DESIGN DATA			
Traffic	Average Daily (Pass, Trucks, Total)		
Reference Point	198.717	208.72	221.712
Current 2015	1275, 895, 2170	1730, 815, 2545	2170, 850, 3020
Forecast 2035	1825, 1335, 3160	2475, 1215, 3690	3105, 1270, 4375
Clear Zone Distance: 32 Feet		Design Speed: 65 mph	
Minimum Sight Dist. for Stopping: 645 Feet		Bridges: 0052-216.127 HS 45	
Sight Dist. for No Passing Zone: 1100 Feet		0052-222.340 HS 42	
Pavement Design Life (years) 20			
Design Accumulated One-way ESALs: 3,902,158			

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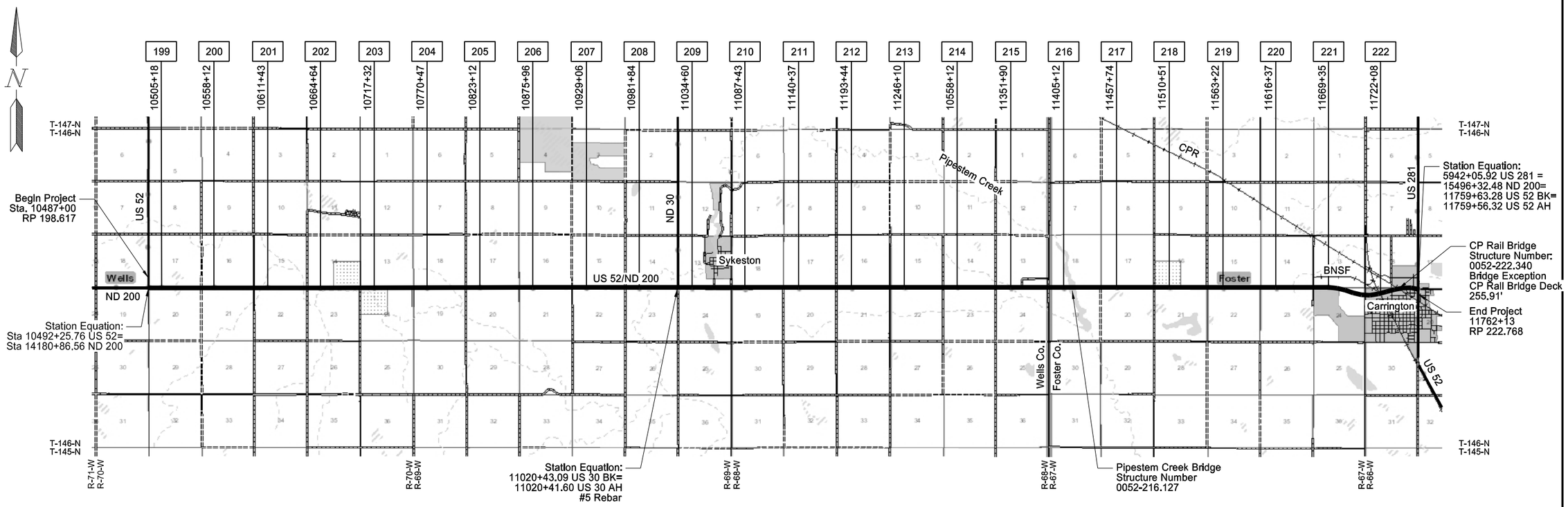
ND	CPU-SNH-3-052(042)198	18878	1	1

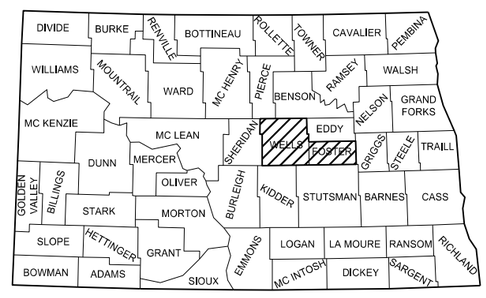
JOB # 19
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

CPU-SNH-3-052(042)198
Wells and Foster County
US 52-W Jct ND 200 to E Jct ND 200
RP 198.717 to RP 222.719
Grading, HMA, Aggregate Base, Concrete, Signing, Lighting, Guardrail, Structure Improvements, and Incidentals

GOVERNING SPECIFICATIONS:
2014 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
CPU-SNH-3-052(042)198 \ US Hwy 52	24.151	24.103





STATE COUNTY MAP

DESIGNERS

Jeff Wilcox

Brad Schaff

Miles Mehlhoff

APPROVED DATE 2-16-2016

Roger Weigel
OFFICE OF PROJECT DEVELOPMENT
ND DEPARTMENT OF TRANSPORTATION

I hereby certify that the attached plans were prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the state of ND.

APPROVED DATE 2/15/16

Eric Molbert
NDDOT DIV-DIST OR CONSULTANT FIRM

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SP 0004(14)	Federal Migratory Bird Treaty Act
SP 0266(14)	Flexible Pavement Surface Tolerance
SP 5091(14)	Permits and Environmental Considerations

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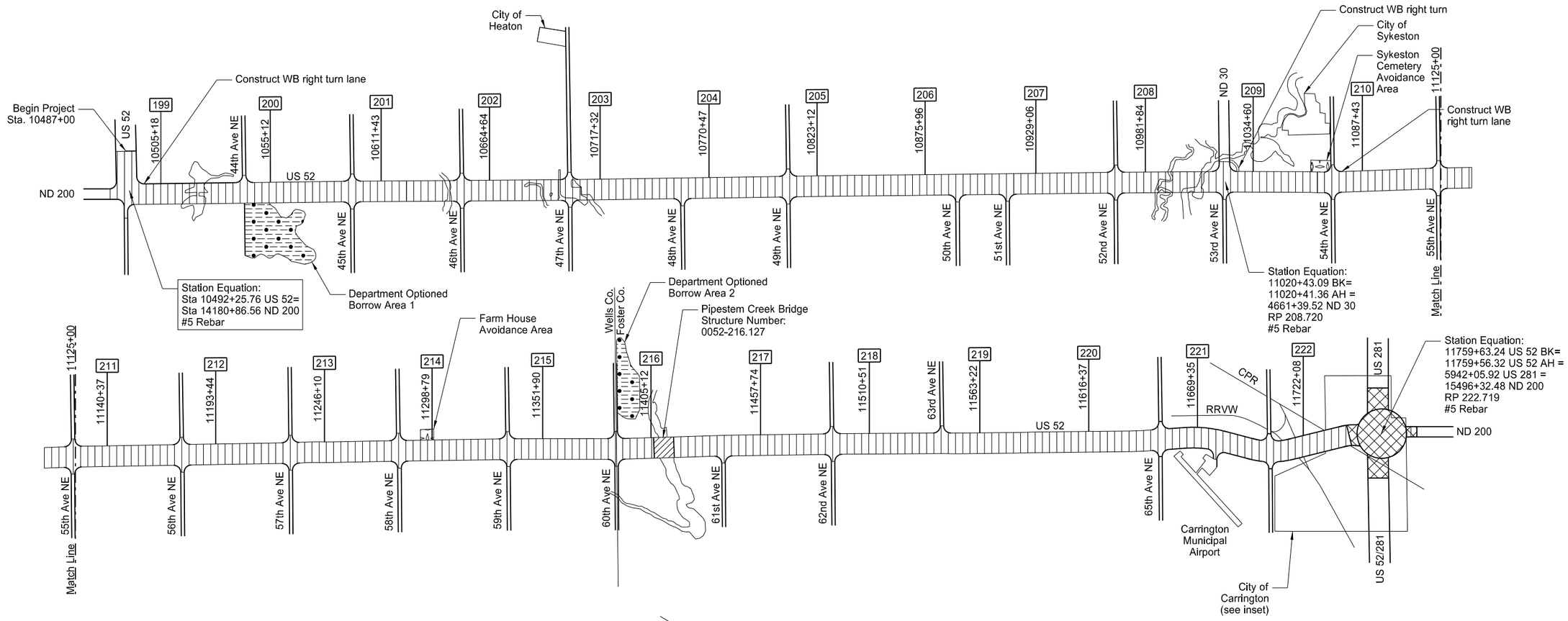

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Scope of Work

NOTES

GENERAL NOTES

100-P01 WEEKLY PLANNING/REPORTING MEETING: Organize a weekly meeting to coordinate efforts between subcontractors, utilities, local authorities, and others.

Send a knowledgeable representative to conduct the weekly reporting/planning meeting. Prepare minutes for each meeting and make the appropriate distribution of the minutes. Have the minutes approved by the Engineer before distribution.

Provide a written schedule of the next week's work and a tentative schedule of the following week. Include a discussion of problems encountered during the current week; also include information of interest to local authorities, subcontractors, and utilities.

Invite interested agencies to the meeting. Include the following agencies and any other agencies that are necessary:

1. North Dakota Department of Transportation
2. Local Government Agencies
3. Police department
4. Fire department
5. Ambulance service
6. Telephone Co.
7. Power Co.
8. Cable T.V.
9. Gas Co.
10. Railroad Co.
11. Subcontractors
12. Chamber of Commerce

100-P02 COORDINATION OF PROJECTS: Another project in the vicinity of this project is under contract during the 2016 construction season. This project is NH-3-052(046)185 and is located on US 52 between RP 185.548 and RP 198.686.

102-P01 TIED PROJECTS: Project SHE-3-281(116)125 – PCN 20289 is tied to this project. The contract bond and mobilization items will be paid for under project SNH-3-052(042)198 for both tied projects.

107-112 RAILROAD PROTECTIVE LIABILITY INSURANCE: This project crosses the Canadian Pacific Railway at RP 222.34. The type of work that will be performed within the railroad right of way is approach slab replacement at the highway bridge over the railroad. Direct inquiries regarding protective liability insurance to:

Jim Krieger, PE
Manager Public Works – Southern Region
Canadian Pacific Railroad
120 South 6th Street, Suite 900
Minneapolis, MN 55402
612-330-4555 off.
jim_krieger@cpr.ca

Obtain information regarding crossing number DOT 694955U from the Federal Railroad Administration website: http://safetydata.fra.dot.gov/Officeofsafety/

107-114 RAILROAD PROTECTIVE LIABILITY INSURANCE: This project crosses the Red River Valley and Western Railroad Company at RP 221.97. The type of work that will be performed within the railroad right of way is grading, milling, and paving. Direct inquiries regarding protective liability insurance to:

Mr. Dan Zink, Director of Administration
Red River Valley and Western Railroad Company
P.O. Box 608
Wahpeton, ND 58074
701-642-8257

Obtain information regarding crossing number DOT 086425C from the Federal Railroad Administration website: http://safetydata.fra.dot.gov/Officeofsafety/

107-700 HAUL ROADS: The Engineer will not designate paved roads off the state system as haul roads.

107-710 HAUL ROADS: Before submitting a proposal, contact the appropriate State, County, Township, or City officials to determine if there are any roadways that will be designated as "no haul routes".

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NOTES

107-P01 RAILROAD SITES: For the purposes of railroad protective liability insurance, the Red River Valley and Western Railroad crossing at RP 221.97 shall be Site 1 and the Canadian Pacific Railway crossing at RP 222.34 shall be Site 2.

107-P02 RAILROAD PERMIT: Contact Jill Kulpera at 701-642-8257 to obtain a Temporary Occupancy Permit at least two weeks prior to starting any work within the Red River Valley and Western Railroad right of way. Contact Cal Gruerly, Track Manager, at 218-643-1532 at least two weeks prior to any milling and paving work within the Red River Valley and Western Railroad right of way.

107-P03 HAUL ROAD: The entire haul cycle, loaded and empty, will be considered for haul routes.

107-P04 HAUL ROAD: If the contractor obtains written permission from the applicable local entity and chooses to use a paved road off the state system for this project, the contractor shall be responsible for all costs of the inspection, maintenance, restoration, and release of the haul road.

107-P05 HAUL ROAD RESTORATION: Use Class 13 aggregate for haul road restoration.

107-P06 AVOIDANCE AREAS: Cultural resource avoidance areas are located between Sta 11066+00 to 11073+00 Lt (Sykeston Cemetery) and 11289+00 to 11291+00 Lt (Farm house). Do not disturb these avoidance areas. Provide and maintain a temporary fence adjacent to the right of way line at the farm house until completion of the project. All costs to provide, place, maintain, and remove the fence shall be included in the price bid for “Temporary Safety Fence.”

107-P07 AIRPORT HEIGHT RESTRICTION: Between Sta 11651+00 and 11657+00, restrict all construction vehicle equipment to a total height of 16 feet or less due to Carrington Municipal Airport operation. Equipment height will be measured from the centerline of the roadway and will include the extended box of dump vehicles.

108-P01 WORK SCHEDULE: No construction activities below the water level of the Pipestem Creek shall take place prior to June 2 due to the fish spawning period from April 15 to June 1.

202-P01 REMOVAL OF TEMPORARY BYPASS: Remove all embankment, surfacing, and drainage material for the construction of the temporary bypass to required design grades. The removal of temporary roadway and base shall be included in the price bid for “Removal of Temporary Bypass”

202-P02 SAW CONCRETE OR ASPHALT PAVEMENT: Pavement removal locations are shown in the plans. Provide a saw cut edge where new pavement abuts existing pavement. Sawing will not be paid separately and all costs for sawing shall be included in the price bid for “Removal of Pavement”.

202-P03 REMOVAL OF OBSTRUCTIONS: At the private driveway reconstruction Sta 11408+85, remove the existing landscaping rock and stockpile the materials within the construction easement. Remove the existing mailbox and support and provide a temporary mailbox location during driveway reconstruction. Replace the existing mailbox and support at the new driveway location upon completion of the driveway. All costs for removal and stockpiling the landscaping rock, removal and temporary installation of the mailbox, and the installation of the mailbox at the new location shall be paid for as “Removal of Obstructions”.

203-010 SHRINKAGE: 25 percent additional volume is included for shrinkage in earth embankment.

203-380 AVERAGE HAUL: The average haul shown on the plans does not include the dead haul from the borrow areas to the point of entry into the mass.

203-P01 COMPACTION AND DENSITY CONTROL: Construct the roundabout, approach reconstruction and pipe backfill embankment in accordance with Section 203.04 E. 2, “Compaction Control, Type A”. Construct the shoulder embankment in the full depth reclamation areas in accordance with Section 203.04 E. 4, “Compaction Control, Type C”.

203-P02 MISCELLANEOUS EMBANKMENT: Include all costs associated with the construction of slope flattening for centerline pipe extensions and approach pipe, guardrail embankment, and approach reconstruction in the price bid for “Common Excavation-Type A” and “Borrow-Excavation”.

261-P01 PERMANENT FIBER ROLLS: If fiber rolls are to remain on the project, provide fiber rolls that are composed of plastic or natural fiber photodegradable netting that has a life expectancy between 12 to 24 months. If the photodegradable netting is plastic, the netting color must be either clear or green. Black plastic netting will not be allowed.

306-P01 FULL DEPTH RECLAMATION: Construct a vertical edge along the widening areas either by milling or saw cut. Blend the existing asphalt pavement, the existing aggregate base and virgin aggregate to a depth of 9” below finished base elevation. In turn lane construction areas, blend to the elevation and depth designated in the typical sections. All cost for constructing the vertical edge, and blending and placing the blended base course for the shoulder widening areas shall be included in the unit price bid for “Full Depth Reclamation”.

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411-P01 TEMPORARY ASPHALT WEDGES: Construct temporary asphalt wedges to allow smooth passage of vehicles at milled locations. Place asphalt wedges prior to the traffic being allowed back on the milled roadway section. Milled bituminous material shall not be used as wedges. All costs associated with labor, materials and equipment for the installation and removal of the asphalt wedges shall be included in the price bid for “Milling Pavement Surface”.

430-P01 PG 70-28 ASPHALT CEMENT: Construct the full depth of the asphalt pavement with PG 70-28 asphalt cement in the following areas:

1. US 52 mill and fill region north of the W Jct ND 200
2. US 52 westbound right turn lane and taper at W Jct ND 200
3. US 52 intersection with ND 200 at the W Jct ND 200

The PG 70-28 asphalt cement shall also meet the following PG+ specifications:

1. Elastic Recovery RTFO Material (AASHTO T301 @ 77°F): 65% min.

Furnish all test data verifying PG+ specification compliance to the Engineer.

430-P02 ASPHALT PAVEMENT SEAMS: Install a hot seam at all locations when the paving joint is closer than 11.5’ from the centerline of the roadway. Hot seams can be located at any offset distance. A hot seam is defined as a seam created when two pavers are paving at the same time, with no more than 300’ between the pavers and rolled in a way to join and hide the seam so it is not visible to the traveling public.

430-P03 CONTRACTOR CORING: Apply a tack coat on all sides of the asphalt pavement core holes before patching the core locations. Include all costs for tacking cores holes in the bid price for “SUPERPAVE FAA 45”.

430-P04 COMMERCIAL GRADE ASPHALT: Provide an asphalt surface for the temporary detour around the roundabout construction work zone. Include all costs for the temporary pavement, PG asphalt cement, and the tack coat between paving lifts in the bid price for “COMMERCIAL GRADE HOT MIX ASPHALT”.

430-P05 LEVELING COURSE: Place a paver laid leveling course at a rate of approximately 100 tons per lane mile on the driving lanes throughout the entire project before placing the first lift of the pavement overlay. The leveling course should be used to correct rutting and the cross slope of the driving lanes. Apply a tack coat to the surface before placing the leveling course. Use the same type of mix that is required for the subsequent lift. Use a pneumatic roller as specified in Section 151.01 A.3. “Self-Propelled Pneumatic-Tired Roller” to compact the mix.

550-P01 CONTRACTOR CORING: Fill all concrete pavement core holes with AE-3 concrete. Include all costs for filling core holes in the bid price for “9IN NON REINF CONCRETE PVMT CL AE DOWELED”.

550-P02 9IN REINF CONCRETE PVMT CL AE-COLORED & TEXT: Pave the truck apron and blisters with 9” concrete pavement colored red and textured with a large cobblestone or brick pattern. Continuous reinforcement of the truck apron and blisters pavement is not required. Place tie bars and dowel bars in accordance with Section 90. Mix the pigmented concrete and provide curing in accordance with the Standard Specifications and ASTM C979, Specification for Pigments for Integrally Colored Concrete. Provide a pigment from a supplier below or provide an approved equal. Use the same supplier for all colored concrete placed under the contract.

1. Number 366 Natural Red, Solomon Colors, Inc.
2. Brick Red Pigment Number 160, Davis Colors
3. Pigment R/M – Brick Red, Southern Color Company

If a color equivalent is proposed, provide a mock up sample to be approved by the Engineer prior to installation. Clean any colored concrete from the adjacent pavements by sandblasting.

Form a textured pattern into the concrete surface using a large cobblestone or running bond brick pattern. Provide a mock up sample of the proposed style and depth of texture lines to be approved by the Engineer prior to starting the work.

All costs associated with the placement, coloring and finishing will be included in the price bid for “9IN REINF CONCRETE PVMT CL AE-COLORED & TEXT”.

550-P03 CONCRETE PAVEMENT SURFACE FINISH: Transverse metal tine finish is allowed.

550-P04 CONCRETE PAVEMENT PLACEMENT: Slip form the pavement to the extent possible. Where full width vibratory equipment is not feasible, provide the Engineer with a placement and consolidation plan that includes the spreading and strike off methods and the number of portable vibratory heads per foot of strike off length.

704-100 TRAFFIC CONTROL SUPERVISOR: Provide a Traffic Control Supervisor.

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NOTES

704-200 PRECAST CONCRETE MEDIAN BARRIERS – STATE FURNISHED: Obtain 97 Barriers from Devils Lake District yard. Return barriers to Devils Lake District yard.

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-P01 TRAFFIC CONTROL: Provide traffic control consisting of a temporary road closure, flagging, and a pilot car.

Traffic control device quantities are based on two 6 mile work zones and the list below. Provide additional devices at no additional cost to the Department.

1. Standard Drawing D-704-5;
2. Standard Drawing D-704-15, layout A (3 provided);
3. Standard Drawing D-704-15, layout B (2 provided for roundabout temporary bypass);
4. Standard Drawing D-704-16 (2 provided);
5. Standard Drawing D-704-20, layout G;
6. Standard Drawing D-704-22, layouts K and L;
7. Standard Drawing D-704-24, layout R (2 provided); and
8. Standard Drawing D-704-26, layouts CC, EE, and GG;

When installing layout G from Standard Drawing D-704-20, move sign W-3-5-48 and the sign assembly containing signs R2-1-48 and R2-1a-24 with the work area as it progresses through the construction zone. Place the R2-1-48 assembly a minimum of 500 feet in advance of flagging signs.

Place flaggers and traffic control devices as shown on Standard Drawing D-704-15, layout A at the following intersections when the lane closure spans across them:

1. ND 30
2. Hughes Avenue (Sykeston)
3. 19th Avenue (Carrington)
4. 11th Avenue (Carrington)

704-P02 WIDENING: Limit the drop off for full depth reclamation to the immediate work zone. Outside of the immediate work zone, the full depth reclamation areas shall not have a drop off greater than 2 inches. If a drop off exceeds 2 inches, the contractor will be required to provide a safe and traversable in slope. A safe and traversable slope is defined as having a cross slope of 4:1 or flatter. The reshaping of the aggregate or embankment required for this operation shall not be paid for separately but shall be included in the price bid for aggregate or embankment items.

704-P03 STATE ROUTE MARKERS: Provide State Route Marker signs for temporary traffic control. Upon completion, the State Route Marker sign panels will become property of the State. Stockpile sign panels within the project limits. The Engineer will arrange to have the stockpiled panels removed from the project limits. Include the price of furnishing, installing, maintenance, stockpiling and other incidentals in the contract unit price of "Traffic Control Signs".

704-P04 WORK ZONE TRAFFIC CONTROL: The traffic control plans for roundabout construction have been developed on the basis that the roundabout will be constructed in 3 general phases. The work zone traffic control summary lists include the required number of devices for each phase of work. The devices for the first phase will be moved as required for the other phases.

Phase 1: Construct temporary drainage and detour for US 52, US 281 and ND 200 traffic. Switch traffic to the temporary detour and construct the majority of the roundabout.

Phase 2: Construct temporary pavement ties to the new roundabout construction and switch traffic to the roundabout. Construct the inside half of the remaining portions of the roundabout entrances and exits.

Phase 3: Construct outside half of the remaining portions of the roundabout entrances and exits. Remove the temporary drainage and detour.

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NOTES

704-P05 LANE CLOSURE – SIGNAL CONTROL: At the location shown in the plans, the contractor shall install a "Signal Controlled" lane closure for two-lane roadways as shown on Standard Drawing D-704-16. The traffic signal system shall be similar to the one shown, and any modifications shall be approved by the engineer prior to the preconstruction conference.

The contractor shall be responsible for obtaining the electrical source to operate the traffic signals. The contractor shall make arrangement with the utility company or provide generators for electrical service. Solar powered traffic signals may be used. The contractor shall be responsible for all costs of providing the electrical source and any costs required to operate and maintain the traffic signal.

The generator shall be placed at least 60 feet from the roadway centerline unless the generator and signal are part of a trailer-mounted unit. If the contractor chooses to use the utility company, the poles and all equipment shall be placed at least 60 feet from the roadway centerline. The power conductors shall be placed a minimum of 6 inches below the ground. Upon completion of the project and the traffic is returned to the closed roadway, all equipment shall be removed. The cost of furnishing, installing, and providing power to the traffic signal shall be included in the price bid for "Lane Closure - Signal Controller/Flagging Control." The traffic control devices shall be installed in accordance with Standard Drawing D-704-16. The traffic control devices will be measured and paid for at the contract unit price for each device.

706-P01 LABORATORY: Provide laboratories wired for DSL Broadband internet with Wi-Fi and have the capability to allow for hard wiring the computer. Include the cost of the installation and monthly fee in the contract unit price of the laboratory.

706-P02 FIELD OFFICE: Provide a field office which meets the following requirements:

1. Minimum total area of 440 square feet
2. Indoor bathroom facilities and supplies with weekly cleaning services
3. Hookups for heat, electricity, internet, sewer, and potable water.
4. Minimum cabinet space of 32 cubic feet
5. Minimum counter space of 40 square feet
6. A heating and cooling system that is capable of maintaining the temperature between 65°F and 78°F year around.
7. Lighting with a minimum of 110 foot-candles
8. Have a 15 cubic foot or larger refrigerator and a microwave
9. Have 3 desks and 3 desk chairs, 3 extra chairs, one drawer file cabinet with at least two drawers, one table minimum of 2.5’ x 5’
10. Be wired for DSL Broadband internet capabilities. The internet shall have a Wi-Fi router and also the capabilities of hard wiring to a computer.
11. Have a photocopy machine with scanning capabilities that is capable of 11” x 17” photocopies and toner to last the duration of the project. The Engineer will be responsible to furnish the paper. A separate table or cabinet to support the copier.
12. Handicap and wheelchair accessible

Place the field office within the city limits of Carrington. Pay all rental fees, cleaning service, heating and electricity costs, internet service, sewer service, and water service. Make the field office available for occupancy one week before the start of the project. The Engineer will approve the location and the condition of the office. Do not remove the field office until the Engineer releases the field office. All requirements of the Field Office are subject to approval by the Engineer. Include all costs for the field office in the bid price for "Field Office".

714-P01 SILTED PIPES: Remove silted-in material from all centerline pipe before the pipe extensions. Include all costs of removing the silt in the price bid for the centerline pipe items.

714-P02 REMOVE AND REPLACE PIPE: Where existing centerline pipe is reset prior to extension for the widening, wrap the reset pipe joints and provide pipe ties in accordance with new pipe standards.

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NOTES

714-P03 TEMPORARY PIPE CONDUIT: Provide temporary pipe conduit to convey the highway drainage through the temporary bypass. Pipe end sections are not required. Used pipes may be used in lieu of new pipe if free of any structural defects and have sufficient structural capacity for use as a highway drainage structure. Include all costs for furnishing and installing the drainage system for the temporary bypass in the price bid for “Pipe Conduit – Approach” for the various pipe diameters shown on the temporary bypass plans.

714-P04 RCP PIPE BENDS: Provide a total of 22.5° of 36” RCP bend for each side of the centerline pipe extension at Sta. 11705+82. Bend sections will be measured and paid as “PIPE CONC REINF 36IN CL III”.

722-P01 STORM DRAIN INLETS: Fill the bottom of the inlet with AE-3 concrete up to the elevation that will accommodate the lowest invert elevation. Place and shape the concrete fill to eliminate trapping of debris and/or sediment. All costs to accomplish this work will be included in the price bid for the respective inlet. Seal all barrel-to-barrel joints using a rubber gasketed joint.

748-P01 CURB AND GUTTER DEPTH: Construct all standard curb and gutter and special mountable curb and gutter to the depth of the concrete pavement adjacent to the gutter.

748-P02 CURB AND GUTTER SPECIAL MOUNTABLE: Construct special mountable curb types within the roundabout intersection. The special mountable curb shall be constructed and measured according to the Standard Specifications to dimensions as specified in typical sections of this plan set. All costs associated with constructing the special mountable curb types shall be included in the price bid for “CURB & GUTTER MOUNTABLE-TYPE I”.

754-P01 REMOVE SIGNS AND SUPPORTS: Existing signs and supports designated for removal shall be removed and become property of the Contractor. All costs associated with the removal and disposal of the existing signs shall not be paid for separately, but included in the price bid for other items.

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

764-P01 CURB & GUTTER_TYPE I SPECIAL: Install curb and gutter at the CPR bridge guardrail locations as detailed on Standard Drawing D-764-9. All costs to install the curb and gutter shall be included in the price bid for “Curb & Gutter-Type I Special.”

766-P01 MAILBOXES: Temporarily relocate existing mailboxes along the roadway as the work progresses. Existing mailbox assemblies that do not meet NCHRP 350 or MASH must be reset beyond the clear zone or replaced with an assembly that meets the requirements of Section 766 "Mailboxes" and Standard Drawing D-766-01. Mailbox assemblies that meet NCHRP 350 or MASH requirements may be reset adjacent to the roadway. Include the cost for temporarily relocating mailbox assemblies in the contract unit price for "Mailbox – All Types".

770-P01 BREAKAWAY LIGHTING STANDARDS 12FT MA 40FT MT HT. Refer to Standard Drawing D-770-5. Provide light standards that have a davit type mast arm and have factory installed internal vibration dampeners. Provide all light standards with a transformer type base and ensure bases are installed on a concrete foundation. Breakaway type base is required. Duct seal all conduit stubs in the concrete foundation. Install hand holes so that they face opposite the side towards the curb or roadway edge. Provide and apply an anti-corrosion compound to all anchor bolts and nuts. Anchor bolt spacing to accommodate poles shall be verified in the field prior to construction. Provide and install a spare conduit sweep in foundations with only one conduit run shown to them or as shown on the plans.

770-P02 CONDUIT: Seal all conduits with duct seal at the feed point cabinet and at the light standard foundations and pull box. Conduit types may be either schedule 40 PVC or HDPE conduit with a wall thickness equivalent to schedule 40 (Refer to NDDOT specification 895.02 for more details). HDPE conduit to be UL listed and be the color red.

770-P03 LED LUMINAIRES: The standard luminaire to be of the light emitting diode (LED) type designed for roadway lighting where specified in the contract documents. The Roundabout led luminaire to be as follows: American Electric Lighting, Autobahn Series, Model ATB2-80BLEDE10-MVOLT-R3-BL-NR or Eaton Lumark, Navion series, NAV-AE-06-E-UNV-T3-10K-K-AP or an approved equivalent for type III fixtures. Type II fixtures are as follows: American Electric Lighting, Autobahn Series, Model ATB2-80BLEDE10-MVOLT-R2-BL-NR or Eaton Lumark, Navion series, NAV-AE-06-E-UNV-T2-10K-K-AP or an approved equivalent. The Destination lighting led luminaire to be as follows: American Electric Lighting, Autobahn Series, Model ATBS-H-MVOLT-D2-NR or GE Lighting, Evolve series, E2SA-0-B1-B3-1-40K or an approved equivalent. Luminaires shall have a standard grey powder-coat, corrosion resistant finish. Fixtures are to be mounted at an angle of 0º to horizontal, unless otherwise noted in the pole schedule.

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NOTES

770-P04 FEED POINT-TYPE II PAD MOUNTED: Install the feed point at the location indicated in the plans. Incoming electrical service shall be underground. The feed point cabinet to be a NEMA 3R weather proof outdoor cabinet and UL Listed. Feed point cabinet shall be sized sufficiently large to house panelboard and all associated equipment, wiring, and raceways. See NDDOT Standard Drawing D-770-02 for additional requirements.

Coordinate with the electric utility, Ottertail Power, for connection to the electrical service and meter. Provide feeder conductors with an equipment ground, all in conduit, from the metersocket to the feed point cabinet. Run conduit through the feed point foundation to the inside of the cabinet.

The Engineer is to determine the orientation of the feedpoint. Provide a permanent label for the exterior feed point cabinet and for the contactors inside the cabinet.

Provide all the necessary breakers, wires, conduit, and equipment as shown in the detail and panel schedule. The photo cell shall be installed to face north and designed to recess into the cabinet. Duct seal all conduit stubs in concrete foundation.

Include all materials, labor and equipment necessary to furnish and install the feed point in the locations shown in the bid item price as indicated in the drawings.

770-P05 FEED POINT-TYPE II POLE MOUNTED: The feed point shall be installed at the location indicated in the plans. Incoming electrical service to be underground. The feed point cabinet to be a NEMA 3R weather proof outdoor cabinet and UL Listed. Feed point cabinet is sized sufficiently large to house panelboard and all associated equipment, wiring, and raceways. See NDDOT Standard Drawing D-770-02 for additional requirements.

The Engineer is to determine the orientation of the feedpoint. Provide a permanent label for the exterior feed point cabinet and for the contactors inside the cabinet. Pole mounted feedpoint panels to be 100 amp rated main circuit breaker, 120/240V, single phase. Panel to be UL SUSE rated. Service conductors shall be #2 AWG Cu RHW/USE minimum.

All materials, labor and equipment necessary to furnish and install the feed point in the locations shown to be included in the bid item price as indicated in the drawings.

US 52/W Jct ND200 Location

Coordinate with the electric utility, Northern Plains Electric Coop., for relocation of the electrical service and meter. Provide service conductors, all in conduit, between the metersocket and the feed point cabinet. Metersocket mounted adjacent to the feedpoint cabinet as shown in NDDOT Standard Drawing D-770-02.

US 52/ND 30 Location

Coordinate with the electric utility, Ottertail Power, for connection to the electrical service and meter. Provide service conductors, all in conduit, between the metersocket and the feed point cabinet. Metersocket mounted adjacent to the feedpoint cabinet as shown in NDDOT Standard Drawing D-770-02.

770-P06 CONCRETE FOUNDATIONS: Install and tighten anchor bolts as specified in Section 754.04 D.5, "Overhead Sign Structures".

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NOTES

770-P07 REVISE LIGHTING SYSTEM: Remove light standards from their present location and install at a new location as shown in the plans. Remove existing concrete foundation in its entirety. Backfill and compact after removing existing light standard foundation. Restore the surface to match finished grade.

Provide a new concrete foundation as shown in the plans. Provide new anchor bolts for the relocated light standard. Anchor bolt spacing to accommodate poles shall be verified in the field prior to construction. Four anchor bolts shall be used for each light standard.

Disconnected luminaire wires at the fuses and the light standard removed and installed in the new location as specifies in the NDDOT specification 770.04 M. Relocated light standards do not need to be repainted. Relocated lights to be connected as indicated in the plans. Any new conductors, connections, and conduit necessary are incidental to the cost of the relocated light standard. If the light standard becomes damaged in the opinion of the engineer, repair or replace the light standard at no additional cost.

Include all materials, labor and equipment necessary to relocate the light standard including the removal of the existing foundation and installing a new concrete foundation in the bid item price “REVISE LIGHTING SYSTEM”.

772-P01 FLASHING BEACON POST MOUNTED: Power the flashing beacons with 120 volt from the pole mounted lighting feed point cabinet in a separate conduit as shown on the plans and panel schedule. Beacons shall not be solar power type. The control enclosures shall be provided and installed as recommended by the manufacturer.

Quantities for the signs and supports are included in section 110. Include all materials, labor, and equipment necessary to install the two beacons, conduits and cabling in the price bid “FLASHING BEACON-POST MOUNTED”.

802-P01 CONCRETE AGGREGATES: Test the coarse and fine concreate aggregates used in all cast in place concrete products for alkali-silica reactivity. In addition to NDDOT 816, AASHTO Standard Practice PP 65 shall be used. If test results show an expansion greater than 0.10 percent the aggregate will not be allowed for use. Acceptable test results must be given to the Engineer at least 30 calendar days before the aggregate is used on the project.

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ENVIRONMENTAL COMMITMENTS

ENVIRONMENTAL COMMITMENTS (EC): The North Dakota Department of Transportation and the Federal Highway Administration have made environmental commitments to secure approval of this project. The environmental commitments are as follows:

EC-1: Unavoidable impacts to wetlands will be mitigated onsite, adjacent to the project, or at a NDDOT approved mitigation site or bank.

ACTION REQUIRED /TAKEN: 0.00 acres of permanent impacts to USACE jurisdictional waters and 0.93 acres of permanent impacts to EO 11990 wetlands will require mitigation. The NDDOT proposes to mitigate by compensation: 0.93 acres at FHWA EO 11990 Mitigation Bank Vollrath 15/21 in the Red River Regional Service Area. 11.46 acres of temporary wetland impacts and 0.01 acres of other water impacts will result from construction activities. Temporary impact areas will be graded to preconstruction contours.

Wetland Impact Table

Wetland Number	Location	Cowardin Class.	Wetland Type	Wetland Size (acres)	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impacts (acres)		USFWS Easement Impacts (acres)		Wetland Mitigation								
											Mitigation Required			Bank		Onsite			
							Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acres	Mitigation Location; Ratio	Acres	Constructed Site #	Constructed Size (Acres)
1	Sec. 20, T146N, R70W	PEMAd	Basin	0.17	Natural	Yes	0.03	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
2a	Sec. 20, T146N, R70W	PEMC	Basin	0.64	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
2b	Sec. 17, T146N, R70W	PEMC	Basin	0.60	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
3a	Sec. 20, T146N, R70W	PEMCx	Ditch	0.07	Artificial	Yes	0.02	0.00	0.00	0.00	N	N	N						
3b	Sec. 21, T146N, R70W	PEMCx	Ditch	0.80	Artificial	Yes	0.16	0.01	0.00	0.00	N	N	N						
3c	Sec. 21, T146N, R70W	PEMC	Basin	0.89	Natural	Yes	0.08	0.00	0.00	0.00	N	N	N						
3d	Sec. 21, T146N, R70W	PEMCx	Ditch	0.06	Artificial	Yes	0.01	0.00	0.00	0.00	N	N	N						
3e	Sec. 21, T146N, R70W	PEMCx	Ditch	0.04	Artificial	Yes	0.01	0.01	0.00	0.00	N	N	N						
3f	Sec. 17, T146N, R70W	PEMAx	Ditch	0.09	Artificial	Yes	0.01	0.00	0.00	0.00	N	N	N						
3g	Sec. 16, T146N, R70W	PEMAx	Ditch	0.53	Artificial	Yes	0.08	0.01	0.00	0.00	N	N	N						
3h	Sec. 16, T146N, R70W	PEMC	Basin	0.30	Natural	Yes	0.04	0.00	0.00	0.00	N	N	N						
3i	Sec. 16, T146N, R70W	PEMAx	Ditch	0.15	Artificial	Yes	0.01	0.00	0.00	0.00	N	N	N						
3j	Sec. 16, T146N, R70W	PEMC	Basin	0.17	Natural	Yes	0.00	0.00	0.00	0.00	N	N	N						
4	Sec. 16, T146N, R70W	PEMA	Basin	0.06	Natural	Yes	0.01	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
5a	Sec. 16, T146N, R70W	PEMAx	Ditch	0.02	Artificial	No	0.01	0.00	0.00	0.00	N	N	N						

ENVIRONMENTAL COMMITMENTS

Wetland Impact Table

Wetland Number	Location	Cowardin Class.	Wetland Type	Wetland Size (acres)	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impacts (acres)		USFWS Easement Impacts (acres)		Wetland Mitigation								
											Mitigation Required			Bank		Onsite			
							Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acres	Mitigation Location; Ratio	Acres	Constructed Site #	Constructed Size (Acres)
5b	Sec. 15, T146N, R70W	PEMCx	Ditch	0.04	Artificial	No	0.02	0.01	0.00	0.00	N	N	N						
6a	Sec. 22, T146N, R70W	PEMC	Slope	0.16	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
6b	Sec. 15, T146N, R70W	PEMC	Slope	0.17	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
6c	Sec. 15&22, T146N, R70W	PEMC	Slope	0.10	Natural	Yes	0.00	0.00	0.00	0.00	N	N	N						
6d	Sec. 23, T146N, R70W	PEMC	Fringe	0.08	Natural	Yes	3.00	0.00	0.00	0.00	N	N	N						
6e	Sec. 23, T146N, R70W	PEMC	Fringe	0.05	Natural	Yes	0.00	0.00	0.00	0.00	N	N	N						
6g	Sec. 23, T146N, R70W	PEMCx	Ditch	0.47	Artificial	Yes	0.01	0.00	0.00	0.00	N	N	N						
6h	Sec. 23, T146N, R70W	PEMC	Slope	0.05	Natural	Yes	0.01	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
6i	Sec. 14, T146N, R70W	PEMC	Slope	0.06	Natural	Yes	0.01	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
6j	Sec. 23, T146N, R70W	PEMC	Slope	0.32	Natural	Yes	0.05	0.00	0.00	0.00	N	N	N						
6k	Sec. 14, T146N, R70W	PEMAx	Ditch	0.04	Artificial	Yes	0.01	0.00	0.00	0.00	N	N	N						
6l	Sec. 14, T146N, R70W	PEMC	Basin	0.13	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
6m	Sec. 13, T146N, R70W	PEMC	Basin	0.41	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
6n	Sec. 24, T146N, R70W	PEMC	Slope	0.21	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
6o	Sec. 23, T146N, R70W	PEMC	Slope	0.11	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
6p	Sec. 24, T146N, R70W	PEMC	Slope	0.07	Natural	Yes	0.00	0.00	0.00	0.00	N	N	N						
6q	Sec. 23, T146N, R69W	PEMC	Slope	0.19	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
6r	Sec. 23, T146N, R69W	PEMCx	Ditch	0.10	Artificial	Yes	0.01	0.00	0.00	0.00	N	N	N						

ENVIRONMENTAL COMMITMENTS

Wetland Impact Table

Wetland Number	Location	Cowardin Class.	Wetland Type	Wetland Size (acres)	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impacts (acres)		USFWS Easement Impacts (acres)		Wetland Mitigation								
											Mitigation Required			Bank		Onsite			
							Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acres	Mitigation Location; Ratio	Acres	Constructed Site #	Constructed Size (Acres)
6s	Sec. 23, T146N, R69W	PEMC	Basin	0.30	Natural	Yes	0.04	0.00	0.00	0.00	N	N	N						
6t	Sec. 23, T146N, R69W	PEMAx	Ditch	1.02	Artificial	Yes	0.26	0.03	0.00	0.00	N	N	N						
6u	Sec. 14, T146N, R69W	PEMC	Slope	0.50	Natural	Yes	0.02	0.00	0.00	0.00	N	N	N						
6v	Sec. 18, T146N, R67W	PEMCx	Ditch	0.17	Artificial	Yes	0.00	0.00	0.00	0.00	N	N	N						
6w	Sec. 19, T146N, R67W	PEMC	Fringe	0.13	Natural	Yes	0.00	0.00	0.00	0.00	N	N	N						
6x	Sec. 19, T146N, R67W	PEMC	Fringe	0.09	Natural	Yes	0.00	0.00	0.00	0.00	N	N	N						
6y	Sec. 18, T146N, R67W	PEM5Cx	Ditch	0.07	Artificial	Yes	0.00	0.00	0.00	0.00	N	N	N						
6z	Sec. 18, T146N, R67W	PEM5C	Slope	0.03	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
6aa	Sec. 19, T146N, R67W	PEMC	Fringe	0.08	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
6bb	Sec. 19, T146N, R67W	PEMC	Fringe	0.23	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
7	Sec. 18, T146N, R70W	PEMAx	Ditch	0.16	Artificial	No	0.00	0.00	0.00	0.00	N	N	N						
8a	Sec. 19, T146N, R70W	PEMC	Basin	0.78	Natural	No	0.00	0.00	0.00	0.00	N	N	N						
8b	Sec. 20, T146N, R70W	PEMC	Basin	0.11	Natural	No	0.00	0.00	0.00	0.00	N	N	N						
9	Sec. 14, T146N, R70W	PEMA	Basin	0.02	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
13	Sec. 24, T146N, R70W	PEMAx	Ditch	0.04	Artificial	No	0.02	0.01	0.00	0.00	N	N	N						
14a	Sec. 24, T146N, R70W	PEMAx	Ditch	0.10	Artificial	No	0.05	0.01	0.00	0.00	N	N	N						
14b	Sec. 13, T146N, R70W	PEMA	Basin	0.94	Natural	No	0.20	0.06	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.06				
14c	Sec. 13, T146N, R70W	PEMCx	Ditch	0.20	Artificial	No	0.06	0.04	0.00	0.00	N	N	N						

ENVIRONMENTAL COMMITMENTS

Wetland Impact Table

Wetland Number	Location	Cowardin Class.	Wetland Type	Wetland Size (acres)	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impacts (acres)		USFWS Easement Impacts (acres)		Wetland Mitigation								
											Mitigation Required			Bank		Onsite			
							Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acres	Mitigation Location; Ratio	Acres	Constructed Site #	Constructed Size (Acres)
15	Sec. 24, T146N, R70W	PEMAx	Ditch	0.05	Artificial	No	0.03	0.01	0.00	0.00	N	N	N						
16a	Sec. 18, T146N, R69W	PEMC	Basin	0.07	Natural	Yes	0.01	0.00	0.00	0.00	N	N	N						
16b	Sec. 19, T146N, R69W	PEMC	Basin	0.04	Natural	Yes	0.01	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
17	Sec. 19, T146N, R69W	PEMA	Basin	0.19	Natural	No	0.04	0.03	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.03				
18a	Sec. 19, T146N, R69W	PEMCx	Ditch	0.29	Artificial	No	0.11	0.07	0.00	0.00	N	N	N						
18b	Sec. 20, T146N, R69W	PEMAx	Ditch	0.15	Artificial	No	0.09	0.03	0.00	0.00	N	N	N						
19	Sec. 19, T146N, R69W	PEMCx	Ditch	0.27	Artificial	No	0.09	0.05	0.00	0.00	N	N	N						
21a	Sec. 17, T146N, R69W	PEMAx	Ditch	0.13	Artificial	No	0.05	0.02	0.00	0.00	N	N	N						
21b	Sec. 20, T146N, R69W	PEMAx	Ditch	0.32	Artificial	No	0.18	0.03	0.00	0.00	N	N	N						
21c	Sec. 20, T146N, R69W	PEMAx	Ditch	0.03	Artificial	No	0.01	0.01	0.00	0.00	N	N	N						
22	Sec. 17, T146N, R69W	PEMCx	Ditch	0.07	Artificial	No	0.03	0.01	0.00	0.00	N	N	N						
23	Sec. 20, T146N, R69W	PEMAx	Ditch	0.06	Artificial	No	0.04	0.01	0.00	0.00	N	N	N						
24	Sec. 17, T146N, R69W	PEMCx	Ditch	0.07	Artificial	No	0.03	0.01	0.00	0.00	N	N	N						
25	Sec. 21, T146N, R69W	PEMA	Basin	0.07	Natural	No	0.01	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
26	Sec. 16, T146N, R69W	PEMAx	Ditch	0.07	Artificial	No	0.01	0.00	0.00	0.00	N	N	N						
27	Sec. 21, T146N, R69W	PEMCx	Ditch	0.02	Artificial	No	0.01	0.01	0.00	0.00	N	N	N						
28	Sec. 21, T146N, R69W	PEMAx	Ditch	0.14	Artificial	No	0.08	0.03	0.00	0.00	N	N	N						
29a	Sec. 22, T146N, R69W	PEMAx	Ditch	0.16	Artificial	No	0.07	0.07	0.00	0.00	N	N	N						

ENVIRONMENTAL COMMITMENTS

Wetland Impact Table

Wetland Number	Location	Cowardin Class.	Wetland Type	Wetland Size (acres)	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impacts (acres)		USFWS Easement Impacts (acres)		Wetland Mitigation								
											Mitigation Required			Bank		Onsite			
							Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acres	Mitigation Location; Ratio	Acres	Constructed Site #	Constructed Size (Acres)
29b	Sec. 22, T146N, R69W	PEMA	Basin	0.15	Natural	No	0.03	0.02	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.02				
29c	Sec. 22, T146N, R69W	PEMAx	Ditch	0.11	Artificial	No	0.06	0.02	0.00	0.00	N	N	N						
29d	Sec. 15, T146N, R69W	PEMA	Basin	0.46	Natural	No	0.10	0.02	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.02				
30	Sec. 15, T146N, R69W	PEMAx	Ditch	0.03	Artificial	No	0.01	0.01	0.00	0.00	N	N	N						
32a	Sec. 23, T146N, R69W	PEMC	Slope	0.23	Natural	Yes	0.07	0.02	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.02				
32b	Sec. 14, T146N, R69W	PEMA	Slope	0.12	Natural	Yes	0.03	0.00	0.00	0.00	N	N	N						
33	Sec. 14, T146N, R69W	PEMCx	Ditch	0.23	Artificial	No	0.06	0.03	0.00	0.00	N	N	N						
34	Sec. 24, T146N, R69W	PEMAx	Ditch	0.06	Artificial	No	0.01	0.01	0.00	0.00	N	N	N						
35	Sec. 13, T146N, R69W	PEMAx	Ditch	0.07	Artificial	No	0.03	0.01	0.00	0.00	N	N	N						
36a	Sec. 24, T146N, R69W	PEMAx	Ditch	0.07	Artificial	No	0.04	0.03	0.00	0.00	N	N	N						
36b	Sec. 24, T146N, R69W	PEMAx	Ditch	0.02	Artificial	No	0.01	0.01	0.00	0.00	N	N	N						
37	Sec. 13, T146N, R69W	PEMAx	Ditch	0.06	Artificial	No	0.03	0.01	0.00	0.00	N	N	N						
38	Sec. 13, T146N, R69W	PEMCx	Ditch	0.32	Artificial	No	0.10	0.03	0.00	0.00	N	N	N						
39	Sec. 24, T146N, R69W	PEMAx	Ditch	0.13	Artificial	No	0.07	0.03	0.00	0.00	N	N	N						
40	Sec. 24, T146N, R69W	PEMAx	Ditch	0.08	Artificial	No	0.03	0.04	0.00	0.00	N	N	N						
41a	Sec. 24, T146N, R69W	PEMA	Basin	0.15	Natural	No	0.05	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
41b	Sec. 13, T146N, R69W	PEMA	Basin	0.07	Natural	No	0.01	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
42	Sec. 13, T146N, R69W	PEMAx	Ditch	0.04	Artificial	No	0.02	0.02	0.00	0.00	N	N	N						

ENVIRONMENTAL COMMITMENTS

Wetland Impact Table

Wetland Number	Location	Cowardin Class.	Wetland Type	Wetland Size (acres)	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impacts (acres)		USFWS Easement Impacts (acres)		Wetland Mitigation								
											Mitigation Required			Bank		Onsite			
							Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acres	Mitigation Location; Ratio	Acres	Constructed Site #	Constructed Size (Acres)
43	Sec. 24, T146N, R69W	PEMC	Basin	0.06	Natural	No	0.01	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
44	Sec. 24, T146N, R69W	PEMCx	Ditch	0.04	Artificial	No	0.02	0.02	0.00	0.00	N	N	N						
45	Sec. 19, T146N, R68W	PEMCx	Ditch	0.10	Artificial	No	0.05	0.05	0.00	0.00	N	N	N						
46a	Sec. 18, T146N, R68W	PEMCx	Ditch	0.13	Artificial	No	0.05	0.05	0.00	0.00	N	N	N						
46b	Sec. 18, T146N, R68W	PEMCx	Ditch	0.08	Artificial	No	0.03	0.01	0.00	0.00	N	N	N						
46c	Sec. 18, T146N, R68W	PEMC	Basin	0.42	Natural	No	0.06	0.02	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.02				
46d	Sec. 18, T146N, R68W	PEMCx	Ditch	0.89	Artificial	No	0.33	0.12	0.00	0.00	N	N	N						
46e	Sec. 19, T146N, R68W	PEMC	Basin	0.31	Natural	No	0.05	0.02	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.02				
46f	Sec. 19, T146N, R68W	PEMCx	Ditch	0.18	Artificial	No	0.07	0.02	0.00	0.00	N	N	N						
47	Sec. 18, T146N, R68W	PEMCx	Ditch	0.39	Artificial	No	0.22	0.04	0.00	0.00	N	N	N						
48	Sec. 18, T146N, R68W	PEMAx	Ditch	0.04	Artificial	No	0.02	0.01	0.00	0.00	N	N	N						
49a	Sec. 19, T146N, R68W	PEMC	Basin	0.33	Natural	No	0.06	0.03	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.03				
49b	Sec. 18, T146N, R68W	PEMA	Basin	0.22	Natural	No	0.05	0.02	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.02				
49c	Sec. 18, T146N, R68W	PEMAx	Ditch	0.19	Artificial	No	0.07	0.07	0.00	0.00	N	N	N						
49d	Sec. 17, T146N, R68W	PEMAx	Ditch	0.03	Artificial	No	0.01	0.00	0.00	0.00	N	N	N						
50	Sec. 17, T146N, R68W	PEMAx	Ditch	0.14	Artificial	No	0.06	0.01	0.00	0.00	N	N	N						
51	Sec. 20, T146N, R68W	PEMCx	Ditch	0.06	Artificial	No	0.03	0.02	0.00	0.00	N	N	N						
52	Sec. 17, T146N, R68W	PEMAx	Ditch	0.03	Artificial	No	0.02	0.01	0.00	0.00	N	N	N						

ENVIRONMENTAL COMMITMENTS

Wetland Impact Table

Wetland Number	Location	Cowardin Class.	Wetland Type	Wetland Size (acres)	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impacts (acres)		USFWS Easement Impacts (acres)		Wetland Mitigation								
											Mitigation Required			Bank		Onsite			
							Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acres	Mitigation Location; Ratio	Acres	Constructed Site #	Constructed Size (Acres)
53	Sec. 17, T146N, R68W	PEMA	Basin	0.01	Natural	No	0.00	0.00	0.00	0.00	N	N	N						
54a	Sec. 17, T146N, R68W	PEMC	Basin	0.28	Natural	Yes	0.05	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
54b	Sec. 17, T146N, R68W	PEMAx	Ditch	0.21	Artificial	Yes	0.07	0.01	0.00	0.00	N	N	N						
54c	Sec. 20, T146N, R68W	PEMAd	Basin	0.71	Natural	Yes	0.03	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
56	Sec. 21, T146N, R68W	PEMAx	Ditch	0.03	Artificial	No	0.02	0.01	0.00	0.00	N	N	N						
57	Sec. 21, T146N, R68W	PEMAx	Ditch	0.13	Artificial	No	0.06	0.03	0.00	0.00	N	N	N						
58	Sec. 21, T146N, R68W	PEMA	Basin	0.41	Natural	No	0.09	0.03	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.03				
59a	Sec. 16, T146N, R68W	PEMC	Basin	0.48	Natural	No	0.09	0.03	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.03				
59b	Sec. 21, T146N, R68W	PEMC	Basin	0.08	Natural	No	0.01	0.00	0.00	0.00	N	N	N						
60a	Sec. 15, T146N, R68W	PEMAx	Ditch	0.11	Artificial	Yes	0.03	0.01	0.00	0.00	N	N	N						
60b	Sec. 14, T146N, R68W	PEMC	Basin	0.27	Natural	Yes	0.03	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
60c	Sec. 14, T146N, R68W	PEMCx	Ditch	0.21	Artificial	Yes	0.04	0.00	0.00	0.00	N	N	N						
60d	Sec. 14, T146N, R68W	PEMAx	Ditch	0.33	Artificial	Yes	0.09	0.00	0.00	0.00	N	N	N						
60e	Sec. 22, T146N, R68W	PEMCx	Ditch	0.19	Artificial	Yes	0.05	0.00	0.00	0.00	N	N	N						
60f	Sec. 23, T146N, R68W	PEMC	Basin	0.67	Natural	Yes	0.06	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
61	Sec. 13, T146N, R68W	PEMC	Slope	0.02	Natural	Yes	0.00	0.00	0.00	0.00	N	N	N						
62a	Sec. 13, T146N, R68W	PEMAx	Ditch	0.02	Artificial	Yes	0.01	0.01	0.00	0.00	N	N	N						
62b	Sec. 24, T146N, R68W	PEMCx	Ditch	0.12	Artificial	Yes	0.03	0.02	0.00	0.00	N	N	N						

ENVIRONMENTAL COMMITMENTS

Wetland Impact Table

Wetland Number	Location	Cowardin Class.	Wetland Type	Wetland Size (acres)	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impacts (acres)		USFWS Easement Impacts (acres)		Wetland Mitigation								
											Mitigation Required			Bank		Onsite			
							Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acres	Mitigation Location; Ratio	Acres	Constructed Site #	Constructed Size (Acres)
63	Sec. 13, T146N, R68W	PEMC	Basin	0.06	Natural	Yes	0.00	0.00	0.00	0.00	N	N	N						
64	Sec. 24, T146N, R68W	PEMCx	Ditch	0.25	Artificial	No	0.11	0.04	0.00	0.00	N	N	N						
65	Sec. 13, T146N, R68W	PEMCx	Ditch	0.10	Artificial	No	0.05	0.01	0.00	0.00	N	N	N						
67	Sec. 19, T146N, R67W	PEMCx	Ditch	0.06	Artificial	No	0.02	0.04	0.00	0.00	N	N	N						
68	Sec. 19, T146N, R67W	PEMA	Basin	0.08	Natural	No	0.02	0.02	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.02				
69a	Sec. 17, T146N, R67W	PEMA	Basin	0.19	Natural	No	0.05	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
69b	Sec. 20, T146N, R67W	PEMA	Basin	0.12	Natural	No	0.02	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
70	Sec. 17, T146N, R67W	PEMA	Basin	0.19	Natural	No	0.04	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
71	Sec. 17, T146N, R67W	PEMAx	Ditch	0.34	Artificial	No	0.18	0.06	0.00	0.00	N	N	N						
72	Sec. 17, T146N, R67W	PEMAx	Ditch	0.27	Artificial	No	0.15	0.03	0.00	0.00	N	N	N						
73	Sec. 20, T146N, R67W	PEMCx	Ditch	0.02	Artificial	No	0.01	0.00	0.00	0.00	N	N	N						
74a	Sec. 17, T146N, R67W	PEMAx	Ditch	0.09	Artificial	No	0.03	0.01	0.00	0.00	N	N	N						
74b	Sec. 16, T146N, R67W	PEMAx	Ditch	1.00	Artificial	No	0.41	0.27	0.00	0.00	N	N	N						
74c	Sec. 16, T146N, R67W	PEMA	Basin	0.04	Natural	No	0.00	0.00	0.00	0.00	N	N	N						
74d	Sec. 16, T146N, R67W	PEMA	Basin	0.25	Natural	No	0.00	0.00	0.00	0.00	N	N	N						
74e	Sec. 21, T146N, R67W	PEMCx	Ditch	0.41	Artificial	No	0.15	0.04	0.00	0.00	N	N	N						
74f	Sec. 21, T146N, R67W	PEMC	Basin	0.55	Natural	No	0.12	0.06	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.06				
74g	Sec. 21, T146N, R67W	PEMCx	Ditch	0.45	Artificial	No	0.13	0.04	0.00	0.00	N	N	N						

ENVIRONMENTAL COMMITMENTS

Wetland Impact Table

Wetland Number	Location	Cowardin Class.	Wetland Type	Wetland Size (acres)	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impacts (acres)		USFWS Easement Impacts (acres)		Wetland Mitigation								
											Mitigation Required			Bank		Onsite			
							Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acres	Mitigation Location; Ratio	Acres	Constructed Site #	Constructed Size (Acres)
75	Sec. 20, T146N, R67W	PEMAx	Ditch	0.06	Artificial	No	0.02	0.03	0.00	0.00	N	N	N						
76a	Sec. 21, T146N, R67W	PEMAx	Ditch	0.24	Artificial	No	0.08	0.04	0.00	0.00	N	N	N						
76b	Sec. 16, T146N, R67W	PEMC	Basin	0.60	Natural	No	0.12	0.02	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.02				
78a	Sec. 22, T146N, R67W	PEMA	Basin	0.22	Natural	No	0.09	0.05	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.05				
78b	Sec. 22, T146N, R67W	PEMAx	Ditch	0.13	Artificial	No	0.08	0.02	0.00	0.00	N	N	N						
79	Sec. 22, T146N, R67W	PEMAx	Ditch	0.02	Artificial	No	0.01	0.01	0.00	0.00	N	N	N						
80a	Sec. 15, T146N, R67W	PEMAx	Ditch	0.12	Artificial	No	0.04	0.03	0.00	0.00	N	N	N						
80b	Sec. 22, T146N, R67W	PEMA	Basin	0.43	Natural	No	0.11	0.06	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.06				
80c	Sec. 22, T146N, R67W	PEMAx	Ditch	0.09	Artificial	No	0.04	0.02	0.00	0.00	N	N	N						
80d	Sec. 22, T146N, R67W	PEMCx	Ditch	0.21	Artificial	No	0.09	0.05	0.00	0.00	N	N	N						
81a	Sec. 23, T146N, R67W	PEMA	Basin	0.78	Natural	No	0.27	0.04	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.04				
81b	Sec. 14, T146N, R67W	PEMC	Basin	0.58	Natural	No	0.18	0.12	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.12				
81c	Sec. 14, T146N, R67W	PEMAx	Ditch	0.02	Artificial	No	0.02	0.01	0.00	0.00	N	N	N						
82	Sec. 23, T146N, R67W	PEMA	Basin	0.42	Natural	No	0.10	0.05	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.05				
83	Sec. 23, T146N, R67W	PEMA	Basin	0.09	Natural	No	0.02	0.01	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.01				
84	Sec. 23, T146N, R67W	PEMAx	Ditch	0.09	Artificial	No	0.03	0.02	0.00	0.00	N	N	N						
85	Sec. 13, T146N, R67W	PEMA	Basin	0.11	Natural	No	0.01	0.00	0.00	0.00	N	N	N						
86	Sec. 24, T146N, R67W	PEMAx	Ditch	0.11	Artificial	No	0.05	0.04	0.00	0.00	N	N	N						

ENVIRONMENTAL COMMITMENTS

Wetland Impact Table

Wetland Number	Location	Cowardin Class.	Wetland Type	Wetland Size (acres)	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impacts (acres)		USFWS Easement Impacts (acres)		Wetland Mitigation								
											Mitigation Required			Bank		Onsite			
							Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acres	Mitigation Location; Ratio	Acres	Constructed Site #	Constructed Size (Acres)
87	Sec. 24, T146N, R67W	PEMA	Basin	0.20	Natural	No	0.05	0.02	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.02				
88a	Sec. 24, T146N, R67W	PEMAx	Ditch	0.02	Artificial	No	0.02	0.01	0.00	0.00	N	N	N						
88b	Sec. 24, T146N, R67W	PEMAx	Ditch	0.03	Artificial	No	0.02	0.01	0.00	0.00	N	N	N						
89a	Sec. 24, T146N, R67W	PEMAx	Ditch	0.05	Artificial	No	0.01	0.01	0.00	0.00	N	N	N						
89b	Sec. 24, T146N, R67W	PEMAx	Ditch	0.31	Artificial	No	0.09	0.16	0.00	0.00	N	N	N						
89c	Sec. 24, T146N, R67W	PEMAx	Ditch	0.29	Artificial	No	0.10	0.14	0.00	0.00	N	N	N						
90	Sec. 19, T146N, R66W	PEMAx	Ditch	0.58	Artificial	No	0.21	0.10	0.00	0.00	N	N	N						
91	Sec. 19, T146N, R66W	PEMA	Basin	0.09	Natural	No	0.01	0.02	0.00	0.00	Y	N	N	Vollrath 15/21 11990	0.02				
92	Sec. 19, T146N, R66W	PEMCx	Ditch	0.16	Artificial	No	0.03	0.02	0.00	0.00	N	N	N						
93a	Sec. 19, T146N, R66W	PEMCx	Ditch	0.22	Artificial	No	0.06	0.04	0.00	0.00	N	N	N						
93b	Sec. 19, T146N, R66W	PEMCx	Ditch	0.06	Artificial	No	0.01	0.01	0.00	0.00	N	N	N						
93c	Sec. 18, T146N, R66W	PEMCx	Ditch	0.01	Artificial	No	0.00	0.01	0.00	0.00	N	N	N						
			Totals	**34.60**			**11.46**	**3.51**	**0.00**	**0.00**					**0.93**		**0.00**		**0.00**

[1] A wetland Jurisdictional Determination was issued by the USACE on 05/27/2015; NWO-2015-0671-BIS for all wetlands except 7, 8a and 8b.

For wetlands 7, 8a and 8b, a wetland Jurisdictional Determination was issued by the USACE on 02/19/2014; NWO-2013-2563-BIS (Old wetland numbers 11, 15a and 15b)

ENVIRONMENTAL COMMITMENTS

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
			Acres	Linear Feet			Acres Temp	Acres Perm	Linear Feet Temp	Linear Feet Perm	EO 11990	USACE	USFWS		
OW6f	Sec. 23, T146N, R70W	Pipestem Creek	0.09	183	Stream	Yes	0.00	0.00	0	0	N	N	N		
OW6cc	Sec. 18-19, T146N, R67W	Pipestem Creek	0.20	202	Reservoir	Yes	0.00	0.00	0	0	N	N	N		
OW1	Sec. 17-18, T146N, R66W	Kelly Creek	0.02	153	Artificial Stream	Pending	0.01	0.00	32	0	N	N	N		
		Totals	**0.31**	**538**			**0.01**	**0.00**	**32**	**0**					

[1] A wetland Jurisdictional Determination was issued by the USACE on 05/27/2015; NWO-2015-0671-BIS, and on xx/xx/xxxx, NWO-XXXX-XXXX-BIS.

Summary Impact Table

Total Permanent Impact Summary		Temporary Impacts and Additional Information	
Wetland Type	**Total (Acres)**	**Wetland Type**	**Total (Acres/Lf)**
Natural JD	0.11	**Temporary JD**	4.62
Natural Non-JD	0.82	**Non-JD Temporary**	6.84
Artificial JD	0.11	**Permanent JD > 0.10**	0.00
Artificial Non-JD	2.47	**Permanent OW**	0.00 ac 0 ft
Total	**3.51**	**Temporary OW**	0.01 ac 32 ft

EC- 2: No construction or demolition activities will take place during the spawning season in the Pipestem Creek from April 15 to June 1.

EC- 3: The contractor shall provide, place, maintain, and remove safety fence as directed by North Dakota Department of Transportation representatives.

ACTION REQUIRED /TAKEN: During construction, the right of way line at the avoidance area site (32WEx123 – Farm house) will be fenced to insure there are no unanticipated impacts to the site. The contractor shall provide, place, maintain, and remove safety fence as directed by North Dakota Department of Transportation representatives. See plan note 107-P06 Avoidance Areas.

EC- 4: The contractor shall provide the required notice of proposed construction with the Federal Aviation Administration and Carrington Municipal Airport prior to beginning any construction that impacts the airport.

ACTION REQUIRED /TAKEN: Prior to any construction of widening and pavement overlay from Sta. 11650+00 to Sta. 11658+00, the contractor will provide the required advanced notice of construction in accordance with the FAA 7460-1 requirements.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	8	1

Spec	Code	Description	Units	Quantity
103	100	CONTRACT BOND	L SUM	1
103	200	ESCROW OF BID DOCUMENTATION	L SUM	1
107	103	RAILWAY PROTECTION INSURANCE-SITE 1	EA	1
107	104	RAILWAY PROTECTION INSURANCE-SITE 2	EA	1
202	130	REMOVAL OF CURB & GUTTER	LF	389
202	137	REMOVAL OF PAVEMENT	SY	10,447
202	174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	2,027
202	230	REMOVAL OF INLETS	EA	2
202	295	REMOVAL OF OBSTRUCTIONS	L SUM	1
202	350	REMOVAL OF TEMPORARY BYPASS	EA	1
203	101	COMMON EXCAVATION-TYPE A	CY	4,346
203	108	TOPSOIL-BORROW AREA	CY	30,144
203	109	TOPSOIL	CY	144,133
203	140	BORROW-EXCAVATION	CY	321,533
216	100	WATER	M GAL	247.6
251	200	SEEDING CLASS II	ACRE	269.6
251	2000	TEMPORARY COVER CROP	ACRE	269.6
253	101	STRAW MULCH	ACRE	539.3
255	202	TRM TYPE II	SY	1,644
260	100	SILT FENCE UNSUPPORTED	LF	48,781
260	101	REMOVE SILT FENCE UNSUPPORTED	LF	48,781
261	112	FIBER ROLLS 12IN	LF	135,008
261	113	REMOVE FIBER ROLLS 12IN	LF	40,644
265	100	STABILIZED CONSTRUCTION ACCESS	EA	2
265	101	REMOVE STABILIZED CONSTRUCTION ACCESS	EA	2
302	120	AGGREGATE BASE COURSE CL 5	TON	244,007.25
306	510	FULL DEPTH RECLAMATION	SY	243,796.0
401	50	TACK COAT	GAL	87,584
401	60	PRIME COAT	GAL	49,652
411	105	MILLING PAVEMENT SURFACE	SY	5,372.6
430	45	SUPERPAVE FAA 45	TON	143,459.71
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	1,679
430	1000	CORED SAMPLE	EA	528
430	6428	PG 64-28 ASPHALT CEMENT	TON	8,530.43
430	7028	PG 70-28 ASPHALT CEMENT	TON	77.52
550	129	9IN REINF CONCRETE PVMT CL AE-COLORED & TEXT	SY	2,576.2
550	305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	8,123.2
550	3005	CONCRETE MEDIAN PAVEMENT	SY	1,356.9
602	130	CLASS AAE-3 CONCRETE	CY	0.6
602	1135	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	189.0
650	704	OVERLAY CONCRETE	CY	17.8
650	720	CLASS 1 REMOVAL	SY	355.6
650	721	CLASS 2 REMOVAL	SY	71.1
650	722	CLASS 2-A REMOVAL	LF	128
650	723	CLASS 3 REMOVAL	SY	17.8
650	724	CLASS 4 REMOVAL	SY	3.6
702	100	MOBILIZATION	L SUM	1.0
704	100	FLAGGING	MHR	6,200.0
704	1000	TRAFFIC CONTROL SIGNS	UNIT	7,891.0
704	1018	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	EA	2
704	1039	ATTENUATION DEVICE-TYPE B-45	EA	2
704	1043	ATTENUATION DEVICE-TYPE B-65	EA	2
704	1052	TYPE III BARRICADE	EA	54
704	1060	DELINEATOR DRUMS	EA	20
704	1067	TUBULAR MARKERS	EA	918
704	1185	PILOT CAR	HR	2,000
704	1500	OBLITERATION OF PAVEMENT MARKING	SF	1,570
704	3510	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	97
706	400	FIELD OFFICE	EA	1
706	500	AGGREGATE LABORATORY	EA	1

Spec	Code	Description	Units	Quantity
706	550	BITUMINOUS LABORATORY	EA	1
706	600	CONTRACTOR'S LABORATORY	EA	1
709	162	GEOSYNTHETIC MATERIAL TYPE S2	SY	10,699.4
714	615	PIPE CONC REINF 24IN CL III	LF	416
714	820	PIPE CONC REINF 30IN CL III	LF	74
714	905	PIPE CONC REINF 36IN CL III	LF	154
714	1210	PIPE CONC REINF 54IN CL III	LF	86
714	4096	PIPE CONDUIT 15IN-APPROACH	LF	51
714	4099	PIPE CONDUIT 18IN-APPROACH	LF	938
714	4101	PIPE CONDUIT 18IN-STORM DRAIN	LF	283
714	4106	PIPE CONDUIT 24IN-APPROACH	LF	731
714	4113	PIPE CONDUIT 30IN-APPROACH	LF	256
714	4116	PIPE CONDUIT 36IN-APPROACH	LF	221
714	4125	PIPE CONDUIT 48IN	LF	318
714	4132	PIPE CONDUIT 54IN-APPROACH	LF	74
714	9659	REMOVE & RELAY PIPE-ALL TYPES & SIZES	LF	152
714	9660	REMOVE & RELAY END SECTION-ALL TYPE & SIZES	EA	86
720	110	RIGHT OF WAY MARKERS	EA	140
720	125	ALIGNMENT MONUMENTS	EA	77
720	130	IRON PIN R/W MONUMENTS	EA	81
720	135	IRON PIN REFERENCE MONUMENTS	EA	57
722	3510	INLET-TYPE 2	EA	9
722	6240	ADJUST UTILITY APPURTENANCE	EA	2
724	427	ADJUST HYDRANT	EA	1
748	120	CURB & GUTTER MOUNTABLE-TYPE I	LF	1,782
748	140	CURB & GUTTER-TYPE I	LF	3,265
748	141	CURB & GUTTER-TYPE 1 SPECIAL	LF	80
752	911	TEMPORARY SAFETY FENCE	LF	200
754	110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	214
754	112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	1,306
754	206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	3,399
754	563	REFERENCE MARKER-TYPE C	EA	24
754	592	RESET SIGN PANEL	EA	58
754	805	OBJECT MARKERS - CULVERTS	EA	87
760	5	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	45.520
760	7	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	22.760
760	9	RUMBLE STRIPS - INTERSECTION	EA	1
762	103	PVMT MK PAINTED-MESSAGE	SF	601
762	122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	142
762	420	SHORT TERM 4IN LINE-TYPE R	LF	7,320
762	426	SHORT TERM 24IN LINE-TYPE R	LF	96
762	430	SHORT TERM 4IN LINE-TYPE NR	LF	128,823
762	442	SHORT TERM MESSAGE-TYPE NR	SF	601
762	1104	PVMT MK PAINTED 4IN LINE	LF	305,906
762	1108	PVMT MK PAINTED 8IN LINE	LF	2,802
762	1124	PVMT MK PAINTED 24IN LINE	LF	264
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	818
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	398
764	131	W-BEAM GUARDRAIL	LF	490.0
764	145	W-BEAM GUARDRAIL END TERMINAL	EA	8
764	151	REMOVE W-BEAM GUARDRAIL & POSTS	LF	822.0
764	1050	RESET W-BEAM GUARDRAIL	LF	400.0
764	1990	REMOVE CONCRETE SAFETY SHAPE TRANSITION	EA	4
764	2081	REMOVE END TREATMENT & TRANSITION	EA	8
766	100	MAILBOX-ALL TYPES	EA	15
770	1	LIGHTING SYSTEM	EA	1
770	7	DESTINATION LIGHTING	EA	2
770	4525	REVISE LIGHTING SYSTEM	EA	2
772	2110	FLASHING BEACON-POST MOUNTED	EA	2
772	3150	REMOVE FLASHING BEACON SYSTEM	EA	2

Quantities

Application Rates
Prime Coat @ 0.20 Gallons/SY
Blotter Material @ 15 Lbs/SY (Not a pay item. Any blotter material required is incidental to price bid for Prime Coat)
Tack Coat @ 0.05 Gallons/SY
Asphalt Cement @ 6.0% of Superpave FAA 45

Unit Weights
Aggregate Base Course CL 5 @ 1.875 Tons/CY
Superpave FAA 45 @ 2.00 Tons/CY

Mailboxes		
Station	**Type**	**Type of Work**
10614+84 - RT	Single	Replace
10627+05 - RT	Single	Replace
10889+64 - RT	Single	Replace
10935+51 - RT	Single	Replace
10958+20 - RT	Single	Replace
10983+18 - LT	Single	Replace
11050+74 - RT	Single	Replace
11086+14 - RT	Single	Replace
11239+24 - RT	Single	Replace
11263+09 - LT	Double	Replace
11369+19 - RT	Double	Replace
11389+17 - RT	Single	Replace
11396+94 - RT	Single	Replace
11428+38 - RT	Single	Replace
11579+69 - LT	Single	Replace
Project Total		**15**

HBP Cored Samples							
	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**
430.04 I.2.b(1), "General"	63	2	2	252	504	N/A	EA
430.04 I.2.b(2), " Pavement Thickness Determination Cores"					N/A	24	EA
				Total	**504**	**24**	**EA**

Water			
Description	**Basis**	**Units**	**Mgal**
10 Mgal/Mile for Dust Palliative	24	Miles	240.0
20 Gal/Ton for Aggregates	244,007	Tons	4.9
10 Gal/CY for Embankment	260,702	CY	2.7
Project Total			**247.6**

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Basis of Estimate

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	10	2

Asphalt Pavement Summary

Item	Begin Station	End Station	Length (FT)	Average Width (FT)	Superpave Average End Area (SF)	Superpave @ 2.0 Tons/CY (Ton)	Asphalt Cement @ 6.0% (Ton)	Tack Coat @ 0.05 Gal/SY and 2 lifts (Gal)
Overlay								
US 52 W. Jct 200 Right Turn Lane	10492+26	10498+58	632	48.0	22.9	1,072.06	64.32	338
US 52 W. Jct 200 Right Turn Lane Taper	10498+58	10499+78	120	44.0	18.5	164.44	9.87	58
US 52 Mainline	10499+78	11021+43	52,165	40.0	14.0	54,097.04	3,245.82	23,184
US 52 ND 30 Right Turn Lane	11021+43	11026+73	530	48.0	16.6	651.70	39.10	282
US 52 ND 30 Right Turn Lane Taper	11026+73	11027+93	120	44.0	15.3	136.00	8.16	58
US 52 Mainline	11027+93	11056+85	2,892	40.0	14.0	2,999.11	179.95	1,286
US 52 Hughes Ave Right Turn Lane	11056+85	11062+27	542	48.0	16.6	666.46	39.99	290
US 52 Hughes Ave Right Turn Lane Taper	11062+27	11063+47	120	44.0	15.3	136.00	8.16	58
US 52 Mainline (1)	11063+47	11698+63	63,436	40.0	14.0	65,785.48	3,947.13	28,194
US 52 19th Ave Turn Lane Taper	11698+63	11703+76	513	48.0	16.7	632.70	37.96	274
US 52 19th Ave Turn Lanes	11703+76	11708+93	517	56.0	19.3	739.12	44.35	322
US 52 19th Ave Turn Lane Taper	11708+93	11714+70	577	48.6	16.7	711.63	42.70	312
US 52 Mainline	11714+70	11729+70	1,500	40.0	14.0	1,555.56	93.33	666
US 52 11th Ave Right Turn Lane Taper	11729+70	11730+66	96	44.0	15.3	108.80	6.53	46
US 52 11th Ave Right Turn Lane	11730+66	11732+60	194	48.0	16.6	238.84	14.33	104
US 52 Mainline (1)	11732+60	11754+37	1,881	40.0	14.0	1,950.67	117.04	836
Overlay Subtotal			**125,835**			**131,645.61**	**7,898.74**	**56,308**
(1) Length adjusted for Bridges								
Leveling and Superelevation Correction								
Superelevation C128	11063+44	11073+29	985	27.0	5.9	430.48	25.83	148
Superelevation C402	11234+53	11243+50	897	27.0	4.0	265.78	15.95	135
Superelevation C407	11663+81	11683+82	2,001	27.0	1.6	237.16	14.23	300
Superelevation C199	11743+11	11751+16	805	27.0	4.6	274.30	16.46	121
Leveling Course @ 100 Tons/Lane Mile				27.0		4,766.48	285.99	28,154
Leveling and Superelevation Correction Subtotal			**4,688**			**5,974.20**	**358.46**	**28,858**
Miscellaneous Items								
West Jct ND 200 Intersection						711.33	42.68	24
ND 30 Intersection						362.00	21.72	162
Hughes Avenue Intersection						190.59	11.44	86
19th Avenue Intersection						219.85	13.19	98
11th Avenue Intersection						180.20	10.81	82
Carrington roundabout tie-ins						106.67	6.40	4
Standard section lines approachs and private drives						3,525.46	211.87	1,774
Special approach details						398.80	23.94	188
Guardrail surfacing						145.00	8.70	0
Miscellaneous Items Subtotal						**5,839.90**	**350.75**	**2,418**
Grand Total						**143,459.71**	**8,607.95**	**87,584.00**

PG Asphalt Cement

Item	SY	Asphalt Cement (Tons)
PG 70-28		
US 52 North of W Jct ND 200	2,134	42.68
WB right turn lane - W Jct ND 200	1,113	22.27
W Jct ND 200 Intersection	943	12.57
PG 70-24 Total		**77.52**
PG 64-28		
Balance of Project		**8,530.43**

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Asphalt Pavement

Full Depth Reclamation Summary

Item	Left	Right	FDR Pay Width Left (FT)	FDR Pay Width Right (FT)	FDR Total (SY)	CL 5 Aggregate for Blending (SF)	CL 5 Aggregate for Blending (Tons)	Prime Coat @ 0.20 Gal/SY (Gal)
Mainline Widening	120,945	118,607	8.8	8.8	234,229	13.4	222,916.44	46,846
Turn Lane Construction								
W. Jct 200 Right Turn Lane		632		16.8	1,180	20.0	877.78	236
W. Jct 200 Right Turn Lane Taper		120		12.8	171	16.8	140.00	34
ND 30 Right Turn Lane		530		16.8	989	20.0	736.11	198
ND 30 Right Turn Lane Taper		120		12.8	171	16.8	140.00	34
Hughes Ave Right Turn Lane		542		16.8	1,012	20.0	752.78	202
Hughes Ave Right Turn Lane Taper		120		12.8	171	16.8	140.00	34
19th Ave Turn Lane Taper West	513	513	12.8	12.8	1,459	19.0	1,351.61	292
19th Ave Turn Lanes West	258.5	258.5	16.8	22.8	1,137	33.0	1,183.00	227
19th Ave Turn Lanes East	258.5	258.5	22.8	16.8	1,137	33.0	1,183.00	227
19th Ave Turn Lane Taper East	577	577	12.8	12.8	1,641	19.0	1,520.23	328
11th Ave Turn Lane Taper		96		12.8	137	16.8	112.00	27
11th Ave Right Turn Lane		194		16.8	362	20.0	269.44	72
Net Widening Length	**122,552**	**122,568**			**243,796**		**231,322.39**	**48,757**
Approaches and Intersections excluded from Full Depth Reclamation	3,283	3,267						
Bridge Exceptions	376	376						
Gross Widening Length Sta. 10492+26 to Sta. 11754+37	**126,211**	**126,211**						

Aggregate Base Course CL 5 and Prime Coat Summary

Item	Aggregate Base CL 5 (Tons)	Prime Coat Area (SY)	Prime Coat @ 0.20 Gal/SY (Gal)
CL 5 Aggregate for Blending	231,322.39		48,757
Carrington roundabout base course	7,207.50		
Carrington roundabout tie-ins	200.00	320	64
Standard section lines approachs and private drives	3,874.67	0	0
Special approach details	995.69	2,853	571
Guardrail surfacing	407.00	1,302	260
Grand Total	**244,007.25**		**49,652**

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Full Depth Reclamation and Aggregate Base

Earthwork Summary

Item	Common Excavation (CY)	Embankment (CY)	Adjusted Embankment at 25% Shrinkage (CY)	Borrow (CY)	Topsoil (CY)
	A	B	C = B × (1.25)	D = C - A	E
ND Highway 52 - Mainline widening					
Sta 10492+25.76 to 11755+00.00	**0**	**254,241**	**317,801**	**317,801**	**137,757**
ND Highway 52 -Approach Reconstruction					
Sta 10645+98 Rt (Gravel Private Drive)	0	444	555	555	154
Sta 11049+02 Lt (Gravel Private Drive)	0	31	39	39	61
Sta 11408+87 Rt (Paved Private Drive)	290	187	234	-56	215
Sta 11579+55 Lt (Paved Private Drive)	0	32	40	40	24
Sta 11579+60 Rt (Gravel Private Drive)	0	212	265	265	37
Sta 11599+75 Lt (Gravel Section Line)	0	104	130	130	53
5th Avenue (Paved Street Approach)	251	150	188	-63	160
Subtotal - Approach Reconstruction	**541**	**1,160**	**1,451**	**910**	**704**
ND Highway 52 - Approach Side Slope Flattening					
Sta 10935+26 Rt (Field Drive)	0	102	128	128	76
Sta 11177+74 Rt (Gravel Section Line)	0	149	186	186	99
Sta 11428+24 Rt (Gravel Private Drive)	0	216	270	270	74
Sta 11546+98 Rt (Gravel Section Line)	0	151	189	189	108
Sta 11555+83 Lt (Gravel Private Drive)	0	111	139	139	83
Subtotal - Approach Flattening	**0**	**729**	**912**	**912**	**440**
ND Highway 52 - E. JCT 200 Roundabout					
US 52 - Sta 11755+00 to 11762+00	2,089	2,066	2,583	494	2872
ND 200 - Sta 15496+50 to 15500+00	301	2,281	2,851	2,550	414
US 281 - Sta 5943+30 to 5947+00	1,415	225	281	-1,134	1946
Subtotal - Roundabout	**3,805**	**4,572**	**5,715**	**1,910**	**5,232**
Project Total	**4,346**	**260,702**	**325,879**	**321,533**	**144,133**

Borrow Topsoil Basis of Estimate for Option Areas

Item	Quantity	Units
Borrow Need	321,533	CY
Borrow Striping based on 8' cut average	120,575	SY
Borrow Area Topsoil based on 9" strip depth	**30,144**	**CY**

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Earthwork Summary

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	1

Curve	C128	
PI Station	=	11068+36.90
Delta	=	3° 48' 22"
Degree	=	0° 30' 00"
Radius	=	11459.2
Length	=	761.24
Design Speed	=	65 MPH

AASHTO Method 5 with Max 6%

Station	Left Slope ('/')	Right Slope ('/')
11063+44.47	-0.021	-0.021
11064+11.47	-0.021	0.000
11064+78.47	-0.021	0.021
11071+95.05	-0.021	0.021
11072+62.05	-0.021	0.000
11073+29.05	-0.021	-0.021

Curve	C402	
PI Station	=	11239+01.88
Delta	=	3° 22' 10"
Degree	=	0° 30' 00"
Radius	=	11459.2
Length	=	673.9
Design Speed	=	65 MPH

AASHTO Method 5 with Max 6%

Station	Left Slope ('/')	Right Slope ('/')
11234+53.16	-0.021	-0.021
11235+20.16	0.000	-0.021
11235+87.16	0.021	-0.021
11242+16.40	0.021	-0.021
11242+83.40	0.000	-0.021
11243+50.40	-0.021	-0.021

Spiral Curve	SCS407	
PI Station	=	11673+90.41
Delta	=	18° 37' 37"
Degree	=	1° 00' 00"
Radius	=	5729.65
Length	=	1662.70
Design Speed	=	65 MPH

AASHTO Method 5 with Max 6%

Station	Left Slope ('/')	Right Slope ('/')
11663+50.72	-0.021	-0.021
11664+30.72	0.000	-0.021
11665+50.72	0.030	-0.030
11682+13.42	0.030	-0.030
11683+33.42	0.000	-0.021
11684+13.42	-0.021	-0.021

Spiral Curve	SCS408	
PI Station	=	11707+40.01
Delta	=	28° 28' 21"
Degree	=	1° 30' 00"
Radius	=	3819.83
Length	=	1598.21
Design Speed	=	55 MPH

AASHTO Method 5 with Max 6%

Station	Left Slope ('/')	Right Slope ('/')
11696+20.63	-0.021	-0.021
11697+34.63	-0.021	0.000
11699+20.63	-0.033	0.033
11715+18.85	-0.033	0.033
11717+04.85	-0.021	0.000
11718+18.85	-0.021	-0.021

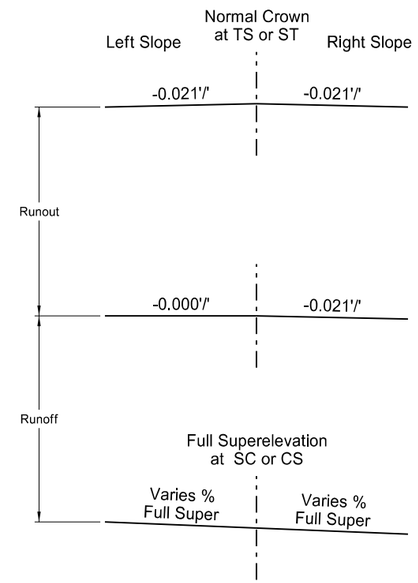
Spiral Curve	SCS199	
PI Station	=	11747+19.83
Delta	=	23° 29' 08"
Degree	=	2° 59' 59"
Radius	=	1910.08
Length	=	482.95
Design Speed	=	45 MPH

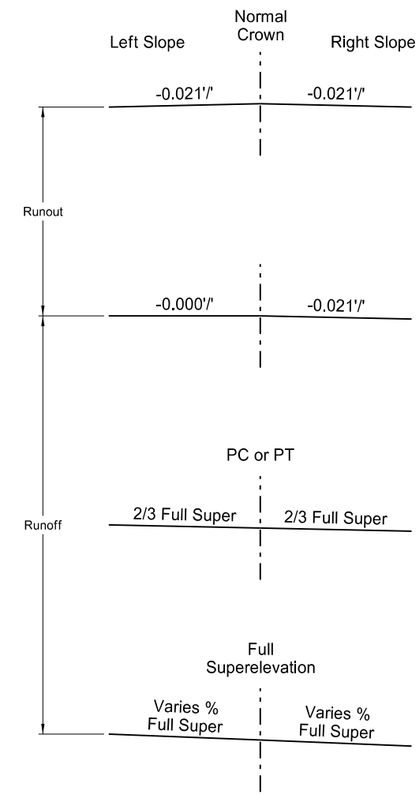
AASHTO Method 5 with Max 6%

Station	Left Slope ('/')	Right Slope ('/')
11741+72.40	-0.021	-0.021
11742+73.40	0.000	-0.021
11744+72.40	0.040	-0.040
11749+55.35	0.040	-0.040
11751+54.35	0.000	-0.021
11752+55.35	-0.021	-0.021

Curves with no superelevation required.

C125	C406	C202
C152	C136	C403
C177	C49	C405
C158	C404	





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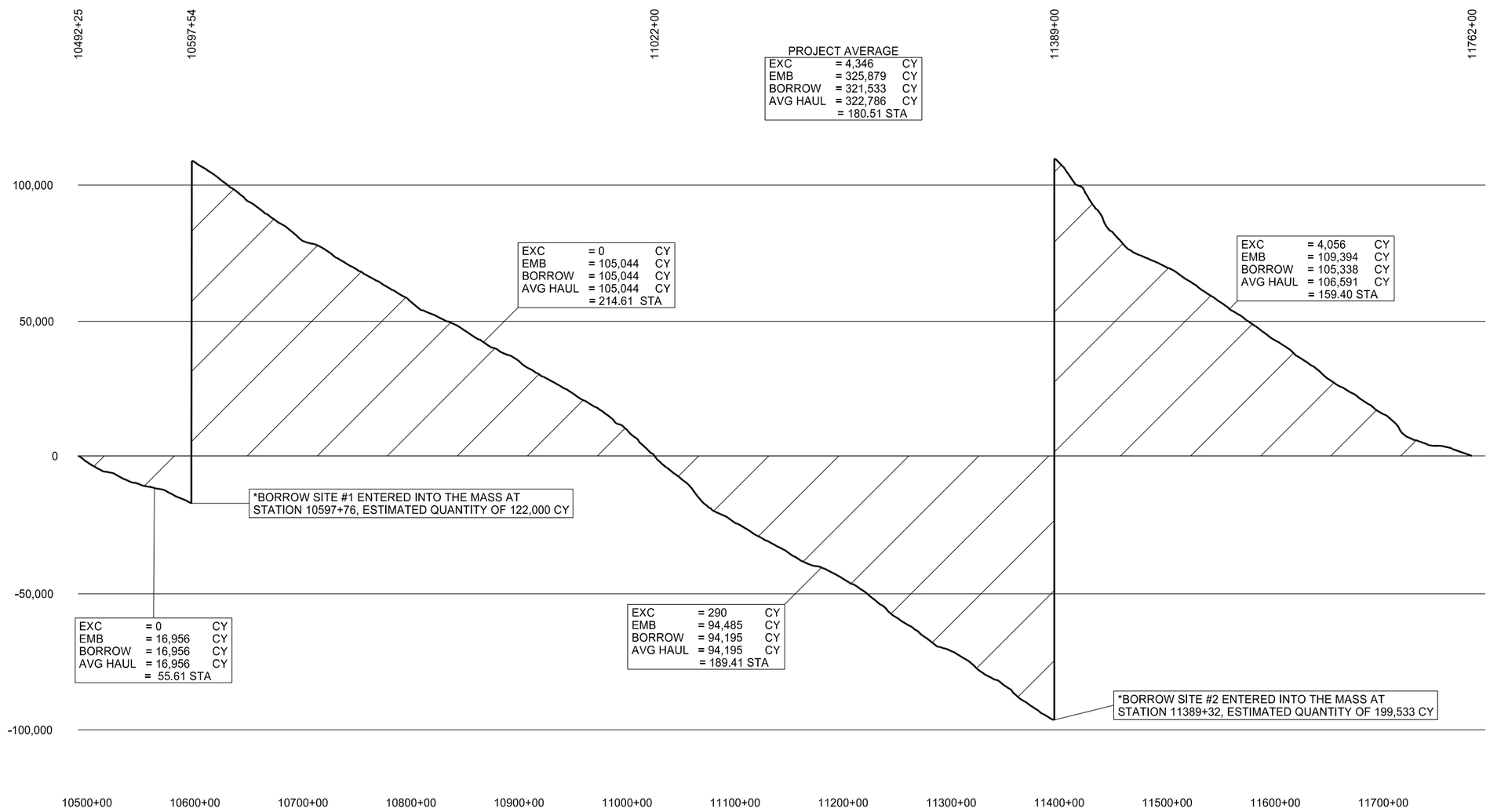
Superelevation Tables

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	2



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Mass Balance Diagram

US 52

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	3

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10492+77.28	0	0	0	1.6	0	0	0	0	0
10493+00.00	0	0	0	22.5	10	13	0	-13	-13
10494+00.00	0	0	0	46	127	159	0	-171	-171
10495+00.00	0	0	0	47.4	173	216	0	-388	-388
10496+00.00	0	0	0	69.2	216	270	0	-658	-658
10497+00.00	0	0	0	65.2	249	311	0	-969	-969
10498+00.00	0	0	0	79.5	268	335	0	-1,304	-1,304
10498+58.47	0	0	0	77.4	170	213	0	-1,516	-1,516
10499+78.20	0	0	0	47.4	277	346	0	-1,863	-1,863
10500+00.00	0	0	0	48.5	39	49	0	-1,911	-1,911
10501+00.00	0	0	0	50.2	183	229	0	-2,140	-2,140
10502+00.00	0	0	0	66.9	217	271	0	-2,411	-2,411
10503+00.00	0	0	0	53.9	224	280	0	-2,691	-2,691
10504+00.00	0	0	0	47.7	188	235	0	-2,926	-2,926
10505+00.00	0	0	0	50.8	182	228	0	-3,154	-3,154
10506+00.00	0	0	0	60	205	256	0	-3,410	-3,410
10507+00.00	0	0	0	32.6	171	214	0	-3,624	-3,624
10507+18.03	0	0	0	29.1	21	26	0	-3,650	-3,650
10507+55.78	0	0	0	26.9	39	49	0	-3,699	-3,699
10508+00.00	0	0	0	56.5	68	85	0	-3,784	-3,784
10509+00.00	0	0	0	50	197	246	0	-4,030	-4,030
10510+00.00	0	0	0	53.9	192	240	0	-4,270	-4,270
10511+00.00	0	0	0	46	185	231	0	-4,501	-4,501
10512+00.00	0	0	0	46.7	172	215	0	-4,716	-4,716
10513+00.00	0	0	0	33.8	149	186	0	-4,903	-4,903
10514+00.00	0	0	0	46.5	149	186	0	-5,089	-5,089
10515+00.00	0	0	0	60.4	198	248	0	-5,336	-5,336
10516+00.00	0	0	0	19.9	149	186	0	-5,523	-5,523
10517+04.05	0	0	0	11.2	60	75	0	-5,598	-5,598
10517+41.80	0	0	0	6.4	12	15	0	-5,613	-5,613
10518+00.00	0	0	0	17.1	25	31	0	-5,644	-5,644
10519+00.00	0	0	0	13.2	56	70	0	-5,714	-5,714
10520+00.00	0	0	0	11.6	46	58	0	-5,771	-5,771
10521+00.00	0	0	0	14.1	48	60	0	-5,831	-5,831
10522+00.00	0	0	0	18.9	61	76	0	-5,908	-5,908
10522+06.73	0	0	0	18.3	5	6	0	-5,914	-5,914
10523+00.00	0	0	0	16.7	60	75	0	-5,989	-5,989
10524+00.00	0	0	0	15.4	59	74	0	-6,063	-6,063
10525+00.00	0	0	0	14.9	56	70	0	-6,133	-6,133
10526+00.00	0	0	0	45.2	111	139	0	-6,271	-6,271
10527+00.00	0	0	0	53.6	183	229	0	-6,500	-6,500

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10528+00.00	0	0	0	53.7	199	249	0	-6,749	-6,749
10529+00.00	0	0	0	53.8	199	249	0	-6,998	-6,998
10530+00.00	0	0	0	35.4	165	206	0	-7,204	-7,204
10531+00.00	0	0	0	47.4	153	191	0	-7,395	-7,395
10532+00.00	0	0	0	49.6	180	225	0	-7,620	-7,620
10533+00.00	0	0	0	45.1	175	219	0	-7,839	-7,839
10534+00.00	0	0	0	45.4	168	210	0	-8,049	-8,049
10535+00.00	0	0	0	39.4	157	196	0	-8,245	-8,245
10536+00.00	0	0	0	22.1	114	143	0	-8,388	-8,388
10536+19.40	0	0	0	22.7	16	20	0	-8,408	-8,408
10536+57.16	0	0	0	21.8	31	39	0	-8,446	-8,446
10537+00.00	0	0	0	39.6	49	61	0	-8,508	-8,508
10538+00.00	0	0	0	45	157	196	0	-8,704	-8,704
10539+00.00	0	0	0	42	161	201	0	-8,905	-8,905
10540+00.00	0	0	0	37.1	146	183	0	-9,088	-9,088
10541+00.00	0	0	0	35.9	135	169	0	-9,256	-9,256
10542+00.00	0	0	0	32.9	127	159	0	-9,415	-9,415
10543+00.00	0	0	0	10.2	80	100	0	-9,515	-9,515
10544+00.00	0	0	0	13.2	43	54	0	-9,569	-9,569
10544+71.56	0	0	0	0	17	21	0	-9,590	-9,590
10546+00.00	0	0	0	25.9	43	54	0	-9,644	-9,644
10547+00.00	0	0	0	31.7	107	134	0	-9,778	-9,778
10548+00.00	0	0	0	30.9	116	145	0	-9,923	-9,923
10549+00.00	0	0	0	33.5	119	149	0	-10,071	-10,071
10550+00.00	0	0	0	43.6	143	179	0	-10,250	-10,250
10551+00.00	0	0	0	34.3	144	180	0	-10,430	-10,430
10552+00.00	0	0	0	22.6	105	131	0	-10,561	-10,561
10553+00.00	0	0	0	19.2	77	96	0	-10,658	-10,658
10554+00.00	0	0	0	16.1	65	81	0	-10,739	-10,739
10555+00.00	0	0	0	14.3	56	70	0	-10,809	-10,809
10556+00.00	0	0	0	15.6	55	69	0	-10,878	-10,878
10556+42.71	0	0	0	6.2	17	21	0	-10,899	-10,899
10557+00.00	0	0	0	18	26	33	0	-10,931	-10,931
10558+00.00	0	0	0	14.7	61	76	0	-11,008	-11,008
10559+00.00	0	0	0	12.9	51	64	0	-11,071	-11,071
10560+00.00	0	0	0	13.1	48	60	0	-11,131	-11,131
10561+00.00	0	0	0	18.2	58	73	0	-11,204	-11,204
10562+00.00	0	0	0	31.1	91	114	0	-11,318	-11,318
10563+00.00	0	0	0	26	106	133	0	-11,450	-11,450
10564+00.00	0	0	0	21.7	88	110	0	-11,560	-11,560
10565+00.00	0	0	0	14.1	66	83	0	-11,643	-11,643

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	4

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10566+00.00	0	0	0	10.1	45	56	0	-11,699	-11,699
10567+00.00	0	0	0	6.3	30	38	0	-11,736	-11,736
10568+00.00	0	0	0	17.4	44	55	0	-11,791	-11,791
10568+49.20	0	0	0	17	31	39	0	-11,830	-11,830
10569+00.00	0	0	0	11.2	27	34	0	-11,864	-11,864
10570+00.00	0	0	0	31.6	79	99	0	-11,963	-11,963
10571+00.00	0	0	0	10.8	79	99	0	-12,061	-12,061
10571+10.03	0	0	0	0.9	2	3	0	-12,064	-12,064
10571+48.82	0	0	0	2.3	2	3	0	-12,066	-12,066
10572+00.00	0	0	0	51	51	64	0	-12,130	-12,130
10573+00.00	0	0	0	37.8	164	205	0	-12,335	-12,335
10574+00.00	0	0	0	57.3	176	220	0	-12,555	-12,555
10575+00.00	0	0	0	49.7	198	248	0	-12,803	-12,803
10576+00.00	0	0	0	51.1	187	234	0	-13,036	-13,036
10577+00.00	0	0	0	39	167	209	0	-13,245	-13,245
10578+00.00	0	0	0	32.1	132	165	0	-13,410	-13,410
10579+00.00	0	0	0	40.9	135	169	0	-13,579	-13,579
10580+00.00	0	0	0	37.9	146	183	0	-13,761	-13,761
10580+53.35	0	0	0	77.7	114	143	0	-13,904	-13,904
10581+00.00	0	0	0	51.3	111	139	0	-14,043	-14,043
10582+00.00	0	0	0	40.7	170	213	0	-14,255	-14,255
10583+00.00	0	0	0	41.3	152	190	0	-14,445	-14,445
10584+00.00	0	0	0	37.4	146	183	0	-14,628	-14,628
10585+00.00	0	0	0	29.1	123	154	0	-14,781	-14,781
10585+21.03	0	0	0	19.1	19	24	0	-14,805	-14,805
10585+58.78	0	0	0	20.7	28	35	0	-14,840	-14,840
10586+00.00	0	0	0	38.9	45	56	0	-14,896	-14,896
10587+00.00	0	0	0	36.7	140	175	0	-15,071	-15,071
10588+00.00	0	0	0	36	135	169	0	-15,240	-15,240
10589+00.00	0	0	0	34.9	131	164	0	-15,404	-15,404
10590+00.00	0	0	0	30.4	121	151	0	-15,555	-15,555
10591+00.00	0	0	0	34	119	149	0	-15,704	-15,704
10592+00.00	0	0	0	33.8	126	158	0	-15,861	-15,861
10593+00.00	0	0	0	43.8	144	180	0	-16,041	-16,041
10594+00.00	0	0	0	52.1	178	223	0	-16,264	-16,264
10595+00.00	0	0	0	48.7	187	234	0	-16,498	-16,498
10596+00.00	0	0	0	44.2	172	215	0	-16,713	-16,713
10597+00.00	0	0	0	39.7	155	194	0	-16,906	-16,906
10597+53.95	0	122,000	122,000	0	40	50	0	-16,956	105,044
10599+00.00	0	0	122,000	64.2	117	146	0	-17,103	104,898
10600+00.00	0	0	122,000	59.8	230	288	0	-17,390	104,610

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10601+00.00	0	0	122,000	53.55	210	263	0	-17,653	104,348
10602+00.00	0	0	122,000	62.3	215	269	0	-17,921	104,079
10603+00.00	0	0	122,000	61.1	229	286	0	-18,208	103,793
10604+00.00	0	0	122,000	55.1	215	269	0	-18,476	103,524
10604+24.26	0	0	122,000	50	47	59	0	-18,535	103,465
10605+00.00	0	0	122,000	42.3	129	161	0	-18,696	103,304
10606+00.00	0	0	122,000	50.5	172	215	0	-18,911	103,089
10607+00.00	0	0	122,000	44.5	176	220	0	-19,131	102,869
10608+00.00	0	0	122,000	48	171	214	0	-19,345	102,655
10609+00.00	0	0	122,000	44.7	172	215	0	-19,560	102,440
10610+00.00	0	0	122,000	51.9	179	224	0	-19,784	102,216
10611+00.00	0	0	122,000	60.2	208	260	0	-20,044	101,956
10612+00.00	0	0	122,000	81.8	263	329	0	-20,373	101,628
10612+52.38	0	0	122,000	41.5	120	150	0	-20,523	101,478
10612+91.75	0	0	122,000	40.2	60	75	0	-20,598	101,403
10614+00.00	0	0	122,000	70	221	276	0	-20,874	101,126
10614+45.20	0	0	122,000	35.2	88	110	0	-20,984	101,016
10614+84.57	0	0	122,000	35.3	51	64	0	-21,048	100,953
10615+00.00	0	0	122,000	35.5	20	25	0	-21,073	100,928
10616+00.00	0	0	122,000	69.3	194	243	0	-21,315	100,685
10617+00.00	0	0	122,000	67.2	253	316	0	-21,631	100,369
10618+00.00	0	0	122,000	52.4	221	276	0	-21,908	100,093
10619+00.00	0	0	122,000	64.4	216	270	0	-22,178	99,823
10620+00.00	0	0	122,000	60	230	288	0	-22,465	99,535
10621+00.00	0	0	122,000	63.1	228	285	0	-22,750	99,250
10622+00.00	0	0	122,000	69	245	306	0	-23,056	98,944
10623+00.00	0	0	122,000	76.3	269	336	0	-23,393	98,608
10624+00.00	0	0	122,000	69.5	270	338	0	-23,730	98,270
10624+19.43	0	0	122,000	43.5	41	51	0	-23,781	98,219
10624+58.80	0	0	122,000	42.2	62	78	0	-23,859	98,141
10625+00.00	0	0	122,000	66.5	83	104	0	-23,963	98,038
10625+28.58	0	0	122,000	89.6	83	104	0	-24,066	97,934
10626+00.00	0	0	122,000	78.7	223	279	0	-24,345	97,655
10626+88.20	0	0	122,000	32.9	182	228	0	-24,573	97,428
10627+25.95	0	0	122,000	32.5	46	58	0	-24,630	97,370
10628+00.00	0	0	122,000	78.2	152	190	0	-24,820	97,180
10629+00.00	0	0	122,000	70.6	276	345	0	-25,165	96,835
10630+00.00	0	0	122,000	66.5	254	318	0	-25,483	96,518
10631+00.00	0	0	122,000	70.2	253	316	0	-25,799	96,201
10632+00.00	0	0	122,000	69.1	258	323	0	-26,121	95,879
10633+00.00	0	0	122,000	61	241	301	0	-26,423	95,578

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	5

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10634+07.23	0	0	122,000	29.8	180	225	0	-26,648	95,353
10634+44.98	0	0	122,000	30.1	42	53	0	-26,700	95,300
10635+00.00	0	0	122,000	55.6	87	109	0	-26,809	95,191
10636+00.00	0	0	122,000	66.6	226	283	0	-27,091	94,909
10637+00.00	0	0	122,000	60.8	236	295	0	-27,386	94,614
10638+00.00	0	0	122,000	59.1	222	278	0	-27,664	94,336
10639+00.00	0	0	122,000	65.8	231	289	0	-27,953	94,048
10640+00.00	0	0	122,000	80.3	271	339	0	-28,291	93,709
10641+00.00	0	0	122,000	73.4	285	356	0	-28,648	93,353
10642+00.00	0	0	122,000	76.3	277	346	0	-28,994	93,006
10643+04.38	0	0	122,000	43.8	232	290	0	-29,284	92,716
10643+42.13	0	0	122,000	41.5	60	75	0	-29,359	92,641
10644+00.00	0	0	122,000	71.7	121	151	0	-29,510	92,490
10645+00.00	0	0	122,000	76.4	274	343	0	-29,853	92,148
10645+66.37	0	0	122,000	34.3	136	170	0	-30,023	91,978
10646+04.13	0	0	122,000	29.9	45	56	-555	-30,634	91,366
10647+00.00	0	0	122,000	66.2	171	214	0	-30,848	91,153
10648+00.00	0	0	122,000	62.6	239	299	0	-31,146	90,854
10649+00.00	0	0	122,000	64.8	236	295	0	-31,441	90,559
10649+58.27	0	0	122,000	57.4	132	165	0	-31,606	90,394
10650+00.00	0	0	122,000	41.2	76	95	0	-31,701	90,299
10650+39.96	0	0	122,000	2.5	32	40	0	-31,741	90,259
10650+93.63	0	0	122,000	6.9	9	11	0	-31,753	90,248
10651+43.74	0	0	122,000	63.6	65	81	0	-31,834	90,166
10652+00.00	0	0	122,000	63	132	165	0	-31,999	90,001
10653+00.00	0	0	122,000	51.1	211	264	0	-32,263	89,738
10654+00.00	0	0	122,000	61.7	209	261	0	-32,524	89,476
10655+00.00	0	0	122,000	56.6	219	274	0	-32,798	89,203
10656+00.00	0	0	122,000	66.9	229	286	0	-33,084	88,916
10657+00.00	0	0	122,000	62.4	239	299	0	-33,383	88,618
10658+00.00	0	0	122,000	57.8	223	279	0	-33,661	88,339
10659+00.00	0	0	122,000	63	224	280	0	-33,941	88,059
10660+00.00	0	0	122,000	64.5	236	295	0	-34,236	87,764
10661+00.00	0	0	122,000	61.6	234	293	0	-34,529	87,471
10662+00.00	0	0	122,000	69.3	242	303	0	-34,831	87,169
10663+00.00	0	0	122,000	70.7	259	324	0	-35,155	86,845
10664+00.00	0	0	122,000	74.8	269	336	0	-35,491	86,509
10665+00.00	0	0	122,000	75.2	278	348	0	-35,839	86,161
10665+50.67	0	0	122,000	4.4	75	94	0	-35,933	86,068
10665+89.11	0	0	122,000	0.1	3	4	0	-35,936	86,064
10666+00.00	0	0	122,000	2.6	1	1	0	-35,938	86,063

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10667+00.00	0	0	122,000	64	123	154	0	-36,091	85,909
10668+00.00	0	0	122,000	78.8	264	330	0	-36,421	85,579
10669+00.00	0	0	122,000	69.6	275	344	0	-36,765	85,235
10670+00.00	0	0	122,000	64.2	248	310	0	-37,075	84,925
10671+00.00	0	0	122,000	61.9	234	293	0	-37,368	84,633
10672+00.00	0	0	122,000	47.6	203	254	0	-37,621	84,379
10673+00.00	0	0	122,000	61.5	202	253	0	-37,874	84,126
10674+00.00	0	0	122,000	60.3	226	283	0	-38,156	83,844
10674+78.21	0	0	122,000	73.9	194	243	0	-38,399	83,601
10675+00.00	0	0	122,000	69.6	58	73	0	-38,471	83,529
10676+00.00	0	0	122,000	67.9	255	319	0	-38,790	83,210
10676+95.75	0	0	122,000	31.3	176	220	0	-39,010	82,990
10677+33.51	0	0	122,000	31.8	44	55	0	-39,065	82,935
10678+00.00	0	0	122,000	61.4	115	144	0	-39,209	82,791
10679+00.00	0	0	122,000	41.3	190	238	0	-39,446	82,554
10680+00.00	0	0	122,000	38.9	149	186	0	-39,633	82,368
10681+00.00	0	0	122,000	46.3	158	198	0	-39,830	82,170
10682+00.00	0	0	122,000	31.6	144	180	0	-40,010	81,990
10683+00.00	0	0	122,000	69.6	187	234	0	-40,244	81,756
10684+00.00	0	0	122,000	66.1	251	314	0	-40,558	81,443
10685+00.00	0	0	122,000	72.2	256	320	0	-40,878	81,123
10686+00.00	0	0	122,000	67.4	259	324	0	-41,201	80,799
10687+00.00	0	0	122,000	69.8	254	318	0	-41,519	80,481
10688+00.00	0	0	122,000	77.5	273	341	0	-41,860	80,140
10689+00.00	0	0	122,000	45.3	227	284	0	-42,144	79,856
10690+00.00	0	0	122,000	88.7	248	310	0	-42,454	79,546
10690+13.72	0	0	122,000	104.1	49	61	0	-42,515	79,485
10691+00.00	0	0	122,000	38.5	228	285	0	-42,800	79,200
10692+00.00	0	0	122,000	71.5	204	255	0	-43,055	78,945
10693+00.00	0	0	122,000	79.9	280	350	0	-43,405	78,595
10694+00.00	0	0	122,000	81	298	373	0	-43,778	78,223
10695+00.00	0	0	122,000	88.7	314	393	0	-44,170	77,830
10696+00.00	0	0	122,000	84.5	321	401	0	-44,571	77,429
10697+00.00	0	0	122,000	42.6	235	294	0	-44,865	77,135
10698+00.00	0	0	122,000	101.4	267	334	0	-45,199	76,801
10698+09.47	0	0	122,000	94.8	34	43	0	-45,241	76,759
10699+00.00	0	0	122,000	41.1	228	285	0	-45,526	76,474
10700+00.00	0	0	122,000	21.7	116	145	0	-45,671	76,329
10701+00.00	0	0	122,000	27.2	91	114	0	-45,785	76,215
10701+27.17	0	0	122,000	26.5	27	34	0	-45,819	76,181
10702+00.00	0	0	122,000	39.8	89	111	0	-45,930	76,070

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	6

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10703+02.82	0	0	122,000	49.2	169	211	0	-46,141	75,859
10703+35.66	0	0	122,000	2.4	31	39	0	-46,180	75,820
10703+97.62	0	0	122,000	6.1	10	13	0	-46,193	75,808
10704+30.36	0	0	122,000	20.6	16	20	0	-46,213	75,788
10705+00.00	0	0	122,000	33.7	70	88	0	-46,300	75,700
10706+04.75	0	0	122,000	15.9	96	120	0	-46,420	75,580
10707+00.00	0	0	122,000	13.4	52	65	0	-46,485	75,515
10708+00.00	0	0	122,000	13.4	50	63	0	-46,548	75,453
10709+00.00	0	0	122,000	15.7	54	68	0	-46,615	75,385
10709+14.98	0	0	122,000	26	12	15	0	-46,630	75,370
10710+00.00	0	0	122,000	17.6	69	86	0	-46,716	75,284
10711+00.00	0	0	122,000	16.8	64	80	0	-46,796	75,204
10712+00.00	0	0	122,000	52.4	128	160	0	-46,956	75,044
10713+00.00	0	0	122,000	41.3	174	218	0	-47,174	74,826
10714+00.00	0	0	122,000	38.5	148	185	0	-47,359	74,641
10715+00.00	0	0	122,000	37.8	141	176	0	-47,535	74,465
10716+00.00	0	0	122,000	50.7	164	205	0	-47,740	74,260
10717+00.00	0	0	122,000	51.7	190	238	0	-47,978	74,023
10718+00.00	0	0	122,000	44	177	221	0	-48,199	73,801
10719+00.00	0	0	122,000	53.8	181	226	0	-48,425	73,575
10720+00.00	0	0	122,000	62.4	215	269	0	-48,694	73,306
10721+00.00	0	0	122,000	46.9	202	253	0	-48,946	73,054
10722+00.00	0	0	122,000	50.8	181	226	0	-49,173	72,828
10723+00.00	0	0	122,000	69.3	222	278	0	-49,450	72,550
10724+00.00	0	0	122,000	37.5	198	248	0	-49,698	72,303
10724+08.09	0	0	122,000	32.5	10	13	0	-49,710	72,290
10724+45.84	0	0	122,000	31.9	45	56	0	-49,766	72,234
10725+00.00	0	0	122,000	73.2	105	131	0	-49,898	72,103
10726+00.00	0	0	122,000	86.2	295	369	0	-50,266	71,734
10727+00.00	0	0	122,000	77.9	304	380	0	-50,646	71,354
10728+00.00	0	0	122,000	66.9	268	335	0	-50,981	71,019
10729+00.00	0	0	122,000	65.2	245	306	0	-51,288	70,713
10729+84.19	0	0	122,000	26.9	144	180	0	-51,468	70,533
10730+21.94	0	0	122,000	25	36	45	0	-51,513	70,488
10731+00.00	0	0	122,000	49.8	108	135	0	-51,648	70,353
10732+00.00	0	0	122,000	52.5	189	236	0	-51,884	70,116
10733+00.00	0	0	122,000	47.4	185	231	0	-52,115	69,885
10734+00.00	0	0	122,000	53	186	233	0	-52,348	69,653
10734+11.08	0	0	122,000	66.5	25	31	0	-52,379	69,621
10735+00.00	0	0	122,000	41.5	178	223	0	-52,601	69,399
10736+00.00	0	0	122,000	45.5	161	201	0	-52,803	69,198

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10737+00.00	0	0	122,000	49.1	175	219	0	-53,021	68,979
10738+00.00	0	0	122,000	58.5	199	249	0	-53,270	68,730
10739+00.00	0	0	122,000	55.2	211	264	0	-53,534	68,466
10740+00.00	0	0	122,000	50.5	196	245	0	-53,779	68,221
10741+00.00	0	0	122,000	52.8	191	239	0	-54,018	67,983
10742+00.00	0	0	122,000	47.6	186	233	0	-54,250	67,750
10743+00.00	0	0	122,000	46.4	174	218	0	-54,468	67,533
10744+00.00	0	0	122,000	35.7	152	190	0	-54,658	67,343
10744+20.31	0	0	122,000	25.1	23	29	0	-54,686	67,314
10744+58.06	0	0	122,000	25.9	36	45	0	-54,731	67,269
10745+00.00	0	0	122,000	40.5	52	65	0	-54,796	67,204
10746+00.00	0	0	122,000	45.4	159	199	0	-54,995	67,005
10747+00.00	0	0	122,000	58.2	192	240	0	-55,235	66,765
10748+00.00	0	0	122,000	50.1	201	251	0	-55,486	66,514
10749+00.00	0	0	122,000	64.3	212	265	0	-55,751	66,249
10750+00.00	0	0	122,000	52.3	216	270	0	-56,021	65,979
10751+00.00	0	0	122,000	63.4	214	268	0	-56,289	65,711
10751+46.75	0	0	122,000	2.5	57	71	0	-56,360	65,640
10751+86.14	0	0	122,000	0	2	3	0	-56,363	65,638
10752+00.00	0	0	122,000	4	1	1	0	-56,364	65,636
10753+00.00	0	0	122,000	58.9	116	145	0	-56,509	65,491
10754+00.00	0	0	122,000	60.6	221	276	0	-56,785	65,215
10755+00.00	0	0	122,000	72.3	246	308	0	-57,093	64,908
10756+00.00	0	0	122,000	72.7	269	336	0	-57,429	64,571
10756+06.22	0	0	122,000	85.6	18	23	0	-57,451	64,549
10756+21.89	0	0	122,000	23	32	40	0	-57,491	64,509
10756+78.06	0	0	122,000	3.5	28	35	0	-57,526	64,474
10757+00.00	0	0	122,000	34.3	15	19	0	-57,545	64,455
10758+00.00	0	0	122,000	53.9	163	204	0	-57,749	64,251
10759+00.00	0	0	122,000	55.8	203	254	0	-58,003	63,998
10760+00.00	0	0	122,000	44.1	185	231	0	-58,234	63,766
10761+00.00	0	0	122,000	37.8	152	190	0	-58,424	63,576
10762+00.00	0	0	122,000	41.6	147	184	0	-58,608	63,393
10763+00.00	0	0	122,000	51	171	214	0	-58,821	63,179
10764+00.00	0	0	122,000	44.4	177	221	0	-59,043	62,958
10764+25.52	0	0	122,000	55.9	47	59	0	-59,101	62,899
10765+00.00	0	0	122,000	33	123	154	0	-59,255	62,745
10766+00.00	0	0	122,000	57.2	167	209	0	-59,464	62,536
10767+00.00	0	0	122,000	60.8	219	274	0	-59,738	62,263
10767+84.09	0	0	122,000	2.1	98	123	0	-59,860	62,140
10768+23.12	0	0	122,000	0.9	2	3	0	-59,863	62,138

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	7

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10769+00.00	0	0	122,000	60.5	87	109	0	-59,971	62,029
10770+00.00	0	0	122,000	54.6	213	266	0	-60,238	61,763
10771+00.00	0	0	122,000	56.7	206	258	0	-60,495	61,505
10772+00.00	0	0	122,000	61	218	273	0	-60,768	61,233
10773+00.00	0	0	122,000	59.4	223	279	0	-61,046	60,954
10774+00.00	0	0	122,000	50	203	254	0	-61,300	60,700
10775+00.00	0	0	122,000	42.6	171	214	0	-61,514	60,486
10776+00.00	0	0	122,000	46	164	205	0	-61,719	60,281
10777+00.00	0	0	122,000	48.1	174	218	0	-61,936	60,064
10778+00.00	0	0	122,000	51.2	184	230	0	-62,166	59,834
10779+00.00	0	0	122,000	52.5	192	240	0	-62,406	59,594
10780+00.00	0	0	122,000	53.8	197	246	0	-62,653	59,348
10781+00.00	0	0	122,000	70.2	230	288	0	-62,940	59,060
10781+89.28	0	0	122,000	4.7	124	155	0	-63,095	58,905
10782+28.19	0	0	122,000	1.3	4	5	0	-63,100	58,900
10783+00.00	0	0	122,000	57.1	78	98	0	-63,198	58,803
10784+00.00	0	0	122,000	52.3	203	254	0	-63,451	58,549
10785+00.00	0	0	122,000	57.8	204	255	0	-63,706	58,294
10786+00.00	0	0	122,000	55	209	261	0	-63,968	58,033
10787+00.00	0	0	122,000	53	200	250	0	-64,218	57,783
10788+00.00	0	0	122,000	50.6	192	240	0	-64,458	57,543
10789+00.00	0	0	122,000	47.7	182	228	0	-64,685	57,315
10790+00.00	0	0	122,000	43.7	169	211	0	-64,896	57,104
10791+00.00	0	0	122,000	46.8	168	210	0	-65,106	56,894
10792+00.00	0	0	122,000	49.9	179	224	0	-65,330	56,670
10793+00.00	0	0	122,000	36.9	161	201	0	-65,531	56,469
10794+00.00	0	0	122,000	35.8	135	169	0	-65,700	56,300
10795+00.00	0	0	122,000	49.4	158	198	0	-65,898	56,103
10796+00.00	0	0	122,000	89.2	257	321	0	-66,219	55,781
10796+18.79	0	0	122,000	131.9	77	96	0	-66,315	55,685
10797+00.00	0	0	122,000	73.4	309	386	0	-66,701	55,299
10798+00.00	0	0	122,000	61.7	250	313	0	-67,014	54,986
10799+00.00	0	0	122,000	64.4	234	293	0	-67,306	54,694
10800+00.00	0	0	122,000	77.4	263	329	0	-67,635	54,365
10801+00.00	0	0	122,000	71.1	275	344	0	-67,979	54,021
10802+00.00	0	0	122,000	69.1	260	325	0	-68,304	53,696
10803+00.00	0	0	122,000	70.3	258	323	0	-68,626	53,374
10804+00.00	0	0	122,000	73.6	266	333	0	-68,959	53,041
10805+00.00	0	0	122,000	67.3	261	326	0	-69,285	52,715
10806+00.00	0	0	122,000	56.3	229	286	0	-69,571	52,429
10807+00.00	0	0	122,000	75.2	244	305	0	-69,876	52,124

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Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10808+00.00	0	0	122,000	57.2	245	306	0	-70,183	51,818
10808+34.48	0	0	122,000	0	37	46	0	-70,229	51,771
10809+00.00	0	0	122,000	5.7	2	3	0	-70,231	51,769
10810+00.00	0	0	122,000	36.7	79	99	0	-70,330	51,670
10811+00.00	0	0	122,000	33	129	161	0	-70,491	51,509
10812+00.00	0	0	122,000	41.7	138	173	0	-70,664	51,336
10813+00.00	0	0	122,000	30	133	166	0	-70,830	51,170
10814+00.00	0	0	122,000	38.3	126	158	0	-70,988	51,013
10815+00.00	0	0	122,000	36.8	139	174	0	-71,161	50,839
10816+00.00	0	0	122,000	36.8	136	170	0	-71,331	50,669
10817+00.00	0	0	122,000	29.8	123	154	0	-71,485	50,515
10818+00.00	0	0	122,000	32.2	115	144	0	-71,629	50,371
10819+00.00	0	0	122,000	25.5	107	134	0	-71,763	50,238
10820+00.00	0	0	122,000	39.4	120	150	0	-71,913	50,088
10821+00.00	0	0	122,000	41.5	150	188	0	-72,100	49,900
10822+00.00	0	0	122,000	44.8	160	200	0	-72,300	49,700
10823+00.00	0	0	122,000	45.1	166	208	0	-72,508	49,493
10824+00.00	0	0	122,000	41.5	160	200	0	-72,708	49,293
10825+00.00	0	0	122,000	37.7	147	184	0	-72,891	49,109
10826+00.00	0	0	122,000	44.1	151	189	0	-73,080	48,920
10827+00.00	0	0	122,000	47.5	170	213	0	-73,293	48,708
10828+00.00	0	0	122,000	38.7	160	200	0	-73,493	48,508
10829+00.00	0	0	122,000	43.4	152	190	0	-73,683	48,318
10830+00.00	0	0	122,000	38.3	151	189	0	-73,871	48,129
10831+00.00	0	0	122,000	35.4	136	170	0	-74,041	47,959
10832+00.00	0	0	122,000	44.3	148	185	0	-74,226	47,774
10832+51.21	0	0	122,000	0.7	43	54	0	-74,280	47,720
10832+90.64	0	0	122,000	0	1	1	0	-74,281	47,719
10833+00.00	0	0	122,000	1.5	0	0	0	-74,281	47,719
10834+00.00	0	0	122,000	40.8	78	98	0	-74,379	47,621
10835+00.00	0	0	122,000	44.8	159	199	0	-74,578	47,423
10835+16.74	0	0	122,000	54.8	31	39	0	-74,616	47,384
10836+00.00	0	0	122,000	34.2	137	171	0	-74,788	47,213
10837+00.00	0	0	122,000	39.1	136	170	0	-74,958	47,043
10838+00.00	0	0	122,000	42	150	188	0	-75,145	46,855
10839+00.00	0	0	122,000	37	146	183	0	-75,328	46,673
10840+00.00	0	0	122,000	38.5	140	175	0	-75,503	46,498
10841+00.00	0	0	122,000	37.4	141	176	0	-75,679	46,321
10842+00.00	0	0	122,000	44.8	152	190	0	-75,869	46,131
10843+00.00	0	0	122,000	55.3	185	231	0	-76,100	45,900
10844+00.00	0	0	122,000	64.7	222	278	0	-76,378	45,623

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	8

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10845+00.00	0	0	122,000	53.1	218	273	0	-76,650	45,350
10846+00.00	0	0	122,000	53.3	197	246	0	-76,896	45,104
10847+00.00	0	0	122,000	59.9	210	263	0	-77,159	44,841
10848+00.00	0	0	122,000	51.8	207	259	0	-77,418	44,583
10849+00.00	0	0	122,000	54.7	197	246	0	-77,664	44,336
10850+00.00	0	0	122,000	54.8	203	254	0	-77,918	44,083
10850+86.13	0	0	122,000	68.7	197	246	0	-78,164	43,836
10851+00.00	0	0	122,000	44.4	29	36	0	-78,200	43,800
10852+00.00	0	0	122,000	57.6	189	236	0	-78,436	43,564
10853+00.00	0	0	122,000	58.2	214	268	0	-78,704	43,296
10854+00.00	0	0	122,000	70.6	239	299	0	-79,003	42,998
10855+00.00	0	0	122,000	44.9	214	268	0	-79,270	42,730
10856+00.00	0	0	122,000	48.8	174	218	0	-79,488	42,513
10857+00.00	0	0	122,000	56.4	195	244	0	-79,731	42,269
10858+00.00	0	0	122,000	56.7	209	261	0	-79,993	42,008
10859+00.00	0	0	122,000	46.8	192	240	0	-80,233	41,768
10860+00.00	0	0	122,000	57.8	194	243	0	-80,475	41,525
10861+00.00	0	0	122,000	37.5	176	220	0	-80,695	41,305
10861+50.34	0	0	122,000	0	35	44	0	-80,739	41,261
10861+88.42	0	0	122,000	3.4	2	3	0	-80,741	41,259
10862+00.00	0	0	122,000	6.9	2	3	0	-80,744	41,256
10863+00.00	0	0	122,000	63.5	130	163	0	-80,906	41,094
10864+00.00	0	0	122,000	70.1	247	309	0	-81,215	40,785
10865+00.00	0	0	122,000	62.5	246	308	0	-81,523	40,478
10866+00.00	0	0	122,000	44.1	197	246	0	-81,769	40,231
10867+00.00	0	0	122,000	60.4	194	243	0	-82,011	39,989
10868+00.00	0	0	122,000	63.1	229	286	0	-82,298	39,703
10869+00.00	0	0	122,000	59.1	226	283	0	-82,580	39,420
10870+00.00	0	0	122,000	61.1	223	279	0	-82,859	39,141
10871+00.00	0	0	122,000	55.5	216	270	0	-83,129	38,871
10872+00.00	0	0	122,000	36.8	171	214	0	-83,343	38,658
10873+00.00	0	0	122,000	40.6	143	179	0	-83,521	38,479
10873+60.49	0	0	122,000	1.9	48	60	0	-83,581	38,419
10874+01.10	0	0	122,000	0.8	2	3	0	-83,584	38,416
10875+00.00	0	0	122,000	36.9	69	86	0	-83,670	38,330
10876+00.00	0	0	122,000	37.5	138	173	0	-83,843	38,158
10877+00.00	0	0	122,000	37.9	140	175	0	-84,018	37,983
10878+00.00	0	0	122,000	39.9	144	180	0	-84,198	37,803
10879+00.00	0	0	122,000	68.1	200	250	0	-84,448	37,553
10879+37.46	0	0	122,000	89	109	136	0	-84,584	37,416
10880+00.00	0	0	122,000	64.1	177	221	0	-84,805	37,195

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Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10881+00.00	0	0	122,000	44.1	200	250	0	-85,055	36,945
10882+00.00	0	0	122,000	40.4	156	195	0	-85,250	36,750
10883+00.00	0	0	122,000	37.9	145	181	0	-85,431	36,569
10884+00.00	0	0	122,000	34.4	134	168	0	-85,599	36,401
10885+00.00	0	0	122,000	29.8	119	149	0	-85,748	36,253
10886+00.00	0	0	122,000	30.5	112	140	0	-85,888	36,113
10887+00.00	0	0	122,000	37.1	125	156	0	-86,044	35,956
10888+00.00	0	0	122,000	32.6	129	161	0	-86,205	35,795
10888+96.04	0	0	122,000	3.9	65	81	0	-86,286	35,714
10889+54.23	0	0	122,000	1.2	5	6	0	-86,293	35,708
10890+00.00	0	0	122,000	45.7	40	50	0	-86,343	35,658
10891+00.00	0	0	122,000	45.5	169	211	0	-86,554	35,446
10892+00.00	0	0	122,000	63.2	201	251	0	-86,805	35,195
10893+00.00	0	0	122,000	51.9	213	266	0	-87,071	34,929
10894+00.00	0	0	122,000	46.1	181	226	0	-87,298	34,703
10895+00.00	0	0	122,000	50.6	179	224	0	-87,521	34,479
10896+00.00	0	0	122,000	57.9	201	251	0	-87,773	34,228
10897+00.00	0	0	122,000	67.7	233	291	0	-88,064	33,936
10898+00.00	0	0	122,000	71	257	321	0	-88,385	33,615
10899+00.00	0	0	122,000	78.9	278	348	0	-88,733	33,268
10900+00.00	0	0	122,000	81.5	297	371	0	-89,104	32,896
10901+00.00	0	0	122,000	68.1	277	346	0	-89,450	32,550
10902+00.00	0	0	122,000	62.3	241	301	0	-89,751	32,249
10903+00.00	0	0	122,000	60	226	283	0	-90,034	31,966
10904+00.00	0	0	122,000	48.2	200	250	0	-90,284	31,716
10905+00.00	0	0	122,000	52.9	187	234	0	-90,518	31,483
10906+00.00	0	0	122,000	49.8	190	238	0	-90,755	31,245
10907+00.00	0	0	122,000	36.7	160	200	0	-90,955	31,045
10907+40.97	0	0	122,000	49.2	65	81	0	-91,036	30,964
10908+00.00	0	0	122,000	33	90	113	0	-91,149	30,851
10909+00.00	0	0	122,000	43	141	176	0	-91,325	30,675
10910+00.00	0	0	122,000	45.1	163	204	0	-91,529	30,471
10911+00.00	0	0	122,000	59.2	193	241	0	-91,770	30,230
10912+00.00	0	0	122,000	59.3	219	274	0	-92,044	29,956
10913+00.00	0	0	122,000	67.1	234	293	0	-92,336	29,664
10914+00.00	0	0	122,000	42.5	203	254	0	-92,590	29,410
10914+35.53	0	0	122,000	0	28	35	0	-92,625	29,375
10914+74.14	0	0	122,000	0.4	0	0	0	-92,625	29,375
10915+00.00	0	0	122,000	33.5	16	20	0	-92,645	29,355
10916+00.00	0	0	122,000	71.1	194	243	0	-92,888	29,113
10917+00.00	0	0	122,000	71	263	329	0	-93,216	28,784

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	9

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10918+00.00	0	0	122,000	63.1	248	310	0	-93,526	28,474
10919+00.00	0	0	122,000	48.8	207	259	0	-93,785	28,215
10920+07.61	0	0	122,000	2	101	126	0	-93,911	28,089
10920+49.42	0	0	122,000	3.3	4	5	0	-93,916	28,084
10921+00.00	0	0	122,000	52.1	52	65	0	-93,981	28,019
10922+00.00	0	0	122,000	47.3	184	230	0	-94,211	27,789
10923+00.00	0	0	122,000	43.6	168	210	0	-94,421	27,579
10924+00.00	0	0	122,000	50.8	175	219	0	-94,640	27,360
10925+00.00	0	0	122,000	44.7	177	221	0	-94,861	27,139
10926+00.00	0	0	122,000	44.5	165	206	0	-95,068	26,933
10927+00.00	0	0	122,000	49.4	174	218	0	-95,285	26,715
10928+00.00	0	0	122,000	46.8	178	223	0	-95,508	26,493
10929+00.00	0	0	122,000	32.8	147	184	0	-95,691	26,309
10929+16.79	0	0	122,000	51.4	26	33	0	-95,724	26,276
10930+00.00	0	0	122,000	43.5	146	183	0	-95,906	26,094
10931+00.00	0	0	122,000	50.2	174	218	0	-96,124	25,876
10932+00.00	0	0	122,000	48.8	183	229	0	-96,353	25,648
10933+00.00	0	0	122,000	49	181	226	0	-96,579	25,421
10934+00.00	0	0	122,000	54.6	192	240	0	-96,819	25,181
10935+00.00	0	0	122,000	3.5	108	135	0	-96,954	25,046
10935+07.60	0	0	122,000	0.8	1	1	0	-96,955	25,045
10935+48.52	0	0	122,000	0.5	1	1	-128	-97,084	24,916
10936+00.00	0	0	122,000	56.2	54	68	0	-97,152	24,848
10937+00.00	0	0	122,000	52.6	201	251	0	-97,403	24,597
10938+00.00	0	0	122,000	51.2	192	240	0	-97,643	24,357
10939+00.00	0	0	122,000	52	191	239	0	-97,882	24,118
10940+00.00	0	0	122,000	51.9	192	240	0	-98,122	23,878
10940+75.97	0	0	122,000	0.5	74	93	0	-98,214	23,786
10941+21.56	0	0	122,000	3.2	3	4	0	-98,218	23,782
10942+00.00	0	0	122,000	68.5	104	130	0	-98,348	23,652
10943+00.00	0	0	122,000	58.8	236	295	0	-98,643	23,357
10944+00.00	0	0	122,000	63.6	227	284	0	-98,927	23,073
10945+00.00	0	0	122,000	38.3	189	236	0	-99,163	22,837
10946+00.00	0	0	122,000	58.9	180	225	0	-99,388	22,612
10947+00.00	0	0	122,000	61.4	223	279	0	-99,667	22,333
10948+00.00	0	0	122,000	51.8	210	263	0	-99,929	22,071
10949+00.00	0	0	122,000	63.7	214	268	0	-100,197	21,803
10950+00.00	0	0	122,000	53.5	217	271	0	-100,468	21,532
10951+00.00	0	0	122,000	67.4	224	280	0	-100,748	21,252
10952+00.00	0	0	122,000	61.1	238	298	0	-101,046	20,955
10953+00.00	0	0	122,000	56.9	219	274	0	-101,319	20,681

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10954+00.00	0	0	122,000	54.6	206	258	0	-101,577	20,423
10955+00.00	0	0	122,000	48.4	191	239	0	-101,816	20,185
10956+00.00	0	0	122,000	44.2	171	214	0	-102,029	19,971
10957+00.00	0	0	122,000	50.9	176	220	0	-102,249	19,751
10957+80.39	0	0	122,000	0.6	77	96	0	-102,346	19,655
10958+20.96	0	0	122,000	0.7	1	1	0	-102,347	19,653
10959+00.00	0	0	122,000	68.4	101	126	0	-102,473	19,527
10960+00.00	0	0	122,000	55.4	229	286	0	-102,759	19,241
10961+00.00	0	0	122,000	52.7	200	250	0	-103,009	18,991
10962+00.00	0	0	122,000	44.8	181	226	0	-103,236	18,765
10963+00.00	0	0	122,000	64.8	203	254	0	-103,489	18,511
10964+00.00	0	0	122,000	41.7	197	246	0	-103,736	18,265
10965+00.00	0	0	122,000	53.8	177	221	0	-103,957	18,043
10965+01.41	0	0	122,000	54.6	3	4	0	-103,961	18,040
10966+00.00	0	0	122,000	55.4	201	251	0	-104,212	17,788
10967+00.00	0	0	122,000	67.2	227	284	0	-104,496	17,505
10967+48.77	0	0	122,000	0	61	76	0	-104,572	17,428
10969+00.00	0	0	122,000	54.2	100	125	0	-104,697	17,303
10970+00.00	0	0	122,000	58.3	208	260	0	-104,957	17,043
10971+00.00	0	0	122,000	61.3	221	276	0	-105,233	16,767
10972+00.00	0	0	122,000	54.2	214	268	0	-105,501	16,500
10973+00.00	0	0	122,000	48.9	191	239	0	-105,739	16,261
10974+00.00	0	0	122,000	55.9	194	243	0	-105,982	16,018
10975+00.00	0	0	122,000	64.3	223	279	0	-106,261	15,740
10976+00.00	0	0	122,000	70.8	250	313	0	-106,573	15,427
10977+00.00	0	0	122,000	61.9	246	308	0	-106,881	15,120
10978+00.00	0	0	122,000	55.3	217	271	0	-107,152	14,848
10979+00.00	0	0	122,000	62.3	218	273	0	-107,424	14,576
10980+00.00	0	0	122,000	61.3	229	286	0	-107,711	14,290
10981+00.00	0	0	122,000	53.7	213	266	0	-107,977	14,023
10982+00.00	0	0	122,000	92.9	271	339	0	-108,316	13,685
10983+00.00	0	0	122,000	53.3	271	339	0	-108,654	13,346
10983+17.55	0	0	122,000	36.4	29	36	0	-108,691	13,310
10983+55.31	0	0	122,000	32.4	48	60	0	-108,751	13,250
10984+00.00	0	0	122,000	85.5	98	123	0	-108,873	13,127
10985+00.00	0	0	122,000	107.2	357	446	0	-109,319	12,681
10986+00.00	0	0	122,000	136.7	452	565	0	-109,884	12,116
10987+00.00	0	0	122,000	62	368	460	0	-110,344	11,656
10988+00.00	0	0	122,000	41	191	239	0	-110,583	11,417
10988+98.59	0	0	122,000	19.8	111	139	0	-110,722	11,278
10989+00.00	0	0	122,000	20	1	1	0	-110,723	11,277

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	10

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
10990+00.00	0	0	122,000	53.6	136	170	0	-110,893	11,107
10991+00.00	0	0	122,000	48.6	189	236	0	-111,129	10,871
10992+00.00	0	0	122,000	62.4	206	258	0	-111,387	10,613
10993+00.00	0	0	122,000	64.7	235	294	0	-111,681	10,320
10994+00.00	0	0	122,000	85.4	278	348	0	-112,028	9,972
10995+00.00	0	0	122,000	79.9	306	383	0	-112,411	9,590
10995+54.78	0	0	122,000	60.8	143	179	0	-112,589	9,411
10995+92.53	0	0	122,000	52.9	79	99	0	-112,688	9,312
10996+00.00	0	0	122,000	61.7	16	20	0	-112,708	9,292
10997+00.00	0	0	122,000	78.6	260	325	0	-113,033	8,967
10998+00.00	0	0	122,000	104.6	339	424	0	-113,457	8,543
10999+00.00	0	0	122,000	99.3	378	473	0	-113,929	8,071
11000+00.00	0	0	122,000	85.6	342	428	0	-114,357	7,643
11001+00.00	0	0	122,000	75.8	299	374	0	-114,731	7,270
11002+00.00	0	0	122,000	60.5	252	315	0	-115,046	6,955
11003+00.00	0	0	122,000	63	229	286	0	-115,332	6,668
11004+00.00	0	0	122,000	65.1	237	296	0	-115,628	6,372
11005+00.00	0	0	122,000	58.9	230	288	0	-115,916	6,085
11006+00.00	0	0	122,000	44.4	191	239	0	-116,154	5,846
11007+00.00	0	0	122,000	79.2	229	286	0	-116,441	5,560
11007+96.54	0	0	122,000	183.5	470	588	0	-117,028	4,972
11008+00.00	0	0	122,000	156.6	22	28	0	-117,056	4,945
11009+00.00	0	0	122,000	89.8	456	570	0	-117,626	4,375
11010+00.00	0	0	122,000	65.3	287	359	0	-117,984	4,016
11010+07.73	0	0	122,000	55.8	17	21	0	-118,006	3,995
11010+45.49	0	0	122,000	49.4	74	93	0	-118,098	3,902
11011+00.00	0	0	122,000	86.1	137	171	0	-118,269	3,731
11012+00.00	0	0	122,000	84.8	316	395	0	-118,664	3,336
11013+00.00	0	0	122,000	73.3	293	366	0	-119,031	2,970
11014+00.00	0	0	122,000	70.9	267	334	0	-119,364	2,636
11015+00.00	0	0	122,000	87.7	294	368	0	-119,732	2,268
11016+00.00	0	0	122,000	88.5	326	408	0	-120,139	1,861
11017+00.00	0	0	122,000	78.2	309	386	0	-120,526	1,475
11018+00.00	0	0	122,000	74.2	282	353	0	-120,878	1,122
11019+00.00	0	0	122,000	100.5	324	405	0	-121,283	717
11020+00.50	0	0	122,000	22.7	229	286	0	-121,569	431
11020+41.60	0	0	122,000	0	17	21	0	-121,591	410
11020+93.01	0	0	122,000	55.2	53	66	0	-121,657	343
11021+21.70	0	0	122,000	98.8	82	103	0	-121,759	241
11022+00.00	0	0	122,000	116	306	383	0	-122,142	-142
11023+00.00	0	0	122,000	102.3	404	505	0	-122,647	-647

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	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11024+00.00	0	0	122,000	98.8	372	465	0	-123,112	-1,112
11025+00.00	0	0	122,000	122	409	511	0	-123,623	-1,623
11025+50.06	0	0	122,000	44.1	159	199	0	-123,822	-1,822
11026+00.00	0	0	122,000	44.1	87	109	0	-123,931	-1,931
11026+72.97	0	0	122,000	98.1	184	230	0	-124,161	-2,161
11027+00.00	0	0	122,000	95.1	91	114	0	-124,274	-2,274
11027+92.71	0	0	122,000	68.8	286	358	0	-124,632	-2,632
11028+10.13	0	0	122,000	75.5	47	59	0	-124,691	-2,691
11029+00.00	0	0	122,000	81.8	257	321	0	-125,012	-3,012
11030+00.00	0	0	122,000	62	266	333	0	-125,344	-3,344
11031+00.00	0	0	122,000	73.2	250	313	0	-125,657	-3,657
11032+00.00	0	0	122,000	70.3	266	333	0	-125,989	-3,989
11033+00.00	0	0	122,000	74.3	268	335	0	-126,324	-4,324
11033+51.83	0	0	122,000	35	108	135	0	-126,459	-4,459
11033+90.02	0	0	122,000	38.3	52	65	0	-126,524	-4,524
11034+00.00	0	0	122,000	38.6	12	15	0	-126,539	-4,539
11035+00.00	0	0	122,000	72	205	256	0	-126,796	-4,796
11036+00.00	0	0	122,000	72.2	267	334	0	-127,129	-5,129
11037+00.00	0	0	122,000	66.3	256	320	0	-127,449	-5,449
11038+00.00	0	0	122,000	68.7	250	313	0	-127,762	-5,762
11039+00.00	0	0	122,000	65.1	248	310	0	-128,072	-6,072
11040+00.00	0	0	122,000	57.3	227	284	0	-128,356	-6,356
11041+00.00	0	0	122,000	69	234	293	0	-128,648	-6,648
11042+00.00	0	0	122,000	62	243	304	0	-128,952	-6,952
11043+00.00	0	0	122,000	56.7	220	275	0	-129,227	-7,227
11044+00.00	0	0	122,000	54.5	206	258	0	-129,484	-7,484
11045+00.00	0	0	122,000	68.5	228	285	0	-129,769	-7,769
11046+00.00	0	0	122,000	64.6	246	308	0	-130,077	-8,077
11047+00.00	0	0	122,000	79	266	333	0	-130,409	-8,409
11048+00.00	0	0	122,000	83.5	301	376	0	-130,786	-8,786
11048+83.41	0	0	122,000	39.1	193	241	0	-131,027	-9,027
11049+21.16	0	0	122,000	39.7	55	69	-39	-131,135	-9,135
11050+00.00	0	0	122,000	93.8	191	239	0	-131,373	-9,373
11050+59.71	0	0	122,000	39	151	189	0	-131,562	-9,562
11051+18.90	0	0	122,000	45.8	93	116	0	-131,678	-9,678
11052+00.00	0	0	122,000	85	193	241	0	-131,920	-9,920
11053+00.00	0	0	122,000	60.8	270	338	0	-132,257	-10,257
11053+16.90	0	0	122,000	98.8	54	68	0	-132,325	-10,325
11053+35.24	0	0	122,000	78.9	60	75	0	-132,400	-10,400
11054+00.00	0	0	122,000	90.6	199	249	0	-132,648	-10,648
11055+00.00	0	0	122,000	118.5	387	484	0	-133,132	-11,132

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	11

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11055+06.72	0	0	122,000	118.8	36	45	0	-133,177	-11,177
11055+54.67	0	0	122,000	85.7	182	228	0	-133,405	-11,405
11056+34.74	0	0	122,000	53	206	258	0	-133,662	-11,662
11057+00.00	0	0	122,000	130.1	216	270	0	-133,932	-11,932
11057+08.20	0	0	122,000	133	47	59	0	-133,991	-11,991
11058+00.00	0	0	122,000	127.7	436	545	0	-134,536	-12,536
11059+00.00	0	0	122,000	115	449	561	0	-135,097	-13,097
11060+00.00	0	0	122,000	113.1	422	528	0	-135,625	-13,625
11061+00.00	0	0	122,000	114.9	422	528	0	-136,152	-14,152
11062+00.00	0	0	122,000	107.9	413	516	0	-136,668	-14,668
11062+26.62	0	0	122,000	110.7	114	143	0	-136,811	-14,811
11063+00.00	0	0	122,000	92.2	270	338	0	-137,148	-15,148
11063+45.58	0	0	122,000	81.6	151	189	0	-137,337	-15,337
11064+00.00	0	0	122,000	87	165	206	0	-137,543	-15,543
11065+00.00	0	0	122,000	111.8	368	460	0	-138,003	-16,003
11066+00.00	0	0	122,000	107.4	406	508	0	-138,511	-16,511
11067+00.00	0	0	122,000	68	325	406	0	-138,917	-16,917
11068+00.00	0	0	122,000	77.5	269	336	0	-139,253	-17,253
11068+81.23	0	0	122,000	59.1	209	261	0	-139,515	-17,515
11069+19.06	0	0	122,000	54.4	80	100	0	-139,615	-17,615
11070+00.00	0	0	122,000	66.8	178	223	0	-139,837	-17,837
11071+00.00	0	0	122,000	77.4	267	334	0	-140,171	-18,171
11072+00.00	0	0	122,000	97.7	324	405	0	-140,576	-18,576
11072+61.51	0	0	122,000	68.9	194	243	0	-140,818	-18,818
11072+93.70	0	0	122,000	3.2	43	54	0	-140,872	-18,872
11073+57.25	0	0	122,000	2.1	6	8	0	-140,880	-18,880
11073+88.84	0	0	122,000	76.2	46	58	0	-140,937	-18,937
11075+00.00	0	0	122,000	84.9	327	409	0	-141,346	-19,346
11075+58.41	0	0	122,000	95.1	200	250	0	-141,596	-19,596
11076+00.00	0	0	122,000	80.2	130	163	0	-141,758	-19,758
11076+69.50	0	0	122,000	28.3	143	179	0	-141,937	-19,937
11077+07.25	0	0	122,000	23.3	36	45	0	-141,982	-19,982
11078+00.00	0	0	122,000	43.6	113	141	0	-142,123	-20,123
11079+00.00	0	0	122,000	41.7	158	198	0	-142,321	-20,321
11080+00.00	0	0	122,000	35.1	142	178	0	-142,498	-20,498
11081+00.00	0	0	122,000	29.2	119	149	0	-142,647	-20,647
11081+12.61	0	0	122,000	33.4	16	20	0	-142,667	-20,667
11082+00.00	0	0	122,000	46.1	126	158	0	-142,825	-20,825
11083+00.00	0	0	122,000	46.2	171	214	0	-143,038	-21,038
11084+00.00	0	0	122,000	31.7	144	180	0	-143,218	-21,218
11085+00.00	0	0	122,000	48.3	148	185	0	-143,403	-21,403

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11085+72.17	0	0	122,000	19.1	92	115	0	-143,518	-21,518
11086+09.92	0	0	122,000	17	25	31	0	-143,550	-21,550
11087+00.00	0	0	122,000	43.7	100	125	0	-143,675	-21,675
11088+00.00	0	0	122,000	45.1	164	205	0	-143,880	-21,880
11089+00.00	0	0	122,000	53.5	183	229	0	-144,108	-22,108
11090+00.00	0	0	122,000	49.6	191	239	0	-144,347	-22,347
11091+00.00	0	0	122,000	61.6	206	258	0	-144,605	-22,605
11092+00.00	0	0	122,000	66.9	238	298	0	-144,902	-22,902
11093+00.00	0	0	122,000	58.9	233	291	0	-145,193	-23,193
11094+00.00	0	0	122,000	63.5	227	284	0	-145,477	-23,477
11095+00.00	0	0	122,000	54.7	219	274	0	-145,751	-23,751
11096+00.00	0	0	122,000	57	207	259	0	-146,010	-24,010
11097+00.00	0	0	122,000	52	202	253	0	-146,262	-24,262
11098+00.00	0	0	122,000	22.9	139	174	0	-146,436	-24,436
11098+12.77	0	0	122,000	2.3	7	9	0	-146,445	-24,445
11098+57.85	0	0	122,000	3.2	5	6	0	-146,451	-24,451
11099+00.00	0	0	122,000	45.3	37	46	0	-146,497	-24,497
11100+00.00	0	0	122,000	47.1	171	214	0	-146,711	-24,711
11101+00.00	0	0	122,000	46.7	174	218	0	-146,928	-24,928
11102+00.00	0	0	122,000	51.2	181	226	0	-147,155	-25,155
11103+00.00	0	0	122,000	56.9	200	250	0	-147,405	-25,405
11104+00.00	0	0	122,000	50.6	199	249	0	-147,653	-25,653
11105+00.00	0	0	122,000	46.9	181	226	0	-147,880	-25,880
11106+00.00	0	0	122,000	50.8	181	226	0	-148,106	-26,106
11107+00.00	0	0	122,000	40.3	169	211	0	-148,317	-26,317
11108+00.00	0	0	122,000	49.3	166	208	0	-148,525	-26,525
11108+26.16	0	0	122,000	58.2	55	69	0	-148,593	-26,593
11109+00.00	0	0	122,000	48.9	143	179	0	-148,772	-26,772
11110+00.00	0	0	122,000	64.1	209	261	0	-149,033	-27,033
11111+00.00	0	0	122,000	59	228	285	0	-149,318	-27,318
11112+00.00	0	0	122,000	12.3	132	165	0	-149,483	-27,483
11113+00.00	0	0	122,000	63.8	141	176	0	-149,660	-27,660
11114+00.00	0	0	122,000	52.9	216	270	0	-149,930	-27,930
11115+00.00	0	0	122,000	50.6	192	240	0	-150,170	-28,170
11116+00.00	0	0	122,000	43.5	174	218	0	-150,387	-28,387
11117+00.00	0	0	122,000	41.7	158	198	0	-150,585	-28,585
11118+00.00	0	0	122,000	40	151	189	0	-150,773	-28,773
11119+00.00	0	0	122,000	43.7	155	194	0	-150,967	-28,967
11120+00.00	0	0	122,000	49.5	173	216	0	-151,183	-29,183
11120+65.34	0	0	122,000	44.6	116	145	0	-151,328	-29,328
11121+00.00	0	0	122,000	37.1	50	63	0	-151,391	-29,391

This document was originally issued and sealed by Eric R. Molbert, Registration Number PE- 4222, on 02/15/16 and the original document is stored at the North Dakota Department of Transportation

Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	12

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11122+00.00	0	0	122,000	50.3	162	203	0	-151,593	-29,593
11123+00.00	0	0	122,000	57.6	200	250	0	-151,843	-29,843
11124+00.00	0	0	122,000	78.8	253	316	0	-152,160	-30,160
11124+51.89	0	0	122,000	0	78	98	0	-152,257	-30,257
11125+03.62	0	0	122,000	0.4	0	0	0	-152,257	-30,257
11126+00.00	0	0	122,000	43.6	77	96	0	-152,353	-30,353
11127+00.00	0	0	122,000	45.9	166	208	0	-152,561	-30,561
11128+00.00	0	0	122,000	52.3	182	228	0	-152,788	-30,788
11129+00.00	0	0	122,000	50.3	190	238	0	-153,026	-31,026
11130+00.00	0	0	122,000	34.6	157	196	0	-153,222	-31,222
11131+00.00	0	0	122,000	49.7	156	195	0	-153,417	-31,417
11132+00.00	0	0	122,000	37.5	161	201	0	-153,618	-31,618
11132+16.51	0	0	122,000	56.7	31	39	0	-153,657	-31,657
11133+00.00	0	0	122,000	35.9	141	176	0	-153,833	-31,833
11134+00.00	0	0	122,000	61	179	224	0	-154,057	-32,057
11135+00.00	0	0	122,000	46.3	199	249	0	-154,306	-32,306
11136+00.00	0	0	122,000	38.8	158	198	0	-154,503	-32,503
11137+00.00	0	0	122,000	33	133	166	0	-154,670	-32,670
11138+00.00	0	0	122,000	50.2	154	193	0	-154,862	-32,862
11139+00.00	0	0	122,000	38.9	165	206	0	-155,068	-33,068
11140+00.00	0	0	122,000	41.3	149	186	0	-155,255	-33,255
11141+00.00	0	0	122,000	46.5	163	204	0	-155,458	-33,458
11142+00.00	0	0	122,000	46.8	173	216	0	-155,675	-33,675
11143+00.00	0	0	122,000	52	183	229	0	-155,903	-33,903
11144+00.00	0	0	122,000	62.9	213	266	0	-156,170	-34,170
11145+00.00	0	0	122,000	57.9	224	280	0	-156,450	-34,450
11146+00.00	0	0	122,000	62	222	278	0	-156,727	-34,727
11147+00.00	0	0	122,000	61.7	229	286	0	-157,013	-35,013
11148+00.00	0	0	122,000	53.1	213	266	0	-157,280	-35,280
11149+00.00	0	0	122,000	63.1	215	269	0	-157,548	-35,548
11150+00.00	0	0	122,000	61.2	230	288	0	-157,836	-35,836
11150+68.19	0	0	122,000	2.4	82	103	0	-157,938	-35,938
11151+06.14	0	0	122,000	0.6	2	3	0	-157,941	-35,941
11152+00.00	0	0	122,000	73.7	127	159	0	-158,100	-36,100
11153+00.00	0	0	122,000	49.3	228	285	0	-158,385	-36,385
11154+00.00	0	0	122,000	58.3	199	249	0	-158,633	-36,633
11155+00.00	0	0	122,000	58.1	216	270	0	-158,903	-36,903
11156+00.00	0	0	122,000	54.6	209	261	0	-159,165	-37,165
11157+00.00	0	0	122,000	43.5	182	228	0	-159,392	-37,392
11158+00.00	0	0	122,000	43	160	200	0	-159,592	-37,592
11159+00.00	0	0	122,000	44	161	201	0	-159,793	-37,793

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11159+65.50	0	0	122,000	28	89	111	0	-159,905	-37,905
11160+04.25	0	0	122,000	26.4	39	49	0	-159,953	-37,953
11161+00.00	0	0	122,000	53.3	139	174	0	-160,127	-38,127
11162+00.00	0	0	122,000	33.1	160	200	0	-160,327	-38,327
11163+00.00	0	0	122,000	36	128	160	0	-160,487	-38,487
11164+00.00	0	0	122,000	34.4	130	163	0	-160,650	-38,650
11165+00.00	0	0	122,000	30.9	121	151	0	-160,801	-38,801
11166+00.00	0	0	122,000	28.9	111	139	0	-160,940	-38,940
11167+00.00	0	0	122,000	20.7	92	115	0	-161,055	-39,055
11167+77.03	0	0	122,000	36.7	83	104	0	-161,158	-39,158
11168+00.00	0	0	122,000	24.6	24	30	0	-161,188	-39,188
11169+00.00	0	0	122,000	13.1	70	88	0	-161,276	-39,276
11170+00.00	0	0	122,000	15.1	52	65	0	-161,341	-39,341
11171+00.00	0	0	122,000	10.2	47	59	0	-161,400	-39,400
11172+00.00	0	0	122,000	6.3	31	39	0	-161,438	-39,438
11173+00.00	0	0	122,000	19.2	47	59	0	-161,497	-39,497
11174+00.00	0	0	122,000	25.8	83	104	0	-161,601	-39,601
11175+00.00	0	0	122,000	31	105	131	0	-161,732	-39,732
11176+00.00	0	0	122,000	41	133	166	0	-161,898	-39,898
11177+00.00	0	0	122,000	56.2	180	225	0	-162,123	-40,123
11177+46.85	0	0	122,000	0	50	63	0	-162,186	-40,186
11177+96.07	0	0	122,000	2.2	2	3	-186	-162,374	-40,374
11179+00.00	0	0	122,000	44.3	88	110	0	-162,484	-40,484
11180+00.00	0	0	122,000	52	178	223	0	-162,707	-40,707
11181+00.00	0	0	122,000	46.8	183	229	0	-162,936	-40,936
11182+00.00	0	0	122,000	35.8	153	191	0	-163,127	-41,127
11183+00.00	0	0	122,000	47.1	154	193	0	-163,319	-41,319
11184+00.00	0	0	122,000	41.6	164	205	0	-163,524	-41,524
11185+00.00	0	0	122,000	52.7	175	219	0	-163,743	-41,743
11186+00.00	0	0	122,000	40.4	172	215	0	-163,958	-41,958
11187+00.00	0	0	122,000	34.4	139	174	0	-164,132	-42,132
11188+00.00	0	0	122,000	33.7	126	158	0	-164,289	-42,289
11189+00.00	0	0	122,000	49.7	154	193	0	-164,482	-42,482
11190+00.00	0	0	122,000	54.2	192	240	0	-164,722	-42,722
11191+00.00	0	0	122,000	47.7	189	236	0	-164,958	-42,958
11192+00.00	0	0	122,000	43.8	169	211	0	-165,169	-43,169
11193+00.00	0	0	122,000	47.3	169	211	0	-165,381	-43,381
11194+00.00	0	0	122,000	50.9	182	228	0	-165,608	-43,608
11195+00.00	0	0	122,000	54.8	196	245	0	-165,853	-43,853
11196+00.00	0	0	122,000	55.6	204	255	0	-166,108	-44,108
11197+00.00	0	0	122,000	53.1	201	251	0	-166,359	-44,359

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	13

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11198+00.00	0	0	122,000	53.4	197	246	0	-166,606	-44,606
11199+00.00	0	0	122,000	52.3	196	245	0	-166,851	-44,851
11200+00.00	0	0	122,000	47.8	185	231	0	-167,082	-45,082
11201+00.00	0	0	122,000	49.5	180	225	0	-167,307	-45,307
11201+18.20	0	0	122,000	67.6	43	54	0	-167,361	-45,361
11202+00.00	0	0	122,000	45.2	168	210	0	-167,571	-45,571
11203+00.00	0	0	122,000	59	193	241	0	-167,812	-45,812
11203+85.97	0	0	122,000	1.8	98	123	0	-167,934	-45,934
11204+24.60	0	0	122,000	1.1	2	3	0	-167,937	-45,937
11205+00.00	0	0	122,000	46.4	65	81	0	-168,018	-46,018
11206+00.00	0	0	122,000	41.3	162	203	0	-168,221	-46,221
11207+00.00	0	0	122,000	41.5	153	191	0	-168,412	-46,412
11207+18.41	0	0	122,000	55.9	36	45	0	-168,457	-46,457
11208+00.00	0	0	122,000	54.9	164	205	0	-168,662	-46,662
11209+00.00	0	0	122,000	55.9	205	256	0	-168,918	-46,918
11210+00.00	0	0	122,000	73.4	239	299	0	-169,217	-47,217
11211+00.00	0	0	122,000	59.6	246	308	0	-169,524	-47,524
11212+00.00	0	0	122,000	51	205	256	0	-169,781	-47,781
11213+00.00	0	0	122,000	51.6	190	238	0	-170,018	-48,018
11214+00.00	0	0	122,000	41	171	214	0	-170,232	-48,232
11215+00.00	0	0	122,000	68.5	203	254	0	-170,486	-48,486
11216+00.00	0	0	122,000	53.3	226	283	0	-170,768	-48,768
11217+00.00	0	0	122,000	68.6	226	283	0	-171,051	-49,051
11218+00.00	0	0	122,000	76.2	268	335	0	-171,386	-49,386
11219+00.00	0	0	122,000	76.4	283	354	0	-171,739	-49,739
11220+00.00	0	0	122,000	72.6	276	345	0	-172,084	-50,084
11221+00.00	0	0	122,000	75.2	274	343	0	-172,427	-50,427
11222+00.00	0	0	122,000	61.7	254	318	0	-172,744	-50,744
11223+00.00	0	0	122,000	61.9	229	286	0	-173,031	-51,031
11224+00.00	0	0	122,000	66.3	237	296	0	-173,327	-51,327
11225+00.00	0	0	122,000	63.4	240	300	0	-173,627	-51,627
11226+00.00	0	0	122,000	73.4	253	316	0	-173,943	-51,943
11227+00.00	0	0	122,000	70.6	267	334	0	-174,277	-52,277
11228+00.00	0	0	122,000	73.1	266	333	0	-174,609	-52,609
11228+18.28	0	0	122,000	93.5	61	76	0	-174,686	-52,686
11229+00.00	0	0	122,000	58.6	226	283	0	-174,968	-52,968
11230+00.00	0	0	122,000	58.1	216	270	0	-175,238	-53,238
11230+76.76	0	0	122,000	1.8	2	3	0	-175,241	-53,241
11231+00.00	0	0	122,000	45.1	19	24	0	-175,264	-53,264
11232+00.00	0	0	122,000	56.6	188	235	0	-175,499	-53,499
11233+00.00	0	0	122,000	63.5	222	278	0	-175,777	-53,777

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11234+00.00	0	0	122,000	65.2	238	298	0	-176,074	-54,074
11235+00.00	0	0	122,000	95.2	297	371	0	-176,446	-54,446
11236+00.00	0	0	122,000	110.8	381	476	0	-176,922	-54,922
11237+00.00	0	0	122,000	102.4	395	494	0	-177,416	-55,416
11238+00.00	0	0	122,000	79.6	337	421	0	-177,837	-55,837
11239+00.00	0	0	122,000	62.1	262	328	0	-178,164	-56,164
11239+16.93	0	0	122,000	65.4	43	54	0	-178,218	-56,218
11239+54.76	0	0	122,000	61.2	89	111	0	-178,329	-56,329
11240+00.00	0	0	122,000	72.6	108	135	0	-178,464	-56,464
11241+00.00	0	0	122,000	68.1	261	326	0	-178,791	-56,791
11242+00.00	0	0	122,000	65.3	247	309	0	-179,099	-57,099
11243+00.00	0	0	122,000	49.6	213	266	0	-179,366	-57,366
11244+00.00	0	0	122,000	30	147	184	0	-179,549	-57,549
11245+00.00	0	0	122,000	64.1	174	218	0	-179,767	-57,767
11246+00.00	0	0	122,000	58.3	227	284	0	-180,051	-58,051
11246+20.27	0	0	122,000	30.4	36	45	0	-180,096	-58,096
11246+58.00	0	0	122,000	28.3	41	51	0	-180,147	-58,147
11247+00.00	0	0	122,000	79.2	81	101	0	-180,248	-58,248
11248+00.00	0	0	122,000	72.7	281	351	0	-180,599	-58,599
11249+00.00	0	0	122,000	58.9	244	305	0	-180,904	-58,904
11250+00.00	0	0	122,000	46	194	243	0	-181,147	-59,147
11251+00.00	0	0	122,000	56.5	190	238	0	-181,384	-59,384
11252+00.00	0	0	122,000	51.2	199	249	0	-181,633	-59,633
11253+00.00	0	0	122,000	45.7	179	224	0	-181,857	-59,857
11254+00.00	0	0	122,000	46.3	170	213	0	-182,069	-60,069
11255+00.00	0	0	122,000	51.4	181	226	0	-182,296	-60,296
11256+00.00	0	0	122,000	46.9	182	228	0	-182,523	-60,523
11256+18.55	0	0	122,000	55.9	38	48	0	-182,571	-60,571
11256+77.17	0	0	122,000	22.2	85	106	0	-182,677	-60,677
11257+14.92	0	0	122,000	23.7	32	40	0	-182,717	-60,717
11258+00.00	0	0	122,000	62.7	134	168	0	-182,884	-60,884
11259+00.00	0	0	122,000	57.7	223	279	0	-183,163	-61,163
11260+00.00	0	0	122,000	70.1	237	296	0	-183,459	-61,459
11261+00.00	0	0	122,000	68.9	257	321	0	-183,781	-61,781
11262+00.00	0	0	122,000	77.7	271	339	0	-184,119	-62,119
11262+99.25	0	0	122,000	11.9	167	209	0	-184,328	-62,328
11263+56.68	0	0	122,000	14.7	28	35	0	-184,363	-62,363
11264+00.00	0	0	122,000	74.6	69	86	0	-184,449	-62,449
11265+00.00	0	0	122,000	83.2	292	365	0	-184,814	-62,814
11266+00.00	0	0	122,000	92.4	325	406	0	-185,221	-63,221
11267+00.00	0	0	122,000	71.1	303	379	0	-185,599	-63,599

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	14

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11268+00.00	0	0	122,000	77	274	343	0	-185,942	-63,942
11269+00.00	0	0	122,000	40	217	271	0	-186,213	-64,213
11269+08.33	0	0	122,000	38.3	14	18	0	-186,231	-64,231
11269+46.08	0	0	122,000	35.1	51	64	0	-186,294	-64,294
11270+00.00	0	0	122,000	80.9	113	141	0	-186,436	-64,436
11271+00.00	0	0	122,000	69.4	278	348	0	-186,783	-64,783
11271+46.41	0	0	122,000	31.7	90	113	0	-186,896	-64,896
11271+84.16	0	0	122,000	31.8	44	55	0	-186,951	-64,951
11272+00.00	0	0	122,000	34	17	21	0	-186,972	-64,972
11273+00.00	0	0	122,000	70.4	193	241	0	-187,213	-65,213
11274+00.00	0	0	122,000	73.4	266	333	0	-187,546	-65,546
11275+00.00	0	0	122,000	64.5	255	319	0	-187,864	-65,864
11276+00.00	0	0	122,000	58.9	229	286	0	-188,151	-66,151
11277+00.00	0	0	122,000	72.3	243	304	0	-188,454	-66,454
11278+00.00	0	0	122,000	58.1	241	301	0	-188,756	-66,756
11279+00.00	0	0	122,000	58.6	216	270	0	-189,026	-67,026
11280+00.00	0	0	122,000	88.3	272	340	0	-189,366	-67,366
11281+00.00	0	0	122,000	58.6	272	340	0	-189,706	-67,706
11282+00.00	0	0	122,000	65	229	286	0	-189,992	-67,992
11283+00.00	0	0	122,000	13.1	145	181	0	-190,173	-68,173
11283+19.39	0	0	122,000	10.6	9	11	0	-190,184	-68,184
11283+70.26	0	0	122,000	0.1	10	13	0	-190,197	-68,197
11284+00.00	0	0	122,000	12	6	8	0	-190,204	-68,204
11285+00.00	0	0	122,000	28	74	93	0	-190,297	-68,297
11285+52.10	0	0	122,000	26.2	54	68	0	-190,364	-68,364
11286+00.00	0	0	122,000	20.2	40	50	0	-190,414	-68,414
11287+00.00	0	0	122,000	33.6	100	125	0	-190,539	-68,539
11288+00.00	0	0	122,000	24.1	107	134	0	-190,673	-68,673
11289+00.00	0	0	122,000	36.6	112	140	0	-190,813	-68,813
11289+32.66	0	0	122,000	3.4	25	31	0	-190,844	-68,844
11289+76.18	0	0	122,000	0.2	3	4	0	-190,848	-68,848
11290+00.00	0	0	122,000	22.2	9	11	0	-190,859	-68,859
11291+00.00	0	0	122,000	28.8	94	118	0	-190,977	-68,977
11292+00.00	0	0	122,000	36.9	122	153	0	-191,129	-69,129
11293+00.00	0	0	122,000	37.1	137	171	0	-191,301	-69,301
11294+00.00	0	0	122,000	40.6	144	180	0	-191,481	-69,481
11295+00.00	0	0	122,000	43.4	156	195	0	-191,676	-69,676
11296+00.00	0	0	122,000	49.6	172	215	0	-191,891	-69,891
11296+73.95	0	0	122,000	4.3	75	94	0	-191,984	-69,984
11297+18.07	0	0	122,000	3.8	7	9	0	-191,993	-69,993
11298+00.00	0	0	122,000	62.1	98	123	0	-192,116	-70,116

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11299+00.00	0	0	122,000	64.6	235	294	0	-192,409	-70,409
11300+00.00	0	0	122,000	50.7	214	268	0	-192,677	-70,677
11301+00.00	0	0	122,000	50.3	187	234	0	-192,911	-70,911
11302+00.00	0	0	122,000	47.2	181	226	0	-193,137	-71,137
11303+00.00	0	0	122,000	53.1	186	233	0	-193,369	-71,369
11304+00.00	0	0	122,000	52.9	196	245	0	-193,614	-71,614
11305+00.00	0	0	122,000	51.2	193	241	0	-193,856	-71,856
11306+00.00	0	0	122,000	55.9	198	248	0	-194,103	-72,103
11307+00.00	0	0	122,000	43.9	185	231	0	-194,334	-72,334
11308+00.00	0	0	122,000	47.1	169	211	0	-194,546	-72,546
11309+00.00	0	0	122,000	53.2	186	233	0	-194,778	-72,778
11309+84.02	0	0	122,000	29.2	130	163	0	-194,941	-72,941
11310+21.81	0	0	122,000	33.7	44	55	0	-194,996	-72,996
11311+00.00	0	0	122,000	63.8	138	173	0	-195,168	-73,168
11312+00.00	0	0	122,000	66.9	242	303	0	-195,471	-73,471
11313+00.00	0	0	122,000	80.9	274	343	0	-195,813	-73,813
11314+00.00	0	0	122,000	70.8	281	351	0	-196,164	-74,164
11315+00.00	0	0	122,000	71.1	263	329	0	-196,493	-74,493
11316+00.00	0	0	122,000	81.9	283	354	0	-196,847	-74,847
11317+00.00	0	0	122,000	90.5	319	399	0	-197,246	-75,246
11318+00.00	0	0	122,000	86.4	328	410	0	-197,656	-75,656
11319+00.00	0	0	122,000	76.1	301	376	0	-198,032	-76,032
11320+00.00	0	0	122,000	57.1	247	309	0	-198,341	-76,341
11321+00.00	0	0	122,000	73.8	242	303	0	-198,643	-76,643
11322+00.00	0	0	122,000	69.1	265	331	0	-198,974	-76,974
11322+98.04	0	0	122,000	31.9	186	233	0	-199,207	-77,207
11323+35.82	0	0	122,000	29.7	43	54	0	-199,261	-77,261
11324+00.00	0	0	122,000	67	112	140	0	-199,401	-77,401
11325+00.00	0	0	122,000	70.4	254	318	0	-199,718	-77,718
11326+00.00	0	0	122,000	55.6	233	291	0	-200,009	-78,009
11327+00.00	0	0	122,000	48.7	193	241	0	-200,251	-78,251
11328+00.00	0	0	122,000	35	155	194	0	-200,444	-78,444
11329+00.00	0	0	122,000	40.8	140	175	0	-200,619	-78,619
11330+00.00	0	0	122,000	42.8	155	194	0	-200,813	-78,813
11331+00.00	0	0	122,000	42.6	158	198	0	-201,011	-79,011
11332+00.00	0	0	122,000	45.5	163	204	0	-201,214	-79,214
11333+00.00	0	0	122,000	54.2	185	231	0	-201,446	-79,446
11334+00.00	0	0	122,000	41.4	177	221	0	-201,667	-79,667
11335+00.00	0	0	122,000	35.3	142	178	0	-201,844	-79,844
11336+03.72	0	0	122,000	21	110	138	0	-201,982	-79,982
11336+29.84	0	0	122,000	0	10	13	0	-201,994	-79,994

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	15

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11336+79.23	0	0	122,000	0.3	0	0	0	-201,994	-79,994
11337+06.41	0	0	122,000	19.5	10	13	0	-202,007	-80,007
11338+00.00	0	0	122,000	40.1	102	128	0	-202,134	-80,134
11339+00.00	0	0	122,000	61.3	188	235	0	-202,369	-80,369
11340+00.00	0	0	122,000	67.4	238	298	0	-202,667	-80,667
11341+00.00	0	0	122,000	75.8	265	331	0	-202,998	-80,998
11342+00.00	0	0	122,000	78.8	286	358	0	-203,356	-81,356
11343+00.00	0	0	122,000	61.5	260	325	0	-203,681	-81,681
11344+00.00	0	0	122,000	53.5	213	266	0	-203,947	-81,947
11345+00.00	0	0	122,000	59.3	209	261	0	-204,208	-82,208
11346+00.00	0	0	122,000	49.9	202	253	0	-204,461	-82,461
11347+00.00	0	0	122,000	60.7	205	256	0	-204,717	-82,717
11348+00.00	0	0	122,000	55.6	215	269	0	-204,986	-82,986
11349+00.00	0	0	122,000	38.7	175	219	0	-205,204	-83,204
11349+19.93	0	0	122,000	24.7	25	31	0	-205,236	-83,236
11349+57.68	0	0	122,000	29	38	48	0	-205,283	-83,283
11350+00.00	0	0	122,000	51.2	61	76	0	-205,359	-83,359
11351+00.00	0	0	122,000	143.1	360	450	0	-205,809	-83,809
11351+24.69	0	0	122,000	235.3	183	229	0	-206,038	-84,038
11352+00.00	0	0	122,000	70.4	418	523	0	-206,561	-84,561
11353+00.00	0	0	122,000	56.2	234	293	0	-206,853	-84,853
11354+00.00	0	0	122,000	68.5	231	289	0	-207,142	-85,142
11355+00.00	0	0	122,000	73.7	263	329	0	-207,471	-85,471
11356+00.00	0	0	122,000	79.1	283	354	0	-207,824	-85,824
11357+00.00	0	0	122,000	79	293	366	0	-208,191	-86,191
11358+00.00	0	0	122,000	61.6	260	325	0	-208,516	-86,516
11359+00.00	0	0	122,000	64.7	234	293	0	-208,808	-86,808
11360+00.00	0	0	122,000	51.9	216	270	0	-209,078	-87,078
11361+00.00	0	0	122,000	57.6	203	254	0	-209,332	-87,332
11362+00.00	0	0	122,000	41	183	229	0	-209,561	-87,561
11362+85.50	0	0	122,000	30.9	116	145	0	-209,706	-87,706
11363+23.26	0	0	122,000	33.5	45	56	0	-209,762	-87,762
11364+00.00	0	0	122,000	62.8	134	168	0	-209,929	-87,929
11365+00.00	0	0	122,000	64.6	236	295	0	-210,224	-88,224
11366+00.00	0	0	122,000	67.4	244	305	0	-210,529	-88,529
11367+00.00	0	0	122,000	56.2	229	286	0	-210,816	-88,816
11367+22.73	0	0	122,000	78.7	61	76	0	-210,892	-88,892
11368+00.00	0	0	122,000	72.5	212	265	0	-211,157	-89,157
11368+73.30	0	0	122,000	28.9	140	175	0	-211,332	-89,332
11369+11.09	0	0	122,000	31.4	42	53	0	-211,384	-89,384
11370+00.00	0	0	122,000	67	159	199	0	-211,583	-89,583

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11371+00.00	0	0	122,000	49.8	216	270	0	-211,853	-89,853
11372+00.00	0	0	122,000	65.3	213	266	0	-212,119	-90,119
11373+00.00	0	0	122,000	49.8	213	266	0	-212,386	-90,386
11374+00.00	0	0	122,000	45.9	177	221	0	-212,607	-90,607
11375+00.00	0	0	122,000	59.6	195	244	0	-212,851	-90,851
11376+00.00	0	0	122,000	74.5	248	310	0	-213,161	-91,161
11376+19.06	0	0	122,000	94.3	64	80	0	-213,241	-91,241
11377+00.00	0	0	122,000	62.5	231	289	0	-213,529	-91,529
11378+00.00	0	0	122,000	61.8	230	288	0	-213,817	-91,817
11379+00.00	0	0	122,000	35.5	180	225	0	-214,042	-92,042
11379+08.93	0	0	122,000	20.7	11	14	0	-214,056	-92,056
11379+46.69	0	0	122,000	28.3	34	43	0	-214,098	-92,098
11380+00.00	0	0	122,000	50.8	76	95	0	-214,193	-92,193
11381+00.00	0	0	122,000	53.5	193	241	0	-214,434	-92,434
11382+00.00	0	0	122,000	43.4	179	224	0	-214,658	-92,658
11383+00.00	0	0	122,000	46.8	167	209	0	-214,867	-92,867
11384+00.00	0	0	122,000	52.3	184	230	0	-215,097	-93,097
11385+00.00	0	0	122,000	54.6	198	248	0	-215,344	-93,344
11386+00.00	0	0	122,000	51.9	197	246	0	-215,591	-93,591
11387+00.00	0	0	122,000	45.3	180	225	0	-215,816	-93,816
11388+00.00	0	0	122,000	56.3	188	235	0	-216,051	-94,051
11389+07.56	0	0	122,000	0.2	114	143	0	-216,193	-94,193
11389+55.17	0	199,533	321,533	2.6	2	3	0	-216,196	105,338
11390+00.00	0	0	321,533	58.9	49	61	0	-216,257	105,276
11391+00.00	0	0	321,533	95.2	290	363	0	-216,619	104,914
11392+00.00	0	0	321,533	93.9	350	438	0	-217,057	104,476
11393+00.00	0	0	321,533	78.7	320	400	0	-217,457	104,076
11394+00.00	0	0	321,533	70.4	276	345	0	-217,802	103,731
11395+00.00	0	0	321,533	98.7	313	391	0	-218,193	103,340
11396+00.00	0	0	321,533	102.7	373	466	0	-218,659	102,874
11396+92.18	0	0	321,533	59.6	277	346	0	-219,006	102,528
11397+33.82	0	0	321,533	62.4	94	118	0	-219,123	102,410
11398+00.00	0	0	321,533	124.1	229	286	0	-219,409	102,124
11399+00.00	0	0	321,533	134.4	479	599	0	-220,008	101,525
11400+00.00	0	0	321,533	123.5	478	598	0	-220,606	100,928
11401+00.00	0	0	321,533	118.7	449	561	0	-221,167	100,366
11402+00.00	0	0	321,533	118.4	439	549	0	-221,716	99,818
11403+00.00	0	0	321,533	110.9	425	531	0	-222,247	99,286
11404+00.00	0	0	321,533	129.2	445	556	0	-222,803	98,730
11405+00.00	0	0	321,533	127.2	475	594	0	-223,397	98,136
11406+00.00	0	0	321,533	125.2	467	584	0	-223,981	97,553

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	16

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11407+00.00	0	0	321,533	118.1	451	564	0	-224,544	96,989
11408+00.00	0	0	321,533	112.8	428	535	0	-225,079	96,454
11408+61.76	0	0	321,533	90.4	232	290	0	-225,369	96,164
11409+12.60	0	0	321,533	46.9	129	161	56	-225,475	96,059
11414+00.00	0	0	321,533	10.7	520	650	0	-226,125	95,409
11415+00.00	0	0	321,533	117.9	238	298	0	-226,422	95,111
11416+00.00	0	0	321,533	161.8	518	648	0	-227,070	94,464
11417+00.00	0	0	321,533	191.9	655	819	0	-227,888	93,645
11418+00.00	0	0	321,533	153.9	640	800	0	-228,688	92,845
11418+32.21	0	0	321,533	85.1	143	179	0	-228,867	92,666
11418+73.96	0	0	321,533	85.3	132	165	0	-229,032	92,501
11419+00.00	0	0	321,533	152	114	143	0	-229,175	92,359
11420+00.00	0	0	321,533	163.9	585	731	0	-229,906	91,627
11421+00.00	0	0	321,533	139.5	562	703	0	-230,608	90,925
11422+00.00	0	0	321,533	126.5	493	616	0	-231,225	90,309
11423+00.00	0	0	321,533	126.3	468	585	0	-231,810	89,724
11424+00.00	0	0	321,533	113.3	444	555	0	-232,365	89,169
11425+00.00	0	0	321,533	109.9	413	516	0	-232,881	88,652
11426+00.00	0	0	321,533	114	415	519	0	-233,400	88,134
11427+00.00	0	0	321,533	123.3	439	549	0	-233,948	87,585
11428+03.03	0	0	321,533	21.4	276	345	0	-234,293	87,240
11428+47.50	0	0	321,533	16.8	31	39	-270	-234,602	86,931
11429+00.00	0	0	321,533	127	140	175	0	-234,777	86,756
11430+00.00	0	0	321,533	126.5	469	586	0	-235,363	86,170
11431+00.00	0	0	321,533	122.5	461	576	0	-235,940	85,594
11432+00.00	0	0	321,533	116.5	443	554	0	-236,493	85,040
11433+00.00	0	0	321,533	171	532	665	0	-237,158	84,375
11434+00.00	0	0	321,533	247.6	775	969	0	-238,127	83,406
11434+30.60	0	0	321,533	304.9	313	391	0	-238,518	83,015
11435+00.00	0	0	321,533	168.5	608	760	0	-239,278	82,255
11436+00.00	0	0	321,533	150.9	591	739	0	-240,017	81,516
11437+00.00	0	0	321,533	118.1	498	623	0	-240,640	80,894
11438+00.00	0	0	321,533	101.4	406	508	0	-241,147	80,386
11439+00.00	0	0	321,533	102.3	377	471	0	-241,618	79,915
11440+00.00	0	0	321,533	85.8	348	435	0	-242,053	79,480
11440+86.10	0	0	321,533	6.2	147	184	0	-242,237	79,296
11441+30.37	0	0	321,533	0.9	6	8	0	-242,245	79,289
11442+00.00	0	0	321,533	85.8	112	140	0	-242,385	79,149
11443+00.00	0	0	321,533	93.7	332	415	0	-242,800	78,734
11443+10.55	0	0	321,533	115.7	41	51	0	-242,851	78,682
11444+00.00	0	0	321,533	105.6	367	459	0	-243,310	78,224

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11445+00.00	0	0	321,533	84.2	351	439	0	-243,748	77,785
11446+00.00	0	0	321,533	99.6	340	425	0	-244,173	77,360
11447+00.00	0	0	321,533	84.3	341	426	0	-244,600	76,934
11448+00.00	0	0	321,533	81.7	307	384	0	-244,983	76,550
11449+00.00	0	0	321,533	82	303	379	0	-245,362	76,171
11450+00.00	0	0	321,533	94.3	326	408	0	-245,770	75,764
11451+00.00	0	0	321,533	97.7	356	445	0	-246,215	75,319
11452+00.00	0	0	321,533	105.6	376	470	0	-246,685	74,849
11453+00.00	0	0	321,533	105.4	391	489	0	-247,173	74,360
11454+00.00	0	0	321,533	86.5	355	444	0	-247,617	73,916
11455+00.00	0	0	321,533	76.7	302	378	0	-247,995	73,539
11456+00.00	0	0	321,533	84.3	298	373	0	-248,367	73,166
11457+00.00	0	0	321,533	73.6	292	365	0	-248,732	72,801
11457+96.88	0	0	321,533	0.2	132	165	0	-248,897	72,636
11458+38.65	0	0	321,533	0.1	0	0	0	-248,897	72,636
11459+00.00	0	0	321,533	75.2	86	108	0	-249,005	72,529
11460+00.00	0	0	321,533	67.4	264	330	0	-249,335	72,199
11461+00.00	0	0	321,533	56.4	229	286	0	-249,621	71,912
11462+00.00	0	0	321,533	50.6	198	248	0	-249,868	71,665
11463+00.00	0	0	321,533	38.9	166	208	0	-250,076	71,457
11464+00.00	0	0	321,533	39.4	145	181	0	-250,257	71,276
11465+00.00	0	0	321,533	33.8	136	170	0	-250,427	71,106
11466+00.00	0	0	321,533	32.7	123	154	0	-250,581	70,952
11467+00.00	0	0	321,533	37.7	130	163	0	-250,743	70,790
11467+26.76	0	0	321,533	15	26	33	0	-250,776	70,757
11467+68.51	0	0	321,533	19.1	26	33	0	-250,808	70,725
11468+00.00	0	0	321,533	41.4	35	44	0	-250,852	70,681
11469+00.00	0	0	321,533	37.8	147	184	0	-251,036	70,497
11470+00.00	0	0	321,533	31.4	128	160	0	-251,196	70,337
11471+00.00	0	0	321,533	38.3	129	161	0	-251,357	70,176
11472+00.00	0	0	321,533	31.7	130	163	0	-251,520	70,014
11473+00.00	0	0	321,533	40.8	134	168	0	-251,687	69,846
11474+00.00	0	0	321,533	29.4	130	163	0	-251,850	69,684
11475+00.00	0	0	321,533	38.4	126	158	0	-252,007	69,526
11476+00.00	0	0	321,533	41.9	149	186	0	-252,193	69,340
11477+00.00	0	0	321,533	43.7	159	199	0	-252,392	69,141
11478+00.00	0	0	321,533	28.5	134	168	0	-252,560	68,974
11478+40.91	0	0	321,533	27.6	43	54	0	-252,613	68,920
11479+00.00	0	0	321,533	25.5	58	73	0	-252,686	68,847
11480+00.00	0	0	321,533	35.1	112	140	0	-252,826	68,707
11481+00.00	0	0	321,533	34.8	129	161	0	-252,987	68,546

This document was originally issued and sealed by Eric R. Molbert, Registration Number PE- 4222, on 02/15/16 and the original document is stored at the North Dakota Department of Transportation

Earthwork Data Table

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11482+00.00	0	0	321,533	34.2	128	160	0	-253,147	68,386
11483+00.00	0	0	321,533	43.9	145	181	0	-253,328	68,205
11484+00.00	0	0	321,533	37.4	151	189	0	-253,517	68,016
11484+18.23	0	0	321,533	3.2	14	18	0	-253,535	67,999
11484+67.28	0	0	321,533	26.2	27	34	0	-253,568	67,965
11485+00.00	0	0	321,533	66.5	56	70	0	-253,638	67,895
11486+00.00	0	0	321,533	51.3	218	273	0	-253,911	67,622
11487+00.00	0	0	321,533	39.6	168	210	0	-254,121	67,412
11488+00.00	0	0	321,533	34.8	138	173	0	-254,293	67,240
11489+00.00	0	0	321,533	40	139	174	0	-254,467	67,066
11490+00.00	0	0	321,533	42.5	153	191	0	-254,658	66,875
11491+00.00	0	0	321,533	51.5	174	218	0	-254,876	66,657
11492+00.00	0	0	321,533	43.1	175	219	0	-255,095	66,439
11493+00.00	0	0	321,533	49.4	171	214	0	-255,308	66,225
11493+84.94	0	0	321,533	2.3	81	101	0	-255,410	66,124
11494+32.49	0	0	321,533	0.1	2	3	0	-255,412	66,121
11495+00.00	0	0	321,533	50.7	64	80	0	-255,492	66,041
11496+00.00	0	0	321,533	43.8	175	219	0	-255,711	65,822
11497+00.00	0	0	321,533	41.4	158	198	0	-255,908	65,625
11498+00.00	0	0	321,533	50.7	171	214	0	-256,122	65,411
11499+00.00	0	0	321,533	53.5	193	241	0	-256,363	65,170
11500+00.00	0	0	321,533	43.6	180	225	0	-256,588	64,945
11501+00.00	0	0	321,533	61.9	195	244	0	-256,832	64,701
11502+00.00	0	0	321,533	64.2	234	293	0	-257,125	64,409
11503+00.00	0	0	321,533	63	236	295	0	-257,420	64,114
11504+00.00	0	0	321,533	59.4	227	284	0	-257,703	63,830
11505+00.00	0	0	321,533	55.3	212	265	0	-257,968	63,565
11505+42.53	0	0	321,533	70.8	99	124	0	-258,092	63,441
11506+00.00	0	0	321,533	66.6	146	183	0	-258,275	63,259
11507+00.00	0	0	321,533	56.6	228	285	0	-258,560	62,974
11508+00.00	0	0	321,533	61	218	273	0	-258,832	62,701
11509+00.00	0	0	321,533	61.4	227	284	0	-259,116	62,417
11510+00.00	0	0	321,533	46.2	199	249	0	-259,365	62,169
11511+00.00	0	0	321,533	44.8	169	211	0	-259,576	61,957
11512+00.00	0	0	321,533	38.5	154	193	0	-259,768	61,765
11513+00.00	0	0	321,533	50.1	164	205	0	-259,973	61,560
11514+00.00	0	0	321,533	53.9	193	241	0	-260,215	61,319
11515+00.00	0	0	321,533	55.6	203	254	0	-260,468	61,065
11516+00.00	0	0	321,533	57.9	210	263	0	-260,731	60,802
11517+00.00	0	0	321,533	67.8	233	291	0	-261,022	60,511
11517+71.95	0	0	321,533	29.6	130	163	0	-261,185	60,349

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11518+37.66	0	0	321,533	45.7	92	115	0	-261,300	60,234
11519+00.00	0	0	321,533	54.5	116	145	0	-261,445	60,089
11520+00.00	0	0	321,533	71.9	234	293	0	-261,737	59,796
11521+00.00	0	0	321,533	76.5	275	344	0	-262,081	59,452
11522+00.00	0	0	321,533	75.2	281	351	0	-262,432	59,101
11523+00.00	0	0	321,533	64.7	259	324	0	-262,756	58,777
11524+00.00	0	0	321,533	54	220	275	0	-263,031	58,502
11525+00.00	0	0	321,533	49.8	192	240	0	-263,271	58,262
11525+33.03	0	0	321,533	59.8	67	84	0	-263,355	58,179
11526+00.00	0	0	321,533	51	137	171	0	-263,526	58,007
11527+00.00	0	0	321,533	57.8	201	251	0	-263,777	57,756
11528+00.00	0	0	321,533	58.3	215	269	0	-264,046	57,487
11529+00.00	0	0	321,533	58.7	217	271	0	-264,317	57,216
11530+00.00	0	0	321,533	43.2	189	236	0	-264,553	56,980
11531+00.00	0	0	321,533	55.9	184	230	0	-264,783	56,750
11532+00.00	0	0	321,533	48.6	194	243	0	-265,026	56,507
11533+00.00	0	0	321,533	66.9	214	268	0	-265,293	56,240
11533+40.84	0	0	321,533	22.7	68	85	0	-265,378	56,155
11533+99.19	0	0	321,533	32.2	59	74	0	-265,452	56,081
11535+00.00	0	0	321,533	62.1	176	220	0	-265,672	55,861
11536+00.00	0	0	321,533	62.2	230	288	0	-265,960	55,574
11537+00.00	0	0	321,533	72	249	311	0	-266,271	55,262
11538+00.00	0	0	321,533	58.5	242	303	0	-266,573	54,960
11539+00.00	0	0	321,533	62.1	223	279	0	-266,852	54,681
11540+00.00	0	0	321,533	59.2	225	281	0	-267,133	54,400
11541+00.00	0	0	321,533	55.6	213	266	0	-267,400	54,134
11542+00.00	0	0	321,533	51.8	199	249	0	-267,648	53,885
11543+00.00	0	0	321,533	47.9	185	231	0	-267,880	53,654
11544+00.00	0	0	321,533	55.7	192	240	0	-268,120	53,414
11545+00.00	0	0	321,533	73.8	240	300	0	-268,420	53,114
11546+00.00	0	0	321,533	71.9	270	338	0	-268,757	52,776
11546+73.53	0	0	321,533	11.8	114	143	0	-268,900	52,634
11547+24.90	0	0	321,533	0.6	12	15	-189	-269,104	52,430
11548+00.00	0	0	321,533	91.9	129	161	0	-269,265	52,268
11549+00.00	0	0	321,533	76.7	312	390	0	-269,655	51,878
11550+00.00	0	0	321,533	70.5	273	341	0	-269,996	51,537
11551+00.00	0	0	321,533	58.2	238	298	0	-270,294	51,240
11552+00.00	0	0	321,533	46.4	194	243	0	-270,536	50,997
11553+00.00	0	0	321,533	41.4	163	204	0	-270,740	50,793
11554+00.00	0	0	321,533	45.1	160	200	0	-270,940	50,593
11555+00.00	0	0	321,533	49.5	175	219	0	-271,159	50,375

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	18

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11555+64.10	0	0	321,533	39.6	106	133	0	-271,291	50,242
11556+02.19	0	0	321,533	47.7	62	78	-139	-271,508	50,026
11557+00.00	0	0	321,533	45.3	168	210	0	-271,718	49,816
11558+00.00	0	0	321,533	41.2	160	200	0	-271,918	49,616
11559+00.00	0	0	321,533	52.3	173	216	0	-272,134	49,399
11560+00.00	0	0	321,533	43.3	177	221	0	-272,355	49,178
11561+00.00	0	0	321,533	43.2	160	200	0	-272,555	48,978
11561+33.26	0	0	321,533	86.9	80	100	0	-272,655	48,878
11562+00.00	0	0	321,533	56.9	178	223	0	-272,878	48,656
11563+00.00	0	0	321,533	74.7	244	305	0	-273,183	48,351
11564+00.00	0	0	321,533	70.7	269	336	0	-273,519	48,014
11565+00.00	0	0	321,533	79.1	277	346	0	-273,865	47,668
11565+71.13	0	0	321,533	40.9	158	198	0	-274,063	47,471
11566+12.89	0	0	321,533	39.9	62	78	0	-274,140	47,393
11567+00.00	0	0	321,533	65.6	170	213	0	-274,353	47,181
11568+00.00	0	0	321,533	59.9	232	290	0	-274,643	46,891
11569+00.00	0	0	321,533	50.3	204	255	0	-274,898	46,636
11570+00.00	0	0	321,533	55.5	196	245	0	-275,143	46,391
11571+00.00	0	0	321,533	65.5	224	280	0	-275,423	46,111
11572+00.00	0	0	321,533	51.5	217	271	0	-275,694	45,839
11573+00.00	0	0	321,533	51.1	190	238	0	-275,931	45,602
11573+33.17	0	0	321,533	82.3	82	103	0	-276,034	45,499
11573+53.54	0	0	321,533	31.7	43	54	0	-276,088	45,446
11573+95.30	0	0	321,533	28.2	46	58	0	-276,145	45,388
11575+00.00	0	0	321,533	79.6	209	261	0	-276,406	45,127
11576+00.00	0	0	321,533	75.9	288	360	0	-276,766	44,767
11577+00.00	0	0	321,533	56.1	244	305	0	-277,071	44,462
11578+00.00	0	0	321,533	61.9	219	274	0	-277,345	44,188
11579+00.00	0	0	321,533	63.3	232	290	0	-277,635	43,898
11579+27.30	0	0	321,533	35.7	50	63	0	-277,698	43,836
11579+79.57	0	0	321,533	14.4	48	60	-305	-278,063	43,471
11580+00.00	0	0	321,533	46.4	23	29	0	-278,091	43,442
11581+00.00	0	0	321,533	46.4	172	215	0	-278,306	43,227
11582+00.00	0	0	321,533	52.4	183	229	0	-278,535	42,998
11583+00.00	0	0	321,533	68	223	279	0	-278,814	42,719
11584+00.00	0	0	321,533	66	248	310	0	-279,124	42,409
11585+00.00	0	0	321,533	67.4	247	309	0	-279,433	42,101
11586+00.00	0	0	321,533	72.4	259	324	0	-279,756	41,777
11587+00.00	0	0	321,533	61	247	309	0	-280,065	41,468
11588+00.00	0	0	321,533	55.9	216	270	0	-280,335	41,198
11589+00.00	0	0	321,533	56.8	209	261	0	-280,596	40,937

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11590+00.00	0	0	321,533	50.5	199	249	0	-280,845	40,688
11591+00.00	0	0	321,533	42.1	171	214	0	-281,059	40,474
11592+00.00	0	0	321,533	51.9	174	218	0	-281,276	40,257
11593+00.00	0	0	321,533	38	166	208	0	-281,484	40,049
11594+00.00	0	0	321,533	42.2	149	186	0	-281,670	39,863
11595+00.00	0	0	321,533	50.7	172	215	0	-281,885	39,648
11596+00.00	0	0	321,533	55.8	197	246	0	-282,131	39,402
11597+00.00	0	0	321,533	58.4	211	264	0	-282,395	39,138
11598+00.00	0	0	321,533	57.5	215	269	0	-282,664	38,869
11599+00.00	0	0	321,533	61.8	221	276	0	-282,940	38,593
11599+14.19	0	0	321,533	79.5	37	46	0	-282,986	38,547
11599+57.44	0	0	321,533	6.5	69	86	0	-283,073	38,461
11600+00.82	0	0	321,533	8.1	12	15	-130	-283,218	38,316
11601+00.00	0	0	321,533	53.2	113	141	0	-283,359	38,174
11602+00.00	0	0	321,533	66.4	221	276	0	-283,635	37,898
11603+00.00	0	0	321,533	63.8	241	301	0	-283,936	37,597
11604+00.00	0	0	321,533	45.4	202	253	0	-284,189	37,344
11605+00.00	0	0	321,533	55.7	187	234	0	-284,423	37,111
11606+00.00	0	0	321,533	81.3	254	318	0	-284,740	36,793
11607+00.00	0	0	321,533	82.8	304	380	0	-285,120	36,413
11608+00.00	0	0	321,533	71.5	286	358	0	-285,478	36,056
11609+00.00	0	0	321,533	77.4	276	345	0	-285,823	35,711
11609+22.04	0	0	321,533	108.7	76	95	0	-285,918	35,616
11610+00.00	0	0	321,533	81.6	275	344	0	-286,261	35,272
11611+00.00	0	0	321,533	85.5	309	386	0	-286,648	34,886
11611+97.20	0	0	321,533	15.1	181	226	0	-286,874	34,659
11612+38.95	0	0	321,533	5.3	16	20	0	-286,894	34,639
11613+00.00	0	0	321,533	65.9	80	100	0	-286,994	34,539
11614+00.00	0	0	321,533	60.1	233	291	0	-287,285	34,248
11615+00.00	0	0	321,533	51.2	206	258	0	-287,543	33,991
11616+00.00	0	0	321,533	61.1	208	260	0	-287,803	33,731
11617+00.00	0	0	321,533	51.5	209	261	0	-288,064	33,469
11618+00.00	0	0	321,533	54.4	196	245	0	-288,309	33,224
11619+00.00	0	0	321,533	43.5	181	226	0	-288,535	32,998
11620+00.00	0	0	321,533	56.1	184	230	0	-288,765	32,768
11621+00.00	0	0	321,533	60.5	216	270	0	-289,035	32,498
11622+00.00	0	0	321,533	66.1	234	293	0	-289,328	32,206
11623+00.00	0	0	321,533	54.5	223	279	0	-289,606	31,927
11624+00.00	0	0	321,533	60.7	213	266	0	-289,873	31,661
11625+00.00	0	0	321,533	76.3	254	318	0	-290,190	31,343
11625+96.93	0	0	321,533	12.2	159	199	0	-290,389	31,144

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	19

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11626+54.13	0	0	321,533	9	22	28	0	-290,416	31,117
11627+00.00	0	0	321,533	71.8	69	86	0	-290,503	31,031
11628+00.00	0	0	321,533	65.2	254	318	0	-290,820	30,713
11629+00.00	0	0	321,533	61.9	235	294	0	-291,114	30,419
11630+00.00	0	0	321,533	64.5	234	293	0	-291,406	30,127
11631+00.00	0	0	321,533	74.3	257	321	0	-291,728	29,806
11632+00.00	0	0	321,533	69	265	331	0	-292,059	29,474
11633+00.00	0	0	321,533	74.7	266	333	0	-292,391	29,142
11634+00.00	0	0	321,533	82.4	291	364	0	-292,755	28,778
11634+37.10	0	0	321,533	105.4	129	161	0	-292,916	28,617
11635+00.00	0	0	321,533	91.5	229	286	0	-293,203	28,331
11636+00.00	0	0	321,533	64.9	290	363	0	-293,565	27,968
11637+00.00	0	0	321,533	67.3	245	306	0	-293,871	27,662
11638+00.00	0	0	321,533	68	251	314	0	-294,185	27,348
11639+00.00	0	0	321,533	79.9	274	343	0	-294,528	27,006
11640+00.00	0	0	321,533	61.1	261	326	0	-294,854	26,679
11641+00.00	0	0	321,533	47.5	201	251	0	-295,105	26,428
11642+00.00	0	0	321,533	50.3	181	226	0	-295,331	26,202
11643+00.00	0	0	321,533	62.3	209	261	0	-295,593	25,941
11644+00.00	0	0	321,533	51.3	210	263	0	-295,855	25,678
11645+00.00	0	0	321,533	52.5	192	240	0	-296,095	25,438
11646+00.00	0	0	321,533	65.4	218	273	0	-296,368	25,166
11647+00.00	0	0	321,533	62.8	237	296	0	-296,664	24,869
11648+00.00	0	0	321,533	53.9	216	270	0	-296,934	24,599
11649+00.00	0	0	321,533	42	178	223	0	-297,156	24,377
11650+00.00	0	0	321,533	45.7	162	203	0	-297,359	24,174
11651+00.00	0	0	321,533	46.1	170	213	0	-297,571	23,962
11652+00.00	0	0	321,533	62.5	201	251	0	-297,823	23,711
11652+49.37	0	0	321,533	0.4	58	73	0	-297,895	23,638
11653+01.70	0	0	321,533	4.1	4	5	0	-297,900	23,633
11654+00.00	0	0	321,533	64.8	125	156	0	-298,056	23,477
11655+00.00	0	0	321,533	53.2	219	274	0	-298,330	23,203
11656+00.00	0	0	321,533	46.3	184	230	0	-298,560	22,973
11657+00.00	0	0	321,533	54.7	187	234	0	-298,794	22,739
11658+00.00	0	0	321,533	50.9	196	245	0	-299,039	22,494
11659+00.00	0	0	321,533	54.6	195	244	0	-299,283	22,251
11660+00.00	0	0	321,533	54	201	251	0	-299,534	21,999
11661+00.00	0	0	321,533	43.1	180	225	0	-299,759	21,774
11662+00.00	0	0	321,533	35.3	145	181	0	-299,940	21,593
11663+00.00	0	0	321,533	35.2	131	164	0	-300,104	21,429
11664+00.00	0	0	321,533	40	139	174	0	-300,278	21,256

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11665+00.00	0	0	321,533	59.8	185	231	0	-300,509	21,024
11666+00.00	0	0	321,533	55.9	214	268	0	-300,776	20,757
11667+00.00	0	0	321,533	65.2	224	280	0	-301,056	20,477
11668+00.00	0	0	321,533	85.1	278	348	0	-301,404	20,129
11669+00.00	0	0	321,533	70	287	359	0	-301,763	19,771
11670+00.00	0	0	321,533	53.8	229	286	0	-302,049	19,484
11671+00.00	0	0	321,533	55.5	202	253	0	-302,301	19,232
11672+00.00	0	0	321,533	51	197	246	0	-302,548	18,986
11673+00.00	0	0	321,533	58.6	203	254	0	-302,801	18,732
11674+00.00	0	0	321,533	49.1	199	249	0	-303,050	18,483
11675+00.00	0	0	321,533	52.9	189	236	0	-303,286	18,247
11676+00.00	0	0	321,533	57.5	204	255	0	-303,541	17,992
11677+00.00	0	0	321,533	62.2	222	278	0	-303,819	17,714
11677+41.64	0	0	321,533	78.1	108	135	0	-303,954	17,579
11678+00.00	0	0	321,533	25.4	112	140	0	-304,094	17,439
11678+48.93	0	0	321,533	14.3	36	45	0	-304,139	17,394
11678+99.50	0	0	321,533	38.5	49	61	0	-304,200	17,333
11680+00.00	0	0	321,533	66.8	196	245	0	-304,445	17,088
11681+00.00	0	0	321,533	71.6	256	320	0	-304,765	16,768
11682+00.00	0	0	321,533	75.4	272	340	0	-305,105	16,428
11683+00.00	0	0	321,533	81.5	291	364	0	-305,469	16,064
11684+00.00	0	0	321,533	73.2	286	358	0	-305,826	15,707
11685+00.00	0	0	321,533	57.4	242	303	0	-306,129	15,404
11686+00.00	0	0	321,533	53.2	205	256	0	-306,385	15,148
11687+00.00	0	0	321,533	47.6	187	234	0	-306,619	14,914
11688+00.00	0	0	321,533	50.6	182	228	0	-306,846	14,687
11689+00.00	0	0	321,533	52.7	191	239	0	-307,085	14,448
11690+00.00	0	0	321,533	39.7	171	214	0	-307,299	14,234
11691+00.00	0	0	321,533	43.7	154	193	0	-307,491	14,042
11692+00.00	0	0	321,533	44.8	164	205	0	-307,696	13,837
11693+00.36	0	0	321,533	15.6	112	140	0	-307,836	13,697
11693+74.67	0	0	321,533	28.8	61	76	0	-307,913	13,621
11694+00.00	0	0	321,533	38.2	31	39	0	-307,951	13,582
11695+00.00	0	0	321,533	74.4	209	261	0	-308,213	13,321
11696+00.00	0	0	321,533	78.3	283	354	0	-308,566	12,967
11697+00.00	0	0	321,533	79.4	292	365	0	-308,931	12,602
11698+00.00	0	0	321,533	76.9	289	361	0	-309,293	12,241
11699+00.00	0	0	321,533	81.6	294	368	0	-309,660	11,873
11700+00.00	0	0	321,533	53.9	251	314	0	-309,974	11,559
11701+00.00	0	0	321,533	78.4	245	306	0	-310,280	11,253
11702+00.00	0	0	321,533	81.5	296	370	0	-310,650	10,883

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Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	20

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11702+80.64	0	0	321,533	82.9	246	308	0	-310,958	10,576
11703+76.56	0	0	321,533	130.1	378	473	0	-311,430	10,103
11704+00.00	0	0	321,533	90.9	96	120	0	-311,550	9,983
11705+50.61	0	0	321,533	119.7	587	734	0	-312,284	9,249
11705+90.23	0	0	321,533	234.1	260	325	0	-312,609	8,924
11706+75.52	0	0	321,533	142.6	595	744	0	-313,353	8,181
11707+22.77	0	0	321,533	102.4	214	268	0	-313,620	7,913
11708+00.00	0	0	321,533	99.8	289	361	0	-313,981	7,552
11708+93.40	0	0	321,533	90	328	410	0	-314,391	7,142
11709+89.41	0	0	321,533	44.5	239	299	0	-314,690	6,843
11711+00.00	0	0	321,533	79.4	254	318	0	-315,008	6,526
11712+00.00	0	0	321,533	73.4	283	354	0	-315,361	6,172
11713+00.00	0	0	321,533	43.3	216	270	0	-315,631	5,902
11714+00.00	0	0	321,533	24.4	125	156	0	-315,788	5,746
11715+00.00	0	0	321,533	31.1	103	129	0	-315,916	5,617
11716+00.00	0	0	321,533	40.4	132	165	0	-316,081	5,452
11717+00.00	0	0	321,533	45.2	159	199	0	-316,280	5,253
11718+00.00	0	0	321,533	44.8	167	209	0	-316,489	5,044
11719+00.00	0	0	321,533	39.4	156	195	0	-316,684	4,849
11719+33.54	0	0	321,533	16.6	35	44	0	-316,728	4,806
11720+00.00	0	0	321,533	3.5	25	31	0	-316,759	4,774
11721+00.00	0	0	321,533	1.5	9	11	0	-316,770	4,763
11722+00.00	0	0	321,533	36.2	70	88	0	-316,858	4,676
11723+00.00	0	0	321,533	32.7	128	160	0	-317,018	4,516
11724+00.00	0	0	321,533	37.7	130	163	0	-317,180	4,353
11725+03.97	0	0	321,533	20.8	113	141	0	-317,321	4,212
11725+45.72	0	0	321,533	23.6	34	43	0	-317,364	4,169
11726+00.00	0	0	321,533	35.4	59	74	0	-317,438	4,096
11727+00.00	0	0	321,533	28.7	119	149	0	-317,586	3,947
11727+32.75	0	0	321,533	26.9	34	43	0	-317,629	3,904
11728+00.00	0	0	321,533	24.4	64	80	0	-317,709	3,824
11729+00.00	0	0	321,533	27.9	97	121	0	-317,830	3,703
11729+69.58	0	0	321,533	24.3	67	84	0	-317,914	3,619
11730+65.57	0	0	321,533	47.7	128	160	0	-318,074	3,459
11731+00.00	0	0	321,533	54.7	65	81	0	-318,155	3,378
11732+00.00	0	0	321,533	47.1	189	236	0	-318,391	3,142
11732+60.35	0	0	321,533	34.1	91	114	0	-318,505	3,028
11732+98.33	0	0	321,533	19.4	38	48	0	-318,553	2,981
11733+86.20	0	0	321,533	8.9	46	58	0	-318,610	2,923
11734+22.76	0	0	321,533	6.4	10	13	0	-318,623	2,911
11735+00.00	0	0	321,533	23.5	43	54	0	-318,676	2,857

*An additional volume of 25% has been included to allow for shrinkage.

Sta	Common Excavation & Borrow			Embankment			Added Vol. (CY)	Adj. Accum. Vol. (CY)	Mass Ordinate
	End Area (SF)	Vol. (CY)	Accum. Vol. (CY)	End Area (SF)	Vol. (CY)	Adj. Vol. (CY)*			
11736+00.00	0	0	321,533	3.1	49	61	0	-318,738	2,796
11737+00.00	0	0	321,533	0	6	8	0	-318,745	2,788
11743+00.00	0	0	321,533	0	0	0	0	-318,745	2,788
11744+00.00	0	0	321,533	10	19	24	0	-318,769	2,764
11745+00.00	0	0	321,533	14.2	45	56	0	-318,825	2,708
11746+00.00	0	0	321,533	22	67	84	0	-318,909	2,624
11747+00.00	0	0	321,533	23.6	84	105	0	-319,014	2,519
11748+00.00	0	0	321,533	14.2	70	88	0	-319,101	2,432
11749+00.00	0	0	321,533	19.5	62	78	0	-319,179	2,354
11750+00.00	0	0	321,533	18.7	71	89	0	-319,268	2,266
11751+00.00	0	0	321,533	16.3	65	81	0	-319,349	2,184
11752+00.00	0	0	321,533	15.4	59	74	0	-319,423	2,111
11753+00.00	0	0	321,533	44.4	111	139	0	-319,561	1,972
11754+00.00	0	0	321,533	9.4	100	125	0	-319,686	1,847
11755+00.00	0	0	321,533	0	0	0	-1847	-321,533	0

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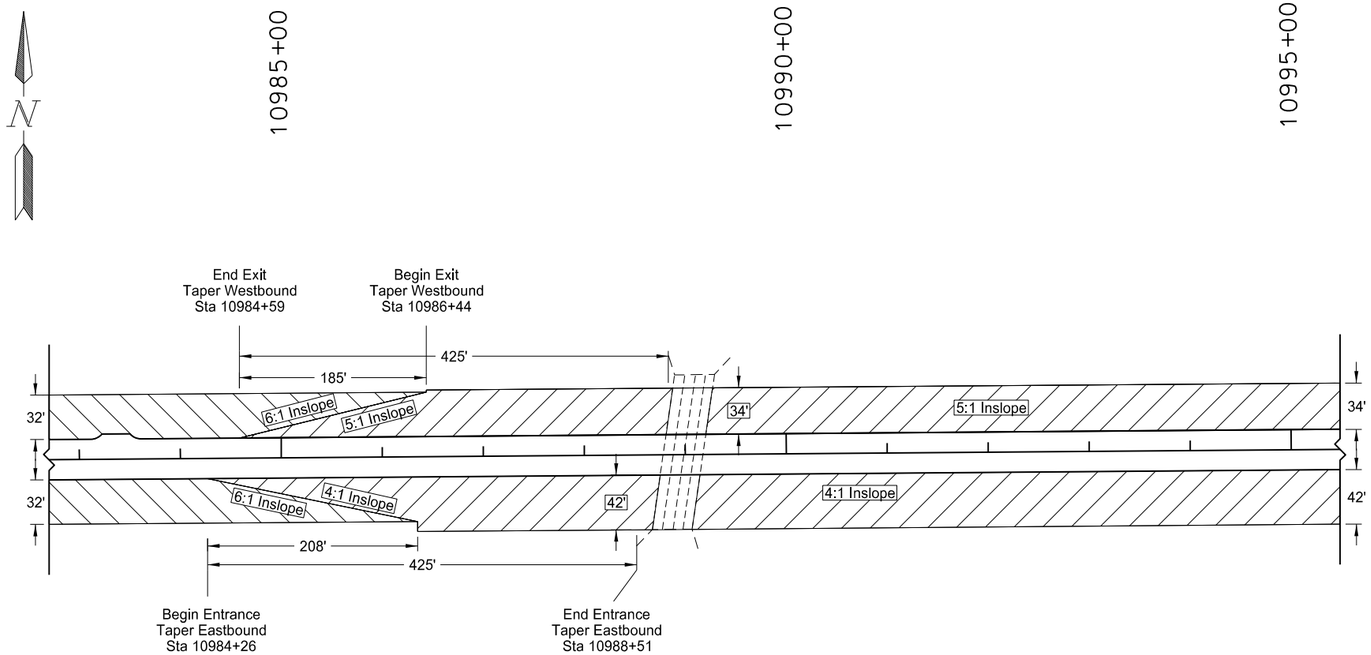
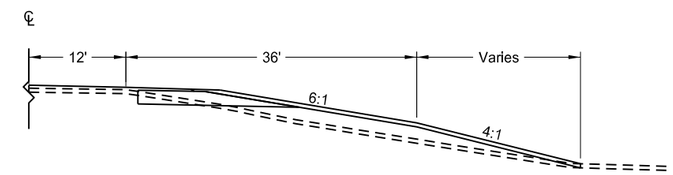
Earthwork Data Table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	11	21



Clear Zone and Slope Runout for Box Culvert Sta. 10988+98.60



Deep Fill Slope

Foreslope Exceptions			
Begin Sta.	End Sta.	Offset	Foreslopes
10496+00.00	10497+00.00	RT	Deep Fill Slope
10516+00.00	10525+00.00	LT & RT	5:1 Foreslope
10542+50.00	10569+50.00	LT	5:1 Foreslope
10542+50.00	10573+50.00	RT	5:1 Foreslope
10526+00.00	10526+00.00	RT	Deep Fill Slope
10570+00.00	10570+00.00	LT	Deep Fill Slope
10602+00.00	10602+00.00	RT	Deep Fill Slope
10603+00.00	10612+00.00	LT	Deep Fill Slope
10604+24.26	10611+00.00	RT	Deep Fill Slope
10641+00.00	10645+00.00	RT	Deep Fill Slope
10645+00.00	10646+00.00	LT	Deep Fill Slope
10648+00.00	10648+00.00	LT & RT	Deep Fill Slope
10667+00.00	10669+00.00	RT	Deep Fill Slope
10673+00.00	10678+00.00	RT	Deep Fill Slope
10679+00.00	10679+00.00	LT & RT	5:1 Foreslope
10681+00.00	10681+00.00	RT	Deep Fill Slope
10689+00.00	10691+00.00	LT & RT	5:1 Foreslope
10692+00.00	10693+00.00	RT	Deep Fill Slope
10696+00.00	10696+00.00	RT	Deep Fill Slope
10697+00.00	10711+00.00	LT & RT	5:1 Foreslope
10712+00.00	10712+00.00	RT	Deep Fill Slope
10796+00.00	10796+18.79	LT & RT	Deep Fill Slope

Foreslope Exceptions			
Begin Sta.	End Sta.	Offset	Foreslopes
10879+00.00	10879+37.46	RT	Deep Fill Slope
10879+37.46	10879+37.46	LT	Deep Fill Slope
10985+00.00	10986+00.00	RT	Deep Fill Slope
10986+00.00	10986+00.00	LT	Deep Fill Slope
10986+50.00	10996+00.00	LT	5:1 Foreslope
10986+50.00	10996+50.00	RT	4:1 Foreslope
10996+50.00	11006+00.00	RT	5:1 Foreslope
11002+00.00	11005+00.00	LT	Deep Fill Slope
11007+00.00	11008+00.00	LT & RT	Deep Fill Slope
11053+00.00	11054+00.00	RT	Deep Fill Slope
11053+18.40	11053+18.40	LT	Deep Fill Slope
11067+00.00	11073+00.00	LT & RT	5:1 Foreslope
11166+00.00	11172+00.00	LT	5:1 Foreslope
11166+50.00	11174+00.00	RT	5:1 Foreslope
11225+00.00	11225+00.00	LT	Deep Fill Slope
11227+00.00	11228+19.77	LT	Deep Fill Slope
11227+00.00	11228+00.00	RT	Deep Fill Slope
11237+50.00	11244+50.00	LT & RT	5:1 Foreslope
11280+50.00	11297+50.00	LT	5:1 Foreslope
11283+00.00	11294+00.00	RT	5:1 Foreslope
11348+00.00	11348+00.00	LT	Deep Fill Slope
11351+00.00	11351+26.18	LT	Deep Fill Slope

Foreslope Exceptions			
Begin Sta.	End Sta.	Offset	Foreslopes
11351+00.00	11352+00.00	RT	Deep Fill Slope
11375+00.00	11375+00.00	LT	Deep Fill Slope
11392+00.00	11416+00.00	RT	5:1 Foreslope
11394+00.00	11412+00.00	LT	5:1 Foreslope
11418+00.00	11419+00.00	LT	Deep Fill Slope
11422+00.00	11432+00.00	RT	5:1 Foreslope
11433+00.00	11435+00.00	LT	Deep Fill Slope
11434+00.00	11434+30.60	RT	Deep Fill Slope
11435+00.00	11438+00.00	RT	5:1 Foreslope
11442+00.00	11443+10.55	LT & RT	Deep Fill Slope
11446+00.00	11446+00.00	RT	Deep Fill Slope
11552+00.00	11561+00.00	LT	5:1 Foreslope
11609+00.00	11609+00.00	RT	Deep Fill Slope
11610+00.00	11610+00.00	LT	Deep Fill Slope
11700+00.00	11710+00.00	RT	4:1 Foreslope
11704+00.00	11710+00.00	LT	4:1 Foreslope
11710+00.00	11730+00.00	RT	5:1 Foreslope
11710+00.00	11735+50.00	LT	5:1 Foreslope
11730+00.00	11754+50.00	RT	4:1 Foreslope
11735+50.00	11754+50.00	LT	4:1 Foreslope

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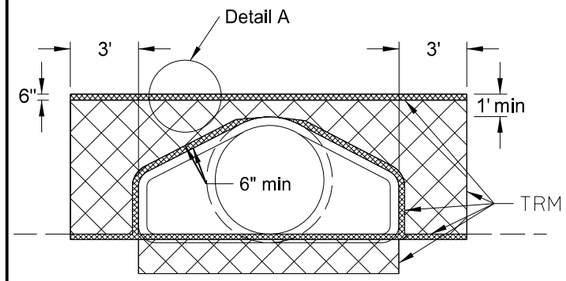
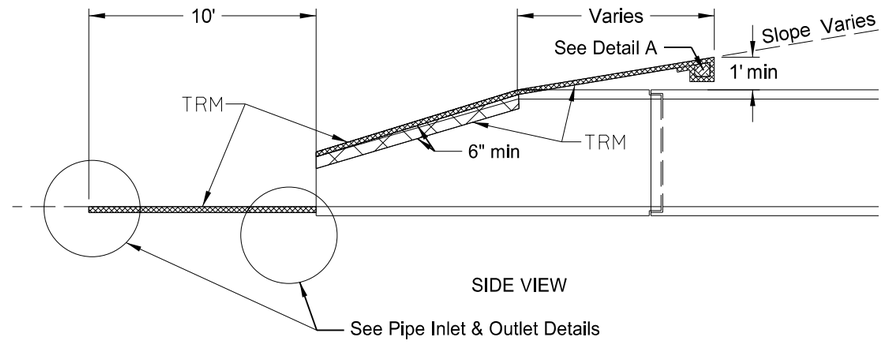
Foreslope Transitions

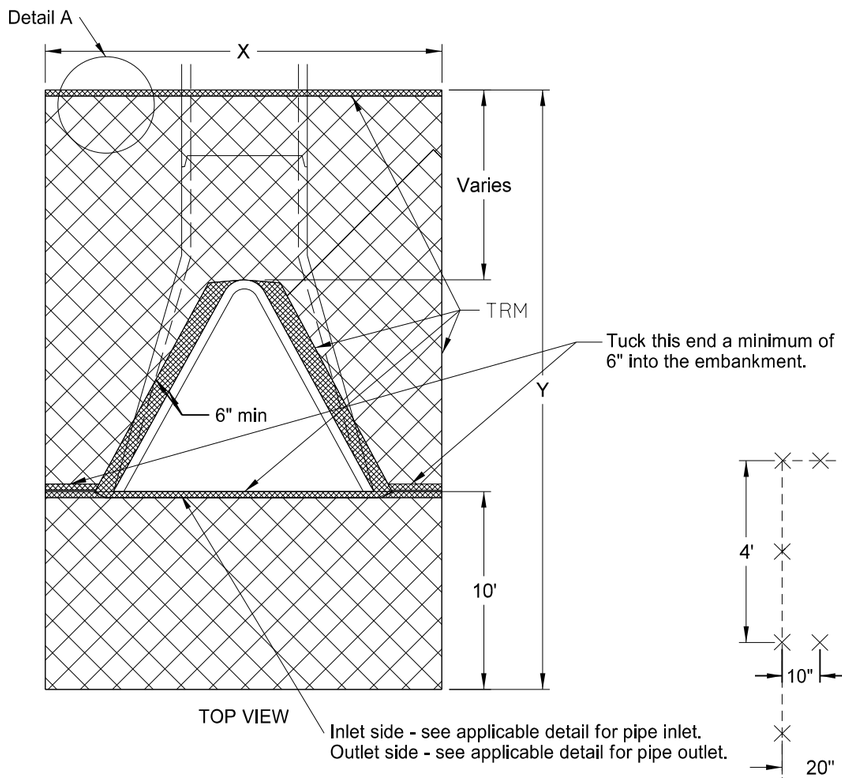
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	1



FRONT VIEW



SIDE VIEW

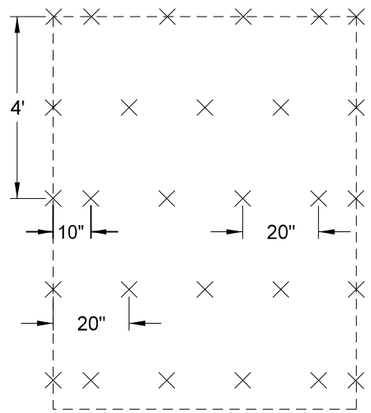


TOP VIEW

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

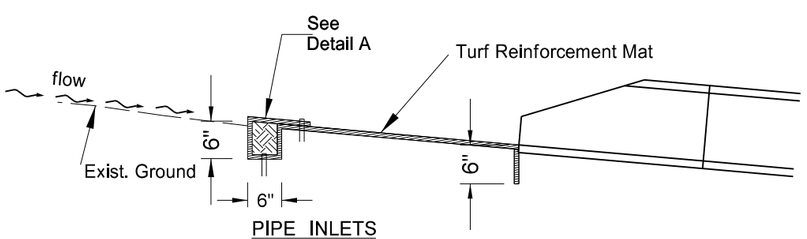
CENTERLINE CULVERTS									
DIA	X	Y	Surface area to be protected	TRM	DIA	X	Y	Surface area to be protected	TRM
In	Ft	Ft	SF	SY	In	Ft	Ft	SF	SY
24	10.5	19.6	193.1	22	24	10.5	27.6	172.1	20
30	11.6	20.5	218.3	25	30	11.6	18.5	195.1	22
36	12.7	21.2	242.1	27	36	12.7	19.2	216.7	24
48	13.8	22.0	265.6	30	48	13.8	20.0	238.0	27
54	14.5	21.5	273.7	31	54	14.5	19.5	244.7	28
Note: Quantities based on 6:1 slope.					Note: Quantities based on 4:1 slope.				

APPROACH CULVERTS				
DIA	X	Y	Surface area to be protected	TRM
In	Ft	Ft	SF	SY
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
Note: Quantities based on 8:1 slope.				

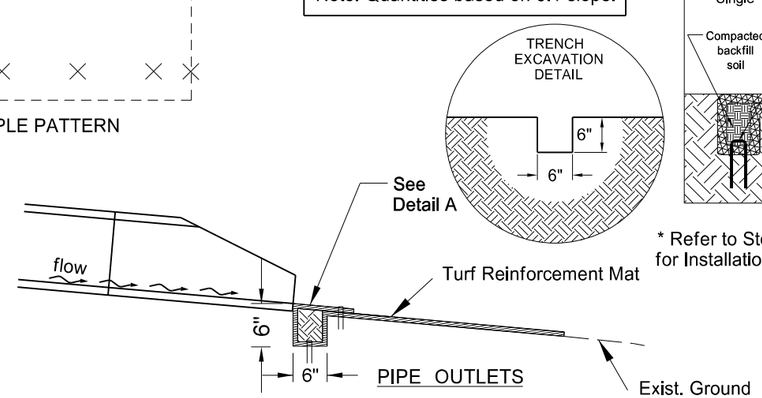


STAPLE PATTERN

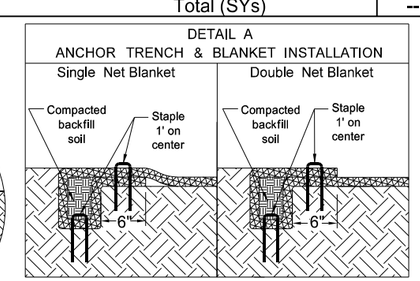
Turf Reinforcement Mat (TRM)								
Location to be Protected	Culvert Type	Pipe Diam	No	Unit Quantity	Total Quantity			
Station	Appr/CL	(Inch)		(SY)	Type 1 (SY)	Type 2 (SY)	Type 3 (SY)	Type 4 (SY)
10556+43 Lt	CL	24	1	22	--	22	--	--
10580+53 Lt	CL	24	1	22	--	22	--	--
10625+30 Lt	CL	24	1	22	--	22	--	--
10690+15 Rt	CL	36	1	27	--	27	--	--
10734+09 Lt	CL	24	1	22	--	22	--	--
10756+07 Lt	CL	30	1	25	--	25	--	--
10764+25 Lt	CL	30	1	25	--	25	--	--
10796+18 Lt	CL	36	2	27	--	54	--	--
10835+18 Rt	CL	24	1	22	--	22	--	--
10850+87 Lt	CL	24	1	22	--	22	--	--
10879+38 Rt	CL	30	1	25	--	25	--	--
10929+16 Lt	CL	24	1	22	--	22	--	--
10965+02 Rt	CL	24	1	22	--	22	--	--
11021+21 Lt	CL	36	1	27	--	27	--	--
11028+11 Lt	CL	24	1	22	--	22	--	--
11053+53 Rt	CL	30	1	25	--	25	--	--
11057+08 Lt	CL	24	1	22	--	22	--	--
11108+26 Rt	CL	24	1	22	--	22	--	--
11120+65 Lt	CL	24	1	22	--	22	--	--
11132+27 Rt	CL	24	1	22	--	22	--	--
11167+75 Rt	CL	24	1	22	--	22	--	--
11201+18 Lt	CL	24	1	22	--	22	--	--
11207+19 Rt	CL	24	1	22	--	22	--	--
11230+30 Lt	CL	24	1	22	--	22	--	--
11256+18 Lt	CL	24	1	22	--	22	--	--
11351+63 Rt	CL	54	3	31	--	93	--	--
11376+19 Lt	CL	24	1	22	--	22	--	--
11434+31 Lt	CL	24	1	22	--	22	--	--
11443+11 Rt	CL	24	1	22	--	22	--	--
11478+42 Rt	CL	24	1	22	--	22	--	--
11505+42 Rt	CL	36	1	27	--	27	--	--
11525+34 Rt	CL	24	1	22	--	22	--	--
11561+34 Rt	CL	24	1	22	--	22	--	--
11573+34 Lt	CL	30	1	25	--	25	--	--
11599+15 Lt	CL	24	1	22	--	22	--	--
11609+24 Lt	CL	24	1	22	--	22	--	--
11634+36 Rt	CL	24	1	22	--	22	--	--
11677+45 Rt	CL	30	1	25	--	25	--	--
11719+34 Lt	CL	24	1	22	--	22	--	--
11738+30*	Bridge	--	--	--	--	298	--	--
11741+24*	Bridge	--	--	--	--	298	--	--
11758+91 Lt	CL	48	2	27	--	54	--	--
Total (SYs)					--	1644	--	--



PIPE INLETS



PIPE OUTLETS



* Refer to Std. Drw D-255-1 for Installation requirements

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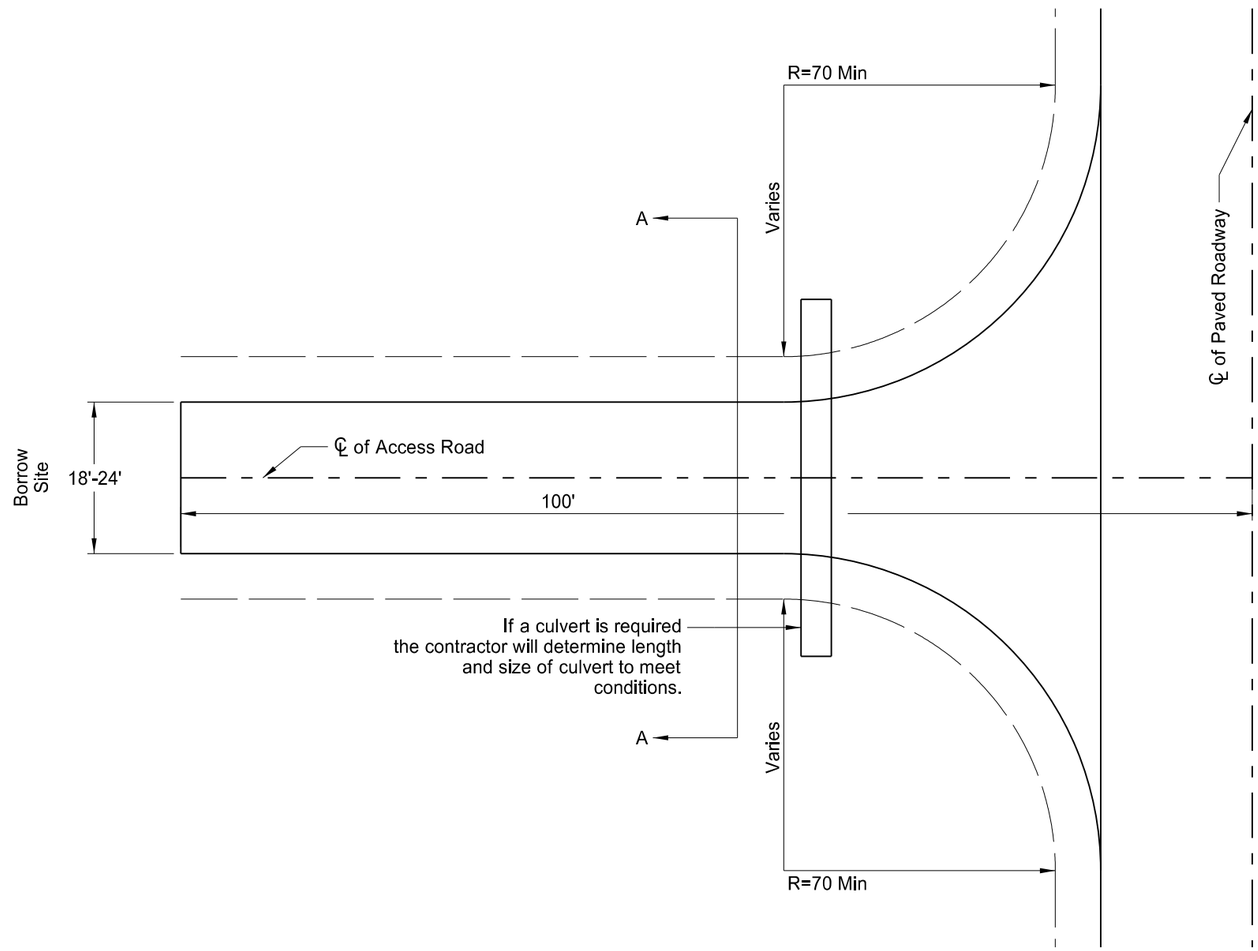
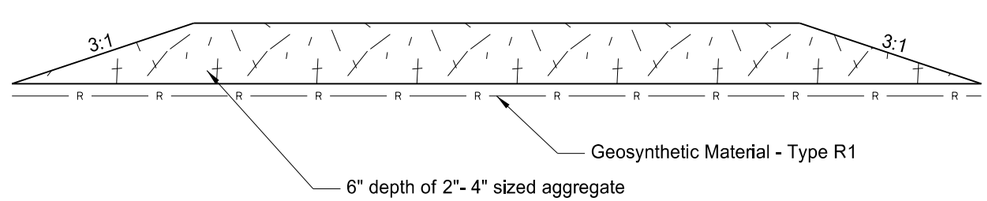
Erosion Control at Culvert Flared End Sections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	2

BID ITEM	UNIT	QUANTITY
STABILIZED CONSTRUCTION ACCESS		
Department Optioned Borrow Site	EA	2



PLAN VIEW



A - A Cross Section

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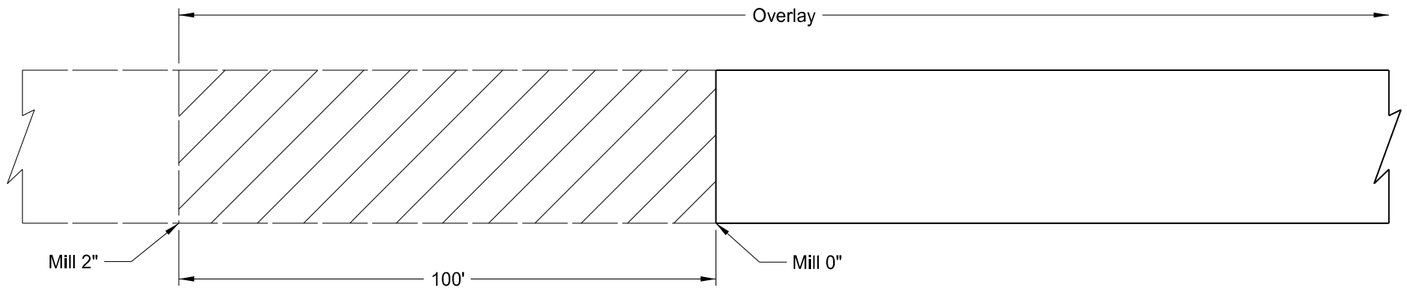
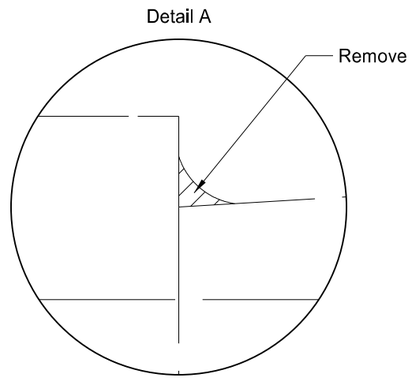
Stabilized Construction Access

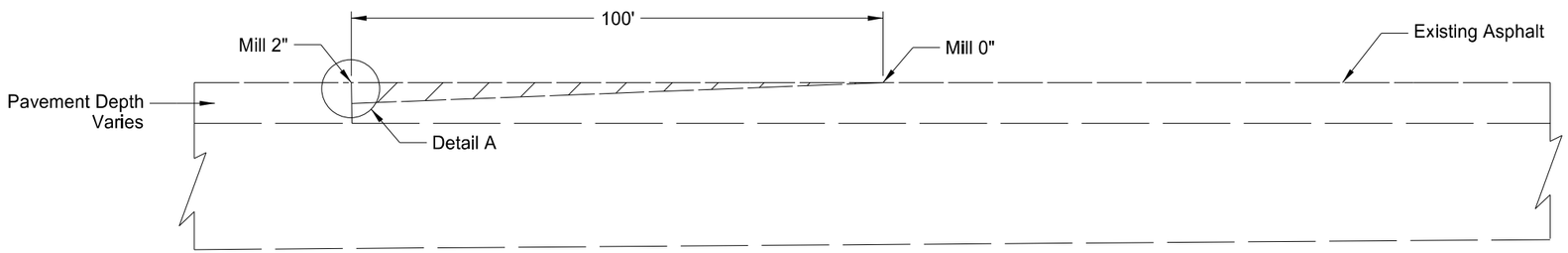
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	3



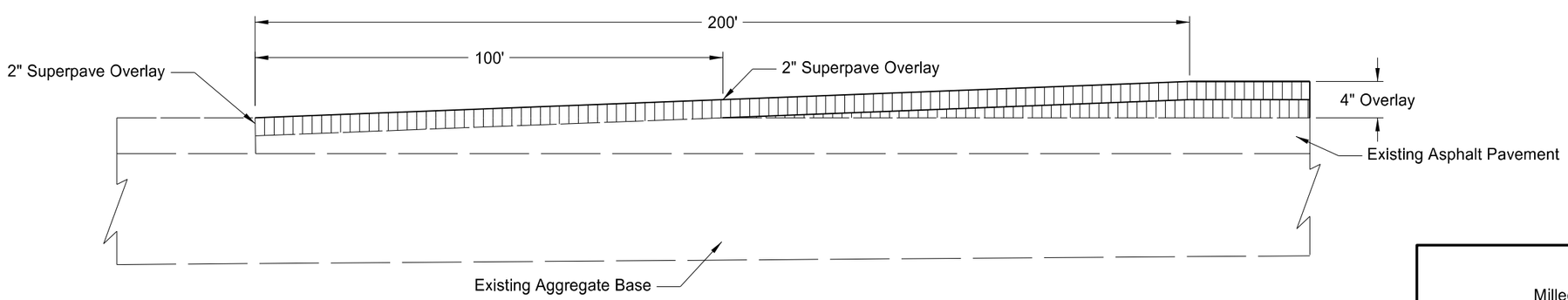
Plan View



Note: Remove excess material to form vertical edge before paving.



Milling Transition Detail



Overlay Transition Detail

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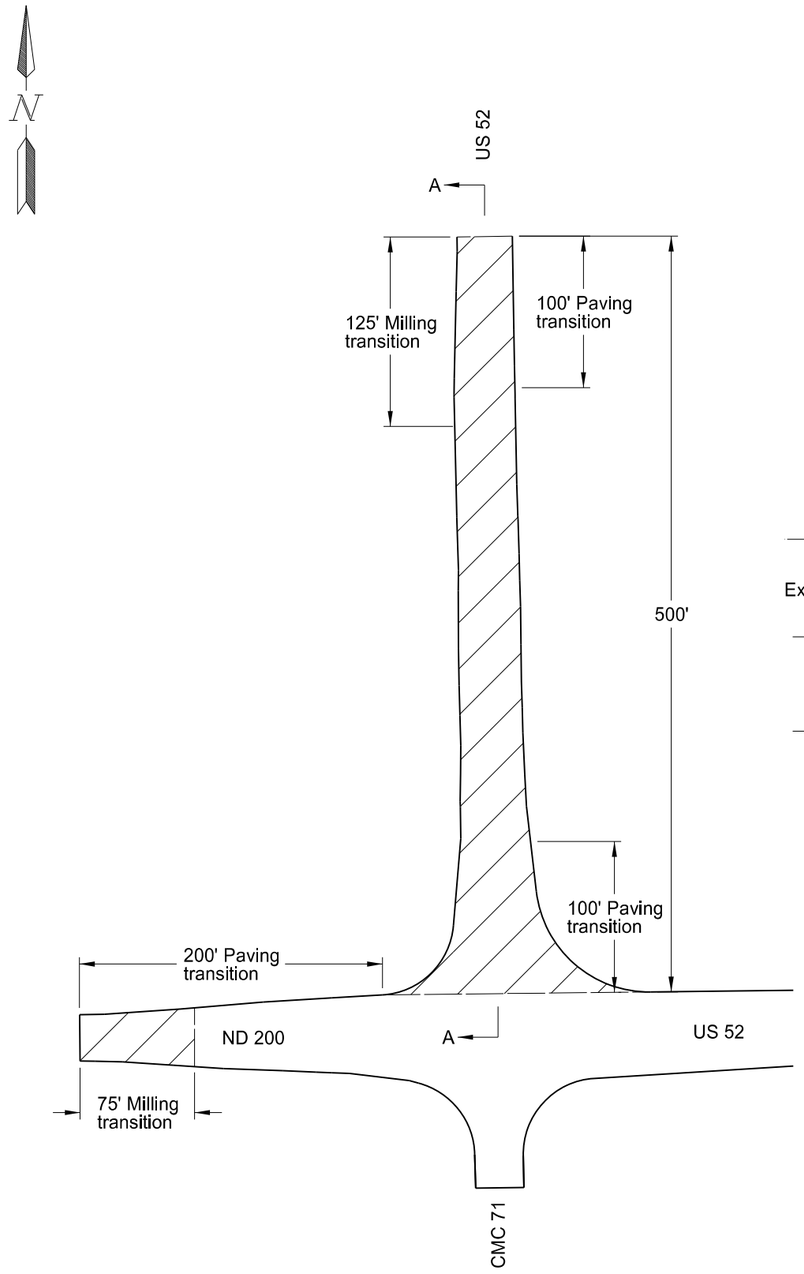
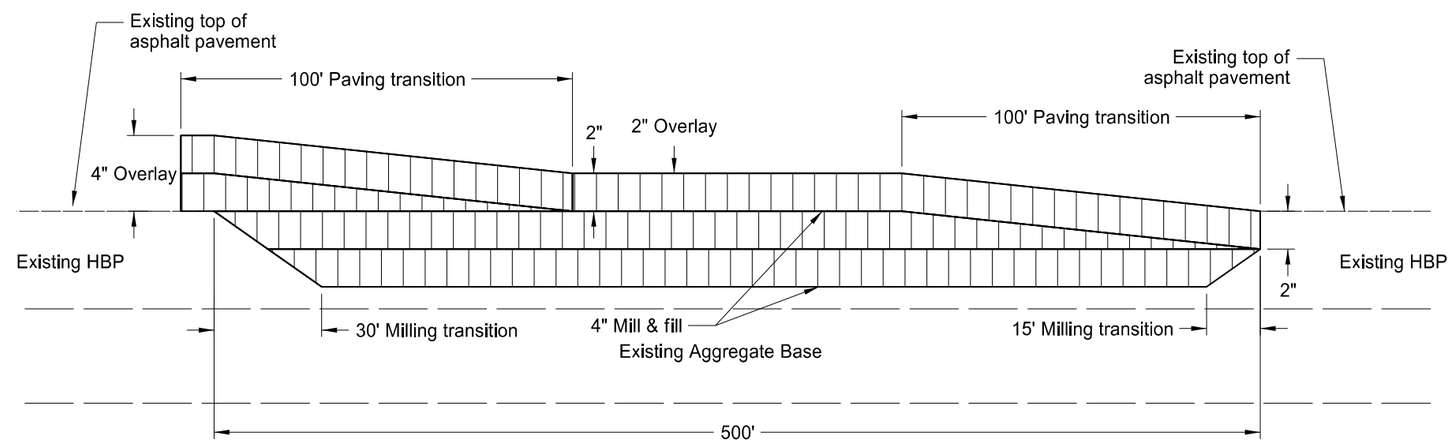
Milled Transition Detail

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	4



West Junction Paving Transitions
Sta 10487+00 to Sta 10492+00 (US 52)
Sta 14178+12 to Sta 14180+12 (ND 200)



Section A-A Mill, Fill, and Overlay Transition for US 52 North of West Junction
Not to scale

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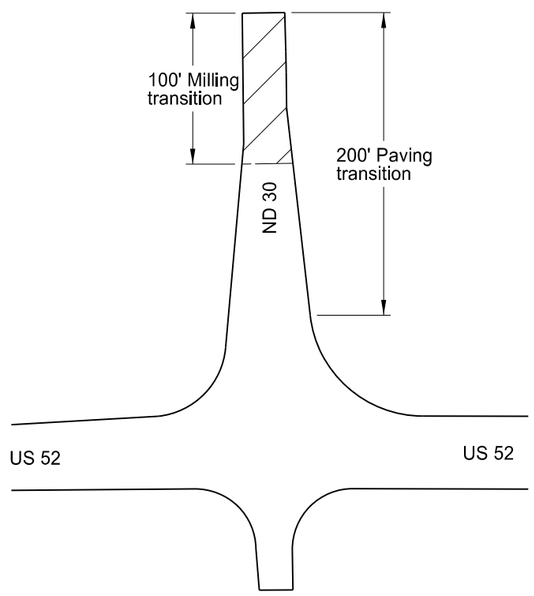
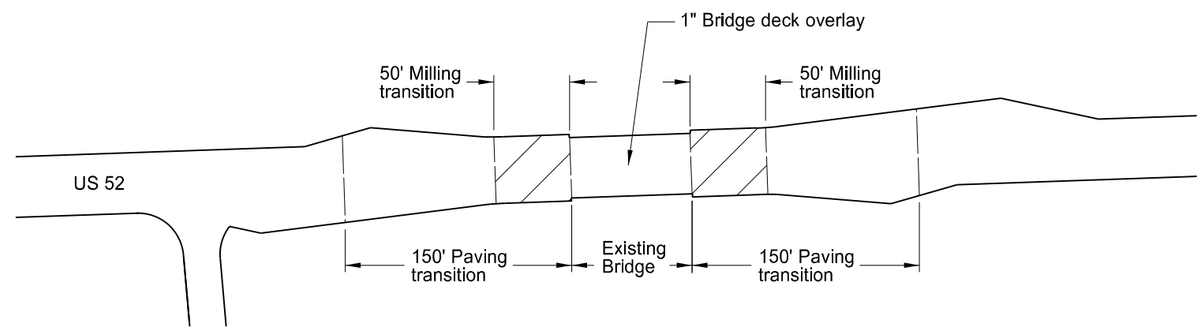
Milling and Paving Transitions

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	5



ND 30 Paving Transition
Sta 4662+34 to Sta 4664+34



Pipestem Creek Bridge Paving Transitions
Sta 11409+33 to Sta 11411+33
Sta 11412+12 to Sta 11414+12

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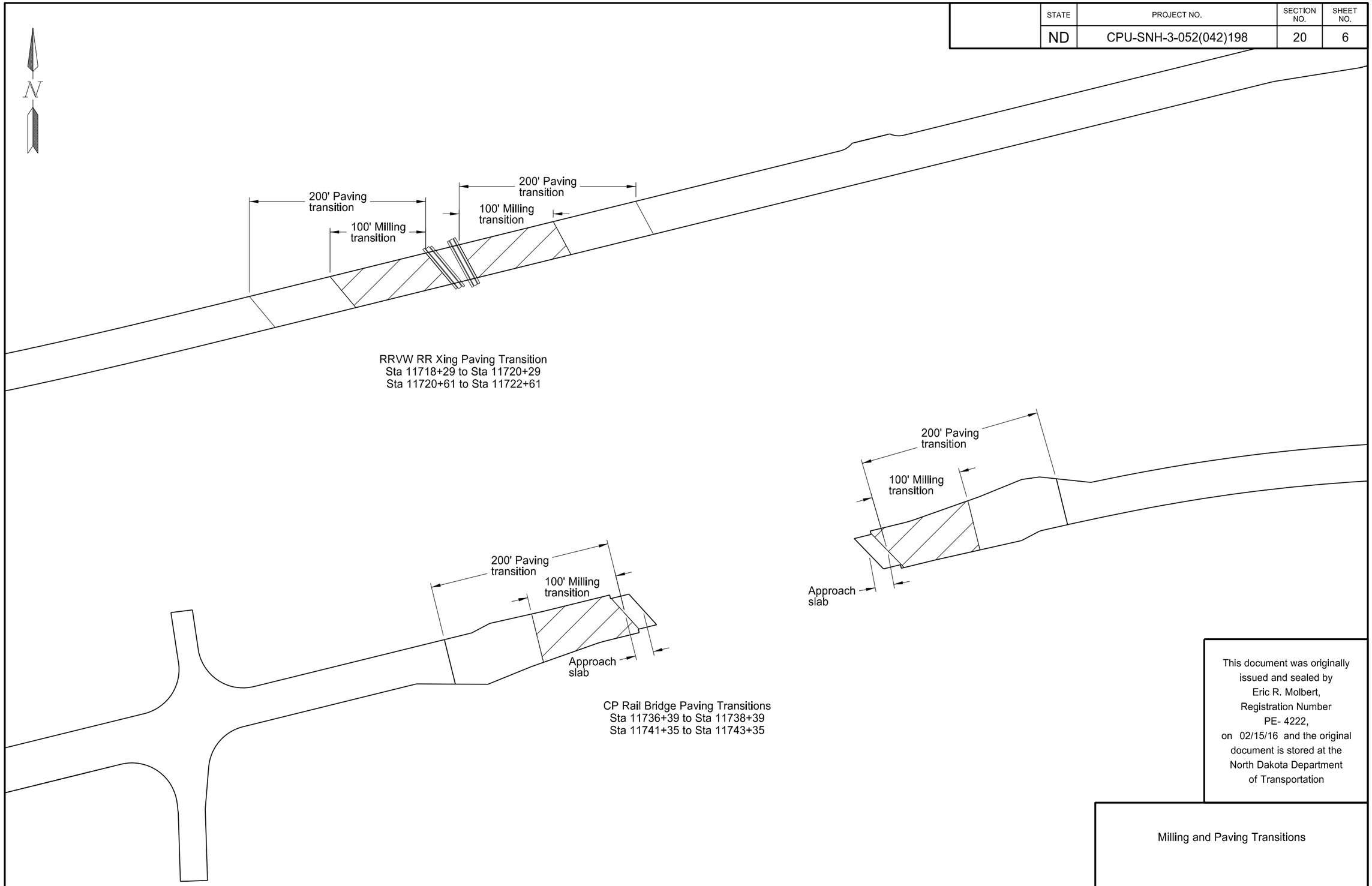
Milling and Paving Transitions

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	6



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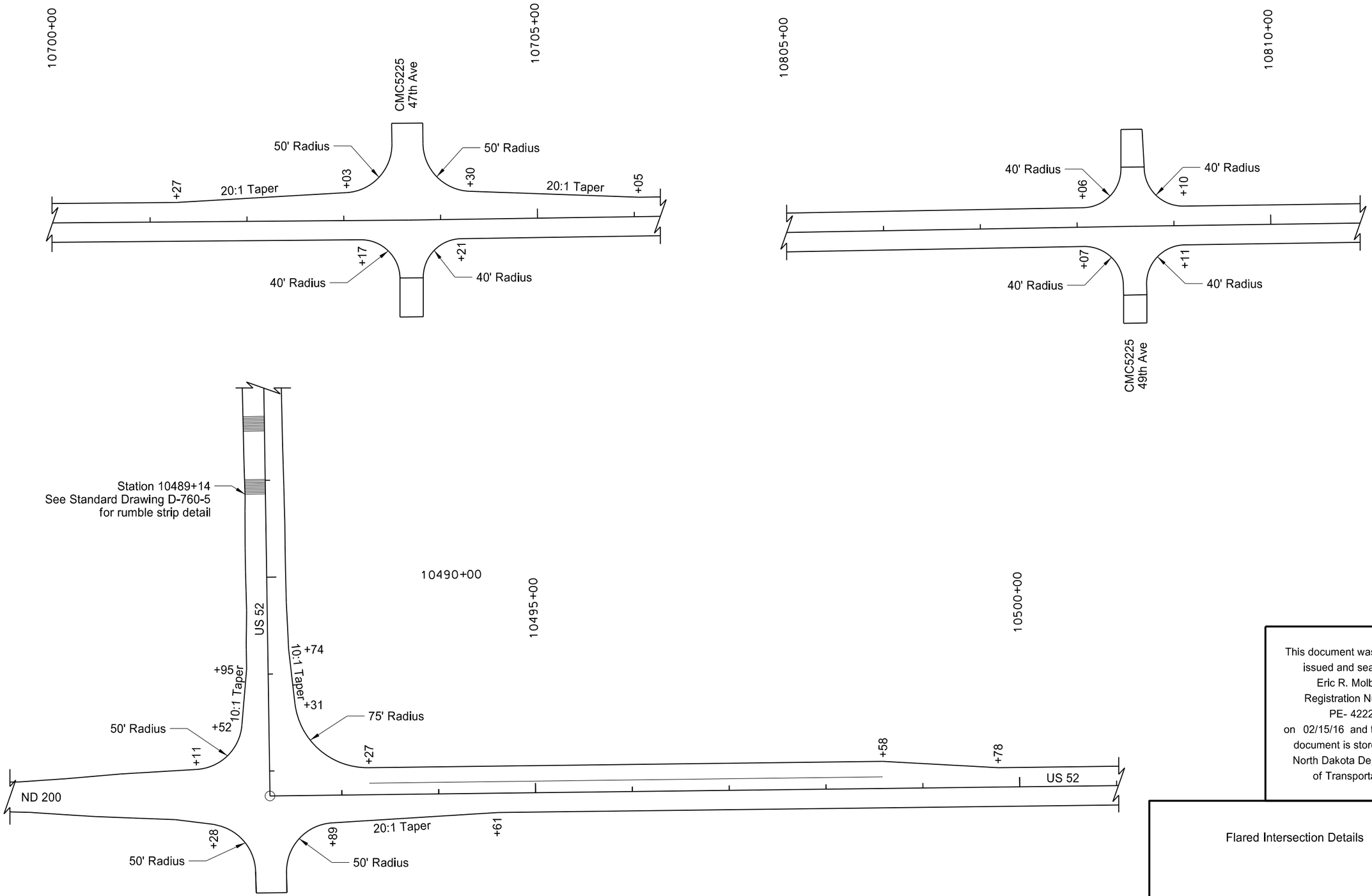
Milling and Paving Transitions

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	7



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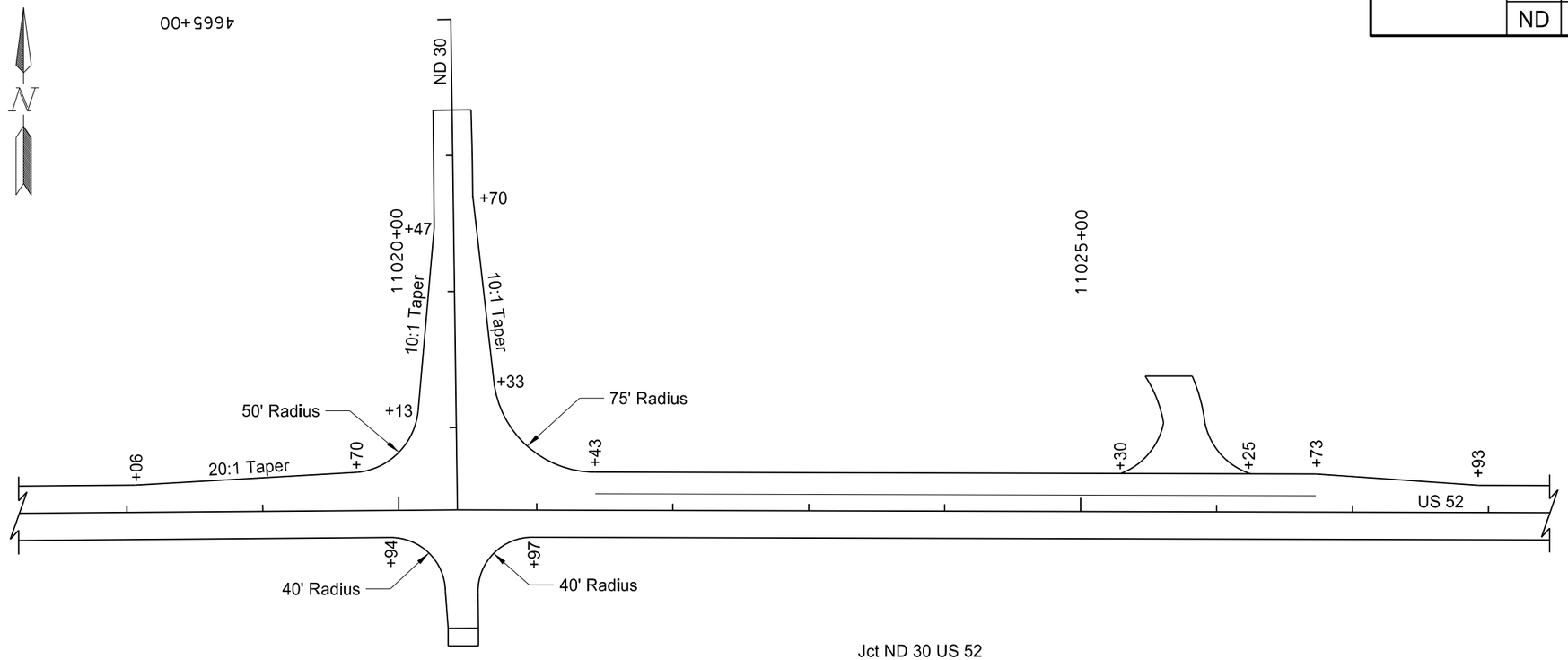
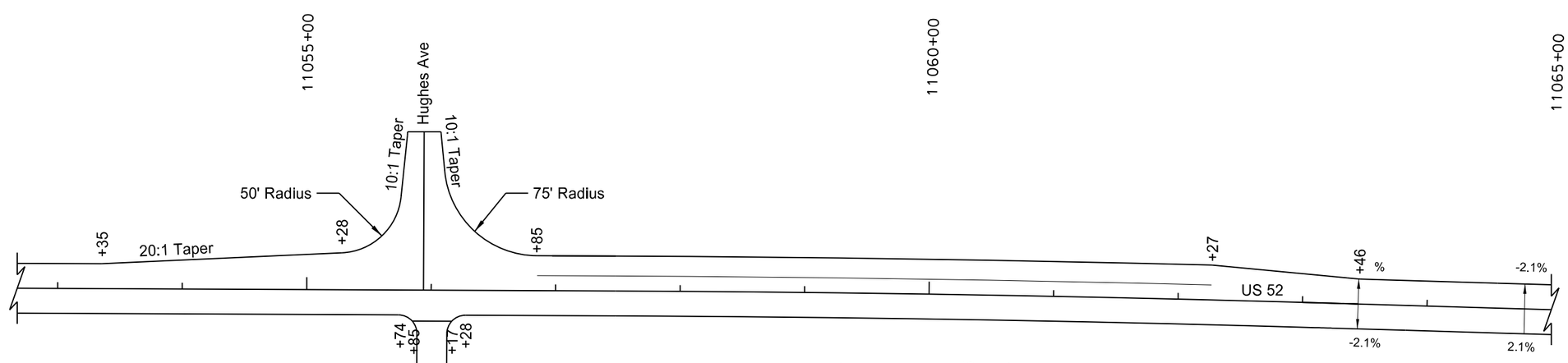
Flared Intersection Details

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	8



Jct ND 30 US 52



Jct Hughes Avenue (Sykeston)
US 52/ND 200

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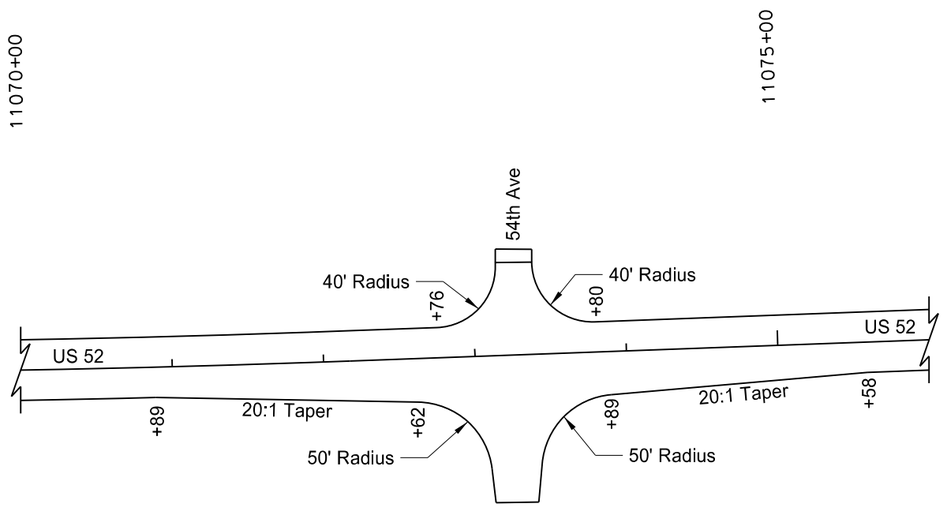
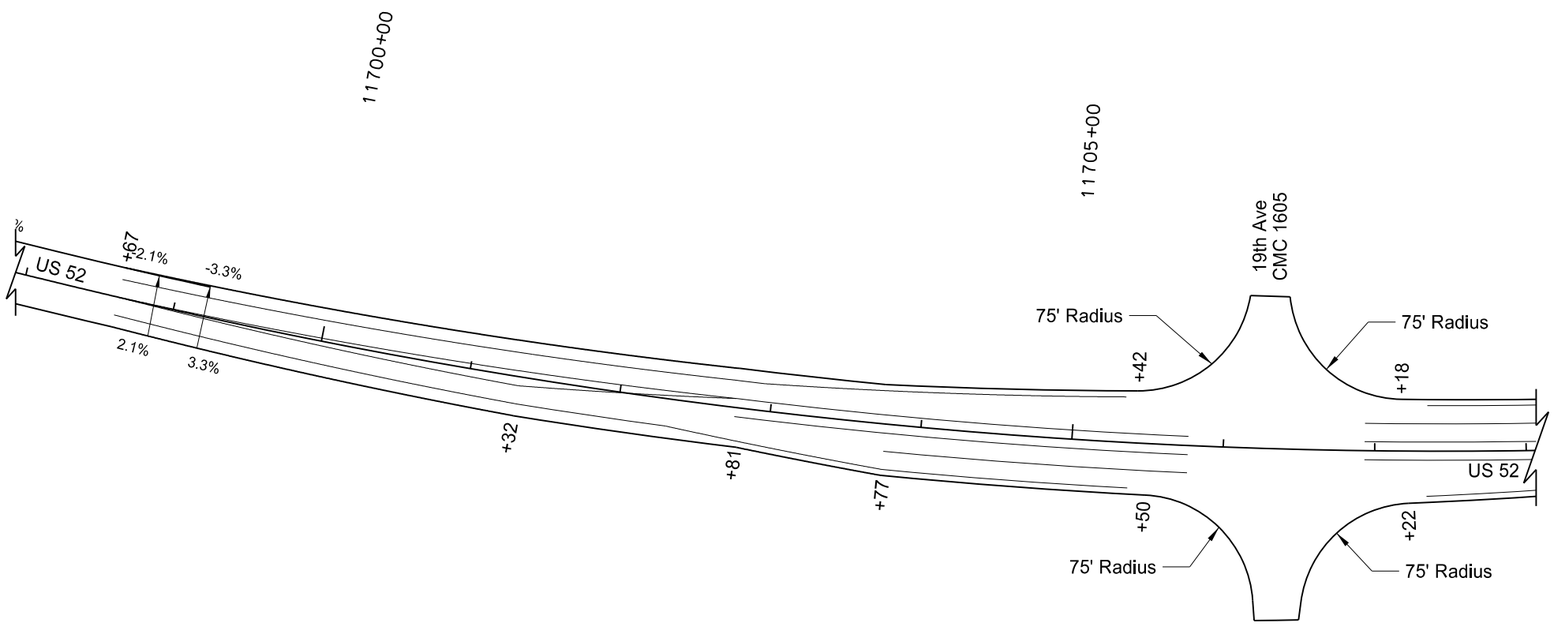
Flared Intersection Details
Jct of ND 30 & US 52/ND200
Jct of Hughes Ave & US 52/ND 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	9



Jct of 54th Ave & US 52/ND 200



Jct of 19th Ave & US 52/ND 200

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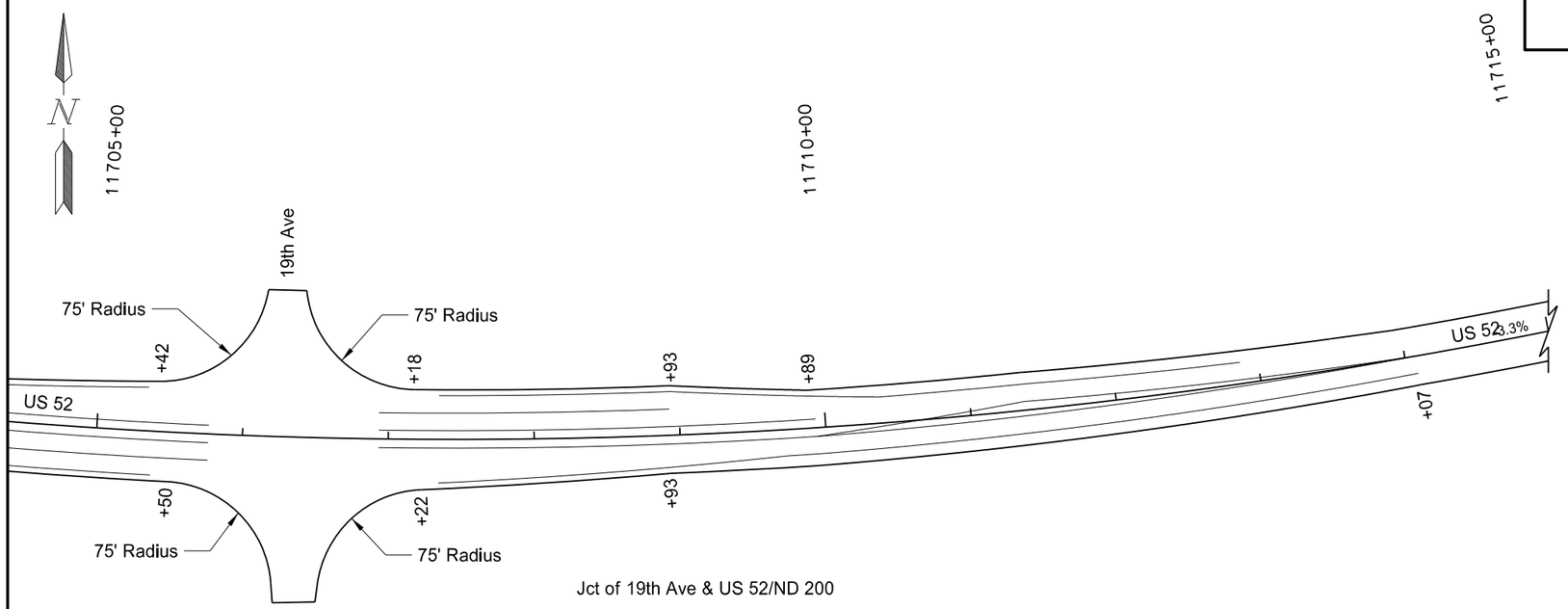
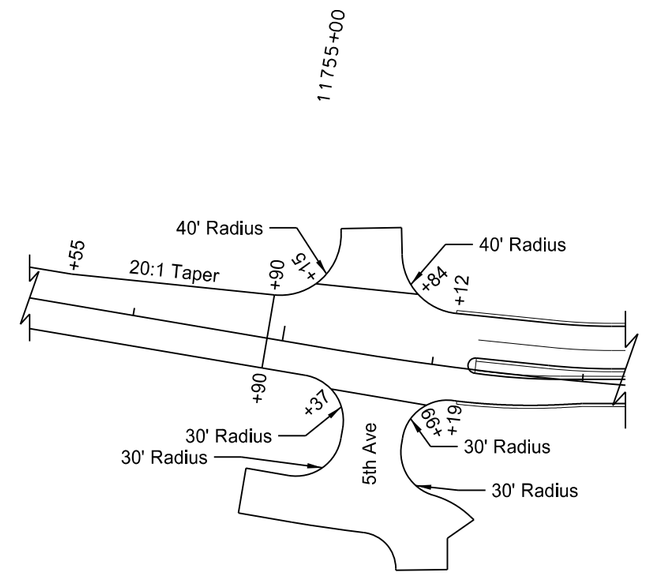
Flared Intersection Details
Jct of 54th Ave & US 52/ND 200
Jct of 19th Ave & US 52/ND 200

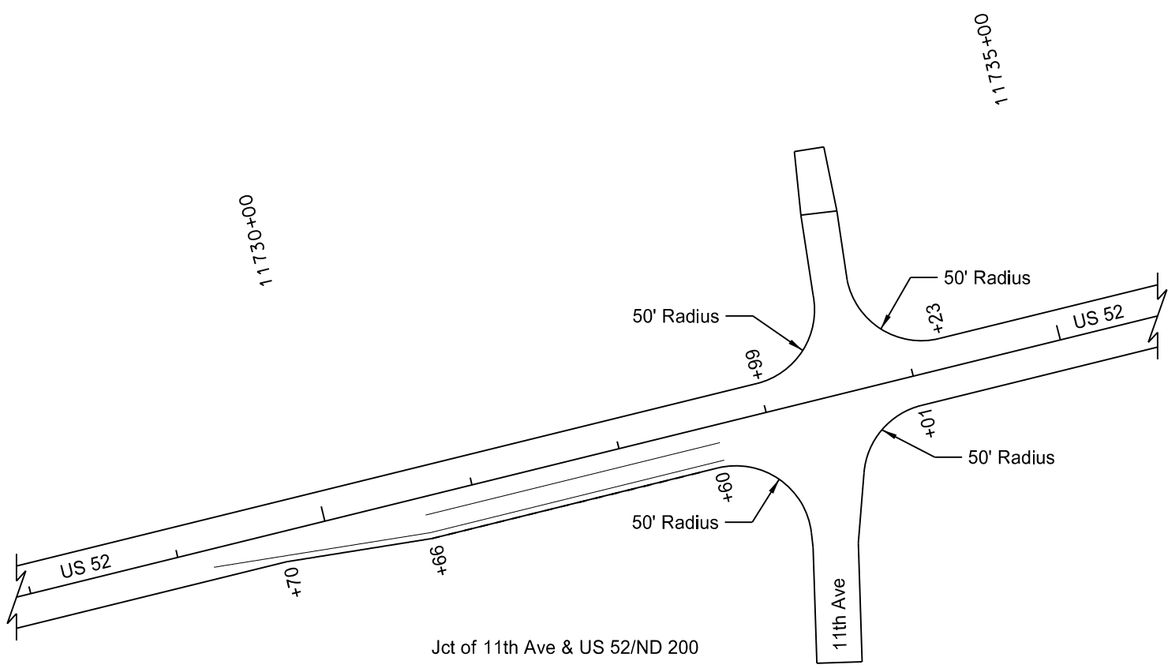
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	10



Jct of 19th Ave & US 52/ND 200



Jct of 5th Ave & US 52/ND 200



Jct of 11th Ave & US 52/ND 200

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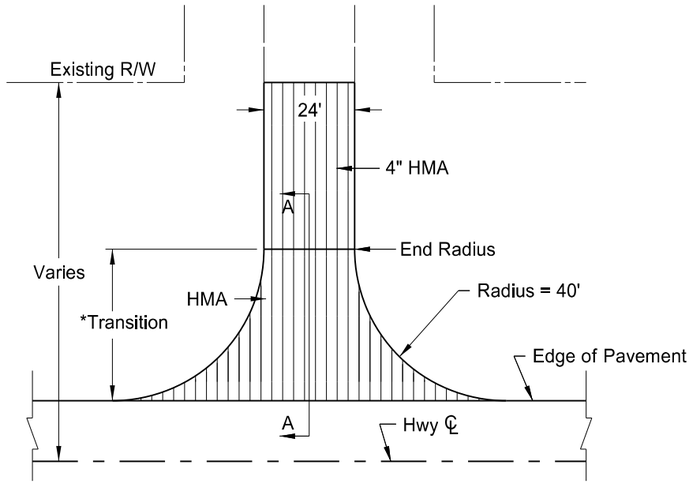
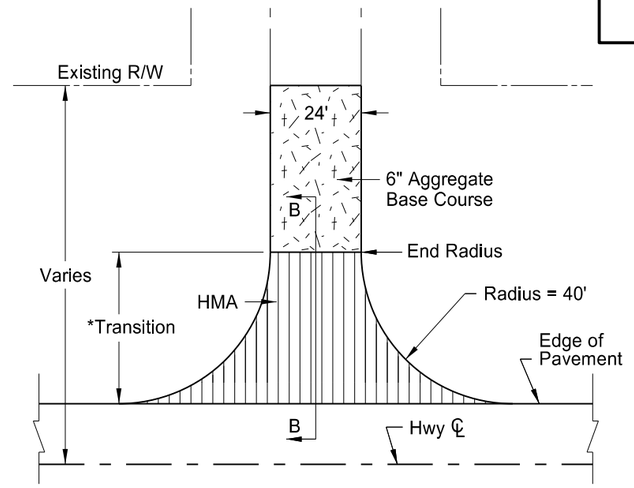
Jct of 19th Ave & US 52/ND 200
Jct of 11th Ave & US 52/ND 200
Jct of 5th Ave & US 52/ND 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	11



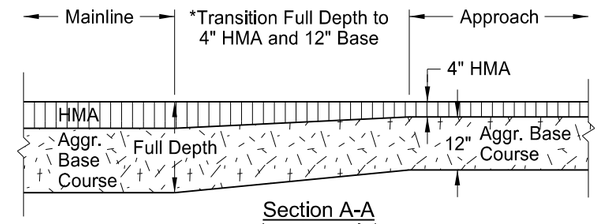
(1) Paved Section Line, County Road, or Street Approach



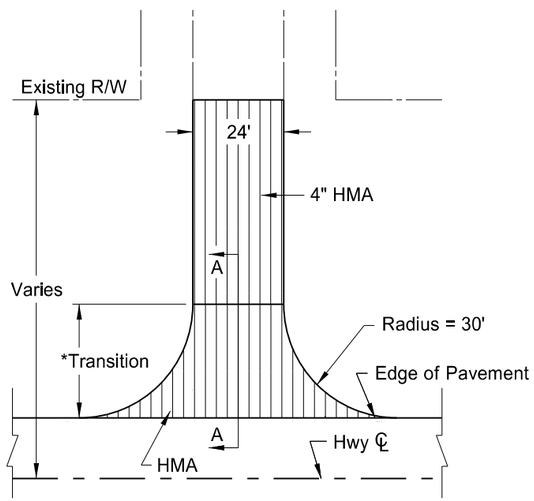
(2) Gravel Section Line, County Road, or Street Approach

Notes:

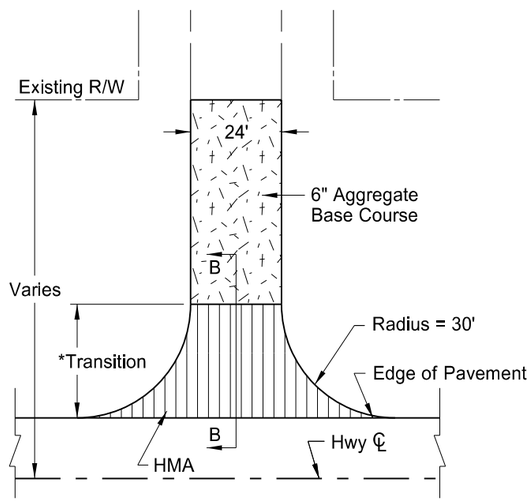
1. Actual HMA paving and aggregate base course locations may vary in the field, as approved by the Engineer.
2. Quantity totals have been included in the bid items of the "Estimate of Quantities" of the plans.



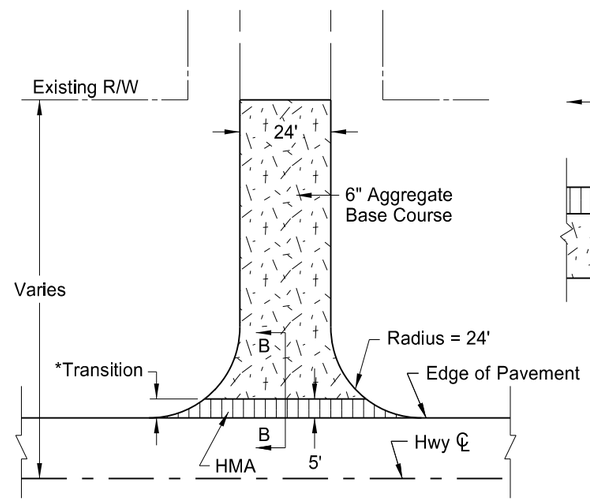
Section A-A
(not to scale)



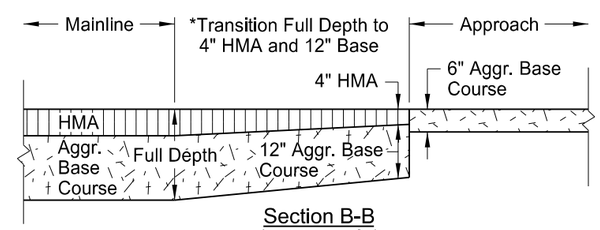
(3) Paved Private Drive Approach



(4) Gravel Private Drive Approach



(5) Field Drive Approach



Section B-B
(not to scale)

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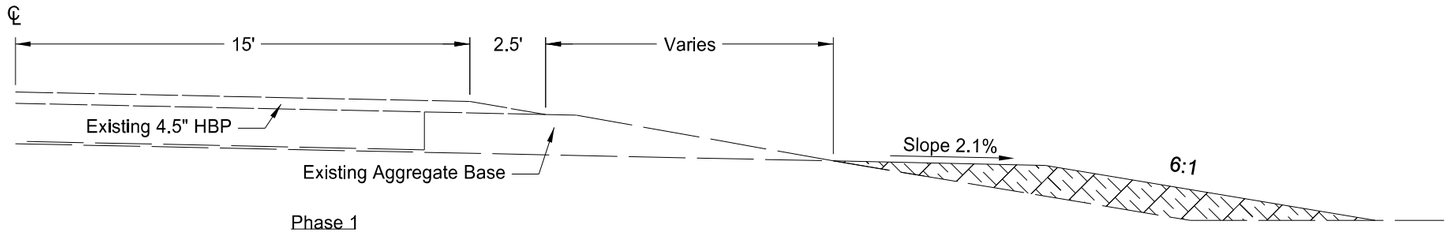
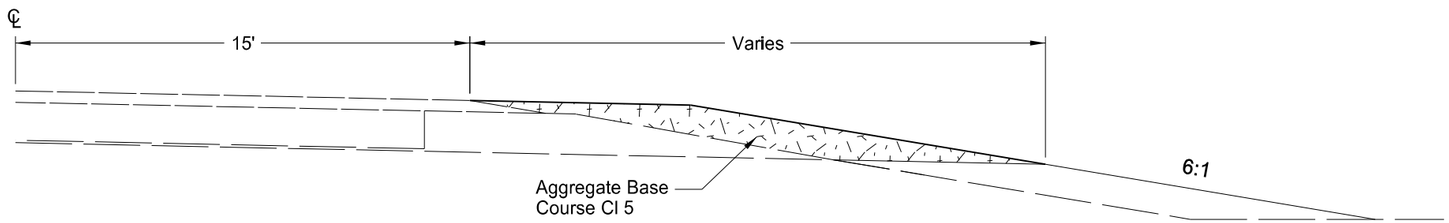
BASIS OF ESTIMATE		(1)	(2)	(3)	(4)	(5)	
ITEM	UNIT	Paved Section Line	Gravel Section Line	Paved Private Drive	Gravel Private Drive	Field Drive	TOTALS
Number of Locations	#	11	35	9	17	77	149
Aggregate Base Course CL 5	TON	0.00	22.22	0.00	19.75	35.86	3,874.67
Tack Coat	GAL	30	20	22	14	4	1,774
Superpave FAA 45	TON	64.37	40.67	48.37	27.31	6.42	3,525.46
PG 64-28 Asphalt Cement	TON	3.86	2.44	2.90	1.64	0.39	211.87

Approach Paving Details

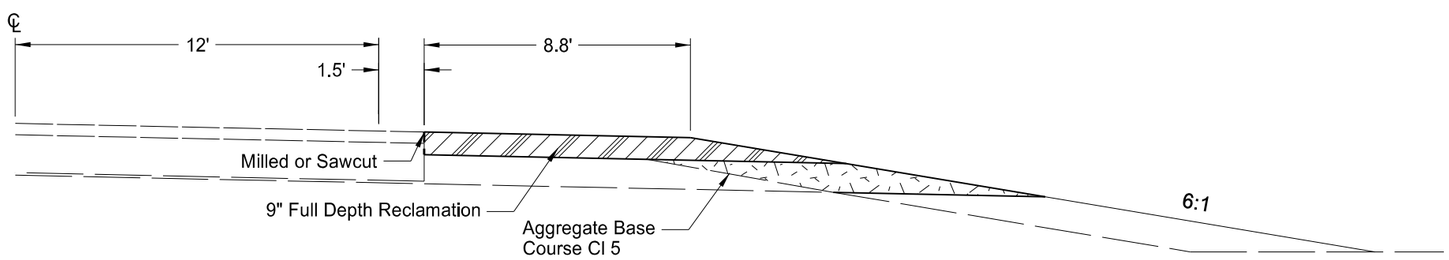
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	12



Phase 1
Construct Embankment



Phase 2
Supplement Class 5 Aggregate



Phase 3
Full Depth Reclamation

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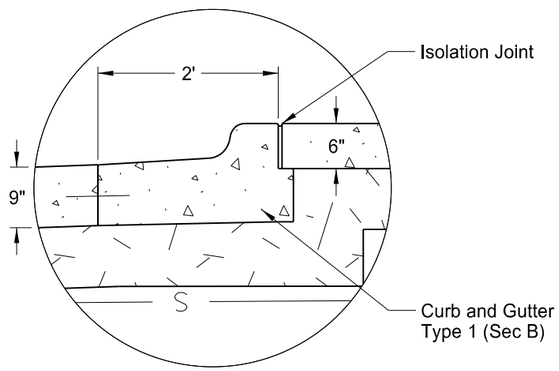
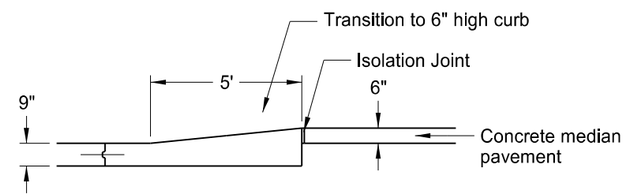
Full Depth Reclamation Detail

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	13

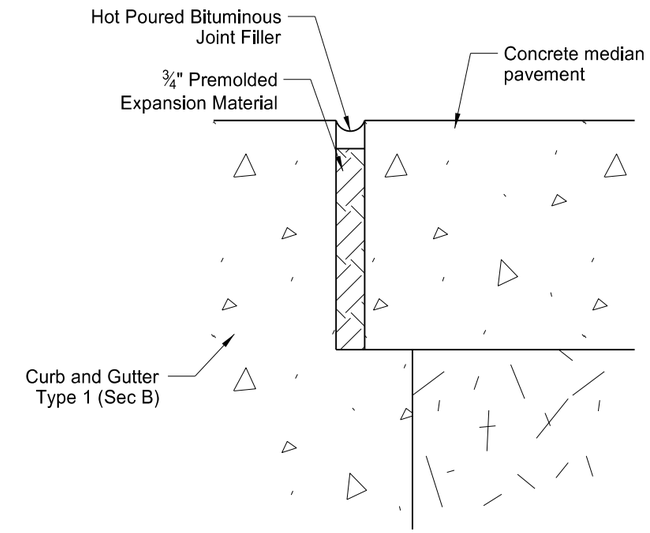
MEDIAN NOSE DETAIL



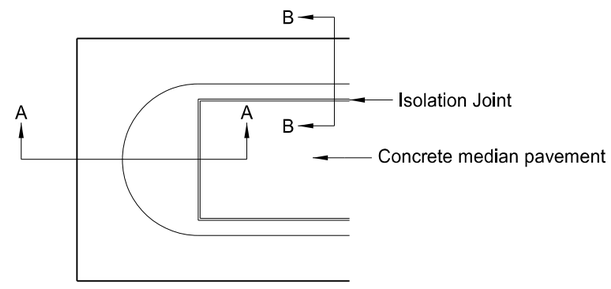
Section B-B



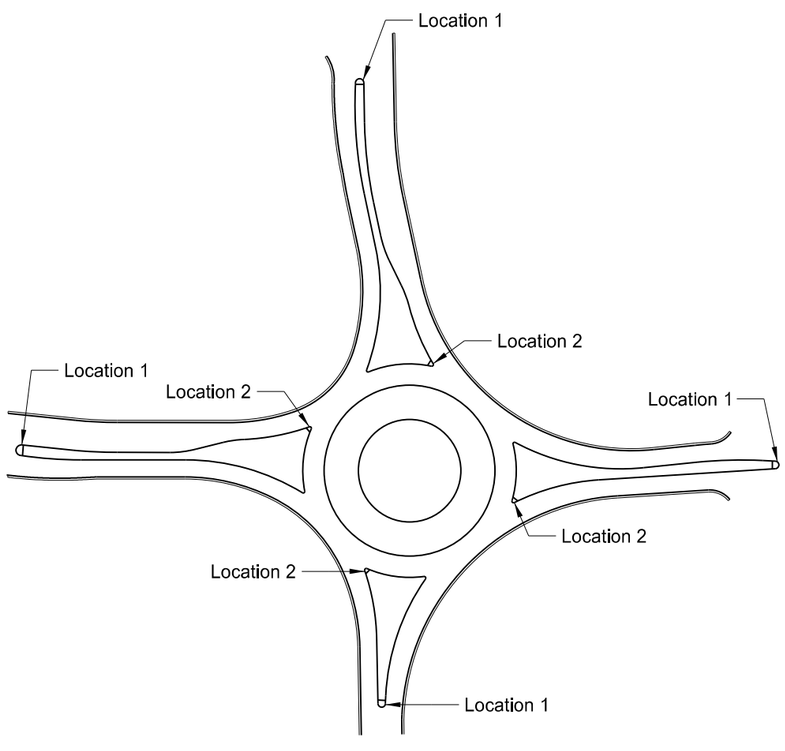
Section A-A

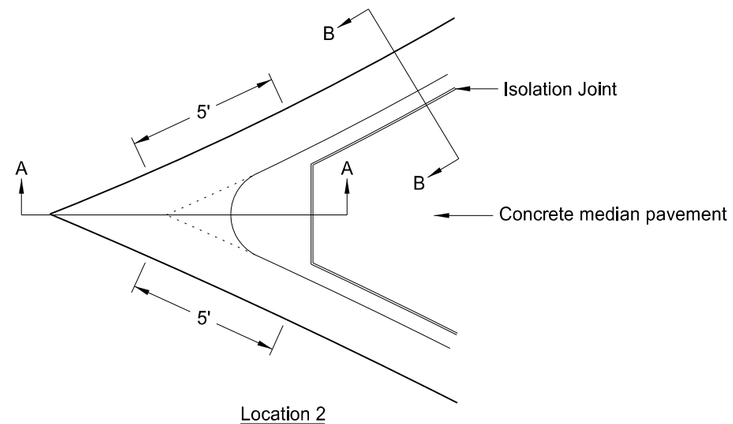


Isolation Joint



Location 1





Location 2

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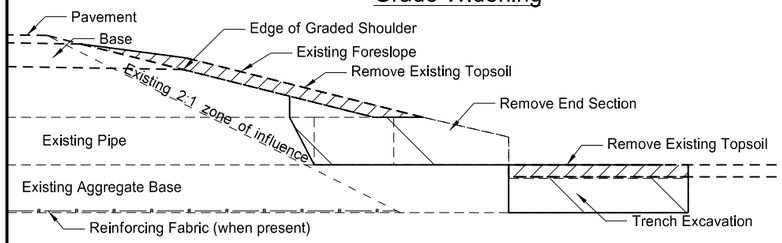
Median Nose Detail

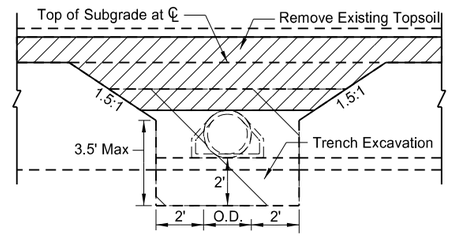
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	20	14

Grade Widening



Removal Section

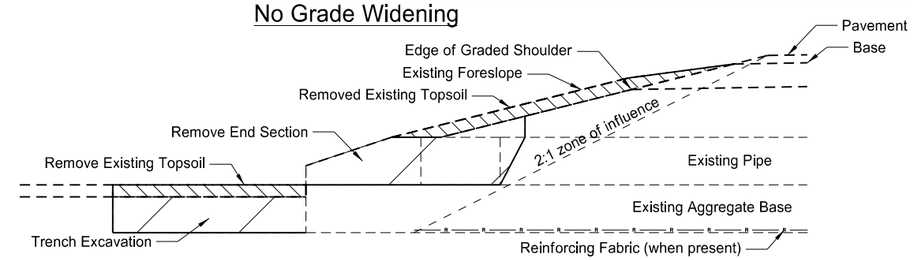
Cross Section View



Removal Detail

Side View

No Grade Widening



Removal Section

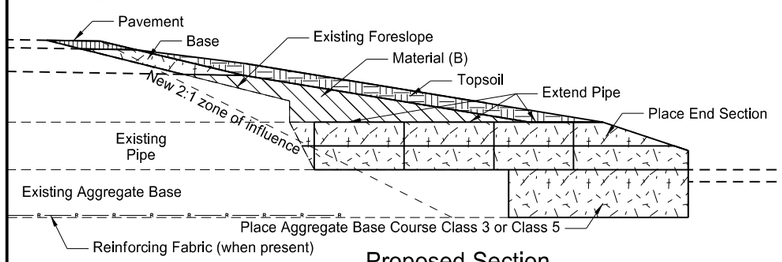
Cross Section View

Pay Items
1) Pipe*
2) Remove & Relay Pipe - All Types & Sizes (when required)
3) Remove & Reset End Section or new End Section
4) Borrow Excavation (Compaction Control Type A) or Common Excavation-Type A
5) Topsoil
6) Seeding
7) Mulching

*Included in Pipe Pay Item
1) Pipe
2) Trench excavation
3) Aggregate Base Course Class 3 or Class 5

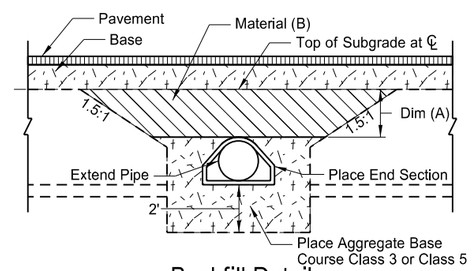
Pay Items
1) Pipe*
2) Remove & Reset End Section or Remove End Section and Place New End Section

*Included in Pipe Pay Item
1) Pipe
2) Trench excavation
3) Aggregate Base Course Class 3 or Class 5
4) Embankment (Compaction Control Type A)
5) Topsoil, Seeding, and Mulch



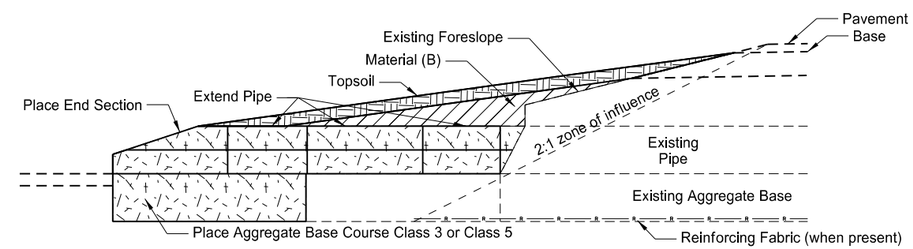
Proposed Section

Cross Section View



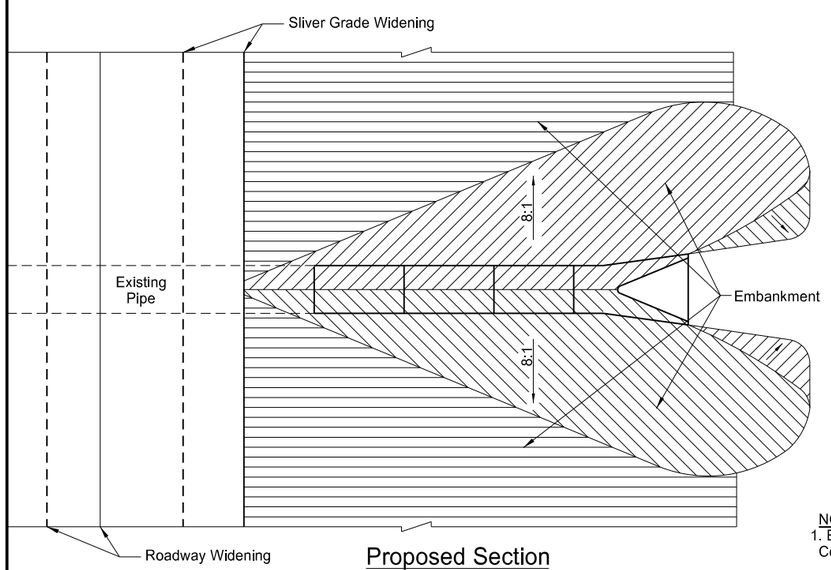
Backfill Detail

Side View (Topsoil not shown)



Proposed Section

Cross Section View

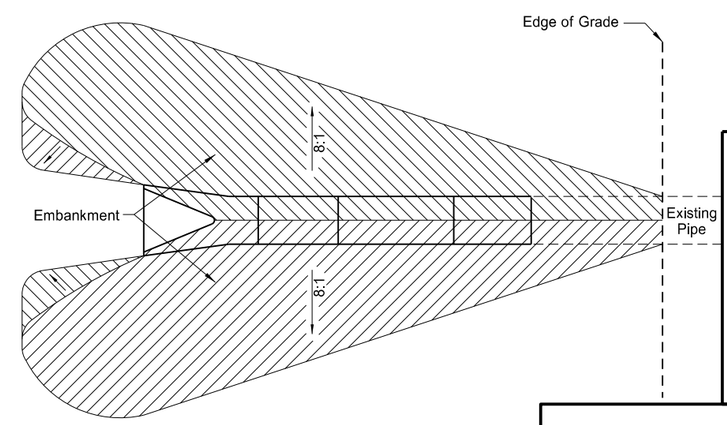


Proposed Section

Plan View

Pipe Materials	Dim (A)<=4 Feet Material (B)	Dim (A)>4 Feet Material (B)
Concrete	Embank or Aggr	Embank or Aggr
Metal	Embank or Aggr	Embank or Aggr

NOTES:
1. Embankment may be either Borrow Excavation (Compaction Control - Type A) or Common Excavation - Type A.
2. Aggregate may be either Class 3 or Class 5 Aggregate Base Course.



Proposed Section

Plan View

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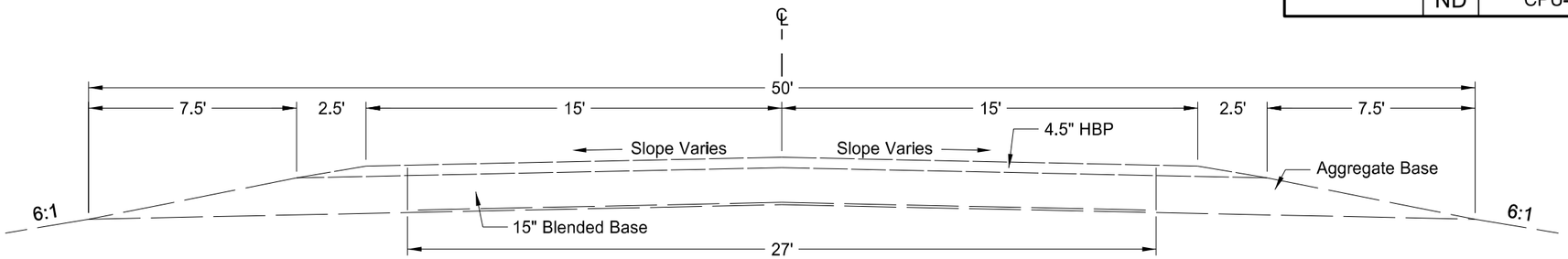
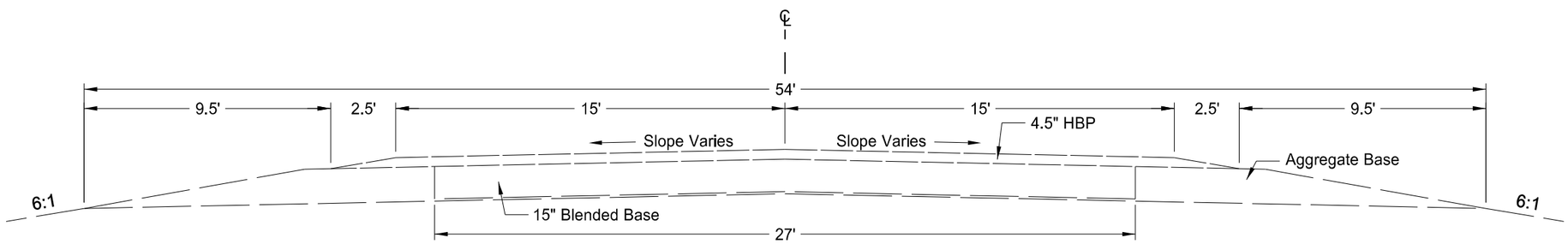
Centerline Pipe Extension Detail

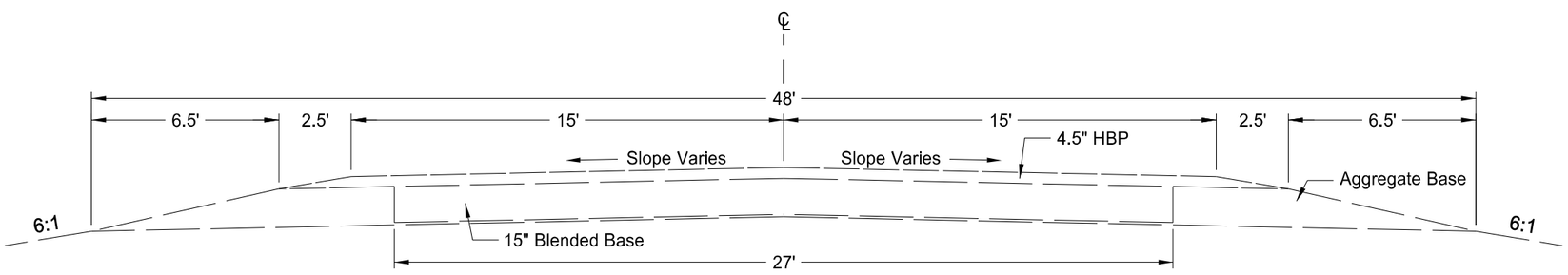
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	30	1



US 52
Sta 10492+25 to Sta 10548+25, Sta 10560+25 to Sta 10574+25
Sta 10588+25 to Sta 10619+25, Sta 10629+25 to Sta 10729+25
Sta 10785+25 to Sta 10810+25, Sta 10972+25 to Sta 11112+25
Sta 11215+25 to Sta 11248+25, Sta 11339+25 to Sta 11361+25
Sta 11437+25 to Sta 11461+25, Sta 11604+25 to Sta 11759+57



US 52
Sta 10548+25 to Sta 10560+25, Sta 10574+25 to Sta 10588+25
Sta 10619+25 to Sta 10629+25, Sta 10729+25 to Sta 10785+25
Sta 10810+25 to Sta 10972+25, Sta 11112+25 to Sta 11215+25
Sta 11248+25 to Sta 11339+25, Sta 11361+25 to Sta 11392+25
Sta 11461+25 to Sta 11604+25



US 52
Sta 11392+25 to 11437+25

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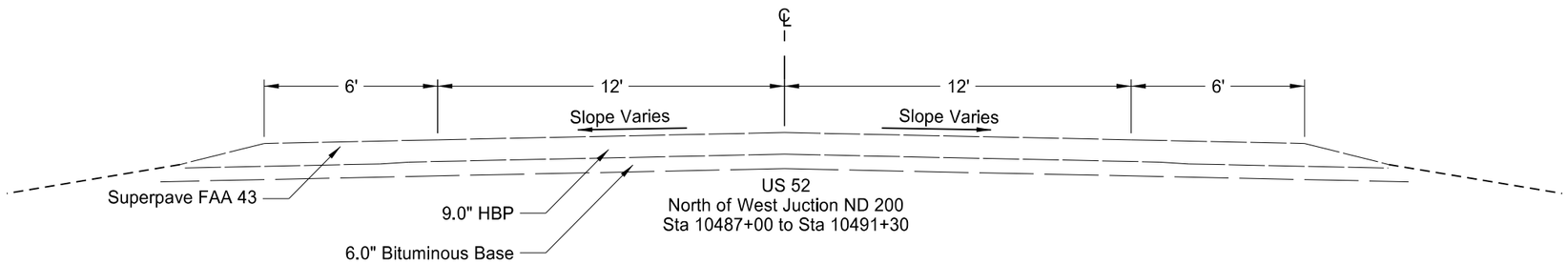
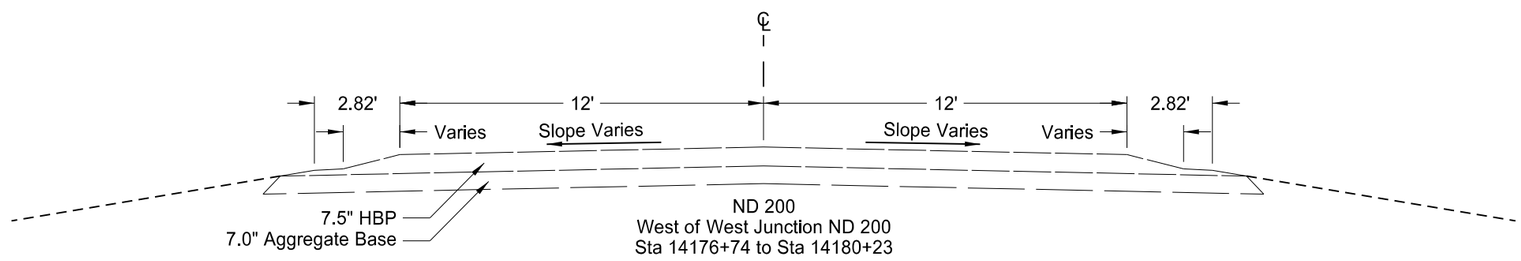
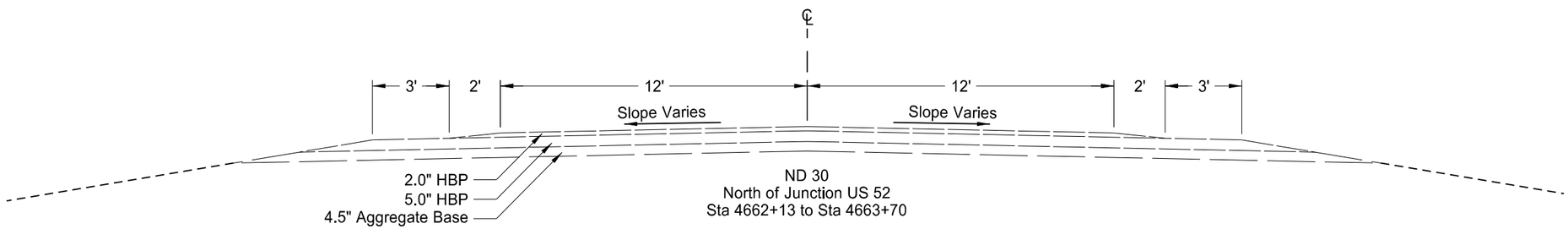
Existing Typical Sections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	30	2







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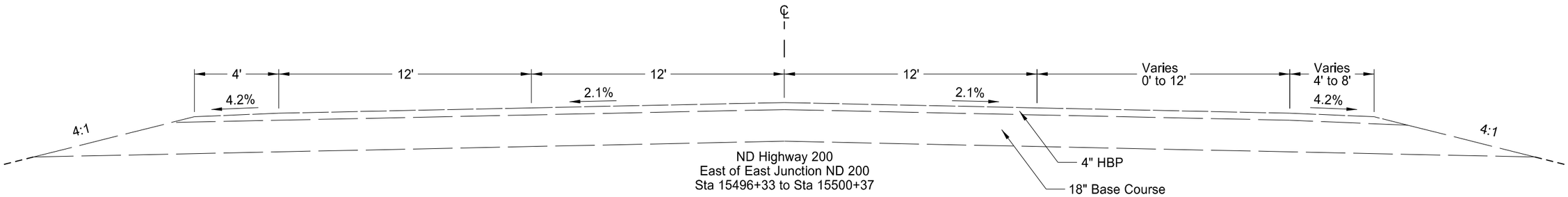
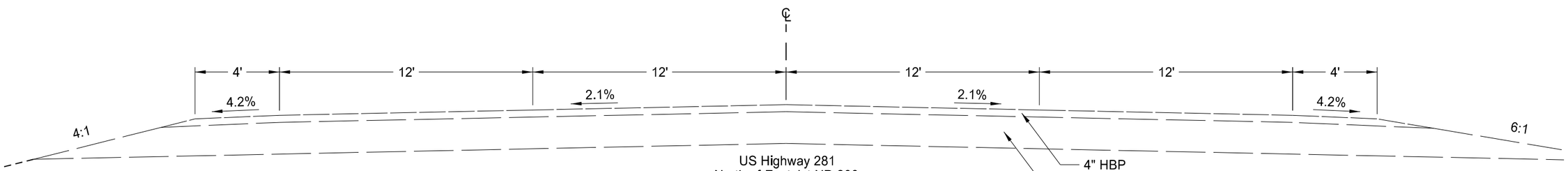
Existing Typical Sections

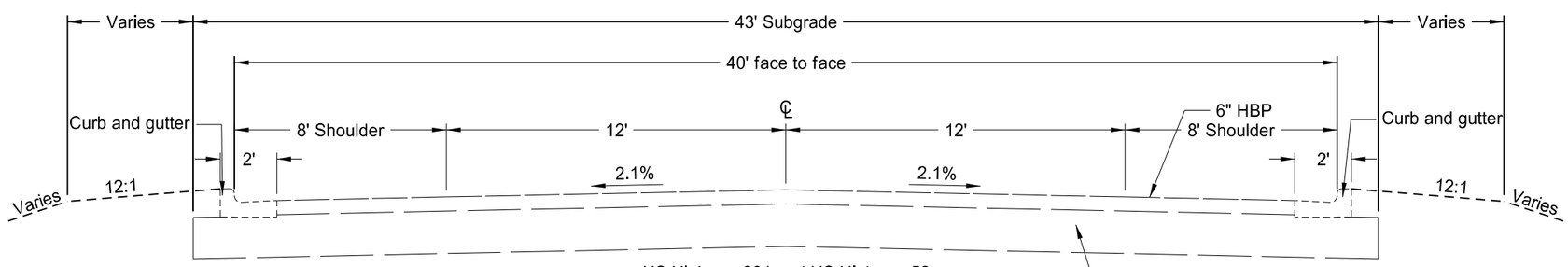
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	30	3



ND Highway 200
East of East Junction ND 200
Sta 15496+33 to Sta 15500+37



US Highway 281
North of East Jct ND 200
Sta 5942+06 to Sta 5947+30



US Highway 281 and US Highway 52
South of East Junction ND 200
Sta 11760+24 to Sta 11762+13

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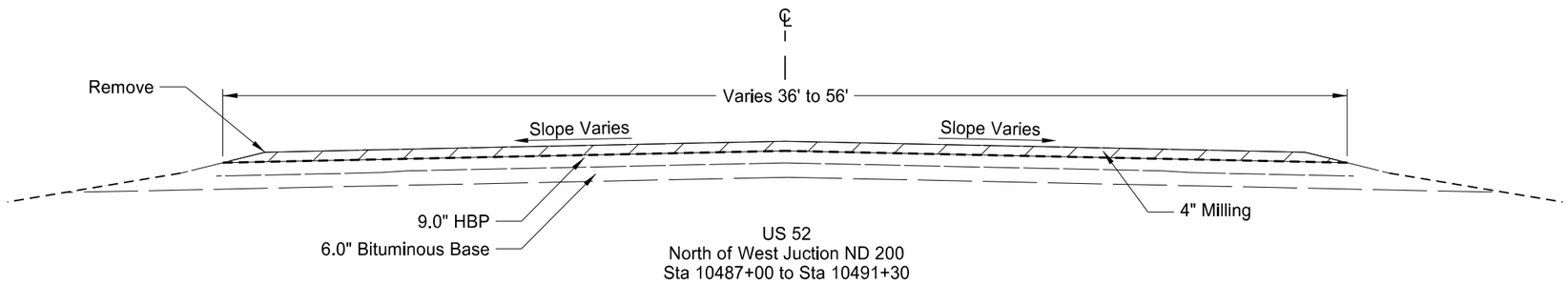
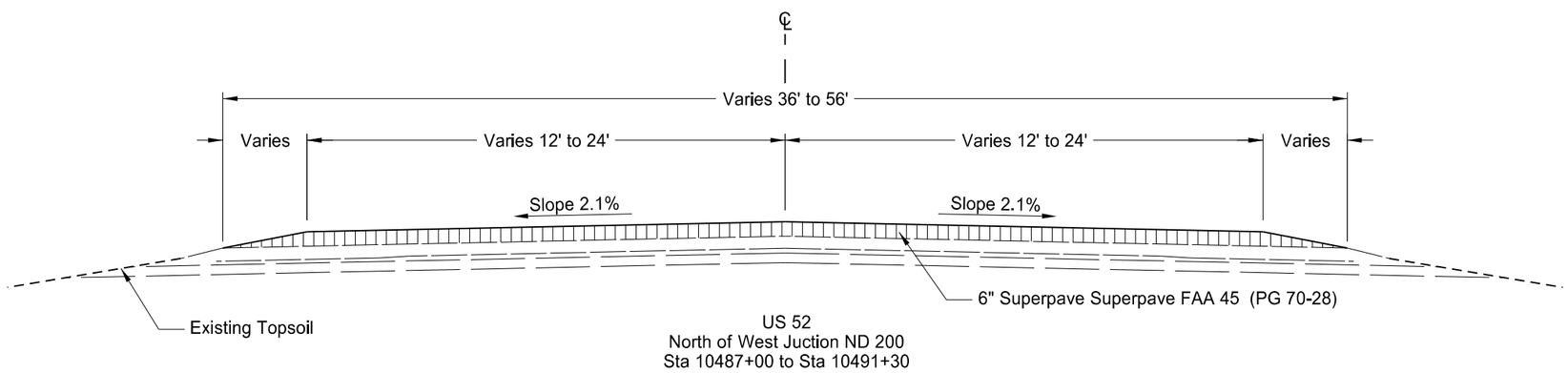
Existing Typical Sections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	30	4





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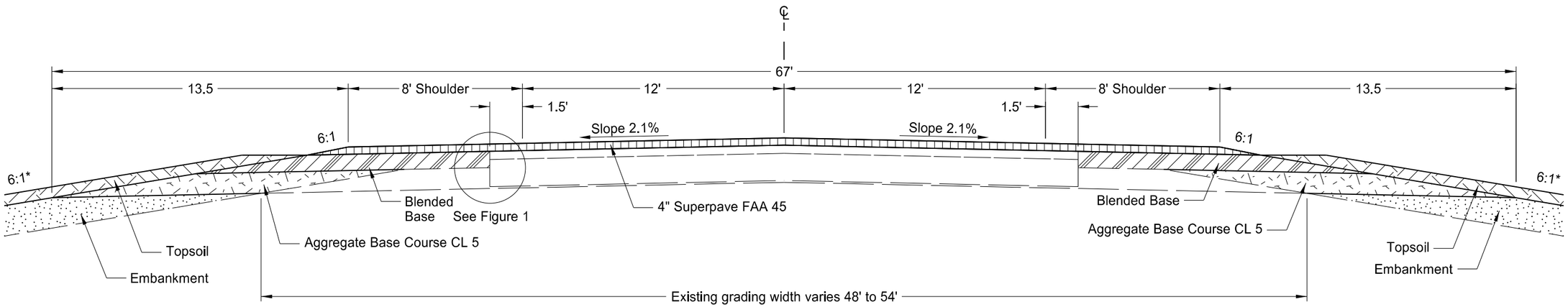
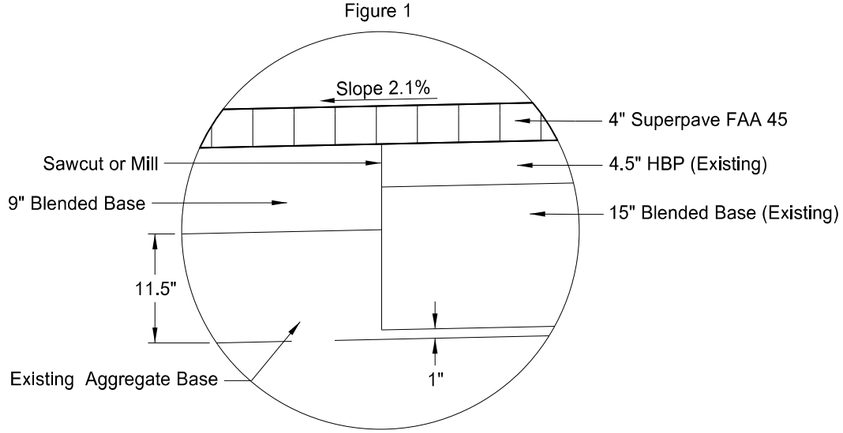
Proposed Typical Sections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	30	5



US 52
Sta 10492+26 to Sta 10493+27
Sta 10500+38 to Sta 11021+43
Sta 11028+53 to Sta 11056+93
Sta 11064+02 to Sta 11698+10
Sta 11705+27 to Sta 11707+34
Sta 11728+70 to Sta 11729+22
Sta 11732+60 to Sta 11759+56

Figure 1



*Typical foreslope rate
See details for slope table

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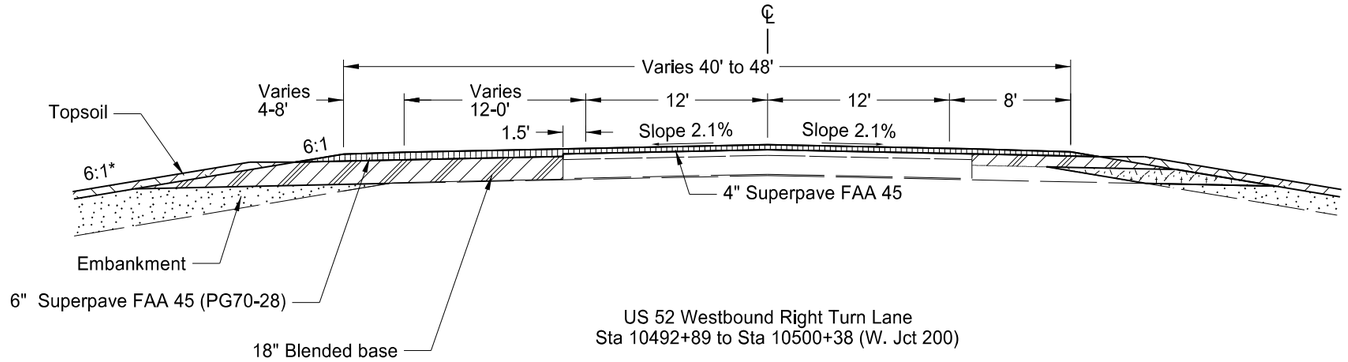
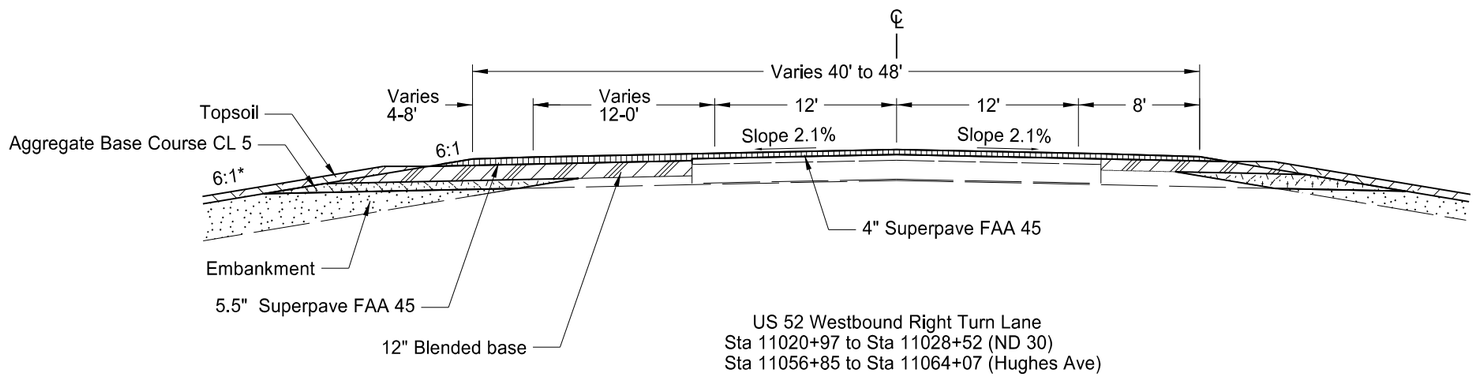
Proposed Typical Sections

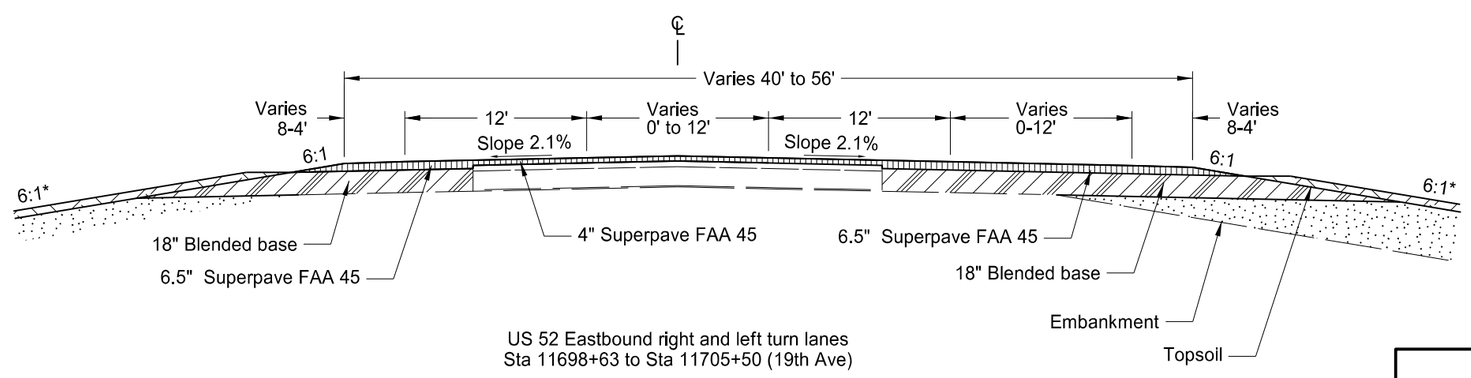
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	30	6



US 52 Westbound Right Turn Lane
Sta 10492+89 to Sta 10500+38 (W. Jct 200)



US 52 Westbound Right Turn Lane
Sta 11020+97 to Sta 11028+52 (ND 30)
Sta 11056+85 to Sta 11064+07 (Hughes Ave)



US 52 Eastbound right and left turn lanes
Sta 11698+63 to Sta 11705+50 (19th Ave)

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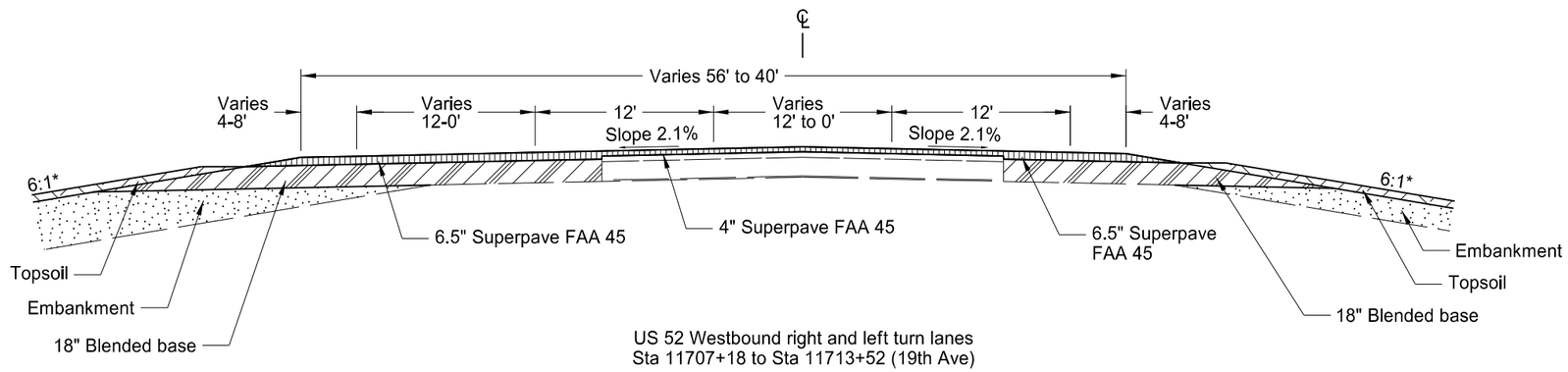
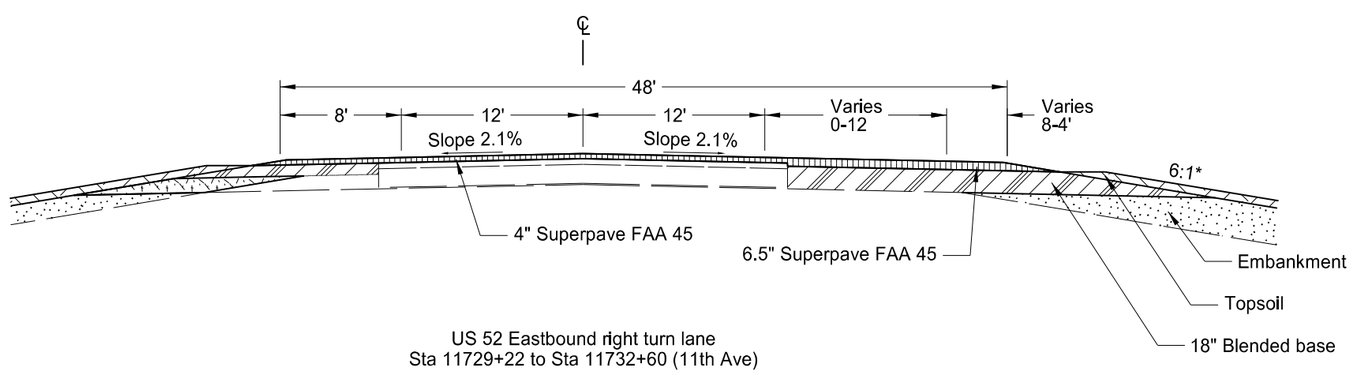
Proposed Typical Sections

* Typical foreslope rate
See details for slope table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	30	7



US 52 Westbound right and left turn lanes
Sta 11707+18 to Sta 11713+52 (19th Ave)



US 52 Eastbound right turn lane
Sta 11729+22 to Sta 11732+60 (11th Ave)

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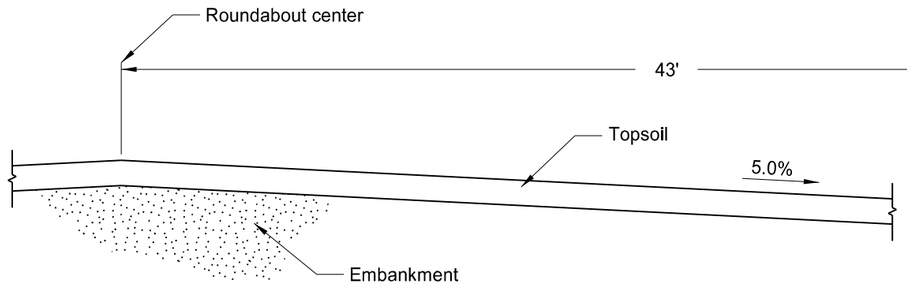
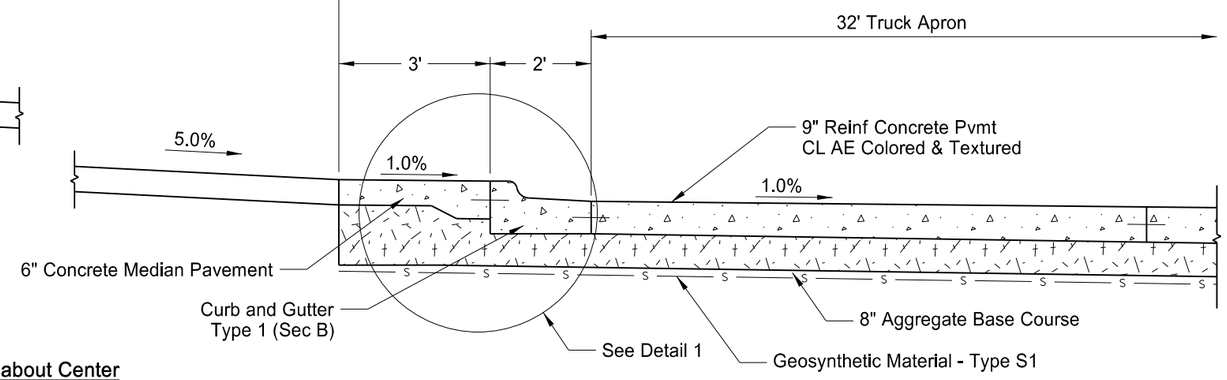
Proposed Typical Sections

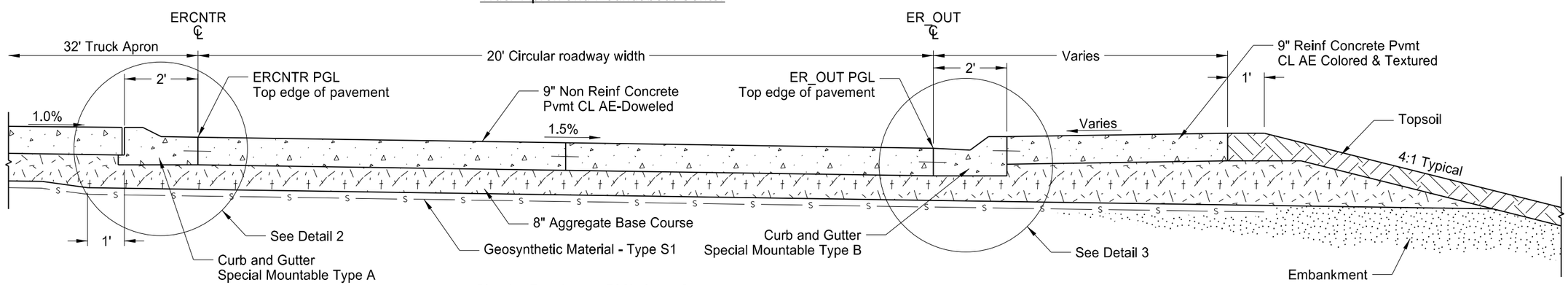
* Typical foreslope rate
See details for slope table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	30	8

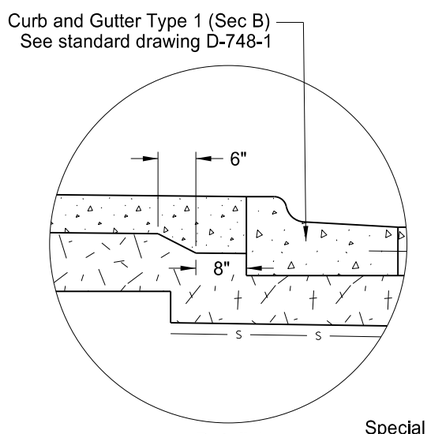




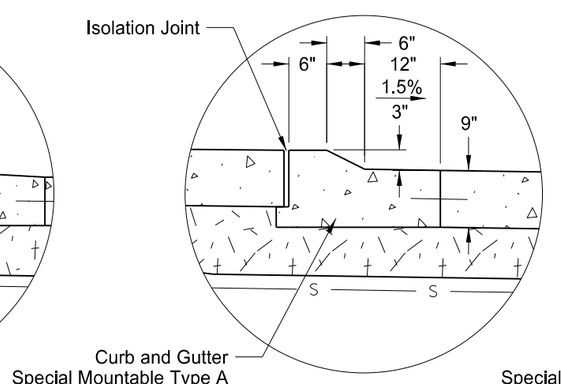
Truck Apron and Roundabout Center



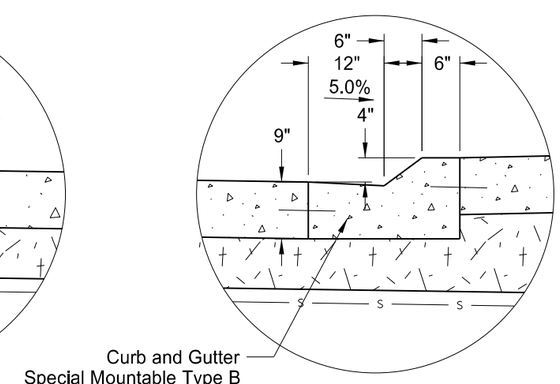
Circular Roadway - 503' circumference
along alignment ERCNTR
With paved blister (See plan view for locations)



Detail 1



Detail 2



Detail 3

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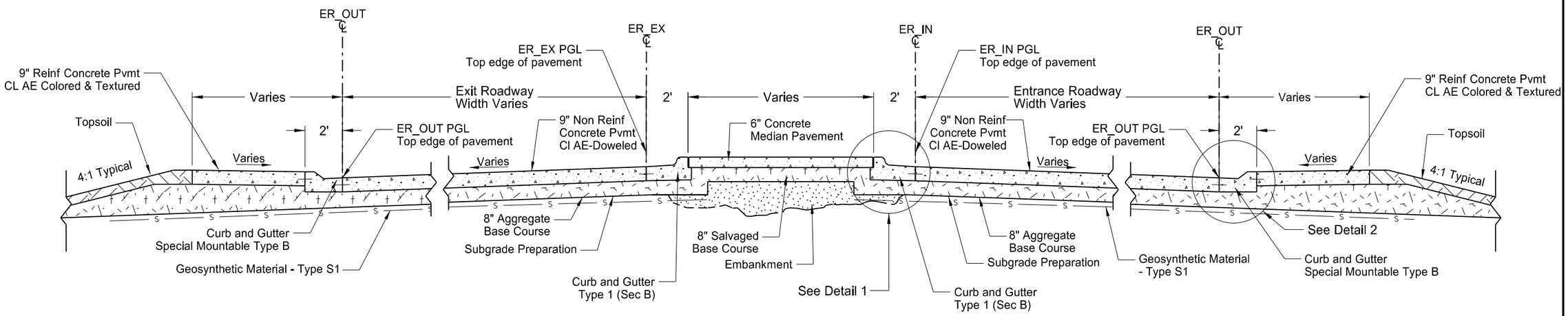
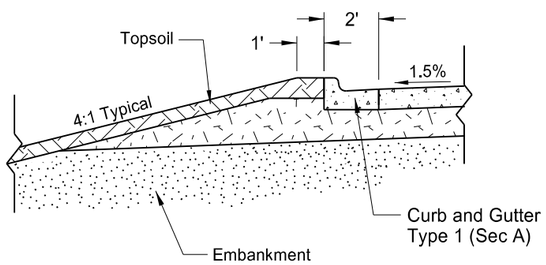
Proposed Typical Section

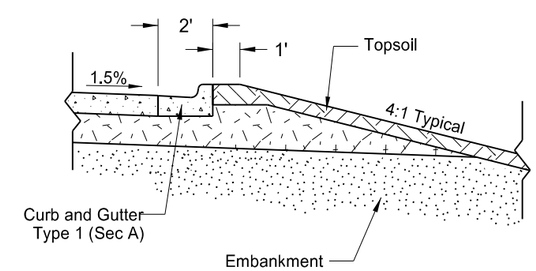
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	30	9



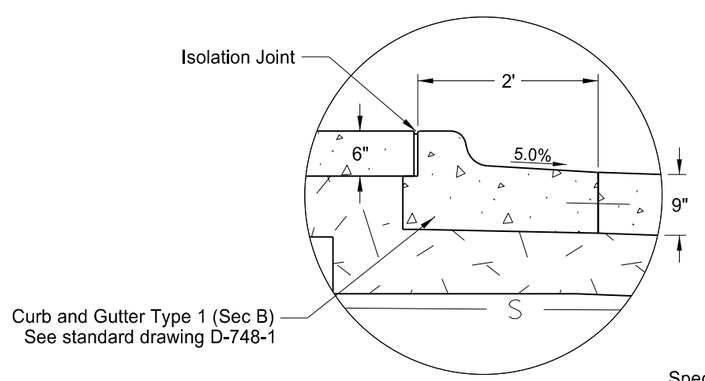


Exit Roadway
Without Paved Blister

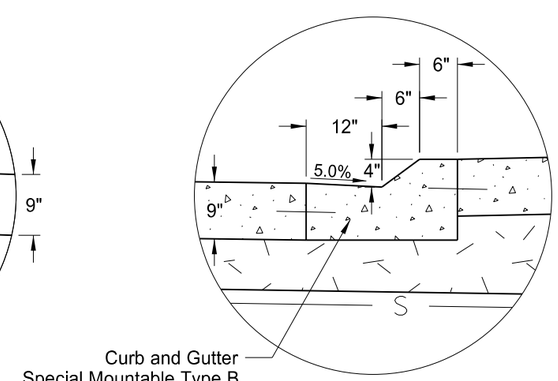
Roundabout Entance and Exit Roadways
with paved Truck Blister (see plan view for locations)



Entrance Roadway
Without Paved Blister



Detail 1



Detail 2

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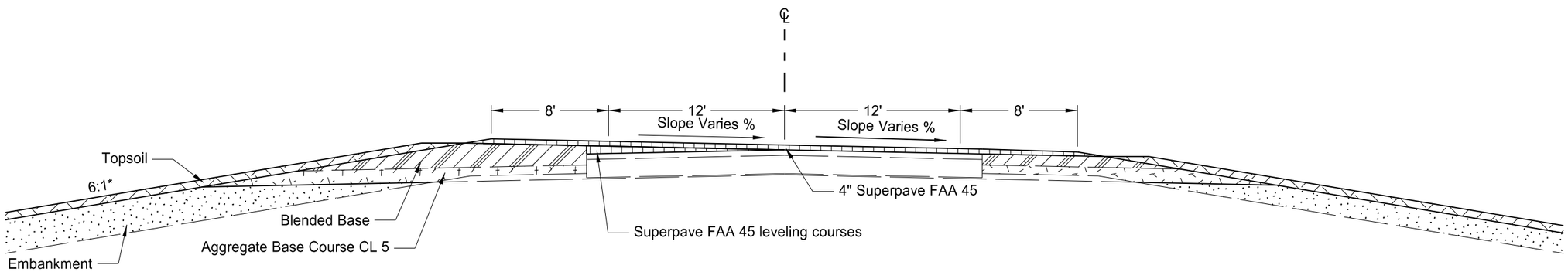
Proposed Typical Sections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	30	10



Superelevation Correction Typical Section US 52
Sta 11063+44 to Sta 11073+29
Sta 11234+53 to Sta 11243+50
Sta 11663+51 to Sta 11684+13
Sta 11696+21 to Sta 11718+19
Sta 11741+72 to Sta 11752+55

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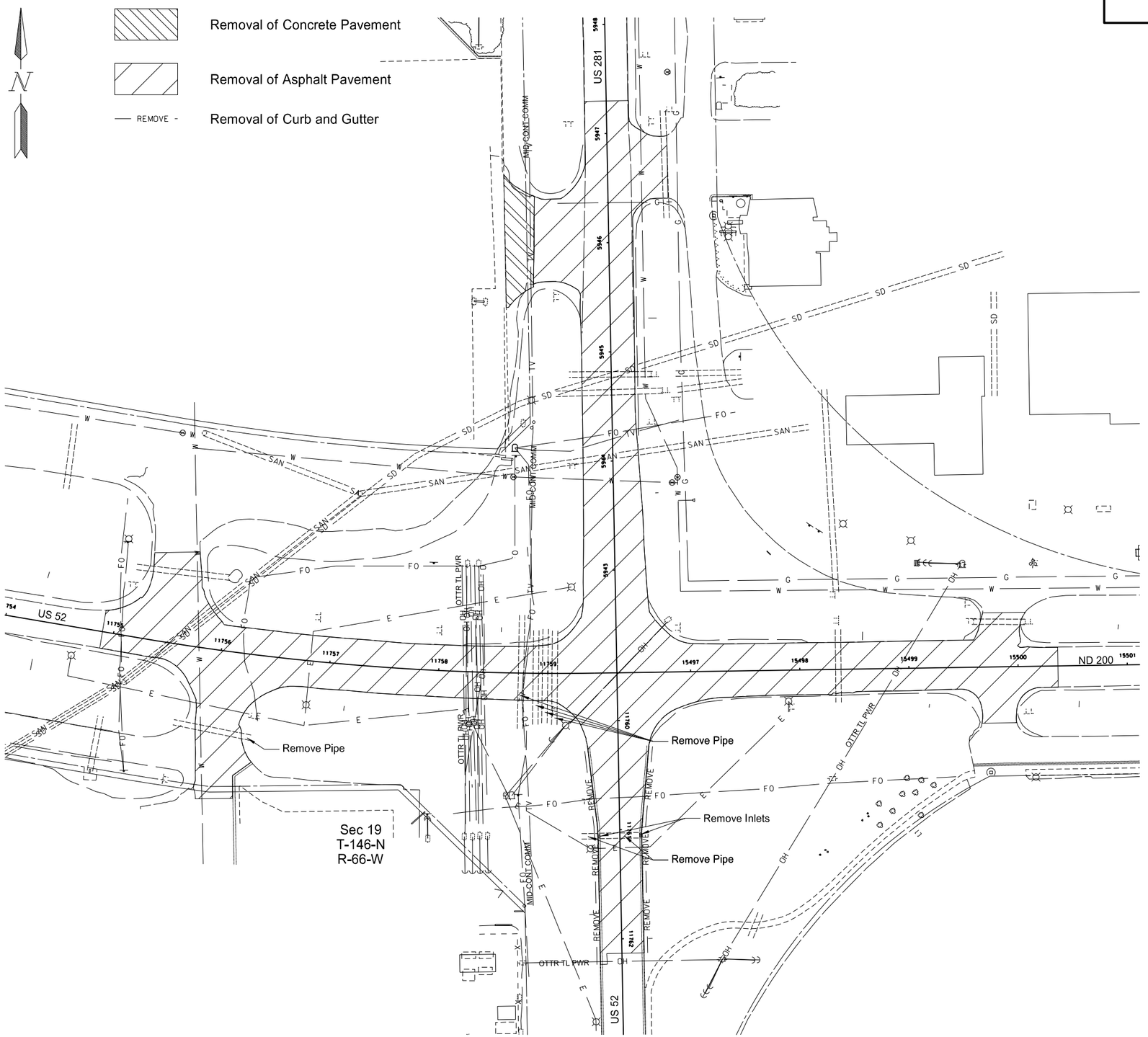
Superelevation Correction Typical

*Typical foreslope rate
See details for slope table

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	40	1



REMOVAL OF CURB & GUTTER	Qty
Sta 11760+24 RT - Sta 11761+99 RT	200 LF
Sta 11760+24 LT - Sta 11761+99 LT	189 LF

REMOVAL OF PAVEMENT	Qty
Sta 11754+90 - Sta 11762+13 Sta 15496+32 - Sta 15500+37 Sta 5942+06 - Sta 5947+30	10,814 SY

REMOVAL OF INLETS	Qty
Sta 11761+06 - 18' Rt	1
Sta 11761+06 - 18' Lt	1

REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 11756+01 - 73' Rt	72 LF
Sta 11758+76 - ℄	102 LF
Sta 11758+89 - ℄	86 LF
Sta 11758+98 - ℄	86 LF
Sta 11759+06 - ℄	86 LF
Sta 11761+06 - ℄	38 LF
Sta 11761+06 - 18' Rt	16 LF

REMOVE FLASHING BEACON SYSTEM	Qty
Sta 11759+56	1 EA

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Removals

HYDRAULIC DATA FOR PROJECT CPU-SNH-3-052(042)198 [(A)]

STATION	EXISTING PIPE	PROPOSED PIPE SIZE	DRAINAGE AREA (ACRES)	25-YEAR DATA				100-YEAR	
				DESIGN DISCHARGE (CFS)	DESIGN HEADWATER (FT)	DESIGN VELOCITY (FPS)	DESIGN STAGE (NAVD 88)	100-YEAR DISCHARGE (CFS)	100-YEAR STAGE (NAVD 88)
11758+75	24" RCP Triple 36" RCP	Double 48"	163.3	23.6	1.4	3.7	1573.86	39.6	1574.30
15498+35	24" RCP	Extend Existing	4.2	14.5	2.2	7.0	1575.37	21.6	1576.36

[(A)] Hydraulic data provided is for smooth-walled type conduits.

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Hydraulic Data

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	50	2

Inlet No.	1
Type	Inlet - Type 2
Grate Style	D
Station	2+36.68 - 17.00' Rt
Grate Elev.	1578.28
Base Elev.	1573.78
Invert Elev.	1574.14
'H' Distance	4.00 Ft

Inlet No.	2
Type	Inlet - Type 2
Grate Style	D
Station	4+75.13 - 17.00' Lt
Grate Elev.	1577.28
Base Elev.	1572.78
Invert Elev.	1573.05
'H' Distance	4.00 Ft

Inlet No.	3
Type	Inlet - Type 2
Grate Style	V
Station	2+43.82 - 1.00' Rt
Grate Elev.	1579.35
Base Elev.	1574.85
Invert Elev.	1575.55
'H' Distance	4.00 Ft

Inlet No.	4
Type	Inlet - Type 2
Grate Style	V
Station	0+86.83 - 1.00' Rt
Grate Elev.	1579.32
Base Elev.	1574.82
Invert Elev.	1576.15
'H' Distance	4.00 Ft

Inlet No.	5
Type	Inlet - Type 2
Grate Style	D
Station	0+62.83 - 17.00' Lt
Grate Elev.	1576.94
Base Elev.	1572.44
Invert Elev.	1574.69
'H' Distance	4.00 Ft

Inlet No.	6
Type	Inlet - Type 2
Grate Style	D
Station	0+57.60 - 17.00' Rt
Grate Elev.	1576.98
Base Elev.	1572.48
Invert Elev.	1573.86
'H' Distance	4.00 Ft

Inlet No.	7
Type	Inlet - Type 2
Grate Style	D
Station	3+38.25 - 17.00' Rt
Grate Elev.	1577.38
Base Elev.	1572.88
Invert Elev.	1573.94
'H' Distance	4.00 Ft

Inlet No.	8
Type	Inlet - Type 2
Grate Style	D
Station	3+31.53 - 17.00' Rt
Grate Elev.	1577.64
Base Elev.	1573.14
Invert Elev.	1573.65
'H' Distance	4.00 Ft

Inlet No.	9
Type	Inlet - Type 2
Grate Style	D
Station	1+33.25 - 21.00' Rt
Grate Elev.	1578.75
Base Elev.	1574.25
Invert Elev.	1574.60
'H' Distance	4.00 Ft

ADJUST HYDRANT	Qty
Fire hydrant - Sta 5943+63 - 73' Rt	1

ADJUST UTILITY APPURTENANCE	Qty
Watermain gate valve - Sta 5943+79 - 54' Rt	1
Watermain gate valve - Sta 5943+84 - 59' Rt	1

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Inlet and Utility Adjustment Summary

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	51	1

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation Pay Item			Allowable Material	Required Diameter (In)	Steel Pipe Coatings (Type)	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness (In)	R1 Fabric Pay Item (SY)	End Sections*		Applicable Backfill Detail
				In	Bid Item	LF							Begin (Ea)	End (Ea)	
10516+27	83' Rt	10516+73	83' Rt	24	PIPE CONDUIT 24IN- APPROACH	46	Reinforced Concrete Pipe - Class III **(barrel length = 38 LF)**	24					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
10556+43	50' Lt	10556+43	54' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24					Remove & Relay		Sect 20 Sheet 15
10580+53	43' Lt	10580+53	51' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
10580+54	43' Rt	10580+54	51' Rt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24						Remove & Relay	Sect 20 Sheet 15
10585+18	73' Lt	10585+59	75'Lt	18	PIPE CONDUIT 18IN- APPROACH	42	Reinforced Concrete Pipe - Class III **(barrel length = 34 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
10612+43	80' Lt	10612+97	79' Lt	18	PIPE CONDUIT 18IN- APPROACH	54	Reinforced Concrete Pipe - Class III **(barrel length = 46 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
10624+19	70' Rt	10624+64	71' Rt	24	PIPE CONDUIT 24IN- APPROACH	44	Reinforced Concrete Pipe - Class III **(barrel length = 36 LF)**	24					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	30	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
10625+29	41' Lt	10625+29	53' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
10625+28	45' Rt	10625+28	51' Lt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
10643+04	72' Lt	10643+47	72' Lt	18	PIPE CONDUIT 18IN- APPROACH	42	Reinforced Concrete Pipe - Class III **(barrel length = 34 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
10645+37	175' Rt	10646+12	180' Rt	24	PIPE CONDUIT 24IN- APPROACH	75	Reinforced Concrete Pipe - Class III **(barrel length = 75 LF)**	24					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	30	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
10665+39	69' Lt	10666+08	69' Lt	18	PIPE CONDUIT 18IN- APPROACH	68	Reinforced Concrete Pipe - Class III **(barrel length = 60 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
10674+78	58' Lt	10674+78	66' Lt	30	PIPE CONC REINF 30IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	30					Remove & Relay		Sect 20 Sheet 15
10690+14	50' Lt	10690+14	62' Lt	36	PIPE CONC REINF 36IN CL III	12	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	36					Remove & Relay		Sect 20 Sheet 15
10690+14	56' Rt	10690+14	62' Rt	36	PIPE CONC REINF 36IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	36						Remove & Relay	Sect 20 Sheet 15
10697+98	43' Lt	10697+98	47' Lt	54	PIPE CONC REINF 54IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	54					Remove & Relay		Sect 20 Sheet 15
10698+20	44' Lt	10698+20	48' Lt	54	PIPE CONC REINF 54IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	54					Remove & Relay		Sect 20 Sheet 15
10734+13	42' Lt	10734+13	50' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
10734+10	44' Rt	10734+10	50' Rt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
10756+07	43' Lt	10756+07	51' Lt	30	PIPE CONC REINF 30IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	30					Remove & Relay		Sect 20 Sheet 15
10756+06	43' Rt	10756+06	51' Rt	30	PIPE CONC REINF 30IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	30						Remove & Relay	Sect 20 Sheet 15
10764+25	43' Lt	10764+25	47' Lt	30	PIPE CONC REINF 30IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	30					Remove & Relay		Sect 20 Sheet 15
10764+26	43' Rt	10764+26	47' Rt	30	PIPE CONC REINF 30IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	30						Remove & Relay	Sect 20 Sheet 15
10796+09	44' Lt	10796+09	54' Lt	36	PIPE CONC REINF 36IN CL III	10	Reinforced Concrete Pipe - Class III **(barrel length = 10 LF)**	36					Remove & Relay		Sect 20 Sheet 15
10796+12	43' Rt	10796+12	55' Rt	36	PIPE CONC REINF 36IN CL III	12	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	36						Remove & Relay	Sect 20 Sheet 15
10796+25	44' Lt	10796+25	54' Lt	36	PIPE CONC REINF 36IN CL III	10	Reinforced Concrete Pipe - Class III **(barrel length = 10 LF)**	36					Remove & Relay		Sect 20 Sheet 15
10796+27	42' Rt	10796+27	54' Rt	36	PIPE CONC REINF 36IN CL III	12	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	36						Remove & Relay	Sect 20 Sheet 15

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

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

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

(*) The price bid for "Pipe Conduit" bid items includes end sections. Pipe Extensions shall pay for end sections separately.
FES = Flared End Section
TES = Traversable End Section

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Allowable Pipe Materials List

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	51	2

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation Pay Item			Allowable Material	Required Diameter (In)	Steel Pipe Coatings (Type)	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness (In)	R1 Fabric Pay Item (SY)	End Sections*		Applicable Backfill Detail
				In	Bid Item	LF							Begin (Ea)	End (Ea)	
10832+52	66' Rt	10832+99	67' Rt	18	PIPE CONDUIT 18IN- APPROACH	46	Reinforced Concrete Pipe - Class III **(barrel length = 38 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
10835+16	42' Lt	10835+16	50' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
10835+17	45' Rt	10835+17	49' Rt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24						Remove & Relay	Sect 20 Sheet 15
10850+86	43' Lt	10850+86	51' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
10850+86	44' Rt	10850+86	52' Rt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24						Remove & Relay	Sect 20 Sheet 15
10879+37	49' Lt	10879+37	55' Lt	30	PIPE CONC REINF 30IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	30					Remove & Relay		Sect 20 Sheet 15
10879+38	48' Rt	10879+38	56' Rt	30	PIPE CONC REINF 30IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	30						Remove & Relay	Sect 20 Sheet 15
10889+04	65' Lt	10889+52	65' Lt	30	PIPE CONDUIT 30IN- APPROACH	48	Reinforced Concrete Pipe - Class III **(barrel length = 43 LF)**	30					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	36	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	30	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	30							
10920+01	64' Rt	10920+52	64' Rt	18	PIPE CONDUIT 18IN- APPROACH	50	Reinforced Concrete Pipe - Class III **(barrel length = 42 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
10929+16	43' Lt	10929+16	47' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24					Remove & Relay		Sect 20 Sheet 15
10929+17	43' Rt	10929+17	47' Rt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24						Remove & Relay	Sect 20 Sheet 15
10934+88	50' Lt	10935+67	50' Lt	24	PIPE CONDUIT 24IN- APPROACH	79	Reinforced Concrete Pipe - Class III **(barrel length = 74 LF)**	24					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
10965+01	44' Lt	10965+01	48' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24					Remove & Relay		Sect 20 Sheet 15
10965+02	42' Rt	10965+02	48' Rt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11021+21	42' Lt	11021+21	54' Lt	36	PIPE CONC REINF 36IN CL III	12	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	36					Remove & Relay		Sect 20 Sheet 15
11028+11	42' Lt	11028+11	50' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11028+09	44' Rt	11028+09	52' Rt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11033+42	66' Rt	11034+08	65' Rt	18	PIPE CONDUIT 18IN- APPROACH	64	Reinforced Concrete Pipe - Class III **(barrel length = 56 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
11048+76	80' Lt	11049+26	78' Lt	18	PIPE CONDUIT 18IN- APPROACH	54	Reinforced Concrete Pipe - Class III **(barrel length = 46 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
11050+67	75' Rt	11051+10	78' Rt	30	PIPE CONDUIT 30IN- APPROACH	42	Reinforced Concrete Pipe - Class III **(barrel length = 39 LF)**	30					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	30	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	30	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	30							
11053+17	49' Lt	11053+17	55' Lt	30	PIPE CONC REINF 30IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	30					Remove & Relay		Sect 20 Sheet 15
11053+17	49' Rt	11053+17	55' Rt	30	PIPE CONC REINF 30IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	30						Remove & Relay	Sect 20 Sheet 15
11057+08	42' Lt	11057+08	58' Lt	24	PIPE CONC REINF 24IN CL III	16	Reinforced Concrete Pipe - Class III **(barrel length = 16 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11057+09	44' Rt	11057+09	52' Rt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11108+26	42' Lt	11108+26	50' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11108+26	44' Rt	11108+26	50' Rt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11120+66	41' Lt	11120+66	47' Lt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24					Remove & Relay		Sect 20 Sheet 15

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P = Polymeric (over Zinc or Aluminum)

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

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

(*) The price bid for "Pipe Conduit" bid items includes end sections. Pipe Extensions shall pay for end sections separately.
FES = Flared End Section
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Allowable Pipe Materials List

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	51	3

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation Pay Item			Allowable Material	Required Diameter (In)	Steel Pipe Coatings (Type)	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness (In)	R1 Fabric Pay Item (SY)	End Sections*		Applicable Backfill Detail
				In	Bid Item	LF							Begin (Ea)	End (Ea)	
11132+16	43' Lt	11132+16	47' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11132+17	43' Rt	11132+17	47' Rt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11167+79	45' Lt	11167+79	55' Lt	24	PIPE CONC REINF 24IN CL III	10	Reinforced Concrete Pipe - Class III **(barrel length = 10 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11167+75	48' Rt	11167+75	52' Rt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11177+33	60' Rt	11178+09	60' Rt	24	PIPE CONDUIT 24IN- APPROACH	76	Reinforced Concrete Pipe - Class III **(barrel length = 71 LF)**	24					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
11201+18	45' Lt	11201+18	49' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11201+18	41' Rt	11201+18	47' Rt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11207+18	43' Lt	11207+18	47' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11228+19	55' Lt	11228+19	61' Lt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11228+18	48' Rt	11228+18	56' Rt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11256+18	43' Lt	11256+18	47' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11256+79	66' Lt	11257+22	66' Lt	18	PIPE CONDUIT 18IN- APPROACH	42	Reinforced Concrete Pipe - Class III **(barrel length = 34 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
11283+23	69 ' Lt	11283+69	70' Lt	24	PIPE CONDUIT 24IN- APPROACH	46	Reinforced Concrete Pipe - Class III **(barrel length = 38 LF)**	24					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
11289+34	72' Lt	11289+77	72' Lt	24	PIPE CONDUIT 24IN- APPROACH	42	Reinforced Concrete Pipe - Class III **(barrel length = 34 LF)**	24					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	30	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
11336+31	68' Lt	11336+79	67' Lt	18	PIPE CONDUIT 18IN- APPROACH	50	Reinforced Concrete Pipe - Class III **(barrel length = 42 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
11350+76	46' Lt	11350+76	62' Lt	54	PIPE CONC REINF 54IN CL III	16	Reinforced Concrete Pipe - Class III **(barrel length = 16 LF)**	54					Remove & Relay		Sect 20 Sheet 15
11351+33	53' Rt	11351+33	63' Rt	54	PIPE CONC REINF 54IN CL III	10	Reinforced Concrete Pipe - Class III **(barrel length = 10 LF)**	54						Remove & Relay	Sect 20 Sheet 15
11350+98	47' Lt	11350+98	63' Lt	54	PIPE CONC REINF 54IN CL III	16	Reinforced Concrete Pipe - Class III **(barrel length = 16 LF)**	54					Remove & Relay		Sect 20 Sheet 15
11351+54	53' Rt	11351+54	63' Rt	54	PIPE CONC REINF 54IN CL III	10	Reinforced Concrete Pipe - Class III **(barrel length = 10 LF)**	54						Remove & Relay	Sect 20 Sheet 15
11351+19	47' Lt	11351+19	63' Lt	54	PIPE CONC REINF 54IN CL III	16	Reinforced Concrete Pipe - Class III **(barrel length = 16 LF)**	54					Remove & Relay		Sect 20 Sheet 15
11351+76	53' Rt	11351+19	63' Rt	54	PIPE CONC REINF 54IN CL III	10	Reinforced Concrete Pipe - Class III **(barrel length = 10 LF)**	54						Remove & Relay	Sect 20 Sheet 15
11367+23	43' Lt	11367+23	47' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11367+23	43' Rt	11367+23	51' Rt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11376+19	46' Lt	11376+19	54' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11376+19	43' Rt	11376+19	49' Rt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11379+07	63' Lt	11379+41	64' Lt	18	PIPE CONDUIT 18IN- APPROACH	34	Reinforced Concrete Pipe - Class III **(barrel length = 26 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
11396+79	60' Rt	11397+49	60' Rt	18	PIPE CONDUIT 18IN- APPROACH	70	Reinforced Concrete Pipe - Class III **(barrel length = 62 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							

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

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

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

(*) The price bid for "Pipe Conduit" bid items includes end sections. Pipe Extensions shall pay for end sections separately.
FES = Flared End Section
TES = Traversable End Section

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Allowable Pipe Materials List

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	51	4

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation Pay Item			Allowable Material	Required Diameter (In)	Steel Pipe Coatings (Type)	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness (In)	R1 Fabric Pay Item (SY)	End Sections*		Applicable Backfill Detail
				In	Bid Item	LF							Begin (Ea)	End (Ea)	
11408+44	62' Rt	11409+30	59' Rt	30	PIPE CONDUIT 30IN- APPROACH	86	Reinforced Concrete Pipe - Class III **(barrel length = 83 LF)**	30					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	30	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	30	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	30							
11427+80	60' Rt	11428+63	60' Rt	18	PIPE CONDUIT 18IN- APPROACH	85	Reinforced Concrete Pipe - Class III **(barrel length = 80 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
11434+31	44' Lt	11434+31	68' Lt	24	PIPE CONC REINF 24IN CL III	24	Reinforced Concrete Pipe - Class III **(barrel length = 24 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11434+30	42' Rt	11434+30	60' Rt	24	PIPE CONC REINF 24IN CL III	18	Reinforced Concrete Pipe - Class III **(barrel length = 18 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11443+11	46' Lt	11443+11	54' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11443+10	48' Rt	11443+10	56' Rt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11457+96	75' Lt	11458+42	73' Lt	18	PIPE CONDUIT 18IN- APPROACH	46	Reinforced Concrete Pipe - Class III **(barrel length = 38 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
11478+40	44' Lt	11478+40	48' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11478+42	41' Rt	11478+42	47' Rt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11493+78	69' Lt	11494+40	69' Lt	24	PIPE CONDUIT 24IN- APPROACH	62	Reinforced Concrete Pipe - Class III **(barrel length = 54 LF)**	24					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	30	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
11505+42	42' Rt	11505+42	46' Rt	36	PIPE CONC REINF 36IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	36						Remove & Relay	Sect 20 Sheet 15
11525+32	43' Lt	11525+32	47' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11525+34	43' Rt	11525+34	49' Rt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11533+46	82' Lt	11533+88	81' Lt	18	PIPE CONDUIT 18IN- APPROACH	42	Reinforced Concrete Pipe - Class III **(barrel length = 34 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
11533+47	64' Rt	11533+88	64' Rt	18	PIPE CONDUIT 18IN- APPROACH	40	Reinforced Concrete Pipe - Class III **(barrel length = 32 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
11546+59	68' Rt	11547+41	68' Rt	24	PIPE CONDUIT 24IN- APPROACH	82	Reinforced Concrete Pipe - Class III **(barrel length = 77 LF)**	24					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
11555+52	51' Lt	11556+12	50' Lt	18	PIPE CONDUIT 18IN- APPROACH	60	Reinforced Concrete Pipe - Class III **(barrel length = 52 LF)**	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
11561+32	42' Lt	11561+32	50' Lt	24	PIPE CONC REINF 24IN CL III	8	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11561+34	44' Rt	11561+34	50' Rt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11573+32	43' Lt	11573+32	49' Lt	30	PIPE CONC REINF 30IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	30					Remove & Relay		Sect 20 Sheet 15
11573+34	44' Rt	11573+34	48' Rt	30	PIPE CONC REINF 30IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	30						Remove & Relay	Sect 20 Sheet 15
11579+33	66' Rt	11579+85	66' Rt	24	PIPE CONDUIT 24IN- APPROACH	52	Reinforced Concrete Pipe - Class III **(barrel length = 44 LF)**	24					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							

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

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

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

(*) The price bid for "Pipe Conduit" bid items includes end sections. Pipe Extensions shall pay for end sections separately.
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TES = Traversable End Section

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Allowable Pipe Materials List

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	51	5

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation Pay Item			Allowable Material	Required Diameter (In)	Steel Pipe Coatings (Type)	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness (In)	R1 Fabric Pay Item (SY)	End Sections*		Applicable Backfill Detail
				In	Bid Item	LF							Begin (Ea)	End (Ea)	
11599+15	43' Lt	11599+15	49' Lt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11599+13	43' Rt	11599+13	49' Rt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11609+24	53' Lt	11609+24	59' Lt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11609+18	41' Rt	11609+18	57' Rt	24	PIPE CONC REINF 24IN CL III	16	Reinforced Concrete Pipe - Class III **(barrel length = 16 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11634+38	45' Lt	11634+38	57' Lt	24	PIPE CONC REINF 24IN CL III	12	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11634+36	46' Rt	11634+36	58' Rt	24	PIPE CONC REINF 24IN CL III	12	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11652+29	70' Rt	11653+11	67' Rt	30	PIPE CONDUIT 30IN- APPROACH	80	Reinforced Concrete Pipe - Class III **(barrel length = 75 LF)**	30					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	36	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	30	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	30							
11677+45	42' Rt	11677+45	48' Rt	30	PIPE CONC REINF 30IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	30						Remove & Relay	Sect 20 Sheet 15
11705+73	86' Lt	11705+92	42' Lt	36	PIPE CONC REINF 36IN CL III	44	Reinforced Concrete Pipe - Class III **(barrel length = 48 LF)**	36					Remove & Relay		Sect 20 Sheet 15
11705+78	80' Rt	11705+92	48' Rt	36	PIPE CONC REINF 36IN CL III	32	Reinforced Concrete Pipe - Class III **(barrel length = 36 LF)**	36						Remove & Relay	Sect 20 Sheet 15
11719+34	42' Lt	11719+34	46' Lt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24					Remove & Relay		Sect 20 Sheet 15
11719+33	44' Rt	11719+33	48' Rt	24	PIPE CONC REINF 24IN CL III	4	Reinforced Concrete Pipe - Class III **(barrel length = 4 LF)**	24						Remove & Relay	Sect 20 Sheet 15
11755+34	70' Rt	11756+06	75' Rt	54	PIPE CONDUIT 54IN- APPROACH	74	Reinforced Concrete Pipe - Class III **(barrel length = 68 LF)**	54					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	54	Z, A, P	2, 3, 5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	54							
Inlet 1 2+36 WEIN	17' Rt	2+36 WEIN	59' Rt	15	PIPE CONDUIT 18IN - STORM DRAIN	42	Reinforced Concrete Pipe - Class III **(barrel length = 38 LF)**	15						FES	Standard D-714-27
							Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
Inlet 2 4+75 WEEX	17' Lt	4+75 WEEX	37' Lt	15	PIPE CONDUIT 18IN - STORM DRAIN	20	Reinforced Concrete Pipe - Class III **(barrel length = 16 LF)**	15						FES	Standard D-714-27
							Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
11758+87	94' Lt	11758+66	59' Rt	48	PIPE CONDUIT 48IN	154	Reinforced Concrete Pipe - Class III **(barrel length = 150 LF)**	48				Incidental to Pipe	FES	FES	Standard D-714-26M
							Corrugated Steel Pipe	48	Z	2, 3, 5	0.168				
							Corrugated Steel Pipe	48	A	2, 3, 5	0.138				
							Corrugated Steel Pipe	48	P	2, 3, 5	0.064				
							Spiral Rib Steel Pipe	48	P	3/4, 1	0.064				
11758+97	101' Lt	11758+74	62' Rt	48	PIPE CONDUIT 48IN	164	Reinforced Concrete Pipe - Class III **(barrel length = 160 LF)**	48				Incidental to Pipe	FES	FES	Standard D-714-26M
							Corrugated Steel Pipe	48	Z	2, 3, 5	0.168				
							Corrugated Steel Pipe	48	A	2, 3, 5	0.138				
							Corrugated Steel Pipe	48	P	2, 3, 5	0.064				
							Spiral Rib Steel Pipe	48	P	3/4, 1	0.064				
Inlet 3 2+45 SWOUT	1' Rt	2+39 SWOUT	26' Rt	18	PIPE CONDUIT 18IN - STORM DRAIN	26	Reinforced Concrete Pipe - Class III **(barrel length = 22 LF)**	18						FES	Standard D-714-27
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
Inlet 4 0+87 SEOUT	1' Rt	Inlet 3 2+45 SWOUT	1' Rt	18	PIPE CONDUIT 18IN - STORM DRAIN	56	Reinforced Concrete Pipe - Class III **(barrel length = 56 LF)**	18				Incidental to Pipe			Standard D-714-26
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
Inlet 5 0+63 EAEX	17' Lt	0+66 EAEX	29' Lt	15	PIPE CONDUIT 18IN - STORM DRAIN	12	Reinforced Concrete Pipe - Class III **(barrel length = 8 LF)**	15						FES	Standard D-714-27
							Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
Inlet 6 0+58 EAIN	17' Rt	0+58 EAIN	33' Rt	15	PIPE CONDUIT 18IN - STORM DRAIN	16	Reinforced Concrete Pipe - Class III **(barrel length = 12 LF)**	15						FES	Standard D-714-27
							Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
Inlet 7 3+38 NOEX	17' Lt	3+38 NOEX	33' Lt	15	PIPE CONDUIT 18IN - STORM DRAIN	15	Reinforced Concrete Pipe - Class III **(barrel length = 11 LF)**	15						FES	Standard D-714-27
							Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
Inlet 8 3+32 NOIN	17' Rt	3+32 NOIN	37' Rt	15	PIPE CONDUIT 18IN - STORM DRAIN	20	Reinforced Concrete Pipe - Class III **(barrel length = 16 LF)**	15						FES	Standard D-714-27
							Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
Inlet 9 1+33 CNTR	21' Rt	0+84 NWOUT	29' Rt	15	PIPE CONDUIT 18IN - STORM DRAIN	76	Reinforced Concrete Pipe - Class III **(barrel length = 72 LF)**	15				Incidental to Pipe		FES	Standard D-714-26
							Spiral Rib Steel Pipe	15	P	3/4, 1	0.064				
15498+35	30' Rt	15498+35	51' Rt	24	PIPE CONC REINF 24IN CL III	18	Reinforced Concrete Pipe - Class III **(barrel length = 18 LF)**	24						Remove & Relay	Sect 20 Sheet 15
15498+36	36' Lt	15498+36	47' Lt	24	PIPE CONC REINF 24IN CL III	6	Reinforced Concrete Pipe - Class III **(barrel length = 6 LF)**	24						Remove & Relay	Sect 20 Sheet 15

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

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

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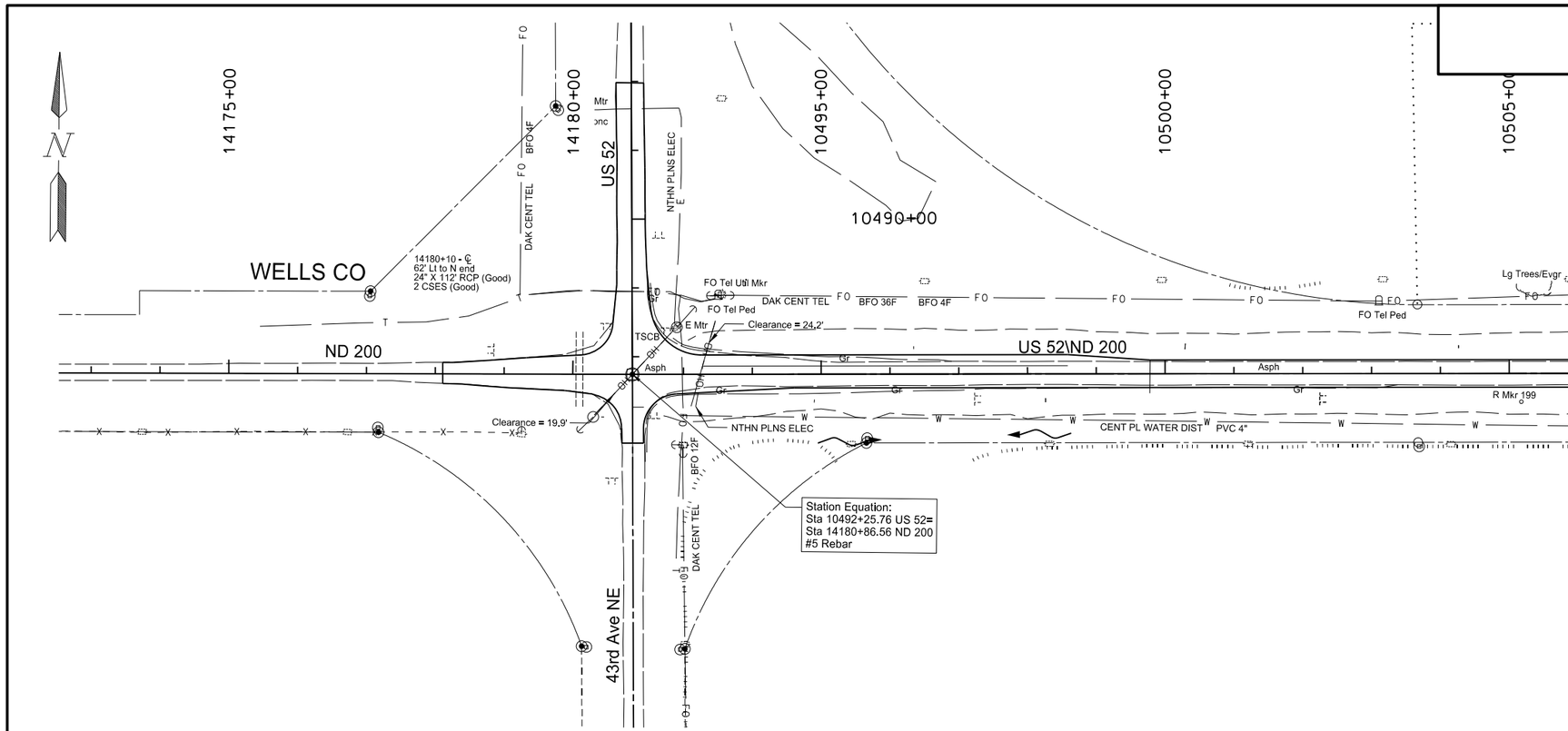
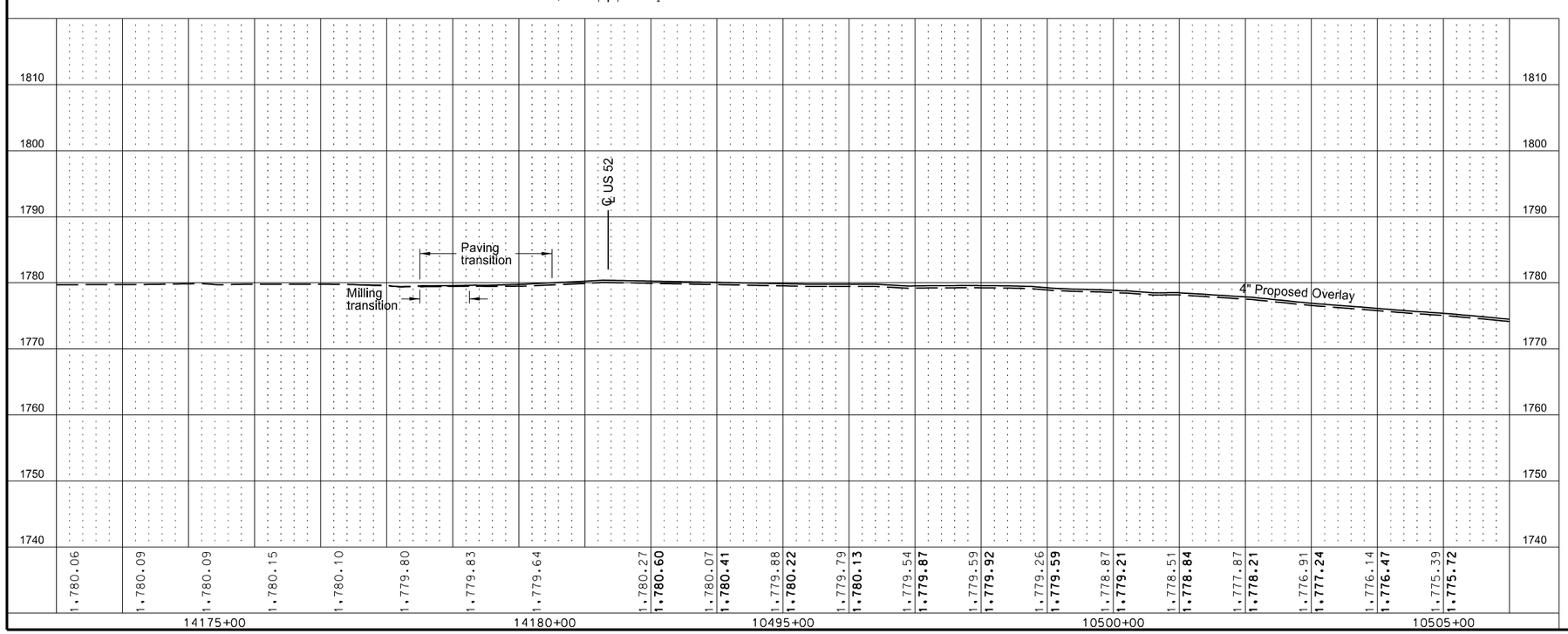
Allowable Pipe Materials List

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	1





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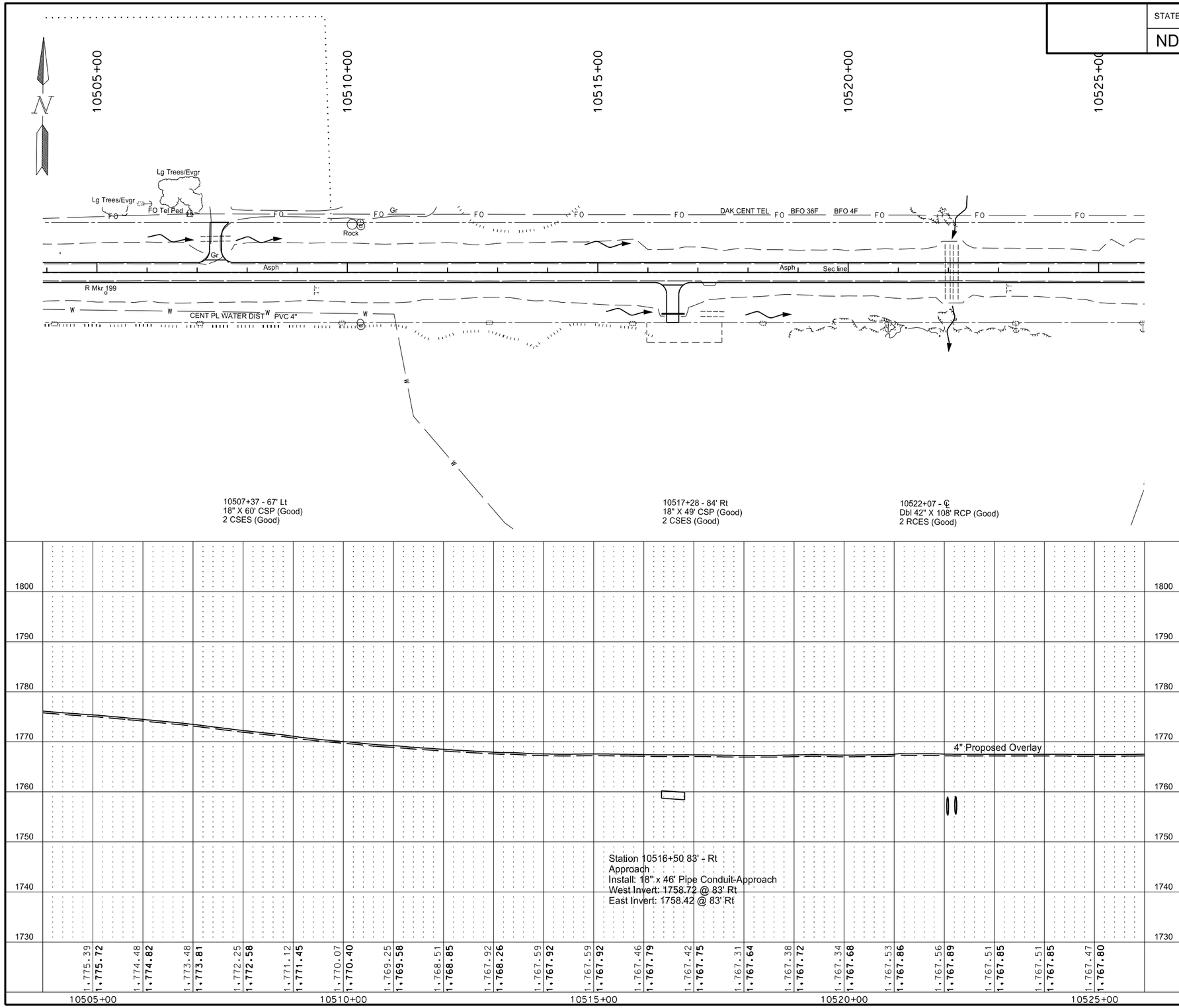
Plan & Profile
Sta 10492+26 to Sta 10505+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	2



REMOVAL OF PIPE ALL TYPES AND SIZES — Qty
Sta 10517+28 Rt — 49 LF

PIPE CONDUIT 18IN-APPROACH — Qty
Sta 10516+50 Rt — 46 LF

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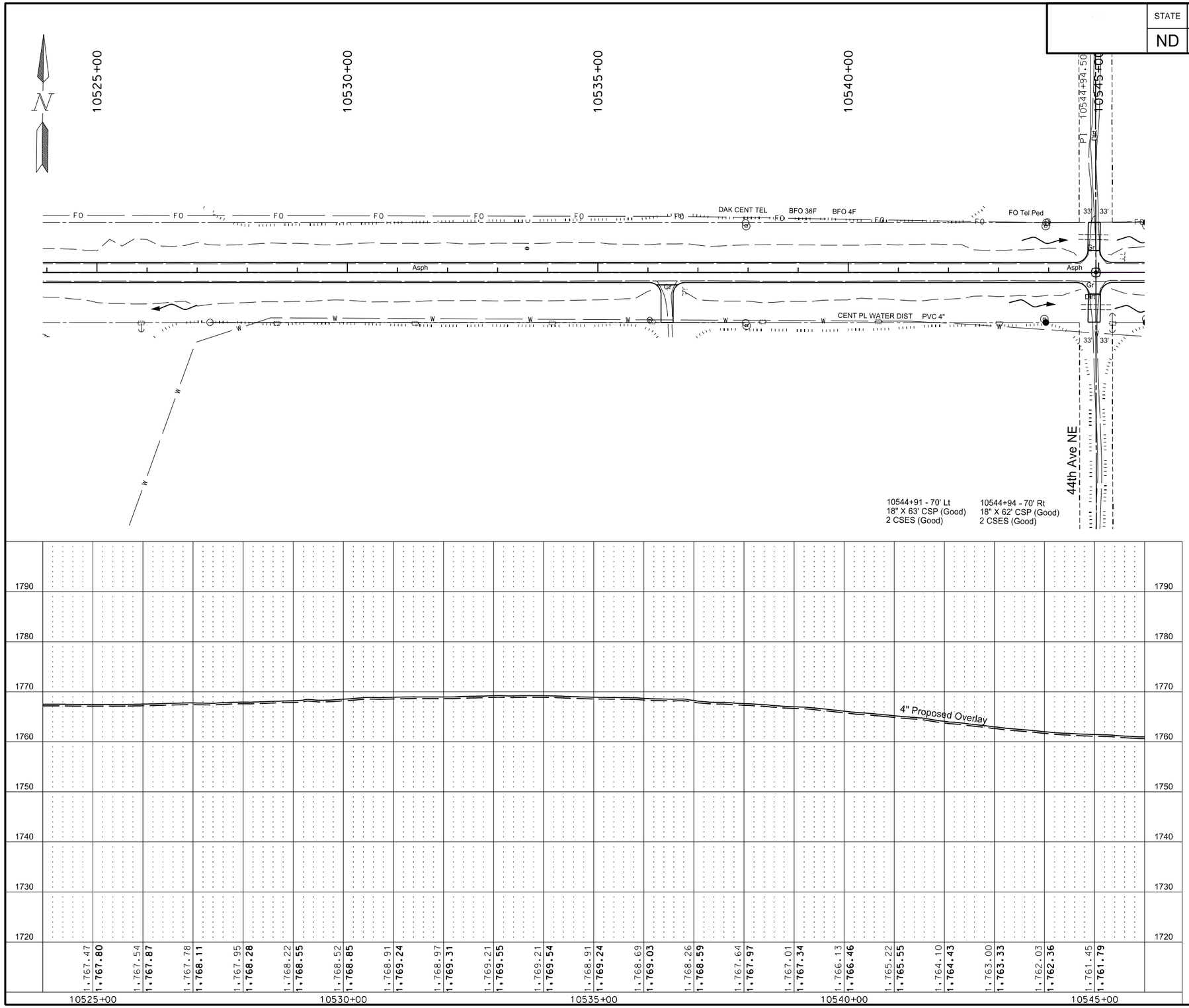
Plan & Profile
Sta 10505+00 to Sta 10525+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	3



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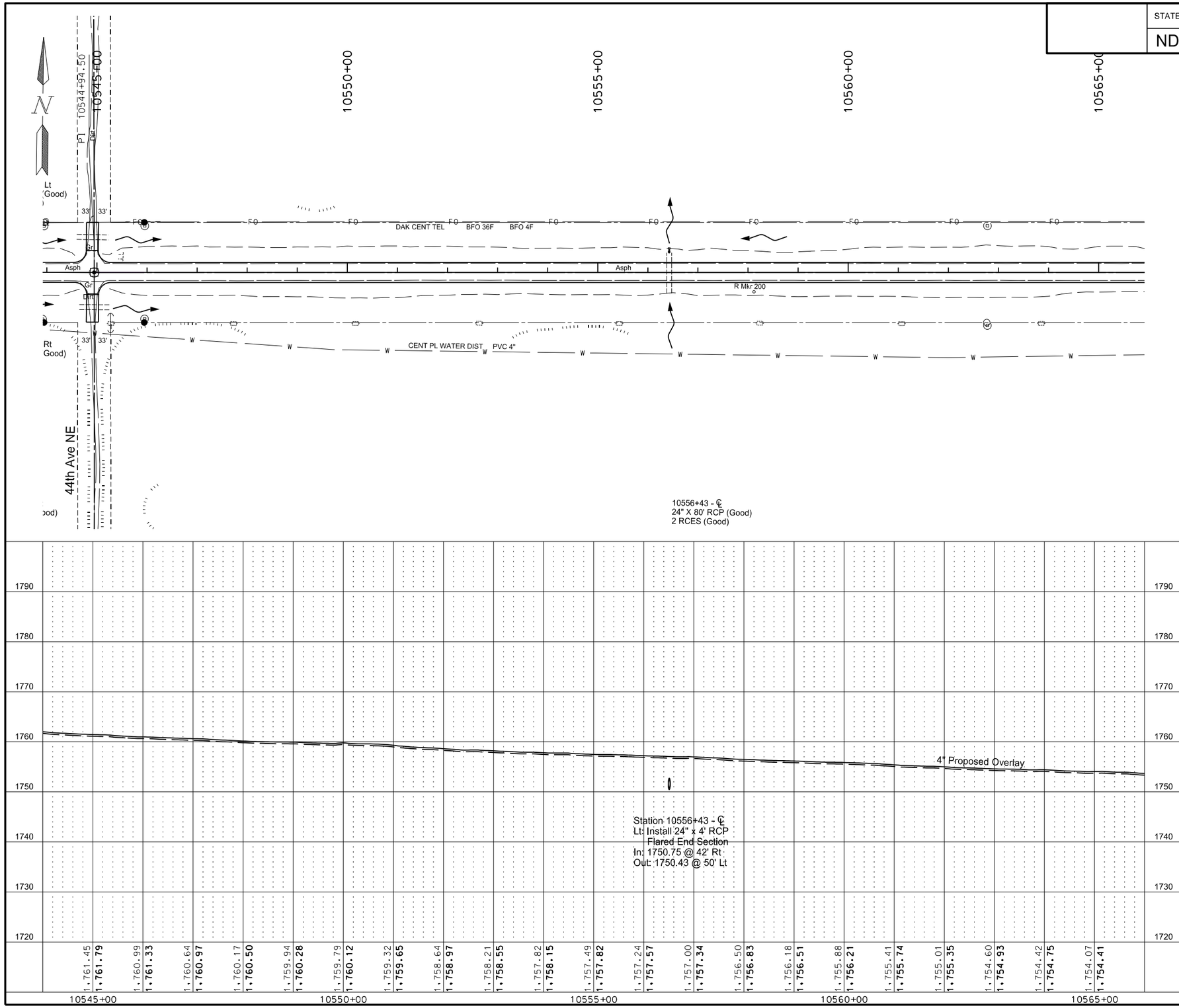
Plan & Profile
Sta 10525+00 to Sta 10545+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	4



PIPE CONC REINF 24IN CL III — Qty
Sta 10556+43 Lt — 4 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES — Qty
Sta 10556+43 Lt — 1 EA

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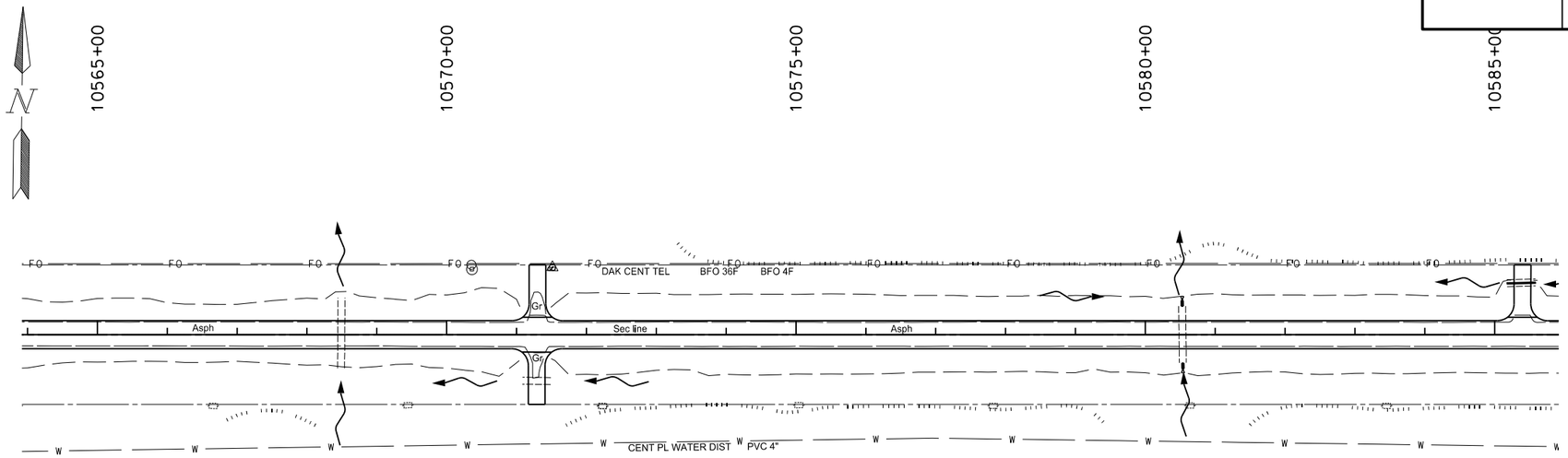
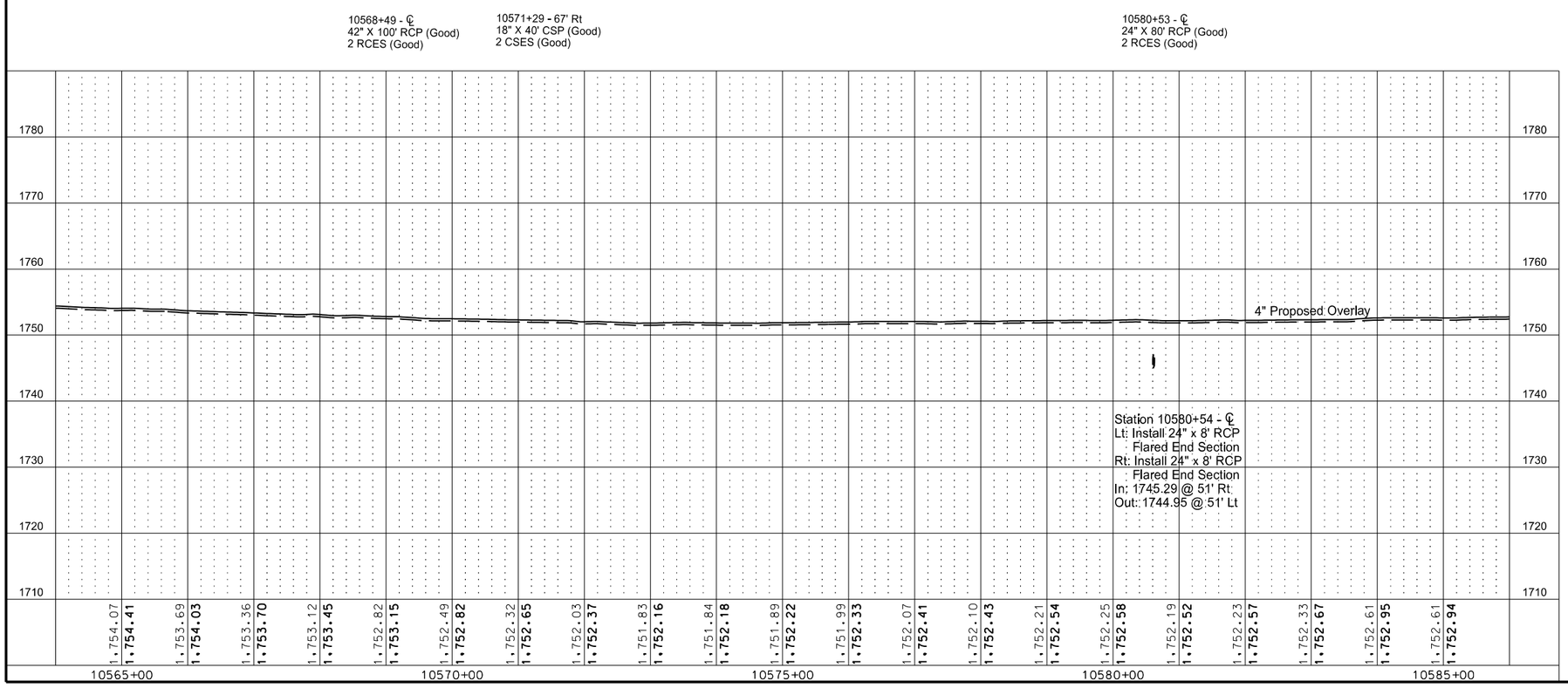
Plan & Profile
Sta 10545+00 to Sta 10565+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	5

PIPE CONC REINF 24IN CL III	Qty
Sta 10580+53 Lt	8 LF
Sta 10580+54 Rt	8 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10580+53 Lt	1 EA
Sta 10580+54 Rt	1 EA





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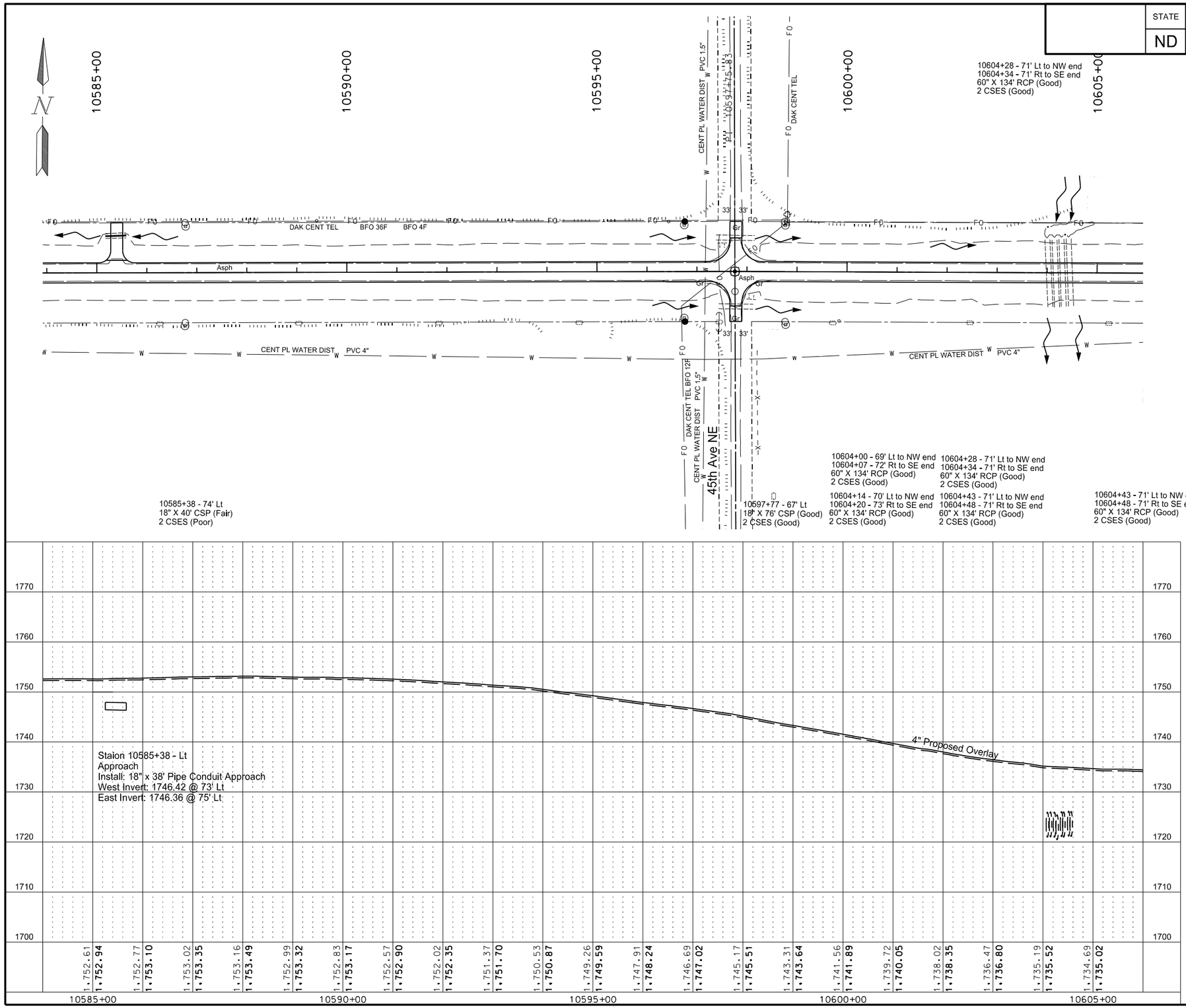
Plan & Profile
Sta 10565+00 to Sta 10585+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	6



REMOVAL OF PIPE ALL TYPES AND SIZES — Qty
Sta 10585+38 Lt — 41 LF

PIPE CONDUIT 18IN-APPROACH — Qty
Sta 10585+38 Lt — 42 LF

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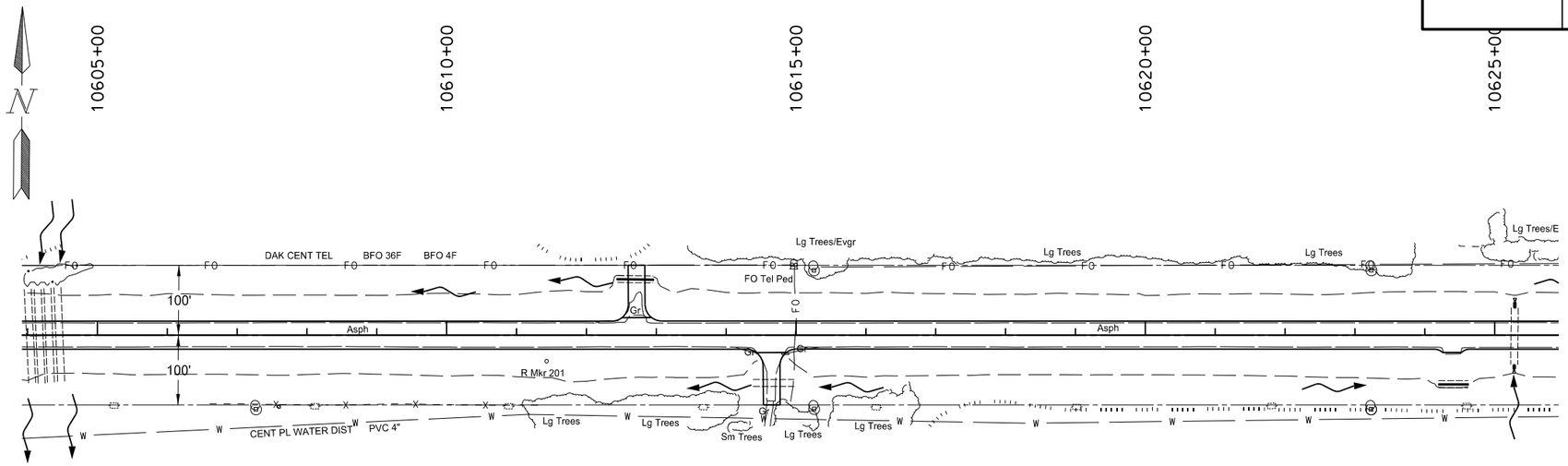
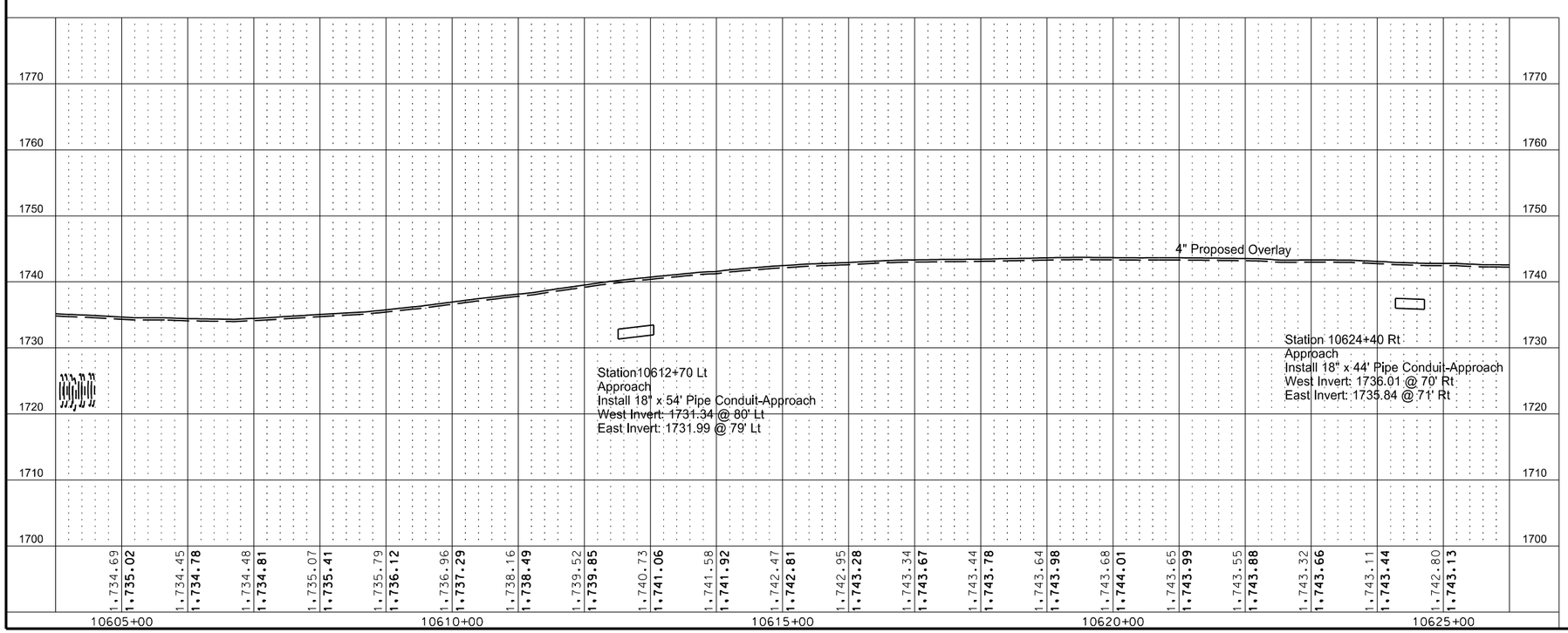
Plan & Profile
Sta 10585+00 to Sta 10605+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	7



REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 10612+70 Lt	51 LF
Sta 10624+40 Rt	42 LF

PIPE CONDUIT 18IN-APPROACH	Qty
Sta 10612+70 Lt	54 LF
Sta 10624+40 Rt	44 LF



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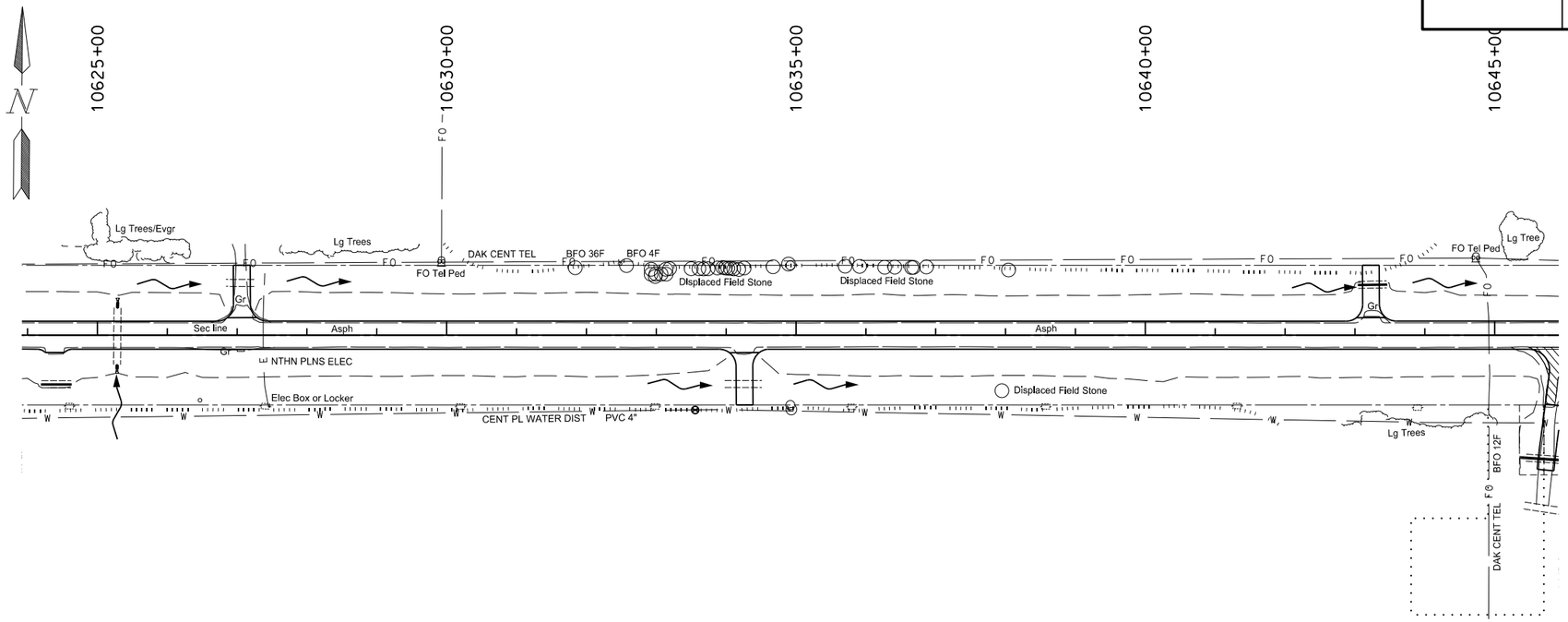
Plan & Profile
Sta 10605+00 to Sta 110625+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	8



REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 10643+25 Lt	40 LF

PIPE CONDUIT 18IN-APPROACH	Qty
Sta 10643+25 Lt	42 LF

PIPE CONC REINF 24IN CL III	Qty
Sta 10625+29 Lt	8 LF
Sta 10625+28 Rt	6 LF

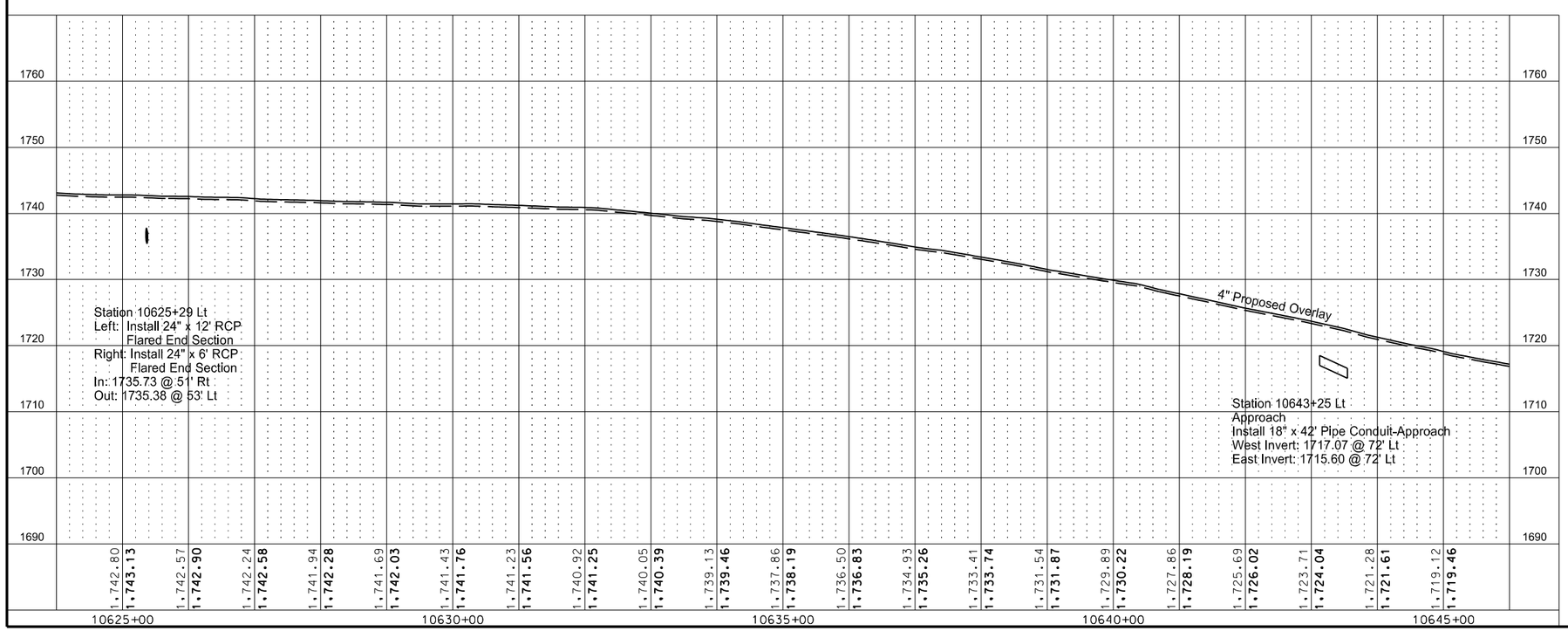
REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10625+29 Lt	1 EA
Sta 10625+28 Rt	1 EA

10625+29 - ℄
24" X 80' RCP (Good)
2 RCES (Fair)

10627+04 - 74' Lt
18" X 40' CSP (Good)
2 CSES (Good)

10634+25 - 70' Rt
18" X 52' CSP (Good)
2 CSES (Good)

10643+25 - 72' Lt
18" X 40' CSP (Good)
2 CSES (Poor)



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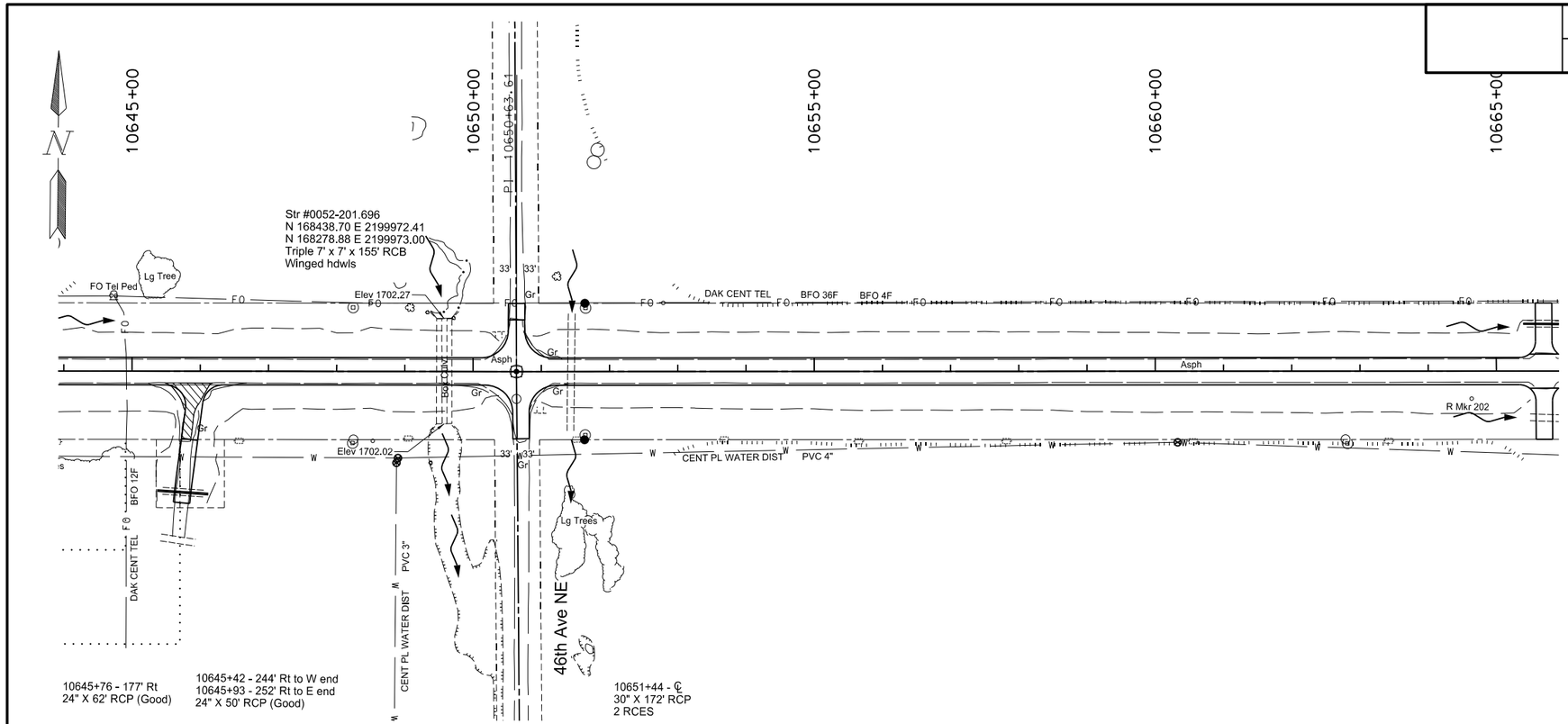
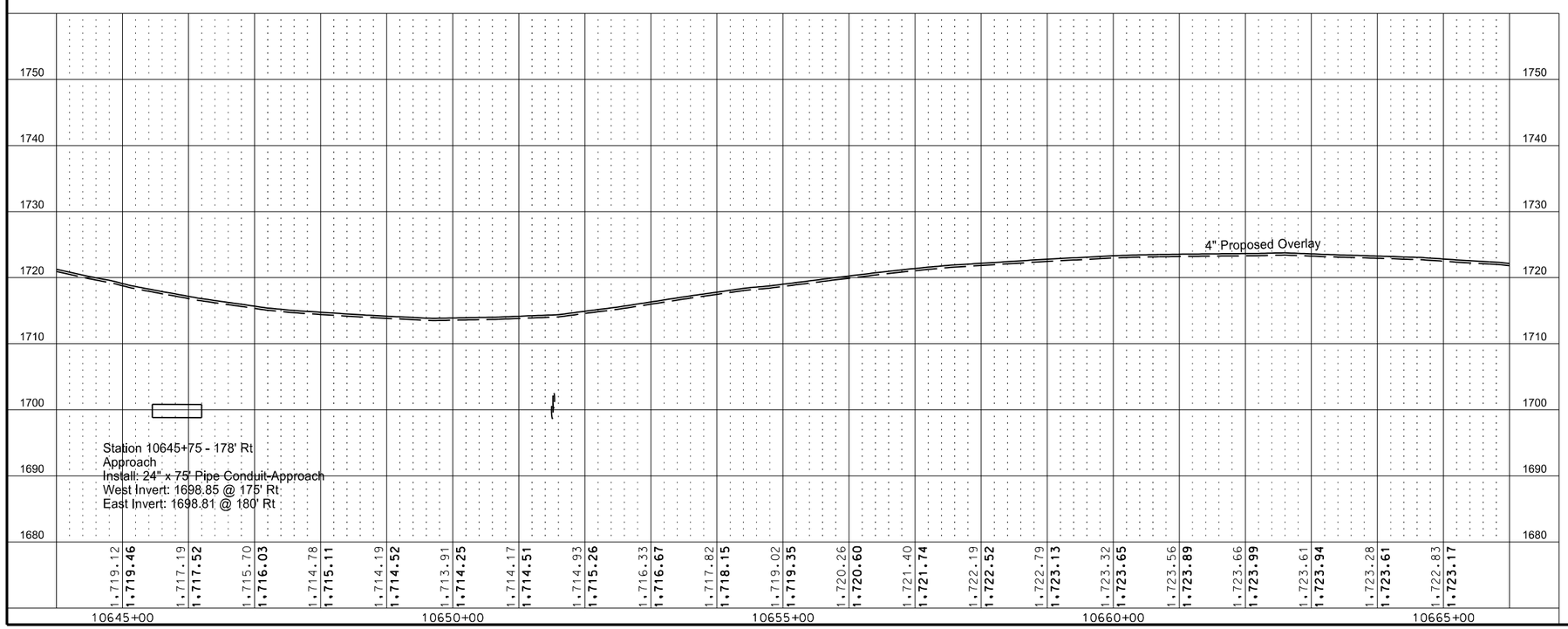
Plan & Profile
Sta 10625+00 to Sta 10645+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	9

REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 10645+75 Rt	62 LF

PIPE CONDUIT 24IN-APPROACH	Qty
Sta 10645+75 Rt	75 LF





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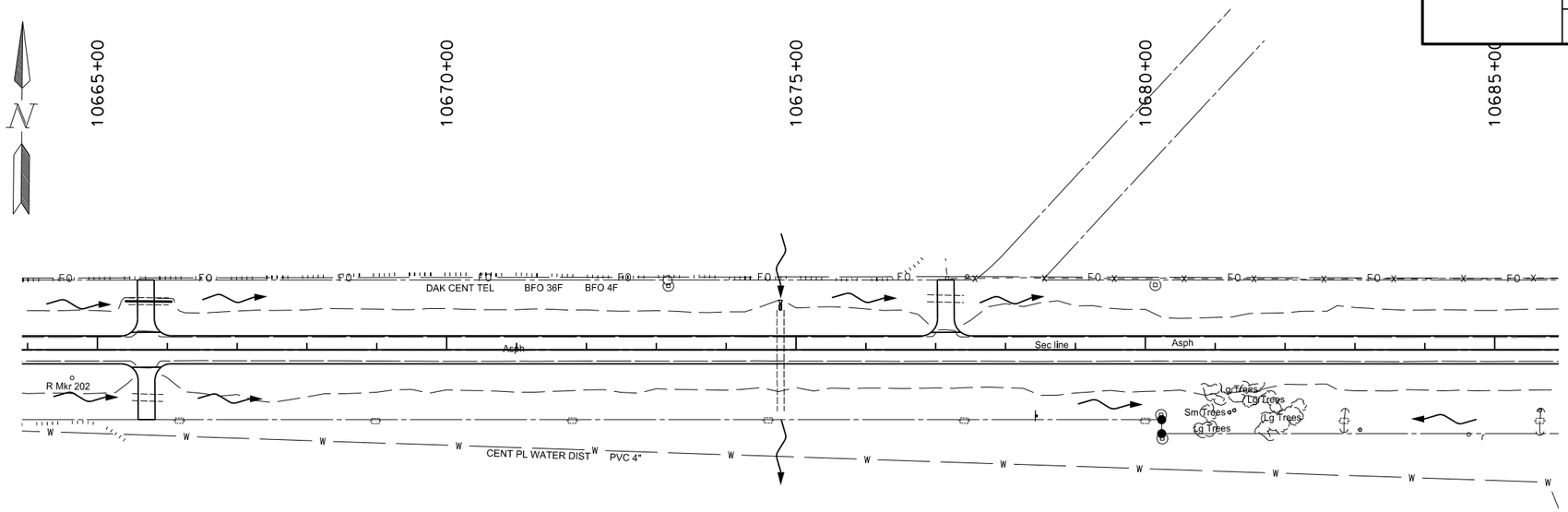
Plan & Profile
Sta 10645+00 to Sta 10665+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	10



REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 10665+73 Lt	64 LF

PIPE CONDUIT 18IN-APPROACH	Qty
Sta 10665+73 Lt	68 LF

PIPE CONC REINF 30IN CL III	Qty
Sta 10674+78 Lt	8 LF

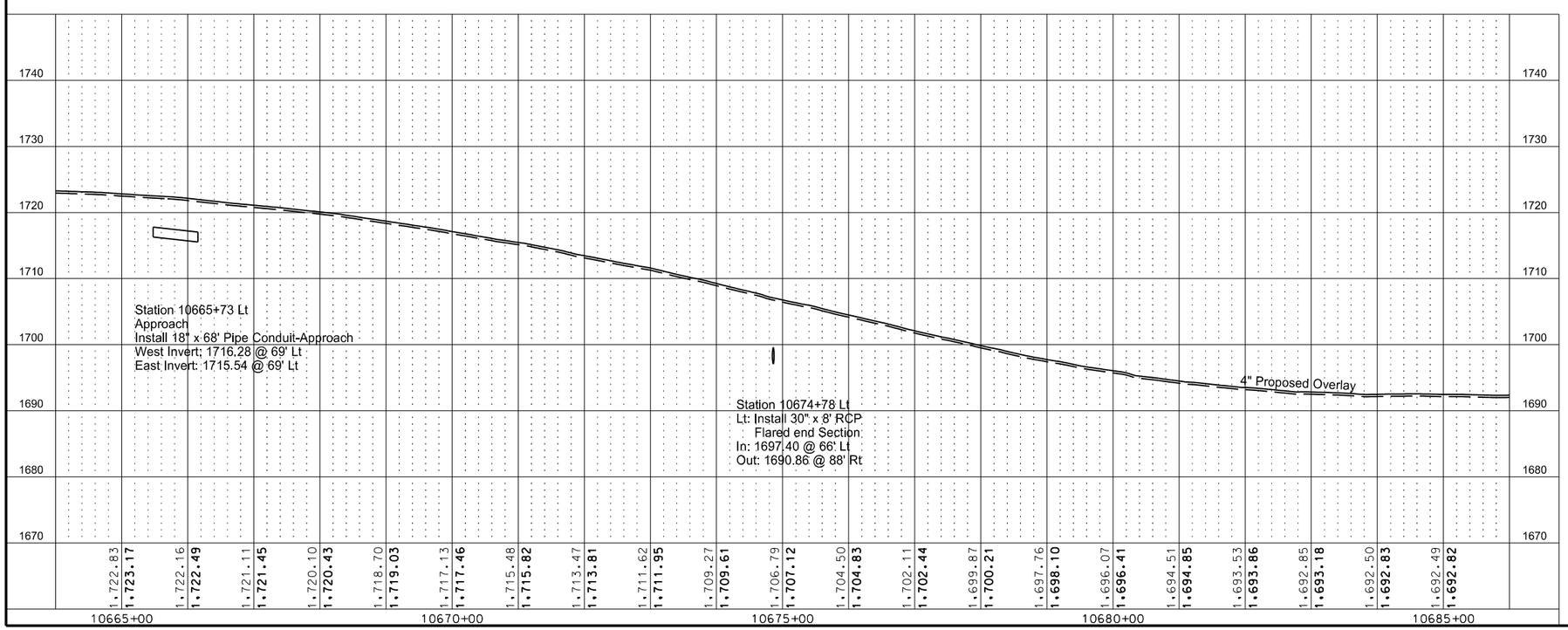
REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10674+78 Lt	1 EA

10665+72 - 69' Rt
18" X 52' CSP (Good)
2 CSES (Good)

10665+73 - 69' Lt
18" X 64' CSP
Silted in

10674+78 - ℄
90 Rt to S end
30" X 142' RCP (Good)
2 RCES (Good)

10677+14 - 73' Lt
18" X 52' CSP (Good)
2 CSES (Good)



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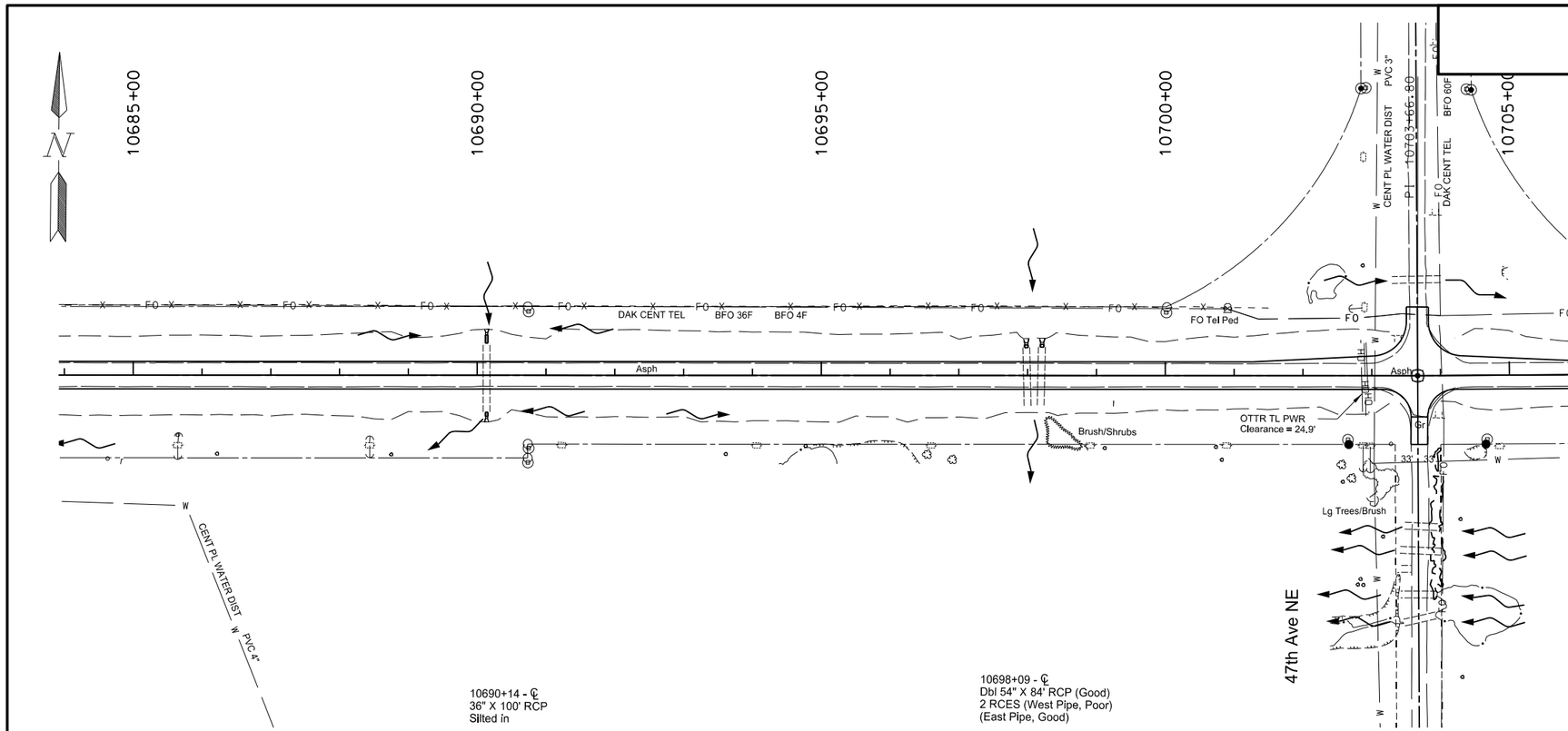
Plan & Profile
Sta 10665+00 to Sta 10685+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	11

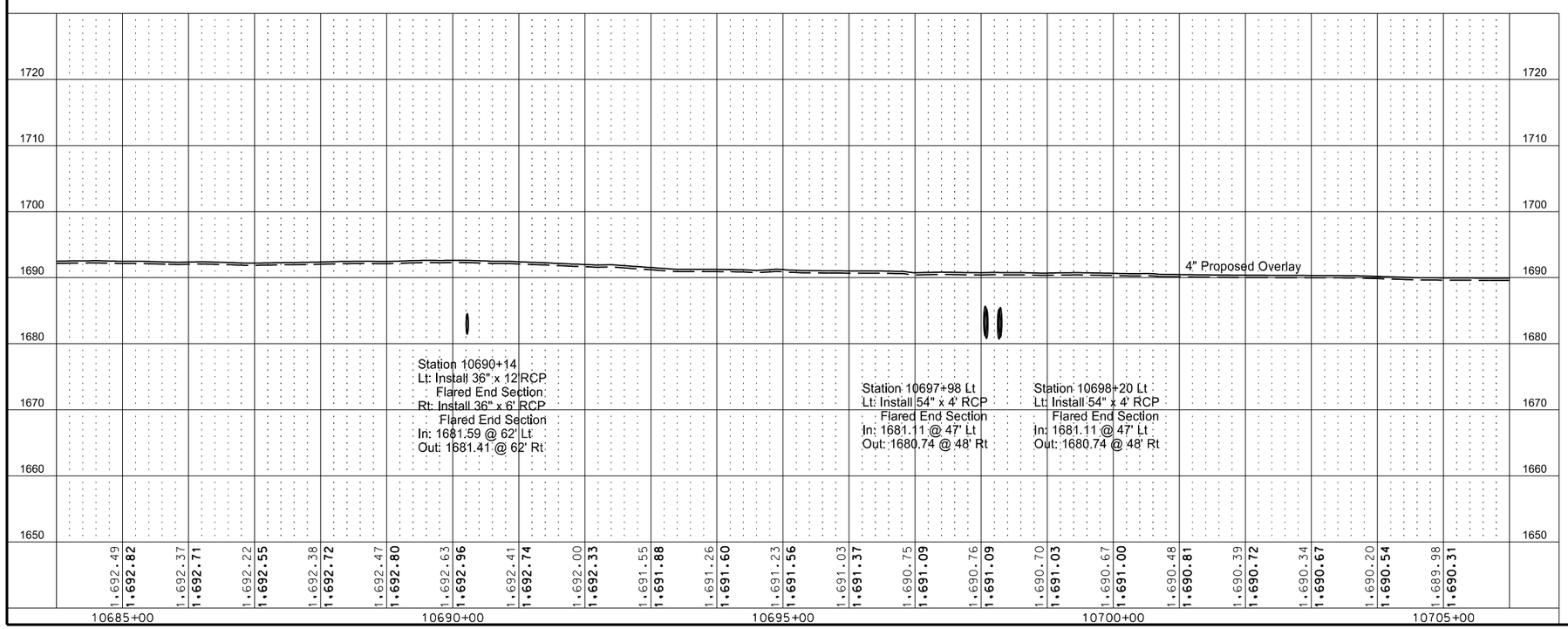


PIPE CONC REINF 36IN CL III	Qty
Sta 10690+14 Lt	12 LF
Sta 10690+14 Rt	6 LF

PIPE CONC REINF 54IN CL III	Qty
Sta 10697+98 Lt	4 LF
Sta 10698+20 Lt	4 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10690+14 Lt	1 EA
Sta 10690+14 Rt	1 EA
Sta 10697+98 Lt	1 EA
Sta 10698+20 Lt	1 EA

REMOVE & RELAY PIPE-ALL TYPE & SIZES	Qty
Sta 10690+14 Lt	8 LF
Sta 10690+14 Rt	8 LF



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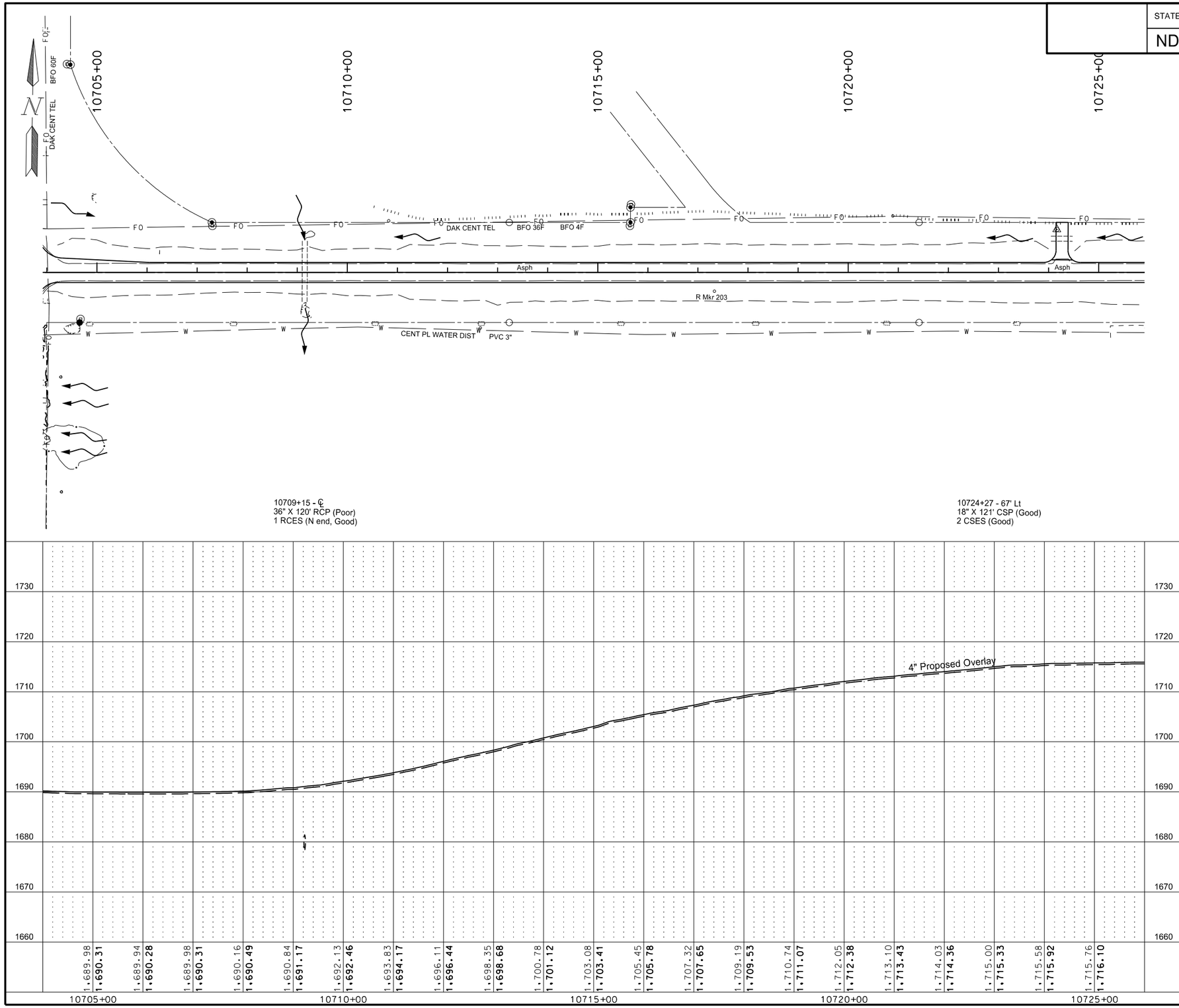
Plan & Profile
Sta 10685+00 to Sta 10705+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	12



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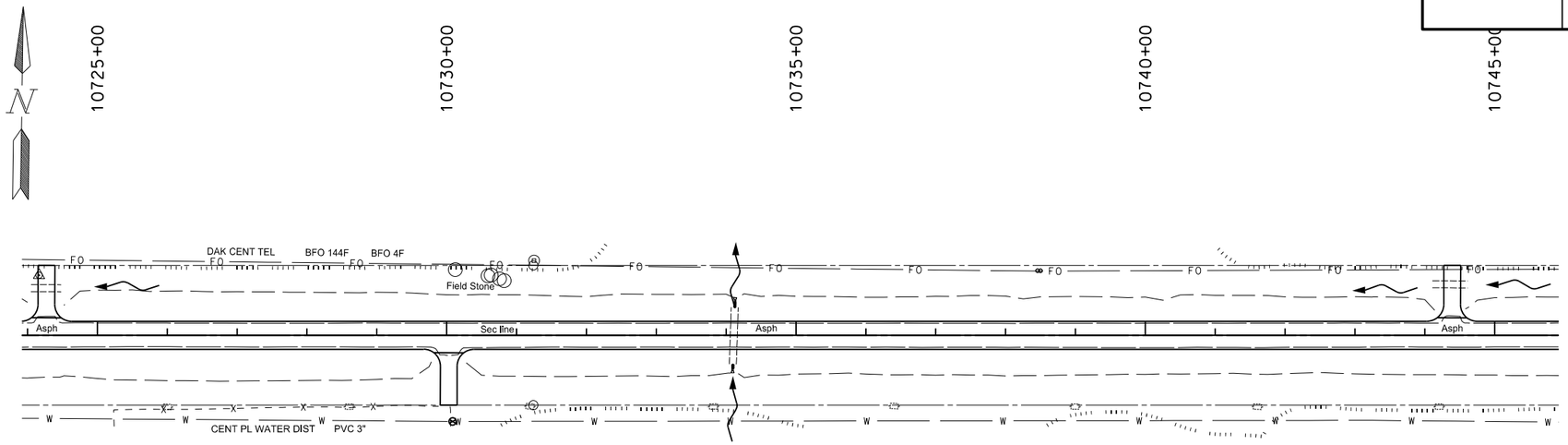
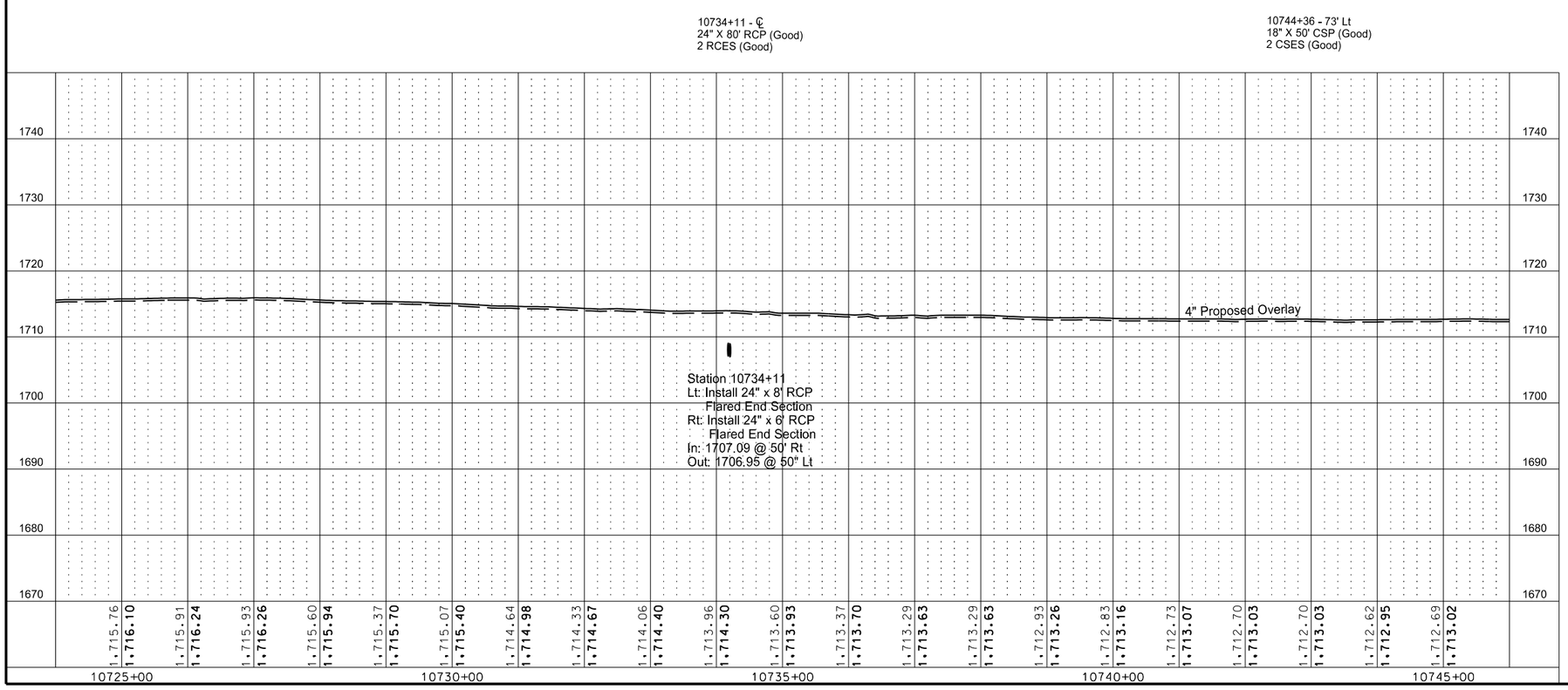
Plan & Profile
Sta 10705+00 to Sta 10725+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	13



PIPE CONC REINF 24IN CL III	Qty
Sta 10734+13 Lt	8 LF
Sta 10734+10 Rt	6 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10734+13 Lt	1 EA
Sta 10734+10 Rt	1 EA



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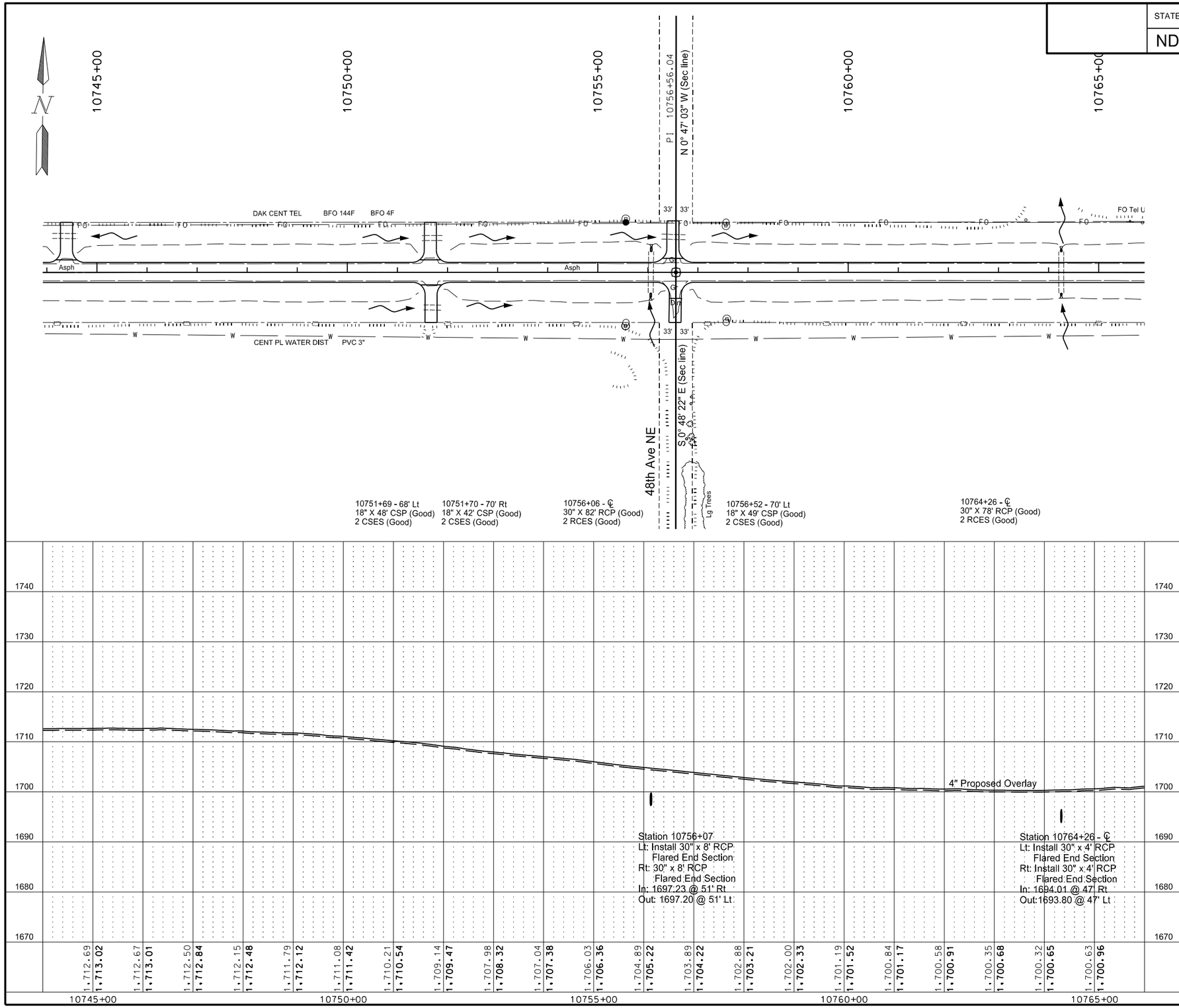
Plan & Profile
Sta 10725+00 to Sta 10745+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	14



PIPE CONC REINF 30IN CL III	Qty
Sta 10756+07 Lt	8 LF
Sta 10756+06 Rt	8 LF
Sta 10764+25 Lt	4 LF
Sta 10764+26 Rt	4 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10756+07 Lt	1 EA
Sta 10756+06 Rt	1 EA
Sta 10764+25 Lt	1 EA
Sta 10764+26 Rt	1 EA

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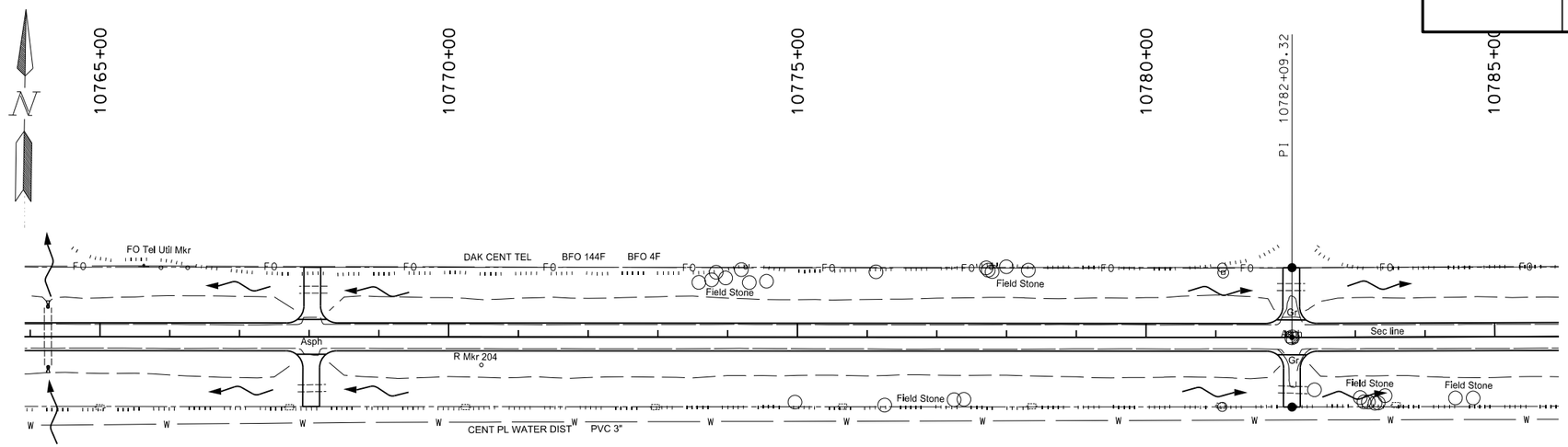
Plan & Profile
Sta 10745+00 to Sta 10765+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	15

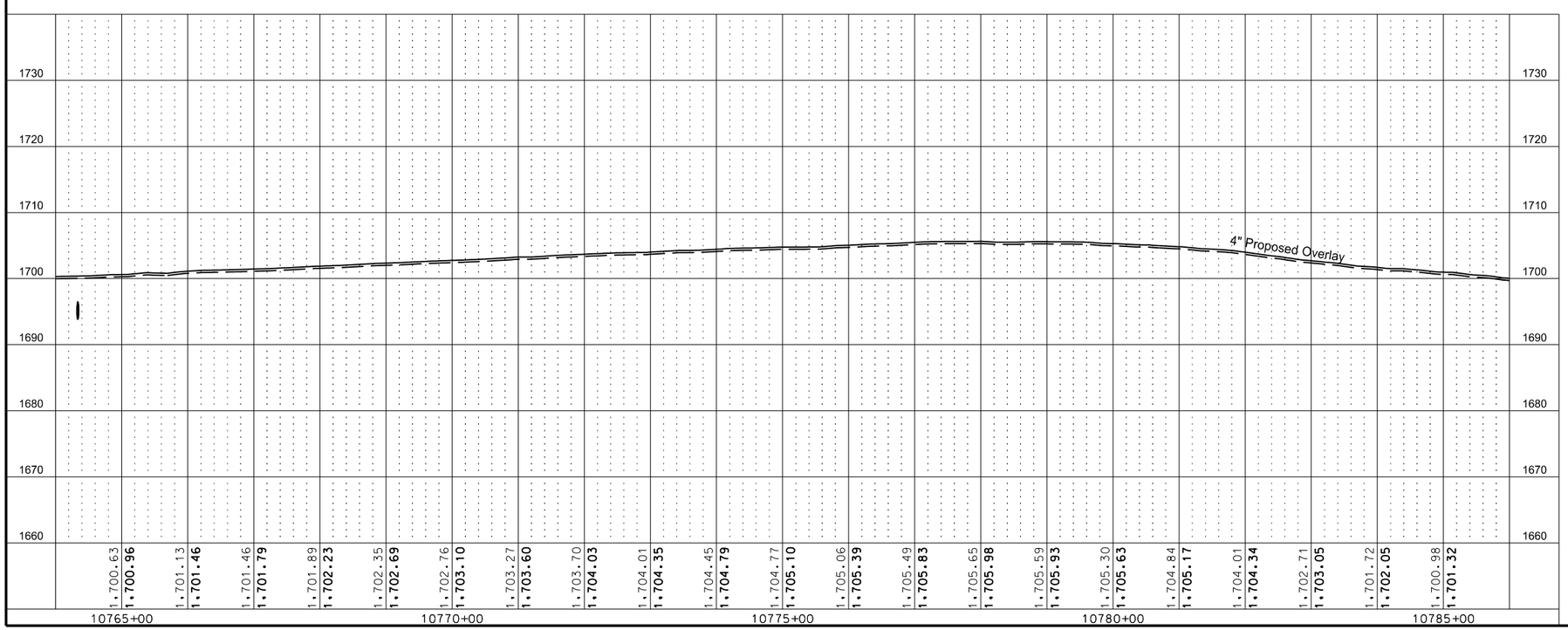


10768+04 - 74' Rt
18" X 40' CSP (Fair)
2 CSES (Fair)

10768+06 - 67' Lt
18" X 40' CSP (Good)
2 CSES (Good)

10782+08 - 72' Lt
18" X 40' CSP (Good)
2 CSES (Good)

10782+10 - 76' Rt
18" X 42' CSP (Good)
2 CSES (Good)



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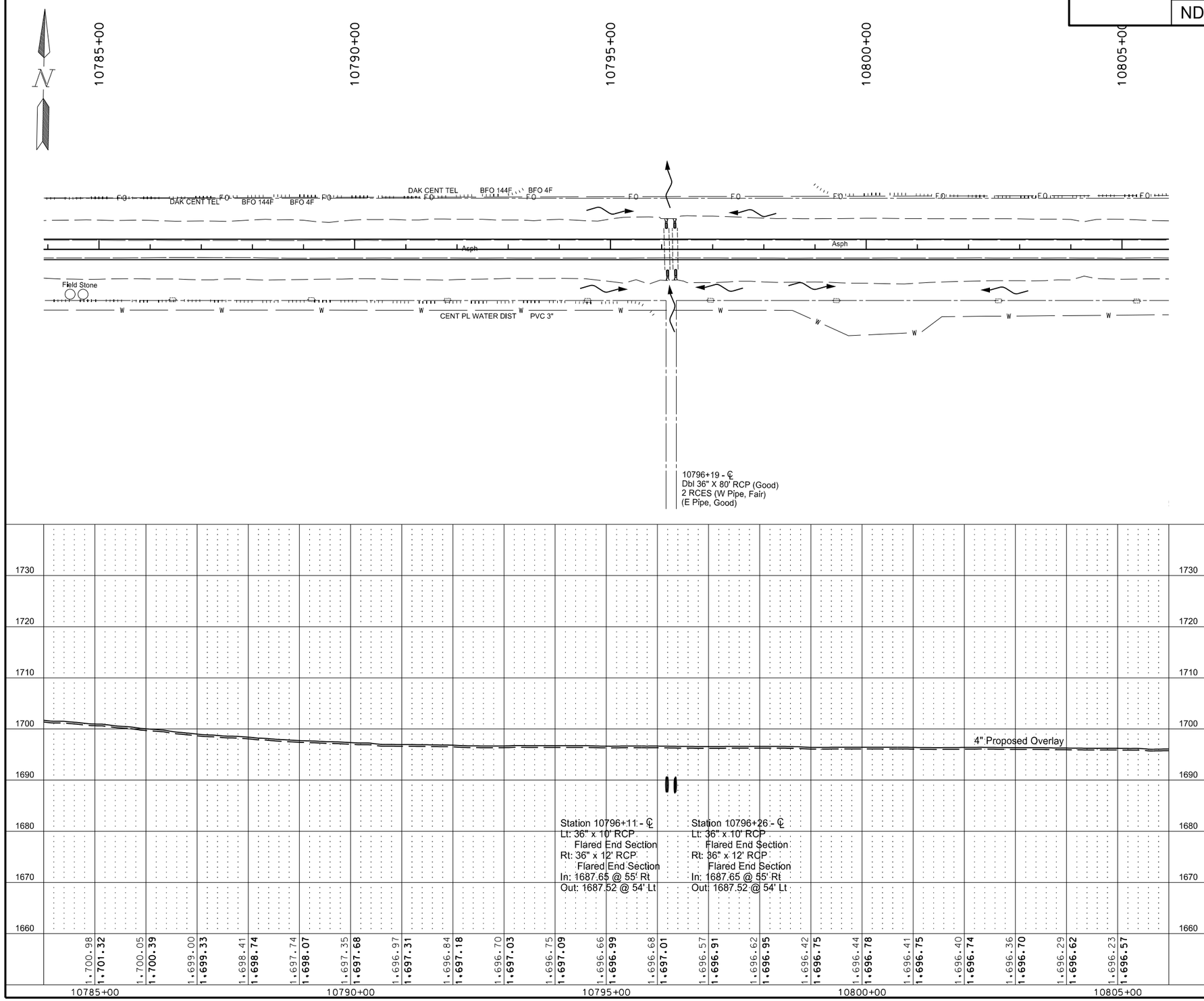
Plan & Profile
Sta 10765+00 to Sta 10785+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	16



PIPE CONC REINF 36IN CL III	Qty
Sta 10796+09 Lt	10 LF
Sta 10796+12 Rt	12 LF
Sta 10796+25 Lt	10 LF
Sta 10796+27 Rt	12 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10796+09 Lt	1 EA
Sta 10796+12 Rt	1 EA
Sta 10796+25 Lt	1 EA
Sta 10796+27 Rt	1 EA

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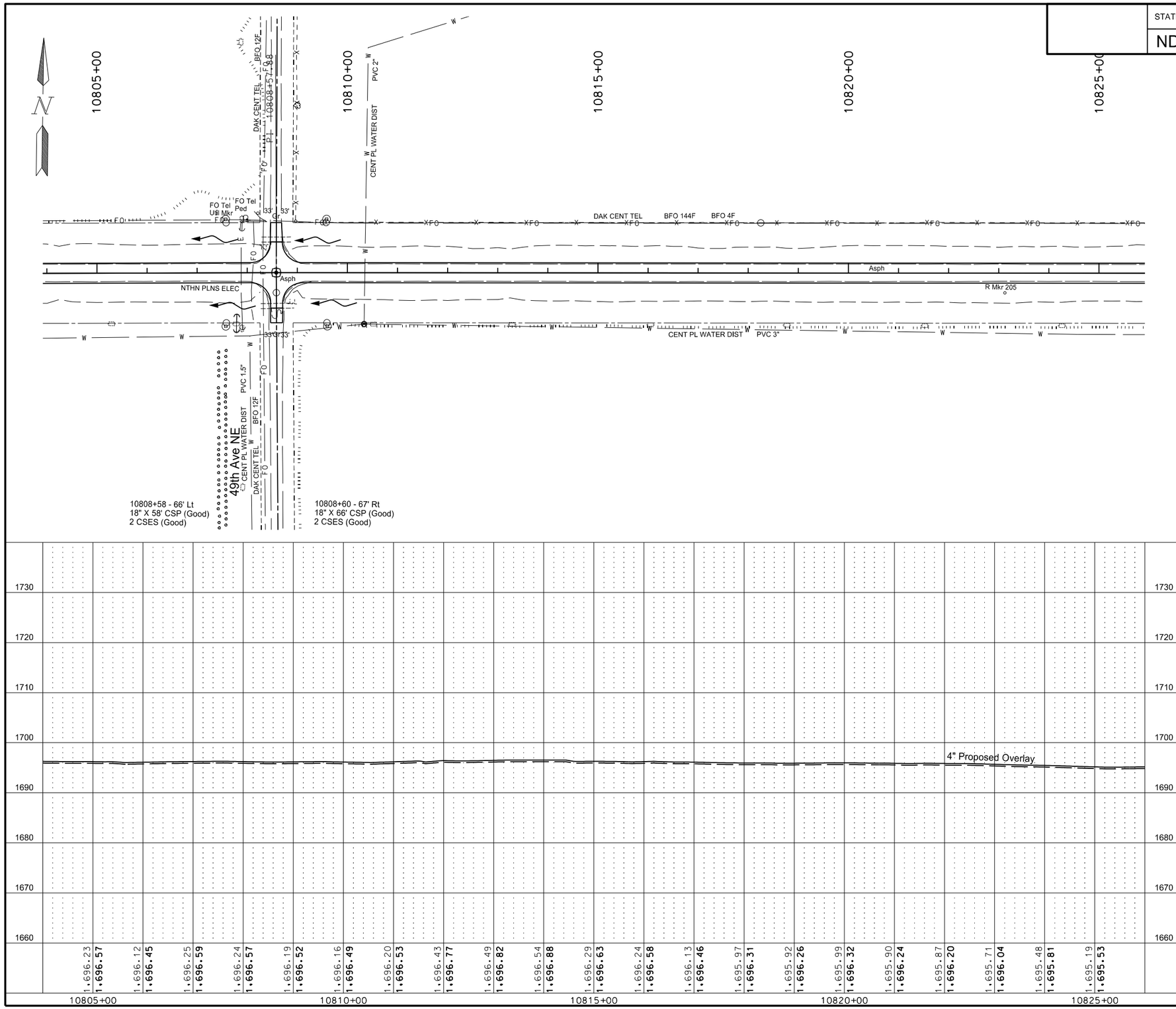
Plan & Profile
Sta 10785+00 to Sta 10805+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	17



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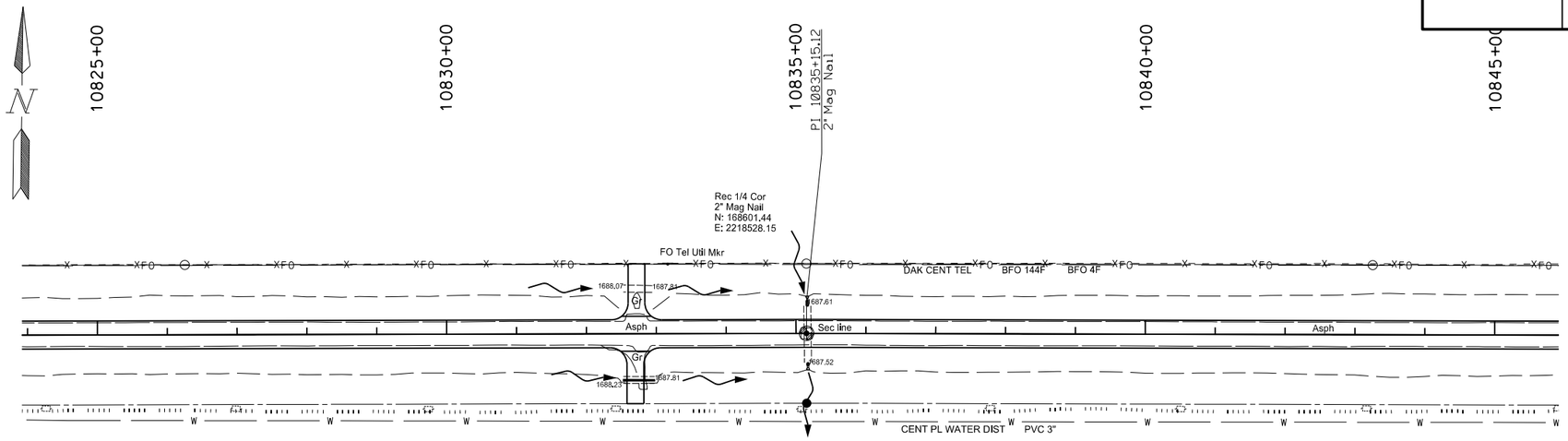
Plan & Profile
Sta 10805+00 to Sta 10825+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	18



REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 10832+75 Rt	44 LF

PIPE CONC REINF 24IN CL III	Qty
Sta 10835+16 Lt	8 LF
Sta 10835+17 Rt	4 LF

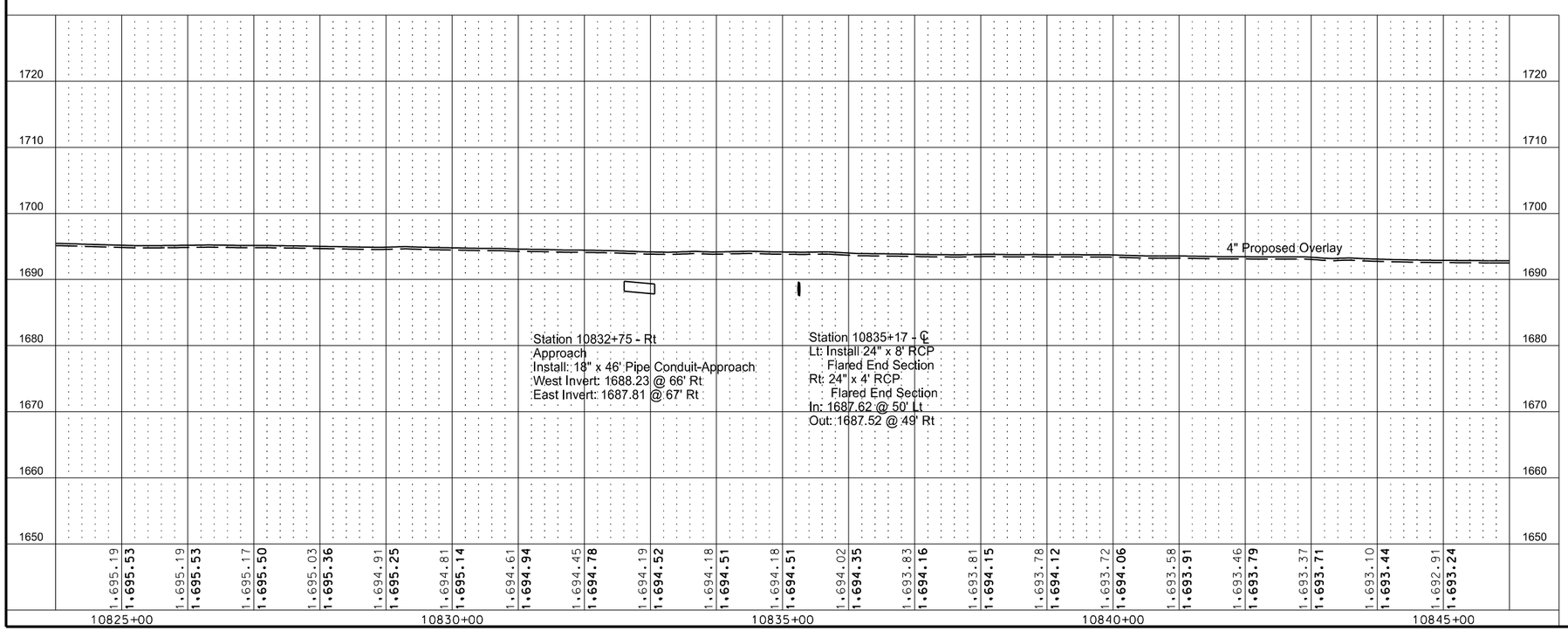
PIPE CONDUIT 24IN-APPROACH	Qty
Sta 10832+75 Rt	46 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10835+16 Lt	1 EA
Sta 10835+17 Rt	1 EA

10832+74 - 64' Lt
18" X 41' CSP (Good)
2 CSES (Good)

10832+75 - 67' Rt
18" X 44' CSP (Good)
2 CSES (Poor)

10835+17 - ℄
24" X 80' RCP (Good)
2 RCES (Good)



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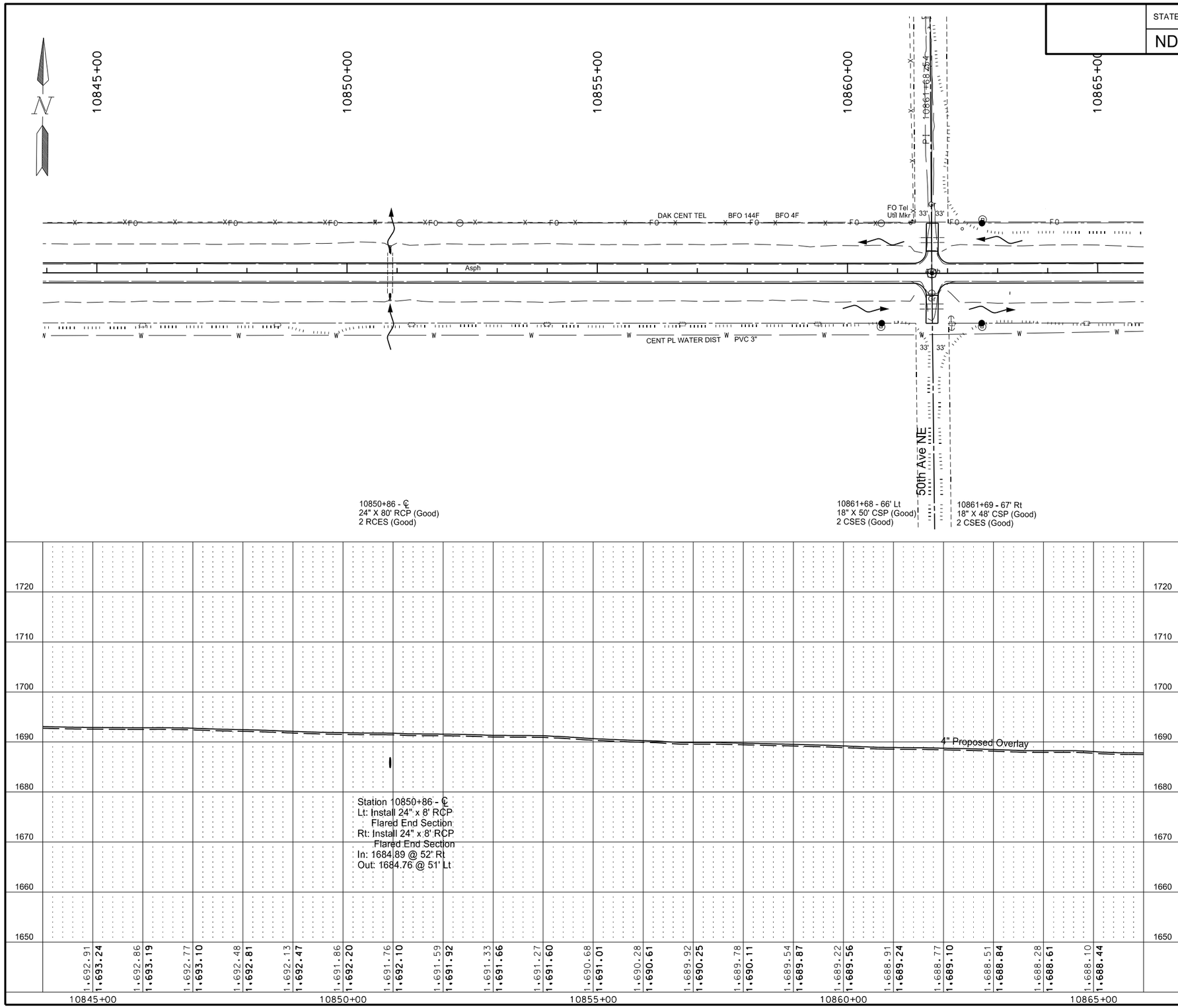
Plan & Profile
Sta 10825+00 to Sta 10845+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	19



PIPE CONC REINF 24IN CL III	Qty
Sta 10850+86 Lt	8 LF
Sta 10850+86 Rt	8 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10850+86 Lt	1 EA
Sta 10850+86 Rt	1 EA

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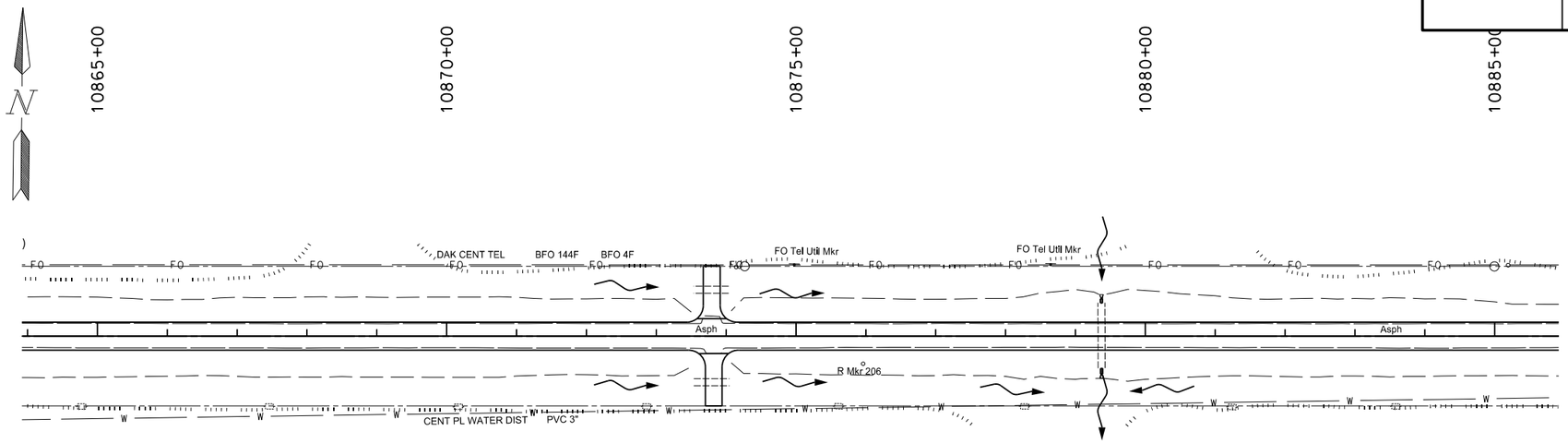
Plan & Profile
Sta 10845+00 to Sta 10865+00

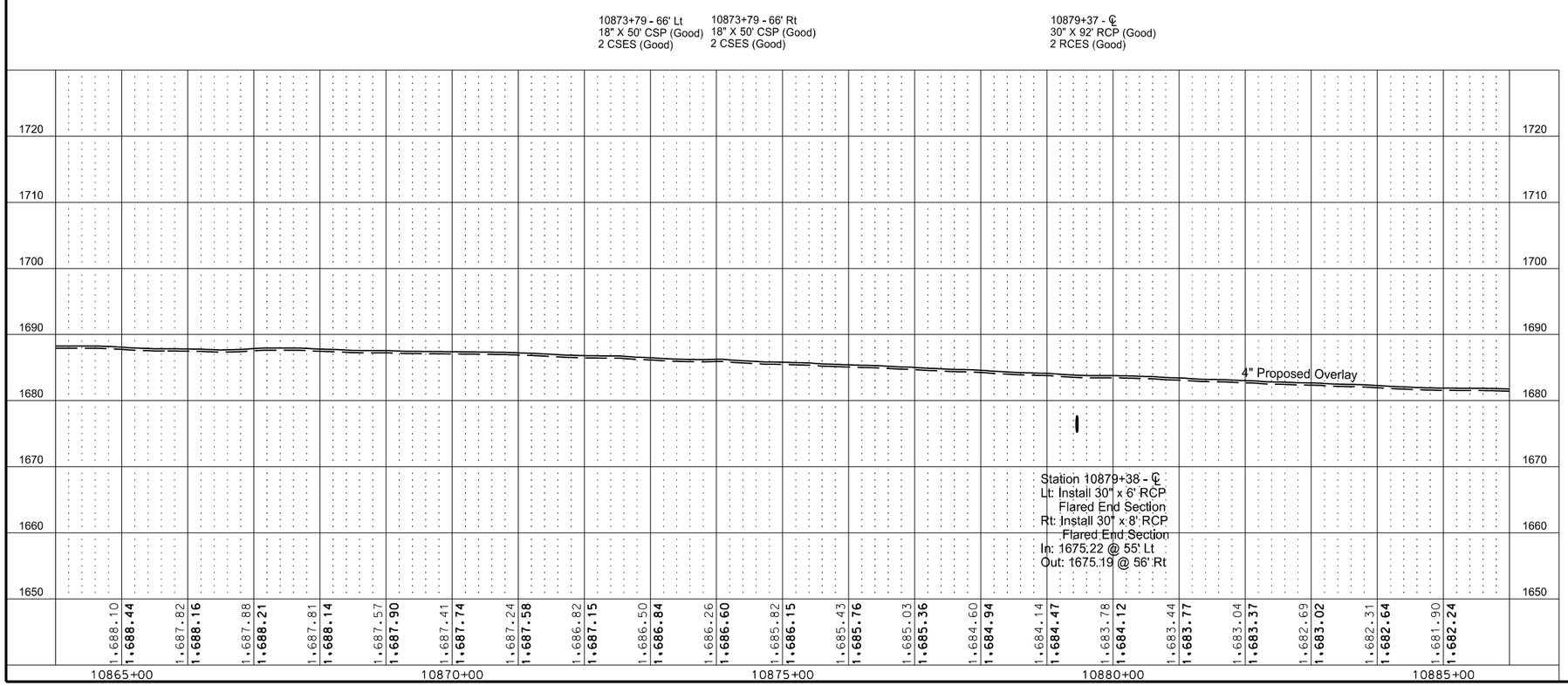
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	20



PIPE CONC REINF 30IN CL III	Qty
Sta 10879+37 Lt	6 LF
Sta 10879+38 Rt	8 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10879+37 Lt	1 EA
Sta 10879+38 Rt	1 EA

REMOVE & RELAY PIPE-ALL TYPES & SIZES	Qty
Sta 10879+37 Lt	8 LF
Sta 10879+38 Rt	8 LF



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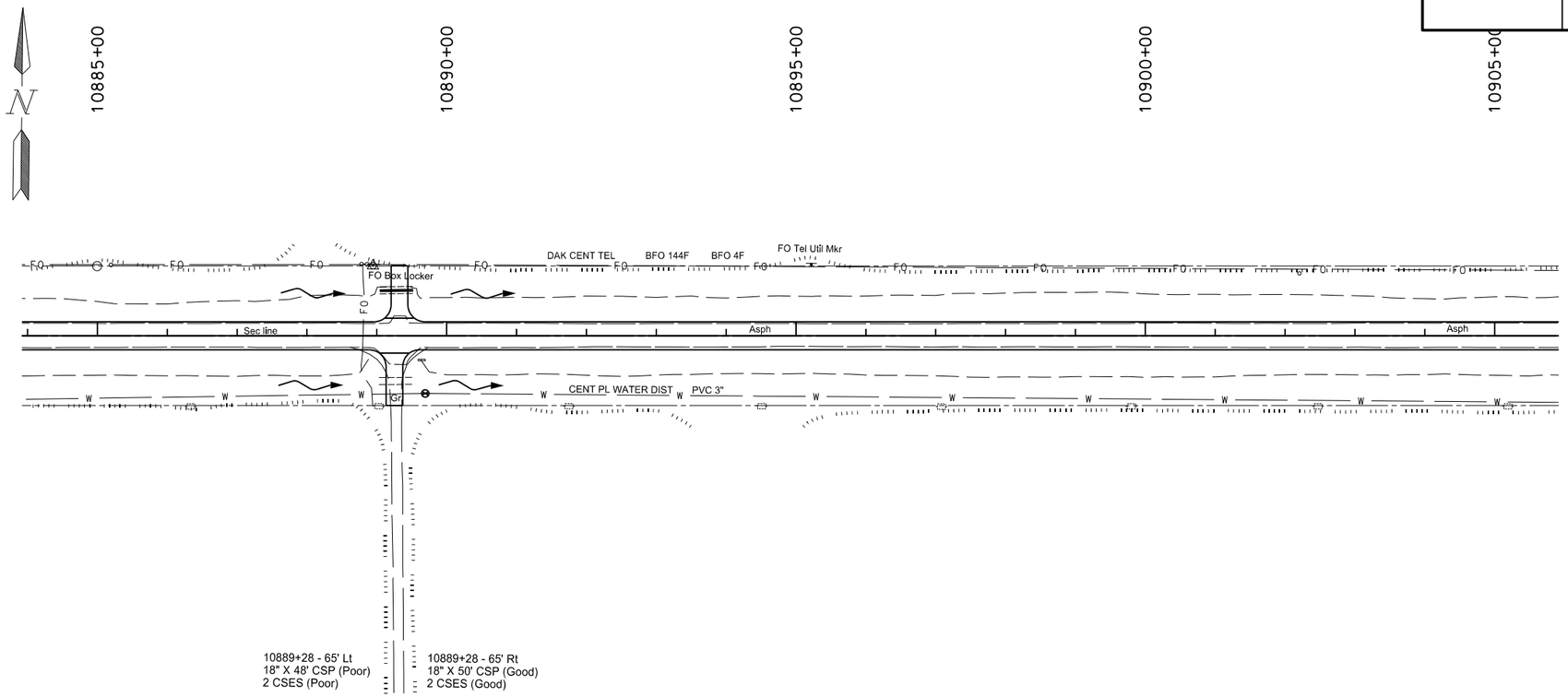
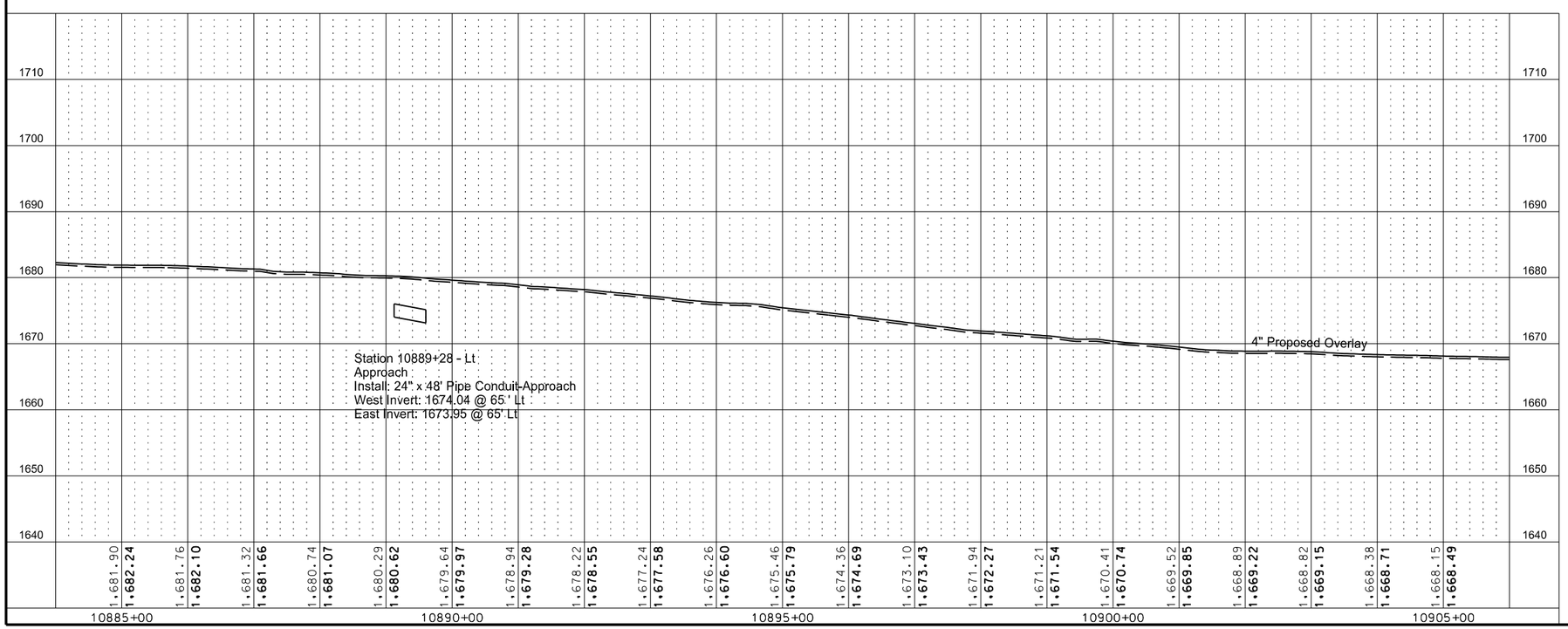
Plan & Profile
Sta 10865+00 to Sta 10885+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	21



REMOVAL OF PIPE ALL TYPES AND SIZES — Qty
Sta 10889+28 Lt — 48 LF

PIPE CONDUIT 24IN-APPROACH — Qty
Sta 10889+28 Lt — 48 LF



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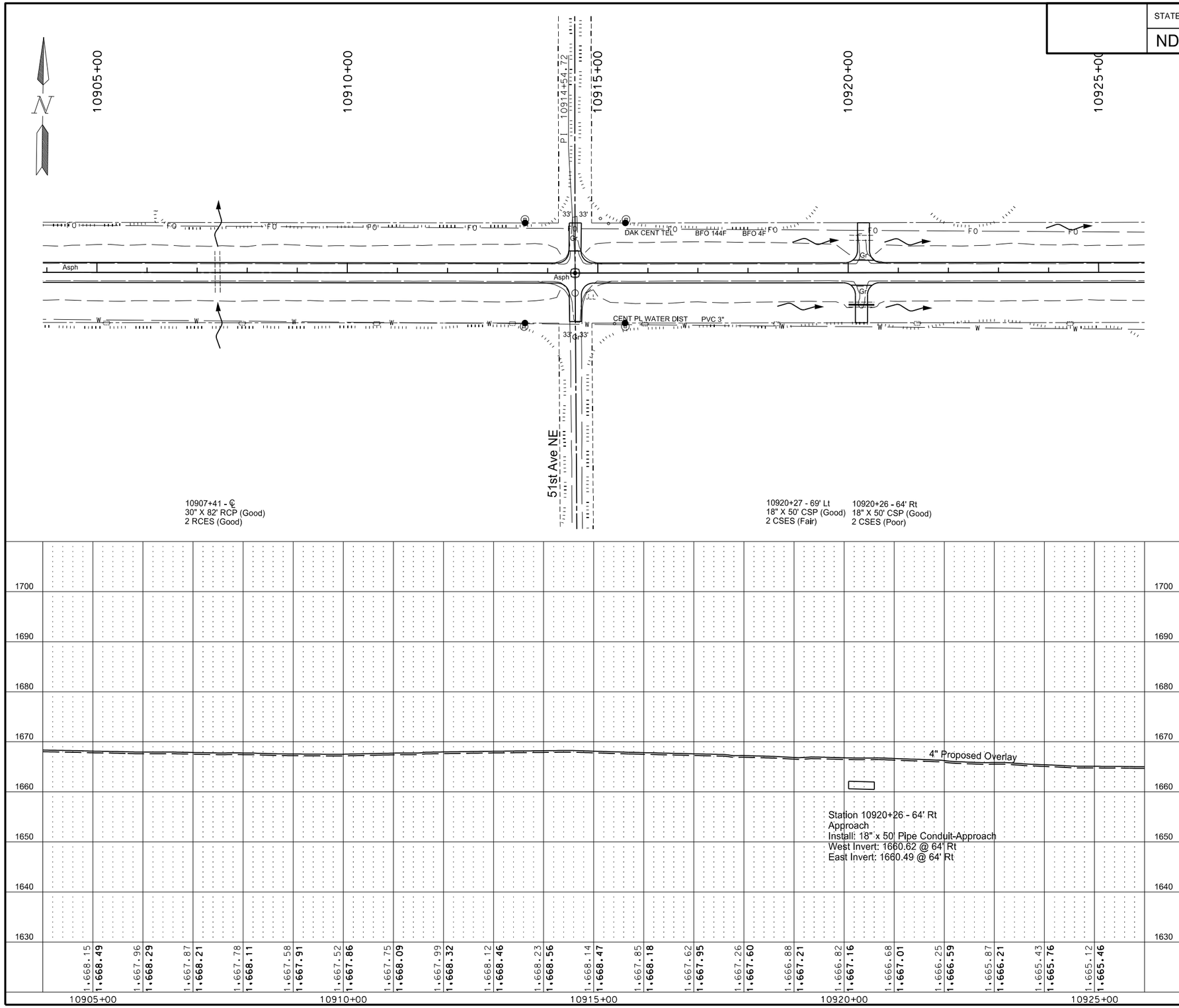
Plan & Profile
Sta 10885+00 to Sta 10905+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	22



REMOVAL OF PIPE ALL TYPES AND SIZES — Qty
Sta 10920+26 Rt — 50 LF

PIPE CONDUIT 18IN-APPROACH — Qty
Sta 10920+26 Rt — 50 LF

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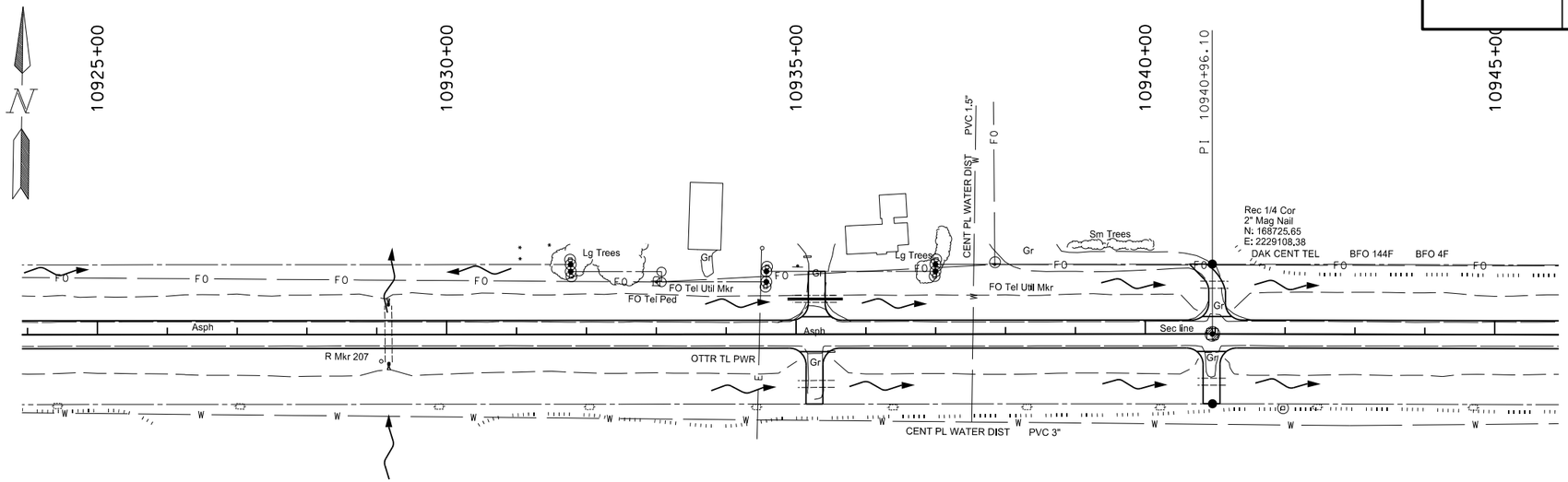
Plan & Profile
Sta 10905+00 to Sta 10925+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	23

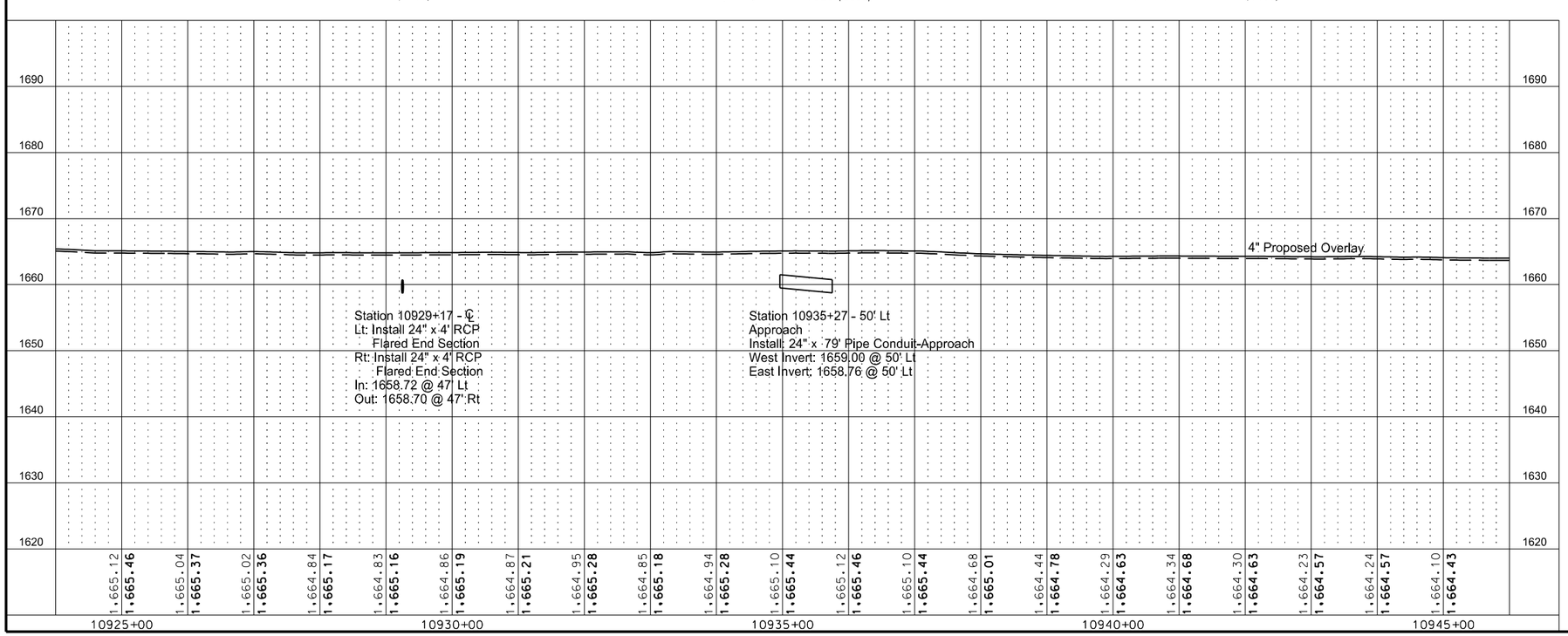


PIPE CONC REINF 24IN CL III	Qty
Sta 10929+16 Lt	4 LF
Sta 10929+17 Rt	4 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10929+16 Lt	1 EA
Sta 10929+17 Rt	1 EA

REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 10935+27 Lt	62 LF

PIPE CONDUIT 24IN-APPROACH	Qty
Sta 10935+27 Lt	79 LF



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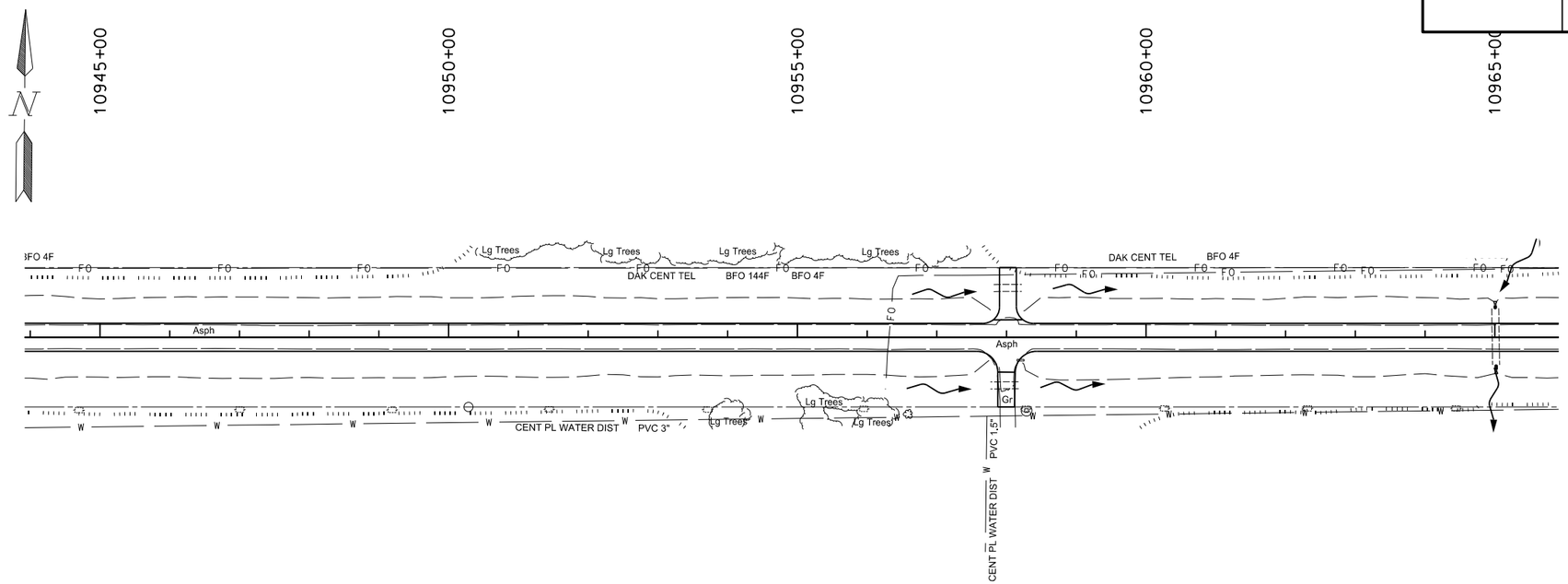
Plan & Profile
Sta 10925+00 to Sta 10945+00

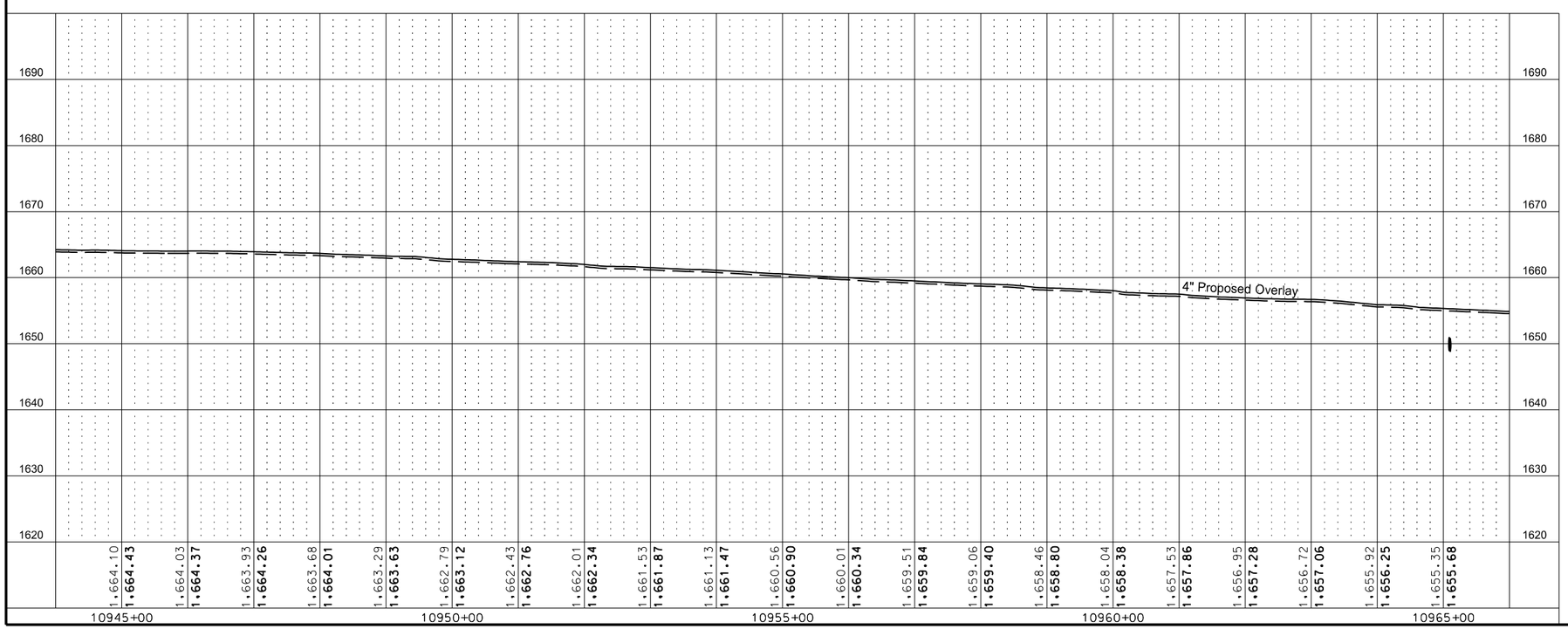
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	24



10958+02 - 70' Lt
18" X 40' CSP (Good)
2 CSES (Good)

10957+97 - 69' Rt
18" X 40' CSP (Good)
2 CSES (Good)

10965+01 - ℄
24" X 80' RCP (Good)
2 RCES (Good)



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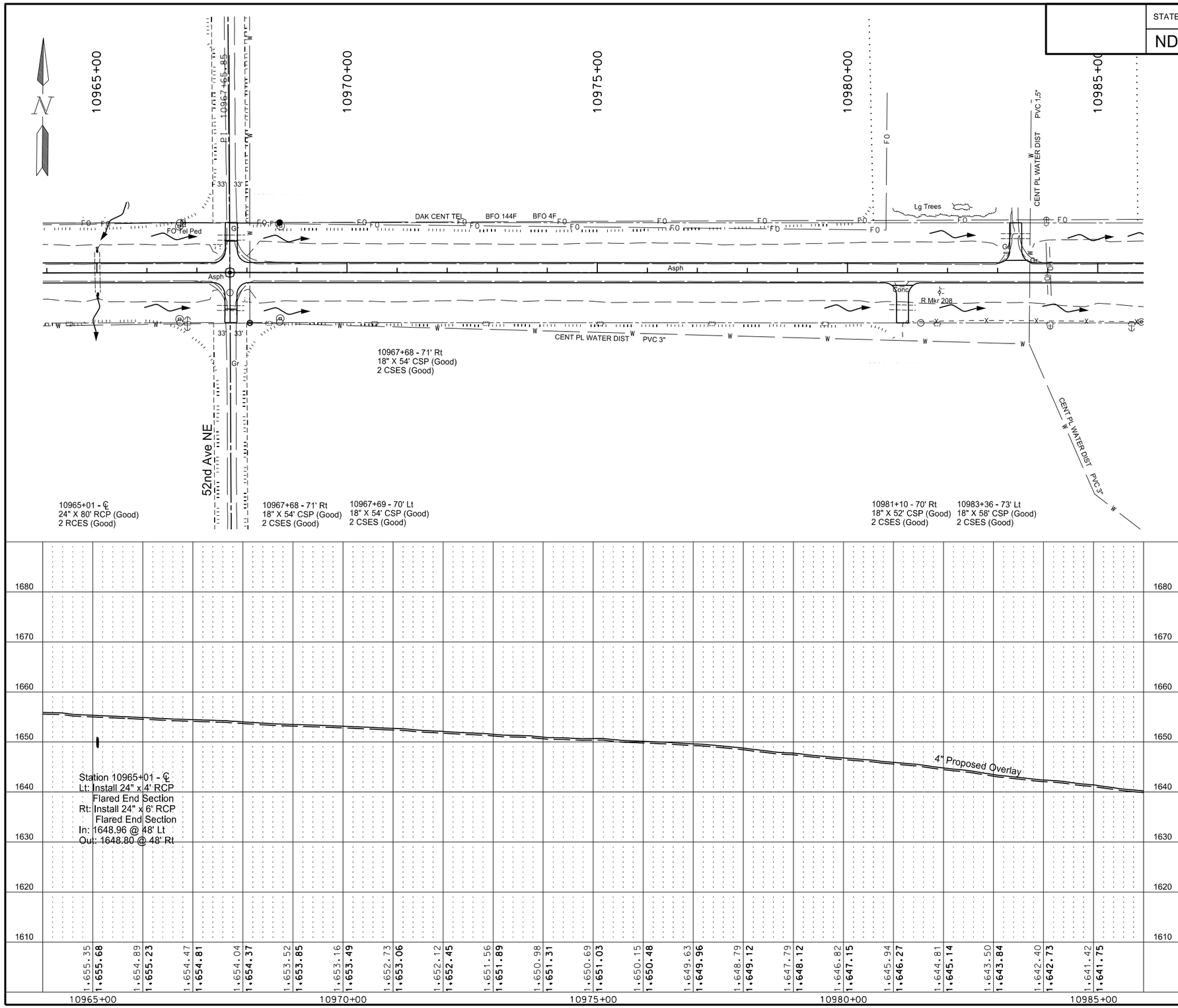
Plan & Profile
Sta 10945+00 to Sta 10965+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	25



PIPE CONC REINF 24IN CL III	Qty
Sta 10965+01 Lt	4 LF
Sta 10965+02 Rt	6 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 10965+01 Lt	1 EA
Sta 10965+02 Rt	1 EA

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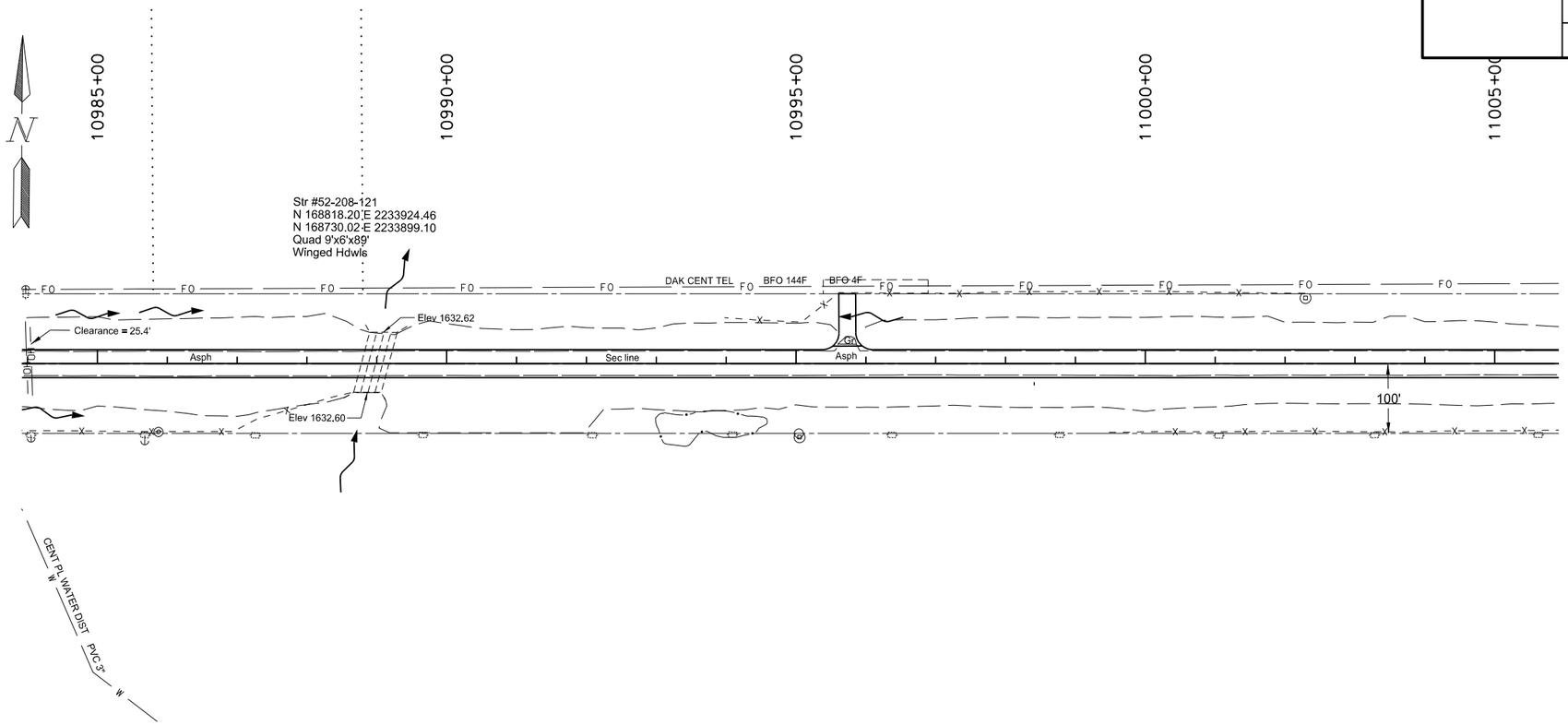
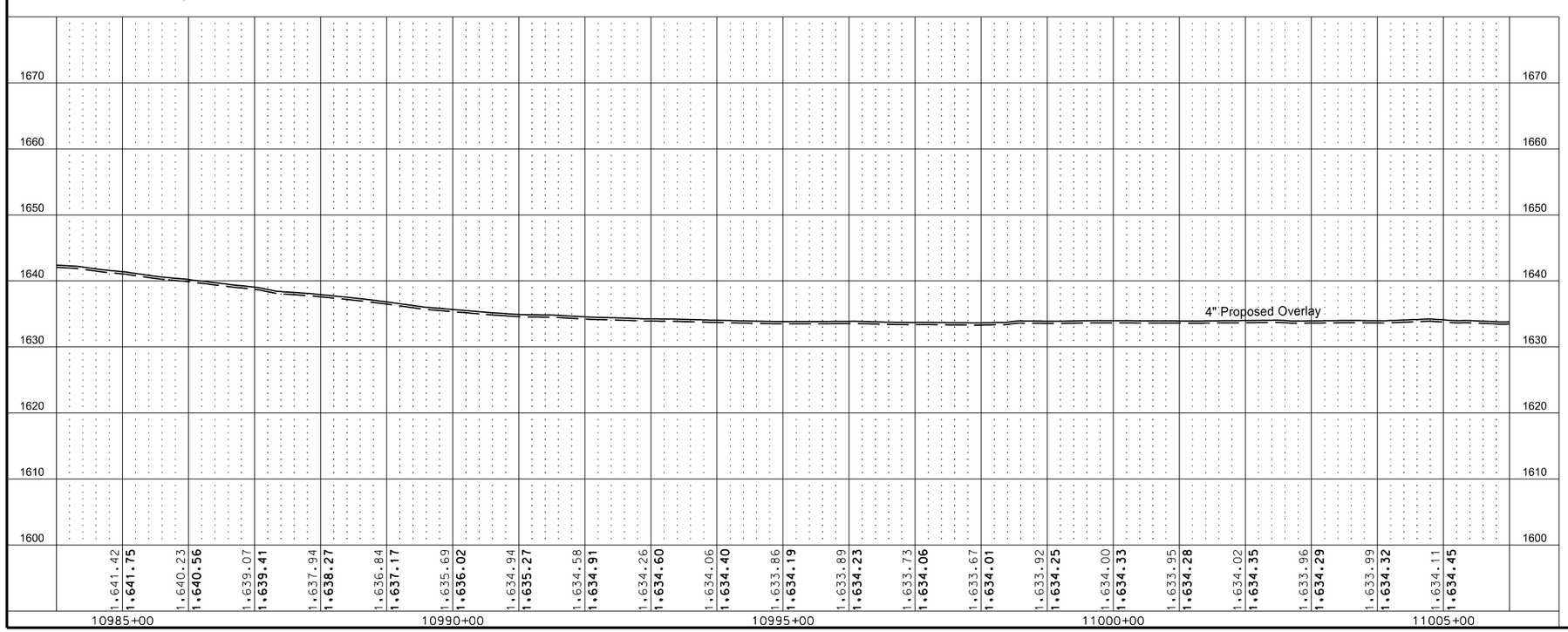
Plan & Profile
Sta 10965+00 to Sta 10985+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	26





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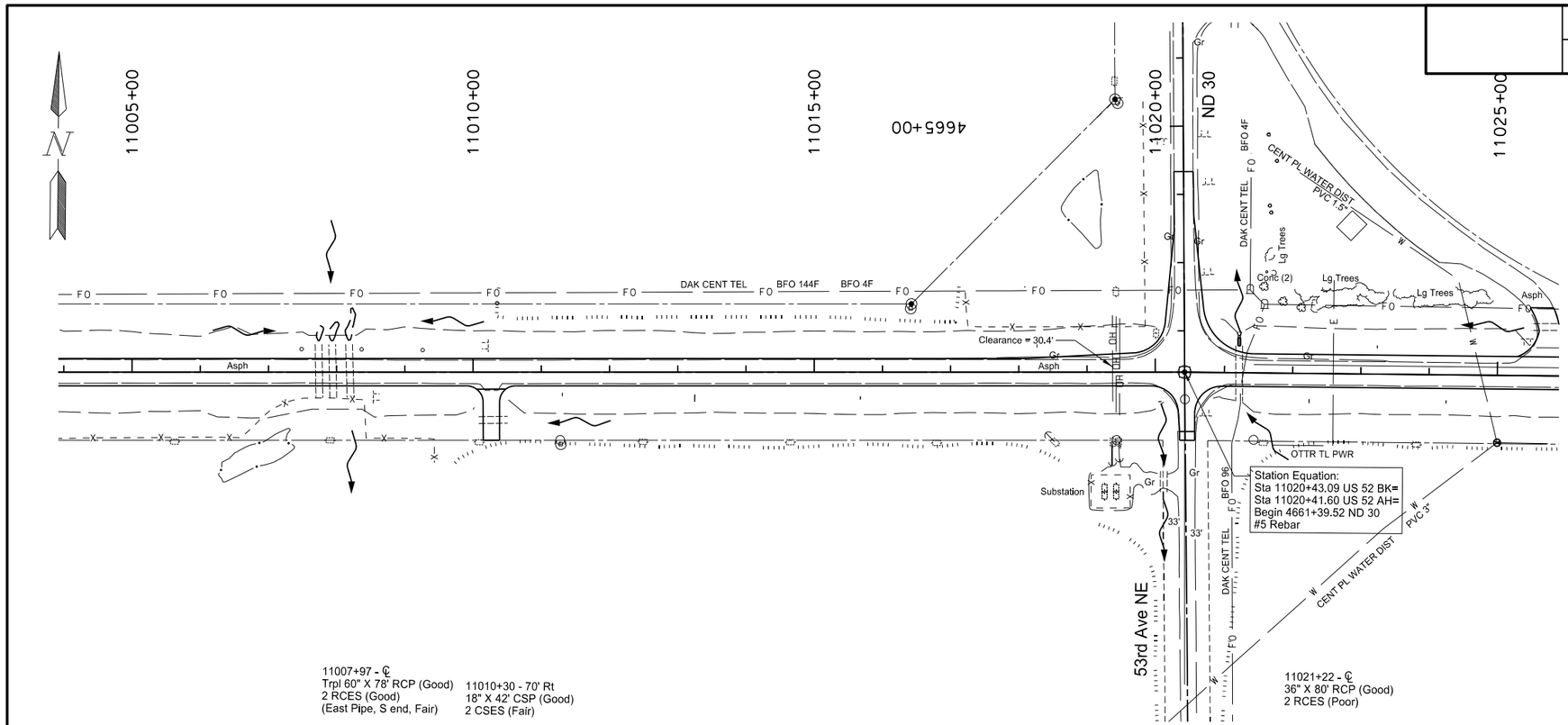
Plan & Profile
Sta 10985+00 to Sta 11005+00

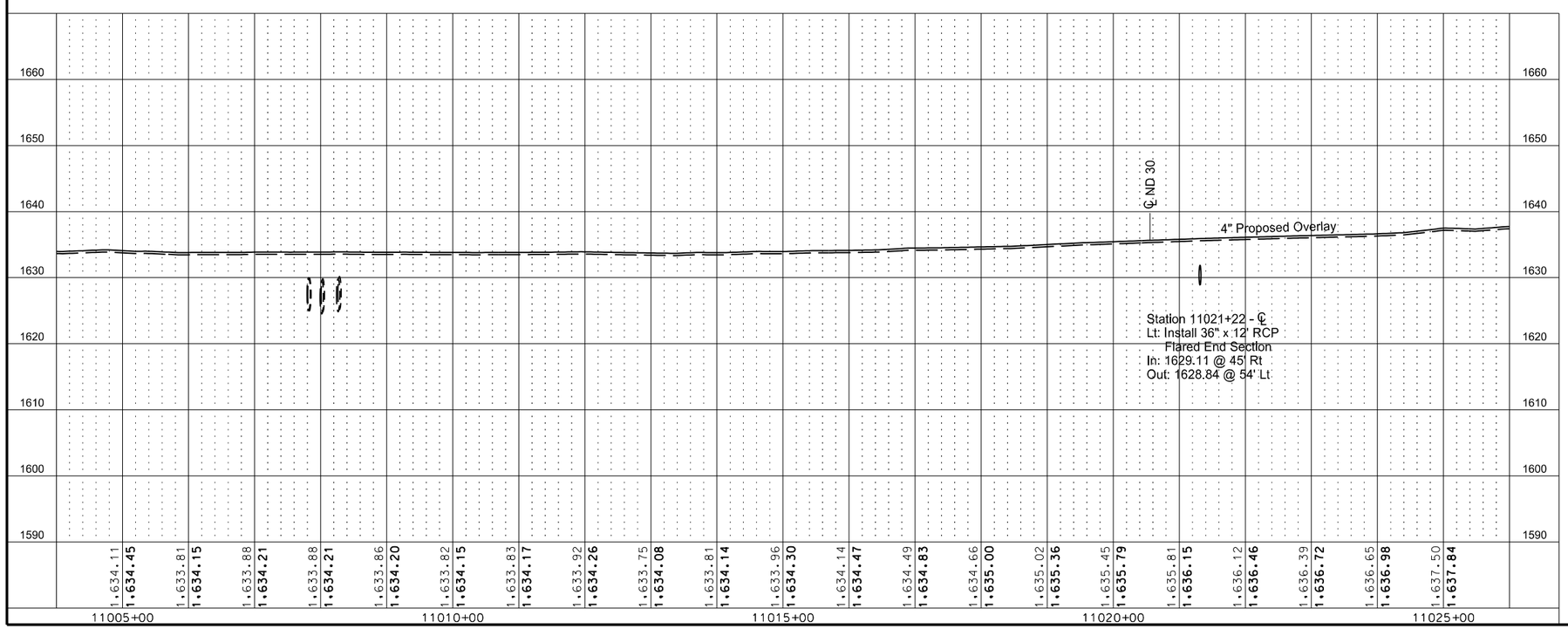
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	27



PIPE CONC REINF 36IN CL III — Qty
Sta 11021+21 Lt — 12 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES — Qty
Sta 11021+21 Lt — 1 EA

REMOVE & RELAY PIPE-ALL TYPES & SIZES — Qty
Sta 11021+21 Lt — 8LF



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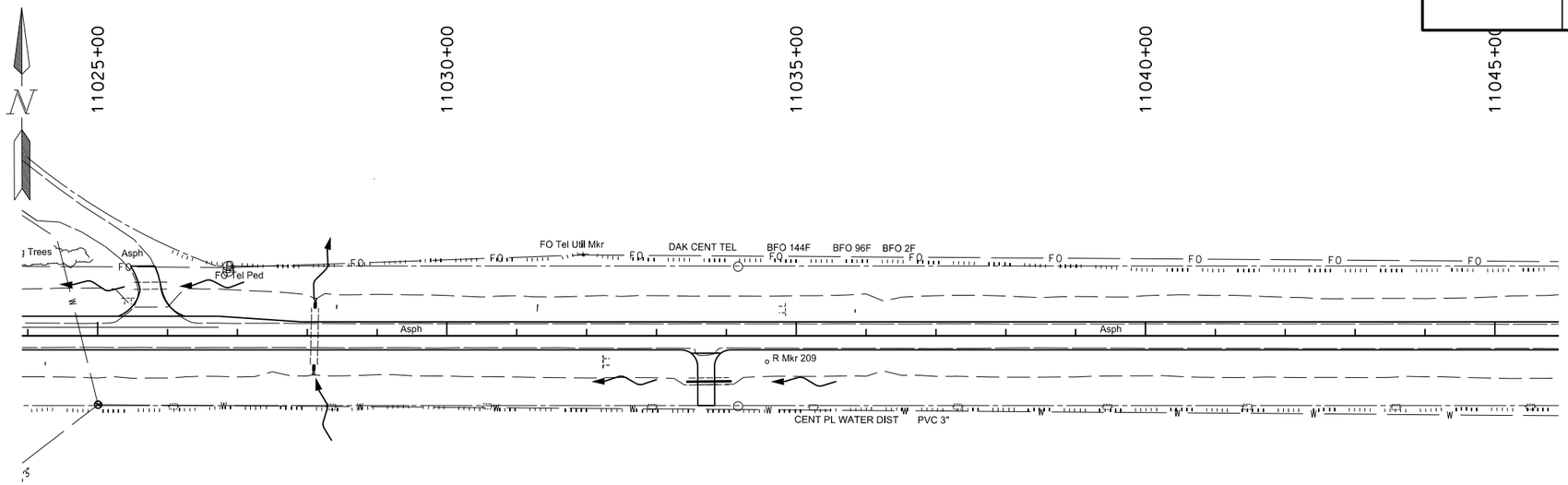
Plan & Profile
Sta 11005+00 to Sta 11025+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	28



REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 11033+75 Rt	64 LF

PIPE CONC REINF 24IN CL III	Qty
Sta 11028+11 Lt	8 LF
Sta 11028+09 Rt	8 LF

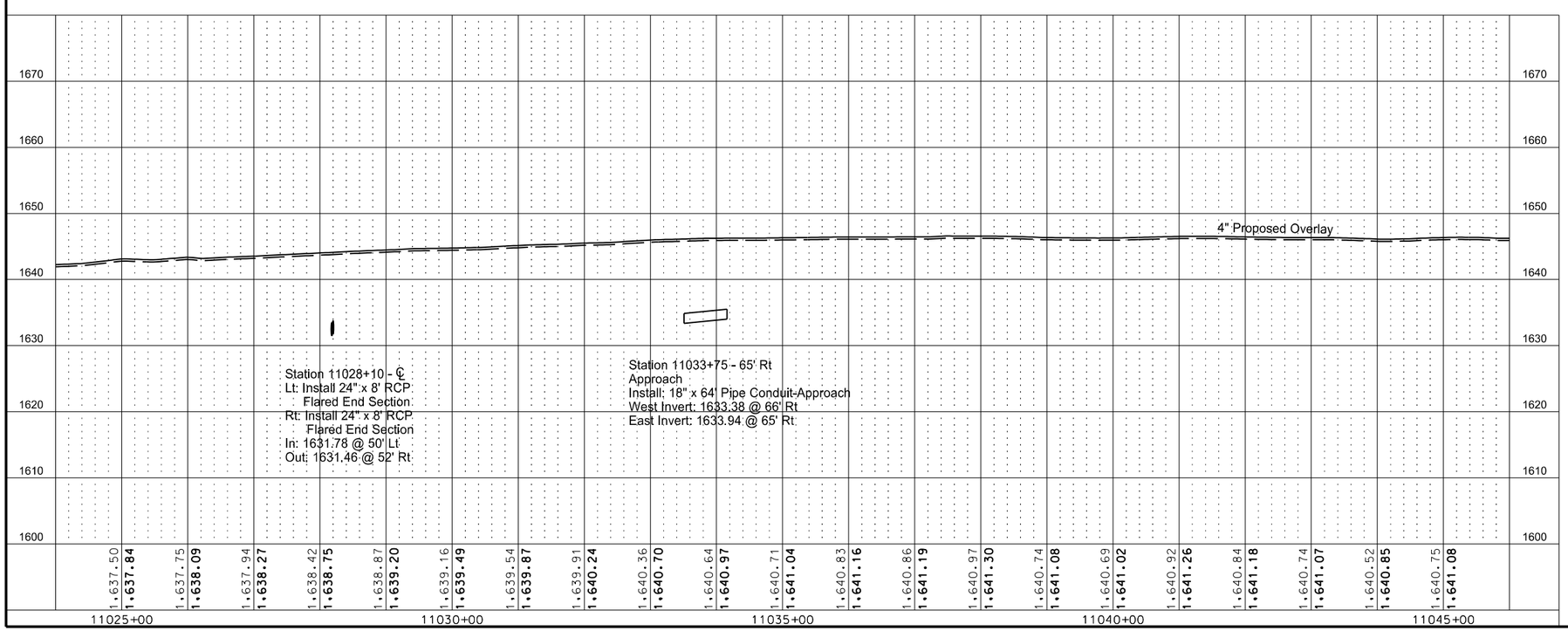
PIPE CONDUIT 18IN-APPROACH	Qty
Sta 11033+75 Rt	64 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11028+11 Lt	1 EA
Sta 11028+09 Rt	1 EA

11025+74 - 71' Lt
18" X 50' CSP (Good)
2 CSES (Good)

11028+10 - ℄
24" X 80' RCP (Good)
2 RCES (Good)

11033+75 - 65' Rt
18" X 64' CSP (Poor)
1 CSES (E end, Good)



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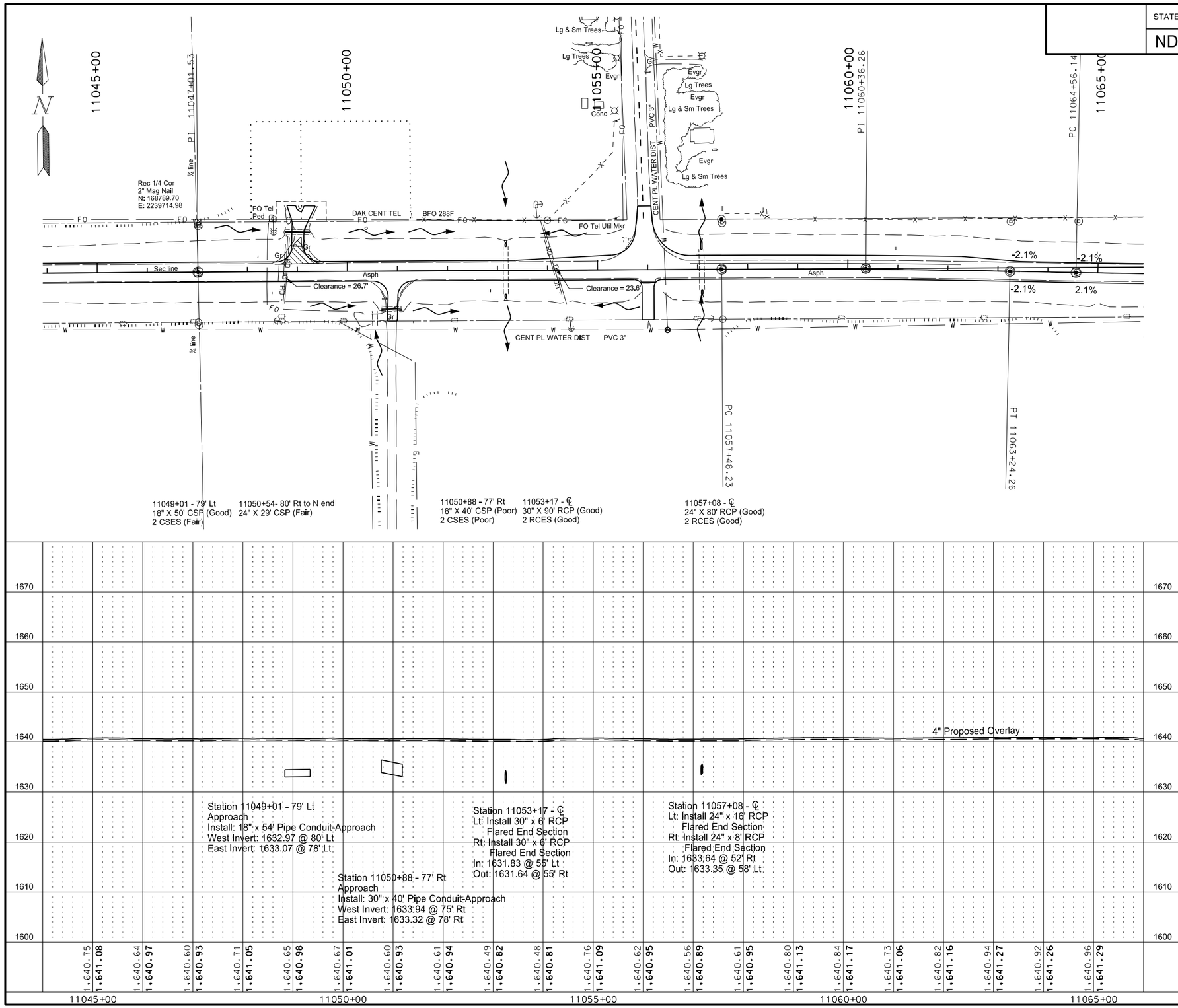
Plan & Profile
Sta 11025+00 to Sta 11045+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	29



REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 11049+01 Lt	54 LF
Sta 11050+88 Rt	40 LF

PIPE CONC REINF 30IN CL III	Qty
Sta 11053+17 Lt	6 LF
Sta 11053+17 Rt	6 LF

PIPE CONC REINF 24IN CL III	Qty
Sta 11057+08 Lt	16 LF
Sta 11057+09 Rt	8 LF

PIPE CONDUIT 18IN-APPROACH	Qty
Sta 11049+01 Lt	54 LF

PIPE CONDUIT 30IN-APPROACH	Qty
Sta 11050+88 Rt	40 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11053+17 Lt	1 EA
Sta 11053+17 Rt	1 EA
Sta 11057+08 Lt	1 EA
Sta 11057+09 Rt	1 EA

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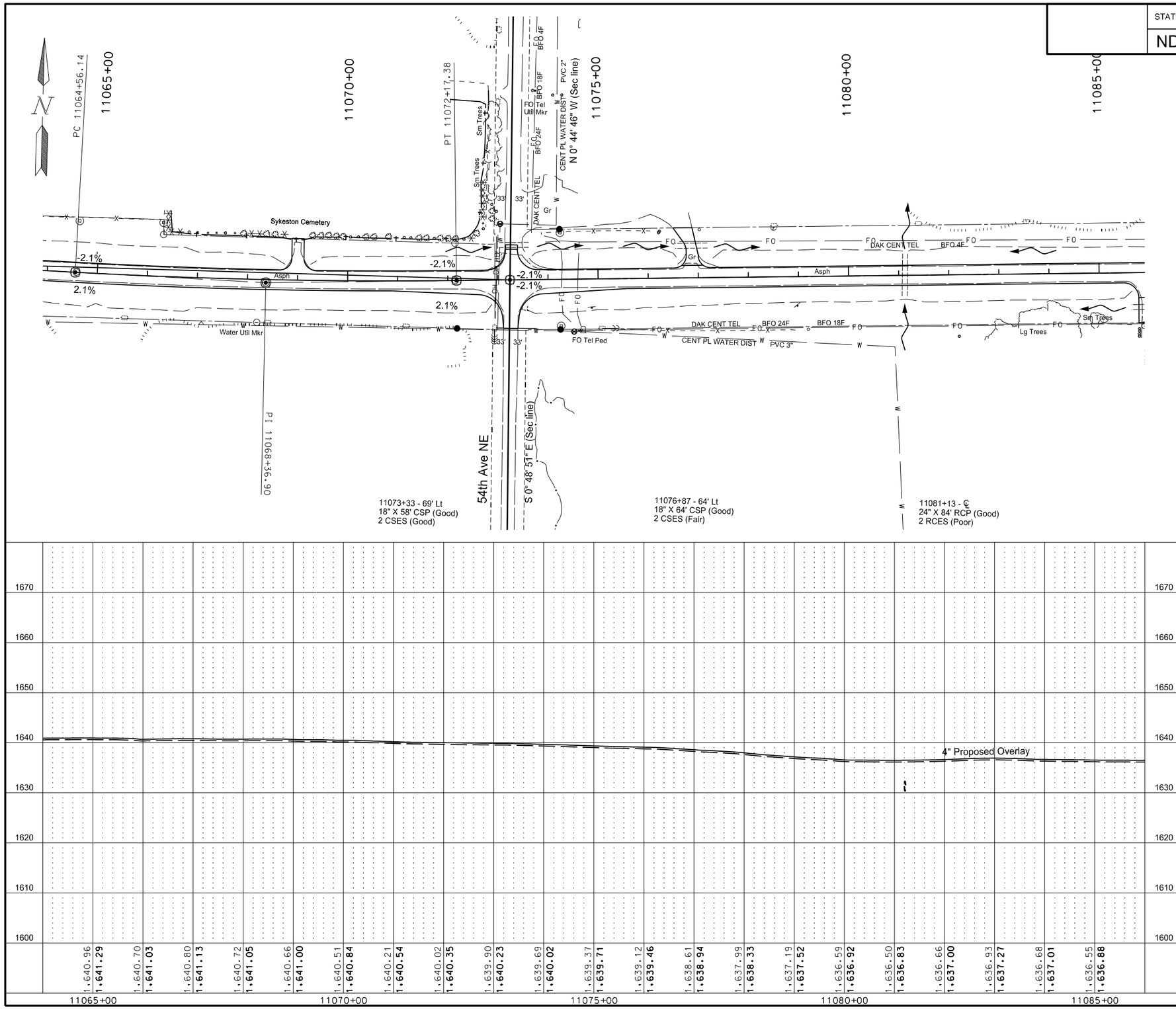
Plan & Profile
Sta 11045+00 to Sta 11065+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	30



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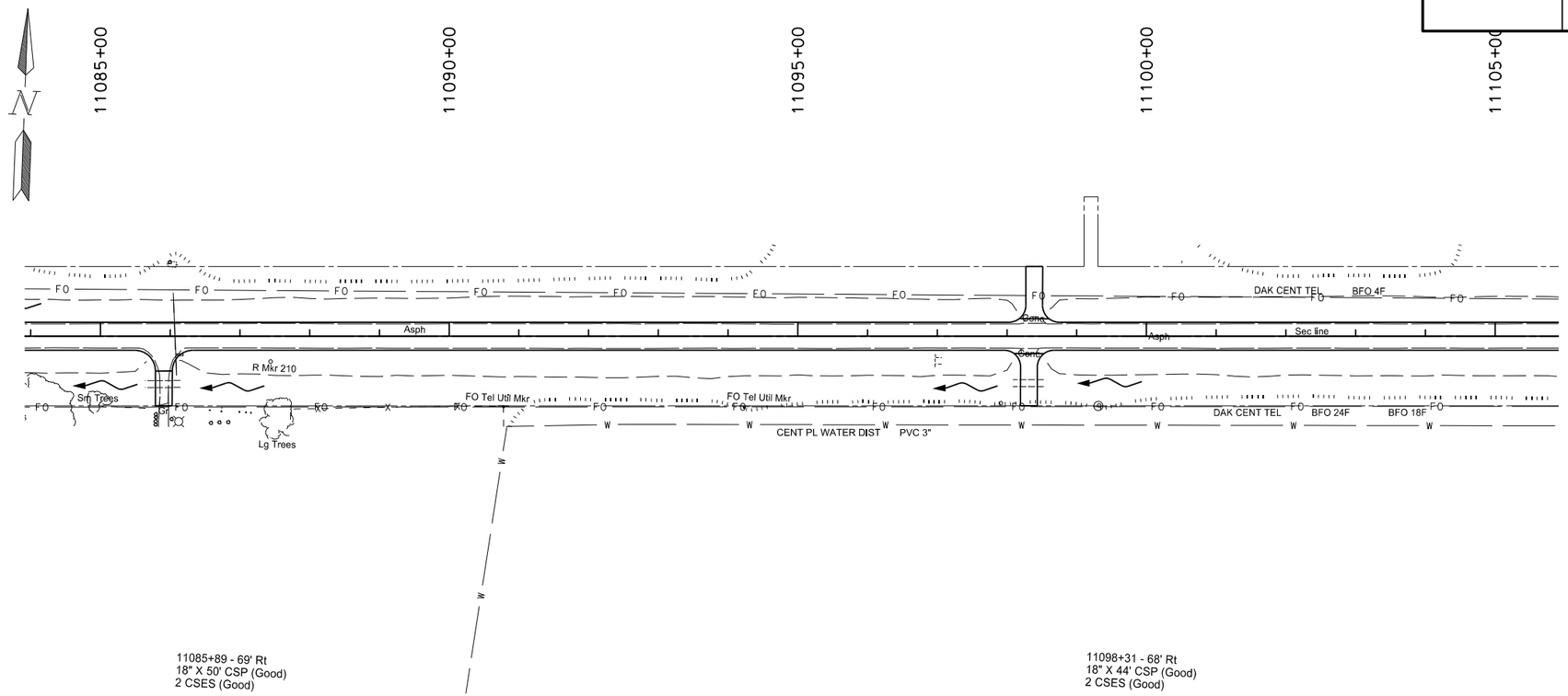
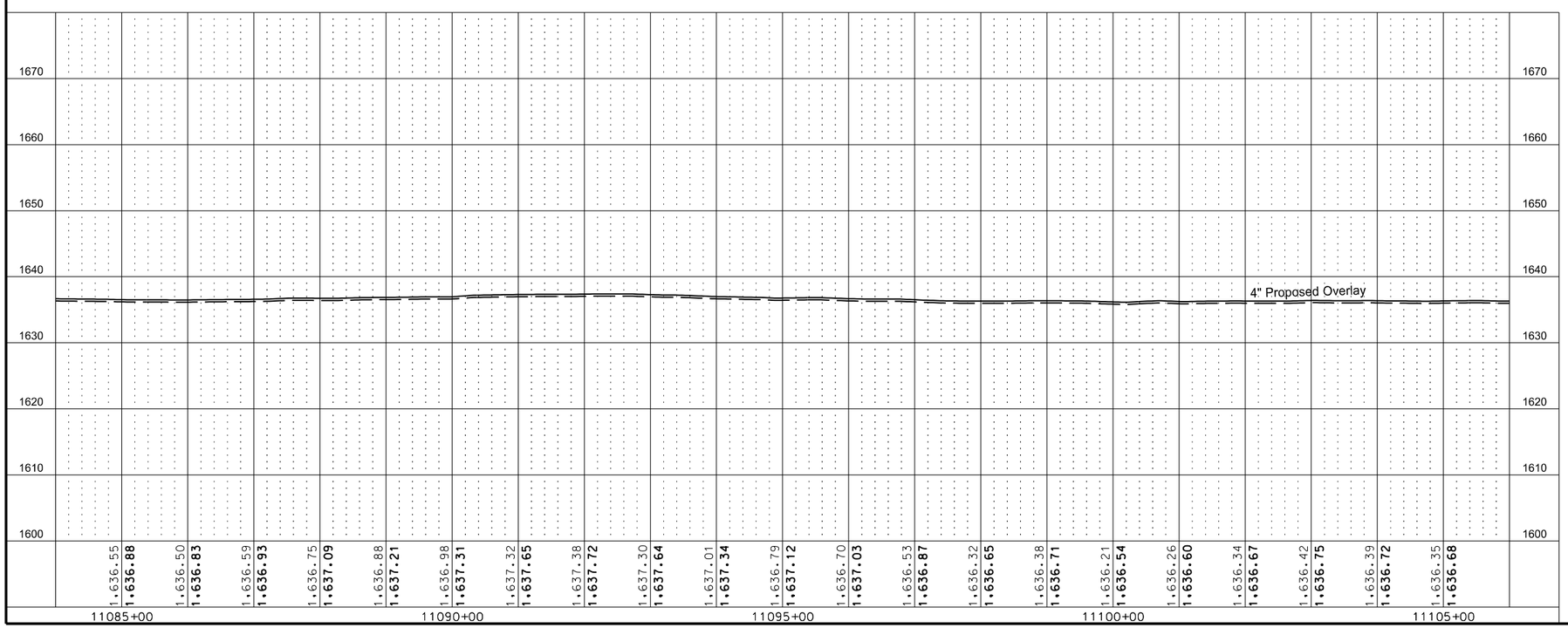
Plan & Profile
Sta 11065+00 to Sta 11085+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	31





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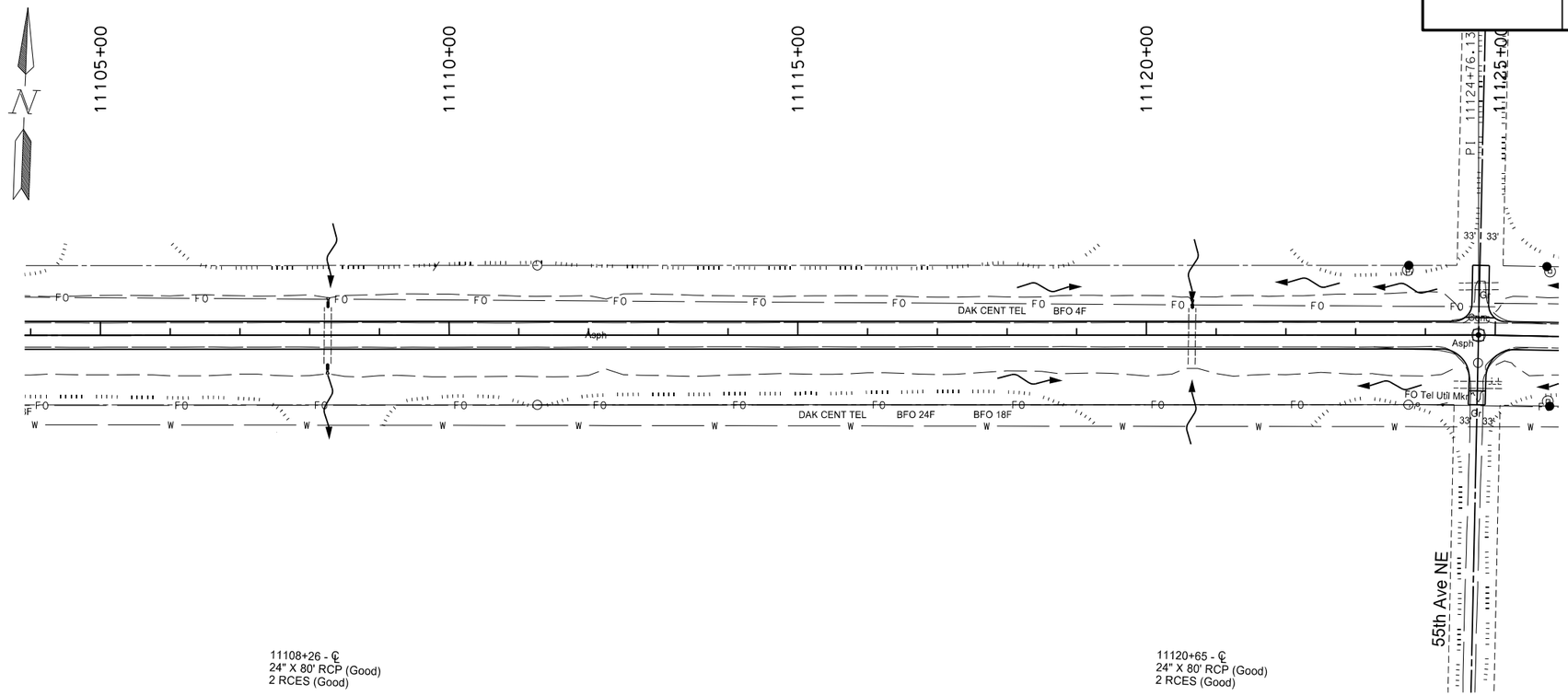
Plan & Profile
Sta 11085+00 to Sta 11105+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	32

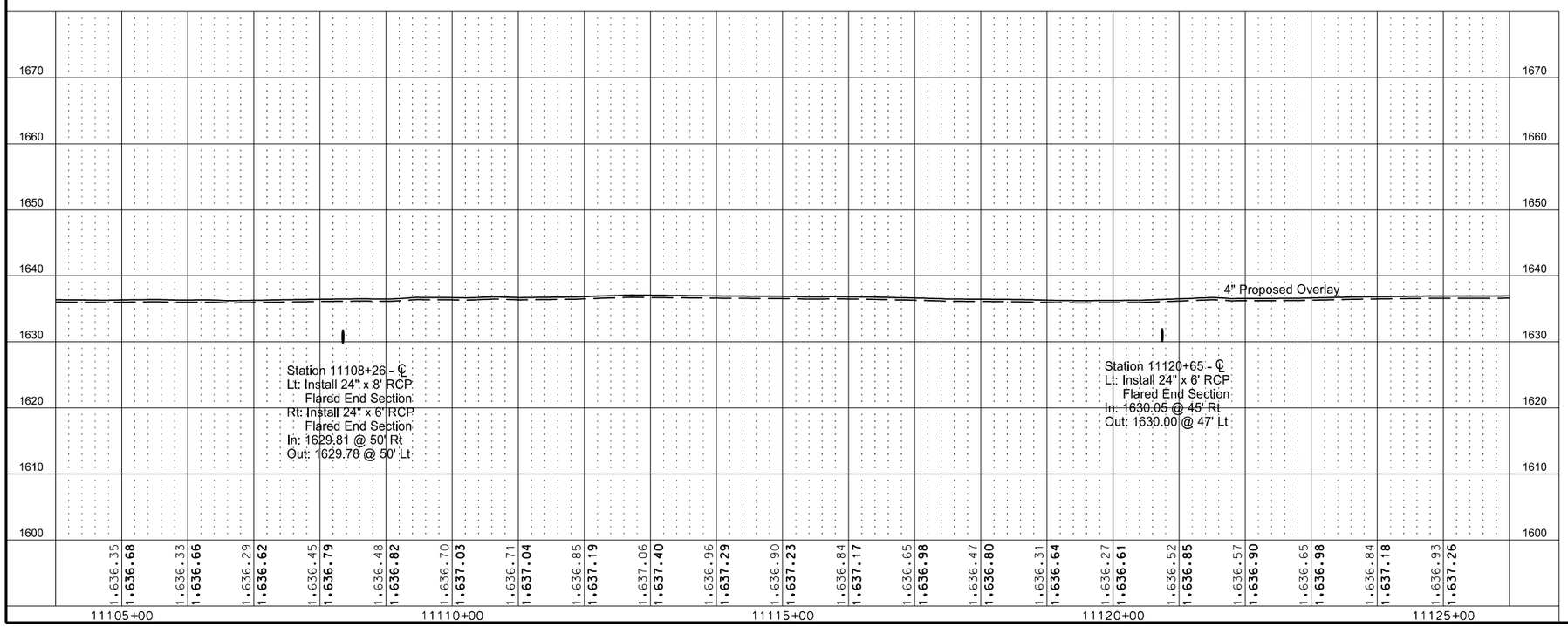


PIPE CONC REINF 24IN CL III

	Qty
Sta 11108+26 Lt	8 LF
Sta 11108+26 Rt	6 LF
Sta 11120+66 Lt	6 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES

	Qty
Sta 11108+26 Lt	1 EA
Sta 11108+26 Rt	1 EA
Sta 11120+66 Lt	1 EA



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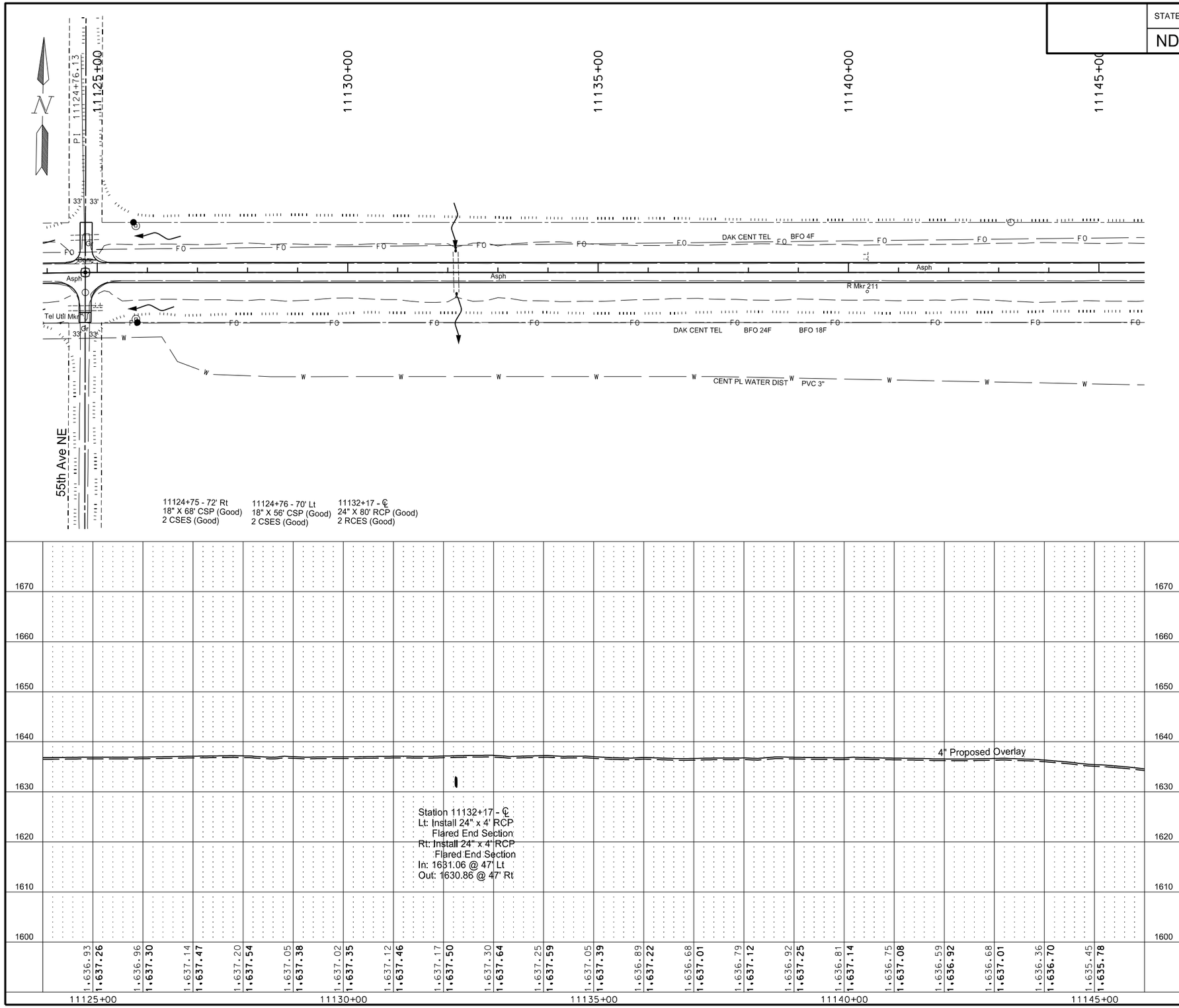
Plan & Profile
Sta 11105+00 to Sta 11125+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	33



PIPE CONC REINF 24IN CL III	Qty
Sta 11132+16 Lt	4 LF
Sta 11132+17 Rt	4 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11132+16 Lt	1 EA
Sta 11132+17 Rt	1 EA

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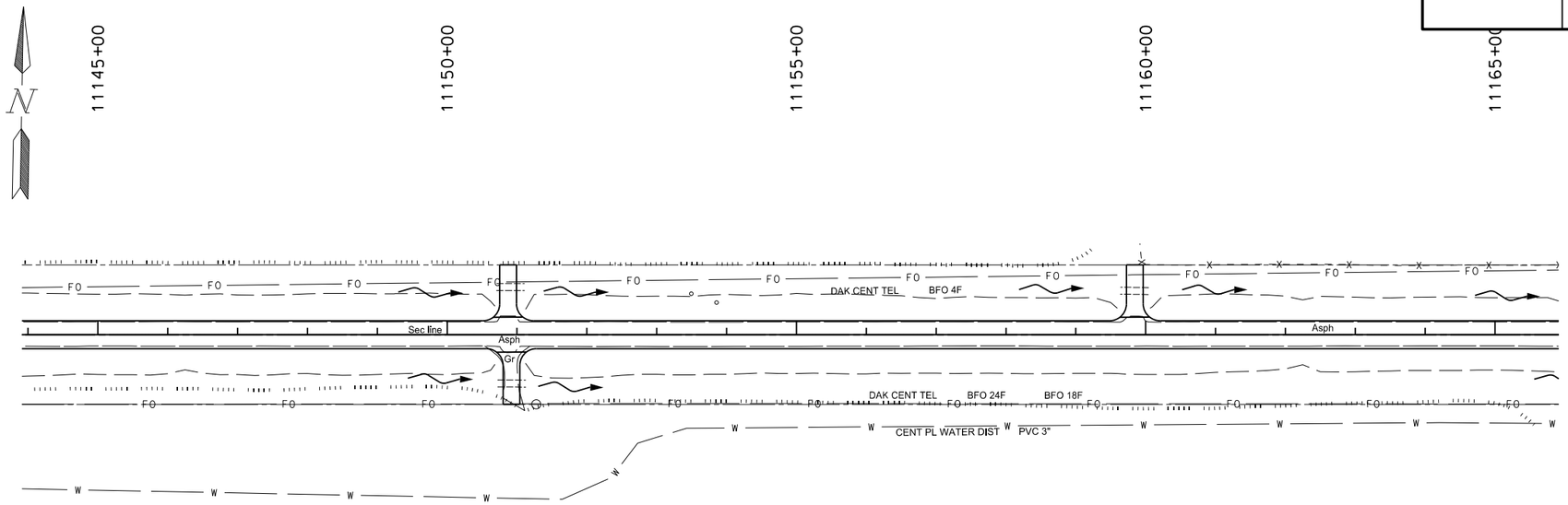
Plan & Profile
Sta 11125+00 to Sta 11145+00

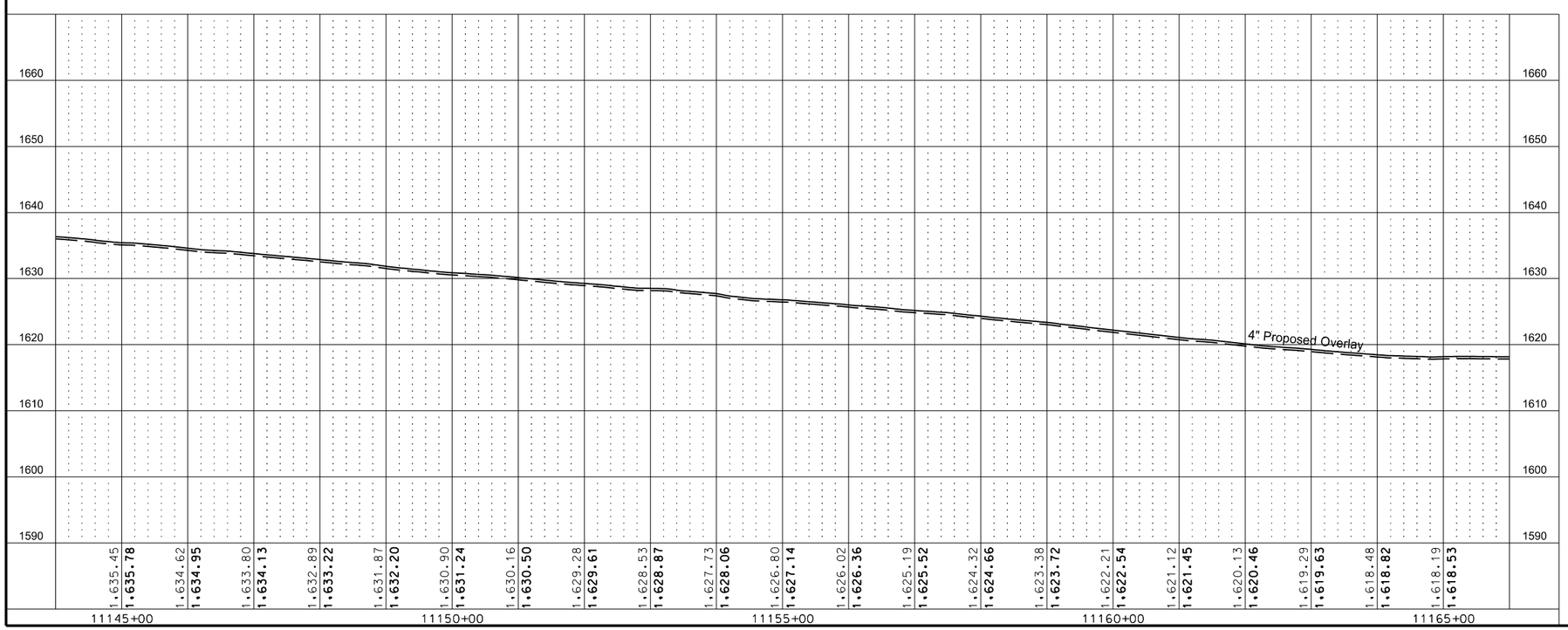
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	34



11150+93 - 70' Rt
18" X 40' CSP (Good)
2 CSES (Good)

11150+91 - 68' Lt
18" X 40' CSP (Good)
2 CSES (Good)

11159+84 - 62' Lt
18" X 40' CSP (Good)
2 CSES (Good)



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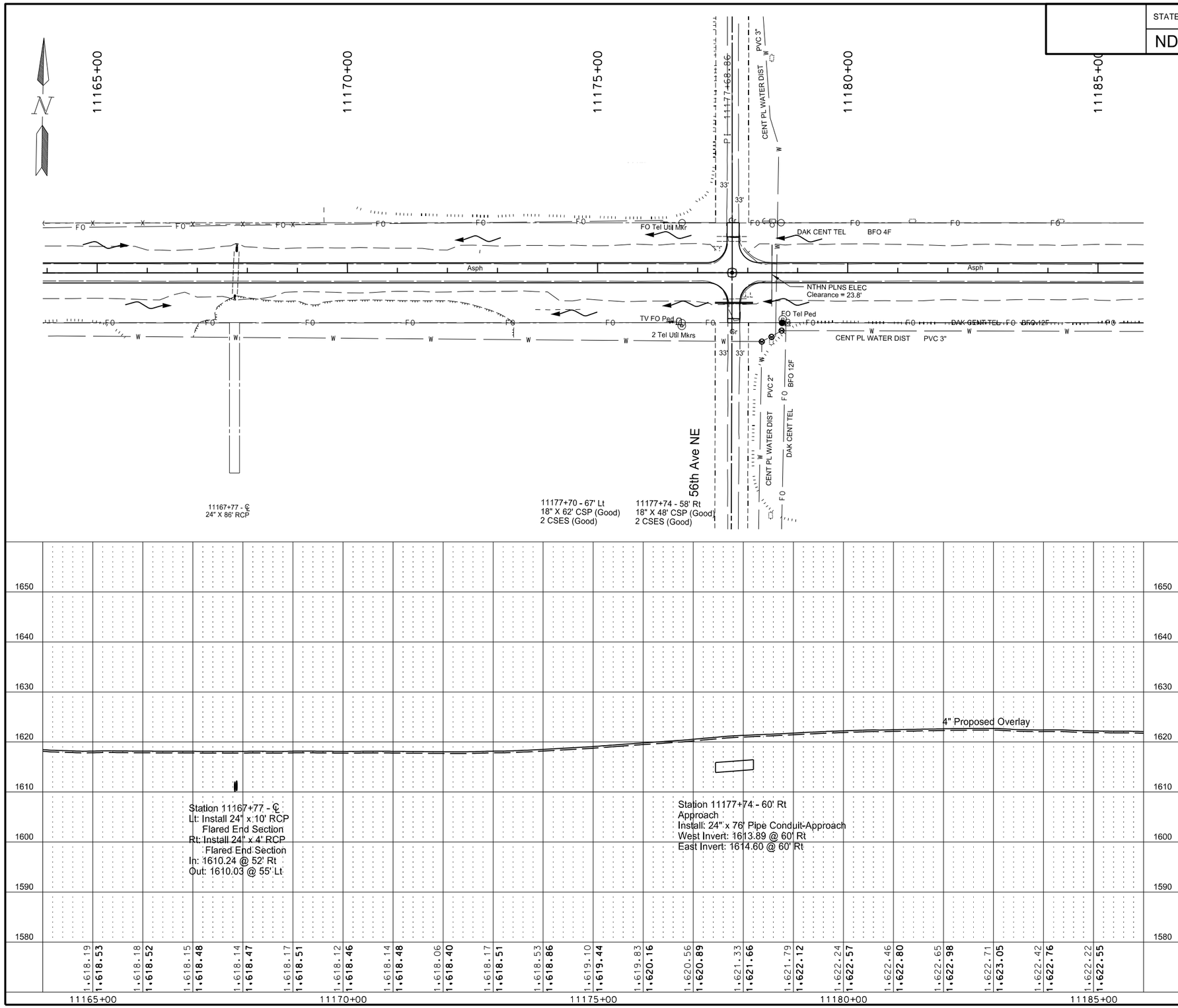
Plan & Profile
Sta 11145+00 to Sta 11165+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	35



PIPE CONC REINF 24IN CL III

	Qty
Sta 11167+79 Lt	10 LF
Sta 11167+75 Rt	4 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES

	Qty
Sta 11167+79 Lt	1 EA
Sta 11167+75 Rt	1 EA

REMOVAL OF PIPE-ALL TYPES & SIZES

	Qty
Sta 11177+74 Rt	48 LF

PIPE CONDUIT 24IN APPROACH

	Qty
Sta 11177+74 Rt	76 LF

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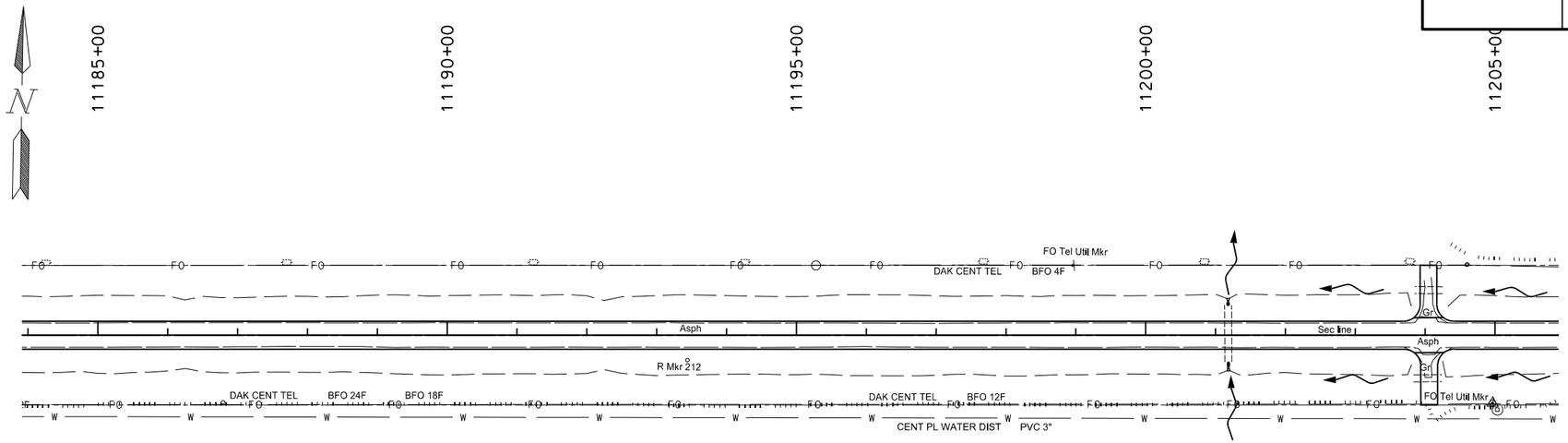
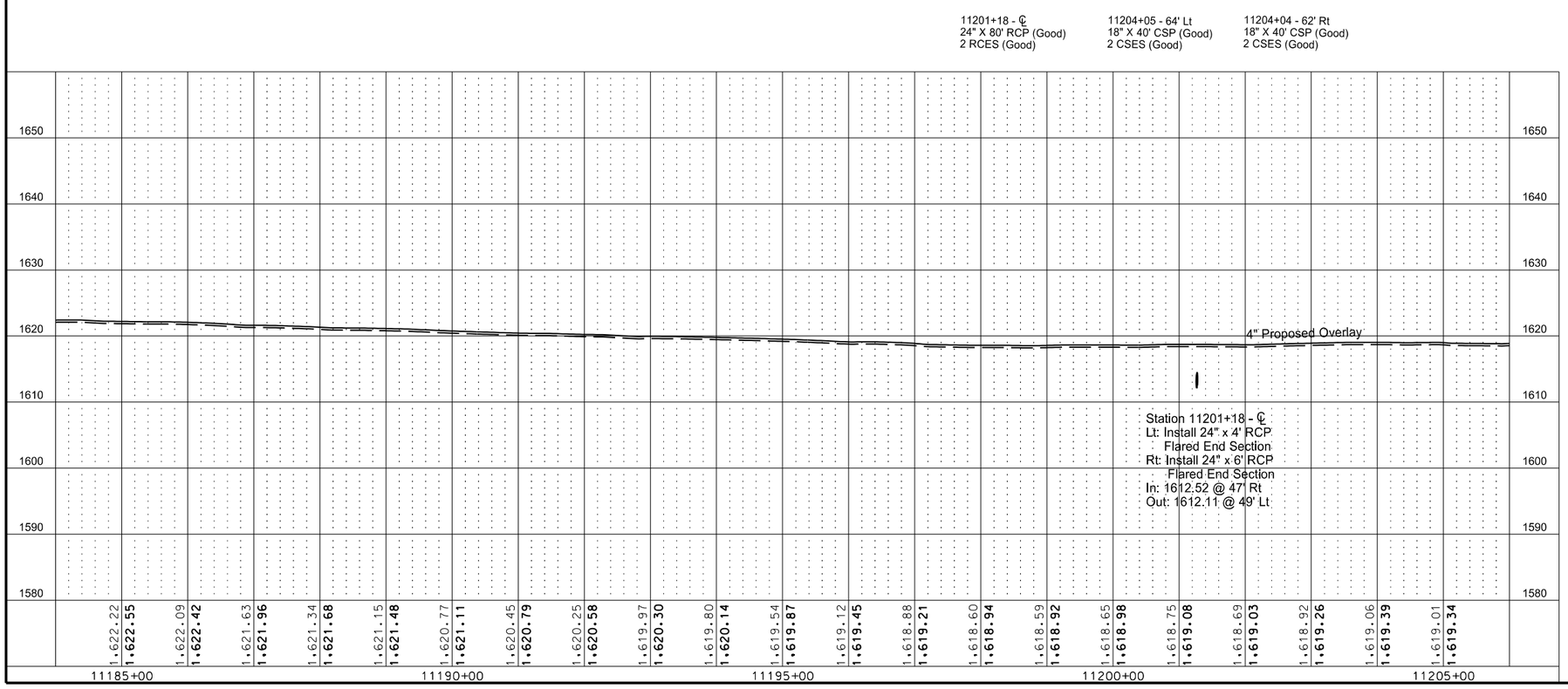
Plan & Profile
Sta 11165+00 to Sta 11185+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	36



PIPE CONC REINF 24IN CL III	Qty
Sta 11201+18 Lt	4 LF
Sta 11201+18 Rt	6 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11201+18 Lt	1 EA
Sta 11201+18 Rt	1 EA



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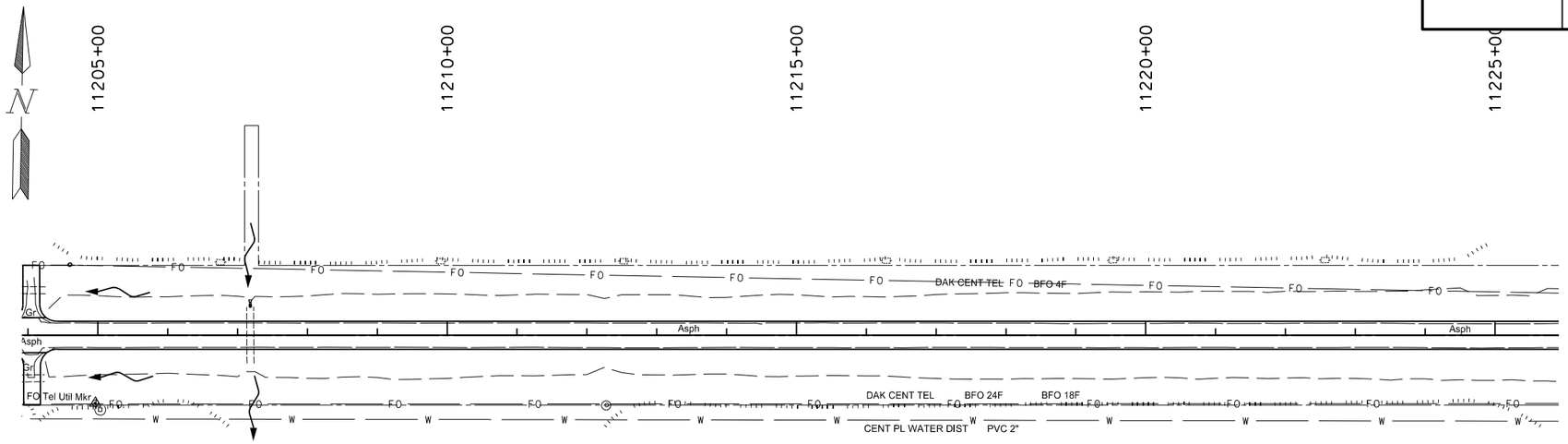
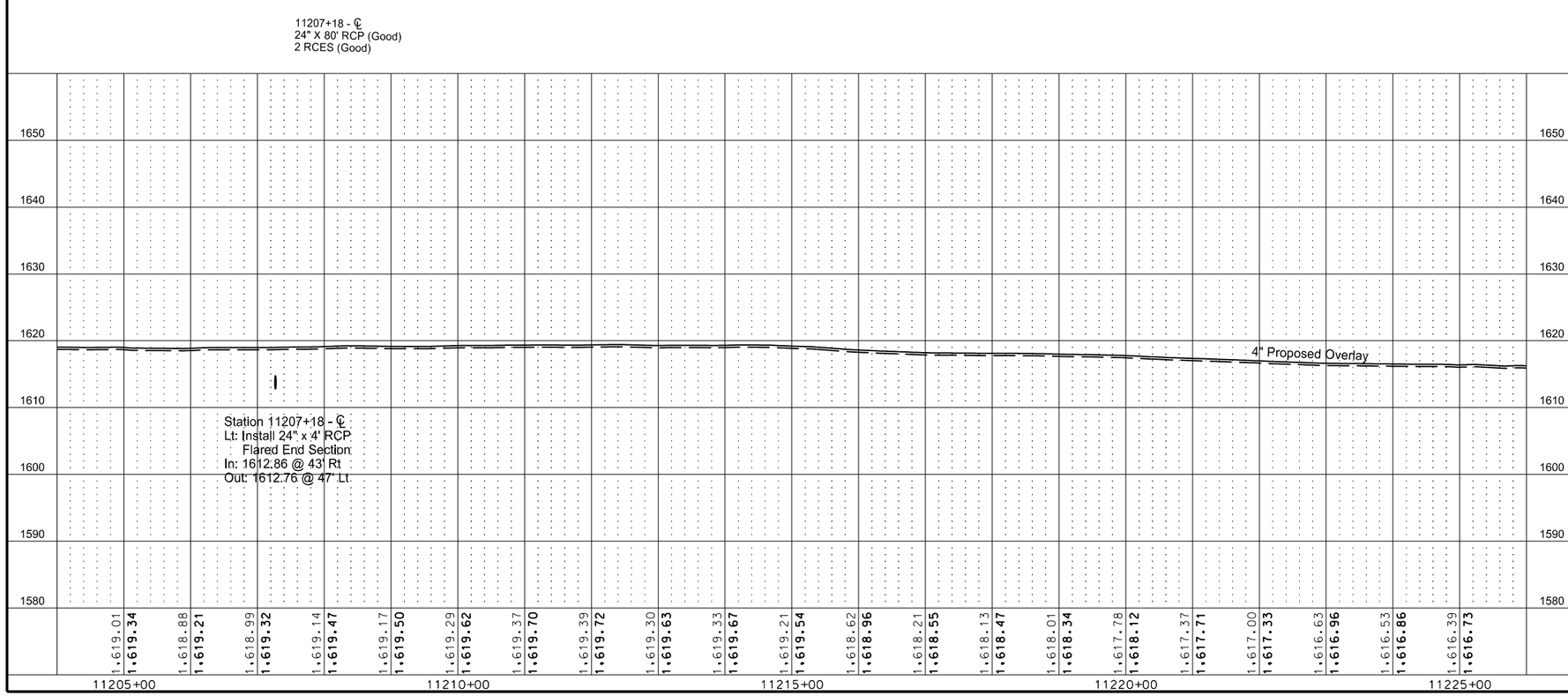
Plan & Profile
Sta 11185+00 to Sta 11205+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	37



PIPE CONC REINF 24IN CL III	Qty
Sta 11207+18 Lt	4 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11207+18 Lt	1 EA



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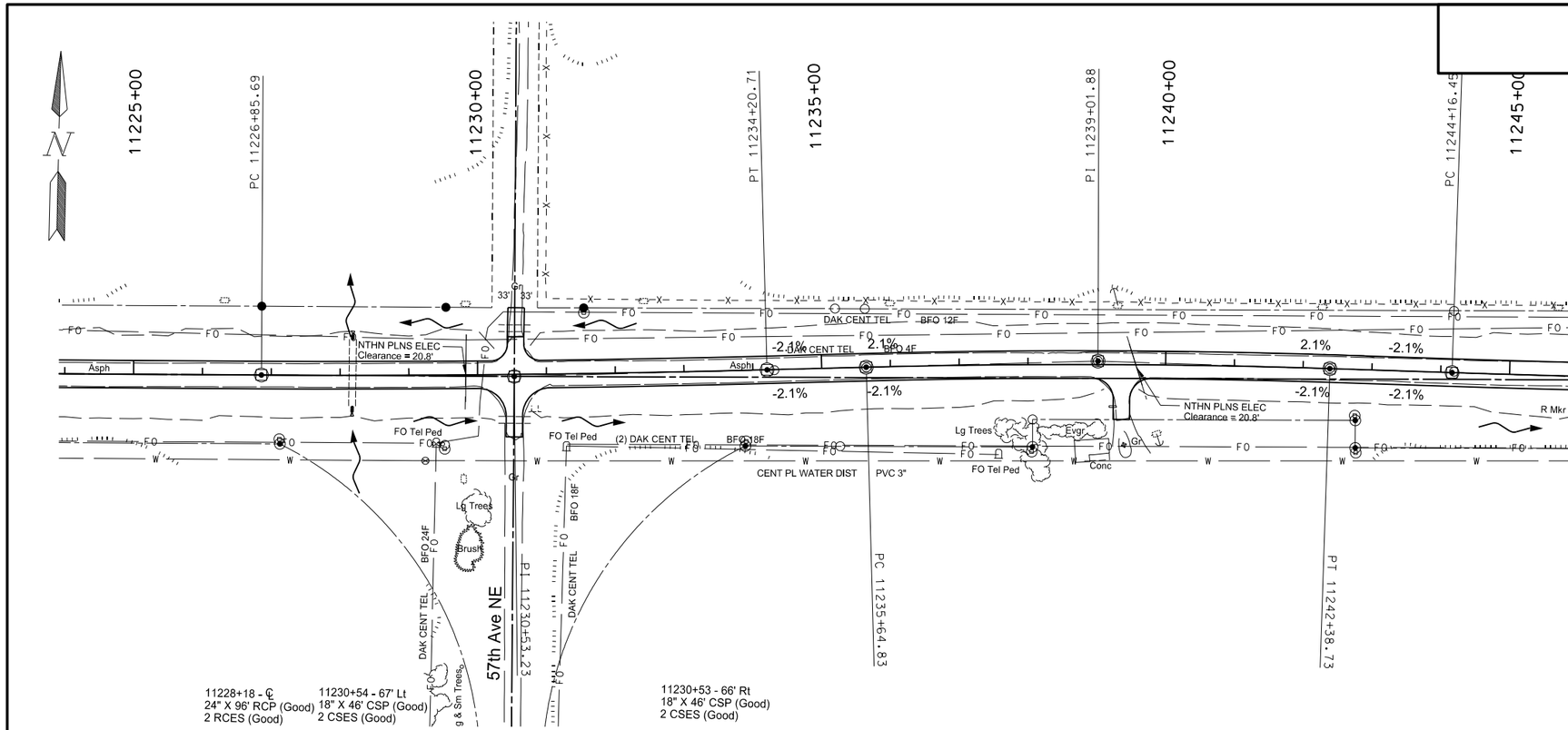
Plan & Profile
Sta 11205+00 to Sta 11225+00

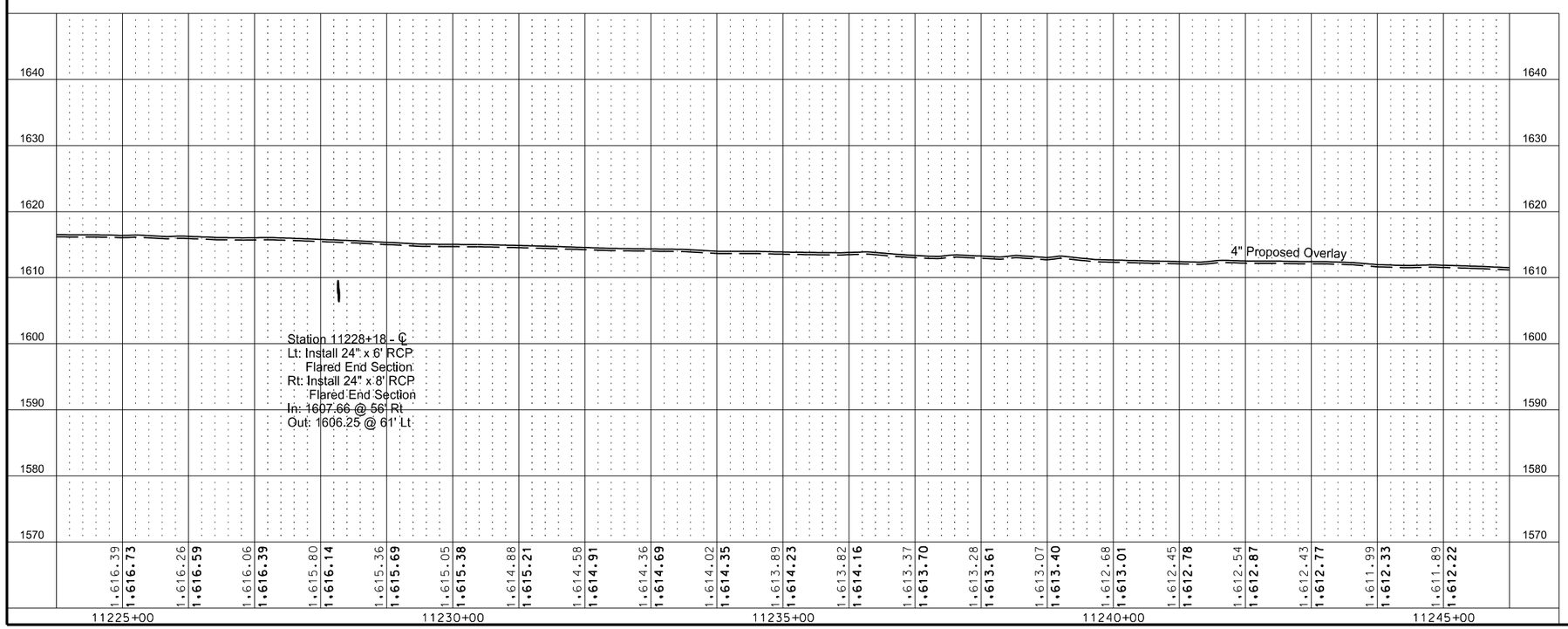
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	38



PIPE CONC REINF 24IN CL III	Qty
Sta 11228+19 Lt	6 LF
Sta 11228+18 Rt	8 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11228+19 Lt	1 EA
Sta 11228+18 Rt	1 EA

REMOVE & RELAY PIPE-ALL TYPE & SIZES	Qty
Sta 11228+19 Lt	8 LF
Sta 11228+18 Rt	8 LF



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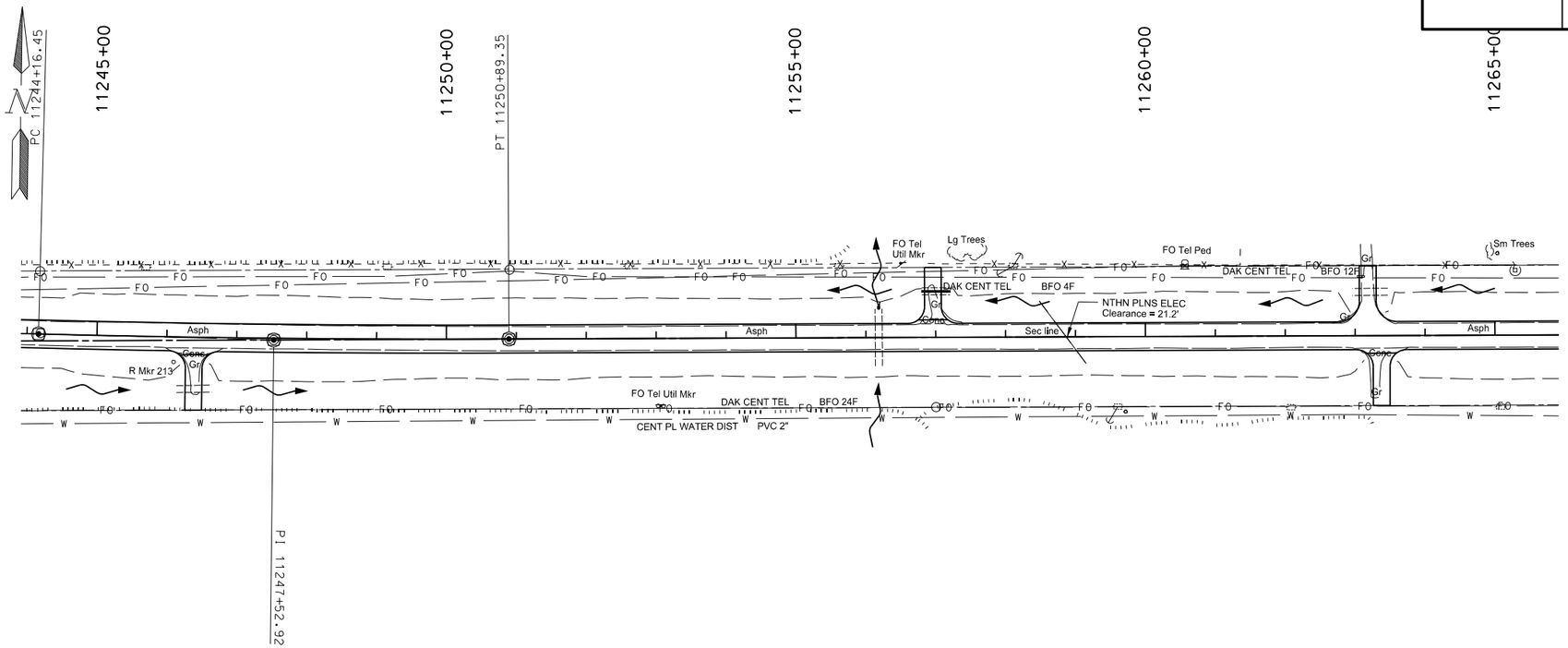
Plan & Profile
Sta 11225+00 to Sta 11245+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	39

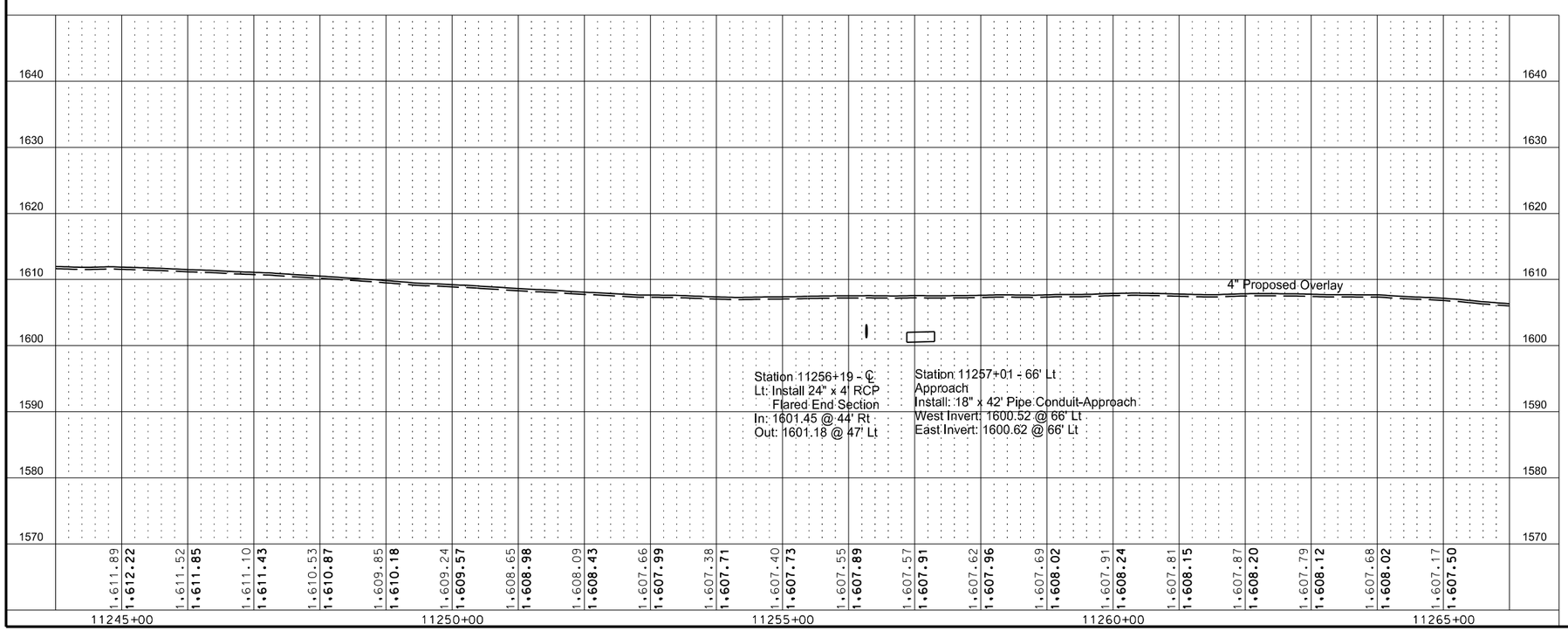


11246+40 - 74' Rt
18" X 50' CSP (Good)
2 CSES (Good)

11256+19 - ℄
24" X 80' RCP (Good)
2 RCES (Good)

11257+01 - 66' Lt
18" X 40' CSP (Fair)
2 CSES (Poor)

11263+22 - 62' Lt
18" X 50' CSP (Good)
2 CSES (Good)



REMOVAL OF PIPE ALL TYPES AND SIZES — Qty
Sta 11257+01 Lt — 40 LF

PIPE CONC REINF 24IN CL III — Qty
Sta 11256+18 Lt — 4 LF

PIPE CONDUIT 18IN-APPROACH — Qty
Sta 11257+01 Lt — 42 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES — Qty
Sta 11256+18 Lt — 1 EA

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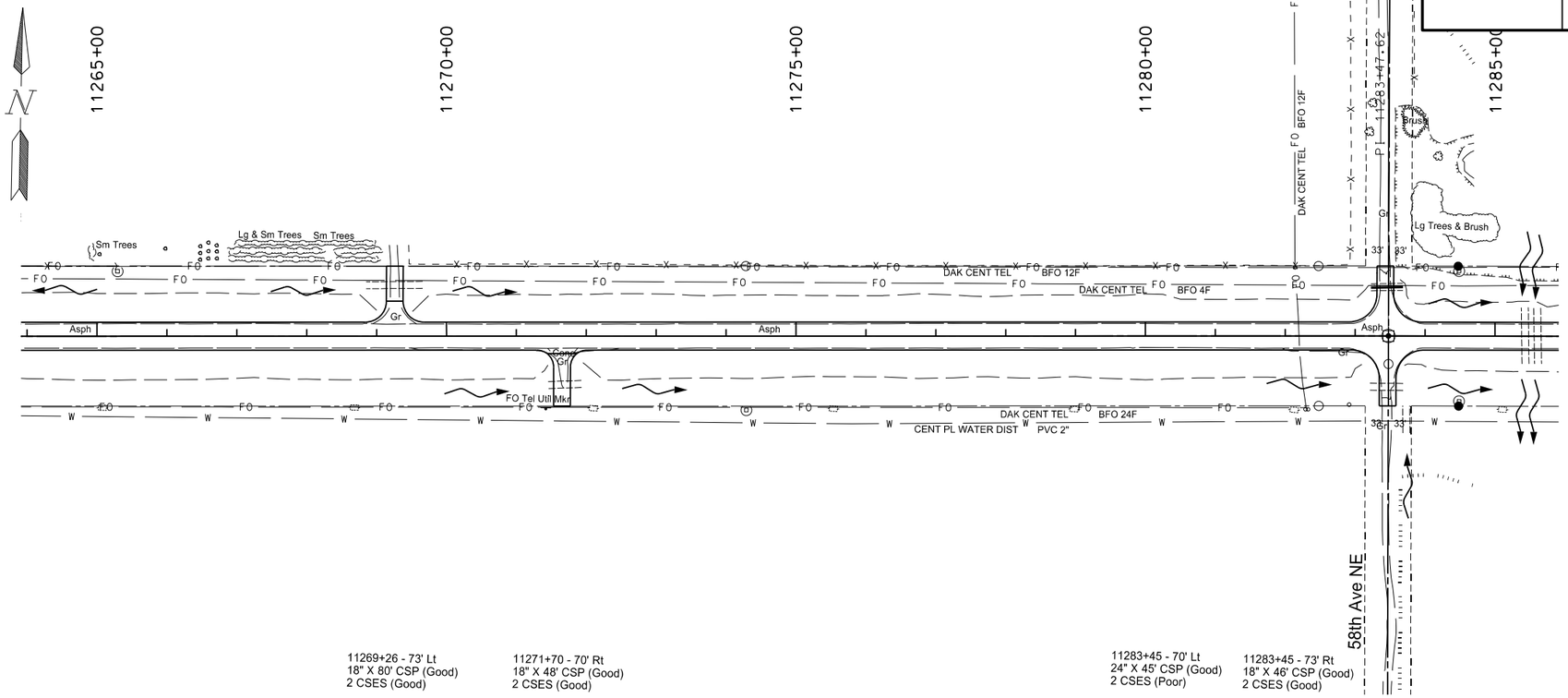
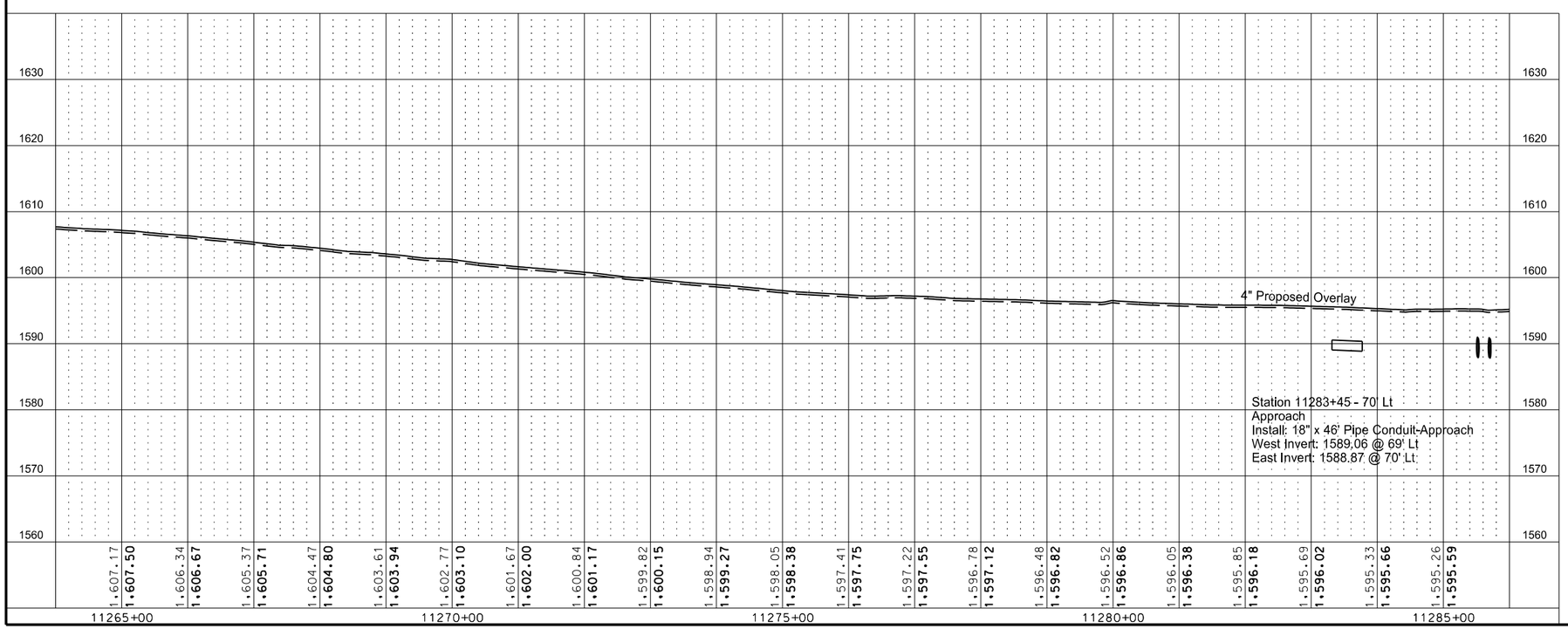
Plan & Profile
Sta 11245+00 to Sta 11265+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	40



REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 11283+45 Lt	46 LF

PIPE CONDUIT 18IN-APPROACH	Qty
Sta 11283+45 Lt	46 LF



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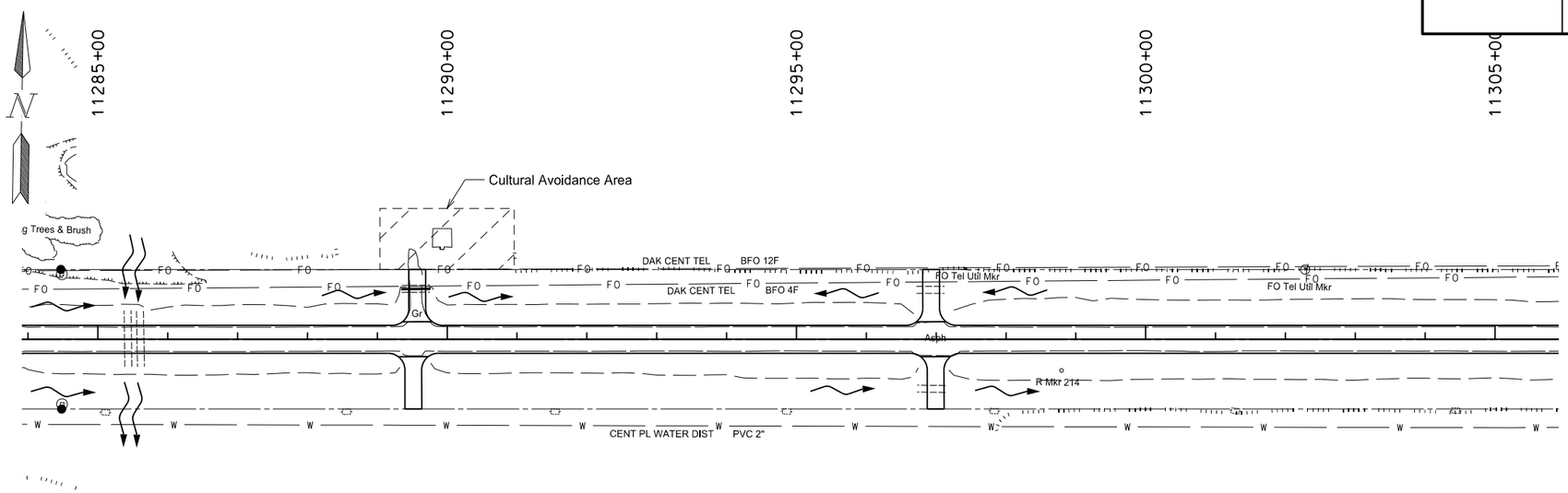
Plan & Profile
Sta 11265+00 to Sta 11285+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	41



REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 11289+55 Lt	40 LF

PIPE CONDUIT 18IN-APPROACH	Qty
Sta 11289+55 Lt	42 LF

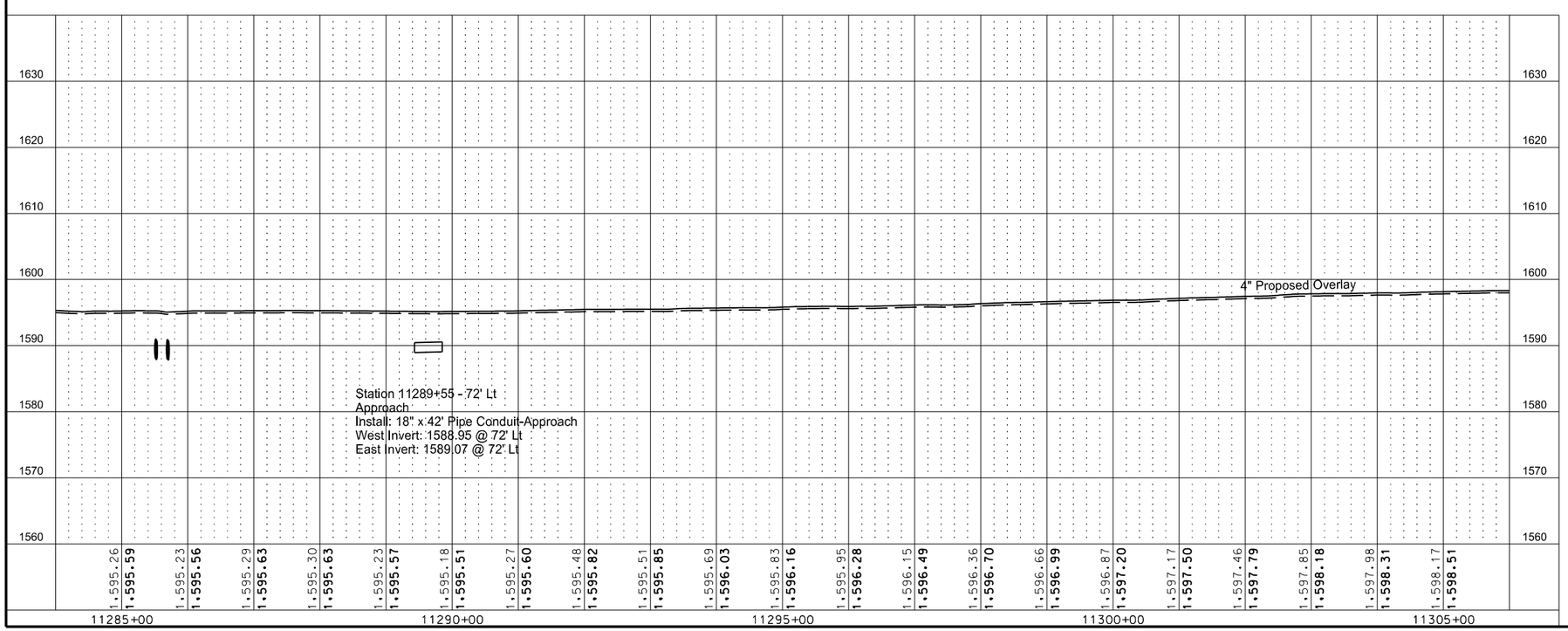
TEMPORARY SAFETY FENCE	Qty
Sta 11289+00 to 11291+00 Lt	200 LF

11285+52 - ℄
Dbl 36" X 78' RCP (Good)
2 RCES (Good)

11289+55 - 72' Lt
18" X 40' CSP (Fair)
2 CSES (Poor)

11296+92 - 70' Lt
18" X 40' CSP (Good)
2 CSES (Good)

11296+93 - 71' Rt
18" X 40' CSP (Good)
2 CSES (Good)



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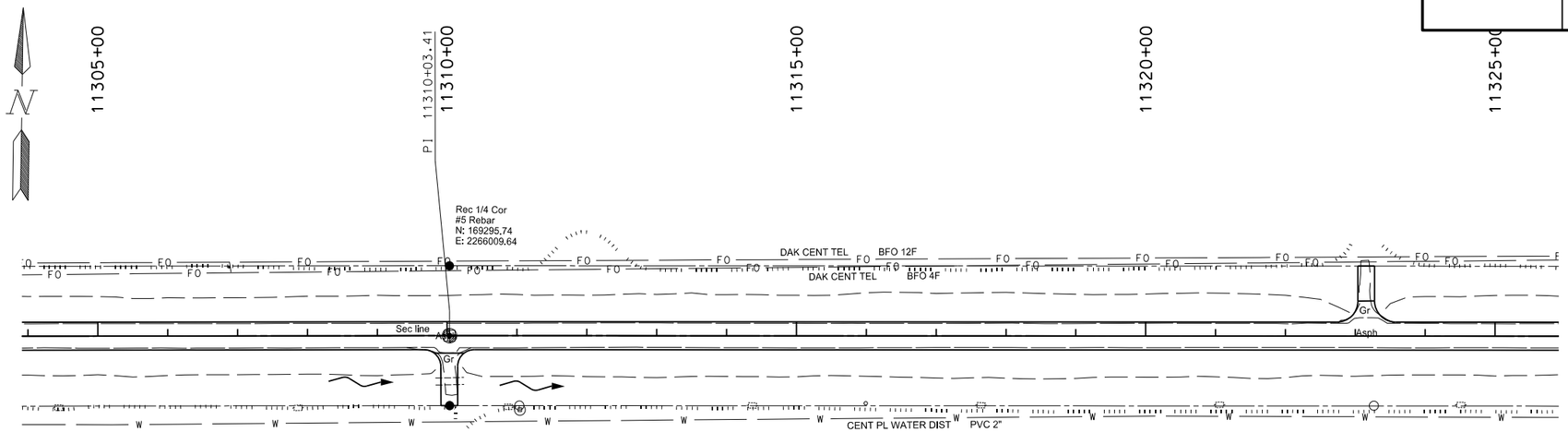
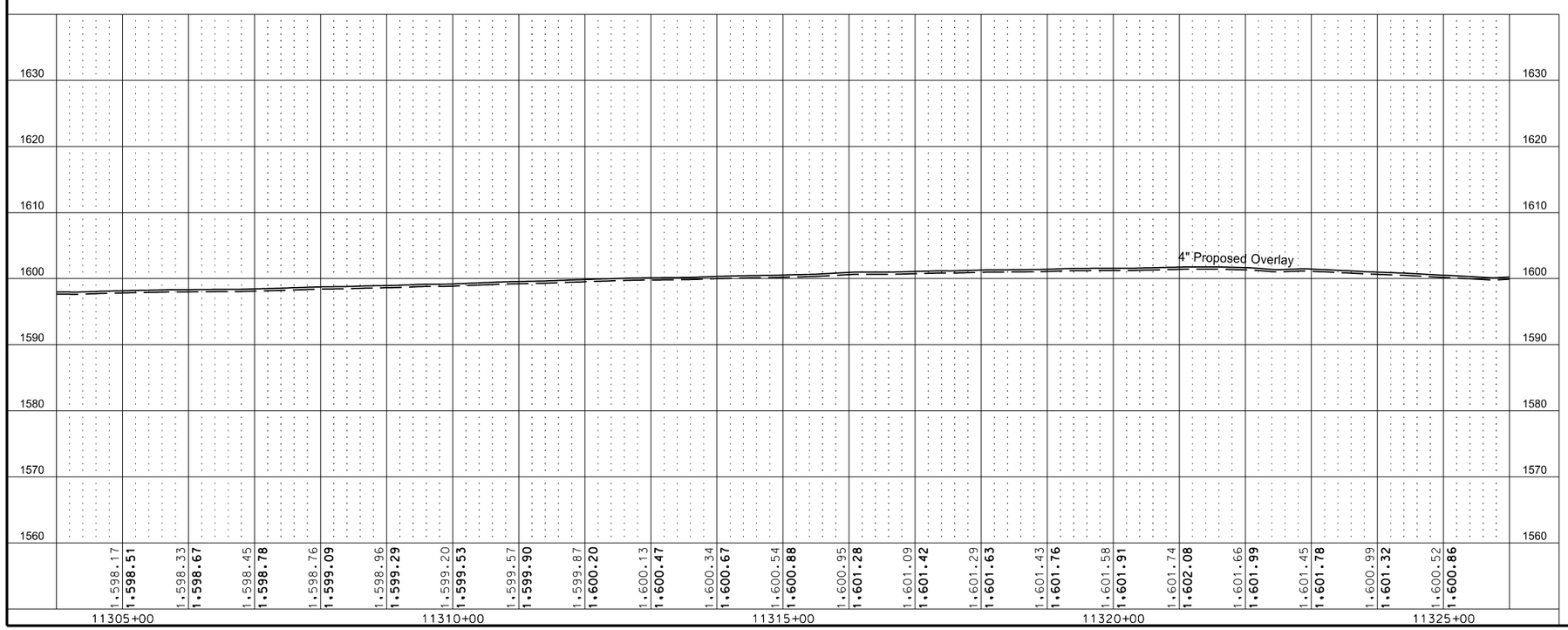
Plan & Profile
Sta 11285+00 to Sta 11305+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	42



11310+04 - 66' Rt
18" X 40' CSP (Good)
2 CSES (Fair)



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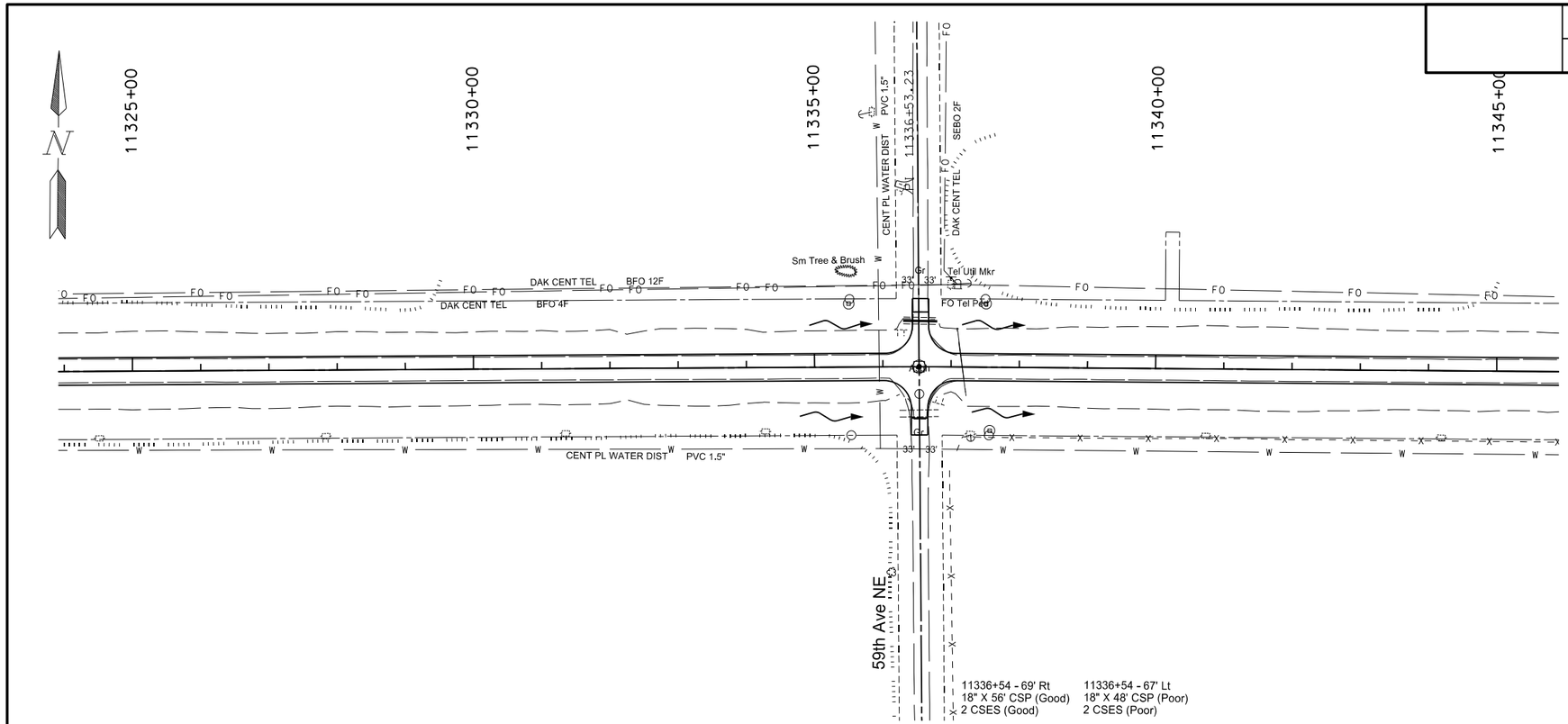
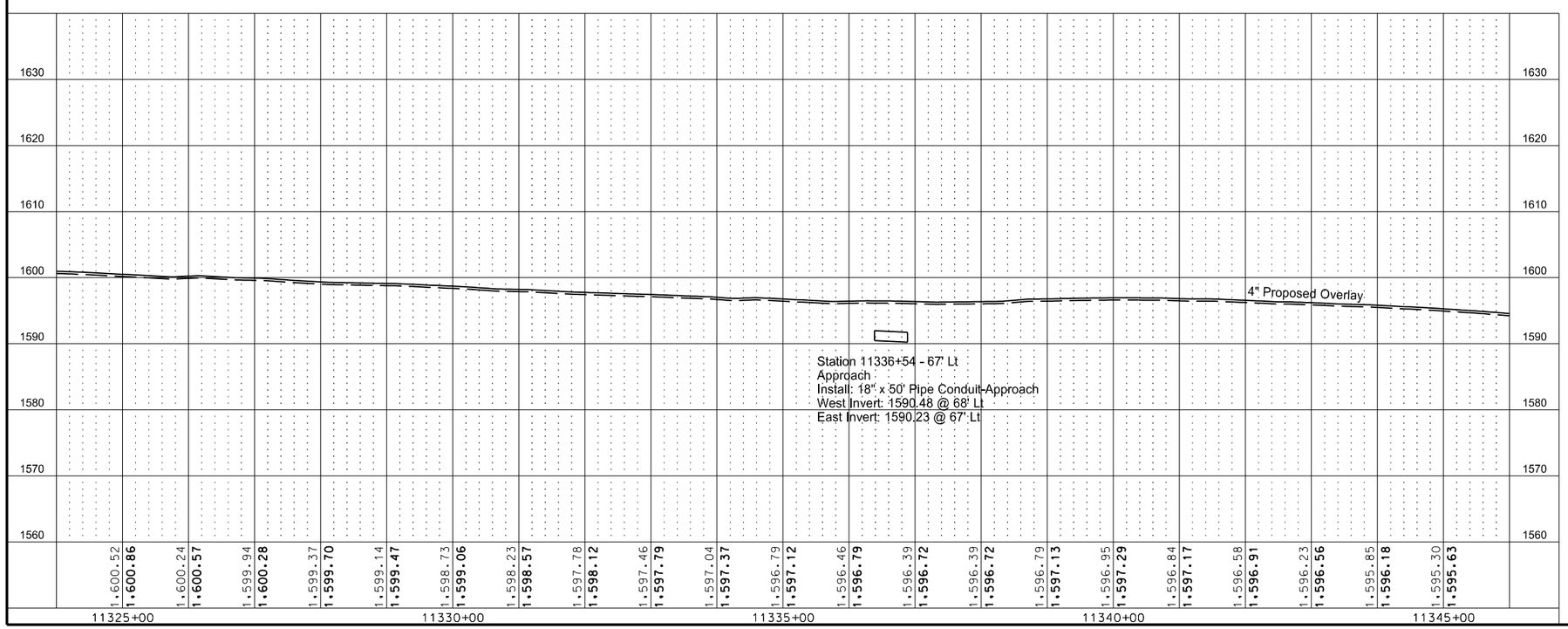
Plan & Profile
Sta 11305+00 to Sta 11325+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	43



REMOVAL OF PIPE ALL TYPES AND SIZES — Qty
Sta 11336+54 Lt — 48 LF

PIPE CONDUIT 18IN-APPROACH — Qty
Sta 11336+54 Lt — 50 LF



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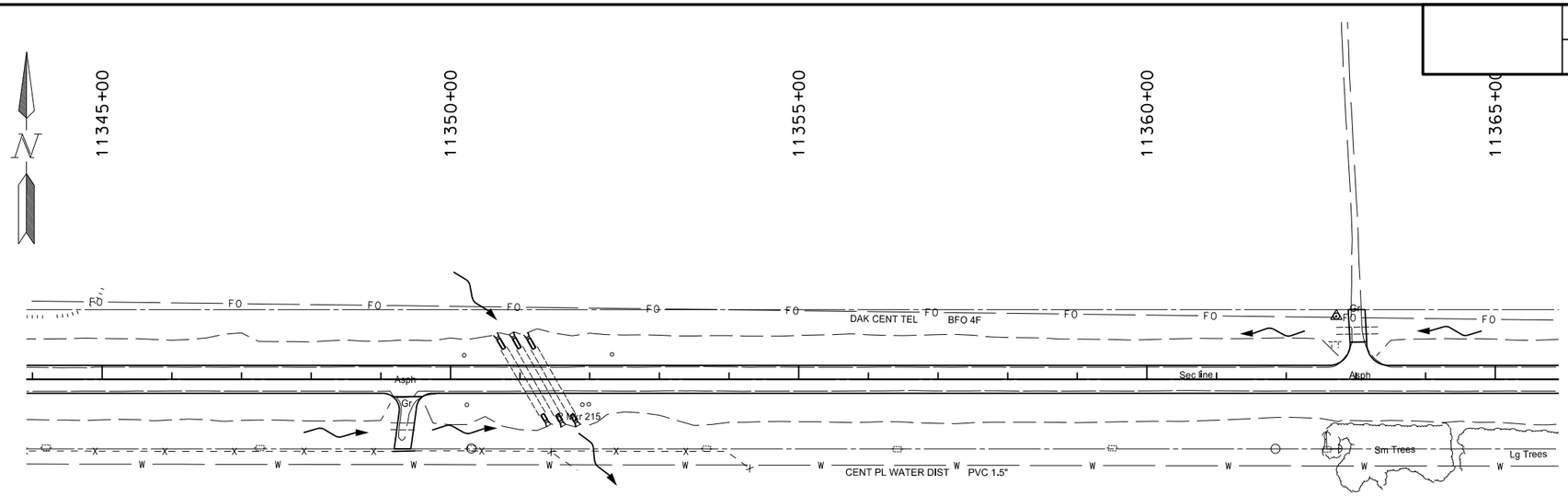
Plan & Profile
Sta 11325+00 to Sta 11345+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	44



PIPE CONC REINF 54IN CL III	Qty
Sta 11350+76 Lt	16 LF
Sta 11351+33 Rt	10 LF
Sta 11350+98 Lt	16 LF
Sta 11351+54 Rt	10 LF
Sta 11351+19 Lt	16 LF
Sta 11351+76 Rt	10 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11350+76 Lt	1 EA
Sta 11351+33 Rt	1 EA
Sta 11350+98 Lt	1 EA
Sta 11351+54 Rt	1 EA
Sta 11351+19 Lt	1 EA
Sta 11351+76 Rt	1 EA

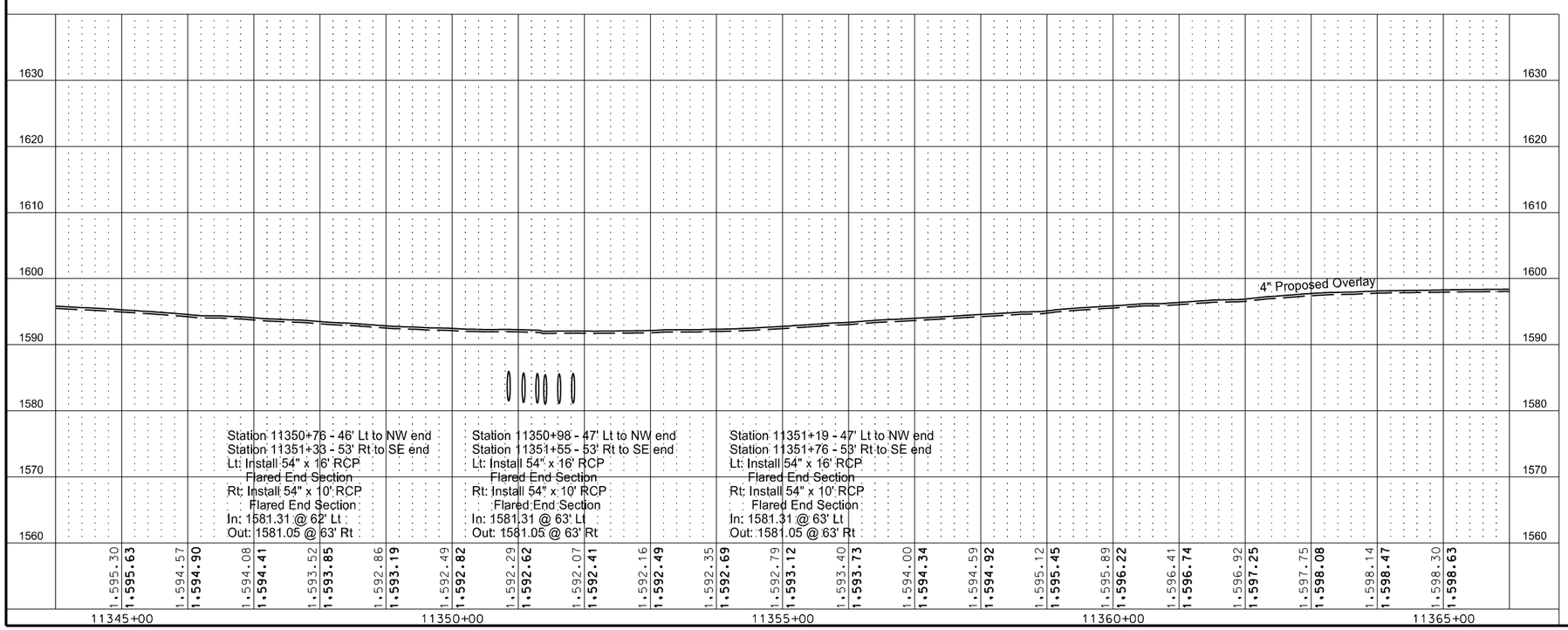
11349+32 - 68' Rt
24" X 36' CSP (Good)
2 CSES (Fair)

11350+76 - 46' Lt to NW end
11351+33 - 53' Rt to SE end
54" X 102' RCP (Good)
2 RCES (Good)

11350+98 - 47' Lt to NW end
11351+55 - 53' Rt to SE end
54" X 102' RCP (Good)
2 RCES (Good)

11351+19 - 47' Lt to NW end
11351+76 - 53' Rt to SE end
54" X 102' RCP (Good)
2 RCES (N end,Fair)

11363+02 - 69' Lt
18" X 60' CSP (Good)
2 CSES (Good)



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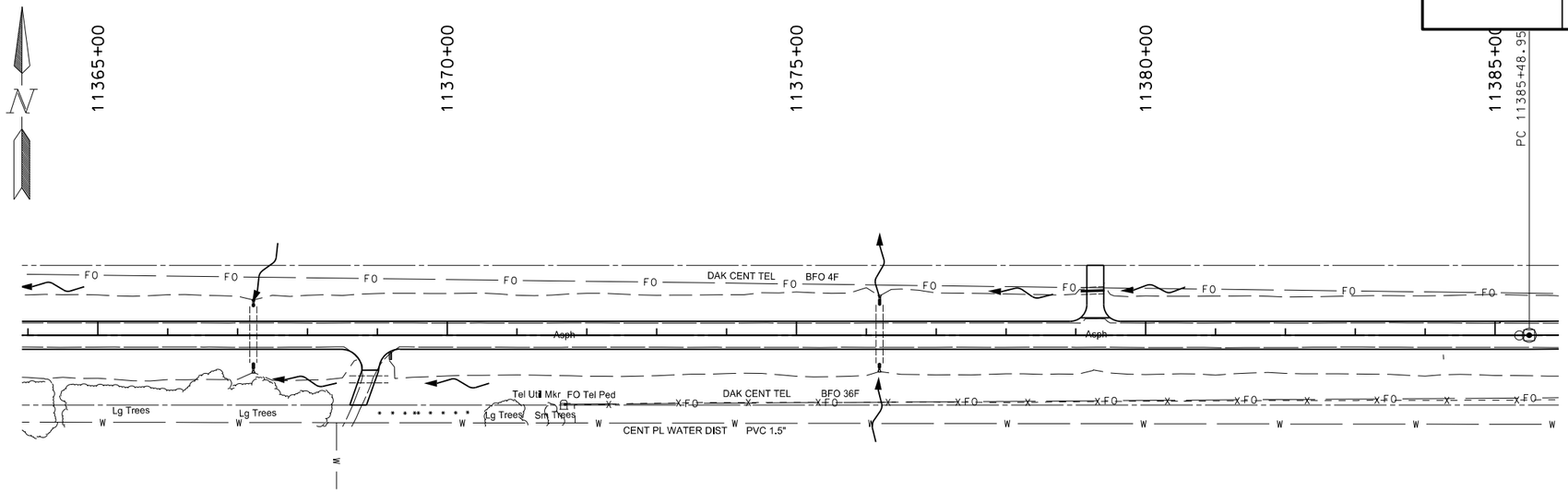
Plan & Profile
Sta 11345+00 to Sta 11365+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	45

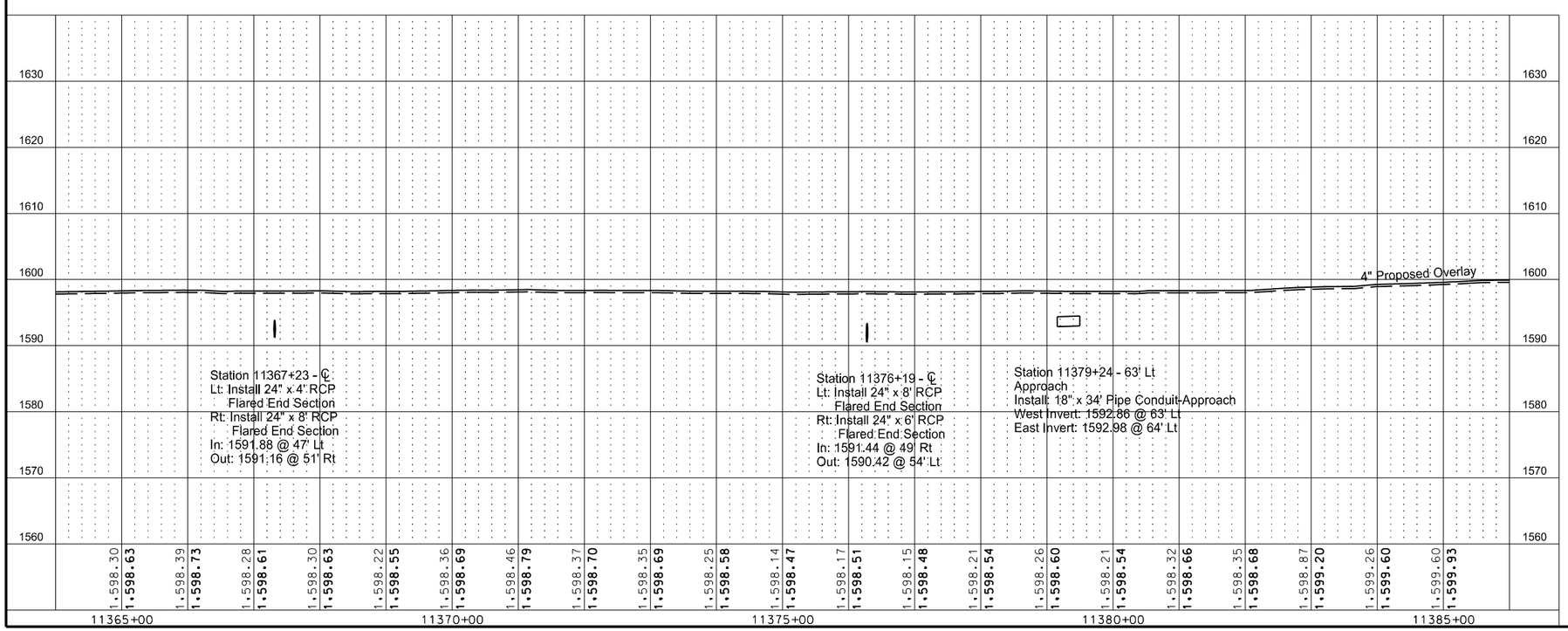


REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 11379+24 Lt	34 LF

PIPE CONC REINF 24IN CL III	Qty
Sta 11367+23 Lt	4 LF
Sta 11367+23 Rt	8 LF
Sta 11376+19 Lt	8 LF
Sta 11376+19 Rt	6 LF

PIPE CONDUIT 18IN-APPROACH	Qty
Sta 11379+24 Lt	34 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11367+23 Lt	1 EA
Sta 11367+23 Rt	1 EA
Sta 11376+19 Lt	1 EA
Sta 11376+19 Rt	1 EA



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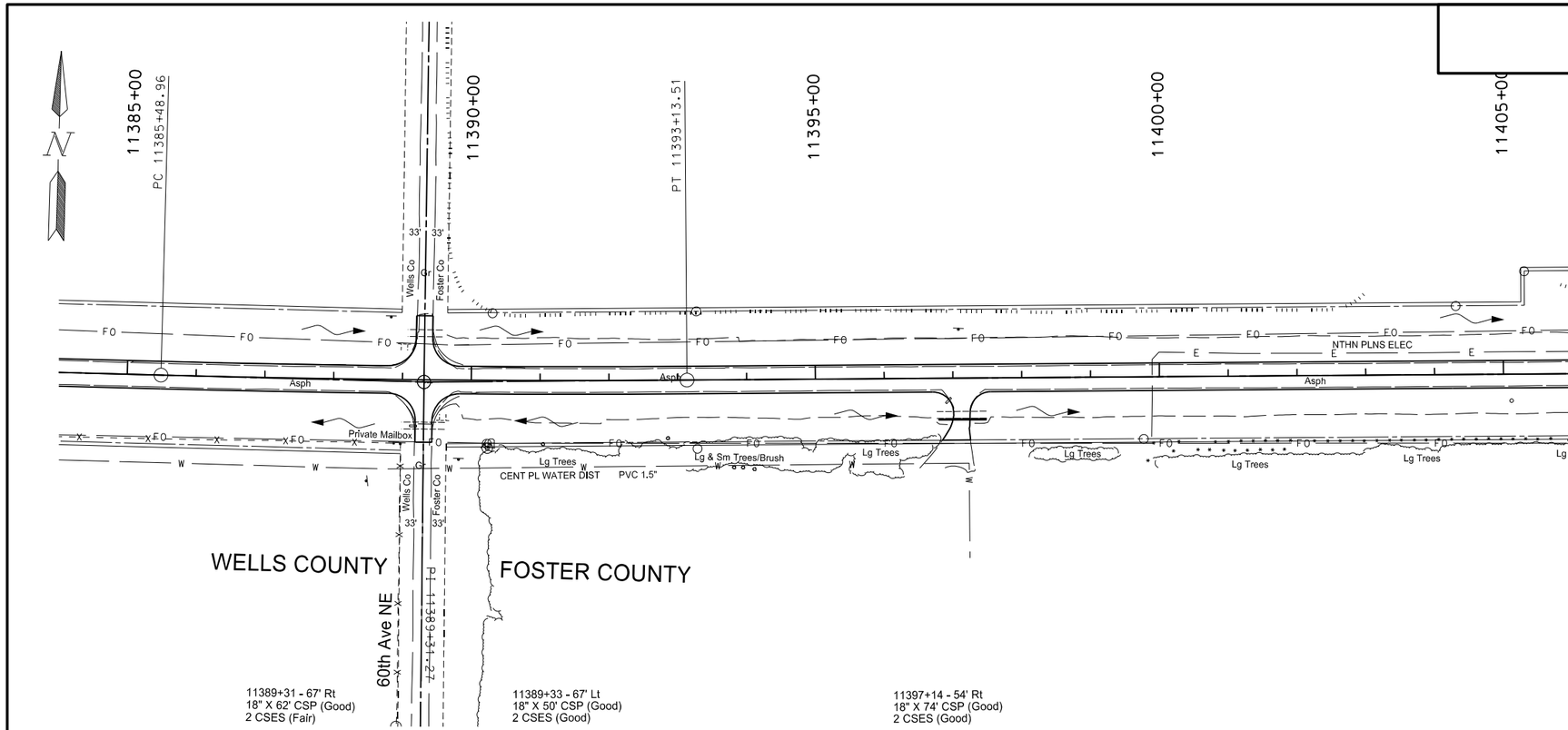
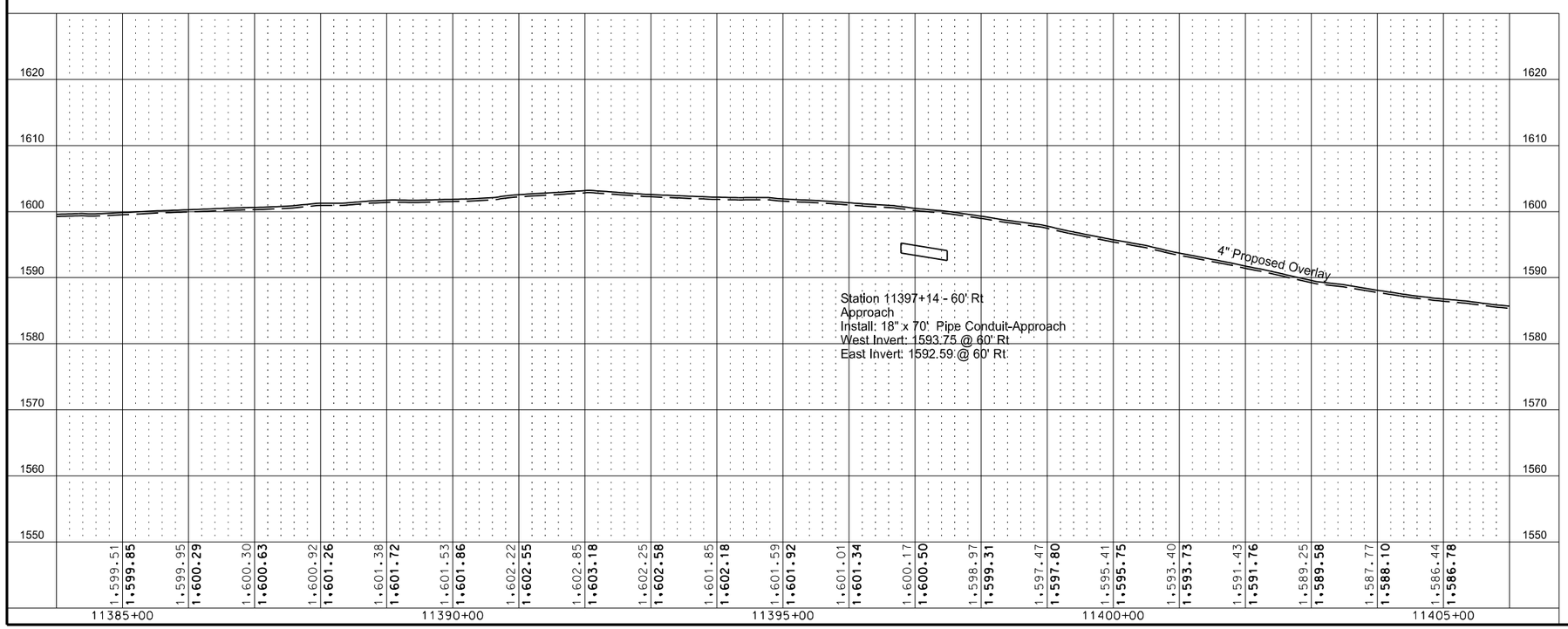
Plan & Profile
Sta 11365+00 to Sta 11385+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	46

REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 11397+14 Rt	74 LF

PIPE CONDUIT 18IN-APPROACH	Qty
Sta 11397+14 Rt	70 LF





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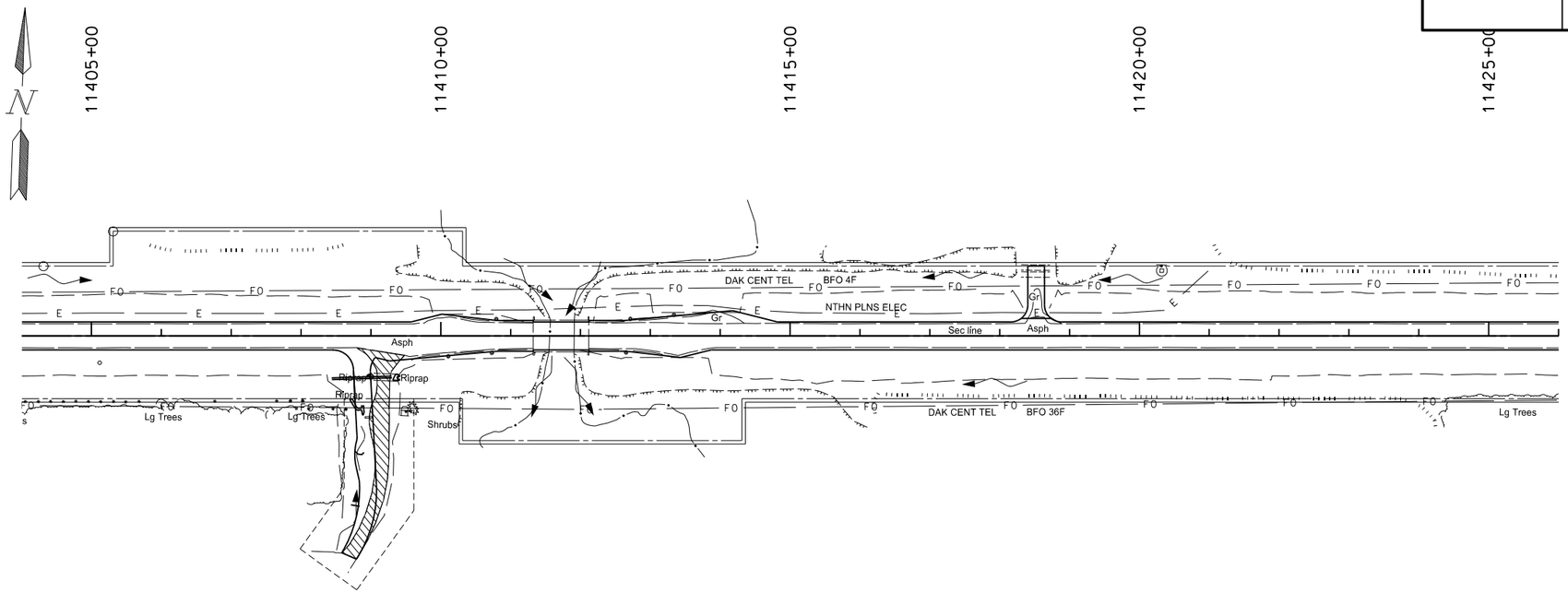
Plan & Profile
Sta 11385+00 to Sta 11405+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	47

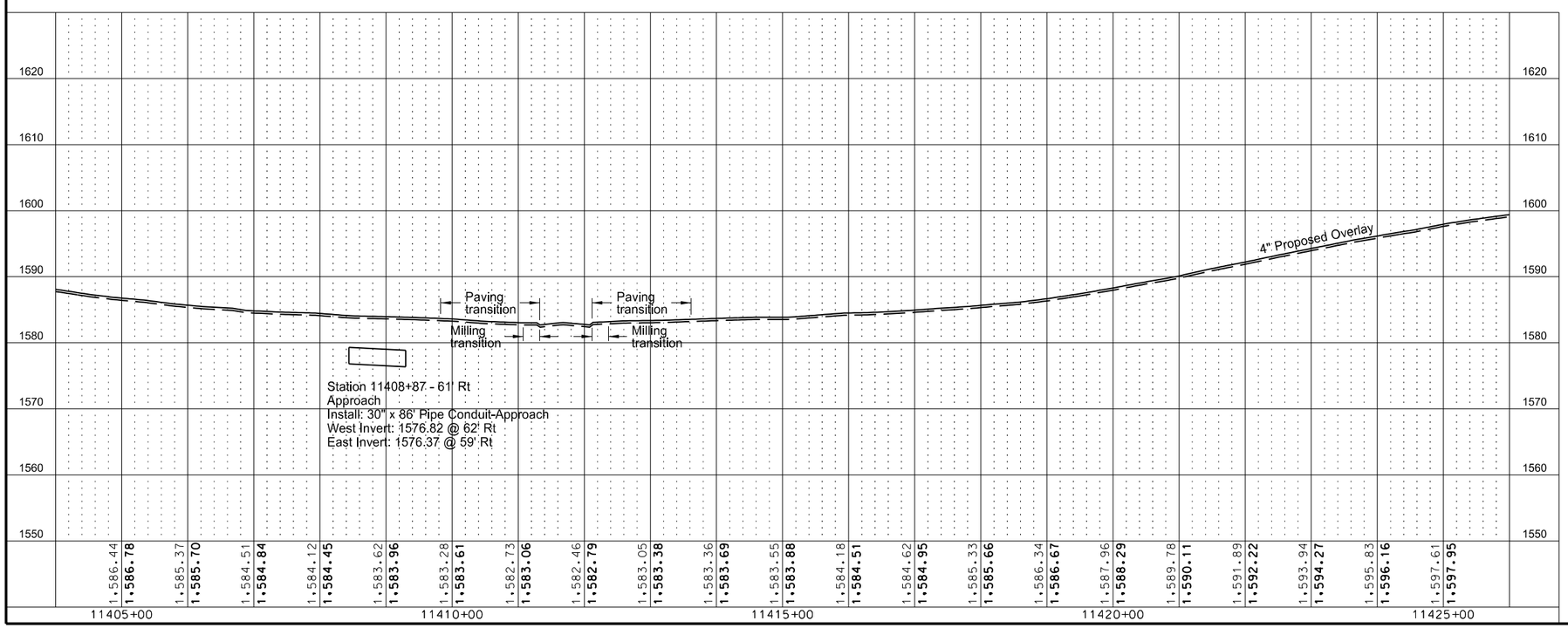
REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 11410+09 Rt	40 LF

PIPE CONDUIT 30IN-APPROACH	Qty
Sta 11408+87 Rt	86 LF



11409+19 - 59' Rt
18" X 40' CSP (Good)
2 CSES (Good)

11418+51 - 92' Lt
Dbl 36" X 40' RCP (Good)
2 RCES (Good)



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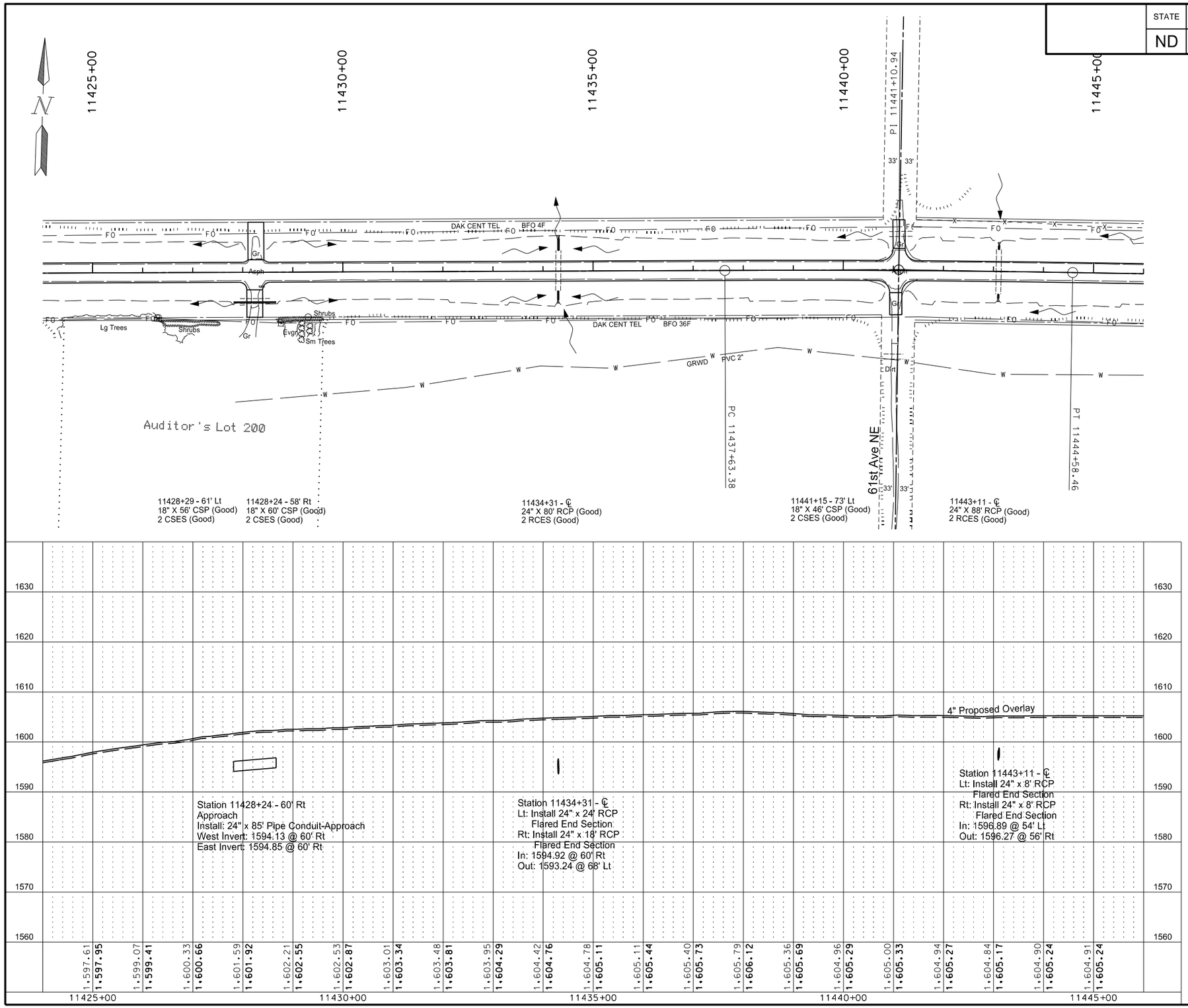
Plan & Profile
Sta 11405+00 to Sta 11425+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	48



REMOVAL OF PIPE ALL TYPES AND SIZES

	Qty
Sta 11428+24 Rt	60 LF

PIPE CONC REINF 24IN CL III

	Qty
Sta 11434+31 Lt	24 LF
Sta 11434+30 Rt	18 LF
Sta 11443+11 Lt	8 LF
Sta 11443+10 Rt	8 LF

PIPE CONDUIT 24IN-APPROACH

	Qty
Sta 11428+24 Rt	85 LF

REMOVE & RELAY PIPE-ALL TYPE & SIZES

	Qty
Sta 11434+31 Lt	8 LF
Sta 11434+30 Rt	8 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES

	Qty
Sta 11434+31 Lt	1 EA
Sta 11434+30 Rt	1 EA
Sta 11443+11 Lt	1 EA
Sta 11443+10 Rt	1 EA

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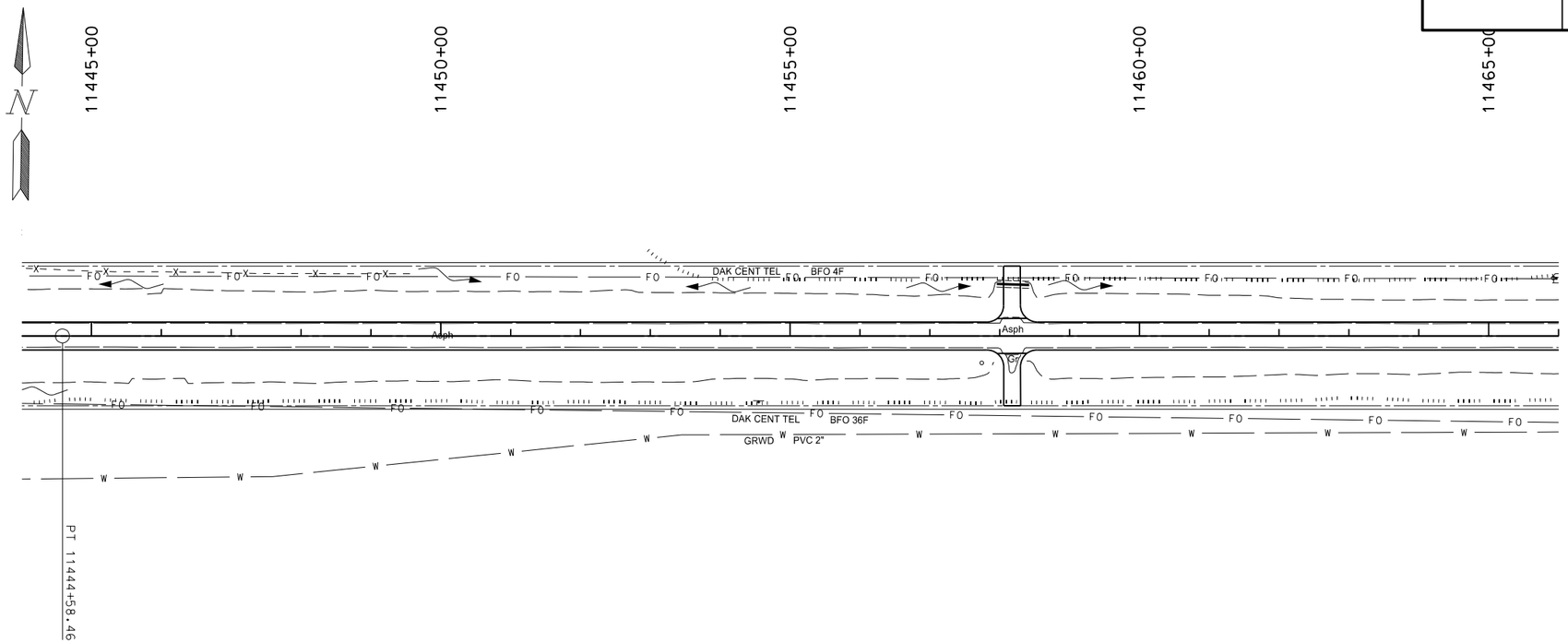
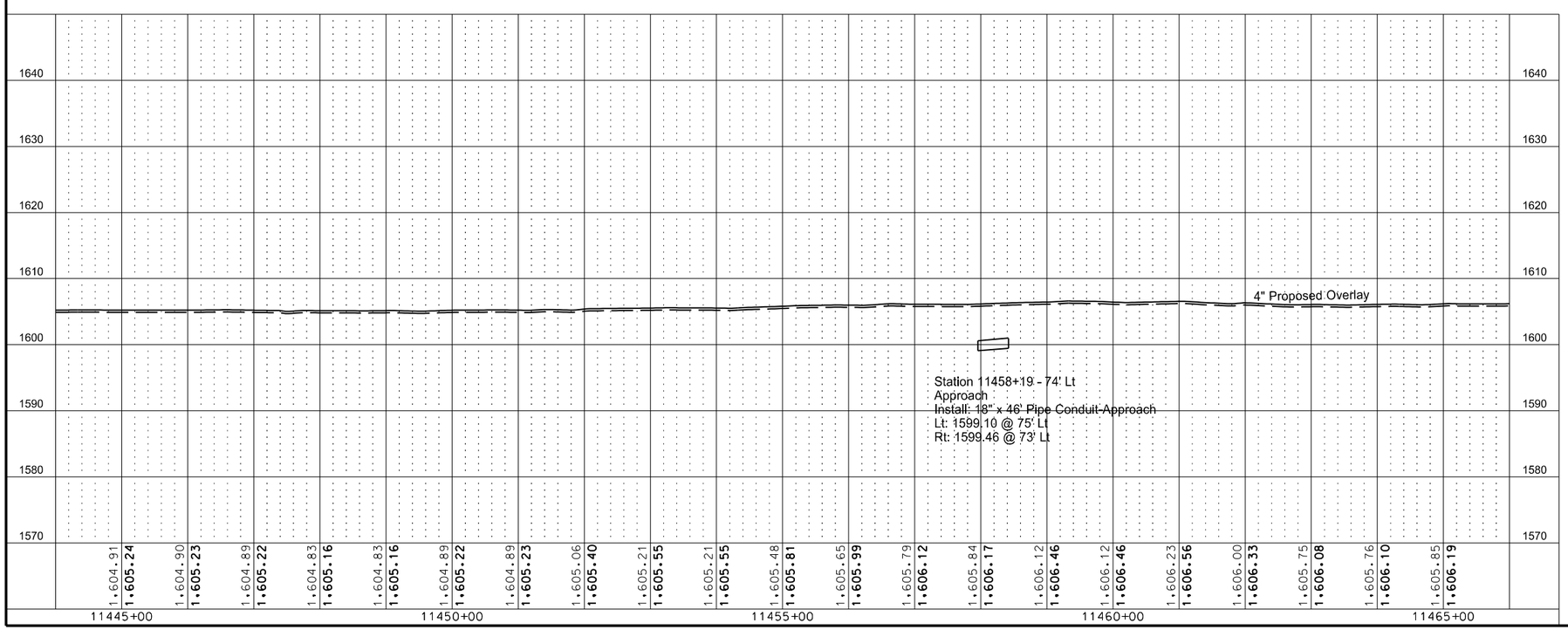
Plan & Profile
Sta 11425+00 to Sta 11445+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	49



REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 11458+19 Lt	46 LF

PIPE CONDUIT 18IN-APPROACH	Qty
Sta 11458+19 Lt	46 LF



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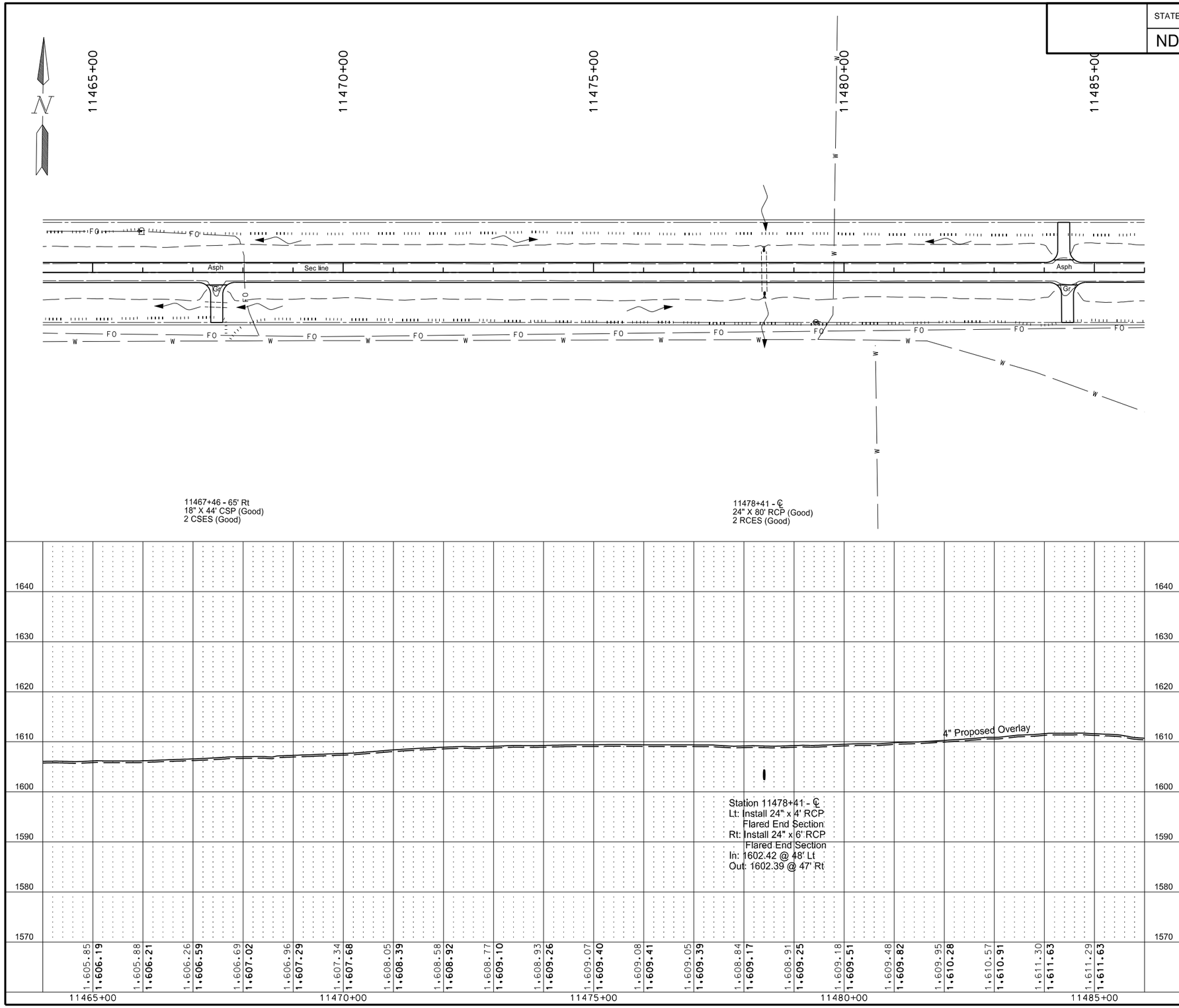
Plan & Profile
Sta 11445+00 to Sta 11465+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	50

PIPE CONC REINF 24IN CL III	Qty
Sta 11478+40 Lt	4 LF
Sta 11478+42 Rt	6 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11478+40 Lt	1 EA
Sta 11478+42 Rt	1 EA



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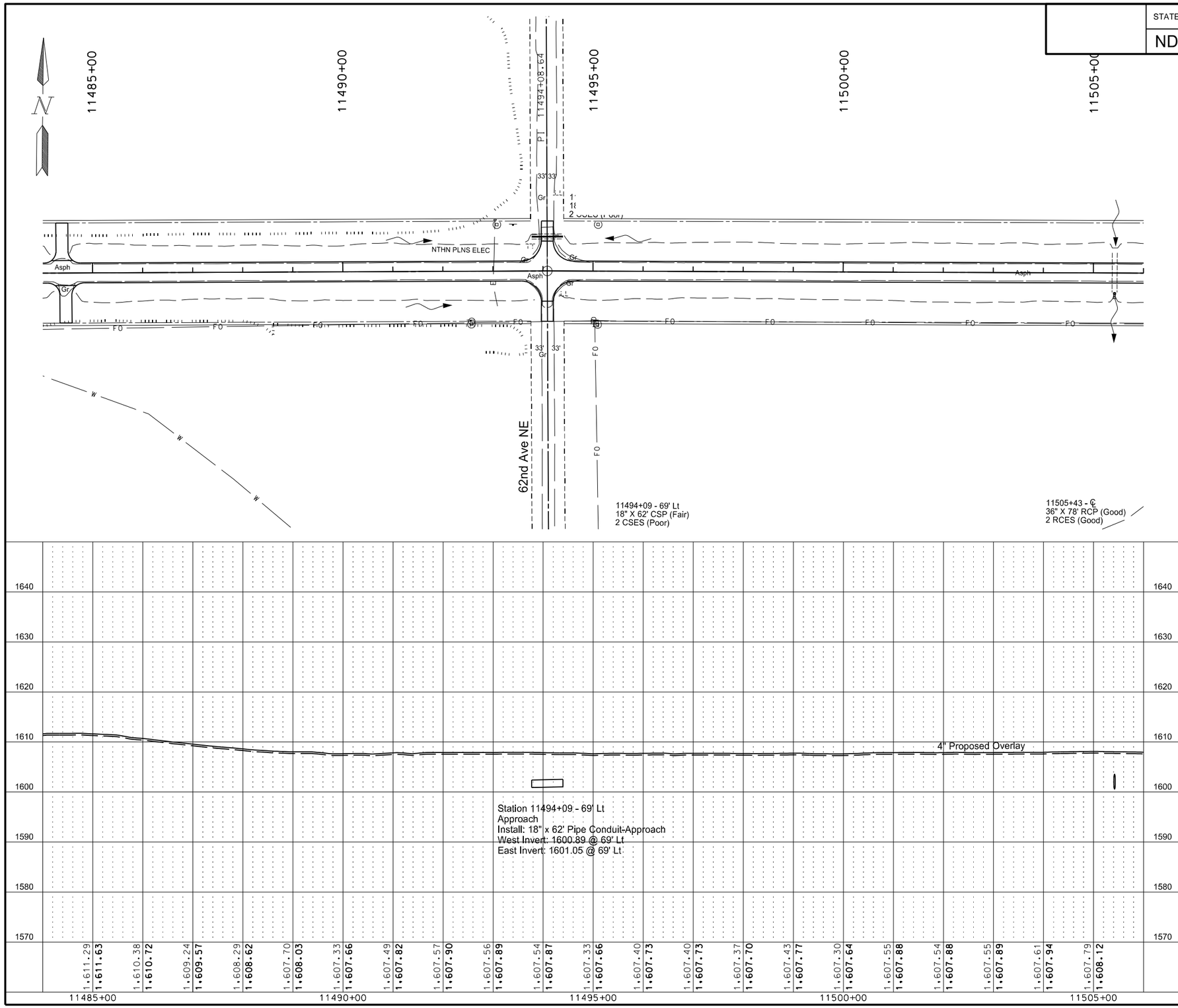
Plan & Profile
Sta 11465+00 to Sta 11485+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	51



REMOVAL OF PIPE ALL TYPES AND SIZES — Qty
Sta 11494+09 Lt — 62 LF

PIPE CONDUIT 18IN-APPROACH — Qty
Sta 11494+09 Lt — 62 LF

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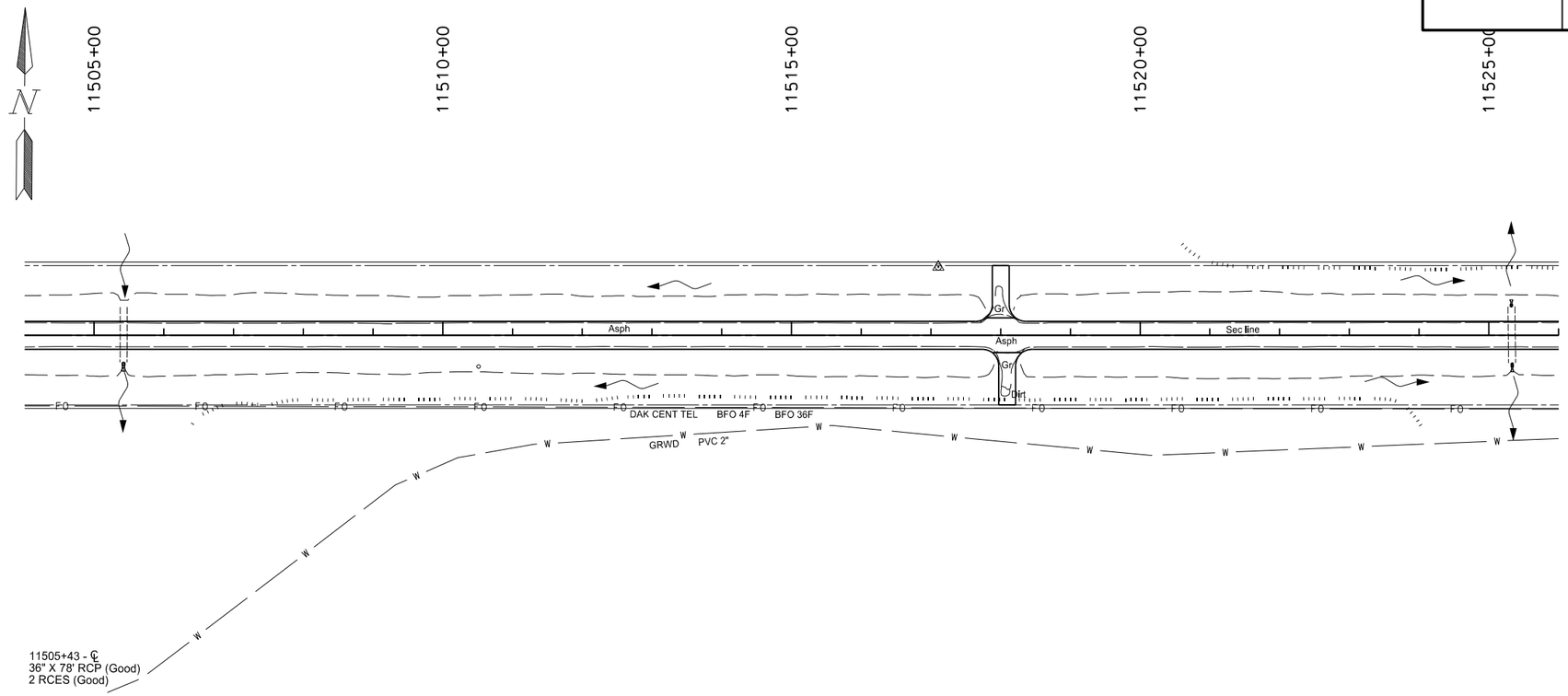
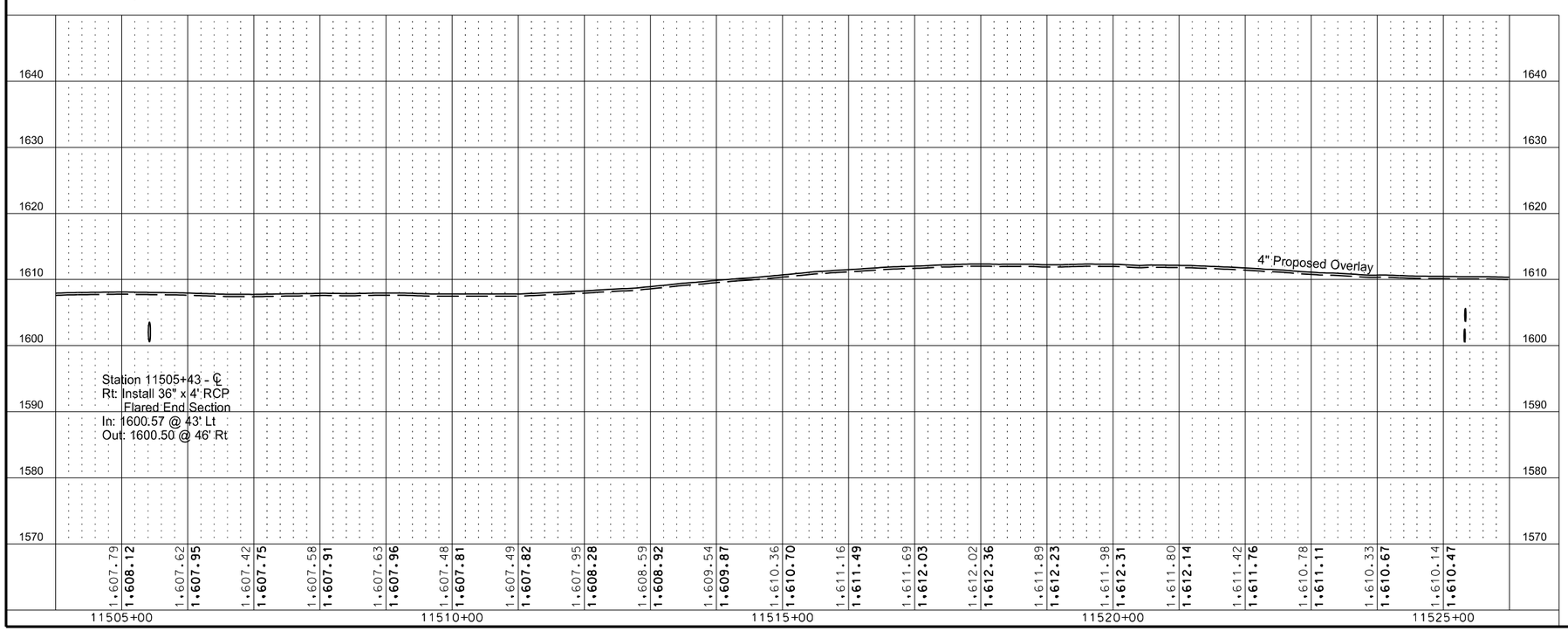
Plan & Profile
Sta 11485+00 to Sta 11505+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	52



PIPE CONC REINF 36IN CL III — Qty
Sta 11505+42 Rt — 4 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES — Qty
Sta 11505+42 Rt — 1 EA



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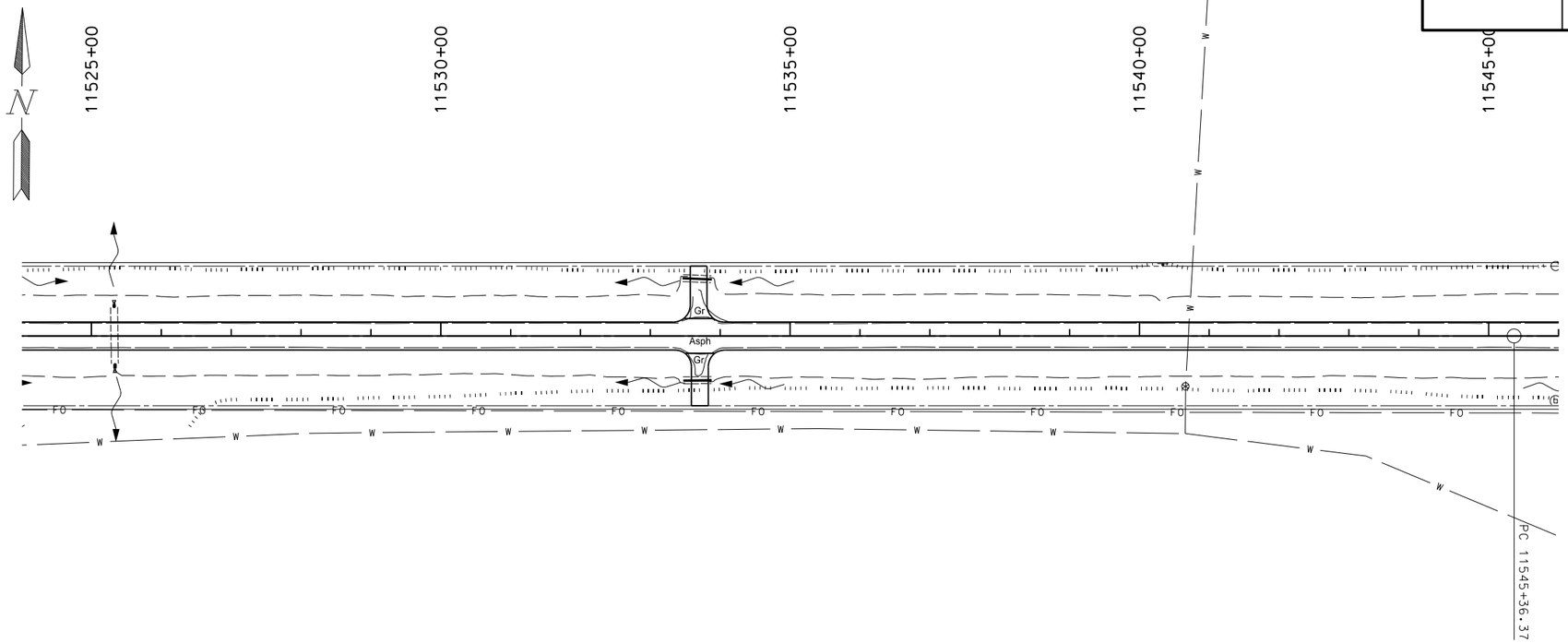
Plan & Profile
Sta 11505+00 to Sta 11525+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	53

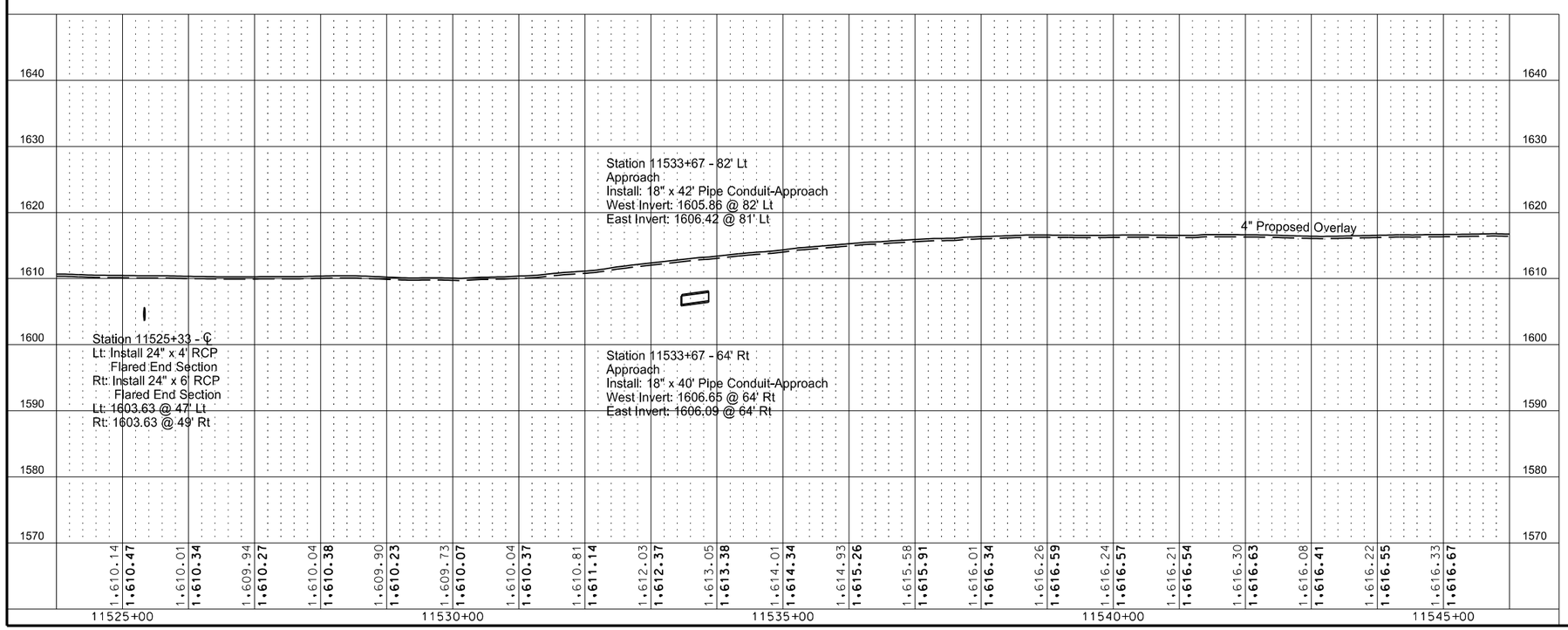


11525+33 - ℄
24" X 80' RCP (Good)
2 RCES (Good)

11533+67 - 64' RT
18" X 40' CSP (Fair)
2 CSES (Poor)

11533+67 - 82' Lt
18" X 40' CSP (Fair)
2 CSES (Poor)

11546+98 - 68' Rt
18" X 46' CSP (Fair)
2 CSES (Poor)



REMOVAL OF PIPE ALL TYPES AND SIZES — Qty
Sta 11533+67 Lt — 40 LF
Sta 11533+67 Rt — 40 LF

PIPE CONC REINF 24IN CL III — Qty
Sta 11525+32 Lt — 4 LF
Sta 11525+34 Rt — 6 LF

PIPE CONDUIT 18IN-APPROACH — Qty
Sta 11533+67 Lt — 42 LF
Sta 11533+67 Rt — 40 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES — Qty
Sta 11525+32 Lt — 1 EA
Sta 11525+34 Rt — 1 EA

REMOVE & RELAY PIPE-ALL TYPE & SIZES — Qty
Sta 11525+32 Lt — 8 LF
Sta 11525+34 Rt — 8 LF

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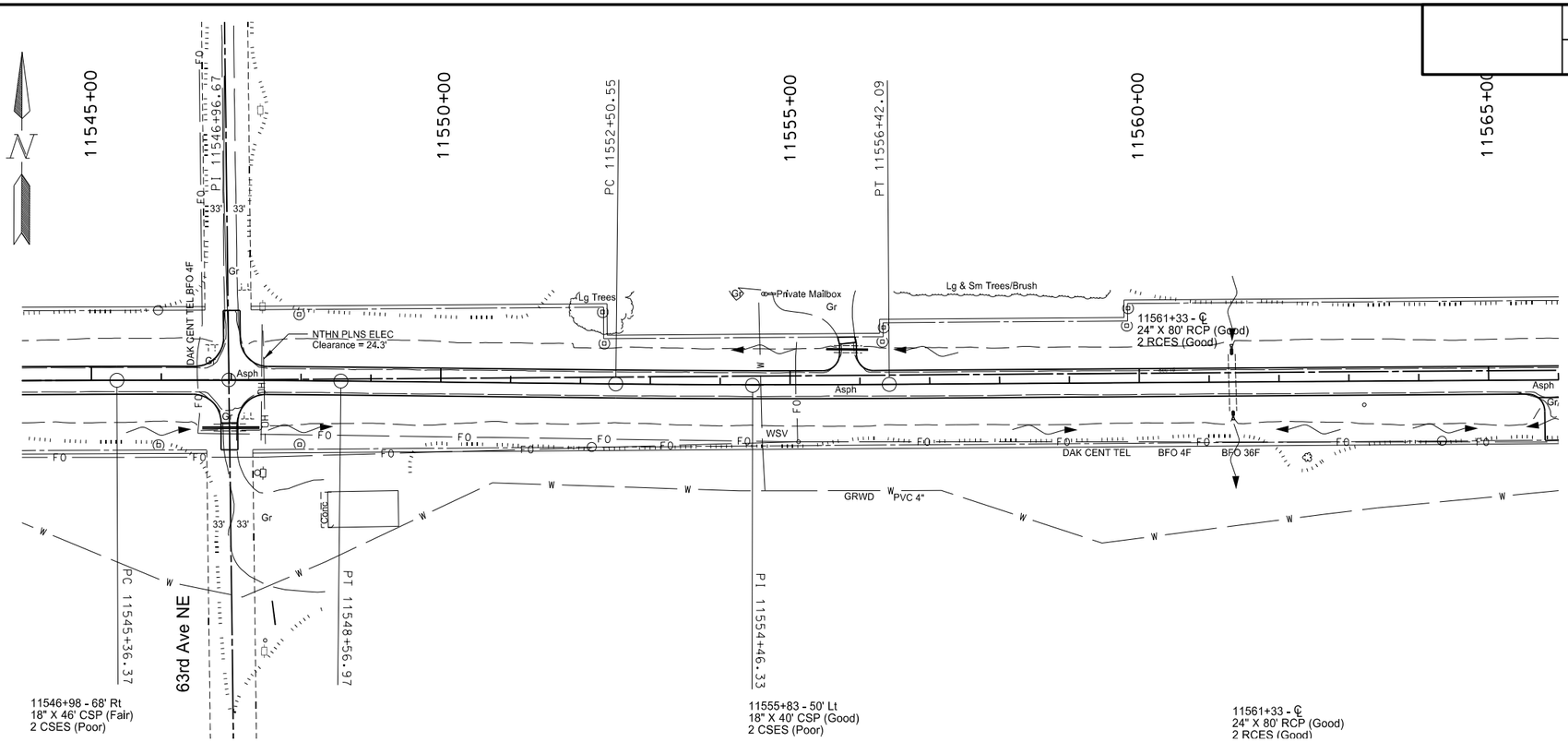
Plan & Profile
Sta 11525+00 to Sta 11545+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	54



REMOVAL OF PIPE ALL TYPES AND SIZES	Qty
Sta 11546+98 Rt	46 LF
Sta 11555+83 Lt	40 LF

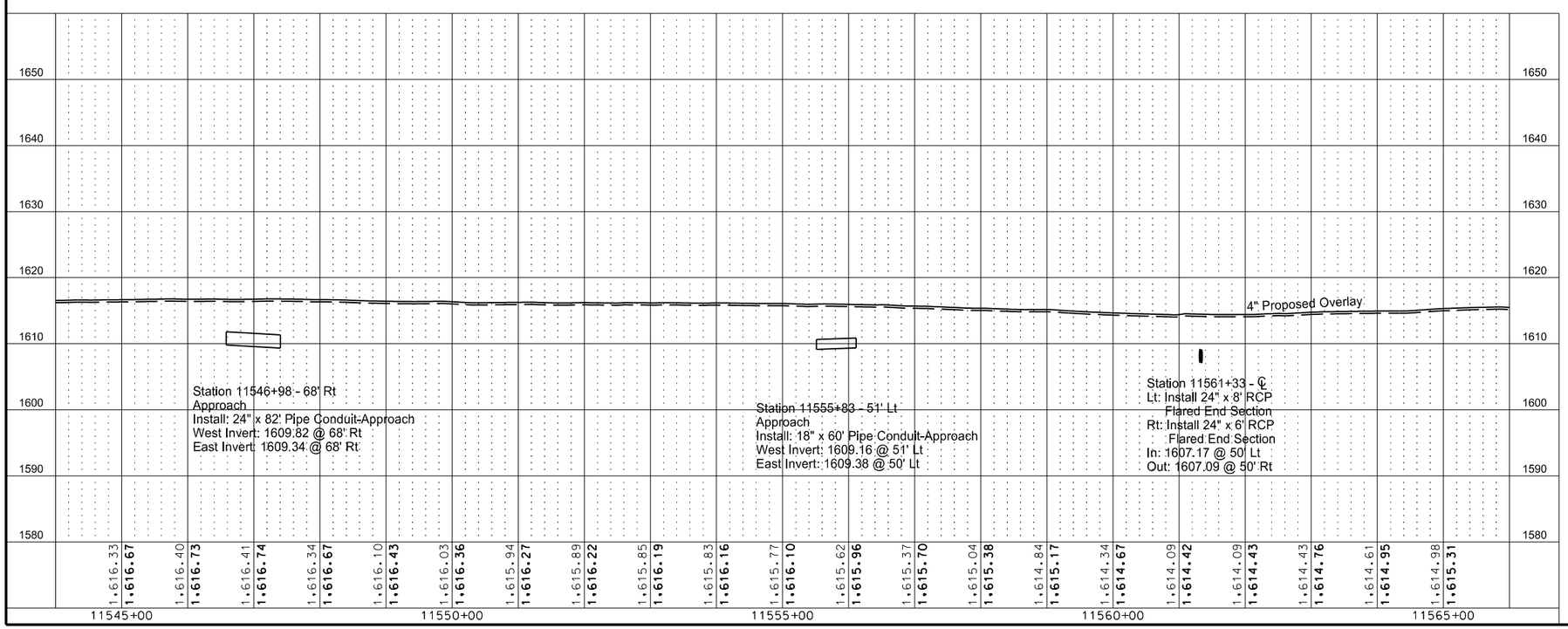
PIPE CONC REINF 24IN CL III	Qty
Sta 11561+32 Lt	8 LF
Sta 11561+34 Rt	6 LF

PIPE CONDUIT 18IN-APPROACH	Qty
Sta 11555+83 Lt	60 LF

PIPE CONDUIT 24IN-APPROACH	Qty
Sta 11546+98 Rt	82 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11561+32 Lt	1 EA
Sta 11561+34 Rt	1 EA

REMOVE & RELAY PIPE-ALL TYPE & SIZES	Qty
Sta 11561+32 Lt	8 LF
Sta 11561+34 Rt	8 LF



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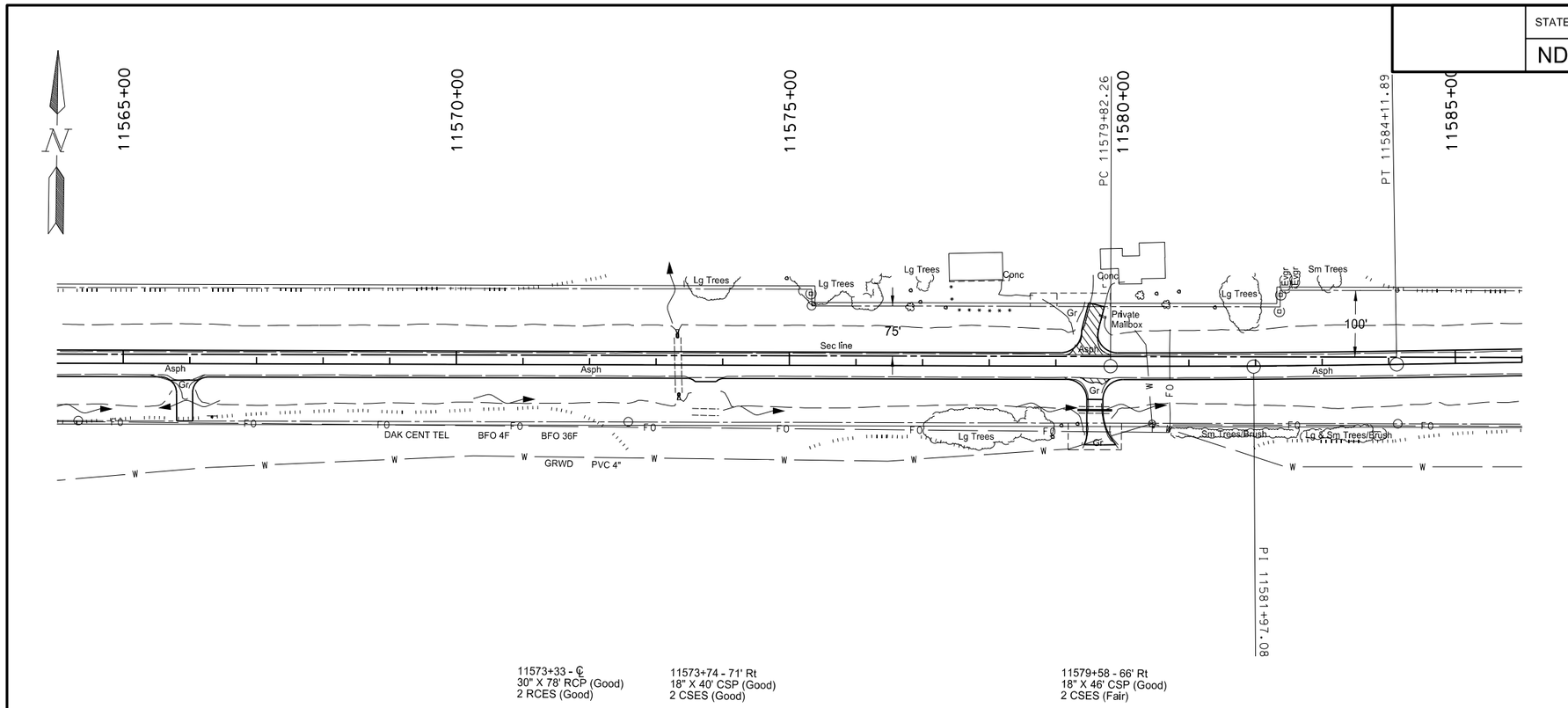
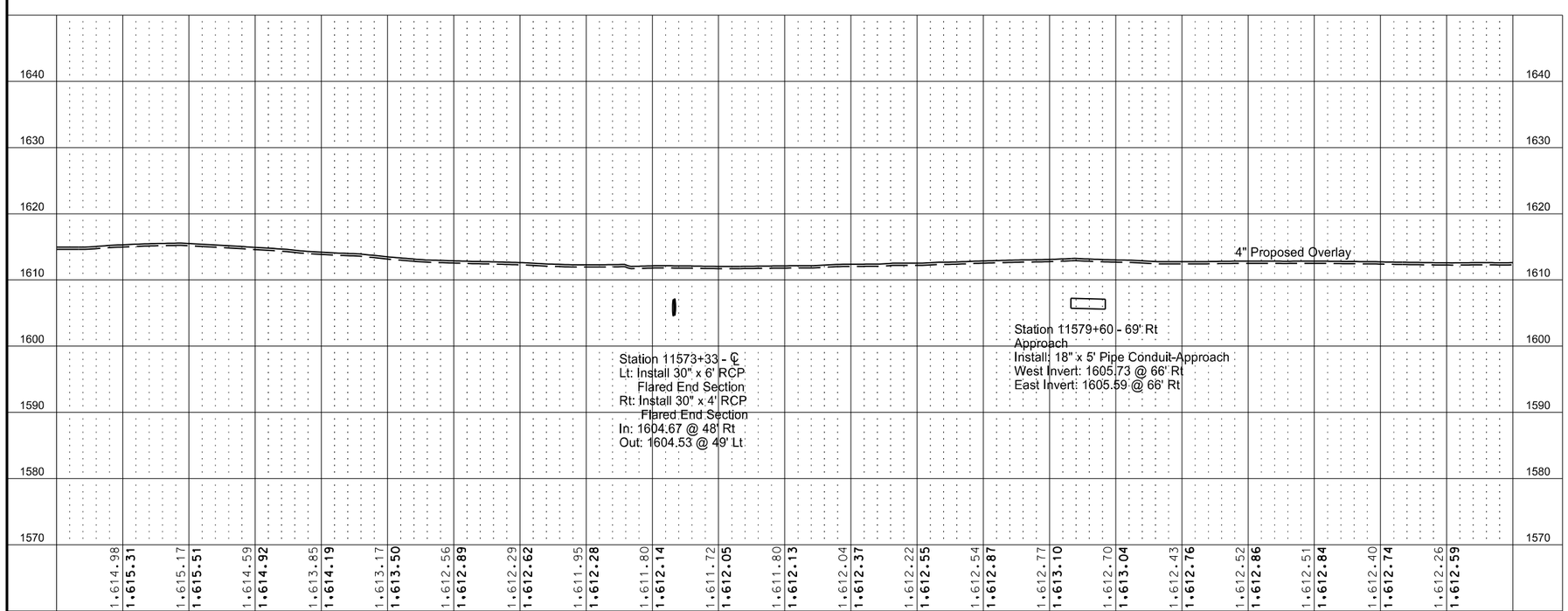
Plan & Profile
Sta 11545+00 to Sta 11565+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	55





REMOVAL OF PIPE ALL TYPES AND SIZES — Qty
Sta 11579+60 Rt — 46 LF

PIPE CONC REINF 30IN CL III — Qty
Sta 11573+32 Lt — 6 LF
Sta 11573+34 Rt — 4 LF

PIPE CONDUIT 18IN-APPROACH — Qty
Sta 11579+60 Rt — 52 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES — Qty
Sta 11573+32 Lt — 1 EA
Sta 11573+34 Rt — 1 EA

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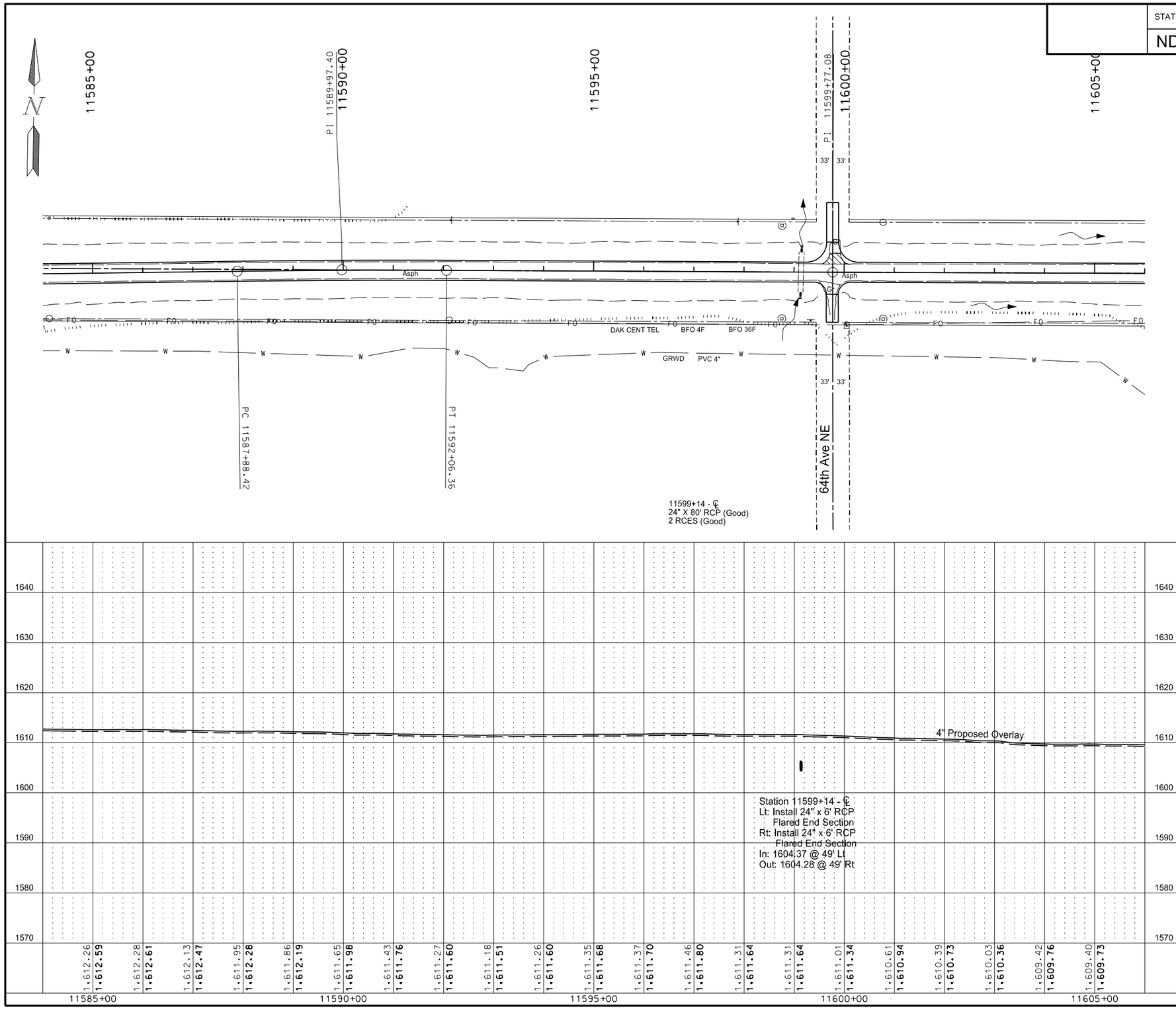
Plan & Profile
Sta 11565+00 to Sta 11585+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	56



PIPE CONC REINF 24IN CL III

	Qty
Sta 11599+15 Lt	6 LF
Sta 11599+13 Rt	6 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES

	Qty
Sta 11599+15 Lt	1 EA
Sta 11599+13 Rt	1 EA

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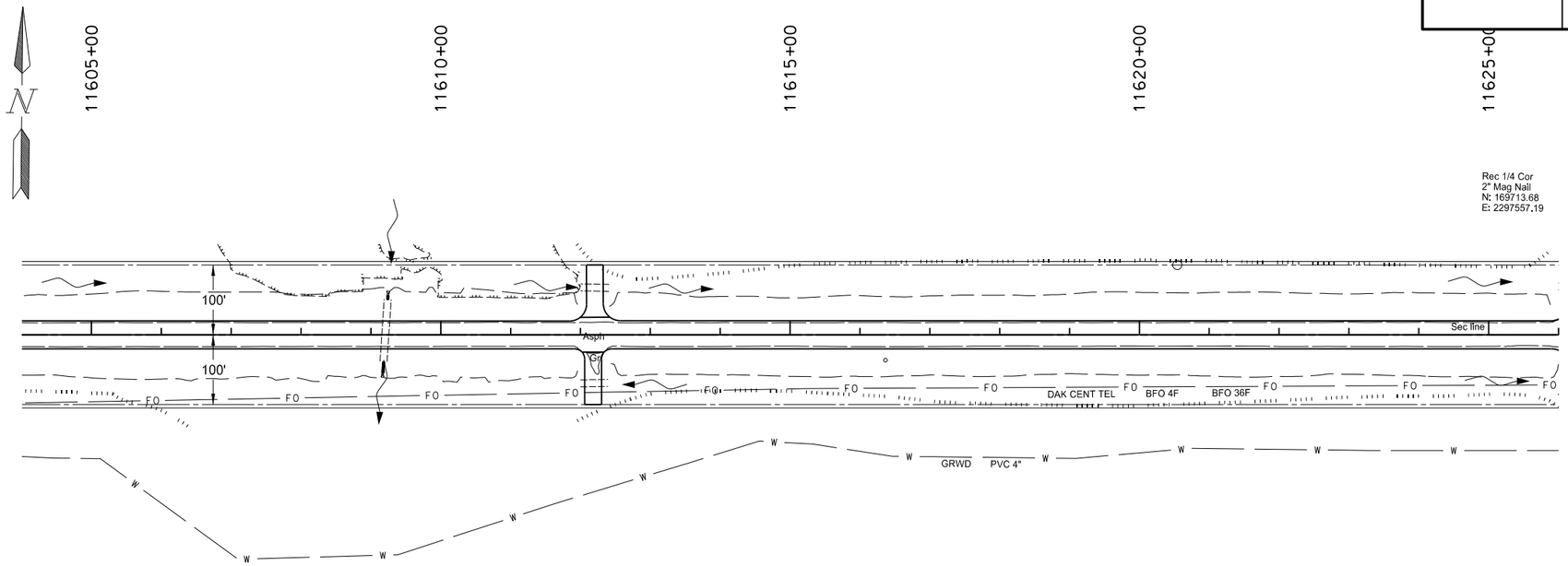
Plan & Profile
Sta 11585+00 to Sta 11605+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	57



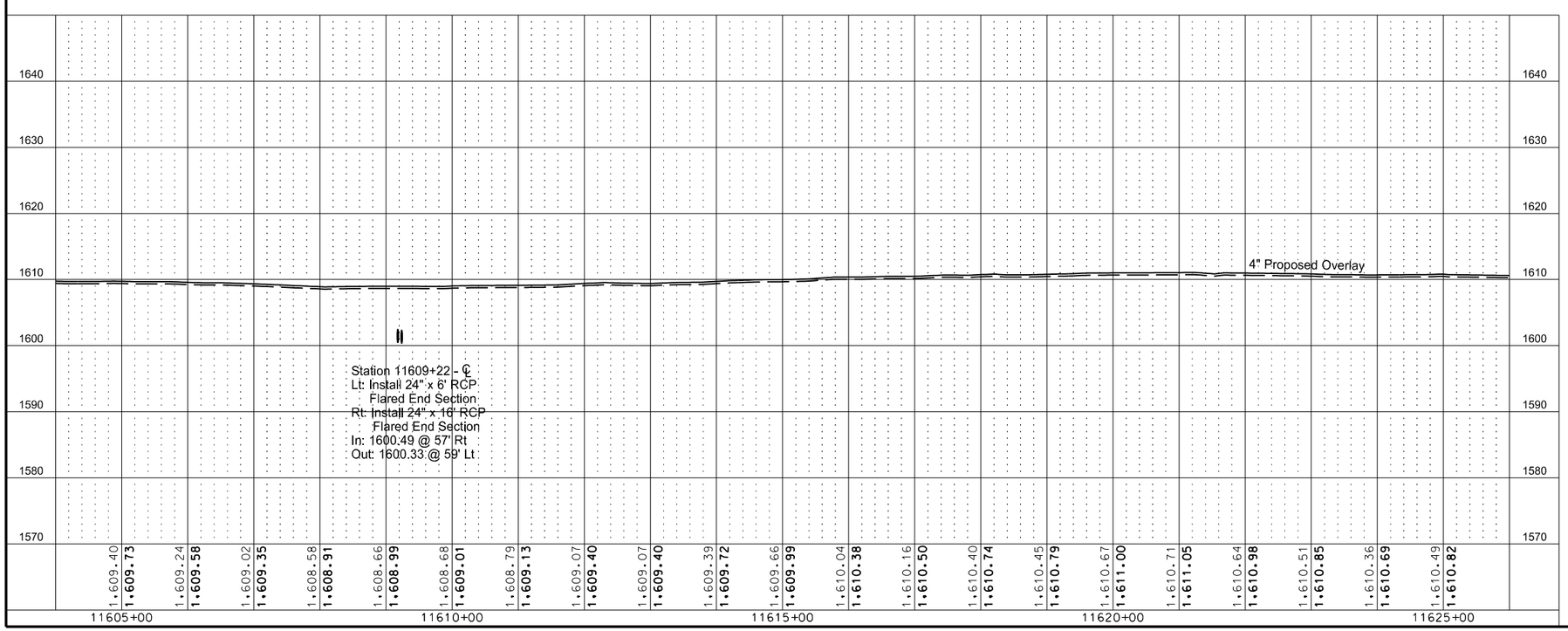
PIPE CONC REINF 24IN CL III	Qty
Sta 11609+24 Lt	6 LF
Sta 11609+18 Rt	16 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11609+24 Lt	1 EA
Sta 11609+18 Rt	1 EA

11609+22 - ℄
24" X 88' RCP (Good)
2 RCES (Good)

11612+21 - 67' Lt
18" X 40' CSP (Good)
2 CSES (Good)

11612+20 - 70' Rt
18" X 38' CSP (Fair)
2 CSES (Good)



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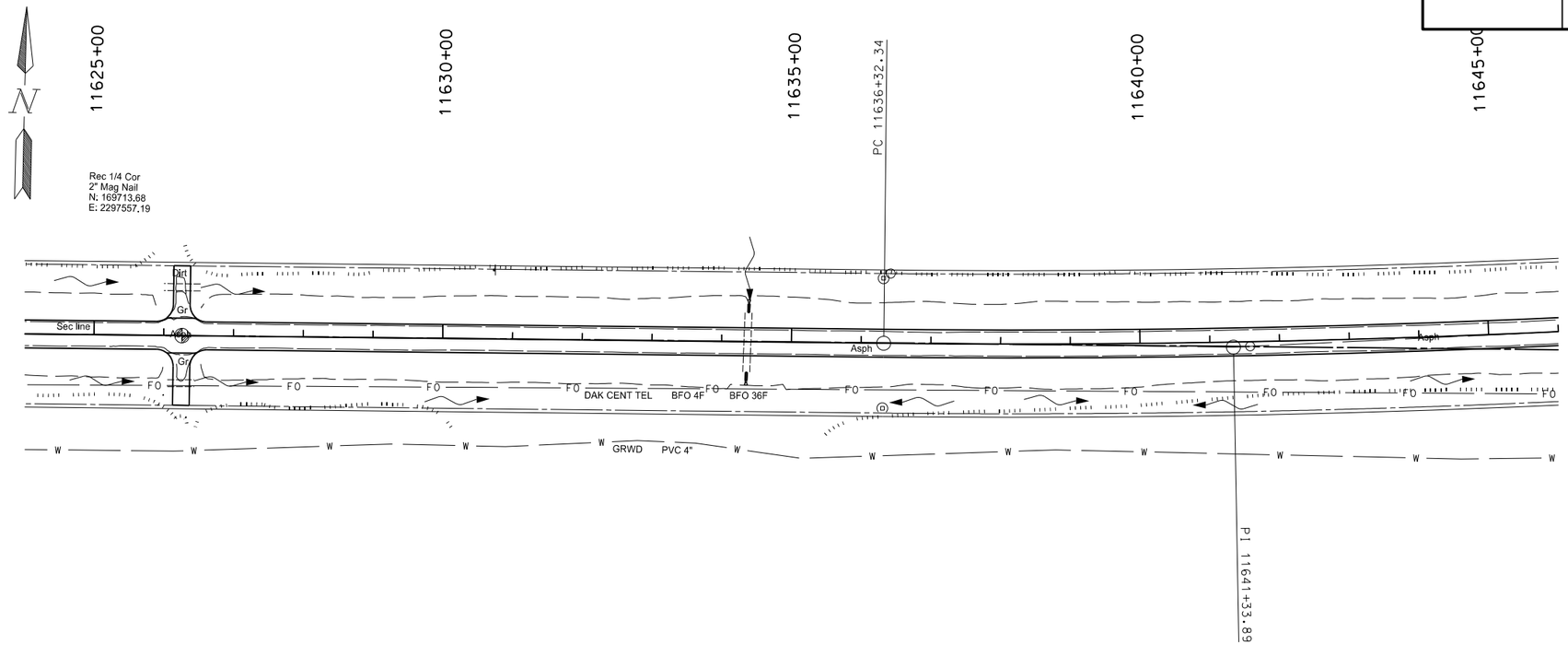
Plan & Profile
Sta 11605+00 to Sta 11625+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	58



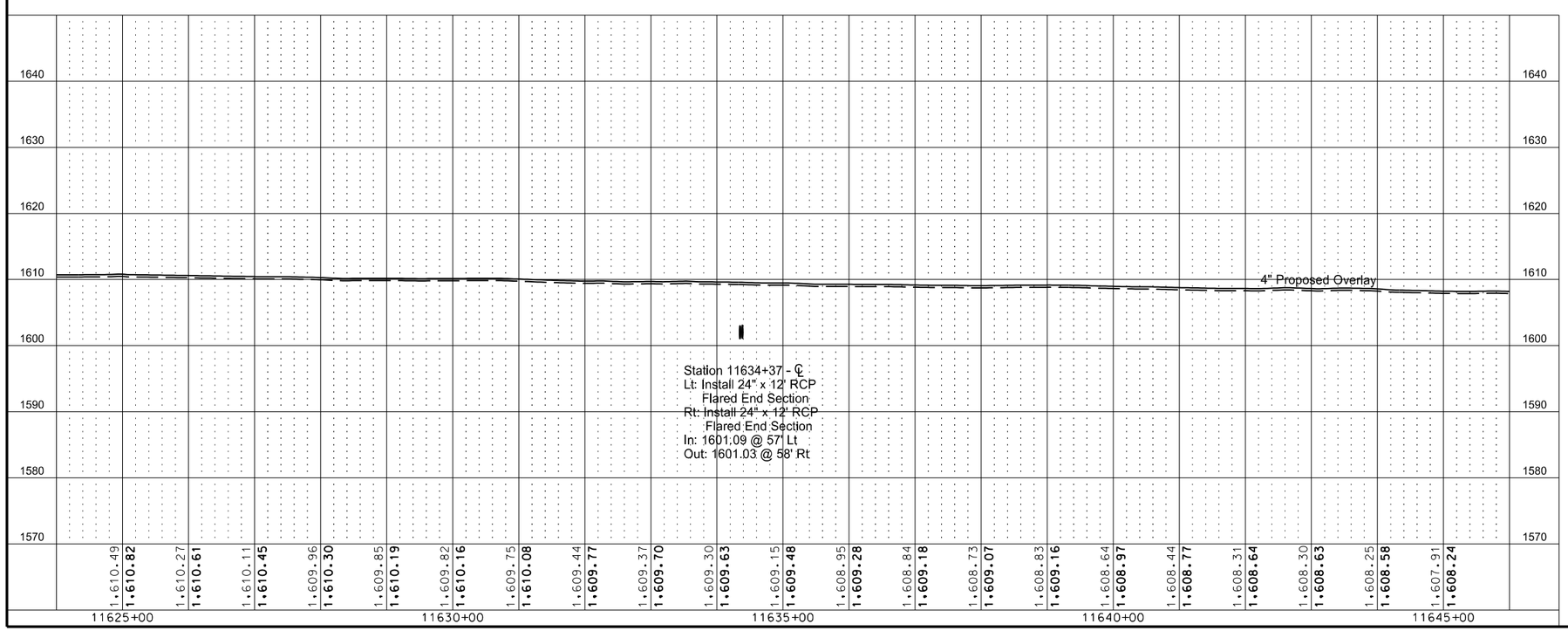
PIPE CONC REINF 24IN CL III	Qty
Sta 11634+38 Lt	12 LF
Sta 11634+36 Rt	12 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11634+38 Lt	1 EA
Sta 11634+36 Rt	1 EA

11626+25 - 69' Rt
18" X 38' CSP (Fair)
2 CSES (Good)

11626+26 - 69' Lt
18" X 52' CSP (Good)
2 CSES (Good)

11634+37 - ℄
24" X 84' RCP (Good)
2 RCES (Good)



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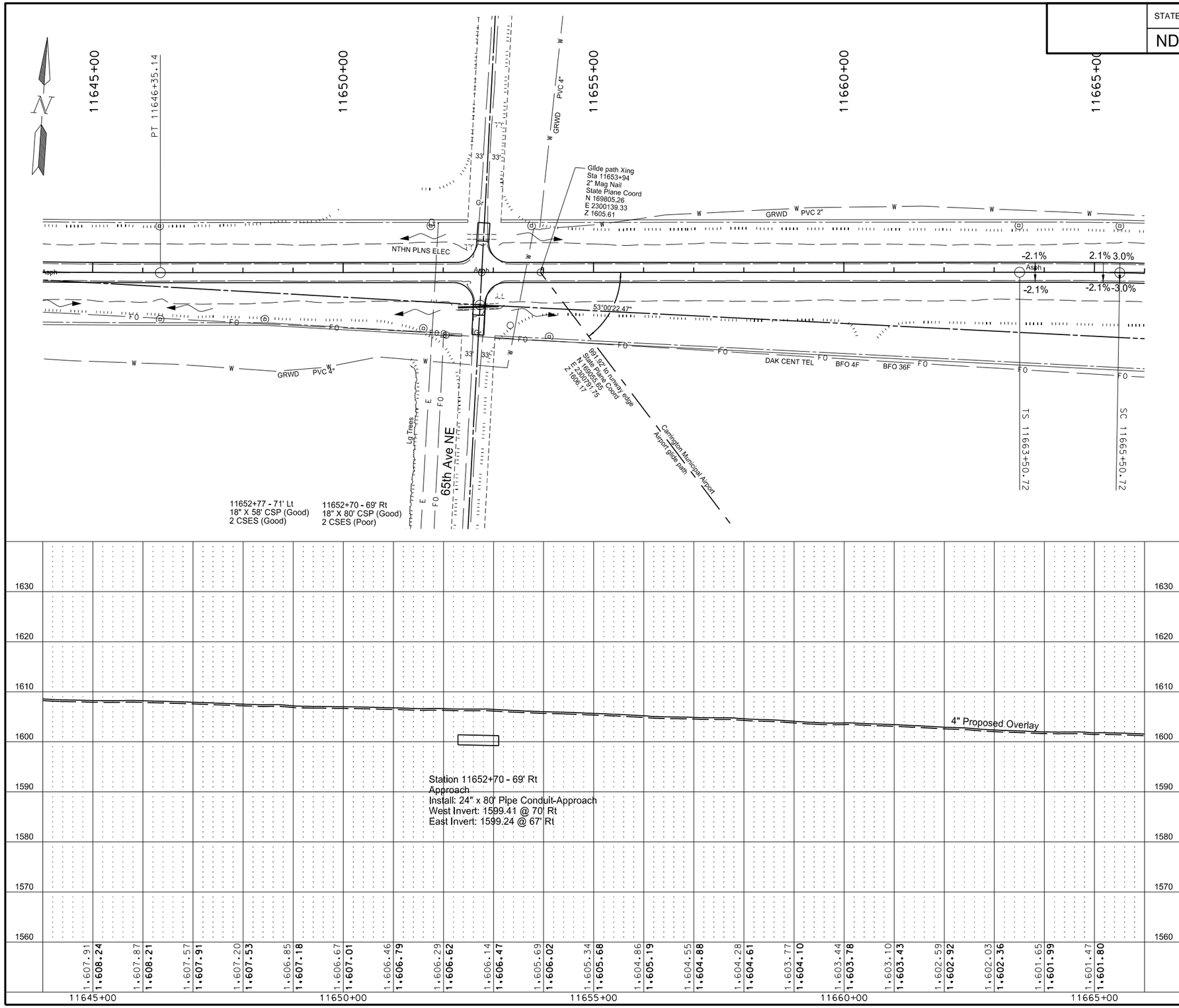
Plan & Profile
Sta 11625+00 to Sta 11645+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	59



REMOVAL OF PIPE ALL TYPES AND SIZES — Qty
Sta 11652+70 Rt — 80 LF

PIPE CONDUIT 24IN-APPROACH — Qty
Sta 11652+70 Rt — 80 LF

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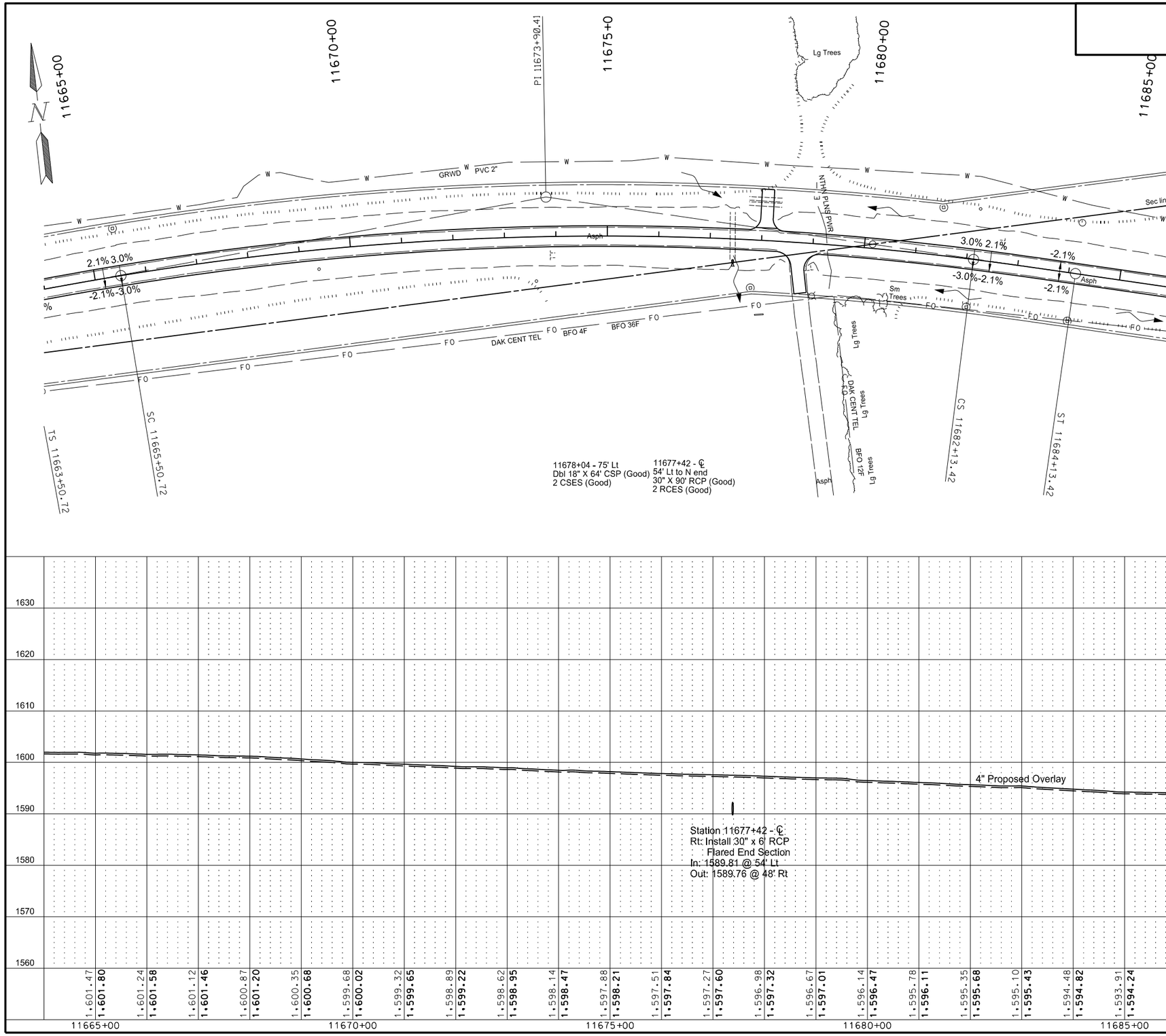
Plan & Profile
Sta 11645+00 to Sta 11665+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	60



PIPE CONC REINF 30IN CL III — Qty
Sta 11677+45 Rt — 6 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES — Qty
Sta 11677+45 Rt — 1 EA

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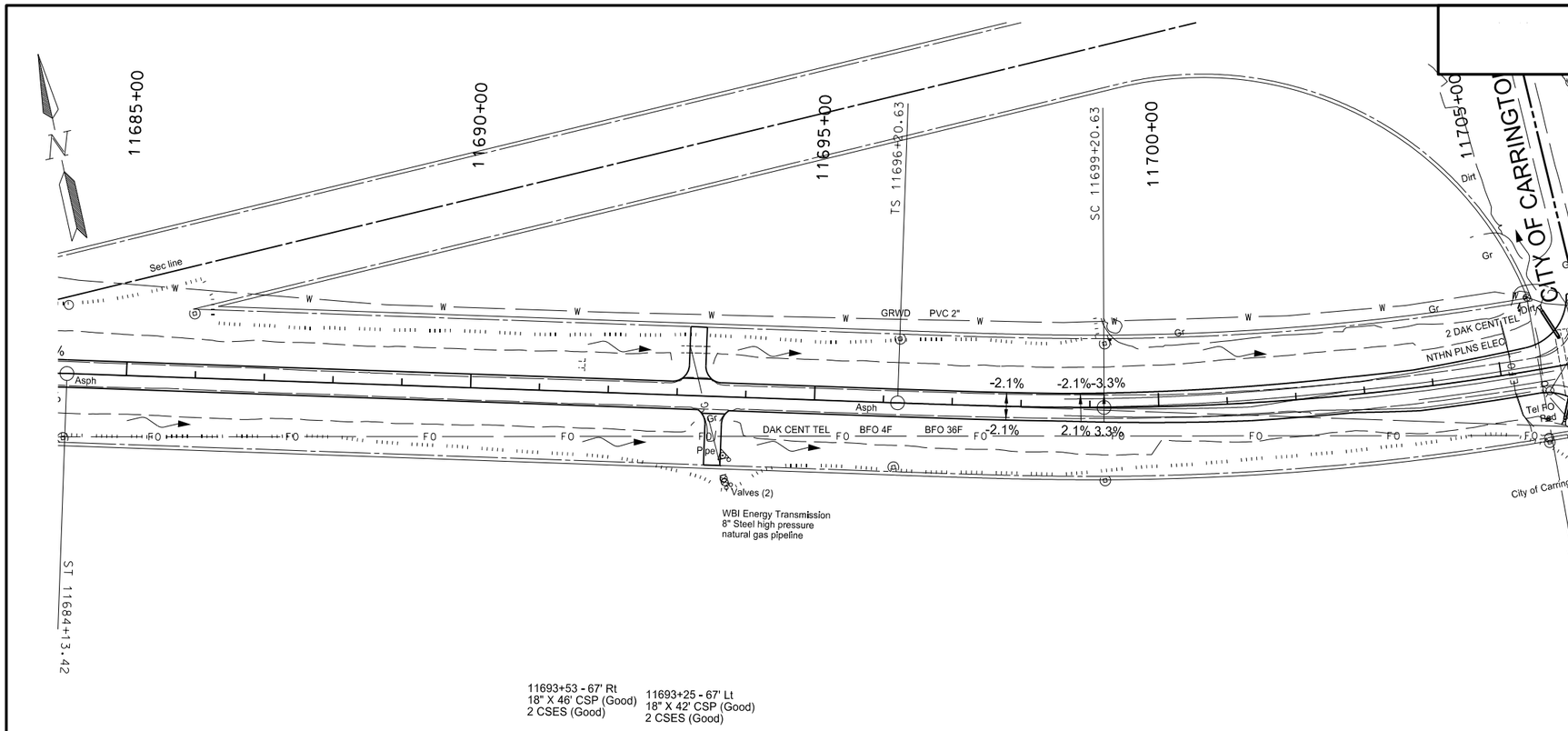
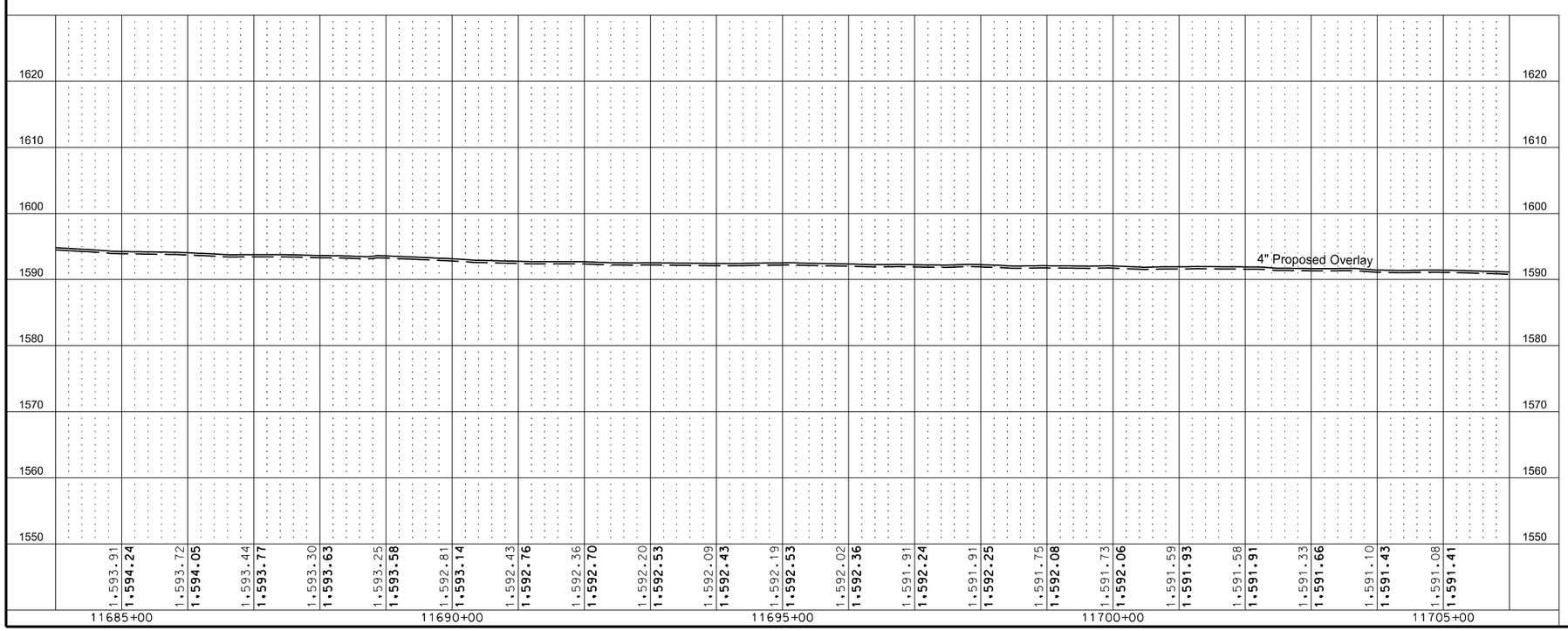
Plan & Profile
Sta 11665+00 to Sta 11685+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	61





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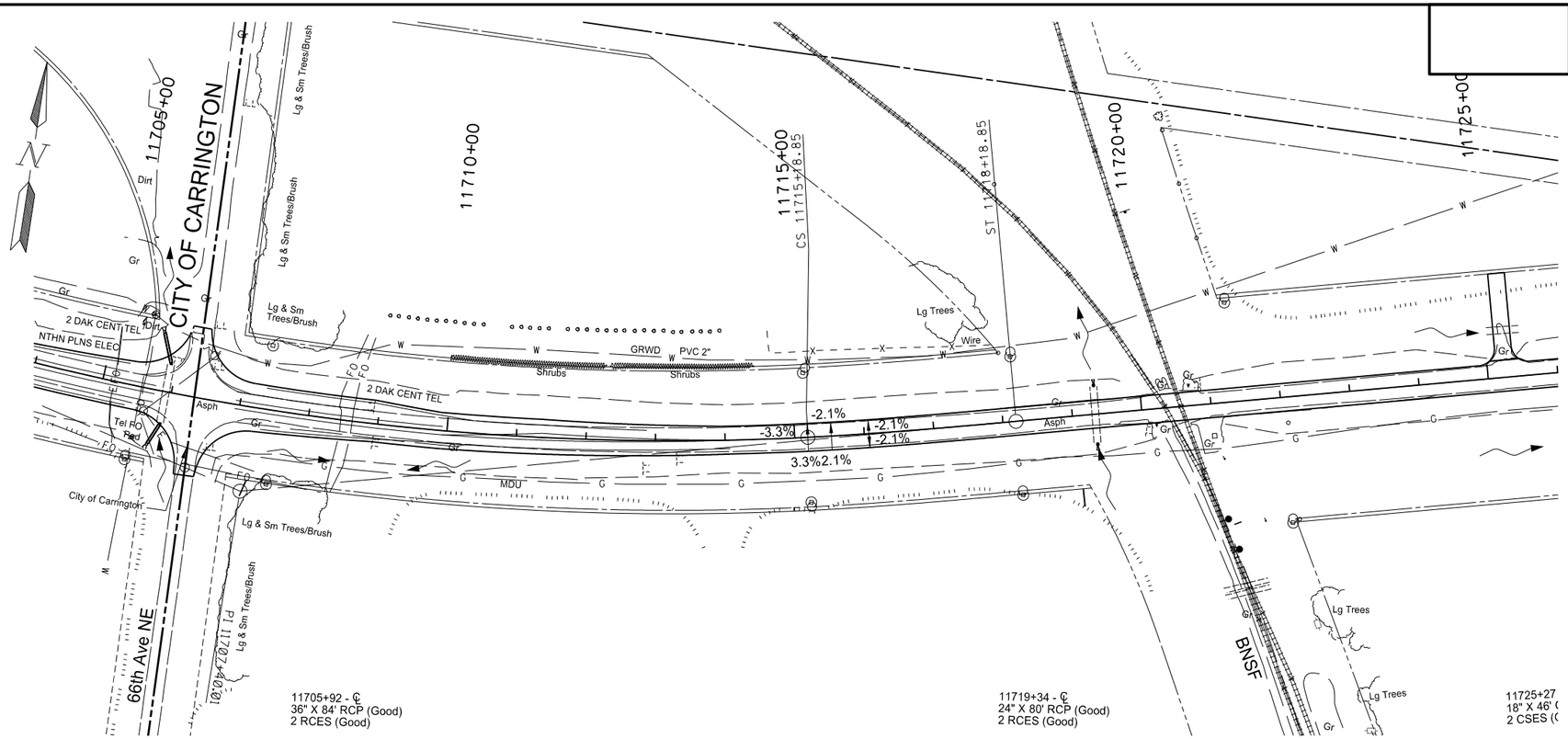
Plan & Profile
Sta 11685+00 to Sta 11705+00

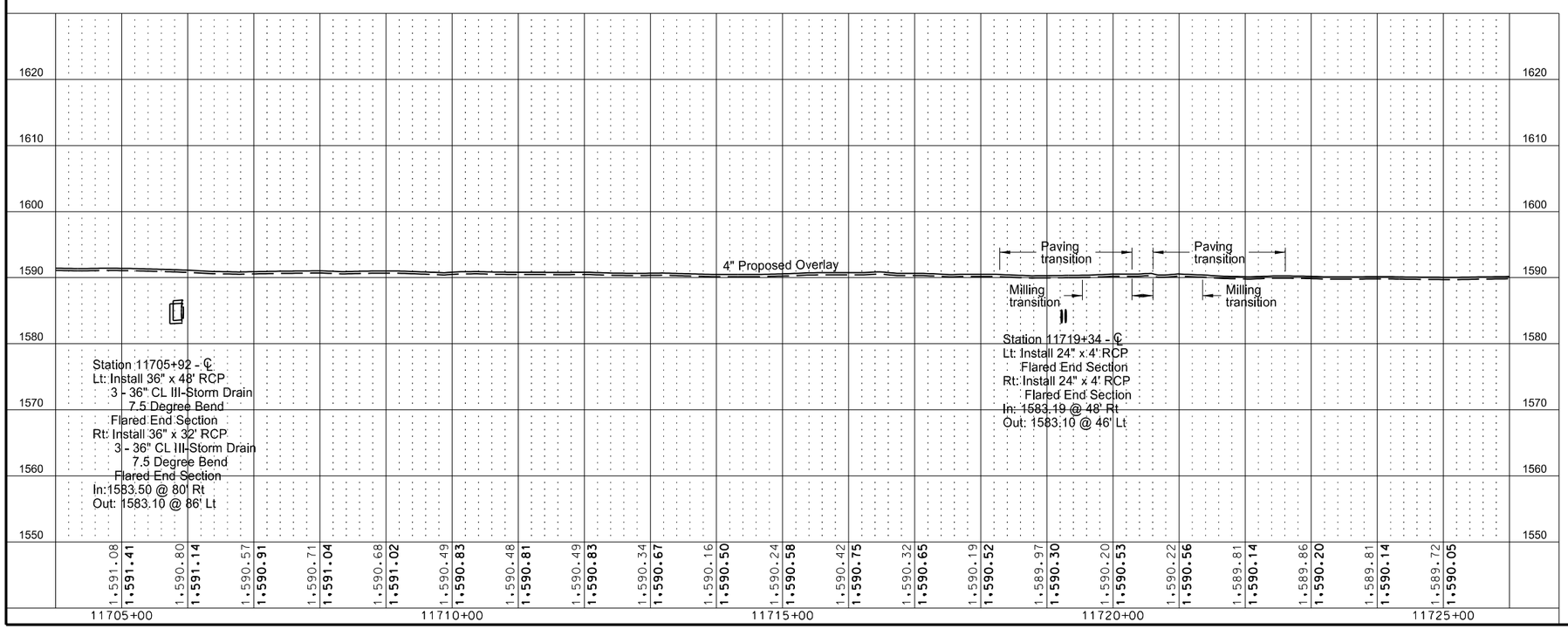
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	62



PIPE CONC REINF 24IN CL III	Qty
Sta 11719+34 Lt	4 LF
Sta 11719+33 Rt	4 LF

PIPE CONC REINF 36IN CL III	Qty
Sta 11705+82 Lt	47 LF
Sta 11705+85 Rt	35 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES	Qty
Sta 11705+73 Lt	1 EA
Sta 11705+78 Rt	1 EA
Sta 11719+34 Lt	1 EA
Sta 11719+33 Rt	1 EA



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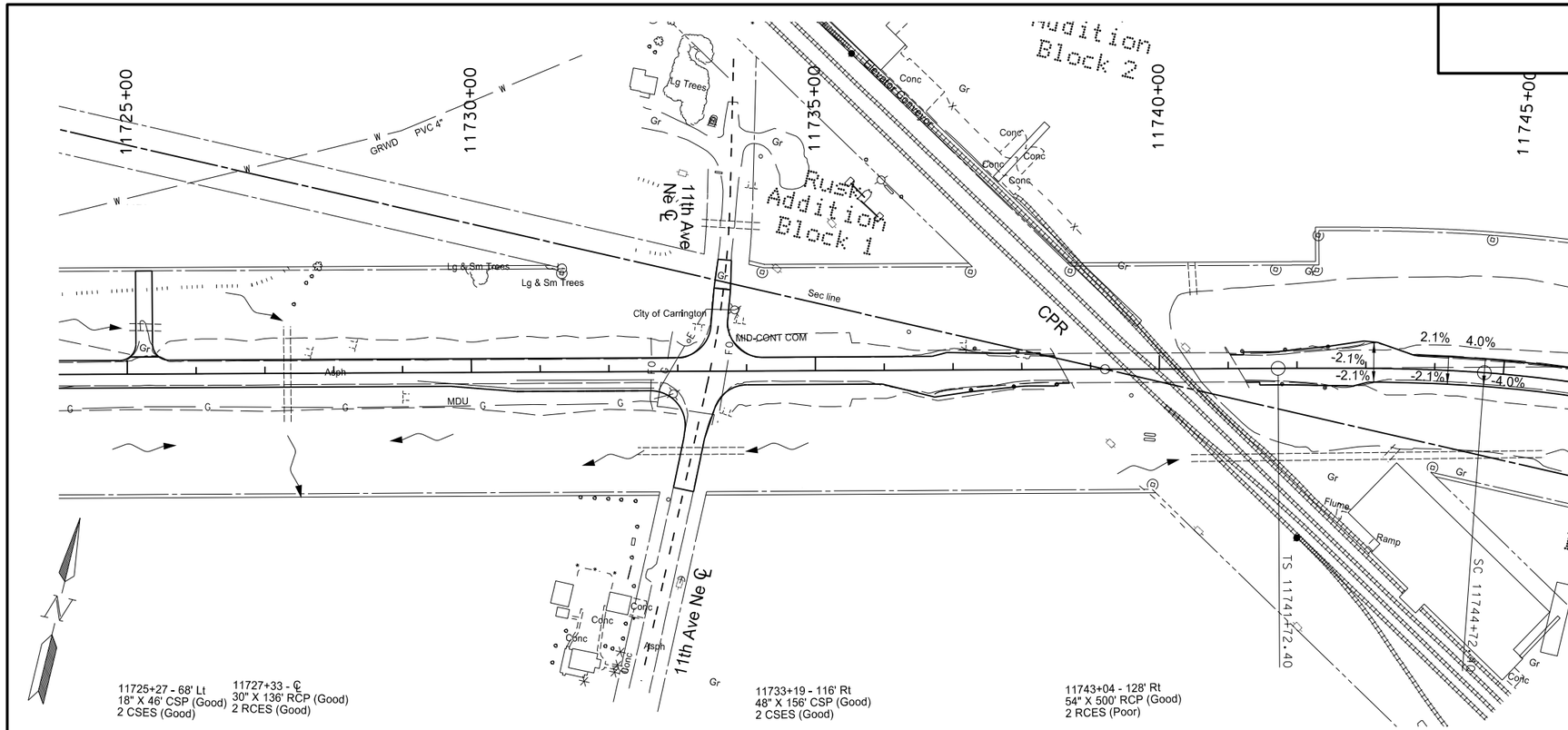
Plan & Profile
Sta 11705+00 to Sta 11725+00

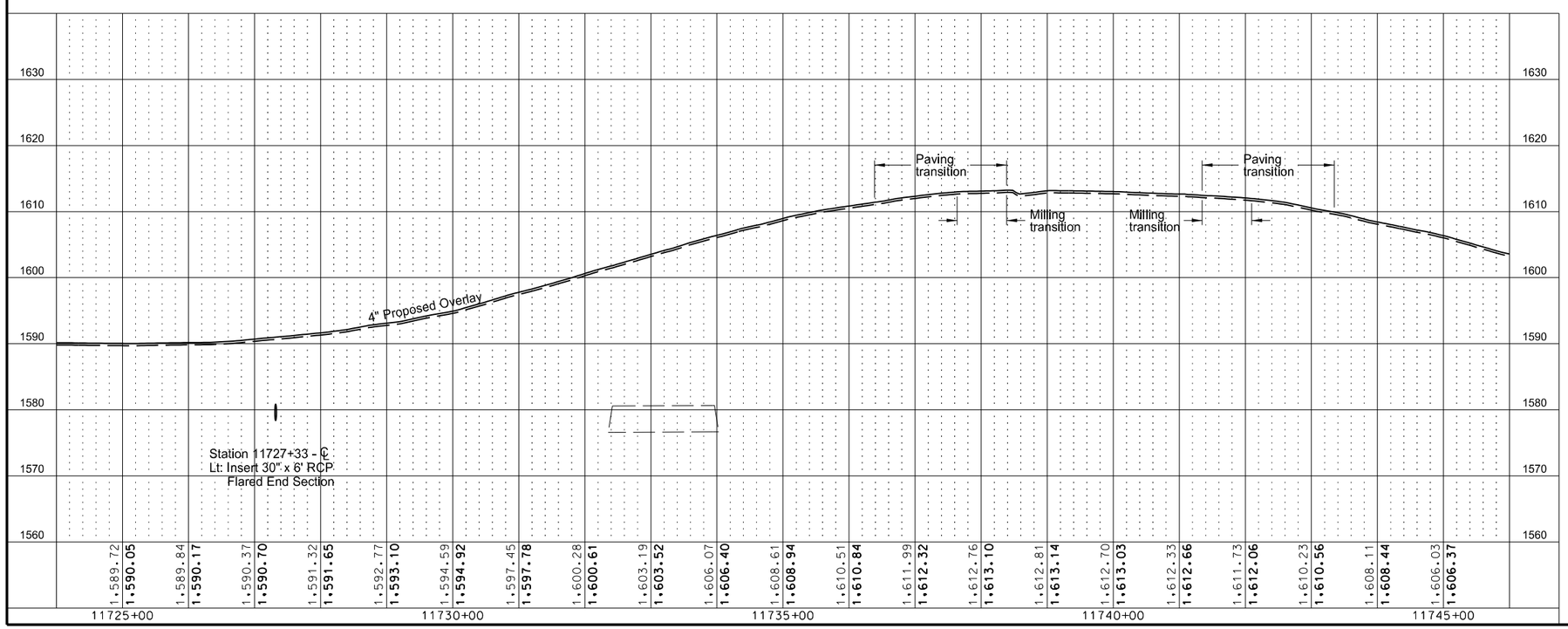
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	63



PIPE CONC REINF 30IN CL III — Qty
Sta 11727+33 Lt — 6 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES — Qty
Sta 11727+33 Lt — 1 EA

REMOVE & RELAY PIPE-ALL TYPES & SIZES — Qty
Sta 11727+33 Lt — 8 LF



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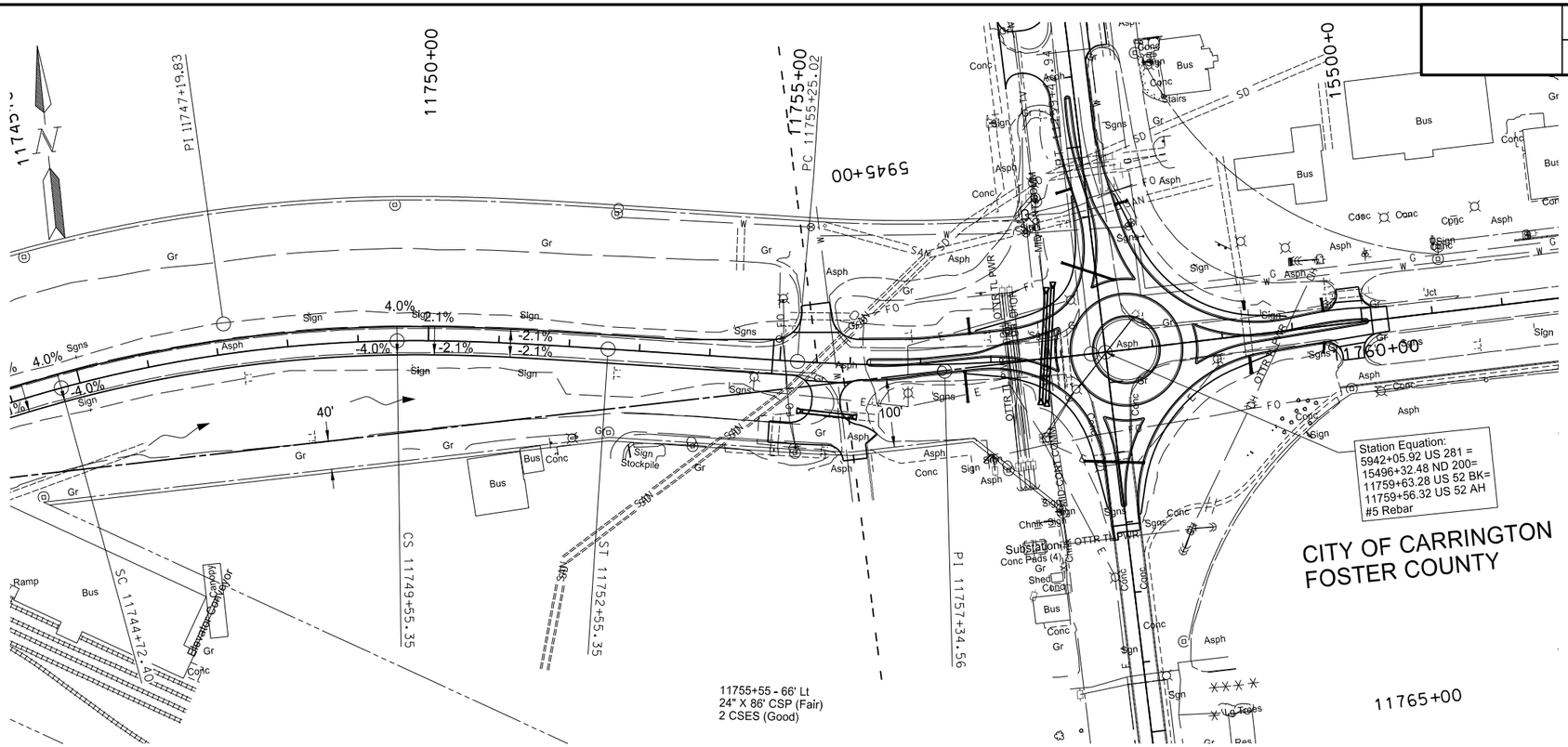
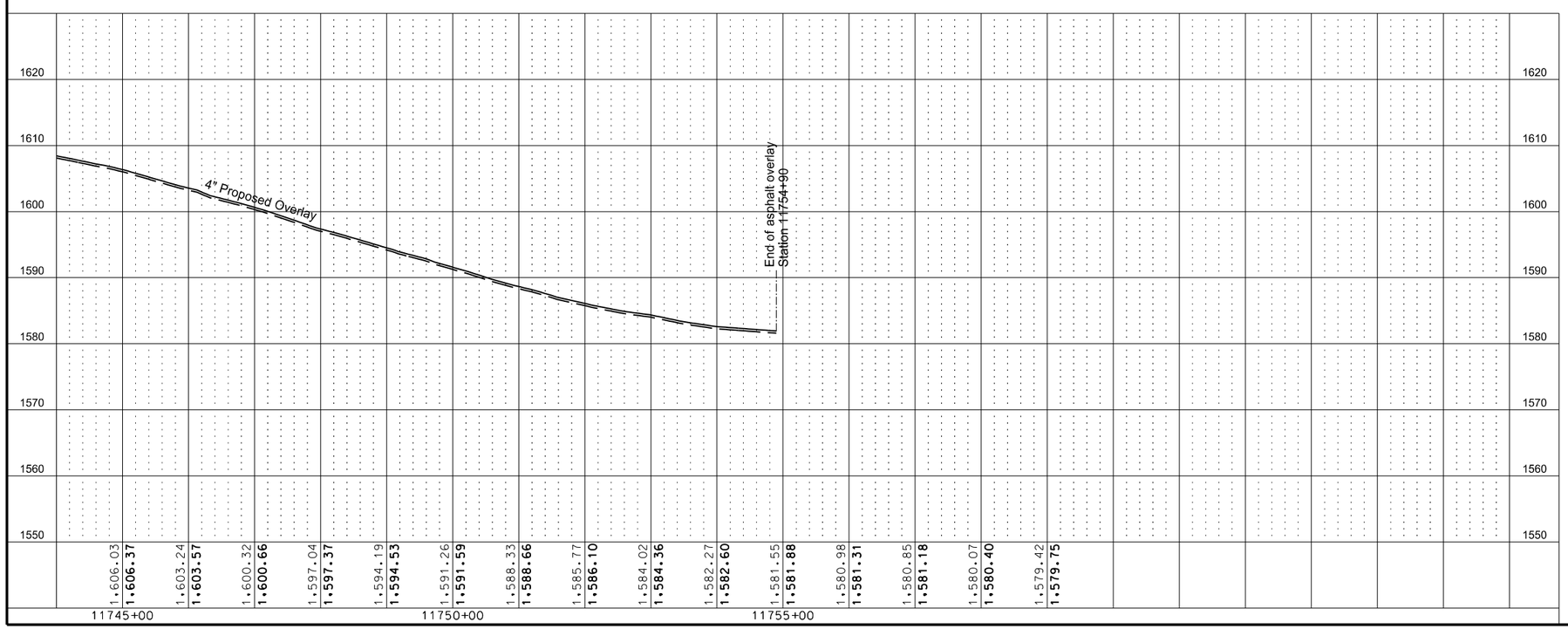
Plan & Profile
Sta 11725+00 to Sta 11745+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	64





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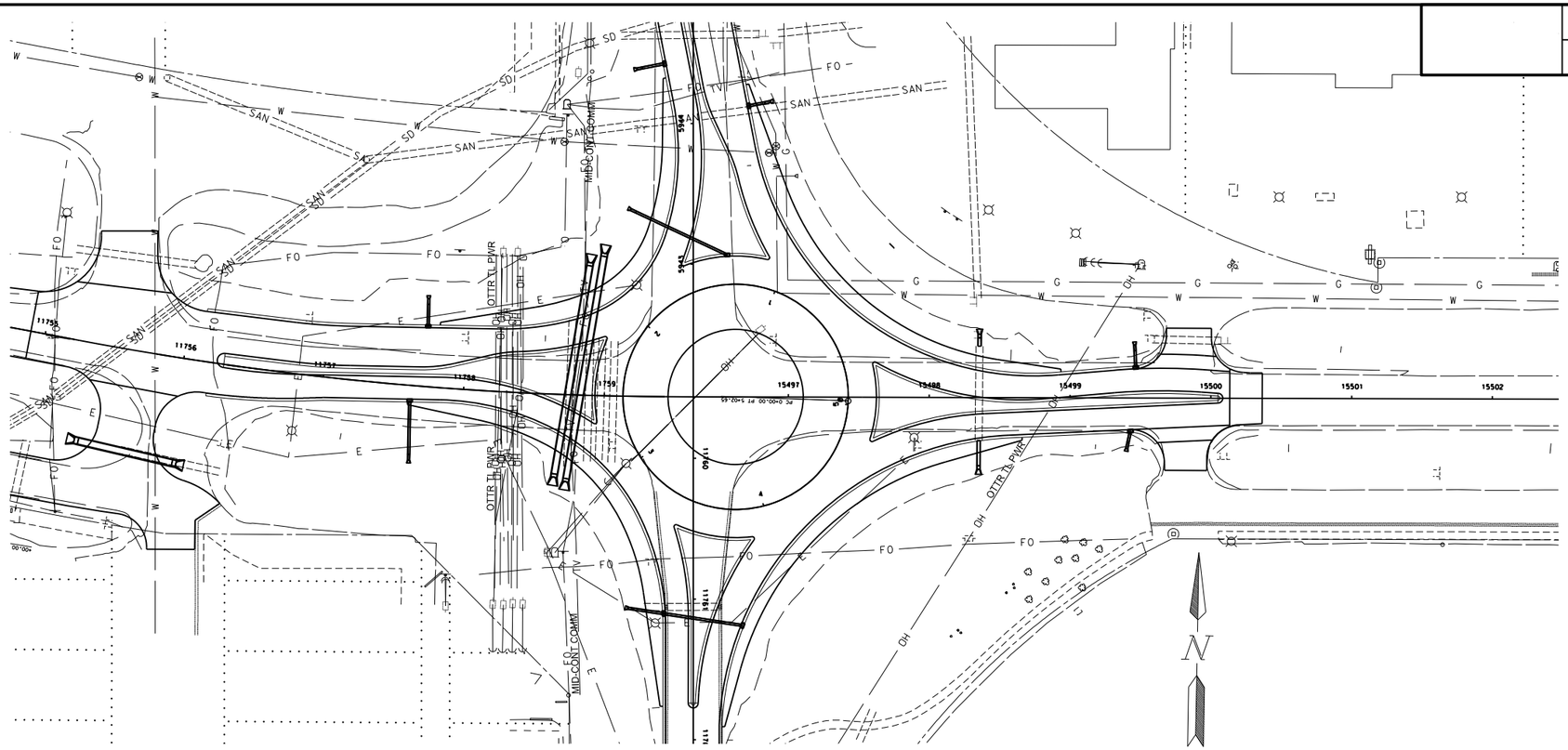
Plan & Profile
Sta 11745+00 to Sta 11754+90

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	65



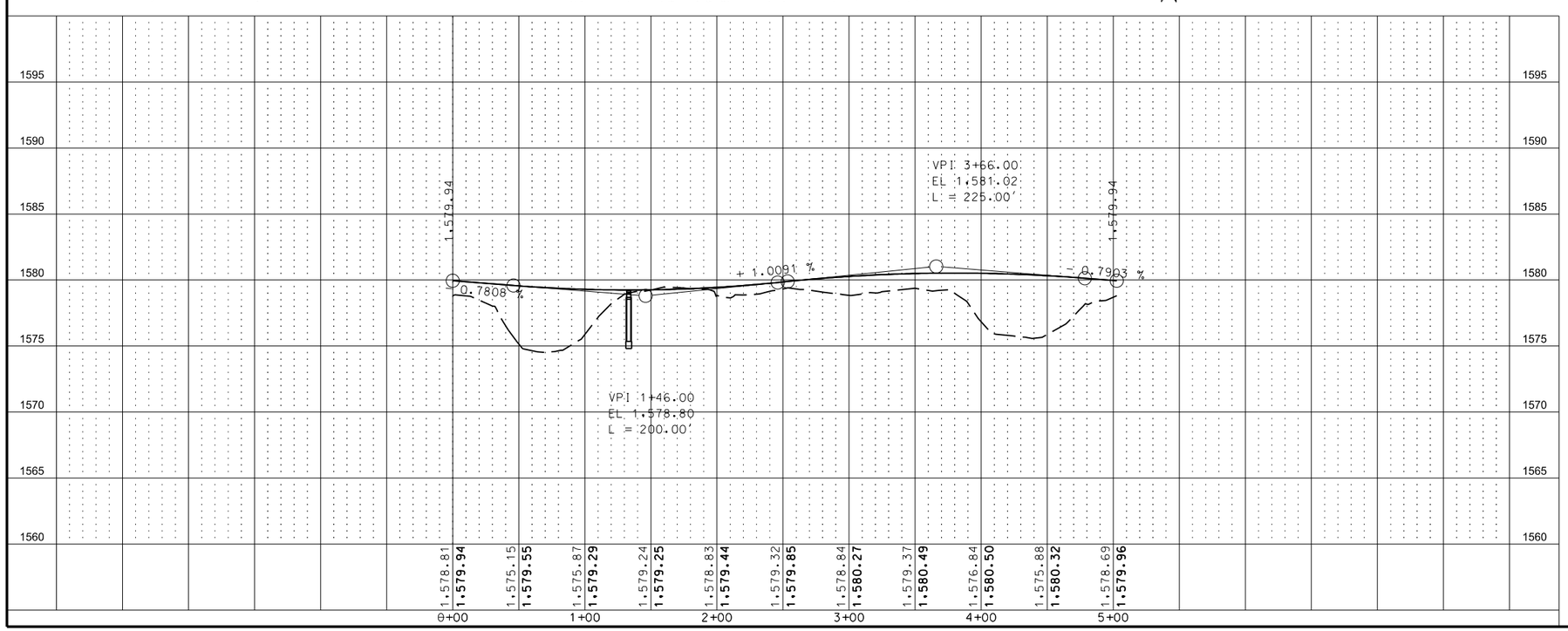
PIPE CONDUIT 48IN — Qty
Sta 11758+66 - 59' Rt
to — 154.0 LF
Sta 11758+87 - 94' Lt
Sta 11758+74 - 62' Rt
to — 164.0 LF
Sta 11758+97 - 101' Lt

INLET TYPE 2 — Qty
1+33 - 21' Rt ERCNTR — 1 EA

PIPE CONDUIT 18IN - STORM DRAIN — Qty
1+33 - 21' Rt ERCNTR
to — 76.0 LF
0+84 29' Rt ERNWOUT

PIPE CONC REINF 24IN CL III — Qty
Sta 15498+35 Rt — 18.0 LF
Sta 15498+35 Lt — 6.0 LF

REMOVE & RELAY END SECTION-ALL TYPE & SIZES — Qty
Sta 15498+35 — 2 EA



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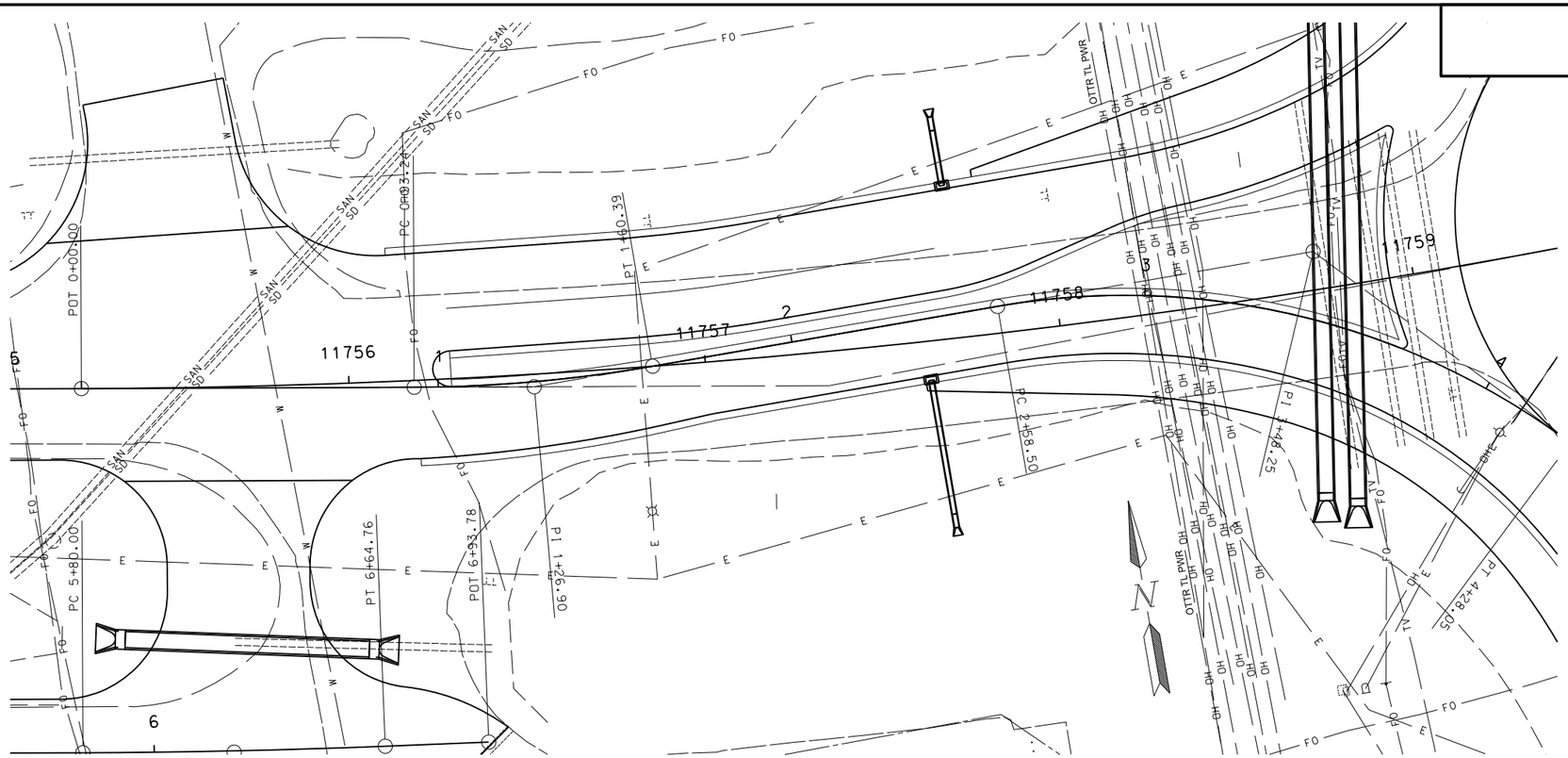
Roundabout Center

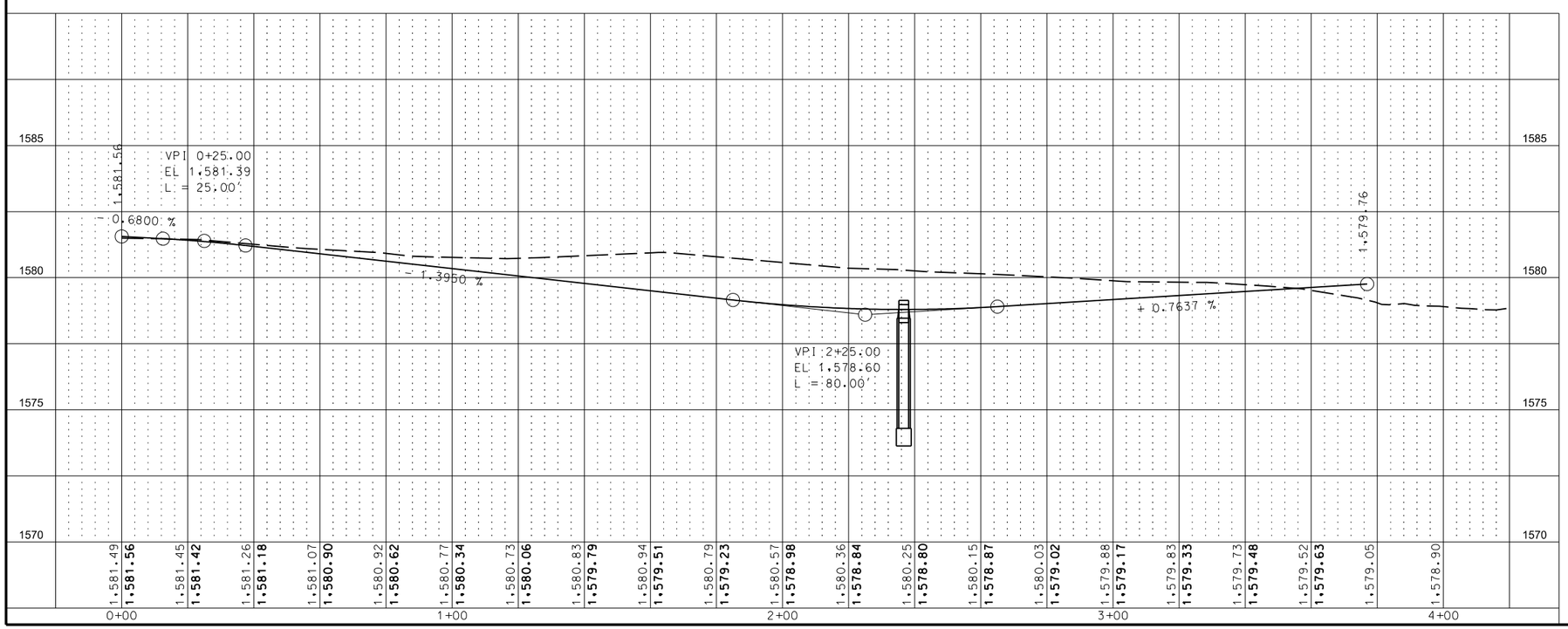
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	66



INLET-TYPE 2 — Qty
Sta 2+36 - 07' Rt WEIN — 1 EA

PIPE CONDUIT 54IN- APPROACH — Qty
Sta 11755+34 - 70' Rt
to
Sta 11756+06 - 75' Rt — 74.0 LF

PIPE CONDUIT 18IN - STORM DRAIN — Qty
Sta 2+36 - 17' Rt WEIN
to
Sta 2+36 - 59' Rt WEIN — 42.0 LF



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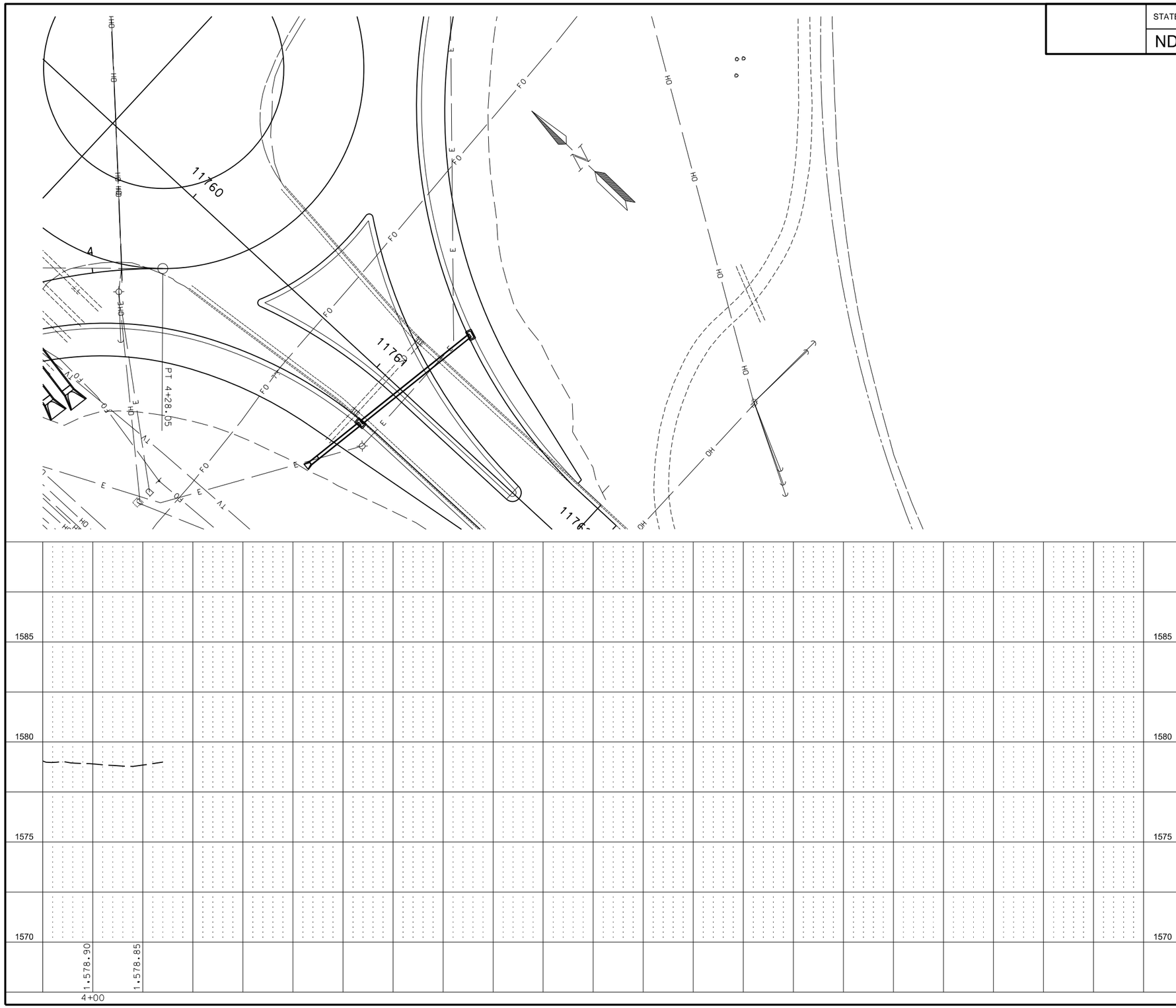
Roundabout West Entrance

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	67



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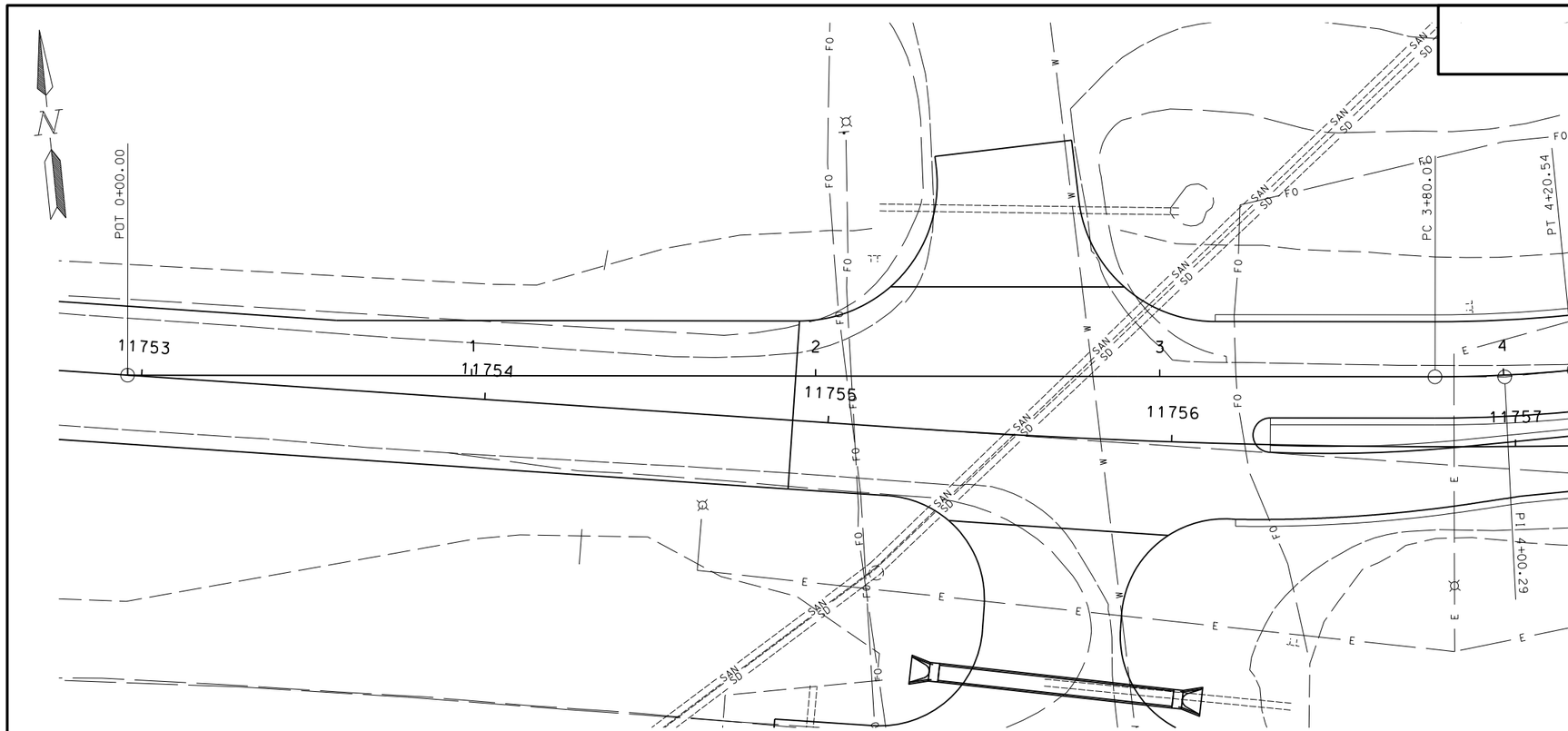
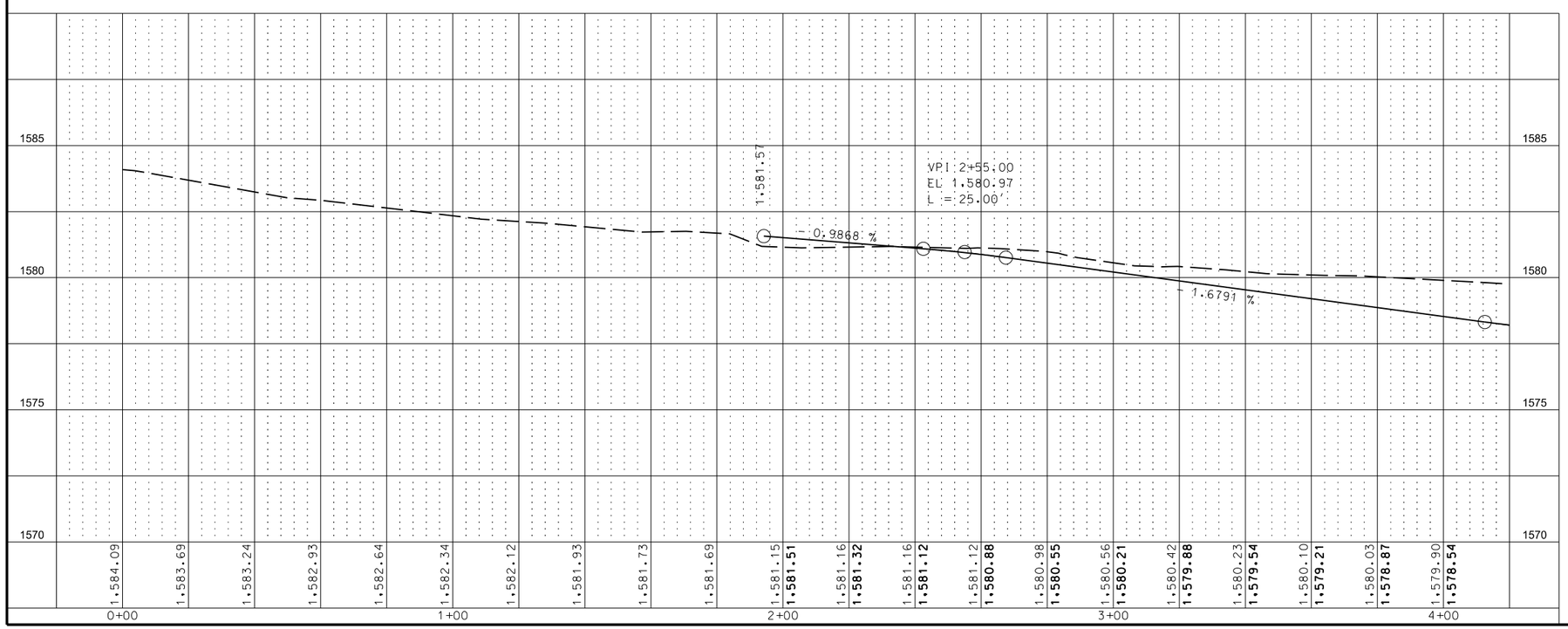
Roundabout West Entrance

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	68





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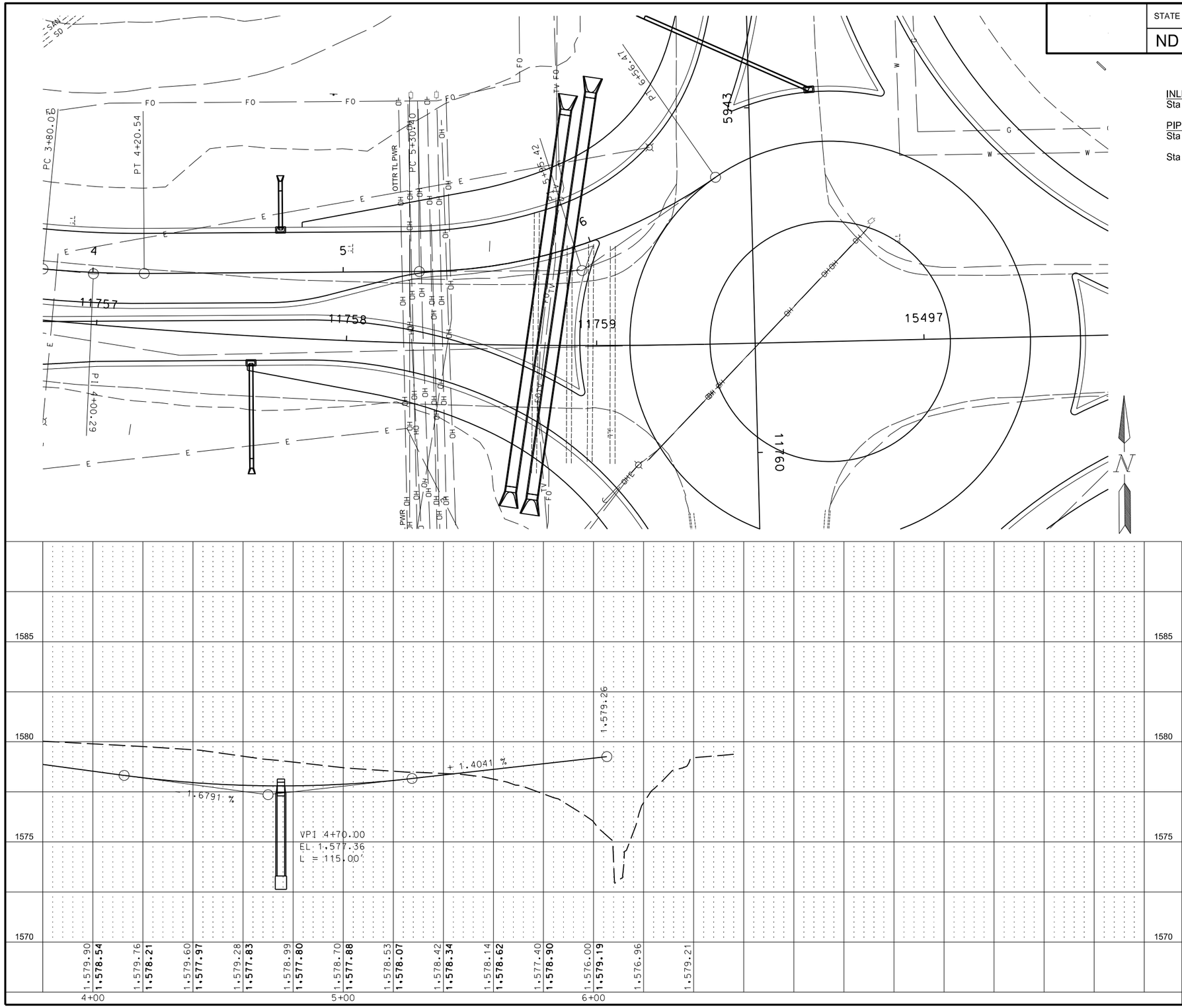
Roundabout West Exit

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	69



INLET-TYPE 2 — Qty
Sta 4+75 - 17' Lt WEEX — 1 EA

PIPE CONDUIT 18IN - STORM DRAIN — Qty
Sta 4+75 - 17' Lt WEEX
to
Sta 4+75 - 37' Lt WEEX — 20.0 LF

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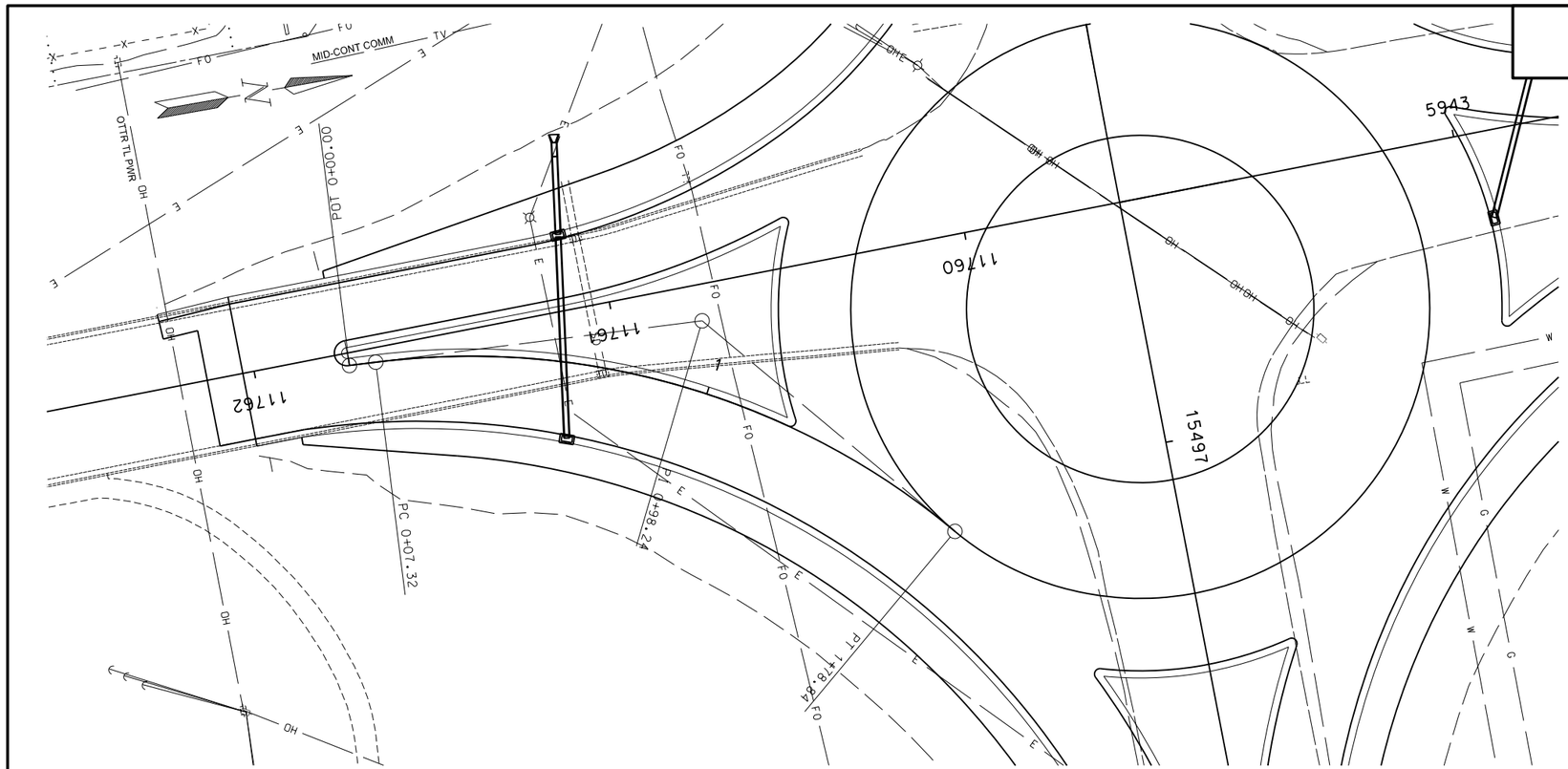
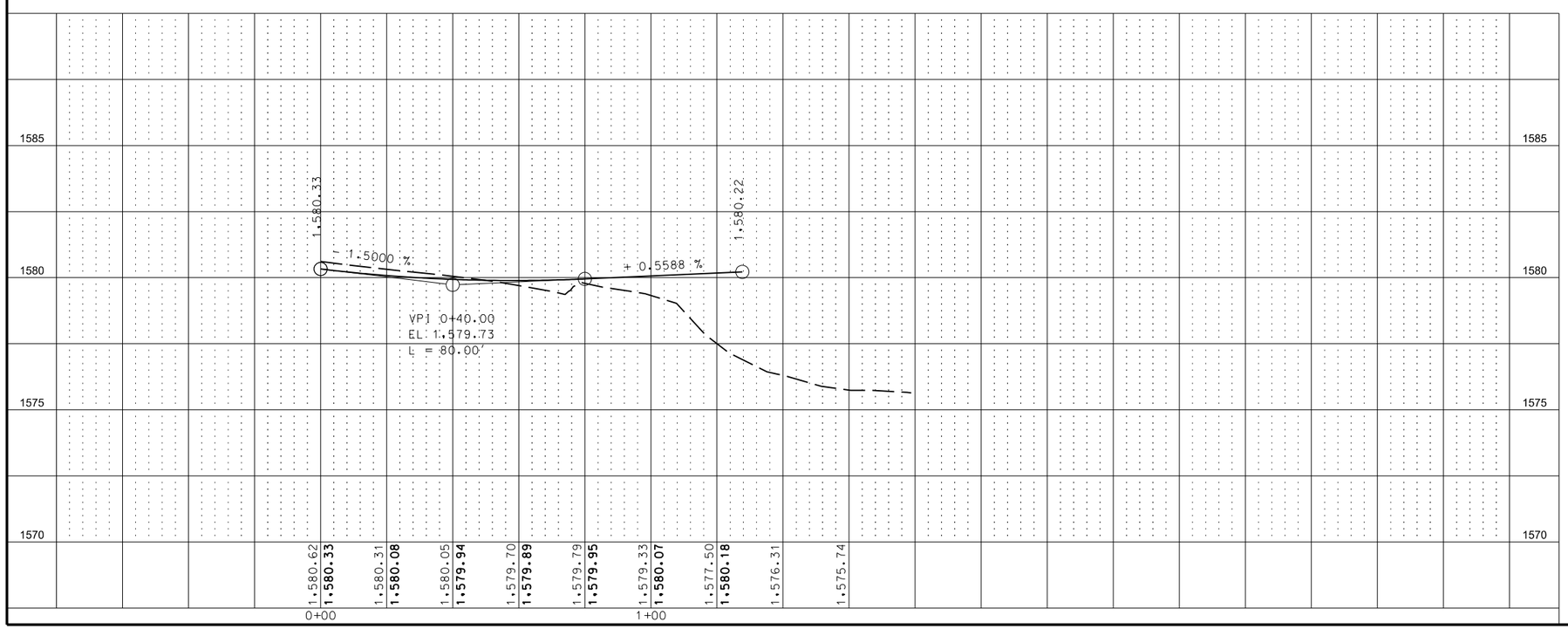
Roundabout West Exit

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	70





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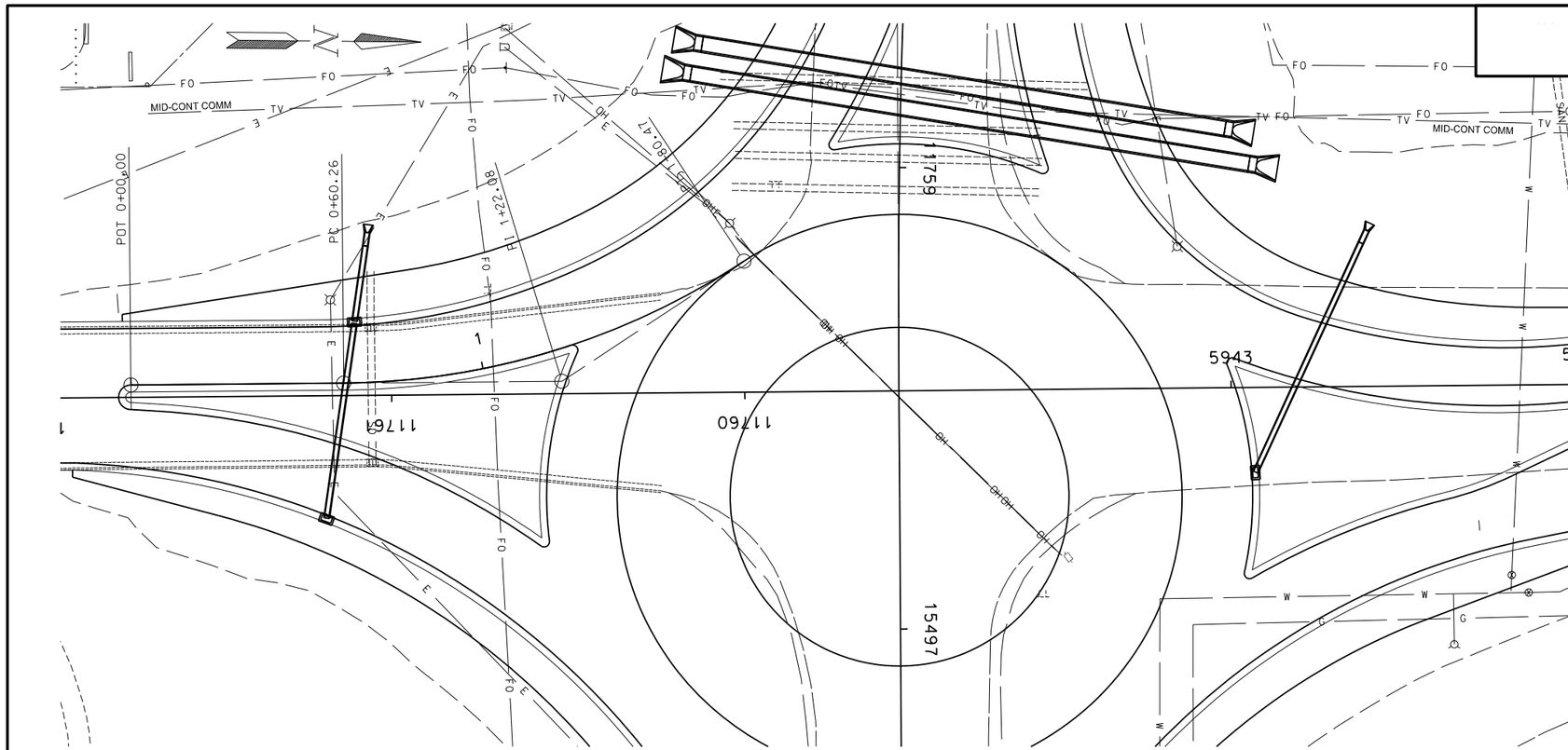
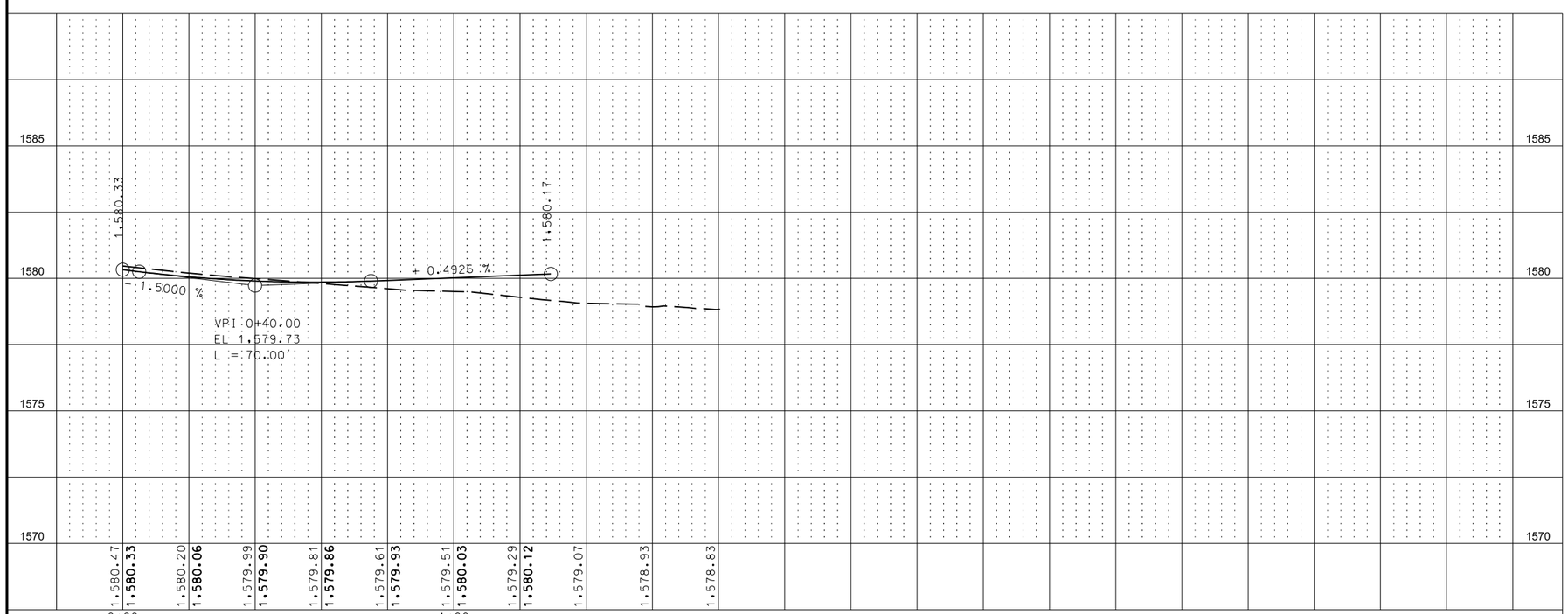
Roundabout South Entrance

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	71





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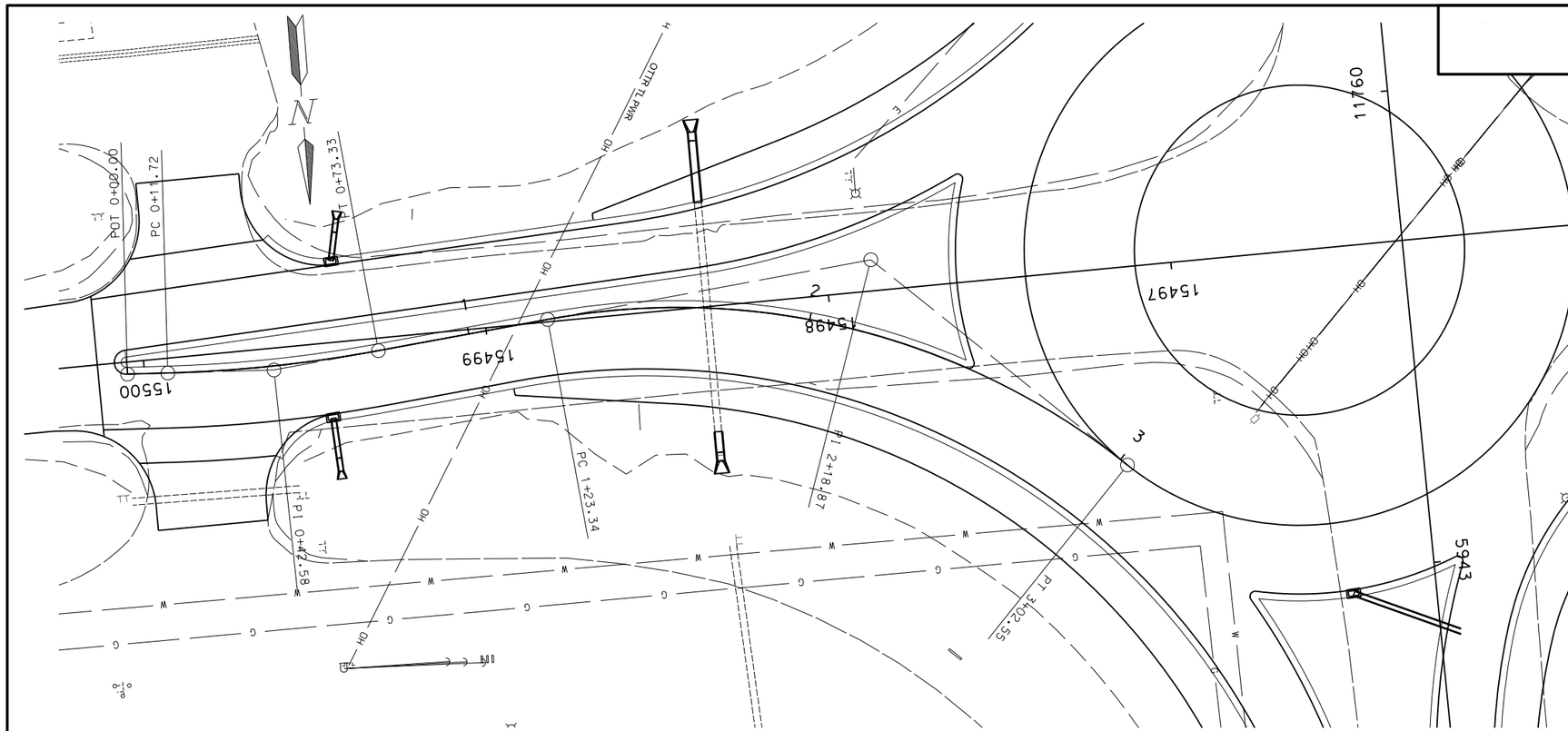
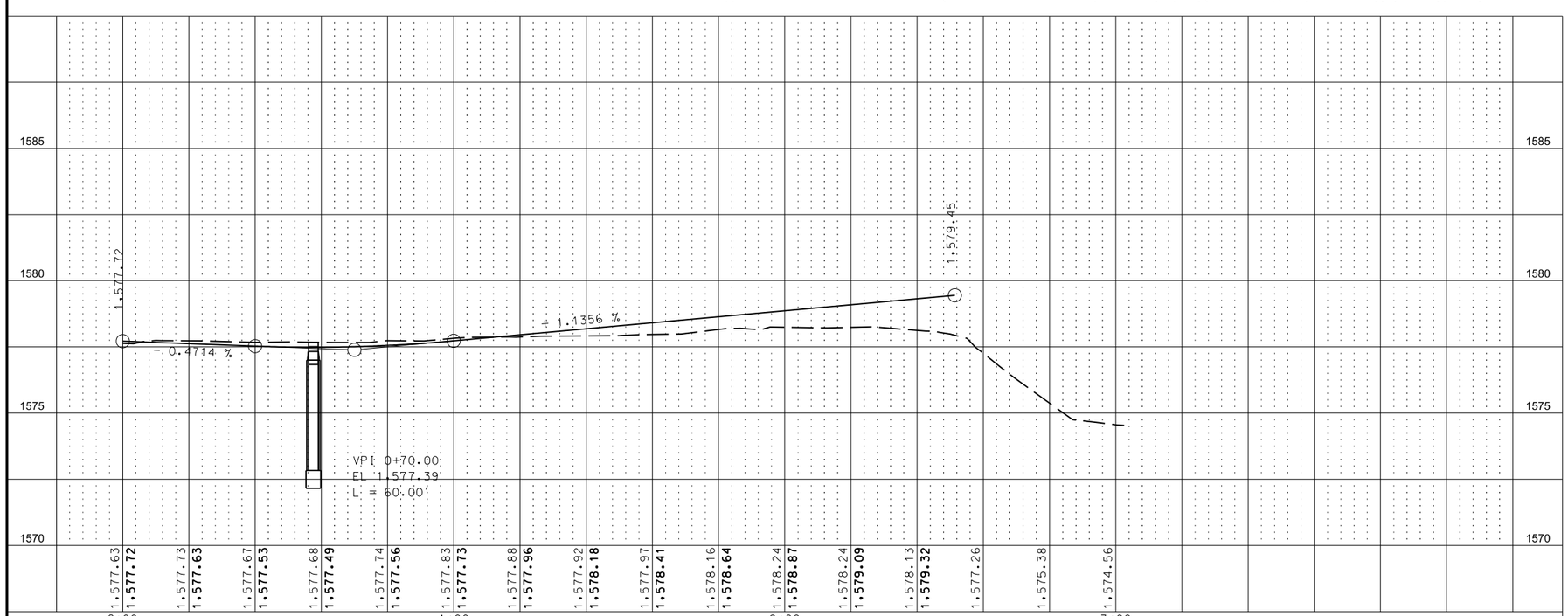
Roundabout South Exit

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	72



INLET-TYPE 2	Qty
Sta 0+58 - 17" Rt EAIN	1 EA

PIPE CONDUIT 18IN - STORM DRAIN	Qty
Sta 0+58 - 17' Rt EAIN to Sta 0+58 - 33' Rt EAIN	16.0 LF



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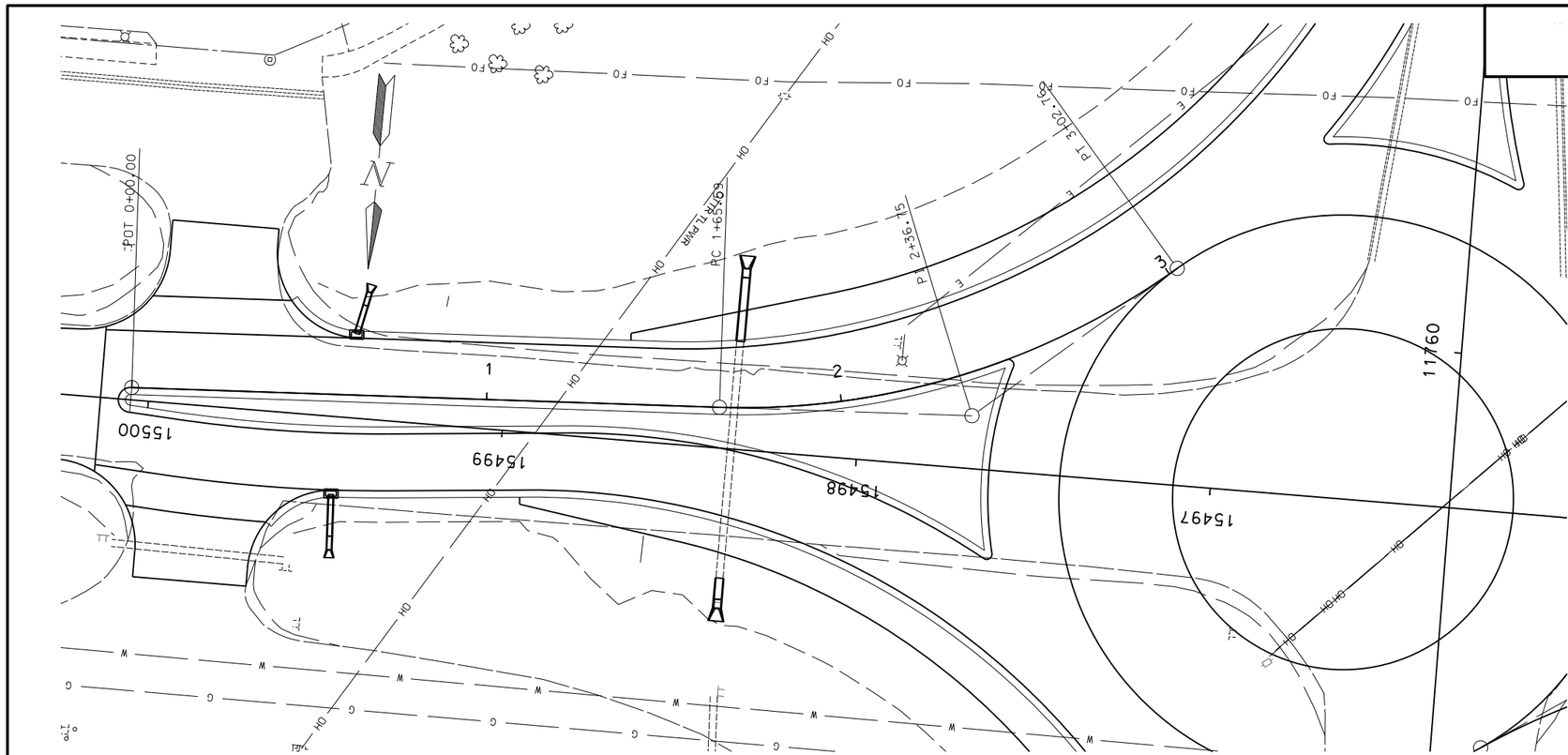
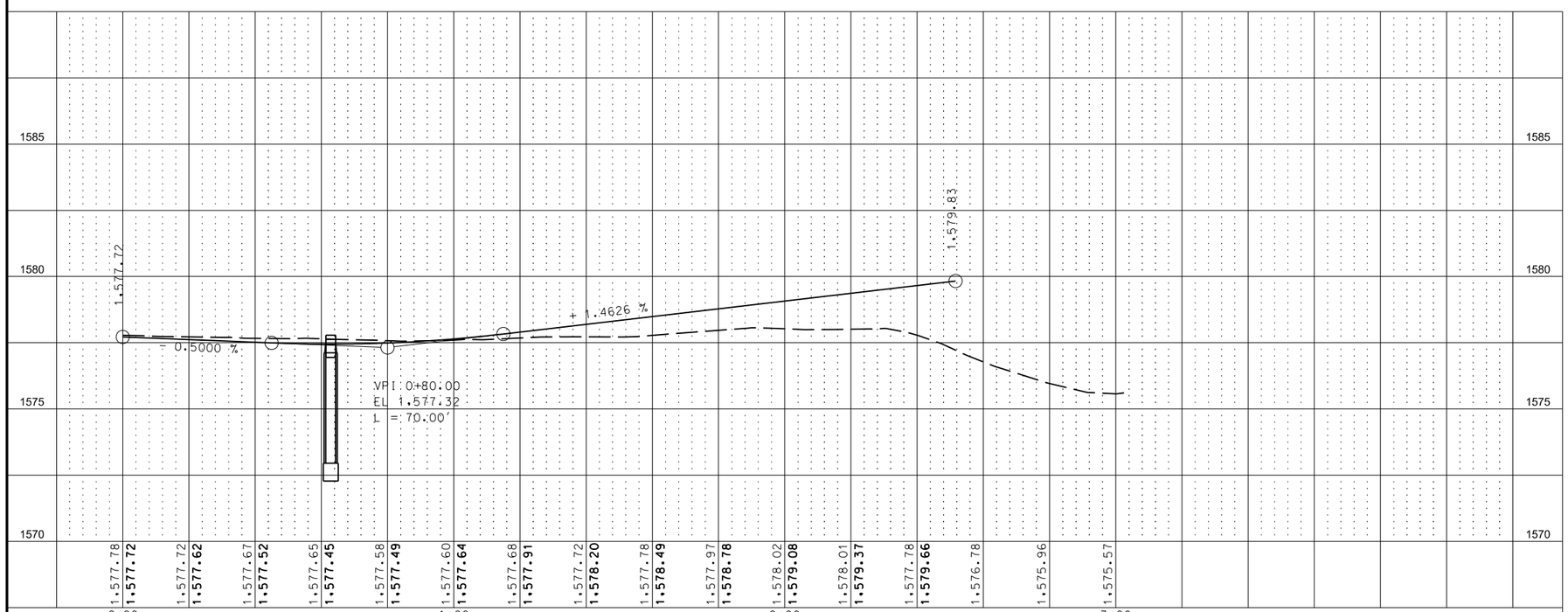
Roundabout East Entrance

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	73



INLET-TYPE 2	Qty
Sta 0+63 - 17" Lt EAEX	1 EA

PIPE CONDUIT 18IN - STORM DRAIN	Qty
Sta 0+63 - 17" Lt EAEX to Sta 0+66 - 29" Lt EAEX	12.0 LF



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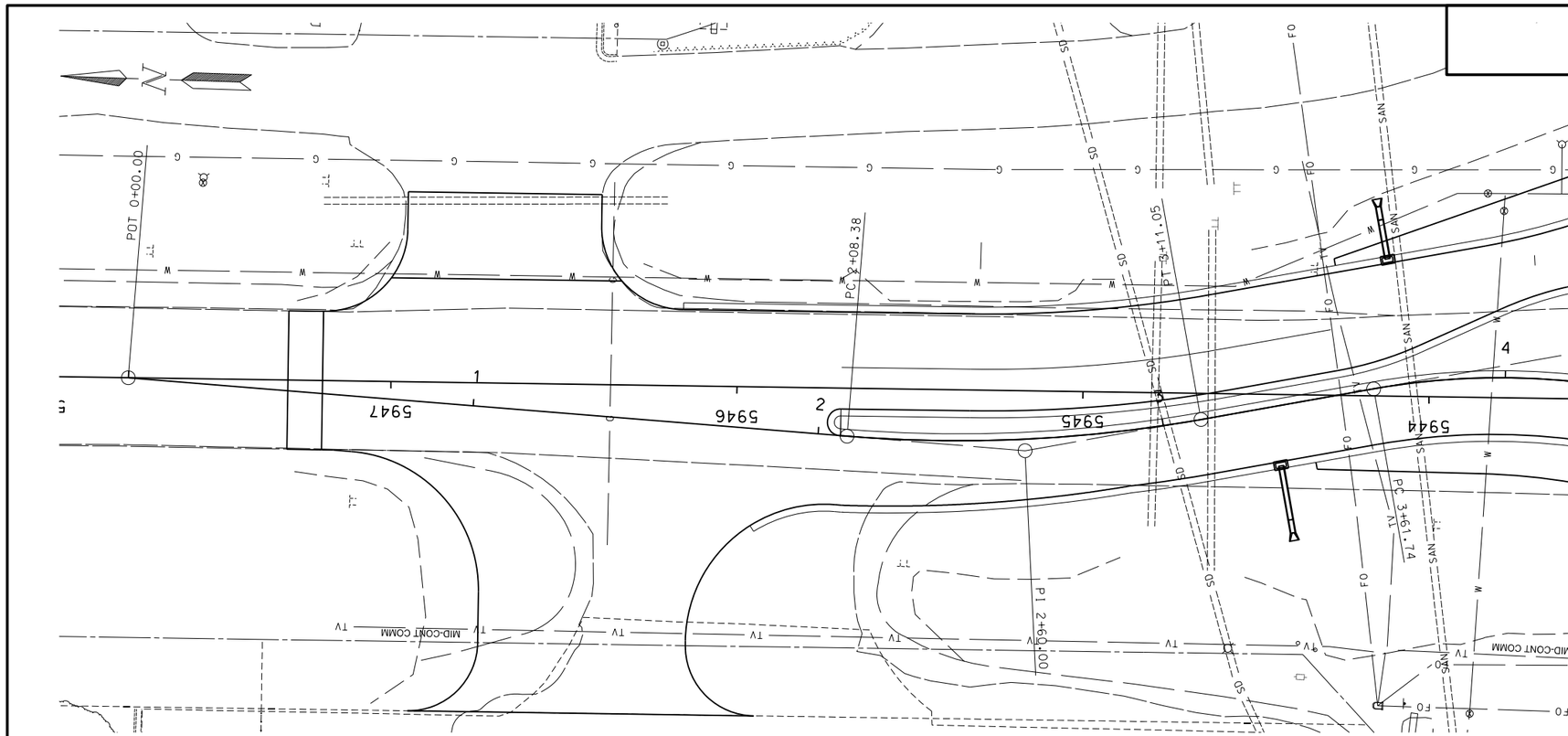
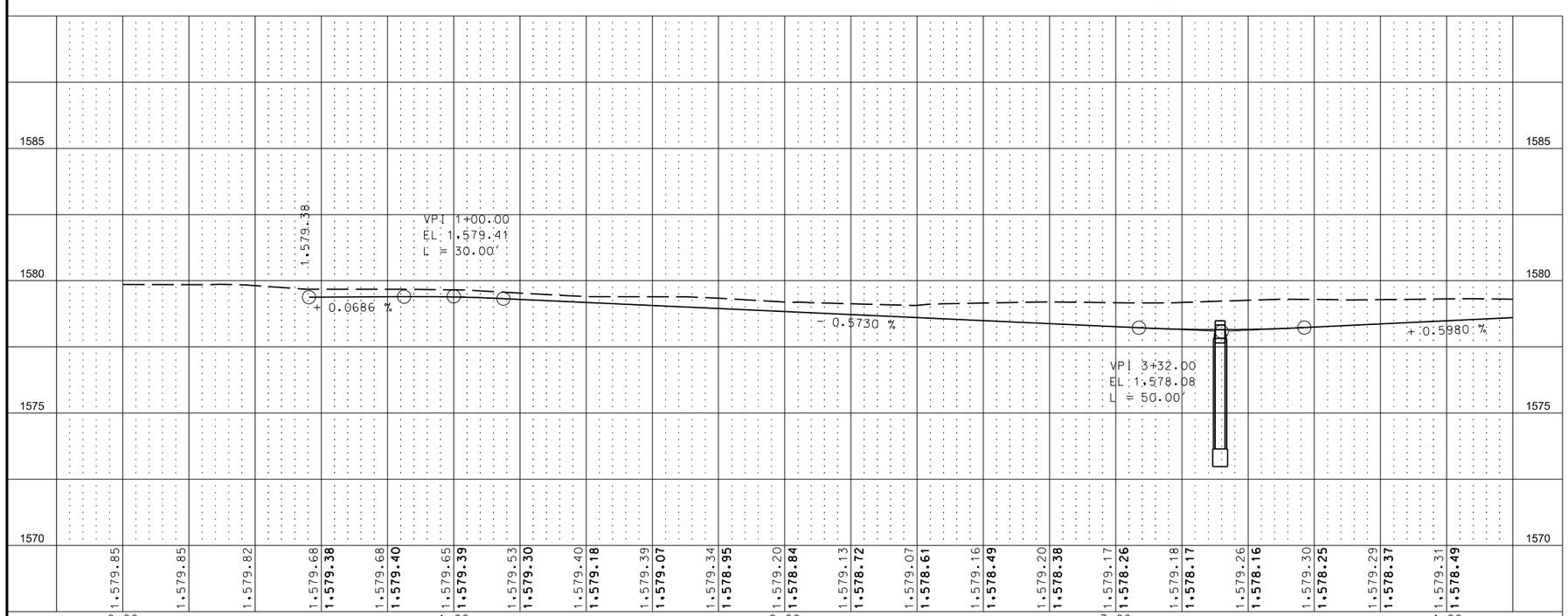
Roundabout East Exit

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	74



INLET-TYPE 2	Qty
Sta 3+32 - 17' Rt NOIN	1 EA

PIPE CONDUIT 18IN - STORM DRAIN	Qty
Sta 3+32 - 17' Rt NOIN to Sta 3+32 - 37' Rt NOIN	20.0 LF



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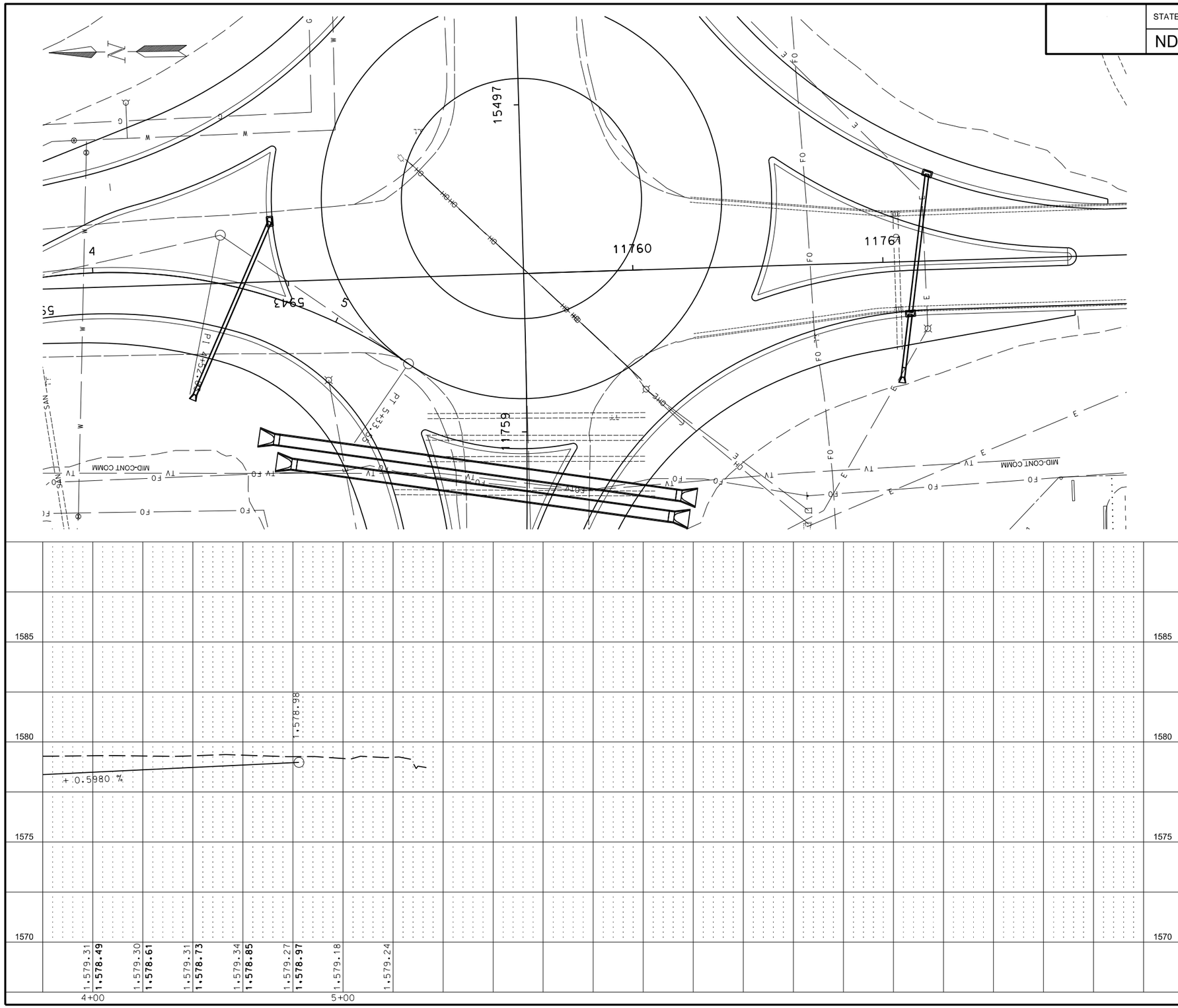
Roundabout North Entrance

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	75



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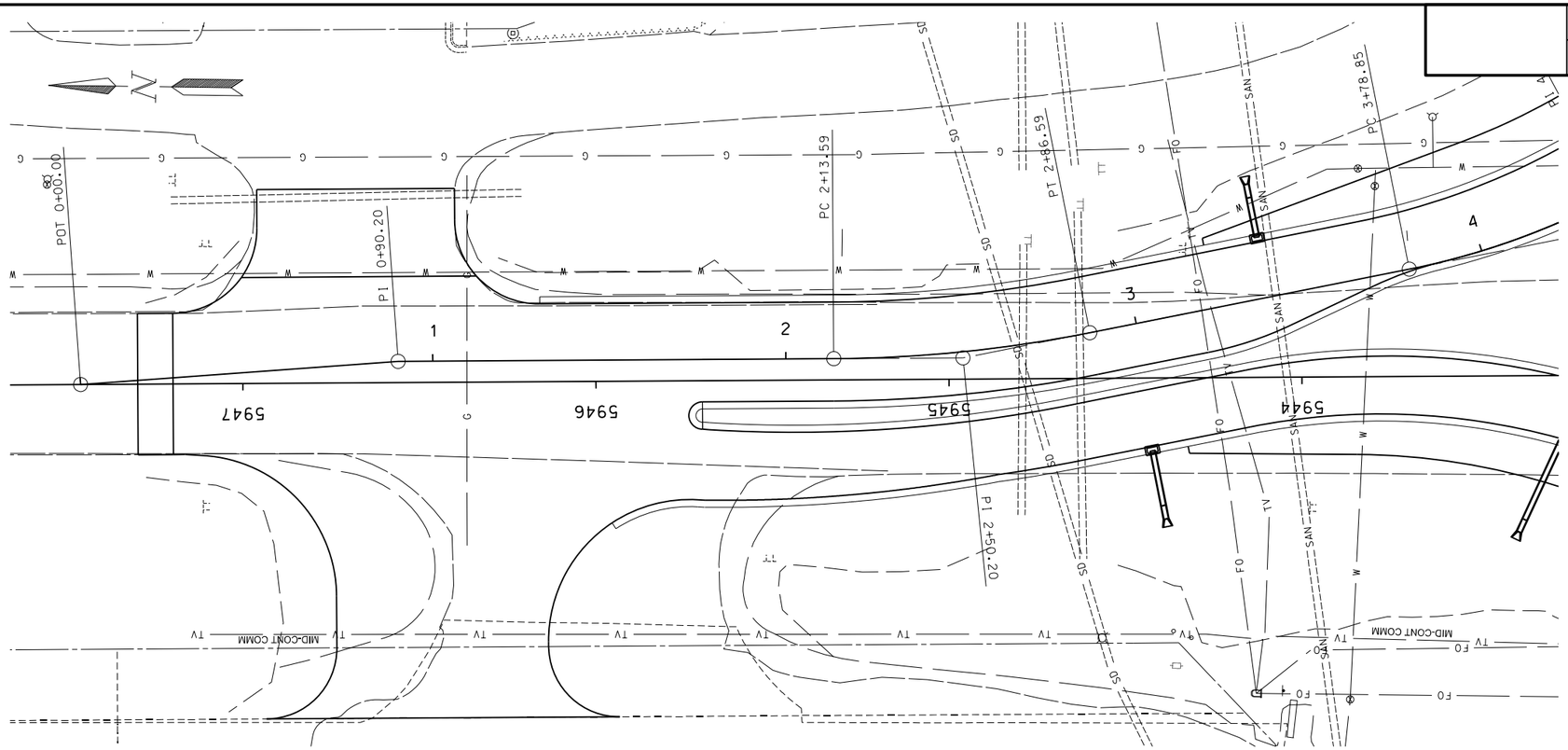
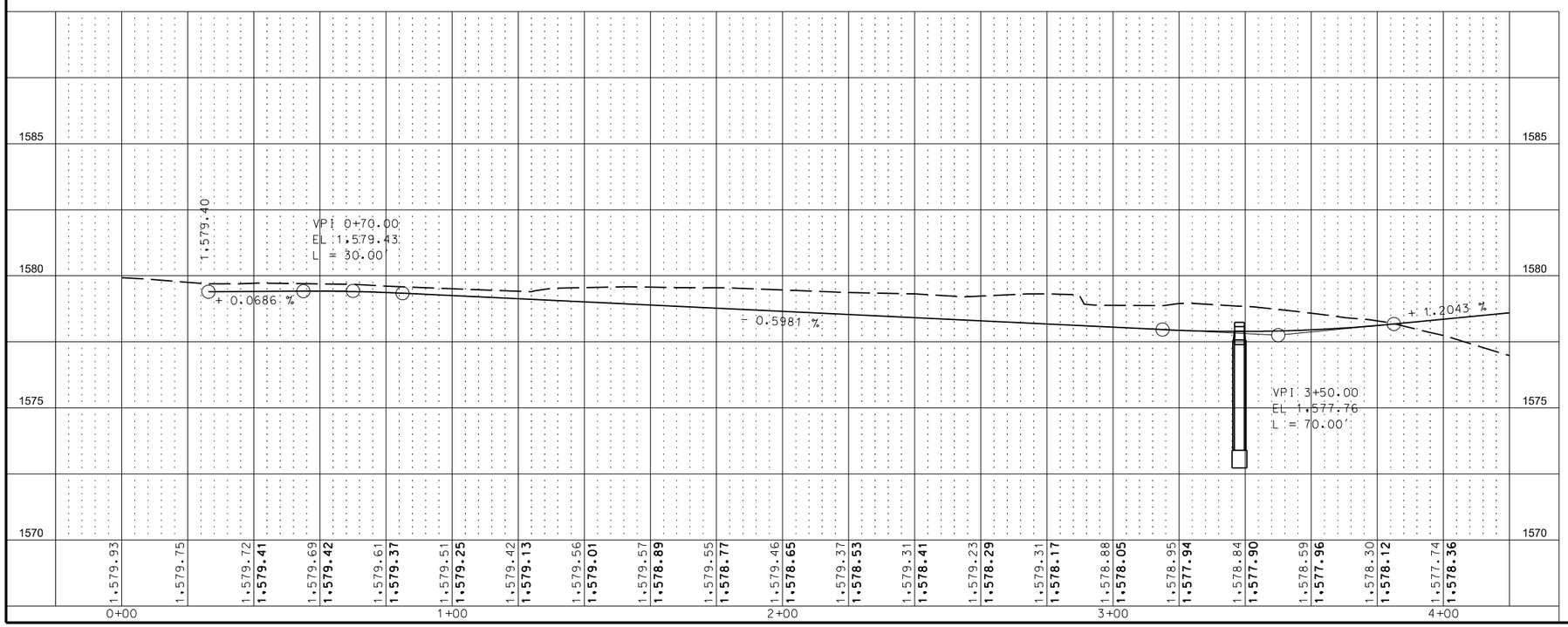
Roundabout North Entrance

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	76



INLET-TYPE 2	Qty
Sta 3+38 - 17' Lt NOEX	1 EA

PIPE CONDUIT 18IN - STORM DRAIN	Qty
Sta 3+38 - 17' Lt NOEX to Sta 3+38 - 33' Lt NOEX	15.0 LF



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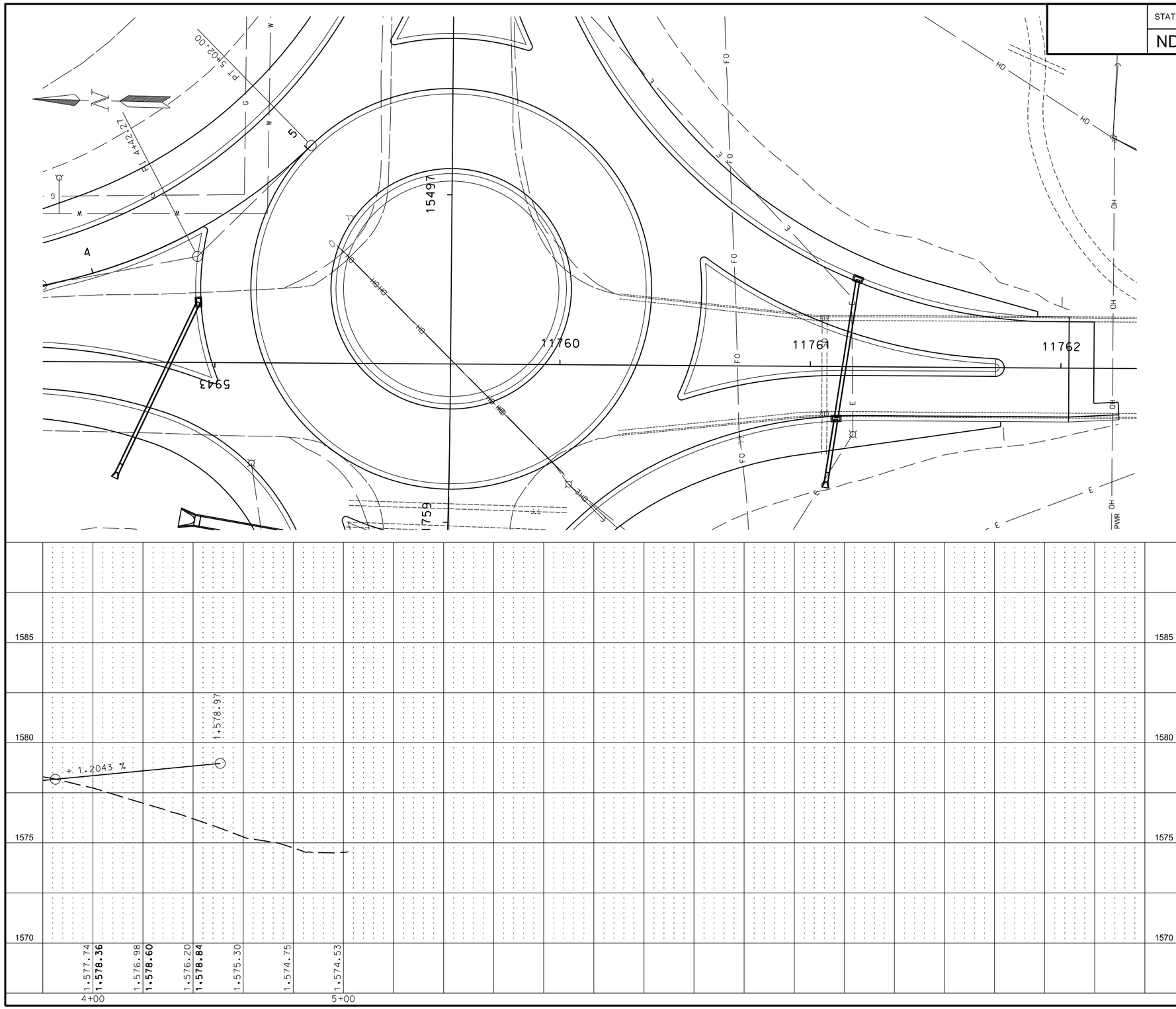
Roundabout North Exit

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	77



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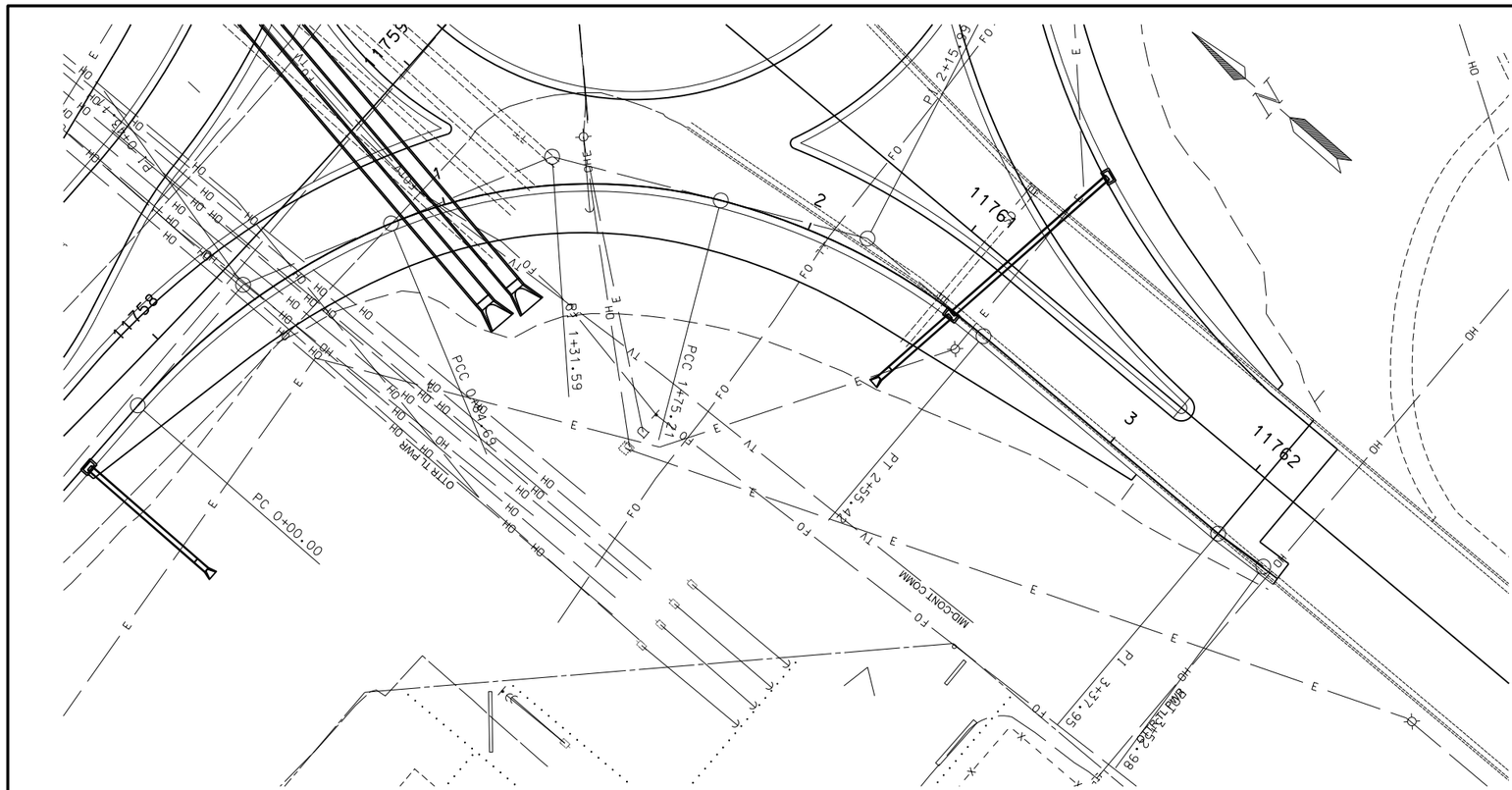
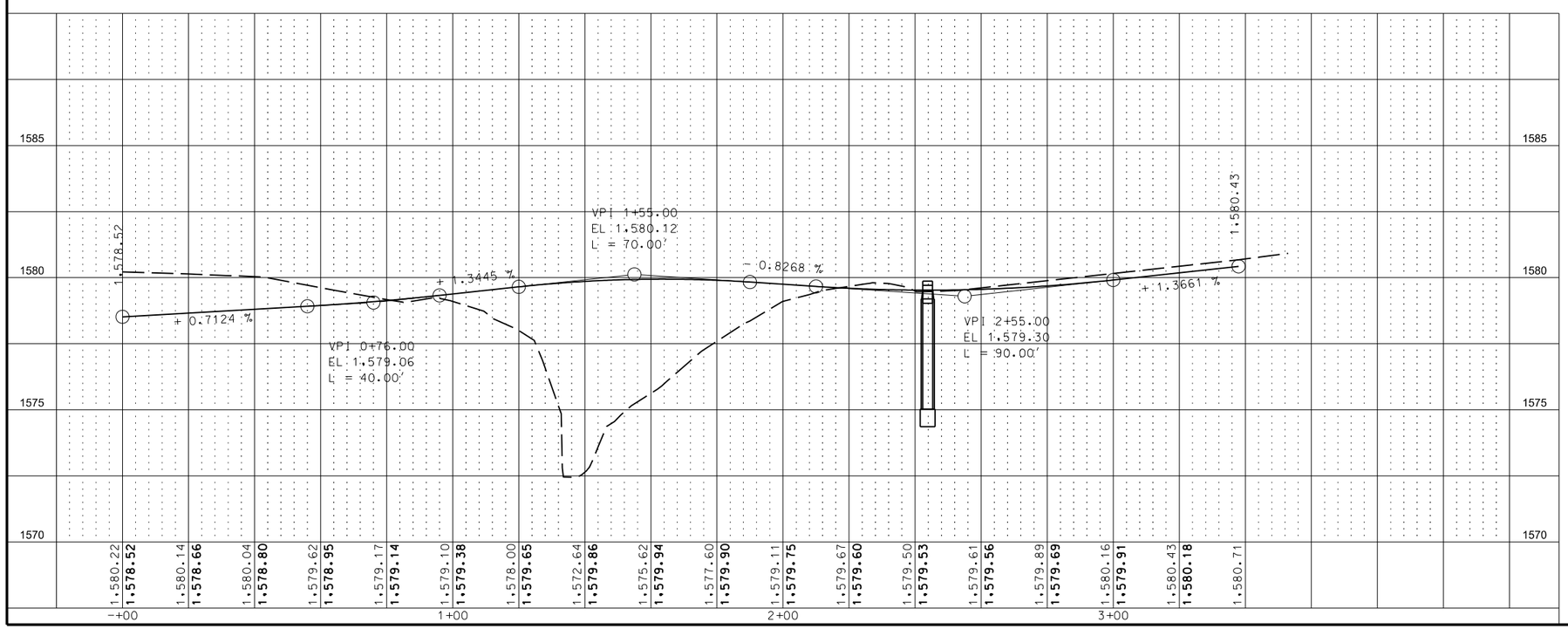
Roundabout North Exit

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	78



INLET-TYPE 2 — Qty
Sta 2+45 - 1' RT SWOUT — 1 EA

PIPE CONDUIT 18IN - STORM DRAIN — Qty
Sta 2+45 - 1' RT SWOUT
to
Sta 2+39 - 26' RT SWOUT — 26.0 LF



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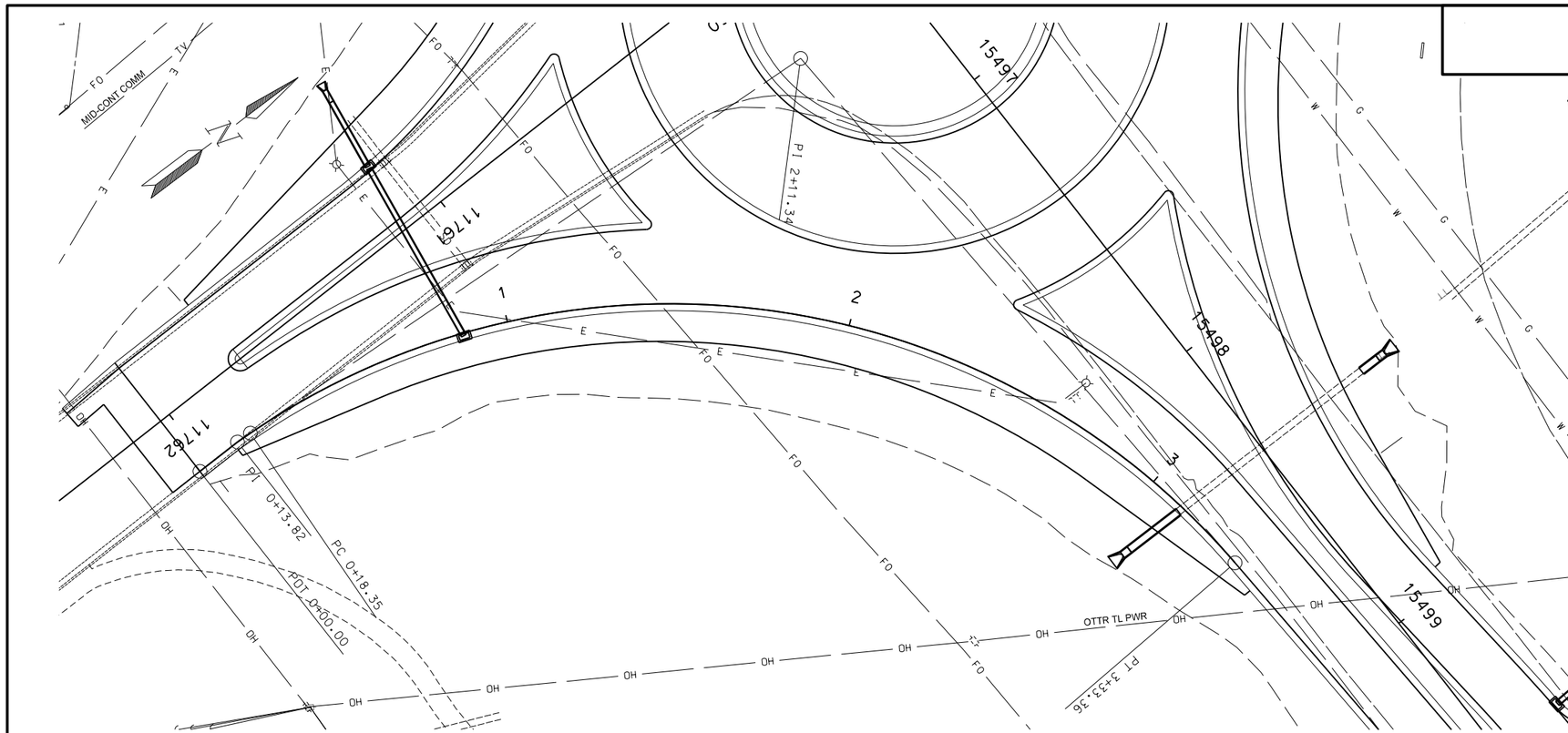
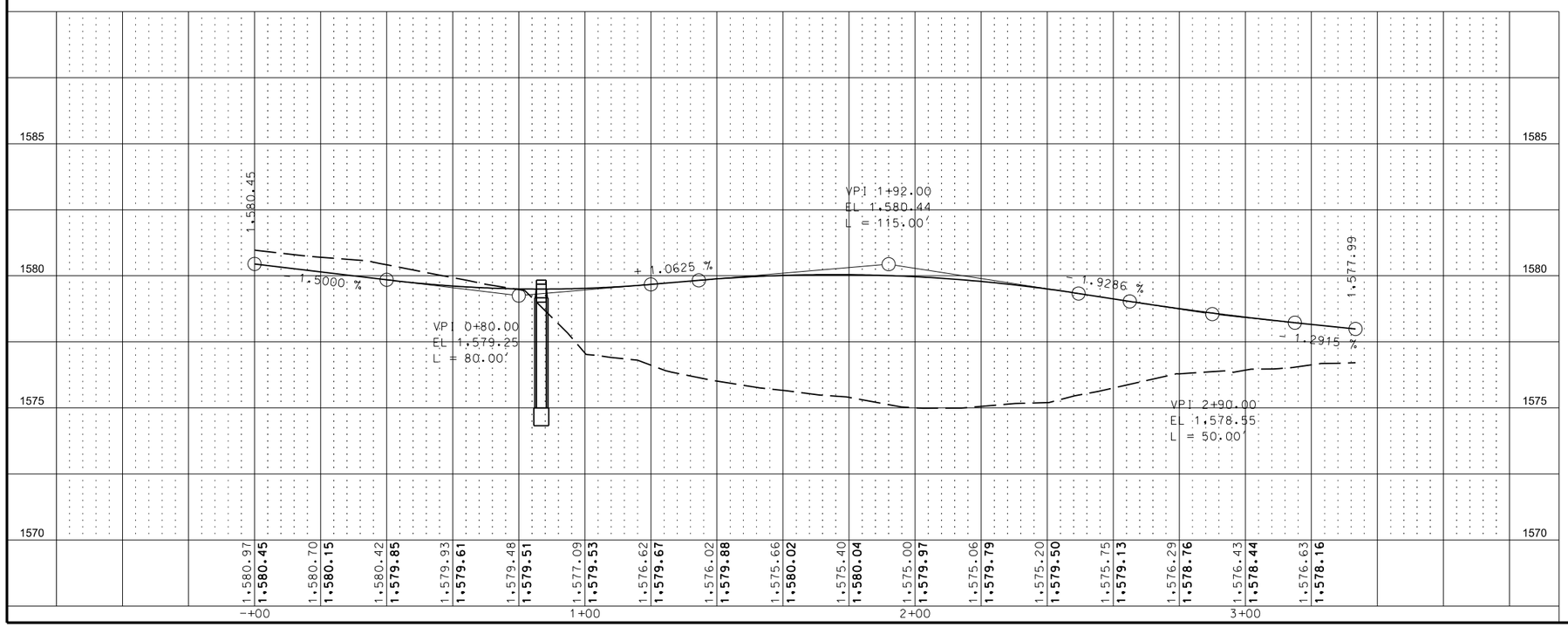
Roundabout Soutwest EOP

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	79



INLET-TYPE 2	Qty
Sta 0+87 - 1' Rt SEOUT	1 EA

PIPE CONDUIT 18IN - STORM DRAIN	Qty
Sta 0+87 - 1' Rt SEOUT to Sta 2+45 - 1' Rt SWOUT	56.0 LF



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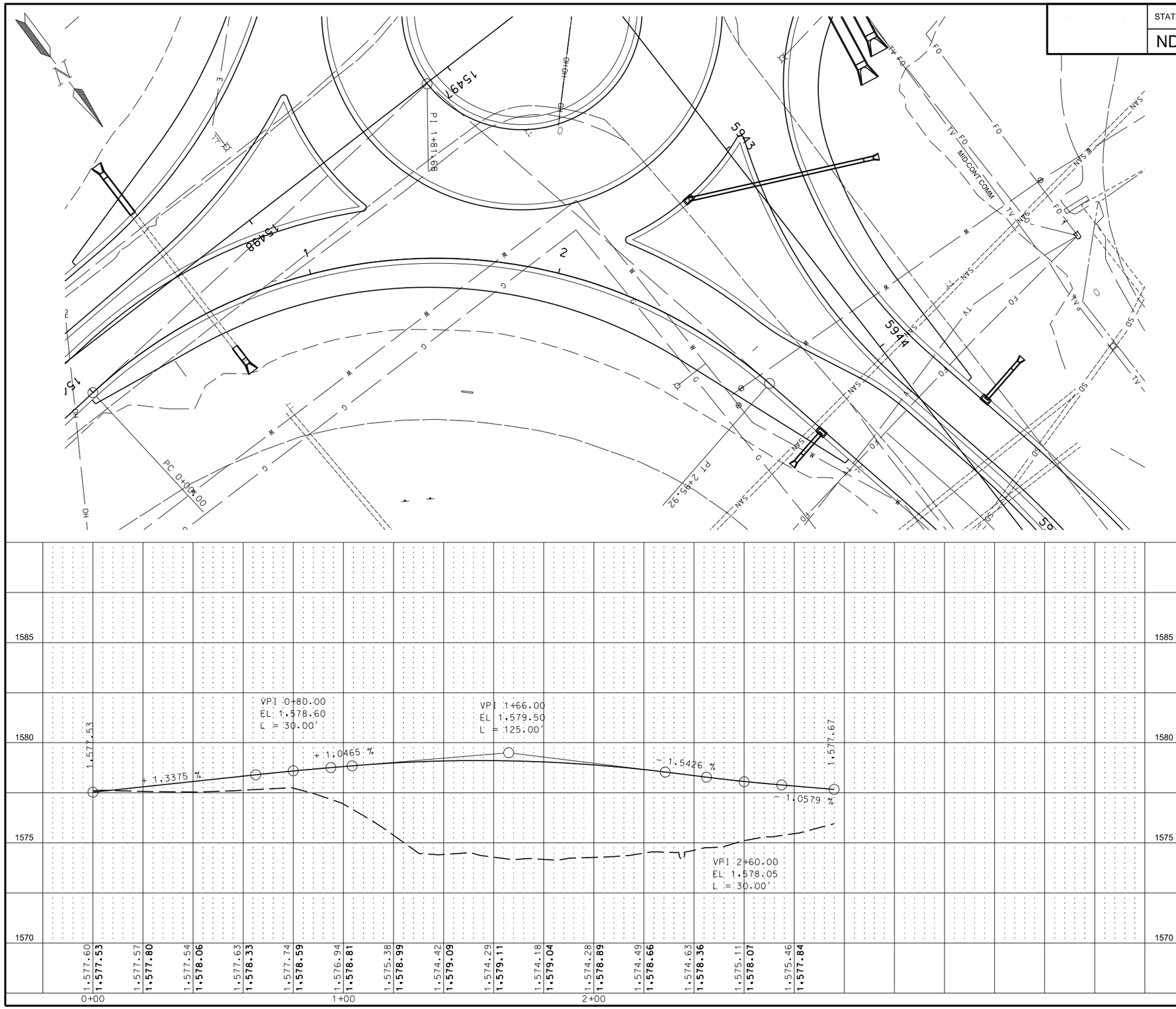
Roundabout Southeast EOP

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	80



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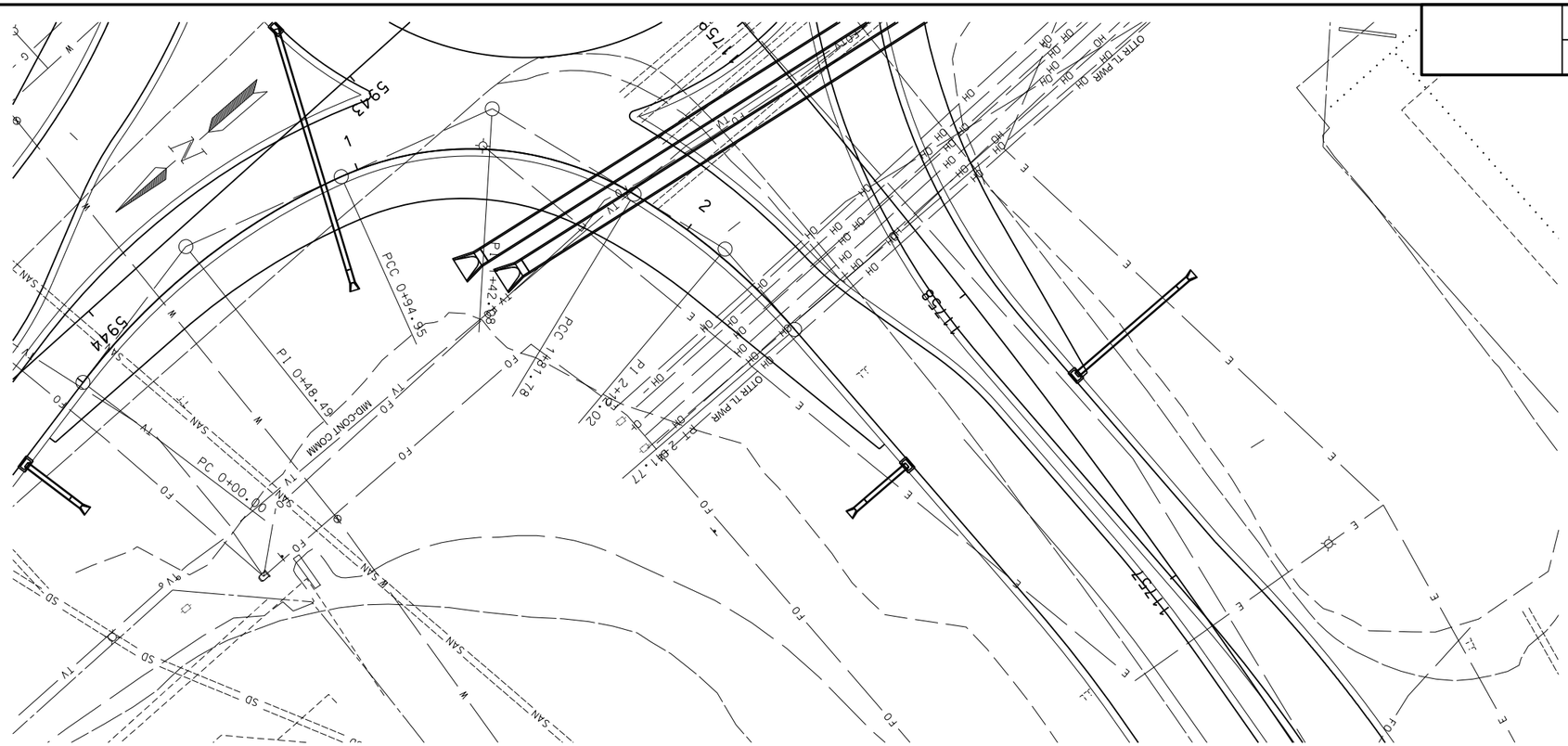
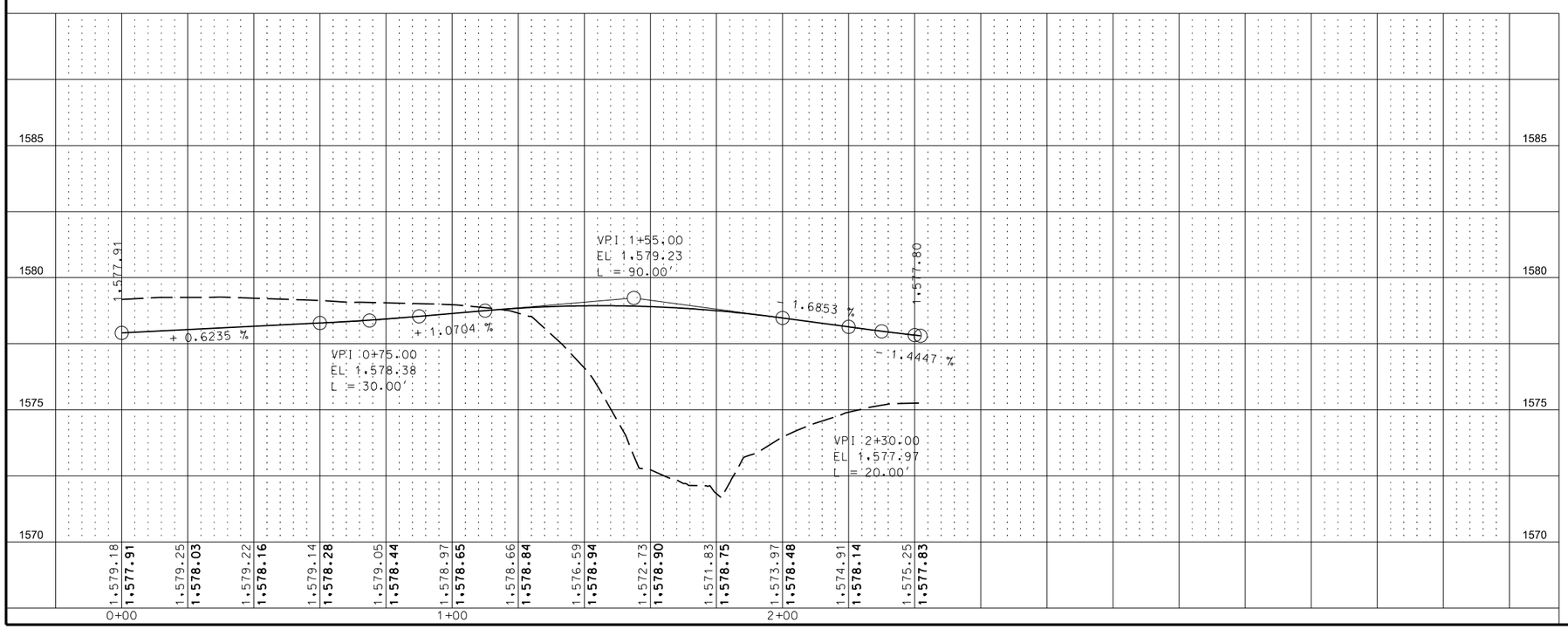
Roundabout Northeast EOP

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	81





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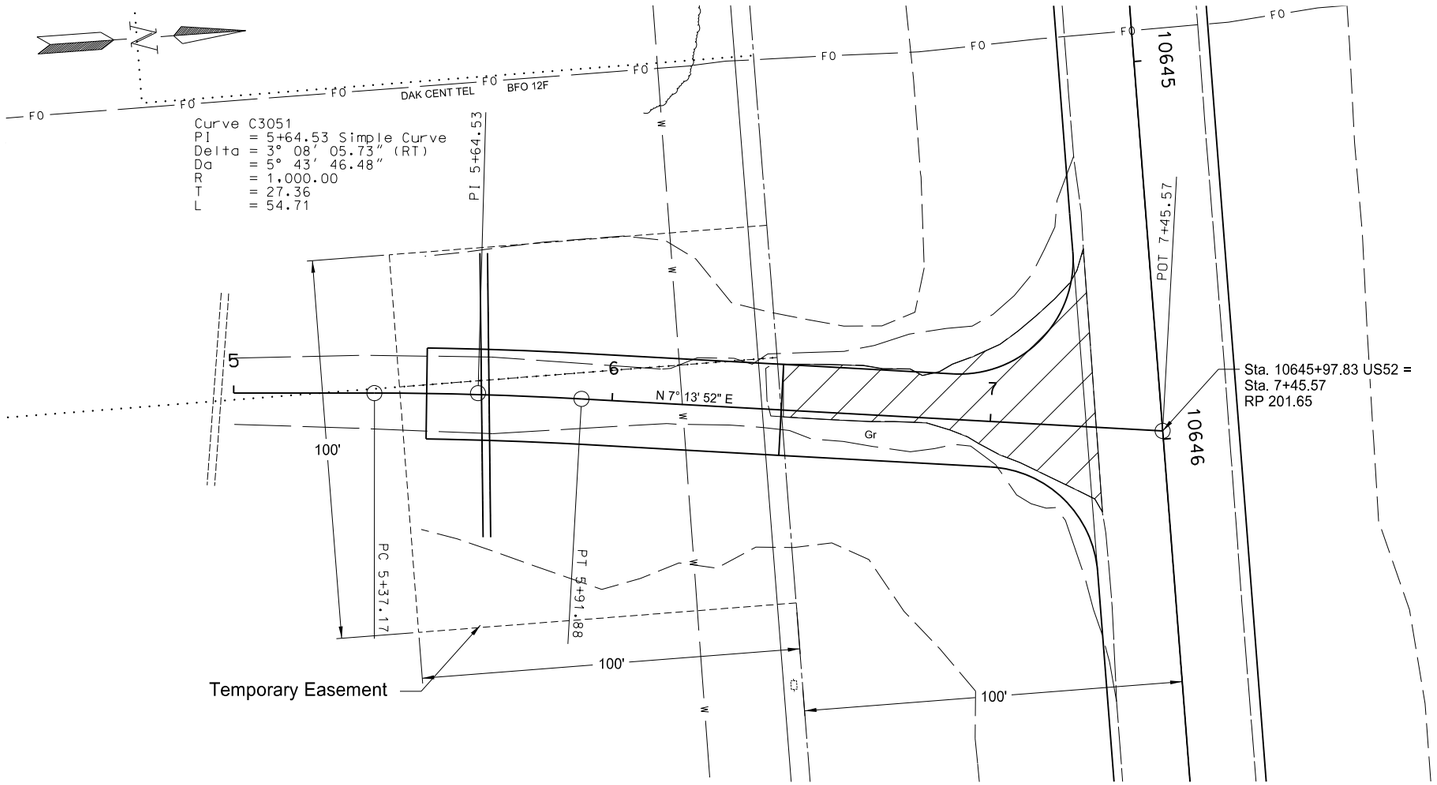
Roundabout Northwest EOP

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	82



Removal of Pavement	Qty
10645+98 RT	227 SY

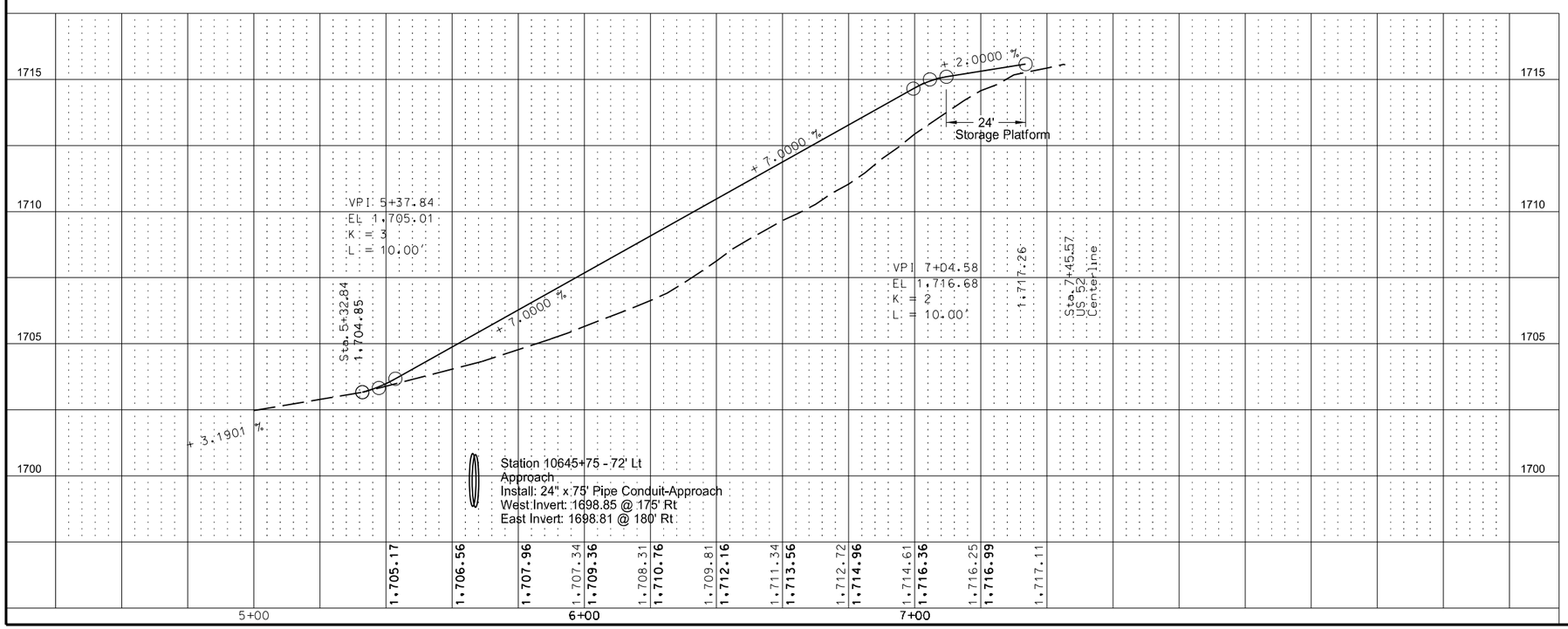
Aggregate Base Course CL 5	Qty
10645+98 RT	120.57 Tons

Tack Coat	Qty
10645+98 RT	26 Gal

Superpave FAA 45	Qty
10645+98 RT	57.75 Tons

PG 64-28 Asphalt Cement	Qty
10645+98 RT	3.47 Tons

Removal of Pavement



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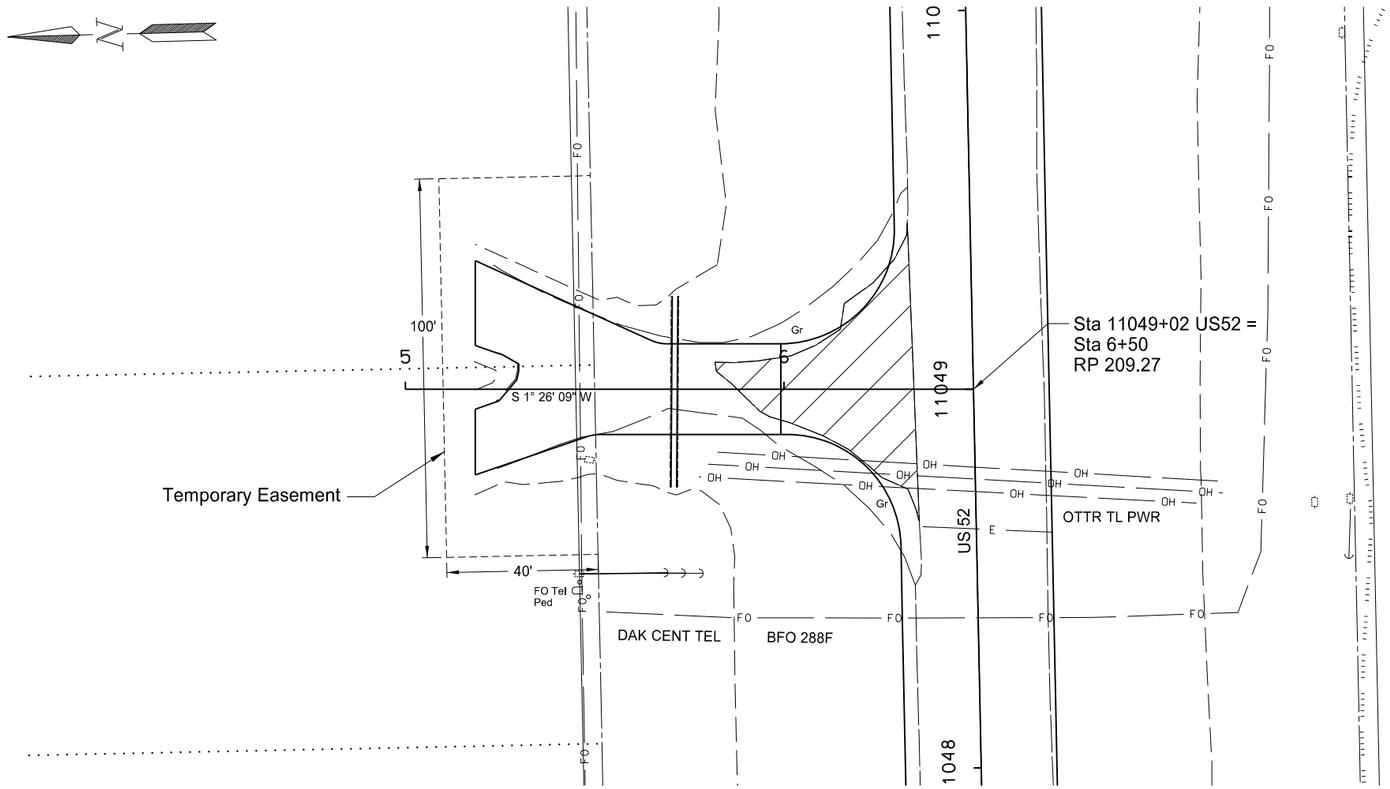
Approach Sta. 10645+98 RT

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	83



Removal of Pavement	Qty
Sta. 11049+02 LT	169 SY

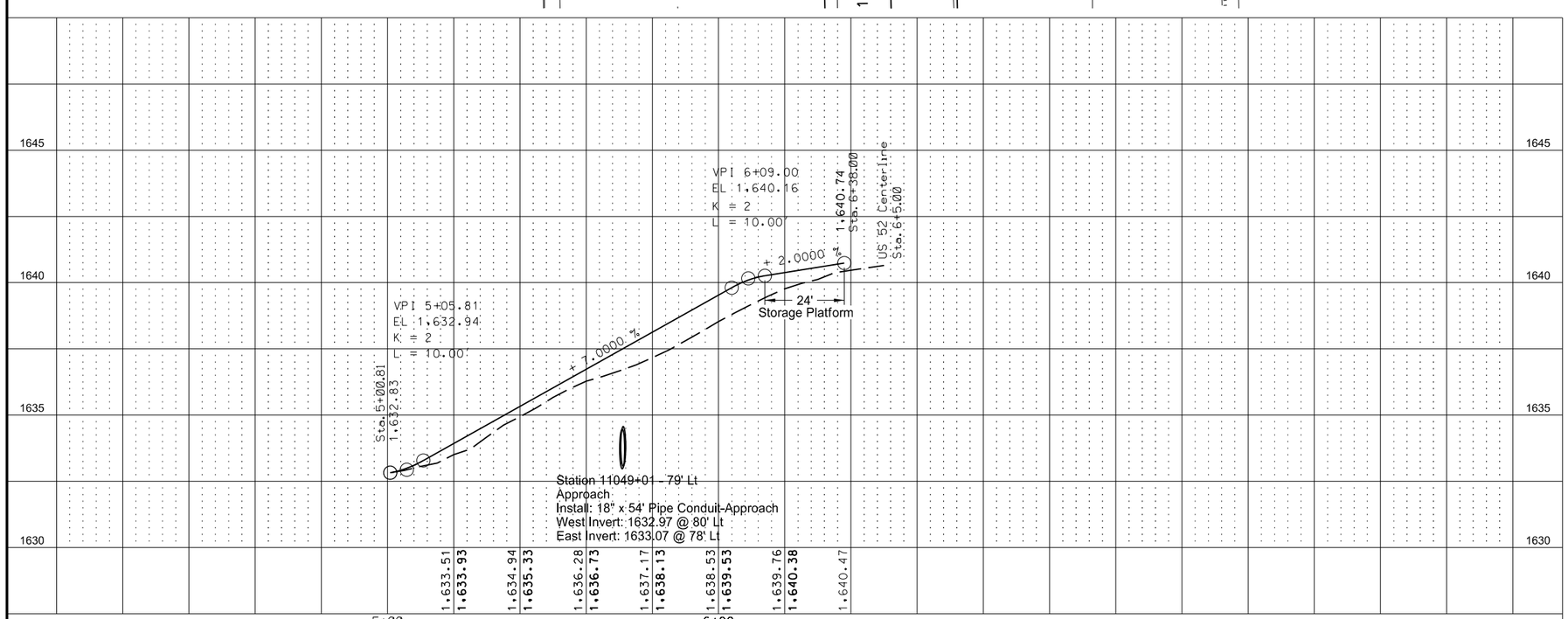
Aggregate Base Course CL 5	Qty
Sta. 11049+02 LT	49.78 Tons

Tack Coat	Qty
Sta. 11049+02 LT	14 Gal

Superpave FAA 45	Qty
Sta. 11049+02 LT	28.10 Tons

PG 64-28 Asphalt Cement	Qty
Sta. 11049+02 LT	1.69 Tons

Removal of Pavement



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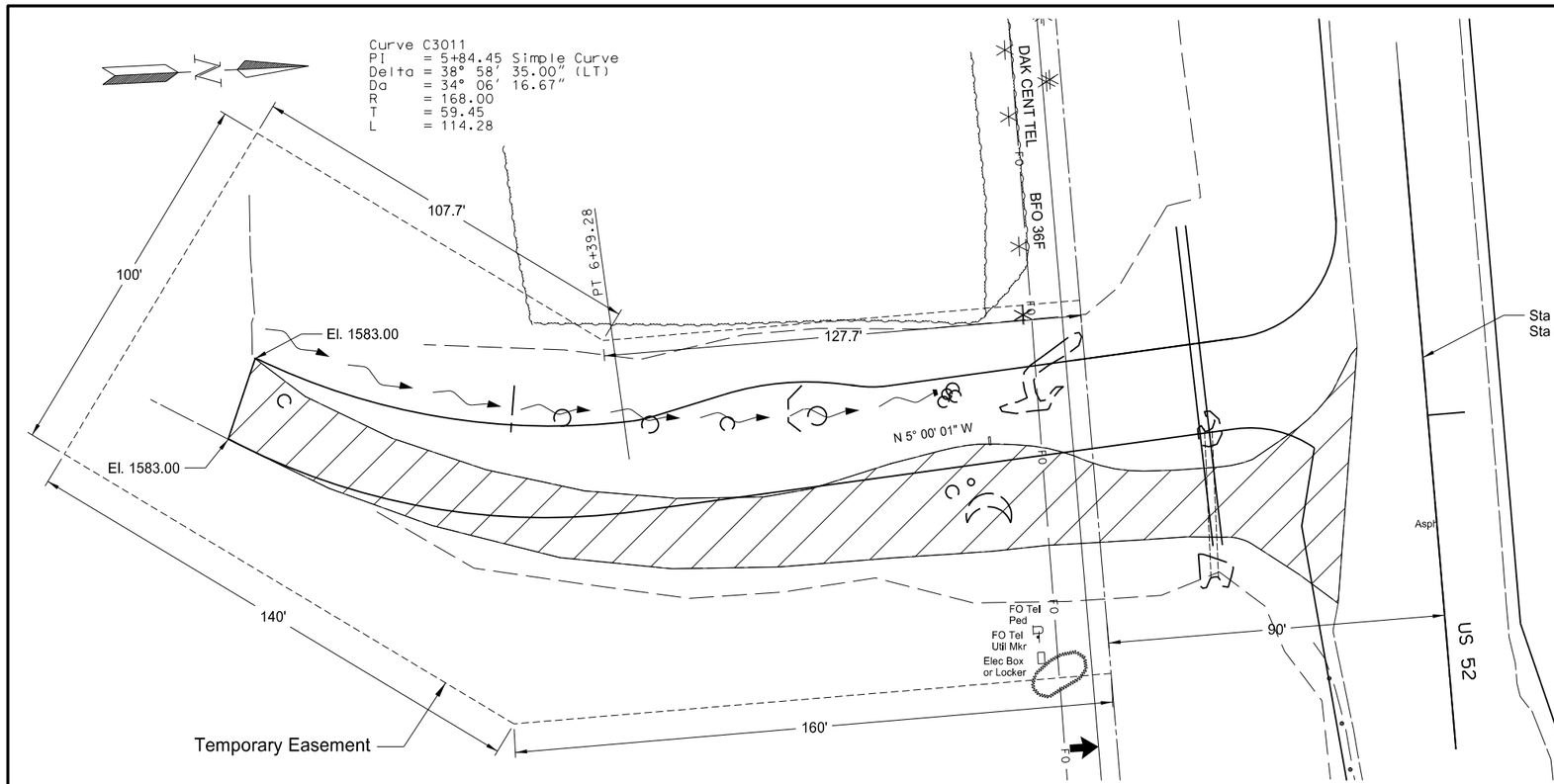
Approach Sta. 11049+02 LT

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	84



Removal of Pavement	Qty
11408+85 RT	753 SY

Common Excavation - Type A	Qty
11408+85 RT	290 CY

Removal of Obstructions	Qty
11408+85 RT	1 LSUM

Aggregate Base Course CL 5	Qty
11408+85 RT	538.89 Tons

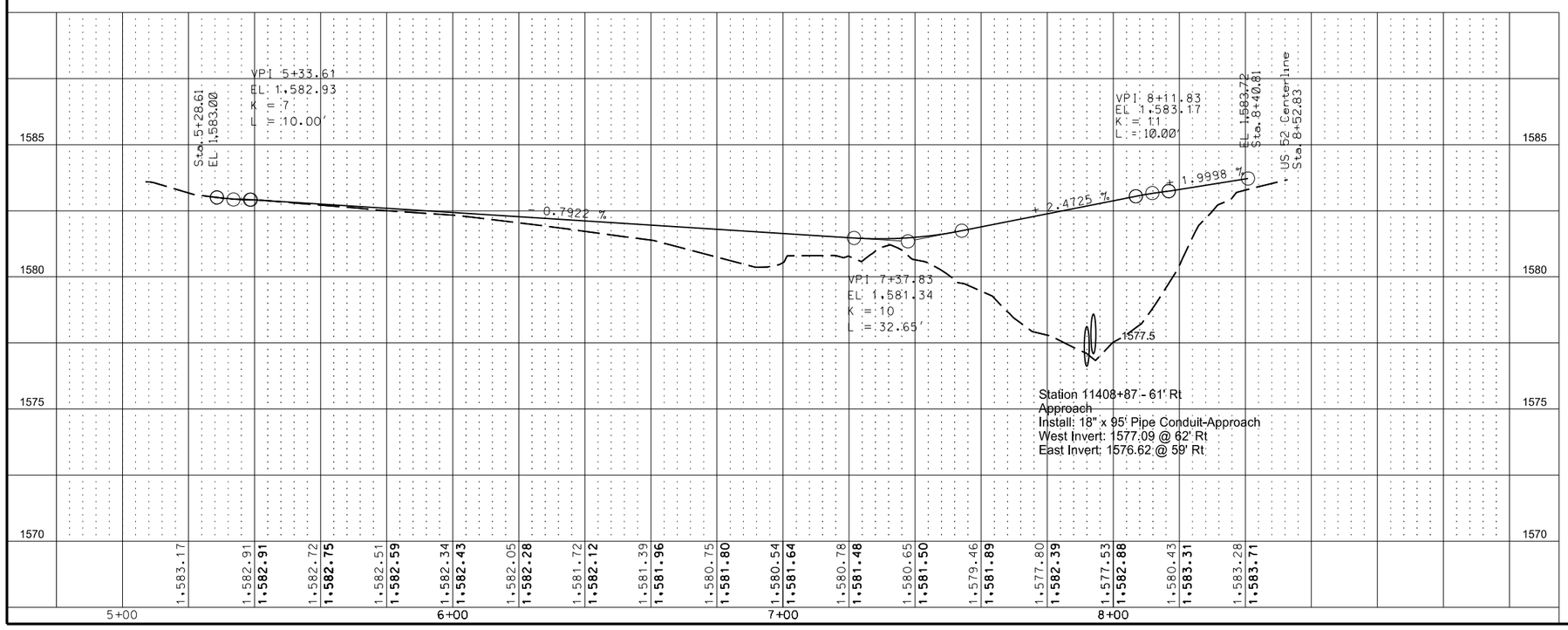
Tack Coat	Qty
11408+85 RT	88 Gal

Superpave FAA 45	Qty
11408+85 RT	191.60 Tons

PG 64-28 Asphalt Cement	Qty
11408+85 RT	11.50 Tons

Removal of Obstructions

Removal of Pavement



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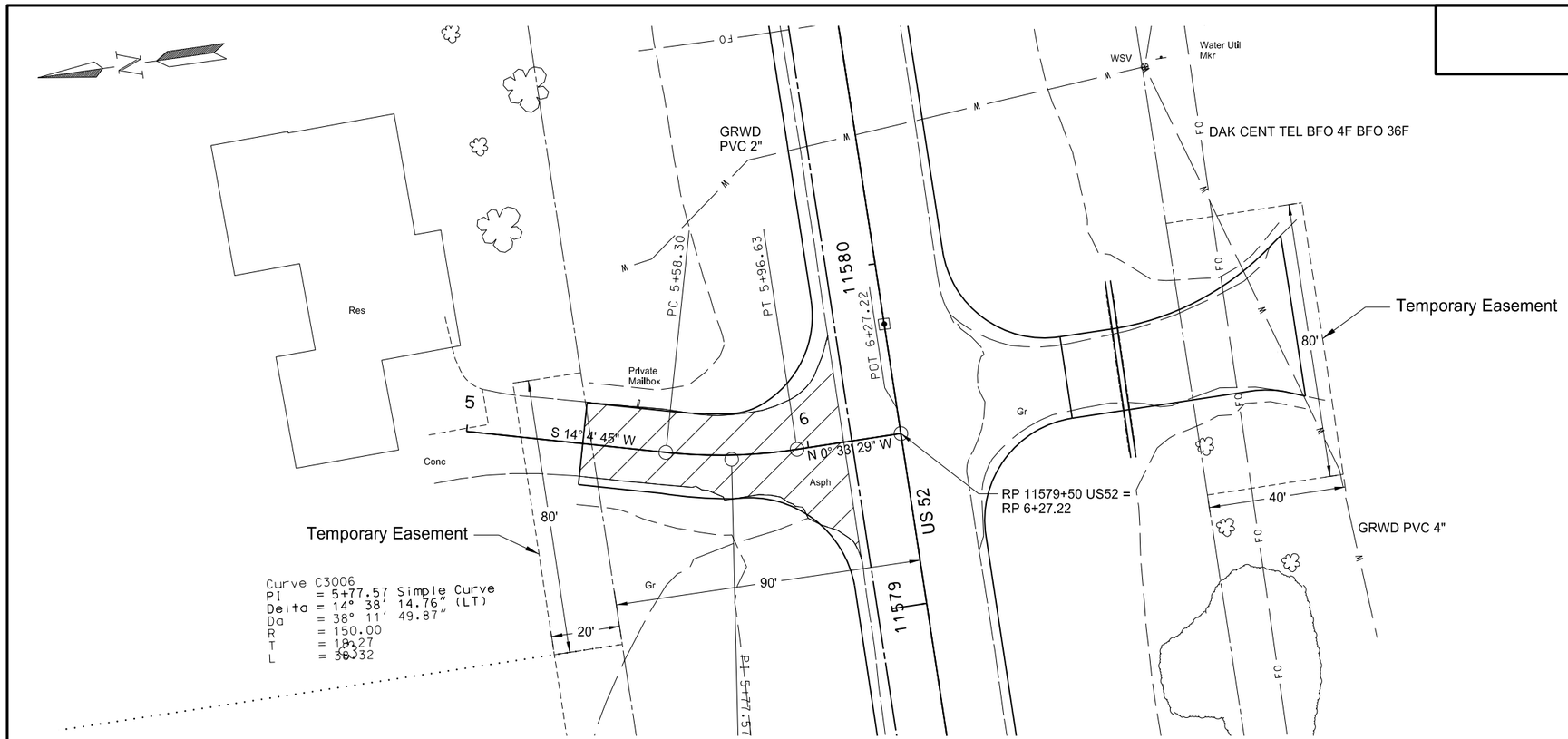
Approach Sta. 11408+85 RT

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	85



Removal of Pavement	Qty
Sta. 11579+55 LT	231 SY

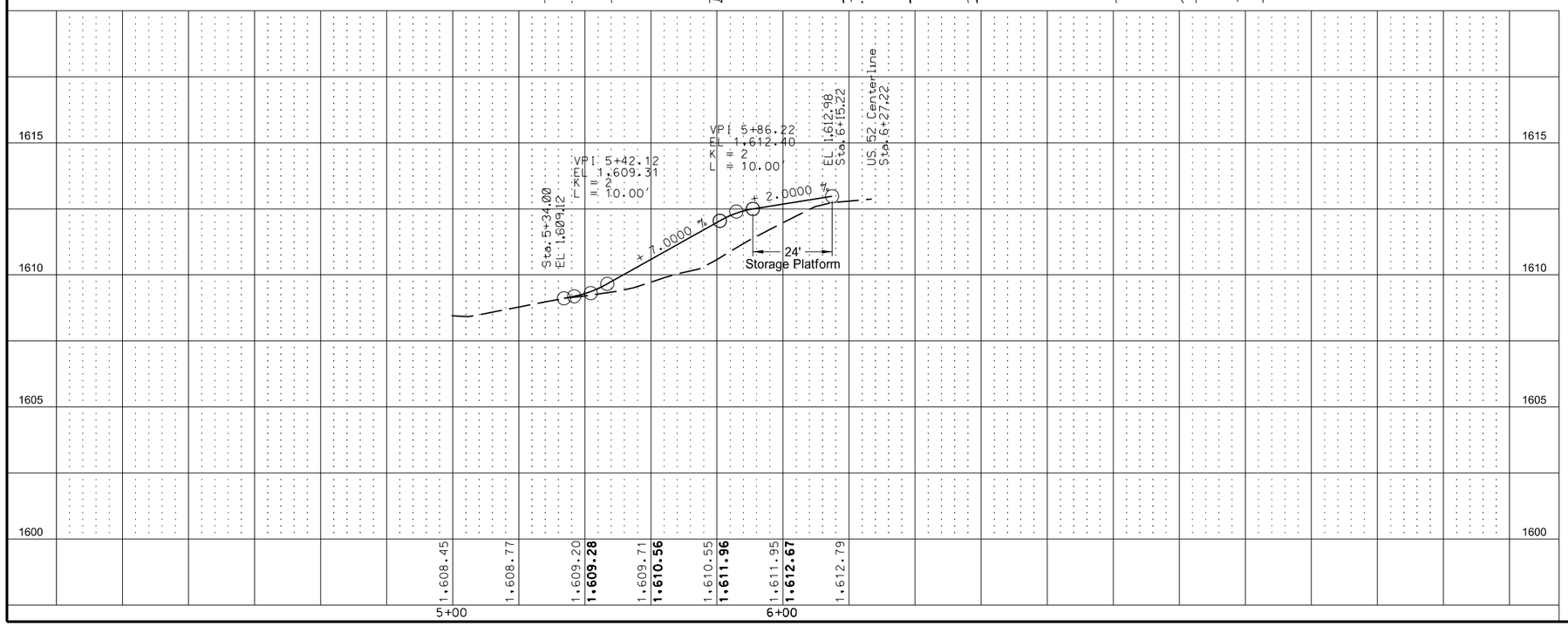
Aggregate Base Course CL5	Qty
Sta. 11579+55 LT	150.14 Tons

Tack Coat	Qty
Sta. 11579+55 LT	26 Gal

Superpave FAA 45	Qty
Sta. 11579+55 LT	53.38 Tons

PG 64-28 Asphalt Cement	Qty
Sta. 11579+55 LT	3.2 Tons

REMOVAL OF PAVEMENT



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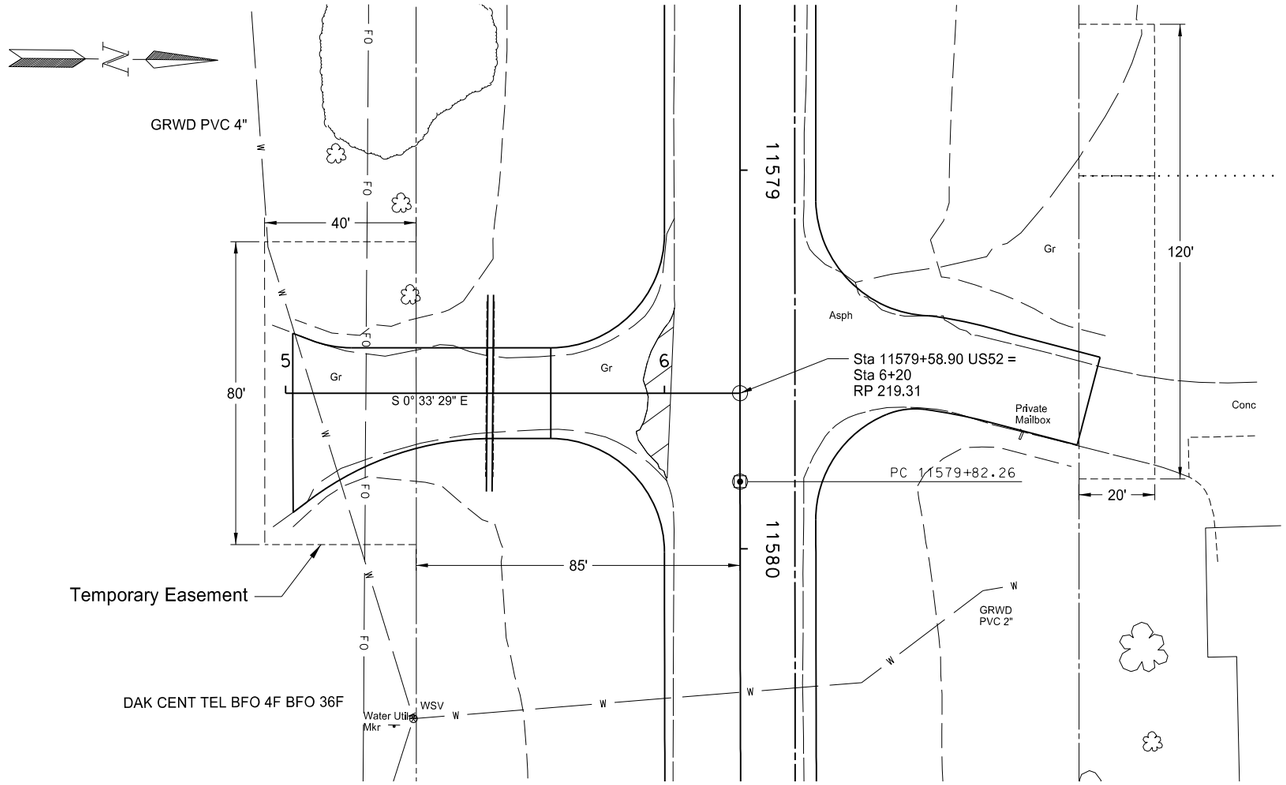
Approach Sta. 11579+55 LT

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	86



Removal of Pavement	Qty
Sta. 11579+60 RT	26 SY

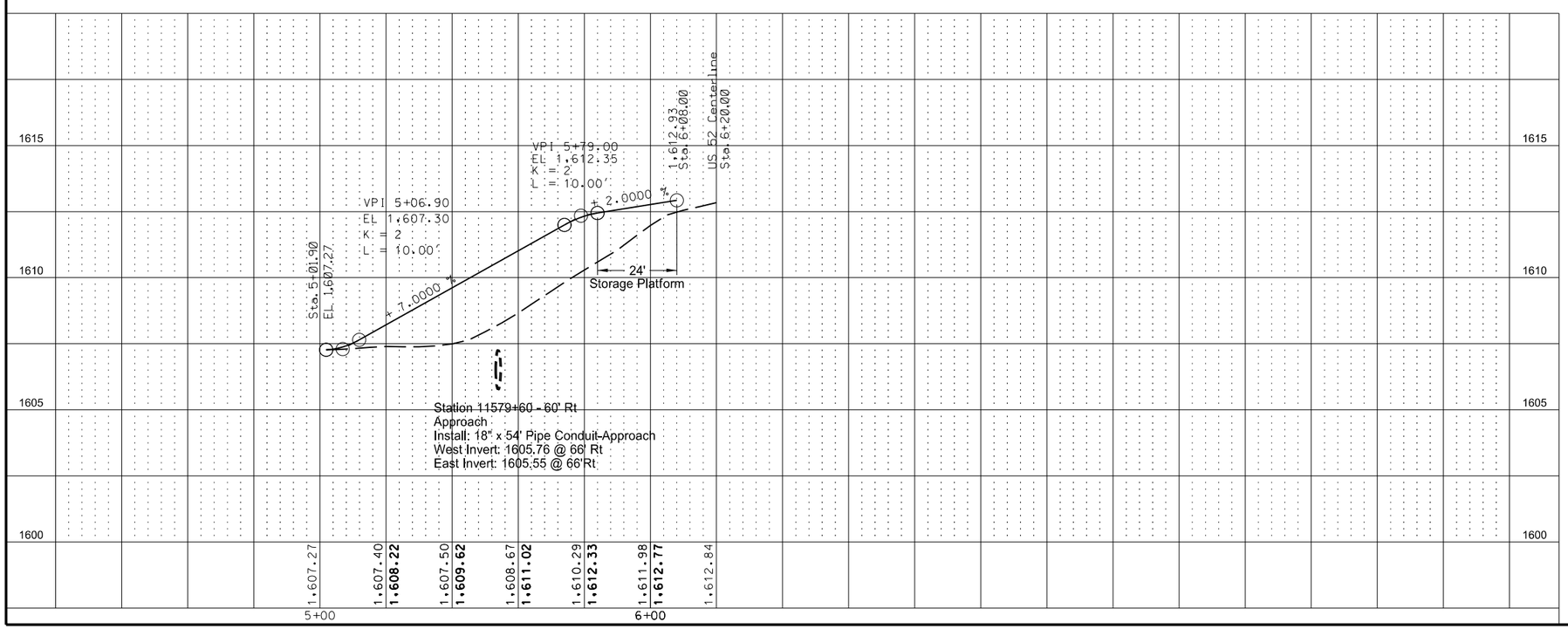
Aggregate Base Course CL 5	Qty
Sta. 11579+60 RT	52.53 Tons

Tack Coat	Qty
Sta. 11579+60 RT	14 Gal

Superpave FAA 45	Qty
Sta. 11579+60 RT	27.31 Tons

PG 64-28 Asphalt Cement	Qty
Sta. 11579+60 RT	1.64 Tons

Removal of Pavement



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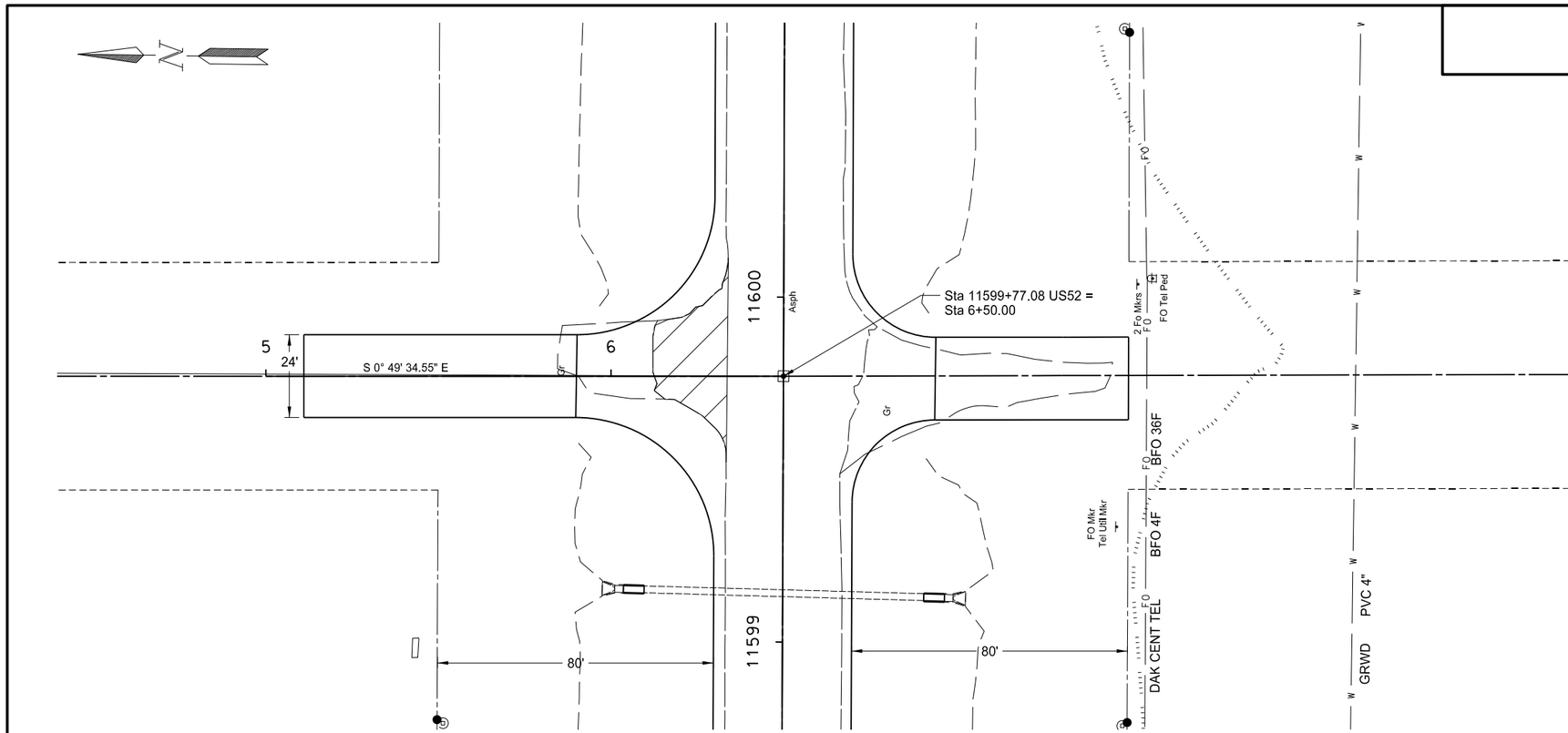
Approach Sta. 11579+60 RT

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	87



Removal of Pavement	Qty
Sta. 11599+75 LT	71 SY

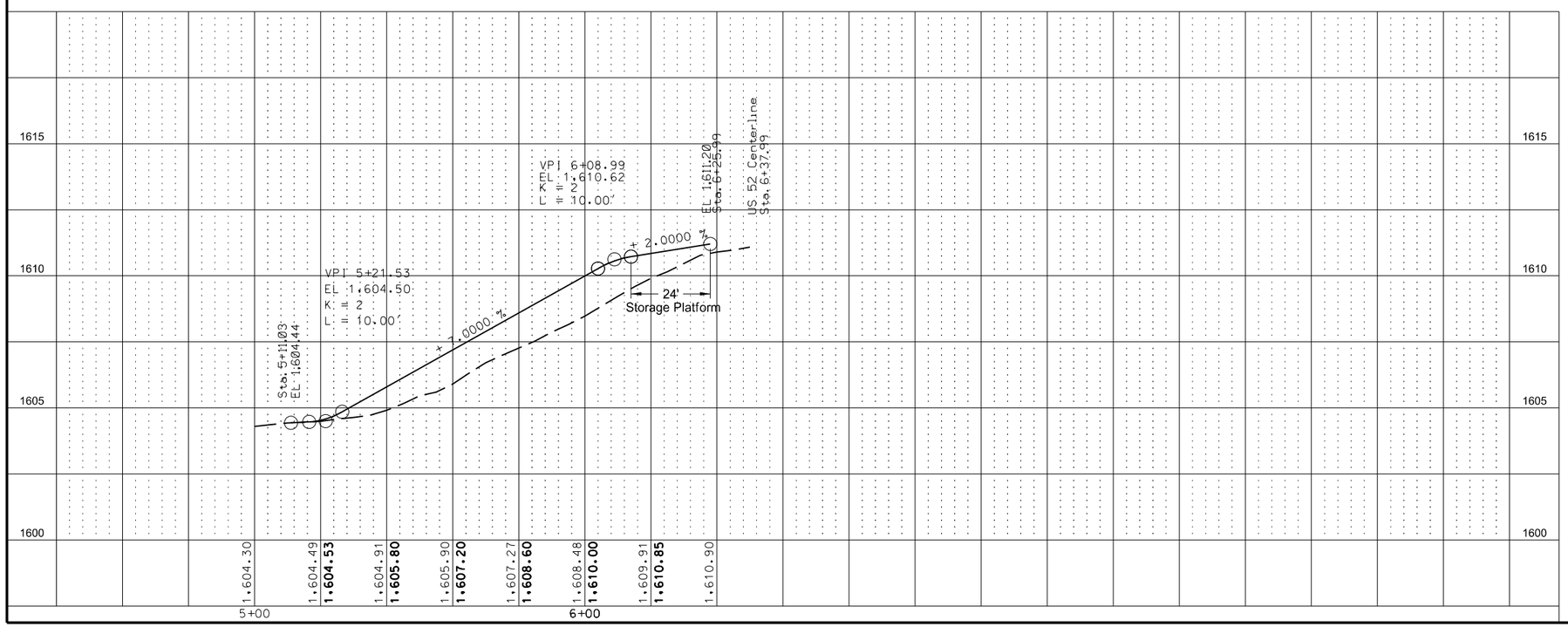
Aggregate Base Course CL 5	Qty
Sta. 11599+75 LT	83.78 Tons

Tack Coat	Qty
Sta. 11599+75 LT	20 Gal

Superpave FAA 45	Qty
Sta. 11599+75 LT	40.66 Tons

PG 64-28 Asphalt Cement	Qty
Sta. 11599+75 LT	2.44 Tons

Removal of Pavement



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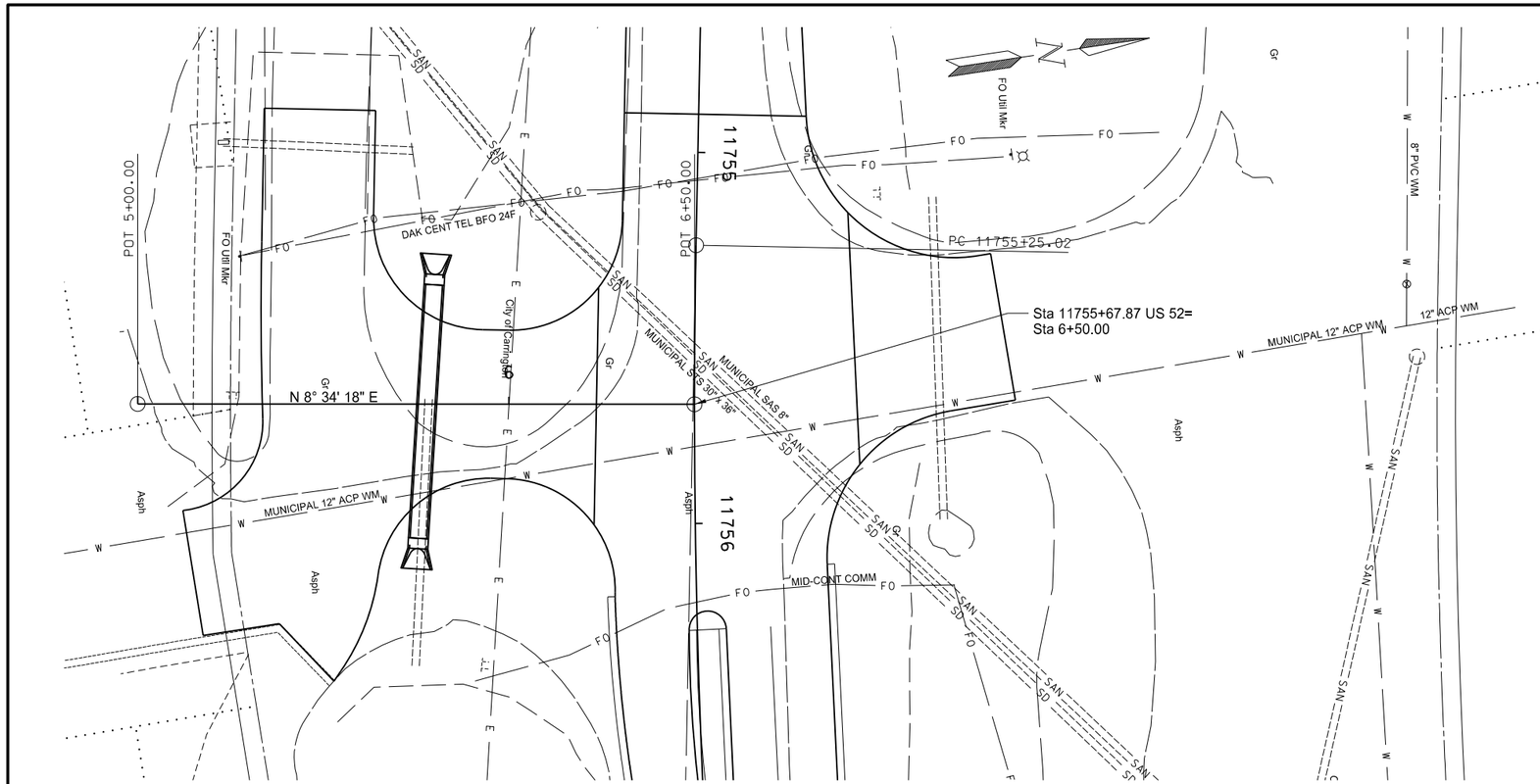
Approach Sta. 11599+75 LT

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	88

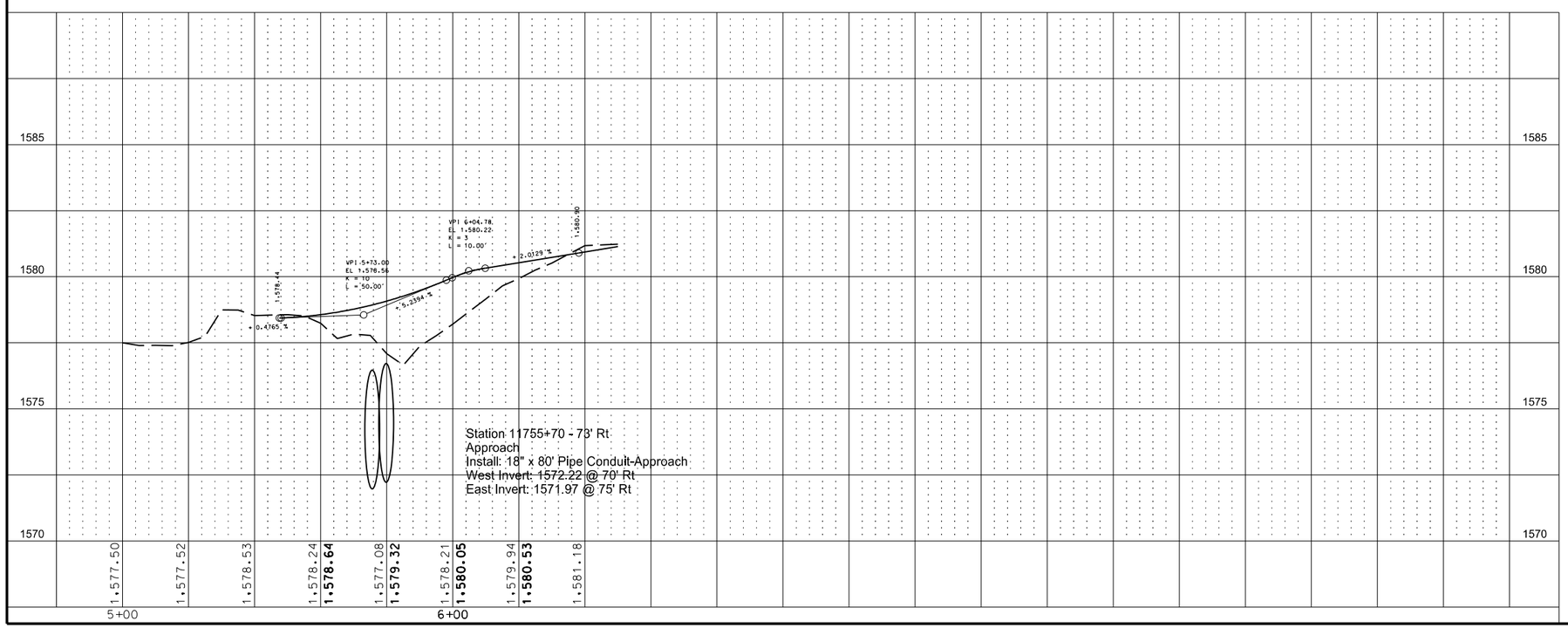


Aggregate Base Course CL 5 — Qty
Sta. 11599+75 LT — 560 Tons

Tack Coat — Qty
Sta. 11599+75 LT — 44.8 Gal

Superpave FAA 45 — Qty
Sta. 11599+75 LT — 198.9 Tons

PG 64-28 Asphalt Cement — Qty
Sta. 11599+75 LT — 12 Tons



Station 11755+70 - 73' Rt
Approach
Install: 18" x 80' Pipe Conduit-Approach
West Invert: 1572.22 @ 70' Rt
East Invert: 1571.97 @ 75' Rt

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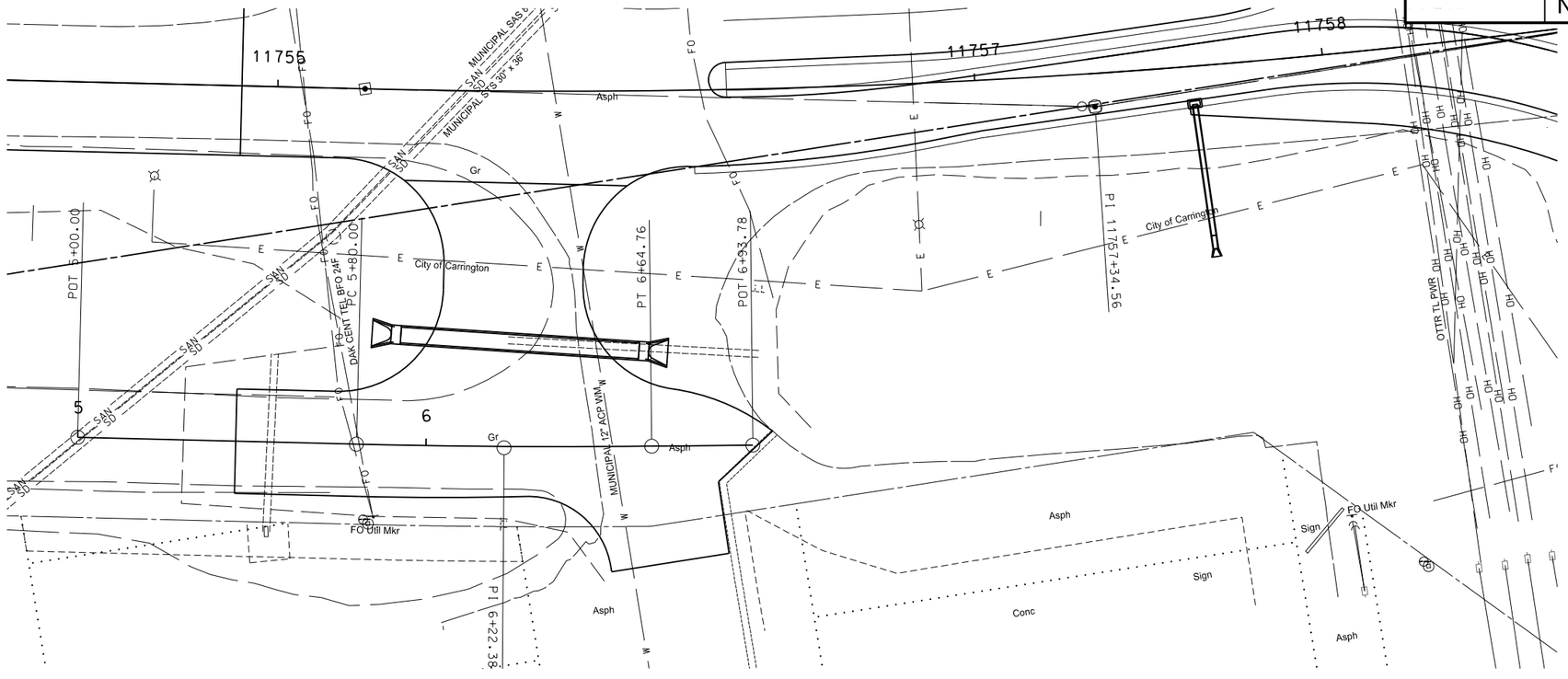
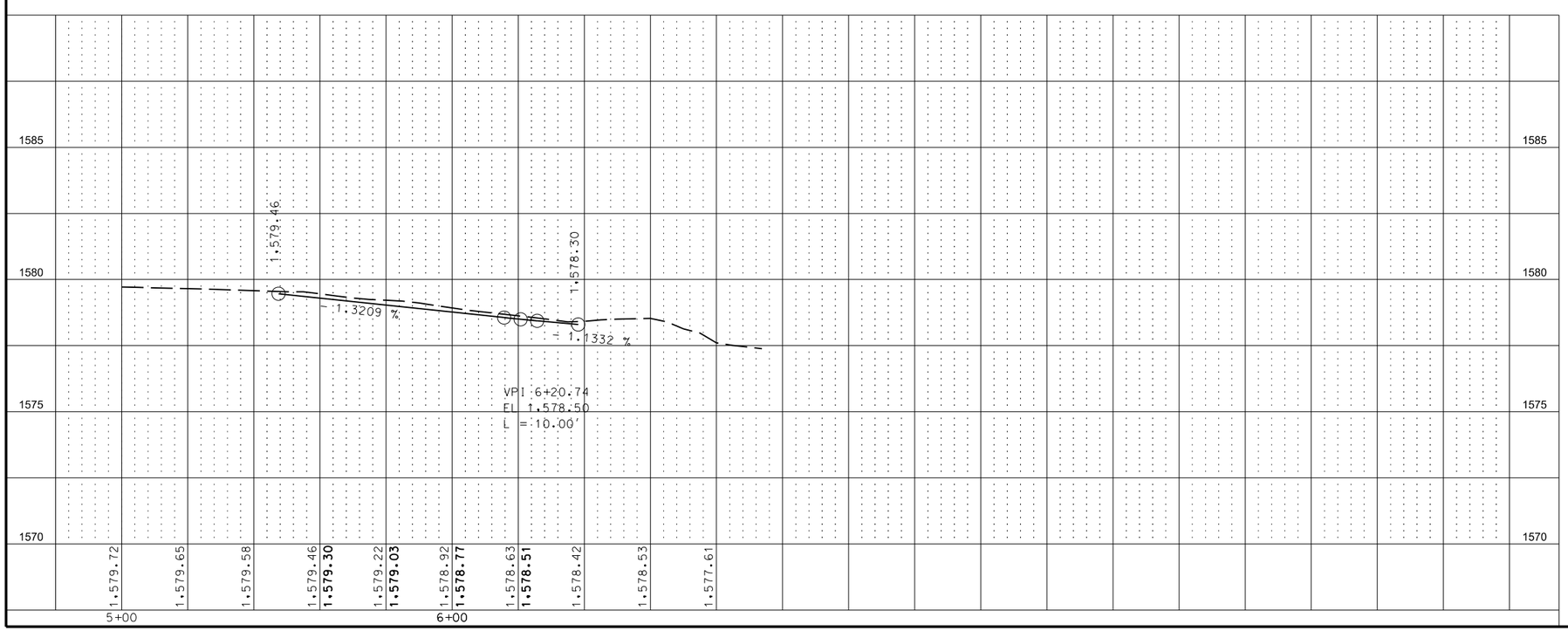
5th Avenue Approach

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	60	89





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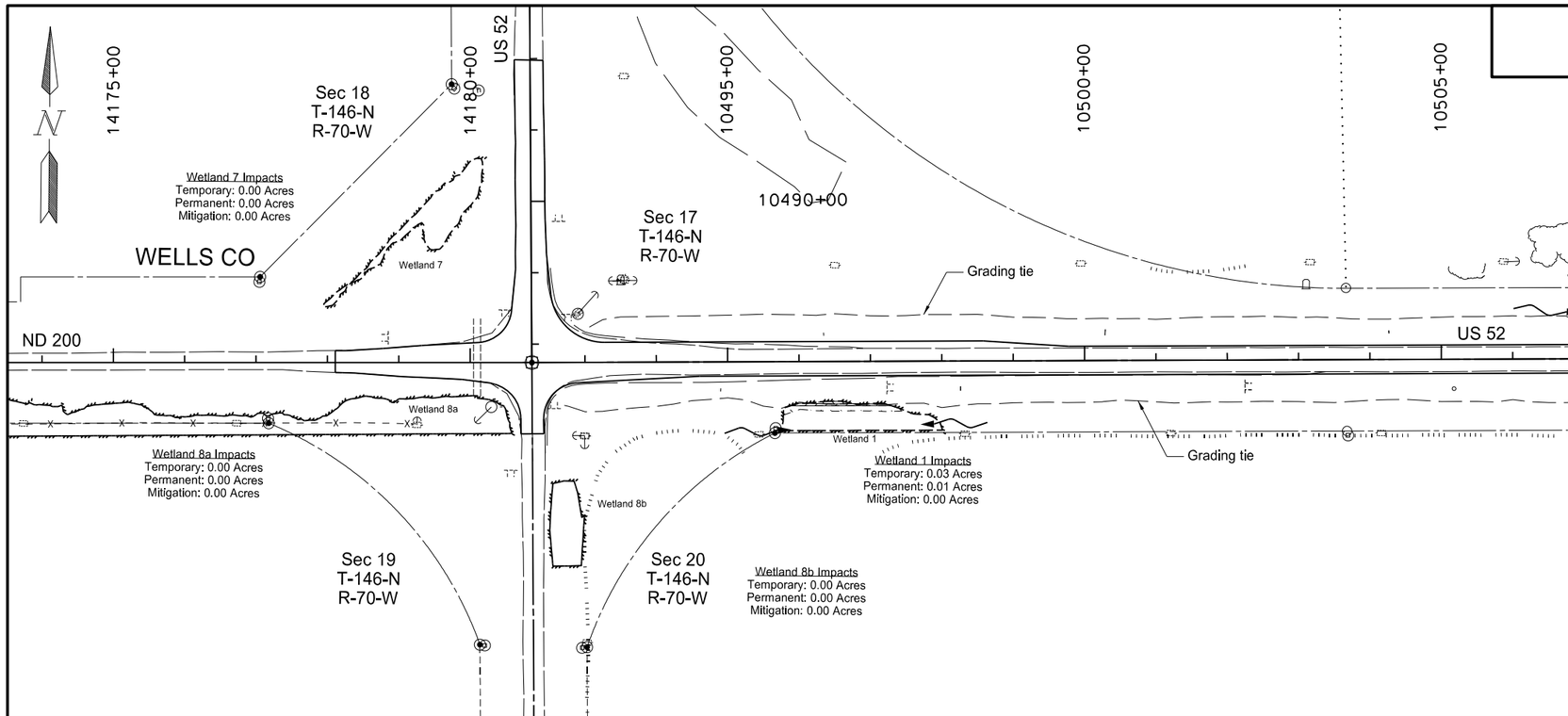
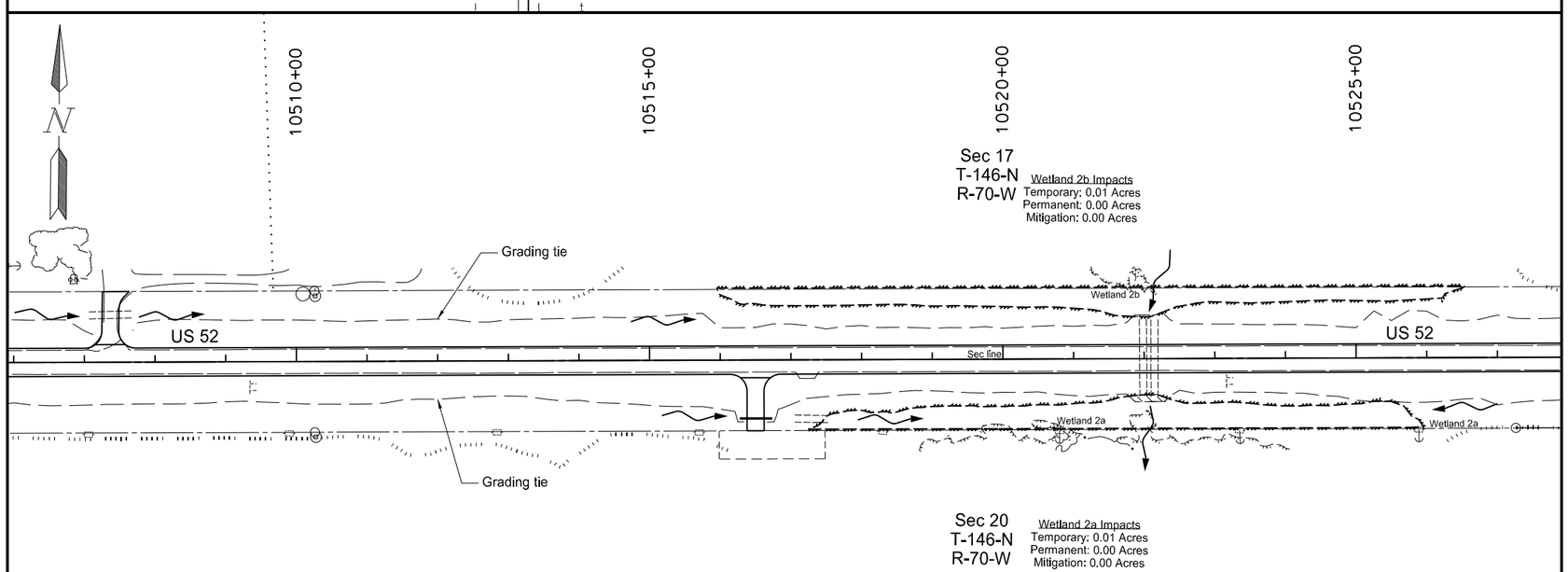
8th Street

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	1





Temporary Wetland Impact

Permanent Wetland Impact

Other Waters Temporary Impact

Other Waters Permanent Impact

Wetland Mitigation

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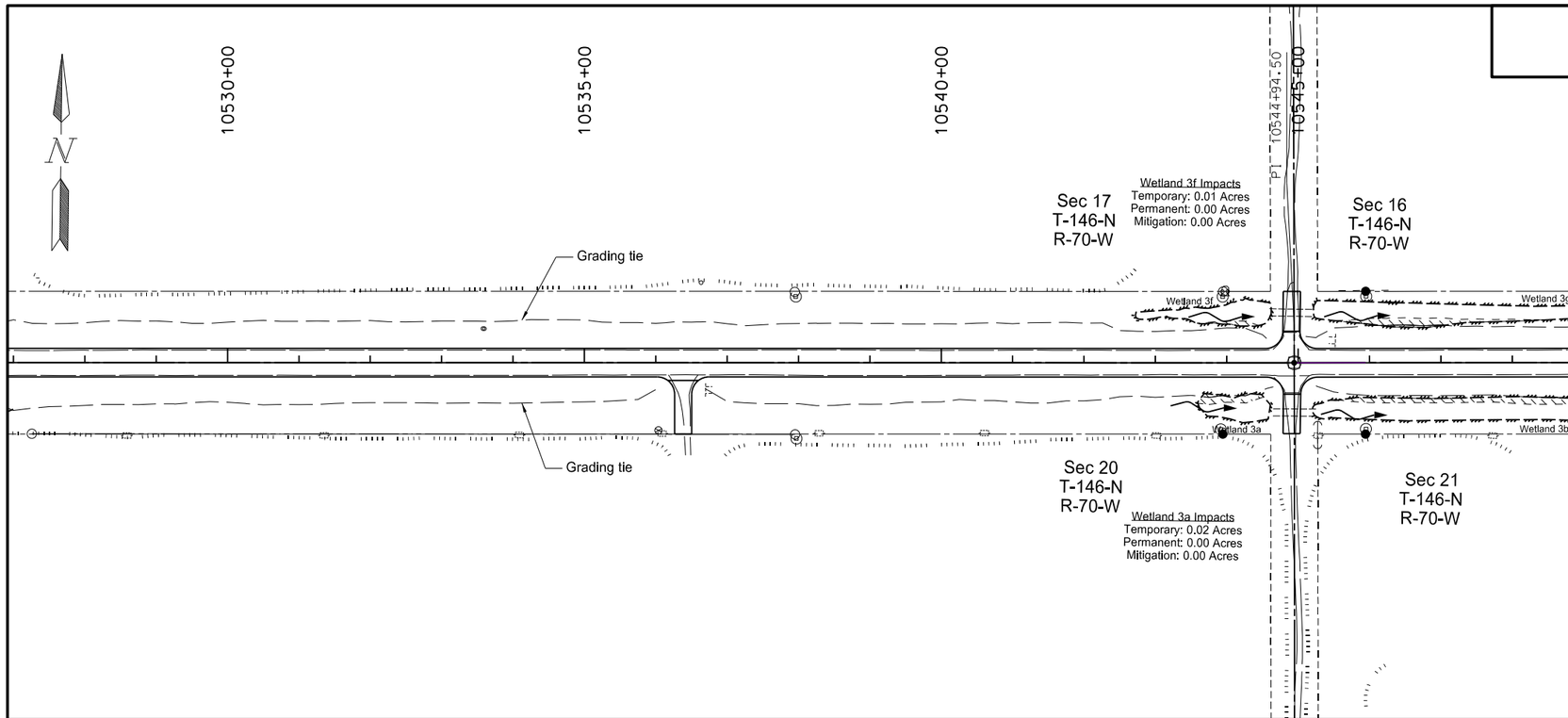
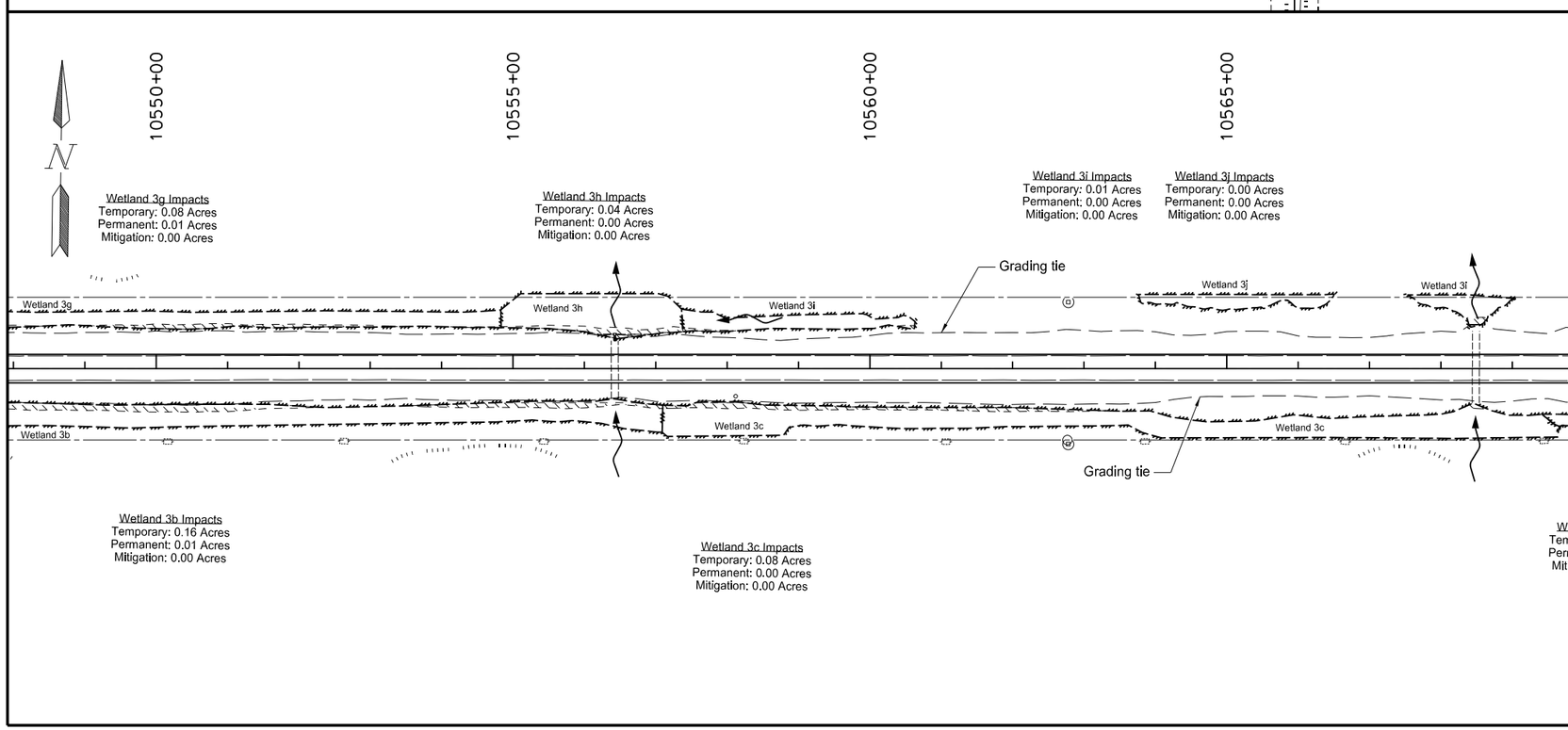
Wetland Impact & Mitigation

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	2





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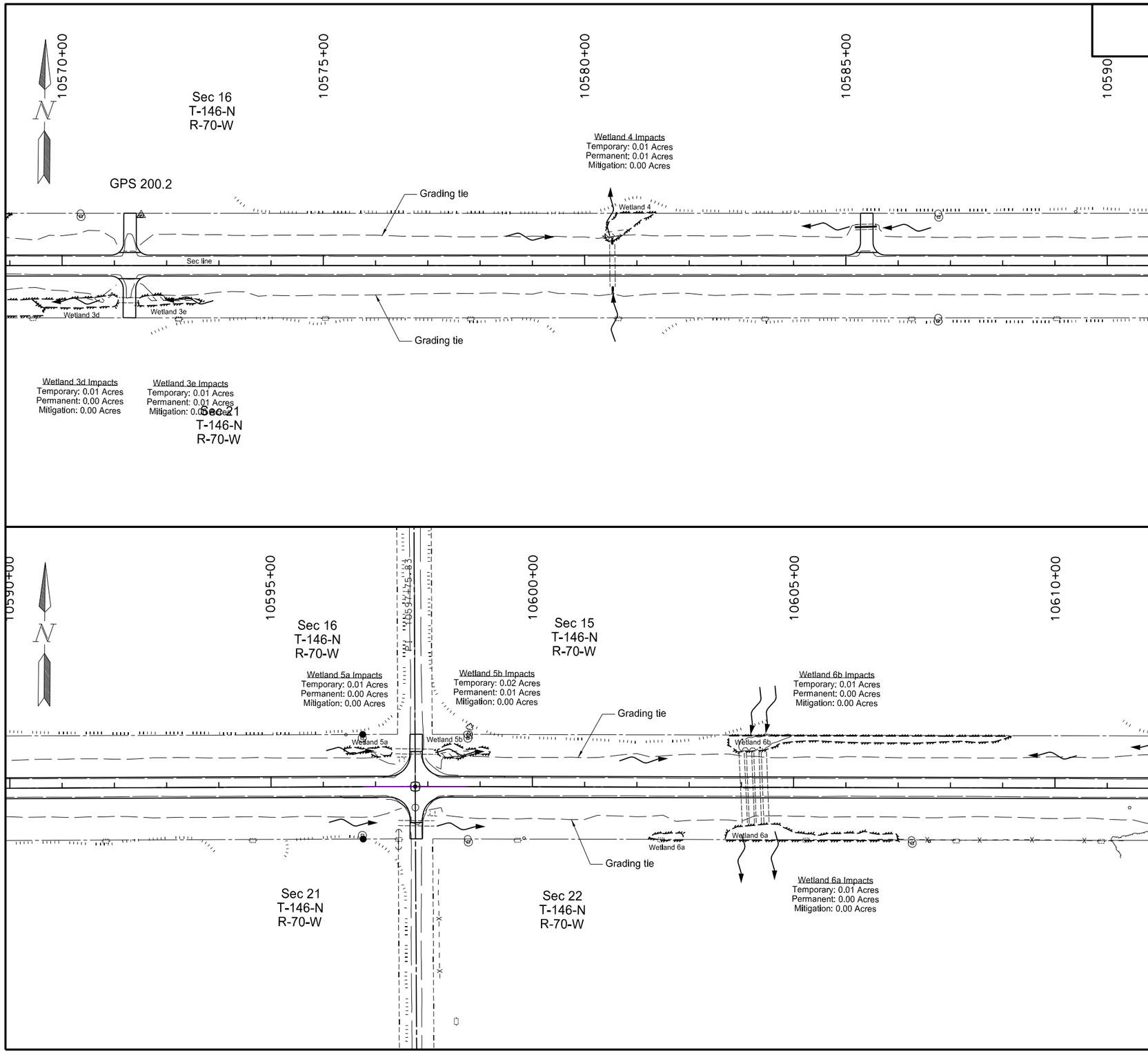
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	3



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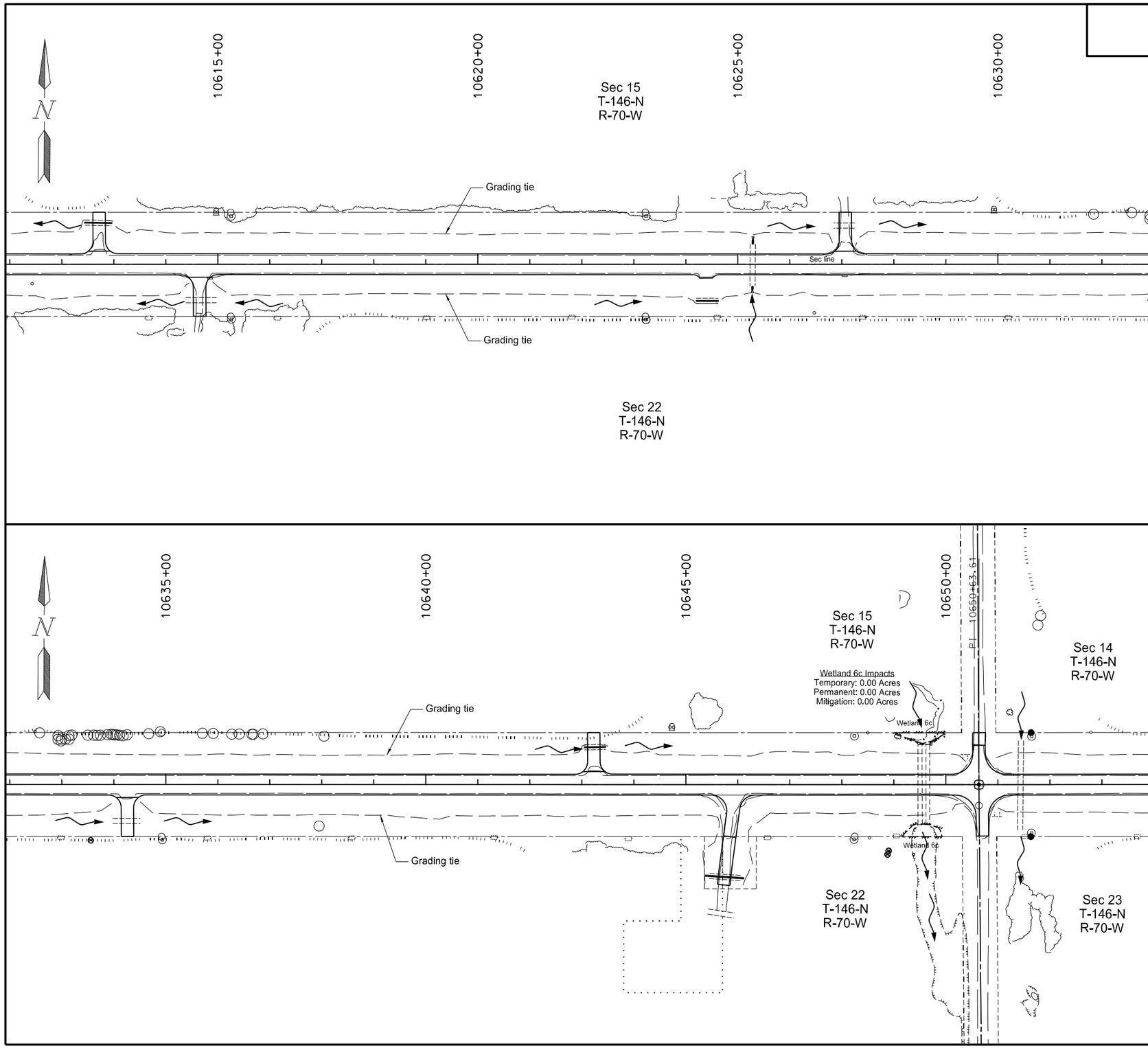
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	4



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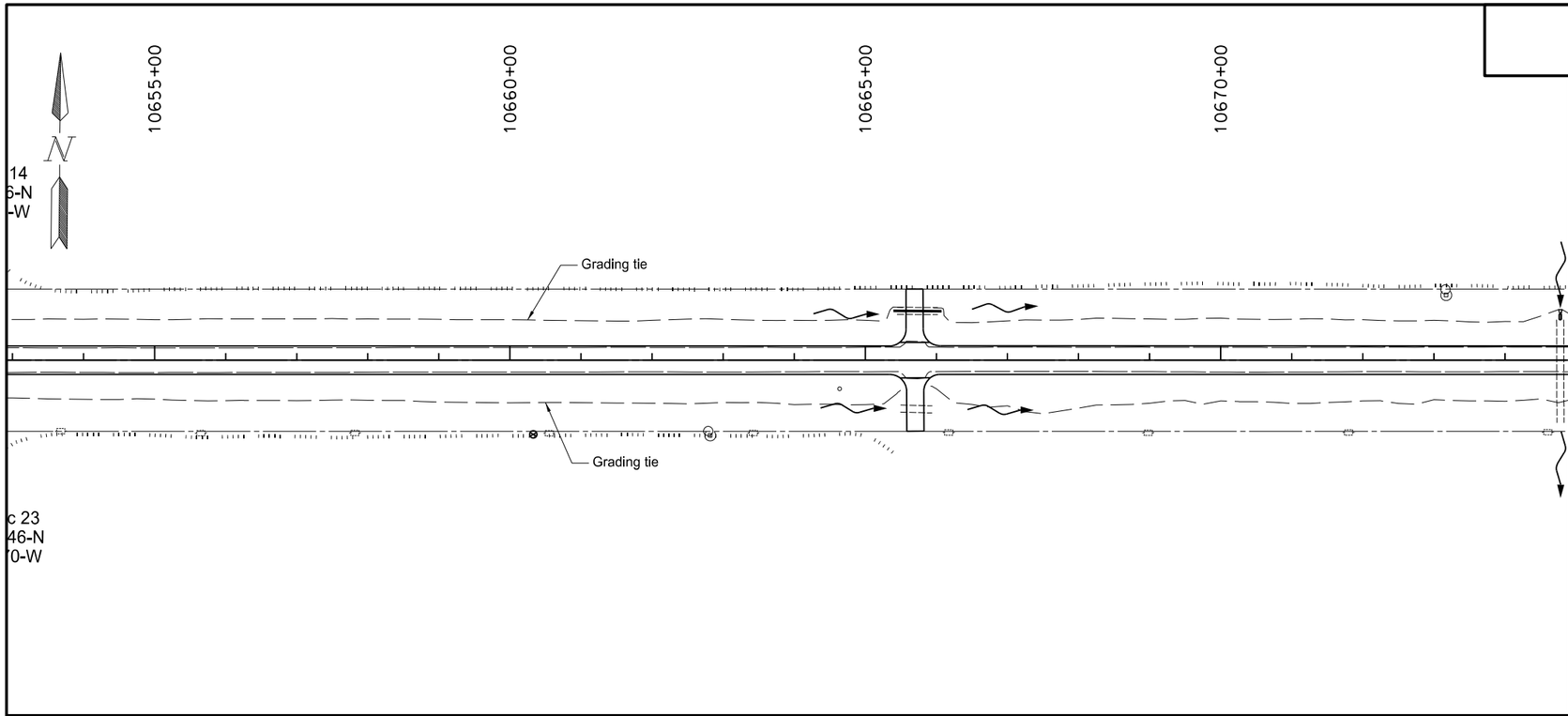
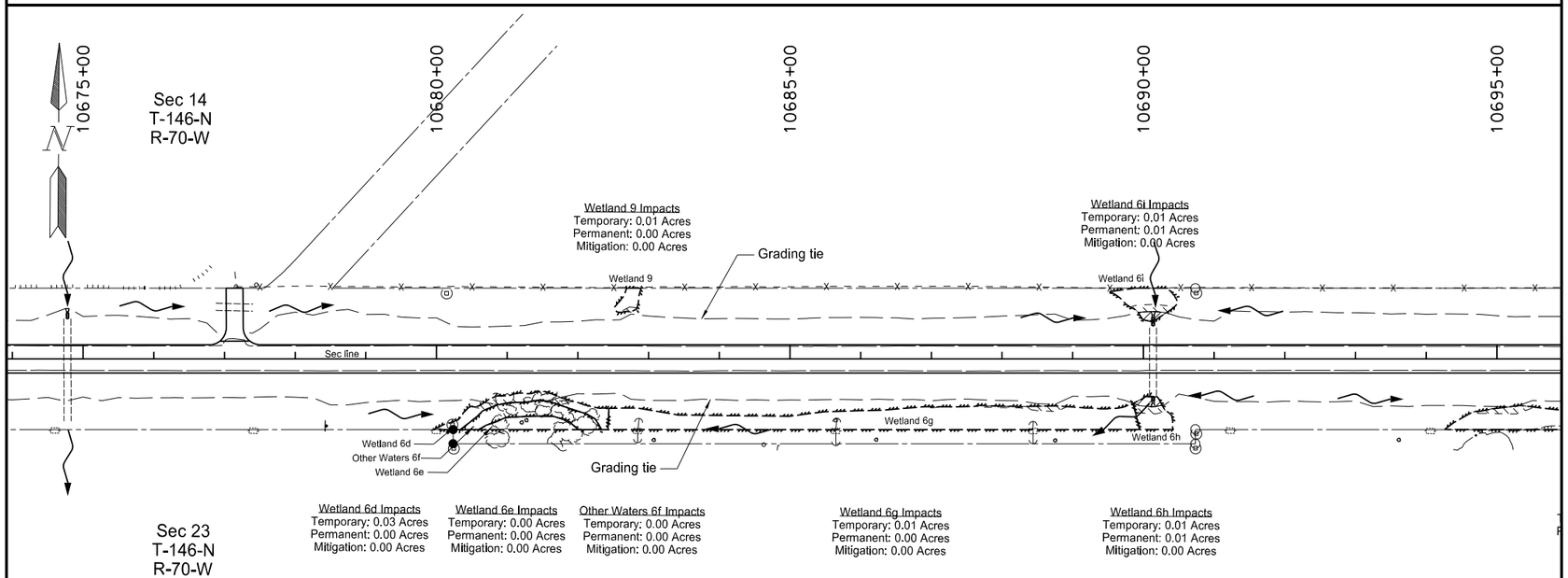
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	5





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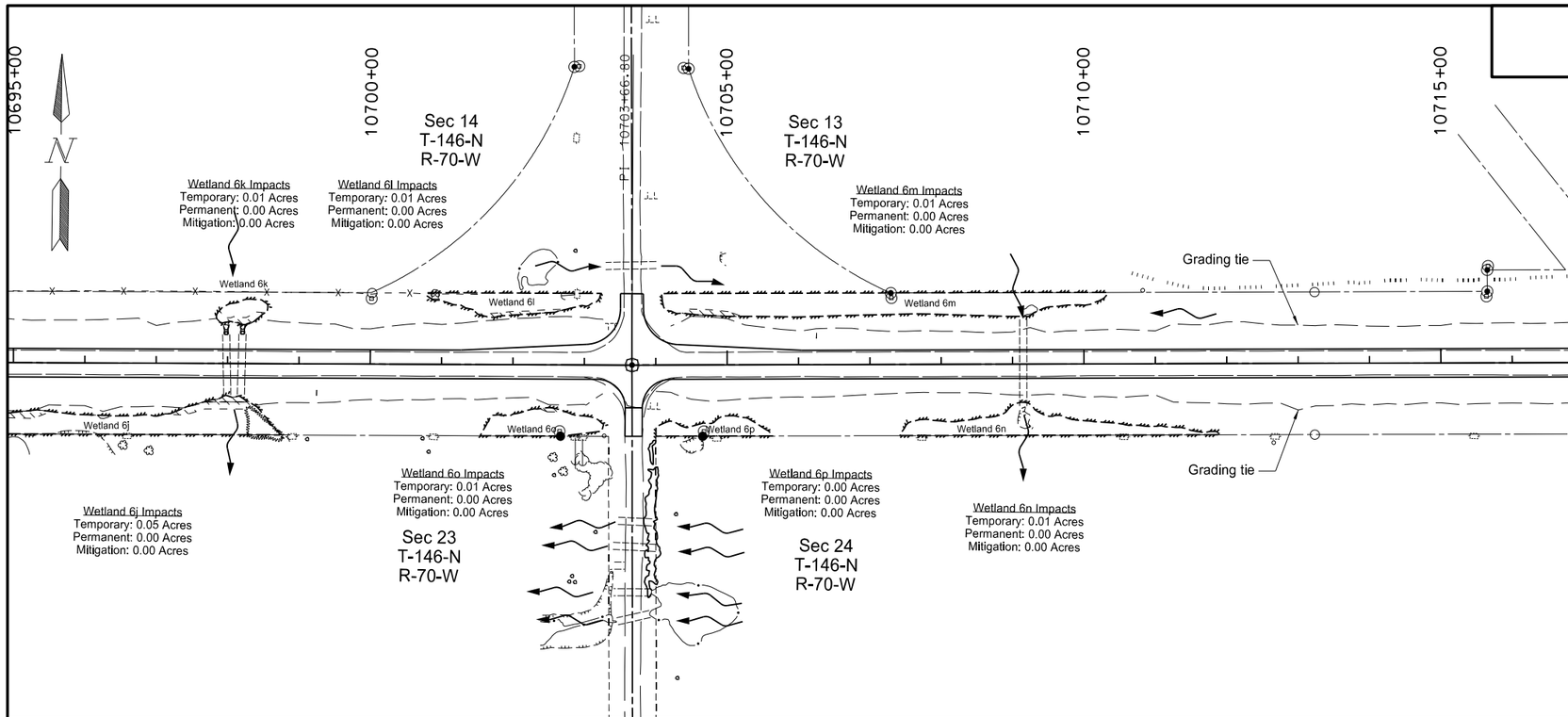
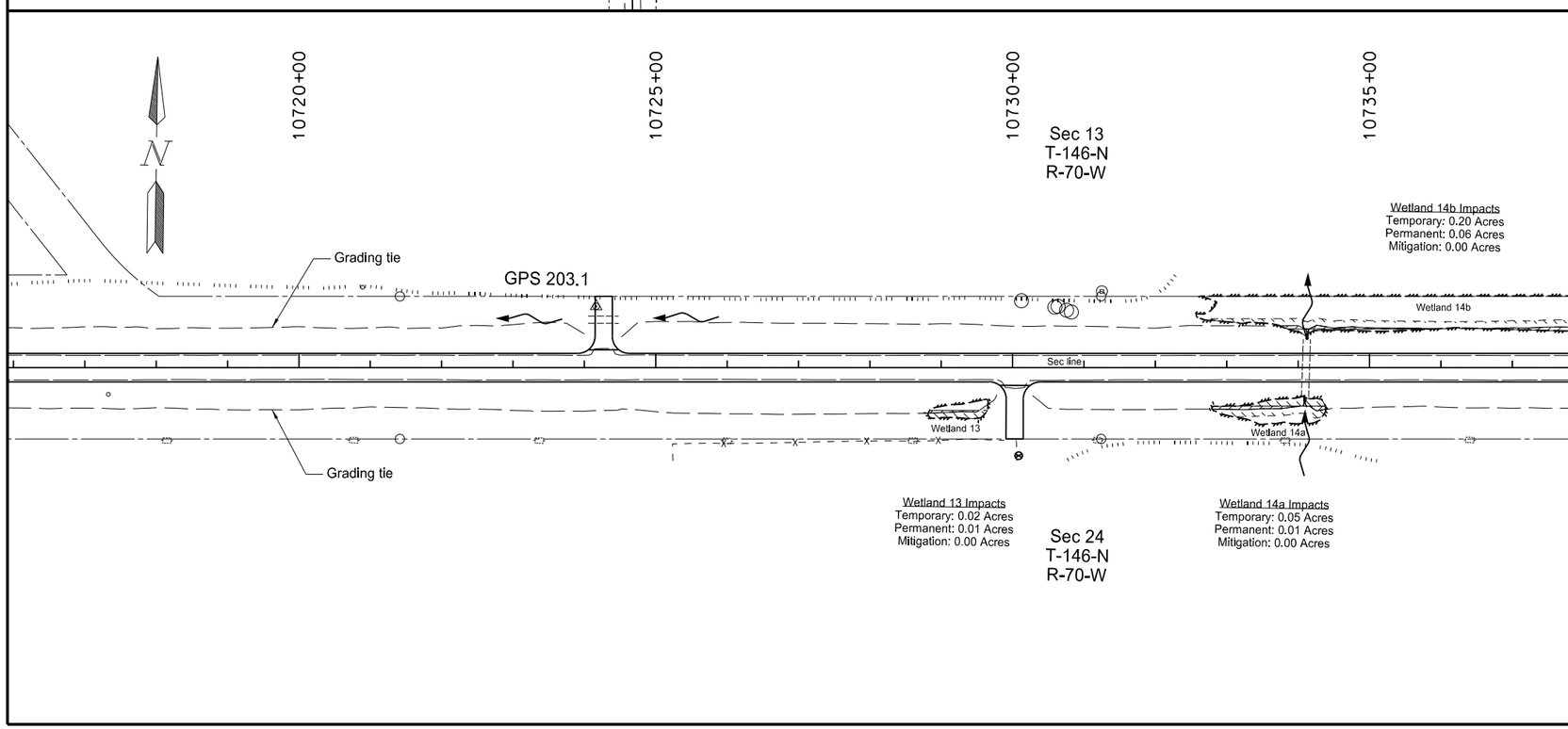
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	6





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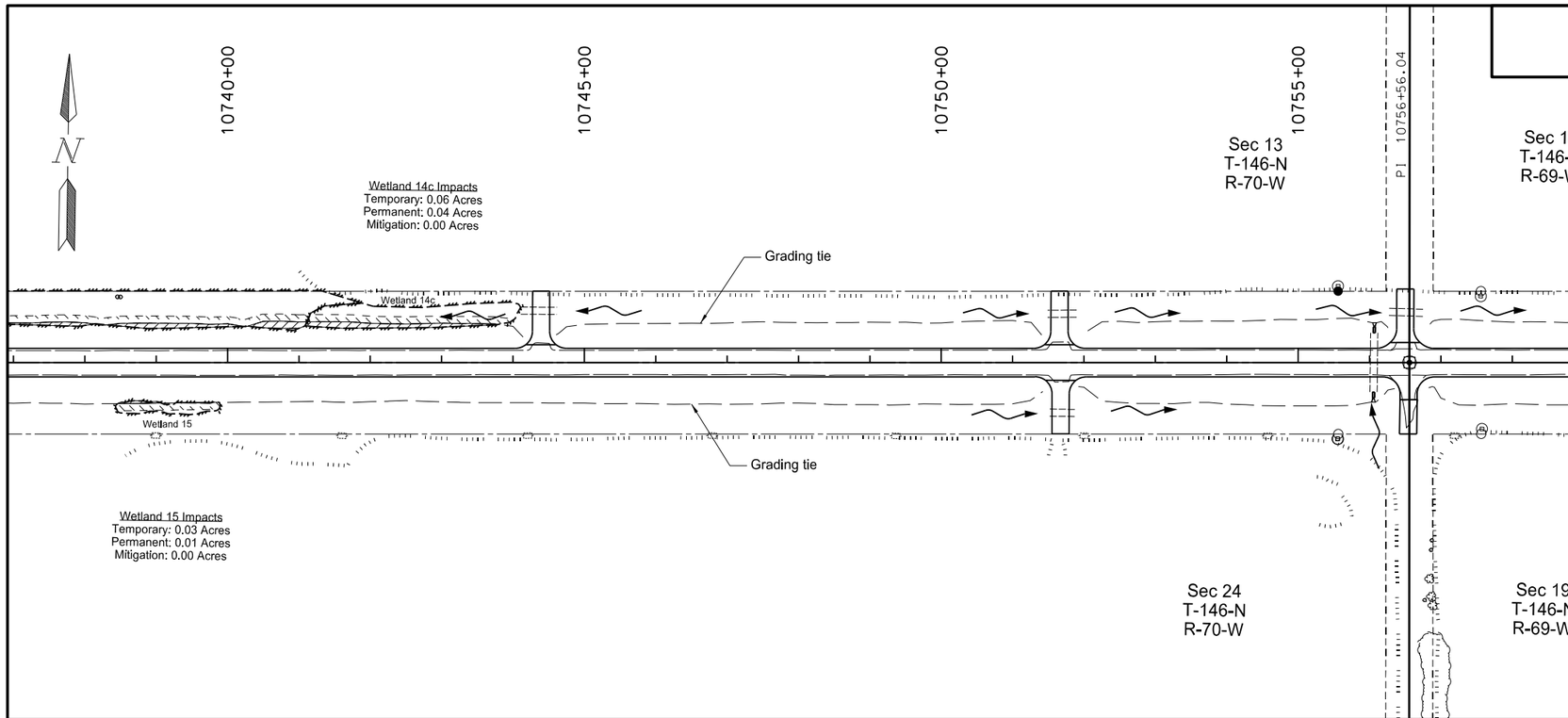
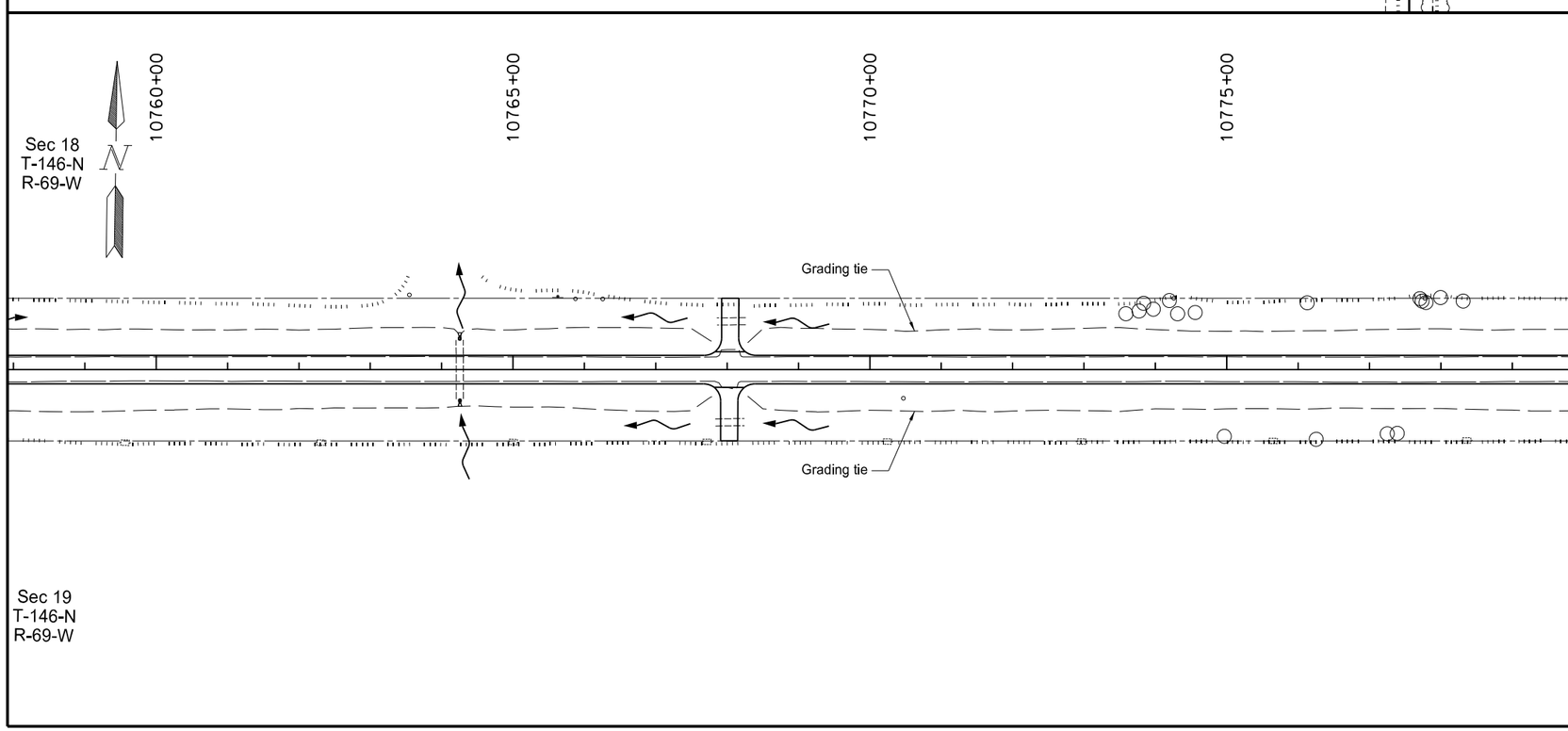
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	7





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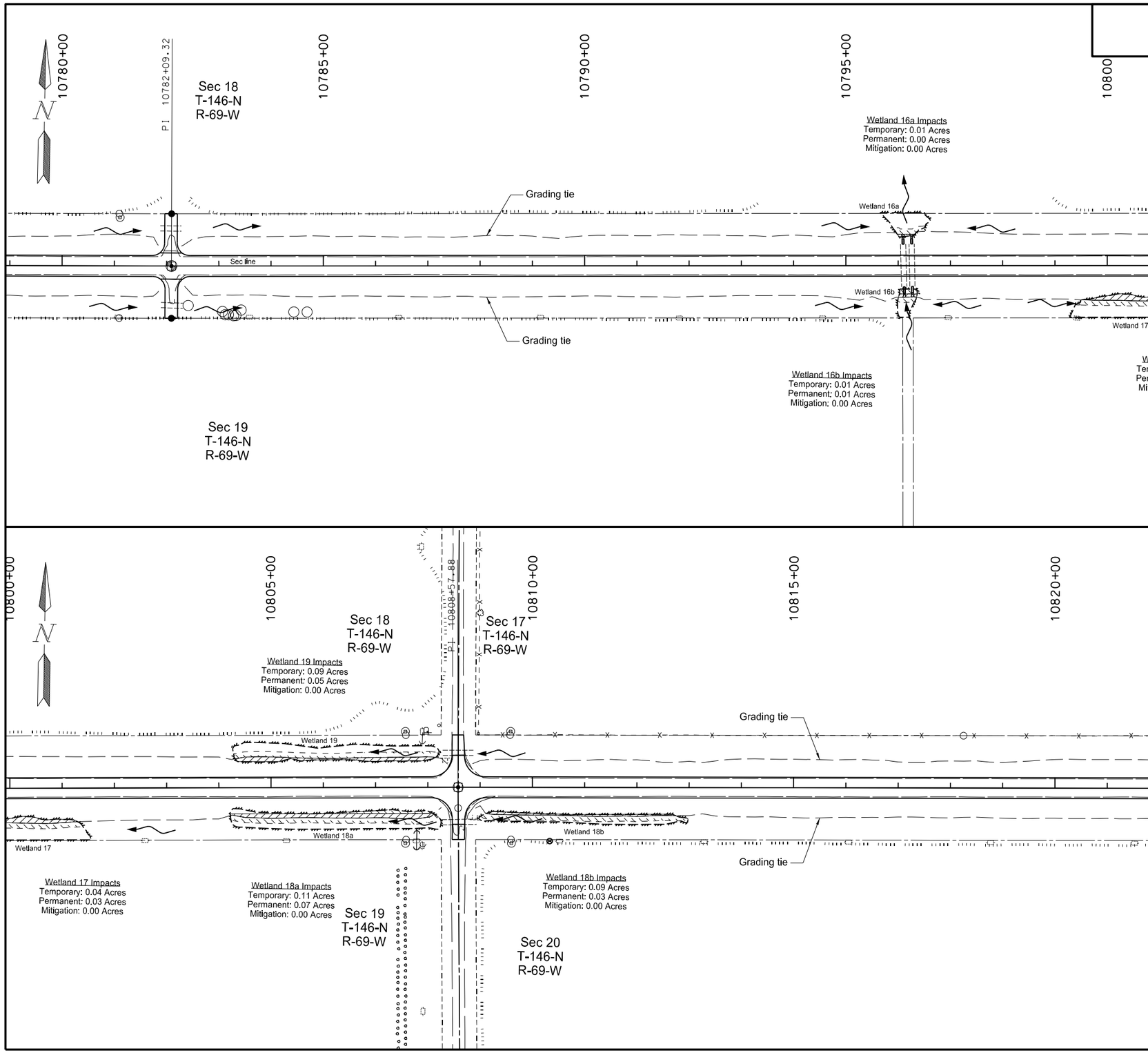
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	8



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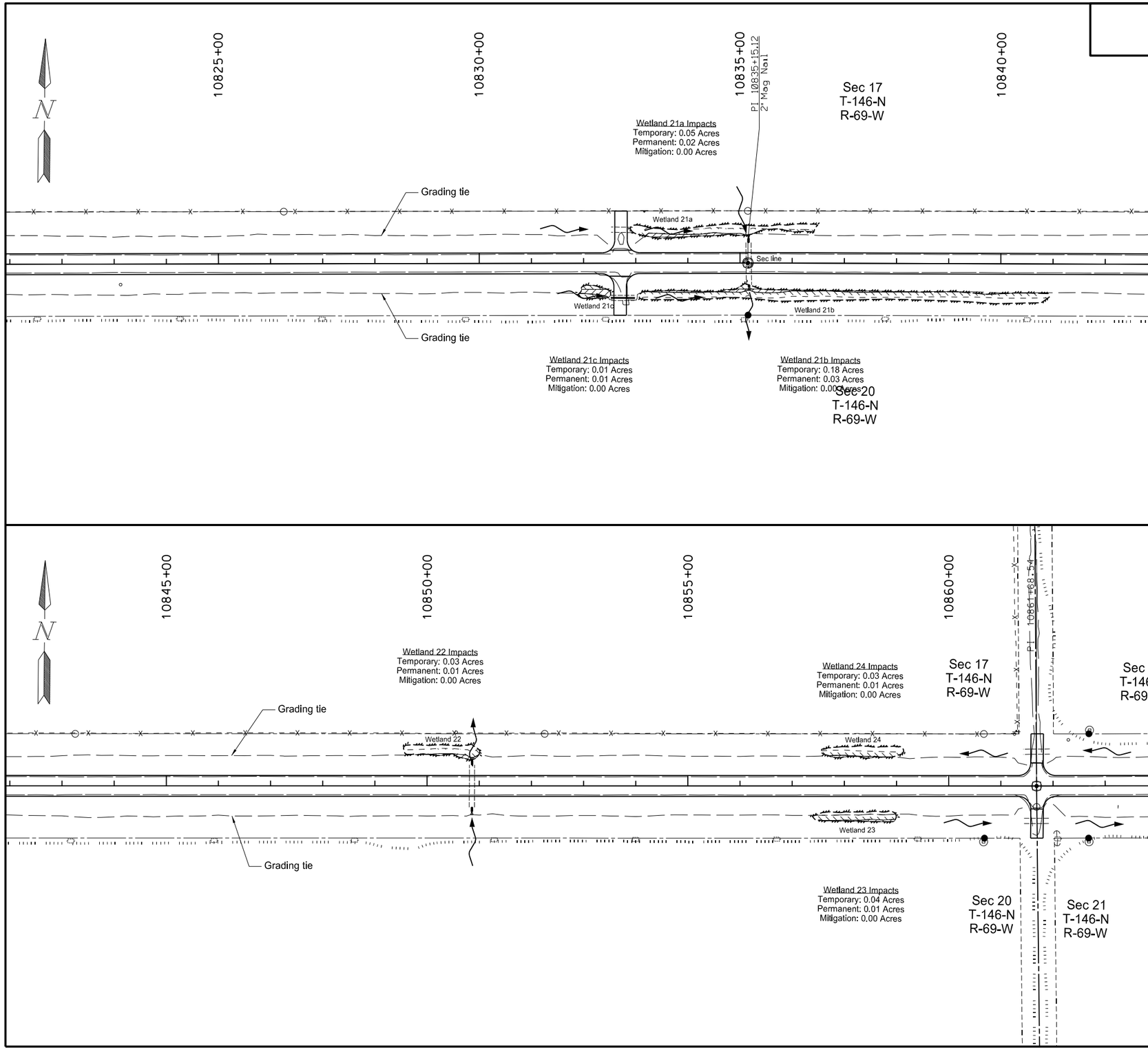
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	9



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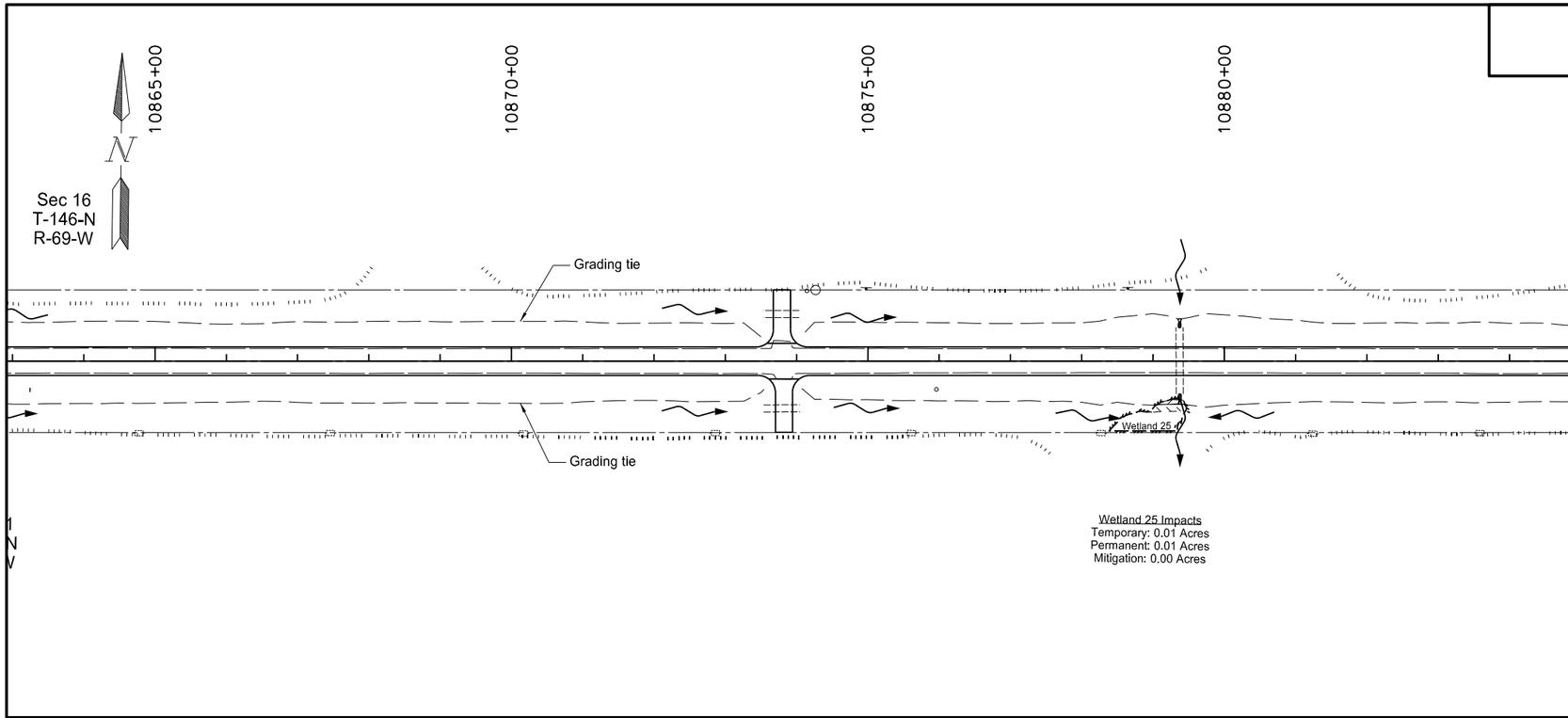
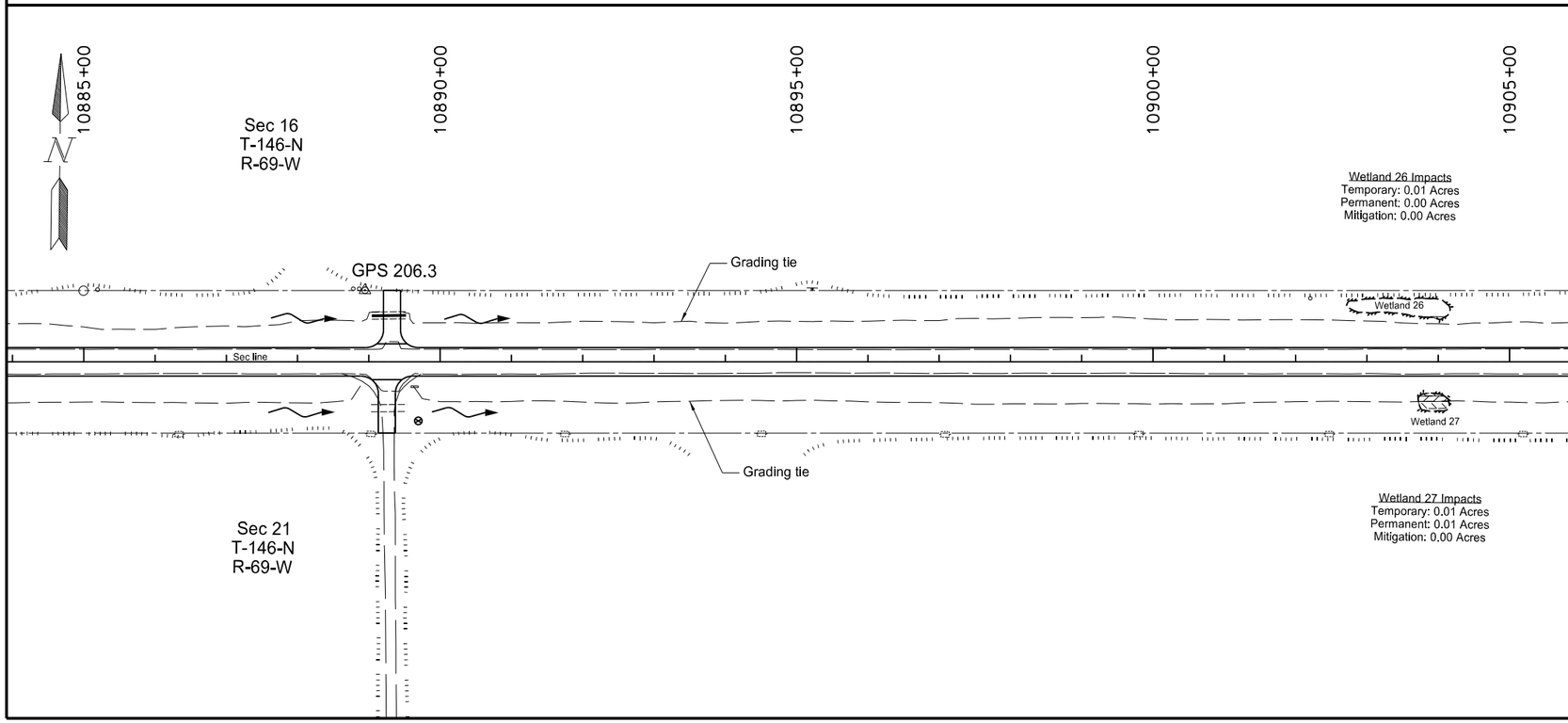
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	10





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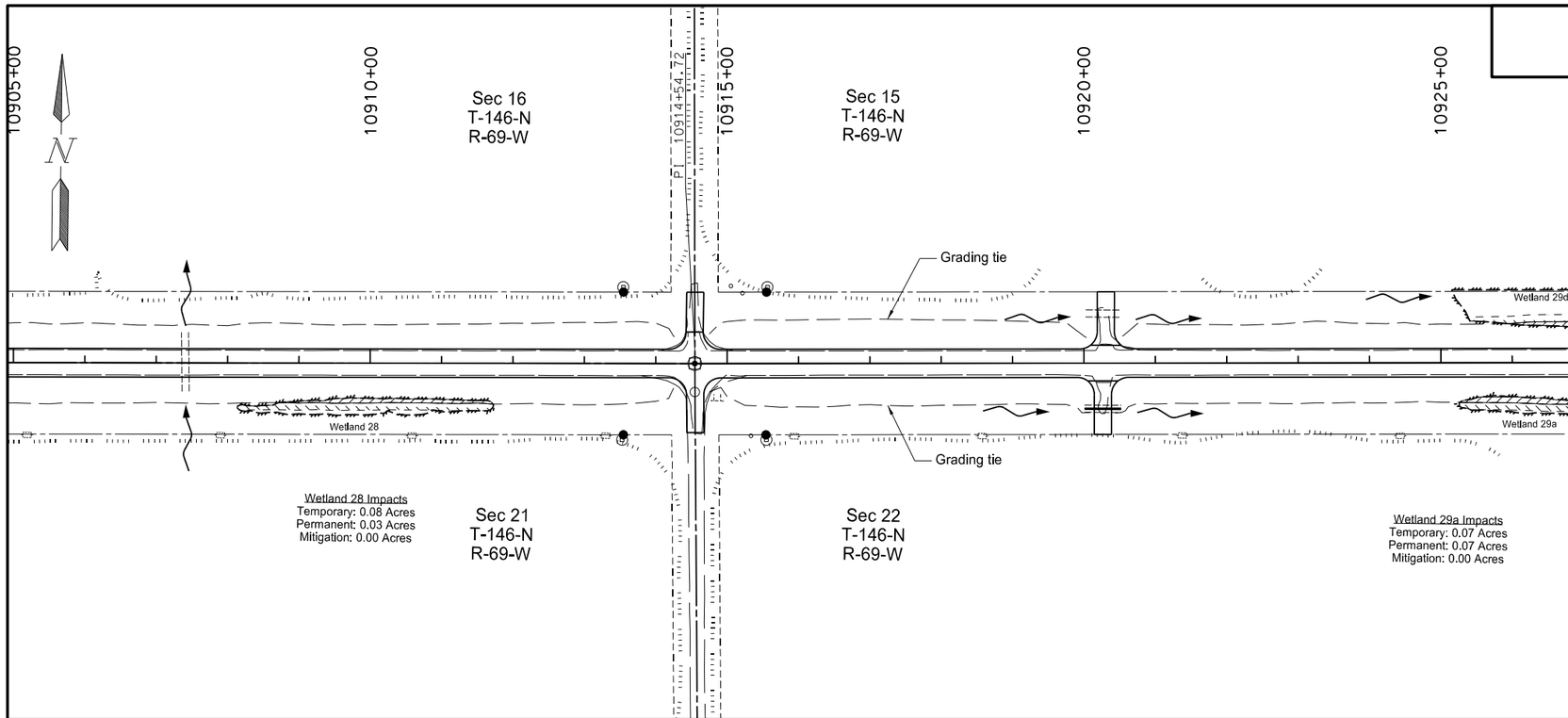
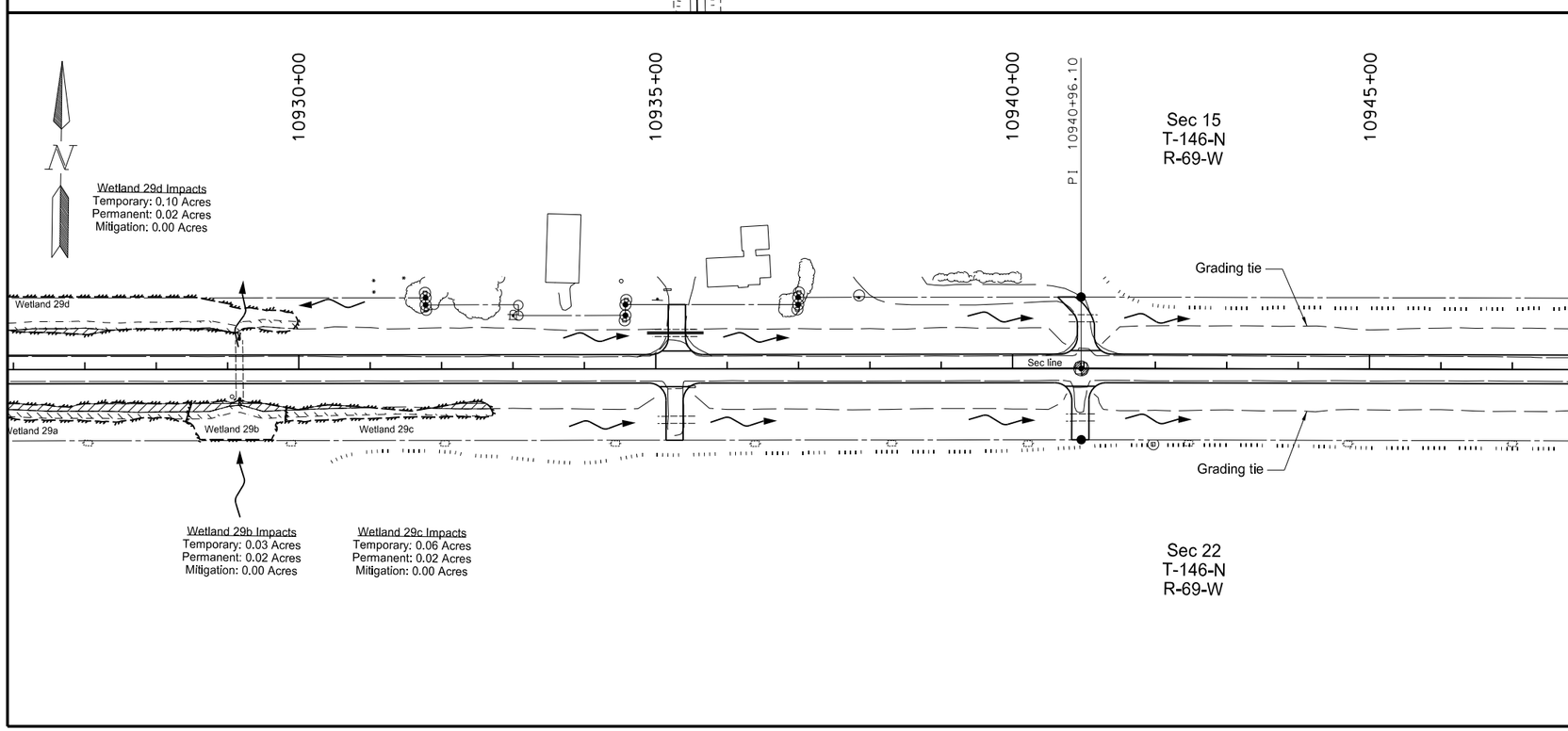
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	11





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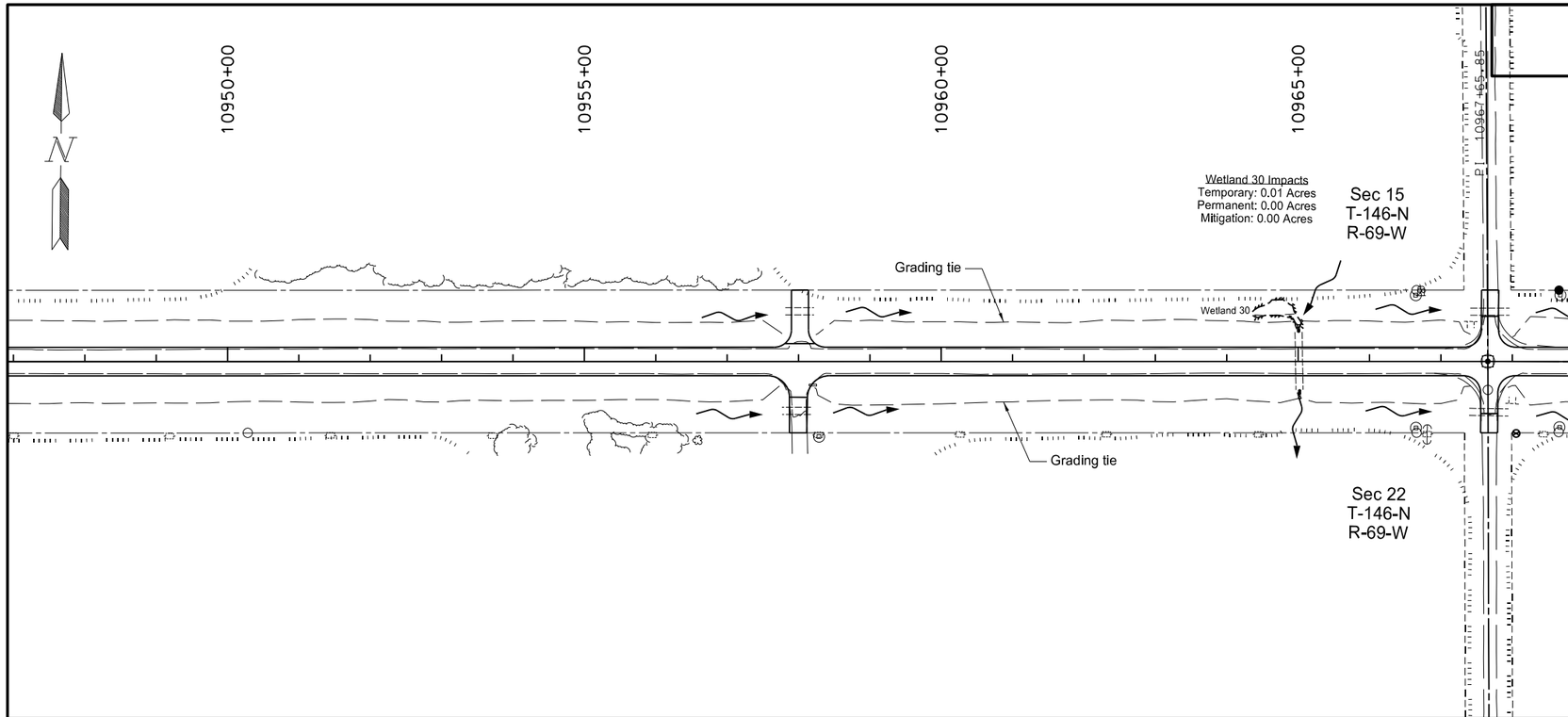
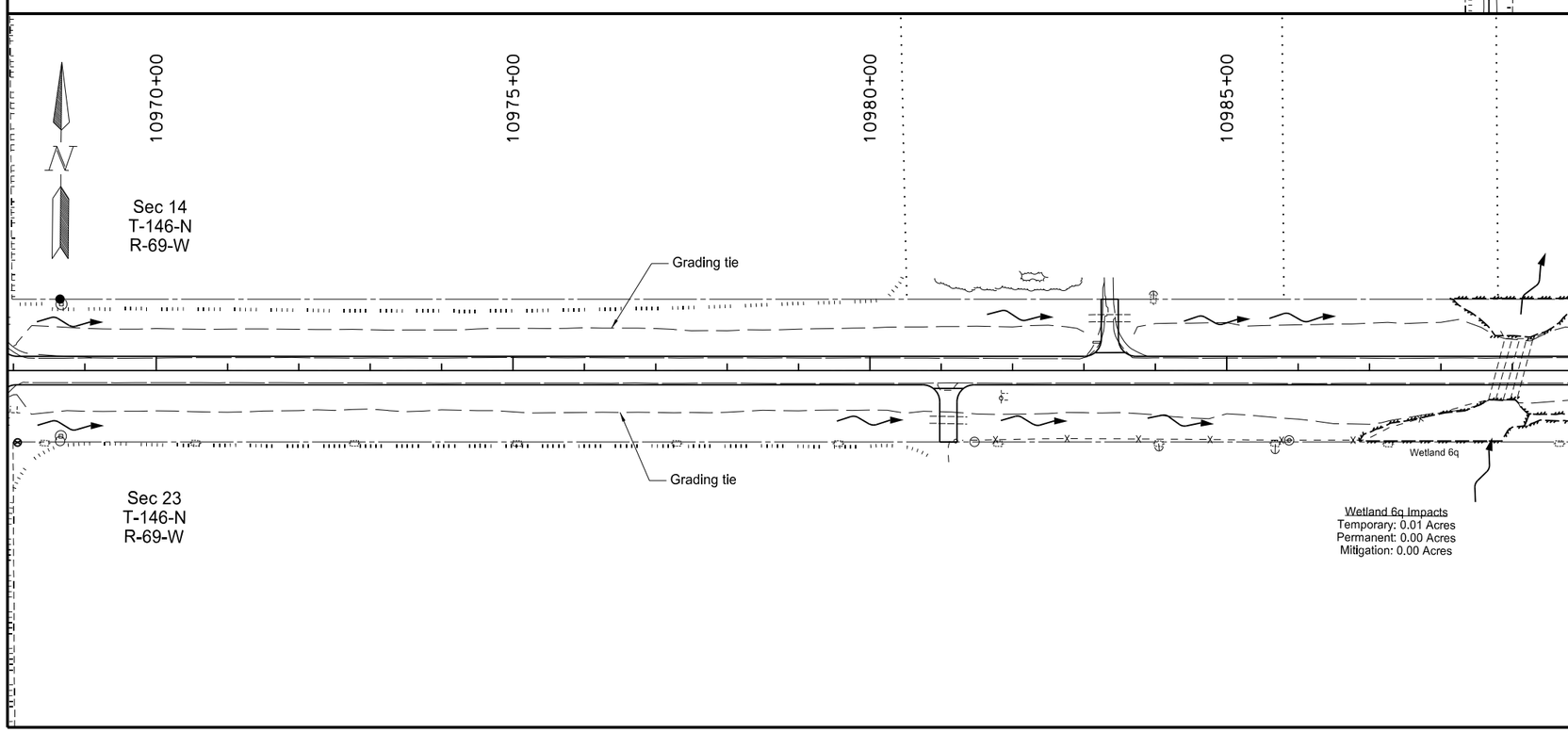
Wetland Impact & Mitigation

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	12





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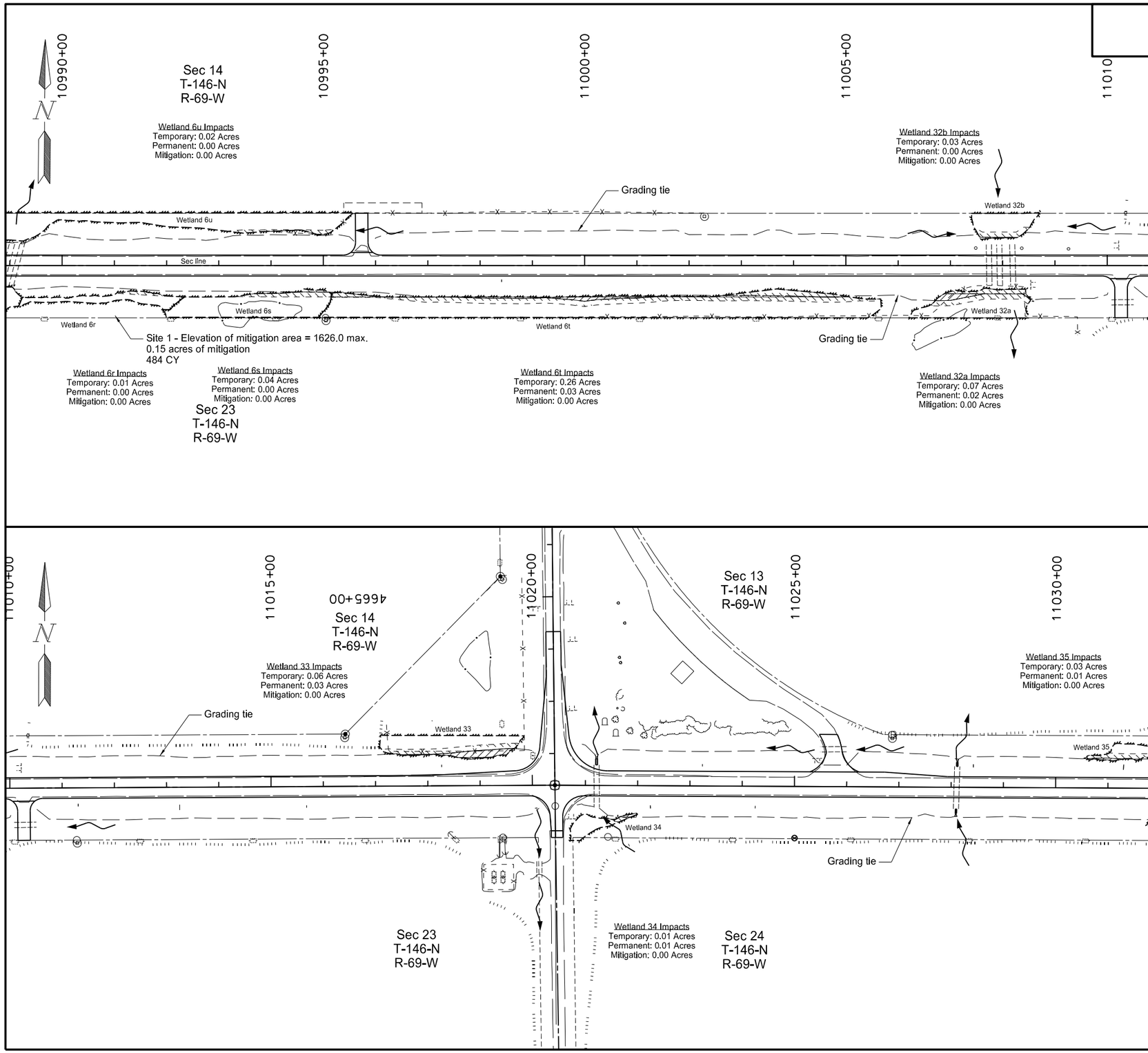
Wetland Impact & Mitigation

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	13



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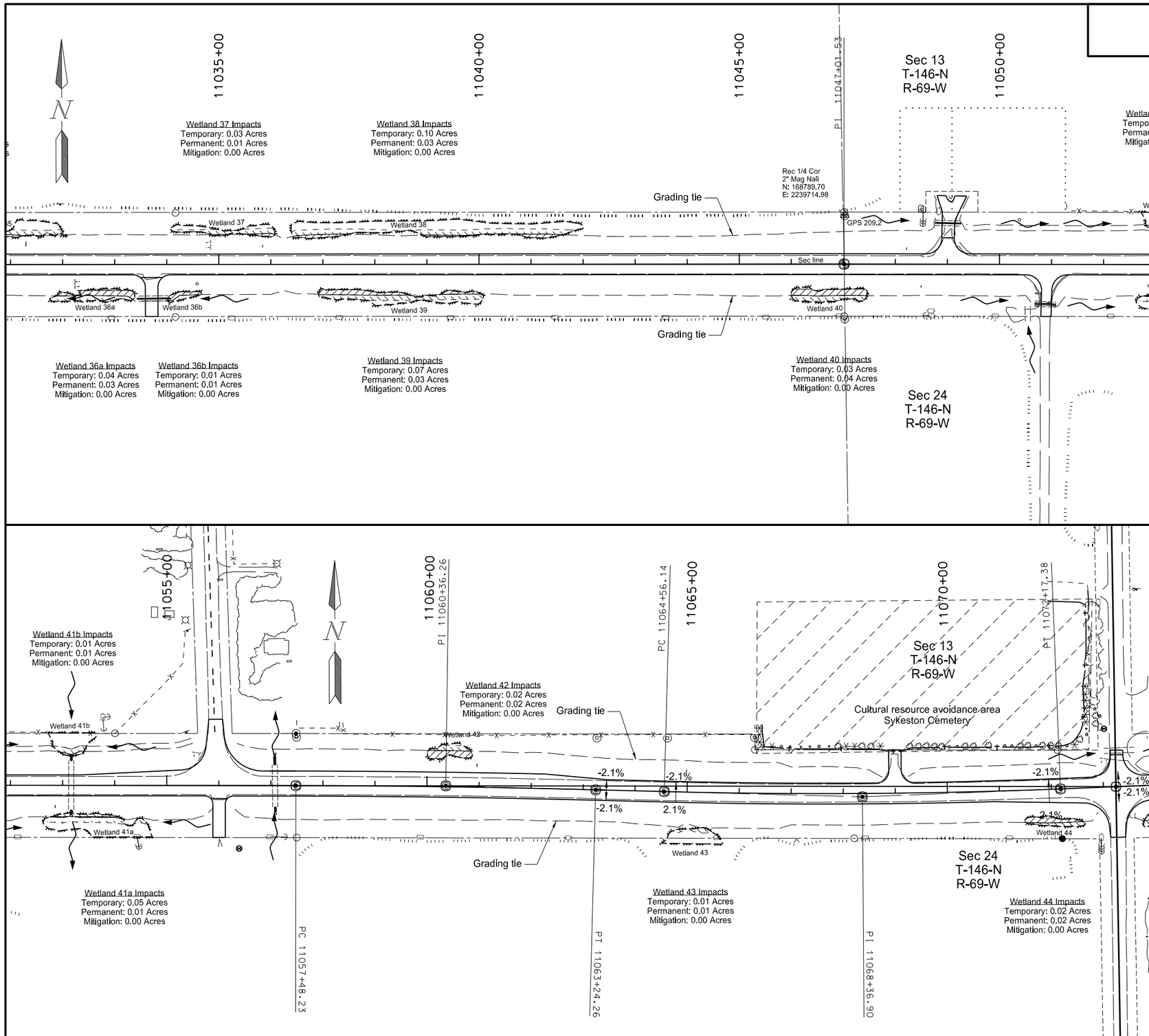
Wetland Impact & Mitigation

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	14



Temporary Wetland Impact

Permanent Wetland Impact

Other Waters Temporary Impact

Other Waters Permanent Impact

Wetland Mitigation

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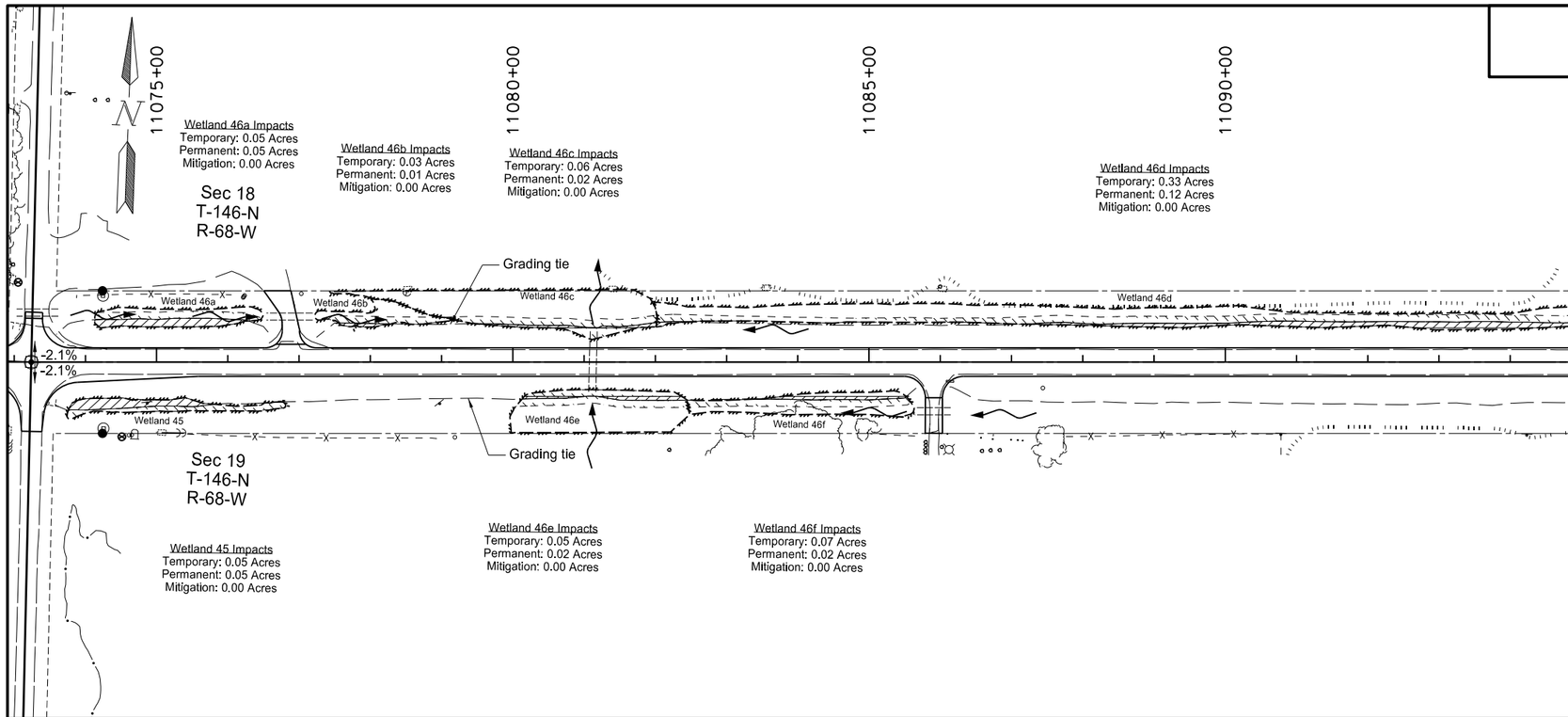
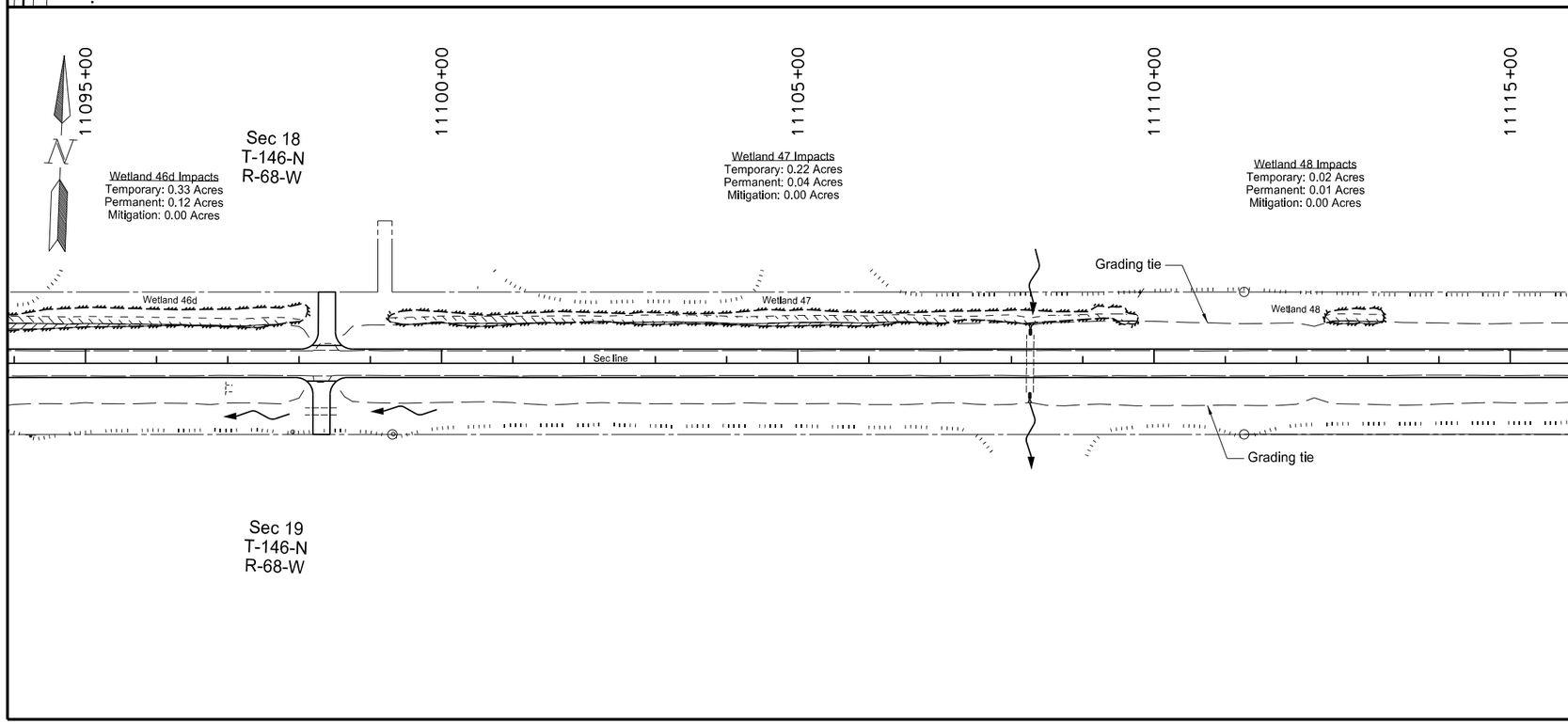
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	15





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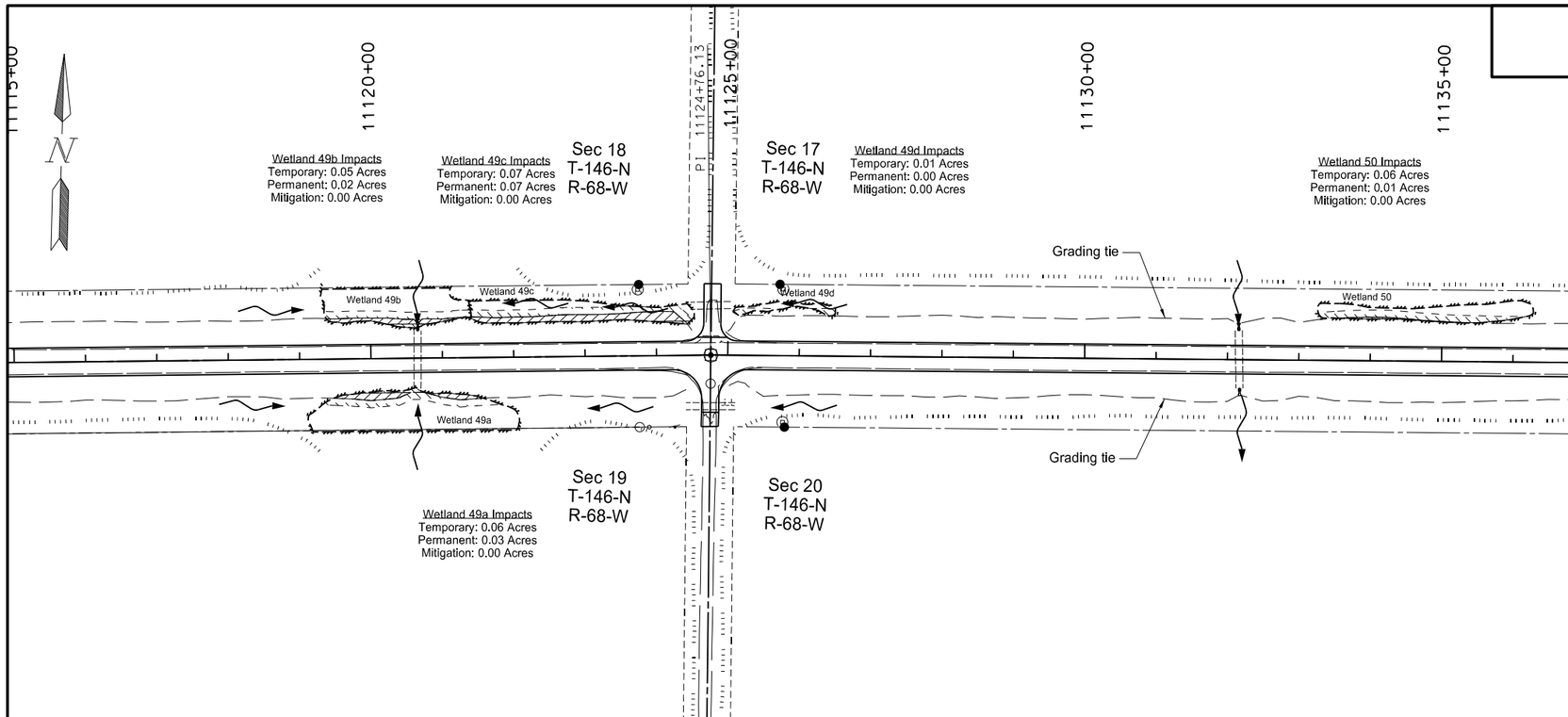
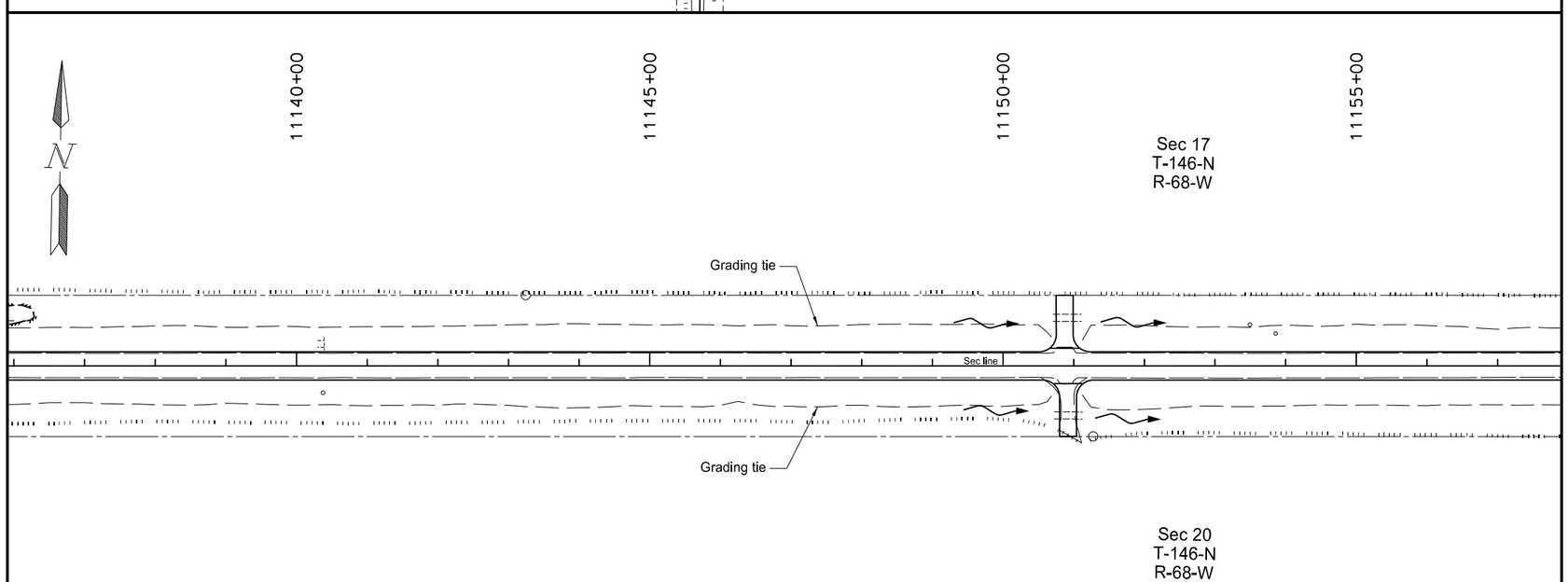
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	16





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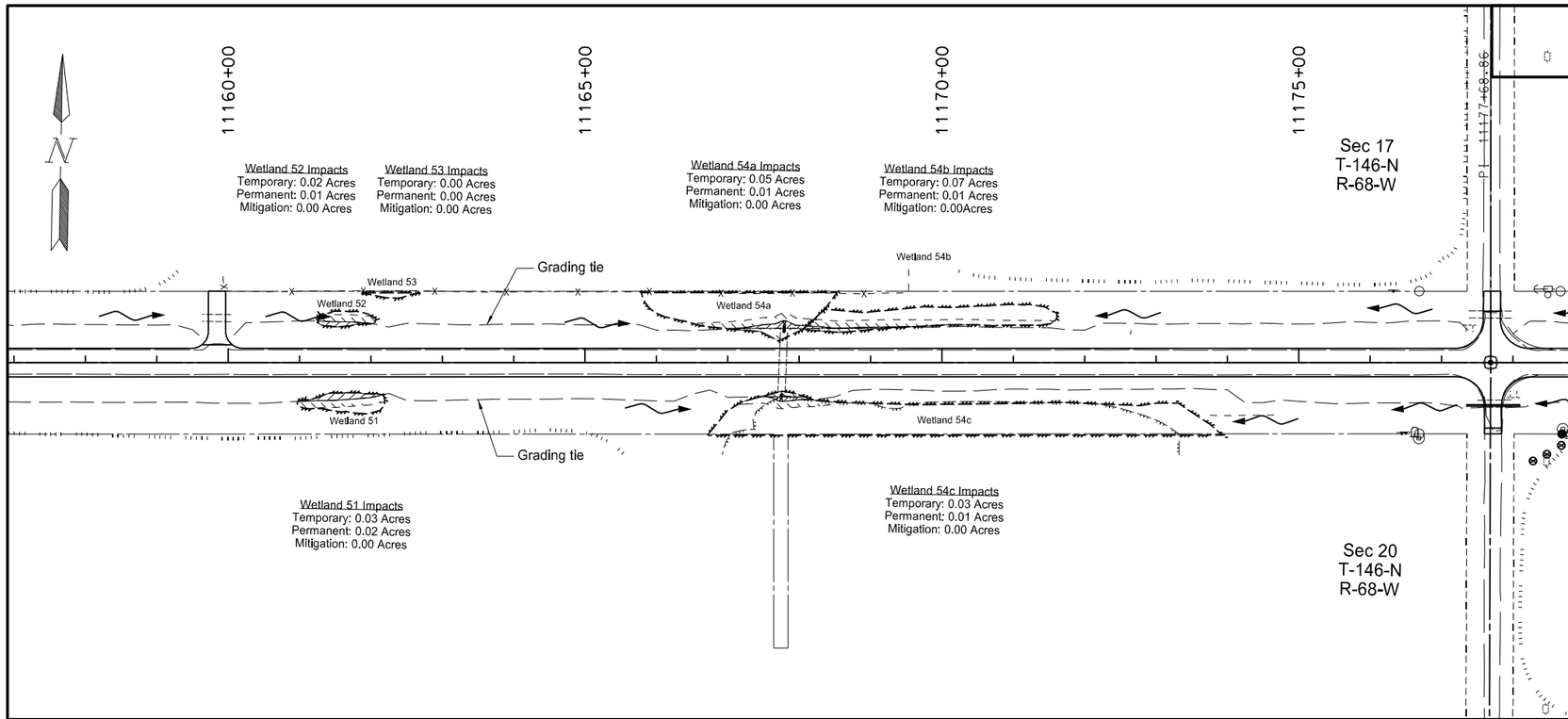
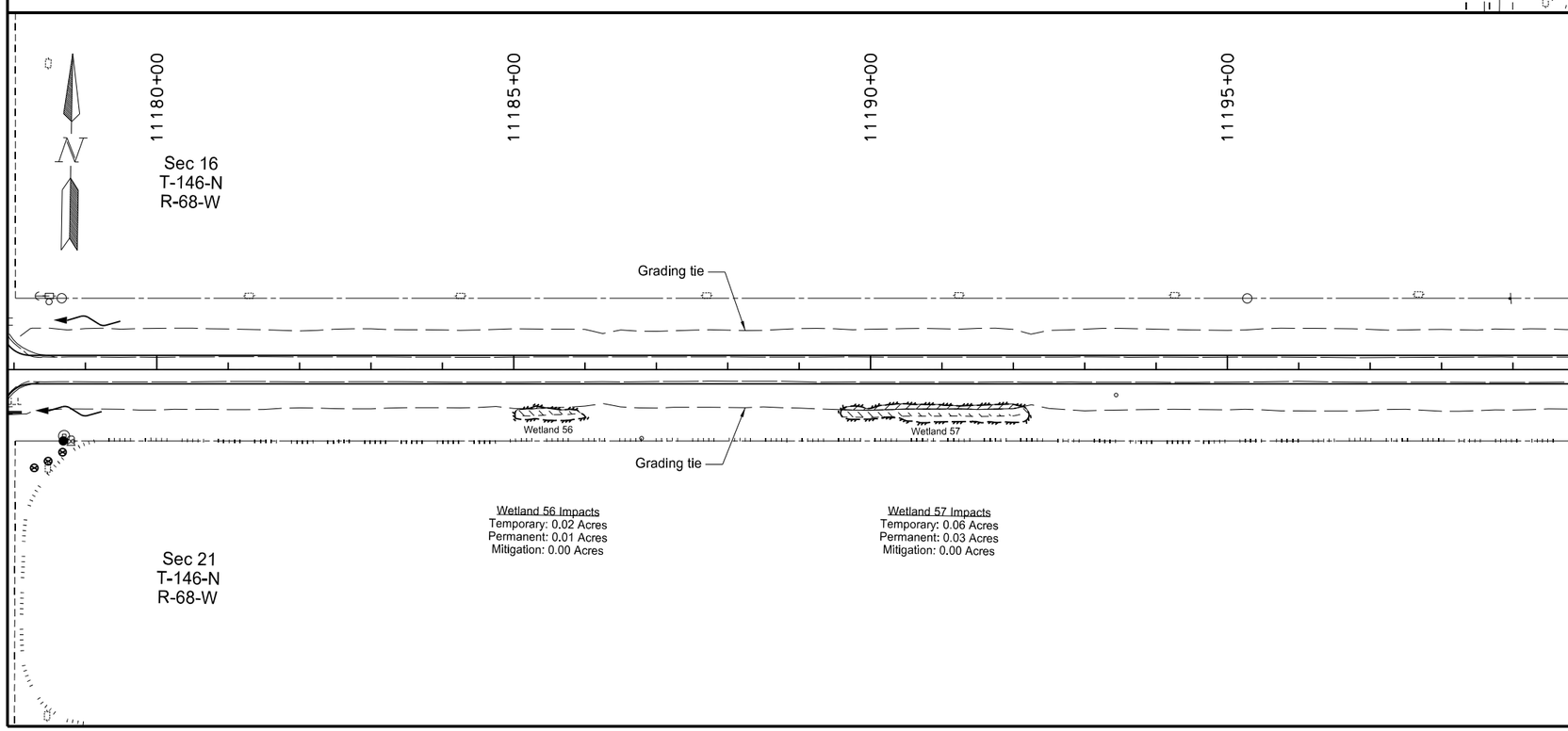
ND	CPU-SNH-3-052(042)198	75	17





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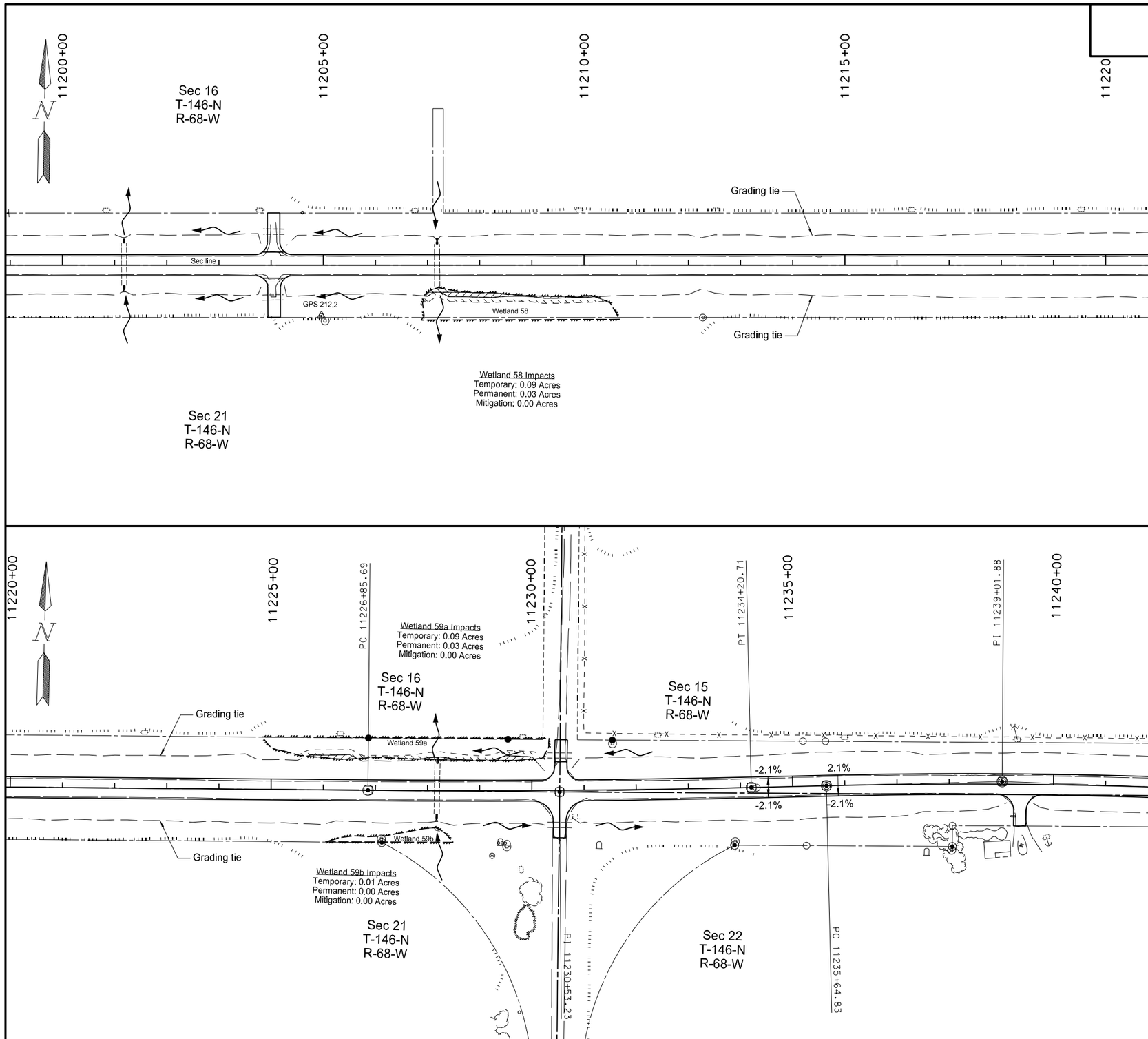

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Wetland Impact & Mitigation

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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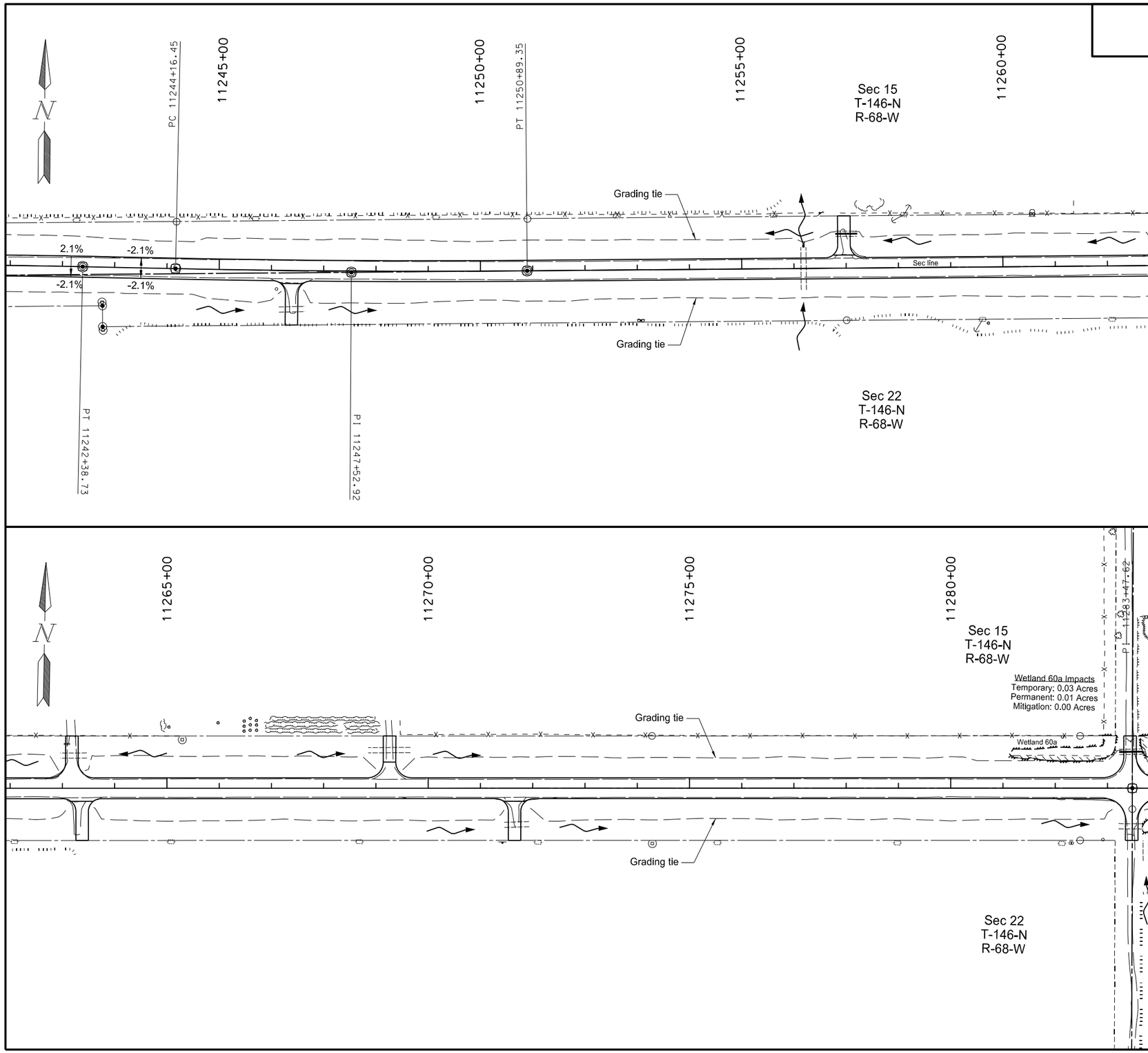

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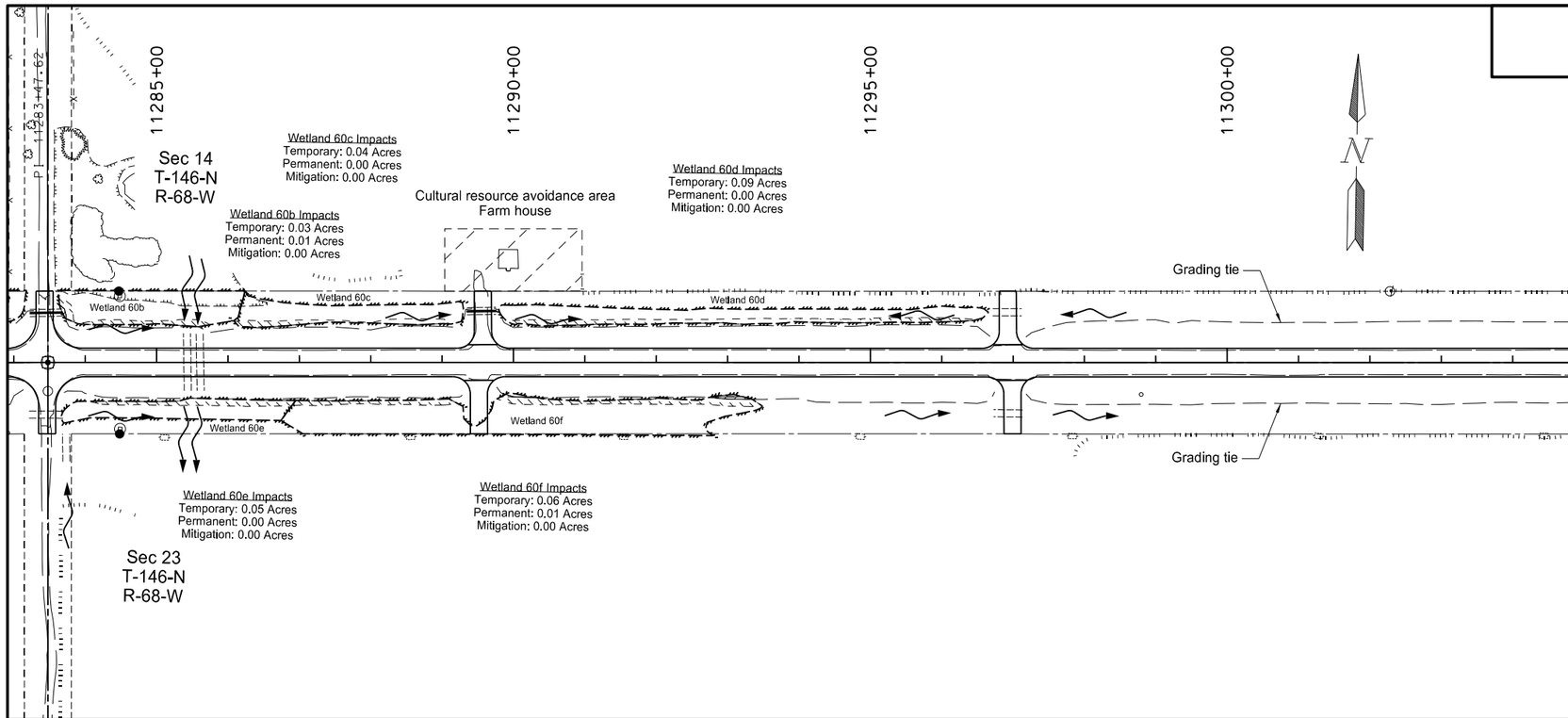

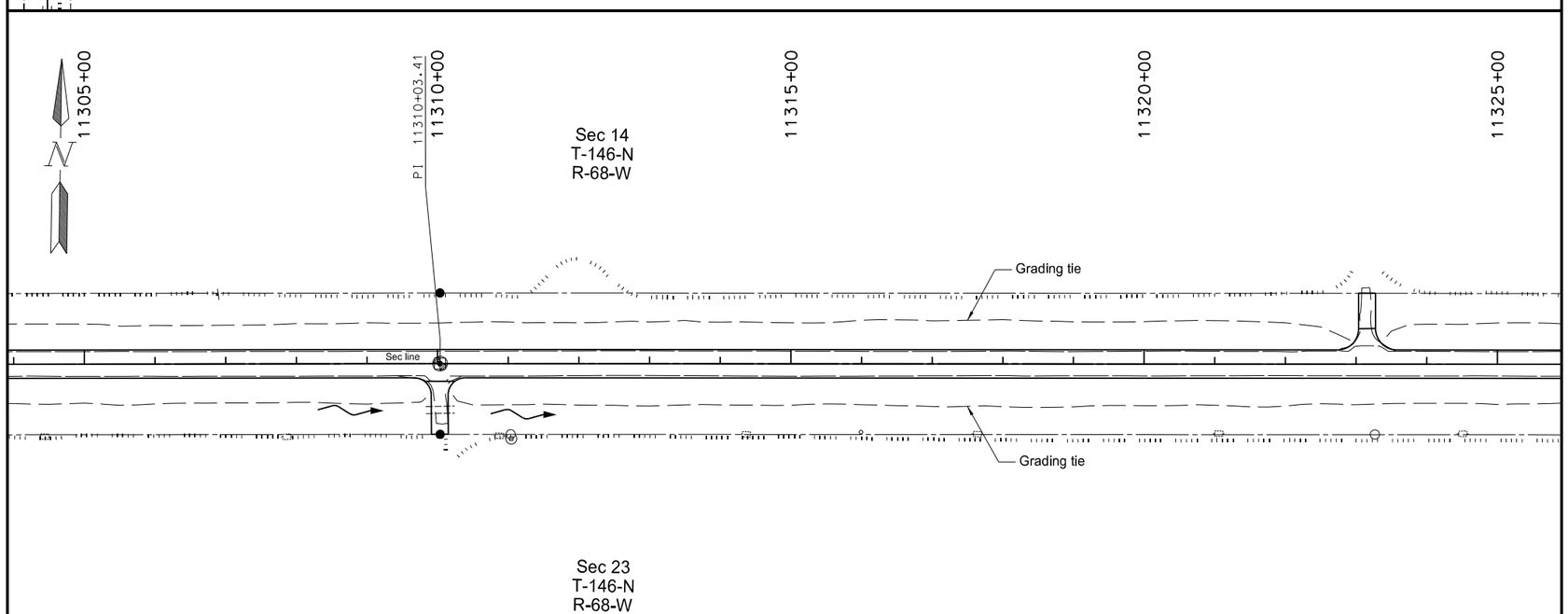

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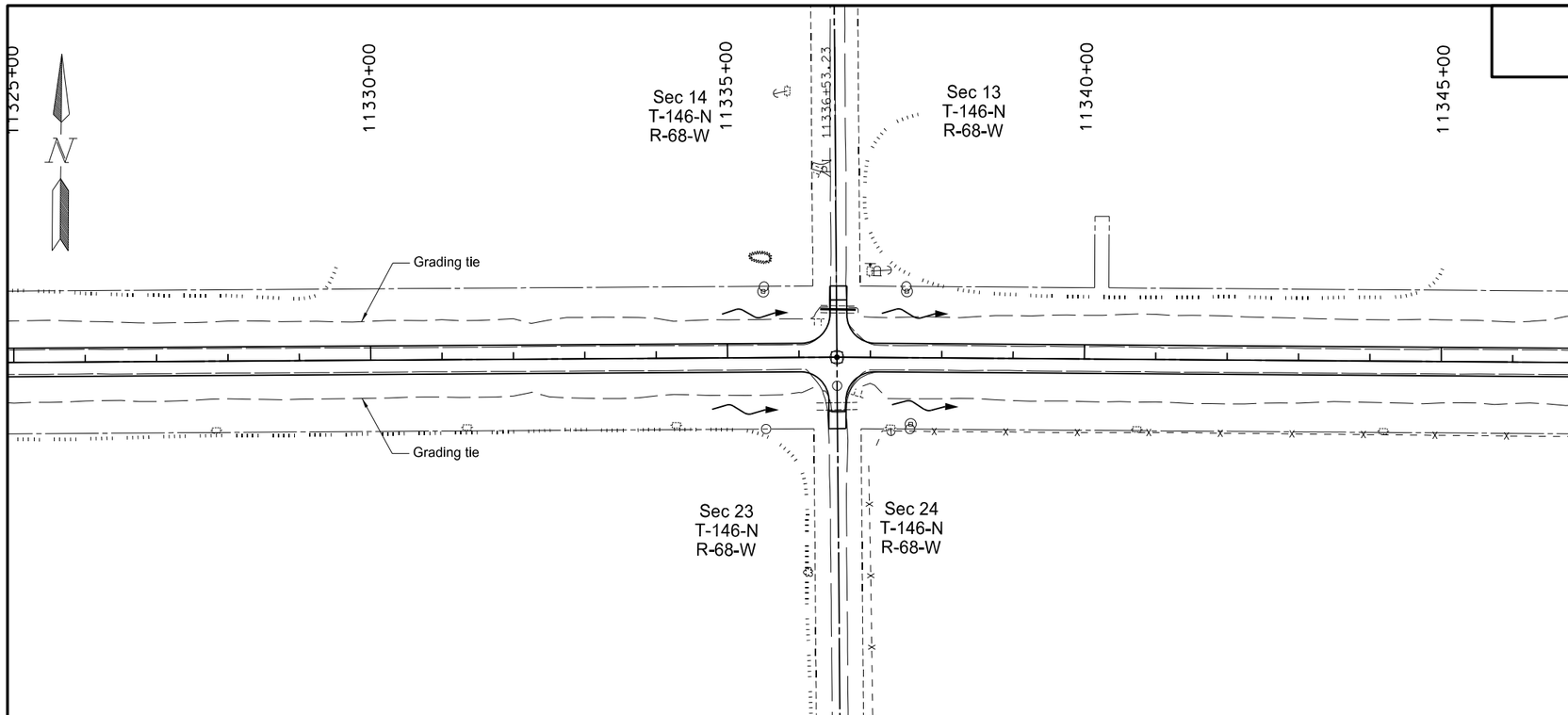
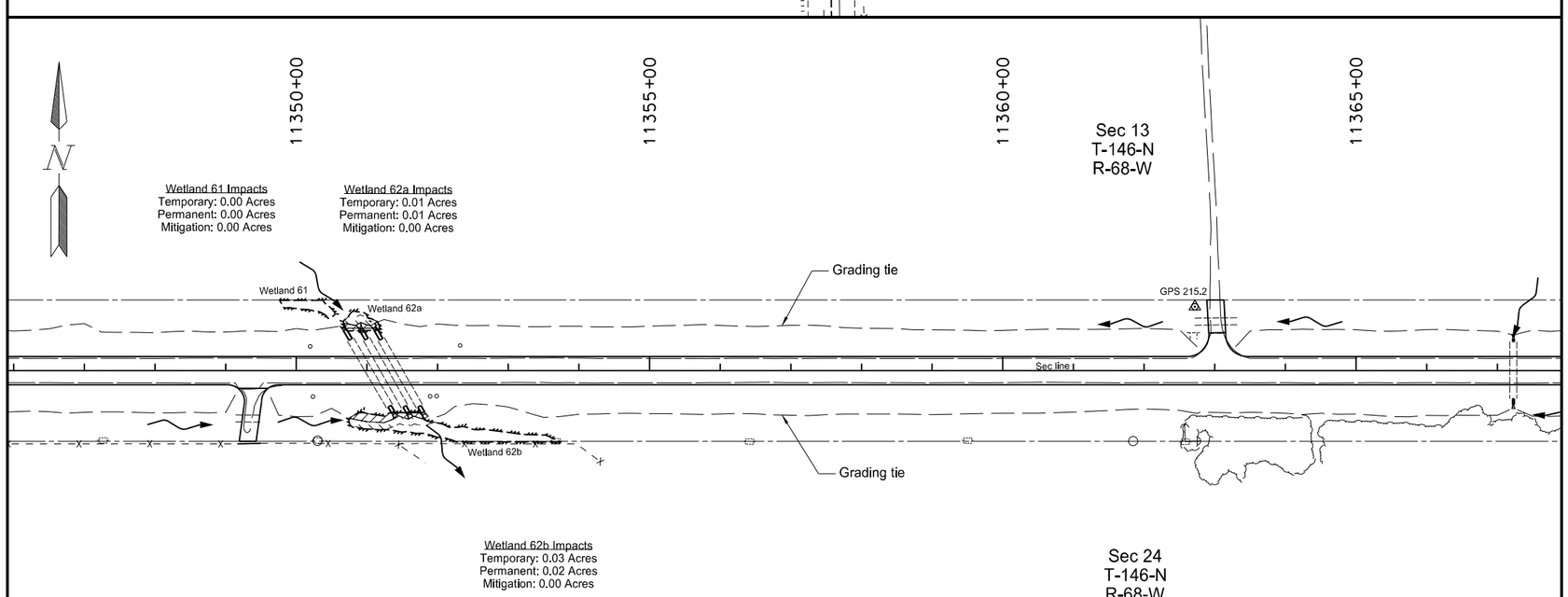
ND	CPU-SNH-3-052(042)198	75	21





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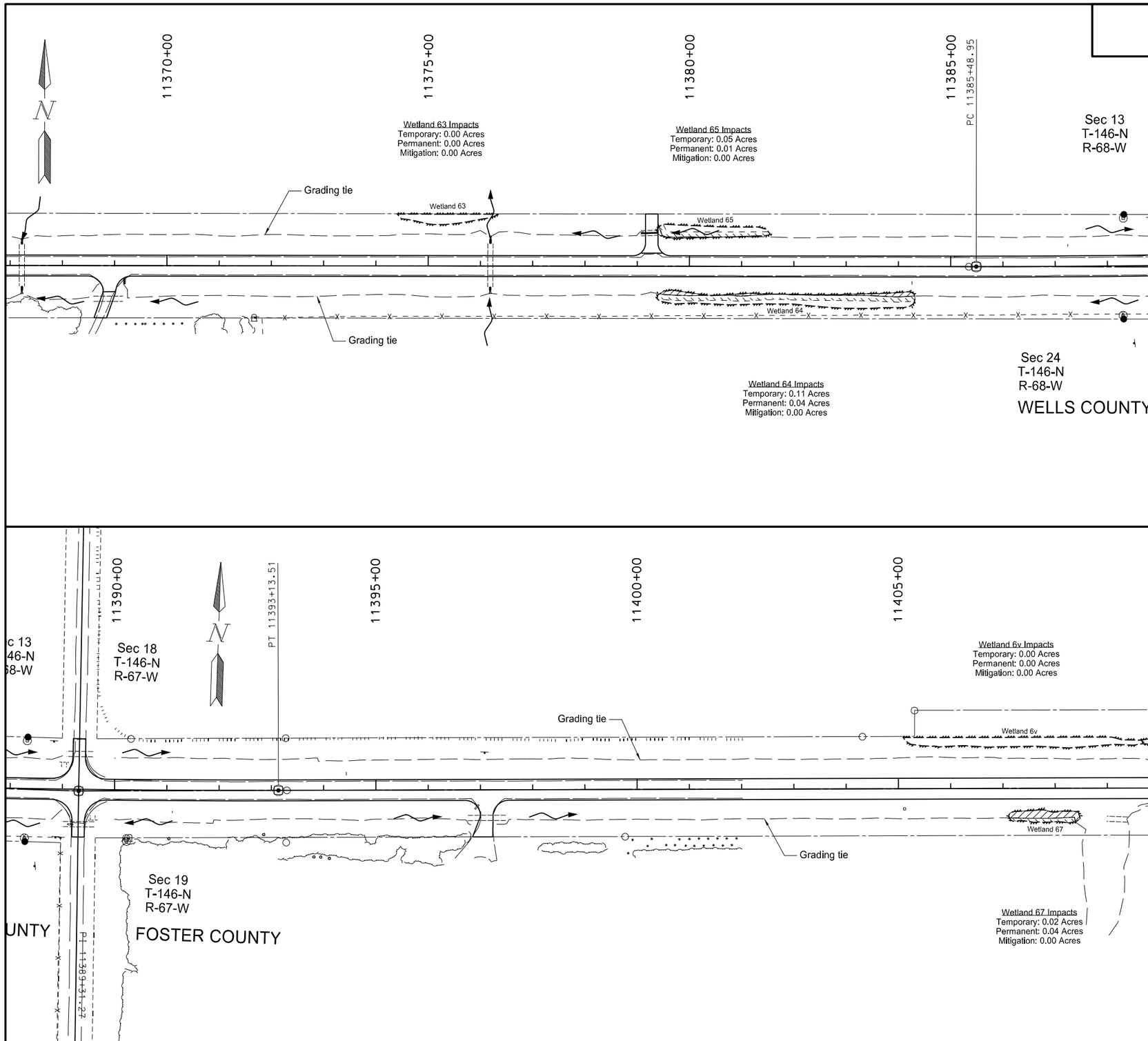
ND	CPU-SNH-3-052(042)198	75	22



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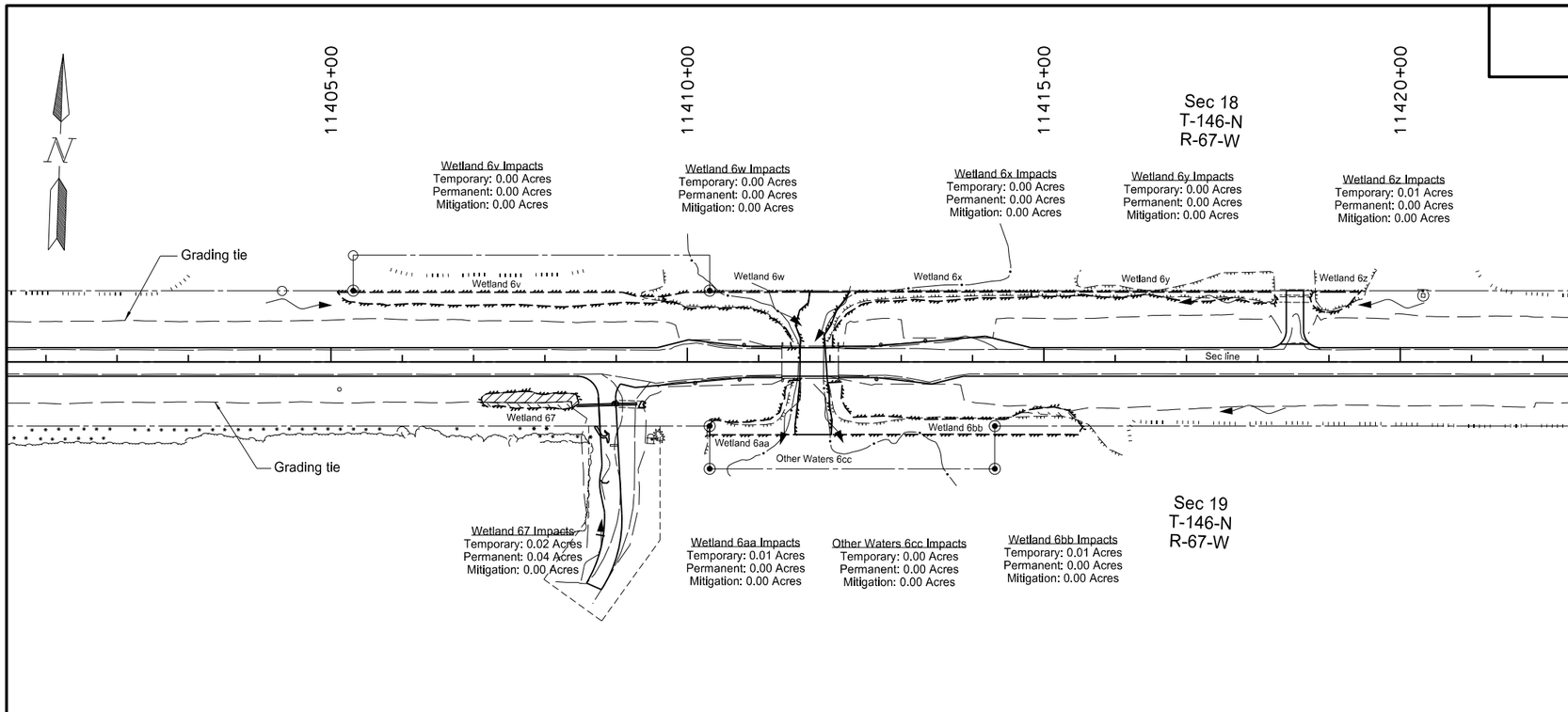
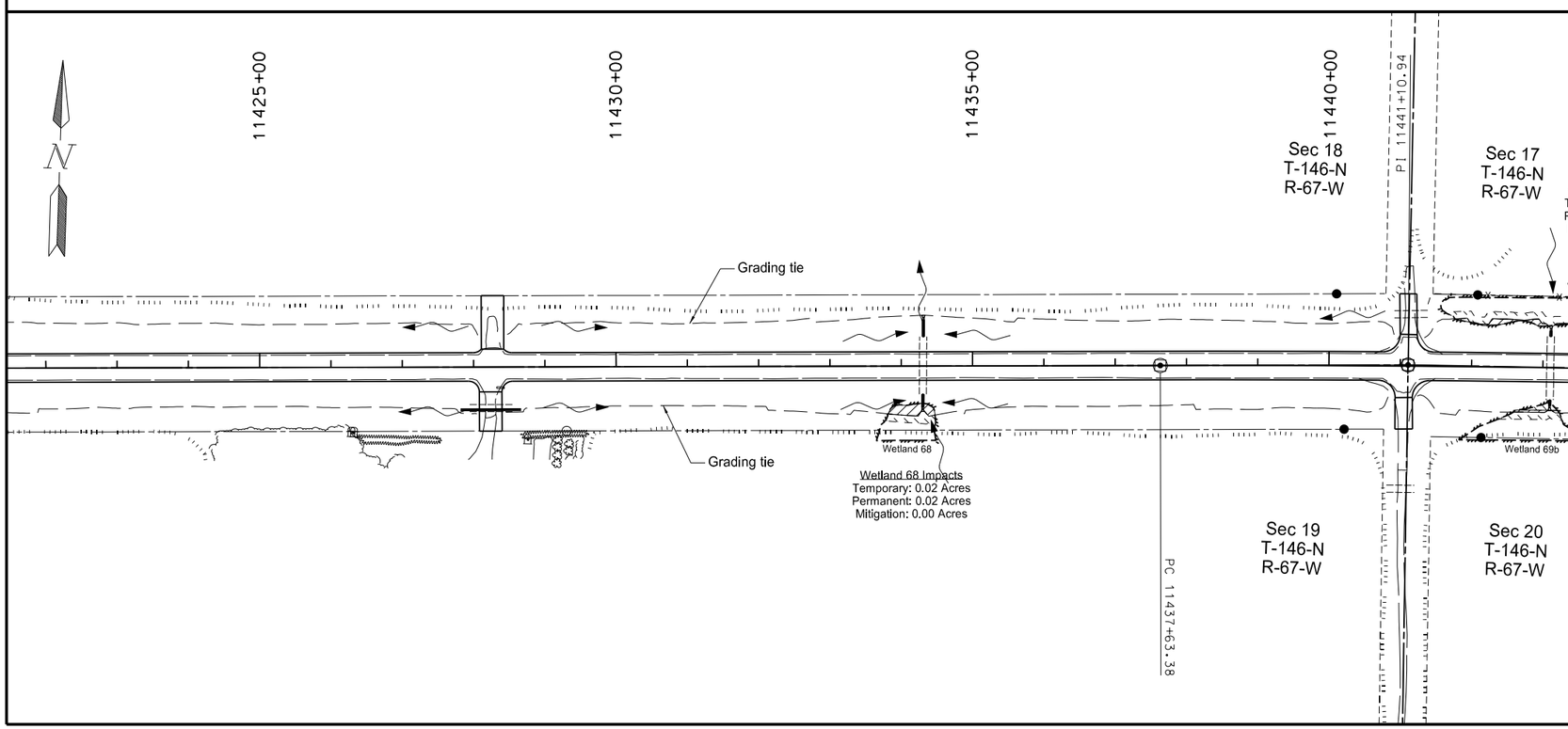
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	23





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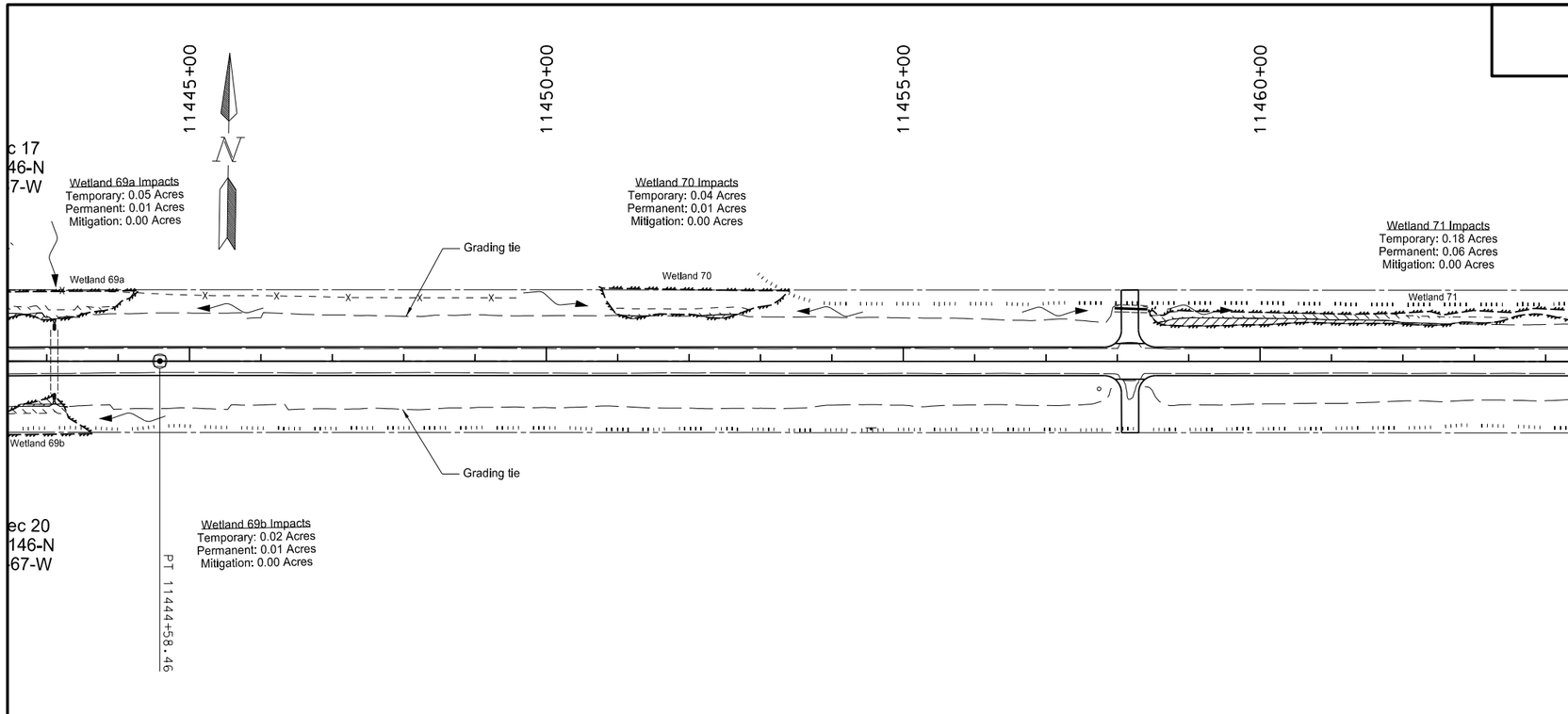
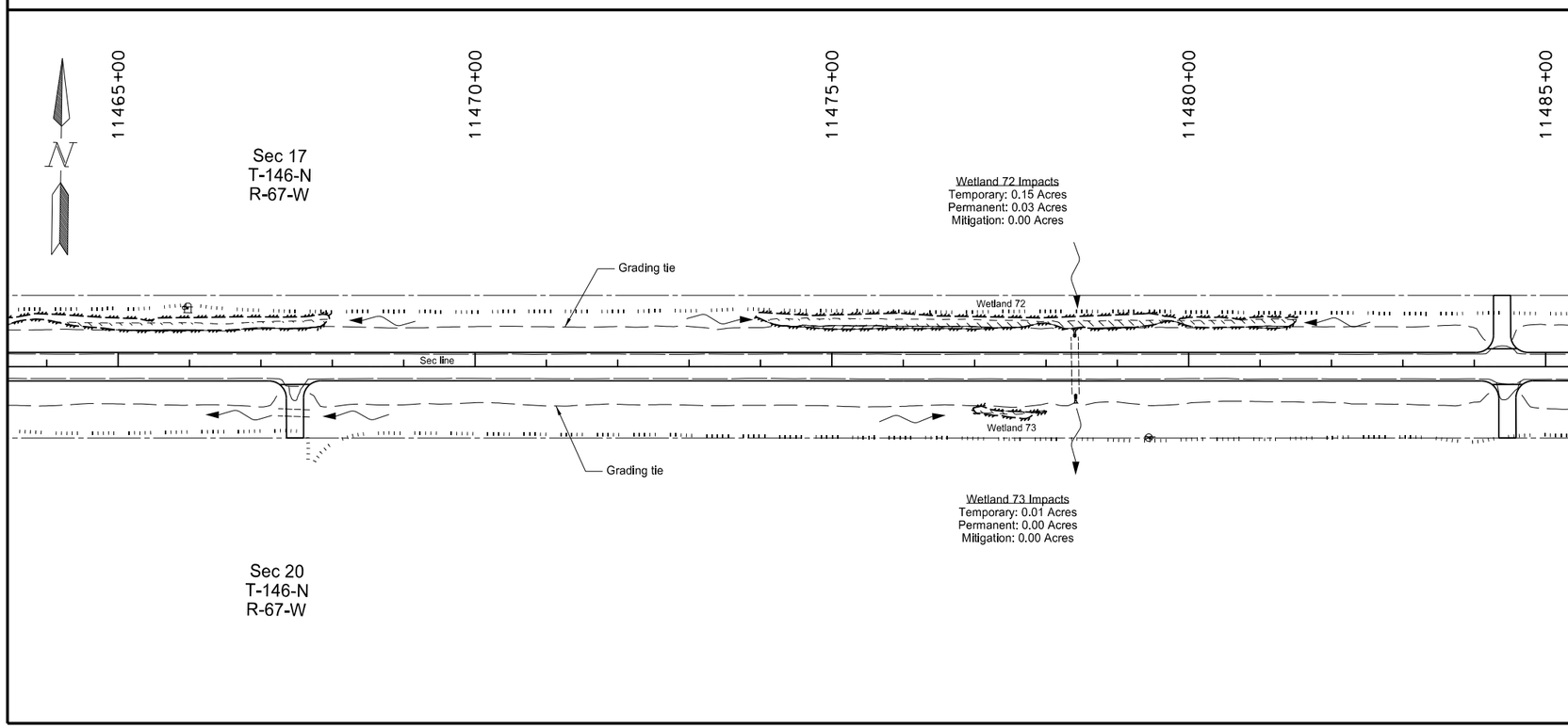
ND	CPU-SNH-3-052(042)198	75	24





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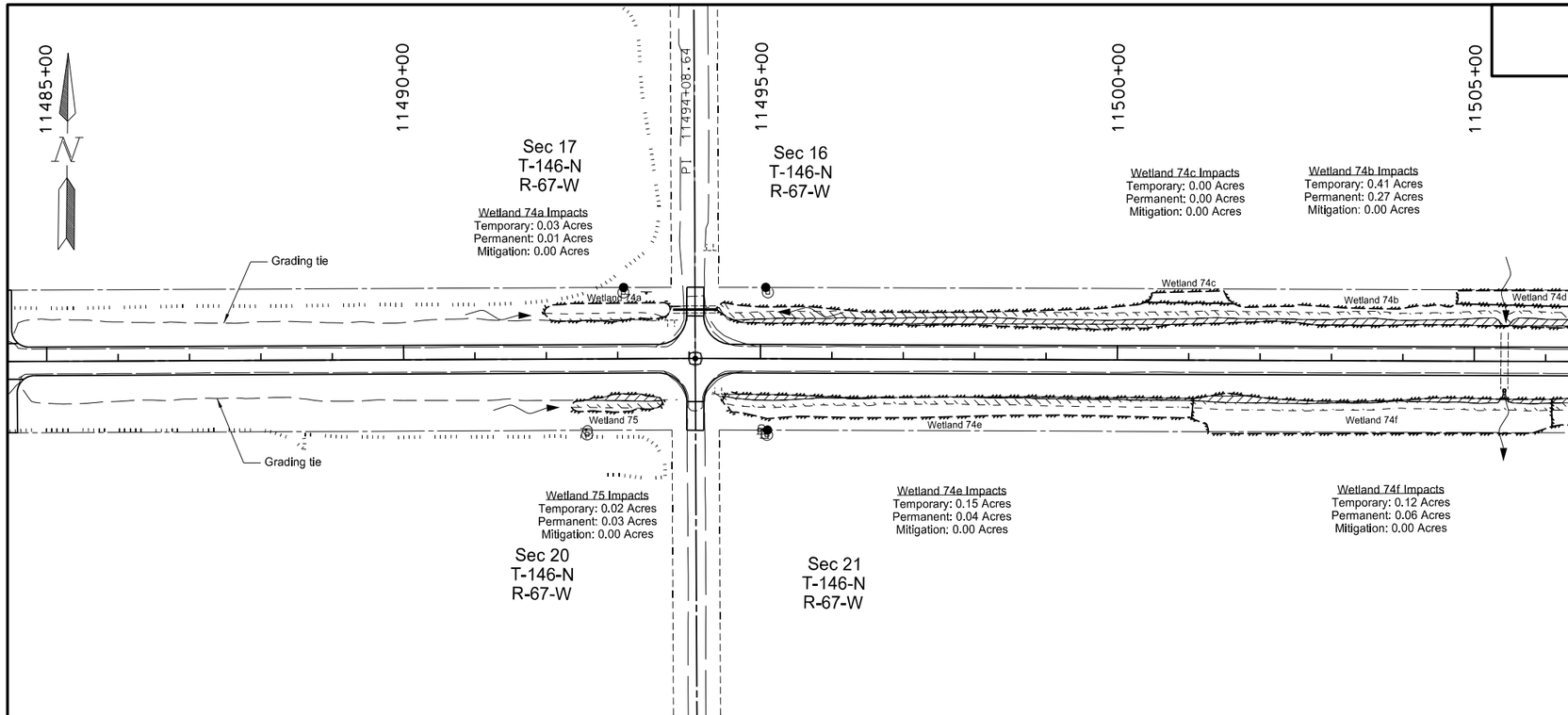
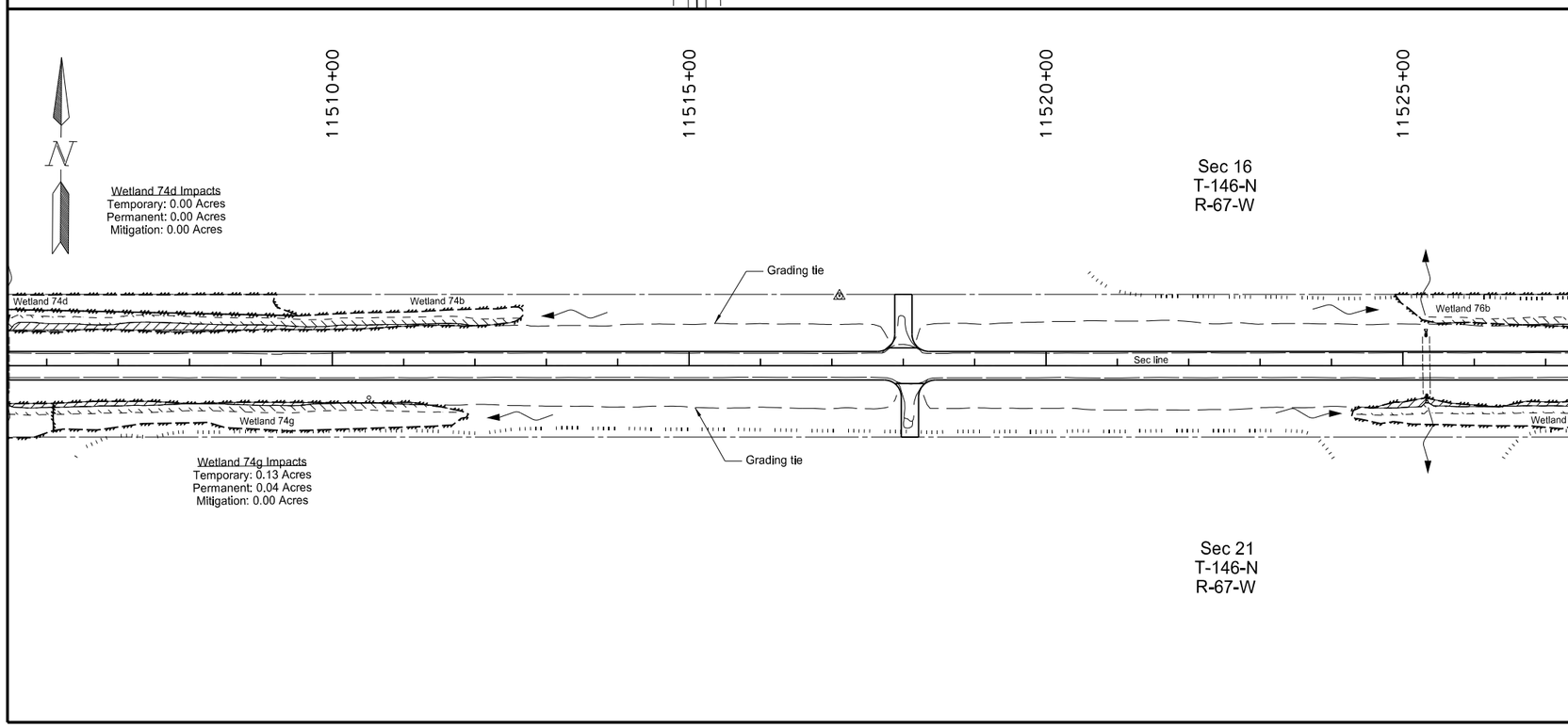
ND	CPU-SNH-3-052(042)198	75	25





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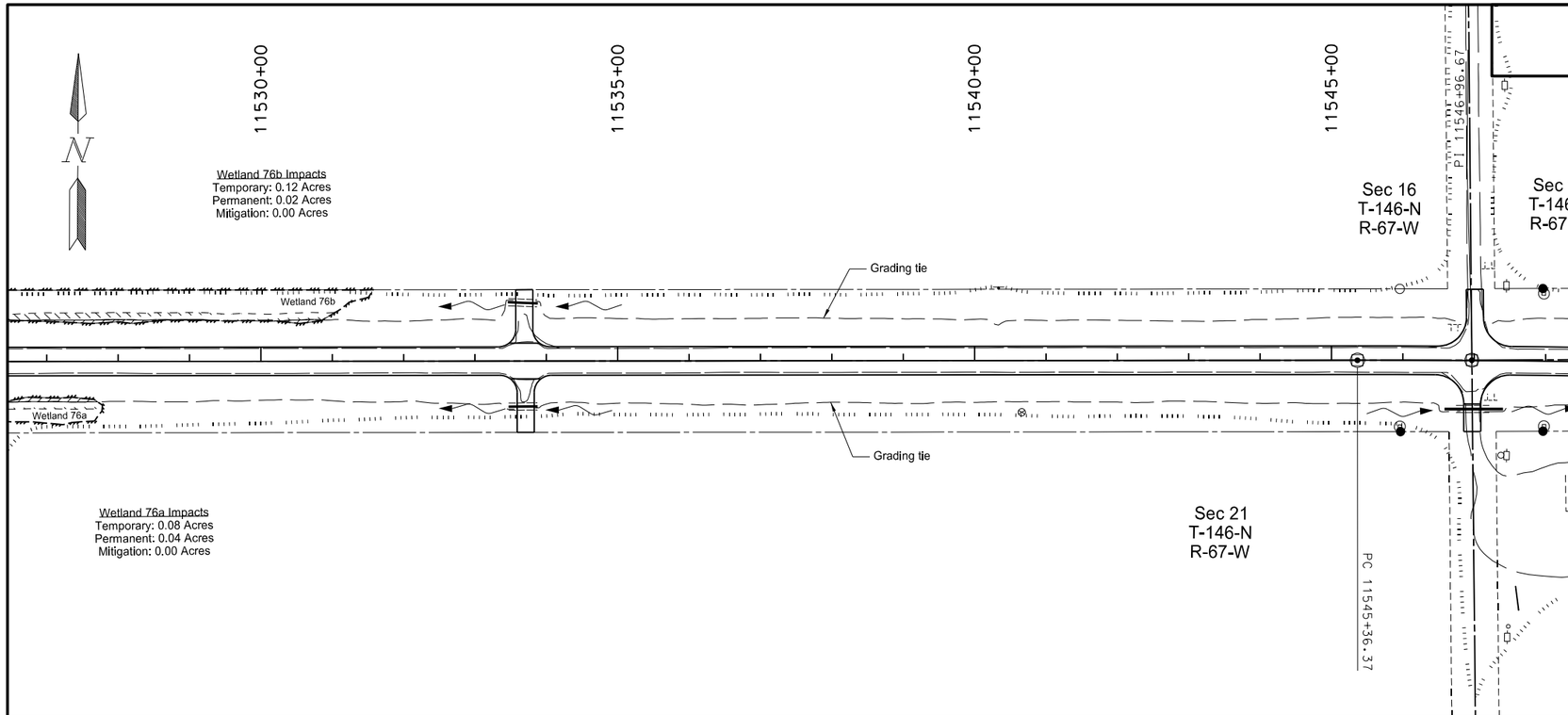
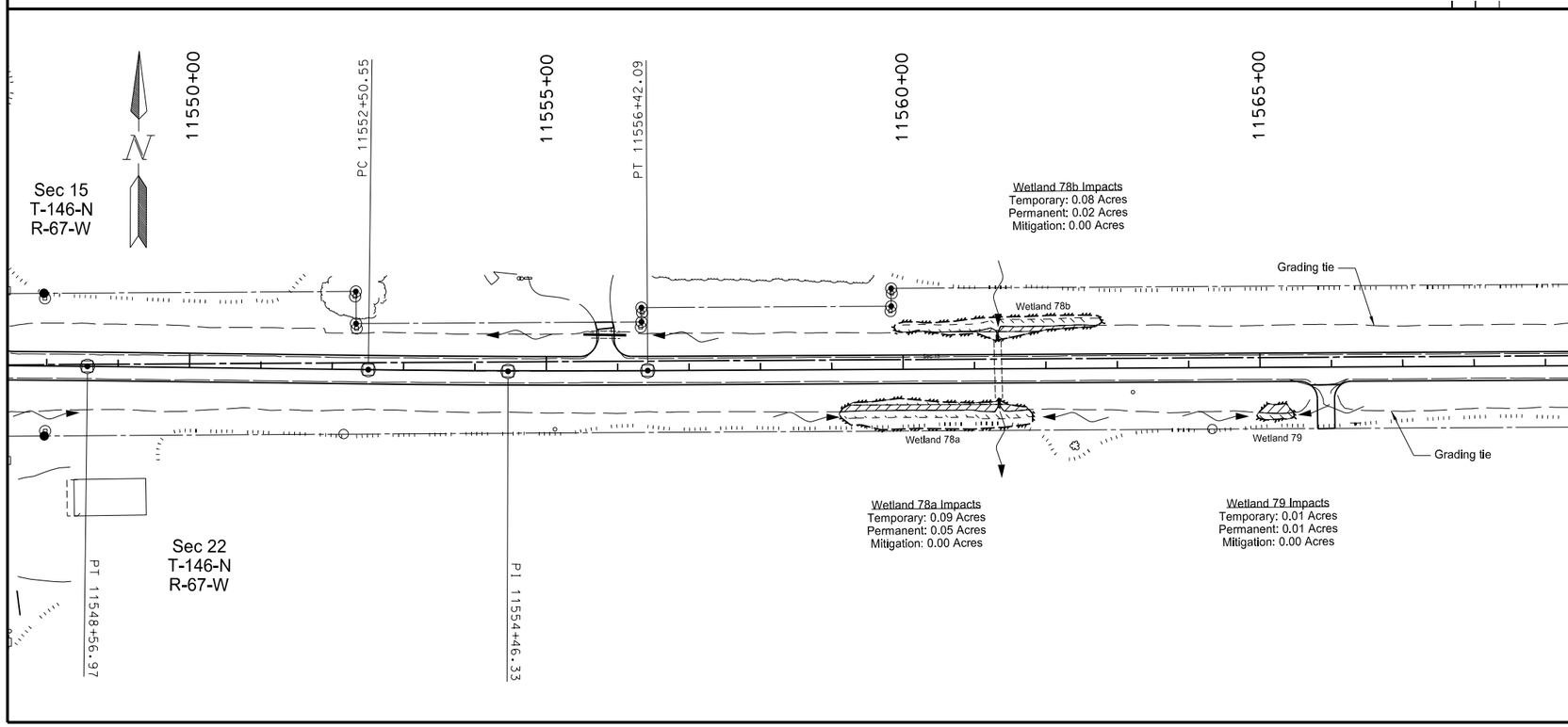
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	26





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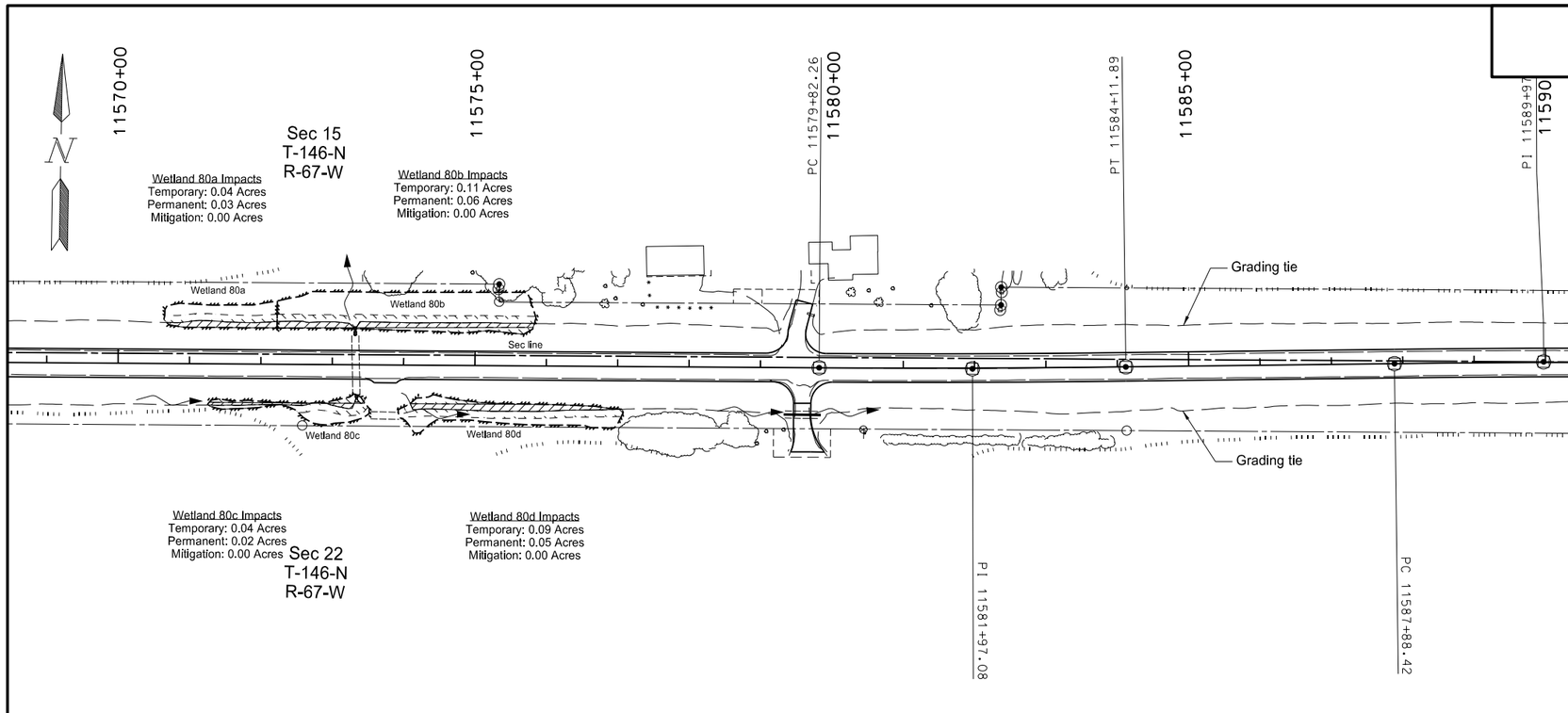
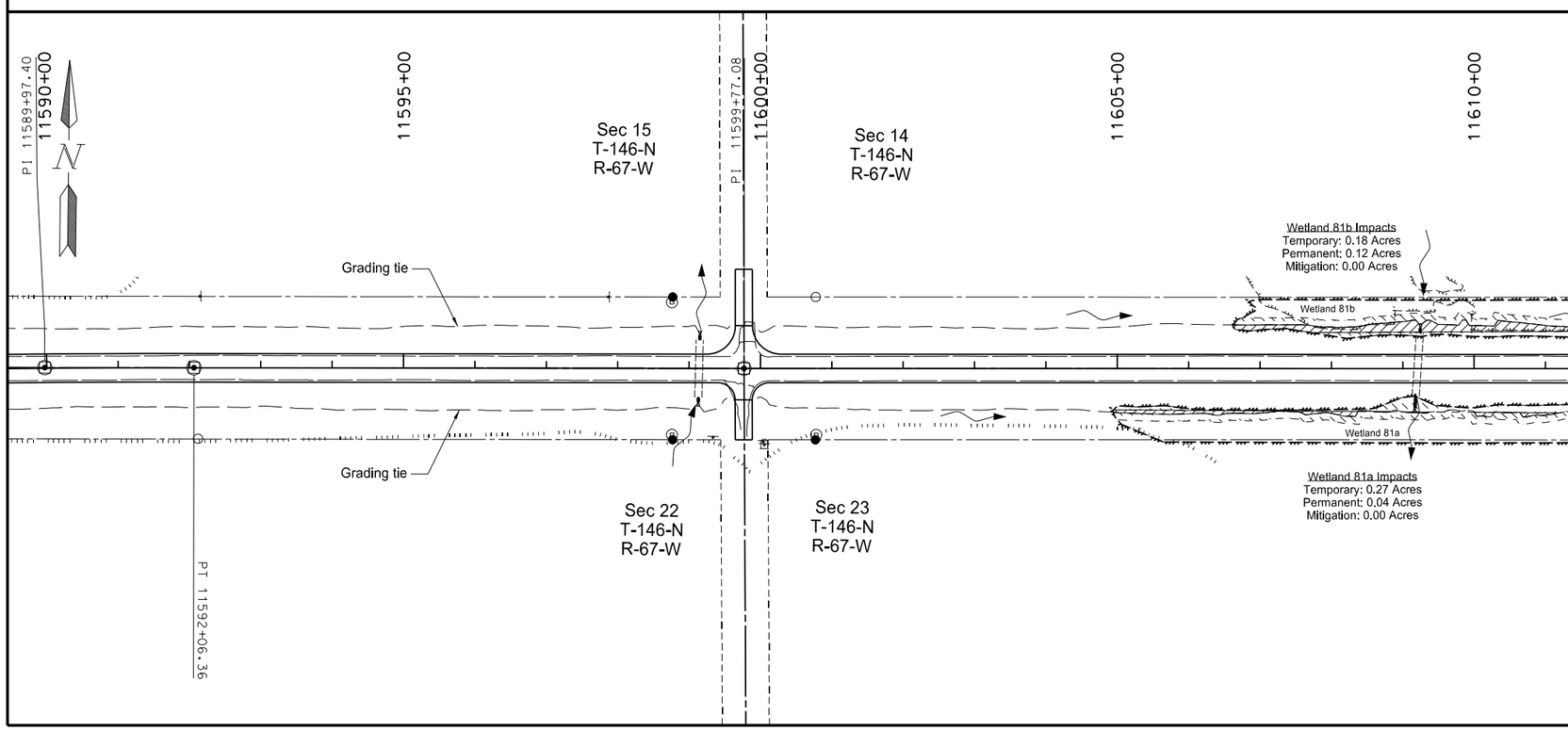
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	27





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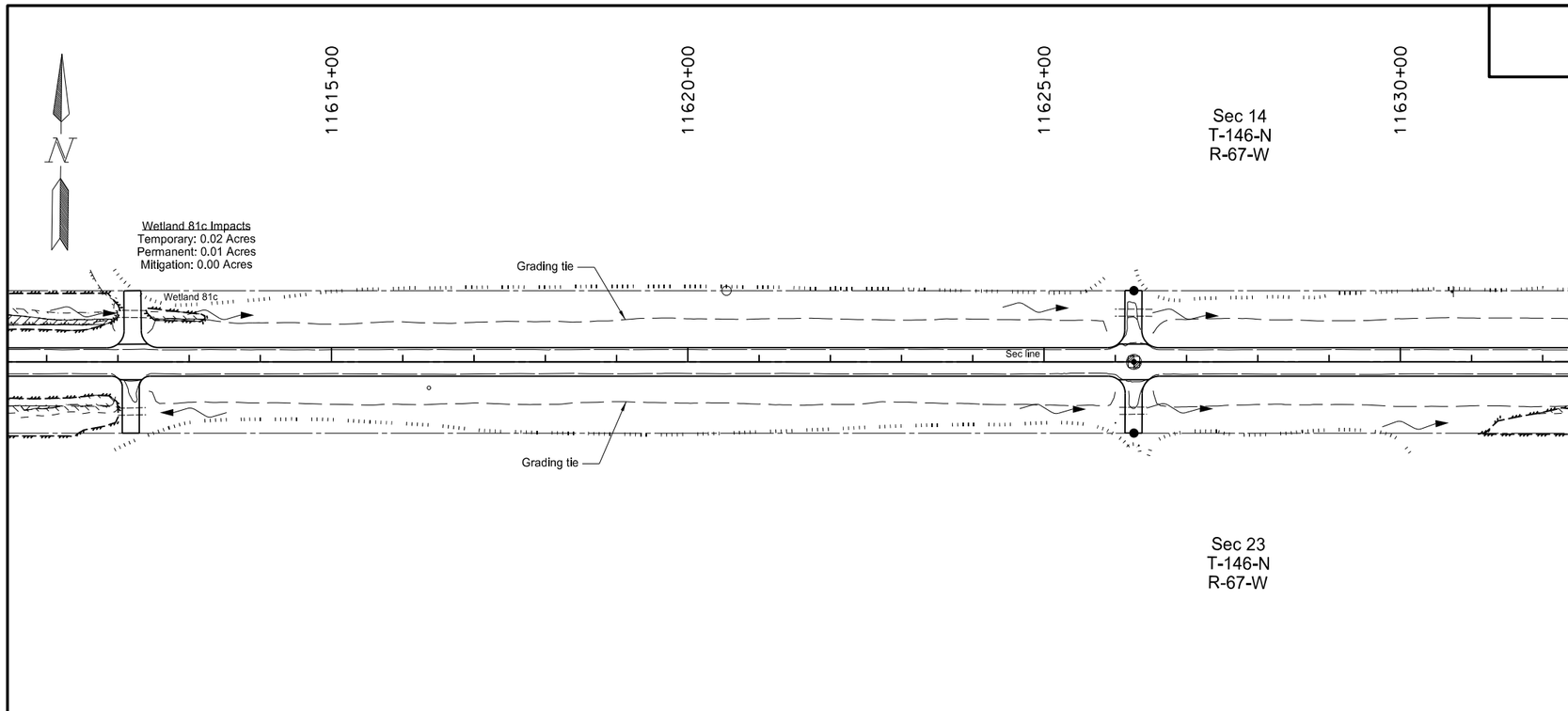
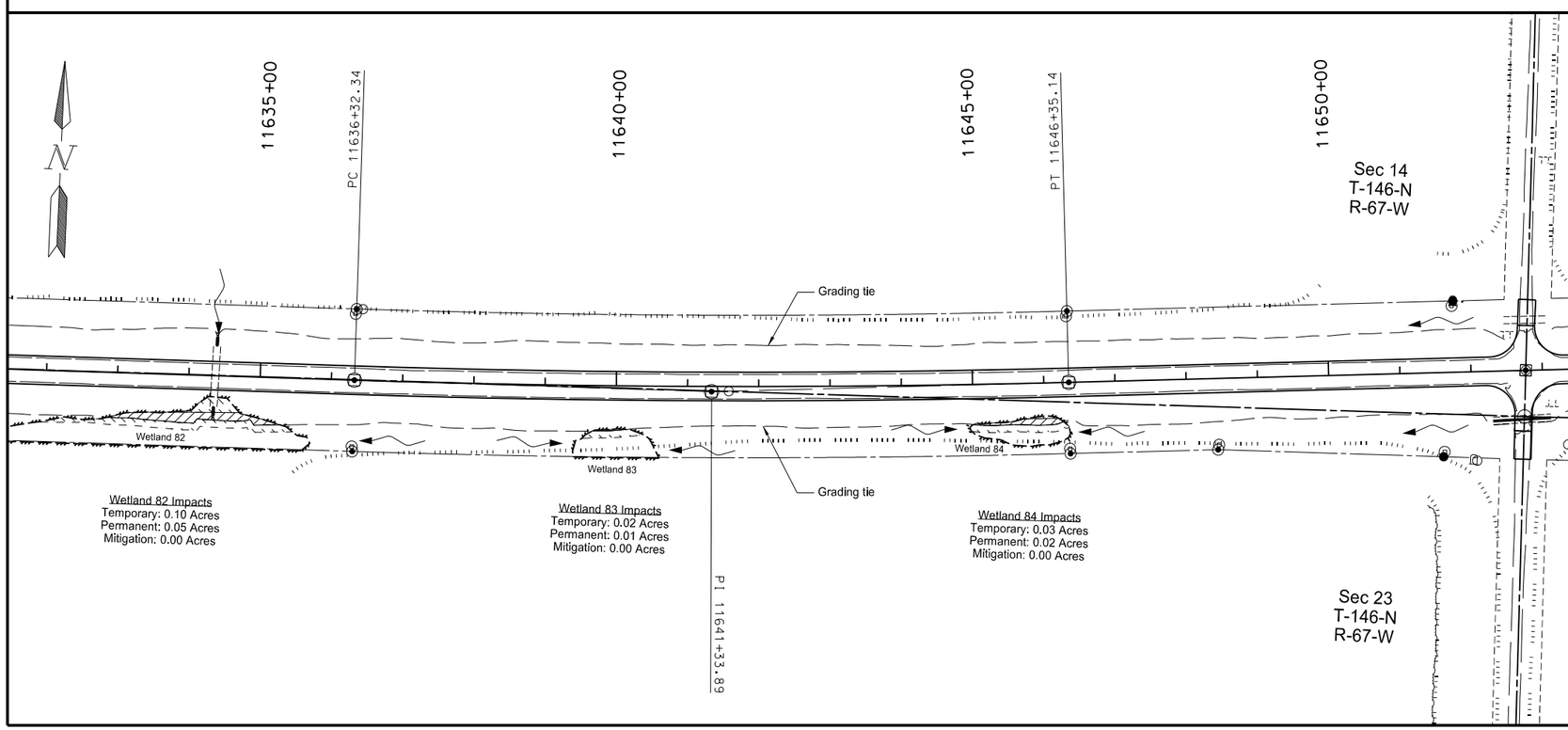
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	28





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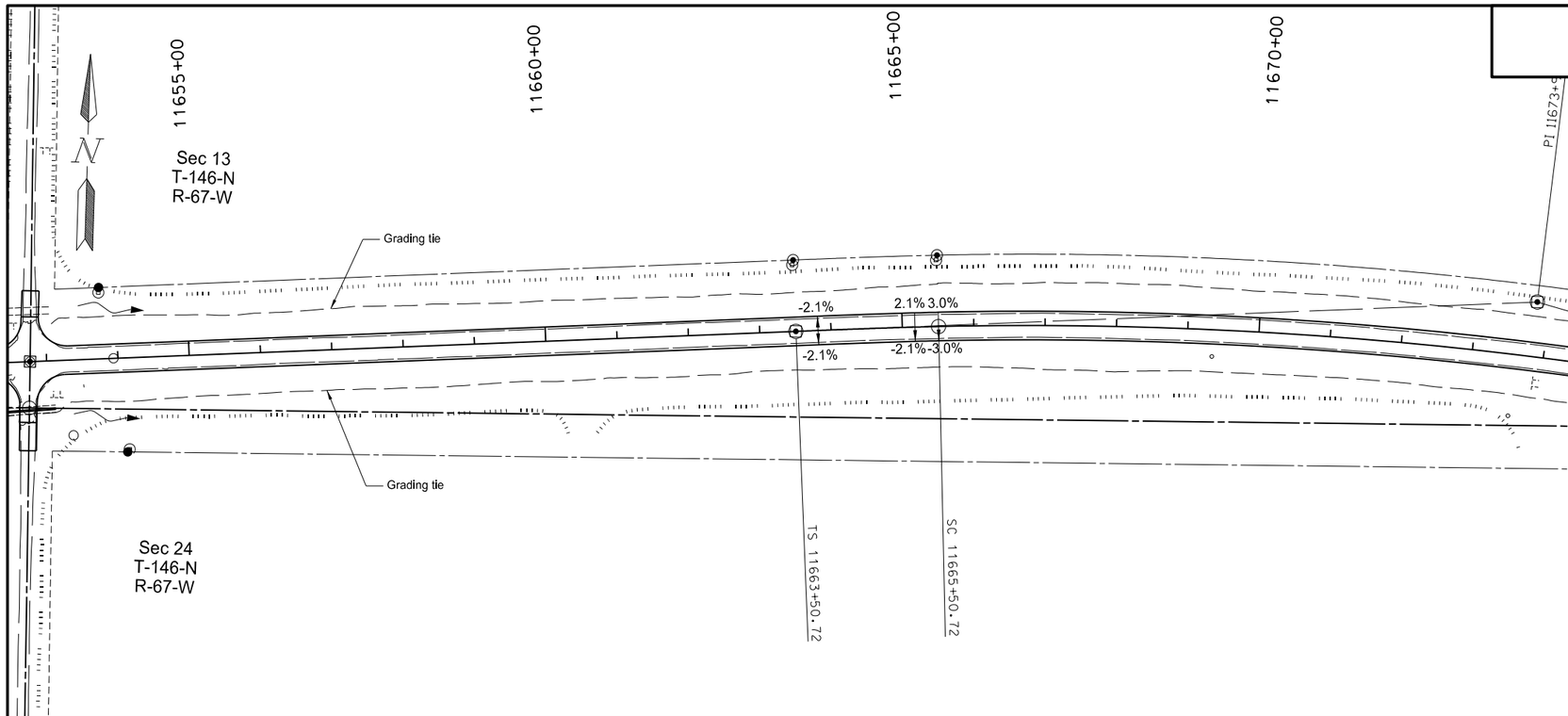
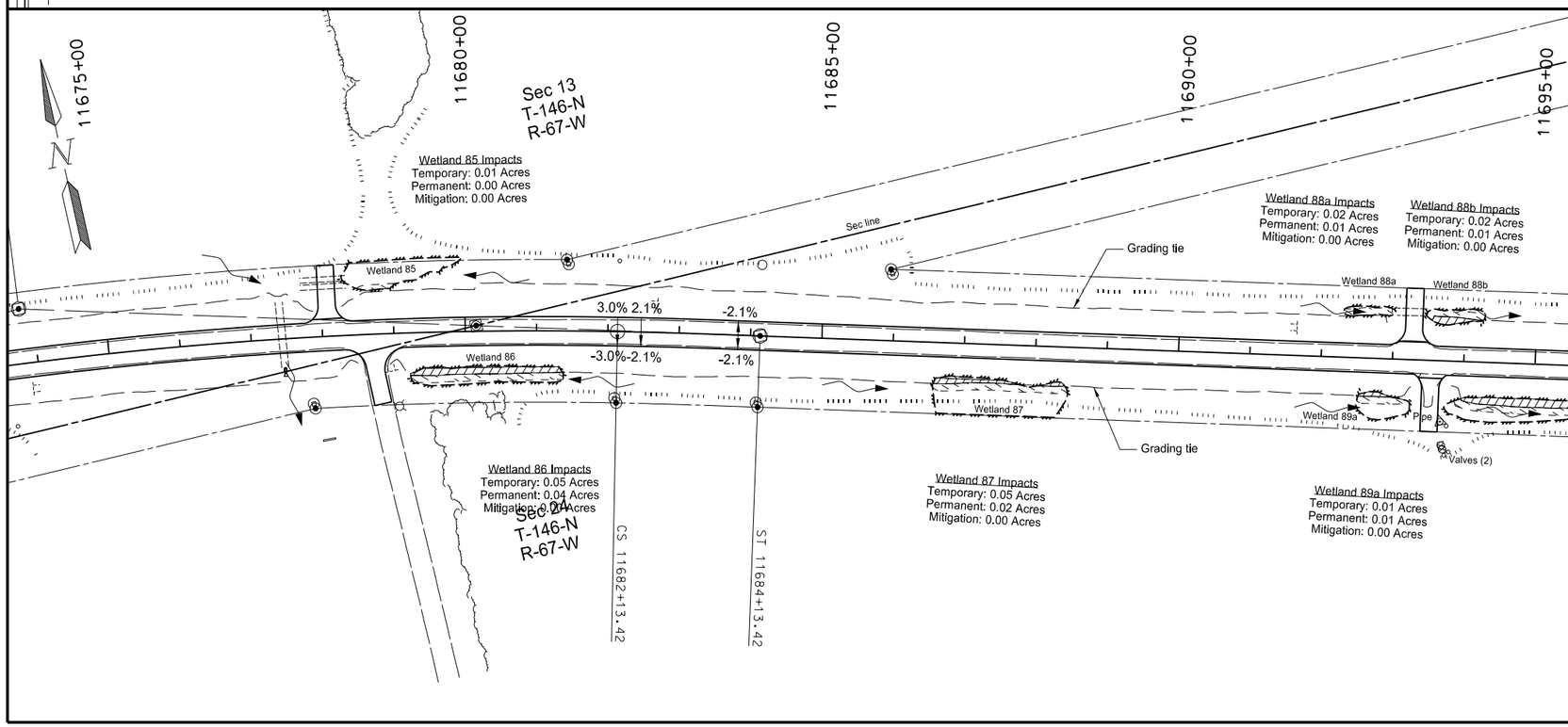
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	29





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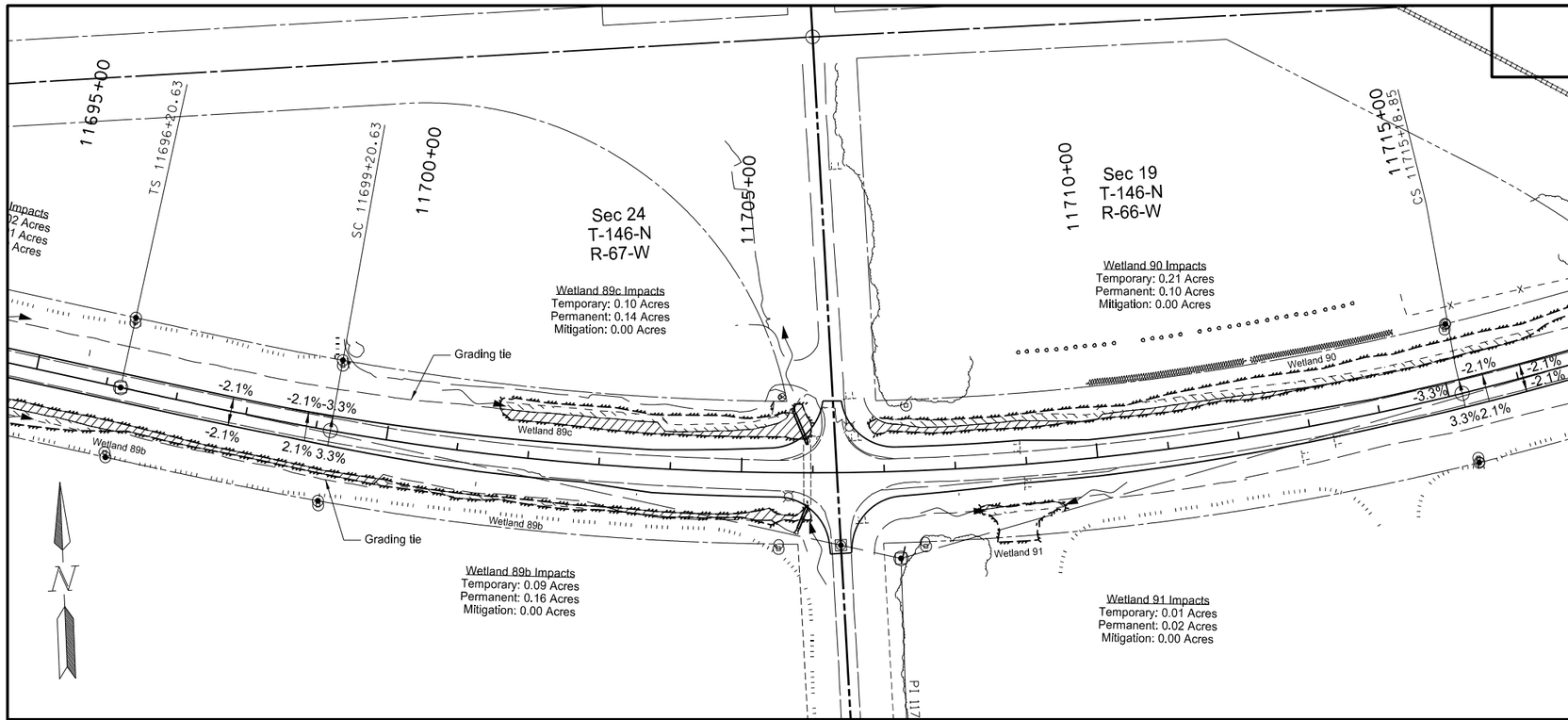
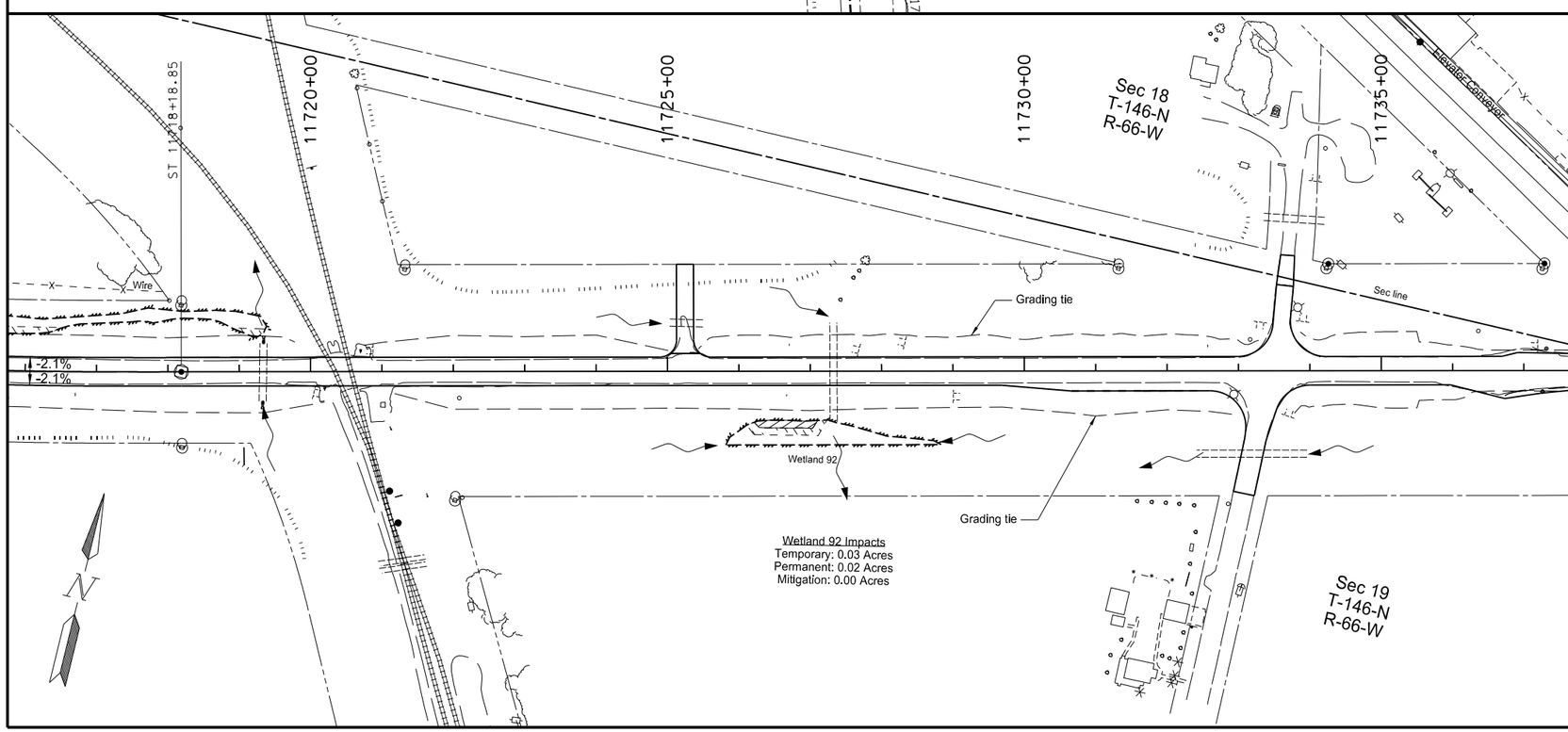
ND	CPU-SNH-3-052(042)198	75	30





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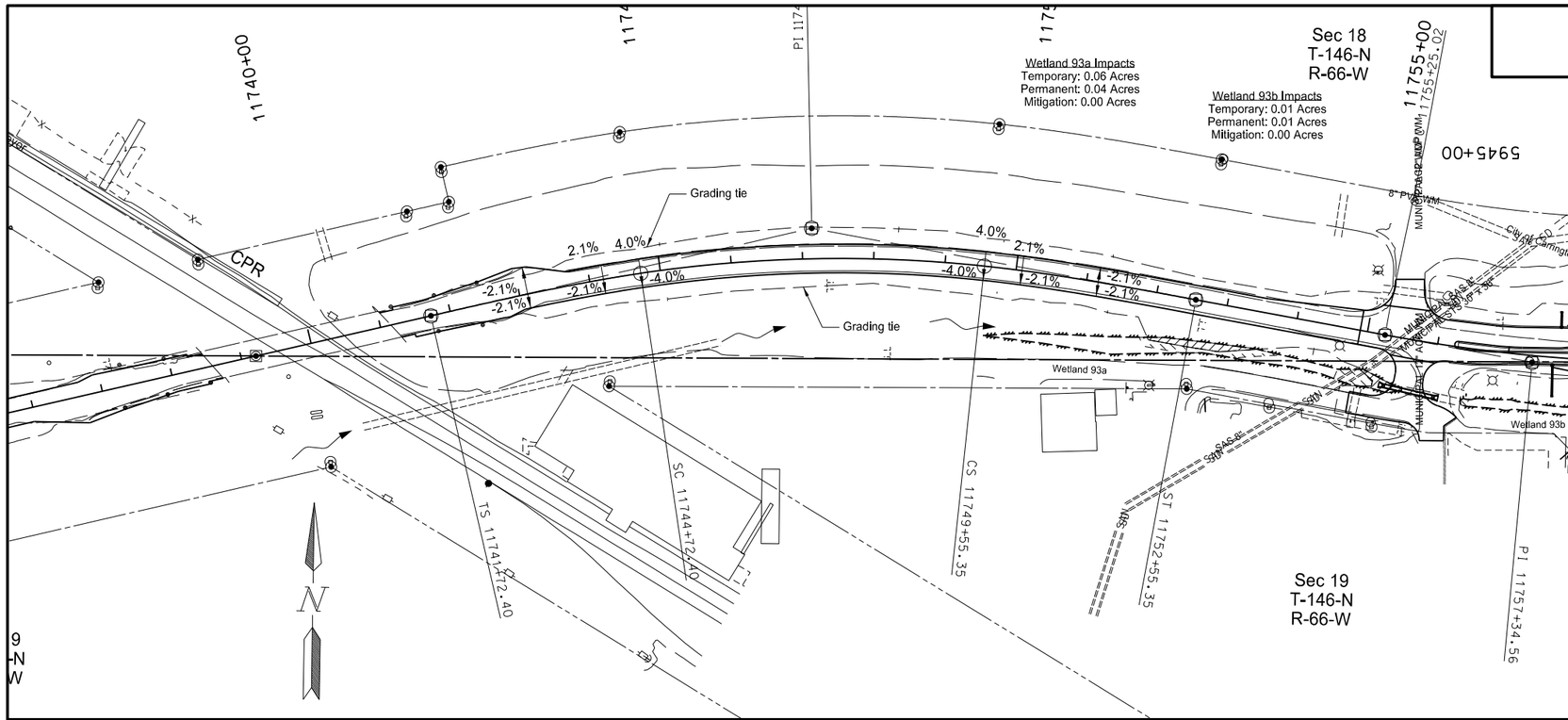
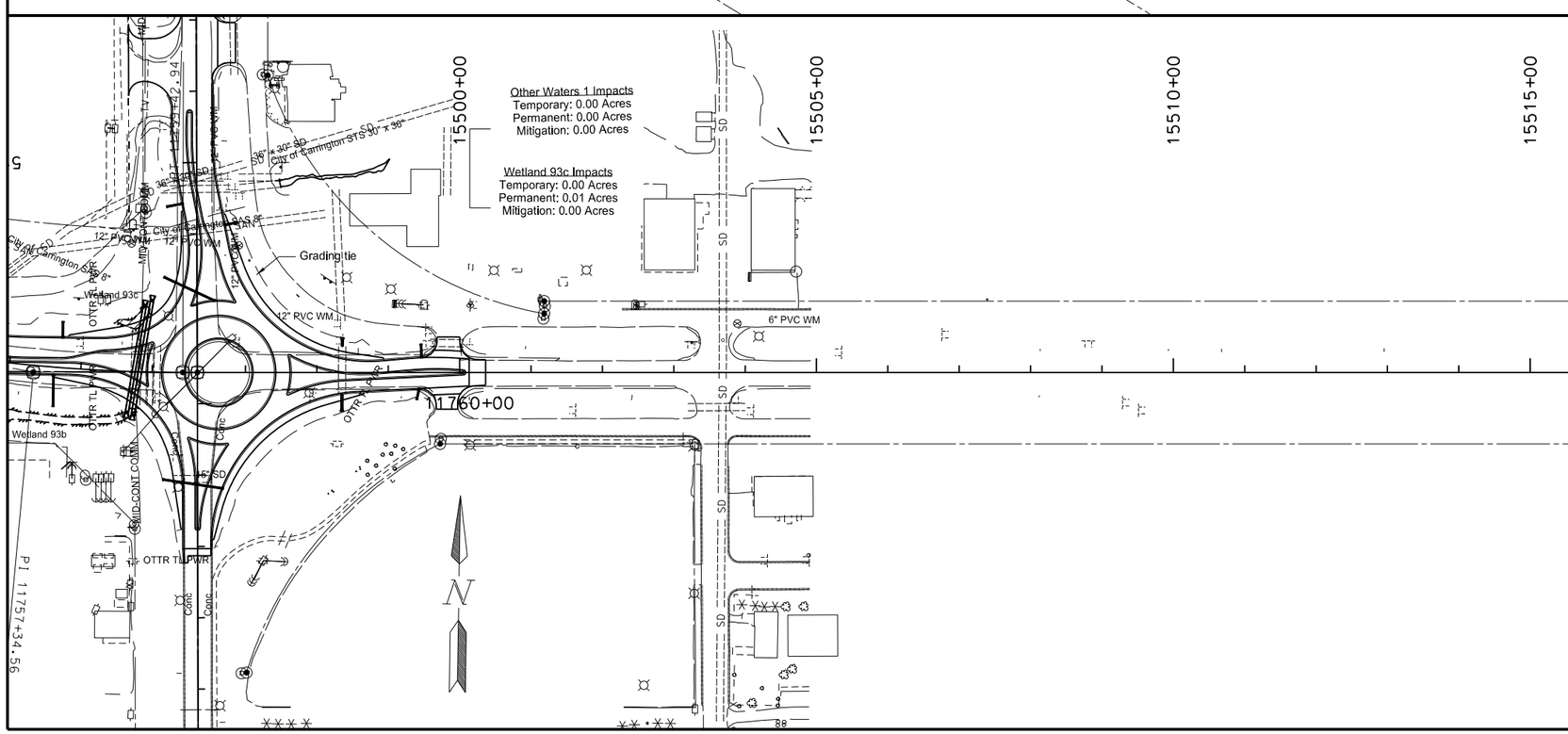
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CPU-SNH-3-052(042)198	75	31





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