

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT NO. 410A395
ROBERTS COUNTY

Sisseton Shop Floor Replacement

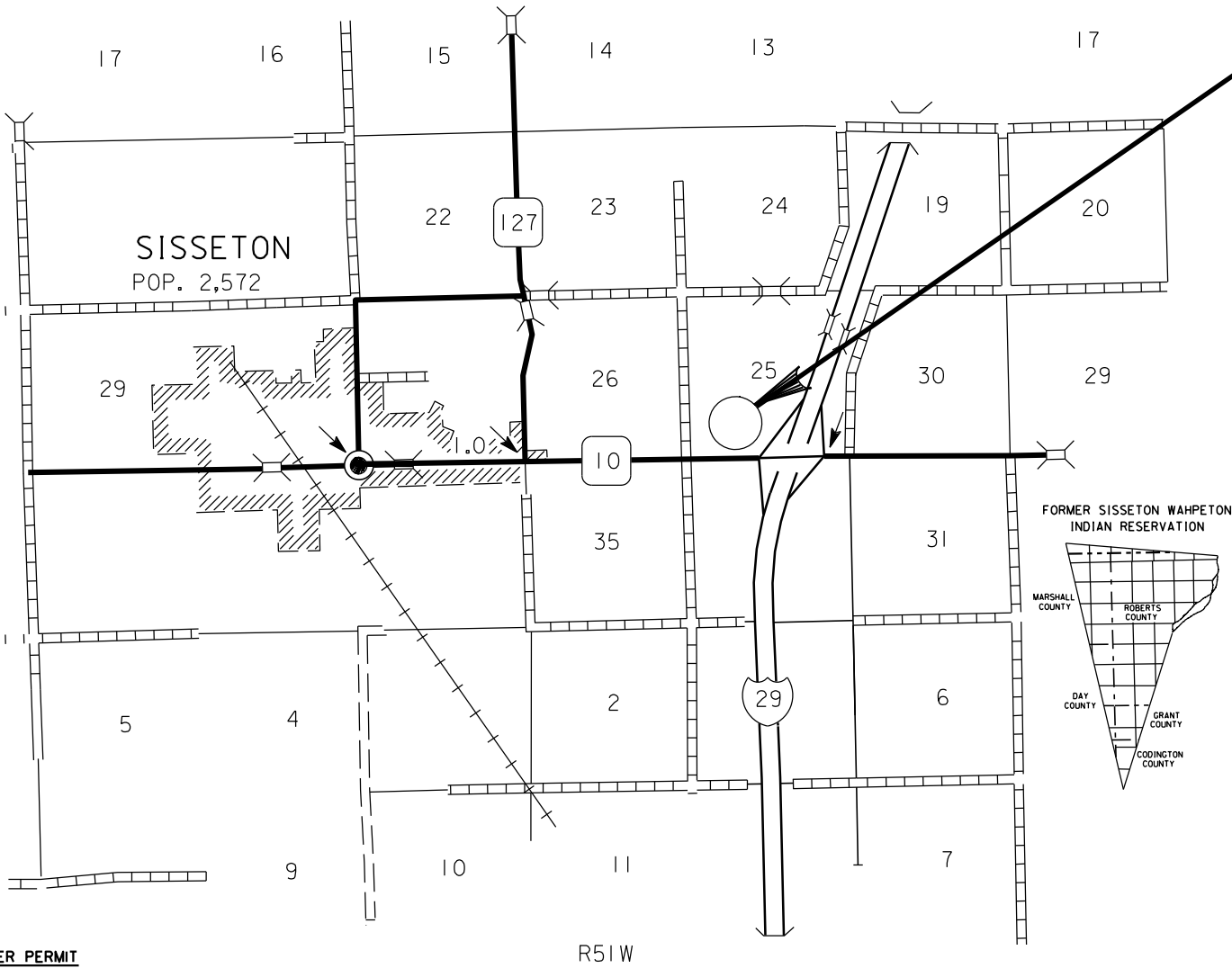
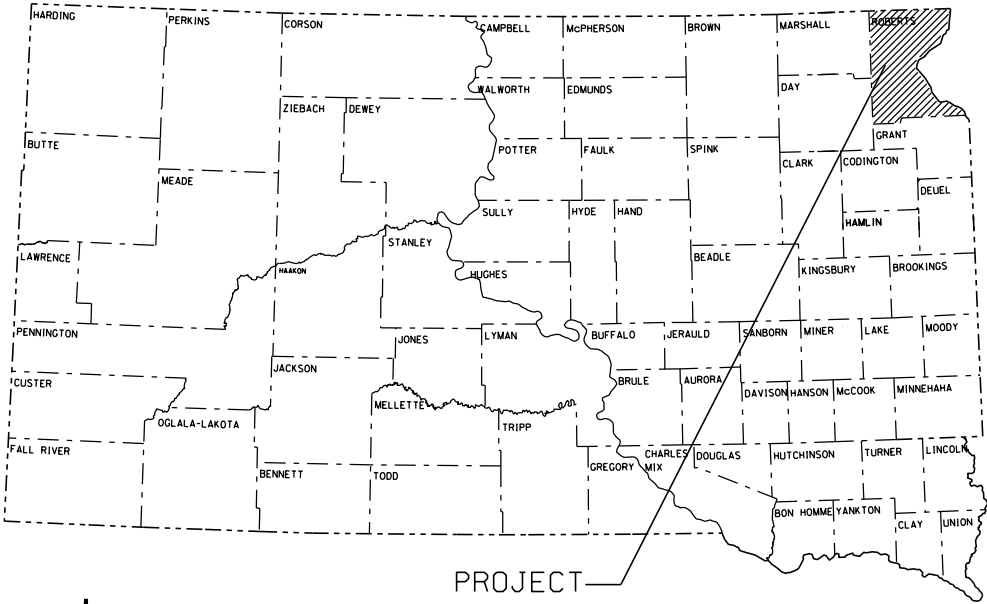
PCN i5UL

Project Location:
Located along the North side of SD10,
1 mile East of the City of Sisseton, SD.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	410A0395	1	13
Plotting Date:			

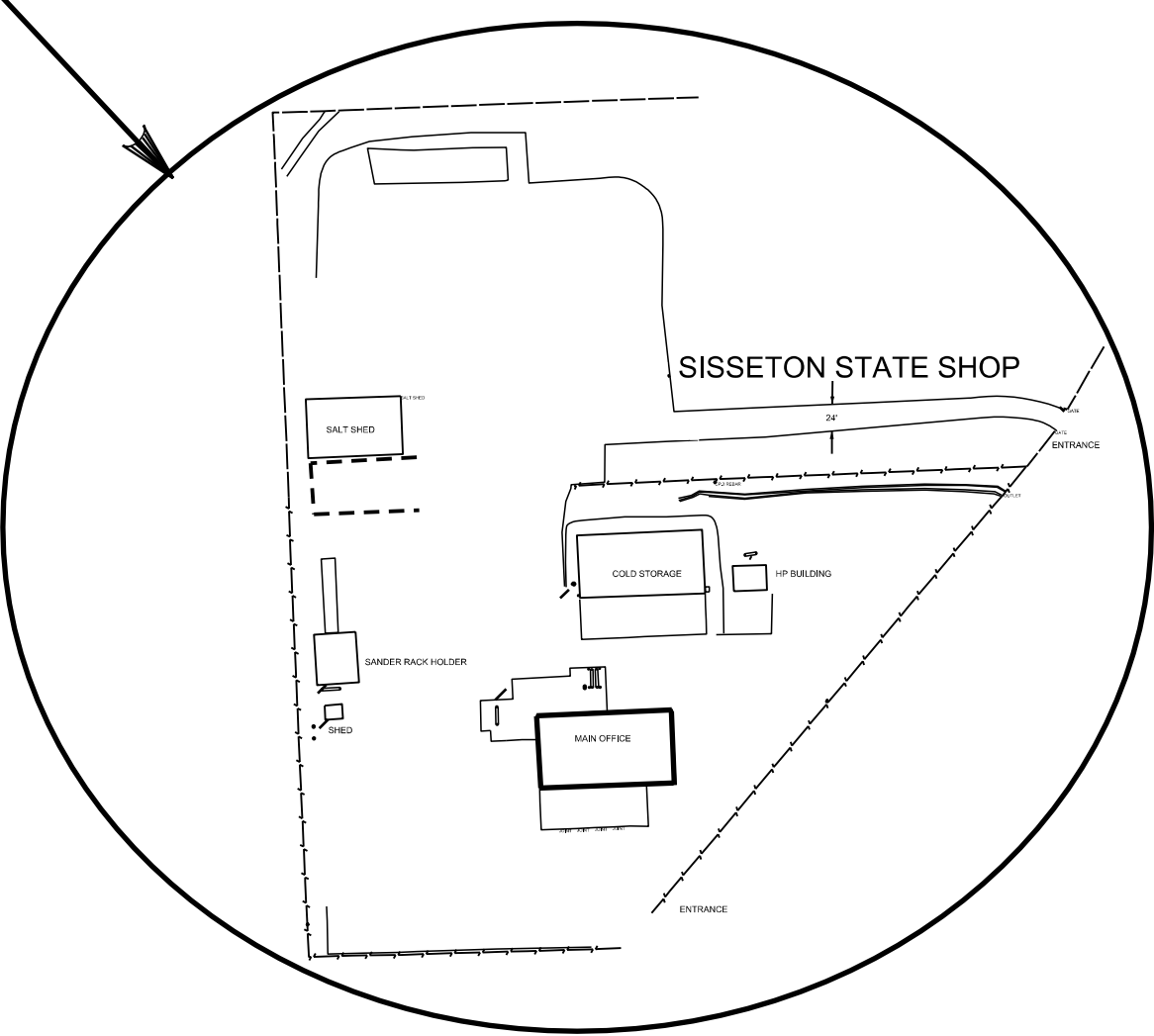
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STORM WATER PERMIT
(None Required)

R51W



ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

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BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 009E0010	Mobilization	Lump Sum	LS
* 110E1100	Remove Concrete Pavement	581.1	SqYd
* 120E0020	Unclassified Excavation	Lump Sum	LS
* 260E2010	Gravel Cushion	189.6	Ton
* 380E1120	Miscellaneous PCC Pavement	581.1	SqYd
* 380E6110	Insert Steel Bar in PCC Pavement	168	Each
* 900E2028	Miscellaneous Work, Plumbing	Lump Sum	LS
* 900E2030	Miscellaneous Work	1	Site

* - Denotes Non-Participating

SPECIFICATIONS

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

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified 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. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <<https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf>>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will 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) will 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) will 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 Environmental Office and the Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with 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 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) will be incidental to the various contract items.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic 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 a cultural resource review prior to scheduling the pre-construction meeting. 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 will arrange and pay for a record search and when necessary, a cultural resource survey. 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 if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in 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 will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. 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.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery 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 will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

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SCOPE OF WORK

- Work on this project includes but is not limited to:
- Removal of the existing concrete in the shop
 - Preparation of grade for new floor concrete
 - Installing or repairing the floor drainage system
 - Installation of floor concrete in accordance with plans and specifications.

GENERAL NOTES

All waste and excess material generated from the various construction activities shall be removed from the property as determined by the Engineer.

- During construction, the contractor will be required to
- assure the building is secure during construction.
 - repair any damage caused during construction.
 - notify state personnel prior to construction.
 - o To allow movement of equipment.
 - o For scheduling of work and personnel.

A sequence of construction/events will be required from the contractor and approved by the Engineer.

INSPECTION OF BUILDING SITE

The Contractor may inspect the building site prior to bidding. Arrangements for entering the building will be made by contacting Brian Chase (605) 881-7183.

UTILITIES

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 project engineer to determine modifications that will be necessary to avoid utility impacts.

EXISTING CONCRETE FLOOR

The existing concrete floor of the maintenance shop is 5 inches thick with No. 3 reinforcing steel at a 12” spacing in both directions.

REMOVE CONCRETE PAVEMENT

The existing concrete shop floor will need to be removed from the maintenance shop. No. 3 reinforcing steel extends through the existing maintenance shop floor into the concrete footings. Full depth sawing of the concrete floor to within 6 inches of the existing wall is required prior to removal.

Due to confined space, this concrete sawing and removal may involve additional hand work. The Contractor is encouraged to complete a site inspection prior to bidding.

On the Concrete Removal Layout, Areas by the steel beams along the walls will required special attention as to not damage the #6 and “Hair Pin” rebar.

The Original Shop Drawings page will show the rebar coming from the footing out into the main floor. Theses bars are to be salvaged and additionally, for the bars at the corners and along the overhead doors, a lap splice of 18” of similar material will be required to extend this rebar.

The tops of the rebar and footings are to be sandblasted while protecting the walls and the columns.

Concrete removal on top of the footings will be 5” in depth.

To facilitate the concrete removal over these areas, sawcut 1.5” at the back of these areas to assist in the breakout as to be able to salvage these rebars.

Any damage to the salvaged rebar shall be repaired, as directed by the Engineer, at no cost to the SDDOT.

All costs for sawing, sandblasting and concrete breakout shall be incidental to the contract unit price per Square Yard for REMOVE CONCRETE PAVEMENT

The drain by the office door will only be partially removed and not replaced as shown in the concrete removal layout.

Care must be taken during concrete removal and placement due to the confined conditions. Any damage, concrete splatter, concrete saw or cure residue must be repaired prior to the completion of the project at the contractor’s expense.

UNCLASSIFIED EXCAVATION

Limits of the removal shall be excavated to the proper elevation to allow for the placement of gravel cushion and new concrete pavement.

Compaction of the grade prior to installation of gravel cushion shall be to the satisfaction of the Engineer which is incidental to the contract unit price per ton for Gravel Cushion. Any unstable material shall be removed.

Additional excavation may be necessary to assure positive drainage. These areas shall be excavated to allow for the placement of 6 inches of gravel cushion.

It is not anticipated that water for compaction will be required; however, if in the opinion of the Engineer the excavated subgrade is extremely dry, water may be ordered and placed to the satisfaction of the Engineer. All costs for any added water shall be incidental to the contract lump sum price for UNCLASSIFIED EXCAVATION.

GRAVEL CUSHION

Compaction of the gravel cushion will be to the satisfaction of the Engineer.

WATER FOR COMPACTION OF GRANULAR MATERIALS

Cost of water for compaction of the granular material shall be incidental to the contract unit price for GRAVEL CUSHION. Six percent, plus or minus, moisture will be required at the time of compaction unless otherwise directed by the Engineer.

STEEL BAR INSTALLATION

The Contractor shall install the epoxy coated steel bars (18” - #4 deformed bars) into drilled holes in the existing concrete pavement (foundation). An epoxy resin adhesive must be used to anchor the steel bar in the drilled hole.

The epoxy coated steel bars shall be cut to the specified length by sawing and shall be free from burring or deformations. Shearing will not be permitted.

Epoxy resin adhesive shall be of the type intended for horizontal applications and shall conform to the requirements of ASTM C 881, Type IV, Grade 3 (equivalent to AASHTO M235, Type IV, Grade 3).

The diameter of the drilled holes in the existing concrete pavement for the steel bars shall not be less than 1/8 inch nor more than 3/8 inch greater than the overall diameter of the steel bar. Holes drilled into the existing concrete pavement shall be located at mid-depth of the slab and true and normal. 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.

Mix the epoxy resin as recommended by the manufacturer and apply by an injection method approved by the Engineer. If an epoxy pump is utilized, it shall be capable of metering the components at the manufacturers designated rate and be equipped with an automatic shut-off. The pump shall shut off when any of the components are not being metered at the designated rate. Fill the

drilled holes from the back to the front 1/3 to 1/2 full of epoxy or as recommended by the manufacturer, prior to insertion of the steel bar. Care shall be taken to prevent epoxy from running out of the horizontal hole prior to steel bar insertion. Rotate the steel bar during installation to eliminate voids and ensure complete bonding of the bar. Insertion of the bars by the dipping method will not be allowed.

Concrete shall be placed when the epoxy for anchoring the steel bars has hardened sufficiently to permit no movement of the steel bars as recommended by the manufacturer.

All costs for the installation of steel bars shall be incidental to the contract unit price per each for INSERT STEEL BAR IN PCC PAVEMENT.

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MISCELLANEOUS PCC PAVEMENT

Concrete used for shop floor shall be Class M-6 with the coarse aggregate being Crushed Ledge Rock.

Contractor will be responsible to set floor elevations as shown in the plans. Elevations of the existing floor along the edge of the new concrete are stated on Sheet 6 of the plans.

Surface Finish will be a hard troweled finish.

Epoxy coated reinforcing steel used in the floor will have a lap splice of at least 18" where rebar requires extension. Reinforcing Steel will adhere to ASTM A615/A615M Grade 60 (420). Chairs, Bolsters, or Bar Supports to keep reinforcing at proper location are required. All #4 Reinforcing Steel and incidentals required for the floor will be incidental to the contract unit price per SqYd of MISCELLANEOUS PCC PAVEMENT.

Total Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.

Underslab Vapor Barrier:

- Water Vapor Permeance: Not more than0.010 perms, maximum.
- Thickness: 15 mils.
- Stego Industries LLC; Stego Wrap Vapor Barrier (15-mil): www.stegoindustries.com
- Install vapor barrier in accordance with manufacturer's instructions and ASTM E1643.
- Install vapor barrier under interior slabs on grade; lap sheet over footings and seal to foundation walls.
- Lap joints minimum 6 inches.
- Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions.
- No penetration of vapor barrier is allowed except for reinforcing steel and permanent utilities.
- Repair damaged vapor retarder before covering with other materials.

All costs and incidentals required for the Underslab Vapor Barrier will be incidental to the contract unit price of MISCELLANEOUS PCC PAVEMENT.

Concrete sawing contraction joints on the new floor will be determined in the field. Saw cut joints before concrete cools (4 to 12 hours after placing). These joints will be sawn with a 3/16th in blade at not less 1 in deep and not more than ¼ the thickness of the slab. Joints will be sealed with a silicone sealant used for floor joints. All cost incurred for this sawing and sealing will be incidental to contract unit price per SqYd of MISCELLANEOUS PCC PAVEMENT.

All costs incurred for furnishing all materials, labor, equipment, and incidentals necessary to complete the work, except for installation of steel bars in drilled holes, shall be incidental to the contract unit price per square yard for MISCELLANEOUS PCC PAVEMENT

CURING CONCRETE

Concrete curing will comply with requirements of ACI 308R, Guide to Curing Concrete.

Materials:

Evaporation Reducer: Liquid thin-film-forming compound that reduces rapid moisture loss caused by high temperature, low humidity, and high winds; intended for application immediately after concrete placement. Curing compound will be applied at the manufacture's recommended rate of application.

Acceptable Products:

- a. SpecChem, LLC; SpecFilm Concentrate or SpecFilm RTU: www.specchemllc.com.
- b. W.R. Meadows, Inc; Evapre or Evapre-RTU: www.wrmeadows.com.

Curing and Sealing Compound, Moisture Emission Reducing:

Liquid, membrane-forming, clear sealer, for application to newly placed concrete; capable of providing adequate bond for flooring adhesives, initially and over the long term; with sufficient moisture vapor impermeability to prevent deterioration of flooring adhesives due to moisture emission.

Product will comply with the following:

- a. Comply with ASTM C309 and ASTM C1315 Type I Class A.
- b. VOC Content: Less than 100 g/L.
- c. Solids Content: 25 percent, minimum.

FLOOR FLATNESS AND LEVEL TOLERANCES

Maximum Variation of Surface Flatness on the exposed floor will be ¼ in per 10 ft.

- Correct the slab surface if out of tolerance.
- Correct defects by grinding or removal.
- Areas requiring corrective action will be identified.
- Identified areas will be re-checked with the same process after correction.

MISCELLANEOUS PLUMBING

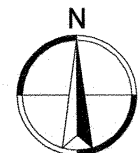
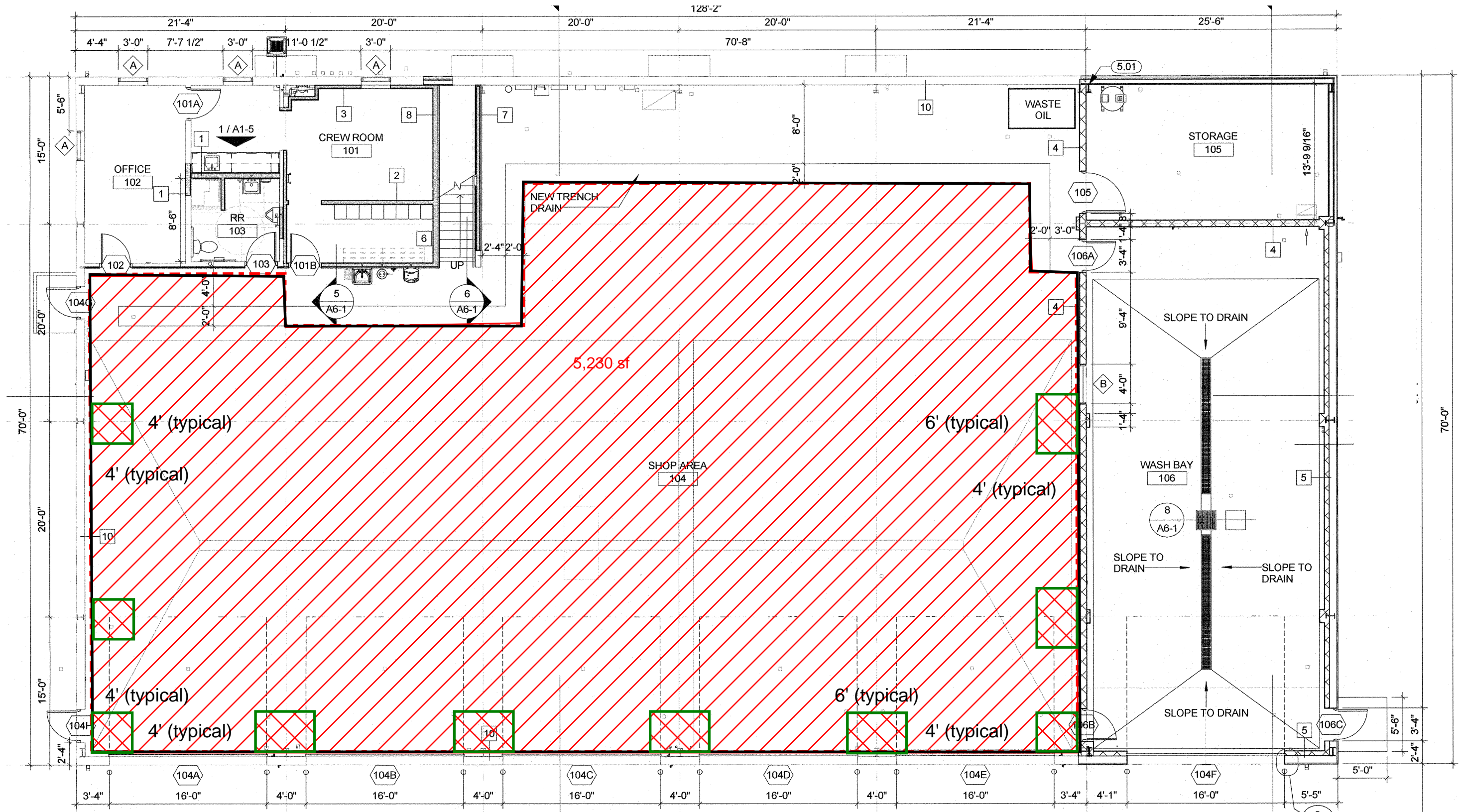
Plumbing required for the shop floor will be installed as per plans layout. This will include all the drains, covers/grates, pits, separators, elbows, pipes and equipment required for installation of this drainage system.

All costs incurred for furnishing all materials, labor, equipment, and incidentals necessary to complete the work shall be incidental to the contract lump sum price for MISCELLANEOUS WORK, PLUMBING.

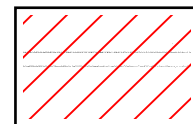
SANITATION FACILITIES

The Contractor will furnish and maintain a Portable Toilet during the project. The portable toilet will be for SDDOT staff use only. The Contractor shall also furnish and maintain a Free Standing Handwashing Station for SDDOT staff use. The Free Standing Handwashing Station shall have a minimum fresh water capacity of 15 gallons and be equipped with paper towel dispensers. All costs associated with furnishing and maintaining the Portable Toilet and the Free Standing Handwashing Station shall be incidental to the contract unit price per site for MISCELLANEOUS WORK.

Floor Removal Area



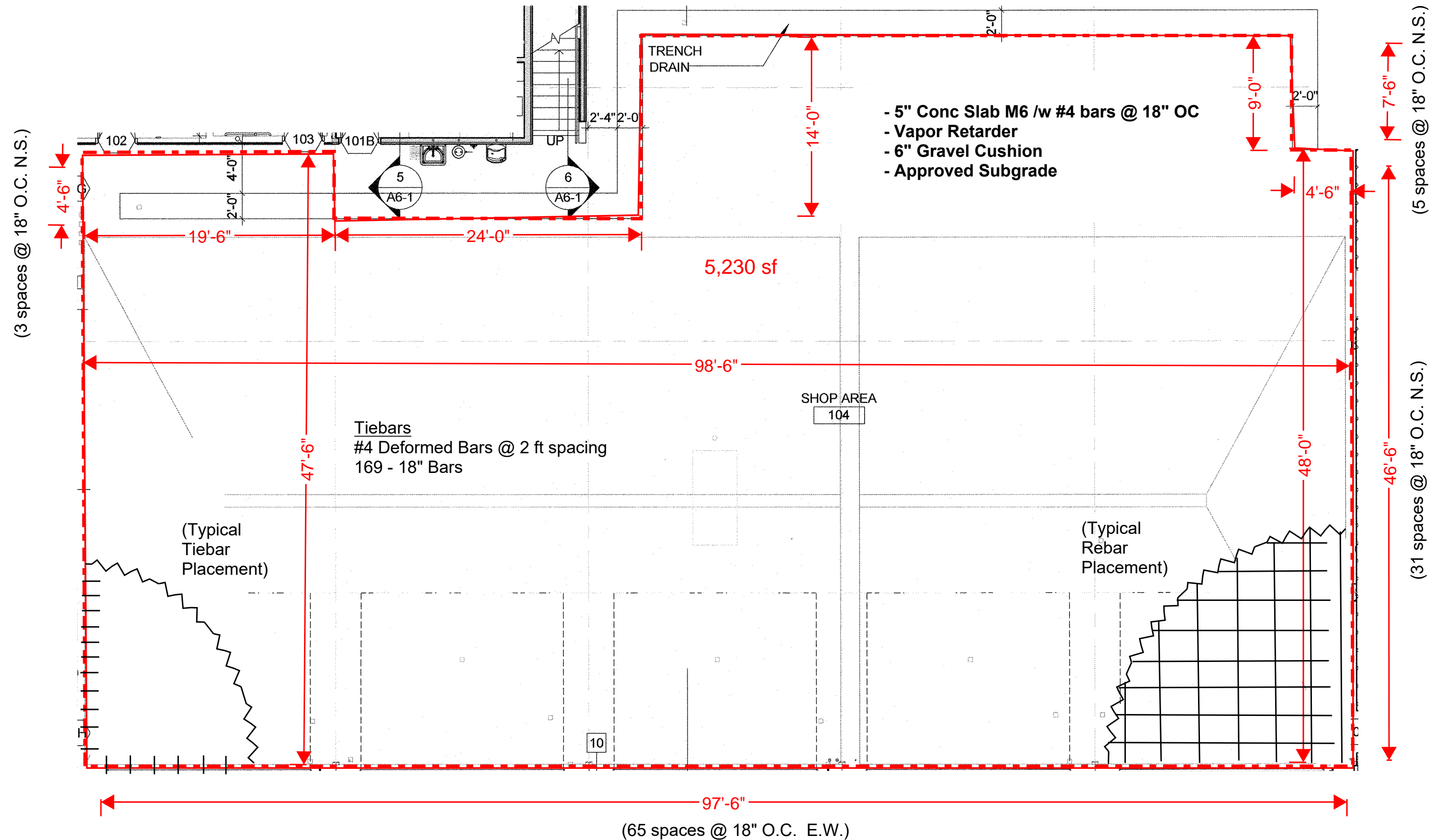
Concrete
Removal
Area



Foundation
Area

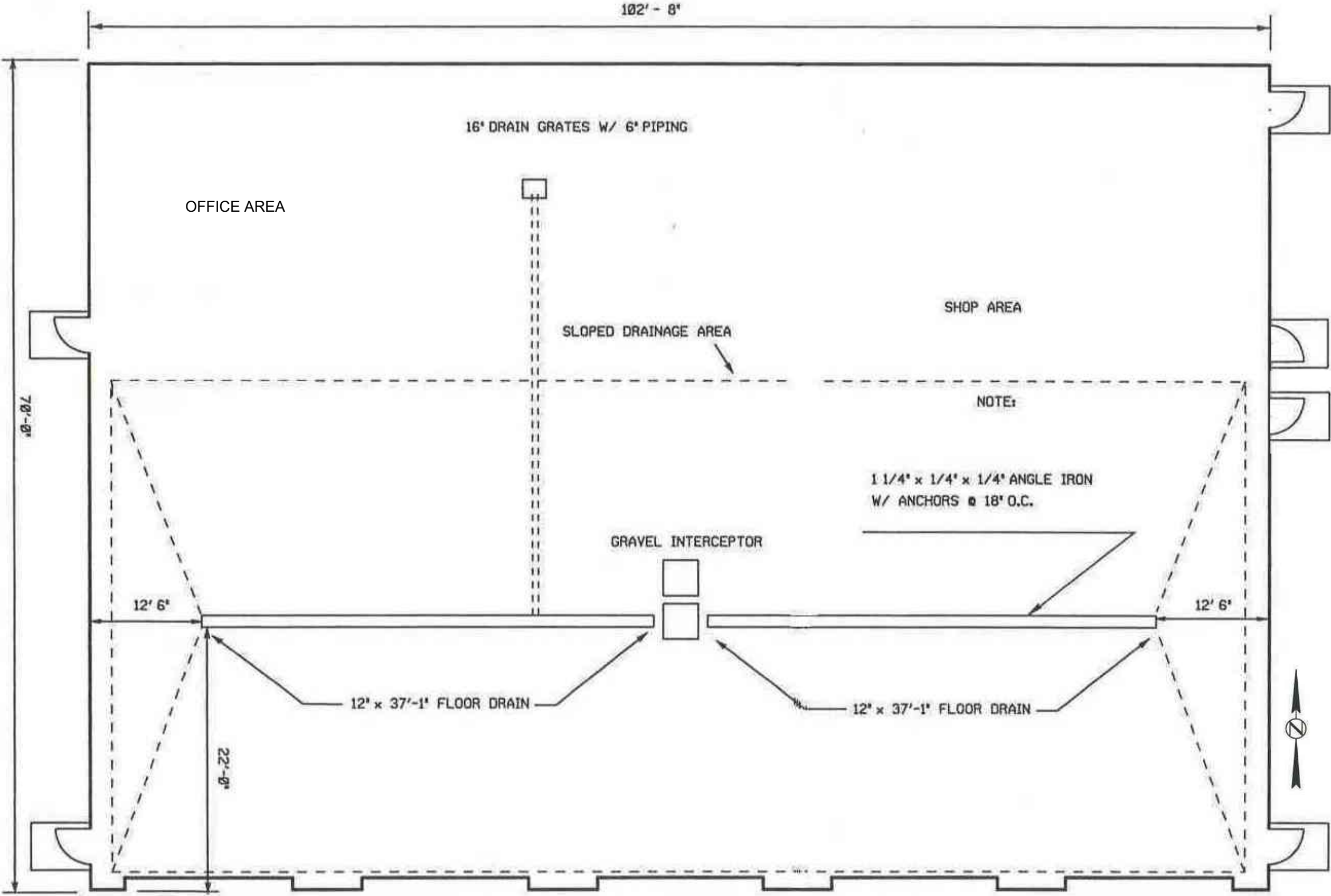


FLOOR REBAR LAYOUT

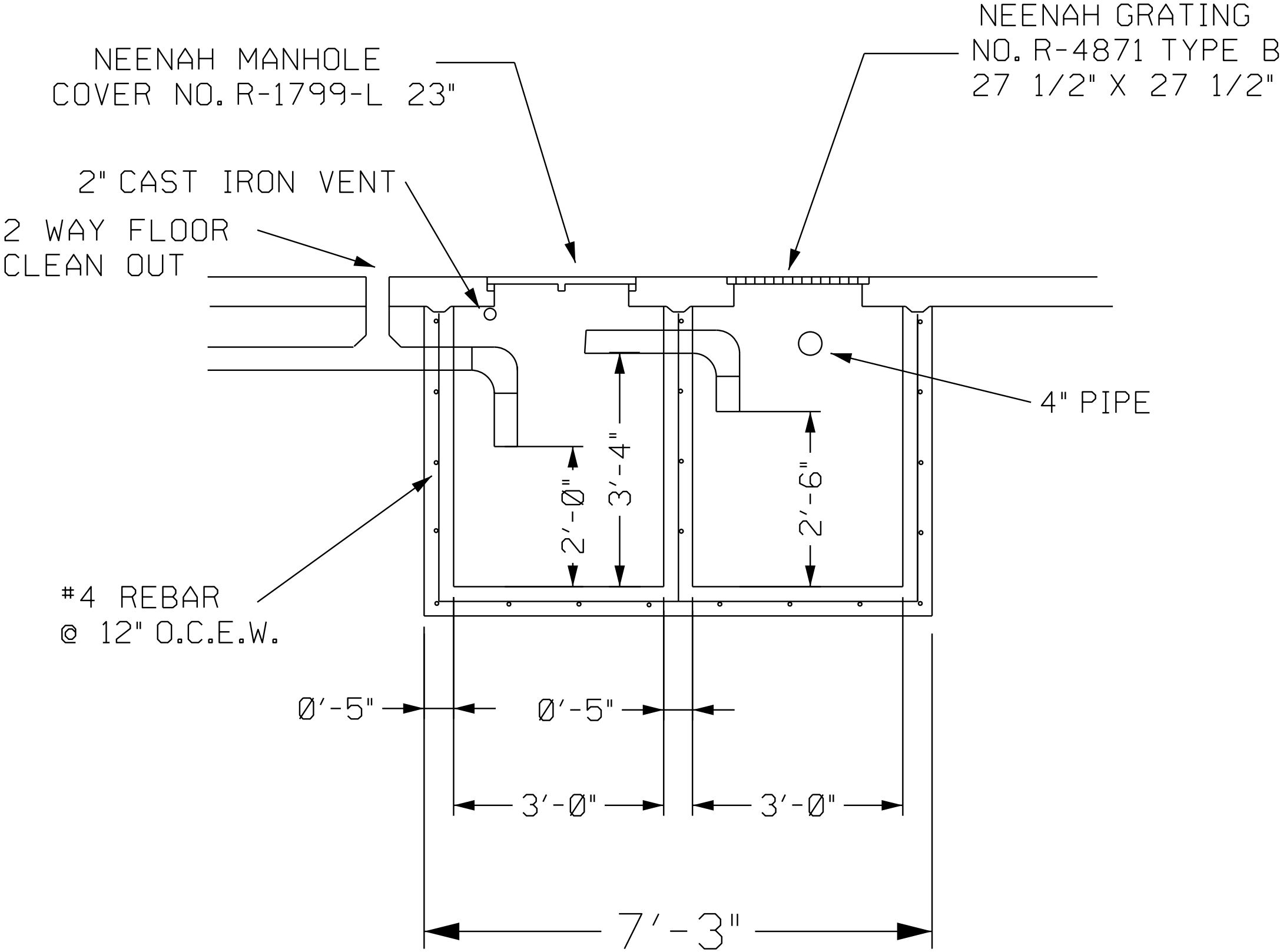


FLOOR DRAIN LAYOUT

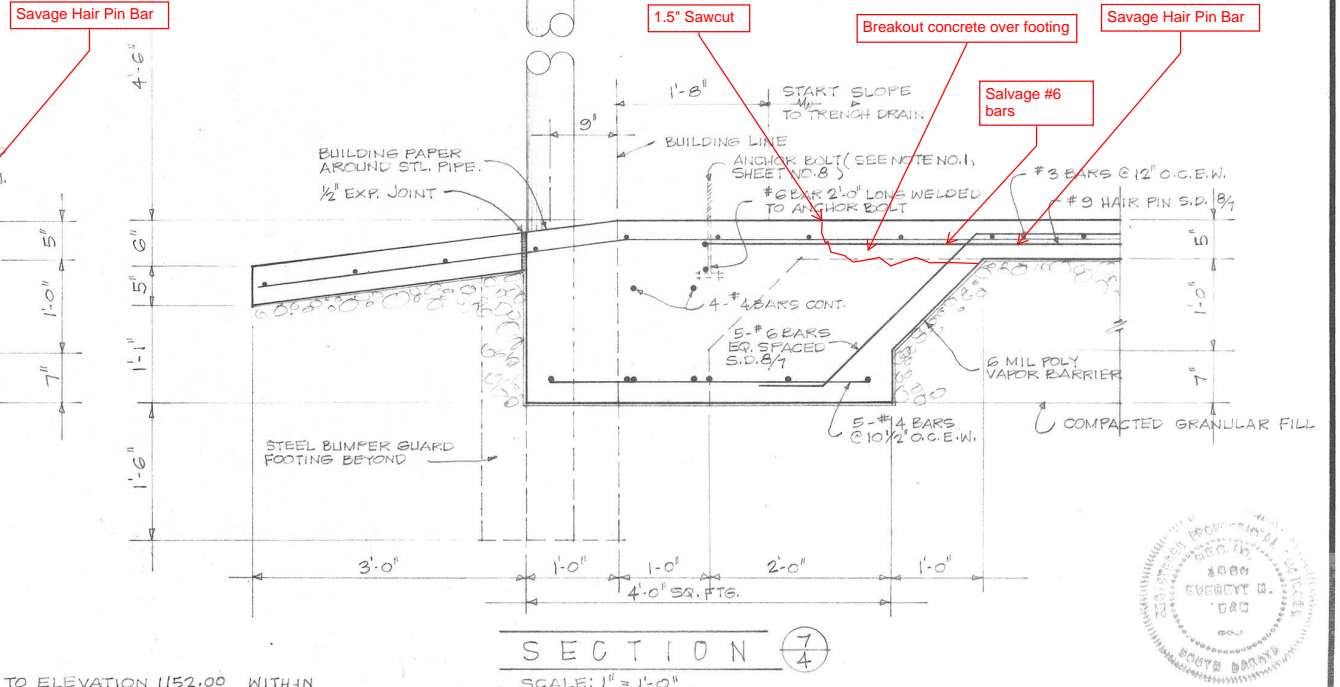
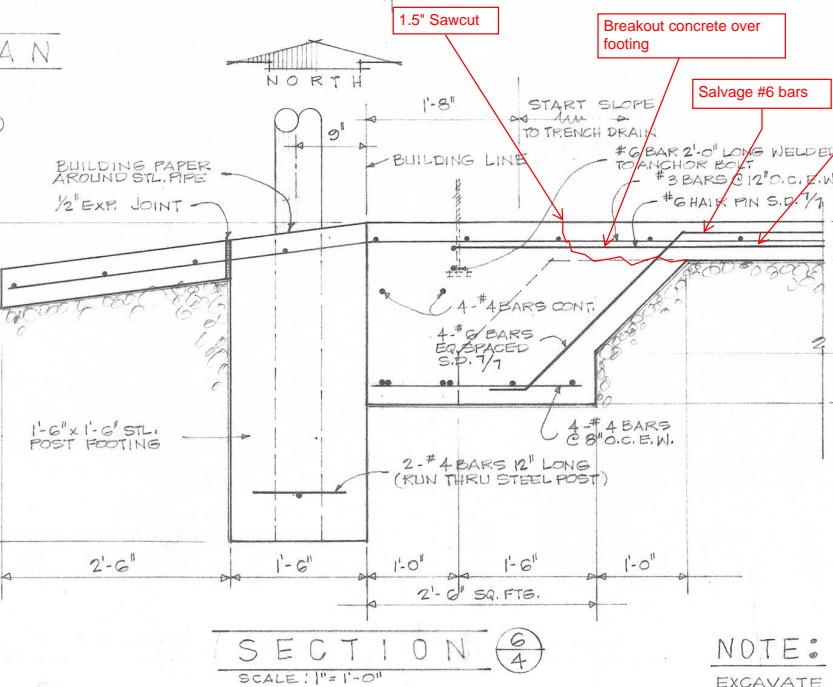
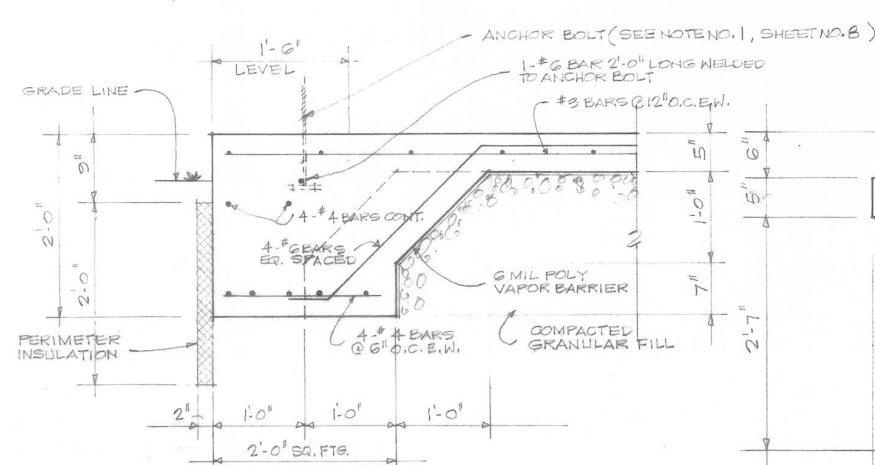
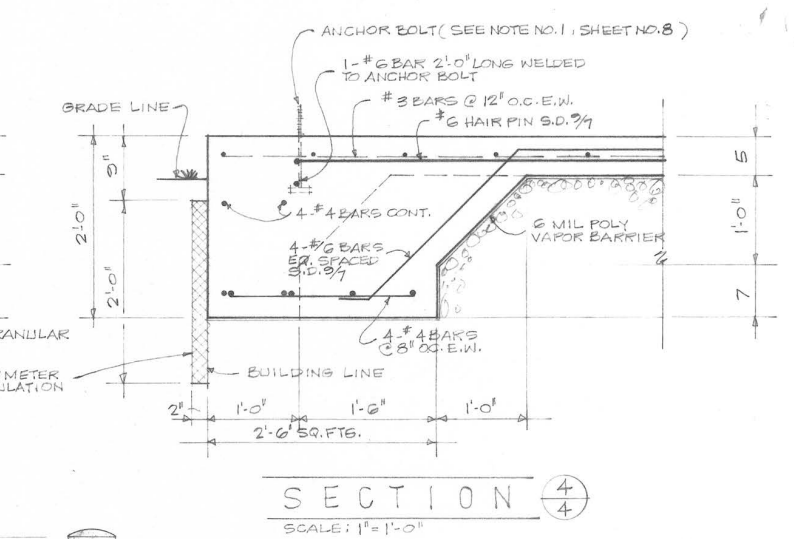
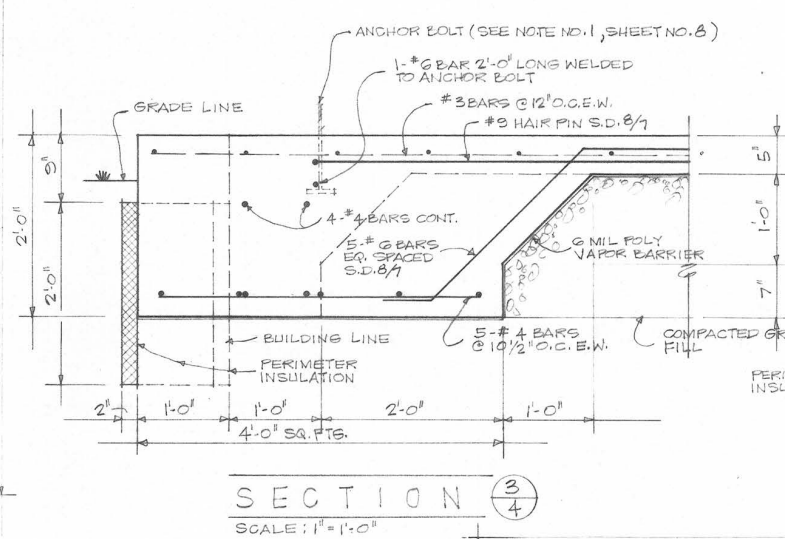
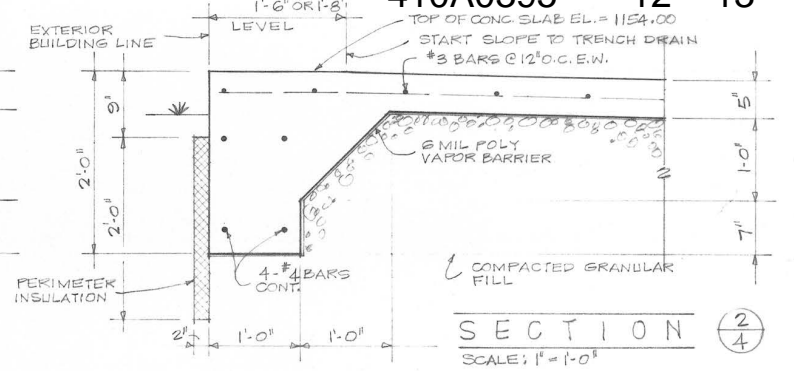
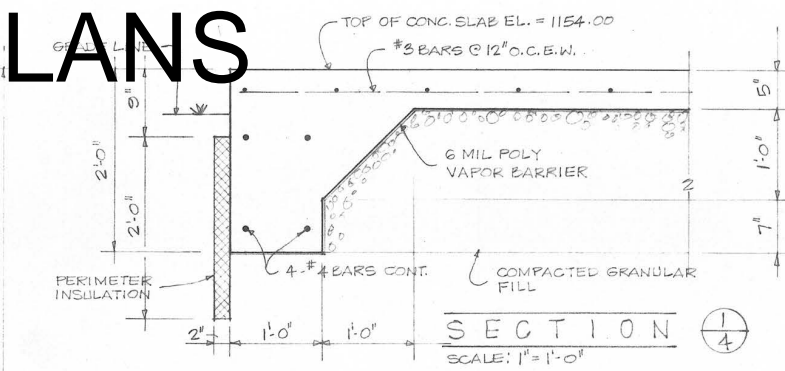
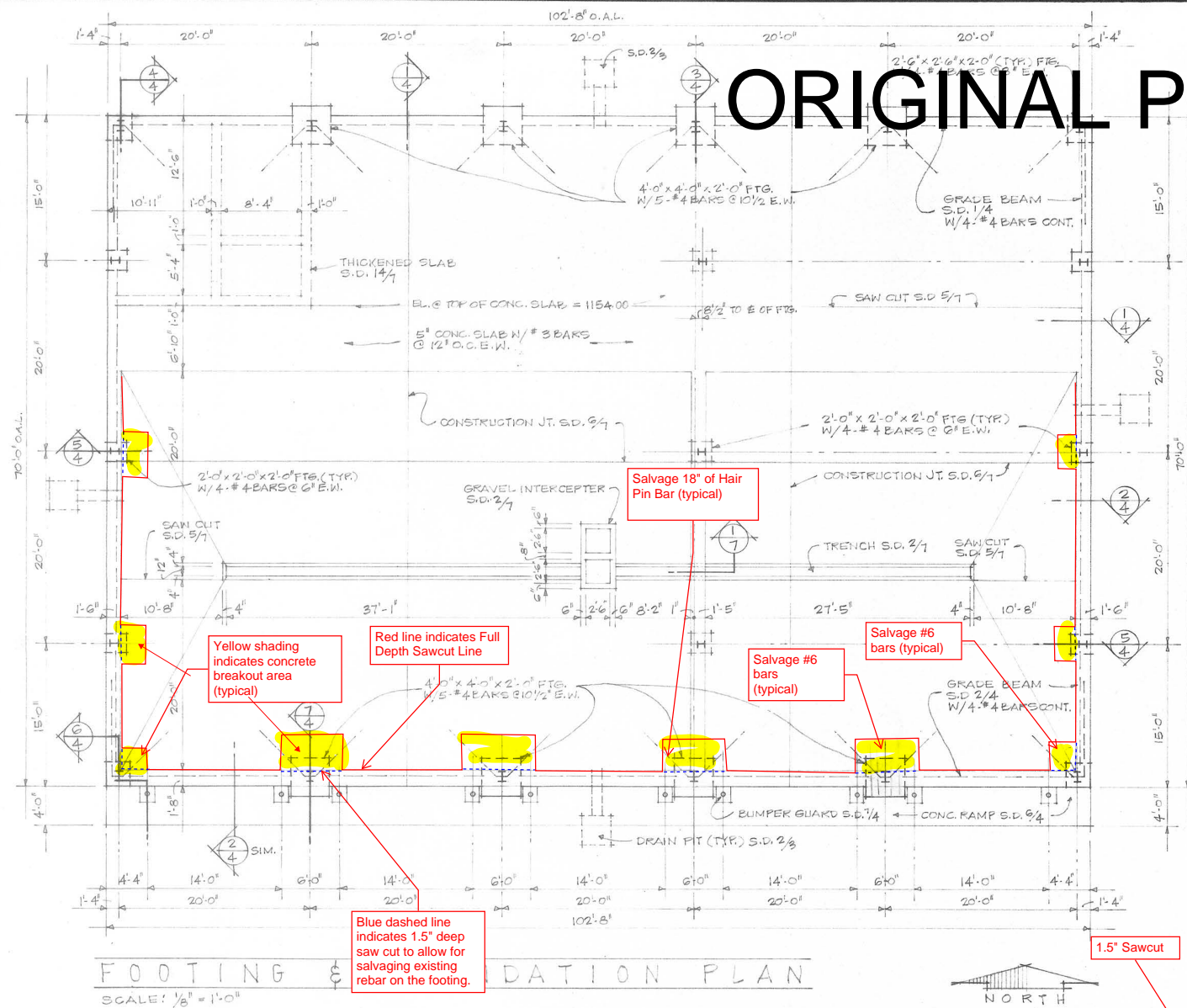
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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Plotting Date:			



GRAVEL INTERCEPTOR DETAIL



ORIGINAL PLANS

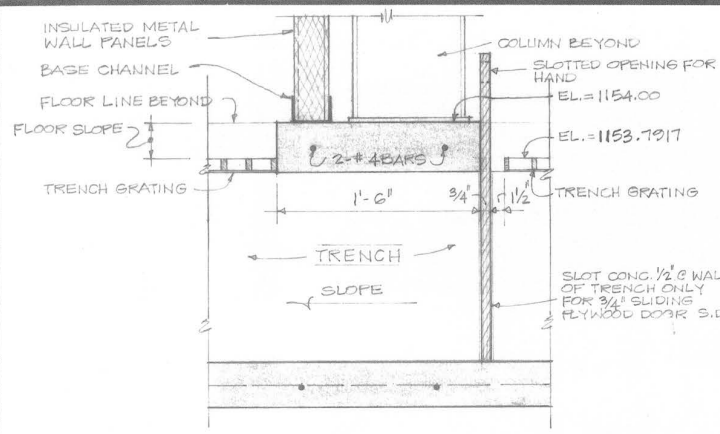


NOTE:

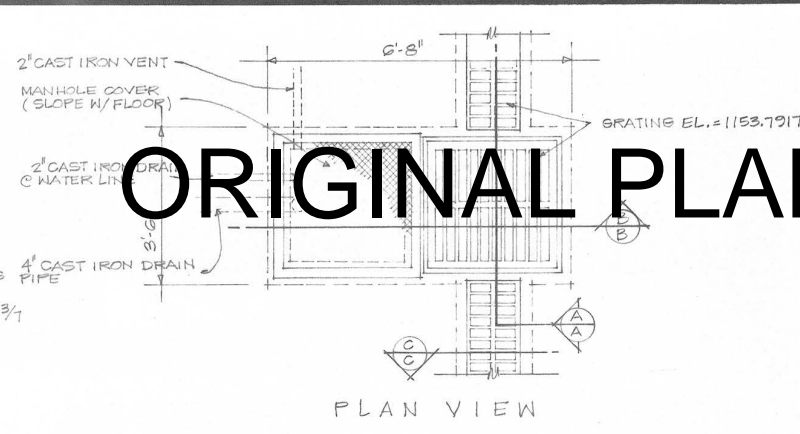
EXCAVATE TO ELEVATION 1152.00 WITHIN
CONFINES OF BUILDING FOUNDATION AND FILL
WITH APPROVED GRANULAR FILL AS SHOWN.



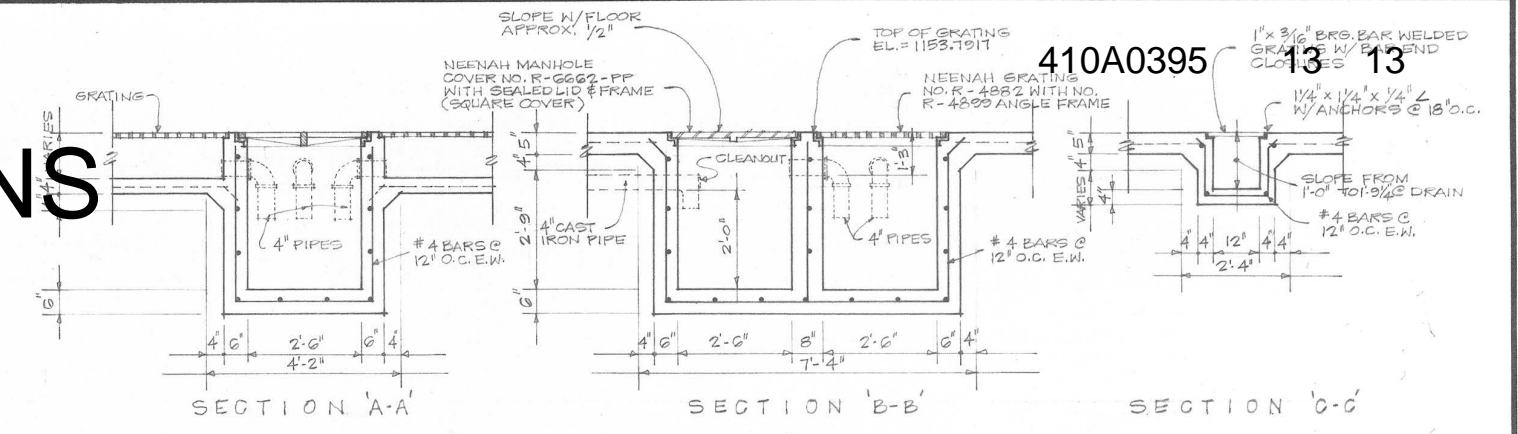
REVISIONS NO. REVISIONS DATE		STATE OF SOUTH DAKOTA OFFICE OF STATE ENGINEERING SUITE 205, JOE FORD BUILDING PIERRE, SOUTH DAKOTA	SHEET NO. 4 OF 8
APPROVED _____ STATE ENGINEER		PROJECT OFFICE AND MAINTENANCE SHOP SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION, SISSETON, S.D.	DATE FEB 78
_____ STATE ENGINEER		DRAWN BY J.E. MUZZY	CHECKED BY _____



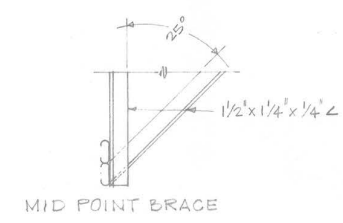
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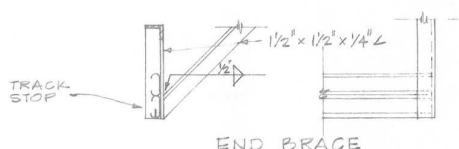
PLAN VIEW



DETAILS OF GRAVEL INTERCEPTOR 2/7
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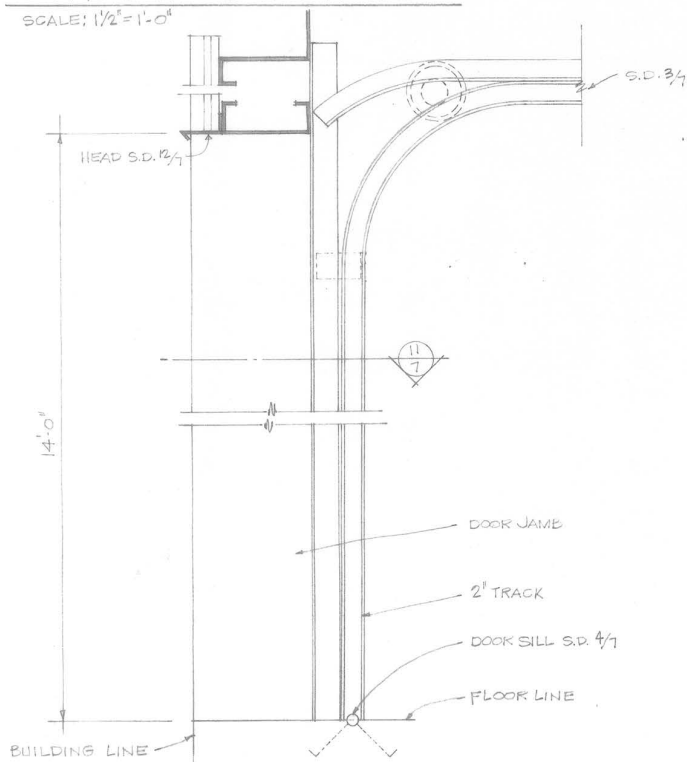


MID POINT BRACE

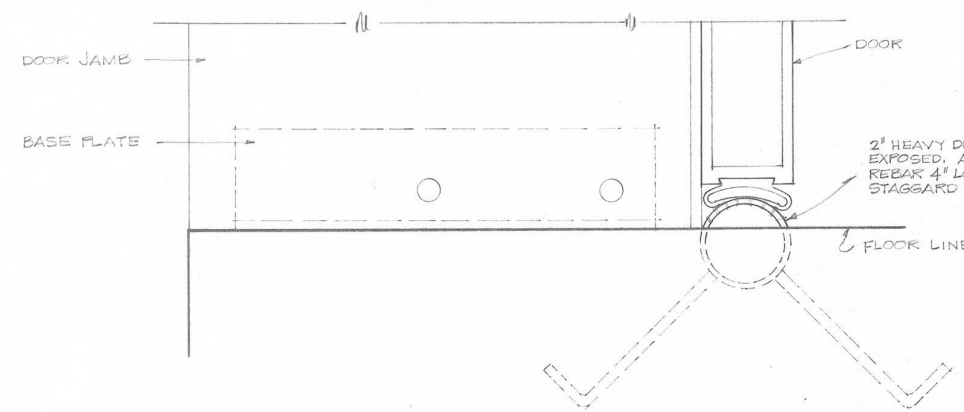


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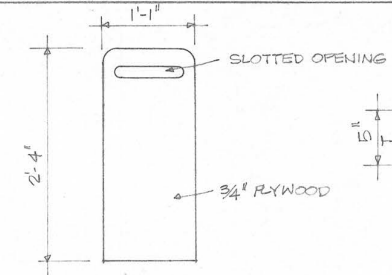
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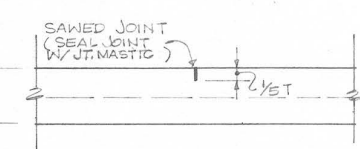
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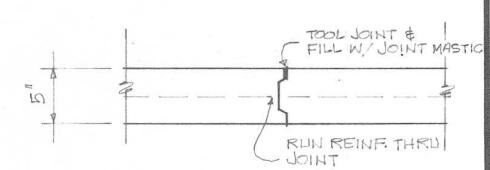
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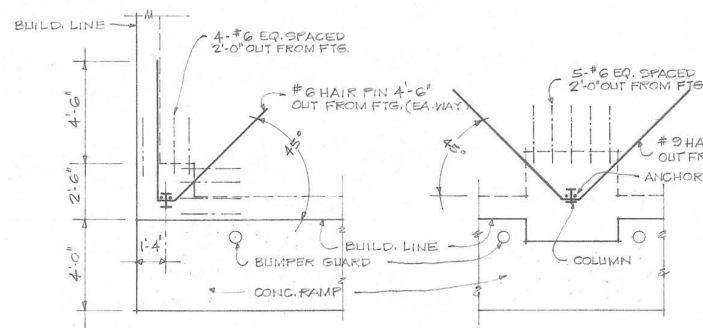
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NO. SCALE:



CONTROL JT. 5/7



CONSTRUCTION JT. 6/7

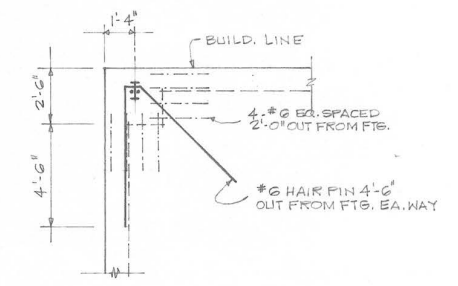


DETAIL 7/7

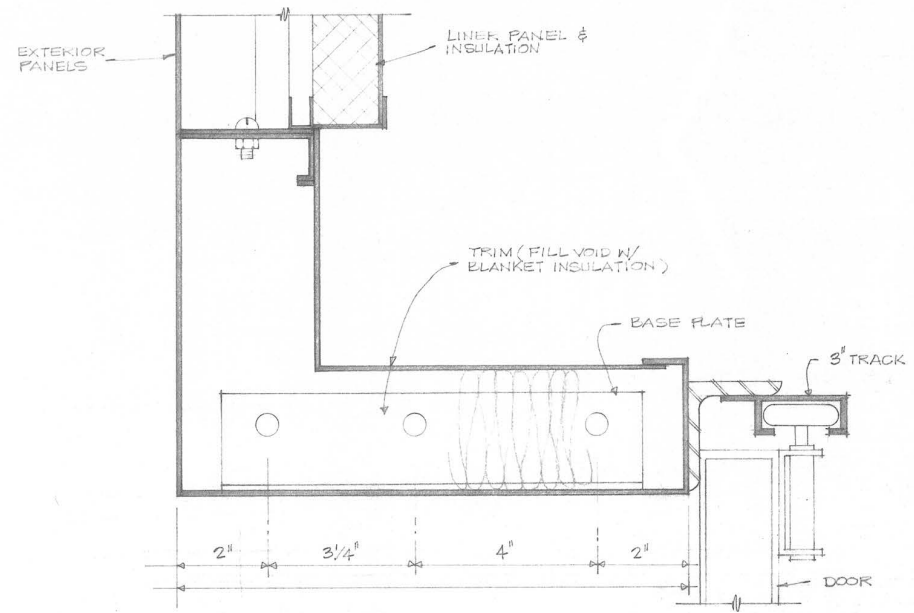
DETAIL 8/7

DETAIL 9/7

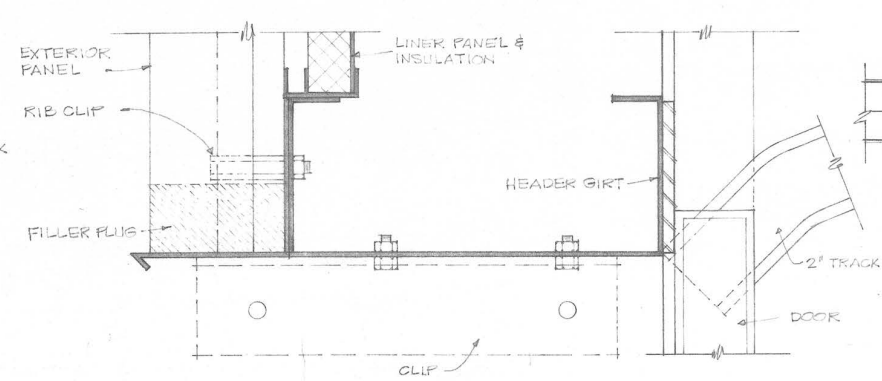
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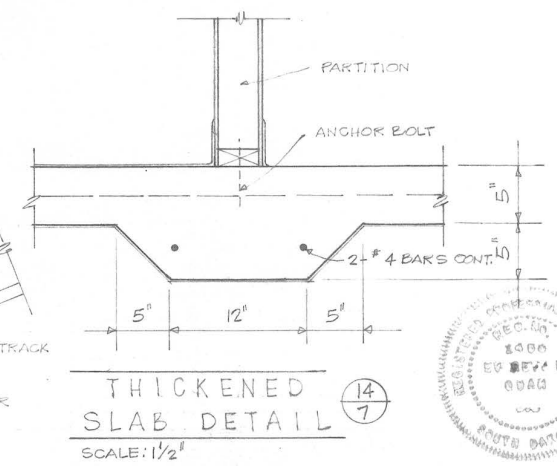
NOTE:
NOT ALL REIN. IS SHOWN



JAMB SECTION 11/7
SCALE: 1/2" = 1'-0"



HEAD SECTION 12/7
SCALE: 1/2" = 1'-0"



THICKENED SLAB DETAIL 14/7
SCALE: 1/2"



REVISIONS			STATE OF SOUTH DAKOTA		SHEET NO.
NO.	REMARKS	DATE	OFFICE OF THE STATE ENGINEER SOUTH 225 W. 2ND FLOOR BUILDING SIOUX FALLS, SOUTH DAKOTA		
			PROJECT OFFICE AND MAINTENANCE SHOP SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION, SIOGESTON, SD.		7 OF 8
APPROVED			DRAWN BY J.E. MUZZY		CHECKED BY
STATE ENGINEER					DATE FEB 78