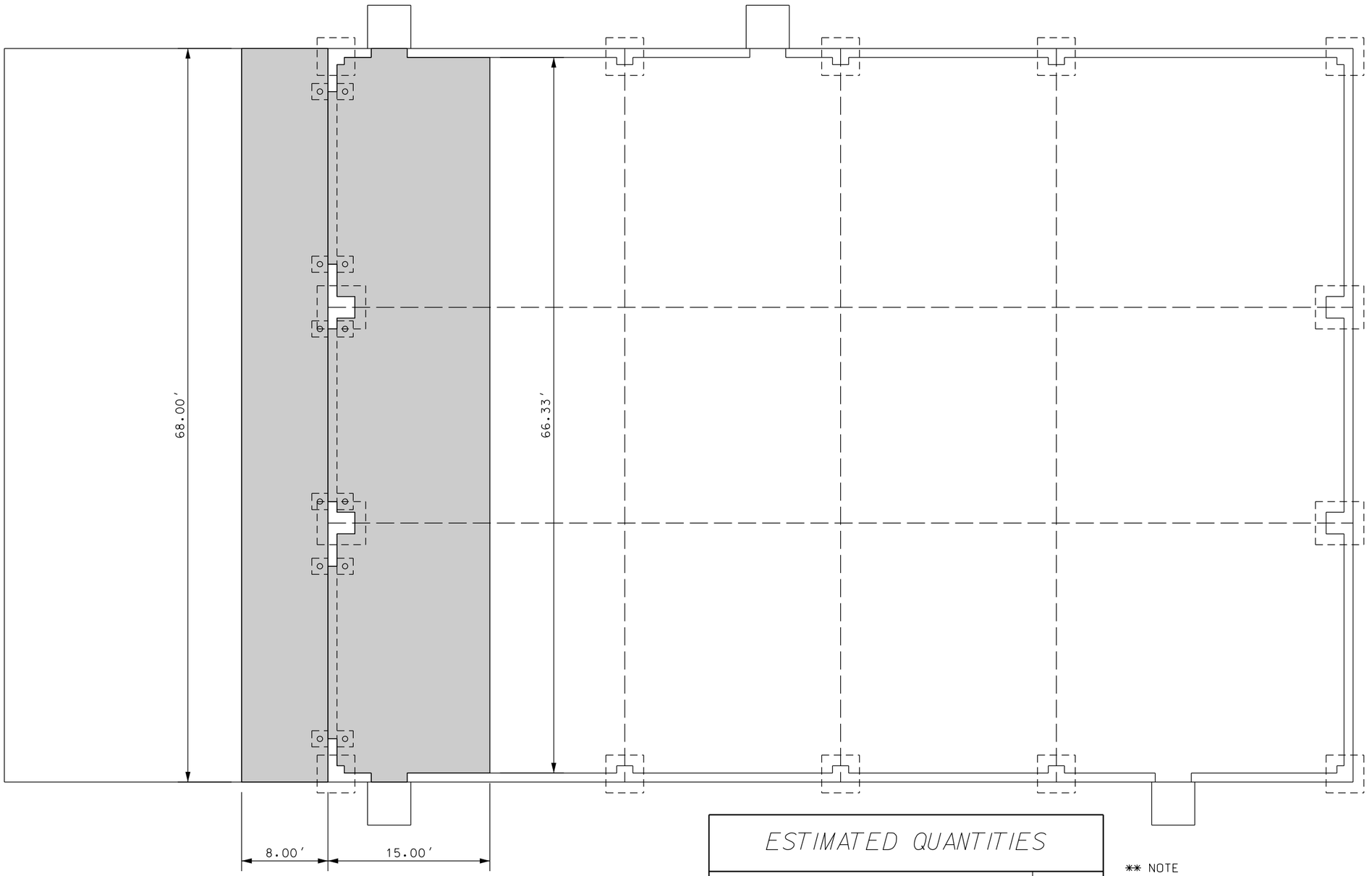
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	OSE# T2205--37X/DEL	5	30

SITE LAYOUT



STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	OSE #T2205--37X/DEL	6	30

FOUNDATION PLAN - REMOVAL



CONCRETE REMOVAL

ESTIMATED QUANTITIES

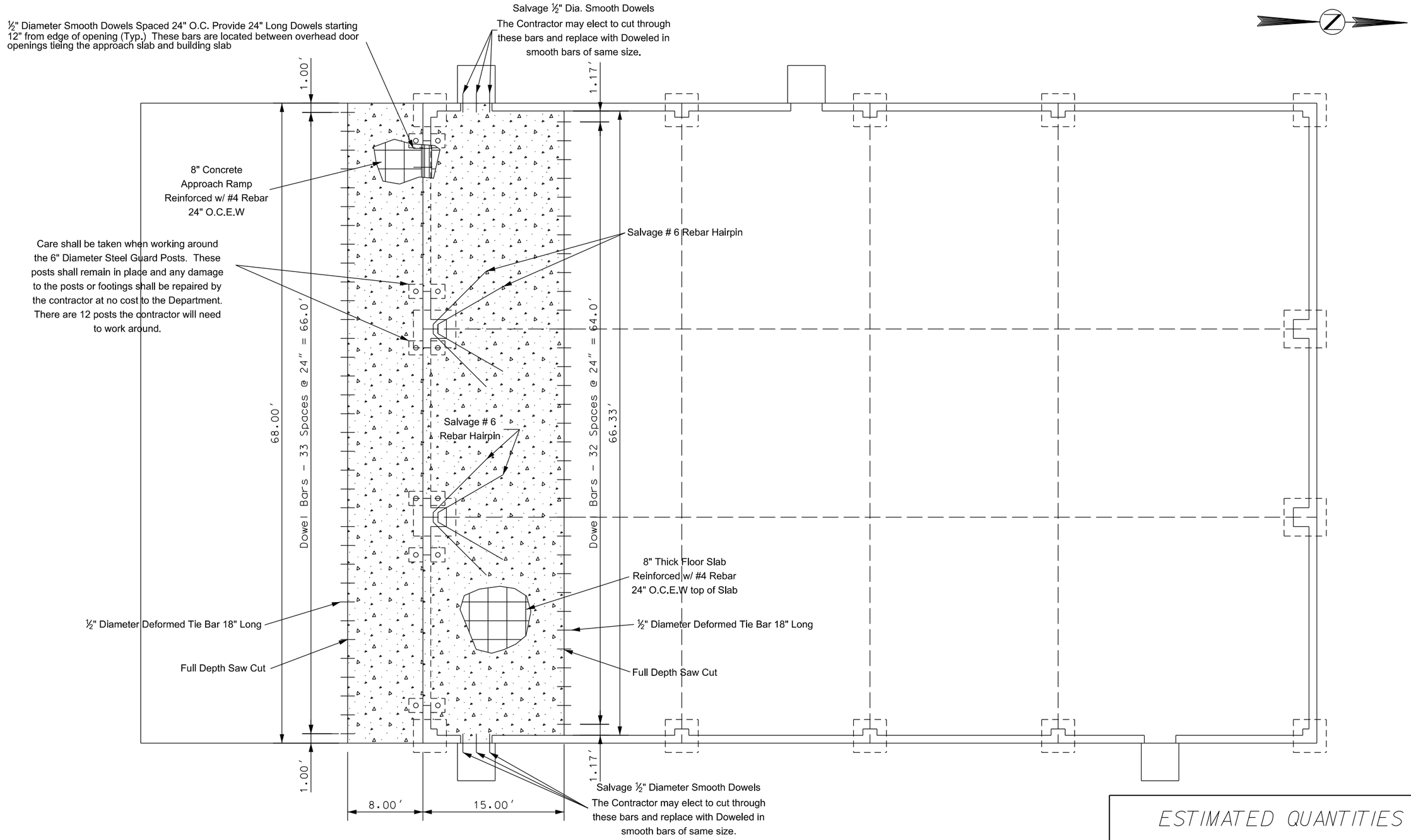
BID ITEM	QUANTITY
** REMOVE CONCRETE PAVEMENT (SQYD)	169.1
UNCLASSIFIED EXCAVATION, DIGOUTS (CUYD)	17.0

** NOTE

The slab thickness is 6" and reinforced with #4 rebar on 24" O.C.E.W. Care shall be taken not to damage any building hardware. Any damge shall be repaired by the contractor at no cost to the Department. All costs associated for removal and disposal of the concrete and incidentals shall be paid for at the contract unit price per square yard for "Remove Concrete Pavement".

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	OSE #T2205--37X/DEL	7	30

FOUNDATION PLAN - REPLACEMENT



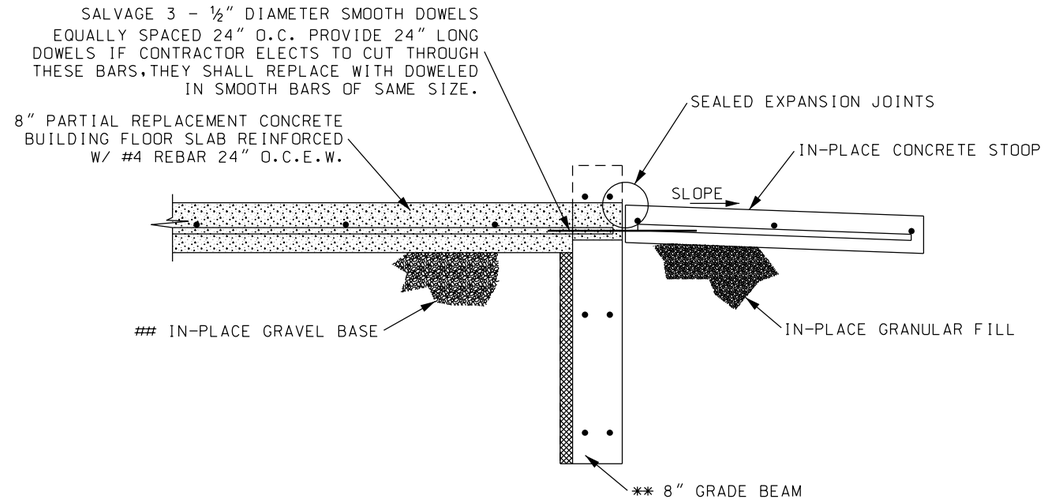
CONCRETE REPLACEMENT

ESTIMATED QUANTITIES

BID ITEM	QUANTITY
8" Miscellaneous PCC Pavement (SQYD)	169.1
DOWEL BAR (EACH)	24
INSTALL DOWEL IN CONCRETE (EACH)	67

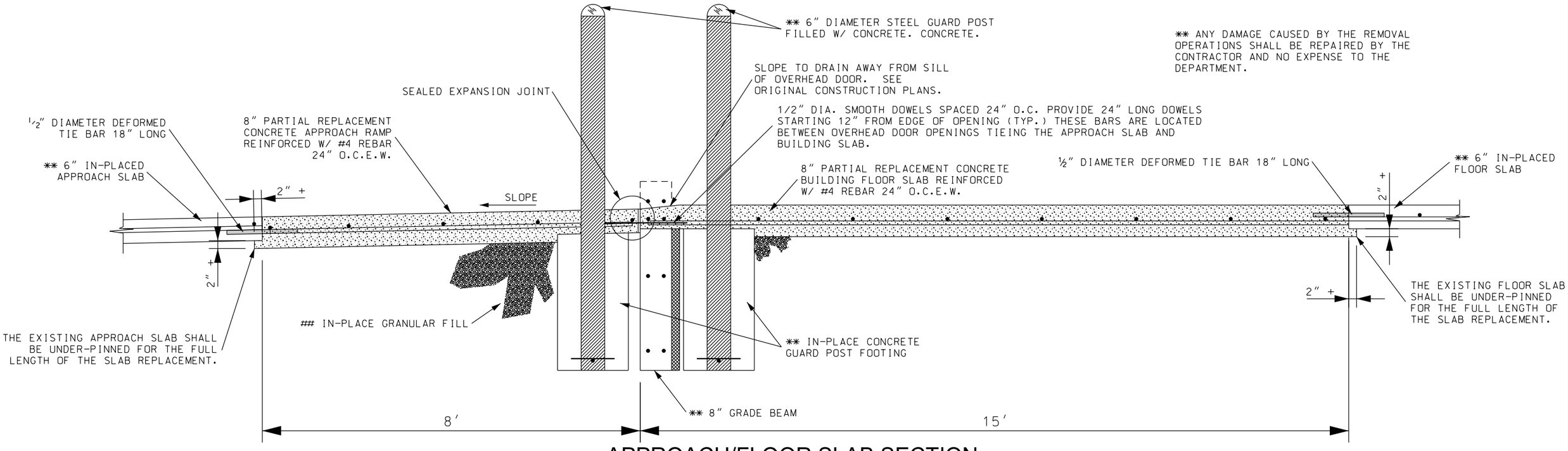
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	OSE *T2205--37X/DEL	8	30

CONSTRUCTION DETAILS



ENTRANCE DOOR STOOP SECTION - 2 LOCATIONS

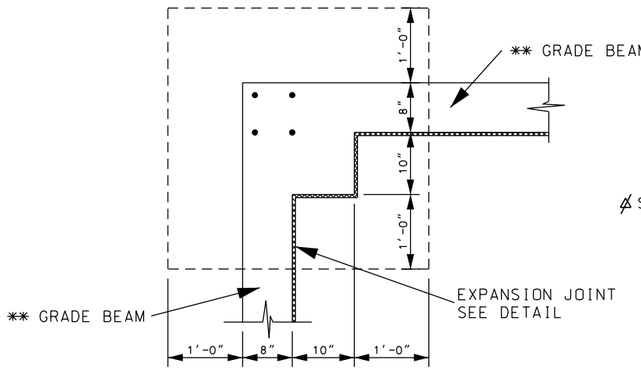
THE BASE SHALL BE INSPECTED BY THE DEPARTMENT BEFORE ANY REBAR OR CONCRETE IS PLACED TO DETERMINE IF THERE ARE ANY DIGOUT LOCATIONS.



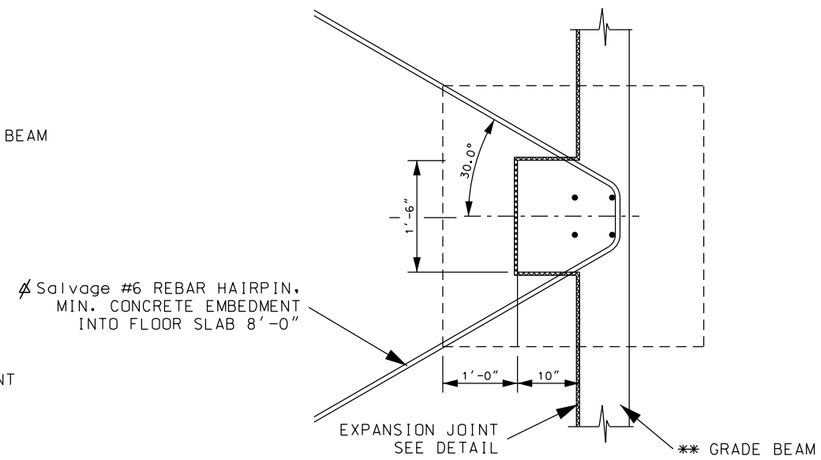
APPROACH/FLOOR SLAB SECTION

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	OSE *T2205--3TX/DEL	9	30

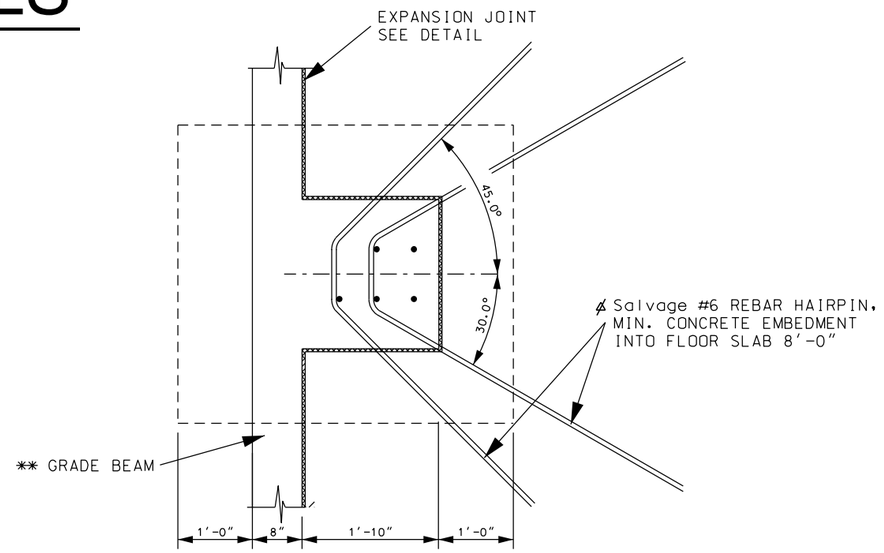
CONSTRUCTION DETAILS



CORNER POST DETAIL



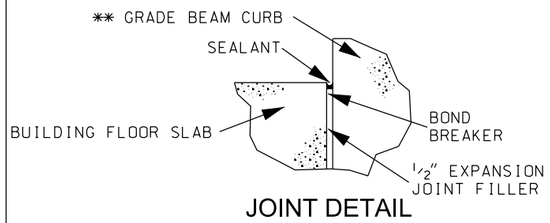
END WALL POST DETAIL



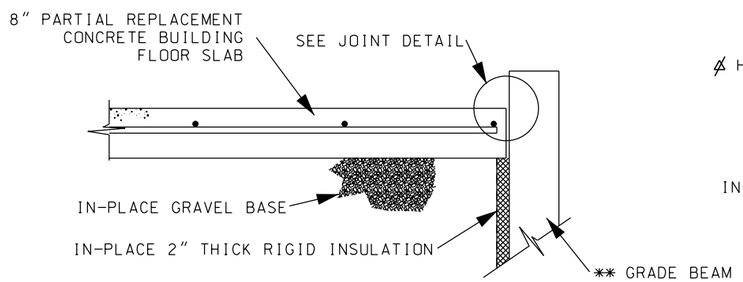
RIGID FRAME DETAIL

** Care shall be taken when removing a portion of the approach/building slab so no damage occurs to components of the building. Any damage caused by the removal of the slabs shall be repaired by the Contractor at no expense to the Department.

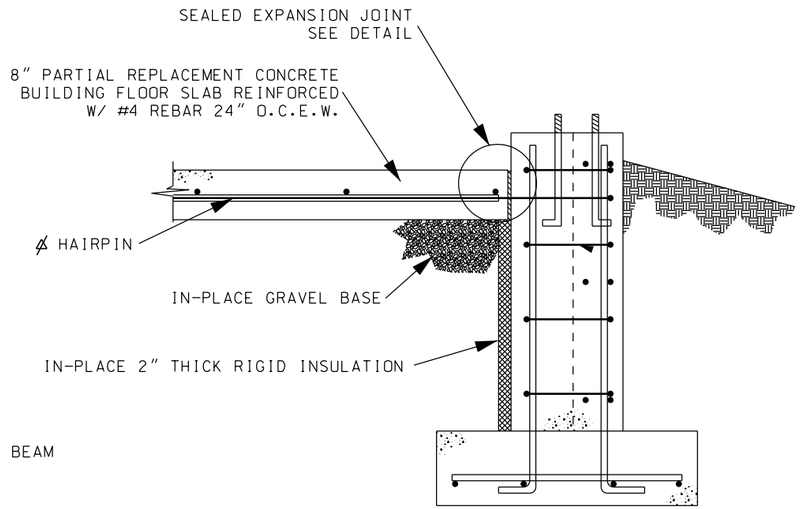
Ø The Contractor needs to salvage the hairpin bars as detailed in the plans.



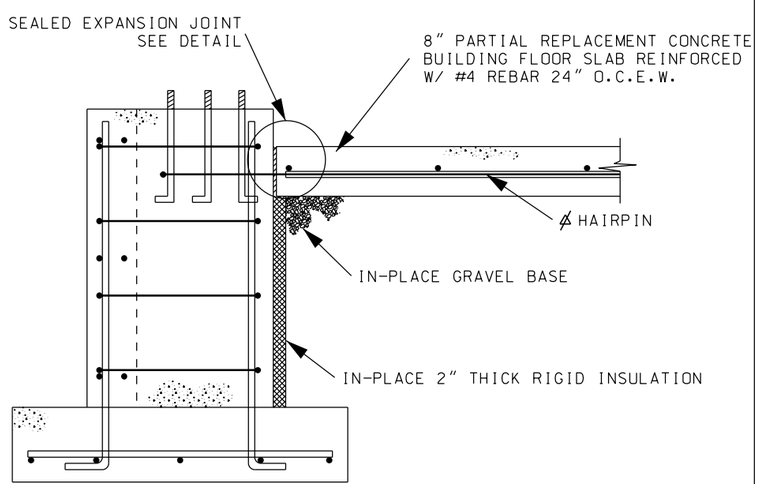
JOINT DETAIL



EXPANSION JOINT DETAIL



END WALL POST SECTION VIEW



RIGID FRAME SECTION VIEW

OFFICE AND MAINTENANCE SHOP

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION
ISABEL, SOUTH DAKOTA - DEWEY COUNTY
OSE# T2205--21X

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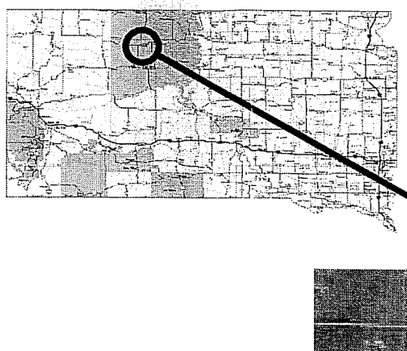


PROJECT LOCATION MAP

SCALE: NONE

Foss Building
523 E. Capitol Ave.
Pierre, South Dakota 57501-3182

Division of Administration
Office of the State Engineer
State Engineer - John St. C. White, PE

DATE MARCH 2006
REVISION
REVISION

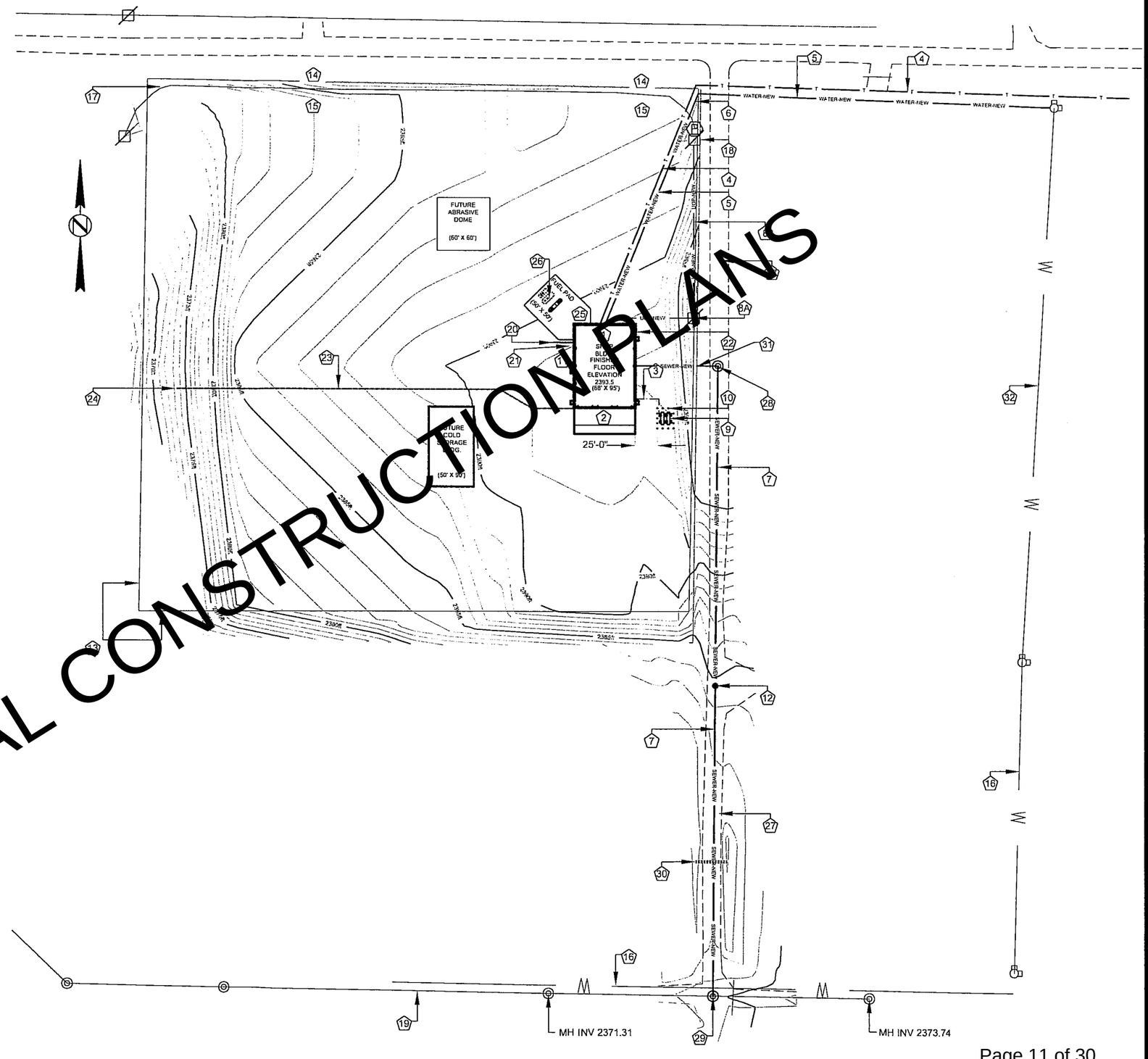
PROJECT NUMBER T2205--21X
DRAWN BY MMR

TITLE OFFICE AND MAINTENANCE SHOP TITLE PAGE

PAGE 1 OF 15

NOTES:

1. PROPOSED PRE-ENGINEERED STEEL OFFICE AND MAINTENANCE SHOP BUILDING. PERIMETER FLOOR SLAB SURFACE ELEVATION 2393.5.
2. PROPOSED CONCRETE APPROACH SLAB. SEE DETAILS ON PLAN SHEET 3 OF 15.
3. PROVIDE AND INSTALL UNDERGROUND COPPER GAS LINE TO BUILDING. SEE DETAILS ON MECHANICAL PLAN SHEETS.
4. PROVIDE AND INSTALL UNDERGROUND TELEPHONE SERVICE TO BUILDING.
5. PROVIDE AND INSTALL UNDERGROUND WATER LINE FROM EXISTING WATER MAIN TO NEW SHOP. PROVIDE AND INSTALL 2" DIAMETER PIPE. SEE WATER SERVICE DETAILS ON MECHANICAL PLAN SHEETS.
6. PROVIDE AND INSTALL WATER CURB STOP AT CORNER OF PROPERTY LINE. PROVIDE CAST IRON CURB STOP FRAME AND COVER SET IN 24" X 24" X 4" THICK CONCRETE PAD. DOCUMENT EXACT LOCATION OF CURB STOP ON AS-CONSTRUCTED DRAWINGS.
7. PROVIDE AND INSTALL 4" DIAMETER PVC SEWER AS SHOWN.
8. PROVIDE AND INSTALL UNDERGROUND ELECTRICAL POWER FROM EXISTING TO NEW PAD MOUNTED TRANSFORMER. SEE DETAILS ON ELECTRICAL PLAN SHEETS.
9A. PROVIDE AND INSTALL SECONDARY PAD MOUNTED TRANSFORMER AND SERVICE TO BUILDING. SEE DETAILS ON ELECTRICAL PLAN SHEETS.
9. PROVIDE AND INSTALL TWO 1000 GAL PROPANE TANKS SET ON CONCRETE PAD. SEE PAD DETAILS ON PLAN SHEET 6 OF 15.
10. PROVIDE AND INSTALL PIPE GUARD POSTS AROUND PROPANE TANKS. SEE DETAILS ON PLAN SHEET 5 OF 15.
17. CONTRACTOR TO BACKFILL AND GRADE AROUND PERIMETER OF NEW BUILDING TO PROVIDE ADEQUATE DRAINAGE AWAY FROM BUILDING.
12. PROVIDE AND INSTALL FLOOR DRAIN LINE CLEANOUT TO SURFACE OF GRADE. PROVIDE AND INSTALL CAST IRON FRAME AND COVER SET IN 24" X 24" X 4" THICK CONCRETE PAD.
13. EXISTING CHAIN-LINK FENCE AROUND PERIMETER OF COMPLEX.
14. EXISTING APPROACHES INTO COMPLEX.
15. EXISTING CHAIN-LINK GATE.
16. EXISTING 6" DIAMETER UNDERGROUND WATER SERVICE.
17. EXISTING UNDERGROUND ELECTRICAL SERVICE LINE.
18. EXISTING ELECTRICAL POWER POLE AND PAD MOUNTED TRANSFORMER.
19. EXISTING UNDERGROUND CITY SEWER LINE.
20. STUB OUT AND CAP 2" PVC CONDUIT FOR FUTURE SERVICE TO FUTURE ABRASIVE AND STORAGE BUILDING. DOCUMENT EXACT TERMINATION ON AS-CONSTRUCTED DRAWINGS.
21. COMPRESSED AIR LINE IN CONDUIT FROM SHOP BUILDING TO SERVICE ISLAND. SEE DETAILS ON PLAN SHEET 15 OF 15.
22. PERFORATED 4" PVC DRAIN PIPING AROUND BUILDING AT BOTTOM OF FOOTING ELEVATION.
23. 4" PVC DRAIN LINE FROM SHOP BUILDING TO OUTLET STRUCTURE. SLOPE TO DRAIN.
24. CONCRETE OUTLET STRUCTURE. SEE DETAILS ON PLAN SHEET 5 OF 15.
25. CONCRETE SERVICE ISLAND AND CONCRETE FUEL PAD AROUND ISLAND. SEE DETAILS ON PLAN SHEET 15 OF 15.
26. UNDERGROUND GASOLINE AND DIESEL FUEL STORAGE TANKS. DOCUMENT EXACT LOCATION OF TANKS ON AS-CONSTRUCTED DRAWINGS.
27. EXISTING UNSURFACED STREET.
28. PROVIDE AND INSTALL PRECAST CONCRETE MANHOLE (INVERT ELEVATION = 2384.90)
29. PROVIDE AND INSTALL PRECAST CONCRETE MANHOLE AT LOCATION WHERE NEW SEWER LINE TIES INTO EXISTING CITY SEWER LINE. INVERT ELEVATION APPROXIMATELY 2372.55.
30. EXISTING CMP CULVERT. CONTRACTOR TO REMOVE AND REINSTALL AS NECESSARY TO INSTALL NEW SEWER LINE.
31. DO NOT CUT CHAIN-LINK FENCE FABRIC WHERE NEW SEWER LINE ENTERS SITE. REMOVE FABRIC FROM SE CORNER TO THE NORTH IF NECESSARY. REINSTALL FENCE FABRIC UPON COMPLETION OF SEWER LINE CONSTRUCTION.
32. EXISTING 3" DIAMETER UNDERGROUND WATER SERVICE.



SITE PLAN

SCALE: 1/128" = 1'-0"

PROPERTY LEGAL DESCRIPTION
NE ¼, NE ¼, OF SEC 32, T17N, R22E

Foss Building
523 E. Capitol Ave.
Pierre, South Dakota 57501-3182
Phone: (605) 773 - 3465

Division of Administration
Office of the State Engineer
State Engineer - John St. C. White, PE

DATE	REVISION	REVISION
MARCH 2006		

PROJECT NUMBER	DRAWN BY
T2205--21X	MMR

TITLE: OFFICE AND MAINTENANCE SHOP
SITE PLAN AND NOTES

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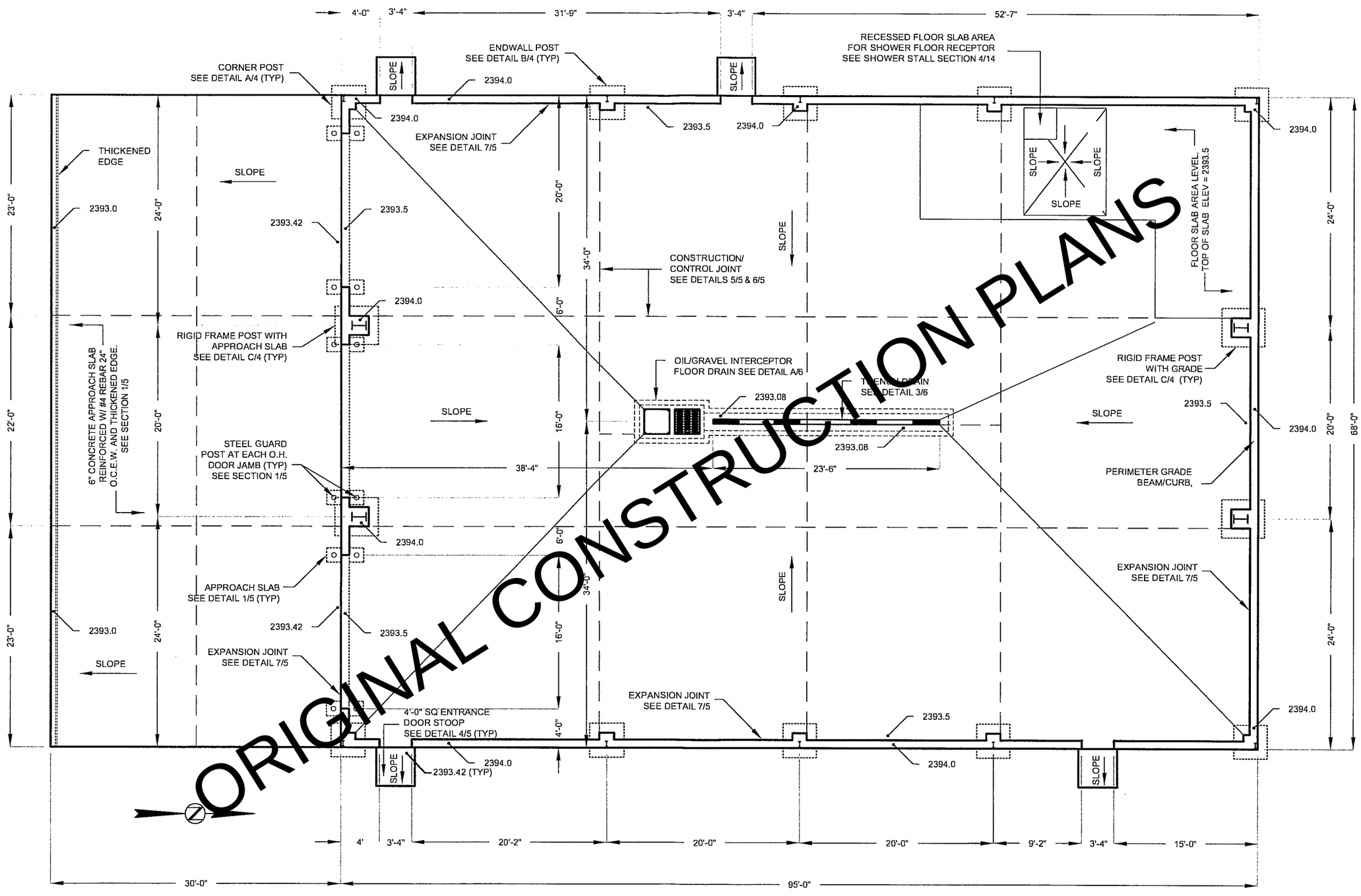

FOOTING AND FOUNDATION PLAN

SCALE: 3/32" = 1'-0"

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PROJECT NUMBER: T2205--21X
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TITLE: OFFICE AND MAINTENANCE SHOP
FOOTING/FOUNDATION PLAN

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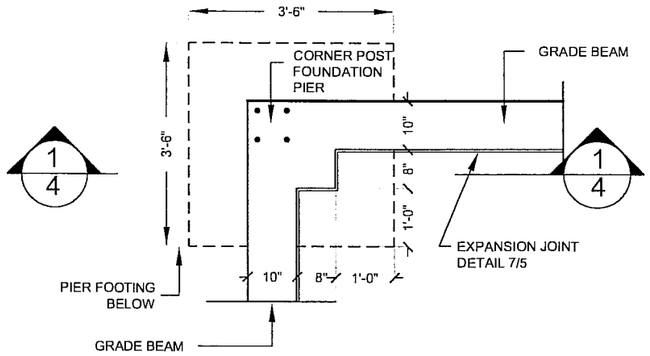
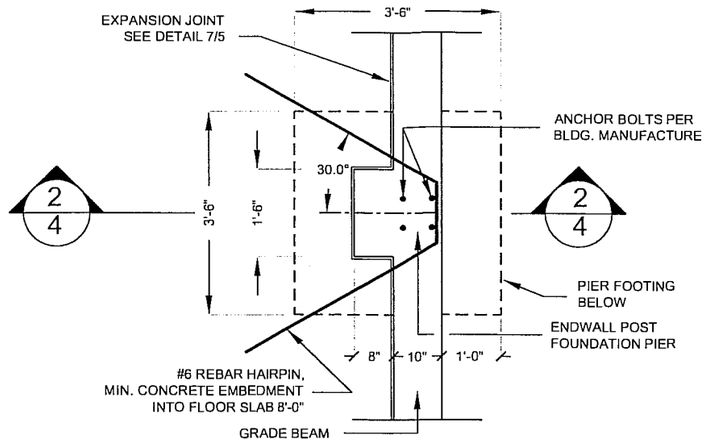
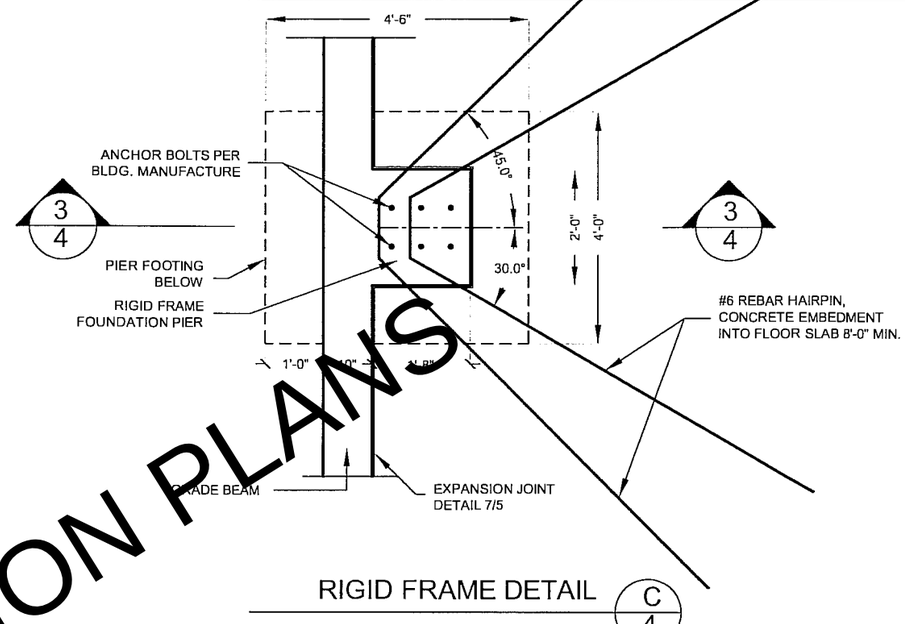


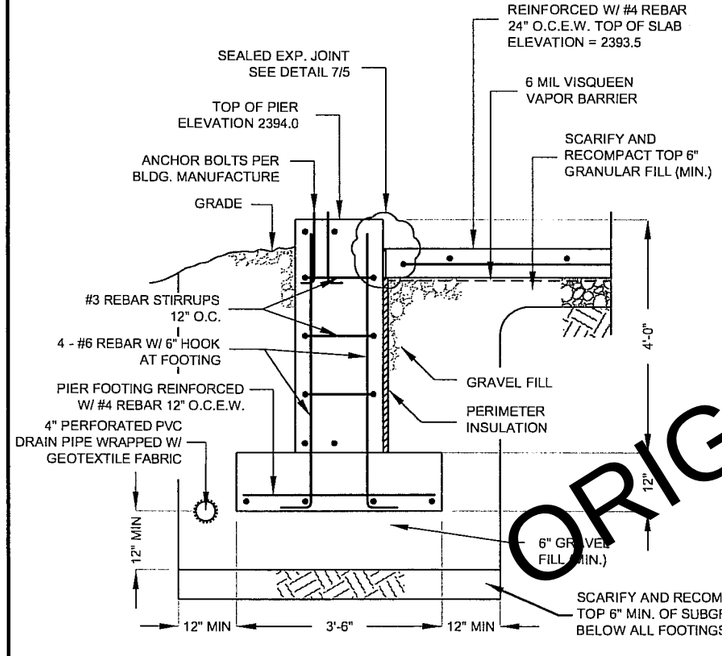
CORNER POST DETAIL A/4



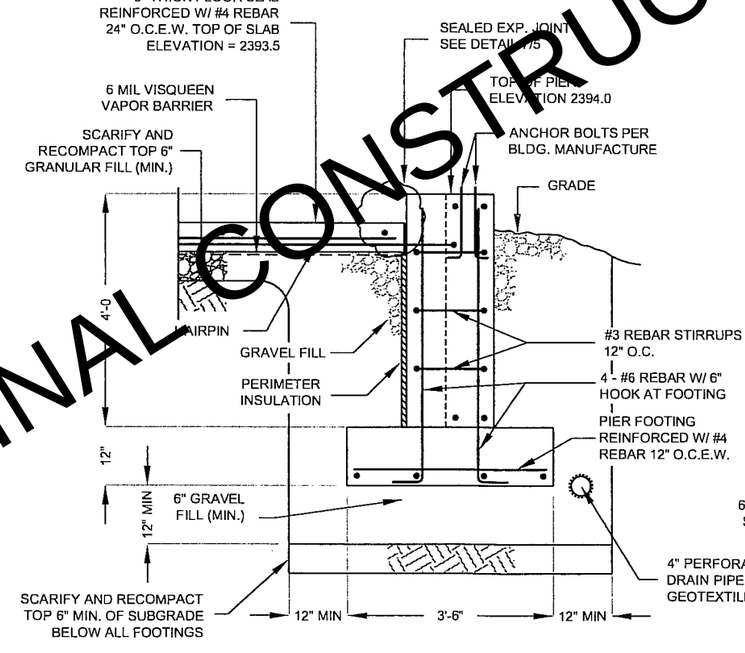
END WALL POST DETAIL B/4



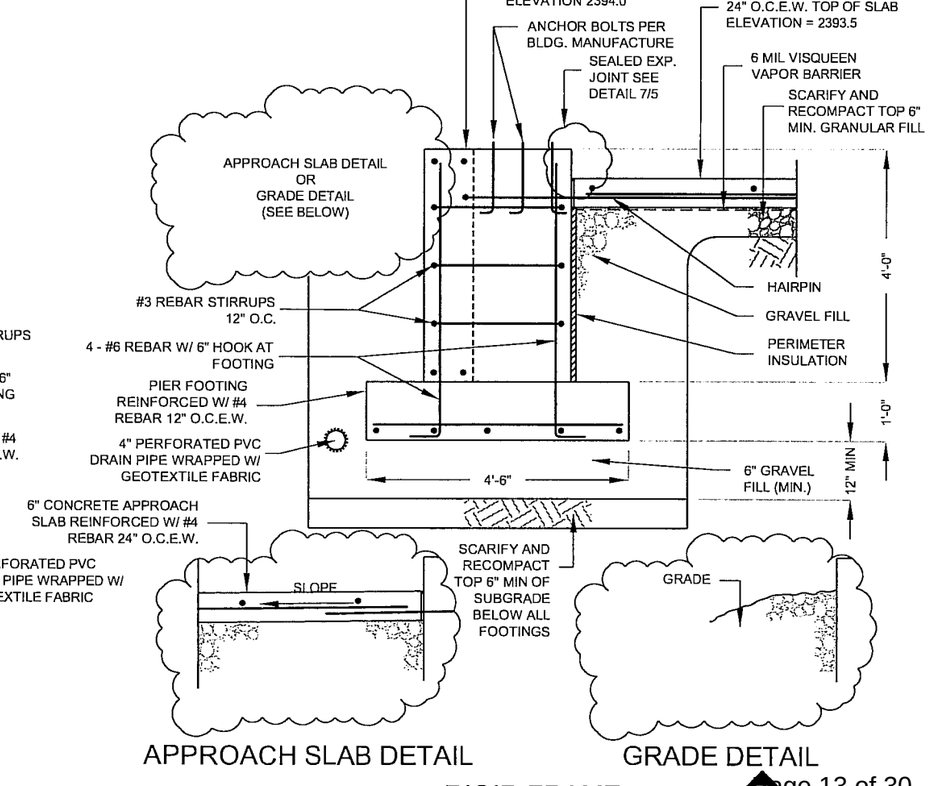
RIGID FRAME DETAIL C/4



CORNER POST SECTION VIEW 1/4



END WALL POST SECTION VIEW 2/4



APPROACH SLAB DETAIL

GRADE DETAIL

RIGID FRAME SECTION VIEW 3/4

FOUNDATION PIER DETAILS

SCALE: 3/8" = 1'-0"

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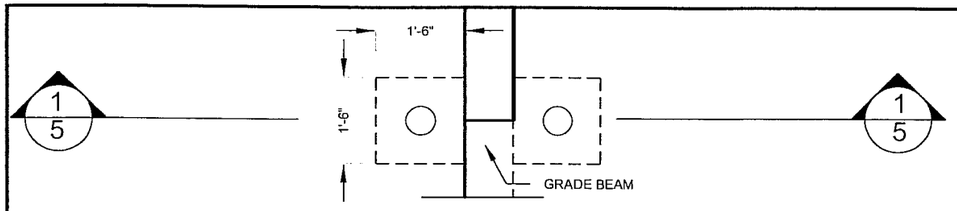
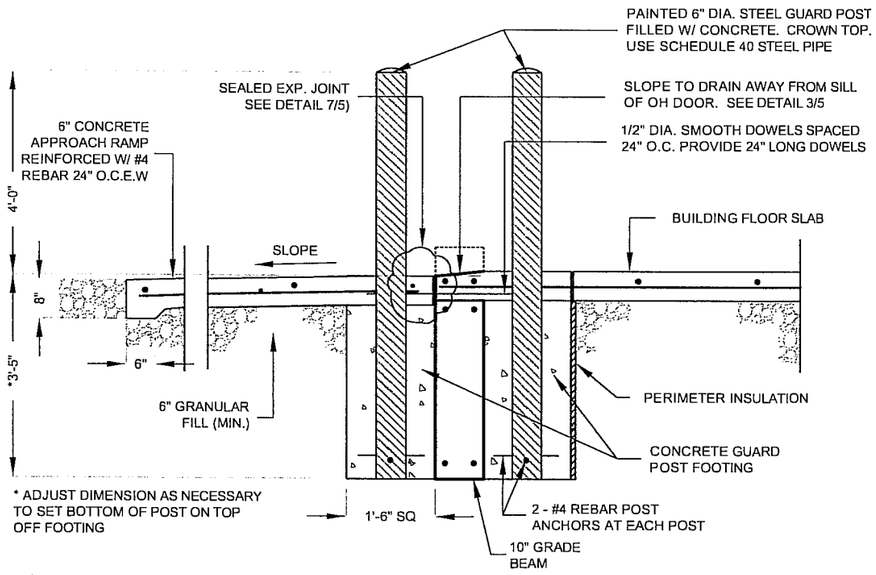
TITLE OFFICE AND MAINTENANCE SHOP FOUNDATION PIER DETAILS



APPROACH SLAB DETAIL

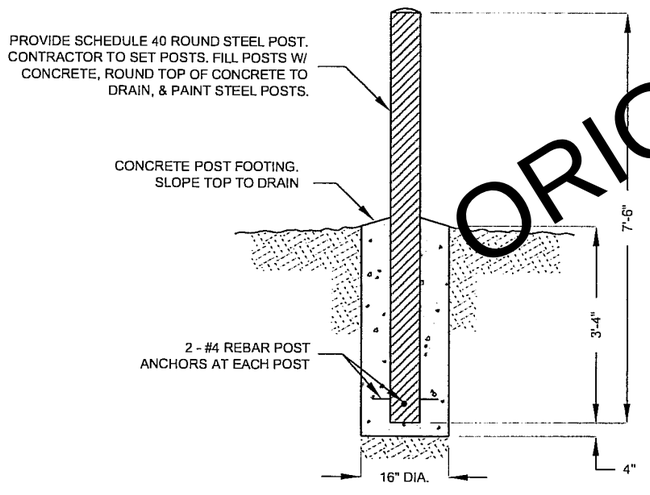
A/5



APPROACH SLAB SECTION

1/5

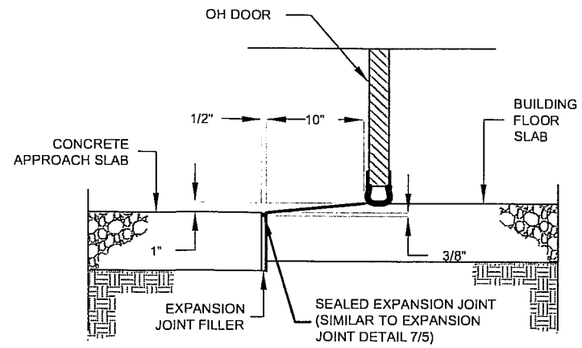
SCALE: 3/8" = 1'-0"



PROPANE TANK GUARD POST SECTION

2/5

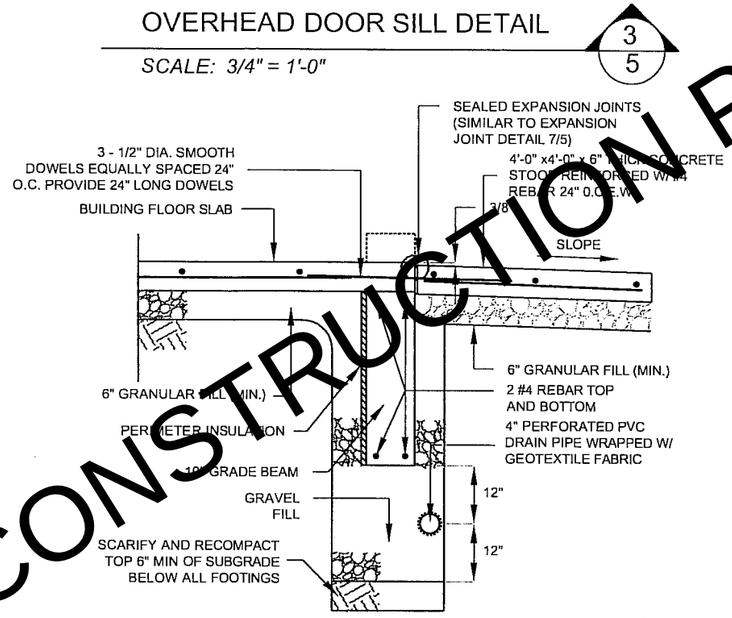
SCALE: 3/8" = 1'-0"



OVERHEAD DOOR SILL DETAIL

3/5

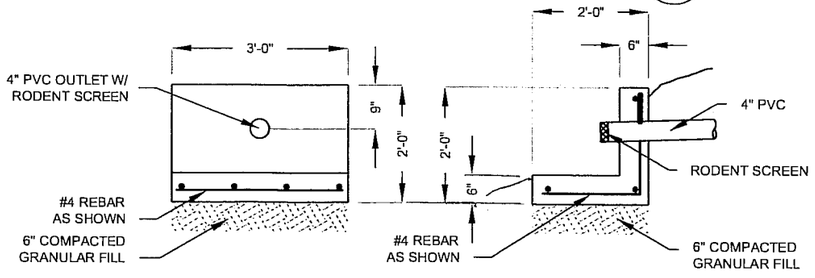
SCALE: 3/4" = 1'-0"



ENTRANCE DOOR STOOP SECTION

4/5

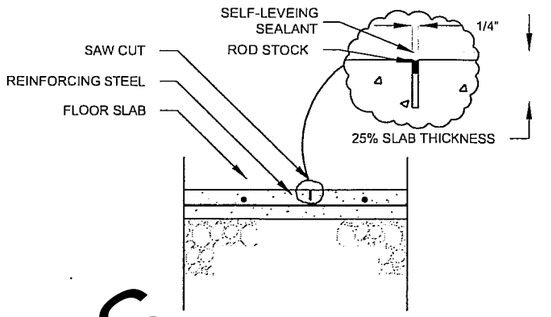
SCALE: 3/8" = 1'-0"



PLAN VIEW DRAIN PIPE OUTLET SECTION 8/5

CONCRETE DRAIN PIPE OUTLET STRUCTURE

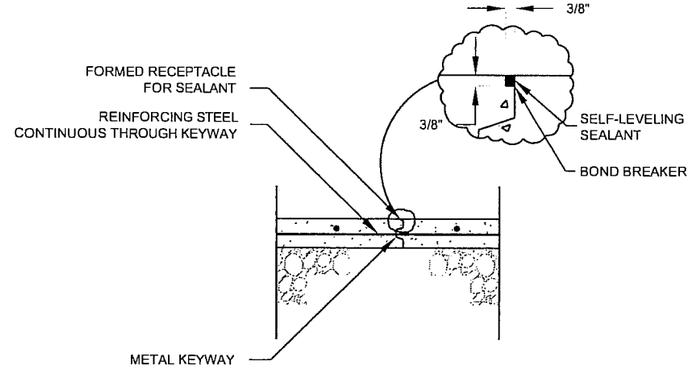
SCALE: 3/8" = 1'-0"



CONTROL JOINT DETAIL

5/5

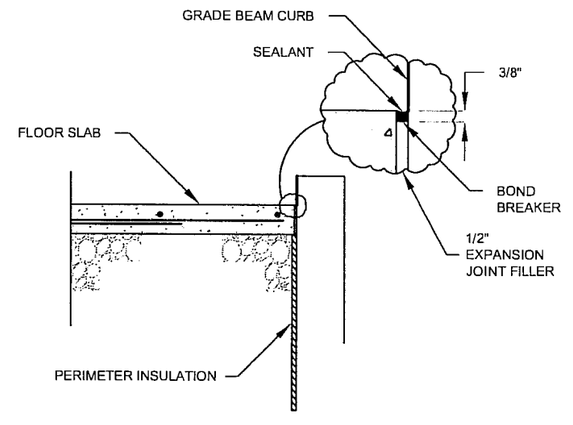
SCALE: 3/8" = 1'-0"



CONSTRUCTION JOINT DETAIL

6/5

SCALE: 3/8" = 1'-0"



EXPANSION JOINT DETAIL

7/5

SCALE: 3/8" = 1'-0"

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TITLE OFFICE AND MAINTENANCE SHOP MISC CONCRETE & JOINT DETAILS

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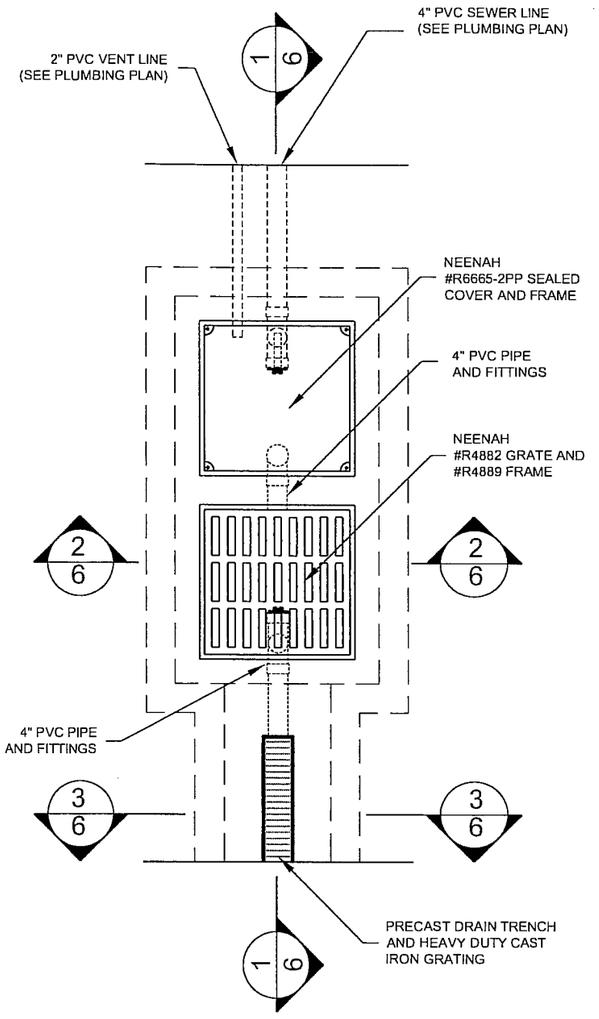
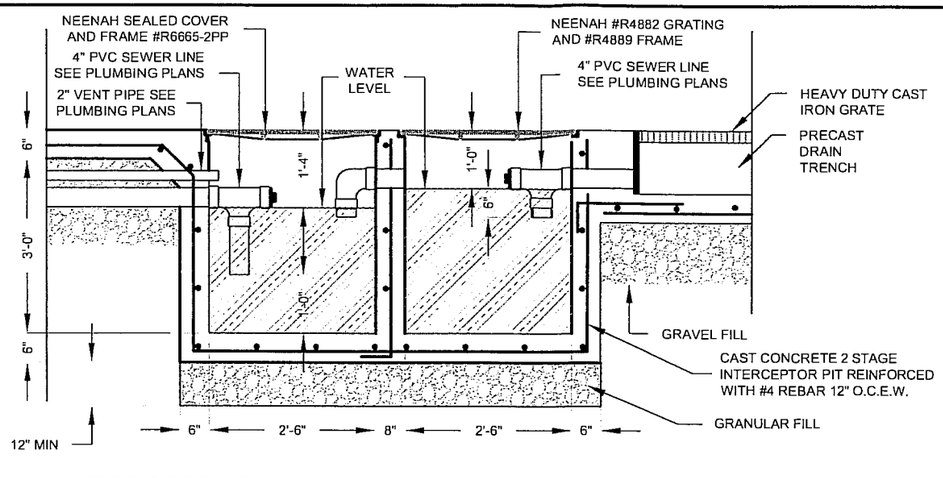


INTERCEPTOR FLOOR DRAIN PLAN VIEW

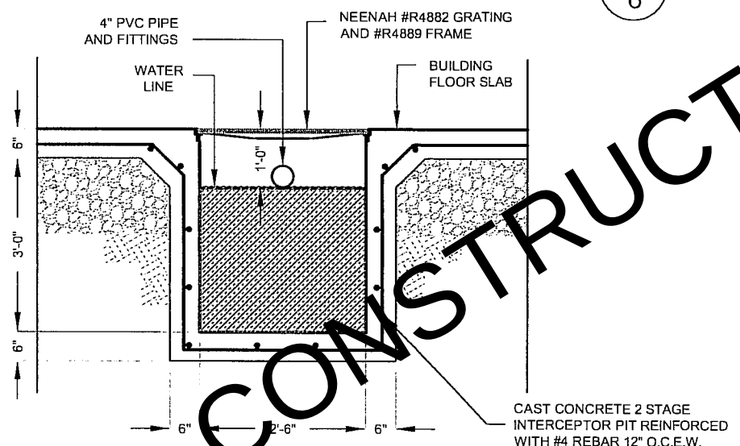
SCALE: 3/8" = 1'-0"

A
6



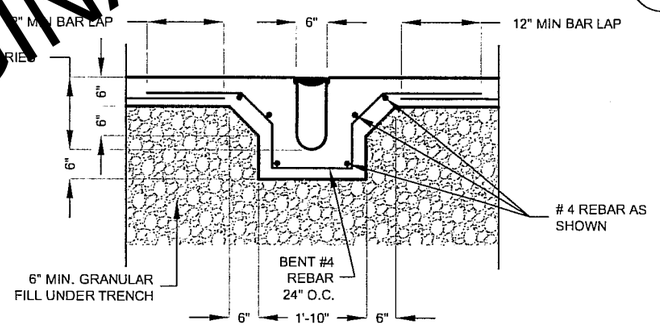
INTERCEPTOR FLOOR DRAIN SECTION VIEW

1
6



INTERCEPTOR FLOOR DRAIN SECTION VIEW

2
6

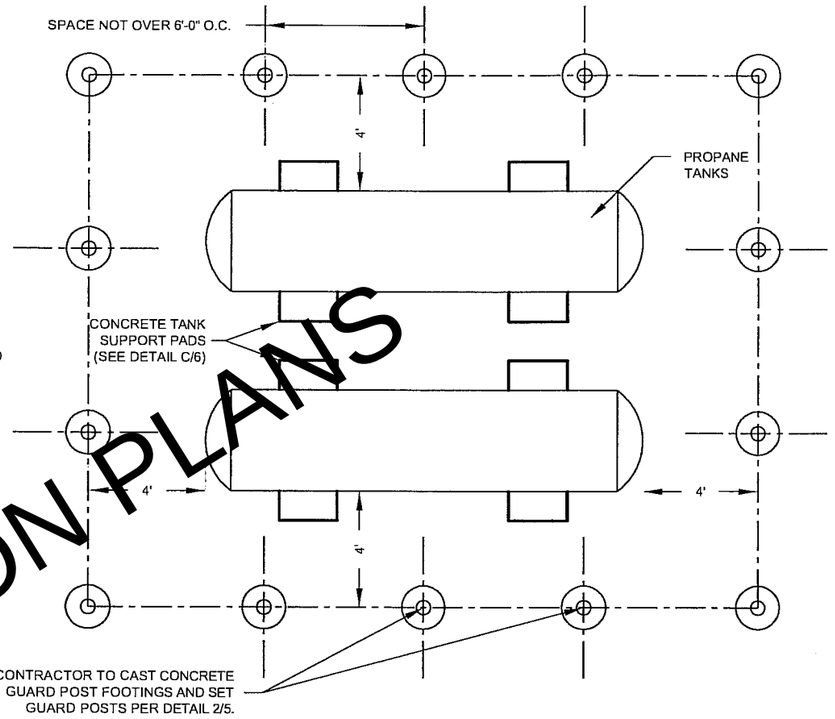


DRAIN TRENCH SECTION VIEW

3
6

FLOOR DRAIN SECTIONS

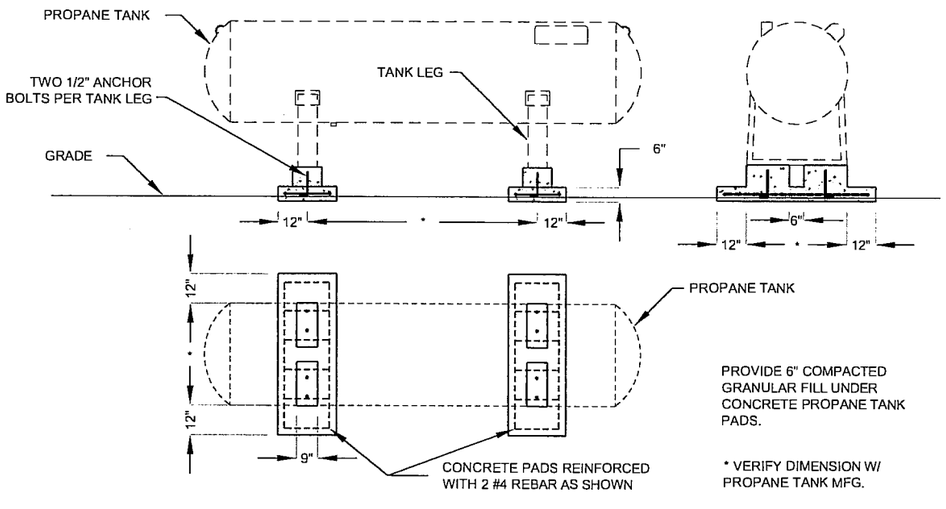
SCALE: 3/8" = 1'-0"



PROPANE TANK GUARD POST FOOTINGS

SCALE: 3/16" = 1'-0"

B
6



PROPANE TANK SUPPORT PADS

SCALE: 3/16" = 1'-0"

C
6

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FLOOR DRAIN/PROPANE TANK DTL

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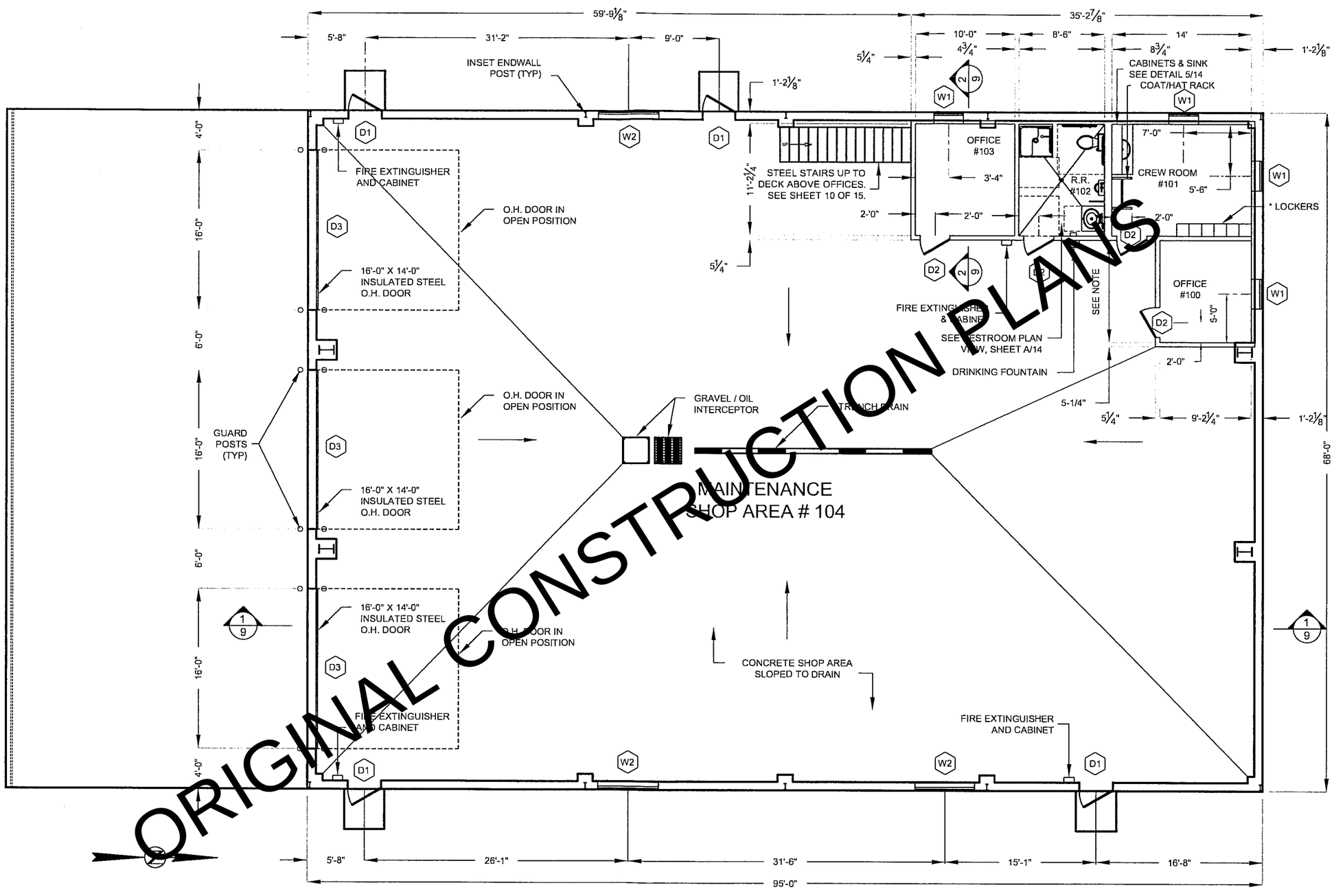

NOTE:

APPROXIMATELY 10'-6". MAXIMIZE DIMENSION BY CONSTRUCTING WALL FLUSH WITH INSIDE EDGE OF RIGID FRAME BEAM.

* ASSEMBLE LOCKER AND SET IN PLACE. LOCKER ASSEMBLY WILL BE ATTACHED TO WALL BY OWNER

FLOOR PLAN

SCALE: 3/32" = 1'-0"

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TITLE OFFICE AND MAINTENANCE SHOP FLOOR PLAN

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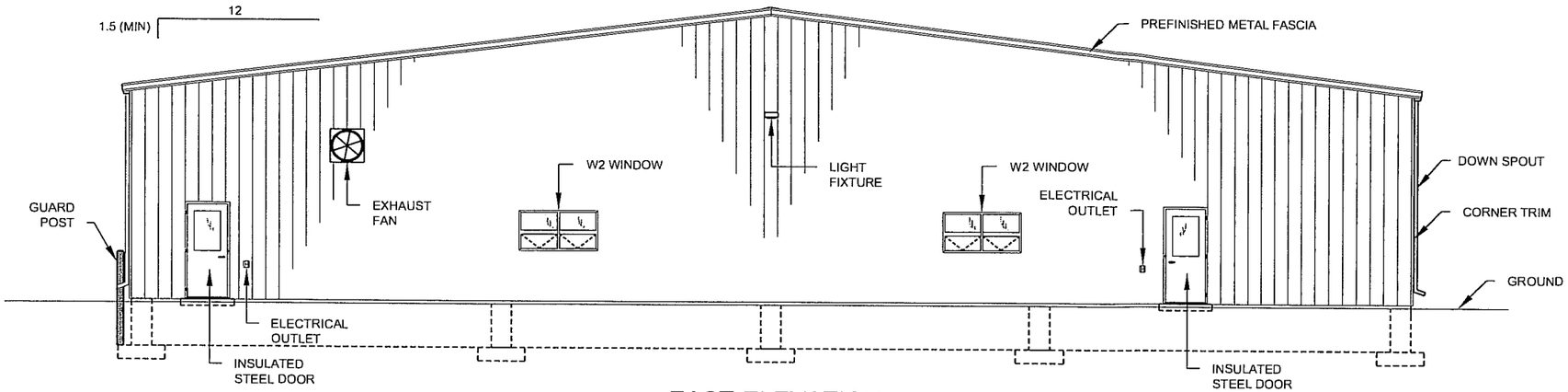
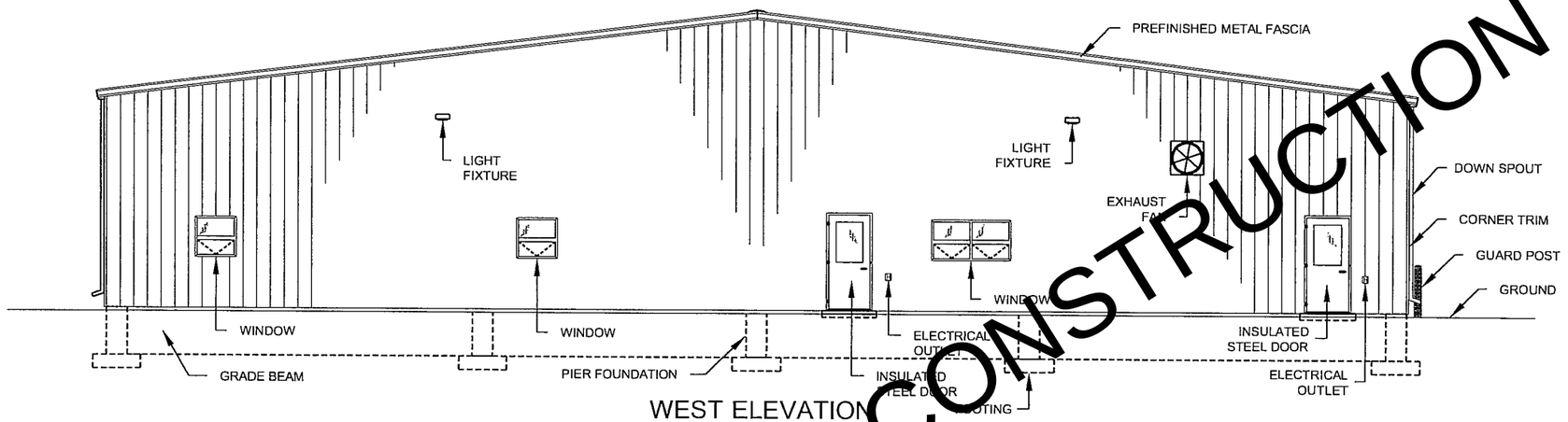
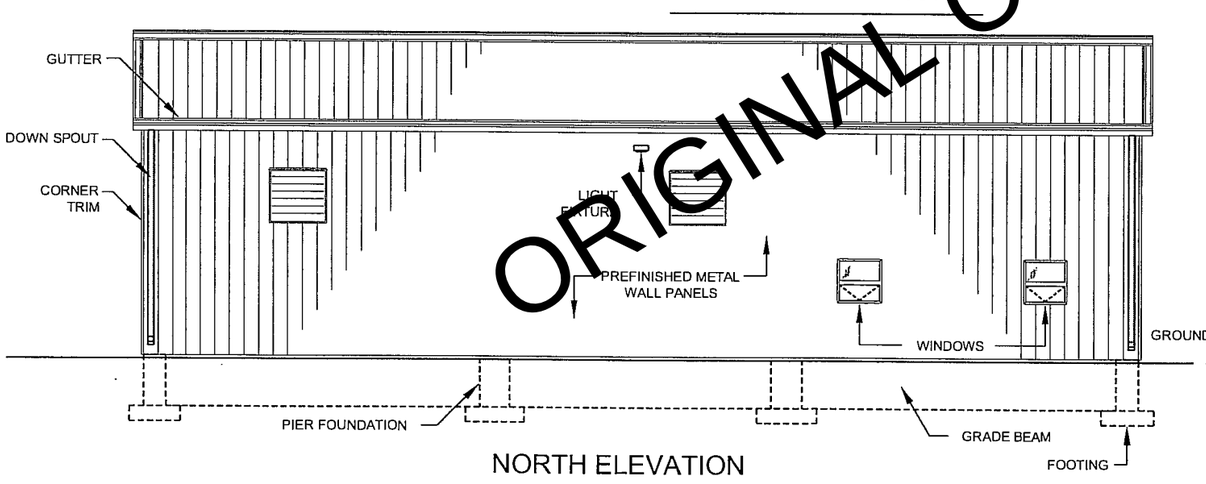


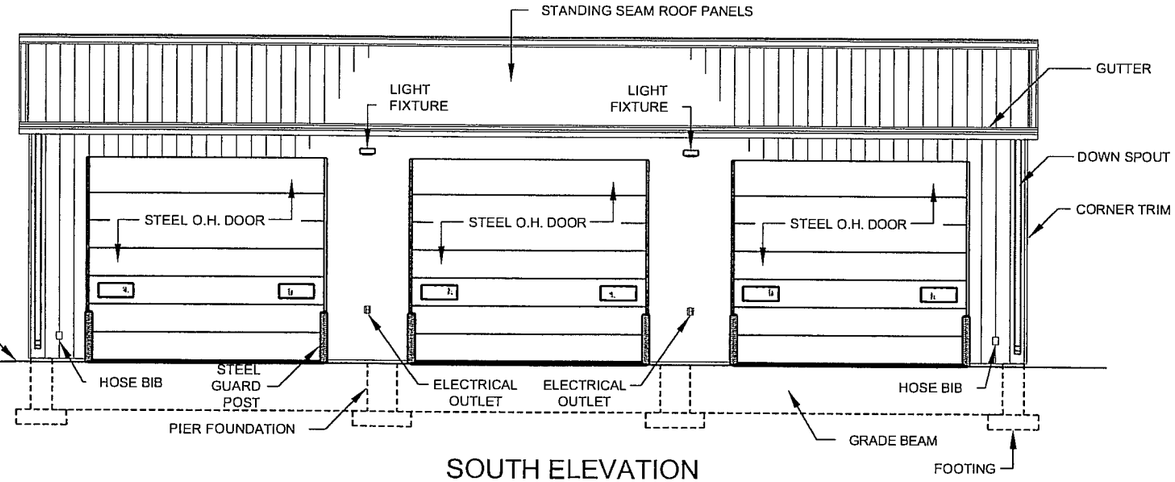
EAST ELEVATION



WEST ELEVATION



NORTH ELEVATION



SOUTH ELEVATION

BUILDING ELEVATIONS

SCALE: 3/32" = 1'-0"

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BUILDING ELEVATIONS

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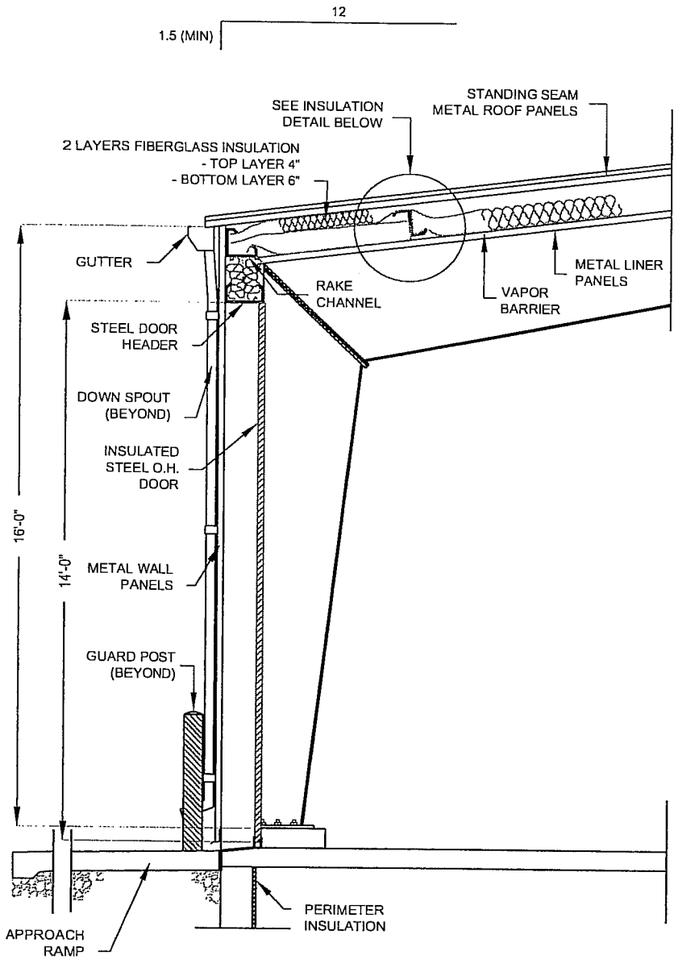
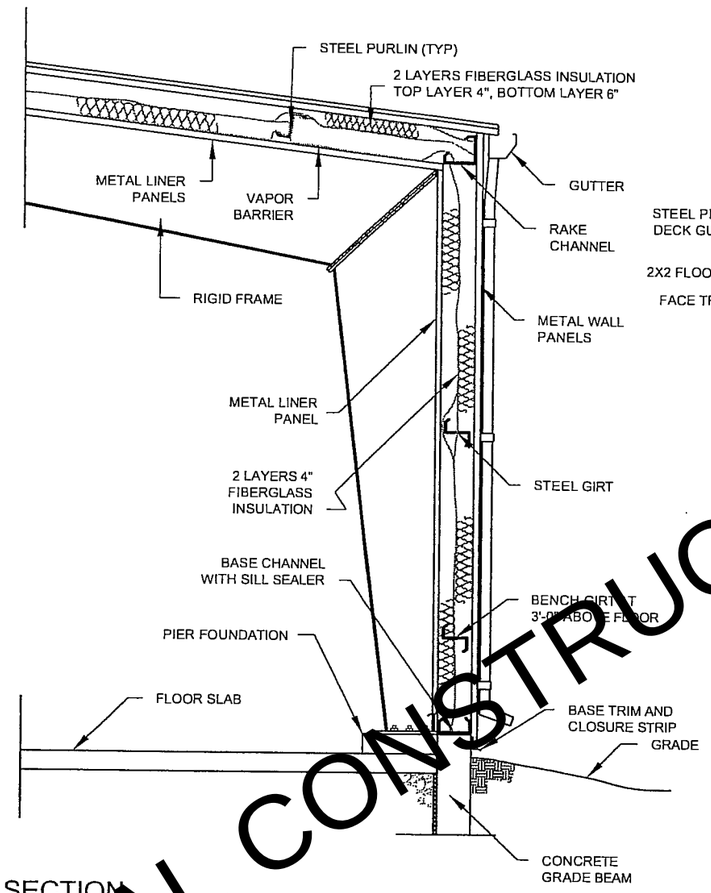
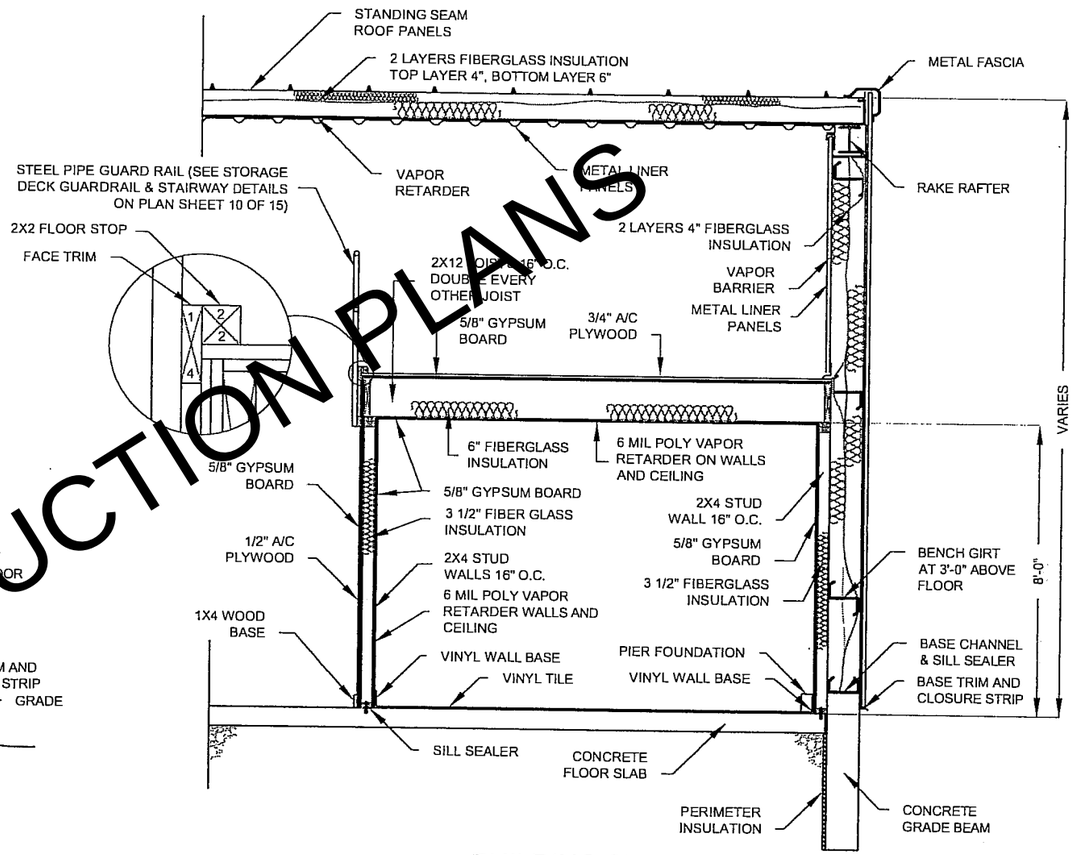




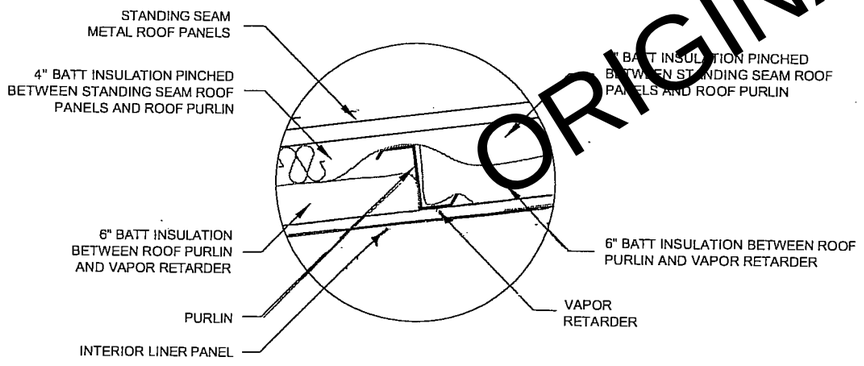
1/9 BUILDING SECTION

NOTE:

ALL INTERIOR STUD WALLS TO RECEIVE FIBERGLASS BATT INSULATION.



2/9 BUILDING SECTION



INSULATION DETAIL

BUILDING SECTIONS

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

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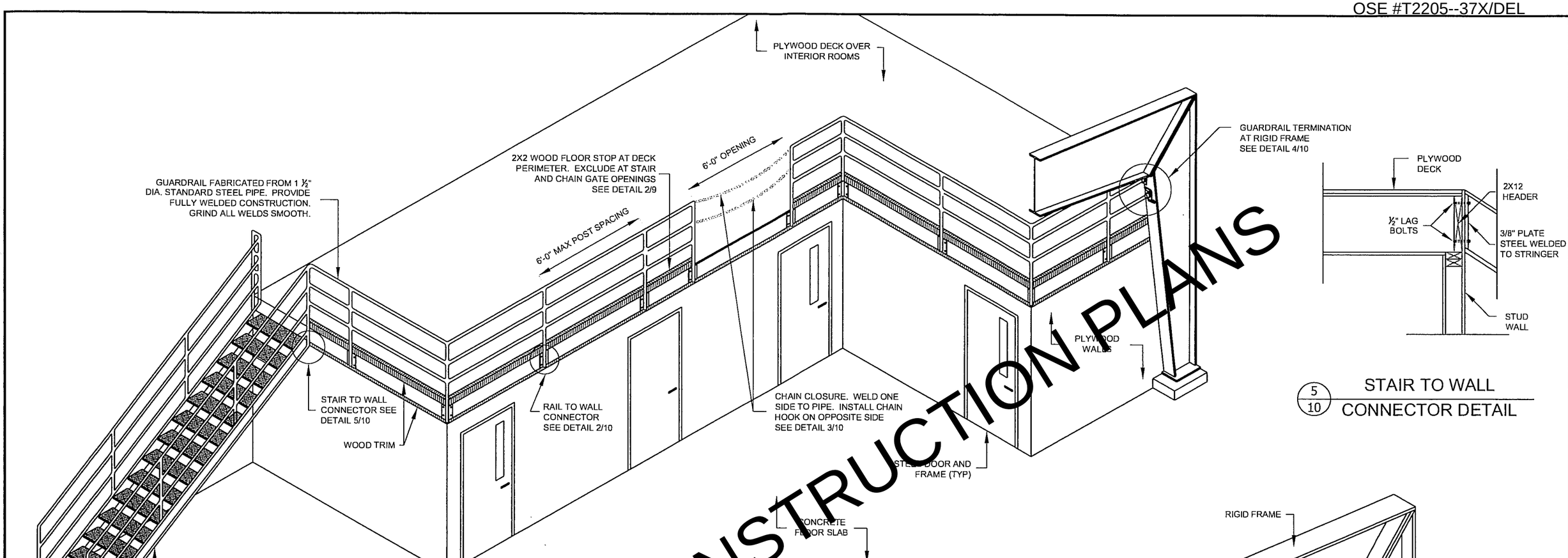
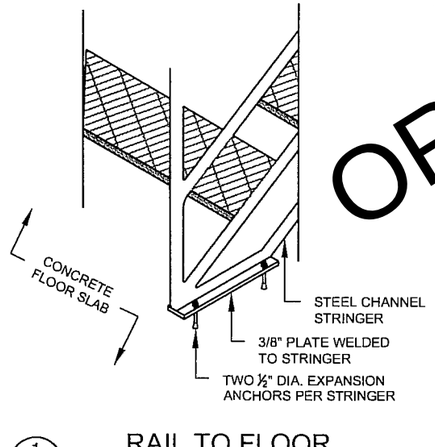


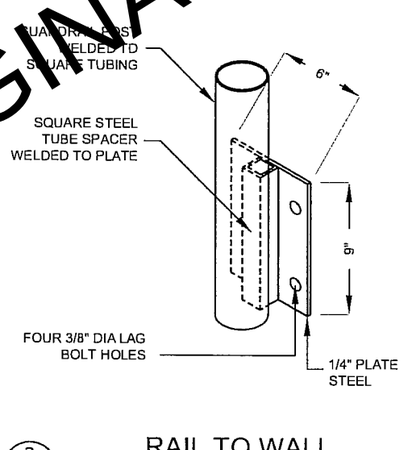
5/10 STAIR TO WALL CONNECTOR DETAIL

STORAGE DECK GUARDRAIL & STAIRWAY

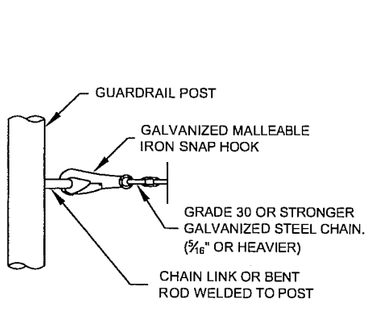
SCALE: 3/16" = 1'-0"



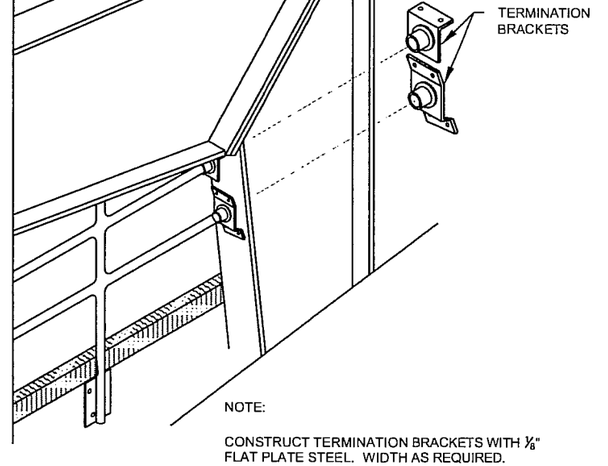
1/10 RAIL TO FLOOR CONNECTOR DETAIL



2/10 RAIL TO WALL CONNECTOR DETAIL



3/10 CHAIN HOOK DETAIL



NOTE:

CONSTRUCT TERMINATION BRACKETS WITH ⅛" FLAT PLATE STEEL. WIDTH AS REQUIRED.

USE HANDRAIL FLANGES, MALE OR FEMALE WELDED TO PLATE.

SECURE PLATES TO RIGID FRAME FLANGE WITH ⅜" BOLTS.

4/10 GUARDRAIL TERMINATION AT RIGID FRAME DETAIL

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STORAGE DECK GRAIL & STAIRWAY

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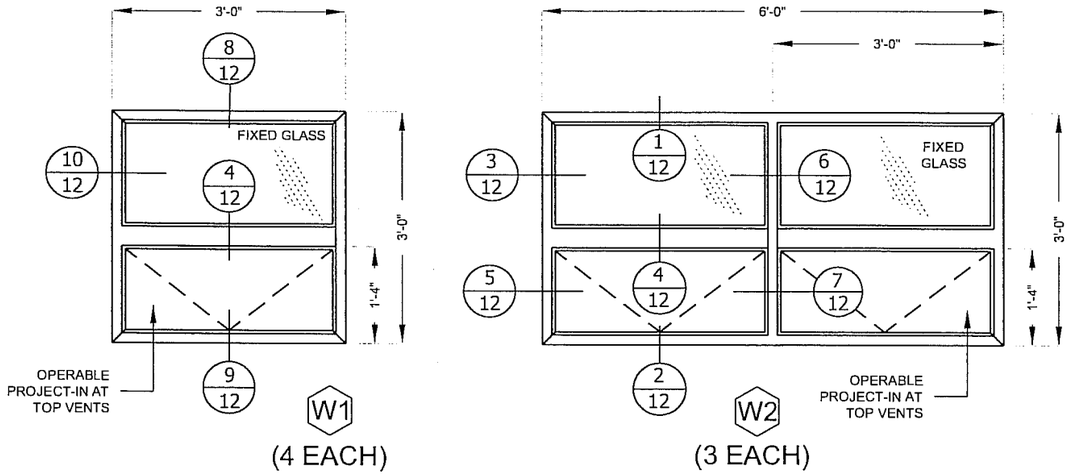
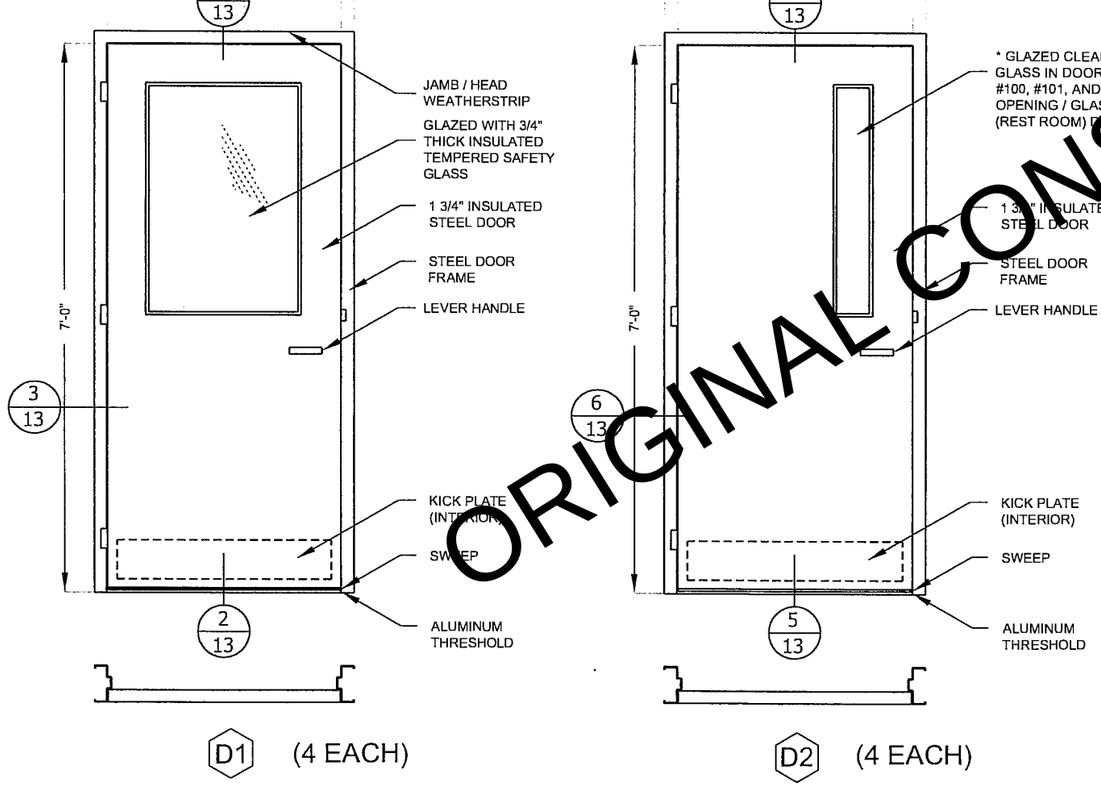


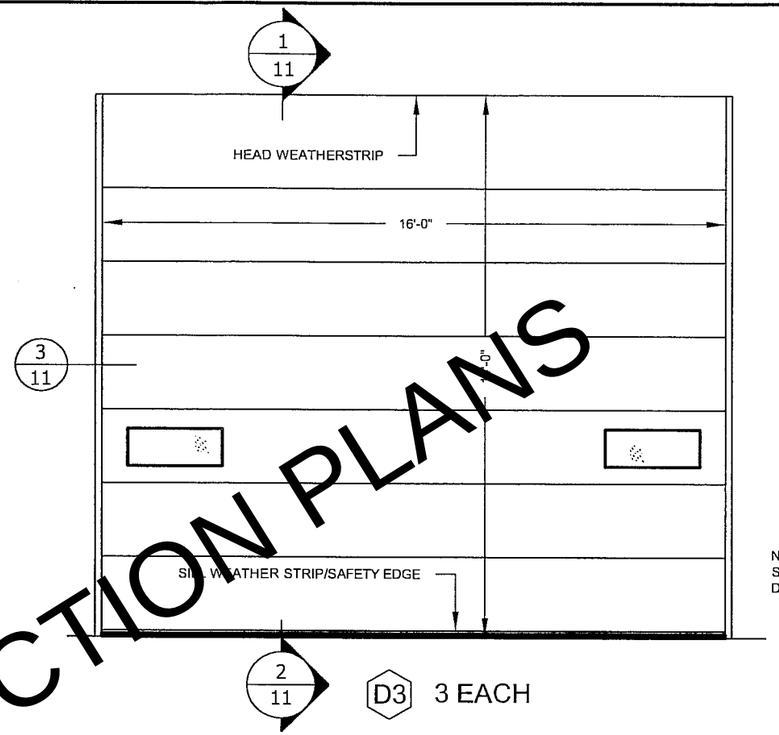
PROJECT-IN THERMAL WINDOW ELEVATION

SCALE: 1/2" = 1'-0"



DOOR ELEVATION

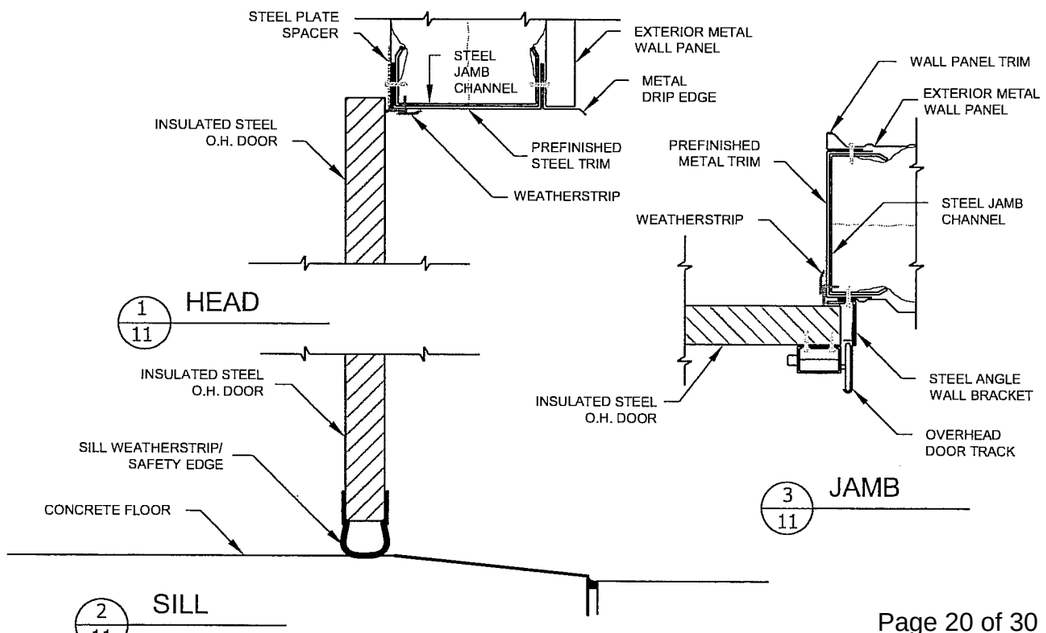
SCALE: 1/2" = 1'-0"



NOTE: PROVIDE REINFORCING STRUTS ON INTERIOR SIDE OF DOOR TO LIMIT DOOR DEFLECTION.

O.H. DOOR ELEVATION

SCALE: 1/2" = 1'-0"



O.H. DOOR SECTION

SCALE: 1 1/2" = 1'-0"

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TITLE OFFICE AND MAINTENANCE SHOP
DOOR & WINDOW ELEV. / SECTION

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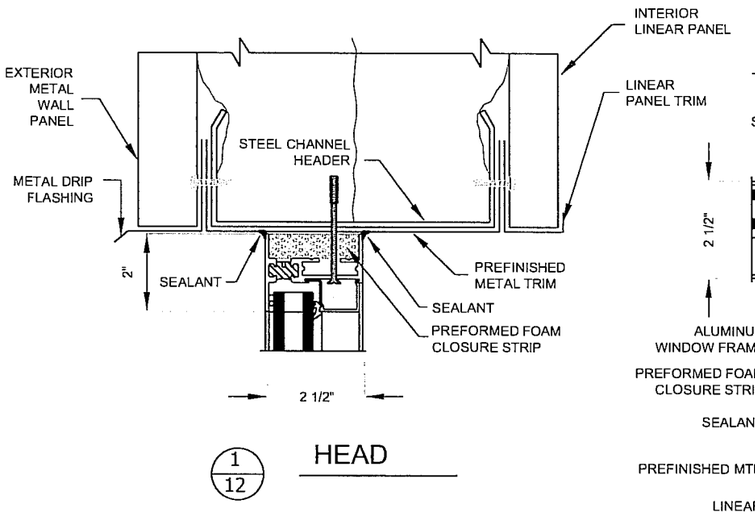
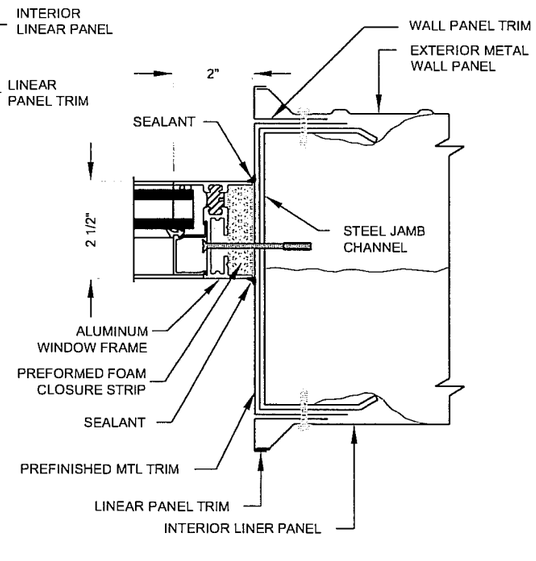
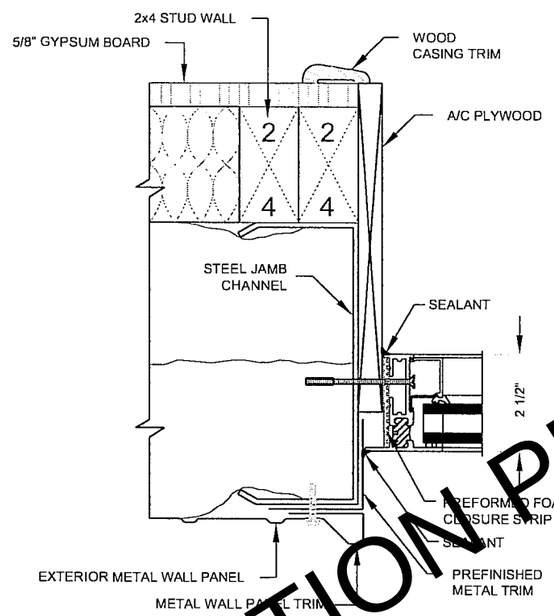


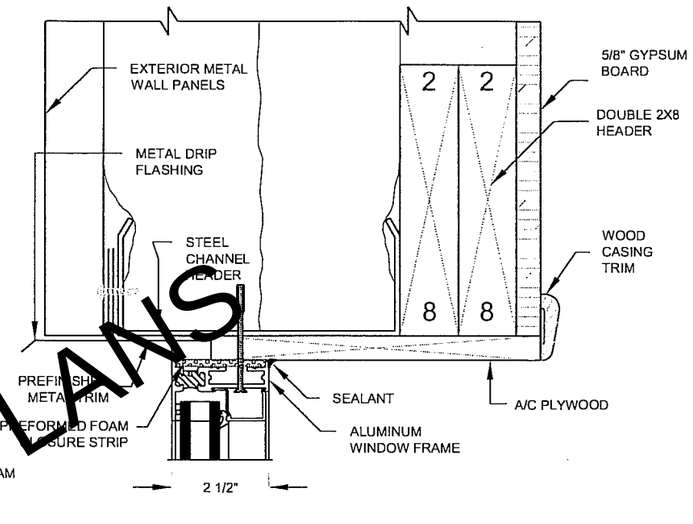
1/12 HEAD



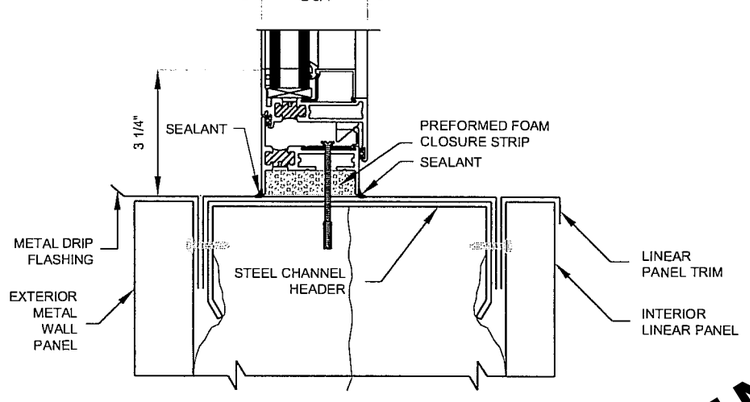
3/12 JAM



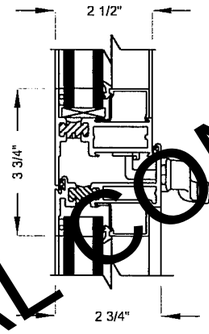
10/12 JAM



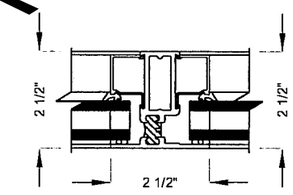
8/12 HEAD



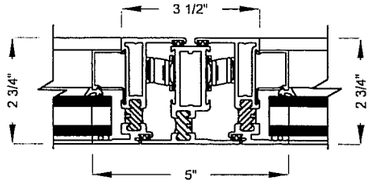
2/12 VENT SILL



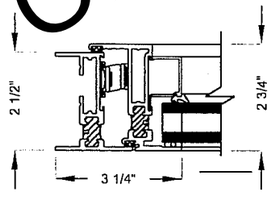
4/12 HORIZONTAL MULL



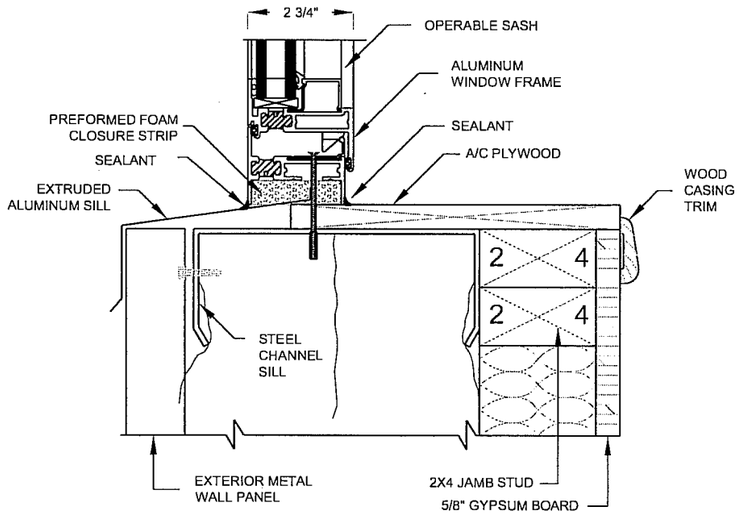
6/12 HORIZ. MULL



7/12 HORIZ. VENT MULL



5/12 VENT JAM



9/12 VENT SILL

ALUMINUM WINDOW SECTIONS

SCALE: 3" = 1'-0"

NOTE:

ALL GLASS IS ONE INCH INSULTING GLASS.

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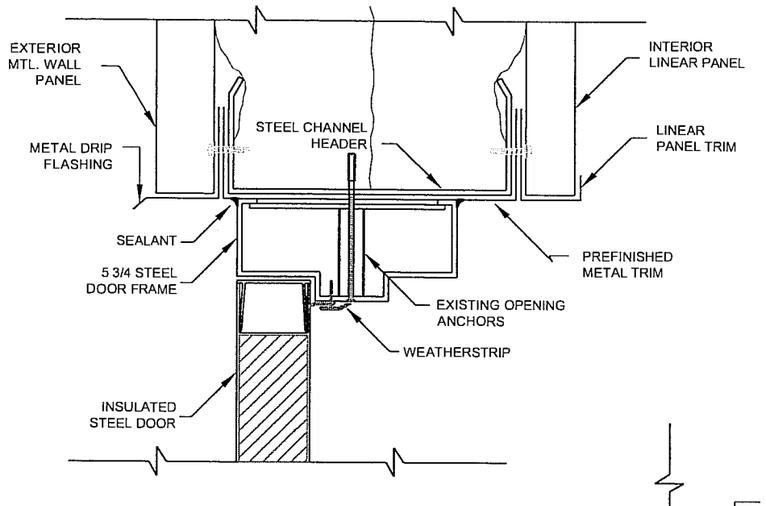
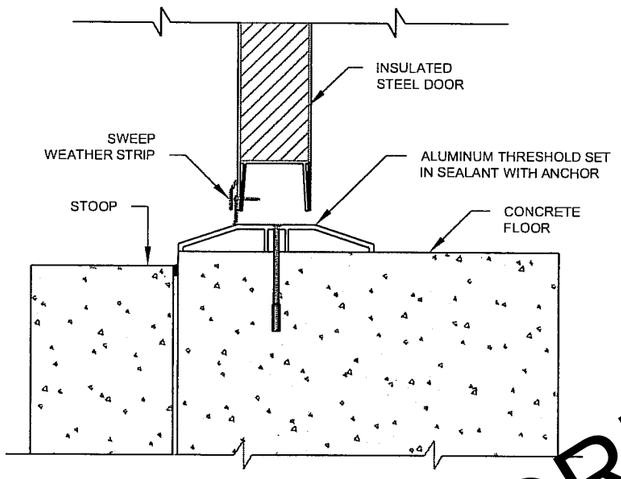
PROJECT NUMBER: T2205--21X
DRAWN BY: MMR

TITLE: OFFICE AND MAINTENANCE SHOP
ALUMINUM WINDOW SECTIONS

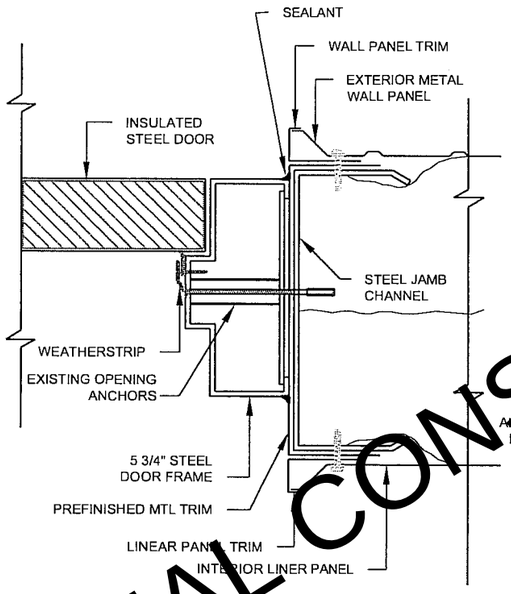
PAGE 12 OF 15



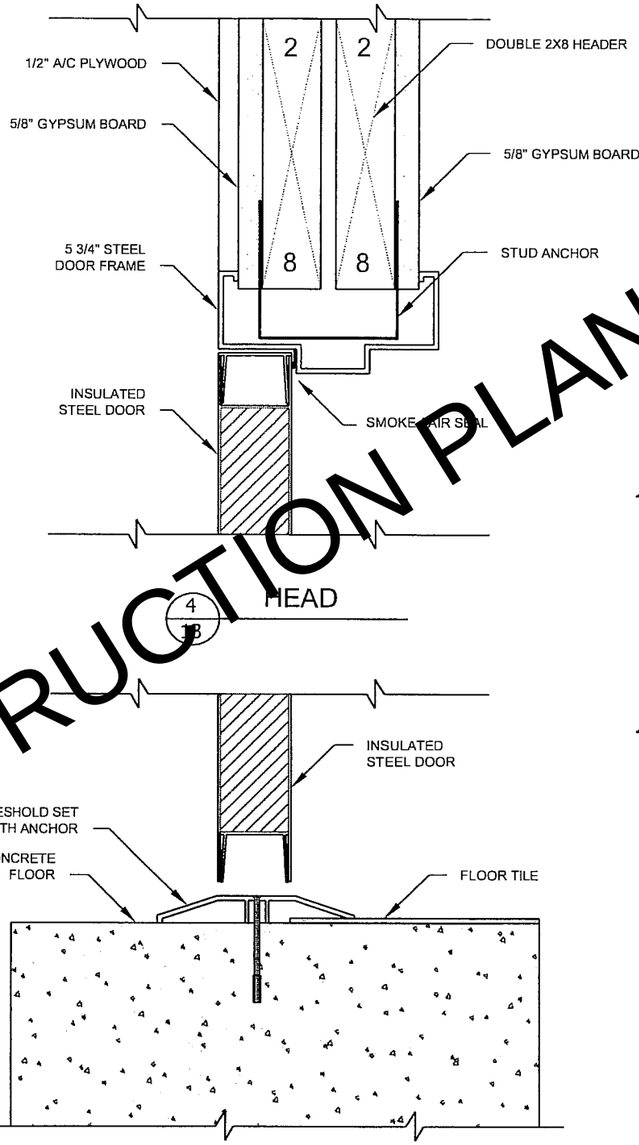
1/13 HEAD



2/13 SILL

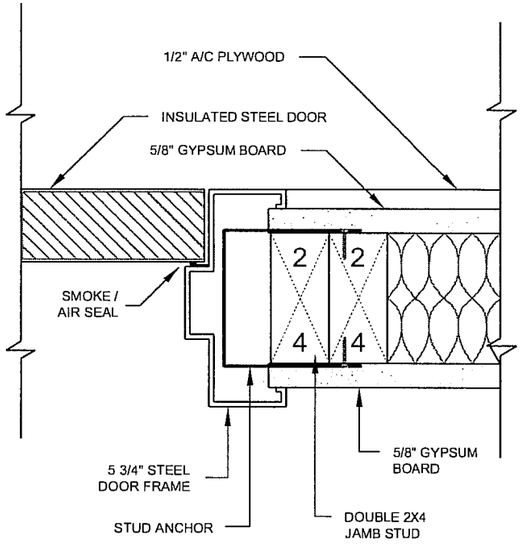


3/13 JAMB



4/13 HEAD

5/13 SILL



6/13 JAMB

STEEL DOOR SECTIONS

SCALE: 3" = 1'-0"

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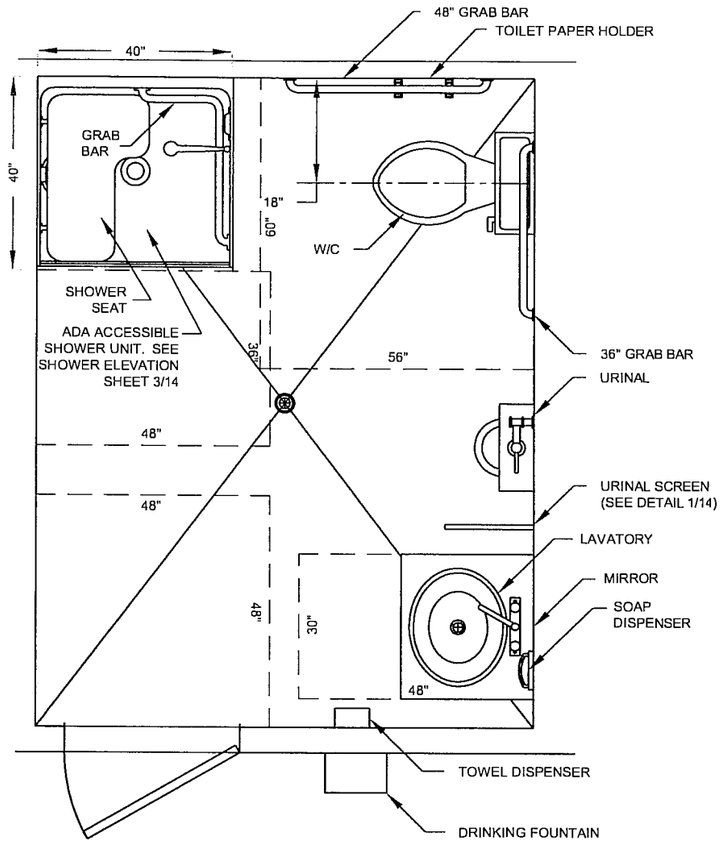
TITLE OFFICE AND MAINTENANCE SHOP
STEEL DOOR SECTIONS

PAGE 13 OF 15



NOTE:

DASHED LINES AND DIMENSIONS INDICATE CLEAR FLOOR SPACE REQ'D AT FIXTURES AND DOOR FOR ADA ACCESSIBILITY.

ENLARGED RESTROOM PLAN VIEW

A 14

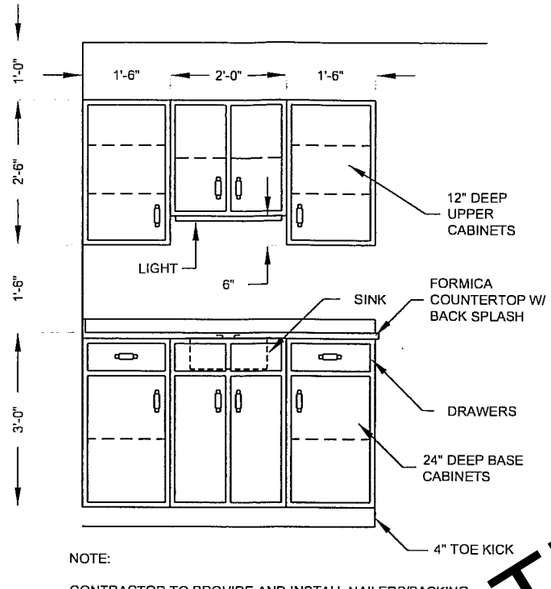
SCALE: 3/8" = 1'-0"

ROOM FINISH SCHEDULE

ROOM AND NUMBER	BASE			FLOOR			WALLS			CEILING			REMARKS
	4" VINYL	WOOD	CONCRETE	VINYL TILE	CONCRETE		GYP BOARD	METAL PANELS	PLYWOOD	GYP. BOARD	METAL PANELS		
OFFICE #100	O			O			O			O			SEE NOTE 1
CREW ROOM #101	O			O			O			O			SEE NOTE 1
RESTROOM #102	O			O			O			O			SEE NOTE 1
OFFICE #103	O			O			O			O			SEE NOTE 1
MAIN SHOP #104		O	O		O			O	O		O		SEE NOTE 2

NOTES:
1. ALL GYPSUM WALLBOARD TO RECEIVE TEXTURE AND PAINT. WALLS TO RECEIVE LIGHT ORANGE PEEL TEXTURE. CEILINGS TO RECEIVE MEDIUM SPRAY TEXTURE UTILIZING POLYSTYRENE AGGREGATE.

2. SHOP AREA FLOOR SLAB TO RECEIVE SMOOTH TROWELED FINISH. APPLY CURING COMPOUND UPON COMPLETION OF FLOOR FINISHING ACTIVITIES.



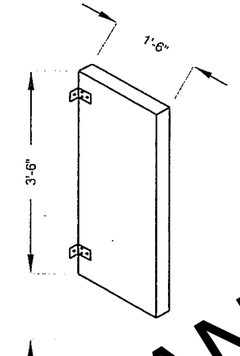
NOTE:

CONTRACTOR TO PROVIDE AND INSTALL NAILERS/BACKING WITHIN WALL AS NECESSARY TO SECURE CABINETS TO WALL.

CABINETS & SINK ELEVATION

5/14

SCALE: 3/8" = 1'-0"



NOTES:

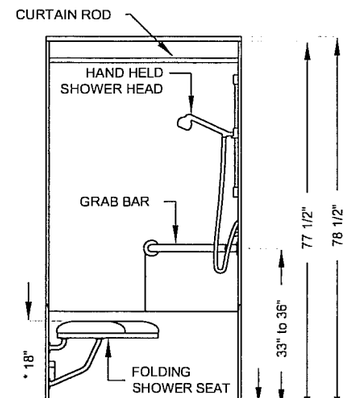
STAINLESS STEEL WALL BRACKET TOP AND BOTTOM. PROVIDE BLOCKING/NAILERS IN STUD WALL.

14 GAUGE INSULATED STEEL URINAL SCREEN WITH BAKED ENAMEL FINISH.

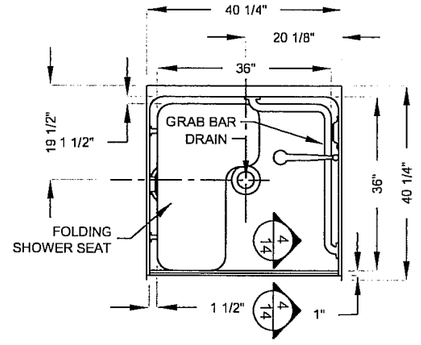
URINAL SCREEN DETAIL

1/14

SCALE: 3/8" = 1'-0"



ELEVATION VIEW

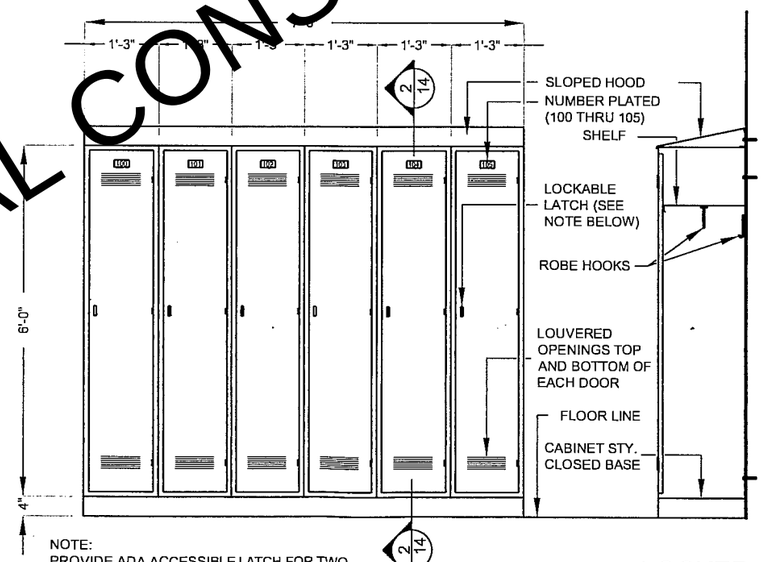


PLAN VIEW

SHOWER STALL DETAIL

3/14

SCALE: 3/8" = 1'-0"



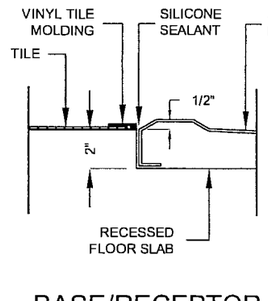
NOTE:
PROVIDE ADA ACCESSIBLE LATCH FOR TWO LOCKERS

ASSEMBLE LOCKER AND SET IN PLACE. LOCKER ASSEMBLY WILL BE ATTACHED TO WALL BY OWNER

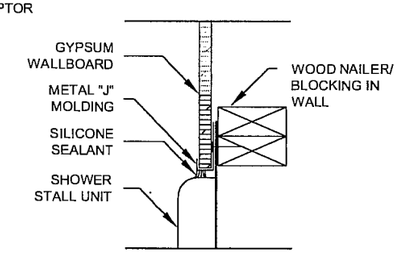
LOCKER ELEVATION

SCALE: 3/8" = 1'-0"

LOCKER SECTION 2/14



BASE/RECEPTOR SECTION 4/14



GYPSUM WALLBOARD TRANSITION

SHOWER DETAILS

SCALE: 1-1/2" = 1'-0"

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TITLE OFFICE AND MAINTENANCE SHOP INTERIOR OFFICE DETAILS

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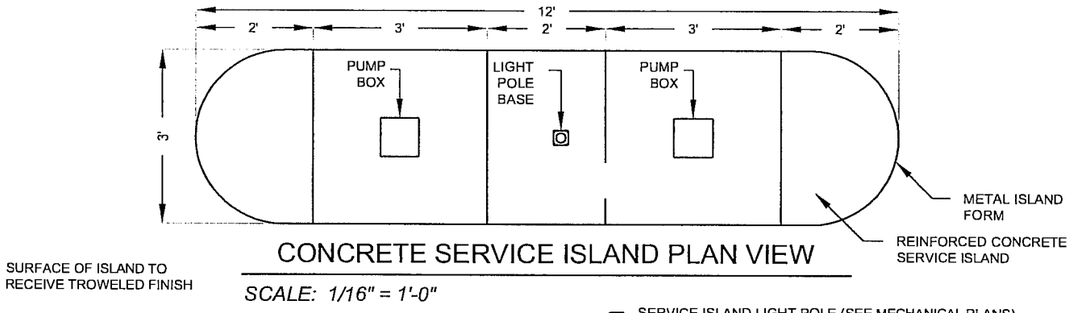
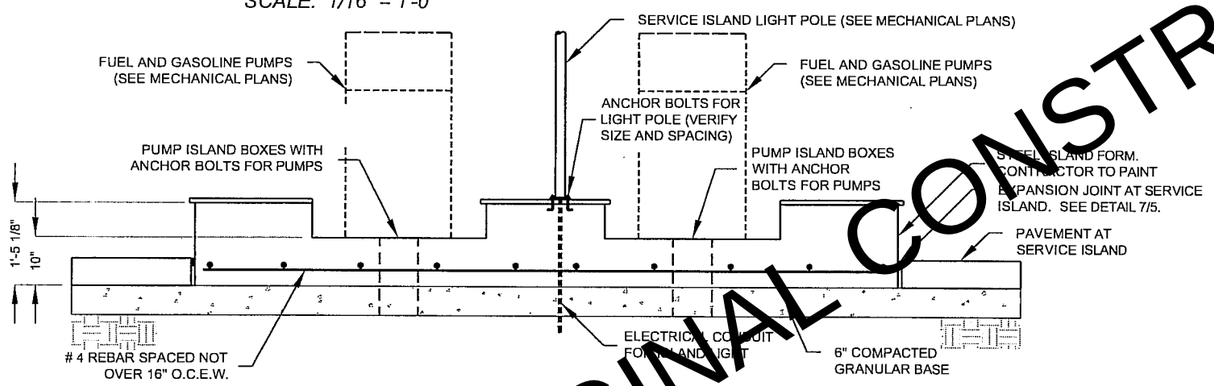


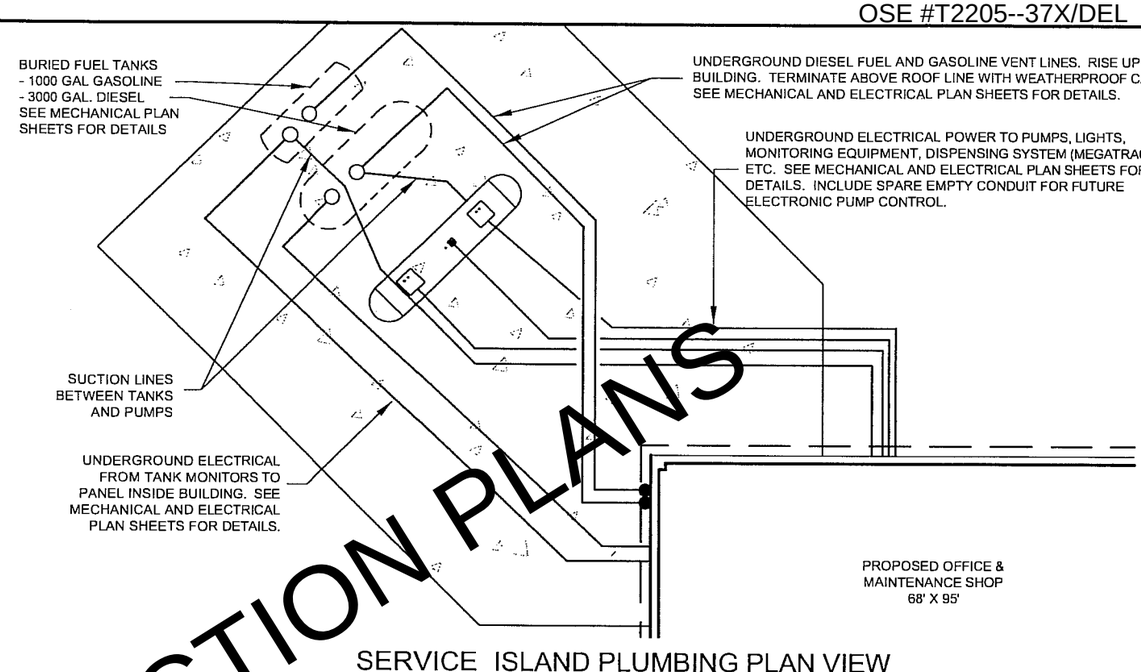
CONCRETE SERVICE ISLAND PLAN VIEW

SCALE: 1/16" = 1'-0"



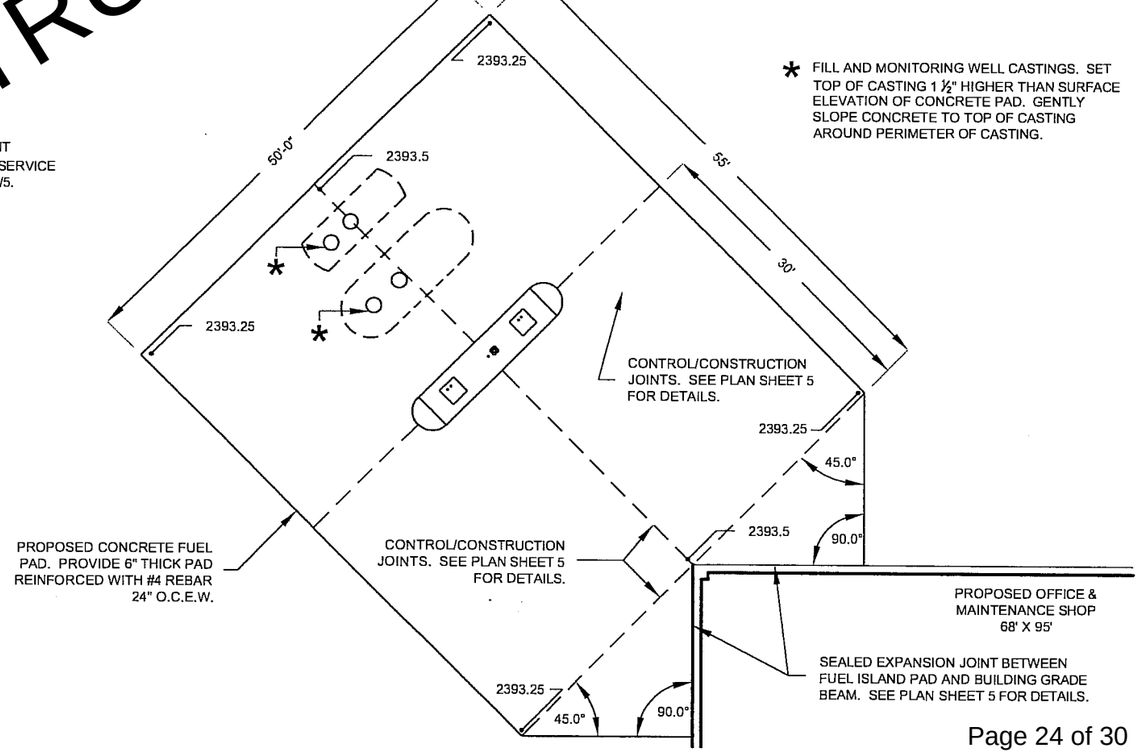
SERVICE ISLAND CONCRETE PLAN VIEW

SCALE: 3/8" = 1'-0"



SERVICE ISLAND PLUMBING PLAN VIEW

SCALE: 1/16" = 1'-0"



CONCRETE FUEL PAD PLAN VIEW

SCALE: 1/16" = 1'-0"

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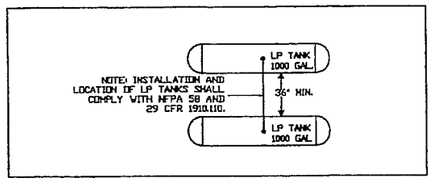
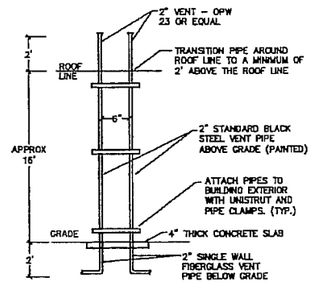
TITLE
OFFICE AND MAINTENANCE SHOP
FUEL STORAGE SITE

PAGE 15 OF 15



PROPANE TANK SCHEMATIC
NO SCALE



FUEL TANK VENT RISER DETAIL
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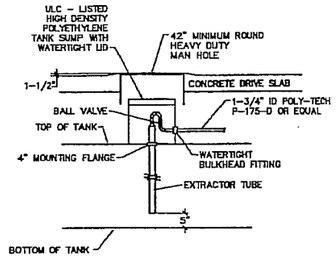

TANK SUMP DETAIL
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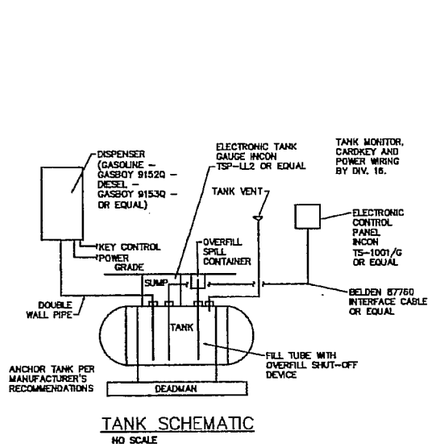

TANK SCHEMATIC
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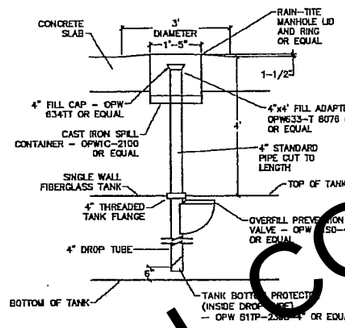

FUEL FILL DETAIL
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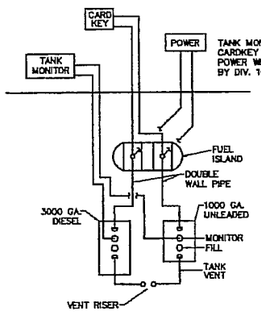
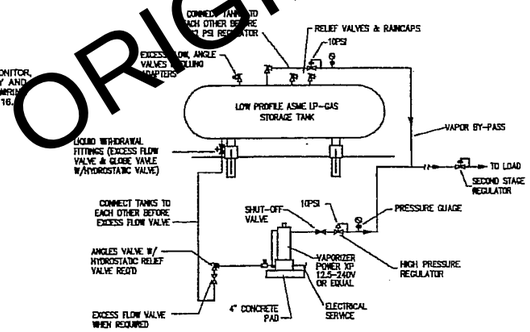
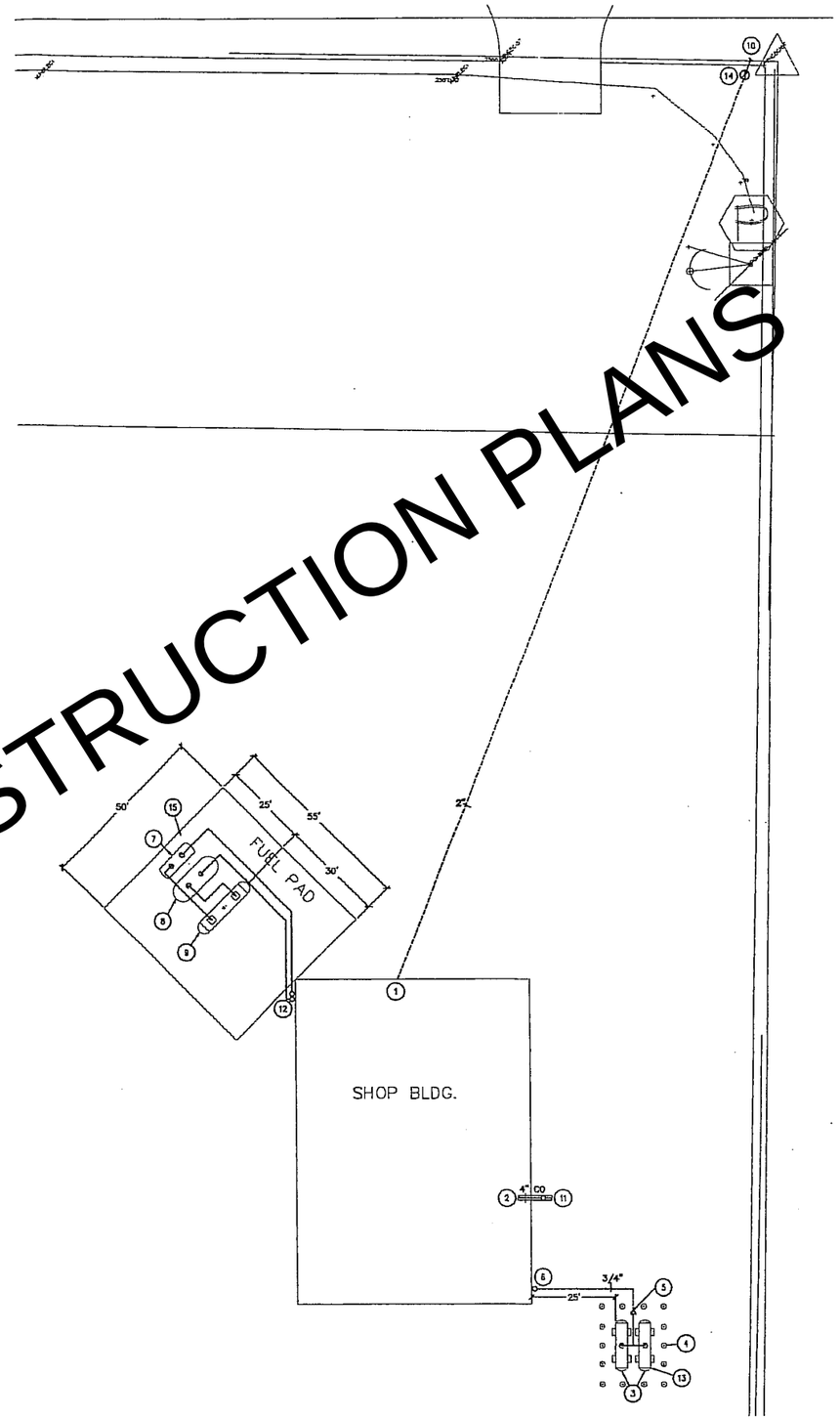


FUELING SCHEMATIC
NO SCALE



LP-GAS TANK AND VAPORIZER DETAIL
NO SCALE



MECHANICAL SITE PLAN
SCALE: 1"=20'-0"

MECHANICAL SPECIFIC NOTES:

1. 2" WATER SERVICE. SEE SHEET M2 FOR CONTINUATION.
2. 4" WASTE. SEE SHEET M2 FOR CONTINUATION.
3. 1,000 GALLON PROPANE STORAGE TANKS BY MECHANICAL CONTRACTOR (2 TOTAL.) SEE DETAIL THIS SHEET.
4. BOLLARD BY GENERAL CONTRACTOR. (TYPICAL)
5. 3/4" LP DN TO BELOW GRADE.
6. 3/4" LP UP. SEE SHEET M2 FOR CONTINUATION. 11" W.C. 2ND STAGE REGULATOR EQUAL TO FISHER R622DFF.
7. 1000 GALLON UNLEADED GAS TANK.
8. 3000 GALLON DIESEL TANK.
9. FUELING ISLAND. SEE PLAN SHEET 15 OF 15 FOR DETAIL.
10. REFER TO SHEET 2 OF 15 FOR CONTINUATION.
11. REFER TO SHEET 2 OF 15 FOR CONTINUATION.
12. FUEL TANK VENT RISER. SEE DETAIL THIS SHEET.
13. CONCRETE LP TANK PADS BY GENERAL CONTRACTOR. SEE PLAN SHEET 6 OF 15.
14. CURB STOP FOR 2" WATER SERVICE. PROVIDE CAST IRON CURB STOP FRAME AND COVER SET IN 24"x24"x4" THICK CONCRETE PAD.
15. CONCRETE PADS FOR FILL/MONITORING WELL CASINGS BY GENERAL CONTRACTOR. SEE PLAN SHEET 15 OF 15 FOR DETAIL.

DRAWING REDUCED, FULL SIZE DRAWING AVAILABLE UPON REQUEST

WPE WEST PLAINS ENGINEERING
CONSULTING ENGINEERS
1750 RAND ROAD - RAPID CITY, SD 57702
PHONE: (605) 348-7455 FAX: (605) 348-9445

MECHANICAL SITE PLAN
OFFICE AND MAINTENANCE SHOP
ISABEL, SOUTH DAKOTA

REVISIONS		
REV	DESCRIPTION	DATE
*		APR.

PROJ.#:	R06006
CADFILE:	R06006M1
DESIGNED:	CTT/DVD
DRAWN:	MJW
APPROVED:	CTT/DRF
DATE:	MARCH 2006

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 6036
DOUGLAS R. PETERL
SOUTH DAKOTA

SHEET: M1

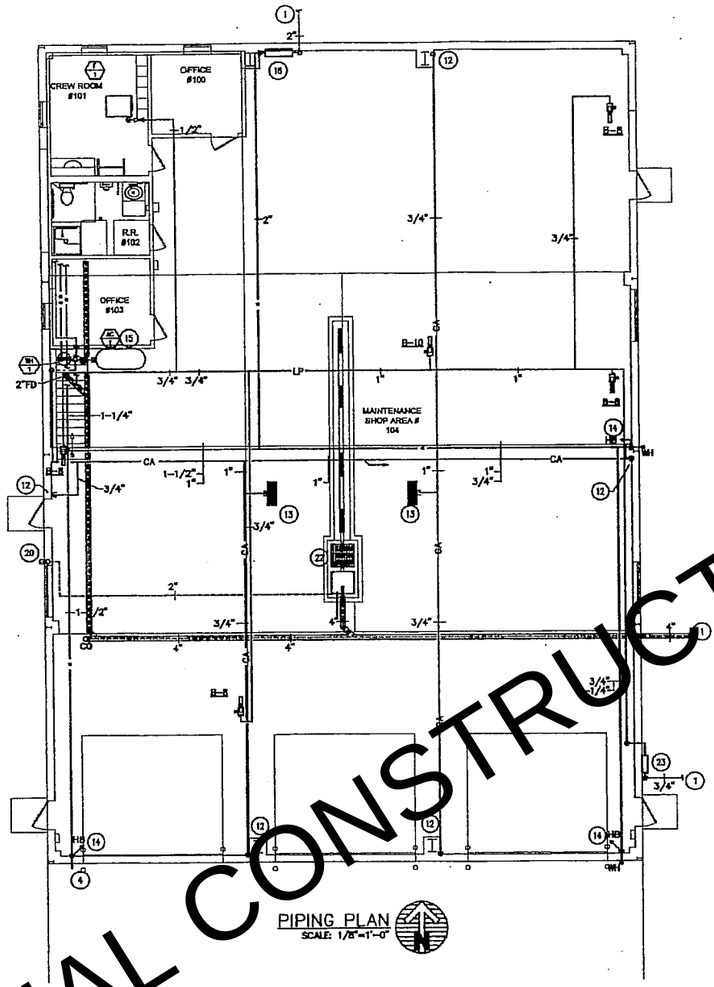
GENERAL NOTES:

A. COORDINATE DUCT & PIPING WITH OTHER TRADES.

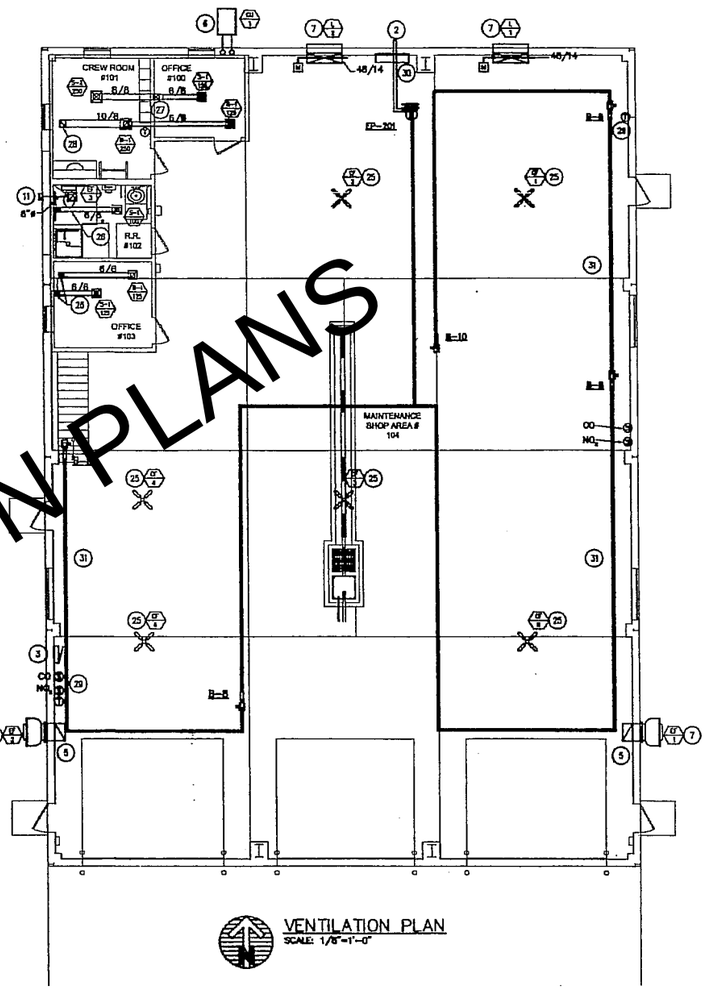
B. INSTALL RADIANT HEAT AS HIGH AS POSSIBLE.

SPECIFIC NOTES:

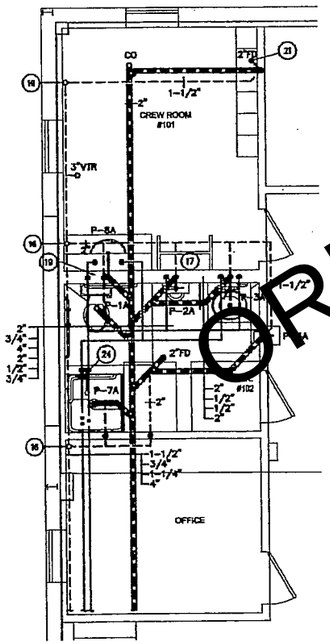
1. REFER TO SHEET M1 FOR CONTINUATION.
2. VENT VACUUM PUMP THROUGH SIDEWALL PER MANUFACTURER'S RECOMMENDATIONS. INSTALL VACUUM PUMP AS HIGH AS POSSIBLE. MAINTAIN A MINIMUM OF 5' CLEARANCE FROM VACUUM PUMP DISCHARGE TO FRESH AIR LOUVERS.
3. INTEC MODEL GAS-202 REMOTE CONTROL PANEL WITH 2 REMOTE NO-2 SENSORS AND 2 REMOTE CO SENSORS. TURN ON EF-1 & EF-2 FANS AND OPEN L-1 & L-2 DAMPERS WHEN ACTIVATED. PANEL SHALL HAVE FIELD MOUNTED MANUAL BYPASS SWITCH.
4. 1-1/2" WATER STUB-OUT TO EXTERIOR 54" A.F.F. SHUTOFF VALVE INSIDE BUILDING FOR OPERATION. COORDINATE COUPLER STYLE WITH OWNER. PROVIDE VACUUM BREAKER WITH COUPLER.
5. 24/14 DUCT DOWN TO 12" A.F.F. AND 24/14 DUCT UP TO 12" FROM STRUCTURE WITH 1" SCREEN ON OPENINGS.
6. PROVIDE 4" HIGH CONCRETE PAD FOR CU-1 8" WIDER THAN THE UNIT ON EACH SIDE.
7. MOUNT AT 10' A.F.F.
8. INSTALL DX COIL AND CONNECT REFRIGERANT PIPING TO CONDENSING UNIT. PIPE CONDENSATE TO FLOOR DRAIN. SUPPORT FURNACE 12" ABOVE MEZZANINE FLOOR. PROVIDE SECONDARY DRAIN PAN 1" HIGH WITH SEPARATE 3/4" CONDENSATE LINE TO FLOOR DRAIN. PROVIDE A 1" FILTER RACK FULL SIZE OF RETURN AIR OPENING.
9. CONCENTRIC VENT TERMINATION ON ROOF.
10. SUPPORT DUCT 12" A.F.F. FOR INSTALLATION OF COMBINATION DAMPER.
11. WALL CAP.
12. COMPRESSED AIR DROP WITH QUICK COUPLER. REFER TO DETAIL ON THIS SHEET.
13. 50 FOOT HOSE REEL SHALL BE REEL CRAFT MODEL A5850 OLP. MOUNT ADJACENT TO ELECTRIC REELS. MOUNT AT 12" A.F.F. PROVIDE LATERAL SUPPORTS FOR HOSE REELS.
14. 3/4" COLD WATER DROP WITH HOSE BIB. REFER TO DETAIL ON THIS SHEET.
15. REFER TO AIR COMPRESSOR PIPING DETAIL, THIS SHEET.
16. 2" VENT UP TO MEZZANINE. PENETRATION THROUGH RATED ASSEMBLY SHALL BE CAST IRON.
17. 1/2"HW & 1/2"CW DOWN TO LAV. 3/4"CW DOWN TO URINAL.
18. WATER SERVICE ENTRANCE. REFER TO DETAIL.
19. 1/2"HW & 1/2"CW DOWN TO SINK. 1/2"CW DOWN TO WATER CLOSET.
20. 2" PLUMBING VENT TO TERMINATE 3" AT SIDEWALL WITH ELBOW DOWN AT EXTERIOR 12" A.F.F.
21. INSTALL FLOOR DRAIN ON MEZZANINE FLOOR WITH 12" X 12" X 3" THICK CONCRETE PAD. SLOPE CONCRETE TO FLOOR DRAIN. PROVIDE CAST IRON PIPING DOWN THROUGH RATED ASSEMBLY.
22. SAND/OIL INTERCEPTOR BY GENERAL CONTRACTOR.
23. 2ND STAGE REGULATOR ON LP GAS SERVICE.
24. 1/2"HW & 1/2"CW DOWN TO SHOWER.
25. MOUNT AT 14' A.F.F. PROVIDE LATERAL SUPPORT FOR FAN HANGER.
26. 6/8 DUCT UP TO MEZZANINE.
27. 10/8 DUCT UP TO MEZZANINE.
28. 10/8 DUCT UP TO MEZZANINE.
29. MOUNT THERMOSTATS ON 2" WOOD INSULATING BLOCKS, FULL SIZE OF THERMOSTAT. PAINT WOOD BLACK.
30. HEATING SYSTEM CONTROL PANEL.
31. PROVIDE SIDE EXTENSION REFLECTOR ON RADIANT HEATERS PER MANUFACTURER'S RECOMMENDATIONS. INSTALL RADIANT HEAT AS HIGH AS POSSIBLE.



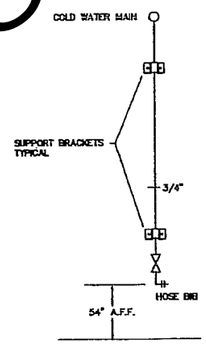
PIPING PLAN
SCALE: 1/8"=1'-0"



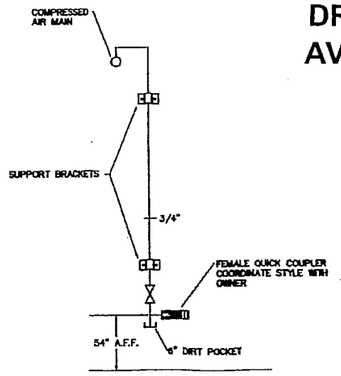
VENTILATION PLAN
SCALE: 1/8"=1'-0"



ENLARGED BATHROOM PLAN
SCALE: 1/4"=1'-0"

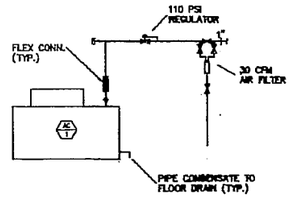


WATER OUTLET DETAIL
NO SCALE

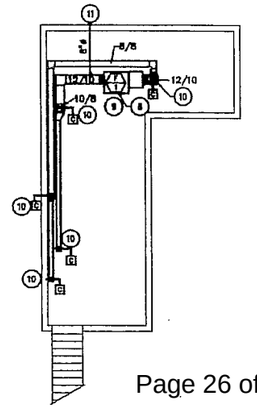


AIR OUTLET DETAIL
NO SCALE

DRAWING REDUCED, FULL SIZE DRAWING AVAILABLE UPON REQUEST



AIR COMPRESSOR PIPING DIAGRAM
NO SCALE



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

WPE WEST PLAINS ENGINEERING
CONSULTING ENGINEERS
1750 RAND ROAD • RAPID CITY, SD 57702
PHONE: (605) 348-7455 FAX: (605) 348-8445

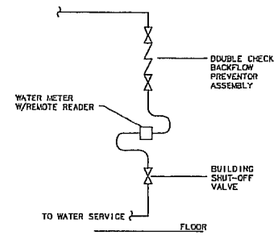
MECHANICAL PLANS
OFFICE AND MAINTENANCE SHOP
ISABEL, SOUTH DAKOTA

REV	DESCRIPTION	DATE	APP.

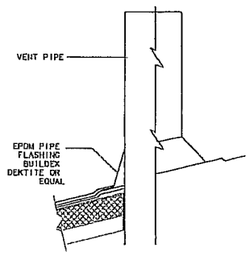
PROJ.#:	R08005
CADFILE:	R08005M2
DESIGNED:	DAV
DRAWN:	MJW
APPROVED:	DRF
DATE:	MARCH 2008

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 6038
DOUGLAS R. FETTIG

SHEET: M2



WATER SERVICE ENTERANCE DETAIL
NO SCALE



PLUMBING VENT DETAIL
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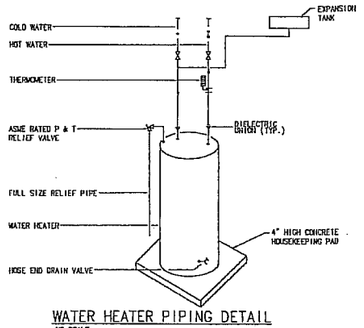
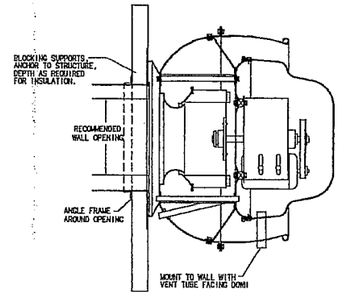
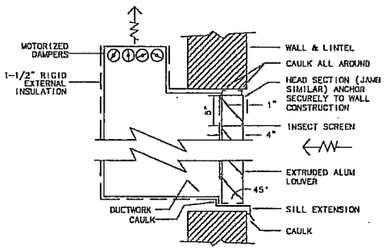


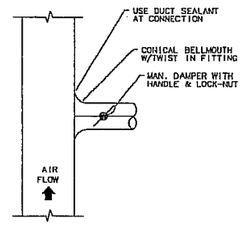
WATER HEATER PIPING DETAIL
NO SCALE



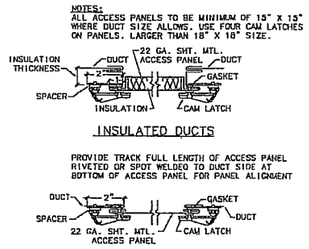
WALL MOUNTED POWER VENTILATOR DETAIL
NO SCALE



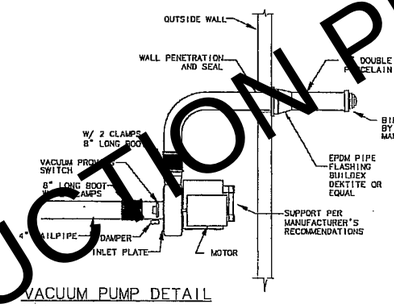
AIR INTAKE DETAIL
NO SCALE



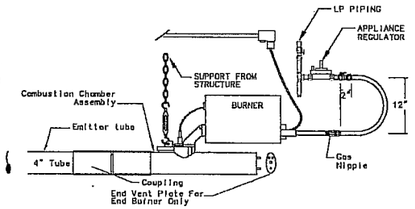
ROUND DUCT TAKE-OFF DETAIL
NO SCALE



LOW PRESSURE DUCTWORK ACCESS PANELS
NO SCALE



VACUUM PUMP DETAIL
NOT TO SCALE



INFRARED BURNER DETAIL
NOT TO SCALE

DRAWING REDUCED, FULL SIZE DRAWING AVAILABLE UPON REQUEST

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MECHANICAL DETAILS
OFFICE AND MAINTENANCE SHOP
ISMAY, SOUTH DAKOTA

REVISIONS			
REV	DESCRIPTION	DATE	APP.
-			

PROJ.#:	R06006
CADFILE:	R06006M2
DESIGNED:	DAV
DRAWN:	MJW
APPROVED:	DRF
DATE:	MARCH 2006

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 6036
DOUGLAS R. FETERL

SHEET: M3

CONDENSING UNIT SCHEDULE

UNIT NO	MANUFACTURER'S DESIGNATION	SERVES	CAPACITY MBH	AMBIENT TEMP.	EAT		ELECTRICAL			SEER	REMARKS
					DB	WB	V	PH	HZ		
CU-1	RUUD UAKA-018JAZ	F-1	17	95	80	67	208	1	60	10	1

1. 4" CONCRET EQUIPMENT PAD.

FURNACE SCHEDULE

UNIT NO	MANUFACTURER'S DESIGNATION	SERVES	CFM	EXT. S.P.	FUEL	HP	MBH		FILTERS	ELECTRIC	REMARKS
							IN	OUT			
F-1	RUUD UTGA-D4EMAES	#100-#103	600	0.50	LP	0.5	45	41	THROWAWAY	115/60/1	1,2,3,4,5,6

1. PERFORMANCE AT LOW FAN SPEED.
2. HORIZONTAL CONFIGURATION.
3. PROGRAMMABLE AUTO-CHANGEOVER THERMOSTAT.
4. FULL CASED RCBA-2457 DX COIL WITH HORIZONTAL DRAIN PAN.
5. 1" TALL DRIP PAN UNDER FURNACE AND DX COIL WITH SEPARATE 3/4" CONNECTION RUN TO DRAIN.
6. CONCENTRIC VENT KIT.

LOUVER SCHEDULE

UNIT NO	MANUFACTURER'S DESIGNATION	LOCATION	FUNCTION	SIZE W" X H"	CFM	S.P. (IN. W.G)	FREE AREA VELOCITY (FPM)	REMARKS
L-1	GREENHECK ESD-635	SHOP #104	INTAKE	48 X 42	4500	.05	588	1, 2
L-2	GREENHECK ESD-635	SHOP #104	INTAKE	48 X 42	4500	.05	588	1, 2

1. BIRDSCREEN, BAKED ENAMEL FINISH.
2. COORDINATE COLOR WITH ARCHITECT.

REGISTER GRILLES AND DIFFUSER SCHEDULE

UNIT NO	MANUFACTURER'S DESIGNATION	NOMINAL SIZE (IN.)	THROAT SIZE (IN.)	MAX CFM	THROW	S.P.D. (IN.)	NC	FRAME	REMARKS
S-1	TITUS TDCA	11.5 X 11.5	9 X 9	125	9	.15	23	SURFACE	1
S-2	TITUS TDCA	14.5 X 14.5	9 X 9	250	13	.14	24	SURFACE	1
R-1	TITUS 50F	11.75 X11.75	10 X 10	250	N/A	.037	10	SURFACE	1

1. OPPOSED BLADE DAMPER.

FAN SCHEDULE

UNIT NO	MANUFACTURER'S DESIGNATION	LOCATION	SERVICE	VIBRATION ISOLATION	CFM	S.P.D. (IN)	RPM	MOTOR			REMARKS
								HP	ELEC.	SONES	
EF-1	GREENHECK CWB-180-15	AREA #104	EXHAUST	INTERNAL	4500	0.375	1725	1.5	230/60/1	19.6	1
EF-2	GREENHECK CWB-180-15	AREA #104	EXHAUST	INTERNAL	4500	0.375	1725	1.5	230/60/1	19.6	1
EF-3	GREENHECK SP-B110	RESTROOM	EXHAUST	INTERNAL	100	0.2	950	80W	115/60/1	2.3	1, 2
CF-1	HRS EF-300-36	AREA #104	VENTILATION	INTERNAL	5800	–	0-400		120/60/1	–	
CF-2	HRS EF-300-36	AREA #104	VENTILATION	INTERNAL	5800	–	0-400		120/60/1	–	
CF-3	HRS EF-300-36	AREA #104	VENTILATION	INTERNAL	5800	–	0-400		120/60/1	–	
CF-4	HRS EF-300-36	AREA #104	VENTILATION	INTERNAL	5800	–	0-400	54W	120/60/1	–	
CF-5	HRS EF-300-36	AREA #104	VENTILATION	INTERNAL	5800	–	0-400	54W	120/60/1	–	
CF-6	HRS EF-300-36	AREA #104	VENTILATION	INTERNAL	5800	–	0-400	54W	120/60/1	–	

1. PROVIDE WITH BACKDRAFT DAMPER.
2. HOODED WALL CAP WITH ROUND 6" CONNECTION.

WATER HEATER SCHEDULE

UNIT NO	MANUFACTURER'S DESIGNATION	LOCATION	SERVES	STORAGE CAPACITY	FUEL	INPUT	RECOVERY RATE(GPH)	TEMP. RISE	REMARKS
WH-1	A.O. SMITH EES-30D	SHOP AREA #104	DOM. HW	30 GAL.	–	4.5 KW	23	80F	1, 2

1. 240V
2. 120 DEG. F.

EXPANSION TANK SCHEDULE

UNIT NO	MANUFACTURER'S DESIGNATION	LOCATION	SERVICE	SIZE			REMARKS
				GALLONS	LENGTH	DIAMETER	
ET-1	AMTROL IN-LINE ST-5	SHOP AREA #104	DOM WH	2.0	12 5/8"	8"	

PLUMBING FIXTURE SCHEDULE

FIXTURE NO	MANUFACTURER'S DESIGNATION	FIXTURE TYPE	WASTE	VENT	SUPPLY		TRIM/REMARKS
					CW	HW	
P-1A	ELJER "PRESERVER II 17" 091-4985	WATER CLOSET FLOOR MOUNT TANK	4"	2"	1/2"	–	WHITE VITREOUS CHINA, ELONGATED BOWL, FLOOR MOUNT, OLSONITE 95 SEAT WITH OPEN FRONT LESS COVER
P-2A	ELJER "SAVON" 161-1090	URINAL HANDICAPPED HEIGHT	2"	1-1/2"	3/4"	–	WHITE VITREOUS CHINA, WALL HUNG SIPHON JET URINAL SLOAN REGAL 186-1.0 FLUSH VALVE
P-3A	ELJER "SIGNATURE" 051-3544	LAVATORY W/ HO ADA COMPLIANT	2"	1-1/2"	1/2"	1/2"	VITREOUS CHINA, CONCEALED ARM CARRIER, ELJER 557-1000 SERIES SUPPLY FITTING WITH LEVER HANDLE, AERATOR, GRID DRAIN HANDI-TRAP SUPPLY/DRAIN PROTECTION
P-4A	SS-14WM	WATER COOLER SINGLE ADA COMPLIANT	2"	1-1/2"	1/2"	–	SINGLE-LEVEL STAINLESS STEEL TOP, FRONT PUSH BAR, WALL HANGER, BOTTOM COVER PLATE, 1-1/4" CAST BRASS P-TRAP, 1/2" SCREWDRIVER STOP, ANTI-SQUIRT BUBBLER.
P-	LASCO 1363-BFS HANDI-CAP	SHOWER 36"X36"X75"	2"	1-1/2"	1/2"	1/2"	SYMMONS "TEMPTROL" S-98-1-131 PRESSURE BALANCED MIXING VALVE 30" SLIDE BAR WITH FLEXIBLE METAL HOSE, HAND SPRAY W/INLINE VACUUM BREAKER, DIVERTER VALVE SYMMONS NO. 4-270, HEAD, L-SHAPED GRAB, L-SHAPED FOLD UP SEAT, ADA
P-6A	ELKAY "LUSTERTONE" LR2219	SINK SINGLE COMPARTMENT	1-1/2"	1-1/2"	1/2"	1/2"	ELKAY MODEL LK-4121 SUPPLY FITTING, LK99 GRID DRAIN

AIR COMPRESSOR SCHEDULE

UNIT NO	MANUFACTURER'S DESIGNATION	HP	TYPE	CAPACITY AT 175PSI	RPM	RECEIVER	REDUCING VALVE		ELECTRICAL	REMARKS
							IN	OUT		
AC-1	QUINCY QR-25 F340	7.5	HORIZONTAL	26 ACFM	786	80 GALLON			230/60/1	1, 2, 3

1. PROVIDE WITH VIBRATION ISOLATORS.
2. PROVIDE COALESCING FILTER WITH .7 MICRON RATING.
3. 110 PSI LINE SIZE REGULATOR.

MECHANICAL SYMBOLS

THESE SYMBOLS COMPRISE A STANDARD LIST; NOT ALL SYMBOLS MAY APPEAR ON THIS PROJECT.

- UNDERFLOOR SOIL PIPE
- ABOVE FLOOR WASTE PIPE
- VENT PIPE
- PIPE CONNECTION
- ELBOW DOWN
- ELBOW UP
- TEE DOWN
- PIPE PITCH DOWN
- DIRECTION OF FLOW
- PIPE ANCHOR
- REDUCER
- UNION
- FLEXIBLE PIPE CONNECTION
- COLD WATER PIPE
- HOT WATER PIPE
- CAPPED OUTLET
- SHUT-OFF VALVE
- BALANCING VALVE
- PRESSURE REDUCING VALVE
- PRESSURE RELIEF VALVE
- CHECK VALVE
- CO CLEAN OUT ABOVE FLOOR
- CO CLEAN OUT IN FLOOR
- FD FLOOR DRAIN
- WH WALL HYDRANT
- HB HOSE BIB
- LP LIQUEFIED PETROLEUM GAS
- CA COMPRESSED AIR PIPE
- RL REFRIGERANT LIQUID PIPE
- RS REFRIGERANT SUCTION PIPE
- PRESSURE GAUGE
- THERMOMETER
- STRAINER
- BACK FLOW PREVENTER
- CURB STOP
- THERMOSTAT

VENTILATION SYMBOLS

- SUPPLY DUCT (UP & DOWN)
- RETURN OR EXHAUST DUCT (UP & DOWN)
- STANDARD RADIUS ELBOW R EQUAL W (MINIMUM)
- DUCT TURN WITH TURN VANES
- FLEXIBLE DUCT CONNECTION
- M-MOTORIZED DAMPER C-COMBINATION FIRE SMOKE DAMPER
- FLEX DUCT (5' MAXIMUM)
- MANUAL VOLUME DAMPER
- BRANCH DUCT INTO SIDE OF MAIN DUCT
- 12/8 DUCT DIMENSION- WIDTH x DEPTH
- TYPE OF EQUIP 200 CFM GRILLE, REGISTER & DIFFUSER DESIGNATION SUPPLY, RETURN, EXHAUST, & TRANSFER
- TYPE OF EQUIP 1 EQUIP. NO. EQUIPMENT DESIGNATION

RADIANT HEAT COORDINATION SCHEDULE

DESCRIPT.	VOLT	AMP	H.P.	R.P.M.	ELECTRICAL CONNECTION	INPUT MBH	GAS NG/LP	GAS CONNEC.
B-8	120V	.3	–	–	CORD & PLUG	80	LP	1/2"
B-10	120V	.3	–	–	CORD & PLUG	100	LP	1/2"
EP-2D1	120V	6.6	3/4	3450	HARD CONNEC.	–	–	–

CONTROL PANEL WIRING
EP-2D0
THE CONTROL PANEL IS HARD WIRED BACK TO AN ELECTRICAL PANEL 1-20A, 1Ø CKT; BURNERS ARE FED 120V POWER FROM THE CONTROL PANEL – THERMOSTATS HAVE 12V DC CONTROL WIRING FROM CONTROL PANEL – VACUUM PUMP HAS 120V POWER FROM THE CONTROL PANEL. THE VACUUM PROVING SWITCH IS CONNECTED TO THE CONTROL PANEL VIA 12V DC WIRING.

INFRARED HEATER SCHEDULE

BURNER INPUT MBH	EMITTER PIPE LGTH	GAS NG/LP	GAS CONNEC.	SYSTEM PRESSURE	VOLT	AMP	T-STAT LINE LOW	MANUFACTURER	MODEL #	NOTES
80	VARIES	LP	1/2"	NEGATIVE	120V	.3	X	ROBERTS GORDON	CO-RAY-VAC 'B-8'	1,2,3,4,5,6
100	VARIES	LP	1/2"	NEGATIVE	120V	.3	X	ROBERTS GORDON	CO-RAY-VAC 'B-10'	1,2,3,4,5,6

NOTES

1. PROVIDE HOT ROLLED STEEL FOR ALL COMBUSTION CHAMBERS AND EMITTER TUBING; PROVIDE DOUBLE COATED PORCELAINIZED STEEL TUBING FOR ALL TAIL PIPING.
2. PROVIDE MANUFACTURERS MILL FINISH ALUMINUM REFLECTOR OVER ALL EMITTER TUBE.
3. PROVIDE MANUFACTURERS SIDE REFLECTOR WHERE SHOWN ON PLANS
4. PROVIDE VACUUM PUMP, THERMOSTATS AND CONTROL WIRING AS INDICATED.
5. ELECTRONIC IGNITION, THREE TRY DIRECT SPARK, 100% SHUT-OFF
6. EXHAUST THRU THE WALL: EXTEND DOUBLE COATED PORCELAIN TUBE A MIN. 18" FROM EXTERIOR OF BUILDING WITH BIRD SCREEN.

DRAWING REDUCED, FULL SIZE DRAWING AVAILABLE UPON REQUEST

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PHONE: (605) 348-7455 FAX: (605) 348-9445

MECHANICAL SCHEDULES
OFFICE AND MAINTENANCE SHOP
ISABEL, SOUTH DAKOTA

REVISIONS			
REV	DESCRIPTION	DATE	APP.
-	-	-	-

PROJ.#:	R06006
CADFILE:	R06006M3
DESIGNED:	DAV
DRAWN:	MJW
APPROVED:	DRF
DATE:	MARCH 2006

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
6036
DOUGLAS R. FETERL
SOUTH DAKOTA

SHEET:
M4

DRAWING REDUCED, FULL SIZE DRAWING AVAILABLE UPON REQUEST

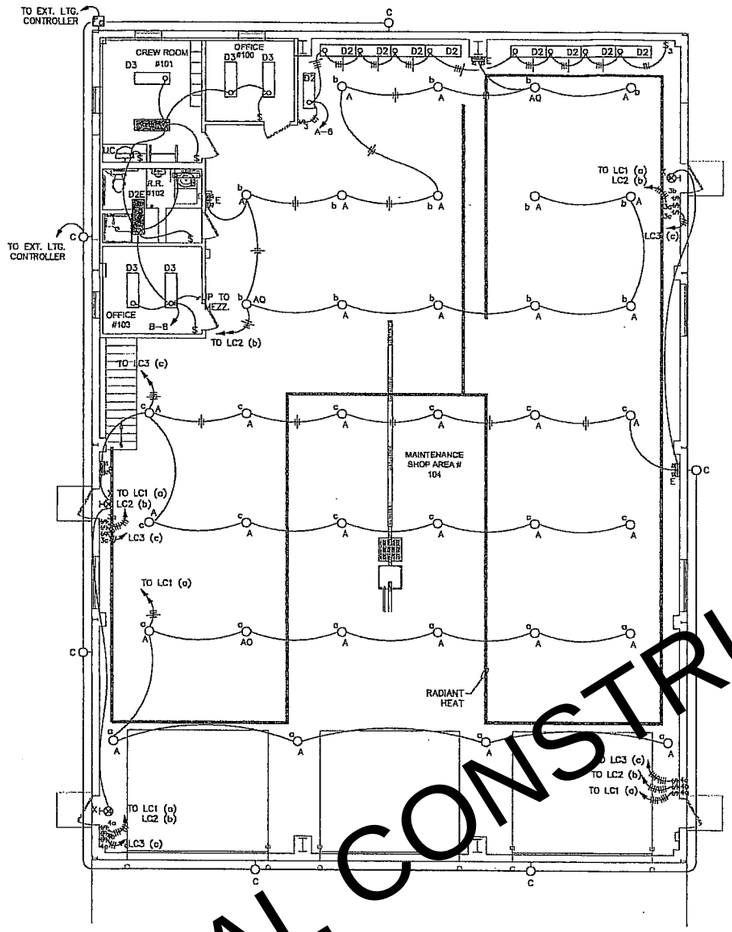
MISCELLANEOUS NOTES:

A. SEE ALSO SHEET ME1.

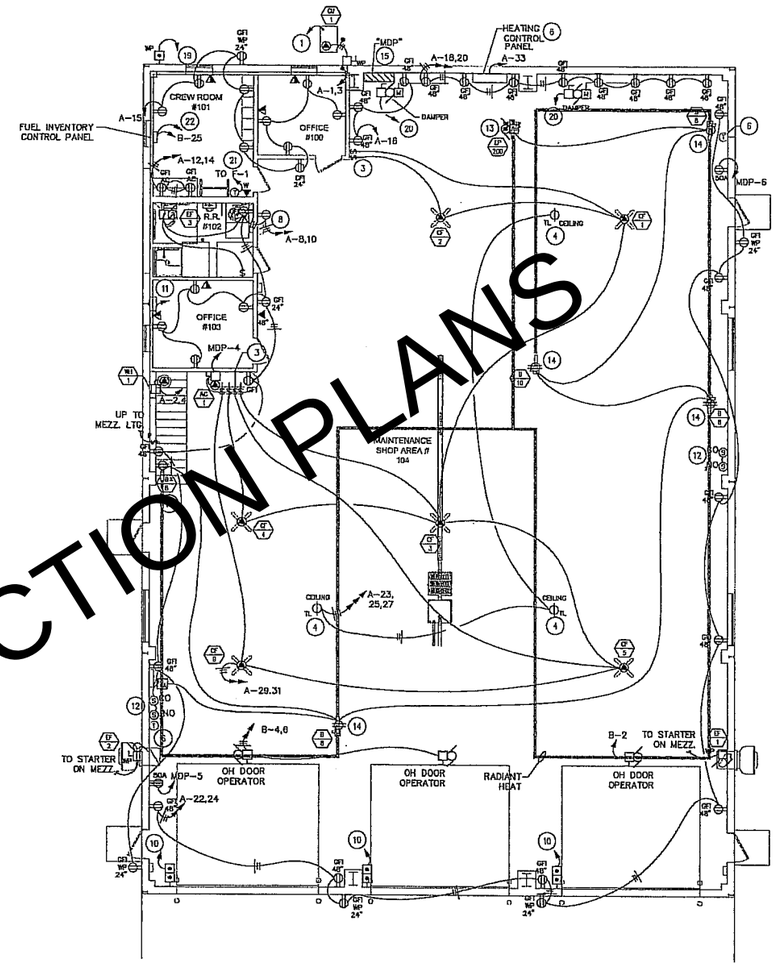
B. ALL 120V. BRANCH CIRCUITS MORE THAN 65 FT. FROM ASSOCIATED PANEL SHALL BE FED WITH #10 CU. AS NEEDED.

SPECIFIC NOTES: (#)

1. PROVIDE CONTROL WIRING TO ASSOCIATED FURNACE. COORDINATE WITH M.C.
2. PROVIDE 120V TO COMBINATION DAMPERS AND DUCT DETECTORS (USE CIRCUIT E-16) AS REQUIRED, TYPICAL. PROVIDE DUCT DETECTOR EQUAL TO SYSTEM SENSOR MODEL DH100ACDCCLP WITH APPROPRIATELY SIZED SAMPLING TUBE. ALSO PROVIDE REMOTE KEYED TEST STATION WITH ALARM LED FOR EACH DUCT DETECTOR.
3. PROVIDE VARIABLE SPEED SWITCHES FOR EACH FAN.
4. PROVIDE CORD REEL MOUNTED AT CEILING. PROVIDE WITH TWISTLOCK PLUG TO MATCH RECEPTACLE. CORD REEL SHALL BE REELCRAFT MODEL L555012J33 OR EQUAL.
5. PROVIDE 3/4"x4'x8' PLYWOOD BACKBOARD, PAINTED BOTH SIDES WITH GRAY FIRE RESISTANT PAINT. PROVIDE 2" CONDUIT (FOR PHONE) STUBBED OUT OF BUILDING BELOW GRADE TO 5' FROM BUILDING. COORDINATE EXACT LOCATION WITH APPROPRIATE UTILITY.
6. PROVIDE ALL INTERCONNECTION WIRING REQUIRED FOR HEATING SYSTEMS. PROVIDE WIRING TO THERMOSTATS. SEE NOTES 13 & 14.
7. ALL UTILITY CHARGES ARE BY THIS CONTRACTOR. COORDINATE ALL REQUIREMENTS WITH UTILITY COMPANY. TRANSFORMER BASEMENT AND METER ENCLOSURE ARE FURNISHED BY UTILITY COMPANY.
8. MOUNT RECEPTACLE BEHIND WATER COOLER SKIRT. COORDINATE WITH M.C.
9. PROVIDE TRENCH AND BACKFILL PER UTILITY REQUIREMENTS. SEE SITE PLAN.
10. PUSHBUTTON CONTROL FURNISHED BY DOOR SUPPLIER, INSTALLED AND WIRED BY THIS CONTRACTOR. PROVIDE CONDUIT, BOX AND WIRING TO ASSOCIATED DOOR, AS REQUIRED.
11. PROVIDE A 4 SQ. BOX WITH SINGLE GANG RING AND AND A 3/4" CONDUIT ROUTED TO THE COMMUNICATION TERMINAL BOARD. CONDUIT SHALL BE BONDED TO THE GROUNDING SYSTEM, AND SHALL BE TERMINATED WITH A BUSHING. TYPICAL FOR ALL VOICE/AND OR DATA OUTLETS.
12. CO AND NO SENSORS ARE PROVIDED BY MECHANICAL 2 CONTRACTOR. THIS CONTRACTOR TO PROVIDE HAND AUTO SWITCH SWITCHES, J-BOXES, CONDUIT AND WIRE FOR INTERCONNECTION OF SENSORS, FANS AND MOTORIZED DAMPERS. UPON SIGNAL OF HIGH LEVELS OF CO AND/OR NO , EXHAUST FAN SHALL START AND 2 MOTORIZED DAMPERS SHALL BE INTERLOCKED TO OPEN. WHEN LEVELS ARE SAFE, FAN SHALL SHUT DOWN AND MOTORIZED DAMPER SHALL CLOSE. THIS WILL OCCUR WITH HAND/AUTO SWITCH IN AUTO POSITION. IN HAND POSITION, FAN SHALL OPERATE AND DAMPERS OPEN.
13. PROVIDE FOR ELECTRICAL CONNECTION OF VACUUM PUMP. PROVIDE INTERCONNECTION WIRING FOR HEATING SYSTEM. (120V AND 12V). COORDINATE WITH M.C. SEE SHEETS M3 & M4.
14. PROVIDE FOR ELECTRICAL CONNECTION OF BURNER FOR RADIANT HEAT. PROVIDE INTERCONNECTION WIRING FOR HEATING SYSTEM. COORDINATE WITH M.C. SEE SHEETS M3 & M4.
15. MOUNT PANEL 24" AFF. PROVIDE 2 - 2" CONDUITS FROM PANEL STUBBED OUT BELOW GRADE TO 10' FROM BUILDING (WEST). CONDUIT TO SERVE AS FUTURE ELECTRICAL SERVICE TO STORAGE AND ABRASIVE BUILDINGS. STUB OUT CONDUIT BELOW GRADE AND CAP. DOCUMENT EXACT LOCATION OF CAPPED CONDUIT ON AS-BUILT DRAWINGS.
16. INSTALL E.J. WARD ON NEW DISPENSERS. E.J. WARD IS FURNISHED BY OWNER, INSTALLED AND WIRED BY THIS CONTRACTOR. CONTRACTOR SHALL PROVIDE ALL FIELD WIRING AND MAKE ALL CONNECTIONS NECESSARY TO CONNECT NEW E.J. WARD TO DISPENSERS. FROM THE DISPENSER'S MAIN J-BOX, PROVIDE RIGID STEEL CONDUIT TO THE E.J. WARD (MCU). PROVIDE A SEALOFF BEFORE MCU. PROVIDE AN 18 GA. TWISTED PAIR COMMUNICATION WIRE FROM EACH MCU TO THE CREW ROOM (ALONG WEST WALL). PROVIDE A FLUSH MOUNT J-BOX WITH BLANK COVER ON WEST WALL OF CREW ROOM (NEAR INVENTORY CONTROL PANEL). SEE NOTE 18.
17. PROVIDE 1" CONDUIT BETWEEN DISPENSERS AND A 1" CONDUIT FROM DISPENSER TO THE COMMUNICATION BACKBOARD. CAP CONDUITS (FOR FUTURE). SEE NOTE 18.
18. PROVIDE ISOLATION RELAYS, SEAL-OFFS, INTERLOCK WITH EMERGENCY SHUTDOWN PUSHBUTTONS, AND ETC. AS REQUIRED BY N.E.C. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE COMPLETE SYSTEMS PER N.E.C.
19. EMERGENCY FUEL SHUT-OFF BUTTON. INTERLOCK WITH ALL FUELING EQUIPMENT PER NEC. SEE NOTE 18.
20. INTERLOCK WITH CO & NO SENSORS. SEE NOTE 12.
21. PROVIDE CONTROL WIRING TO F-1. COORDINATE WITH M.C. THERMOSTAT FURNISHED BY M.C. INSTALLED AND WIRED BY E.C.
22. PROVIDE CONTROL CABLE (BELDEN 8776D) TO TANK PROBES (2 TOTAL). SEE SHEET 1 FOR SCHEMATIC DIAGRAMS, AND SHEET E2 FOR TANK LOCATION.



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

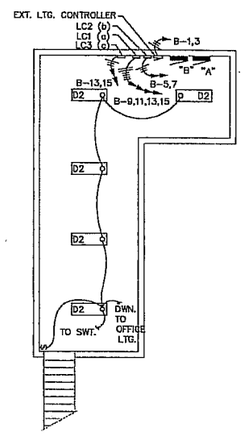


POWER & SIGNAL PLAN
SCALE: 1/8"=1'-0"

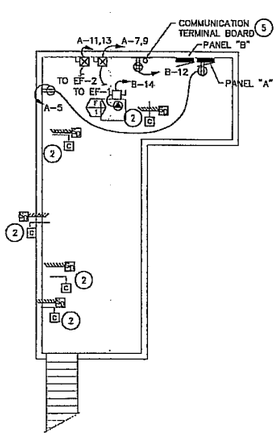
ELECTRICAL SYMBOLS

THESE SYMBOLS COMPRISE A STANDARD LIST; NOT ALL SYMBOLS MAY OCCUR ON THIS PROJECT.

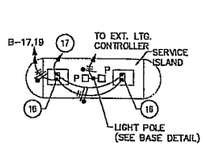
- CEILING SURFACE MOUNT FIXTURE. (Capital letter indicates fixture type. Small letter indicates switching. Typical for all fixture types.)
- WALL FIXTURE
- RECESSED DOWNLIGHT FIXTURE
- SURFACE MOUNT FIXTURE
- RECESSED FIXTURE
- WALL MOUNTED INDICATING EMERGENCY FIXTURES
- EMERGENCY LIGHTING UNIT W/BATTERY PACK
- EXIT SIGN (FACES SHADED, ARROW AS CHEVRON)
- SINGLE POLE SWITCH
- SPEED CONTROL SWITCH
- LOADCENTER OR ELECTRICAL PANEL
- SPECIAL EQUIPMENT CABINET-AS NOTED
- DUPLEX CONVENIENCE RECEPTACLE
- SPECIAL PURPOSE OUTLET OR CONNECTION
- COMBINATION VOICE/DATA OUTLET
- VOICE OUTLET
- JUNCTION BOX
- MOTOR CONNECTION
- DISCONNECT SWITCH
- MOTOR THERMAL SWITCH
- TRANSFORMER
- TERM. BOARD
- THERMOSTAT
- TYPE OF EXHAUST FAN / EXHAUST FAN NO. — SEE SCHEDULES
- FIRE ALARM MANUAL STATION
- HEAT DETECTOR (RATE OF RISE)
- SMOKE DETECTOR
- DUCT SMOKE DETECTOR
- FLOW SWITCH
- TAMPER SWITCH
- FIRE ALARM CUT-OFF RELAY
- FIRE ALARM HORN/STROBE
- COMBINATION FIRE/SMOKE DAMPER
- MOTORIZED DAMPER
- HAND/AUTO SWITCH
- CARBON MONOXIDE SENSOR
- NITROGEN DIOXIDE SENSOR
- PHOTOCELL
- GROUND
- CONDUIT IN WALL OR CEILING SPACE, CROSS MARKS INDICATE NUMBER OF WIRES. NO MARKS INDICATE TWO WIRES. ARROWS INDICATE HOME RUNS TO PANEL. NUMBERS INDICATE PANEL AND CIRCUIT IN PANEL. SWITCHLEG, TRAVELER, NEUTRAL WIRE, HOT
- INDICATES SEPARATE GROUND WIRE TO BE INSTALLED IN RACEWAY
- UNDERGROUND ELECTRICAL SERVICE



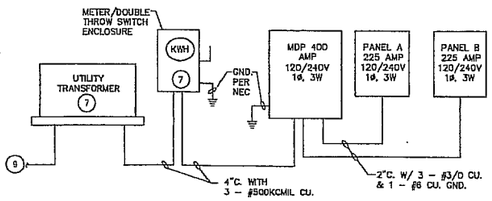
MEZZANINE LIGHTING PLAN
SCALE: 1/8"=1'-0"



MEZZANINE POWER & SIGNAL PLAN
SCALE: 1/8"=1'-0"



NEW FUEL SYSTEM
NO SCALE (SEE E2 FOR LOCATION)



ONE-LINE DIAGRAM
NO SCALE

WPE WEST PLAINS ENGINEERING
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1750 RAND ROAD - RAPID CITY, SD 57702
PHONE: (605) 348-7455 FAX: (605) 348-9445

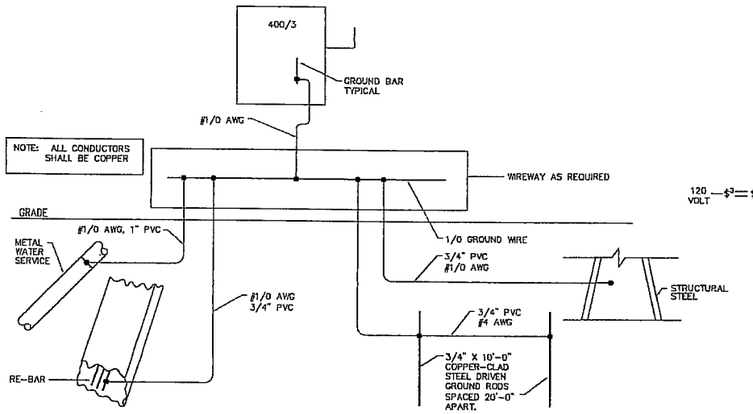
ELECTRICAL PLANS
OFFICE AND MAINTENANCE SHOP
ISABEL, SOUTH DAKOTA

REVISIONS			
REV	DESCRIPTION	DATE	APP.
-	-	-	-

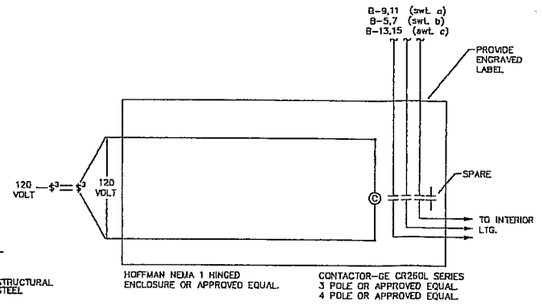
PROJ.#:	R06006
CADFILE:	R06006E1-E2
DESIGNED:	CTT
DRAWN:	VLS
APPROVED:	CTT
DATE:	MARCH 2006

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 6993
CHRISTOPHER T. TIEDE
SOUTH DAKOTA
6/01/06

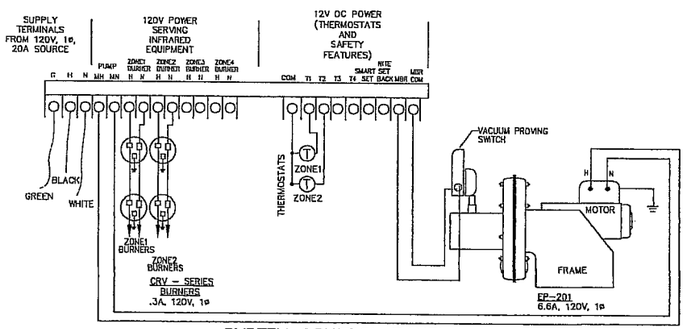
SHEET: E1



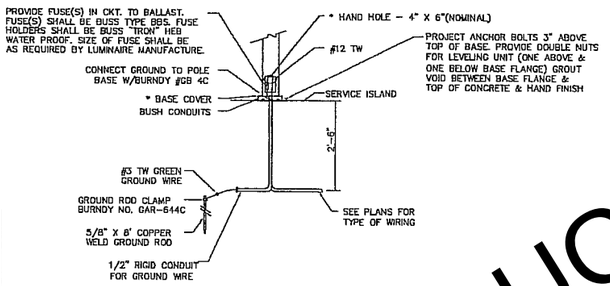
GROUNDING ELECTRODE DIAGRAM
NO SCALE:



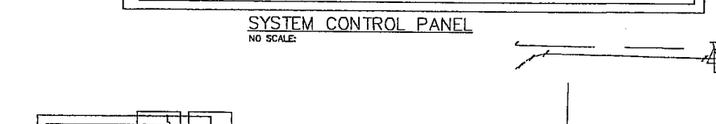
INTERIOR LIGHTING CONTROL DIAGRAM
NO SCALE: [TYPICAL OF THREE, MAY BE COMBINED INTO ONE ENCLOSURE]



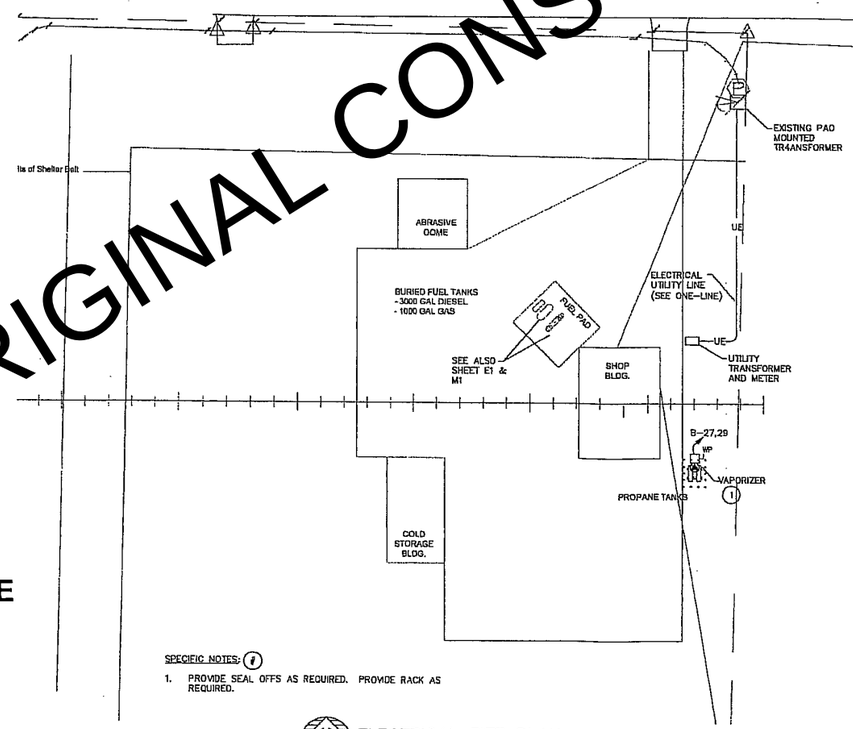
SYSTEM CONTROL PANEL
NO SCALE:



OUTDOOR LIGHTING DETAIL
NO SCALE:



EXTERIOR LIGHTING CONTROL DIAGRAM
NO SCALE:



SPECIFIC NOTES: (1)
1. PROVIDE SEAL OFFS AS REQUIRED. PROVIDE RACK AS REQUIRED.

ELECTRICAL SITE PLAN
SCALE: 1"=60'-0"

LIGHTING FIXTURE SCHEDULE

FIXT TYPE LTR	FIXTURE DATA: MANUFACTURER'S DESIGNATION	CATALOG NUMBER	MOUNTING	LAMP DATA: TYPE	NO	WATTS	CATALOG NUMBER	REMARKS
A	GE	C1S-17M-1A-S-TA-1	SURFACE/CEIL	MH	1	175	INCLUDED	LOWBAY, NOTE 2
AQ	GE	C1S-17M-1A-S-TA-1-B	SURFACE/CEIL	MH/QTZ	1/1	175/150	INCLUDED	LOWBAY, NOTE 2
B	LITHONIA	WS-217-A12-120EB-	SURFACE/WALL	FLU	2	17	F17T8/SPX35	MOUNT ABOVE MIRROR
C	LITHONIA	TWH-250M-240-SF-LPI	SURFACE/WALL	MH	1	250	INCLUDED	WALL PAK, NOTE 3
D2	LITHONIA	LB-232-120EB	CHAIN	FLU	2	32	F32T8/SPX35	WRAP, CHAIN HANG FROM STRUCTURE 9'AFF
D2E	LITHONIA	LB-232-120EB-ELB	SURFACE/CEIL	FLU	2	32	F32T8/SPX35	WRAP WITH EMERGENCY BALLAST
D3	LITHONIA	LB-332-120EB	SURFACE/CEIL	FLU	3	32	F32T8/SPX35	WRAP
D3E	LITHONIA	LB-332-120EB3-ELB	SURFACE/CEIL	FLU	3	32	F32T8/SPX35	WRAP WITH EMERGENCY BALLAST
E	LITHONIA	ELM4-N	SURFACE/WALL	INC	2	12	INCLUDED	EMERGENCY
P	LITHONIA	KAD250M-R4-TB-RPD09-LPI	POLE	MH	1	250	INCLUDED	PROVIDE POLE #RSS-15-4-5B-DW28-DDB
S	RAB	VBR1-GL100R	WALL	INC	1	100	A19	VAPORPROOF, RED LENS
T	LITHONIA	EJ-232-120EB'	CHAIN	FLU	2	32	F32T8/SPX35	INDUSTRIAL, CHAIN HANG FROM STRUCTURE 9'AFF
UC	LITHONIA	2UC-15-120-HPF	UNDERCOUNTER	FLU	1	15	F15T12/SPX35	18" UNDERCABINET
X	LITHONIA	LQM-S-W-1-R-120/277-ELN	UNIVERSAL	LED			INCLUDED	EXIT

NOTES:
1. ALTERNATE MANUFACTURERS: HUBBELL, COOPER, LITHONIA, GARDCO.
2. PROVIDE FIXTURE WITH LAMP.
3. COORDINATE MOUNTING HEIGHT WITH OWNER.

PANEL A

VOLTS: 120/240 | PHASE: 1 | WIRE: 3 | MAIN CAP. 225 AMPERES
AIC RATING: 22,000
MOUNTING: SURFACE | FEEDER SIZE: | SEE ONE-LINE | MAIN CONNECTION: MLO

CCT NO	ITEM FED	LOAD WATTS	WIRE SIZE	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	CIRCUIT BREAKER FRAME	NEUTRAL	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER AMPS	WIRE SIZE	LOAD WATTS	ITEM FED	CCT NO
1	CU-1	600	12	29	--	--	L1	--	1	20	10	2300	WH-1	2
3	--	600	12	--	--	--		--	--	--	10	2300	--	4
5	MEZZANINE RECEPTACLES	400	12	20	--	--	L1	--	1	20	12	700	TASK LIGHTING	6
7	EF-1	1200	12	25	--	--	L2	--	1	20	12	1300	RESROOM, SHOP RECPTACLES	8
9	--	1200	12	--	--	--	L1	--	1	20	12	700	OFFICE RECEPTACLES	10
11	EF-2	1200	12	25	--	--	L2	--	1	20	12	400	BREAK RM. COUNTER REC.	12
13	--	1200	12	--	--	--	L1	--	1	20	12	1100	REFRIGERATOR	14
15	BREAK RM., OFFICE REC.	1600	12	20	--	--	L2	--	1	20	12	800	SHOP/WORK BENCH RECEPTACLES	16
17	SPARE	--	--	20	--	--	L1	--	1	20	12	700	SHOP/WORK BENCH RECEPTACLES	18
19	SPARE	--	--	20	--	--	L2	--	1	20	12	700	SHOP/WORK BENCH RECEPTACLES	20
21	SPARE	--	--	20	--	--	L1	--	1	20	12	1100	EXTERIOR, SHOP RECEPTACLES	22
23	CORDREEL (PROVIDE OR EWD)	1200	12	20	--	--	L2	--	1	20	12	900	SHOP, EXT. RECEPTACLES	24
25	CORDREEL (PROVIDE OR EWD)	1200	12	20	--	--	L1	--	--	--	--	--	SPACE	26
27	CORDREEL (PROVIDE OR EWD)	1200	12	20	--	--	L2	--	--	--	--	--	SPACE	28
29	NO/CO DETECTION SYSTEMS	800	12	20	--	--	L1	--	--	--	--	--	SPACE	30
31	CEILING FANS(EF-3)(4 TOTAL)	300	12	20	--	--	L2	--	--	--	--	--	SPACE	32
33	RADIANT HEATING SYSTEM	1000	12	20	--	--	L1	--	--	--	--	--	SPACE	34
35	SPARE	--	--	20	--	--	L2	--	--	--	--	--	SPACE	36
37	SPARE	--	--	20	--	--	L1	--	--	--	--	--	SPACE	38
39	SPARE	--	--	20	--	--	L2	--	--	--	--	--	SPACE	40
41	SPARE	--	--	20	--	--	L1	--	--	--	--	--	SPACE	42

APPROXIMATE CONNECTED LOAD
L1= 12,000 WATTS
L2= 11,500 WATTS

PANEL B

VOLTS: 120/240 | PHASE: 1 | WIRE: 3 | MAIN CAP. 225 AMPERES
AIC RATING: 22,000
MOUNTING: SURFACE | FEEDER SIZE: | SEE ONE-LINE | MAIN CONNECTION: MLO

CCT NO	ITEM FED	LOAD WATTS	WIRE SIZE	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	CIRCUIT BREAKER FRAME	NEUTRAL	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER AMPS	WIRE SIZE	LOAD WATTS	ITEM FED	CCT NO
1	EXTERIOR LIGHTING	900	10	20	2	--	L1	--	1	15	12	900	OVERHEAD DOOR OPERATOR	2
3	--	900	10	--	--	--	L2	--	1	15	12	900	OVERHEAD DOOR OPERATOR	4
5	SHOP LIGHTING (swt b)	1700	10	20	1	--	L1	--	1	15	12	900	OVERHEAD DOOR OPERATOR	6
7	SHOP LIGHTING (swt b)	1700	10	20	1	--	L2	--	1	20	12	1300	OFFICE/MEZZ. LIGHTING	8
8	SHOP LIGHTING (swt a)	1300	10	20	1	--	L1	--	1	20	--	--	SPARE	10
11	SHOP LIGHTING (swt a)	1500	10	20	1	--	L2	--	1	20	12	500	COMM. TERMINAL BOARD REC.	12
13	SHOP LIGHTING (swt c)	1300	10	20	1	--	L1	--	1	20	12	1200	F-1	14
15	SHOP LIGHTING (swt c)	1300	10	20	1	--	L2	--	1	20	12	400	COMBINATION DAMPERS/DUCT DET.	16
17	FUEL DISPENSER (NOTE 1)	1700	10	20	1	--	L1	--	1	20	--	--	SPARE	18
19	FUEL DISPENSER (NOTE 1)	1700	10	20	1	--	L2	--	1	20	--	--	SPARE	20
21	SPACE	--	--	--	1	--	L1	--	1	20	--	--	SPARE	22
23	SPACE	--	--	--	1	--	L2	--	--	--	--	--	SPACE	24
25	FUEL INVENTORY CONTROL PNL.	500	12	20	1	--	L1	--	--	--	--	--	SPACE	26
27	PROPANE VAPORIZER	1700	10	20	2	--	L2	--	--	--	--	--	SPACE	28
29	--	1700	10	--	--	--	L1	--	--	--	--	--	SPACE	30
31	SPACE	--	--	--	--	--	L2	--	--	--	--	--	SPACE	32
33	SPACE	--	--	--	--	--	L1	--	--	--	--	--	SPACE	34
35	SPACE	--	--	--	--	--	L2	--	--	--	--	--	SPACE	36
37	SPACE	--	--	--	--	--	L1	--	--	--	--	--	SPACE	38
39	SPACE	--	--	--	--	--	L2	--	--	--	--	--	SPACE	40
41	SPACE	--	--	--	--	--	L1	--	--	--	--	--	SPACE	42

APPROXIMATE CONNECTED LOAD
L1= 12,100 WATTS
L2= 11,800 WATTS

NOTES:
1. PROVIDE SWITCHED NEUTRAL BREAKER

MAIN DISTRIBUTION PANEL

MOUNTING: SURFACE | VOLTS: 120/240 | PHASE: 1 | WIRE: 3 | MAIN CAPACITY: 400 AMPERES
FEEDER SIZE: SEE ONE-LINE DIAGRAM | MAIN CONNECTION: MCB

CCT NO	ITEM FED	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	CIRCUIT BREAKER FRAME	WIRE SIZE	LOAD DISTRIBUTION PHASE A KW	LOAD DISTRIBUTION PHASE B KW	LOAD DISTRIBUTION PHASE C KW	REMARKS
1	PANEL A	200	2	--	SEE ONE-LINE DIAGRAM		15	12	
2	SPACE ONLY	200	2				--	--	
3	PANEL B	200	2	--	SEE ONE-LINE DIAGRAM		13	13	
4	AIR COMPRESSOR	50	2	--	2-#6CU. & 1-#10CU. GND.		4.8	4.8	
5	240V. RECEPTACLES	50	2	--	#8		--	--	
6	240V. RECEPTACLES	100	2	--	#6		--	--	
7	SPACE ONLY	100	2	--	--		--	--	
8	SPACE ONLY	100	2	--	--		--	--	

STARTER AND DISCONNECT SCHEDULE

UNIT NO	MOTOR HP	MOTOR VOLT PHASE	MOTOR LOCATION	STARTER NEMA SIZE	STARTER TYPE	STARTER LOCATION	CONTROL TYPE	CONTROL LOCATION	DISCONNECT RATING (A)	REMARKS
		240/1	SHOP	--	--	--	NONE	--	100	
WH	4.5 KW	240/1	SHOP	--	--	--	NONE	--	30	
F-1	.5	120/1	MEZZANINE	--	--	--	BY OTHERS	--	20	
EF-1	1.5	240/1	EXTERIOR WALL	--	--	--	NONE	--	30A WP	
EF-2	1.5	240/1	EXTERIOR WALL	--	--	--	NONE	--	30A WP	
EF-1	1.5	240/1	MEZZANINE	1	FVNR	MEZZANINE	CO/NO SEN.	SHOP	30	
EF-2	1.5	240/1	MEZZANINE	1	FVNR	MEZZANINE	CO/NO SEN.	SHOP	30	
EF-3	F	120/1	BATHROOM	--	--	--	SWITCH	BATHROOM	20	
DAMPER	F	120/1	VARIOUS	--	--	--	CO/NO SEN.	SHOP	20	SEE PLANS
CU-1	--	240/1	OUTDOORS	--	--	--	F-1	MEZZANINE	30A WP	
LIFT	1/2	120/1	OUTDOORS	--	--	--	SEE PLAN	LIFT STATION	30A WP	SEE SITE PLAN
LIFT	F	120/1	SHOP	--	--	--	SEE PLAN	SHOP	20	
VAPOR.	--	240/1	OUTDOORS	--	--	--	BY OTHERS	--	30A WP	

DRAWING REDUCED, FULL SIZE DRAWING AVAILABLE UPON REQUEST

WPE WEST PLAINS ENGINEERING
CONSULTING ENGINEERS
1750 RAND ROAD - RAPID CITY, SD 57702
PHONE: (605) 348-7455 FAX: (605) 348-9445

ELECTRICAL SITE PLAN, DETAILS, RISERS & SCHEDULES
OFFICE AND MAINTENANCE SHOP
ISABEL, SOUTH DAKOTA

REV	DATE	DESCRIPTION	APP.
-	-	REVISIONS	-

PROJ.#:	R06006
CADFILE:	R06006E1-E2
DESIGNED:	CTT
DRAWN:	VLS
APPROVED:	CTT
DATE:	MARCH 2006

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 6883
CRAIG T. TIEDE
SOUTH DAKOTA

SHEET: E2