

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0291(00)12	1	9

Plotting Date: 11/23/2016

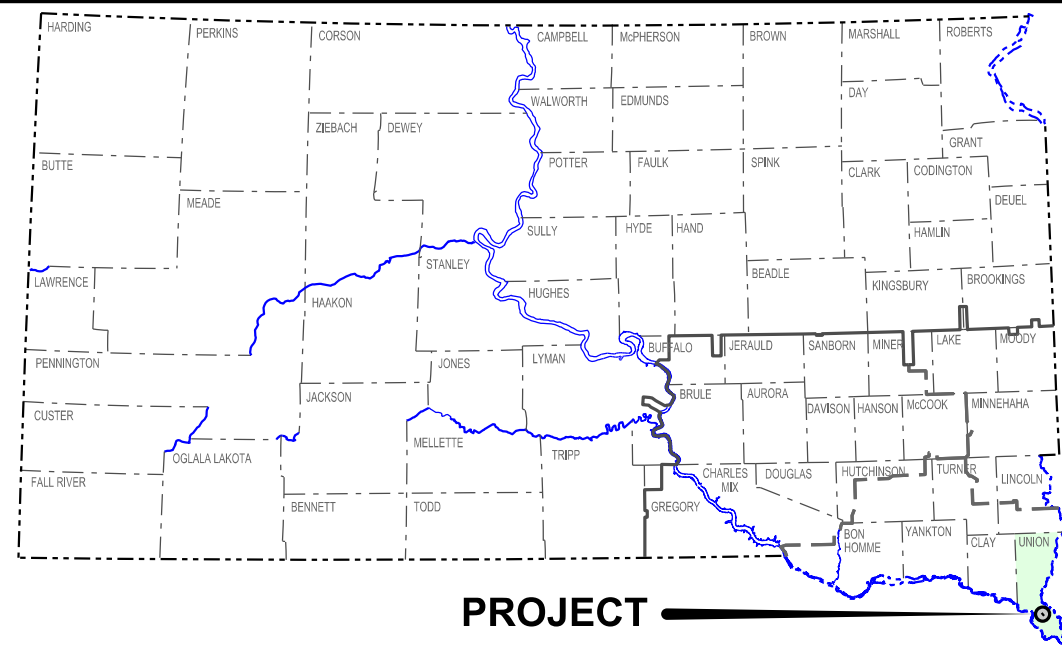
PLANS FOR PROPOSED
PROJECT IM 0291(00)12
INTERSTATE 29 NBL
AT PORT OF ENTRY
UNION COUNTY

REPLACE WEIGH SCALES & SCALE PIT REPAIR
PCN 05T0

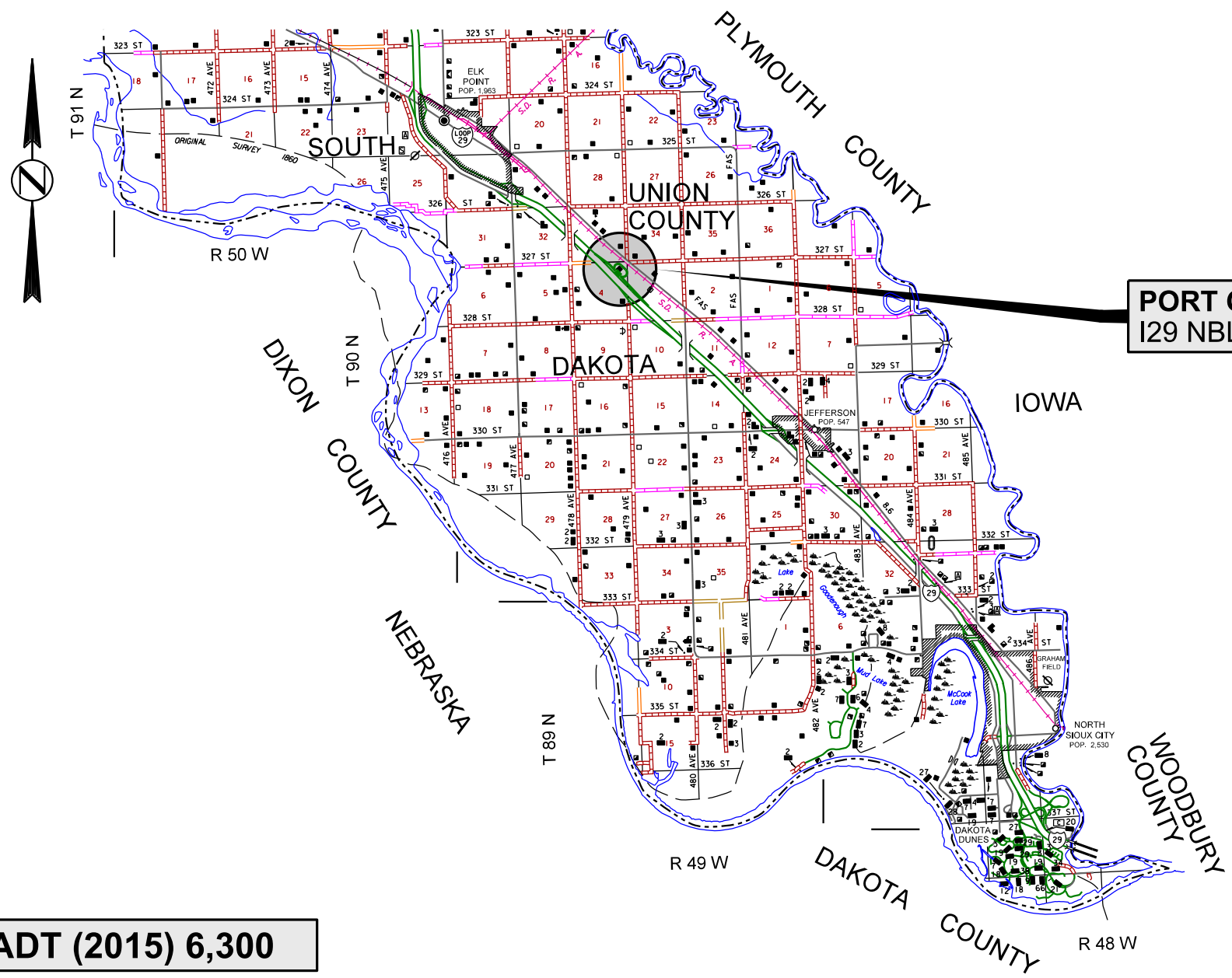
INDEX OF SHEETS

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PLOT SCALE - 1"=14000'



PROJECT



PORT OF ENTRY (WEIGH STATION)
I29 NBL MRM 13.00 +0.473

STORM WATER PERMIT
(None required)

NBL WEIGH STATION RAMP ADT (2015) 6,300

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ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0291(00)12	2	9

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E1100	Remove Concrete Pavement	2.9	SqYd
460E0100	Class A45 Concrete, Miscellaneous	1.4	CuYd
460E0300	Breakout Structural Concrete	1.4	CuYd
460E0380	Install Dowel in Concrete	37	Each
480E0200	Epoxy Coated Reinforcing Steel	196	Lb
480E5000	Galvanic Anode	9	Each
900E5835	Static Scale	2	Each

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 C: WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment before entering South Dakota to reduce the risk of invasive species introduction into the project vicinity.

Action Taken/Required:

The Contractor shall obtain the necessary permits from the regulatory agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE) prior to executing water extraction activities.

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.

Cost 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.

SPECIFICATIONS

1. Design Specifications: AASHTO Standard Specifications for Highway Bridges 2002 17th Edition with 2003 Interim using Working Stress Design.
2. Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications and Special Provisions as included in the Proposal.
3. All Welding and Welding Inspection shall be in conformance with the AASHTO/AWS Bridge Welding Code D1.5M/D1.5:2010 unless otherwise noted in this plan set.

DETAILS AND DIMENSIONS OF EXISTING SCALE

It is the Contractor's responsibility to inspect and verify the actual field conditions and any necessary dimensions affecting the satisfactory completion of the work required for this project.

SCOPE OF WORK & SEQUENCE OF OPERATIONS

1. Remove existing two south scales. The scales will be disposed of by the contractor at a location approved by the owner.
2. Repair the south End Wall of the Scale Pit as shown in the plan details.
3. Repair the piers that support the scales.
4. Place two new 11'x40'x14" deck scales with link suspension load cells.

DESIGN MIX OF CONCRETE

1. All structural concrete shall be Class A45 unless otherwise indicated.
2. Type II cement is required.
3. The concrete mix shall be designed to produce a concrete having a minimum 28 day compressive strength of 4,500 psi (Class A45).
4. Coarse Aggregate to be used in concrete shall consist of either crushed quartzite or other crushed ledge rock. If crushed ledge rock other than quartzite is to be used, it shall be from a source approved by the Engineer.

GENERAL CONSTRUCTION

1. All mild reinforcing steel shall conform to ASTM A615, Grade 60.
2. All exposed concrete corners and edges shall be chamfered 3/4" unless noted otherwise in the plans. Match existing chamfer if the existing chamfer differs.
3. Use 2" clear cover on all reinforcing steel except as shown otherwise.
4. Request for construction joints or resteel splices at points other than those shown, must be submitted to the Engineer for prior approval. If additional splices are approved, no payment will be allowed for the added quantity of reinforcing steel.
5. Surfaces of fresh concrete at construction joints shall be rough floated sufficiently to consolidate the surface. All construction joints shall be cleaned of surface laitance, curing compounds and other foreign materials prior to placing fresh concrete against the joint.
6. The type of vibratory screed shall be approved by the Engineer.

CONCRETE BREAKOUT

The existing scale wall and approach slab shall be broken out to the limits shown on the plans. Breakout limits shall be defined with a 3/4" deep sawcut (unless specified otherwise in these plans), where practical, as approved by the Engineer. Reinforcing steel that is exposed and is scheduled for use in the new construction shall be cleaned and straightened to the satisfaction of the Engineer. Care shall be taken not to damage the existing reinforcing steel that is to be reused in the new construction during concrete breakout. Any reinforcing steel that is damaged during concrete breakout shall be replaced or repaired, as approved by the Engineer, by the Contractor at no cost to the Department.

All broken out concrete, discarded reinforcing bars and angle iron devices shall be disposed of by the Contractor. Any disposal of discarded material shall be in accordance with the Environmental Commitments.

The contract unit price per cubic yard for "Breakout Structural Concrete" shall include breaking out concrete, cleaning, straightening existing reinforcing steel, removal of the existing angle iron devices, and disposal of all broken out material.

GALVANIC ANODE

1. The Contractor shall furnish and place Galvanic anodes in the concrete repair areas specified in this plan set.
2. The galvanic anodes shall be supplied as one of the following:
 - a. Galvashield XP2
Vector Corrosion Technologies
13312 N 56th St, Suite 102
Tampa, FL 33617
Phone: (813) 830-7566
Website: www.vector-corrosion.com
 - b. Sentinel Silver
Euclid Chemical Company
19218 Redwood Road
Cleveland, OH 44110
Phone: (800) 321-7628
Website: www.euclidchemical.com
 - c. Sika Galvashield XP+
Sika Corporation US
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: (800) 933-7452
Website: <http://usa.sika.com>
3. The anodes shall be placed in accordance with manufacturer's recommendations and as approved by the Engineer. The anodes have not been shown on the drawings. The Contractor shall provide an As Built drawing of the galvanic anode installation including locations of the individual anodes.
4. The anodes shall be placed with a minimum 3/4" cover and shall be set in Embedding Mortar per the manufacturer's recommendations. The anodes shall be fully encased in the concrete repair material. Where adequate cover does not exist, a concrete pocket shall be chipped out behind the anode to provide sufficient cover. The Contractor may need to chip around the reinforcing bar locally at the anode installation to make the electrical connection. The reinforcing steel at the connection location shall be cleaned per the manufacturer's recommendations to provide sufficient electrical connection and mechanical bond.
5. The electrical continuity of the electrical connections and reinforcing steel shall be confirmed per the manufacturer's recommendations.
6. The Contractor shall provide manufacturer's product literature and installation instructions to the Engineer 10 days prior to installation.
7. All costs associated with placing anodes including labor, equipment, materials and incidentals shall be included in the contract unit price per each for "Galvanic Anode".

ANGLE IRON ASSEMBLY

1. Steel for the Angle Iron shall conform to Grade 36. The Automatic End Welded Deformed Bar Anchor Studs shall conform to ASTM A1064. The Armor Assembly complete in-place shall be a continuous unit.
2. Galvanize the Angle Irons and anything welded to them after all welding is completed. They shall be galvanized in accordance with AASHTO M111 (ASTM A123). If welded splices are used subsequent to galvanizing, the weld details and the procedures for preparing the surface for welding and repairing the galvanizing after welding shall be included with the shop plans. Repair of galvanizing shall be by the zinc-based solder method in conformance with ASTM A780.
3. Welding for the Armor Iron shall be in accordance with AWS D1.5 Structural Welding Code - Steel.
4. The cost of the Angle Iron complete in-place including fabrication, welding, and galvanizing shall be incidental to the contract price per cubic yard for Class A45 Concrete, Miscellaneous".

INSTALLING DOWELS IN CONCRETE

1. Holes drilled in the existing concrete shall be true and normal or as shown in the plans. Drilling holes using a core drill shall not be allowed. The Contractor can expect to encounter and have to drill through reinforcing steel or shift the dowel spacing as approved by the Engineer to miss the existing reinforcing steel. If the Contractor shifts the dowel spacing, the unused drill holes shall be completely filled with the epoxy resin specified in note number 2 under "Installing Dowels in Concrete" as approved by the Engineer.
2. The epoxy resin mixture shall be of a type for bonding steel to hardened concrete and shall conform to AASHTO M235 Type IV, Grade 3 (Equivalent to ASTM C881, Type IV, Grade 3). Grade 1, 2 or 3 may be used for vertical dowels and Grade 3 epoxy shall be used for all horizontal dowels.
3. The diameter of the drilled holes shall not be less than 1/8 inch greater, nor more than 3/8 inch greater than the diameter of the dowels or as per the Manufacturer's recommendations. The drilled holes shall be blown out with compressed air using a device that will reach the back of the hole to ensure that all debris or loose material has been removed prior to epoxy injection.
4. Mix epoxy resin as recommended by the Manufacturer and apply by an injection method as approved by the Engineer. Beginning at the back of the drilled holes, fill the holes 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 holes 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 or painting method will not be allowed.
5. No loads shall be applied to the epoxy grouted dowel bars until the epoxy resin has had sufficient time to cure as specified by the epoxy resin manufacturer.
6. Dowel bars shall be deformed bars conforming to ASTM A615 Grade 60.
7. The cost of epoxy resin, dowels, installation and other incidental items shall be incidental to the contract unit price per each for "Install Dowel in Concrete".

SHOP PLANS

Shop plans shall be required as specified by Section 410.3 A. of the Construction Specifications

REPAIRING THE PIERS

The scales that are to be replaced shall be removed to allow the piers to be repaired.

1. Remove the steel plates.
2. Cut off anchor bolts flush with the concrete.
3. After the anchor bolts have been cut off, the top of the concrete must be cleaned with a high pressure water washer to get all the contaminants off the top of the pier.
4. A new 10 hole base plate will be placed and 2 new anchors will need to be drilled into the existing piers at a location not to hit the old anchors and meet new anchor specs.
5. The anchors will need to be epoxied in with an epoxy approved by the Engineer.
6. After the new anchors have been placed, the total area on top of each pier will need to have a minimum of a 1/4" thick grout placed. The grout shall fill the gap where the old steel plate was setting and to level the top of the pier. Place new base plates on to new anchor bolts. Tighten anchor plates down with anchor nuts.

Cost to repair the piers shall be incidental to contract unit price per cubic yard for Class A45 Concrete, Miscellaneous.

NEW 11'x40'x14" DECK SCALES

The Contractor shall furnish and install two new 11'x40'x14" deck scales with link suspension load cells.

The actual size of the decks should be verified at the site. After the scales are placed they should be connected to the existing controller and tested to verify they work with the other two existing scales. The new scales must work with all the existing hardware and software in the controller office. Contact the Jefferson Port of Entry (605-356-0124) to schedule a time to determine the compatibility of the current controller.

Cost to furnish and place the new scales, connecting to the controller and testing of the scales shall be included in contract unit price per each for Static Scale.

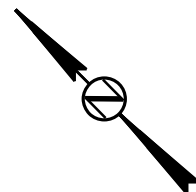
LAYOUT FOR UPGRADING WEIGH SCALES AND SCALE PIT

PORT OF ENTRY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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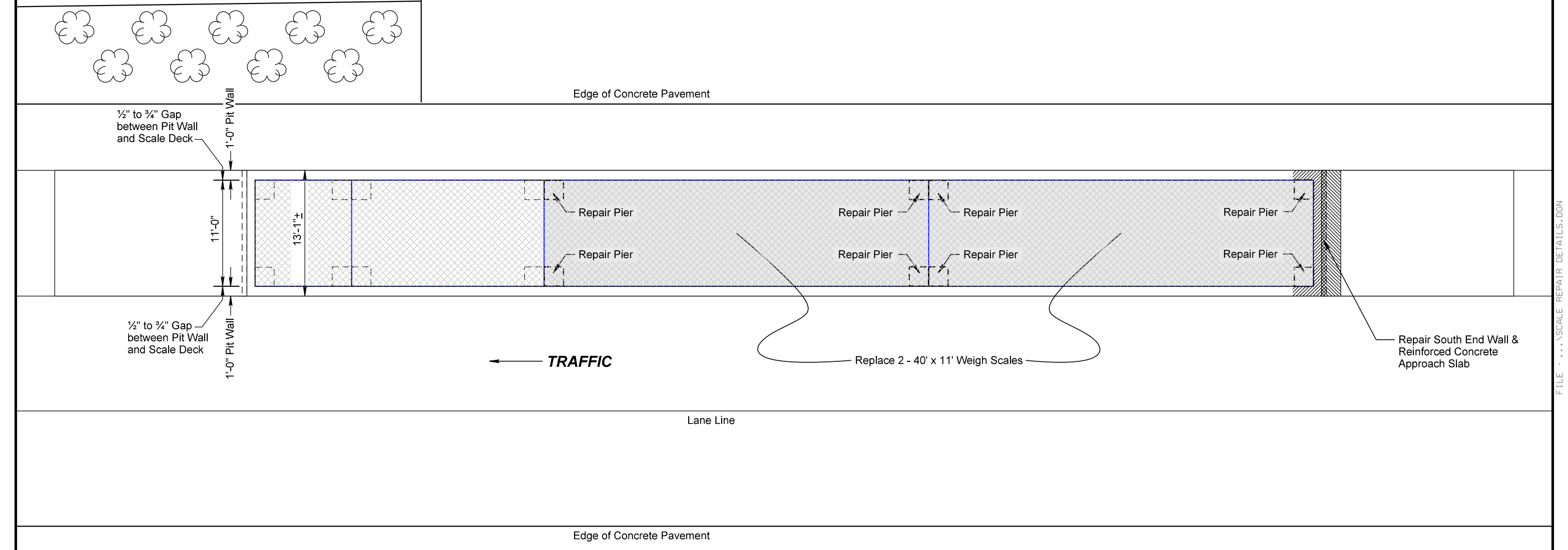
Plotting Date: 11/23/2016

Office Building



PLOT SCALE - 1:10

PLOT NAME - 2



PLAN


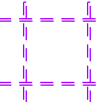
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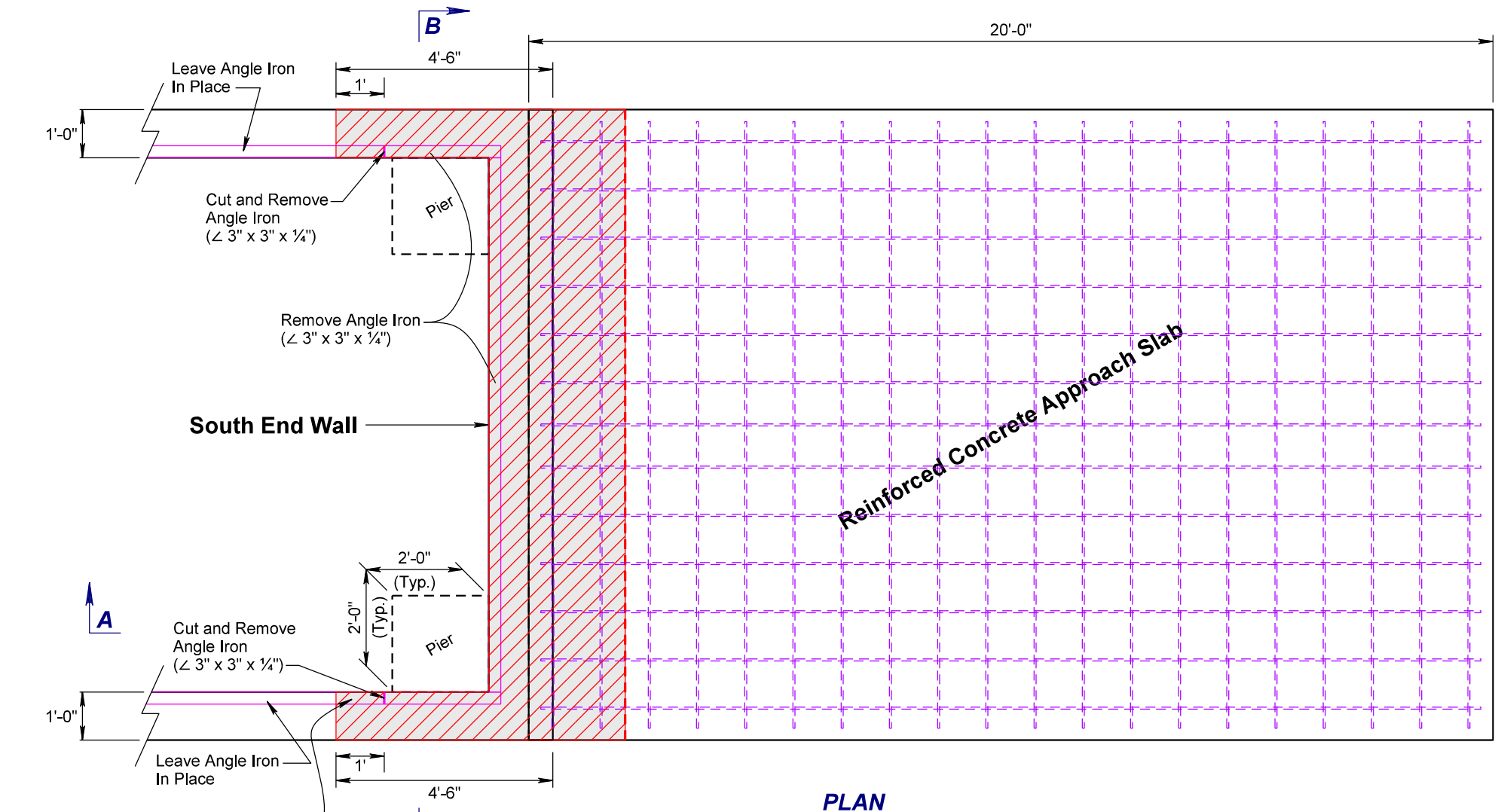
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REMOVAL LAYOUT

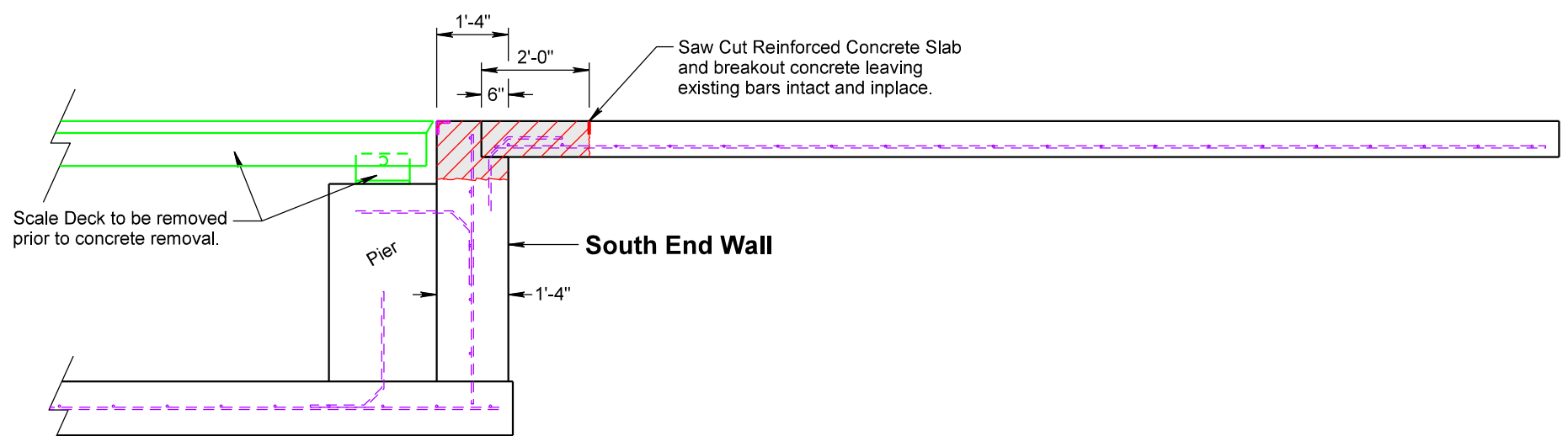
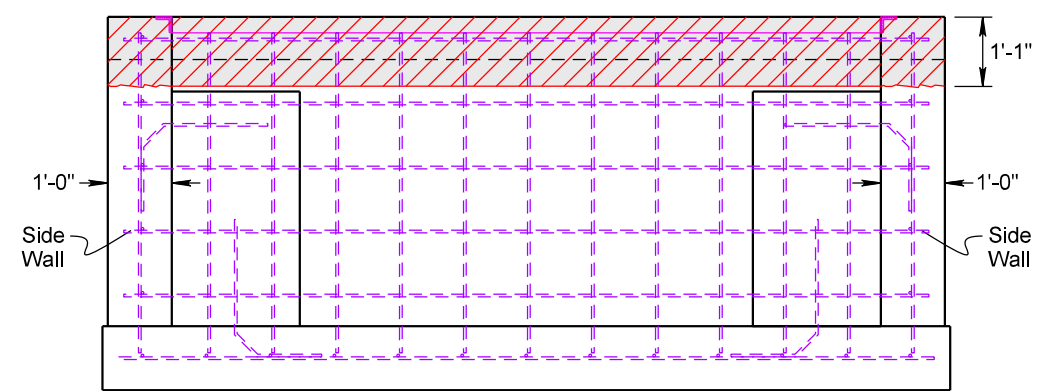
EXISTING WEIGH SCALE PIT AND REINFORCED SLAB - REMOVAL LIMITS

Key:

-  Breakout Structural Concrete
1.36 Cubic Yards
-  Existing Reinforcing Steel
To be preserved
(Reinforcing Steel may differ than what is shown)



Leave one foot of existing angle iron in place within the breakout area. (Both sides)



PIT REPAIR LAYOUT

EXISTING WEIGH SCALE PIT AND REINFORCED SLAB - REPAIR DETAILS

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REINFORCING SCHEDULE

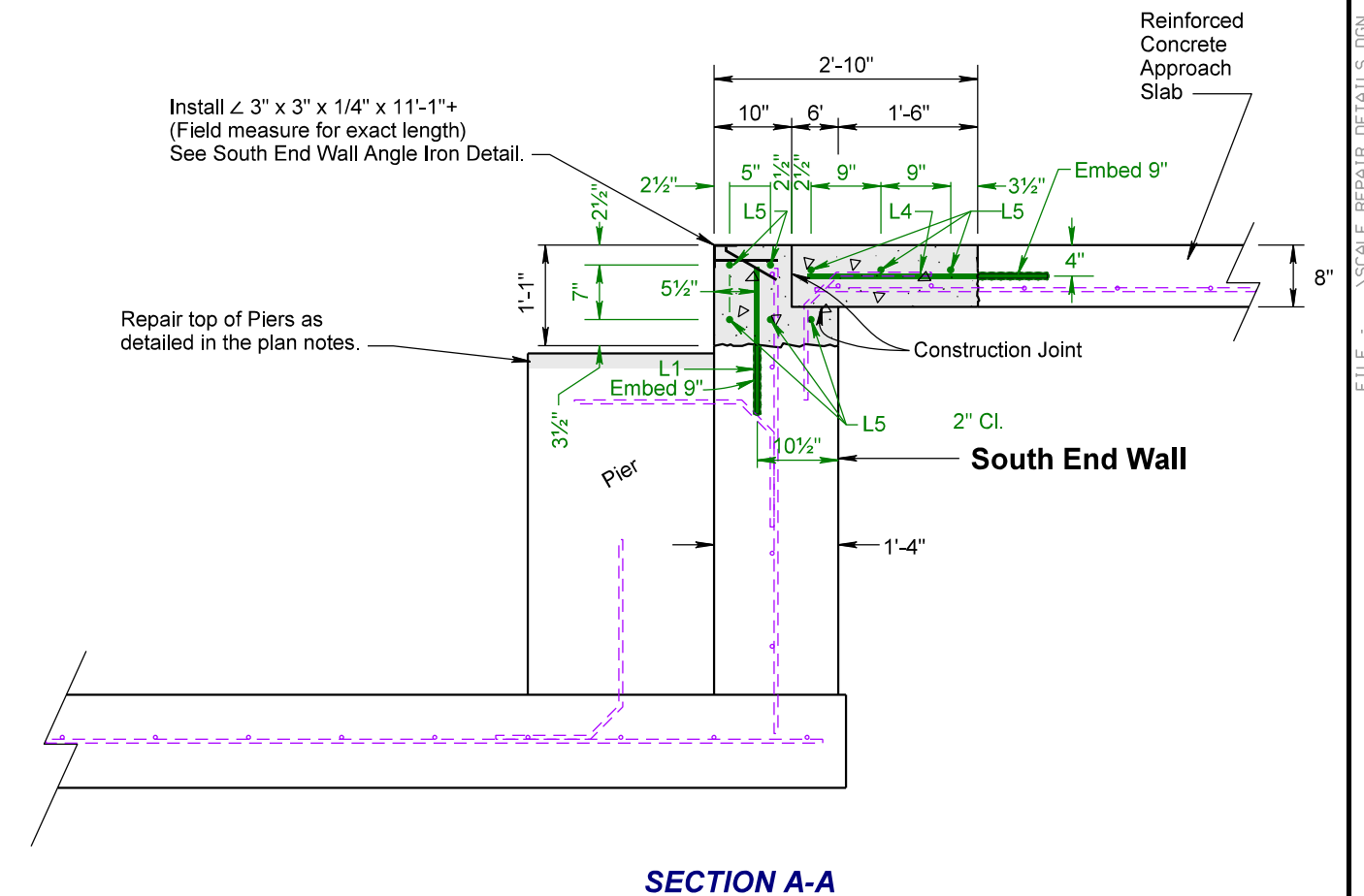
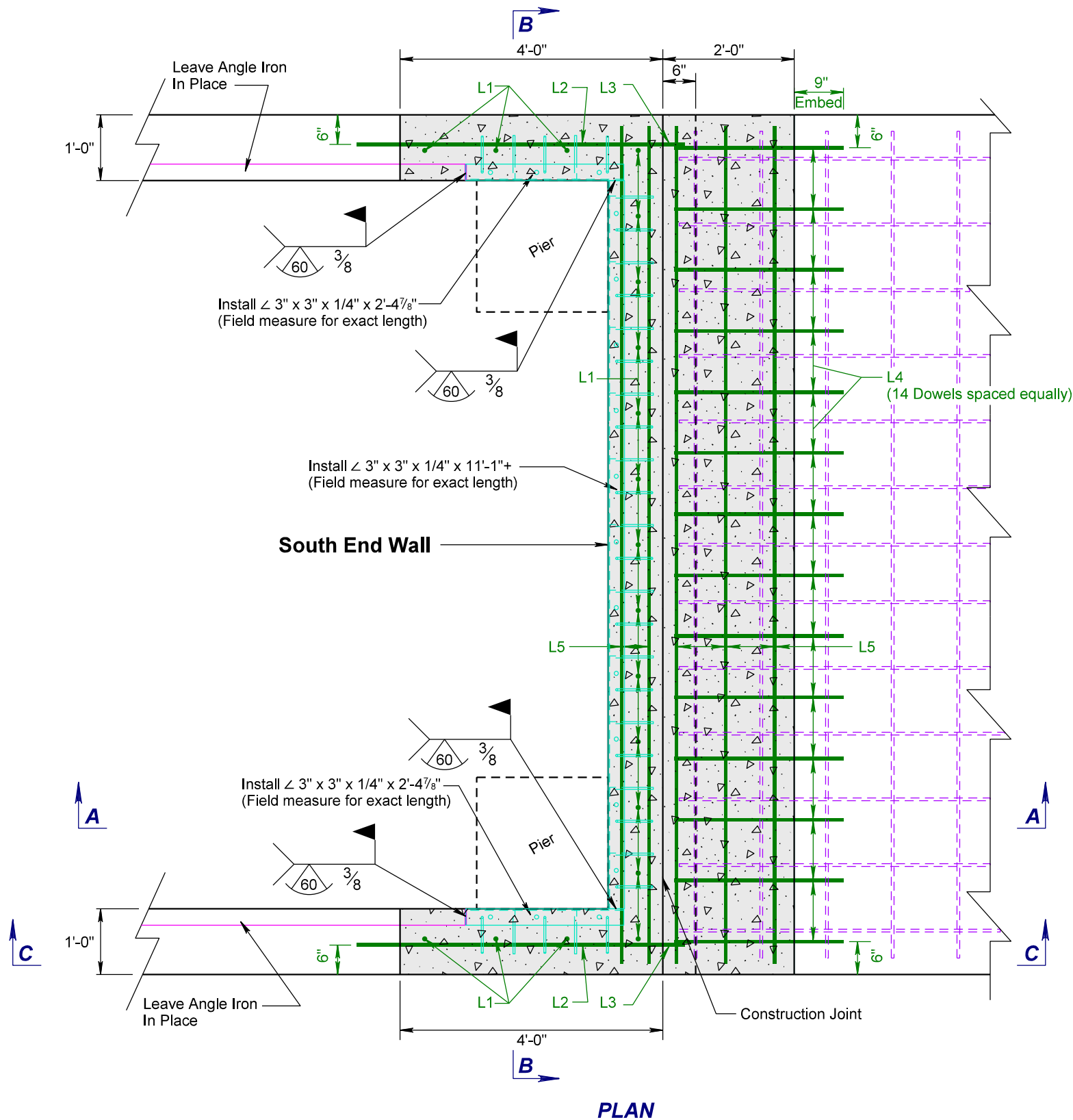
Mk.	No.	Size	Length	Type	
△	L1	19	5	1'-7"	Str.
△	L2	2	5	4'-7"	Str.
△	L3	2	5	5'-1"	Str.
△	L4	14	5	2'-7"	Str.
	L5	8	5	12'-9"	Str.

△ Dowels

Reinforcing Steel to be installed - (Shown in Green)
Reinforcing Steel shall be epoxy coated

--- Existing Reinforcing Steel To be preserved
(Reinforcing Steel may differ than what is shown)

Class A45 Concrete



PLOT SCALE - 1:2.00001

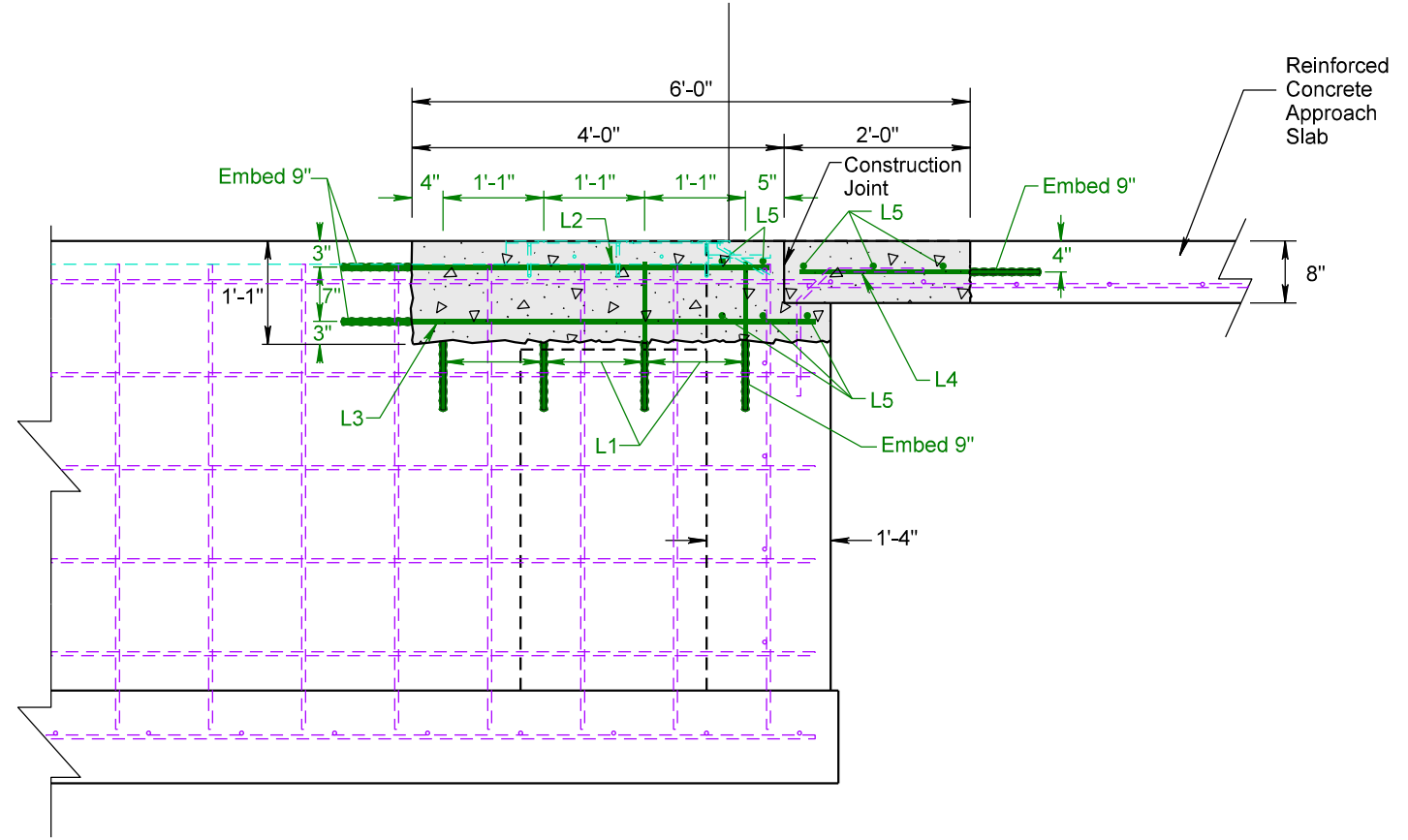
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PLOT NAME - 4

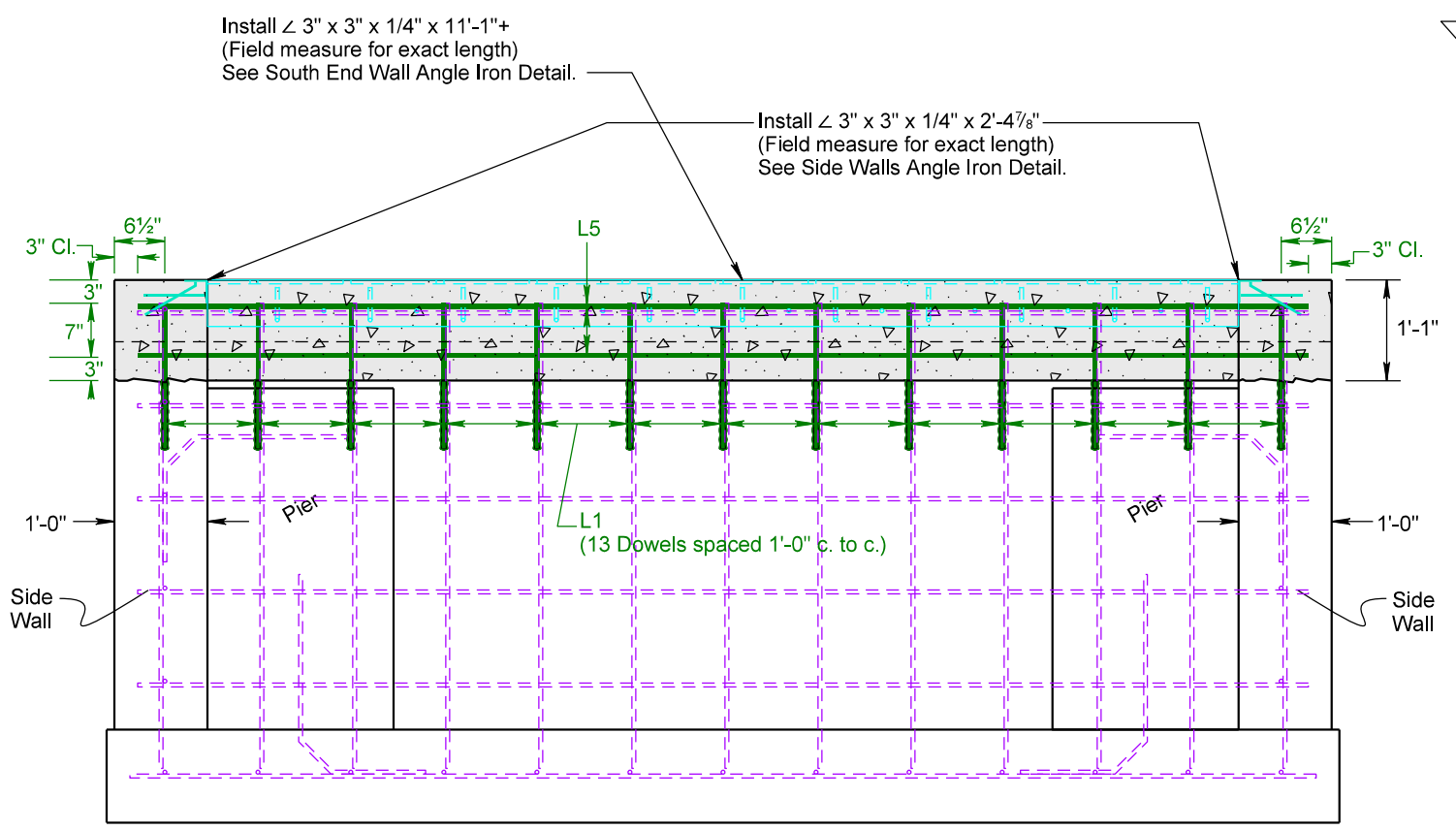
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PIT REPAIR LAYOUT

EXISTING WEIGH SCALE PIT AND REINFORCED SLAB - REPAIR DETAILS



SECTION C-C



SECTION B-B

PLOT SCALE - 1:2.00001

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PLOT NAME - 5

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ANGLE IRON DETAIL

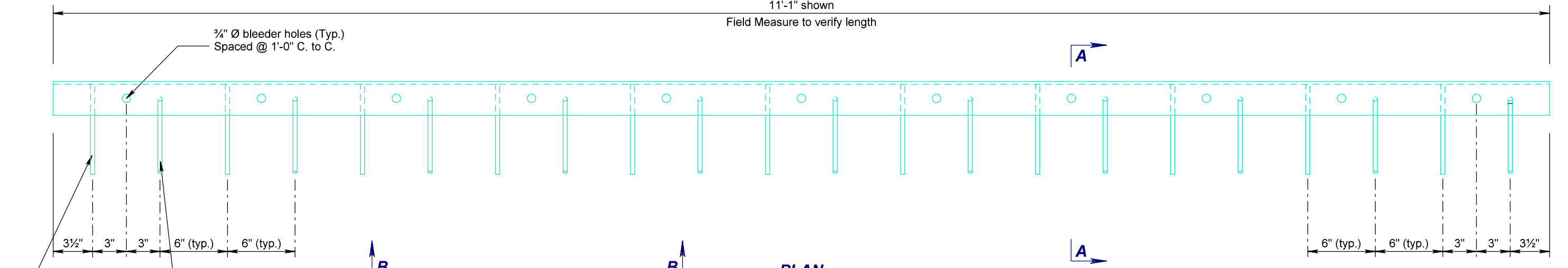
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0291(00)12	9	9

Plotting Date: 11/28/2016

ANGLE IRON TO BE INSTALLED ON SOUTH END WALL

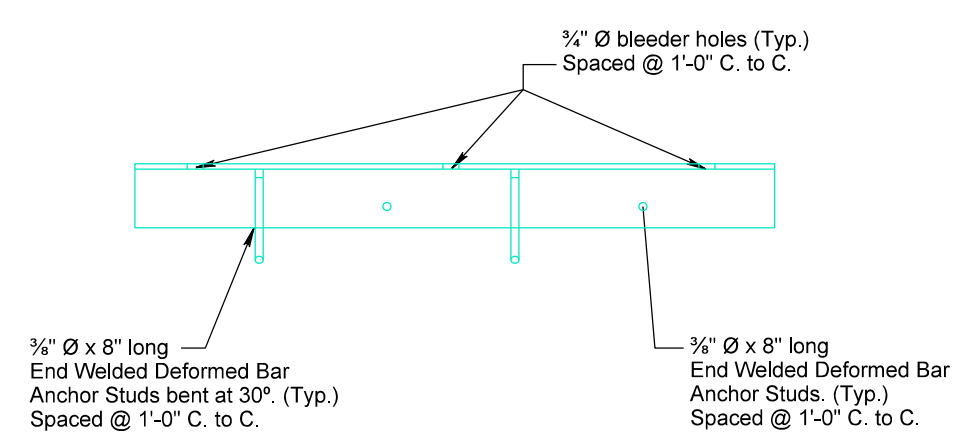
11'-1" shown

Field Measure to verify length

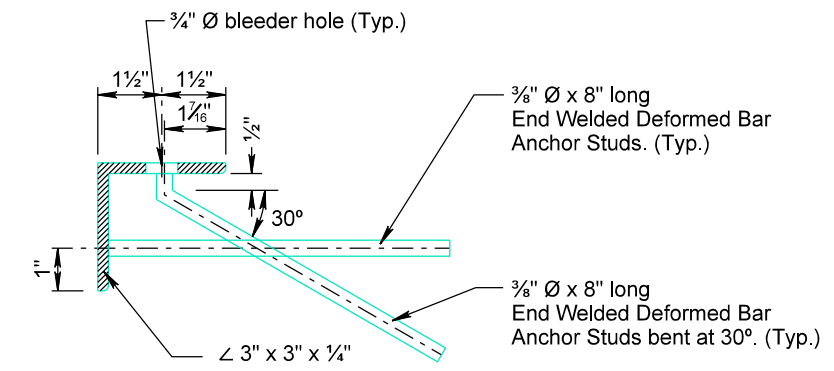


PLAN

Angle Iron for South End Wall

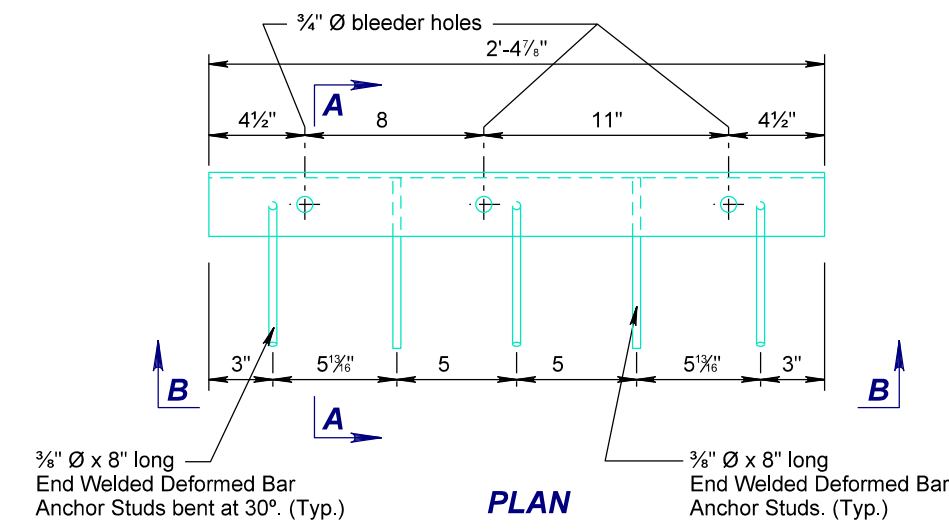


VIEW B-B

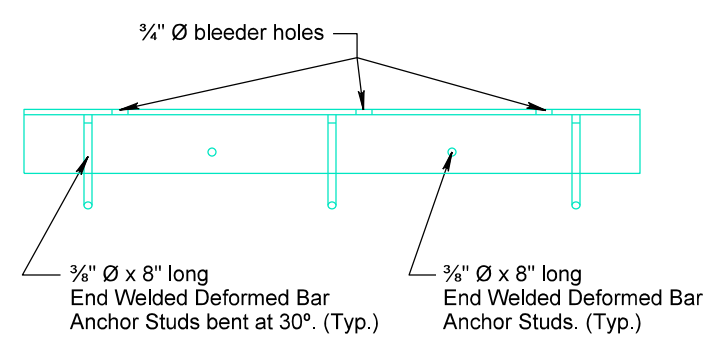


SEC. A-A

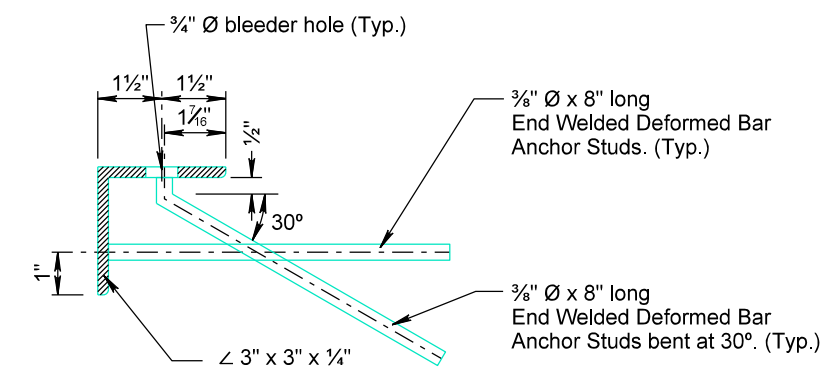
ANGLE IRON TO BE INSTALLED ON SIDE WALLS



PLAN



VIEW B-B



SEC. A-A

PLOT SCALE - 1=0.75

PLOT NAME - 6

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