

PROJECT

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

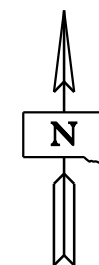
PHILIP DOT MAINTENANCE YARD

PARTIAL BUILDING FLOOR REMOVAL/REPLACEMENT & SEWER REPAIR

PHILIP, SOUTH DAKOTA

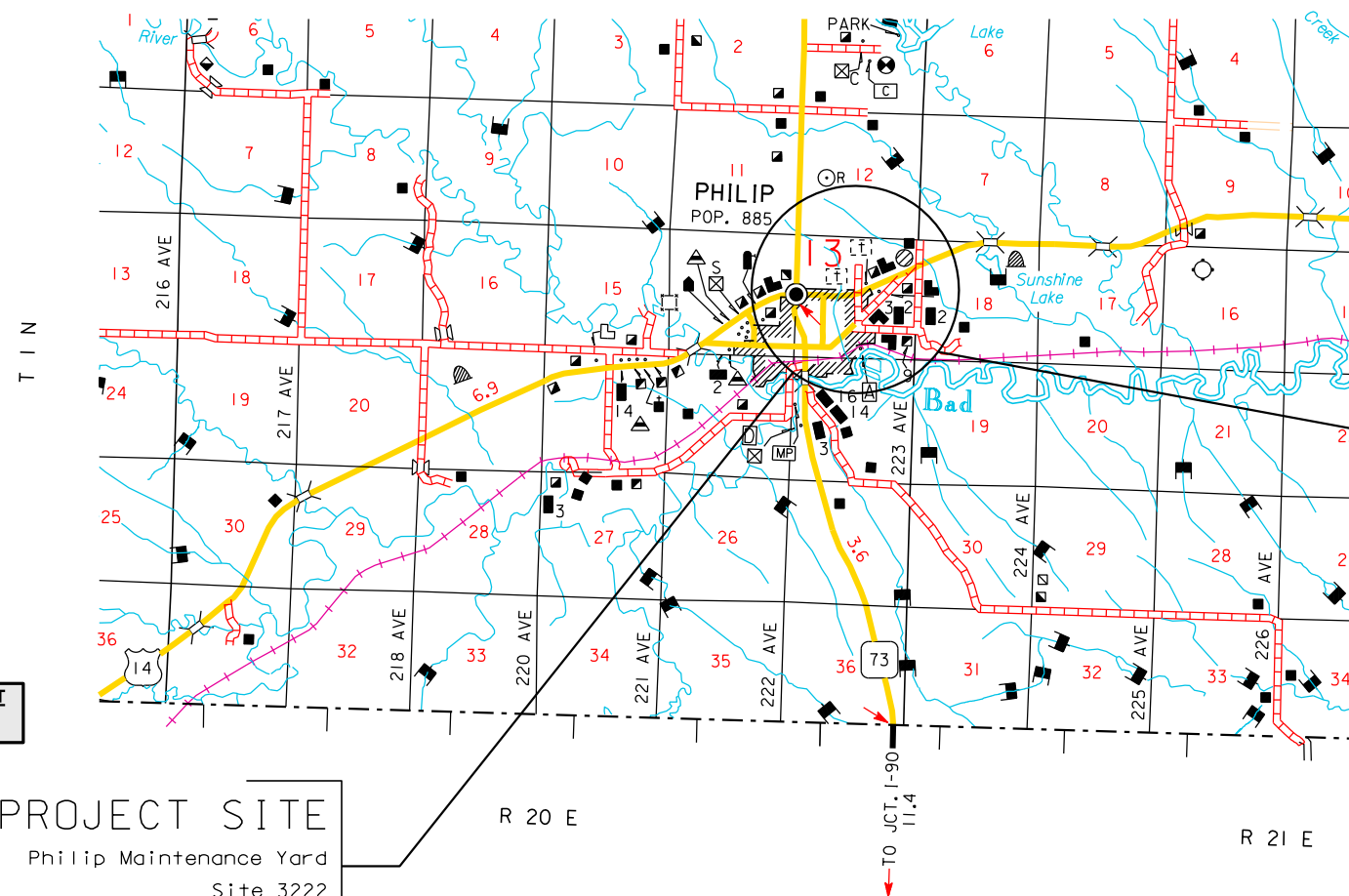
M 0009 – 352

APRIL 2017



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PROJECT SITE

Philip Maintenance Yard
Site 3222
Subdivision of tract "A" in the
S2NE4 and tract "C" in the N2SE4,
All in SEC 13 T1N R20E



Plans Prepared By
State of South Dakota
Department of Transportation

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	M 0009 - 352	2	27

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E1100	Remove Concrete Pavement	10.2	SqYd
380E1030	8" Miscellaneous PCC Pavement	10.2	SqYd
451E0508	2" PVC Pipe	44	Ft
451E0514	4" PVC Pipe	24	Ft
460E0380	Install Dowel in Concrete	32	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 Philip Maintenance Shop includes, but is not limited to, the following items, not listed in order of execution.

- 1. Remove and dispose a portion of the interior concrete building slab in the Maintenance Shop
- 2. Remove/replace existing 4" PVC sewer line
- 3. Install new 2" PVC vent line
- 4. Excavate grade to proper elevations for new 8" slab
- 5. Inspect base material
- 6. Compact subgrade/subbase bedding material
- 7. Furnish and Install Dowels and Reinforcing Steel as detailed
- 8. Furnish and place all new 8" Miscellaneous PCC Pavement
- 9. Seal new concrete slab joints

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 State and/or City Permits and/or Licenses in accordance with Section 7.2 of the Specifications.

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, 2017.** The Contractor shall notify the Pierre Area Office two weeks prior to starting of their operation.

The Contractor shall take steps to reduce or contain the dust generated from the sawing process.

Where new concrete is placed adjacent to existing concrete, the existing 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 oil/gravel interceptor, water line/assembly, 4" sewer line, and/or buildings footings. Any damage to the building or components shall be repaired by the Contractor at no expense to the State. The disposal of the concrete shall be incidental to the contract unit price per square yard for "Remove Concrete Pavement".

The grading, removal and disposal of material 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 at no cost to the Contractor.

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

PVC PIPE REPAIR

A portion of the existing 4" PVC sewer pipe shall be removed as detailed in the plans. The quantity in the plans may decrease or increase depending on condition and slope of pipe. If the Contractor can install the new pipe and have positive drainage the wye may stay in place. The Contractor shall ensure that the new pipe once installed shall have positive drainage. The existing pipe has a sag in it and is causing the sewer to plug.

The Contractor will need to excavate down along the interceptor box to access the side of the Oil/Gravel Interceptor to install a new 4" sewer line and a new 2" vent line. The PVC vent line was not installed with the original construction of the building. Details of where the vent line should have been placed can be seen in the original construction plans. The Contractor will be required to drill through the side of the pit to install the new 2" vent line. Also the Contractor may need to widen the hole where the 4" line is to ensure positive drainage of the pipe. Once the new pipes are installed in the interceptor box, the Contractor shall grout all openings around pipes ensuring that there is a water tight fit.

The Contractor shall ensure all plumbing codes are followed and adhered to.

The Contractor shall wrap the 2" vent line and the water pipe with a felt material to create a bond breaker and an expansion filler between pipe and concrete.

There will not be a separate payment made for brackets, tee's, bends, wyes, elbows, glue, sealant, felt, drilling/widening holes for pipes, removal of damaged pipe and any other incidentals to complete the work described in this contract as payment shall be incidental to the contract unit price per foot for "2" PVC pipe" and "4" PVC Pipe" respectively.

CONCRETE SLAB

Concrete used to construct the removed portions of 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.

Concrete slab shall be reinforced with # 4 reinforcing steel bars as detailed in the plans. 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 finished surface and slopes of the new concrete shall match that of the adjacent in-place concrete.

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, sawing, 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".

STEEL BAR INSERTION

The Contractor shall insert the Steel Bars (½" diameter x 18" deformed tie bars) into drilled holes in the existing concrete 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.

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".

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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.

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.

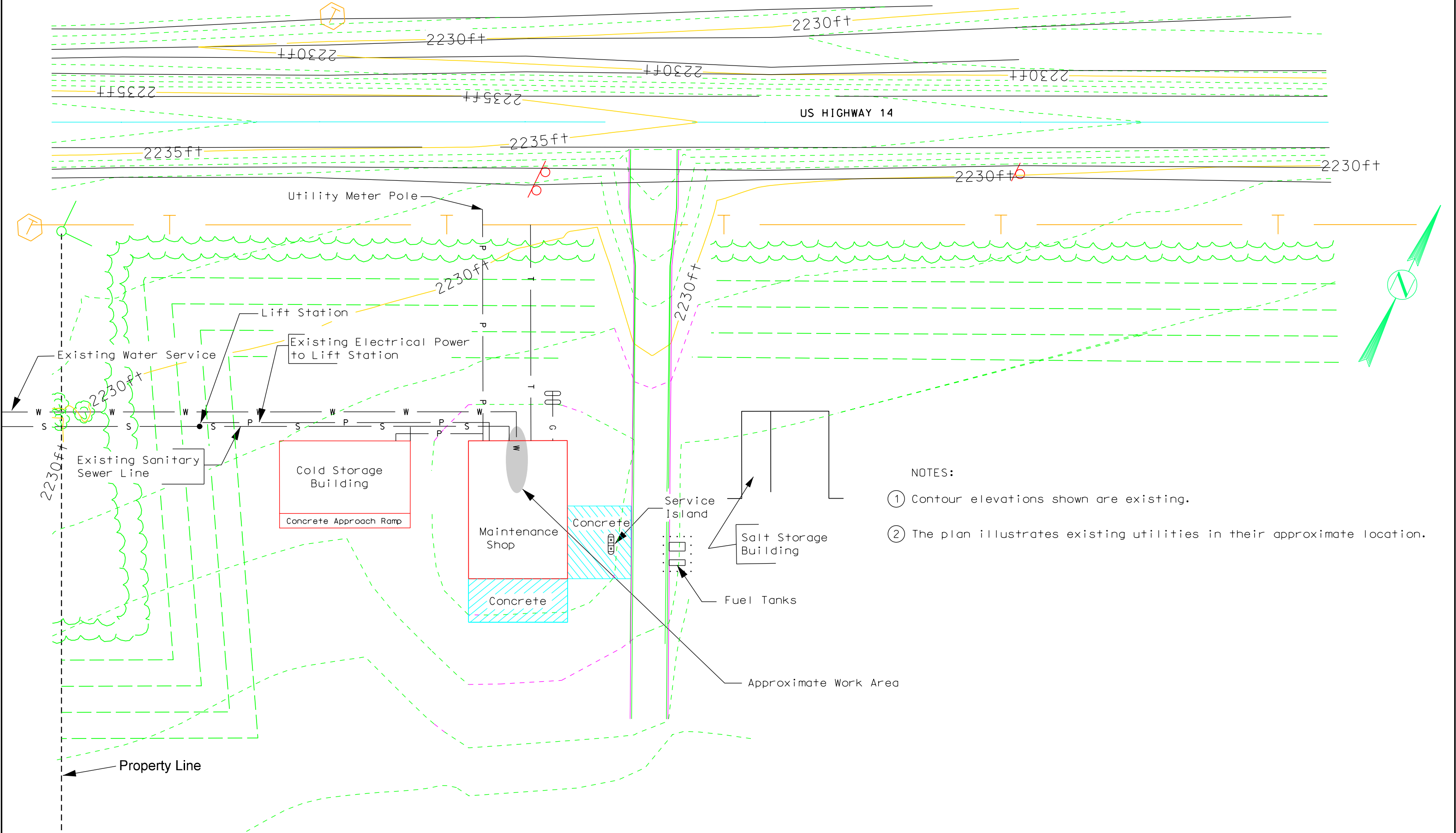
The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). 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.

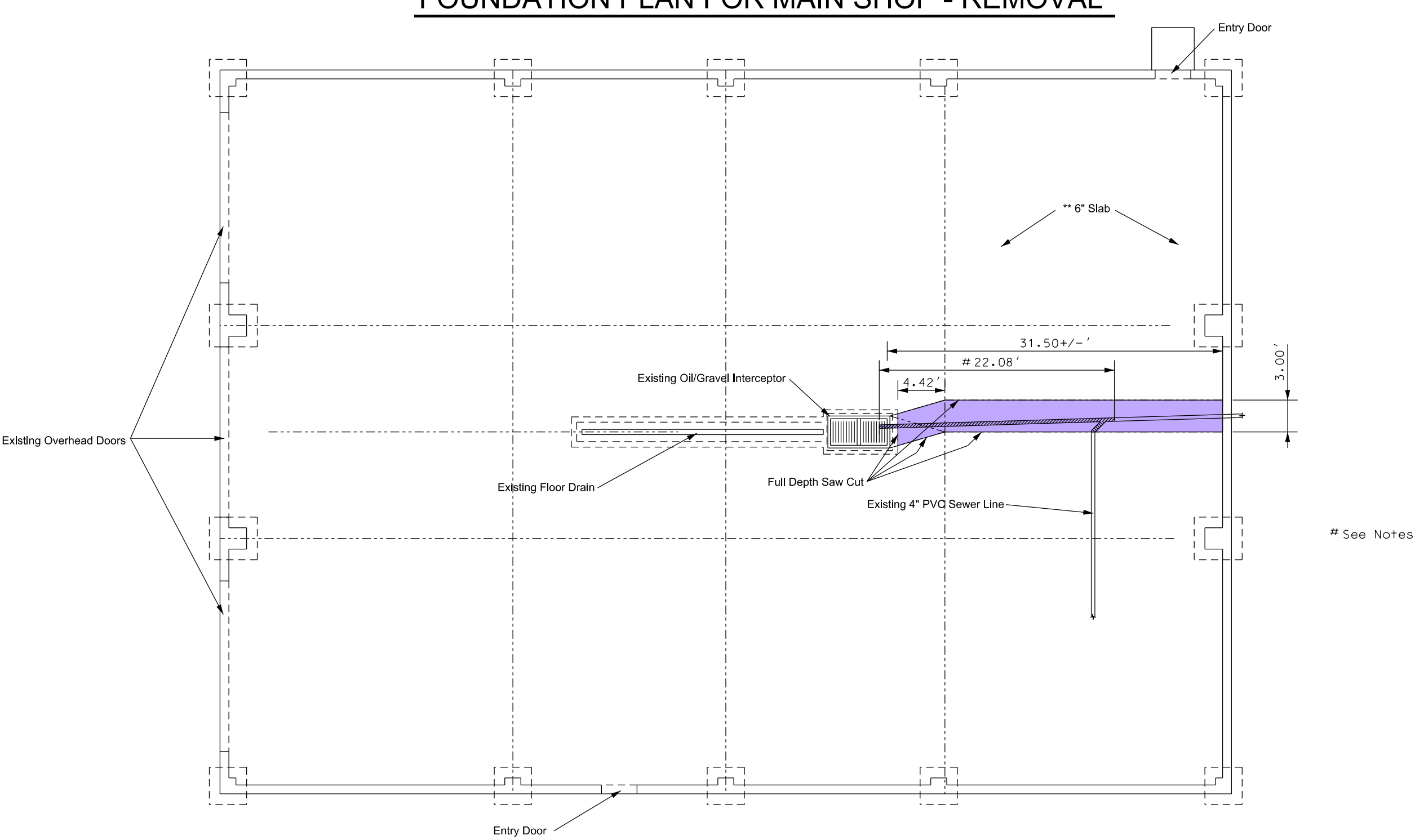
SITE LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	M 0009 - 352	4	27



STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
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FOUNDATION PLAN FOR MAIN SHOP - REMOVAL



See Notes

PIPE REMOVAL

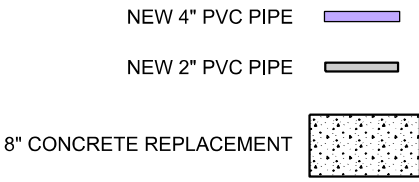
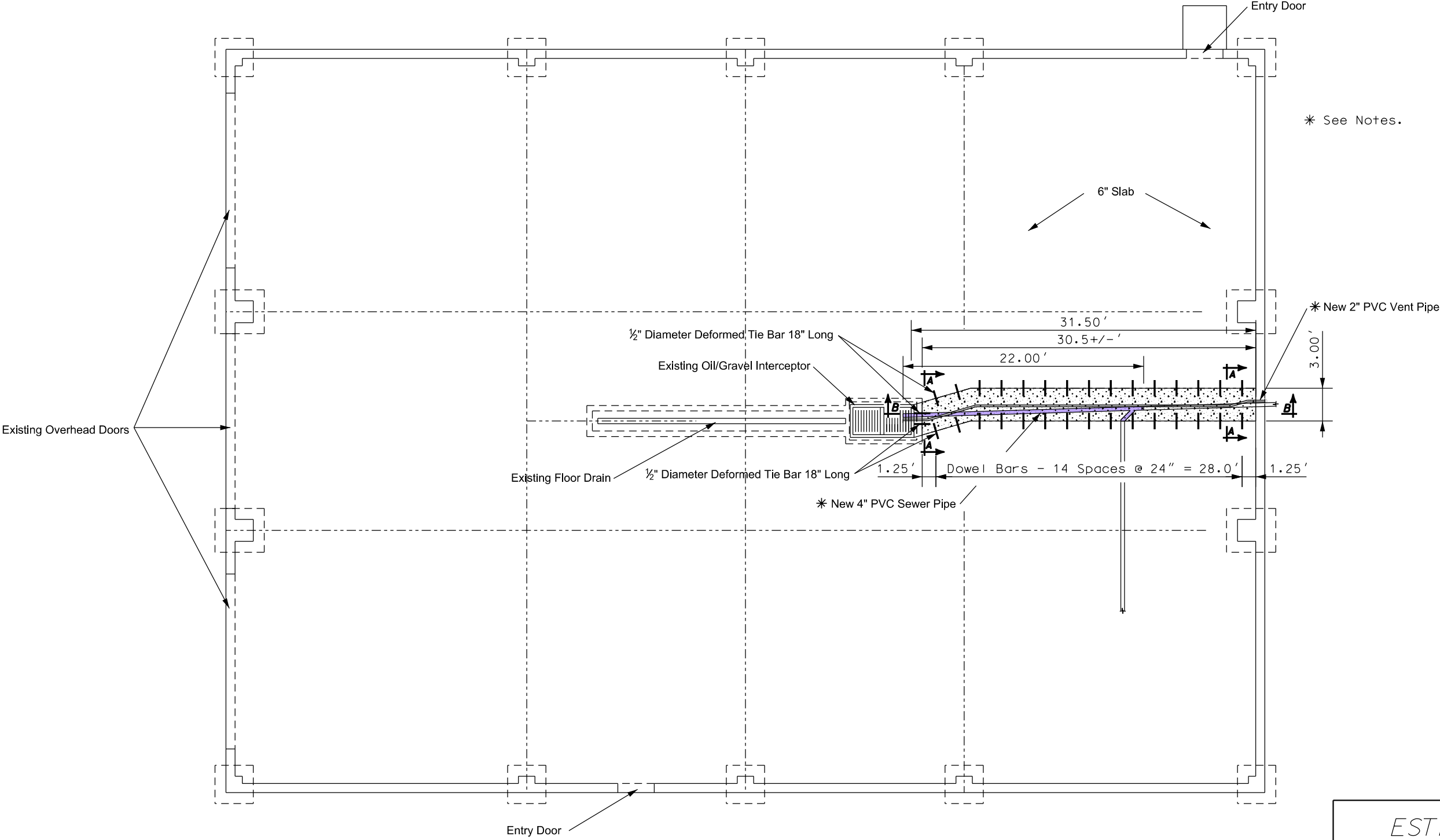
CONCRETE REMOVAL

ESTIMATED QUANTITIES	
BID ITEM	QUANTITY
** REMOVE CONCRETE PAVEMENT (SQYD)	10.2

** 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 damage 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".

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	M 0009 - 352	6	27

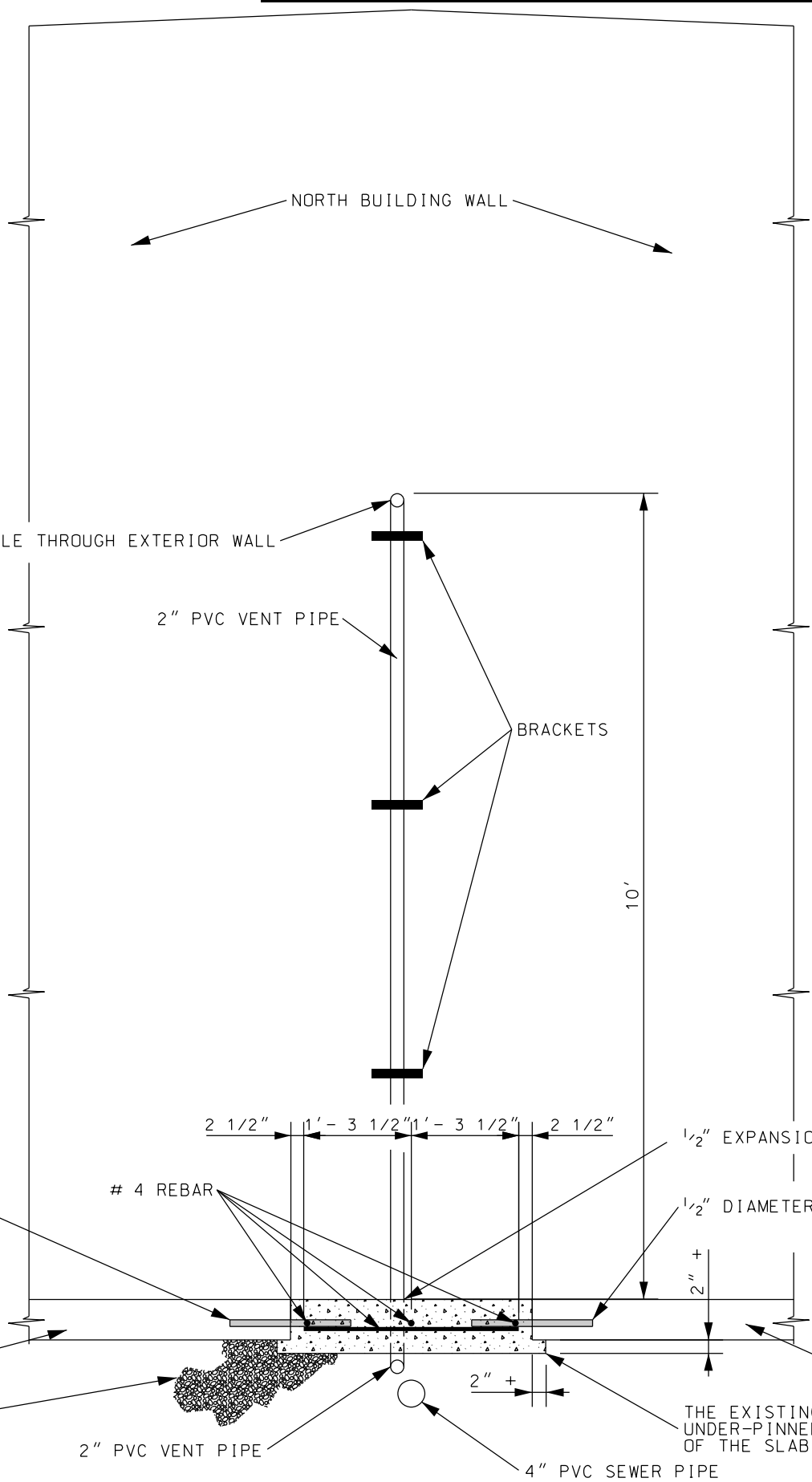
FOUNDATION PLAN FOR MAIN SHOP - REPLACEMENT



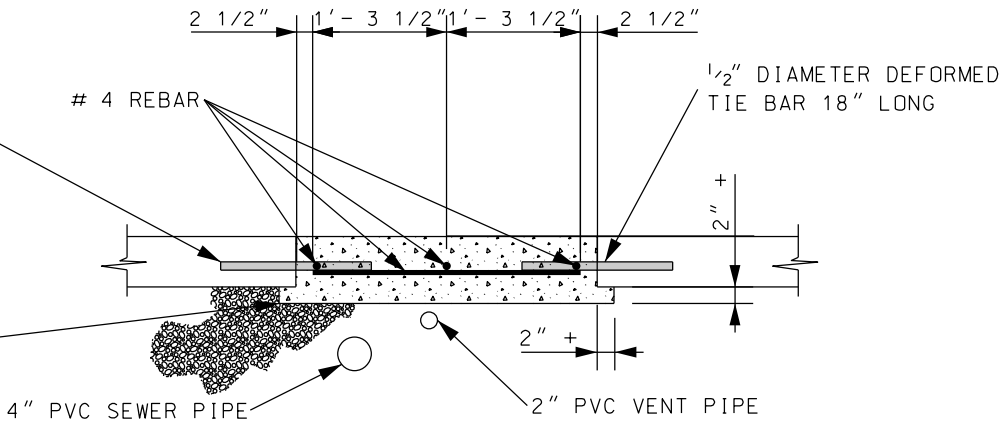
ESTIMATED QUANTITIES	
BID ITEM	QUANTITY
8" MISCELLANEOUS PCC PAVEMENT (SQYD)	10.2
INSTALL DOWEL IN CONCRETE (EACH)	32
2" PVC PIPE (FT)	44
4" PVC PIPE (FT)	24

CONSTRUCTION DETAILS

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
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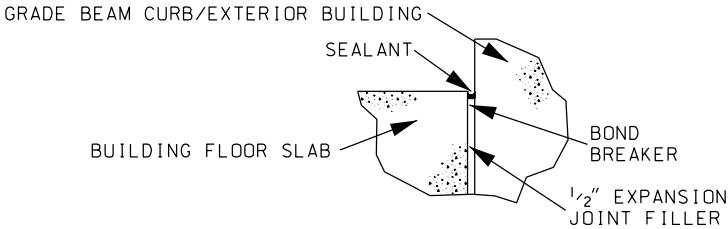


SECTION A - A ~ AT EXTERIOR WALL

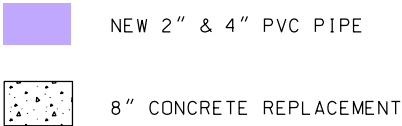
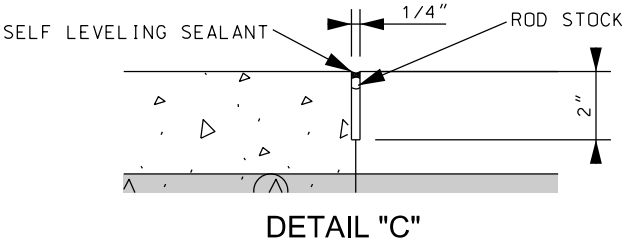


SECTION A - A ~ AT INTERCEPTOR

CONSTRUCTION DETAILS

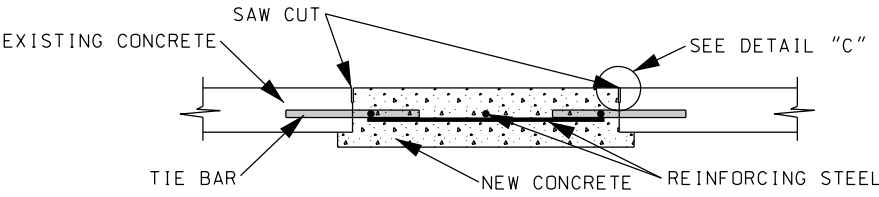


JOINT DETAIL AT EXTERIOR WALL



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

@ PLUMBING VENT TO ELBOW DOWN AT EXTERIOR



JOINT DETAIL BETWEEN NEW AND EXISTING

DRILL AND SEAL HOLE THROUGH EXTERIOR WALL

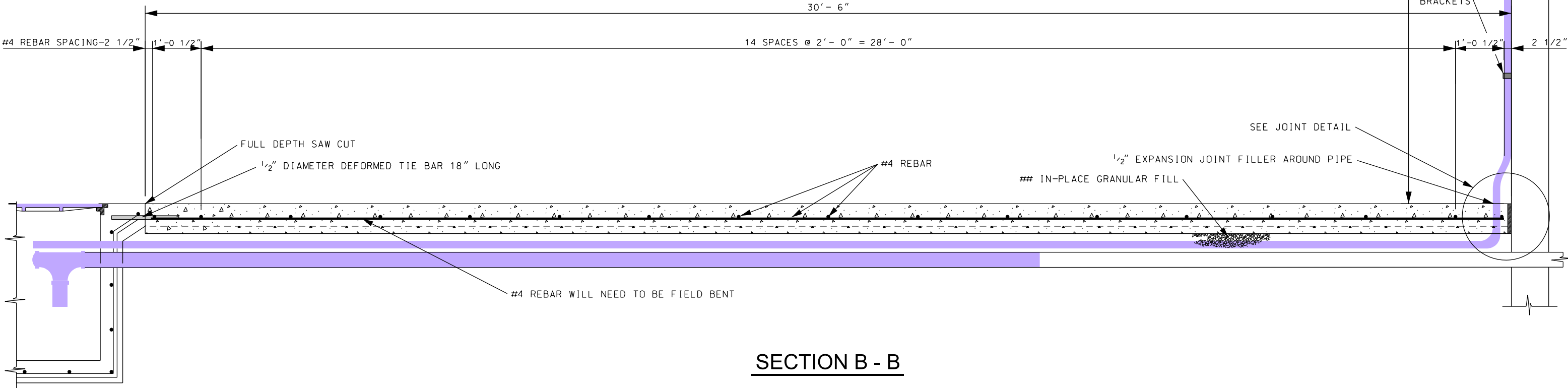
@ 2" PVC VENT PIPE

10' - 0"

BRACKETS

1' - 0 1/2"

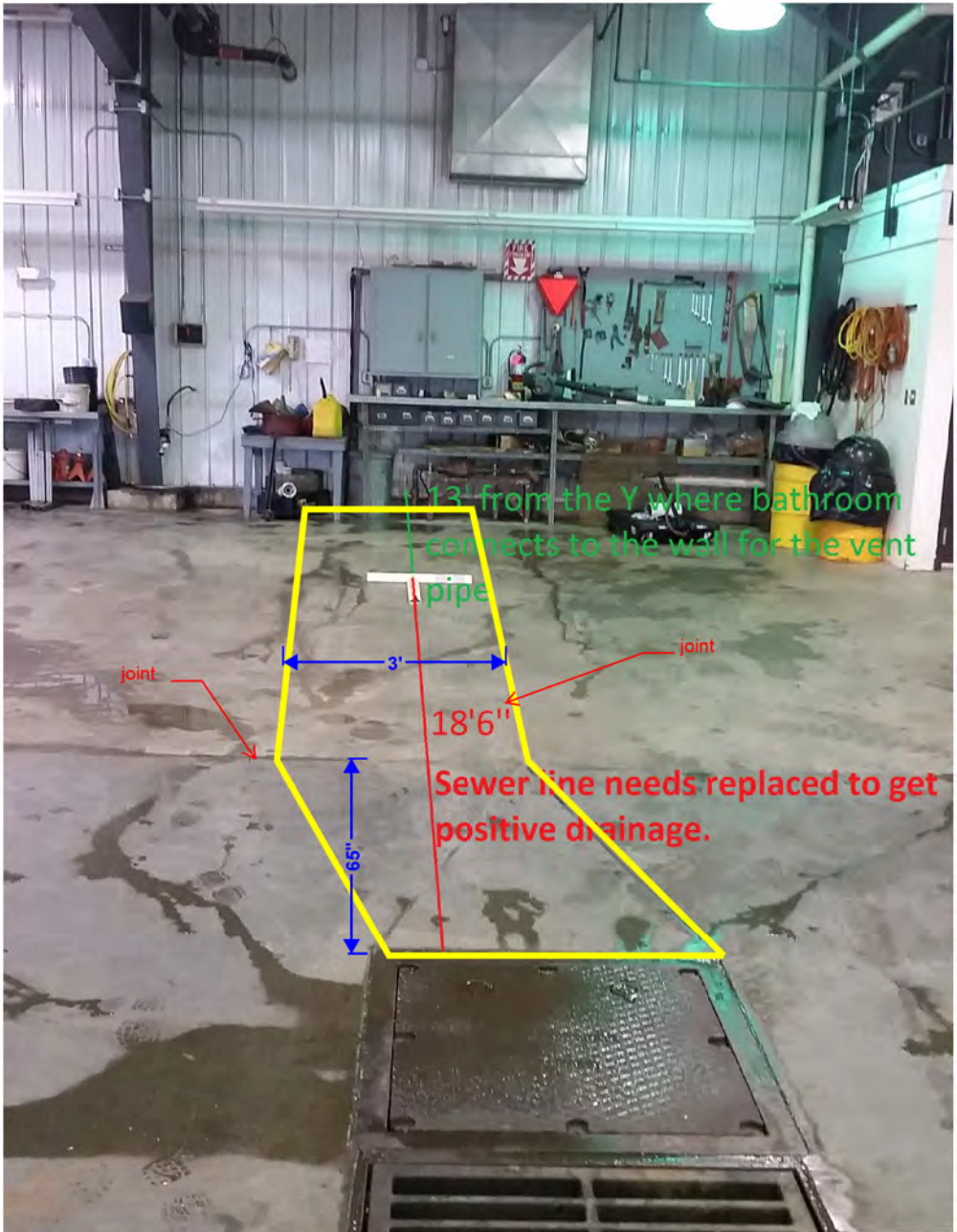
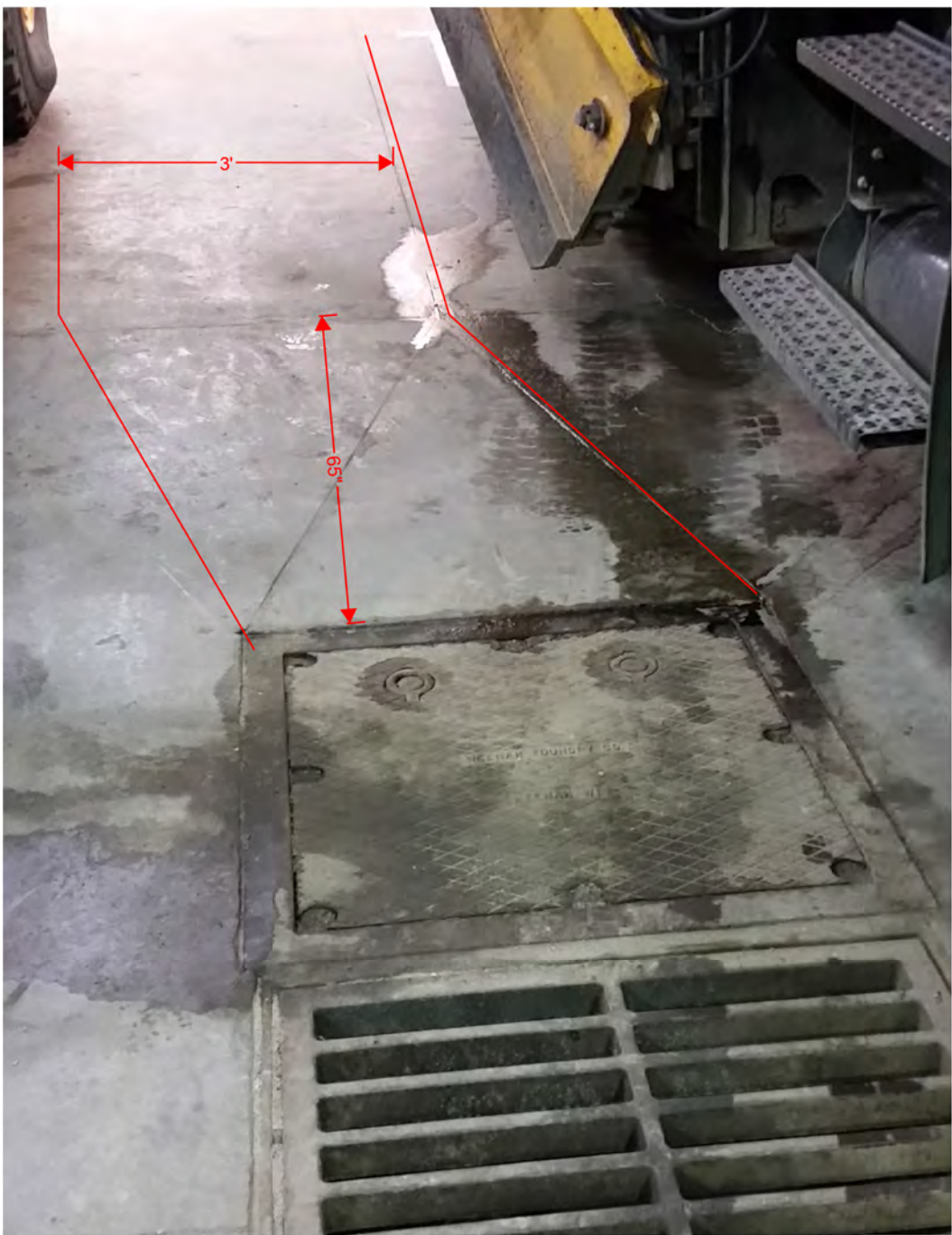
2 1/2"



SECTION B - B

PICTURES OF PROJECT SITE

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OFFICE AND MAINTENANCE SHOP BUILDING

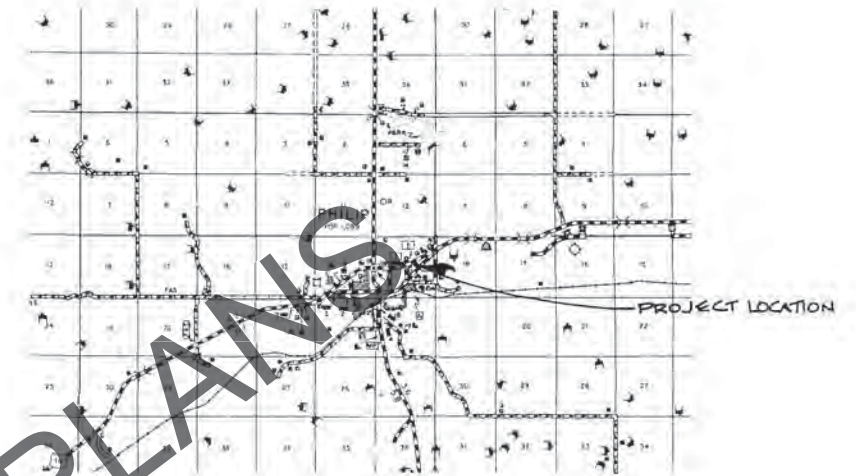
SOUTH DAKOTA DEPARTMENT
OF TRANSPORTATION
PHILIP, SOUTH DAKOTA
OSE #T2203-07X

PLAN SHEET INDEX:

PLAN SHEET 1 OF 12	TITLE SHEET, VICINITY MAP AND SITE PLAN
PLAN SHEET 2 OF 12	FOOTING/FOUNDATION PLAN AND MISC. DETAILS
PLAN SHEET 3 OF 12	MISC. FOOTING AND FOUNDATION DETAILS
PLAN SHEET 4 OF 12	FLOOR INTERCEPTOR, PROPANE TANK PAD AND PAVEMENT DETAILS
PLAN SHEET 5 OF 12	SERVICE ISLAND DETAILS
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PLAN SHEET 11 OF 12	WINDOW SECTIONS AND SHOWER DETAILS
PLAN SHEET 12 OF 12	CHAIN-LINK FENCE DETAILS
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PLAN SHEET M2 OF 4	PIPING PLAN AND VENTILATION PLAN
PLAN SHEET M3 OF 4	MISC. MECHANICAL DETAILS
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PLAN SHEET E1 OF 2	LIGHTING PLAN AND POWER & SIGNAL PLAN
PLAN SHEET E2 OF 2	MISC. ELECTRICAL DETAILS AND PANEL SCHEDULES

UTILITY COMPANIES:
WATER & SEWER- CITY OF PHILIP
ELECTRICAL- WEST CENTRAL ELECTRIC
TELEPHONE- US WEST

Plans prepared by:
Office of the State Engineer
523 East Capitol Avenue
Pierre, South Dakota

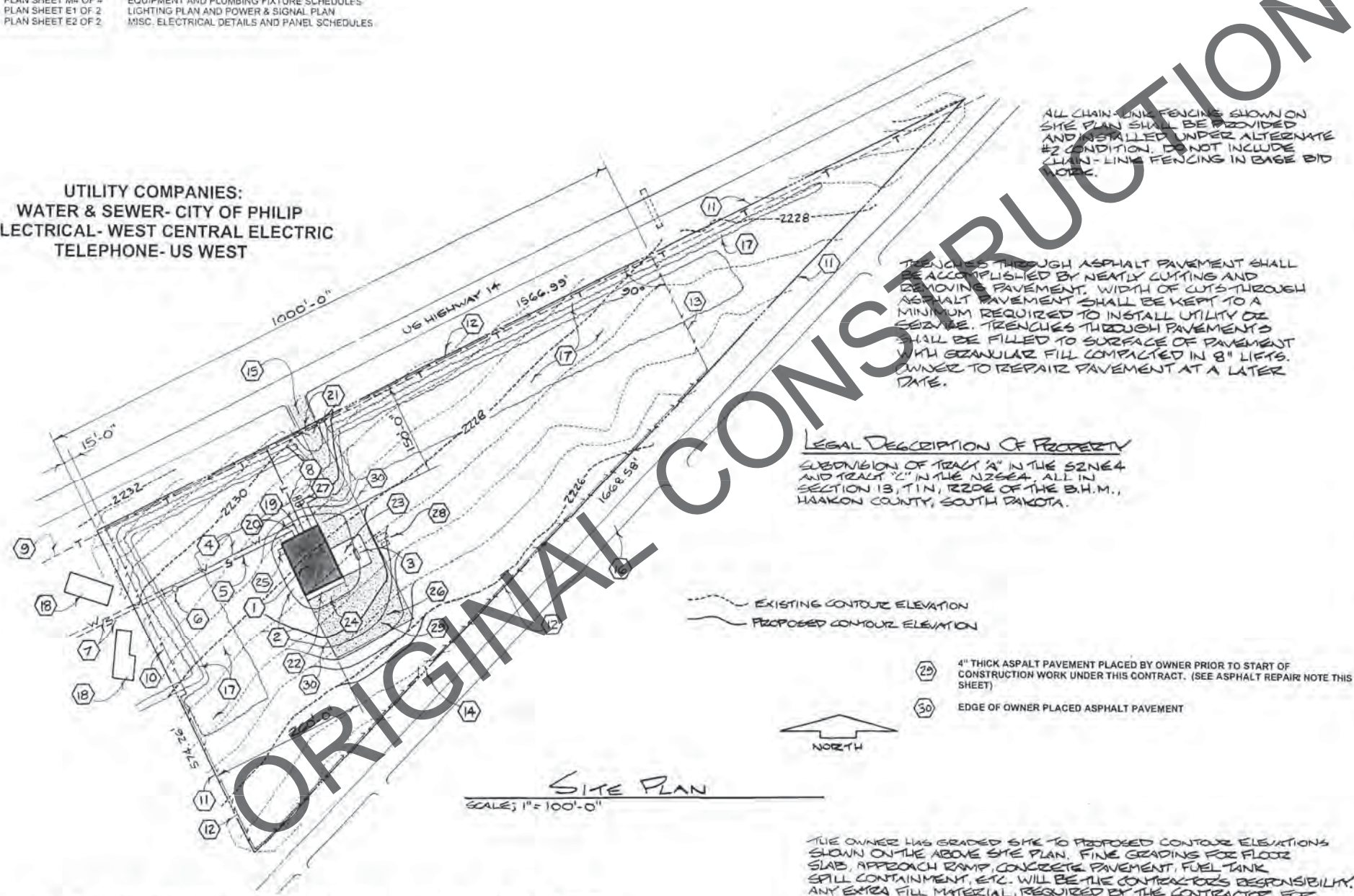


PROJECT LOCATION MAP
NO SCALE



SHE PLAN NOTES

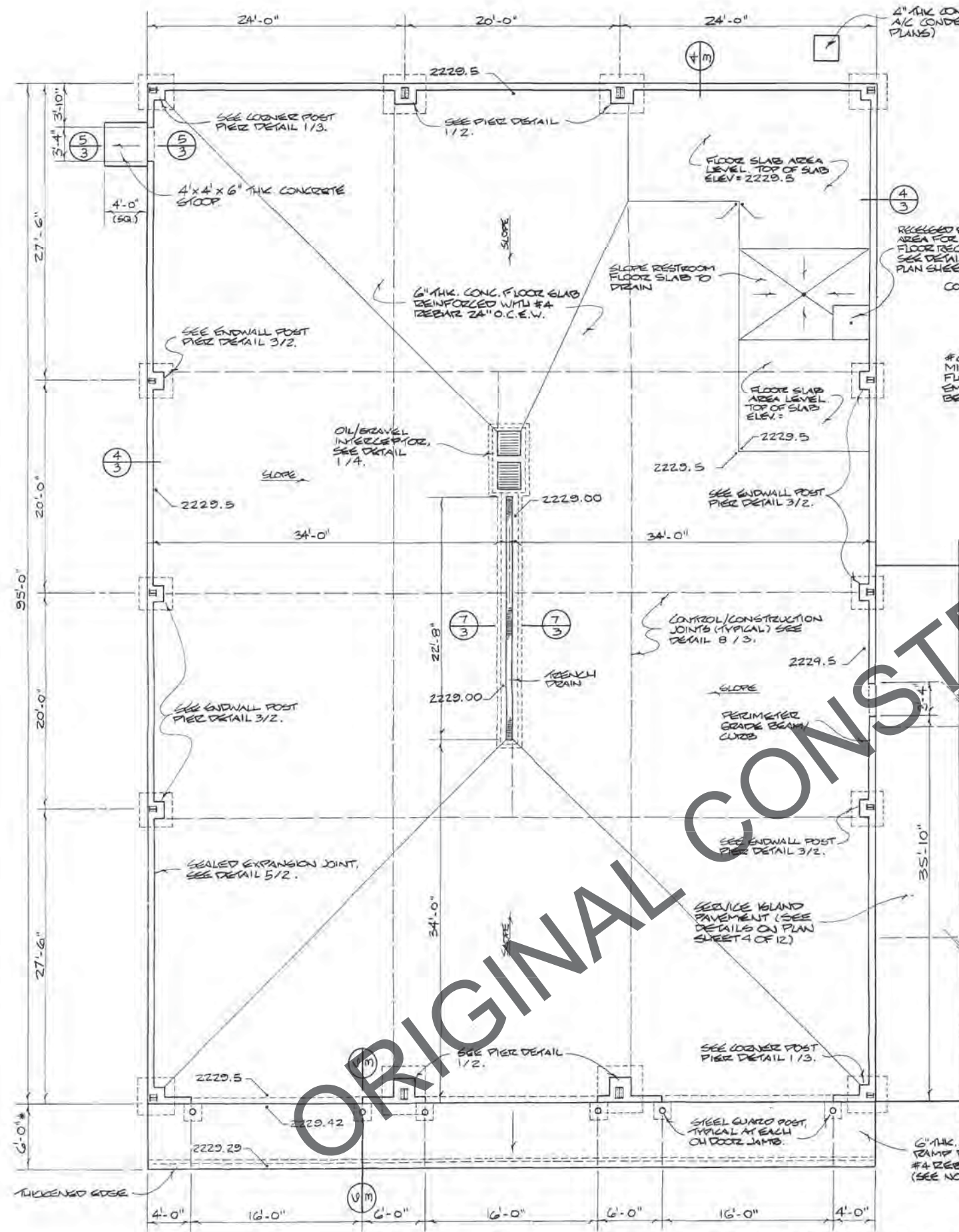
- 1 PROPOSED OFFICE AND MAINTENANCE SHOP BUILDING. PROPOSED FINISHED FLOOR ELEVATION = 2229.5.
- 2 OWNER TO PREPARE, FILL, COMPACT AND GRADE BUILDING SITE TO BOTTOM OF FLOOR SLAB ELEVATION 2229.0. CONTRACTOR TO EXCAVATE FOR FOOTINGS, GRADE BEAM, PLUMBING, ELECTRICAL, ETC. CONTRACTOR WILL BE REQUIRED TO BACKFILL AND COMPACT ALL EXCAVATIONS. CONTRACTOR WILL ALSO BE REQUIRED TO FINE GRADE FLOOR SLAB SUBGRADE AS NECESSARY TO COMPENSATE FOR FLOOR SLOPE.
- 3 SERVICE ISLAND, PUMPS AND SERVICE ISLAND LIGHT. SEE DETAILS ON PLAN SHEET 4 OF 12. ~~AND~~ DETAILS ON MECHANICAL AND ELECTRICAL PLANS.
- 4 PROPOSED 2" WATER SERVICE TO BUILDING FROM EXISTING CITY WATER LINE STUBBED ONTO SITE (SEE PLUMBING PLAN SHEETS).
- 5 PROPOSED 4" SEWER LINE FROM BUILDING TO MANHOLE (SEE PLUMBING PLAN SHEETS).
- 6 PROPOSED MANHOLE WITH PUMP AND FORCEMAIN TO CITY SEWER (SEE PLUMBING PLAN SHEETS)
- 7 EXISTING WATER AND SEWER LINES STUBBED ONTO SITE.
- 8 PROPOSED TELEPHONE SERVICE TO BUILDING.
- 9 EXISTING UNDERGROUND TELEPHONE LINE.
- 10 PROVIDE AND CONSTRUCT CHAIN-LINK FENCE OFF-SET FROM PROPERTY LINE AS SHOWN (SEE DETAILS ON PLAN SHEET 12 OF 12). **ALTERNATE #2**
- 11 PROPERTY LINE
- 12 PROPOSED CHAIN-LINK FENCE SET PARALLEL TO PROPERTY LINE 1'-0" INSIDE OWNERS PROPERTY. (SEE DETAILS ON PLAN SHEET 12 OF 12) **ALTERNATE #2**
- 13 PROPOSED CHAIN-LINK FENCE. (6'-0" HEIGHT) **ALTERNATE #2**
- 14 CHAIN-LINK FENCE GATE WITH OPENING WIDTH OF 24' (SEE DETAILS ON PLAN SHEET 12 OF 12). PROVIDE DOUBLE SWING GATES. **ALTERNATE #2**
- 15 APPROACH CONSTRUCTED BY THE OWNER PRIOR TO START OF BUILDING CONSTRUCTION ACTIVITIES.
- 16 EXISTING GRAVELED ROAD.
- 17 EXISTING TREES/SHELTER BELT.
- 18 EXISTING PRIVATE RESIDENCES.
- 19 PROPOSED WATER SUPPLY CURB STOP.
- 20 PROPOSED SEWER LINE CLEAN OUT. PROVIDE CAST IRON FRAME AND COVER SET IN CONCRETE PAD. (SEE DETAILS ON PLUMBING PLAN)
- 21 CHAIN-LINK FENCE GATE WITH OPENING WIDTH OF 32'. (SEE DETAILS ON PLAN SHEET 12 OF 12) PROVIDE DOUBLE ROLLING GATE SYSTEM. **ALTERNATE #2**
- 22 CONSTRUCT 6' WIDE CONCRETE APPROACH RAMP UNDER BASE BID. SEE DETAILS ON PLAN SHEET 2 OF 12.
- 23 8" THICK CONCRETE PAVEMENT AROUND SERVICE ISLAND ALONG WEST ELEVATION OF THE MAINTENANCE SHOP. (SEE DETAILS ON PLAN SHEET 4 OF 12)
- 24 EXTEND CONCRETE APPROACH RAMP TO 30' WIDE UNDER ALTERNATE #1 CONDITION. SEE DETAILS ON PLAN SHEET 4 OF 12.
- 25 CONCRETE STOOP AT ENTRANCE DOOR. SEE DETAILS ON PLAN SHEET 2 OF 12.
- 26 PROPOSED CONTOUR ELEVATION LINES INDICATE GRADING WORK COMPLETED BY OWNER PRIOR TO CONSTRUCTION WORK PROPOSED UNDER THIS PROJECT.
- 27 PROPANE TANK(S). SEE DETAILS ON PLAN SHEET 4 OF 12. AND MECHANICAL PLANS. LOCATE TANKS 25' (MIN) AWAY FROM BUILDING.
- 28 UNDERGROUND FUEL AND GASOLINE FUEL STORAGE TANKS. SEE DETAILS ON MECHANICAL PLAN SHEETS.



OWNER WILL PLACE ASPHALT PAVEMENT TO WITHIN OR ABOUT 12" FROM EDGES OF CONCRETE APPROACH RAMP AND SERVICE ISLAND SLAB. ASPHALT PAVEMENT SET-BACK WILL BE INCREASED TO 4'-0" AT BUILDING FOUNDATION WALL. UPON COMPLETION OF CONCRETE PAVEMENTS/FOUNDATION WALL, THE CONTRACTOR SHALL FILL VOID BETWEEN ASPHALT PAVEMENT AND CONCRETE PAVEMENT OR FOUNDATION WALL WITH GRANULAR FILL.

THE OWNER HAS GRADED SITE TO PROPOSED CONTOUR ELEVATIONS SHOWN ON THE ABOVE SITE PLAN. FINE GRADING FOR FLOOR SLAB, APPROACH RAMP, CONCRETE PAVEMENT, FUEL TANK SPILL CONTAINMENT, ETC. WILL BE THE CONTRACTORS RESPONSIBILITY. ANY EXTRA FILL MATERIAL, REQUIRED BY THE CONTRACTOR FOR FINE GRADING WORK, WILL BE PROVIDED BY THE OWNER. CONTRACTOR SHALL OBTAIN GRANULAR FINE GRADING MATERIAL FROM OWNERS STOCKPILE LOCATED APPROXIMATELY 1/2 MILE FROM PROJECT SITE ADJACENT TO HIGHWAY 14.

PLAN DATE #2	1 of 12	DATE
DETAILS		DATE
ELEVATION		DATE
FI		DATE
2 OF 12,		DATE
PLETED BY		DATE
EC		DATE
DATE		DATE
FILE		DATE
AILS ON		DATE
31 FINAL		DATE



4" THK. CONCRETE PAD FOR A/C CONDENSER. (SEE MECH. PLANS)

GRADE BEAM

ANCHOR BOLTS PER BUILDING MANUFACTURER

FOOTING

6" FLOOR SLAB REINFORCED W/ #4 REBAR 24" O.C.E.W. TOP OF SLAB ELEVATION = 2229.5.

SEALED EXPANSION JOINT (S.D. 8/3)

TOP OF PIER ELEVATION = 2230.0

ANCHOR BOLTS PER BUILDING MANUFACTURER

GRADE

#3 REBAR STIRRUPS 12" O.C.

GRAVEL FILL PERIMETER INSULATION

PIER REINFORCED W/ 4" #6 REBAR (VERT.) 6" HOOK AT FOOTING END

FOOTING REINFORCED WITH #4 REBAR 12" O.C.E.W.

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

RIGID FRAME PIER DETAIL
SCALE: 3/4" = 1'-0"

PIER ENDWALL POST FOUNDATION

CONCRETE SLAB

EXPANSION JOINT

#6 REBAR HAIRPIN, MINIMUM CONCRETE EMBEDMENT INTO FLOOR SLAB 6'-0"

FOOTING

GRADE BEAM

ENDWALL POST PIER DETAIL
SCALE: 3/4" = 1'-0"

SEALED EXPANSION JOINT (S.D. 8/3)

TOP OF PIER ELEVATION = 2230.0

ANCHOR BOLTS PER BUILDING MANUFACTURER

GRADE

#3 REBAR STIRRUPS 12" O.C.

6" FLOOR SLAB REINFORCED WITH #4 REBAR 24" O.C.E.W. TOP OF SLAB ELEVATION AT WALL = 2229.5.

#6 HAIRPIN

GRAVEL FILL

PERIMETER INSULATION

ANCHOR BOLTS PER BLDG. MANUFACTURER

PIER REINFORCED WITH 4" #6 REBAR (VERT.) 6" HOOK AT FOOTING END

FOOTING REINFORCED WITH #4 REBAR 12" O.C.E.W.

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

GRADE BEAM CURB

SEALANT

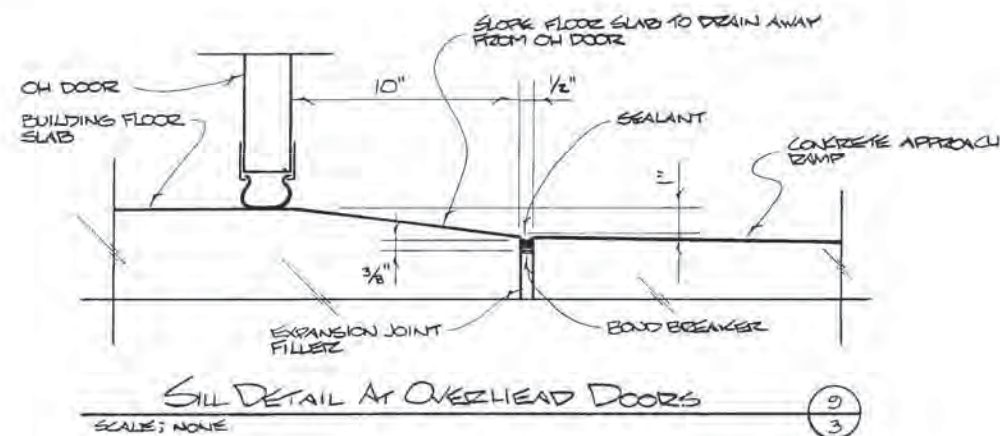
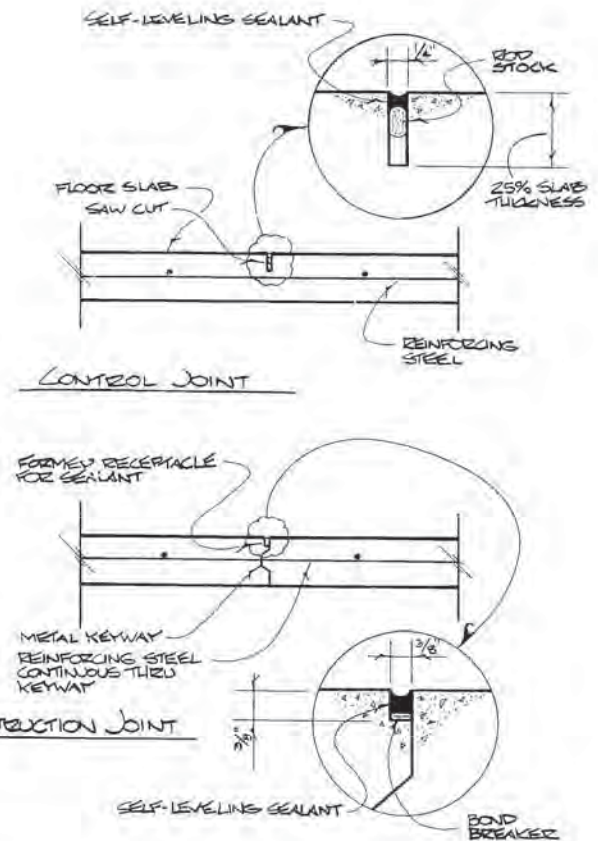
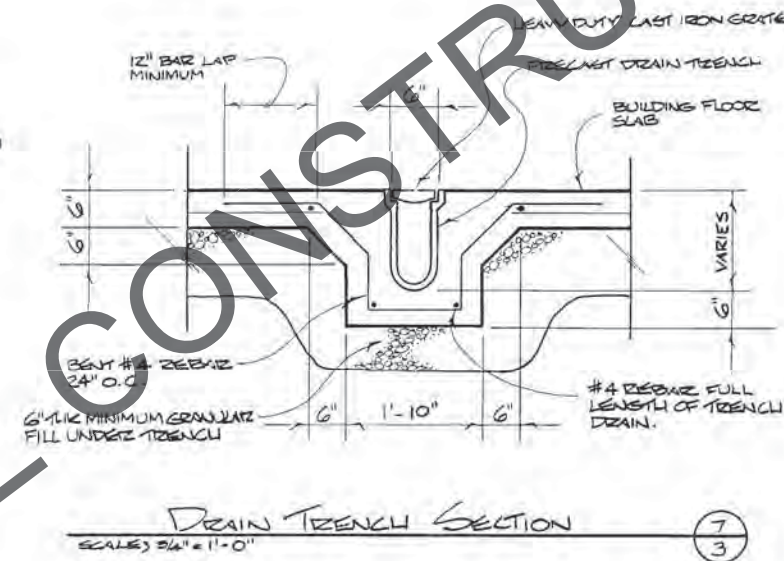
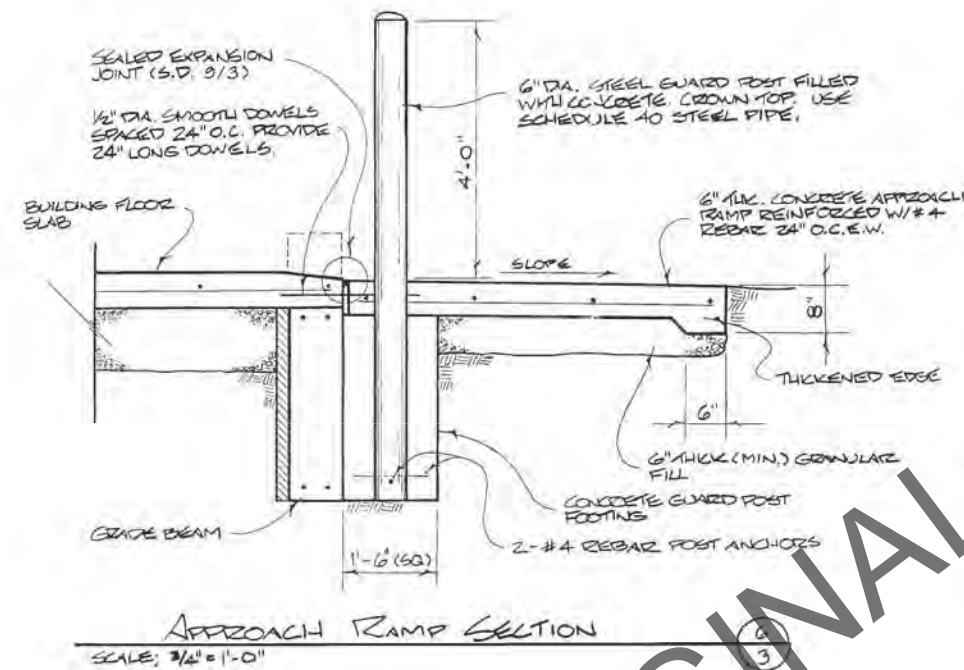
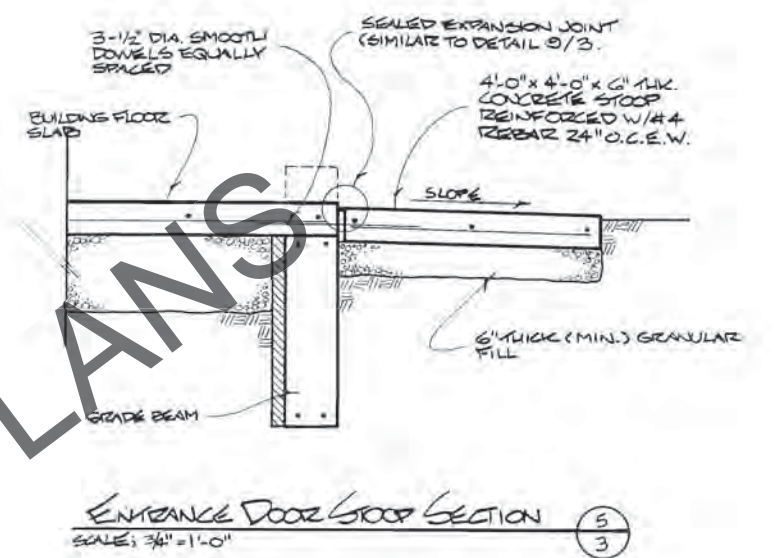
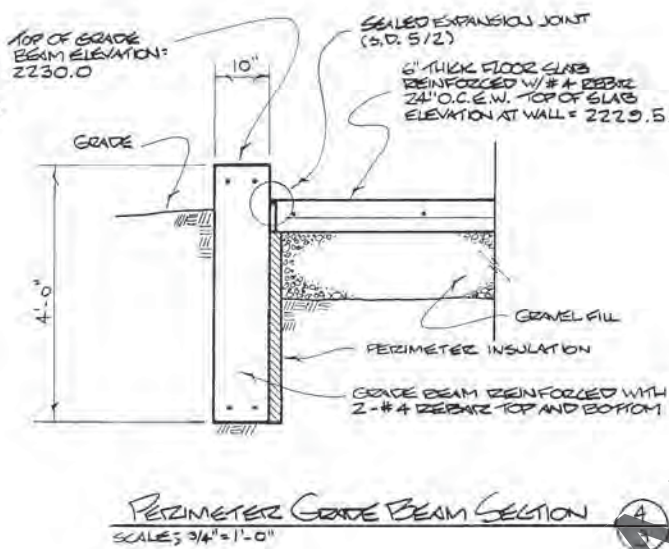
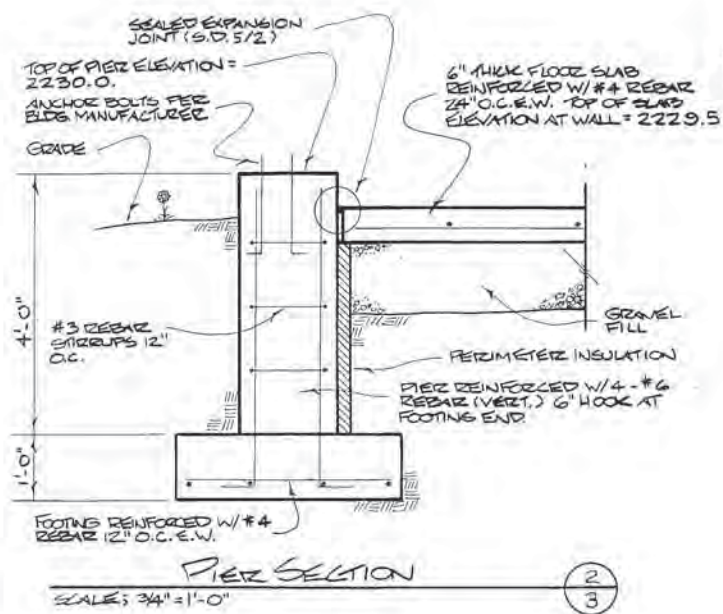
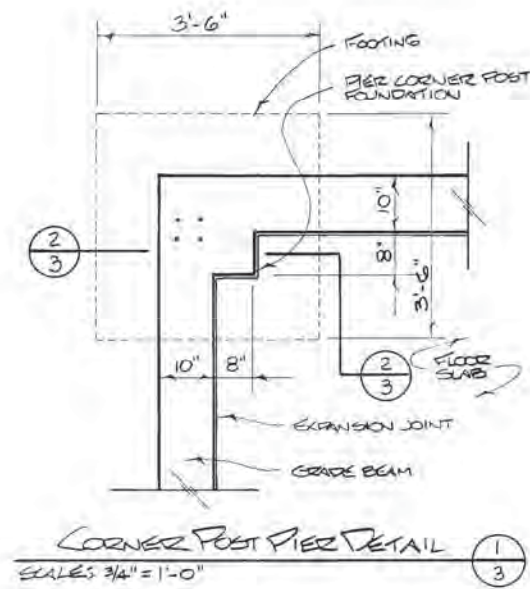
FLOOR SLAB

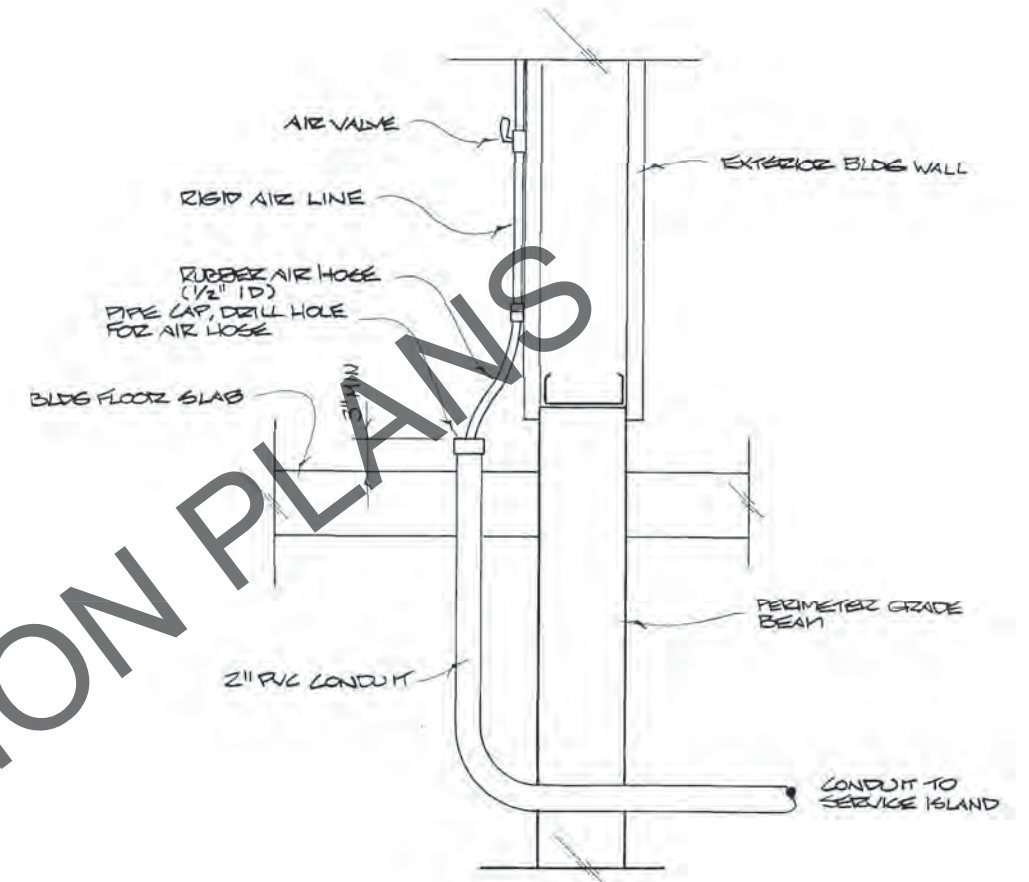
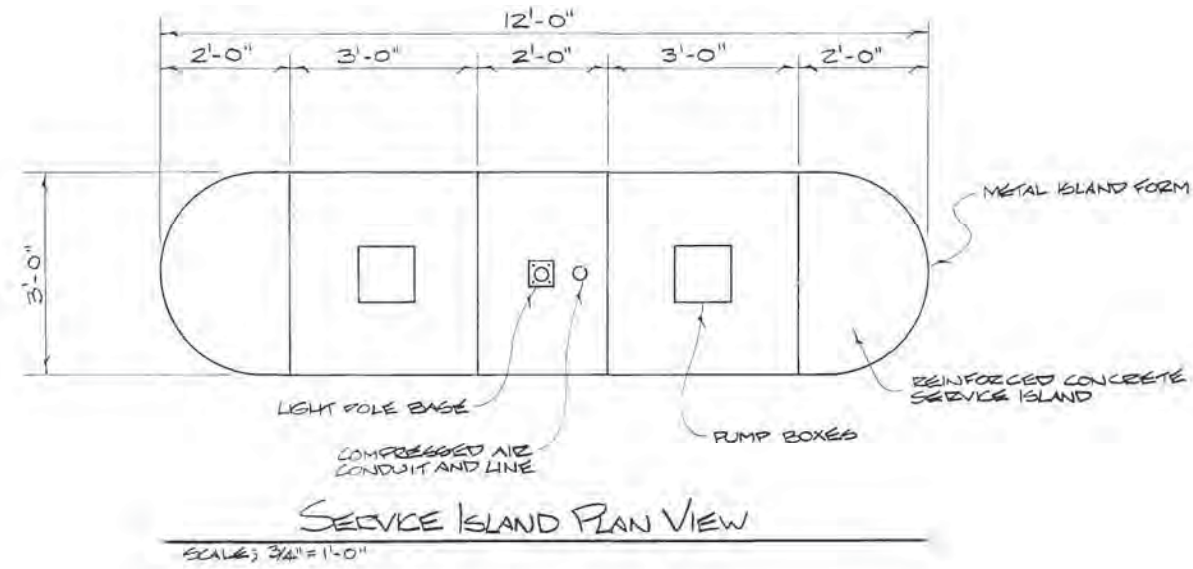
BOUD BREAKER

1/2" EXPANSION JOINT FILLER

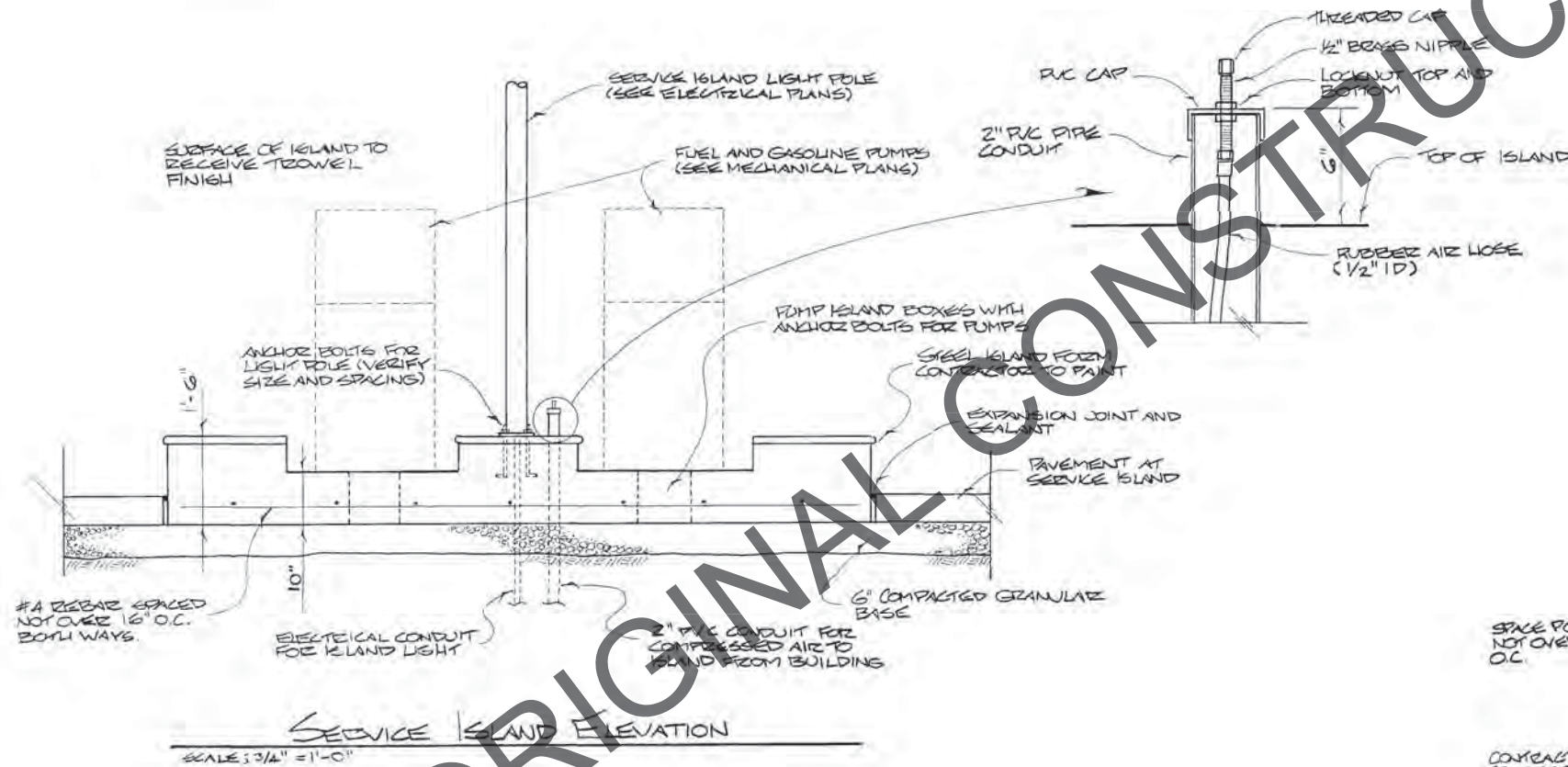
EXPANSION JOINT DETAIL
SCALE: NONE

PROJECT NO.	2	OF	12	SHEET NO.	11
DATE	01/15/2011	BY	CHUCK	CHECKED BY	CHUCK
PROJECT NAME	OFFICE OF TRANSPORTATION SOUTH DAKOTA PHILIP, SOUTH DAKOTA				

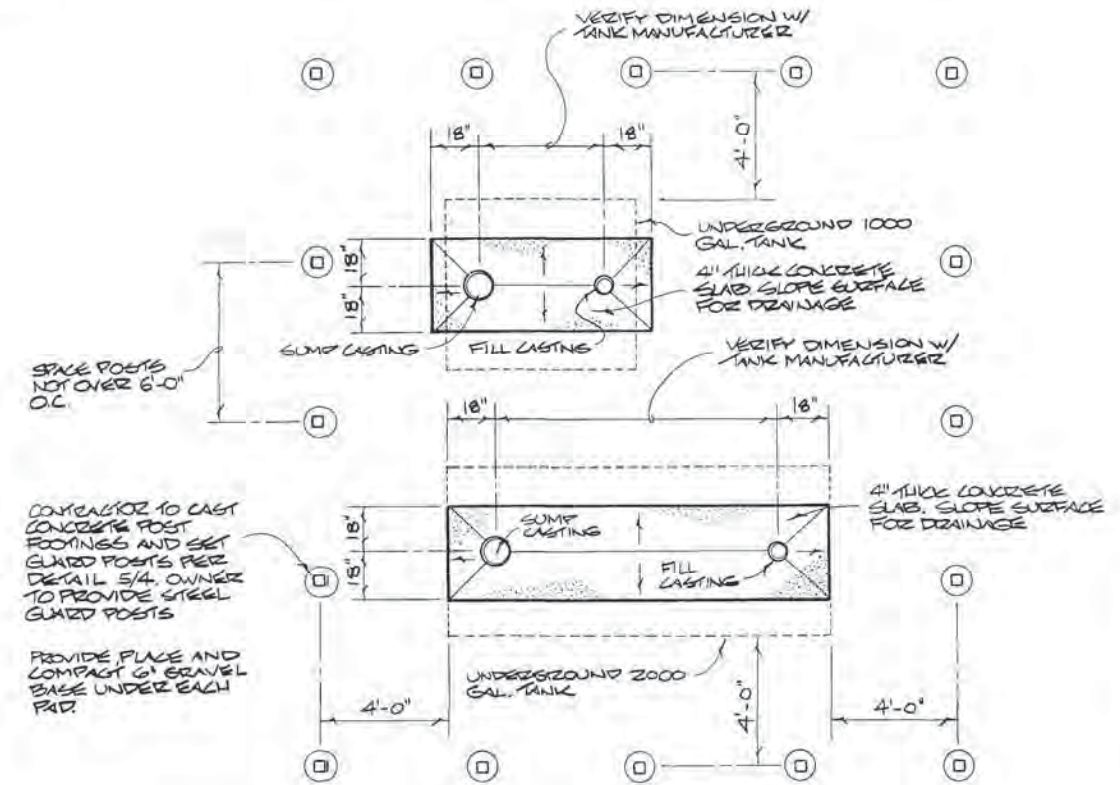




AIR LINE DETAIL THRU BLDG FLR SLAB
NO SCALE

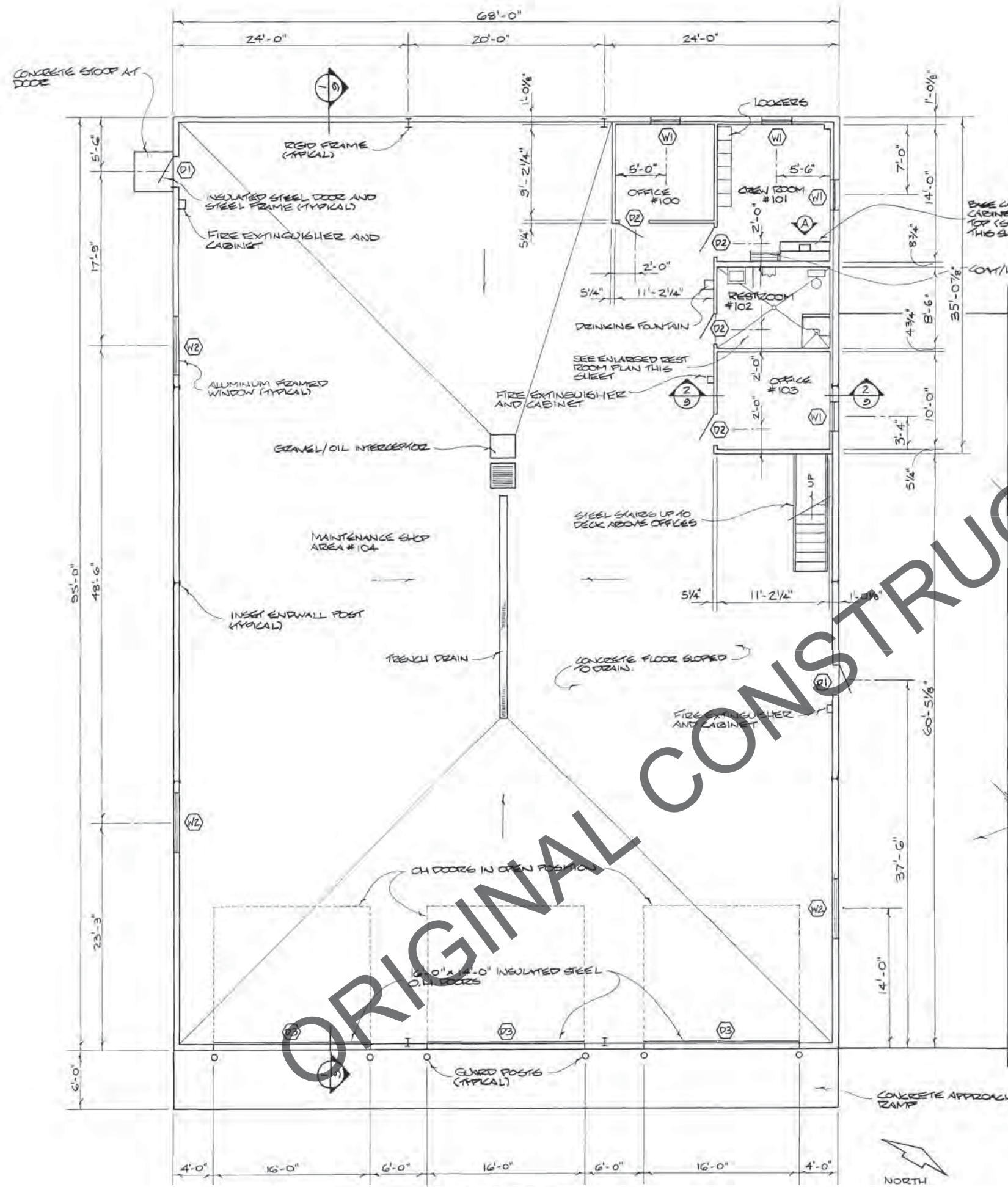


SERVICE ISLAND ELEVATION
SCALE: 3/4" = 1'-0"

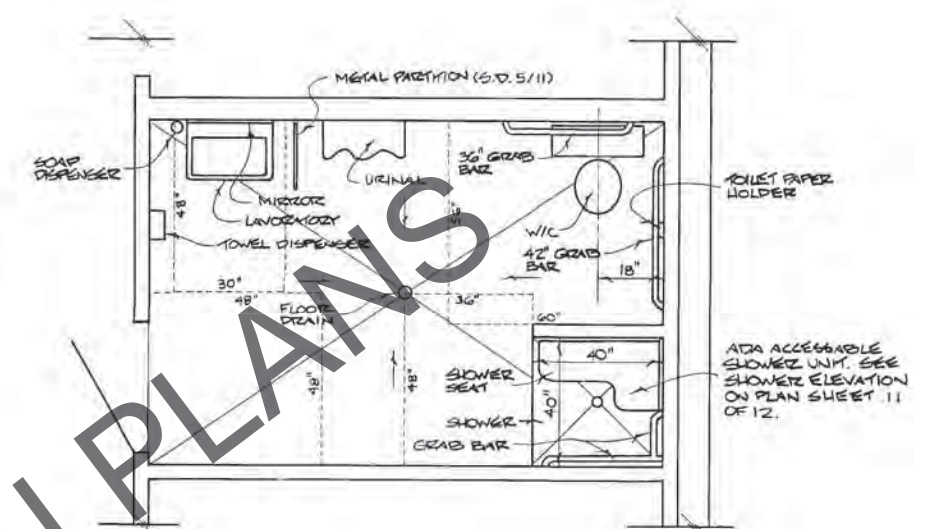


UNDERGROUND TANK FILL/SUMP PAD DETAIL
SCALE: 3/8" = 1'-0"

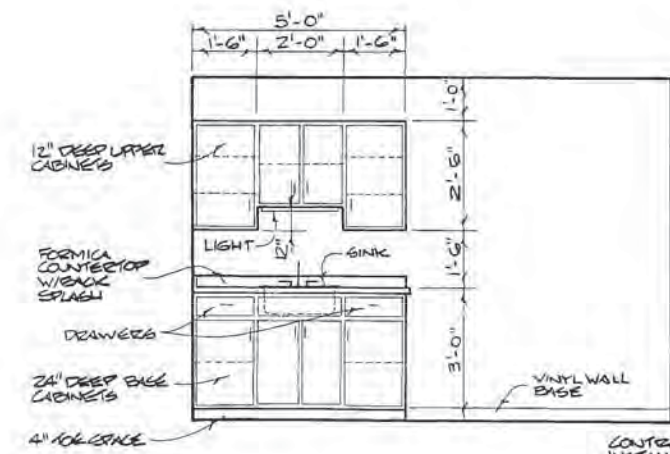
DATE	5 OF 12	DATE	08/20/24
PROJECT	OFFICE & MAINTENANCE SHED	DESIGNED BY	PAV
LOCATION	50 DEPT. OF TRANSPORTATION	CHECKED BY	
	PHILIP, SOUTH DAKOTA		



FLOOR PLAN
SCALE: $3/16" = 1'-0"$



ENLARGED RESTROOM PLAN
SCALE: 1/2" = 1'-0"



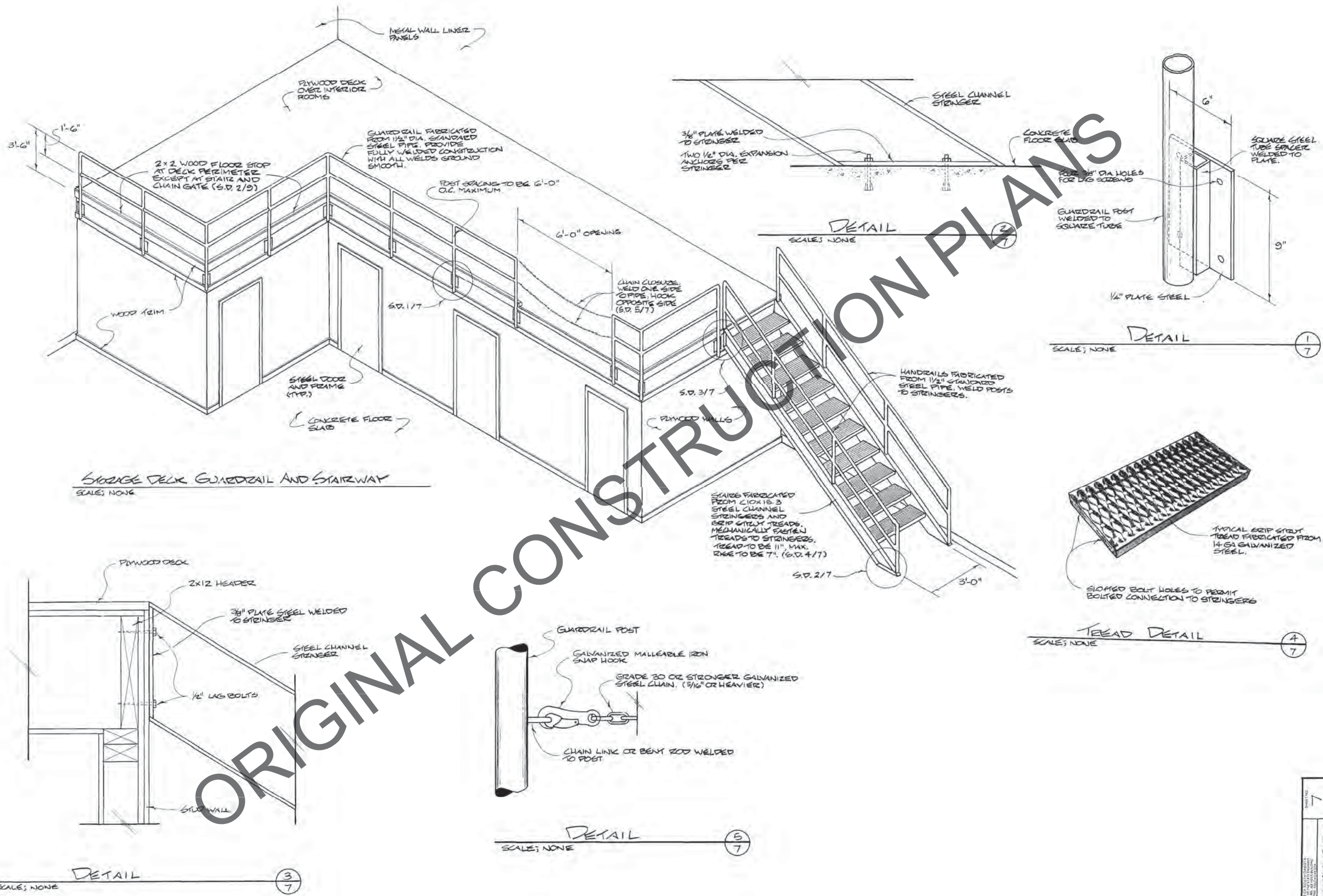
ELEVATION "A"
SCALE: $\frac{1}{2}" = 1'-0"$

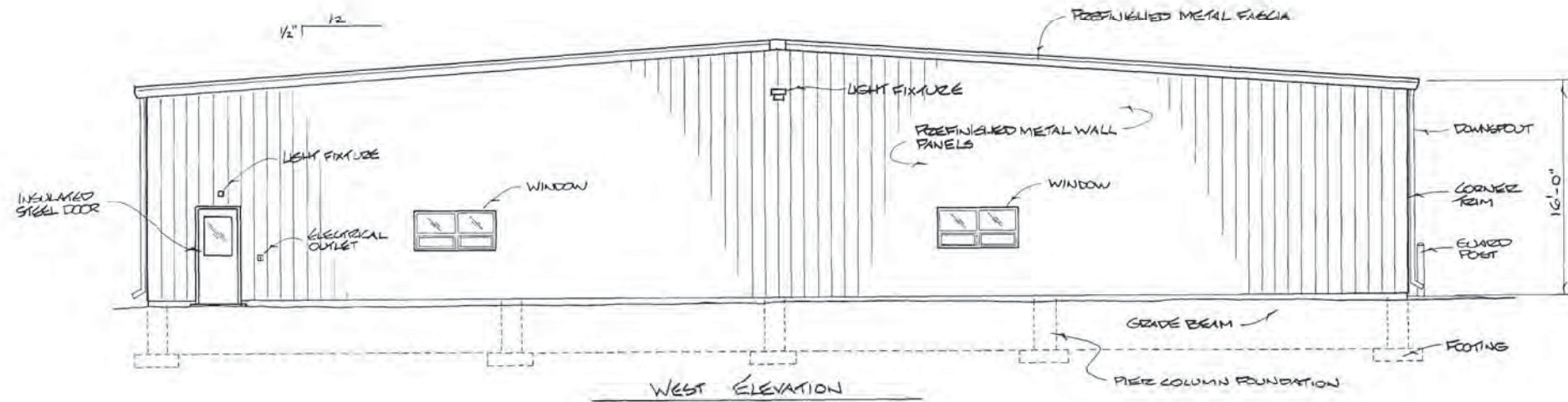
CONTRACTOR TO PROVIDE AND
INSTALL NAILERS/BACKING
WITHIN WALL AS NECESSARY
TO SECURE CABINETS TO
WALL

[illegible]

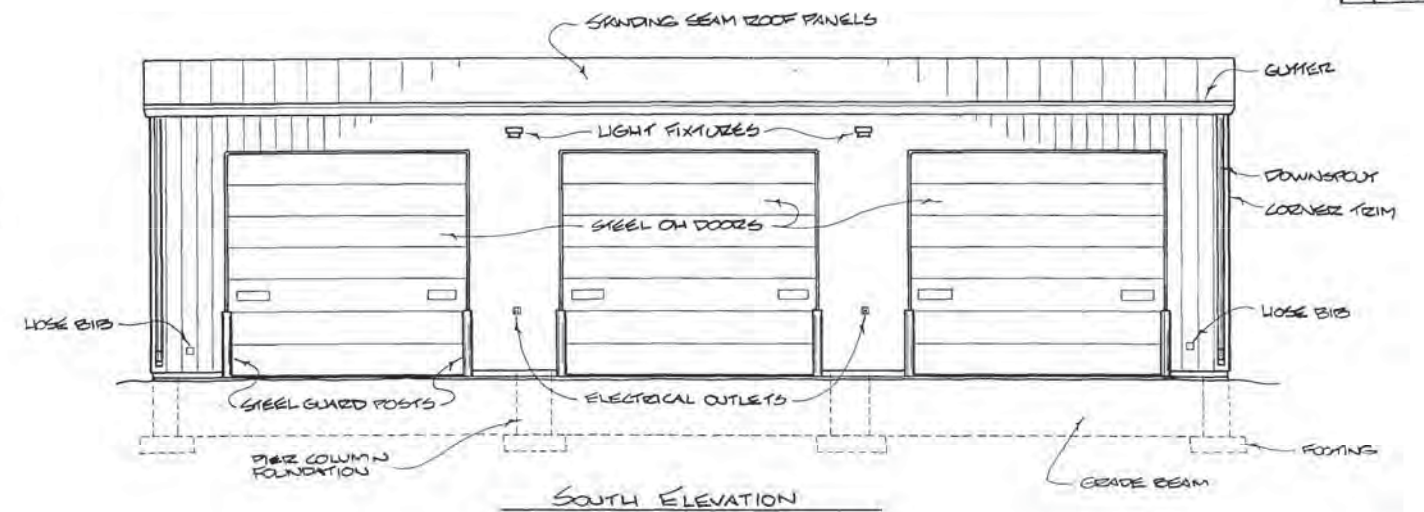
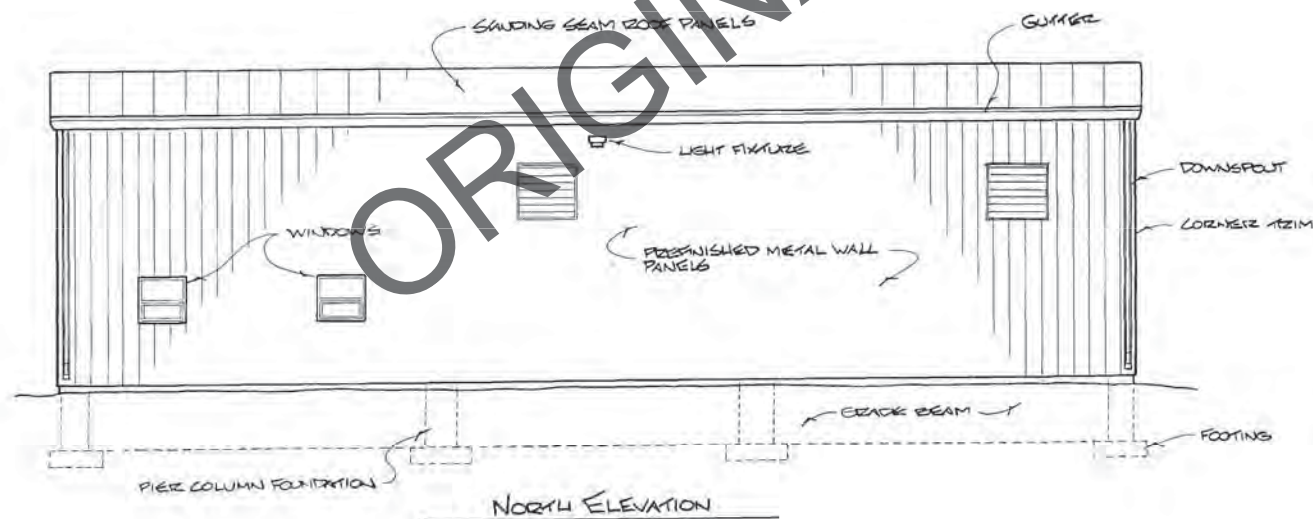
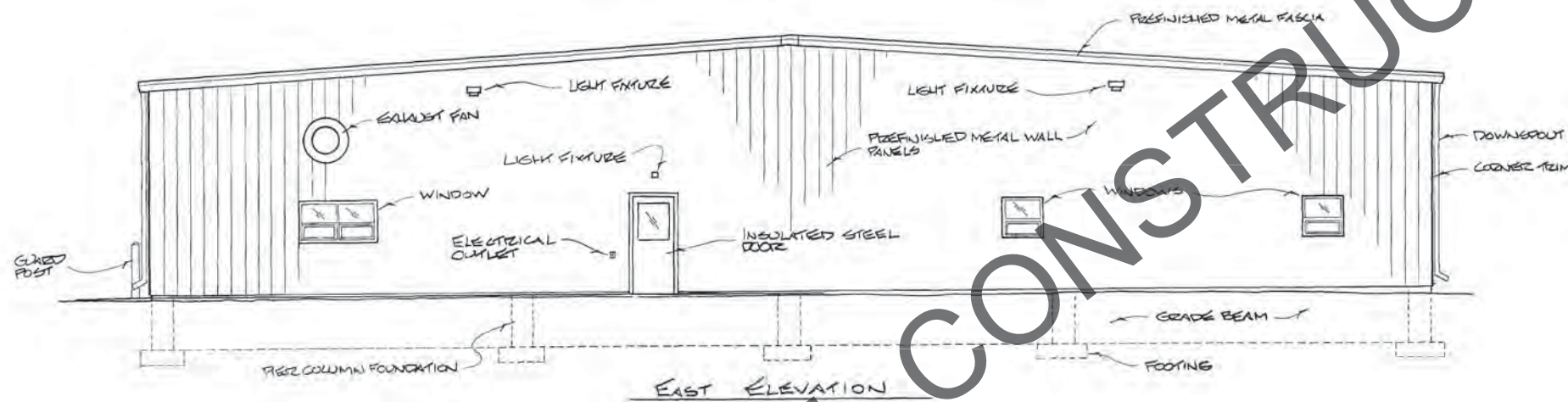
- NOTES:
1. ALL GYPSUM WALLBOARD TO RECEIVE TEXTURE AND PAINT. WALLS TO RECEIVE LIGHT ORANGE PEEL TEXTURE. CEILINGS TO RECEIVE MEDIUM SPRAY TEXTURE UTILIZING POLYSTYRENE AGGREGATE.
 2. SHOP AREA FLOOR SLAB TO RECEIVE SMOOTH TROWELED FINISH. APPLY CURING COMPOUND UPON COMPLETION OF FLOOR FINISHING ACTIVITIES.

STATION CONTROLLER DARCY C. CHATFIELD 10000 13TH AVE. S.W. ALBUQUERQUE, N.M.	DATE MAY 2004
PROJECT MILWAUKEE SHOP SOUTHWESTERN PHILIP, SOUTH DAKOTA	CHECKED BY RAMESH
SHEET NO 6 of 12	

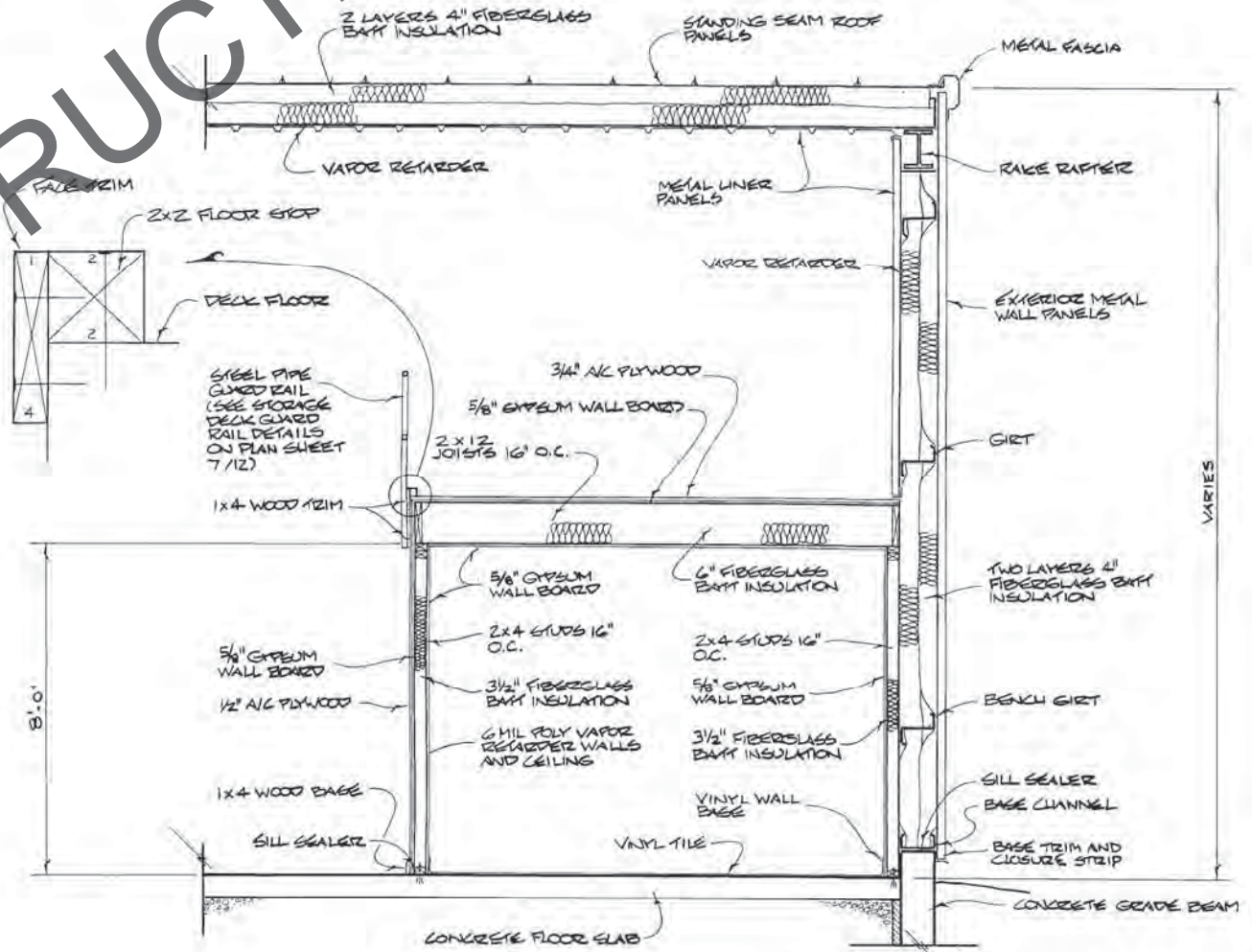
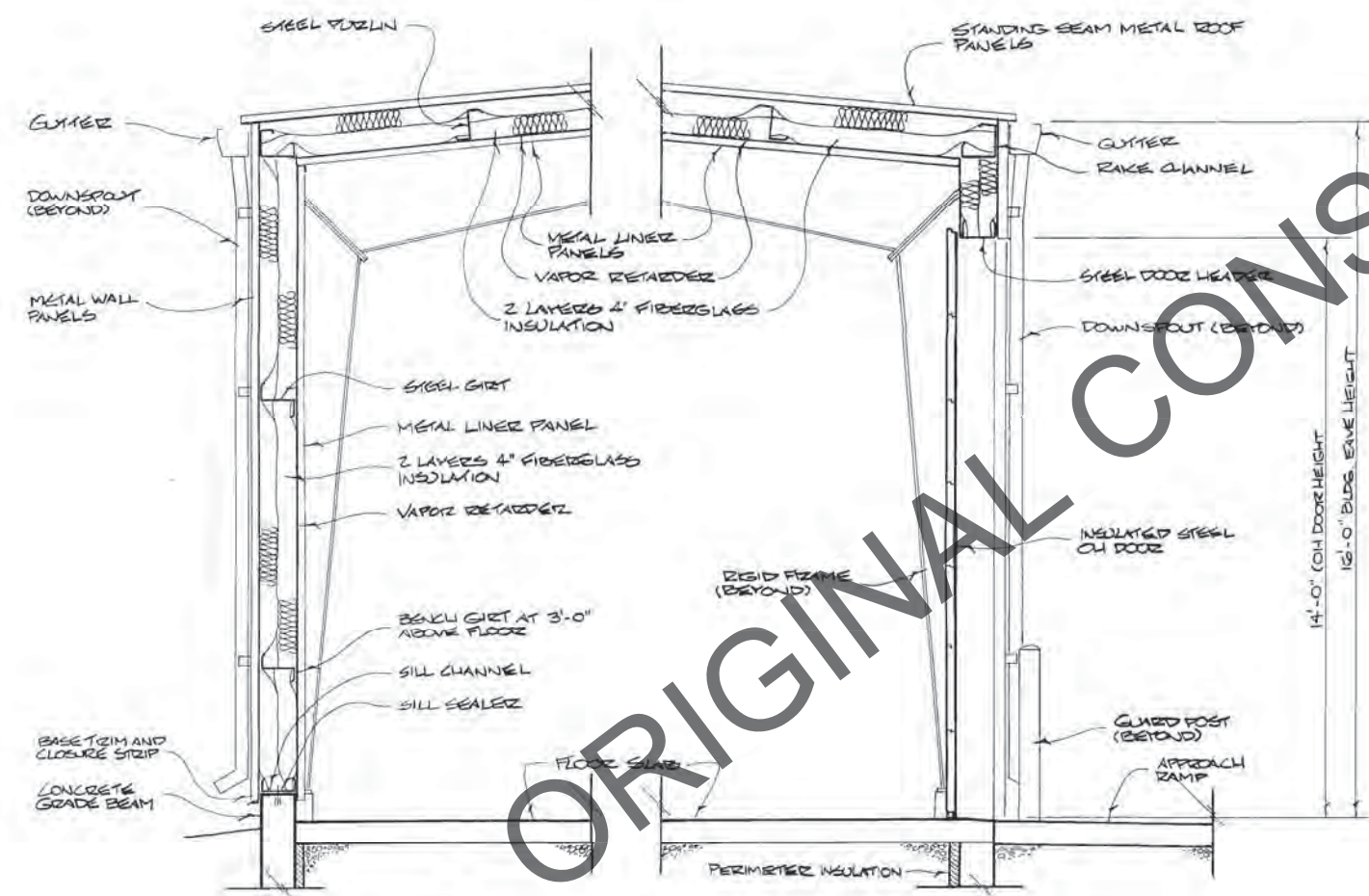
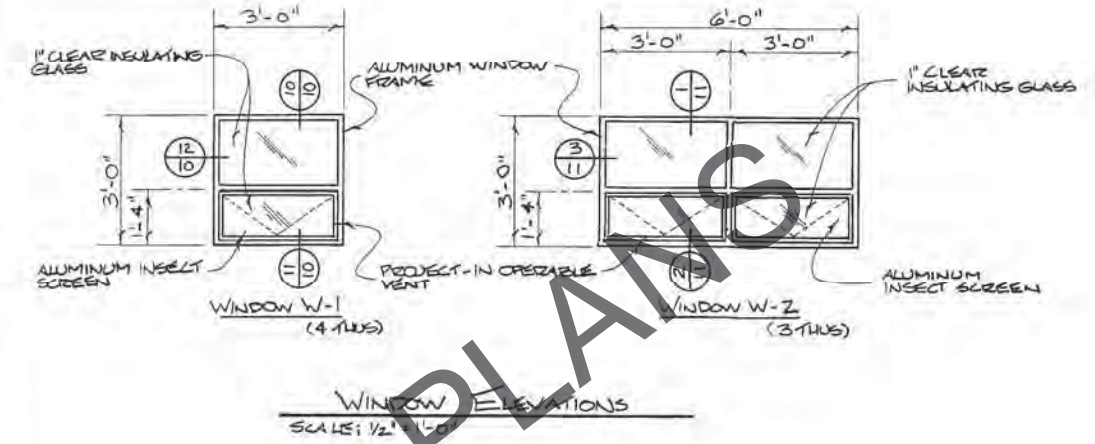
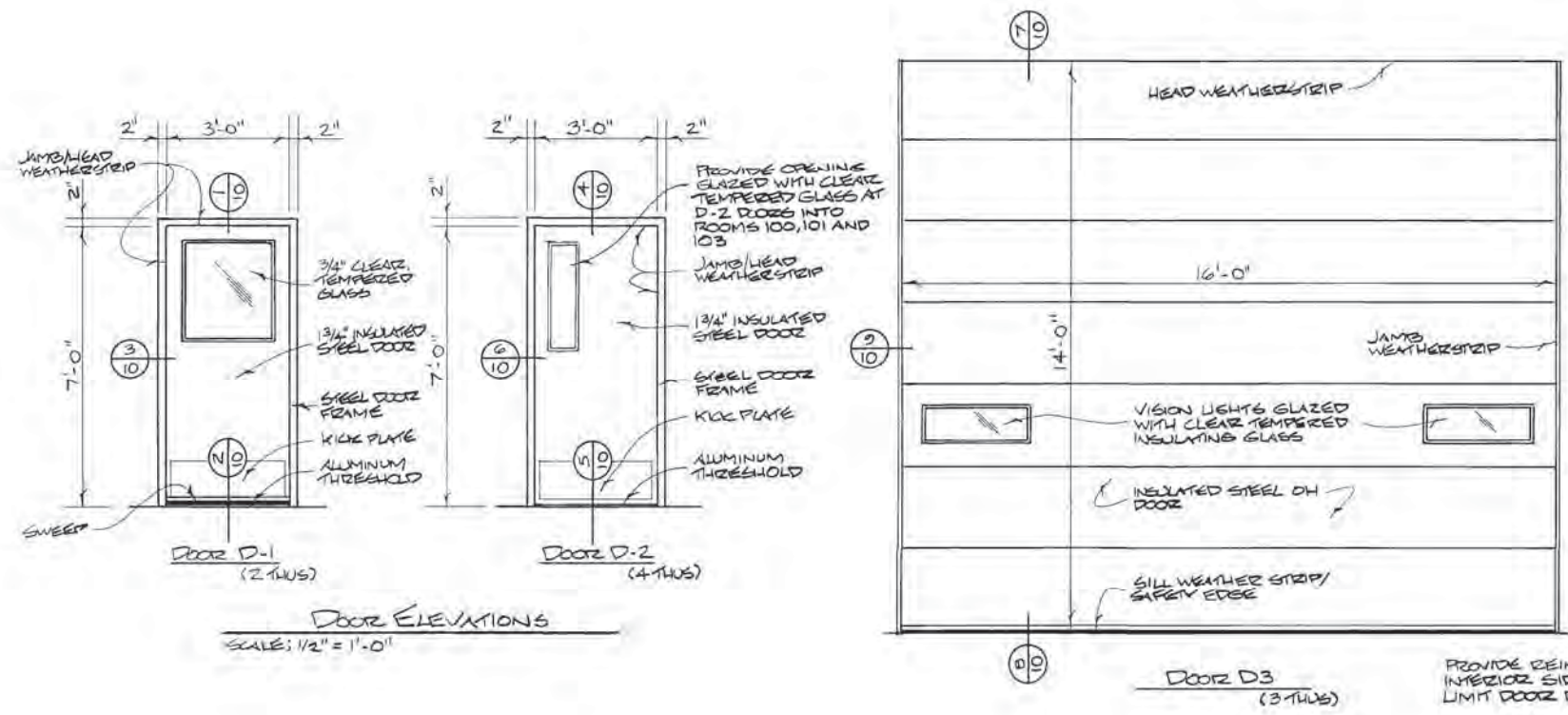




BUILDING ELEVATIONS
SCALE: 3/16" = 1'-0"



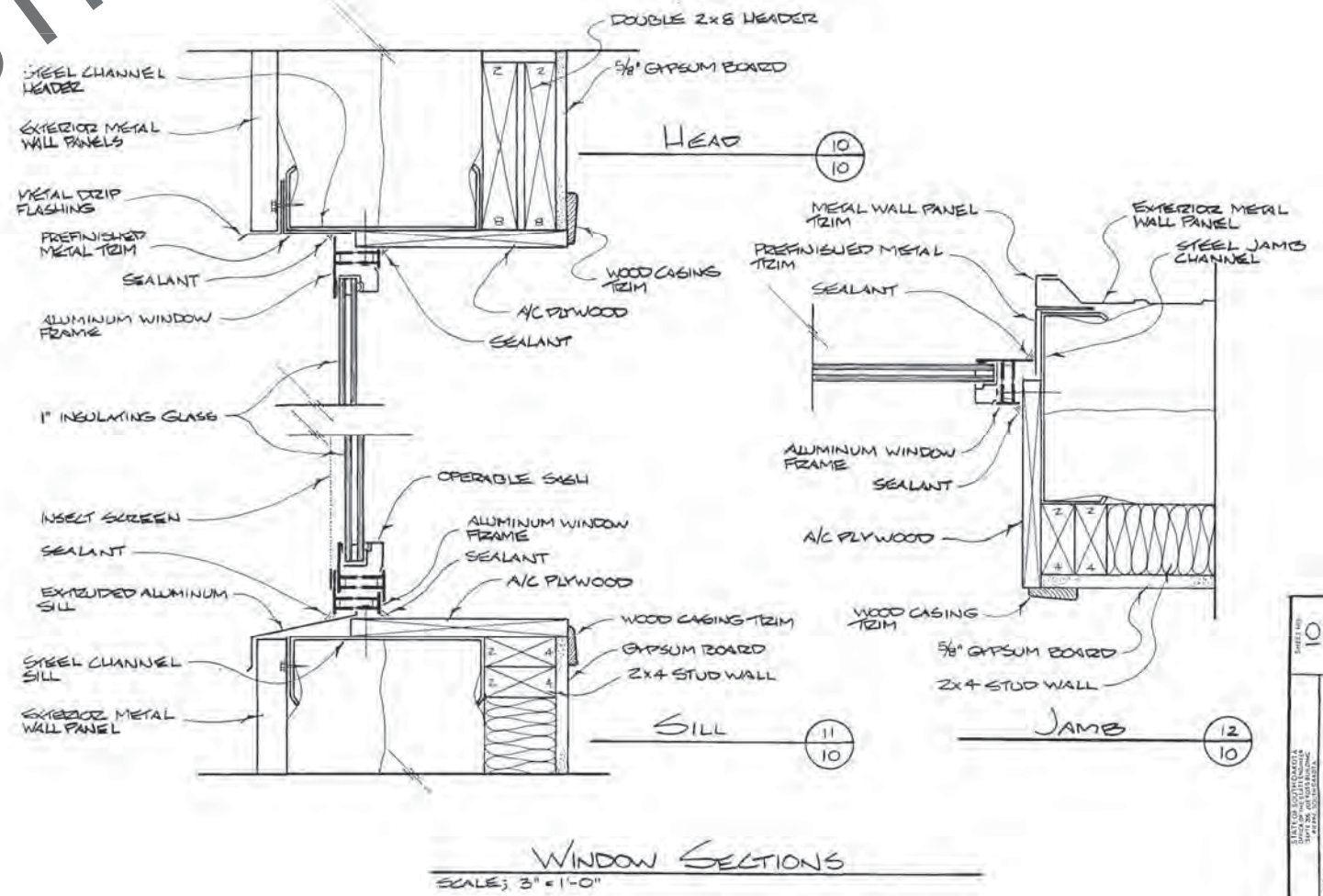
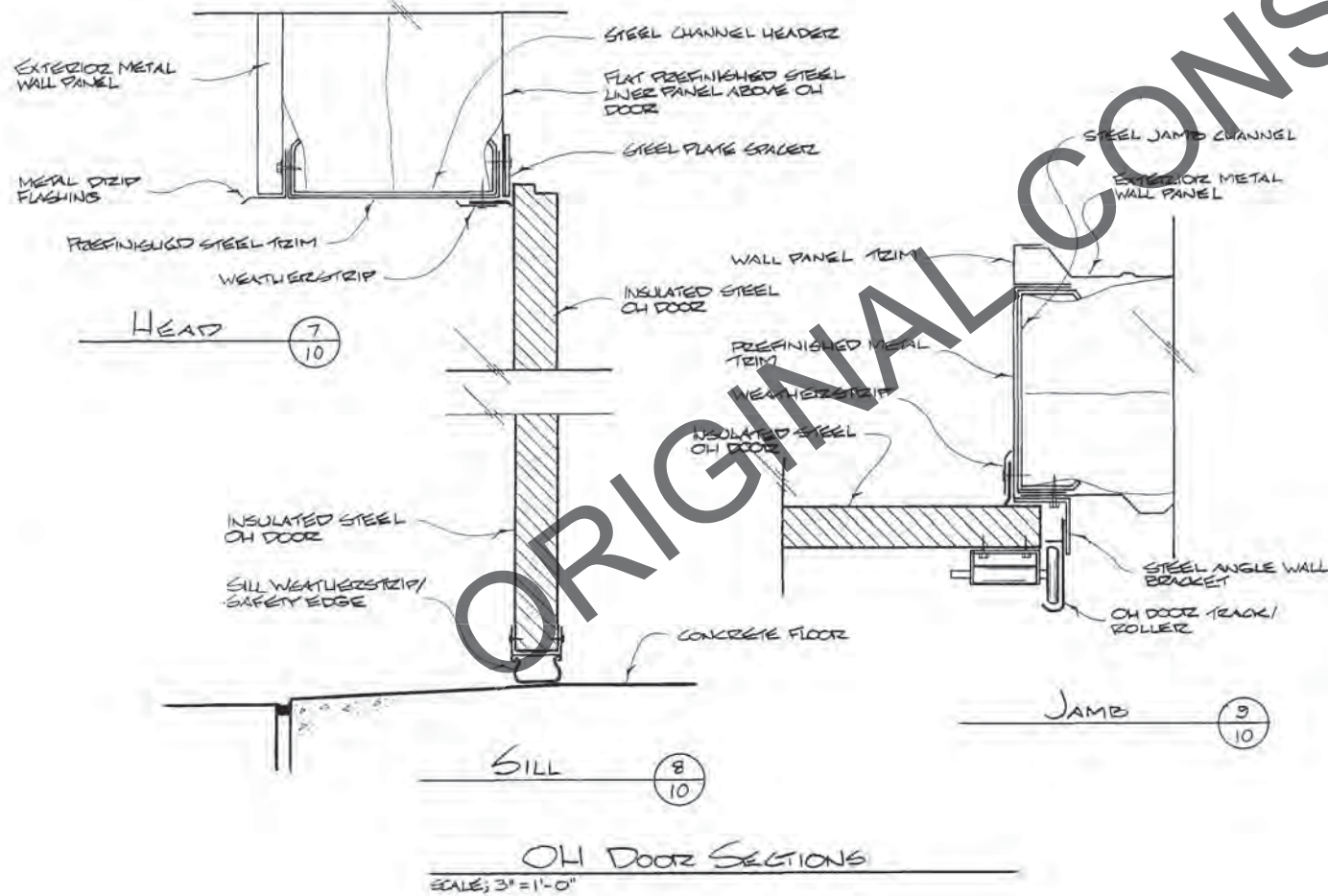
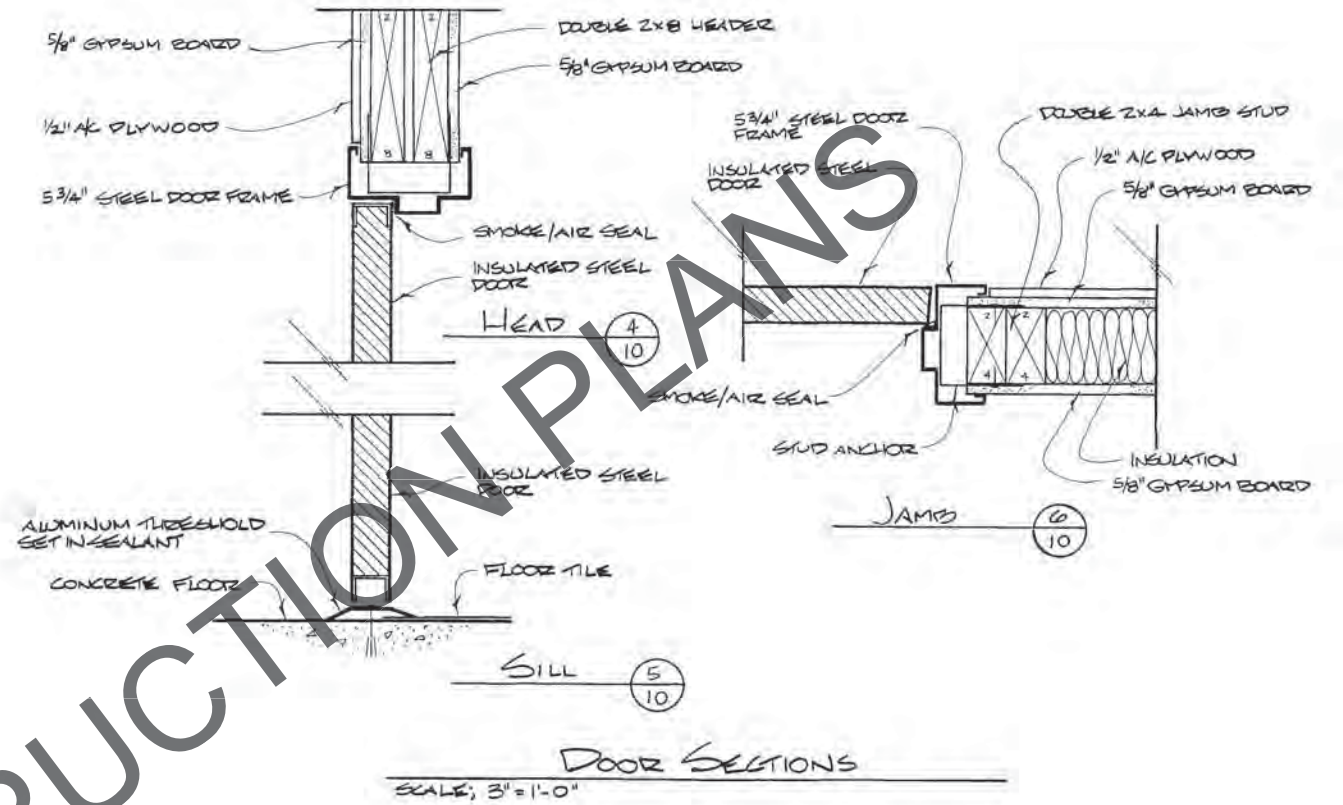
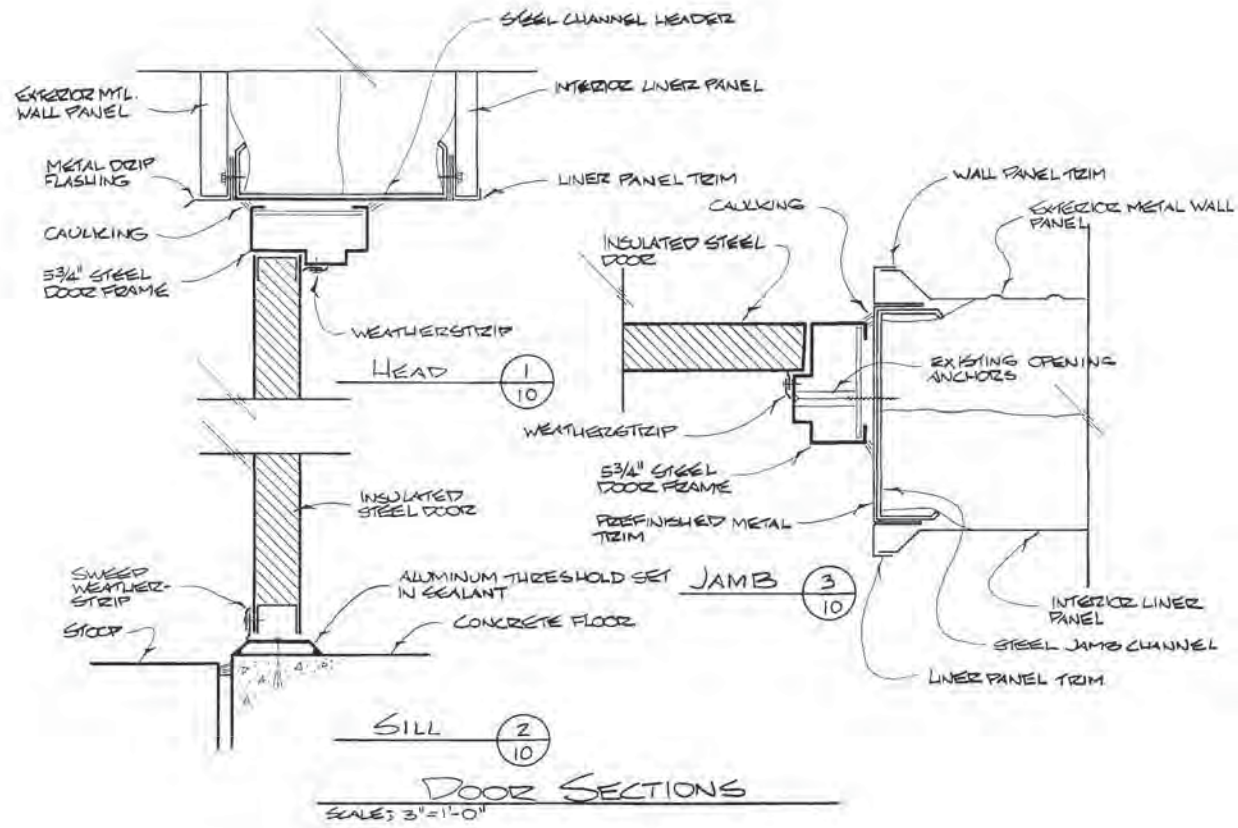
DATE: 10/1/12	8 OF 12	PROJECT: OFFICE / MAINTENANCE SHOP OFFICE OF TRANSPORTATION PHILIP, SOUTH DAKOTA	DESIGNED BY: [blank]	DRAWN BY: [blank]
STATE OF SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION PHILIP, SOUTH DAKOTA			DATE: 10/1/12	10/1/12



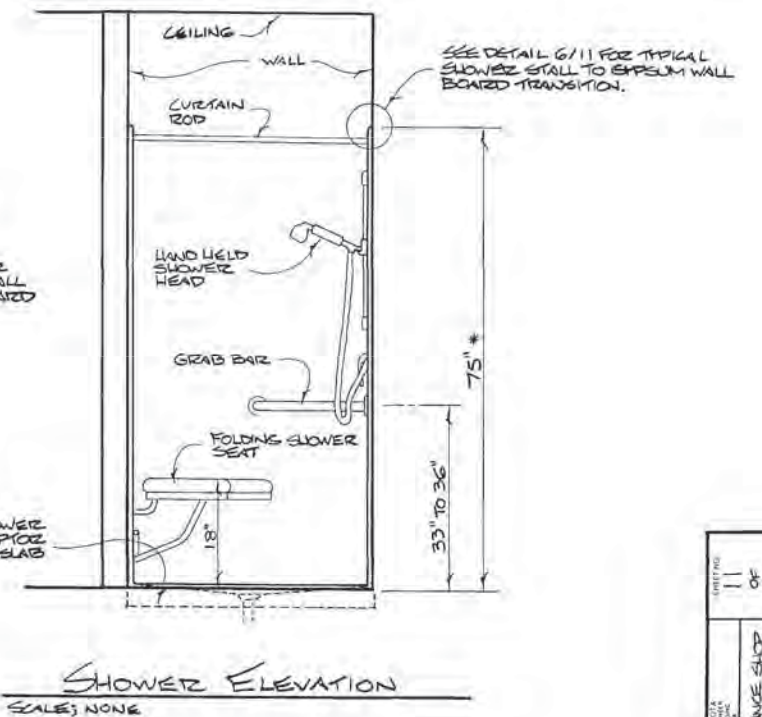
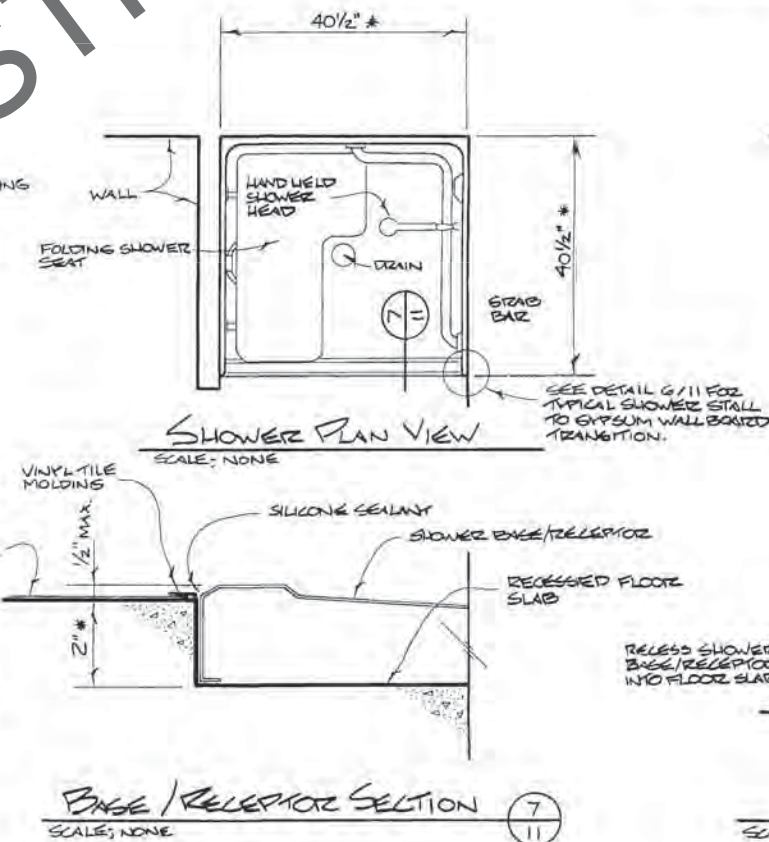
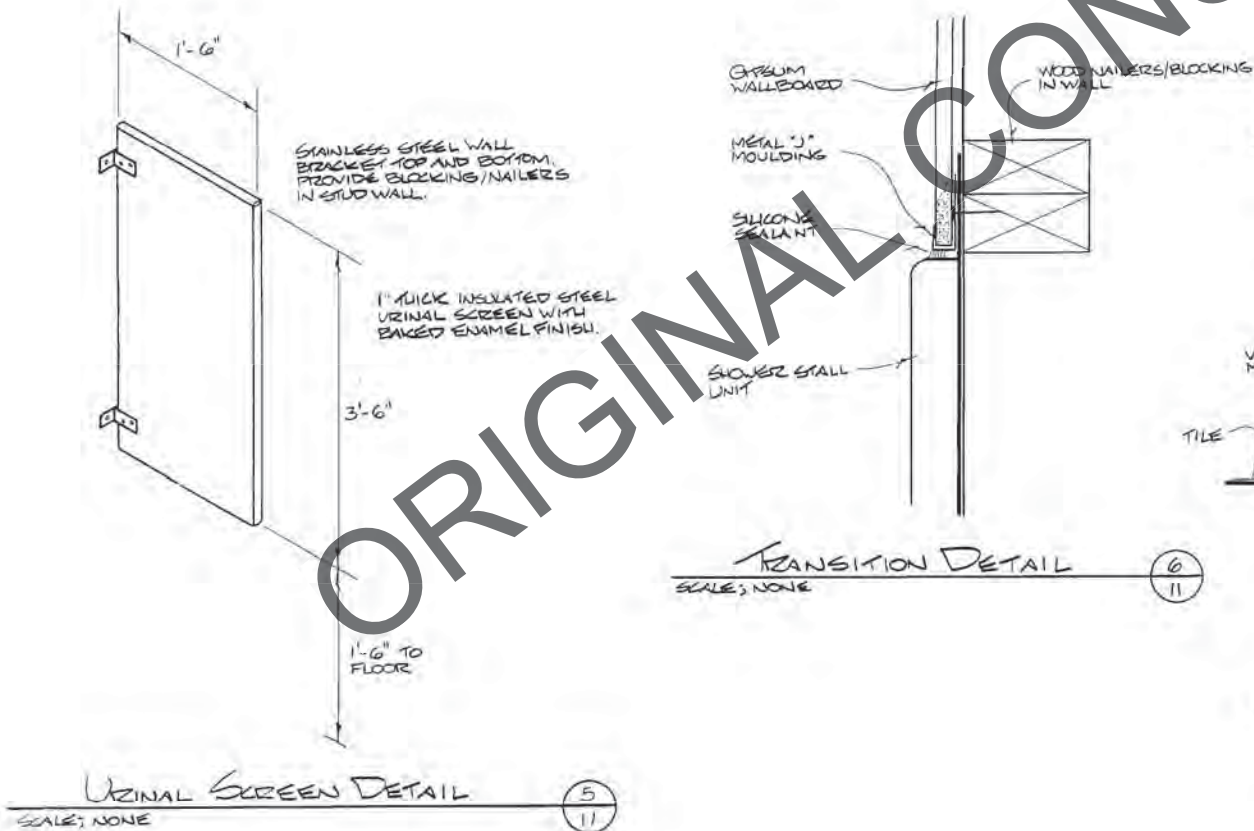
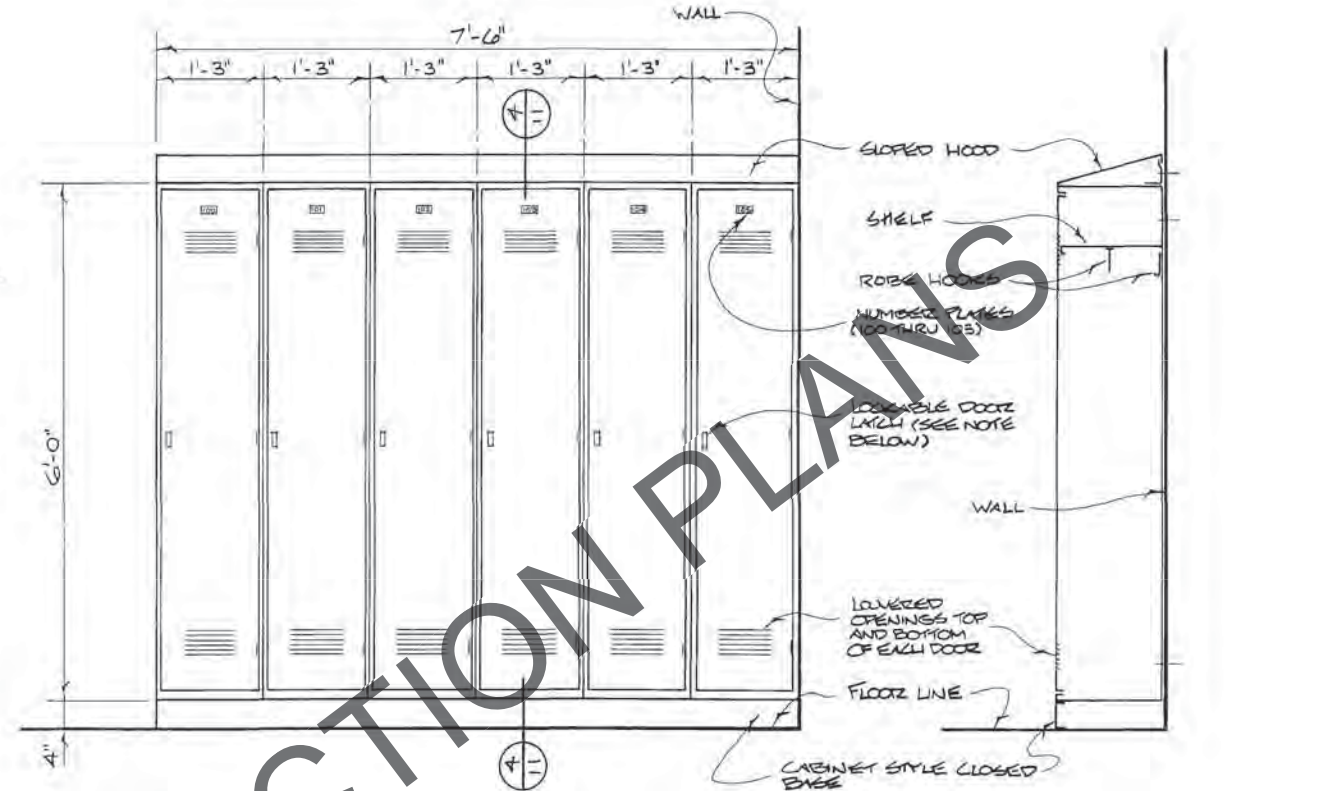
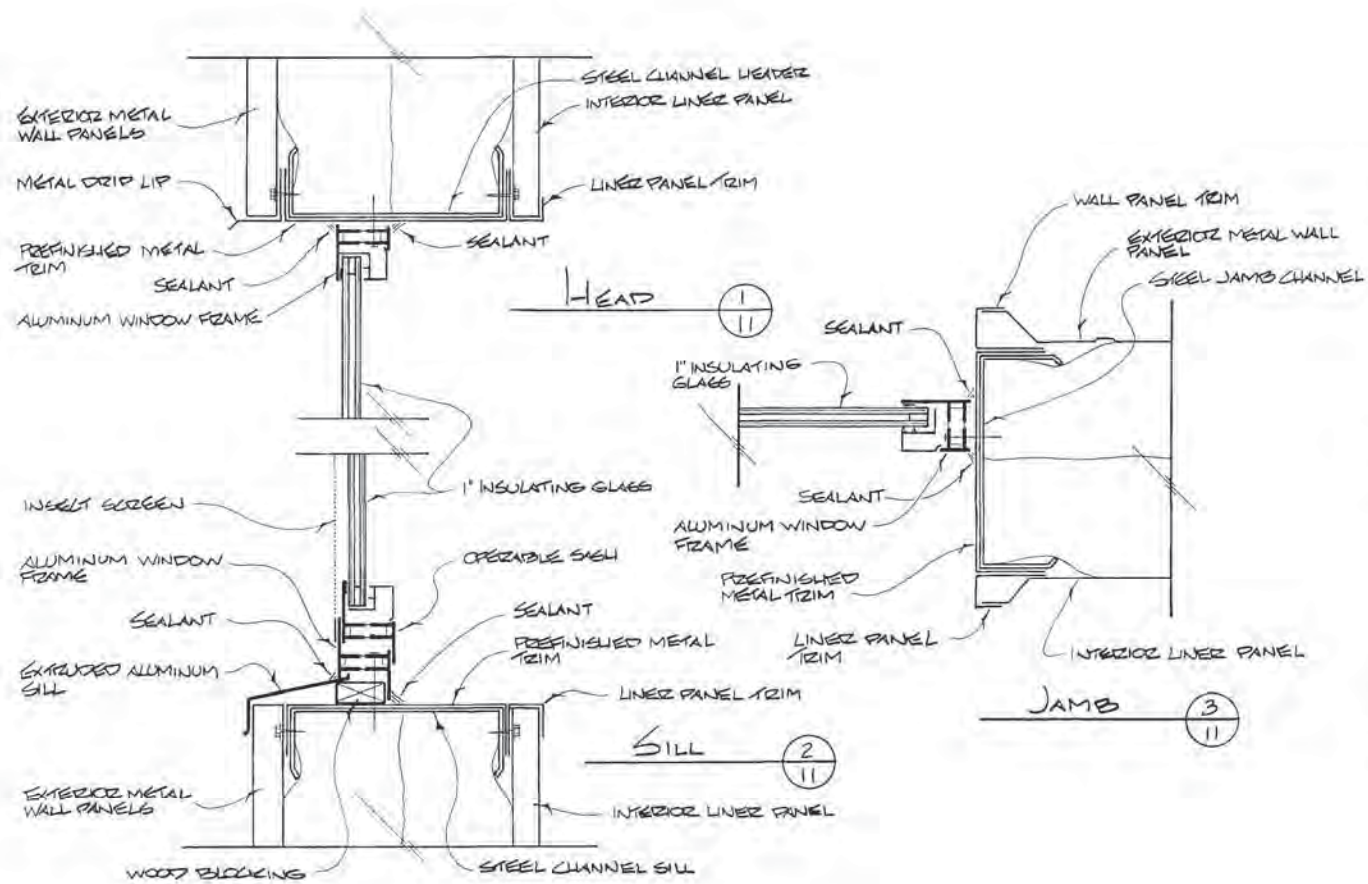
BUILDING SECTION 1
SCALE: 1/2" = 1'-0"

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

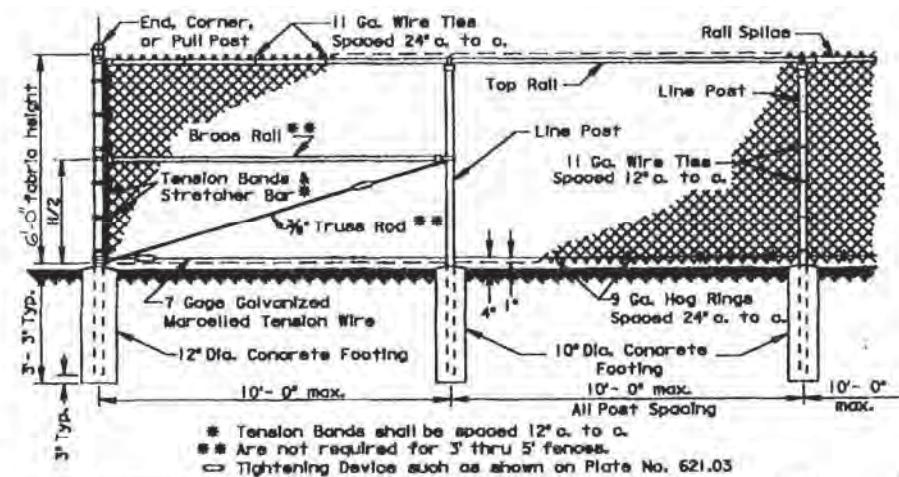
PROJECT: MAINTENANCE SHOP SOUTH OF TRANSPORTATION PHILIP, SOUTH DAKOTA	SHEET NO. 9 OF 12
DESIGNED BY: [blank]	CHECKED BY: [blank]
DRAWN BY: [blank]	DATE: [blank]



10	OF	12
PROJECT: INTERVIEW SHOP	CHECKED: [Signature]	DATE: 05/04/2011
BY: [Signature]	CHECKED: [Signature]	DATE: 05/04/2011



DATE: 01/11/2017	BY: J. B. B.	CHECKED: J. B. B.
PROJECT: OFFICE & MAINTENANCE SHOP	NO. OF SHEETS: 11	SHEET NO.: 12
LOCATION: SD DEPT. OF TRANSPORTATION	DESIGNED BY: J. B. B.	ENGINEER: J. B. B.
PROJECT: PHILIP, SOUTH DAKOTA	DATE: 01/11/2017	SCALE: 1"=1'-0"



* Tension Bands shall be spaced 12" o. c. to o.
* Are not required for 3' thru 5' fences.
□ Tightening Device such as shown on Plate No. 621.03

Component	End, Corner & Pull Post	Line Post	Top & Brose Roll
Type of Fabrication	Round Pipe Nominal	Round Pipe Nominal	Round Pipe Nominal
Size	3.00" O. D.	2.50" O. D.	1.625" O. D.
Height (in. / ft.)	5.75 or 4.64	3.68 or 3.12	1.34

GENERAL NOTES:
Specific details of manufacture of component parts of the complete fence construction shall be subject to the approval of the Engineer. Commercially available items produced specifically for the use intended shall be used wherever possible in the construction of the fence.

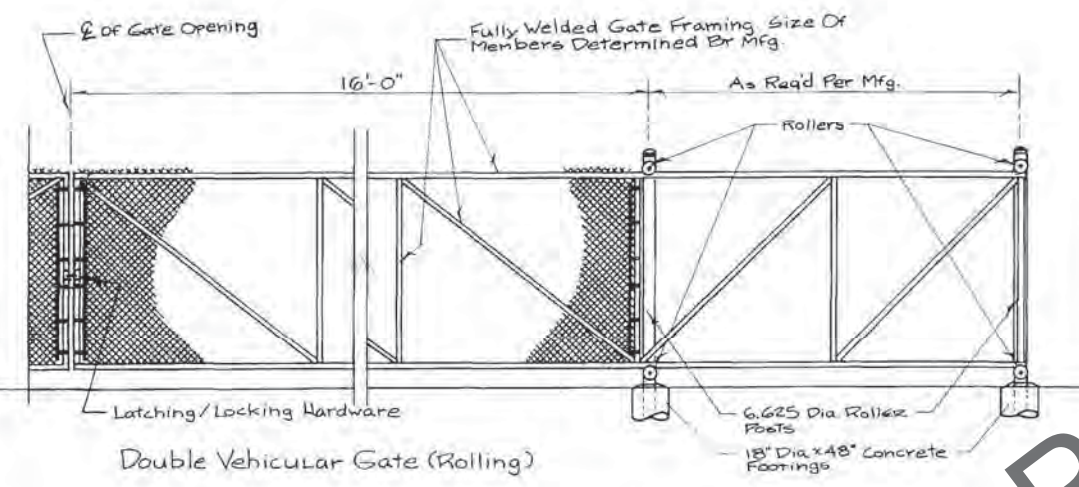
Height of Fabrication shall be as shown on the Plans. Fabric is available in the following heights: 36", 42", 48", 60", 72", 84", 96", 108", 120", & 144". Fabric heights 60 inches and under shall be knuckled at both selvages. Fabric heights 72 inches and over shall be knuckled at one selvage and twisted at the other selvage.

Chain Link Fabric shall be 2" mesh, No. 9 gage galvanized wire securely fastened to Tension Wire, Line Post, Ralls, Brose and Stretcher Bars spaced as shown hereon.

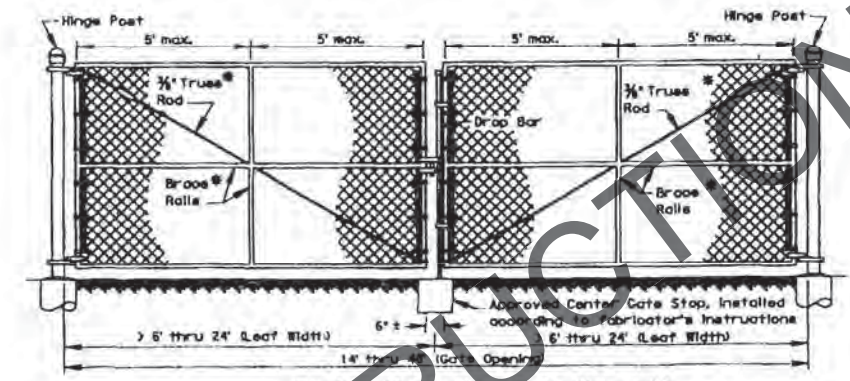
Fence may be constructed with either Round Pipe, "C" Section, "H" Beam, or roll Formed Steel components as shown in the table above. Line post may be Round Pipe, "C" Section, or "H" Beam. The Corner Post and Ralls shall be either Round Pipe or Roll Formed Steel. The type of components used shall have prior approval by the Engineer before construction.

Where fence must cross small bodies of water (such as drainage areas or ponds) that could freeze during the winter, use 11 gage Hog Rings. Provide only two ties per Tension Wire and Top Roll between line posts.

A suitable method of roll splicing shall be used to allow for expansion and contraction while maintaining proper position of the Top Roll.



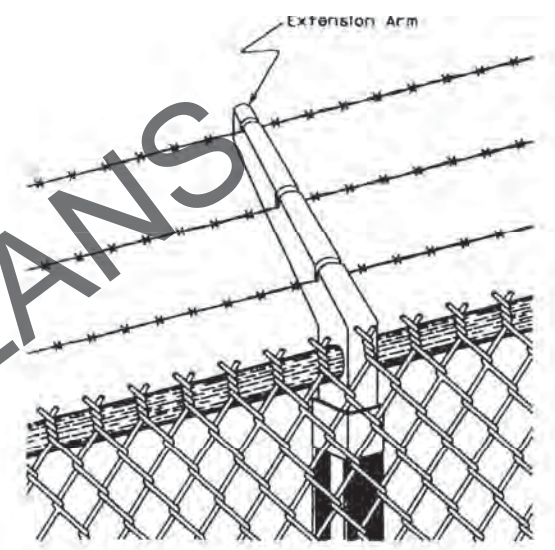
Double Vehicular Gate (Rolling)



Double Vehicular Gate (Hinged)

Gate Opening Width 1	Gate Opening Height 2	Frame Pipe Nominal		Hinge Post		Concrete Footing	
		Round Pipe	Roll Formed Steel	Round Pipe	Roll Formed Steel	Depth	Diameter
3' thru 6'	3' thru 6'	1.50"	1.50"	3.00"	3.50"x3.50"	36"	12"
> 6' thru 23'	6'	1.80"	1.50"	4.00"	—	42"	12"
> 6' thru 23'	> 6' thru 12'	1.80"	1.90"	6.625"	—	48"	18"
> 6' thru 23'	> 6' thru 23'	—	—	6.625"	—	48"	24"

NOTE: Gate frames may be constructed of bent or welded steel tubing installed according to fabricator's instructions and subject to the Engineer's approval.
* Are not required for gates 3' thru 5' height or 5' or less in width.
* Tension Bands shall be spaced 12" o. c. to o.
□ Tightening Device such as shown on Plate No. 621.03
1 Leaf width for Double Vehicular Gate
2 Shall coincide with fence height



GENERAL NOTES:
Extension arms shall be hot dipped galvanized. End and corner arms shall be malleable iron. Intermediate arms may be pressed steel. Arms shall have sealed caps and three slots to accommodate the barbed wires. The top wire shall be 12 inches above the fabric and 12 inches out from the fence line at an angle of approximately 45°. Adjustable arms may be used. Barbed wire shall be two strand 12 1/2 gauge wire with four point round barbs spaced on 5 inch centers.

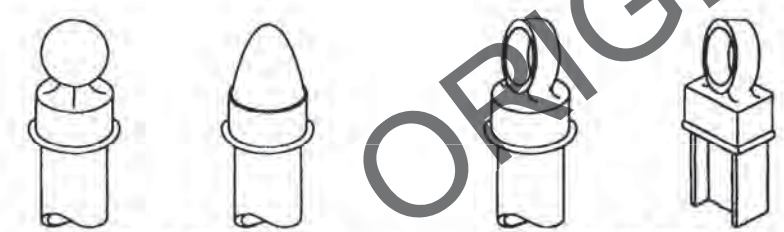
When extension arms with barbed wire is called for in the plans, extra payment will not be made. Payment for same is to be absorbed in rrd will be made at the contract unit price for the chain link fence it is attached to.

CHAIN-LINK FENCE BARBED WIRE TOP

BARBED WIRE TOP REQUIRED ON ALL CHAIN-LINK FENCING INCLUDING ALL GATES.

CHAIN-LINK FENCE WITH RAILED TOP

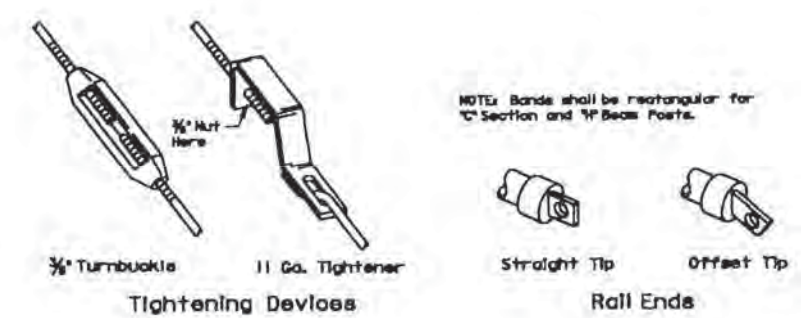
SEE SITE PLAN FOR LOCATION OF FENCE AND LINEAL FOOTAGE REQUIRED.



Typical Post Tops (Shown for example only)

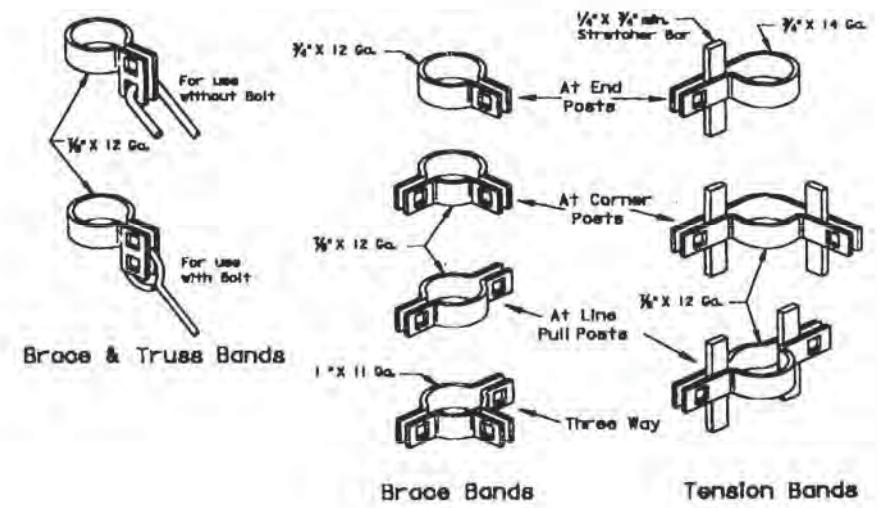
CHAIN-LINK FENCE GATES

SEE SITE PLAN FOR LOCATION AND SIZE OF GATES REQUIRED.



Tightening Devices

Rail Ends



Brace & Truss Bands

Brace Bands

Tension Bands

ALL DETAILS THIS SHEET APPLY TO ALTERNATE #2 CONDITION

MISC. CHAIN-LINK FENCE HARDWARE

STATE OF SOUTH DAKOTA OFFICE OF THE STATE ENGINEER PHILIP, SOUTH DAKOTA		DATE: MAY 2004
PROJECT: OFFICE MAINTENANCE SHOP 501 DEPT. OF TRANSPORTATION PHILIP, SOUTH DAKOTA	DESIGNED BY: [Signature]	CHECKED BY: [Signature]
REVISED		12 OF 12

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MECHANICAL SITE PLAN

DOT OFFICE AND
MAINTENANCE SHOP
PHILIP, SOUTH DAKOTA

REV	DESCRIPTION	DATE	APP

PROJ. #:	R04002
CADFILE:	R04002M1
DESIGNED:	DAV
DRAWN:	MJW
APPROVED:	DRF
DATE:	6/07/04



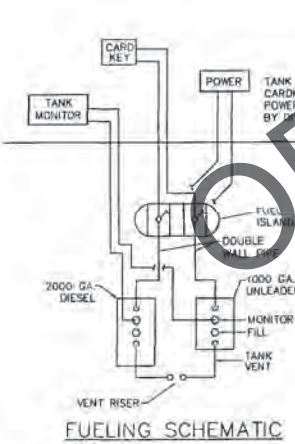
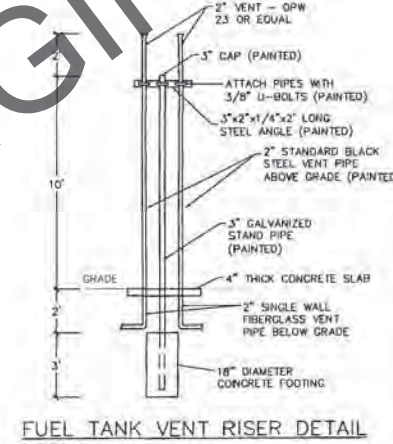
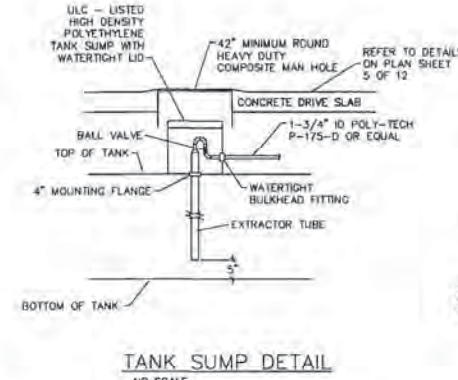
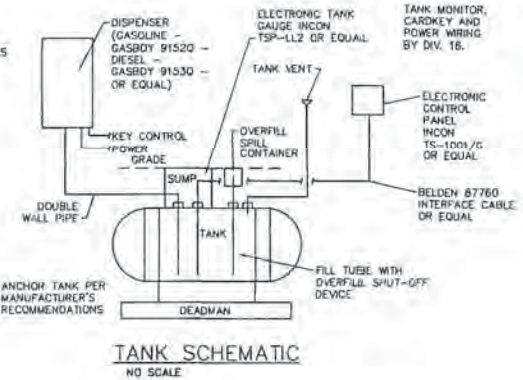
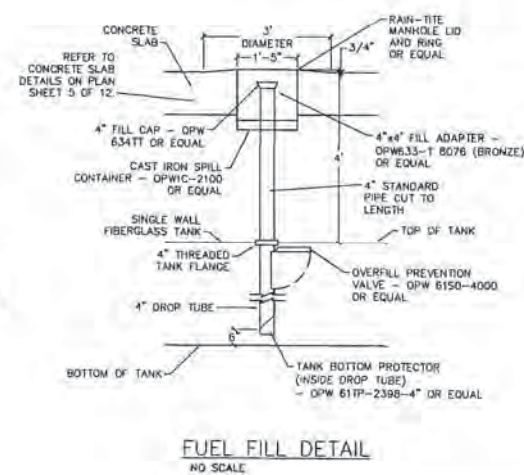
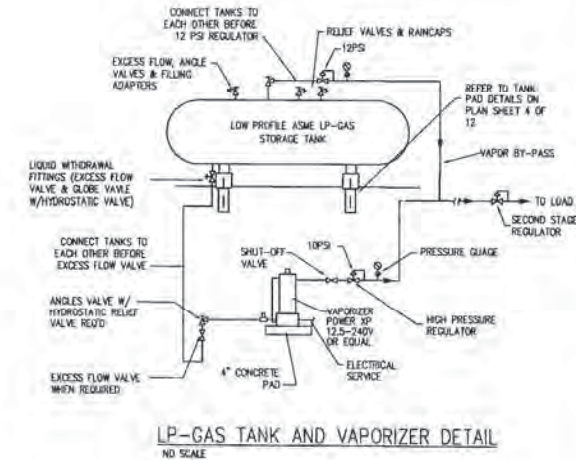
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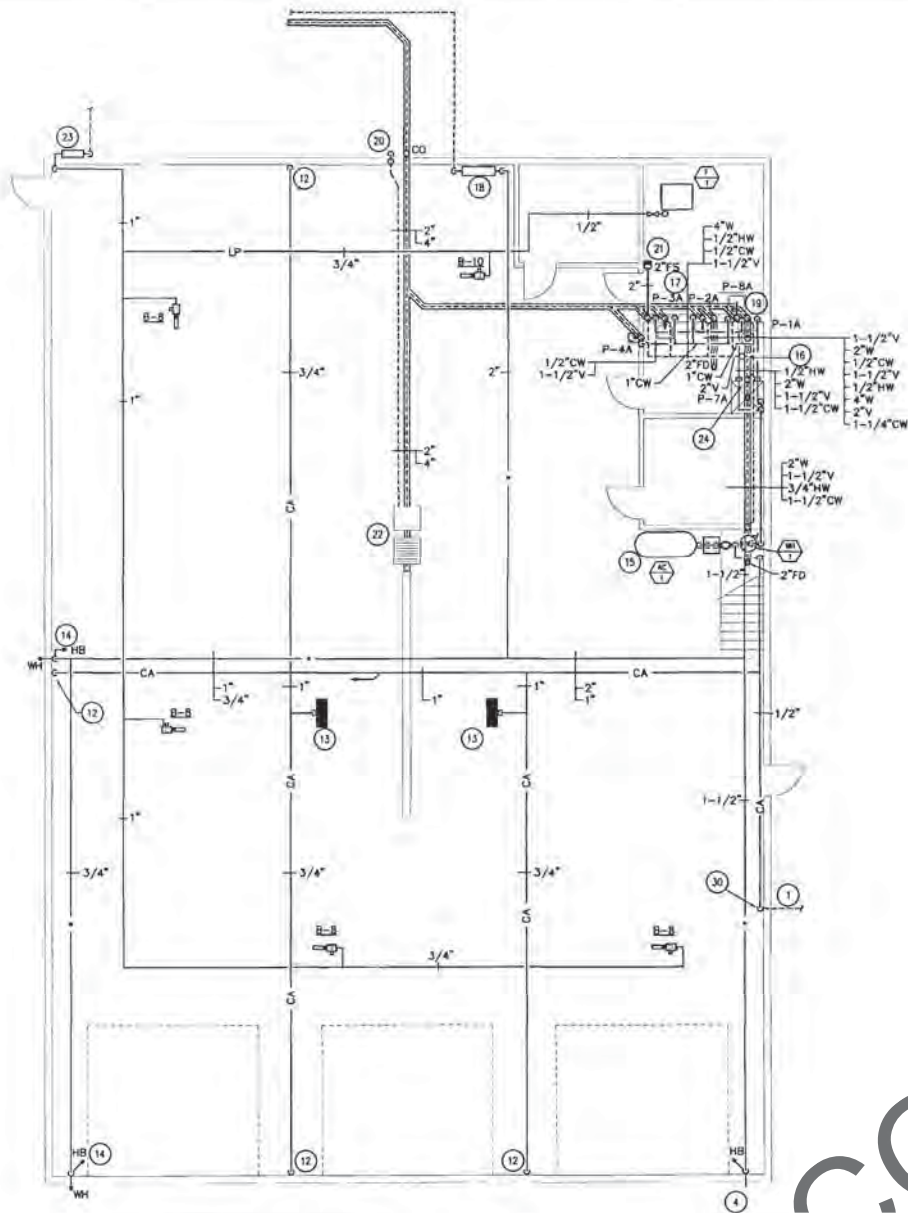
M1
OF
4

MECHANICAL SPECIFIC NOTES:

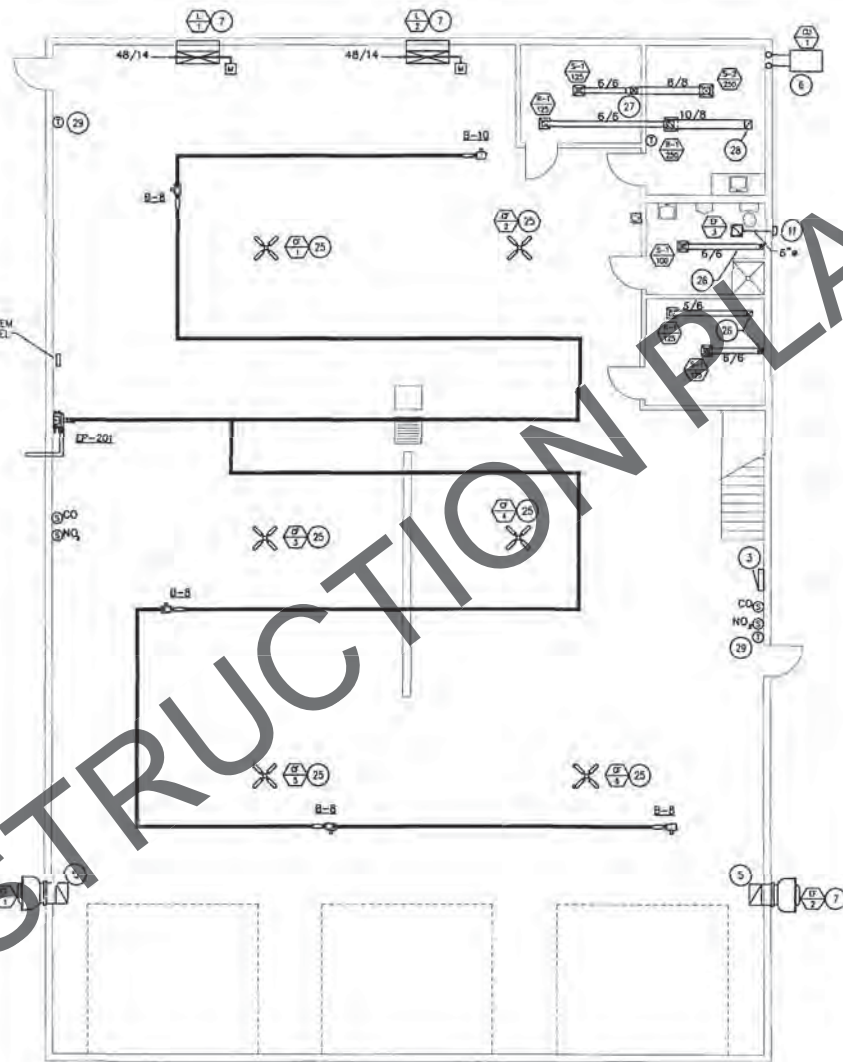
- 2" WATER SERVICE. SEE SHEET M2 FOR CONTINUATION.
- 4" WASTE. SEE SHEET M2 FOR CONTINUATION.
- 1,000 GALLON PROPANE STORAGE TANKS BY MECHANICAL CONTRACTOR (2 TOTAL). SEE DETAIL THIS SHEET.
- BOLLARD BY GENERAL CONTRACTOR (TYPICAL).
- 1/2" LIFT TO BELOW GRADE.
- 1/2" LP LINE. SEE SHEET M2 FOR CONTINUATION. 11" W.C. 2ND STAGE REGULATOR EQUAL TO FISHBONE #220P.
- 1000 GALLON UNLEADED GAS TANK.
- 2000 GALLON DIESEL TANK.
- FUELING ISLAND.
- GENERAL LIFT STATION.
- CONNECT TO EXISTING SEWER LINE. CONTRACTOR TO VERIFY EXACT LOCATION.
- CONNECT TO EXISTING WATER LINE. CONTRACTOR TO VERIFY EXACT LOCATION.
- 2" PVC CONDUIT FROM BUILDING TO SERVICE ISLAND FOR COMPRESSED AIR.
- BOLLARDS AROUND BURIED TANKS TO BE FURNISHED BY OWNER AND INSTALLED BY GENERAL CONTRACTOR.
- CONCRETE PADS FOR FILL/MONITORING WELL CASINGS BY GENERAL CONTRACTOR. SEE PLAN SHEET 5 OF 12.
- CONCRETE LP TANK PADS BY GENERAL CONTRACTOR, SEE PLAN SHEET 5 OF 12.
- CURB STOP FOR 2" WATER SERVICE.
- FUEL TANK VENT RISER. SEE DETAIL THIS SHEET.

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



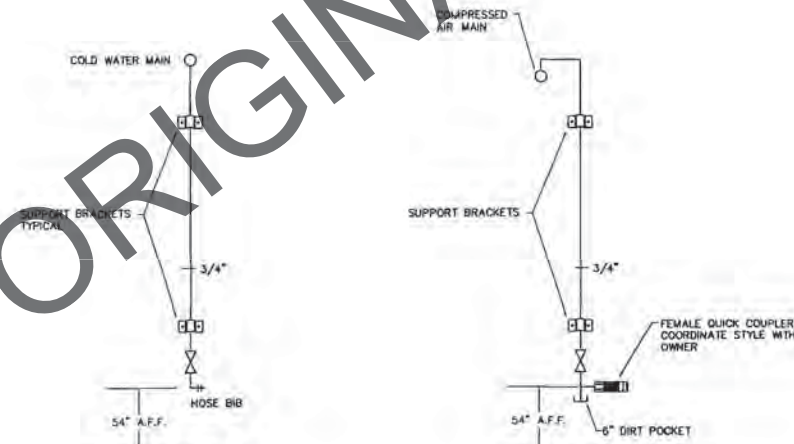


PIPING PLAN
SCALE: 1/8"=1'-0"



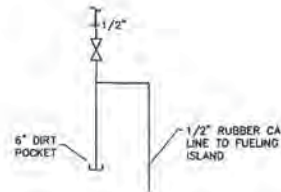
VENTILATION PLAN
SCALE: 1/8"=1'-0"

- GENERAL NOTES:**
- A. COORDINATE DUCT & PIPING WITH OTHER TRADES.
- SPECIFIC NOTES:**
- 1/2" CA DOWN TO 1/2" RUBBER CA LINE RUN IN 2" PVC CONDUIT TO FUELING ISLAND. SEE DETAILS ON PLAN SHEET 5. CONDUIT AND CA LINES BY MECHANICAL CONTRACTOR. INSTALL CONDUIT 48" BELOW GRADE BETWEEN BUILDING AND FUELING ISLAND.
 - 2" PLUMBING VENT DOWN.
 - INTEC MODEL GAS-202 REMOTE CONTROL PANEL WITH 2 REMOTE NOISE SENSORS AND 2 REMOTE CO SENSORS. TURN ON FANS AND OPEN L-1 DAMPERS WHEN ACTIVATED. PANEL SHALL HAVE FIELD MOUNTED MANUAL BYPASS SWITCH.
 - 1-1/2" WATER SHUT-OFF TO EXTERIOR 54" A.F.F. SHUTOFF VALVE INSIDE BUILDING FOR OPERATION. COORDINATE COUPLER STYLE WITH OWNER.
 - 24" DUCT DOWN TO 12" A.F.F. AND 24/14 DUCT UP TO 12" A.F.F. STRUCTURE WITH 1" SCREEN ON OPENINGS.
 - PROVIDE 4" HIGH CONCRETE PAD FOR CU-1 8" WIDER THAN THE UNIT ON EACH SIDE.
 - MOUNT AT 10' A.F.F.
 - INSTALL DX COIL AND CONNECT REFRIGERANT PIPING TO CONDENSING UNIT. PIPE CONDENSATE TO FLOOR DRAIN. SUPPORT FURNACE 12" A.F.F. 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.
 - CONCENTRIC VENT TERMINATION ON ROOF.
 - SUPPORT DUCT 12" A.F.F. FOR INSTALLATION OF COMBINATION DAMPER.
 - WALL CAP.
 - 3/4" COMPRESSED AIR DROP WITH QUICK COUPLER. REFER TO DETAIL THIS PAGE.
 - 50 FOOT HOSE REEL SHALL BE REEL CRAFT MODEL A5850. DLP. MOUNT ADJACENT TO ELECTRIC REELS. MOUNT AT 12' A.F.F.
 - 3/4" COLD WATER DROP WITH HOSE BIB. REFER TO DETAIL THIS PAGE.
 - REFER TO AIR COMPRESSOR PIPING DETAIL THIS PAGE.
 - 2" VENT UP TO MEZZANINE. PENETRATION THROUGH RATED ASSEMBLY SHALL BE CAST IRON.
 - 1/2"HW & 1/2"CW DOWN TO LAV. 3/4"CW DOWN TO URINAL.
 - WATER SERVICE ENTRANCE. REFER TO DETAIL.
 - 1/2"HW & 1/2"CW DOWN TO SINK. 1-1/4"CW DOWN TO WATER CLOSET.
 - 2" PLUMBING VENT TO TERMINATE 3" AT SIDEWALL WITH ELBOW DOWN AT EXTERIOR 12' A.F.F.
 - INSTALL FLOOR SINK IN MEZZANINE FLOOR. PROVIDE CAST IRON PIPING DOWN THROUGH RATED ASSEMBLY.
 - SAND/OIL INTERCEPTOR BY GENERAL CONTRACTOR.
 - 2ND STAGE REGULATOR ON LP GAS SERVICE.
 - 1/2"HW & 1/2"CW DOWN TO SHOWER.
 - MOUNT AT 14' A.F.F.
 - 6/6 DUCT UP TO MEZZANINE.
 - 10/8 DUCT UP TO MEZZANINE.
 - 10/8 DUCT UP TO MEZZANINE.
 - MOUNT THERMOSTATS ON 2" WOOD INSULATING BLOCKS, FULL SIZE OF THERMOSTAT. PAINT WOOD BLACK.
 - 6" DIRT POCKET ON CA DROP TO ISLAND CONNECTION. SEE DETAIL THIS SHEET.

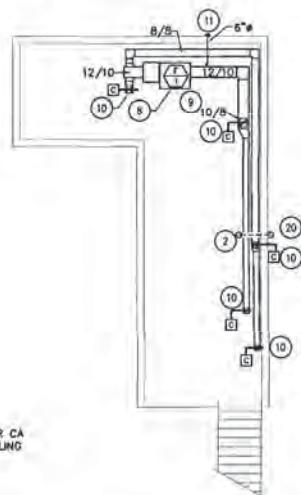


WATER OUTLET DETAIL
NO SCALE

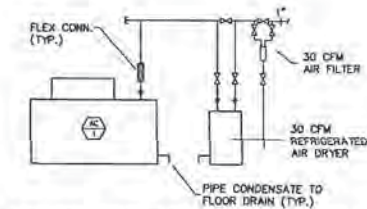
AIR OUTLET DETAIL
NO SCALE



ISLAND COMPRESSED AIR DROP
NO SCALE



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



AIR COMPRESSOR PIPING DIAGRAM
NO SCALE

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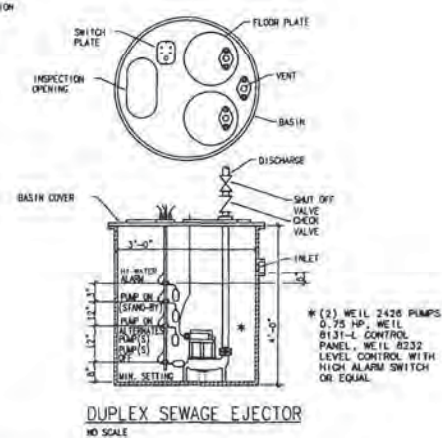
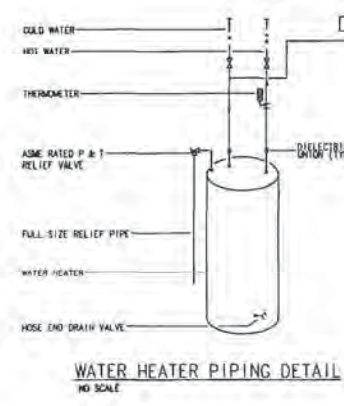
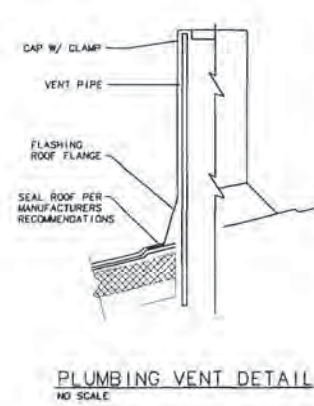
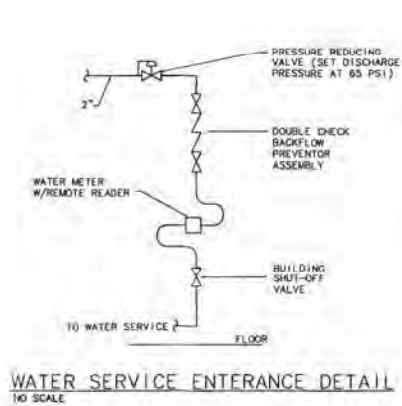
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MECHANICAL PLANS DOT OFFICE AND MAINTENANCE SHOP PHILIP, SOUTH DAKOTA	REV	DESCRIPTION	DATE	APP

PROJ #:	R04002
CADFILE:	R04002M2
DESIGNED:	DAV
DRAWN:	MJW
APPROVED:	DRF
DATE:	6/07/04

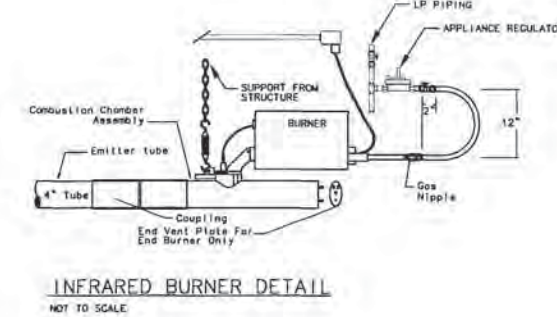
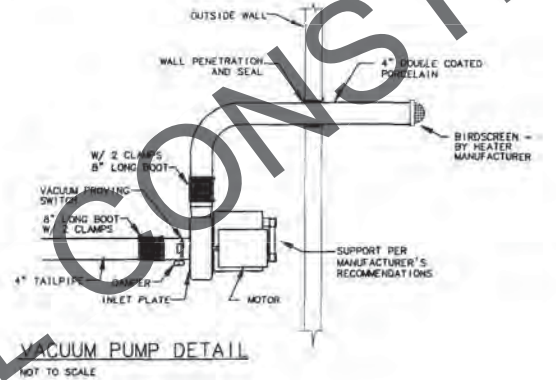
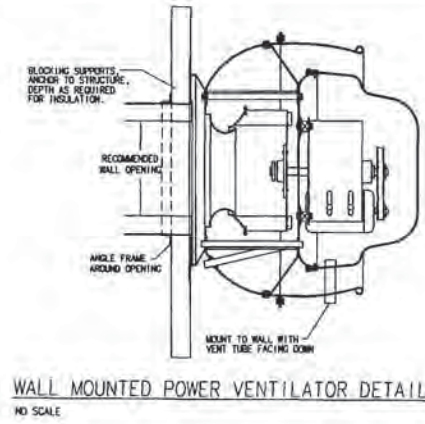
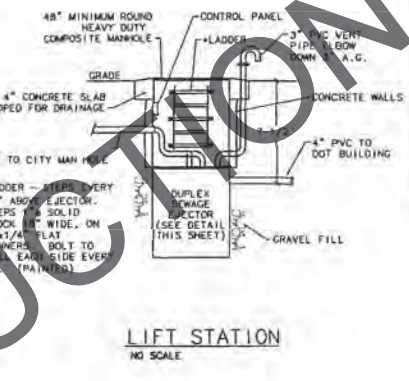
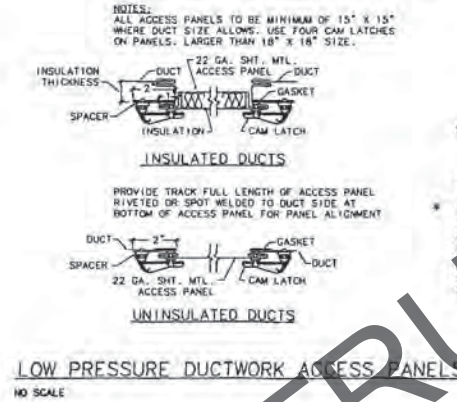
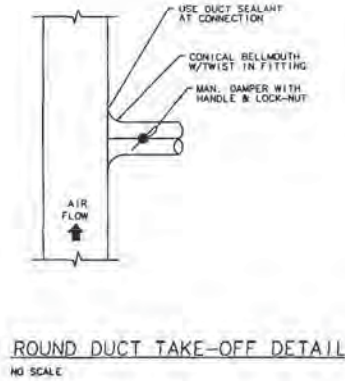
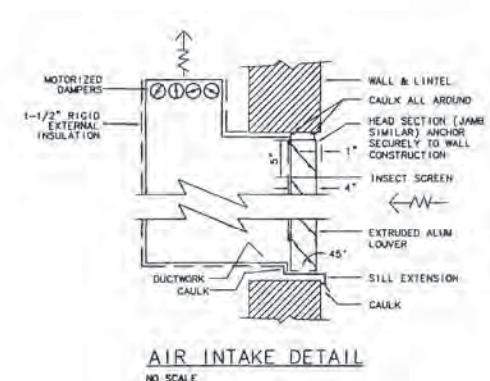


SHEET:
M2
OF
4



MECHANICAL SYMBOLS		
THESE SYMBOLS COMPRISE A STANDARD LIST; NOT ALL SYMBOLS MAY APPEAR ON THIS PROJECT.		
UNDERFLOOR SOIL PIPE	COLD WATER PIPE	LIQUEFIED PETROLEUM GAS
ABOVE FLOOR WASTE PIPE	HOT WATER PIPE	COMPRESSED AIR PIPE
VENT PIPE	CIRCULATING HOT WATER PIPE	REFRIGERANT LIQUID PIPE
		REFRIGERANT SUCTON PIPE
PIPE CONNECTION	FLOW MEASURING DEVICE	AIR VENT
ELBOW DOWN	EXPANSION JOINT	PRESSURE/TEMPERATURE TAP
ELBOW UP	CAPPED OUTLET	PRESSURE GAUGE
TEE DOWN	SHUT OFF VALVE	THERMOMETER
PIPE PITCH DOWN	SHOCK-RESISTANT VALVE	STRAINER
DIRECTION OF FLOW	3-WAY CONTROL VALVE	BACK FLOW PREVENTER
PIPE ANCHOR	PRESSURE-RELIEF VALVE	FLOW CONTROL VALVE
REDUCER OR INCREASE	PRESSURE-RELIEF VALVE	STRAINER VALVE
UNION	DRY VALVE	CLUB STOP
FLEXIBLE PIPE CONNECTION	DOWN SPOUT	
WALL INDIANT	STAND PIPE	
HOSE BIB	CLEAN OUT ABOVE FLOOR	
CLEAN OUT ABOVE FLOOR	CLEAN OUT IN FLOOR	
FLOOR DRAIN	TYPE TANK RADIATION DESIGNATION	
RADIATION ELEMENT	CLUB STOP	
		FLOW ALARM
		THERMOSTAT

VENTILATION SYMBOLS		
THESE SYMBOLS COMPRISE A STANDARD LIST; NOT ALL SYMBOLS MAY APPEAR ON THIS PROJECT.		
SUPPLY DUCT (UP & DOWN)	MANUAL VOLUME DAMPER	
RETURN OR EXHAUST DUCT (UP & DOWN)	BRANCH DUCT INTO SIDE OF MAIN DUCT	
DUCT RISE OR DROP IN DIRECTION OF AIR FLOW	SPLITTER DAMPER (NON-ADJUSTABLE)	
STANDARD RADIUS ELBOW (R EQUAL W (MINIMUM))	DUCT DIMENSION- WIDTH x DEPTH	
DUCT TURN WITH TURN VANES	DUCT INSULATION (SEE SPECIFICATION)	
FLEXIBLE DUCT CONNECTION	DUCT TURN AND AIR SPLIT TYPE TAKEOFF (NON-ADJUSTABLE)	
F-FIRE DAMPER	DRILLE, REGISTER & DIFFUSER DESIGNATION	
5-SMOKE DAMPER	SUPPLY, RETURN, EXHAUST, & TRANSFER	
B-BACKDRAFT DAMPER		
C-COMBINATION FIRE SMOKE DAMPER		
FLEX DUCT (5' MAXIMUM)	EQUIPMENT DESIGNATION	



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1750 RAND ROAD - RAPID CITY, SD 57702
PHONE: (605) 348-4455 FAX: (605) 348-9445

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REV	DESCRIPTION	DATE	APP.

PROJ. #	R04002
CADFILE	R04002M3
DESIGNED	DAV
DRAWN	MJW
APPROVED	DRF
DATE	6/07/04



SHEET:
M3
OF
4

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-D18JAZ	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 LP	HP	MBH		FILTERS THROAWAY	ELECTRIC 115/60/1	REMARKS
							IN	OUT			
F-1	RUUD UTGA-D4EMAES	#100-#103	600	0.50		0.5	45	41			1,2,3,4,5,6

1. PERFORMANCE AT LOW FAN SPEED.
2. HORIZONTAL CONFIGURATION.
3. PROGRAMMABLE AUTO-CHANGEOVER THERMOSTAT.
4. FULL CASED, RCB-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 E50-E35	SHOP #104	INTAKE	48 X 42	4500	.05	568	1, 2	
L-2	GREENHECK E50-E35	SHOP #104	INTAKE	48 X 42	4500	.05	568	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. W.G.)	NC	FRAME	REMARKS
S-1	TITUS TDCA	11.5 X 11.5	6 X 6	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 S6F	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.)	MOTOR			REMARKS	
							RPM	HP	ELEC.		
EF-1	GREENHECK CWB-180-15	AREA #104	EXHAUST	INTERNAL	4500	0.375	1725	1.5	230/60/1	1	
EF-2	GREENHECK CWB-180-15	AREA #104	EXHAUST	INTERNAL	4500	0.375	1725	1.5	230/60/1	1	
EF-3	GREENHECK SP-B110	RESTROOM	EXHAUST	INTERNAL	100	0.2	950	.05	115/60/1	1, 2	
CF-1	HRS EF-300-36	AREA #104	VENTILATION	INTERNAL	5800	-	0-400	.54W	120/60/1	-	
CF-2	HRS EF-300-36	AREA #104	VENTILATION	INTERNAL	5800	-	0-400	.54W	120/60/1	-	
CF-3	HRS EF-300-36	AREA #104	VENTILATION	INTERNAL	5800	-	0-400	.54W	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 8" 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-300	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	GALLONS	SIZE LENGTH	DIAMETER	REMARKS
ET-1	AMTROL IN-LINE ST-5	SHOP AREA #104	DOM. HW	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 17" 111-4815	WATER CLOSET FLOOR MOUNT FV	4"	2"	1-1/4"	-	WHITE VITROUS CHINA, ELONGATED BOWL, FLOOR MOUNT, OLSONITE 95 SEAT WITH OPEN FRONT LESS COVER, SLOAN REGAL 111 FLUSH VALVE		
P-2A	ELJER "SAVON" 161-1090	URINAL HANDICAPPED HEIGHT	2"	1-1/2"	3/4"	-	WHITE VITROUS CHINA, WALL HUNG SIPHON JET URINAL SLOAN REGAL 186-1.0 FLUSH VALVE		
P-3A	ELJER "SINK-TITE" 051-3244	LAVATORY WALL HUNG ADA COMPLIANT	2"	1-1/2"	1/2"	1/2"	VITROUS CHINA, CONCEALED ARM CARRIER, ELJER 557-1000 SERIES SUPPLY FITTING WITH LEVER HANDLE, AERATOR, GRID DRAIN HANDI-TRAP SUPPLY/DRAIN PROTECTION		
P-4A	OASIS PBAM	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-7A	LASCO 1363-BFS HANDI-CAP	SHOWER 36"X36"X75"	2"	1-1/2"	1/2"	1/2"	SYMMONS "TEMPTRON" S-99-1-131 PRESSURE BALANCED MIXING VALVE 30" SLIDE BAR WITH FLEXIBLE METAL HOSE, HAND SPRAY W/MILNE VACUUM BREAKER, DIVERTER VALVE SYMMONS NO. 4-270, HEAD, L-SHAPED DRAB, L-SHAPED FOLD UP SEAT, ADA		
P-8A	ELKAY "LUSTERTONE" LR2219	SINK SINGLE COMPARTMENT	1-1/2"	1-1/2"	1/2"	1/2"	ELKAY MODEL LR-4121 SUPPLY FITTING, 1X99 GRID DRAIN		

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

1. PROVIDE WITH VIBRATION ISOLATORS.
2. PROVIDE AIRTEK M-30 REFRIGERATED AIR DRYER, 115/60/1 AND COALESCING FILTER .7 MICRON RATING.

RADIANT HEAT COORDINATION SCHEDULE								
DESCRPT.	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-201	120V	6.6	3/4	3450	HARD CONNEC.	-	-	-

CONTROL PANEL WIRING
EP-200
THE CONTROL PANEL IS HARD WRED BACK TO AN ELECTRICAL PANEL 1-20A, 14 DKT. 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.

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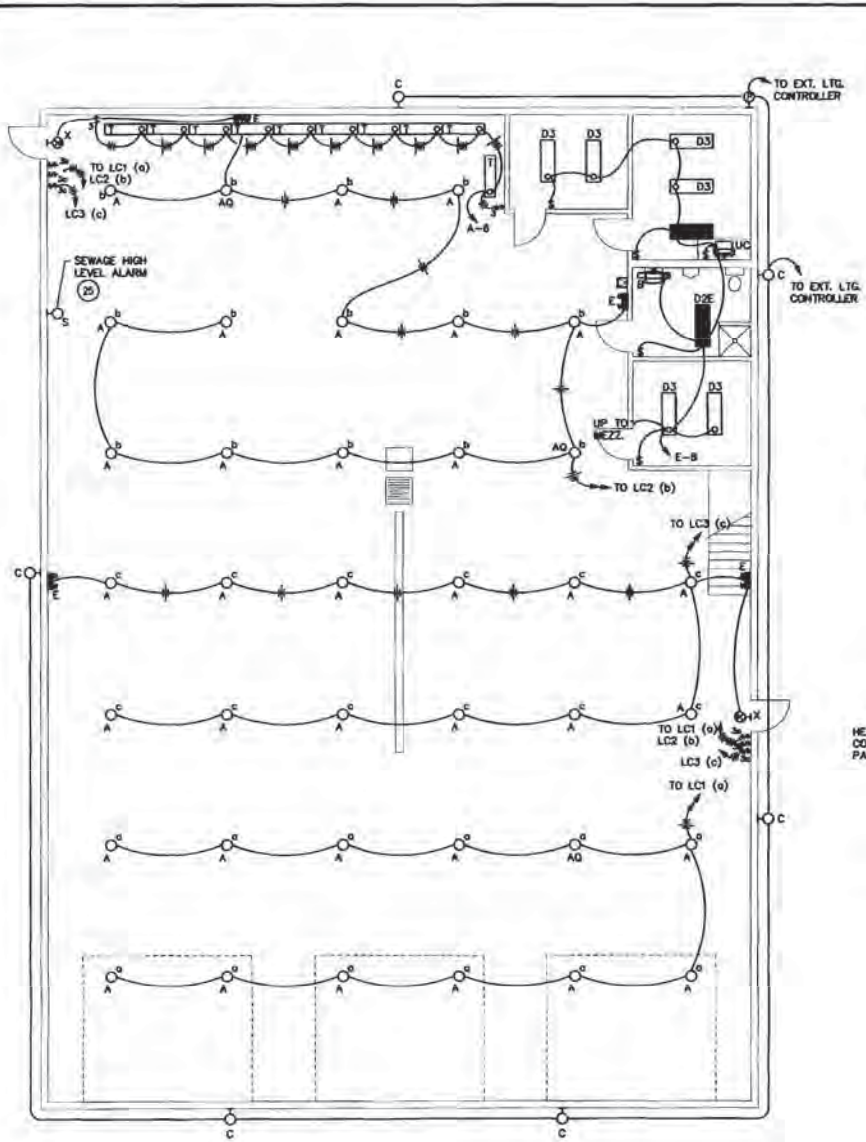
MECHANICAL SCHEDULES		REV	DATE	APP	
DOT OFFICE AND MAINTENANCE SHOP PHILLIP, SOUTH DAKOTA					
		REVISIONS	DESCRIPTION		

PROJ. #	R04002
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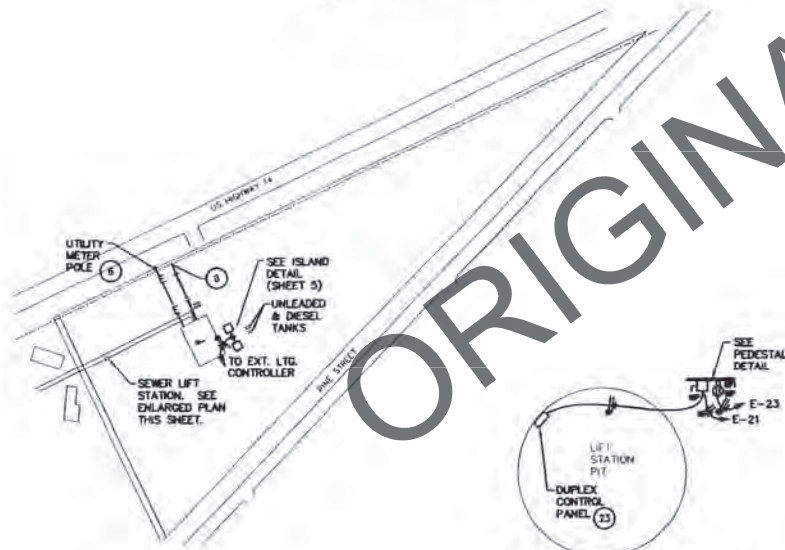


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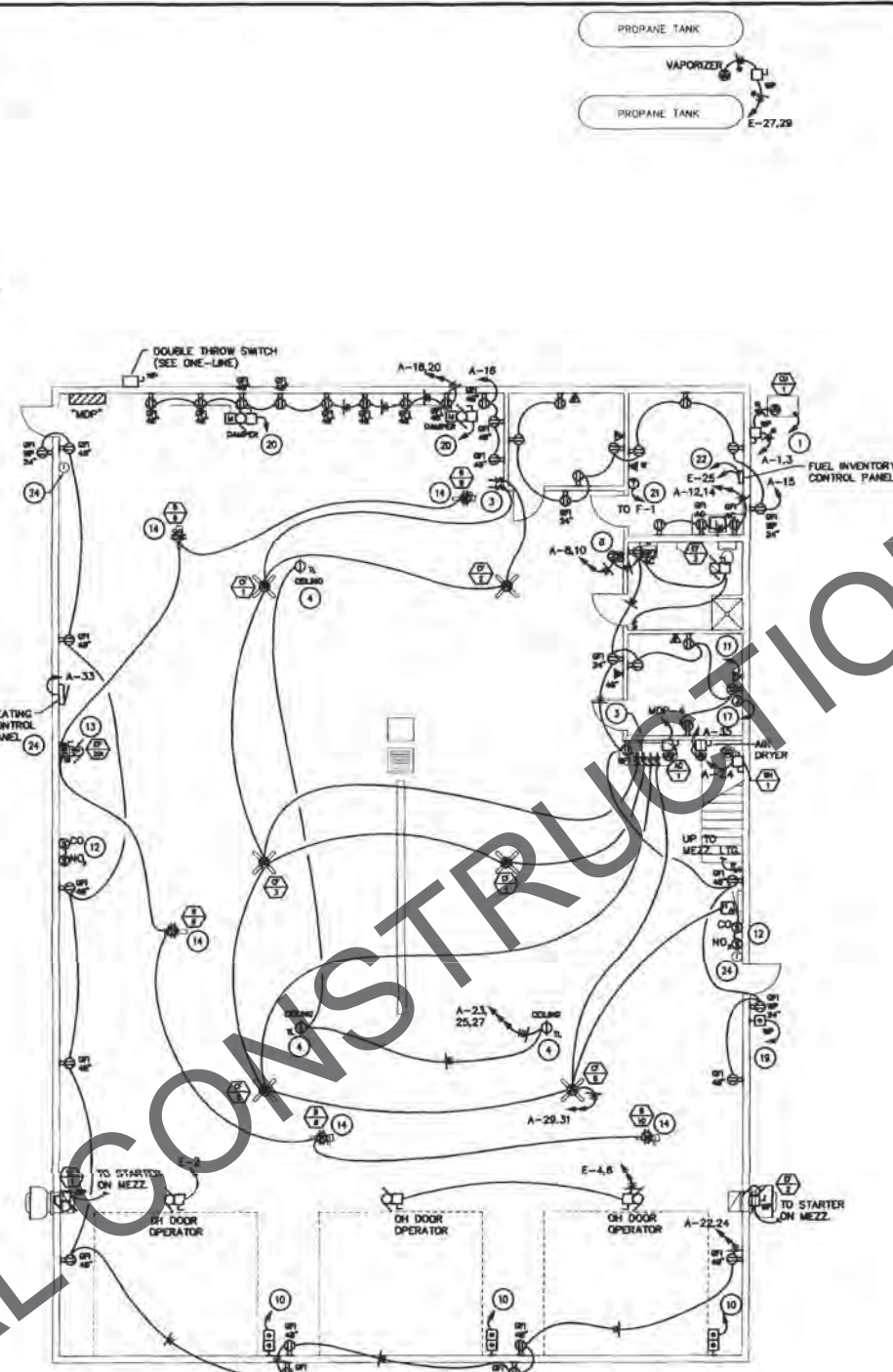
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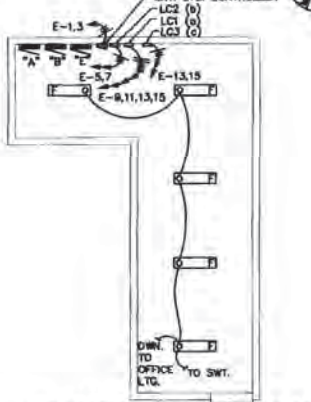
LIGHTING PLAN
SCALE: 1/8"=1'-0"



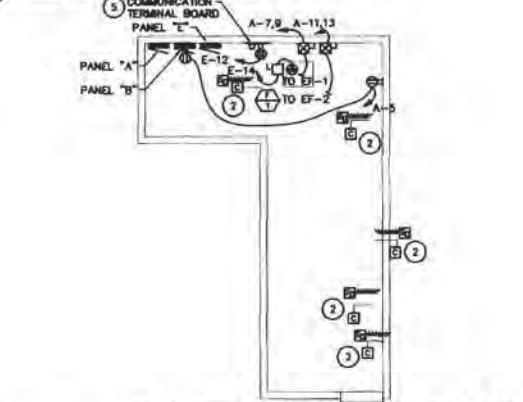
ENLARGED SEWAGE LIFT STATION ELECTRICAL PLAN
SCALE: 1/2"=1'-0"



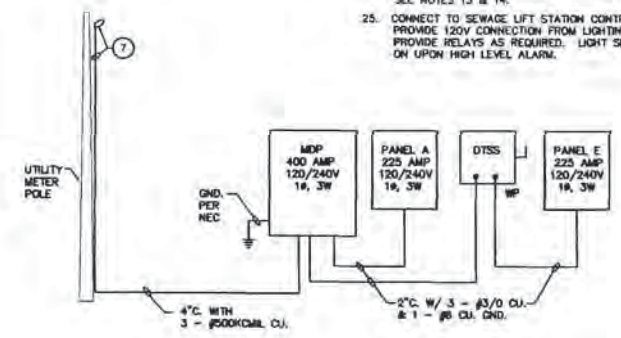
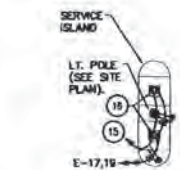
POWER & SIGNAL PLAN
SCALE: 1/8"=1'-0"



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



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



ONE-LINE DIAGRAM
NO SCALE

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-18) AS REQUIRED. TYPICAL. PROVIDE DUCT DETECTOR EQUAL TO SYSTEM SENSOR MODEL INTRODUCTION. 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 REELCHRAFT MODEL 155501233 OR EQUAL.
5. PROVIDE 3/4" X 1/2" PLYWOOD BACKBOARD, PAINTED BOTH SIDES WITH GRAY FIRE RESISTANT PAINT. PROVIDE 8 - 2" CONDUITS (FOR FUTURE) TO PROPERTY LINE. COORDINATE EXACT LOCATION WITH APPROPRIATE UTILITY.
6. COORDINATE EXACT LOCATION UTILITY CONNECTION POINT LOCATION WITH APPROPRIATE UTILITY.
7. PROVIDE SCH. 80 PVC UP POLE AND WEATHER HEAD AS SHOWN. LEAVE WIRE COILED UP FOR UTILITY CONNECTION. COORDINATE SERVICE COORDINATES WITH UTILITY COMPANY. ALL SERVICE COSTS ARE THE RESPONSIBILITY OF THIS CONTRACTOR.
8. MOUNT RECEPTACLE BEHIND WATER COOLER SINK. COORDINATE WITH M.C.
9. PROVIDE LABEL.
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 4 SW BOX WITH SINGLE GANG RING 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 NO2 SENSORS ARE PROVIDED BY MECHANICAL 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 NO2 EXHAUST FAN SHALL START AND 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. PROVIDE 1" CONDUIT BETWEEN DISPENSERS AND A 1" CONDUIT FROM DISPENSER TO THE COMMUNICATION BACKBOARD. CAP CONDUITS (FOR FUTURE). SEE NOTE 18.
16. REMOVE EXISTING MEGA-TRACK SYSTEM FROM EXISTING DISPENSERS (LOCATED OFF-SITE) AND INSTALL ON NEW DISPENSERS. EXISTING DISPENSERS SHALL BE LEFT OPERATIONAL. CONTRACTOR SHALL PROVIDE ALL FIELD WIRING AND MAKE ALL CONNECTIONS NECESSARY TO CONNECT MEGA-TRACK SYSTEM TO NEW DISPENSERS. FROM THE DISPENSER'S MAIN J-BOX PROVIDE RIGID STEEL CONDUIT TO THE MEGA-TRACK (MOU). PROVIDE A SEAL-OFF BEFORE MOU. SEE NOTE 18. PROVIDE AN 18 GA. TWISTED PAIR COMMUNICATION WIRE FROM EACH MOU TO THE OFFICE (ALONG EAST WALL). PROVIDE A FLUSH MOUNT J-BOX WITH BLANK COVER ON EAST WALL OF OFFICE.
17. PROVIDE A 4 SQ. BOX WITH BLANK COVER PLATE AND A 1" CONDUIT STUBBED OUT THROUGH SIDEWALL OF BUILDING, NEAR ROOF, ON THE SOUTH END. CAP CONDUIT.
18. PROVIDE ISOLATION RELAYS, SEAL-OFFS, INTERLOCK WITH EMERGENCY SHUTDOWN PUSHBUTTONS, AND ETC. AS REQUIRED BY M.C. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE COMPLETE SYSTEMS PER M.C.
19. EMERGENCY FUEL SHUT-OFF BUTTON. INTERLOCK WITH ALL FUELING EQUIPMENT. SEE NOTE 18.
20. INTERLOCK WITH CO & NO2 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 87760) TO TANK PROBES (2 TOTAL). SEE SHEET M3 FOR SCHEMATIC DIAGRAMS.
23. CONTROL PANEL IS FURNISHED BY M.C. INSTALLED AND WIRED BY E.C. TERMINATE ALL CONTROL WIRING FROM PROBES, AND POWER WIRING FROM PUMPS. PROVIDE ALARM WIRING TO BUILDING FOR ALARM LIGHT. LIGHT SHALL BE ACTIVATED BY HIGH LEVEL.
24. PROVIDE ALL INTERCONNECTION WIRING REQUIRED FOR HEATING SYSTEMS. PROVIDE WIRING TO THERMOSTATS. SEE NOTES 13 & 14.
25. CONNECT TO SEWAGE LIFT STATION CONTROL PANEL. PROVIDE 120V CONNECTION FROM LIGHTING CIRCUIT. PROVIDE RELAYS AS REQUIRED. LIGHT SHALL COME ON UPON HIGH LEVEL ALARM.

WEST PLAINS ENGINEERING
CONSULTING ENGINEERS
1750 RAND ROAD - RAPID CITY, SD 57702
PHONE: (605) 348-7465 FAX: (605) 348-9445

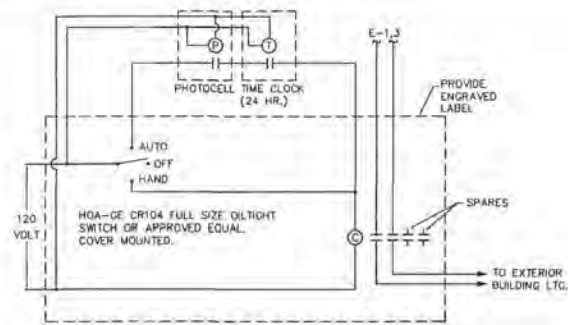
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REV	DATE	DESCRIPTION

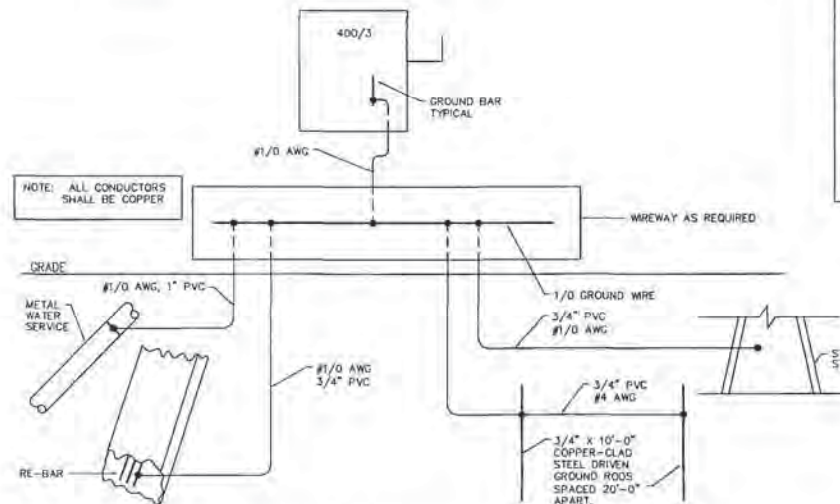
PROJ. #	RD4002
CADFILE	RD4002E1-E2
DESIGNED:	CTT
DRAWN:	VLS
APPROVED:	CTT
DATE:	8/07/04

REGISTERED PROFESSIONAL ENGINEER
S.D. 0003
CHAD T. LAMM
8/7/04

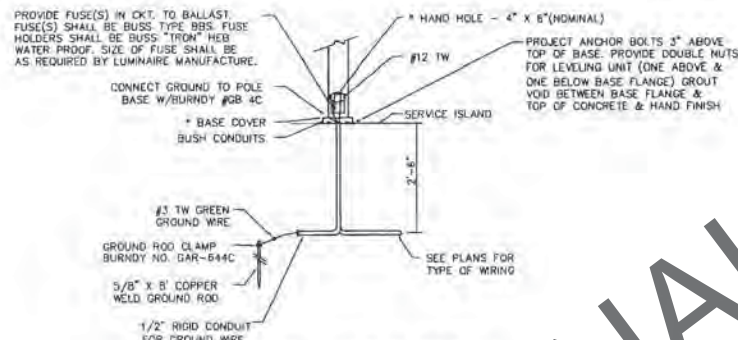
SHEET:
E1
OF
2



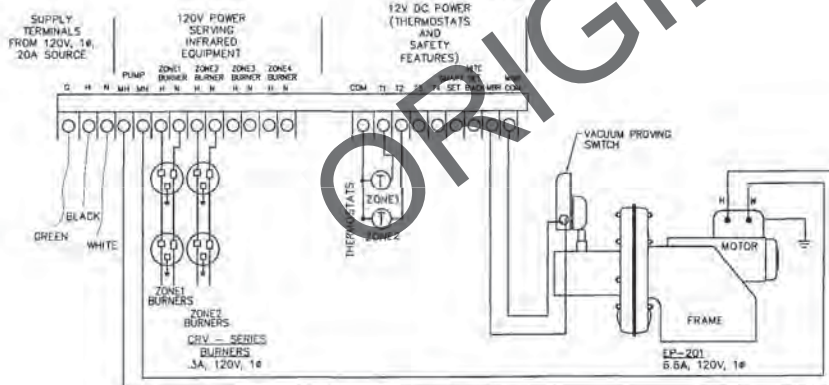
EXTERIOR LIGHTING CONTROL DIAGRAM
NO SCALE:



GROUNDING ELECTRODE DIAGRAM
NO SCALE:



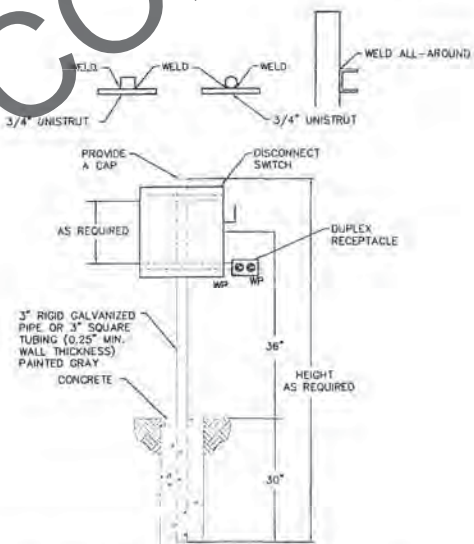
OUTDOOR LIGHTING DETAIL
NO SCALE: [SEE SHEET 5 FOR SERVICE ISLAND]



SYSTEM CONTROL PANEL
NOT TO SCALE



INTERIOR LIGHTING CONTROL DIAGRAM
[TYPICAL OF TWO]



LIFT STATION DISCONNECT PEDESTAL
NO SCALE:

LIGHTING FIXTURE SCHEDULE (NOTE1)

FIXTURE TYPE	MANUFACTURER'S DESIGNATION	CATALOG NUMBER	MOUNTING	TYPE	NO	WATTS	CATALOG NUMBER	REMARKS
A	GE	C15-17M-1A-5-TA-1	SURFACE/CEILING	MH	1	175	INCLUDED	LOWBAY, NOTE 2
AO	GE	C15-17M-1A-5-TA-1-B	SURFACE/CEILING	MH/QTZ	1/1	175/150	INCLUDED	LOWBAY, NOTE 2
B	LITHONIA	WS-217-A12-120GB-	SURFACE/WALL	FLU	2	17	F17TB/SPX35	MOUNT ABOVE MIRROR
C	LITHONIA	TW-250M-240-SF-LPI	SURFACE/WALL	MH	1	250	INCLUDED	WALL PAK, NOTE 3
D2E	LITHONIA	LB-332-120GB-EL6	SURFACE/CEILING	FLU	2	32	F32TB/SPX35	WRAP WITH EMERGENCY BALLAST
D3	LITHONIA	LB-332-120GB-EL6	SURFACE/CEILING	FLU	3	32	F32TB/SPX35	WRAP
D3E	LITHONIA	LB-332-120GB-EL6	SURFACE/CEILING	FLU	3	32	F32TB/SPX35	WRAP WITH EMERGENCY BALLAST
E	LITHONIA	ELM-4-N	SURFACE/WALL	INC	2	12	INCLUDED	EMERGENCY
F	LITHONIA	KAD400M-04-18-RP008-LPI	POLE	MH	1	400	INCLUDED	PROVIDE POLE #RTS-30-8-DW28-008
S	RAB	VB01-01008	WALL	INC	1	100	A19	VAPORPROOF, RED LENS
T	LITHONIA	EJ-232-120GB	CHAM	FLU	2	32	F32TB/SPX35	PROVIDE CHAIN HANG FROM STRUCTURE 9' AFF
UC	LITHONIA	2UC-15-120-MHF	UNDERCOUNTER	FLU	1	15	F15TB/SPX35	18" UNDERCABINET
X	LITHONIA	LQM-S-W-1-R-120/277-ELN	UNIVERSAL	LED			INCLUDED	EXIT

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

MAIN DISTRIBUTION PANEL

MOUNTING	SURFACE	VOLTS	120/240	PHASE	1	WIRE	3	MAIN CAPACITY	400 AMPERES
FEEDER SIZE:	SEE ONE-LINE DIAGRAM								
CCT NO	ITEM FED	WATTS	POLES	FRAME	WIRE SIZE	NEUTRAL	MAIN CONNECTION	LOAD DISTRIBUTION	REMARKS
1	PANEL A	200	2				SEE ONE-LINE DIAGRAM	12	12
2	SPACE ONLY	200	2						
3	DTSS	200	2				SEE ONE-LINE DIAGRAM	13	10
4	AIR COMPRESSOR	100	2				2-#8CU & 1-#10CU GND.	4.8	4.8
5	SPACE ONLY	100	2						
6	SPACE ONLY	100	2						

PANEL A

		MOUNTING		SURFACE		FEEDER SIZE		SEE ONE-LINE				MAIN CONNECTION: MLO		
CCT NO	ITEM FED	DISTRIBUTION WATTS	WIRE SIZE	CIRCUIT AMPS	BREAKER POLES	FRAME	NEUTRAL	CIRCUIT FRAME/POLES	WIRE AMPS	WIRE SIZE	DISTRIBUTION WATTS	ITEM FED	WIRE SIZE	CCT NO
1	CU-1	600	12	20	2	—	L1	—	2	30	2300	WH-1	2	2
3	—	600	12	—	—	—	L2	—	—	—	2300	—	—	4
5	MEZZANINE RECEPTACLES	400	12	20	1	—	L1	—	1	20	12	700	TASK LIGHTING	6
7	EF-1	1200	12	25	2	—	L2	—	1	20	12	1300	RESROOM, SHOP RECEPTACLES	8
9	—	1200	12	—	—	—	L1	—	1	20	12	700	OFFICE RECEPTACLES	10
11	EF-2	1200	12	25	2	—	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	1	—	L2	—	1	20	12	600	SHOP/WORK BENCH RECEPTACLES	16
17	SPARE	—	—	20	1	—	L1	—	1	20	12	700	SHOP/WORK BENCH RECEPTACLES	18
19	SPARE	—	—	20	1	—	L2	—	1	20	12	700	SHOP/WORK BENCH RECEPTACLES	20
21	SPARE	—	—	20	1	—	L1	—	1	20	12	1100	EXTERIOR, SHOP RECEPTACLES	22
23	CORREEL (PROVIDE GFI BKR)	200	12	20	1	—	L2	—	1	20	12	900	SHOP, EXT. RECEPTACLES	24
25	CORREEL (PROVIDE GFI BKR)	200	12	20	1	—	L1	—	—	—	—	SPACE	—	26
27	CORREEL (PROVIDE GFI BKR)	200	12	20	1	—	L2	—	—	—	—	SPACE	—	28
29	NO/CO DETECTION SYSTEMS	800	12	20	1	—	L1	—	—	—	—	SPACE	—	30
31	CEILING FANS(4 TOTAL)	300	12	20	1	—	L2	—	—	—	—	SPACE	—	32
33	RADIANT HEATING SYSTEM	1000	12	20	1	—	L1	—	—	—	—	SPACE	—	34
35	AIR DRIVER	500	12	20	1	—	L2	—	—	—	—	SPACE	—	36
37	SPARE	—	—	20	1	—	L1	—	—	—	—	SPACE	—	38
39	SPARE	—	—	20	1	—	L2	—	—	—	—	SPACE	—	40
41	SPARE	—	—	20	1	—	L1	—	—	—	—	SPACE	—	42

APPROXIMATE CONNECTED LOAD
L1 12 KW
L2 12 KW

PANEL E

CCT NO	ITEM FED	MOUNTING		FEEDER SIZE				SEE ONE-LINE				MAIN CONNECTION: MLD		CCT NO	
		SURFACE	DISTRIBUTION	WIRE SIZE	CIRCUIT BREAKER AMPS	POLES	FRAME	CIRCUIT BREAKER AMPS	WIRE SIZE	DISTRIBUTION WATTS	ITEM FED				
1	EXTERIOR LIGHTING		900	12	20	2	—	L1	—	1	15	12	900	OVERHEAD DOOR OPERATOR	2
3	—		900	12	—	—	—	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
9	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		1700	10	20	1	—	L1	—	1	20	—	—	SPARE	18
19	FUEL DISPENSER		1700	10	20	1	—	L2	—	1	20	—	—	SPARE	20
21	LIFT STATION		3300	6	45	1	—	L1	—	1	20	—	—	SPARE	22
23	LIFT STATION RECEPTACLE		200	10	20	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 15 KW
L2 12 KW

STARTER AND DISCONNECT SCHEDULE

MOTOR				STARTER		CONTROL		DISCONNECT RATING (A)	REMARKS	
UNIT NO	HP	VOLT PHASE	LOCATION	NEMA SIZE	TYPE	LOCATION	TYPE			LOCATION
AC	7.5	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	
SEWAGE	(2) -1/2	120/1	OUTDOORS	—	—	—	SEE PLAN	LIFT STATION	30A WP	SEE SITE PLAN
EP-201	F	120/1	SHOP	—	—	—	SEE PLAN	SHOP	20	
VAPOR	—	240/1	OUTDOORS	—	—	—	BY OTHERS	—	30A WP	
DTSS	—	240/1	OUTDOORS	—	—	—	NONE	—	200A WP	DOUBLE THROW SW.

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ELECTRICAL DETAILS, RISERS & SCHEDULES

DOT OFFICE AND MAINTENANCE SHOP

PHILIP, SOUTH DAKOTA

REVISIONS

DESCRIPTION

PROJ. # R04002
CADFILE: R04002E1-E2
DESIGNED: CTT
DRAWN: VLS
APPROVED: CTT
DATE: 8/07/04

REGISTERED PROFESSIONAL ENGINEER
6883
PHILIP, SOUTH DAKOTA
8/7/04

SHEET

E2
OF
2