

DESIGN DATA				
Traffic	Average Daily			
Current 2016	Pass: 7869	Trucks: 1281	Total: 9150	
Forecast 2040	Pass: 9993	Trucks: 1627	Total: 11620	
Clear Zone Distance: 18 ft/28 ft		Design Speed: 35/45		
Minimum Sight Dist. for Stopping: 240 ft		Bridges: N/A		
Sight Dist. for No Passing Zone: N/A				
Pavement Design Life 20 (years) HMA, 30 (years) Concrete				
Design Accumulated One-way Heavy Trucks: 10,283,300; One-way Flexible ESALs: 3,692,561				

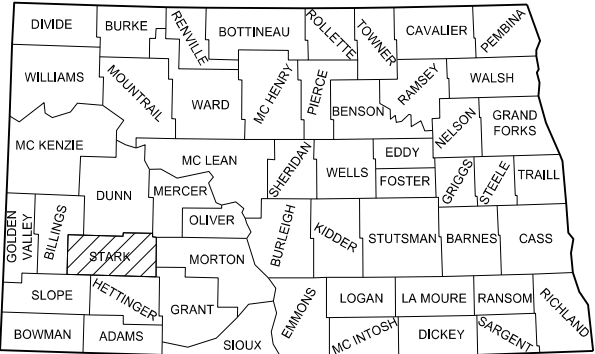
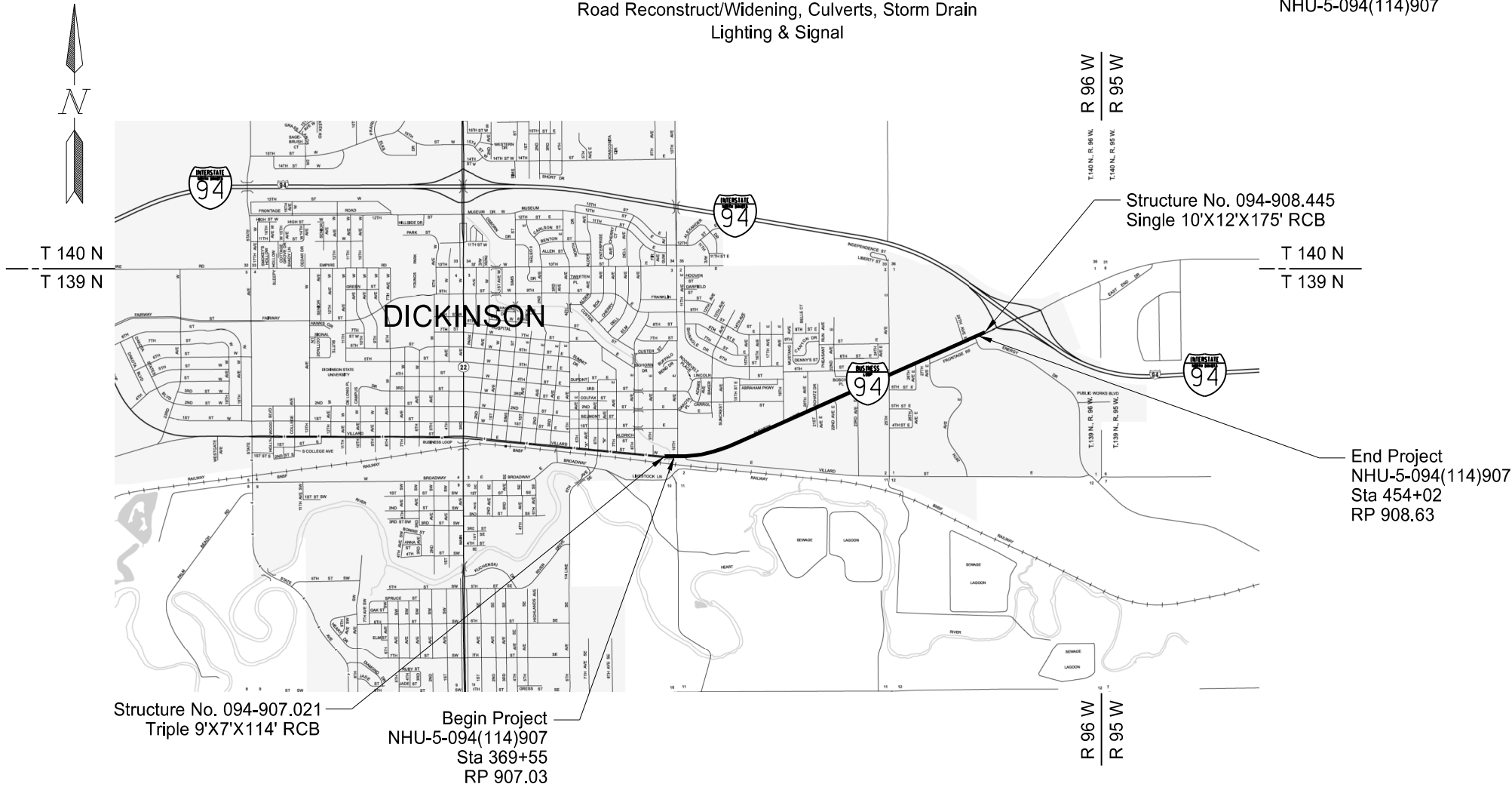
JOB #29
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

NHU-5-094(114)907
East Business Loop from 10th Ave E to Exit 64
Stark County
City of Dickinson
Road Reconstruct/Widening, Culverts, Storm Drain
Lighting & Signal

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GOVERNING SPECIFICATIONS:
2020 Standard Specifications adopted by the North Dakota
Department of Transportation and the Supplemental Specifications
effective on the date the project is advertised.

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
NHU-5-094(114)907	1.60	1.60



STATE COUNTY MAP

DESIGNER Jake Wilder
DESIGNER Matt Davison
DESIGNER Carl Rohde
DESIGNER Ben Bingham
DESIGNER Alex Evanson

ND DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT
Chad M. Orn /s/ 08/31/2020

CIVIL SCIENCE

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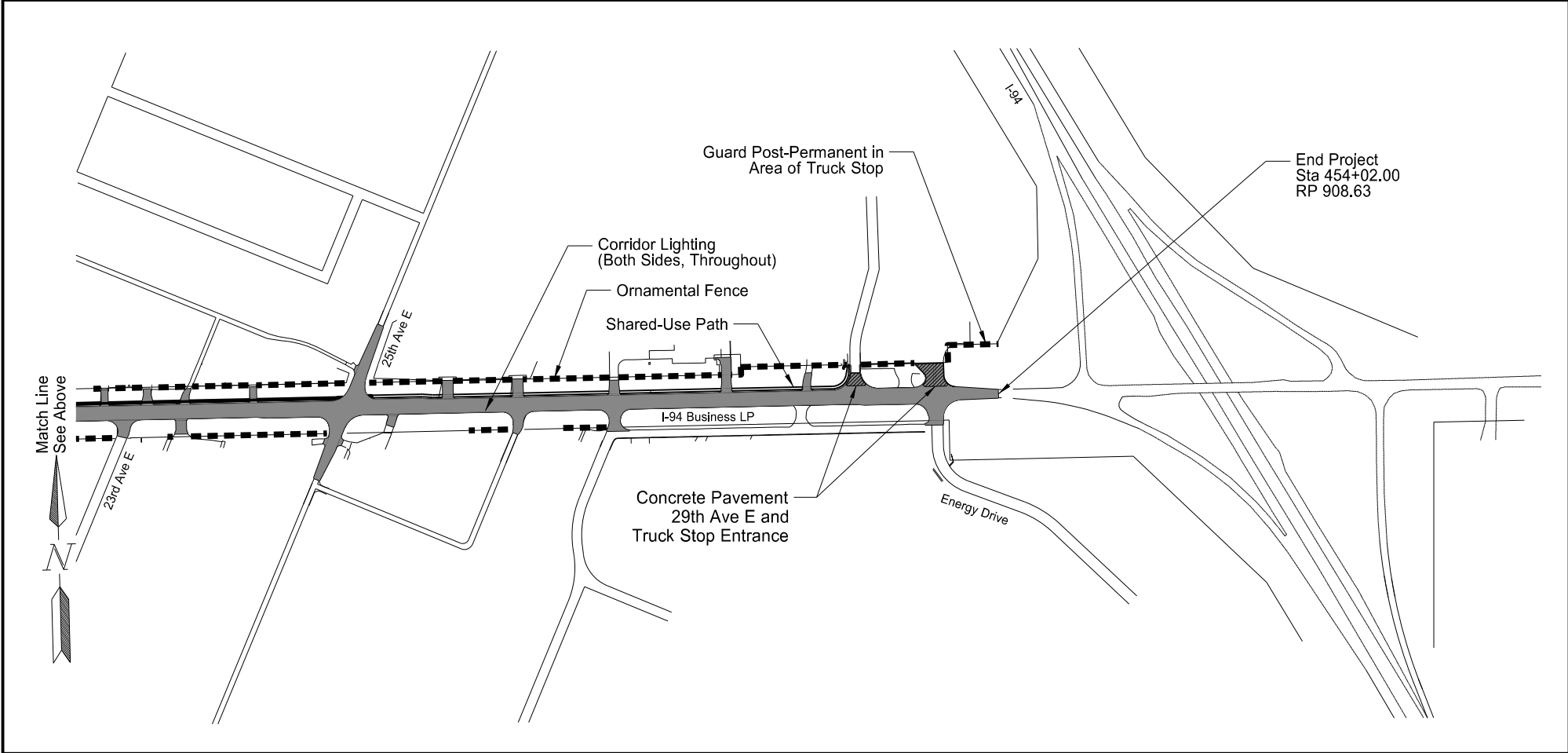
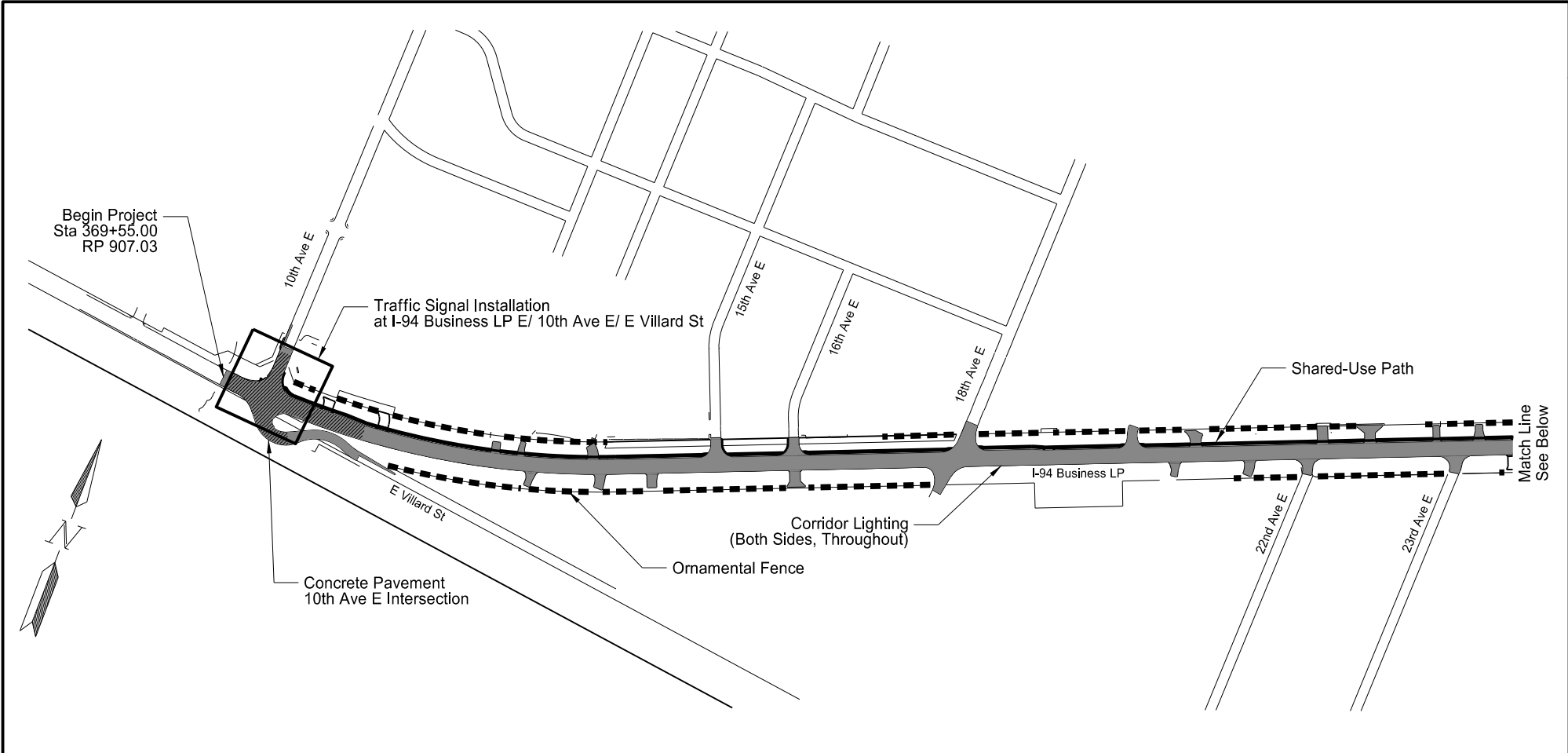
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- Legend
- Roadway Reconstruction
 - Concrete Pavement
 - New Traffic Signal System
 - Ornamental Fence (Along Right-of-Way)
(Guard Post-Permanent at Truck Stop)
 - Shared-Use Path

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Scope of Work

Project Area

Road Reconstruct/Widening, Lighting, and Signals
E Business LP 10th Ave E - Exit 64
Dickinson, ND

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- 100-P01 TIED PROJECT: This plan set and project includes overlapping limits and work activities with tied project IM-5-094(147)063, PCN 22839. See plans for specific project activities and limits.
- 100-P02 CONTROL AND STATIONING: The tied projects do not share common stationing. See Section 81, Preliminary Survey Coordinate and Curve Data sheet for stationing information.
- 100-P03 NIGHT WORK: Limit all construction activities, other than drive approaches, to the hours of 5:00 a.m. to 10:00 p.m., unless written permission is obtained from the Engineer. Request permission a minimum of 30 days prior to night work. Provide notice, a minimum of 14 days prior to work, to all property owners immediately adjacent to the work area and to any residential properties within 200 feet of the work area. Include in the notice information notifying the owners of potentially increased noise levels.
- 100-P04 DRIVE APPROACH RECONSTRUCTION: Notify adjacent business and property owners a minimum of 14 days prior to drive approach reconstruction. Notice must include Contractor contact information, anticipated duration of construction activities, planned hours of work, and planned restrictions to accesses. Coordinate with owners to ascertain if there are potential secondary access locations and timing options that could facilitate potential driveway closures during regular construction hours. Obtain written agreements with owners for use of secondary accesses or timing options. In the event that agreements are not prepared, complete drive approach reconstruction during the hours of 10:00 pm to 5:00 am and provide a smooth and traversable drive approach surface during regular construction hours.
- Complete construction of the driveway at station 376+23 LT prior to the reconstruction of the existing concrete driveway located at station 373+87 LT. Finish aggregate base accessway between these two drive approach locations as shown in the plans by leaving the aggregate grade 8 inches below the finished driveway grade. Work on the driveway located at station 373+87 LT cannot start until 30 days after the new drive approach at station 376+23 LT and aggregate accessway is completed, allowing the property owner time for placement of concrete on the accessway. Place topsoil up to elevation of the finished concrete after completion of concrete by owner.
- Construct the driveway approach at station 451+51 LT before removing the existing drive approach at station 450+34 LT and the associated existing concrete that is currently located within the right-of-way. Maintain access on the drive approach at station 450+34 LT until the reconstructed drive approach at station 451+51 LT is completed and functional.
- 100-P05 STORMWATER CONTROL: Place embankment and culverts to maintain continuous drainage flow to historic discharge locations. All related costs related are included in the bid price for COMMON EXCAVATION-TYPE A.

- 100-P06 TEMPORARY EASEMENT LANDSCAPE PROTECTION: Preserve and protect existing landscaping within the temporary easement (7-1) located at 443+20 LT.
- 100-P07 UNDERDRAIN PROTECTION: Preserve and protect an existing private underdrain line located between 410+25 LT and 416+00 LT.
- 105-110 PAVEMENT SWEEPING: Sweep paved areas that were used by construction traffic before opening these areas to public traffic.
- Sweep all newly constructed pavement no more than 24 hours before a scheduled final inspection.
- Use a vacuum or pick-up type sweeper to perform this work.
- 105-200 UTILITY COORDINATION: A utility coordination meeting is required.
- 105-P01 PRIVATE STREET LIGHTING SYSTEM REMOVAL: The existing MDU and ROUGHRIDER ELECTRIC street lighting systems within the project area will be de-energized and removed by MDU and ROUGHRIDER ELECTRIC respectively. Provide a 14 day notice of necessary removals, confirm de-energization, and coordinate work as required by the Utility Coordination Special Provision.
- 108-100 WEEKLY PLANNING & REPORTING MEETING: A weekly planning and reporting meeting is required.
- 108-150 PUBLIC RELATIONS COORDINATOR: Provide a public relations and information coordinator. The coordinator cannot be the project superintendent or construction foreman. The coordinator should be knowledgeable in construction operations, be able to develop effective media releases, possess written and verbal communications skills, and be able to organize productive meetings.
- Provide the name, work address, and work phone number to the relevant project, community, and media personnel.
- The public relations coordinator is responsible for providing the following:
1. Organizing, scheduling, and conducting the meetings specified in Note 108-100, "Weekly Planning & Reporting Meeting".
 2. Advise Loretta Marshik, Assistant City Engineer (701-456-7768), and/or City Engineering Department (701-456-7000), of upcoming construction activities in regard to street closures and traffic detour routes so that city police, emergency services, schools, and other pertinent city agencies may be notified.
 3. Provide news releases and necessary drawings to the media before and during construction. News releases

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should inform the public on construction activities every other week, at a minimum.

4. Be available for media interview.
5. Work directly with property owners and businesses affected by construction activities. The coordinator must have sufficient knowledge and authority to resolve property owner and business concerns regarding scheduling, maintaining access, and construction operations.

- 108-P01 STOCKYARD TRUCK TRAFFIC: The public relations coordinator will be responsible to notify the Stockmen’s Livestock Exchange, 1-800-568-2490 and 1-800-472-2667 of planned construction activities and timing in the area of 10th Avenue E and the E Villard Street roadway.
- 202-P01 REMOVAL OF PAVEMENT: Removal of pavement consists of removing and salvaging concrete pavement, bituminous pavement, sidewalks, concrete islands, valley gutters, driveways, parking lots and aggregate base. All material is to be salvaged for base course material.
- 203-010 SHRINKAGE: 25% percent additional volume is included for shrinkage in earth embankment.
- 203-385 AVERAGE HAUL: No average haul has been computed for this project.
- 230-P01 SUBGRADE PREPARATION: For accesses and drive approaches, scarify and compact subgrade to depth as shown per plan. Adhere to the requirements of Subgrade Preparation – Type A as defined within Section 230 of the Standard Specifications. All costs for subgrade preparation, including material, equipment, testing and labor is included in the bid price for the “COMMON EXCAVATION-TYPE A” pay item.
- 550-P01 CONCRETE PAVEMENT: Install manhole and valve box castings with the paving operation or with each adjoining full concrete panel. Isolation or box outs will not be allowed.
- 704-100 TRAFFIC CONTROL SUPERVISOR: Provide a traffic control supervisor.
- 704-200 PRECAST CONCRETE MEDIAN BARRIERS – STATE FURNISHED: Obtain 55 barriers from the NDDOT Dickinson District’s Belfield Section yard. Return barriers to the Belfield Section yard (898 8th St. NE, Belfield, N.D.).

Install any missing markers on the barriers before traffic use. Include the cost of the markers in the contract unit price for "Precast Concrete Median Barrier – State Furnished".

Some 4 inch x 4 inch boards are available at the return location. Provide any additional 4 inch x 4 inch boards necessary to stack barriers. The boards will become property of the Department. Include the cost for boards in the contract unit price for "PRECAST CONCRETE MEDIAN BARRIER - STATE FURNISHED".

704-255 TRAFFIC CONTROL FOR SHOULDER DROP-OFF: If the shoulder and adjacent driving lane are not even at the end of the day, the following criteria will apply:

Place the following sign assembly at the locations listed below.

Sign Assembly: Sign No. W8-17-48 "Shoulder Drop Off" and supplemental plate Sign No. W20-52P-54 to identify the distance.

Locations:

- In advance of the drop off;
- Spaced at each mile from the advance sign; and
- At major intersections (CMC routes, state and US highways, and Interstate Ramps).

If the difference in elevation between the shoulder and the driving lane is 2" or greater, construct a slough on the driving lane that is 4:1 or flatter.

If the difference in elevation between the shoulder and driving lane is less than 2", no slough is required.

Sign assemblies will be measured and paid for according to Section 704 "Temporary Traffic Control".

704-900 ATTENUATION DEVICE TYPE B: Install either of the following attenuation devices:

- The barrel type shown on standard D-704-01; or
- The liquid filled attenuation device described in this note.

Install liquid filled attenuation devices that are 2.5 feet wide.

Before installing devices, provide the Engineer a Certificate of Compliance stating that the devices meet NCHRP Report 350, MASH 2009, or MASH 2016, and a copy of an eligibility letter from FHWA.

Use devices rated for the MPH designation used in the item description.

Install devices according to the manufacturer's specifications.

Liquid filled attenuators may not be deployed in any portion of the months of January, February, and December, nor before the 15th of March.

If liquid filled attenuation devices are deployed after the 15th of March or in any portion of the months of April, October or November, include calcium magnesium acetate or potassium acetate in the liquid filled barrier solution. Mix the anti-icing

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chemicals with water as recommended by the anti-icing chemical manufacturer to protect the barrier from freezing to a temperature of 0°F. Contact the Engineer and the NDDOT Environmental and Transportation Services Division in the case of a spill leaving the roadway. Dispose of the mixture inside the device as specified in Section 107.17, "Removed Material".

Provide a full replacement set of attenuators available to the project. If the replacement devices are installed, have a set of replacement devices available to the project within 3 calendar days.

Immediately replace any damaged pieces. The Department will reimburse the Contractor for damaged pieces based on the invoice price plus 10 percent. All other costs associated with installing and maintaining replacement pieces will be at no additional cost to the Department.

704-P01 WORK ZONE TRAFFIC CONTROL:

Phase 1 Notes:
Maintain two-way traffic on existing pavement. Construct temporary aggregate surface along the north side of I-94 Business Loop E and along the west side of 10th Avenue E. Remove median and curb and gutter in the northwest quadrant of the I-94 Business Loop E / 10th Avenue E / East Villard Street intersection.

Phase 2 Notes:
Maintain two-way traffic on the temporary aggregate surfaces along the north side of I-94 Business Loop E. Maintain a 12:1 maximum slope between the temporary aggregate surface and approaches. Fully construct the south portion of the roadway including half of the permanent westbound through lane, two-way left turn lane, eastbound through lane, eastbound turn lanes, south leg of 25th Avenue E, and south approaches.

Phase 2a Notes:
Maintain two-way I-94 Business Loop E traffic on the south side of the existing roadway through the 10th Avenue E intersection. East of 10th Avenue E taper I-94 Business Loop E traffic to the temporary aggregate surface north of the I-94 Business Loop E. North of I-94 Business Loop E maintain two-way 10th Avenue E traffic on temporary aggregate surface west of 10th Avenue E. Maintain two-way traffic for East Villard Street on the existing East Villard Street connections while constructing the East Villard temporary realignment. Once the East Villard temporary realignment is completed, maintain two-way traffic on the East Villard temporary realignment and close the existing East Villard Street connections to I-94 Business Loop E. Adjust East Villard temporary traffic control devices and signing to match Phase 2b. Use temporary signals to accommodate traffic at the 10th Avenue E intersection. Construct the northeast quadrant of the proposed I-94 Business Loop E / 10th Avenue E / East Villard Street intersection improvements.

Phase 2b Notes:
Maintain two-way I-94 Business Loop E traffic on the south side of the existing roadway through the 10th Avenue E intersection. East of 10th Avenue E taper I-94 Business Loop E traffic to the temporary aggregate surface north of the I-94 Business Loop E. Maintain two-way 10th Avenue E traffic north of I-94 Business Loop E on the east portion of proposed pavement constructed in Phase 2a. Maintain two-way East Villard Street traffic on the East Villard temporary realignment. Use temporary signals to accommodate traffic at the 10th Avenue E intersection. Construct the northwest quadrant of the proposed I-94 Business Loop E / 10th Avenue E / East Villard Street intersection improvements.

Phase 2c Notes:
Maintain two-way I-94 Business Loop E traffic on the north side of the proposed pavement constructed in Phases 2a and 2b through the 10th Avenue E intersection. East of 10th Avenue E maintain two-way I-94 Business Loop E traffic on the temporary aggregate surface north of the I-94 Business Loop E. Maintain two-way 10th Avenue E traffic north of I-94 Business Loop E on proposed pavement constructed in Phases 2a and 2b. Maintain two-way East Villard Street traffic on the East Villard temporary realignment. Use temporary signals to accommodate traffic at the 10th Avenue E intersection. Construct the south portion of the proposed I-94 Business Loop E / 10th Avenue E / East Villard Street intersection improvements including the permanent realignment of East Villard Street.

Phase 2d Notes:
Maintain two-way I-94 Business Loop E traffic on the north side of the proposed pavement constructed in Phases 2a and 2b through the 10th Avenue E intersection. East of 10th Avenue E maintain two-way I-94 Business Loop E traffic on the temporary aggregate surface north of the I-94 Business Loop E. Maintain two-way 10th Avenue E traffic north of I-94 Business Loop E on proposed pavement constructed in Phases 2a and 2b. Maintain two-way East Villard Street traffic on the south leg of the I-94 Business Loop E / 10th Avenue E / East Villard Street intersection constructed in Phase 2c. Use temporary signals to accommodate traffic at the 10th Avenue E intersection. Remove the East Villard temporary realignment and construct the remaining portions of the south side of I-94 Business Loop E and East Villard Street permanent realignment.

Phase 3 Notes:
Maintain two-way traffic on the south portion of newly constructed roadway pavement. Fully construct the remaining north portion of the roadway, shared-use path, north leg of 25th Avenue E, and approaches.

Phase 3a Notes:
Maintain two-way traffic on the south portion of newly constructed roadway pavement. Maintain two-way 10th Avenue East and East Villard Street on the proposed intersection improvements. Use temporary signals to accommodate head to head traffic at the 10th Avenue E

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intersection. Construct remaining portion of proposed concrete pavement in the northeast quadrant.

Phase 3b Notes:

Use the proposed permanent signal to control traffic through the I-94 Business Loop E / 10th Avenue E / East Villard Street intersection. Provide fully operational 10th Avenue E and E Villard Street legs as well as the I-94 Business Loop E eastbound left turn, westbound through and westbound right turn movements. Shift the I-94 Business Loop E eastbound through movements to the south side of I-94 Business Loop E and maintain the Westbound Left turn in a closed condition to allow for construction of the proposed raised median.

704-P02 PORTABLE CHANGEABLE MESSAGE SIGN: Stage the Portable Changeable Message Signs (PCMS) as shown in the plans two weeks before work begins on this project. Use the PCMS to display information throughout the project duration. The Engineer will determine the locations for PCMS installation and approve the displayed message. Relocate the PCMS as directed by the Engineer.

Provide an operator trained in the use of the PCMS. The operator will program the message within one hour of the Engineer's request to change the message.

704-P03 TIED PROJECT TRAFFIC CONTROL: Traffic control devices used on the tied projects will be paid separately.

704-P04 TEMPORARY TRAFFIC SIGNALS: Provide signal equipment capable of phasing for thru movements and a protected left turn movement for eastbound 94 East Business Loop traffic. Place signals according to locations and details in the plans. Adjust the Temporary Traffic Signals timing based on traffic volumes during construction. Coordinate with the Engineer on timing and phasing prior to startup or changes.

704-P05 TRAFFIC CONTROL FOR ONE LANE CLOSURE TWO LANE ROADWAY: To facilitate construction of 25th Avenue the roadway may be restricted to one lane during construction activities using flaggers. Return the roadway to two-way traffic or overnight flaggers must be used at the contractor's expense. Remove lane closures if no work is scheduled for the following day. Lane closures may remain in place for up to 3 days if weather prevents work from being performed on days when work was scheduled to take place.

Refer to Standard Drawing D-704-16/17

704-P06 TEMPORARY ROADWAY: Maintain a smooth driving surface at all times. Include all costs associated with maintaining the temporary roadway including, but not limited to aggregate, labor and equipment in the "SALVAGED BASE COURSE" bid item.

Reuse SALVAGED BASE COURSE, that is placed for temporary roadway on 25th Avenue E, for both the north and south legs of 25th Avenue E. Include all costs associated with relocating the material in the "SALVAGED BASE COURSE" bid item.

706-P01 FIELD OFFICE: Provide a field office which meets the following requirements:

1. Be completely insulated and weather tight.
2. Minimum total area of 450 square feet.
3. Indoor bathroom facilities, sewer and potable water.
4. Have a dependable source of electricity for power and lights with a minimum of 6 electrical outlets spaced throughout the building and light fixtures spaced to uniformly light the entire interior (lumens required 110 foot-candles).
5. Be wired for DSL Broadband internet with wireless Wi-Fi and have the capability to allow for hard wiring the computer. Include the cost of the installation and monthly fees.
6. A heating and cooling system that is capable of maintaining the temperature between 65°F and 78°F year around.
7. A minimum of 3 desks and 3 desk chairs, 3 extra chairs, a drawer file cabinet with at least two drawers, one table minimum of 2.5 ft x 5 ft.
8. Photocopy machine/Printer capable of 11x17 photocopies/prints and toner to last the duration of the project. Engineer will provide paper. Other features to include digital coping & scanning. (Fax capabilities can be included but not necessary).
9. The location of the field office will be on, or as close to the project as possible and approved by the Engineer. Any rental fees will be paid by the Contractor.
10. Make the field office available for occupancy one week before the start of the project and remain through project completion. Provide a field office that is separate or independent from the contractor's field office.
11. Heat, electric, internet service, sewer, and water hookups to be furnished by contractor, Contractor to pay utility bills.

All requirements of the Field Office are subject to approval by the Engineer. Include the costs for the field office in the bid item "Field Office" and the Schedule for Payment is as follows:

- 25% when set up on site.
- 50% when 30% of the work is complete.
- 75% when 60% of the work is complete.
- 100% when project is complete.

708-P01 INLET PROTECTION - SPECIAL: All costs associated with furnishing, preparation of inlet and protection device, installing, maintaining, disposal of sediment and removal are included in the cost for "INLET PROTECTION-SPECIAL". Use Dandy Curb Sack, EconoCurb, Frye Flow, Flexstorm Catch-It, or approved equal.

Each protected structure will only be paid for once, even if multiple devices are used.

710-P01 TEMPORARY CONNECTION: The "TEMPORARY CONNECTION" bid item includes all costs associated with constructing, maintaining, and removing temporary connection to maintain two-way traffic at each drive approach. This includes, but is not limited to, embankment,

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salvaged base course, pipe conduit, removal of embankment, aggregate removal, and removal of pipe conduit.

Use aggregate for the Temporary Connection that meets the specifications for Salvaged Base Course.

714-P01 PLUG PIPE: At the location designated in the plans clean out and plug existing pipe. Pump the pipe full of controlled density backfill to prevent any future collapse or failure of the abandoned pipe. The pipe is 90 feet long and approximately 24 inches in diameter.

Use a blend of cement, water, pozzolanic materials, and fillers for the backfill. The material will be fluid on placement to flow through and fill the pipe. The material needs to be able to support normal loads after six hours and have a compressive strength in the range of 75 psi to 125 psi at 28 days. If the following mix design is used, no further testing will be required. The mix design yields approximately one cubic yard of controlled density backfill.

MIX DESIGN;	
Fly Ash	300 lbs
Water	70 gals
Cement	100 lbs
Fine Aggregate	2600 lbs

Furnish and install an end plug near the end of the pipe prior to placing backfill in the pipe itself. The end plug must be watertight.

Place controlled density backfill starting at the end plug, filling the cavity progressively away from the end plug until the entire pipe is filled. Controlled density backfill must continue to be pumped until refusal (when no more backfill can be pumped).

722-P01 ADJUST MANHOLE: Remove existing casting frame, lid and any support down to the riser. Replace with new casting frame, lid and necessary supports adjusted to meet finished grade. Field verify grades, structure configuration and dimensions prior to adjustment work.

722-P02 ADJUST UTILITY APPERTENANCE: For adjustments to valve boxes, remove existing casting frame, lid and any support. Replace with new casting frame, lid and necessary supports adjusted to meet finished grade. Field verify grades, structure configuration and dimensions prior to adjustment work.

722-P03 INLETS AND MANHOLES: Fabricate all new inlets and manholes with a minimum 4 foot riser. Fill void between inlet or manhole base and bottom of lowest pipe with Class AE-3 concrete, and then slope the inlet or manhole bottom to drain using either Class AE-3 concrete or mortar in accordance with the details shown on standard drawings D-722-1B, D-722-2, and D-722-5. Include the costs to accomplish this work in the unit price bid for the respective inlet or manhole pay item

724-P01 HYDRANT RELOCATION: Relocate fire hydrants at locations shown in the plans. Payment includes all related work including excavation, fittings, valves, pipe, bracing, backfill, removal of existing bollards, and surface restoration.

744-P01 POLYSTYTRENE INSULATION BOARD: Install insulation board per plan detail. Locate waterline horizontally and vertically at no less than 100-foot intervals and coordinate locations/depths with the Engineer prior to board placement.

750-P01 SIDEWALK CONCRETE 4IN: Includes all costs for labor, equipment and materials required to form and place pedestrian ramps as shown in the plans, where not otherwise covered by a separate pay item.

750-P02 DETECTABLE WARNING PANELS: Provide and install unpainted, cast iron detectable warning panels.

750-P03 SHARED USE PATH: Saw all longitudinal and transverse joints on the 10-foot shared use path. Saw joints in a timely manner to prevent any uncontrolled random cracking. If random cracking occurs, remove and replace all damaged panels. Include all costs for the labor, equipment, and material necessary to construct the shared use path in the price bid for "SIDEWALK CONCRETE 4IN".

750-P04 DRIVEWAY CONCRETE 8IN REINFORCED: Reinforce driveways with No. 4 deformed reinforcing bars placed at 24 inches on center both transversely and longitudinally. Include an 18-inch lap (minimum) at splice locations. Use chairs to place the bars at mid-depth of the slab and ensure a clearance of 3 inches to all side forms. Tie driveways to the curb and gutter with No. 4 x 12-inch dowel bars placed mid depth at 24-inch centers. Include reinforcing in the price bid for "DRIVEWAY CONCRETE 8IN REINFORCED".

750-P05 CONCRETE MEDIAN PAVING DOWELS: Install epoxy coated dowel bars. All costs for the dowels, including material, installation, equipment and labor, is included in the bid price for "CONCRETE MEDIAN PAVING" pay item.

752-P01 ORNAMENTAL FENCE: Use concrete Class AE for post bases in accordance with Se. 802 of the Standard Specifications. Paint posts and chain in flat black, Color No. 37038 of the Federal Standard No. 595B Colors. Use size No. 4 or 5 coarse aggregate for concrete mix. "ORNAMENTAL FENCE" pay item Includes all costs for posts, sleeves, chains, paint, hardware, concrete, excavation, labor, equipment and materials required to construct post and chain style ornamental fence as shown in the plans.

Remove Existing wooden pole fence from Sta 435+14 Rt to Sta 436+67 Rt in preparation for placement of Ornamental Fence. All cost, including labor, equipment, and disposal is included in the bid price for the "ORNAMENTAL FENCE" pay item.

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752-P02 TEMPORARY SAFETY FENCE: A quantity of 300 LF has been to be used as directed by the Engineer. Install temporary safety fence where hazardous situations may occur. Payment includes the installation, maintenance and removal of the temporary safety fence.

754-P01 DYNAMIC SPEED DISPLAY SIGN: Remove existing Dynamic Speed Sign, salvage, and deliver to Dickinson City Public Works Dept.

762-050 PAVEMENT MARKING: If the Engineer and Contractor agree, plan quantity will be used as the measurement for payment for pavement marking items.

770-P01 LIGHTING SYSTEM: Provide a fully functional street lighting system for each circuit shown in the plans. This includes, but is not limited to, the installation of the following features where applicable: light standards and foundation, installation hardware, luminaires, feed point and all conductor, conduit, junction boxes and appurtenances. Include all labor and equipment for installation within the bid price for "LIGHTING SYSTEM". All costs required to operate and maintain street lights to final acceptance of the street lighting system are included within the "LIGHTING SYSTEM" pay item.

770-P02 REMOVE LIGHT STANDARD: Deliver removed and salvaged streetlight standards between Sta. 368+00 and Sta. 375+00 to the City of Dickinson Public Works. Dispose of any items not accepted by the City. The contact is below:

Gary Zuroff
Public Works Director
701-456-7979

Removal of light standard includes removal of existing foundation. Remove abandoned light standard foundations to a minimum depth of 3 feet below finish grade. Removal of light standard foundation includes backfill with Foundation Fill, and restoration of surface to match adjacent areas.

All costs for removal, including backfill, materials, equipment and labor is included in the bid price for "REMOVE LIGHT STANDARD" pay item.

770-P03 STREET LIGHT STANDARDS:

Type C1
Pole and Mast Arm: Millerbernd, Model RJAC8-320-001-2-GV/PT or approved equal

Fixture: American Electric Lighting, Autobahn Series
ATB2-60BLED10-MVOLT-R3-3K-BK

Type C1 (Double)
Pole and Mast Arm: Millerbernd, Model RJAC8-320-001-2-GV/PT with required twin arm, or approved equal

Fixtures: American Electric Lighting, Autobahn Series
ATB2-60BLED10-MVOLT-R3-3K-BK

Color: Hot-dip galvanize components in conformance with ASTM A123, then paint all traffic signal system components flat black, color no. 37038 of the Federal Standard No. 595B colors

Written approval from the City of Dickinson is required for any alternatives.

772-P01 TRAFFIC SIGNAL SYSTEM: Provide a fully functional traffic signal system. This includes, but is not limited to, the installation of the following features where applicable: traffic signal standards and foundation, vehicular heads, video detection system, traffic signal controller and all ancillary controller hardware, controller cabinet and foundation, feed point and all cable, conduit, junction boxes and appurtenances. Include all labor and equipment for installation within the bid price for "TRAFFIC SIGNAL SYSTEM". All costs required to operate and maintain traffic signals to final acceptance of the Traffic Signal System are included within the "TRAFFIC SIGNAL SYSTEM" pay item.

772-P02 EMERGENCY VEHICLE PRE-EMPTION (EVP): Provide optical emitter Opticom emergency vehicle preemption systems, or approved equal, for traffic signal site. Coordinate system requirements with the City of Dickinson. Contact information below:

Aaron Meyer
IT Manager
701-456-77805

Provide LED indicator lamps at locations shown in the plans. Provide all labor and equipment necessary for the emergency vehicle preemption system to be fully operational.

Notify City of Dickinson fire chief, Jeremy Presnell, 701-456-7848, when the EVP systems are tested and operable.

Include all costs for labor, materials and equipment necessary for furnishing and installing this item in the price bid for "TRAFFIC SIGNAL SYSTEM".

772-P03 SIGNAL EQUIPMENT:

A. Provide steel signal plumbizer and pedestal adapters/collars.

B. Provide 16-inch pedestrian heads with tunnel visors with countdown displays.

C. Provide vehicle and pedestrian heads constructed of cast aluminum and installed level on all sides.

D. Provide stainless steel fasteners and use anti-seize lubricant on all threaded components.

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- E. Provide louvered aluminum traffic signal backplates.
- F. Provide LED indications on all new signal heads.

772-P04 VIDEO DETECTION SYSTEM: Provide a GRIDSMART GS2 detection system or an Autoscope Vision detection system, or approved equal, at the 10th Avenue E signalized intersection.

Coordinate system requirements with the City of Dickinson. Contact information below:

Aaron Meyer
IT Manager
701-456-7805

Coordinate with video detection system manufacturer to ensure the system includes all cable connections, camera aiming and system set-up, including programming detection zones and verification of reliable operation. The location of cameras in the plans are for reference only. Install the cable, cameras and provide all labor and equipment necessary for the video detection system to be fully operational. Provide one spare camera and processor. Include all costs for labor, materials and equipment necessary for furnishing and installing this item in the price bid for "TRAFFIC SIGNAL SYSTEM".

772-P05 SIGNAL AND LIGHTING FEED POINTS: Verify the location of existing and planned Traffic Signal and Street Lighting feed points with MDU or ROUGHRIDER ELECTRIC, as applicable, prior to construction. New feed points and conduits to street lighting system must be located outside of private property and accessible for service and installation via public access ways.

772-P06 BATTERY BACK-UP: Equip traffic controller at 10th Avenue E intersection with an "on-line" type Uninterruptible Power Supply (UPS) that provides power conditioning in both normal and backup mode. Size it to provide backup power to the system for a minimum of 2 hours in full signalized operation and a minimum of 8 hours in flash operation. Provide the UPS with aux contacts to put the system into flash operation. Incorporate full power management and diagnostic function into the UPS.

Provide the UPS with features to automatically provide battery back-up power to the controller system with no interruption when the electric utility power supply de-energizes. Provide a UPS that operates such that it does not provide power to the de-energized incoming electric utility service conductors.

Install the UPS in a temperature and humidity-controlled environment. Install the UPS in a separate enclosure on the same pad as the signal controller cabinet. Extend the controller cabinet pad mount foundation to provide a minimum of 3" of clearance from the outside edge of the cabinets to the outside edge of the foundation on any side, even if the battery back-up cabinet is mounted on the controller cabinet and not the

foundation. Include all costs for materials, labor and equipment necessary to furnish and install the battery back-up in the bid price for "TRAFFIC SIGNAL SYSTEM".

772-P07 PADLOCKS: Obtain all padlocks from the City of Dickinson. The contact is below:

Gary Zuroff
Public Works Director
701-456-7979

772-P08 CONDUIT: Install conduit at the location shown on the plans.

Seal all conduit with duct seal at the controller cabinet and at the traffic signal standard foundations. Install three spare 2-inch conduit sweeps in the controller cabinet foundation and one spare 2-inch conduit sweep in each traffic signal standard base. Cap the spare conduits with an oil-tight plug with wing nut and labeled as to which direction they face.

772-P09 LABEL ALL FIELD CABLES: Obtain approval from the City of Dickinson on all labeling of materials. Provide labels that are readable without moving the cables.

Use a heat-shrink labeling system. Do not strip back from the connection more than 12 to 18 inches. This work is not a separate pay item. Include costs in the price bid for the "TRAFFIC SIGNAL SYSTEM" pay item.

772-P10 CONTROLLER CABINET WIRING DIAGRAM: Label the following items on the cabinet wiring diagram, in addition to information required by NDDOT Standard Specifications.

- A. Label the camera number (e.g., D2-1) from the plan on the detector panel drawing adjacent to the point for termination.
- B. Label the field wire terminals for the vehicle/pedestrian head control cables with the phase number and direction (e.g. Ø2, SB).
- C. Label the field wire terminals for the SONEM cable with the pre-empt number (e.g. P.E. #1).
- D. Label the field wire terminal for the pre-empt indicator lamps with the pre-empt number and direction (e.g., P.E. #1, NB).
- E. Label the field wire terminals for the pedestrian push-button cables with the phase number (e.g., Ø8 PED).
- F. Provide an intersection diagram on cabinet door showing phasing of intersection and camera numbering and detection zone numbering.
- G. Provide a CAD drawing file of the as-built cabinet wiring diagram.

772-P11 ACCESSIBLE PEDESTRIAN SIGNALS (APS) PUSHBUTTON AND SIGN: Include the features, installation procedures, and be compliant with the following:

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1. Features:

a. Rapid tick WALK indication, no more than 2-5dBA above ambient sound

b. Vibrotactile Walk indication

c. Speaker and vibrotactile indication located at pushbutton

d. Pushbutton locator tone

e. Tactile arrow on each device aligned in direction of travel on the crosswalk
2. Installation Procedures

a. APS should be reachable from the level landing of the curb ramp for the crossing or from a level surface with an accessible path to the ramp (MUTCD Section 4E.08 and Proposed and Draft PROWAG).

b. APS should be within 5 feet of the crosswalk line furthest from the center of the intersection and within 10 feet of the curb (MUTCD Section 4E.08).

c. Align tactile arrow with parallel to the direction of travel on the crosswalk (MUTCD Section 4E.12, P1).

d. Pushbutton is required to be located within reach range for wheelchair users (Proposed PROWAG, R406).
3. Code Compliance:

a. Functionality: MUTCD 2009 – 4E

b. Temperature and Humidity: NEMA TS 2

c. Transient Voltage Protection: NEMA TS 2

d. Transient Suppression: IEC 61000-4-4, IEC 61000-4-5

e. Electronic Noise: FCC Title 47, Part 15, Class A

f. Mechanical Shock and Vibration: NEMA TS 2

g. EN4 PBS Enclosure: NEMA 250 – Type 4X

h. Electrical Reliability: NEMA TS 4

Include the cost for the accessible pedestrian signals pushbuttons and signs in the "TRAFFIC SIGNAL SYSTEM" pay item.

772-P12 TRAFFIC SIGNAL CONTROLLER: Provide a Econolite Cobalt traffic signal controller or approved equal. Coordinate system requirements with the City of Dickinson. Contact information is below:

Loretta Marshik
Assistant City Engineer
701-456-7768

Provide a GFCI receptacle in the controller cabinet. Include all costs for labor, materials and equipment required to install the new controllers in the price bid for "TRAFFIC SIGNAL SYSTEM". This includes but is not limited to the cabinet, detector amplifiers (furnished and installed), other ancillary signal components (such as load switches, conflict monitors, etc.), concrete foundation, and controller cabinet components connected as required to make the new controller equipment operational with the proposed signal equipment. This also includes any programming and data entry (i.e. signal timing plans) necessary to provide a fully functional traffic signal controller.

772-P13 TRAFFIC SIGNAL STANDARDS BASE: Provide "T" transformer base type standards for all traffic signal standards for the traffic signal system. Include all cost for labor, materials, and equipment necessary for furnishing and installing this item in the bid price for "TRAFFIC SIGNAL SYSTEM".

772-P14 SURVEILLANCE CAMERA SYSTEM: Install cameras, controller, antenna, and mounting hardware provided by the City of Dickinson. Provide materials and install cables and conduit per plan. Notify City of Dickinson a minimum of 30 days' prior to expected collection and installation of city provided system components. Coordinate start up and function with Dickinson City. Contact is as follows:

Aaron Meyer
IT Manager
701-456-7805

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ENVIRONMENTAL NOTES

ENVIRONMENTAL NOTES (EN): The North Dakota Department of Transportation and the Federal Highway Administration have made environmental commitments to secure approval of this project. The following environmental notes are requirements to comply with these commitments:

EN-1 TEMPORARY WETLAND IMPACT: Temporary impact areas within wetlands and or other waters are incorporated into the plans for this project. Remove temporary fill placed and sedimentation in wetlands or other waters. Restore these wetlands to preconstruction contours.

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Estimated Quantities						STATE	PROJECT NO.	SECTION NO.	SHEET NO.
						ND	NHU-5-094(114)907	8	1
SPEC	CODE	ITEM DESCRIPTION	UNIT	Mainline: Funding A	100% City: Funding B	100% County: Funding C	City/County: Funding D	TOTAL	
103	0100	CONTRACT BOND	L SUM	0.78				0.78	
202	0128	REMOVE AGGREGATE BASE	TON	2330				2330	
202	0130	REMOVAL OF CURB & GUTTER	LF	1364				1364	
202	0136	REMOVAL OF PAVEMENT	TON	40914				40914	
202	0170	REMOVAL OF CULVERTS-ALL TYPES & SIZES	LF	2275				2275	
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	204				204	
202	0210	REMOVAL OF MANHOLES	EA	2				2	
202	0230	REMOVAL OF INLETS	EA	2				2	
203	0101	COMMON EXCAVATION-TYPE A	CY	25799				25799	
203	0109	TOPSOIL	CY	14568				14568	
203	0140	BORROW-EXCAVATION	CY	593				593	
216	0100	WATER	M GAL	1948				1948	
251	0200	SEEDING CLASS II	ACRE	18				18	
253	0201	HYDRAULIC MULCH	ACRE	36				36	
255	0101	ECB TYPE 1	SY	1928				1928	
256	0100	RIPRAP GRADE I	CY	26				26	
260	0100	SILT FENCE UNSUPPORTED	LF	5382				5382	
260	0101	REMOVE SILT FENCE UNSUPPORTED	LF	5382				5382	
261	0112	FIBER ROLLS 12IN	LF	1787				1787	
261	0113	REMOVE FIBER ROLLS 12IN	LF	822				822	
261	0120	FIBER ROLLS 20IN	LF	91				91	
261	0121	REMOVE FIBER ROLLS 20IN	LF	54				54	
302	0100	SALVAGED BASE COURSE	TON	84771				84771	
401	0050	TACK COAT	GAL	5850				5850	
411	0116	MILLING PAVEMENT SURFACE - 3 INCH	SY	860				860	
430	0045	SUPERPAVE FAA 45	TON	21476				21476	
430	1000	CORED SAMPLE	EA	215				215	
430	5803	PG 58S-28 ASPHALT CEMENT	TON	455				455	
430	5818	PG 58H-34 ASPHALT CEMENT	TON	820				820	
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	7599				7599	
702	0100	MOBILIZATION	L SUM	0.78				0.78	
704	0100	FLAGGING	MHR	3100				3100	
704	1000	TRAFFIC CONTROL SIGNS	UNIT	4973				4973	
704	1035	ATTENUATION DEVICE-TYPE B-25	EA	3				3	
704	1052	TYPE III BARRICADE	EA	154				154	
704	1060	DELINEATOR DRUMS	EA	994				994	
704	1067	TUBULAR MARKERS	EA	250				250	
704	1500	OBLITERATION OF PAVEMENT MARKING	SF	1778				1778	
704	3510	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	55				55	
704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	3				3	
706	0400	FIELD OFFICE	EA	0.78				0.78	
706	0500	AGGREGATE LABORATORY	EA	0.78				0.78	
706	0550	BITUMINOUS LABORATORY	EA	0.78				0.78	
706	0600	CONTRACTOR'S LABORATORY	EA	0.78				0.78	
708	1531	INLET PROTECTION-FIBER ROLL 12IN	EA	31				31	
708	1533	REMOVAL INLET PROTECTION-FIBER ROLL 12IN	EA	16				16	
708	1540	INLET PROTECTION-SPECIAL	EA	52				52	

Estimated Quantities						STATE	PROJECT NO.	SECTION NO.	SHEET NO.
						ND	NHU-5-094(114)907	8	2
SPEC	CODE	ITEM DESCRIPTION	UNIT	Mainline: Funding A	100% City: Funding B	100% County: Funding C	City/County: Funding D	TOTAL	
708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	52				52	
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	62184				62184	
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	80				80	
710	0409	TEMPORARY CONNECTION	EA	27				27	
714	0620	PIPE CONC REINF 24IN CL III-STORM DRAIN	LF	38				38	
714	1010	PIPE CONC REINF 42IN CL III-STORM DRAIN	LF	16				16	
714	2111	PIPE CONC REINF ARCH 29IN X 18IN CL III-S DRAIN	LF	425				425	
714	3020	END SECT-CONC REINF 24IN	EA	1				1	
714	3040	END SECT-CONC REINF 42IN	EA	1				1	
714	3085	END SECT-CONC REINF ARCH 29IN X 18IN	EA	1				1	
714	4090	PIPE CONDUIT 12IN	LF	91				91	
714	4095	PIPE CONDUIT 15IN	LF	1257				1257	
714	4099	PIPE CONDUIT 18IN-APPROACH	LF	1455				1455	
714	4100	PIPE CONDUIT 18IN	LF	828				828	
714	4105	PIPE CONDUIT 24IN	LF	910				910	
714	4106	PIPE CONDUIT 24IN-APPROACH	LF	680				680	
714	4110	PIPE CONDUIT 30IN	LF	34				34	
714	5010	PIPE CORR STEEL .064IN 15IN	LF	8				8	
714	5290	PIPE CORR STEEL .109IN 24IN	LF	5				5	
714	5805	END SECT CORR STEEL .064IN 15IN	EA	1				1	
714	9660	REMOVE & RELAY END SECTION-ALL TYPE & SIZES	EA	1				1	
714	9680	PLUG PIPE-ALL TYPES & SIZES	EA	1				1	
720	0110	RIGHT OF WAY MARKERS	EA	4				4	
720	0125	ALIGNMENT MONUMENTS	EA	7				7	
720	0130	IRON PIN R/W MONUMENTS	EA	4				4	
720	0135	IRON PIN REFERENCE MONUMENTS	EA	3				3	
722	0107	MANHOLE 54IN	EA	1				1	
722	0115	MANHOLE 66IN	EA	1				1	
722	0315	MANHOLE CASTING	EA	3				3	
722	1106	MANHOLE RISER 54IN	LF	4				4	
722	1115	MANHOLE RISER 66IN	LF	9				9	
722	3510	INLET-TYPE 2	EA	38				38	
722	3520	INLET-TYPE 2 DOUBLE	EA	15				15	
722	3730	INLET SPECIAL CATCH BASIN 9IN BEEHIVE 48IN	EA	8				8	
722	3790	INLET SPECIAL CATCH BASIN 9IN BEEHIVE 60IN	EA	4				4	
722	6200	ADJUST MANHOLE	EA	17				17	
722	6240	ADJUST UTILITY APPURTENANCE	EA	32				32	
724	0420	HYDRANT-RELOCATE	EA	2				2	
744	0100	POLYSTYRENE INSULATION BOARD	BD FT	39040				39040	
748	0140	CURB & GUTTER-TYPE I	LF	17502				17502	
748	1000	VALLEY GUTTER 36IN	LF	308				308	
750	0115	SIDEWALK CONCRETE 4IN	SY	7457				7457	
750	0200	CONCRETE MEDIAN PAVING	SY	255				255	
750	0210	CONCRETE MEDIAN NOSE PAVING	SY	8				8	
750	1021	DRIVEWAY CONCRETE 8IN REINFORCED	SY	3246				3246	
750	2115	DETECTABLE WARNING PANELS	SF	267				267	
752	0850	ORNAMENTAL FENCE	LF	9199				9199	

Estimated Quantities						STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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SPEC	CODE	ITEM DESCRIPTION	UNIT	Mainline: Funding A	100% City: Funding B	100% County: Funding C	City/County: Funding D	TOTAL	
752	0911	TEMPORARY SAFETY FENCE	LF	300				300	
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	375				375	
754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	139				139	
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	1275				1275	
754	0563	REFERENCE MARKER-TYPE C	EA	1				1	
754	0592	RESET SIGN PANEL	EA	38				38	
754	0593	RESET SIGN SUPPORT	EA	27				27	
754	0805	OBJECT MARKERS - CULVERTS	EA	106				106	
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	1710				1710	
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	41429				41429	
762	1307	PREFORMED PATTERNED PVMT MK 6IN LINE-GROOVED	LF	613				613	
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	4750				4750	
762	1315	PREFORMED PATTERNED PVMT MK 12IN LINE-GROOVED	LF	76				76	
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED	LF	603				603	
770	0001	LIGHTING SYSTEM	EA	1				1	
770	4560	REMOVE LIGHT STANDARD	EA	10				10	
772	0001	TRAFFIC SIGNALS SYSTEM	EA	1				1	
772	2810	TEMPORARY TRAFFIC SIGNALS	EA	4				4	
772	9300	SURVEILLANCE CAMERA SYSTEM	EA			1		1	
990	0220	GUARD POST-PERMANENT	EA	56				56	

BASIS OF ESTIMATE

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Paving Summary

		I-94 E Bus Loop & 10 th Ave (Intersection Area)	I-94 E Bus Loop Mainline	25 th Avenue East
		Sta 369+55 to Sta 375+54	Sta 375+54 to Sta 454+02	Sta 27+00 to Sta 28+55 Sta 41+54 to Sta 43+55
Material	Unit	Quantity	Quantity	Quantity
Salvaged Base Course @ 1.875 Ton/CY	Ton	3940.1	60797.6	1048.4
Tack Coat @ 0.05 Gal/SY	Gal	78.7	5697.5	73.7
Superpave FAA 45 @ 2 Ton/CY	Ton	342.9	20790.3	342.4
PG 58S-28 Asphalt Cement @ 6.0%*	Ton	0.0	454.8	0.0
PG 58H-34 Asphalt Cement @ 6.0%*	Ton	20.6	783.2	16.3
9IN Non-Reinf Concrete Pvmnt CI AE-Doweled	SY	6591.2	1008.4	0.0

*See section 30 for which lifts require which grade of asphalt cement.

	Excavation (CY)	Pvmt & Aggr Removal from Excavation (CY)	Common Excavation – Type A (CY) Pay Item	Embankment (CY)	Salvaged Base Course (CY) **	Common Excavation – Borrow (CY) Pay Item	Topsoil (CY) Pay Item
Location	A	B	C=A-B	D	E	F=D-(C+E)	G
I-94 E Bus Loop/10 th Ave/E Villard Intersection (Sta 369+75 – 375+54.5)	5,137	2,954	2,183	1,717	408	(874)	1,025
I-94 E Bus Loop Mainline* (Sta 375+54.5 – 425+00, 431+00 – 454+02)	36,531	16,212	20,319	30,315	8,216	1,781	11,812
I-94 E Bus Loop/25 th Ave Intersection Sta(425+00 – 431+00)	3,990	1,837	2,153	2,522	682	(313)	1,731
Totals	45,658	21,003	24,655	34,554	9306	593	14,568

*Includes all intersections and approaches otherwise not separately quantified

**Salvaged Base Course quantity listed is for temporary roadway placed along I-94 E Business Loop. See section 100 for quantities.

706 0400 Field Office 1 EA

710 0409 Temporary Connection 27 EA

Embankment	131	CY
Salvaged Base Course	35	TON
Pipe Conduit*	20	LF
Excavation	131	CY
Remove Salvaged Base Course	35	TON
Removal of Pipe All Types and Sizes	20	LF

*Match the pipe conduit size to the approach culvert

752 0911 Temporary Safety Fence 300 LF

754 0805 Object Markers-Culverts 106 EA

SALVAGED BASE COURSE CALCULATION			
			% Breakdown
Total Concrete Removed	2,255	TON	5.51%
Total Bituminous Removed	19,698	TON	48.14%
Total Aggregate Removed	18,961	TON	46.35%
Total Removals	40,914	TON	100.00%
5% Less for Crushing & Handling	2,046	TON	
Total Removals Available for Salvage	38,868	TON	
Salvage Base Course Required	84,771	TON	
Additional Required Aggregate Material	45,903	TON	

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BASIS OF ESTIMATE

I-94 E Bus LP/10 th Ave/E Villard Short Term 4 IN Line-Type NR		
Construction Phase	Basis	Quantity
Phase 1	24" White Stop Bar 5,280 LF/mile 8" White Channel Line 5,280 LF/mile	36 LF 248 LF
Phase 2a	24" White Stop Bar 5,280 LF/mile	24 LF
Phase 2b	24" White Stop Bar 5,280 LF/mile	34 LF
Phase 2c	24" White Stop Bar 5,280 LF/mile	22 LF
Phase 2d	24" White Stop Bar 5,280 LF/mile	69 LF
Phase 3a	24" White Stop Bar 5,280 LF/mile	82 LF

Cored Samples (Pay Item)							
	A	B	C	D			
Specification Section	Distance (Ft)÷2000	Lanes	Lifts	Sublots (A x B x C)	Quantity (D x 2)	Quantity (1 per mile)	Unit
I-94 E Bus Loop Mainline							
430.04 I.2.b(1), "General" (Mat Density)	5	3	3	45	90	N/A	EA
Longitudinal Joint Density	5	3	3	45	90	N/A	EA
430.04 I.2.b(2), "Pavement Thickness Determination Cores"						1	EA
E Villard Street							
430.04 I.2.b(1), "General" (Mat Density)	1	2	2	4	8	N/A	EA
Longitudinal Joint Density	1	2	2	4	8	N/A	EA
430.04 I.2.b(2), "Pavement Thickness Determination Cores"						1	EA
25 th Avenue East							
430.04 I.2.b(1), "General" (Mat Density)	1	2	2	4	8	N/A	EA
Longitudinal Joint Density	1	2	2	4	8	N/A	EA
430.04 I.2.b(2), "Pavement Thickness Determination Cores"						1	EA
Total					212	3	EA

Water
25 MGal/Mile for Dust Palliative
20 Gal/Ton for Aggregates
10 Gal/CY for Embankment

Removals
Concrete Pavement @ 2.00 Ton/CY
Bituminous Surfacing @ 2.00 Ton/CY
Aggregate Base Course @ 1.875 Ton/CY

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Drainage Channel Slope Staking					
Station	Channel Elevation Left		Ditch Elevation Right		
	Offset	Ditch Elevation	Offset	Ditch Elevation	
372+12.98	78.30	Lt	2412.45		
372+50.00	68.13	Lt	2414.25		
373+00.00	67.83	Lt	2415.57		
373+48.24	68.34	Lt	2416.84		
374+20.56	71.70	Lt	2418.22		
374+50.00	71.58	Lt	2419.10		
375+00.00	69.09	Lt	2420.65		
375+50.00	65.09	Lt	2422.21		
375+85.81	63.73	Lt	2423.59		
376+50.00	52.14	Lt	2428.37		
377+00.00	52.65	Lt	2429.73		
377+50.00	52.93	Lt	2431.08		
378+00.00	52.98	Lt	2432.44		
378+50.00	52.81	Lt	2433.79		
379+00.00	52.51	Lt	2435.12		
379+50.00	52.86	Lt	2436.23		
380+00.00	52.98	Lt	2437.34		
380+50.00	52.87	Lt	2438.44		
380+60.63	52.81	Lt	2438.68		
381+11.67	52.81	Lt	2439.74		
381+50.00	52.85	Lt	2440.44		
381+69.44	52.82	Lt	2440.86		
382+60.00	60.16	Lt	2440.53		
383+00.00	60.20	Lt	2441.15		
383+50.00	60.04	Lt	2441.93		
384+00.00	60.70	Lt	2442.44		
384+41.44	61.87	Lt	2442.68		
385+11.22	53.50	Lt	2445.55		
385+50.00	55.64	Lt	2445.40		
386+00.00	56.68	Lt	2445.59		
386+50.00	57.47	Lt	2445.78		
387+00.00	58.04	Lt	2445.97		
387+50.00	58.07	Lt	2446.26		
388+00.00	58.11	Lt	2446.55		
388+50.00	58.14	Lt	2446.85		
389+00.00	58.18	Lt	2447.14		
389+32.31	58.60	Lt	2447.37		
390+23.10	58.39	Lt	2447.82		
390+50.00	58.52	Lt	2447.93		
391+00.00	58.51	Lt	2448.13		
391+50.00	58.15	Lt	2448.33		
392+00.00	57.46	Lt	2448.53		
392+35.15	56.96	Lt	2448.68		
393+21.93	51.85	Lt	2450.13		
393+37.41			39.74	Rt	2448.93
393+50.00	50.78	Lt	2449.80	39.73	Rt 2448.83
394+00.00	51.90	Lt	2449.20	40.09	Rt 2448.43
394+50.00	52.71	Lt	2448.61	40.12	Rt 2448.03
395+00.00	53.18	Lt	2448.01	39.81	Rt 2447.63
395+50.00	53.31	Lt	2447.42	39.17	Rt 2447.23
396+00.00	53.11	Lt	2446.82	39.57	Rt 2446.49
396+40.00			41.27	Rt	2445.50
396+50.00	52.65	Lt	2446.23	41.69	Rt 2445.25
397+00.00	52.18	Lt	2445.63	43.79	Rt 2444.01
397+50.00	51.71	Lt	2445.04	43.60	Rt 2443.35

Drainage Channel Slope Staking					
Station	Channel Elevation Left		Ditch Elevation Right		
	Offset	Ditch Elevation	Offset	Ditch Elevation	
398+00	51.24	Lt	2444.44	43.41	Rt 2442.68
398+04.32				43.40	Rt 2442.62
398+50.00	50.76	Lt	2443.85		
399+00.00	49.21	Lt	2443.25		
399+14.98	49.49	Lt	2443.07		
399+75.77				46.24	Rt 2439.47
400+00.00				47.02	Rt 2438.92
400+50.00				48.23	Rt 2437.81
400+52.55				48.29	Rt 2437.75
413+86.59				48.31	Rt 2426.11
414+00.00				48.29	Rt 2426.24
414+23.12	61.86	Lt	2426.77		
414+50.00	61.94	Lt	2427.00	48.26	Rt 2426.70
415+00.00	60.60	Lt	2427.79	48.22	Rt 2427.17
415+48.44	59.56	Lt	2428.59		
415+50.00				48.18	Rt 2427.63
416+00.00				48.14	Rt 2428.10
416+07.70	59.74	Lt	2428.98		
416+50.00	59.87	Lt	2429.34	48.10	Rt 2428.56
417+00.00	60.03	Lt	2429.75	48.06	Rt 2429.03
417+50.00	60.18	Lt	2430.17	48.17	Rt 2429.45
418+00.00	60.34	Lt	2430.59	48.92	Rt 2429.72
418+17.92	60.39	Lt	2430.73		
418+50.00				49.66	Rt 2429.99
418+68.26	60.02	Lt	2431.29		
419+00.00	60.30	Lt	2431.51		
419+50.00	60.74	Lt	2431.85		
419+82.56	61.03	Lt	2432.07		
419+85.39				48.57	Rt 2431.50
420+00.00				48.62	Rt 2431.62
420+44.97	57.51	Lt	2432.64		
420+50.00	57.50	Lt	2432.70	48.80	Rt 2432.03
420+97.32				48.96	Rt 2432.59
421+00.00	57.33	Lt	2433.21		
421+33.44	57.23	Lt	2433.55		
421+88.96				48.97	Rt 2433.25
421+91.34	58.30	Lt	2433.89		
422+00.00	58.50	Lt	2433.90	49.14	Rt 2433.31
422+50.00	57.78	Lt	2434.60	49.89	Rt 2433.58
423+00.00	58.58	Lt	2434.79	50.64	Rt 2433.85
423+20.00				50.94	Rt 2433.95
423+50.00	59.06	Lt	2435.08		
424+00.00	58.84	Lt	2435.61		
424+08.96	58.50	Lt	2435.81		
424+60.63	58.38	Lt	2436.50		
425+00.00	58.63	Lt	2437.56		
425+50.00	58.34	Lt	2438.09		
425+80.00				52.52	Rt 2433.95
426+00.00	58.30	Lt	2438.56	52.97	Rt 2436.91
426+50.00	57.09	Lt	2439.31	54.08	Rt 2437.09
426+90.74				54.98	Rt 2437.24
427+00.00	55.13	Lt	2440.26		
427+50.00	56.09	Lt	2440.47		
427+89.84	57.23	Lt	2440.73		

Drainage Channel Slope Staking					
Station	Channel Elevation Left		Ditch Elevation Right		
	Offset	Ditch Elevation	Offset	Ditch Elevation	
428+71.23			40.59	Rt	2441.56
428+95.67	55.91	Lt	2442.42		
429+00.00	56.01	Lt	2442.45	40.44	Rt 2441.84
429+48.67				39.95	Rt 2442.31
429+50.00	56.54	Lt	2442.80		
430+00.00	56.27	Lt	2443.16		
430+16.67				34.29	Rt 2444.10
430+50.00	55.70	Lt	2443.51	35.36	Rt 2443.96
431+00.00	54.84	Lt	2443.86	36.72	Rt 2443.76
431+50.00	50.32	Lt	2444.22	37.79	Rt 2443.56
431+84.48	49.04	Lt	2444.47		
432+00.00				38.56	Rt 2443.36
432+35.06	47.10	Lt	2444.90		
432+50.00	47.75	Lt	2444.69	39.03	Rt 2443.15
433+00.00	49.64	Lt	2444.06	39.21	Rt 2442.95
433+50.00	51.25	Lt	2443.43	39.10	Rt 2442.75
434+00.00	52.55	Lt	2442.80	38.69	Rt 2442.55
434+28.28				38.32	Rt 2442.43
434+50.00	53.56	Lt	2442.17		
434+58.18	53.70	Lt	2442.06		
435+23.55	53.07	Lt	2441.62		
435+50.00	53.74	Lt	2441.14		
435+52.31				48.41	Rt 2438.73
436+00.00	54.80	Lt	2440.28	46.88	Rt 2438.54
436+50.00	55.55	Lt	2439.41	44.98	Rt 2438.34
437+00.00	56.11	Lt	2438.55	42.88	Rt 2438.14
437+40.00				41.20	Rt 2437.98
437+50.00	56.66	Lt	2437.69		
438+00.00	57.21	Lt	2436.82		
438+45.41	57.71	Lt	2436.33		
439+07.03	58.73	Lt	2434.89		
439+50.00	61.42	Lt	2433.59		
440+00.00	64.62	Lt	2432.07		
440+50.00	63.27	Lt	2431.68		
441+00.00	61.36	Lt	2431.43		
441+50.00	60.44	Lt	2430.93		
442+00.00	59.63	Lt	2430.41		
442+50.00	58.83	Lt	2429.88		
442+60.00	58.67	Lt	2429.78		
444+20.00	53.94	Lt	2428.63		
444+50.00	54.24	Lt	2428.12		
445+00.00	54.68	Lt	2427.29		
445+50.00	55.12	Lt	2426.45		
445+70.00				60.17	Rt 2421.18
446+00.00	55.56	Lt	2425.62	59.95	Rt 2420.80
446+17.62	55.71	Lt	2425.32		
446+50.00				59.57	Rt 2420.17
446+70.00				59.42	Rt 2419.92
449+26.18	56.17	Lt	2417.92		
449+50.00	55.58	Lt	2417.73		
450+00.00	54.34	Lt	2417.64		
450+50.00	53.51	Lt	2416.90		
450+68.05	53.53	Lt	2416.75		

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Data Tables
Channel Elevation Data

E Business LP 10th Ave E - Exit 64

Dickinson, ND

Access Way Grading Points			
	Station	Offset	Elevation
Start	374+13	100' Lt	2420.50
	374+50	100' Lt	2421.57
	375+00	100' Lt	2423.01
Grade Change	375+16	100' Lt	2423.52
	375+50	100' Lt	2425.35
Grade Change	375+65	100' Lt	2426.18
	376+00	100' Lt	2426.92
End	376+33	100' Lt	2427.61

Alignment Monuments		
Station	Offset	Description
368+81.96	0.00	PC
371+45.64	0.00	Section Line
377+27.27	112.24 Rt	Curve PI
385+72.59	0.00	PT
399+32.92	0.00	Quarter Line
428+05.91	0.00	Section Line
431+69.17	0.00	Quarter Line
Total		7

Iron Pin R/W Monuments and R/W Markers				
Station	Offset	Description	Monument	Marker
368+81.96	60.00 Lt	PC	1	1
368+81.96	40.00 Rt	PC	1	1
385+72.29	75.00 Lt	PT	1	1
385+72.29	100.00 Rt	PT	1	1
Total			4	4

Existing Pavement Core Data		
RP	Offset	Depth (IN)
907.125	8.6' RT	11.50
907.250	8.6' LT	11.50
907.375	5.3' RT	9.50
907.500	8.0' LT	10.50
907.625	5.5' RT	11.50
907.750	6.5' LT	10.50
907.875	7.5' RT	10.00
908.000	8.0' LT	11.50
908.125	8.0' RT	10.00
908.250	5.0' LT	11.50
908.375	6.5' RT	10.50
908.500	7.5' LT	12.00
908.625	11.5' RT	12.00
908.750	6.0' LT	11.00
908.875	5.0' RT	12.50
Average Depth = 11.1		

Reference Monuments		
Station	Offset	Description
399+32.92	100.00 Rt	Quarter Line
431+69.17	100.00 Lt	Quarter Line
431+69.17	100.00 Rt	Quarter Line
Total		3

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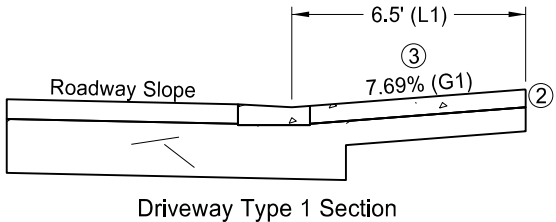
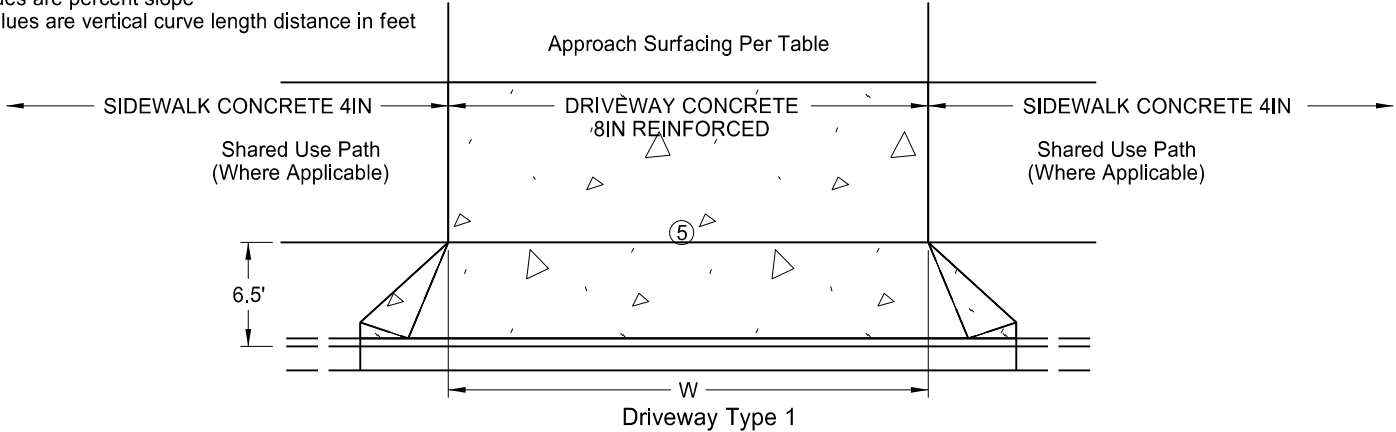
Data Tables
Monument Data

E Business LP 10th Ave E - Exit 64

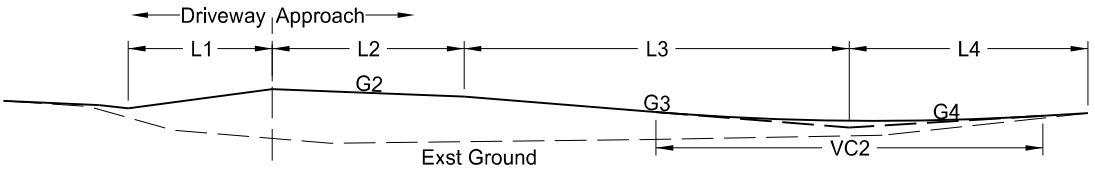
Dickinson, ND

Approach Grades and Curve Data																	
④ Station	Offset	Profile Type	Surface Type	W	③ G1	L1	G2	L2	VC1	G3	L3	VC2	G4	L4	VC3	G5	L5
373+87	Lt	-	Concrete	40'	-	See Driveway Type 1 Section Detail This Sheet	-2.00%*	10.00*	-	-5.77%	13.08	-	-1.34%	10.06	N/A	N/A	N/A
376+23	Lt	A	Concrete	40'	-		-2.00%*	10.00*	-	-2.72%	25.00	30' VC	2.32%	17.64	N/A	N/A	N/A
380+88	Lt	-	Asphalt	30'	-		-2.00%*	10.00*	-	2.81%	10.00	-	7.68%	18.70	N/A	N/A	N/A
381+91	Lt	A	Asphalt	24'	-		-2.00%*	10.00*	-	-2.00%	15.80	31.6' VC	2.75%	26.27	N/A	N/A	N/A
382+37	Rt	B	Asphalt	24'	2.00%		2.00%	3.10	6.20' VC	-12.76%	49.90	N/A	N/A	N/A	N/A	N/A	N/A
384+82	Lt	A	Asphalt	34'	-		-2.00%*	10.00*	-	-4.00%	24.50	20' VC	2.23%	17.52	N/A	N/A	N/A
385+10	Rt	B	Asphalt	35'	2.00%		2.00%	11.20	22.4' VC	-10.00%	41.21	N/A	N/A	N/A	N/A	N/A	N/A
387+15	Rt	-	Asphalt	36'	-		-3.22%	50.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
392+86	Rt	-	Asphalt	40'	-		-1.12%	65.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
402+99	Lt	A	Gravel	34'	-		-2.00%*	10.00*	-	-7.88%	39.92	30' VC	-2.75%	15.00	N/A	N/A	N/A
406+32	Lt	-	Asphalt	36'	-		-2.00%*	10.00*	-	-3.00%	54.21	-	-0.14%	16.62	N/A	N/A	N/A
408+00	Rt	-	Asphalt	26'	-		-7.92%	50.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
408+84	Lt	-	Asphalt	30'	-		-2.00%*	10.00*	-	-7.41%	37.38	-	-2.72%	5.00	N/A	N/A	N/A
410+98	Rt	-	Asphalt	34'	-		-4.86%	53.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
413+90	Lt	A	Asphalt	28'	-		-2.00%*	10.00*	-	-6.05%	39.00	32' VC	-1.40%	16.00	N/A	N/A	N/A
415+79	Lt	-	Concrete	41'	-		-2.00%*	10.00*	-	-6.95%	25.00	-	1.06%	0.00	N/A	N/A	N/A
418+44	Lt	A	Asphalt	25'	-		-2.00%*	10.00*	-	-5.99%	32.90	30' VC	-2.19%	15.00	N/A	N/A	N/A
420+14	Lt	A	Asphalt	28'	-		-2.00%*	10.00*	-	-7.23%	31.61	30' VC	-3.13%	16.00	N/A	N/A	N/A
421+46	Rt	C	Asphalt	36'	3.33%		-4.65%	36.94	32' VC	-2.10%	16.00	N/A	N/A	N/A	N/A	N/A	N/A
421+63	Lt	A	Asphalt	24'	-		-2.00%*	10.00*	-	-6.44%	32.01	29' VC	-1.10%	14.90	N/A	N/A	N/A
424+36	Lt	A	Concrete	25'	-		-2.00%*	10.00*	-	-7.54%	31.50	30' VC	-4.57%	15.00	N/A	N/A	N/A
429+90	Rt	-	Asphalt	31'	-		0.55%	40.88	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
432+11	Lt	-	Asphalt	40'	-		-2.00%*	10.00*	-	7.58%	50.00	-	5.43%	5.00	N/A	N/A	N/A
434+90	Lt	-	Asphalt	40'	-		-2.00%*	10.00*	-	9.46%	50.00	-	6.89%	5.00	N/A	N/A	N/A
438+74	Lt	-	Concrete	35'	-		-2.00%*	10.00*	-	0.97%	27.44	-	1.88%	15.00	N/A	N/A	N/A
443+21	Lt	D	Concrete	40'	-		-2.00%*	10.00*	-	10.00%	69.70	23' VC	2.36%	43.33	-	0.91%	10.00
446+41	Lt	A	Concrete	30'	-		-2.00%*	10.00*	-	-2.00%	9.94	19.5' VC	3.81%	45.70	N/A	N/A	N/A

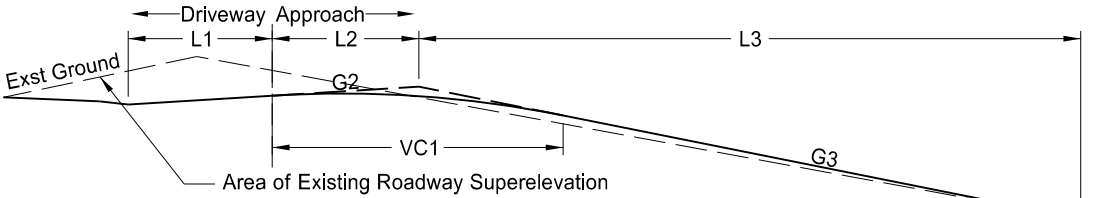
*Shared Use Path
All L values are length distance in feet
All G values are percent slope
All VC values are vertical curve length distance in feet



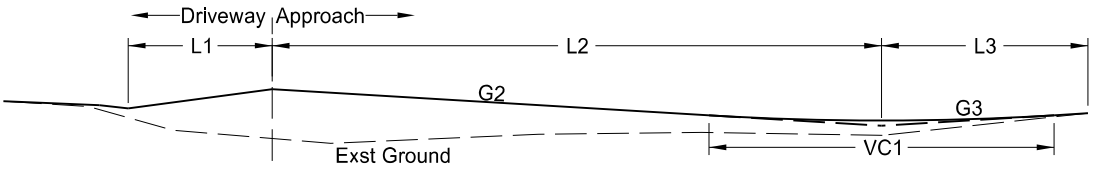
- Notes:
- See Standard Drawing D-750-1 CONCRETE DRIVEWAY - URBAN for additional information.
 - Refer to Approach Grades and Curve Data Table and Profile details for driveway approach grades and curve data.
 - (G1) Grade is 7.69% unless noted otherwise, see table.
 - Driveway approach stationing is to center at the driveway approach.
 - Driveway and the Shared Use Path immediately behind driveway are constructed to the same thickness. (DRIVEWAY CONCRETE 8IN REINFORCED)



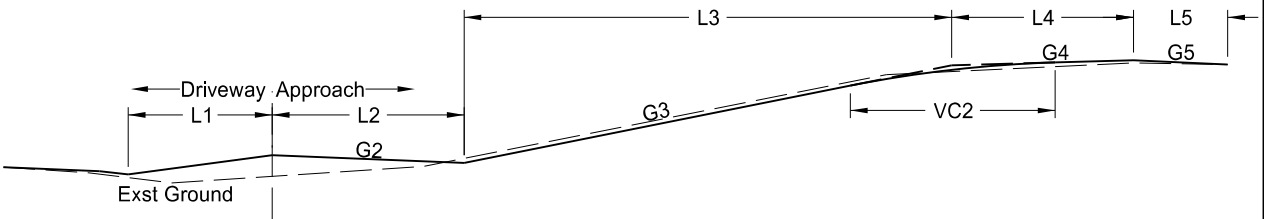
Profile Type A



Profile Type B



Profile Type C



Profile Type D

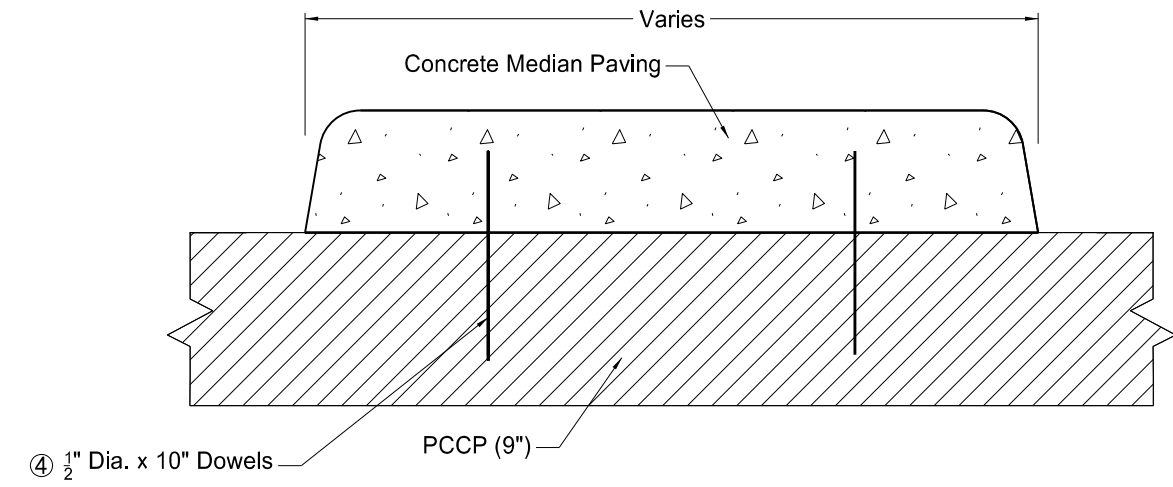
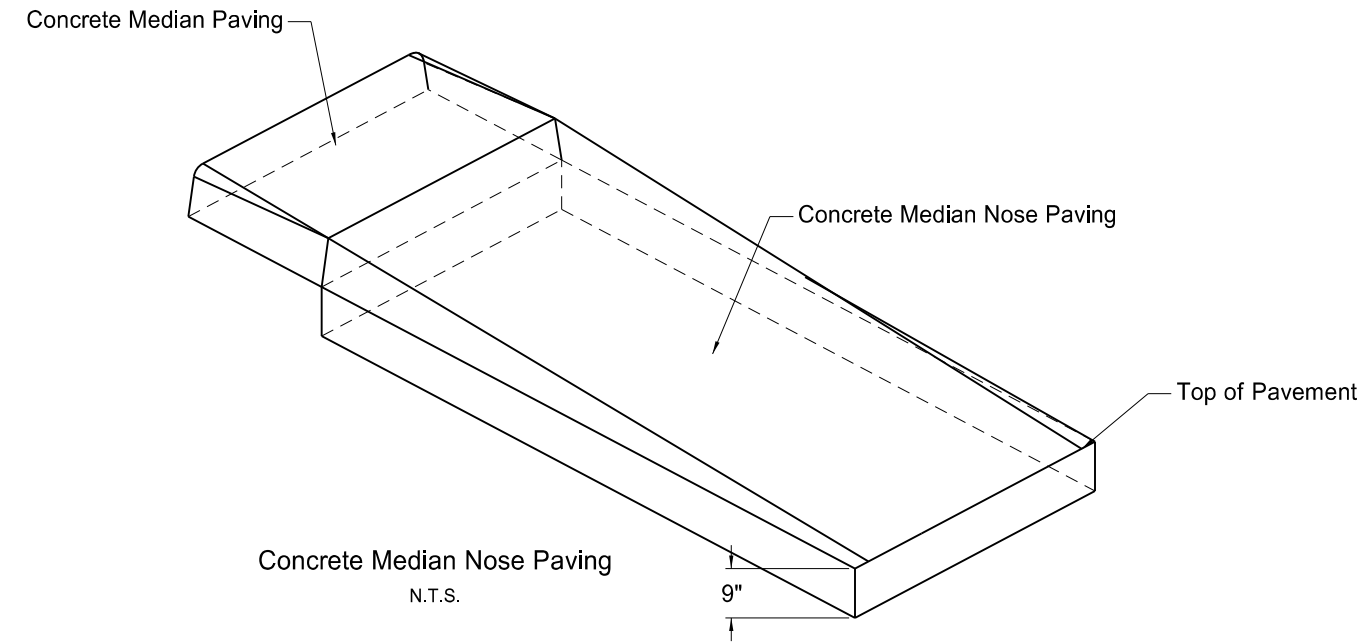
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Driveway Approach Details

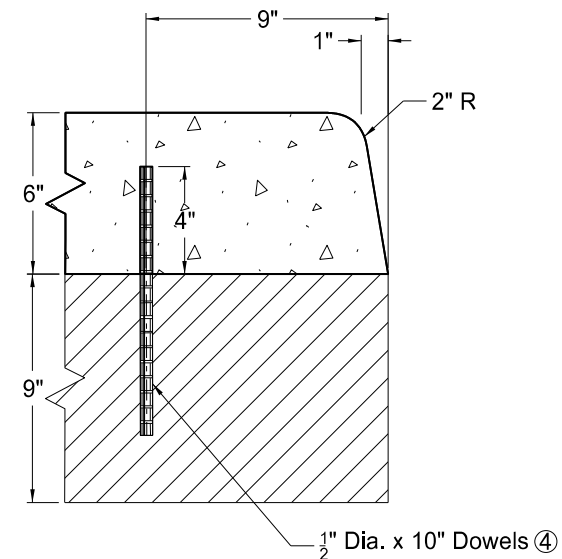
E Business LP 10th Ave E - Exit 64

Dickinson, ND

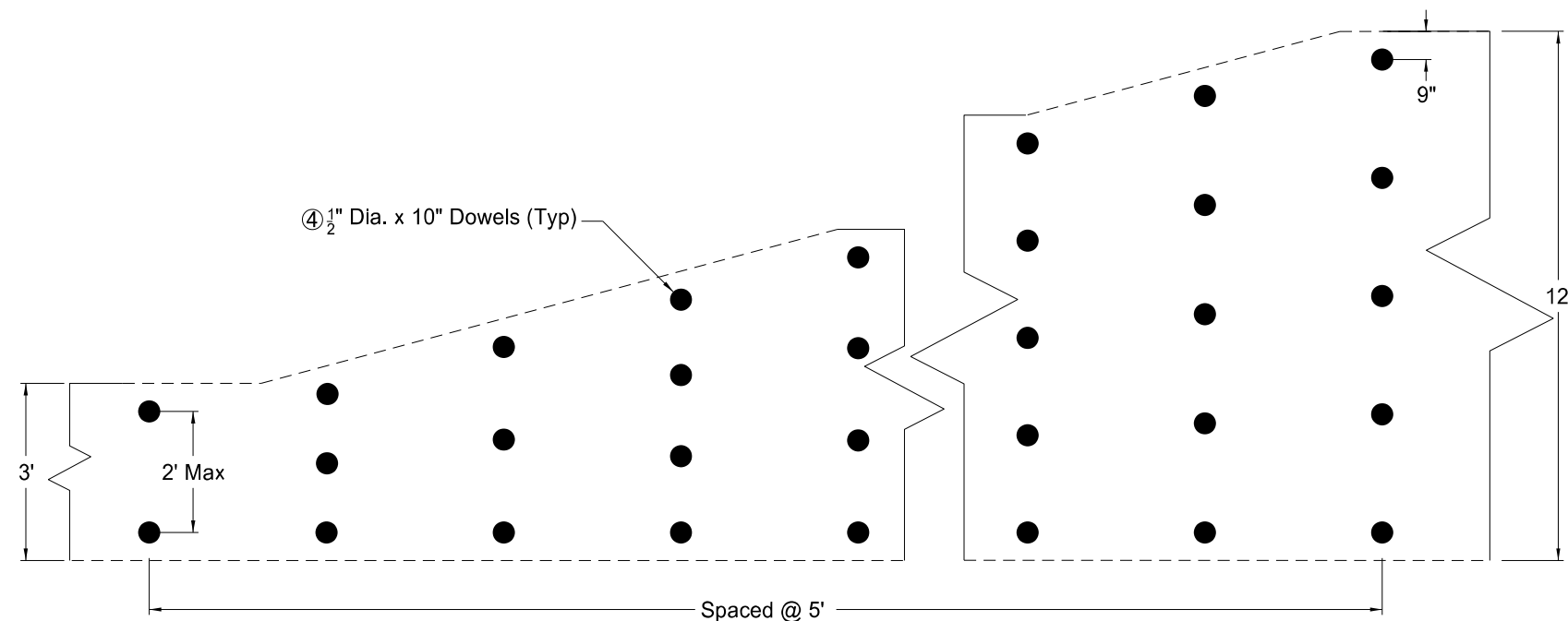
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	20	2



Raised Median Detail A
N.T.S.



Raised Median Detail B
N.T.S.



Raised Median on Paving Plan Layout
N.T.S.

Notes:

1. Drill, brush, and clean all holes before installing deformed dowels.
2. Epoxy the deformed dowels in the clean holes with Type IV, Grade 3 epoxy
3. Place joints to match Concrete Pavement joints.
- ④ Dowels are Epoxy Coated Deformed Bars. All costs for the dowels, including material, installation, equipment and labor, is included in the bid price for Concrete Median Paving pay item.

Pay Items:

- | | |
|---------|----------------------------------|
| 750-200 | Concrete Median Paving (SY) |
| 750-210 | Concrete Median Nose Paving (SY) |

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Raised Median Details

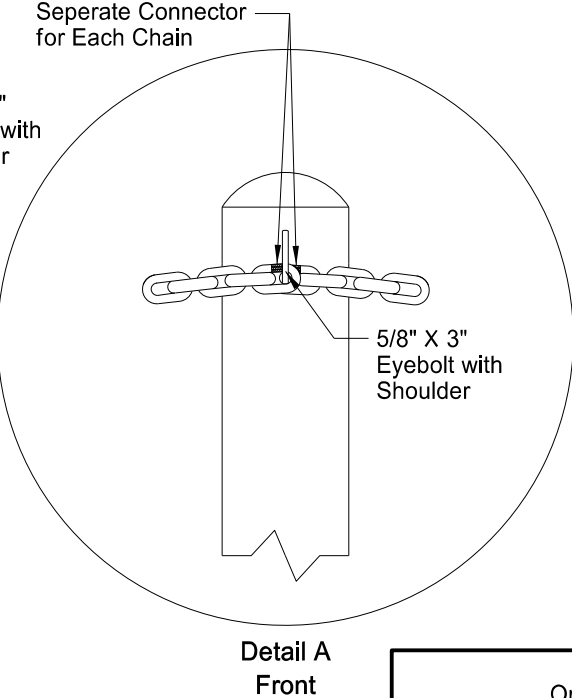
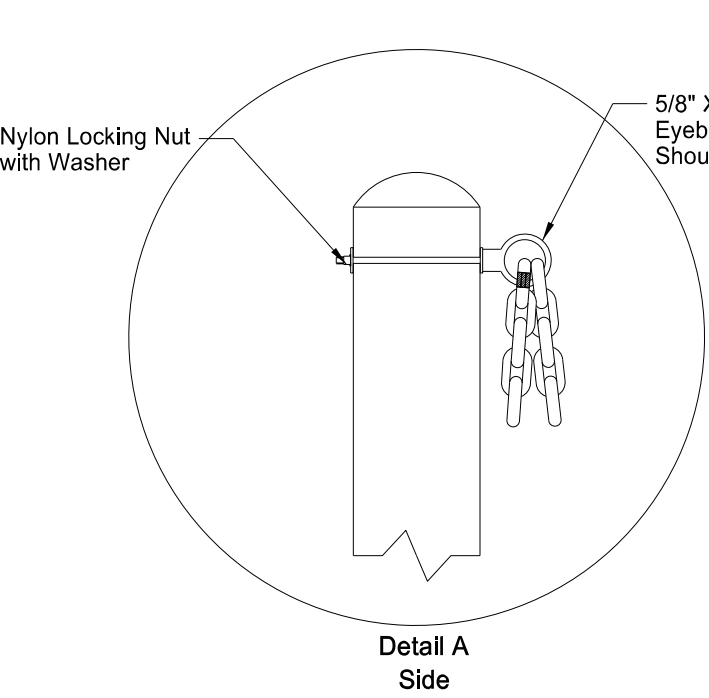
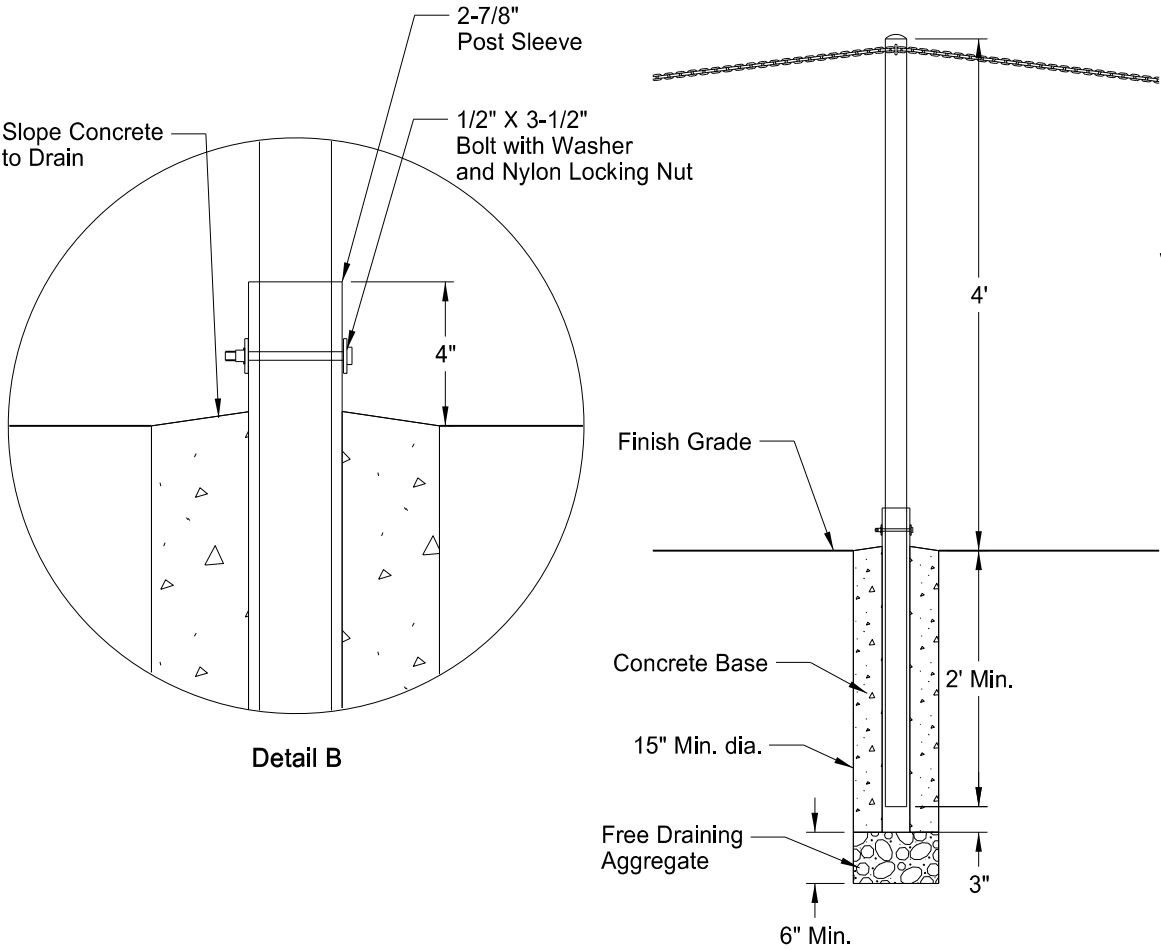
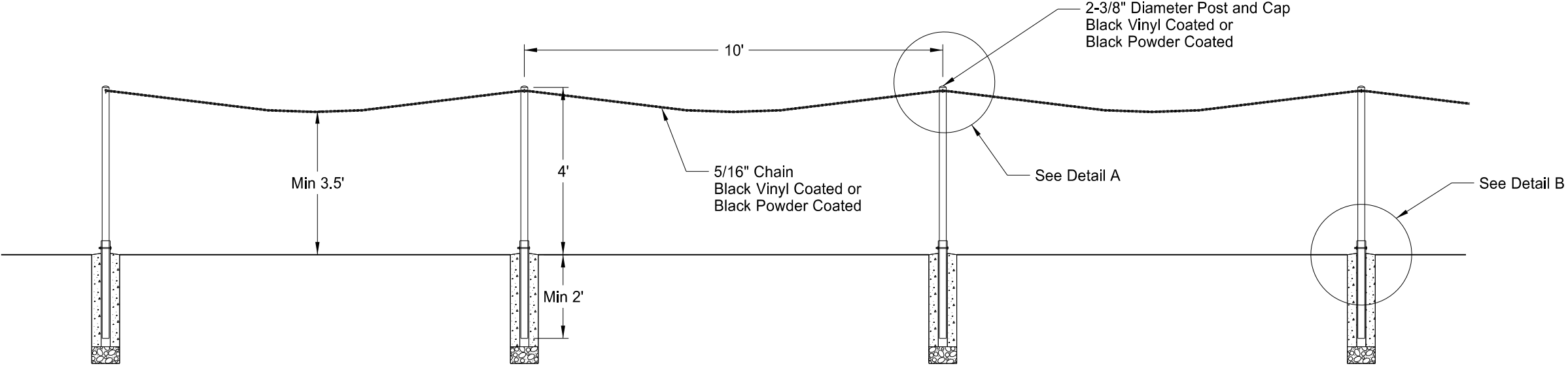
E Business LP 10th Ave E - Exit 64

Dickinson, ND

Notes:

1. Posts and caps are sch. 40, galvanized and then coated to finish color.
2. Coat and paint all hardware to match posts and chains.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	20	3



Ornamental Fence

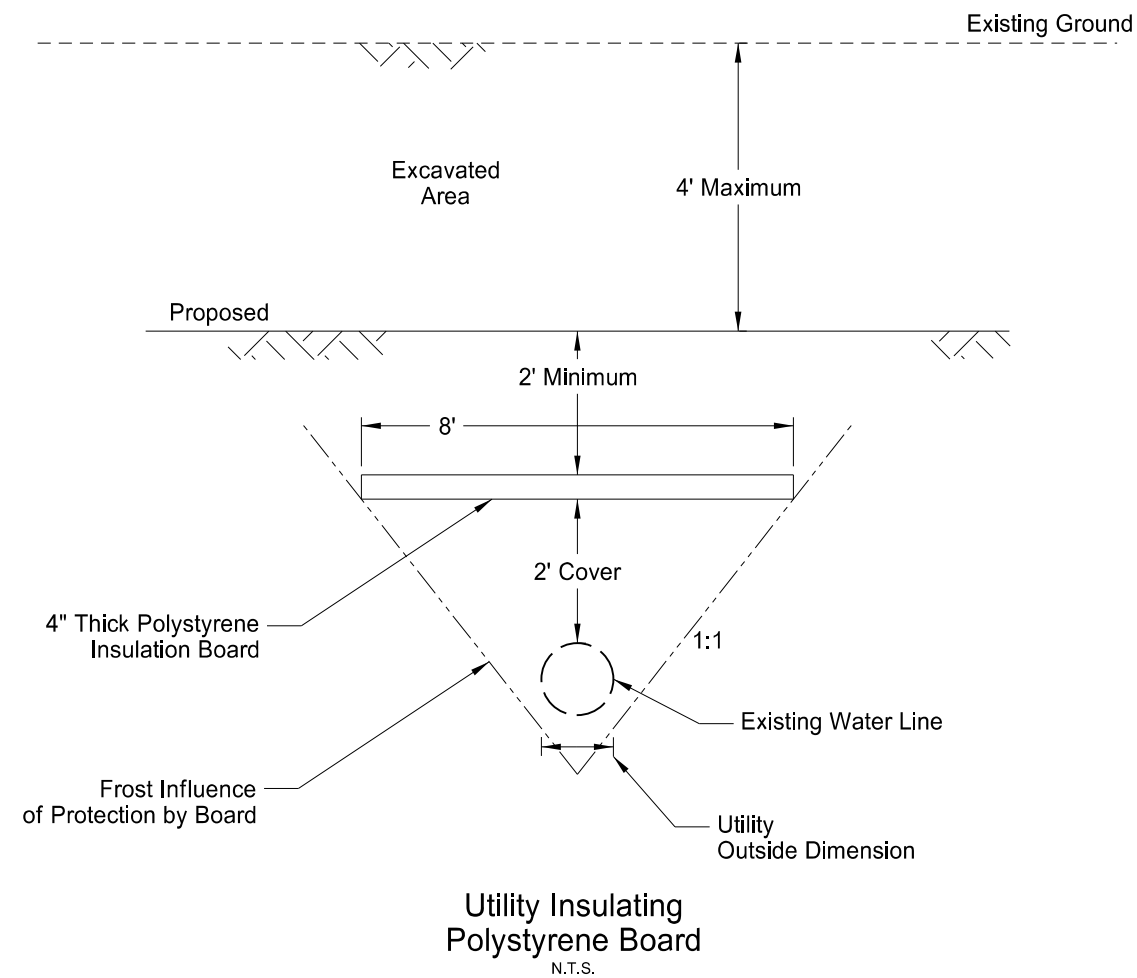
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Ornamental Fence Detail

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	20	4



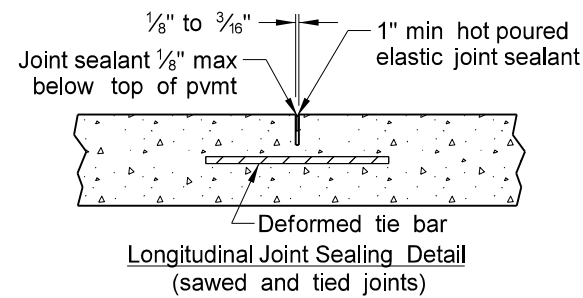
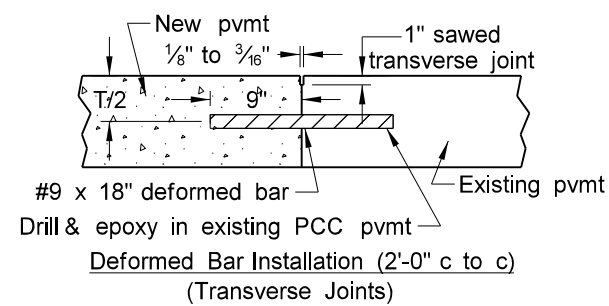
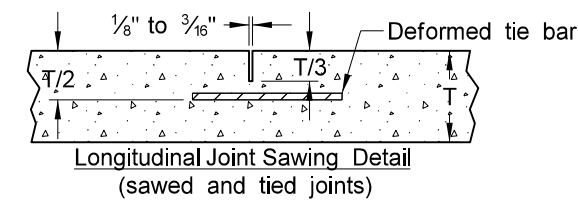
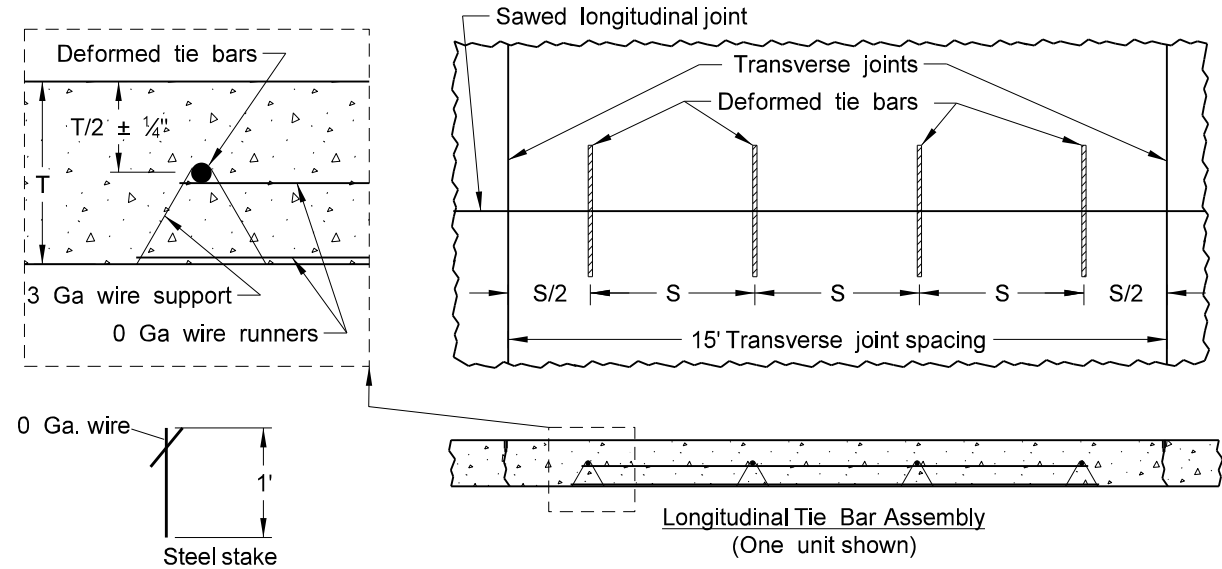
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Utility Details

Utility Insulating
Polystyrene Board

E Business LP 10th Ave E - Exit 64

Dickinson, ND



Grade 40 Longitudinal Joint Deformed Tie Bars	
PCC Depth	9"
Mainline Centerline	
Bar Size x Length (S=30")	#5 x 30"
Bar Size x Length (S=45")	#6 x 36"
Shoulder Joint	
Bar Size x Length (S=30")	#4 x 24"
Bar Size x Length (S=45")	#5 x 30"

Grade 60 Longitudinal Joint Deformed Tie Bars	
PCC Depth	9"
Mainline Centerline	
Bar Size x Length (S=30")	#4 x 36"
Bar Size x Length (S=45")	#5 x 42"
Shoulder Joint	
Bar Size x Length (S=30")	#3 x 30"
Bar Size x Length (S=45")	#4 x 36"

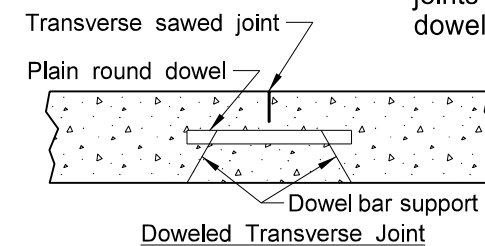
- Notes:
1. Dowel bars shall be $1\frac{1}{4}"$ X 18"
 2. S = Tie bar spacing
 3. T = Pavement thickness
 4. Place no tie bar within 15" of a transverse joint.
 5. Shoulder widths are plan dependent see plan.
 6. Transverse joints are 15' typ see plan.
 7. Keyed joints placed as shown in plan.
 8. At all "T" joints core a full depth 2" diameter hole and fill the empty core hole with full depth Hot Poured Elastic Joint Sealant to $1/8"$ to $1/4"$ below top of PCC pavement.

Sawed & sealed longitudinal joints

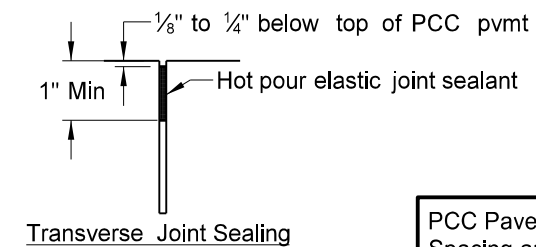
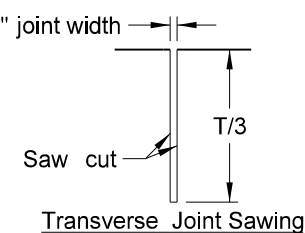
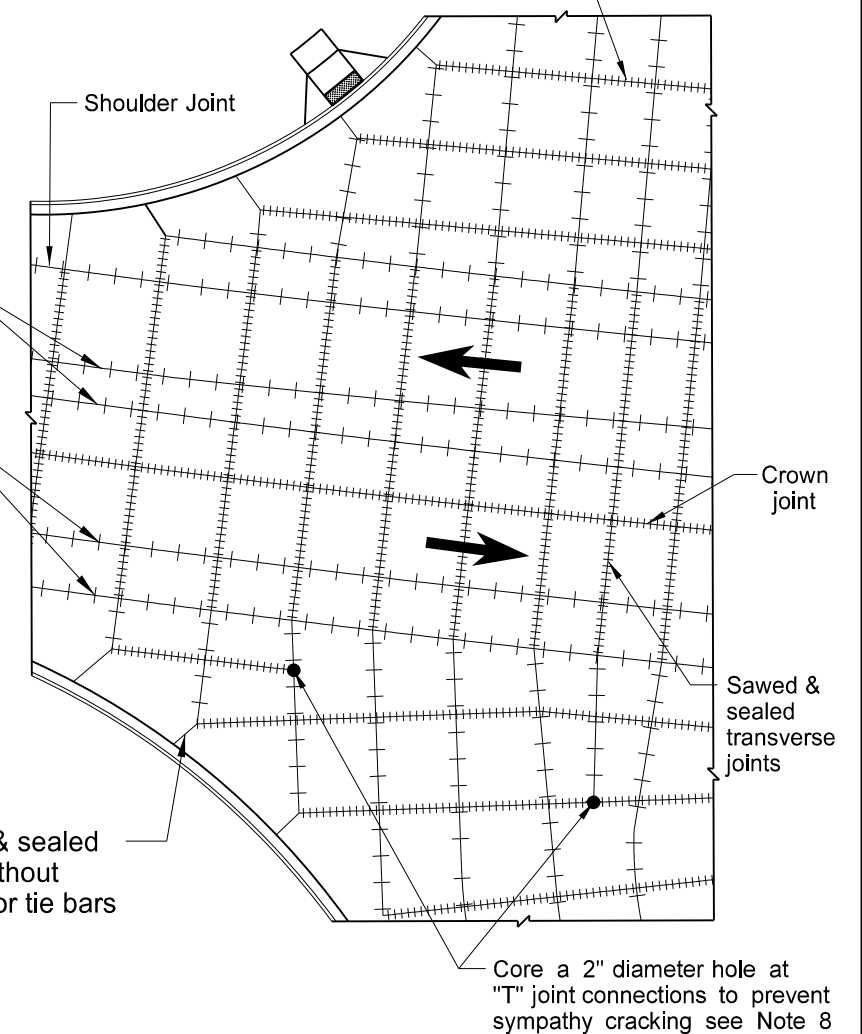
Deformed tie bars (Typ.)
(See table below for spacing, size, and length)

See Section 90 for Dimensions

Sawed & sealed joints without dowels or tie bars



Dowel bars @ 1'-0" c to c spacing (Typ.)



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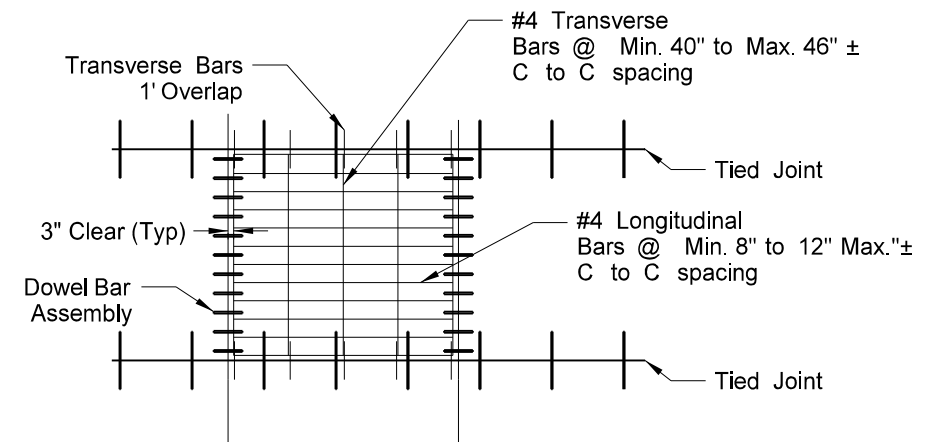
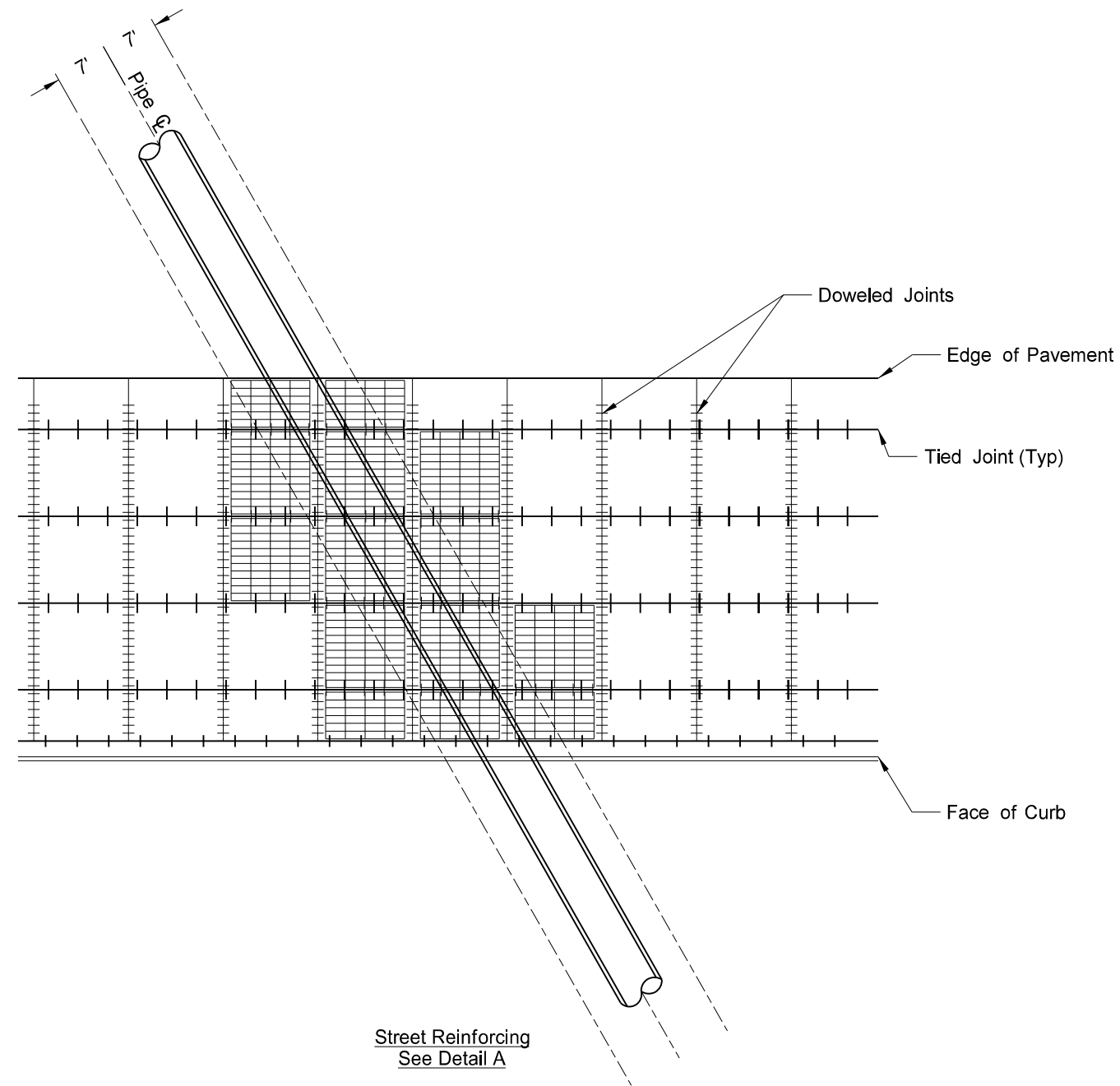
PCC Pavement - Perpendicular Joints @ 14' Nominal Spacing and Full Depth PCC Outside Shoulder Detail

PCC Pavement Construction

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	20	6



Detail A Reinforcing Layout

NOTES:

1. Place reinforcing steel above dowel bars and longitudinal centerline tie bars.
2. Provide a 1 foot minimum overlap of transverse reinforcing steel across the longitudinal tied joints.
3. Reinforce the complete panel if any part of the panel lies within 7 feet of the pipe centerline.
4. Include all costs to furnish and install the reinforcing steel as shown in the price bid for "9IN NON-REINF CONCRETE PVMT CL AE-DOWELED".

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Pavement Reinforcing at Pipe Locations Details

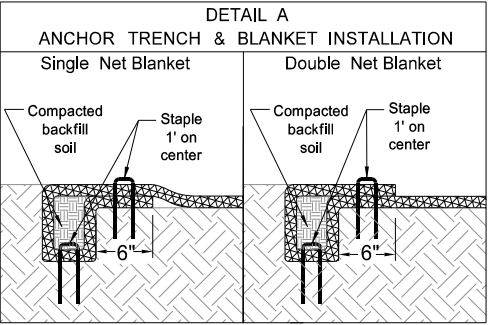
E Business LP 10th Ave E - Exit 64

Dickinson, ND

Erosion Control Blanket (ECB) Type 1			
Location		Pipe Diam (Inch)	Unit Quantity (SY)
Station	Offset		
28+35	27' Lt	18	22
28+53	33' Rt	18	22
28+69	27' Lt	18	22
28+92	33' Rt	18	22
80+71	53' Rt	18	22
83+72	21' Lt	18	22
85+02	27' Lt	18	22
372+07	77' Lt	30	27
372+70	65' Lt	15	20
373+56	72' Lt	24	24
374+12	72' Lt	24	24
375+94	63' Lt	24	24
384+47	66' Lt	18	22
385+10	65' Lt	18	22
385+79	58' Lt	15	20
387+60	47' Rt	15	20
389+40	62' Lt	18	22
390+21	62' Lt	18	22
398+05	45' Rt	18	22
399+71	50' Rt	18	22
404+05	74' Rt	15	20
404+52	55' Lt	15	20
407+68	55' Rt	15	20
409+41	62' Lt	18	22
409+84	58' Lt	15	20
410+24	64' Lt	42	31
410+40	46' Rt	15	20
410+44	55' Lt	15	20
411+15	52' Lt	15	20
411+42	47' Rt	15	20
411+75	45' Rt	15	20
412+00	52' Lt	15	20
412+77	46' Rt	24	24
413+64	61' Lt	Multiple	43
413+79	52' Rt	Multiple	38
414+17	63' Lt	Multiple	43
415+54	60' Lt	24	36
416+02	60' Lt	Multiple	43
416+20	41' Rt	15	20
418+24	60' Lt	24	36

Erosion Control Blanket (ECB) Type 1			
Location		Pipe Diam (Inch)	Unit Quantity (SY)
Station	Offset		
418+58	54' Rt	24	24
418+62	60' Lt	Multiple	43
419+78	53' Rt	Multiple	38
419+88	43' Rt	15	20
419+89	61' Lt	30	27
420+39	58' Lt	30	27
421+10	53' Rt	24	24
421+40	57' Lt	30	27
421+79	53' Rt	Multiple	38
421+85	58' Lt	30	27
423+01	52' Lt	15	20
424+12	59' Lt	18	22
424+58	58' Lt	18	22
426+95	59' Rt	24	24
434+63	57' Lt	18	22
435+19	57' Lt	18	22
435+49	52' Rt	18	22
438+05	40' Rt	15	20
438+38	53' Lt	15	20
438+45	77' Rt	18	22
438+50	60' Lt	24	24
439+05	63' Lt	24	24
439+09	78' Rt	18	22
440+18	64' Rt	24	24
442+50	53' Lt	15	20
442+63	63' Lt	24	24
442+70	40' Rt	15	20
444+17	58' Lt	24	24
445+60	49' Rt	15	20
445+93	56' Lt	24	24
446+97	68' Lt	Multiple	28
447+39	65' Lt	24	24
449+00	54' Rt	15	20
449+22	60' Lt	24	24
450+50	55' Rt	15	20
450+70	57' Lt	24	24
450+74	70' Rt	24	24
451+97	78' Rt	24	24
452+17	77' Lt	18	22
Total (SY's)			1928

Blanket Sizing				
DIA	X	Y	Surface area to be protected	ECB
In	Ft	Ft	SF	SY
12	9.0	16.0	144.0	16
15	9.0	20.0	176.0	20
18	9.5	20.7	190.7	22
21	9.5	21.0	190.9	22
24	10.5	21.6	214.1	24
27	11.0	22.0	226.3	25
30	11.6	22.5	241.5	27
36	12.7	23.3	268.8	30
42	13.3	23.3	279.7	31
48	13.8	24.0	293.2	33
54	14.5	23.4	300.6	34
60	15.0	23.0	307.5	35
66	15.6	24.0	325.6	37
72	16.2	24.5	340.6	38

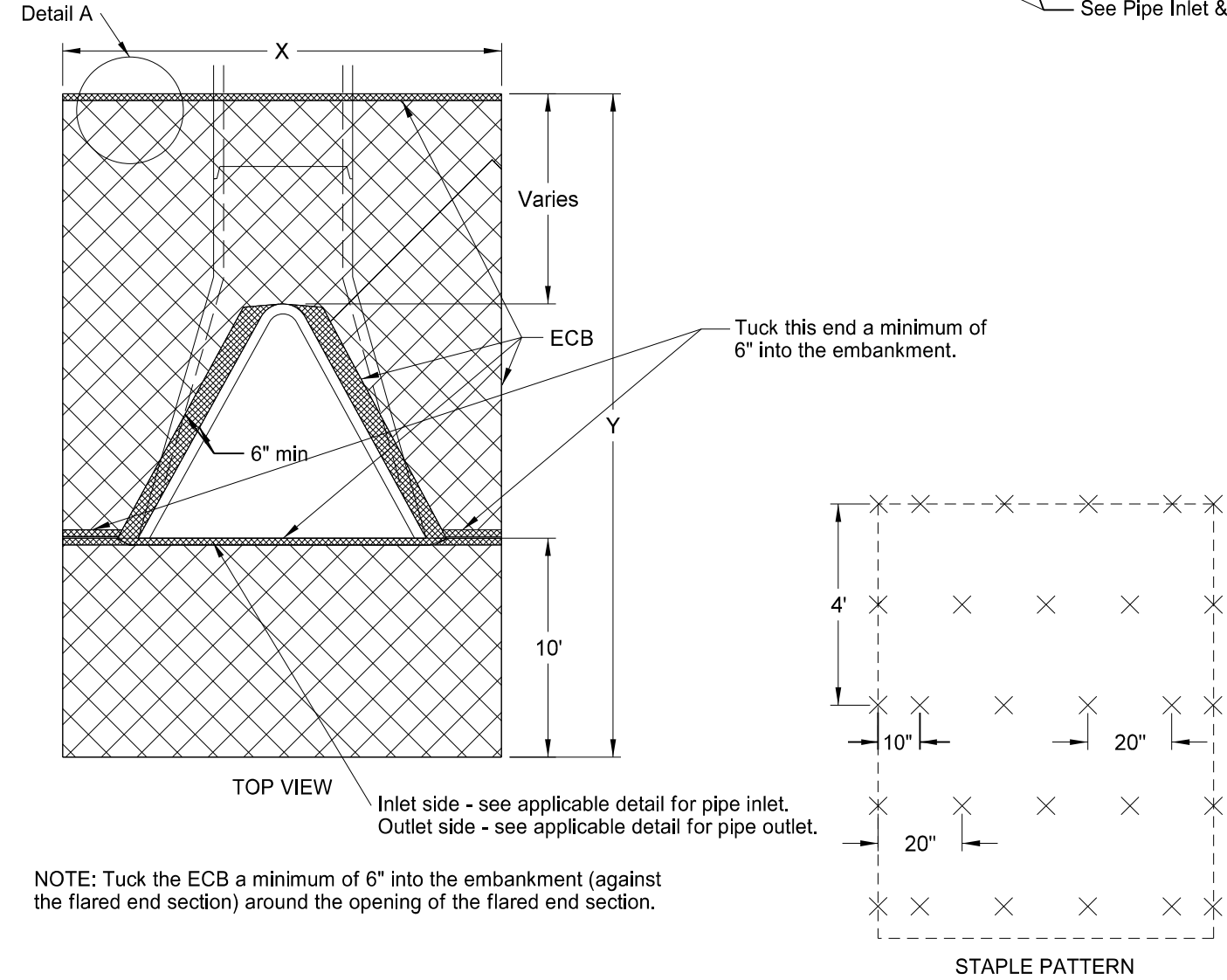
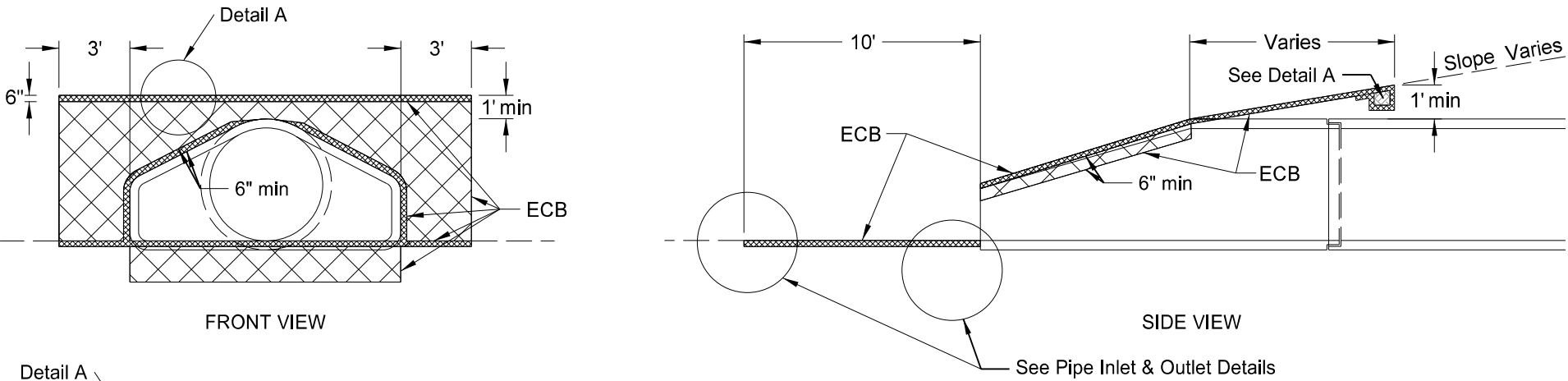


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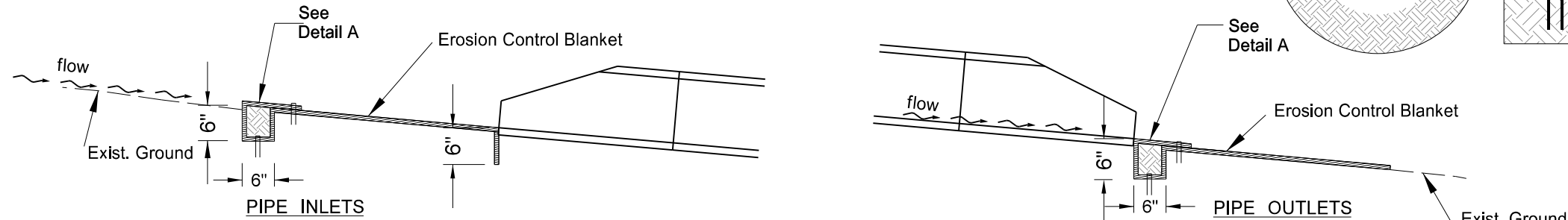
Erosion Control at Culvert Flared End Sections

E Business LP 10th Ave E - Exit 64

Dickinson, ND



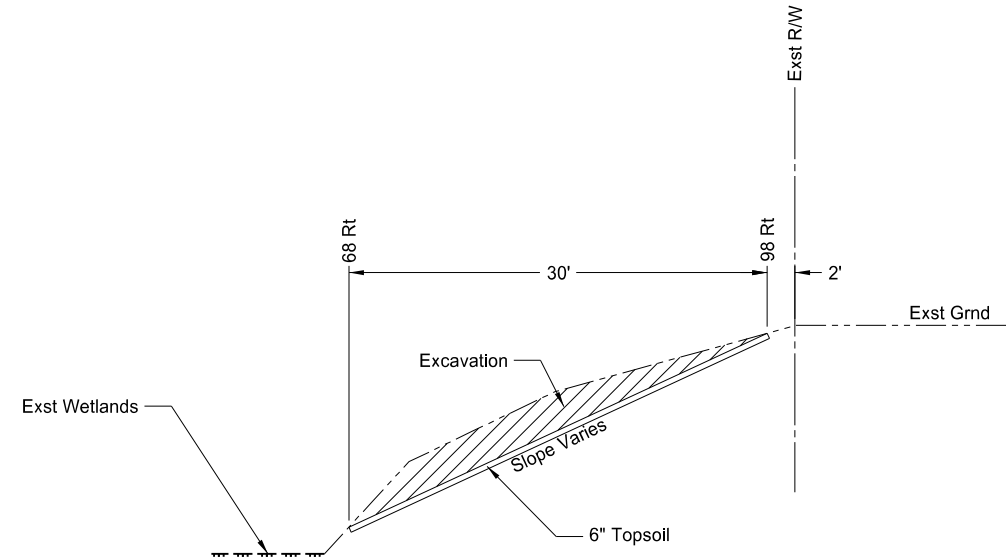
NOTE: Tuck the ECB a minimum of 6" into the embankment (against the flared end section) around the opening of the flared end section.



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	20	8



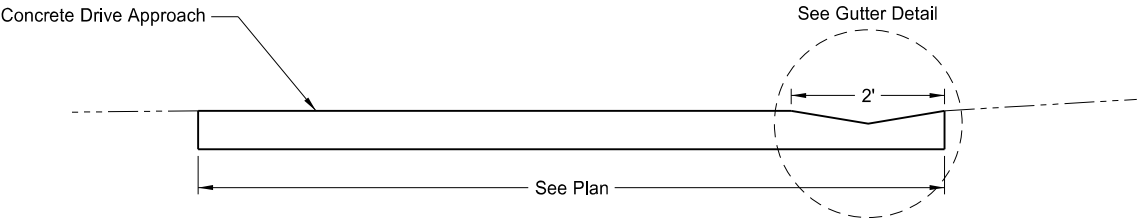
Plan



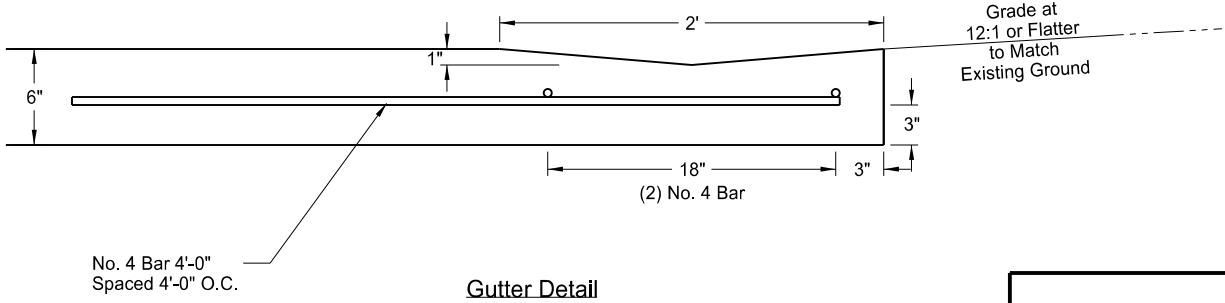
Section A - A
N.T.S.

- Notes:
- Excavate encroaching embankment between Sta. 411+50 Rt and 412+80 Rt per detail.
 - Perform all work from within Exst R/W.
 - Estimated Volume:
- | | | |
|----------------------------|-----|----|
| Common Excavation - Type A | 250 | CY |
| Topsoil | 73 | CY |

Slope Grading Detail
Sta. 411+50 to Sta. 412+80



Drive Approach Section
N.T.S.



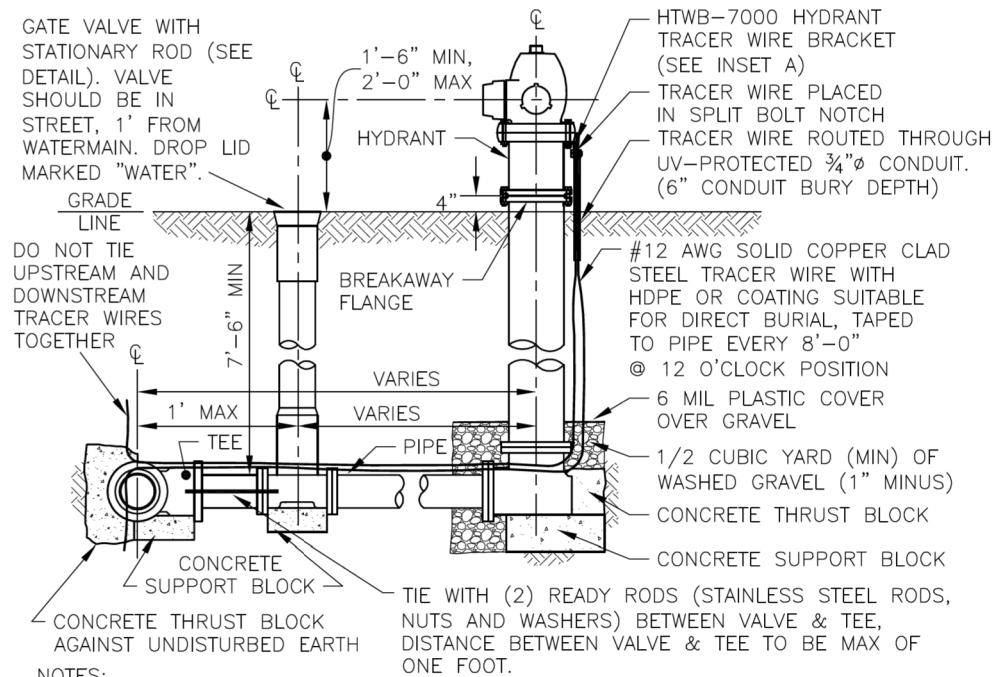
Formed Valley Gutter Detail
Sta. 443+40 Lt

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Slope Grading & Formed Valley Gutter Details

E Business LP 10th Ave E - Exit 64

Dickinson, ND



NOTES:

1. IF FLANGE-TO-FLANGE INSTALLATION IS NOT USED, THEN STAINLESS STEEL READY RODS, NUTS AND WASHERS SHALL BE USED BETWEEN THE TEE & VALVE.
2. VALVE BOXES ON HYDRANT LEADS SHALL HAVE DROP LIDS MARKED "WATER".
3. 3/4"Ø TRACER WIRE CONDUIT SHALL BE UV RESISTANT.



HTWB-7000 HYDRANT TRACER WIRE BRACKET MANUFACTURED BY VAIT PRODUCTS (OR APPROVED EQUAL) AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS

INSET A

City Detail No.:
C5.02
Last Revision:
11/2017
Scale:
None

STANDARD DRAWINGS

HYDRANT WITH GATE VALVE - STANDARD

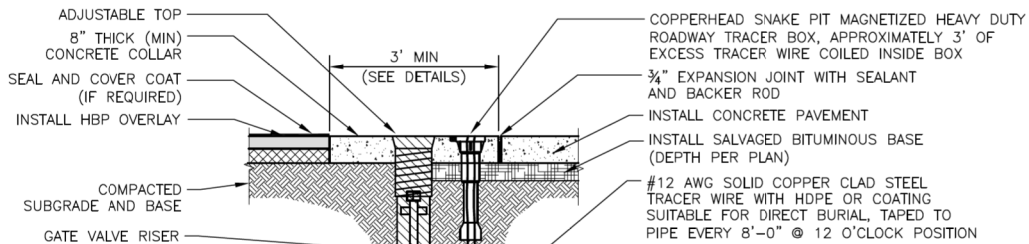


City Detail No.:
C2.23
Last Revision:
3/2017
Scale:
None

STANDARD DRAWINGS
GATE VALVE ADJUSTMENT



GENERAL NOTE:
TRACER BOX AND
TRACER WIRE FOR NEW
CONSTRUCTION ONLY.



NOTES: (FOR ASPHALT SURFACES ONLY)

1. THE ADJUSTABLE RISER ON EXISTING GATE VALVES SHALL BE LOWERED TO ALLOW FOR PAVEMENT MILLING.
2. UPON COMPLETION OF THE HBP SURFACING, THE CONTRACTOR SHALL REMOVE THE NEW AND EXISTING PAVEMENT AS REQUIRED TO ADJUST THE EXISTING GATE VALVE RISER AND INSTALL THE ADJACENT CONCRETE SLAB. THE 8" x 3' x 3' CONCRETE SLAB AND RISER SHALL BE 3/16" LOWER THAN THE ADJACENT HBP SURFACE. METAL ADJUSTING RINGS WILL NOT BE ALLOWED.
3. THE CONCRETE BORDERING THE GATE VALVE RISERS SHALL BE CLASS AE-3 HIGH EARLY CONCRETE AND JOINTED AS DETAILED ON THE GATE VALVE ADJUSTMENT PLAN DETAIL.
4. THE CONCRETE BORDERING THE GATE VALVE SHALL BE CUT DIAMOND SHAPED WITH THE DIRECTION OF TRAFFIC FLOW.

NOTES: (FOR CONCRETE PAVEMENT ONLY)

1. THE ADJUSTABLE RISER ON EXISTING GATE VALVES SHALL BE LOWERED TO ALLOW FOR PAVEMENT MILLING AND/OR REMOVAL.
2. ADJUSTMENT OF EXISTING GATE VALVE RISERS SHALL BE DONE IN CONJUNCTION WITH THE NEW CONCRETE PAVEMENT INSTALLATION. METAL ADJUSTING RINGS WILL NOT BE ALLOWED.
3. THE 3' DIA. x 8" CONCRETE SEAL AND GATE VALVE RISER SHALL BE INSTALLED 3/16" LOWER THAN THE ADJACENT ROADWAY SURFACE.
4. THE CONCRETE BORDERING THE GATE VALVE RISERS SHALL BE CLASS AE-3 HIGH EARLY CONCRETE AND JOINTED AS DETAILED ON THE GATE VALVE ADJUSTMENT PLAN DETAIL.

①

Notes:

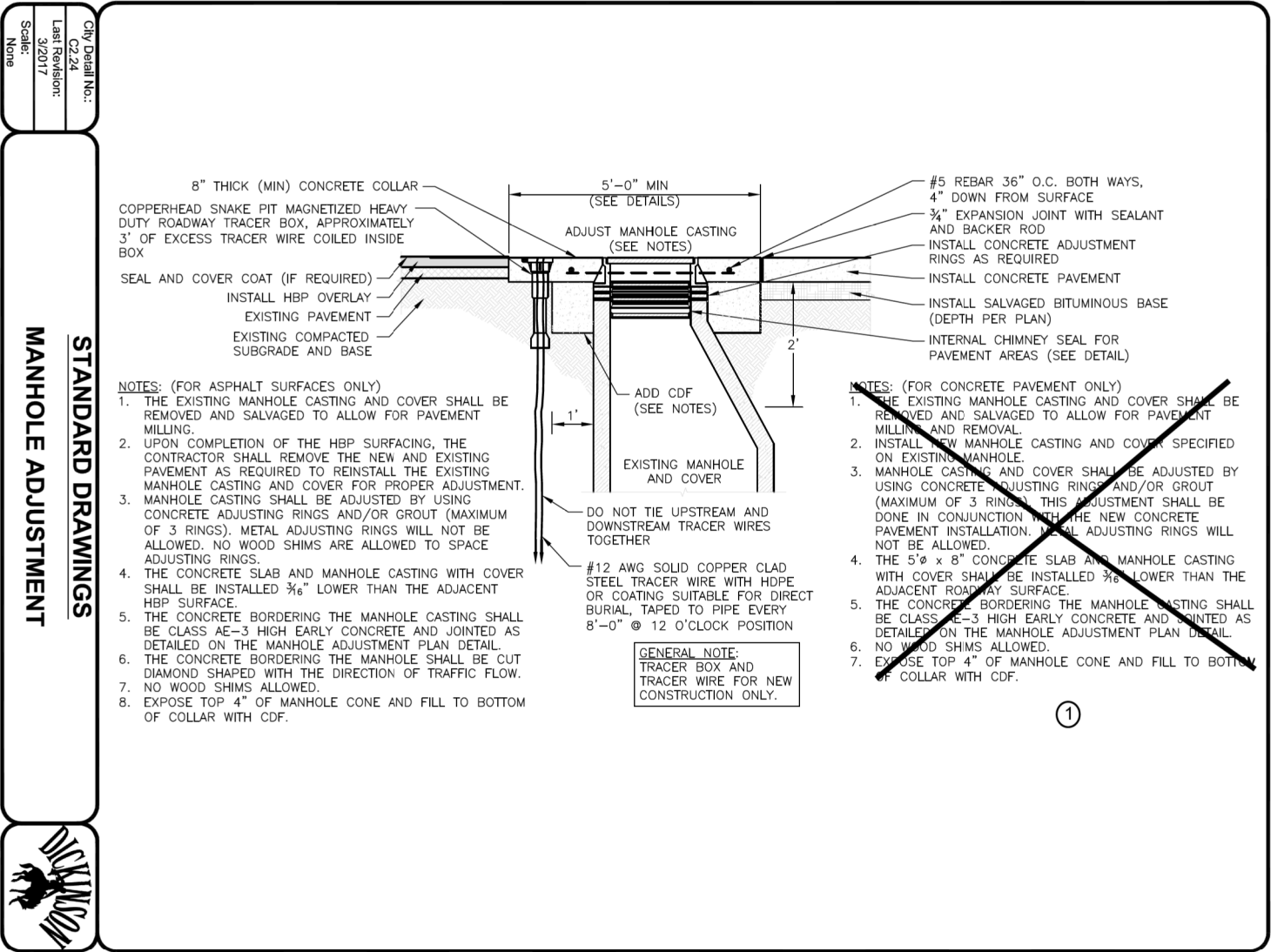
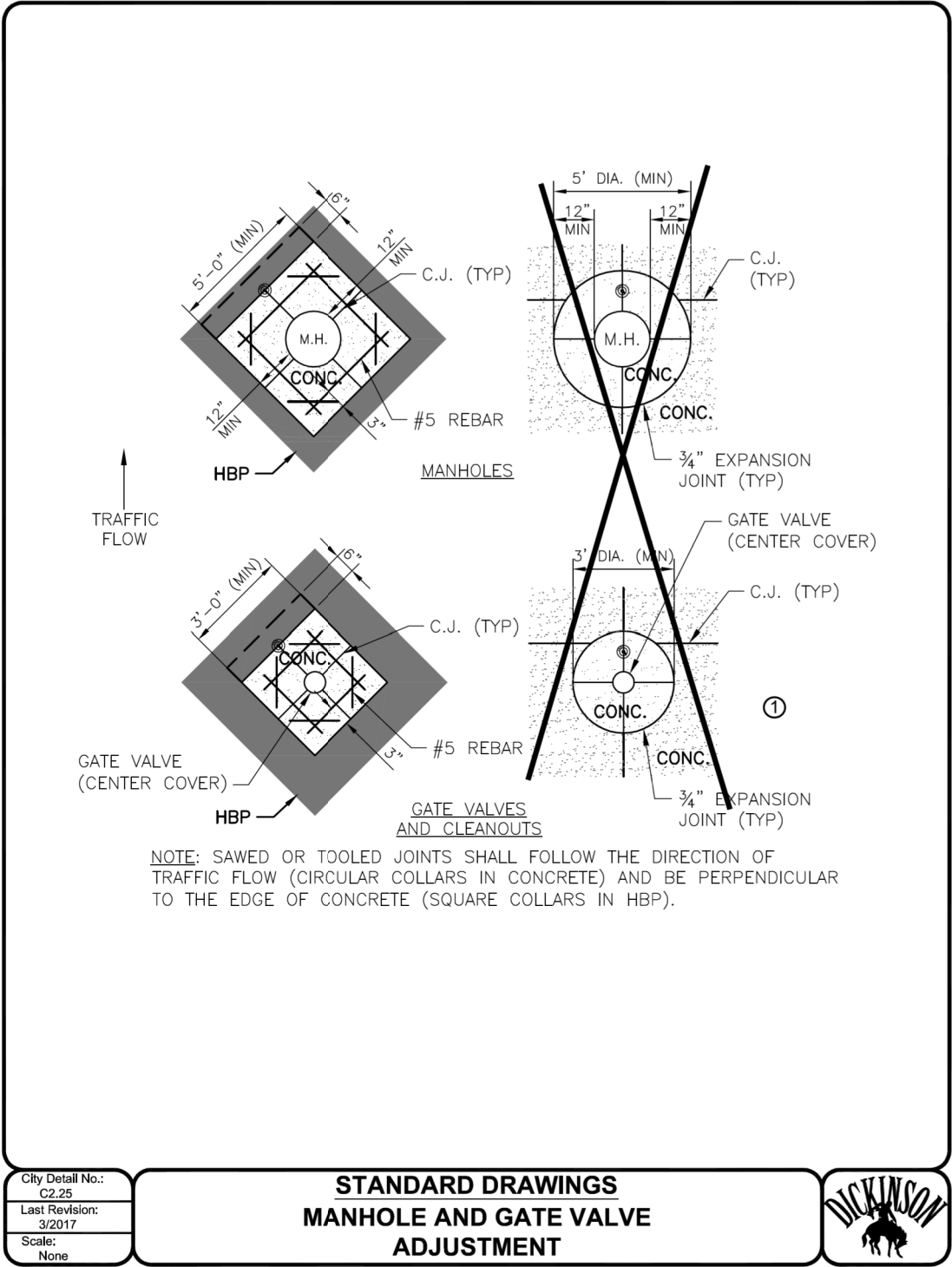
- ① Utilize concrete collar details from City of Dickinson only in areas of HMA(HBP) paving or topsoil.

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City of Dickinson Standard Drawings

E Business LP 10th Ave E - Exit 64

Dickinson, ND



Notes:

- ① Utilize concrete collar details from City of Dickinson only in areas of HMA(HBP) paving or topsoil.

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City of Dickinson Standard Drawings

E Business LP 10th Ave E - Exit 64

Dickinson, ND

City Detail No.:
CS.06
Last Revision:
3/2017
Scale:
None

STANDARD DRAWINGS
THRUST BLOCKING



① THRU LINE CONNECTION, WYE

② THRU LINE CONNECTION, CROSS USED AS TEE

③ DIRECTION CHANGE, TEE USED AS ELBOW

④ DIRECTION CHANGE, ELBOW

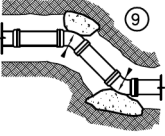
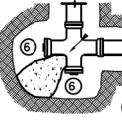
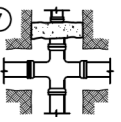
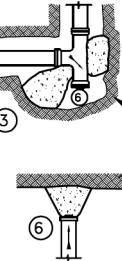
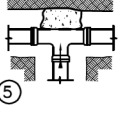
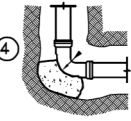
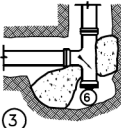
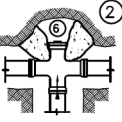
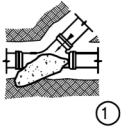
⑤ THRU LINE CONNECTION, TEE

⑥ BLOCKING OF PLUG, TO INCLUDE BOND BREAKER

⑦ CHANGE LINE SIZE, REDUCER

⑧ DIRECTION CHANGE, CROSS USED AS ELBOW

⑨ DIRECTION CHANGE, BEND



REPRESENTS
UNDISTURBED
GROUND

MINIMUM BEARING SURFACE AREA (SQ. FT.)					
SIZE OF MAIN	HORIZONTAL BENDS				TEE OR DEAD END PLUG
	11.25'	22.5'	45'	90'	
4"	0.00	1.00	1.00	2.50	1.50
6"	0.00	1.25	2.25	5.00	3.00
8"	0.00	2.00	4.00	8.00	5.25
12"	2.25	4.50	8.75	16.25	11.25
16"	3.75	7.50	14.50	24.00	19.00
20"	5.00	10.00	19.50	35.50	25.00
24"	7.00	14.00	27.75	51.00	36.00

NOTES:
1. BLOCKING NOT SHOWN MUST BE APPROVED BY ENGINEER.
2. BEARING SURFACE AREAS SHOWN IN THE TABLE ARE MINIMUMS.
3. BASED ON 150 PSI INTERNAL PIPE PRESSURE PLUS WATER HAMMER: 4", 6", 8" AND 12" WATER HAMMER=110 PSI; 16", 20" AND 24" WATER HAMMER=70 PSI.
4. TABLE VALUES BASED ON 3,000 PSF SOIL BEARING CAPACITY.
5. ALL FITTINGS AND COUPLINGS SHALL BE SET ON A CONCRETE BLOCK ALONG WITH THE THRUST BLOCKING AS SHOWN.
6. CONCRETE FOR THRUST BLOCKING TO CONFORM TO SPECIFICATION SECTION 03 3000.

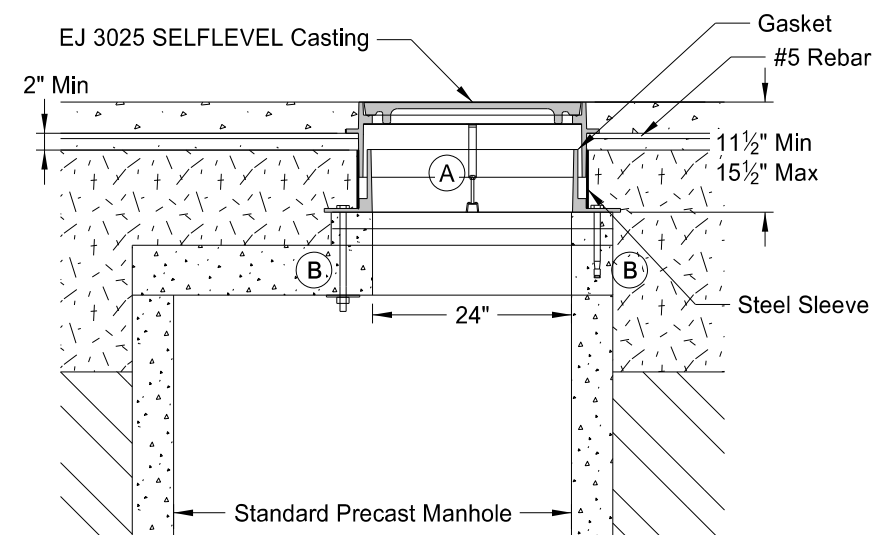
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City of Dickinson Standard Drawings

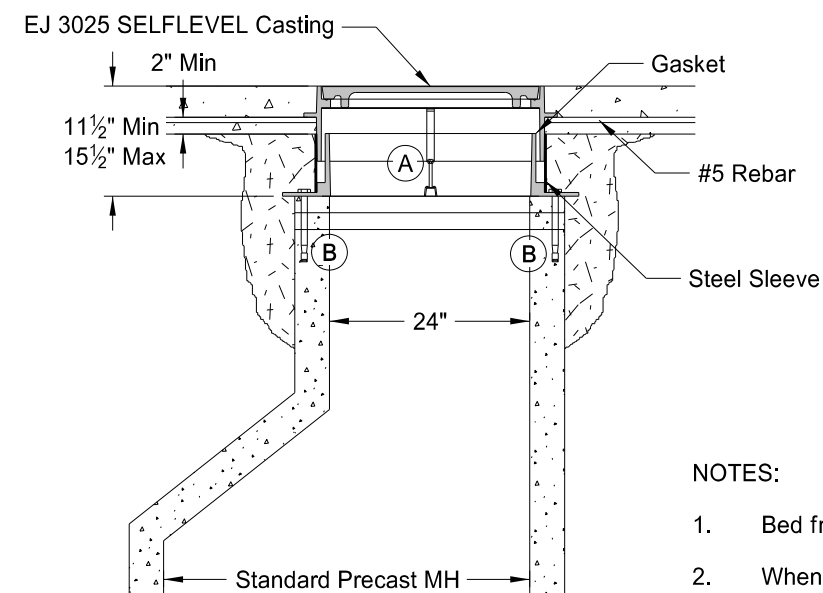
E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	20	12

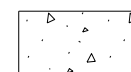


ELEVATION VIEW OF CONNECTION TO
STANDARD PRECAST MANHOLE - TYPICAL

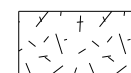


ELEVATION VIEW OF CONNECTION TO
CONICAL MANHOLE - TYPICAL

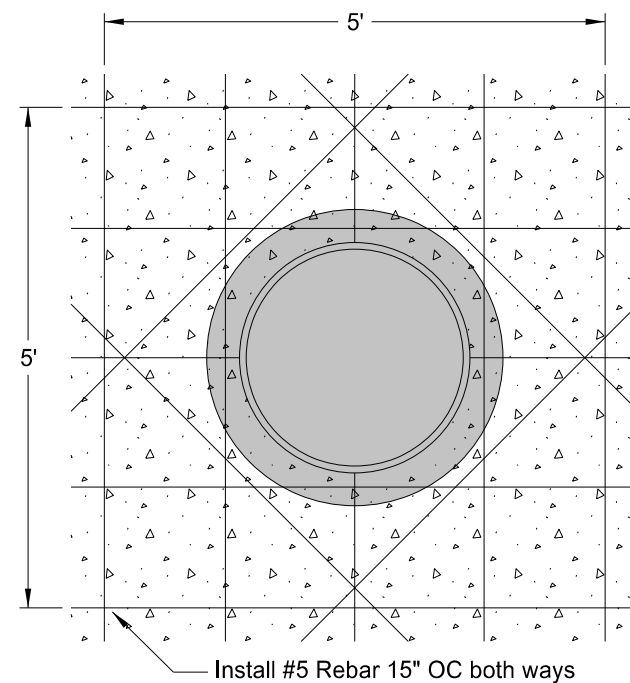
KEY:



Portland Cement Concrete Pavement



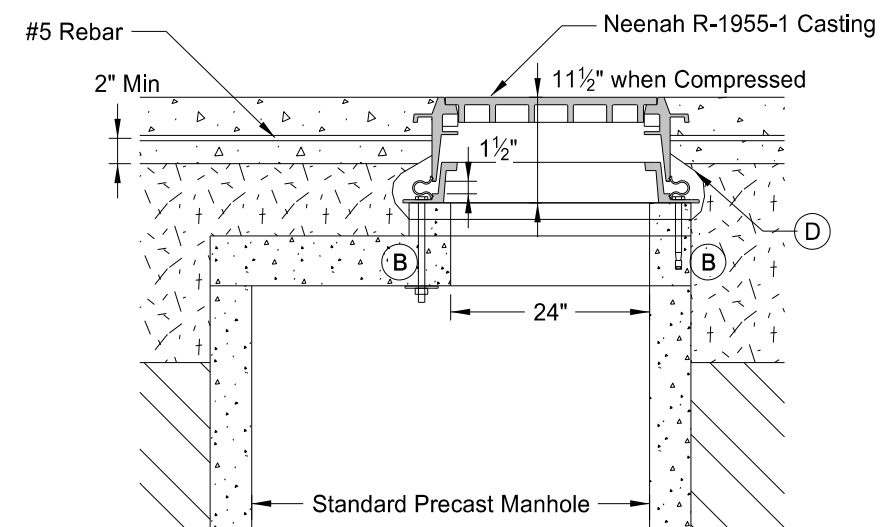
Granular Backfill



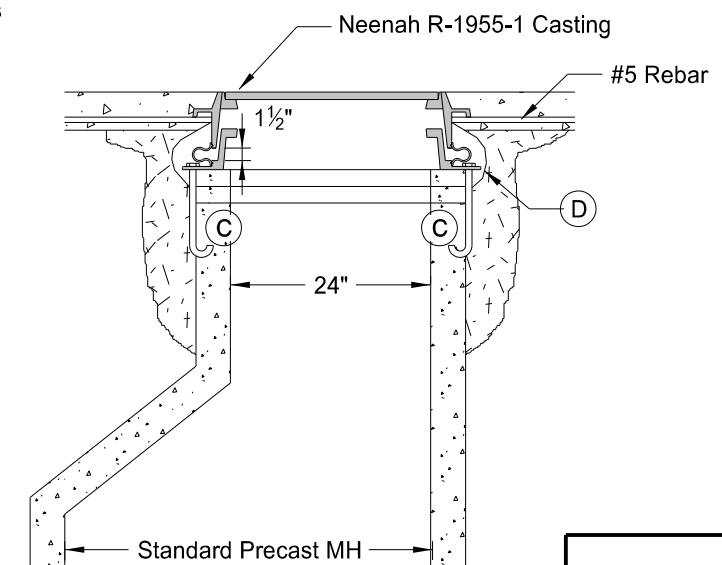
REBAR LAYOUT

NOTES:

1. Bed frame in mortar, install precast two-inch rings, and plaster inside and out with mortar.
 2. When installing an existing box out, drill 20" - #5 rebar into existing pavement 6" deep - 15" OC.
 3. The length of anchor bolts varies with the number of adjusting rings.
 4. Include installation costs at existing locations in the unit price bid for "MANHOLE CASTING."
 5. Include installation costs at new manhole locations in the unit price bid for "MANHOLE _IN."
- (A) (3) 6" full thread adjusting bolt and bracket (To be removed after concrete cures.)
- (B) Provide 3/4" diameter stainless steel bolts, nut assemblies, and 1/2"x4"x4" plates to extend through the manhole cover, or provide anchor bolts to extend a minimum of 4" into the MH cover. Provide 4 bolts per casting.
- (C) Provide 3/4" diameter stainless steel bolts with nuts to extend 5" below the adjusting rings. Provide 4 bolts per casting.
- (D) Wrap and tape 6 mil polyethelene on casting above the rubber gasket and tape to adjusting rings below the gasket.



ELEVATION VIEW OF CONNECTION TO
STANDARD PRECAST MANHOLE - TYPICAL



ELEVATION VIEW OF CONNECTION TO
CONICAL MANHOLE - TYPICAL

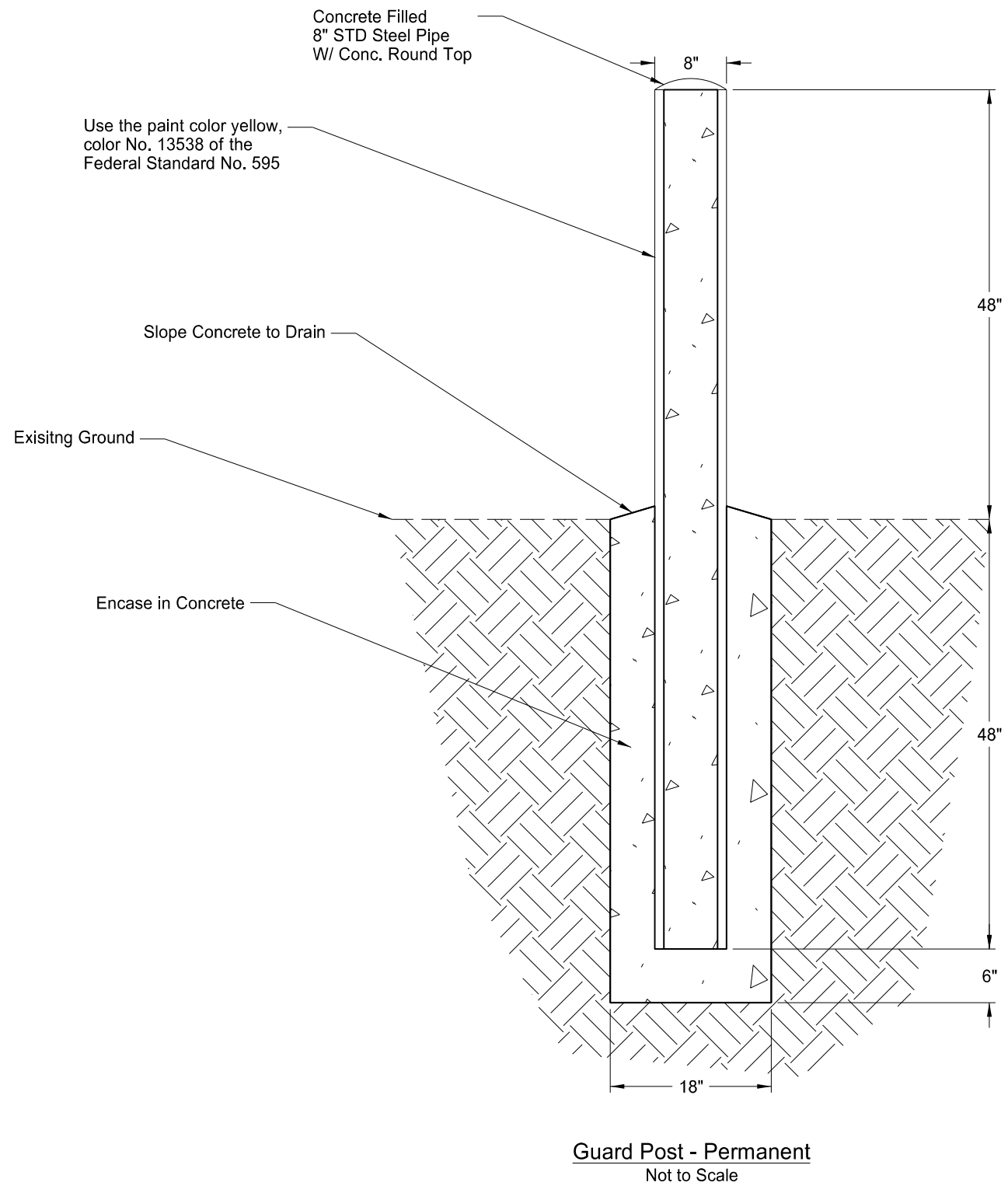
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Floating Manhole Details

E Business LP 10th Ave E - Exit 64

Dickinson, ND

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	ND	NHU-5-094(114)907	20	13



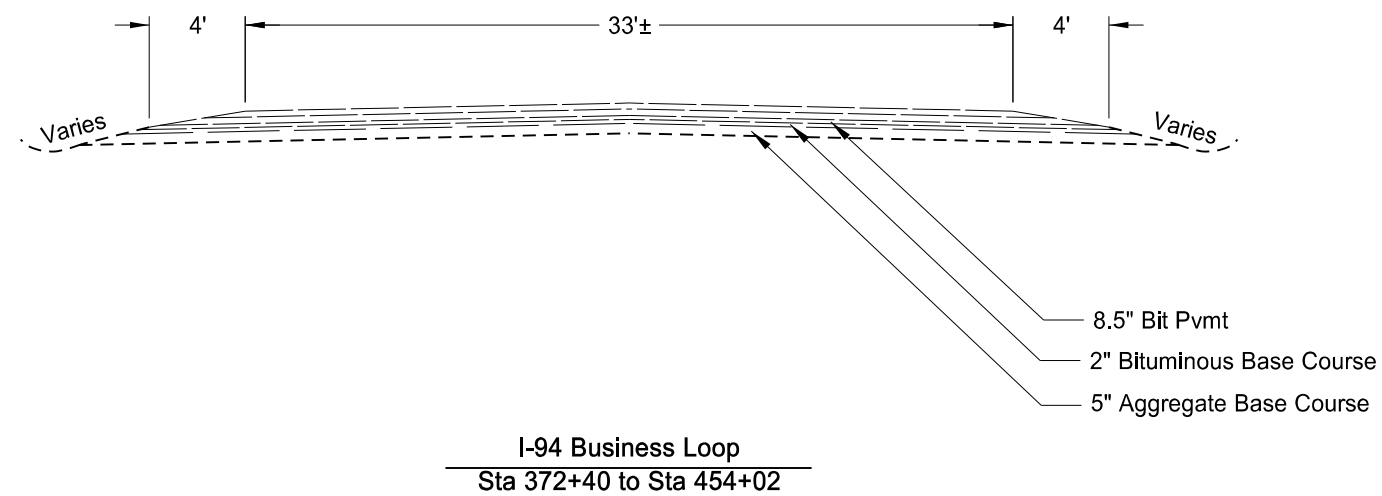
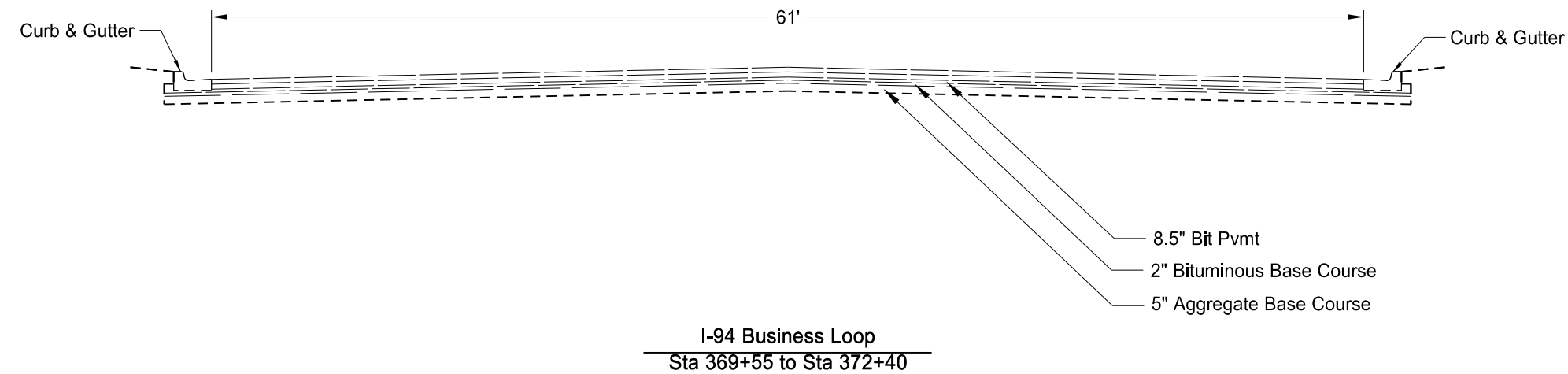
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Guard Post - Permanent Detail

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	30	1



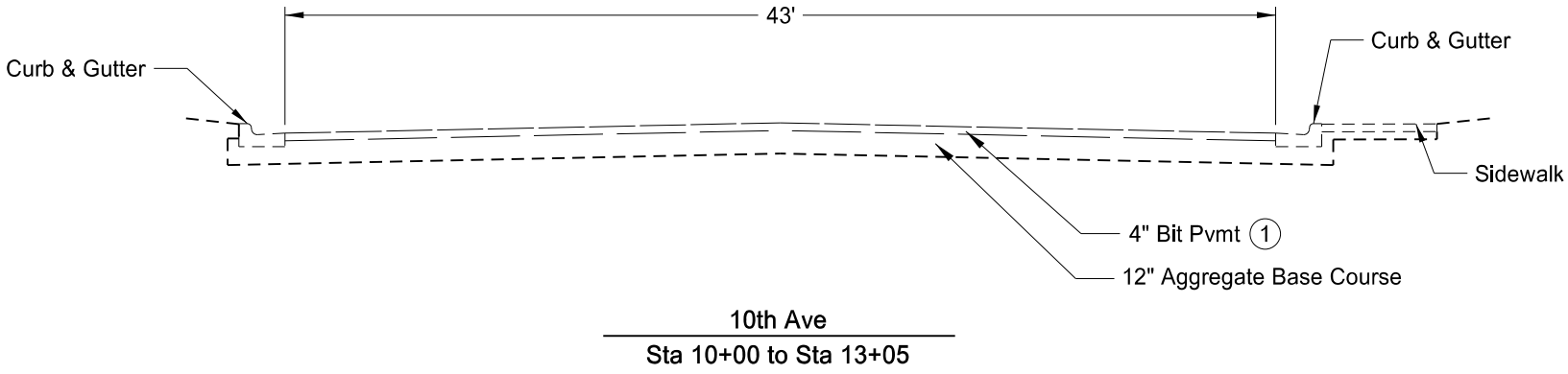
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Existing Typical Sections

E Business LP 10th Ave E - Exit 64

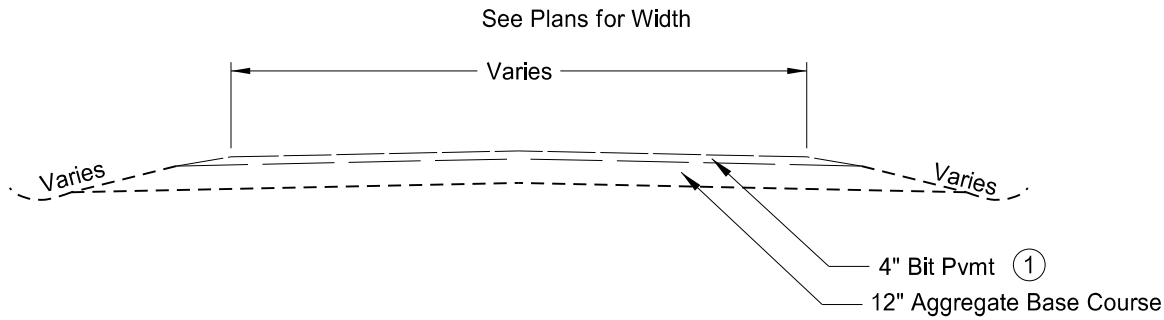
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	30	2

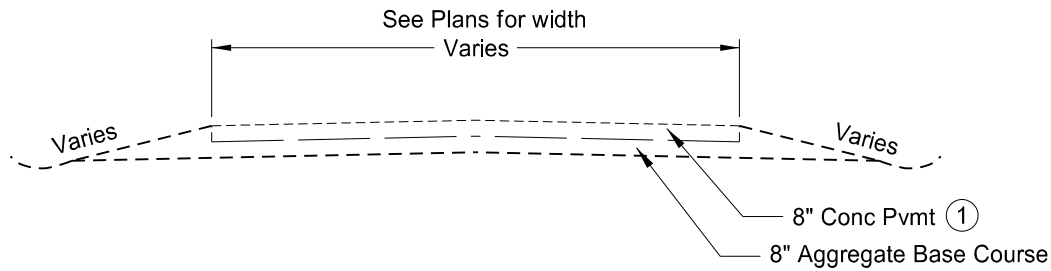


Notes:

① Existing pavement depth values are approximations and may vary.



Other Roadways
E Villard St - Sta 372+00 30' Rt to Sta 377+00 140' Rt (Existing Location)
18th Ave E - Sta 399+33 Lt
25th Ave E - Sta 428+06 Rt and Lt
Energy Dr -Sta 451+58 Rt



Minor Intersection
29th Ave E - 448+35 Lt

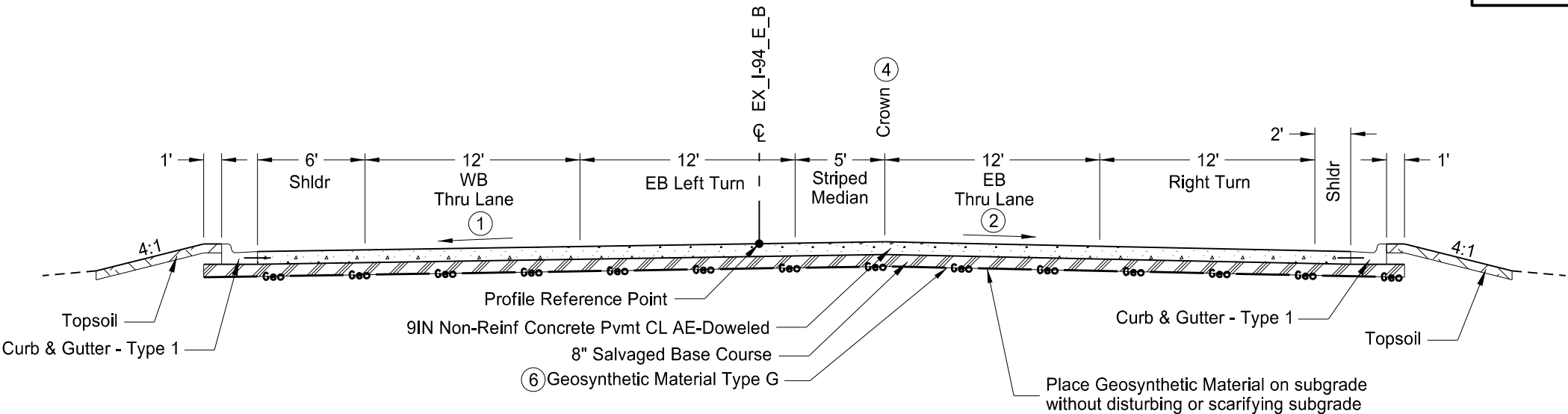
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Existing Typical Sections

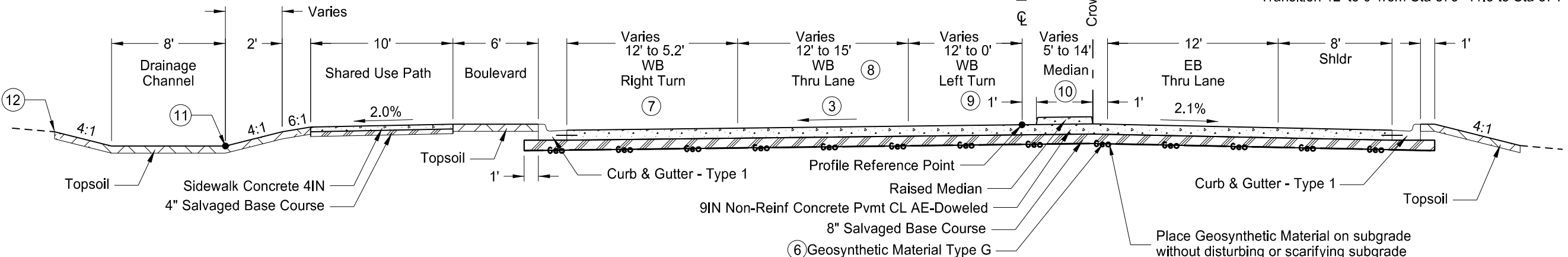
E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	30	3



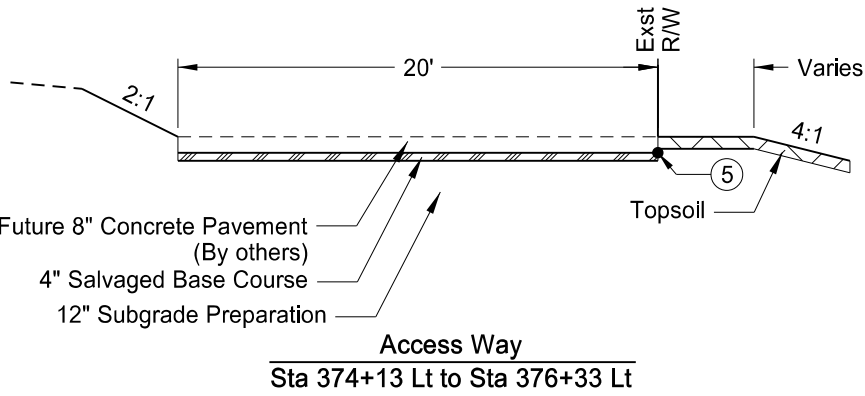
I-94 Business Loop
Sta 369+75 to Sta 372+00



I-94 Business Loop
Sta 372+00 to Sta 375+54.5

Notes:

- 10 5' from Sta 372+00 to Sta 373+41.3
Transition 5' to 14' from Sta 373+41.3 to Sta 374+69.9
14' from Sta 374+69.9 to Sta 375+54.5.
- 11 See Section 11 for drainage channel elevation information.
- 12 See Access Way typical section, this sheet, for Sta 374+13 to Sta 375+54.5.



Access Way
Sta 374+13 Lt to Sta 376+33 Lt

Notes:

- 1 Transition from 2.1% at Sta 369+75 Lt to 1.1% at Sta 370+40 Lt.
- 2 Transition from superelevated +2.1% at Sta 369+75 Rt to normal crown -2.1% at Sta 371+00 Rt.
- 3 Transition from 1.1% at Sta 372+45 Lt to 2.1% at Sta 373+10 Lt.
- 4 Crown transitions from 7' Rt at Sta 370+76.8 to 6' Rt at Sta 372+22.4.
- 5 See Section 11 for grading data.
- 6 Geosynthetic Material Type G to be placed in area of existing roadway. Place entire 8 inches of base upon Geosynthetic Material prior to compacting base material. Width varies.
- 7 12' from Sta 372+00 to Sta 374+69.9
Transition 12' to 5.2' from Sta 374+69.9 to Sta 375+54.5.
- 8 12' from Sta 372+00 to Sta 373+41.3
Transition 12' to 15' from Sta 373+41.3 to Sta 374+69.9
Transition 15' to 14.8' from Sta 374+69.9 to Sta 375+54.5.
- 9 12' from Sta 372+00 to Sta 373+41.3
Transition 12' to 0' from Sta 373+41.3 to Sta 374+69.9.

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Proposed Typical Sections

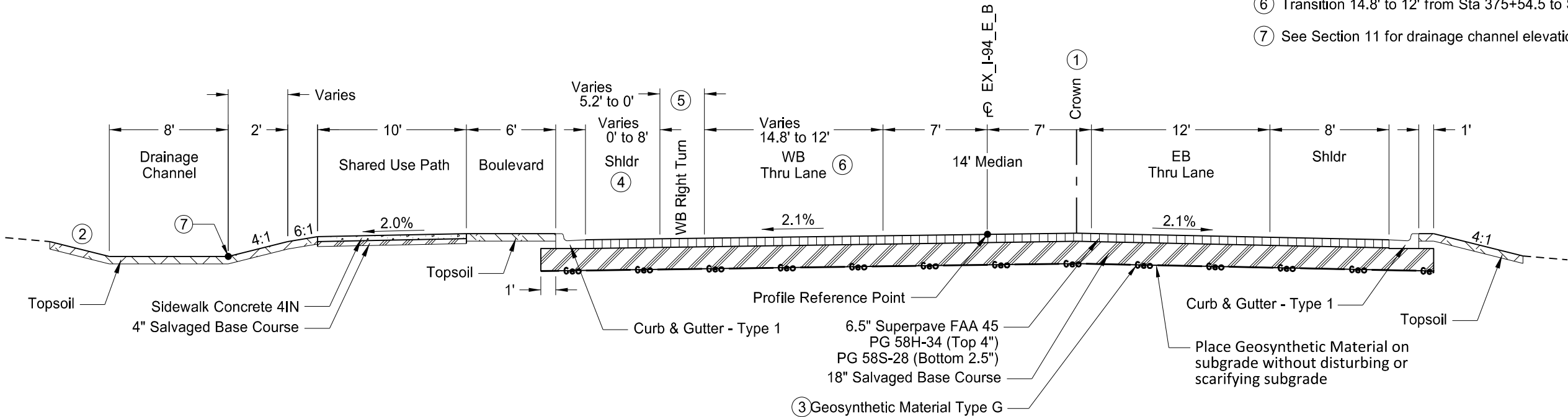
E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	30	4

Notes:

- ① Crown transitions from 6' Rt at Sta 375+54.5 to 0' Rt at Sta 377+00
- ② See Access Way typical section on Section 30, Sheet 3 for Sta 375+54.5 to Sta 376+33.
- ③ Geosynthetic Material Type G to be placed in area of existing roadway. Place 10 inches of base upon Geosynthetic Material prior to compacting base material.
- ④ Transition 0' to 8' from Sta 375+54.5 to Sta 376+51.0
8' from Sta 376+51.0 to Sta 377+00
- ⑤ Transition 5.2' to 0' from Sta 375+54.5 to Sta 376+51.0
- ⑥ Transition 14.8' to 12' from Sta 375+54.5 to Sta 376+51.0
- ⑦ See Section 11 for drainage channel elevation information



I-94 Business Loop
Sta 375+54.5 to Sta 377+00

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Proposed Typical Sections

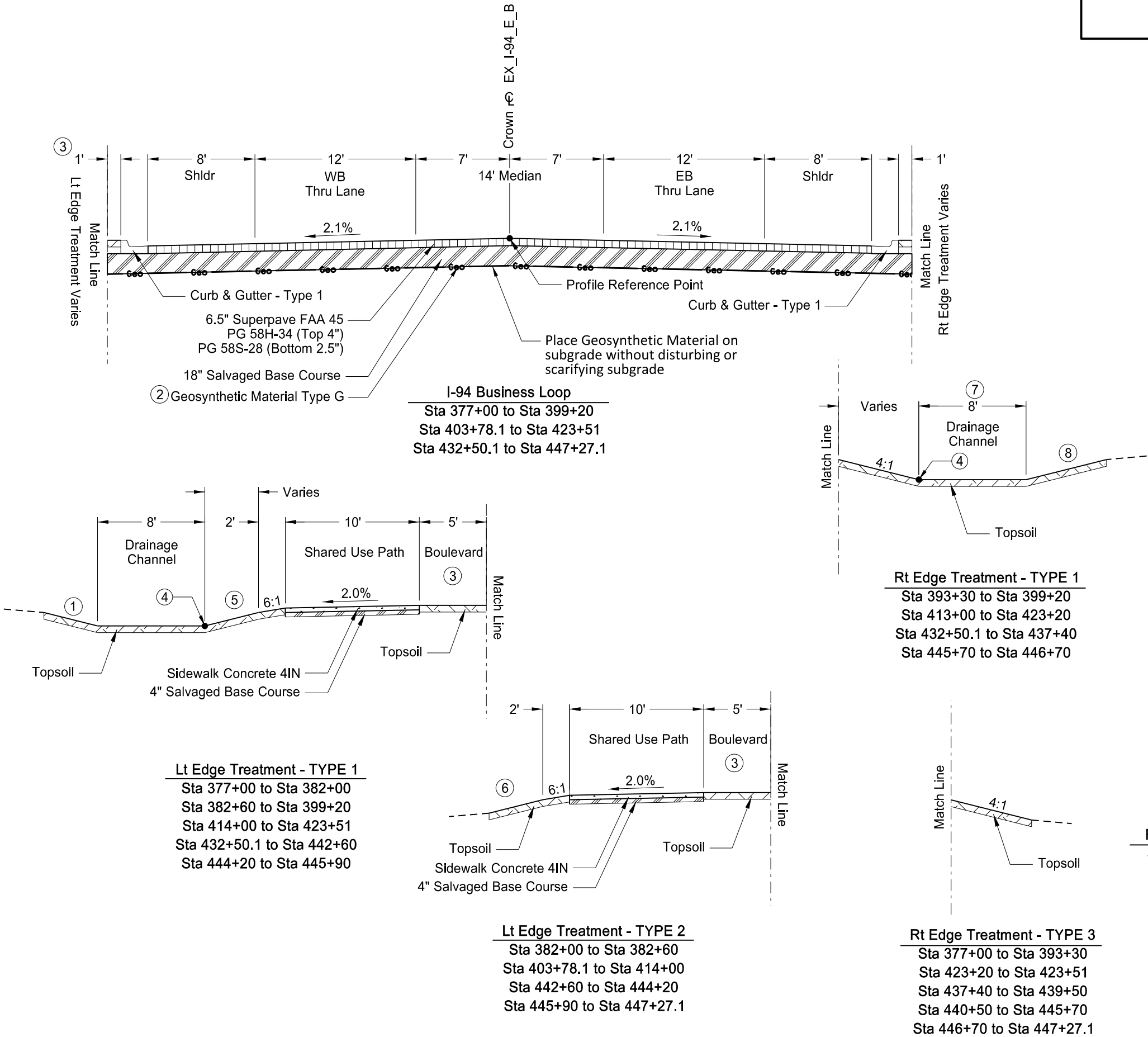
E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	30	5

Notes:

- ① 4:1 slope unless noted otherwise
3:1 from Sta 378+40 to Sta 380+10
3:1 from Sta 381+30 to Sta 381+60
Flat from Sta 385+10 to Sta 387+00
3:1 from Sta 390+00 to Sta 392+50
3:1 from Sta 420+00 to Sta 424+51
3:1 from Sta 439+80 to Sta 442+60
3:1 from Sta 445+10 to Sta 445+90
- ② Geosynthetic Material Type G to be placed in area of existing roadway. Place 10 inches of base upon Geosynthetic Material prior to compacting base material.
- ③ Total Boulevard width is 6'
- ④ See Section 11 for drainage channel elevation information
- ⑤ 4:1 slope unless noted otherwise
3:1 from Sta 420+00 to Sta 423+51
- ⑥ 4:1 slope unless noted otherwise
3:1 from Sta 403+78.1 to Sta 414+00
- ⑦ 8' wide unless noted otherwise
20' wide from Sta 445+70 to Sta 446+70
- ⑧ 4:1 slope unless noted otherwise
Flat from Sta 393+30 to Sta 396+40



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Proposed Typical Sections

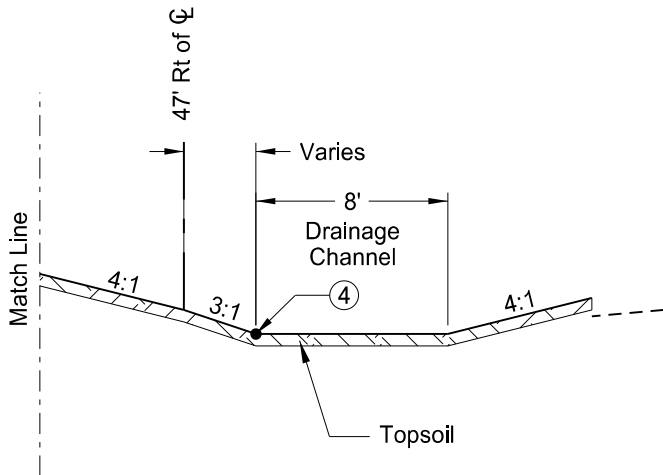
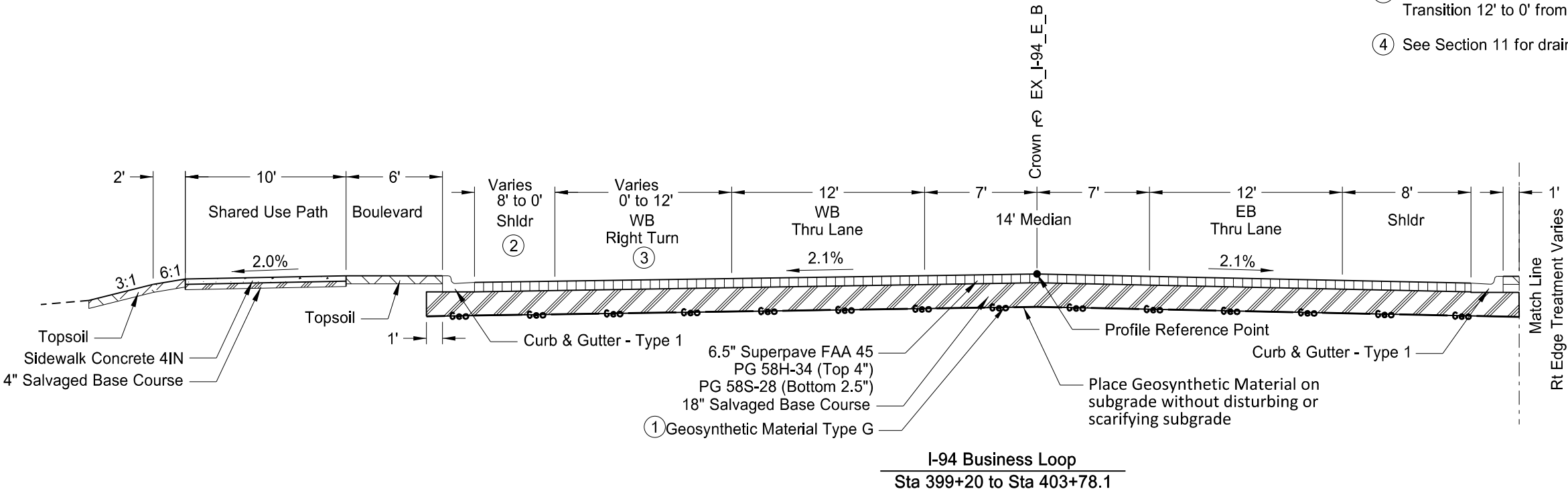
E Business LP 10th Ave E - Exit 64

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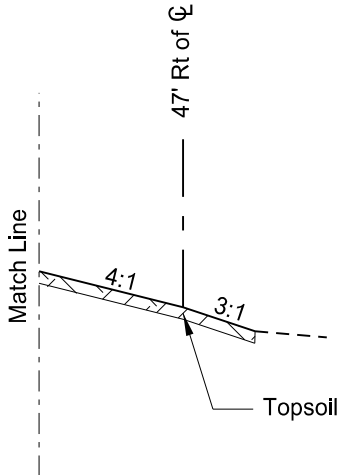
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	30	6

Notes:

- ① Geosynthetic Material Type G to be placed in area of existing roadway. Place 10 inches of base upon Geosynthetic Material prior to compacting base material.
- ② 0' from Sta 400+00 to St. 402+82.1
Transition 0' to 8' from Sta 402+82.1 to Sta 403+78.1
- ③ 12' from Sta 400+00 to Sta 402+34.1
Transition 12' to 0' from Sta 402+34.1 to Sta 403+78.1
- ④ See Section 11 for drainage channel elevation information



Rt Edge Treatment - TYPE 2
Sta 399+20 to Sta 400+53



Rt Edge Treatment - TYPE 3
Sta 400+53 to Sta 403+78.1

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Proposed Typical Sections

E Business LP 10th Ave E - Exit 64

Dickinson, ND

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	ND	NHU-5-094(114)907	30	7

Notes:

- ① See Section 11 for drainage channel elevation information

② 4:1 slope unless noted otherwise
Flat from Sta 430+00 to Sta 432+50.1

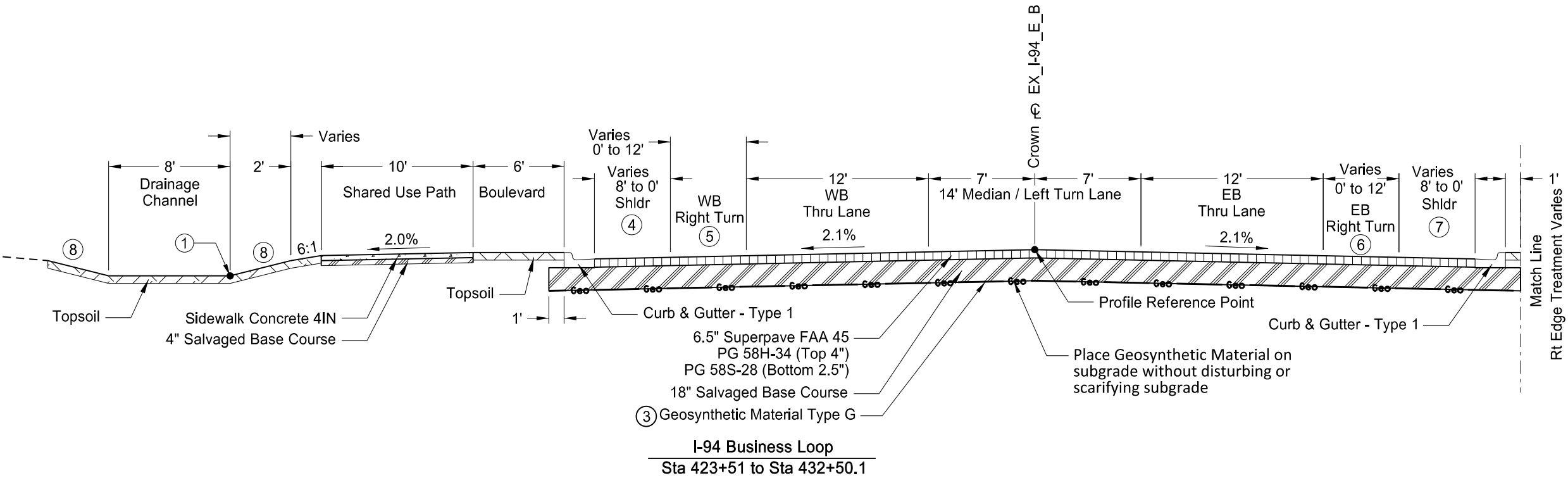
③ Geosynthetic Material Type G to be placed in area of existing roadway. Place 10 inches of base upon Geosynthetic Material prior to compacting base material.

④ 0' from Sta 429+00 to Sta 431+54.1
Transition 0' to 8' from Sta 431+54.1 to Sta 432+50.1
- ⑤ 12' from Sta 429+00 to Sta 431+06.1
Transition 12' to 0' from Sta 431+06.1 to Sta 432+50.1

⑥ Transition 0' to 12' from Sta 423+51 to Sta 424+95
12' from Sta 424+95 to Sta 427+00

⑦ Transition 8' to 0' from Sta 423+51 to Sta 424+47
0' from Sta 424+47 to Sta 427+00

⑧ 4:1 slope unless noted otherwise
3:1 from Sta 423+51 to Sta 424+75



Rt Edge Treatment - TYPE 1
Sta 423+51 to Sta 425+75

Rt Edge Treatment - TYPE 2
Sta 425+75 to Sta 432+50.1

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Proposed Typical Sections

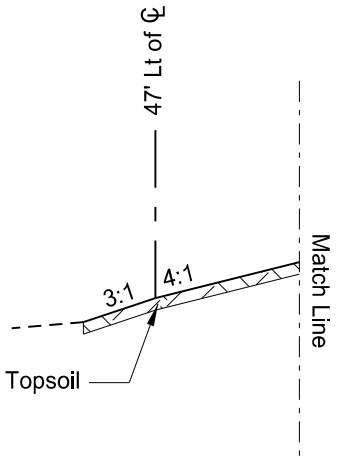
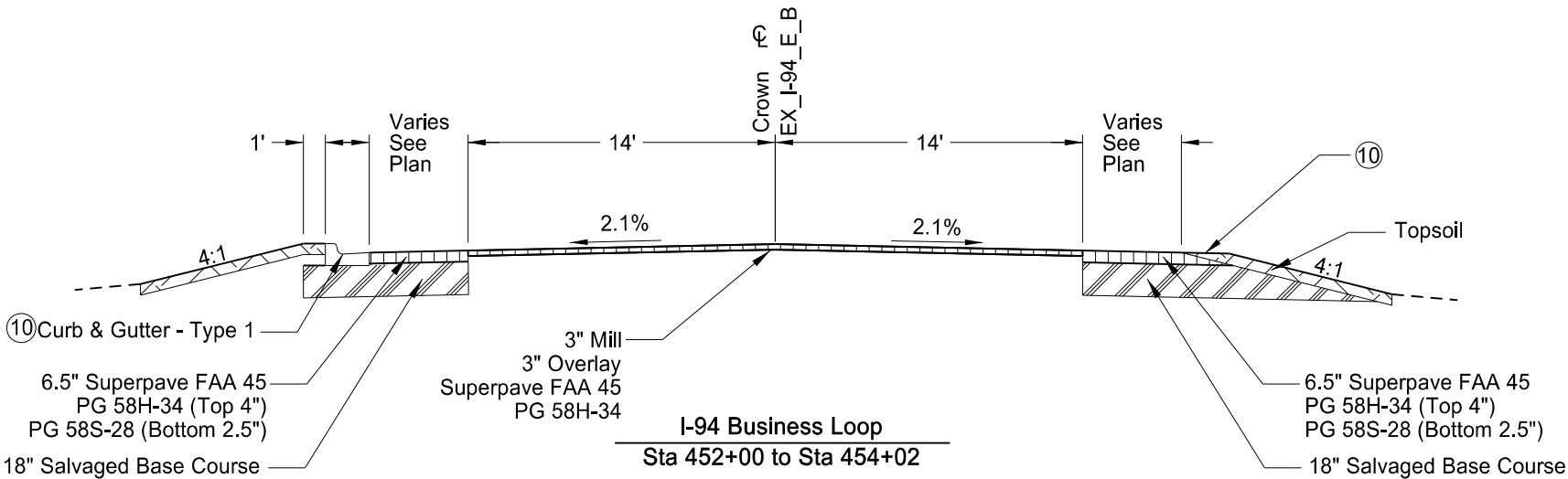
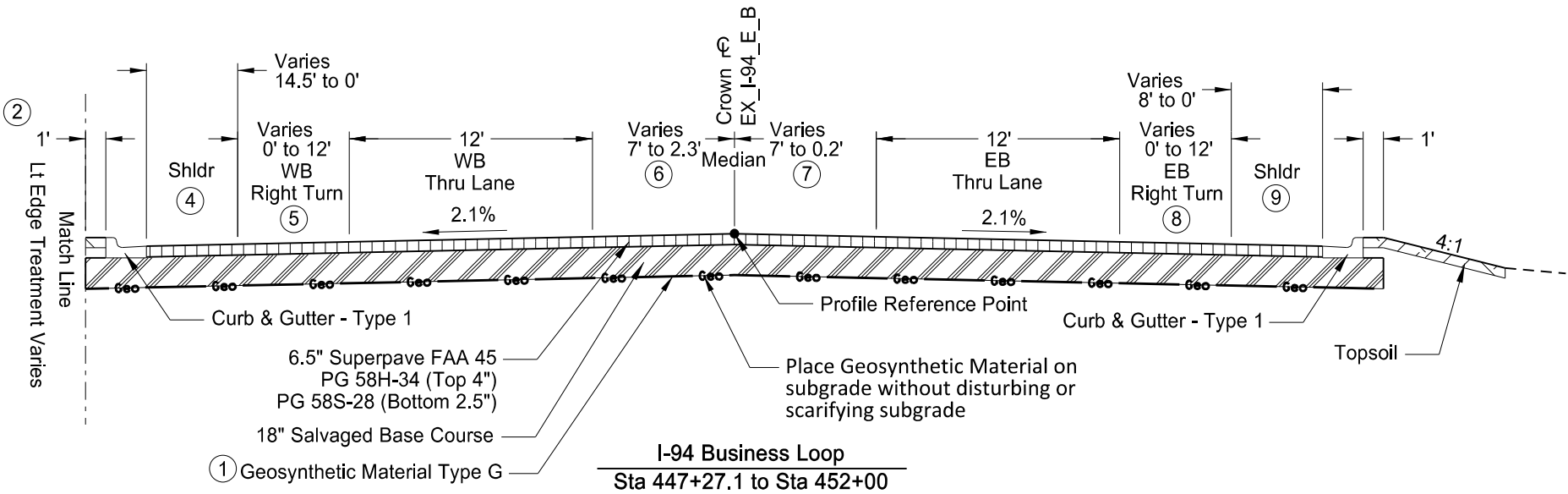
E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	30	8

Notes:

- ① Geosynthetic Material Type G to be placed in area of existing roadway. Place 10 inches of base upon Geosynthetic Material prior to compacting base material.
- ② Total Boulevard width is 6'
- ③ See Section 11 for drainage channel elevation information
- ④ 0' from Sta 448+93.5 to Sta 450+99
Transition 14.5' to 3.2' from Sta 452+58.1 to Sta 454+02
- ⑤ 12' from Sta. 448+93.5 to Sta 450+99
Transition 12' to 0' from Sta 451+00 to Sta 452+02
- ⑥ Transition 7' to 2.3' from Sta 450+99 to Sta 454+02
- ⑦ Transition 7' to 0.2' from Sta 450+99 to Sta 454+02
- ⑧ Transition 0' to 12' from Sta 447+27.1 to Sta 448+71.1
12' from Sta 448+71.1 to Sta 450+99
- ⑨ Transition 8' to 0' from Sta 447+27.1 to Sta 448+23.1
0' from Sta 448+23.1 to Sta 450+99
3.2' from Sta 452+19.4 to Sta 454+02
- ⑩ Curb and Gutter location varies, see plan.



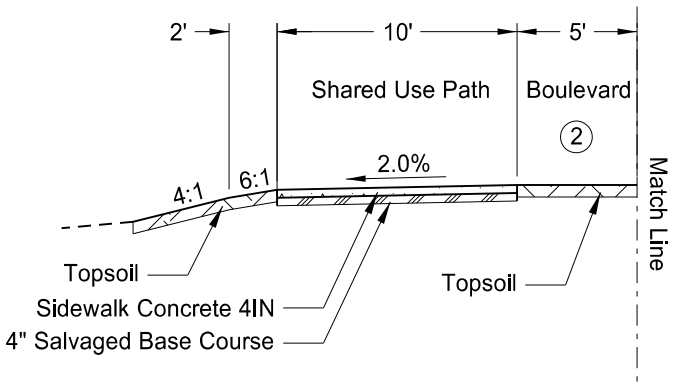
Lt Edge Treatment - TYPE 4
Sta 453+95 to Sta 454+02

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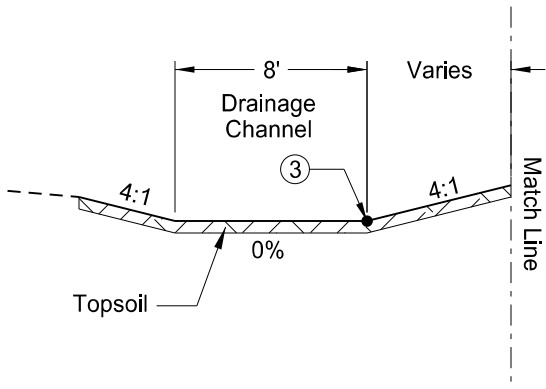
Proposed Typical Sections

E Business LP 10th Ave E - Exit 64

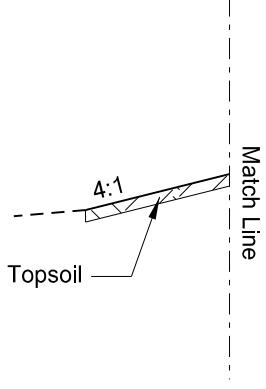
Dickinson, ND



Lt Edge Treatment - TYPE 1
Sta 447+27.1 to Sta 448+50

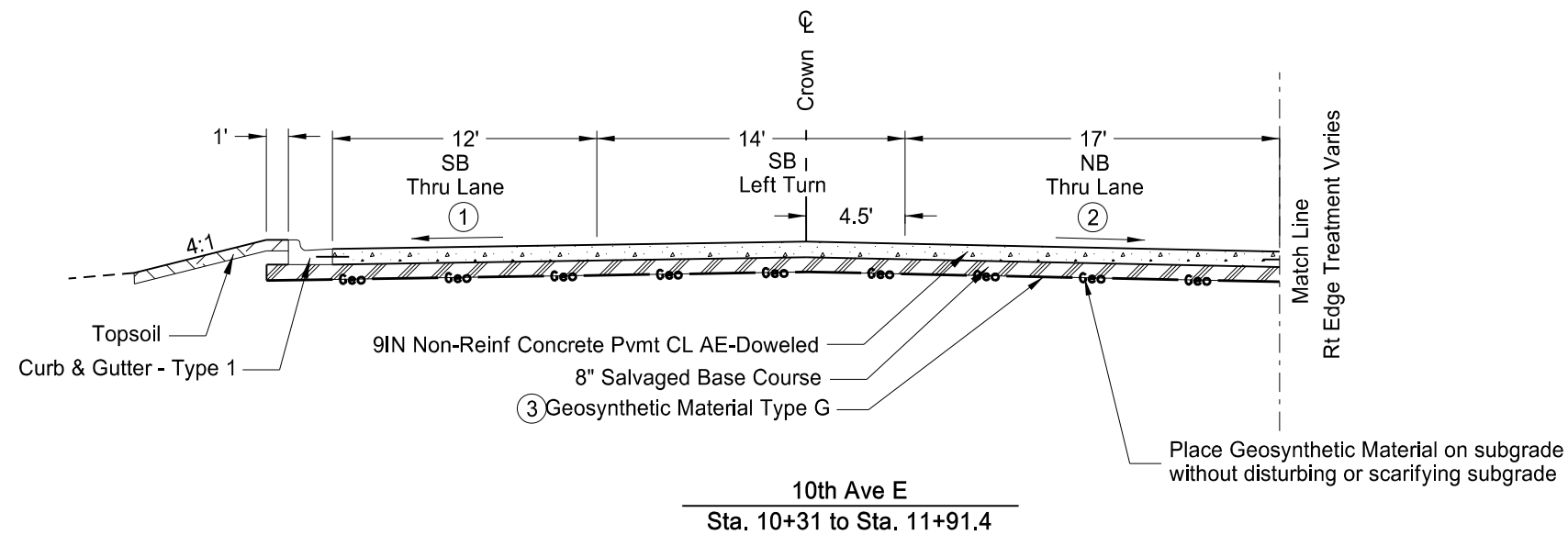


Lt Edge Treatment - TYPE 2
Sta 449+25 to Sta 450+90



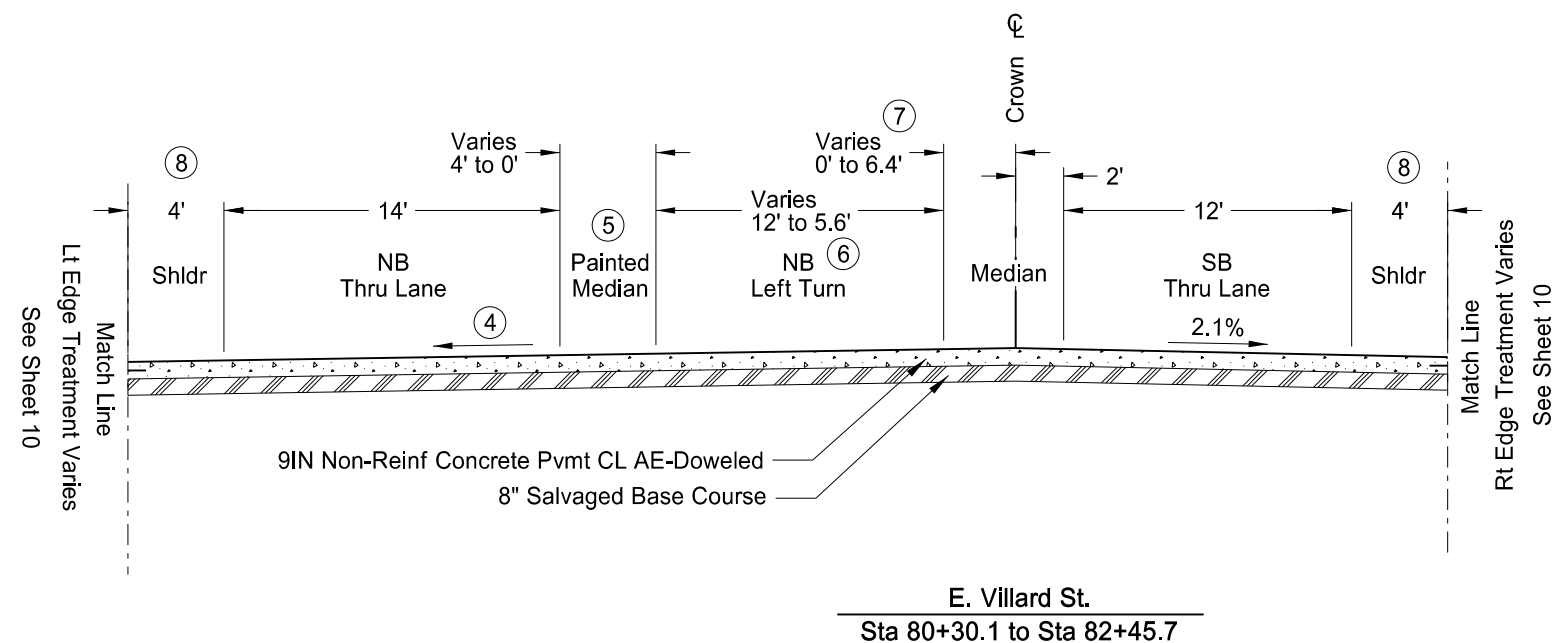
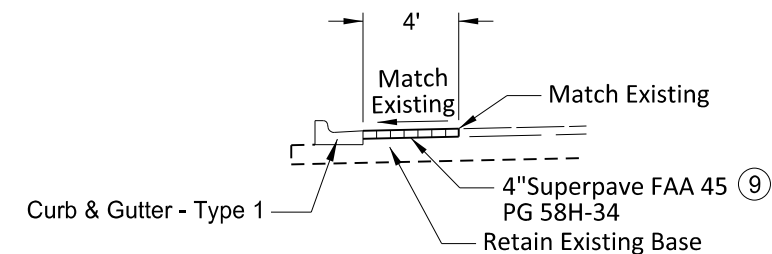
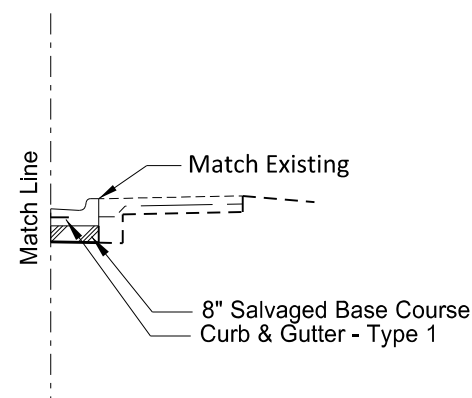
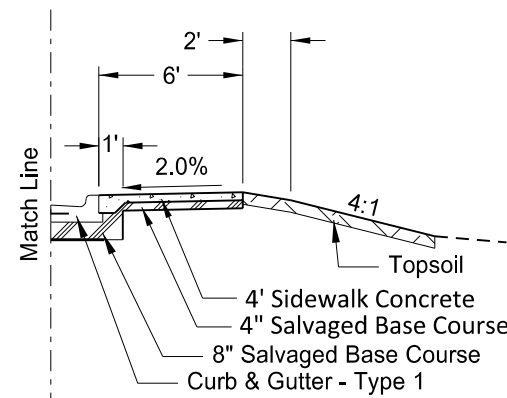
Lt Edge Treatment - TYPE 3
Sta 448+50 to Sta 449+25
Sta 450+90 to Sta 453+95

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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Notes:

- ① Transition 2.29% to 4.74% from Sta 11+06.6 to Sta 11+91.4
- ② Transition 0% to 1.9% from Sta 11+08.4 to Sta 11+91.4
- ③ Geosynthetic Material Type G to be placed in area of existing roadway. Place 8 inches of base upon Geosynthetic Material prior to compacting base material.
- ④ Transition -3.0% to 2.1% from Sta 80+30.1 to Sta 82+45.7
- ⑤ Transition 4' to 0' from Sta 80+47 to Sta 81+36.6
- ⑥ Transition 12' to 5.6' from Sta 81+65 to Sta 82+45.7
- ⑦ Transition 0' to 6.4' from Sta 81+65 to Sta 82+45.7
- ⑧ See Section 120 for details on fog line location.
- ⑨ Match existing depth if different than shown



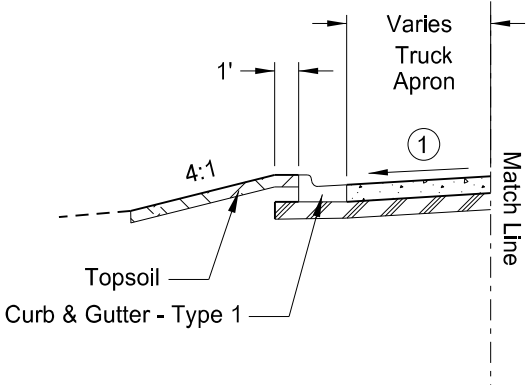
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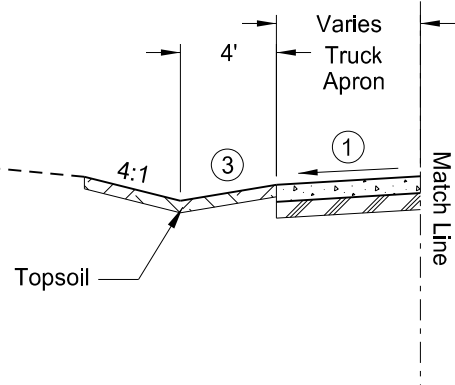
E Business LP 10th Ave E - Exit 64

Dickinson, ND

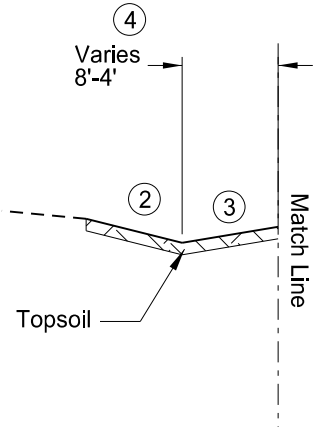
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ND	NHU-5-094(114)907	30	10



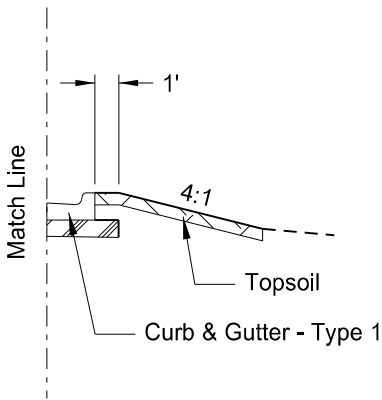
Lt Edge Treatment - TYPE 1
Sta 80+30.1 to Sta 80+67.7



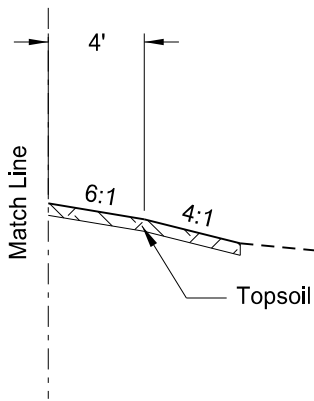
Lt Edge Treatment - TYPE 2
Sta 80+67.7 to Sta 81+62.1



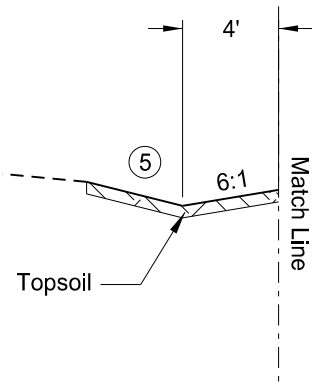
Lt Edge Treatment - TYPE 3
Sta 81+62.1 to Sta 82+45.7



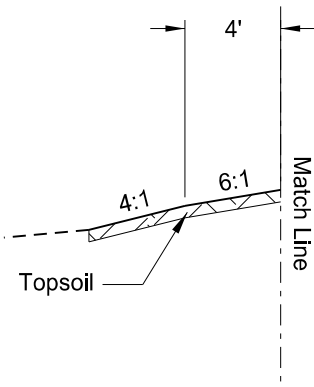
Rt Edge Treatment - TYPE 1
Sta 80+30.1 to Sta 80+70.7



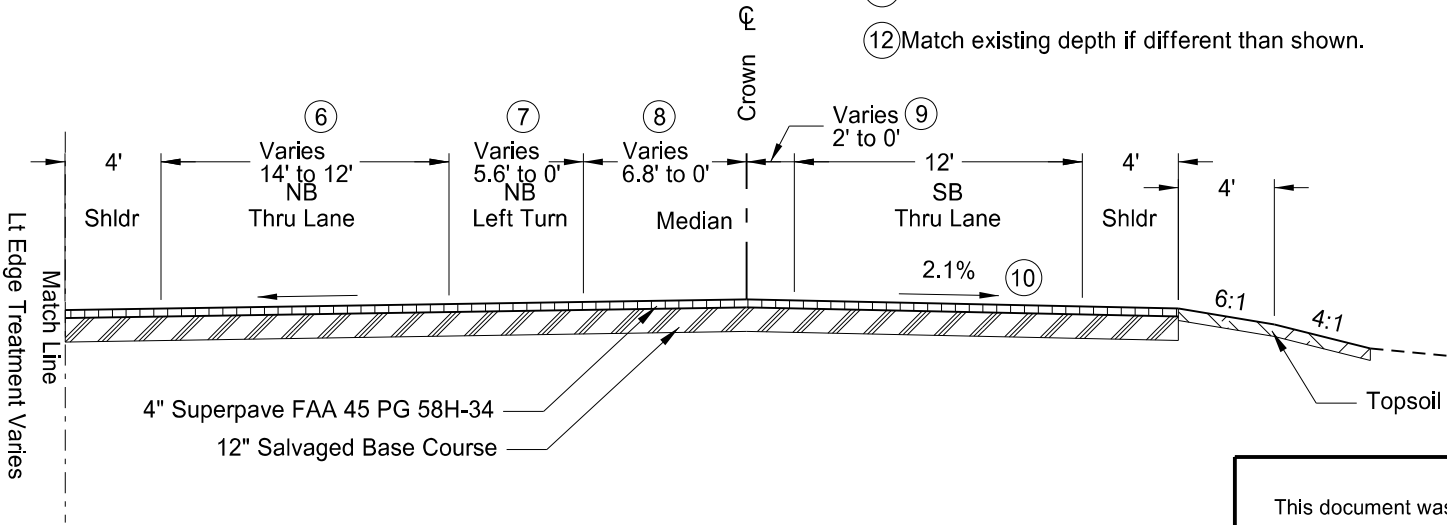
Rt Edge Treatment - TYPE 2
Sta 80+70.7 to Sta 82+45.7



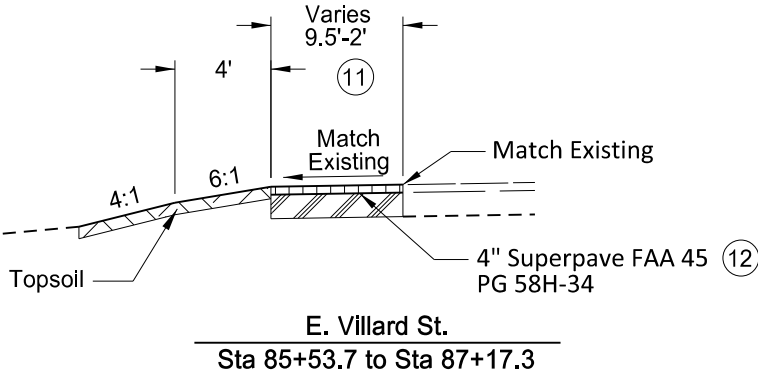
Lt Edge Treatment - TYPE 4
Sta 82+45.7 to Sta 83+64.8



Lt Edge Treatment - TYPE 5
Sta 83+64.8 to Sta 85+53.7



E. Villard St.
Sta 82+45.7 to Sta 85+53.7



E. Villard St.
Sta 85+53.7 to Sta 87+17.3

- Notes:
- ① See Section 20 for details on Truck Apron.
 - ② 4:1 unless noted otherwise
2.0% from Sta 82+31.7 to Sta 82+45.7
 - ③ Transition 6:1 to 6% from Sta 81+10.2 to Sta 81+62.1
Transition 6% to 6:1 from Sta 81+62.1 to Sta 82+45.7
 - ④ Transition 8' to 4' from Sta 81+62.1 to Sta 82+45.7
 - ⑤ 4:1 unless noted otherwise
2.0% from Sta 82+45.7 to Sta 83+02
 - ⑥ Transition 14' to 12' from Sta. 82+45.7 to Sta. 83+40.9
 - ⑦ Transition 5.6' to 0' from Sta. 82+45.7 to Sta. 83+40.9
 - ⑧ Transition 6.4' to 6.8' from Sta 82+45.7 to Sta 82+55
Transition 6.8' to 0' from Sta 82+55 to Sta 83+25.7
 - ⑨ Transition 2' to 0' from Sta. 82+68.8 to Sta. 83+02.8
 - ⑩ Adjust cross slope to match existing from Sta. 83+70.9 to Sta. 85+53.7
 - ⑪ Transition from 9.5' to 2' from Sta. 85+53.7 to Sta. 87+17.3
 - ⑫ Match existing depth if different than shown.

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Proposed Typical Sections

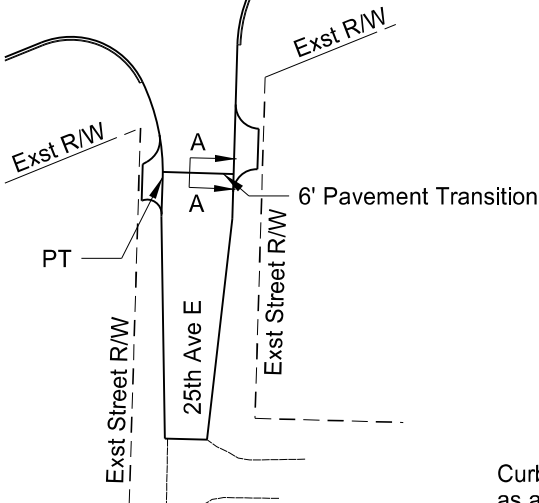
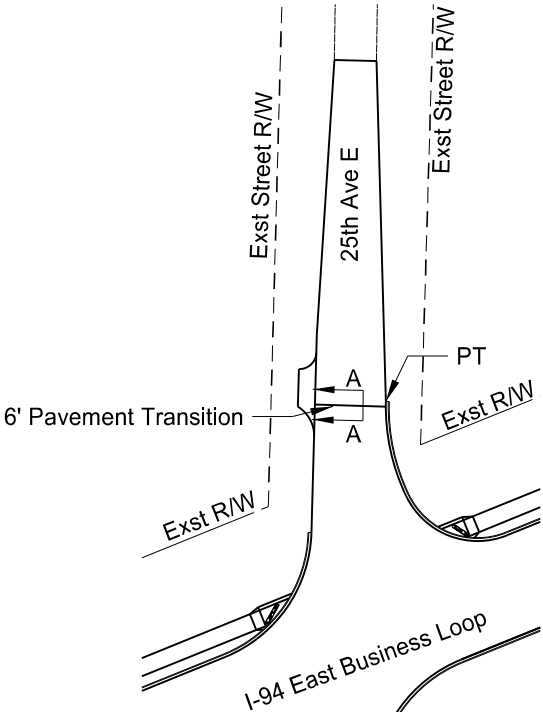
E Business LP 10th Ave E - Exit 64

Dickinson, ND

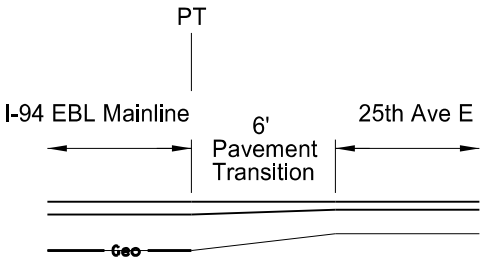
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	30	11

Notes:

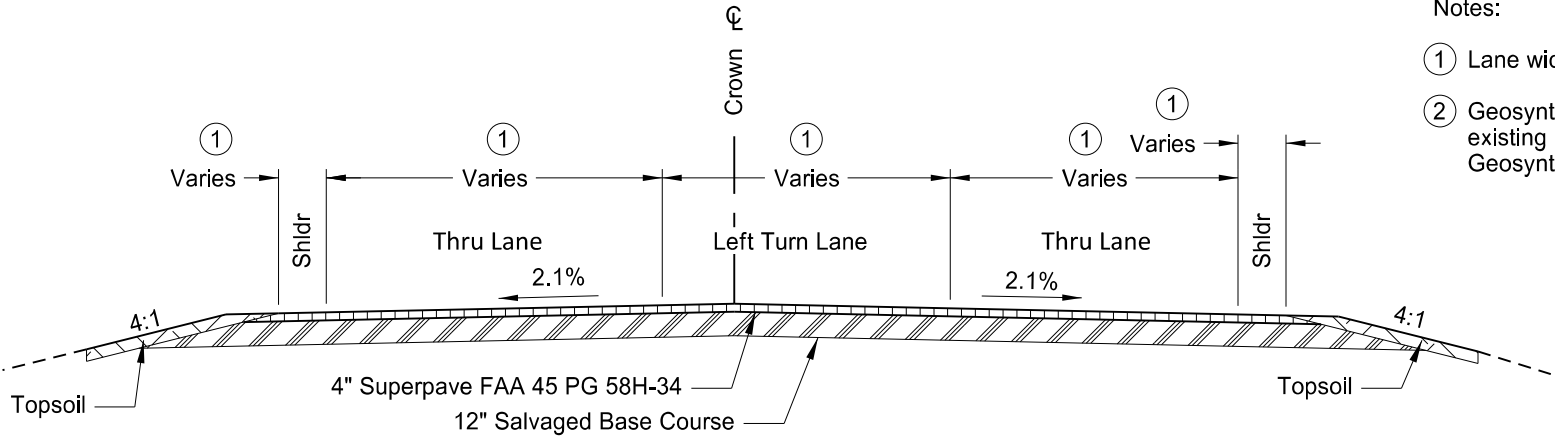
- ① Lane widths vary. See Section 120 for details.
- ② Geosynthetic Material Type G to be placed in area of existing roadway. Place 10 inches of base upon Geosynthetic Material prior to compacting the base material.



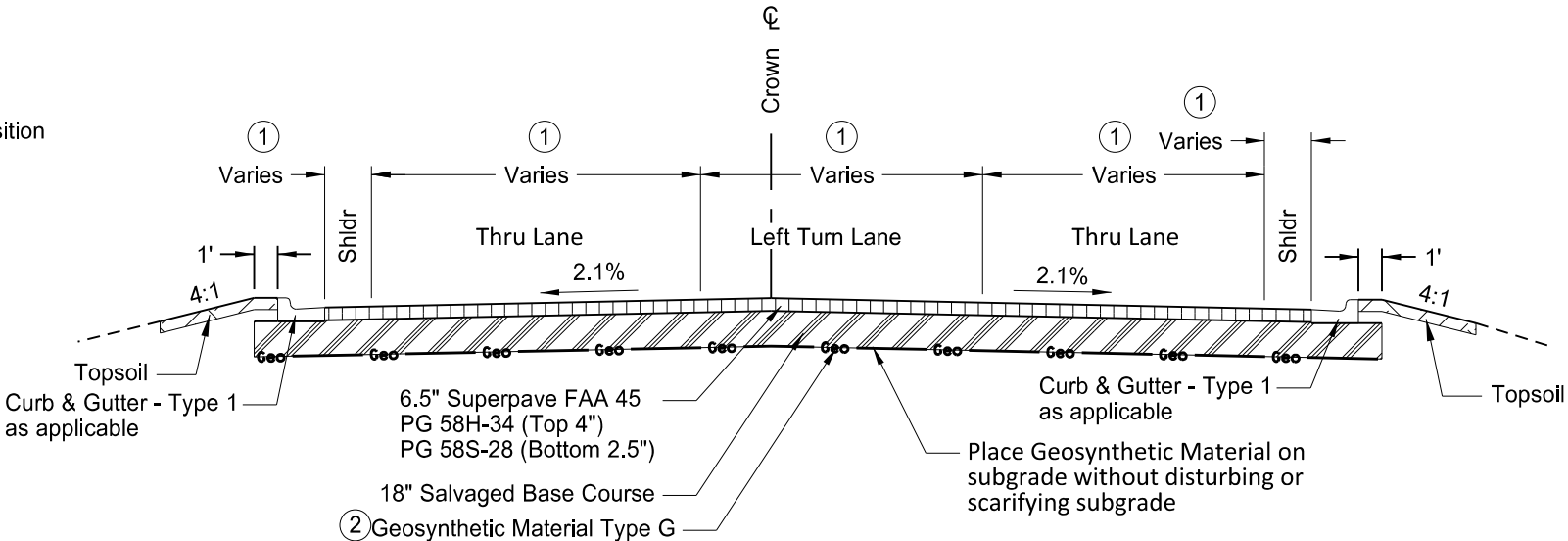
25th Ave E
Plan View



Section A-A



25th Ave E
Sta 27+00 to Sta 28+54.9
Sta 41+53.7 to Sta 43+55.1



25th Ave E
Sta 28+54.9 to Sta 29+76
Sta 40+31.3 to Sta 41+53.7

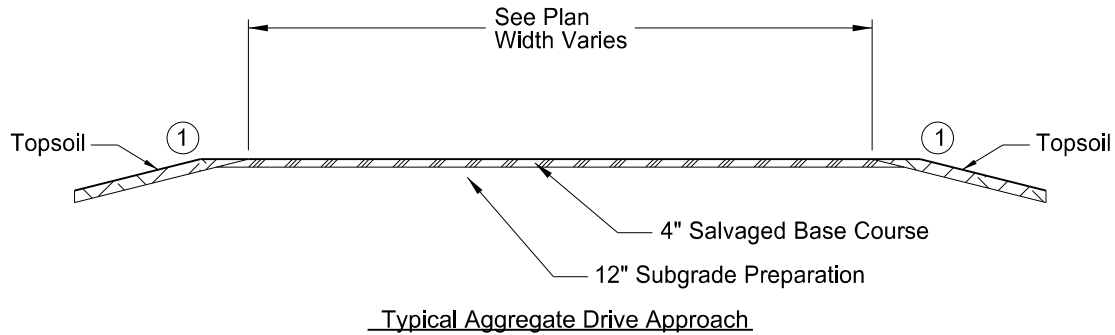
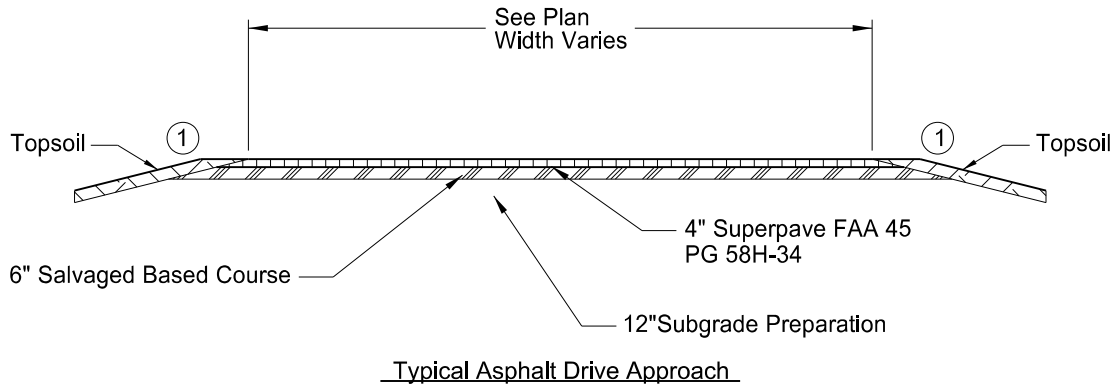
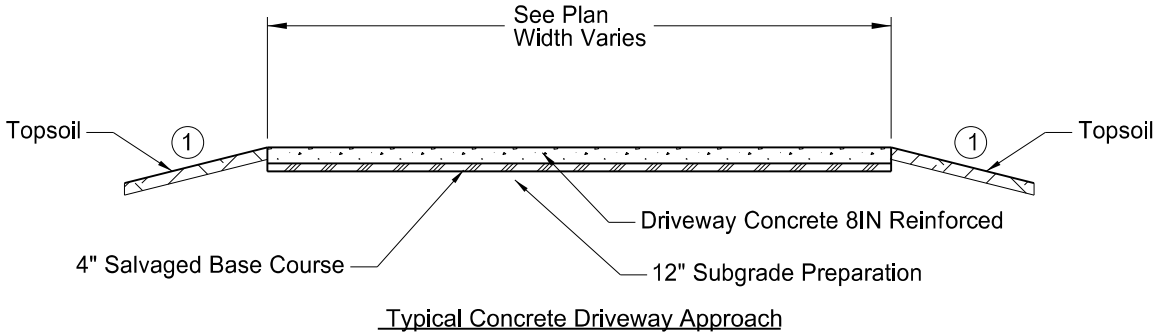
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Proposed Typical Sections

E Business LP 10th Ave E - Exit 64

Dickinson, ND

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	ND	NHU-5-094(114)907	30	13



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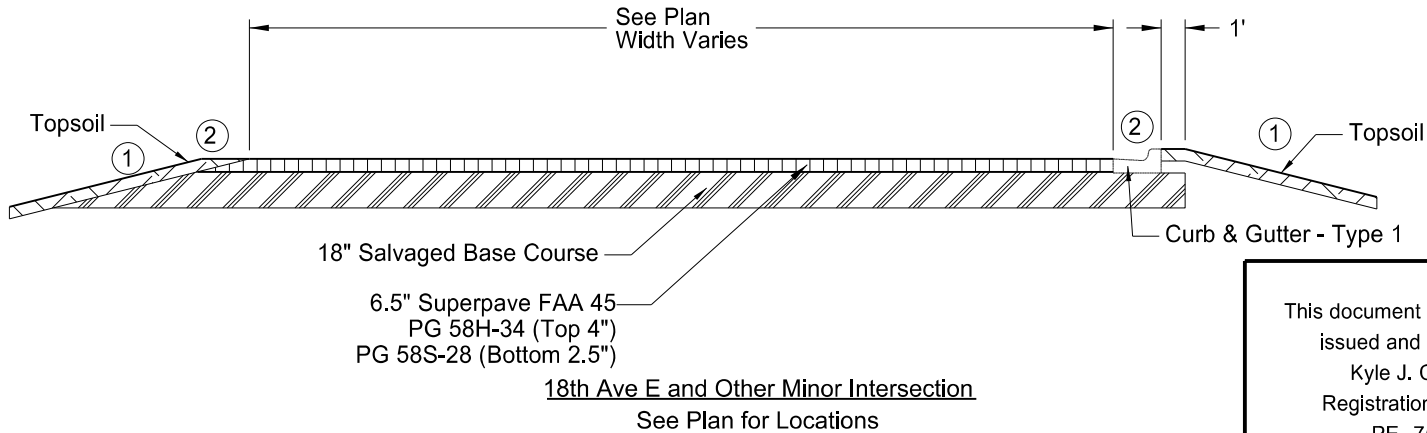
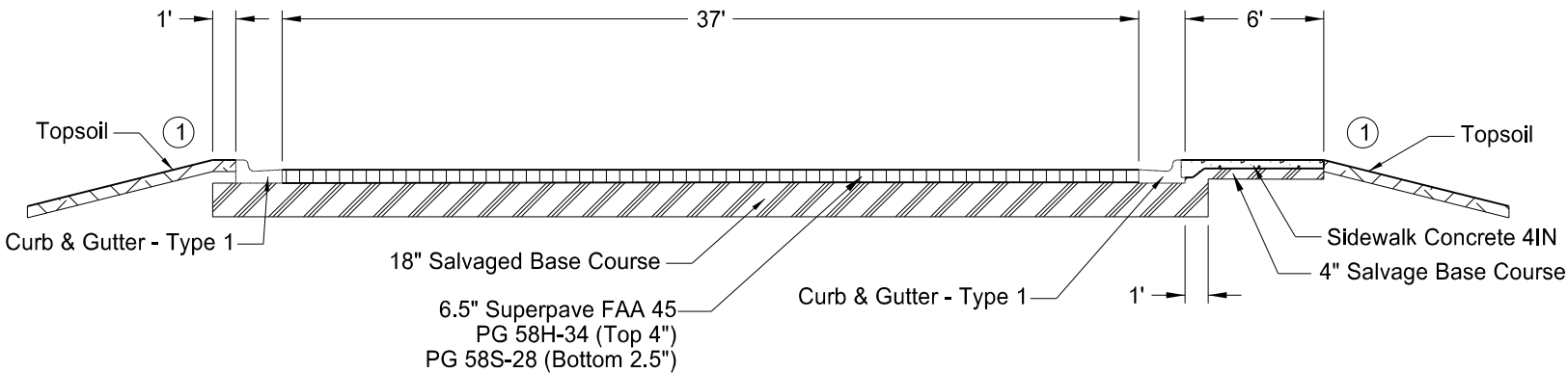
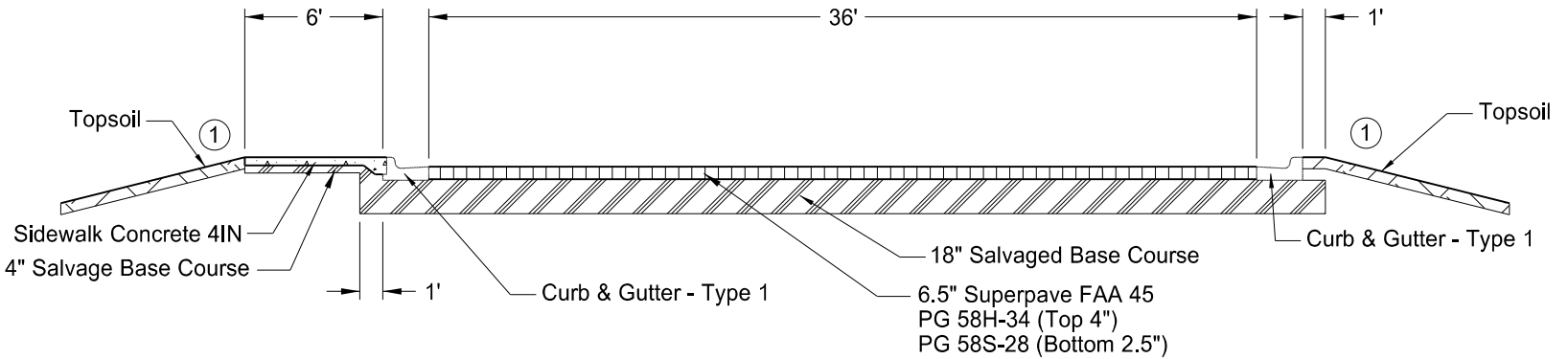
① 8:1 Slope where (A) or less
from centerline of I-94 E BL.

4:1 Slope where (B) or greater
from centerline of I-94 E BL.

Transition slope from 8:1 to 4:1
from (A) to (B) from
Centerline of I-94 E BL.

② Curb and Gutter location varies,
see plan.

Clear Zone			
Sta to Sta		(A)	(B)
370+00	400+00	37 ft	47 ft
400+00	454+00	47 ft	57 ft



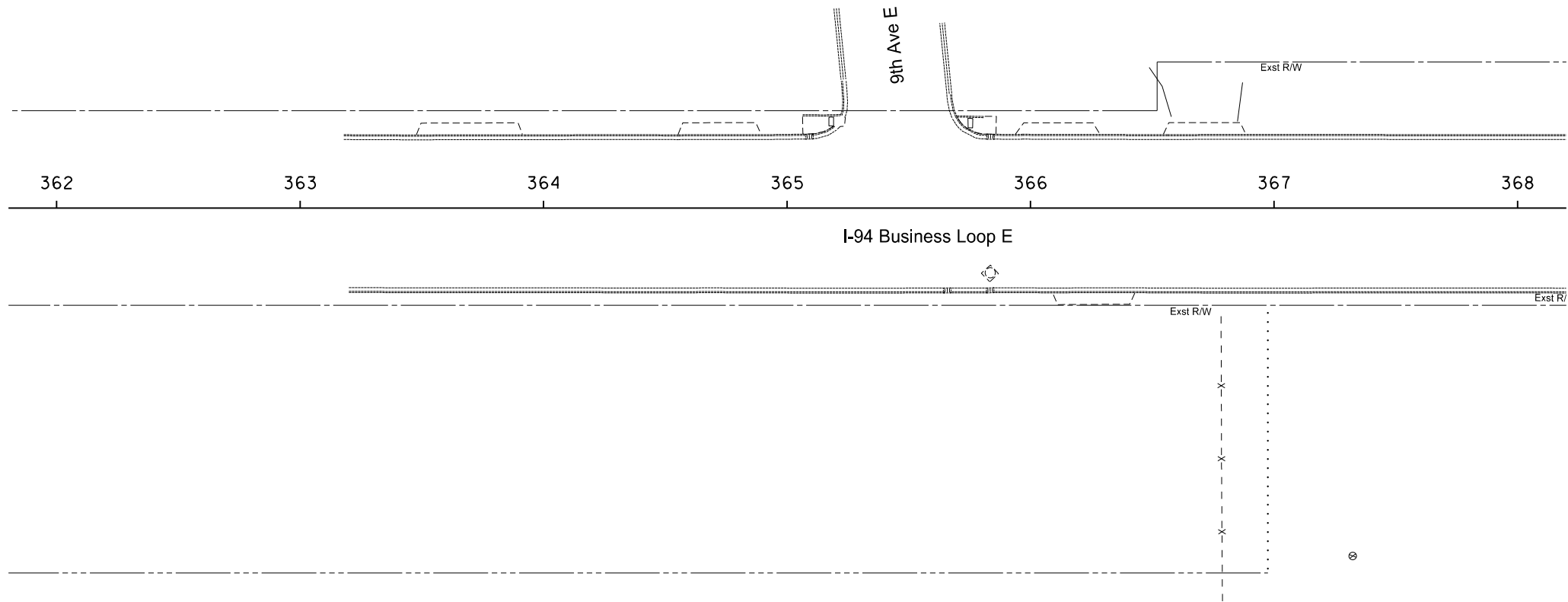
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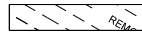

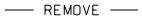
E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	40	1



Legend

-  Removal of Pavement (Bituminous)
-  Removal of Pavement (Concrete)
-  Pavement Milling
-  Removal of Curb & Gutter

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Removals

Sta 363+00 to Sta 368+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	40	2

SPEC	CODE	BID ITEM	QTY	UNIT
202	0130	REMOVAL OF CURB & GUTTER		
		Sta 369+75 Lt to Sta 371+13 Lt	379	LF
		Sta 369+75 Rt to Sta 371+30 Rt	173	LF
		Sta 370+98 - 31' Lt to Sta 371+28 - 65' Lt	125	LF
		Sta 371+65 Lt to Sta 372+40 Lt	203	LF
		Sta 372+35 - 30' Rt to Sta 373+13 - 38' Rt	171	LF
		Sta 373+44 Lt to Sta 374+00 Lt	56	LF
		TOTAL	1107	LF
202	0136	REMOVAL OF PAVEMENT		
		Sta 369+75 to Sta 374+00		
		BITUMINOUS - I-94	1181	TON
		BITUMINOUS - 10th Ave E	397	TON
		BITUMINOUS - E Villard St	309	TON
		AGGREGATE - I-94	1912	TON
		AGGREGATE - 10th Ave E	482	TON
		AGGREGATE - E Villard St	239	TON
		Sta 370+91 -61' Lt (SIDEWALK)	5	TON
		Sta 371+19 - 42' Lt (SIDEWALK/ISLAND)	12	TON
		Sta 371+79 - 75' Lt (SCUPPER)	3	TON
		Sta 371+92 - 53' Lt (SIDEWALK)	2	TON
		Sta 372+85 - 30' Rt (ISLAND)	16	TON
		Sta 373+78 - 86' Lt		
		CONCRETE PAVEMENT	130	TON
		AGGREGATE	60	TON
		TOTAL	4748	TON
411	0116	MILLING PAVEMENT SURFACE - 3 INCH		
		Sta 369+55 to Sta 369+75	137	SY
		Sta 371+17 to Sta 371+64	95	SY
		TOTAL	232	SY

- Notes:
- 1 Remove existing bituminous pavement only, for installation of replacement curb and gutter.
 - 2 Remove curb and gutter, and approach concrete for temporary roadway

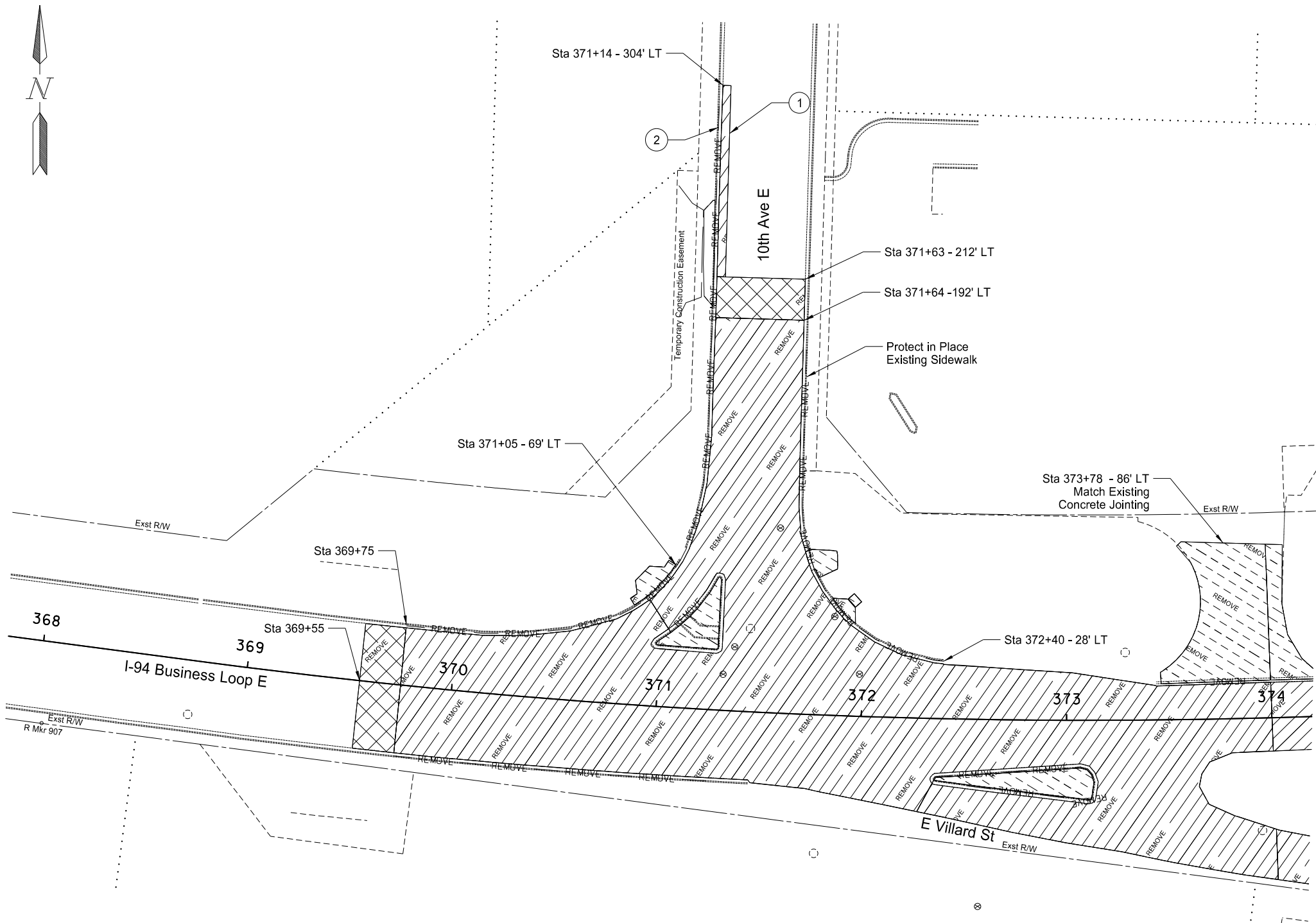
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Removals

Sta 368+00 to Sta 374+00

E Business LP 10th Ave E - Exit 64

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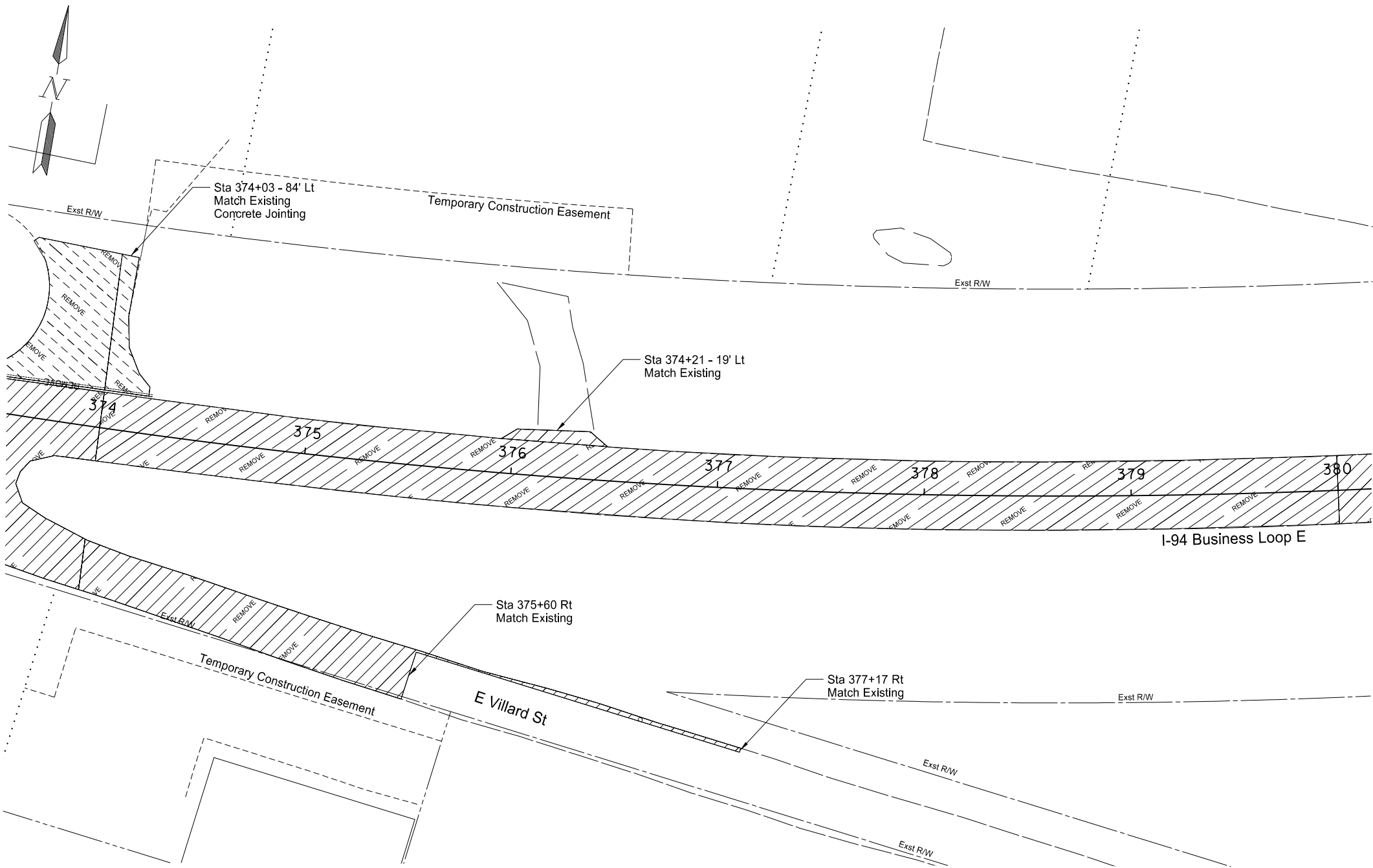


Legend

- Removal of Pavement (Bituminous)
- Removal of Pavement (Concrete)
- Pavement Milling
- REMOVE Removal of Curb & Gutter

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	40	3

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 374+00 to Sta 380+00		
		BITUMINOUS	1036	TON
		AGGREGATE	800	TON
		Sta 374+00 to Sta 377+17		
		BITUMINOUS	105	TON
		AGGREGATE	296	TON
		Sta 374+03 - 84' Lt (DRIVEWAY)		
		CONCRETE PAVEMENT	30	TON
		AGGREGATE	14	TON
		Sta 376+21 - 19' Lt (DRIVEWAY)		
		BITUMINOUS	6	TON
		AGGREGATE	6	TON
		TOTAL	2293	TON



Legend	
	Removal of Pavement (Bituminous)
	Removal of Pavement (Concrete)
	Pavement Milling
	Removal of Curb & Gutter

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Removals

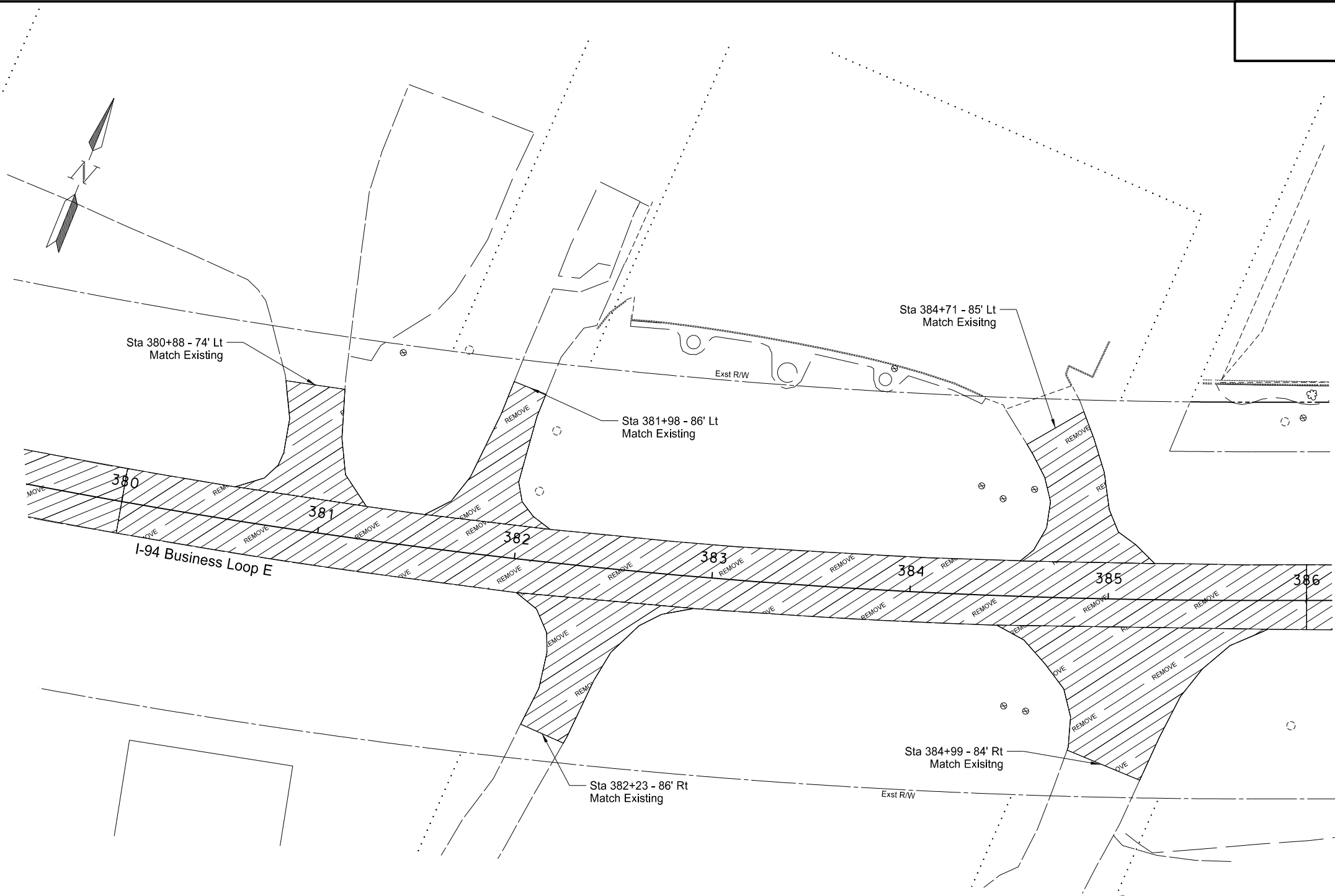
Sta 374+00 to Sta 380+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	40	4

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 380+00 to Sta 386+00		
		BITUMINOUS	1034	TON
		AGGREGATE	798	TON
		Sta 380+88 - 74' Lt (DRIVEWAY)		
		BITUMINOUS	48	TON
		AGGREGATE	45	TON
		Sta 381+98 - 86' Lt (DRIVEWAY)		
		BITUMINOUS	44	TON
		AGGREGATE	42	TON
		Sta 382+23 - 86' Rt (DRIVEWAY)		
		BITUMINOUS	62	TON
		AGGREGATE	58	TON
		Sta 384+71 - 85' Rt (DRIVEWAY)		
		BITUMINOUS	117	TON
		AGGREGATE	110	TON
		Sta 384+99 - 84' Lt (DRIVEWAY)		
		BITUMINOUS	61	TON
		AGGREGATE	57	TON
		TOTAL	2476	TON



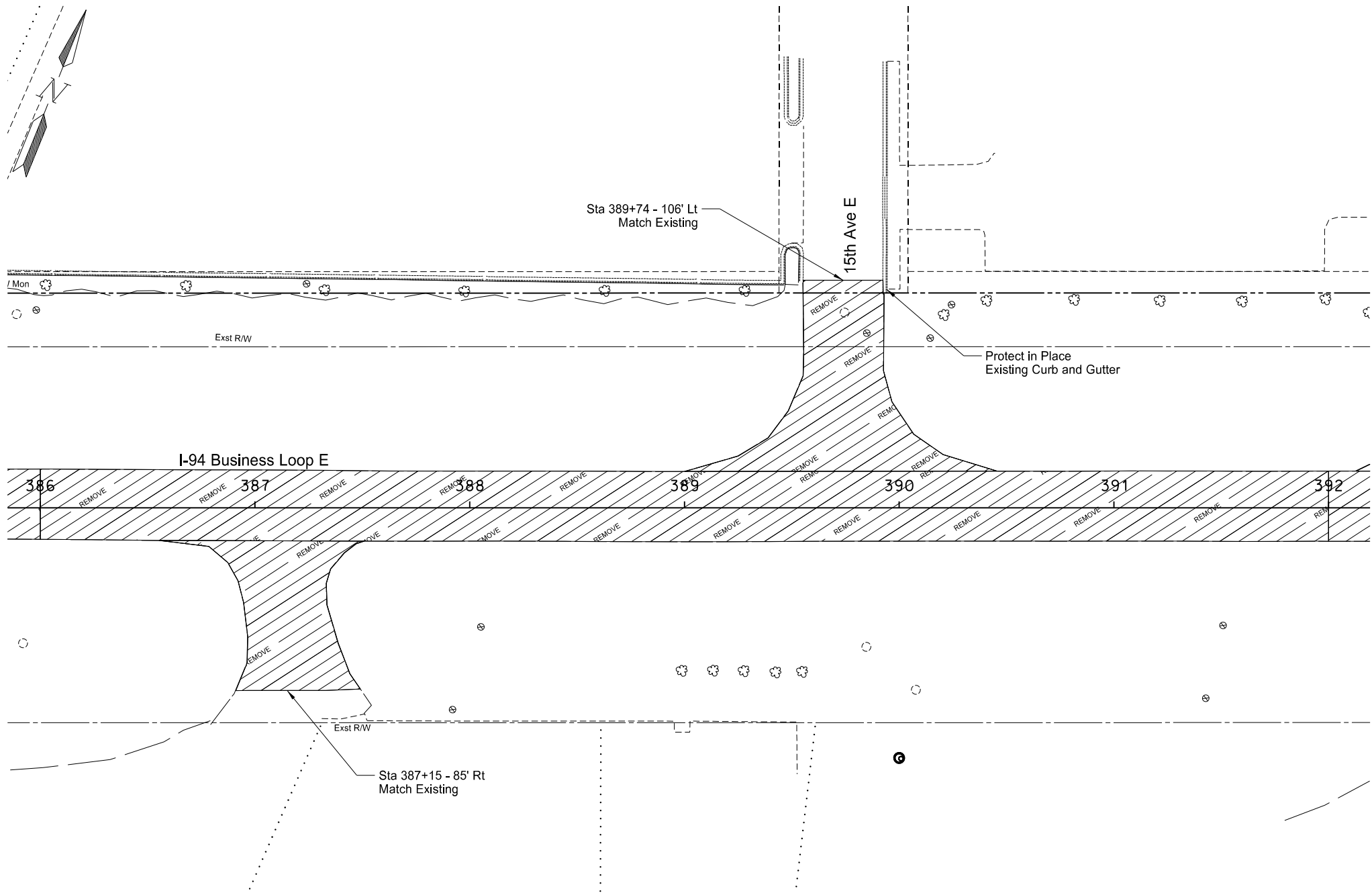
Legend	
	Removal of Pavement (Bituminous)
	Removal of Pavement (Concrete)
	Pavement Milling
	Removal of Curb & Gutter

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Removals
Sta 380+00 to Sta 386+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	40	5

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 386+00 to Sta 392+00		
		BITUMINOUS	1024	TON
		AGGREGATE	795	TON
		Sta 387+15 - 85' Rt (DRIVEWAY)		
		BITUMINOUS	81	TON
		AGGREGATE	76	TON
		Sta 389+74 - 106' Lt (15TH AVE)		
		BITUMINOUS	240	TON
		AGGREGATE	187	TON
		TOTAL	2403	TON



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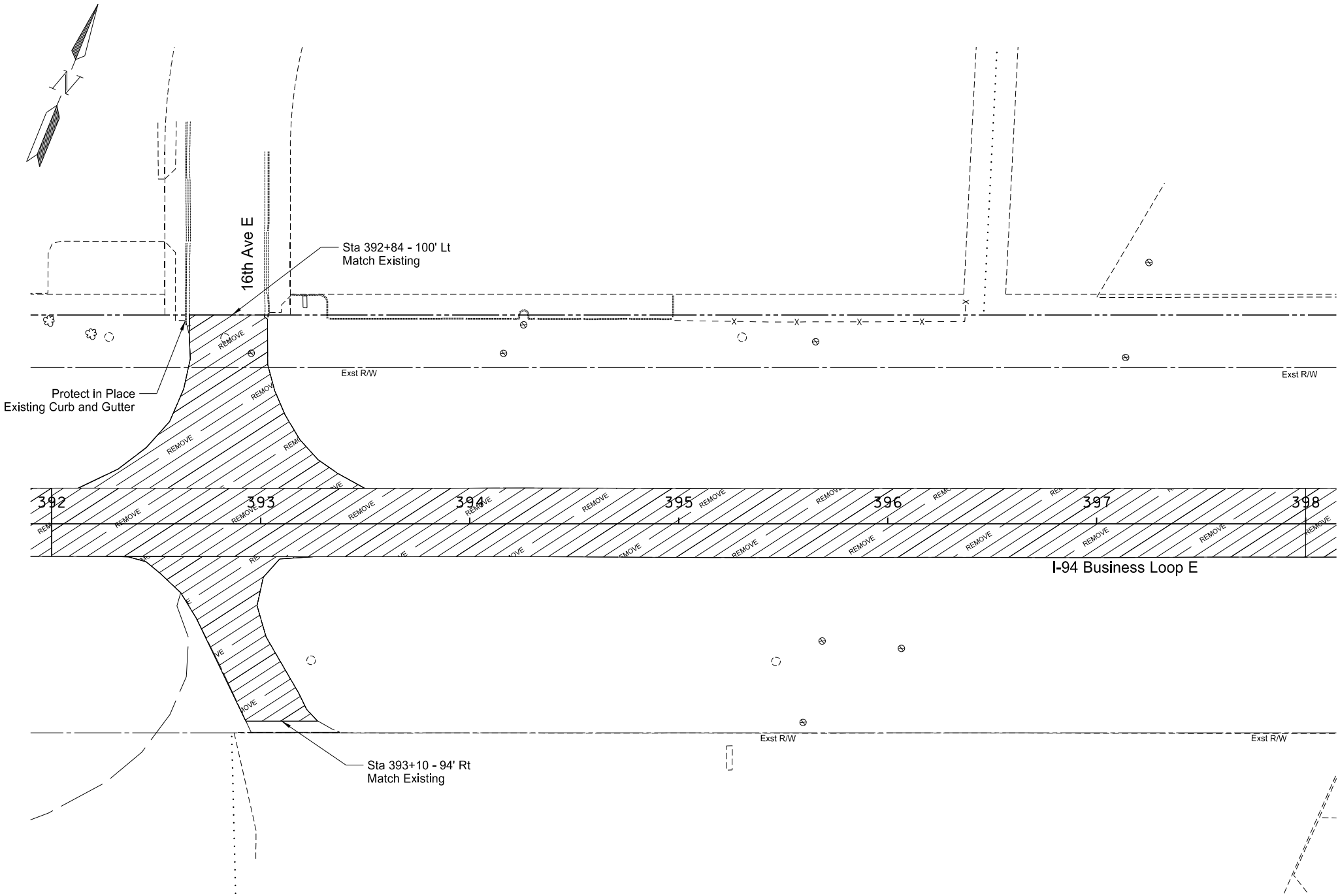
Sta 386+00 to Sta 392+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	40	6

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 392+00 to Sta 398+00		
		BITUMINOUS	1035	TON
		AGGREGATE	799	TON
		Sta 392+84 - 100' Lt (16TH AVE)		
		BITUMINOUS	261	TON
		AGGREGATE	201	TON
		Sta 393+10 - 94' Rt (DRIVEWAY)		
		BITUMINOUS	70	TON
		AGGREGATE	66	TON
		TOTAL	2432	TON



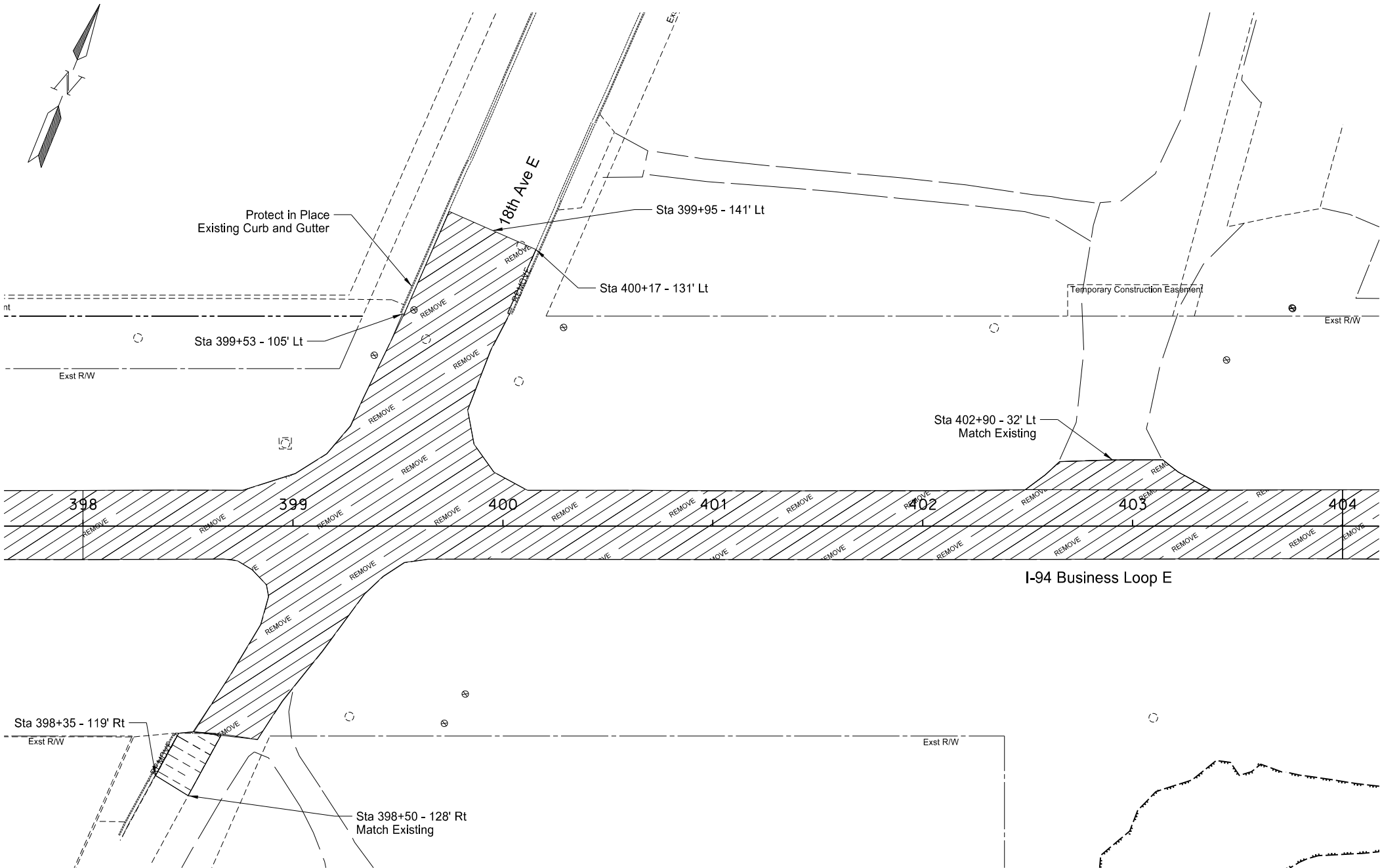
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	Removal of Pavement (Concrete)
	Pavement Milling
	Removal of Curb & Gutter

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Removals
Sta 392+00 to Sta 398+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	40	7

SPEC	CODE	BID ITEM	QTY	UNIT
202	0130	REMOVAL OF CURB & GUTTER		
		Sta 398+33 Rt to Sta 398+43 Rt	22	LF
		Sta 399+52 Lt to Sta 399+53 Lt	4	LF
		Sta 400+03 Lt to Sta 400+15 Lt	33	LF
		TOTAL	59	LF
202	0136	REMOVAL OF PAVEMENT		
		Sta 398+00 to Sta 404+00		
		BITUMINOUS - I-94	1035	TON
		BITUMINOUS - 18th Ave S Leg	182	TON
		BITUMINOUS - 18th Ave N Leg	337	TON
		AGGREGATE - I-94	799	TON
		AGGREGATE - 18th Ave S Leg	153	TON
		AGGREGATE - 18th Ave N Leg	338	TON
		CONCRETE - 18th Ave S Leg	19	TON
		Sta 402+92 - 32' Lt (DRIVEWAY)		
		BITUMINOUS	47	TON
		AGGREGATE	38	TON
		TOTAL	2948	TON



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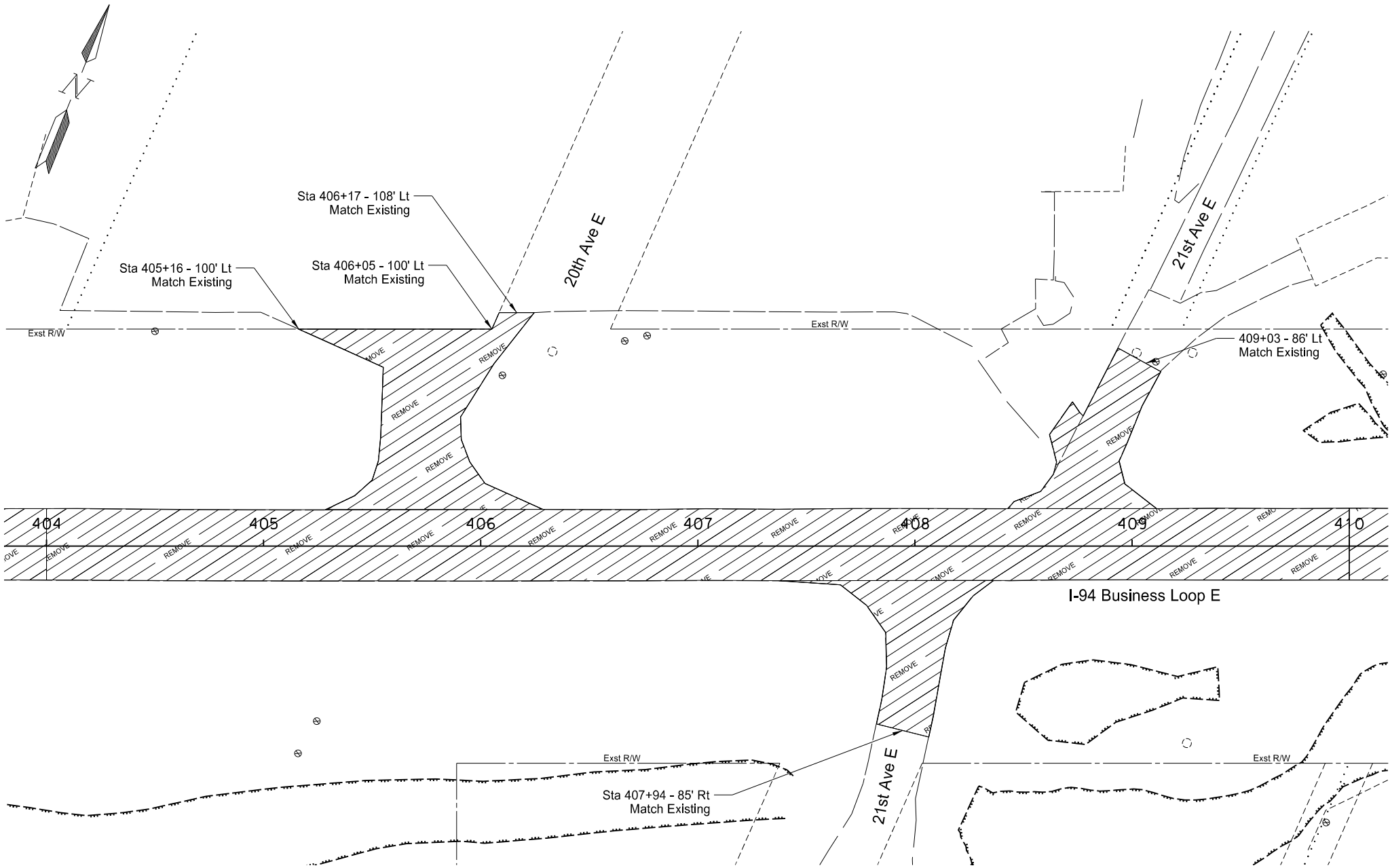
Sta 398+00 to Sta 404+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	40	8

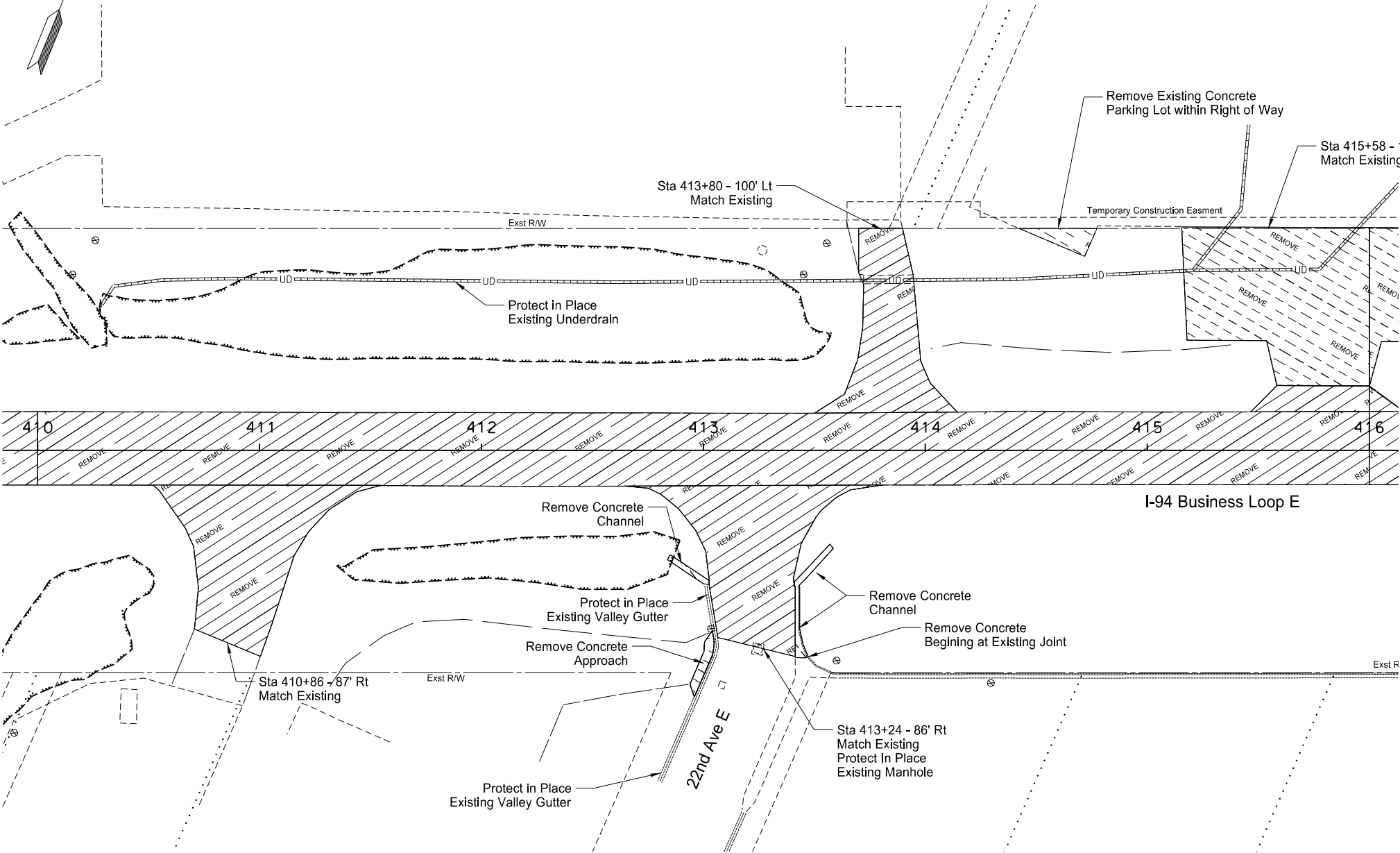
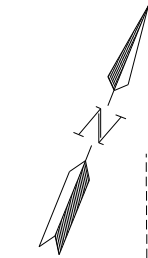
SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 404+00 to Sta 410+00		
		BITUMINOUS	1037	TON
		AGGREGATE	800	TON
		Sta 405+79 - 100' Lt (20TH AVE)		
		BITUMINOUS	245	TON
		AGGREGATE	195	TON
		Sta 407+94 - 85' Rt (21ST AVE)		
		BITUMINOUS	58	TON
		AGGREGATE	54	TON
		Sta 409+03 - 86' Lt (21ST AVE)		
		BITUMINOUS	57	TON
		AGGREGATE	54	TON
		TOTAL	2500	TON



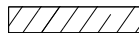
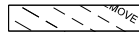

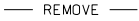
Legend	
	Removal of Pavement (Bituminous)
	Removal of Pavement (Concrete)
	Pavement Milling
	Removal of Curb & Gutter

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Removals
Sta 404+00 to Sta 410+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND



Legend

-  Removal of Pavement (Bituminous)
-  Removal of Pavement (Concrete)
-  Pavement Milling
-  Removal of Curb & Gutter

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	40	9

SPEC	CODE	BID ITEM	QTY	UNIT
202	0130	REMOVAL OF CURB AND GUTTER		
		Sta 412+93 - 54' Rt (FORMED CHANNEL GUTTER)	22	LF
		Sta 413+50 - 52' Rt (FORMED CHANNEL GUTTER)	25	LF
		TOTAL	47	LF
202	0136	REMOVAL OF PAVEMENT		
		Sta 410+00 to Sta 416+00		
		BITUMINOUS	1034	TON
		AGGREGATE	798	TON
		Sta 410+86 - 87' Rt (DRIVEWAY)		
		BITUMINOUS	88	TON
		AGGREGATE	83	TON
		Sta 413+24 - 86' Rt (22ND AVE)		
		BITUMINOUS	182	TON
		CONCRETE	55	TON
		AGGREGATE	140	TON
		Sta 413+80 - 100' Lt (DRIVEWAY)		
		BITUMINOUS	57	TON
		CONCRETE	4	TON
		AGGREGATE	55	TON
		Sta 414+60 - 100' Lt (PARKING LOT)		
		CONCRETE	8	TON
		AGGREGATE	5	TON
		Sta 415+58 - 100' Lt (DRIVEWAY)		
		BITUMINOUS	14	TON
		CONCRETE	254	TON
		AGGREGATE	132	TON
		TOTAL	2909	TON

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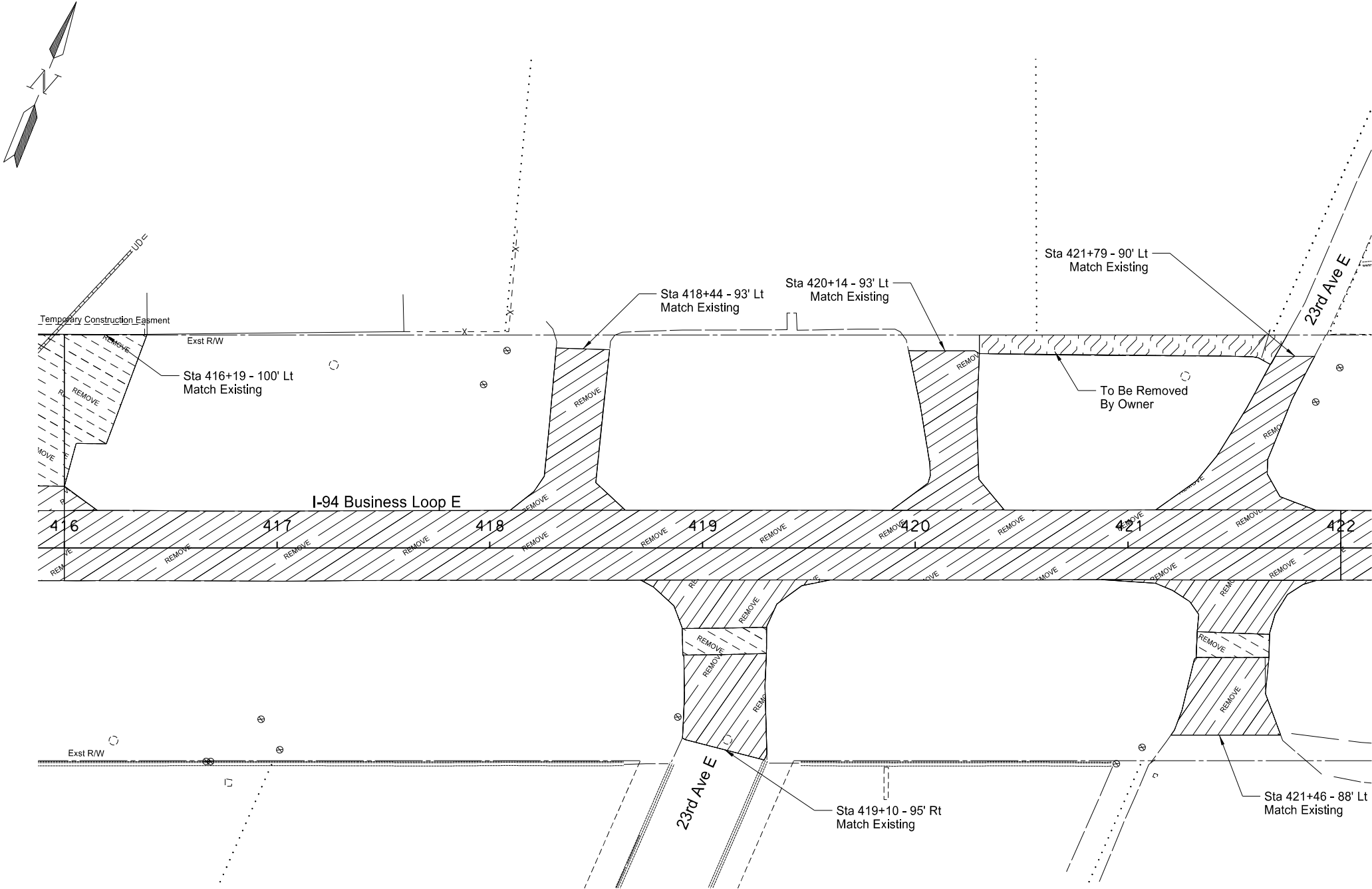
Sta 410+00 to Sta 416+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	40	10

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 416+00 to 422+00		
		BITUMINOUS	1034	TON
		AGGREGATE	798	TON
		Sta 416+19 - 100' Lt (DRIVEWAY)		
		BITUMINOUS	2	TON
		CONCRETE	77	TON
		AGGREGATE	38	TON
		Sta 418+44 - 93' Lt (DRIVEWAY)		
		BITUMINOUS	51	TON
		AGGREGATE	48	TON
		Sta 419+10 - 50' Rt (23RD AVE)		
		BITUMINOUS	155	TON
		CONCRETE	24	TON
		AGGREGATE	143	TON
		Sta 419+10 - 95' Rt (23RD AVE)		
		BITUMINOUS	53	TON
		AGGREGATE	50	TON
		Sta 420+76 - 90' Lt (DRIVEWAY)		
		BITUMINOUS	49	TON
		AGGREGATE	46	TON
		Sta 421+46 - 88' Rt (DRIVEWAY)		
		BITUMINOUS	65	TON
		CONCRETE	19	TON
		AGGREGATE	70	TON
		TOTAL	2722	TON



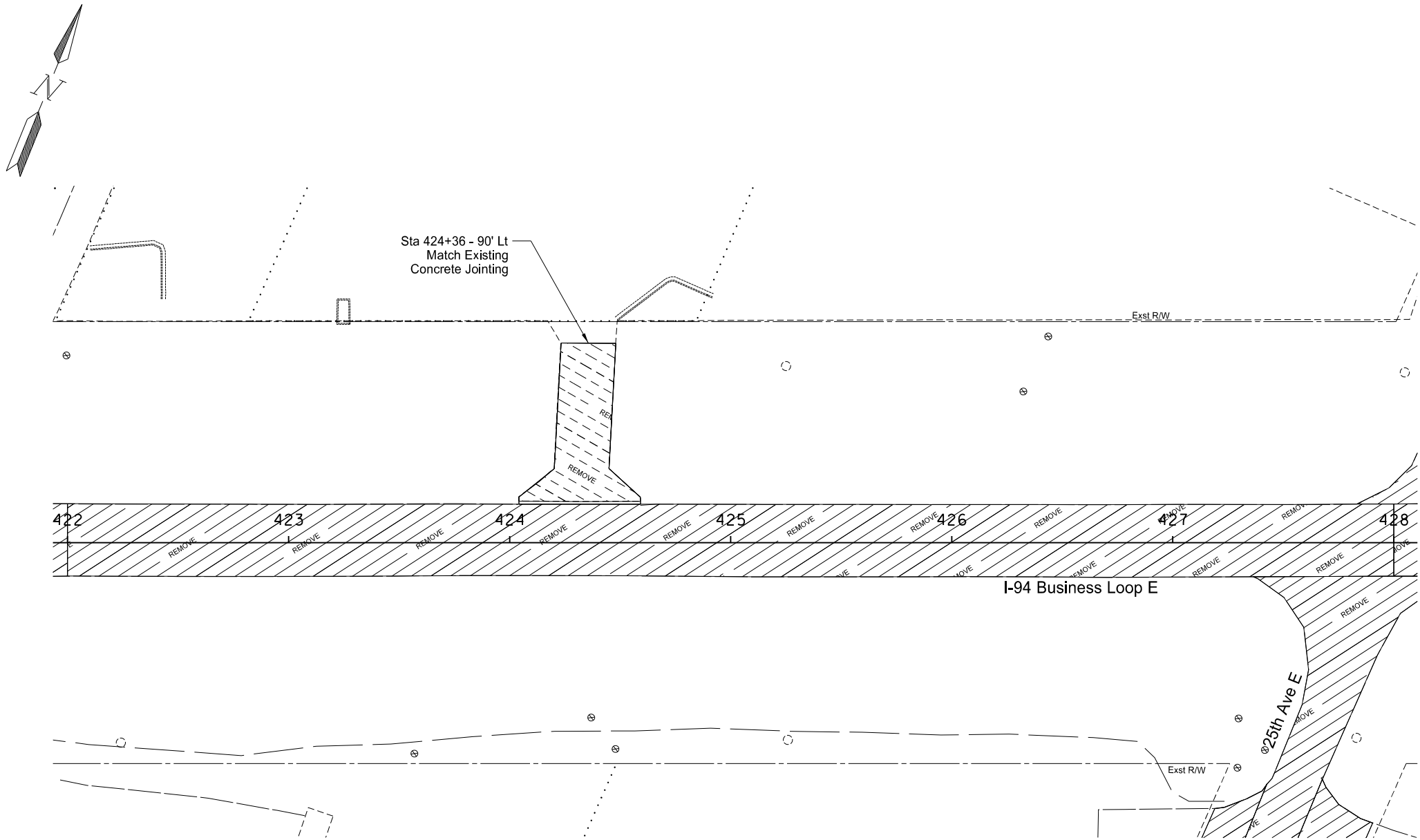
Legend	
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	Removal of Pavement (Concrete)
	Pavement Milling
	Removal of Curb & Gutter

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Removals
Sta 416+00 to Sta 422+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

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	ND	NHU-5-094(114)907	40	11

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 422+00 to Sta 428+00		
		BITUMINOUS	1027	TON
		AGGREGATE	793	TON
		Sta 424+36 - 90' Lt (DRIVEWAY)		
		CONCRETE	104	TON
		AGGREGATE	49	TON
		TOTAL	1973	TON



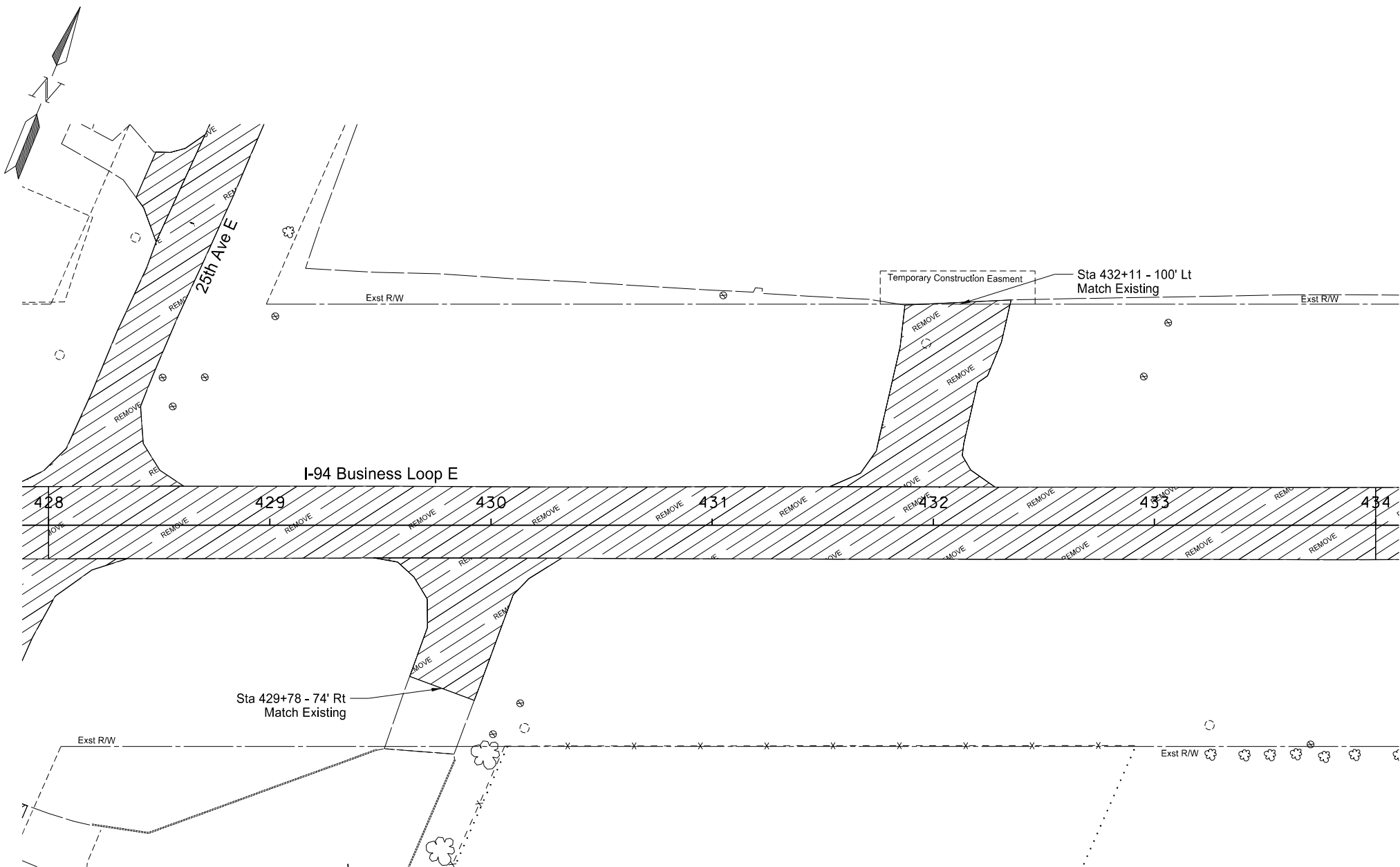
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Sta 422+00 to Sta 428+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

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ND	NHU-5-094(114)907	40	12

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 428+00 to Sta 434+00		
		BITUMINOUS	1026	TON
		AGGREGATE	792	TON
		Sta 429+78 - 74' Rt (DRIVEWAY)		
		BITUMINOUS	59	TON
		AGGREGATE	55	TON
		Sta 432+11 - 100' Lt (DRIVEWAY)		
		BITUMINOUS	90	TON
		AGGREGATE	85	TON
		TOTAL	2107	TON



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	Removal of Pavement (Concrete)
	Pavement Milling
	Removal of Curb & Gutter

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	40	13

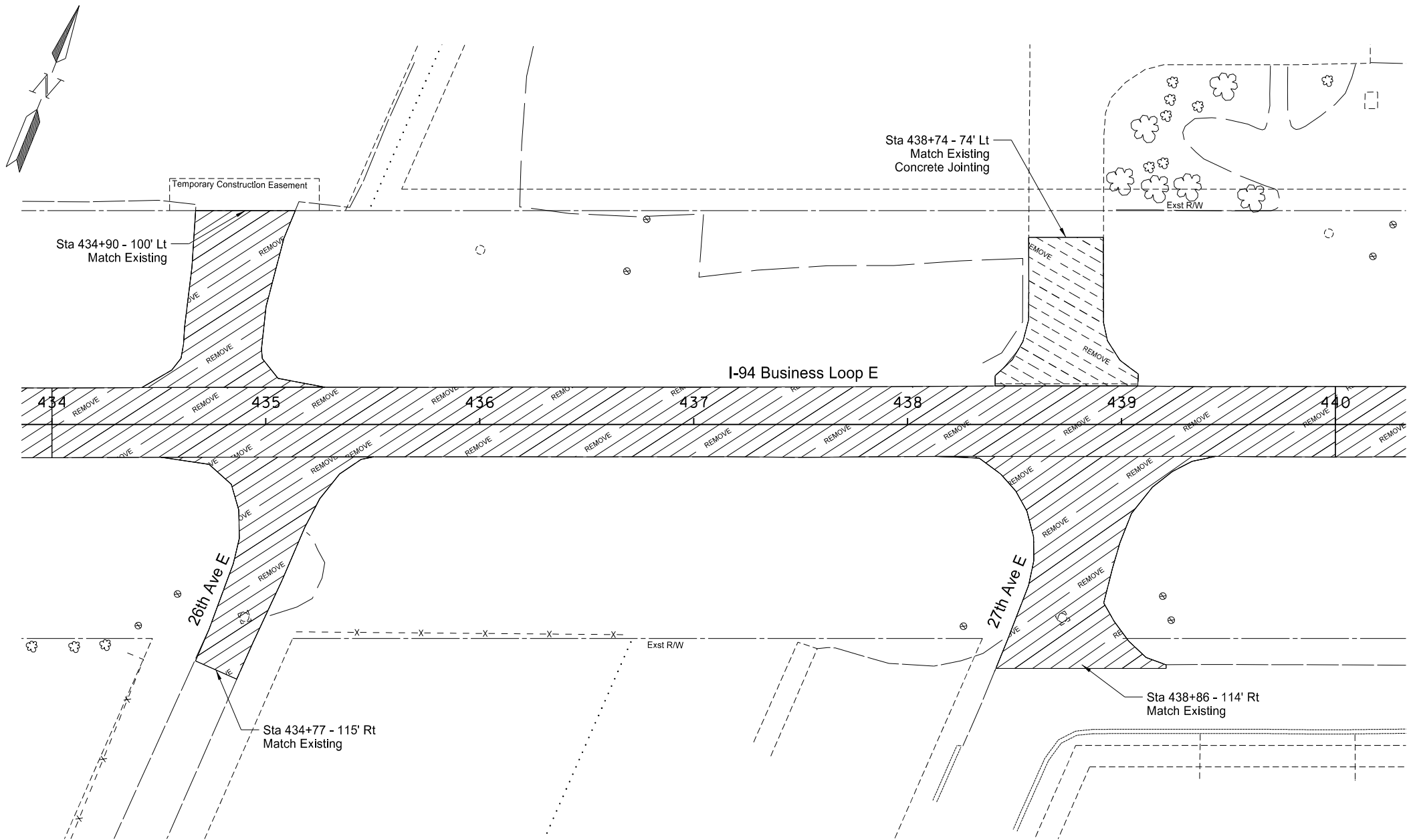
SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 434+00 to Sta 440+00		
		BITUMINOUS	1029	TON
		AGGREGATE	795	TON
		Sta 434+90 - 100' Lt (DRIVEWAY)		
		BITUMINOUS	85	TON
		AGGREGATE	80	TON
		Sta 434+77 - 115' Rt (26TH AVE)		
		BITUMINOUS	164	TON
		AGGREGATE	139	TON
		Sta 438+74 - 74' Lt (DRIVEWAY)		
		CONCRETE	140	TON
		AGGREGATE	66	TON
		Sta 438+86 - 114' Rt (27TH AVE)		
		BITUMINOUS	252	TON
		AGGREGATE	199	TON
		TOTAL	2949	TON

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Removals

Sta 434+00 to Sta 440+00
E Business LP 10th Ave E - Exit 64

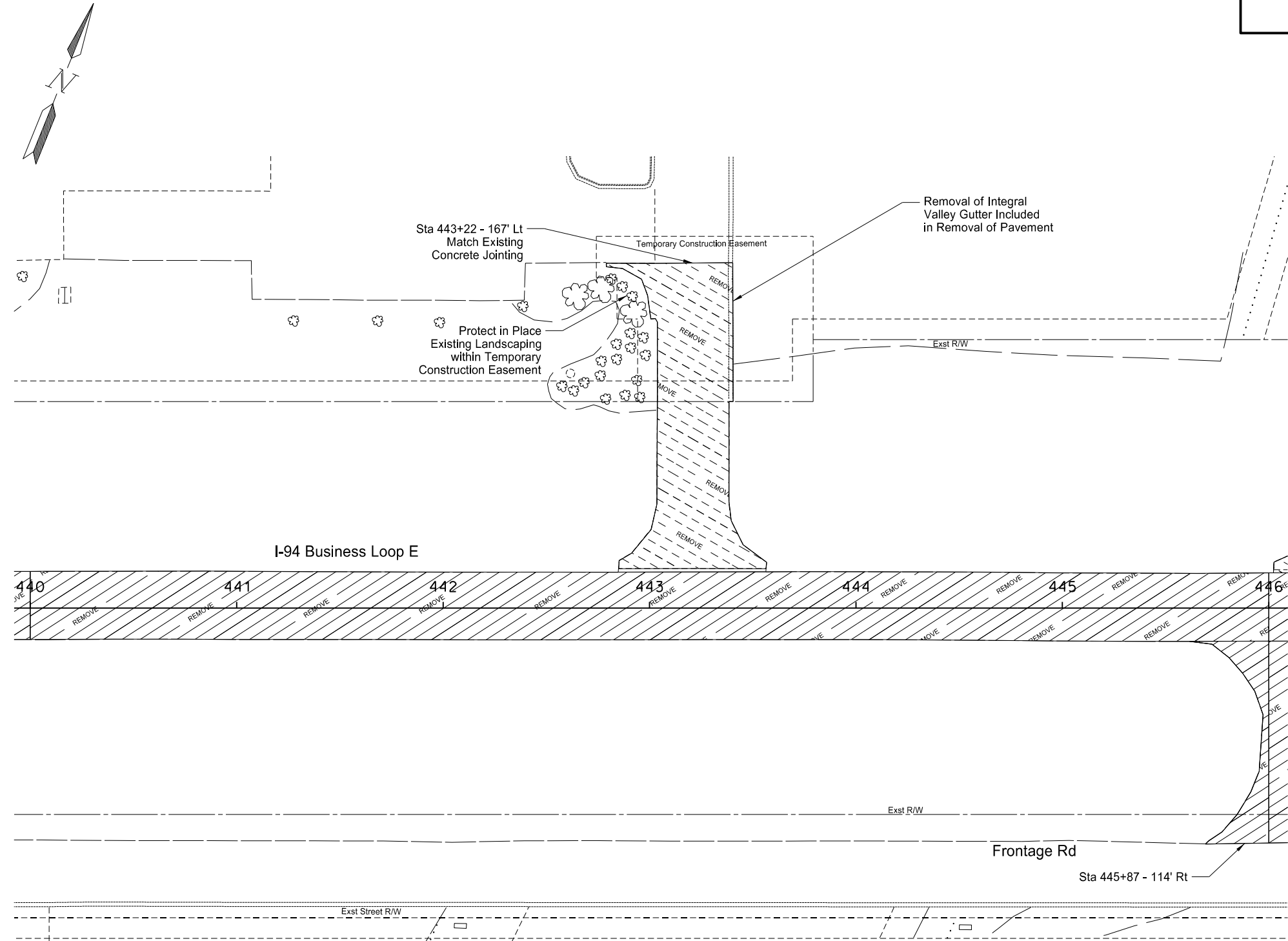
Dickinson, ND



Legend	
	Removal of Pavement (Bituminous)
	Removal of Pavement (Concrete)
	Pavement Milling
	Removal of Curb & Gutter

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	40	14

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 440+00 to Sta 446+00		
		BITUMINOUS	1036	TON
		AGGREGATE	800	TON
		Sta 443+22 - 167' Lt (DRIVEWAY)		
		CONCRETE	299	TON
		AGGREGATE	140	TON
		Sta 445+87 - 114' Rt (DRIVEWAY)		
		BITUMINOUS	26	TON
		AGGREGATE	25	TON
		TOTAL	2326	TON



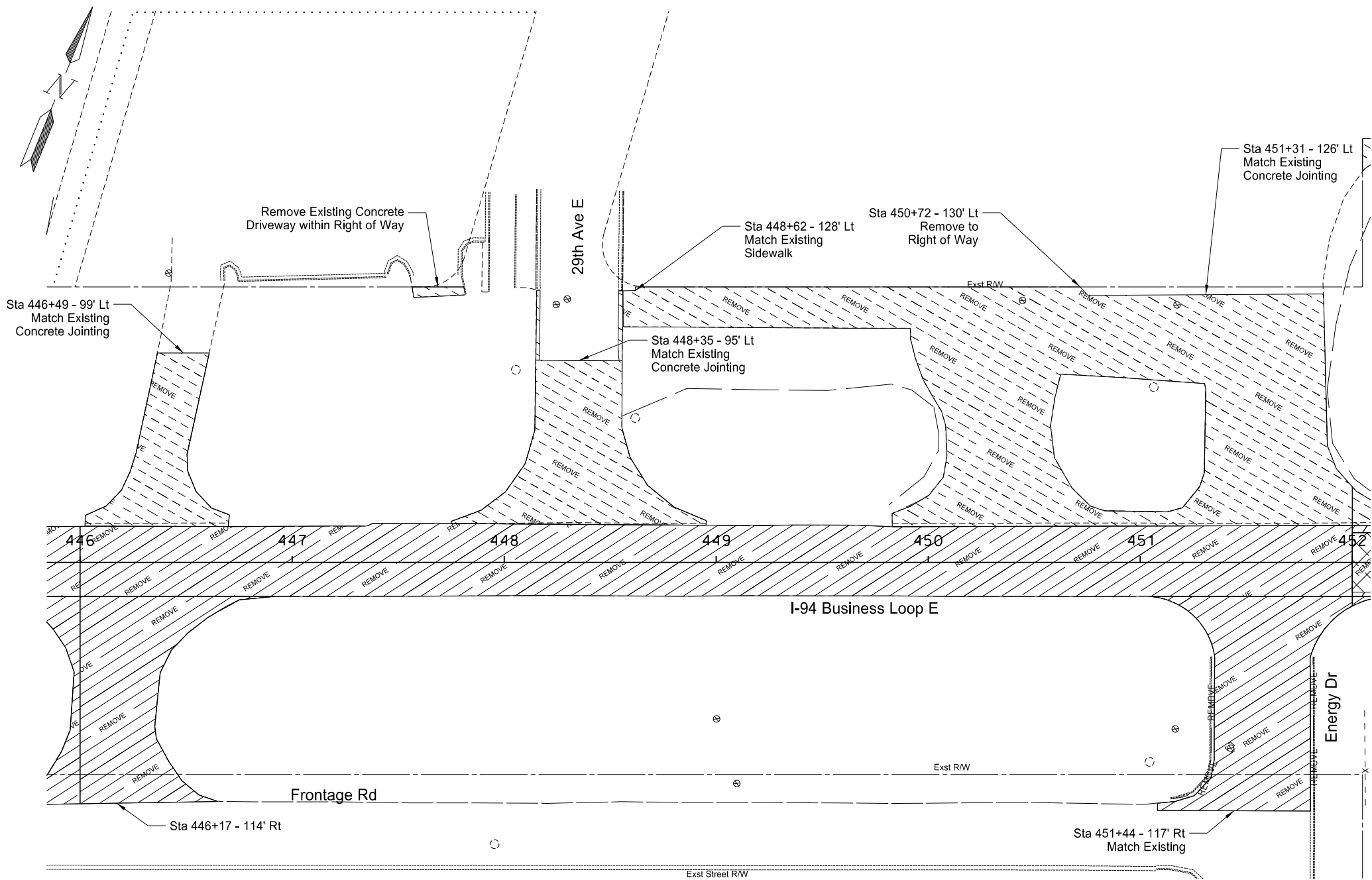
Legend	
	Removal of Pavement (Bituminous)
	Removal of Pavement (Concrete)
	Pavement Milling
	Removal of Curb & Gutter

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Removals
Sta 440+00 to Sta 446+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	40	15

SPEC	CODE	BID ITEM	QTY	UNIT
202	0130	REMOVAL OF CURB AND GUTTER		
		Sta 451+14 - 111' Rt to Sta 451+34 - 44' Rt	78	LF
		Sta 451+82 - 117' Rt to Sta 451+82 - 44' Rt	73	LF
		TOTAL	151	LF
202	0136	REMOVAL OF PAVEMENT		
		Sta 446+00 to Sta 452+00		
		BITUMINOUS	1049	TON
		AGGREGATE	810	TON
		Sta 446+17 - 114' Rt (DRIVEWAY)		
		BITUMINOUS	110	TON
		AGGREGATE	103	TON
		Sta 446+49 - 99' Lt (DRIVEWAY)		
		CONCRETE	95	TON
		AGGREGATE	89	TON
		Sta 447+69 - 126' Lt (DRIVEWAY)		
		CONCRETE	4	TON
		AGGREGATE	4	TON
		Sta 448+35 - 95' Lt (29TH AVE)		
		CONCRETE	165	TON
		AGGREGATE	154	TON
		Sta 451+31 - 126' Lt (DRIVEWAY)		
		CONCRETE	729	TON
		AGGREGATE	683	TON
		Sta 451+44 - 117' Rt (ENERGY DR)		
		BITUMINOUS	225	TON
		AGGREGATE	242	TON
		TOTAL	4462	TON



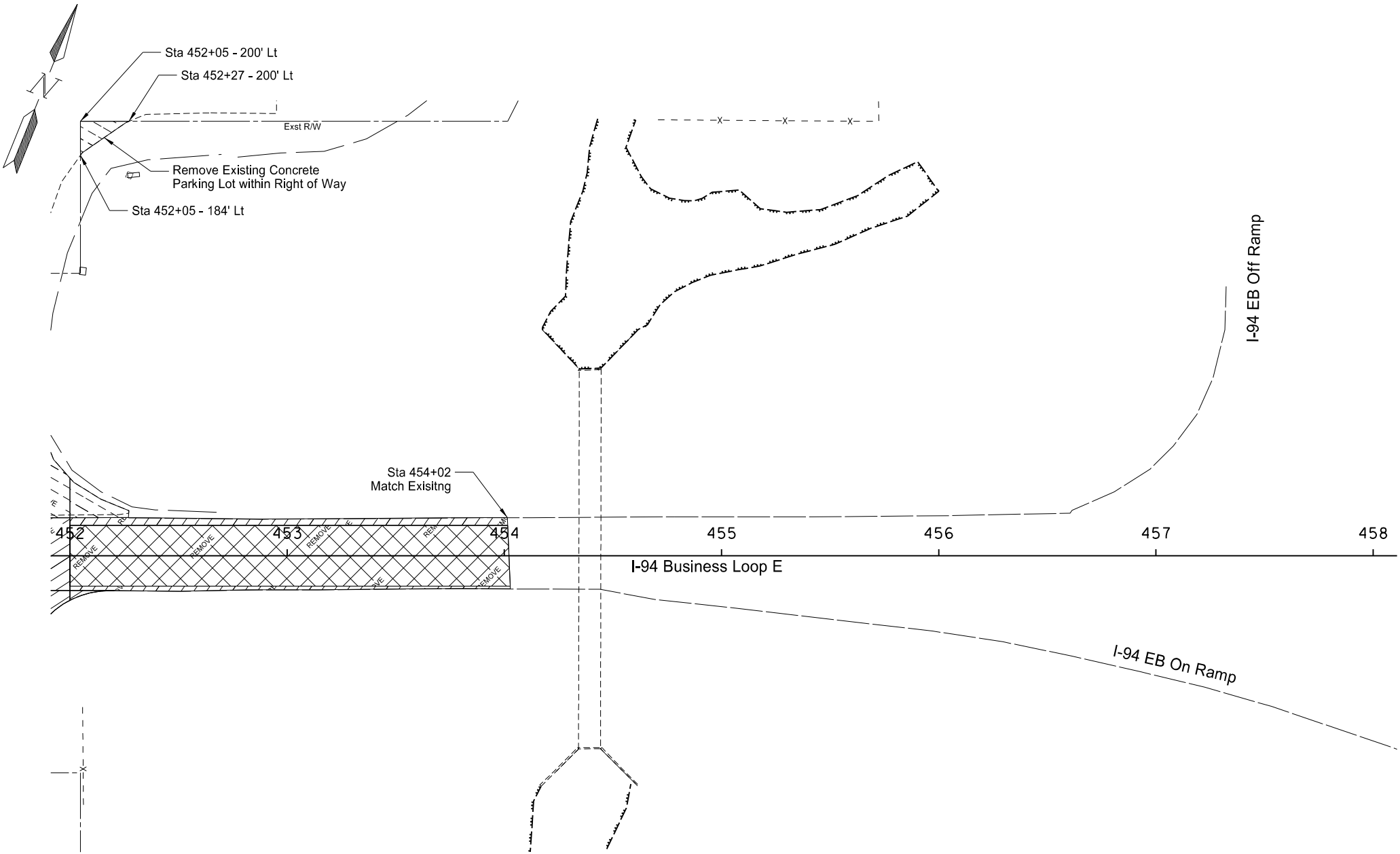
Legend	
	Removal of Pavement (Bituminous)
	Removal of Pavement (Concrete)
	Pavement Milling
	Removal of Curb & Gutter

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Removals
Sta 446+00 to Sta 452+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	40	16

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 452+00 to Sta 454+02		
		BITUMINOUS	49	TON
		AGGREGATE	40	TON
		Sta 452+04 - 17' Rt (ENERGY DR)		
		BITUMINOUS	2	TON
		AGGREGATE	1	TON
		Sta 452+10 - 23' Lt (DRIVEWAY)		
		CONCRETE	13	TON
		AGGREGATE	6	TON
		Sta 452+16 - 200' Lt (PARKING LOT)		
		CONCRETE	8	TON
		AGGREGATE	4	TON
		TOTAL	123	TON
411	0116	MILLING PAVEMENT SURFACE - 3 INCH		
		Sta 452+00 to Sta 454+02	628	SY



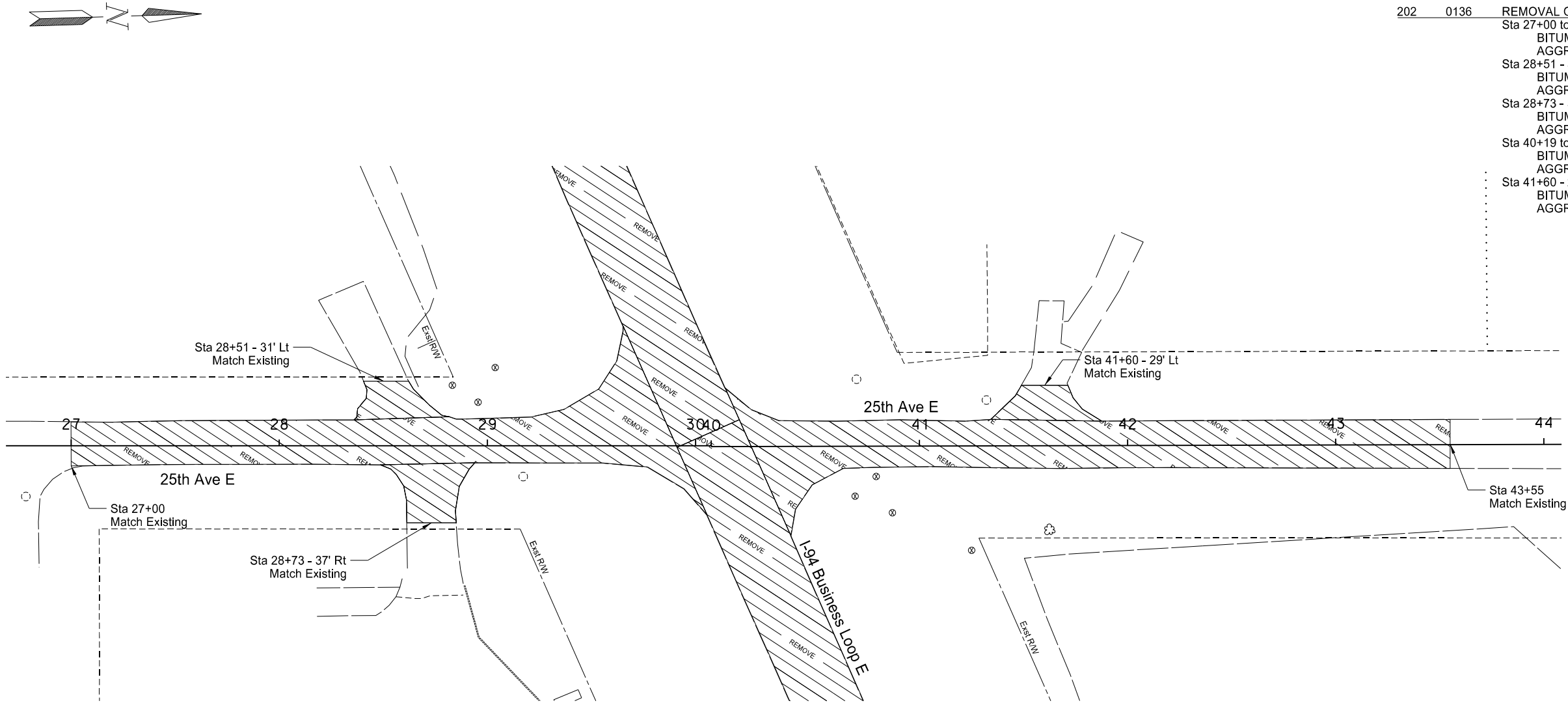
Legend	
	Removal of Pavement (Bituminous)
	Removal of Pavement (Concrete)
	Pavement Milling
	Removal of Curb & Gutter

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Removals
Sta 452+00 to Sta 458+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	40	17

SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 27+00 to Sta 29+91		
		BITUMINOUS	271	TON
		AGGREGATE	414	TON
		Sta 28+51 - 31' Lt (DRIVEWAY)		
		BITUMINOUS	13	TON
		AGGREGATE	12	TON
		Sta 28+73 - 37' Rt (DRIVEWAY)		
		BITUMINOUS	20	TON
		AGGREGATE	18	TON
		Sta 40+19 to Sta 43+55		
		BITUMINOUS	278	TON
		AGGREGATE	490	TON
		Sta 41+60 - 29' Lt (DRIVEWAY)		
		BITUMINOUS	14	TON
		AGGREGATE	13	TON
		TOTAL	1543	TON



Legend

- Removal of Pavement (Bituminous)
- Removal of Pavement (Concrete)
- Pavement Milling
- Removal of Curb & Gutter

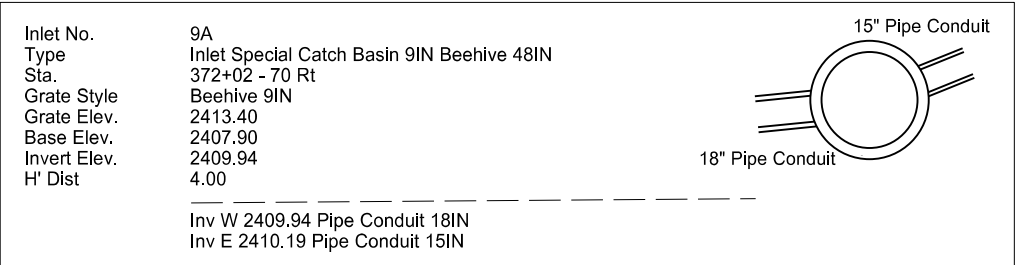
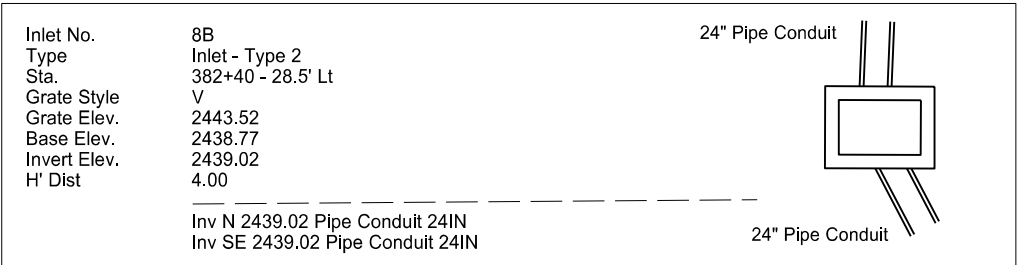
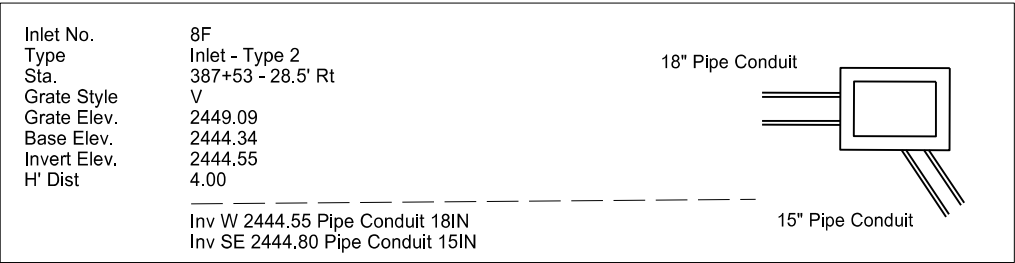
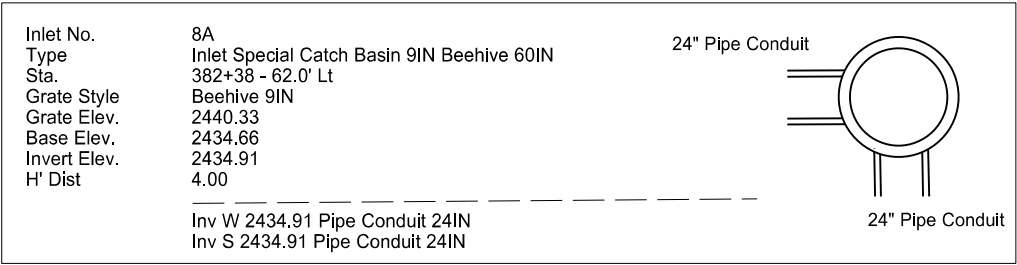
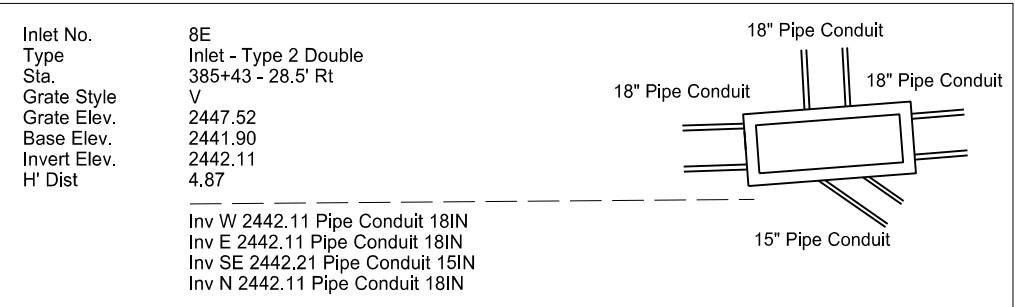
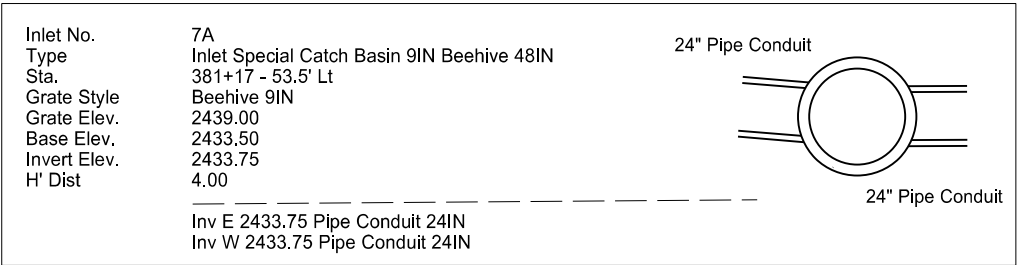
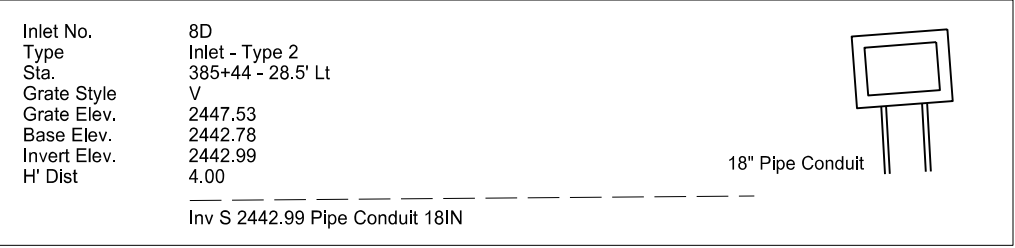
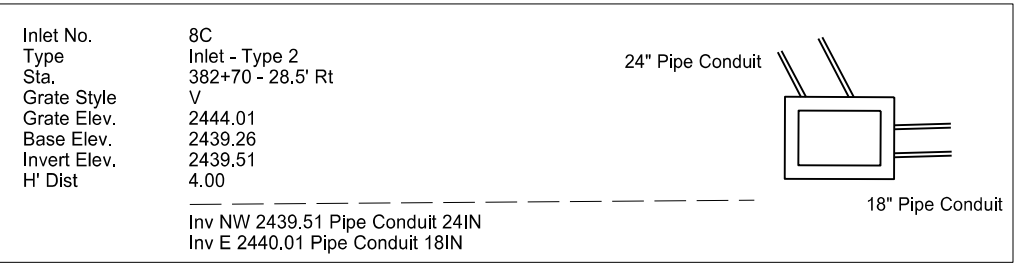
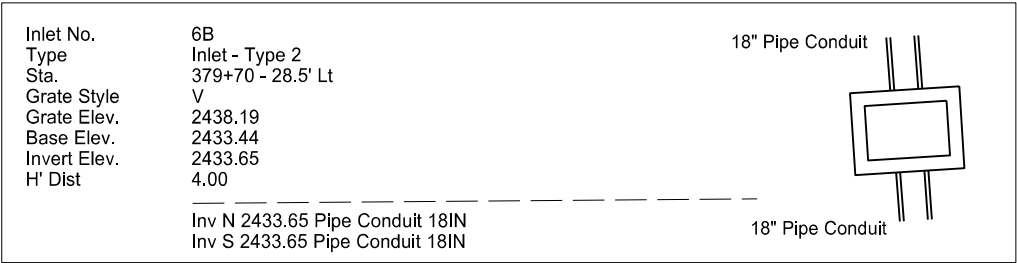
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Removals

Sta 27+00 to Sta 44+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND



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Inlet & Manhole Summary

E Business LP 10th Ave E - Exit 64

Dickinson, ND

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

9B

Inlet - Type 2

373+00 - 28.5 Rt

V

2419.41

2414.66

2414.85

4.00

15" Pipe Conduit

15" Pipe Conduit

Inv E 2414.85 Pipe Conduit 15IN

Inv SW 2414.85 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

11B

Inlet - Type 2

398+35.7 - 48.1' Rt

V

2445.81

2441.06

2442.05

4.00

15" Pipe Conduit

18" Pipe Conduit

18" Pipe Conduit

Inv NE 2442.16 Pipe Conduit 15IN

Inv E 2442.05 Pipe Conduit 18IN

Inv W 2442.05 Pipe Conduit 18IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

9C

Inlet - Type 2

374+01 - 28.5' Rt

V

2422.46

2417.71

2417.90

4.00

15" Pipe Conduit

Inv W 2417.90 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

12A

Inlet Special Catch Basin 9IN Beehive 48IN

399+14 - 55.0' Lt

Beehive 9IN

2443.09

2437.59

2437.88

4.00

15" Pipe Conduit

30" Pipe Conduit

Inv E 2437.88 Pipe Conduit 30IN

Inv SW 2439.13 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

10A

Inlet - Type 2

390+02 - 51.2' Lt

D

2450.75

2446.00

2447.56

4.00

15" Pipe Conduit

Inv NW 2447.56 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

12B

Inlet - Type 2

398+73 - 28.5' Lt

V

2444.49

2439.74

2439.93

4.00

15" Pipe Conduit

Inv NE 2439.93 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

10B

Inlet - Type 2

398+97 - 61.6' Lt

V

2450.86

2446.11

2447.53

4.00

18" Pipe Conduit

18" Pipe Conduit

15" Pipe Conduit

Inv E 2447.53 Pipe Conduit 18IN

Inv W 2447.53 Pipe Conduit 18IN

Inv SE 2447.53 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Rim Elev.

Base Elev.

Invert Elev.

H' Dist

13

Manhole 66IN

399+46 - 52.5' Lt

2443.28

2432.40

2432.69

8.92

15" Pipe Conduit

30" Existing RCP

Inv N 2439.11 Pipe Conduit 15IN

Inv W 2432.69 Pipe Conduit 30IN

Inv NE 2432.69 Existing 30" RCP

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

11A

Inlet - Type 2

398+14 - 30.0' Rt

D

2445.43

2440.68

2442.24

4.00

15" Pipe Conduit

Inv SE 2442.24 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

13A

Inlet - Type 2 Double

399+42 - 80.5' Lt

D

2443.08

2438.33

2439.89

4.00

15" Pipe Conduit

Inv S 2439.89 Pipe Conduit 15IN

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Inlet & Manhole Summary

E Business LP 10th Ave E - Exit 64

Dickinson, ND

Manhole No. 14

Type Adjust Manhole

Sta. 400+08 - 68.9 Lt

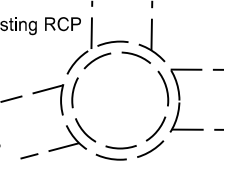
Grate Elev. 2442.47

Grate Style A

Notes

1. Rotate cone, frame, and lid away from proposed curb and gutter.

30" Existing RCP



30" Existing RCP

30" Existing RCP

Inlet No. 19A

Type Inlet - Type 2

Sta. 409+84 - 28.5' Lt

Grate Style V

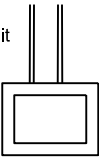
Grate Elev. 2428.91

Base Elev. 2424.16

Invert Elev. 2424.47

H' Dist 4.00

15" Pipe Conduit



Inv N 2424.47 Pipe Conduit 15IN

Inlet No. 15A

Type Inlet - Type 2 Double

Sta. 404+05 - 28.5' Rt

Grate Style V

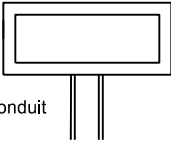
Grate Elev. 2436.91

Base Elev. 2432.16

Invert Elev. 2432.35

H' Dist 4.00

15" Pipe Conduit



Inv S 2432.35 Pipe Conduit 15IN

Inlet No. 20A

Type Inlet - Type 2 Double

Sta. 410+40 - 28.5' Rt

Grate Style V

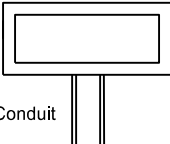
Grate Elev. 2428.53

Base Elev. 2423.78

Invert Elev. 2424.15

H' Dist 4.00

15" Pipe Conduit



Inv S 2424.15 Pipe Conduit 15IN

Inlet No. 16A

Type Inlet - Type 2

Sta. 404+52 - 28.5' Lt

Grate Style V

Grate Elev. 2436.23

Base Elev. 2431.48

Invert Elev. 2432.29

H' Dist 4.00

15" Pipe Conduit



Inv N 2432.29 Pipe Conduit 15IN

Inlet No. 21A

Type Inlet - Type 2

Sta. 410+44 - 28.5' Lt

Grate Style V

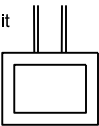
Grate Elev. 2428.51

Base Elev. 2423.76

Invert Elev. 2424.57

H' Dist 4.00

15" Pipe Conduit



Inv N 2424.57 Pipe Conduit 15IN

Inlet No. 17A

Type Inlet - Type 2 Double

Sta. 407+68 - 28.5' Rt

Grate Style V

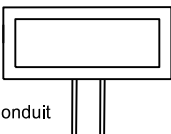
Grate Elev. 2431.73

Base Elev. 2426.98

Invert Elev. 2427.29

H' Dist 4.00

15" Pipe Conduit



Inv S 2427.29 Pipe Conduit 15IN

Inlet No. 22A

Type Inlet - Type 2 Double

Sta. 411+15 - 28.5' Lt

Grate Style D

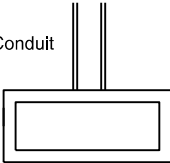
Grate Elev. 2428.35

Base Elev. 2423.60

Invert Elev. 2425.16

H' Dist 4.00

15" Pipe Conduit



Inv N 2425.16 Pipe Conduit 15IN

Inlet No. 18A

Type Inlet Special Catch Basin 9IN Beehive 48IN

Sta. 408+51 - 55.0 Lt

Grate Style Beehive 9IN

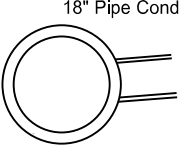
Grate Elev. 2428.57

Base Elev. 2423.07

Invert Elev. 2425.11

H' Dist 4.00

18" Pipe Conduit



Inv E 2425.11 Pipe Conduit 18IN

Inlet No. 23A

Type Inlet - Type 2 Double

Sta. 411+31 - 28.5' Rt

Grate Style D

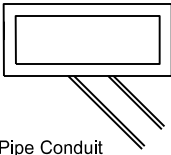
Grate Elev. 2428.36

Base Elev. 2423.61

Invert Elev. 2424.17

H' Dist 4.00

15" Pipe Conduit



Inv SE 2424.17 Pipe Conduit 15IN

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Inlet & Manhole Summary

E Business LP 10th Ave E - Exit 64

Dickinson, ND

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

24A

Inlet - Type 2 Double

411+75 - 28.5' Rt

V

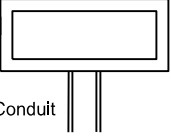
2428.47

2423.72

2424.48

4.00

15" Pipe Conduit



Inv S 2424.48 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

29A

Inlet - Type 2

416+20 - 28.5' Rt

V

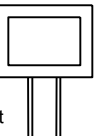
2432.31

2427.56

2428.62

4.00

15" Pipe Conduit



Inv S 2428.62 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

25A

Inlet - Type 2

412+00 - 28.5' Lt

V

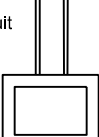
2428.59

2423.84

2425.40

4.00

15" Pipe Conduit



Inv N 2425.40 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

30A

Inlet - Type 2

418+74 - 28.5' Lt

V

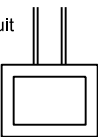
2434.63

2429.88

2431.44

4.00

15" Pipe Conduit



Inv N 2431.44 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

26A

Inlet - Type 2 Double

413+93 - 28.5' Rt

V

2430.25

2425.50

2427.06

4.00

15" Pipe Conduit



Inv S 2427.06 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

31A

Inlet - Type 2

419+88 - 28.5' Rt

V

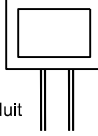
2435.67

2430.92

2432.48

4.00

15" Pipe Conduit



Inv S 2432.48 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

27A

Inlet - Type 2

414+31 - 28.5' Lt

V

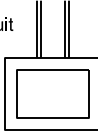
2430.60

2425.85

2427.41

4.00

15" Pipe Conduit



Inv N 2427.41 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

32A

Inlet - Type 2

421+87 - 28.5' Rt

V

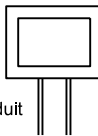
2437.48

2432.73

2434.29

4.00

15" Pipe Conduit



Inv S 2434.29 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

28A

Inlet - Type 2

416+15 - 28.5' Lt

V

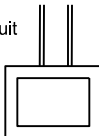
2432.27

2427.52

2429.08

4.00

15" Pipe Conduit



Inv N 2429.08 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

33A

Inlet - Type 2 Double

423+01 - 28.5' Lt

V

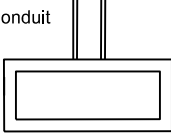
2438.52

2433.77

2435.33

4.00

15" Pipe Conduit



Inv N 2435.33 Pipe Conduit 15IN

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Inlet & Manhole Summary

E Business LP 10th Ave E - Exit 64

Dickinson, ND

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

40A

Inlet - Type 2

442+70 - 28.5' Rt

V

2432.58

2427.83

2429.39

4.00

15" Pipe Conduit

Inv S 2429.39 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

45A

Inlet - Type 2

450+50 - 32.5' Rt

V

2421.29

2416.54

2418.10

4.00

15" Pipe Conduit

Inv S 2418.10 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

41A

Inlet - Type 2

445+60 - 28.5' Rt

V

2428.37

2423.62

2423.81

4.00

15" Pipe Conduit

Inv S 2423.81 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

46A

Inlet - Type 2

451+15 - 63.5' Lt

D

2420.67

2415.36

2415.57

4.56

24" Pipe Conduit

24" Pipe Conduit

Inv W 2415.57 Pipe Conduit 24IN

Inv E 2415.57 Pipe Conduit 24IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

42A

Inlet - Type 2

446+12 - 28.5' Lt

V

2427.62

2422.87

2424.43

4.00

15" Pipe Conduit

Inv NE 2424.43 Pipe Conduit 15IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

46B

Inlet - Type 2

451+88 - 73.2' Lt

D

2420.58

2413.49

2413.70

6.34

24" Pipe Conduit

24" Pipe Conduit

Inv W 2413.70 Pipe Conduit 24IN

Inv E 2413.70 Pipe Conduit 24IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

43A

Inlet - Type 2 Double

448+06 - 64.2' Lt

V

2425.31

2420.08

2420.29

4.48

24" Pipe Conduit

24" Pipe Conduit

Inv W 2420.29 Pipe Conduit 24IN

Inv E 2420.29 Pipe Conduit 24IN

Inlet No.

Type

Sta.

Grate Style

Grate Elev.

Base Elev.

Invert Elev.

H' Dist

44A

Inlet - Type 2

449+00 - 32.5' Rt

V

2423.35

2418.60

2418.79

4.00

15" Pipe Conduit

Inv S 2418.79 Pipe Conduit 15IN

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Inlet & Manhole Summary

E Business LP 10th Ave E - Exit 64

Dickinson, ND

8/26/2020 11:58:12 AM cesdes3 L:\IND\Projects\Active 2016\Tx16121.00 - I-94 Business Loop - 10th Ave E - Exit 64\700 - CAD\5-094(114)907\Design\Sheets\050IM_007.dgn

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	Geosynthetic Material - Type G (Pay Item)	(*) End Sections		Applicable Backfill
				In	Bid Item	LF							Begin	End	
								In	Type		In	SY	EA	EA	
10+76 (10th Ave)	18' Rt	11+85 (10th Ave)	23' Rt	15	Pipe Conduit 15IN	110'	Reinforced Concrete Pipe - Class III (barrel length = 110 LF)	15							
28+35 (25th Ave)	27' Lt	28+69 (25th Ave)	27' Lt	18	Pipe Conduit 18IN-Approach	34'	Reinforced Concrete Pipe - Class III (barrel length = 34 LF)	18					FES	FES	
							Corrugated Steel Pipe	18	Z, A, P		0.064				
							Spiral Rib Steel Pipe	18	Z, A, P		0.064				
28+53 (25th Ave)	32' Rt	28+93 (25th Ave)	33' Rt	18	Pipe Conduit 18IN-Approach	40'	Reinforced Concrete Pipe - Class III (barrel length = 40 LF)	18					FES	FES	
							Corrugated Steel Pipe	18	Z, A, P		0.064				
							Spiral Rib Steel Pipe	18	Z, A, P		0.064				
83+72 (Villard)	21' Lt	85+02 (Villard)	27' Lt	18	Pipe Conduit 18IN-Approach	142'	Reinforced Concrete Pipe - Class III (barrel length = 142 LF)	18					FES	FES	
							Corrugated Steel Pipe	18	Z, A, P		0.064				
							Spiral Rib Steel Pipe	18	Z, A, P		0.064				
370+94	87' Rt	372+02	70' Rt	18	Pipe Conduit 18IN	112'	Reinforced Concrete Pipe - Class III (barrel length = 112 LF)	18					FES		
371+08	76' Lt	371+13	76' Lt	24	Pipe Corr Steel .109IN 24IN	5'	Corrugated Steel Pipe	24							
371+62	76' Lt	371+75	76' Lt	-	Pipe Conc Reinf Arch 29IN X 18IN CL III-S Drain	14'	Reinforced Concrete Arch Pipe 29IN x 18IN - Class III	29X18							
371+75	76' Lt	371+96	77' Lt	-	Pipe Conc Reinf Arch 29IN X 18IN CL III-S Drain	22'	Reinforced Concrete Arch Pipe 29IN x 18IN - Class III	29X18							
371+96	77' Lt	372+07	77' Lt	-	Pipe Conc Reinf Arch 29IN X 18IN CL III-S Drain	11'	Reinforced Concrete Arch Pipe 29IN x 18IN - Class III	29X18						FES	
372+02	70' Rt	373+00	28.5' Rt	15	Pipe Conduit 15IN	108'	Reinforced Concrete Pipe - Class III (barrel length = 108 LF)	15							
372+70	62' Lt	372+70	35.5' Lt	15	Pipe Conduit 15IN	27'	Reinforced Concrete Pipe - Class III (barrel length = 27 LF)	15							
373+56	72' Lt	374+12	72' Lt	3	Pipe Conduit 24IN	56'	Reinforced Concrete Pipe - Class III (barrel length = 56 LF)	3					FES	FES	
373+00	28.5' Rt	374+01	28.5' Rt	15	Pipe Conduit 15IN	102'	Reinforced Concrete Pipe - Class III (barrel length = 102 LF)	15							
375+94	63' Lt	376+55	52.5' Lt	24	Pipe Conduit 24IN	62'	Reinforced Concrete Pipe - Class III (barrel length = 62 LF)	24					FES		
376+55	28.5' Rt	376+55	28.5' Lt	18	Pipe Conduit 18IN	58'	Reinforced Concrete Pipe - Class III (barrel length = 58 LF)	18							
376+55	28.5' Lt	376+55	52.5' Lt	18	Pipe Conduit 18IN	28'	Reinforced Concrete Pipe - Class III (barrel length = 28 LF)	18							
376+55	52.5' Lt	379+70	53.5' Lt	24	Pipe Conduit 24IN	310'	Reinforced Concrete Pipe - Class III (barrel length = 310 LF)	24							
379+70	28.5' Rt	379+70	28.5' Lt	18	Pipe Conduit 18IN	58'	Reinforced Concrete Pipe - Class III (barrel length = 58 LF)	18							
379+70	28.5' Lt	379+70	53.5' Lt	18	Pipe Conduit 18IN	26'	Reinforced Concrete Pipe - Class III (barrel length = 26 LF)	18							
379+70	53.5' Lt	381+17	53.5' Lt	24	Pipe Conduit 24IN	146'	Reinforced Concrete Pipe - Class III (barrel length = 146 LF)	24							
381+17	53.5' Lt	382+38	62' Lt	24	Pipe Conduit 24IN	122'	Reinforced Concrete Pipe - Class III (barrel length = 122 LF)	24							
382+38	62' Lt	382+40	28.5' Lt	24	Pipe Conduit 24IN	34'	Reinforced Concrete Pipe - Class III (barrel length = 34 LF)	24							
382+40	28.5' Lt	382+70	28.5' Rt	24	Pipe Conduit 24IN	66'	Reinforced Concrete Pipe - Class III (barrel length = 66 LF)	24							
382+70	28.5' Rt	385+43	28.5' Rt	18	Pipe Conduit 18IN	276'	Reinforced Concrete Pipe - Class III (barrel length = 276 LF)	18							
384+47	66' Lt	385+10	64' Lt	18	Pipe Conduit 18IN-Approach	62'	Reinforced Concrete Pipe - Class III (barrel length = 62 LF)	18					FES	FES	
385+43	28.5' Rt	385+44	28.5' Lt	18	Pipe Conduit 18IN	58'	Reinforced Concrete Pipe - Class III (barrel length = 58 LF)	18							
385+43	28.5' Rt	385+79	58' Rt	15	Pipe Conduit 15IN	48'	Reinforced Concrete Pipe - Class III (barrel length = 48 LF)	15						FES	
385+43	28.5' Rt	387+53	28.5' Rt	18	Pipe Conduit 18IN	212'	Reinforced Concrete Pipe - Class III (barrel length = 212 LF)	18							
387+53	28.5' Rt	387+58	41' Rt	15	Pipe Conduit 15IN	14'	Reinforced Concrete Pipe - Class III (barrel length = 14 LF)	15						FES	
389+40	62' Lt	389+97	61.6' Lt	18	Pipe Conduit 18IN-Approach	57'	Reinforced Concrete Pipe - Class III (barrel length = 57 LF)	18					FES	FES	
389+97	61.6' Lt	390+15	62' Lt	18	Pipe Conduit 18IN-Approach	18'	Reinforced Concrete Pipe - Class III (barrel length = 18 LF)	18							
389+97	61.6' Lt	390+02	51.2' Lt	15	Pipe Conduit 15IN	12'	Reinforced Concrete Pipe - Class III (barrel length = 12 LF)	15							
398+14	30' Rt	398+35.7	48.1' Rt	15	Pipe Conduit 15IN	28'	Reinforced Concrete Pipe - Class III (barrel length = 28 LF)	15							
398+09	47' Rt	398+35.7	48.1' Rt	18	Pipe Conduit 18IN-Approach	27'	Reinforced Concrete Pipe - Class III (barrel length = 27 LF)	18					FES		
							Corrugated Steel Pipe	18	Z, A, P		0.064				
							Spiral Rib Steel Pipe	18	Z, A, P		0.064				
398+35.7	48.1' Rt	399+71	50' Rt	18	Pipe Conduit 18IN-Approach	135'	Reinforced Concrete Pipe - Class III (barrel length = 135 LF)	18						FES	
							Corrugated Steel Pipe	18	Z, A, P		0.064				
							Spiral Rib Steel Pipe	18	Z, A, P		0.064				

Corrugations: 2 = 2-2/3"x1/2"
3 = 3"x1"
5 = 5"x1"

Coatings: Z = Zinc
A = Aluminum
P = Polymeric (over Zinc or Aluminum)

Spiral Ribs: 3/4 = 3/4"x3/4"@7-1/2"
1 = 3/4"x1"@11-1/2"

(*) End sections are measured and paid for separately for pipe extensions.
FES = Flared End Section
TES = Traversable End Section

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Pipe List

E Business LP 10th Ave E - Exit 64

Dickinson, ND

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation (Pay Item)		Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	Geosynthetic Material - Type G (Pay Item)	(*) End Sections		Applicable Backfill
												Begin	End	
				In	Bid Item	LF	In	Type		In	SY	EA	EA	
398+73	28.5' Lt	399+14	55' Lt	15	Pipe Conduit 15IN	50'	Reinforced Concrete Pipe - Class III (barrel length = 50 LF)	15						
399+14	55' Lt	399+46	53' Lt	30	Pipe Conduit 30IN	34'	Reinforced Concrete Pipe - Class III (barrel length = 34 LF)	30						
399+42	80.5' Lt	399+46	52.5' Lt	15	Pipe Conduit 15IN	28'	Reinforced Concrete Pipe - Class III (barrel length = 28 LF)	15						
404+05	28.5' Rt	404+05	73.5' Rt	15	Pipe Conduit 15IN	45'	Reinforced Concrete Pipe - Class III (barrel length = 45 LF)	15					FES	
404+52	28.5' Lt	404+53	55' Lt	15	Pipe Conduit 15IN	28'	Reinforced Concrete Pipe - Class III (barrel length = 28 LF)	15					FES	
407+68	28.5' Rt	407+68	55' Rt	15	Pipe Conduit 15IN	28'	Reinforced Concrete Pipe - Class III (barrel length = 28 LF)	15					FES	
408+51	55' Lt	409+41	62' Lt	18	Pipe Conduit 18IN-Approach	90'	Reinforced Concrete Pipe - Class III (barrel length = 90 LF)	18						
							Corrugated Steel Pipe	18	Z, A, P	0.064			FES	
							Spiral Rib Steel Pipe	18	Z, A, P	0.064				
409+84	28.5' Lt	409+84	58' Lt	15	Pipe Conduit 15IN	30'	Reinforced Concrete Pipe - Class III (barrel length = 30 LF)	15					FES	
410+24	42' Lt	410+24	57' Lt	42	Pipe Conc Reinf 42IN CL III-Storm Drain	16'	Reinforced Concrete Pipe - Class III (barrel length = 16 LF)	42					FES	
410+40	28.5' Rt	410+40	46' Rt	15	Pipe Conduit 15IN	18'	Reinforced Concrete Pipe - Class III (barrel length = 18 LF)	15					FES	
410+44	28.5' Lt	410+44	55' Lt	15	Pipe Conduit 15IN	28'	Reinforced Concrete Pipe - Class III (barrel length = 28 LF)	15					FES	
411+15	28.5' Lt	411+15	52' Lt	15	Pipe Conduit 15IN	24'	Reinforced Concrete Pipe - Class III (barrel length = 24 LF)	15					FES	
411+31	28.5' Rt	411+42	47' Rt	15	Pipe Conduit 15IN	22'	Reinforced Concrete Pipe - Class III (barrel length = 22 LF)	15					FES	
411+75	28.5' Rt	411+75	45' Rt	15	Pipe Conduit 15IN	18'	Reinforced Concrete Pipe - Class III (barrel length = 18 LF)	15					FES	
412+00	28.5' Lt	412+00	52' Lt	15	Pipe Conduit 15IN	24'	Reinforced Concrete Pipe - Class III (barrel length = 24 LF)	15					FES	
412+77	46' Rt	413+79	52' Rt	24	Pipe Conduit 24IN-Approach	102'	Reinforced Concrete Pipe - Class III (barrel length = 102 LF)	24				FES	FES	
413+64	63.5' Lt	414+17	65' Lt	-	Pipe Conc Reinf Arch 29IN X 18IN CL III-S Drain	54'	Reinforced Concrete Pipe - Class III (barrel length = 54 LF)	29X18				FES	FES	
413+64	59' Lt	414+17	60.5' Lt	-	Pipe Conc Reinf Arch 29IN X 18IN CL III-S Drain	54'	Reinforced Concrete Pipe - Class III (barrel length = 54 LF)	29X18				FES	FES	
413+60	66' Lt	413+68	69' Lt	15	Pipe Corr Steel .064IN 15IN	8'	Corrugated Steel Pipe	15	Z, A, P	0.064		FES		
413+93	28.5' Rt	413+93	42' Rt	15	Pipe Conduit 15IN	14'	Reinforced Concrete Pipe - Class III (barrel length = 14 LF)	15					FES	
414+31	28.5' Lt	414+31	56' Lt	15	Pipe Conduit 15IN	28'	Reinforced Concrete Pipe - Class III (barrel length = 28 LF)	15					FES	
415+54	62.25' Lt	416+02	62.25' Lt	-	Pipe Conc Reinf Arch 29IN X 18IN CL III-S Drain	49'	Reinforced Concrete Pipe - Class III (barrel length = 49 LF)	29X18				FES	FES	
415+54	57.75' Lt	416+02	57.75' Lt	-	Pipe Conc Reinf Arch 29IN X 18IN CL III-S Drain	49'	Reinforced Concrete Pipe - Class III (barrel length = 49 LF)	29X18				FES	FES	
416+15	28.5' Lt	416+15	54' Lt	15	Pipe Conduit 15IN	26'	Reinforced Concrete Pipe - Class III (barrel length = 26 LF)	15					FES	
416+20	28.5' Rt	416+20	41' Rt	15	Pipe Conduit 15IN	14'	Reinforced Concrete Pipe - Class III (barrel length = 14 LF)	15					FES	
418+24	62.25' Lt	418+62	62.25' Lt	-	Pipe Conc Reinf Arch 29IN X 18IN CL III-S Drain	38'	Reinforced Concrete Pipe - Class III (barrel length = 38 LF)	29X18				FES	FES	
418+24	57.75' Lt	418+62	57.75' Lt	-	Pipe Conc Reinf Arch 29IN X 18IN CL III-S Drain	38'	Reinforced Concrete Pipe - Class III (barrel length = 38 LF)	29X18				FES	FES	
418+58	54' Rt	419+78	53' Rt	24	Pipe Conduit 24IN-Approach	120'	Reinforced Concrete Pipe - Class III (barrel length = 120 LF)	24				FES	FES	
418+74	28.5' Lt	418+74	54' Lt	15	Pipe Conduit 15IN	26'	Reinforced Concrete Pipe - Class III (barrel length = 26 LF)	15					FES	
419+88	28.5' Rt	419+88	43' Rt	15	Pipe Conduit 15IN	14'	Reinforced Concrete Pipe - Class III (barrel length = 14 LF)	15					FES	
419+89	61' Lt	420+39	58' Lt	-	Pipe Conc Reinf Arch 29IN X 18IN CL III-S Drain	50'	Reinforced Concrete Pipe - Class III (barrel length = 50 LF)	29X18				FES	FES	
421+10	53' Rt	421+79	53' Rt	24	Pipe Conduit 24IN-Approach	70'	Reinforced Concrete Pipe - Class III (barrel length = 70 LF)	24				FES	FES	
421+40	57' Lt	421+85	58' Lt	-	Pipe Conc Reinf Arch 29IN X 18IN CL III-S Drain	46'	Reinforced Concrete Pipe - Class III (barrel length = 46 LF)	29X18				FES	FES	
421+87	28.5' Rt	421+87	43' Rt	15	Pipe Conduit 15IN	16'	Reinforced Concrete Pipe - Class III (barrel length = 16 LF)	15					FES	
423+01	28.5' Lt	423+01	52' Lt	15	Pipe Conduit 15IN	24'	Reinforced Concrete Pipe - Class III (barrel length = 24 LF)	15					FES	
424+12	59' Lt	424+58	58' Lt	18	Pipe Conduit 18IN-Approach	46'	Reinforced Concrete Pipe - Class III (barrel length = 46 LF)	18						
							Corrugated Steel Pipe	18	Z, A, P	0.064		FES	FES	
							Spiral Rib Steel Pipe	18	Z, A, P	0.064				
426+95	59' Rt	428+73	44' Rt	24	Pipe Conduit 24IN-Approach	180'	Reinforced Concrete Pipe - Class III (barrel length = 180 LF)	24						
							Corrugated Steel Pipe	24	Z, A, P	0.064		FES		
							Spiral Rib Steel Pipe	24	Z, A, P	0.064				
428+73	44.5' Rt	428+73	28.5' Rt	24	Pipe Conduit 24IN	16'	Reinforced Concrete Pipe - Class III (barrel length = 16 LF)	24						
428+73	28.5' Rt	428+88	53.5' Lt	24	Pipe Conduit 24IN	84'	Reinforced Concrete Pipe - Class III (barrel length = 84 LF)	24						

Corrugations: 2 = 2-2/3"x1/2"
3 = 3"x1"
5 = 5"x1"

Coatings: Z = Zinc
A = Aluminum
P = Polymeric (over Zinc or Aluminum)

Spiral Ribs: 3/4 = 3/4"x3/4"@7-1/2"
1 = 3/4"x1"@11-1/2"

(*) End sections are measured and paid for separately for pipe extensions.
FES = Flared End Section
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Pipe List

E Business LP 10th Ave E - Exit 64

Dickinson, ND

											STATE	PROJECT NO.	SECTION NO.	SHEET NO.
										ND		NHU-5-094(114)907	51	3

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation (Pay Item)		Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	Geosynthetic Material - Type G (Pay Item)	(*) End Sections		Applicable Backfill
				In	LF							Begin	End	
				In	Bid Item	LF	In	Type		In	SY	EA	EA	
428+88	53.5' Lt	429+00	59' Lt	24	Pipe Conduit 24IN	14'	24							
434+25	28.5' Rt	434+25	42.5' Rt	15	Pipe Conduit 15IN	14'	15							
434+25	43' Rt	435+49	52' Rt	18	Pipe Conduit 18IN-Approach	124'	18							
							18	Z, A, P	0.064		FES			
							18	Z, A, P	0.064					
434+63	57' Lt	435+19	57' Lt	18	Pipe Conduit 18IN-Approach	57'	18					FES	FES	
437+65	28.5' Lt	438+38	53' Lt	15	Pipe Conduit 15IN	77'	15						FES	
438+05	28.5' Rt	438+05	40' Rt	15	Pipe Conduit 15IN	12'	15						FES	
438+45	77' Rt	439+09	78' Rt	18	Pipe Conduit 18IN-Approach	63'	18							
							18	Z, A, P	0.064		FES	FES		
							18	Z, A, P	0.064					
438+48	62' Lt	439+05	63' Lt	24	Pipe Conduit 24IN-Approach	55'	24							
							24	Z, A, P	0.064		FES	FES		
							24	Z, A, P	0.064					
440+18	38' Lt	440+18	68' Lt	24	Pipe Conc Reinf 24IN CL III-Storm Drain	31'	24							
440+18	54' Rt	440+18	61' Rt	24	Pipe Conc Reinf 24IN CL III-Storm Drain	7'	24						FES	
442+27	28.5' Lt	442+50	53' Rt	15	Pipe Conduit 15IN	32'	15						FES	
442+63	63' Lt	444+17	58' Rt	24	Pipe Conduit 24IN-Approach	153'	24							
							24	Z, A, P	0.064		FES	FES		
							24	Z, A, P	0.064					
442+70	28.5' Rt	442+70	40' Rt	15	Pipe Conduit 15IN	12'	15						FES	
445+60	28.5' Rt	445+60	49' Rt	15	Pipe Conduit 15IN	22'	15						FES	
445+93	56' Lt	446+97	68' Lt	24	Pipe Conduit 24IN-Approach	105'	24							
							24	Z, A, P	0.064		FES	FES		
							24	Z, A, P	0.064					
446+12	28.5' Lt	446+94	62' Lt	15	Pipe Conduit 15IN	90'	15						FES	
447+39	66' Lt	448+06	64.2' Lt	24	Pipe Conduit 24IN-Approach	68'	24							
							24	Z, A, P	0.064		FES			
							24	Z, A, P	0.064					
448+06	64.2' Lt	449+22	60' Lt	24	Pipe Conduit 24IN-Approach	116'	24							
							24	Z, A, P	0.064			FES		
							24	Z, A, P	0.064					
449+00	32.5' Rt	449+00	54' Rt	15	Pipe Conduit 15IN	22'	15						FES	
450+50	32.5' Rt	450+50	55' Rt	15	Pipe Conduit 15IN	22'	15						FES	
450+70	58' Lt	451+15	63.5' Lt	24	Pipe Conduit 24IN-Approach	45'	24							
							24	Z, A, P	0.064		FES			
							24	Z, A, P	0.064					
450+74	70' Rt	451+97	78' Rt	24	Pipe Conduit 24IN-Approach	123'	24							
							24	Z, A, P	0.064		FES	FES		
							24	Z, A, P	0.064					
451+15	63.5' Lt	451+88	73.2' Lt	24	Pipe Conduit 24IN-Approach	74'	24							
							24	Z, A, P	0.064					
							24	Z, A, P	0.064					
451+88	73.2' Lt	452+17	77' Lt	24	Pipe Conduit 24IN-Approach	29'	24							
							24	Z, A, P	0.064			FES		
							24	Z, A, P	0.064					

Corrugations: 2 = 2-2/3"x1/2"
3 = 3"x1"
5 = 5"x1"

Coatings: Z = Zinc
A = Aluminum
P = Polymeric (over Zinc or Aluminum)

Spiral Ribs: 3/4 = 3/4"x3/4"@7-1/2"
1 = 3/4"x1"@11-1/2"

(*) End sections are measured and paid for separately for pipe extensions.
FES = Flared End Section
TES = Traversable End Section

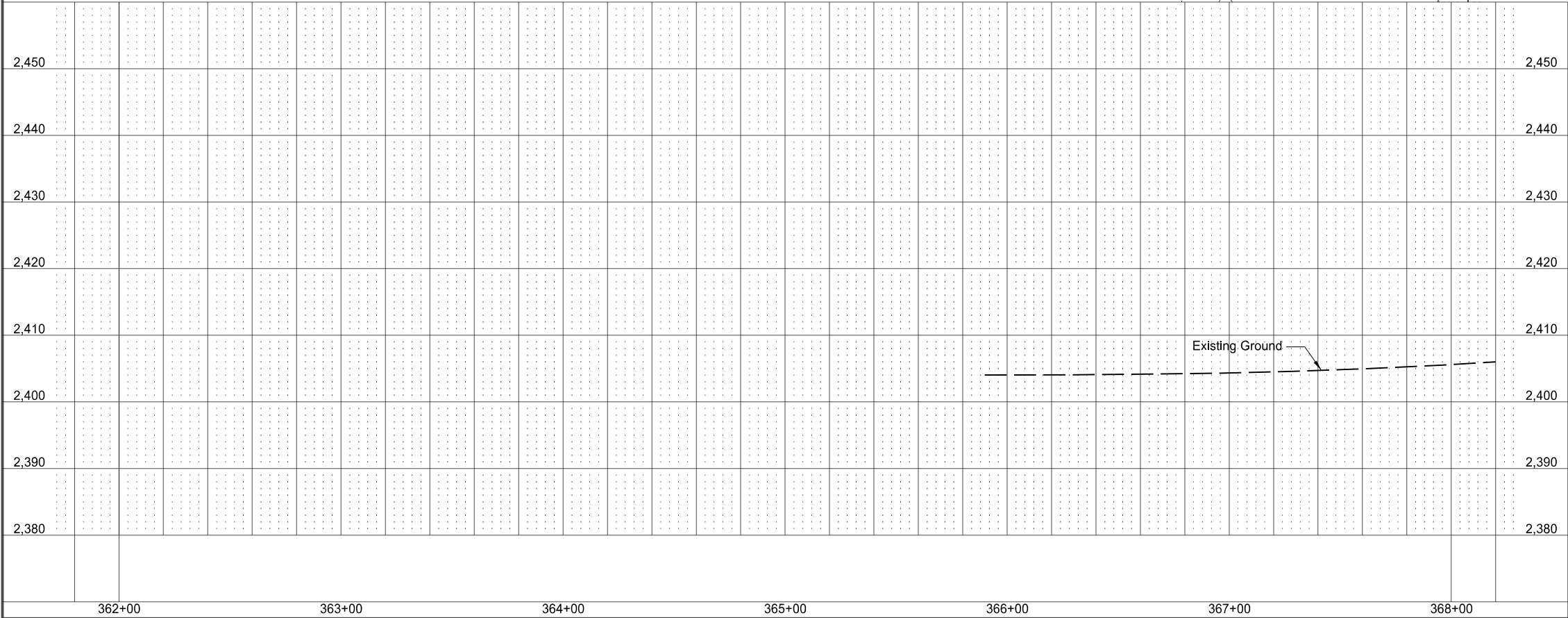
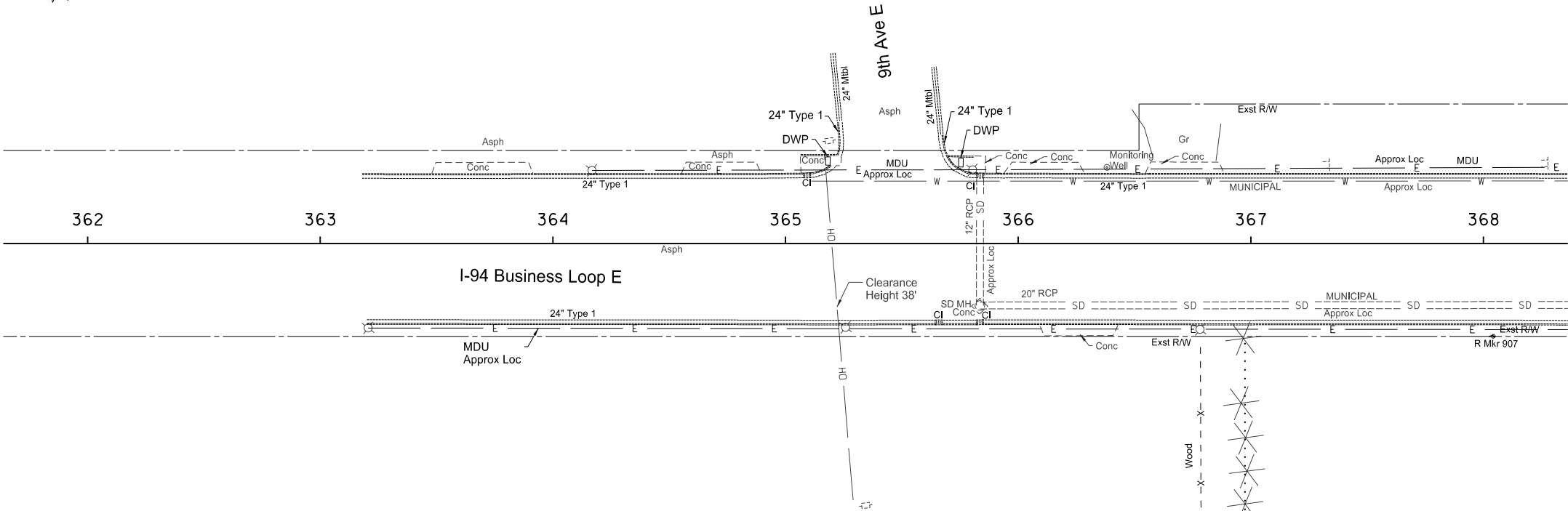
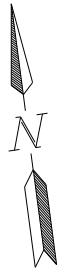
Pipe List

E Business LP 10th Ave E - Exit 64

Dickinson, ND

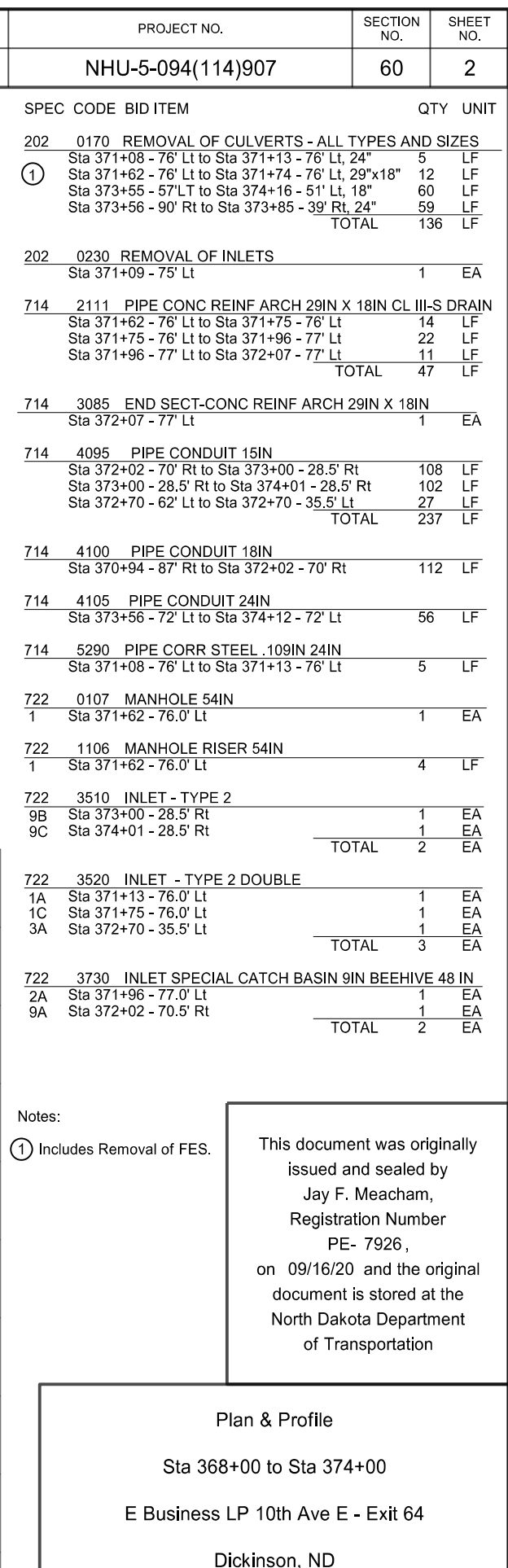
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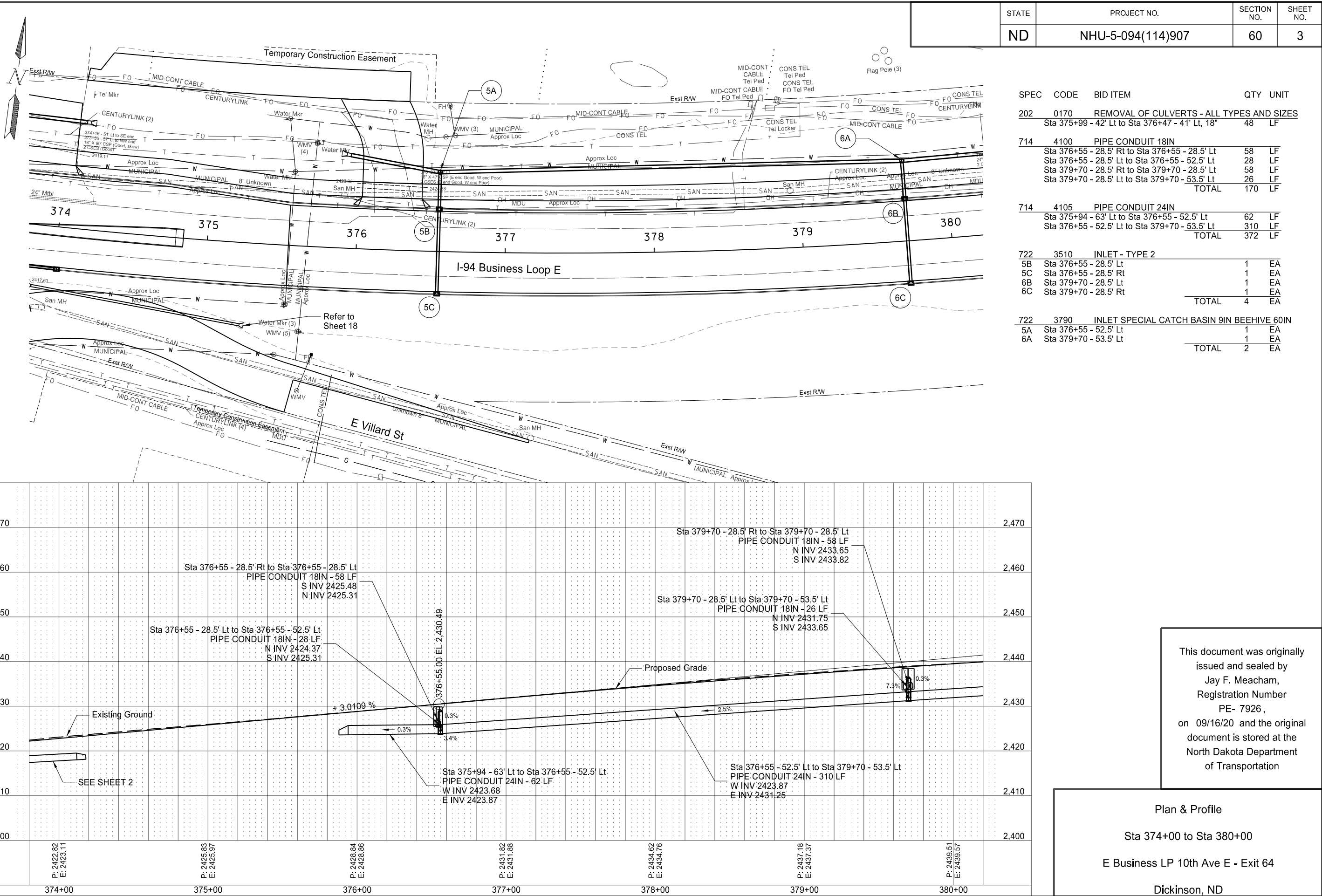
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	60	1



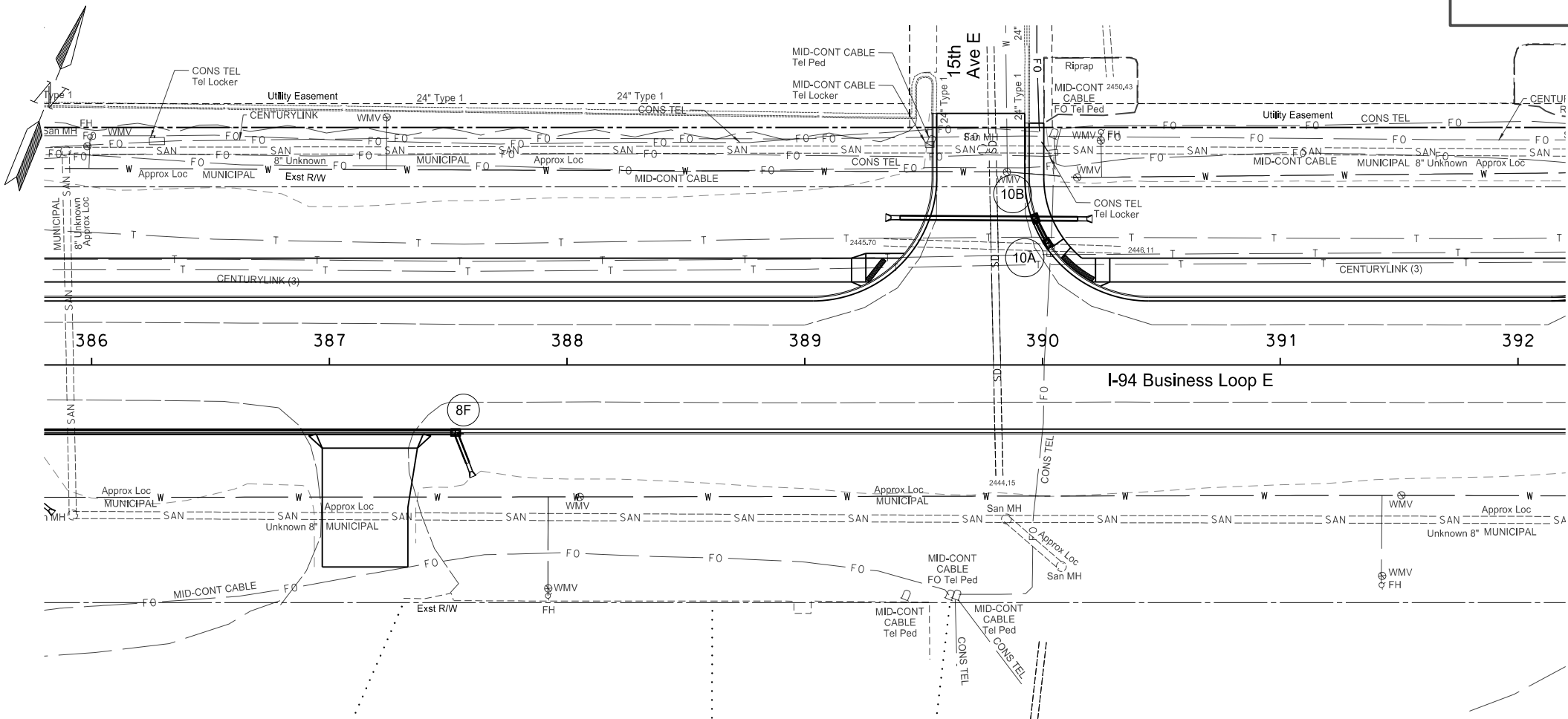
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Plan & Profile
Sta 362+00 to Sta 368+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

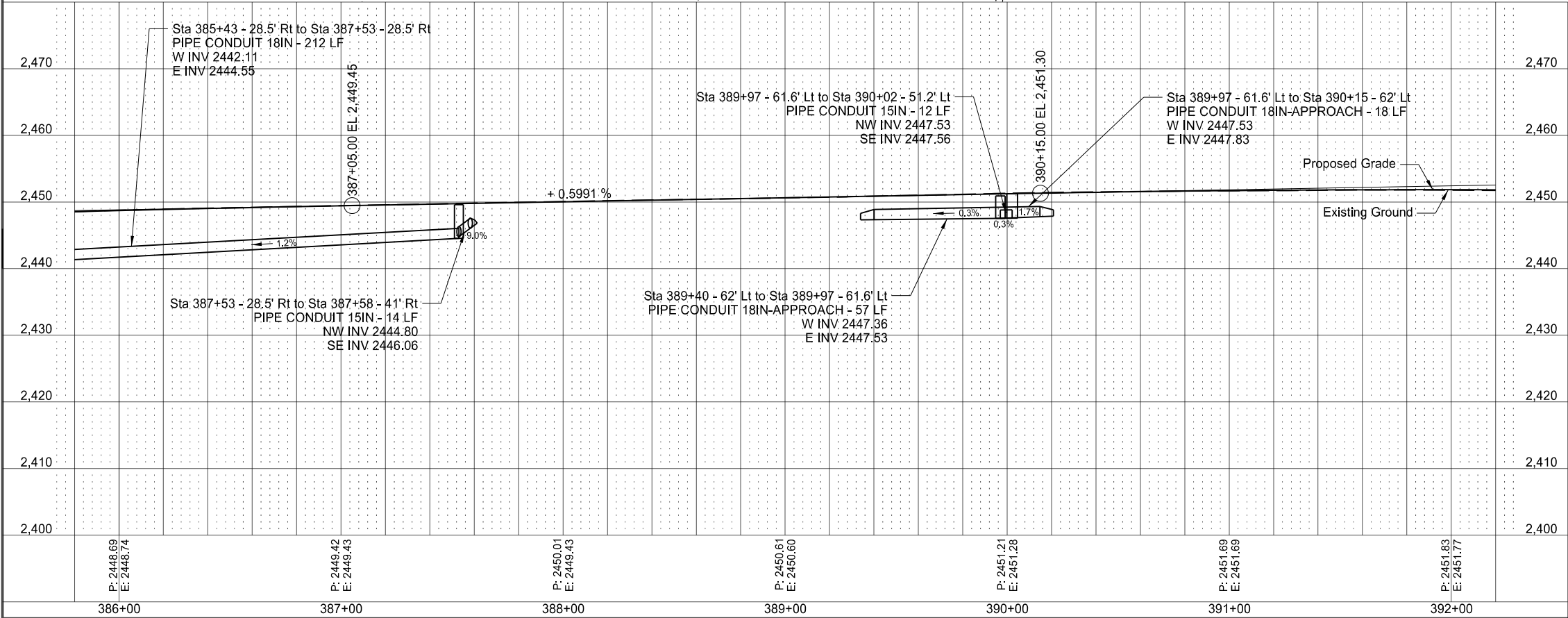




STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	60	5



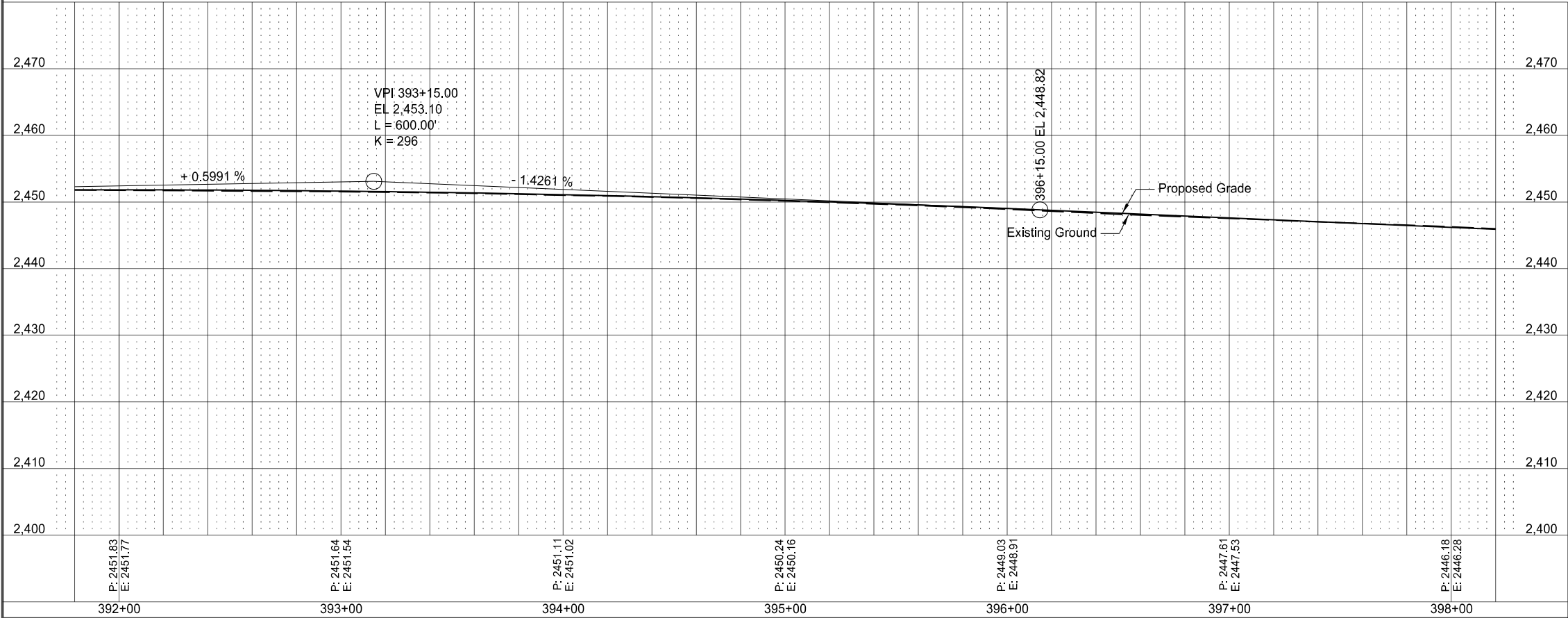
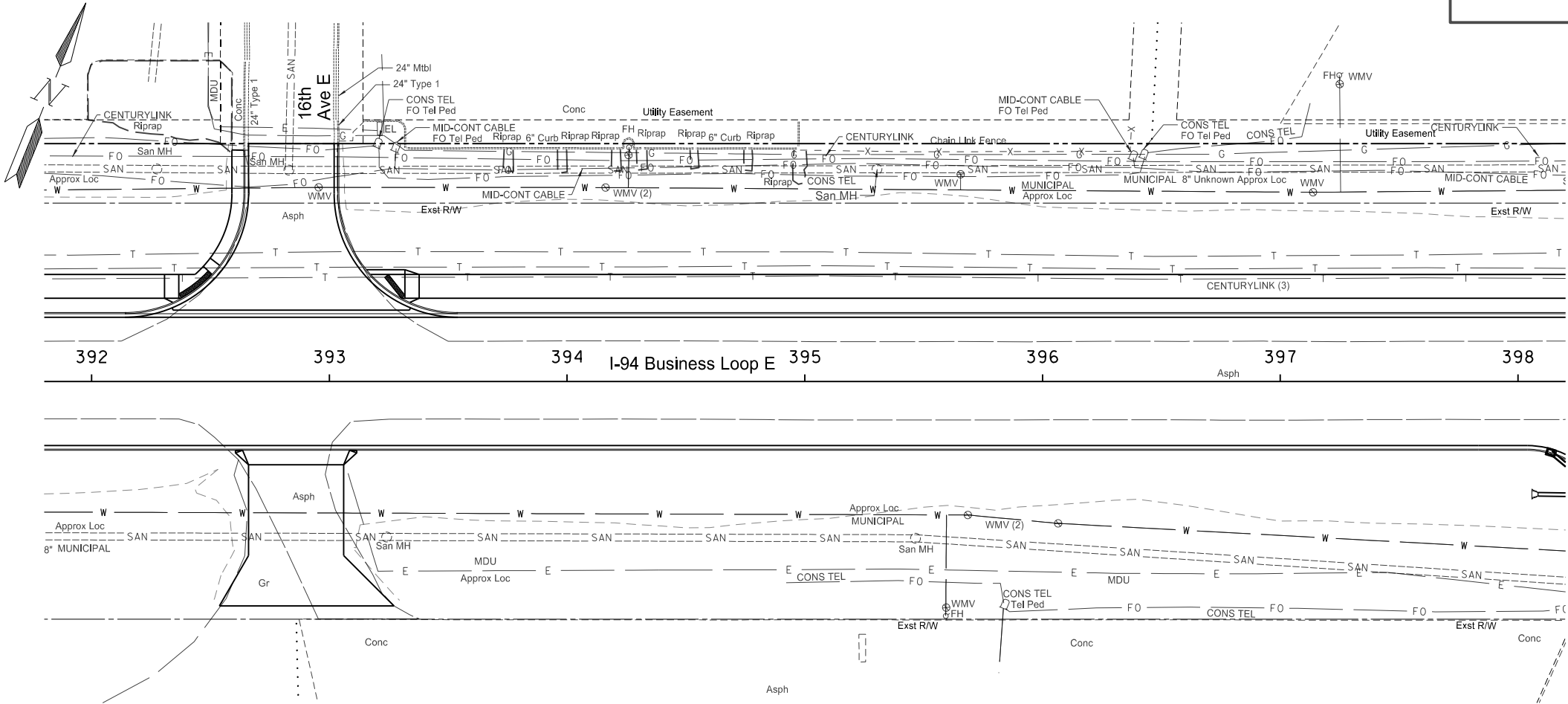
SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES AND SIZES		
		Sta 389+33 - 52' Lt to Sta 390+33 - 49' Lt, 24"	100	LF
714	4095	PIPE CONDUIT 15IN		
		Sta 387+53 - 28.5' Rt to Sta 387+58 - 41' Rt	14	LF
		Sta 389+97 - 61.6' Lt to Sta 390+02 - 51.2' Lt	12	LF
		TOTAL	26	LF
714	4099	PIPE CONDUIT 18IN-APPROACH		
		Sta 389+40 - 62' Lt to Sta 389+97 - 61.6' Lt	57	LF
		Sta 389+97 - 61.6' Lt to Sta 390+15 - 62' Lt	18	LF
		TOTAL	75	LF
714	4100	PIPE CONDUIT 18IN		
		Sta 385+43 - 28.5' Rt to Sta 387+53 - 28.5' Rt	212	LF
722	3510	INLET - TYPE 2		
		8F Sta 387+53 - 28.5' Rt	1	EA
		10B Sta 389+97 - 61.6' Lt	1	EA
		10A Sta 390+02 - 51.2' Lt	1	EA
		TOTAL	3	EA



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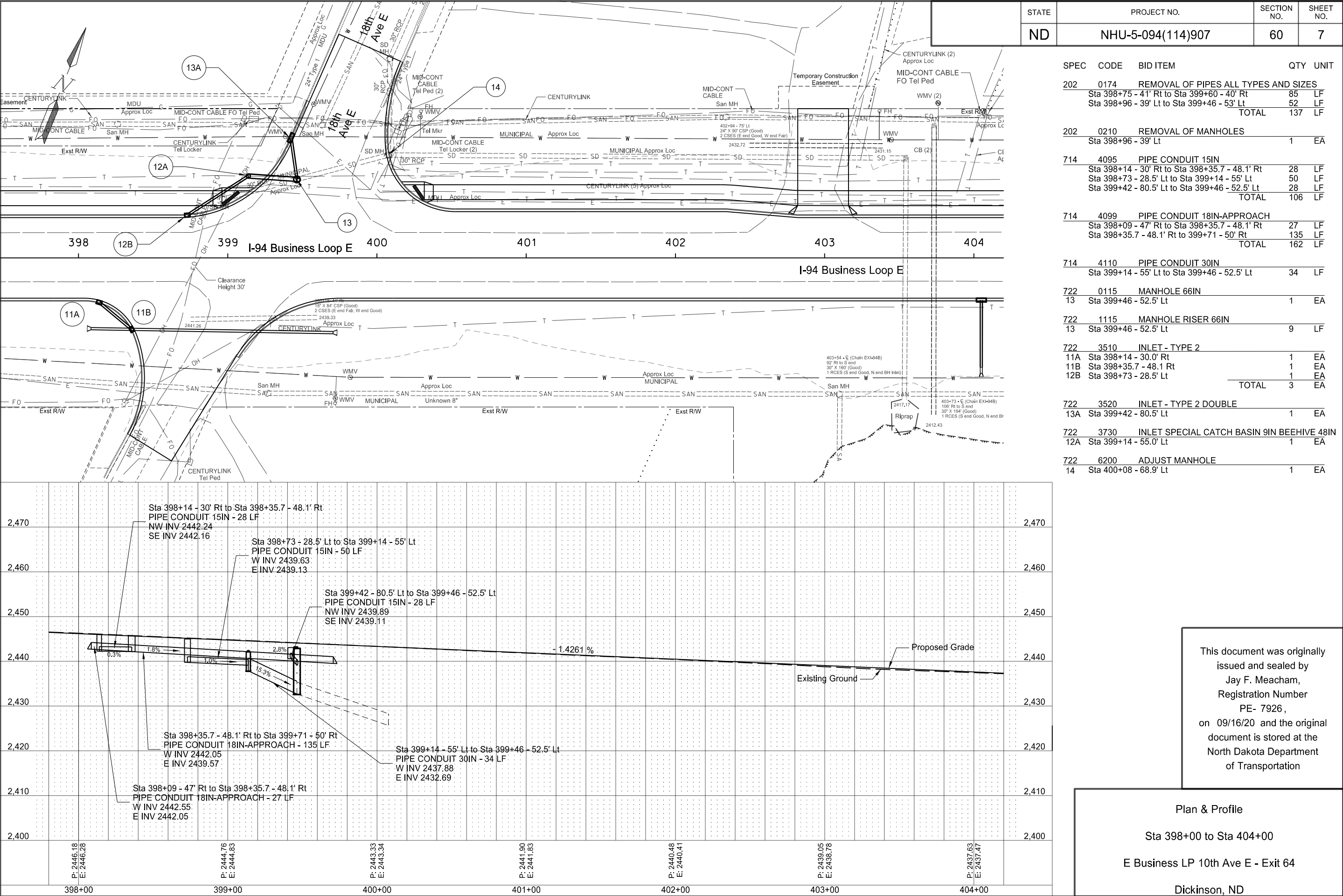
Plan & Profile
Sta 386+00 to Sta 392+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

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ND	NHU-5-094(114)907	60	6

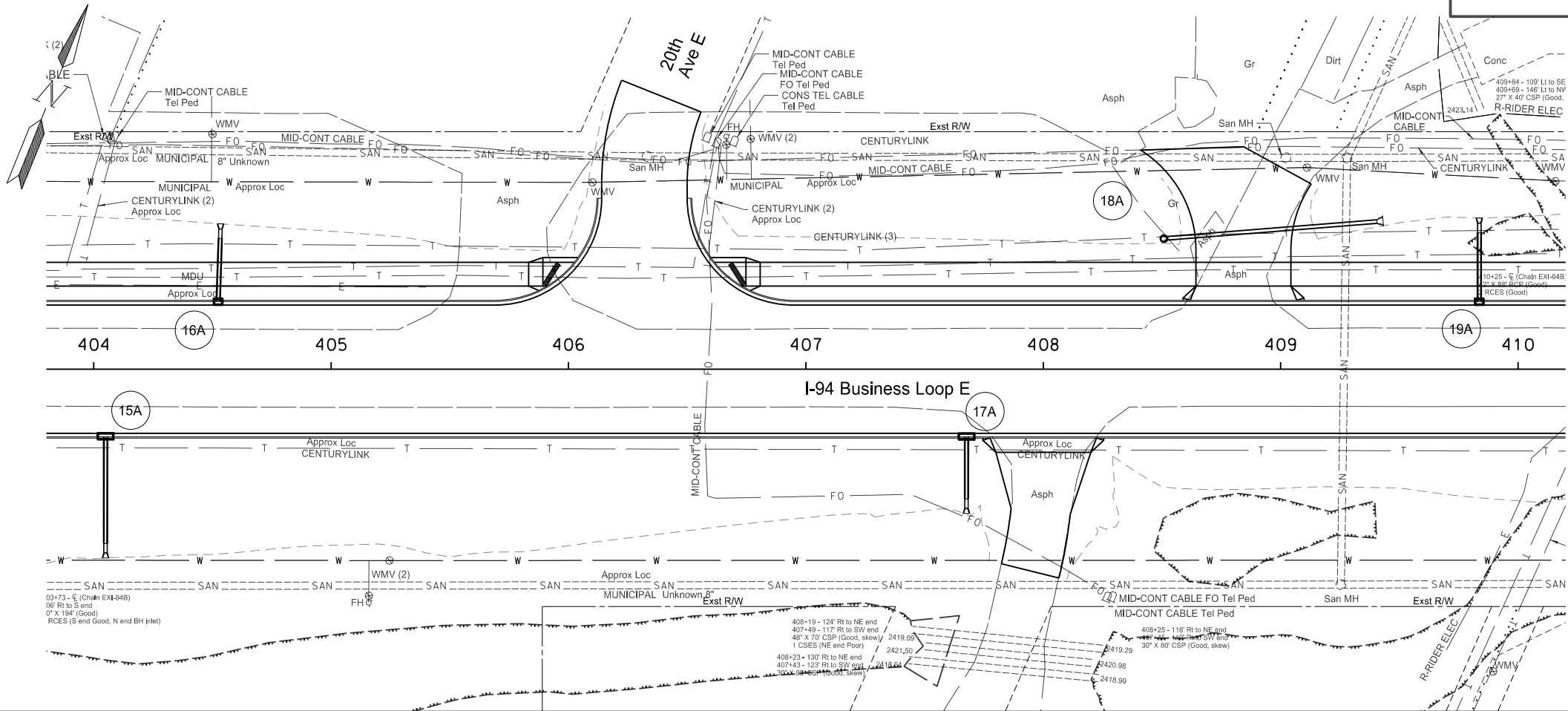


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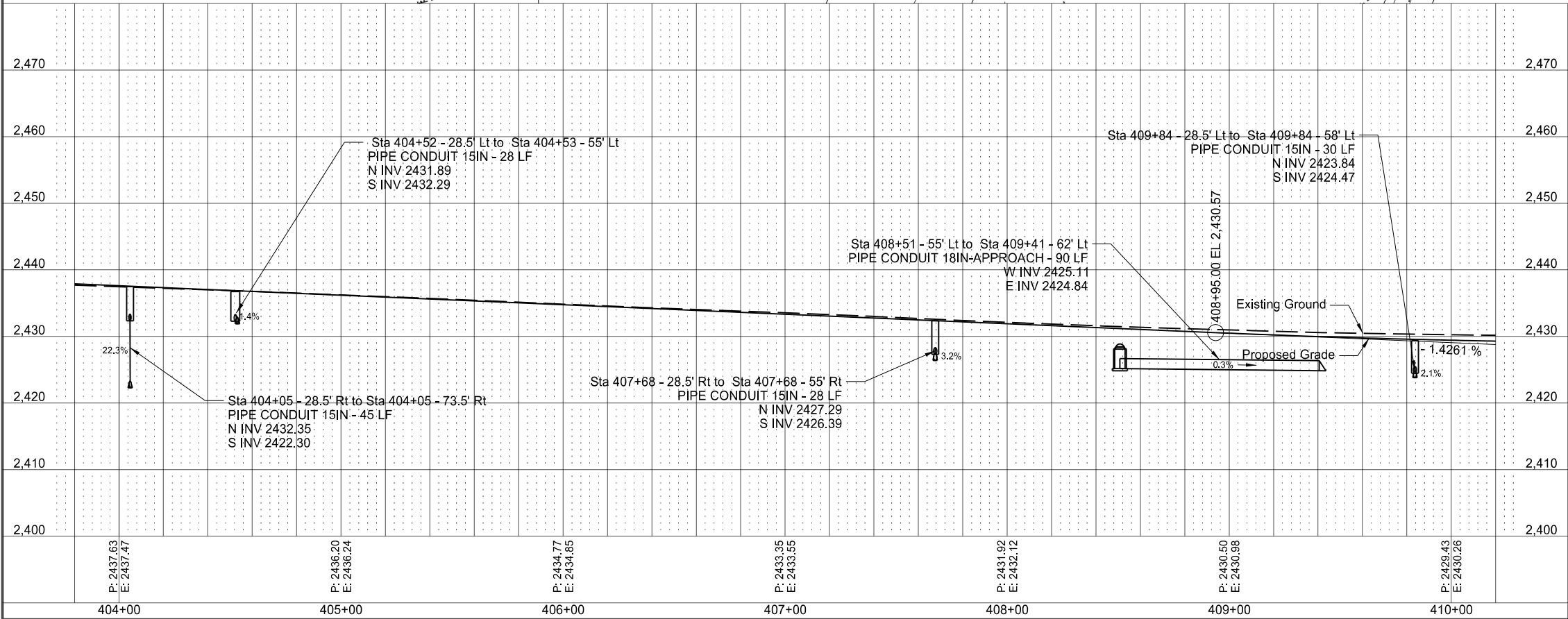
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Sta 392+00 to Sta 398+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	60	8



SPEC	CODE	BID ITEM	QTY	UNIT
714	4095	PIPE CONDUIT 15IN		
		Sta 404+05 - 28.5' Rt to Sta 404+05 - 73.5' Rt	45	LF
		Sta 404+52 - 28.5' Lt to Sta 404+53 - 55' Lt	28	LF
		Sta 407+68 - 28.5' Rt to Sta 407+68 - 55' Rt	28	LF
		Sta 409+84 - 28.5' Lt to Sta 409+84 - 58' Lt	30	LF
		TOTAL	131	LF
714	4099	PIPE CONDUIT 18IN-APPROACH		
		Sta 408+51 - 55' Lt to Sta 409+41 - 62' Lt	90	LF
722	3510	INLET - TYPE 2		
16A		Sta 404+52 - 28.5' Lt	1	EA
19A		Sta 409+84 - 28.5' Lt	1	EA
		TOTAL	2	EA
722	3520	INLET - TYPE 2 DOUBLE		
15A		Sta 404+05 - 28.5' Rt	1	EA
17A		Sta 407+68 - 28.5' Rt	1	EA
		TOTAL	2	EA
722	3730	INLET SPECIAL CATCH BASIN 9IN BEEHIVE 48IN		
18A		Sta 408+51 - 55.0' Lt	1	EA



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Plan & Profile

Sta 404+00 to Sta 410+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	60	9

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES AND SIZES		
		Sta 412+87 - 40' Rt to Sta 413+52 - 41' Rt, 18"	66	LF
		Sta 413+54 - 44' Lt to Sta 414+00 - 44' Lt, 15"	46	LF
		Sta 415+53 - 40' Lt to Sta 416+04 - 40' Lt, 18"	50	LF
		TOTAL	162	LF
714	1010	PIPE CONC REINF 42IN CL III-STORM DRAIN		
		Sta 410+24 - 42' Lt to Sta 410+24 - 57' Lt	16	LF
714	2111	PIPE CONC REINF ARCH 29IN X 18IN CL III-S DRAIN		
		Sta 413+64 - 59' Lt to Sta 414+17 - 60.5' Lt	54	LF
		Sta 413+64 - 63.5' Lt to Sta 414+17 - 65' Lt	54	LF
		Sta 415+54 - 62.25' Lt to Sta 416+02 - 62.25' Lt	49	LF
		Sta 415+54 - 57.75' Lt to Sta 416+02 - 57.75' Lt	50	LF
		TOTAL	206	LF
714	3040	END SECT-CONC REINF 42IN		
		Sta 410+24 - 57' Lt	1	EA
714	4095	PIPE CONDUIT 15IN		
		Sta 410+40 - 28.5' Rt to Sta 410+40 - 46' Rt	18	LF
		Sta 410+44 - 28.5' Lt to Sta 410+44 - 55' Lt	28	LF
		Sta 411+15 - 28.5' Lt to Sta 411+15 - 52' Lt	24	LF
		Sta 411+31 - 28.5' Rt to Sta 411+42 - 47' Rt	22	LF
		Sta 411+75 - 28.5' Rt to Sta 411+75 - 45' Rt	18	LF
		Sta 412+00 - 28.5' Lt to Sta 412+00 - 52' Lt	24	LF
		Sta 413+93 - 28.5' Rt to Sta 413+93 - 42' Rt	14	LF
		Sta 414+31 - 28.5' Lt to Sta 414+31 - 56' Lt	28	LF
		TOTAL	176	LF
714	4106	PIPE CONDUIT 24IN-APPROACH		
		Sta 412+77 - 46' Rt to Sta 413+79 - 52' Rt	102	LF
714	5010	PIPE CORR STEEL .064 15IN		
		Sta 413+60 - 66' Lt to Sta 413+68 - 69' Lt	8	LF
714	5805	END SECT CORR STEEL .064 15IN		
		Sta 413+60 - 66' Lt	1	EA
722	3510	INLET - TYPE 2		
		21A Sta 410+44 - 28.5' Lt	1	EA
		25A Sta 412+00 - 28.5' Lt	1	EA
		27A Sta 414+31 - 28.5' Lt	1	EA
		TOTAL	3	EA
722	3520	INLET - TYPE 2 DOUBLE		
		20A Sta 410+40 - 28.5' Rt	1	EA
		22A Sta 411+15 - 28.5' Lt	1	EA
		23A Sta 411+31 - 28.5' Rt	1	EA
		24A Sta 411+75 - 28.5' Rt	1	EA
		26A Sta 413+93 - 28.5' Rt	1	EA
		TOTAL	5	EA

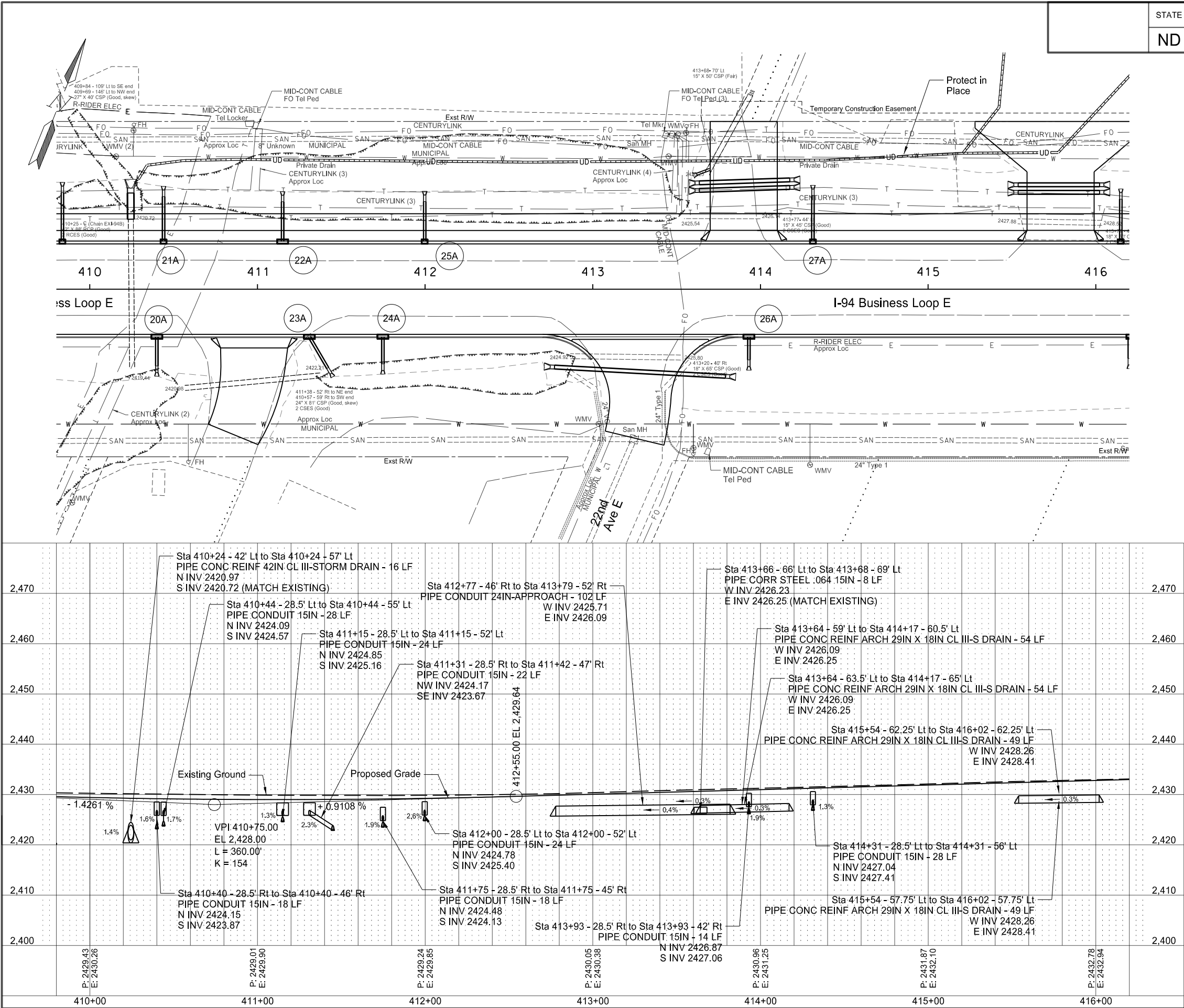
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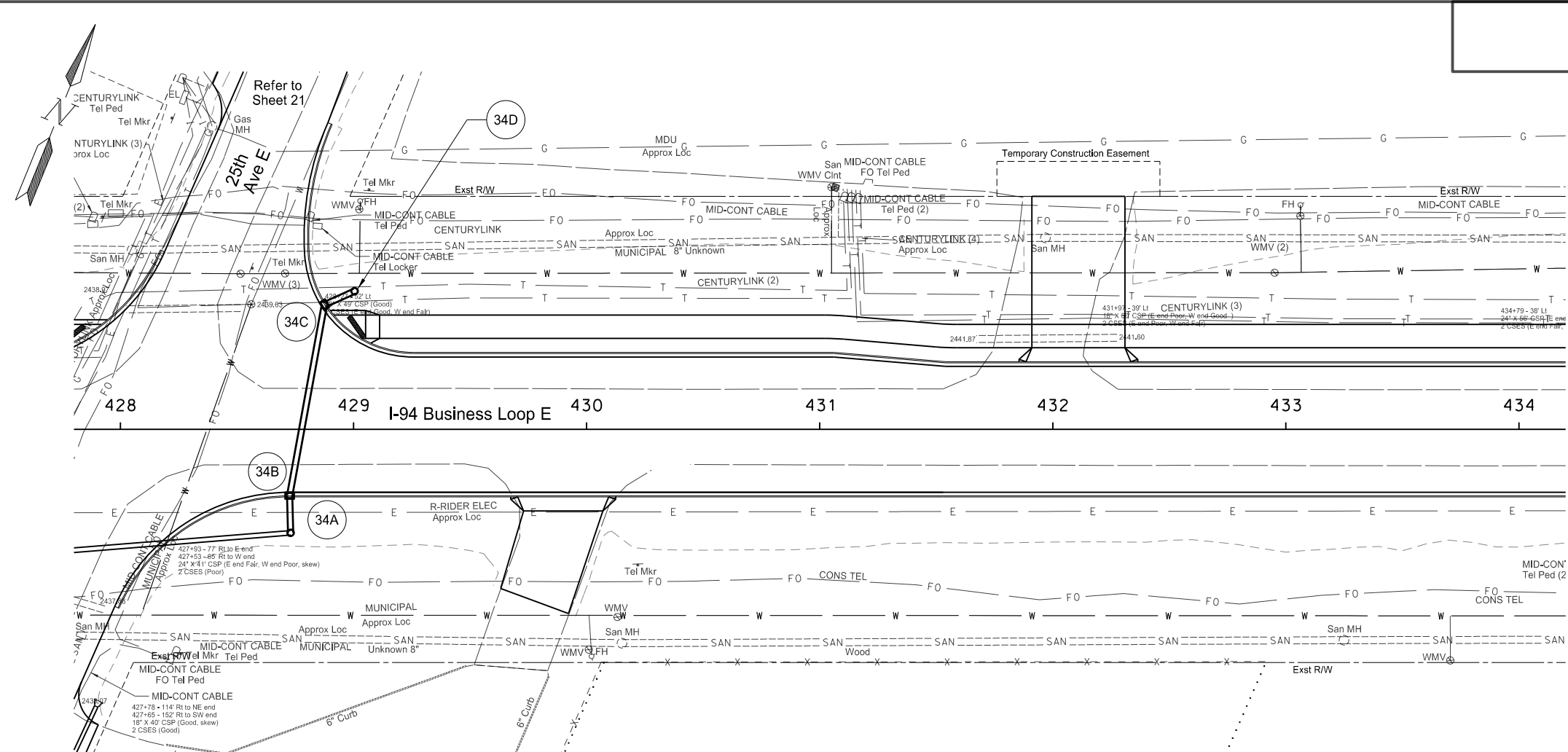
Sta 410+00 tp Sta 416+00

E Business LP 10th Ave E - Exit 64

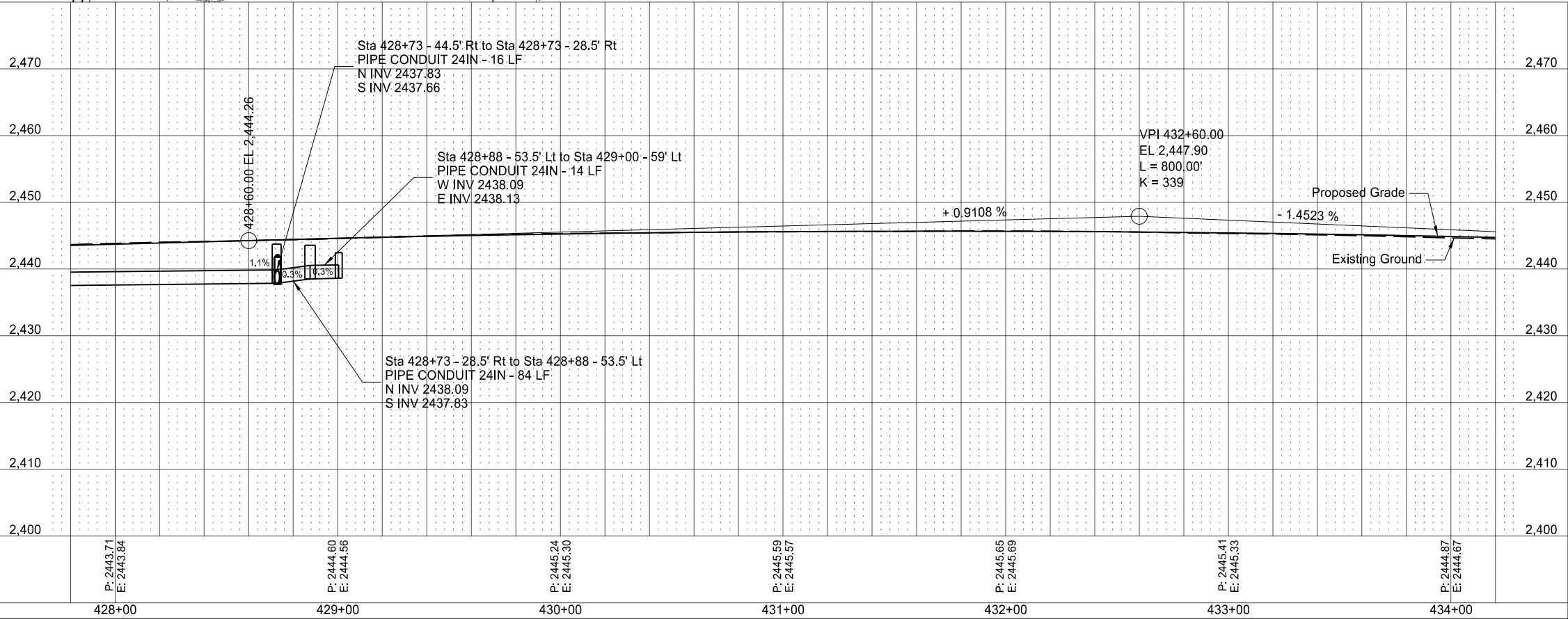
Dickinson, ND



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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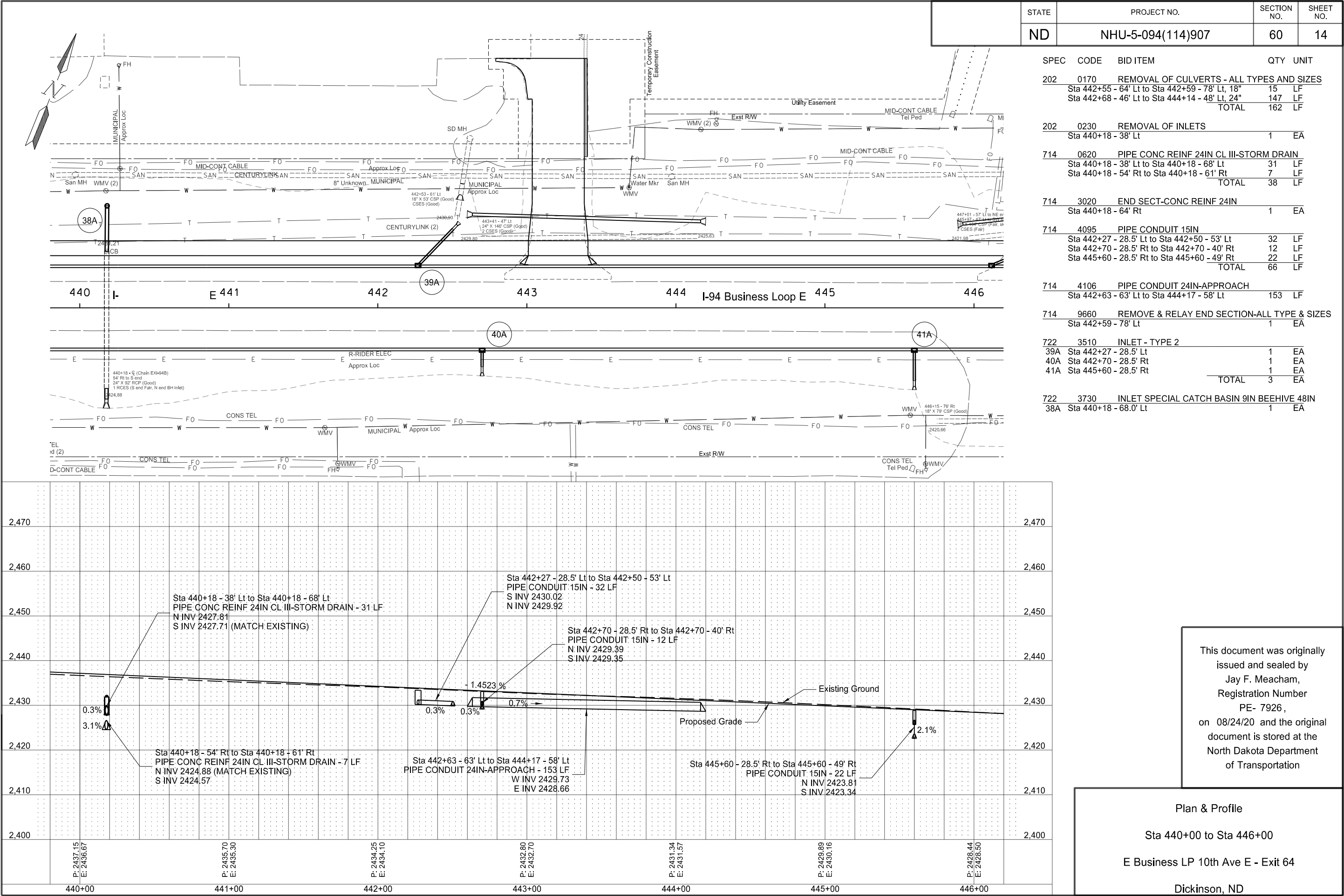


SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES AND SIZES		
		Sta 428+03 - 52' Lt to Sta 428+52 - 52' Lt, 18"	49	LF
		Sta 431+67 - 39' Lt to Sta 432+28 - 39' Lt, 18"	60	LF
		TOTAL	109	LF
714	4105	PIPE CONDUIT 24IN		
		Sta 428+73 - 44.5' Rt to Sta 428+73 - 28.5' Rt	16	LF
		Sta 428+73 - 28.5' Rt to Sta 428+88 - 53.5' Lt	84	LF
		Sta 428+88 - 53.5' Lt to Sta 429+00 - 59' Lt	14	LF
		TOTAL	114	LF
722	3510	INLET - TYPE 2		
34B		Sta 428+73 - 28.5' Rt	1	EA
34C		Sta 428+88 - 53.5' Lt	1	EA
		TOTAL	2	EA
722	3730	INLET SPECIAL CATCH BASIN 9IN BEEHIVE 48IN		
34D		Sta 429+00 - 59.5' Lt	1	EA
722	3790	INLET SPECIAL CATCH BASIN 9IN BEEHIVE 60IN		
34A		Sta 428+73 - 44.5' Rt	1	EA

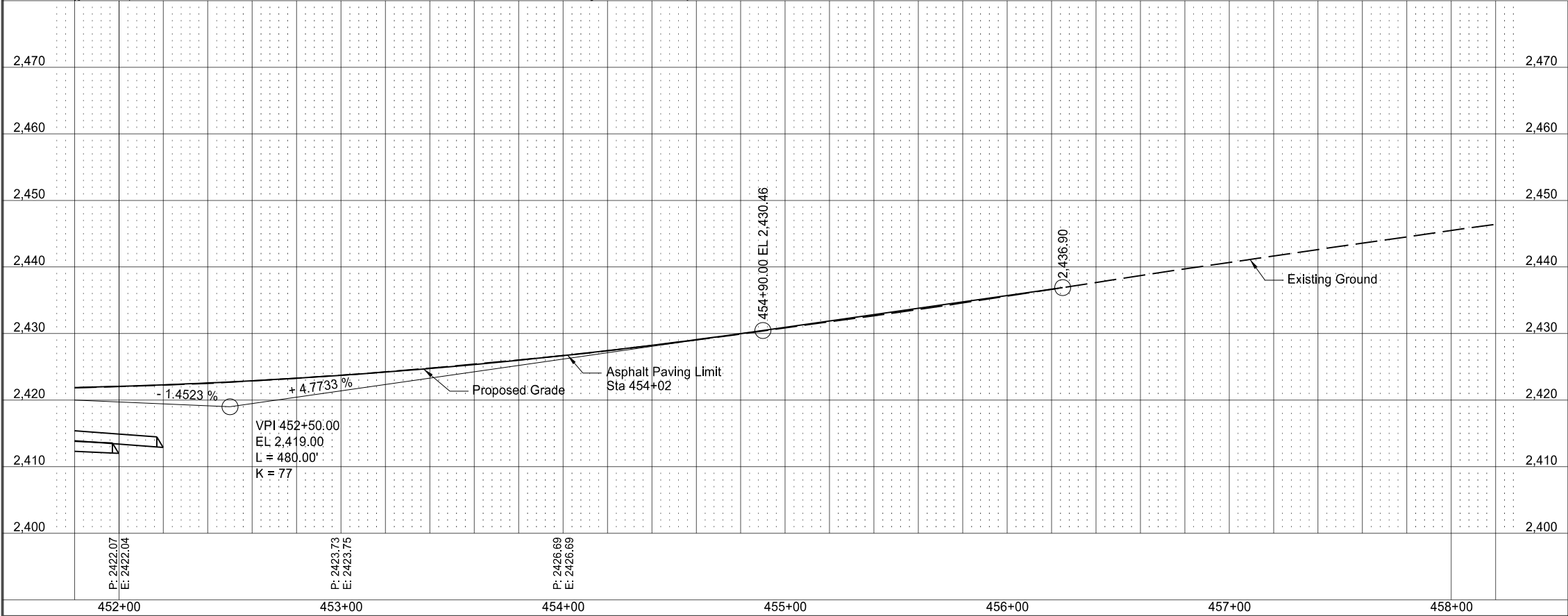
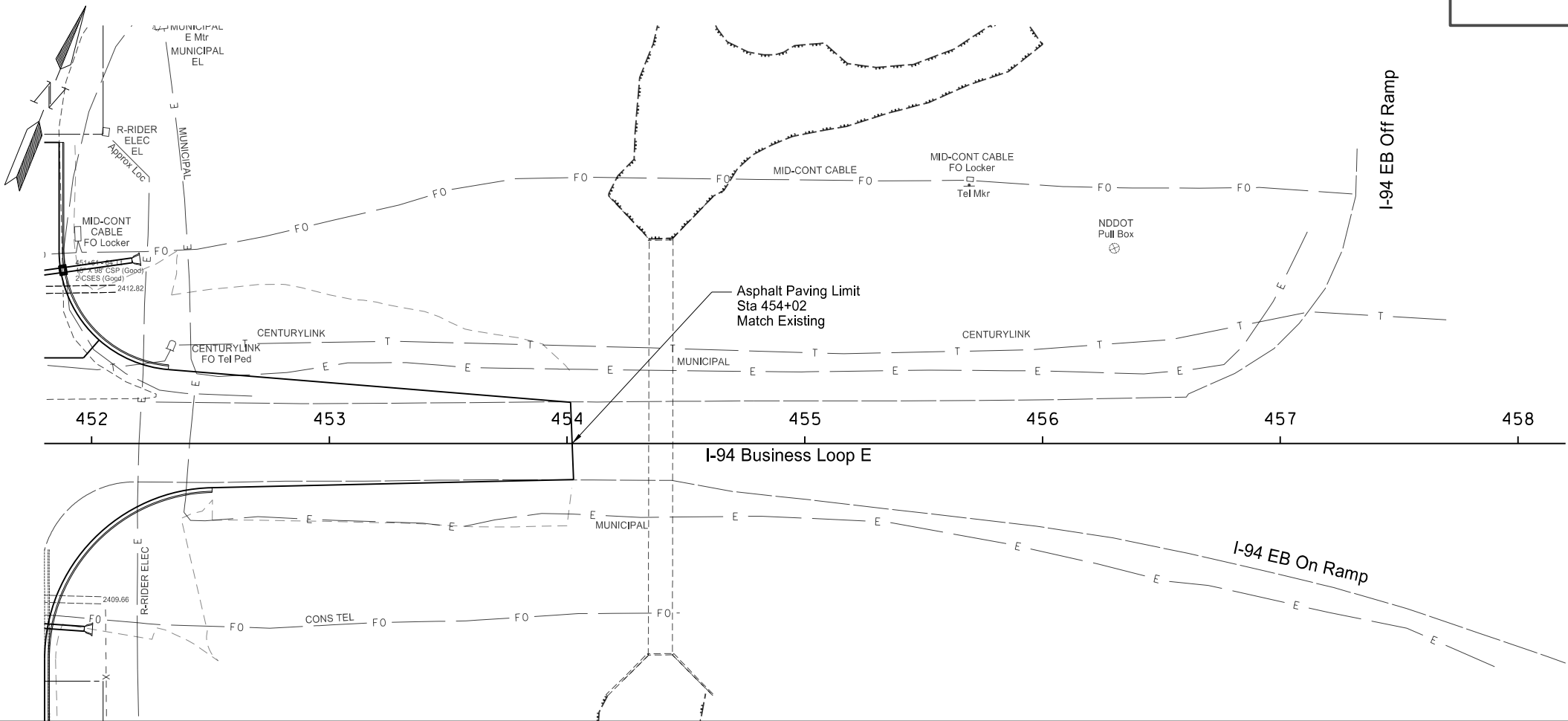


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Plan & Profile
Sta 428+00 to Sta 434+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

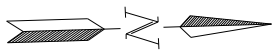


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	60	16



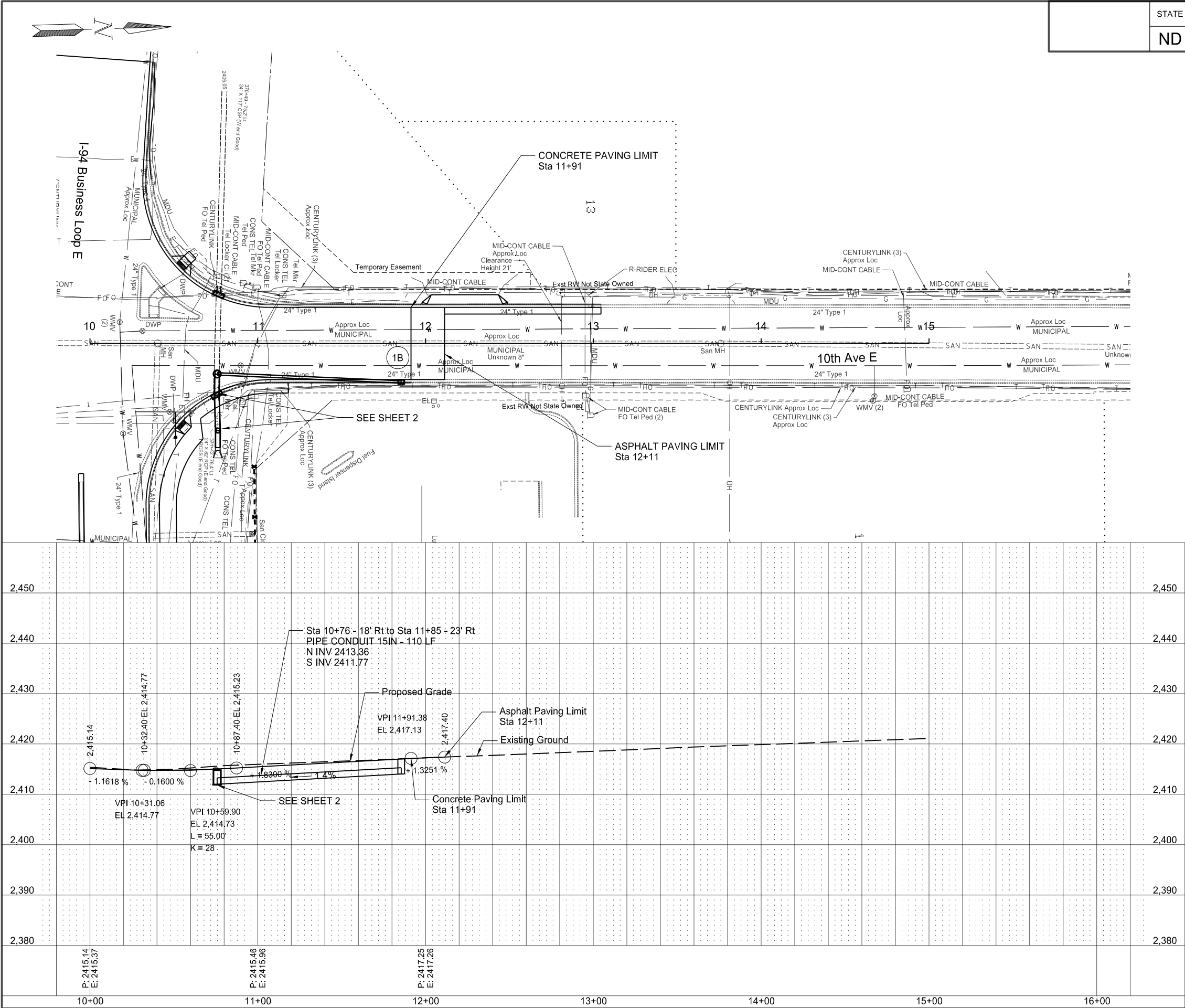
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Sta 452+00 to Sta 458+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND



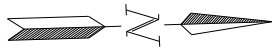
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	60	17

SPEC	CODE	BID ITEM	QTY	UNIT
714	4095	PIPE CONDUIT 15IN Sta 10+76 - 18' Rt to Sta 11+85 - 23' Rt	110	LF
722	3510	INLET - TYPE 2 1B Sta 11+85 - 23' Rt	1	EA



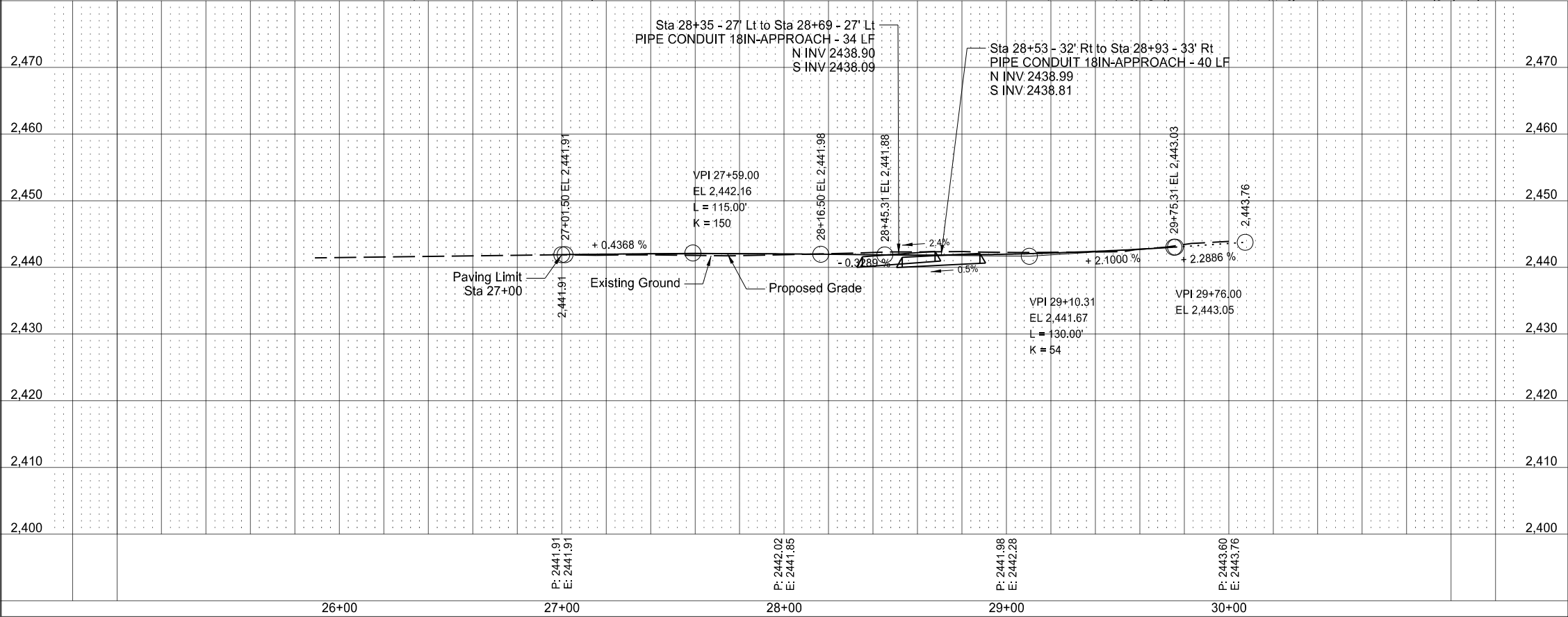
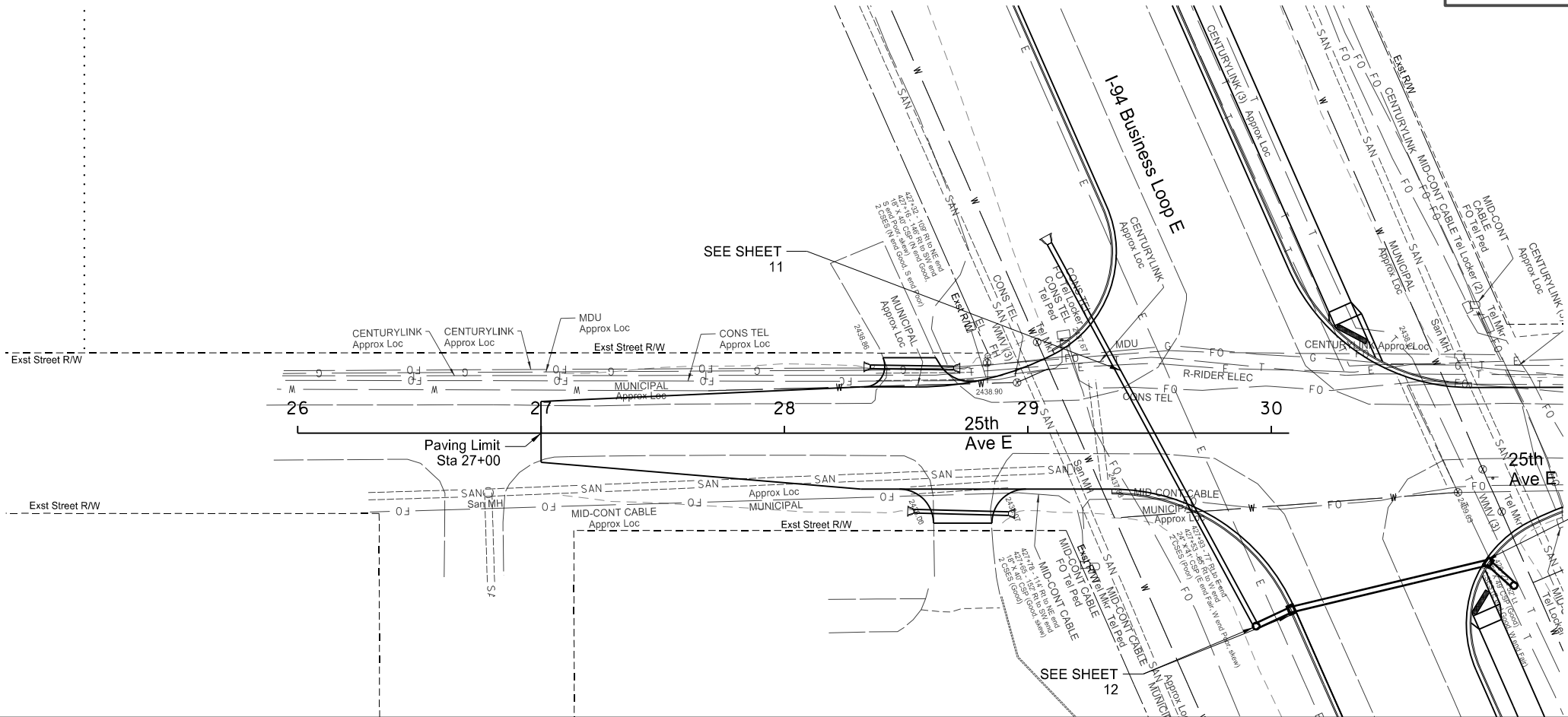
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Sta 10+00 to Sta 15+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	60	20

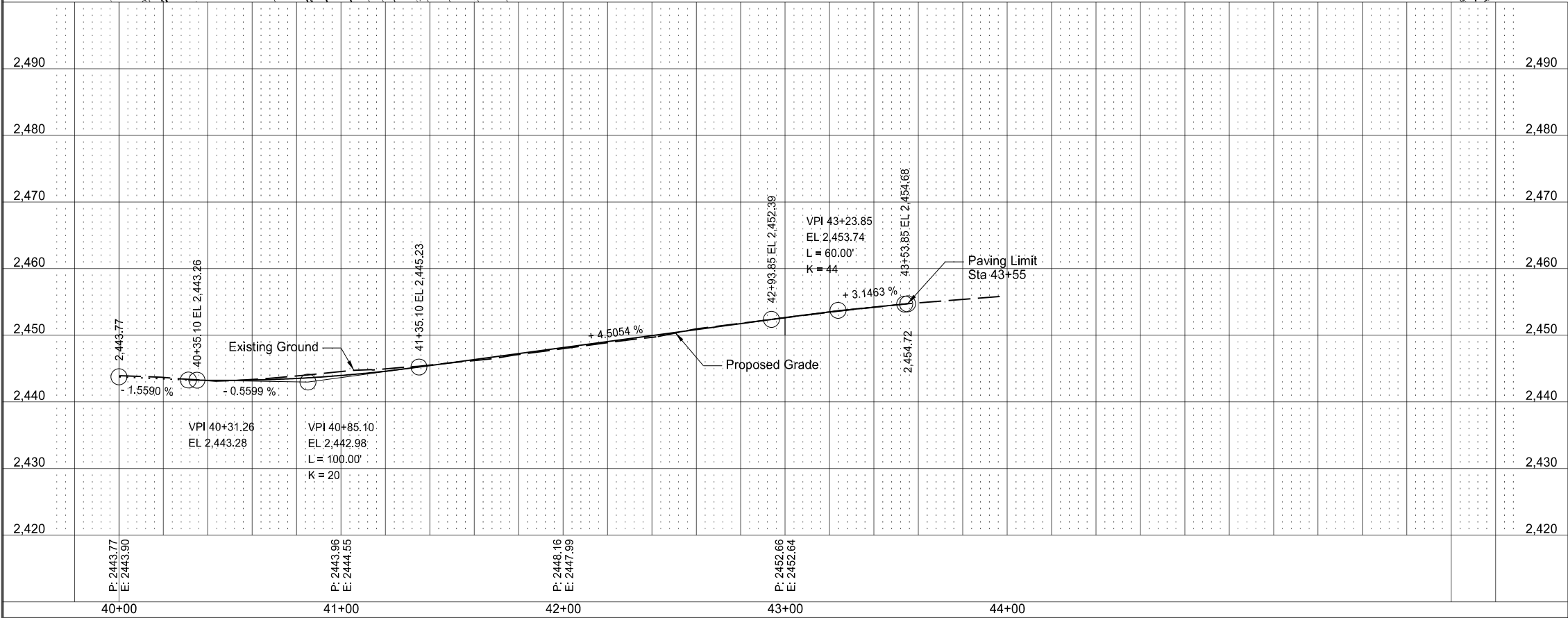
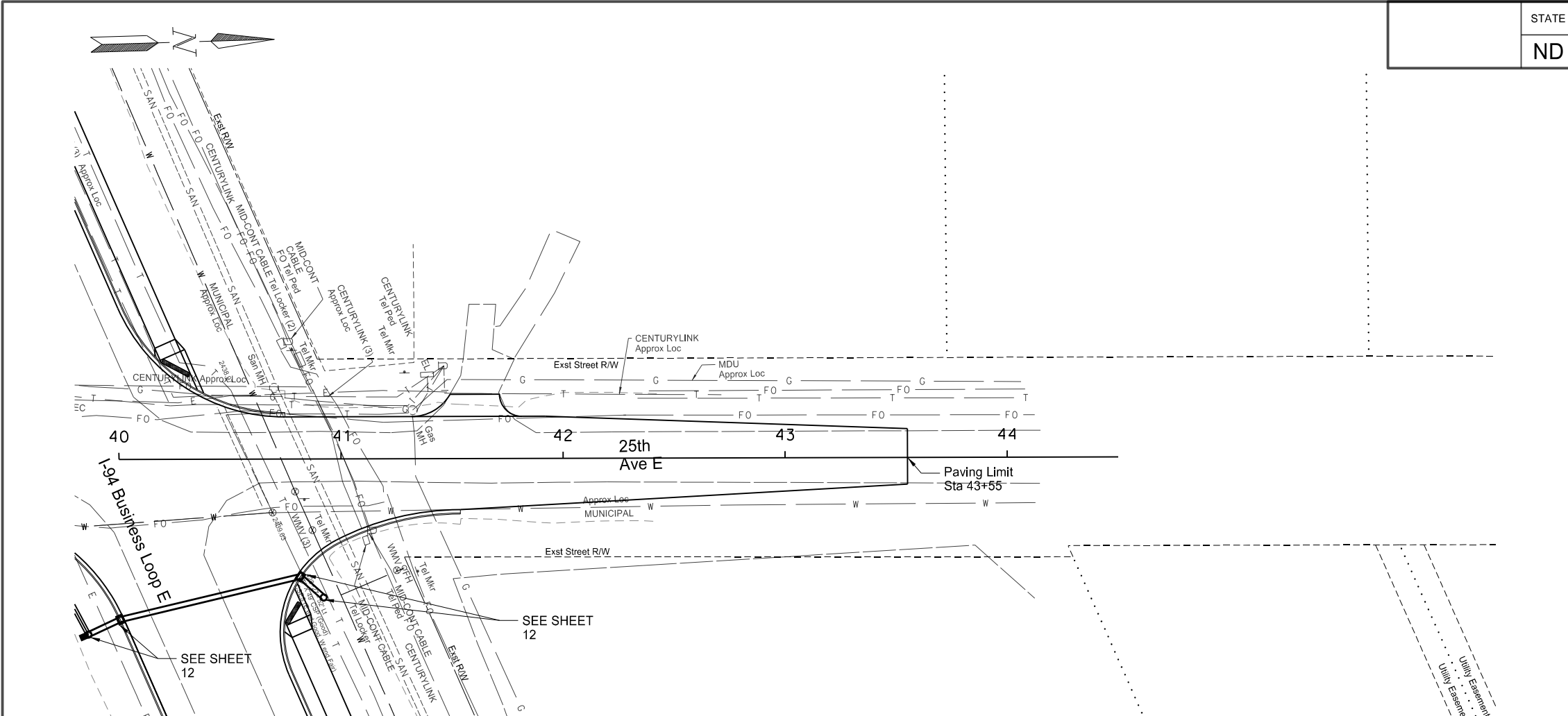
SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES AND SIZES		
		Sta 28+38 - 23' Lt to Sta 28+78 - 24' Lt, 18"	41	LF
		Sta 28+52 - 24' Rt to Sta 28+92 - 21' Rt, 18"	41	LF
		TOTAL	82	LF
714	4099	PIPE CONDUIT 18IN-APPROACH		
		Sta 28+35 - 27' Lt to Sta 28+69 - 27' Lt	34	LF
		Sta 28+53 - 32' Rt to Sta 28+93 - 33' Rt	40	LF
		TOTAL	74	LF



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Sta 26+00 to Sta 30+07
E Business LP 10th Ave E - Exit 64
Dickinson, ND

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Plan & Profile
Sta 40+00 to Sta 44+50
E Business LP 10th Ave E - Exit 64
Dickinson, ND

Wetland Impact Table																						
Wetland Number	Location	Wetland Type	Wetland Feature	USACE Jurisdictional Wetlands ¹	Wetland Impacts Acre(s)			USFWS Easement Impacts Acre(s)		Wetland Mitigation												
										Mitigation Required			USACE/11990 Bank		11990 Bank		USFWS Bank		Onsite			
					Temp.	Perm. (Fill/Drain)	Perm. (Cut)	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acre(s)	Location	Acre(s)	Location	Acre(s)	Mitigation Location; Ratio	Acre(s)	Constructed Site #	Constructed Size Acre(s)
1a	2-139 N-96-W	Depression	Natural	Yes	0.000	0.000	0.000	0.00	0.00	N	N	N										
1b	2-139 N-96 W	Depression	Artificial	Yes	0.011	0.003	0.000	0.00	0.00	N	Y	N	Foss	0.003								
1c	2-139 N-96 W	Depression	Artificial	Yes	0.029	0.028	0.000	0.00	0.00	N	Y	N	Foss	0.028								
1d	2-139 N-96 W	Depression	Artificial	Yes	0.000	0.009	0.000	0.00	0.00	N	Y	N	Foss	0.009								
1e	2-139 N-95 W	Depression	Artificial	Yes	0.003	0.006	0.000	0.00	0.00	N	Y	N	Foss	0.006								
1f	2-139 N-96 W	Depression	Artificial	Yes	0.071	0.117	0.000	0.00	0.00	N	Y	N	Foss	0.117								
2	2-139 N-96 W	Depression	Artificial	No	0.008	0.000	0.000	0.00	0.00	N	N	N										
3a	1-139 N-96 W	Depression	Natural	Yes	0.000	0.000	0.000	0.00	0.00	N	N	N										
3b	1-139 N-96 W	Depression	Natural	Yes	0.000	0.000	0.000	0.00	0.00	N	N	N										
3c	1-139 N-96 W	Depression	Natural	Yes	0.000	0.000	0.000	0.00	0.00	N	N	N										
4	1-139 N-96 W	Depression	Artificial	No	0.000	0.000	0.000	0.00	0.00	N	N	N										
5	1-139 N-96 W	Depression	Artificial	No	0.000	0.000	0.000	0.00	0.00	N	N	N										
Totals					0.122	0.163	0.000	0.000	0.000					0.163								

Other Waters Impact Table																	
Other Waters										Other Water Mitigation							
Number	Location	Type	Size		Feature	USACE Jurisdictional ¹	Impacts to Other Waters						Mitigation Required			Mitigation Location; ratio	Method
			Acre(s)	Linear Feet			Acres			Linear Feet			EO 11990	USACE	USFWS		
							Temp.	Perm. (Fill/Drain)	Perm. (Cut)	Temp.	Perm. (Fill/Drain)	Perm. (Cut)					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
						Totals											

¹ A wetland Jurisdictional Determination was issued by the USACE on 4/03/2017; NWO-2010-0283-BIS.

Impact Summary Table			
Permanent Impact Summary		Temporary Impacts and additional information	
Wetland Type	Total (Acres)	Wetland Type	Total (Acres/Lf)
Natural/JD (Fill/Drain)	0.000	Temporary JD	0.114
Natural/Non-JD (Fill/Drain)	0.000	Non-JD Temporary	0.008
Artificial/JD (Fill/Drain)	0.163	Permanent JD > 0.10	0.163
Artificial /Non-JD (Fill/Drain))	0.000	Permanent OW	0.000
Total	0.163	Temporary OW	0.000
JD Natural (Cut)	0.000		
JD Artificial (Cut)	0.000		
Non-JD Natural (Cut)	0.000		
Non-JD Artificial (Cut)	0.000		
Total	0.000		

Mitigation Summary Table					
	Location	Onsite Acre(s)	11990 Bank Acre(s)	USACE/11990 Bank Acre(s)	USFWS Bank Acre(s)
USACE Only					
EO 11990 Only					
USACE/11990	Foss Bank			0.163	
USFWS					
Total		0	0	0.163	0

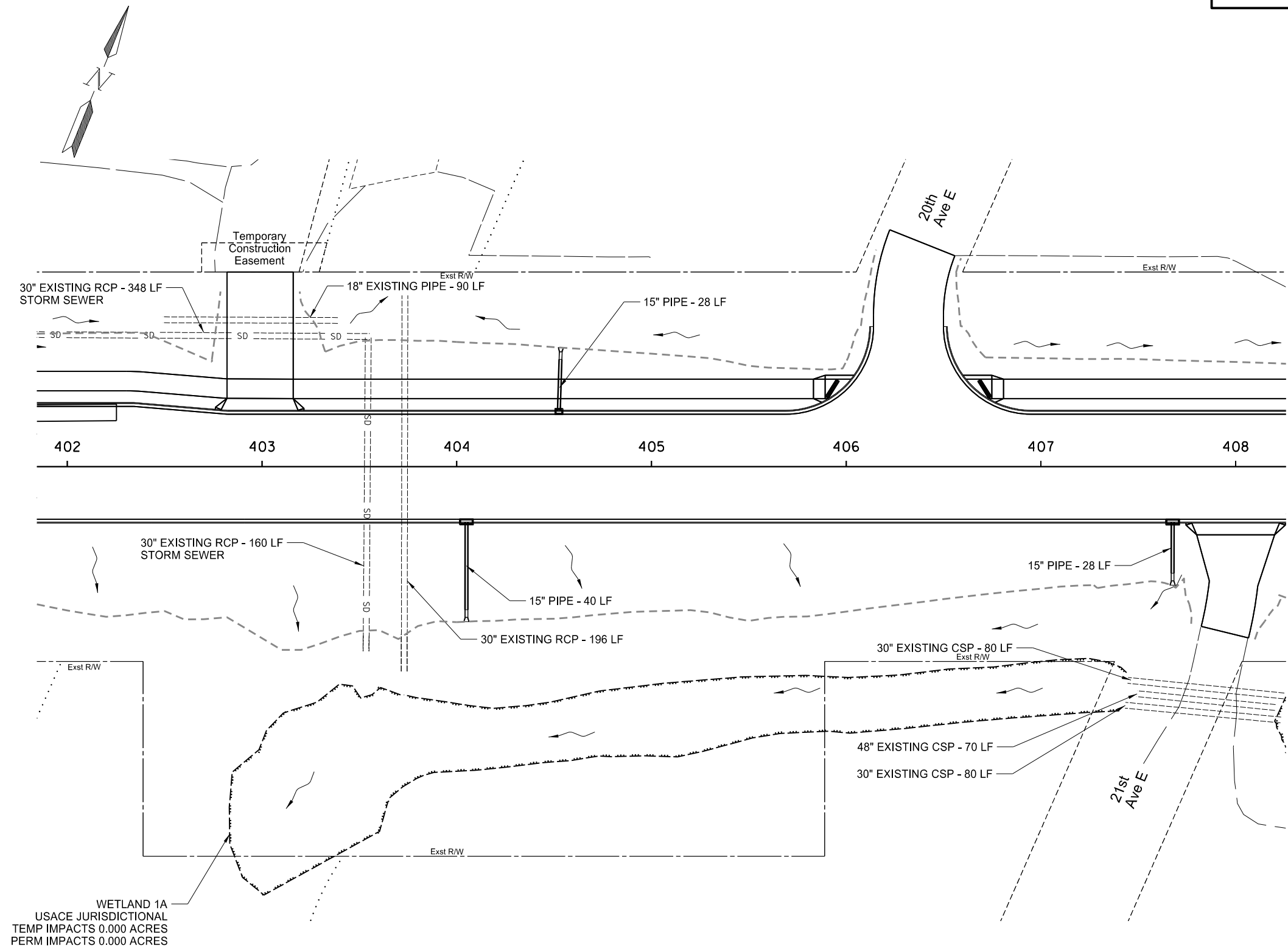
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Wetland Impacts

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	75	2



LEGEND

- TEMPORARY IMPACT
- PERMANENT IMPACT
- GRADING TIE LINE
- EXISTING DELINEATED WETLAND
- FLOW DIRECTION

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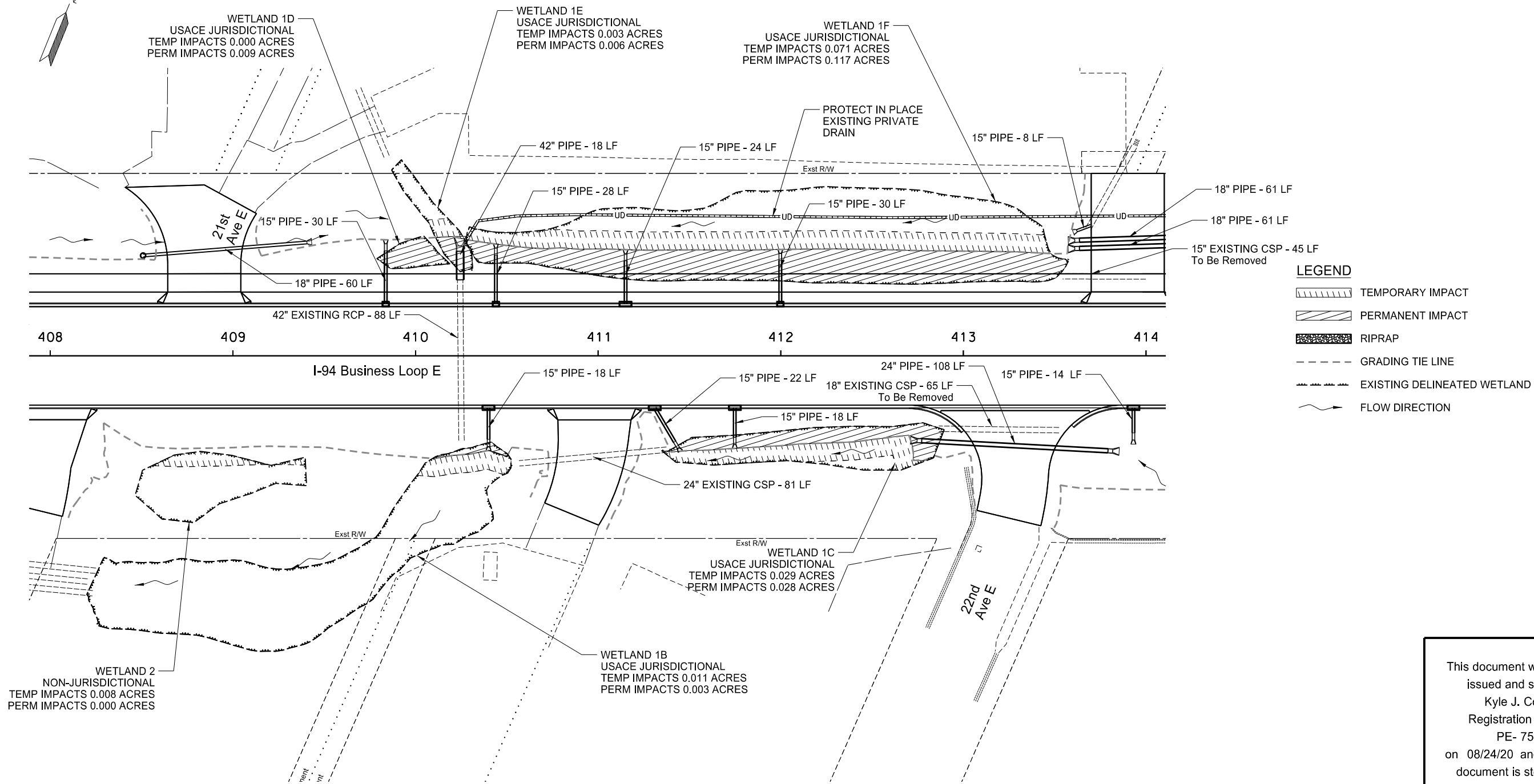
Wetland Impacts

Sta 402+00 to Sta 408+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

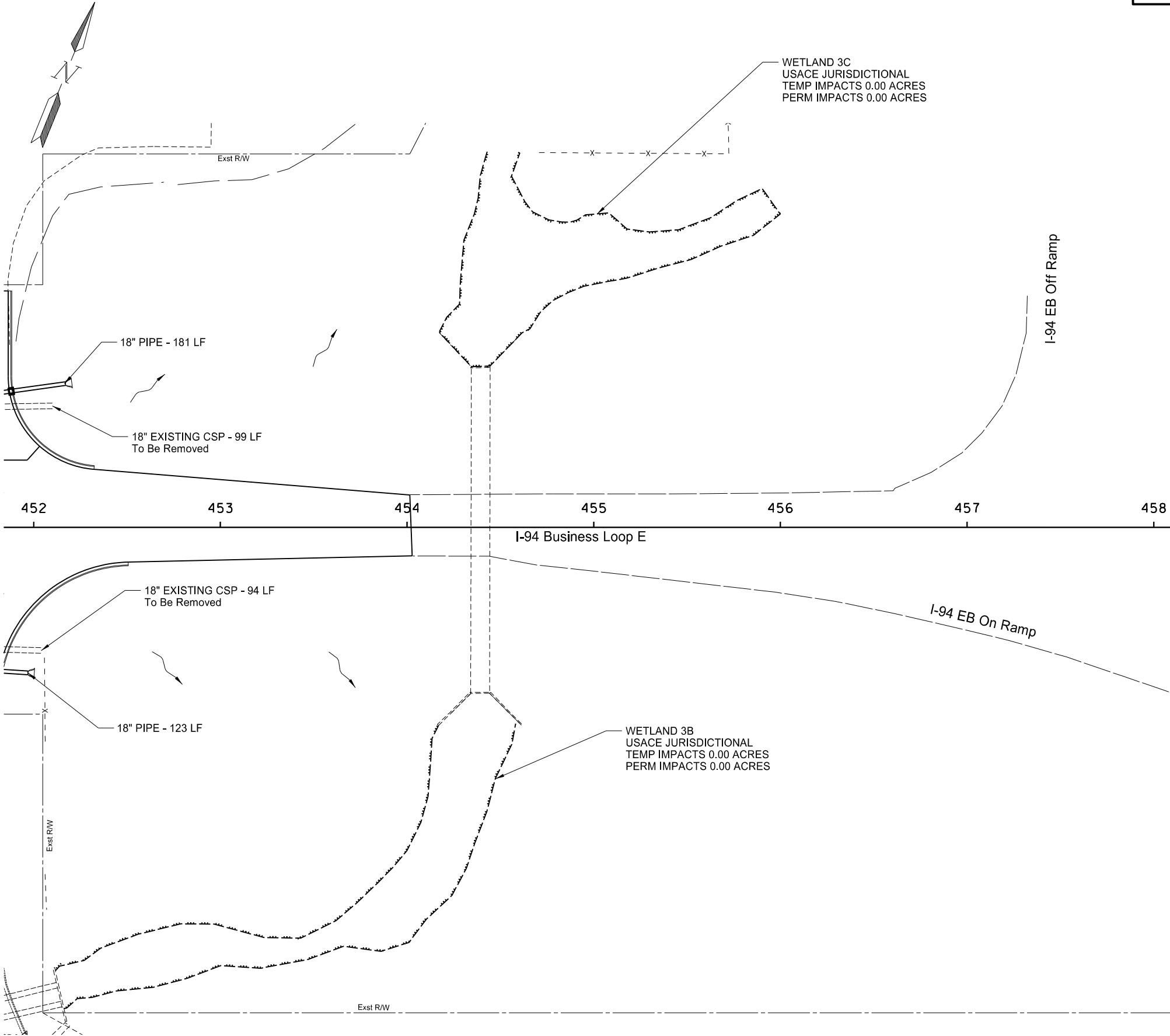
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	75	3



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Wetland Impacts
Sta 408+00 to Sta 414+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	75	4



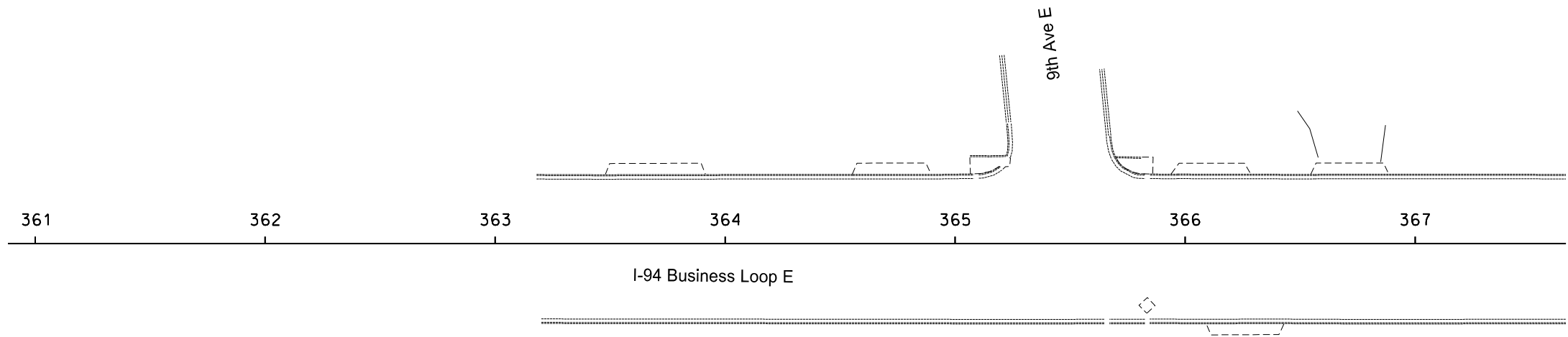
LEGEND

- TEMPORARY IMPACT
- PERMANENT IMPACT
- GRADING TIE LINE
- EXISTING DELINEATED WETLAND
- FLOW DIRECTION

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Wetland Impacts
Sta 452+00 to Sta 458+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	76	1



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Temporary Erosion Control

Sta 362+00 to Sta 368+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	76	2

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta 369+75 Rt to Sta 374+00 Rt	0.32	AC
		Sta 369+75 Lt to Sta 374+00 Lt	0.39	AC
		TOTAL	0.71	AC
260	0100	SILT FENCE UNSUPPORTED		
		Sta 369+62 - 53' Rt to Sta 370+44 - 56' Rt	83	LF
		Sta 369+63 - 40' Lt to Sta 370+48 - 98' Lt	130	LF
		TOTAL	213	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Sta 369+62 - 53' Rt to Sta 370+44 - 56' Rt	83	LF
		Sta 369+63 - 40' Lt to Sta 370+48 - 98' Lt	130	LF
		TOTAL	213	LF
261	0112	FIBER ROLLS 12 IN		
		Sta 372+07 - 77' Lt	23	LF
		Sta 372+70 - 66' Lt	12	LF
		TOTAL	35	LF
261	0113	REMOVE FIBER ROLLS 12 IN		
		Sta 372+07 - 77' Lt	23	LF
		Sta 372+70 - 66' Lt	12	LF
		TOTAL	35	LF
708	1531	INLET PROTECTION-FIBER ROLL 12IN		
		Sta 371+96 - 77' Lt	1	EA
708	1533	REMOVAL INLET PROTECTION-FIBER ROLL 12IN		
		Sta 371+96 - 77' Lt	1	EA
708	1540	INLET PROTECTION - SPECIAL		
		Sta 371+13 - 76' Lt	1	EA
		Sta 371+75 - 76' Lt	1	EA
		Sta 372+70 - 36' Lt	1	EA
		Sta 373+00 - 28' Rt	1	EA
		TOTAL	4	EA
708	1541	REMOVE INLET PROTECTION - SPECIAL		
		Sta 371+13 - 76' Lt	1	EA
		Sta 371+75 - 76' Lt	1	EA
		Sta 372+70 - 36' Lt	1	EA
		Sta 373+00 - 28' Rt	1	EA
		TOTAL	4	EA

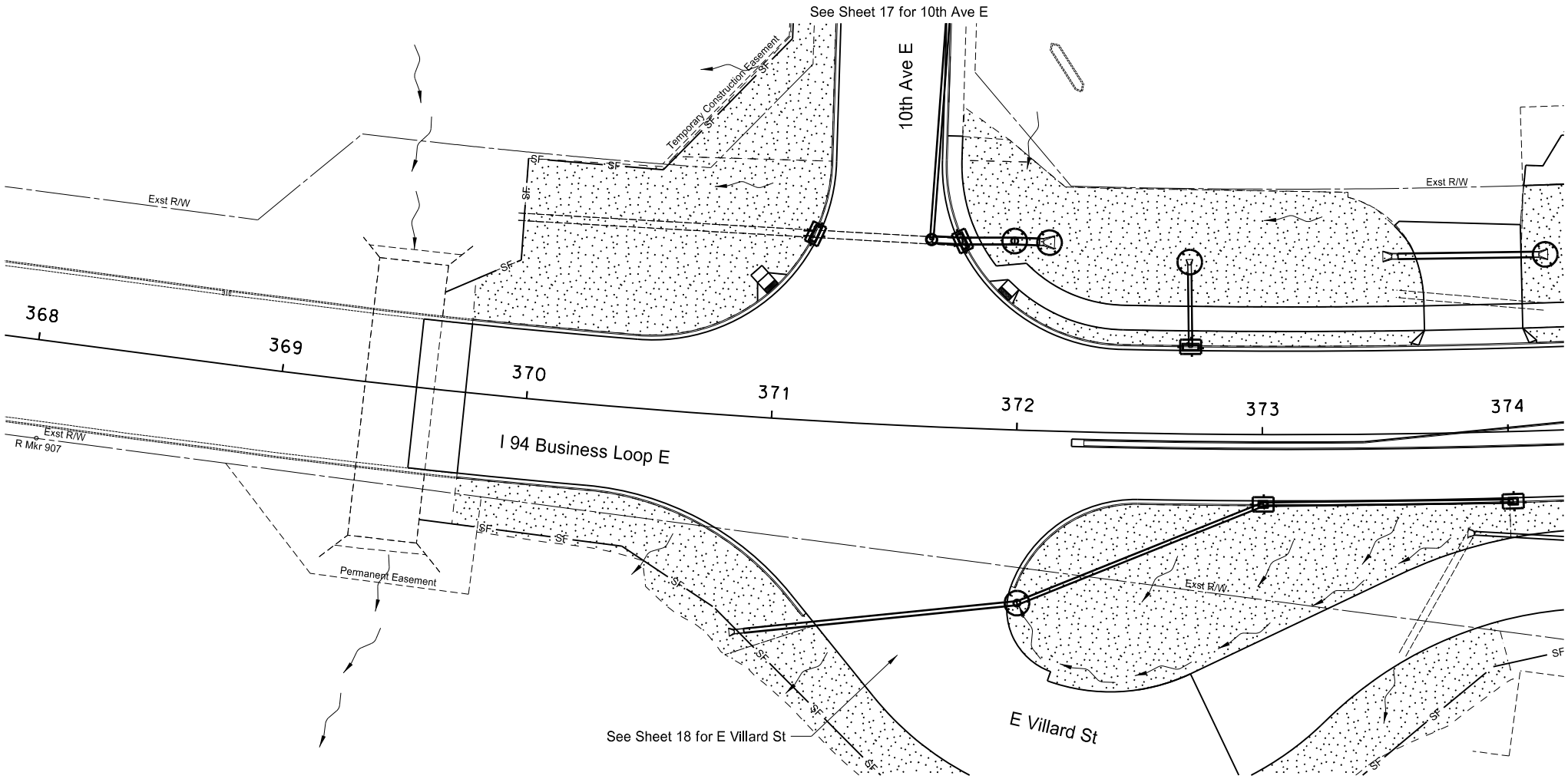
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Temporary Erosion Control

Sta 368+00 to Sta 374+00

E Business LP 10th Ave E - Exit 64

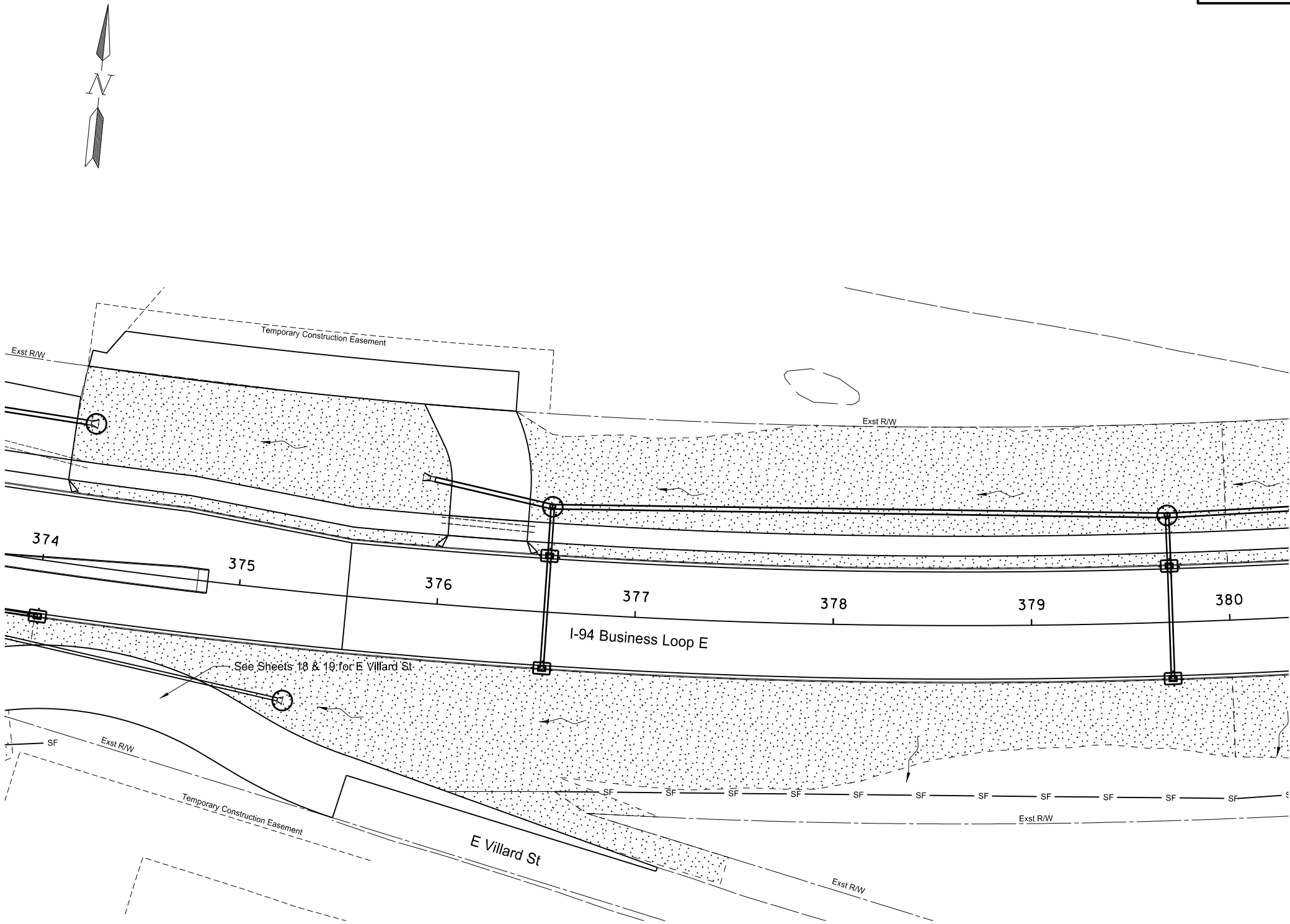
Dickinson, ND



Legend	
	Direction of Flow
	Silt Fence
	Fiber Rolls
	Curb Inlet Protection Device
	Wetland
	Hydraulic Mulch

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	76	3

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta 374+00 Rt to Sta 380+00 Rt	0.60	AC
		Sta 374+00 Lt to Sta 380+00 Lt	0.71	AC
		TOTAL	1.31	AC
260	0100	SILT FENCE UNSUPPORTED		
		Sta 376+65 - 90' Rt to Sta 380+00 - 90' Rt	344	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Sta 376+65 - 90' Rt to Sta 380+00 - 90' Rt	344	LF
261	0112	FIBER ROLLS 12IN		
		Sta 374+12 - 72' Lt	18	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 374+12 - 72' Lt	18	LF
708	1531	INLET PROTECTION-FIBER ROLL 12 IN		
		Sta 376+55 - 53' Lt	1	EA
		Sta 379+70 - 54' Lt	1	EA
		TOTAL	2	EA
708	1533	REMOVAL INLET PROTECTION-FIBER ROLL 12 IN		
		Sta 376+55 - 53' Lt	1	EA
		Sta 379+70 - 54' Lt	1	EA
		TOTAL	2	EA
708	1540	INLET PROTECTION - SPECIAL		
		Sta 374+01 - 28' Rt	1	EA
		Sta 376+55 - 28' Lt	1	EA
		Sta 376+55 - 28' Rt	1	EA
		Sta 379+70 - 28' Lt	1	EA
		Sta 379+70 - 28' Rt	1	EA
		TOTAL	5	EA
708	1541	REMOVE INLET PROTECTION - SPECIAL		
		Sta 374+01 - 28' Rt	1	EA
		Sta 376+55 - 28' Lt	1	EA
		Sta 376+55 - 28' Rt	1	EA
		Sta 379+70 - 28' Lt	1	EA
		Sta 379+70 - 28' Rt	1	EA
		TOTAL	5	EA



Legend	
	Direction of Flow
	Silt Fence
	Fiber Rolls
	Curb Inlet Protection Device
	Wetland
	Hydraulic Mulch

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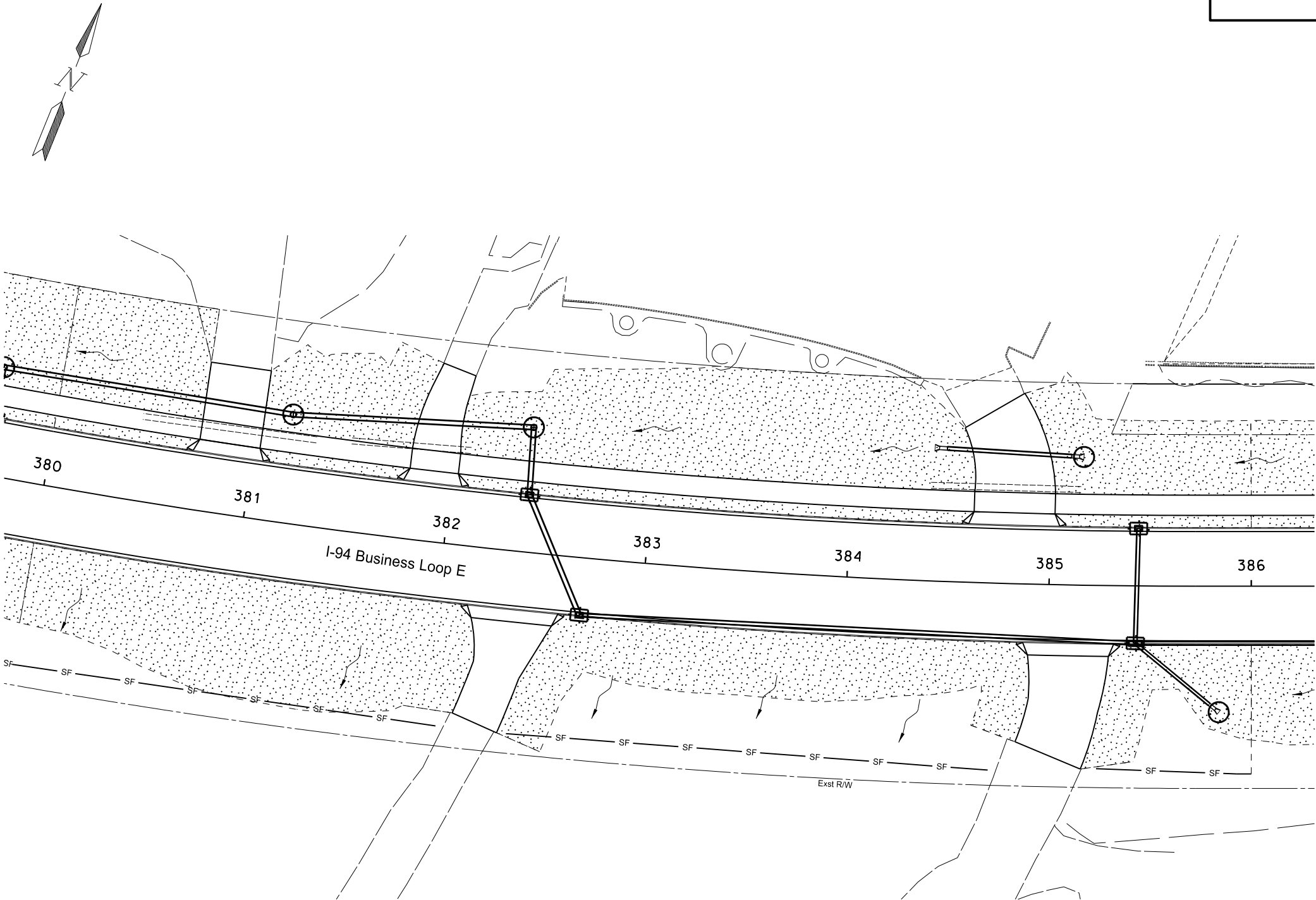
Sta 374+00 to Sta 380+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	76	4

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta 380+00 Rt to 386+00 Rt	0.54	AC
		Sta 380+00 Lt to 386+00 Lt	0.61	AC
		TOTAL	1.15	AC
260	0100	SILT FENCE UNSUPPORTED		
		Sta 380+00 - 90' Rt to Sta 382+10 - 90' Rt	215	LF
		Sta 382+40 - 90' Rt to Sta 384+72 - 93' Rt	239	LF
		Sta 385+25 - 91' Rt to Sta 386+00 - 93' Rt	77	LF
		TOTAL	531	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Sta 380+00 - 90' Rt to Sta 382+10 - 90' Rt	215	LF
		Sta 382+40 - 90' Rt to Sta 384+72 - 93' Rt	239	LF
		Sta 385+25 - 91' Rt to Sta 386+00 - 93' Rt	77	LF
		TOTAL	531	LF
261	0112	FIBER ROLLS 12IN		
		Sta 385+10 - 64' Lt	14	LF
		Sta 385+79 - 58' Rt	12	LF
		TOTAL	26	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 385+10 - 64' Lt	14	LF
		Sta 385+79 - 58' Rt	12	LF
		TOTAL	26	LF
708	1531	INLET PROTECTION-FIBER ROLL 12IN		
		Sta 381+17 - 54' Lt	1	EA
		Sta 382+38 - 62' Lt	1	EA
		TOTAL	2	EA
708	1533	REMOVAL INLET PROTECTION-FIBER ROLL 12IN		
		Sta 381+17 - 54' Lt	1	EA
		Sta 382+38 - 62' Lt	1	EA
		TOTAL	2	EA
708	1540	INLET PROTECTION - SPECIAL		
		Sta 382+40 - 28' Lt	1	EA
		Sta 382+70 - 28' Rt	1	EA
		Sta 385+43 - 28' Rt	1	EA
		Sta 385+44 - 28' Lt	1	EA
		TOTAL	4	EA
708	1541	REMOVE INLET PROTECTION - SPECIAL		
		Sta 382+40 - 28' Lt	1	EA
		Sta 382+70 - 28' Rt	1	EA
		Sta 385+43 - 28' Rt	1	EA
		Sta 385+44 - 28' Lt	1	EA
		TOTAL	4	EA



Legend	
	Direction of Flow
	Silt Fence
	Fiber Rolls
	Curb Inlet Protection Device
	Wetland
	Hydraulic Mulch

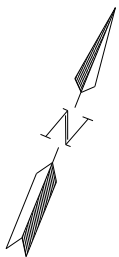
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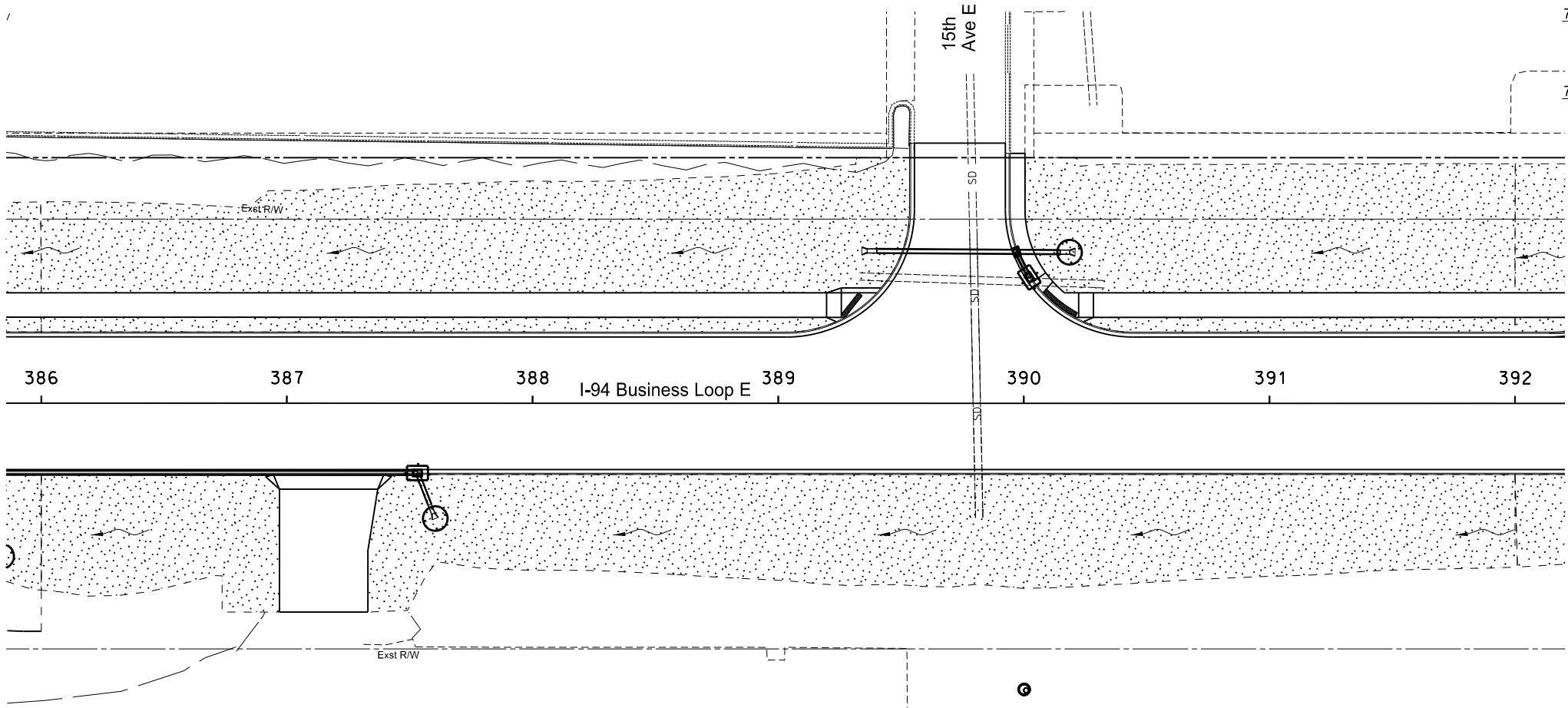
Sta 380+00 to Sta 386+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND



1



- Legend
- Direction of Flow
 - SF Silt Fence
 - Fiber Rolls
 - Curb Inlet Protection Device
 - Wetland
 - Hydraulic Mulch

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	76	5

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta 386+00 Rt to Sta 392+00 Rt	0.56	AC
		Sta 386+00 Lt to Sta 392+00 Lt	0.66	AC
		TOTAL	1.22	AC
261	0112	FIBER ROLLS 12IN		
		Sta 387+58 - 41' Rt	12	LF
		Sta 390+15 - 62' Lt	14	LF
		TOTAL	26	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 387+58 - 41' Rt	12	LF
		Sta 390+15 - 62' Lt	14	LF
		TOTAL	26	LF
708	1540	INLET PROTECTION - SPECIAL		
		Sta 387+53 - 28' Rt	1	EA
		Sta 390+02 - 51' Lt	1	EA
		TOTAL	2	EA
708	1541	REMOVE INLET PROTECTION - SPECIAL		
		Sta 387+53 - 28' Rt	1	EA
		Sta 390+02 - 51' Lt	1	EA
		TOTAL	2	EA

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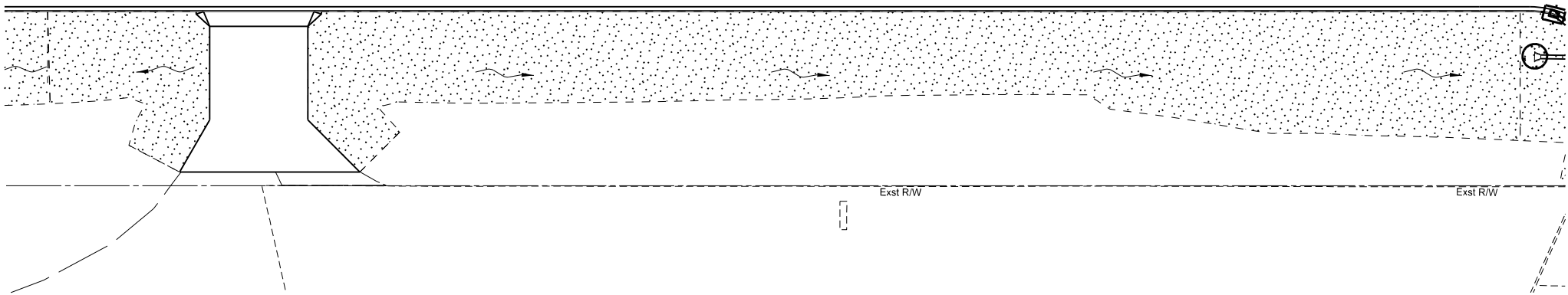
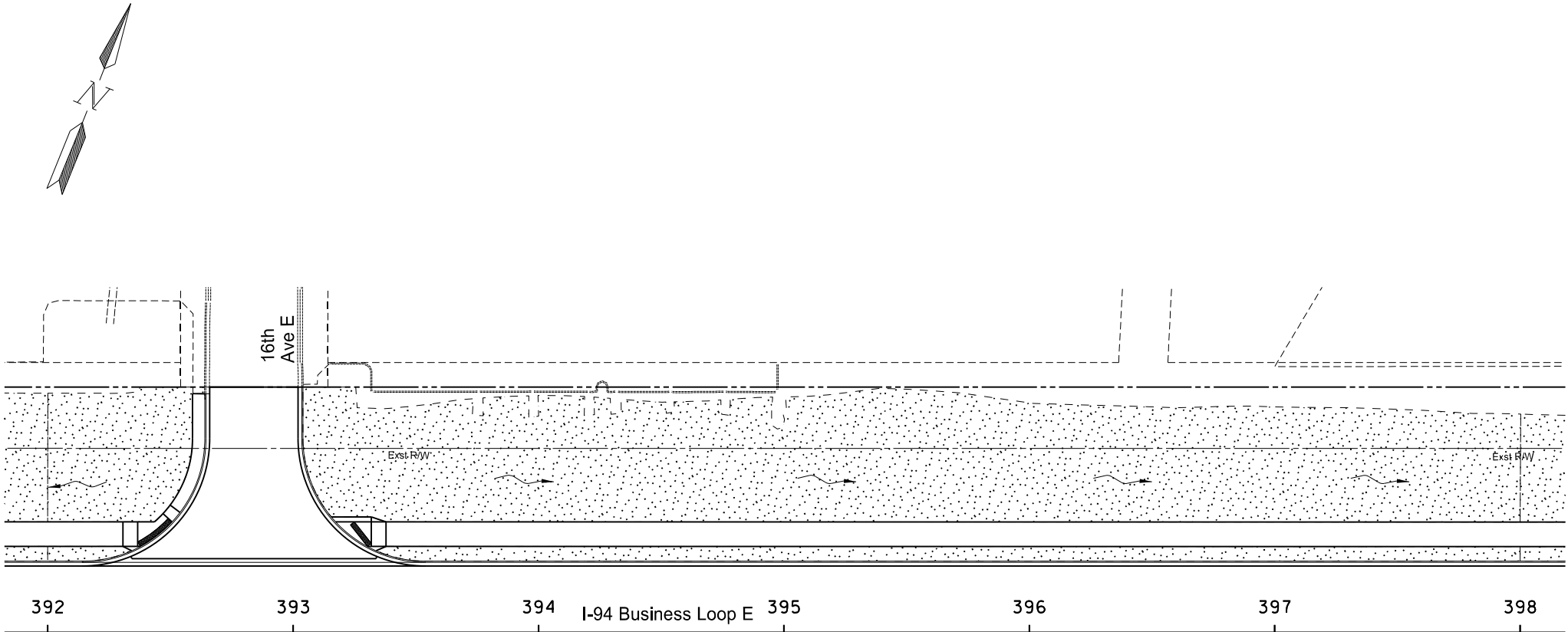
Sta 386+00 to Sta 392+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	76	6

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta 392+00 Rt to Sta 398+00 Rt	0.54	AC
		Sta 392+00 Lt to Sta 398+00 Lt	0.69	AC
		TOTAL	1.23	AC



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Sta 392+00 to Sta 398+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	76	8

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta 404+00 Rt to Sta 410+00 Rt	0.60	AC
		Sta 404+00 Lt to Sta 410+00 Lt	0.50	AC
		TOTAL	1.10	AC
260	0100	SILT FENCE UNSUPPORTED		
		Sta 404+00 - 90' Rt to Sta 407+75 - 110' Rt	463	LF
		Sta 408+05 - 100' Rt to Sta 410+00 - 65' Rt	214	LF
		Sta 409+22 - 88' Lt to Sta 410+00 - 71' Lt	124	LF
		TOTAL	801	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Sta 404+00 - 90' Rt to Sta 407+75 - 110' Rt	463	LF
		Sta 408+05 - 100' Rt to Sta 410+00 - 65' Rt	214	LF
		Sta 409+22 - 88' Lt to Sta 410+00 - 71' Lt	124	LF
		TOTAL	801	LF
261	0112	FIBER ROLLS 12IN		
		Sta 403+85 - 103' Rt to Sta 404+35 - 100' Rt	35	LF
		Sta 403+90 - 95' Rt to Sta 404+25 - 93' Rt	50	LF
		Sta 404+05 - 74' Rt	12	LF
		Sta 407+68 - 55' Rt	12	LF
		TOTAL	109	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 403+85 - 103' Rt to Sta 404+35 - 100' Rt	35	LF
		Sta 403+90 - 95' Rt to Sta 404+25 - 93' Rt	50	LF
		Sta 404+05 - 74' Rt	12	LF
		Sta 407+68 - 55' Rt	12	LF
		TOTAL	109	LF
708	1531	INLET PROTECTION-FIBER ROLL 12IN		
		Sta 408+51 - 55' Lt	1	EA
708	1533	REMOVAL INLET PROTECTION-FIBER ROLL 12IN		
		Sta 408+51 - 55' Lt	1	EA
708	1540	INLET PROTECTION - SPECIAL		
		Sta 404+05 - 28' Lt	1	EA
		Sta 404+52 - 28' Rt	1	EA
		Sta 407+68 - 28' Rt	1	EA
		Sta 409+84 - 28' Lt	1	EA
		TOTAL	4	EA
708	1541	REMOVE INLET PROTECTION - SPECIAL		
		Sta 404+05 - 28' Lt	1	EA
		Sta 404+52 - 28' Rt	1	EA
		Sta 407+68 - 28' Rt	1	EA
		Sta 409+84 - 28' Lt	1	EA
		TOTAL	4	EA

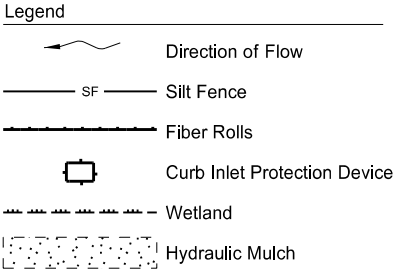
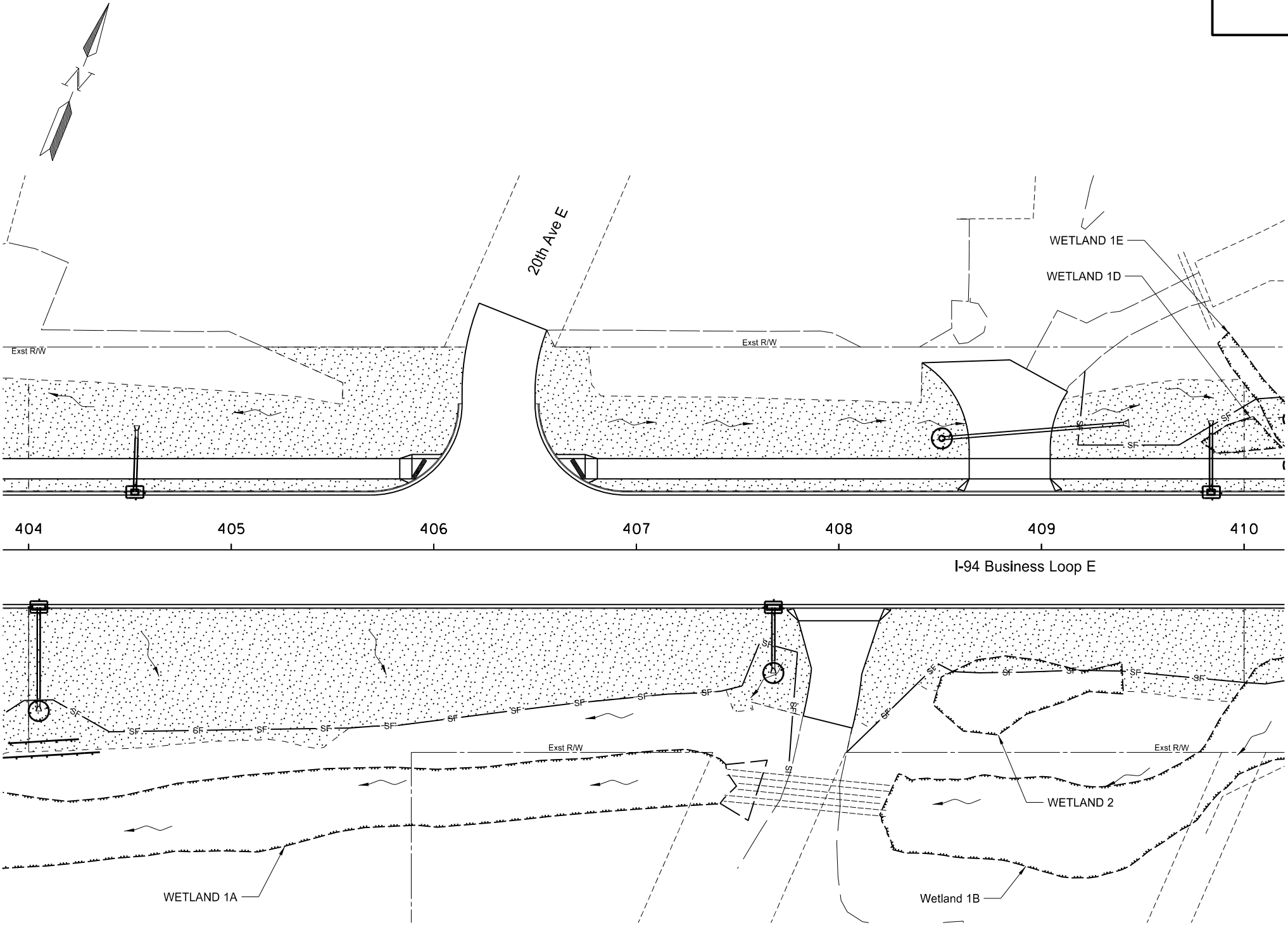
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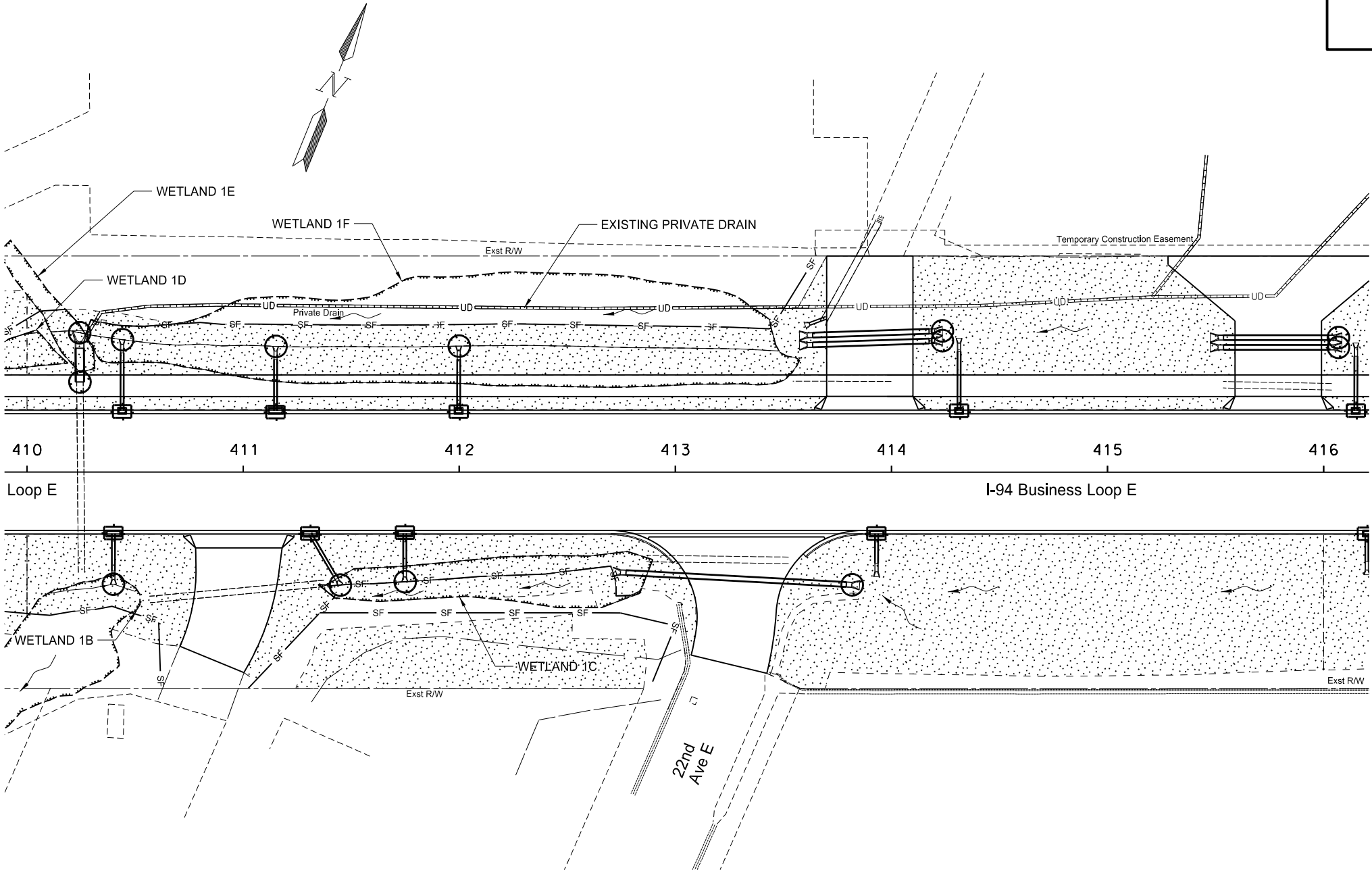
Sta 404+00 to Sta 410+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	76	9



SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta 410+00 Rt to Sta 416+00 Rt	0.68	AC
		Sta 410+00 Lt to Sta 416+00 Lt	0.40	AC
		TOTAL	1.08	AC
260	0100	SILT FENCE UNSUPPORTED		
		Sta 410+00 - 65' Rt to Sta 410+62 - 100' Rt	93	LF
		Sta 410+00 - 71' Lt to Sta 413+65 - 100' Lt	397	LF
		Sta 411+02 - 100' Rt to Sta 412+88 - 101' Rt	249	LF
		Sta 411+35 - 65' Rt to Sta 412+75 - 65' Rt	140	LF
		Sta 412+10 - 58' Rt to Sta 412+64 - 63' Rt	59	LF
		TOTAL	938	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Sta 410+00 - 65' Rt to Sta 410+62 - 100' Rt	93	LF
		Sta 410+00 - 71' Lt to Sta 413+65 - 100' Lt	397	LF
		Sta 411+02 - 100' Rt to Sta 412+88 - 101' Rt	249	LF
		Sta 411+35 - 65' Rt to Sta 412+75 - 65' Rt	140	LF
		Sta 412+10 - 58' Rt to Sta 412+64 - 63' Rt	59	LF
		TOTAL	938	LF
261	0112	FIBER ROLLS 12IN		
		Sta 410+40 - 46' Rt	12	LF
		Sta 410+44 - 55' Lt	12	LF
		Sta 411+15 - 52' Lt	12	LF
		Sta 411+42 - 47' Rt	12	LF
		Sta 411+75 - 45' Rt	12	LF
		Sta 412+00 - 52' Lt	12	LF
		Sta 413+79 - 52' Rt	18	LF
		Sta 414+21 - 61' Lt	23	LF
		Sta 414+21 - 65' Lt	23	LF
		TOTAL	136	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 410+40 - 46' Rt	12	LF
		Sta 410+44 - 55' Lt	12	LF
		Sta 411+15 - 52' Lt	12	LF
		Sta 411+42 - 47' Rt	12	LF
		Sta 411+75 - 45' Rt	12	LF
		Sta 412+00 - 52' Lt	12	LF
		Sta 413+79 - 52' Rt	18	LF
		Sta 414+21 - 61' Lt	23	LF
		Sta 414+21 - 65' Lt	23	LF
		TOTAL	136	LF
261	0120	FIBER ROLLS 20IN		
		Sta 410+24 - 42' Lt	27	LF
		Sta 410+24 - 59' Lt	27	LF
		TOTAL	54	LF
261	0121	REMOVE FIBER ROLLS 20IN		
		Sta 410+24 - 42' Lt	27	LF
		Sta 410+24 - 59' Lt	27	LF
		TOTAL	54	LF

Legend	
	Direction of Flow
	Silt Fence
	Fiber Rolls
	Curb Inlet Protection Device
	Wetland
	Hydraulic Mulch

SPEC	CODE	BID ITEM	QTY	UNIT
708	1540	INLET PROTECTION - SPECIAL		
		Sta 410+40 - 28' Rt	1	EA
		Sta 410+44 - 28' Lt	1	EA
		Sta 411+15 - 28' Lt	1	EA
		Sta 411+31 - 28' Rt	1	EA
		Sta 411+75 - 28' Rt	1	EA
		Sta 412+00 - 28' Lt	1	EA
		Sta 413+93 - 28' Rt	1	EA
		Sta 414+31 - 28' Lt	1	EA
		TOTAL	8	EA
708	1541	REMOVE INLET PROTECTION - SPECIAL		
		Sta 410+40 - 28' Rt	1	EA
		Sta 410+44 - 28' Lt	1	EA
		Sta 411+15 - 28' Lt	1	EA
		Sta 411+31 - 28' Rt	1	EA
		Sta 411+75 - 28' Rt	1	EA
		Sta 412+00 - 28' Lt	1	EA
		Sta 413+93 - 28' Rt	1	EA
		Sta 414+31 - 28' Lt	1	EA
		TOTAL	8	EA

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Temporary Erosion Control

Sta 410+00 to Sta 416+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	76	10

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta 416+00 Rt to Sta 422+00 Rt	0.67	AC
		Sta 416+00 Lt to Sta 422+00 Lt	0.63	AC
		TOTAL	1.30	AC
261	0112	FIBER ROLLS 12IN		
		Sta 416+05 - 58' Lt	23	LF
		Sta 416+05 - 62' Lt	23	LF
		Sta 418+62 - 58' Lt	23	LF
		Sta 418+62 - 62' Lt	23	LF
		Sta 419+78 - 53' Rt	18	LF
		Sta 420+39 - 58' Lt	18	LF
		Sta 421+85 - 58' Rt	18	LF
		Sta 421+87 - 43' Lt	18	LF
		TOTAL	164	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 416+05 - 58' Lt	23	LF
		Sta 416+05 - 62' Lt	23	LF
		Sta 418+62 - 58' Lt	23	LF
		Sta 418+62 - 62' Lt	23	LF
		Sta 419+78 - 53' Rt	18	LF
		Sta 420+39 - 58' Lt	18	LF
		Sta 421+85 - 58' Rt	18	LF
		Sta 421+87 - 43' Lt	18	LF
		TOTAL	164	LF
708	1540	INLET PROTECTION - SPECIAL		
		Sta 416+15 - 28' Lt	1	EA
		Sta 416+20 - 28' Rt	1	EA
		Sta 418+74 - 28' Lt	1	EA
		Sta 419+88 - 28' Rt	1	EA
		Sta 421+87 - 28' Rt	1	EA
		TOTAL	5	EA
708	1541	REMOVE INLET PROTECTION - SPECIAL		
		Sta 416+15 - 28' Lt	1	EA
		Sta 416+20 - 28' Rt	1	EA
		Sta 418+74 - 28' Lt	1	EA
		Sta 419+88 - 28' Rt	1	EA
		Sta 421+87 - 28' Rt	1	EA
		TOTAL	5	EA

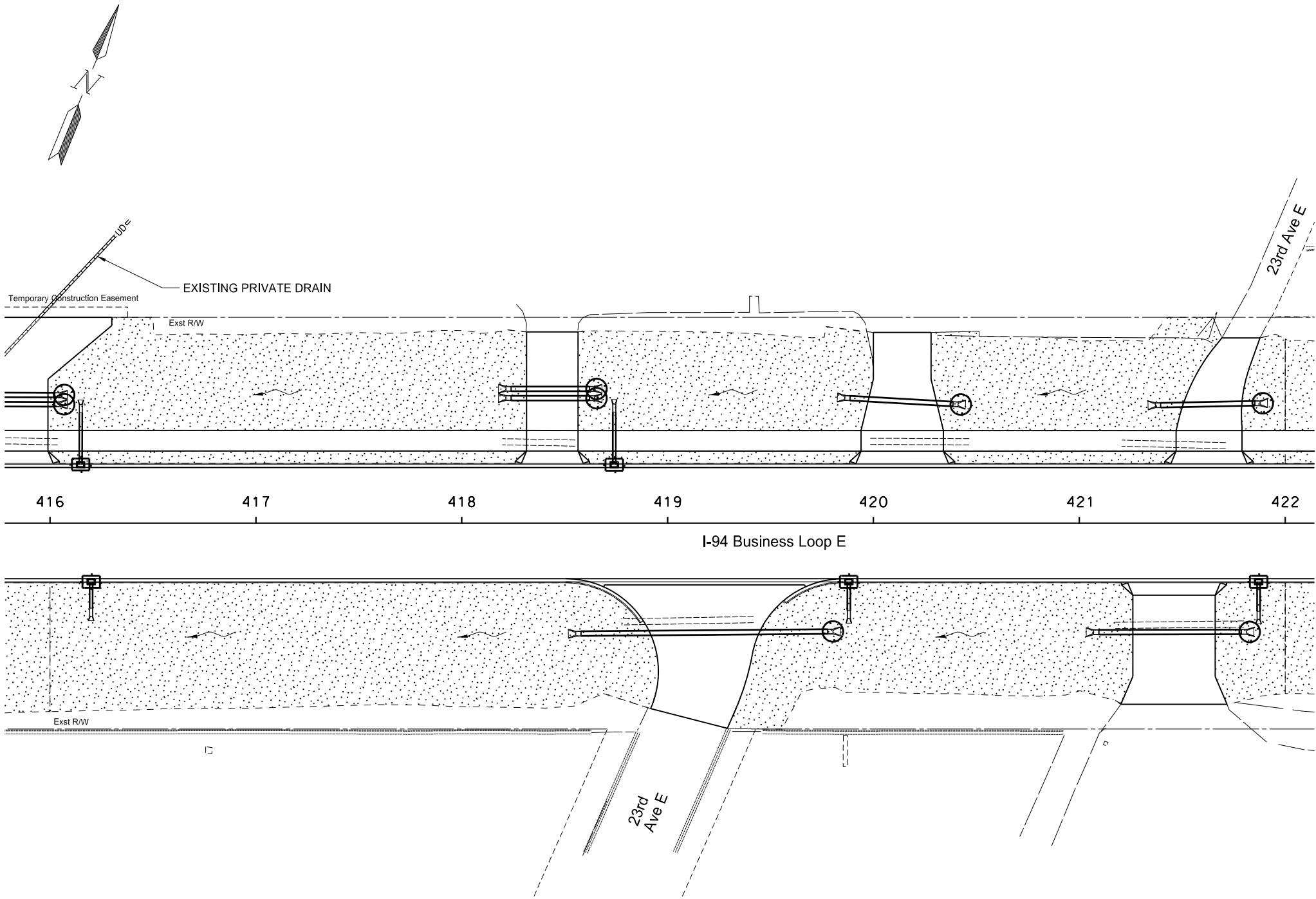
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Sta 416+00 to Sta 422+00

E Business LP 10th Ave E - Exit 64

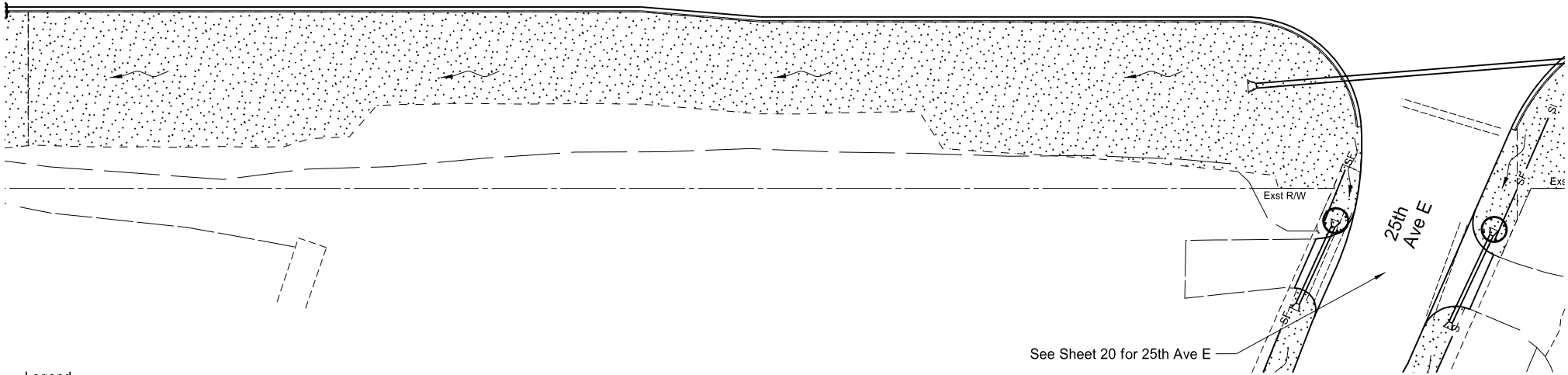
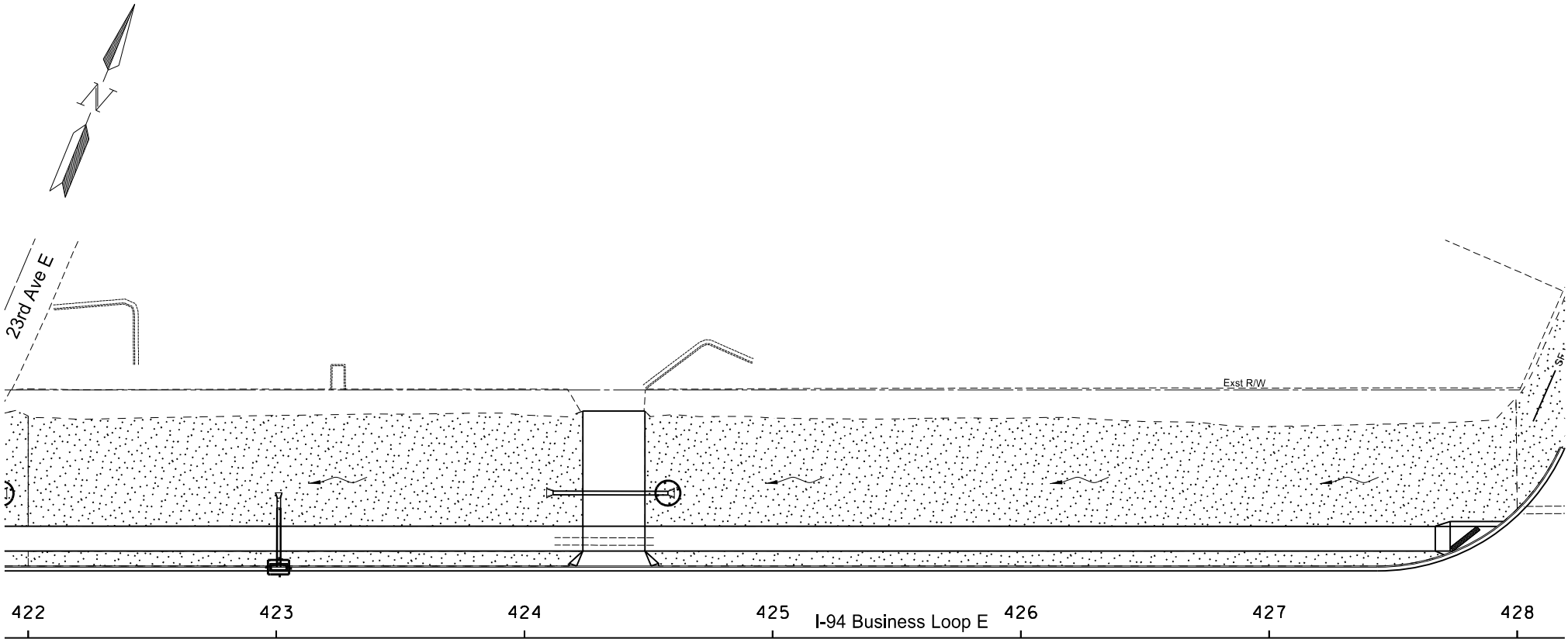
Dickinson, ND



- Legend
- Direction of Flow
 - SF Silt Fence
 - Fiber Rolls
 - Curb Inlet Protection Device
 - Wetland
 - Hydraulic Mulch

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	76	11

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta 422+00 Rt to Sta 428+00 Rt	0.58	AC
		Sta 422+00 Lt to Sta 428+00 Lt	0.65	AC
		TOTAL	1.23	AC
261	0112	FIBER ROLLS 12IN		
		Sta 424+58 - 58' Lt	14	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 424+58 - 58' Lt	14	LF
708	1540	INLET PROTECTION - SPECIAL		
		Sta 423+01 - 28' Lt	1	EA
708	1541	REMOVE INLET PROTECTION - SPECIAL		
		Sta 423+01 - 28' Lt	1	EA



Legend

- Direction of Flow
- SF Silt Fence
- Fiber Rolls
- Curb Inlet Protection Device
- Wetland
- Hydraulic Mulch

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Temporary Erosion Control
Sta 422+00 to Sta 428+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	76	12

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta 428+00 Rt to Sta 434+00 Rt	0.54	AC
		Sta 428+00 Lt to Sta 434+00 Lt	0.60	AC
		TOTAL	1.14	AC
708	1531	INLET PROTECTION-FIBER ROLL 12IN		
		Sta 428+73 - 44' Rt	1	EA
		Sta 429+00 - 59' Lt	1	EA
		TOTAL	2	EA
708	1533	REMOVAL INLET PROTECTION-FIBER ROLL 12IN		
		Sta 428+73 - 44' Rt	1	EA
		Sta 429+00 - 59' Lt	1	EA
		TOTAL	2	EA
708	1540	INLET PROTECTION - SPECIAL		
		Sta 428+73 - 28' Rt	1	EA
		Sta 428+87 - 53' Lt	1	EA
		TOTAL	2	EA
708	1541	REMOVE INLET PROTECTION - SPECIAL		
		Sta 428+73 - 28' Rt	1	EA
		Sta 428+87 - 53' Lt	1	EA
		TOTAL	2	EA

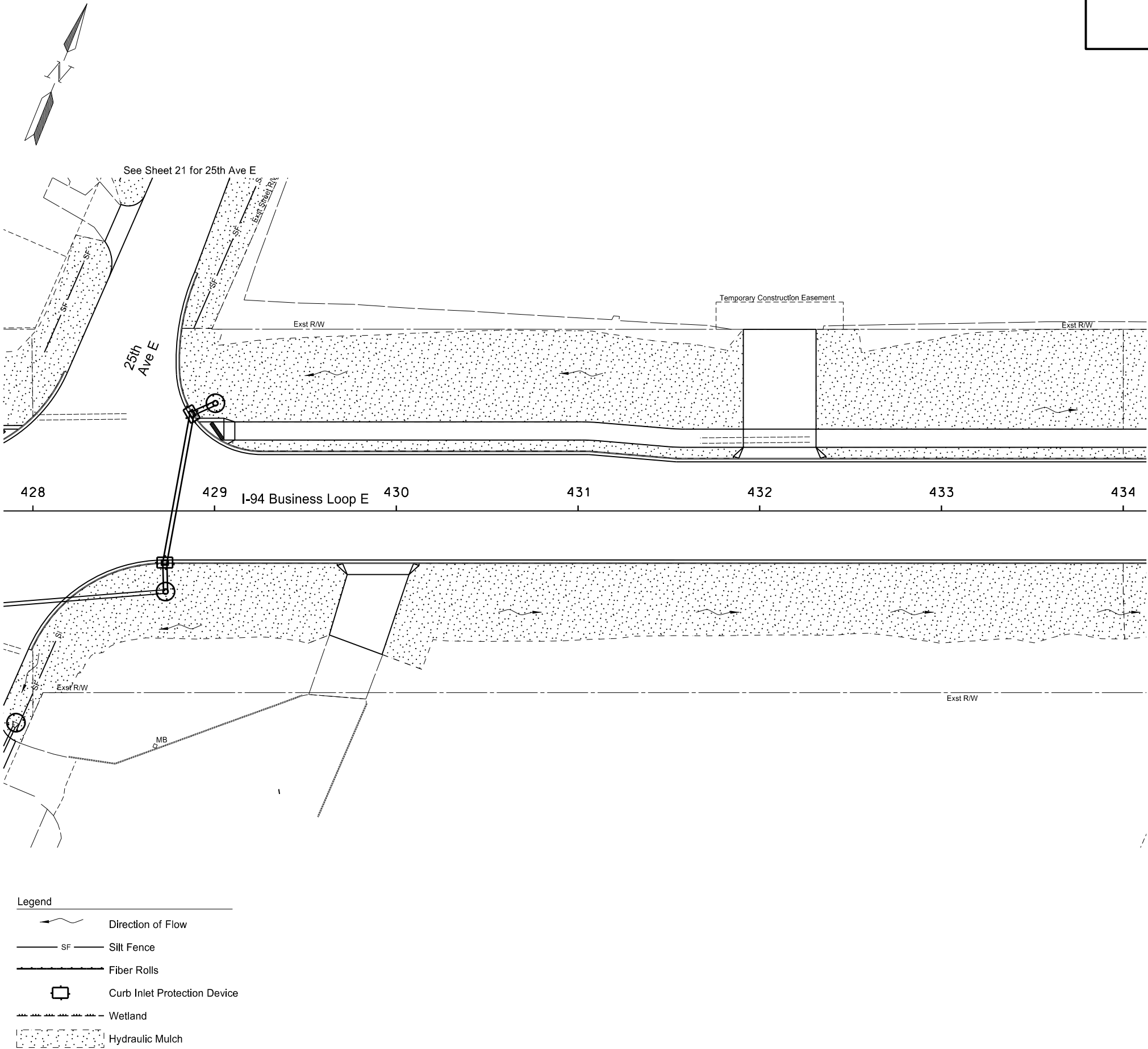
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Sta 428+00 to Sta 434+00

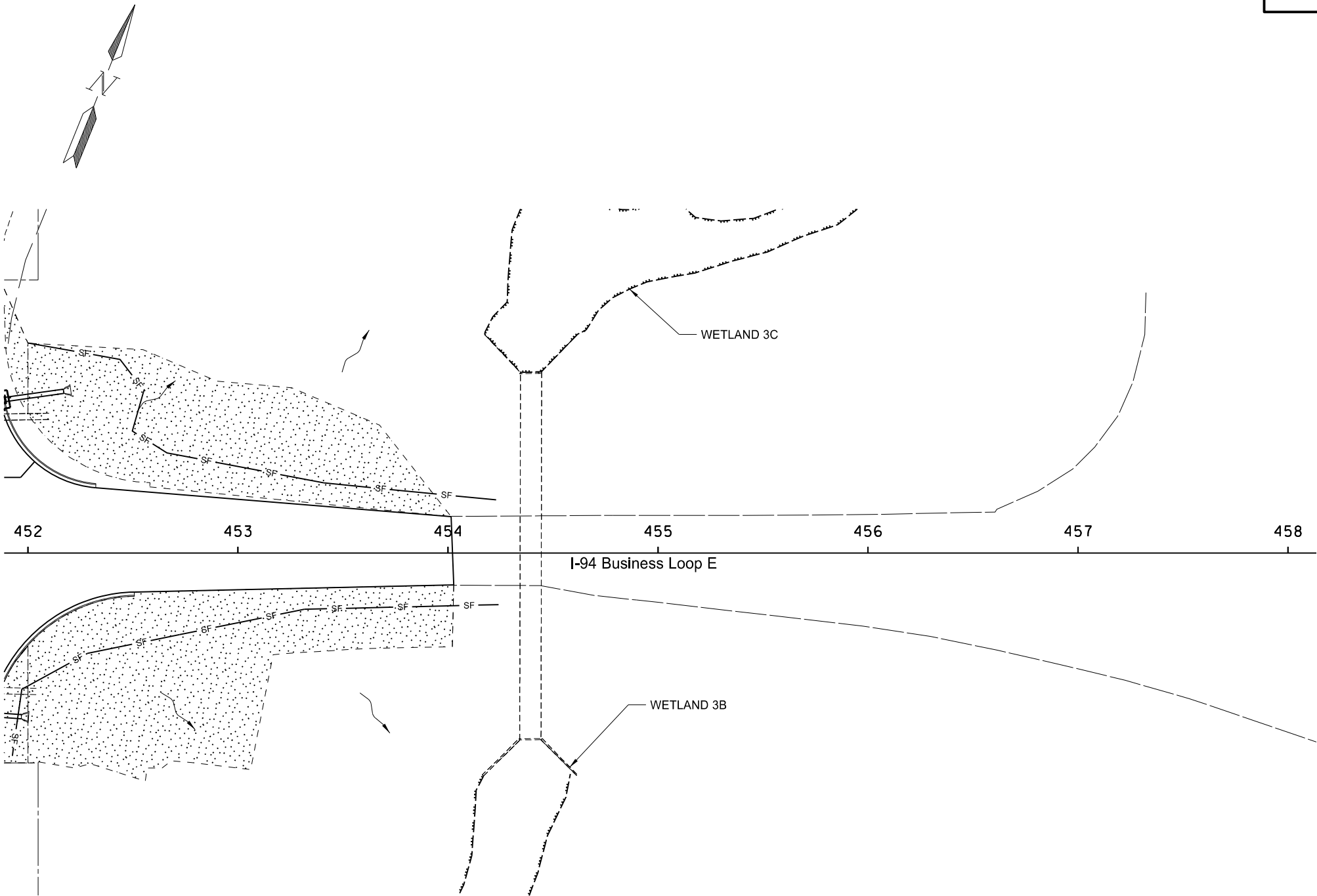
E Business LP 10th Ave E - Exit 64

Dickinson, ND



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	76	16

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta 452+00 Rt to Sta 454+02 Rt	0.27	AC
		Sta 452+00 Lt to Sta 454+02 Lt	0.22	AC
		TOTAL	0.49	AC
260	0100	SILT FENCE UNSUPPORTED		
		Sta 452+00 - 100' Lt to Sta 454+23 - 26' Lt	261	LF
		Sta 452+00 - 63' Rt to Sta 454+24 - 25' Rt	230	LF
		TOTAL	473	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Sta 452+00 - 100' Lt to Sta 454+23 - 26' Lt	261	LF
		Sta 452+00 - 63' Rt to Sta 454+24 - 25' Rt	230	LF
		TOTAL	473	LF



Legend	
	Direction of Flow
	Silt Fence
	Fiber Rolls
	Curb Inlet Protection Device
	Wetland
	Hydraulic Mulch

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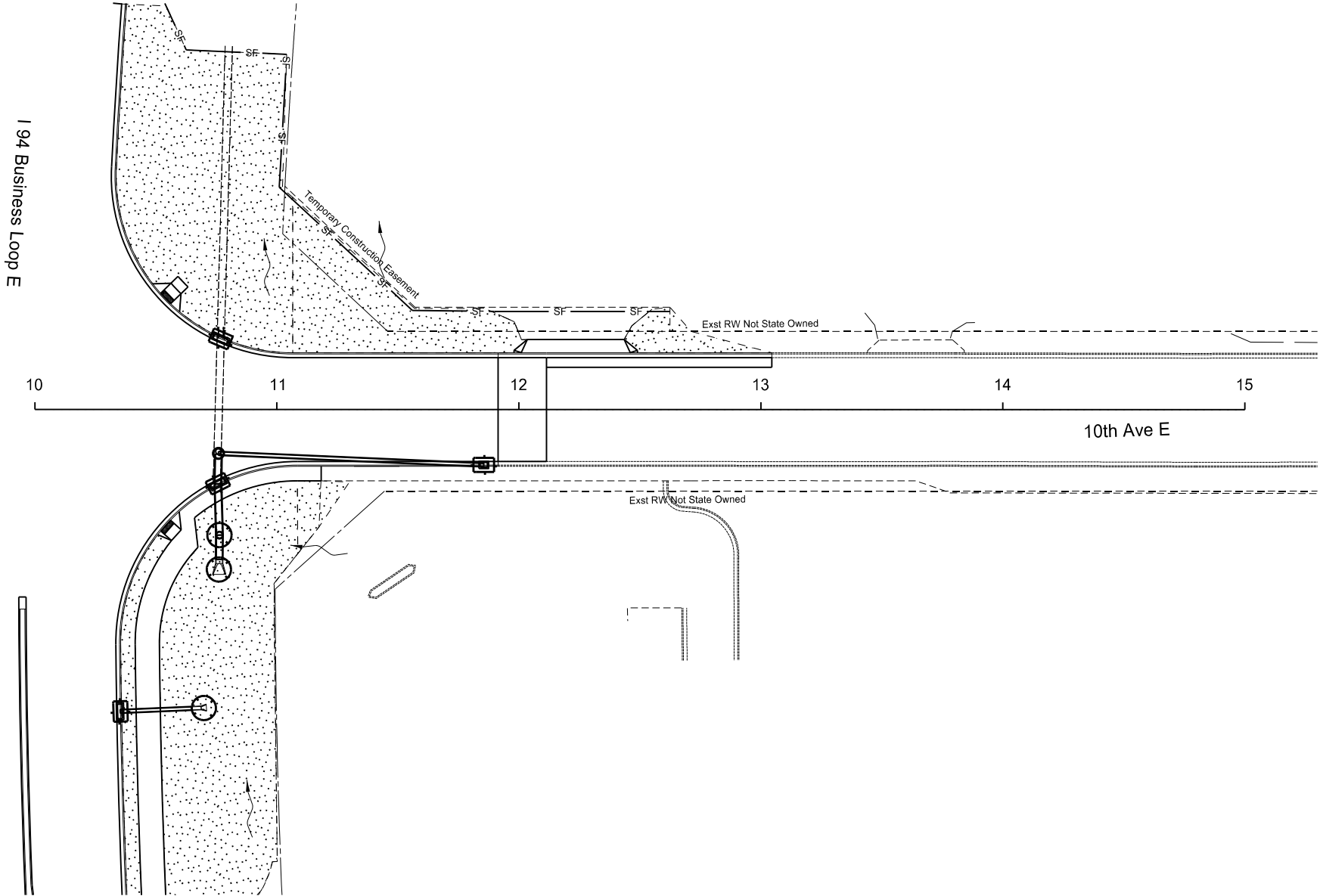
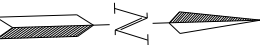
Sta 452+00 to Sta 458+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	76	17

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULTCH		
		Sta 11+08 Rt to Sta 11+30 Rt	0.01	AC
		Sta 11+07 Lt to Sta 13+05 Lt	0.08	AC
		TOTAL	0.09	AC
260	0100	SILT FENCE UNSUPPORTED		
		Sta 11+01 - 91' Lt to Sta 11+90 - 41' Lt	181	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Sta 11+01 - 91' Lt to Sta 11+90 - 41' Lt	181	LF
708	1540	INLET PROTECTION - SPECIAL		
		Sta 11+85 - 23' Rt	1	EA
708	1541	REMOVE INLET PROTECTION - SPECIAL		
		Sta 11+85 - 23' Rt	1	EA



Legend	
	Direction of Flow
	Silt Fence
	Fiber Rolls
	Curb Inlet Protection Device
	Wetland
	Hydraulic Mulch

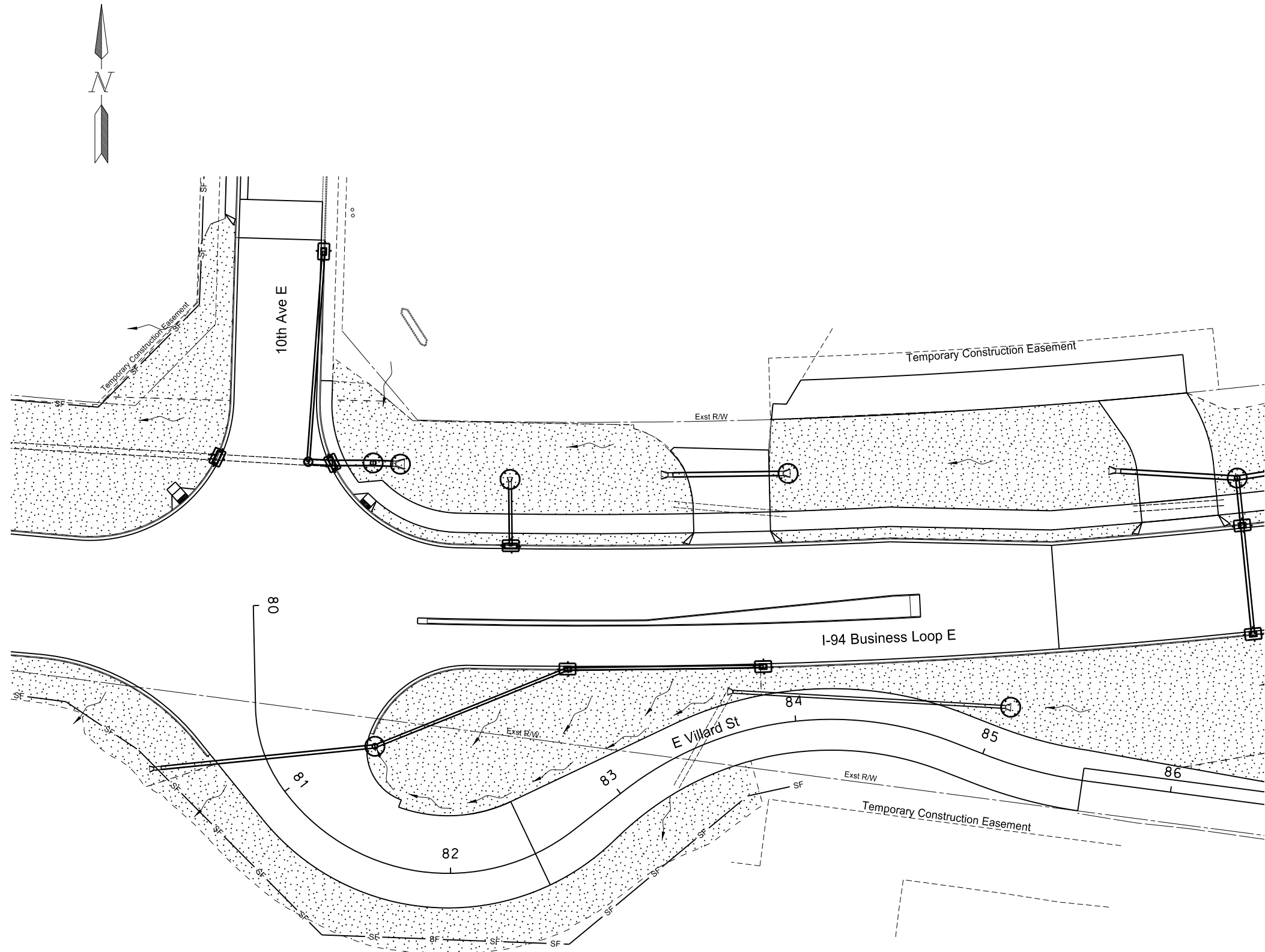
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Sta 10+00 to Sta 15+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND



STATE		PROJECT NO.		SECTION NO.	SHEET NO.
ND		NHU-5-094(114)907		76	18
SPEC	CODE	BID ITEM		QTY	UNIT
253	0201	HYDRAULIC MULTCH		0.21	AC
		Sta 80+75 Rt to Sta 83+72 Rt			
260	0100	SILT FENCE UNSUPPORTED		460	LF
		Sta 80+48 - 99' Rt to Sta 84+02 - 33' Rt			
260	0101	REMOVE SILT FENCE UNSUPPORTED		460	LF
		Sta 80+48 - 99' Rt to Sta 84+02 - 33' Rt			
261	0112	FIBER ROLLS 12IN		14	LF
		Sta 85+02 - 27' Lt			
261	0113	REMOVE FIBER ROLLS 12IN		14	LF
		Sta 85+02 - 27' Lt			
708	1531	INLET PROTECTION-FIBER ROLL 12IN		1	EA
		Sta 81+18 - 51' Lt			
708	1533	REMOVAL INLET PROTECTION-FIBER ROLL 12IN		1	EA
		Sta 81+19 - 51' Lt			

Legend

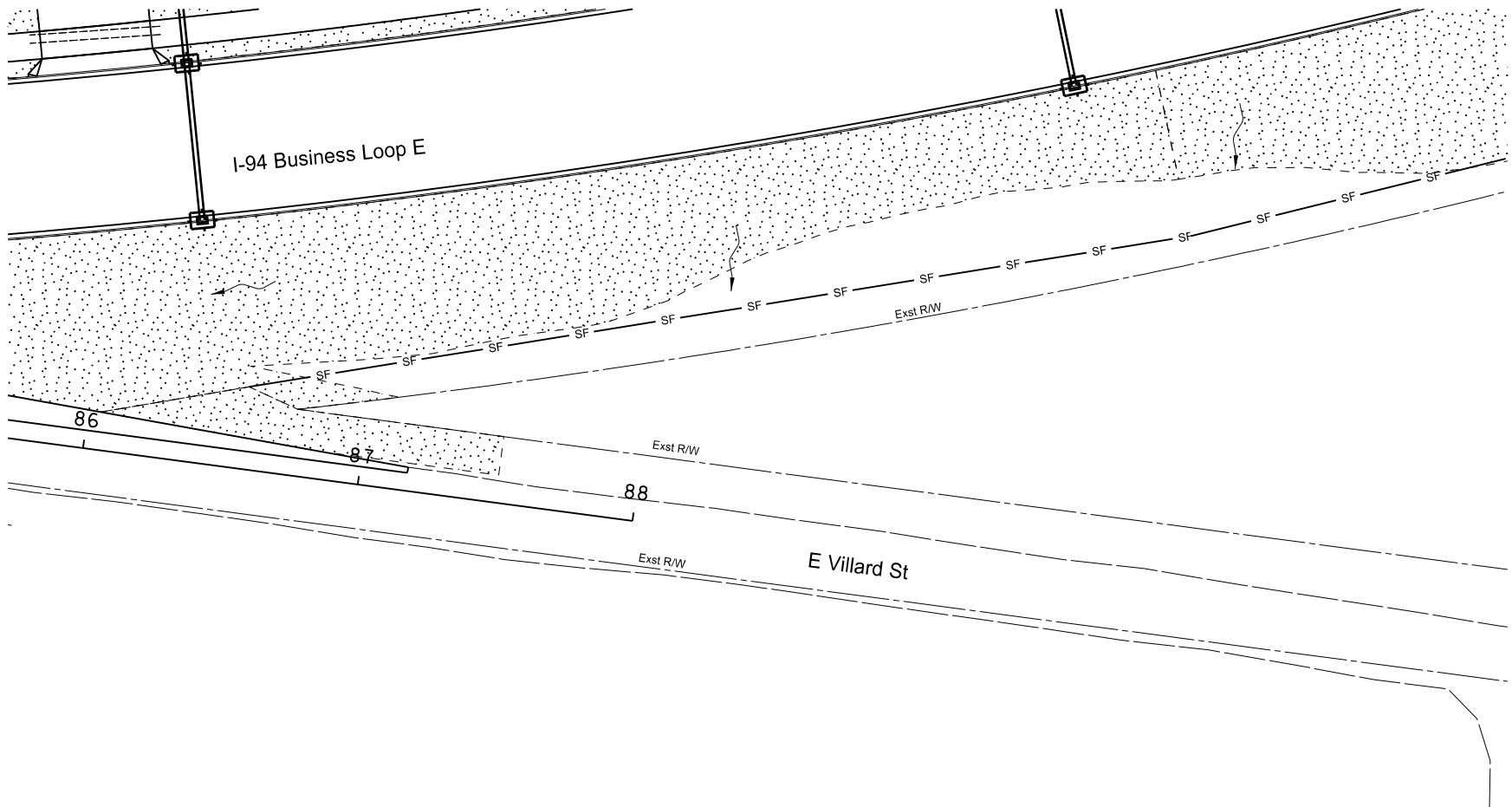
- Direction of Flow
- SF Silt Fence
- Fiber Rolls
- Curb Inlet Protection Device
- Wetland
- Hydraulic Mulch

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Temporary Erosion Control
Sta 80+00 to Sta 86+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	76	19

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULCH		
		Sta 86+05 Lt to Sta 87+50 Lt	0.04	AC



Legend	
	Direction of Flow
	Silt Fence
	Fiber Rolls
	Curb Inlet Protection Device
	Wetland
	Hydraulic Mulch

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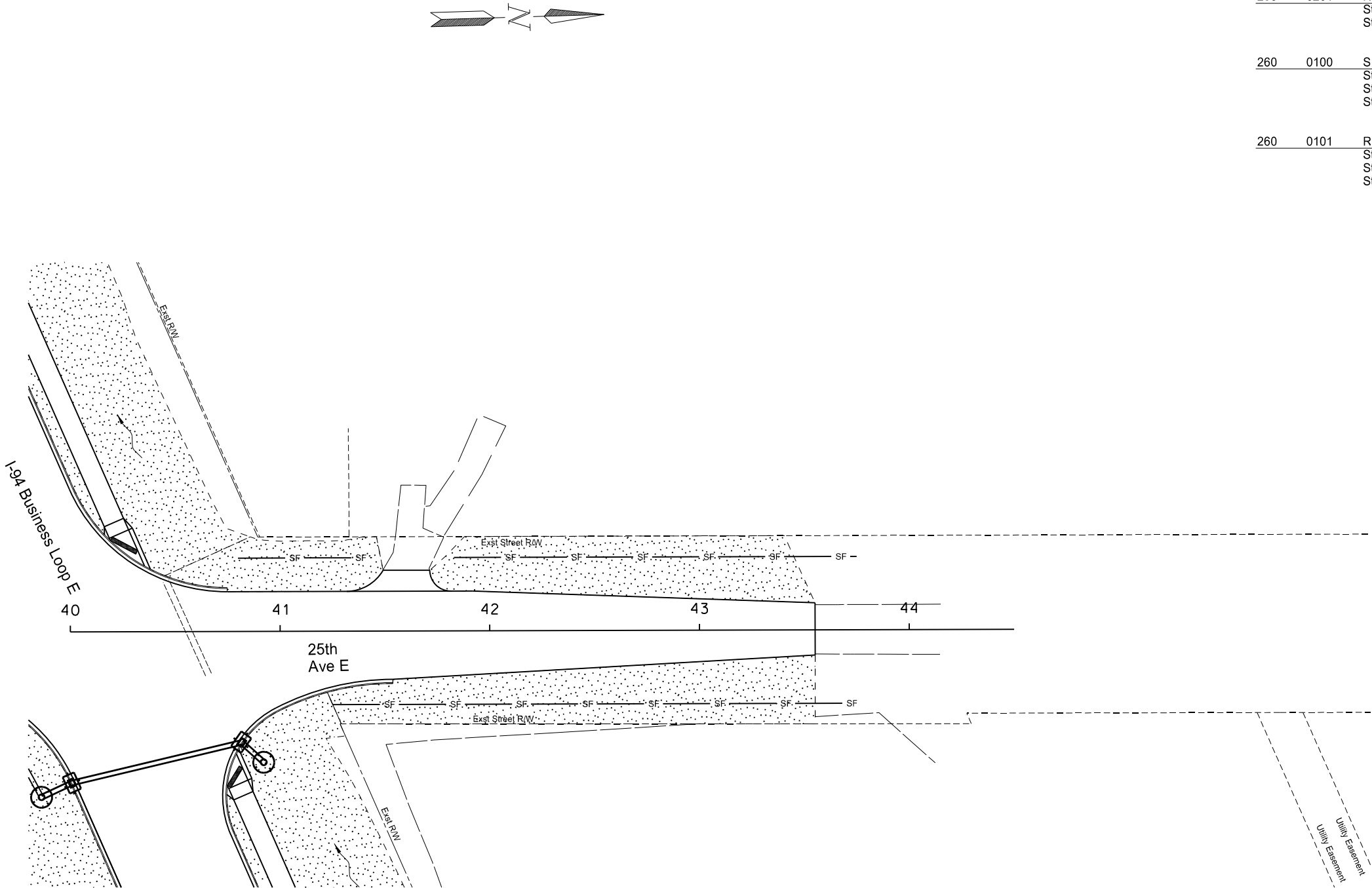
Sta 86+00 to Sta 88+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	76	21

SPEC	CODE	BID ITEM	QTY	UNIT
253	0201	HYDRAULIC MULTCH		
		Sta 40+45 Lt to Sta 43+55 Lt	0.16	AC
		Sta 41+22 Rt to Sta 43+55 Rt	0.14	AC
		TOTAL	0.30	AC
260	0100	SILT FENCE UNSUPPORTED		
		Sta 40+80 - 35' Lt to Sta 41+44 - 35' Lt	64	LF
		Sta 41+25 - 35' Rt to Sta 43+75 - 35' Rt	250	LF
		Sta 41+83 - 35' Lt to Sta 43+75 - 35' Lt	192	LF
		TOTAL	506	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Sta 40+80 - 35' Lt to Sta 41+44 - 35' Lt	64	LF
		Sta 41+25 - 35' Rt to Sta 43+75 - 35' Rt	250	LF
		Sta 41+83 - 35' Lt to Sta 43+75 - 35' Lt	192	LF
		TOTAL	506	LF



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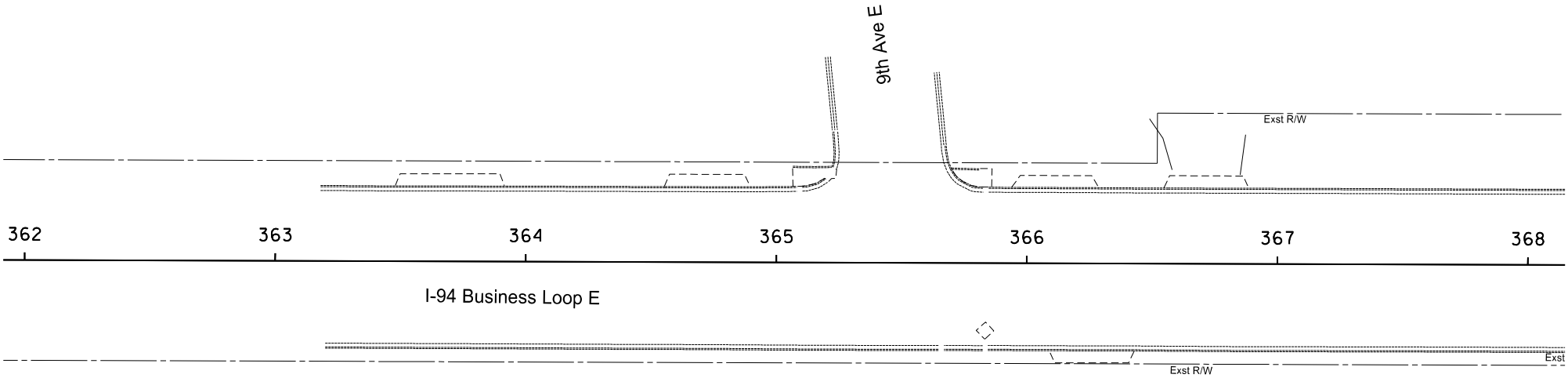
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Sta 40+00 to Sta 44+00

E Business LP 10th Ave E - Exit 64

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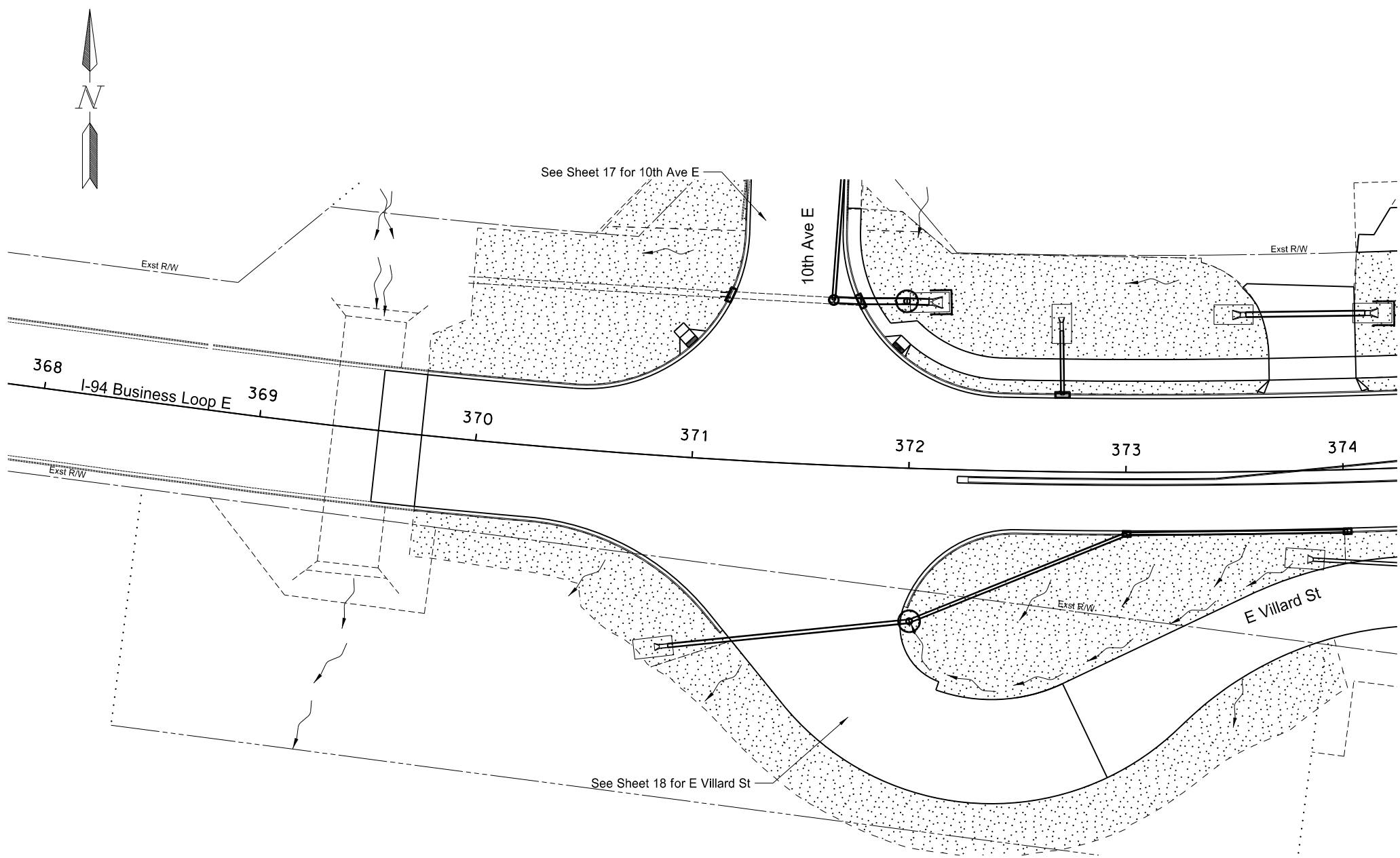
Sta 362+00 to Sta 368+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	77	2

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 369+55 Rt to Sta 374+00 Rt	0.32	AC
		Sta 369+55 Lt to Sta 374+00 Lt	0.39	AC
		TOTAL	0.71	AC
253	0201	HYDRAULIC MULCH		
		Sta 369+55 Rt to Sta 374+00 Rt	0.32	AC
		Sta 369+55 Lt to Sta 374+00 Lt	0.39	AC
		TOTAL	0.71	AC
255	0101	ECB TYPE 1		
		Sta 372+07 - 77' Lt	27	SY
		Sta 372+70 - 65' Lt	20	SY
		Sta 373+56 - 72' Lt	24	SY
		TOTAL	71	SY
261	0112	FIBER ROLLS 12IN		
		Sta 372+07 - 77' Lt	36	LF
708	1531	INLET PROTECTION-FIBER ROLL 12 IN		
		Sta 371+96 - 77' Lt	1	EA



Legend

Direction of Flow

Fiber Rolls Protection

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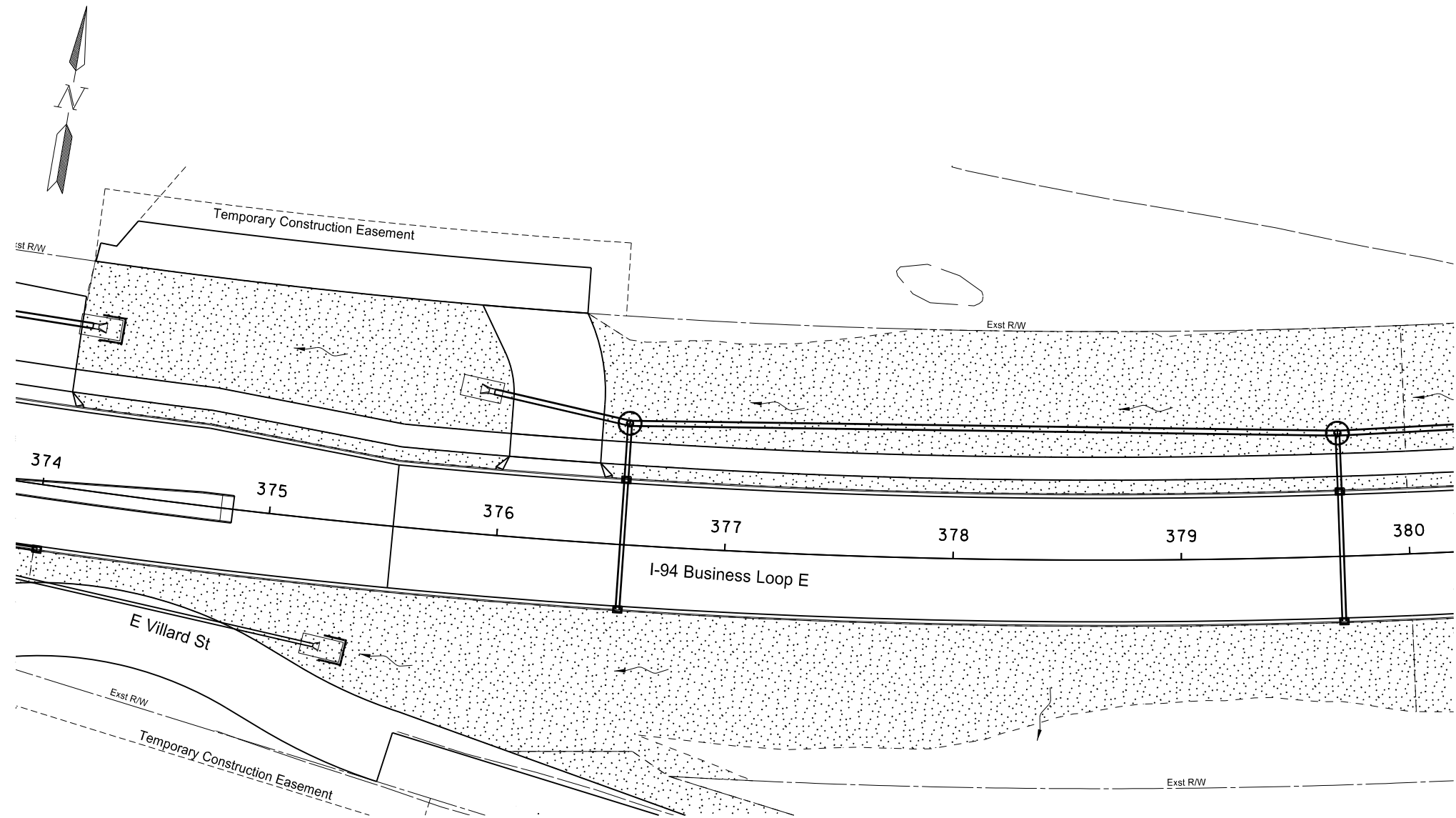
Sta 368+00 to Sta 374+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	77	3

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 374+00 Rt to Sta 380+00 Rt	0.60	AC
		Sta 374+00 Lt to Sta 380+00 Lt	0.71	AC
		TOTAL	1.31	AC
253	0201	HYDRAULIC MULCH		
		Sta 374+00 Rt to Sta 380+00 Rt	0.60	AC
		Sta 374+00 Lt to Sta 380+00 Lt	0.71	AC
		TOTAL	1.31	AC
255	0101	ECB TYPE 1		
		Sta 374+12 - 72' Lt	24	SY
		Sta 375+94 - 63' Lt	24	SY
		TOTAL	48	SY
261	0112	FIBER ROLLS 12IN		
		Sta 374+12 - 72' Lt	35	LF
708	1531	INLET PROTECTION-FIBER ROLL 12 IN		
		Sta 376+55 - 53' Lt	1	EA
		Sta 379+70 - 54' Lt	1	EA
		TOTAL	2	EA



Legend	
	Direction of Flow
	Fiber Rolls Protection
	Hydraulic Mulch and Permanent Seeding
	Erosion Control Blanket (See Sec 20 for Location)
	Riprap Grade I

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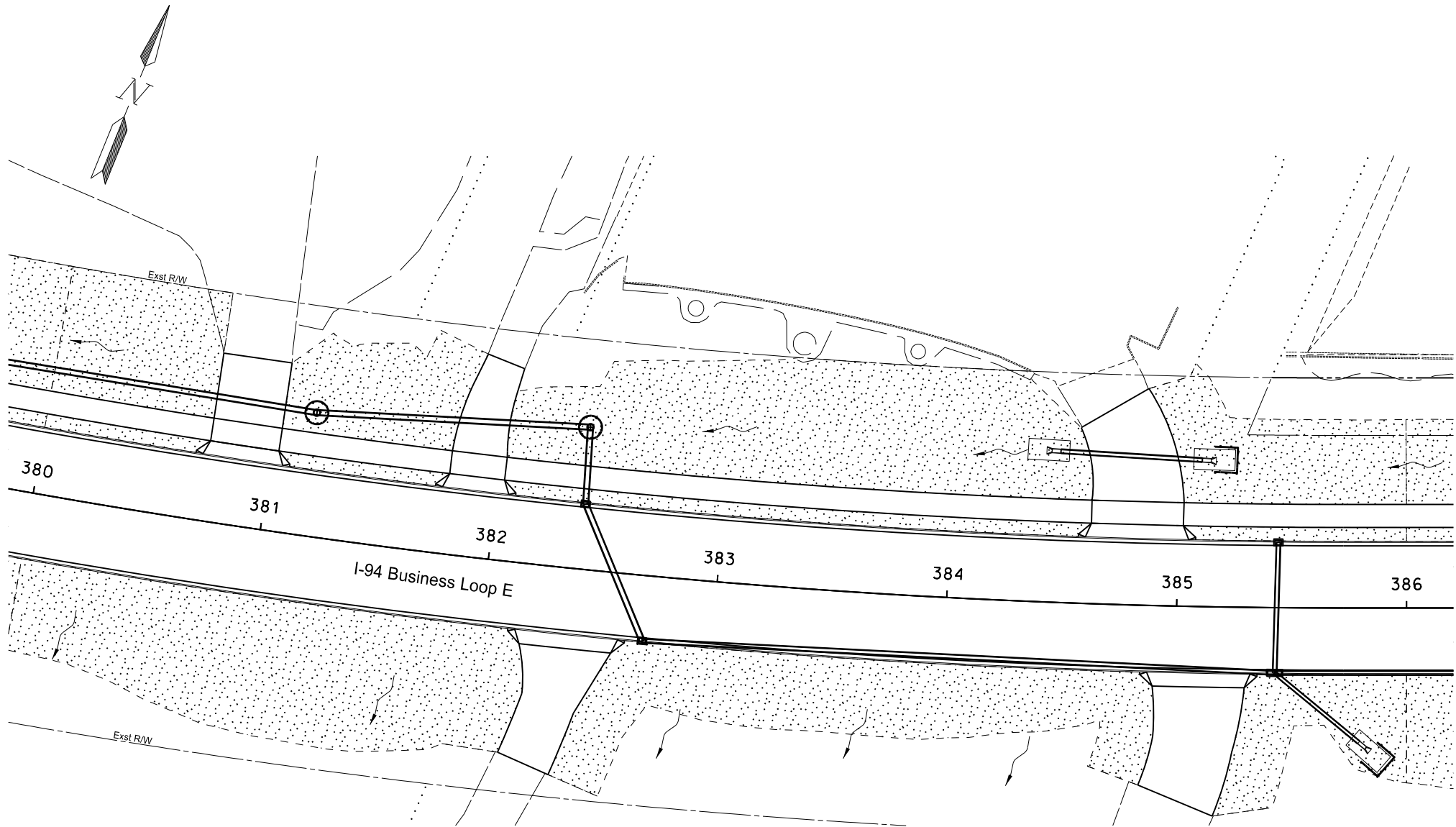
Sta 374+00 to Sta 380+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	77	4

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 380+00 Rt to Sta 386+00 Rt	0.54	AC
		Sta 380+00 Lt to Sta 386+00 Lt	0.61	AC
		TOTAL	1.15	AC
253	0201	HYDRAULIC MULCH		
		Sta 380+00 Rt to Sta 386+00 Rt	0.54	AC
		Sta 380+00 Lt to Sta 386+00 Lt	0.61	AC
		TOTAL	1.15	AC
255	0101	ECB TYPE 1		
		Sta 384+47 - 66' Lt	22	SY
		Sta 385+10 - 64' Lt	22	SY
		Sta 385+79 - 58' Lt	20	SY
		TOTAL	64	SY
261	0112	FIBER ROLLS 12IN		
		Sta 385+10 - 64' Lt	34	LF
		Sta 385+79 - 58' Rt	33	LF
		TOTAL	67	LF
708	1531	INLET PROTECTION-FIBER ROLL 12 IN		
		Sta 381+17 - 57' Lt	1	EA
		Sta 382+38 - 62' Lt	1	EA
		TOTAL	2	EA



Legend	
	Direction of Flow
	Fiber Rolls Protection
	Hydraulic Mulch and Permanent Seeding
	Erosion Control Blanket (See Sec 20 for Location)
	Riprap Grade I

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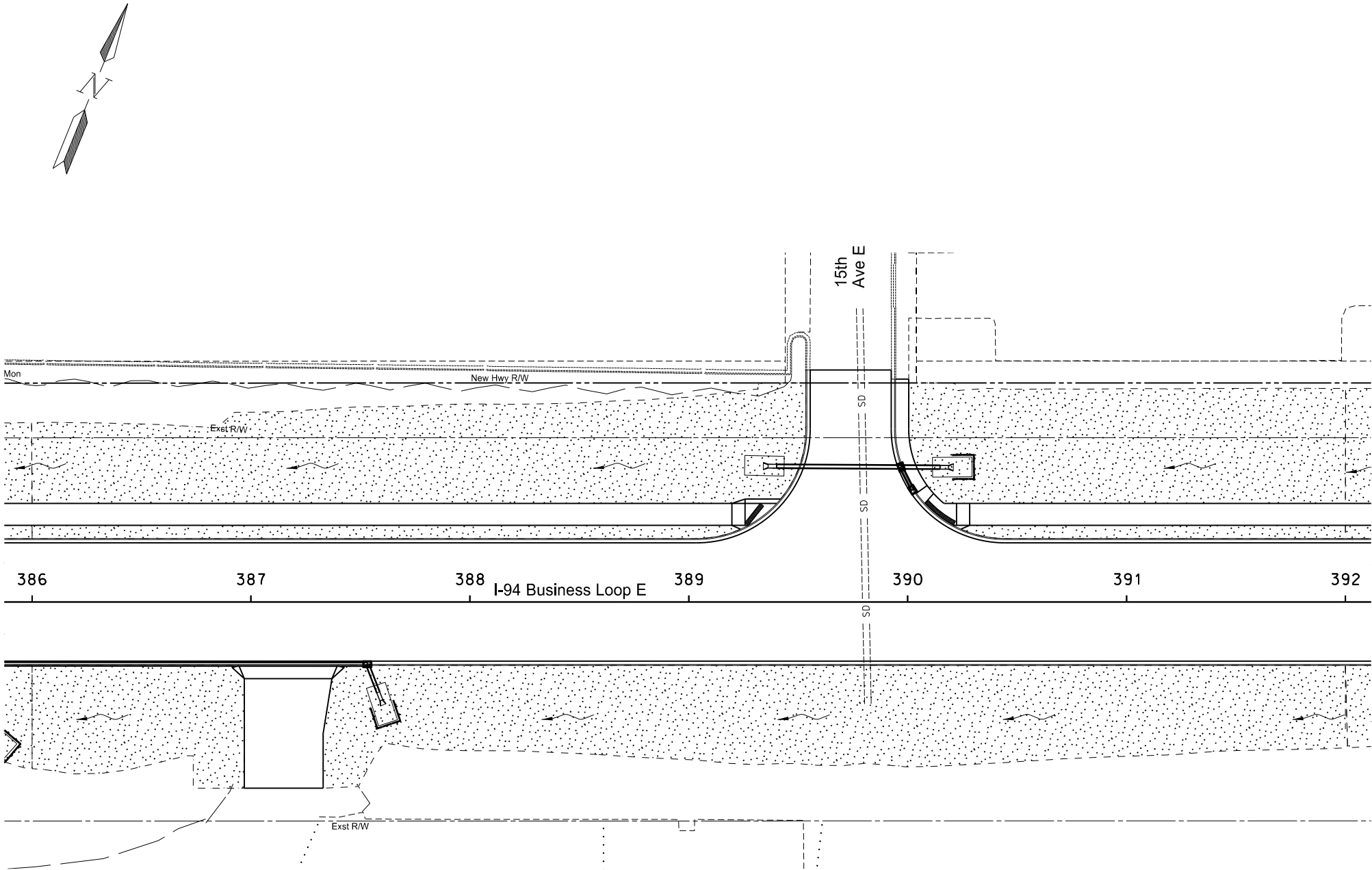
Sta 380+00 to Sta 386+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	77	5

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 386+00 Lt to Sta 392+00 Lt	0.66	AC
		Sta 386+00 Rt to Sta 392+00 Rt	0.56	AC
		TOTAL	1.22	AC
253	0201	HYDRAULIC MULCH		
		Sta 386+00 Lt to Sta 392+00 Lt	0.66	AC
		Sta 386+00 Rt to Sta 392+00 Rt	0.56	AC
		TOTAL	1.22	AC
255	0101	ECB TYPE 1		
		Sta 387+60 - 47' Rt	20	SY
		Sta 389+40 - 62' Lt	22	SY
		Sta 390+21 - 62' Lt	22	SY
		TOTAL	64	SY
261	0112	FIBER ROLLS 12IN		
		Sta 387+60 - 47' Rt	33	LF
		Sta 390+21 - 62' Lt	34	LF
		TOTAL	67	LF



- Legend
- Direction of Flow
 - Fiber Rolls Protection
 - Hydraulic Mulch and Permanent Seeding
 - Erosion Control Blanket (See Sec 20 for Location)
 - Riprap Grade I

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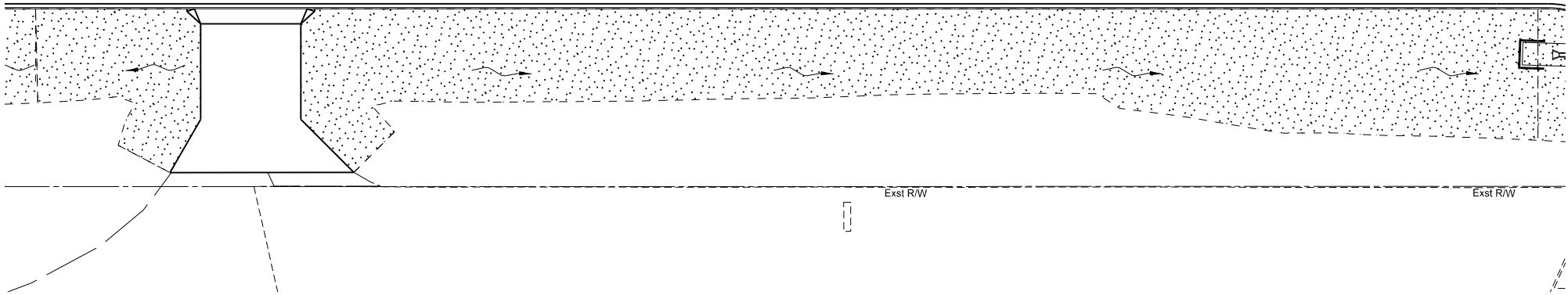
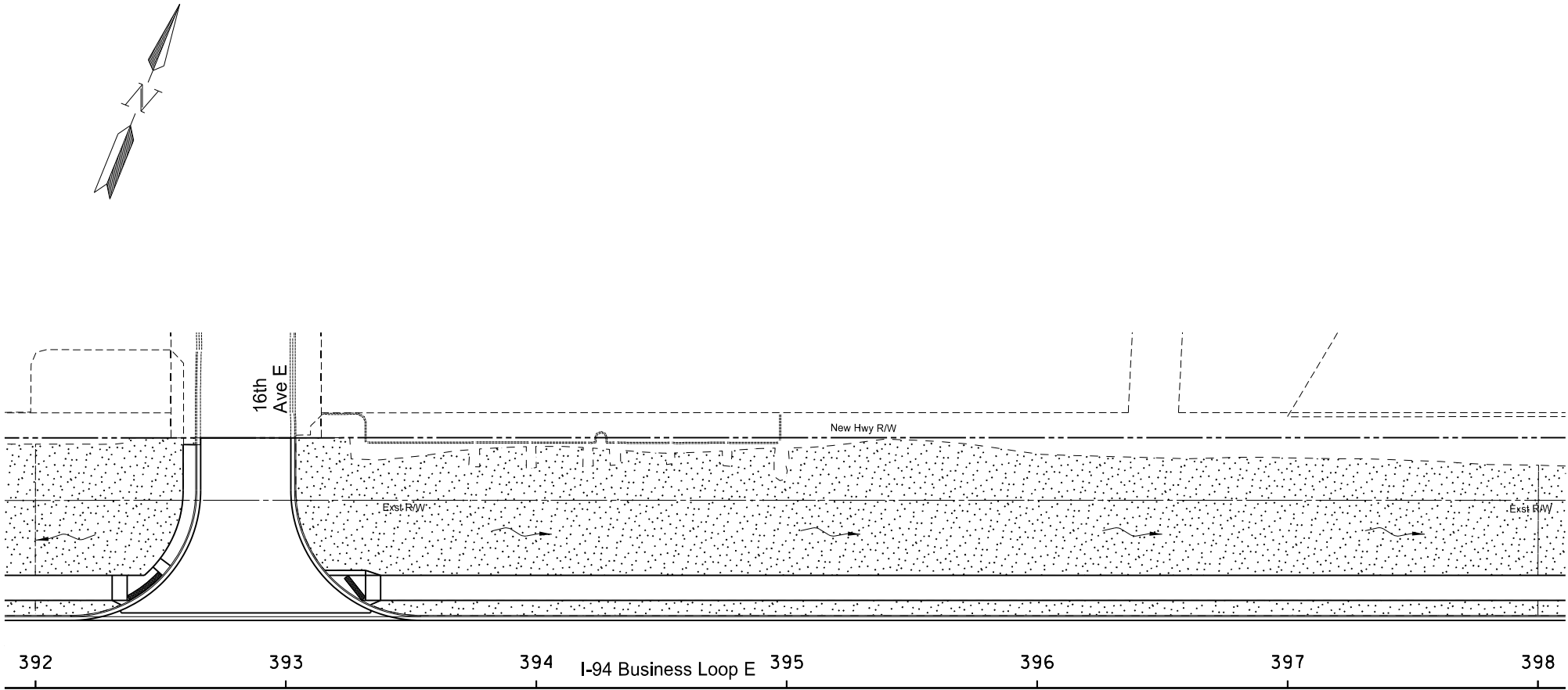
Sta 386+00 to Sta 392+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	77	6

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 392+00 Lt to Sta 398+00 Lt	0.69	AC
		Sta 392+00 Rt to Sta 398+00 Rt	0.54	AC
		TOTAL	1.23	AC
253	0201	HYDRAULIC MULCH		
		Sta 392+00 Lt to Sta 398+00 Lt	0.69	AC
		Sta 392+00 Rt to Sta 398+00 Rt	0.54	AC
		TOTAL	1.23	AC



- Legend**
- Direction of Flow
 - Fiber Rolls Protection
 - Hydraulic Mulch and Permanent Seeding
 - Erosion Control Blanket (See Sec 20 for Location)
 - Riprap Grade I

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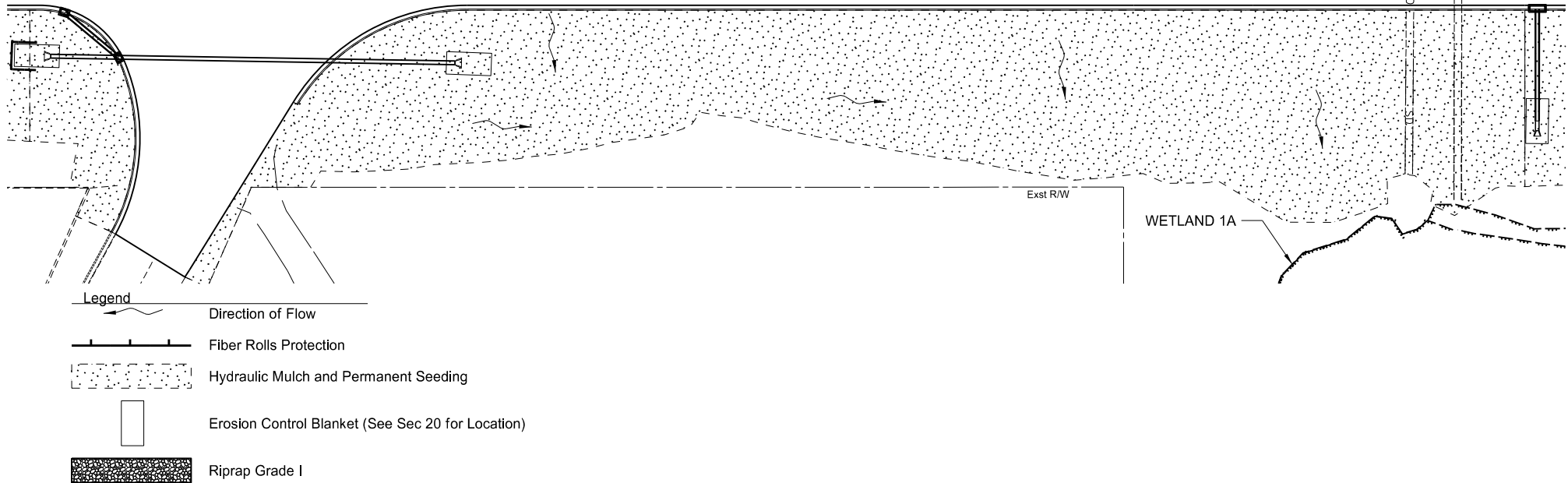
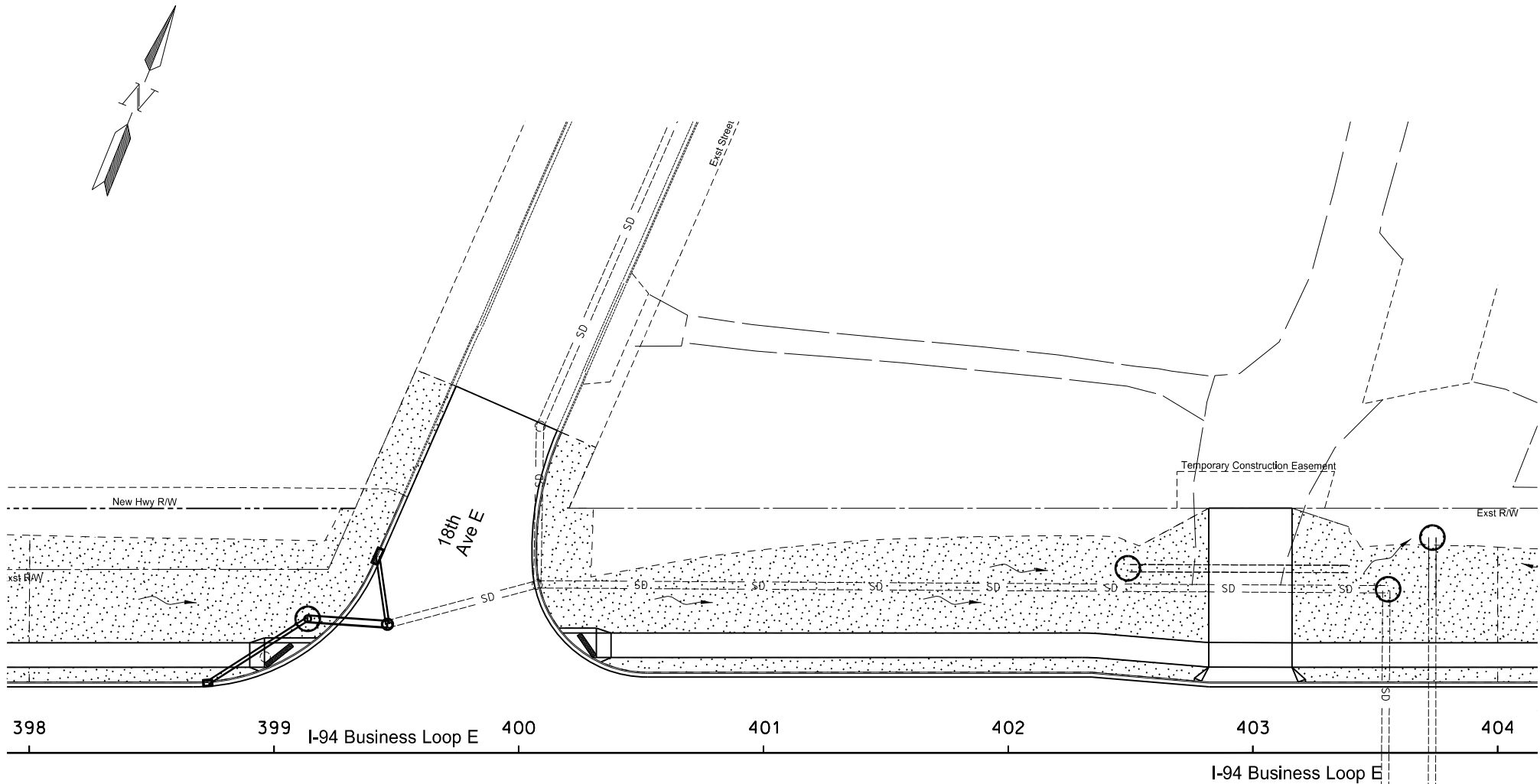
Sta 392+00 to Sta 398+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	77	7

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 398+00 Lt to Sta 404+00 Lt	0.55	AC
		Sta 398+00 Rt to Sta 404+00 Rt	0.77	AC
		TOTAL	1.32	AC
253	0201	HYDRAULIC MULCH		
		Sta 398+00 Lt to Sta 404+00 Lt	0.55	AC
		Sta 398+00 Rt to Sta 404+00 Rt	0.77	AC
		TOTAL	1.32	AC
255	0101	ECB TYPE 1		
		Sta 398+05 - 48' Rt	22	SY
		Sta 399+71 - 50' Rt	22	SY
		TOTAL	44	SY
261	0112	FIBER ROLLS 12 IN		
		Sta 398+05 - 48' Rt	34	LF
708	1531	INLET PROTECTION-FIBER ROLL 12IN		
		Sta 399+14 - 55' Lt	1	EA
		Sta 402+49 - 75' Lt	1	EA
		Sta 403+55 - 67' Lt	1	EA
		Sta 403+73 - 88' Lt	1	EA
		TOTAL	4	EA



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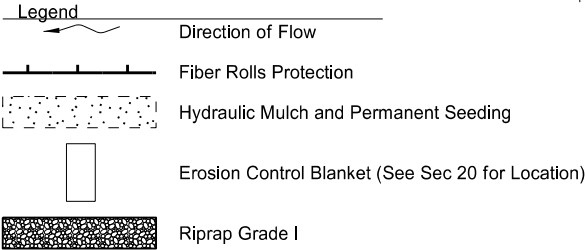
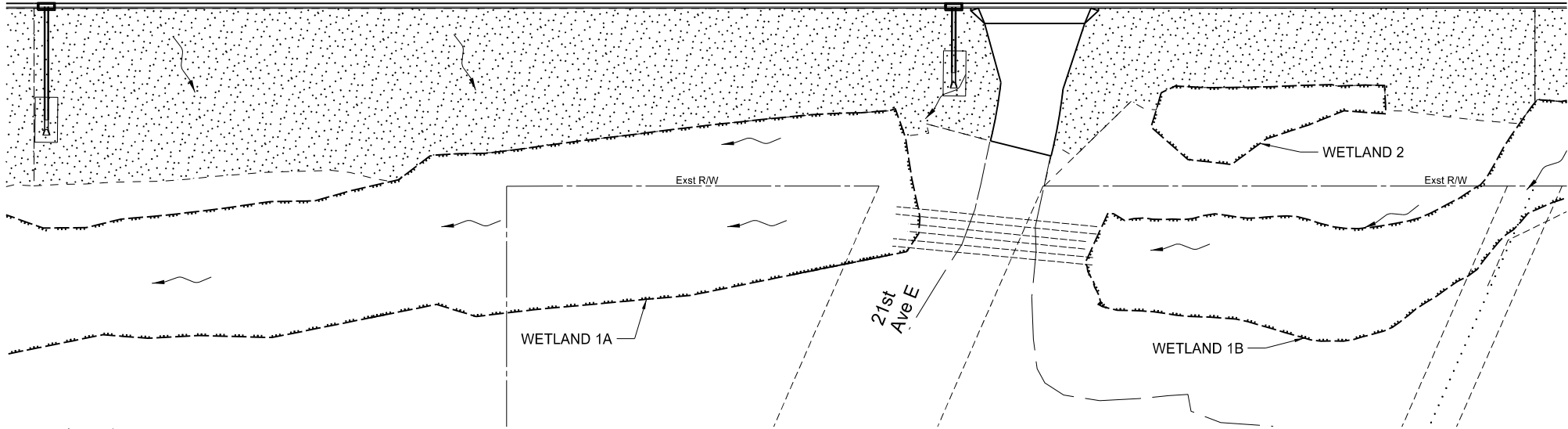
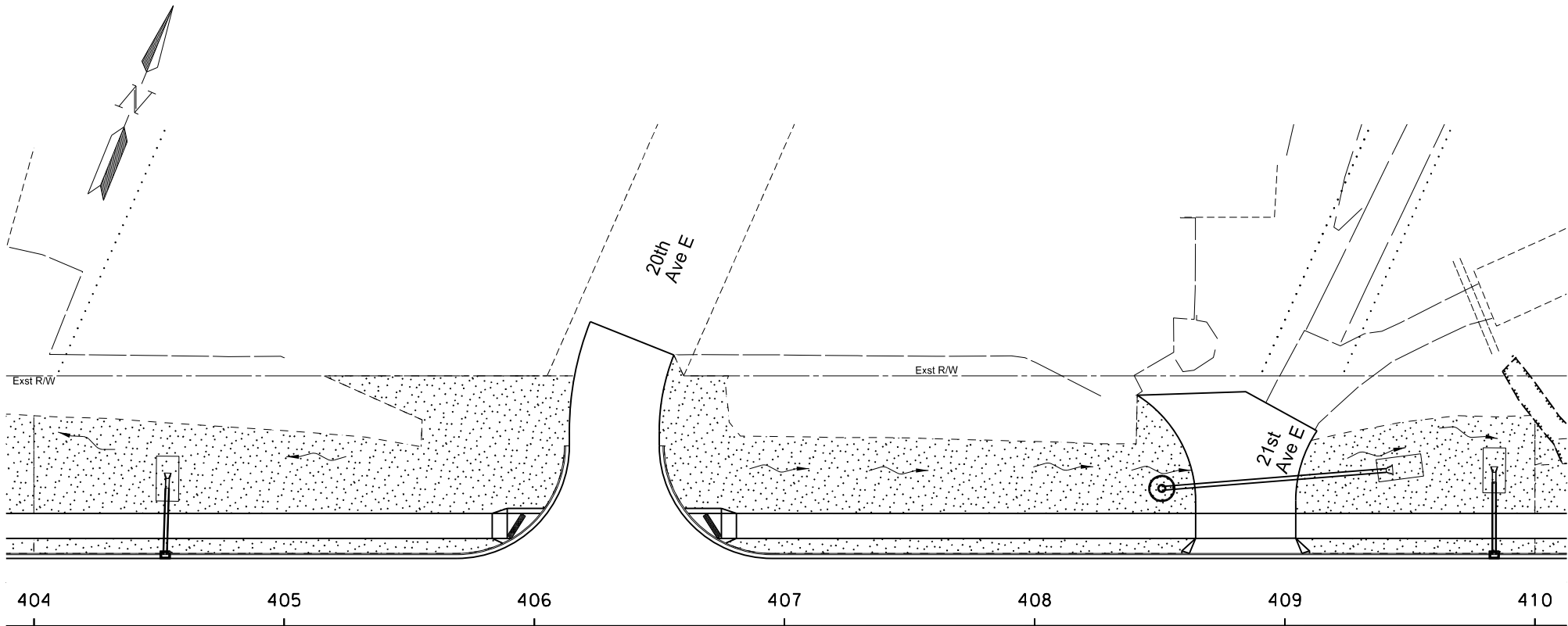
Sta 398+00 to Sta 404+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	77	8

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 404+00 Lt to Sta 410+00 Lt	0.50	AC
		Sta 404+00 Rt to Sta 410+00 Rt	0.66	AC
		TOTAL	1.16	AC
253	0201	HYDRAULIC MULCH		
		Sta 404+00 Lt to Sta 410+00 Lt	0.50	AC
		Sta 404+00 Rt to Sta 410+00 Rt	0.66	AC
		TOTAL	1.16	AC
255	0101	ECB TYPE 1		
		Sta 404+05 - 74' Rt	20	SY
		Sta 404+52 - 55' Lt	20	SY
		Sta 407+68 - 55' Rt	20	SY
		Sta 409+41 - 62' Lt	22	SY
		Sta 409+84 - 58' Lt	20	SY
		TOTAL	102	SY
708	1531	INLET PROTECTION-FIBER ROLL 12 IN		
		Sta 408+51 - 55' Lt	1	EA

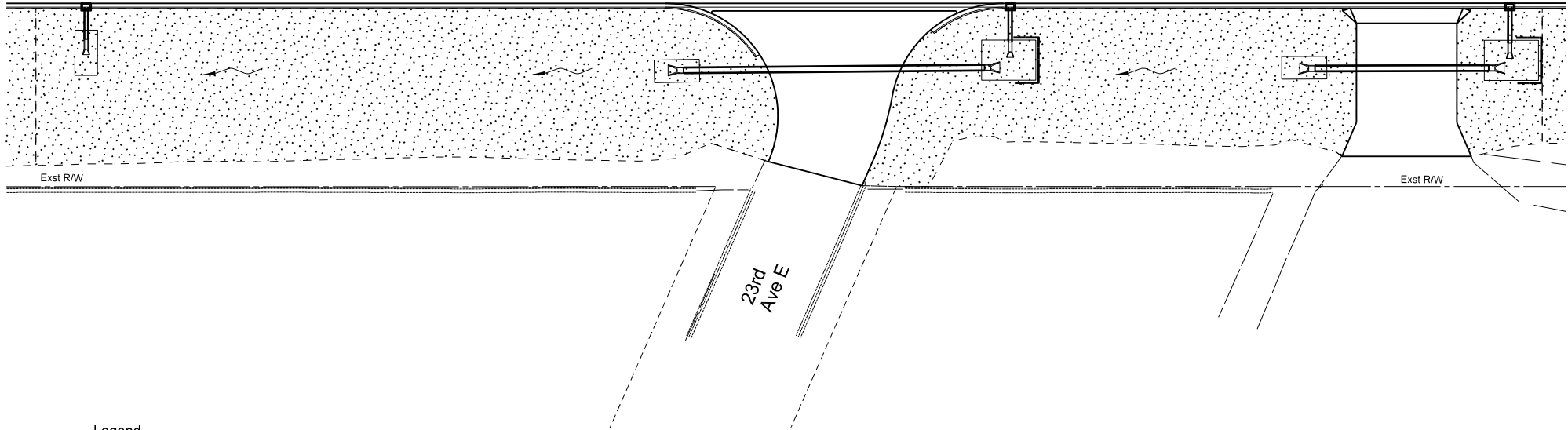
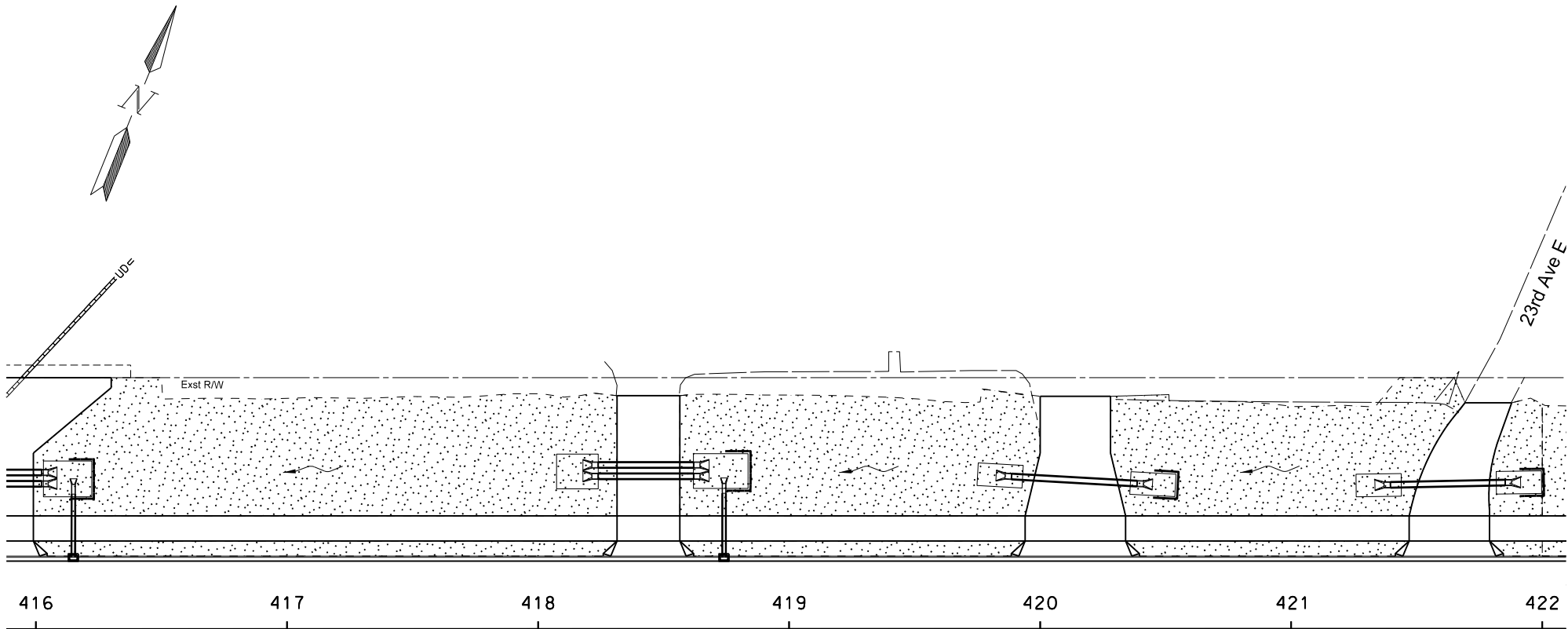


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Permanent Erosion Control
Sta 404+00 to Sta 410+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	77	10

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 416+00 Lt to Sta 422+00 Lt	0.63	AC
		Sta 416+00 Rt to Sta 422+00 Rt	0.67	AC
		TOTAL	1.30	AC
253	0201	HYDRAULIC MULCH		
		Sta 416+00 Lt to Sta 422+00 Lt	0.63	AC
		Sta 416+00 Rt to Sta 422+00 Rt	0.67	AC
		TOTAL	1.30	AC
255	0101	ECB TYPE 1		
		Sta 416+02 - 60' Lt	43	SY
		Sta 416+20 - 41' Rt	20	SY
		Sta 418+24 - 60' Lt	36	SY
		Sta 418+58 - 54' Rt	24	SY
		Sta 418+62 - 60' Lt	43	SY
		Sta 419+78 - 53' Rt	38	SY
		Sta 419+88 - 43' Rt	20	SY
		Sta 419+89 - 61' Lt	27	SY
		Sta 420+39 - 58' Lt	27	SY
		Sta 421+10 - 53' Rt	24	SY
		Sta 421+40 - 57' Lt	27	SY
		Sta 421+79 - 53' Rt	38	SY
		Sta 421+85 - 58' Lt	27	SY
		TOTAL	394	SY
261	0112	FIBER ROLLS 12IN		
		Sta 416+02 - 60' Lt	42	LF
		Sta 418+62 - 60' Lt	42	LF
		Sta 419+78 - 43' Rt	38	LF
		Sta 420+39 - 58' Lt	36	LF
		Sta 421+79 - 53' Rt	38	LF
		Sta 421+85 - 58' Lt	36	LF
		TOTAL	232	LF



Legend	
	Direction of Flow
	Fiber Rolls Protection
	Hydraulic Mulch and Permanent Seeding
	Erosion Control Blanket (See Sec 20 for Location)
	Riprap Grade I

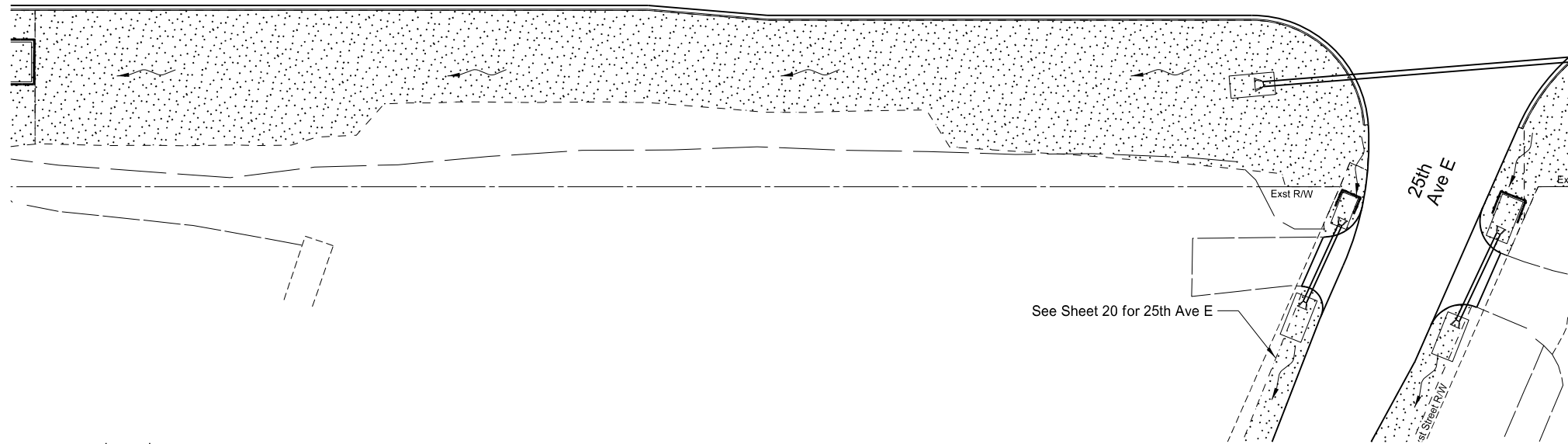
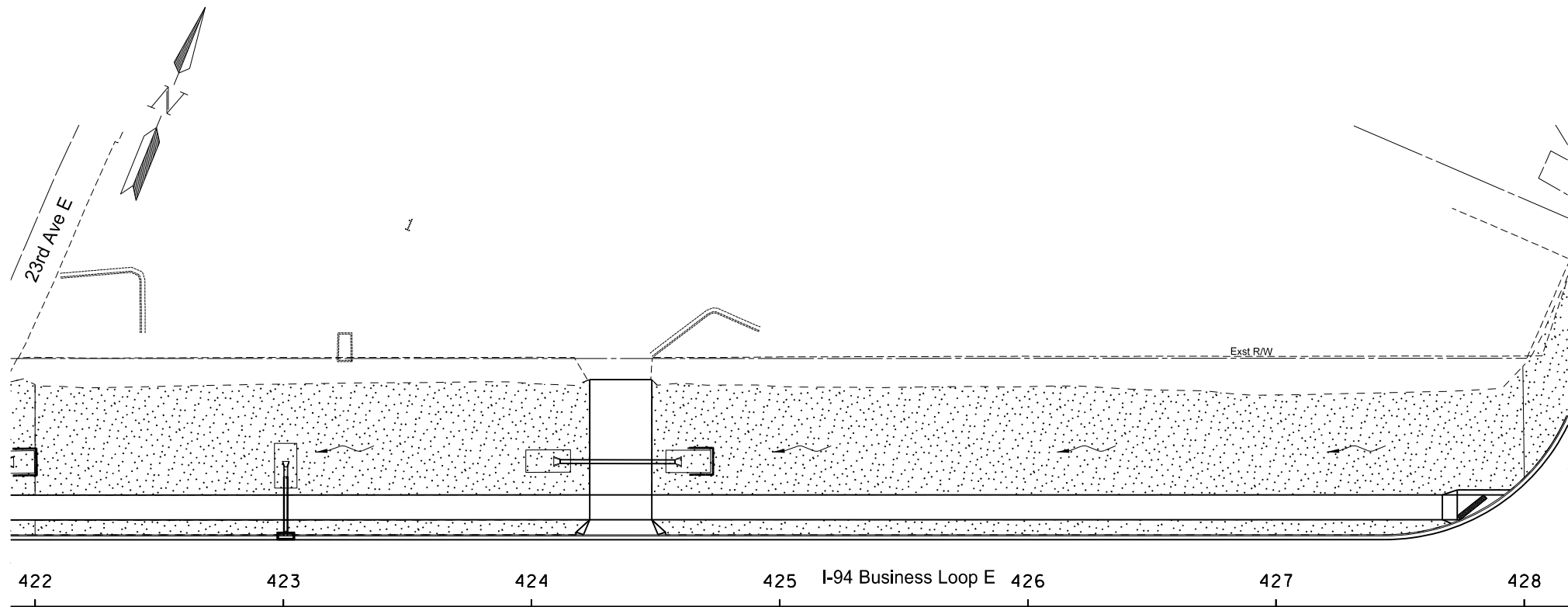
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Permanent Erosion Control

Sta 416+00 to Sta 422+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND



- Legend
- Direction of Flow
 - Fiber Rolls Protection
 - Hydraulic Mulch and Permanent Seeding
 - Erosion Control Blanket (See Sec 20 for Location)
 - Riprap Grade I

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	77	11

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 422+00 Lt to Sta 428+00 Lt	0.65	AC
		Sta 422+00 Rt to Sta 427+37 Rt	0.58	AC
		TOTAL	1.23	AC
253	0201	HYDRAULIC MULCH		
		Sta 422+00 Lt to Sta 428+00 Lt	0.65	AC
		Sta 422+00 Rt to Sta 427+37 Rt	0.58	AC
		TOTAL	1.23	AC
255	0101	ECB TYPE 1		
		Sta 423+01 - 52' Lt	20	SY
		Sta 424+12 - 59' Lt	22	SY
		Sta 424+58 - 58' Lt	22	SY
		Sta 426+95 - 59' Rt	24	SY
		TOTAL	88	SY
261	0112	FIBER ROLLS 12IN		
		Sta 424+58 - 58' Lt	34	LF

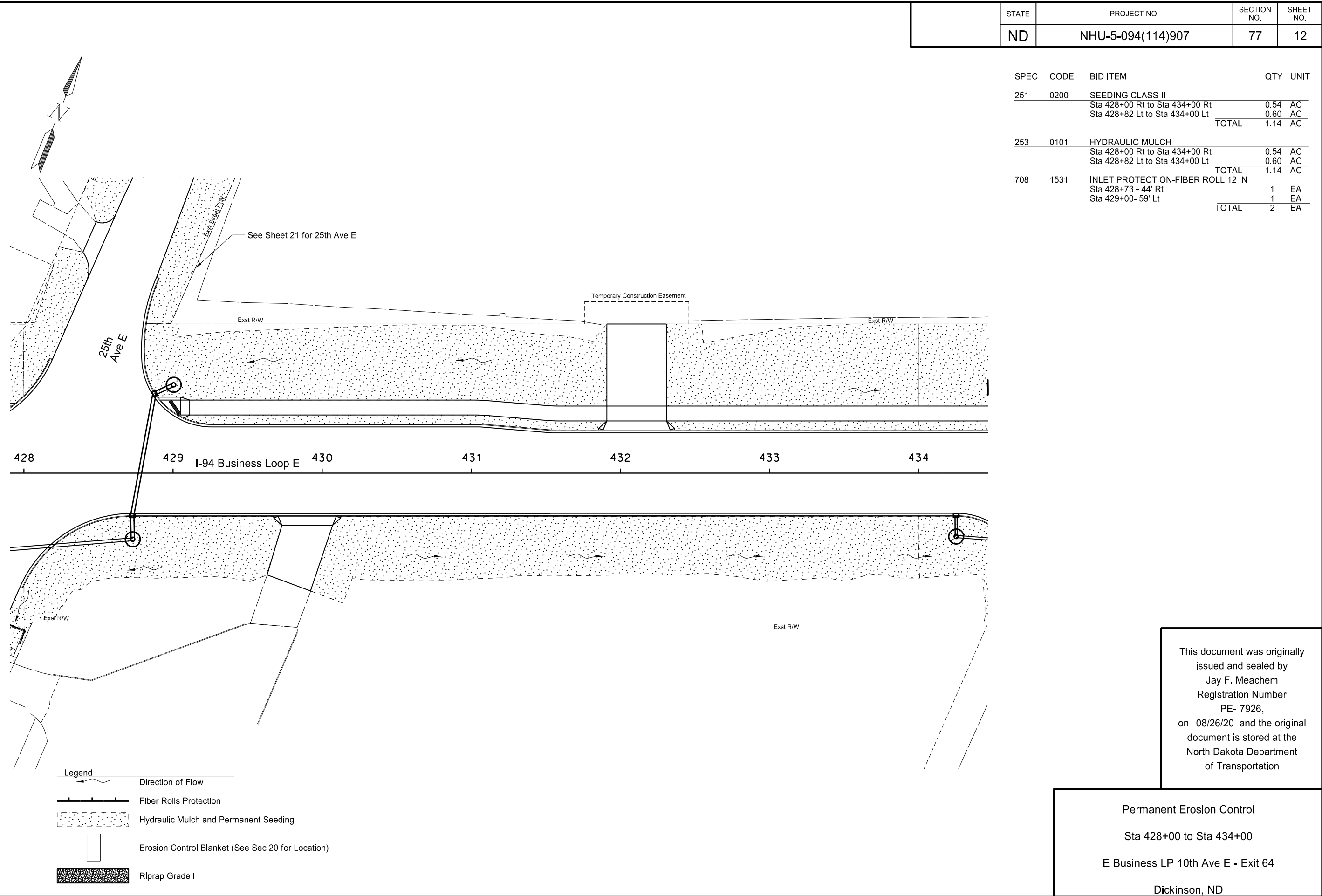
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Permanent Erosion Control

Sta 422+00 to Sta 428+00

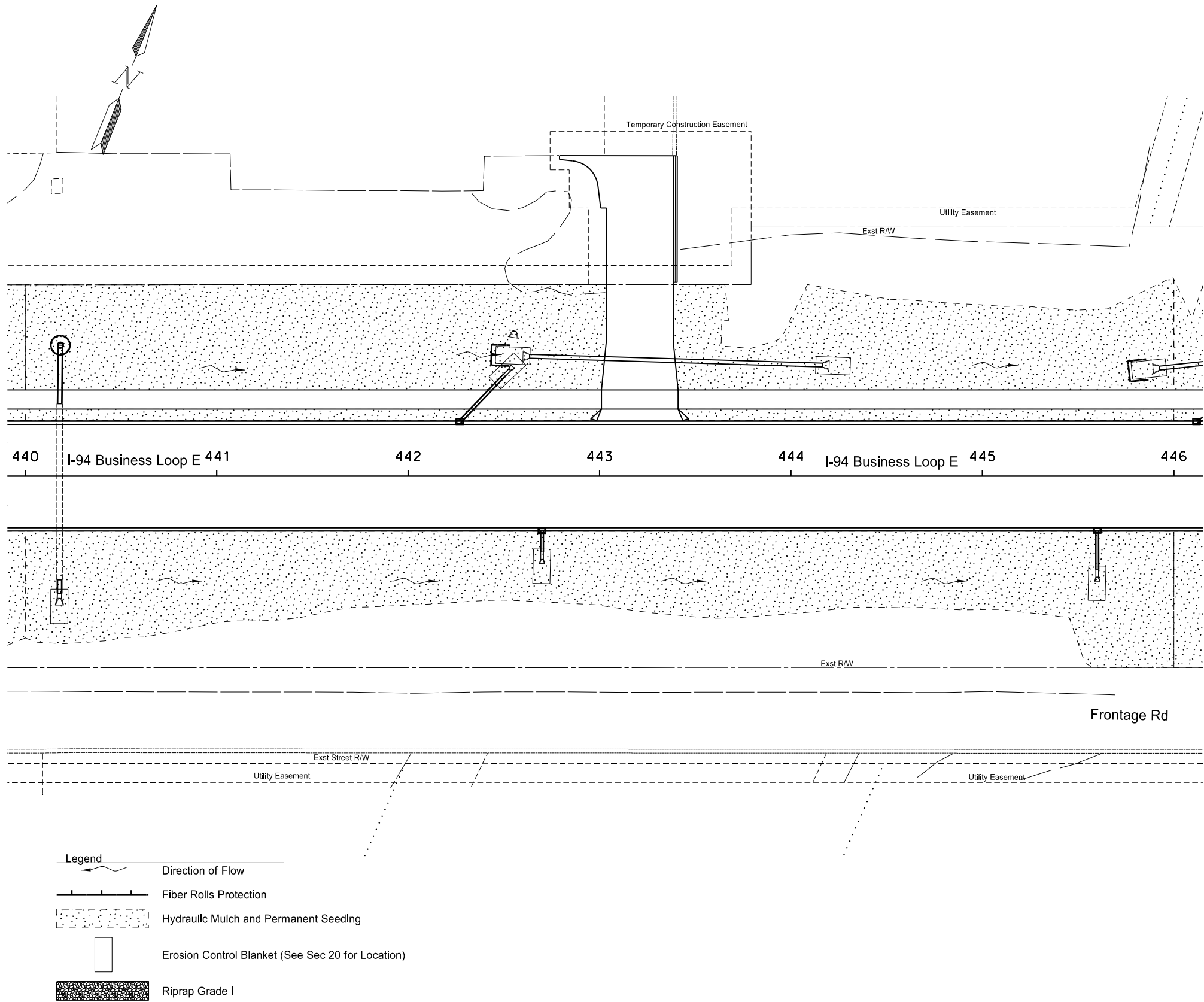
E Business LP 10th Ave E - Exit 64

Dickinson, ND



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	77	14

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 440+00 Lt to Sta 446+00 Lt	0.73	AC
		Sta 440+00 Rt to Sta 446+00 Rt	0.63	AC
		TOTAL	1.36	AC
253	0201	HYDRAULIC MULCH		
		Sta 440+00 Lt to Sta 446+00 Lt	0.73	AC
		Sta 440+00 Rt to Sta 446+00 Rt	0.63	AC
		TOTAL	1.36	AC
255	0101	ECB TYPE 1		
		Sta 440+18 - 64' Rt	24	SY
		Sta 442+50 - 53' Lt	20	SY
		Sta 442+63 - 63' Lt	24	SY
		Sta 442+70 - 40' Rt	20	SY
		Sta 444+17 - 58' Lt	24	SY
		Sta 445+60 - 49' Rt	20	SY
		Sta 445+93 - 56' Lt	24	SY
		TOTAL	156	SY
261	0112	FIBER ROLLS 12IN		
		Sta 442+70 - 40' Rt	35	LF
		Sta 445+93 - 56' Lt	35	LF
		TOTAL	70	LF
708	1531	INLET PROTECTION-FIBER ROLL 12 IN		
		Sta 440+18 - 68' Lt	1	EA



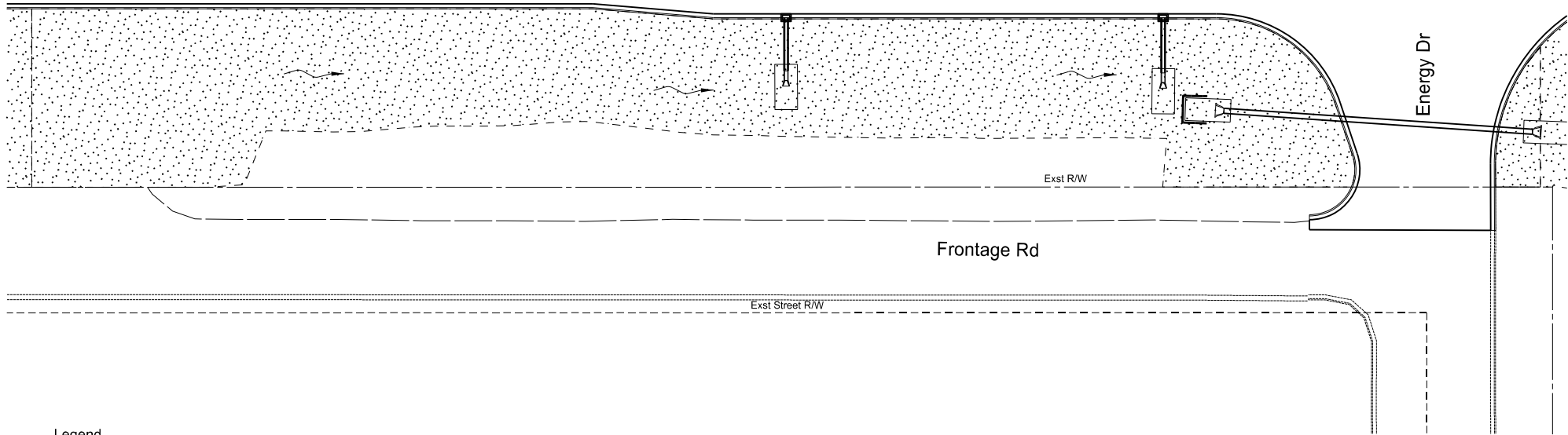
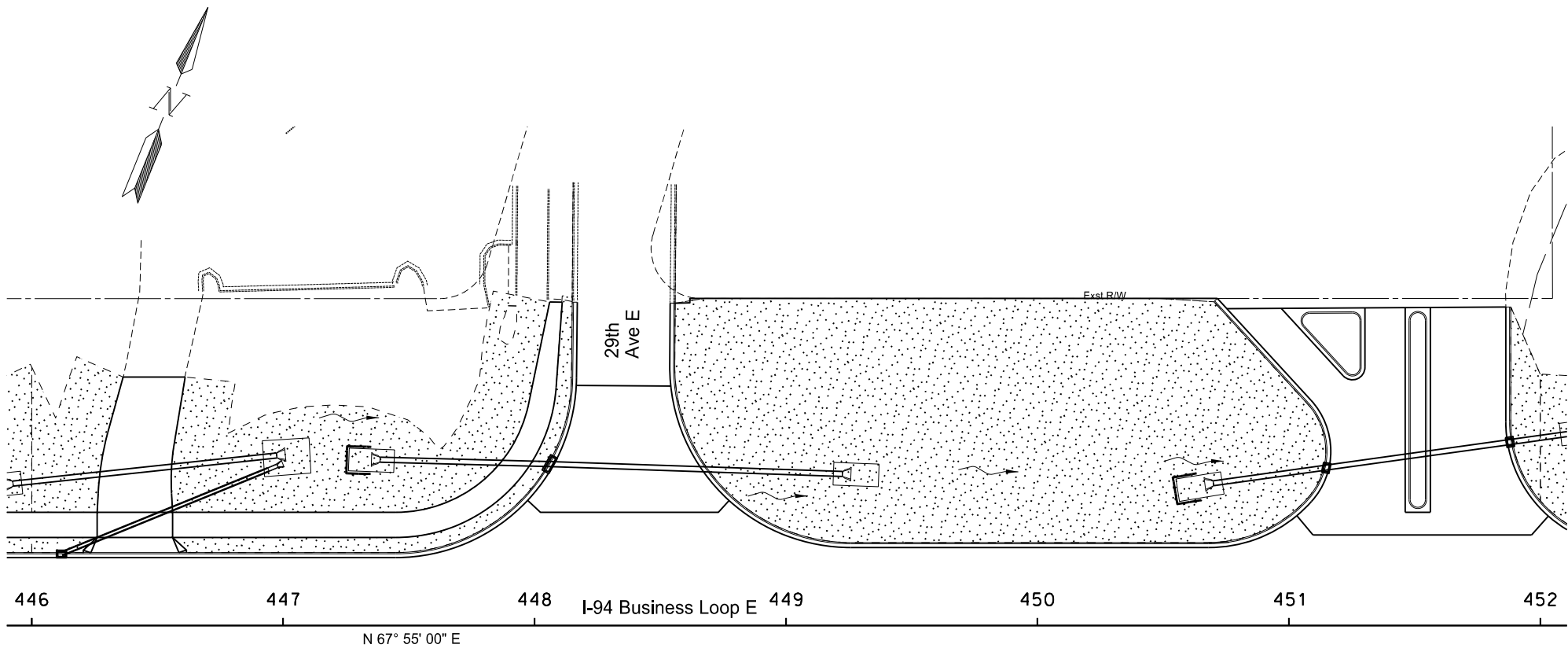
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Permanent Erosion Control

Sta 440+00 to Sta 446+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND



- Legend
- Direction of Flow
 - Fiber Rolls Protection
 - Hydraulic Mulch and Permanent Seeding
 - Erosion Control Blanket (See Sec 20 for Location)
 - Riprap Grade I

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	77	15

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 446+00 Lt to Sta 452+00 Lt	0.73	AC
		Sta 446+00 Rt to Sta 452+00 Rt	0.65	AC
		TOTAL	1.38	AC
253	0201	HYDRAULIC MULCH		
		Sta 446+00 Lt to Sta 452+00 Lt	0.73	AC
		Sta 446+00 Rt to Sta 452+00 Rt	0.65	AC
		TOTAL	1.38	AC
255	0101	ECB TYPE 1		
		Sta 446+97 - 68' Lt	28	SY
		Sta 447+39 - 65' Lt	24	SY
		Sta 449+00 - 54' Rt	20	SY
		Sta 449+22 - 60' Lt	24	SY
		Sta 450+50 - 55' Rt	20	SY
		Sta 450+70 - 57' Lt	24	SY
		Sta 450+74 - 70' Rt	24	SY
		Sta 451+97 - 78' Rt	24	SY
		TOTAL	188	SY
261	0112	FIBER ROLLS 12IN		
		Sta 447+39 - 65' Lt	35	LF
		Sta 450+70 - 57' Lt	35	LF
		Sta 450+74 - 70' Rt	35	LF
		TOTAL	105	LF

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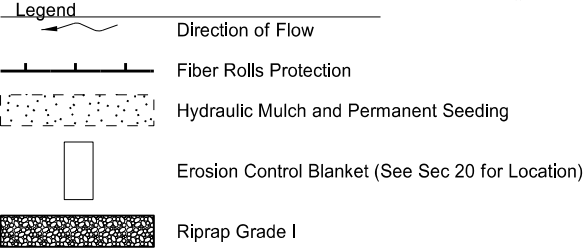
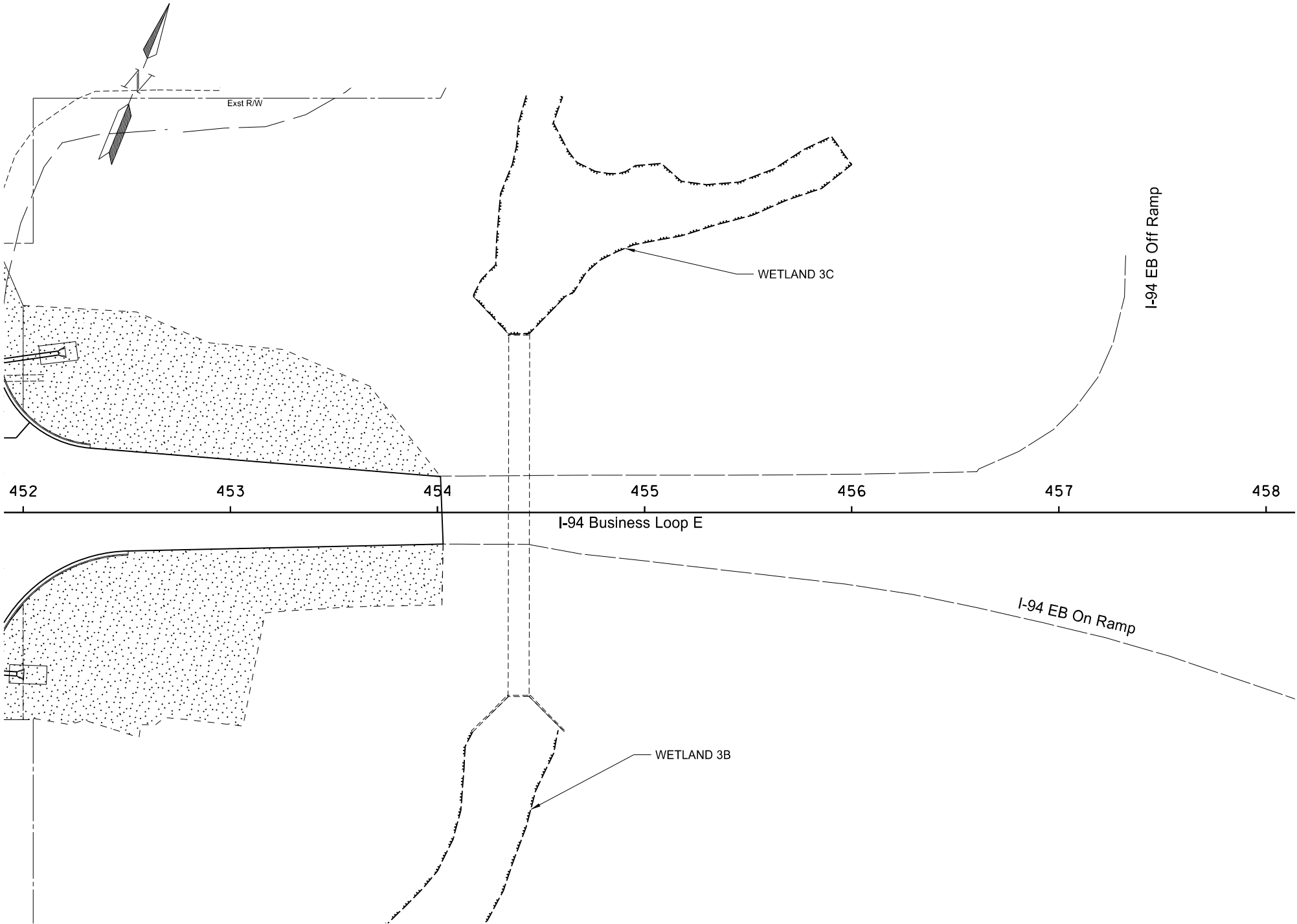
Sta 446+00 to Sta 452+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	77	16

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 452+00 Lt to Sta 454+00 Lt	0.22	AC
		Sta 452+00 Rt to Sta 454+00 Rt	0.27	AC
		TOTAL	0.49	AC
253	0201	HYDRAULIC MULCH		
		Sta 452+00 Lt to Sta 454+00 Lt	0.22	AC
		Sta 452+00 Rt to Sta 454+00 Rt	0.27	AC
		TOTAL	0.49	AC
255	0101	ECB TYPE 1		
		Sta 452+17 - 77' Lt	22	SY



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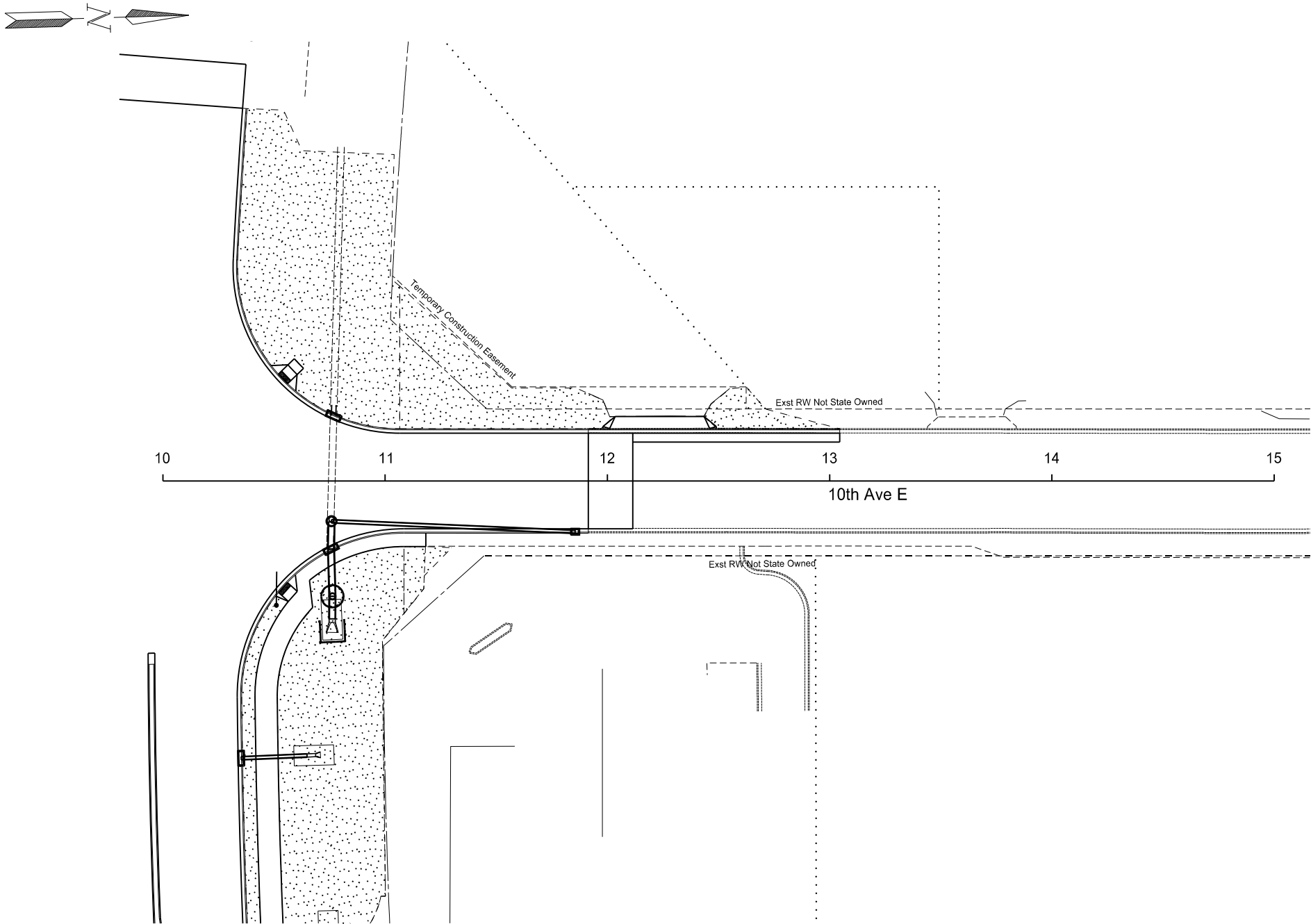
Sta 452+00 to Sta 458+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	77	17

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 11+07 - 80' Lt to Sta 13+05 - 23' Lt	0.08	AC
		Sta 11+08 - 52' Rt to Sta 12+30 - 30' Rt	0.01	AC
		TOTAL	0.09	AC
253	0201	HYDRAULIC MULCH		
		Sta 11+07 - 80' Lt to Sta 13.05 - 23' Lt	0.08	AC
		Sta 11+08 - 52' Rt to Sta 12+30 - 30' Rt	0.01	AC
		TOTAL	0.09	AC



Legend

Direction of Flow

Fiber Rolls Protection

Hydraulic Mulch and Permanent Seeding

Erosion Control Blanket (See Sec 20 for Location)

Riprap Grade I

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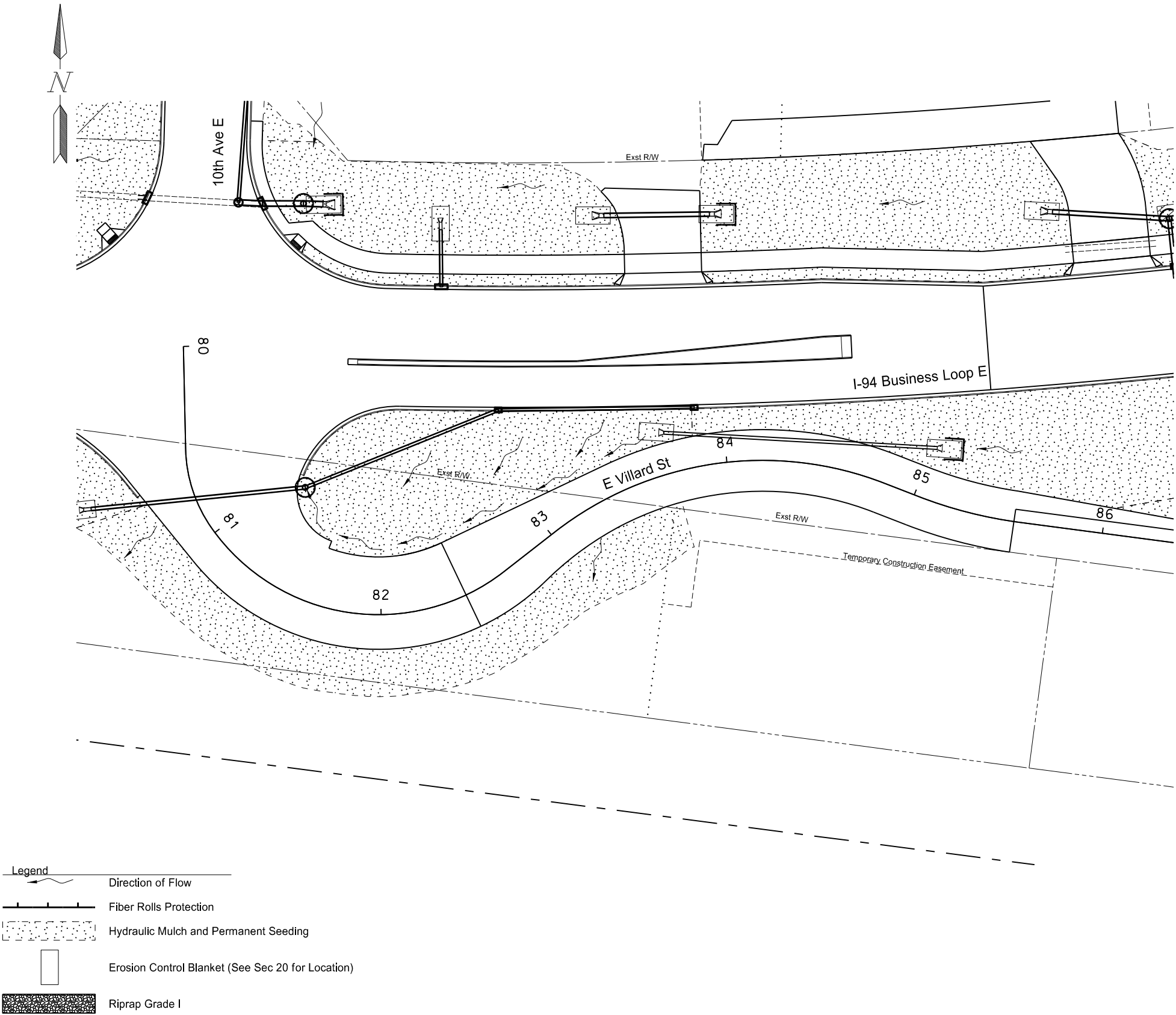
Sta 10+00 to Sta 15+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	77	18

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II Sta 80+75 Rt to Sta 83+72 Rt	0.21	AC
253	0201	HYDRAULIC MULCH Sta 80+75 Rt to Sta 83+72 Rt	0.21	AC
255	0101	ECB TYPE 1 Sta 80+71 - 53' Rt Sta 83+72 - 21' Lt Sta 85+02 - 27' Lt	22 22 22	SY SY SY
		TOTAL	66	SY
261	0112	FIBER ROLLS 12IN Sta 85+02 - 27' Lt	34	LF
708	1531	INLET PROTECTION-FIBER ROLL 12IN Sta 81+18 - 51' Lt	1	EA



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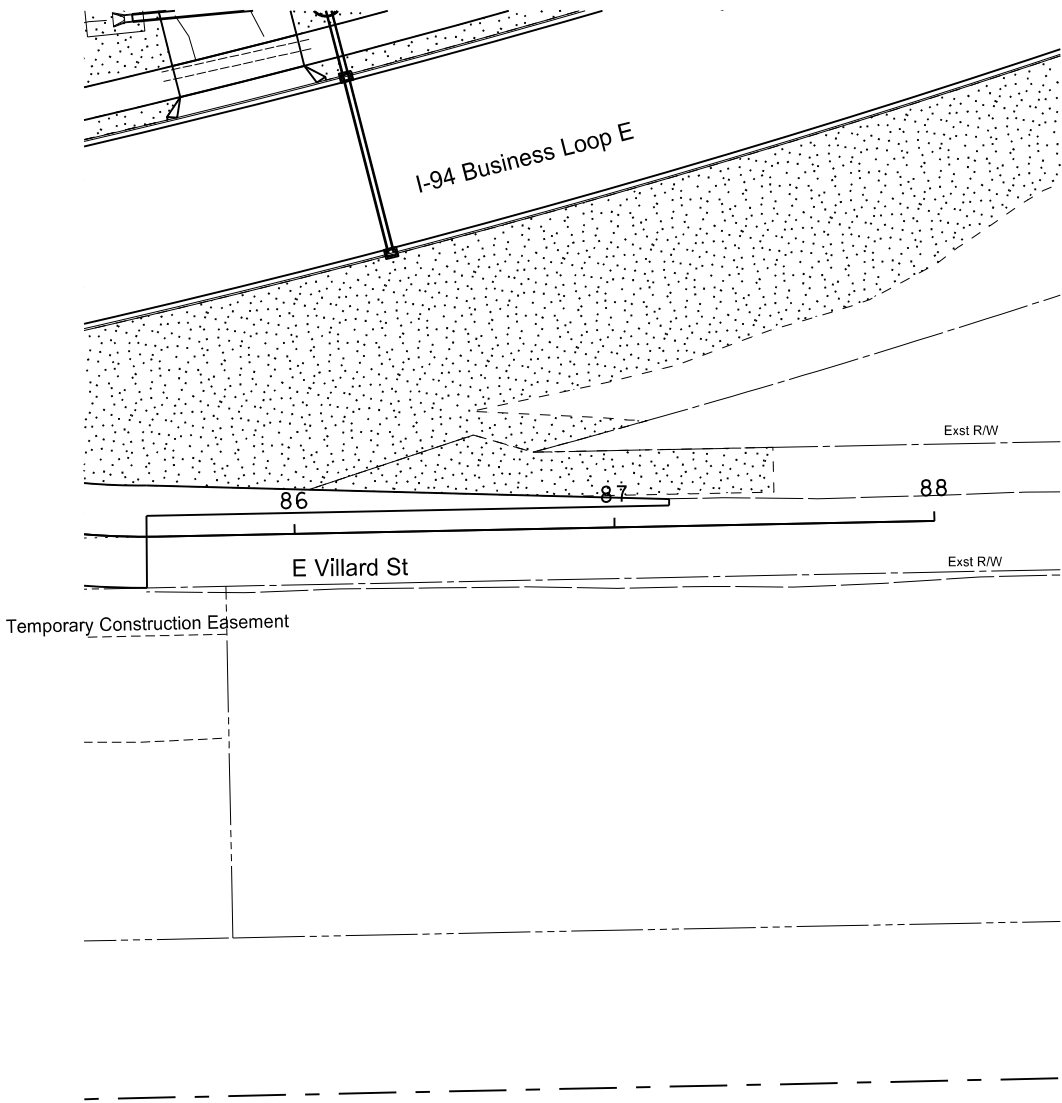
Sta 80+00 to Sta 86+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	77	19

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II Sta 86+57 Lt to Sta 87+50 Lt	0.04	AC
253	0201	HYDRAULIC MULCH Sta 86+57 Lt to Sta 87+50 Lt	0.04	AC



Legend

Direction of Flow

Fiber Rolls Protection

Hydraulic Mulch and Permanent Seeding

Erosion Control Blanket (See Sec 20 for Location)

Riprap Grade I

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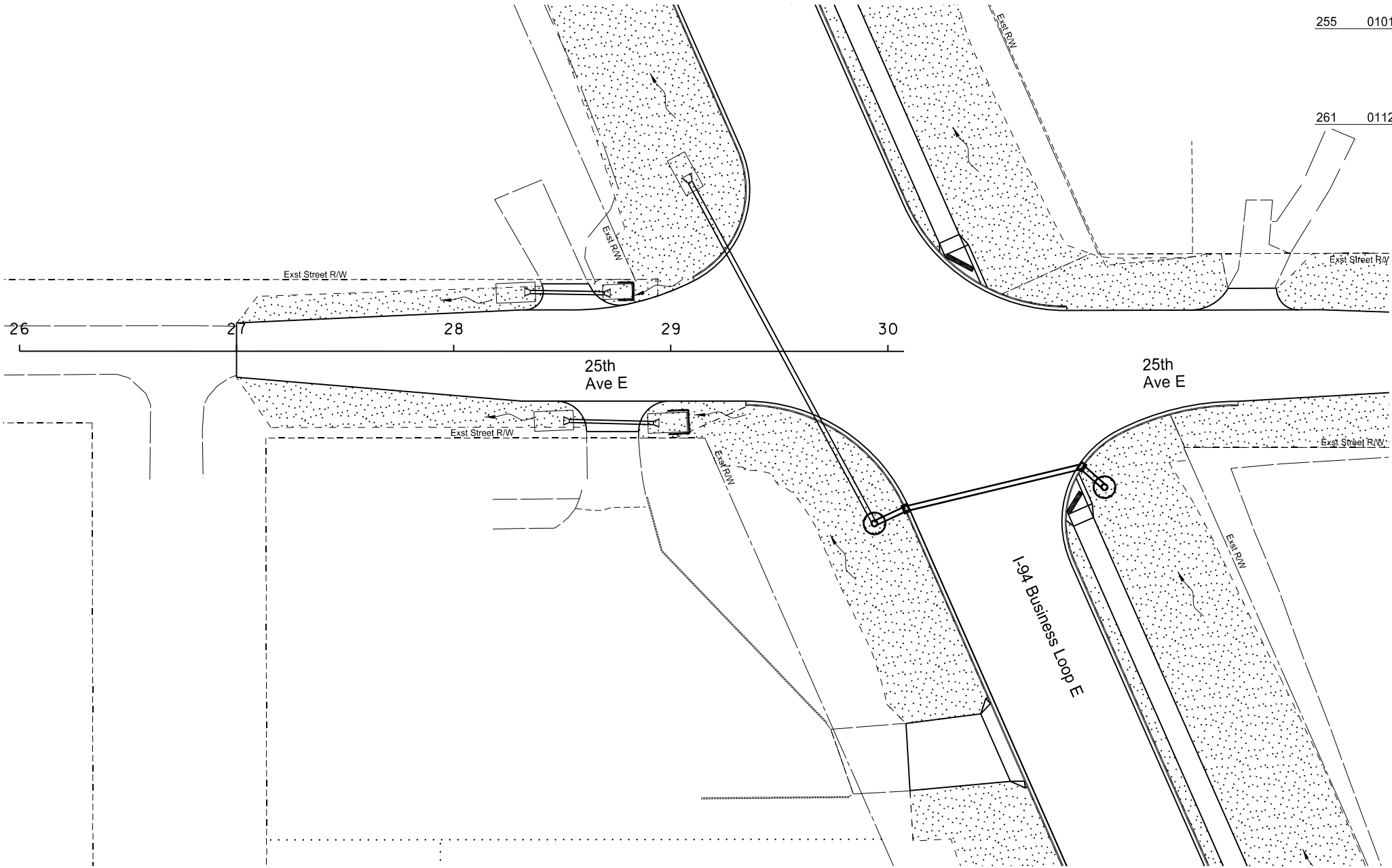
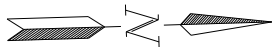
Sta 86+00 to Sta 88+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	77	20

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 27+00 Lt to Sta 28+94 Lt	0.04	AC
		Sta 27+00 Rt to Sta 29+13 Rt	0.07	AC
		TOTAL	0.11	AC
253	0201	HYDRAULIC MULCH		
		Sta 27+00 Lt to Sta 28+94 Lt	0.04	AC
		Sta 27+00 Rt to Sta 29+13 Rt	0.07	AC
		TOTAL	0.11	AC
255	0101	ECB TYPE 1		
		Sta 28+35 - 27' Lt	22	SY
		Sta 28+53 - 33' Rt	22	SY
		Sta 28+69 - 27' Lt	22	SY
		Sta 28+92 - 33' Rt	22	SY
		TOTAL	88	SY
261	0112	FIBER ROLLS 12IN		
		Sta 28+69 - 27' Lt	34	LF
		Sta 28+92 - 33' Rt	34	LF
		TOTAL	68	LF



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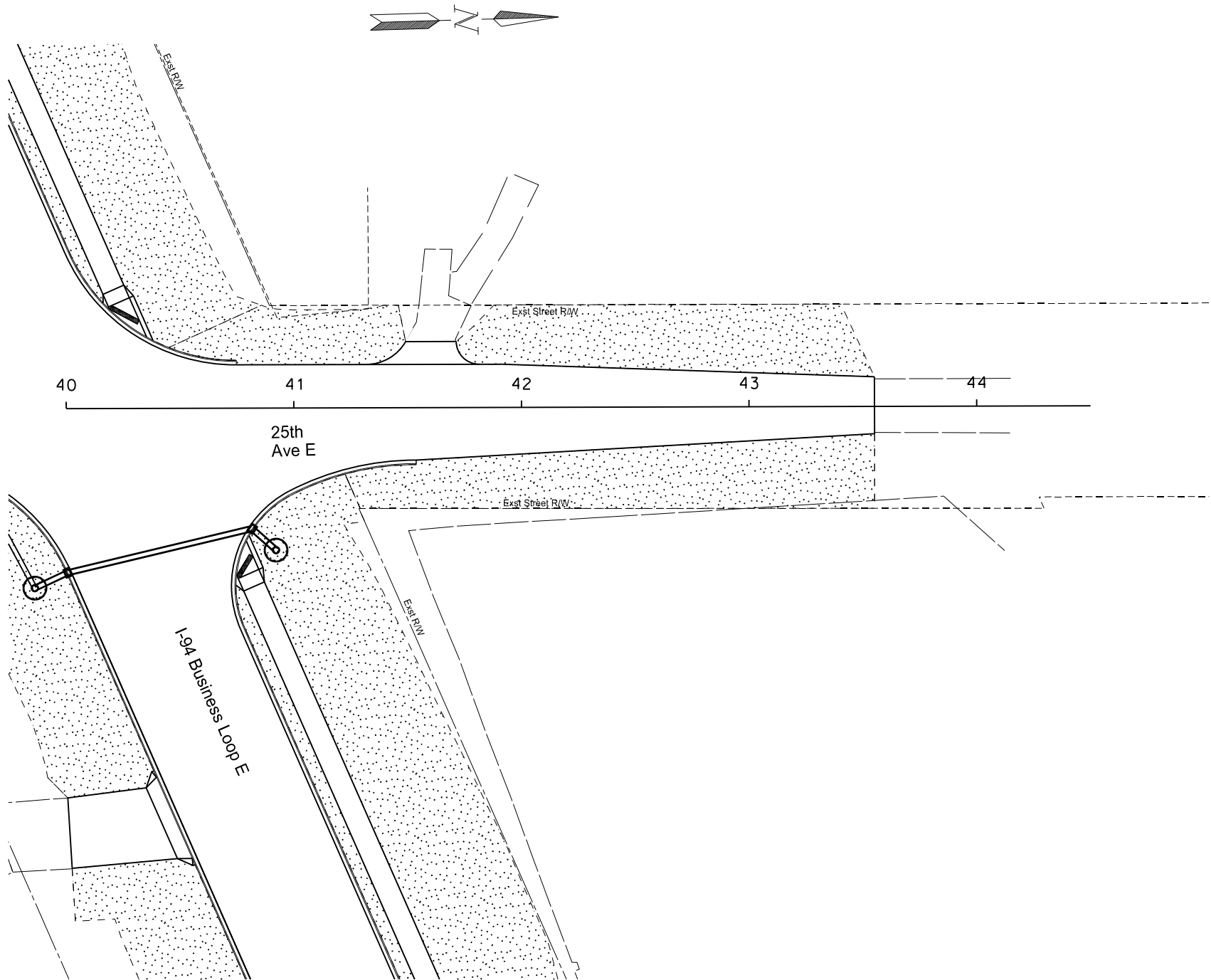
Sta 26+00 to Sta 30+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	77	21

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 40+74 Lt to Sta 43+55 Lt	0.16	AC
		Sta 41+29 Rt to Sta 43+55 Rt	0.14	AC
		TOTAL	0.30	AC
253	0201	HYDRAULIC MULCH		
		Sta 40+74 Lt to Sta 43+55 Lt	0.16	AC
		Sta 41+29 Rt to Sta 43+55 Rt	0.14	AC
		TOTAL	0.30	AC



- Legend
- Direction of Flow
 - Fiber Rolls Protection
 - Hydraulic Mulch and Permanent Seeding
 - Erosion Control Blanket (See Sec 20 for Location)
 - Riprap Grade I

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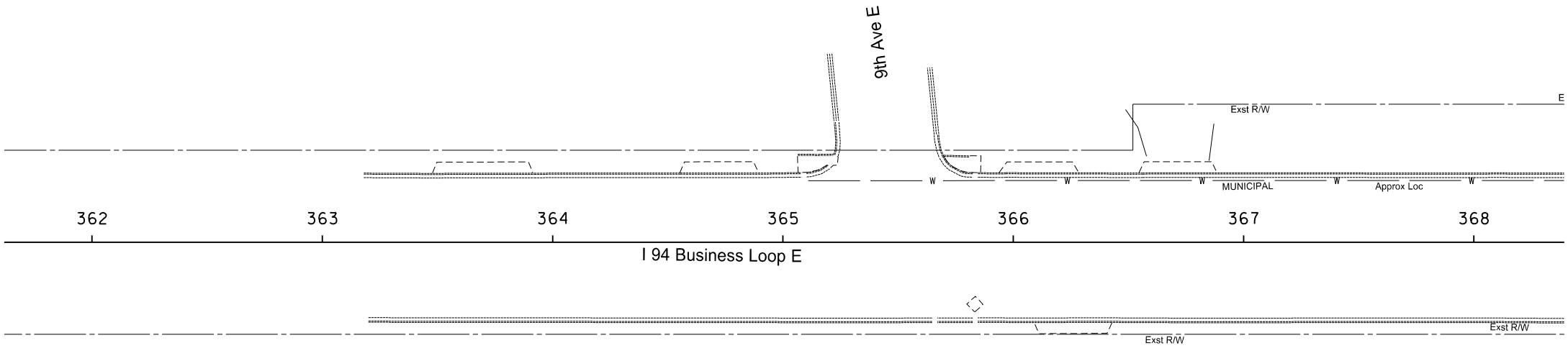
Permanent Erosion Control

Sta 40+00 to Sta 44+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	80	1

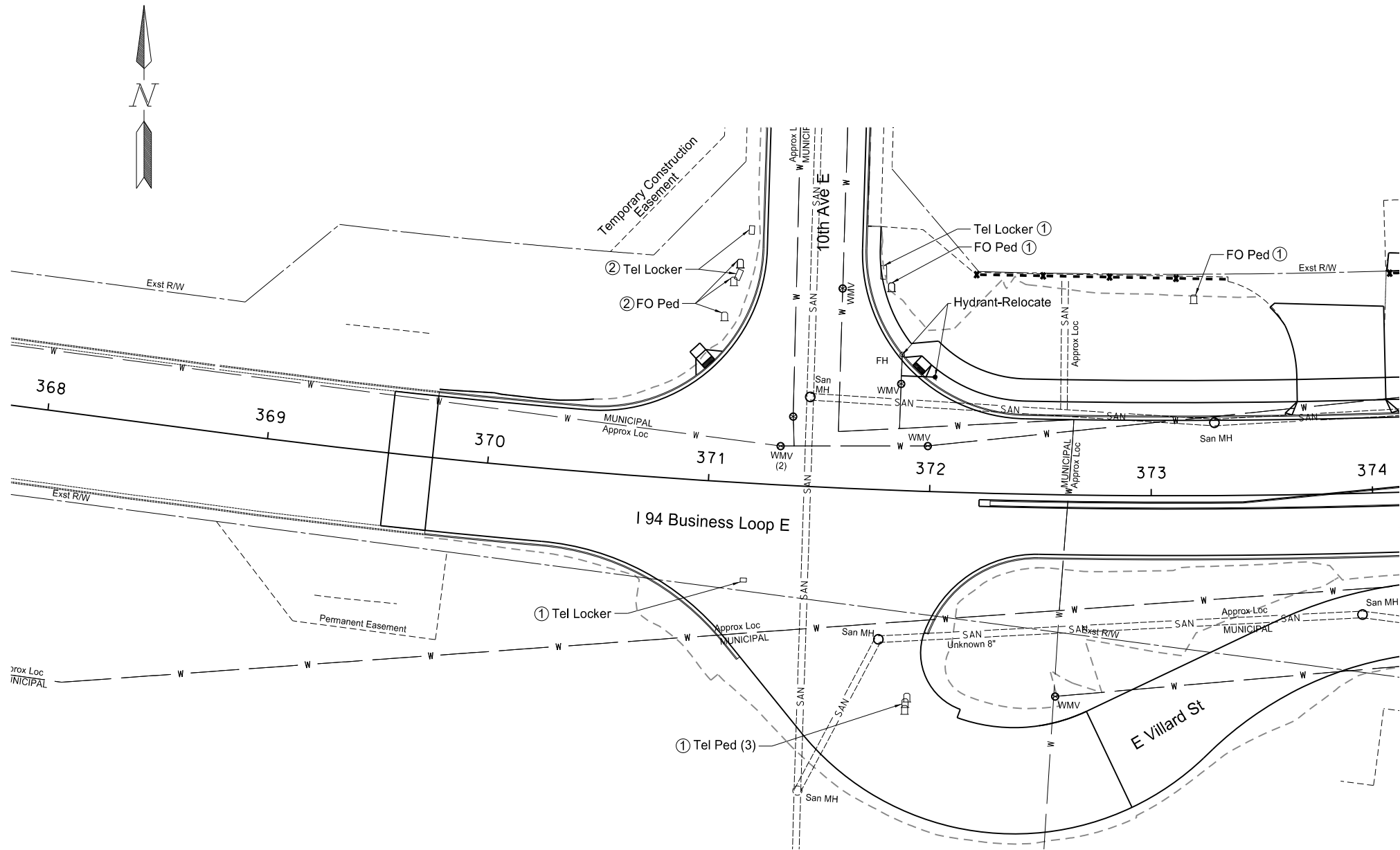


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Layout
Sta 362+00 to Sta 368+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	80	2

SPEC	CODE	BID ITEM	QTY	UNIT
722	0315	MANHOLE CASTING		
		Sta 371+44 - 40' Lt (SAN)	1	EA
		Sta 371+80 - 68' Rt (SAN)	1	EA
		Sta 373+29 - 33' Lt (SAN)	1	EA
		TOTAL	3	EA
722	6200	ADJUST MANHOLE		
		Sta 373+94 - 55' Rt (SAN)	1	EA
722	6240	ADJUST UTILITY APPURTENANCE		
		Sta 371+32 - 17' Lt	1	EA
		Sta 371+37 - 31' Lt	1	EA
		Sta 371+56 - 90' Lt	1	EA
		Sta 371+85 - 48' Lt	1	EA
		Sta 371+98 - 20' Lt	1	EA
		Sta 372+58 - 91' Rt	1	EA
		TOTAL	6	EA
724	0420	HYDRANT-RELOCATE		
		Sta 371+85 - 61' Lt to Sta 372+00.7 - 51.7' Lt	1	EA
752	0850	ORNAMENTAL FENCE		
		Sta 372+18 - 99' Lt to Sta 373+36 - 98' Lt	118	LF



Legend

- Ornamental Fence
Set 1' Inside Exst R/W
- 8' Wide 4" Thick Polystyrene Insulation Board
Centered on Exst Waterline
- Grading Tie Line

Notes:

- ① Private utility feature conflict.
To be relocated or adjusted to grade by owner.
- ② Coordinate relocation, adjustment, or preservation
in place of private utility features in conflict with
temporary roadway elements.

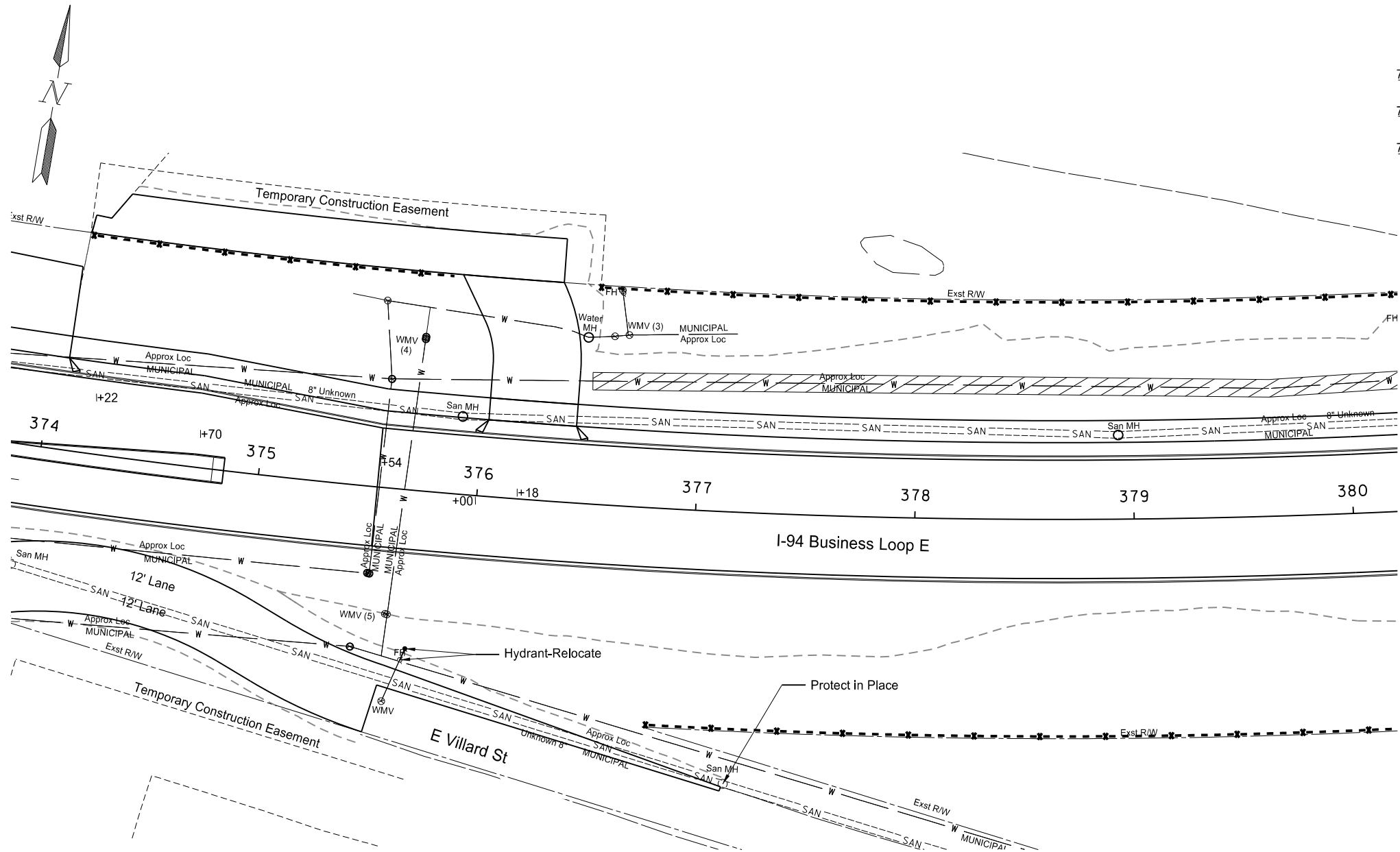
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Layout

Sta 368+00 to Sta 374+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	80	3

SPEC	CODE	BID ITEM	QTY	UNIT
722	6200	ADJUST MANHOLE		
		Sta 375+91 - 36' Lt (SAN)	1	EA
		Sta 376+46 - 76' Lt (WATER)	1	EA
		Sta 378+93 - 38' Lt (SAN)	1	EA
		TOTAL	3	EA
722	6240	ADJUST UTILITY APPURTENANCE		
		Sta 375+49 - 74' Rt	1	EA
		Sta 375+54 - 39' Rt	1	EA
		Sta 375+55 - 40' Rt	1	EA
		Sta 375+57 - 50' Lt	1	EA
		Sta 375+70 - 69' Lt	1	EA
		Sta 375+71 - 70' Lt	1	EA
		TOTAL	6	EA
724	0420	HYDRANT-RELOCATE		
		Sta 375+72 - 78' Rt to Sta 375+73.5 - 72.3' Rt	1	EA
744	0100	POLYSTYRENE INSULATION BOARD		
		Sta 376+49 - 56' Lt to Sta 380+00 - 59' Lt	11232	BD FT
752	0850	ORNAMENTAL FENCE		
		Sta 374+09 - 99' Lt to Sta 375+81 - 99' Lt	172	LF
		Sta 376+49 - 99' Lt to Sta 380+00 - 99' Lt	351	LF
		Sta 376+81 - 99' Rt to Sta 380+00 - 99' Rt	319	LF
		TOTAL	842	LF



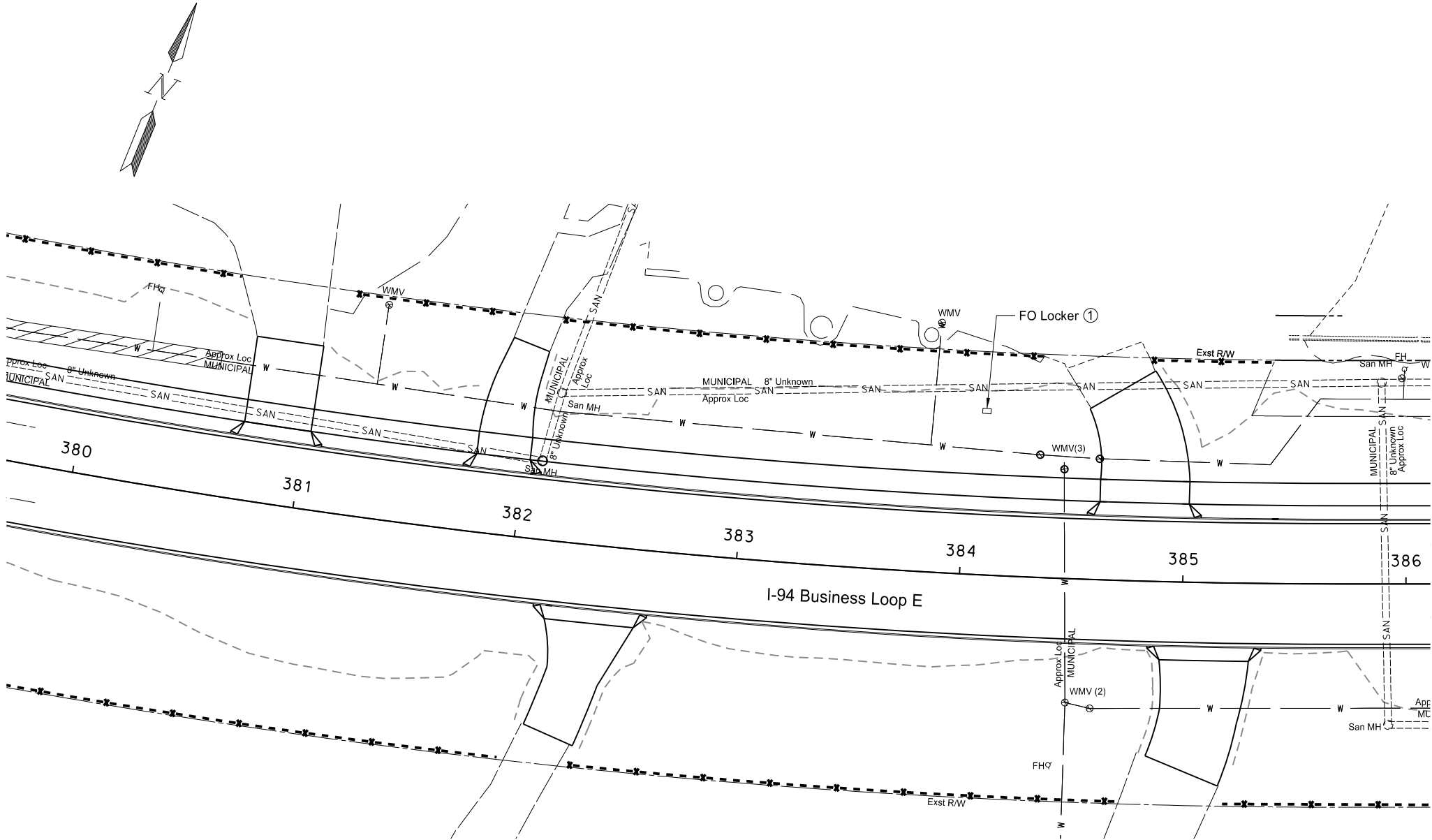
Legend	
	Ornamental Fence Set 1' Inside Exst R/W
	8' Wide 4" Thick Polystyrene Insulation Board Centered on Exst Waterline
	Grading Tie Line

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Layout
Sta 374+00 to Sta 380+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	80	4

SPEC	CODE	BID ITEM	QTY	UNIT
722	6200	ADJUST MANHOLE Sta 382+09 - 35' Lt (SAN)	1	EA
722	6240	ADJUST UTILITY APPURTENANCE Sta 384+34 - 55' Lt	1	EA
		Sta 384+45 - 49' Lt	1	EA
		Sta 384+61 - 54' Lt	1	EA
		TOTAL	3	EA
744	0100	POLYSTYRENE INSULATION BOARD Sta 380+00 - 59' Lt to Sta 380+58 - 60' Lt	1856	BD FT
752	0850	ORNAMENTAL FENCE Sta 380+00 - 99' Lt to Sta 380+61 - 99' Lt	61	LF
		Sta 380+00 - 99' Rt to Sta 382+03 - 99' Rt	203	LF
		Sta 381+15 - 99' Lt to Sta 381+92 - 99' Lt	77	LF
		Sta 382+11 - 99' Lt to Sta 384+34 - 99' Lt	223	LF
		Sta 382+34 - 99' Rt to Sta 384+74 - 99' Rt	240	LF
		Sta 384+83 - 99' Lt to Sta 385+40 - 99' Lt	57	LF
		Sta 385+19 - 99' Rt to Sta 386+00 - 99' Rt	81	LF
		TOTAL	942	LF



- Legend
- Ornamental Fence
Set 1' Inside Exst R/W
 - 8' Wide 4" Thick Polystyrene Insulation Board
Centered on Exst Waterline
 - Grading Tie Line

Notes:

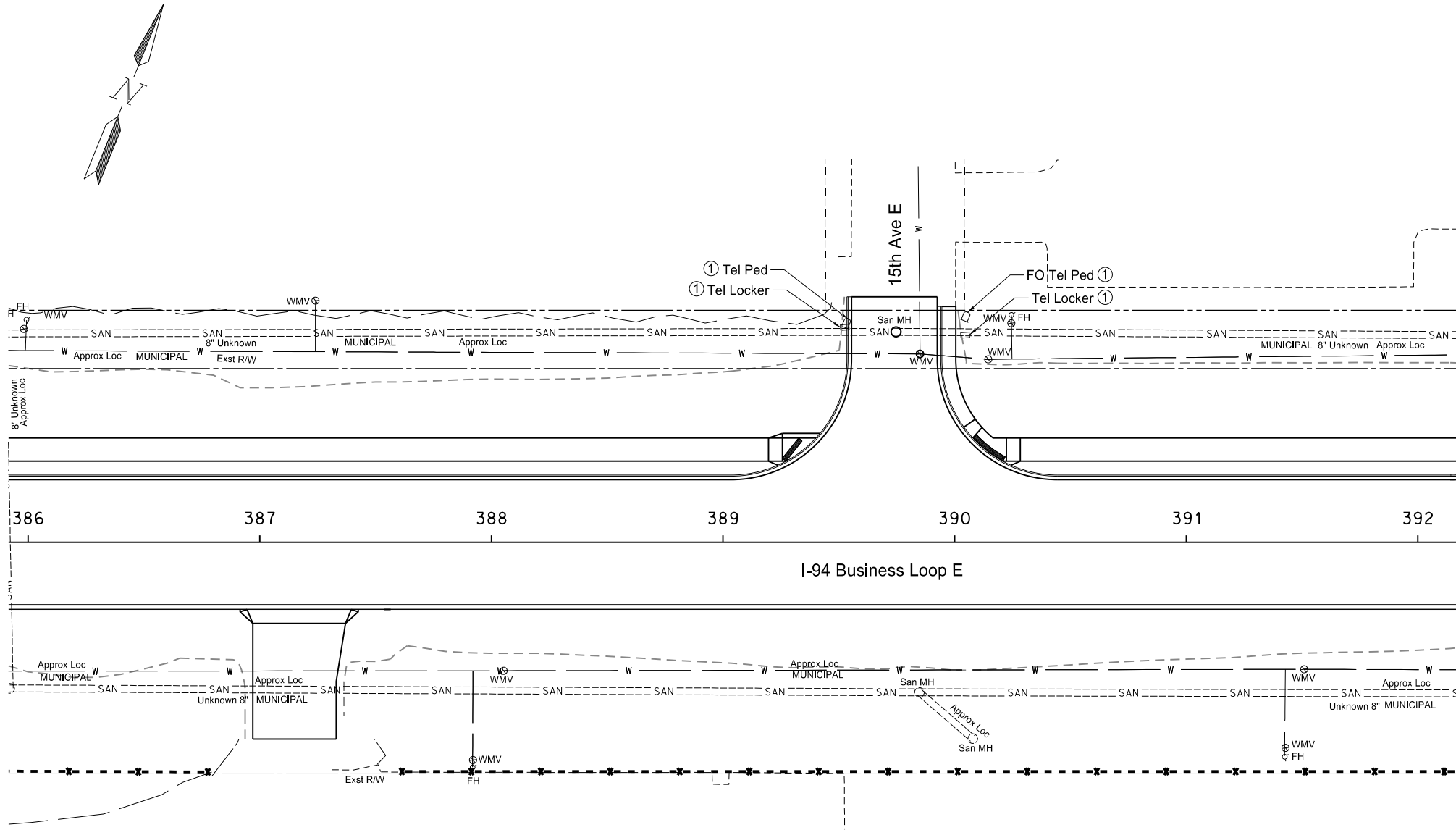
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Layout
Sta 380+00 to Sta 386+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	80	5

SPEC	CODE	BID ITEM	QTY	UNIT
722	6200	ADJUST MANHOLE Sta 389+75 - 91' Lt	1	EA
722	6240	ADJUST UTILITY APPURTENANCE Sta 389+85 - 81' Lt	1	EA
752	0850	ORNAMENTAL FENCE Sta 386+00 - 99' Rt to Sta 386+79 - 99' Rt	79	LF
		Sta 387+60 - 99' Rt to Sta 392+00 - 99' Rt	440	LF
		TOTAL	519	LF



- Legend
- Ornamental Fence
Set 1' Inside Exst R/W
 - 8' Wide 4" Thick Polystyrene Insulation Board
Centered on Exst Waterline
 - Grading Tie Line

Notes:

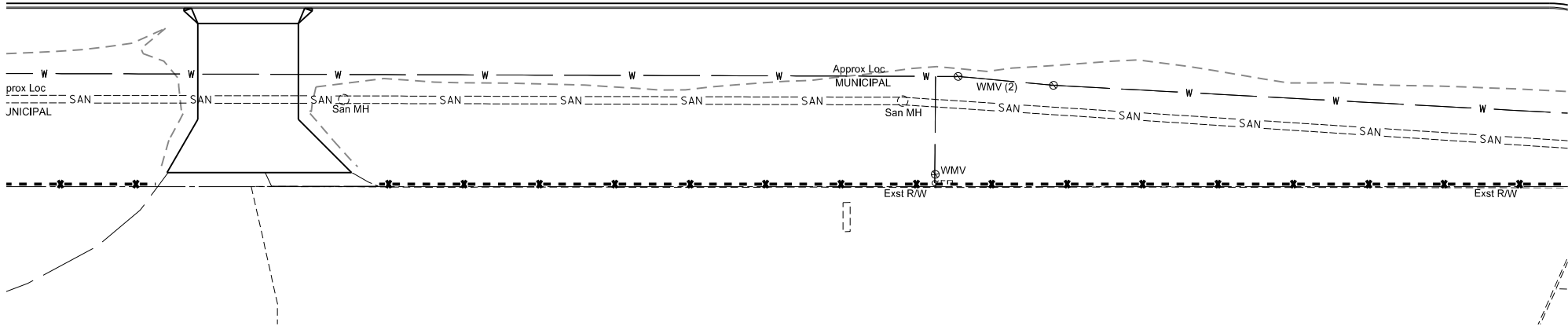
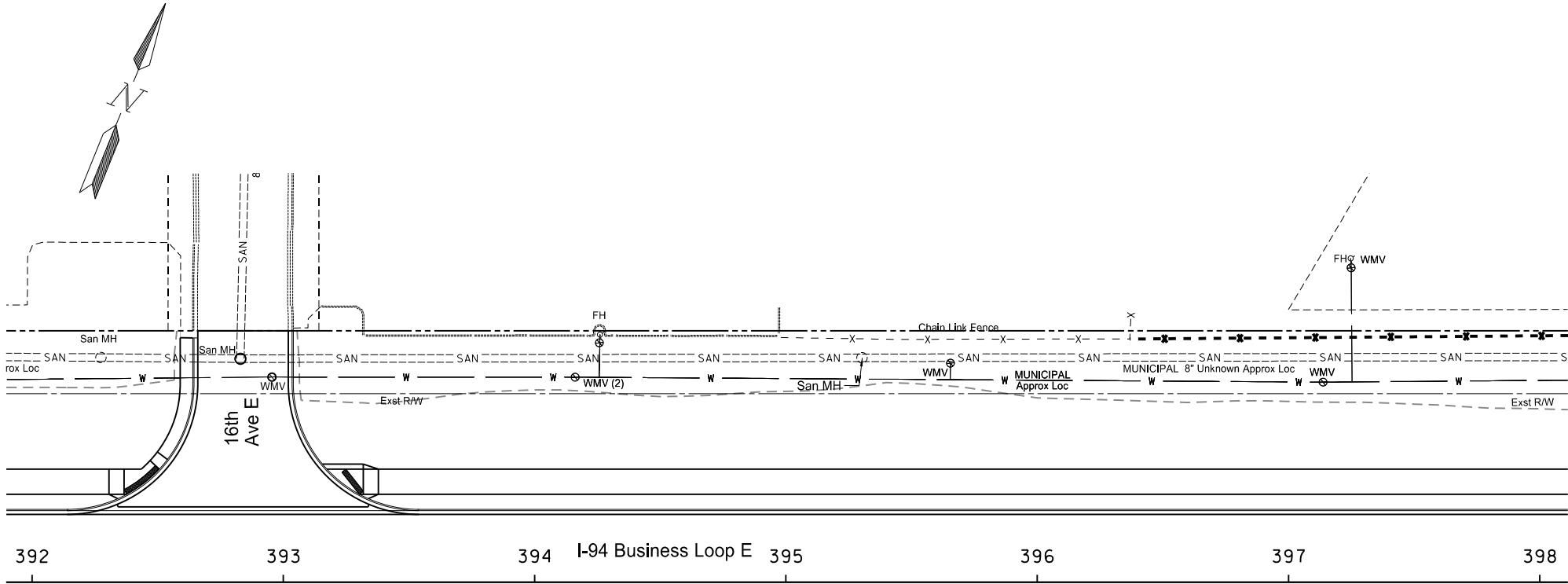
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Layout
Sta 386+00 to Sta 392+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	80	6

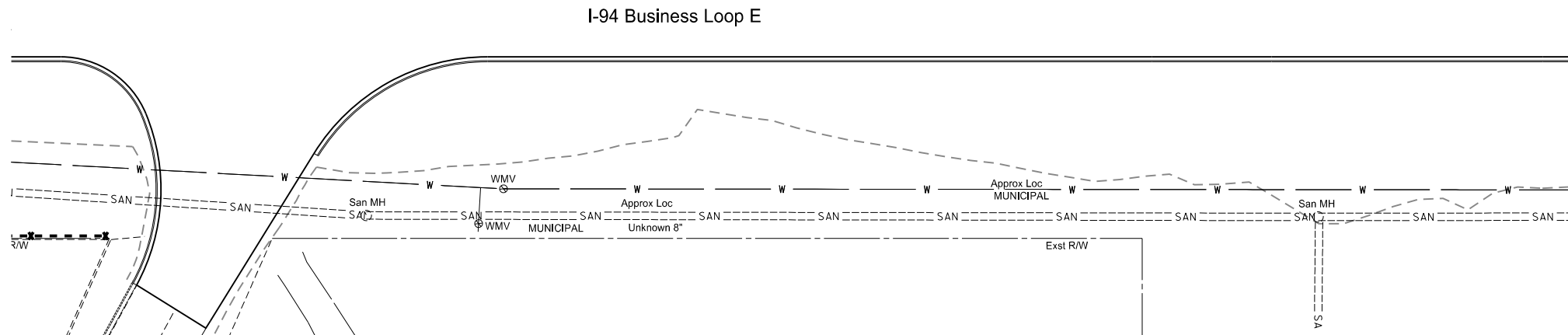
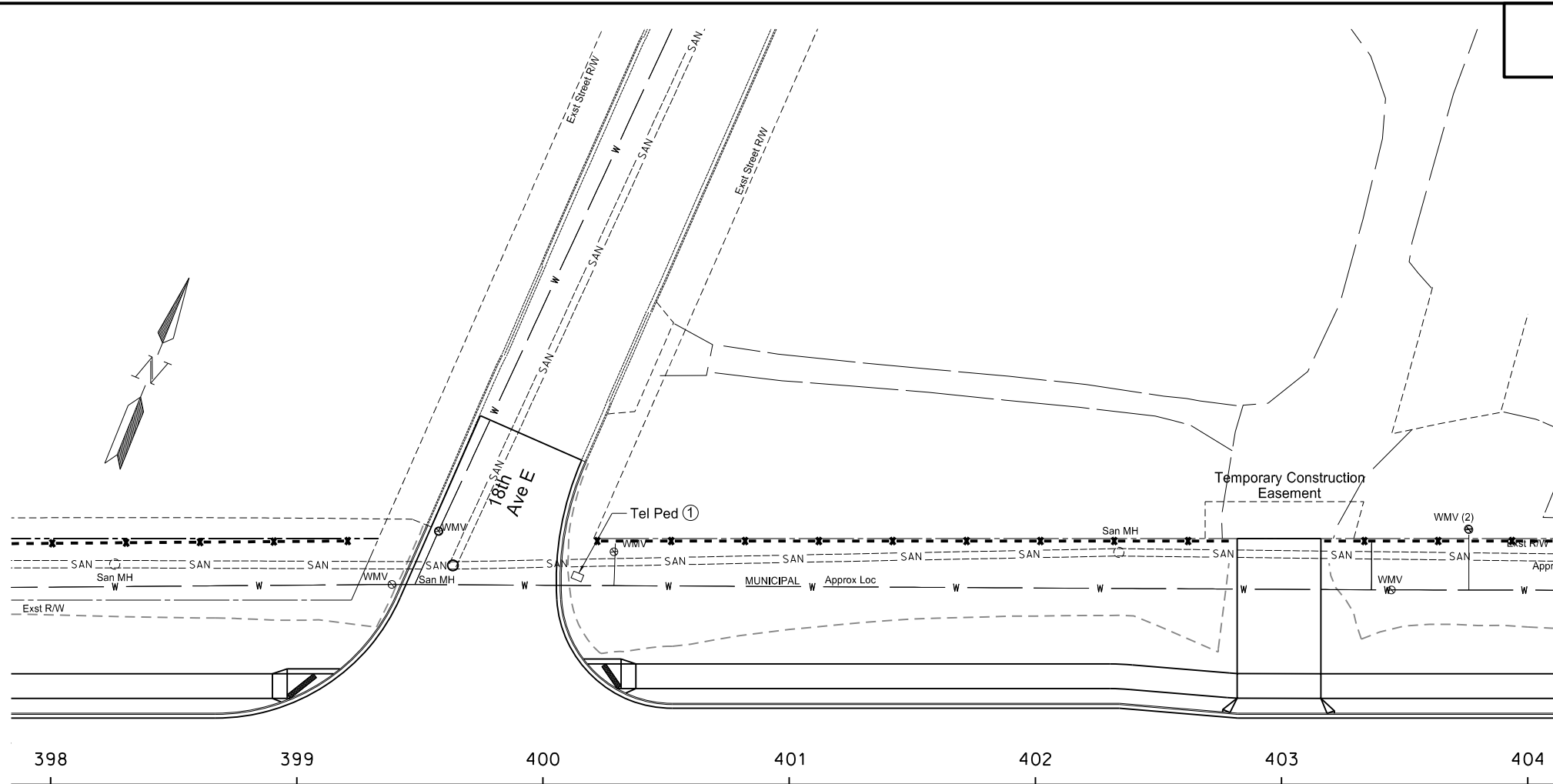
SPEC	CODE	BID ITEM	QTY	UNIT
722	6200	ADJUST MANHOLE Sta 392+83 - 89' Lt (SAN)	1	EA
722	6240	ADJUST UTILITY APPURTENANCE Sta 392+96 - 82' Lt	1	EA
752	0850	ORNAMENTAL FENCE Sta 392+00 - 99' Rt to Sta 392+49 - 99' Rt	49	LF
		Sta 393+38 - 99' Rt to Sta 398+00 - 99' Rt	462	LF
		Sta 396+37 - 99' Lt to Sta 398+00 - 99' Lt	163	LF
		TOTAL	674	LF



- Legend
- Ornamental Fence
Set 1' Inside Exst R/W
 - 8' Wide 4" Thick Polystyrene Insulation Board
Centered on Exst Waterline
 - Grading Tie Line

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Layout
Sta 392+00 to Sta 398+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND



- Legend
- Ornamental Fence
Set 1' Inside Exst R/W
 - 8' Wide 4" Thick Polystyrene Insulation Board
Centered on Exst Waterline
 - Grading Tie Line

Notes:

① Private utility feature conflict.
To be relocated or adjusted to grade by owner.

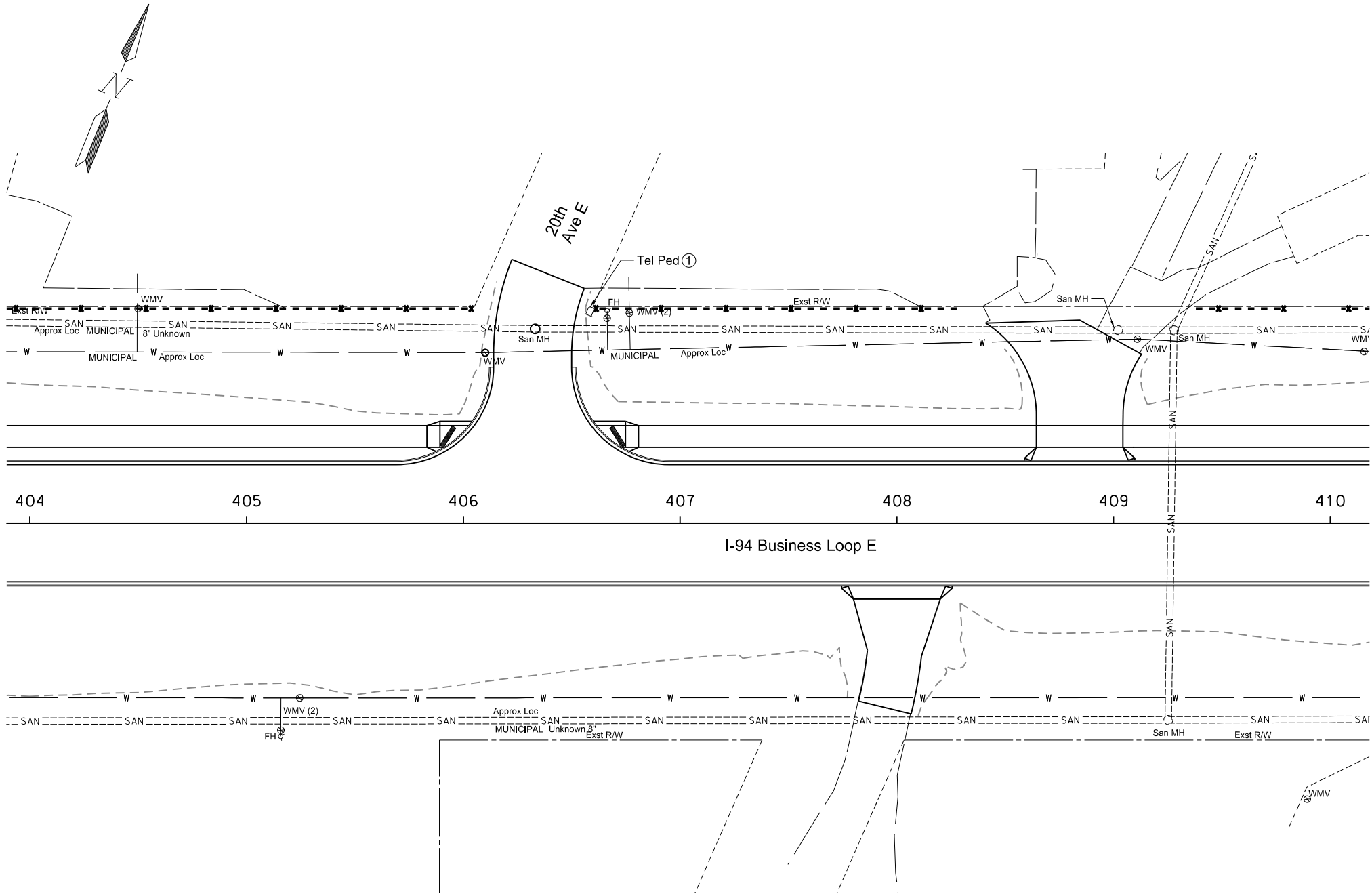
SPEC	CODE	BID ITEM	QTY	UNIT
722	6200	ADJUST MANHOLE Sta 399+63 - 89' Lt (SAN)	1	EA
722	6240	ADJUST UTILITY APPURTENANCE Sta 399+58 - 103' Lt	1	EA
752	0850	ORNAMENTAL FENCE Sta 398+00 - 99' Lt to Sta 399+22 - 99' Lt Sta 398+00 - 99' Rt to Sta 398+23 - 99' Rt Sta 400+21 - 99' Lt to Sta 402+79 - 99' Lt Sta 403+17 - 99' Rt to Sta 404+00 - 99' Lt	122 23 258 83	LF LF LF LF
TOTAL			486	LF

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Layout
Sta 398+00 to Sta 404+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	80	8

SPEC	CODE	BID ITEM	QTY	UNIT
722	6200	ADJUST MANHOLE Sta 406+33 - 90' Lt	1	EA
722	6240	ADJUST UTILITY APPURTENANCE Sta 406+10 - 79' Lt	1	EA
752	0850	ORNAMENTAL FENCE Sta 404+00 - 99' Lt to Sta 406+05 - 99' Lt	205	LF
		Sta 406+60 - 99' Lt to Sta 408+29 - 99' Lt	169	LF
		Sta 409+37 - 99' Lt to Sta 409+80 - 99' Lt	43	LF
		TOTAL	417	LF



- Legend
- Ornamental Fence
Set 1' Inside Exst R/W
 - 8' Wide 4" Thick Polystyrene Insulation Board
Centered on Exst Waterline
 - Grading Tie Line

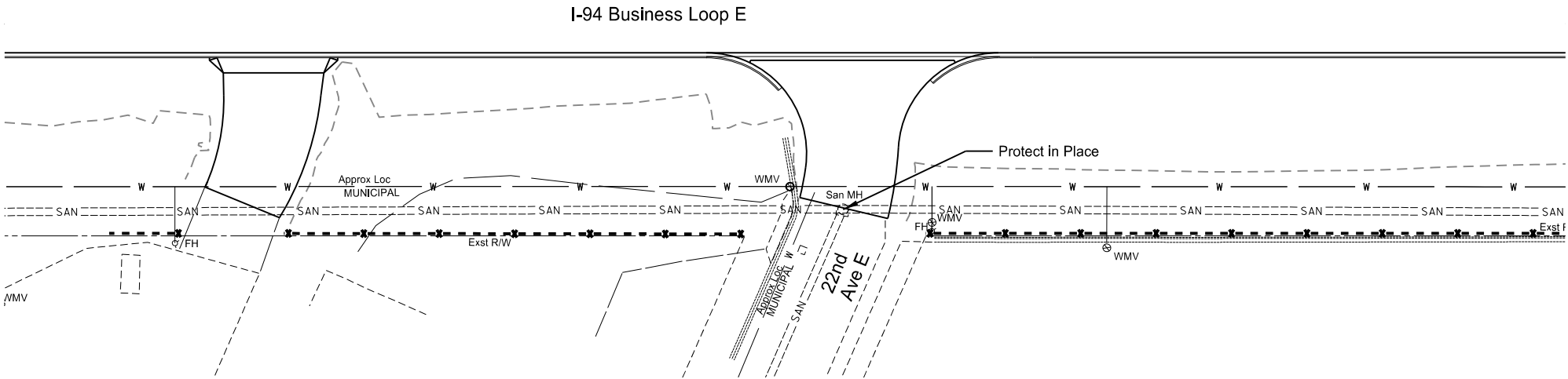
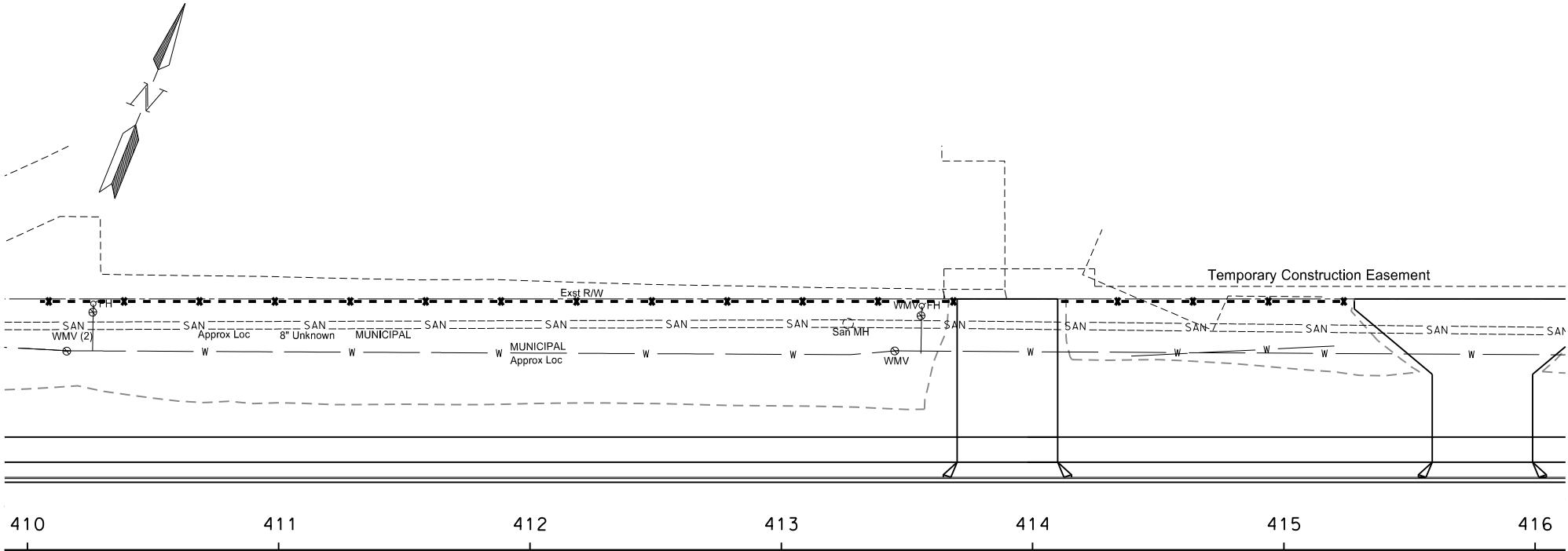
- Notes:
- ① Private utility feature conflict.
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Layout
Sta 404+00 to Sta 410+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	80	9

SPEC	CODE	BID ITEM	QTY	UNIT
722	6240	ADJUST UTILITY APPURTENANCE		
		Sta 413+04 - 80' Rt	1	EA
752	0850	ORNAMENTAL FENCE		
		Sta 410+05 - 99' Lt to Sta 413+70 - 99' Lt	365	LF
		Sta 410+33 - 99' Rt to Sta 410+62 - 99' Rt	29	LF
		Sta 411+02 - 99' Rt to Sta 412+85 - 99' Rt	183	LF
		Sta 413+57 - 99' Rt to Sta 416+00 - 99' Rt	243	LF
		Sta 414+10 - 99' Lt to Sta 415+25 - 99' Lt	115	LF
		TOTAL	935	LF



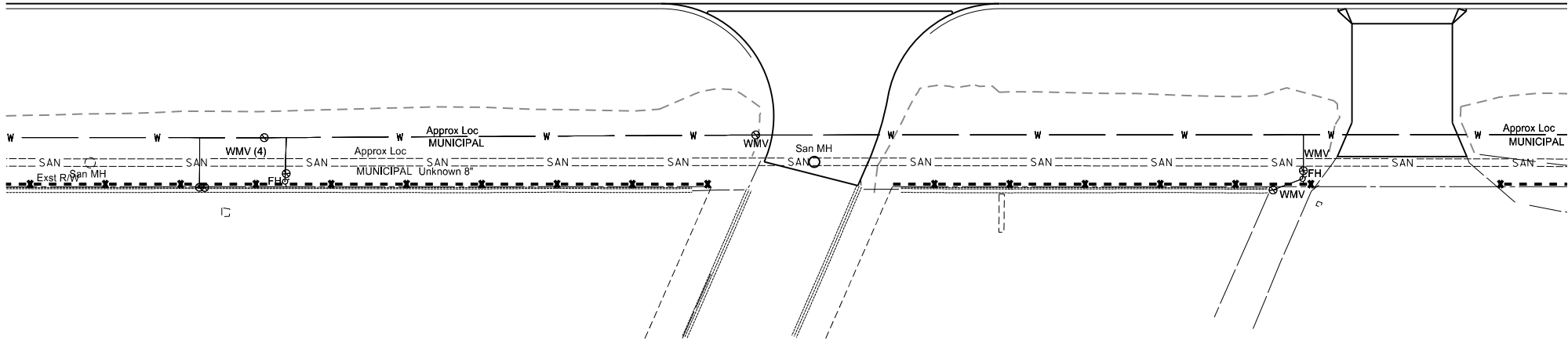
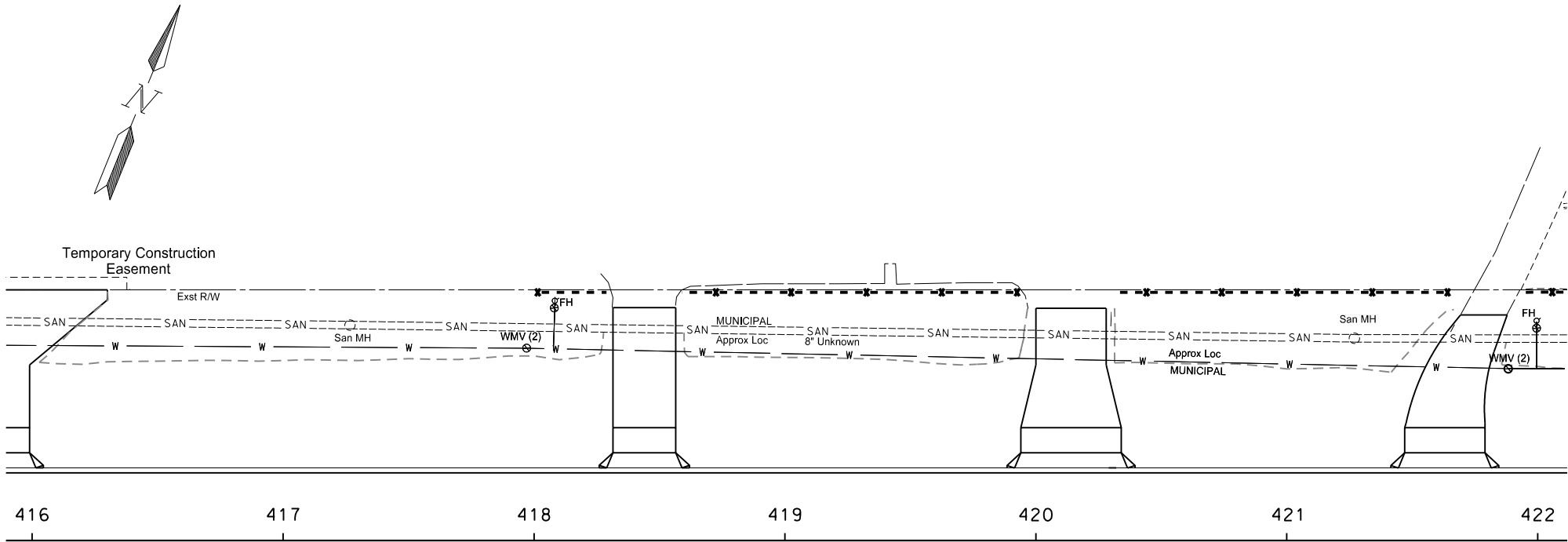
- Legend
- Ornamental Fence
Set 1' Inside Exst R/W
 - 8' Wide 4" Thick Polystyrene Insulation Board
Centered on Exst Waterline
 - Grading Tie Line

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Layout
Sta 410+00 to Sta 416+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	80	10

SPEC	CODE	BID ITEM	QTY	UNIT
722	6200	ADJUST MANHOLE Sta 419+12 - 90' Rt (SAN)	1	EA
722	6240	ADJUST UTILITY APPURTENANCE Sta 421+88 - 68' Lt	1	EA
752	0850	ORNAMENTAL FENCE Sta 416+00 - 99' Rt to Sta 418+71 - 99' Rt Sta 418+00 - 99' Lt to Sta 418+29 - 99' Lt Sta 418+59 - 99' Lt to Sta 419+94 - 99' Lt Sta 419+43 - 99' Rt to Sta 421+11 - 99' Rt Sta 420+31 - 99' Lt to Sta 421+66 - 99' Lt Sta 421+84 - 99' Rt to Sta 422+00 - 99' Rt Sta 421+93 - 99' Lt to Sta 422+00 - 99' Lt	271 29 135 168 135 16 7	LF LF LF LF LF LF LF
TOTAL			761	LF



- Legend
- Ornamental Fence
Set 1' Inside Exst R/W
 - 8' Wide 4" Thick Polystyrene Insulation Board
Centered on Exst Waterline
 - Grading Tie Line

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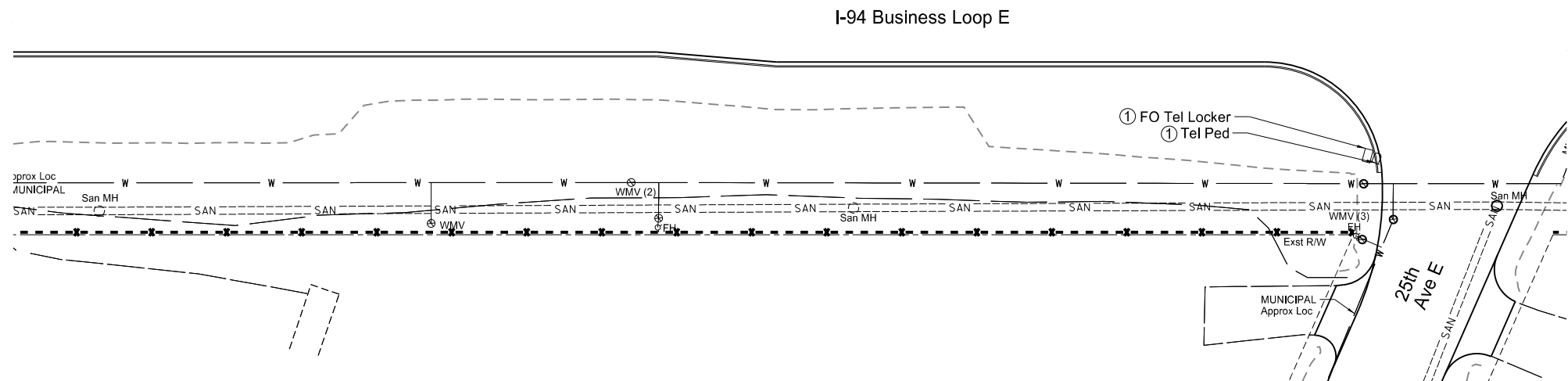
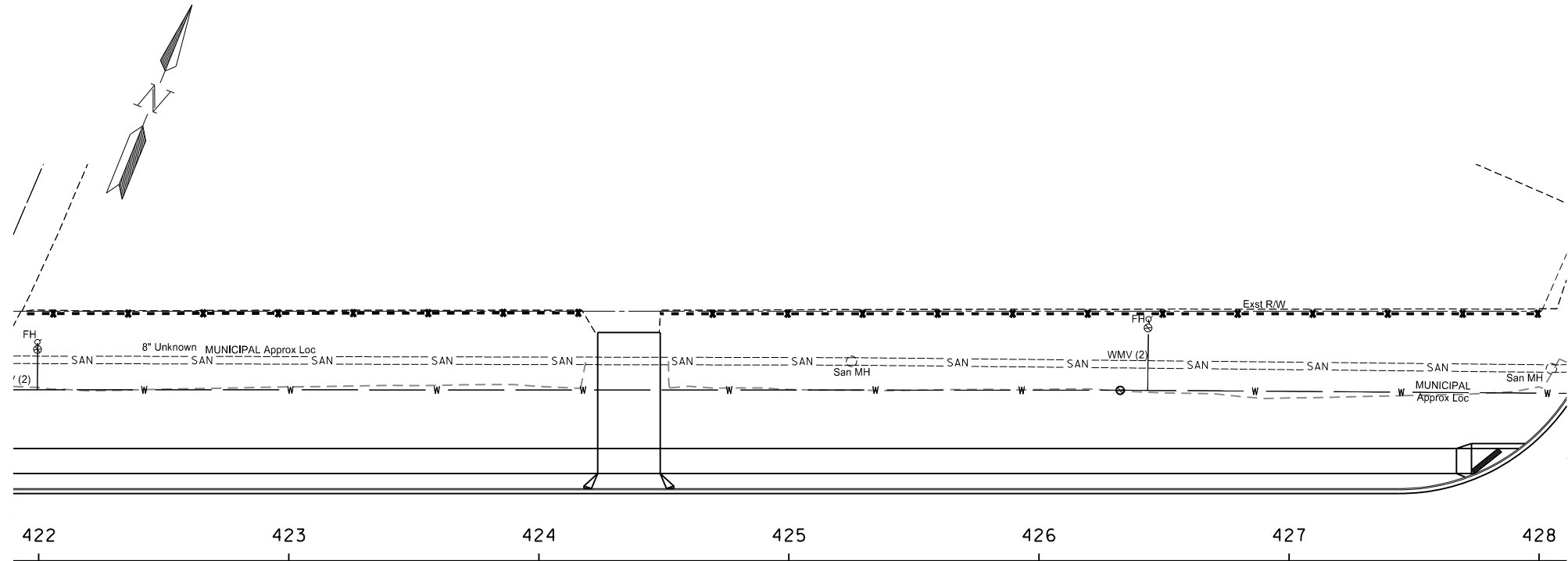
Layout

Sta 416+00 to Sta 422+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	80	11



- Legend
- Ornamental Fence Set 1' Inside Exst R/W
 - 8' Wide 4" Thick Polystyrene Insulation Board Centered on Exst Waterline
 - Grading Tie Line

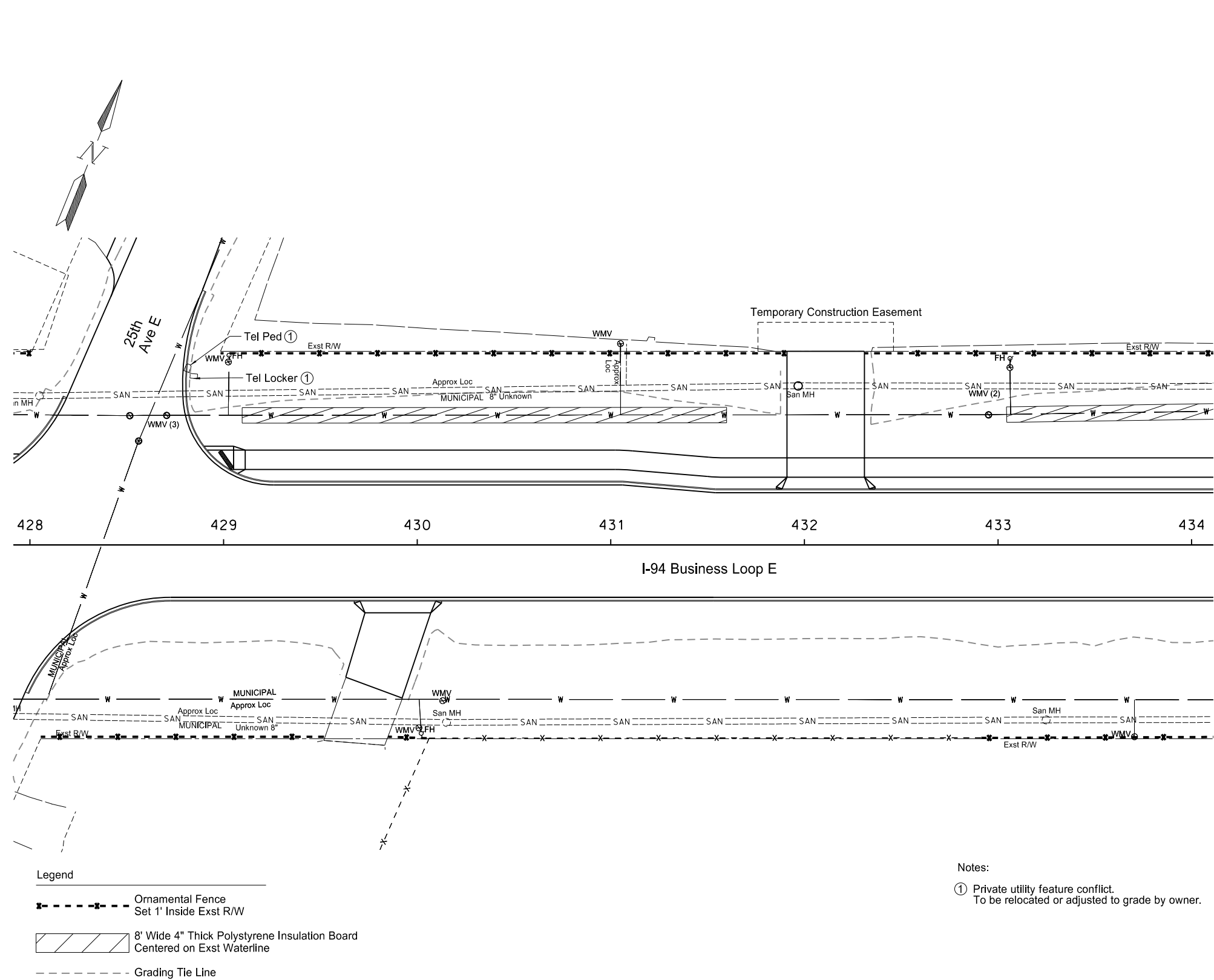
Notes:

① Private utility feature conflict. To be relocated or adjusted to grade by owner.

SPEC	CODE	BID ITEM	QTY	UNIT
722	6200	ADJUST MANHOLE Sta 427+83 - 88' Rt (SAN)	1	EA
722	6240	ADJUST UTILITY APPURTENANCE Sta 426+32 - 68' Lt Sta 427+29 - 102' Rt Sta 427+30 - 80' Rt Sta 427+42 - 94' Rt	1 1 1 1	EA EA EA EA
		TOTAL	4	EA
752	0850	ORNAMENTAL FENCE Sta 422+00 - 99' Rt to Sta 427+26 - 99' Rt Sta 422+00 - 99' Lt to Sta 424+17 - 99' Lt Sta 424+49 - 99' Lt to Sta 428+01 - 99' Lt	526 217 352	LF LF LF
		TOTAL	1095	LF

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Layout
Sta 422+00 to Sta 428+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND



- Legend
- x---x---x--- Ornamental Fence
Set 1' Inside Exst R/W
 - 8' Wide 4\"/>

Notes:

① Private utility feature conflict.
To be relocated or adjusted to grade by owner.

SPEC	CODE	BID ITEM	QTY	UNIT
722	6200	ADJUST MANHOLE Sta 431+97 - 82' Lt (SAN)	1	EA
722	6240	ADJUST UTILITY APPURTENANCE		
		Sta 428+52 - 67' Lt	1	EA
		Sta 428+56 - 54' Lt	1	EA
		Sta 428+71 - 67' Lt	1	EA
		Sta 432+95 - 67' Lt	1	EA
		TOTAL	4	EA
744	0100	POLYSTYRENE INSULATION BOARD		
		Sta 429+10 - 67' Lt to Sta 431+60 - 67' Lt	8000	BD FT
		Sta 433+04 - 67' Lt to Sta 434+00 - 69' Lt	3072	BD FT
		TOTAL	11072	BD FT
752	0850	ORNAMENTAL FENCE		
		Sta 428+06 - 99' Rt to Sta 429+52 - 99' Rt	146	LF
		Sta 428+98 - 99' Lt to Sta 431+91 - 99' Lt	293	LF
		Sta 429+85 - 99' Rt to Sta 430+06 - 99' Rt	21	LF
		Sta 432+31 - 99' Lt to Sta 434+00 - 99' Lt	169	LF
		Sta 432+91 - 99' Rt to Sta 434+00 - 99' Rt	109	LF
		TOTAL	738	LF

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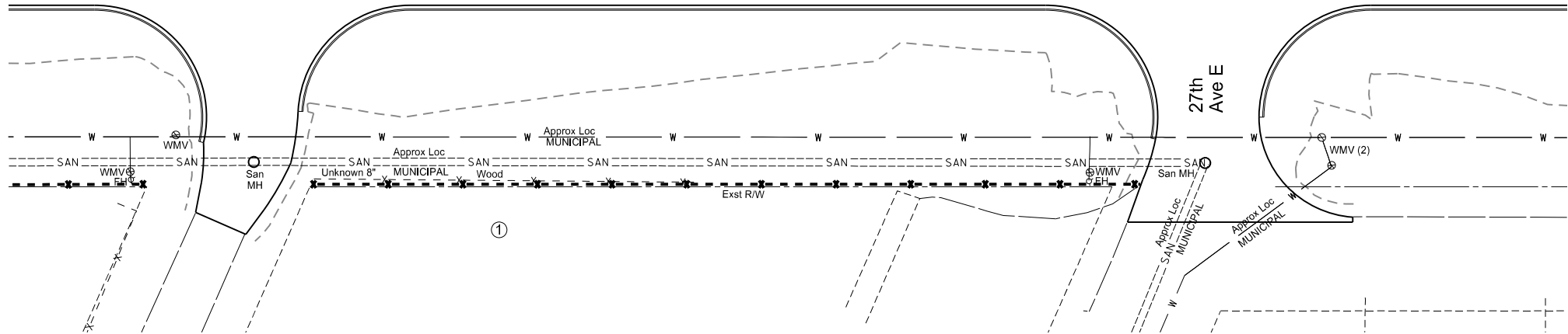
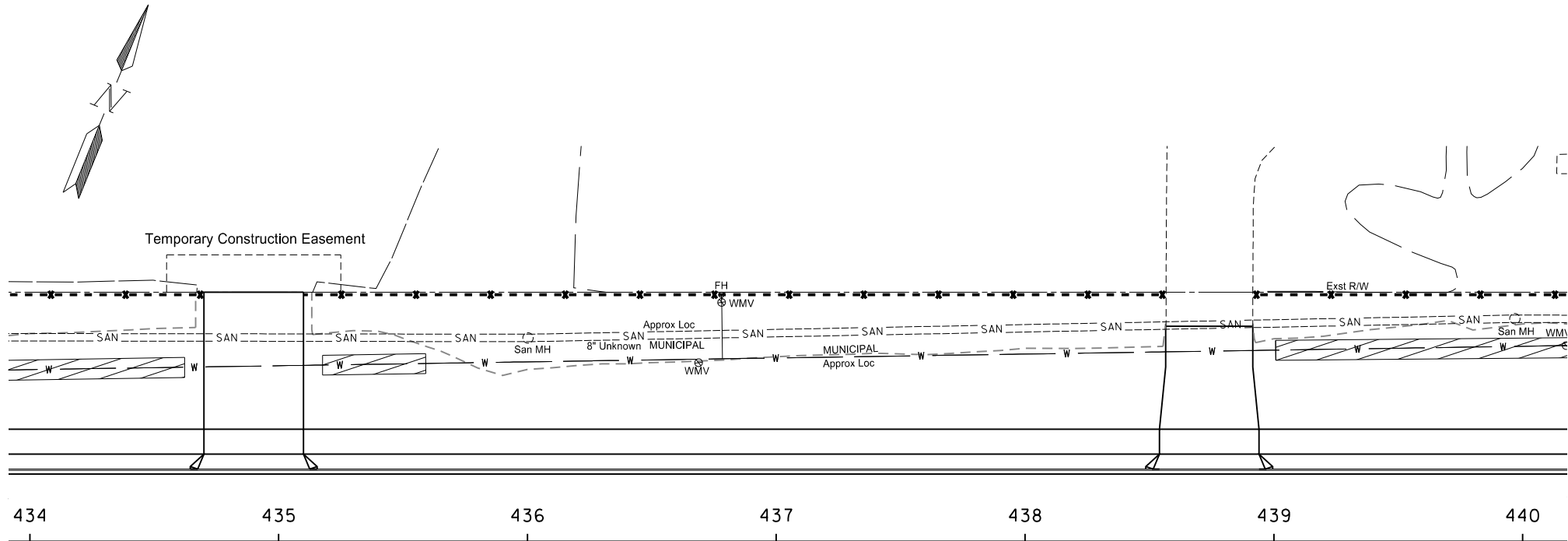
Sta 428+00 to Sta 434+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	80	13

SPEC	CODE	BID ITEM	QTY	UNIT
722	6200	ADJUST MANHOLE		
		Sta 434+90 - 90' Rt	1	EA
		Sta 438+72 - 90' Rt	1	EA
		TOTAL	2	EA
744	0100	POLYSTYRENE INSULATION BOARD		
		Sta 434+00 - 69' Lt to Sta 434+62 - 70' Lt	1984	BD FT
		Sta 435+18 - 71' Lt to Sta 435+59 - 71' Lt	1312	BD FT
		Sta 439+01 - 77' Lt to Sta 440+00 - 77' Lt	3168	BD FT
		TOTAL	6464	BD FT
752	0850	ORNAMENTAL FENCE		
		Sta 434+00 - 99' Rt to Sta 434+47 - 99' Rt	47	LF
		Sta 434+00 - 99' Lt to Sta 434+70 - 99' Lt	70	LF
		Sta 435+10 - 99' Lt to Sta 438+57 - 99' Lt	347	LF
		Sta 435+13 - 99' Rt to Sta 438+46 - 99' Rt	333	LF
		Sta 438+92 - 99' Lt to Sta 440+00 - 99' Lt	108	LF
		TOTAL	905	LF



Legend

- Ornamental Fence Set 1' Inside Exst R/W
- 8' Wide 4" Thick Polystyrene Insulation Board Centered on Exst Waterline
- Grading Tie Line

Notes:

- ① Remove Existing wooden pole fence from Sta 435+14 Rt to Sta 436+67 Rt. All cost, including labor, equipment, and disposal is included in the "Ornamental Fence" pay item.

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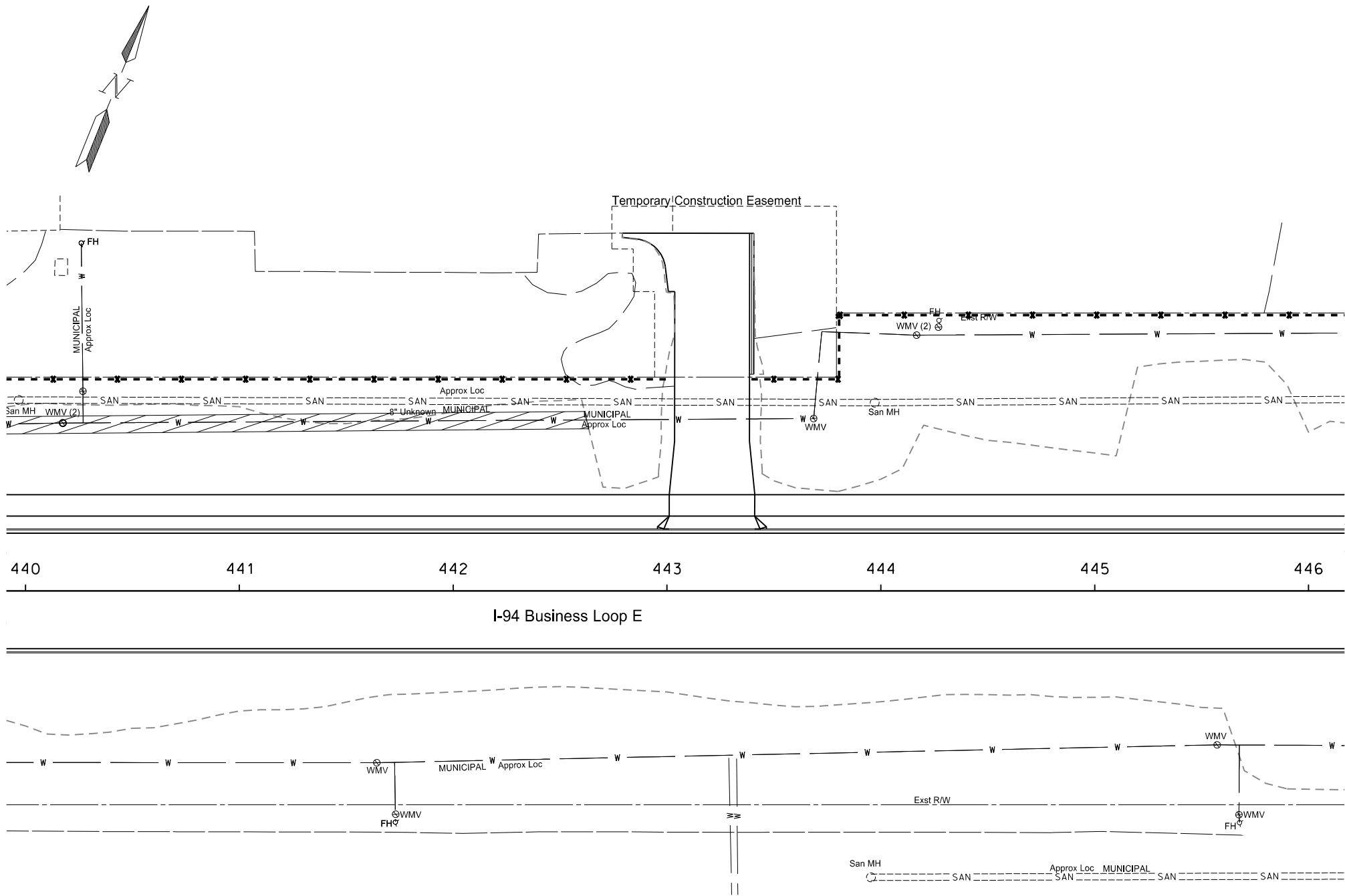
Sta 434+00 to Sta 440+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	80	14

SPEC	CODE	BID ITEM	QTY	UNIT
722	6240	ADJUST UTILITY APPURTENANCE Sta 440+18 - 79' Lt	1	EA
744	0100	POLYSTYRENE INSULATION BOARD Sta 440+00 - 78' Lt to Sta 442+63 -80' Lt	8416	BD FT
752	0850	ORNAMENTAL FENCE Sta 440+00 - 99' Lt to Sta 443+02 - 99' Lt	302	LF
		Sta 443+39 - 99' Lt to Sta 446+00 - 129' Lt	291	LF
		TOTAL	593	LF



- Legend
- Ornamental Fence
Set 1' Inside Exst R/W
 - 8' Wide 4" Thick Polystyrene Insulation Board
Centered on Exst Waterline
 - Grading Tie Line

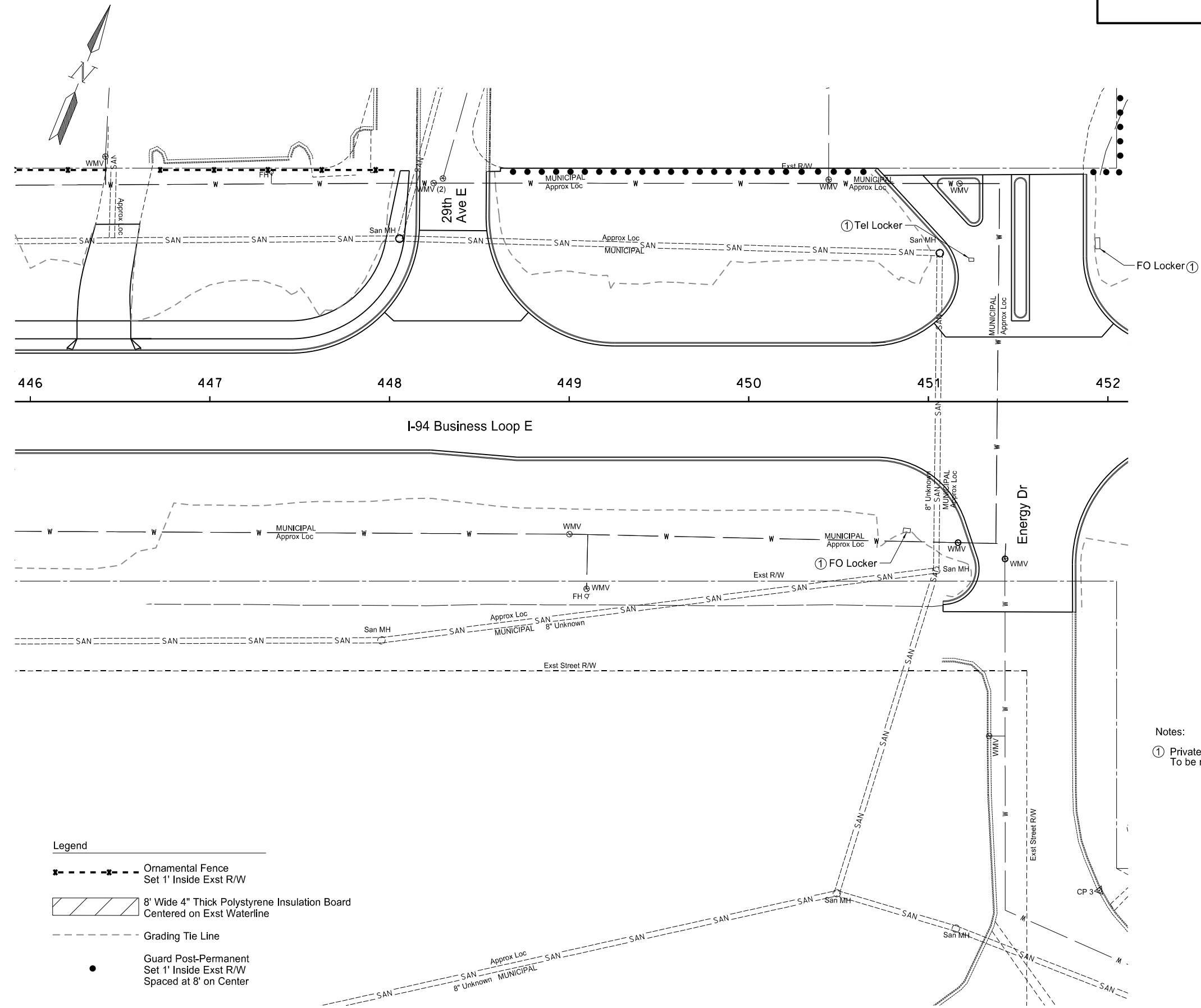
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Layout

Sta 440+00 to Sta 446+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND



SPEC	CODE	BID ITEM	QTY	UNIT
722	6200	ADJUST MANHOLE		
		Sta 448+06 - 91' Lt (SAN)	1	EA
		Sta 451+06 - 83' Lt (SAN)	1	EA
		TOTAL	2	EA
722	6240	ADJUST UTILITY APPURTENANCE		
		Sta 451+17 - 79' Rt	1	EA
		Sta 451+43 - 88' Rt	1	EA
		TOTAL	2	EA
752	0850	ORNAMENTAL FENCE		
		Sta 446+00 - 129' Lt to Sta 446+42 - 129' Lt	42	LF
		Sta 446+71 - 129' Lt to Sta 448+03 - 129' Lt	132	LF
		TOTAL	174	LF
990	0220	GUARD POST-PERMANENT		
		Sta 448+69 - 129' Lt to Sta 450+64 - 129' Lt	25	EA
		Sta 451+92 - 129' Lt to Sta 452+00 - 126' Lt	2	EA
		TOTAL	27	EA

Notes:

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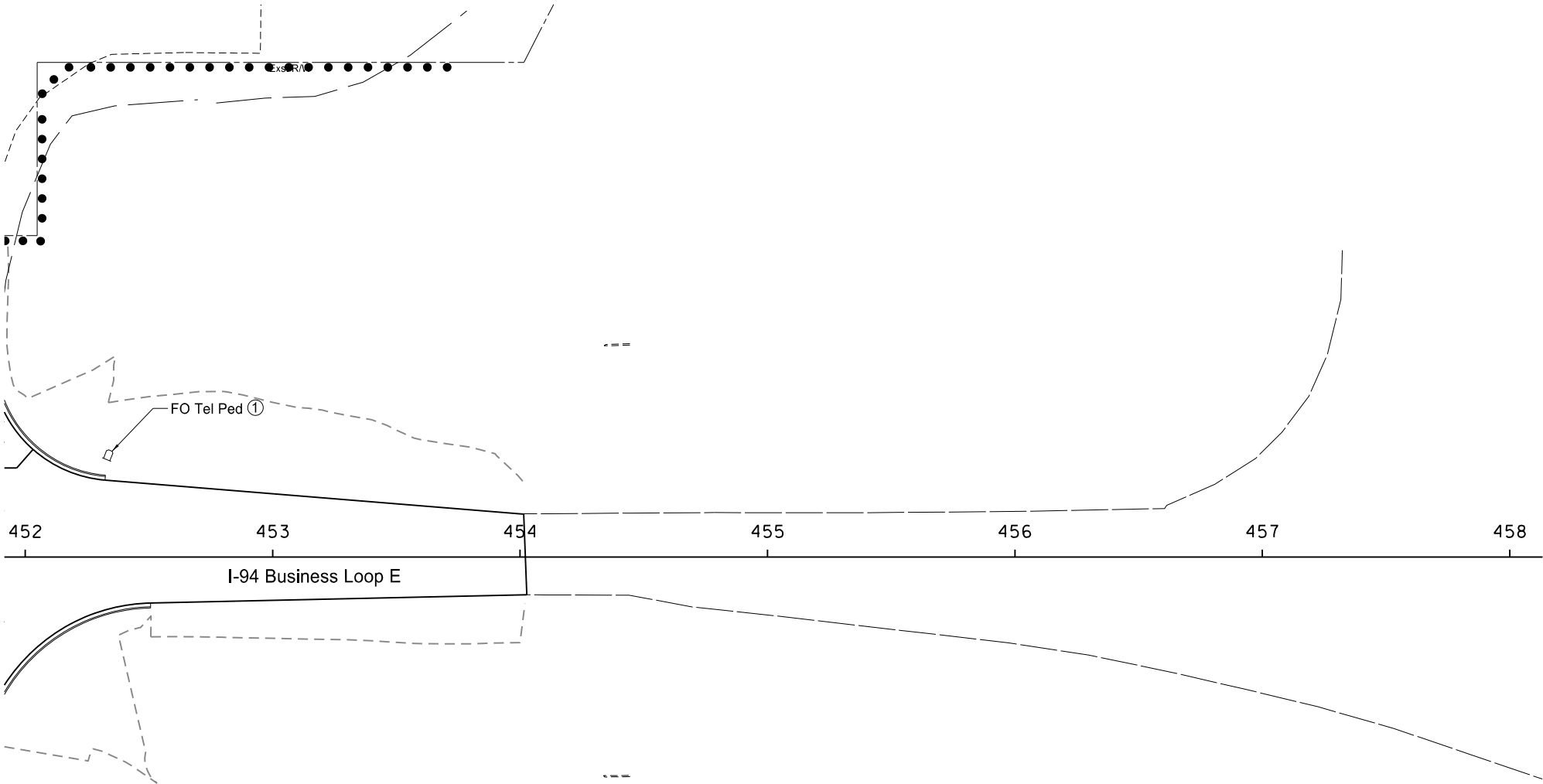
Layout

Sta 446+00 to Sta 452+00
E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	80	16

SPEC	CODE	BID ITEM	QTY	UNIT
990	0220	GUARD POST-PERMANENT		
		Sta 452+06 - 129' Lt to Sta 452+06 - 177' Lt	7	EA
		Sta 452+06 - 185' Lt to Sta 452+18 - 199' Lt	3	EA
		Sta 452+26 - 199' Lt to Sta 453+71 - 199' Lt	19	EA
		TOTAL	29	EA



Legend

- Ornamental Fence
Set 1' Inside Exst R/W
- 8' Wide 4" Thick Polystyrene Insulation Board
Centered on Exst Waterline
- Grading Tie Line
- Guard Post-Permanent
Set 1' Inside Exst R/W
Spaced at 8' on Center

Notes:
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Layout
Sta 452+00 to Sta 458+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	82	1

Chain VILLARD ALG contains:
26539 CUR VILLARD ALG 3 CUR VILLARD ALG 4 CUR VILLARD ALG 7 CUR VILLARD ALG 10-26540

Course from PT VILLARD_ALG_7 to PC VILLARD_ALG_10 S 68° 42' 03.44" E Dist 17.9559

Beginning chain VILLARD ALG description
Feature: Alignment 3 S

Point 26539 N 449,874.0712 E 1,401,495.4031 Sta 80+00.00

Course from 26539 to PC VILLARD ALG 3 S 1° 18' 05.18" E Dist 53.4679

Curve Data

Curve VILLARD ALG 3
P.I. Station 80+75.98 N 449,798.1140 E 1,401,497.1288
Delta = 33° 50' 13.03" (LT)
Degree = 77° 25' 36.22"
Tangent = 22.5090
Length = 43.7019
Radius = 74.0000
External = 3.3476
Long Chord = 43.0696
Mid. Ord. = 3.2027
P.C. Station 80+53.47 N 449,820.6171 E 1,401,496.6175
P.T. Station 80+97.17 N 449,779.7069 E 1,401,510.0839
C.C. N 449,822.2979 E 1,401,570.5984
Back = S 1° 18' 05.18" E
Ahead = S 35° 08' 18.20" E
Chord Bear = S 18° 13' 11.69" E

Curve Data

Curve VILLARD ALG 4
P.I. Station 82+08.38 N 449,688.7668 E 1,401,574.0888
Delta = 92° 44' 45.32" (LT)
Degree = 54° 03' 09.44"
Tangent = 111.2058
Length = 171.5845
Radius = 106.0000
External = 47.6318
Long Chord = 153.4554
Mid. Ord. = 32.8641
P.C. Station 80+97.17 N 449,779.7069 E 1,401,510.0839
P.T. Station 82+68.75 N 449,757.0548 E 1,401,661.8582
C.C. N 449,840.7156 E 1,401,596.7669
Back = S 35° 08' 18.20" E
Ahead = N 52° 06' 56.48" E
Chord Bear = S 81° 30' 40.86" E

Course from PT VILLARD ALG 4 to PC VILLARD ALG 7 N 52° 06' 56.48" E Dist 34.0694

Curve Data

Curve VILLARD ALG 7
P.I. Station 84+02.20 N 449,839.0021 E 1,401,767.1836
Delta = 59° 11' 00.07" (RT)
Degree = 32° 44' 25.60"
Tangent = 99.3802
Length = 180.7653
Radius = 175.0000
External = 26.2497
Long Chord = 172.8354
Mid. Ord. = 22.8258
P.C. Station 83+02.82 N 449,777.9758 E 1,401,688.7476
P.T. Station 84+83.59 N 449,802.9037 E 1,401,859.7759
C.C. N 449,639.8566 E 1,401,796.2096
Back = N 52° 06' 56.48" E
Ahead = S 68° 42' 03.44" E
Chord Bear = N 81° 42' 26.52" E

Curve Data

Curve VILLARD ALG 10
P.I. Station 85+29.37 N 449,786.2734 E 1,401,902.4323
Delta = 13° 47' 50.56" (LT)
Degree = 24° 54' 40.35"
Tangent = 27.8277
Length = 55.3862
Radius = 230.0000
External = 1.6773
Long Chord = 55.2525
Mid. Ord. = 1.6652
P.C. Station 85+01.54 N 449,796.3814 E 1,401,876.5053
P.T. Station 85+56.93 N 449,782.6404 E 1,401,930.0219
C.C. N 450,010.6718 E 1,401,960.0495
Back = S 68° 42' 03.44" E
Ahead = S 82° 29' 54.00" E
Chord Bear = S 75° 35' 58.72" E

Course from PT VILLARD ALG 10 to 26540 S 82° 29' 54.00" E Dist 243.0691

Point 26540 N 449,750.9065 E 1,402,171.0105 Sta 88+00.00

Ending chain VILLARD ALG description

Chain ALG_10TH_AVE contains:
26537 26538

Beginning chain ALG_10TH_AVE description
Feature: Alignment 2 S

Point 26537 N 449,873.6453 E 1,401,503.6073 Sta 10+00.00

Course from 26537 to 26538 N 1° 43' 03.19" E Dist 500.0000

Point 26538 N 450,373.4207 E 1,401,518.5936 Sta 15+00.00

Ending chain ALG_10TH_AVE description

Chain 25THAVE S LEG contains:
26780 26781

Beginning chain 25THAVE S LEG description
Feature: Alignment 4 S

Point 26780 N 451,293.9813 E 1,406,810.7871 Sta 26+00.00

Course from 26780 to 26781 N 1° 42' 32.89" E Dist 407.3814

Point 26781 N 451,701.1814 E 1,406,822.9375 Sta 30+07.38

Ending chain 25THAVE S LEG description

Chain 25THAVE N LEG contains:
26782 26783

Beginning chain 25THAVE N LEG description
Feature: Alignment 5 S

Point 26782 N 451,701.3558 E 1,406,823.3672 Sta 40+00.00

Course from 26782 to 26783 N 1° 32' 42.44" E Dist 450.0000

Point 26783 N 452,151.1921 E 1,406,835.5011 Sta 44+50.00

Ending chain 25THAVE N LEG description

Chain TEMP BYPASS contains:
26841 CUR TEMP BYPASS 3

Beginning chain TEMP BYPASS description
Feature: Alignment 1 S

Point 26841 N 449,915.1322 E 1,401,955.3064 Sta 500+00.00

Course from 26841 to PC TEMP BYPASS 3 S 5° 03' 48.84" E Dist 54.7368

Curve Data

Curve TEMP BYPASS 3
P.I. Station 501+42.05 N 449,773.6376 E 1,401,967.8438
Delta = 76° 52' 52.77" (LT)
Degree = 52° 05' 13.46"
Tangent = 87.3121
Length = 147.6015
Radius = 110.0000
External = 30.4400
Long Chord = 136.7748
Mid. Ord. = 23.8422
P.C. Station 500+54.74 N 449,860.6090 E 1,401,960.1375
P.T. Station 502+02.34 N 449,761.4030 E 1,402,054.2944
C.C. N 449,870.3177 E 1,402,069.7082
Back = S 5° 03' 48.84" E
Ahead = S 81° 56' 41.61" E
Chord Bear = S 43° 30' 15.22" E

Ending chain TEMP BYPASS description

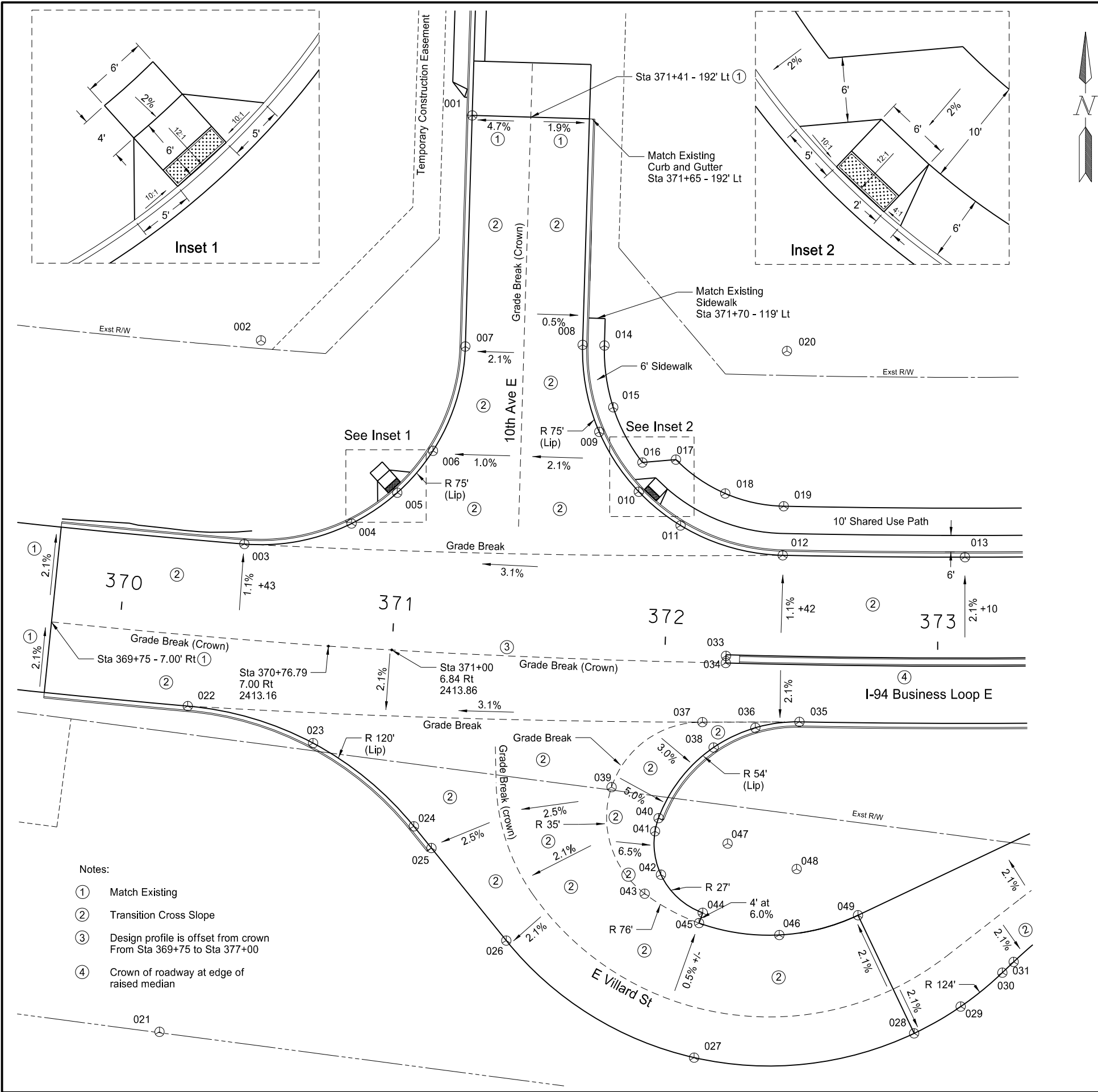
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Alignment Data

10th Ave E and E Villard St

E Business LP 10th Ave E - Exit 64

Dickinson, ND



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	82	2

NUMBER	NORTHING	EASTING	STATION	OFFSET	ELEVATION	COMMENT
1	450065.582	1401487.86	371+17.93	190.79 Lt	[M]2416.12	PI
2	449983.036	1401410.35	370+43.05	103.00 Lt	-	RADIUS
3	449908.286	1401404.23	370+43.05	28.00 Lt	2411.76	PC
4	449915.806	1401443.58	370+82.11	38.47 Lt	2413.19	POC
5	449927.125	1401460.34	370+98.30	50.90 Lt	2413.87	POC
6	449942.511	1401473.46	371+10.64	67.08 Lt	2414.41	POC
7	449980.788	1401485.32	371+20.46	105.99 Lt	2415.09	PT
8	449981.388	1401528.35	371+64.86	108.80 Lt	2415.63	PC
9	449949.461	1401534.44	371+72.54	77.16 Lt	2415.52	POC
10	449927.471	1401548.95	371+88.24	55.77 Lt	2415.77	POC
11	449915.099	1401564.28	372+04.24	43.94 Lt	2416.31	POC
12	449904.153	1401601.76	372+42.45	34.00 Lt	2417.70	PT
13	449903.45	1401668.61	373+10.01	34.00 Lt	2419.39	0
14	449981.145	1401536.35	371+73.14	108.90 Lt	-	BOW
15	449958.464	1401539.59	371+77.44	86.37 Lt	-	BOW
16	449938.201	1401550.28	371+89.19	66.54 Lt	-	BOW
17	449939.275	1401562.58	372+01.70	68.05 Lt	-	BOW
18	449926.832	1401580.67	372+20.51	56.16 Lt	-	BOW
19	449922.152	1401602.13	372+42.44	52.00 Lt	-	BOW
20	449979.137	1401603.32	372+42.45	109.00 Lt	-	RADIUS
21	449729.268	1401373.11	370+27.38	153.00 Rt	-	RADIUS
22	449848.82	1401383.48	370+27.38	33.00 Rt	2411.77	PC
23	449835.219	1401429.45	370+73.75	42.91 Rt	2412.72	POC
24	449804.705	1401466.43	371+12.01	70.90 Rt	2413.53	PT
25	449796.728	1401472.88	371+18.77	78.48 Rt	2413.67	PT
26	449762.764	1401500.33	371+47.20	110.91 Rt	2414.12	PC
27	449719.808	1401569.25	372+15.05	151.11 Rt	-	POC
28	449728.707	1401649.97	372+92.16	140.80 Rt	-	PCC
29	449738.551	1401667.04	373+08.53	130.90 Rt	-	POC
30	449750.977	1401682.34	373+23.29	118.50 Rt	-	PT
31	449754.925	1401686.48	373+27.30	114.57 Rt	-	PC
33	449867.243	1401580.95	372+22.43	3.40 Rt	-	PC
34	449864.644	1401580.88	372+22.43	6.00 Rt	-	PC
35	449843.023	1401607.88	372+49.78	27.00 Rt	2417.92	PT
36	449776.1	1401607.47	372+33.81	29.50 Rt	2417.81	POC
37	449842.937	1401572.28	372+14.49	27.94 Rt	2416.84	POC
38	449833.614	1401576.41	372+18.84	37.14 Rt	2416.69	POC
39	449819.087	1401538.96	371+82.40	52.92 Rt	2415.48	POC
40	449807.706	1401556.21	371+99.74	63.66 Rt	2414.13	PCC
41	449802.882	1401554.92	371+98.65	68.53 Rt	2414.06	POC
42	449786.959	1401557.07	372+01.27	84.37 Rt	2414.46	POC
43	449779.956	1401551.11	371+95.70	91.57 Rt	2415.02	POC
44	449772.961	1401572.41	372+16.61	97.88 Rt	2414.94	PC
45	449769.197	1401571.05	372+15.40	101.68 Rt	2415.18	PC
46	449764.807	1401600.5	372+44.04	105.35 Rt	2415.90	POC
47	449798.369	1401581.54	372+24.83	72.23 Rt	-	RADIUS
48	449789.033	1401606.88	372+49.78	81.00 Rt	-	RADIUS
49	449772.065	1401629.37	372+71.93	97.62 Rt	2416.94	PT

[M] = Match Existing
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pavment - not face or back of curb.

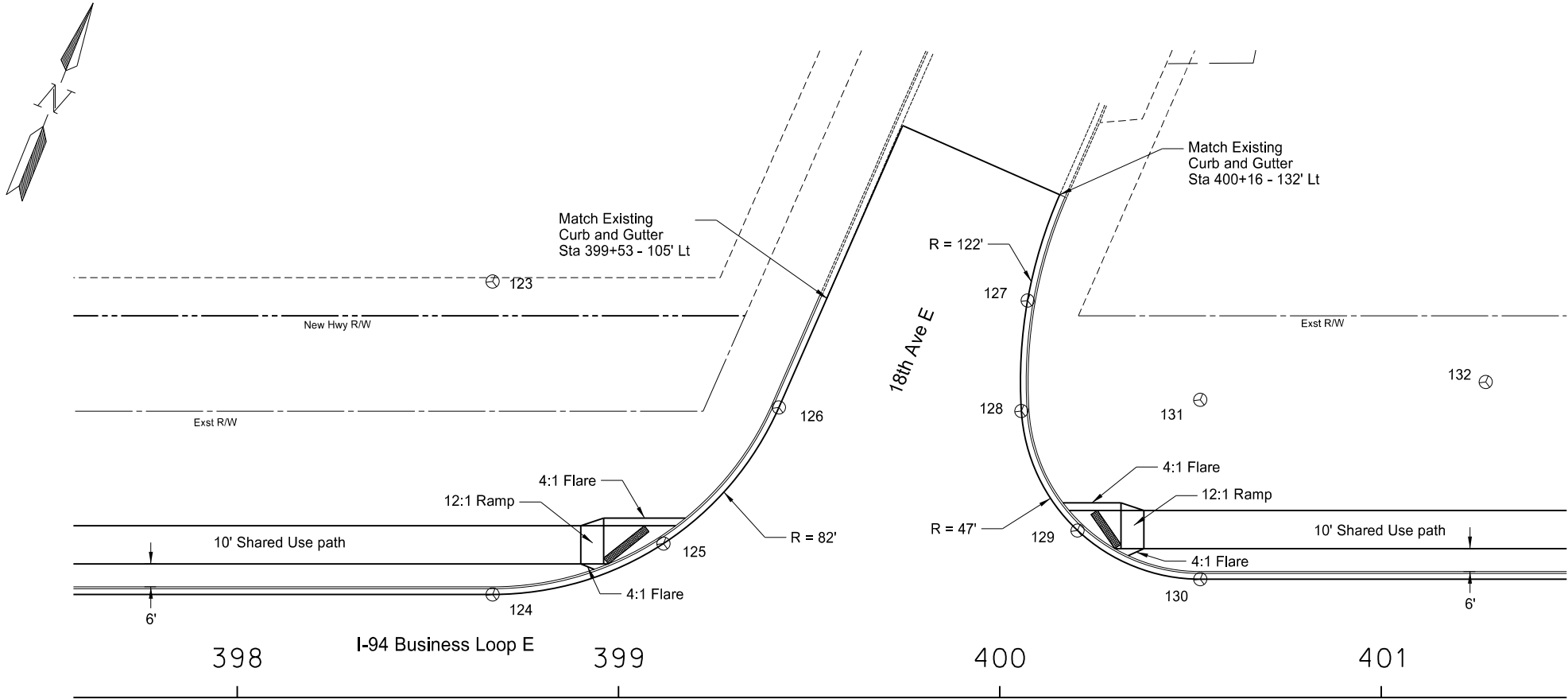
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Survey Data Layout

10th Ave E and E Villard St

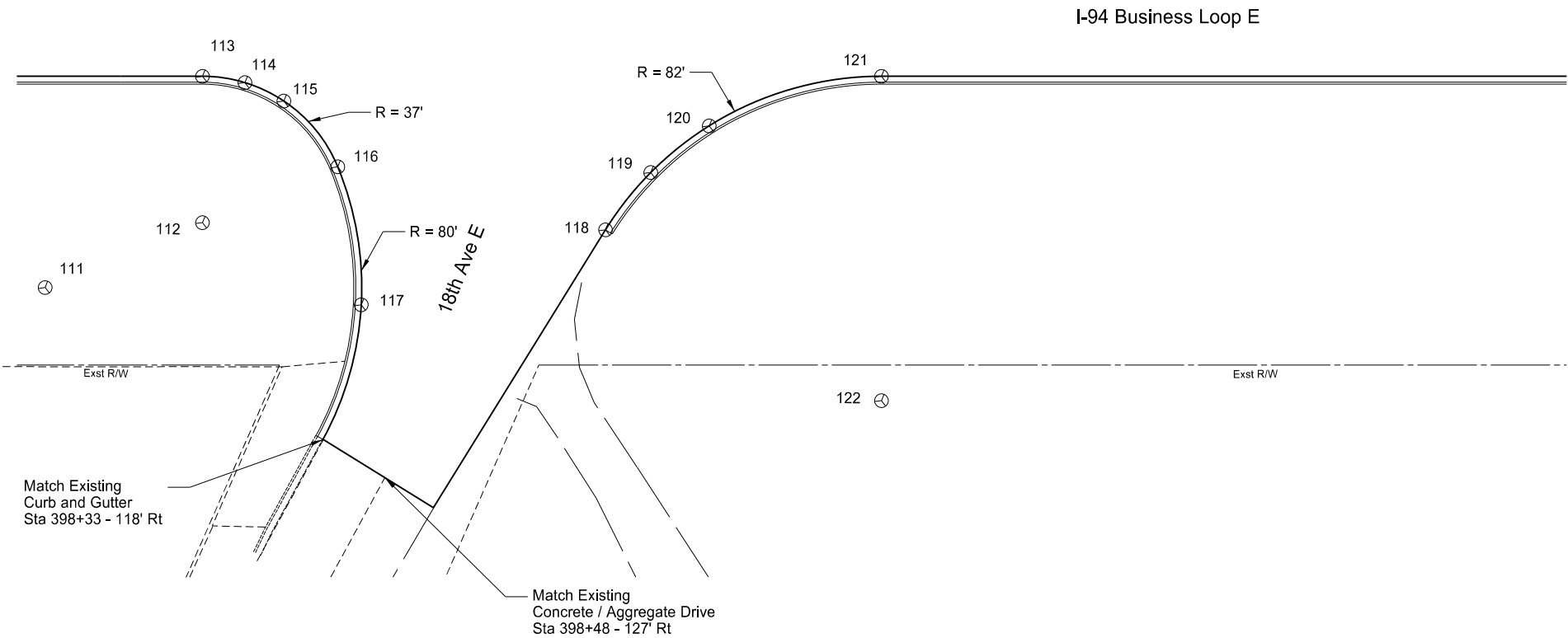
E Business LP 10th Ave E - Exit 64

Dickinson, ND



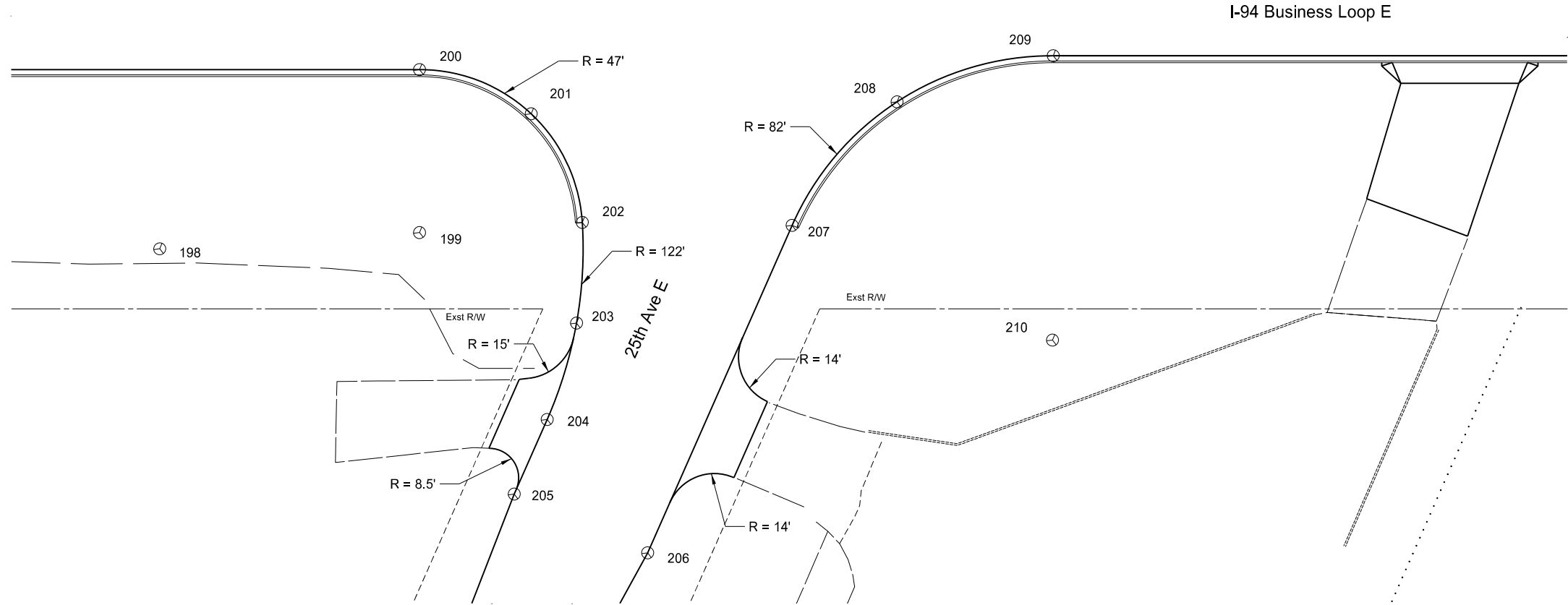
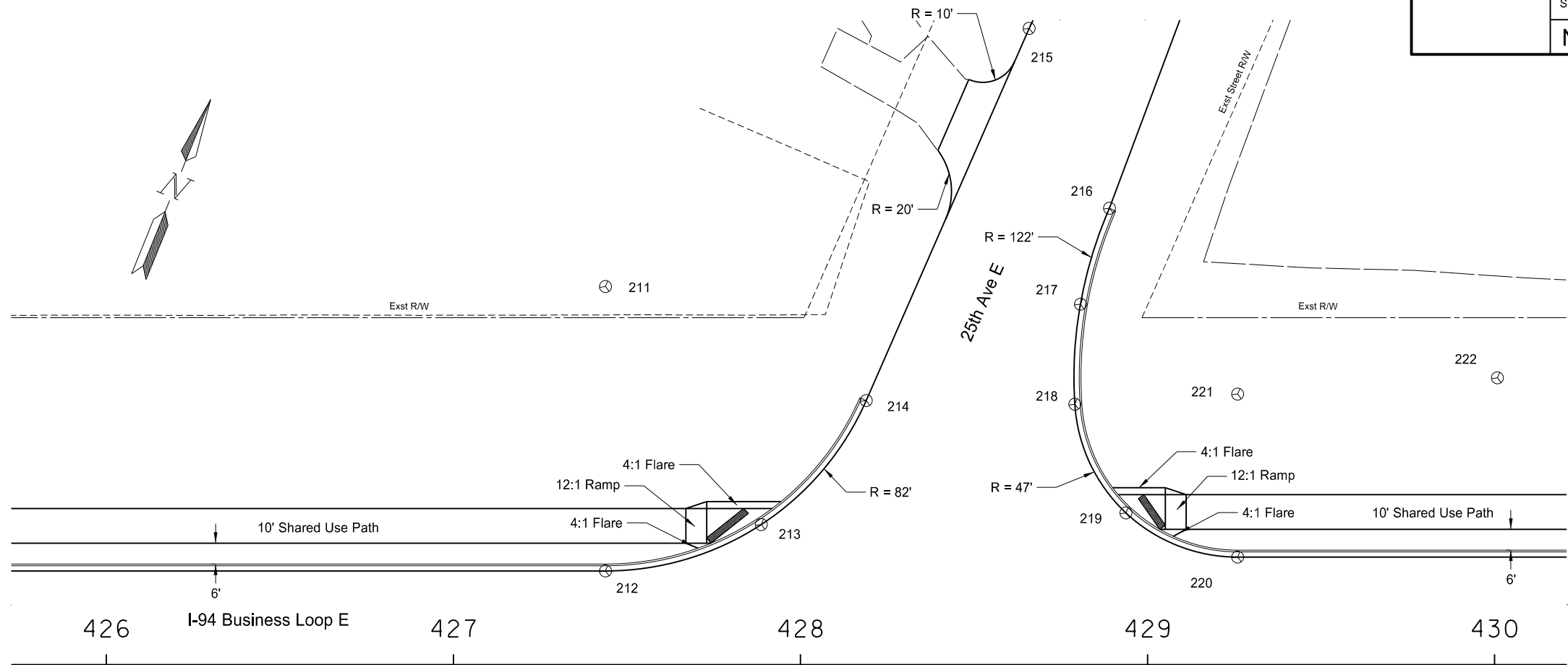
NUMBER	NORTHING	EASTING	STATION	OFFSET	ELEVATION	COMMENT
111	450483.141	1404034.6	397+64.21	80.40 Rt	-	RADIUS
112	450513.283	1404065.27	398+03.96	64.00 Rt	-	RADIUS
113	450547.568	1404051.36	398+03.96	27.00 Rt	2445.56	PC
114	450550.131	1404061.93	398+14.71	28.60 Rt	2445.51	POC
115	450549.513	1404072.78	398+24.54	33.25 Rt	2445.56	POC
116	450539.219	1404091.66	398+38.16	49.89 Rt	2445.97	PCC
117	450509.128	1404110.26	398+44.09	84.77 Rt	2447.05	POC
118	450549.882	1404160.33	399+05.80	65.82 Rt	2445.34	PC
119	450567.612	1404165.47	399+17.23	51.33 Rt	2444.53	POC
120	450584.083	1404174.72	399+32.00	39.54 Rt	2443.9	POC
121	450612.065	1404210.33	399+75.52	27.00 Rt	2443.11	PT
122	450536.081	1404241.16	399+75.52	109.00 Rt	-	RADIUS
123	450697.283	1404058.62	398+66.98	109.00 Lt	-	RADIUS
124	450621.298	1404089.45	398+66.98	27.00 Lt	2444.66	PC
125	450650.506	1404125.97	399+11.80	40.33 Lt	2443.71	POC
126	450694.928	1404140.59	399+42.04	76.00 Lt	2443.18	PT
127	450745.419	1404190.51	400+07.28	104.02 Lt	2442.57	POC
128	450717.971	1404199.87	400+05.64	75.07 Lt	2442.56	PCC
129	450694.482	1404225.29	400+20.36	43.75 Lt	2442.35	POC
130	450694.77	1404259.9	400+52.55	31.00 Lt	2441.93	PT
131	450738.322	1404242.23	400+52.55	78.00 Lt	-	RADIUS
132	450770.798	1404309.84	401+27.40	82.68 Lt	-	RADIUS

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Survey Data Layout
18th Ave E Intersection
E Business LP 10th Ave E - Exit 64
Dickinson, ND



NUMBER	NORTHING	EASTING	STATION	OFFSET	ELEVATION	COMMENT
198	451552.933	1406677.45	426+15.37	82.68 Rt	-	RADIUS
199	451585.408	1406745.06	426+90.22	78.00 Rt	-	RADIUS
200	451628.96	1406727.39	426+90.22	31.00 Rt	2442.06	PC
201	451629.248	1406762	427+22.40	43.75 Rt	2442.18	POC
202	451605.76	1406787.42	427+37.13	75.07 Rt	2441.91	PCC
203	451578.245	1406796.8	427+35.47	104.09 Rt	2441.25	POC
204	451549.294	1406799.4	427+27.00	131.89 Rt	2441.46	PT
205	451525.814	1406798.7	427+17.52	153.39 Rt	2441.53	PI
206	451524.561	1406840.68	427+55.95	170.33 Rt	2441.44	PI
207	451627.698	1406843.76	427+97.58	75.92 Rt	2441.85	PC
208	451672.066	1406858.39	428+27.82	40.31 Rt	2442.93	POC
209	451701.317	1406895.09	428+72.82	27.00 Rt	2443.8	PT
210	451625.252	1406925.72	428+72.61	109.00 Rt	-	RADIUS
211	451778.841	1406724.42	427+43.82	109.00 Lt	-	RADIUS
212	451702.857	1406755.25	427+43.82	27.00 Lt	2442.63	PC
213	451732.124	1406791.81	427+88.70	40.37 Lt	2442.72	POC
214	451776.63	1406806.39	428+18.95	76.13 Lt	2443.04	PT
215	451893.69	1406809.55	428+65.88	183.42 Lt	2447.39	PI
216	451854.357	1406850.5	428+89.04	131.57 Lt	2445.47	PC
217	451825.584	1406853.15	428+80.68	103.92 Lt	2444.29	POC
218	451798.24	1406862.49	428+79.05	75.07 Lt	2443.72	PCC
219	451774.751	1406887.91	428+93.78	43.75 Lt	2443.76	POC
220	451775.04	1406922.52	429+25.96	31.00 Lt	2444.14	PT
221	451818.592	1406904.85	429+25.96	78.00 Lt	-	RADIUS
222	451851.067	1406972.46	430+00.82	82.68 Lt	-	RADIUS

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Survey Data Layout
25th Ave E Intersection
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	82	6

NUMBER	NORTHING	EASTING	STATION	OFFSET	ELEVATION	COMMENT
281	452631.333	1408886.8	450+68.06	86.00 Lt	-	RADIUS
282	452622.873	1408910.32	450+86.68	69.32 Lt	-	RADIUS
283	452580.367	1408907.47	450+68.06	31.00 Lt	2421.21	PC
284	452605.341	1408935.27	451+03.20	43.69 Lt	2420.85	POC
285	452600.615	1408944.08	451+09.59	36.00 Lt	2420.93	PI
286	452612.721	1408938.55	451+09.02	49.30 Lt	2420.81	POC
287	452634.333	1408938.05	451+16.68	69.51 Lt	2420.76	POC
288	452649.994	1408923.15	451+08.76	89.63 Lt	2421.05	PT
289	452673.442	1408873.55	450+71.62	130.00 Lt	2422.16	PI
290	452679.35	1408898.19	450+96.95	126.10 Lt	2421.93	PI
291	452678.999	1408910.93	451+08.34	121.10 Lt	-	RADIUS
292	452663.771	1408931.44	451+21.62	99.27 Lt	2421.22	PC
293	452668.291	1408933.58	451+25.30	102.66 Lt	-	RADIUS
294	452670.171	1408938.21	451+30.30	102.66 Lt	2421.27	PT
295	452685.467	1408926.61	451+25.30	121.20 Lt	-	RADIUS
296	452692.074	1408929.32	451+30.30	126.30 Lt	2421.77	PI
297	452698.177	1408944.11	451+46.30	126.39 Lt	2421.63	PI
298	452695.365	1408950.65	451+51.30	121.33 Lt	-	RADIUS
299	452622.756	1408974.71	451+46.30	45.00 Lt	2421.00	PI
300	452629.259	1408977.47	451+51.30	49.99 Lt	-	RADIUS
301	452626.516	1408983.98	451+56.30	45.00 Lt	2421.02	PI
302	452701.992	1408953.36	451+56.30	126.45 Lt	2421.48	PI
303	452713.436	1408981.09	451+86.30	126.63 Lt	2421.04	PI
304	452671.1	1408998.27	451+86.30	80.94 Lt	2420.68	PC
305	452644.671	1409023.28	451+99.54	47.05 Lt	2420.95	POC
306	452633.307	1409024.66	451+96.55	36.00 Lt	2421.27	PI
307	452642.739	1409027.98	452+03.18	43.49 Lt	2421.05	POC
308	452642.194	1409059.58	452+32.25	31.11 Lt	2421.87	PT
309	452689.9	1409044.59	452+36.30	80.95 Lt	-	RADIUS
310	452475.887	1408953.18	450+71.13	83.00 Rt	-	RADIUS
311	452524.071	1408933.63	450+71.13	31.00 Rt	2421.19	PC
312	452527.577	1408958.84	450+95.81	37.23 Rt	2420.81	POC
313	452522.79	1408975.63	451+09.57	47.98 Rt	2420.32	POC
314	452509.74	1408992.66	451+20.44	66.47 Rt	2419.64	PT
315	452493.61	1409006.49	451+27.19	86.62 Rt	2419.1	PC
316	452475.838	1409010.74	451+24.45	104.68 Rt	2418.96	POC
317	452462.031	1408998.77	451+08.16	112.98 Rt	2418.81	PT
318	452480.588	1408991.31	451+08.23	92.98 Rt	-	RADIUS
319	452509.784	1409057.16	451+80.23	90.68 Rt	2418.94	PC
320	452564.211	1409057.19	452+00.72	40.26 Rt	2422.07	POC
321	452603.067	1409095.3	452+50.64	18.58 Rt	2421.87	PT
322	452536.962	1409123.83	452+52.23	90.56 Rt	-	RADIUS

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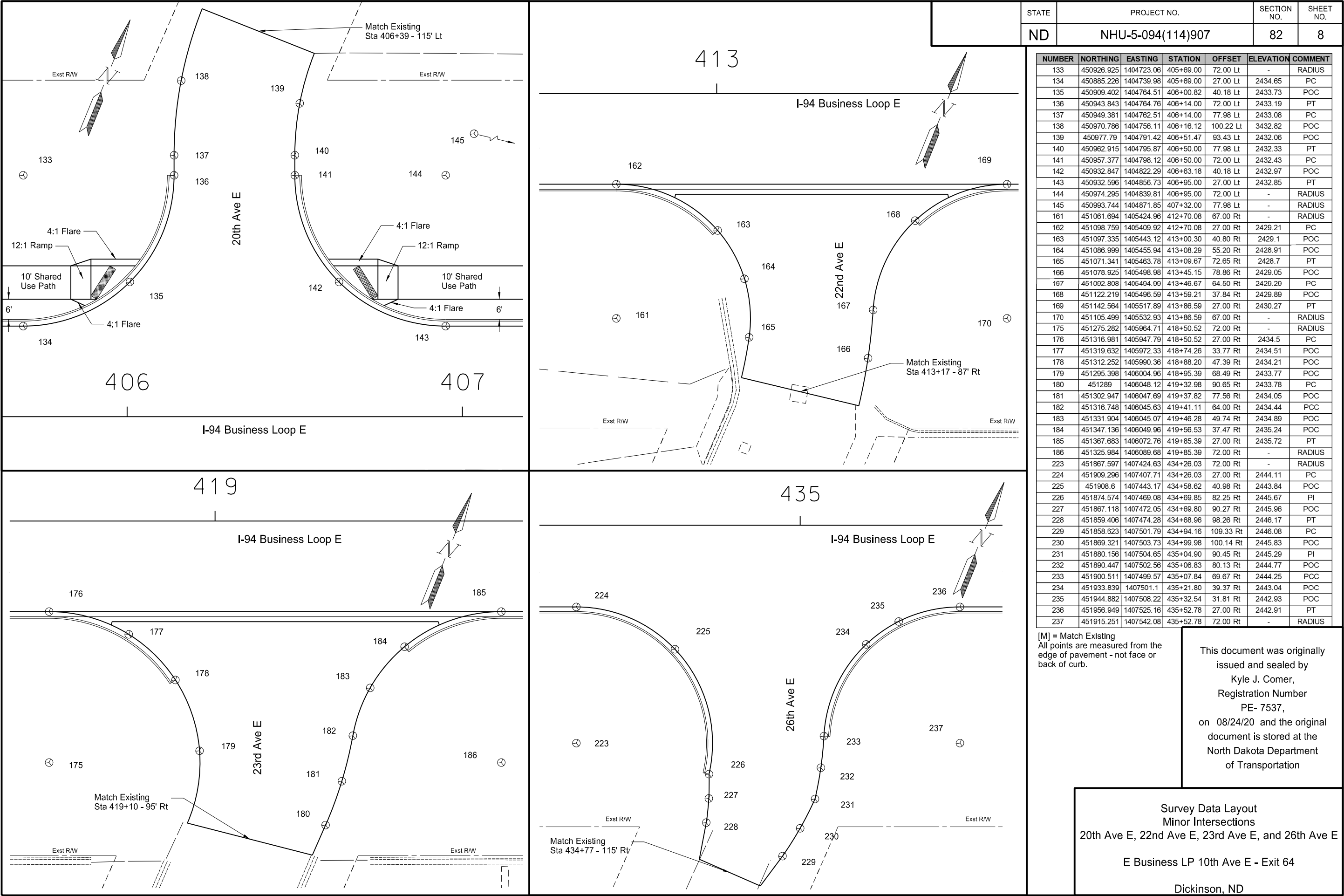
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Survey Data Layout

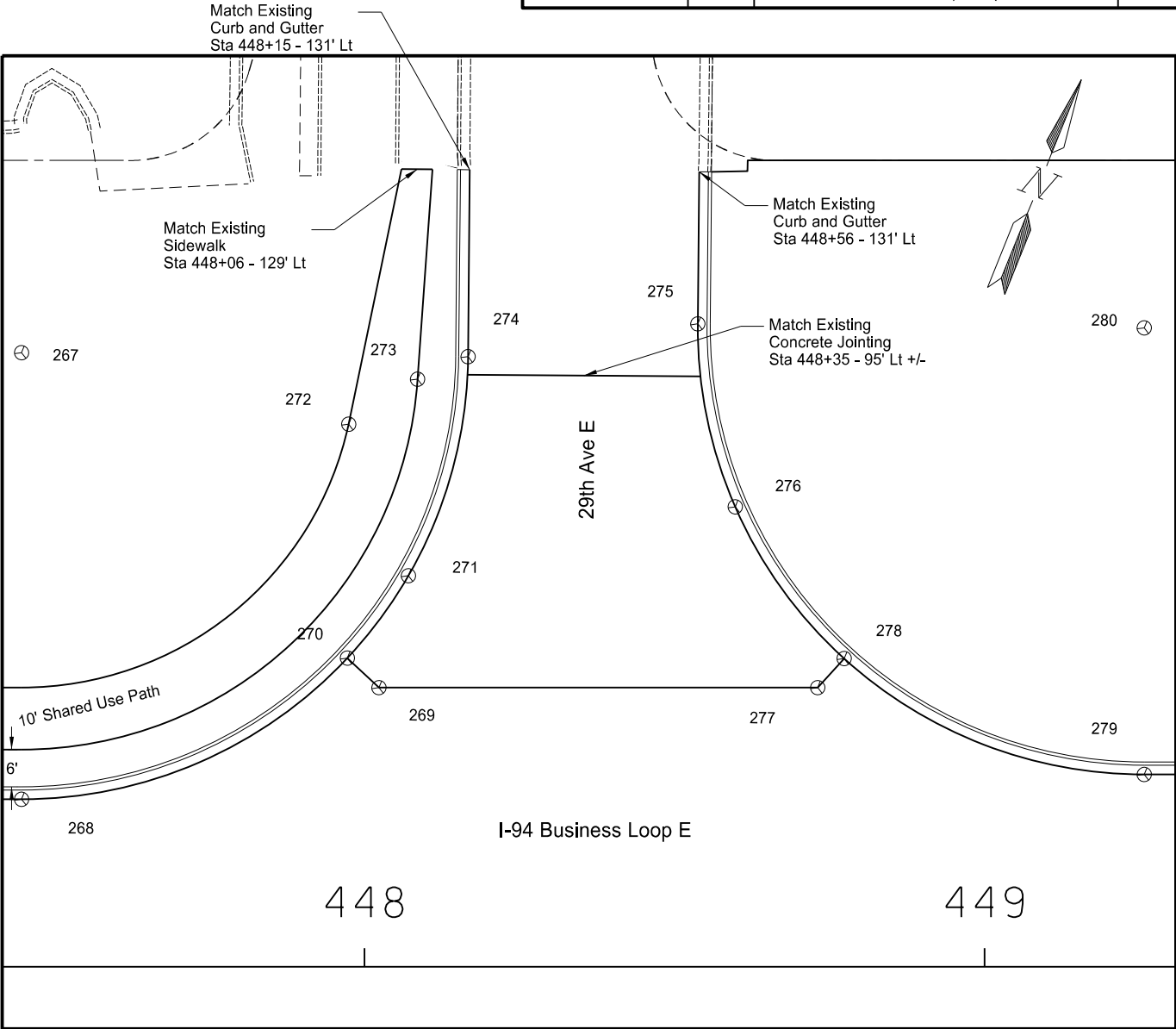
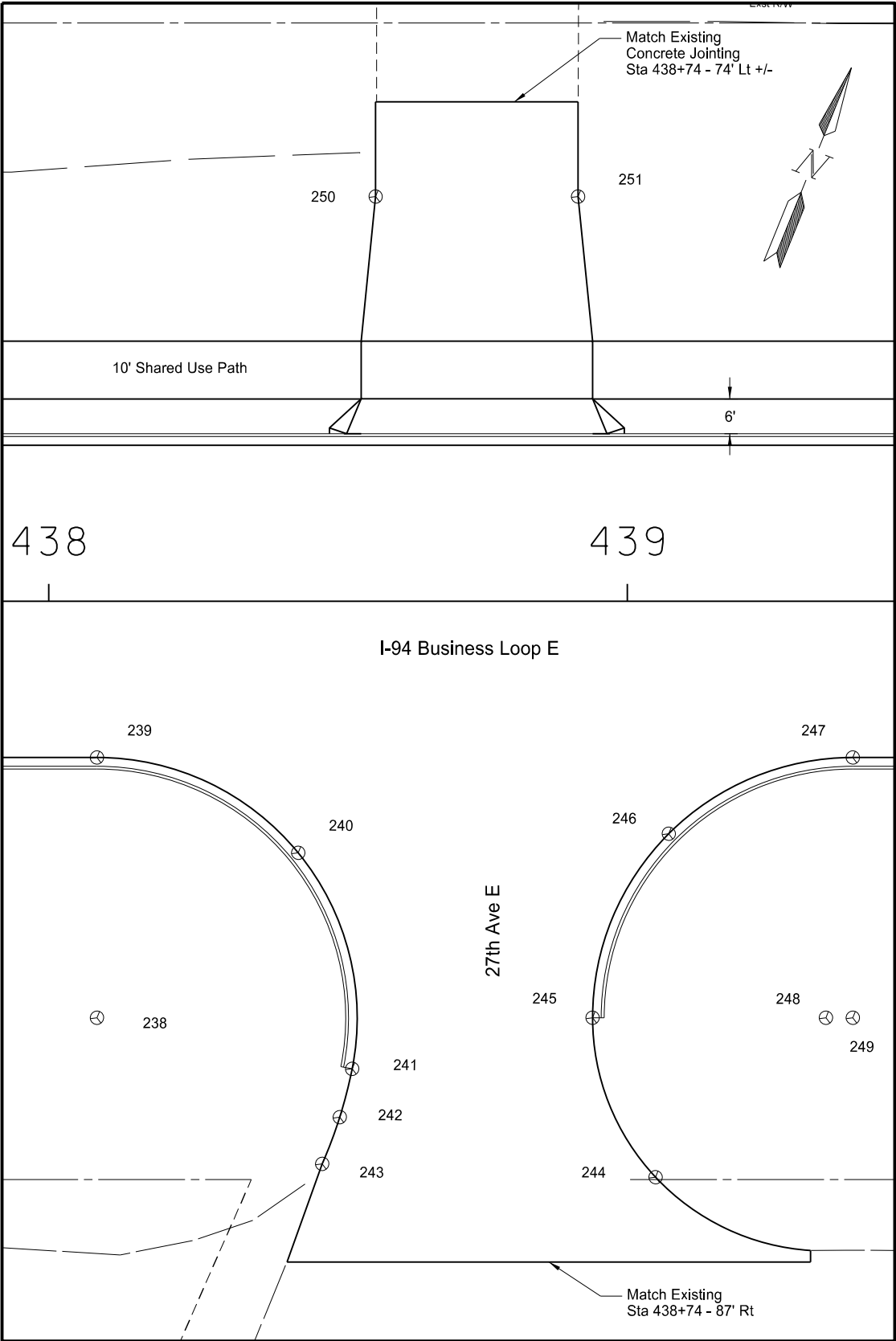
Energy Drive Intersection

E Business LP 10th Ave E - Exit 64

Dickinson, ND



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	82	9



NUMBER	NORTHING	EASTING	STATION	OFFSET	ELEVATION	COMMENT
238	452011.32	1407778.87	438+08.32	72.00 Rt	-	RADIUS
239	452053.019	1407761.96	438+08.32	27.00 Rt	2439.37	PC
240	452050.838	1407800.4	438+43.12	43.47 Rt	2438.43	POC
241	452019.723	1407823.08	438+52.44	80.83 Rt	2436.87	PCC
242	452011.172	1407824.23	438+50.30	89.19 Rt	2436.73	FOC
243	452002.546	1407824.46	438+47.26	97.27 Rt	2436.71	PI
244	452022.076	1407878.73	439+04.90	99.58 Rt	2435.27	POC
245	452043.533	1407858.27	438+94.00	72.00 Rt	2436.4	PCC
246	452077.973	1407858.52	439+07.18	40.18 Rt	2437.33	POC
247	452102.149	1407883.05	439+39.00	27.00 Rt	2437.47	PT
248	452058.699	1407895.65	439+34.34	72.00 Rt	-	RADIUS
249	452060.45	1407899.97	439+39.00	72.00 Rt	-	RADIUS
250	452161.017	1407770.13	438+56.50	70.00 Lt	2438.96	PI
251	452174.175	1407802.57	438+91.50	70.00 Lt	2438.96	PI
267	452521.813	1408582.28	447+44.70	99.00 Lt	-	RADIUS
268	452455.095	1408609.34	447+44.70	27.00 Lt	2425.77	PC
269	452493.436	1408655.97	448+02.33	45.00 Lt	2424.79	PI
270	452495.941	1408649.47	447+97.24	49.77 Lt	2424.99	POC
271	452511.943	1408653.6	448+07.08	63.04 Lt	2424.93	POC
272	452530.965	1408635.5	447+97.46	87.47 Lt	[M]2426.19	BOW
273	452541.859	1408643.06	448+08.56	94.73 Lt	[M]2426.32	BOW

NUMBER	NORTHING	EASTING	STATION	OFFSET	ELEVATION	COMMENT
274	452548.283	1408649.23	448+16.70	98.36 Lt	2425.84	PT
275	452567.113	1408681.58	448+53.75	103.64 Lt	2425.47	PC
276	452542.046	1408698.26	448+59.78	74.15 Lt	2424.89	POC
277	452520.039	1408721.54	448+73.09	45.00 Lt	2423.95	PI
278	452525.991	1408723.73	448+77.35	49.69 Lt	2424.13	POC
279	452526.865	1408775.6	449+25.75	31.00 Lt	2423.06	PT
280	452593.583	1408748.53	449+25.75	103.00 Lt	-	RADIUS

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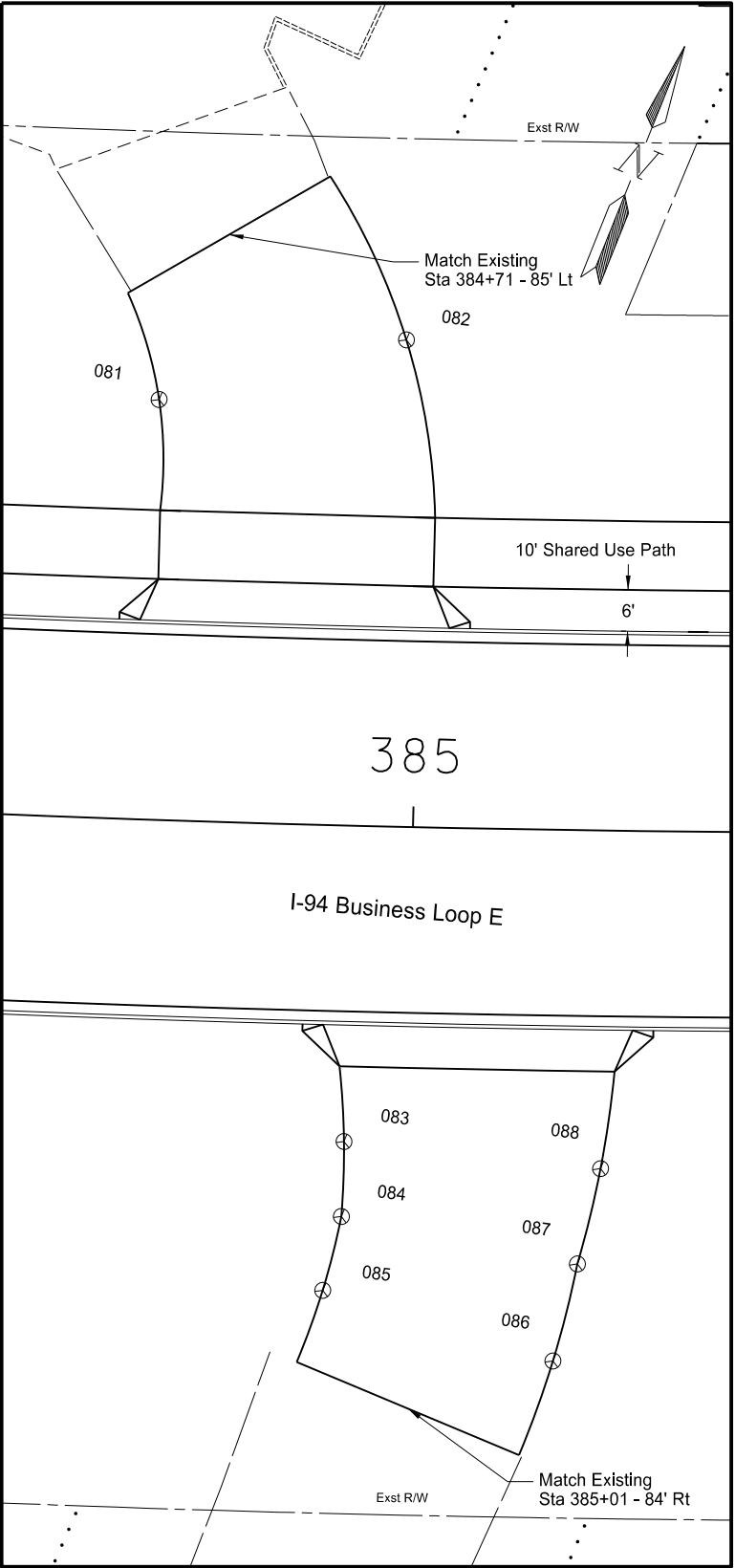
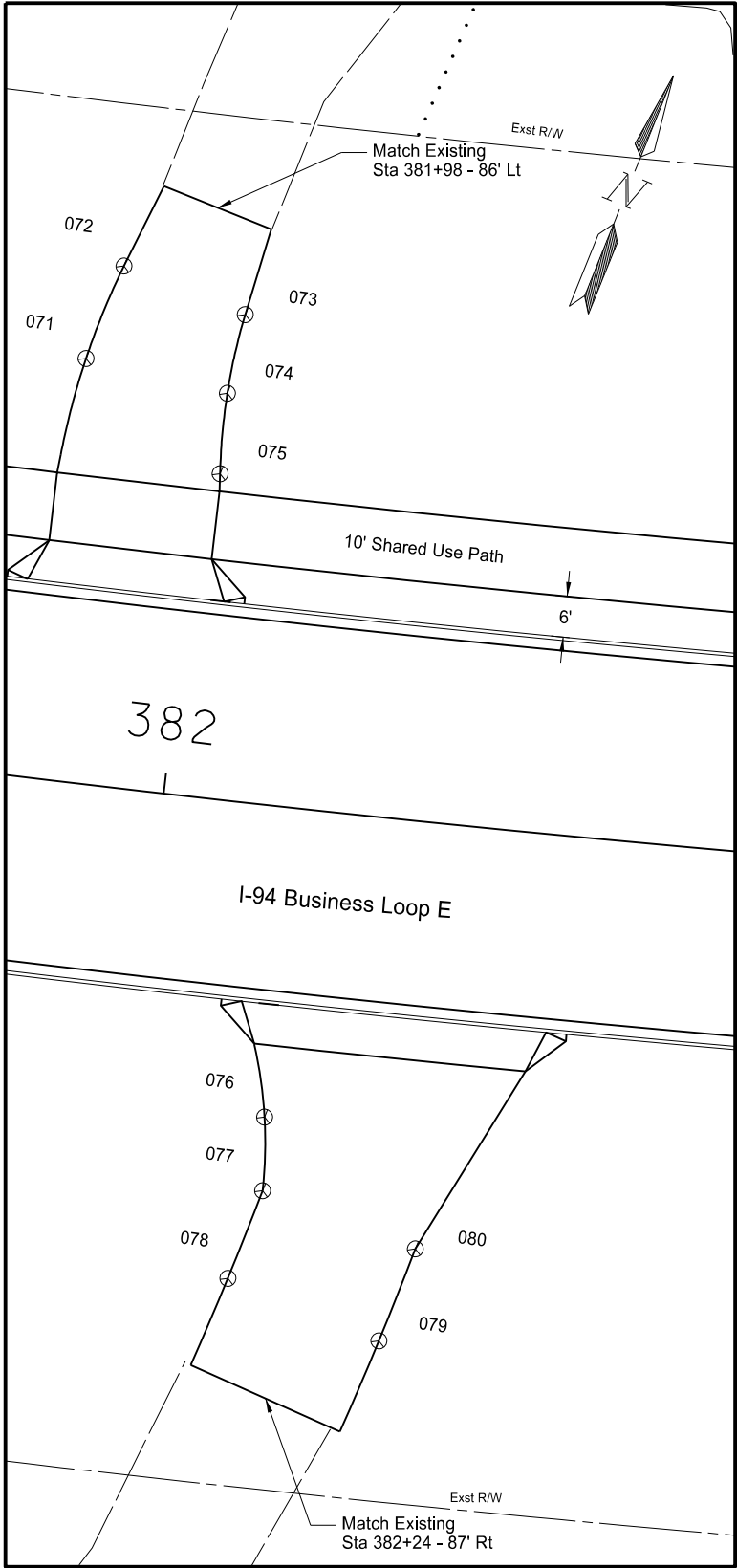
Survey Data Layout
Minor Intersections
27th Ave E and 29th Ave E

E Business LP 10th Ave E - Exit 64

Dickinson, ND

[M] = Match Existing

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	82	10

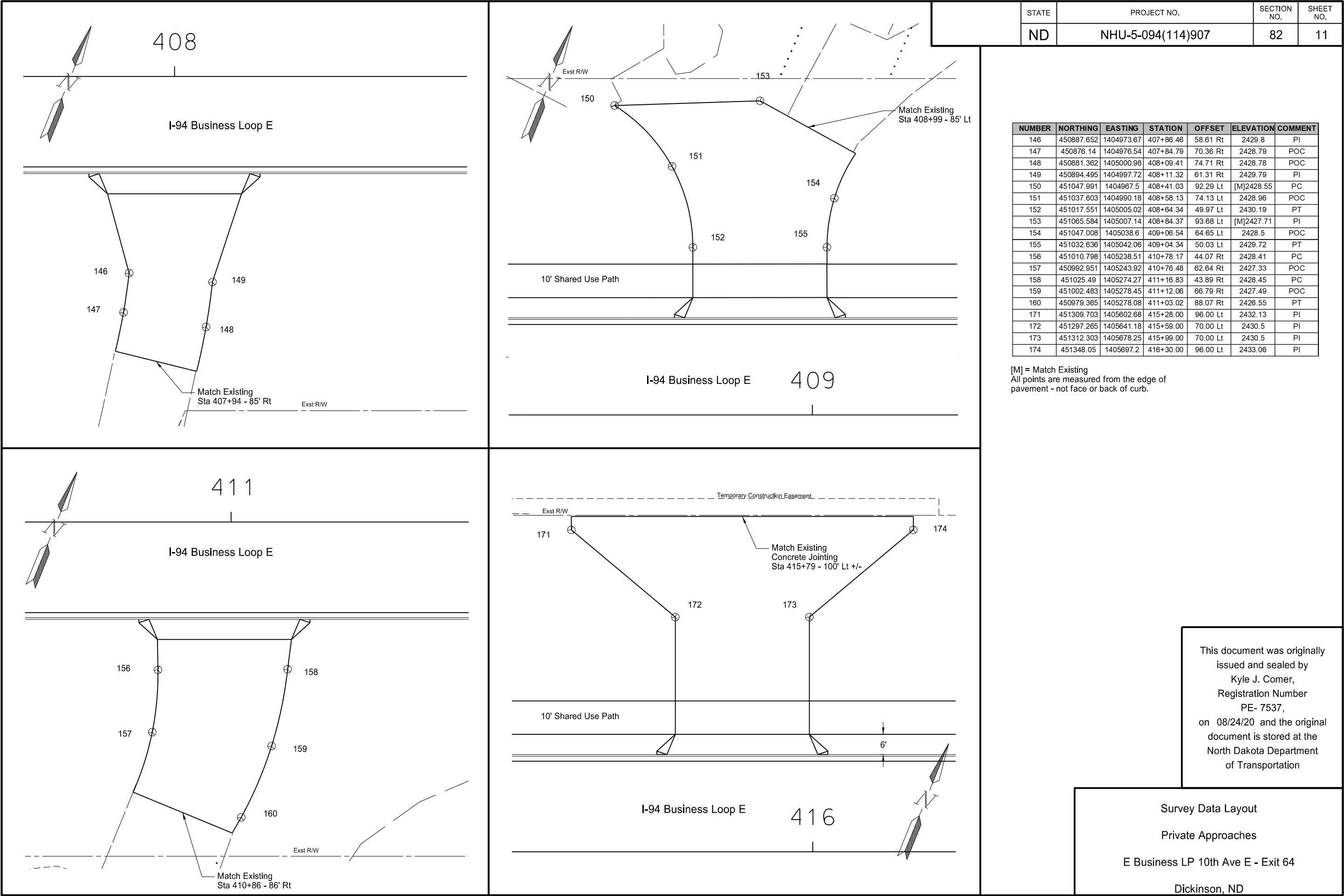


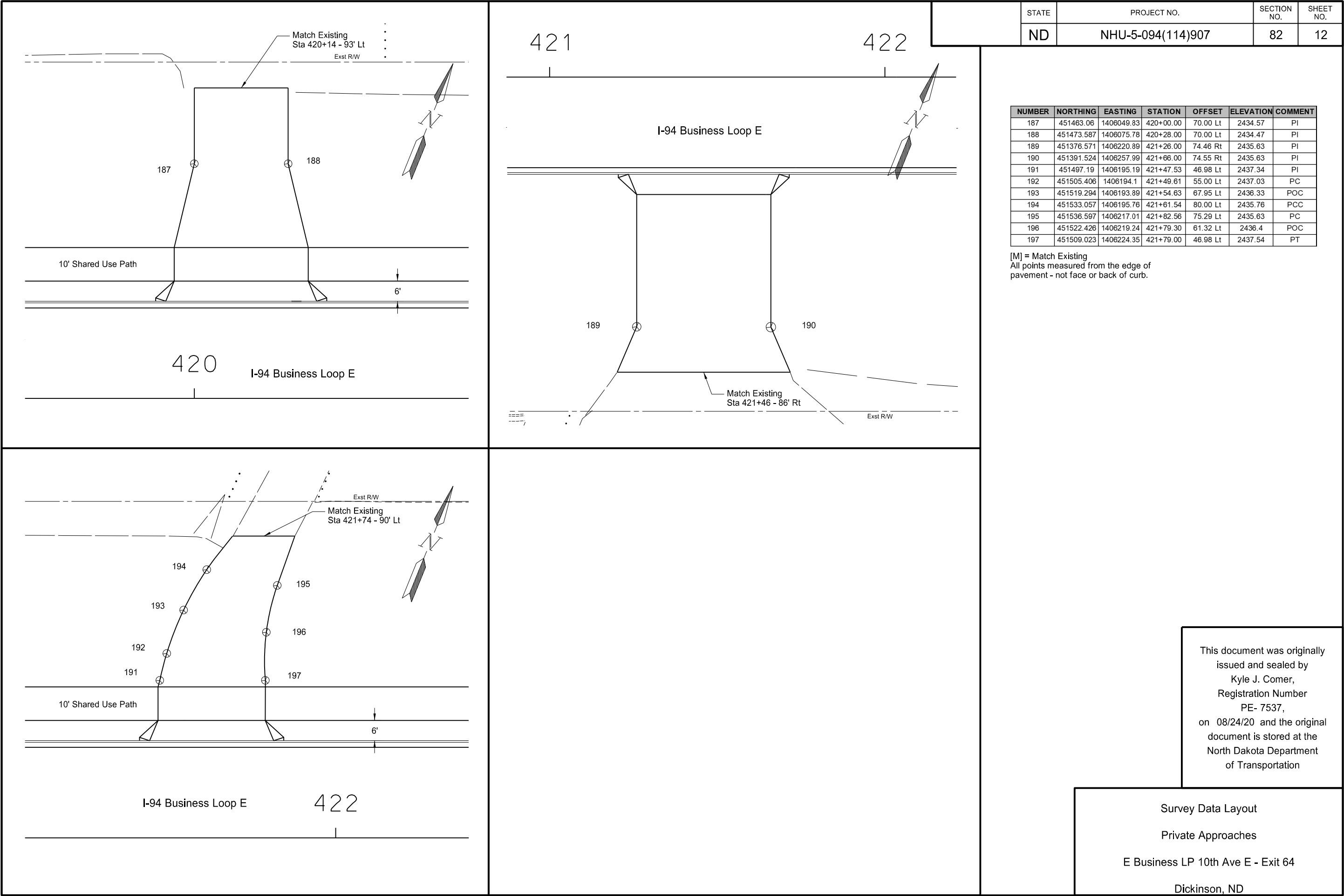
NUMBER	NORTHING	EASTING	STATION	OFFSET	ELEVATION	COMMENT
71	450044.408	1402513.14	381+81.08	62.11 Lt	2442.85	POC
72	450059.066	1402513.2	381+85.08	76.24 Lt	2443.03	PT
73	450059.153	1402532.37	382+04.01	71.21 Lt	2443.03	PI
74	450047.463	1402534.29	382+02.68	59.44 Lt	2442.86	POC
75	450036.132	1402537.74	382+02.96	47.59 Lt	2443.11	PI
76	449951.069	1402579.29	382+19.84	45.56 Rt	2442.22	POC
77	449940.954	1402583.08	382+20.70	56.33 Rt	2440.89	PI
78	449927.113	1402583.2	382+17.09	69.67 Rt	2439.07	POC
79	449926.956	1402607.2	382+39.61	76.46 Rt	2439.06	POC
80	449941.46	1402607.08	382+43.48	62.50 Rt	2440.87	PI
81	450126.817	1402775.07	384+61.01	61.08 Lt	2446.81	POC
82	450148.362	1402805.13	384+97.44	70.76 Lt	2447.55	POC
83	450037.006	1402840.51	384+91.13	45.91 Rt	2447.12	POC
84	450026.776	1402844.25	384+91.02	56.80 Rt	2446.13	PI
85	450015.802	1402845.77	384+88.62	67.61 Rt	2444.88	POC
86	450018.876	1402880.63	385+21.56	77.18 Rt	2444.87	POC
87	450033.272	1402878.64	385+24.84	63.04 Rt	2446.16	PI
88	450047.374	1402876.55	385+27.95	49.13 Rt	2447.13	POC

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Private Approaches
E Business LP 10th Ave E - Exit 64
Dickinson, ND





STATE

PROJECT NO.

SECTION NO.

SHEET NO.

ND

NHU-5-094(114)907

82

12

NUMBER	NORTHING	EASTING	STATION	OFFSET	ELEVATION	COMMENT
187	451463.06	1406049.83	420+00.00	70.00 Lt	2434.57	PI
188	451473.587	1406075.78	420+28.00	70.00 Lt	2434.47	PI
189	451376.571	1406220.89	421+26.00	74.46 Rt	2435.63	PI
190	451391.524	1406257.99	421+66.00	74.55 Rt	2435.63	PI
191	451497.19	1406195.19	421+47.53	46.98 Lt	2437.34	PI
192	451505.406	1406194.1	421+49.61	55.00 Lt	2437.03	PC
193	451519.294	1406193.89	421+54.63	67.95 Lt	2436.33	POC
194	451533.057	1406195.76	421+61.54	80.00 Lt	2435.76	PCC
195	451536.597	1406217.01	421+82.56	75.29 Lt	2435.63	PC
196	451522.426	1406219.24	421+79.30	61.32 Lt	2436.4	POC
197	451509.023	1406224.35	421+79.00	46.98 Lt	2437.54	PT

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All points measured from the edge of pavement - not face or back of curb.

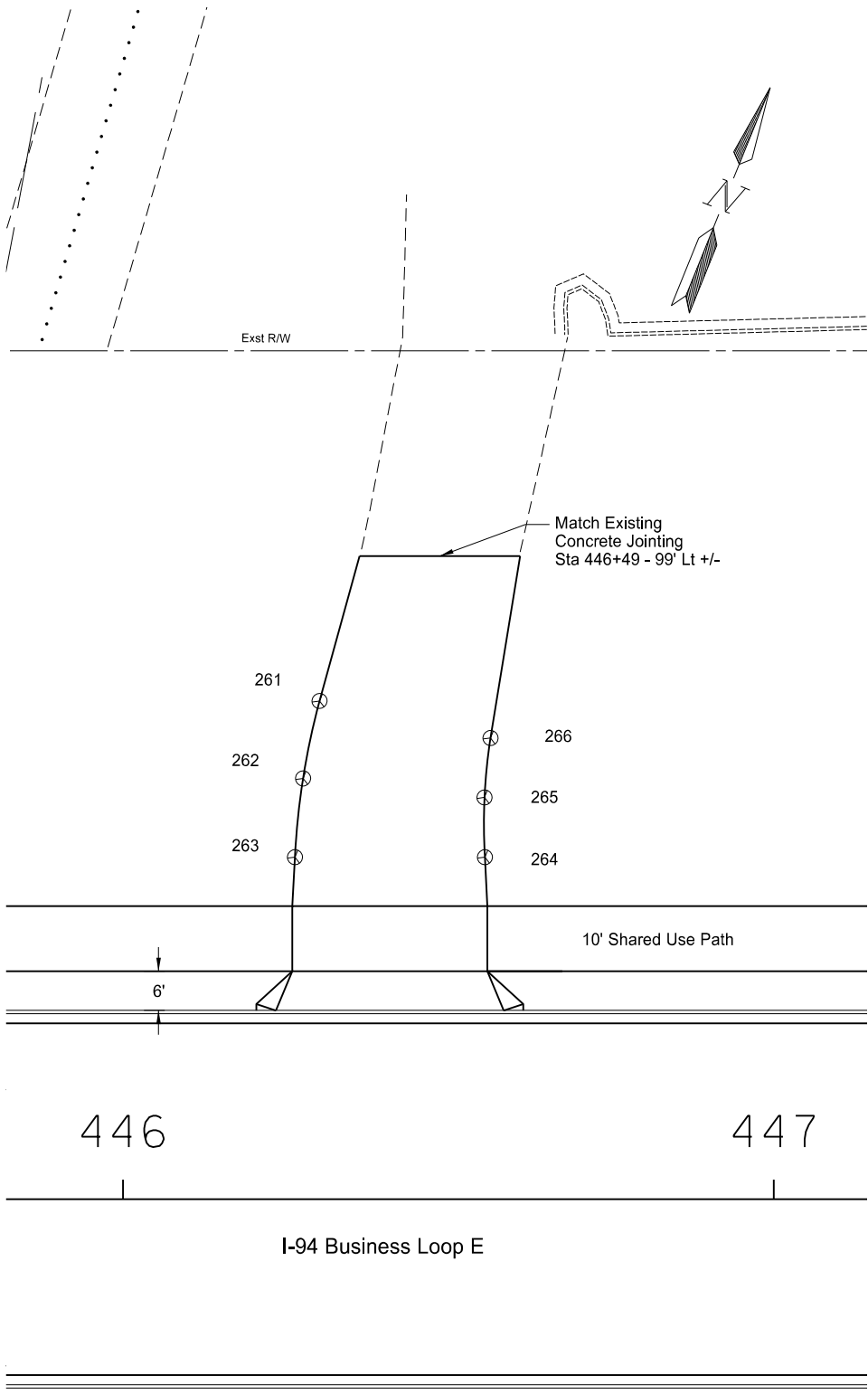
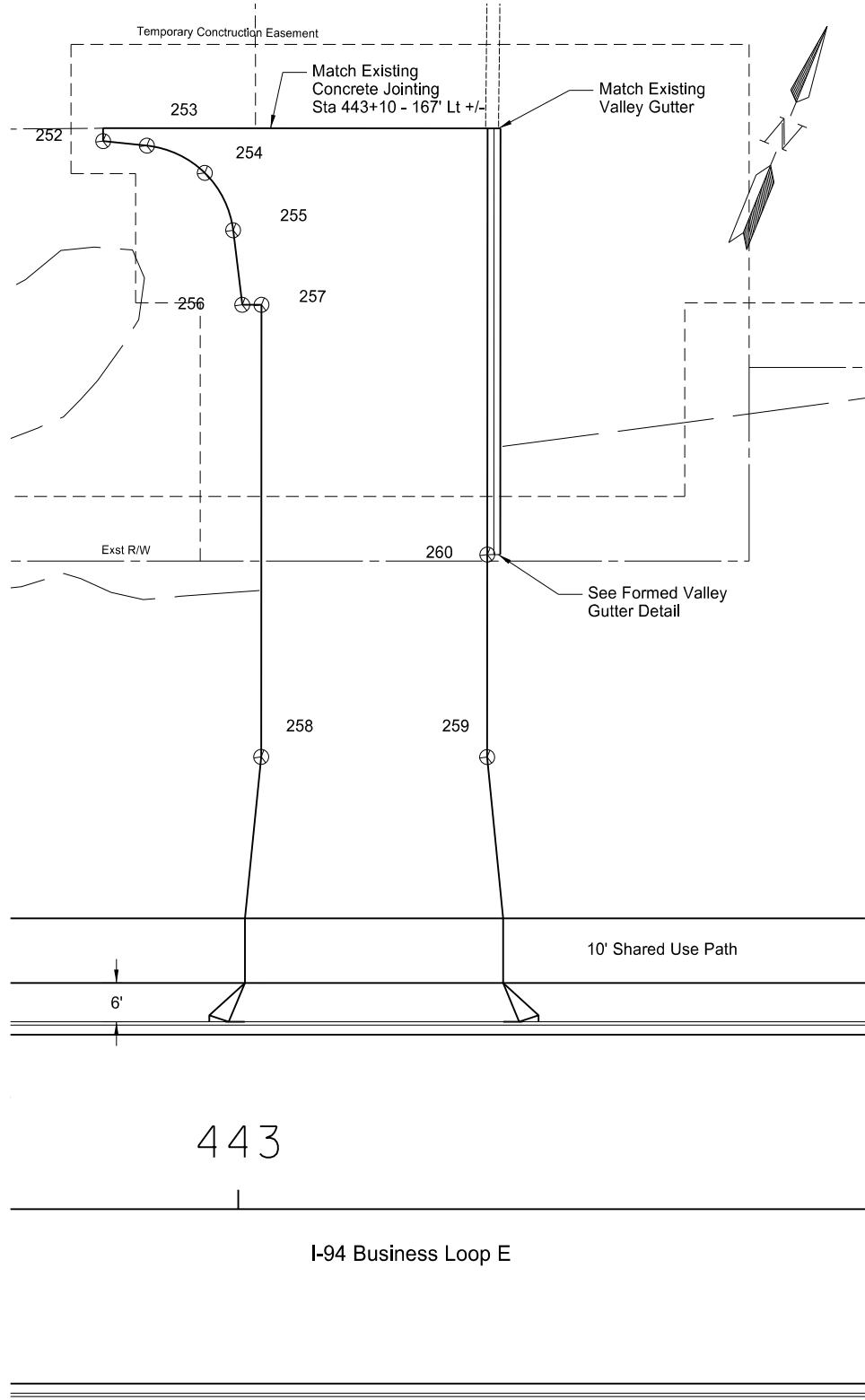
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Survey Data Layout

Private Approaches

E Business LP 10th Ave E - Exit 64

Dickinson, ND



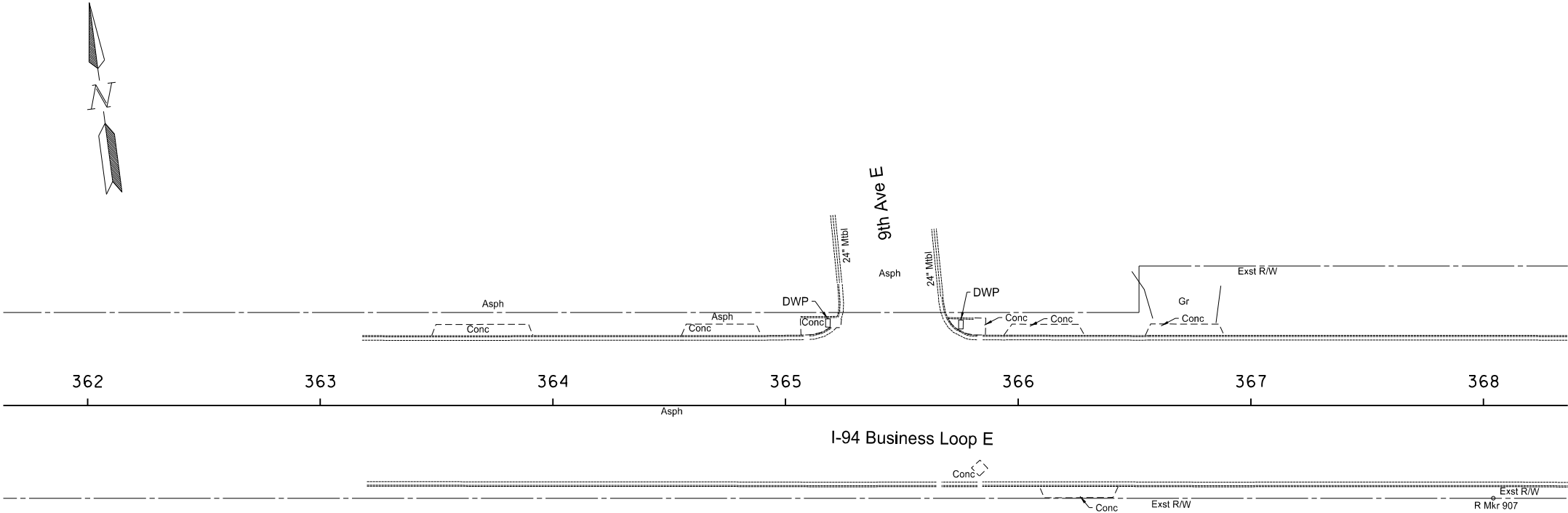
NUMBER	NORTHING	EASTING	STATION	OFFSET	ELEVATION	COMMENT
252	452408.246	1408125.87	442+79.08	165.35 Lt	2440.32	PI
253	452410.144	1408132.41	442+85.86	164.65 Lt	2440.25	PC
254	452409.609	1408142.3	442+94.82	160.44 Lt	2440.15	POC
255	452403.024	1408149.7	442+99.20	151.55 Lt	2439.98	PT
256	452392.856	1408155.35	443+00.62	140.01 Lt	2439.71	PI
257	452393.973	1408158.11	443+03.59	140.01 Lt	2439.71	PI
258	452329.096	1408184.38	443+03.55	70.01 Lt	2434.64	PI
259	452342.233	1408216.82	443+38.55	69.99 Lt	2434.64	PI
260	452371.297	1408205.05	443+38.57	101.35 Lt	[M]2437.78	PI
261	452457.943	1408484.62	446+30.20	76.53 Lt	2428.15	PC
262	452445.968	1408486.75	446+27.67	64.63 Lt	2427.76	POC
263	452434.289	1408490.15	446+26.43	52.53 Lt	2427.62	PT
264	452445.262	1408517.19	446+55.61	52.53 Lt	2427.29	PC
265	452453.742	1408513.69	446+55.56	61.71 Lt	2427.48	POC
266	452462.549	1408511.11	446+56.48	70.84 Lt	2427.87	PT

[M] = Match Existing
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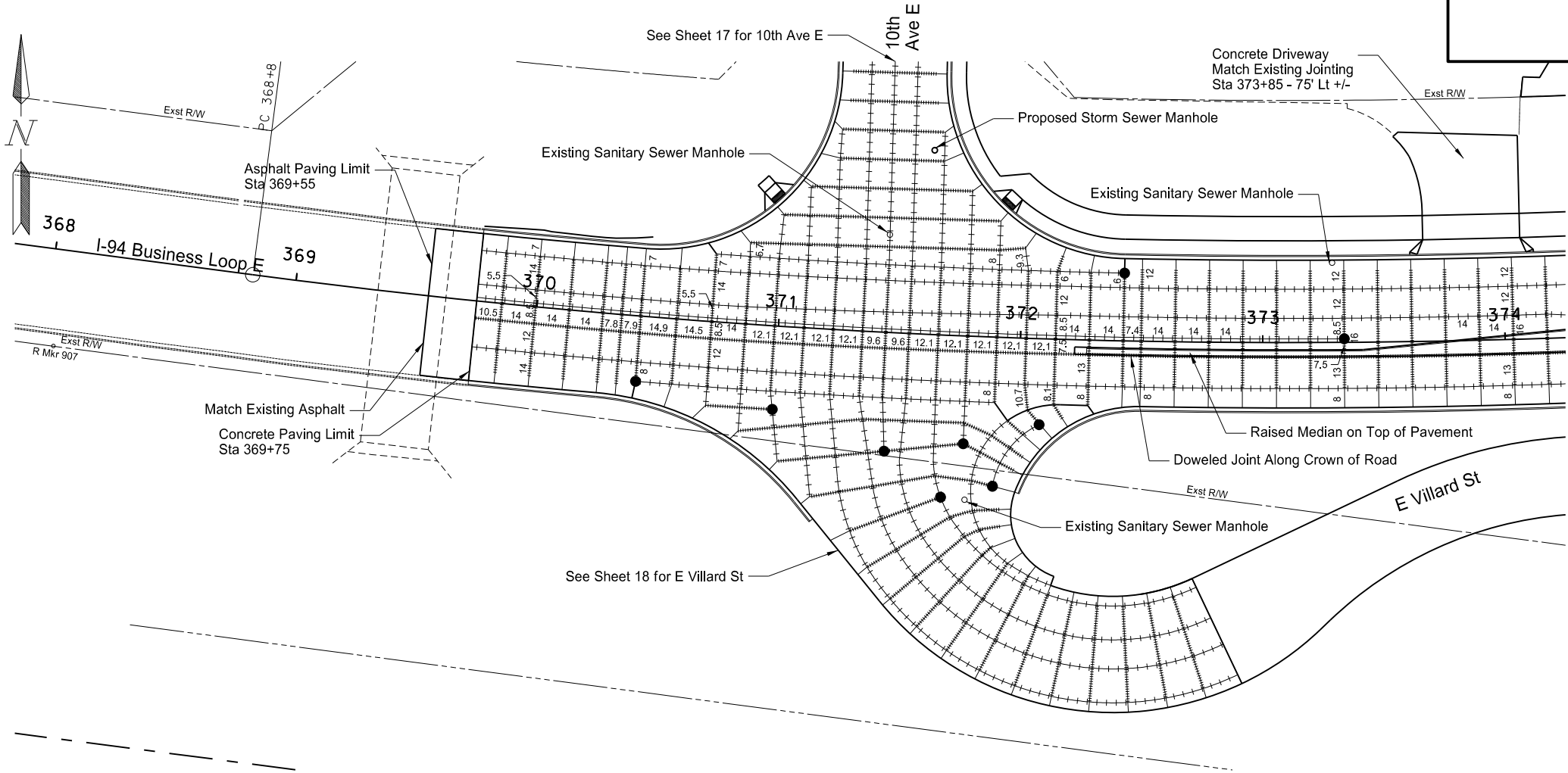
Survey Data Layout
Private Approaches
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	90	1



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Paving Layout
 Sta 362+00 to Sta 368+00
 E Business LP 10th Ave E - Exit 64
 Dickinson, ND



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	90	2

SPEC	CODE	BID ITEM	QTY	UNIT
302	0100	SALVAGED BASE COURSE		
		Sta 369+75 to Sta 374+00	1257.8	TON
		Sta 370+88 Lt to Sta 373+67 Lt	50.5	TON
		Sta 373+87 Lt (Approach)	36.7	TON
		TOTAL	1345.0	TON
401	0050	TACK COAT		
		Sta 369+55 to Sta 369+75	6.8	GAL
430	0045	SUPERPAVE FAA 45		
		Sta 369+55 to Sta 369+75 (3")	22.6	TON
430	5818	PG 58H-34 ASPHALT CEMENT		
		Sta 369+55 to Sta 369+75	1.4	TON
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED		
		Sta 369+75 to Sta 374+00	2870.7	SY
709	0100	GEOSYNTHETIC MATERIAL TYPE G		
		Sta 369+75 to Sta 374+00	3018.4	SY
748	0140	CURB & GUTTER-TYPE I		
		Sta 369+75 - 30' Lt to Sta 371+18 - 106' Lt	186.7	LF
		Sta 369+75 - 35' Rt to Sta 371+17 - 80' Rt	158.5	LF
		Sta 371+67 - 109' Lt to Sta 374+00 - 36' Lt	272.0	LF
		Sta 372+02 - 64' Rt to Sta 374+00 - 29' Rt	220.8	LF
		TOTAL	838.0	LF
750	0115	SIDEWALK CONCRETE 4IN		
		Sta 370+88 - 57' Lt to Sta 371+03 - 59' Lt	10.0	SY
		Sta 371+66 - 119' Lt to Sta 373+67 - 52' Lt	242.6	SY
		TOTAL	252.6	SY
750	0200	CONCRETE MEDIAN PAVING		
		Sta 372+27 - 5' Rt to Sta 374+00 Rt	73.6	SY
750	0210	CONCRETE MEDIAN NOSE PAVING		
		Sta 372+22 - 5' Rt to Sta 372+27 Rt	1.7	SY
750	1021	DRIVEWAY CONCRETE 8IN REINFORCED		
		Sta 373+87 Lt	235.7	SY
750	2115	DETECTABLE WARNING PANELS		
		Sta 370+97 - 53' Lt	9.4	SF
		Sta 371+93 - 55' Lt	9.4	SF
		TOTAL	18.8	SF

Legend - Joint Layout

- +++++ Sawed Tie Joint
- Sawed Dowel Joint
- 2" Dia. Core

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Paving Layout

Sta 368+00 to Sta 374+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	90	3

SPEC	CODE	BID ITEM	QTY	UNIT
302	0100	SALVAGED BASE COURSE		
		Sta 374+00 to Sta 375+54	465.8	TON
		Sta 375+54 to Sta 380+00	2784.7	TON
		Sta 376+23 Lt (Approach Surfacing)	55.3	TON
		Sta 374+10 Lt to 376+33 Lt (Access Way)	96.5	TON
		TOTAL	3402.3	TON
401	0050	TACK COAT		
		Sta 375+54 to Sta 380+00	267.3	GAL
430	0045	SUPERPAVE FAA 45		
		Sta 375+54 to Sta 380+00	965.4	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		Sta 375+54 to Sta 380+00 (Bottom 2.5")	22.3	TON
430	5818	PG 58H-34 ASPHALT CEMENT		
		Sta 375+54 to Sta 380+00 (Top 4")	35.6	TON
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED		
		Sta 374+00 to Sta 375+54	1014.8	SY
709	0100	GEOSYNTHETIC MATERIAL TYPE G		
		Sta 374+00 to Sta 380+00	4082.9	SY
748	0140	CURB & GUTTER-TYPE I		
		Sta 374+00 Lt to Sta 380+00 Lt	594.7	LF
		Sta 374+00 Rt to Sta 380+00 Rt	605.3	LF
		TOTAL	1200.0	LF
750	0115	SIDEWALK CONCRETE 4IN		
		Sta 374+07 Lt to Sta 376+03 Lt	214.6	SY
		Sta 376+43 Lt to Sta 380+00 Lt	391.5	SY
		TOTAL	606.1	SY
750	0200	CONCRETE MEDIAN PAVING		
		Sta 374+00 Rt to Sta 374+79 Rt	89.6	SY
750	0210	CONCRETE MEDIAN NOSE PAVING		
		Sta 374+79 Rt to Sta 374+84 Rt	6.1	SY
750	1021	DRIVEWAY CONCRETE 8IN REINFORCED		
		Sta 376+23 Lt	332.3	SY

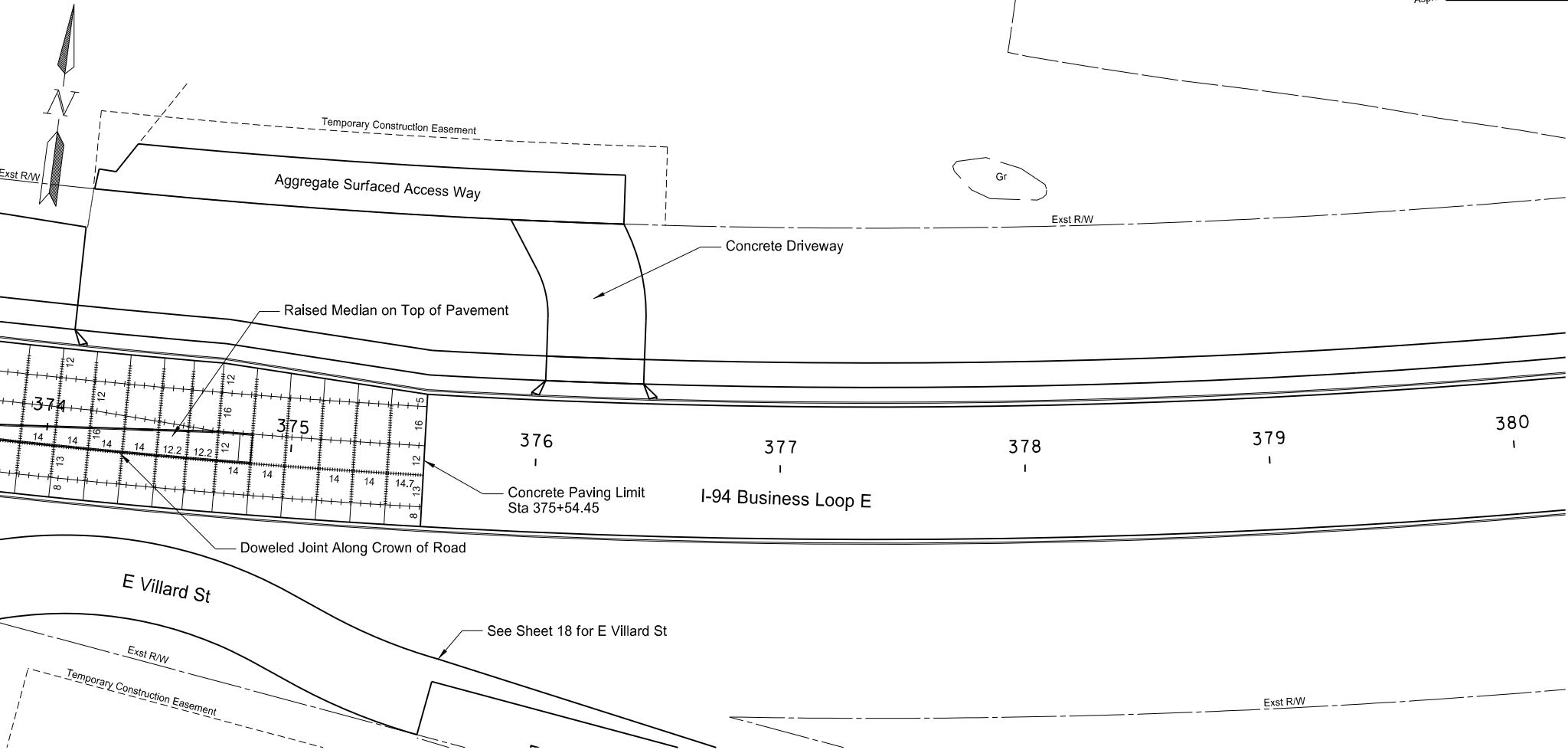
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Paving Layout

Sta 374+00 to Sta 380+00

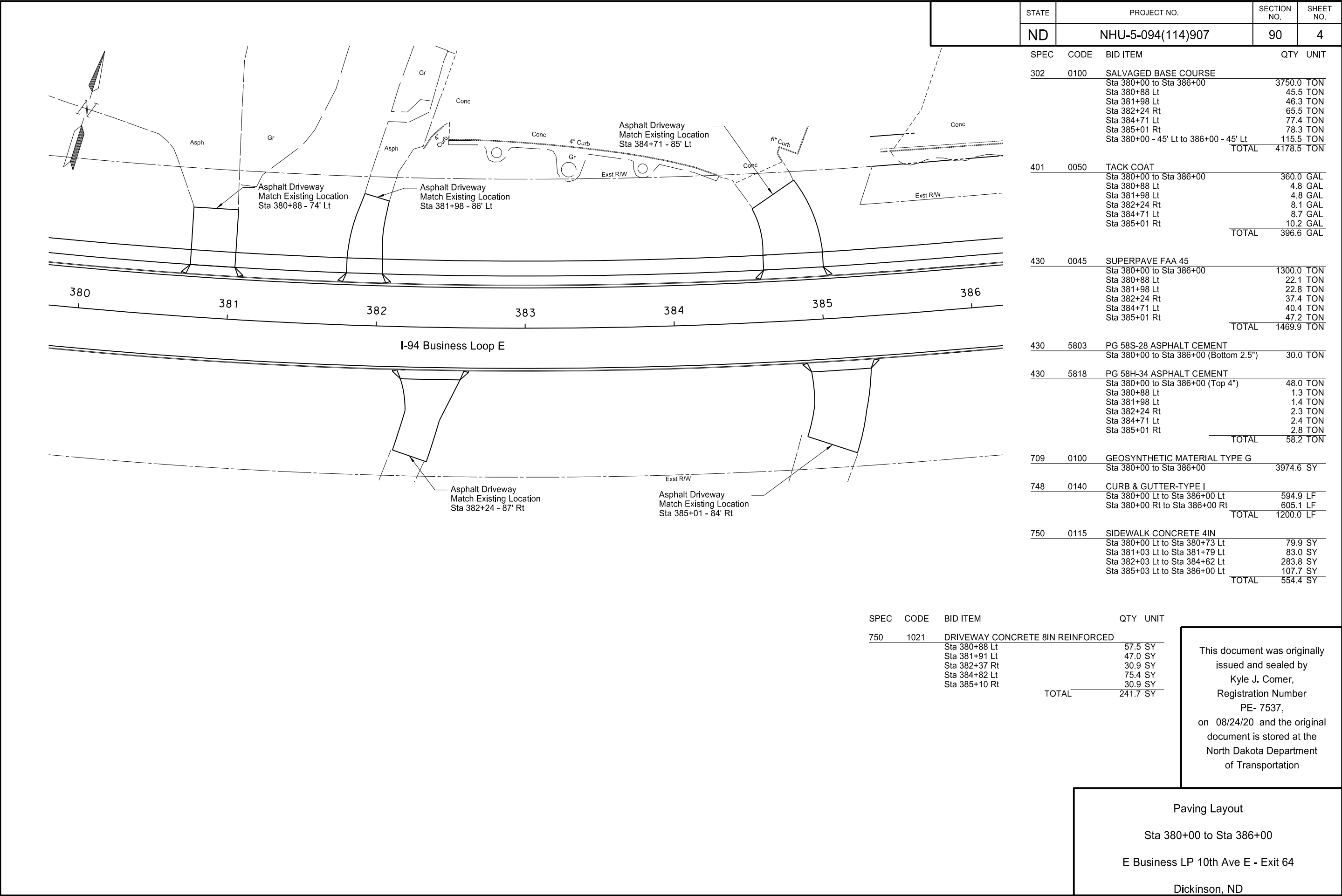
E Business LP 10th Ave E - Exit 64

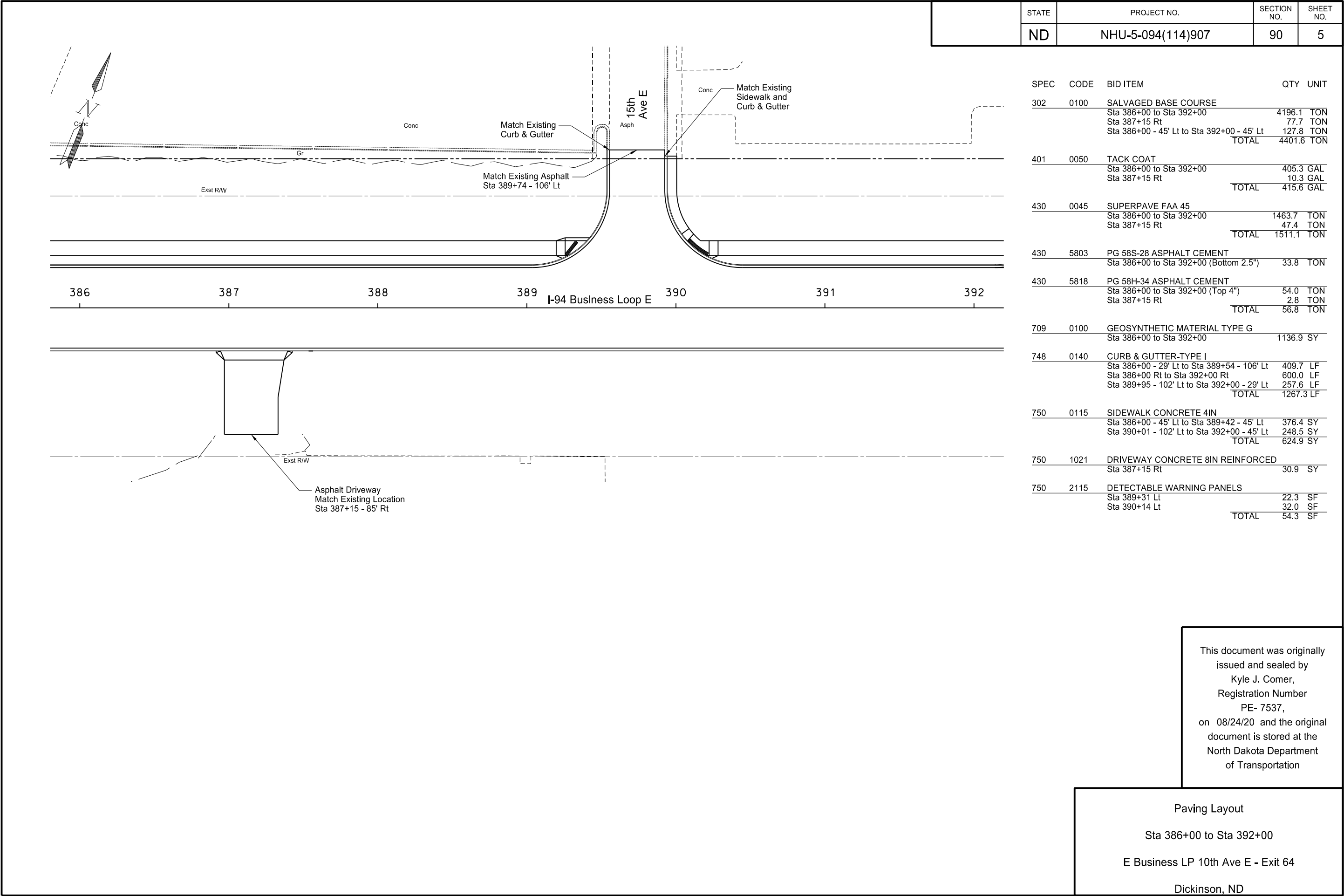
Dickinson, ND

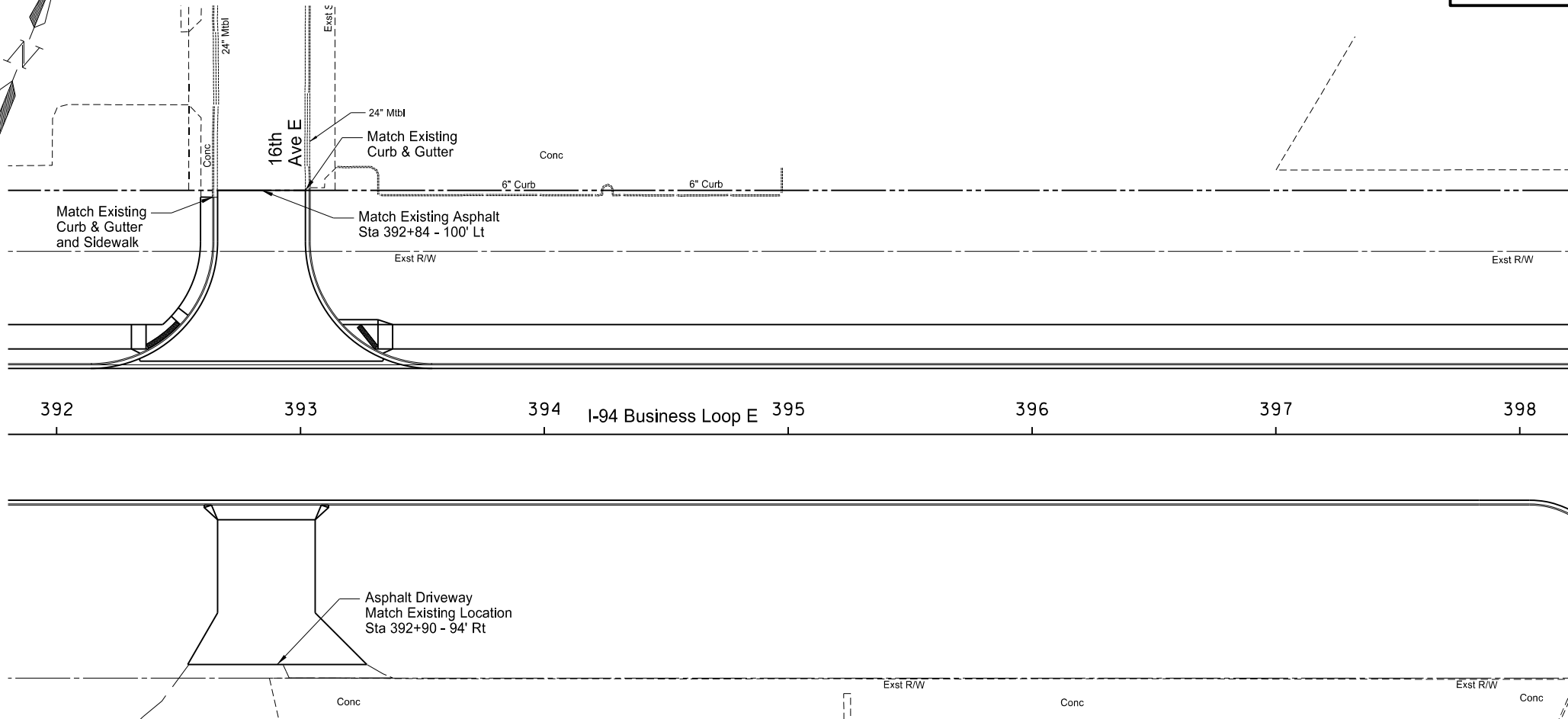
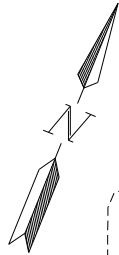


Legend - Joint Layout

- +++++ Sawed Tie Joint
- ===== Sawed Dowel Joint
- 2" Dia. Core





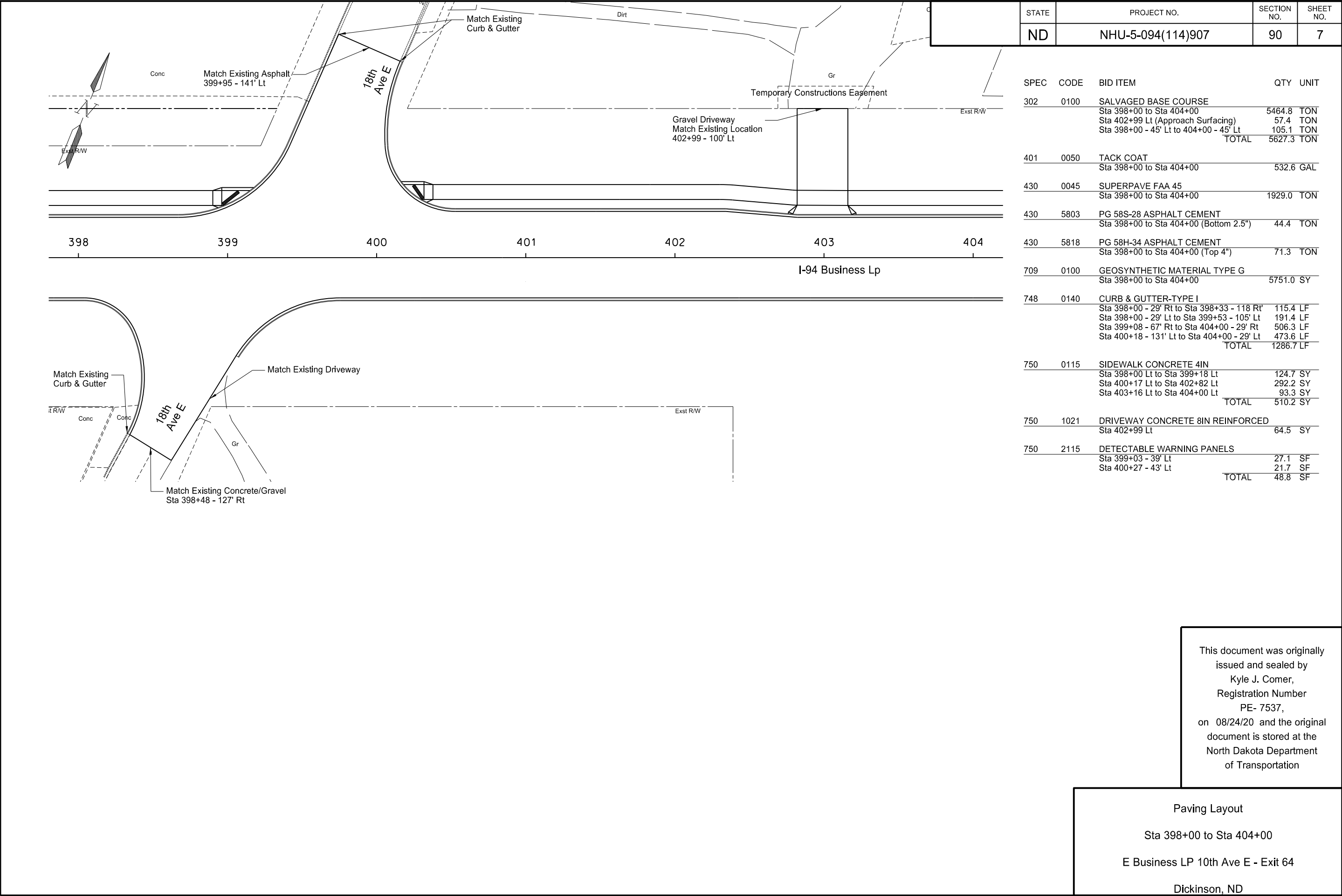


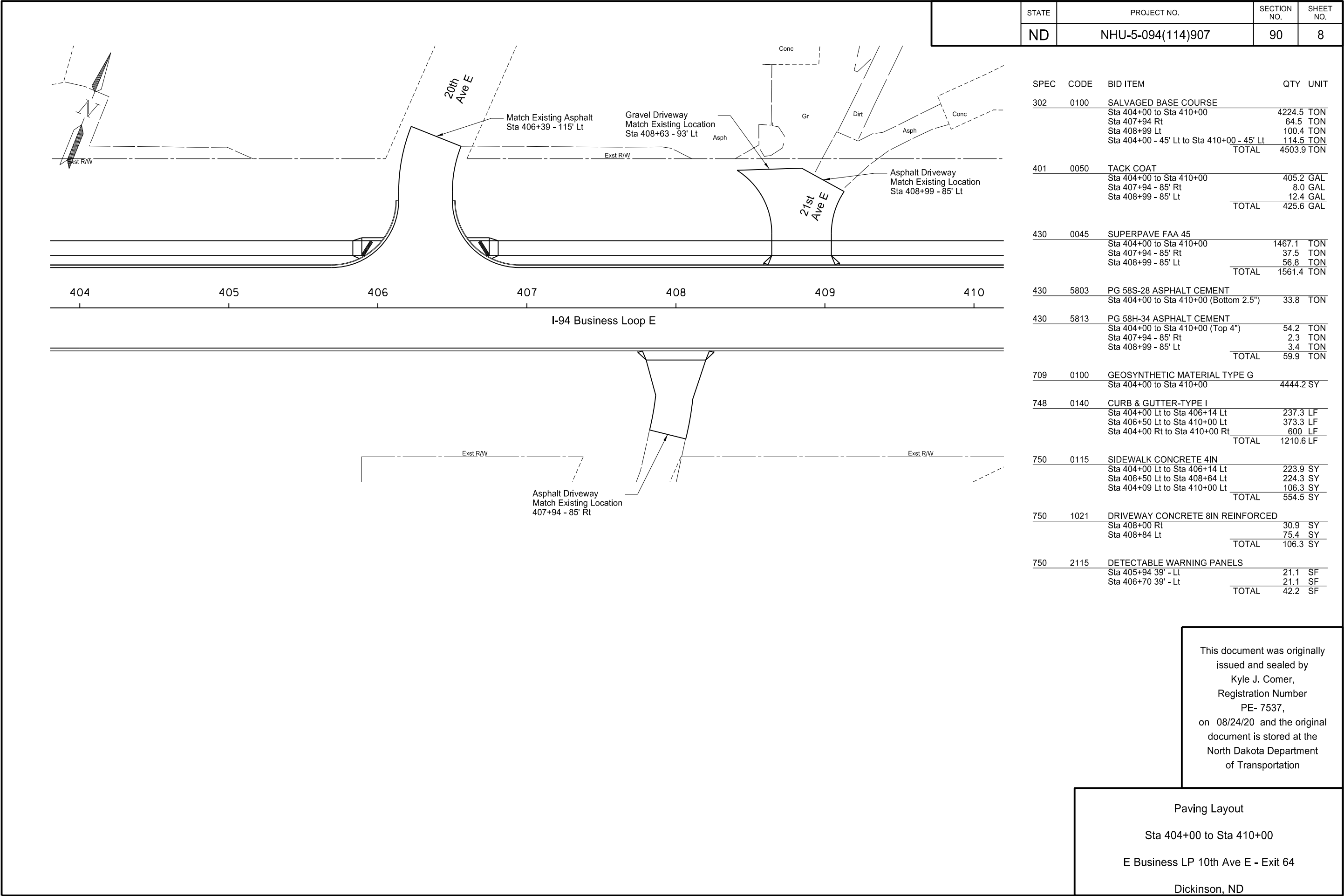
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	90	6

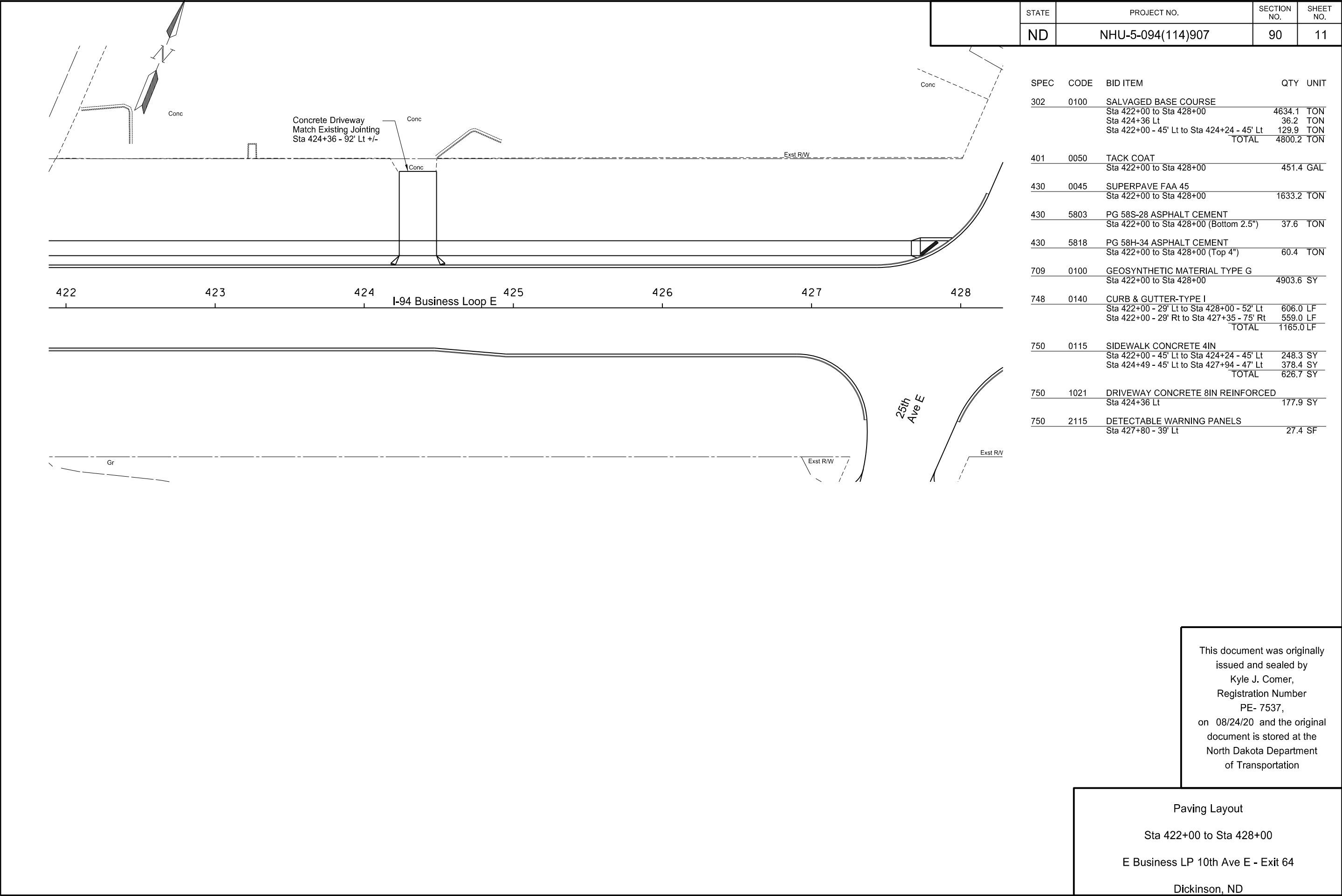
SPEC	CODE	BID ITEM	QTY	UNIT
302	0100	SALVAGED BASE COURSE		
		Sta 392+00 to Sta 398+00	4163.6	TON
		Sta 392+90 - 94' Rt	111.2	TON
		Sta 392+00 - 45' Lt to Sta 398+00 - 45' Lt	126.4	TON
		TOTAL	4401.2	TON
401	0050	TACK COAT		
		Sta 392+00 to Sta 398+00	398.2	GAL
		Sta 392+90 Rt	15.2	GAL
		TOTAL	413.4	GAL
430	0045	SUPERPAVE FAA 45		
		Sta 392+00 to Sta 398+00	1437.9	TON
		Sta 392+90 Rt	75.3	TON
		TOTAL	1513.2	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		Sta 392+00 to Sta 398+00 (Bottom 2.5")	33.2	TON
430	5818	PG 58H-34 ASPHALT CEMENT		
		Sta 392+00 to Sta 398+00 (Top 4")	53.1	TON
		Sta 392+90 Rt	4.2	TON
		TOTAL	57.3	TON
709	0100	GEOSYNTHETIC MATERIAL TYPE G		
		Sta 392+00 to Sta 398+00	4435.6	SY
748	0140	CURB & GUTTER-TYPE I		
		Sta 392+00 - 29' Lt to Sta 392+64 - 100' Lt	111.5	LF
		Sta 392+00 Rt to Sta 398+00 Rt	600.0	LF
		Sta 393+04 - 100' Lt to Sta 398+00 - 29' Lt	546.3	LF
		TOTAL	1257.8	LF
748	1000	VALLEY GUTTER 36IN		
		Sta 392+34 - 31' Lt to Sta 393+34 Lt	115.2	LF
750	0115	SIDEWALK CONCRETE 4IN		
		Sta 392+00 - 45' Lt to Sta 392+59 - 100' Lt	83.4	SY
		Sta 393+16 - 45' Lt to Sta 398+00 - 45' Lt	534.8	SY
		TOTAL	618.2	SY
750	1021	DRIVEWAY CONCRETE 8IN REINFORCED		
		Sta 392+86 Rt	30.9	SY
750	2115	DETECTABLE WARNING PANELS		
		Sta 392+44 Lt	31.7	SF
		Sta 393+27 Lt	22.3	SF
		TOTAL	54.0	SF

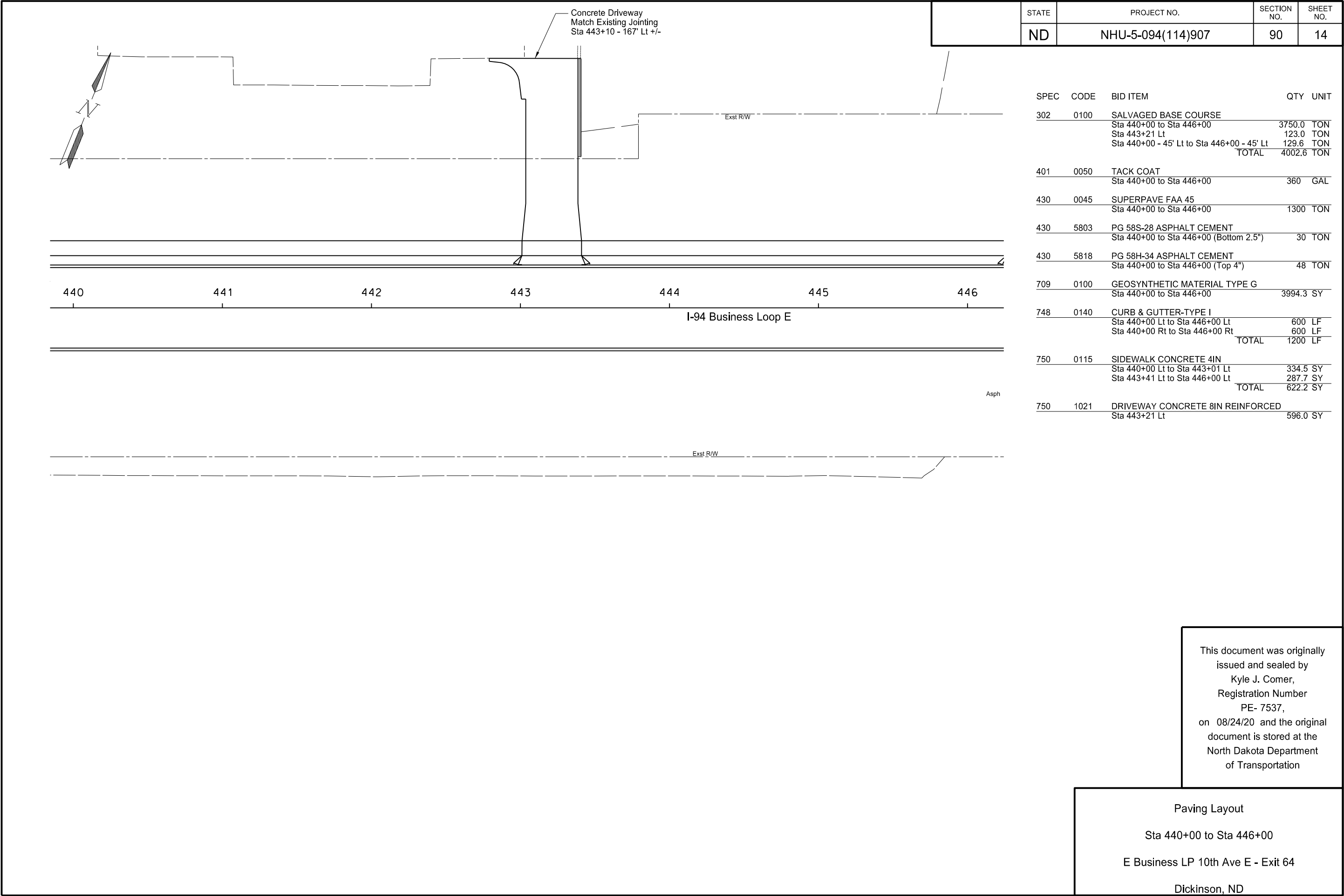
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Paving Layout
Sta 392+00 to Sta 398+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

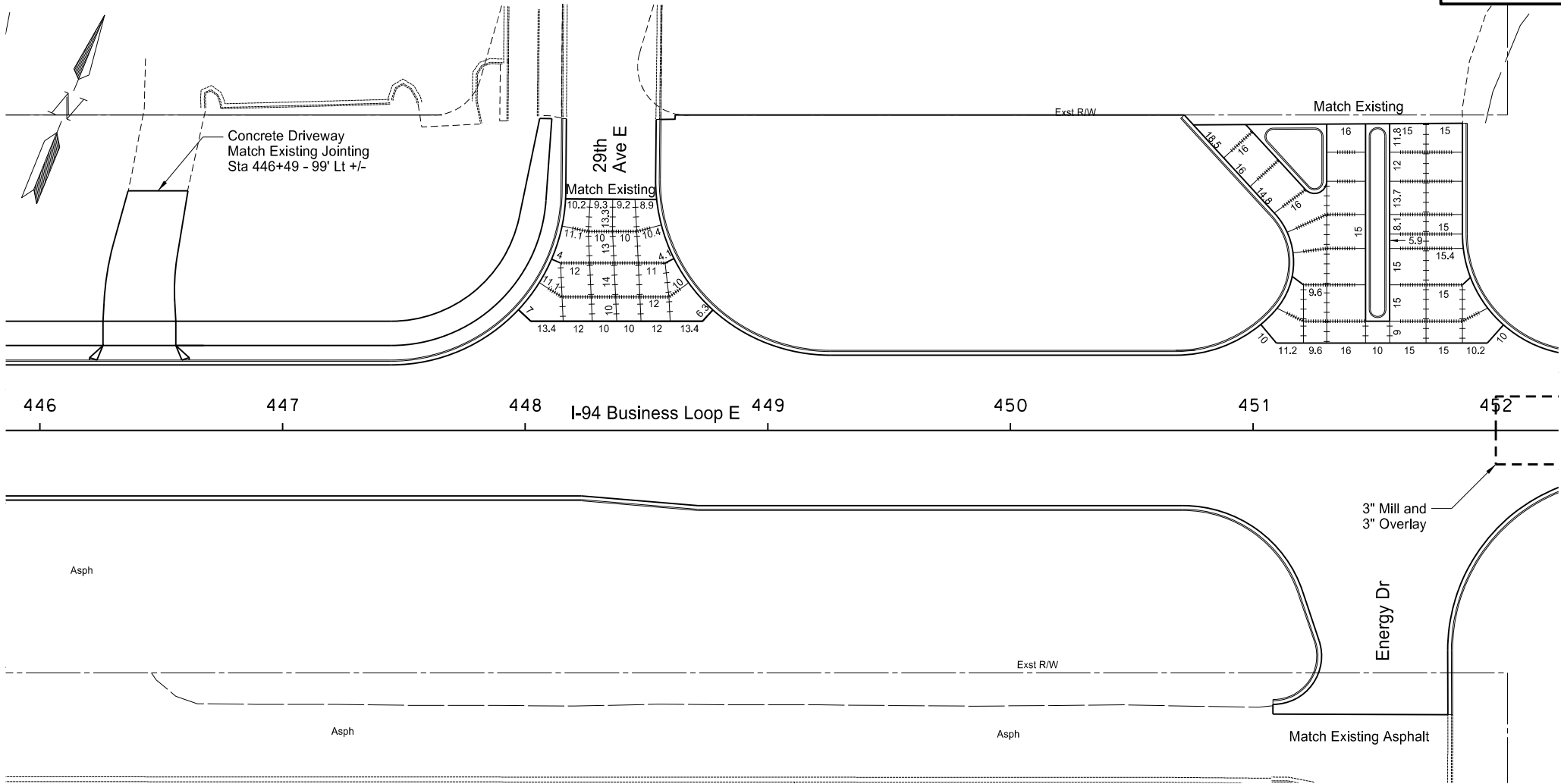








STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	90	15



SPEC	CODE	BID ITEM	QTY	UNIT
302	0100	SALVAGED BASE COURSE		
		Sta 446+00 to Sta 452+00	5325.3	TON
		Sta 446+41 Lt	45.2	TON
		Sta 447+97 - Lt to Sta 448+77 - Lt	148.0	TON
		Sta 446+00 - 45' Lt to Sta 448+07 - 129' Lt	52.7	TON
		TOTAL	5571.2	TON
401	0050	TACK COAT		
		Sta 446+00 to Sta 452+00	528.4	GAL
430	0045	SUPERPAVE FAA 45		
		Sta 446+00 to Sta 452+00	1908.0	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		Sta 446+00 to Sta 452+00 (Bottom 2.5")	44.0	TON
430	5818	PG 58H-34 ASPHALT CEMENT		
		Sta 446+00 to Sta 452+00 (Top 4")	70.4	TON
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED		
		Sta 447+97 Lt to Sta 448+77 Lt	303.4	SY
		Sta 451+03 Lt to Sta 452+03 Lt	705.0	SY
		TOTAL	1008	SY
709	0100	GEOSYNTHETIC MATERIAL TYPE G		
		Sta 446+00 to Sta 452+00	6535.8	SY
748	0140	CURB & GUTTER-TYPE I		
		Sta 446+00 - 29' Lt to Sta 448+15 - 131' Lt	284.9	LF
		Sta 446+00 - 29 Rt to Sta 451+08 - 111' Rt	590.8	LF
		Sta 448+56 - 131' Lt to Sta 450+72 - 130' Lt	420.0	LF
		Sta 451+20 - 115' Lt (Island - Sec. B)	79.4	LF
		Sta 451+52 - 86' Lt (Island - Sec. B)	161.5	LF
		Sta 451+82 - 117' Rt to Sta 452+00 - 44' Rt	76.5	LF
		Sta 451+86 -127' Lt to Sta 452+00 - 66' Lt	88.0	LF
		TOTAL	1701.1	LF
750	0115	SIDEWALK CONCRETE 4IN		
		Sta 446+00 - 45' Lt to Sta 446+26 - 45' LT	28.9	SY
		Sta 446+56 - 45' Lt to Sta 448+06 - 129' LT	224.1	SY
		TOTAL	253.0	SY
750	0200	CONCRETE MEDIAN PAVING		
		Sta 451+20 - 115' Lt	40.8	SY
		Sta 451+52 - 86' Lt	50.7	SY
		TOTAL	91.5	SY
750	1021	DRIVEWAY CONCRETE 8IN REINFORCED		
		Sta 446+41 Lt	221.6	SY

Legend - Joint Layout

- +++++ Sawed Tie Joint
- ===== Sawed Dowel Joint
- 2" Dia. Core

Notes:

- Utilize Curb & Gutter Type 1 (Sec. B) per Standard Drawing D-748-1 for curb islands.

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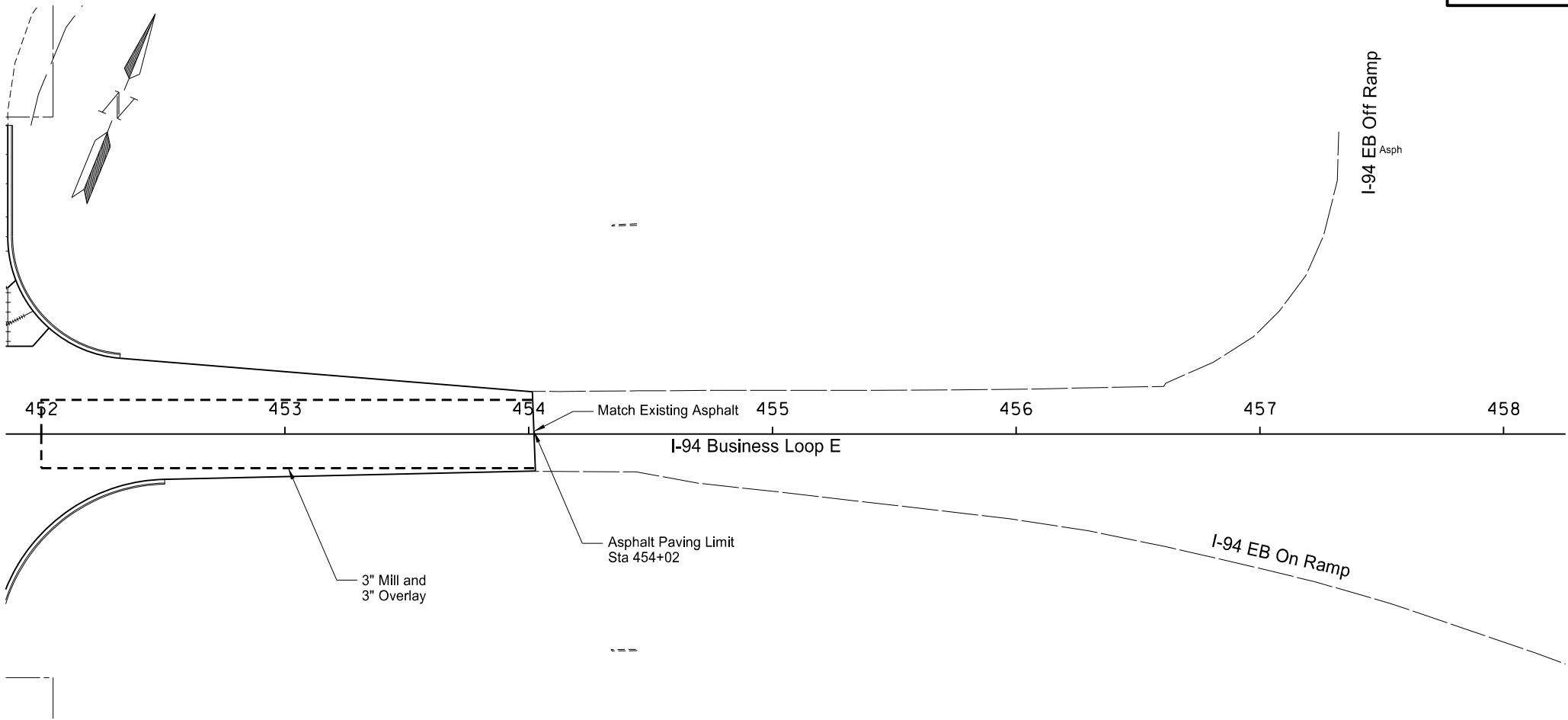
Paving Layout

Sta 446+00 to Sta 452+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	90	16



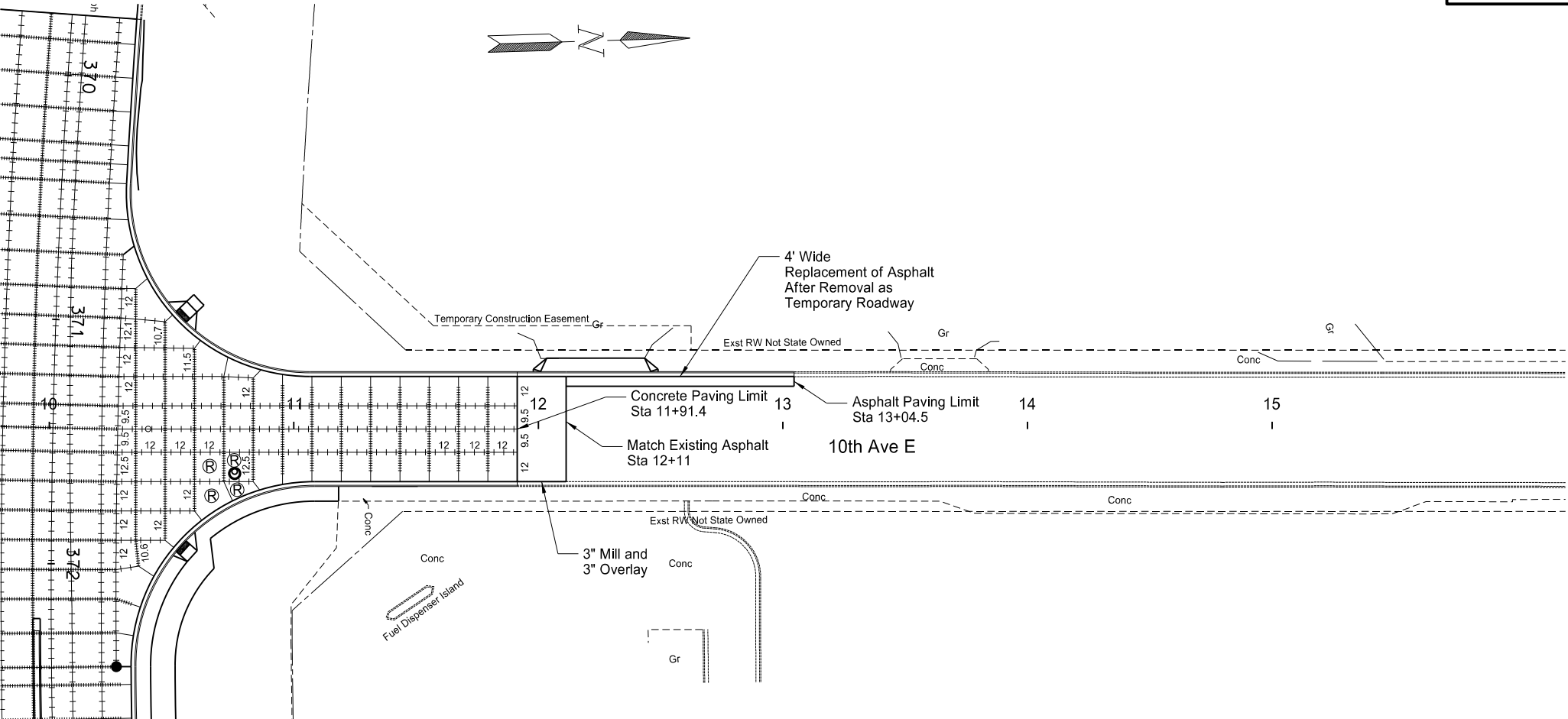
SPEC	CODE	BID ITEM	QTY	UNITS
302	0100	SALVAGED BASE COURSE Sta 452+00 to Sta 454+02	1215.2	TON
401	0050	TACK COAT Sta 452+00 to Sta 454+02	108.4	GAL
430	0045	SUPERPAVE FAA 45 Sta 452+00 to Sta 454+02	404.3	TON
430	5803	PG 58S-28 ASPHALT CEMENT Sta 452+00 to Sta 454+02 (Bottom 2.5")	3.2	TON
430	5818	PG 58H-34 ASPHALT CEMENT Sta 452+00 to Sta 454+02 (Top 4")	11.4	TON
748	0140	CURB & GUTTER-TYPE I Sta 452+00 - 66' Lt to Sta 452+51 - 36' Lt Sta 452+00 - 44' Rt to Sta 452+58 - 21' Rt	69.2 57.3	LF LF
TOTAL			126.5	LF

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Paving Layout
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Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	90	17

SPEC	CODE	BID ITEM	QTY	UNIT
302	0100	SALVAGED BASE COURSE		
		Sta 10+31 to Sta 11+91	497.6	TON
		Sta 11+91 to Sta 12+11 (Approach)	45.5	TON
		TOTAL	543.1	TON
401	0050	TACK COAT		
		Sta 11+91 to Sta 13+05	8.1	TON
430	0045	SUPERPAVE FAA 45		
		Sta 11+91 to Sta 13+04	27.0	TON
430	5818	PG 58H-34 ASPHALT CEMENT		
		Sta 11+91 to Sta 13+04 (3")	1.6	TON
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED		
		Sta 10+31 to Sta 11+91	1194.2	SY
709	0100	GEOSYNTHETIC MATERIAL TYPE G		
		Sta 10+31 to Sta 11+91	1194.2	SY
748	0140	CURB & GUTTER-TYPE I		
		Sta 11+07 Lt to Sta 13+04 Lt	198.0	LF
		Sta 11+08 Rt to Sta 11+91 Rt	83.0	LF
		TOTAL	281.0	LF
750	1021	DRIVEWAY CONCRETE 8IN REINFORCED		
		Sta 12+23 Lt	28.0	SY



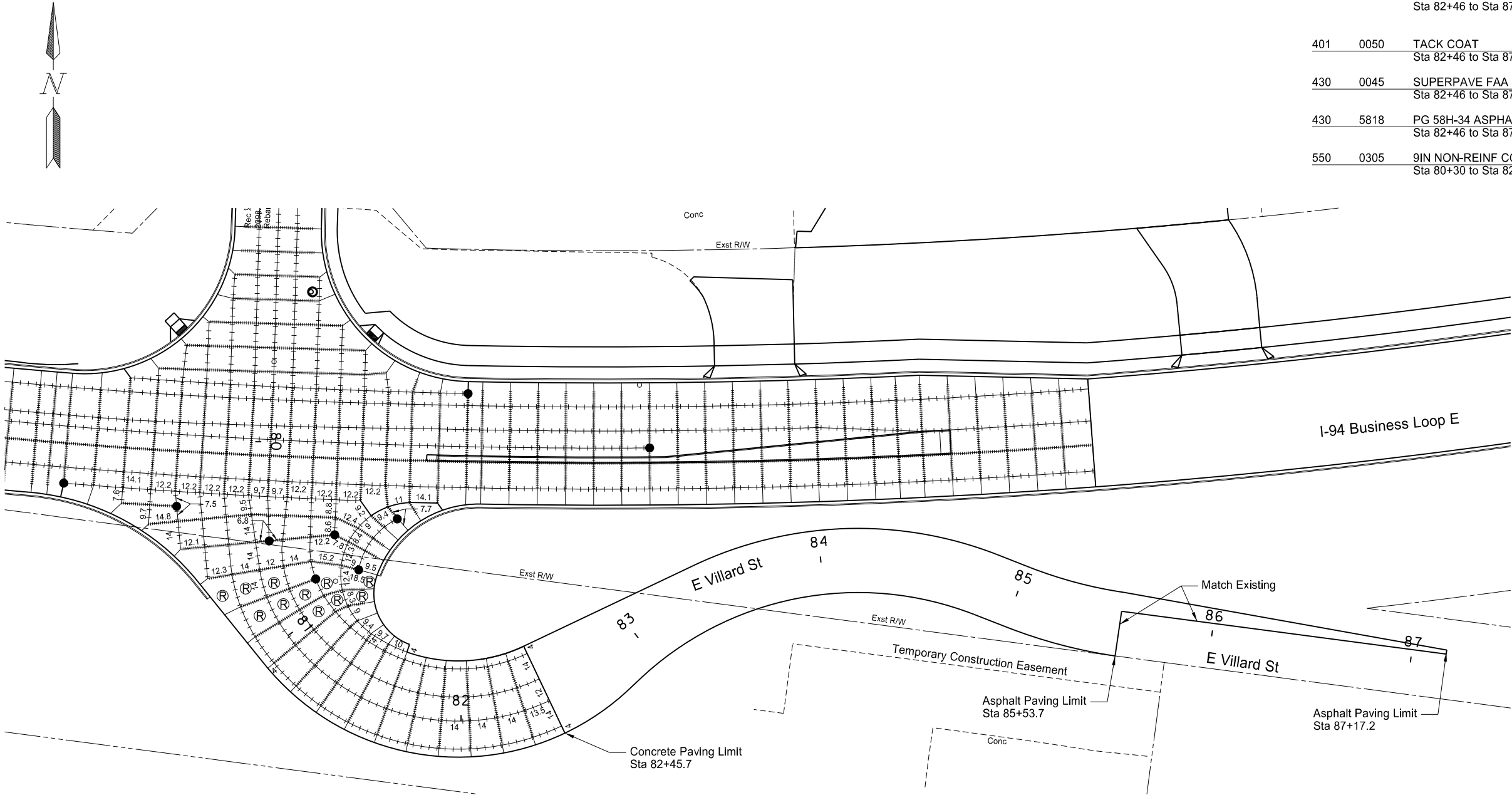
Legend - Joint Layout	
+++++	Sawed Tie Joint
=====	Sawed Dowel Joint
●	2" Dia. Core
Ⓡ	Paving Reinforcing at Pipe Locations

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Paving Layout
Sta 10+00 to Sta 15+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	90	18

SPEC	CODE	BID ITEM	QTY	UNIT
302	0100	SALVAGED BASE COURSE		
		Sta 80+30 to Sta 82+46	649.7	TON
		Sta 82+46 to Sta 87+17	936.5	TON
		TOTAL	1586.2	TON
401	0050	TACK COAT		
		Sta 82+46 to Sta 87+17	63.8	GAL
430	0045	SUPERPAVE FAA 45		
		Sta 82+46 to Sta 87+17	293.3	TON
430	5818	PG 58H-34 ASPHALT CEMENT		
		Sta 82+46 to Sta 87+17	17.6	TON
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED		
		Sta 80+30 to Sta 82+46	1511.5	SY



Legend - Joint Layout

+++++ Sawed Tie Joint

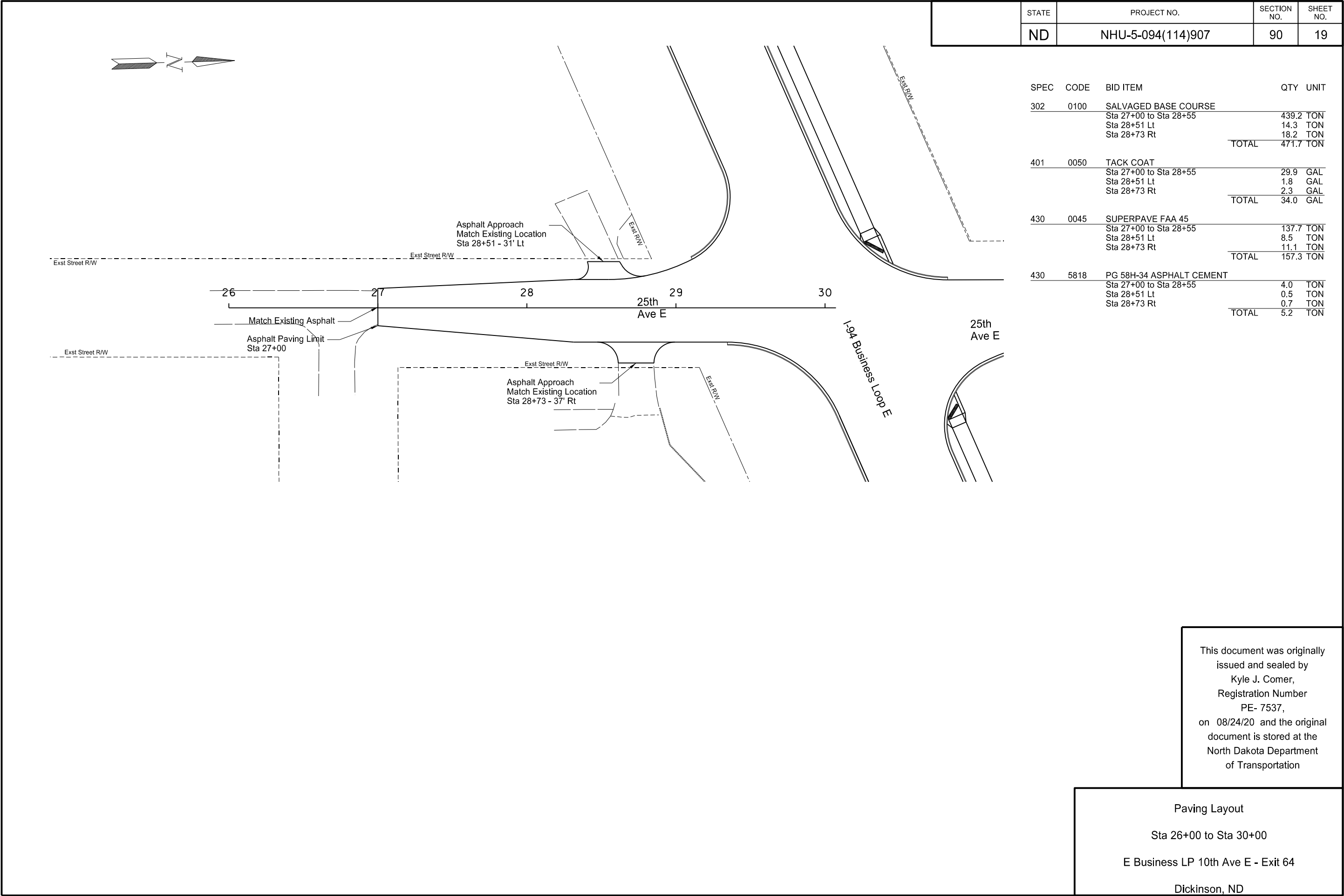
..... Sawed Dowel Joint

● 2" Dia. Core

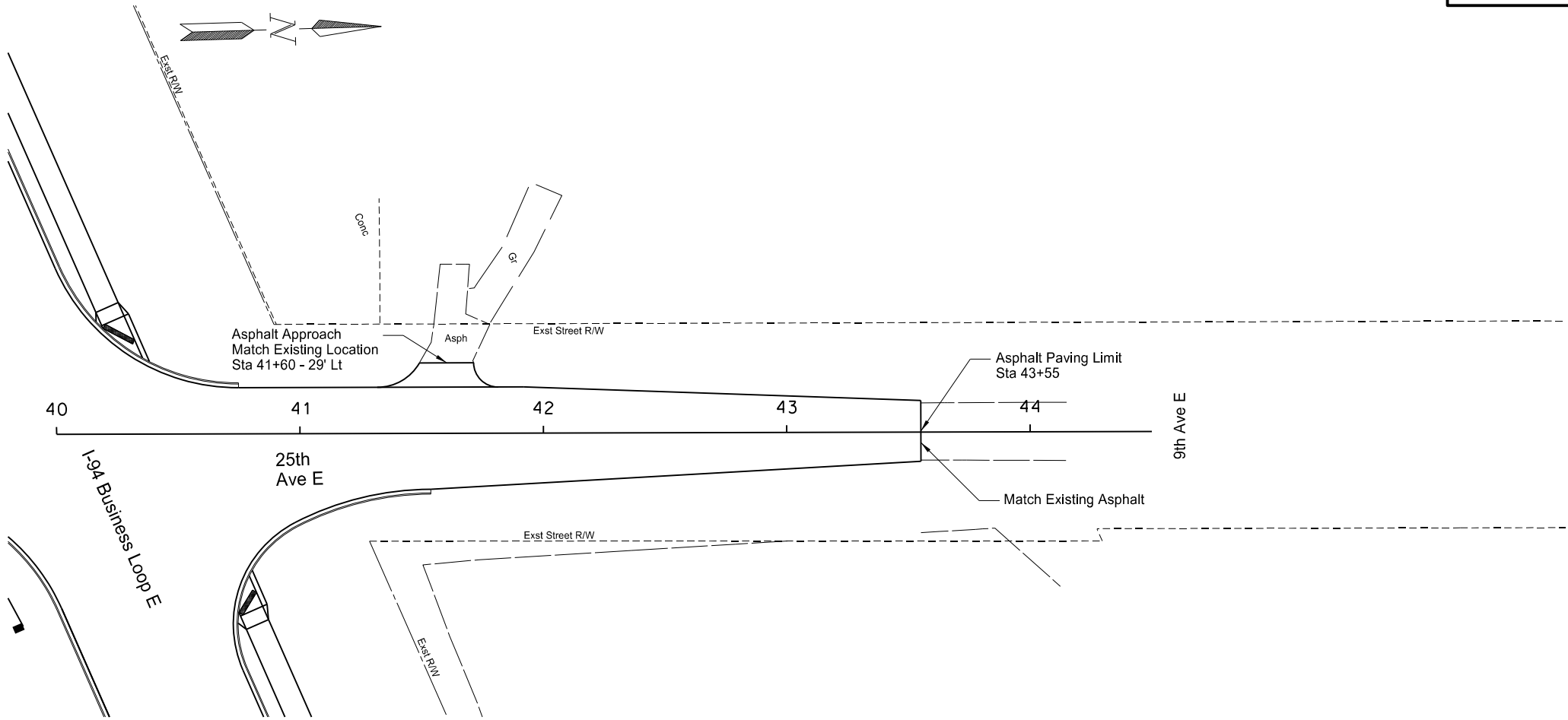
Ⓡ Paving Reinforcing at Pipe Locations

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Paving Layout
Sta 80+00 to Sta 87+50
E Business LP 10th Ave E - Exit 64
Dickinson, ND



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	90	20



SPEC	CODE	BID ITEM	QTY	UNIT
302	0100	SALVAGED BASE COURSE		
		Sta 41+54 to Sta 43+55	563.5	TON
		Sta 41+60 Lt	13.2	TON
		TOTAL	576.7	TON
401	0050	TACK COAT		
		Sta 41+54 to Sta 43+55	38.1	GAL
		Sta 41+60 Lt	1.6	GAL
		TOTAL	39.7	GAL
430	0045	SUPERPAVE FAA 45		
		Sta 41+54 to Sta 43+55	175.7	TON
		Sta 41+60 Lt	9.4	TON
		TOTAL	185.1	TON
430	5818	PG 58H-34 ASPHALT CEMENT		
		Sta 41+54 to Sta 43+55	10.5	TON
		Sta 41+60 Lt	0.6	TON
		TOTAL	11.1	TON

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Paving Layout
Sta 40+00 to Sta 44+50
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED				TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.						
			1	2	3				
E5-1-48	48"x48"	EXIT GORE						35	
G20-1-60	60"x24"	ROAD WORK NEXT ___ MILES						28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)						18	
G20-2-48	48"x24"	END ROAD WORK	7	13	12		13	26	338
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)						18	
G20-10-108	108"x48"	CONTRACTOR SIGN						70	
G20-50a-72	72"x36"	ROAD WORK NEXT ___ MILES RT & LT ARROWS						43	
G20-52a-72	72"x24"	ROAD WORK NEXT ___ MILES RT or LT ARROW						36	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT	7	13	12		13	59	767
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)						10	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)						10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)						10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)						7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)						7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)						7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)						7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)						7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT						15	
M4-10-48	48"x18"	DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)						7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT (Mounted on route marker post)						7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT (Mounted on route marker post)						9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)						7	
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)						9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)						7	
R1-1-48	48"x48"	STOP	25	39	39		39	32	1248
R1-2-60	60"x60"	YIELD						29	
R2-1-36	36"x48"	SPEED LIMIT ___ (Portable only)						30	
R2-1-48	48"x60"	SPEED LIMIT ___	10	18	16		18	39	702
R2-1aP-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)	5	12	10		12	10	120
R3-2-48	48"x48"	NO LEFT TURN						35	
R4-1-48	48"x60"	DO NOT PASS						39	
R4-7-48	48"x60"	KEEP RIGHT						39	
R5-1-48	48"x48"	DO NOT ENTER						35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)						14	
R7-1-12	12"x18"	NO PARKING ANY TIME						11	
R10-6-24	24"x36"	STOP HERE ON RED	3	4	4		4	16	64
R11-2-48	48"x30"	ROAD CLOSED (Mounted on barricade)						12	
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)						12	
R11-3a-60	60"x30"	ROAD CLOSED ___ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)						15	
R11-3c-60	60"x30"	STREET CLOSED ___ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)						15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)						15	
W1-2-48	48"x48"	CURVE		1			1	35	35
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT						35	

[illegible][illegible]

SPEC & CODE			
704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	4973

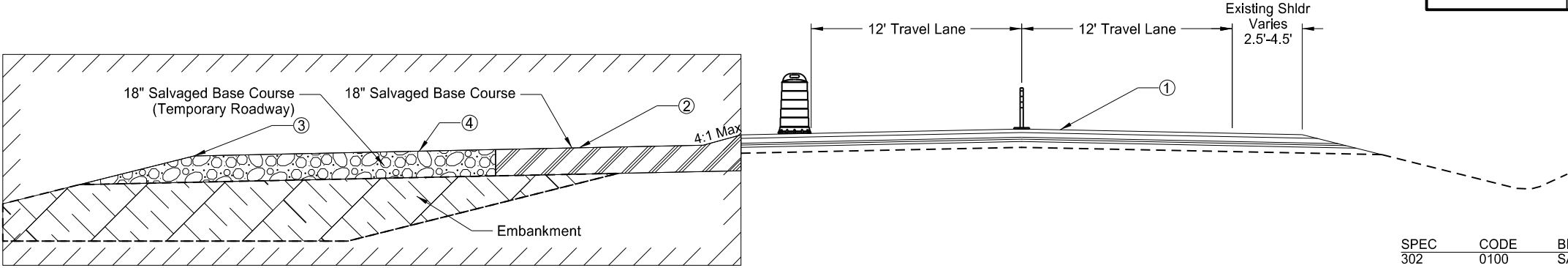
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NOTE:
If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual.
<http://www.dot.nd.gov/>

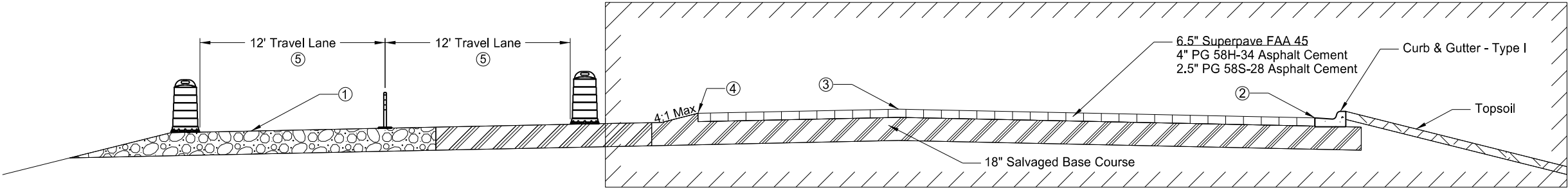
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Traffic Control Devices List
E Business LP 10th Ave E - Exit 64
Dickinson, ND

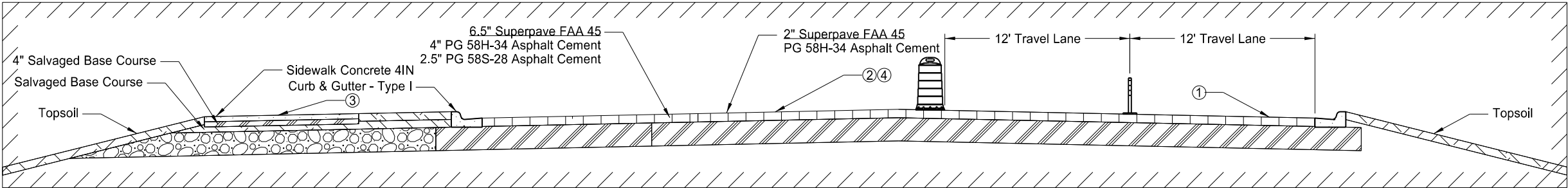
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	2



Phase 1
I-94 Business Loop E



Phase 2
I-94 Business Loop E



Phase 3
I-94 Business Loop E

Legend	
	Tubular Marker
	Delineation Drum
	Work Zone

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- Notes:
Phase 1
- ① Maintain two-way traffic on existing pavement.
 - ② Construct Salvaged Base Course for north portion of roadway and curb & gutter to top of proposed base course.
 - ③ Construct full width of embankment per design plans to 2.5' below finish grade of shared use path. Provide positive slope to ditch. Construct 18" of Salvaged Base Course temporary roadway surface to edge of proposed shared-use path.
 - ④ Construct 12:1 maximum slopes to mitigate elevation differences between approach and temporary roadway.

- Phase 2
- ① Maintain two-way traffic on temporary roadway.
 - ② Construct south portion of roadway and approaches to center of proposed westbound travel lane.
 - ③ Construct proposed HMA.
 - ④ Stagger pavement lifts 6" to allow overlapping in phase 3.
 - ⑤ For Phases 2a, 2b, and 2c use 11' travel lanes from Sta 365+75 to Sta 371+30

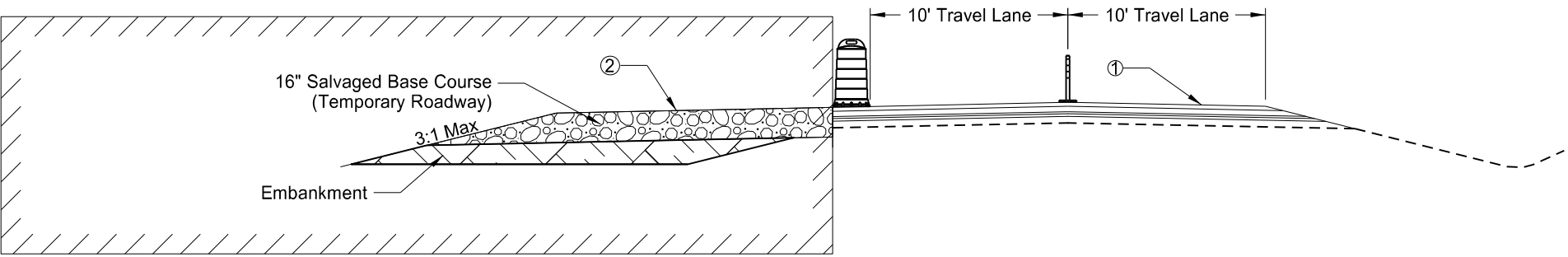
- Phase 3
- ① Maintain two-way traffic on south side of new pavement.
 - ② Construct remaining portion of mainline, turn lanes, and north approaches.
 - ③ Construct shared-use path on top of temporary roadway.
 - ④ Alternate traffic on proposed pavement to finish 10th Avenue E area median.

WZTC Typical Section
I-94 Business Loop E

E Business LP 10th Ave E - Exit 64

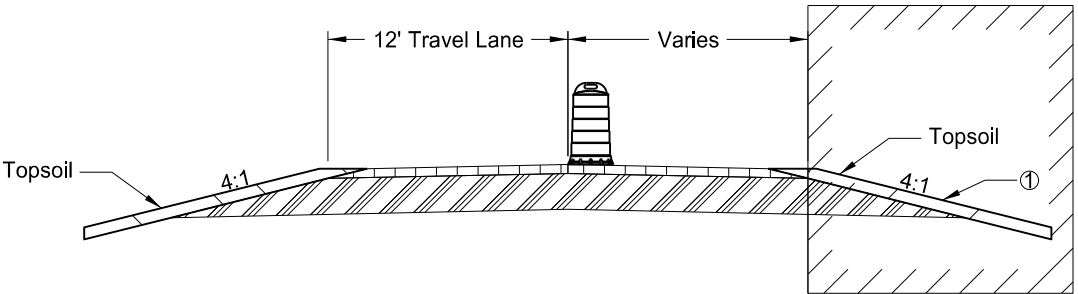
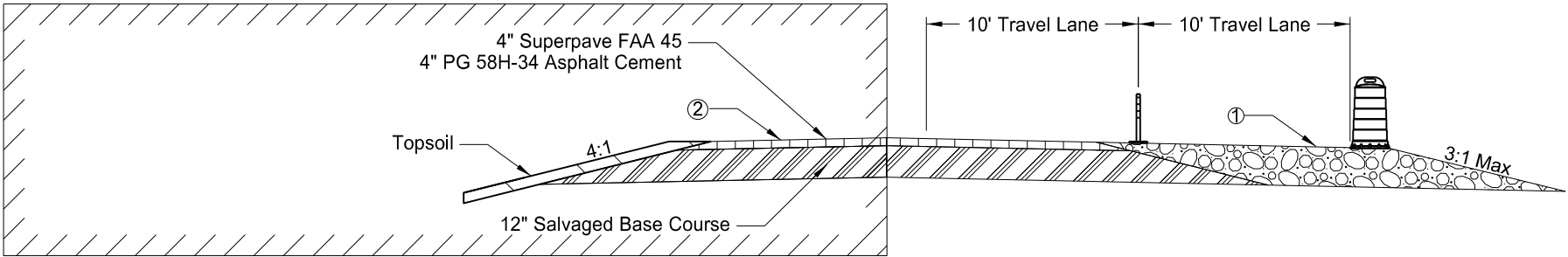
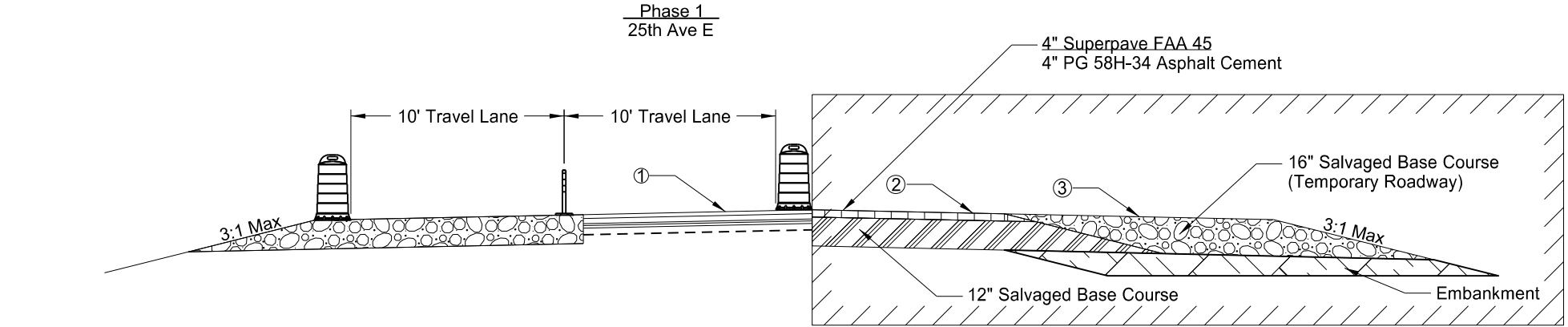
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	3



SPEC	CODE	BID ITEM	QTY	UNIT
202	0128	REMOVE AGGREGATE BASE	1706	TON
203	0101	COMMON EXCAVATION - TYPE A	817	CY
302	0100	SALVAGED BASE COURSE	912	TON

Note: The Salvaged Base Course material used for the 25th Ave temporary roadway will be reused from I-94 E Bus Lp phase 2 for I-94 E Bus Lp phase 3.



Legend	
	Tubular Marker
	Delineation Drum
	Work Zone

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Notes:
Phase 1
① Maintain two-way traffic on existing pavement.
② Construct 16" of Salvaged Base Course temporary roadway surface.

Phase 2
① Maintain two-way traffic on temporary and existing roadway surfaces.
② Construct portion of proposed roadway.
③ Construct 16" of Salvaged Base Course temporary roadway surface.

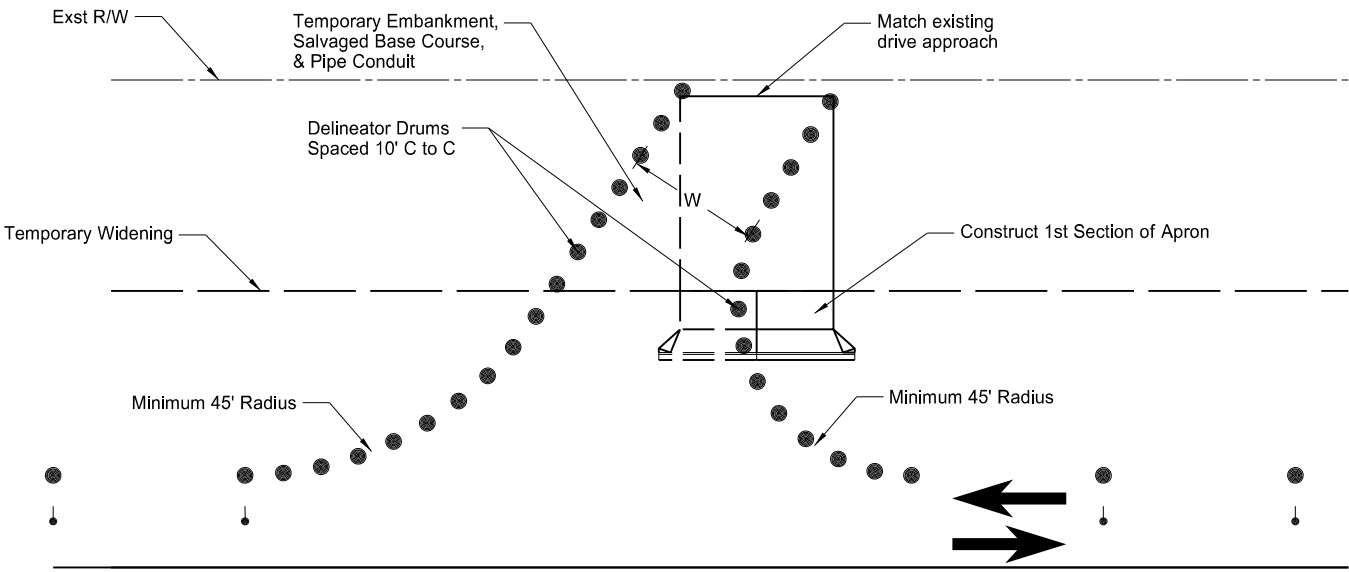
Phase 3
① Maintain two-way traffic on new pavement and temporary roadway surface.
② Construct remaining portion of roadway, Remove Aggregate Base temporary roadway surface, and construct topsoil.

Phase 4
① Remove Aggregate Base Course temporary roadway surface and construct topsoil using flaggers to maintain one lane of traffic during daily operations. Provide two lanes of traffic when not working.

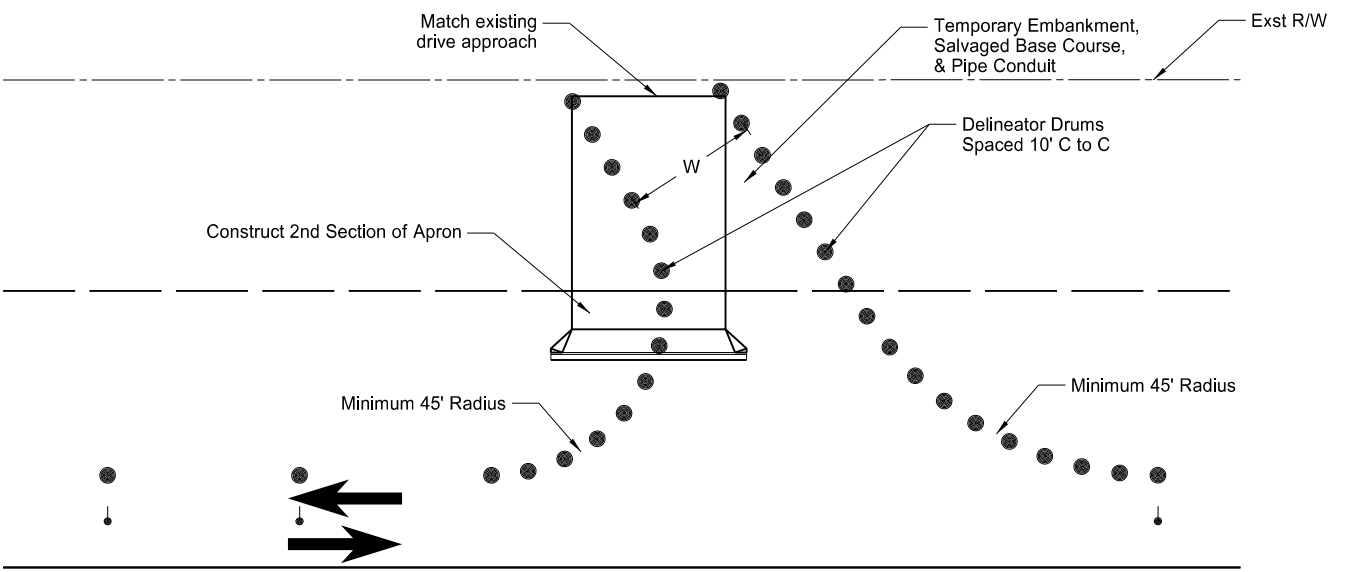
WZTC Typical Section
25th Ave E

E Business LP 10th Ave E - Exit 64

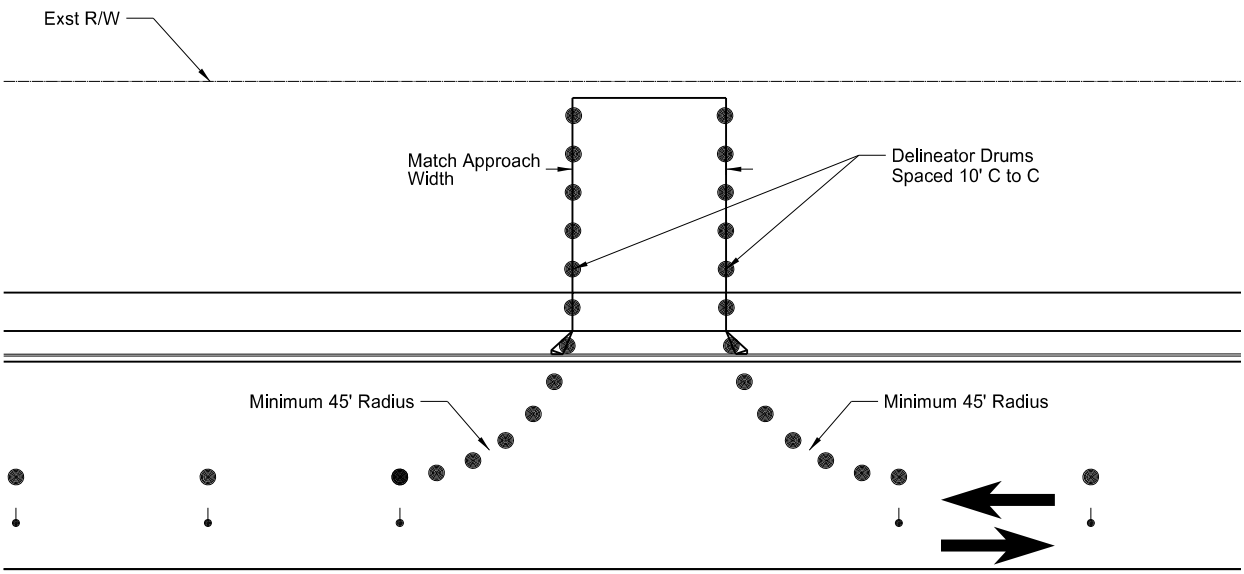
Dickinson, ND



TEMPORARY CONNECTION PHASE 1



TEMPORARY CONNECTION PHASE 2



EXISTING AND FULLY CONSTRUCTED

- Notes:
1. Contractor shall coordinate with each property owner a minimum of 14 days prior to construction activities on their access(es).
 2. Coordinate specific daily business period with each property owner. Generally the daily business period is from 5:00 am to 10:00 pm.
 3. Maintain two-way traffic on all accesses during daily business period. Traffic may be maintained on salvaged base course surface.
 4. During non-business period accesses may be fully closed for construction of the approach.
 5. Construct driveway concrete in sections as shown in phasing layouts above. Construct minor temporary widening with 4:1 max side slopes sufficient to provide two-way traffic during daily business period. Install temporary pipe conduit to extend approach culverts outside of temporary widening.

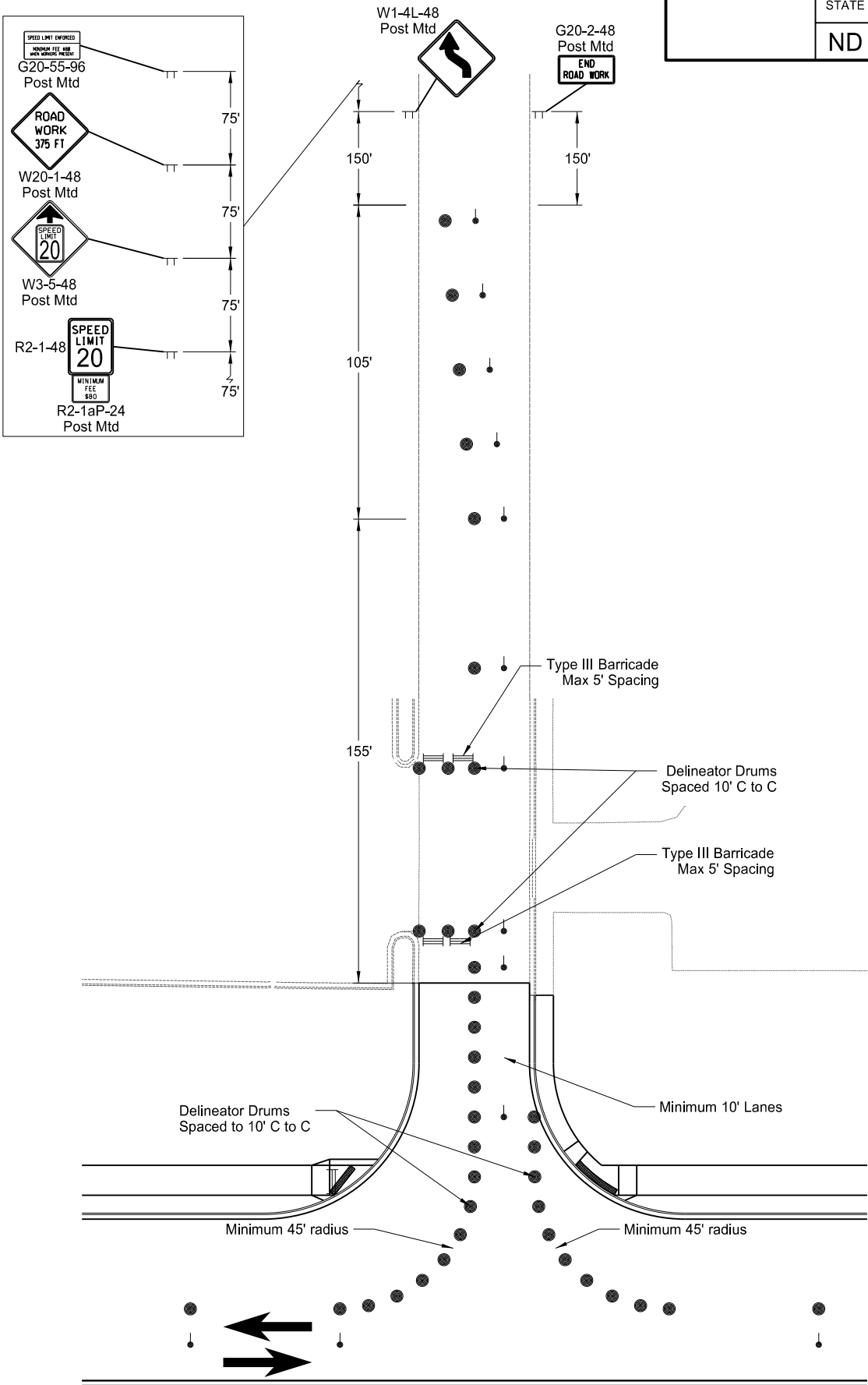
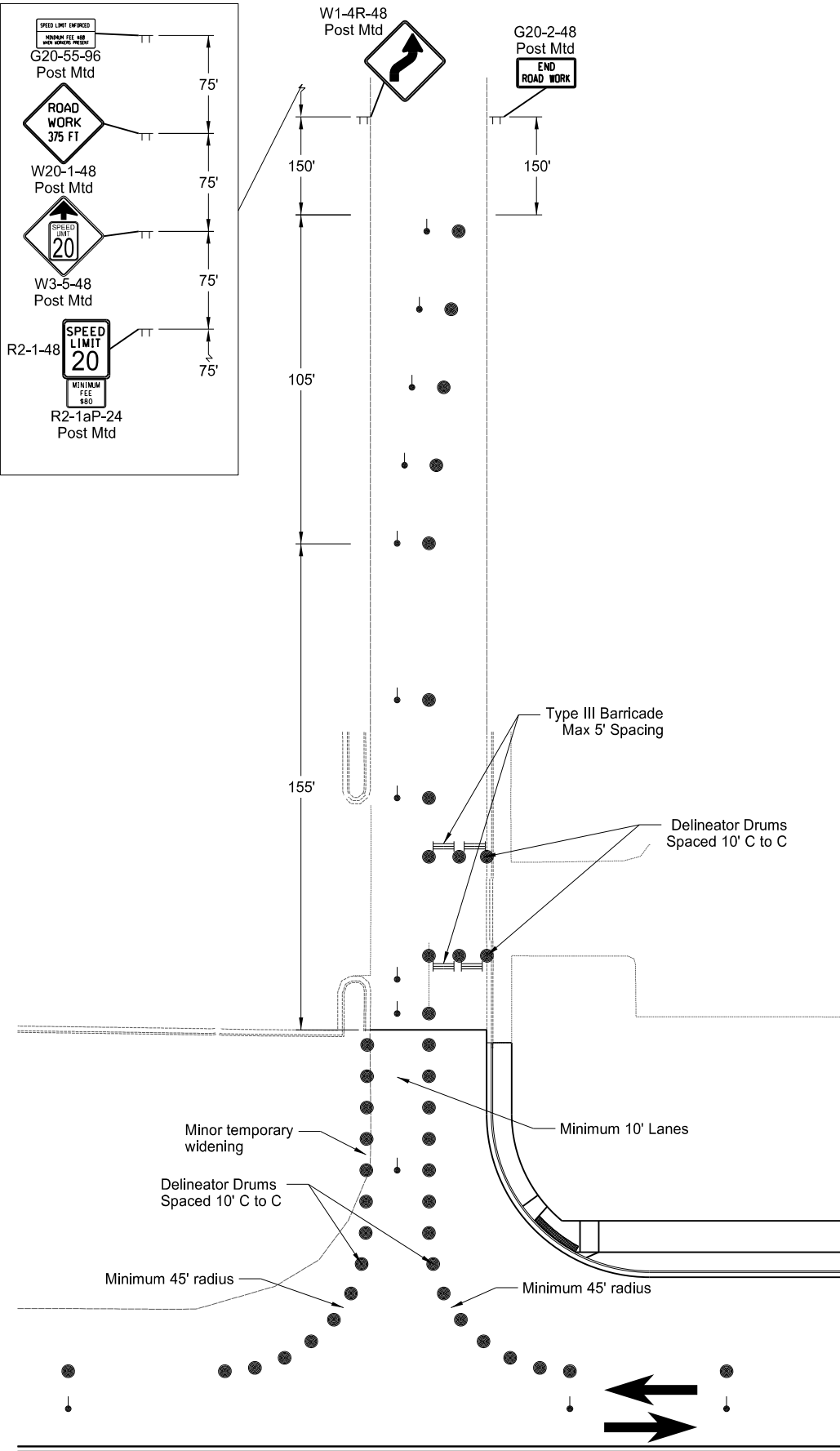
Temporary Connection Widths			
Station	W (FT)	Station	W (FT)
373+87 Lt	40	413+90 Lt	24
376+23 Lt	24	415+79 Lt	40
380+88 Lt	40	418+44 Lt	24
381+91 Lt	24	420+14 Lt	40
382+37 Rt	40	421+46 Rt	40
384+82 Lt	40	421+63 Lt	40
385+10 Rt	40	424+36 Lt	24
387+15 Rt	40	429+90 Rt	24
392+86 Rt	40	432+11 Lt	40
402+99 Lt	34	434+90 Lt	40
408+00 Rt	40	438+74 Lt	40
408+84 Lt	40	443+21 Lt	24
410+98 Rt	24	446+41 Lt	24

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WZTC Typical Section
I-94 Business Loop E

E Business LP 10th Ave E - Exit 64

Dickinson, ND



Minor Intersections	
Station	Name
389+74 Lt	15th Ave E
392+84 Lt	16th Ave E
399+30 Lt & Rt	18th Ave E
② 406+32 Lt	20th Ave E
413+29 Rt	22nd Ave E
419+24 Rt	23rd Ave E
434+90 Rt	26th Ave E
438+74 Rt	27th Ave E
448+35 Lt	29th Ave E
451+58 Rt	Energy Dr

- Notes:
- Construct the Rt Minor Intersections during Phase 2. Construct Lt Minor Intersections during Phase 3.
 - Construct the Minor intersection at 406+32 Lt (20th Ave E) according to Temporary Connection detail.

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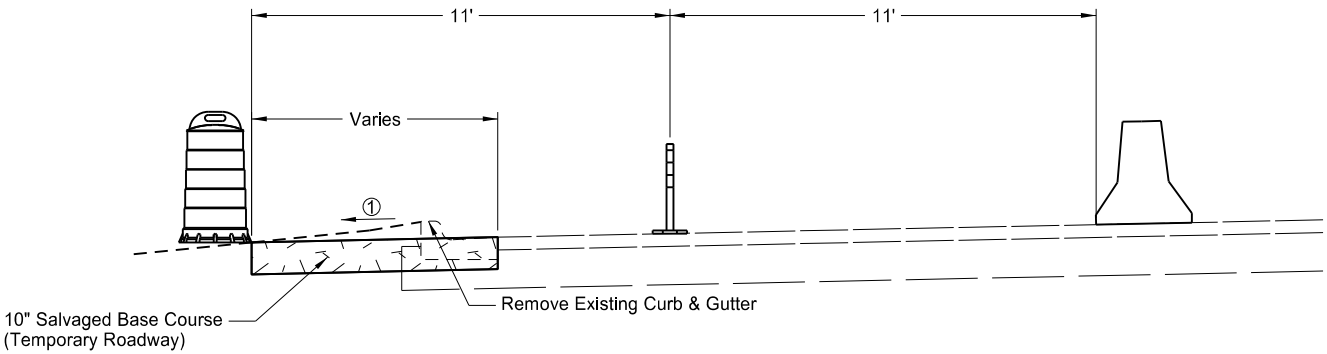
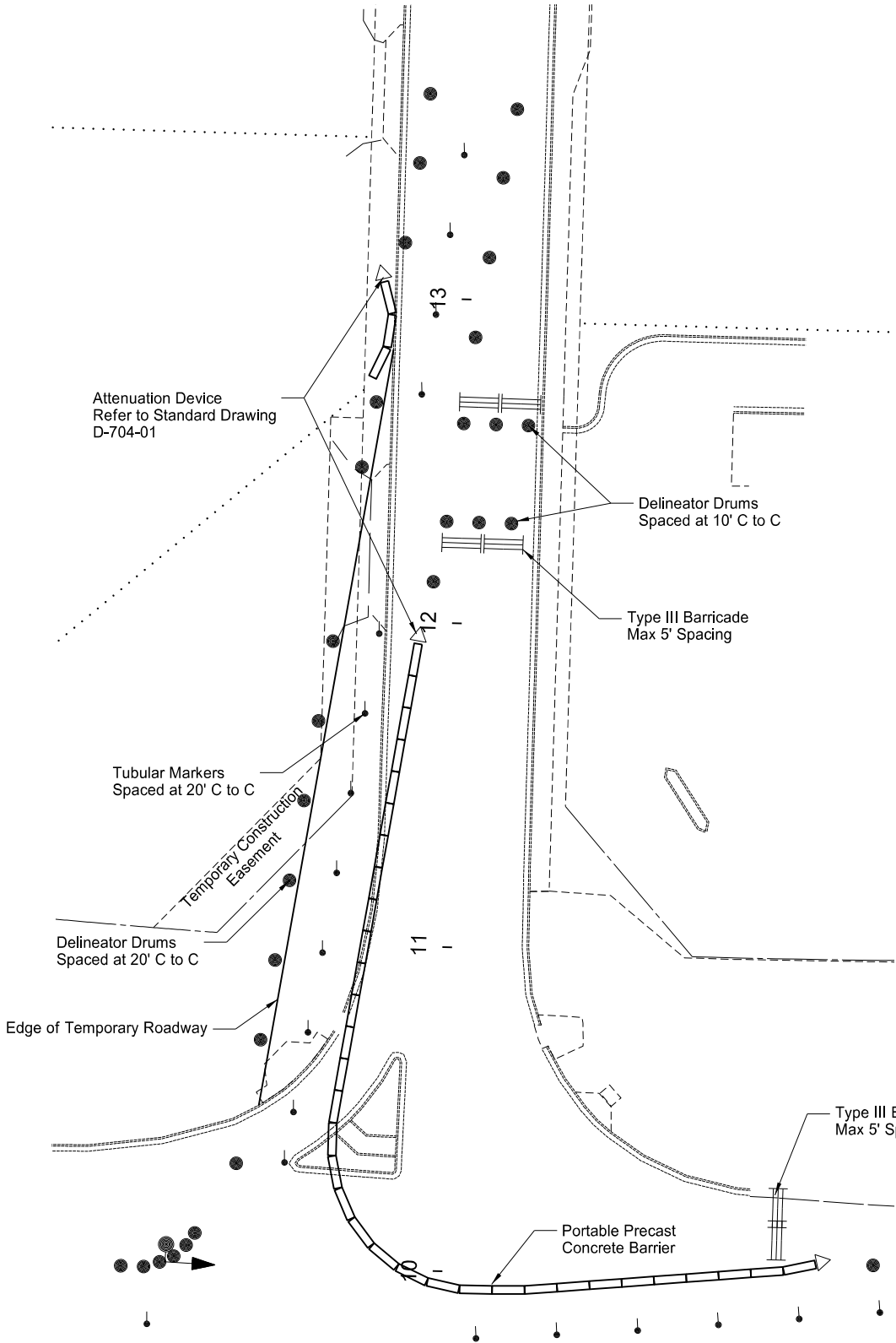
WZTC Detail
Minor Intersection Leaveouts

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	6

SPEC	CODE	BID ITEM	QTY	UNIT
202	0128	REMOVE AGGREGATE BASE	220	TON
203	0095	COMMON EXCAVATION-TYPE A	102	CY
302	0100	SALVAGED BASE COURSE	220	TON



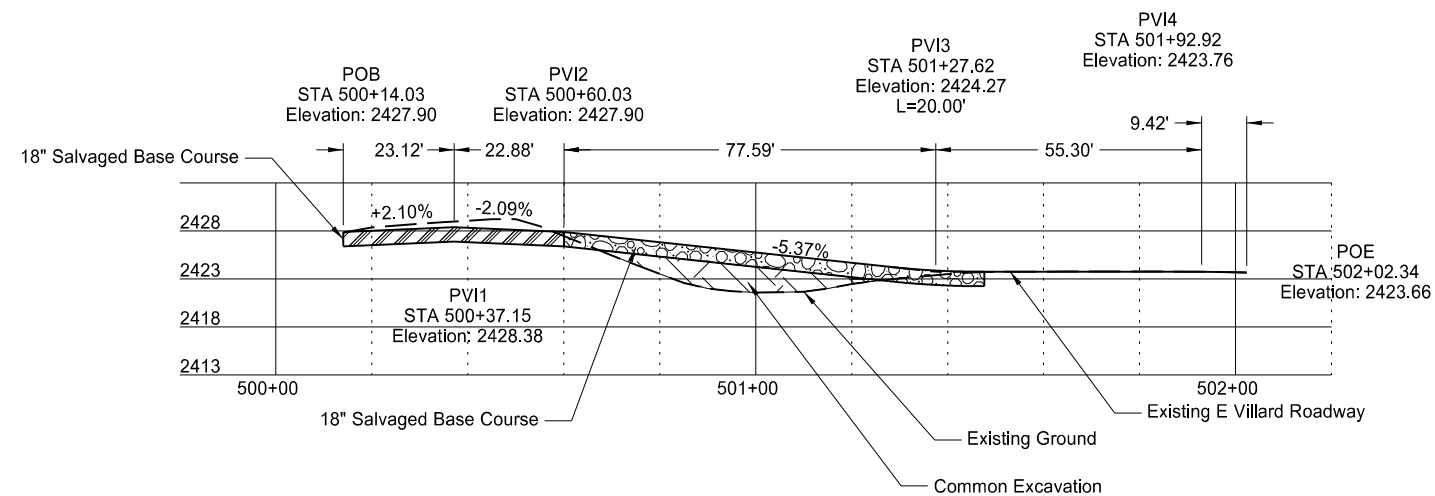
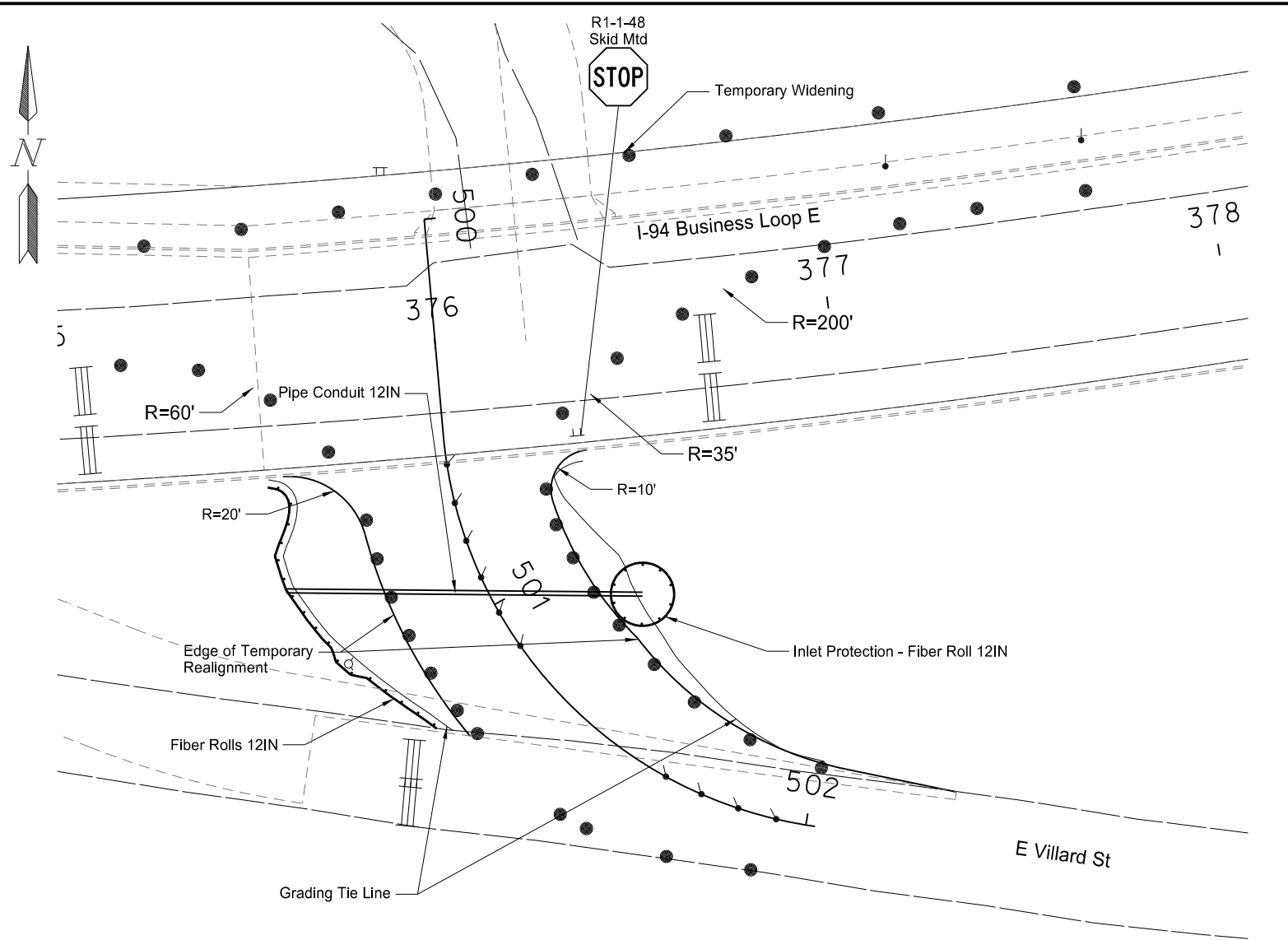
Notes:
 ① Construct 10" Salvage Base Course with positive grade to facilitate drainage

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WZTC Detail
 10th Ave Temporary Widening

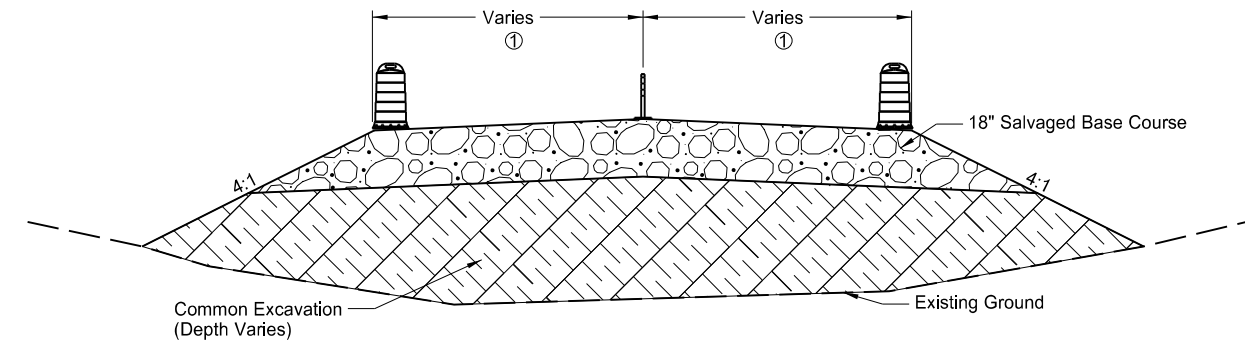
 E Business LP 10th Ave E - Exit 64

 Dickinson, ND



- Notes:
1. Construct temporary realignment during Phase 2a. Construct temporary realignment to tie to I-94 Business Loop E Salvaged Base Course constructed during Phase 2a.
 2. Remove 6" topsoil prior to placement of common excavation.
 3. Place Pipe Conduit 12IN at low point to convey runoff while temporary realignment is in place.
 4. Remove temporary realignment during Phase 2c.

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	7



Temporary Realignment Typical Section
① 24' Lane width from Sta 500+80 to Sta 501+32
Lane width varies from 24' to 14' from Sta 501+32 to Sta 502+02

SPEC	CODE	TEMPORARY REALIGNMENT BID ITEMS BID ITEM	QTY	UNIT
202	0128	REMOVE AGGREGATE BASE	404	TON
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	67	LF
203	0095	COMMON EXCAVATION-TYPE A	225	TON
261	0112	FIBER ROLLS 12IN	84	LF
261	0113	REMOVE FIBER ROLLS 12IN	84	LF
302	0100	SALVAGED BASE COURSE	404	TON
708	1531	INLET PROTECTION - FIBER ROLL 12IN	1	EA
708	1533	REMOVE INLET PROTECTION - FIBER ROLL 12IN	1	EA
714	4090	PIPE CONDUIT 12IN	91	LF

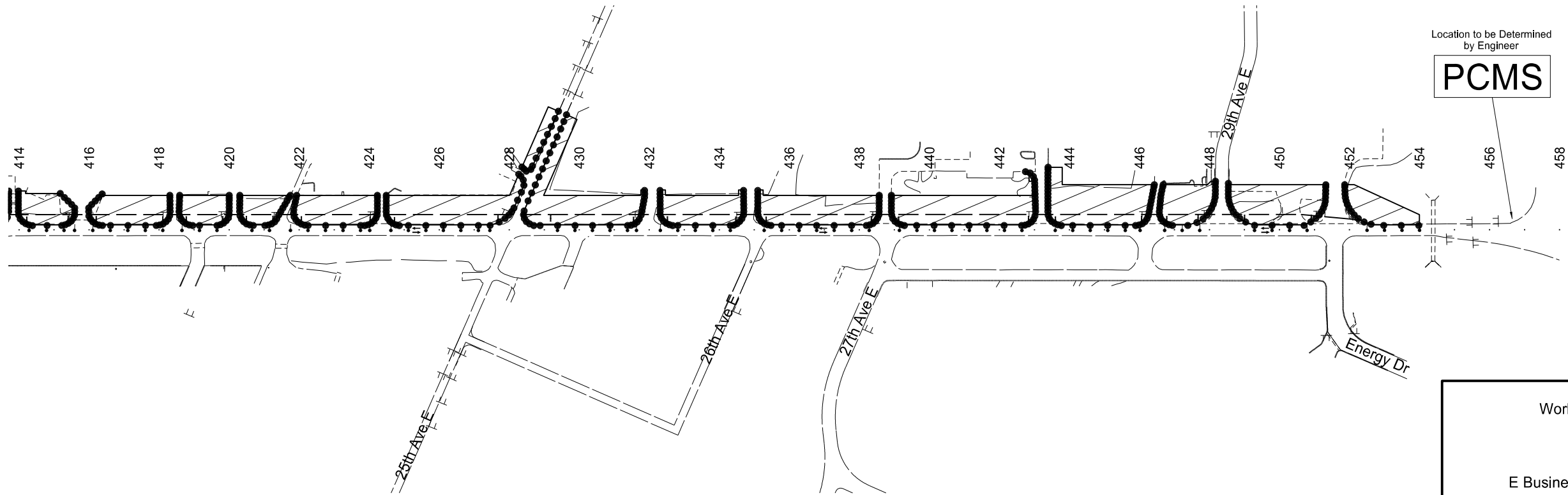
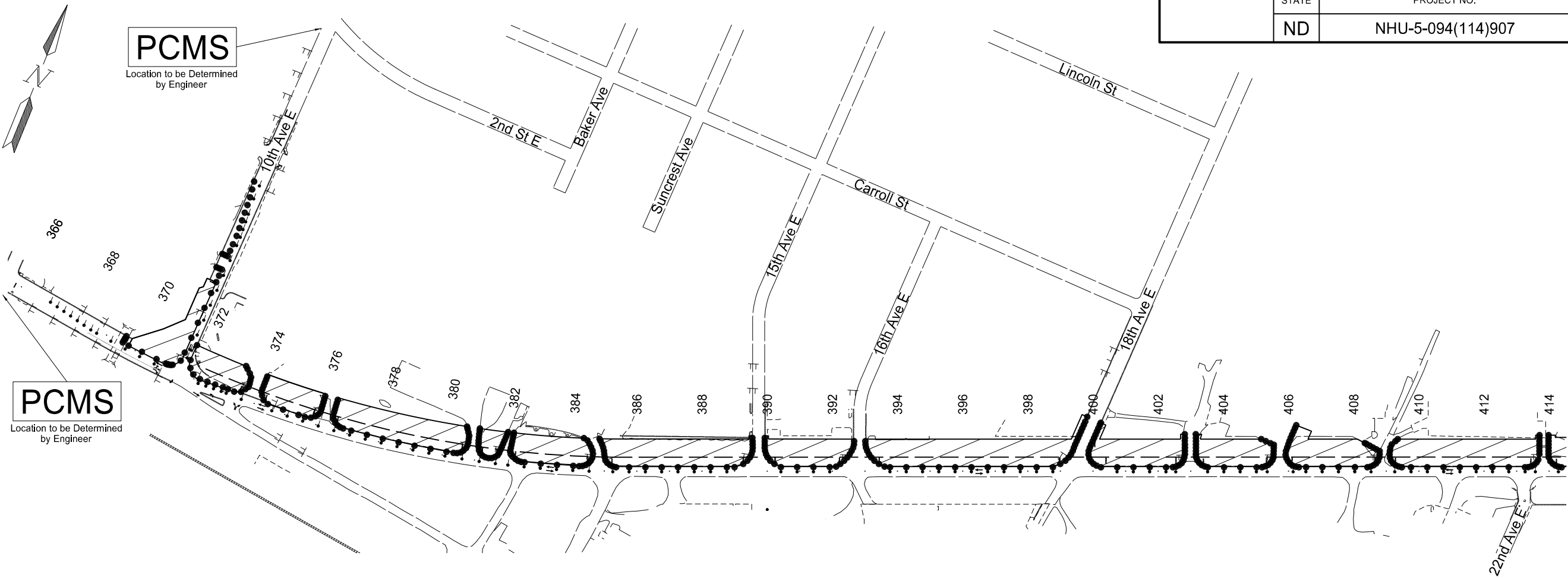
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WZTC Detail
East Villard Temporary Realignment Detail

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	8

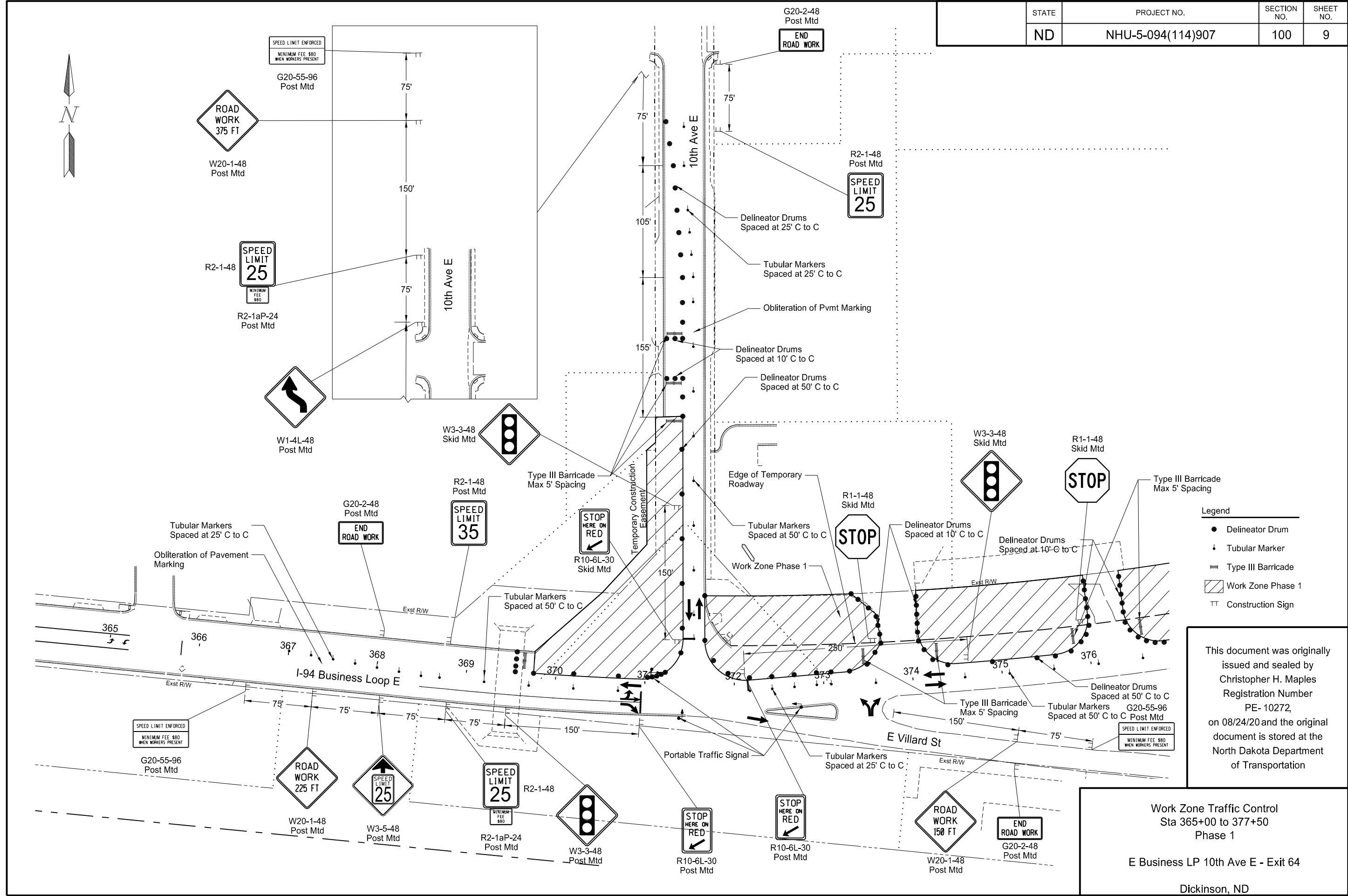


- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - Type III Barricade
 - ▨ Work Zone Phase 1
 - TT Construction Sign

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Work Zone Traffic Control
Phase 1
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	100	9



- Legend
- Delineator Drum
 - Tubular Marker
 - ≡ Type III Barricade
 - ▨ Work Zone Phase 1
 - TT Construction Sign

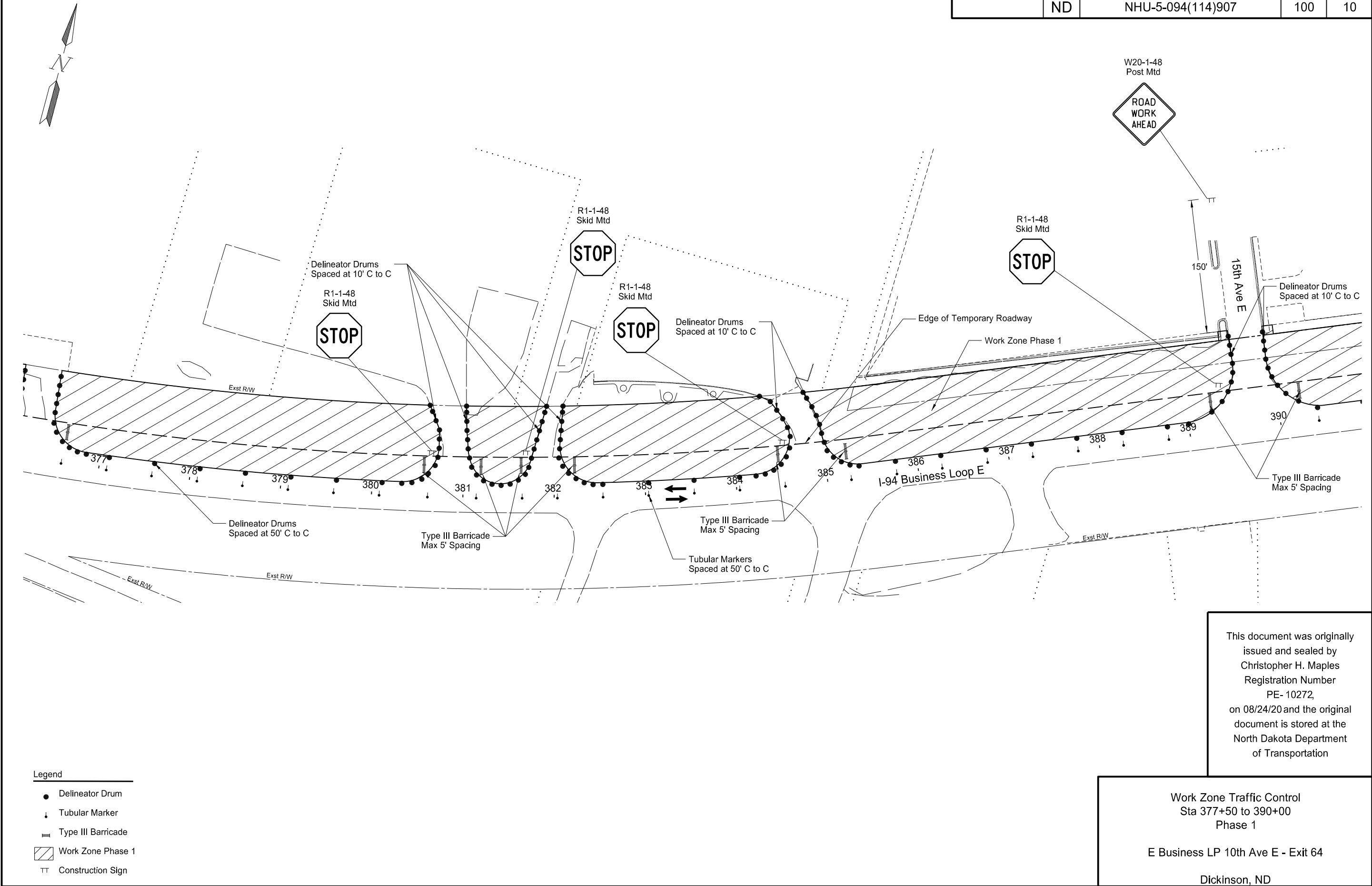
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Work Zone Traffic Control
Sta 365+00 to 377+50
Phase 1

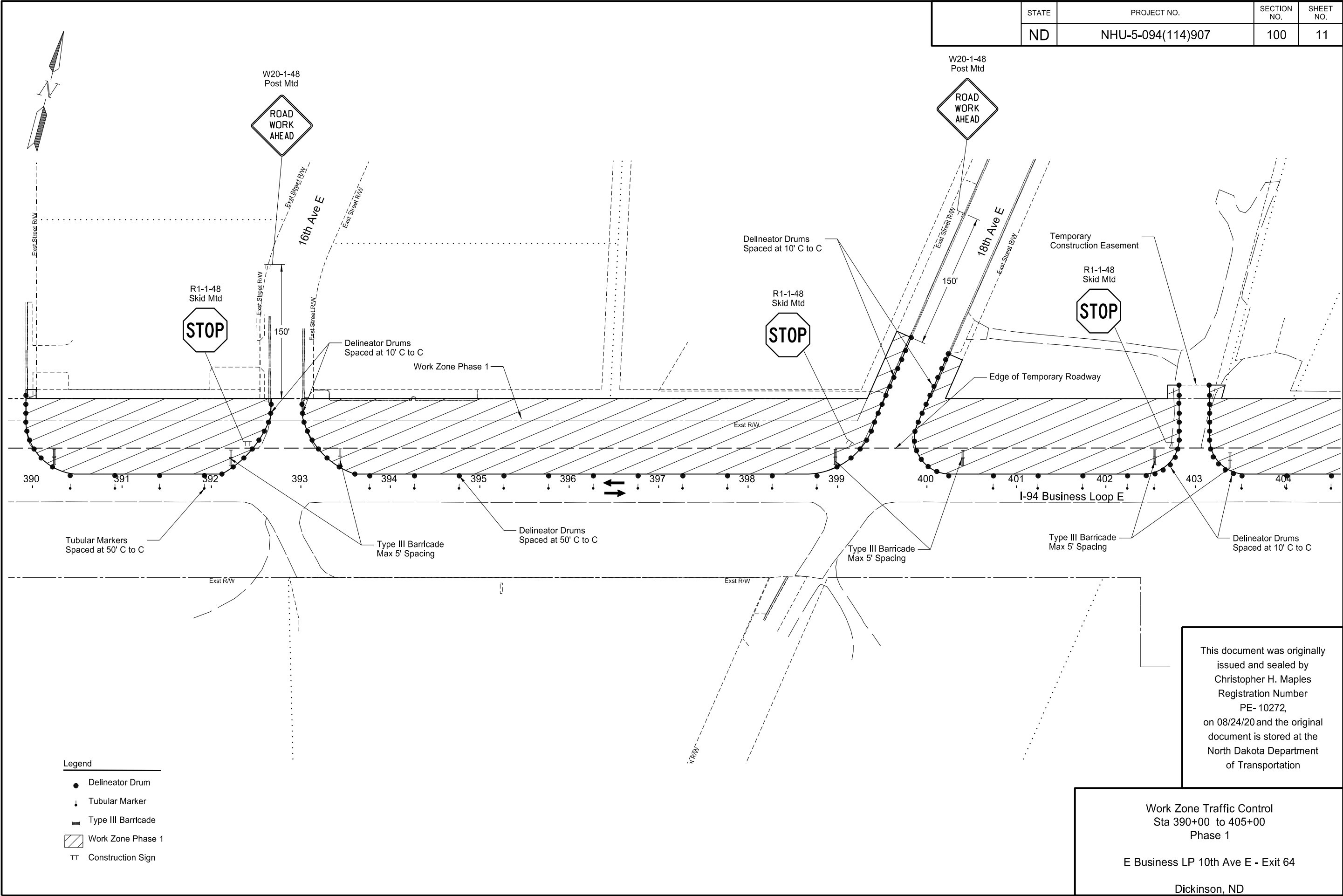
E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	100	10



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	11



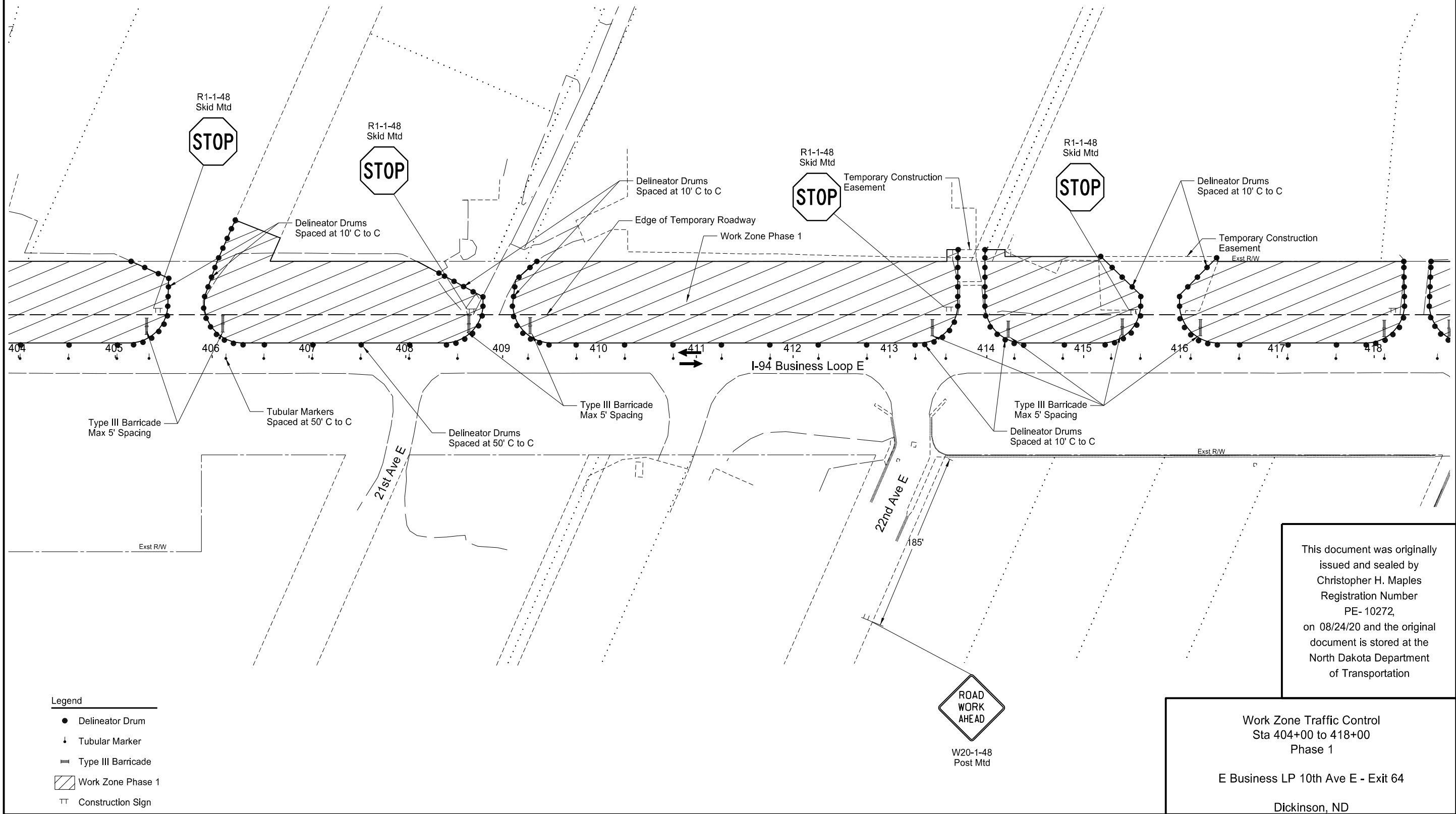
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Work Zone Traffic Control
Sta 390+00 to 405+00
Phase 1

E Business LP 10th Ave E - Exit 64

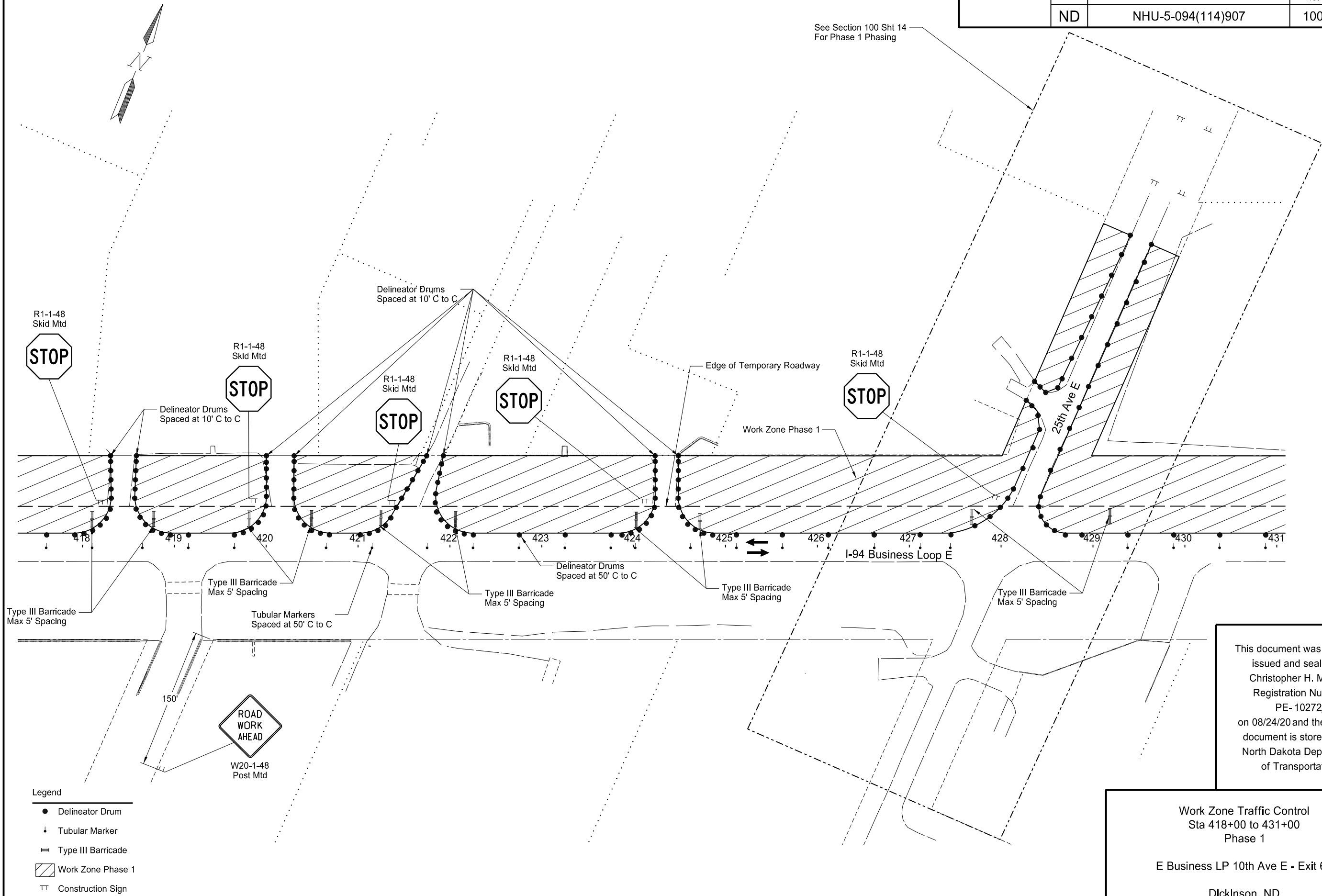
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	12



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	100	13

See Section 100 Sht 14
For Phase 1 Phasing



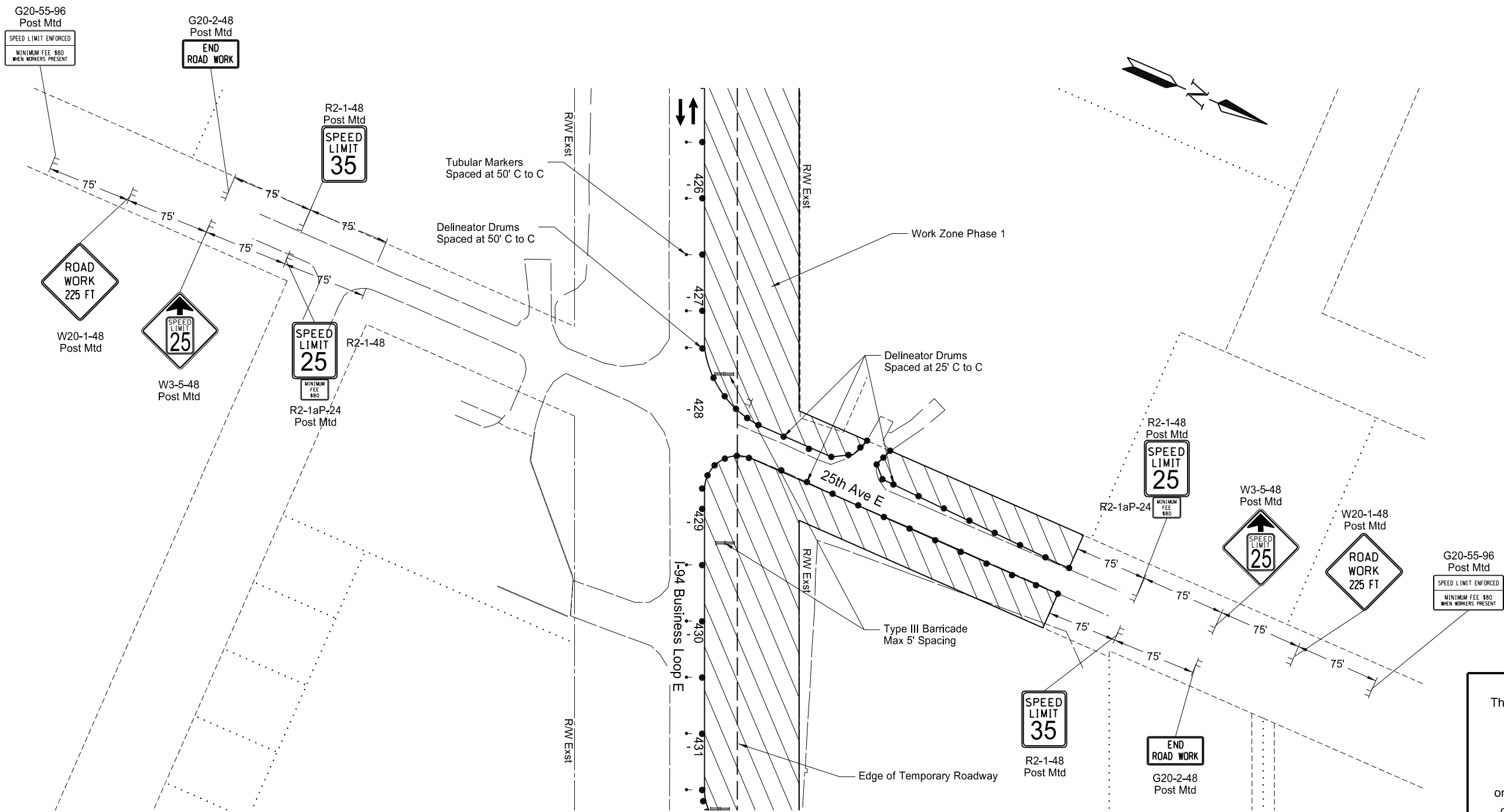
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Work Zone Traffic Control
Sta 418+00 to 431+00
Phase 1

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	14



- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - ≡ Type III Barricade
 - ▨ Work Zone Phase 1
 - TT Construction Sign

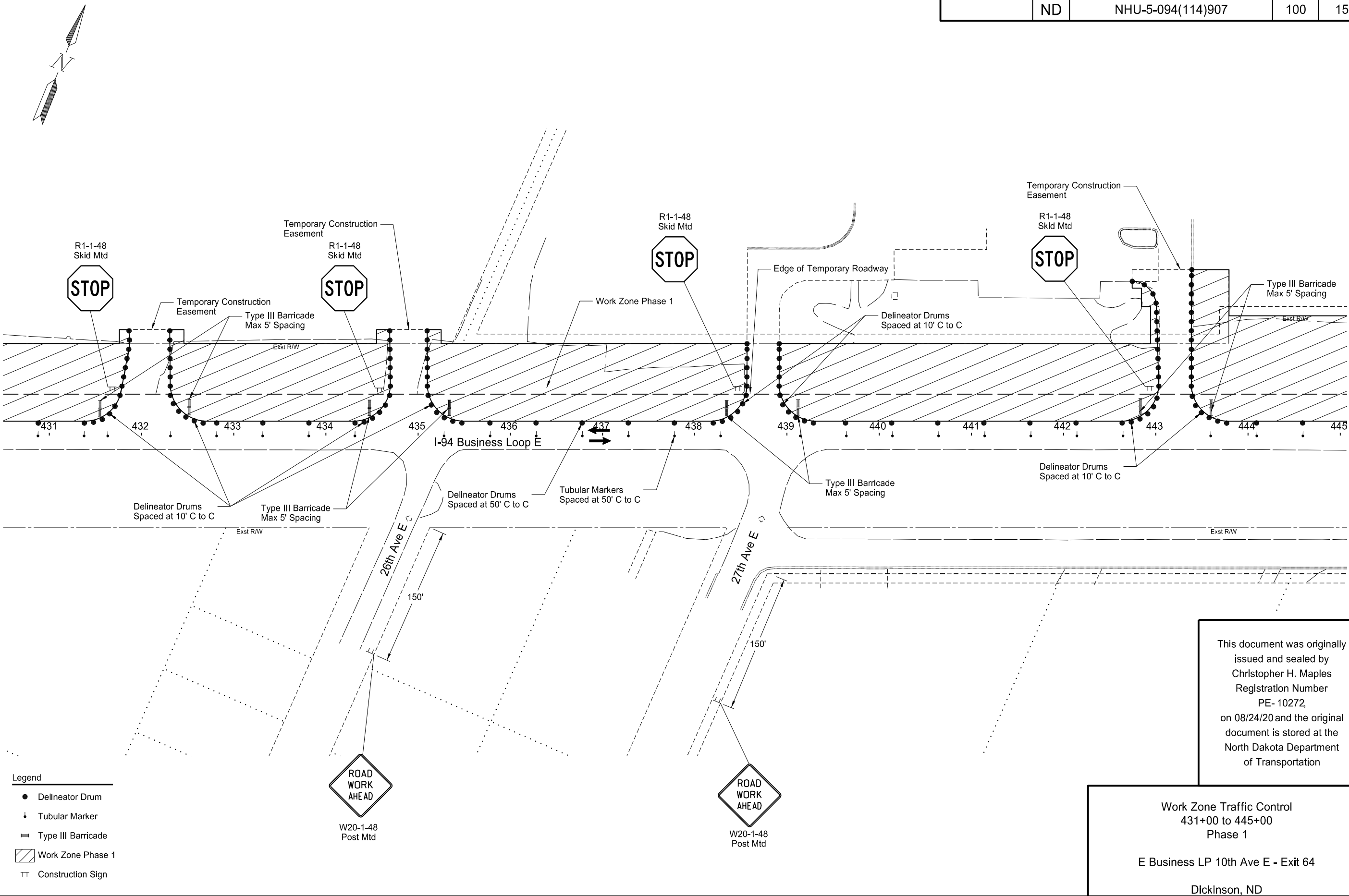
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Work Zone Traffic Control
Sta 426+00 to 431+00
Phase 1

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	100	15



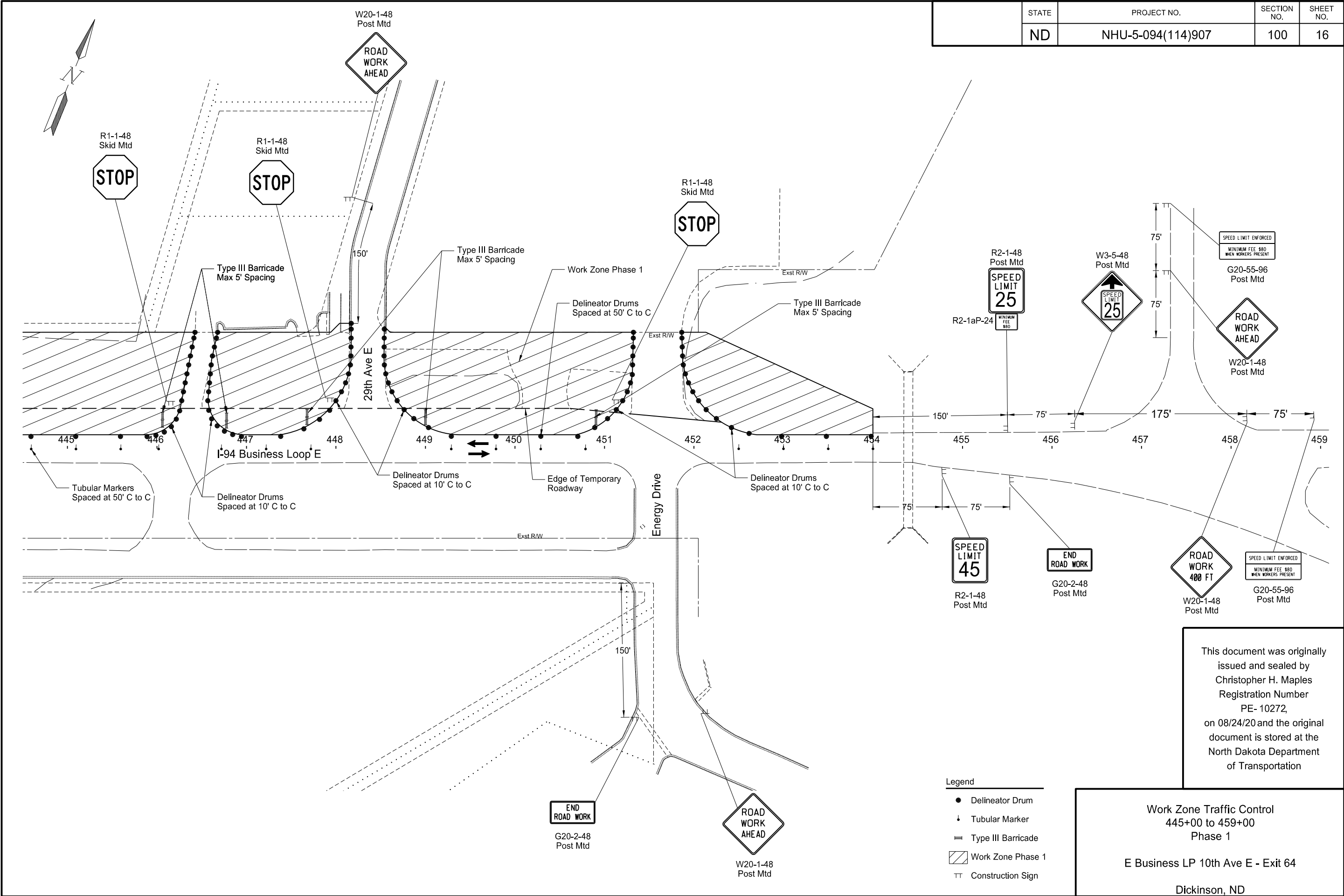
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Work Zone Traffic Control
431+00 to 445+00
Phase 1

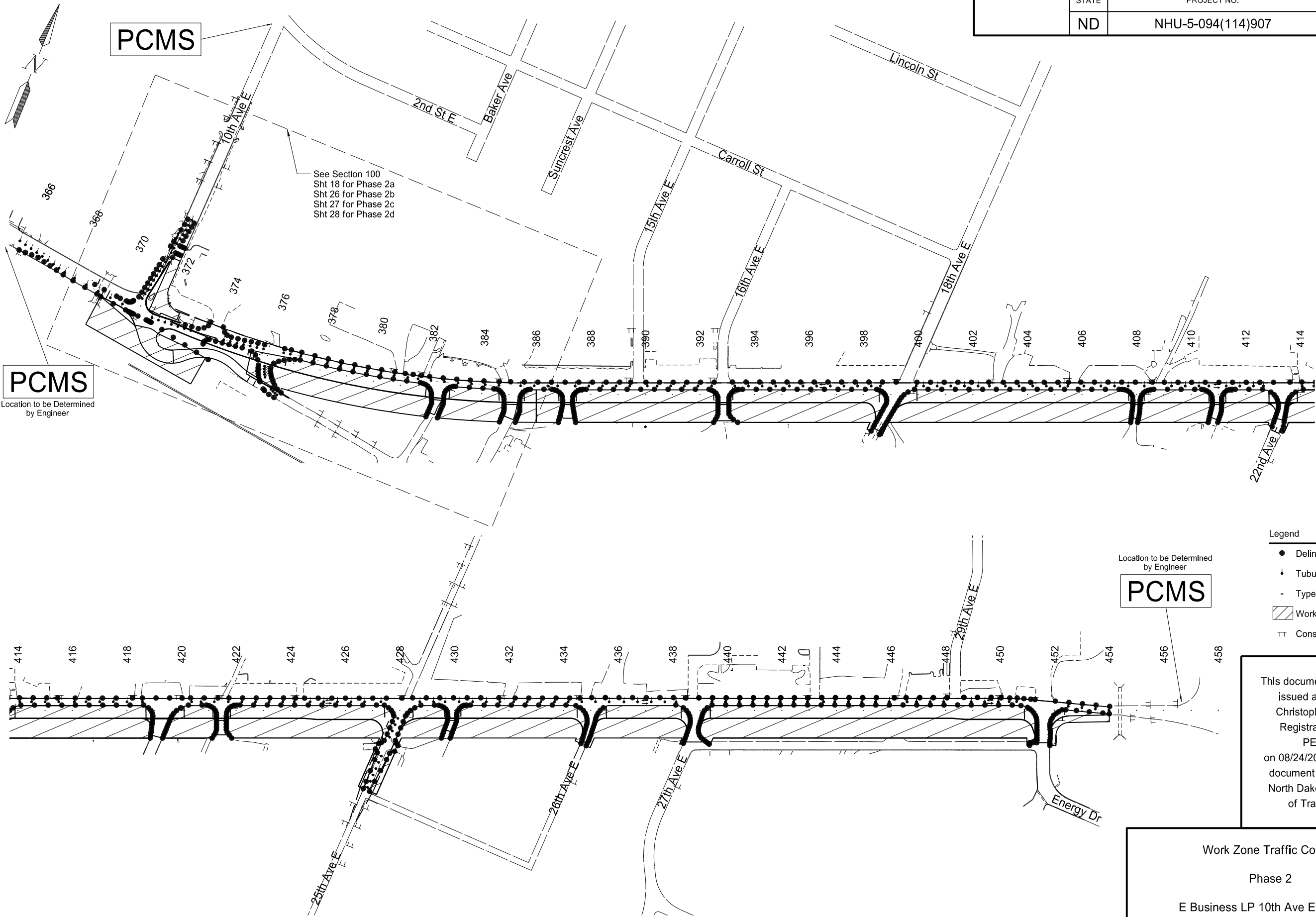
E Business LP 10th Ave E - Exit 64

Dickinson, ND

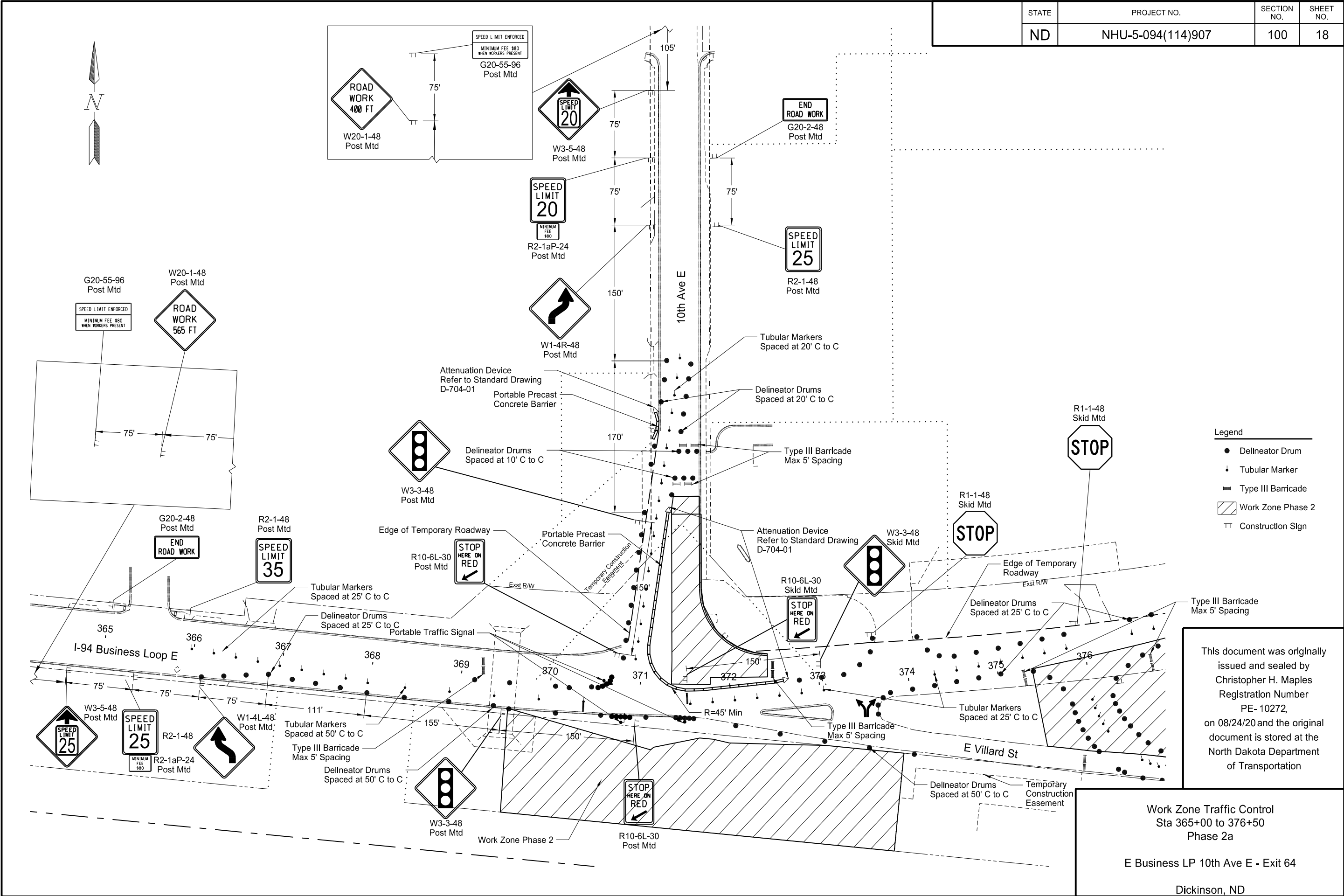
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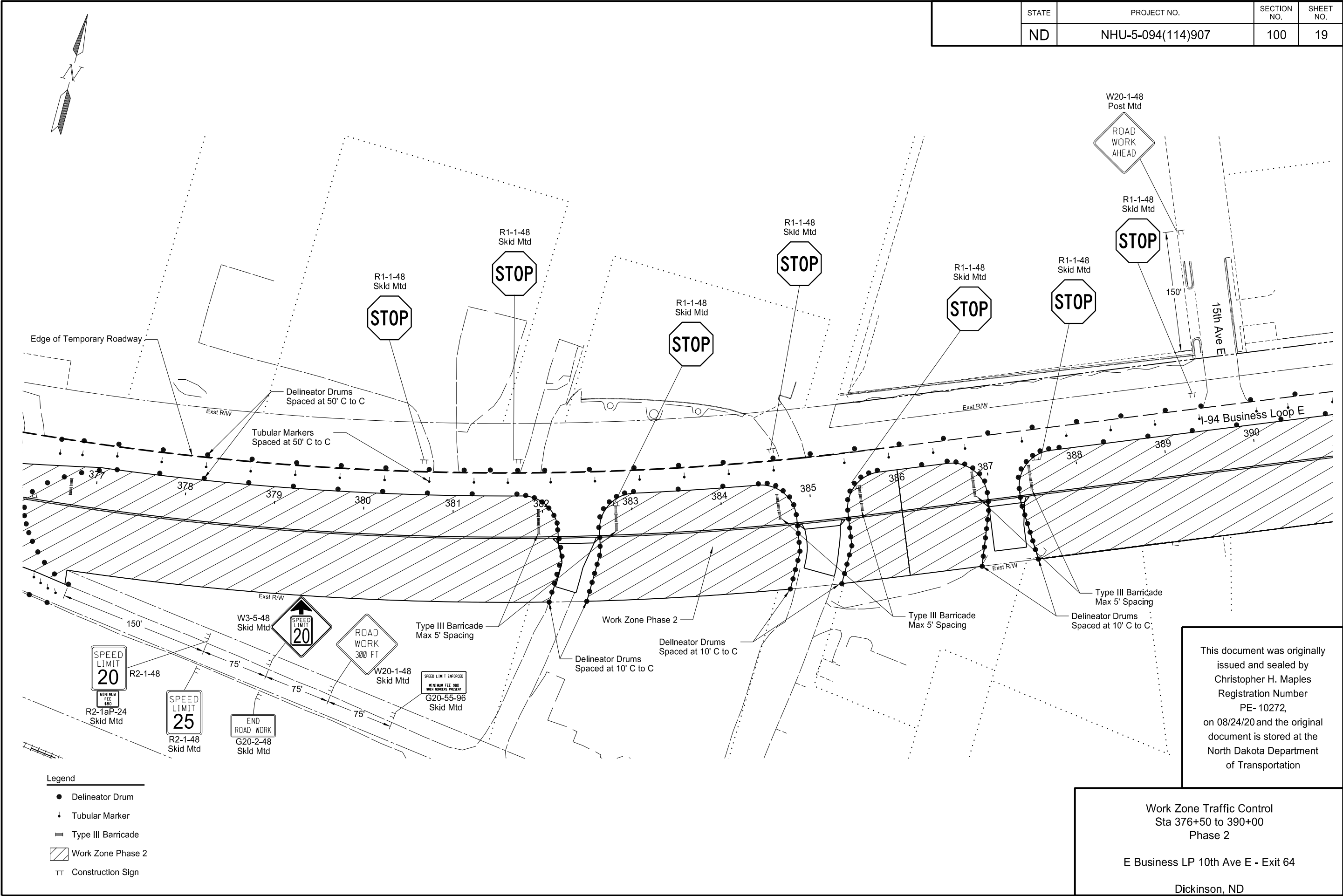
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	17



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	100	18



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	19



- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - ≡ Type III Barricade
 - ▨ Work Zone Phase 2
 - ⏏ Construction Sign

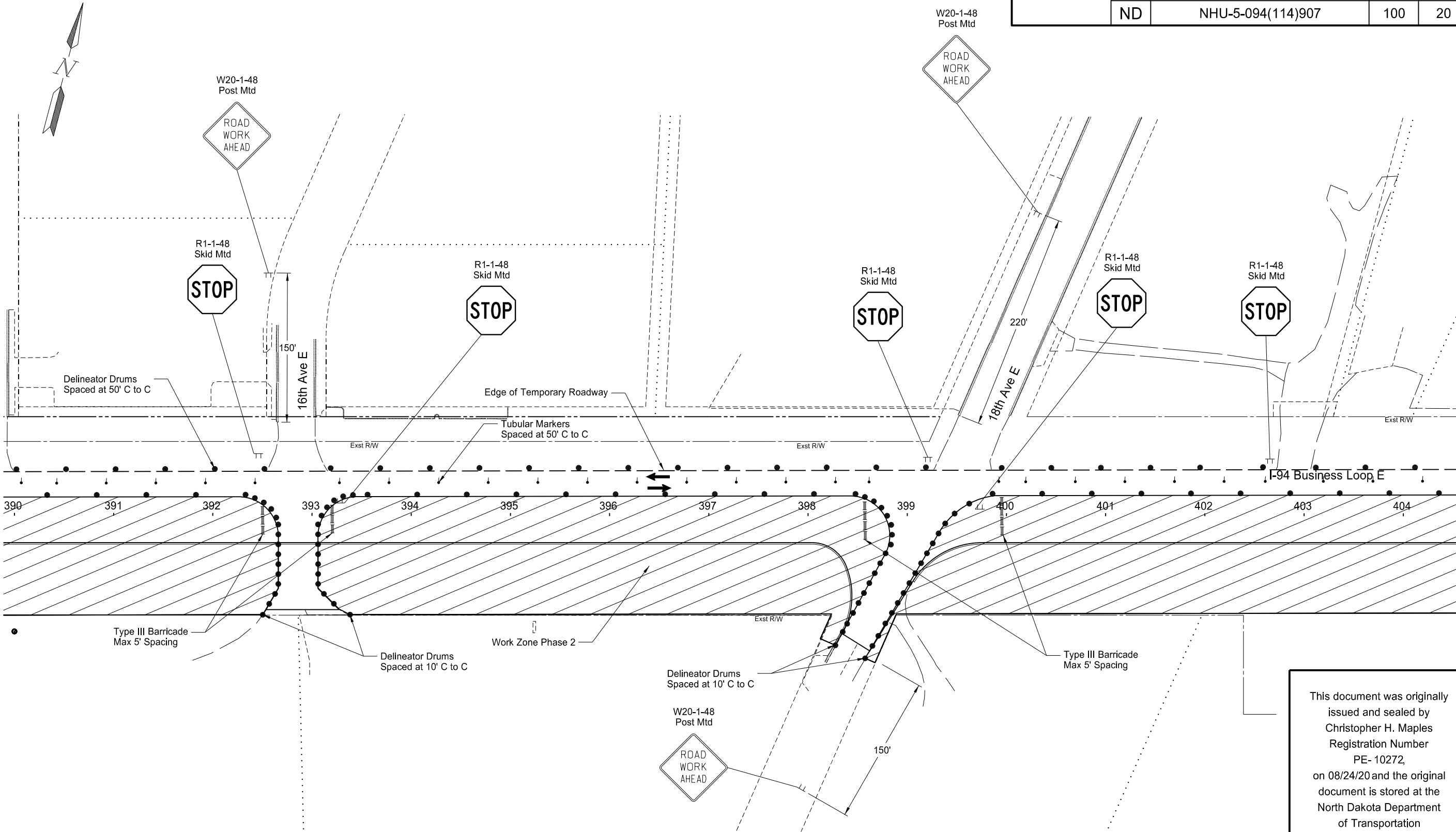
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Work Zone Traffic Control
Sta 376+50 to 390+00
Phase 2

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	20



- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - ▬ Type III Barricade
 - ▨ Work Zone Phase 2
 - TT Construction Sign

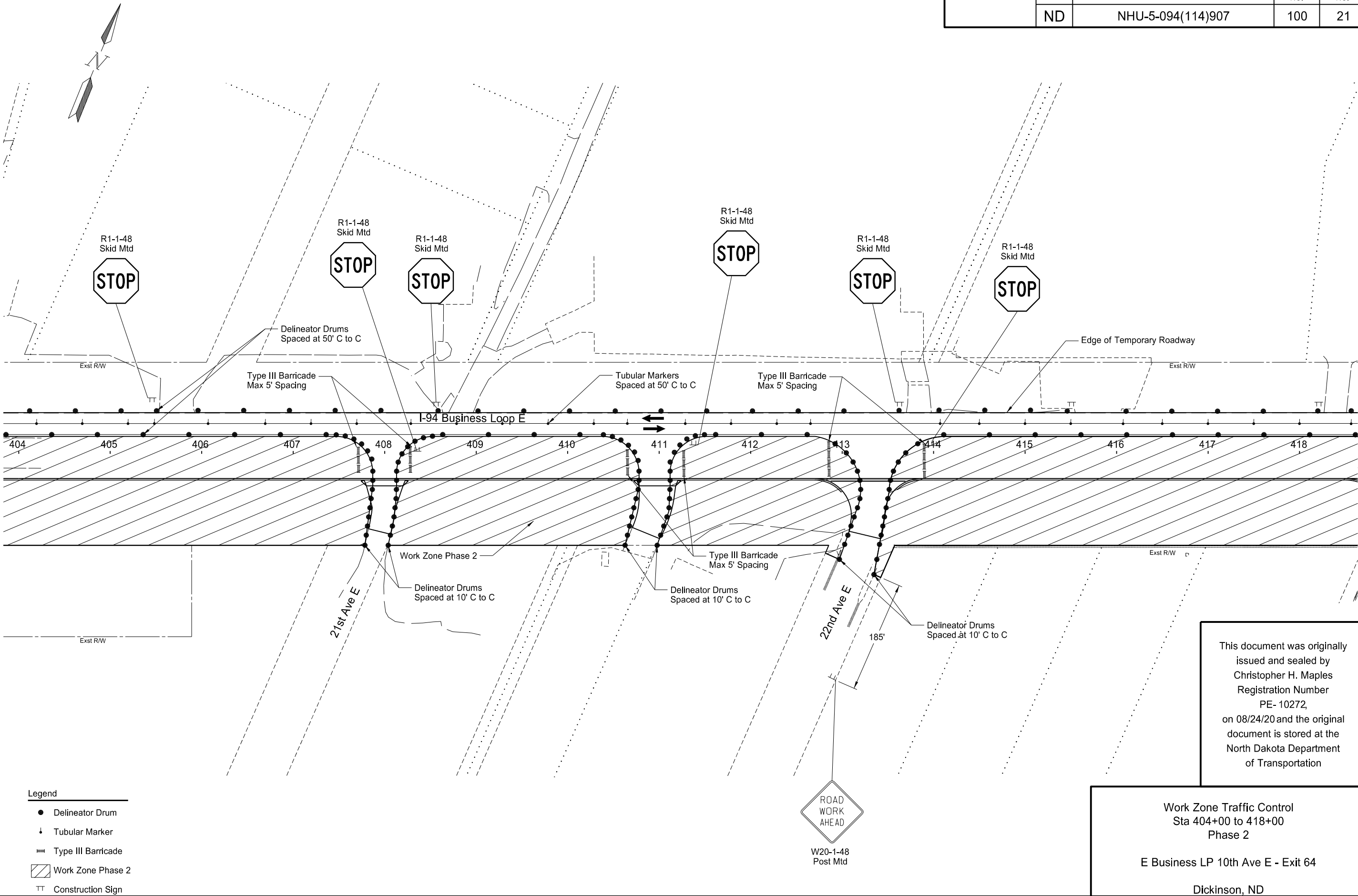
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Work Zone Traffic Control
Sta 390+00 to 404+00
Phase 2

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	21



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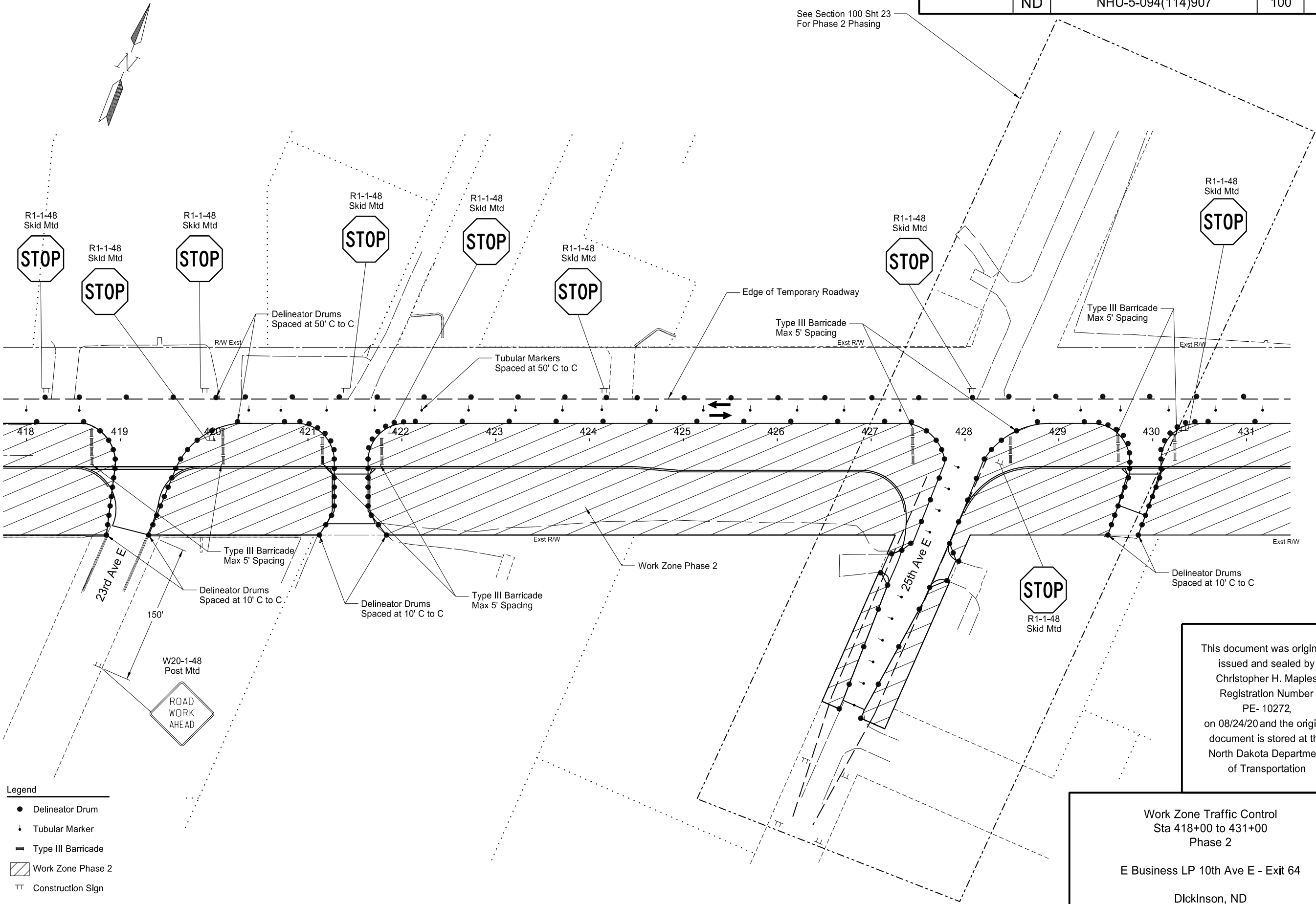
Work Zone Traffic Control
Sta 404+00 to 418+00
Phase 2

E Business LP 10th Ave E - Exit 64

Dickinson, ND

- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - ≡ Type III Barricade
 - ▨ Work Zone Phase 2
 - TT Construction Sign

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	100	22



- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - ≡ Type III Barricade
 - ▨ Work Zone Phase 2
 - TT Construction Sign

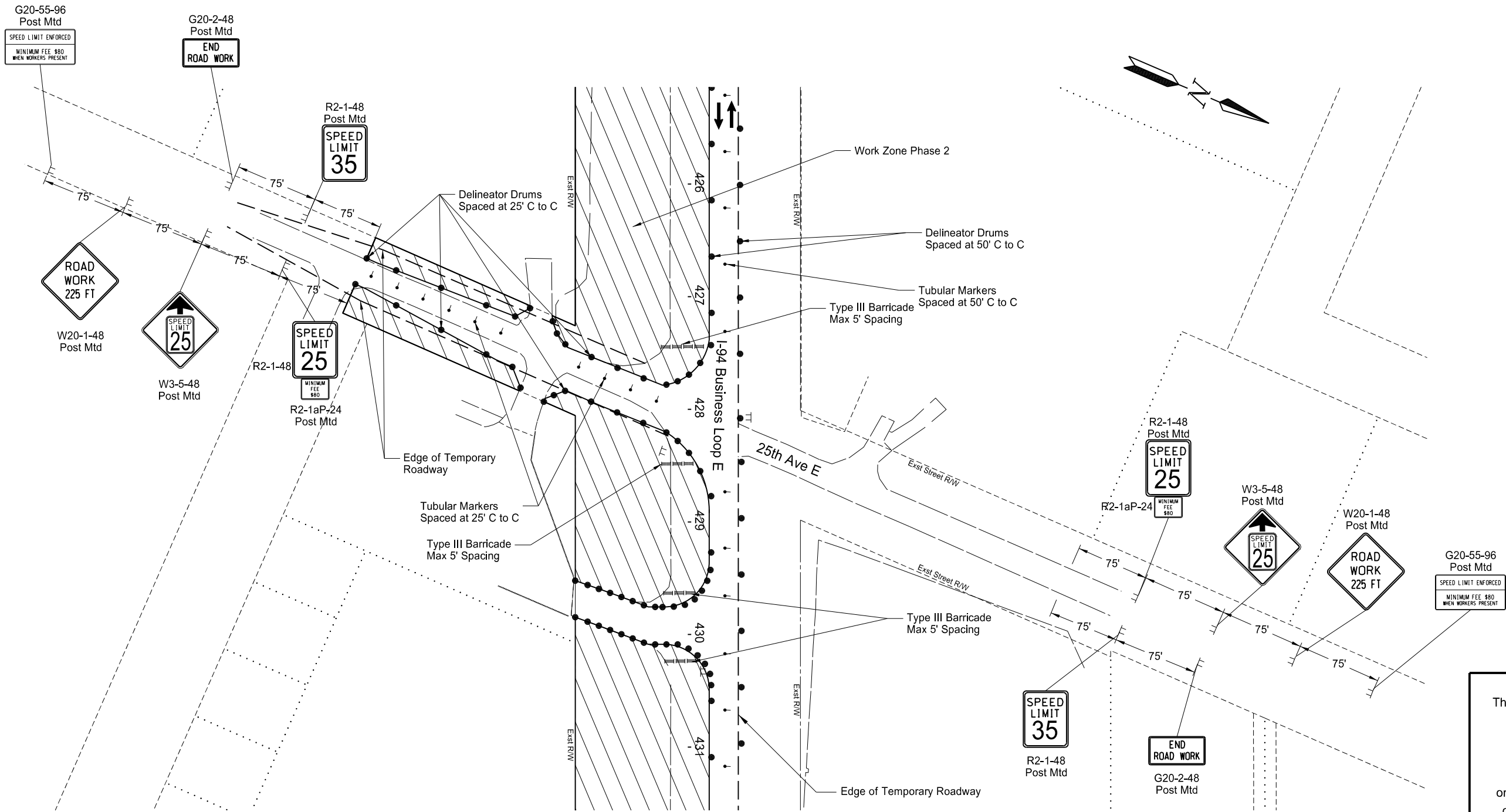
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Work Zone Traffic Control
Sta 418+00 to 431+00
Phase 2

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	23



- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - ≡ Type III Barricade
 - ▨ Work Zone Phase 2
 - TT Construction Sign

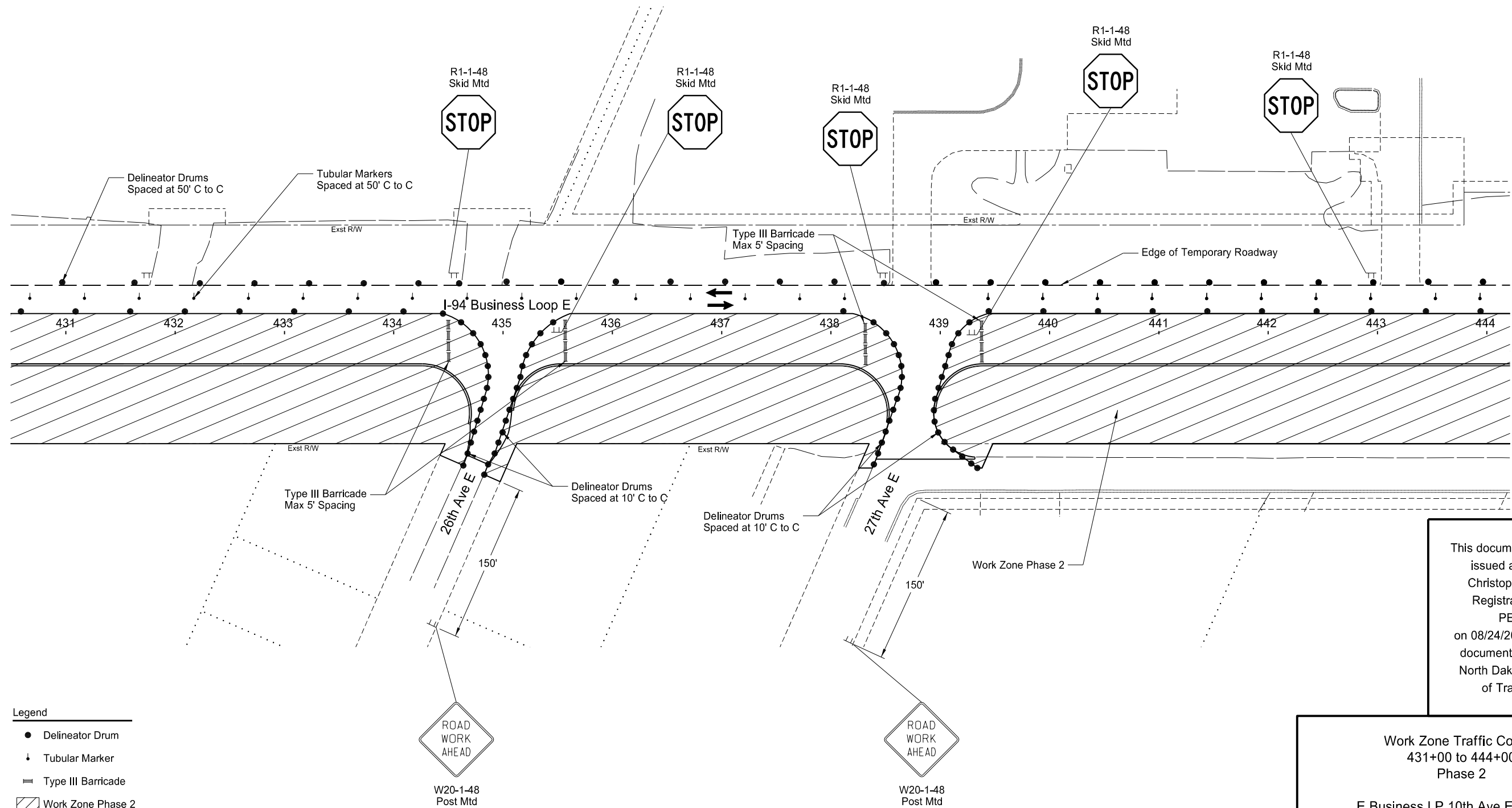
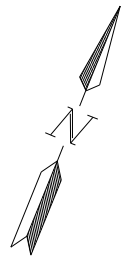
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Work Zone Traffic Control
Sta 426+00 to 431+00
Phase 2

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	24



- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - ≡ Type III Barricade
 - ▨ Work Zone Phase 2
 - TT Construction Sign

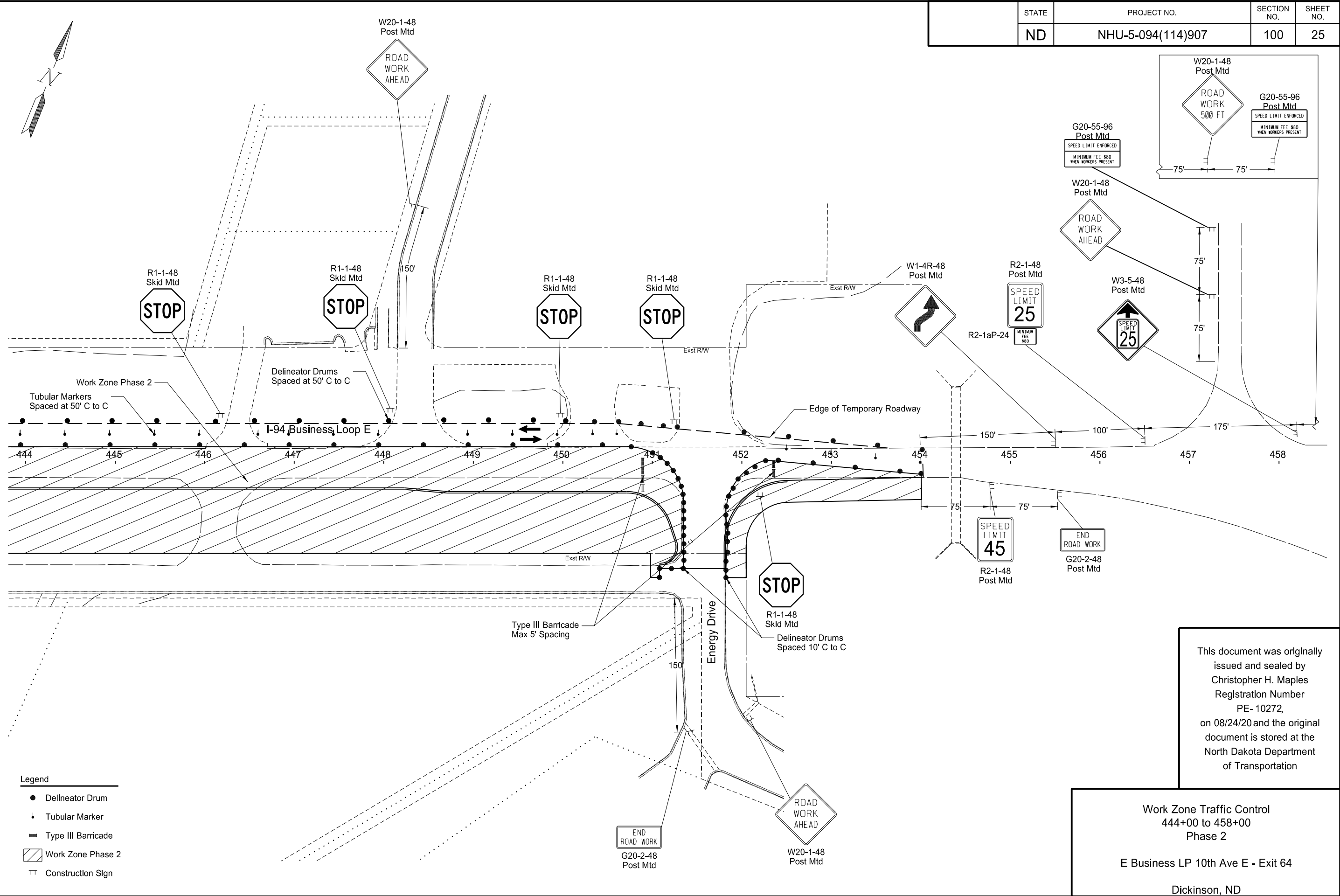
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Work Zone Traffic Control
431+00 to 444+00
Phase 2

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	25



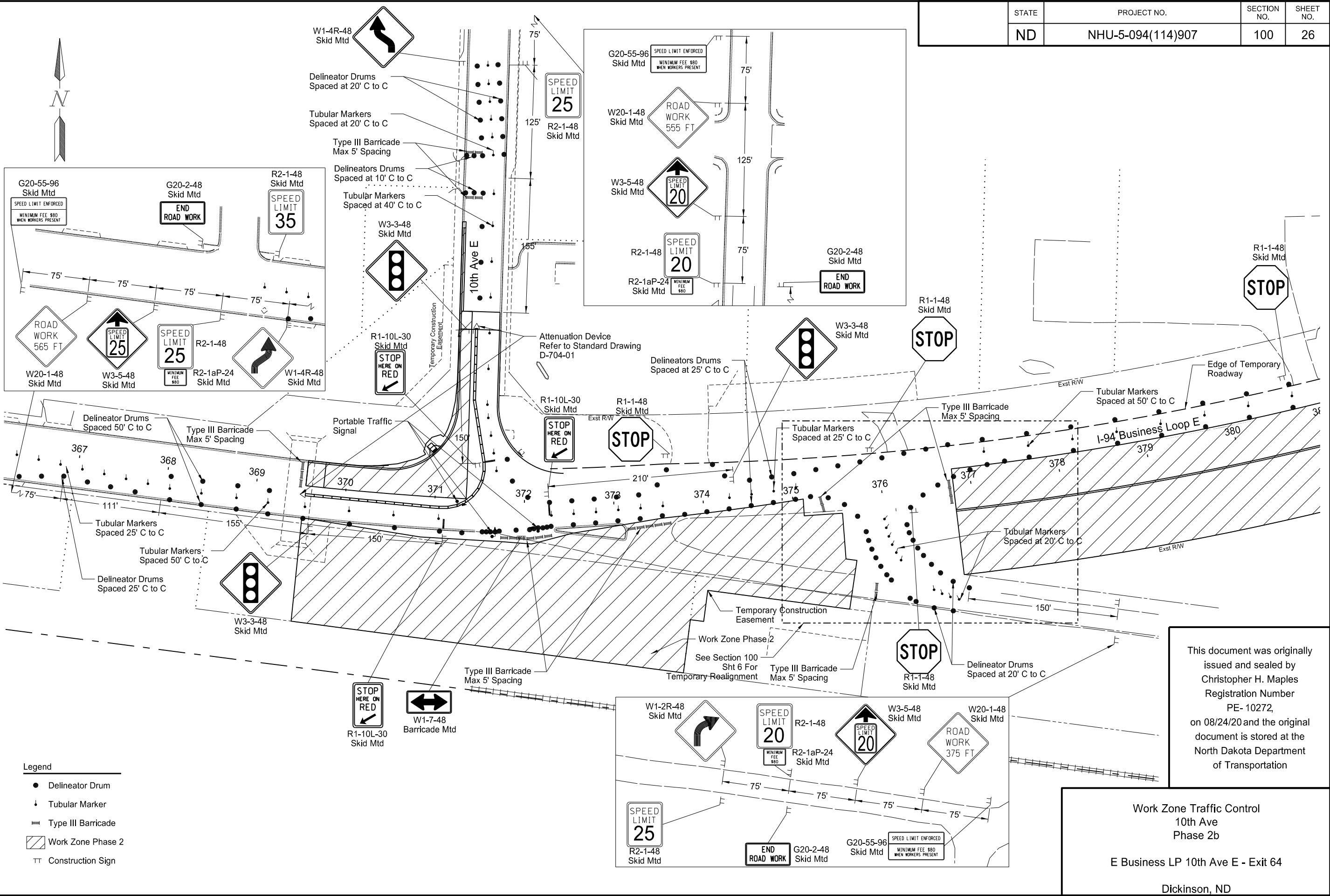
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Work Zone Traffic Control
444+00 to 458+00
Phase 2

E Business LP 10th Ave E - Exit 64

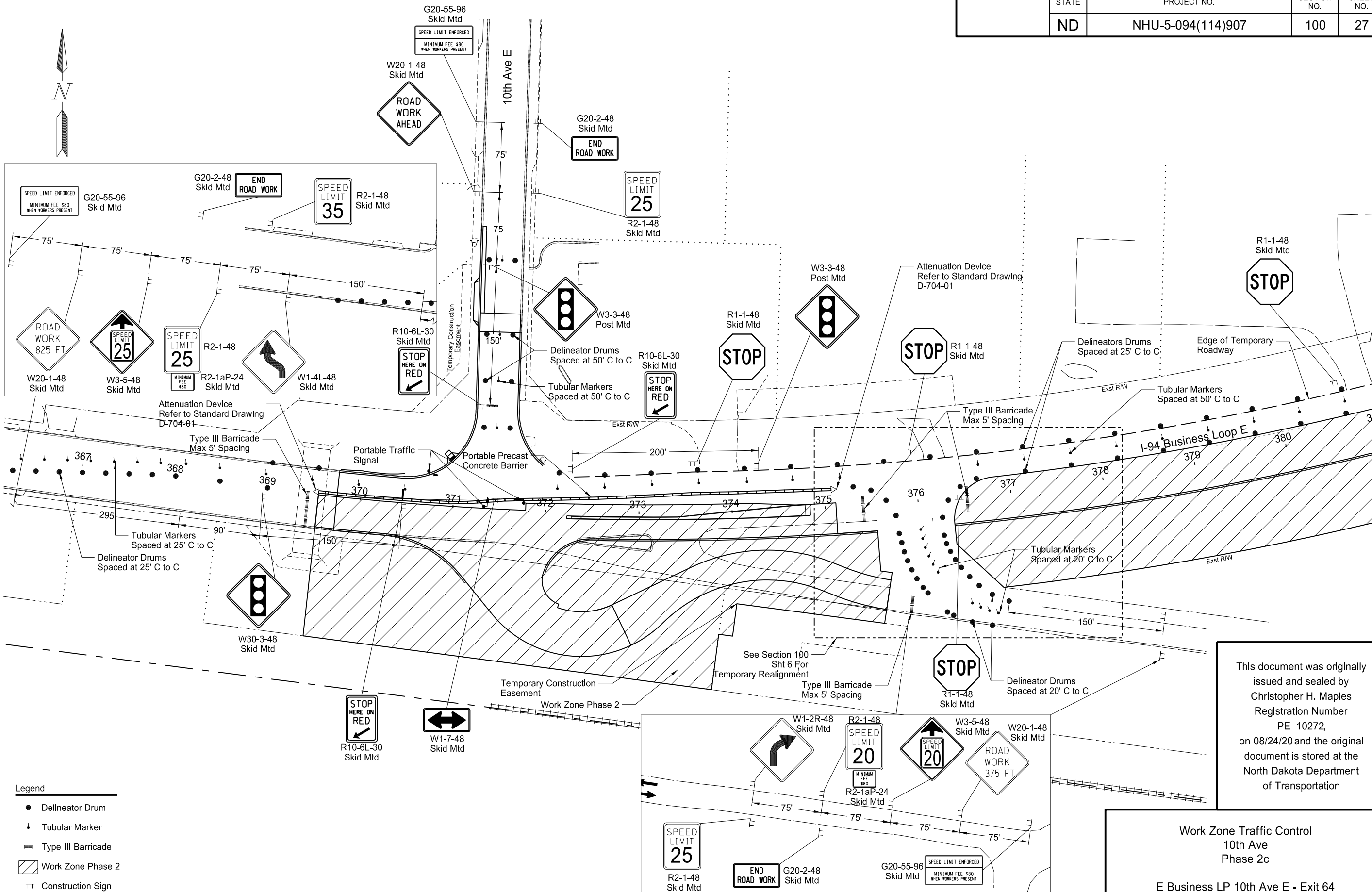
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	100	26

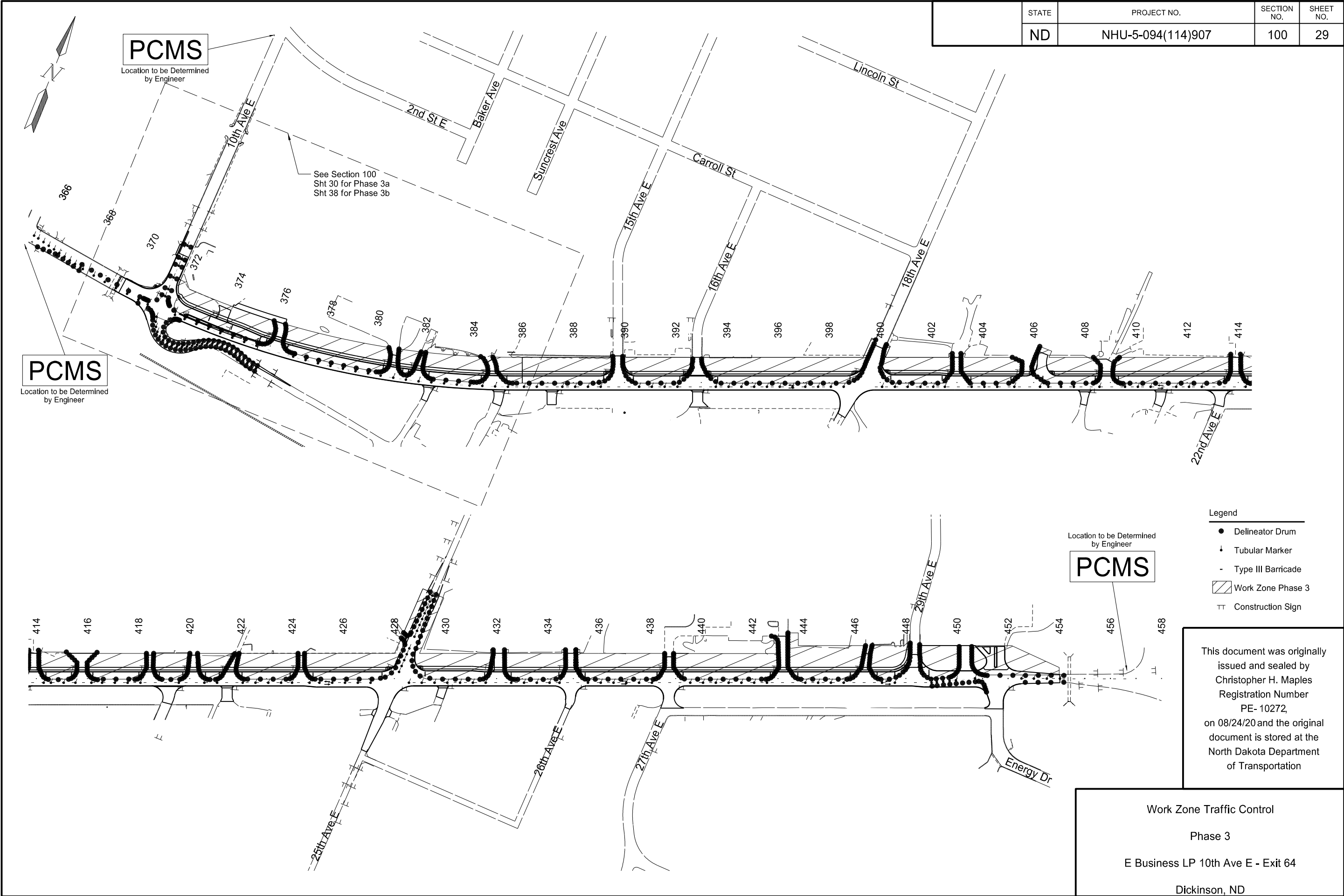


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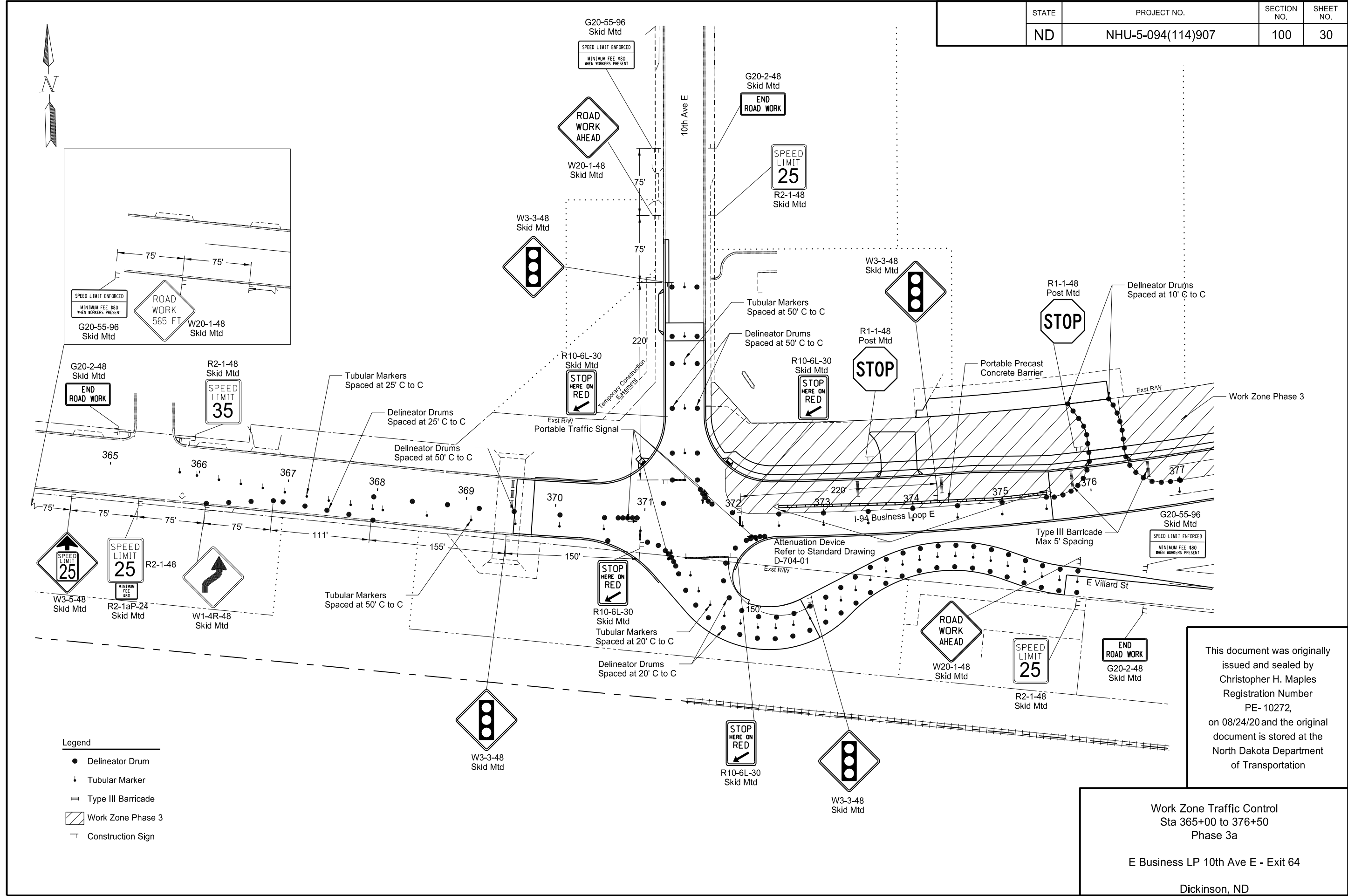
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	100	27



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	29

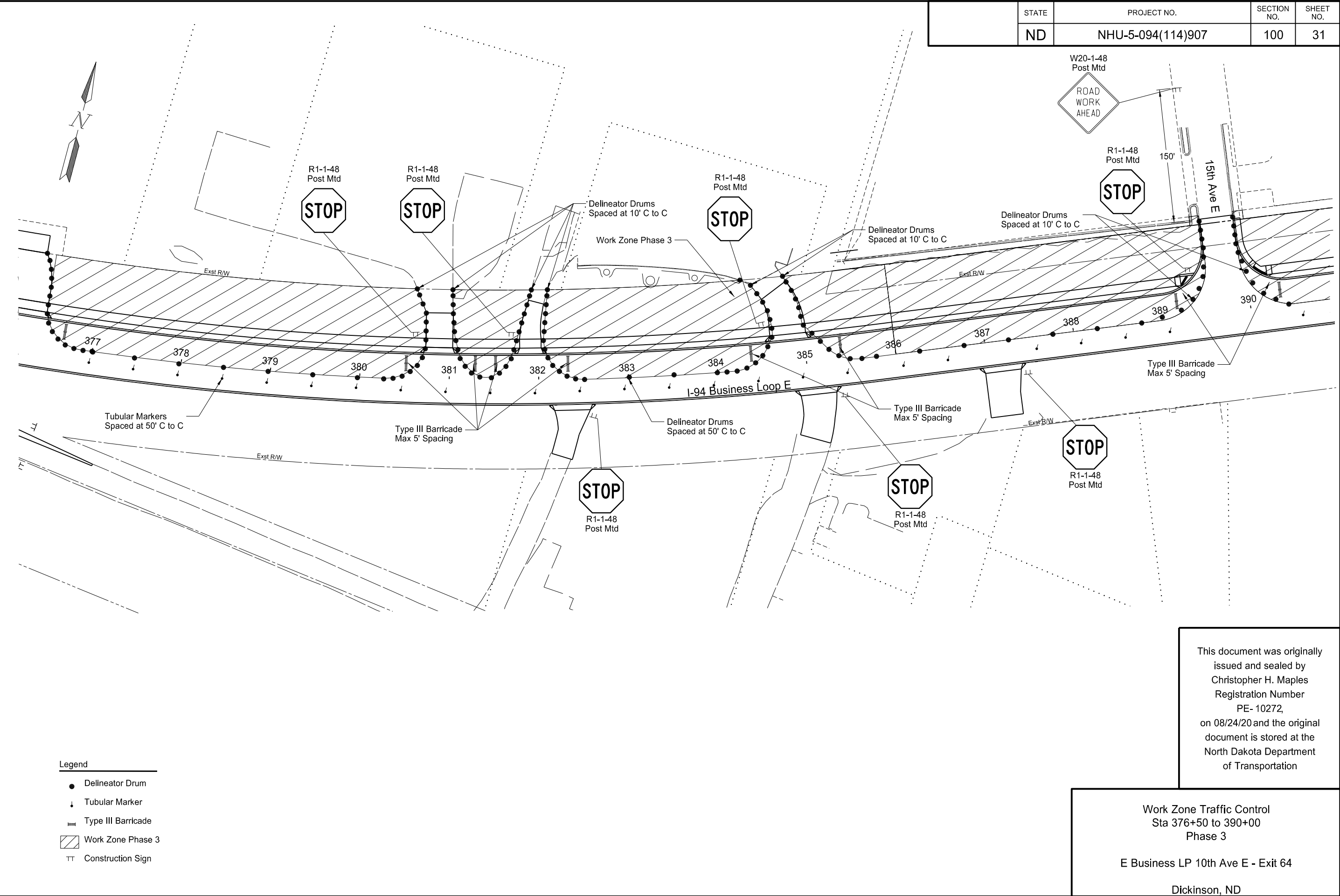


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	100	30

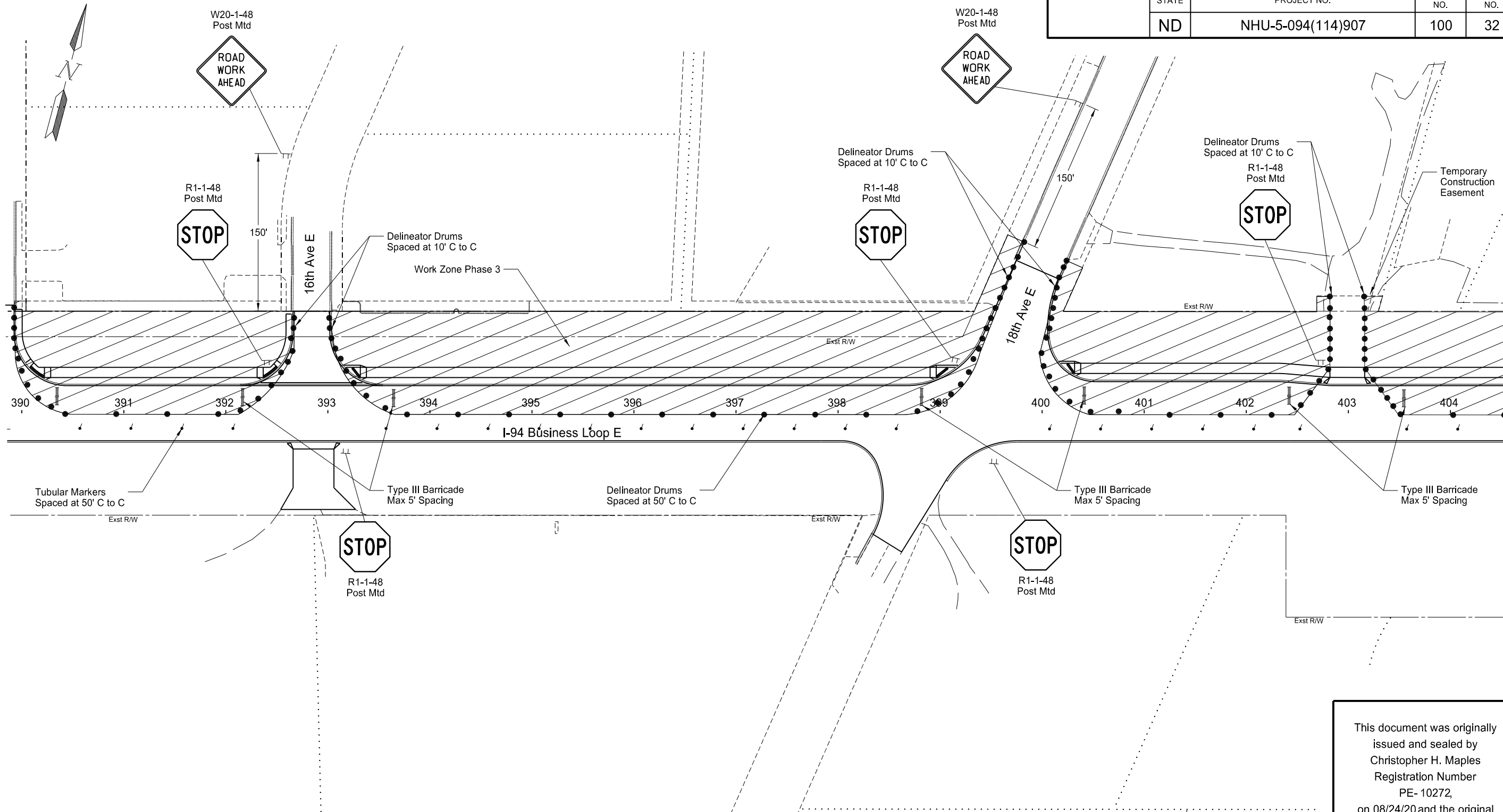


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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	31



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	32



- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - ▬ Type III Barricade
 - ▨ Work Zone Phase 3
 - TT Construction Sign

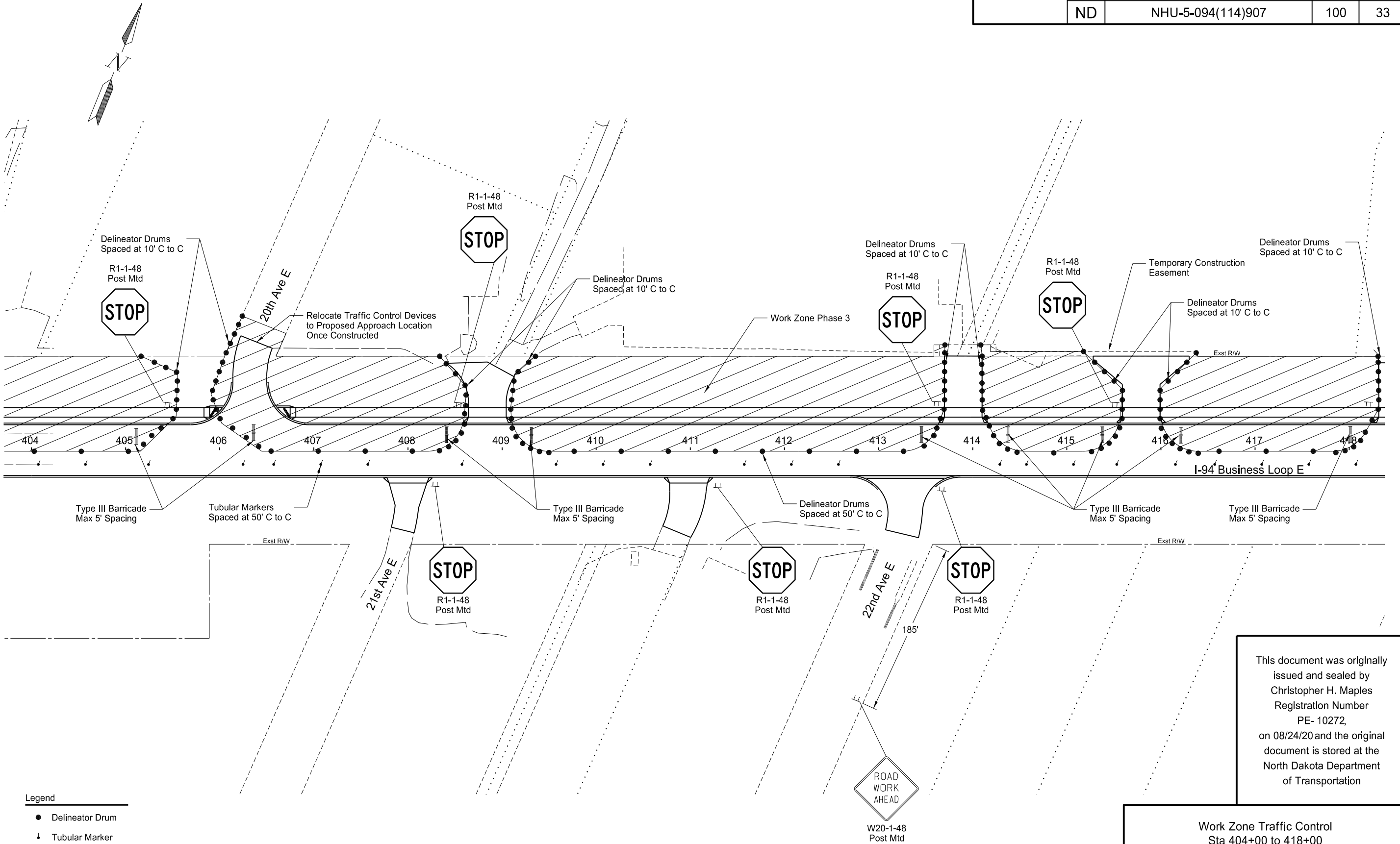
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Work Zone Traffic Control
Sta 390+00 to 404+00
Phase 3

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	33



- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - ≡ Type III Barricade
 - ▨ Work Zone Phase 3
 - TT Construction Sign

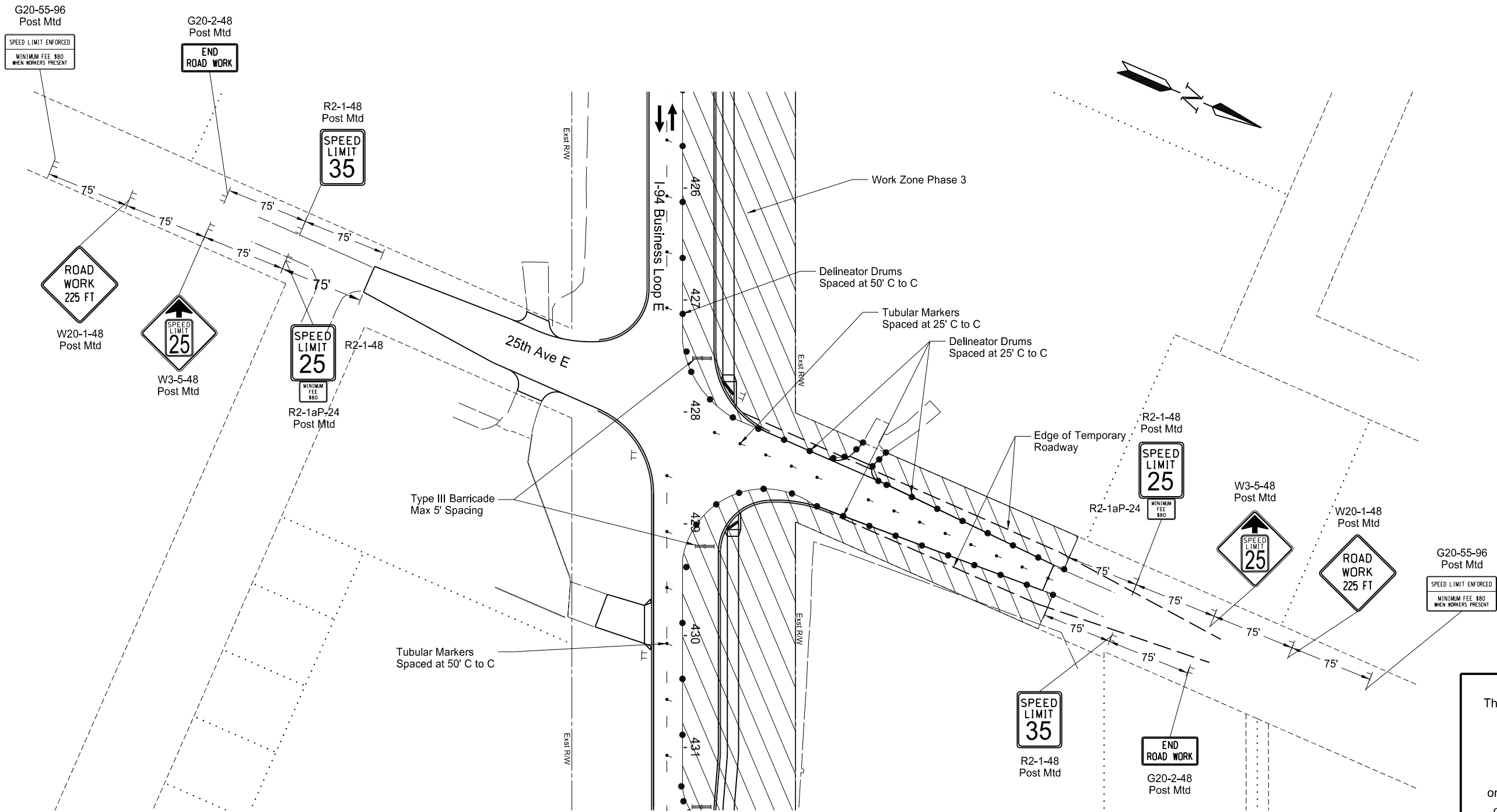
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Work Zone Traffic Control
Sta 404+00 to 418+00
Phase 3

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	35



- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - ≡ Type III Barricade
 - ▨ Work Zone Phase 3
 - TT Construction Sign

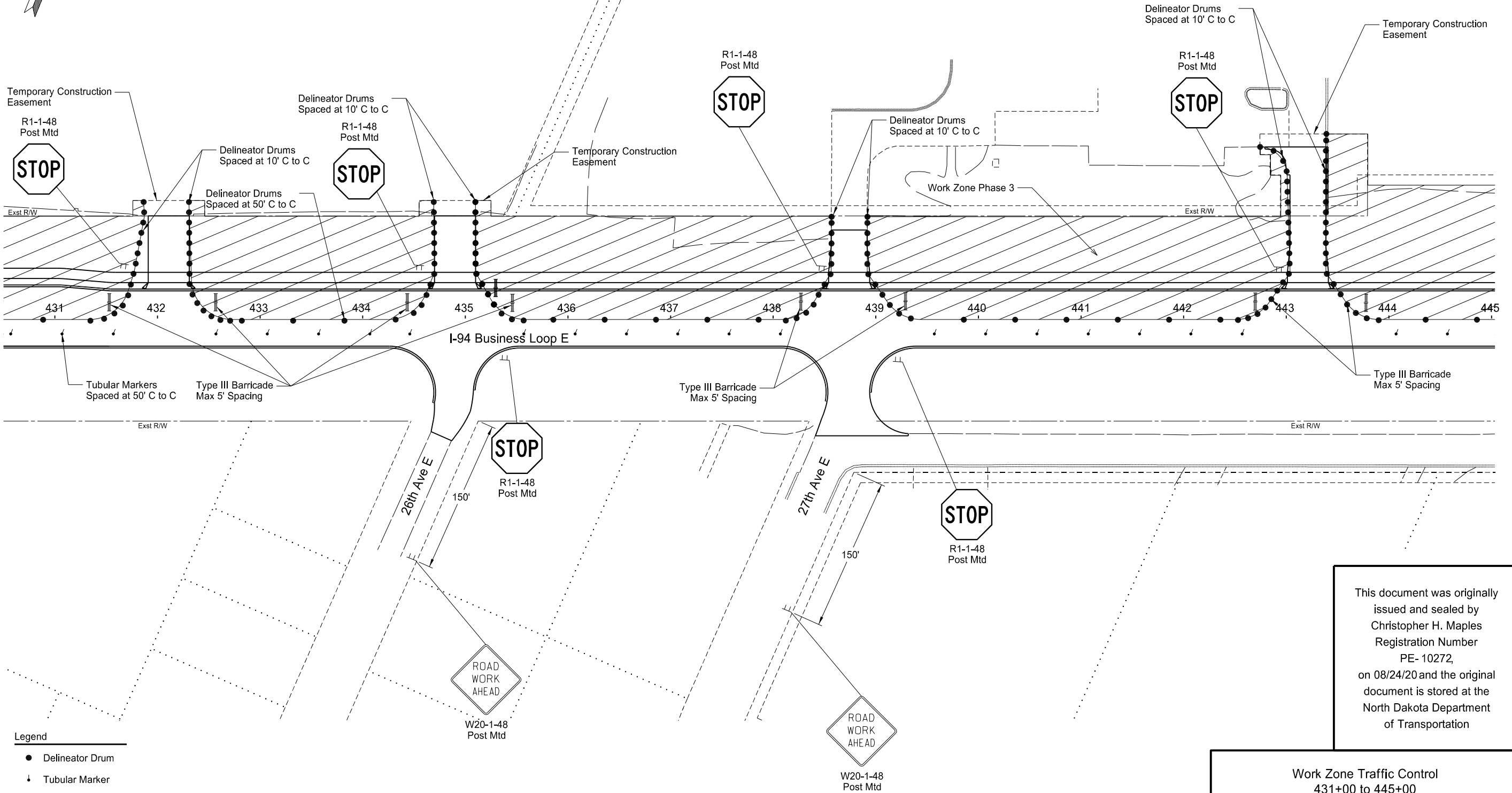
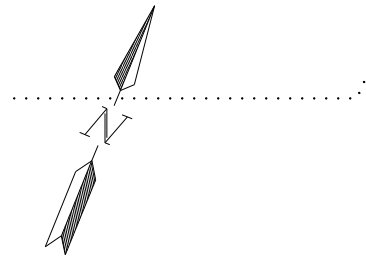
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Work Zone Traffic Control
Sta 426+00 to 431+00
Phase 3

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	100	36



- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - ≡ Type III Barricade
 - ▨ Work Zone Phase 3
 - TT Construction Sign

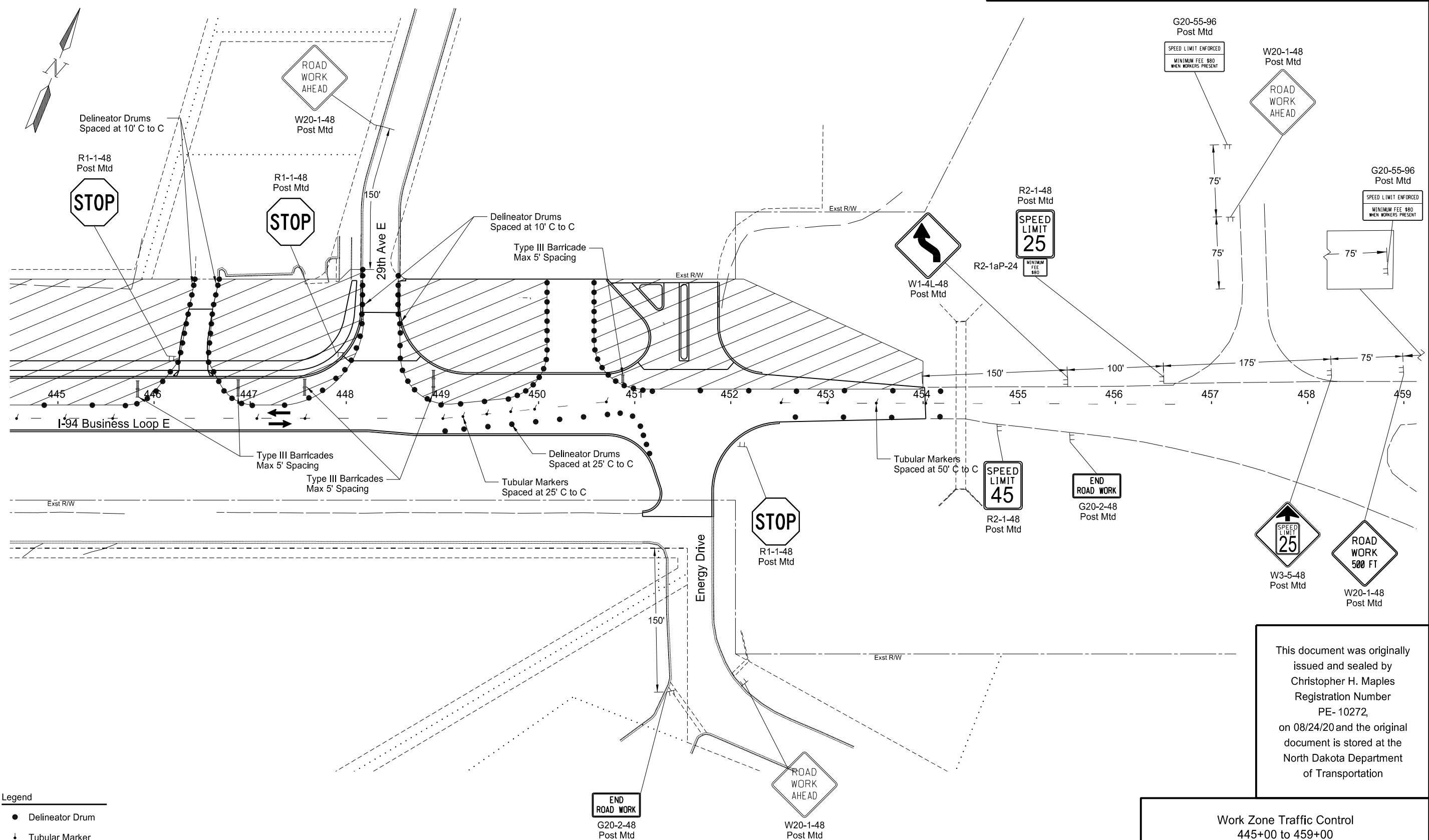
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Work Zone Traffic Control
431+00 to 445+00
Phase 3

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	100	37



- Legend
- Delineator Drum
 - ↓ Tubular Marker
 - ≡ Type III Barricade
 - ▨ Work Zone Phase 3
 - TT Construction Sign

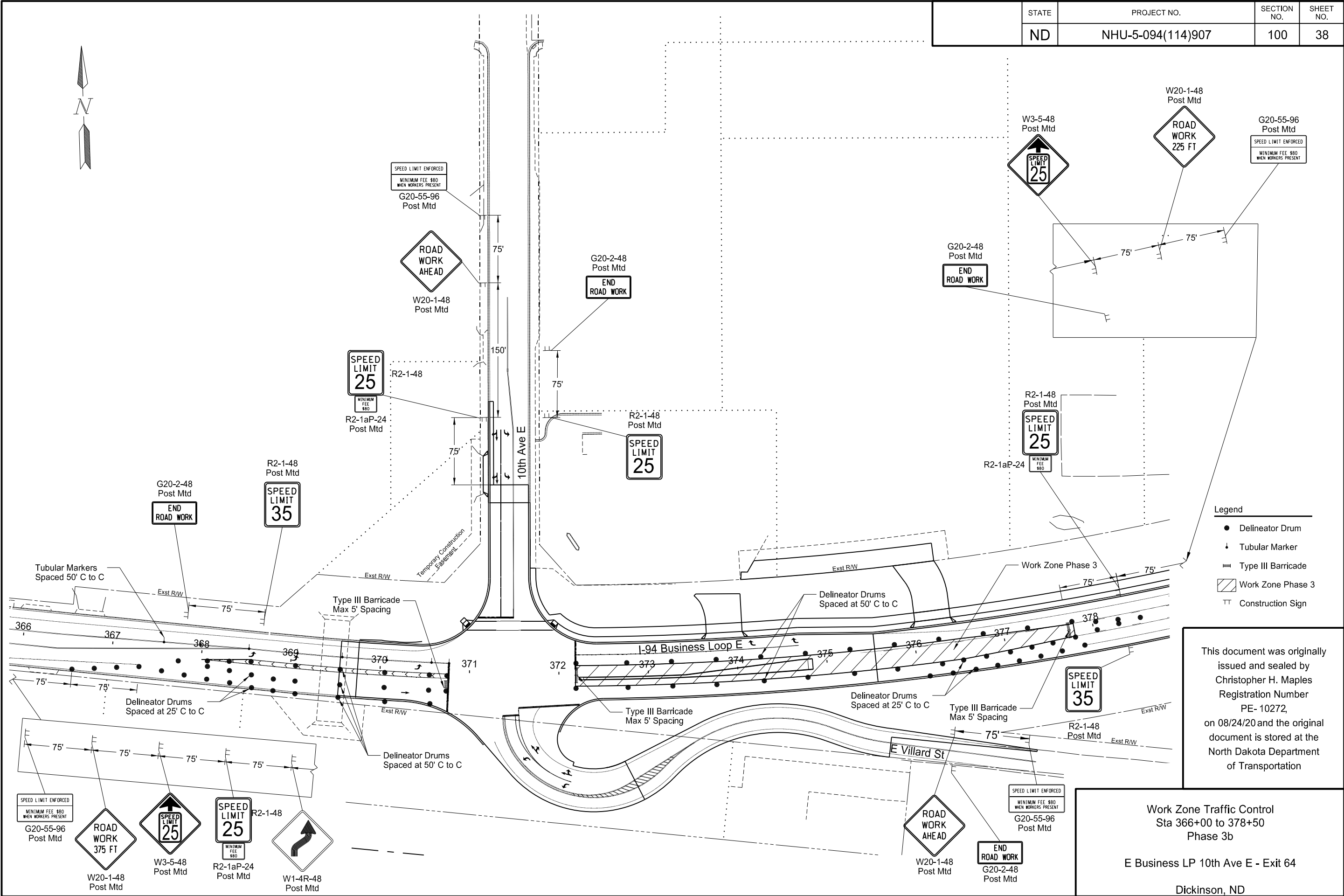
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Work Zone Traffic Control
445+00 to 459+00
Phase 3

E Business LP 10th Ave E - Exit 64

Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	100	38



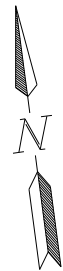
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																	N.D.	NHU-5-094(114)907			110	1	
Station / RP	Sign No.	Assembly No.	Flat Sheet For Signs		Sign Support Length				Vert Clear- ance	Support Size	Max Post Len	Sleeve Length				Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
			IV SF	XI SF	1st LF	2nd LF	3rd LF	4th LF	FT		LF	LF	LF	LF									
10+90 Rt		42			10.7				7.0	2.25 x 2.25 12 ga	11.6					1	4	2.5 x 2.5 12 ga	1				
80+74 Rt		80		13.0	12.9				5.0	2.5 x 2.5 12 ga	14.2	4.0			2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1		
80+79 Rt	Single Chevron			3.0	8.6				4.0	2 x 2 12 ga	14.6					1	4	2.25 x 2.25 12 ga					
81+07 Rt	Double Chevron			3.0	8.6				4.0	2 x 2 12 ga	14.6					1	4	2.25 x 2.25 12 ga					
81+41 Rt	Double Chevron			6.0	8.6				4.0	2 x 2 12 ga	14.6					1	4	2.25 x 2.25 12 ga					
81+77 Rt	Double Chevron			6.0	8.6				4.0	2 x 2 12 ga	14.6					1	4	2.25 x 2.25 12 ga					
82+12 Rt	Double Chevron			6.0	8.6				4.0	2 x 2 12 ga	14.6					1	4	2.25 x 2.25 12 ga					
82+48 Rt	Double Chevron			6.0	8.6				4.0	2 x 2 12 ga	14.6					1	4	2.25 x 2.25 12 ga					
82+85 Rt	Single Chevron			3.0	8.6				4.0	2 x 2 12 ga	14.6					1	4	2.25 x 2.25 12 ga					
85+00 Lt		80		13.0	12.7				5.0	2.5 x 2.5 12 ga	14.2	3.8			2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1		
85+00 Rt		9		5.0	9.8				5.0	2 x 2 12 ga	11.5					1	4	2.25 x 2.25 12 ga					
368+50 Rt		9		5.0	7.7				5.0	2 x 2 12 ga	11.5					1	4	2.25 x 2.25 12 ga					
368+98 Rt																			1			Center over turn lane	
369+20 Lt		9							7.0	2 x 2 12 ga									1	1			
369+73 Lt		7		1.5	6.7				5.0	2 x 2 12 ga	25.5					1	4	2.25 x 2.25 12 ga					
370+89 Lt				0.9																		Mount on Signal	
370+92 Lt				16.0																		Mount on Mast Arm	
370+92 Lt			46.0																			Mount on Mast Arm	
371+00 Rt			20.0																			Mount on Mast Arm	
371+40 Rt				16.0																		Mount on Mast Arm	
371+48 Lt				16.0																		Mount on Mast Arm	
371+79 Lt			20.0																			Mount on Mast Arm	
371+99 Lt				0.9																		Mount on Signal	
372+28 Rt				16.0																		Mount on Mast Arm	
372+29 Rt			46.0																			Mount on Mast Arm	
372+69 Rt		7		1.5	6.6				5.0	2 x 2 12 ga	25.5					1	4	2.25 x 2.25 12 ga					
373+61 Lt		1		5.2	9.7				7.0	2 x 2 12 ga	10.5					1	4	2.25 x 2.25 12 ga					
374+66 Rt		9							5.0	2 x 2 12 ga									1	1			
375+25 Rt	SA A			5.2	9.8				5.0	2 x 2 12 ga	10.9					1	4	2.25 x 2.25 12 ga					
375+91 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5					1	4	2.25 x 2.25 12 ga					
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8/24/20 4:27:36PM Page 1 of 5																							

																				STATE	PROJECT NO.	SECTION NO.	SHEET NO.	
																			N.D.	NHU-5-094(114)907			110	2
Station / RP	Sign No.	Assembly No.	Flat Sheet For Signs		Sign Support Length				Vert Clear- ance	Support Size	Max Post Len	Sleeve Length				Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments	
			IV SF	XI SF	1st LF	2nd LF	3rd LF	4th LF	FT		LF	LF	LF	LF										
375+97 Lt		1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga					
376+00 Rt		22		6.0	10.3				5.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga					
376+94 Rt		9		5.0	9.9				5.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga					
378+00 Rt		7		1.5	8.4				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
380+45 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
380+67 Lt		1			9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1				
381+50 Rt		7		1.5	7.7				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
381+73 Lt		1			9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1				
382+59 Rt		1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga					
383+10 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
383+75 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
384+00 Lt		20		9.0	10.4				7.0	2.5 x 2.5 10 ga	12.9						1	4	3 x 3 7 ga		1			
384+56 Lt		1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga					
385+20 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
385+33 Rt		1							7.0	2 x 2 12 ga										1	1			
385+80 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
387+39 Rt		1							7.0	2 x 2 12 ga										1	1			
388+00 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
388+25 Lt		22		6.0	10.2				7.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga					
388+50 Rt		22		6.0	10.4				5.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga					
389+00 Lt	SA 2E	7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
389+43 Lt					11.7				7.0	2.25 x 2.25 12 ga	13.5						1	4	2.5 x 2.5 12 ga	1				
390+85 Rt		9		5.0	9.9				5.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga					
390+85 Lt		9		5.0	9.7				7.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga					
391+50 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
392+25 Rt	SA 2E	7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
392+48 Lt									7.0	2 x 2 12 ga										1	1			
393+13 Rt		1							7.0	2 x 2 12 ga										1	1			
393+35 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
394+00 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
395+00 Lt		22		6.0	10.2				7.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga					
398+00 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
398+60 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga					
399+13 Rt		1							7.0	2 x 2 12 ga										1	1			
399+28 Lt	SA 2E								7.0	2 x 2 12 ga										1	1			
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Page 2 of 5																								

																				STATE	PROJECT NO.	SECTION NO.	SHEET NO.
																			N.D.		NHU-5-094(114)907	110	3
Station / RP	Sign No.	Assembly No.	Flat Sheet For Signs		Sign Support Length				Vert Clear- ance	Support Size	Max Post Len	Sleeve Length				Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
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400+00 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
402+76 Lt		1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga				
403+75 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
404+00 Lt		9		5.0	9.7				7.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
404+00 Rt		9							5.0	2 x 2 12 ga										1	1		
405+00 Rt		22		6.0	10.4				5.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga				
405+55 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
405+98 Lt	SA 2E								7.0	2 x 2 12 ga										1	1		
407+09 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
407+50 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
407+75 Lt		20		9.0	10.4				7.0	2.5 x 2.5 10 ga	12.9						1	4	3 x 3 7 ga			1	
408+19 Rt	SA 2E								7.0	2 x 2 12 ga										1	1		
408+60 Lt		1							7.0	2 x 2 12 ga										1	1		
411+23 Rt		1							7.0	2 x 2 12 ga										1	1		
412+00 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
412+00 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
413+63 Rt	SA 2E								7.0	2 x 2 12 ga										1	1		
413+64 Lt		1							7.0	2 x 2 12 ga										1	1		
414+00 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
414+75 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
415+53 Lt		1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga				
416+42 Lt		9			9.7				7.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga	1			
416+46 Rt		9							5.0	2 x 2 12 ga										1	1		
417+50 Lt	SA C								7.0	2 x 2 12 ga										1	1		
418+00 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
418+25 Lt		1			9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1			
419+25 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
419+52 Rt	SA 2E								7.0	2 x 2 12 ga										1	1		
419+89 Lt		1							7.0	2 x 2 12 ga										1	1		
420+40 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
421+43 Lt		1			9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1			
421+62 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
421+70 Rt		1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga				
422+00 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
422+00 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
																	This document was originally issued and sealed by Kyle J. Comer, Registration Number 7537, on 8/24/20 and is stored at the North Dakota Department of Transportation.		Sign Summary Perforated Tube E Business LP 10th Ave. E - Exit 64 Dickinson, ND				
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																		STATE	PROJECT NO.			SECTION NO.	SHEET NO.
																	N.D.	NHU-5-094(114)907			110	4	
Station / RP	Sign No.	Assembly No.	Flat Sheet For Signs		Sign Support Length				Vert Clear- ance	Support Size	Max Post Len	Sleeve Length				Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
			IV SF	XI SF	1st LF	2nd LF	3rd LF	4th LF	FT		LF	1st LF	2nd LF	3rd LF	4th LF								
422+50 Lt		22		6.0	10.2				7.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga				
424+18 Lt		1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga				
427+07 Rt		9		5.0	10.0				5.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
427+22 Rt	SA B		7.4		11.8				5.0	2.5 x 2.5 12 ga	14.1						1	4	3 x 3 7 ga				
427+35 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
428+00 Lt	SA 2E								7.0	2 x 2 12 ga										1	1		
428+22 Rt	SA 2E								7.0	2 x 2 12 ga										1	1		
429+00 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
429+09 Lt		9		5.0	10.0				5.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
431+53 Rt		22		6.0	10.4				5.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga				
431+85 Lt		1			9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1			
434+00 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
434+00 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
434+64 Lt		1			9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1			
435+18 Rt	SA 2E								7.0	2 x 2 12 ga										1	1		
435+50 Lt		22		6.0	10.2				7.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga				
436+80 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
437+00 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
438+48 Lt		1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga				
439+50 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
439+50 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
442+50 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
442+98 Lt		1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga				
445+00 Rt		7		1.5	8.9				5.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
446+00 Rt	SA C								5.0	2 x 2 12 ga										1	1		
446+20 Lt		1			9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga	1			
447+40 Lt		7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga				
448+01 Lt	SA 2E								7.0	2 x 2 12 ga										1	1		
450+00 Lt		22		6.0	10.2				7.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga				
451+05 Lt		1							5.0	2 x 2 12 ga										1	1		
451+51 Lt		9		5.0	7.7				5.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga				
451+51 Lt		1		5.2	7.7				5.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga			Mount Back to Back	
451+51 Lt		9		5.0																		Mount Back to Back	
451+98 Rt	SA 2E								7.0	2 x 2 12 ga										1	1		
																	This document was originally issued and sealed by Kyle J. Comer, Registration Number 7537, on 8/24/20 and is stored at the North Dakota Department of Transportation.			Sign Summary Perforated Tube E Business LP 10th Ave. E - Exit 64 Dickinson, ND			
8/24/20 4:27:36PM																							
Page 4 of 5																							

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	6



Sta 367+34 Lt
In Place to Remain



9th Ave E

362 363 364 365 366 367 368

I-94 Business Loop E



Sta 366+76 Rt
In Place to Remain



Sta 368+05 Rt
In Place to Remain

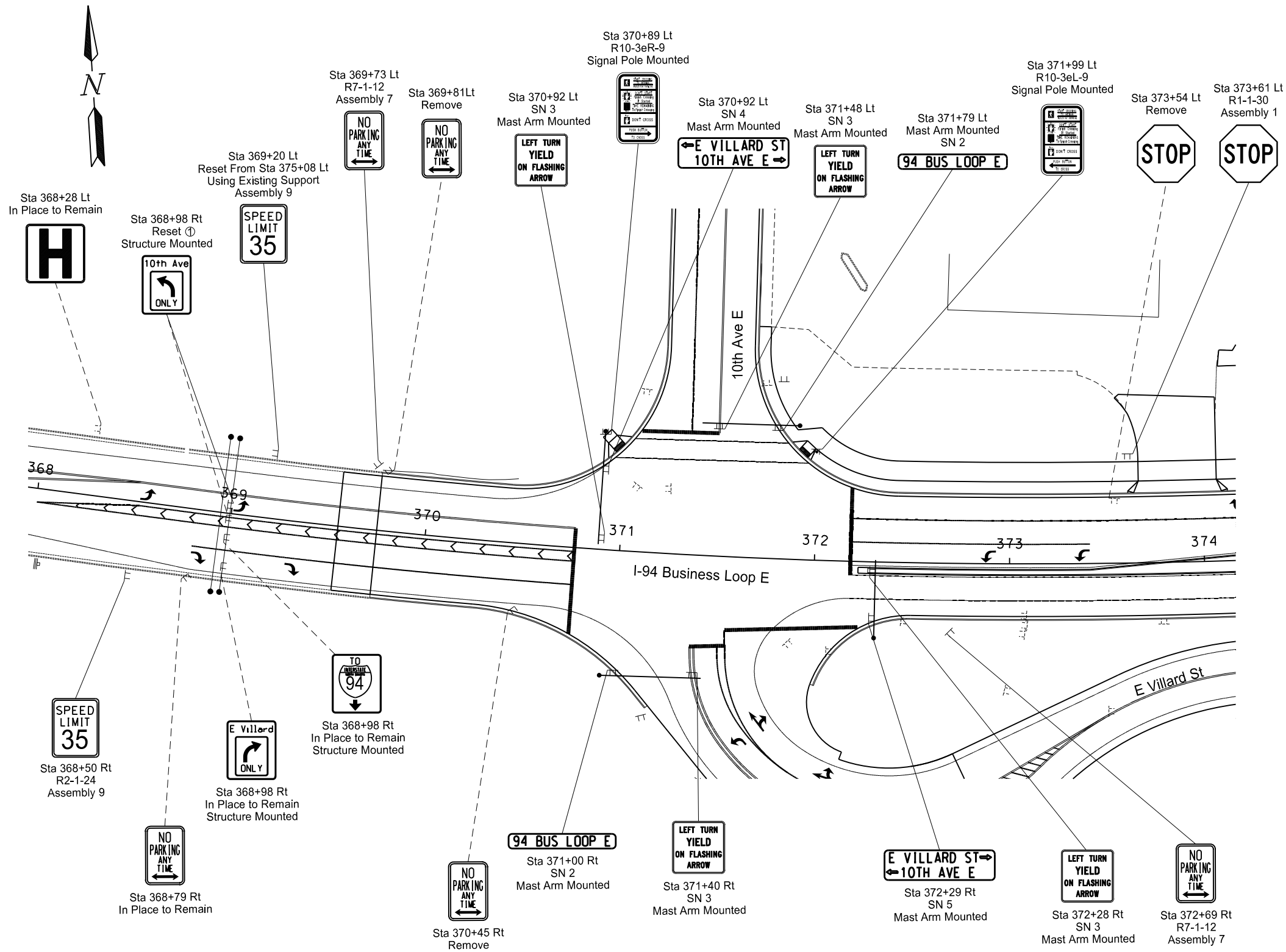
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Signing
I-94 Business Loop
Sta 362+00 to Sta 368+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	7



- Notes:
- ① Reset existing structure mounted sign to be centered over new lane using existing hardware.
 - 2. See section 110, Sheet 21, for signing along 10th Ave.
 - 3. See section 110, Sheet 22, for signing along Villard St.

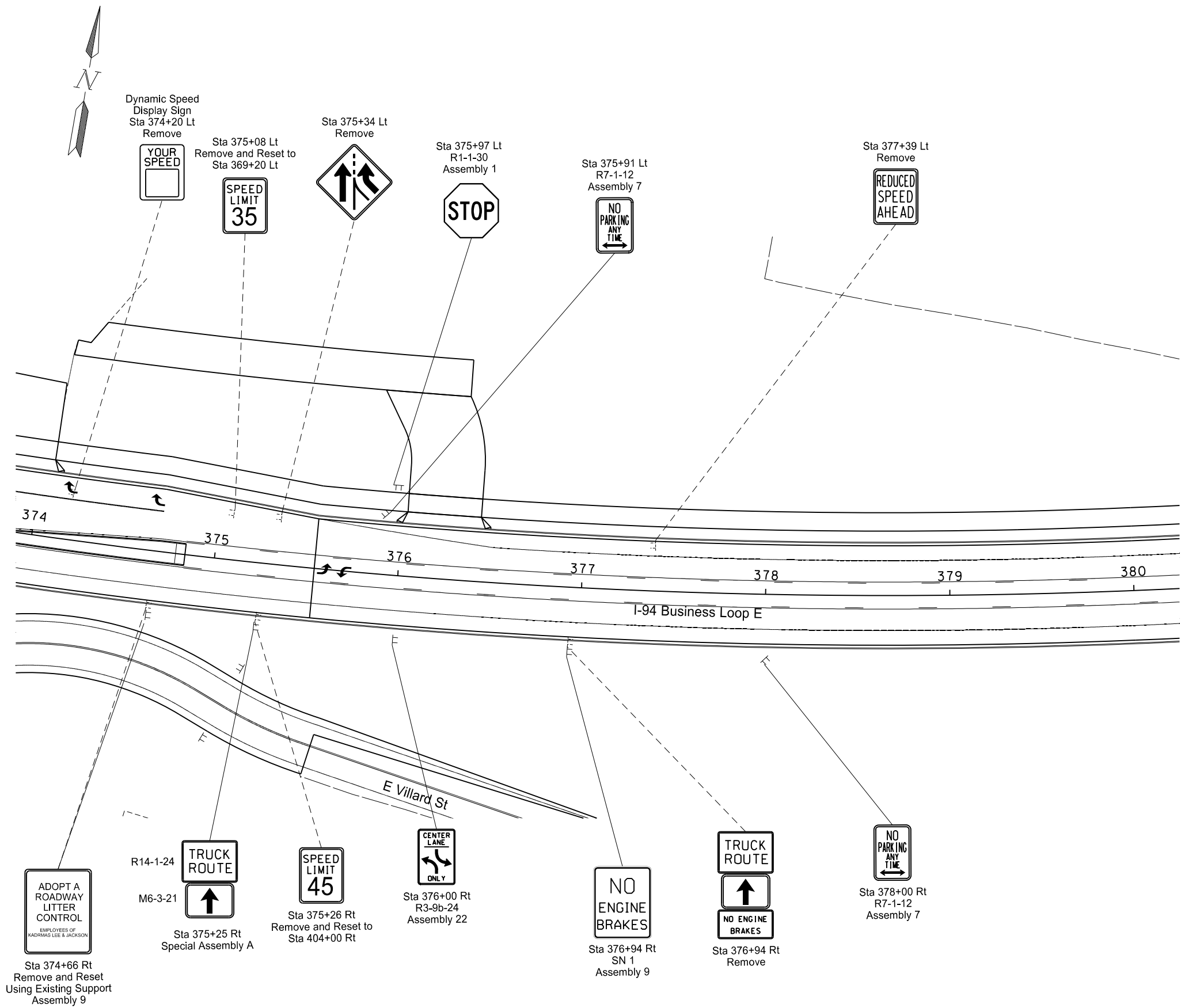
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Signing
I-94 Business Loop
Sta 368+00 to Sta 374+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	8



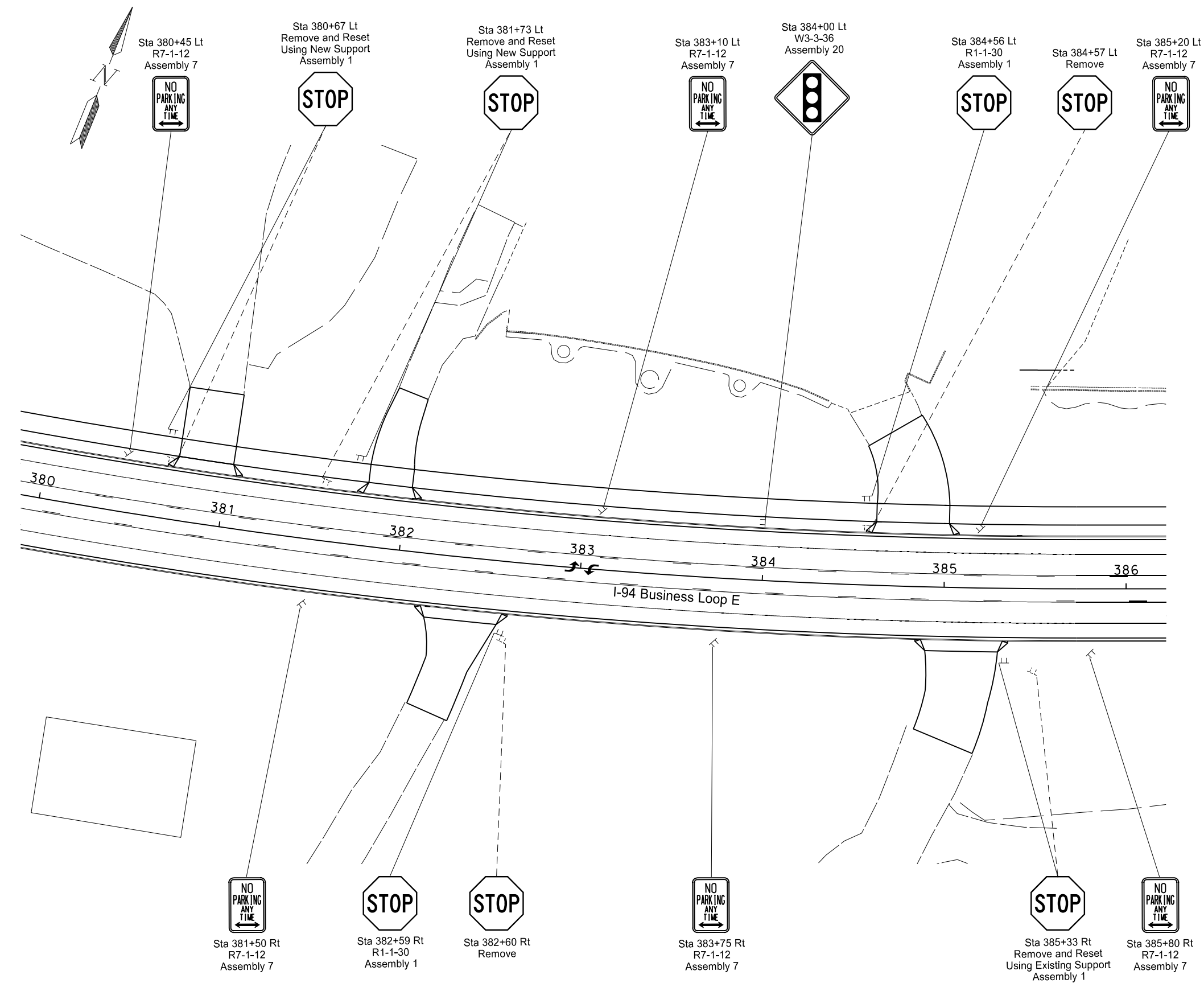
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Signing
I-94 Business Loop
Sta 374+00 to Sta 380+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

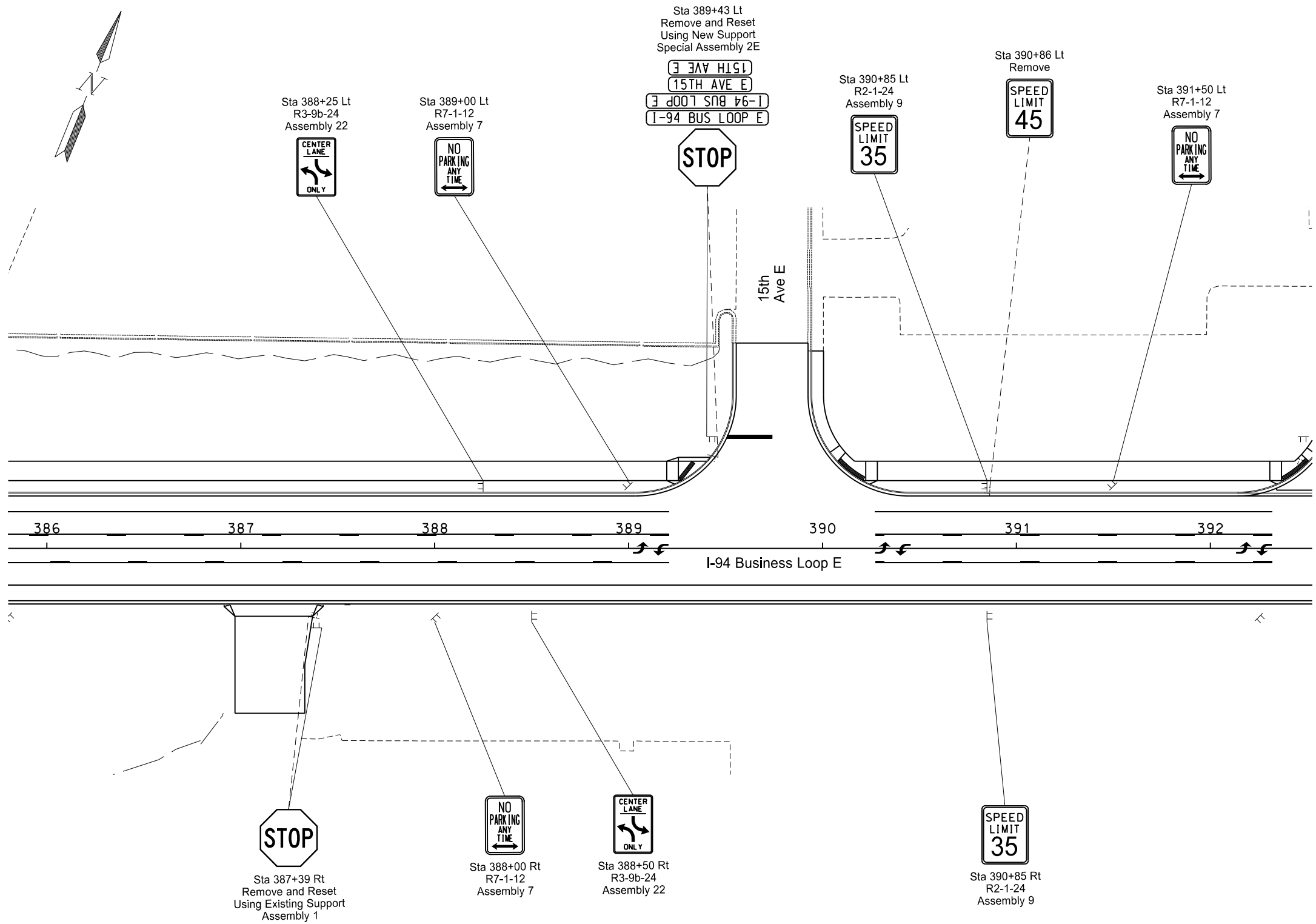
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	9



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Signing
I-94 Business Loop
Sta 380+00 to Sta 386+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	10



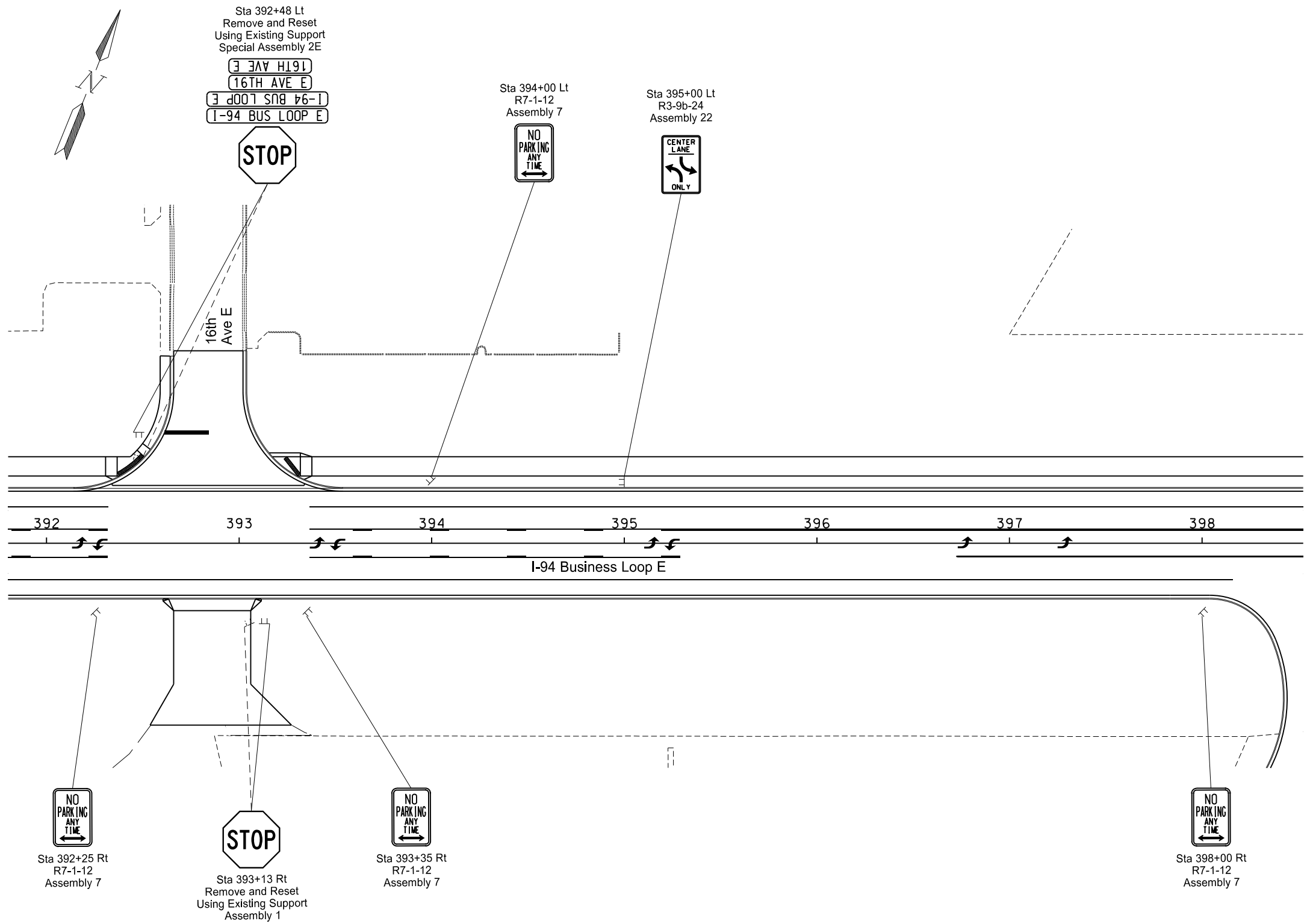
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Signing
I-94 Business Loop
Sta 386+00 to Sta 392+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	11



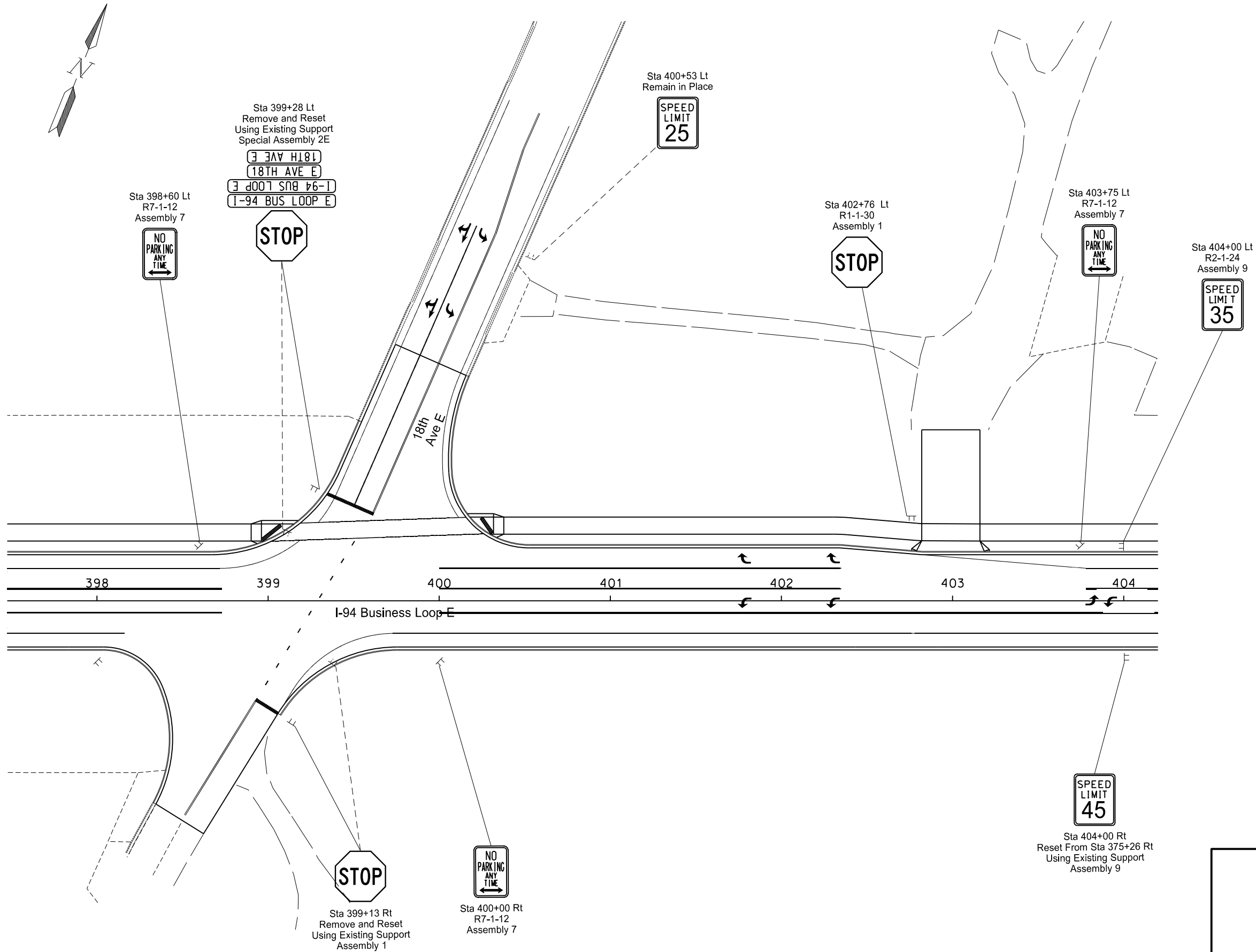
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Signing
I-94 Business Loop
Sta 392+00 to Sta 398+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	12



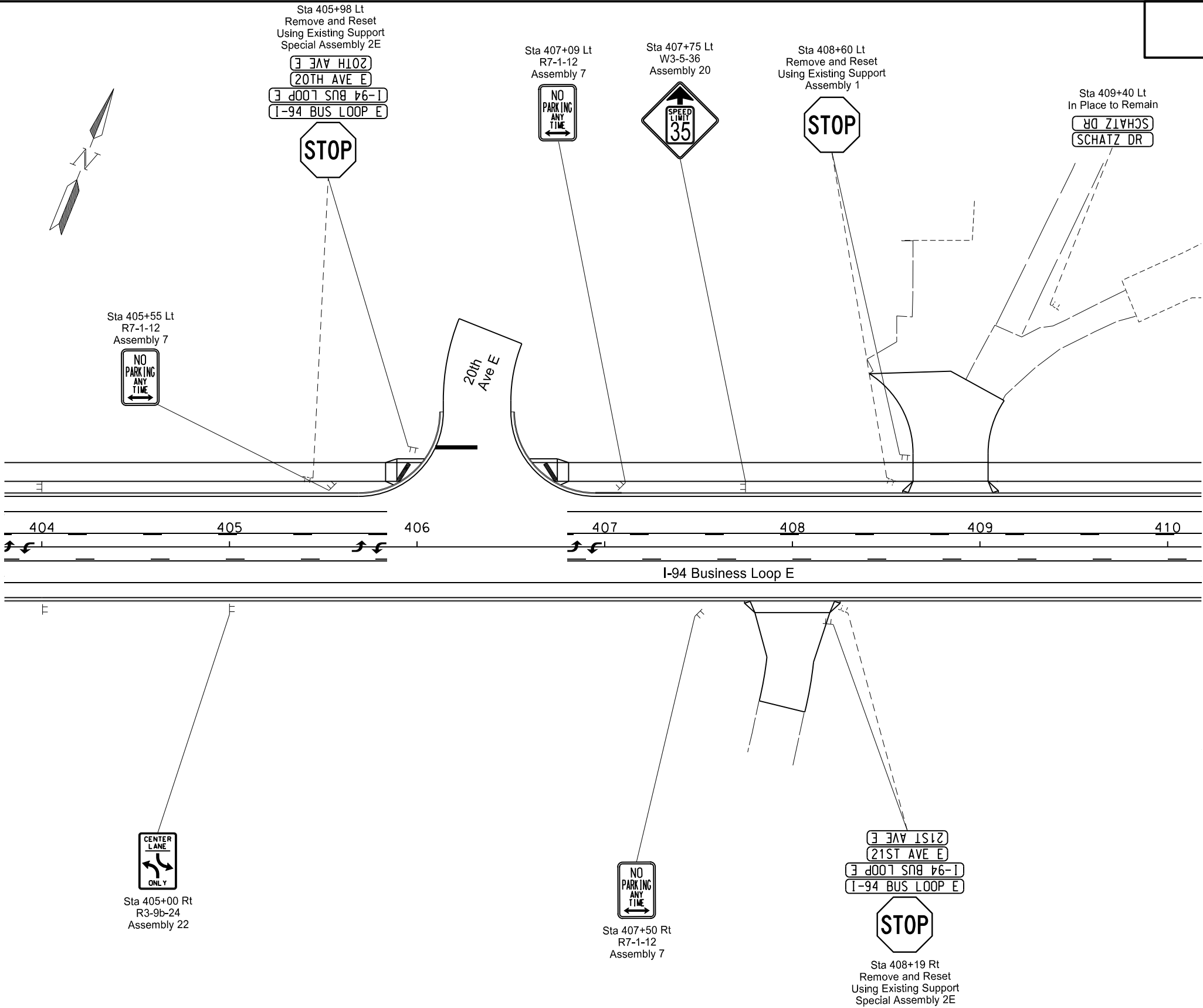
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Signing
I-94 Business Loop
Sta 398+00 to Sta 404+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	13



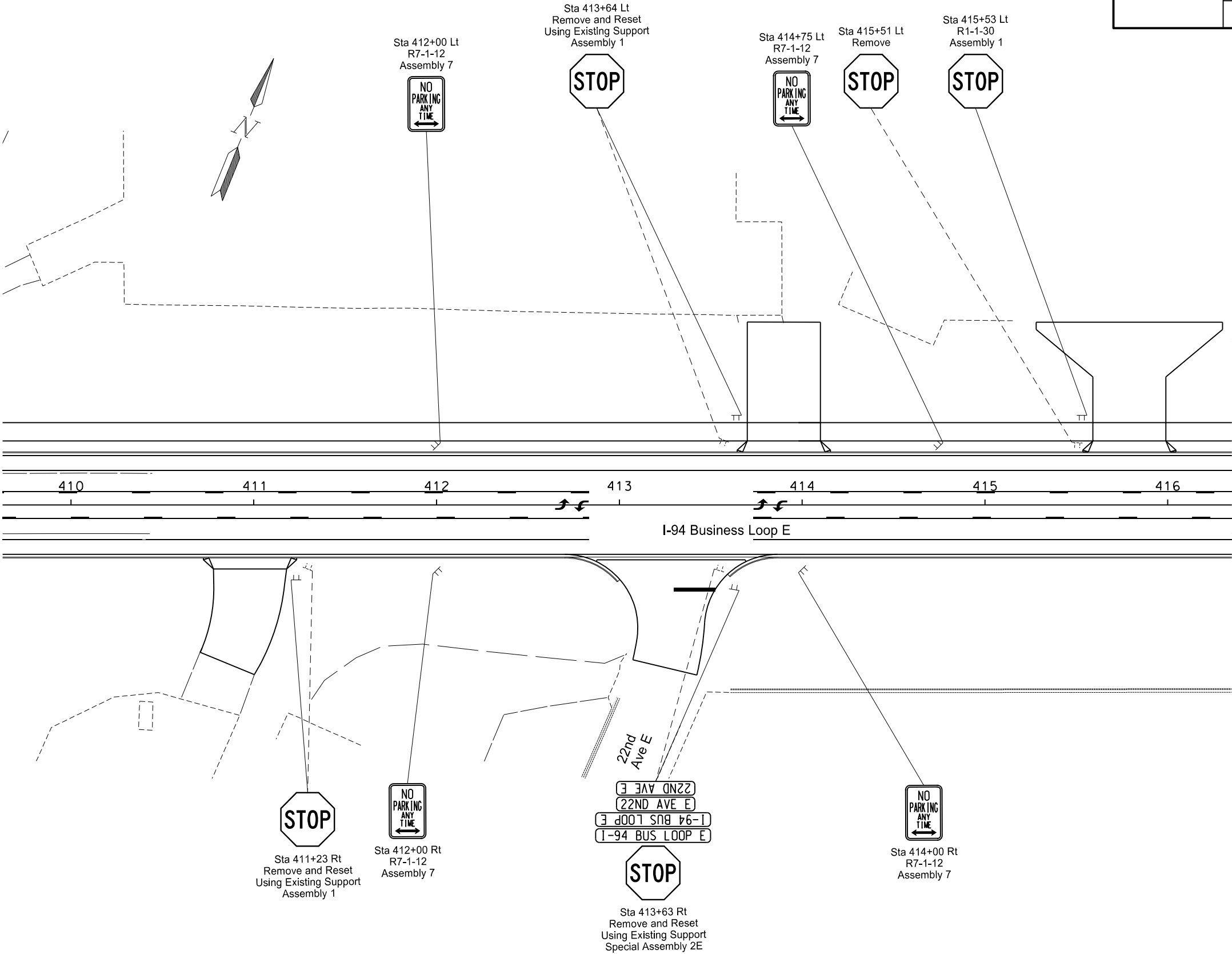
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Signing
I-94 Business Loop
Sta 404+00 to Sta 410+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	14



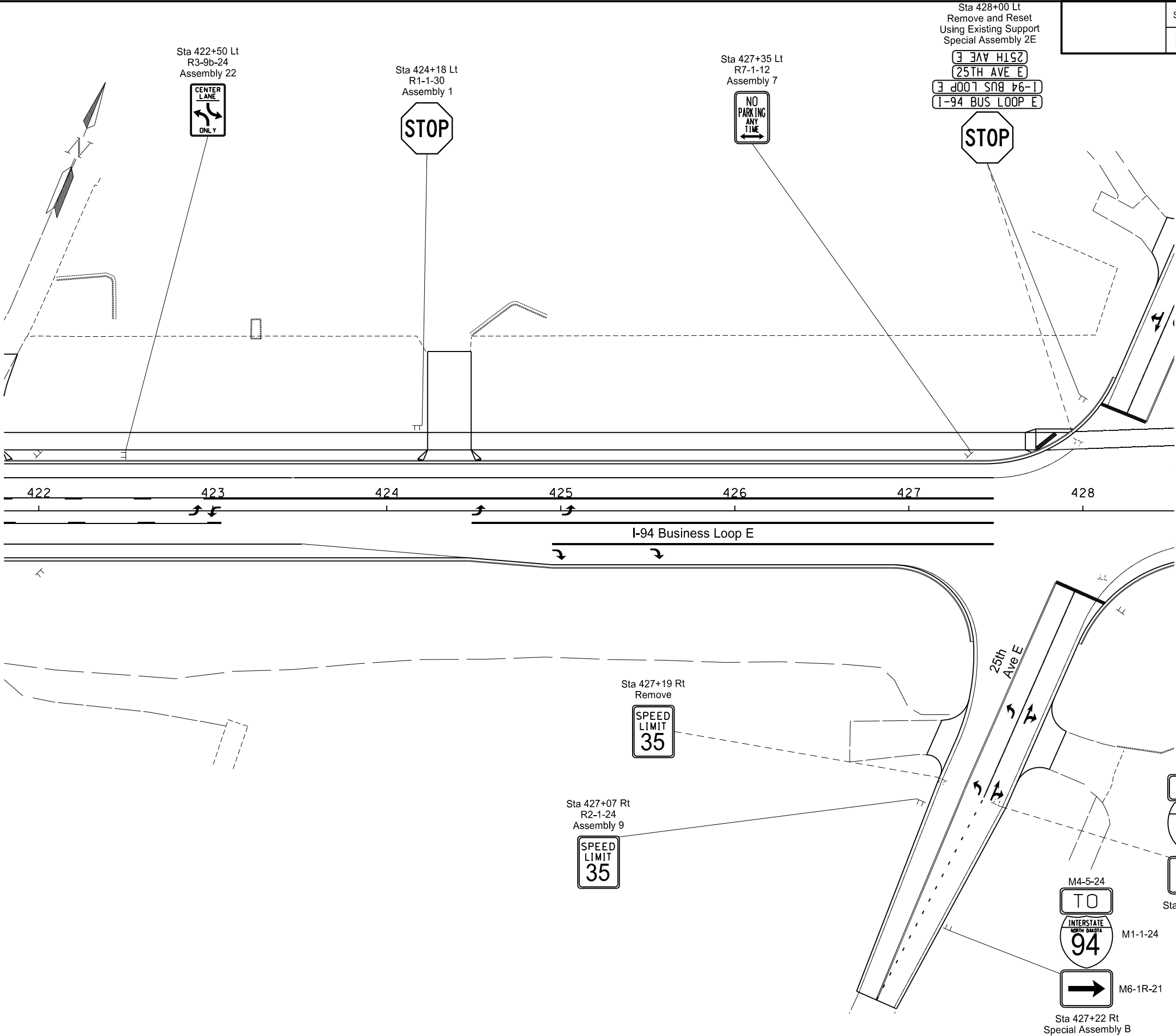
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Signing
I-94 Business Loop
Sta 410+00 to Sta 416+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

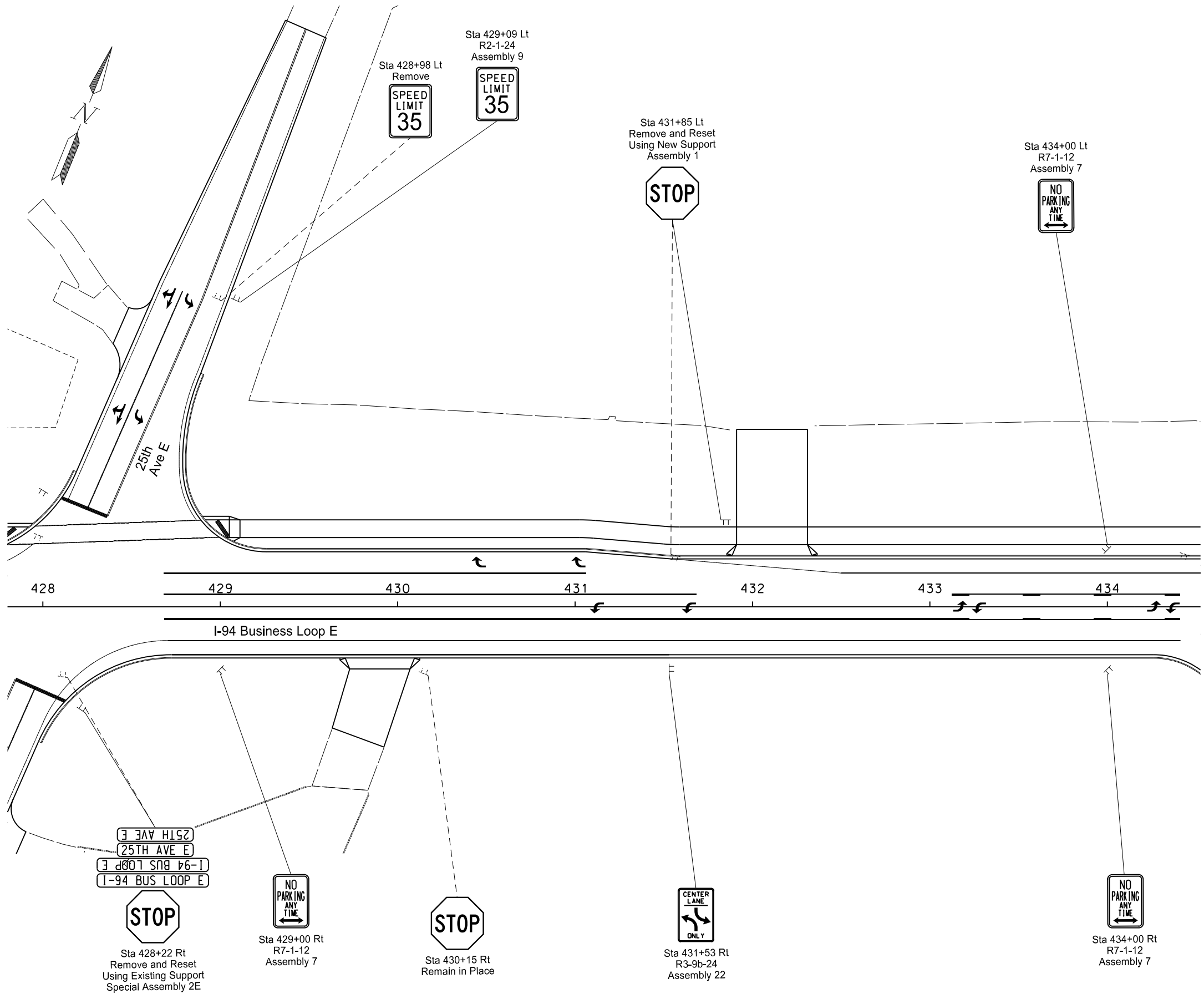
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	ND	NHU-5-094(114)907	110	16



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Signing
I-94 Business Loop
Sta 422+00 to Sta 428+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

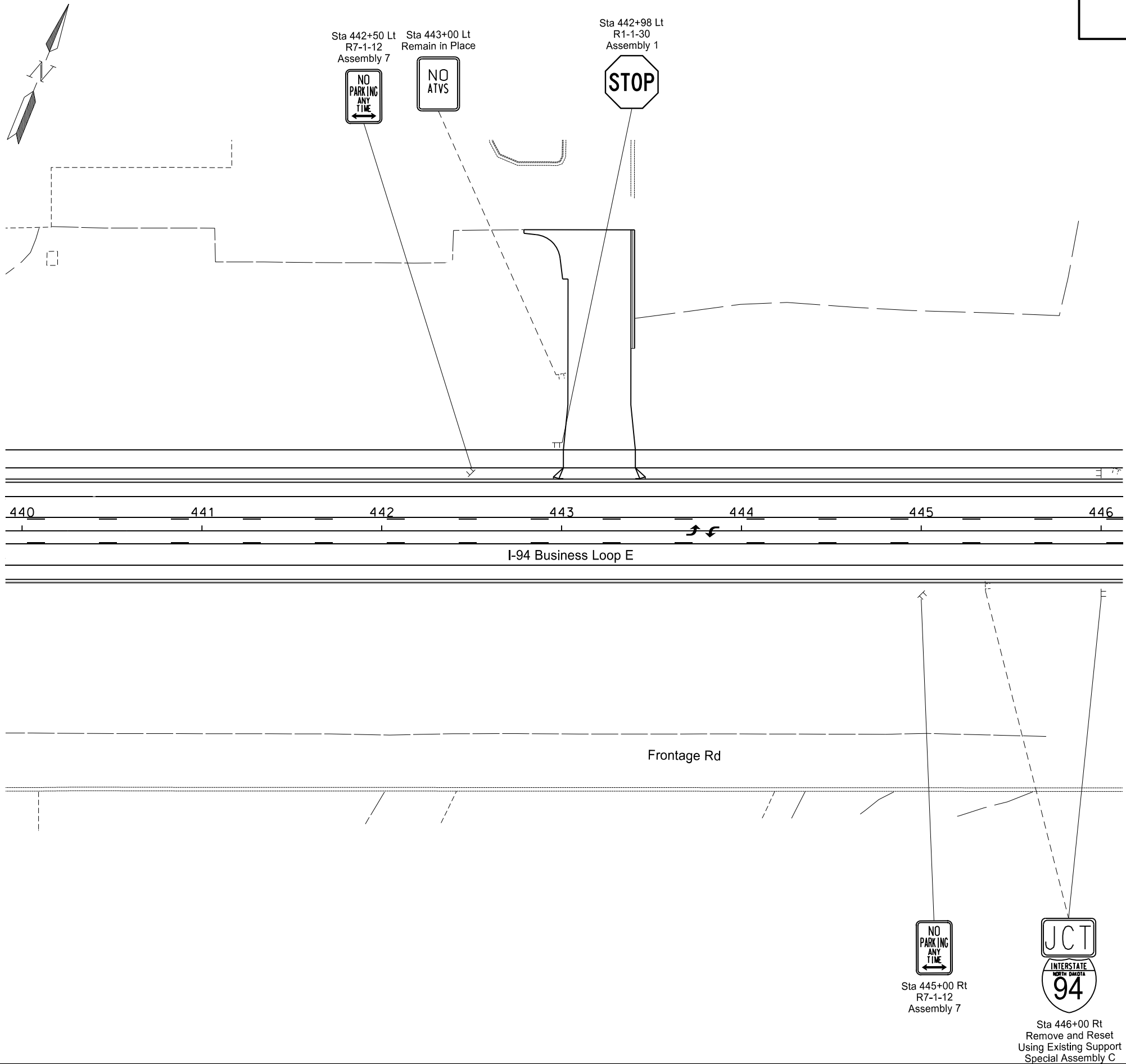
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	17



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Signing
I-94 Business Loop
Sta 428+00 to Sta 434+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

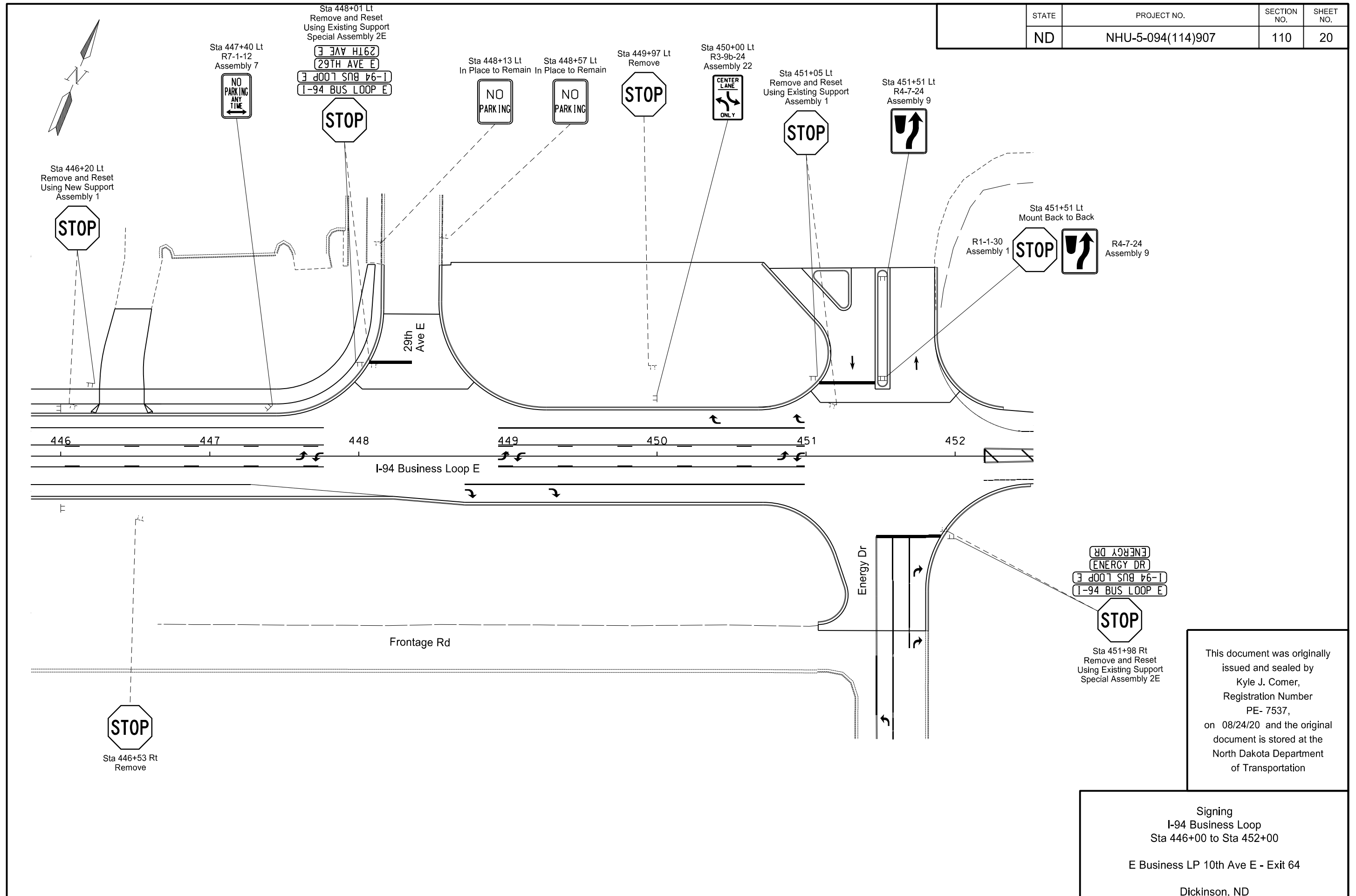
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	ND	NHU-5-094(114)907	110	19



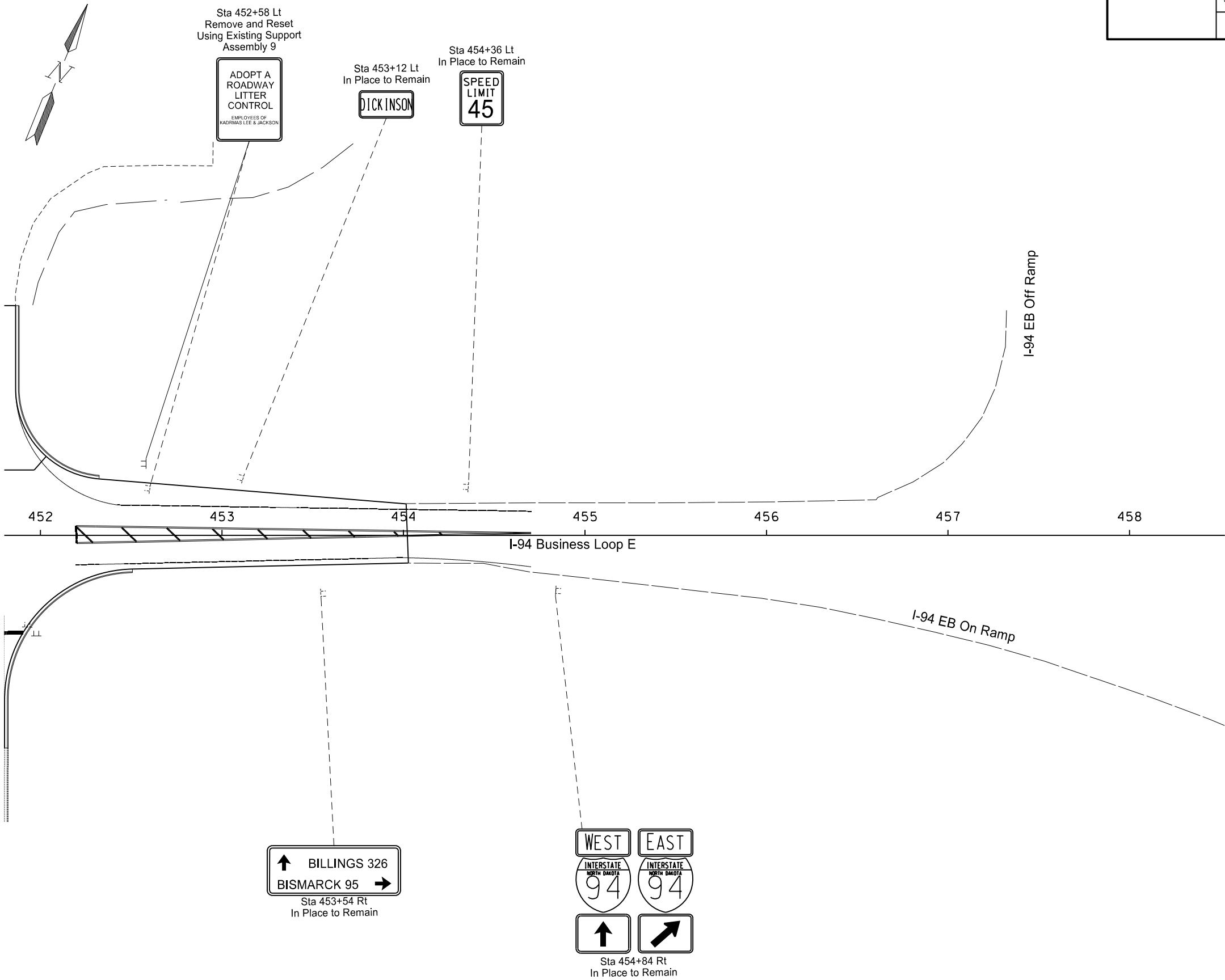
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Signing
I-94 Business Loop
Sta 440+00 to Sta 446+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	20



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	21



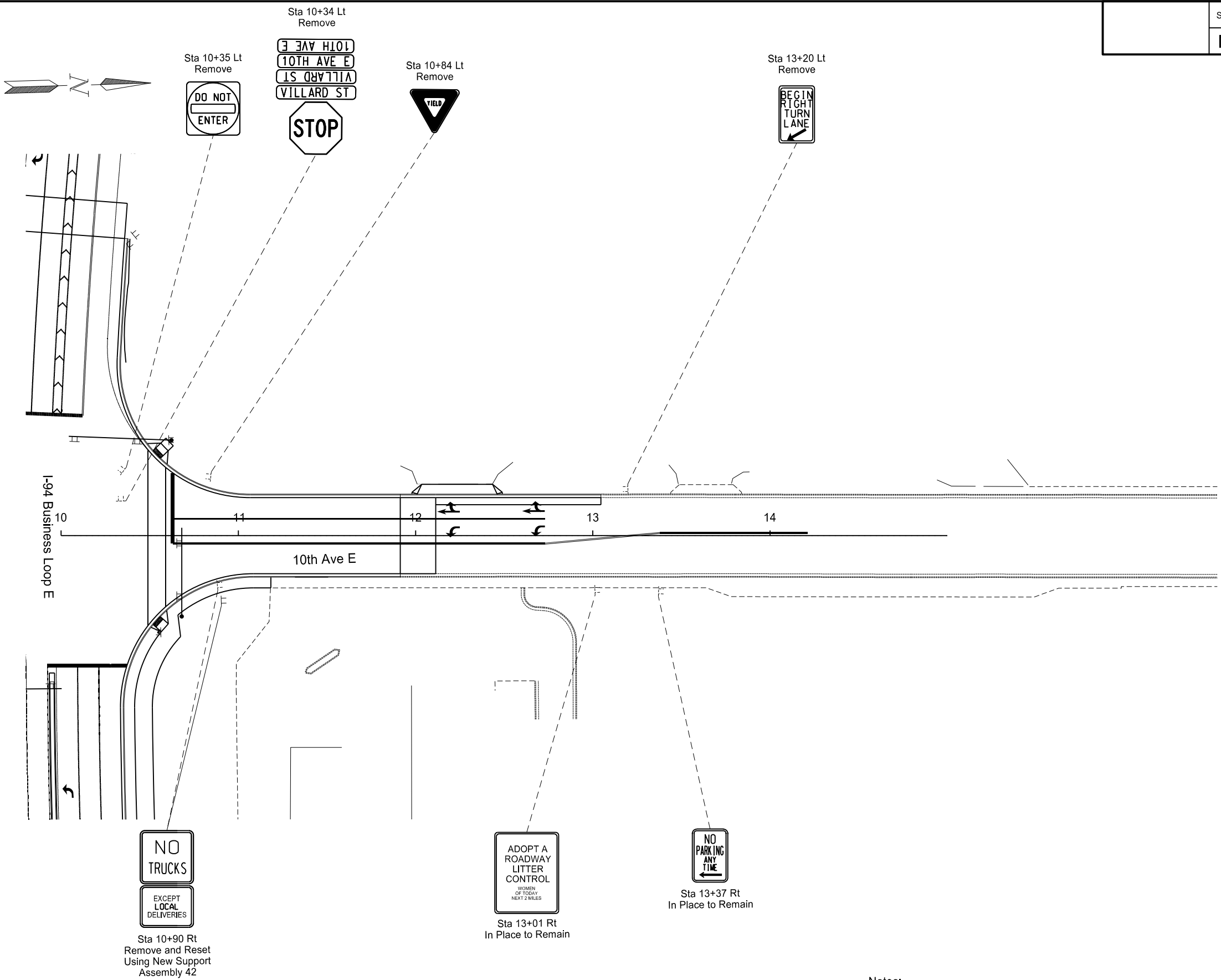
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Signing
I-94 Business Loop
Sta 452+00 to Sta 458+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	22



- Notes:
- 1. See Section 110, sheet 6 for signing along I-94 Business Loop E.

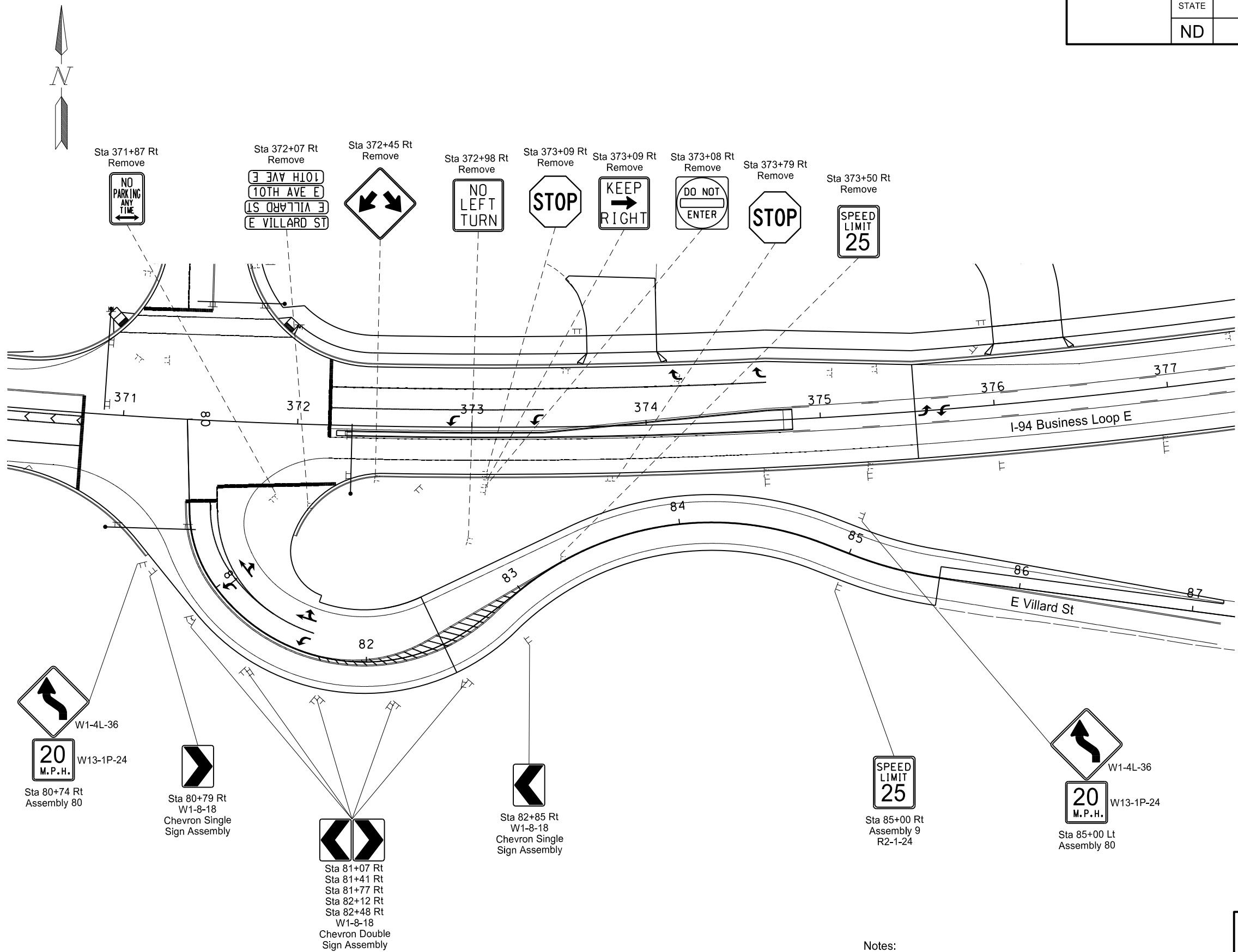
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Signing
10th Avenue East
Sta 10+00 to Sta 14+00

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	23



Notes:
1. See section 110, Sheet 6, for signing along I-94 Business Loop E.

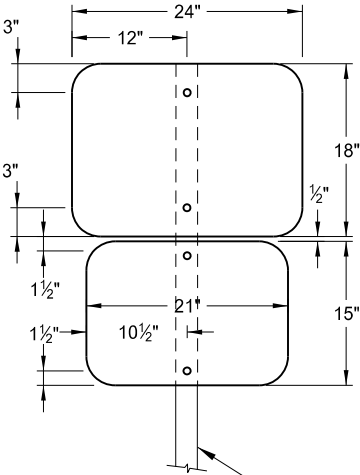
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Signing
East Villard Street
Sta 80+00 to Sta 87+00

E Business LP 10th Ave E - Exit 64

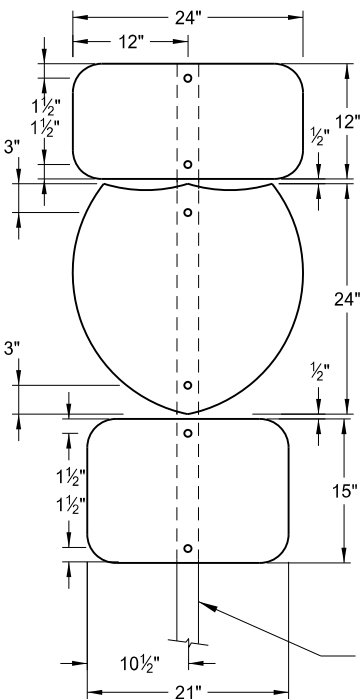
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	110	27



Special Assembly A
(Perforated Tube)
Sta 375+25 Rt
Design Area: 5.2 Sq Ft

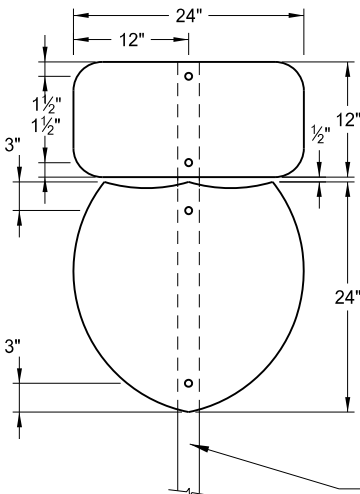
Sign Support



Special Assembly B
(Perforated Tube)
Sta 427+22 Rt

Design Area: 7.4 Sq Ft

Sign Support



Special Assembly C
(Perforated Tube)
Sta 417+50 Lt
Sta 446+00 Rt

Design Area: 5.2 Sq Ft

Sign Support

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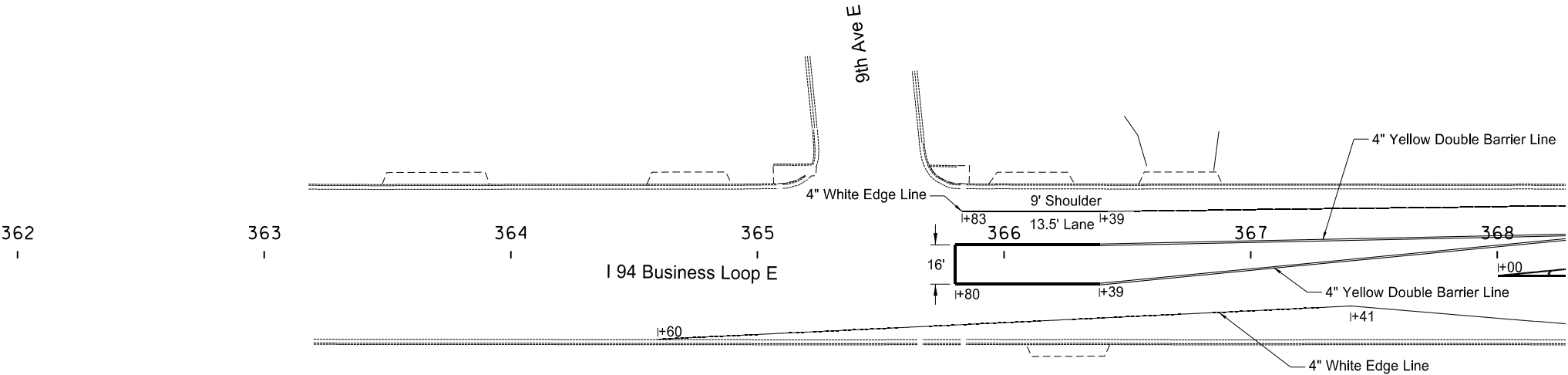
Signing
Special Assembly Details

E Business LP 10th Ave E - Exit 64

Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	1

SPEC	CODE	BID ITEM	QTY	UNIT
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
		4" Yellow Double Barrier Line	913	LF
		4" White Edge Line	558	LF
		TOTAL	1471	LF

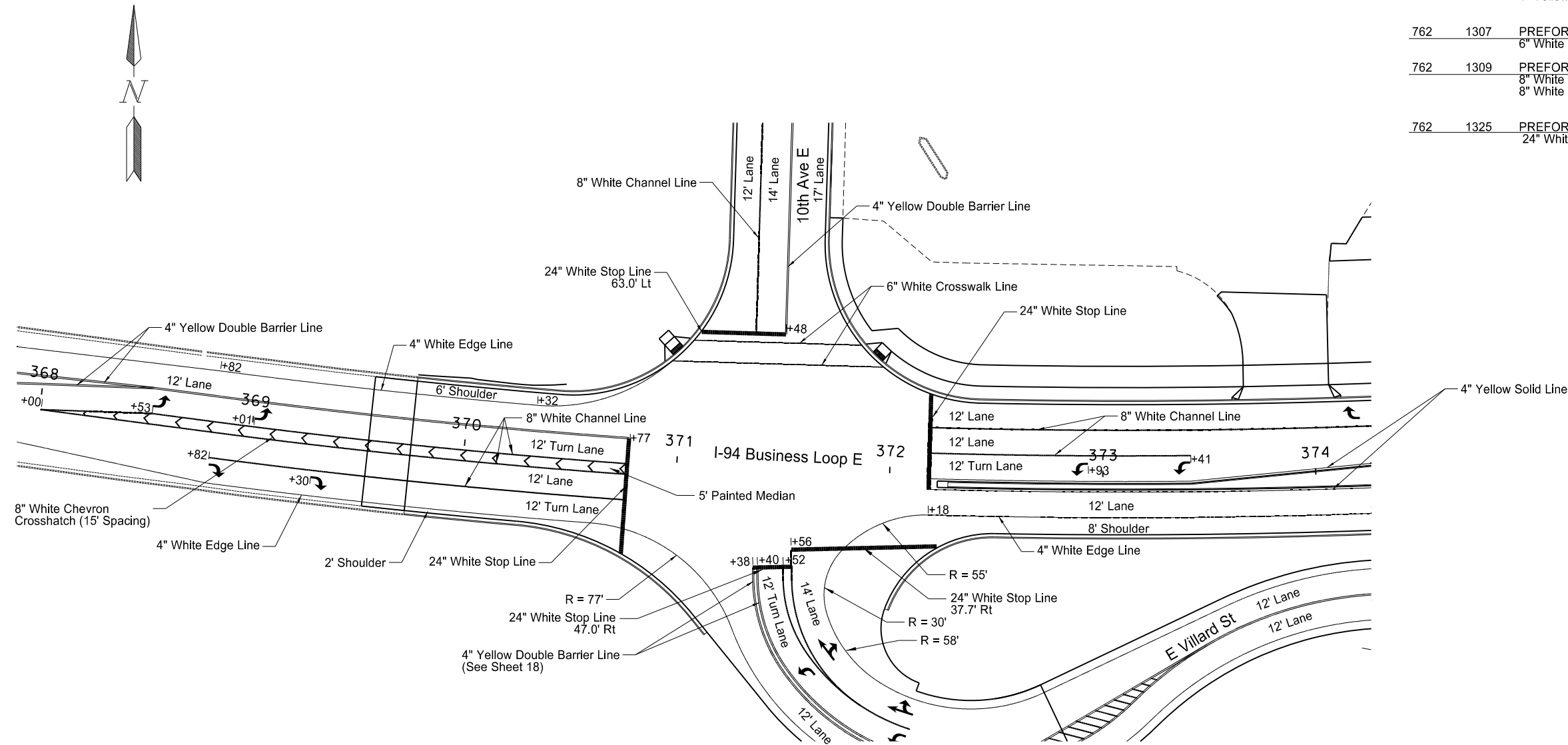


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Pavement Markings
Sta 362+00 to Sta 368+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	2

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
		Left Turn Arrow (4)	64	SF
		Right Turn Arrow (2)	32	SF
		TOTAL	96	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
		4" Yellow Double Barrier Line	657	LF
		4" White Edge Line	746	LF
		4" Yellow Solid Line	364	LF
		TOTAL	1767	LF
762	1307	PREFORMED PATTERNED PVMT MK 6IN LINE-GROOVED		
		6" White Crosswalk Line	177	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		8" White Channel Line	1052	LF
		8" White Chevron Crosshatch	131	LF
		TOTAL	1183	LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED		
		24" White Stop Line	99	LF



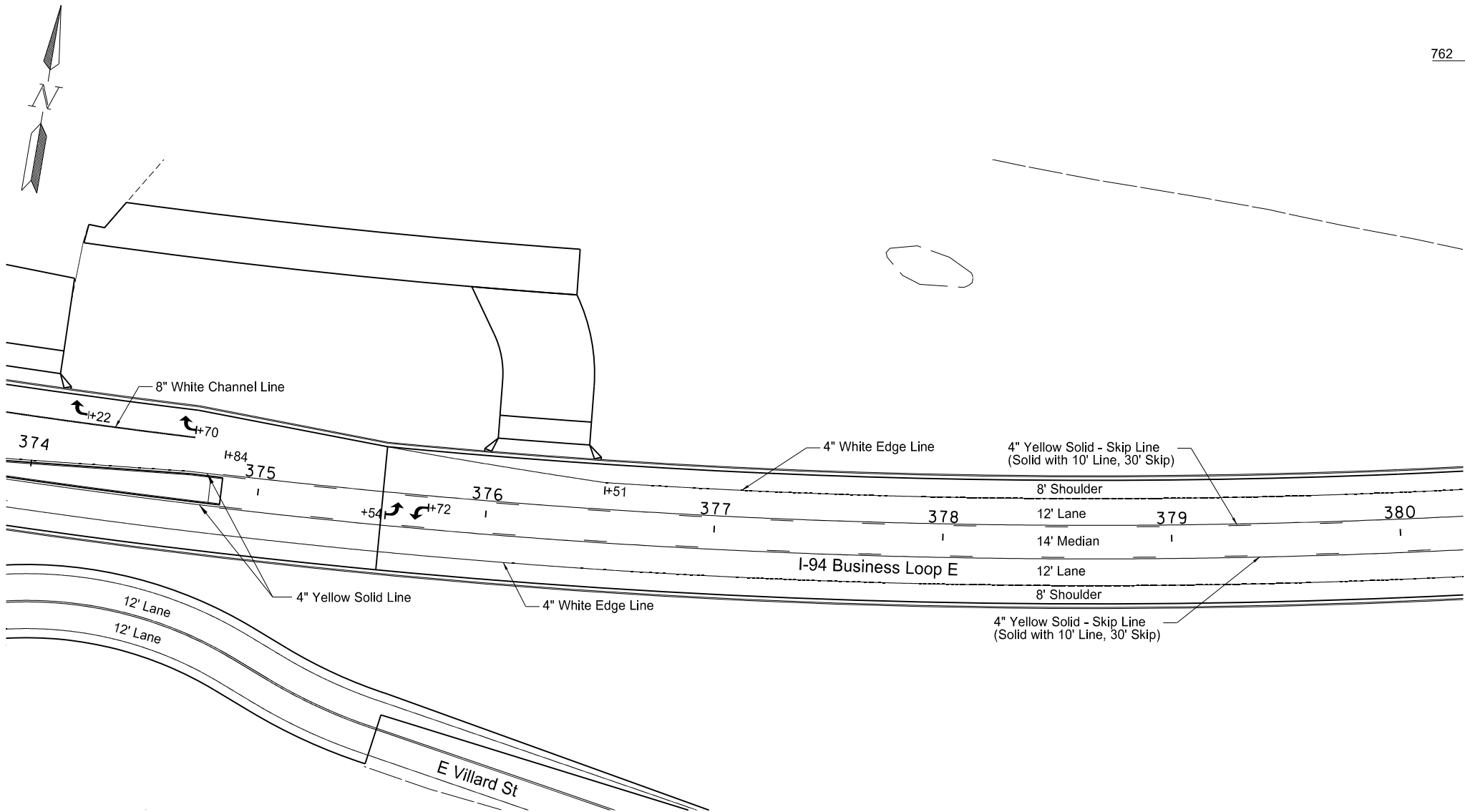
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- Notes:
- See Section 120, Sheet 17, for pavement markings on 10th Ave E.
 - See Section 120, Sheet 18, for pavement markings on E Villard St.

Pavement Markings
Sta 368+00 to Sta 374+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	3

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
		Right Turn Arrow (2)	32	SF
		Left Turn Arrow (2)	32	SF
		TOTAL	64	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
		4" Yellow Solid - Skip Line	1288	LF
		4" Yellow Solid Line	168	LF
		4" White Edge Line	1047	LF
		TOTAL	2503	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		8" White Channel Line	69	LF



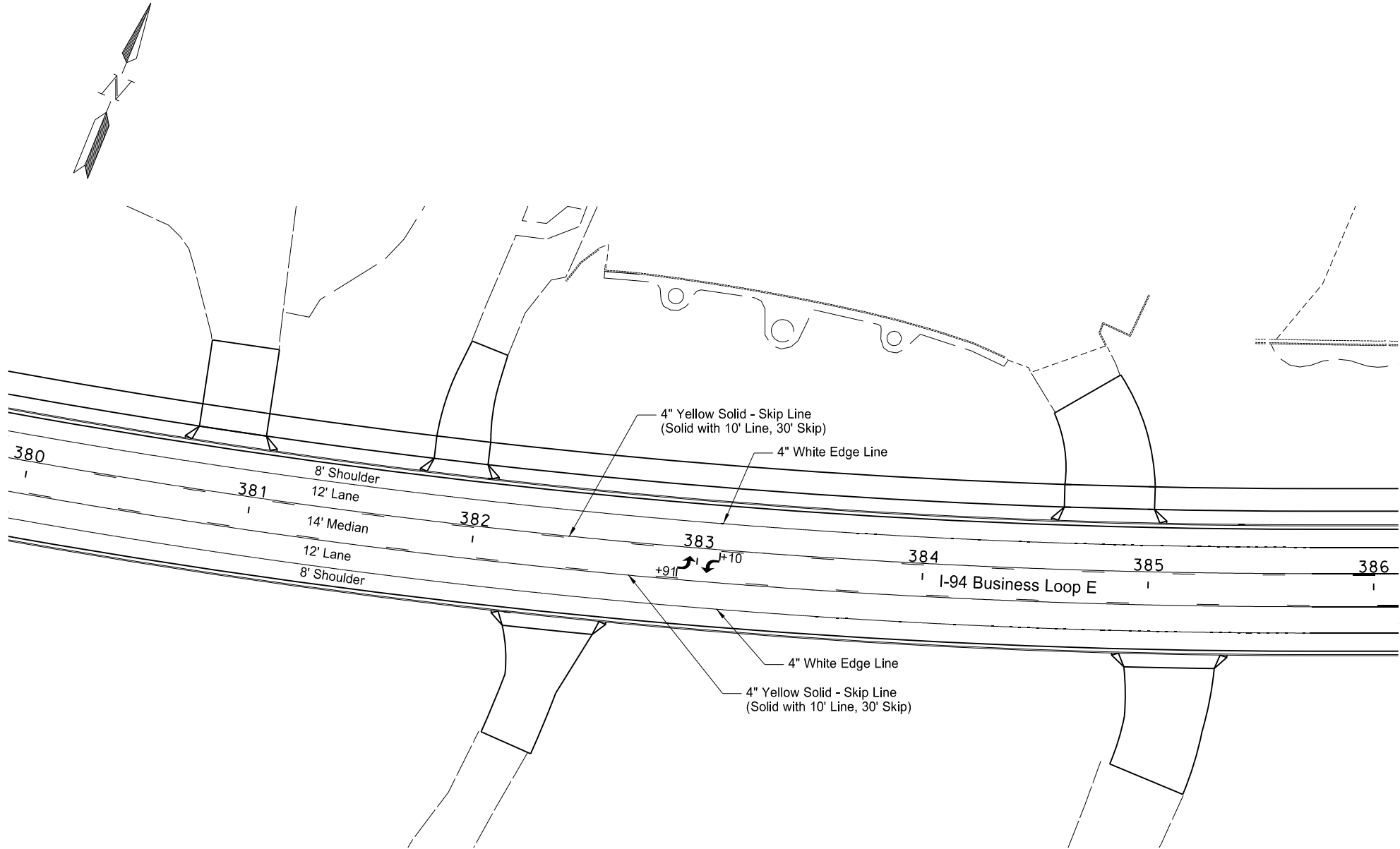
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Notes:
1. See Section 120, Sheet 18, for E Villard St.

Pavement Markings
Sta 374+00 to Sta 380+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	4

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Left Turn Arrow (2)	32	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED 4" Yellow Solid - Skip Line 4" White Edge Line	1500 1200	LF LF
TOTAL			2700	LF

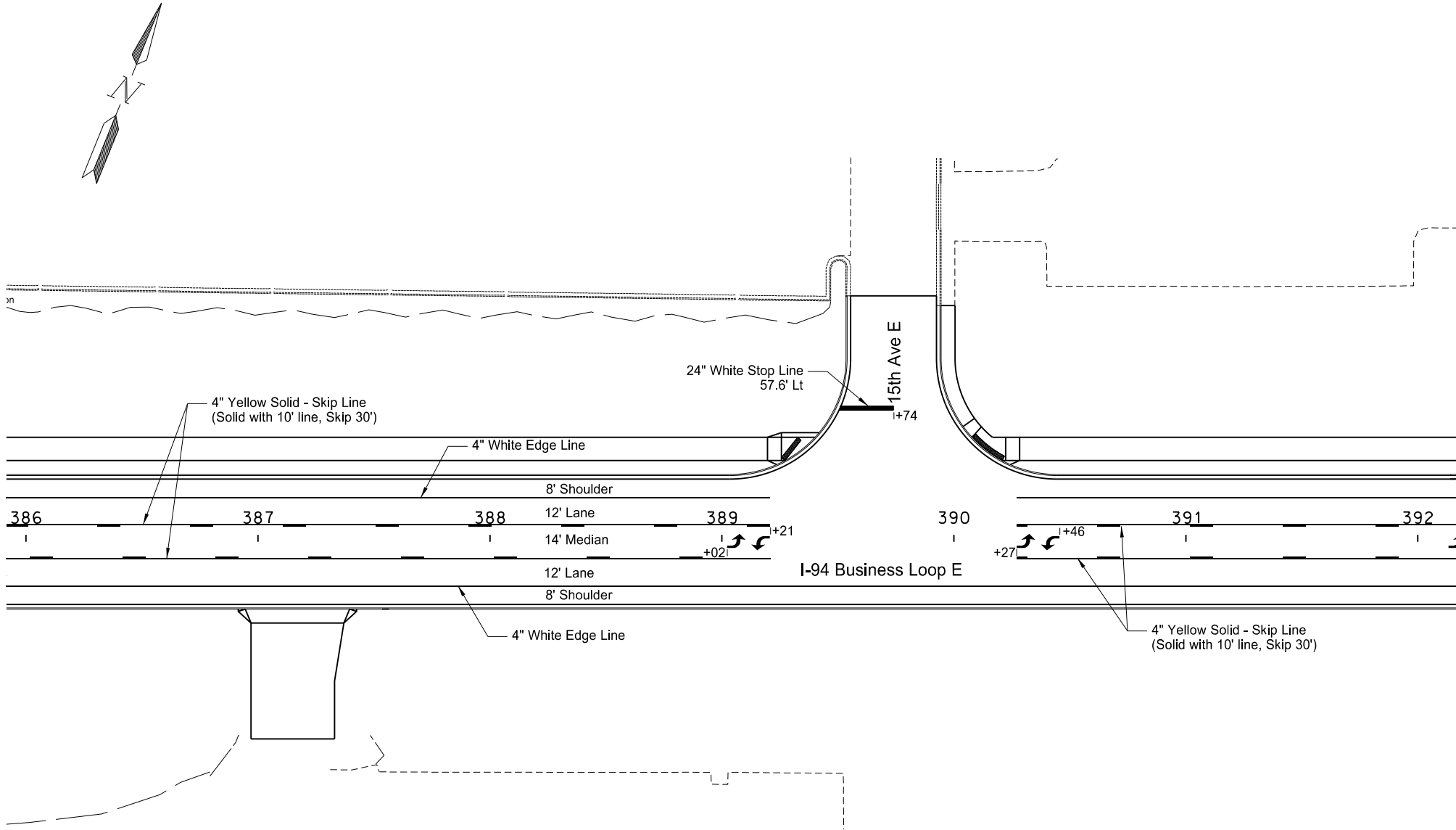


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Pavement Markings
Sta 380+00 to Sta 386+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	5

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Left Turn Arrow (4)	64	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED 4" Yellow Solid - Skip Line	1234	LF
		4" White Edge Line	1094	LF
		TOTAL	2328	LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED 24" White Stop Line	23	LF

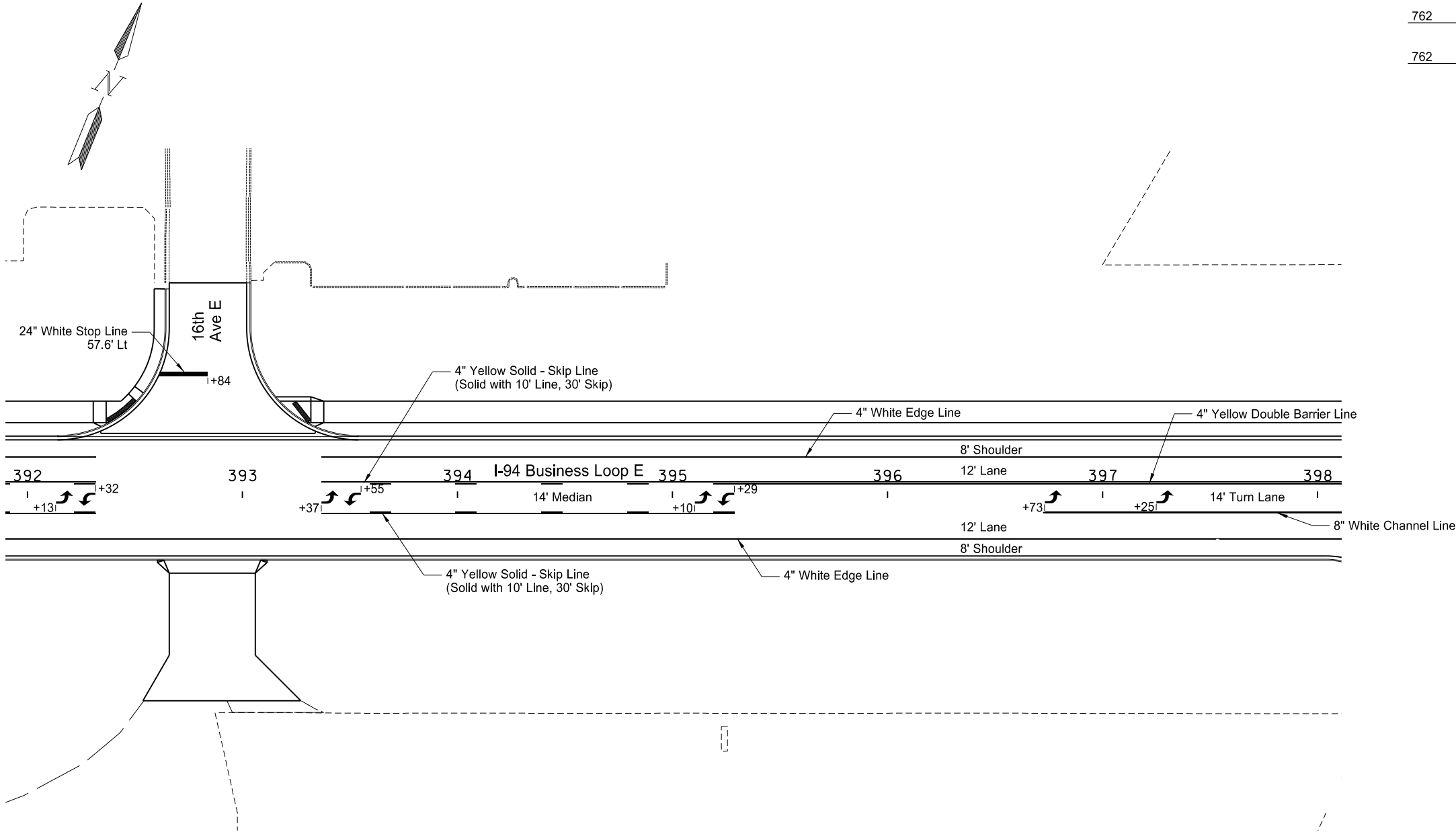


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Pavement Markings
Sta 386+00 to Sta 392+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

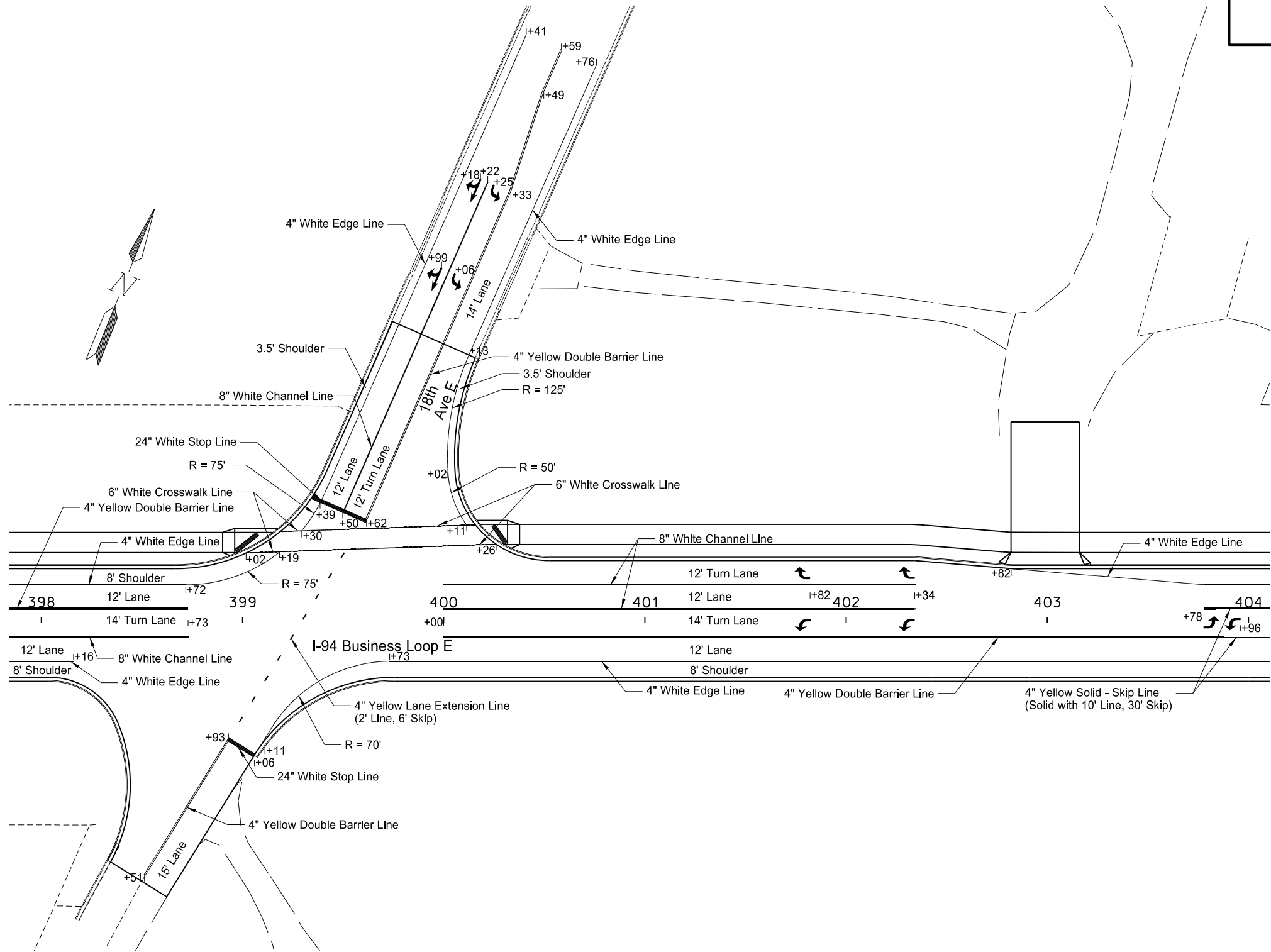
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	6

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Left Turn Arrow (8)	128	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED 4" Yellow Solid - Skip Line	561	LF
		4" White Edge Line	1095	LF
		4" Yellow Double Barrier Line	542	LF
		TOTAL	2198	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED 8" White Channel Line	127	LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED 24" White Stop Line	23	LF



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Pavement Markings
Sta 392+00 to Sta 398+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND



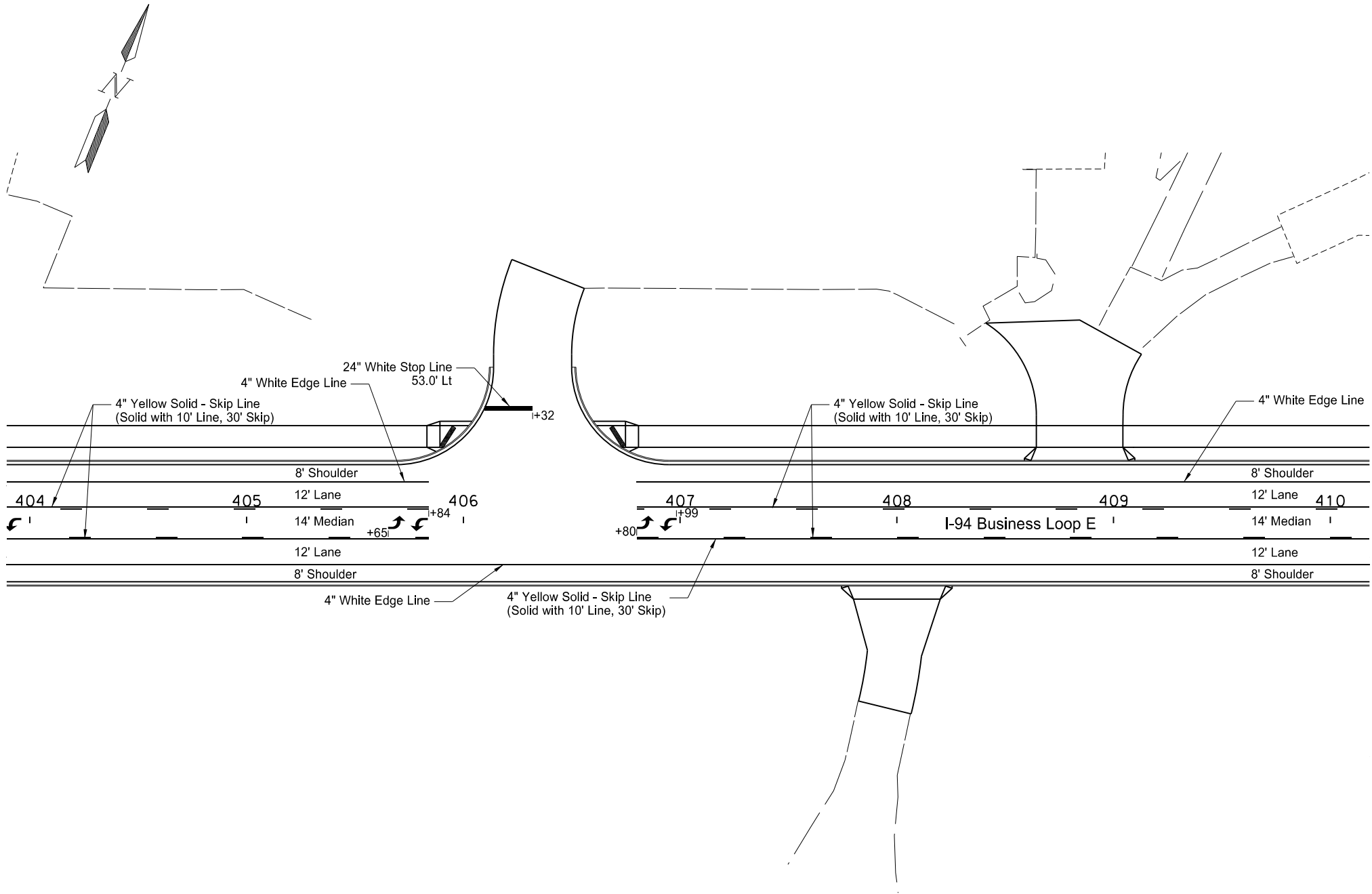
SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVT MK-MESSAGE(GROOVED)		
		Left Turn Arrow (6)	96	SF
		Right Turn Arrow (2)	32	SF
		Thru - Right Arrow (2)	54	SF
		TOTAL	182	SF
762	1305	PREFORMED PATTERNED PVT MK 4IN LINE-GROOVED		
		4" Yellow Solid - Skip Line	55	LF
		4" Yellow Double Barrier Line	1568	LF
		4" White Edge Line	1279	LF
		4" Yellow Lane Extension Line	27	LF
		TOTAL	2929	LF
762	1307	PREFORMED PATTERNED PVT MK 6IN LINE-GROOVED		
		6" White Crosswalk Line	221	LF
762	1309	PREFORMED PATTERNED PVT MK 8IN LINE-GROOVED		
		8" White Channel Line	718	LF
762	1325	PREFORMED PATTERNED PVT MK 24IN LINE-GROOVED		
		24" White Stop Line	45	LF

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Pavement Markings
Sta 398+00 to Sta 404+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	8

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Left Turn Arrow (4)	64	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED 4" Yellow Solid - Skip Line	1260	LF
		4" White Edge Line	1104	LF
		TOTAL	2364	LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED 24" White Stop Line	22	LF

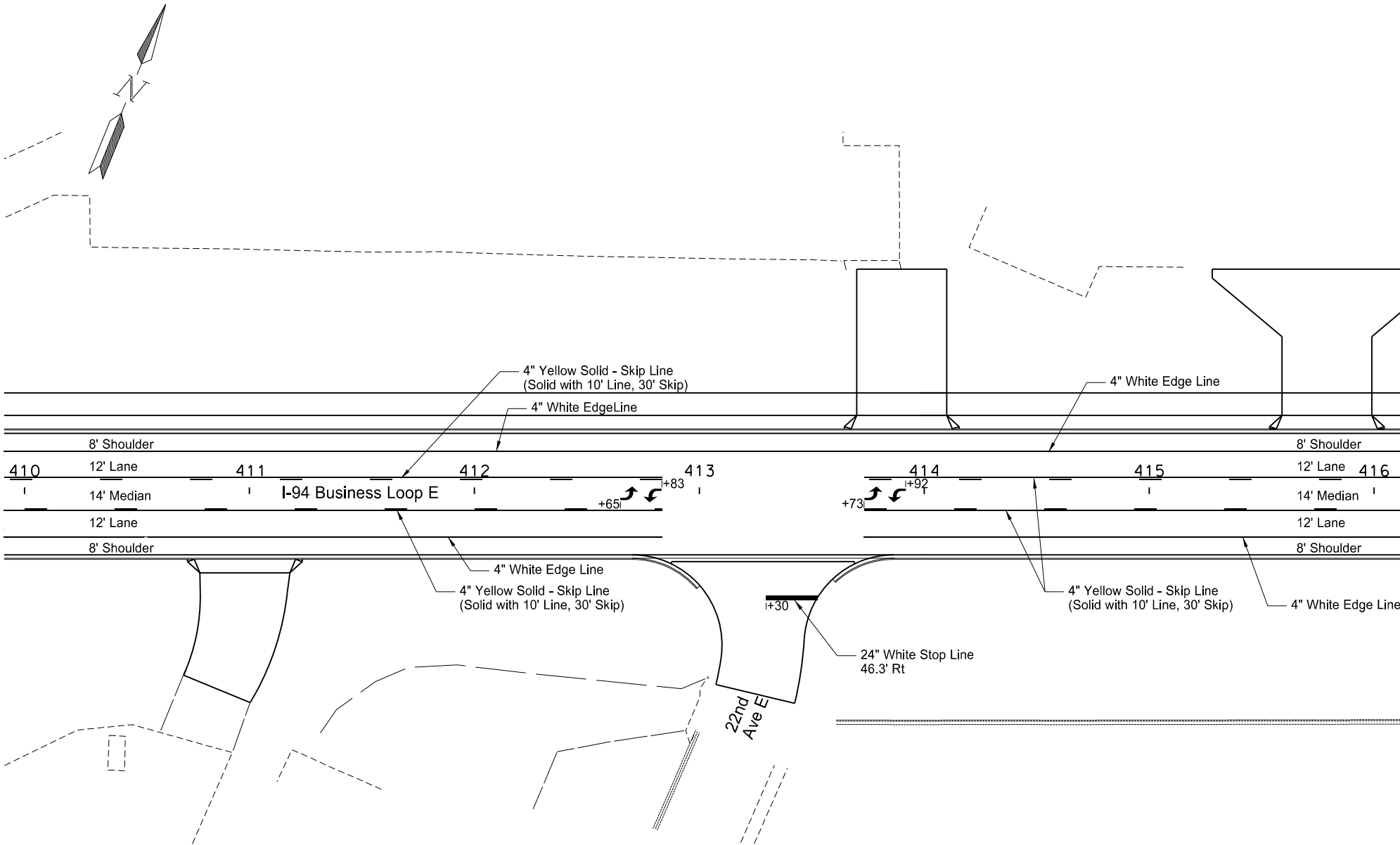


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Pavement Markings
Sta 404+00 to Sta 410+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	9

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Left Turn Arrow (4)	64	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED 4" Yellow Solid - Skip Line	1276	LF
		4" White Edge Line	1110	LF
		TOTAL	2386	LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED 24" White Stop Line	22	LF

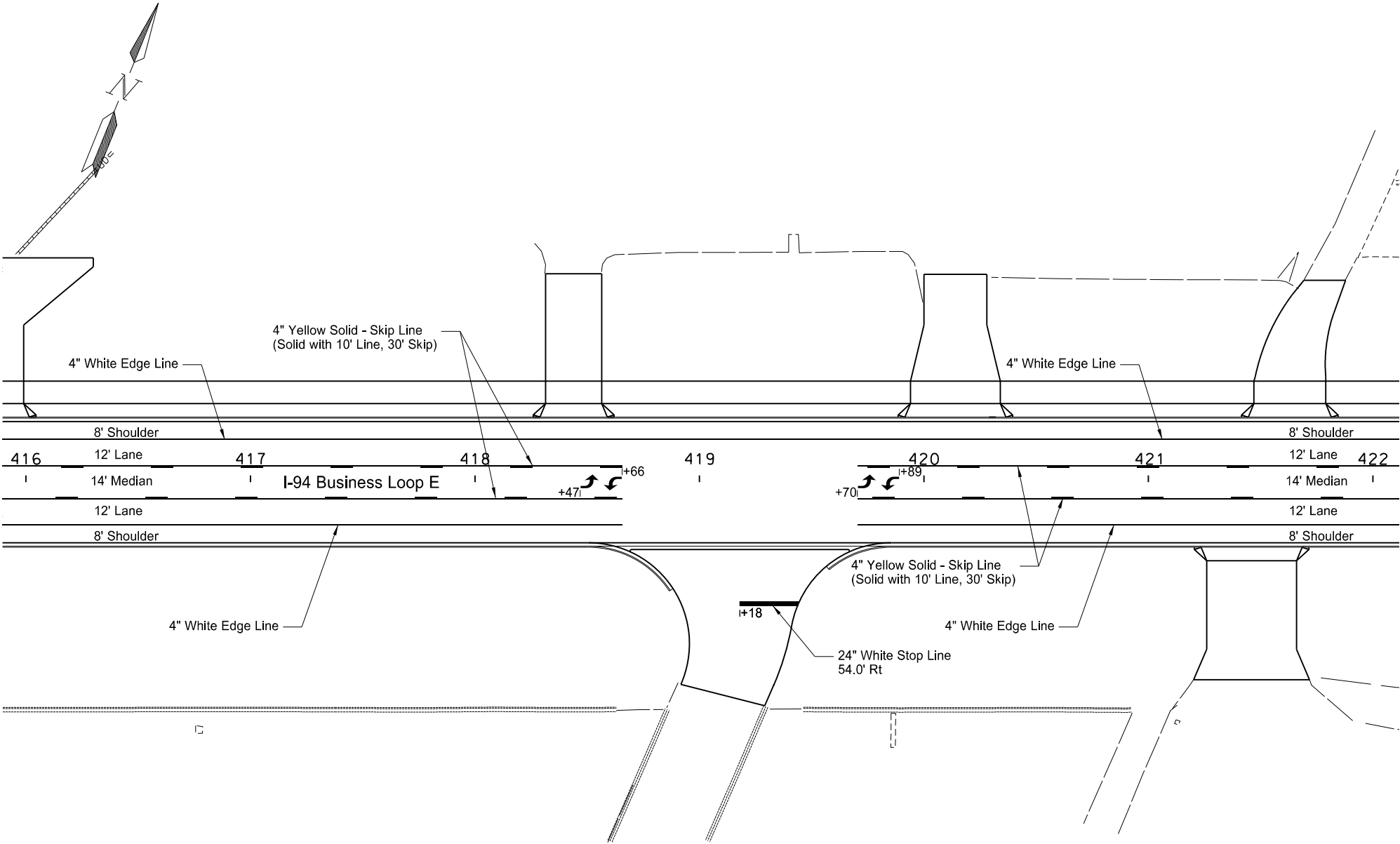


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Pavement Markings
Sta 410+00 to Sta 416+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	10

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Left Turn Arrow (4)	64	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
		4" Yellow Solid - Skip Line	1238	LF
		4" White Edge Line	1095	LF
		TOTAL	2333	LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED		
		24" White Stop Line	26	LF

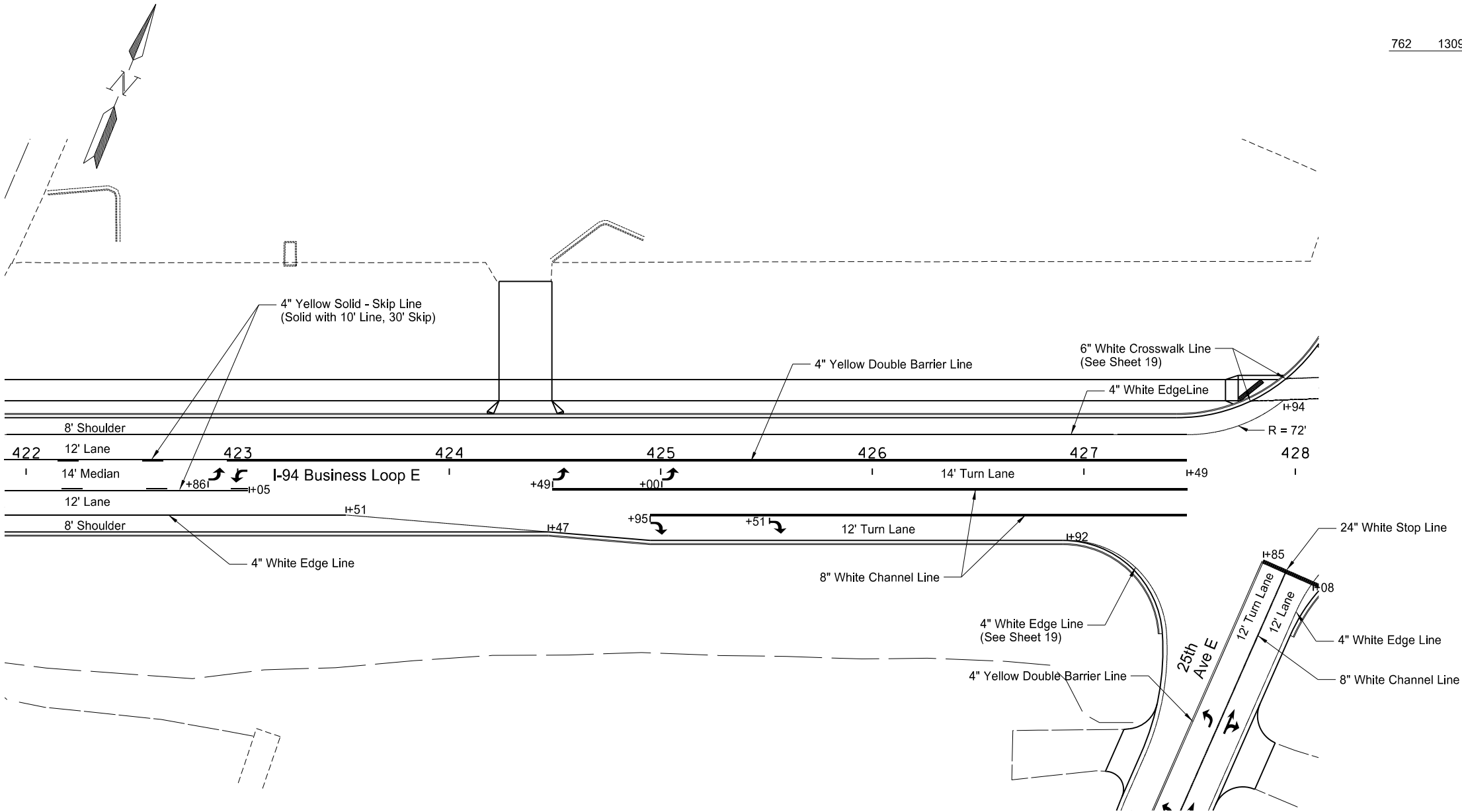


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Pavement Markings
Sta 416+00 to Sta 422+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	11

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
		Right Turn Arrow (2)	32	SF
		Left Turn Arrow (4)	64	SF
		TOTAL	96	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
		4" Yellow Solid - Skip Line	262	LF
		4" White Edge Line	846	LF
		4" Yellow Double Barrier Line	888	LF
		TOTAL	1996	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		8" White Channel Line	554	LF



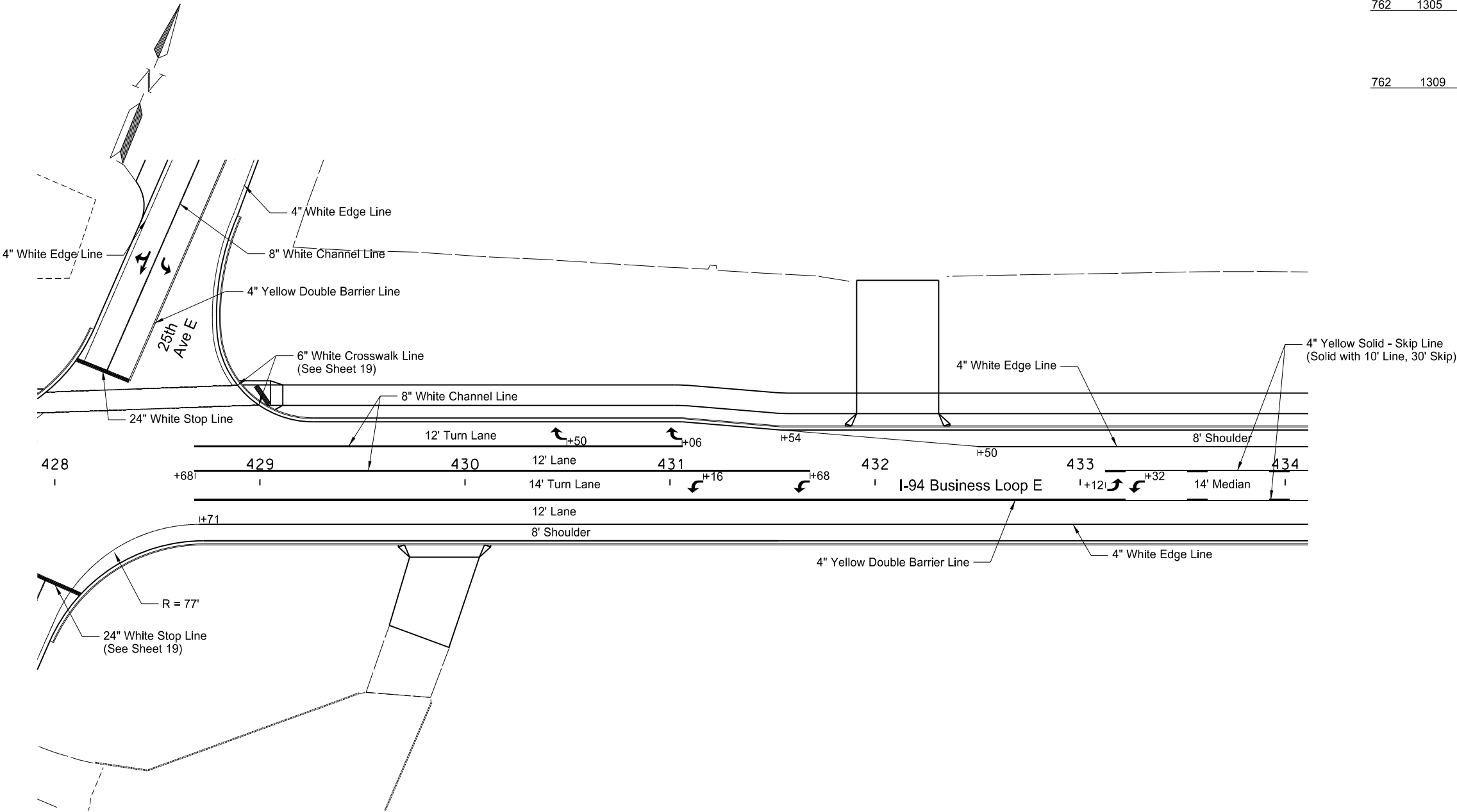
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Notes:
1. See Section 120, Sheet 19 for pavement marking on 25th Ave E.

Pavement Markings
Sta 422+00 to Sta 428+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	12

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
		Right Turn Arrow (2)	32	SF
		Left Turn Arrow (4)	64	SF
		TOTAL	96	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
		4" Yellow Solid - Skip Line	219	LF
		4" White Edge Line	776	LF
		4" Yellow Double Barrier Line	888	LF
		TOTAL	1883	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		8" White Channel Line	538	LF



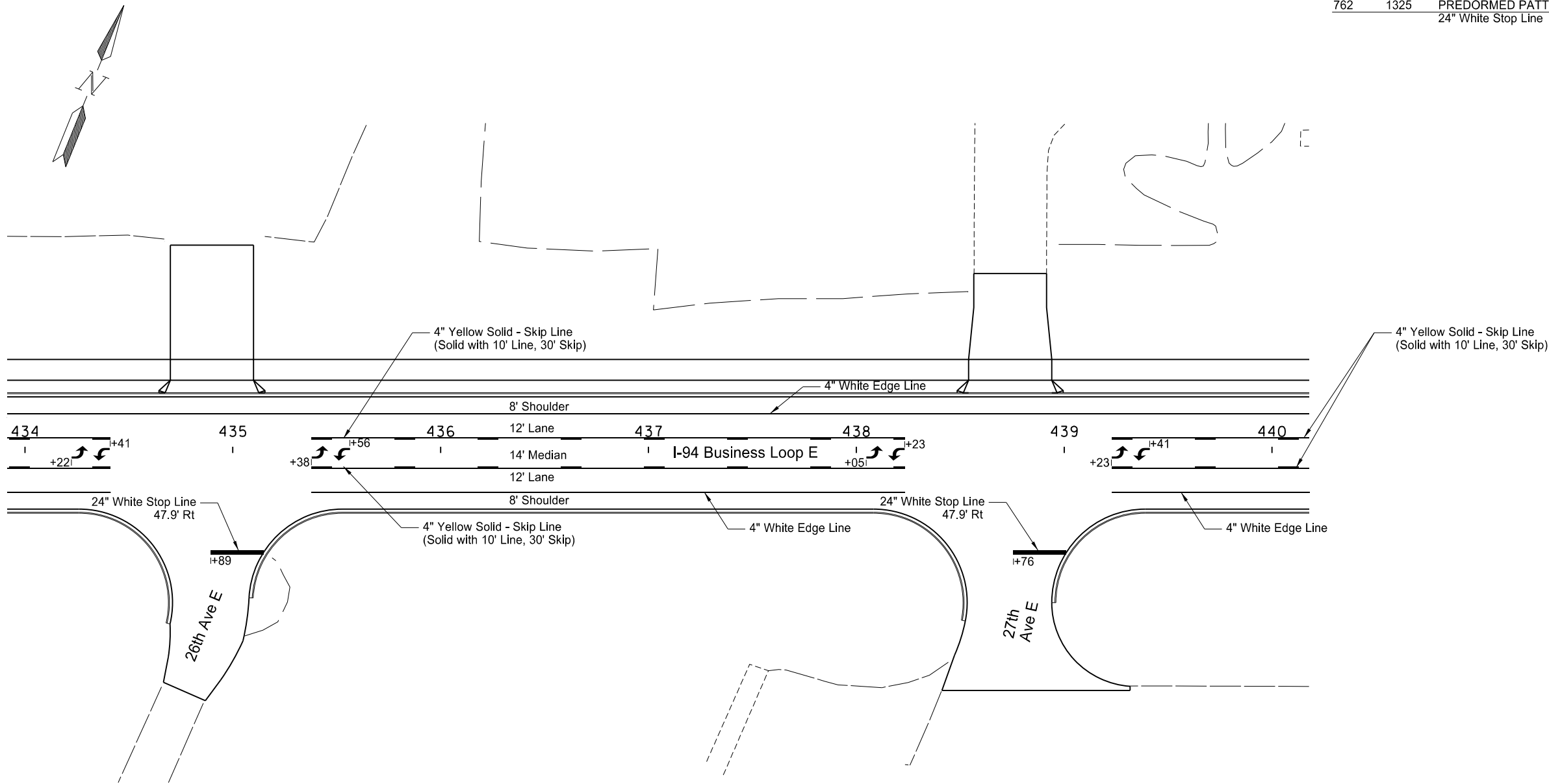
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Notes:
1. See Section 120, Sheet 19, for pavement markings on 25th Ave E.

Pavement Markings
Sta 428+00 to Sta 434+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	13

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Left Turn Arrow (8)	128	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED 4" Yellow Solid - Skip Line	1009	LF
		4" White Edge Line	1004	LF
		TOTAL	2013	LF
762	1325	PREDORMED PATTERNED PVMT MK 24IN LINE-GROOVED 24" White Stop Line	51	LF

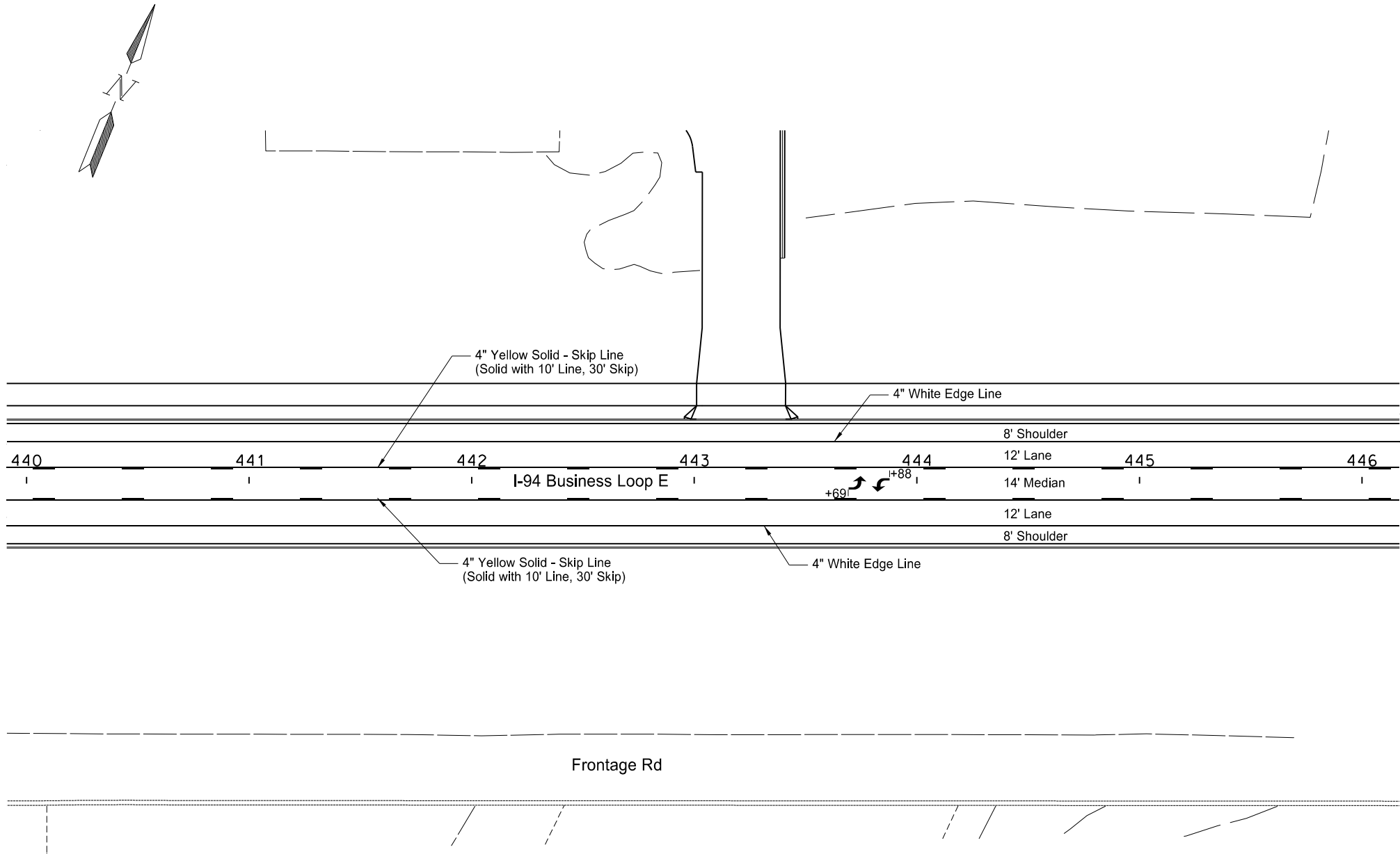


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Pavement Markings
Sta 434+00 to Sta 440+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	14

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Left Turn Arrow (2)	32	LF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED 4" Yellow Solid - Skip Line	1500	LF
		4" White Edge Line	1200	LF
		TOTAL	2700	LF

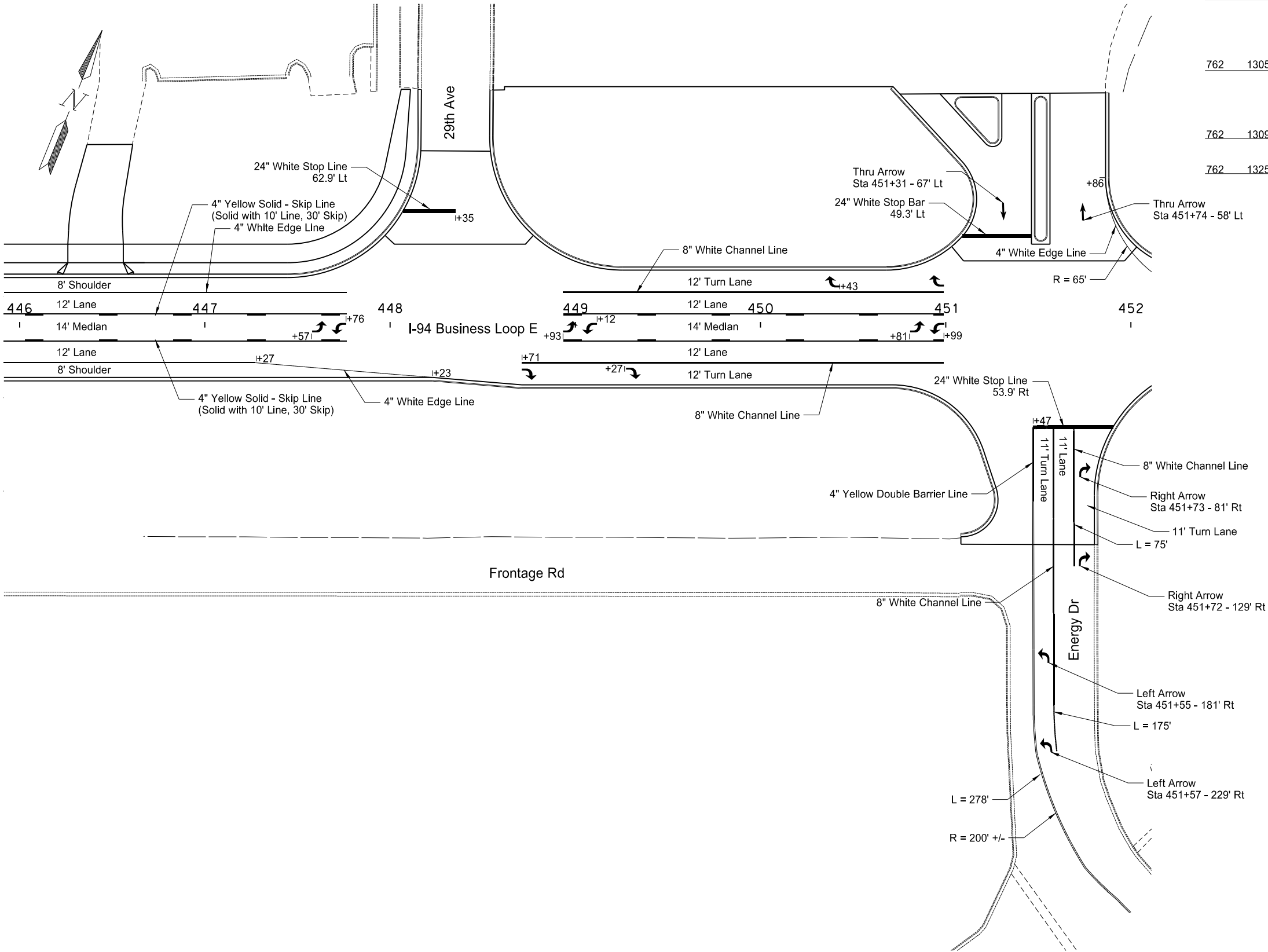


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Pavement Markings
 Sta 440+00 to Sta 446+00
 E Business LP 10th Ave E - Exit 64
 Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	15

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
		Left Turn Arrow (8)	128	SF
		Right Turn Arrow (6)	96	SF
		Thru Arrow (2)	32	SF
		TOTAL	256	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
		4" Yellow Solid - Skip Line	955	LF
		4" Yellow Double Barrier Line	556	LF
		4" White Edge Line	443	LF
		TOTAL	1954	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		8" White Channel Line	683	LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED		
		24" White Stop Bar	108	LF

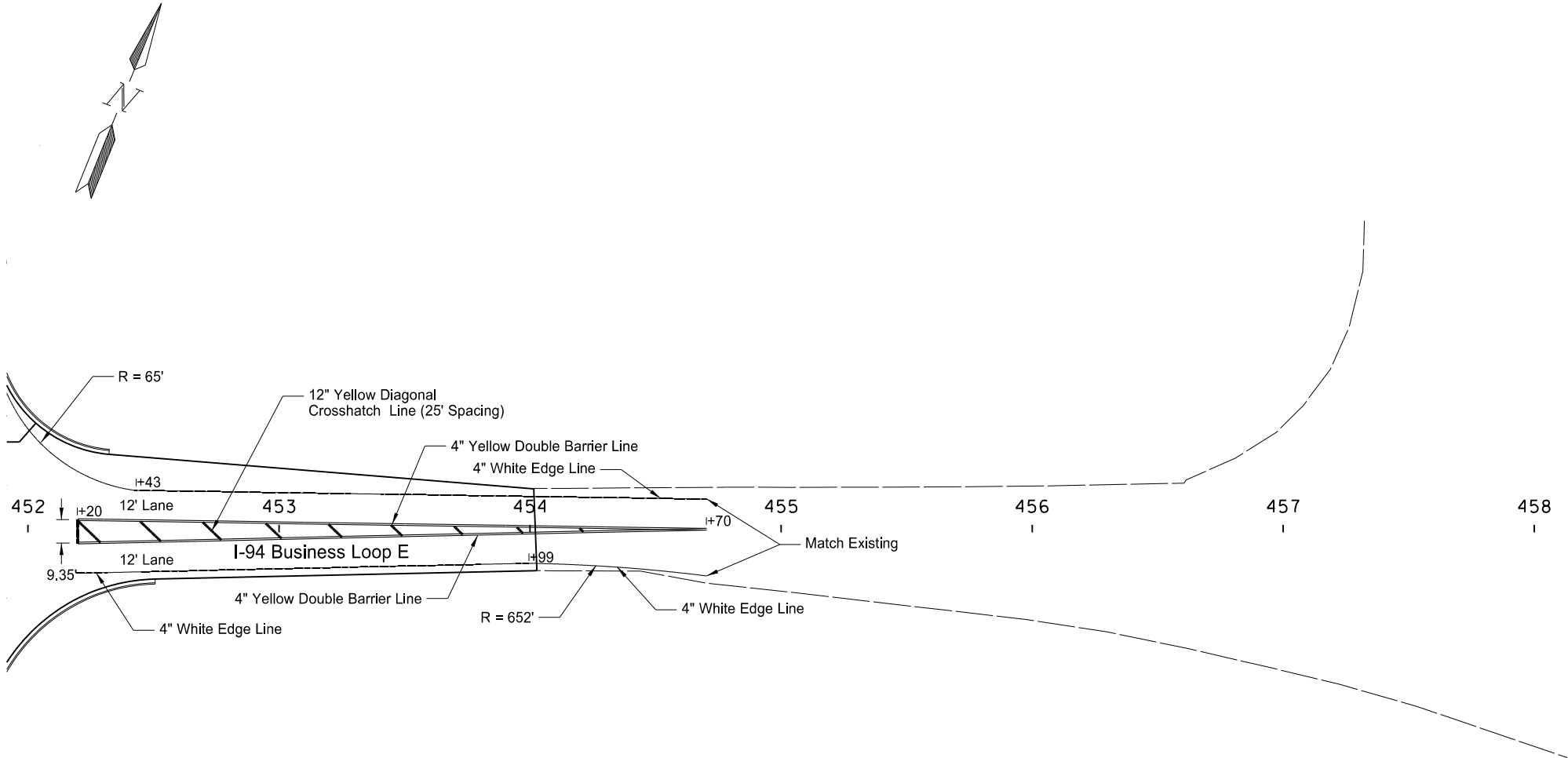


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Pavement Markings
Sta 446+00 to Sta 452+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	16

SPEC	CODE	BID ITEM	QTY	UNIT
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
		4" Yellow Double Barrier Line	1002	LF
		4" White Edge Line	532	LF
		TOTAL	1534	LF
762	1315	PREFORMED PATTERNED PVMT MK 12IN LINE-GROOVED		
		12" Yellow Diagonal Crosshatch	76	LF

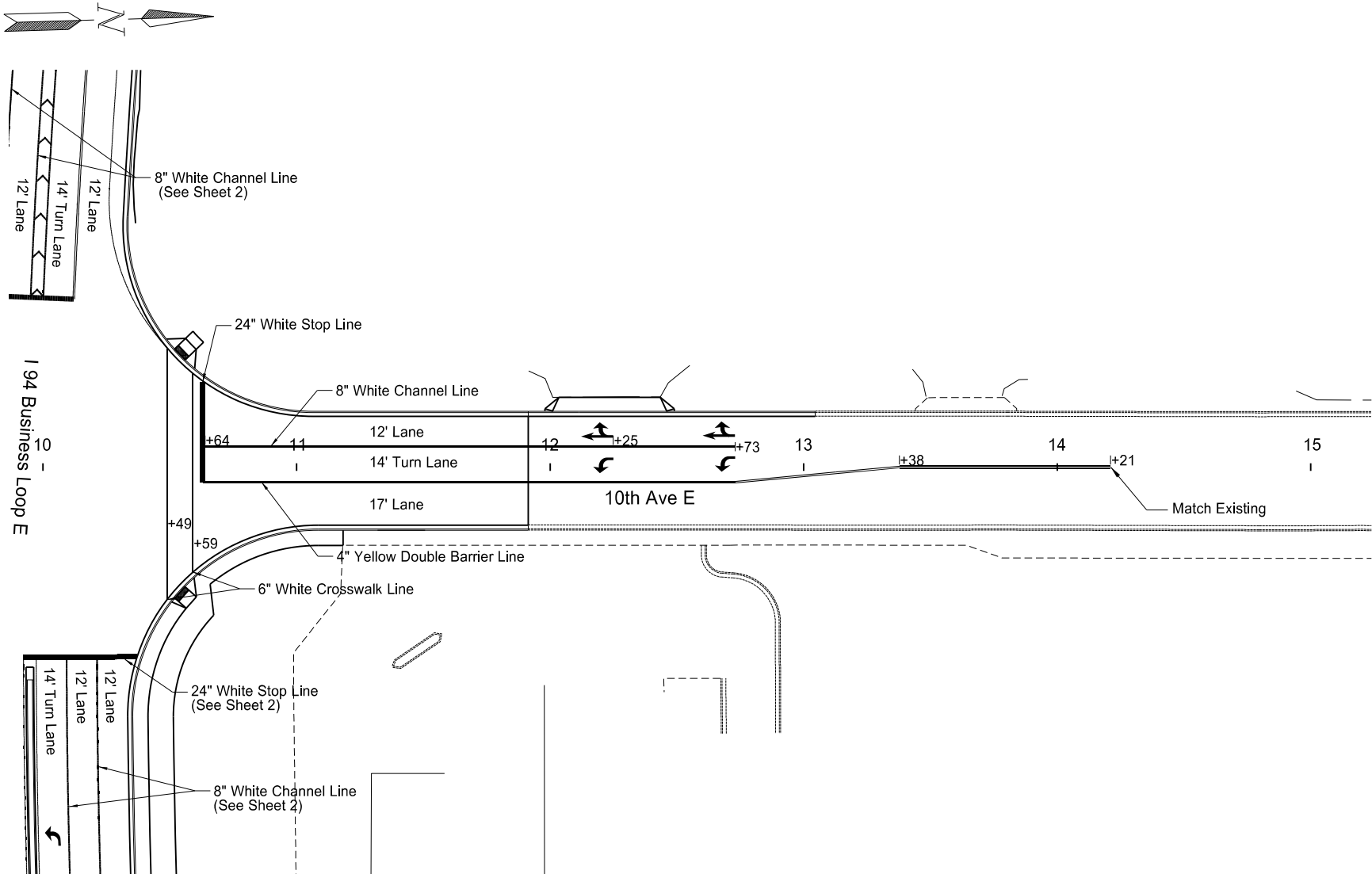


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Pavement Markings
Sta 452+00 to Sta 458+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	17

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
		Left Turn Arrow (2)	32	SF
		Thru - Right Arrow (2)	54	SF
		TOTAL	86	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
		4" Yellow Double Barrier Line	717	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		8" White Channel Line	210	LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED		
		24" White Stop Line	40	LF



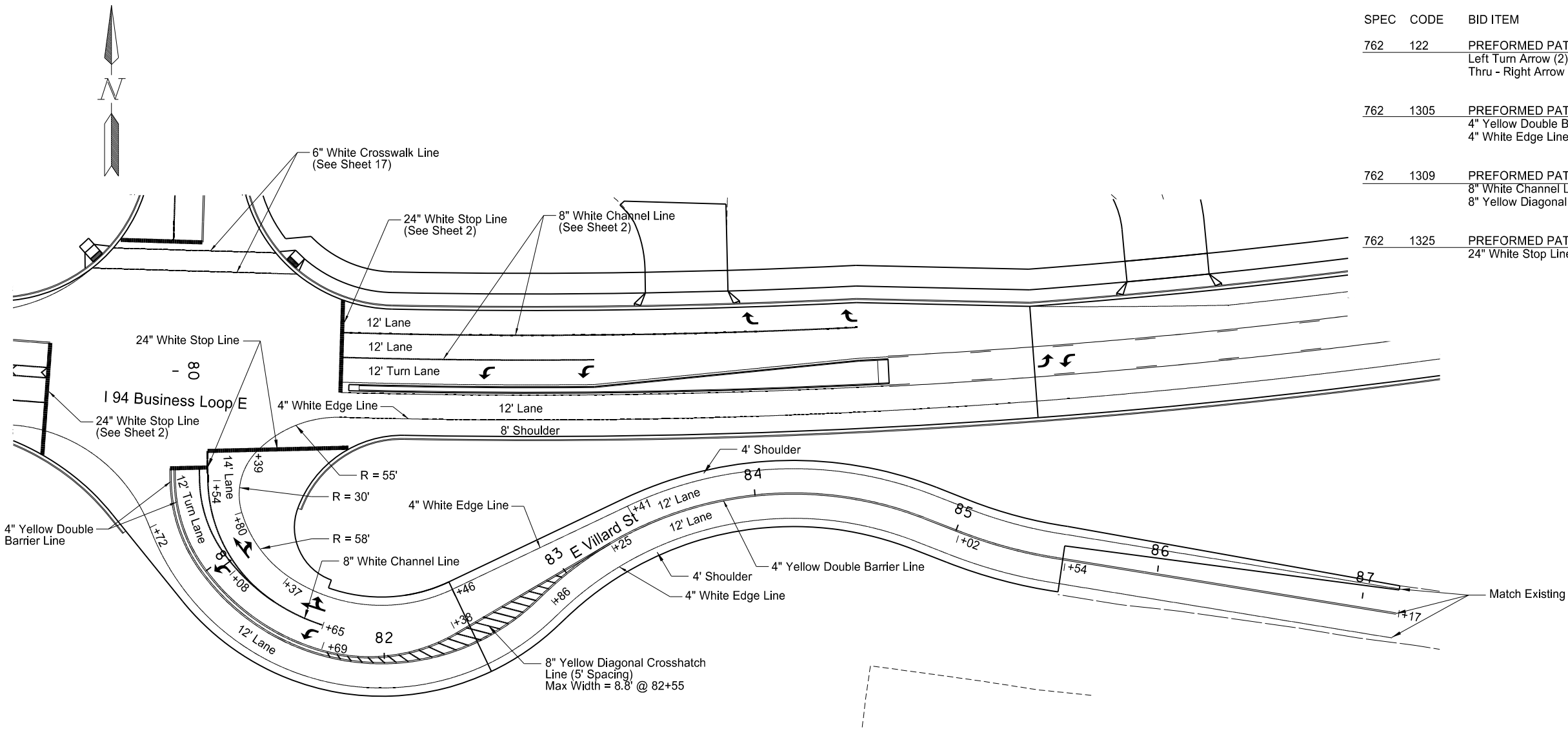
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Notes:
1. See Section 120, Sheet 2, for pavement markings on I-94 Business Loop E.

Pavement Markings
Sta 10+00 to Sta 15+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	18

SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVT MK-MESSAGE(GROOVED)		
		Left Turn Arrow (2)	32	SF
		Thru - Right Arrow (2)	54	SF
		TOTAL	86	SF
762	1305	PREFORMED PATTERNED PVT MK 4IN LINE-GROOVED		
		4" Yellow Double Barrier Line	1903	LF
		4" White Edge Line	1427	LF
		TOTAL	3330	LF
762	1309	PREFORMED PATTERNED PVT MK 8IN LINE-GROOVED		
		8" White Channel Line	187	LF
		8" Yellow Diagonal Crosshatch	184	LF
		TOTAL	371	LF
762	1325	PREFORMED PATTERNED PVT MK 24IN LINE-GROOVED		
		24" White Stop Line	86	LF



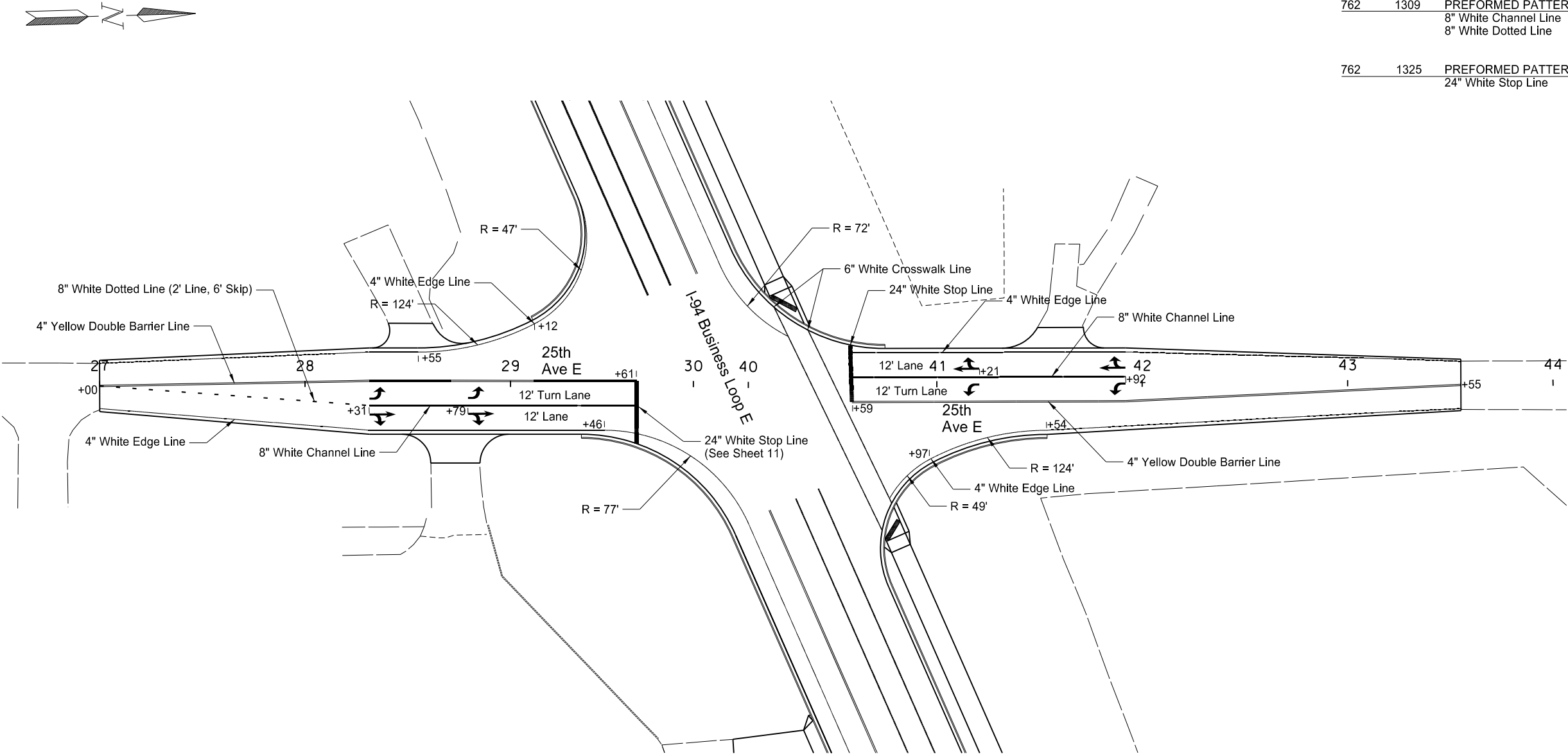
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- Notes:
- See Section 120, Sheet 2, for pavement markings on I-94 Business Loop E.
 - See section 120, Sheet 17, for pavement markings on 10th Ave E.

Pavement Markings
Sta 80+00 to Sta 87+50
E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	120	19

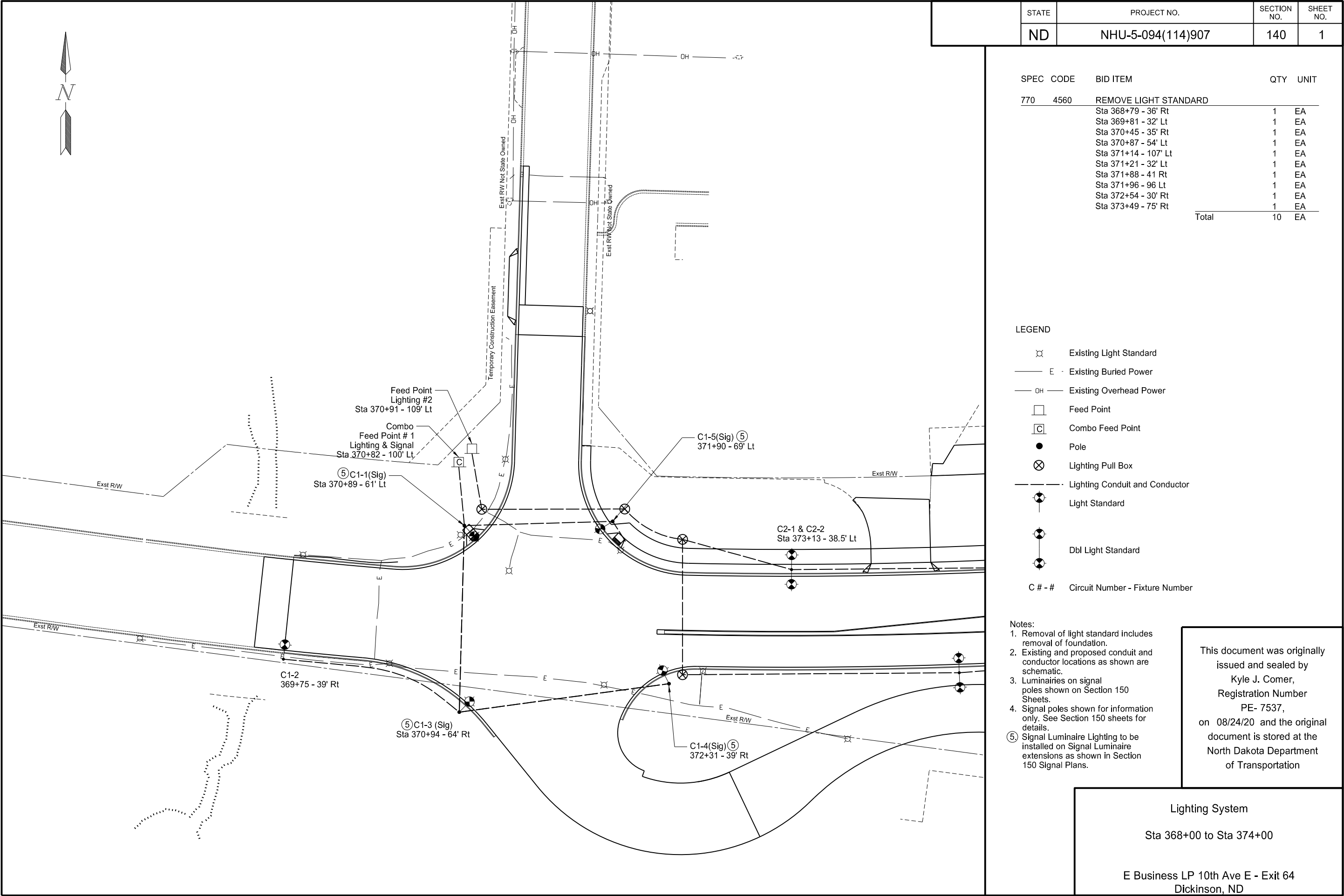
SPEC	CODE	BID ITEM	QTY	UNIT
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)		
		Left Turn Arrow (4)	64	SF
		Thru - Right Turn (4)	108	SF
		TOTAL	172	SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED		
		4" Yellow Double Barrier Line	1116	LF
		4" White Edge Line	1207	LF
		TOTAL	2323	LF
762	1307	PREFORMED PATTERNED PVMT MK 6IN LINE-GROOVED		
		6" White Crosswalk Line	215	LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED		
		8" White Channel Line	264	LF
		8" White Dotted Line	33	LF
		TOTAL	297	LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED		
		24" White Stop Line	58	LF

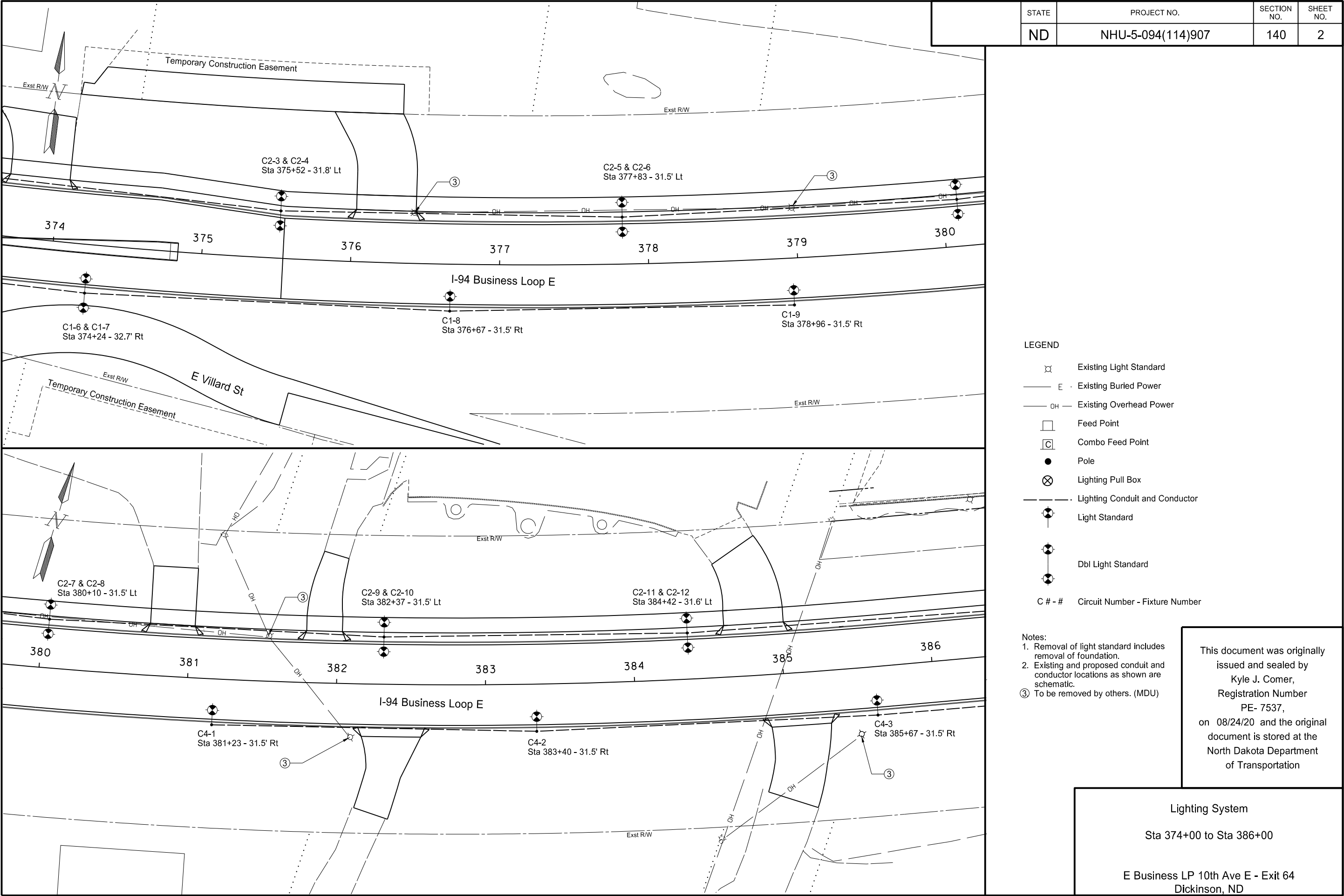


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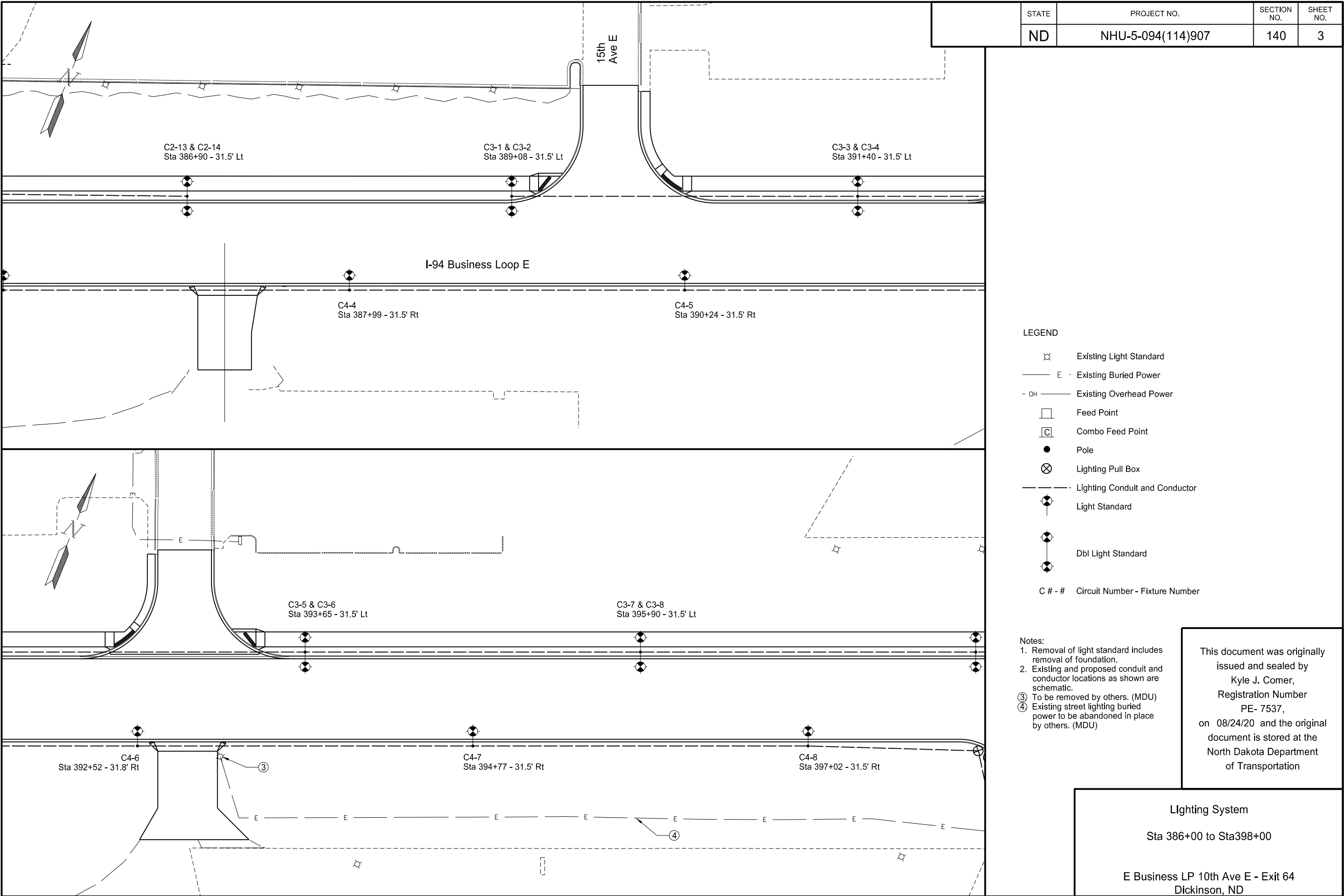
Pavement Markings
Sta 27+00 to Sta 44+00
E Business LP 10th Ave E - Exit 64
Dickinson, ND

- Notes:
- See Section 120, Sheets 11 and 12, for pavement markings on I-94 Business Loop E.





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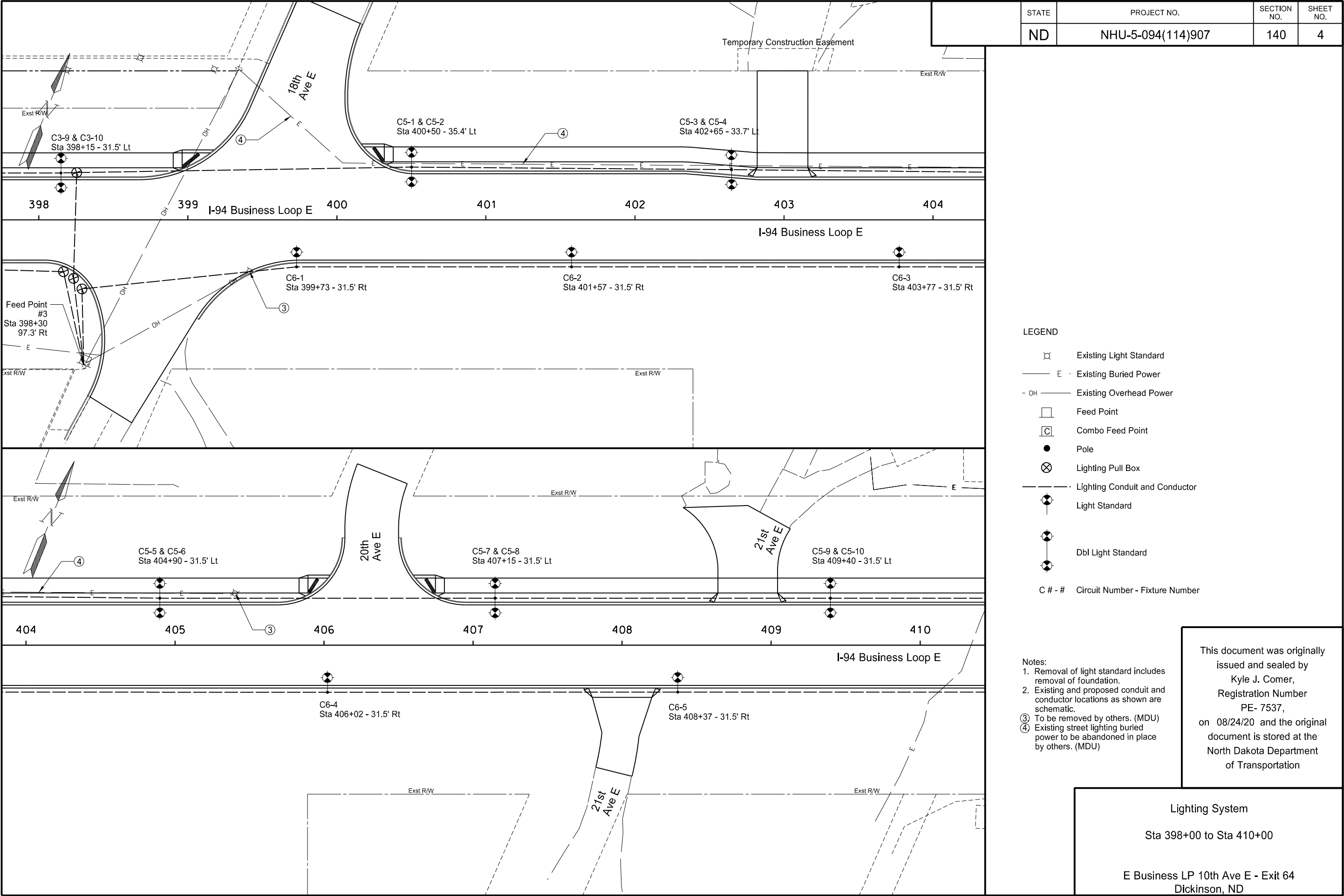


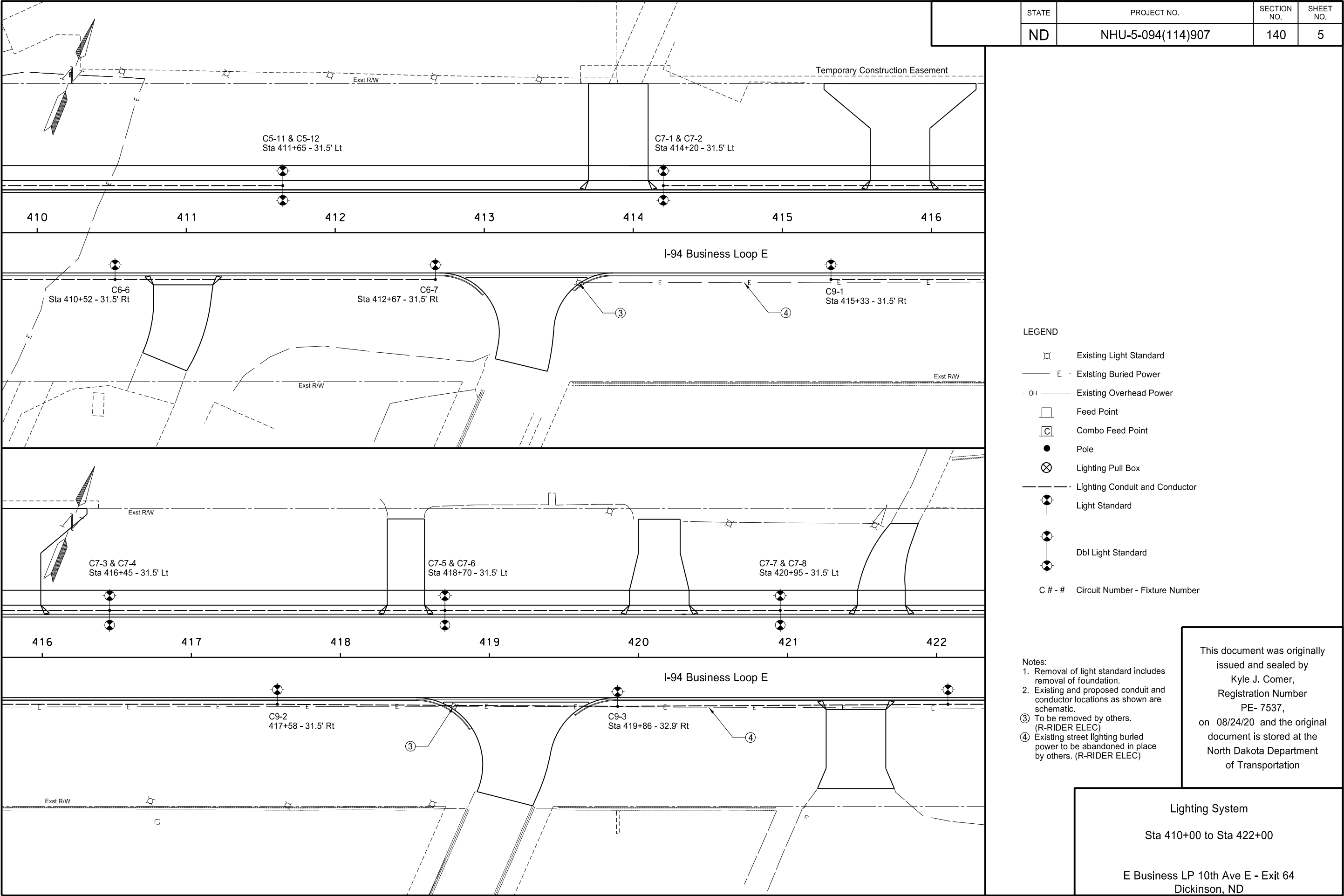
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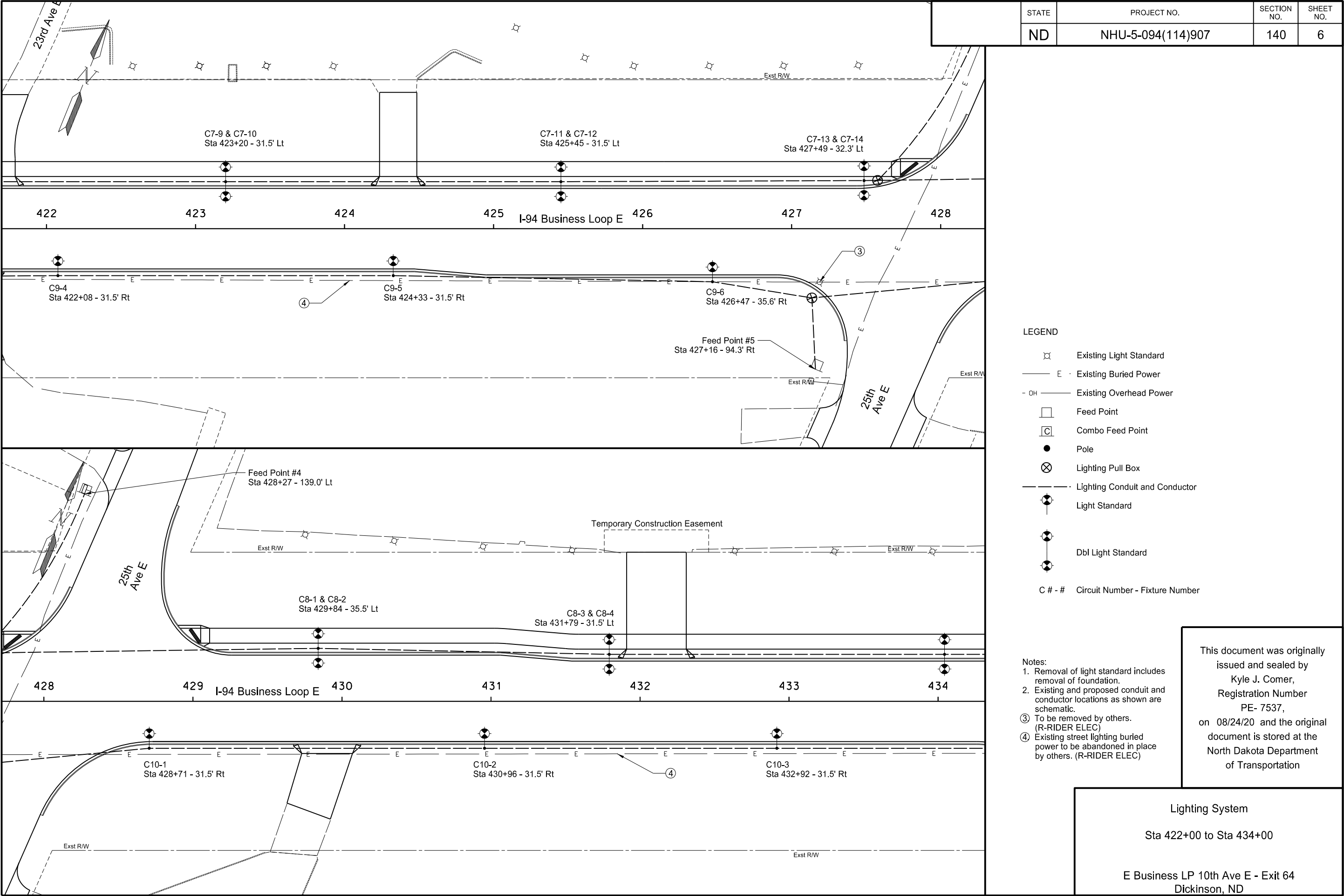
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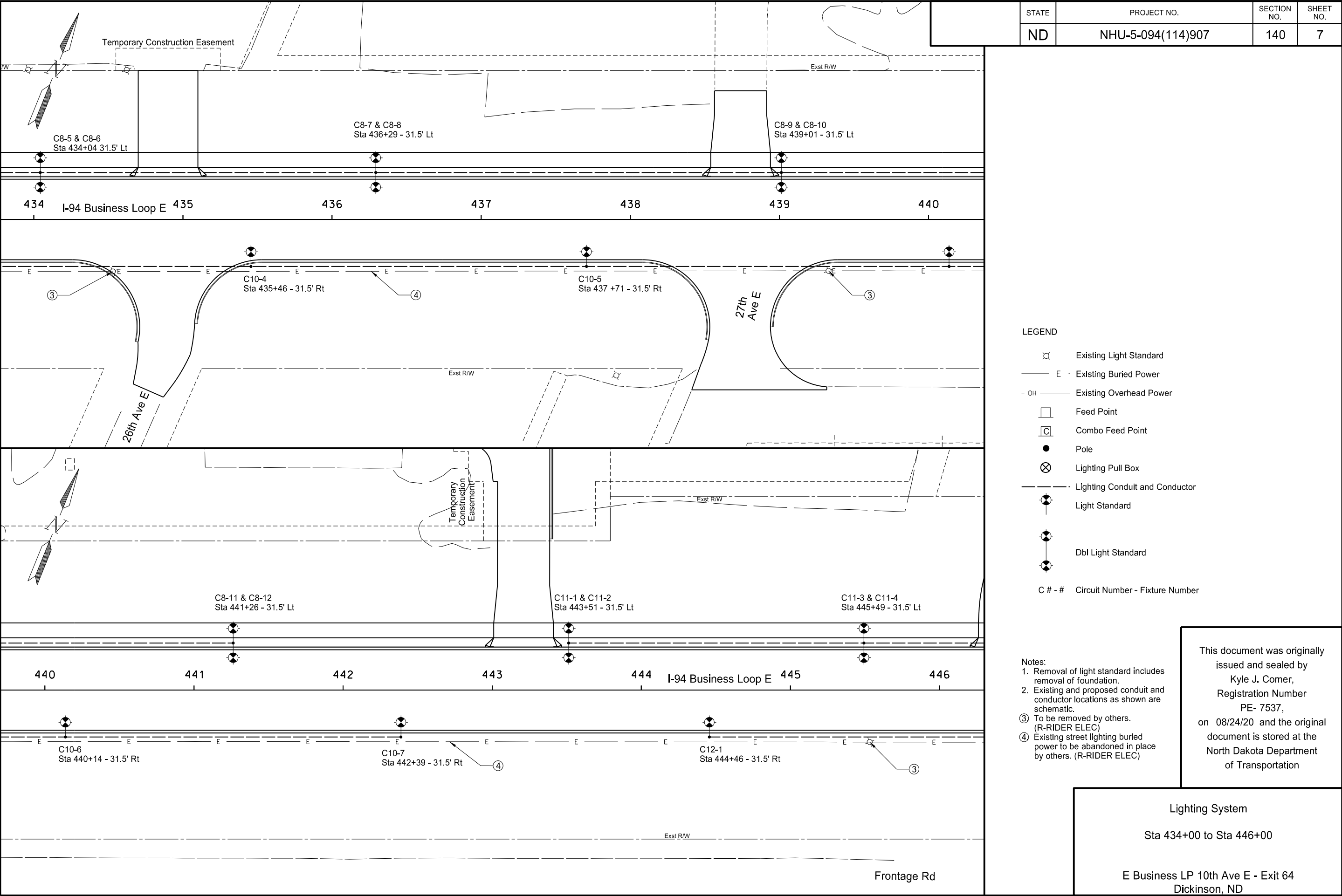
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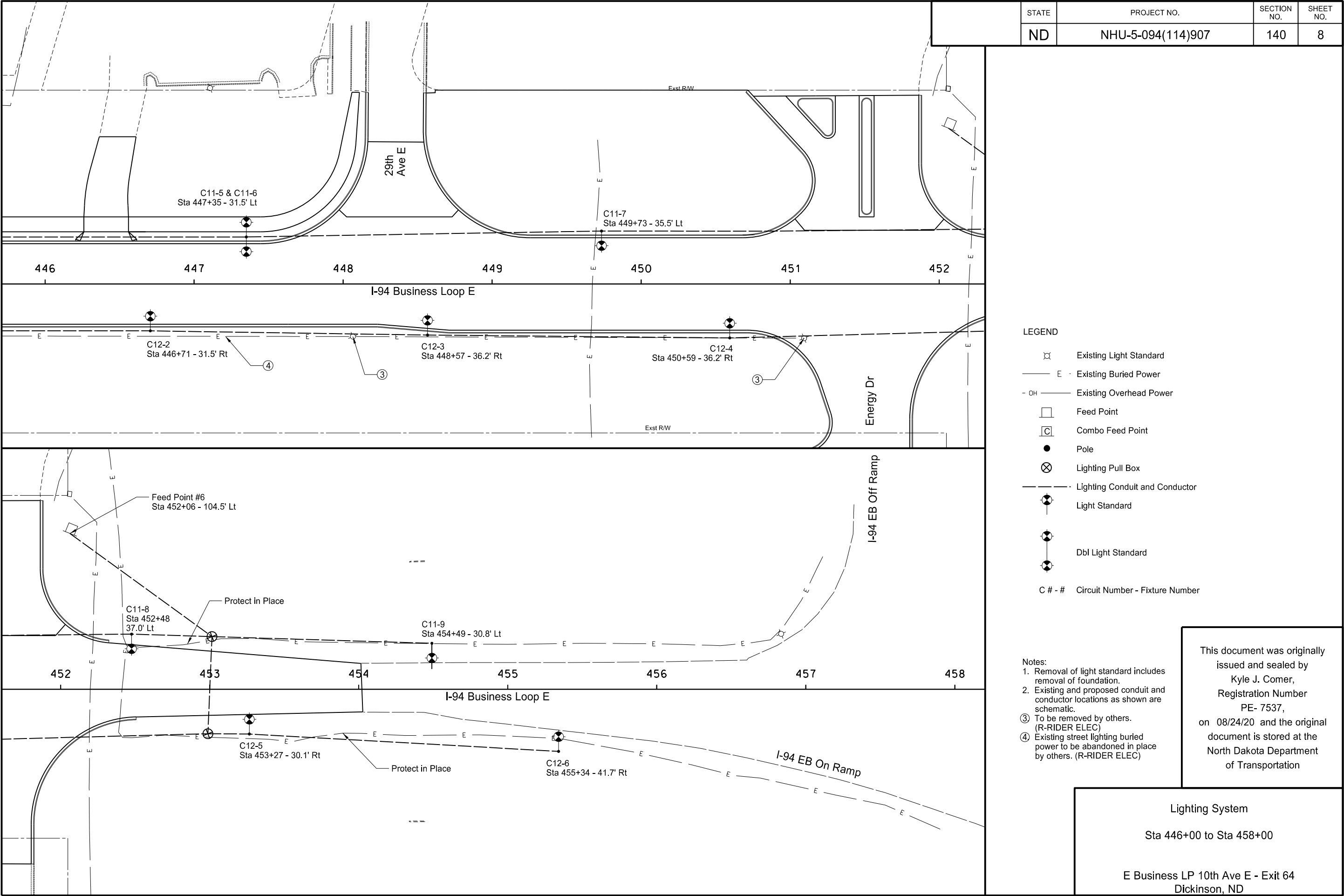
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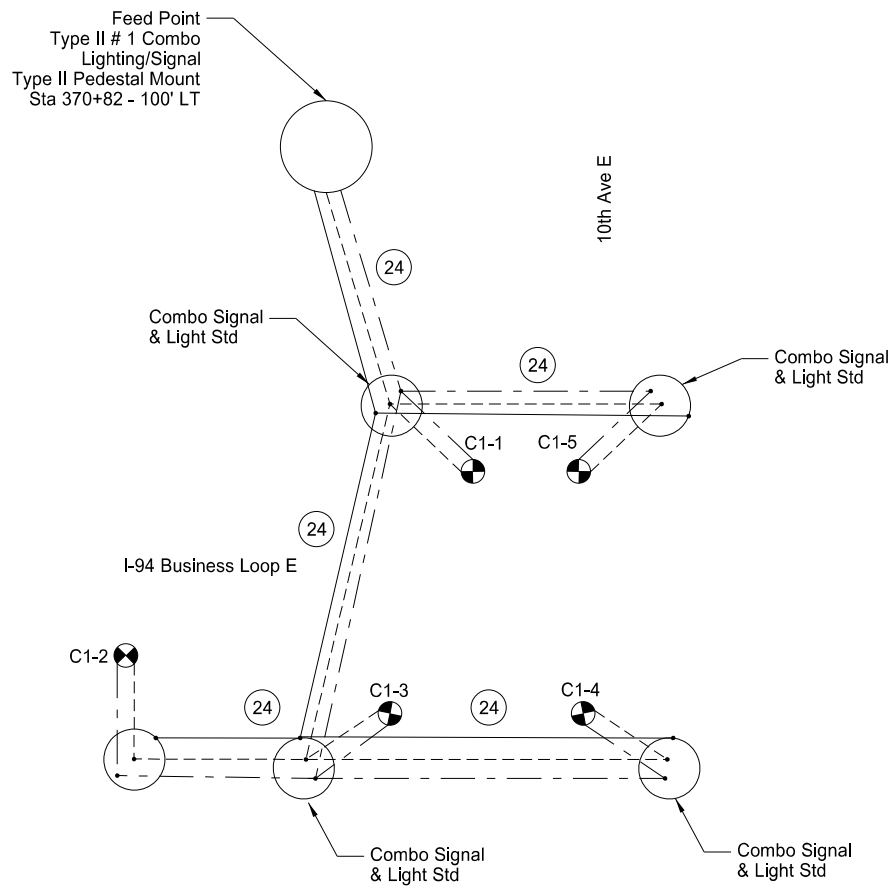








	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	140	9



Legend

- Phase Conductor
- Phase Conductor
- Ground Conductor
- C#-# Circuit Number and Fixture Number
- LED Luminaire 120/240 V operated on 240 V
- Light Standard
- Feed Point
- Junction Box

Copper Feeder Schedule

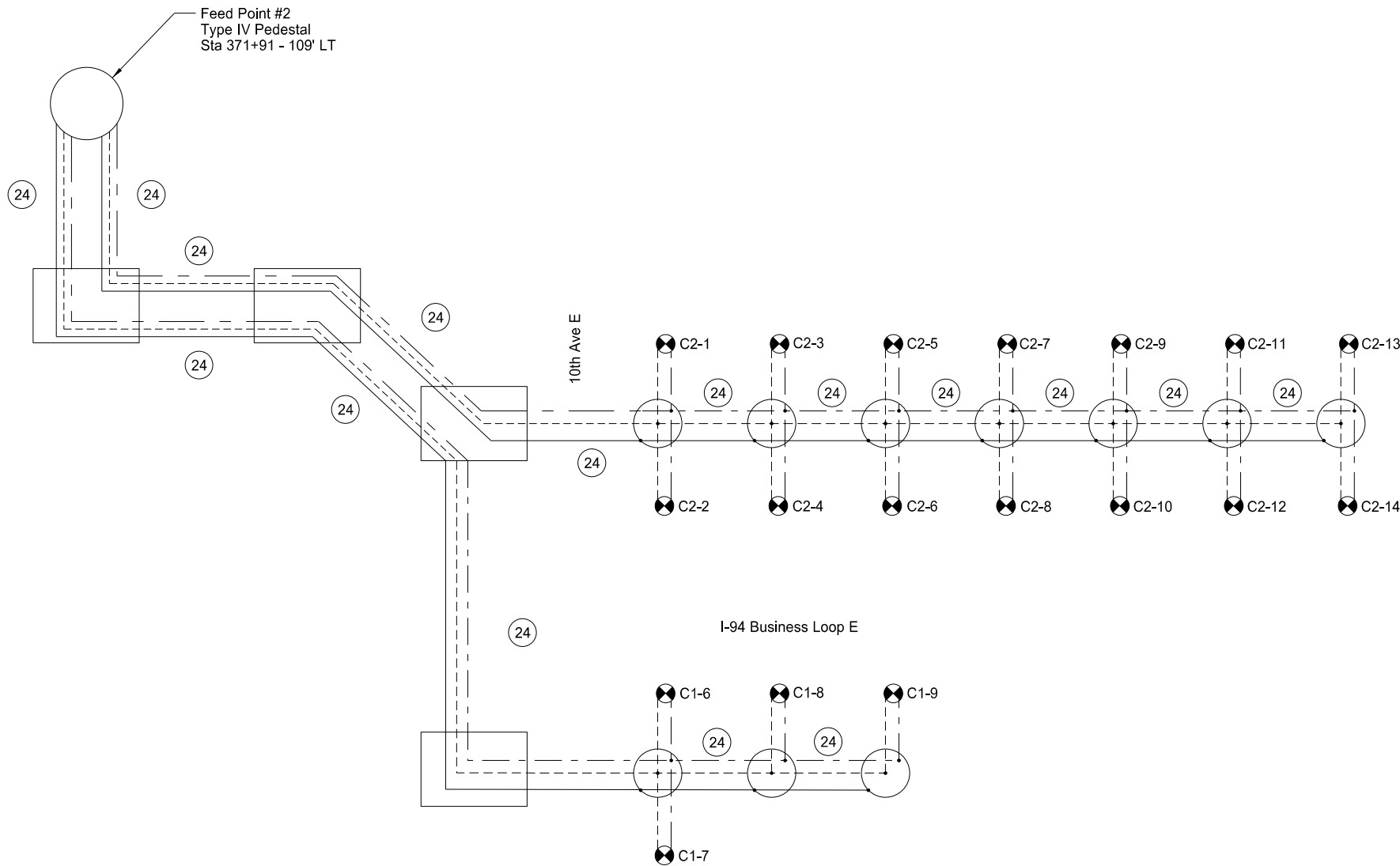
ID	Conduit	Conductors	Type
24	2" PVC	(1) #4 Black (1) #4 Red (1) #6 Green	THW-2

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Lighting System

Lighting Schematic

E Business LP 10th Ave E - Exit 64
Dickinson, ND



Legend

- Phase Conductor
- Phase Conductor
- Ground Conductor
- C#-# Circuit Number and Fixture Number
- LED Luminaire 120/240 V operated on 240 V
- Light Standard
- Feed Point
- Junction Box

Copper Feeder Schedule

ID	Conduit	Conductors	Type
24	2" PVC	(1) #4 Black (1) #4 Red (1) #6 Green	THW-2

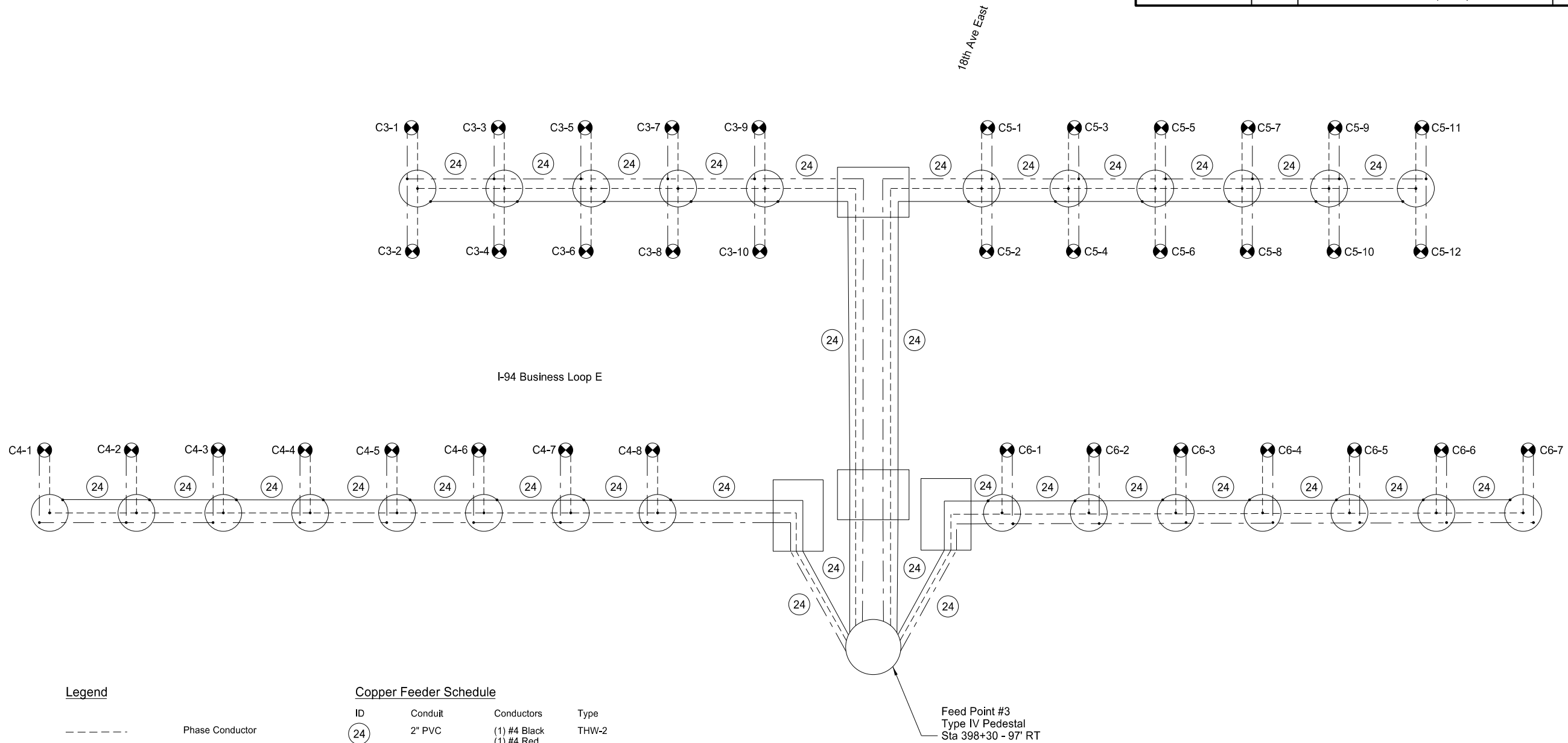
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Lighting System

Lighting Schematic

E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	140	11



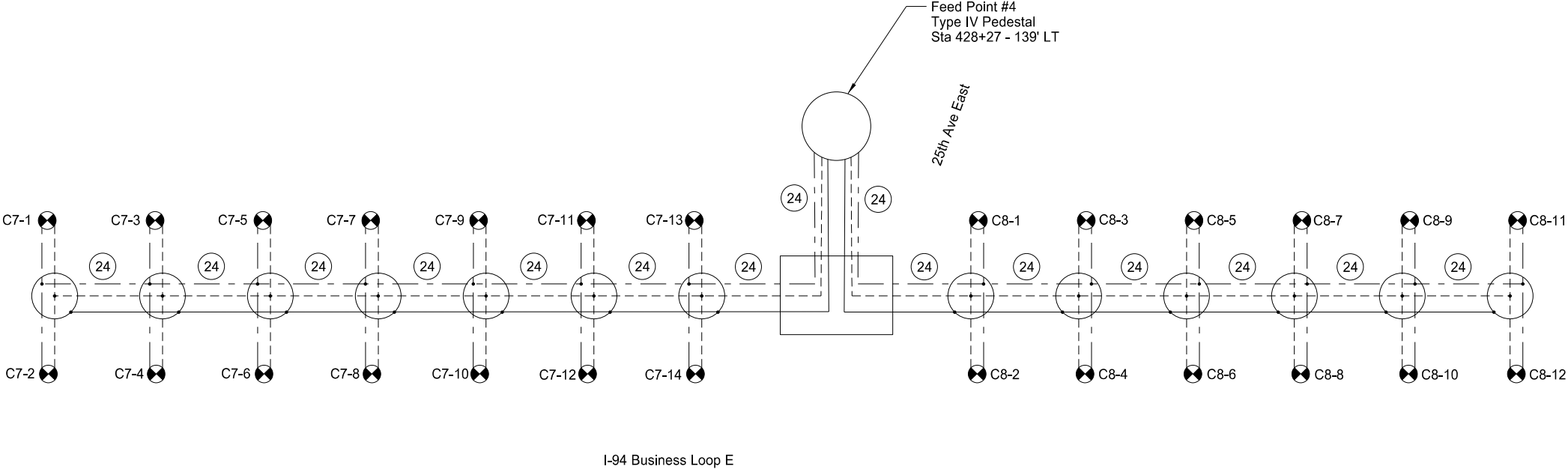
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Lighting System

Lighting Schematic

E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	140	12



Legend

- Phase Conductor
- Phase Conductor
- Ground Conductor
- C#-# Circuit Number and Fixture Number
- LED Luminaire 120/240 V operated on 240 V
- Light Standard
- Feed Point
- Junction Box

Copper Feeder Schedule


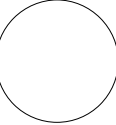


ID	Conduit	Conductors	Type
24	2" PVC	(1) #4 Black (1) #4 Red (1) #6 Green	THW-2

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Lighting System
Lighting Schematic
E Business LP 10th Ave E - Exit 64
Dickinson, ND

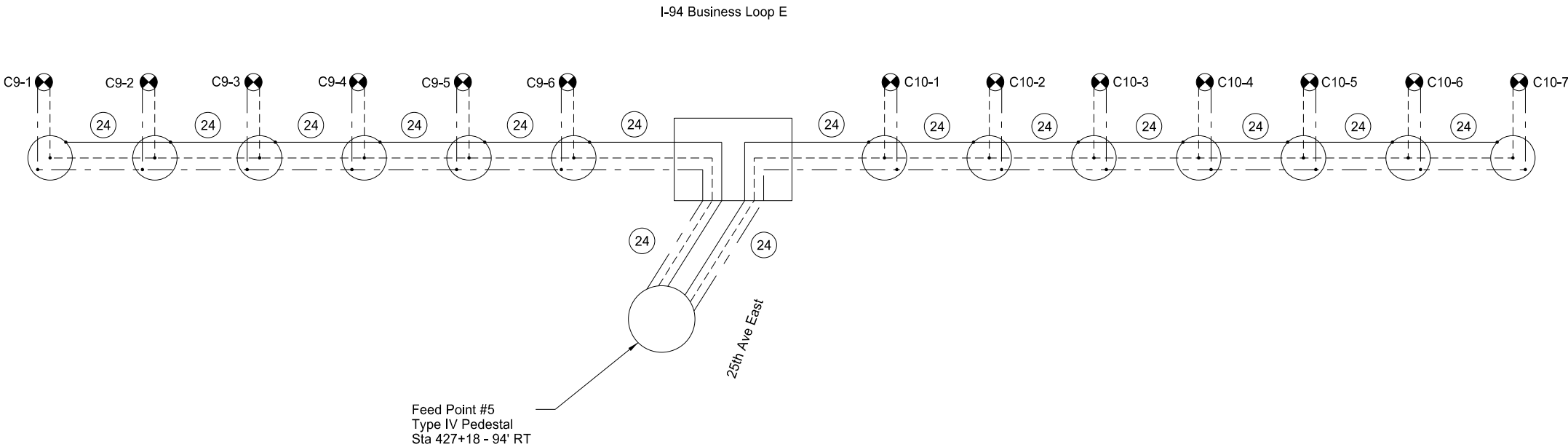
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	140	13

Legend

-----	Phase Conductor
- - - - -	Phase Conductor
_____	Ground Conductor
C#-#	Circuit Number and Fixture Number
	LED Luminaire 120/240 V operated on 240 V
	Light Standard
	Feed Point
	Junction Box

Copper Feeder Schedule

ID	Conduit	Conductors	Type
24	2" PVC	(1) #4 Black (1) #4 Red (1) #6 Green	THW-2



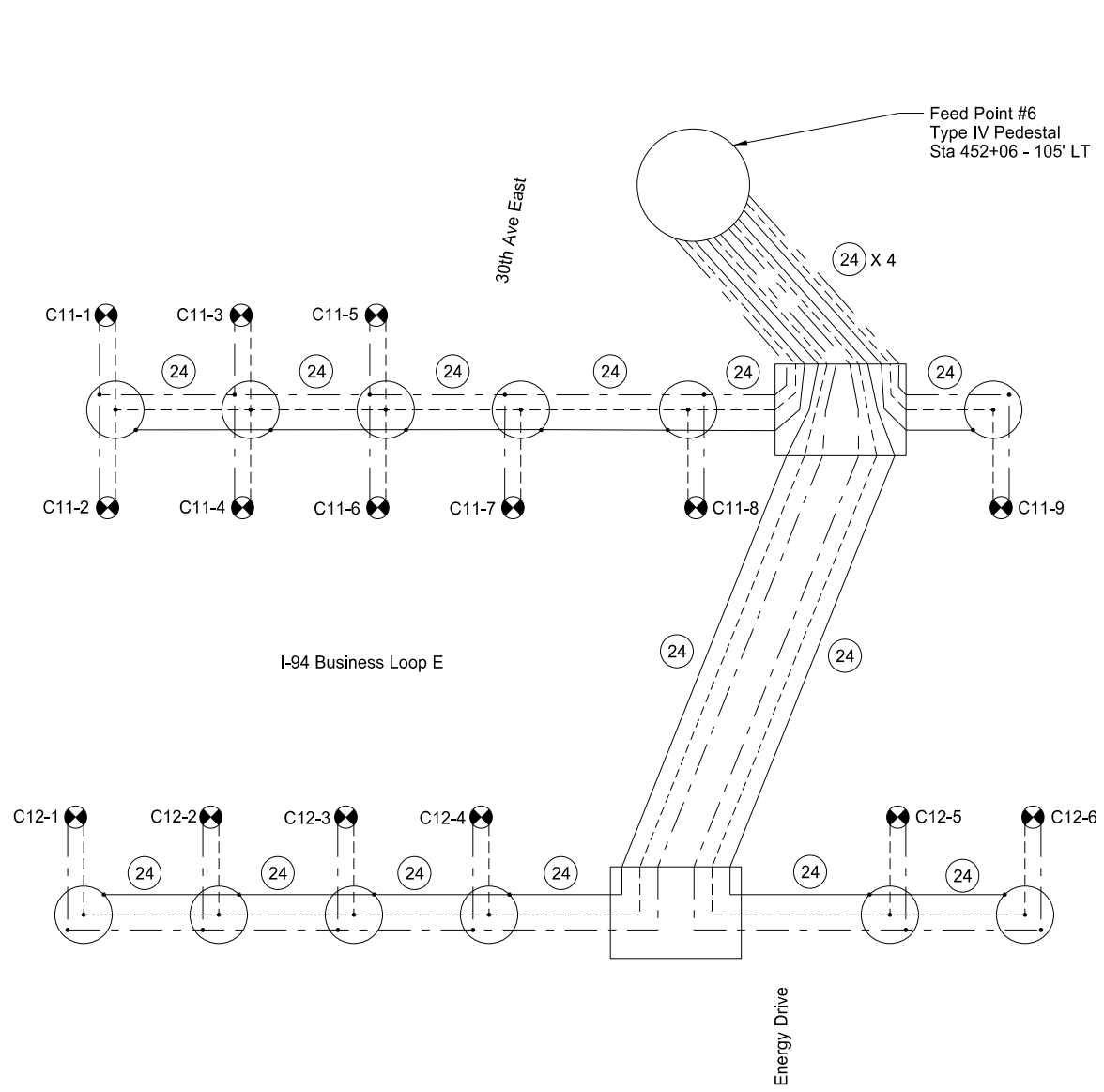
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Lighting System

Lighting Schematic

E Business LP 10th Ave E - Exit 64
Dickinson, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NHU-5-094(114)907	140	14



Legend

--- Phase Conductor
- - - Phase Conductor
--- Ground Conductor
C#-# Circuit Number and Fixture Number
LED Luminaire 120/240 V operated on 240 V
Light Standard
Feed Point
Junction Box

Copper Feeder Schedule

ID	Conduit	Conductors	Type
24	2" PVC	(1) #4 Black (1) #4 Red (1) #4 Green	THW-2

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Lighting System
Lighting Schematic
E Business LP 10th Ave E - Exit 64
Dickinson, ND

Lighting Quantities											Pay Item
Pull Box	Feed Point - Type IV - Pedestal Mounted	Concrete Foundation - Highway Lighting	2" Dia Rigid Conduit	Conductor No. 4 - Type THW-2	Conductor No. 6 - Type THW-2	Conductor No. 12 - Type THW-2	LED Luminaire - 150 Watt (C1)	Light Std	Dbl Light Std	Combo Signal Light Std 8 Ft MA 40' Mt Height	Lighting System
Ea	Ea	Ea	LF	LF	LF	LF	Ea	Ea	Ea	Ea	Ea
12	6	75	17109	51327	51327	16878	114	40	35	4	1

LIGHTING FOUNDATION TABLE		
Description	Footing Depth "D"	Footing Depth "D"
	24" and 30" Dia	36" and 42" Dia
	(Ft)	(Ft)
Light Standard		
30' - 35' Mounting Height	6	5

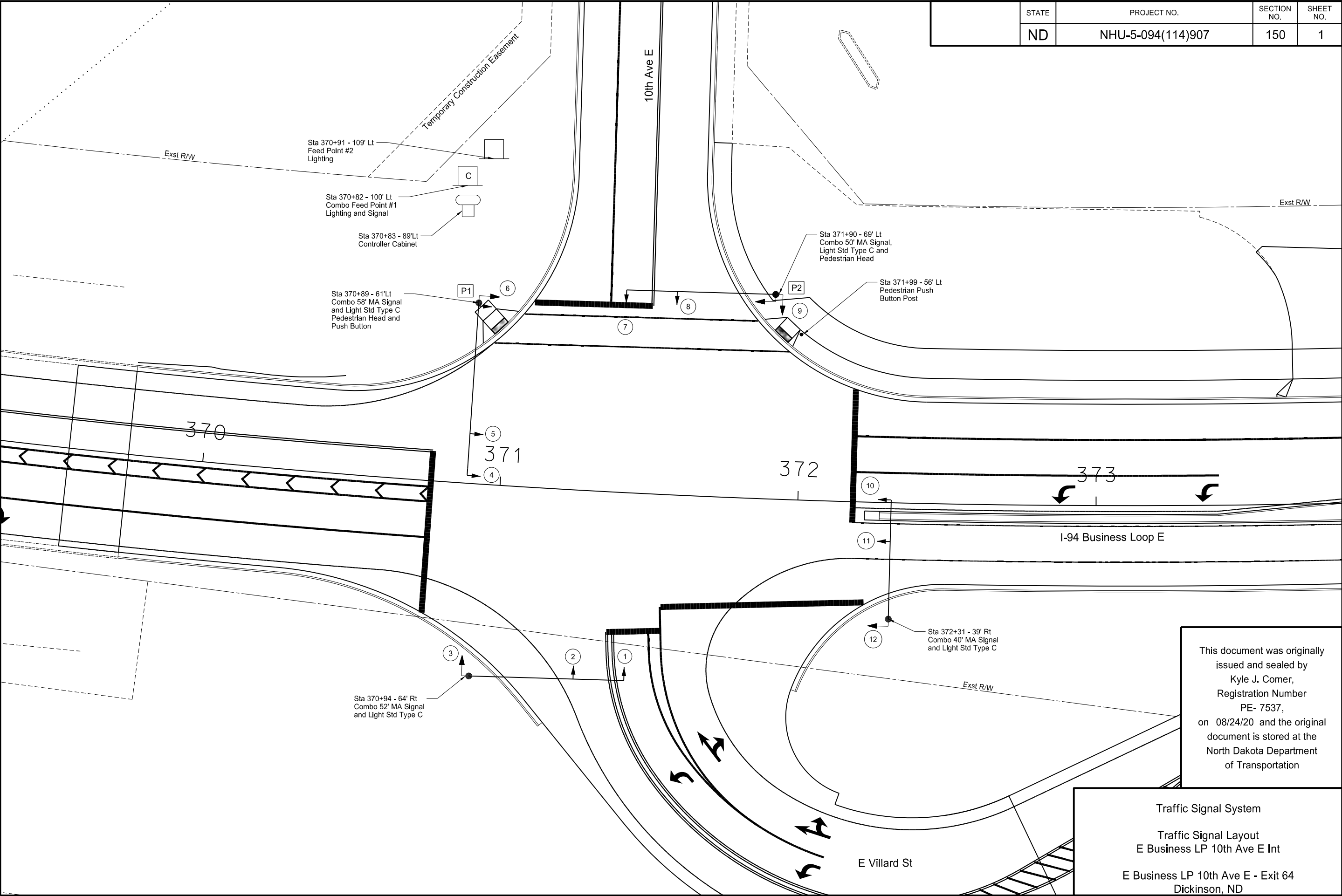
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Lighting System

Lighting Schematic

E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	150	1



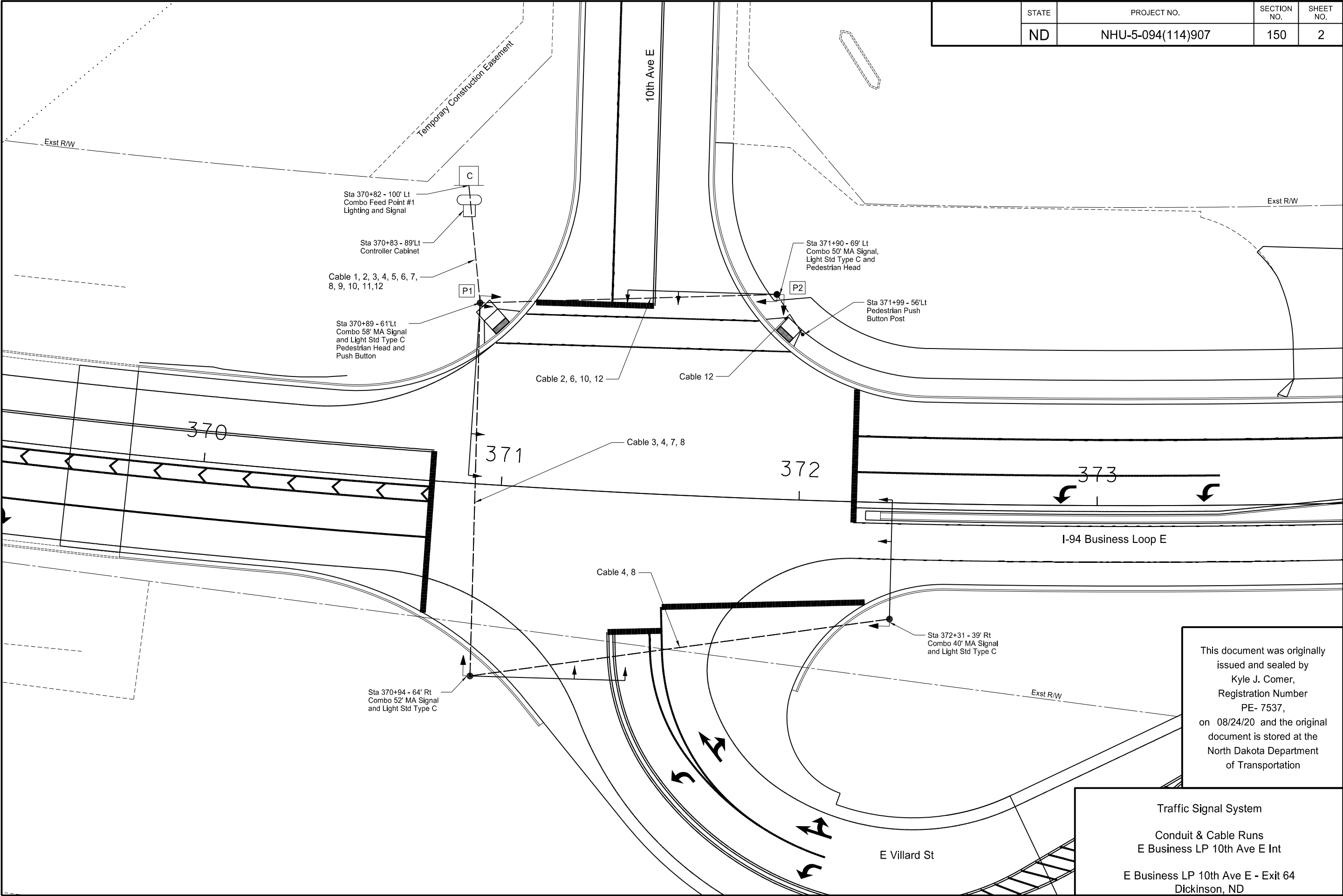
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Traffic Signal System

Traffic Signal Layout
E Business LP 10th Ave E Int

E Business LP 10th Ave E - Exit 64
Dickinson, ND

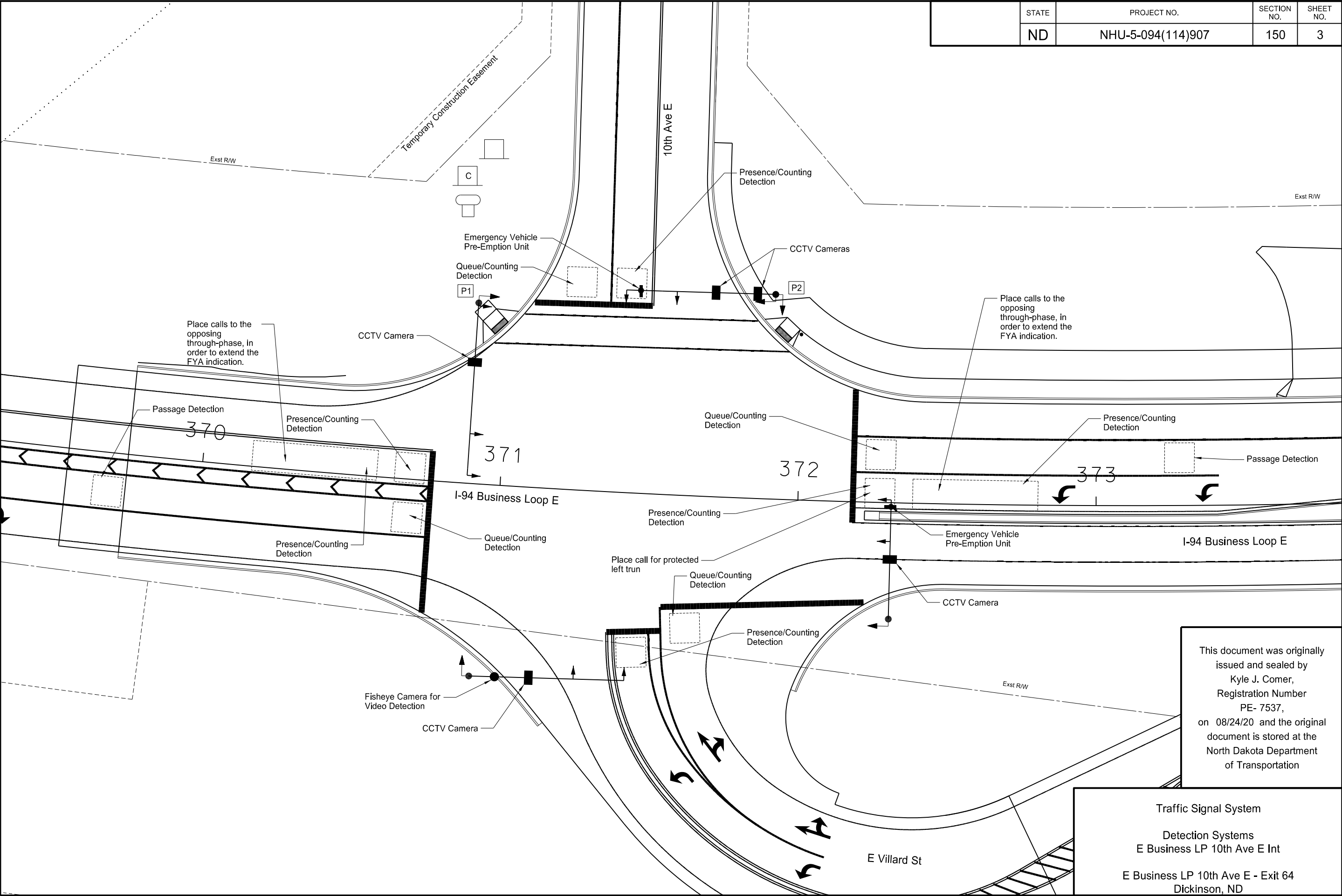
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	ND	NHU-5-094(114)907	150	2



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Traffic Signal System
Conduit & Cable Runs
E Business LP 10th Ave E Int
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	150	3



STATION	CONDUIT RUNS			CABLE RUNS	
	LF	DIA	# Conduits	LF	Type
370+82 Lt to 370+83 Lt	17	3	2	37	No. 12 AWG 3
370+83 Lt to 370+89 Lt	12 15	2 3	6 1	114	No. 14 AWG 5 (Cable 1)
				99	No. 14 AWG 5 (Cable 5)
				29	No. 16 AWG 3 (A) (Cable 9) (A)
				25	No. 16 AWG 2 (B) (Cable 11)(B)
				71	CCTV Cat5e Cable (E)
370+83 Lt to 370+89 Lt to 371+90 Lt	93	2	4	186	No. 14 AWG 5 (Cable 2)
				171	No. 14 AWG 5 (Cable 6)
				110	No. 16 AWG 3 (A) (Cable 10)(A)
				106	No. 16 AWG 2 (B) (Cable 12)(B)
				182	Emergency Vehicle Detection Cables (C)
371+90 Lt to 371+99 Lt	10	2	1	388	CCTV Cat5e Cable (E)
				23	No. 16 AWG 2 (B) (Cable12)
				225	No. 14 AWG 5 (Cable 3)
				210	No. 14 AWG 5 (Cable 7)
				194	Video Detection Cables (D)
370+83 Lt to 370+89 Lt to 370+94 Rt	130	2	4	194	CCTV Cat5e Cable (E)
				504	No. 14 AWG 5 (Cable 4)
				489	No. 14 AWG 5 (Cable 8)
				489	Emergency Vehicle Detection Cables (C)
				480	CCTV Cat5e Cable (E)

- (A) Pedestrian Signal Head Conductor
(B) Pedestrian Pushbutton Conductor
(C)Emergency Vehicle Detector Cables
(D) Video Detection Cables - (As Required by Manufacturer)
(E) CCTV Cat5e Cable

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Traffic Signal System

Conduit & Cable Runs
E Business LP 10th Ave E Int

E Business LP 10th Ave E - Exit 64
Dickinson, ND

QUANTITIES (A)																												
	Signal Combo Feed Point	Controller and Cabinet	3" Dia Rigid Conduit	2" Dia Rigid Conduit	No. 4 AWG RHW	No. 6 AWG THW	No. 12 AWG 3 Conductor Cable	No. 16 AWG 3 Conductor Cable	No. 16 AWG 2 Conductor Cable	No. 14 AWG 5 Conductor Cable	Emergency Vehicle Detector Cables	Video Detection Cables	Type V Signal Std	Combo 58' MA Signal and Light Std - Type C	Combo 52' MA Signal and Light Std - Type C	Combo 50' MA Signal and Light Std - Type C	Combo 40' MA Signal and Light Std - Type C	1-Way 3 Section Head W/12" Lens - Post Mounted	1-Way 3 Section Head W/12" Lens - Mast Arm Mounted	1-Way 4 Section Head W/12" Lens - Mast Arm Mounted	Pedestrian Countdown Signal Heads - Post Mounted	Pedestrian Pushbutton Post	Accessible Pedestrian Signals (APS) Pushbutton & Sign	Video Detection System	Emergency Vehicle Pre-emption Unit	Concrete Foundation - Traffic Signals	Battery Backup	Traffic Signals System (Pay Item)
STATION	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
370+82 100' LT	1																											
370+83 89' LT		1																										
370+89 61' LT													1	1				1	1	1	1		1			1		
370+94 64' RT													1		1			1	1	1	1				1	1		
371+90 69' LT													1			1		1	1	1	1				1	1		
371+99 56' LT																	1	1	1	1		1	1		1	1		
372+31 39' RT													1				1	1	1	1					1	1		
Various Locations			49	1061	70	35	37	139	131	2991	671	194																1
TOTAL	1	1	49	1061	70	35	37	139	131	2991	671	194	4	1	1	1	1	4	4	4	2	1	2	1	2	4	1	1

(A) These items are not be bid separately but will be included in the item "TRAFFIC SIGNALS SYSTEM"

Non - Participating Items						
QUANTITIES (E)						Surveillance Camera System (Pay Item)
	2 " Dia Rigid Conduit (C)	Cat 5e Cable (C)	CCTV Controller (B)	CCTV Camera (B)	CCTV Antenna (B)	
TOTAL	396	1133	1	5	1	

(B) Provided by City of Dickinson
(C) Contractor Supplied
(D) Non- Participating Pay Item
(E) These Items are not be bid separately but will be included in the item "SURVEILLANCE CAMERA SYSTEM"

Signal Std Foundation Table		
Combination 40' Mast Arm Length	Footing Depth (Ft)	
	24" & 30" Ø	36" & 42" Ø
40 ' Signal Mast Arm	16,16	15,15
50 ' Signal Mast Arm	17,16	16,16
52 ' Signal Mast Arm	18,17	16,16
58 ' Signal Mast Arm	19,18	17,17

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Traffic Signal System

Summary of Quantities
E Business LP 10th Ave E Int

E Business LP 10th Ave E - Exit 64
Dickinson, ND

CONDUCTORS			CABLE 1 (NO. 14 AWG 5)	
BASE		TRACER	HEAD	INDICATION
1	Black			Spare
2	White			Neutral
3	Red		5,6	Red
4	Green		5,6	Green
5	Brown		5,6	Yellow

CONDUCTORS			CABLE 2 (NO. 14 AWG 5)	
BASE		TRACER	HEAD	INDICATION
1	Black			Spare
2	White			Neutral
3	Red		8,9	Red
4	Green		8,9	Green
5	Brown		8,9	Yellow

CONDUCTORS			CABLE 3 (NO. 14 AWG 5)	
BASE		TRACER	HEAD	INDICATION
1	Black			Spare
2	White			Neutral
3	Red		2,3	Red
4	Green		2,3	Green
5	Brown		2,3	Yellow

CONDUCTORS			CABLE 4 (NO. 14 AWG 5)	
BASE		TRACER	HEAD	INDICATION
1	Black			Spare
2	White			Neutral
3	Red		11,12	Red
4	Green		11,12	Green
5	Brown		11,12	Yellow

CONDUCTORS			CABLE 5 (NO. 14 AWG 5)	
BASE		TRACER	HEAD	INDICATION
1	Black		4	Yellow
2	White			Neutral
3	Red		4	Red Arrow
4	Green		4	Green Arrow
5	Brown		4	Yellow Arrow

CONDUCTORS			CABLE 6 (NO. 14 AWG 5)	
BASE		TRACER	HEAD	INDICATION
1	Black		7	Yellow
2	White			Neutral
3	Red		7	Red Arrow
4	Green		7	Green Arrow
5	Brown		7	Yellow Arrow

CONDUCTORS			CABLE 7 (NO. 14 AWG 5)	
BASE		TRACER	HEAD	INDICATION
1	Black		1	Yellow
2	White			Neutral
3	Red		1	Red Arrow
4	Green		1	Green Arrow
5	Brown		1	Yellow Arrow

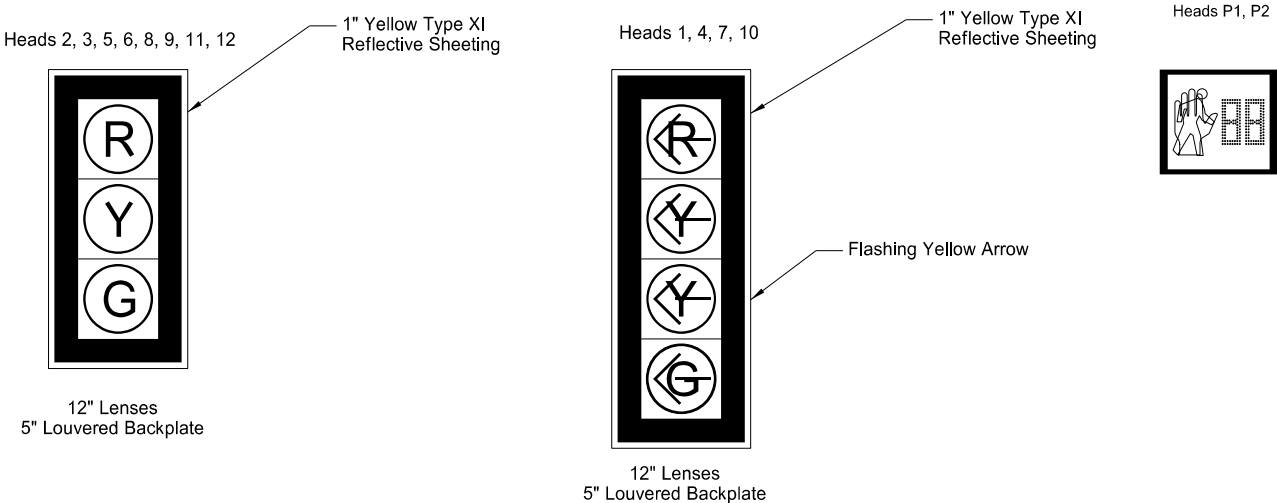
CONDUCTORS			CABLE 8 (NO. 14 AWG 5)	
BASE		TRACER	HEAD	INDICATION
1	Black		10	Yellow
2	White			Neutral
3	Red		10	Red Arrow
4	Green		10	Green Arrow
5	Brown		10	Yellow Arrow

CONDUCTORS			CABLE 9 (NO. 16 AWG 3)	
BASE		TRACER	HEAD	INDICATION
1	Black		P1	Walk
2	White			Neutral
3	Red		P1	Don't Walk

CONDUCTORS			CABLE 10 (NO. 16 AWG 3)	
BASE		TRACER	HEAD	INDICATION
1	Black		P2	Walk
2	White			Neutral
3	Red		P2	Don't Walk

CONDUCTORS			CABLE 11 (NO. 16 AWG 2)	
BASE		TRACER	Push Button	
1	Black		P1	Input
2	White			Neutral

CONDUCTORS			CABLE 12 (NO. 16 AWG 2)	
BASE		TRACER	Push Button	
1	Black		P2	Input
2	White			Neutral

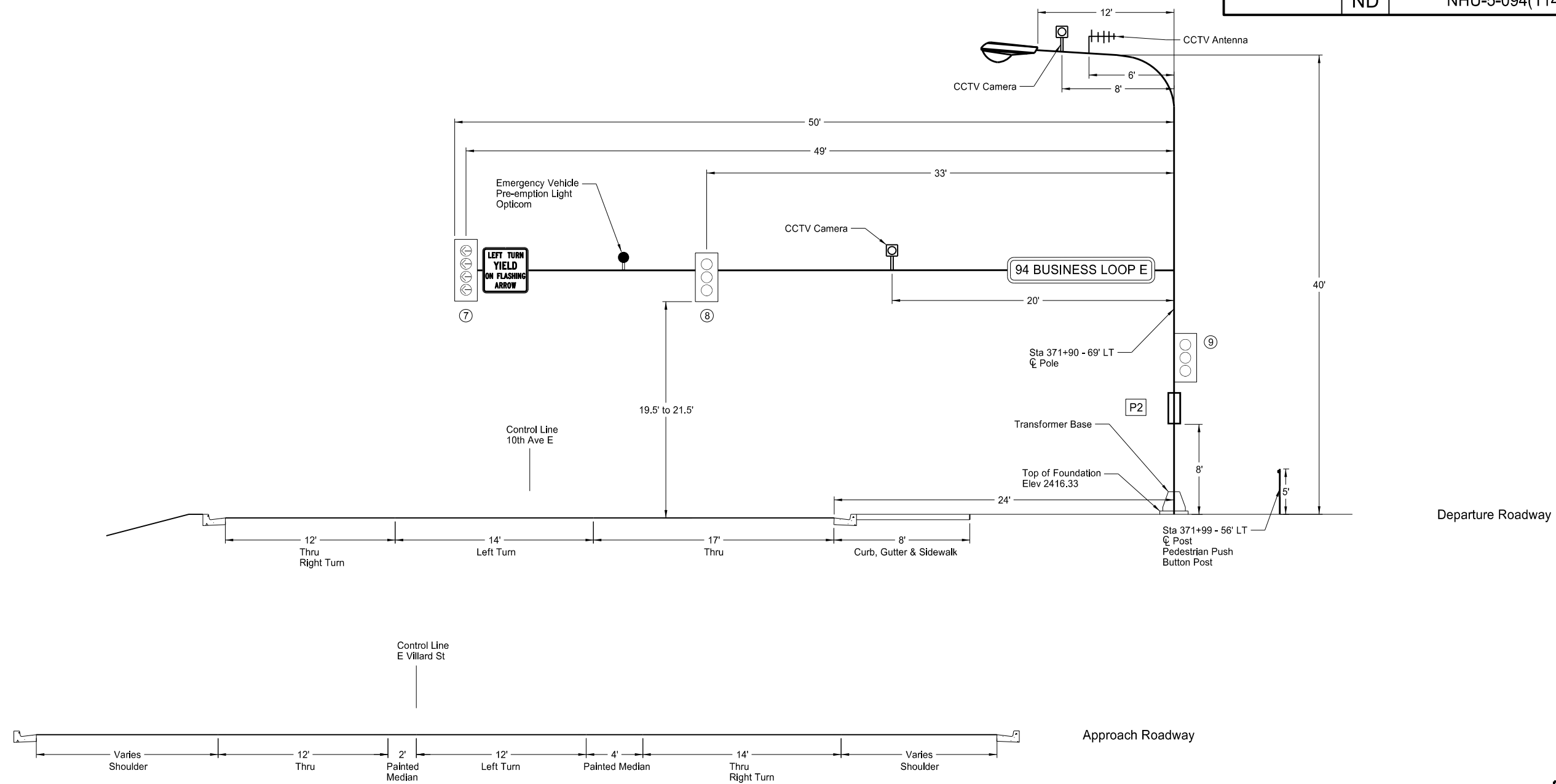


All traffic signal heads shall be LED

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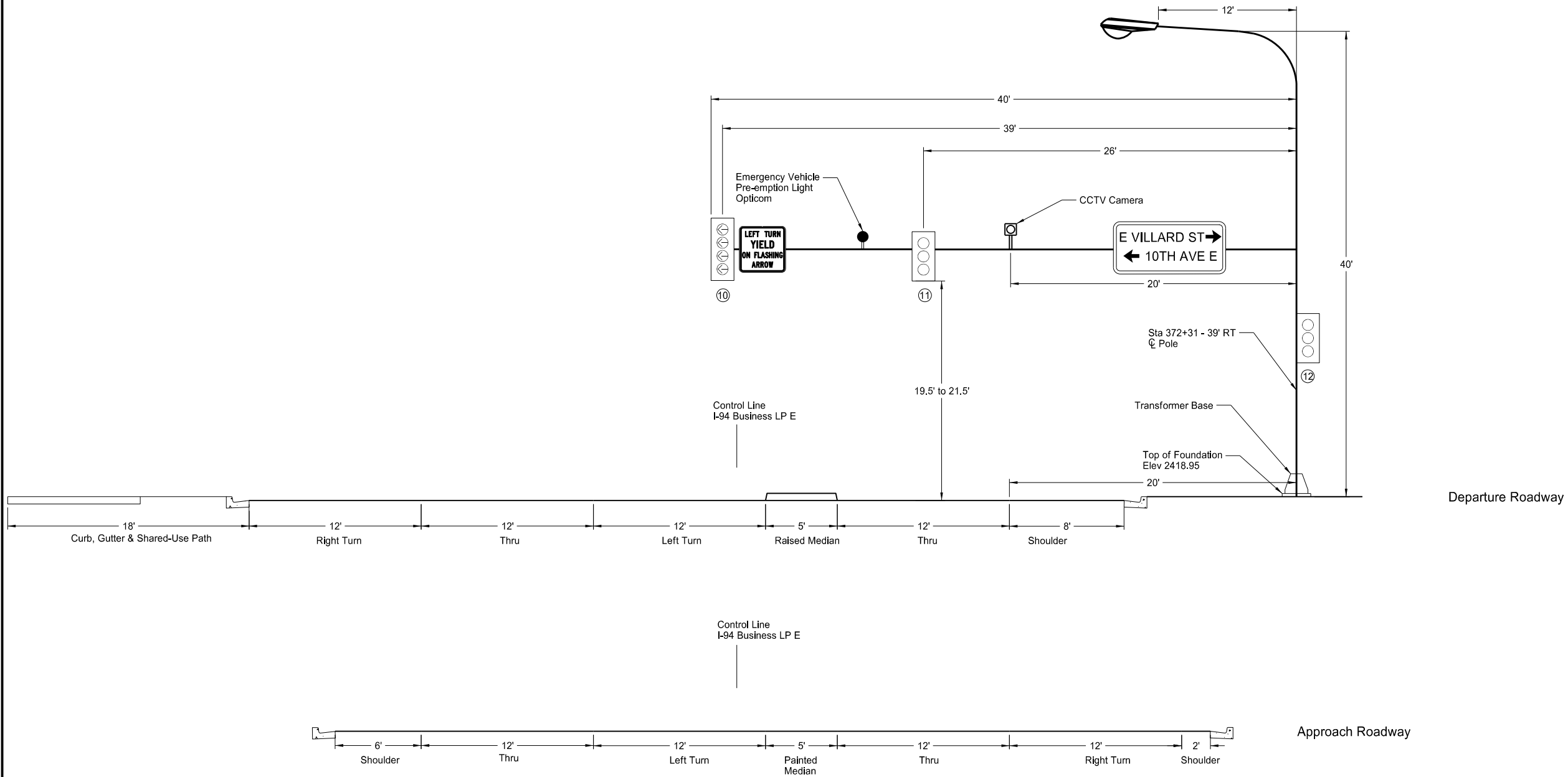
Traffic Signal System
Signal Heads and Conductor Schedules
E Business LP 10th Ave E Int
E Business LP 10th Ave E - Exit 64
Dickinson, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NHU-5-094(114)907	150	9



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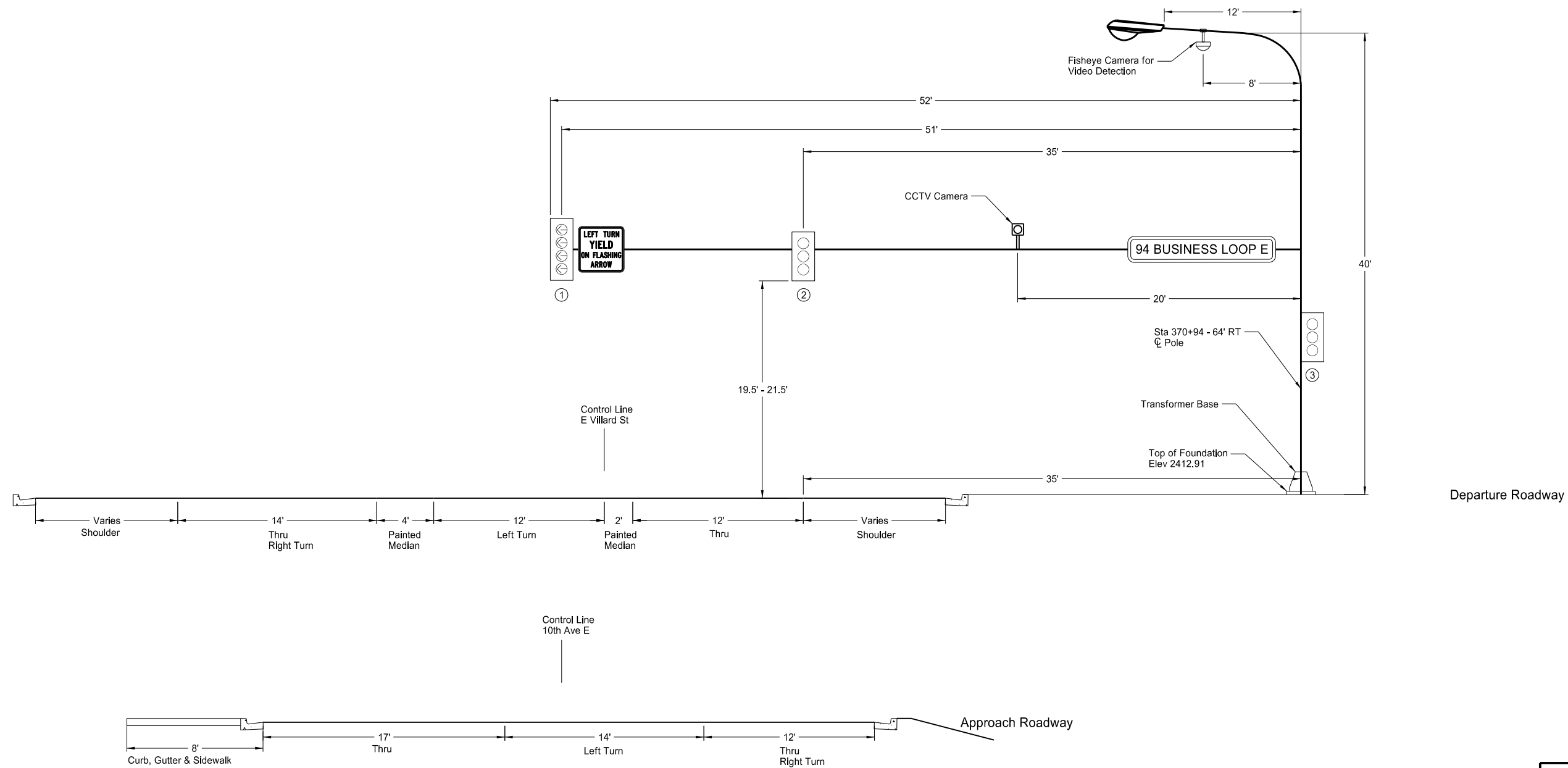
Traffic Signal System
Signal and Head Locations - North
E Business LP 10th Ave E Int
E Business LP 10th Ave E - Exit 64
Dickinson, ND



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Traffic Signal System
Signal and Head Locations - East
E Business LP 10th Ave E Int
E Business LP 10th Ave E - Exit 64
Dickinson, ND

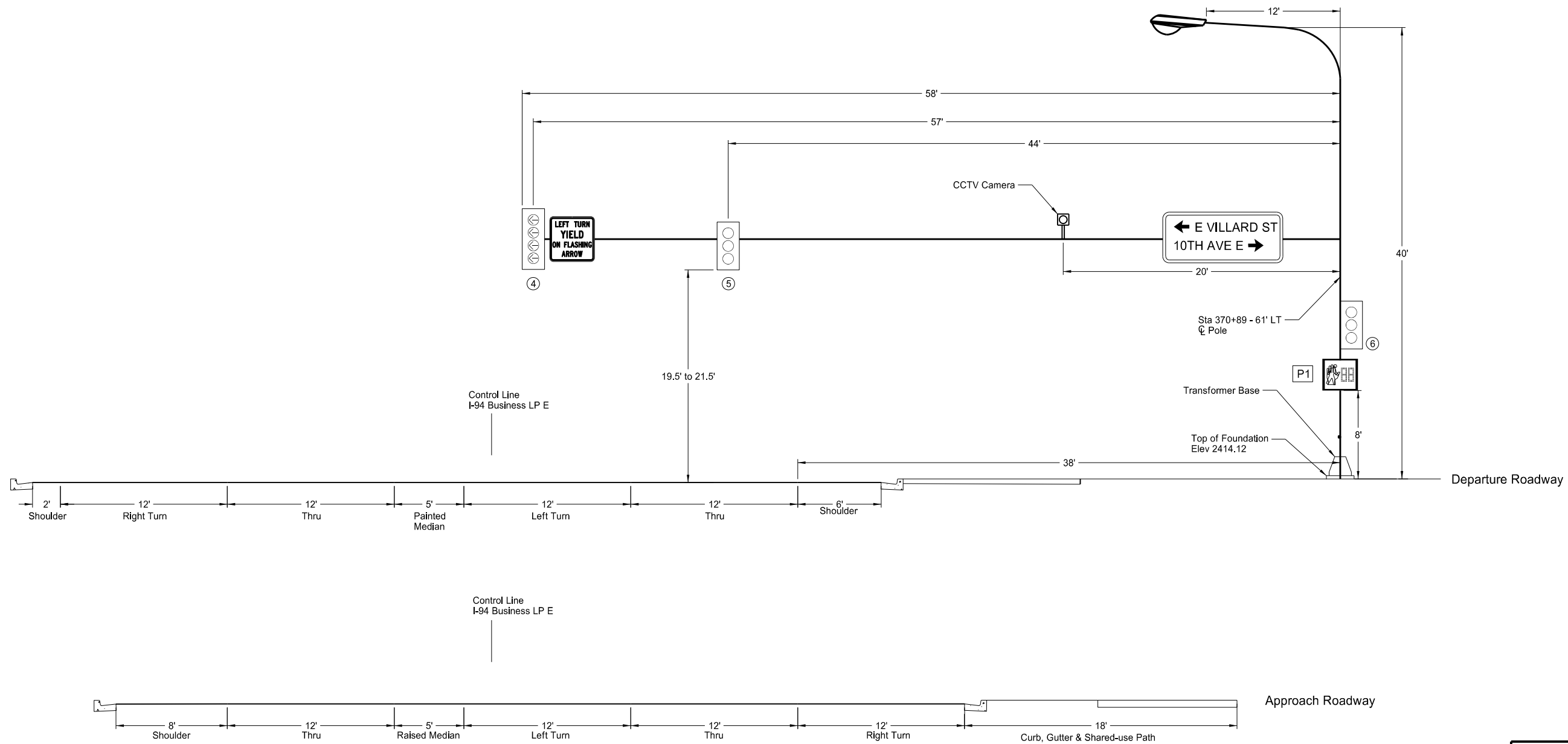
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Traffic Signal System
Signal and Head Locations - South
E Business LP 10th Ave E Int
E Business LP 10th Ave E - Exit 64
Dickinson, ND

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	ND	NHU-5-094(114)907	150	12



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Traffic Signal System
Signal and Head Locations - West
E Business LP 10th Ave E Int
E Business LP 10th Ave E - Exit 64
Dickinson, ND