STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	19972	1	1

JOB # 38
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SOIB-7-085(079)950

McKenzie County
US Hwy 85 Business Route / ND Hwy 23 Business Route
South of Watford City
Grading, HMA, Concrete, Pedestrian
Facilities, Lighting, Signals

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
US Hwy 85 Bus Rt./ND Hwy 23 Bus Rt.	1.897	1.916
SOIB-7-085(079)950	1.897	1.916

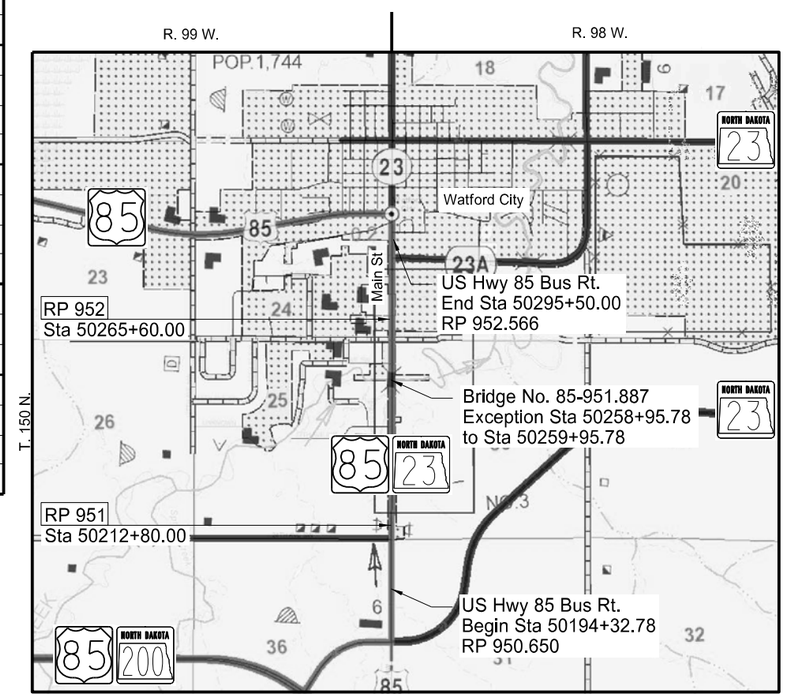
DESIGN DATA

Traffic	Average Daily			Max.Hr.
Current 2016	Pass: 8960	Trucks: 630	Total: 9590	960
Forecast 2036	Pass: 13350	Trucks: 940	Total: 14290	1430

Clear Zone Distance: 28 LF (4:1)	Design Speed: 45
Minimum Sight Dist. for Stopping: 360 LF	Bridges: N/A
Pavement Design Life 20 (years) Flexible	Accumulated ESALs: 2,483,191
Begin RP 950.650	End RP 951.790
Clear Zone Distance: 18 LF (4:1)	Design Speed: 35
Minimum Sight Dist. for Stopping: 250 LF	Bridges: 85-951.887
Pavement Design Life 20 (years) Flexible	Accumulated ESALs: 2,483,191
Begin RP 951.790	End RP 952.022
Clear Zone Distance: 18 LF (4:1)	Design Speed: 35
Minimum Sight Dist. for Stopping: 250 LF	Bridges: N/A
Pavement Design Life 30 (years) Rigid	Accumulated Heavy Trucks: 5,124,000
Begin RP 952.022	End RP 952.126
Clear Zone Distance: 18 LF (4:1)	Design Speed: 35
Minimum Sight Dist. for Stopping: 250 LF	Bridges: N/A
Pavement Design Life 20 (years) Flexible	Accumulated ESALs: 2,483,191
Begin RP 952.126	End RP 952.402
Clear Zone Distance: 18 LF (4:1)	Design Speed: 30
Minimum Sight Dist. for Stopping: 200 LF	Bridges: N/A
Pavement Design Life 30 (years) Rigid	Accumulated Heavy Trucks: 5,124,000
Begin RP 952.402	End RP 952.486

Traffic	Average Daily			Max.Hr.
Current 2016	Pass: 12215	Trucks: 860	Total: 13075	680
Forecast 2036	Pass: 18200	Trucks: 1285	Total: 19485	1015

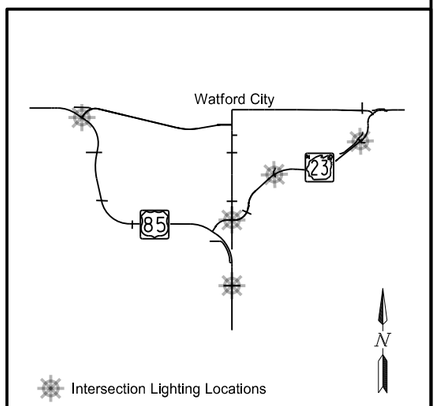
Clear Zone Distance: 18 LF (4:1)	Design Speed: 30
Minimum Sight Dist. for Stopping: 200 LF	Bridges: N/A
Pavement Design Life 30 (years) Rigid	Accumulated Heavy Trucks: 9,152,530
Begin RP 952.486	End RP 952.566

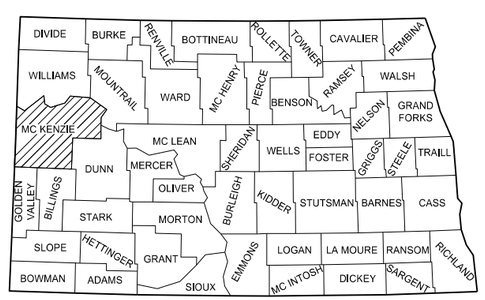


US Hwy 85 Bus Rt. Reference Points

RP	Station
951	50212+80.00
952	50265+60.00

Legal Description
T150N R98W - SEC 19, 30 & 31
T150N R99W - SEC 24, 25, & 36





STATE COUNTY MAP

DESIGNERS

Thomas K Conlin, PE

Erik Gilbertson, PE

Matt Lange, PE

Scott Middaugh, PE

Gabe J. Schell, PE

DISTRICT REVIEW

Bill Gathman /s/
WILLISTON DISTRICT

APPROVED DATE 3/2/16

Robert Fode /s/
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 02/22/16

Jessica R. Karls /s/
KLJ

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	2	1

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SP 5101(14)	Permits and Environmental Considerations

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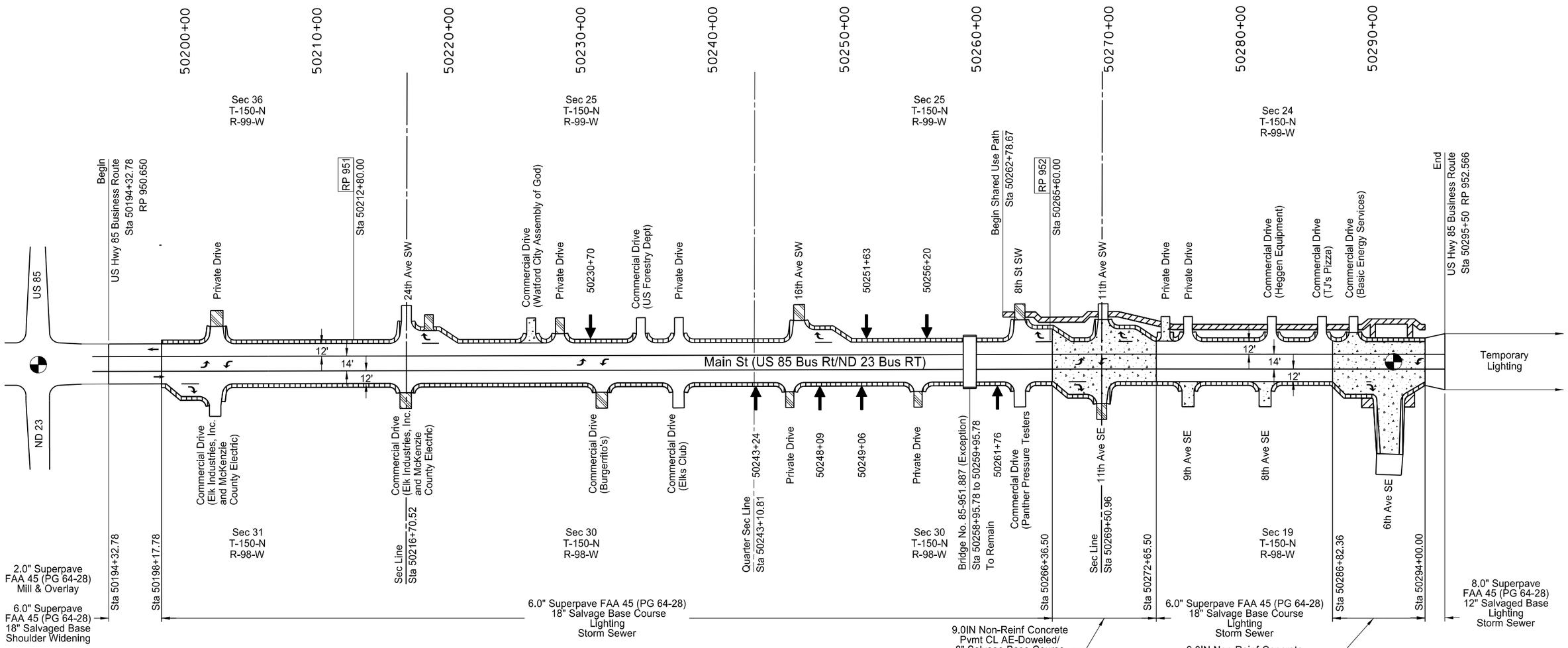
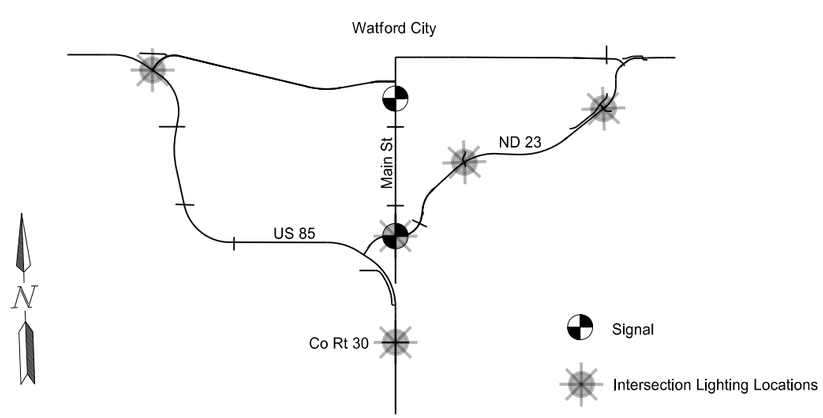


Signal and Lighting Locations



Salvage Base Course

9.0IN Non-Reinf Concrete Pvmt CL AE-Doweled

Curb and Gutter

Shared Path

Signal

Driveway

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Scope of Work

Main St

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:

a. North Dakota Department of Transportation
b. Local Government Agencies
c. Police department
d. Fire department
e. Ambulance service
f. Telephone Co.
g. Power Co.
h. Cable T.V.
i. Gas Co.
j. Subcontractors
k. Chamber of Commerce

100-P02 PUBLIC RELATIONS COORDINATOR: Provide a public relations and information coordinator. The coordinator should not be the project superintendent or construction foreman. The coordinator should be knowledgeable in construction operations, be able to develop effective media releases, possess written and verbal communication skills, and be able to organize productive meetings.

Provide the name of the Public Relations Coordinator, work address, and work phone number to the relevant project, community, and media personnel.

The public relations coordinator is responsible for providing the following:

1. Organizing, scheduling, and conducting the meeting specified in Note 100-P01, "Weekly Planning/Reporting Meeting".
2. Advise Todd Kelley, from the City of Watford City, PH: (701) 444-2533 (ext. 253), of upcoming construction activities in regard to street closures and traffic detour routes so that city police, emergency services, schools, and other pertinent city agencies may be notified.
3. Provide news releases and necessary drawings to the NDDOT for the media before and during construction. News releases should inform the public on construction activities, schedules, street closures, width or height restrictions to traffic, and traffic detour routes. Update news releases regarding construction activities every other week, at a minimum.
4. Be available for media interviews.
5. Work directly with property owners and businesses affected by construction activities. The coordinator must have sufficient knowledge and authority to resolve property owner and business concerns regarding scheduling, maintaining access, and construction operations.

105-110 PAVEMENT SWEEPING: Sweep paved areas that were used by construction traffic before opening these areas to public traffic.

Sweep all newly constructed pavement no more than 24 hours before a scheduled final inspection.

Use a vacuum or pick-up type sweeper to perform this work.

105-200 UTILITY COORDINATION: A utility coordination meeting is required.

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".

202-P01 REMOVAL OF PAVEMENT: The tonnage of “Removal of Pavement” is based on the existing typical sections shown in Section 30. The tonnage includes the entire bituminous/concrete/curb & gutter/aggregate/sidewalk surfacing and the entire aggregate base. The quantity of Removal of Pavement has been deducted from the excavation quantity. This work consists of removing and salvaging the existing surfacing and aggregate base.

202-P02 SAW CUTS: Include the cost of the full depth vertical saw cuts adjacent to pavement removal areas, specified in Section 202.04 A "General", in the contract unit price for “Removal of Pavement.”

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

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NOTES

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 SUBCUT: 1500 lineal feet of discretionary subcut has been added to the quantities of “Common Excavation-Subcut”, “Salvage Base Course”, and “Geosynthetic Material Type R1” to be used at the discretion of the Engineer.

203-P02 EARTHWORK: Due to the construction phasing established for this project, the excess excavation from the right (east) side of the project will not be available until after the embankment for the left (west) side of the project is constructed in Phase A. Dispose of the excess common excavation from the right (east) side of the project in Phase B.

Mass diagrams have been developed for each side of the project. Excavation or borrow will not cross from the east to the west side of the project or vice versa.

302-115 BASE COURSE: Trim base course as specified in 302.04 C.1, "Surface Tolerance Type B."

302-P01 SALVAGE BASE COURSE: 4000 tons of additional Salvage Base Course has been provided. Use aggregate as directed by the Engineer in the field.

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

704-200 PRECAST CONCRETE MEDIAN BARRIERS – STATE FURNISHED: Obtain 40 barriers from the US Highway 2 Storage Area located at RP 12 west of Williston. Return barriers to the same storage area.

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".

704-900 ATTENUATION DEVICE TYPE B: Install either of the following attenuation devices:
The barrel type shown on standard D-704-01; or
The water filled attenuation device described in this note.

Install liquid filled attenuation devices that are 2.5 feet wide.

At the Preconstruction Conference, provide the Engineer a Certificate of Compliance stating that the devices are NCHRP Report 350 or MASH approved and a copy of an acceptance letter from FHWA showing approval for use on the NHS.

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

Install devices according to the manufacturer's specifications.

When the ambient air temperature is expected to drop below 32°F, add calcium magnesium acetate or potassium acetate to the water. Contact the Engineer and the NDDOT Environmental and Transportation Services Division in the case of a spill leaving the roadway. Dispose of the mixture inside the device as specified in Section 107.17, "Removed Material".

Provide replacement pieces for each location, up to a maximum of 20 pieces per project. Include a minimum of 2 nose pieces in the replacement pieces. Stage replacement pieces on the project site.

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

704-P01 TRAFFIC CONTROL DEVICES LIST: The Traffic Control Devices list has been developed using the following layouts and standard drawings for traffic control:

1. Standard D-704-02: Coring hot bituminous pavement.
2. Standard D-704-12: Light installations
3. Standard D-704-15: layout B (x3): Installation of inlets
4. Standard D-704-19: layout F: As applicable
5. Standard D-704-22: layouts K: Trucks hauling material
6. Standard D-704-24: layouts U and S: Shoulder work
7. Standard D-704-27: Moving operations (pavement marking)
8. Standard D-704-30: As applicable
9. Standard D-704-34: One lane closure
10. Standard D-704-37: Mill and overlay

Quantities for traffic control signs and devices are based on a 25 mph workzone speed limit.

704-P02 PORTABLE CHANGEABLE MESSAGE SIGN: Install Portable Changeable Message Signs (PCMS) before work begins on the project. The Engineer will determine the locations for PCMS installation. Relocate the PCMS as directed by the Engineer.

Provide an operator trained in the use of the PCMS.

The Engineer will determine the message to be displayed. The operator shall program the message within one hour of the Engineer's request to change the message.

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NOTES

704-P03 TRAFFIC CONTROL PHASING: See Section 100, “General Traffic Control Layout” for overview of construction phasing plan.

Phase A: Shift and Maintain two-way traffic on the right side of the existing roadway. Complete the following:

- Obliterate of the existing pavement marking
- Install the temporary pavement marking and traffic control as shown in Section 100
- Construct the embankment, on the left (west) side of the project only, to support the temporary roadway
  - Grade inslopes and ditch bottoms to final grades
  - Install embankment for approaches on the left side. Maintain accesses with salvage base course
- Install drainage features on the left (west) side of the project such as: inlets, manholes, storm drain, and centerline and approach culverts
  - Cap and protect any drainage features that extend across the centerline to the right (east) side of the project until full installation can be completed in Phase B
  - Protect effected inlets and manholes as specified in Plan Note 722-P02
  - Jersey barriers have been provided to protect the work area from traffic where inlets, manholes or pipes are in close proximately to the roadway.
- Construct a 26-foot temporary roadway, consisting of 6 inches of salvage base course and a prime coat, on the new embankment on the left (west) side of the project
- Maintain access to approaches

Phase B: Shift and maintain two-way traffic on temporary roadway constructed in Phase A. Complete the following:

- Remove the remaining existing roadway surfacing and aggregate base
- Install drainage features on the right (east) side of the project such as: inlets, manholes, storm drain, and centerline and approach culverts.
  - Expose and connect to drainage features that extend across centerline and complete the remainder of the installation
  - Jersey barriers have been provided to protect the work area from traffic where inlets, manholes or pipes are in close proximately to the roadway
- Grade the embankment on the right (east) side of the project
- Install the curb and gutter on the right (east) side of the project and where possible on the left (west) side of the project
- Pave the bottom two lifts of HMA and all of the concrete for: northbound, southbound, center turn lane and northbound right turn lanes
- Complete and pave approaches on the right side

Phase C: Shift and maintain two-way traffic on the newly constructed roadway. Complete the following:

- Remove the temporary roadway constructed in Phase A
- Complete and pave the approaches on the left side (west) of the project
- Complete the remaining paving on the left (west) side of the project
- Pave the top lift of HMA across the entire section
- Remaining paving (top lift of hot mix asphalt, turn lanes, curb & gutter, project left approaches)
- Complete and pave the Shared Use Path
- Complete pavement marking and signing
- Install permanent lighting and signals

704-P04 DETOUR: A detour has been provided for a continuous 14 calendar day closure for the 6th Avenue intersection during Phase B. During the closure, complete all work necessary (pipe installation and concrete paving) to allow two-way traffic once completed. If the 6th Avenue intersection is not opened to two-way traffic after 14 calendar days, a contract price reduction of $1,000 per day will be applied.

704-P05 TRAFFIC CONTROL: Leave the work area free of all hazards during non-working hours. Hazards include any type of obstruction, drop-offs greater than 2-inches, or steep embankment areas steeper than a 4:1 located within the clear zone. Fill with a temporary 4:1 slope, any drop-offs greater than 2-inches.

704-P06 TEMPORARY TRAFFIC SIGNAL: Temporary traffic signals have been provided to be used on the project. Before temporary traffic signal are activated place supplementary traffic control devices including but not limited to signs and delineator drums. The proposed sign and delineator drum locations may vary from the plans based upon traffic control configurations.

Technical Requirements:
- Meet all applicable MUTCD standards and guidance.
- Communicate between each portable device via wireless radio link.
- Include a signal controller that is NEMA compliant and capable of manual signal timing entry.
- Include a conflict monitor.

Prior to installation sync and troubleshoot all of the portable devices to ensure proper signal coordination between portable devices. Remove the temporary signals immediately when not needed. Obtain the electrical source to operate the portable traffic signals. Arrange with the utility company or provide generators for electrical service. Solar powered traffic signals may be used. The Contractor is responsible for all costs of providing the electrical source and any costs required to operate and maintain the traffic signals. If a utility company is used, all equipment shall be placed outside the roadway. All labor and equipment necessary to furnish, install, maintain and remove the interim traffic signal system shall be included in the price bid for “Temporary Traffic Signal”.

706-P01 AGGREGATE LABORATORY: Supply an Aggregate Laboratory with a printer/copy machine. Include the cost in the contract unit price for "Aggregate Laboratory."

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NOTES

708-P01 INLET PROTECTION**:** This item consists of furnishing, installing, maintaining (cleaning), and removal of a drainage inlet filter assembly to collect sediment in surface storm water runoff.

The drainage inlet filter shall be Wimco, Lange IPD, Flexstorm, Dandy CurbSack, or an approved equal.

The filter will remain in place until after the surfaces are stabilized and the surrounding street is clean of debris. Include all costs related to the material, installation, maintenance, in the contract unit price for "Inlet Protection-Special".

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NOTES

714-P01 STORM DRAIN AND CULVERTS: All storm drain bends indicated on the plans shall be manufactured products, no field cutting will be allowed.

If concrete pipe is selected, a minimum of 24 feet of storm drain pipe shall be restrained from the end section with pipe ties per Standard Detail D-714-22. All reinforced concrete pipe culverts shall be tied per Standard Detail D-714-22.

Reinforced concrete pipe storm drain joints shall be bell and spigot with rubber gaskets. Reinforced concrete pipe culverts shall be tongue and groove joint sealed with butyl mastic and wrapped joints. Spiral rib pipe storm drain and culvert joints shall include rubber gaskets.

No field cutting of spiral rib pipe shall be allowed. Attach metal end sections to the ends of spiral rib pipe by standard metal bands or as approved by the engineer.

722-100 INLETS AND MANHOLES: Inlets and manholes were designed with a minimum 4 foot riser height. Fill the bottom of each drainage structure with concrete, up to the lowest invert elevation.

722-P01 INLETS: All inlet offsets indicated in Section 50, Drainage Summary, are to the back of curb location. Center of structures shall be determined from Standard Drawing D-722-02 for “Inlet-Type 2”. “Inlet Special-Type 2 __IN” shall be constructed with a 2’x3’ rectangular opening in the cover. The opening shall be offset towards the centerline of the road with the center of structure offset away from the centerline of the road. The center of structure shall be located in the field based on the cover opening location provided.

722-P02 INLETS AND MANHOLES: INLETS AND MANHOLES: Cover inlets and manholes installed in Phase A (project left) with steel plates adequate for heavy traffic loads prior to traffic. Traffic will be driving over the steel plates during Phase B.

724-P01 HYDRANT RELOCATE: Coordinate with Watford City two weeks prior to shutting down any water main. Prior to the shutdown notify all properties affected in writing a minimum of 24 hours before hand. If shutdown exceeds four (4) hours, temporary services must be provided. The method of providing the temporary water service is subject to the approval of the Engineer. The materials, labor, equipment to relocate an existing fire hydrant as follows:

- Remove and salvage the existing hydrant
- Install 6-inch 90-degree bend, restrained
- Install 20 lineal feet of 6-inch water main
- Reset existing hydrant
- Provide temporary water service

Include all costs related to the material, labor, and maintenance, in the contract unit price for “Hydrant Relocate”.

750-P01 PIGMENTED IMPRINTED CONCRETE: Develop a mix design using any size coarse aggregate specified in Section 802.01 C.2, "Coarse Aggregate" and with a 60-40 fine aggregate-coarse aggregate ratio.

Provide a pigment from the list below or provide an approved equal. To be considered an approved equal, pigments must meet the requirements of ASTM C 979.
Number 366 Natural Red, produced by Soloman Colors, Inc. http://www.solomoncolors.com/;
Brick Red pigment Number 160, produced by Davis Colors http:/www.daviscolors.com/; or
Pigment R/M – Brick Red, produced by Southern Color Company http://www.southerncolor.com/.
Use the same supplier for all colored concrete placed under the contract.

Add pigment at the ratio recommended by the manufacturer directly into the mixer along with the aggregate, cement, and water. Add pigment while the mixer is operating at mixing speed. Continue mixing for 5 to 10 minutes or between 50 and 100 revolutions.

Form a pattern in the concrete using a roller to create a 4 inch × 8 inch brick pattern.

Cure concrete using curing compound that meets the requirements of ASTM C 309, Type 1.

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

766-P01 MAILBOXES: Existing mailboxes along the roadway will need to be temporarily relocated as 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 766-01. Mailbox assemblies that meet NCHRP 350 or MASH requirements may be reset adjacent to the roadway.

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NOTES

770-P01 CONCRETE FOUNDATION-HIGHWAY LIGHTING: Concrete foundations for street lighting with breakaway bases shall be supplied with a minimum of 4 anchor bolts or as required by the manufacturer. Install and tighten anchor bolts as specified in Section 754.04 D.5, “Overhead Sign Structures”.

770-P02 LIGHTING STANDARDS: Provide light standards that have a davit type mast arm, transformer type base, and have factory installed internal vibration dampeners. 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. Provide and install a spare conduit sweep in all foundations with only one conduit run and where shown on the plans.

770-P03 LED LUMINAIRE: Install luminaires that use light-emitting diodes (LED) as a light source for installation on a NDDOT roadway light standard. Provide luminaires with a die-cast aluminum housing, a powder coated gray finish, and a universal four-bolt slip fitter mount.

Luminaires shall meet the lighting level requirements set forth by AASHTO for the locations shown with a principal arterial roadway classification. Provide luminaires with an asymmetric light distribution that provide the following light levels with a light loss factor of 0.69:

Road	Begin Station	End Station	Average Maintained Illuminance	Maximum permitted Illuminance Uniformity Ratio
ND Hwy 23 Intersection	50181+78	484+63	0.8 footcandles minimum	3.0:1 avg/min
US Hwy 85 Bus. Rt. (south of bridge)	50191+00	50259+00	0.8 footcandles minimum	3.0:1 avg/min
US Hwy 85 Bus. Rt. (north of bridge)	50259+00	50302+00	1.2 footcandles minimum	3.0:1 avg/min
Pathway	50262+76	50292+00	0.8 footcandles minimum	4.0:1 avg/min
By-pass rural intersections	(as shown)	(as shown)	0.8 footcandles minimum	3.0:1 avg/min

Provide luminaires rated between 18,500-21,500 delivered lumens. Provide luminaires with an input power equal to or less than 215 Watts and with a rated efficacy (Lumens per Watt) of 98 or greater. Submit Backlight, Uplight, and Glare (BUG) ratings that do not exceed B3-U0-G3. Provide luminaires that meet ANSI C136.37 standards for solid state light sources. Provide luminaires that meet ANSI C136.31 luminaire vibration standards for bridge/overpass applications (3G rated). Provide luminaires that are photometrically tested by certified independent testing laboratories in accordance with IES LM-79 testing procedures. Use a correlated color temperature (CCT) of 3700 K to 4300 K and a minimum color rendering index (CRI) of 70. Use LEDs that are mercury and lead free. Use LEDs that are tested in accordance with IES LM-80 testing procedures. Use LEDs rated at a minimum of 50,000 hours of life at 25°C, L70. Submit a TM-21 report for the LEDs.

Provide a power supply with a minimum power factor of .90 and a maximum total harmonic distortion (THD) of 20%. Provide surge protection with a minimum of ANSI/IEEE C62.41 category C-high protection. Wire luminaires for 240-volt operation. Provide multi-volt (120-277V) universal driver. Provide access to electrical components without the use of tools and provide a bubble level indicator. Provide luminaires that are listed in the US (NRTL) for use in wet locations and rated for an operating ambient temperature range of -40°C to +40°C.

Provide a minimum 5 year warranty for the entire luminaire assembly including material, workmanship, photometrics, power supply, and LED modules. If more than 10% of the individual LED’s fail within the warranty period the luminaire must be repaired and replaced. Adjust luminaires at night in the presence of the engineer and/or owner. Adjust luminaires so they are level from side to side to limit glare. Luminaires shall be mounted level and not be tilted.

LED luminaires that meet the above requirements include:

- Cooper/Eaton Lighting, Streetworks Navion model NVN-AE-04-E-U-T3-10K-K,
- American Electric Lighting, Autobahn model ATB2-80BLEDE70-MVOLT-R3-4000K-BL-NR,
- Or approved equivalent. Equivalents will not be reviewed without a submitted electronic “.ies” file of the exact luminaire to be used.

770-P04 FEED POINT-TYPE II-PAD MOUNTED: (Feed points #3,4,6) Provide new underground service conductors, in conduit, from the existing metersocket (for the temporary lighting) to the new cabinet panelboard. Provide permanent, typed labeling for contactors, breakers, and control switch. Provide powder coat finish for feed point cabinet. Doors shall be gasketed. Duct seal all conduit, provide caps over spare conduit. Photocell shall face north.

All materials, labor, and coordination required to furnish and install the feed point, service conductors, related conduit, and electrical service equipment shall not be bid separately, but shall be included in the price bid “Lighting System _”.

770-P05 FEED POINT-TYPE III-PAD MOUNTED: (Feed point #7) Coordinate with the electric utility, McKenzie Electric Cooperative (Zane Frick), for the new incoming underground electrical service. Revise the existing overhead temporary lighting service to underground type.

The metersocket the utility provides will require a 100 amp main breaker, to be provided and installed by the contractor. The contractor is to provide the conductors in conduit between the metersocket and the feed point cabinet underground. All exposed conduit shall be rigid steel. Rigid steel shall be provided with corrosion wrap tape where in contact with the earth. Any cost imposed by the utility shall be coordinated by the contractor and paid for by the NDDOT.

Provide permanent, typed labeling for contactors, breakers, and control switch. Provide powder coat finish for feed point cabinet. Doors shall be gasketed. Duct seal all conduit, provide caps over spare conduit. Photocell shall face north.

All materials, labor, and coordination required to furnish and install the feed point, service conductors, related conduit, and electrical service equipment shall not be bid separately, but shall be included in the price bid “Lighting System _”.

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NOTES

770-P06 FEED POINT-TYPE IV-PAD MOUNTED: (Feed point #8) Coordinate with the electric utility, McKenzie Electric Cooperative (Zane Frick), for the new incoming underground electrical service. The utility shall be responsible for providing and installing the primary conductors and transformer including any boring or trenching up to the meter. The utility will also provide and install a metersocket on a pedestal located adjacent to the utility transformer.

The metersocket the utility provides will require a 100 amp main breaker, to be provided and installed by the contractor. The contractor is to provide the conductors in conduit between the metersocket and the feed point cabinet underground. All exposed conduit shall be rigid steel. Rigid steel shall be provided with corrosion wrap tape where in contact with the earth. Any cost imposed by the utility shall be coordinated by the contractor and paid for by the NDDOT.

Provide permanent, typed labeling for contactors, breakers, and control switch. Provide powder coat finish for feed point cabinet. Doors shall be gasketed. Duct seal all conduit, provide caps over spare conduit. Photocell shall face north.

All materials, labor, and coordination required to furnish and install the feed point, service conductors, related conduit, and electrical service equipment shall not be bid separately, but shall be included in the price bid “Lighting System _”.

770-P07 CONCRETE FOUNDATION-FEED POINT-TYPE B: Top of concrete foundation shall be installed level and at an elevation to prevent flood damage of cabinet. Conduits with wire shall be duct sealed. The Contractor shall provide two spare 2” Schedule 40 PVC conduits in the foundation. The spare conduit sweeps shall be capped and labeled as to which direction each sweep faces.

770-P08 REMOVE FEED POINT: Remove existing pole and pad-mounted feed point cabinets where shown on the plans. Associated poles and concrete foundations shall be removed and disposed of. Provide backfill for hole caused by removal. Equipment related to the feed point shall not be reused. All equipment to be disposed of. Preserve any existing electrical services unless otherwise noted.

770-P09 RELOCATE WOOD LIGHT POLE: Remove existing wood light pole and aerial cable. Provide backfill for hole caused by removal. Reinstall wood light pole and mast arm at new locations shown. Dispose of existing HPS luminaires. Install new LED luminaire per note 770-P03. Luminaire shall have a mounting height as shown and be leveled. Wood pole shall be installed plumb and level. Where shown provide reused wood poles for wire support. New aerial cable shall be installed such that the cable sag does not interfere with traffic, with a maintained clearance no less than 20 feet above ground. Relocate additional wood poles as required for cable support.

770-P10 REMOVE WOOD POLE LIGHT STANDARD: Remove existing wood light pole, mast arm, luminaire, and aerial cable. Dispose existing wood poles. Provide backfill for hole caused by removal.

772-P01 FEED POINT-COMBO LIGHTING & SIGNAL-PAD MOUNT: (Feed points #5 & 9) Coordinate with the electric utility for revising the existing incoming underground electrical service for the temporary signals. The existing traffic signal service shall be removed and brought to the new feed point cabinet.

Feed point #5 (McKenzie Electric Cooperative – Zane Frick): Provide new underground service conductors, in conduit, from the existing metersocket (for the temporary signals) to the new cabinet panelboard. Route service conductors in conduit inside the feed point cabinet.

Feed point #9 (MDU – Shane Homiston): Provide metersocket on feed point cabinet exterior (Contractor shall provide new metersocket or reuse existing as permitted by utility). Provide 2” conduit on cabinet exterior for service conductors. Any exposed conduit shall be rigid steel. Relocation of service conductors to be done by utility. Contractor to provide conduit sweep for metersocket at a point 24” below grade. Conduit to be routed through foundation.

Any cost imposed by the utilities shall be coordinated by the contractor and paid for by the NDDOT.

Provide permanent, typed labeling for contactors, breakers, and control switch. Provide powder coat finish for feed point cabinet. Doors shall be gasketed. Duct seal all conduit, provide caps over spare conduit. Photocell shall face north. The contractor shall refeed the existing traffic signal controller as shown on the plans. Provide rigid steel conduit in exposed areas.

All materials, labor, and coordination required to furnish and install the feed point, service conductors, related conduit, and electrical service equipment shall not be bid separately, but shall be included in the price bid “Lighting System _”.

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772-P02 REVISE TRAFFIC SIGNAL SYSTEM-SITE _: There is an existing span wire traffic signal system located at Site 1 and Site 2. The Contractor shall maintain the traffic signal system or use temporary signals until the permanent signal is operational. The Contractor may reuse the existing components at this intersection but all signal hardware, controllers, cabinets and other components shall be salvaged to the NDDOT Williston District. The existing controller shall be reused as part of the permanent traffic signal system at this location. The Contractor shall switch over the existing components to the permanent signal system on weekend days. All costs to modify the existing span wire traffic signal to facilitate traffic throughout construction and remove the system shall be included in the price bid for "Revise Traffic Signal System-Site _".

772-P03 TRAFFIC SIGNALS SYSTEM: The price bid "Traffic Signal System – Site _" shall include all labor and equipment necessary for each signal system to be fully operational as shown in the plans upon construction completion. This includes, but is not limited to, the installation of the following features where applicable; traffic signal standards and foundation, vehicular heads, video detection system, traffic signal controller and all ancillary controller hardware (conflict monitor, load switch, flasher, etc.), controller cabinet and foundation, feed point and all cable, conduit, junction boxes and appurtenances to install the traffic signal completely.

Traffic Signal System – Site 1 shall include utilizing the existing controller cabinet and components including the existing Econolite controller, video detection monitor, Bus Interface Unit and power supply; battery back-up, conflict monitor and load switches and solid state flasher. All other equipment for Traffic Signal System – Site 1 shall be new including conduits, conductors, emergency preemption, Autoscope Encore video cameras and other equipment as necessary for a fully functional signal system. Design the signal standards and mast arms for the northeast and northwest combination signals to accommodate a future 4 section head at the end of the mast arm for future compatibility.

Traffic Signal System – Site 2 shall include utilizing the existing controller cabinet and components including the existing Econolite controller, Bus Interface Unit and power supply; video detection equipment and monitor (including 6 Encore cameras); battery back-up; conflict monitor and load switches and solid state flasher. All other equipment for Traffic Signal System – Site 2 shall be new including conduits, conductors, emergency preemption, and other equipment as necessary for a fully functional signal system. The existing advanced flashing beacon warning signs shall remain in service during construction and are to remain in use after project completion. Install the signal standard mounted 5 section heads and wire to provide future right turn overlaps to display with future protected left turn phases as indicated in section 150.

772-P04 TRAFFIC SIGNAL STANDARDS BASE: Provide "T" transformer base type standards for all traffic signal standards. Include all costs for labor, materials and equipment necessary for furnishing and installing this item in the price bid for "Traffic Signal System – Site _".

772-P05 SIGNAL STANDARD PAINT COLOR: All traffic signal system components shall be painted in accordance with the following:
Transformer base - yellow
Mast arm - yellow
Signal head mounting hardware - yellow
Shaft - yellow
Signal housing - yellow
Pedestrian pushbutton post - yellow
Pedestrian pushbutton housing – yellow
Luminaire mounted on signal standard – galvanized
The color yellow shall be #13538 of Federal Standard No. 595.

772-P06 SIGNAL MOUNTING HEIGHT: All signals mounted above the roadway shall have a mounting height between 20.5' and 21.5' from the roadway to the bottom of the signal assembly (including backplates).

772-P07 COMBINATION LIGHT AND SIGNAL STANDARD: The luminaire extensions shall be of the Davit type with a 6' mast arm at the intersection of Main Street S and 6th Avenue SE (Site 1) and with a 10' mast arm at the intersection of Main Street S and ND Hwy 23 (Site 2).

772-P08 EMERGENCY VEHICLE PREEMPTION: The emergency vehicle preemption system shall be Opticom for compatibility with other EVPs in Watford City. All indicator lamps shall be LED. The Contractor shall provide all labor and equipment necessary for the emergency vehicle preemption system to be fully operational. The Contractor shall notify City of Watford City fire chief when the EVP systems are tested and operable. All costs, labor, materials and equipment necessary for furnishing and installing this item shall be included in the price bid for "Traffic Signal System – Site _".

772-P09 VIDEO DETECTION SYSTEM: The video detection system shall reuse the existing Autoscope Encore Video Detection Equipment and replace all Autoscope Solo Terra cameras with new Encore camera system including 1 spare camera. All cable connections, camera aiming and system set-up, including programming detection zones and verification of reliable operation shall be provided by the Contractor. The location of cameras in the plans are for reference only. Cable and camera installation shall be performed by the Contractor.

The Contractor shall provide all labor and equipment necessary for the video detection system to be fully operational. All costs, labor, materials and equipment necessary for furnishing and installing this item shall be included in the price bid for "Traffic Signal System – Site _"

772-P10 CONDUIT: Install conduit at the location shown on the plans.

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

772-P11 LABEL ALL FIELD CABLES: All labeling materials shall be approved by the City. Labels shall be readable without moving the cables. All field cables installed by the Contractor shall be labeled with the cable designations:

TYPE	LABEL	LABEL LOCATION
Communication cable	Comm./address of other end	Within 12" of conduit
Pedestrian push button	Phase/location (i.e. NW, SW, etc.)	Within 6" of terminals
Video detection cable	Approach Detection (i.e. NW, SW, etc.)	Within 6" of terminals
Control cable	Cable number & location (i.e. NW, SW, etc.)	Within 12" of conduit
Opticom cable	Pre-empt number/location (i.e. NW, SW, e tc.)	Within 6" of terminal

Use a heat-shrink labeling system. Do not strip back from the connection more than 12 to 18 inches. This work is not a separate pay item and include costs in the price bid for "Traffic Signal System – Site _".

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NOTES

772-P12 CONTROLLER CABINET WIRING DIAGRAM: Label the following items on the cabinet wiring diagram, in addition to information required by NDDOT Standard Specification.

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

772-P13 ACCESSIBLE PEDESTRIAN SIGNALS (APS) PUSHBUTTON AND SIGN: All pedestrian pushbuttons shall meet the requirements of accessible pedestrian signal (APS) pushbuttons and include the features, installation procedures and be compliant with the following:

A. Features:
   1. Rapid tick WALK indication, no more than 2–5dBA above ambient sound
   2. Vibrotactile WALK indication
   3. Speaker and vibrotactile indication located at pushbutton
   4. Pushbutton locator tone
   5. Tactile arrow on each device aligned in direction of travel on the crosswalk

B. Installation Procedures
   1. APS should be reachable from the level landing of the curb ramp for the crossing or from a level surface with an accessible path to the ramp (MUTCD Section 4E.08 and Proposed and Draft PROWAG).
   2. APS should be within 5 feet of the crosswalk line furthest from the center of the intersection and within 10 feet of the curb (MUTCD Section 4E.08).
   3. Tactile arrow shall be aligned with parallel to the direction of travel on the crosswalk (MUTCD Section 4E.12, P1).
   4. Pushbutton required to be located within reach range for wheelchair users (Proposed PROWAG, R406).

C. Code Compliance:
   1. Functionality: MUTCD 2009 - 4E
   2. Temperature and Humidity: NEMA TS 2
   3. Transient Voltage Protection: NEMA TS 2
   4. Transient Suppression: IEC 61000-4-4, IEC 61000-4-5
   5. Electronic Noise: FCC Title 47, Part 15, Class A
   6. Mechanical Shock and Vibration: NEMA TS 2
   7. EN4 PBS Enclosure: NEMA 250 - Type 4X
   8. Electrical Reliability: NEMA TS 4

The Contractor shall supply an additional pushbutton unit at each site. The cost for the accessible pedestrian signals pushbutton and sign shall not be bid separately but shall be included in the item “Traffic Signal System – Site _”.

772-P14 SIGNAL STANDARD CONDUCTORS: The contractor shall install one cable from the signal transformer base to each traffic signal head. Daisy chaining from head to head is not allowed.

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ENVIRONMENTAL COMMITMENTS

ENVIRONMENTAL COMMITMENTS (EC): The North Dakota Department of Transportation has made environmental commitments to secure approval of this project. The environmental commitments are as follows:

EC-1: Unavoidable permanent impacts will be mitigated onsite, adjacent to the project, or at a NDDOT approved mitigation site or bank in accordance with the mitigation guidance[2, 3].

ACTION REQUIRED /TAKEN: 0.10 acre of permanent impacts to EO11990 wetlands will require mitigation. The NDDOT will mitigate 0.10 acre of EO 11990 impacts at Vollrath 15/21 Bank in the Red River Regional Service Area. 0.08 acre of temporary impacts will result from construction. 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.30, T150N, R98W	PEMAx	Road Ditch	0.05	Artificial	Yes	0.01	0.02	N/A	N/A	N	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2a	Sec. 30, T150N, R98W	PEMC	Drainage	0.67	Natural	Yes	0.03	0.00	N/A	N/A	N	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2b							0.00	0.00	N/A	N/A	N	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2c							0.00	0.00	N/A	N/A	N	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Sec. 25, T150N, R99W	PEMCx	Road Ditch	0.32	Artificial	No	0.00	0.00	N/A	N/A	N	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4a	Sec. 24, T150N, R99W	PEMC	Drainage	0.86	Natural	Yes	0.02	0.02	N/A	N/A	Y	N	N/A	Vollrath 15/21 NDDOT Bank	0.02	N/A	N/A	N/A	N/A
4b							0.01	0.04	N/A	N/A	Y	N	N/A	Vollrath 15/21 NDDOT Bank	0.04	N/A	N/A	N/A	N/A
4c							0.01	0.04	N/A	N/A	Y	N	N/A	Vollrath 15/21 NDDOT Bank	0.04	N/A	N/A	N/A	N/A
5-(1)	Sec. 23, T150N, R99W	PEMA	Basin	20.72	Natural	Yes	0.00	0.00	N/A	N/A	N	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6-(61)	Sec. 1, T149N, R99W	PEMAx	Road Ditch	0.53	Artificial	Yes	0.00	0.00	N/A	N/A	N	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7 (70)	Sec. 6, T149N, R98W	PEMA	Drainage	1.10	Natural	Yes	0.00	0.00	NA	NA	N	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Totals	**24.25**			**0.08**	**0.12**	**N/A**	**N/A**					**0.10**		**N/A**		**N/A**

[1] A wetland Jurisdictional Determination was issued by the USACE on 01/02/2013; NWO-2012-2871-BIS.

[2] All impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts greater than 0.10 acre to artificial/jurisdictional wetlands require mitigation.

[3] All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by the USACE on a case by case), and temporary impacts do not require mitigation.

ENVIRONMENTAL COMMITMENTS

Summary Impact Table			
Total Permanent Impact Summary		Temporary Impacts and additional information	
Wetland Type	Total (Acres)	Wetland Type	Total (Acres/Lf)
Natural/JD	0.10	Temporary JD	0.08
Natural/Non-JD	0.00	Non-JD Temporary	0.00
Artificial/JD	0.02	Permanent JD > 0.10	0.00
Artificial /Non-JD	0.00	Permanent OW	N/A
Total	0.12	Temporary OW	N/A

EC-2: The project is located within the migration corridor of the endangered whooping crane, and suitable stopover habitat for the whooping crane is present. The migration periods of the whooping crane are April 1st to May 15th and September 1st to October 31st.

ACTION TAKEN/REQUIRED: The contractor will notify the Project Engineer immediately in the event a whooping crane is identified within one mile of the Project Area. The Project Engineer will cease all construction activities, establish an avoidance area, and immediately notify and coordinate with the USFWS, FHWA, and NDDOT. The contractor will not resume work within the avoidance area until the Project Engineer has confirmed that the bird has left the area. In addition, if above ground utility lines are adjusted/relocated or newly installed as a result of this project, line markers (bird diverters) will be added at a ratio of 1:1 (per linear foot) to the adjusted/relocated lines, and a 2:1 ratio to the newly installed lines. Refer to the Utility Conflict Plans regarding bird diverter information, and Relocation Utility Agreement.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	8	1

ESTIMATE OF QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	11TH AVE INTERSECTION	TOTAL
103	0100	CONTRACT BOND	L SUM	1	-	1
103	0200	ESCROW OF BID DOCUMENTATION	L SUM	1	-	1
201	0330	CLEARING & GRUBBING	L SUM	1	-	1
202	0130	REMOVAL OF CURB & GUTTER	LF	408	-	408
202	0136	REMOVAL OF PAVEMENT	TON	49,342	-	49,342
202	0170	REMOVAL OF CULVERTS-ALL TYPES & SIZES	LF	2,379	-	2,379
203	0101	COMMON EXCAVATION-TYPE A	CY	30,430	-	30,430
203	0109	TOPSOIL	CY	21,909	-	21,909
203	0113	COMMON EXCAVATION-WASTE	CY	12,350	-	12,350
203	0121	TOPSOIL-WETLAND	CY	64	-	64
203	0138	COMMON EXCAVATION-SUBCUT	CY	3,230	-	3,230
203	0140	BORROW-EXCAVATION	CY	10,846	-	10,846
216	0100	WATER	M GAL	2,046	-	2,046
230	0165	SUBGRADE PREPARATION-TYPE A-12IN	STA	95.8	-	95.8
251	0200	SEEDING CLASS II	ACRE	25.852	-	25.852
251	1000	WETLAND SEED	ACRE	0.081	-	0.081
251	2000	TEMPORARY COVER CROP	ACRE	25.888	-	25.888
253	0101	STRAW MULCH	ACRE	51.820	-	51.820
255	0103	ECB TYPE 3	SY	2,760	-	2,760
256	0300	RIPRAP GRADE III	CY	199	-	199
260	0200	SILT FENCE SUPPORTED	LF	1,679	-	1,679
260	0201	REMOVE SILT FENCE SUPPORTED	LF	1,679	-	1,679
261	0112	FIBER ROLLS 12IN	LF	22,839	-	22,839
261	0113	REMOVE FIBER ROLLS 12IN	LF	11,829	-	11,829
302	0100	SALVAGED BASE COURSE	TON	74,925	1,866	76,791
401	0050	TACK COAT	GAL	4,646	-	4,646
401	0060	PRIME COAT	GAL	19,138	-	19,138
401	0160	BLOTTER MATERIAL CL 44	TON	577	-	577
411	0114	MILLING PAVEMENT SURFACE - 2 INCH	SY	1,283	-	1,283
430	0045	SUPERPAVE FAA 45	TON	15,420	-	15,420
430	1000	CORED SAMPLE	EA	62	-	62
430	6428	PG 64-28 ASPHALT CEMENT	TON	910	-	910
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	6,369	4,031	10,400
702	0100	MOBILIZATION	L SUM	1	-	1
704	0100	FLAGGING	MHR	7,000	-	7,000
704	1000	TRAFFIC CONTROL SIGNS	UNIT	5,582	-	5,582
704	1035	ATTENUATION DEVICE-TYPE B-25	EA	2	-	2
704	1052	TYPE III BARRICADE	EA	93	-	93
704	1060	DELINEATOR DRUMS	EA	648	-	648
704	1067	TUBULAR MARKERS	EA	167	-	167
704	1080	STACKABLE VERTICAL PANELS	EA	274	-	274
704	1500	OBLITERATION OF PAVEMENT MARKING	SF	10,195	-	10,195
704	3510	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	40	-	40
704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2	-	2
706	0500	AGGREGATE LABORATORY	EA	1	-	1
706	0550	BITUMINOUS LABORATORY	EA	1	-	1
706	0600	CONTRACTOR'S LABORATORY	EA	1	-	1
708	1540	INLET PROTECTION-SPECIAL	EA	39	-	39
708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	39	-	39
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	10,257	-	10,257
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	180	-	180
714	4099	PIPE CONDUIT 18IN-APPROACH	LF	591	-	591
714	4101	PIPE CONDUIT 18IN-STORM DRAIN	LF	1,598	-	1,598
714	4106	PIPE CONDUIT 24IN-APPROACH	LF	252	-	252
714	4107	PIPE CONDUIT 24IN-STORM DRAIN	LF	139	-	139
714	4112	PIPE CONDUIT 30IN-STORM DRAIN	LF	519	-	519
714	4113	PIPE CONDUIT 30IN-APPROACH	LF	172	-	172
714	4115	PIPE CONDUIT 36IN	LF	236	-	236
714	4117	PIPE CONDUIT 36IN-STORM DRAIN	LF	112	-	112
714	4120	PIPE CONDUIT 42IN	LF	510	-	510

US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Estimate of Quantities

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	8	2

ESTIMATE OF QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	11TH AVE INTERSECTION	TOTAL
714	4128	PIPE CONDUIT 48IN-APPROACH	LF	490	-	490
714	9659	REMOVE & RELAY PIPE-ALL TYPES & SIZES	LF	88	-	88
714	9660	REMOVE & RELAY END SECTION-ALL TYPE & SIZES	EA	2	-	2
720	0110	RIGHT OF WAY MARKERS	EA	1	-	1
720	0125	ALIGNMENT MONUMENTS	EA	5	-	5
720	0130	IRON PIN R/W MONUMENTS	EA	1	-	1
720	0135	IRON PIN REFERENCE MONUMENTS	EA	5	-	5
722	0120	MANHOLE 72IN	EA	1	-	1
722	0130	MANHOLE 84IN	EA	1	-	1
722	1120	MANHOLE RISER 72IN	LF	4.7	-	4.7
722	1130	MANHOLE RISER 84IN	LF	4.0	-	4.0
722	3510	INLET-TYPE 2	EA	23	-	23
722	3701	INLET SPECIAL-TYPE 2 48IN	EA	14	-	14
722	3761	INLET SPECIAL-TYPE 2 60IN	EA	2	-	2
722	6140	ADJUST GATE VALVE BOX	EA	17	-	17
722	6200	ADJUST MANHOLE	EA	2	-	2
724	0420	HYDRANT-RELOCATE	EA	1	-	1
748	0120	CURB & GUTTER MOUNTABLE-TYPE I	LF	84	-	84
748	0140	CURB & GUTTER-TYPE I	LF	19,597	-	19,597
750	0030	PIGMENTED IMPRINTED CONCRETE	SY	126	-	126
750	0115	SIDEWALK CONCRETE 4IN	SY	3,278	-	3,278
750	1000	DRIVEWAY CONCRETE	SY	186	-	186
750	2115	DETECTABLE WARNING PANELS	SF	420	-	420
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	286	-	286
754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	482	-	482
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	553	-	553
754	0563	REFERENCE MARKER-TYPE C	EA	2	-	2
754	0805	OBJECT MARKERS - CULVERTS	EA	108	-	108
762	0103	PVMT MK PAINTED-MESSAGE	SF	96	-	96
762	0112	EPOXY PVMT MK MESSAGE	SF	1,056	-	1,056
762	0113	EPOXY PVMT MK 4IN LINE	LF	19,652	-	19,652
762	0114	EPOXY PVMT MK 6IN LINE	LF	328	-	328
762	0115	EPOXY PVMT MK 8IN LINE	LF	2,460	-	2,460
762	0117	EPOXY PVMT MK 24IN LINE	LF	358	-	358
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	240	-	240
762	0420	SHORT TERM 4IN LINE-TYPE R	LF	4,427	-	4,427
762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	34,807	-	34,807
762	1104	PVMT MK PAINTED 4IN LINE	LF	1,359	-	1,359
762	1108	PVMT MK PAINTED 8IN LINE	LF	138	-	138
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	2,659	-	2,659
762	1307	PREFORMED PATTERNED PVMT MK 6IN LINE-GROOVED	LF	683	-	683
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	1,147	-	1,147
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED	LF	245	-	245
764	0131	W-BEAM GUARDRAIL	LF	25.0	-	25.0
764	0151	REMOVE W-BEAM GUARDRAIL & POSTS	LF	357.6	-	357.6
764	1050	RESET W-BEAM GUARDRAIL	LF	207.6	-	207.6
764	1059	RESET W-BEAM GUARDRAIL END TERMINAL	EA	4	-	4
764	2081	REMOVE END TREATMENT & TRANSITION	EA	4	-	4
766	0100	MAILBOX-ALL TYPES	EA	2	-	2
770	0001	LIGHTING SYSTEM	EA	1	-	1
770	0003	LIGHTING SYSTEM A	EA	1	-	1
770	0004	LIGHTING SYSTEM B	EA	2	-	2
770	0005	LIGHTING SYSTEM C	EA	1	-	1
772	2810	TEMPORARY TRAFFIC SIGNALS	EA	3	-	3
772	2906	REVISE TRAFFIC SIGNAL SYSTEM-SITE 1	EA	1	-	1
772	9811	TRAFFIC SIGNAL SYSTEM - SITE 1	EA	1	-	1
772	9812	TRAFFIC SIGNAL SYSTEM - SITE 2	EA	1	-	1

US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Estimate of Quantities

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	10	1

Subrade Preparation - Type A - 12 IN

Location			Quantity (Sta)
Sta	to	Sta	
US Hwy 85 Bus Rt (PRBN85)			
50198+17.78	to	50294+00.00	95.82
230 0165 Subgrade Preparation - Type A - 12IN		Total =	95.8

Salvaged Base Course

Removal Phase	Removal of Bituminous (1) (Ton)	Removal of Concrete (1) (Ton)	Total Removal Bituminous and Concrete (Ton)	Aggregate Required (Ton)	Removal of Aggregate (1) (Ton)	Virgin Aggregate Required (Ton)	Salvaged Base Course Produced
	A	B	C=A+B	D=C/0.30-C	E	F=D-E	G=C+D
Project Left	7,312	156	7,468	17,425	13,243	4,182	24,893
Project Right	9,987	325	10,312	24,061	18,319	5,742	34,373
Produceable Salvaged Base On Site (H)						Total =	59,266
Total Salvaged Base Required for Project (I)						Total =	76,791
Aggregate Base Course CL 5 Required for Project (J=I-H)						Total =	17,525

Notes:
Assumed minimum of 30% bituminous or concrete material
(1) See Section 40 for Quantities

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"	5	2	3	30	60	N/A	EA
430.04 I.2.b(2), "Pavement Thickness Determination Cores"					N/A	2	EA
				Total	60	2	EA
				430 1000 Cored Sample		62	EA

Water
25 M Gal/Mile for Dust Palliative
25 M Gal/Mile for Subgrade Preparation
20 Gal/Ton for Aggregate
10 Gal/CY for Embankment

Mulching
One application for Temporary Cover Crop
One application for Seeding CI-II less ECB & TRM locations

Removal of Pavement
Aggregate Base @ 1.875 Ton/CY
Bituminous @ 2 Ton/CY
Concrete @ 2 Ton/CY

Pavement
Salvaged Base Course @ 1.875 Ton/CY
Tack Coat @ 0.05 Gal/SY
Prime Coat @ 0.25 Gal/SY
Blotter Material CI 44 @ 15 lbs/SY
PG 64-28 Asphalt Cement @ 5.9%
Superpave FAA 45 @ 2 Ton/CY

Alignment Monuments

Station	Offset	Description
50206+27.78	0.00	PI
50216+70.52	0.00	SEC LINE CROSSING
50243+10.81	0.00	QTR LINE CROSSING
50269+50.96	0.00	SEC LINE CROSSING
50291+23.76	0.00	HWY INTERSECTION (ND23A)
720 0125 Allignment Monuments		Total = 5

Iron Pin R/W Monuments

Station	Offset	Description	Include Iron Pin	Include R/W Marker
50217+03.78	-100.00	R/W	x	x
720 0130 Iron Pin R/W Monuments			Total =	1
720 0110 Right of Way Markers			Total =	1

Iron Pin Reference Monuments

Station	Offset	Description
50215+55.52	115.00	SEC LINE
50218+00.52	130.00	SEC LINE
50268+50.96	100.00	SEC LINE
50270+50.88	-100.00	SEC LINE
50270+51.03	100.00	SEC LINE
720 0135 Iron Pin Reference Monuments		Total = 5

Mailbox - All Types

Existing Location		Proposed Location		Replace / Reset	Post Mount	Quantity (EA)
Station	Offset	Station	Offset			
US Hwy 85 Bus Rt						
50228+36.00	41.63, Lt	50228+24.00	56.00, Lt	Replace	Single	1
50230+51.86	37.74, Lt	50230+61.00	40.00, Lt	Replace	Single	1
766 0100 Mailbox -All Types					Total =	2

Object Markers - Culverts
Refer to Standard Drawing D-754-83

Main St (PRBN85)					
Storm Sewer			Centerline Culvert Markers		
Station	Quantity		Station	Quantity	
	Lt	Rt		Lt	Rt
50201+75	1	1	50239+35	1	1
50209+50	1	1	50293+62	2	2
50216+05	1	1	2005+06 (PRTR23)	2	2
50221+50	1	1	Approach Culvert Markers		
50225+70	1	1	Station	Quantity	
50227+90	1			Lt	Rt
50231+00		1	50202+46		4
50233+95	1		50216+68	2	4
50236+90	1	1	50218+79	2	
50242+14	1	1	50226+20	2	
50250+33	1	1	50228+38	2	
50255+02		1	50230+70	2	
50255+54	1		50231+55		6
50256+04		1	50234+53	2	
50262+60	1	1	50237+40		6
50264+04	1	1	50243+24		2
50268+75	1	1	50246+03		2
50268+95	1		50248+09		2
50271+18		1	50249+06		2
50271+30	1		50251+26		2
50274+17	1		50255+53		2
50274+33	1		50263+20		2
50278+30	1	1	50269+51		2
50285+50	1	1	50276+01	2	
50287+87	1	1	50281+85	2	2
50289+15	1		50286+16	2	
			50288+55	2	
Subtotal	40		Subtotal	68	
754 0805 Object Markers - Culverts				Total =	108

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Basis of Estimate

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	11	1

Main St (Project Left)

CHAIN PRBN85 (Project Left)

STATION	END AREA (SF) EXC	END AREA (SF) FILL	ADJUSTED VOLUME (CY) EXC	ADJUSTED VOLUME (CY) FILL	ADJUSTED VOLUME (CY) MASS
50194+32.78	8.85	0.03	0	0	0
50194+50.00	8.60	0.03	6	0	6
50194+75.00	8.07	0.02	8	0	14
50195+00.00	9.11	0.02	8	0	22
50195+25.00	8.24	0.03	8	0	30
50195+50.00	8.45	0.02	8	0	38
50195+75.00	8.35	0.21	8	0	46
50196+00.00	8.91	0.03	8	0	54
50196+25.00	9.19	0.08	8	0	62
50196+50.00	8.95	0.68	8	0	70
50196+75.00	8.91	0.92	8	1	77
50197+00.00	9.12	1.03	8	1	84
50197+25.00	9.19	1.46	8	1	91
50197+50.00	9.82	0.77	9	1	99
50198+00.00	9.60	1.76	18	3	114
50198+09.77	9.11	2.83	3	1	116
50198+17.78	5.62	13.66	2	3	115
50198+25.00	10.81	17.44	2	5	112
50198+50.00	10.80	31.67	10	28	94
50198+75.00	11.03	119.66	10	88	16
50198+88.00	11.30	164.36	5	85	-64
50199+00.00	11.96	224.12	5	108	-167
50199+12.00	18.49	236.95	7	128	-288
50199+50.00	24.57	165.33	31	354	-611
50199+75.00	26.79	156.41	24	186	-773
50200+00.00	27.35	148.37	25	176	-924
50200+25.00	28.16	141.55	26	168	-1066
50200+32.00	28.50	140.08	7	46	-1105
50200+50.00	29.96	136.34	19	115	-1201
50200+75.00	31.89	131.58	29	155	-1327
50201+00.00	33.00	125.34	30	149	-1446
50201+25.00	33.98	120.97	31	143	-1558
50201+50.00	35.43	115.98	33	137	-1662
50201+75.00	35.34	113.00	33	133	-1762
50201+77.50	35.04	112.78	3	13	-1772
50202+24.50	104.10	4.03	121	127	-1778
50202+40.00	117.27	0.09	64	1	-1715
50202+59.00	100.97	8.16	77	4	-1642
50203+11.00	32.54	91.50	128	120	-1634
50203+25.00	32.25	87.64	17	58	-1675
50203+50.00	32.71	85.64	31	100	-1744
50203+75.00	33.07	89.97	31	102	-1815
50204+00.00	32.89	95.52	31	107	-1891
50204+25.00	32.56	93.33	30	109	-1970
50204+50.00	32.75	92.91	30	108	-2048
50204+75.00	33.20	89.22	31	105	-2122
50205+00.00	33.78	87.49	31	102	-2193
50205+25.00	34.24	87.50	32	101	-2262
50205+50.00	34.35	89.76	32	103	-2333
50205+75.00	33.69	91.77	32	105	-2406
50206+00.00	33.01	91.48	31	106	-2481
50206+25.00	32.35	92.44	31	106	-2556
50206+50.00	31.73	94.70	30	108	-2634
50206+75.00	30.97	98.24	29	112	-2717
50207+00.00	30.12	99.27	28	114	-2803
50207+25.00	29.25	103.13	28	117	-2892
50207+50.00	29.05	104.45	27	120	-2985
50207+75.00	29.11	109.06	26	124	-3083
50208+00.00	32.80	111.16	29	127	-3181
50208+25.00	30.36	105.08	29	125	-3277
50208+50.00	30.57	104.99	28	122	-3371
50208+75.00	30.69	114.95	28	127	-3470

CHAIN PRBN85 (Project Left)

STATION	END AREA (SF) EXC	END AREA (SF) FILL	ADJUSTED VOLUME (CY) EXC	ADJUSTED VOLUME (CY) FILL	ADJUSTED VOLUME (CY) MASS
50209+00.00	30.68	107.64	28	129	-3571
50209+25.00	30.63	113.01	28	128	-3671
50209+50.00	30.24	110.95	28	130	-3773
50209+75.00	29.71	111.04	28	128	-3873
50210+00.00	29.40	113.47	28	130	-3975
50210+25.00	29.15	114.43	27	132	-4080
50210+50.00	37.63	116.80	31	134	-4183
50210+75.00	39.70	120.11	36	137	-4284
50211+00.00	40.71	117.05	37	137	-4384
50211+25.00	43.09	122.63	39	139	-4484
50211+50.00	43.66	117.26	40	139	-4583
50211+75.00	45.60	121.93	41	138	-4680
50212+00.00	50.04	114.89	44	137	-4773
50212+25.00	55.21	120.28	49	136	-4860
50212+50.00	54.94	115.08	51	136	-4945
50212+75.00	55.09	119.37	51	136	-5030
50213+00.00	56.18	117.78	51	137	-5116
50213+25.00	49.29	132.05	49	145	-5212
50213+50.00	48.29	132.72	46	153	-5319
50213+75.00	46.49	145.74	44	161	-5436
50214+00.00	46.70	143.92	43	168	-5561
50214+25.00	45.03	151.43	43	171	-5689
50214+50.00	43.75	152.46	41	176	-5824
50214+75.00	42.07	159.47	39	181	-5966
50215+00.00	52.88	160.02	44	185	-6107
50215+25.00	61.70	155.15	53	182	-6236
50215+50.00	66.21	150.21	60	177	-6353
50215+75.00	72.48	140.06	64	168	-6457
50216+00.00	58.18	134.94	60	159	-6556
50216+05.00	55.28	132.02	11	31	-6576
50216+06.50	54.23	131.02	3	9	-6582
50216+58.00	125.26	0.00	171	156	-6567
50216+68.00	142.46	0.00	50	0	-6517
50216+78.00	147.77	0.00	54	0	-6463
50217+29.50	56.65	29.35	195	35	-6303
50217+50.00	56.86	41.41	43	34	-6294
50217+75.00	56.07	42.23	52	48	-6290
50218+00.00	57.72	41.34	53	48	-6285
50218+25.00	61.68	33.47	56	43	-6272
50218+35.00	68.41	27.17	24	14	-6262
50218+67.00	54.29	30.71	73	43	-6232
50218+75.00	56.87	23.35	17	10	-6225
50218+78.00	57.42	25.43	6	3	-6222
50218+78.50	57.45	25.82	1	1	-6222
50218+89.00	56.29	36.00	22	15	-6215
50219+21.00	69.45	24.06	75	44	-6184
50219+25.00	67.04	26.06	10	5	-6179
50219+50.00	62.08	37.87	60	37	-6156
50219+53.50	62.40	38.55	8	6	-6154
50219+70.00	62.22	38.38	38	29	-6145
50219+75.00	63.97	36.72	12	9	-6142
50220+00.00	79.88	34.07	67	41	-6116
50220+22.50	84.86	34.42	69	36	-6083
50220+25.00	85.30	34.49	8	4	-6079
50220+50.00	87.44	22.94	80	33	-6032
50220+75.00	115.25	16.31	94	23	-5961
50220+97.50	112.32	17.56	95	18	-5884
50221+00.00	109.65	17.86	10	2	-5876
50221+25.00	82.41	34.63	89	30	-5817
50221+50.00	72.33	46.08	71	47	-5793
50221+75.00	74.30	44.52	67	52	-5778
50222+00.00	77.28	44.36	70	51	-5759

CHAIN PRBN85 (Project Left)

STATION	END AREA (SF) EXC	END AREA (SF) FILL	ADJUSTED VOLUME (CY) EXC	ADJUSTED VOLUME (CY) FILL	ADJUSTED VOLUME (CY) MASS
50222+25.00	75.13	36.19	71	47	-5735
50222+50.00	76.26	29.76	70	38	-5703
50222+75.00	98.16	17.89	81	28	-5650
50223+00.00	98.25	19.98	91	22	-5581
50223+10.00	84.37	23.00	34	10	-5557
50223+25.00	70.82	31.83	43	19	-5533
50223+50.00	65.80	37.74	64	40	-5509
50223+75.00	66.98	40.83	62	45	-5492
50224+00.00	88.69	37.19	72	45	-5465
50224+25.00	85.24	34.24	80	41	-5426
50224+50.00	74.83	26.79	74	35	-5387
50224+75.00	70.50	30.14	67	33	-5353
50225+00.00	69.25	32.90	65	36	-5324
50225+25.00	70.39	27.54	64	35	-5295
50225+50.00	73.75	25.87	67	31	-5259
50225+70.00	78.44	18.71	56	21	-5224
50225+75.00	82.31	15.47	15	4	-5213
50226+09.00	145.35	0.00	143	12	-5082
50226+20.00	140.88	0.00	58	0	-5024
50226+31.00	136.83	0.00	57	0	-4967
50226+64.50	57.12	34.90	120	27	-4874
50226+75.00	52.83	37.22	22	18	-4870
50227+00.00	46.61	36.32	46	43	-4867
50227+25.00	47.12	39.58	44	44	-4867
50227+50.00	45.38	41.40	42	47	-4872
50227+55.00	50.24	38.51	9	9	-4872
50227+75.00	48.63	34.17	37	34	-4869
50227+90.00	45.72	35.73	26	24	-4867
50227+93.50	44.45	34.23	5	6	-4868
50228+27.00	86.37	68.67	81	80	-4867
50228+38.00	97.90	7.14	38	19	-4848
50228+49.00	102.57	4.30	40	3	-4811
50228+82.50	43.57	37.37	91	32	-4752
50229+00.00	45.08	50.66	29	36	-4759
50229+25.00	49.25	51.20	43	59	-4775
50229+50.00	54.25	46.84	48	57	-4784
50229+51.50	54.56	46.69	3	3	-4784
50229+75.00	56.58	46.19	49	51	-4786
50230+00.00	57.86	44.52	53	52	-4785
50230+25.00	58.20	41.16	53	50	-4782
50230+50.00	61.98	11.39	55	30	-4757
50230+64.00	63.70	0.00	33	4	-4728
50230+76.00	59.74	0.04	28	0	-4700
50231+00.00	50.63	30.96	49	17	-4668
50231+44.00	49.71	43.79	82	76	-4662
50231+55.00	49.36	41.51	20	22	-4664
50231+66.00	48.84	41.24	20	21	-4665
50232+09.50	51.06	40.01	81	82	-4666
50232+25.00	51.31	39.65	29	29	-4666
50232+50.00	50.29	38.31	47	45	-4664
50232+75.00	51.92	38.51	47	44	-4661
50233+00.00	47.14	40.67	46	46	-4661
50233+25.00	44.82	47.01	42	51	-4670
50233+50.00	41.98	48.99	40	56	-4686
50233+75.00	40.87	54.70	38	60	-4708
50233+95.00	38.88	54.61	30	51	-4729
50233+95.50	38.95	54.34	1	1	-4729
50234+39.00	111.20	0.00	121	55	-4663
50234+52.00	116.85	0.00	55	0	-4608
50234+65.00	125.85	0.00	58	0	-4550
50235+08.50	50.95	44.49	143	45	-4452
50235+25.00	46.32	51.70	30	37	-4459

This document was originally issued and sealed by Jessica R. Karls Registration Number PE- 8408, on 02/22/16 and the original document is stored at the North Dakota Department of Transportation

US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Earthwork Values

Main St (Project Left)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	11	2

Main St (Project Left)

CHAIN PRBN85 (Project Left)

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
50235+50.00	42.83	58.48	41	64	-4482
50235+75.00	38.20	59.84	38	68	-4512
50236+00.00	37.33	63.27	35	71	-4548
50236+25.00	32.50	68.45	32	76	-4592
50236+50.00	33.21	73.80	30	82	-4644
50236+75.00	46.43	75.56	37	86	-4693
50236+90.00	55.40	77.65	28	53	-4718
50236+92.50	56.14	78.01	5	9	-4722
50237+26.00	133.53	0.00	117	60	-4665
50237+40.00	136.95	0.00	70	0	-4595
50237+54.00	120.94	0.00	67	0	-4528
50237+87.50	92.92	43.27	132	34	-4430
50238+00.00	86.46	57.90	42	29	-4417
50238+25.00	80.45	64.17	77	71	-4411
50238+50.00	75.72	66.89	72	76	-4415
50238+75.00	75.74	67.34	70	78	-4423
50239+00.00	95.24	67.84	79	78	-4422
50239+25.00	19.43	99.72	53	97	-4466
50239+50.00	21.24	119.92	19	127	-4574
50239+75.00	23.35	111.32	21	134	-4687
50240+00.00	22.86	100.84	21	123	-4789
50240+25.00	24.59	94.13	22	113	-4880
50240+50.00	23.34	83.02	22	103	-4961
50240+75.00	25.37	79.38	23	94	-5032
50241+00.00	29.49	67.75	25	85	-5092
50241+25.00	34.52	57.48	30	72	-5134
50241+50.00	37.98	51.05	34	63	-5163
50241+75.00	39.58	49.52	36	58	-5185
50242+00.00	40.40	48.59	37	57	-5205
50242+14.00	41.11	47.31	21	31	-5215
50242+50.00	37.51	40.94	53	74	-5236
50242+75.00	33.42	34.51	33	44	-5247
50243+00.00	30.64	38.26	30	42	-5259
50243+15.00	28.90	51.78	17	31	-5273
50243+33.00	24.93	76.37	18	53	-5308
50243+50.00	22.64	82.55	15	63	-5356
50243+75.00	20.98	81.49	20	95	-5431
50244+00.00	20.88	79.04	19	93	-5505
50244+25.00	19.54	72.66	19	88	-5574
50244+50.00	17.85	77.61	17	87	-5644
50244+75.00	15.60	81.42	15	92	-5721
50245+00.00	15.30	81.24	14	94	-5801
50245+25.00	16.25	77.67	15	92	-5878
50245+44.50	13.91	84.45	11	73	-5940
50245+94.00	19.42	58.07	31	163	-6072
50246+03.00	21.11	43.45	7	21	-6086
16th Ave	-	-	719	485	-5852
50246+12.00	25.64	23.51	8	14	-5858
50246+61.50	20.82	13.70	43	43	-5858
50247+04.50	26.63	48.89	38	62	-5882
50247+25.00	28.44	52.76	21	48	-5909
50247+50.00	32.18	45.52	28	57	-5938
50247+75.00	36.72	41.89	32	51	-5957
50248+00.00	41.31	36.60	36	45	-5966
50248+10.50	42.86	35.31	16	17	-5967
50248+18.00	43.96	33.79	12	12	-5967
50248+25.00	44.97	32.11	11	11	-5967
50248+53.50	49.55	27.10	50	39	-5956
50248+75.00	52.29	22.72	41	25	-5940
50249+01.00	54.57	18.15	51	25	-5914
50249+11.00	55.14	18.45	20	8	-5902
50249+25.00	54.75	17.01	28	11	-5885

CHAIN PRBN85 (Project Left)

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
50249+50.00	53.34	16.68	50	19	-5854
50249+54.50	52.96	16.55	9	3	-5848
50249+75.00	52.06	16.98	40	16	-5824
50249+97.50	50.96	13.36	43	16	-5797
50250+00.00	50.84	13.03	5	2	-5794
50250+25.00	51.27	9.23	47	13	-5760
50250+33.00	51.44	7.98	15	3	-5748
50250+50.00	52.16	7.36	32	6	-5722
50250+75.00	50.81	8.71	47	9	-5684
50251+00.00	49.51	10.91	46	11	-5649
50251+18.50	48.24	10.12	33	9	-5625
50251+32.50	48.52	5.87	25	5	-5605
50251+50.00	49.71	2.38	32	3	-5576
50251+58.00	93.33	0.00	21	0	-5555
50251+68.00	89.72	0.00	34	0	-5521
50251+75.00	48.16	3.07	18	0	-5503
50252+00.00	36.41	21.03	40	14	-5477
50252+25.00	33.47	41.75	32	36	-5481
50252+50.00	31.95	51.40	31	54	-5504
50252+75.00	30.34	47.33	29	57	-5532
50253+00.00	29.93	35.64	28	48	-5552
50253+25.00	32.46	38.35	29	43	-5566
50253+50.00	33.18	44.86	30	48	-5584
50253+75.00	36.12	31.35	32	44	-5596
50254+00.00	41.13	25.55	36	33	-5593
50254+25.00	44.13	21.53	40	27	-5580
50254+50.00	50.48	16.25	44	22	-5558
50254+75.00	54.52	11.41	49	16	-5525
50255+00.00	56.74	6.48	52	10	-5483
50255+02.00	57.08	6.55	4	1	-5480
50255+10.50	59.27	6.67	18	3	-5465
50255+44.00	63.46	10.45	77	13	-5401
50255+53.00	64.58	11.32	21	5	-5385
50255+54.00	64.70	11.27	3	1	-5383
50255+62.00	65.45	11.85	20	4	-5367
50255+95.50	62.47	11.28	79	18	-5306
50256+04.00	60.46	7.95	19	4	-5291
50256+14.00	76.30	22.99	25	7	-5273
50256+26.00	69.63	20.31	33	12	-5252
50256+50.00	42.18	41.05	49	34	-5237
50256+65.92	38.34	47.66	24	33	-5246
50256+75.00	37.58	48.81	13	20	-5253
50257+00.00	33.91	43.73	33	54	-5274
50257+01.17	33.83	43.29	1	2	-5275
50257+25.00	33.30	36.31	30	44	-5289
50257+50.00	33.33	34.42	31	41	-5299
50257+65.04	31.54	35.24	18	24	-5305
50257+70.59	30.58	36.82	6	9	-5308
50257+75.00	29.86	37.99	5	8	-5311
50257+97.71	24.09	51.41	23	47	-5335
50258+00.00	23.27	53.05	2	6	-5339
50258+09.78	20.34	55.83	8	25	-5356
50258+25.00	18.86	62.93	11	42	-5387
50258+45.34	14.35	67.28	13	61	-5435
50258+45.45	14.31	67.28	0	0	-5435
50258+50.00	12.81	66.37	2	14	-5447
50258+51.42	12.49	65.99	1	4	-5450
50258+57.63	10.68	64.60	3	19	-5466
50258+75.00	8.59	74.46	6	56	-5516
50258+79.78	8.15	81.68	1	17	-5532
50258+95.78	8.13	168.37	5	93	-5620
50259+95.78	1.69	277.38	0	0	-5620

CHAIN PRBN85 (Project Left)

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
50260+00.00	7.40	210.95	1	48	-5667
50260+11.78	8.01	127.57	3	92	-5756
50260+25.00	10.24	77.64	4	63	-5815
50260+33.93	12.68	70.57	4	31	-5842
50260+40.14	15.05	56.81	3	18	-5857
50260+46.11	15.20	45.74	3	14	-5868
50260+50.00	15.11	42.97	2	8	-5874
50260+75.00	16.22	35.91	15	46	-5905
50260+93.85	16.72	29.44	11	29	-5923
50261+00.00	17.30	27.50	4	8	-5927
50261+20.97	19.35	20.83	14	23	-5936
50261+25.00	19.67	20.04	3	4	-5937
50261+26.52	19.72	19.94	1	1	-5937
50261+50.00	21.45	17.71	18	20	-5939
50261+71.00	23.25	13.90	17	15	-5937
50261+81.00	24.04	13.70	9	6	-5934
50261+90.39	25.04	12.50	9	6	-5931
50262+00.00	24.51	16.89	9	7	-5929
50262+25.00	24.40	38.24	23	32	-5938
50262+25.64	24.39	38.91	1	1	-5938
50262+50.00	22.27	41.15	21	45	-5962
50262+60.00	22.10	38.83	8	19	-5973
50262+63.50	22.07	36.40	3	6	-5976
50263+07.00	103.53	7.16	101	44	-5919
50263+20.00	109.69	2.78	51	3	-5871
50263+33.00	111.52	5.53	53	2	-5820
50263+76.50	46.17	15.07	127	21	-5714
50264+04.00	54.41	12.01	51	17	-5680
50264+25.00	57.33	12.45	44	12	-5648
50264+50.00	58.74	15.91	54	16	-5610
50264+50.50	58.66	16.01	1	0	-5609
50264+75.00	58.02	16.67	53	19	-5575
50264+75.50	57.92	16.78	1	0	-5574
50265+00.00	51.01	22.32	49	22	-5547
50265+25.00	43.57	26.48	44	28	-5531
50265+50.00	36.59	30.39	38	33	-5526
50265+75.00	30.54	33.41	31	37	-5532
50266+00.00	24.61	40.95	26	43	-5549
50266+19.50	20.64	45.18	16	39	-5572
50266+25.00	19.86	47.03	4	12	-5580
50266+36.00	18.51	51.12	8	25	-5597
50266+36.50	18.44	51.52	0	1	-5598
50266+75.00	3.30	70.06	16	108	-5690
50267+00.00	0.81	95.08	2	96	-5784
50267+25.00	1.53	89.14	1	107	-5890
50267+50.00	1.49	94.43	1	106	-5995
50267+75.00	1.35	99.02	1	112	-6106
50267+80.50	1.39	101.40	0	26	-6132
50268+00.00	1.62	106.01	1	94	-6225
50268+25.00	22.80	91.26	12	114	-6327
50268+50.00	25.26	76.40	22	97	-6402
50268+75.00	32.65	67.21	26	83	-6459
50268+79.50	31.47	58.08	5	13	-6467
50269+40.00	77.89	2.37	123	85	-6429
50269+51.00	79.80	2.23	32	1	-6398
50269+62.00	82.30	2.14	33	1	-6366
50270+25.00	34.43	119.92	136	178	-6408
50270+50.00	43.98	111.36	36	134	-6506
50270+75.00	48.19	111.67	43	129	-6592
50271+18.00	55.46	86.42	83	197	-6706
50271+21.50	55.54	86.25	7	14	-6713
50271+25.00	55.42	86.12	7	14	-6720

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Earthwork Values

Main St (Project Left)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	11	3

Main St (Project Left)

CHAIN PRBN85 (Project Left)

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
50271+30.00	54.03	86.13	10	20	-6730
50271+50.00	49.41	82.72	38	78	-6770
50271+75.50	39.32	96.01	42	106	-6834
50272+00.00	34.33	98.78	34	110	-6910
50272+25.00	28.69	98.68	29	114	-6995
50272+27.00	28.15	100.52	2	9	-7002
50272+35.00	26.06	108.85	8	39	-7033
50272+50.00	28.65	130.34	16	83	-7100
50272+65.50	30.47	142.25	17	98	-7181
50272+66.00	30.41	142.35	1	3	-7183
50272+75.00	29.18	144.01	10	60	-7233
50273+00.00	23.79	132.44	25	160	-7368
50273+20.50	20.32	61.82	17	92	-7443
50273+64.00	77.53	0.27	79	63	-7427
50273+75.00	73.40	0.01	31	0	-7396
50273+86.00	65.44	0.26	28	0	-7368
50274+29.50	55.67	80.01	98	81	-7351
50274+33.00	49.77	86.80	7	14	-7358
50274+50.00	48.05	82.46	31	67	-7394
50274+75.00	48.36	83.02	44	96	-7446
50275+00.00	47.47	84.60	45	97	-7498
50275+25.00	45.96	88.73	43	100	-7555
50275+44.00	49.80	85.17	33	76	-7598
50275+90.00	93.78	0.00	122	91	-7567
50276+00.50	98.40	0.00	37	0	-7530
50276+09.00	100.35	0.00	31	0	-7499
50276+57.00	53.39	75.61	136	84	-7447
50276+75.00	55.45	79.38	36	65	-7476
50277+00.00	62.49	69.98	55	86	-7507
50277+25.00	60.11	56.52	57	73	-7523
50277+50.00	60.16	49.10	55	61	-7529
50277+75.00	60.54	44.12	56	54	-7527
50278+00.00	60.53	41.23	56	49	-7520
50278+25.00	65.21	35.57	58	44	-7506
50278+30.00	66.22	35.44	12	8	-7502
50278+50.00	62.36	40.07	48	35	-7489
50278+75.00	59.99	46.21	57	50	-7482
50279+00.00	56.50	46.88	54	54	-7482
50279+25.00	51.26	58.39	50	61	-7493
50279+50.00	48.35	64.56	46	71	-7518
50279+75.00	45.76	67.55	43	76	-7551
50280+00.00	36.60	75.06	38	83	-7596
50280+25.00	35.33	80.37	33	90	-7653
50280+50.00	30.19	89.81	31	98	-7720
50280+75.00	23.81	98.03	25	109	-7804
50281+00.00	21.88	104.48	21	117	-7900
50281+25.00	21.01	105.74	20	122	-8002
50281+28.50	21.99	105.05	2	17	-8017
50281+74.00	8.43	40.96	25	154	-8146
50281+85.00	8.52	41.38	3	21	-8164
8th Ave	-	-	144	251	-8271
50281+96.00	9.44	36.73	4	20	-8287
50282+41.50	140.96	45.88	127	87	-8247
50282+47.00	134.91	43.89	28	11	-8230
50282+50.00	124.41	44.84	14	6	-8222
50282+75.00	11.54	81.57	63	73	-8232
50283+00.00	13.49	110.02	12	111	-8331
50283+25.00	16.76	103.76	14	124	-8441
50283+50.00	22.39	96.05	18	116	-8539
50283+75.00	13.66	99.01	17	113	-8635
50284+00.00	13.88	96.70	13	113	-8735
50284+25.00	15.97	88.87	14	107	-8828

CHAIN PRBN85 (Project Left)

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
50284+50.00	23.01	76.81	18	96	-8906
50284+75.00	25.71	66.13	23	83	-8966
50285+00.00	28.70	60.89	25	74	-9015
50285+25.00	33.06	61.96	29	71	-9057
50285+50.00	32.44	67.08	30	75	-9102
50285+55.50	34.14	68.70	7	17	-9112
50285+99.00	79.55	6.95	92	76	-9096
50286+16.00	96.94	0.00	56	3	-9043
50286+33.00	109.77	0.00	65	0	-8978
50286+76.50	39.33	59.24	120	60	-8918
50286+82.27	37.97	59.85	8	16	-8926
50287+00.00	28.90	57.71	22	48	-8952
50287+25.00	31.77	45.19	28	60	-8984
50287+50.00	42.03	34.04	34	46	-8996
50287+75.00	48.43	33.06	42	39	-8993
50287+78.27	49.73	32.52	6	5	-8992
50287+87.00	51.43	34.32	16	14	-8990
50287+98.50	50.47	37.10	22	19	-8987
50288+42.00	128.47	0.00	144	37	-8880
50288+55.00	123.63	0.00	61	0	-8819
50288+58.40	123.58	0.00	16	0	-8803
50288+68.00	115.72	0.00	43	0	-8760
50289+11.50	40.41	45.92	126	46	-8680
50289+15.00	39.65	46.33	5	7	-8682
50289+25.00	41.04	49.57	15	22	-8689
50289+50.00	42.69	59.85	39	63	-8713
50289+53.27	43.10	61.23	5	9	-8717
50289+75.00	42.58	67.26	34	65	-8748
50290+00.00	39.92	72.74	39	81	-8790
50290+25.00	32.96	90.74	33	95	-8852
50290+28.40	32.06	96.27	4	15	-8863
50290+40.26	25.72	114.83	13	58	-8908
50290+94.76	6.07	162.95	32	350	-9226
50291+17.76	4.97	175.76	5	180	-9401
50291+40.76	5.82	177.15	5	188	-9584
50291+95.26	12.70	169.02	19	437	-10002
50292+06.24	12.80	169.27	5	86	-10083
50292+25.00	14.09	152.16	9	140	-10214
50292+50.00	16.37	147.59	14	173	-10373
50292+69.26	18.37	143.03	12	130	-10491
50292+75.00	18.98	132.07	4	37	-10524
50293+00.00	21.29	127.70	19	150	-10655
50293+25.00	23.36	106.28	21	135	-10769
50293+50.00	25.70	69.13	22	102	-10849
50293+52.06	20.04	62.63	2	6	-10853
50293+55.00	26.37	55.73	2	8	-10859
50293+68.00	27.19	19.87	12	23	-10870
50293+75.00	28.61	8.77	7	5	-10868
50294+00.00	31.89	1.12	28	6	-10846

This document was originally issued and sealed by Jessica R. Karls Registration Number PE- 8408, on 02/22/16 and the original document is stored at the North Dakota Department of Transportation

US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Earthwork Values

Main St (Project Left)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	11	4

Main St (Project Right)

CHAIN PRBN85 (Project Right)

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
50194+32.78	37.40	0.00	0	0	0
50194+50.00	34.58	0.00	23	0	23
50194+75.00	30.62	0.00	30	0	53
50195+00.00	29.30	0.00	28	0	81
50195+25.00	30.34	0.00	28	0	109
50195+50.00	34.77	0.05	30	0	139
50195+75.00	31.19	0.38	31	0	170
50196+00.00	28.77	1.01	27	1	196
50196+25.00	28.68	0.24	26	1	221
50196+50.00	30.11	0.04	28	0	249
50196+75.00	27.03	0.94	27	1	275
50197+00.00	26.75	2.80	25	2	298
50197+25.00	27.08	5.36	25	5	318
50197+50.00	28.03	8.00	26	8	336
50198+00.00	32.85	3.90	57	14	379
50198+09.77	36.53	2.34	12	1	390
50198+17.78	35.98	9.52	11	2	399
50198+25.00	50.59	7.10	12	3	408
50198+50.00	43.89	19.18	44	15	437
50198+75.00	47.22	32.44	43	30	450
50198+88.00	49.81	45.58	23	23	450
50199+00.00	59.55	70.22	24	32	442
50199+12.00	58.48	96.62	26	46	422
50199+50.00	65.32	37.63	87	118	391
50199+75.00	81.79	35.97	68	43	416
50200+00.00	91.19	28.47	81	37	460
50200+25.00	103.53	26.34	90	32	518
50200+32.00	108.42	24.54	27	8	537
50200+50.00	118.63	18.94	76	18	595
50200+75.00	128.26	20.36	115	23	687
50201+00.00	137.87	11.20	123	18	792
50201+25.00	142.55	9.03	130	12	910
50201+50.00	151.69	6.68	136	9	1037
50201+75.00	167.79	4.28	148	6	1179
50201+77.50	172.54	3.75	15	0	1194
50202+24.50	204.21	0.00	328	4	1518
50202+40.00	195.55	0.00	115	0	1633
50202+59.00	149.56	0.54	121	0	1754
50203+11.00	140.48	0.00	279	1	2032
50203+25.00	138.22	0.00	72	0	2104
50203+50.00	133.39	0.00	126	0	2230
50203+75.00	126.70	0.00	121	0	2351
50204+00.00	112.44	0.00	110	0	2461
50204+25.00	99.64	0.23	98	0	2559
50204+50.00	99.21	0.93	92	1	2650
50204+75.00	97.60	1.99	92	2	2740
50205+00.00	93.95	3.29	88	3	2825
50205+25.00	91.84	4.93	86	5	2906
50205+50.00	87.62	7.05	84	7	2983
50205+75.00	86.05	9.20	80	9	3054
50206+00.00	81.20	11.08	77	12	3119
50206+25.00	78.18	13.19	74	14	3179
50206+50.00	74.17	17.10	71	18	3232
50206+75.00	70.31	21.48	67	22	3277
50207+00.00	68.10	22.45	64	25	3316
50207+25.00	66.14	22.64	62	26	3352
50207+50.00	62.74	21.60	60	26	3386
50207+75.00	62.01	24.03	58	26	3418
50208+00.00	67.35	24.65	60	28	3450
50208+25.00	70.42	21.01	63	26	3487
50208+50.00	72.70	27.50	66	28	3525
50208+75.00	71.59	25.40	67	31	3561

CHAIN PRBN85 (Project Right)

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
50209+00.00	70.48	34.36	66	35	3592
50209+25.00	70.13	25.64	65	35	3622
50209+50.00	69.99	26.74	65	30	3657
50209+75.00	69.32	10.94	64	22	3699
50210+00.00	69.21	3.76	64	9	3754
50210+25.00	66.42	3.65	63	4	3813
50210+50.00	65.39	4.99	61	5	3869
50210+75.00	65.00	11.28	61	9	3921
50211+00.00	67.13	22.23	61	19	3963
50211+25.00	66.50	3.13	62	15	4010
50211+50.00	65.87	20.27	61	14	4057
50211+75.00	66.69	18.22	61	22	4096
50212+00.00	67.62	25.72	62	25	4133
50212+25.00	65.58	21.86	62	28	4167
50212+50.00	63.67	23.40	60	26	4201
50212+75.00	63.57	17.09	59	23	4237
50213+00.00	63.92	21.43	59	22	4274
50213+25.00	64.31	12.50	59	20	4313
50213+50.00	63.41	13.98	60	15	4358
50213+75.00	61.80	11.97	58	15	4401
50214+00.00	59.77	23.72	56	21	4436
50214+25.00	60.12	14.41	55	22	4469
50214+50.00	60.45	23.14	56	22	4503
50214+75.00	57.83	22.90	55	27	4531
50215+00.00	53.03	36.22	52	34	4549
50215+25.00	52.51	30.01	49	38	4560
50215+50.00	52.89	35.19	49	38	4571
50215+75.00	57.81	32.21	51	39	4583
50216+00.00	71.57	28.33	60	35	4608
50216+05.00	76.38	29.89	13	7	4614
50216+06.50	78.58	30.78	4	2	4616
50216+58.00	146.99	1.19	215	38	4793
50216+68.00	158.99	0.01	57	0	4850
50216+78.00	139.54	0.20	55	0	4905
50217+29.50	41.84	67.00	173	80	4998
50217+50.00	41.56	73.55	32	67	4963
50217+75.00	41.94	77.28	39	87	4915
50218+00.00	43.40	72.99	40	87	4868
50218+25.00	44.32	73.18	41	85	4824
50218+35.00	45.03	70.24	17	33	4808
50218+67.00	47.38	62.80	55	99	4764
50218+75.00	49.01	59.09	14	23	4755
50218+78.00	49.59	58.01	5	8	4752
50218+78.50	49.70	57.83	1	1	4752
50218+89.00	50.88	56.82	20	28	4744
50219+21.00	48.40	53.32	59	82	4721
50219+25.00	48.66	53.24	7	10	4718
50219+50.00	51.53	54.72	46	62	4702
50219+53.50	51.60	55.11	6	9	4699
50219+70.00	52.72	55.57	32	42	4689
50219+75.00	52.88	54.50	10	13	4686
50220+00.00	52.11	50.37	49	61	4674
50220+22.50	52.51	48.04	44	51	4667
50220+25.00	52.81	47.70	5	6	4666
50220+50.00	53.75	45.88	50	54	4662
50220+75.00	55.65	44.04	51	52	4661
50220+97.50	56.37	40.41	46	44	4663
50221+00.00	56.30	40.28	6	5	4664
50221+25.00	55.03	42.93	51	48	4667
50221+50.00	57.41	46.47	52	52	4667
50221+75.00	55.83	49.67	52	56	4663
50222+00.00	54.66	62.22	51	65	4649

CHAIN PRBN85 (Project Right)

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
50222+25.00	52.96	65.54	49	74	4624
50222+50.00	54.29	70.61	50	79	4595
50222+75.00	55.65	67.17	51	80	4566
50223+00.00	55.16	62.65	52	75	4543
50223+10.00	54.42	63.12	20	29	4534
50223+25.00	53.18	60.13	30	43	4521
50223+50.00	53.76	57.72	49	68	4502
50223+75.00	54.98	61.69	51	69	4484
50224+00.00	55.49	60.83	51	71	4464
50224+25.00	56.66	64.93	52	73	4443
50224+50.00	57.14	65.97	53	76	4420
50224+75.00	61.49	61.28	55	74	4401
50225+00.00	60.04	59.99	57	70	4388
50225+25.00	59.11	59.43	55	69	4374
50225+50.00	58.21	61.14	54	70	4358
50225+70.00	59.96	62.88	43	57	4344
50225+75.00	60.66	62.42	12	15	4341
50226+09.00	61.26	61.24	77	97	4321
50226+20.00	59.57	59.21	25	31	4315
50226+31.00	58.51	56.27	24	29	4310
50226+64.50	53.56	56.07	69	87	4292
50226+75.00	52.48	56.75	21	27	4286
50227+00.00	48.04	60.49	47	68	4265
50227+25.00	48.45	59.83	44	70	4239
50227+50.00	50.61	58.19	46	68	4217
50227+55.00	51.22	57.96	9	13	4213
50227+75.00	53.33	56.05	38	53	4198
50227+90.00	56.83	55.00	30	39	4189
50227+93.50	57.14	54.63	7	9	4187
50228+27.00	61.44	58.78	73	88	4172
50228+38.00	66.42	60.57	26	30	4168
50228+49.00	68.07	60.13	27	31	4164
50228+82.50	72.13	59.19	87	93	4158
50229+00.00	79.87	61.06	49	49	4158
50229+25.00	72.70	57.40	70	69	4159
50229+50.00	77.87	54.20	69	65	4163
50229+51.50	78.10	53.67	4	4	4163
50229+75.00	80.47	55.07	69	59	4173
50230+00.00	74.49	48.74	72	60	4185
50230+25.00	81.72	40.95	72	52	4205
50230+50.00	78.63	37.89	74	46	4233
50230+64.00	73.13	37.42	39	24	4248
50230+76.00	76.34	35.55	34	20	4262
50231+00.00	78.29	20.76	69	31	4300
50231+44.00	211.00	0.00	236	21	4515
50231+55.00	228.01	0.00	89	0	4604
50231+66.00	208.04	0.46	89	0	4693
50232+09.50	68.89	21.21	223	22	4894
50232+25.00	55.06	25.60	36	17	4913
50232+50.00	52.29	50.97	49	44	4918
50232+75.00	53.06	66.22	49	68	4899
50233+00.00	49.83	65.00	48	76	4871
50233+25.00	50.80	75.00	47	81	4837
50233+50.00	52.40	77.84	48	88	4797
50233+75.00	53.48	85.31	49	94	4752
50233+95.00	51.28	94.77	39	83	4708
50233+95.50	51.19	95.07	1	2	4707
50234+39.00	43.62	77.41	76	174	4609
50234+52.00	43.66	71.04	21	45	4585
50234+65.00	46.53	66.15	22	41	4566
50235+08.50	43.29	62.02	72	129	4509
50235+25.00	43.37	57.19	26	46	4489

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Earthwork Values

Main St (Project Right)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	11	5

Main St (Project Right)

CHAIN PRBN85 (Project Right)

STATION	END AREA (SF) EXC	END AREA (SF) FILL	ADJUSTED VOLUME (CY) EXC	ADJUSTED VOLUME (CY) FILL	ADJUSTED VOLUME (CY) MASS
50235+50.00	42.88	55.63	40	65	4464
50235+75.00	38.57	48.51	38	60	4442
50236+00.00	37.58	43.40	35	53	4424
50236+25.00	35.90	45.18	34	51	4407
50236+50.00	37.97	41.11	34	50	4391
50236+75.00	47.97	30.27	40	41	4390
50236+90.00	57.81	28.91	30	21	4399
50236+92.50	62.34	29.00	6	3	4402
50237+26.00	92.11	11.33	96	31	4467
50237+40.00	134.34	3.59	58	5	4520
50237+54.00	113.10	6.43	64	3	4581
50237+87.50	96.24	21.90	130	22	4689
50238+00.00	111.34	27.22	48	14	4723
50238+25.00	121.79	31.90	108	34	4797
50238+50.00	143.44	28.76	123	35	4885
50238+75.00	32.48	6.42	82	20	4947
50239+00.00	29.67	7.12	29	8	4968
50239+25.00	30.63	7.11	28	8	4988
50239+50.00	33.54	6.93	30	8	5010
50239+75.00	36.08	5.96	32	7	5035
50240+00.00	36.35	6.57	34	7	5062
50240+25.00	35.86	6.02	33	7	5088
50240+50.00	35.43	6.04	33	7	5114
50240+75.00	37.85	6.29	34	7	5141
50241+00.00	42.67	8.16	37	8	5170
50241+25.00	48.87	6.06	43	8	5205
50241+50.00	53.88	5.30	48	7	5246
50241+75.00	56.90	4.57	52	6	5292
50242+00.00	55.50	5.50	52	6	5338
50242+14.00	55.96	4.82	28	3	5363
50242+50.00	53.86	3.39	73	7	5429
50242+75.00	49.16	4.60	48	5	5472
50243+00.00	43.28	5.54	43	6	5509
50243+15.00	64.25	3.67	30	3	5536
50243+33.00	46.92	15.26	37	8	5565
50243+50.00	97.37	20.88	45	14	5596
50243+75.00	65.75	20.82	75	24	5647
50244+00.00	56.71	20.26	57	24	5680
50244+25.00	60.48	12.41	54	19	5715
50244+50.00	57.00	13.14	54	15	5754
50244+75.00	53.30	15.07	51	16	5789
50245+00.00	58.56	15.36	52	18	5823
50245+25.00	61.85	15.09	56	18	5861
50245+44.50	68.37	14.38	47	13	5895
50245+94.00	42.39	37.59	102	60	5937
50246+03.00	48.22	15.48	15	11	5941
50246+12.00	43.43	30.72	15	10	5946
50246+61.50	47.66	14.41	83	52	5977
50247+04.50	40.73	15.73	71	30	6018
50247+25.00	38.03	19.44	30	17	6031
50247+50.00	45.16	18.90	38	22	6047
50247+75.00	67.25	11.43	52	18	6081
50248+00.00	57.66	19.34	58	18	6121
50248+10.50	67.45	1.21	25	5	6141
50248+18.00	72.62	0.31	20	0	6161
50248+25.00	164.84	5.77	31	1	6191
50248+53.50	87.25	5.93	133	8	6316
50248+75.00	93.46	5.16	72	6	6382
50249+01.00	106.50	0.00	96	3	6475
50249+11.00	114.13	0.00	41	0	6516
50249+25.00	125.90	2.05	62	1	6577
50249+50.00	69.16	6.53	91	5	6663

CHAIN PRBN85 (Project Right)

STATION	END AREA (SF) EXC	END AREA (SF) FILL	ADJUSTED VOLUME (CY) EXC	ADJUSTED VOLUME (CY) FILL	ADJUSTED VOLUME (CY) MASS
50249+54.50	69.28	6.52	11	1	6673
50249+75.00	73.16	9.29	54	8	6719
50249+97.50	79.17	11.50	64	11	6772
50250+00.00	79.82	11.93	8	1	6779
50250+25.00	84.06	9.30	76	12	6843
50250+33.00	85.28	12.36	25	4	6864
50250+50.00	85.68	13.20	54	10	6908
50250+75.00	85.97	6.95	80	12	6976
50251+00.00	95.49	1.80	84	5	7055
50251+18.50	123.13	0.00	75	1	7129
50251+32.50	125.34	0.00	64	0	7193
50251+50.00	105.47	4.51	75	2	7266
50251+58.00	89.39	8.36	29	2	7293
50251+68.00	84.49	12.69	33	5	7321
50251+75.00	80.90	18.62	22	5	7338
50252+00.00	73.91	22.52	72	24	7386
50252+25.00	73.65	23.29	68	27	7427
50252+50.00	90.74	6.50	77	17	7487
50252+75.00	66.59	13.57	73	12	7548
50253+00.00	62.83	12.21	59	15	7592
50253+25.00	64.98	11.83	59	14	7637
50253+50.00	71.56	8.89	63	12	7688
50253+75.00	78.27	6.46	69	9	7748
50254+00.00	84.06	4.02	75	6	7817
50254+25.00	94.48	1.77	83	3	7897
50254+50.00	136.18	0.50	107	1	8003
50254+75.00	108.60	0.00	114	0	8117
50255+00.00	126.30	0.00	109	0	8226
50255+02.00	130.60	0.00	10	0	8236
50255+10.50	149.01	0.00	44	0	8280
50255+44.00	172.24	15.27	200	12	8468
50255+53.00	174.34	11.70	58	6	8520
50255+54.00	173.63	11.84	6	1	8525
50255+62.00	166.93	15.29	50	5	8570
50255+95.50	230.84	0.00	246	12	8804
50256+04.00	232.65	0.00	73	0	8877
50256+14.00	229.73	0.00	85	0	8962
50256+26.00	231.00	0.01	102	0	9064
50256+50.00	226.84	0.37	204	0	9268
50256+65.92	233.16	0.67	136	0	9404
50256+75.00	234.78	0.00	79	0	9483
50257+00.00	246.06	0.19	222	0	9705
50257+01.17	246.40	0.00	10	0	9715
50257+25.00	183.33	1.37	190	1	9904
50257+50.00	117.71	3.93	140	3	10041
50257+65.04	86.35	5.06	57	3	10095
50257+70.59	75.61	5.84	17	1	10111
50257+75.00	71.65	6.98	12	1	10122
50257+97.71	50.72	12.89	51	10	10163
50258+00.00	49.74	13.35	4	1	10166
50258+09.78	42.17	17.05	17	7	10176
50258+25.00	36.13	28.06	22	16	10182
50258+45.34	29.45	40.62	25	32	10175
50258+45.45	29.45	40.65	0	0	10175
50258+50.00	30.32	41.07	5	9	10171
50258+51.42	30.66	40.83	2	3	10170
50258+57.63	29.90	39.35	7	12	10165
50258+75.00	17.40	71.38	15	45	10135
50258+79.78	16.13	84.83	3	17	10121
50258+95.78	13.02	175.92	9	97	10033
50259+95.78	2.36	125.46	0	0	10033
50260+00.00	12.97	63.80	1	18	10016

CHAIN PRBN85 (Project Right)

STATION	END AREA (SF) EXC	END AREA (SF) FILL	ADJUSTED VOLUME (CY) EXC	ADJUSTED VOLUME (CY) FILL	ADJUSTED VOLUME (CY) MASS
50260+11.78	16.97	30.80	7	26	9997
50260+25.00	18.66	16.16	9	14	9992
50260+33.93	18.62	11.73	6	6	9992
50260+40.14	18.87	12.71	4	4	9992
50260+46.11	20.60	11.16	4	3	9993
50260+50.00	20.52	11.97	3	2	9994
50260+75.00	20.96	13.57	19	15	9998
50260+93.85	23.85	13.66	16	12	10002
50261+00.00	26.05	12.41	6	4	10004
50261+20.97	41.39	5.57	26	9	10021
50261+25.00	46.86	4.61	7	1	10027
50261+26.52	49.08	4.49	2	0	10029
50261+50.00	29.98	6.27	34	6	10057
50261+71.00	37.88	2.26	26	4	10079
50261+81.00	38.65	1.95	14	1	10092
50261+90.39	33.23	6.52	12	2	10102
50262+00.00	32.21	6.57	12	3	10111
50262+25.00	35.80	5.43	31	7	10135
50262+25.64	35.96	5.43	1	0	10136
50262+50.00	35.08	8.52	32	8	10160
50262+60.00	34.36	9.03	13	4	10169
50262+63.50	34.22	8.75	4	1	10172
50263+07.00	144.88	0.00	145	9	10308
50263+20.00	162.68	0.00	74	0	10382
50263+33.00	158.61	0.00	77	0	10459
50263+76.50	183.04	10.34	276	10	10725
50264+04.00	93.04	10.48	141	13	10853
50264+25.00	97.02	5.75	74	8	10919
50264+50.00	100.51	3.82	92	6	11005
50264+50.50	100.79	3.93	2	0	11007
50264+75.00	99.34	3.97	90	4	11093
50264+75.50	98.70	4.06	1	0	11094
50265+00.00	80.49	9.40	82	8	11168
50265+25.00	58.78	11.95	64	12	11220
50265+50.00	51.21	13.74	51	15	11256
50265+75.00	50.40	15.80	47	17	11286
50266+00.00	49.19	18.58	46	20	11312
50266+19.50	49.22	18.25	36	17	11331
50266+25.00	48.84	18.46	10	5	11336
50266+36.00	44.33	21.85	19	10	11345
50266+36.50	44.16	22.28	1	1	11345
50266+75.00	19.47	26.52	46	43	11348
50267+00.00	21.62	33.07	19	34	11333
50267+25.00	35.92	20.41	26	31	11328
50267+50.00	60.91	22.78	45	25	11348
50267+75.00	126.88	18.45	87	24	11411
50267+80.50	130.93	18.16	26	5	11432
50268+00.00	138.85	16.66	98	16	11514
50268+25.00	129.01	15.42	124	19	11619
50268+50.00	75.89	28.96	95	26	11688
50268+75.00	75.80	36.25	70	38	11720
50268+79.50	77.05	38.15	13	8	11725
50269+40.00	41.69	11.98	133	70	11788
50269+51.00	65.45	2.81	21	4	11805
50269+62.00	63.53	4.19	27	2	11830
50270+25.00	150.01	2.20	249	9	12070
50270+50.00	152.36	0.35	140	1	12209
50270+75.00	148.63	0.00	140	0	12349
50271+18.00	128.71	0.00	221	0	12570
50271+21.50	127.10	0.00	16	0	12586
50271+25.00	125.28	0.00	16	0	12602
50271+30.00	122.93	0.02	23	0	12625

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Earthwork Values

Main St (Project Right)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	11	6

Main St (Project Right)

CHAIN PRBN85 (Project Right)

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
50271+50.00	111.04	0.56	87	0	12712
50271+75.50	107.69	0.56	103	1	12814
50272+00.00	98.96	2.37	94	2	12906
50272+25.00	85.44	5.51	86	5	12987
50272+27.00	84.88	5.67	6	1	12992
50272+35.00	81.69	3.62	24	2	13014
50272+50.00	79.73	3.89	45	3	13056
50272+65.50	76.68	5.48	45	3	13098
50272+66.00	76.33	5.54	1	0	13099
50272+75.00	69.18	6.52	24	3	13120
50273+00.00	56.24	10.68	58	10	13168
50273+20.50	50.35	14.16	41	12	13197
50273+64.00	45.83	18.54	78	33	13242
50273+75.00	49.68	18.21	20	9	13253
50273+86.00	48.53	18.65	20	9	13264
50274+29.50	42.52	20.97	73	40	13297
50274+33.00	41.41	20.32	5	3	13299
50274+50.00	37.25	21.14	25	16	13308
50274+75.00	34.39	25.56	33	27	13314
50275+00.00	32.73	27.95	31	31	13314
50275+25.00	29.13	30.43	29	34	13309
50275+44.00	28.58	30.75	20	27	13302
50275+90.00	94.95	0.00	105	33	13374
50276+00.50	99.84	0.00	38	0	13412
50276+09.00	98.06	0.00	31	0	13443
50276+57.00	59.70	46.86	140	52	13531
50276+75.00	58.14	53.71	40	42	13529
50277+00.00	62.81	53.27	56	62	13523
50277+25.00	66.08	43.49	59	56	13526
50277+50.00	71.72	36.52	64	46	13544
50277+75.00	75.94	34.68	69	41	13572
50278+00.00	77.40	28.28	71	36	13607
50278+25.00	76.97	27.31	72	32	13647
50278+30.00	76.71	28.22	14	6	13655
50278+50.00	73.55	30.37	55	27	13683
50278+75.00	70.04	31.79	67	36	13714
50279+00.00	61.65	32.41	61	37	13738
50279+25.00	59.71	34.50	56	39	13755
50279+50.00	49.90	39.55	51	43	13763
50279+75.00	45.55	44.86	44	49	13758
50280+00.00	37.35	45.76	38	52	13744
50280+25.00	30.55	52.39	31	57	13718
50280+50.00	29.02	50.95	28	60	13686
50280+75.00	28.19	53.38	27	60	13653
50281+00.00	26.86	50.91	25	60	13618
50281+25.00	35.78	50.00	29	58	13589
50281+28.50	37.69	49.04	5	8	13586
50281+74.00	41.55	5.64	66	58	13594
50281+85.00	48.40	5.02	18	3	13609
50281+96.00	46.70	4.45	19	2	13626
50282+41.50	36.41	33.15	70	40	13656
50282+47.00	29.88	37.82	7	9	13654
50282+50.00	27.68	40.41	4	5	13653
50282+75.00	20.56	42.05	22	48	13627
50283+00.00	18.05	42.20	18	49	13596
50283+25.00	19.98	40.14	18	48	13566
50283+50.00	22.47	38.73	20	46	13540
50283+75.00	23.63	35.97	21	43	13518
50284+00.00	23.76	34.90	22	41	13499
50284+25.00	24.03	35.25	22	41	13480
50284+50.00	25.55	34.75	23	41	13462
50284+75.00	26.10	33.46	24	39	13447

CHAIN PRBN85 (Project Right)

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
50285+00.00	26.73	33.11	24	39	13432
50285+25.00	26.89	30.60	25	37	13420
50285+50.00	28.71	33.10	26	37	13409
50285+55.50	29.17	32.94	6	8	13407
50285+99.00	33.43	24.22	50	58	13399
50286+16.00	35.46	20.66	22	18	13403
50286+33.00	40.03	17.01	24	15	13412
50286+76.50	50.35	13.14	73	30	13455
50286+82.27	51.51	12.08	10	3	13462
50287+00.00	45.21	14.59	32	11	13483
50287+25.00	44.55	20.38	42	20	13505
50287+50.00	52.76	28.50	45	28	13522
50287+75.00	62.31	38.56	53	39	13536
50287+78.27	62.92	40.00	8	6	13538
50287+87.00	62.33	39.86	20	16	13542
50287+98.50	62.49	40.51	26	21	13547
50288+42.00	59.48	40.16	98	81	13564
50288+55.00	55.93	44.54	28	25	13567
50288+58.40	54.88	45.71	7	7	13567
50288+68.00	53.43	48.52	19	21	13565
50289+11.50	52.89	39.72	86	89	13562
50289+15.00	52.24	39.29	7	6	13563
50289+25.00	50.68	37.55	20	18	13565
50289+50.00	48.04	45.21	46	48	13563
50289+53.27	44.48	43.23	6	7	13562
50289+75.00	38.90	47.67	34	46	13550
50290+00.00	32.21	40.98	33	51	13532
50290+25.00	28.92	19.61	28	35	13525
50290+28.40	27.23	17.09	4	3	13526
50290+40.26	22.45	0.00	11	5	13532
50290+94.76	11.98	0.00	35	0	13567
50291+17.76	12.32	0.00	10	0	13577
6th Ave	-	-	288	1616	12249
50291+40.76	14.26	0.00	11	0	12260
50291+95.26	23.45	16.31	38	21	12277
50292+06.24	22.68	22.47	9	10	12276
50292+25.00	24.19	35.28	16	25	12267
50292+50.00	27.20	37.49	24	42	12249
50292+69.26	29.23	29.81	20	30	12239
50292+75.00	30.00	24.27	6	7	12238
50293+00.00	31.70	12.54	29	21	12246
50293+25.00	32.26	5.53	30	10	12266
50293+50.00	35.68	4.13	31	6	12291
50293+52.06	41.87	4.26	3	0	12294
50293+55.00	36.41	4.45	4	1	12297
50293+68.00	38.35	6.44	18	3	12312
50293+75.00	38.94	7.35	10	2	12320
50294+00.00	42.60	6.83	38	8	12350

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Earthwork Values

Main St (Project Right)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	11	7

16th Ave (Project Left)

CHAIN PR16AVE

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
4001+25.00	60.95	60.34	28	35	-7
4001+50.00	137.64	45.38	92	61	24
4001+75.00	213.53	71.19	162	67	119
4002+00.00	196.04	91.48	190	94	215
4002+25.00	161.29	142.54	166	135	246
4002+38.66	156.78	150.64	81	93	234

8th Ave (Project Left)

CHAIN PR8AVE

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
3000+30.00	38.66	0.24	0	0	0
3000+55.00	20.58	5.42	28	3	25
3000+70.00	12.97	7.57	9	5	29
3000+80.00	15.00	24.46	5	7	27
3001+05.00	38.12	93.19	25	68	-16
3001+30.00	128.01	197.73	77	168	-107

6th Ave (Project Right)

CHAIN PRTR23

STATION	END AREA (SF)		ADJUSTED VOLUME (CY)		
	EXC	FILL	EXC	FILL	MASS
2003+50.00	36.36	40.75	0	0	0
2004+00.00	31.85	5.61	63	54	9
2004+25.00	39.41	28.95	33	20	22
2004+50.00	39.00	129.09	36	91	-33
2004+64.10	35.94	196.50	20	106	-119
2004+75.00	30.55	248.69	13	112	-218
2005+00.00	24.09	366.89	25	356	-549
2005+09.57	22.00	365.49	8	162	-703
2005+12.00	31.59	321.51	2	39	-740
2005+25.00	31.56	309.09	15	190	-915
2005+50.00	25.79	178.76	27	282	-1170
2005+60.00	25.79	123.40	10	70	-1230
2005+61.00	25.73	119.69	1	6	-1235
2005+75.00	24.40	74.39	13	63	-1285
2006+00.00	22.14	38.19	22	65	-1328

PROJECT SUMMARY

LOCATION	EMBANKMENT								TOPSOIL					
	Project Left				Project Right				Project Left			Project Right		
	Excavation	Embankmnent (Additional 25% Volume Included for Shrinkage)	**Borrow-Excavation (Pay Item)**	**Common Excavation-Type A (Pay Item)**	Excavation	Embankmnent (Additional 25% Volume Included for Shrinkage)	**Common Excavation-Waste (Pay Item)**	**Common Excavation-Type A (Pay Item)**	**Topsoil Exc. (Pay Item)**	Topsoil	Excess Topsoil	**Topsoil Exc. (Pay Item)**	Topsoil	Excess Topsoil
	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)			(CY)	(CY)	CY	(CY)	(CY)	(CY)
	A	**B**	**C = (B-A)**	**D = (B - C)**	**A**	**B**	**E = (A-B)**	**D = (A - E)**	**A**	**B**	**C = (A-B)**	**A**	**B**	**C = (A-B)**
Main Street - US Hwy 85 Business Route (Project Left)	16,643	27,616	10,973	16,643					10,270	8,700	1,570			
Main Street - US Hwy 85 Business Route (Project Right)					24,986	11,308	13,678	11,308				10,888	10,276	612
16th Ave (Project Left)	719	485	-234	719					283	193	90			
8th Ave (Project Left)	144	251	107	144					168	66	102			
6th Ave (Project Right)					288	1,616	*-1,328*	1,616				300	253	47
Grand Totals	17,506	28,352	**10,846**	**17,506**	25,274	12,924	**12,350**	**12,924**	**10,721**	8,959	1,762	**11,188**	10,529	659

PROJECT PAY QUANTITIES

203 0101 COMMON EXCAVATION-TYPE A			
Total (Project Left)		17,506	CY
Total (Project Right)		12,924	CY
	Total	30,430	CY
203 0109 TOPSOIL			
Total (Project Left)		10,721	CY
Total (Project Right)		11,188	CY
	Total	21,909	CY
203 0113 COMMON EXCAVATION-WASTE			
Total (Project Right)		12,350	CY
203 0140 BORROW-EXCAVATION			
Total (Project Left)		10,846	CY

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Earthwork Values

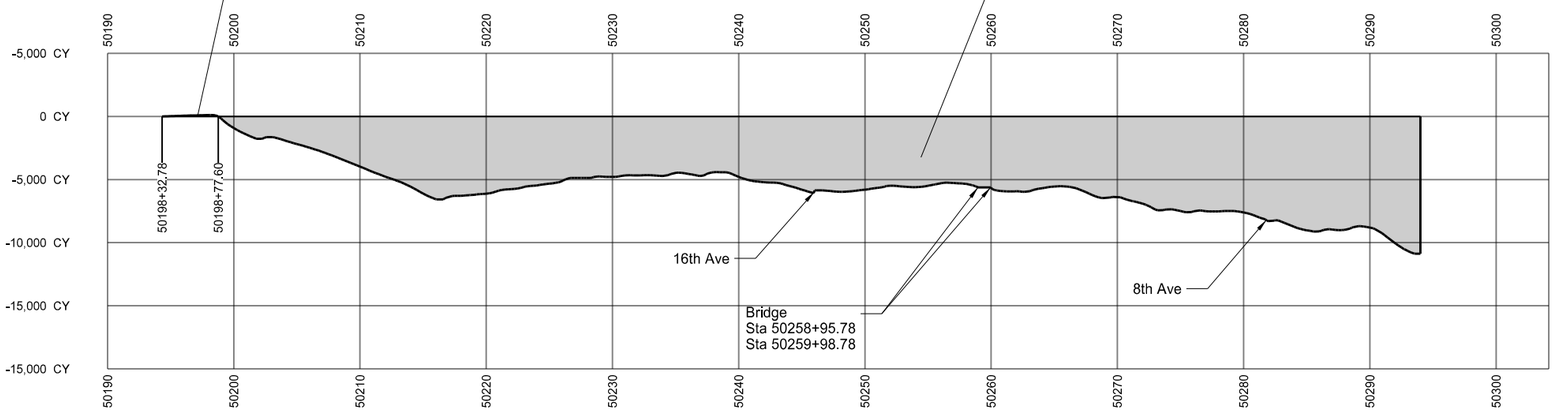
16th Ave SE, 8th Ave SE, 6th Ave SE
Total Earthwork Summary

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	11	8

Main St (Project Left)

EMBANKMENT =	149.00
EXCAVATION =	149.00
TOPSOIL FILL=	96.00
TOPSOIL CUT=	146.00
CUBIC YARD STA. =	280.93
CUBIC YARDS =	115.25
AVERAGE HAUL =	2.44 STA

EMBANKMENT =	28,203.00
EXCAVATION =	17,357.00
TOPSOIL FILL=	8,604.00
TOPSOIL CUT=	10,124.00
CUBIC YARD STA. =	548,655.28
CUBIC YARDS =	16,051.00
AVERAGE HAUL =	34.18 STA

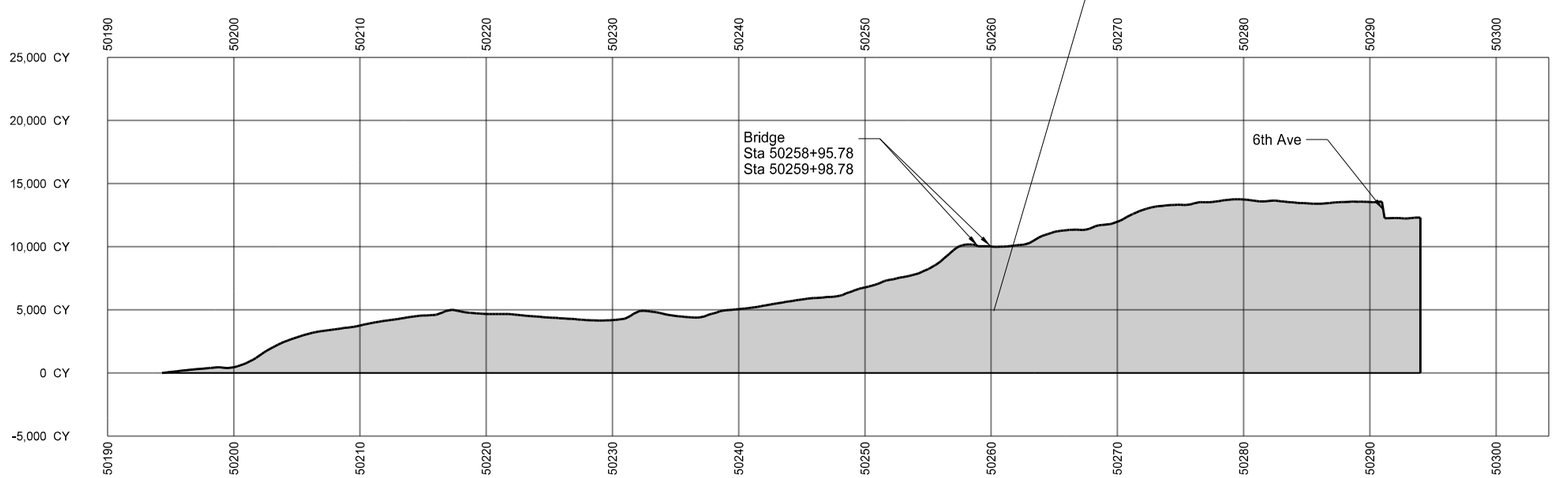


PROJECT LEFT TOTAL

EMBANKMENT =	28,352.00
EXCAVATION =	17,506.00
BORROW =	10,846.00
TOPSOIL FILL=	8,700.00
TOPSOIL CUT=	10,270.00
CUBIC YARD STA. =	548,936.21
CUBIC YARDS =	16,166.25
AVERAGE HAUL =	33.96 STA

Main St (Project Right)

EMBANKMENT =	12,924.00
EXCAVATION =	25,274.00
TOPSOIL FILL =	10,276.00
TOPSOIL CUT =	10,888.00
CUBIC YARD STA. =	732,489.71
CUBIC YARDS =	15,804.25
AVERAGE HAUL =	46.35 STA



PROJECT RIGHT TOTAL

EMBANKMENT =	12,924.00
EXCAVATION =	25,274.00
WASTE =	12,350.00
TOPSOIL FILL =	10,276.00
TOPSOIL CUT =	10,888.00
CUBIC YARD STA. =	732,489.71
CUBIC YARDS =	15,804.25
AVERAGE HAUL =	46.35 STA

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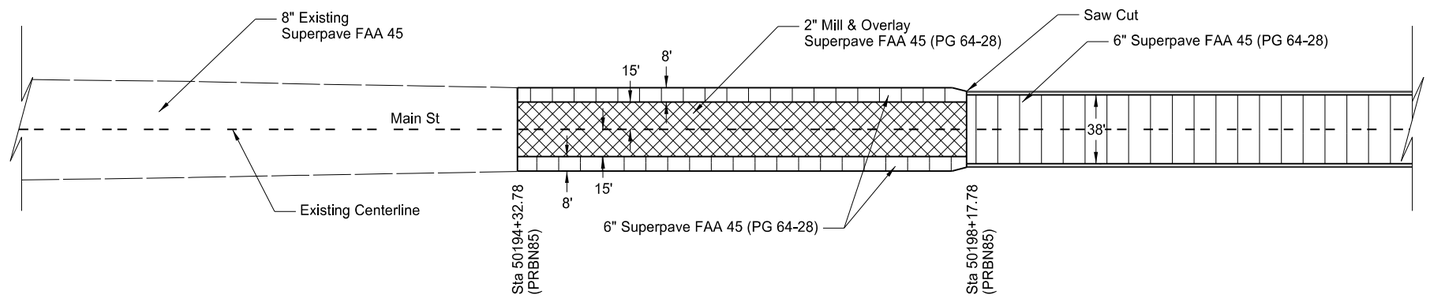
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

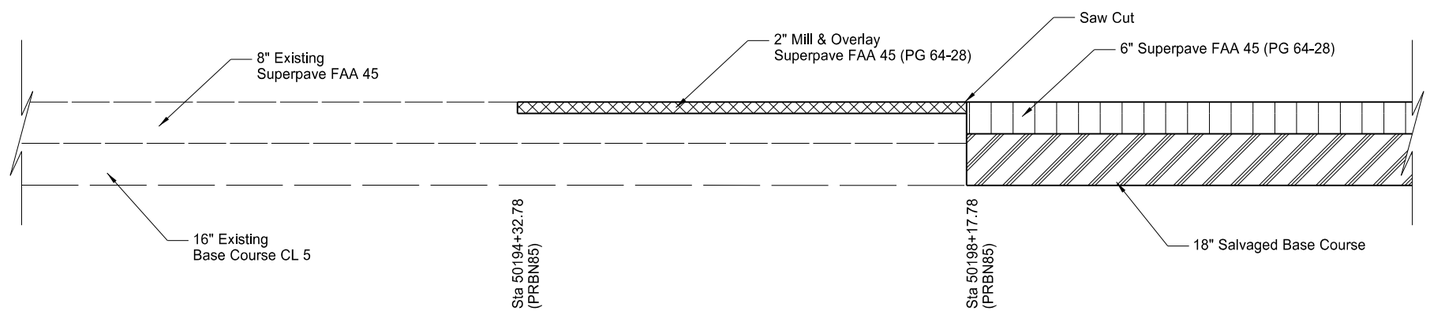
Mass Balance Diagram

Project Left and Project Right

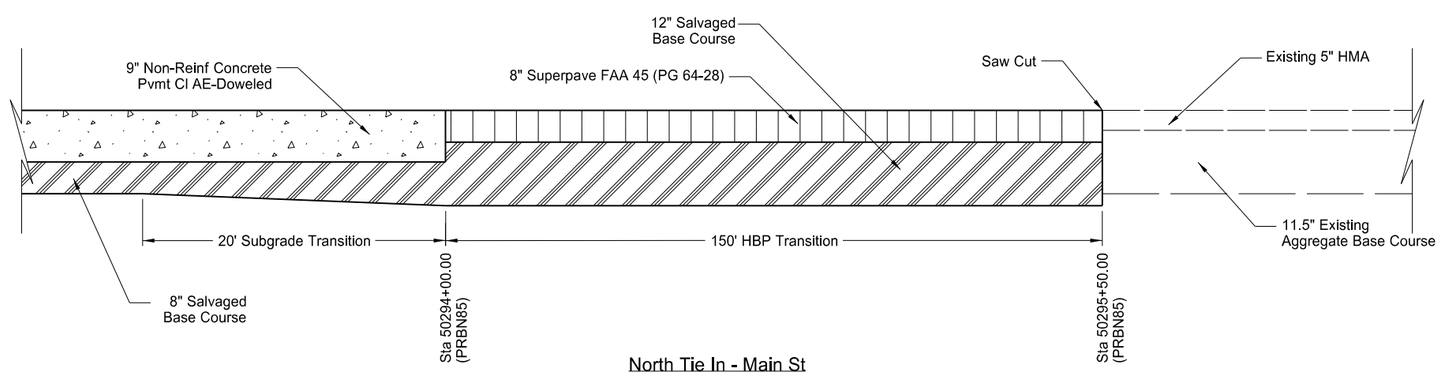
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	20	1



South Tie In - Main St (Plan View)



South Tie In - Main St (Profile View)



North Tie In - Main St

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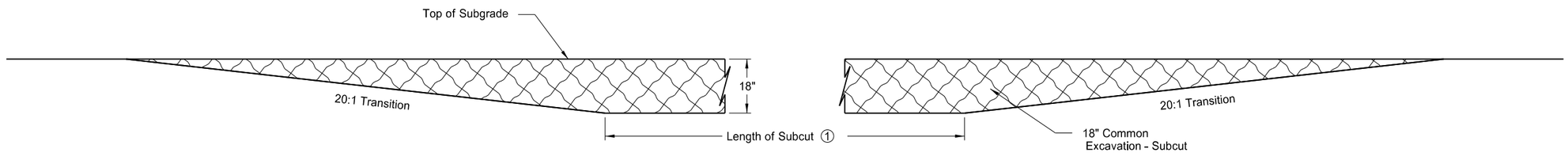
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

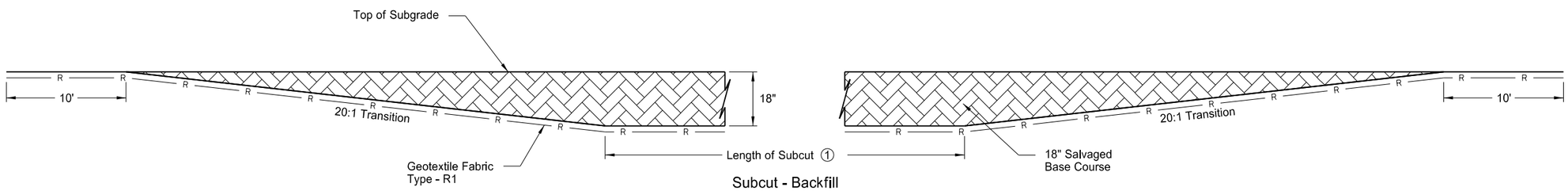
Project Tie-In Transitions

Note: Drawing not to scale

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	20	2



Subcut - Removal
(Not to Scale)



Subcut - Backfill
(Not to Scale)

SPEC	CODE	ITEM DESCRIPTION	QTY	UNIT
203	0138	COMMON EXCAVATION-SUBCUT	3,230	CY
302	0100	SALVAGED BASE COURSE	6,056	TON
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	6,672	SY

① Quantities based on 1,500 lineal feet to discretionary subcut (38' graded width)

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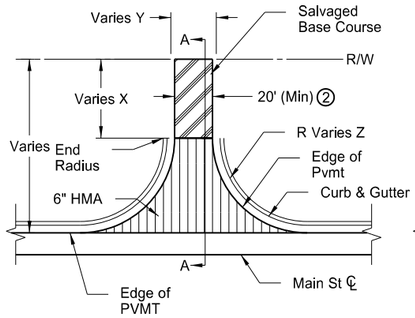
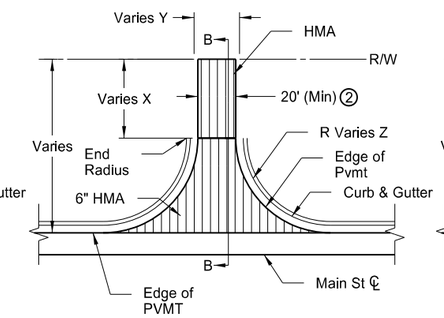
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Subcut Detail

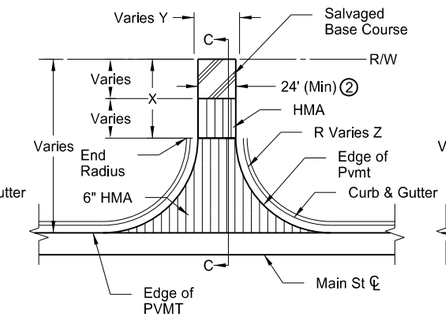
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	20	3



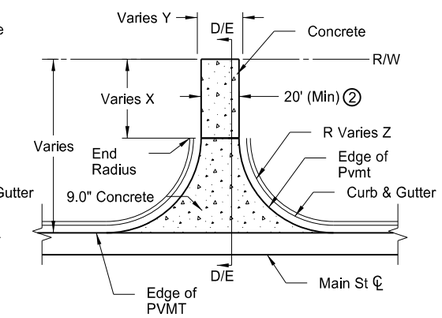
(1) Gravel Approach



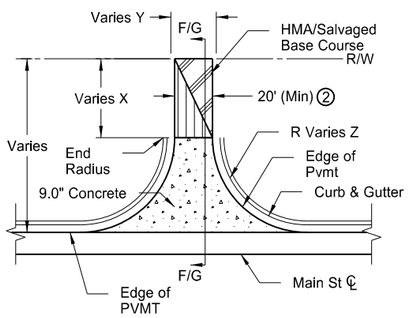
(2) Paved Approach



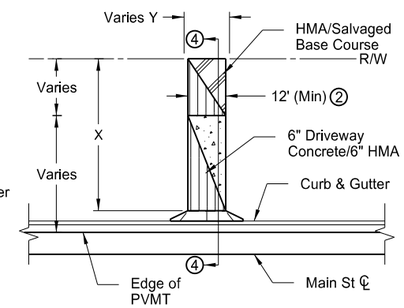
(3) Paved/Gravel Approach



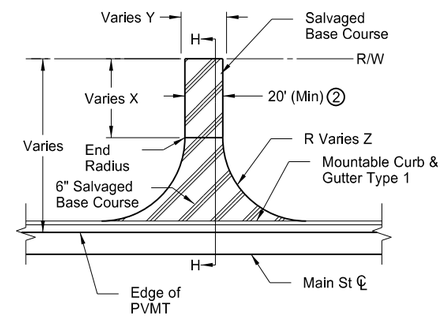
(4) Concrete Approach



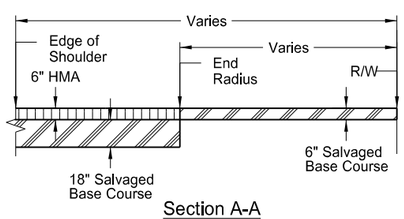
(5) Concrete Approach



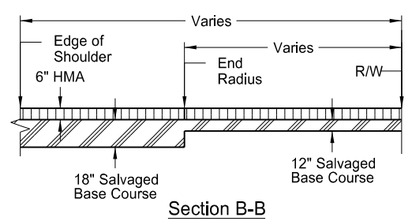
(6) Driveway



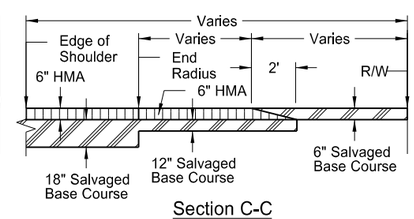
(7) Full Gravel Approach



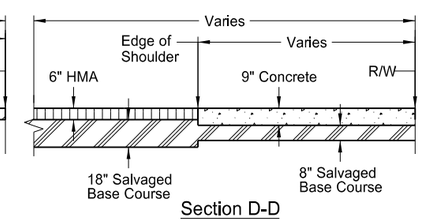
Section A-A
(Not to Scale)



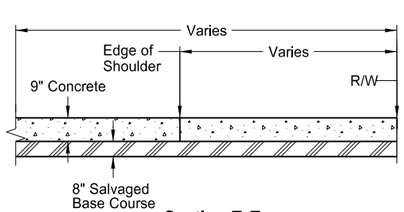
Section B-B
(Not to Scale)



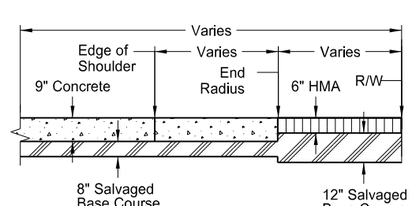
Section C-C
(Not to Scale)



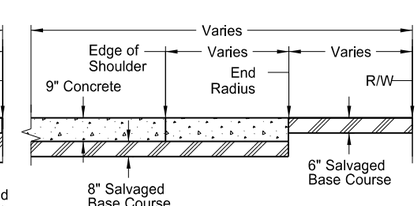
Section D-D
(Not to Scale)



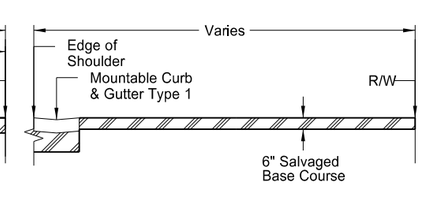
Section E-E
(Not to Scale)



Section F-F
(Not to Scale)



Section G-G
(Not to Scale)



Section H-H
(Not to Scale)

Approach Details					
Station	Offset	Approach Type	Tie-Out Length X	Roadway Width Y	Radius Z
			(LF)	(LF)	(LF)
US 85 Bus Rt					
50202+40	Lt	1	39.5	40	40
50202+46	Rt	2	15	45	40
50216+68	Lt	2	75	38	40
50216+68	Rt	1	54.5	38	40
50218+78	Lt	7	37	24	30
50226+20	Lt	4	39.5	24	30
50228+38	Lt	1	49.5	24	30
50230+70	Lt	6	73.5	14	-
50231+55	Rt	1	57.5	24	40
50234+52	Lt	2	39.5	28	40
50237+40	Rt	3	79.5	30	30
50237+40	Lt	2	49.5	30	30
50243+24	Rt	6	73.5	20	-
50246+03	Rt	3	49.5	20	30
50246+03	Lt	1	129.3	32	40
50248+09	Rt	6	73.5	20	-
50249+06	Rt	6	73.5	12	-
50251+26	Rt	6	73.5	16	-
50251+63	Lt	6	73.5	12	-
50255+53	Rt	1	49.5	20	30
50256+20	Lt	6	73.5	14	-
50261+76	Rt	6	73.5	12	-
50263+20	Lt	1	27.5	28	40
50263+20	Rt	2	39.5	28	40
50269+51	Lt	5	75	38	50
50269+51	Rt	5	17.5	38	50
50273+75	Lt	4	39.5	24	40
50276+01	Lt	2	49.5	24	30
50276+01	Rt	4	19.5	28	40
50281+85	Rt	4	34.5	28	40
50281+85	Lt	2	129.5	24	40
50286+16	Lt	2	39.5	36	40
50288+55	Lt	5	39.5	28	40

Notes:

① Refer to Standard Drawing D-203-8, and to Section 200 Cross Sections for grading details.

② Minimum approach width, match existing width

③ Refer to Sections 60 and 90 for quantities

④ See Standard Drawing D-750-1. If the concrete driveway abuts against asphalt the pavement section consists of 6" HMA on 4" Salvaged Base Course. If the concrete driveway abuts against gravel the aggregate section consists of 6" Salvaged Base Course.

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

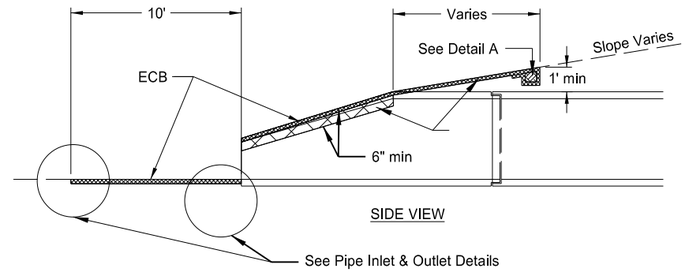
Approach Detail

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	20	4

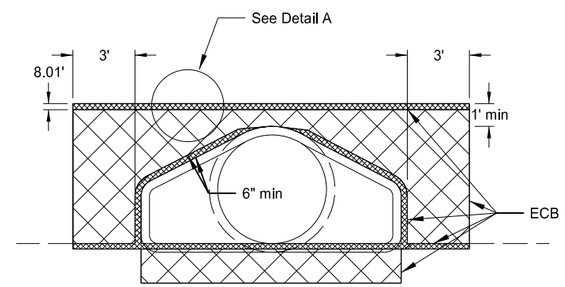
Erosion Control Blanket (ECB)

Location of Surface Area to be Protected		Pipe Diam (Inch)	Description	No.	X	Y	Unit Quantity	Total Quantity
Station	Offset				(ft)	(ft)	(SY)	(SY)
Main St (PRBN85)								
50201+75	Lt & Rt	24	Storm	2	10.5	21.6	24	48
50209+50	Lt & Rt	18	Storm	2	9.5	20.7	22	44
50216+05	Lt & Rt	18	Storm	2	9.5	20.7	22	44
50216+68	Rt	Dbl 48	Approach	2	25.8	24	69	138
50216+68	Lt	24	Approach	2	10.5	21.6	24	48
50218+79	Lt	18	Approach	2	9.5	20.7	22	44
50221+50	Lt & Rt	18	Storm	2	9.5	20.7	22	44
50225+70	Lt & Rt	18	Storm	2	9.5	20.7	22	44
50226+20	Lt	30	Approach	2	11.6	22.5	27	54
50227+90	Lt	18	Storm	1	9.5	20.7	22	22
50228+38	Lt	30	Approach	2	11.6	22.5	27	54
50230+70	Lt	30	Approach	2	11.6	22.5	27	54
50231+00	Rt	18	Storm	1	9.5	20.7	22	22
50231+55	Rt	Tpl 48	Approach	2	37.8	32	134	269
50233+95	Lt	18	Storm	1	9.5	20.7	22	22
50234+53	Lt	30	Approach	2	11.6	22.5	27	54
50236+90	Lt & Rt	36	Centerline	2	12.7	23.3	30	60
50237+40	Rt	Tpl 48	Approach	1	37.8	32	134	134
50239+35	Lt & Rt	42	Centerline	2	13.3	23.3	31	62
50242+14	Lt & Rt	18	Storm	2	9.5	20.7	22	44
50243+24	Rt	18	Approach	2	9.5	20.7	22	44
50246+03	Rt	18	Approach	2	9.5	20.7	22	44
50248+09	Rt	18	Approach	2	9.5	20.7	22	44
50249+06	Rt	18	Approach	2	9.5	20.7	22	44
50250+33	Lt & Rt	18	Storm	2	9.5	20.7	22	44
50251+26	Rt	18	Approach	2	9.5	20.7	22	44
50255+02	Rt	18	Storm	1	9.5	20.7	22	22
50255+53	Rt	18	Approach	2	9.5	20.7	22	44
50255+54	Lt	18	Storm	1	9.5	20.7	22	22
50256+04	Rt	18	Storm	1	9.5	20.7	22	22
50262+60	Lt & Rt	18	Storm	2	9.5	20.7	22	44
50263+20	Rt	24	Approach	2	10.5	21.6	24	48
50264+04	Lt & Rt	18	Storm	2	9.5	20.7	22	44
50268+75	Lt & Rt	18	Storm	2	9.5	20.7	22	44
50268+99	Lt	30	Culvert	1	11.6	22.5	27	27
50269+51	Rt	24	Approach	2	10.5	21.6	24	48
50271+18	Rt	18	Storm	1	9.5	20.7	22	22
50271+30	Lt	18	Storm	1	9.5	20.7	22	22
50274+17	Lt	30	Culvert	1	11.6	22.5	27	27
50274+33	Lt	18	Storm	1	9.5	20.7	22	22
50276+01	Lt	18	Approach	2	9.5	20.7	22	44
50278+30	Lt & Rt	18	Storm	2	9.5	20.7	22	44
50281+85	Rt	24	Approach	2	10.5	21.6	24	48
50281+85	Lt	18	Approach	2	9.5	20.7	22	44
50285+50	Lt & Rt	18	Storm	2	9.5	20.7	22	44
50286+16	Lt	18	Approach	2	9.5	20.7	22	44
50287+87	Lt & Rt	18	Storm	2	9.5	20.7	22	44
50288+55	Lt	18	Approach	2	9.5	20.7	22	44
50289+15	Lt	18	Storm	1	9.5	20.7	22	22
50293+62	Lt & Rt	Dbl 42	Centerline	2	25.3	23.3	65	131
6th Ave (PRTR23)								
2005+06	Lt & Rt	Dbl 36	Centerline	2	24.7	23.3	64	128
2005+06	Rt	-	Inslope	2	18	24	48	96
255 0103 ECB Type 3							Total =	2,760

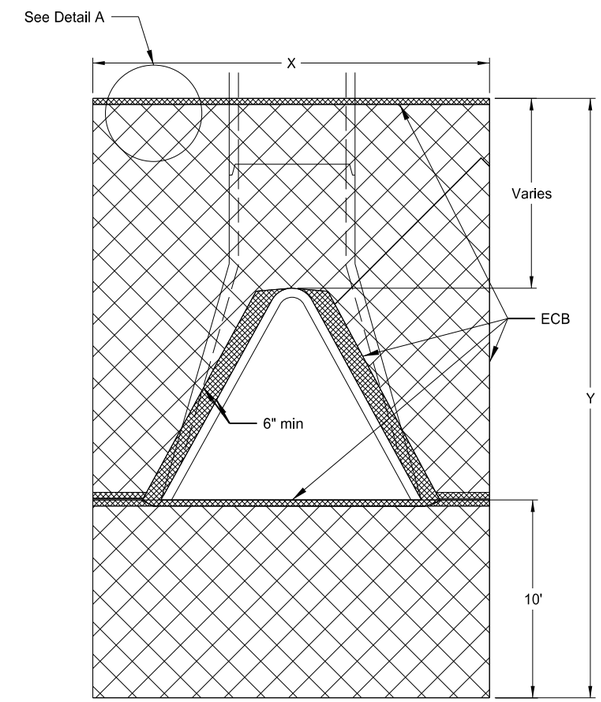
NOTE: Tuck the ECB a minimum of 6" into the embankment (against the flared end section) around the opening of the flared end section.



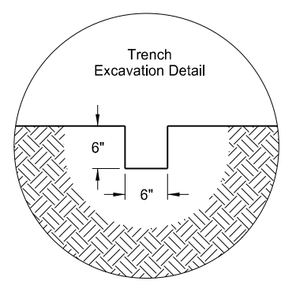
SIDE VIEW

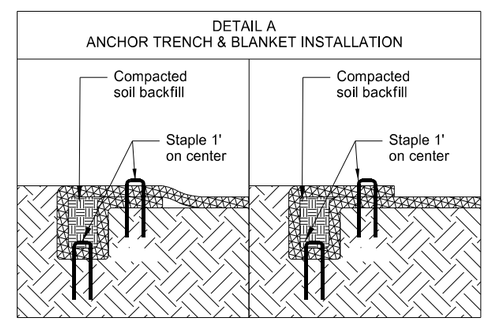


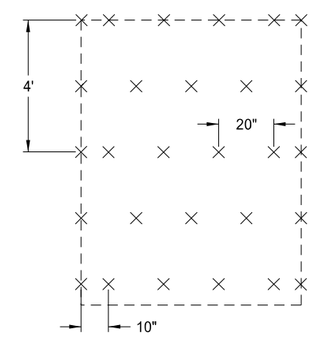
FRONT VIEW



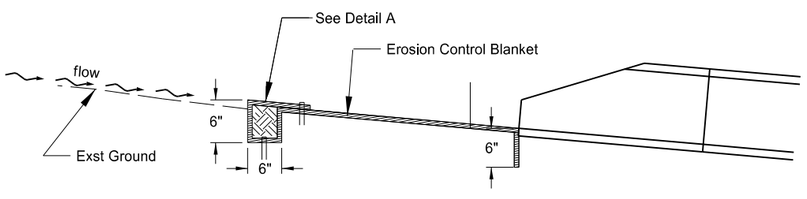
TOP VIEW



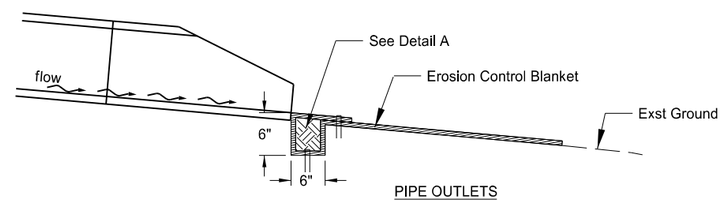




STAPLE PATTERN



PIPE INLETS



PIPE OUTLETS

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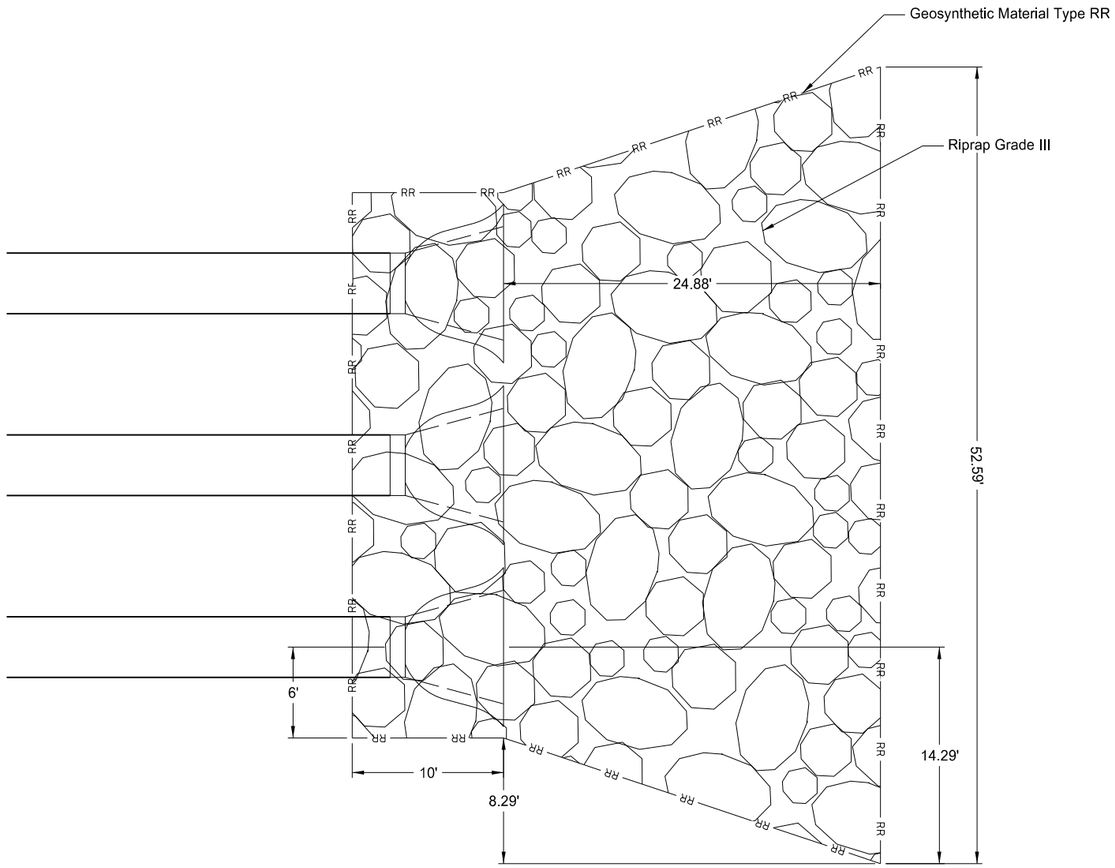
US 85 Bus Rt/ ND 23 Bus Rt South of Watford City

Erosion Control at Culvert Flared End Sections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	20	5

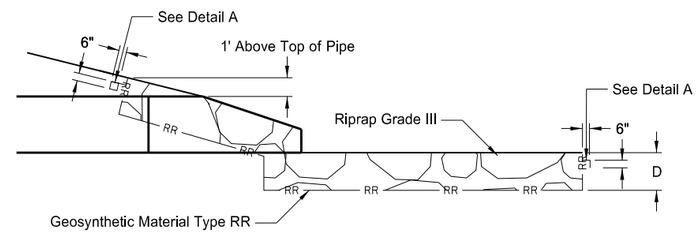


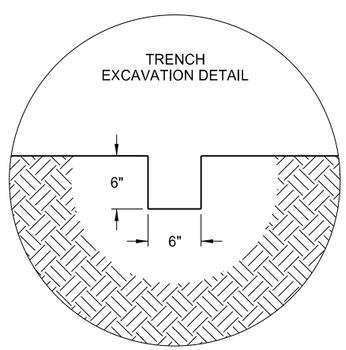
Pipe Installations					
Culvert Diameter (Inch)	No. of Barrels	Riprap Area, A (sf)	Riprap Depth, D (Inch)	Riprap (CY)	RR Fabric (SY)
48	3	1462	44	199	180

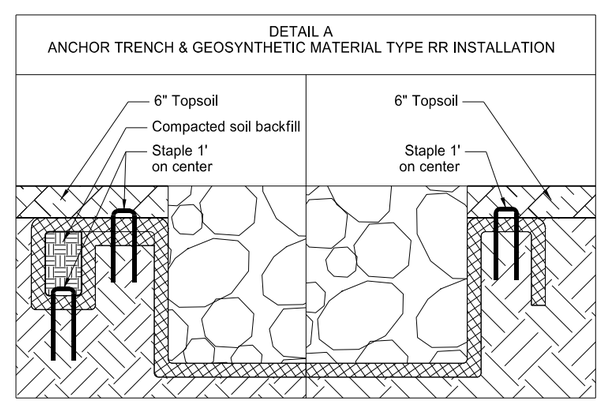
Riprap & Geosynthetic Material

Location	Pipe Dia.	Riprap (CY)		Geotextile Fabric (SY)	
Sta.	(Inch)	North	South	North	South
Main St (PRBN85)					
50237+40	Tpl 48	199	-	180	-

256 0300 Riprap Grade III	Total =	199
709 0155 Geosynthetic Material Type RR	Total =	180







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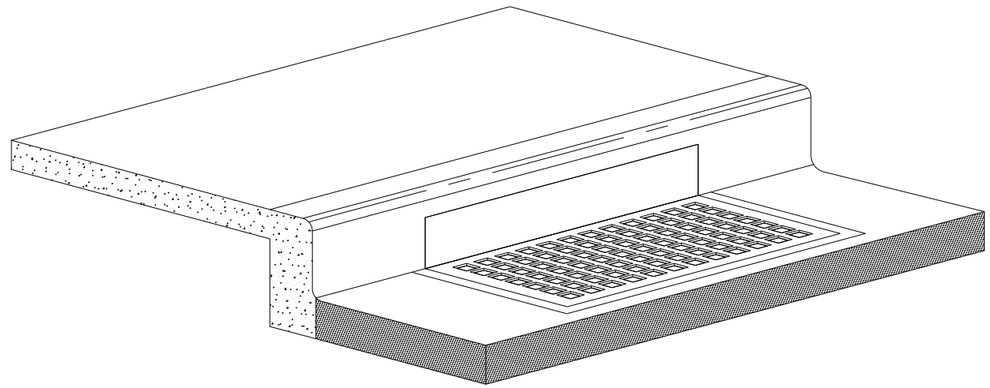
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

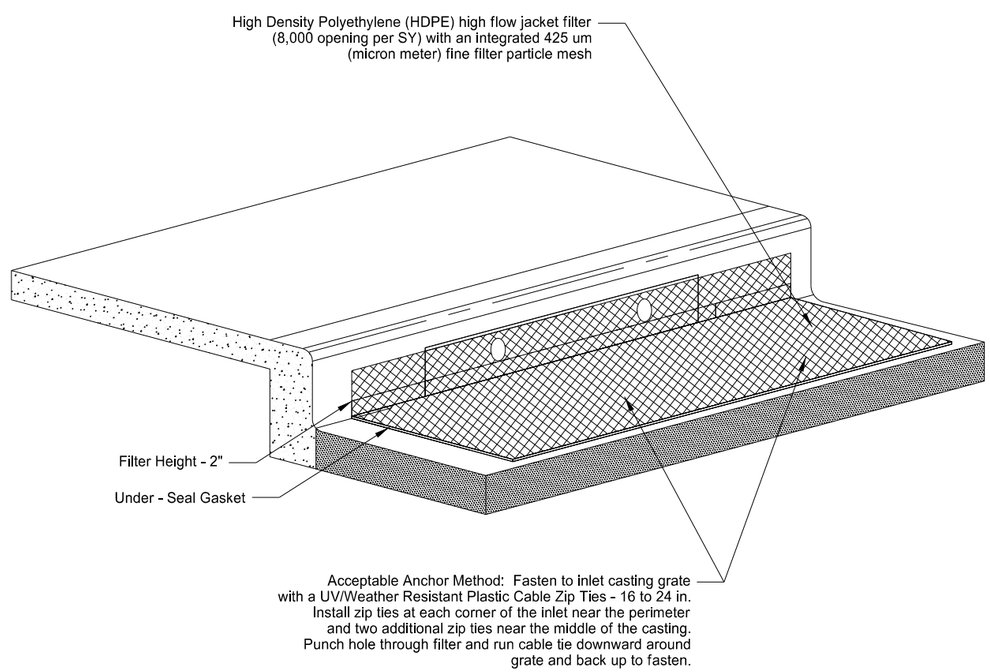
Riprap Detail

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	20	6

Inlet Protection

Inlet Number	Inlet Protection-Special	Remove Inlet Protection-Special
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11	1	1
12	1	1
13	1	1
14	1	1
15	1	1
16	1	1
17	1	1
18	1	1
19	1	1
20	1	1
21	1	1
22	1	1
23	1	1
24	1	1
25	1	1
26	1	1
27	1	1
28	1	1
29	1	1
30	1	1
31	1	1
34	1	1
35	1	1
36	1	1
37	1	1
38	1	1
39	1	1
40	1	1
41	1	1
Subtotal	39	39
708 1540 Inlet Protection-Special		Total = 39
708 1541 Remove Inlet Protection-Special		Total = 39





Inlet Protection Device

Installation Notes:

1. Place device tightly against drain opening and cover entire grate. The device should extend at least 2 inches past grate toward street.
2. Overlap the segments at longer openings.
3. Anchor the device so that water cannot flow behind it.

General Notes:

1. Manufactured alternatives may be substituted at the direction of the engineer.
2. When removing or maintaining inlet protection, care shall be taken so that fabric does not fall into the inlet. Any material falling into the inlet shall be removed immediately.
3. Inlet protection is to be used (and reused) as needed to prevent material from entering inlets as the work progresses through the project.

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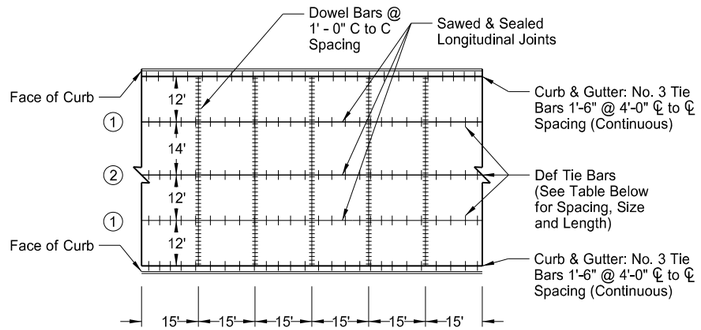
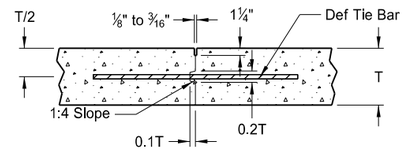
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Inlet Protection Device

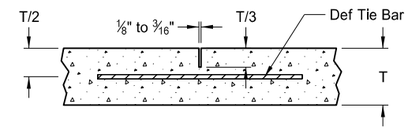
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	20	7



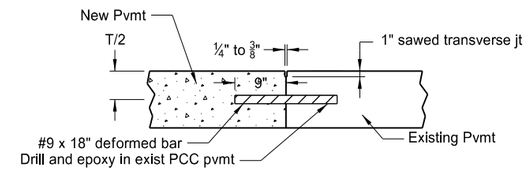
Mainline Joints



Longitudinal Construction Joint
(tied keyed joints)

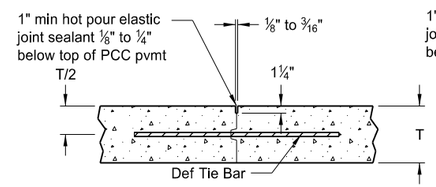


Joint Sawing Detail
(sawed and tied joints)

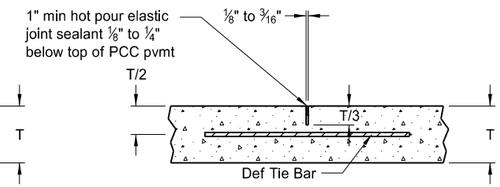


Deformed Bar Installation (2'-0" c to c)
(Transverse Joints)

SOIB-7-085(079)950 Longitudinal Joint Tie Bar Size, Length and Spacing					
Location	Pavement Thickness	Bar Depth	Steel Grade	Bar Size and Length	Spacing 'S'
①	9"	4.5"	40	#6 Bar x 36"	45"
			60	#6 Bar x 48"	45"
②	9"	4.5"	40	#6 Bar x 36"	30"
			60	#6 Bar x 48"	45"



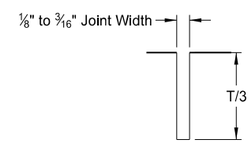
Joint Sealing Detail (all sawed and tied construction joints)



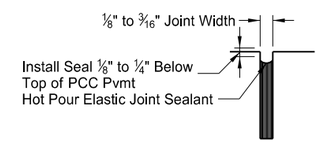
Joint Sealing Detail (all sawed and tied joints)

Notes:

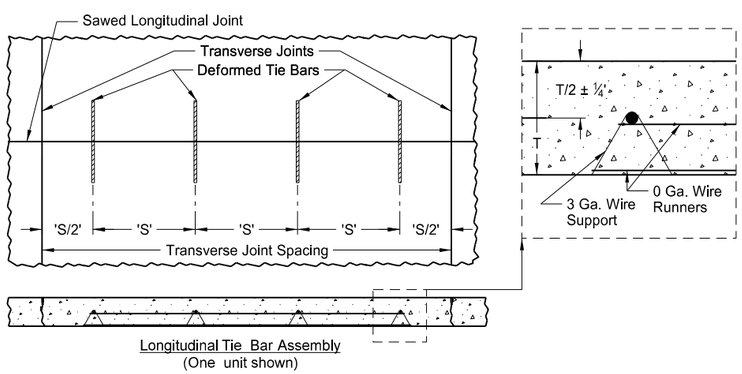
1. See Section 90 of Plans for Joint Spacing in Transition Areas and Widened Sections.
2. See Standard Drawing D-550-2 for Tie Bar Lengths and Sizes in Transition Areas and Widened Sections.
3. All Longitudinal Construction Joints Designated to be Tied; Will be Keyed and Tied.



Transverse Joint Sawing

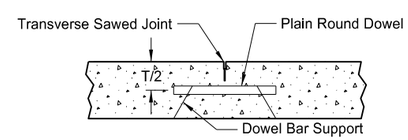


Transverse Joint Sealing

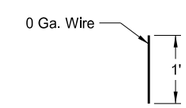


Longitudinal Tie Bar Assembly
(One unit shown)

Notes:
1. T = Pavement Thickness
2. Dowel bars shall be 1¼" x 18" for T = 10" or less.



Doweled Transverse Joint



Steel Stake
4/Unit

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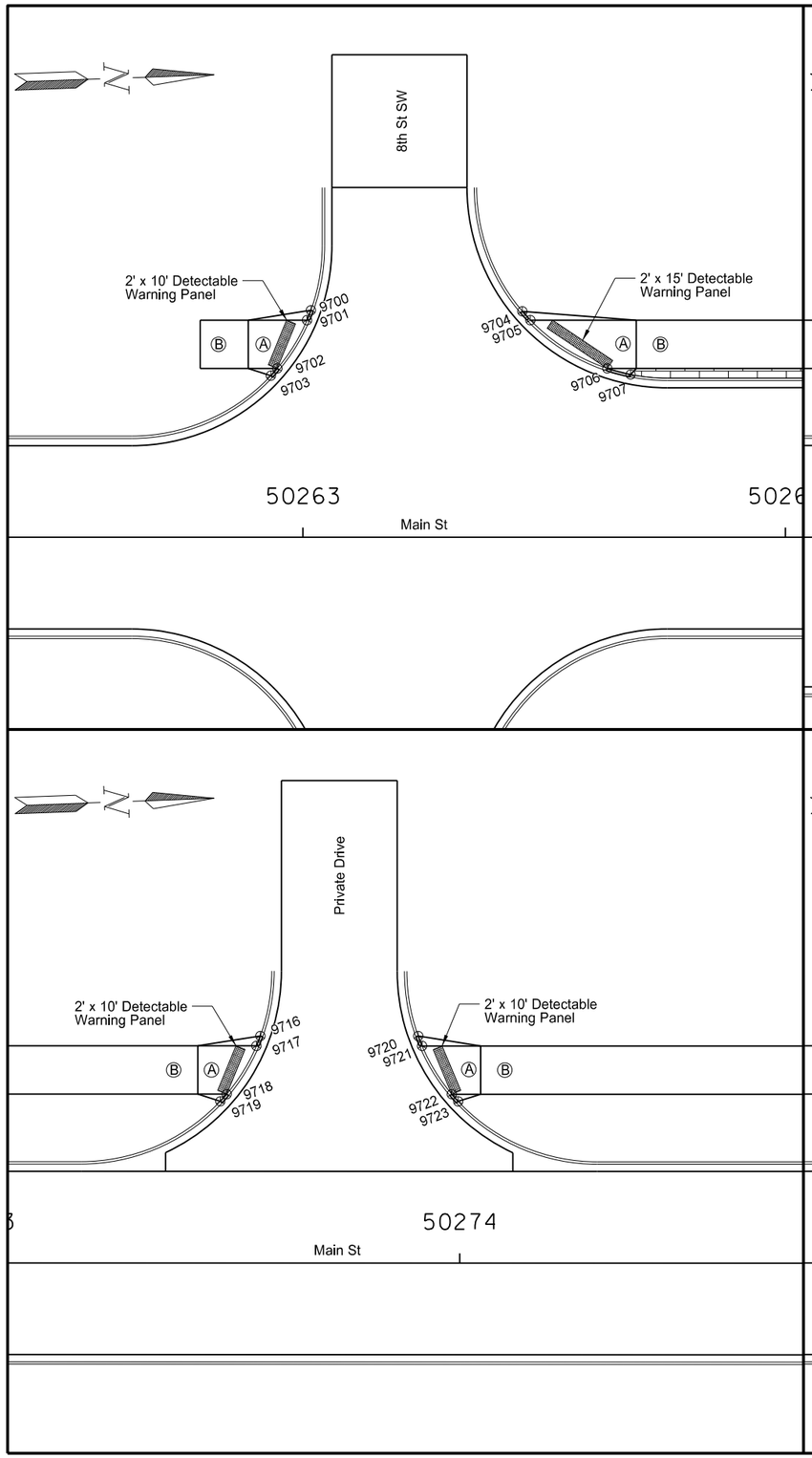
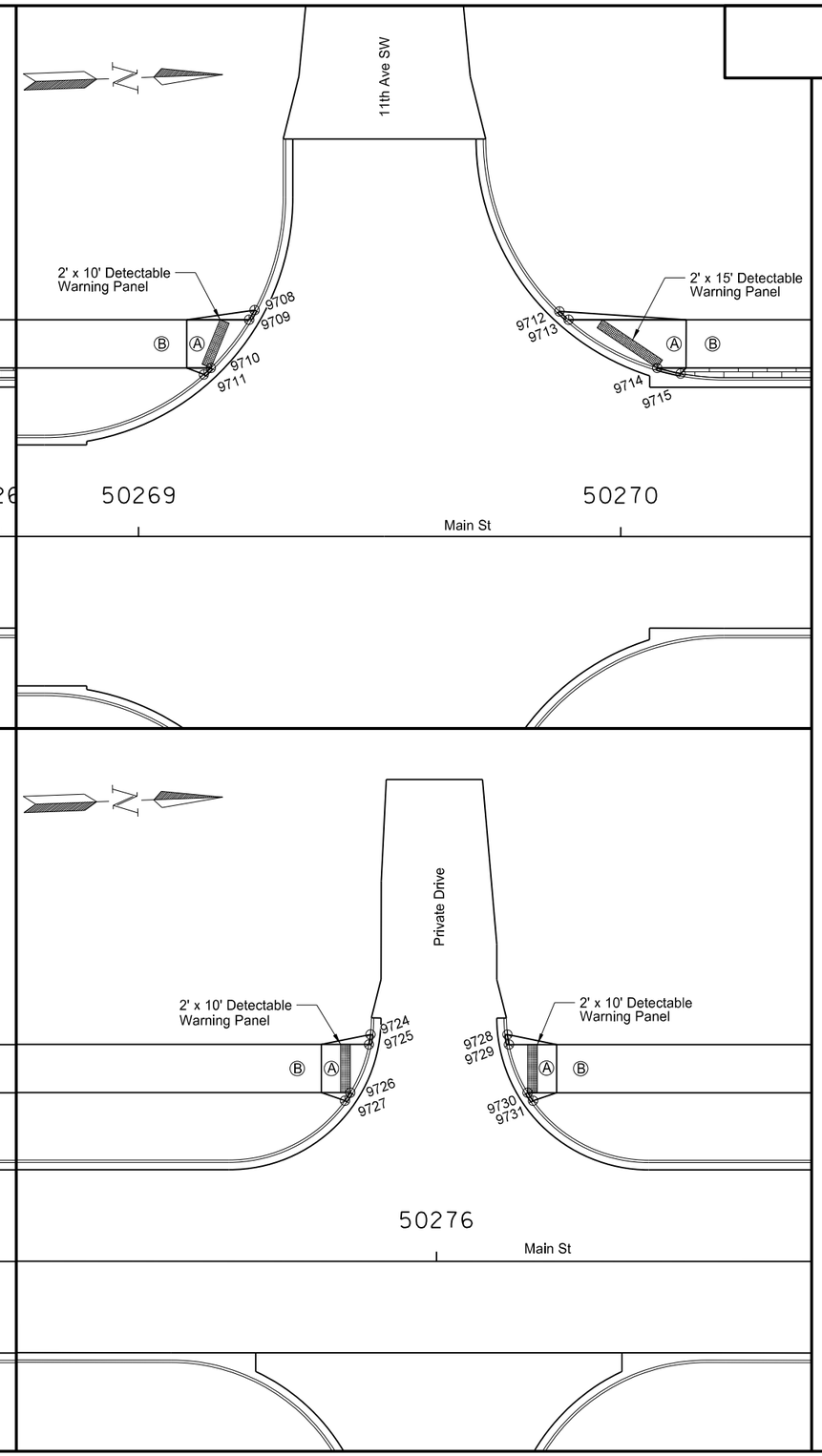
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

PCC Pavement & Joint Details

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	20	8





750 2115 DETECTABLE WARNING PANELS

6 - 2' X 10' Detectable Warning Panels		120 SF
2 - 2' X 15' Detectable Warning Panels		60 SF
	Total	180 SF

Stations and offsets based off PRBN85 alignment

Point	Northing	Easting	Station	Offset
9700	300004.53	1284651.07	50263+01.64	-47.06
9701	300003.64	1284653.10	50263+00.83	-45.00
9702	299997.11	1284662.86	50262+94.67	-35.00
9703	299995.73	1284664.31	50262+93.34	-33.51
9704	300048.33	1284652.91	50263+45.48	-46.83
9705	300049.92	1284654.80	50263+47.15	-45.00
9706	300065.49	1284665.38	50263+63.09	-35.00
9707	300070.27	1284666.83	50263+67.92	-33.73
9708	300626.53	1284674.05	50269+24.06	-47.00
9709	300625.32	1284676.00	50269+22.93	-45.00
9710	300617.02	1284685.70	50269+15.00	-35.00
9711	300615.51	1284687.01	50269+13.53	-33.64
9712	300689.71	1284676.66	50269+87.29	-46.73
9713	300691.55	1284678.46	50269+89.19	-45.00
9714	300709.55	1284689.14	50270+07.57	-35.00
9715	300714.36	1284690.48	50270+12.43	-33.84
9716	301060.82	1284690.15	50273+58.64	-47.06
9717	301059.94	1284692.18	50273+57.83	-45.00
9718	301053.40	1284701.94	50273+51.67	-35.00
9719	301052.02	1284703.38	50273+50.34	-33.51
9720	301093.52	1284691.37	50273+91.36	-47.06
9721	301094.25	1284693.45	50273+92.17	-45.00
9722	301100.04	1284703.68	50273+98.33	-35.00
9723	301101.31	1284705.22	50273+99.66	-33.51
9724	301288.32	1284698.61	50275+86.30	-47.07
9725	301287.93	1284700.67	50275+85.98	-45.00
9726	301283.68	1284710.52	50275+82.10	-35.00
9727	301282.51	1284712.14	50275+80.99	-33.34
9728	301316.71	1284699.67	50276+14.70	-47.07
9729	301316.95	1284701.75	50276+15.02	-45.00
9730	301320.45	1284711.89	50276+18.90	-35.00
9731	301321.50	1284713.59	50276+20.01	-33.34

Ⓐ Curb Ramp
12:1 Maximum Logitudinal Slope
50:1 Maximum Cross Slope

Ⓑ 10' Shared Use Path
12:1 Maximum Logitudinal Slope
50:1 Maximum Cross Slope

Ⓒ Upper Landing
50:1 Maximum Logitudinal Slope
50:1 Maximum Cross Slope
4x4 Minimum, Match Width of Shared Use Path

Notes:

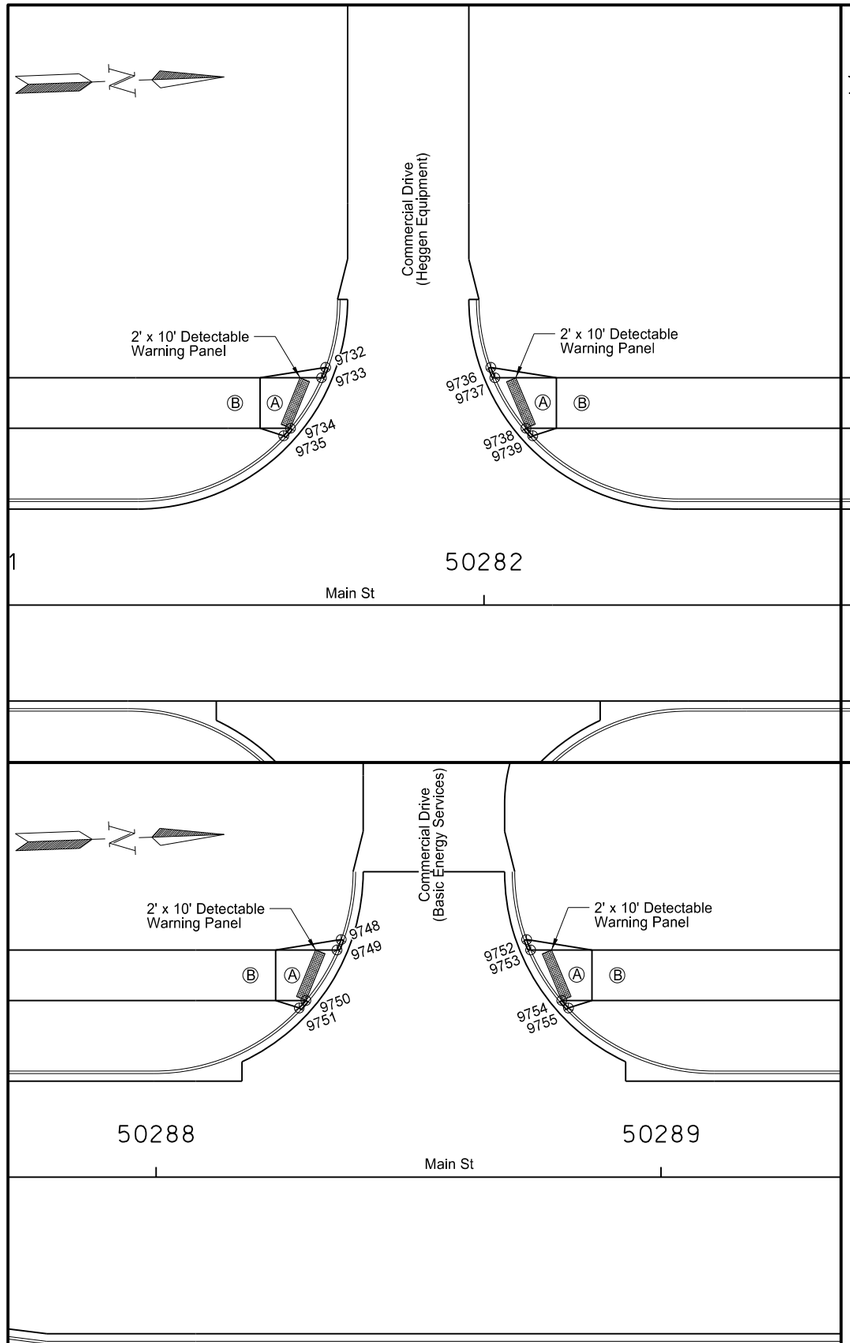
1. Dimension shown may vary from actual. Contractor shall adjust if maximum slopes cannot be met with dimensions shown.
2. All curb ramp flares are graded unless otherwise noted.
3. See standard drawing D-750-3 for more details.

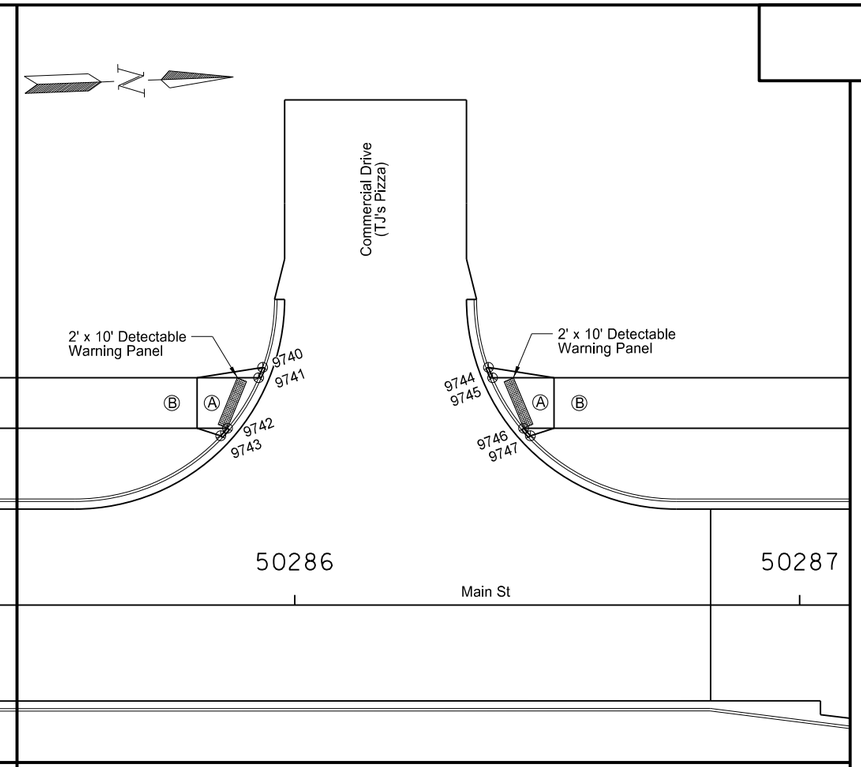
This document was originally issued and sealed by Jessica R. Karls, Registration Number PE- 8408, on 2/22/2016 and the original document is stored at the North Dakota Department of Transportation

US 85 Bus Rt/ND 23 Bus Rt South of Watford City

ADA Ramp Details

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	20	9





750 2115 DETECTABLE WARNING PANELS

6 - 2' X 10' Detectable Warning Panels 120 SF

Stations and offsets based off PRBN85 alignment

Point	Northing	Easting	Station	Offset
9732	301870.26	1284720.30	50281+68.64	-47.06
9733	301869.38	1284722.32	50281+67.83	-45.00
9734	301862.84	1284732.08	50281+61.67	-35.00
9735	301861.46	1284733.53	50281+60.34	-33.51
9736	301902.96	1284721.51	50282+01.36	-47.06
9737	301903.69	1284723.60	50282+02.17	-45.00
9738	301909.48	1284733.82	50282+08.33	-35.00
9739	301910.75	1284735.36	50282+09.66	-33.51
9740	302294.97	1284736.11	50285+93.64	-47.06
9741	302294.08	1284738.14	50285+92.83	-45.00
9742	302287.55	1284747.90	50285+86.67	-35.00
9743	302286.16	1284749.34	50285+85.34	-33.51
9744	302339.65	1284737.78	50286+38.36	-47.06
9745	302340.39	1284739.86	50286+39.17	-45.00
9746	302346.18	1284750.08	50286+45.33	-35.00
9747	302347.45	1284751.63	50286+46.66	-33.51
9748	302537.80	1284745.15	50288+36.64	-47.06
9749	302536.91	1284747.18	50288+35.83	-45.00
9750	302530.38	1284756.94	50288+29.67	-35.00
9751	302529.00	1284758.39	50288+28.34	-33.51
9752	302574.49	1284746.52	50288+73.36	-47.06
9753	302575.22	1284748.61	50288+74.17	-45.00
9754	302581.01	1284758.83	50288+80.33	-35.00
9755	302582.29	1284760.37	50288+81.66	-33.51

Ⓐ Curb Ramp
12:1 Maximum Logitudinal Slope
50:1 Maximum Cross Slope

Ⓑ 10' Shared Use Path
12:1 Maximum Logitudinal Slope
50:1 Maximum Cross Slope

Ⓒ Upper Landing
50:1 Maximum Logitudinal Slope
50:1 Maximum Cross Slope
4x4 Minimum, Match Width of Shared Use Path

Notes:

1. Dimension shown may vary from actual. Contractor shall adjust if maximum slopes cannot be met with dimensions shown.
2. All curb ramp flares are graded unless otherwise noted.
3. See standard drawing D-750-3 for more details.

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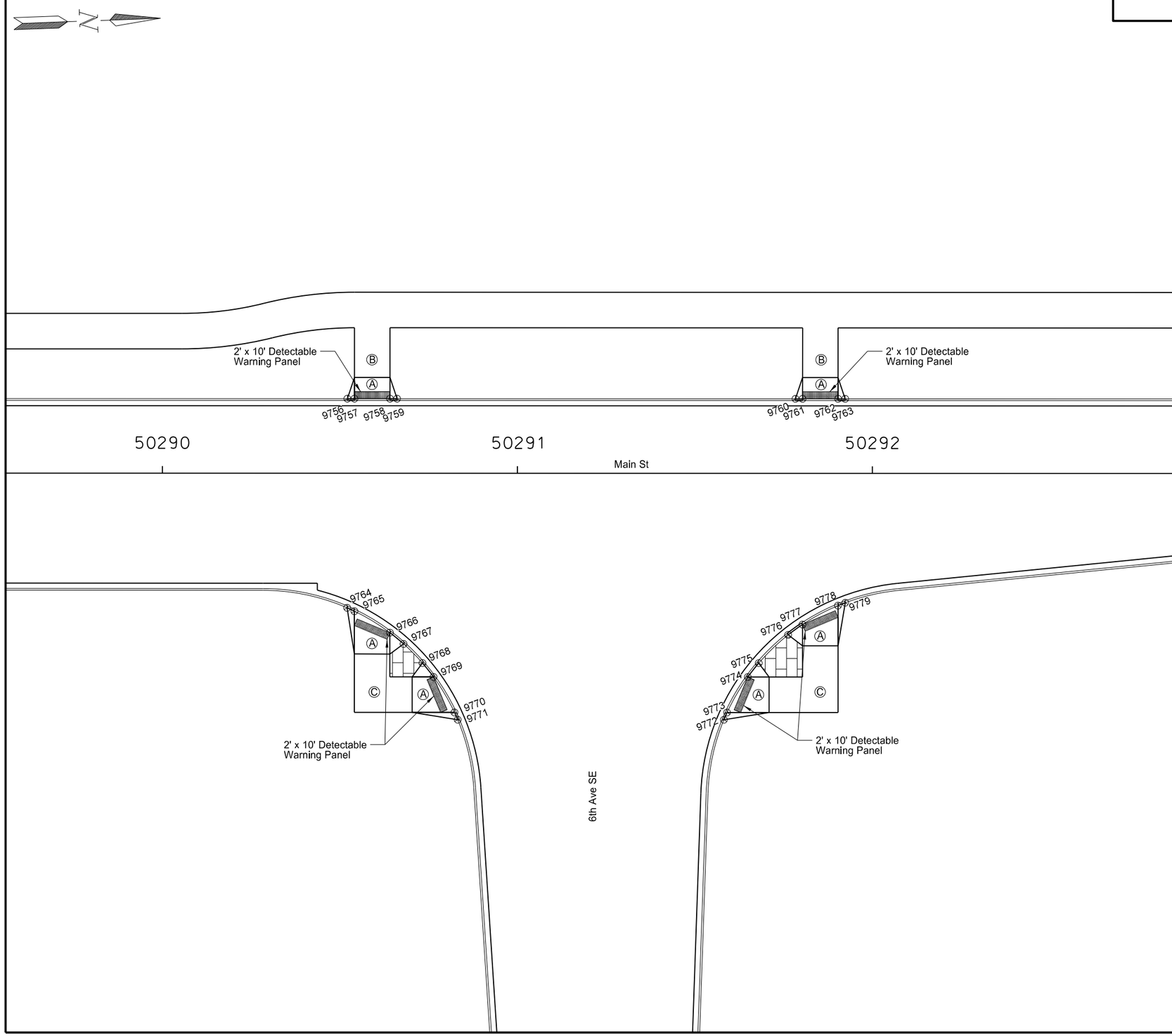
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

ADA Ramp Details

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	20	10



750 2115 DETECTABLE WARNING PANELS

6 - 2' X 10' Detectable Warning Panels 120 SF

Stations and offsets based off PRBN85 alignment

Point	Northing	Easting	Station	Offset
9756	302752.13	1284779.21	50290+52.09	-21.00
9757	302754.13	1284779.29	50290+54.09	-21.00
9758	302764.12	1284779.66	50290+64.09	-21.00
9759	302766.12	1284779.73	50290+66.09	-21.00
9760	302878.28	1284783.91	50291+78.33	-21.00
9761	302880.28	1284783.98	50291+80.33	-21.00
9762	302890.27	1284784.36	50291+90.33	-21.00
9763	302892.27	1284784.43	50291+92.33	-21.00
9764	302749.90	1284838.09	50290+52.06	37.92
9765	302751.90	1284839.10	50290+54.09	38.85
9766	302761.67	1284845.55	50290+64.09	44.94
9767	302765.42	1284848.85	50290+67.96	48.09
9768	302770.53	1284854.43	50290+73.28	53.48
9769	302773.50	1284858.45	50290+76.39	57.39
9770	302779.03	1284868.66	50290+82.30	67.39
9771	302779.86	1284870.74	50290+83.21	69.44
9772	302854.80	1284873.53	50291+58.20	69.43
9773	302855.76	1284871.52	50291+59.09	67.39
9774	302861.96	1284861.74	50291+64.91	57.39
9775	302865.19	1284857.93	50291+68.01	53.46
9776	302873.75	1284850.30	50291+76.27	45.52
9777	302877.91	1284847.53	50291+80.33	42.59
9778	302888.10	1284842.57	50291+90.33	37.25
9779	302890.18	1284841.84	50291+92.38	36.45

Ⓐ Curb Ramp
12:1 Maximum Logitudinal Slope
50:1 Maximum Cross Slope

Ⓑ 10' Shared Use Path
12:1 Maximum Logitudinal Slope
50:1 Maximum Cross Slope

Ⓒ Upper Landing
50:1 Maximum Logitudinal Slope
50:1 Maximum Cross Slope
4x4 Minimum, Match Width of Shared Use Path

Notes:

1. Dimension shown may vary from actual. Contractor shall adjust if maximum slopes cannot be met with dimensions shown.
2. All curb ramp flares are graded unless otherwise noted.
3. See standard drawing D-750-3 for more details.

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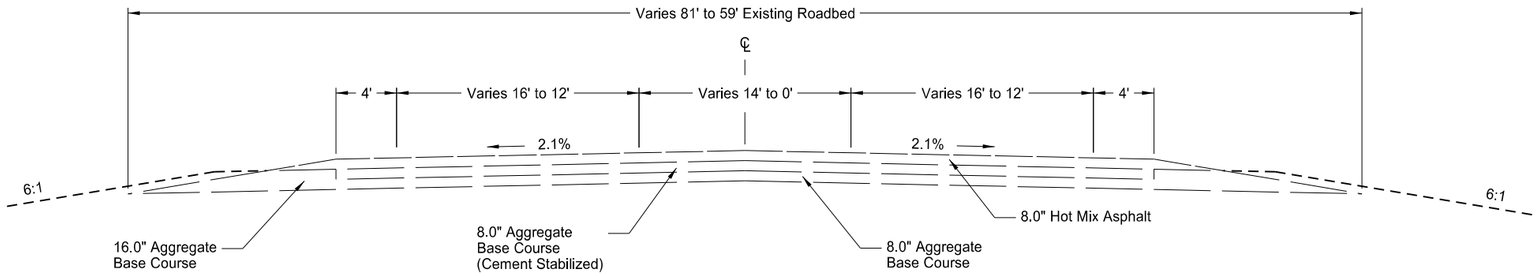
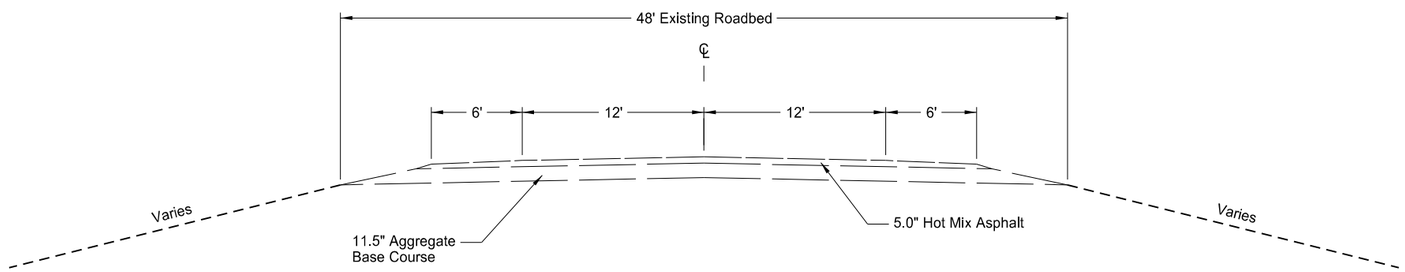
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

ADA Ramp Details

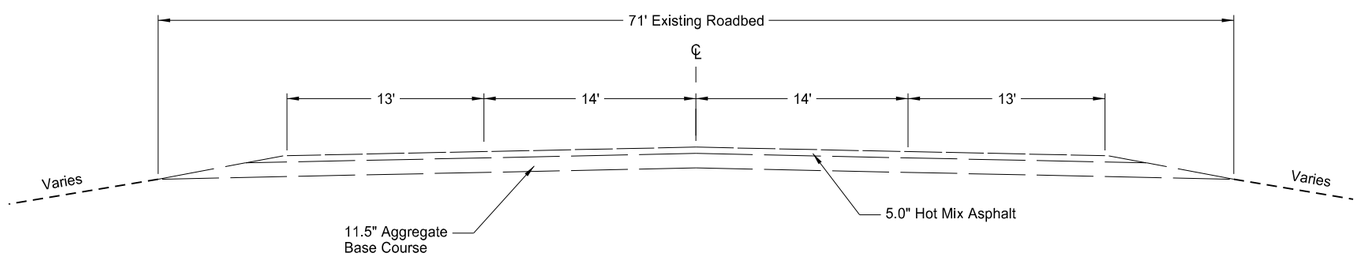
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	30	1



Main St (PRBN85)
Sta 50194+32.78 to Sta 50198+17.78
RP 950.650 to RP 950.723



Main St (PRBN85)
Sta 50198+17.78 to Sta 50216+68.35
RP 950.723 to RP 951.074



Main St (PRBN85)
Sta 50216+68.35 to Sta 50258+95.78
RP 951.074 to RP 951.874
Sta 50259+95.78 to Sta 50295+50.00
RP 951.893 to RP 952.566

Note: Bridge No 85-951.887 from
Sta 50258+95.78 to Sta 50259+95.78

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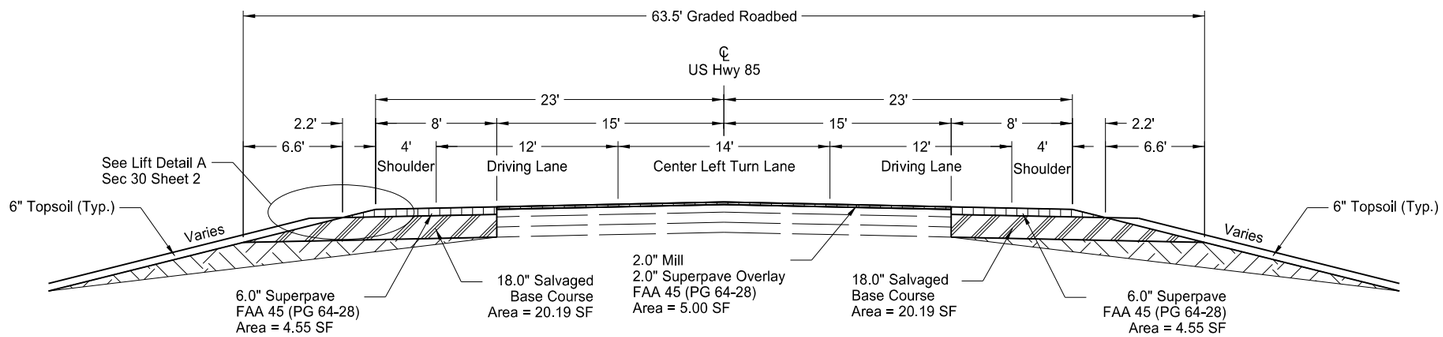
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

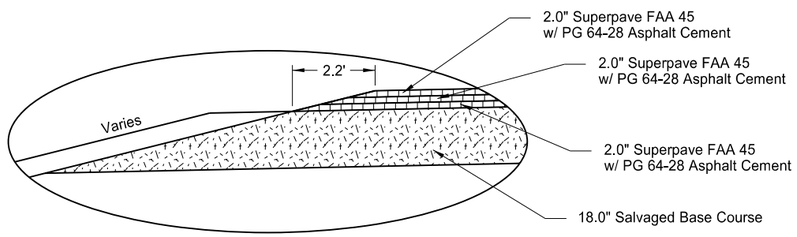
Existing Typical Sections

Main St (PRBN85)

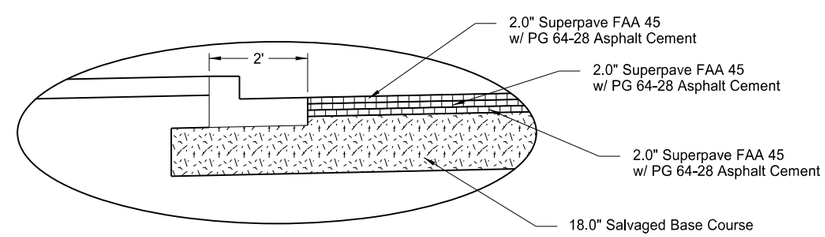
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	30	2



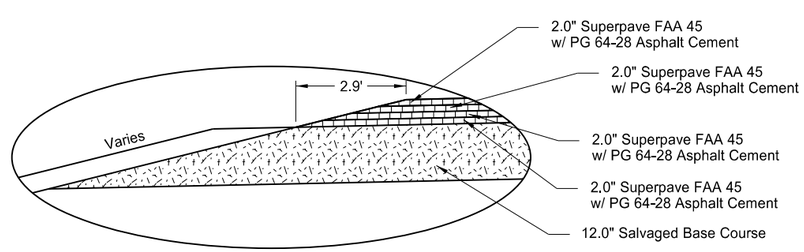
Rural Typical Mill and Overlay Section w/ Shoulder Widening (1)
Sta 50194+32.78 to Sta 50198+17.78



Lift Detail A



Lift Detail B



Lift Detail C

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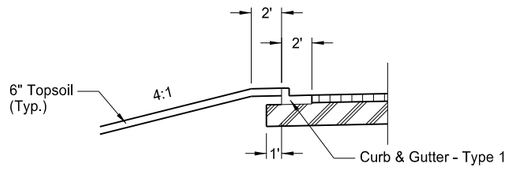
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

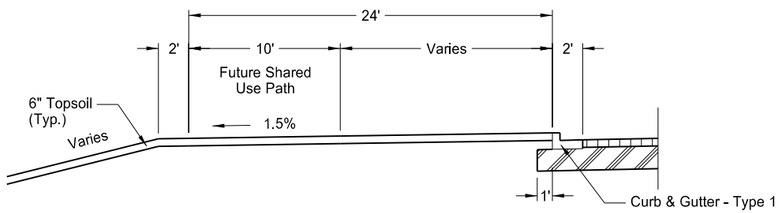
Proposed Typical Sections

Main St (PRBN85)

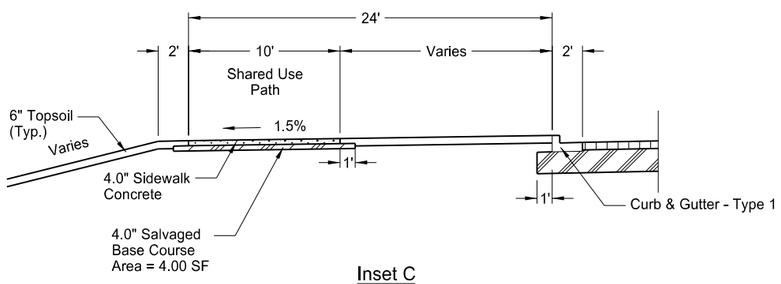
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	30	3



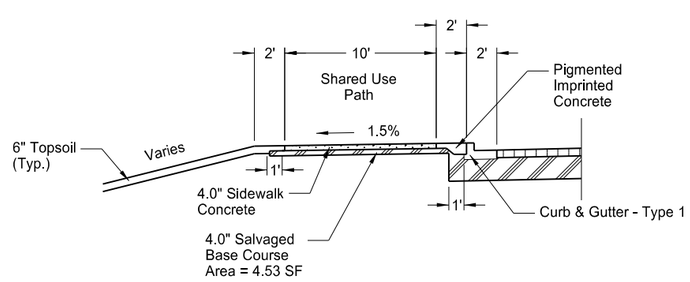
Inset A
Sta 50198+17.78 to Sta 50198+50.00



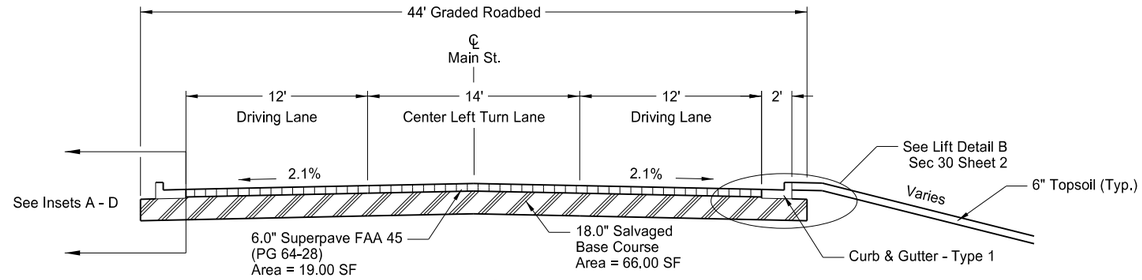
Inset B
*Sta 50198+50.00 to Sta 50258+95.78
*Sta 50259+95.78 to Sta 50262+78.67



Inset C
*Sta 50262+78.67 to Sta 50263+20.00
*Sta 50265+35.58 to Sta 50266+36.50
*Sta 50272+65.50 to Sta 50286+82.36

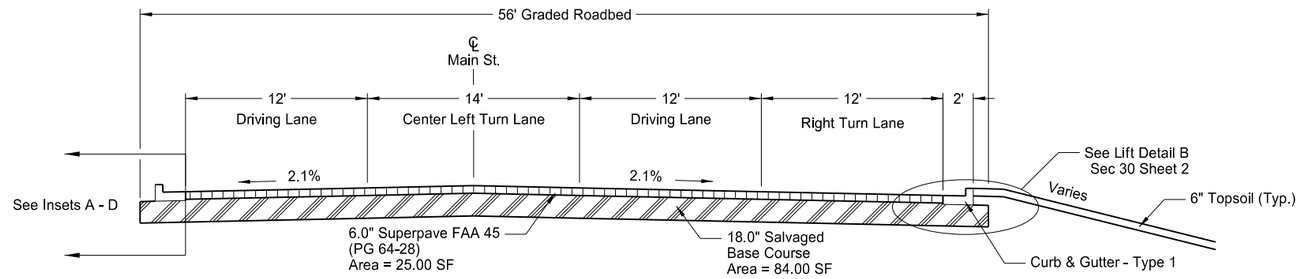


Inset D
*Sta 50263+20.00 to Sta 50265+35.58

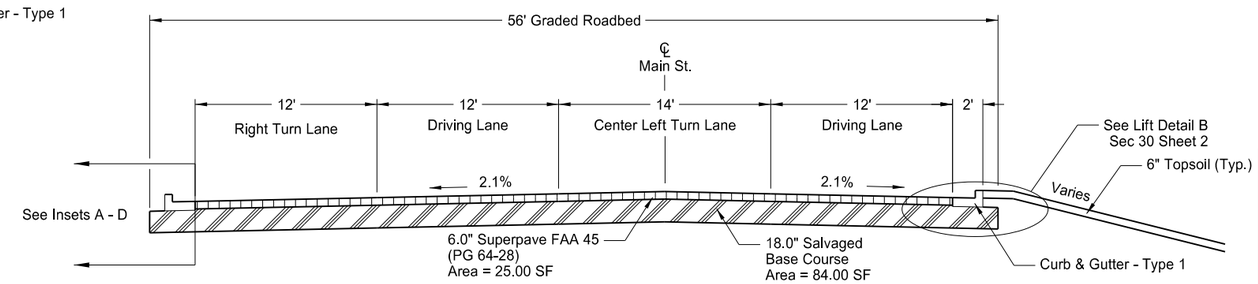


Urban Typical Section (2)

Sta 50198+17.78 to Sta 50198+38.00
Sta 50202+46.00 to Sta 50216+68.00
Sta 50221+47.50 to Sta 50227+57.50
Sta 50231+55.00 to Sta 50246+03.00
*Sta 50250+04.46 to Sta 50258+95.78
*Sta 50259+95.78 to Sta 50263+20.00
Sta 50266+19.50 to Sta 50266+36.50
Sta 50272+65.50 to Sta 50286+82.36



Urban Typical Section w/ NB Right Turn Lane (3)
*Sta 50198+38.00 to Sta 50202+46.00
*Sta 50227+57.50 to Sta 50231+55.00



Urban Typical Section w/ SB Right Turn Lane (4)
*Sta 50216+68.00 to Sta 50221+47.50
*Sta 50246+03.00 to Sta 50250+04.46
*Sta 50263+20.00 to Sta 50266+19.50

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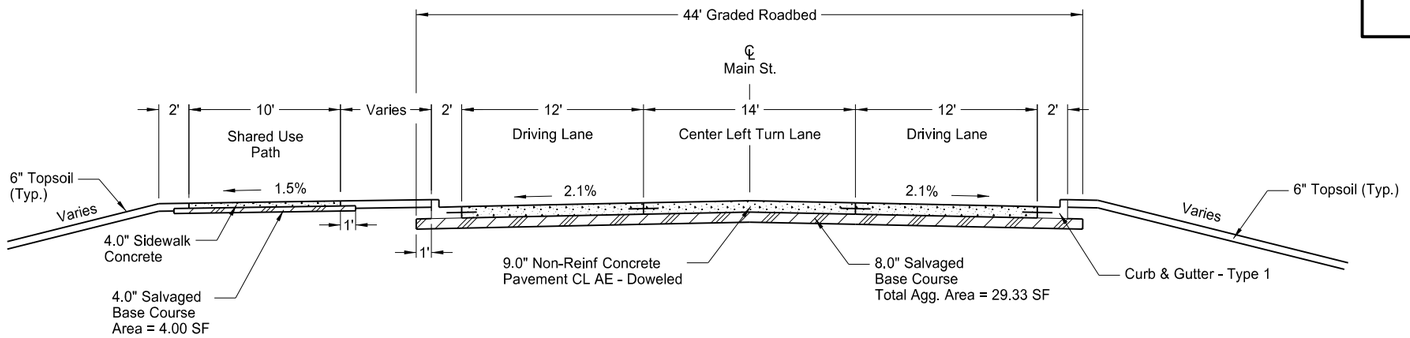
*Station ranges include transition tapers

US 85 Bus Rt/ND 23 Bus Rt South of Watford City

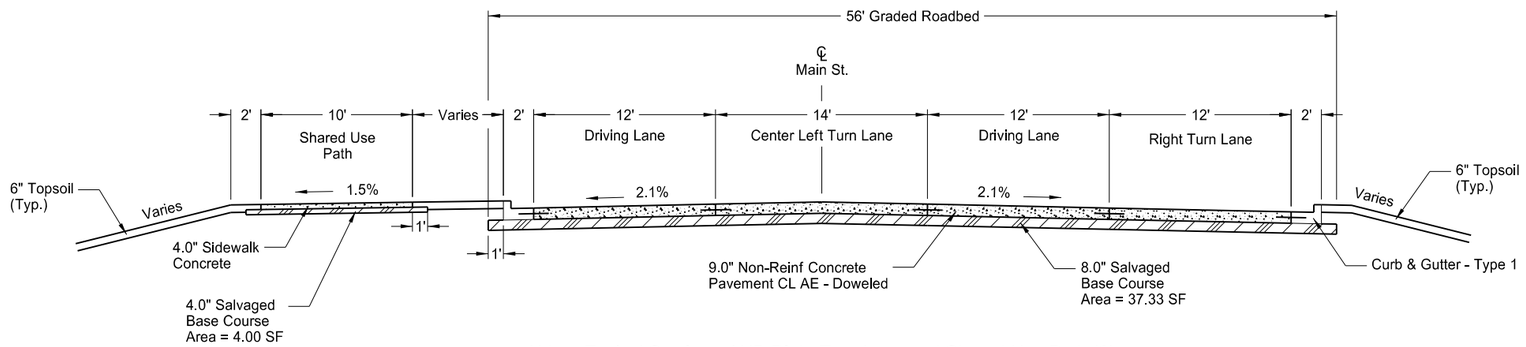
Proposed Typical Sections

Main St (PRBN85)

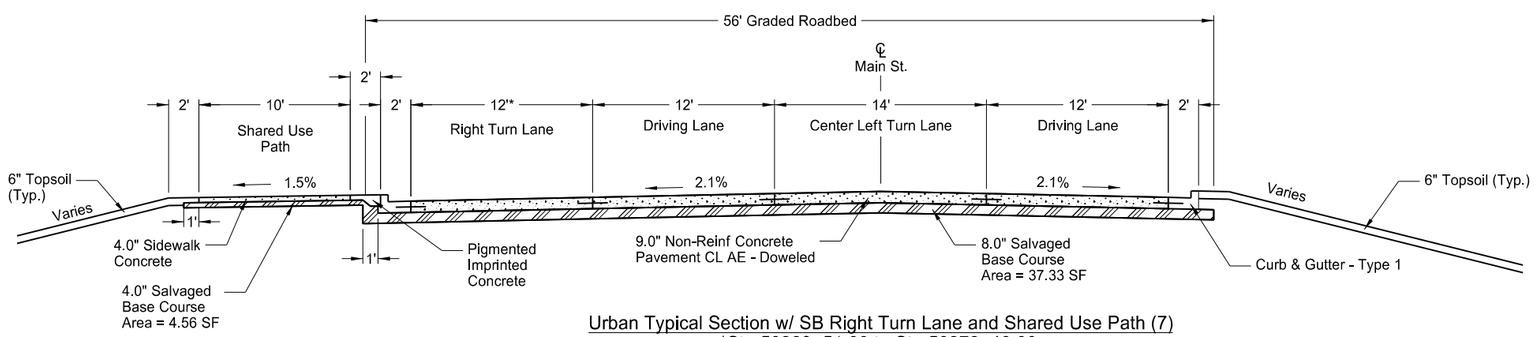
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	30	4



Urban Typical Section w/ Shared Use Path (5)
Sta 50266+36.50 to Sta 50266+65.00
Sta 50272+40.00 to Sta 50272+65.50
Sta 50286+82.36 to Sta 50287+04.10
Sta 50293+05.00 to Sta 50294+00.00



Urban Typical Section w/ NB Right Turn Lane and Shared Use Path (6)
*Sta 50266+65.00 to Sta 50269+51.00
*Sta 50287+04.10 to Sta 50291+17.76



Urban Typical Section w/ SB Right Turn Lane and Shared Use Path (7)
*Sta 50269+51.00 to Sta 50272+40.00

*Station ranges include transition tapers

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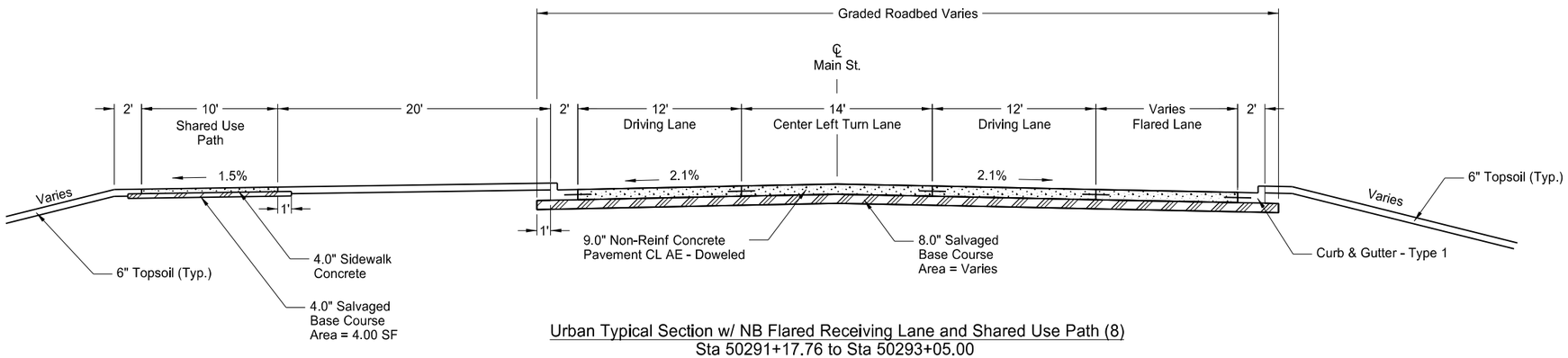
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

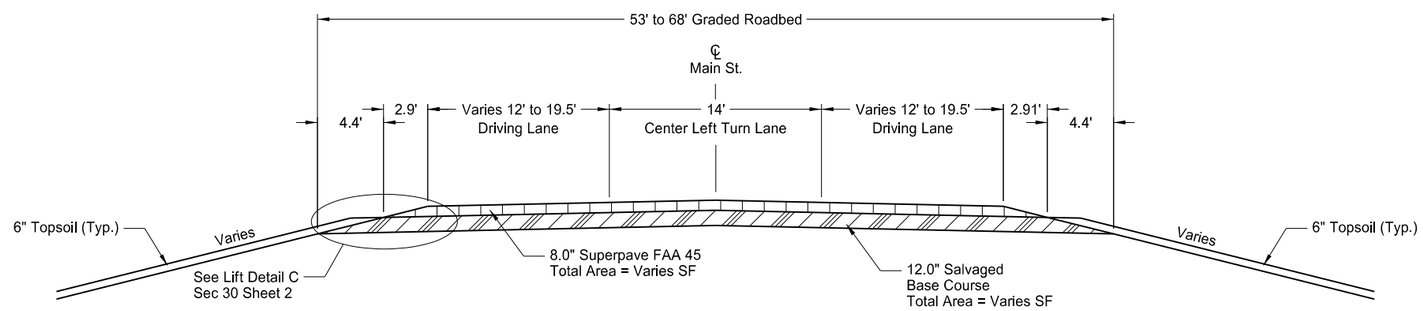
Proposed Typical Sections

Main St (PRBN85)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	30	5



Urban Typical Section w/ NB Flared Receiving Lane and Shared Use Path (8)
Sta 50291+17.76 to Sta 50293+05.00



Urban Typical Section Transition (9)
Sta 50294+00.00 to Sta 50295+50.00

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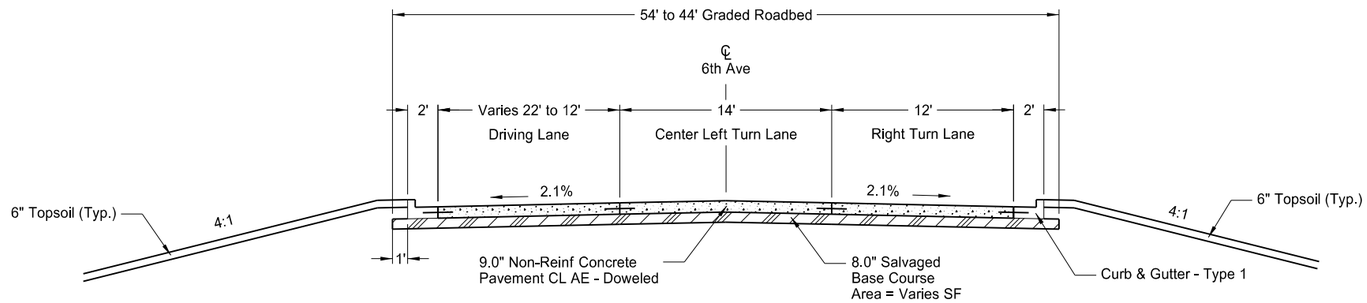
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

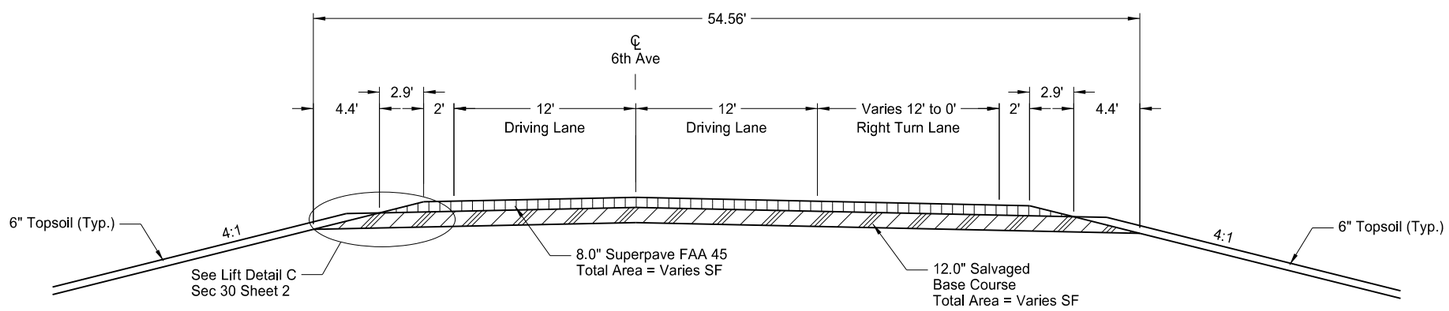
Proposed Typical Sections

Main St (PRBN85)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	30	6



Urban Typical Section w/ WB Right Turn Lane and EB Flared Receiving Lane (10)
Sta 2003+31.02 to Sta 2005+09.57



Urban Typical Section Transition (11)
Sta 2005+09.57 to Sta 2006+05.70

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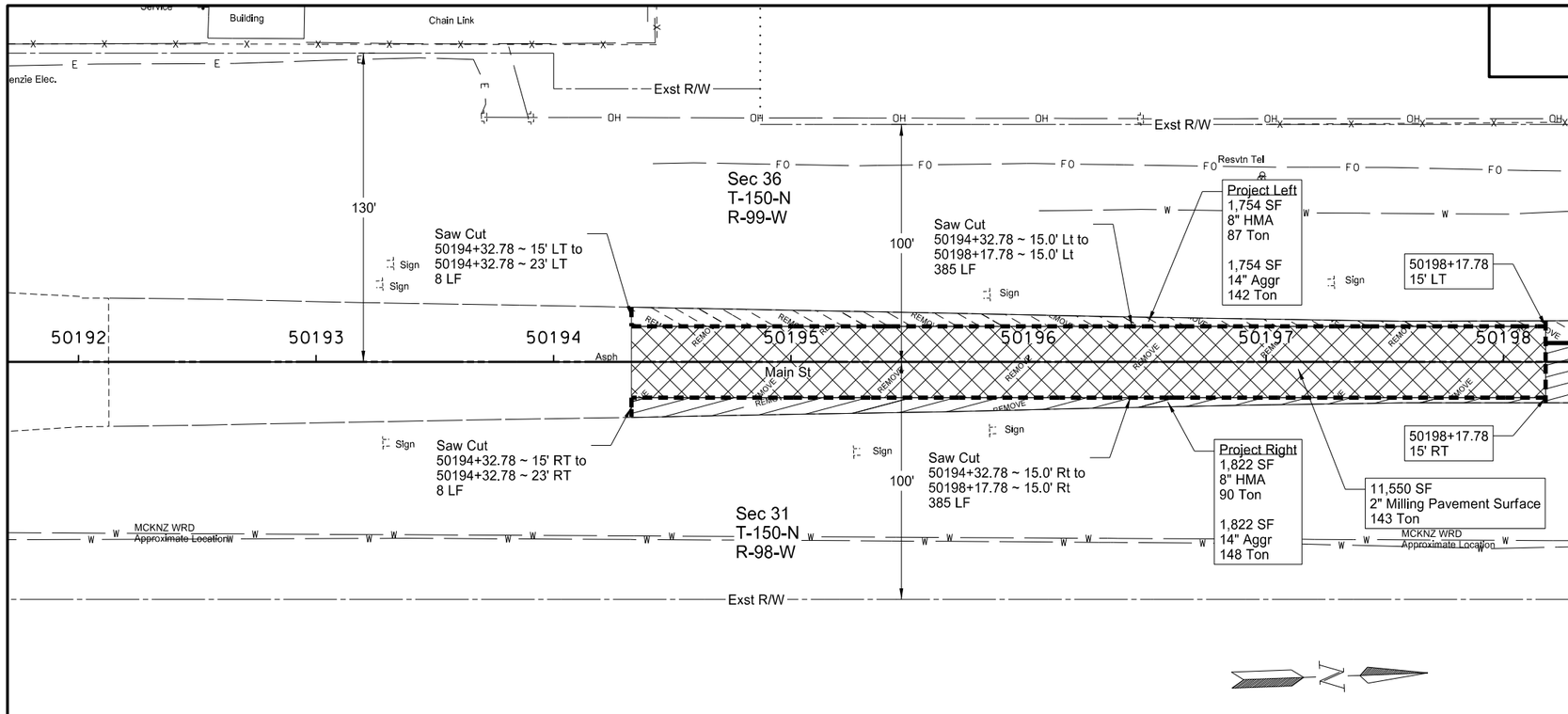
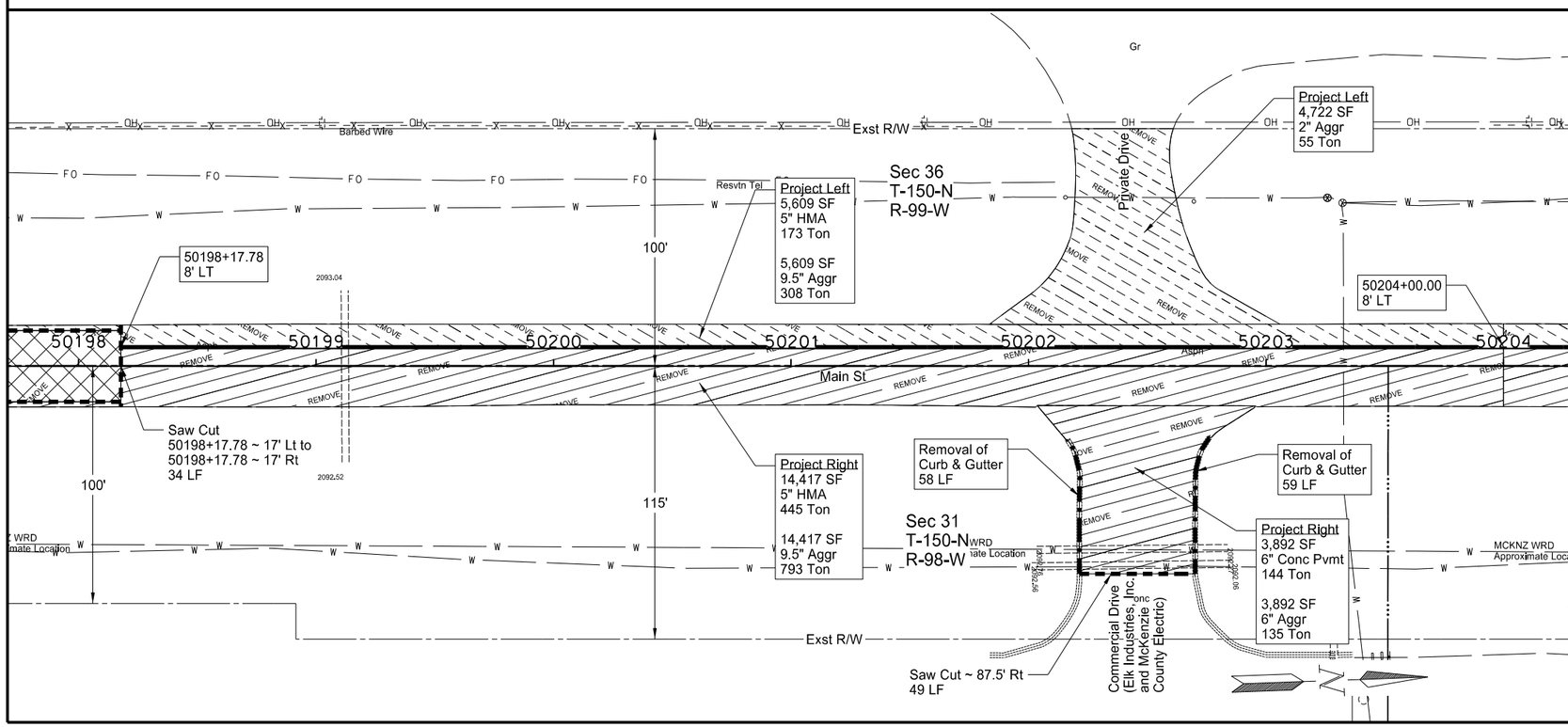
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Proposed Typical Sections

6th Ave (PRTR23)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	40	1





202 0130 REMOVAL OF CURB & GUTTER

Sta 50202+16.36 ~ 31' Rt to Sta 50202+21.45 ~ 88' Rt	58	LF
Sta 50202+70.22 ~ 88' Rt to Sta 5022+76.13 ~ 30' Rt	59	LF
TOTAL	117	LF

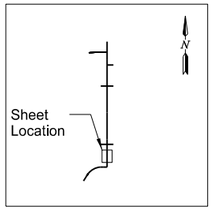
202 0136 REMOVAL OF PAVEMENT

Project Left Mainline - Sta 50194+32.78 to 50198+17.78	229	TON
Project Left Mainline - Sta 50198+17.78 to 50204+00.00	481	TON
Project Left Approach - 50202+40.00 Lt	55	TON
Project Right Mainline - Sta 50194+32.78 to 50198+17.78	238	TON
Project Right Mainline - Sta 50198+17.78 to 50204+00.00	1,238	TON
Project Right Approach - 50202+40.00 Rt	279	TON
TOTAL	2,520	TON

411 0114 MILLING PAVEMENT SURFACE - 2 INCH

Sta 50194+32.78 to Sta 50198+17.78 (15' Lt to 15' Rt)	1,283	SY

Notes:
1. Concrete approaches are assumed to have 6" of concrete on 8" of aggregate base.
2. Apshalt approaches are assumed to have 4" of asphalt on 8" of aggregate base.
3. Gravel approaches are assumed to have 4" of surface aggregate.
4. Quantities assume bottom 2 inches of aggregate is not salvageable.



Milling Pavement Surface (2" Depth)

Removal of Pavement (Project Left)

Removal of Pavement (Project Right)

Saw Cut

Removal of Curb & Gutter

Project Separation (Project Left and Project Right)

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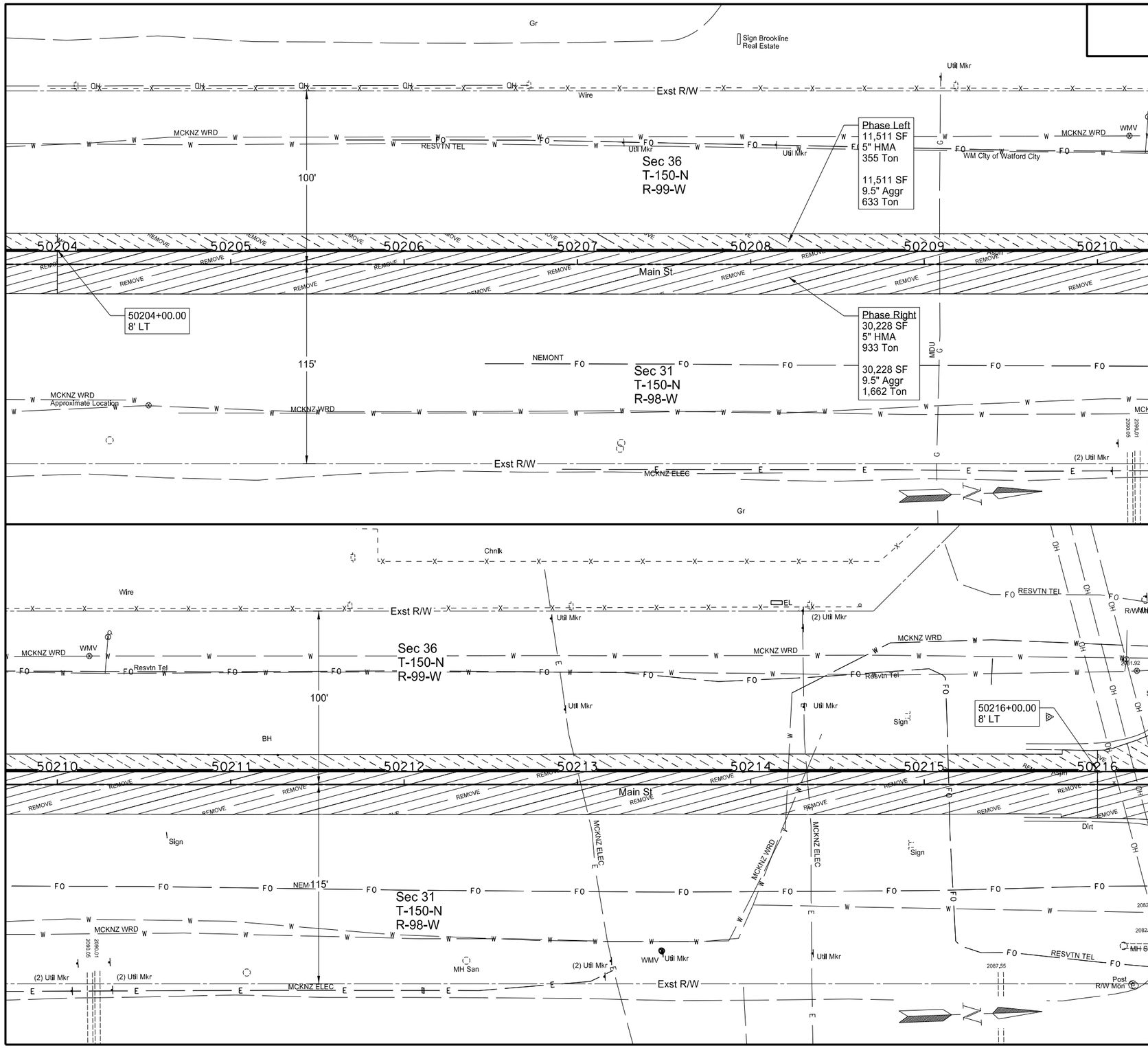
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Removals

Main St (PRBN85)
Sta 50194+32.78 to 50204+00

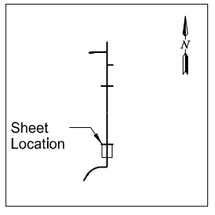
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	40	2



202 0136 REMOVAL OF PAVEMENT

Project Left Mainline - Sta 50204+00.00 to 50216+00.00	988	TON
Project Right Mainline - Sta 50204+00.00 to 50216+00.00	2,595	TON
TOTAL	3,583	TON

Notes:
1. Concrete approaches are assumed to have 6" of concrete on 8" of aggregate base.
2. Apshalt approaches are assumed to have 4" of asphalt on 8" of aggregate base.
3. Gravel approaches are assumed to have 4" of surface aggregate.
4. Quantities assume bottom 2 inches of aggregate is not salvageable.



Milling Pavement Surface (2" Depth)

Removal of Pavement (Project Left)

Removal of Pavement (Project Right)

Saw Cut

Removal of Curb & Gutter

Project Separation (Project Left and Project Right)

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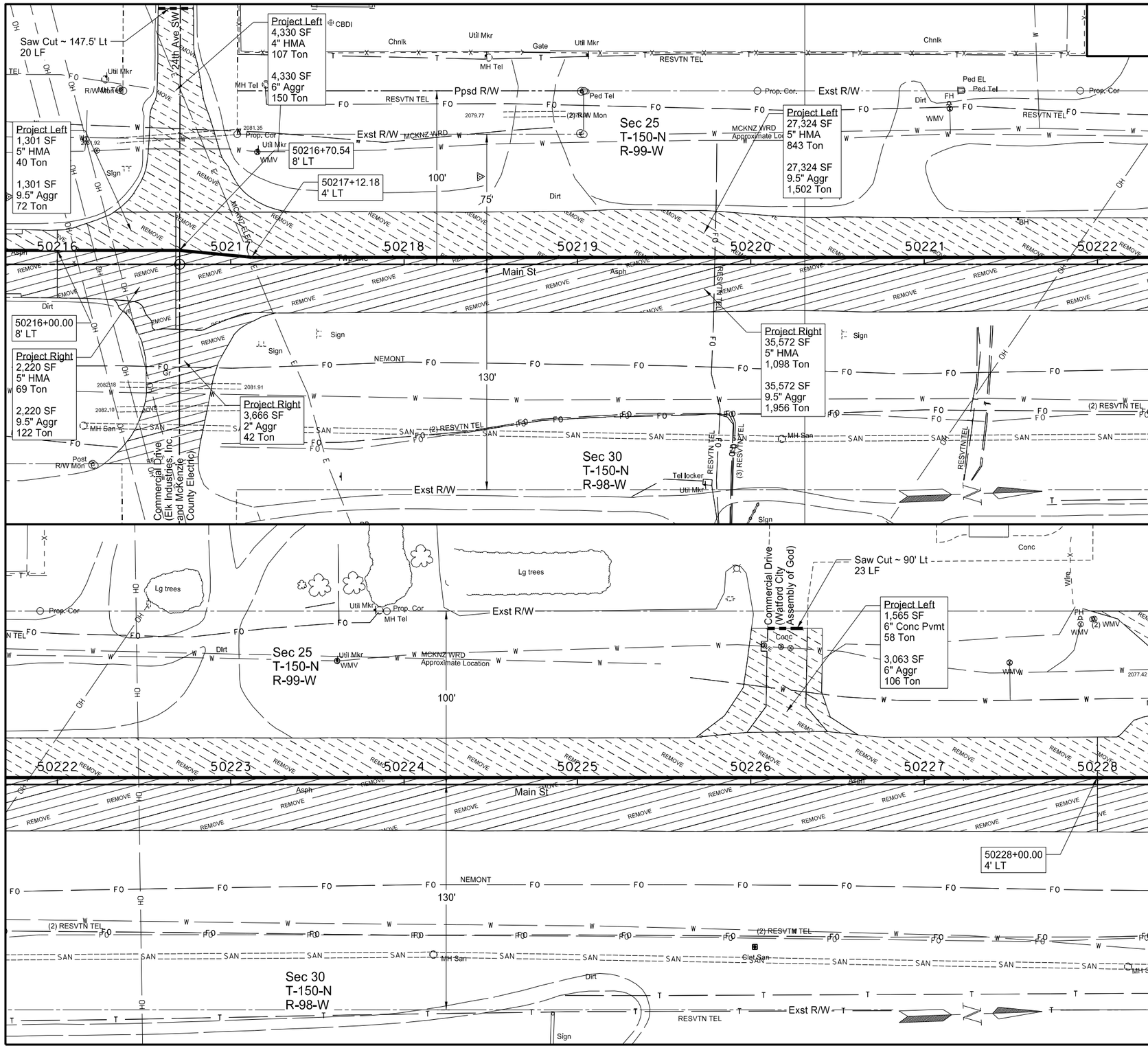
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Removals

Main St (PRBN85)
Sta 50204+00 to 50216+00

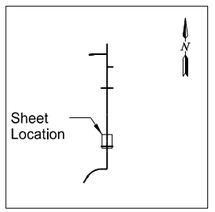
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	40	3



202 0136 REMOVAL OF PAVEMENT

Project Left Mainline - Sta 50216+00.00 to 50216+68.35	112	TON
Project Left Mainline - Sta 50216+68.35 to 50228+00.00	2,345	TON
Project Left Approach - Sta 50216+68.00 Lt	257	TON
Project Left Approach - Sta 50226+21.23 Lt	164	TON
Project Right Mainline - Sta 50216+00.00 to 50216+68.35	191	TON
Project Right Mainline - Sta 50216+68.35 to 50228+00.00	3,054	TON
Project Right Approach - Sta 50216+68.00 Rt	42	TON
TOTAL	6,165	TON

Notes:
1. Concrete approaches are assumed to have 6" of concrete on 8" of aggregate base.
2. Apshalt approaches are assumed to have 4" of asphalt on 8" of aggregate base.
3. Gravel approaches are assumed to have 4" of surface aggregate.
4. Quantities assume bottom 2 inches of aggregate is not salvageable.



Milling Pavement Surface (2" Depth)

Removal of Pavement (Project Left)

Removal of Pavement (Project Right)

Saw Cut

Removal of Curb & Gutter

Project Separation (Project Left and Project Right)

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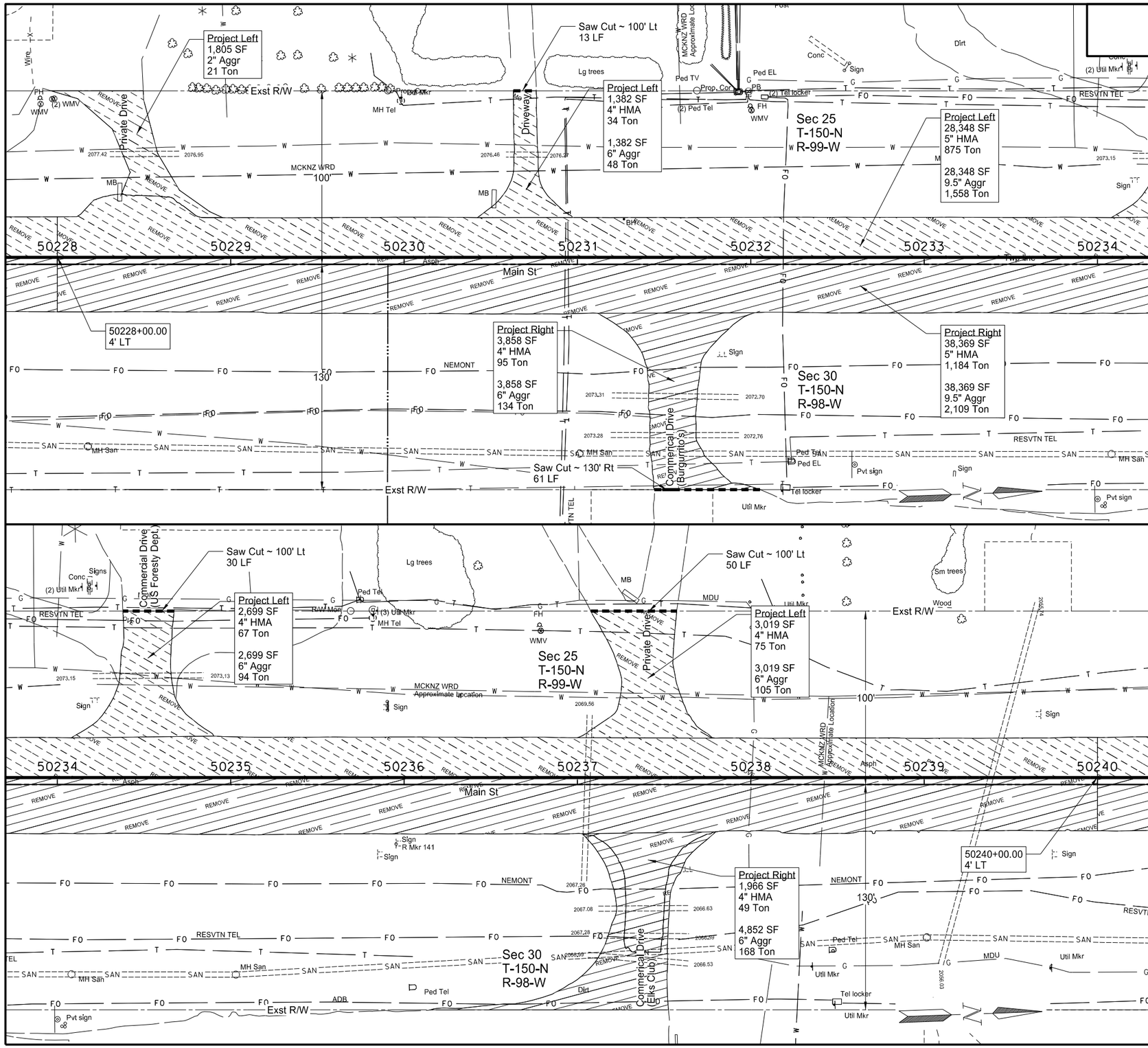
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Removals

Main St (PRBN85)
Sta 50216+00 to 50228+00

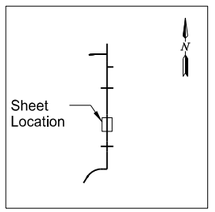
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	40	4



202 0136 REMOVAL OF PAVEMENT

Project Left Mainline - Sta 50228+00.00 to 50240+00.00	2,433	TON
Project Left Approach - Sta 50228+58.00 Lt	21	TON
Project Left Approach - Sta 50230+69.69 Lt	82	TON
Project Left Approach - Sta 50234+49.03 Lt	161	TON
Project Left Approach - Sta 50237+40.06 Lt	180	TON
Project Right Mainline - Sta 50228+00.00 to 50240+00.00	3,293	TON
Project Right Approach - Sta 50231+57.00 Rt	229	TON
Project Right Approach - Sta 50237+41.15 Rt	217	TON
TOTAL	6,616	TON

Notes:
1. Concrete approaches are assumed to have 6" of concrete on 8" of aggregate base.
2. Apshalt approaches are assumed to have 4" of asphalt on 8" of aggregate base.
3. Gravel approaches are assumed to have 4" of surface aggregate.
4. Quantities assume bottom 2 inches of aggregate is not salvageable.



Milling Pavement Surface (2" Depth)

Removal of Pavement (Project Left)

Removal of Pavement (Project Right)

Saw Cut

Removal of Curb & Gutter

Project Separation (Project Left and Project Right)

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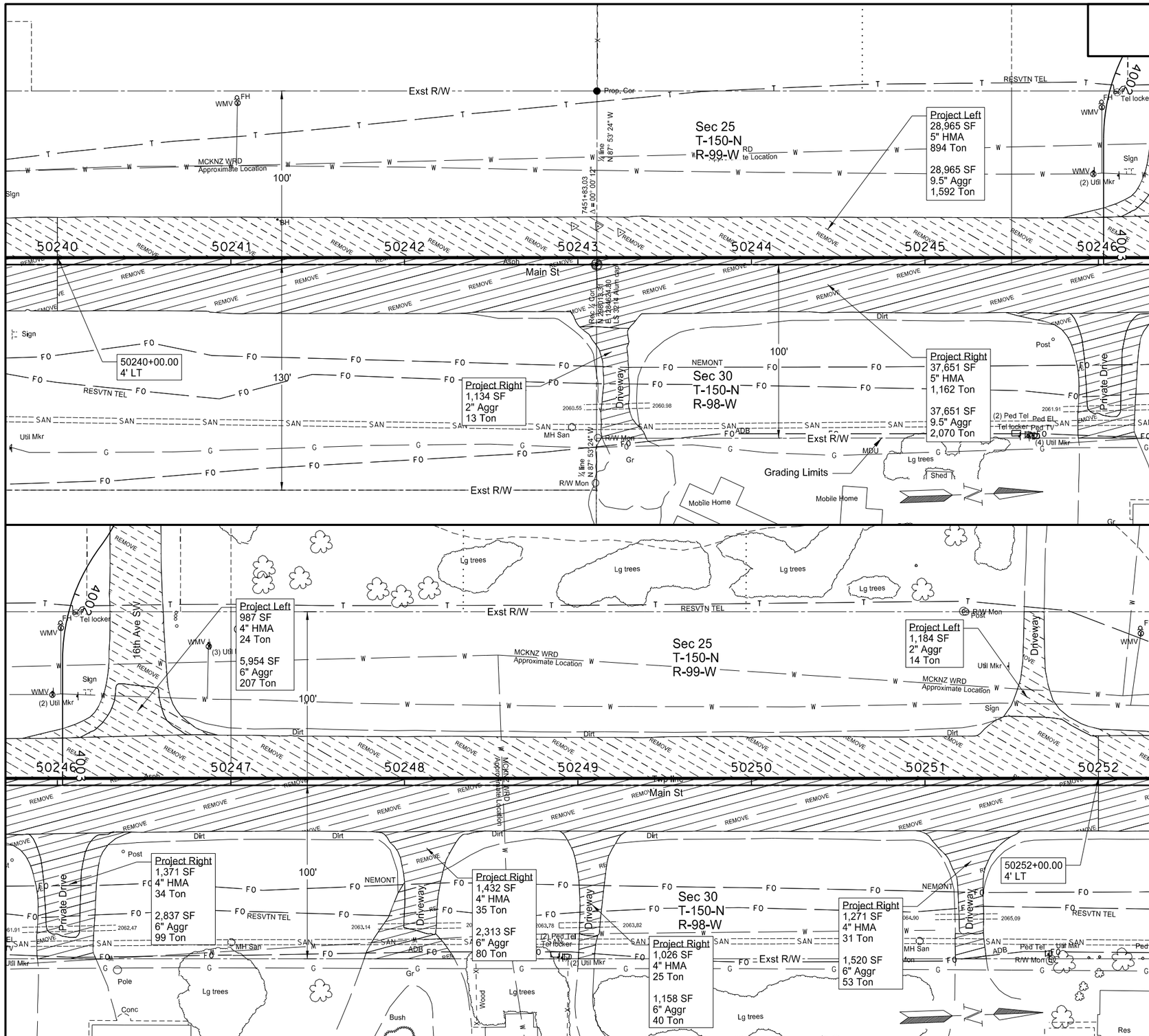
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Removals

Main St (PRBN85)
Sta 50228+00 to 50240+00

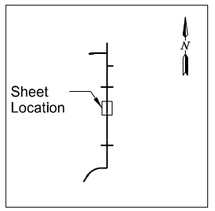
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	40	5



202 0136 REMOVAL OF PAVEMENT

Project Left Mainline - Sta 50240+00.00 to 50252+00.00	2,486	TON
Project Left Approach - Sta 50246+44.09 Lt	231	TON
Project Left Approach - Sta 50251+64.05 Lt	14	TON
Project Right Mainline - Sta 50240+00.00 to 50252+00.00	3,232	TON
Project Right Approach - Sta 50243+16.66 Rt	13	TON
Project Right Approach - Sta 50246+07.08 Rt	133	TON
Project Right Approach - Sta 50248+15.15 Rt	115	TON
Project Right Approach - Sta 50249+08.67 Rt	65	TON
Project Right Approach - Sta 50251+24.63 Rt	84	TON
TOTAL	6,373	TON

Notes:
1. Concrete approaches are assumed to have 6" of concrete on 8" of aggregate base.
2. Apshalt approaches are assumed to have 4" of asphalt on 8" of aggregate base.
3. Gravel approaches are assumed to have 4" of surface aggregate.
4. Quantities assume bottom 2 inches of aggregate is not salvageable.



Milling Pavement Surface (2" Depth)

Removal of Pavement (Project Left)

Removal of Pavement (Project Right)

Saw Cut

Removal of Curb & Gutter

Project Separation (Project Left and Project Right)

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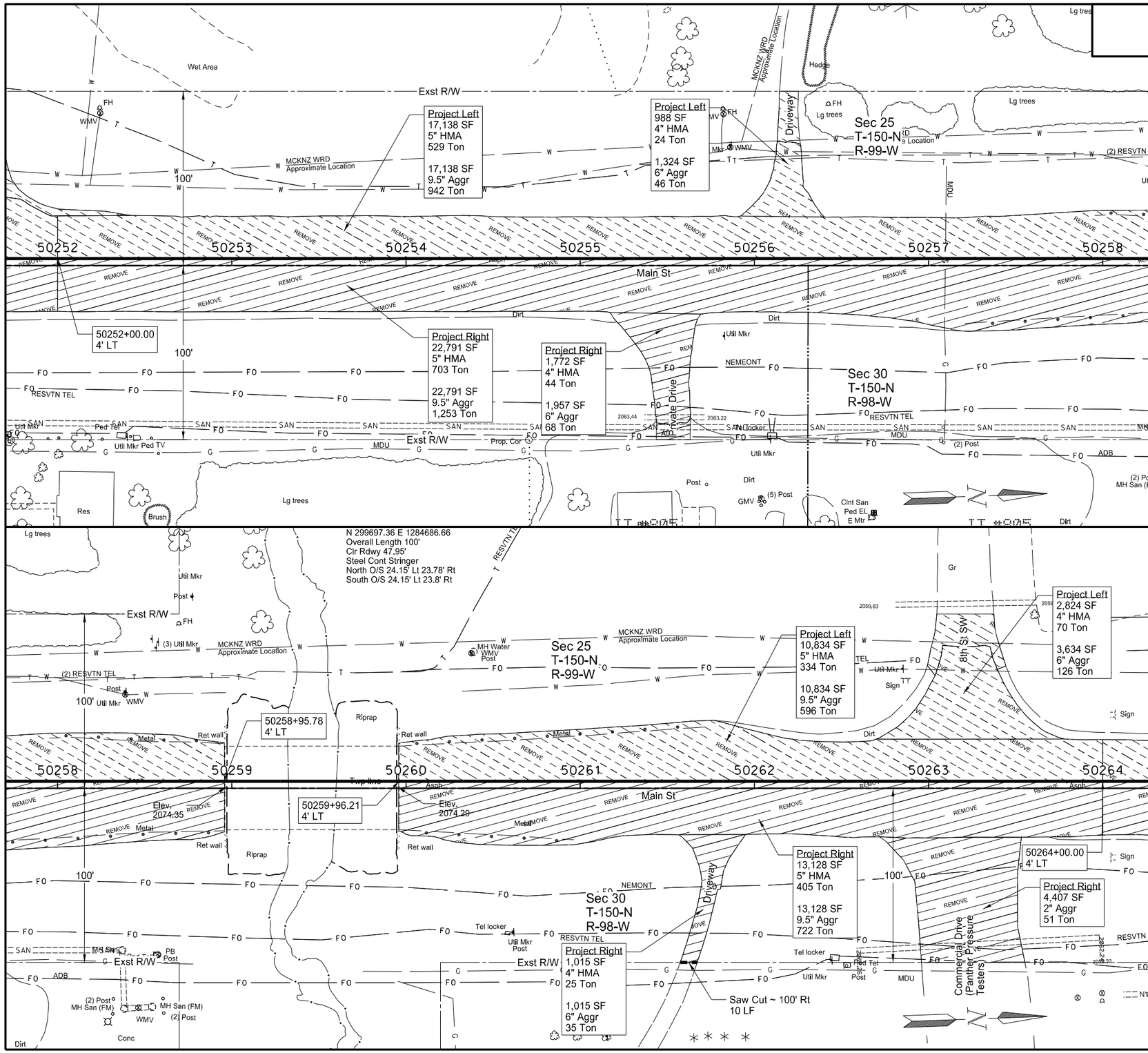
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Removals

Main St (PRBN85)
Sta 50240+00 to 50252+00

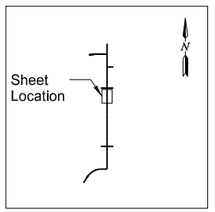
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	40	6



202 0136 REMOVAL OF PAVEMENT

Project Left Mainline - Sta 50252+00.00 to 50258+95.78	1,471	TON
Project Left Mainline - Sta 50259+95.78 to 50264+00.00	930	TON
Project Left Approach - Sta 50256+16.16 Lt	70	TON
Project Left Approach - Sta 50263+23.08 Lt	196	TON
Project Right Mainline - Sta 50252+00.00 to 50258+95.78	1,956	TON
Project Right Mainline - Sta 50259+95.78 to 50264+00.00	1,127	TON
Project Right Approach - Sta 50255+43.11 Rt	112	TON
Project Right Approach - Sta 50261+75.74 Rt	60	TON
Project Right Approach - Sta 50263+19.46 Rt	51	TON
TOTAL	5,973	TON

Notes:
1. Concrete approaches are assumed to have 6" of concrete on 8" of aggregate base.
2. Apshalt approaches are assumed to have 4" of asphalt on 8" of aggregate base.
3. Gravel approaches are assumed to have 4" of surface aggregate.
4. Quantities assume bottom 2 inches of aggregate is not salvageable.



Milling Pavement Surface (2" Depth)

Removal of Pavement (Project Left)

Removal of Pavement (Project Right)

Saw Cut

Removal of Curb & Gutter

Project Separation (Project Left and Project Right)

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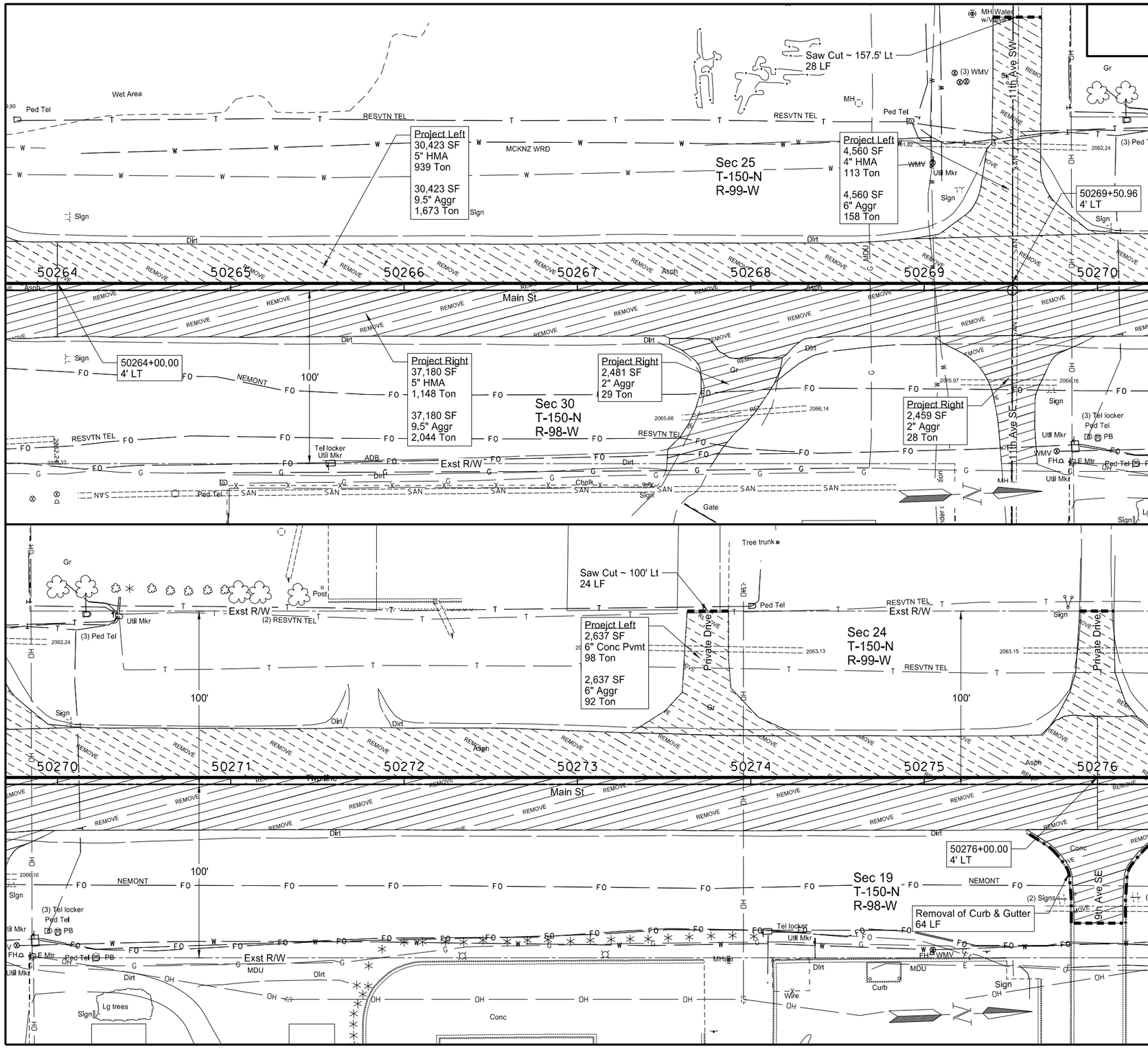
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Removals

Main St (PRBN85)
Sta 50252+00 to 50264+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	40	7



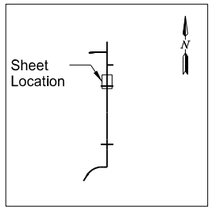
202 0130 REMOVAL OF CURB & GUTTER

Sta 50275+58.99 ~ 28' Rt to Sta 50275+84.86 ~ 80' Rt	64	LF

202 0136 REMOVAL OF PAVEMENT

Project Left Mainline - Sta 50264+00.00 to 50276+00.00	2,612	TON
Project Left Approach - Sta 50269+54.21 Lt	271	TON
Project Left Approach - Sta 50273+75.24 Lt	190	TON
Project Right Mainline - Sta 50264+00.00 to 50276+00.00	3,192	TON
Project Right Approach - Sta 50267+91.16 Rt	29	TON
Project Right Approach - Sta 50269+55.02 Rt	28	TON
TOTAL	6,322	TON

Notes:
1. Concrete approaches are assumed to have 6" of concrete on 8" of aggregate base.
2. Apshalt approaches are assumed to have 4" of asphalt on 8" of aggregate base.
3. Gravel approaches are assumed to have 4" of surface aggregate.
4. Quantities assume bottom 2 inches of aggregate is not salvageable.



Milling Pavement Surface (2" Depth)

Removal of Pavement (Project Left)

Removal of Pavement (Project Right)

Saw Cut

Removal of Curb & Gutter

Project Separation (Project Left and Project Right)

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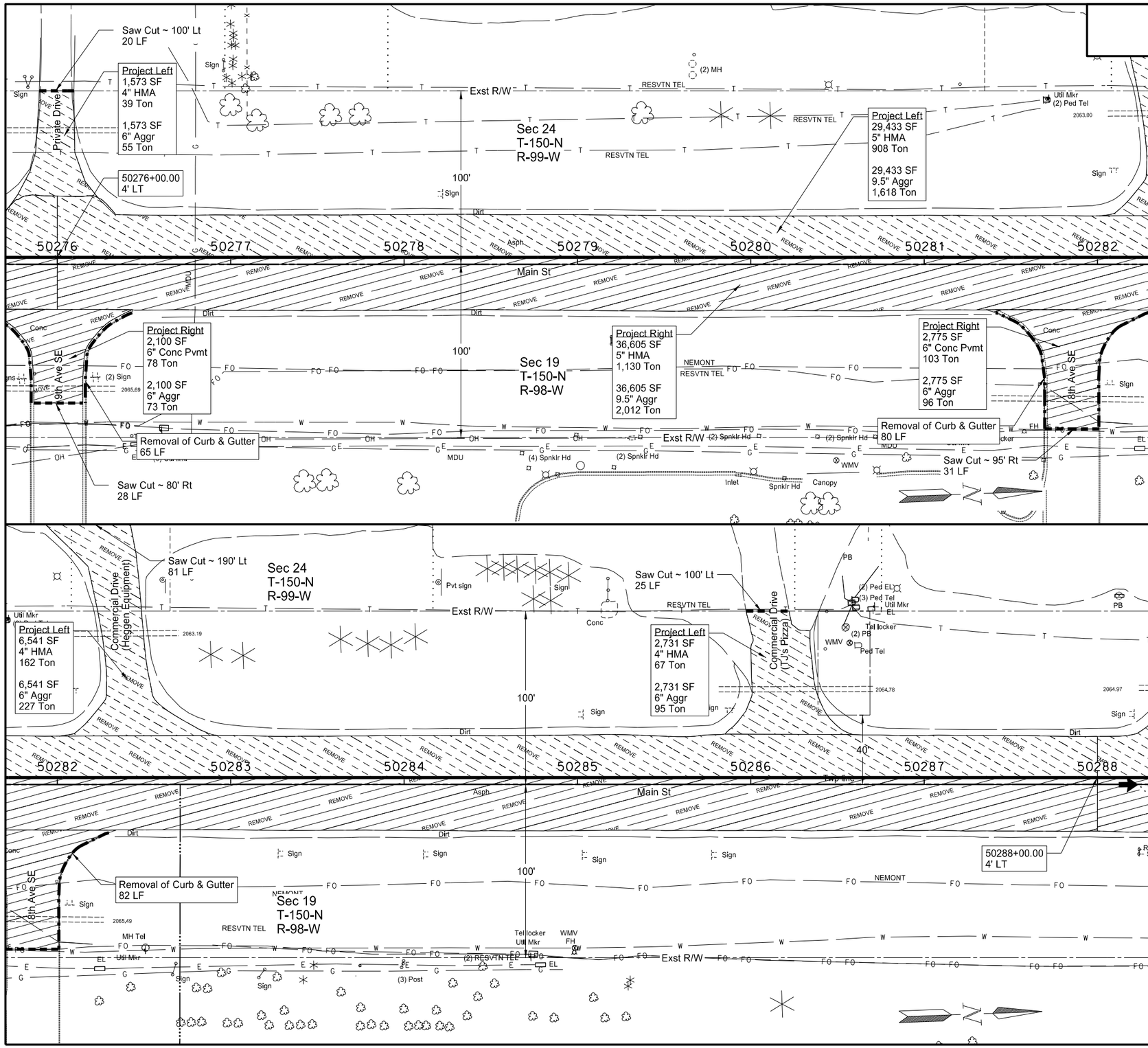
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Removals

Main St (PRBN85)
Sta 50264+00 to 50276+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	40	8



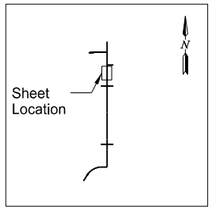
202 0130 REMOVAL OF CURB & GUTTER

Sta 50276+16.16 ~ 80' Rt to Sta 50276+43.07 ~ 28' Rt	65	LF
Sta 50281+41.29 ~ 28' Rt to Sta 50281+69.52 ~ 95' Rt	80	LF
Sta 50282+00.86 ~ 95' Rt to Sta 50282+29.70 ~ 28' Rt	82	LF
TOTAL	227	LF

202 0136 REMOVAL OF PAVEMENT

Project Left Mainline - Sta 50276+00.00 to 50288+00.00	2,526	TON
Project Left Approach - Sta 50276+01.38 Lt	94	TON
Project Left Approach - Sta 50282+47.95 Lt	389	TON
Project Left Approach - Sta 50286+21.92 Lt	162	TON
Project Right Mainline - Sta 50276+00.00 to 50288+00.00	3,142	TON
Project Right Approach - Sta 50276+01.38 Rt	151	TON
Project Right Approach - Sta 50281+85.14 Rt	199	TON
TOTAL	6,663	TON

Notes:
1. Concrete approaches are assumed to have 6" of concrete on 8" of aggregate base.
2. Apshalt approaches are assumed to have 4" of asphalt on 8" of aggregate base.
3. Gravel approaches are assumed to have 4" of surface aggregate.
4. Quantities assume bottom 2 inches of aggregate is not salvageable.



Milling Pavement Surface (2" Depth)

Removal of Pavement (Project Left)

Removal of Pavement (Project Right)

Saw Cut

Removal of Curb & Gutter

Project Separation (Project Left and Project Right)

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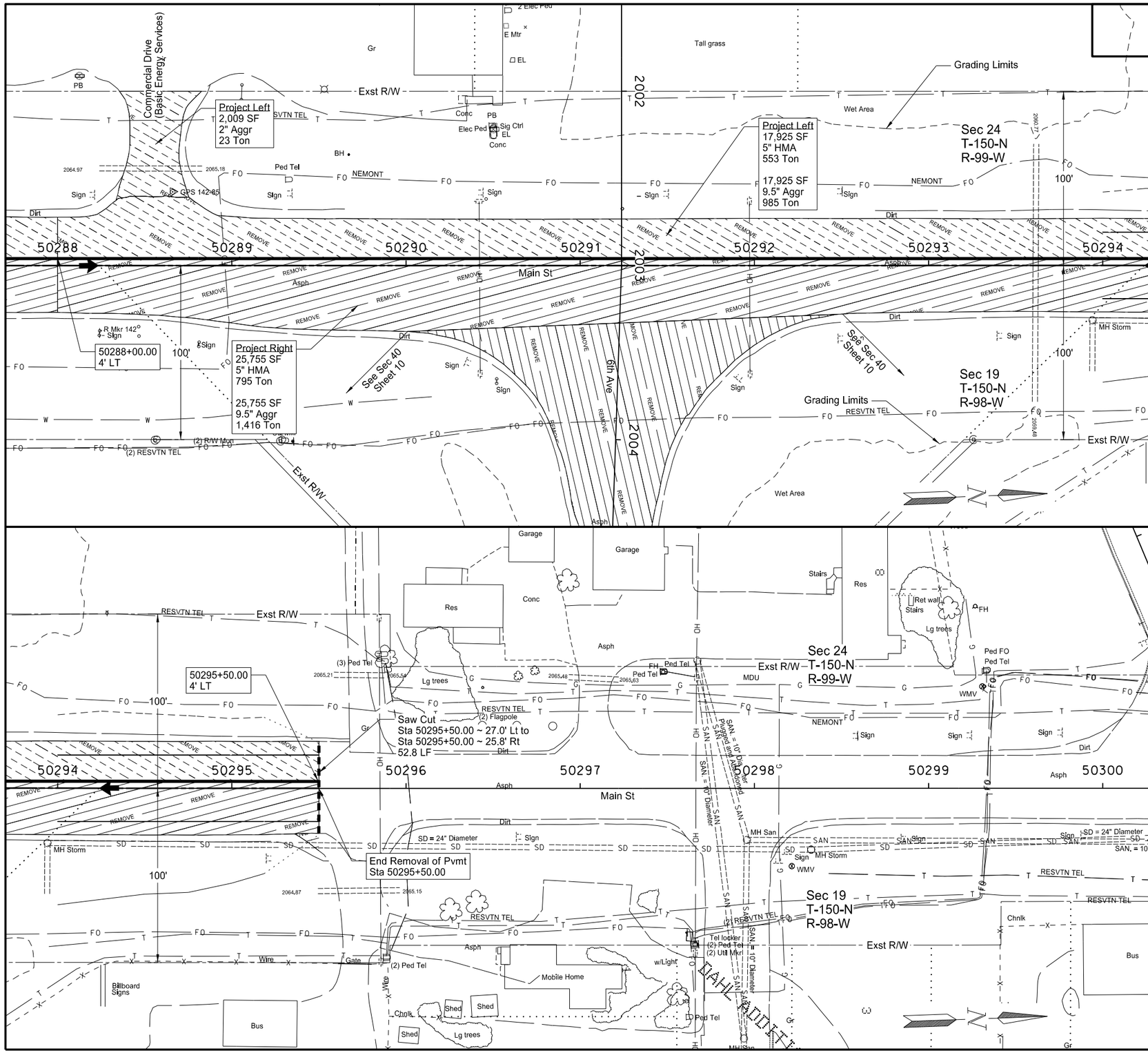
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Removals

Main St (PRBN85)
Sta 50276+00 to 50288+00

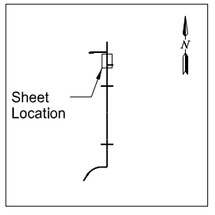
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	40	9



202 0136 REMOVAL OF PAVEMENT

Project Left Mainline - Sta 50288+00.00 to 50295+50.00	1,538	TON
Project Left Approach - Sta 50288+54.04 Lt	23	TON
Project Right Mainline - Sta 50288+00.00 to 50295+50.00	2,211	TON
TOTAL	3,772	TON

Notes:
1. Concrete approaches are assumed to have 6" of concrete on 8" of aggregate base.
2. Apshalt approaches are assumed to have 4" of asphalt on 8" of aggregate base.
3. Gravel approaches are assumed to have 4" of surface aggregate.
4. Quantities assume bottom 2 inches of aggregate is not salvageable.



Milling Pavement Surface (2" Depth)

Removal of Pavement (Project Left)

Removal of Pavement (Project Right)

Saw Cut

Removal of Curb & Gutter

Project Separation (Project Left and Project Right)

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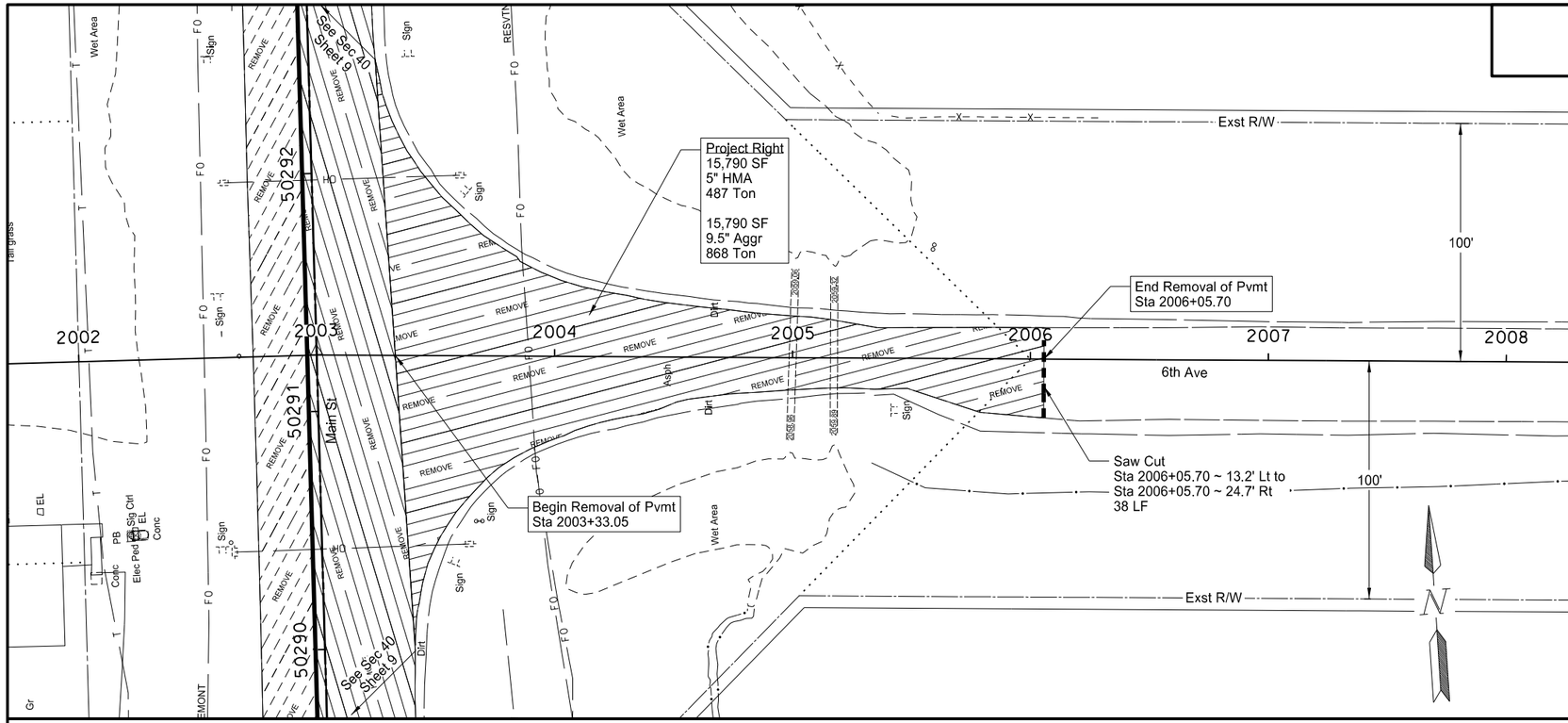
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Removals

Main St (PRBN85)
Sta 50288+00 to 50295+50.00

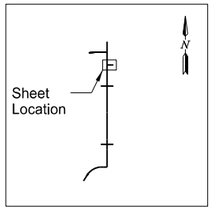
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	40	10



202 0136 REMOVAL OF PAVEMENT

Project Right Mainline - Sta 2003+33.05 to Sta 2006+05.70 1,355 TON

Notes:
1. Concrete approaches are assumed to have 6" of concrete on 8" of aggregate base.
2. Apshalt approaches are assumed to have 4" of asphalt on 8" of aggregate base.
3. Gravel approaches are assumed to have 4" of surface aggregate.
4. Quantities assume bottom 2 inches of aggregate is not salvageable.



Milling Pavement Surface (2" Depth)

Removal of Pavement (Project Left)

Removal of Pavement (Project Right)

Saw Cut

Removal of Curb & Gutter

Project Separation (Project Left and Project Right)

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Removals

6th Ave (PRTR23)
Sta 2003+33.05 to 2006+05.70

BEGIN STATION	BEGIN OFFSET	END STATION	END OFFSET	Existing Pipe	Proposed Pipe Size	Drainage Area (AC)	25-Year Data				100-Year Data	
							Design Discharge (CFS)	Design Headwater (FT)	Design Velocity (FPS)	Design Stage (NAVD 88)	Discharge (CFS)	Stage (NAVD 88)
50201+75.0	62.0' LT	50201+75.0	52.8' RT	48" x 72'RCP	24"	5.7	9.0	1.59	5.6	2094.10	12.3	2094.46
50236+90.0	54.9' LT	50236+90.0	57.4' RT	36" x 96'RCP	36"	19.6	29.5	2.81	6.9	2073.78	40.2	2074.60
50239+08.8	105.2' RT	50239+64.2	101.5' LT	36" x 216'RCP	42"	52.0	44.8	3.59	7.5	2059.59	60.5	2060.42
50293+55.0	69.9' LT	50293+55.0	78.1' RT	48" x 148'CSP	42"	434.8	134.4	4.28	9.8	2065.03	217.3	2068.12
50293+68.0	69.9' LT	50293+68.0	78.1' RT		42"							
2005+00.0	65.3' LT	2005+00.0	52.7' RT	36" x 72'CSP	36"	6.4	9.6	0.89	4.8	2060.89	13.1	2061.04
2005+12.0	65.3' LT	2005+12.0	52.7' RT	36" x 66'CSP	36"							

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Culvert Hydraulic Data

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	50	2

INLET NO.	1
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50201+75 ~ 21' LT
GRATE ELEV	2098.16
BASE ELEV.	2091.95
INVERT ELEV.	2092.20
"H" DIST.	5.5 FT
24 IN CONDUIT E	2092.20
24 IN CONDUIT W	2092.20

INLET NO.	2
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50201+75 ~ 33' RT
GRATE ELEV	2097.91
BASE ELEV.	2091.75
INVERT ELEV.	2092.00
"H" DIST.	5.5 FT
24 IN CONDUIT E	2092.00
24 IN CONDUIT W	2092.00

INLET NO.	3
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50209+50 ~ 21' LT
GRATE ELEV	2093.53
BASE ELEV.	2088.30
INVERT ELEV.	2088.60
"H" DIST.	4.5 FT
18 IN CONDUIT W	2088.60

INLET NO.	4
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50209+50 ~ 21' RT
GRATE ELEV	2093.53
BASE ELEV.	2088.80
INVERT ELEV.	2089.35
"H" DIST.	4.0 FT
18 IN CONDUIT E	2089.35

INLET NO.	5
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50216+05 ~ 21' LT
GRATE ELEV	2089.74
BASE ELEV.	2082.58
INVERT ELEV.	2082.79
"H" DIST.	6.0 FT
18 IN CONDUIT W	2082.79

INLET NO.	6
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50216+05 ~ 21' RT
GRATE ELEV	2089.74
BASE ELEV.	2085.08
INVERT ELEV.	2085.29
"H" DIST.	4.0 FT
18 IN CONDUIT E	2085.29

INLET NO.	7
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50221+50 ~ 21' LT
GRATE ELEV	2086.33
BASE ELEV.	2080.10
INVERT ELEV.	2080.40
"H" DIST.	5.5 FT
18 IN CONDUIT W	2080.40

INLET NO.	8
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50221+50 ~ 21' RT
GRATE ELEV	2086.33
BASE ELEV.	2081.65
INVERT ELEV.	2081.90
"H" DIST.	4.0 FT
18 IN CONDUIT E	2081.90

INLET NO.	9
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50225+70 ~ 21' LT
GRATE ELEV	2083.71
BASE ELEV.	2079.05
INVERT ELEV.	2079.26
"H" DIST.	4.0 FT
18 IN CONDUIT W	2079.26

INLET NO.	10
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50225+70 ~ 21' RT
GRATE ELEV	2083.71
BASE ELEV.	2078.05
INVERT ELEV.	2078.26
"H" DIST.	5.0 FT
18 IN CONDUIT E	2078.26

INLET NO.	11
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50227+90 ~ 21' LT
GRATE ELEV	2082.33
BASE ELEV.	2077.63
INVERT ELEV.	2078.88
"H" DIST.	4.0 FT
18 IN CONDUIT W	2078.88

INLET NO.	12
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50231+00 ~ 33' RT
GRATE ELEV	2079.90
BASE ELEV.	2074.24
INVERT ELEV.	2074.45
"H" DIST.	5.0 FT
18 IN CONDUIT E	2074.45

INLET NO.	13
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50233+95 ~ 21' LT
GRATE ELEV	2077.65
BASE ELEV.	2072.95
INVERT ELEV.	2074.20
"H" DIST.	4.0 FT
18 IN CONDUIT W	2074.20

INLET NO.	14
TYPE	INLET SPECIAL-TYPE 2 60IN
GRATE STYLE	L
STA.	50236+90 ~ 21' LT
GRATE ELEV	2075.13
BASE ELEV.	2069.25
INVERT ELEV.	2069.58
"H" DIST.	4.5 FT
36 IN CONDUIT E	2069.58
36 IN CONDUIT W	2069.68

INLET NO.	15
TYPE	INLET SPECIAL-TYPE 2 60IN
GRATE STYLE	L
STA.	50236+90 ~ 21' RT
GRATE ELEV	2075.12
BASE ELEV.	2067.85
INVERT ELEV.	2068.18
"H" DIST.	5.9 FT
36 IN CONDUIT E	2068.18
36 IN CONDUIT W	2068.28

INLET NO.	16
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50242+00 ~ 21' RT
GRATE ELEV	2070.99
BASE ELEV.	2066.29
INVERT ELEV.	2066.50
"H" DIST.	4.0 FT
18 IN CONDUIT N	2066.50

INLET NO.	17
TYPE	INLET - TYPE 2 - DOUBLE
GRATE STYLE	L
STA.	50242+14 ~ 21' LT
GRATE ELEV	2070.98
BASE ELEV.	2064.32
INVERT ELEV.	2064.53
"H" DIST.	6.0 FT
18 IN CONDUIT W	2064.53

INLET NO.	18
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50242+14 ~ 21' RT
GRATE ELEV	2070.98
BASE ELEV.	2061.32
INVERT ELEV.	2061.53
"H" DIST.	8.5 FT
18 IN CONDUIT E	2061.53
18 IN CONDUIT S	2066.35

INLET NO.	19
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50250+33 ~ 21' LT
GRATE ELEV	2071.51
BASE ELEV.	2066.28
INVERT ELEV.	2067.88
"H" DIST.	4.5 FT
18 IN CONDUIT W	2067.88

INLET NO.	20
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50250+33 ~ 21' RT
GRATE ELEV	2071.51
BASE ELEV.	2065.35
INVERT ELEV.	2065.56
"H" DIST.	5.5 FT
18 IN CONDUIT E	2065.56

INLET NO.	21
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50255+02 ~ 21' RT
GRATE ELEV	2071.93
BASE ELEV.	2064.27
INVERT ELEV.	2064.48
"H" DIST.	6.5 FT
18 IN CONDUIT E	2064.48

INLET NO.	22
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50255+54 ~ 21' LT
GRATE ELEV	2071.78
BASE ELEV.	2067.12
INVERT ELEV.	2067.33
"H" DIST.	4.0 FT
18 IN CONDUIT W	2067.33

INLET NO.	23
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50256+04 ~ 21' RT
GRATE ELEV	2071.92
BASE ELEV.	2061.96
INVERT ELEV.	2062.17
"H" DIST.	8.8 FT
18 IN CONDUIT E	2062.17

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Inlet and Manhole Summary

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	50	3

INLET NO.	24
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50262+60 ~ 21' LT
GRATE ELEV	2072.84
BASE ELEV.	2060.98
INVERT ELEV.	2061.19
"H" DIST.	10.7 FT
18 IN CONDUIT W	2061.19

INLET NO.	25
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50262+60 ~ 21' RT
GRATE ELEV	2072.84
BASE ELEV.	2062.68
INVERT ELEV.	2062.89
"H" DIST.	9.0 FT
18 IN CONDUIT E	2062.89

INLET NO.	26
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50264+04 ~ 33' LT
GRATE ELEV	2072.04
BASE ELEV.	2061.88
INVERT ELEV.	2062.09
"H" DIST.	9.0 FT
18 IN CONDUIT W	2062.09

INLET NO.	27
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50264+04 ~ 21' RT
GRATE ELEV	2072.29
BASE ELEV.	2063.63
INVERT ELEV.	2063.84
"H" DIST.	7.5 FT
18 IN CONDUIT E	2063.84

INLET NO.	28
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50268+75 ~ 21' LT
GRATE ELEV	2072.54
BASE ELEV.	2061.48
INVERT ELEV.	2061.69
"H" DIST.	9.9 FT
18 IN CONDUIT W	2061.69

INLET NO.	29
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50268+75 ~ 33' RT
GRATE ELEV	2072.28
BASE ELEV.	2064.52
INVERT ELEV.	2064.73
"H" DIST.	6.6 FT
18 IN CONDUIT E	2064.73

INLET NO.	30
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50271+18 ~ 33' LT
GRATE ELEV	2070.53
BASE ELEV.	2064.37
INVERT ELEV.	2064.58
"H" DIST.	5.5 FT
18 IN CONDUIT W	2064.58

INLET NO.	31
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50271+18 ~ 21' RT
GRATE ELEV	2070.79
BASE ELEV.	2065.10
INVERT ELEV.	2065.38
"H" DIST.	5.0 FT
18 IN CONDUIT E	2065.38

MH NO.	32	72 IN
STA.	50271+30 ~ 65' LT	
RIM ELEV	2067.54	
BASE ELEV.	2061.12	
INVERT ELEV.	2061.41	
RISER (72IN)	4.7 FT	
30 IN CONDUIT S	2061.41	
30 IN CONDUIT N	2061.41	
18 IN CONDUIT W	2061.70	
18 IN CONDUIT E	2062.20	

MH NO.	33	84 IN
STA.	50272+35 ~ 70' LT	
RIM ELEV	2067.07	
BASE ELEV.	2061.32	
INVERT ELEV.	2061.61	
RISER (84IN)	4.0 FT	
30 IN CONDUIT S	2061.61	
30 IN CONDUIT N	2061.61	
24 IN CONDUIT W	2062.20	

INLET NO.	34
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50274+33 ~ 21' LT
GRATE ELEV	2071.74
BASE ELEV.	2062.48
INVERT ELEV.	2062.69
"H" DIST.	8.1 FT
18 IN CONDUIT W	2062.69

INLET NO.	35
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50278+30 ~ 21' LT
GRATE ELEV	2070.86
BASE ELEV.	2063.20
INVERT ELEV.	2063.41
"H" DIST.	6.5 FT
18 IN CONDUIT W	2063.41

INLET NO.	36
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50278+30 ~ 21' RT
GRATE ELEV	2070.86
BASE ELEV.	2065.70
INVERT ELEV.	2065.91
"H" DIST.	4.5 FT
18 IN CONDUIT E	2065.91

INLET NO.	37
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50285+50 ~ 21' LT
GRATE ELEV	2071.23
BASE ELEV.	2065.03
INVERT ELEV.	2065.24
"H" DIST.	5.5 FT
18 IN CONDUIT W	2065.24

INLET NO.	38
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50285+50 ~ 21' RT
GRATE ELEV	2071.23
BASE ELEV.	2063.39
INVERT ELEV.	2063.60
"H" DIST.	6.6 FT
18 IN CONDUIT E	2063.60

INLET NO.	39
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50287+87 ~ 21' LT
GRATE ELEV	2070.47
BASE ELEV.	2065.81
INVERT ELEV.	2066.02
"H" DIST.	4.0 FT
18 IN CONDUIT W	2066.02

INLET NO.	40
TYPE	INLET SPECIAL-TYPE 2 48IN
GRATE STYLE	L
STA.	50287+87 ~ 33' RT
GRATE ELEV	2070.22
BASE ELEV.	2061.56
INVERT ELEV.	2061.77
"H" DIST.	7.5 FT
18 IN CONDUIT E	2061.77

INLET NO.	41
TYPE	INLET - TYPE 2
GRATE STYLE	L
STA.	50289+15 ~ 21' LT
GRATE ELEV	2071.05
BASE ELEV.	2065.39
INVERT ELEV.	2065.60
"H" DIST.	5.0 FT
18 IN CONDUIT W	2065.60

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Inlet and Manhole Summary

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	51	1

BEGIN STATION	BEGIN OFFSET	END STATION	END OFFSET	PIPE INSTALLATION PAY ITEM (BID ITEM) (IN)		(LF)	ALLOWABLE MATERIAL	REQUIRED DIAMETER (IN)	STEEL PIPE COATINGS (TYPE)	STEEL PIPE CORRUGATIONS OR SPIRAL RIBS	MINUMUM THICKNESS (IN)	TYPE R1 FABRIC (SY)	END SECTION BEGIN (EA)	END SECTION END (EA)	APPLICABLE BACKFILL DETAIL
1		50201+75.0	62.0' LT	24	Pipe Conduit - Storm Drain	42	Reinforced Concrete Pipe - Class III (Barrel Length = 40 LF)	24						FES	D-714-27
							Corrugated Steel Pipe	24	P	2	0.064				
							Spiral Rib Steel Pipe	24	P	3/4, 1	0.064				
							High-Density Polyethylene	24							
							Polypropylene Pipe (AASHTO M330, Type S)	24							
1		2		24	Pipe Conduit - Storm Drain	52	Reinforced Concrete Pipe - Class III (Barrel Length = 52 LF)	24							D-714-27
							Corrugated Steel Pipe	24	P	2	0.064				
							Spiral Rib Steel Pipe	24	P	3/4, 1	0.064				
2		50201+75.0	52.8' RT	24	Pipe Conduit - Storm Drain	21	Reinforced Concrete Pipe - Class III (Barrel Length = 20 LF)	24						FES	D-714-27
							Corrugated Steel Pipe	24	P	2	0.064				
							Spiral Rib Steel Pipe	24	P	3/4, 1	0.064				
							High-Density Polyethylene	24							
							Polypropylene Pipe (AASHTO M330, Type S)	24							
3		50209+50.0	62.4' LT	18	Pipe Conduit - Storm Drain	42	Reinforced Concrete Pipe - Class III (Barrel Length = 40 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
4		50209+50.0	36.2' RT	18	Pipe Conduit - Storm Drain	16	Reinforced Concrete Pipe - Class III (Barrel Length = 14 LF)	18						TES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
5		50216+05.0	71.4' LT	18	Pipe Conduit - Storm Drain	51	Reinforced Concrete Pipe - Class III (Barrel Length = 50 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
6		50216+05.0	37.2' RT	18	Pipe Conduit - Storm Drain	17	Reinforced Concrete Pipe - Class III (Barrel Length = 16 LF)	18						TES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
7		50221+50.0	65.0' LT	18	Pipe Conduit - Storm Drain	45	Reinforced Concrete Pipe - Class III (Barrel Length = 44 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
8		50221+50.0	65.5' RT	18	Pipe Conduit - Storm Drain	46	Reinforced Concrete Pipe - Class III (Barrel Length = 44 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
9		50225+70.0	59.8' LT	18	Pipe Conduit - Storm Drain	40	Reinforced Concrete Pipe - Class III (Barrel Length = 38 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
10		50225+70.0	69.8' RT	18	Pipe Conduit - Storm Drain	50	Reinforced Concrete Pipe - Class III (Barrel Length = 48 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
11		50227+90.0	58.4' LT	18	Pipe Conduit - Storm Drain	38	Reinforced Concrete Pipe - Class III (Barrel Length = 36 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
12		50231+00.0	69.7' RT	18	Pipe Conduit - Storm Drain	38	Reinforced Concrete Pipe - Class III (Barrel Length = 36 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Allowable Pipe List

Storm Sewer

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	51	2

BEGIN STATION	BEGIN OFFSET	END STATION	END OFFSET	PIPE INSTALLATION PAY ITEM (BID ITEM) (IN)		(LF)	ALLOWABLE MATERIAL	REQUIRED DIAMETER (IN)	STEEL PIPE COATINGS (TYPE)	STEEL PIPE CORRUGATIONS OR SPIRAL RIBS	MINUMUM THICKNESS (IN)	TYPE R1 FABRIC (SY)	END SECTION BEGIN (EA)	END SECTION END (EA)	APPLICABLE BACKFILL DETAIL
13		50233+95.0	57.8' LT	18	Pipe Conduit - Storm Drain	38	Reinforced Concrete Pipe - Class III (Barrel Length = 36 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
50236+90.0	54.9' LT	14		36	Pipe Conduit - Storm Drain	35	Reinforced Concrete Pipe - Class III (Barrel Length = 34 LF)	36					FES		D-714-27
							Corrugated Steel Pipe	36	P	2	0.064				
							Spiral Rib Steel Pipe	36	P	3/4, 1	0.064				
							High-Density Polyethylene	36							
							Polypropylene Pipe (AASHTO M330, Type S)	36							
14		15		36	Pipe Conduit - Storm Drain	40	Reinforced Concrete Pipe - Class III (Barrel Length = 40 LF)	36							D-714-27
							Corrugated Steel Pipe	36	P	2	0.064				
							Spiral Rib Steel Pipe	36	P	3/4, 1	0.064				
15		50236+90.0	57.4' RT	36	Pipe Conduit - Storm Drain	37	Reinforced Concrete Pipe - Class III (Barrel Length = 36 LF) with 5 sets of Baffle Rings	36						FES	D-714-27
							Corrugated Steel Pipe	36	P	2	0.064				
16		18		18	Pipe Conduit - Storm Drain	14	Reinforced Concrete Pipe - Class III (Barrel Length = 13 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
17		50242+14.0	69.1' LT	18	Pipe Conduit - Storm Drain	49	Reinforced Concrete Pipe - Class III (Barrel Length = 48 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
18		50242+14.0	84.5' RT	18	Pipe Conduit - Storm Drain	64	Reinforced Concrete Pipe - Class III (Barrel Length = 62 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
19		50250+33.0	58.1' LT	18	Pipe Conduit - Storm Drain	38	Reinforced Concrete Pipe - Class III (Barrel Length = 36 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
20		50250+33.0	63.6' RT	18	Pipe Conduit - Storm Drain	44	Reinforced Concrete Pipe - Class III (Barrel Length = 42 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
21		50255+02.0	63.6' RT	18	Pipe Conduit - Storm Drain	44	Reinforced Concrete Pipe - Class III (Barrel Length = 42 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
22		50255+54.0	61.4' LT	18	Pipe Conduit - Storm Drain	41	Reinforced Concrete Pipe - Class III (Barrel Length = 40 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
23		50256+04.0	63.8' RT	18	Pipe Conduit - Storm Drain	44	Reinforced Concrete Pipe - Class III (Barrel Length = 42 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Allowable Pipe List

Storm Sewer

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	51	3

BEGIN STATION	BEGIN OFFSET	END STATION	END OFFSET	PIPE INSTALLATION PAY ITEM (BID ITEM) (IN)		(LF)	ALLOWABLE MATERIAL	REQUIRED DIAMETER (IN)	STEEL PIPE COATINGS (TYPE)	STEEL PIPE CORRUGATIONS OR SPIRAL RIBS	MINUMUM THICKNESS (IN)	TYPE R1 FABRIC (SY)	END SECTION BEGIN (EA)	END SECTION END (EA)	APPLICABLE BACKFILL DETAIL
24		50262+60.0	101.3' LT	18	Pipe Conduit - Storm Drain	81	Reinforced Concrete Pipe - Class III (Barrel Length = 80 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
25		50262+60.0	89.6' RT	18	Pipe Conduit - Storm Drain	70	Reinforced Concrete Pipe - Class III (Barrel Length = 69 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
26		50264+04.0	87.9' LT	18	Pipe Conduit - Storm Drain	56	Reinforced Concrete Pipe - Class III (Barrel Length = 54 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
27		50264+04.0	66.8' RT	18	Pipe Conduit - Storm Drain	47	Reinforced Concrete Pipe - Class III (Barrel Length = 46 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
28		50268+75.0	87.7' LT	18	Pipe Conduit - Storm Drain	68	Reinforced Concrete Pipe - Class III (Barrel Length = 66 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
29		50268+75.0	66.7' RT	18	Pipe Conduit - Storm Drain	35	Reinforced Concrete Pipe - Class III (Barrel Length = 34 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
50269+99.0	90.6' LT	32		30	Pipe Conduit - Storm Drain	232	Reinforced Concrete Pipe - Class III (Barrel Length = 232 LF)	30					FES		D-714-27
							Corrugated Steel Pipe	36	P	2	0.064				
							Spiral Rib Steel Pipe	30	P	3/4, 1	0.064				
30		32		18	Pipe Conduit - Storm Drain	35	Reinforced Concrete Pipe - Class III (Barrel Length = 32 LF)	18							D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
31		50271+18.0	55.6' RT	18	Pipe Conduit - Storm Drain	36	Reinforced Concrete Pipe - Class III (Barrel Length = 34 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
50271+30.0	84.0' LT	32		18	Pipe Conduit - Storm Drain	19	Reinforced Concrete Pipe - Class III (Barrel Length = 18 LF)	18					FES		D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
32		33		30	Pipe Conduit - Storm Drain	105	Reinforced Concrete Pipe - Class III (Barrel Length = 104 LF)	30							D-714-27
							Corrugated Steel Pipe	36	P	2	0.064				
							Spiral Rib Steel Pipe	30	P	3/4, 1	0.064				
							High-Density Polyethylene	30							
							Polypropylene Pipe (AASHTO M330, Type S)	30							
50272+25.0	92.1' LT	33		24	Pipe Conduit - Storm Drain	24	Reinforced Concrete Pipe - Class III (Barrel Length = 22 LF)	24					FES		D-714-27
							Corrugated Steel Pipe	24	P	2	0.064				
							Spiral Rib Steel Pipe	24	P	3/4, 1	0.064				
							High-Density Polyethylene	24							
							Polypropylene Pipe (AASHTO M330, Type S)	24							

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Allowable Pipe List

Storm Sewer

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	51	4

BEGIN STATION	BEGIN OFFSET	END STATION	END OFFSET	PIPE INSTALLATION PAY ITEM (BID ITEM) (IN)		(LF)	ALLOWABLE MATERIAL	REQUIRED DIAMETER (IN)	STEEL PIPE COATINGS (TYPE)	STEEL PIPE CORRUGATIONS OR SPIRAL RIBS	MINUMUM THICKNESS (IN)	TYPE R1 FABRIC (SY)	END SECTION BEGIN (EA)	END SECTION END (EA)	APPLICABLE BACKFILL DETAIL
33		50274+17.0	80.7' LT	30	Pipe Conduit - Storm Drain	182	Reinforced Concrete Pipe - Class III (Barrel Length = 182 LF)	30						FES	D-714-27
							Corrugated Steel Pipe	36	P	2	0.064				
							Spiral Rib Steel Pipe	30	P	3/4, 1	0.064				
34		50274+33.0	75.1' LT	18	Pipe Conduit - Storm Drain	55	Reinforced Concrete Pipe - Class III (Barrel Length = 54 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
35		50278+30.0	69.3' LT	18	Pipe Conduit - Storm Drain	49	Reinforced Concrete Pipe - Class III (Barrel Length = 48 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
36		50278+30.0	63.7' RT	18	Pipe Conduit - Storm Drain	44	Reinforced Concrete Pipe - Class III (Barrel Length = 42 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
37		50285+50.0	68.3' LT	18	Pipe Conduit - Storm Drain	48	Reinforced Concrete Pipe - Class III (Barrel Length = 46 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
38		50285+50.0	72.8' RT	18	Pipe Conduit - Storm Drain	53	Reinforced Concrete Pipe - Class III (Barrel Length = 52 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
39		50287+87.0	61.4' LT	18	Pipe Conduit - Storm Drain	41	Reinforced Concrete Pipe - Class III (Barrel Length = 40 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
40		50287+87.0	88.9' RT	18	Pipe Conduit - Storm Drain	57	Reinforced Concrete Pipe - Class III (Barrel Length = 56 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
41		50289+15.0	65.3' LT	18	Pipe Conduit - Storm Drain	45	Reinforced Concrete Pipe - Class III (Barrel Length = 44 LF)	18						FES	D-714-27
							Corrugated Steel Pipe	18	P	2	0.064				
							Spiral Rib Steel Pipe	18	P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Allowable Pipe List

Storm Sewer

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	51	5

BEGIN STATION	BEGIN OFFSET	END STATION	END OFFSET	PIPE INSTALLATION PAY ITEM (BID ITEM) (IN)	(BID ITEM)	(LF)	ALLOWABLE MATERIAL	REQUIRED DIAMETER (IN)	STEEL PIPE COATINGS (TYPE)	STEEL PIPE CORRUGATIONS OR SPIRAL RIBS	MINUMUM THICKNESS (IN)	TYPE R1 FABRIC (SY)	END SECTION BEGIN (EA)	END SECTION END (EA)	APPLICABLE BACKFILL DETAIL
50239+08.8	105.2' RT	50239+64.2	101.5' LT	42	Pipe Conduit	214	Reinforced Concrete Pipe - Class III (Barrel Length = 210 LF)	42				1664	FES	FES	D-714-25
							Corrugated Steel Pipe	42	P	2	0.064				
							Spiral Rib Steel Pipe	42	P	3/4, 1	0.064				
50293+55.0	69.9' LT	50293+55.0	78.1' RT	42	Pipe Conduit	148	Reinforced Concrete Pipe - Class III (Barrel Length = 144 LF)	42				1069	FES	FES	D-714-25M
							Corrugated Steel Pipe	42	P	2	0.064				
							Spiral Rib Steel Pipe	42	P	3/4, 1	0.064				
50293+68.0	69.9' LT	50293+68.0	78.1' RT	42	Pipe Conduit	148	Reinforced Concrete Pipe - Class III (Barrel Length = 144 LF)	42					FES	FES	D-714-25M
							Corrugated Steel Pipe	42	P	2	0.064				
							Spiral Rib Steel Pipe	42	P	3/4, 1	0.064				
2005+00.0	65.3' LT	2005+00.0	52.7' RT	36	Pipe Conduit	118	Reinforced Concrete Pipe - Class III (Barrel Length = 114 LF)	36				852	FES	FES	D-714-25M
							Corrugated Steel Pipe	36	P	2	0.064				
							Spiral Rib Steel Pipe	36	P	3/4, 1	0.064				
2005+12.0	65.3' LT	2005+12.0	52.7' RT	36	Pipe Conduit	118	Reinforced Concrete Pipe - Class III (Barrel Length = 114 LF)	36					FES	FES	D-714-25M
							Corrugated Steel Pipe	36	P	2	0.064				
							Spiral Rib Steel Pipe	36	P	3/4, 1	0.064				
											TOTAL	3,585			

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Allowable Pipe List

Storm Sewer

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	51	6

BEGIN STATION	BEGIN OFFSET	END STATION	END OFFSET	PIPE INSTALLATION PAY ITEM (BID ITEM) (IN)	PIPE INSTALLATION PAY ITEM (BID ITEM)	(LF)	ALLOWABLE MATERIAL	REQUIRED DIAMETER (IN)	STEEL PIPE COATINGS (TYPE)	STEEL PIPE CORRUGATIONS OR SPIRAL RIBS	MINUMUM THICKNESS (IN)	TYPE R1 FABRIC (SY)	END SECTION BEGIN (EA)	END SECTION END (EA)	APPLICABLE BACKFILL DETAIL
50216+27.3	80.0' LT	50217+09.3	80.0' LT	24	Pipe Conduit - Approach	82	Reinforced Concrete Pipe - Class III (Barrel Length = 78 LF)	24					FES	FES	D-203-8
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rip Steel Pipe	24	Z, A, P	3/4, 1	0.064				
50216+36.3	78.0' RT	50217+02.3	78.0' RT	48	Pipe Conduit - Approach	66	Reinforced Concrete Pipe - Class III (Barrel Length = 62 LF)	48					FES	FES	D-203-8
							Spiral Rip Steel Pipe	48	Z, A, P	3/4, 1	0.064				
50216+36.3	90.0' RT	50217+02.3	90.0' RT	48	Pipe Conduit - Approach	66	Reinforced Concrete Pipe - Class III (Barrel Length = 62 LF)	48					FES	FES	D-203-8
							Spiral Rib Steel Pipe	48	Z, A, P	3/4, 1	0.064				
50218+48.0	80.0' LT	50219+08.0	80.0' LT	18	Pipe Conduit - Approach	60	Reinforced Concrete Pipe - Class III (Barrel Length = 56 LF)	18					FES	FES	D-203-8
							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							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
50225+96.0	70.0' LT	50226+44.0	70.0' LT	30	Pipe Conduit - Approach	48	Reinforced Concrete Pipe - Class III (Barrel Length = 46 LF)	30					FES	FES	D-203-8
							Corrugated Steel Pipe	30	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	30	Z, A, P	3/4, 1	0.064				
50228+14.0	70.0' LT	50228+62.0	70.0' LT	30	Pipe Conduit - Approach	48	Reinforced Concrete Pipe - Class III (Barrel Length = 46 LF)	30					FES	FES	D-203-8
							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							
							Polypropylene Pipe (AASHTO M330, Type S)	30							
50230+55.6	67.0' LT	50230+85.6	67.0' LT	30	Pipe Conduit - Approach	30	Reinforced Concrete Pipe - Class III (Barrel Length = 28 LF)	30					FES	FES	D-203-8
							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							
							Polypropylene Pipe (AASHTO M330, Type S)	30							
50231+27.9	77.0' RT	50231+83.9	77.0' RT	48	Pipe Conduit - Approach	56	Reinforced Concrete Pipe - Class III (Barrel Length = 52 LF)	48					FES	FES	D-203-8
							Corrugated Steel Pipe	48	Z, A, P	2, 3, 5	0.064				
							Spiral Rib Steel Pipe	48	Z, A, P	3/4, 1	0.064				
50231+27.9	89.5' RT	50231+83.9	89.5' RT	48	Pipe Conduit - Approach	56	Reinforced Concrete Pipe - Class III (Barrel Length = 52 LF)	48					FES	FES	D-203-8
							Corrugated Steel Pipe	48	Z, A, P	2, 3, 5	0.064				
							Spiral Rib Steel Pipe	48	Z, A, P	3/4, 1	0.064				
50231+27.9	102.0' RT	50231+83.9	102.0' RT	48	Pipe Conduit - Approach	56	Reinforced Concrete Pipe - Class III (Barrel Length = 52 LF)	48					FES	FES	D-203-8
							Corrugated Steel Pipe	48	Z, A, P	2, 3, 5	0.064				
							Spiral Rib Steel Pipe	48	Z, A, P	3/4, 1	0.064				
50234+29.8	67.0' LT	50234+75.8	67.0' LT	30	Pipe Conduit - Approach	46	Reinforced Concrete Pipe - Class III (Barrel Length = 44 LF)	30					FES	FES	D-203-8
							Spiral Rib Steel Pipe	30	Z, A, P	3/4, 1	0.064				
50237+12.3	78.0' RT	50237+70.3	79.5' RT	48	Pipe Conduit - Approach	58	Reinforced Concrete Pipe - Class III (Barrel Length = 54 LF)	48					FES	FES	D-203-8
							Corrugated Steel Pipe	48	Z, A, P	2, 3, 5	0.064				
							Spiral Rib Steel Pipe	48	Z, A, P	3/4, 1	0.064				
50237+08.3	89.9' RT	50237+70.3	91.5' RT	48	Pipe Conduit - Approach	62	Reinforced Concrete Pipe - Class III (Barrel Length = 58 LF)	48					FES	FES	D-203-8
							Corrugated Steel Pipe	48	Z, A, P	2, 3, 5	0.064				
							Spiral Rib Steel Pipe	48	Z, A, P	3/4, 1	0.064				
50237+00.3	101.7' RT	50237+70.3	103.5' RT	48	Pipe Conduit - Approach	70	Reinforced Concrete Pipe - Class III (Barrel Length = 66 LF)	48					FES	FES	D-203-8
							Corrugated Steel Pipe	48	Z, A, P	2, 3, 5	0.064				
							Spiral Rib Steel Pipe	48	Z, A, P	3/4, 1	0.064				
50242+99.0	79.0' RT	50243+47.0	79.0' RT	18	Pipe Conduit - Approach	48	Reinforced Concrete Pipe - Class III (Barrel Length = 44 LF)	18					FES	FES	D-203-8
							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							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
50245+75.2	79.0' RT	50246+30.2	79.0' RT	18	Pipe Conduit - Approach	55	Reinforced Concrete Pipe - Class III (Barrel Length = 51 LF)	18					FES	FES	D-203-8
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rip Steel Pipe	18	Z, A, P	3/4, 1	0.064				
50247+86.7	77.0' RT	50248+30.7	77.0' RT	18	Pipe Conduit - Approach	44	Reinforced Concrete Pipe - Class III (Barrel Length = 40 LF)	18					FES	FES	D-203-8
							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							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
50248+88.9	77.0' RT	50249+23.9	77.0' RT	18	Pipe Conduit - Approach	34	Reinforced Concrete Pipe - Class III (Barrel Length = 30 LF)	18					FES	FES	D-203-8
							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							
							Polypropylene Pipe (AASHTO M330, Type S)	18							

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Allowable Pipe List

Centerline Culverts

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	51	7

BEGIN STATION	BEGIN OFFSET	END STATION	END OFFSET	PIPE INSTALLATION (PAY ITEM) (BID ITEM) (IN)		(LF)	ALLOWABLE MATERIAL	REQUIRED DIAMETER (IN)	STEEL PIPE COATINGS (TYPE)	STEEL PIPE CORRUGATIONS OR SPIRAL RIBS	MINUMUM THICKNESS (IN)	TYPE R1 FABRIC (SY)	END SECTION BEGIN (EA)	END SECTION END (EA)	APPLICABLE BACKFILL DETAIL
50251+08.5	77.0' RT	50251+42.5	77.0' RT	18	Pipe Conduit - Approach	34	Reinforced Concrete Pipe - Class III (Barrel Length = 30 LF)	18					FES	FES	D-203-8
							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							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
50255+25.3	74.0' RT	50255+85.3	74.0' RT	18	Pipe Conduit - Approach	60	Reinforced Concrete Pipe - Class III (Barrel Length = 56 LF)	18					FES	FES	D-203-8
							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							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
50262+76.3	93.5' RT	50263+59.0	78.9' RT	24	Pipe Conduit - Approach	84	Reinforced Concrete Pipe - Class III (Barrel Length = 80 LF)	24					FES	FES	D-203-8
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
50269+07.8	72.8' RT	50269+93.6	66.8' RT	24	Pipe Conduit - Approach	86	Reinforced Concrete Pipe - Class III (Barrel Length = 82 LF)	24					FES	FES	D-203-8
							Corrugated Steel Pipe	24	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
50275+67.3	84.0' LT	50276+31.5	84.0' LT	18	Pipe Conduit - Approach	64	Reinforced Concrete Pipe - Class III (Barrel Length = 60 LF)	18					FES	FES	D-203-8
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rip Steel Pipe	18	Z, A, P	3/4, 1	0.064				
50281+41.0	77.6' RT	50282+29.0	77.6' RT		Pipe Conduit - Approach	88	Remove & Relay Existing Pipe						Remove & Relay	Remove & Relay	D-203-8
50281+54.3	90.0' LT	50282+14.3	90.0' LT	18	Pipe Conduit - Approach	60	Reinforced Concrete Pipe - Class III (Barrel Length = 56 LF)	18					FES	FES	D-203-8
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
50285+79.6	78.0' LT	50286+50.9	78.0' LT	18	Pipe Conduit - Approach	71	Reinforced Concrete Pipe - Class III (Barrel Length = 67 LF)	18					FES	FES	D-203-8
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
50288+25.2	76.0' LT	50288+86.3	76.0' LT	18	Pipe Conduit - Approach	61	Reinforced Concrete Pipe - Class III (Barrel Length = 57 LF)	18					FES	FES	D-203-8
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				

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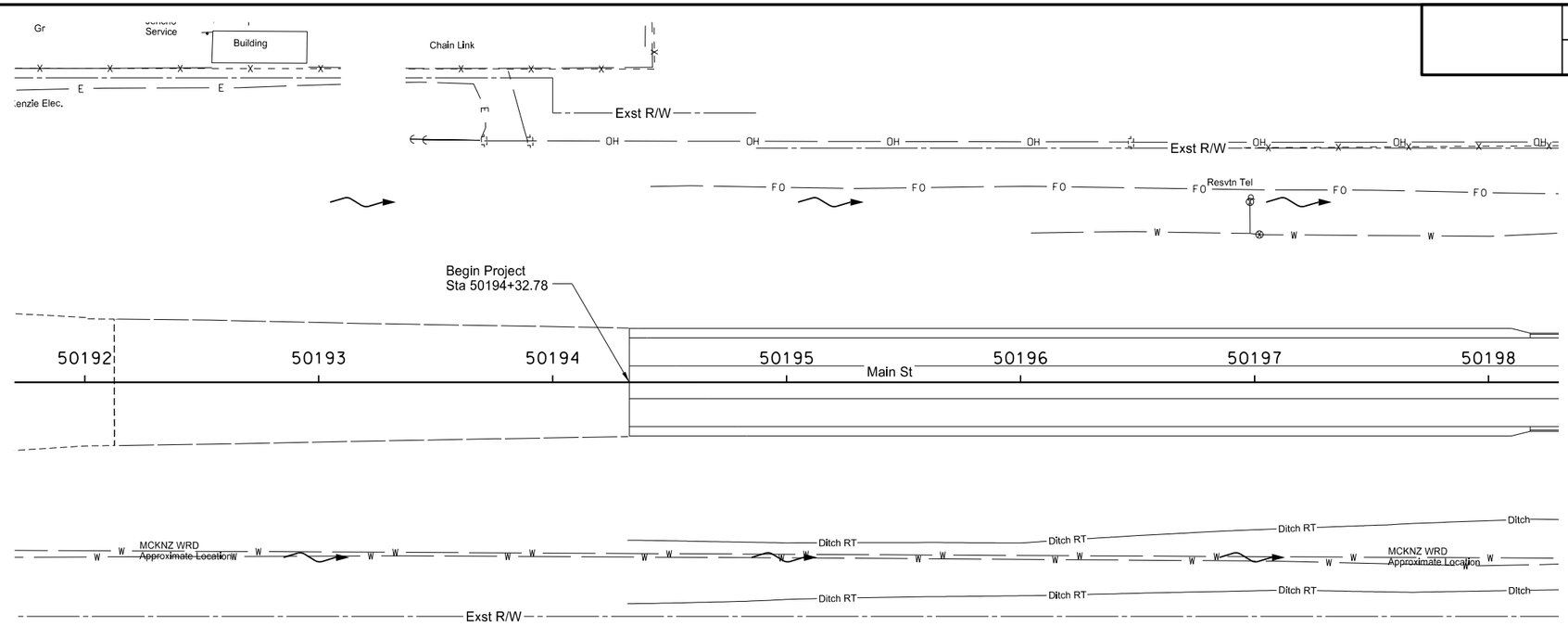
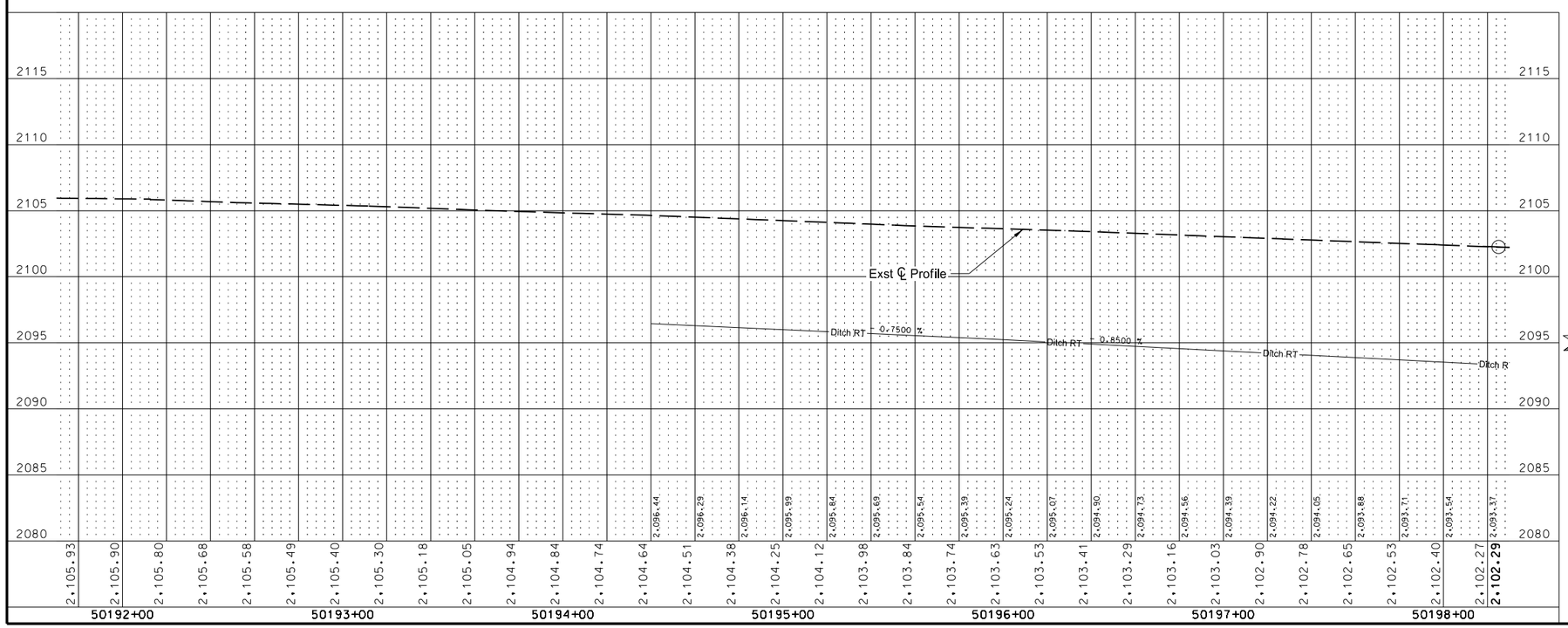
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Allowable Pipe List

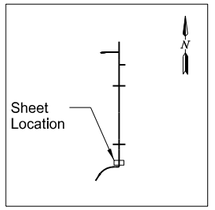
Approach Culverts

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	1





Ditch LT
Ditch RT
Ditch Bottom



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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50194+32.78 to Sta 50198+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	2

202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

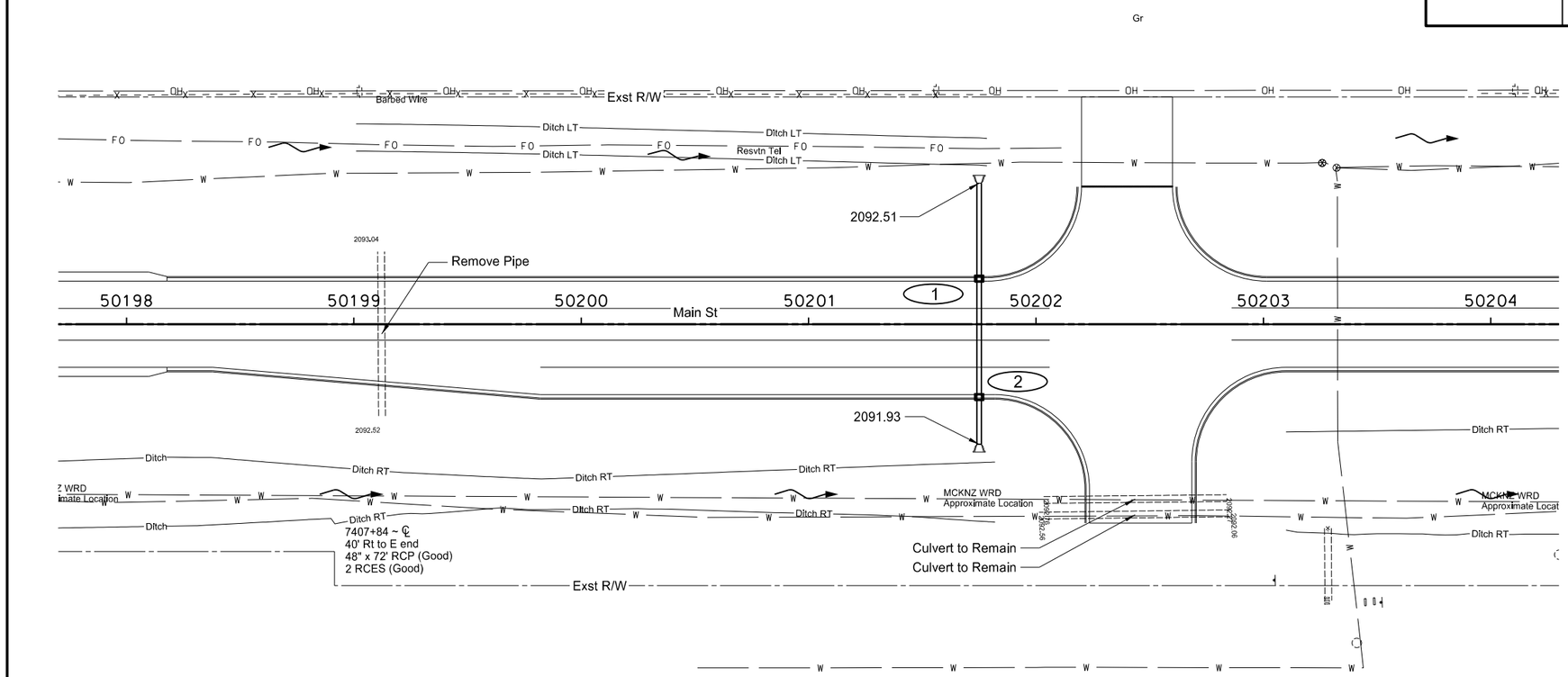
50199+12.2 ~ 4.3' RT	72	LF

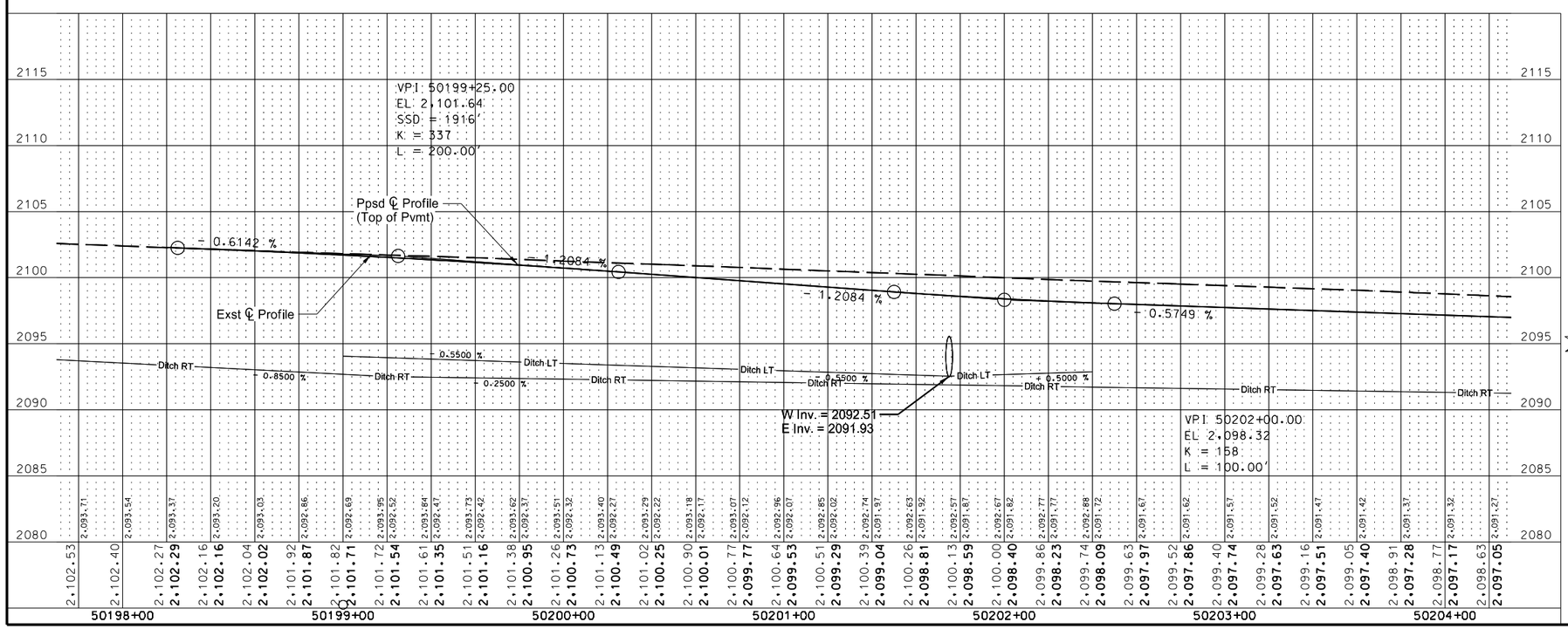
714 4107 PIPE CONDUIT 24IN-STORM DRAIN

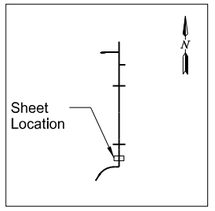
1 to Sta 50201+75~62.0' LT	42	LF
1 to 2	52	LF
2 to Sta 50201+75~52.8' RT	21	LF
TOTAL	115	LF

722 3510 INLET-TYPE 2

1	1	EA
2	1	EA
TOTAL	2	EA







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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50198+00 to Sta 50204+00

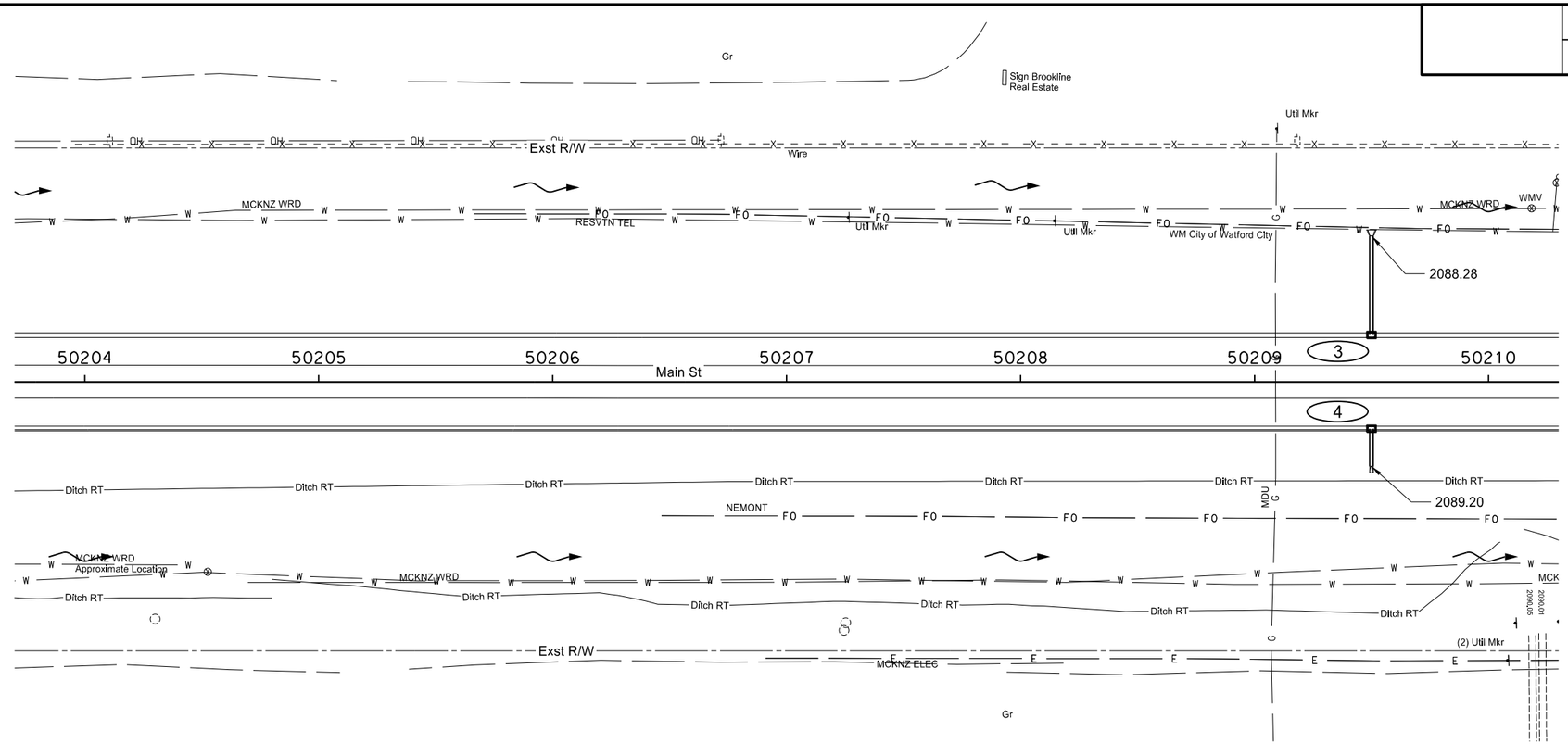
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	3

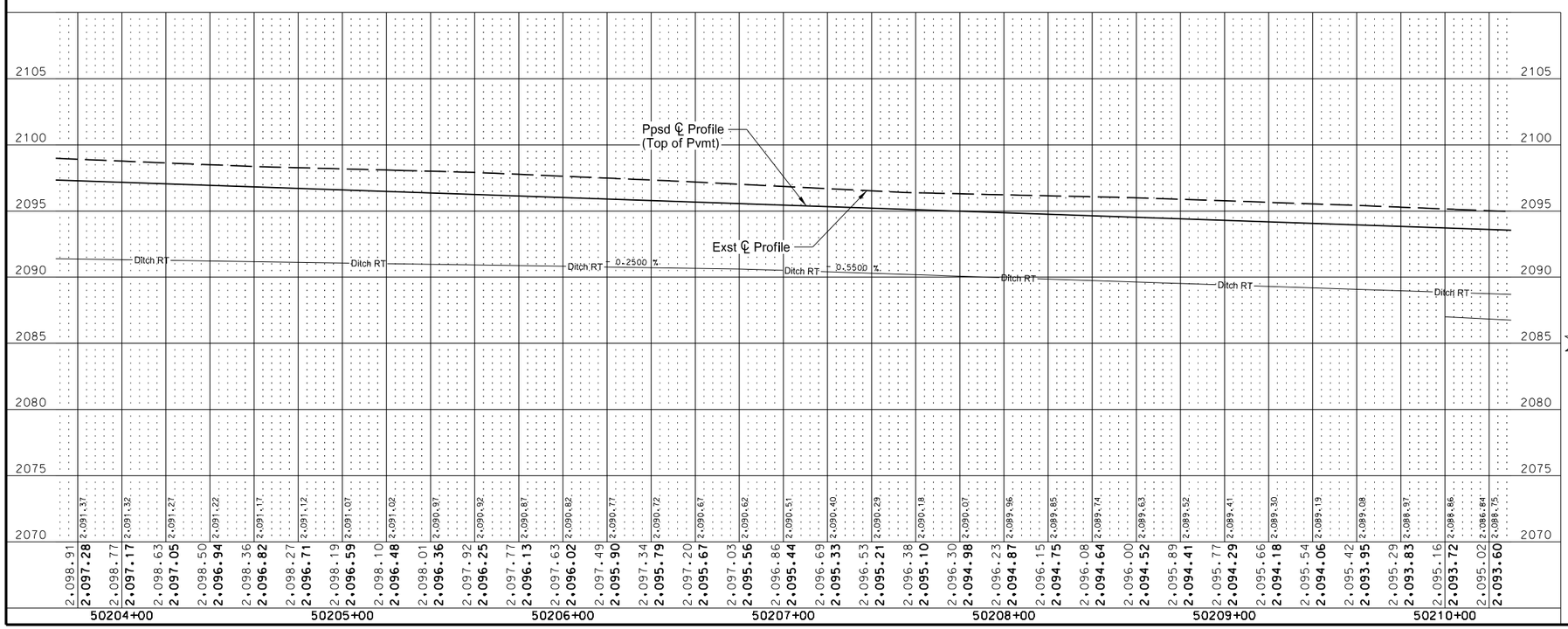
714 4101 PIPE CONDUIT 18IN-STORM DRAIN

3 to Sta. 50209+50~62.4' LT		42	LF
4 to Sta. 50209+50~36.2' RT		16	LF
	TOTAL	58	LF

722 3510 INLET-TYPE 2

3		1	EA
4		1	EA
	TOTAL	2	EA





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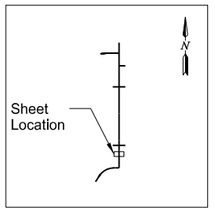

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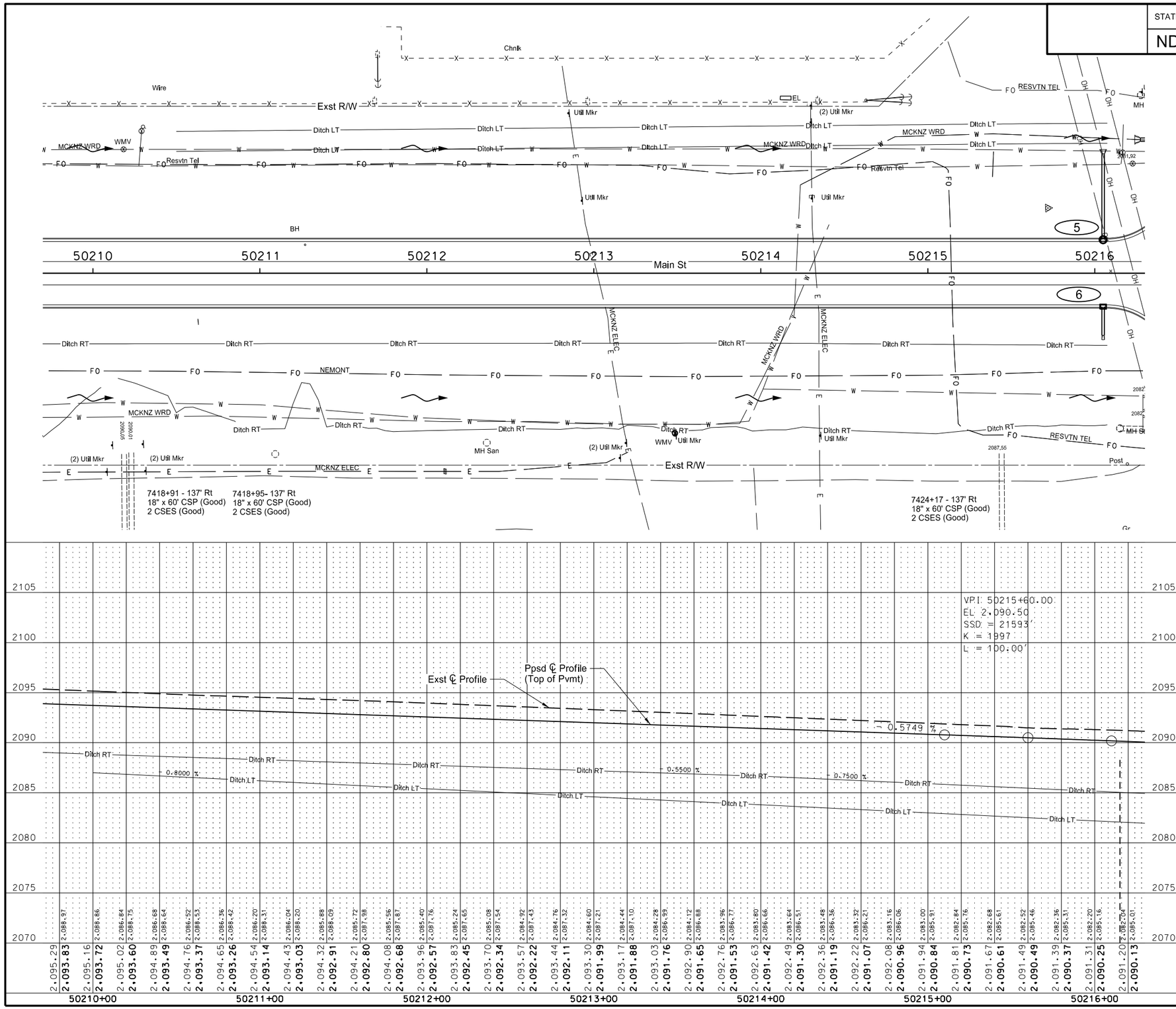
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50204+00 to Sta 50210+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	4



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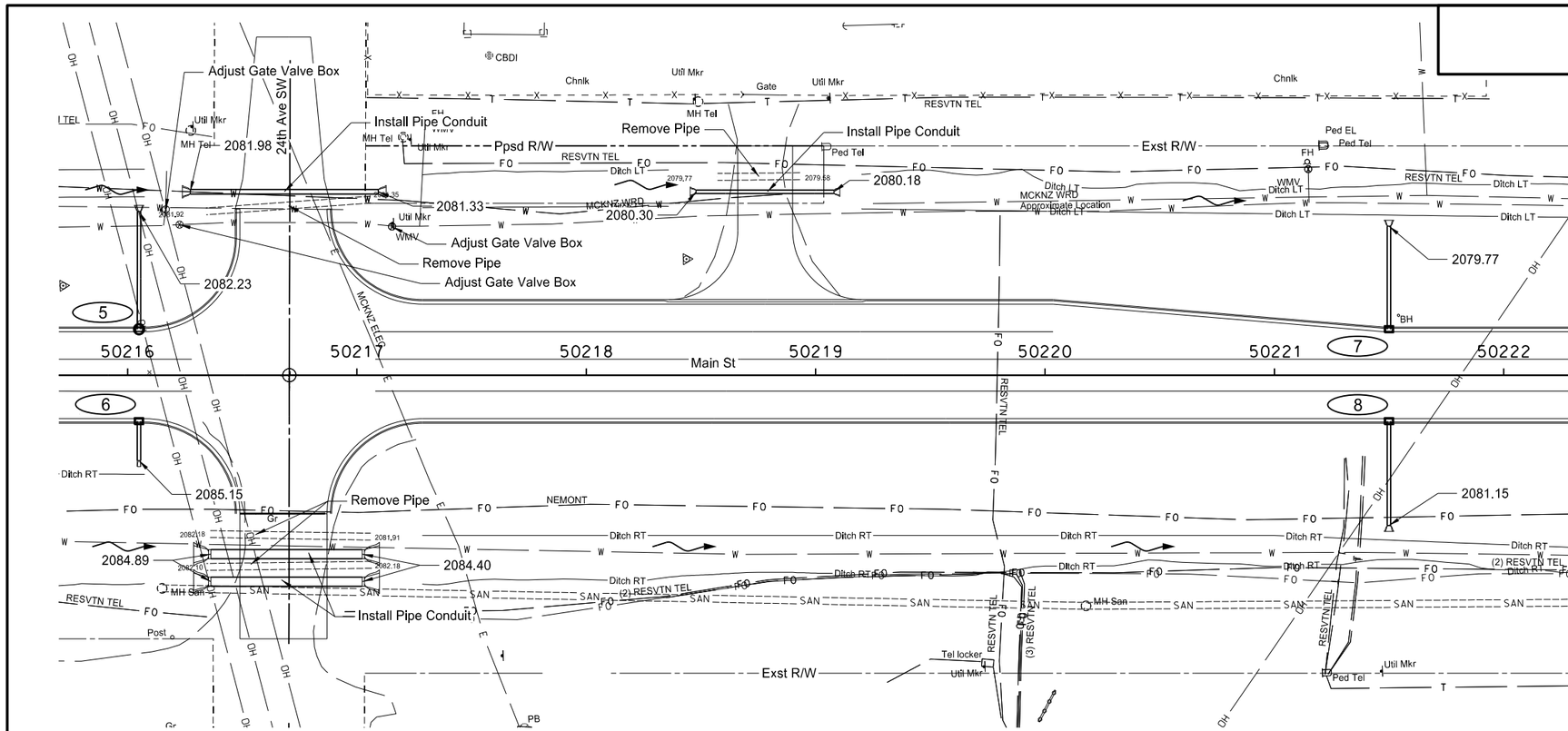
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50210+00 to Sta 50216+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	5



202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

50216+70.2 - 73.9' LT	72	LF
50216+70.5 - 83.3' RT	72	LF
50216+70.5 - 69.6' RT	70	LF
50218+75.3 - 86.5' LT	36	LF
TOTAL	250	LF

714 4099 PIPE CONDUIT 18IN-APPROACH

50218+48.0 ~ 80.0' LT to 50219+08.0 ~ 80.0' LT	60	LF

714 4101 PIPE CONDUIT 18IN-STORM DRAIN

5 to Sta 50216+05~71.4' LT	51	LF
6 to Sta 50216+05~37.2' RT	17	LF
7 to Sta 50221+50~65.0' LT	45	LF
8 to Sta 50221+50~65.5' RT	46	LF
TOTAL	159	LF

714 4106 PIPE CONDUIT 24IN-APPROACH

50216+27.3 ~ 80.0' LT to 50217+09.3 ~ 80.0' LT	82	LF

714 4128 PIPE CONDUIT 48IN-APPROACH

50216+36.3 ~ 78.0' RT to 50217+02.3 ~ 78.0' RT	66	LF
50216+36.3 ~ 90.0' RT to 50217+02.3 ~ 90.0' RT	66	LF
TOTAL	132	LF

722 3510 INLET-TYPE 2

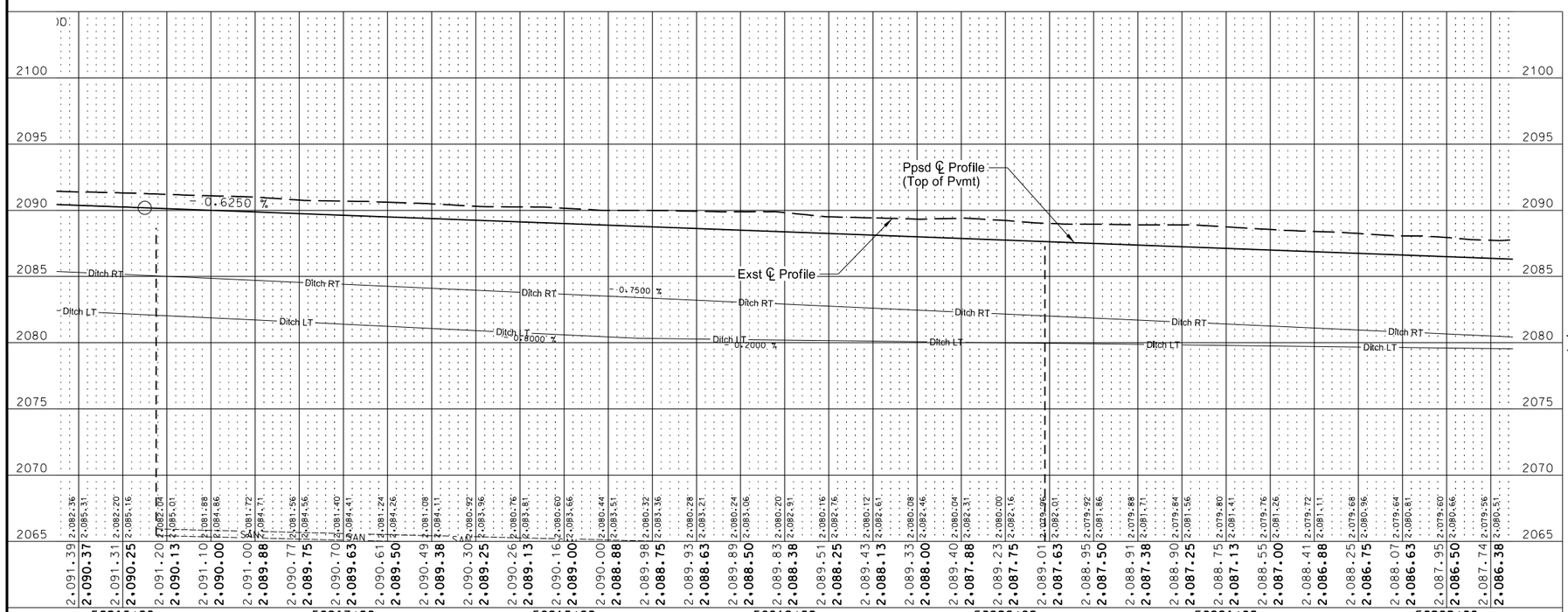
6	1	EA
7	1	EA
8	1	EA
TOTAL	3	EA

722 3701 INLET SPECIAL-TYPE 2 48IN

5	1	EA

722 6140 ADJUST GATE VALVE BOX

Sta 50216+16.7 ~ 72.2' LT	1	EA
Sta 50216+22.7 ~ 65.6' LT	1	EA
Sta 50217+15.3 ~ 64.8' LT	1	EA
TOTAL	3	EA



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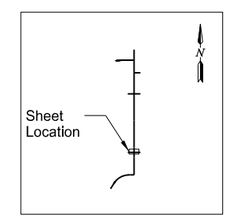

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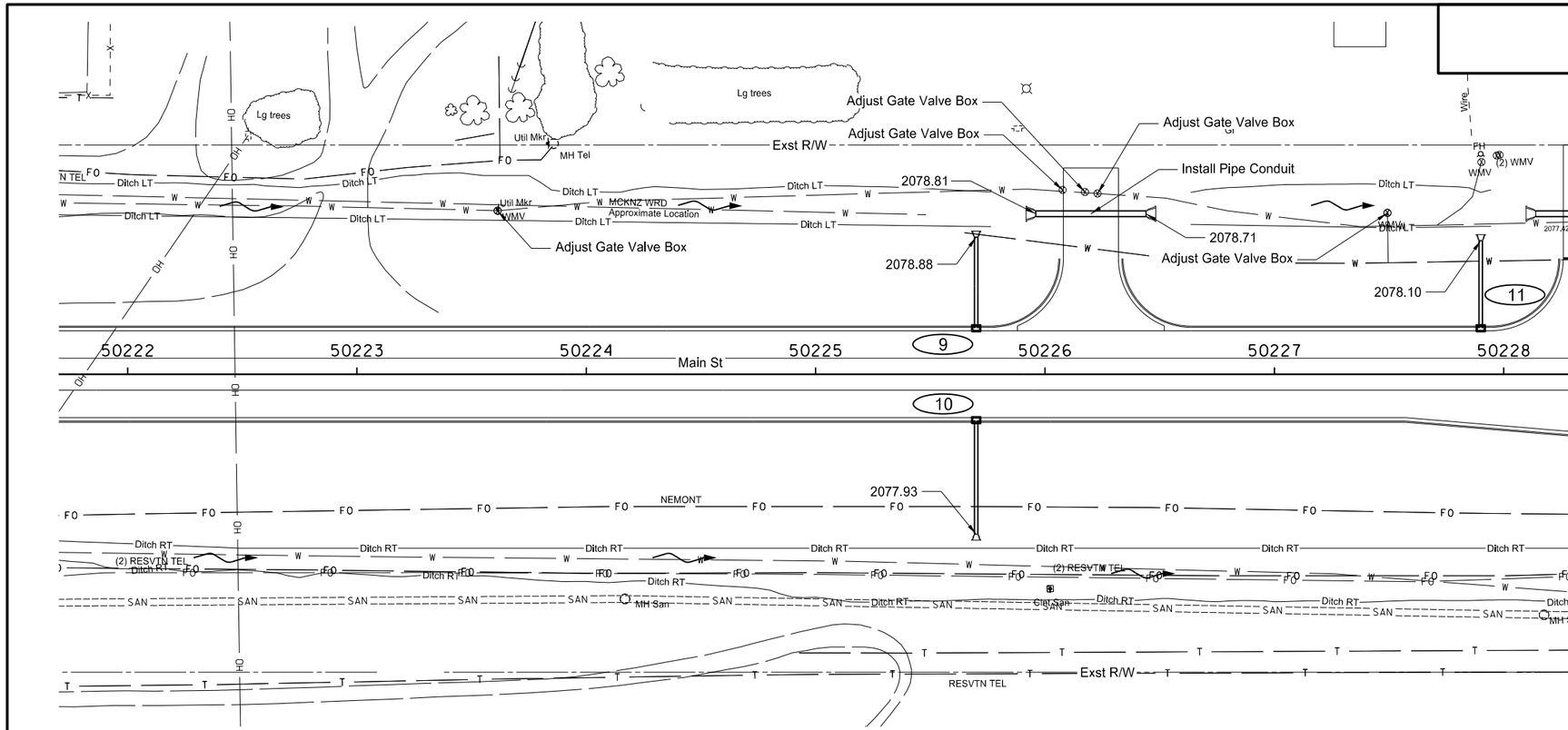
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50216+00 to Sta 50222+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	6



714 4101 PIPE CONDUIT 18IN-STORM DRAIN

9 to Sta 50225+70~59.8' LT	40	LF
10 to Sta 50225+70~69.8' RT	50	LF
11 to Sta 50227+90~58.4' LT	38	LF
TOTAL	128	LF

714 4113 PIPE CONDUIT 30IN-APPROACH

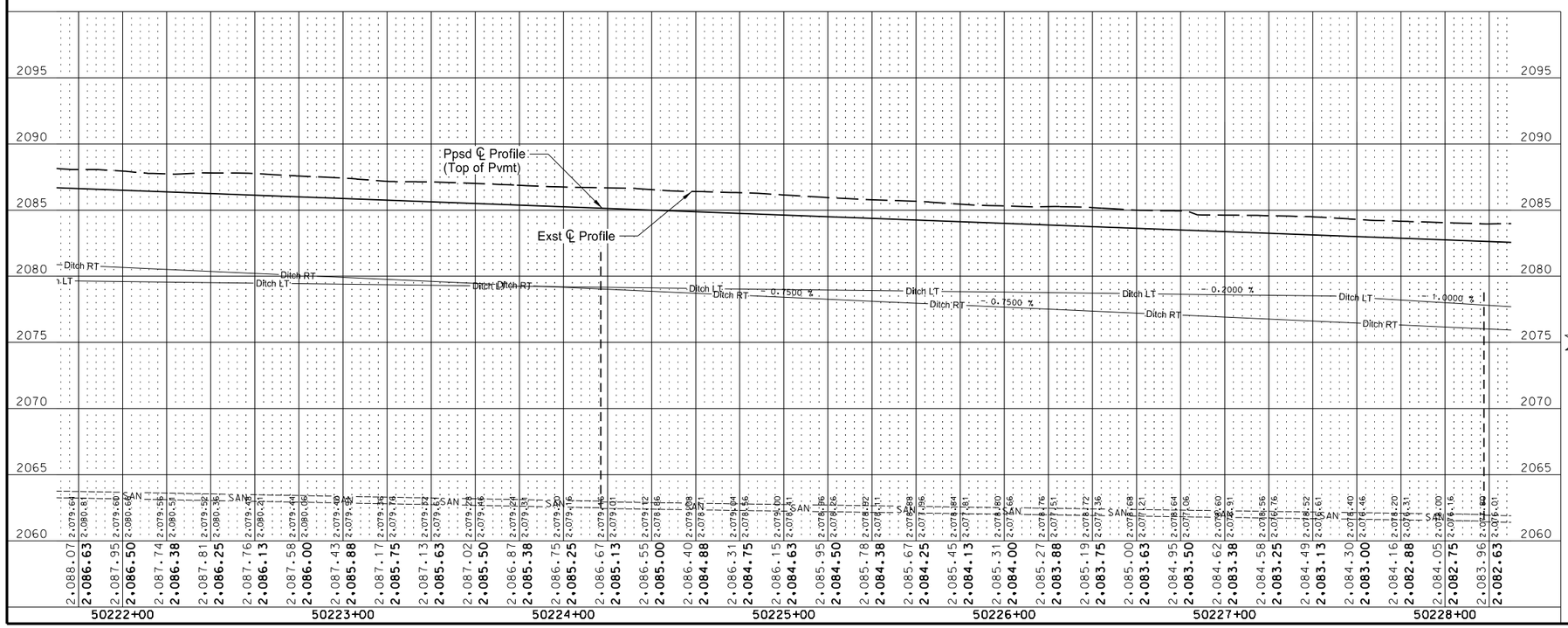
50225+96.0 ~ 70.0' LT to 50226+44.0 ~ 70.0' LT	48	LF

722 3510 INLET-TYPE 2

9	1	EA
10	1	EA
11	1	EA
TOTAL	3	EA

722 6140 ADJUST GATE VALVE BOX

Sta 50223+61.4 ~ 71.2' LT	1	EA
Sta 50226+07.7 ~ 80.3' LT	1	EA
Sta 50226+17.5 ~ 79.4' LT	1	EA
Sta 50226+22.9 ~ 78.7' LT	1	EA
Sta 50227+49.3 ~ 70.3' LT	1	EA
TOTAL	5	EA



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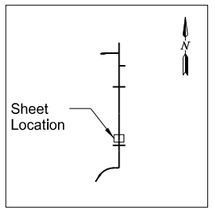

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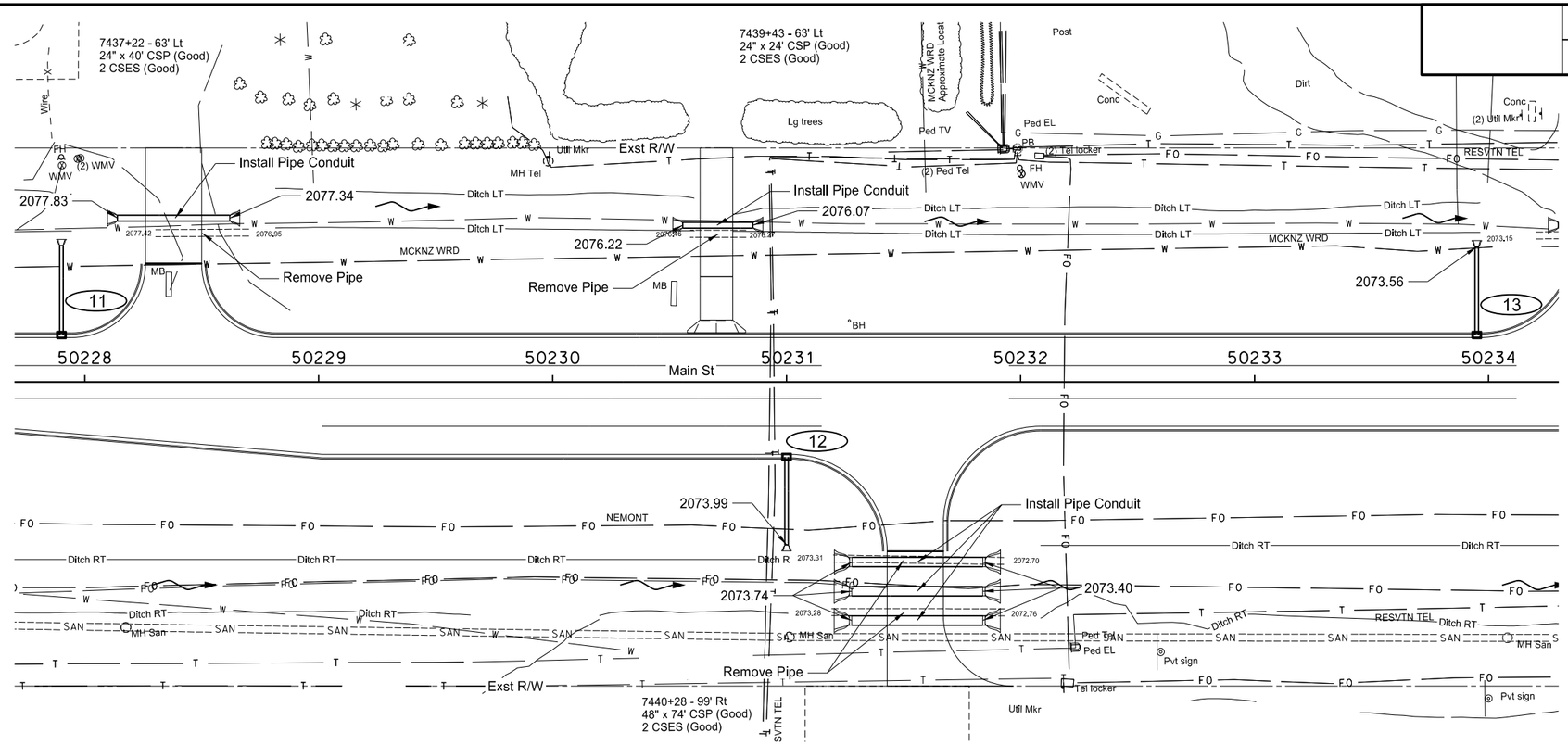
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50222+00 to Sta 50228+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	7



202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

50228+50.3 ~ 63.6' LT	40	LF
50230+70.8 - 63.2' LT	24	LF
50231+56.4 - 76.1' RT	73	LF
50231+56.2 - 98.5' RT	74	LF
TOTAL	211	LF

714 4101 PIPE CONDUIT 18IN-STORM DRAIN

12 to Sta 50231+00~69.7' RT	38	LF
13 to Sta 50233+95~57.8' LT	38	LF
TOTAL	76	LF

714 4113 PIPE CONDUIT 30IN-APPROACH

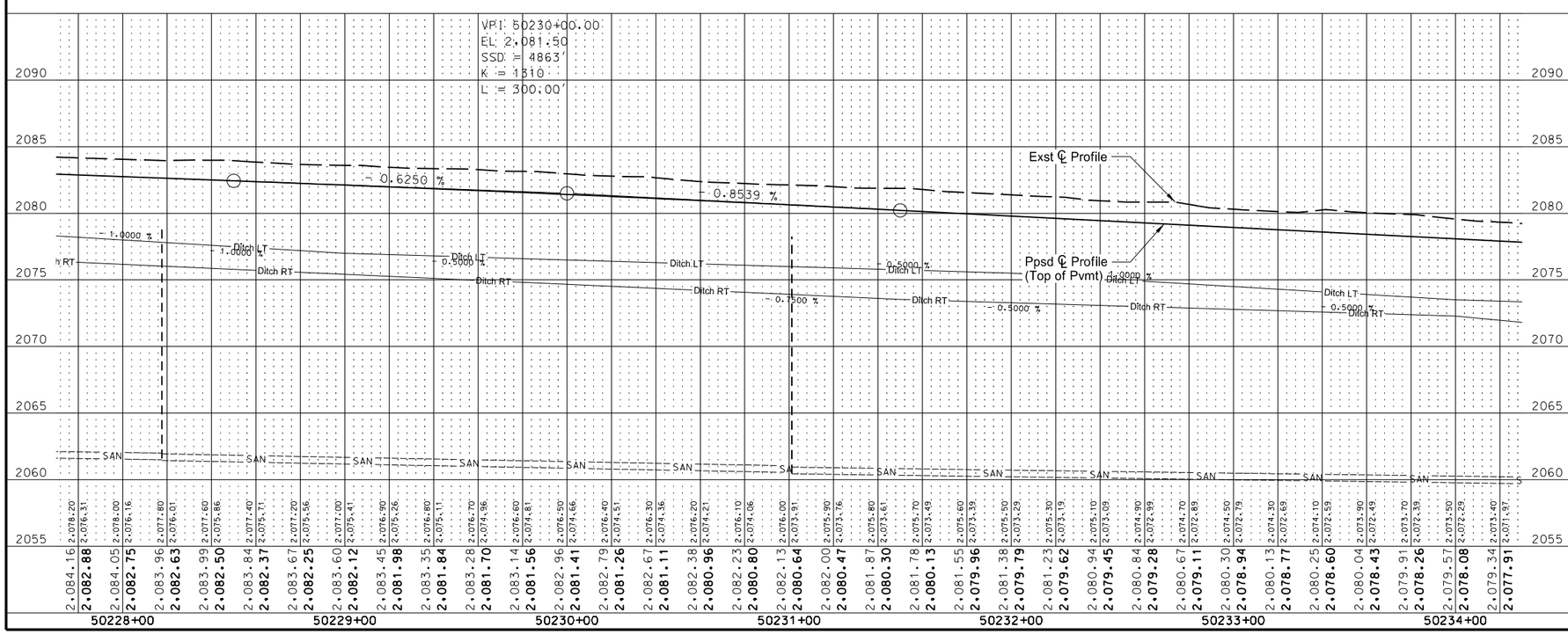
50228+14.0 ~ 70.0' LT to 50228+62.0 ~ 70.0' LT	48	LF
50230+55.6 ~ 67.0' LT to 50230+85.6 ~ 67.0' LT	30	LF
TOTAL	78	LF

714 4128 PIPE CONDUIT 48IN-APPROACH

50231+27.9 ~ 77.0' RT to 50231+83.9 ~ 77.0' RT	56	LF
50231+27.9 ~ 89.5' RT to 50231+83.9 ~ 89.5' RT	56	LF
50231+27.9 ~ 102.0' RT to 50231+83.9 ~ 102.0' RT	56	LF
TOTAL	168	LF

722 3510 INLET-TYPE 2

12	1	EA
13	1	EA
TOTAL	2	EA



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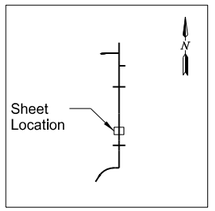

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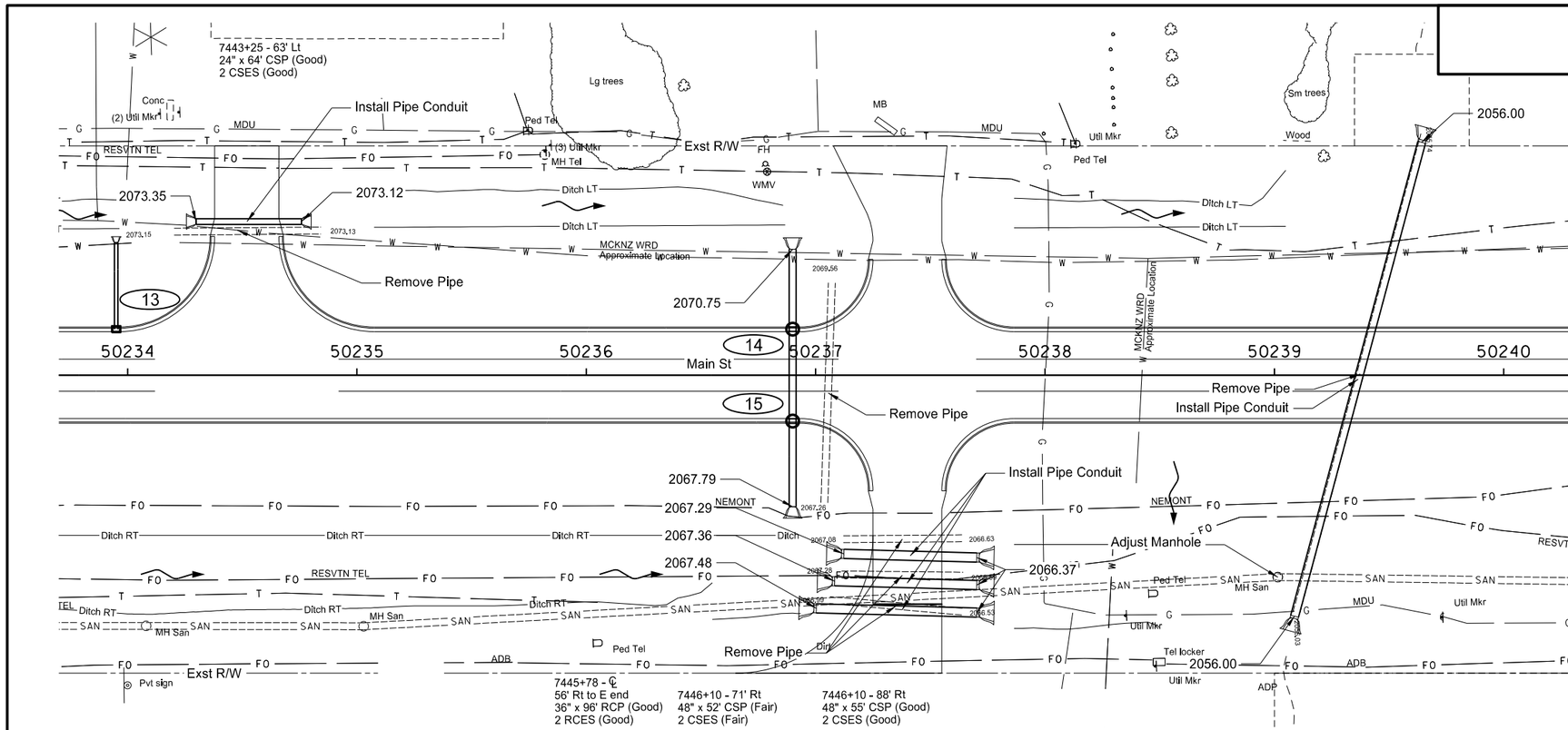
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50228+00 to Sta 50234+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	8



202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

50234+52.4 - 62.7' LT	64	LF
50237+05.5 ~ 7.8' RT	96	LF
50237+37.8 - 71.5 ' RT	52	LF
50237+37.8 - 87.3 ' RT	53	LF
50237+37.8 - 100.7 ' RT	58	LF
50239+37.5 ~ 0.5' LT	216	LF
TOTAL	539	LF

714 4113 PIPE CONDUIT 30IN-APPROACH

50234+29.8 ~ 67.0' LT to 50234+75.8 ~ 67.0' LT	46	LF

714 4117 PIPE CONDUIT 36IN-STORM DRAIN

Sta 50236+90~54.9' LT to 14	35	LF
14 to 15	40	LF
15 to Sta 50236+90~57.4' RT	37	LF
TOTAL	112	LF

714 4120 PIPE CONDUIT 42IN

50239+64.2 ~ 101.5' LT to 50239+08.8 ~ 105.2' RT	214	LF

714 4128 PIPE CONDUIT 48IN-APPROACH

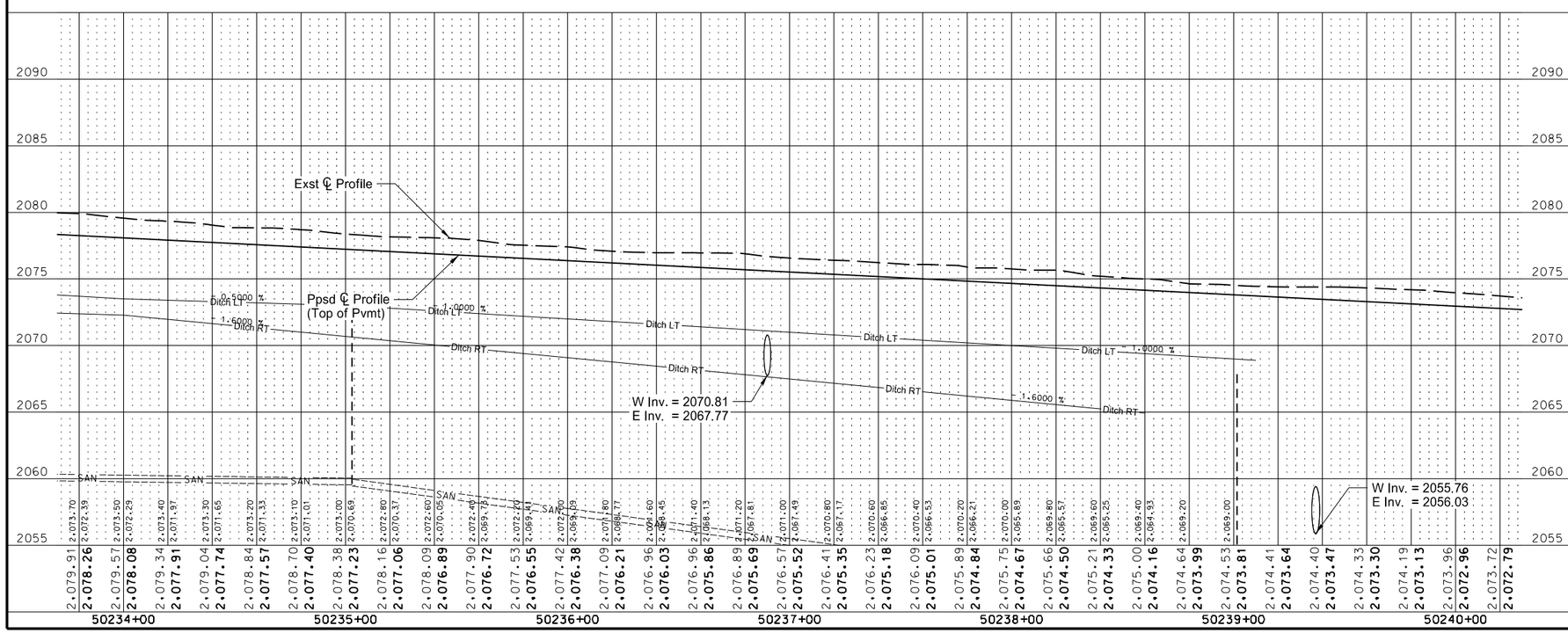
50237+12.3 ~ 78.0' RT to 50237+70.3 ~ 79.5' RT	58	LF
50237+08.3 ~ 89.9' RT to 50237+70.3 ~ 91.5' RT	62	LF
50237+00.3 ~ 101.7' RT to 50237+70.3 ~ 103.5' RT	70	LF
TOTAL	190	LF

722 3761 INLET SPECIAL-TYPE 2 60IN

14	1	EA
15	1	EA
TOTAL	2	EA

722 6200 ADJUST MANHOLE

Sta 50239+01.6~88.2' RT	1	EA



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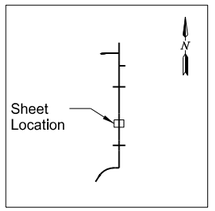

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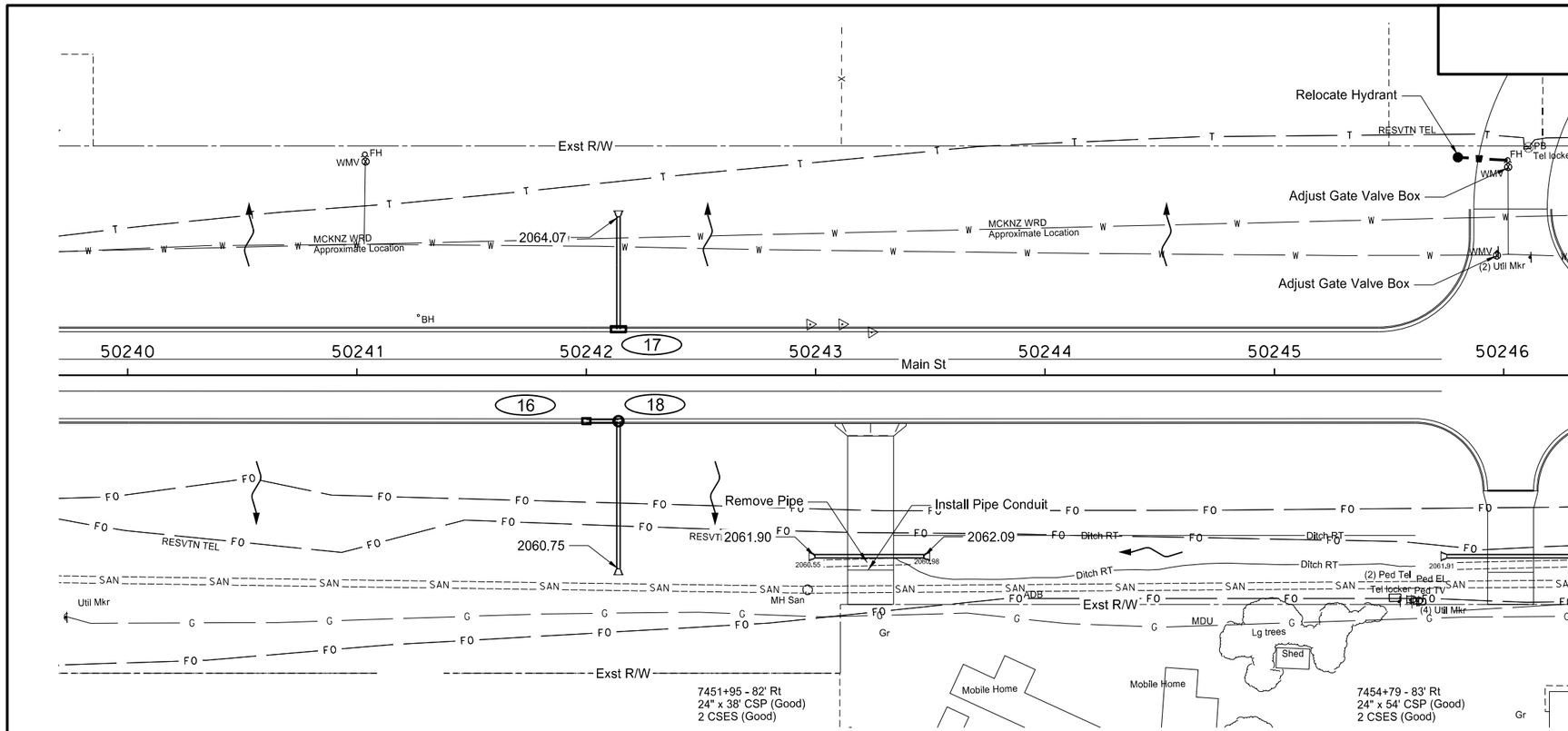
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

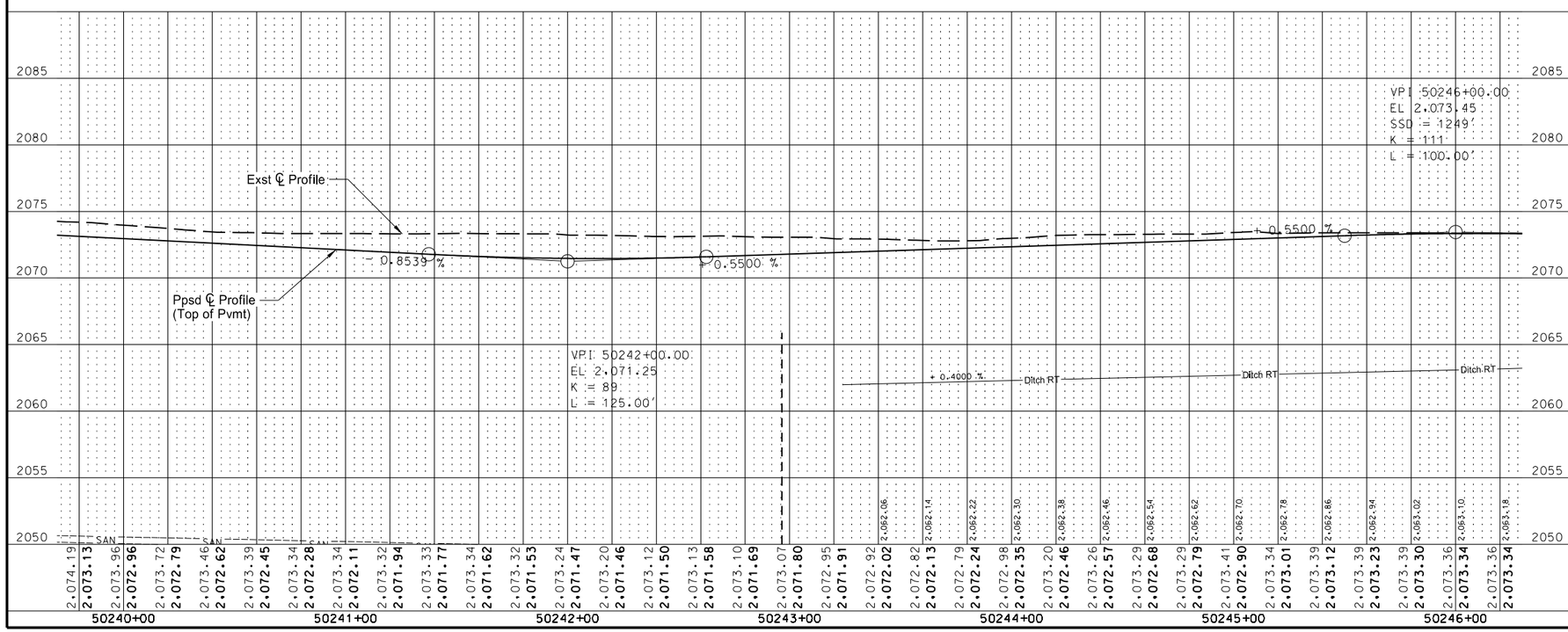
Storm Sewer

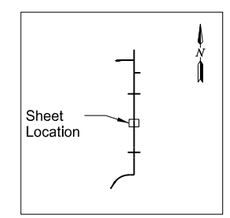
Main St (PRBN85)
Sta 50234+00 to Sta 50240+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	9



202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES			
50243+22.5 ~ 81.7' RT		38	LF
714 4099 PIPE CONDUIT 18IN-APPROACH			
50242+99.0 ~ 79.0' RT to 50243+47.0 ~ 79.0' RT		48	LF
714 4101 PIPE CONDUIT 18IN-STORM DRAIN			
16 to 18		14	LF
17 to Sta 50242+14~69.1' LT		49	LF
18 to Sta 50242+14~84.5' RT		64	LF
	TOTAL	127	LF
722 3510 INLET-TYPE 2			
16		1	EA
17		1	EA
	TOTAL	2	EA
722 3701 INLET SPECIAL-TYPE 2 48IN			
18		1	EA
722 6140 ADJUST GATE VALVE BOX			
Sta 50245+97.1~ 52.1' LT		1	EA
724 0420 HYDRANT-RELOCATE			
Sta 50245+80.0 ~ 93.7' LT		1	EA





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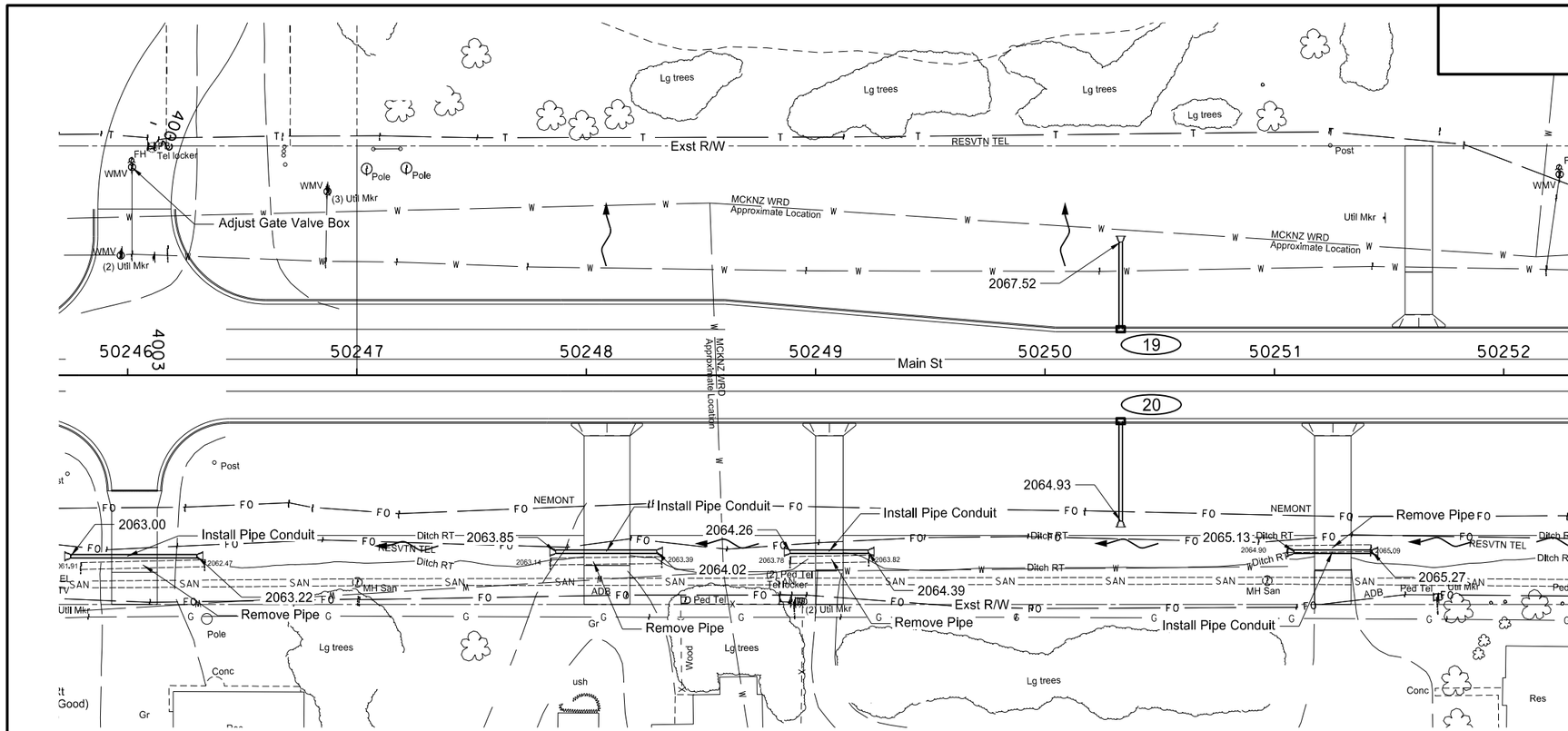
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50240+00 to Sta 50246+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	10



202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

50246+06.7 - 82.7' RT	54	LF
50248+08.7 - 81' RT	48	LF
50249+06.1 - 80.4' RT	34	LF
50251+23.9 - 75.7' RT	36	LF
TOTAL	172	LF

714 4099 PIPE CONDUIT 18IN-APPROACH

50245+75.2 ~ 79.0' RT to 50246+30.2 ~ 79.0' RT	55	LF
50247+86.7 ~ 77.0' RT to 50248+30.7 ~ 77.0' RT	44	LF
50248+88.9 ~ 77.0' RT to 50249+23.9 ~ 77.0' RT	34	LF
50251+08.5 ~ 77.0' RT to 50251+42.5 ~ 77.0' RT	34	LF
TOTAL	167	LF

714 4101 PIPE CONDUIT 18IN-STORM DRAIN

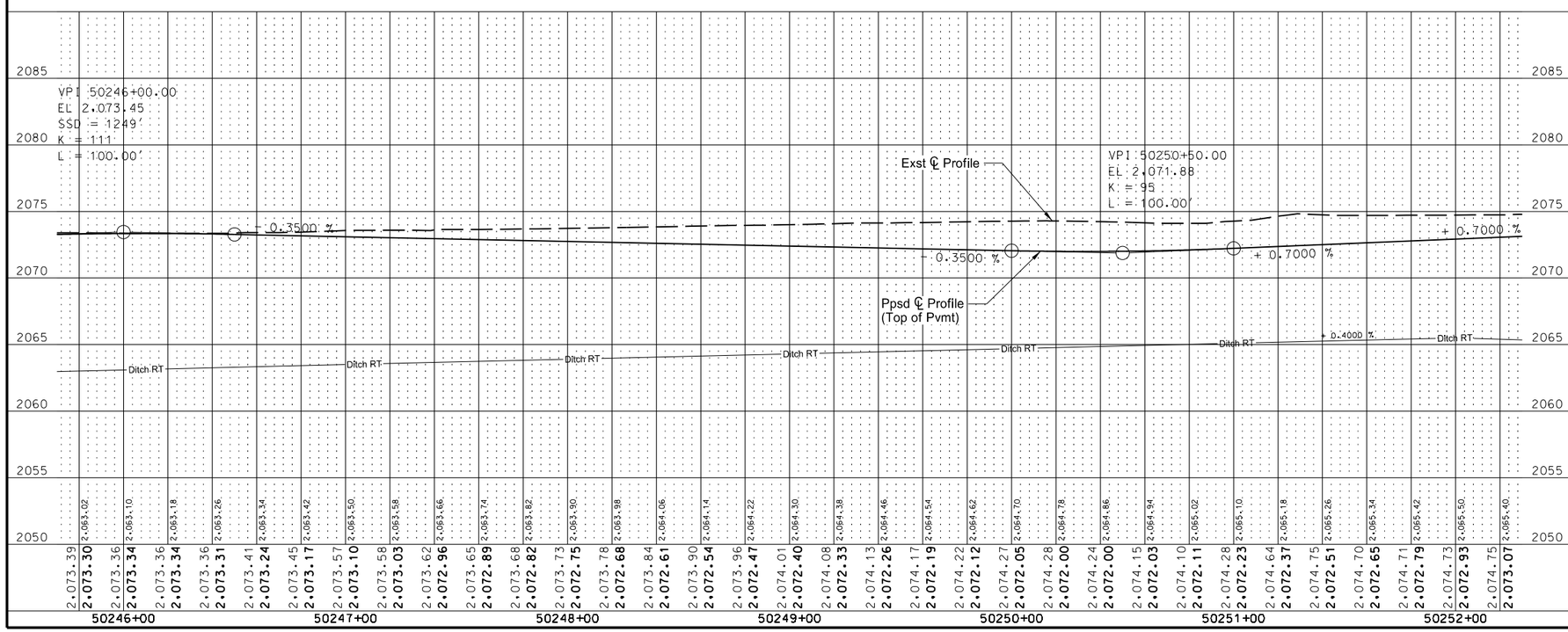
19 to Sta 50250+33~58.1' LT	38	LF
20 to Sta 50250+33~63.6' RT	44	LF
TOTAL	82	LF

722 3510 INLET-TYPE 2

19	1	EA
20	1	EA
TOTAL	2	EA

722 6140 ADJUST GATE VALVE BOX

Sta 50246+02.0 ~ 90.7' LT	1	EA



Ditch LT
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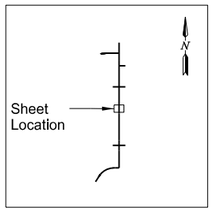

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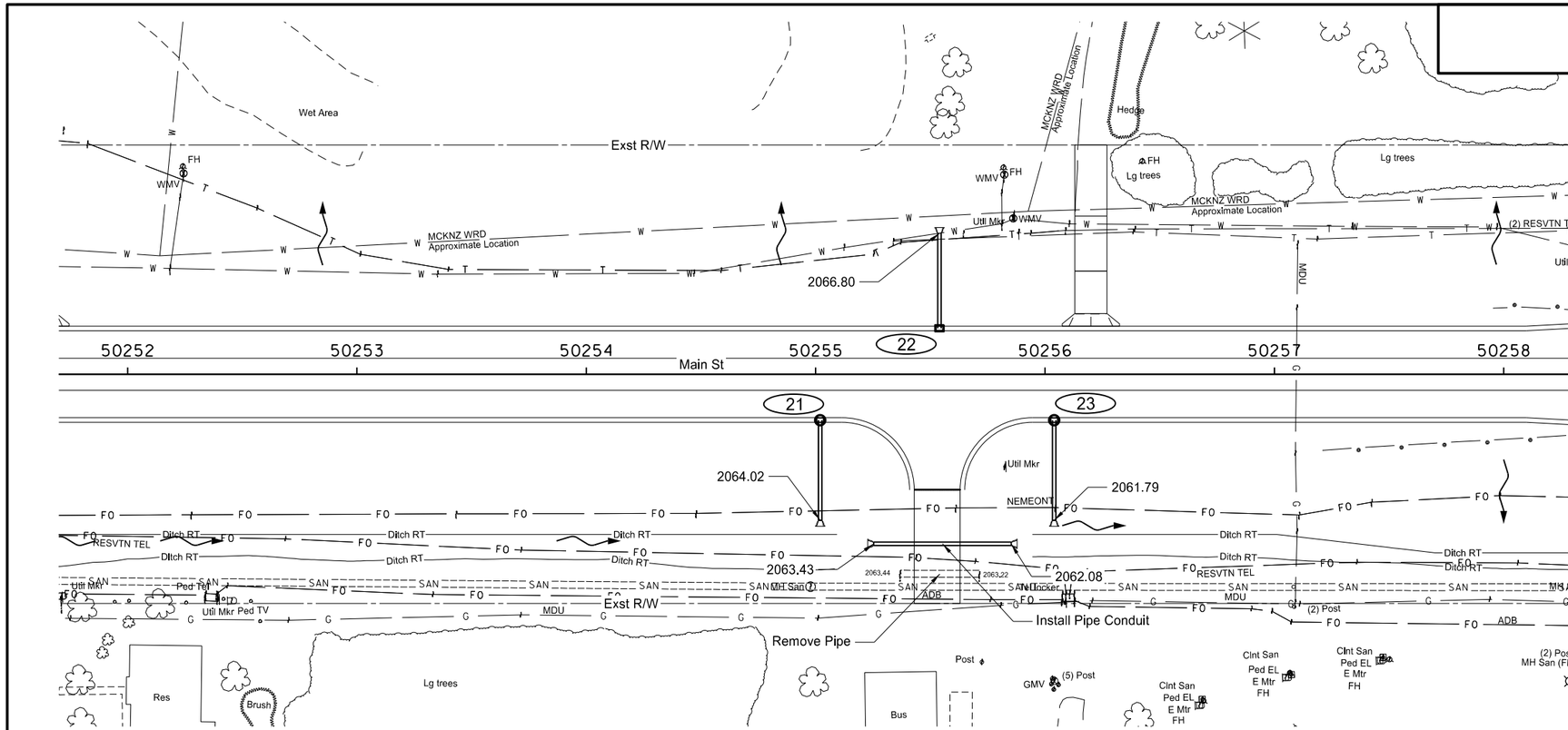
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50246+00 to Sta 50252+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	11



202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

50255+54.2 - 87.1' RT		35	LF

714 4099 PIPE CONDUIT 18IN-APPROACH

50255+25.3 ~ 74.0' RT to 50255+85.3 ~ 74.0' RT		60	LF

714 4101 PIPE CONDUIT 18IN-STORM DRAIN

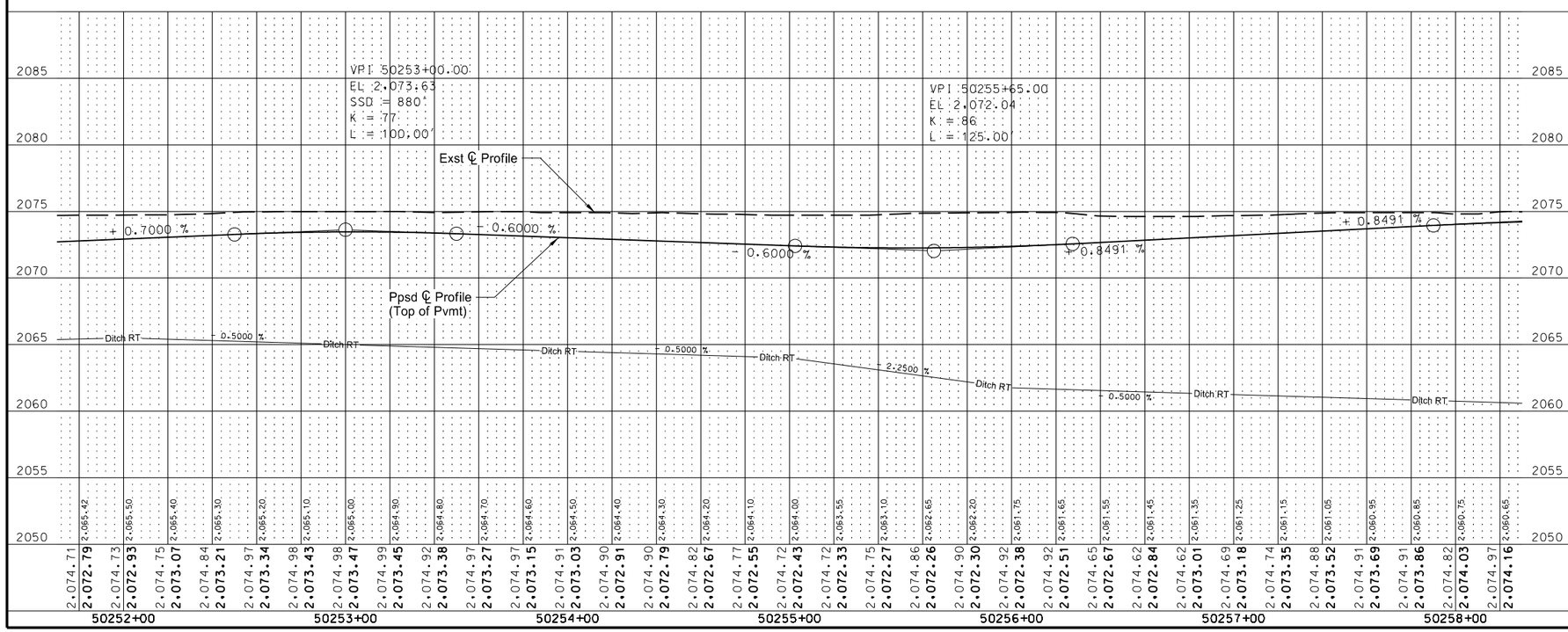
21 to Sta 50255+02~63.7' RT		44	LF
22 to Sta 50255+54~61.4' LT		41	LF
23 to Sta 50256+04~63.8' RT		44	LF
	TOTAL	129	LF

722 3510 INLET-TYPE 2

21		1	EA

722 3701 INLET SPECIAL-TYPE 2 48IN

21		1	EA
23		1	EA
	TOTAL	2	EA



— Ditch LT —
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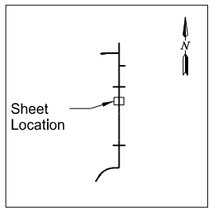

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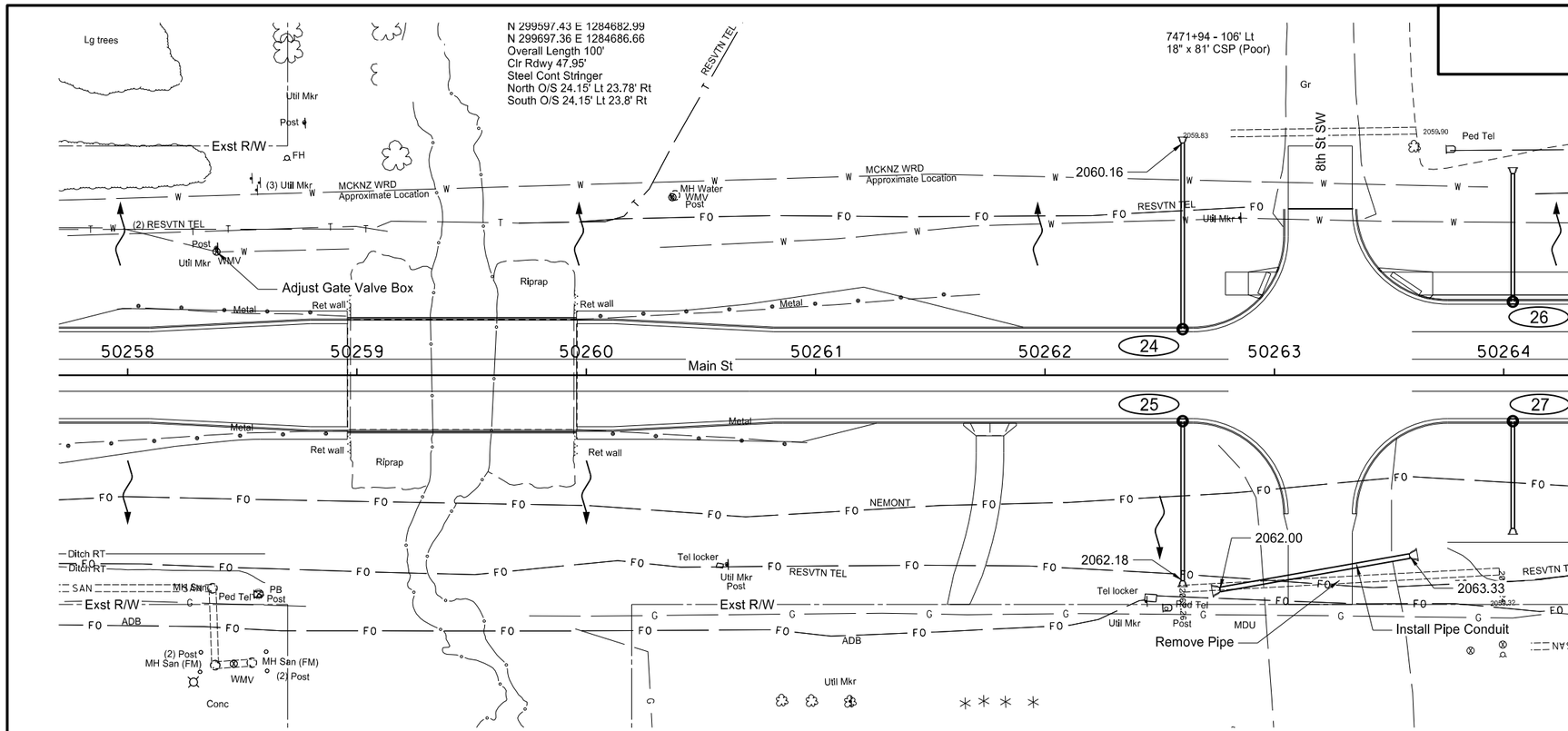
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50252+00 to Sta 50258+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	12



202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

50263+28.4 - 89.5' RT	140	LF

714 4101 PIPE CONDUIT 18IN-STORM DRAIN

24 to Sta 50262+60~101.3' LT	81	LF
25 to Sta 50262+60~89.6' RT	70	LF
TOTAL	151	LF

714 4106 PIPE CONDUIT 24IN-APPROACH

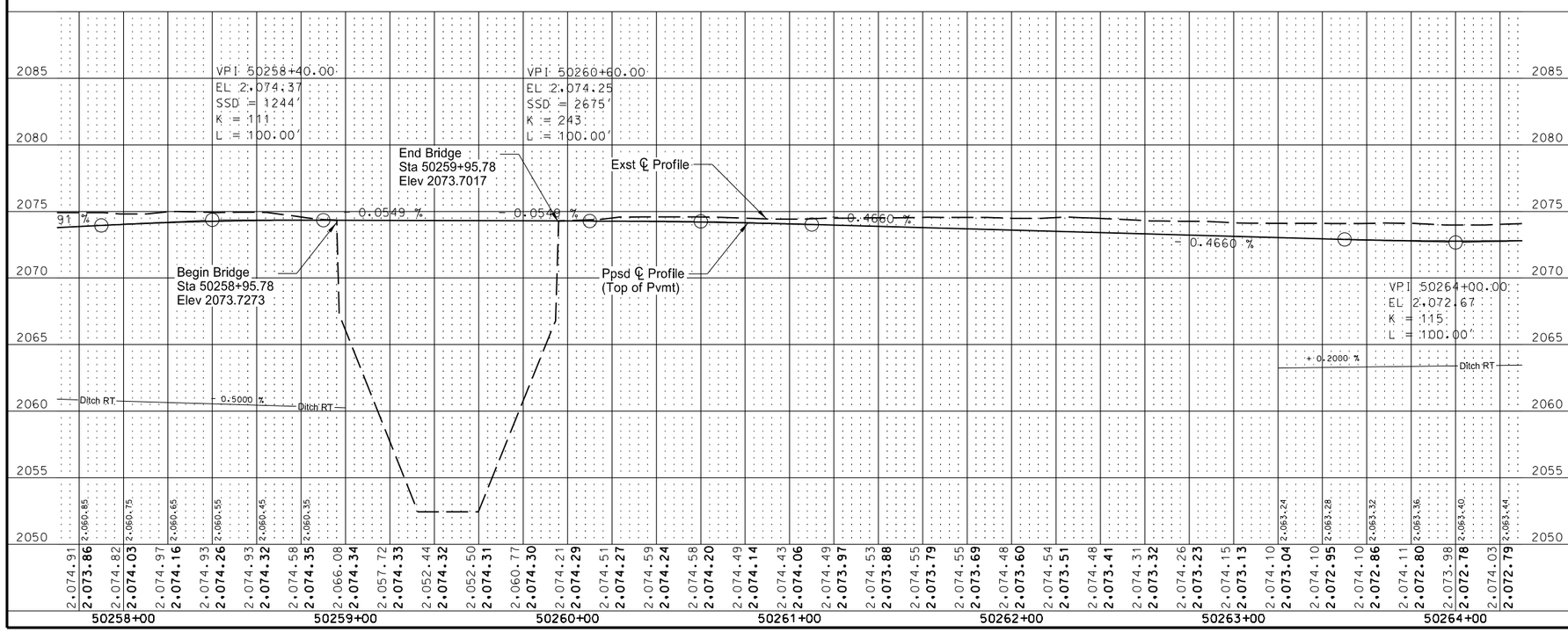
Sta 50262+76.3 ~ 93.5' RT to 50263+59.0 ~ 78.9' RT	84	LF

722 3701 INLET SPECIAL-TYPE 2 48IN

24	1	EA
25	1	EA
TOTAL	2	EA

722 6140 ADJUST GATE VALVE BOX

Sta 50258+38.8 ~ 53.8' LT	1	EA



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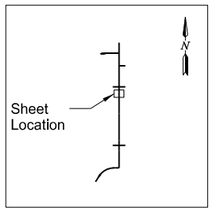

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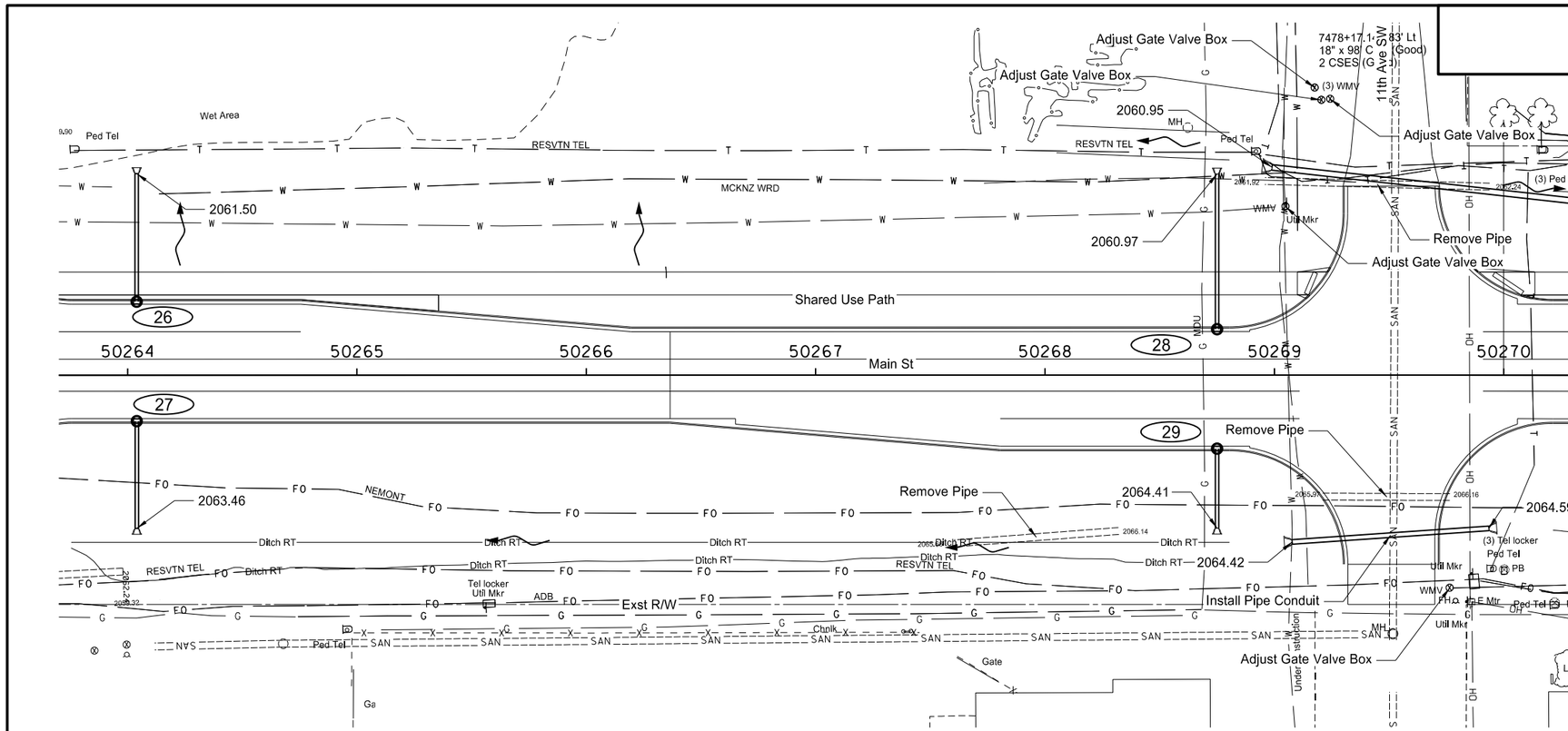
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50258+00 to Sta 50264+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	13



202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

50267+96.2 ~ 70.8' RT	72	LF
50269+44.9 ~ 83.4' LT	98	LF
50269+49.0 ~ 53.2' RT	56	LF
TOTAL	226	LF

714 4101 PIPE CONDUIT 18IN-STORM DRAIN

26 to Sta 50264+04~87.9' LT	56	LF
27 to Sta 50264+04~66.8' RT	47	LF
28 to Sta 50268+75~87.7' LT	68	LF
29 to Sta 50268+75~66.7' RT	35	LF
TOTAL	206	LF

714 4106 PIPE CONDUIT 24IN-APPROACH

50269+07.8~72.8' RT to 50269+93.6~66.8' RT	86	LF

714 4112 PIPE CONDUIT 30IN-STORM DRAIN

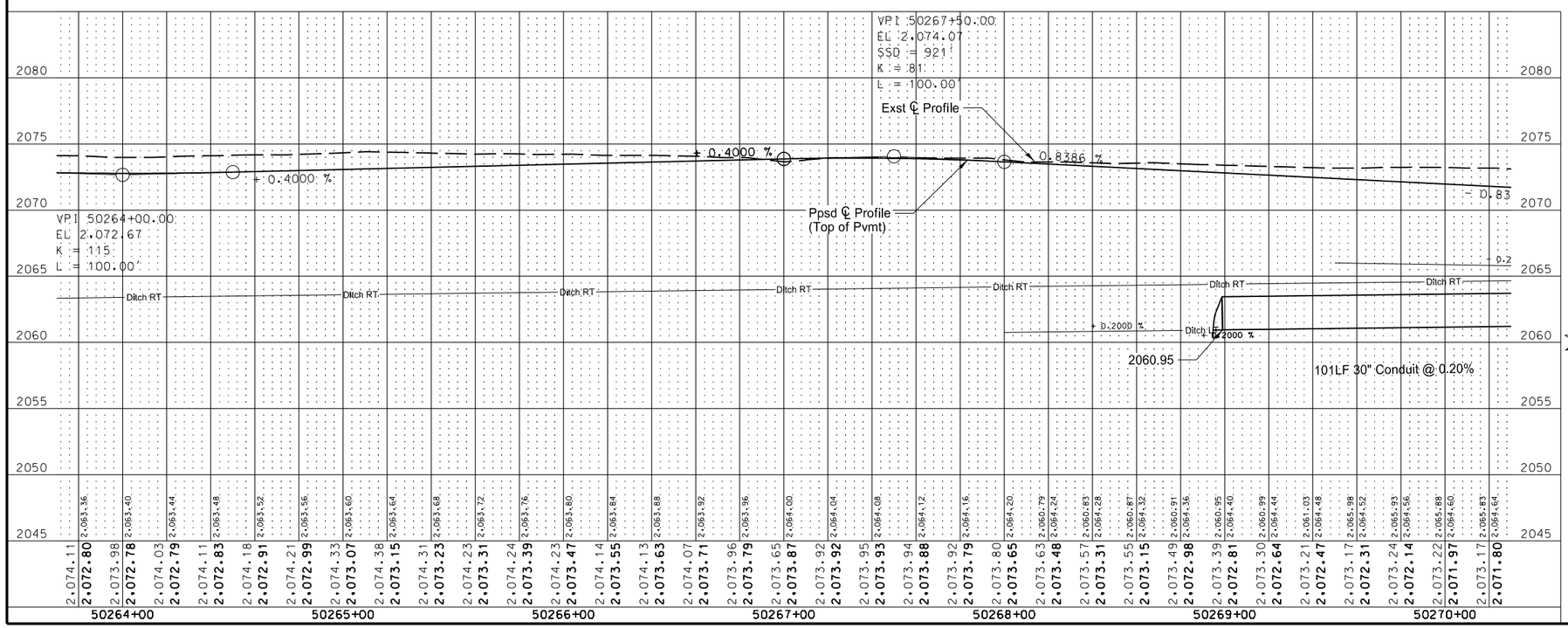
Sta 50269+99~90.6' LT to Sta 50270+00~79' LT	101	LF

722 3701 INLET SPECIAL-TYPE 2 48IN

26	1	EA
27	1	EA
28	1	EA
29	1	EA
TOTAL	4	EA

722 6140 ADJUST GATE VALVE BOX

Sta 50269+04.9 ~ 73.6' LT	1	EA
Sta 50269+17.6 ~ 125.3' LT	1	EA
Sta 50269+20.6 ~ 120.0' LT	1	EA
Sta 50269+24.4 ~ 120.4' LT	1	EA
Sta 50269+76.5 ~ 92.8' RT	1	EA
TOTAL	5	EA



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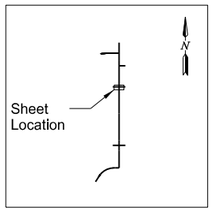

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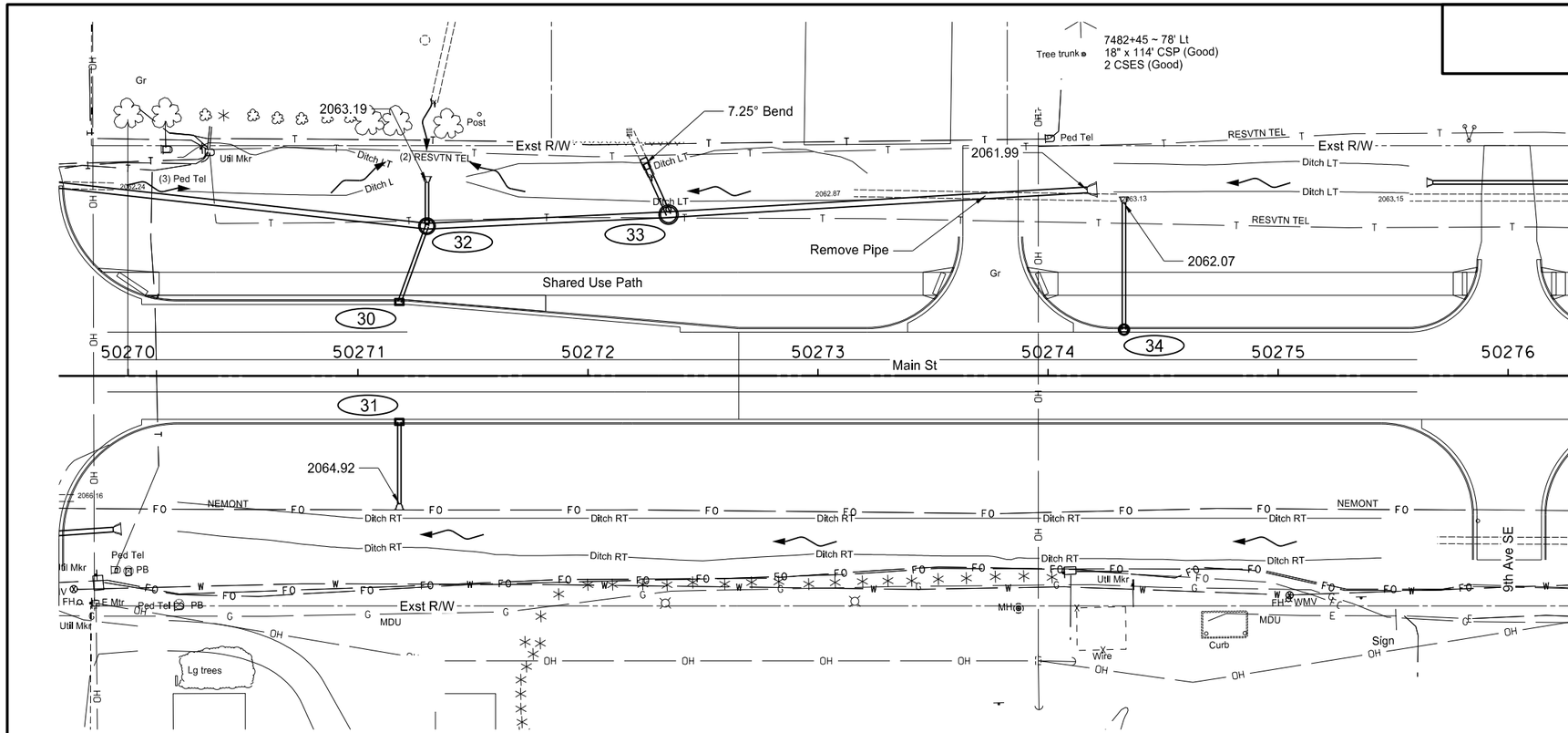
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50264+00 to Sta 50270+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	14



202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

50273+72.8 ~ 78.2' LT		114	LF

714 4101 PIPE CONDUIT 18IN-STORM DRAIN

30 to 32		35	LF
31to Sta 50271+18~55.6' RT		36	LF
Sta 50271+30~84.0' LT to 32		19	LF
34 to Sta 50274+33~75.1' LT		55	LF
	TOTAL	145	LF

714 4107 PIPE CONDUIT 24IN-STORM DRAIN

Sta 50272+25~92.1' LT to 33		24	LF

714 4112 PIPE CONDUIT 30IN-STORM DRAIN

Sta 50270+00~79' LT to 32		131	LF
32 to 33		105	LF
33 to Sta 50274+17~80.7' LT		182	LF
	TOTAL	418	LF

722 0120 MANHOLE 72IN

32		1	EA

722 0130 MANHOLE 84IN

33		1	EA

722 1120 MANHOLE RISER 72IN

32		4.7	LF

722 1130 MANHOLE RISER 84IN

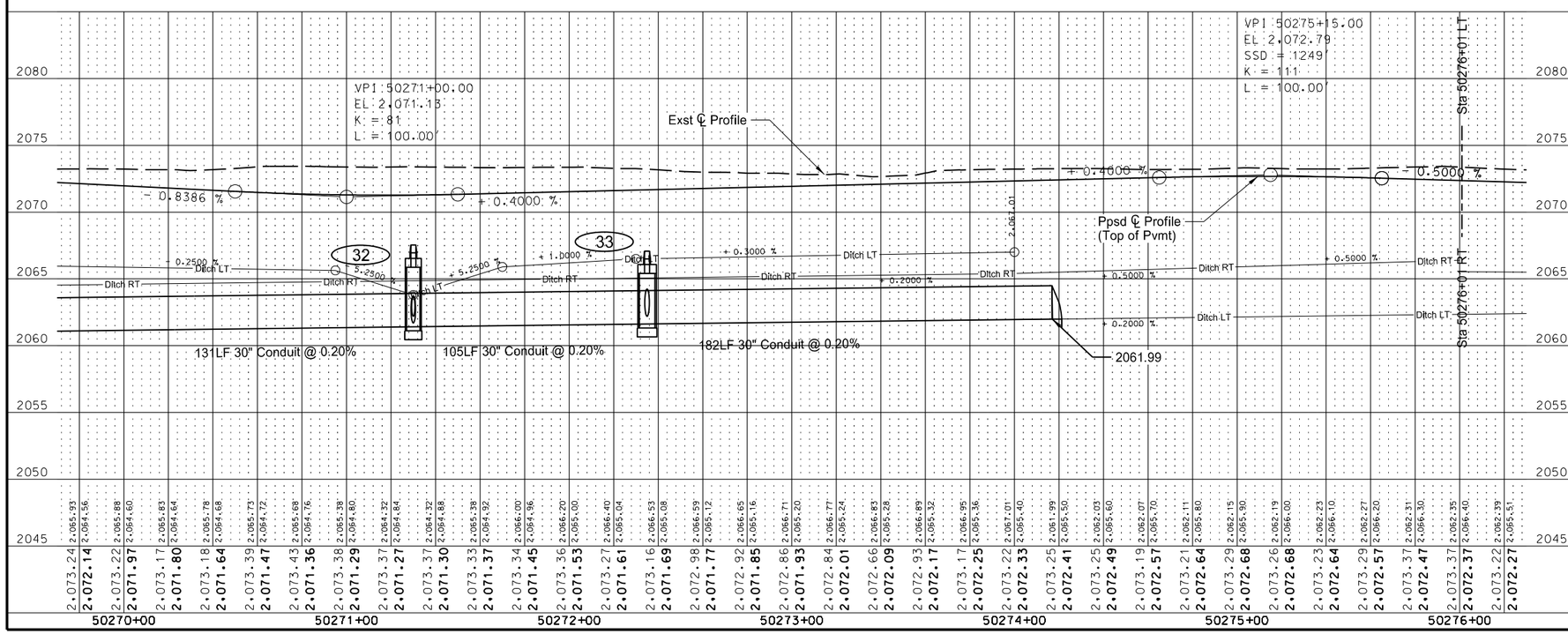
33		4.0	LF

722 3510 INLET-TYPE 2

30		1	EA
31		1	EA
	TOTAL	2	EA

722 3701 INLET SPECIAL-TYPE 2 48IN

34		1	EA



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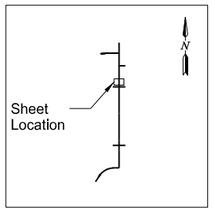

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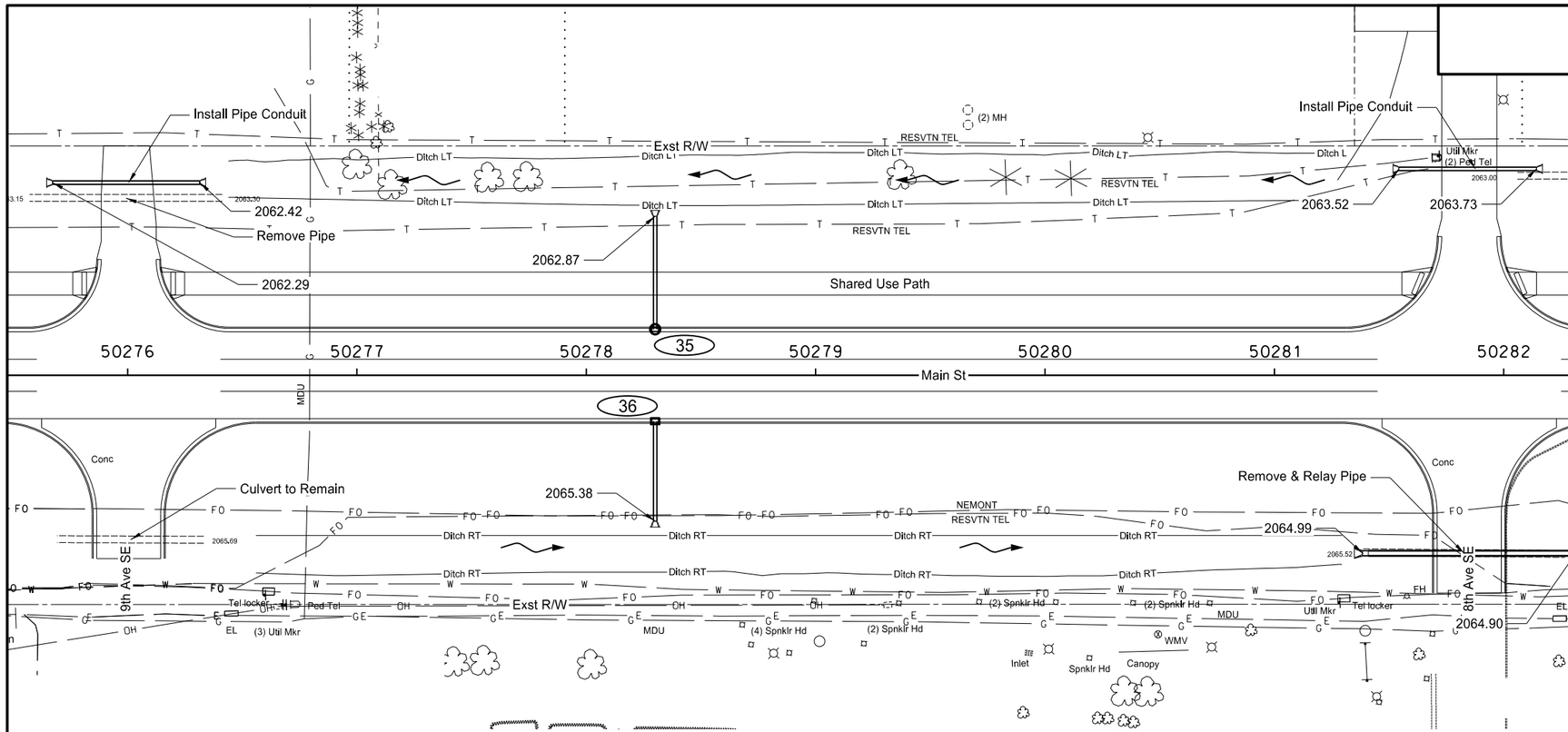
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50270+00 to Sta 50276+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	15



202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

50275+99.3 ~ 77.3' LT	84	LF

714 4099 PIPE CONDUIT 18IN-APPROACH

50275+67.3 ~ 84.0' LT to 50276+31.5 ~ 84.0' LT	64	LF
50281+54.3 ~ 90.0' LT to 50282+14.3 ~ 90.0' LT	60	LF
TOTAL	124	LF

714 4101 PIPE CONDUIT 18IN-STORM DRAIN

35 to Sta 50278+30~69.3' LT	49	LF
36 to Sta 50278+30~63.7' RT	44	LF
TOTAL	93	LF

714 9659 REMOVE & RELAY PIPE-ALL TYPES & SIZES

50281+41.0 ~ 77.6' RT to 50282+29.0 ~ 77.6' RT	88	LF

714 9660 REMOVE & RELAY END SECTION-ALL TYPE & SIZES

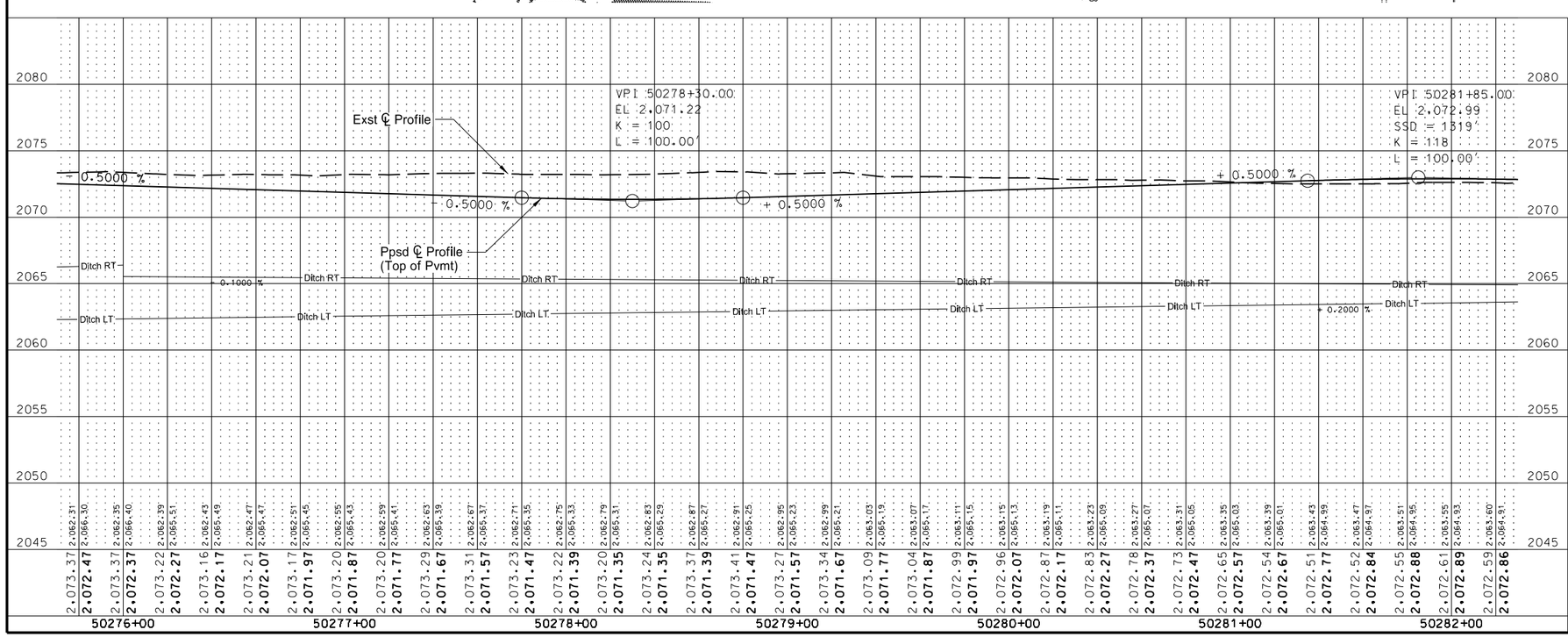
50281+38.5 ~ 77.6' RT to 50282+31.5 ~ 77.6' RT	2	EA

722 3510 INLET-TYPE 2

36	1	EA

722 3701 INLET SPECIAL-TYPE 2 48IN

35	1	EA



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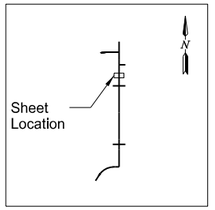

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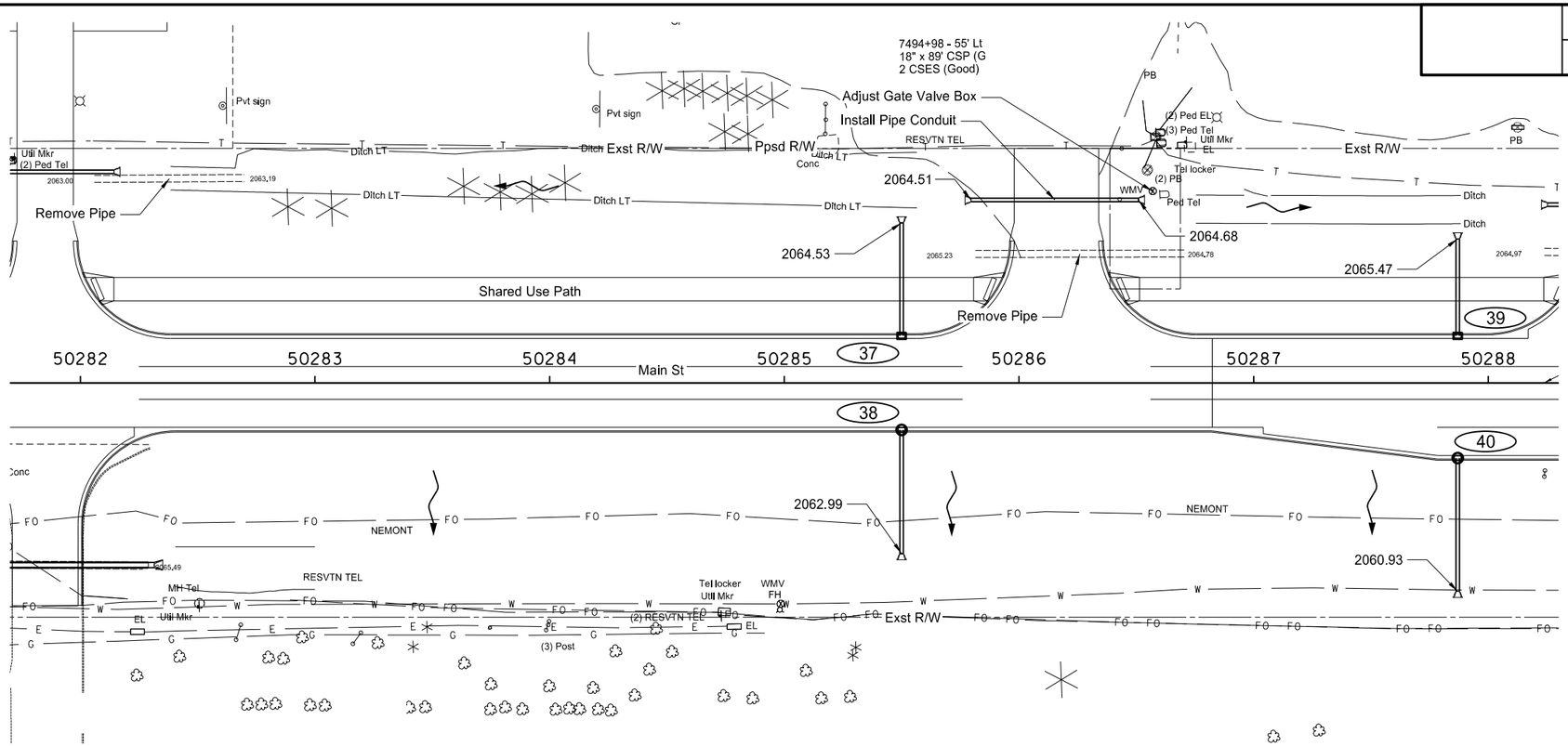
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50276+00 to Sta 50282+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	16



202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

50282+38.0 ~ 87.1' LT		64	LF
50286+26.0 - 55.0' LT		89	LF
	TOTAL	153	LF

714 4099 PIPE CONDUIT 18IN-APPROACH

50285+79.6 ~ 78.0' LT to 50286+50.9 ~ 78.0' LT		71	LF

714 4101 PIPE CONDUIT 18IN-STORM DRAIN

37 to Sta 50285+50~68.3' LT		48	LF
38 to Sta 50285+50~72.8' RT		53	LF
39 to Sta 50287+87~61.4' LT		41	LF
40 to Sta 50287+87~88.9' RT		57	LF
	TOTAL	199	LF

722 3510 INLET-TYPE 2

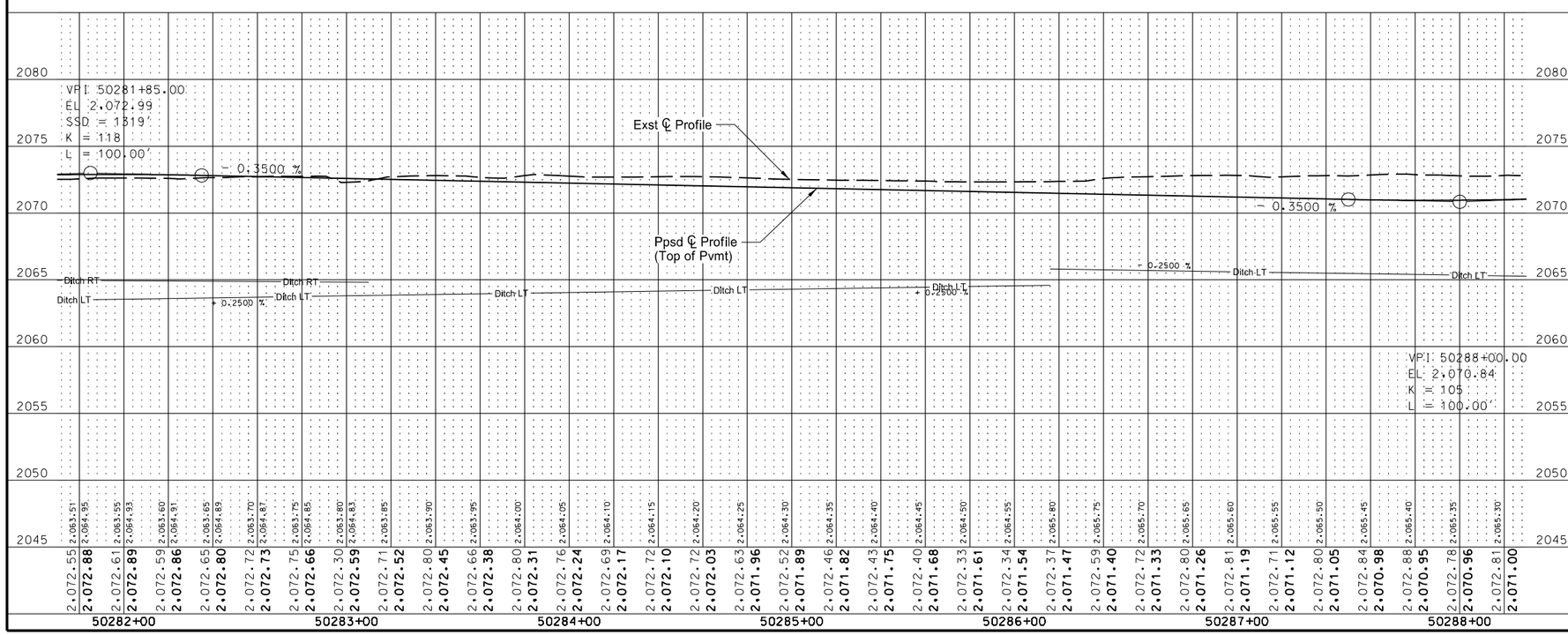
37		1	EA
39		1	EA
	TOTAL	2	EA

722 3701 INLET SPECIAL-TYPE 2 48IN

38		1	EA
40		1	EA
	TOTAL	2	EA

722 6140 ADJUST GATE VALVE BOX

Sta 50286+57.0 ~ 81.7' LT		1	EA



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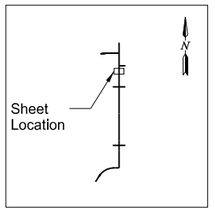

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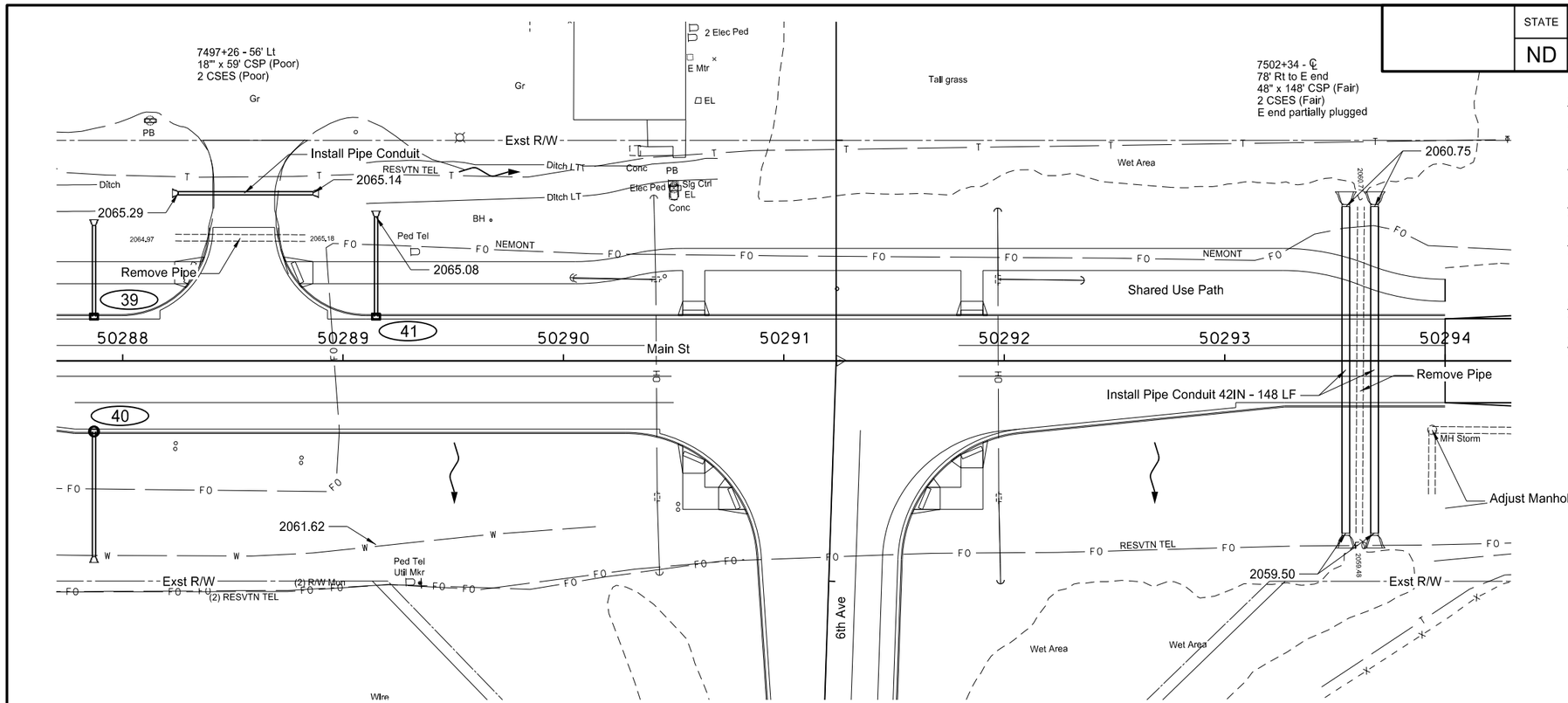
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50282+00 to Sta 50288+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	17



202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

50288+53.4 ~ 55.7' LT	59	LF
50293+61.4 ~ 4.2' RT	148	LF
TOTAL	207	LF

714 4099 PIPE CONDUIT 18IN-APPROACH

50288+25.2 ~ 76.0' LT to 50288+86.3 ~ 76.0' LT	61	LF

714 4101 PIPE CONDUIT 18IN-STORM DRAIN

41to Sta 50289+15~65.3' LT	45	LF

714 4120 PIPE CONDUIT 42IN

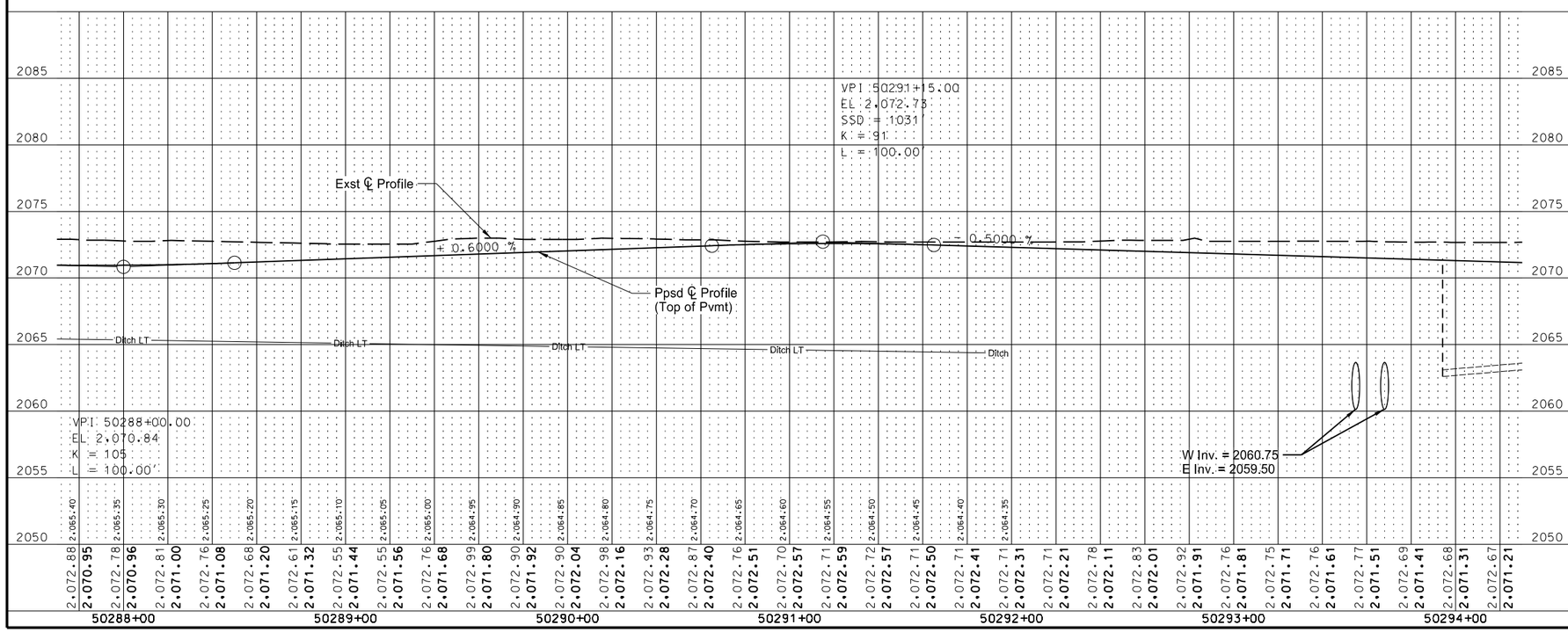
50293+55.0 ~ 69.9' LT to 50293+55.0 ~ 78.1' RT	148	LF
50293+68.0 ~ 69.9' LT to 50293+68.0 ~ 78.1' RT	148	LF
TOTAL	296	LF

722 3510 INLET-TYPE 2

41	1	EA

722 6200 ADJUST MANHOLE

Sta 50293+94.2~31.4' RT	1	EA



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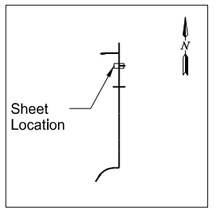

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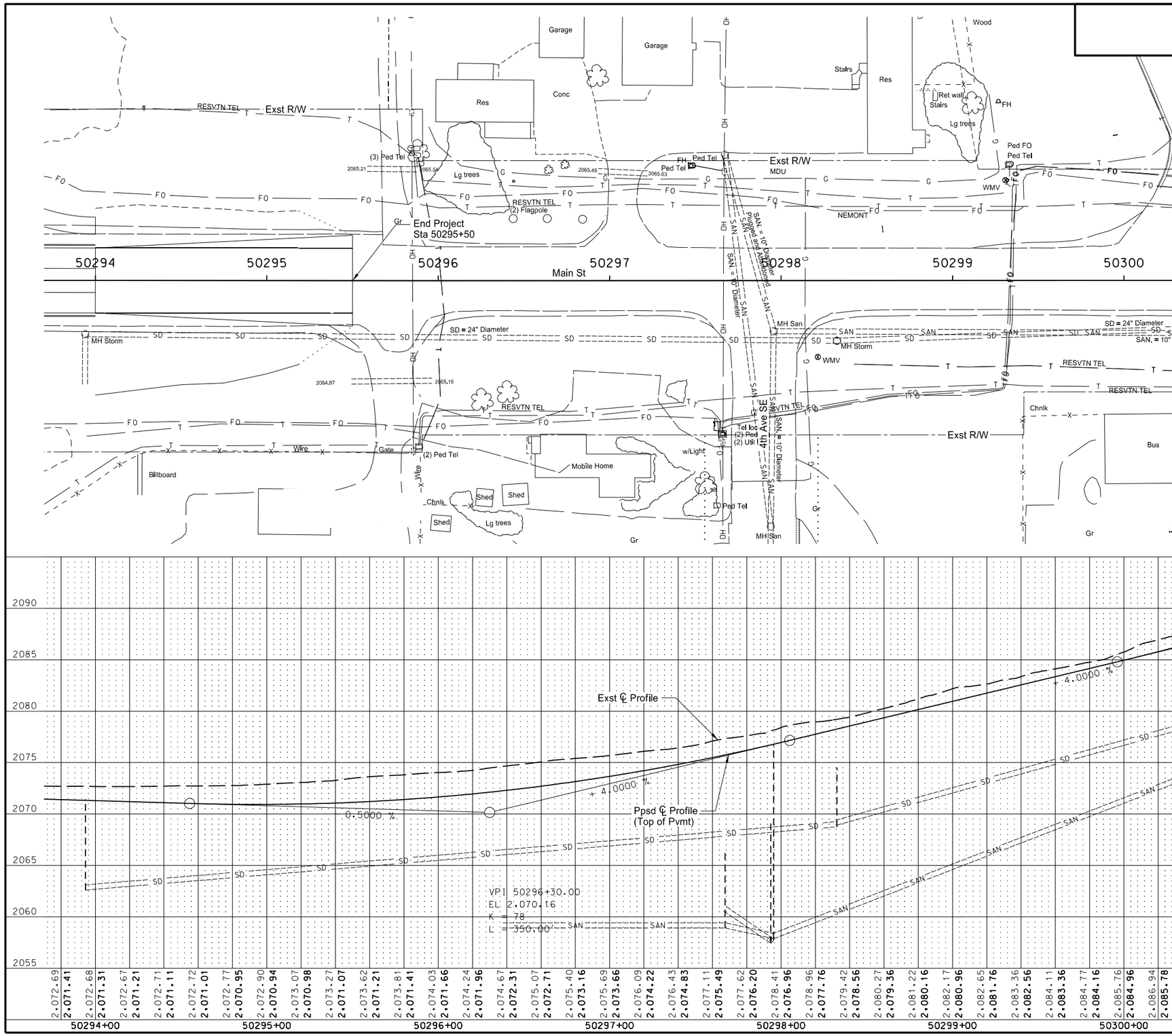
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50288+00 to Sta 50294+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	18



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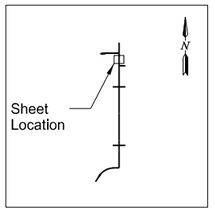

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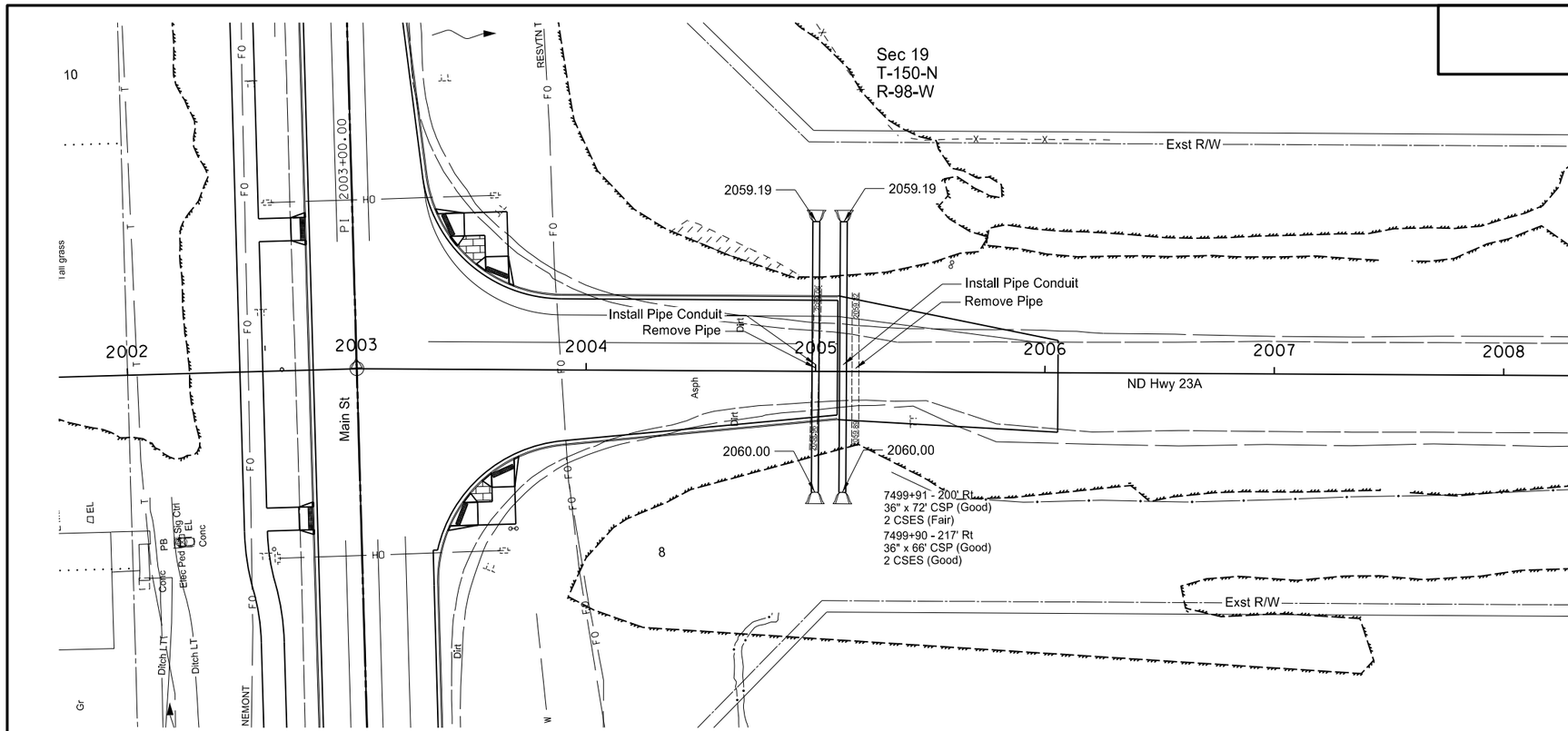
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

Main St (PRBN85)
Sta 50294+00 to Sta 50295+50

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	55	19

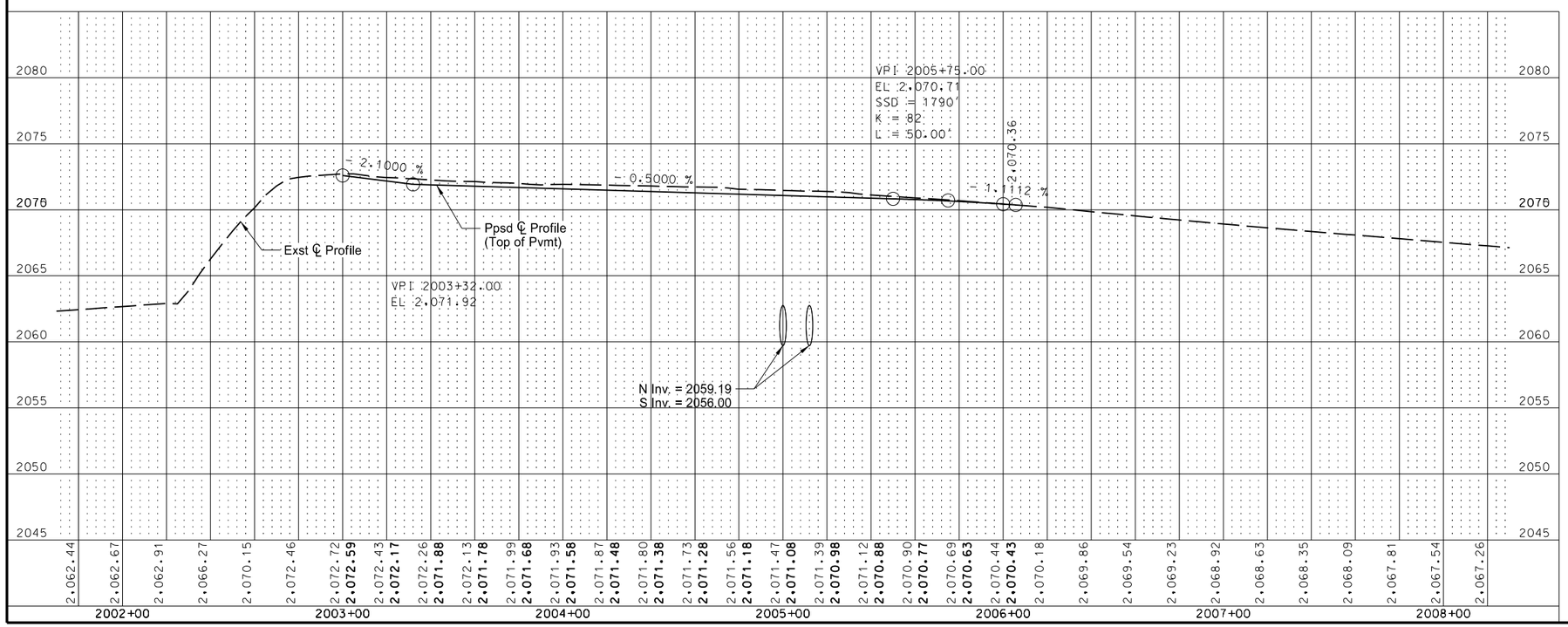


202 0170 REMOVAL OF CULVERTS-ALL TYPES & SIZES

2005+00.1~ 1.5' LT		72	LF
2005+17.5 ~ 1.4' LT		66	LF
	TOTAL	138	LF

714 4115 PIPE CONDUIT 36IN

2005+00.0 ~ 65.3' LT to 2005+00.0 ~ 52.7' RT		118	LF
2005+12.0~ 65.3' LT to 2005+12.0 ~ 52.7' RT		118	LF
	TOTAL	236	LF



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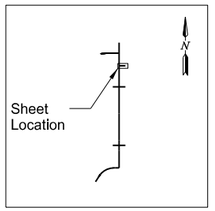
— Ditch RT —
Ditch Bottom



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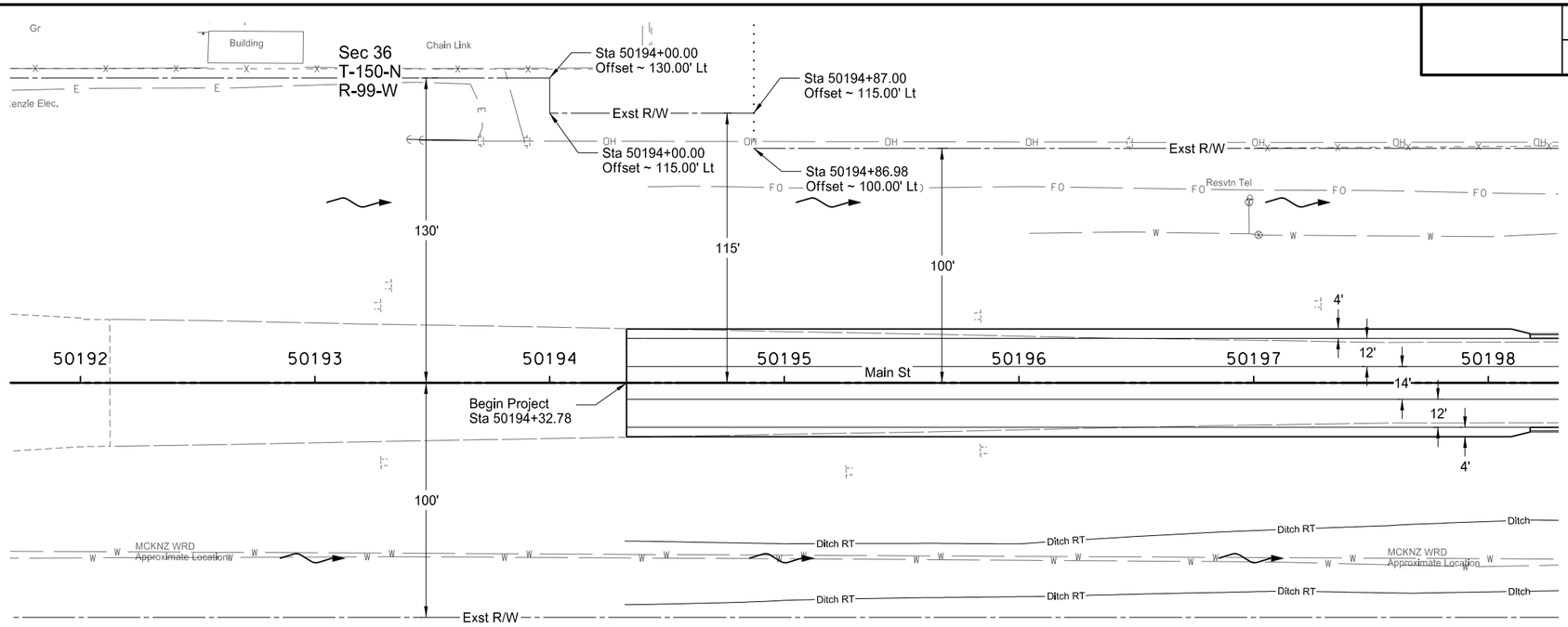
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Storm Sewer

6th Ave (PRTR23)
Sta 2003+34 to 2006+05.70

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	1

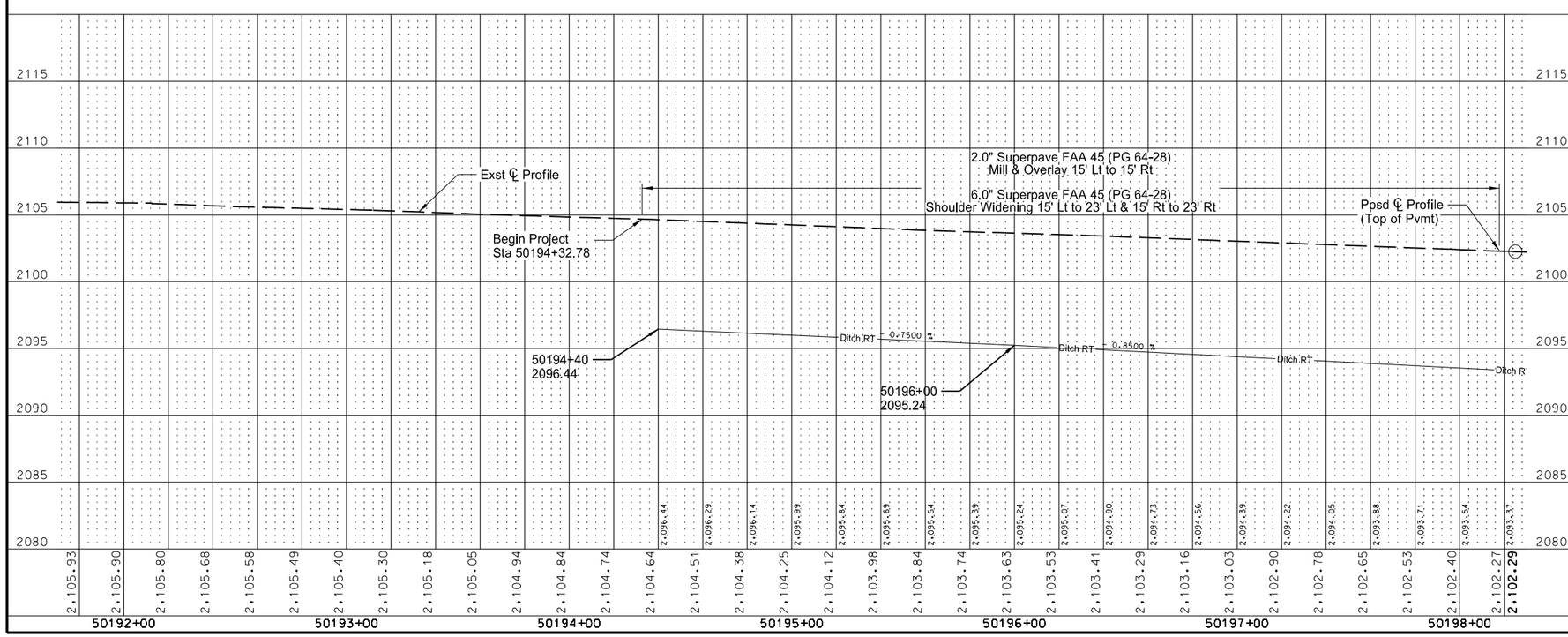


302 0100 SALVAGED BASE COURSE
Sta 50194+32.78 to 50198+17.78 — 1079 TON

401 0050 TACK COAT
Sta 50194+32.78 to 50198+17.78 — 137 GAL

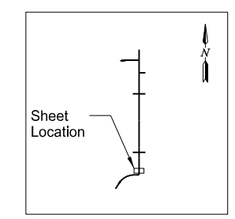
430 0045 SUPERPAVE FAA 45
Sta 50194+32.78 to 50198+17.78 — 402 TON

430 6428 PG 64-28 ASPHALT CEMENT
Sta 50194+32.78 to 50198+17.78 — 24 TON



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT — Ditch Bottom



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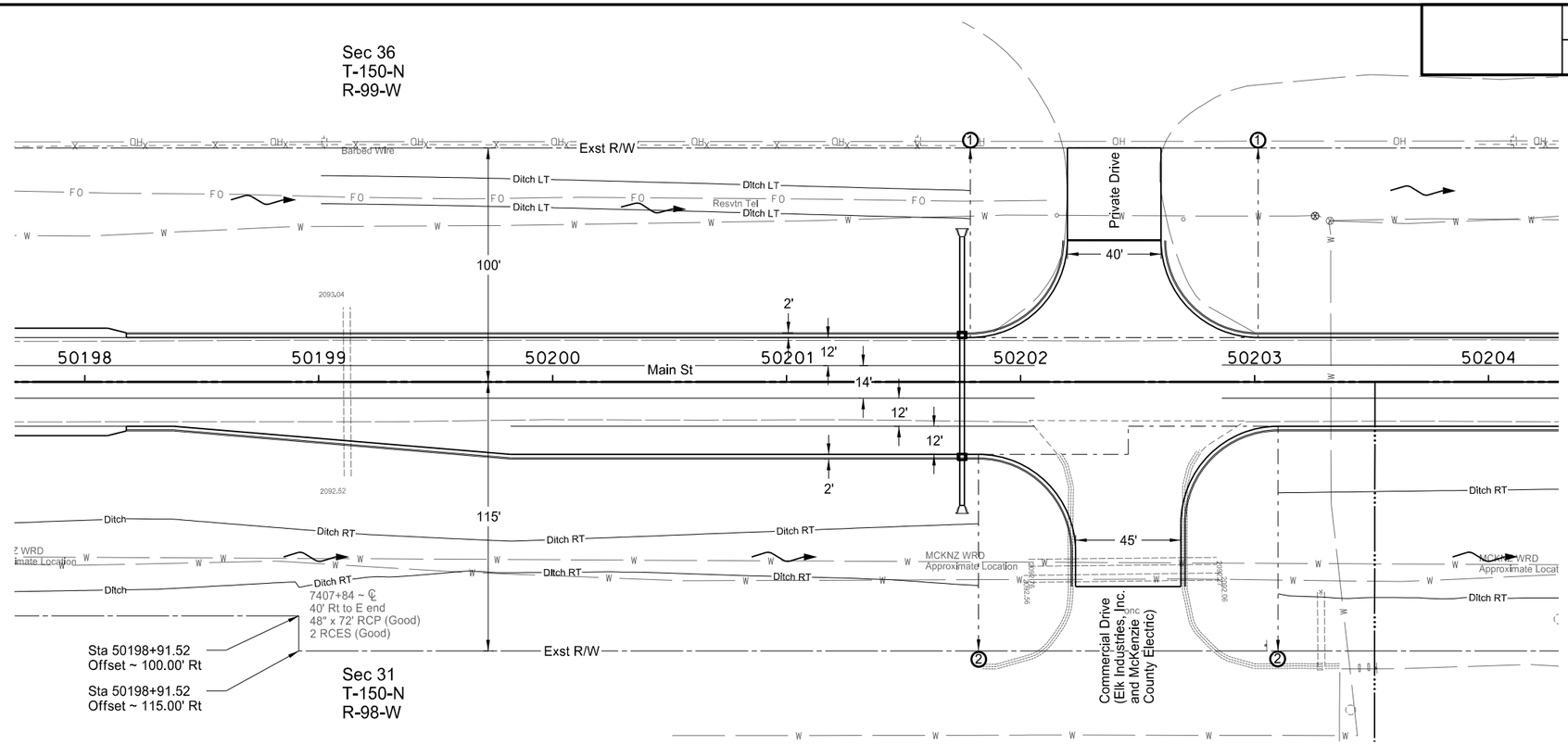
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

Main St (PRBN85)
Sta 50194+32.78 to Sta 50198+17.78

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	2



302 0100 SALVAGED BASE COURSE

Sta 50198+17.78 to 50204+00	3722	TON
Sta 50202+40 LT	58	TON
Total	3780	TON

401 0050 TACK COAT

Sta 50198+17.78 to 50204+00	357	GAL

401 0060 PRIME COAT

Sta 50198+17.78 to 50204+00	892	GAL

401 0160 BLOTTER MATERIAL CL 44

Sta 50198+17.78 to 50204+00	27	TON

430 0045 SUPERPAVE FAA 45

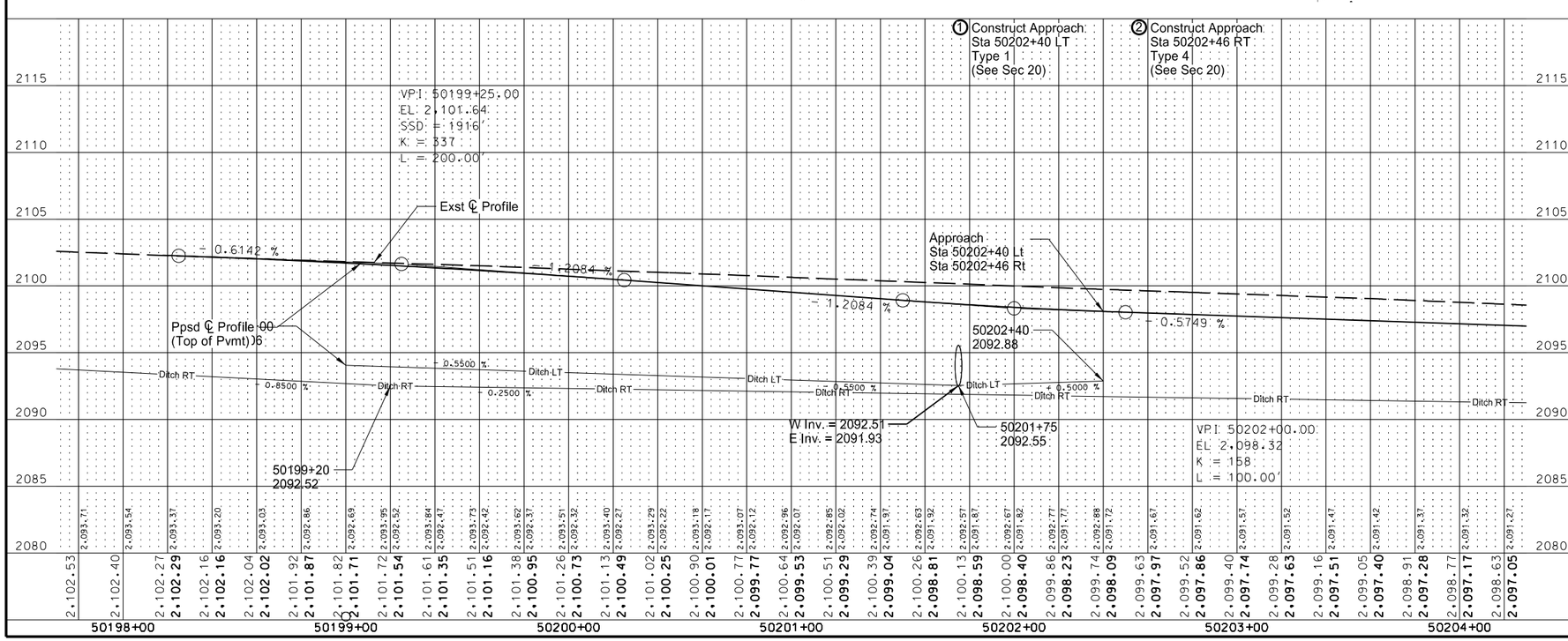
Sta 50198+17.78 to 50204+00	1189	TON

430 6428 PG 64-28 ASPHALT CEMENT

Sta 50198+17.78 to 50204+00	70	TON

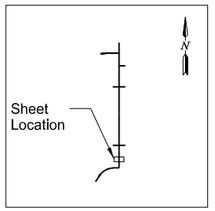
748 0140 CURB & GUTTER-TYPE I

Sta 50198+17.78 to 50204+00 LT	585	LF
Sta 50198+17.78 to 50204+00 RT	622	LF
Total	1207	LF



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT — Ditch Bottom



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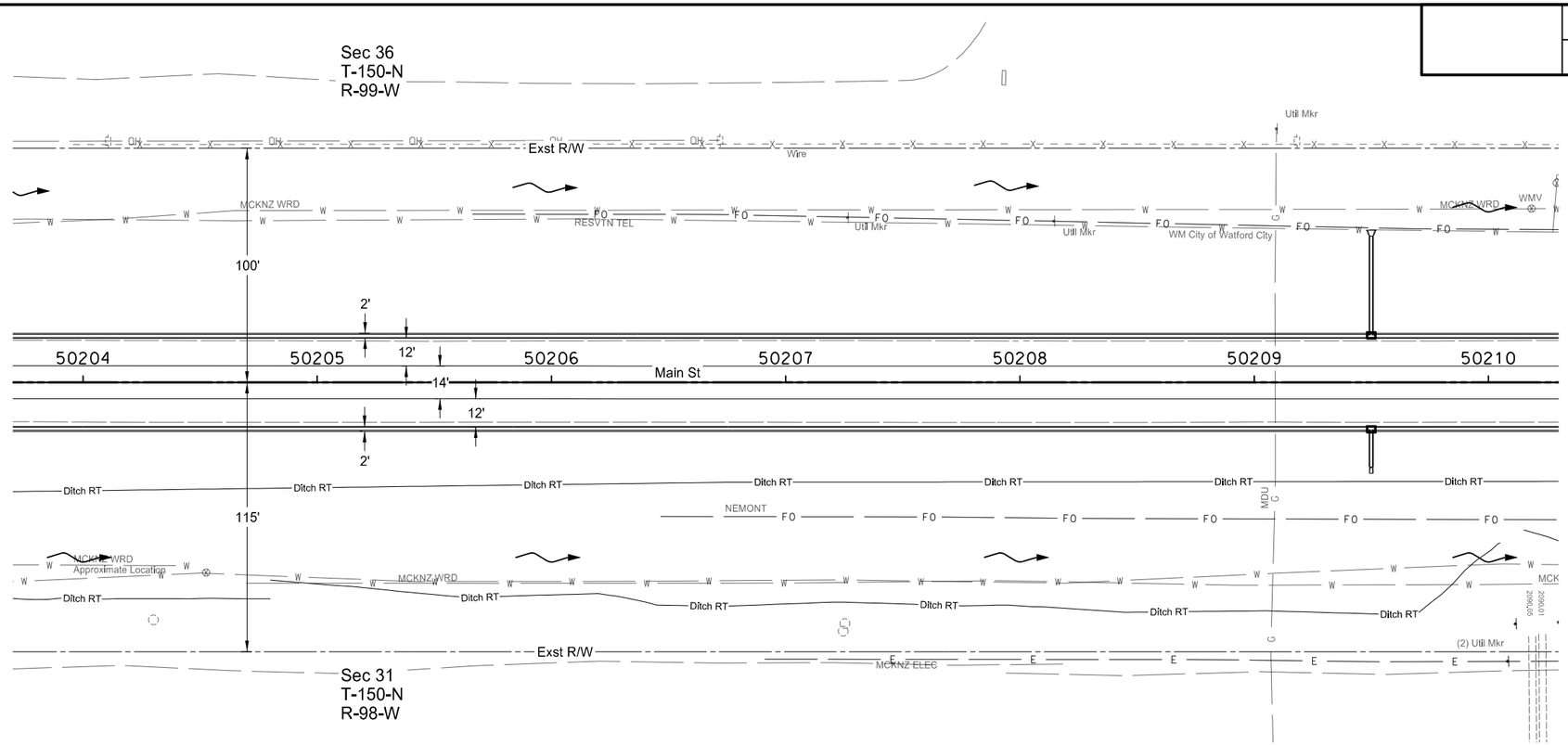
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

Main St (PRBN85)
Sta 50198+17.78 to Sta 50204+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	3



302 0100 SALVAGED BASE COURSE

Sta 50204+00 to 50210+00	2750	TON

401 0050 TACK COAT

Sta 50204+00 to 50210+00	253	GAL

401 0060 PRIME COAT

Sta 50204+00 to 50210+00	633	GAL

401 0160 BLOTTER MATERIAL CL 44

Sta 50204+00 to 50210+00	19	TON

430 0045 SUPERPAVE FAA 45

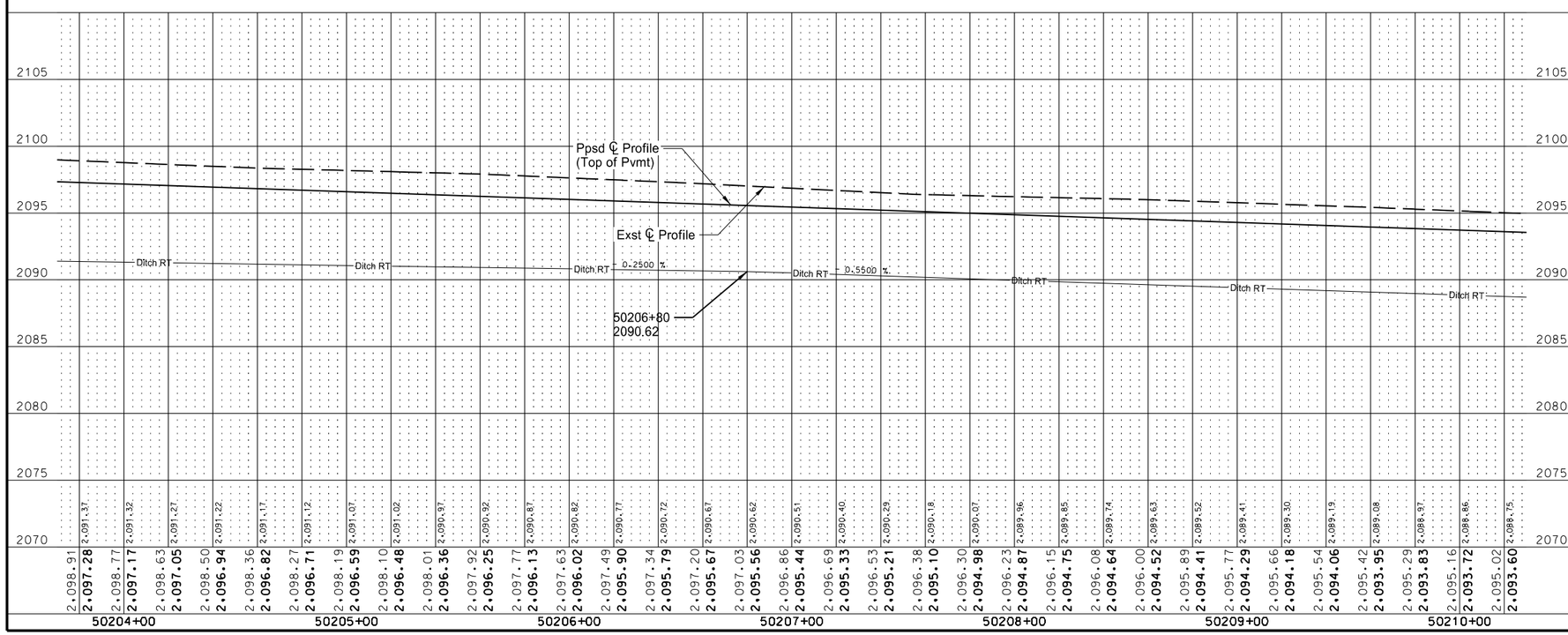
Sta 50204+00 to 50210+00	844	TON

430 6428 PG 64-28 ASPHALT CEMENT

Sta 50204+00 to 50210+00	50	TON

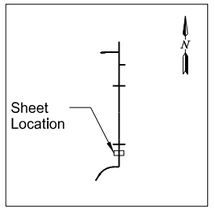
748 0140 CURB & GUTTER-TYPE I

Sta 50204+00 to 50210+00 LT	600	LF
Sta 50204+00 to 50210+00 RT	600	LF
Total	1200	LF



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT —
Ditch Bottom



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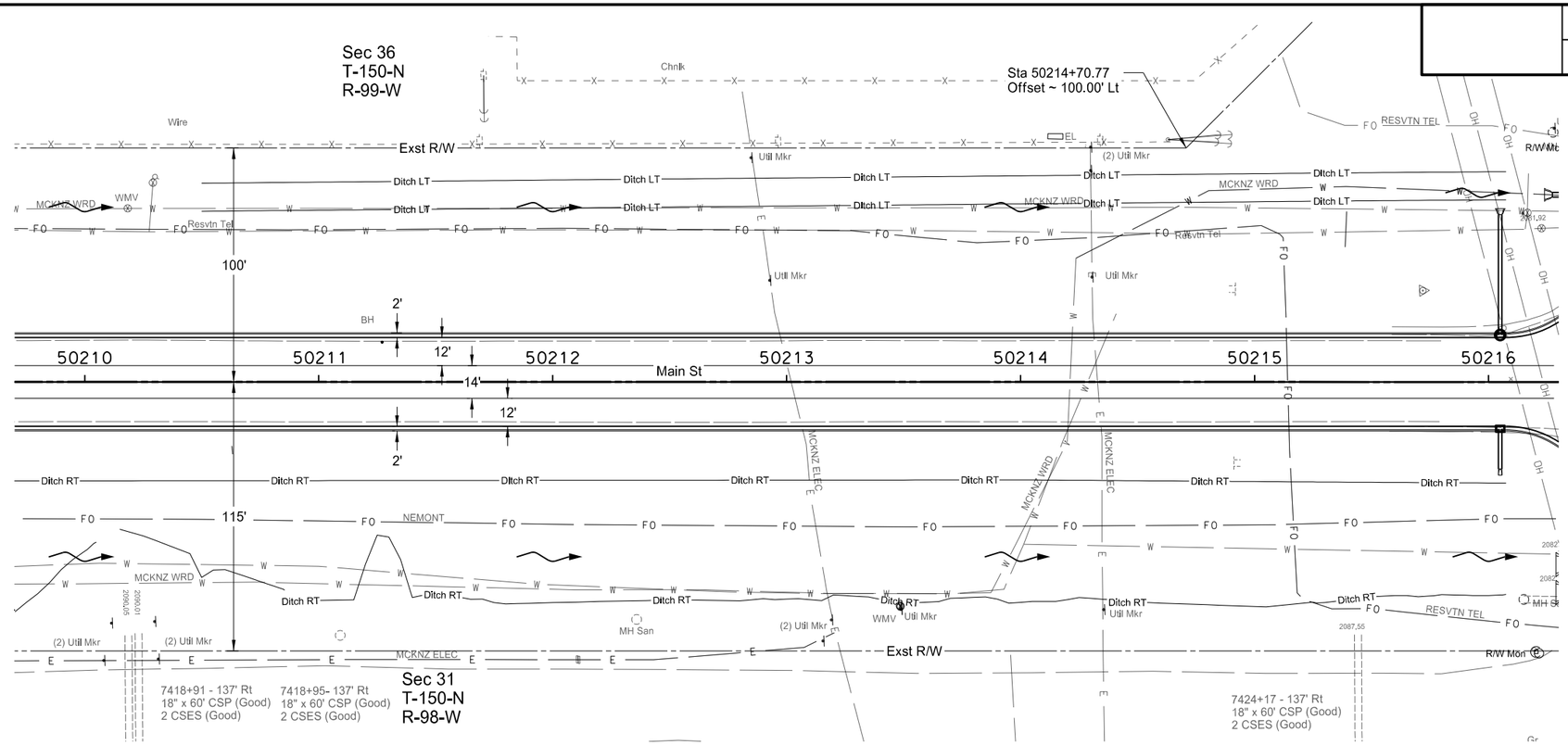
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

Main St (PRBN85)
Sta 50204+00 to Sta 50210+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	4



302 0100 SALVAGED BASE COURSE
Sta 50210+00 to 50216+00 — 2750 TON

401 0050 TACK COAT
Sta 50210+00 to 50216+00 — 253 GAL

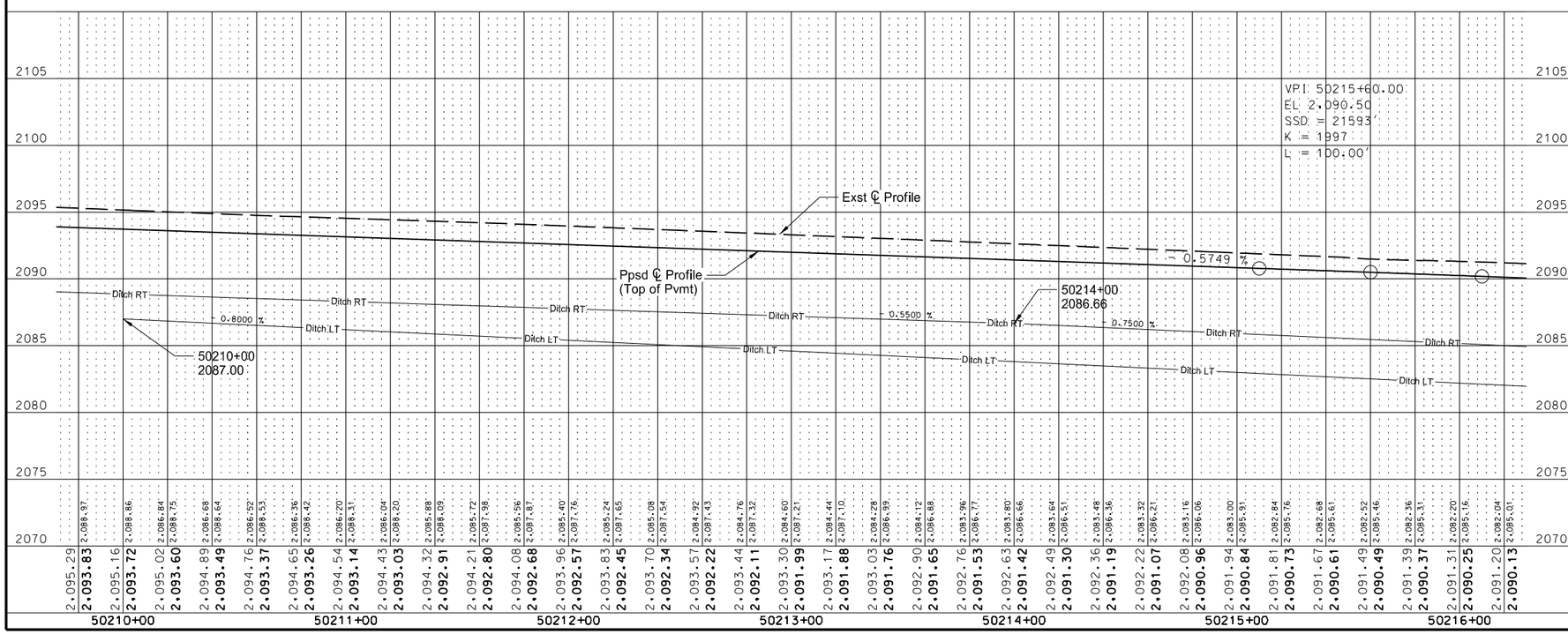
401 0060 PRIME COAT
Sta 50210+00 to 50216+00 — 633 GAL

401 0160 BLOTTER MATERIAL CL 44
Sta 50210+00 to 50216+00 — 19 TON

430 0045 SUPERPAVE FAA 45
Sta 50210+00 to 50216+00 — 844 TON

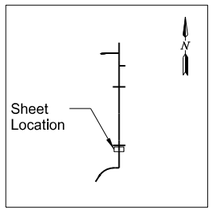
430 6428 PG 64-28 ASPHALT CEMENT
Sta 50210+00 to 50216+00 — 50 TON

748 0140 CURB & GUTTER-TYPE I
Sta 50210+00 to 50216+00 LT — 600 LF
Sta 50210+00 to 50216+00 RT — 600 LF
Total — 1200 LF



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT —
Ditch Bottom



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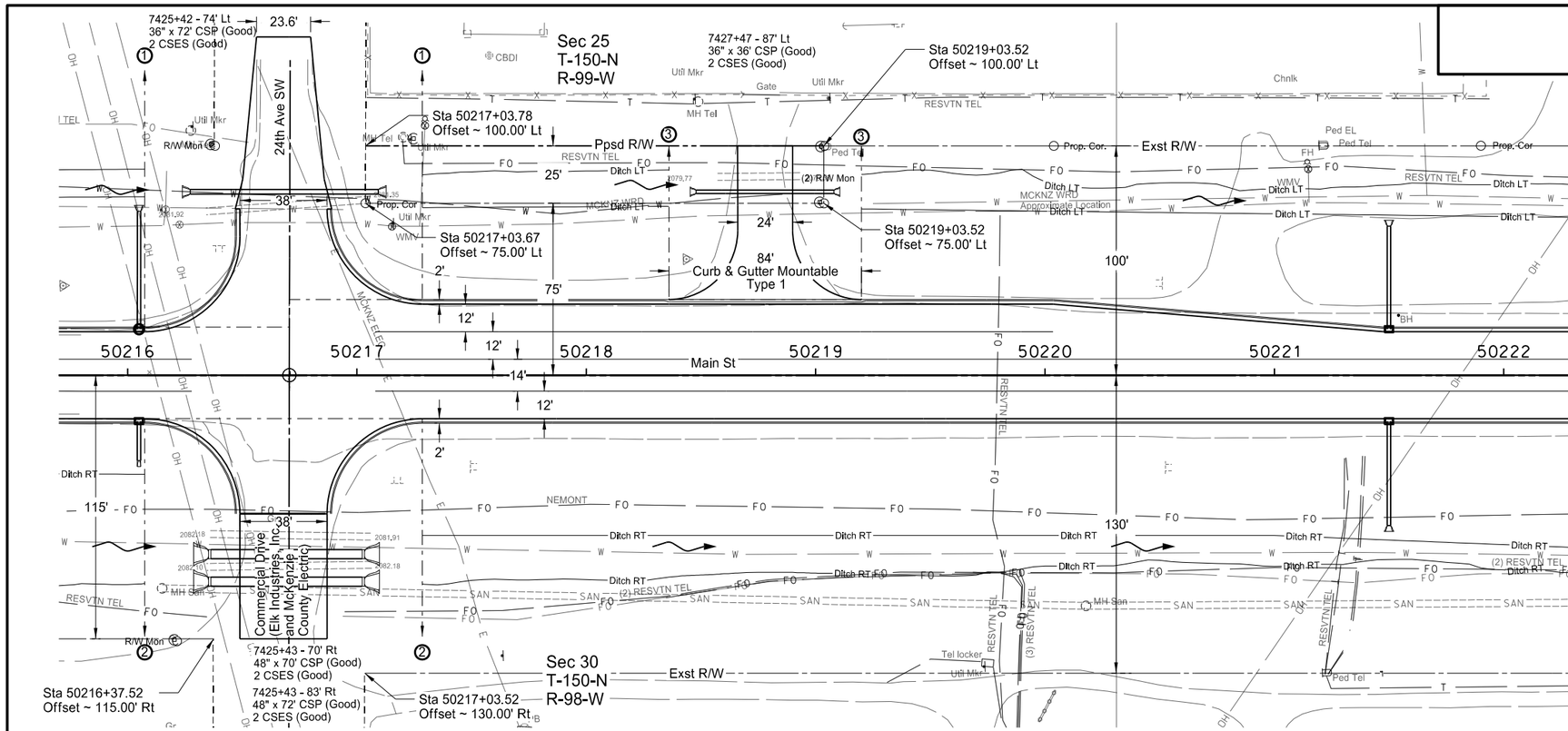
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

Main St (PRBN85)
Sta 50210+00 to Sta 50216+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	5



302 0100 SALVAGED BASE COURSE

Sta 50216+00 to 50222+00	3772	TON
Sta 50216+68 LT	183	TON
Sta 50216+68 RT	76	TON
Sta 50218+78 LT	72	TON
Total	4103	TON

401 0050 TACK COAT

Sta 50216+00 to 50222+00	362	GAL
Sta 50216+68 LT	28	GAL
Total	390	GAL

401 0060 PRIME COAT

Sta 50216+00 to 50222+00	904	GAL
Sta 50216+68 LT	69	GAL
Total	973	GAL

401 0160 BLOTTER MATERIAL CL 44

Sta 50216+00 to 50222+00	27	TON
Sta 50216+68 LT	2	TON
Total	29	TON

430 0045 SUPERPAVE FAA 45

Sta 50216+00 to 50222+00	1206	TON
Sta 50216+68 LT	92	TON
Total	1298	TON

430 6428 PG 64-28 ASPHALT CEMENT

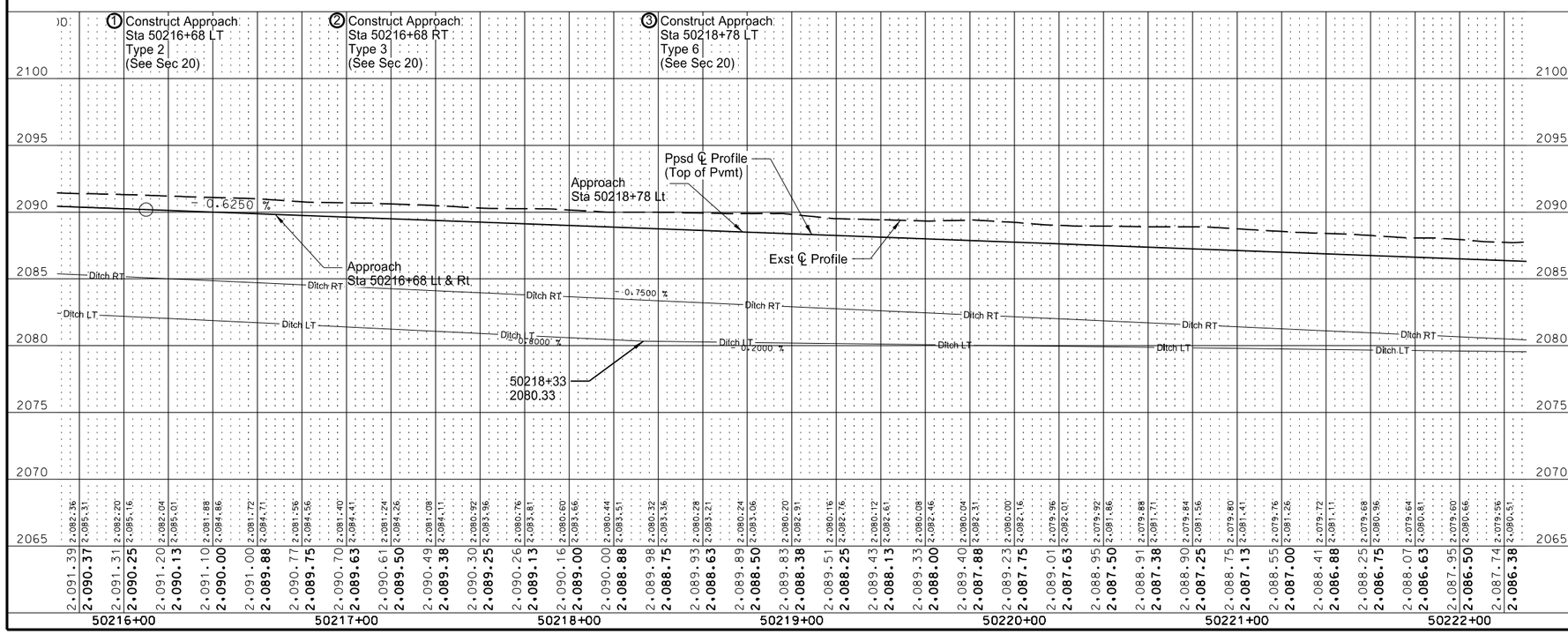
Sta 50216+00 to 50222+00	71	TON
Sta 50216+68 LT	5	TON
Total	76	TON

748 0120 CURB & GUTTER MOUNTABLE-TYPE I

Sta 50218+36 to 50229+20 LT	84	LF

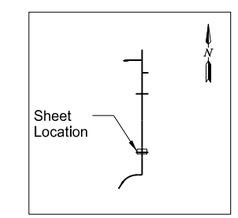
748 0140 CURB & GUTTER-TYPE I

Sta 50216+00 to 50222+00 LT	533	LF
Sta 50216+00 to 50222+00 RT	605	LF
Total	1138	LF



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT —
Ditch Bottom



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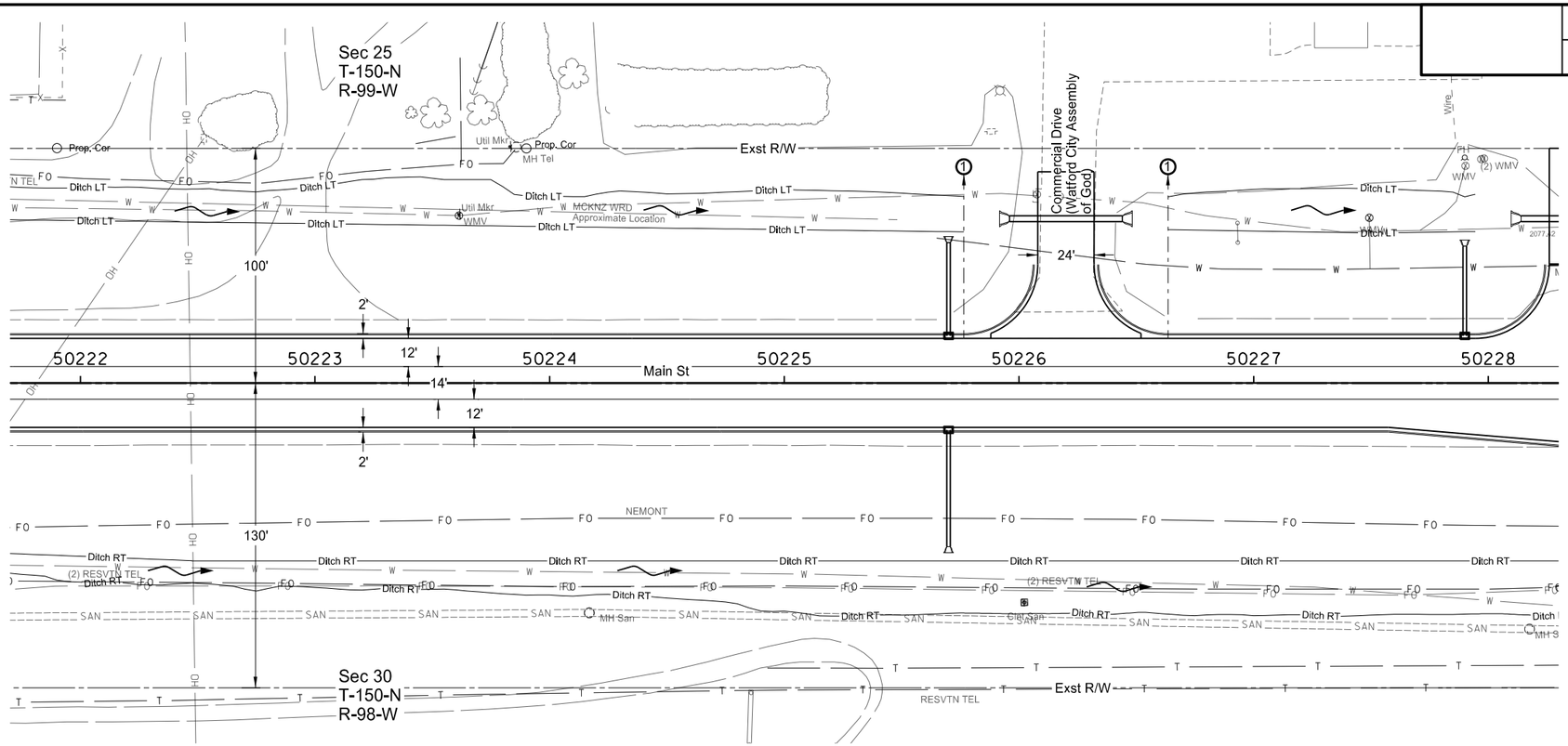
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

Main St (PRBN85)
Sta 50216+00 to Sta 50222+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	6



302 0100 SALVAGED BASE COURSE

Sta 50222+00 to 50228+00		2758	TON
Sta 50226+20 LT		103	TON
	Total	2861	TON

401 0050 TACK COAT

Sta 50222+00 to 50228+00	254	GAL

401 0060 PRIME COAT

Sta 50222+00 to 50228+00	635	GAL

401 0160 BLOTTER MATERIAL CL 44

Sta 50222+00 to 50228+00	19	TON

430 0045 SUPERPAVE FAA 45

Sta 50222+00 to 50228+00	847	TON

430 6428 PG 64-28 ASPHALT CEMENT

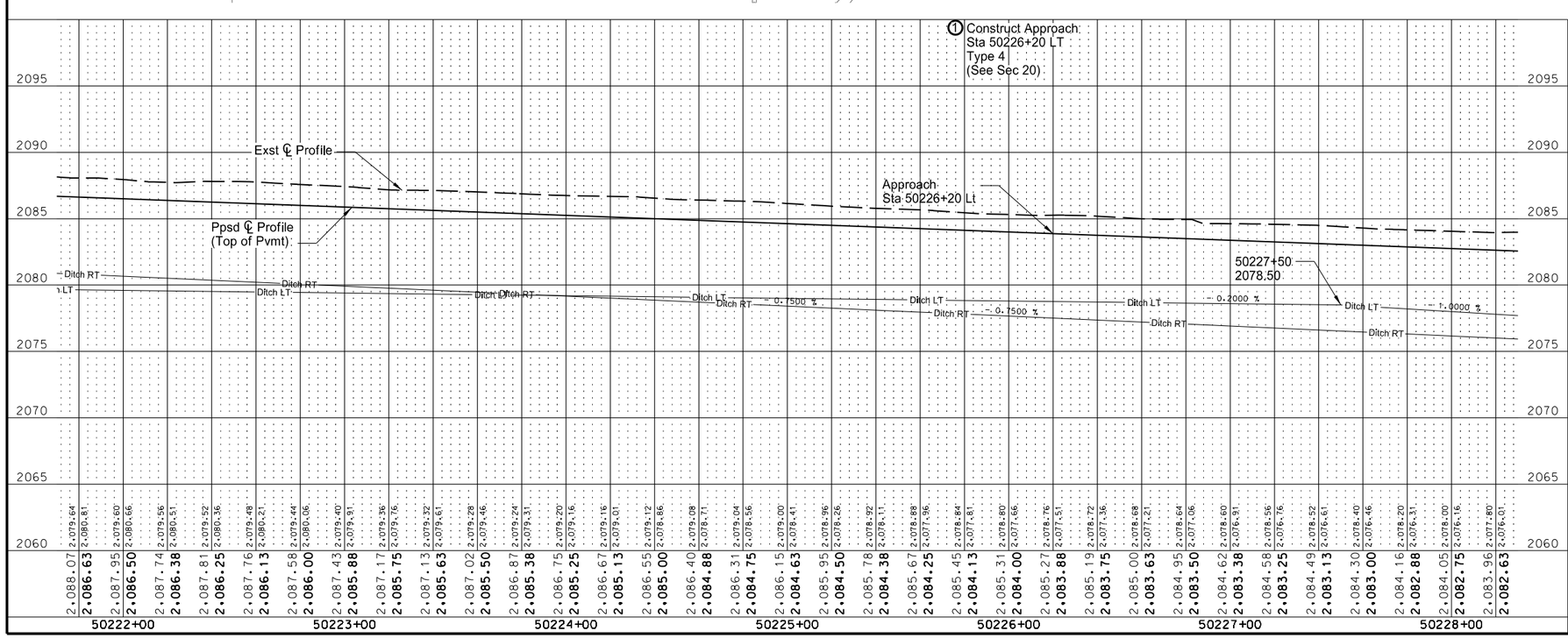
Sta 50222+00 to 50228+00	50	TON

550 0305 9IN NON-REINF CONCRETE PVMT CL AE-DOWELED

Sta 50226+20 LT	235	SY

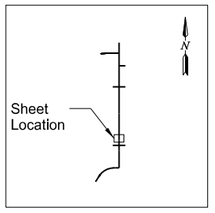
748 0140 CURB & GUTTER-TYPE I

Sta 50222+00 to 50228+00 LT	607	LF
Sta 50222+00 to 50228+00 RT	600	LF
Total	1207	LF



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT — Ditch Bottom



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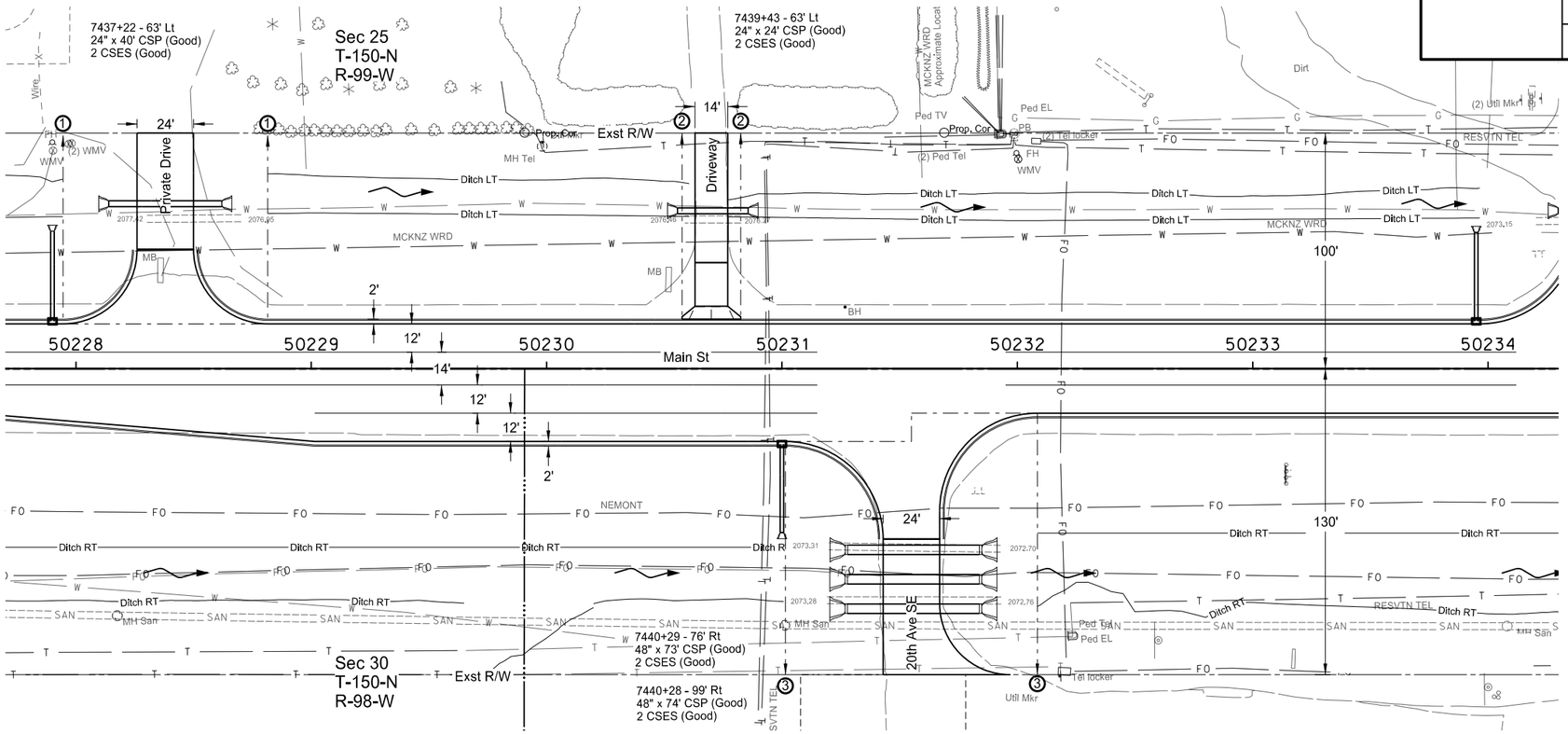
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

Main St (PRBN85)
Sta 50222+00 to Sta 50228+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	7



302 0100 SALVAGED BASE COURSE

Sta 50228+00 to 50234+00		3480	TON
Sta 50228+38 LT		45	TON
Sta 50230+70 LT		101	TON
Sta 50231+55 RT		60	TON
	Total	3686	TON

401 0050 TACK COAT

Sta 50228+00 to 50234+00		330	GAL
Sta 50230+70 LT		9	GAL
	Total	339	GAL

401 0060 PRIME COAT

Sta 50228+00 to 50234+00		825	GAL
Sta 50230+70 LT		24	GAL
	Total	849	GAL

401 0160 BLOTTER MATERIAL CL 44

Sta 50228+00 to 50234+00		25	TON
Sta 50230+70 LT		1	TON
	Total	26	TON

430 0045 SUPERPAVE FAA 45

Sta 50228+00 to 50234+00		1100	TON
Sta 50230+70 LT		31	TON
	Total	1131	TON

430 6428 PG 64-28 ASPHALT CEMENT

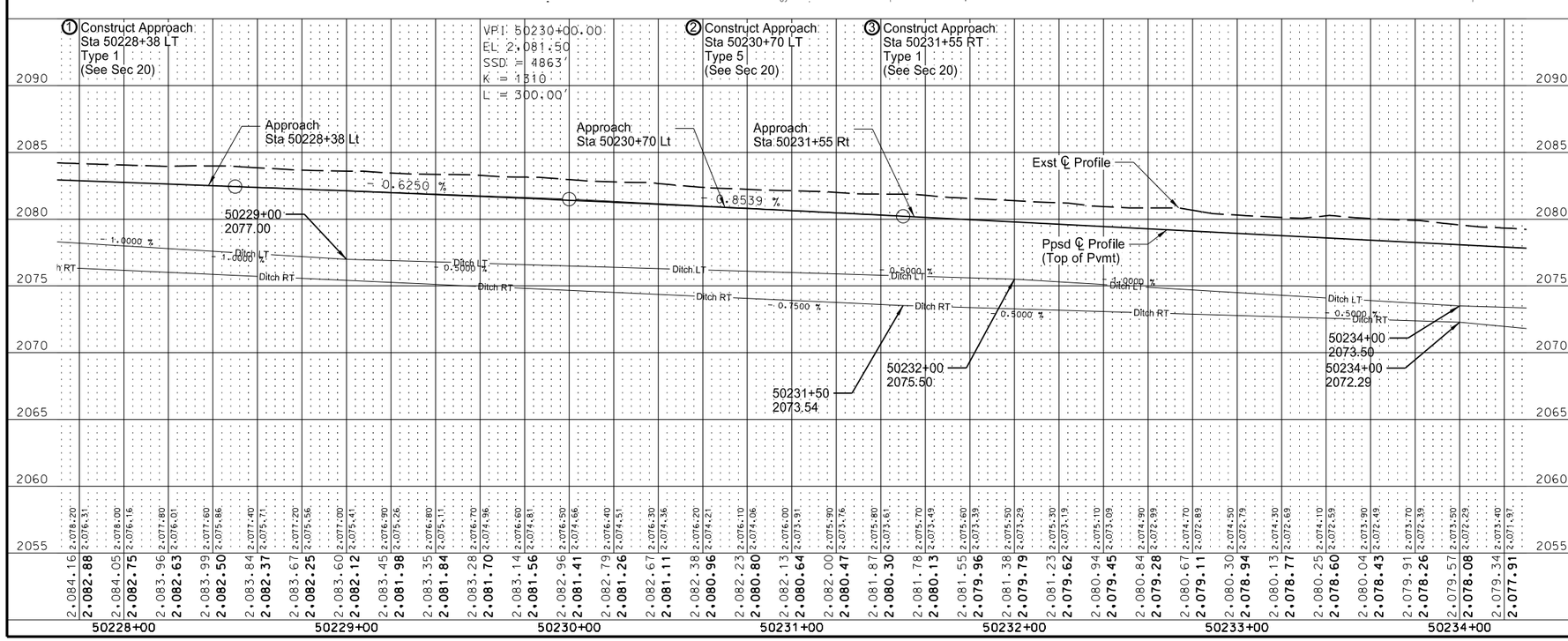
Sta 50228+00 to 50234+00		65	TON
Sta 50230+70 LT		2	TON
	Total	67	TON

748 0140 CURB & GUTTER-TYPE I

Sta 50228+00 to 50234+00 LT		607	LF
Sta 50228+00 to 50234+00 RT		631	LF
	Total	1238	LF

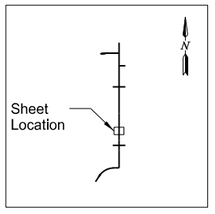
750 1000 DRIVEWAY CONCRETE

Sta 50230+70 LT		41	SY



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT —
Ditch Bottom



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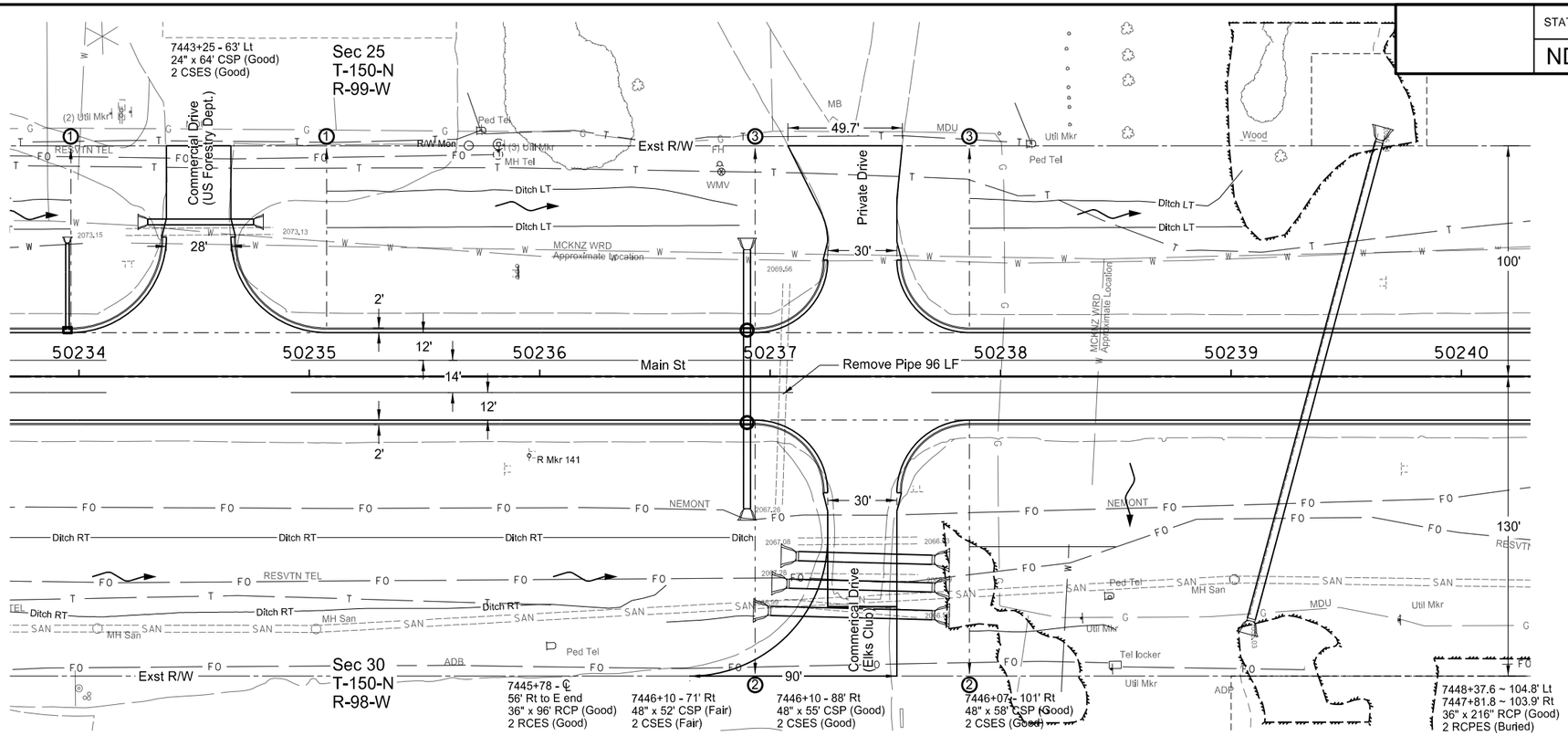
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

Main St (PRBN85)
Sta 50228+00 to Sta 50234+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	8



302 0100 SALVAGED BASE COURSE

Sta 50234+00 to 50240+00	3239	TON
Sta 50234+52 LT	89	TON
Sta 50237+40 LT	141	TON
Sta 50237+40 RT	179	TON
Total	3648	TON

401 0050 TACK COAT

Sta 50234+00 to 50240+00	305	GAL
Sta 50234+52 LT	13	GAL
Sta 50237+40 LT	21	GAL
Sta 50237+40 RT	18	GAL
Total	357	GAL

401 0060 PRIME COAT

Sta 50234+00 to 50240+00	762	GAL
Sta 50234+52 LT	33	GAL
Sta 50237+40 LT	54	GAL
Sta 50237+40 RT	44	GAL
Total	893	GAL

401 0160 BLOTTER MATERIAL CL 44

Sta 50234+00 to 50240+00	23	TON
Sta 50234+52 LT	1	TON
Sta 50237+40 LT	2	TON
Sta 50237+40 RT	1	TON
Total	27	TON

430 0045 SUPERPAVE FAA 45

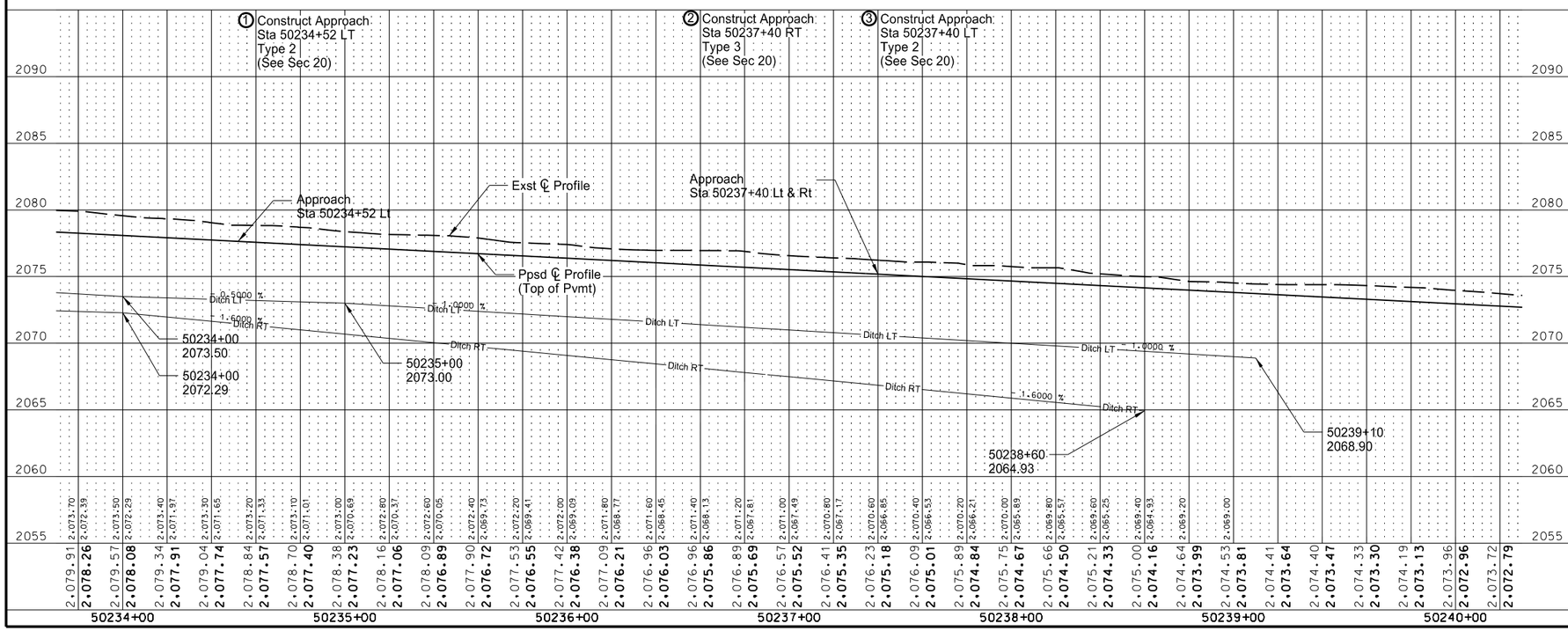
Sta 50234+00 to 50240+00	1016	TON
Sta 50234+52 LT	44	TON
Sta 50237+40 LT	72	TON
Sta 50237+40 RT	59	TON
Total	1191	TON

430 6428 PG 64-28 ASPHALT CEMENT

Sta 50234+00 to 50240+00	60	TON
Sta 50234+52 LT	3	TON
Sta 50237+40 LT	4	TON
Sta 50237+40 RT	3	TON
Total	70	TON

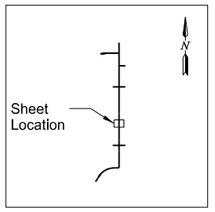
748 0140 CURB & GUTTER-TYPE I

Sta 50234+00 to 50240+00 LT	616	LF
Sta 50234+00 to 50240+00 RT	601	LF
Total	1217	LF



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT — Ditch Bottom



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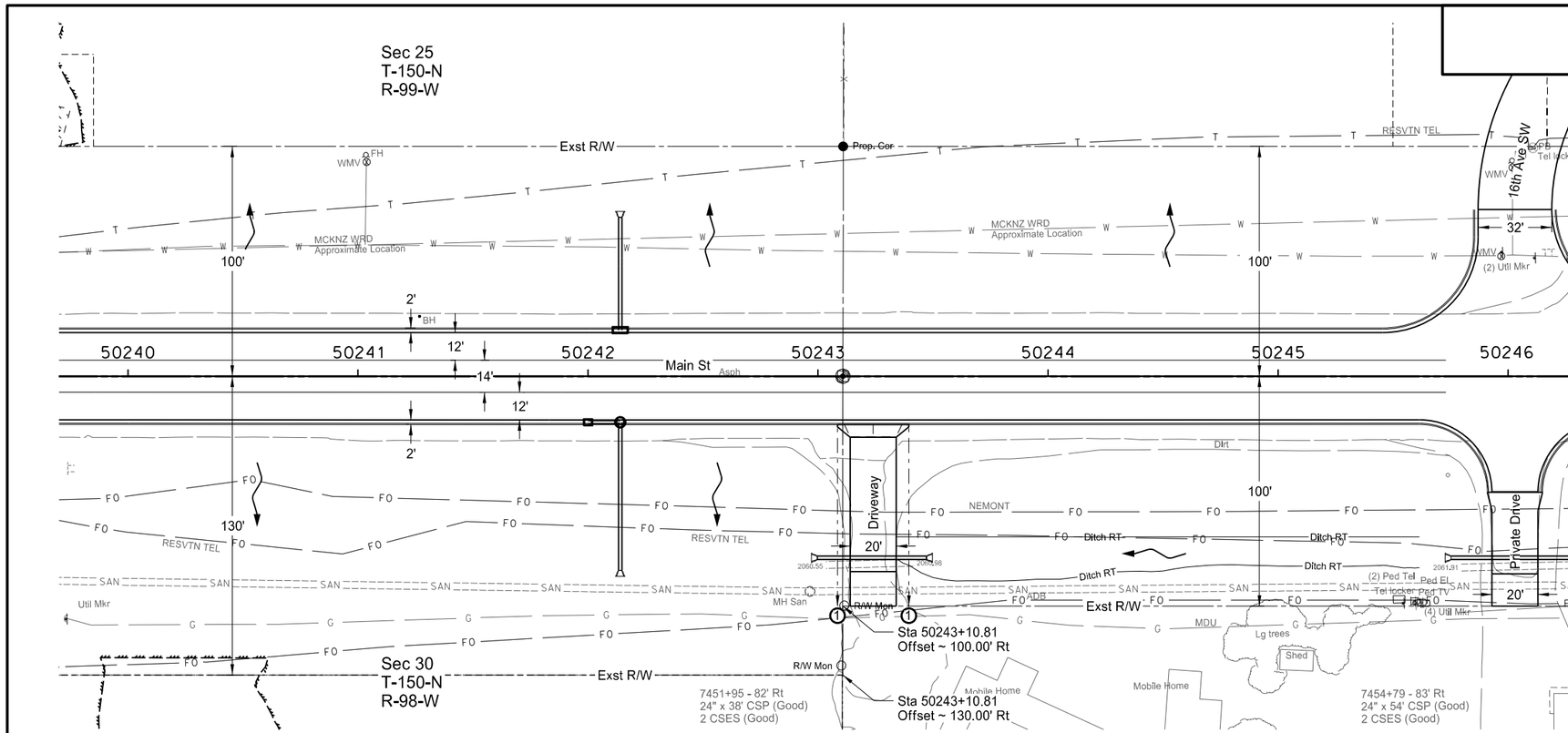
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

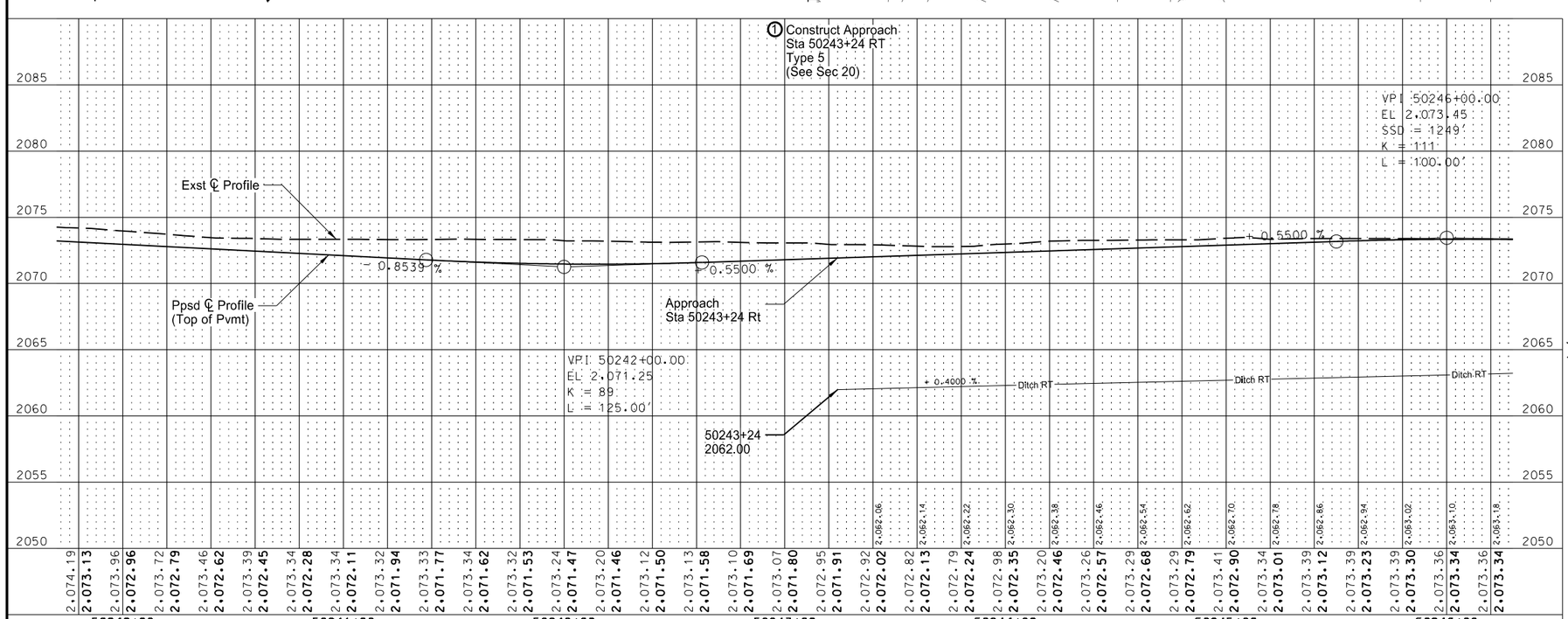
Plan & Profile

Main St (PRBN85)
Sta 50234+00 to Sta 50240+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	9

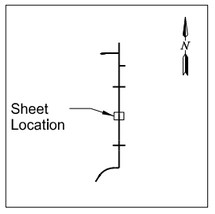


302 0100 SALVAGED BASE COURSE		
Sta 50240+00 to 50246+00	2915	TON
Sta 50243+24 RT	48	TON
Total	2963	TON
401 0050 TACK COAT		
Sta 50240+00 to 50246+00	270	GAL
Sta 50243+24 RT	14	GAL
Total	284	GAL
401 0060 PRIME COAT		
Sta 50240+00 to 50246+00	675	GAL
Sta 50243+24 RT	35	GAL
Total	710	GAL
401 0160 BLOTTER MATERIAL CL 44		
Sta 50240+00 to 50246+00	20	TON
Sta 50243+24 RT	1	TON
Total	21	TON
430 0045 SUPERPAVE FAA 45		
Sta 50240+00 to 50246+00	900	TON
Sta 50243+24 RT	48	TON
Total	948	TON
430 6428 PG 64-28 ASPHALT CEMENT		
Sta 50240+00 to 50246+00	53	TON
Sta 50243+24 RT	3	TON
Total	56	TON
748 0140 CURB & GUTTER-TYPE I		
Sta 50240+00 to 50246+00 LT	620	LF
Sta 50240+00 to 50246+00 RT	609	LF
Total	1229	LF
750 1000 DRIVEWAY CONCRETE		
Sta 50243+24 RT	16	SY



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT —
Ditch Bottom



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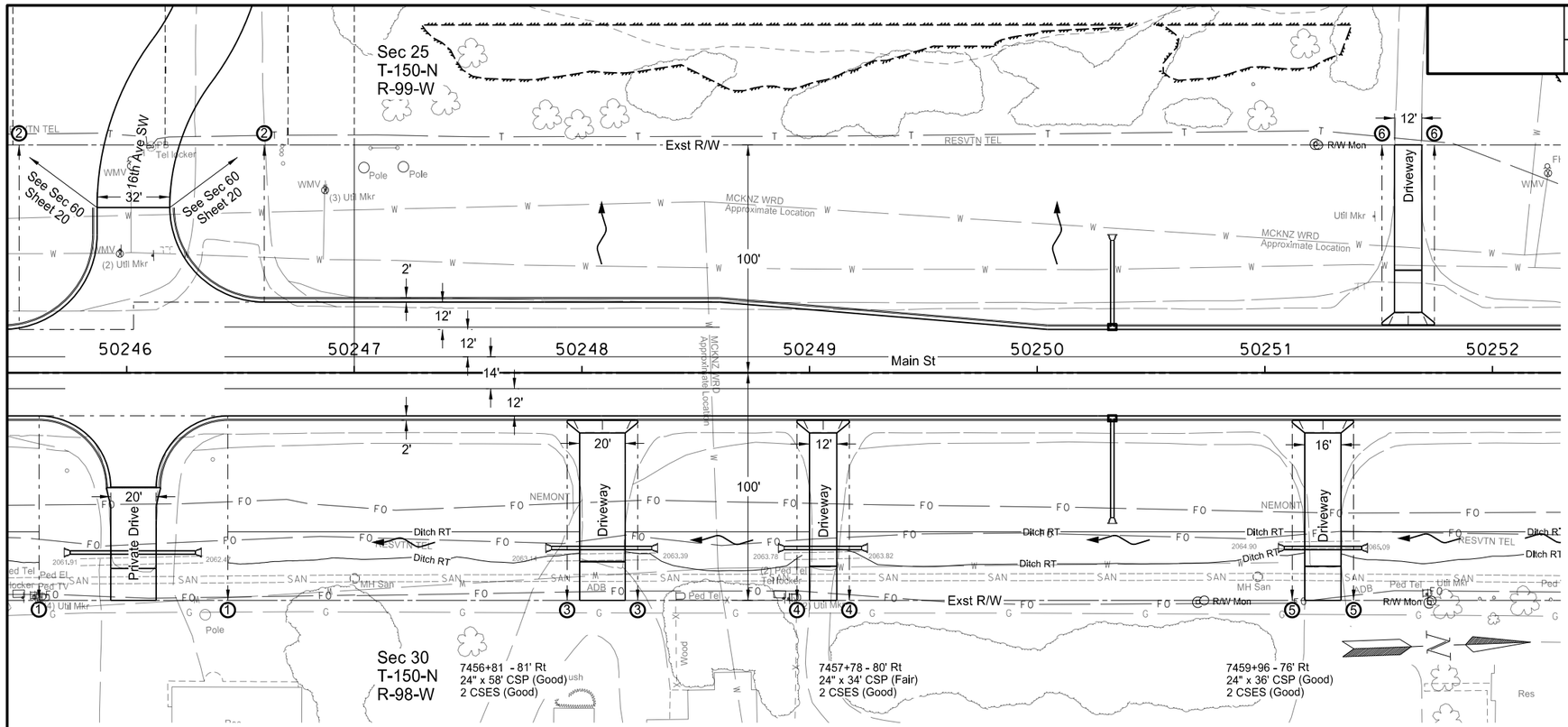
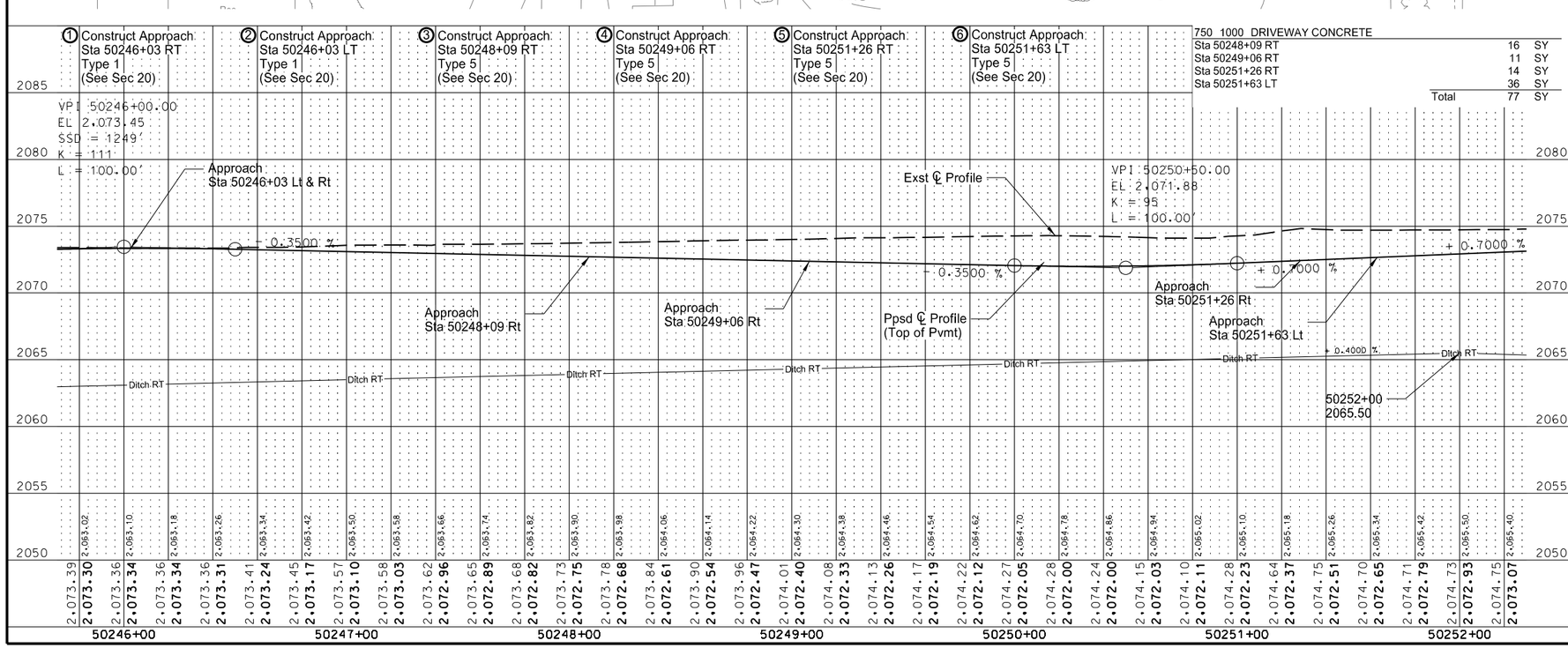
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

Main St (PRBN85)
Sta 50240+00 to Sta 50246+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	10





750 1000 DRIVEWAY CONCRETE

Sta 50248+09 RT	16	SY
Sta 50249+06 RT	11	SY
Sta 50251+26 RT	14	SY
Sta 50251+63 LT	36	SY
Total	77	SY

302 0100 SALVAGED BASE COURSE

Sta 50246+00 to 50252+00	3353	TON
Sta 50264+03 RT	31	TON
Sta 50248+09 RT	48	TON
Sta 50249+06 RT	31	TON
Sta 50251+26 RT	39	TON
Sta 50251+63 LT	30	TON
Total	3532	TON

401 0050 TACK COAT

Sta 50246+00 to 50252+00	317	GAL
Sta 50246+03 RT	9	GAL
Sta 50248+09 RT	13	GAL
Sta 50249+06 RT	9	GAL
Sta 50251+26 RT	11	GAL
Sta 50251+63 LT	8	GAL
Total	367	GAL

401 0060 PRIME COAT

Sta 50246+00 to 50252+00	794	GAL
Sta 50246+03 RT	22	GAL
Sta 50248+09 RT	34	GAL
Sta 50249+06 RT	22	GAL
Sta 50251+26 RT	28	GAL
Sta 50251+63 LT	21	GAL
Total	921	GAL

401 0160 BLOTTER MATERIAL CL 44

Sta 50246+00 to 50252+00	24	TON
Sta 50246+03 RT	1	TON
Sta 50248+09 RT	1	TON
Sta 50249+06 RT	1	TON
Sta 50251+26 RT	1	TON
Sta 50251+63 LT	1	TON
Total	29	TON

430 0045 SUPERPAVE FAA 45

Sta 50246+00 to 50252+00	1058	TON
Sta 50246+03 RT	30	TON
Sta 50248+09 RT	45	TON
Sta 50249+06 RT	29	TON
Sta 50251+26 RT	38	TON
Sta 50251+63 LT	27	TON
Total	1227	TON

430 6428 PG 64-28 ASPHALT CEMENT

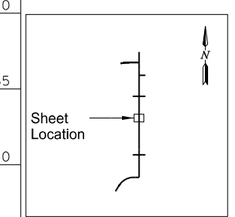
Sta 50246+00 to 50252+00	62	TON
Sta 50246+03 RT	2	TON
Sta 50248+09 RT	3	TON
Sta 50249+06 RT	2	TON
Sta 50251+26 RT	2	TON
Sta 50251+63 LT	2	TON
Total	73	TON

748 0140 CURB & GUTTER-TYPE I

Sta 50246+00 to 50252+00 LT	603	LF
Sta 50246+00 to 50252+00 RT	603	LF
Total	1206	LF

Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT —
Ditch Bottom



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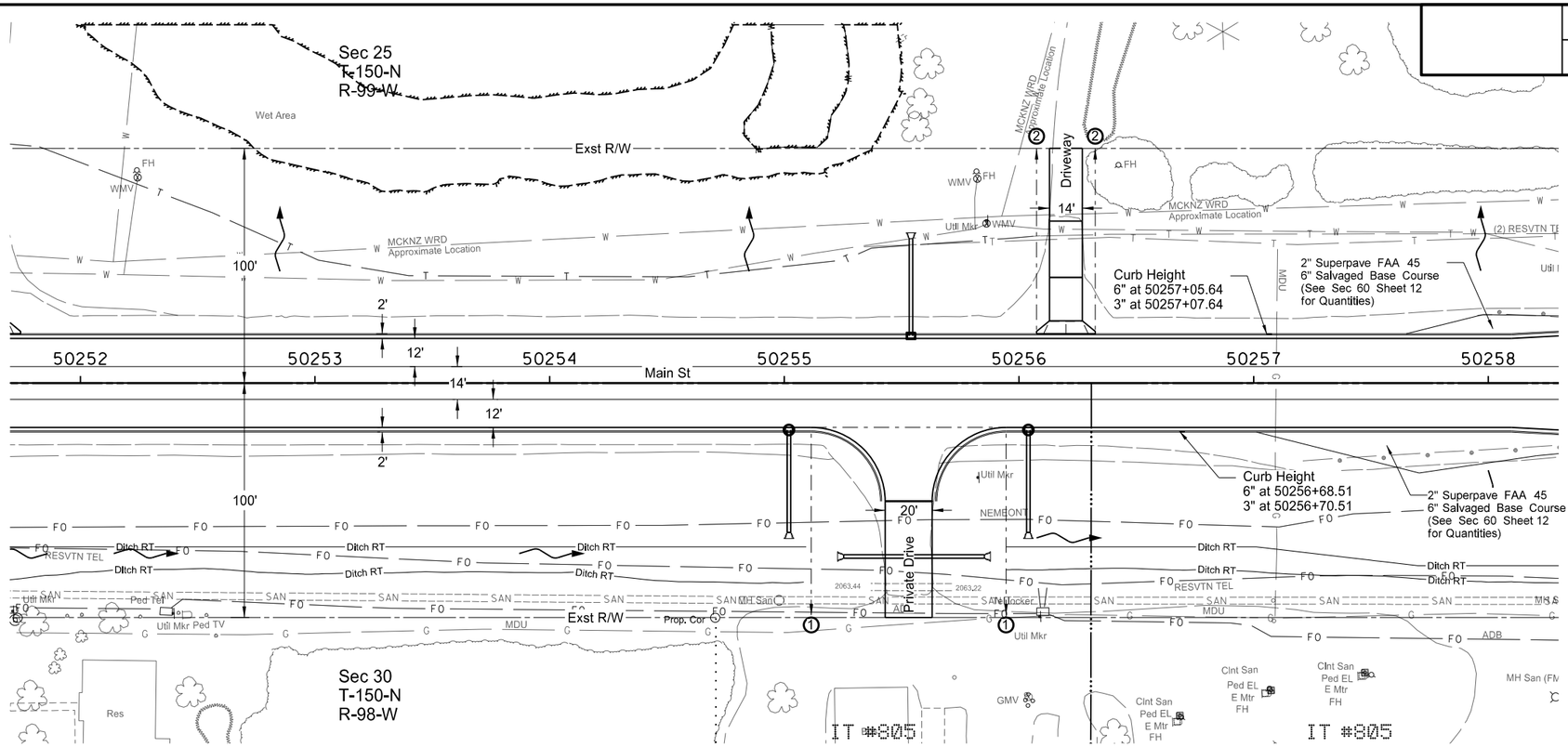
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

Main St (PRBN85)
Sta 50246+00 to Sta 50252+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	11



302 0100 SALVAGED BASE COURSE

Sta 50252+00 to 50258+00	2864	TON
Sta 50255+53 RT	38	TON
Sta 50256+20 LT	38	TON
Total	2940	TON

401 0050 TACK COAT

Sta 50252+00 to 50258+00	265	GAL
Sta 50256+20 LT	4	GAL
Total	269	GAL

401 0060 PRIME COAT

Sta 50252+00 to 50258+00	663	GAL
Sta 50256+20 LT	10	GAL
Total	673	GAL

401 0160 BLOTTER MATERIAL CL 44

Sta 50252+00 to 50258+00	20	TON
Sta 50256+20 LT	1	TON
Total	21	TON

430 0045 SUPERPAVE FAA 45

Sta 50252+00 to 50258+00	884	TON
Sta 50256+20 LT	14	TON
Total	898	TON

430 6428 PG 64-28 ASPHALT CEMENT

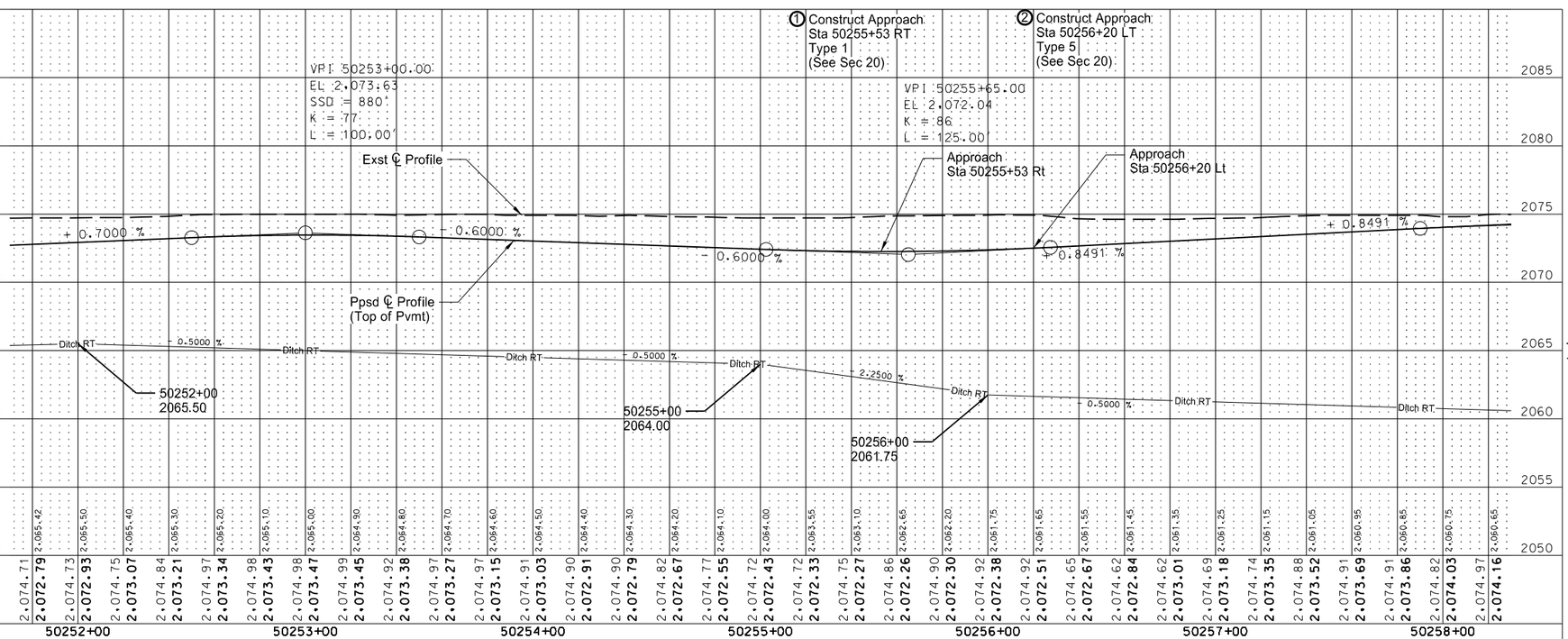
Sta 50252+00 to 50258+00	52	TON
Sta 50256+20 LT	1	TON
Total	53	TON

748 0140 CURB & GUTTER-TYPE I

Sta 50252+00 to 50258+00 LT	600	LF
Sta 50252+00 to 50258+00 RT	611	LF
Total	1211	LF

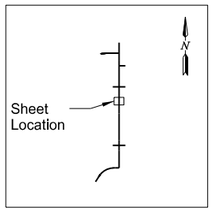
750 1000 DRIVEWAY CONCRETE

Sta 50256+20 LT	41	SY



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT — Ditch Bottom



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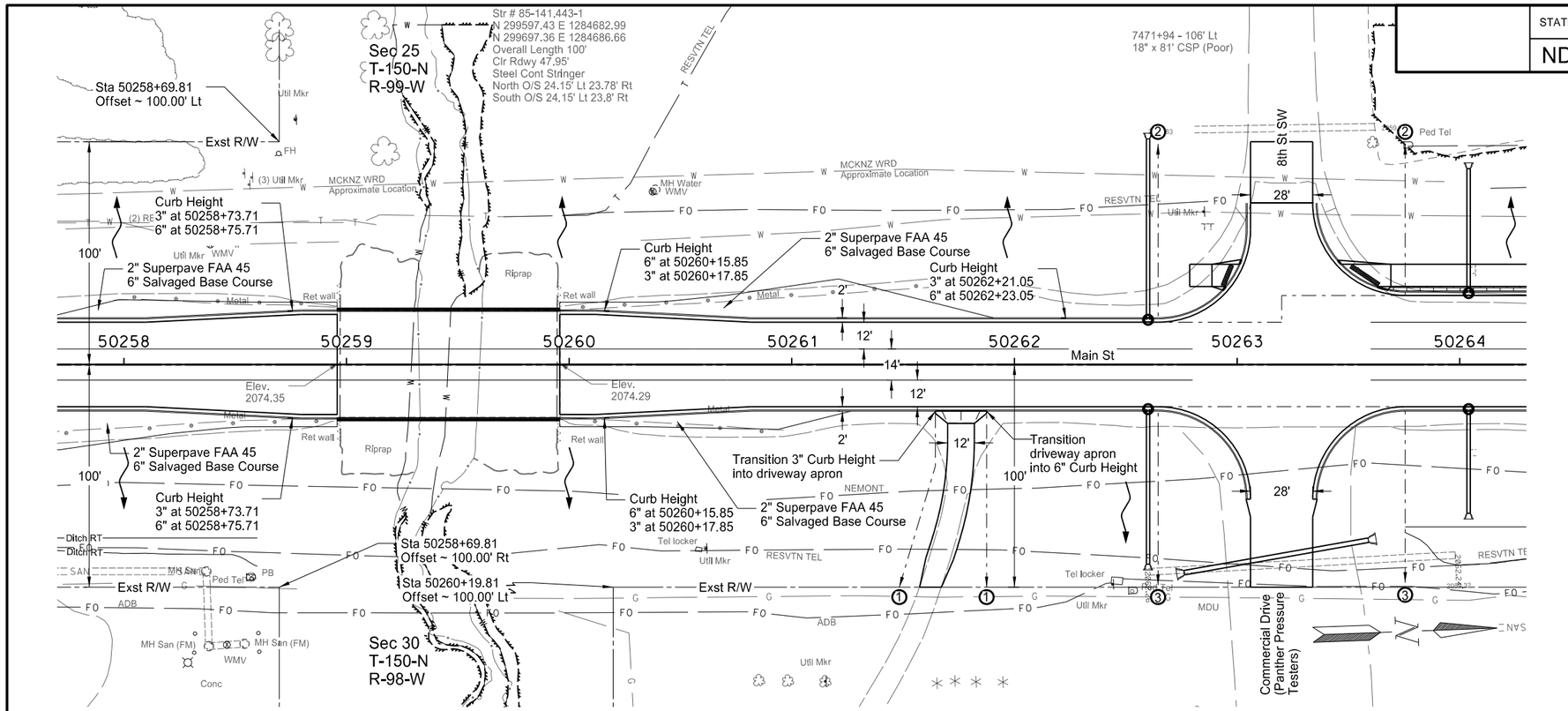
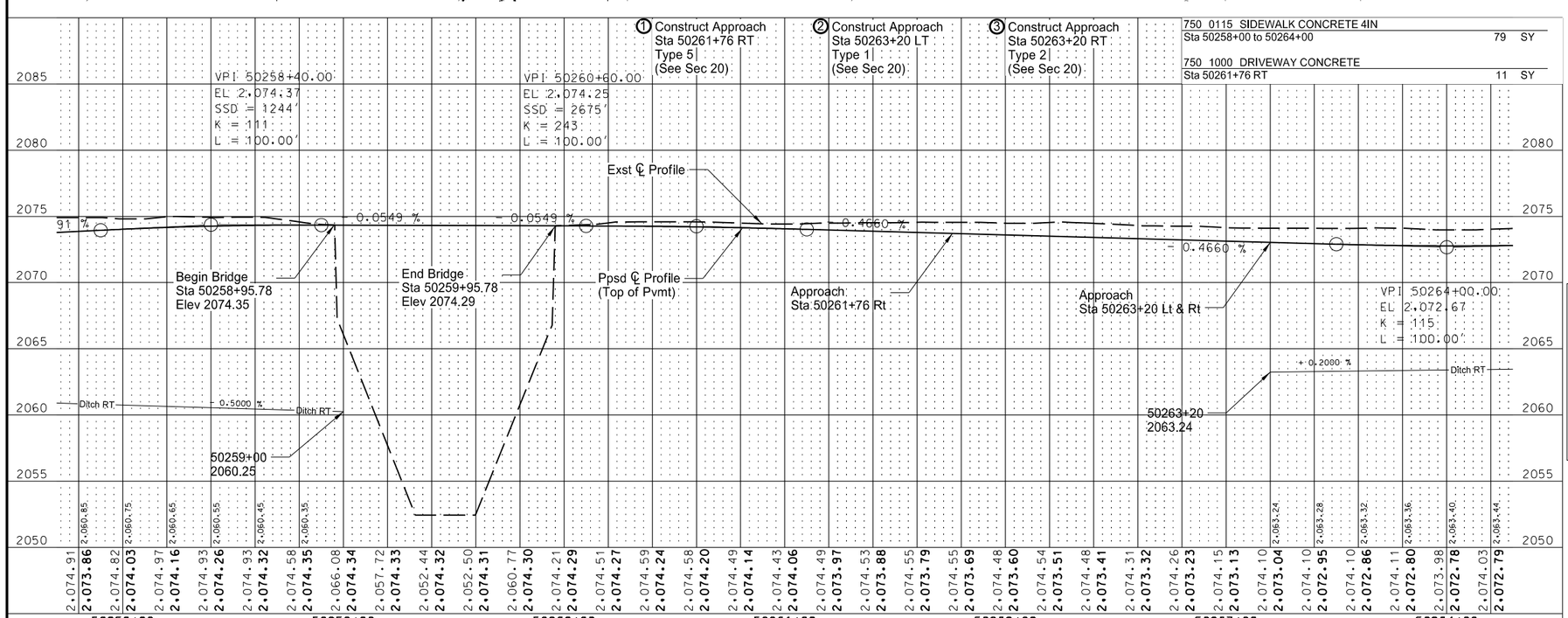
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

Main St (PRBN85)
Sta 50252+00 to Sta 50258+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	12





750 0115 SIDEWALK CONCRETE 4IN		
Sta 50258+00 to 50264+00	79	SY

750 1000 DRIVEWAY CONCRETE		
Sta 50261+76 RT	11	SY

302 0100 SALVAGED BASE COURSE		
Sta 50258+00 to 50264+00 Mainline	2893	TON
Sta 50258+00 to 50264+00 Sidewalk	20	TON
Sta 50256+65.92 to 50258+95.78 RT Guardrail	70	TON
Sta 50257+51.98 to 50258+95.78 LT Guardrail	31	TON
Sta 50259+95.78 to 50261+39.58 RT Guardrail	31	TON
Sta 50259+95.78 to 50262+25.64 LT Guardrail	70	TON
Sta 50261+76 RT	45	TON
Sta 50263+20 LT	29	TON
Sta 50263+20 RT	30	TON
Total	3219	TON

401 0050 TACK COAT		
Sta 50258+00 to 50264+00	274	GAL
Sta 50261+76 RT	11	GAL
Sta 50263+20 RT	13	GAL
Total	298	GAL

401 0060 PRIME COAT		
Sta 50258+00 to 50264+00	685	GAL
Sta 50261+76 RT	28	GAL
Sta 50263+20 RT	33	GAL
Total	746	GAL

401 0160 BLOTTER MATERIAL CL 44		
Sta 50258+00 to 50264+00	21	TON
Sta 50261+76 RT	1	TON
Sta 50263+20 RT	1	TON
Total	23	TON

430 0045 SUPERPAVE FAA 45		
Sta 50258+00 to 50264+00	913	TON
Sta 50256+65.92 to 50258+95.78 RT Guardrail	22	TON
Sta 50257+51.98 to 50258+95.78 LT Guardrail	9	TON
Sta 50259+95.78 to 50261+39.58 RT Guardrail	9	TON
Sta 50259+95.78 to 50262+25.64 LT Guardrail	22	TON
Sta 50261+76 RT	37	TON
Sta 50263+20 RT	44	TON
Total	1056	TON

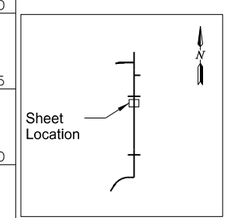
430 6428 PG 64-28 ASPHALT CEMENT		
Sta 50258+00 to 50264+00	54	TON
Sta 50256+65.92 to 50258+95.78 RT Guardrail	1	TON
Sta 50257+51.98 to 50258+95.78 LT Guardrail	1	TON
Sta 50259+95.78 to 50261+39.58 RT Guardrail	1	TON
Sta 50259+95.78 to 50262+25.64 LT Guardrail	1	TON
Sta 50261+76 RT	2	TON
Sta 50263+20 RT	3	TON
Total	63	TON

748 0140 CURB & GUTTER-TYPE I		
Sta 50258+00 to 50264+00 LT	527	LF
Sta 50258+00 to 50264+00 RT	515	LF
Total	1042	LF

750 0030 PIGMENTED IMPRINTED CONCRETE		
Sta 50258+00 to Sta 50264+00	7	SY

Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT —
Ditch Bottom



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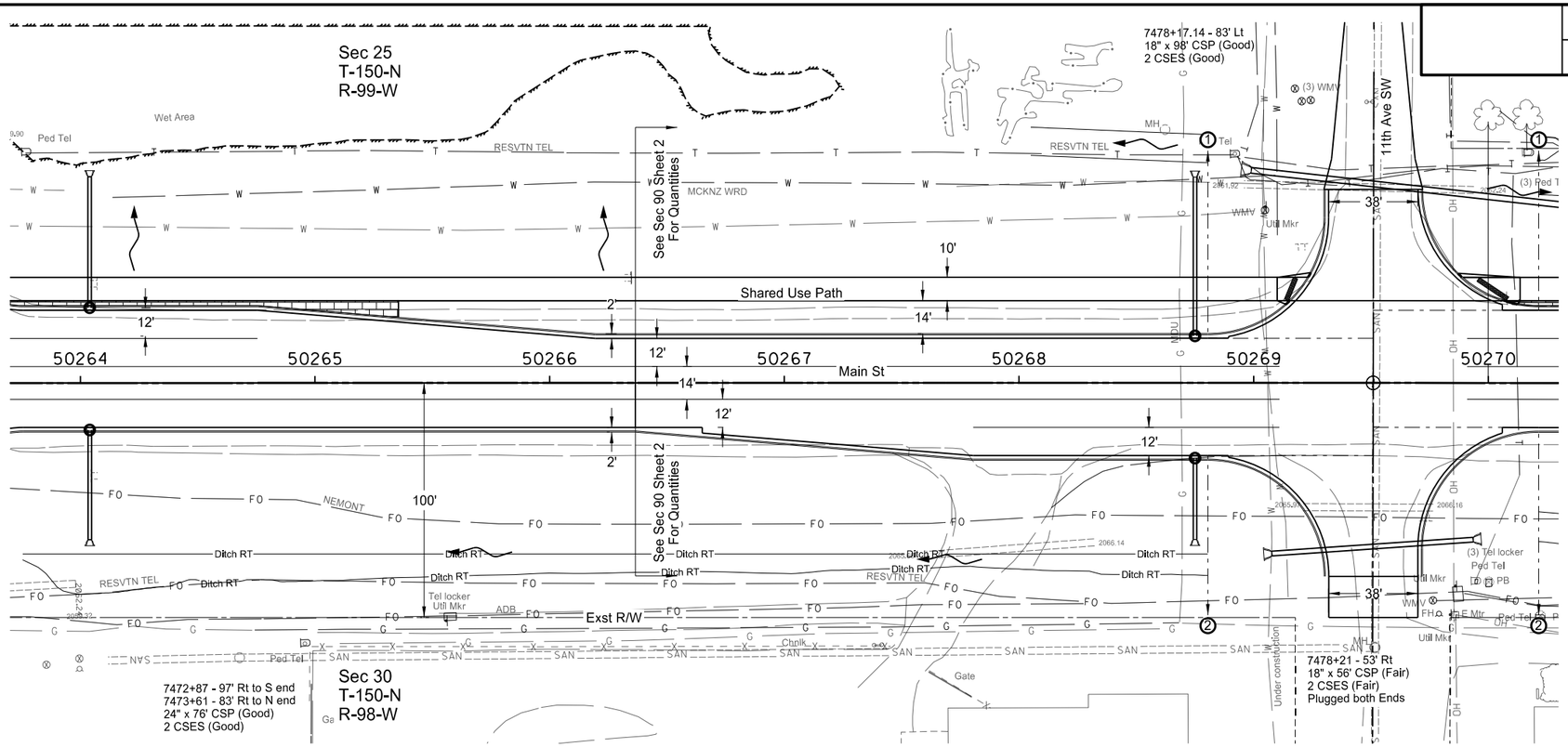
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

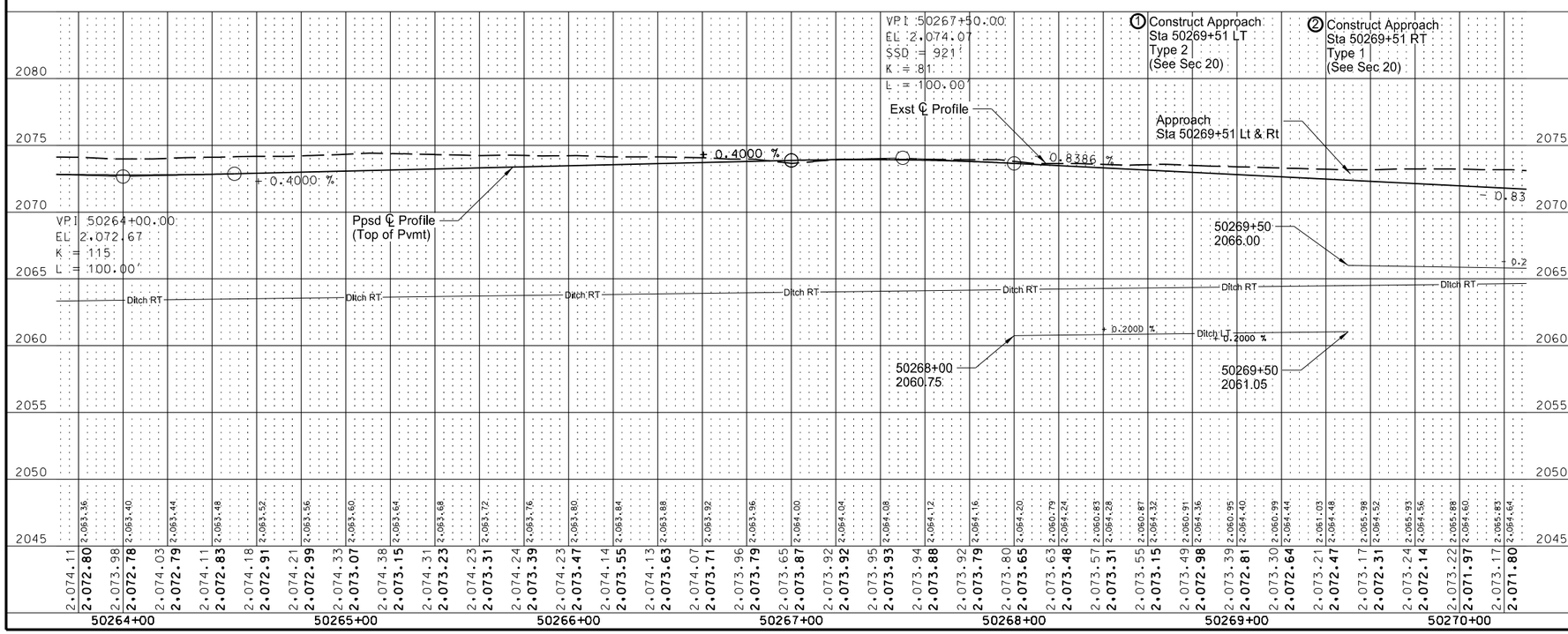
Main St (PRBN85)
Sta 50258+00 to Sta 50264+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	13



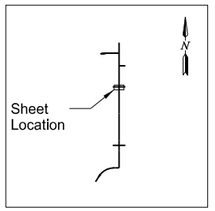
See Section 90 for Concrete Paving Quantities

302 0100 SALVAGED BASE COURSE			
Sta 50264+00 to 50266+36.50		1269	TON
Sta 50264+00 to 50266+36.50 Shared Use Path		72	TON
	Total	1341	TON
401 0050 TACK COAT			
Sta 50264+00 to 50266+36.50		120	GAL
401 0060 PRIME COAT			
Sta 50264+00 to 50266+36.50		299	GAL
401 0160 BLOTTER MATERIAL CL 44			
Sta 50264+00 to 50266+36.50		9	TON
430 0045 SUPERPAVE FAA 45			
Sta 50264+00 to 50266+36.50		398	TON
430 6428 PG 64-28 ASPHALT CEMENT			
Sta 50264+00 to 50266+36.50		23	TON
748 0140 CURB & GUTTER-TYPE I			
Sta 50264+00 to 50266+36.50 LT		237	LF
Sta 50264+00 to 50266+36.50 RT		237	LF
	Total	474	LF
750 0030 PIGMENTED IMPRINTED CONCRETE			
Sta 50264+00 to 50266+36.50		47	SY
750 0115 SIDEWALK CONCRETE 4IN			
Sta 50264+00 to 50266+36.50 Shared Use Path		263	SY



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT —
Ditch Bottom



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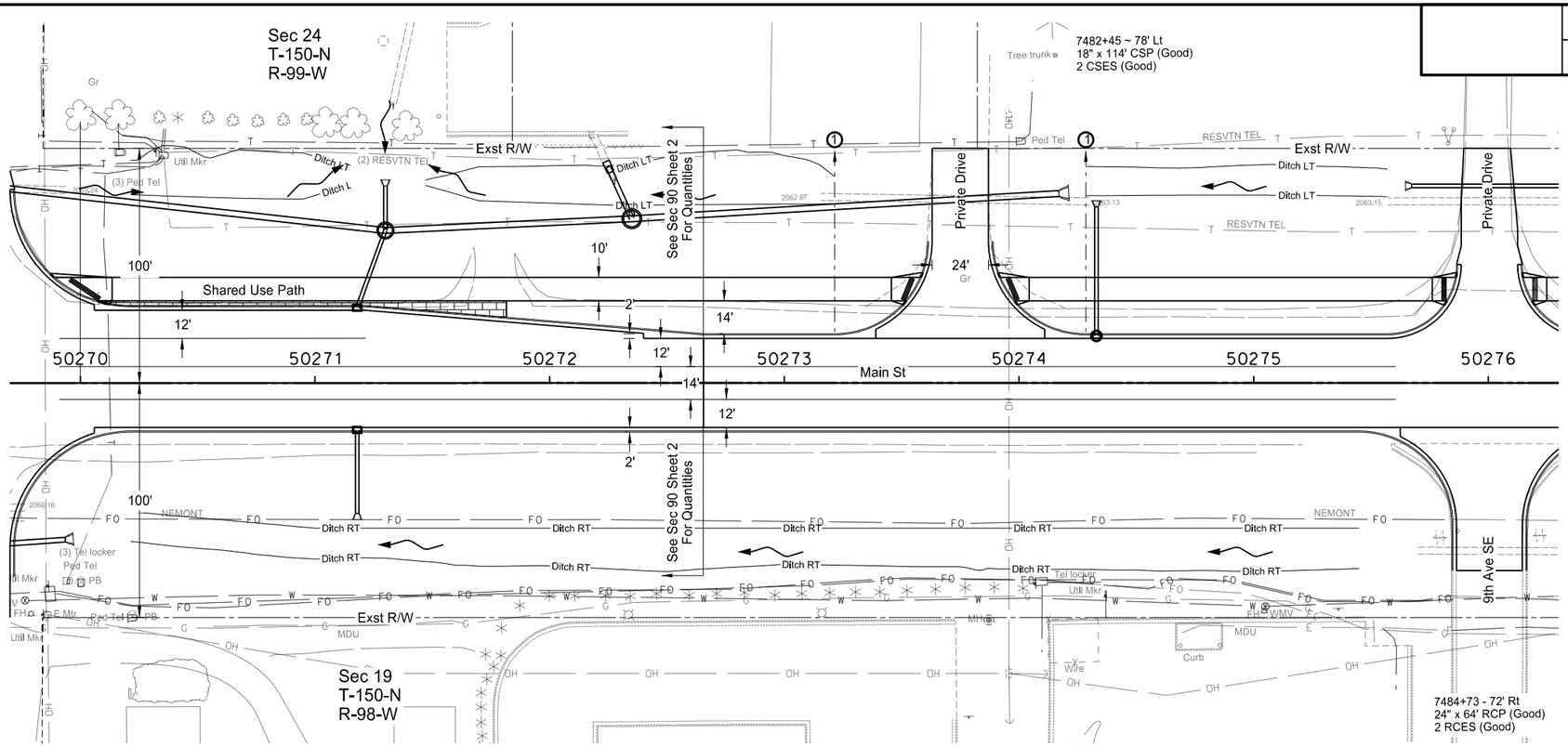
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

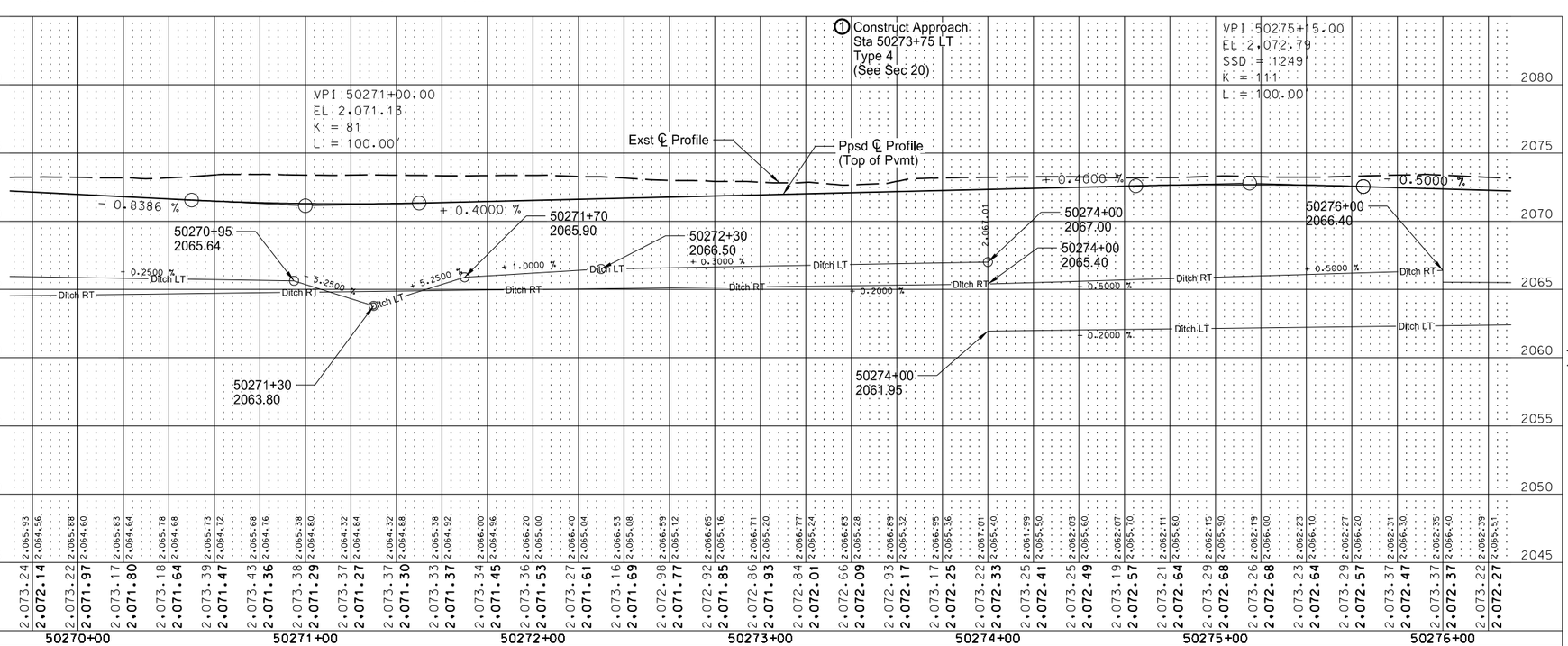
Main St (PRBN85)
Sta 50264+00 to Sta 50270+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	14



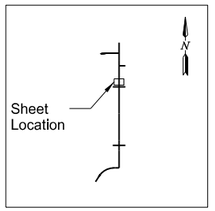
See Section 90 for Concrete Paving Quantities

302 0100 SALVAGED BASE COURSE			
Sta 50272+65.50 to 50276+00		1594	TON
Sta 50272+65.50 to 50276+00 Shared Use Path		79	TON
Sta 50273+75 LT		130	TON
	Total	1803	TON
401 0050 TACK COAT			
Sta 50272+65.50 to 50276+00		148	GAL
401 0060 PRIME COAT			
Sta 50272+65.50 to 50276+00		369	GAL
401 0160 BLOTTER MATERIAL CL 44			
Sta 50272+65.50 to 50276+00		11	TON
430 0045 SUPERPAVE FAA 45			
Sta 50272+65.50 to 50276+00		492	TON
430 6429 PG 64-28 ASPHALT CEMENT			
Sta 50272+65.50 to 50276+00		29	TON
550 0305 9IN NON-REINF CONCRETE PVMT CL AE-DOWELED			
Sta 50273+75 LT		290	SY
748 0140 CURB & GUTTER-TYPE I			
Sta 50272+65.50 to 50276+00 LT		357	LF
Sta 50272+65.50 to 50276+00 RT		362	LF
	Total	719	LF
750 0115 SIDEWALK CONCRETE 4IN			
Sta 50272+65.50 to 50276+00 Shared Use Path		316	SY



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT —
Ditch Bottom



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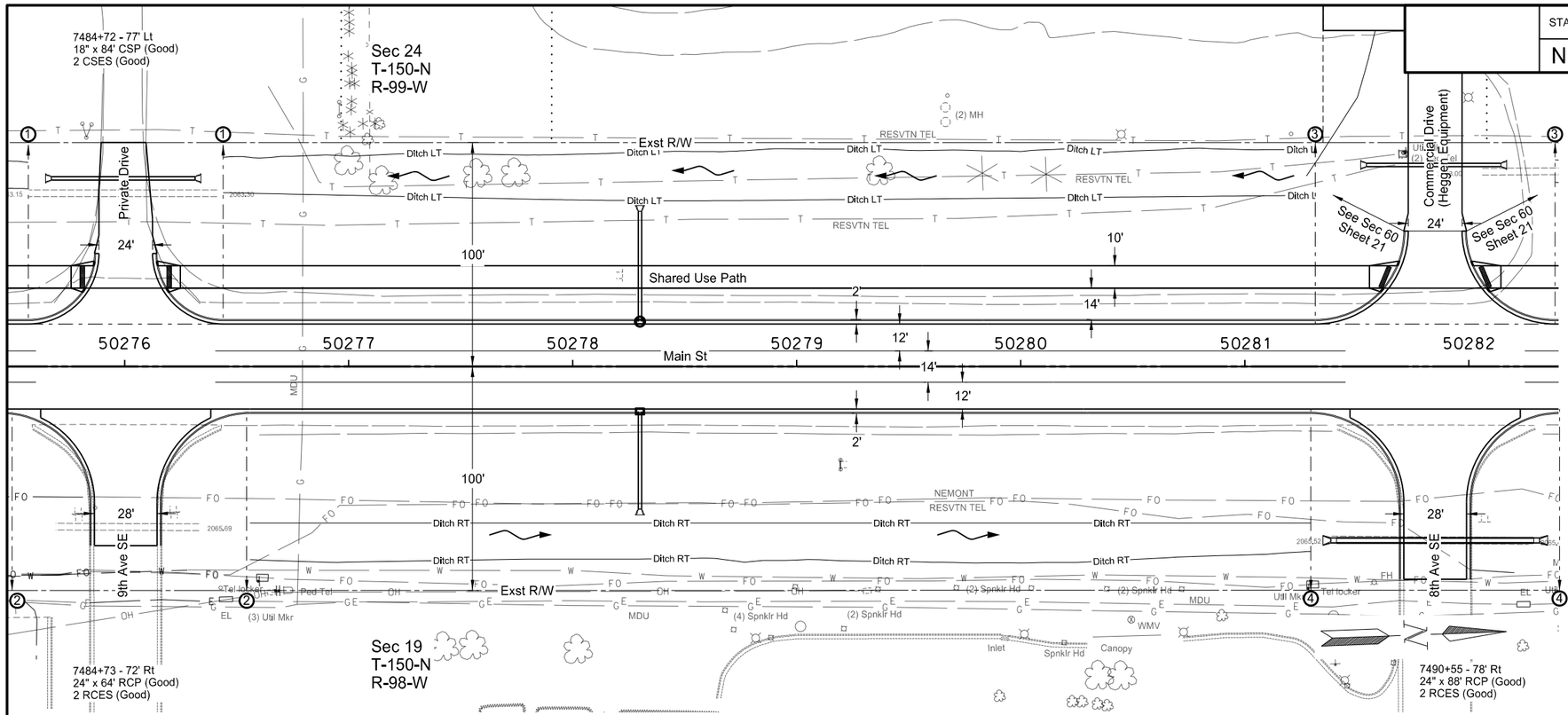
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

Main St (PRBN85)
Sta 50270+00 to Sta 50276+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	15



302 0100 SALVAGED BASE COURSE

Sta 50276+00 to 50282+00	2968	TON
Sta 50276+00 to 50282+00 Shared Use Path	153	TON
Sta 50276+01 LT	93	TON
Sta 50276+01 RT	121	TON
Sta 50281+85 RT	144	TON
Total	3479	TON

401 0050 TACK COAT

Sta 50276+00 to 50282+00	276	GAL
Sta 50276+01 LT	14	GAL
Total	290	GAL

401 0060 PRIME COAT

Sta 50276+00 to 50282+00	691	GAL
Sta 50276+01 LT	34	GAL
Total	725	GAL

401 0160 BLOTTER MATERIAL CL 44

Sta 50276+00 to 50282+00	21	TON
Sta 50276+01 LT	1	TON
Total	22	TON

430 0045 SUPERPAVE FAA 45

Sta 50276+00 to 50282+00	921	TON
Sta 50276+01 LT	46	TON
Total	967	TON

430 6428 PG 64-28 ASPHALT CEMENT

Sta 50276+00 to 50282+00	54	TON
Sta 50276+01 LT	3	TON
Total	57	TON

550 0305 9IN NON-REINF CONCRETE PVMT CL AE-DOWELED

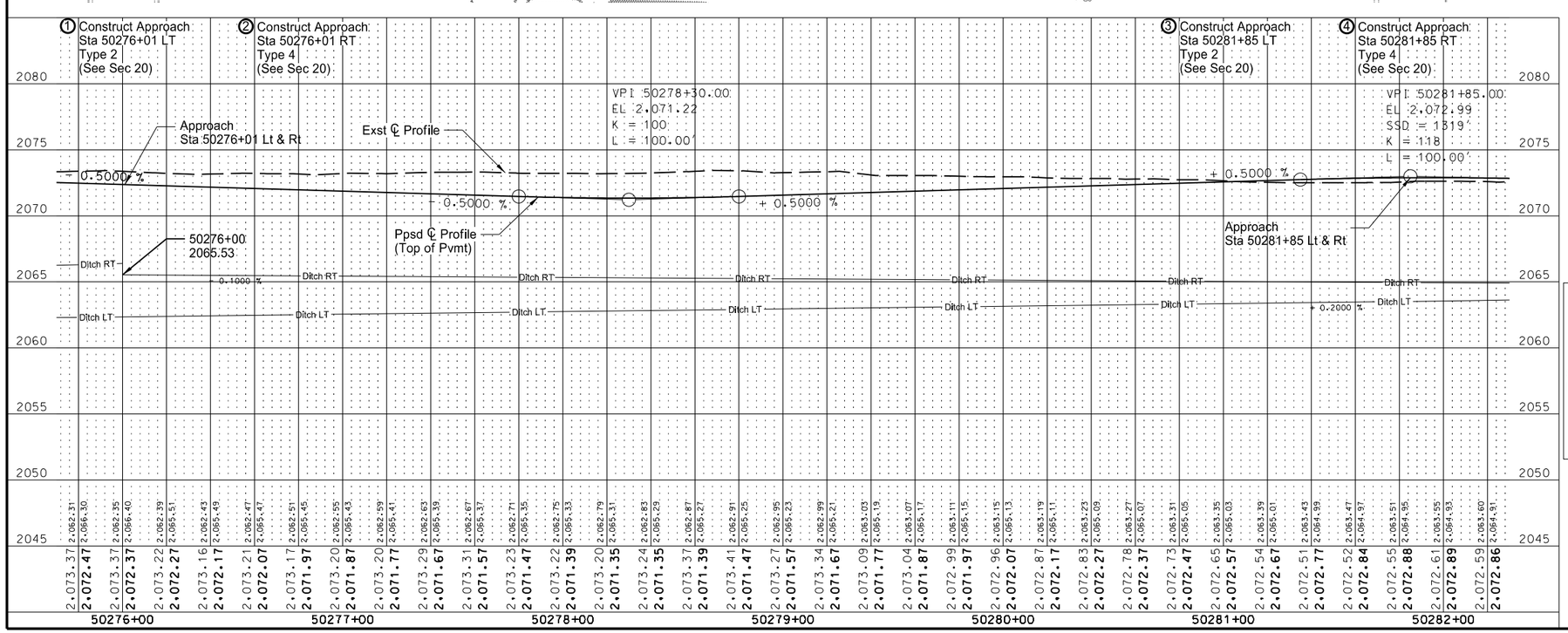
Sta 50276+01 RT	263	SY
Sta 50281+85 RT	309	SY
Total	572	SY

748 0140 CURB & GUTTER-TYPE I

Sta 50276+00 to 50282+00 LT	608	LF
Sta 50276+00 to 50282+00 RT	653	LF
Total	1261	LF

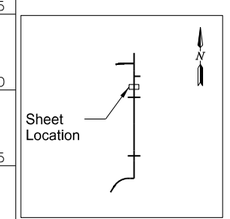
750 0115 SIDEWALK CONCRETE 4IN

Sta 50276+00 to 50282+00 Shared Use Path	613	SY



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT — Ditch Bottom



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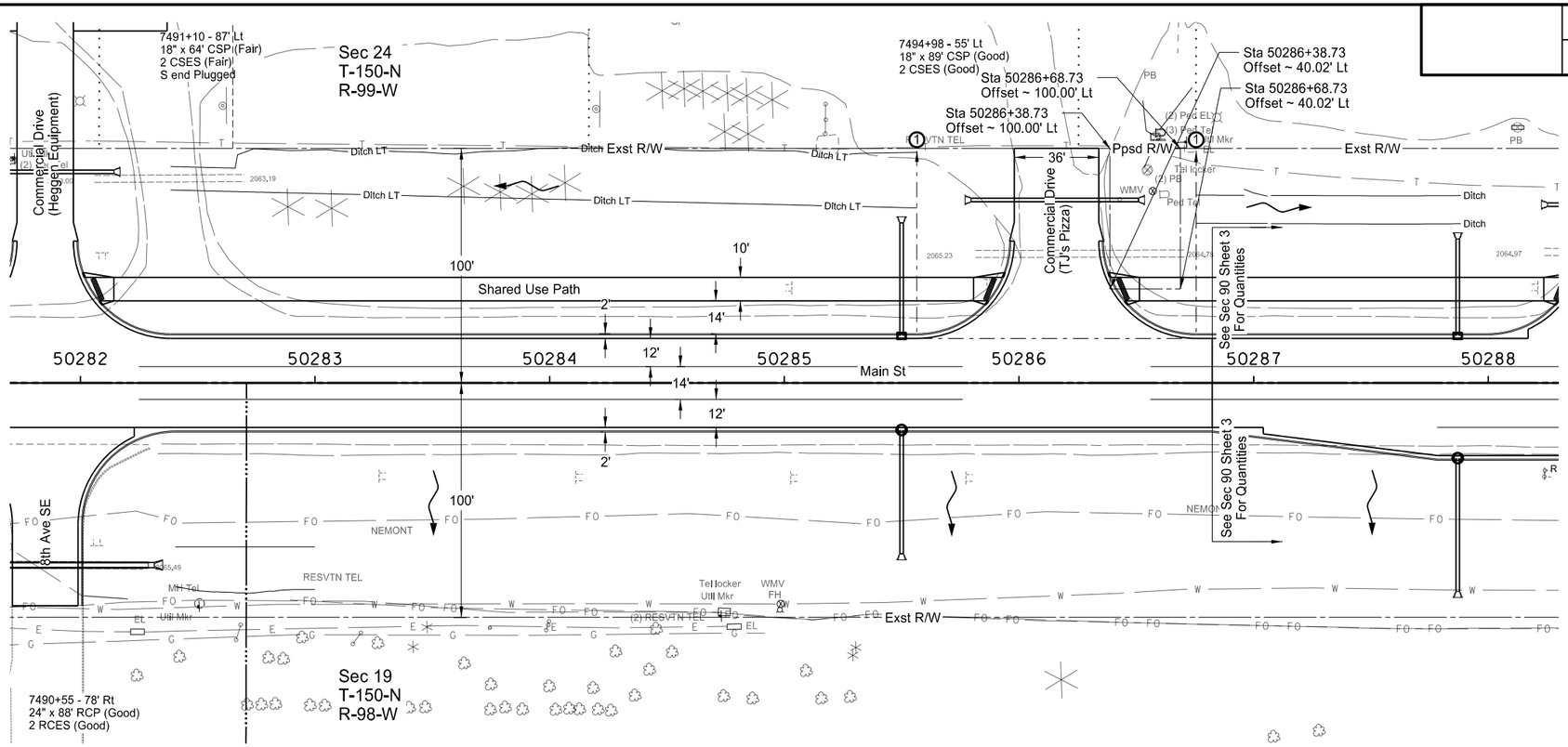
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

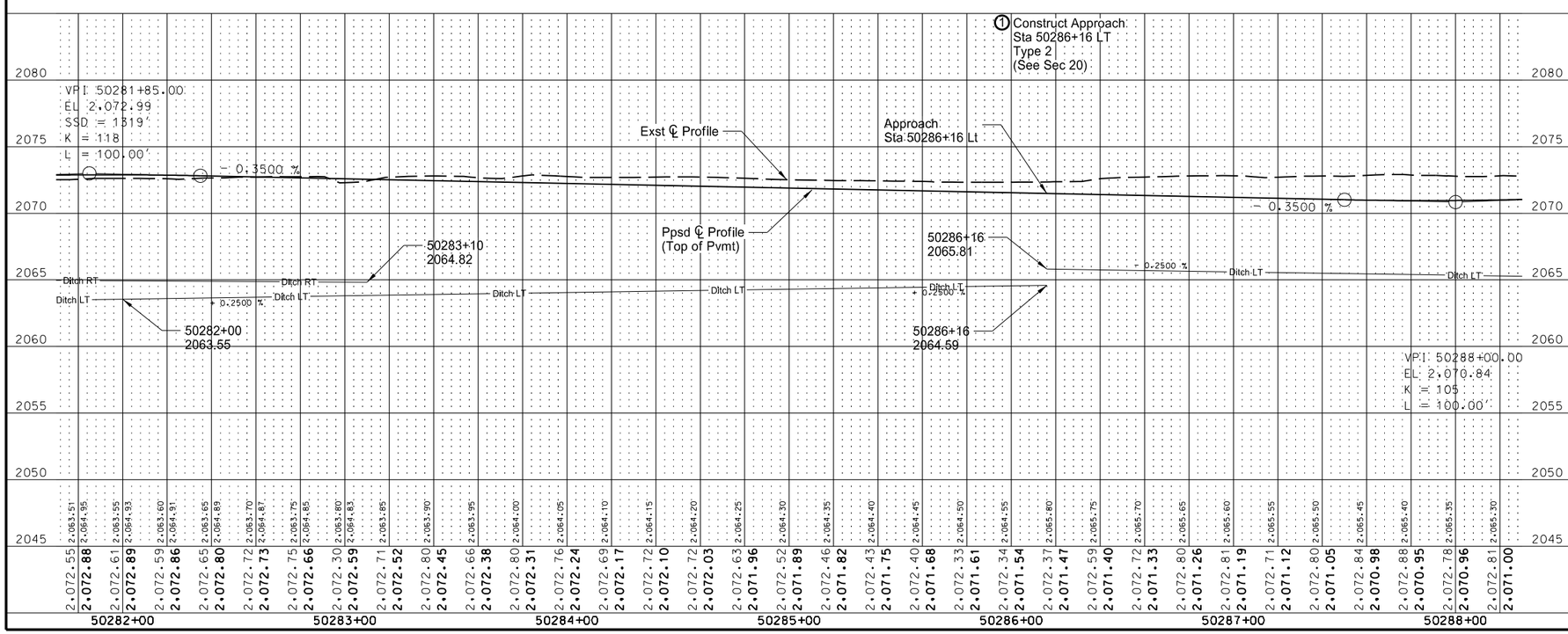
Plan & Profile

Main St (PRBN85)
Sta 50276+00 to Sta 50282+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	16

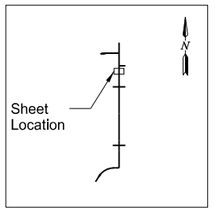


302 0100 SALVAGED BASE COURSE			
Sta 50282+00 to 50286+82.35		2479	TON
Sta 50282+00 to 50286+82.35 Shared Use Path		119	TON
Sta 50286+16 LT		55	TON
	Total	2653	TON
401 0050 TACK COAT			
Sta 50282+00 to 50286+82.35		232	GAL
Sta 50286+16 LT		17	GAL
	Total	249	GAL
401 0060 PRIME COAT			
Sta 50282+00 to 50286+82.35		579	GAL
Sta 50286+16 LT		42	GAL
	Total	621	GAL
401 0160 BLOTTER MATERIAL CL 44			
Sta 50282+00 to 50286+82.35		17	TON
Sta 50286+16 LT		1	TON
	Total	18	TON
430 0045 SUPERPAVE FAA 45			
Sta 50282+00 to 50286+82.35		772	TON
Sta 50286+16 LT		56	TON
	Total	828	TON
430 6428 PG 64-28 ASPHALT CEMENT			
Sta 50282+00 to 50286+82.35		46	TON
Sta 50286+16 LT		3	TON
	Total	49	TON
748 0140 CURB & GUTTER-TYPE I			
Sta 50282+00 to 50286+82.35 LT		502	LF
Sta 50282+00 to 50286+82.35 RT		539	LF
	Total	1,041	LF
750 0115 SIDEWALK CONCRETE 4IN			
Sta 50282+00 to 50286+82.35 Shared Use Path		479	SY



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT — Ditch Bottom



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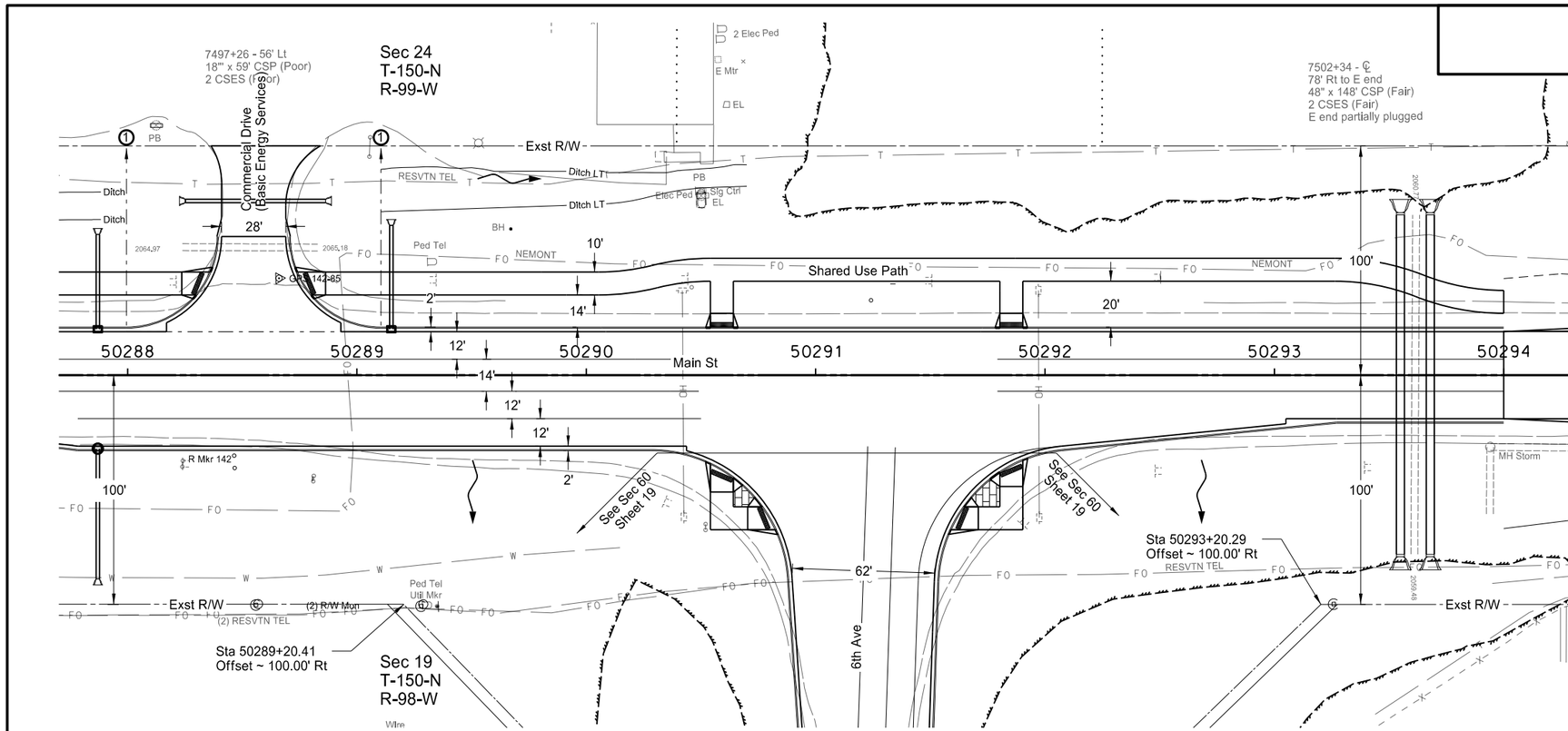
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

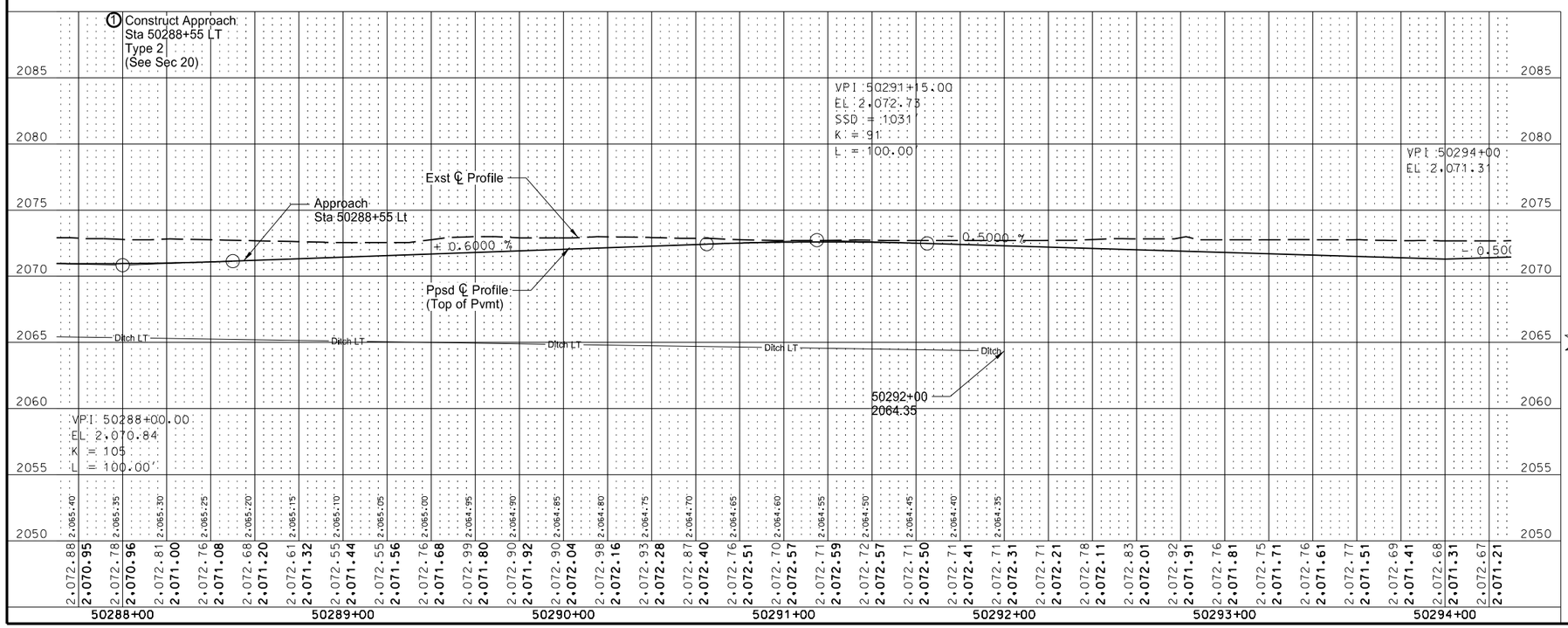
Plan & Profile

Main St (PRBN85)
Sta 50282+00 to Sta 50288+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	17

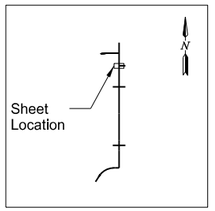
See Section 90 for Concrete Paving Quantities





Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT —
Ditch Bottom



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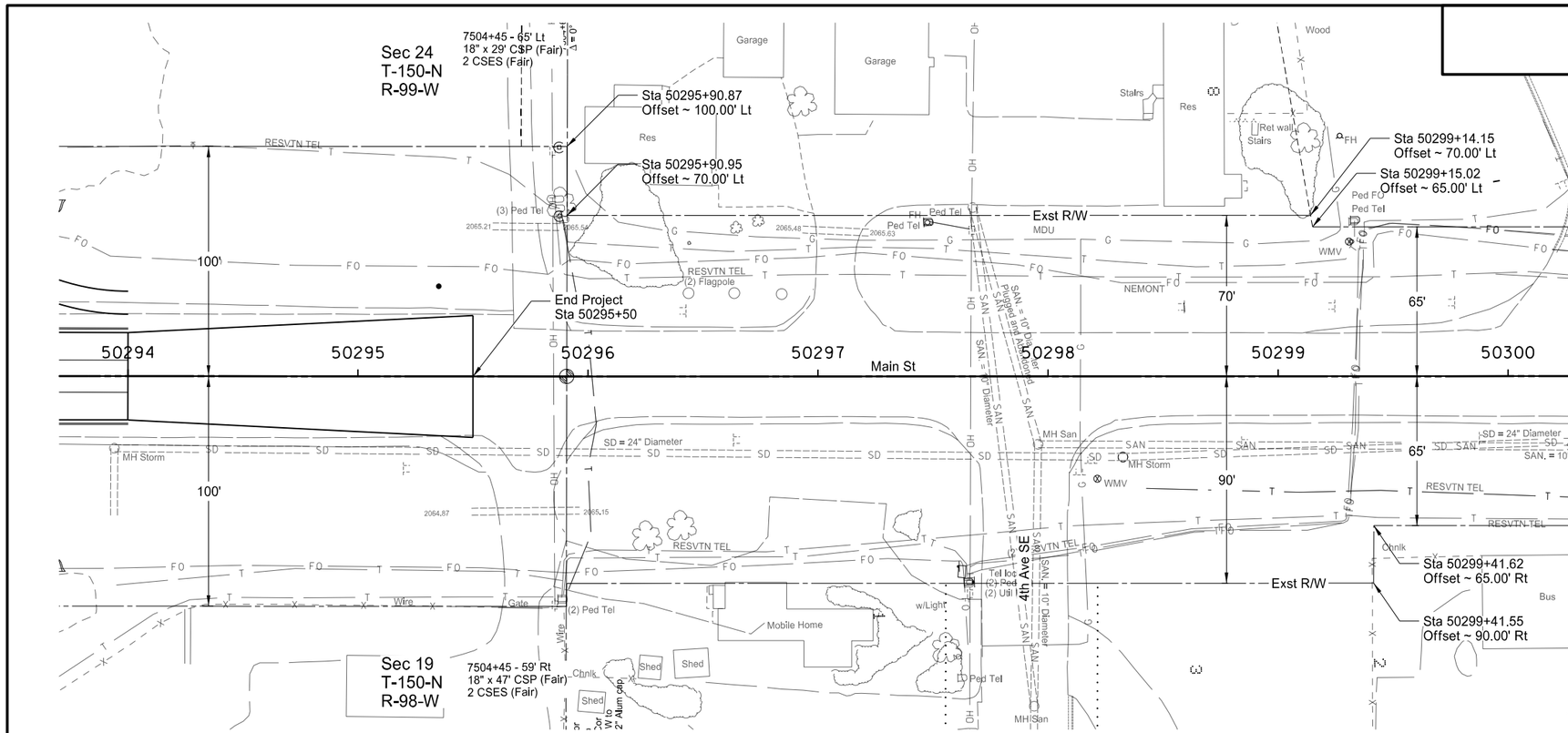
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

Main St (PRBN85)
Sta 50288+00 to Sta 50294+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	18



302 0100 SALVAGED BASE COURSE
Sta 50294+00 to 50295+50 — 544 TON

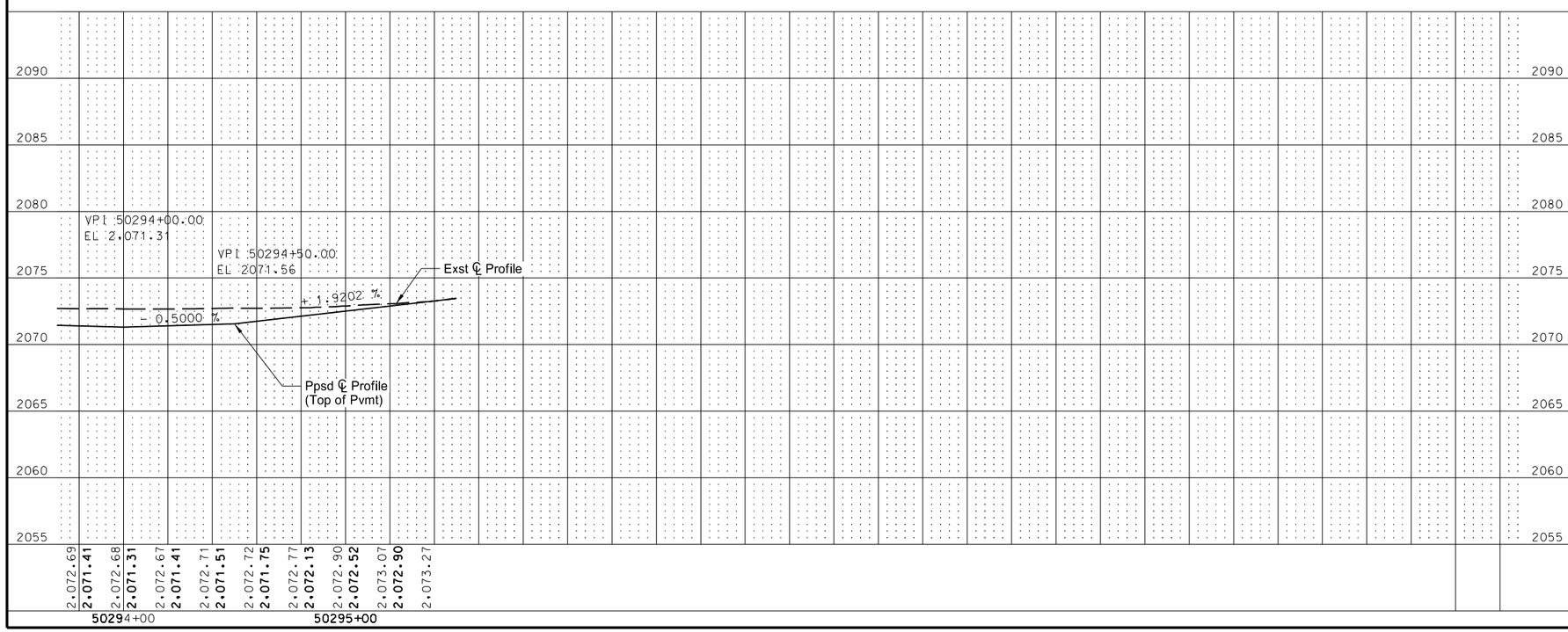
401 0050 TACK COAT
Sta 50294+00 to 50295+50 — 120 GAL

401 0060 PRIME COAT
Sta 50294+00 to 50295+50 — 201 GAL

401 0160 BLOTTER MATERIAL CL 44
Sta 50294+00 to 50295+50 — 6 TON

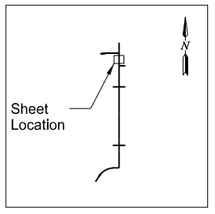
430 0045 SUPERPAVE FAA 45
Sta 50294+00 to 50295+50 — 357 TON

430 6428 PG 64-28 ASPHALT CEMENT
Sta 50294+00 to 50295+50 — 21 TON



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT —
Ditch Bottom



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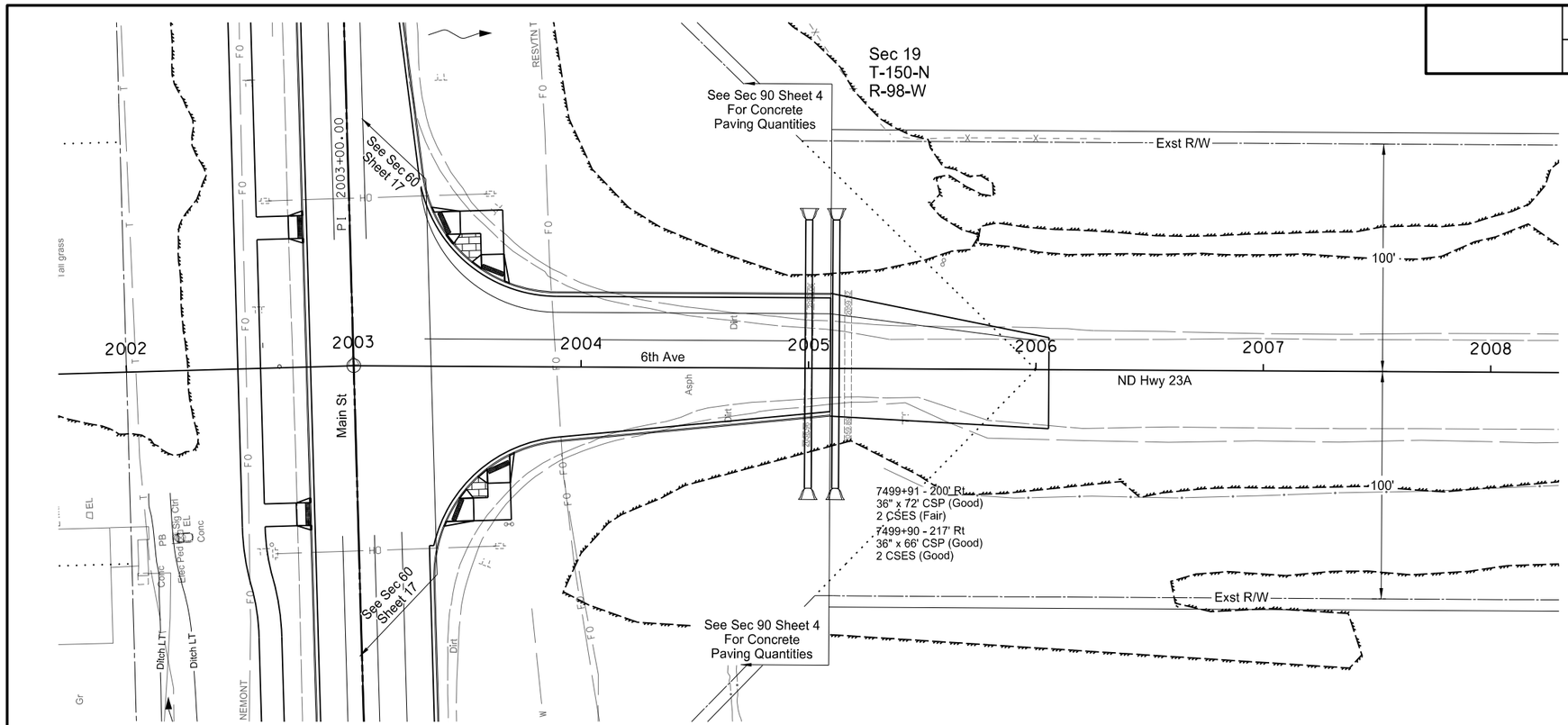
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

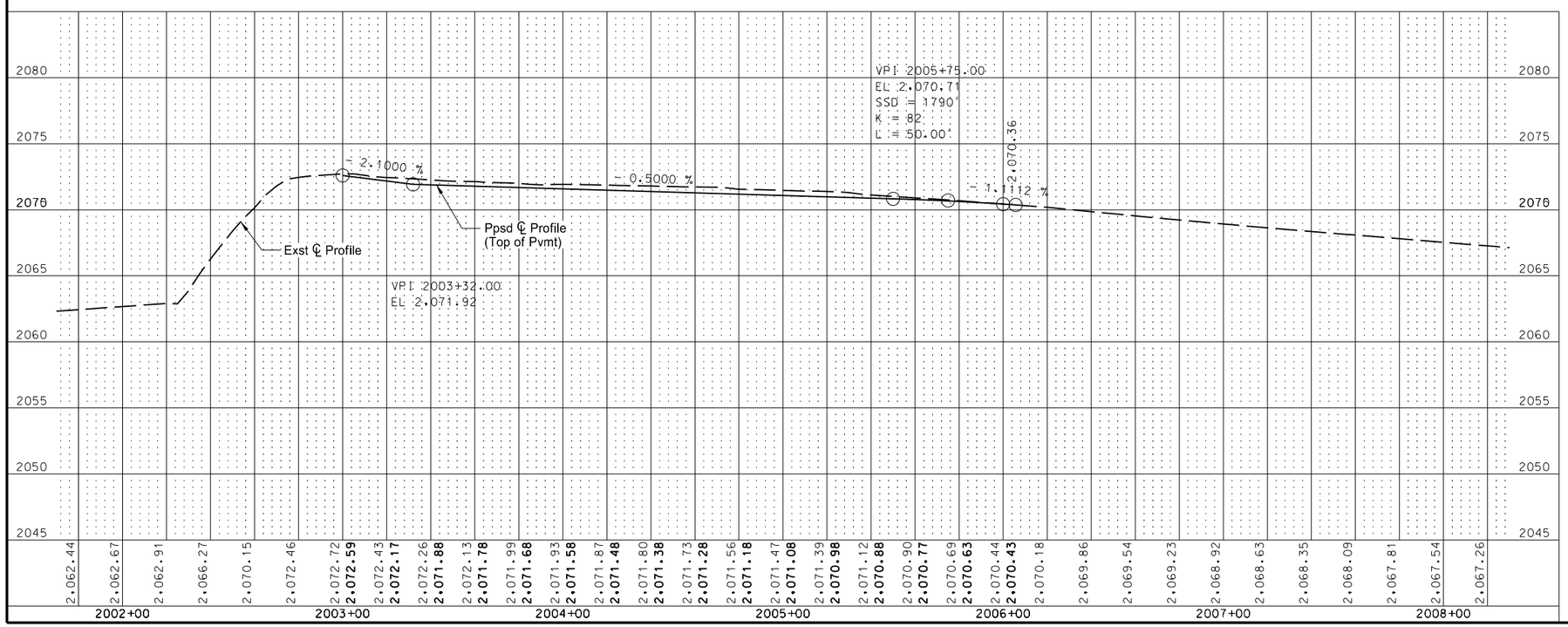
Main St (PRBN85)
Sta 50294+00 to Sta 50295+50

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	19



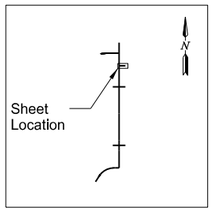
See Section 90 for Concrete Paving Quantities

302 0100 SALVAGED BASE COURSE Sta 2005+09.57 to 2006+05.70	358	TON
401 0050 TACK COAT Sta 2005+09.57 to 2006+05.70	80	GAL
401 0060 PRIME COAT Sta 2005+09.57 to 2006+05.70	133	GAL
401 0160 BLOTTER MATERIAL CL 44 Sta 2005+09.57 to 2006+05.70	4	TON
430 0045 SUPERPAVE FAA 45 Sta 2005+09.57 to 2006+05.70	236	TON
430 6428 PG 64-28 ASPHALT CEMENT Sta 2005+09.57 to 2006+05.70	14	TON



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT —
Ditch Bottom



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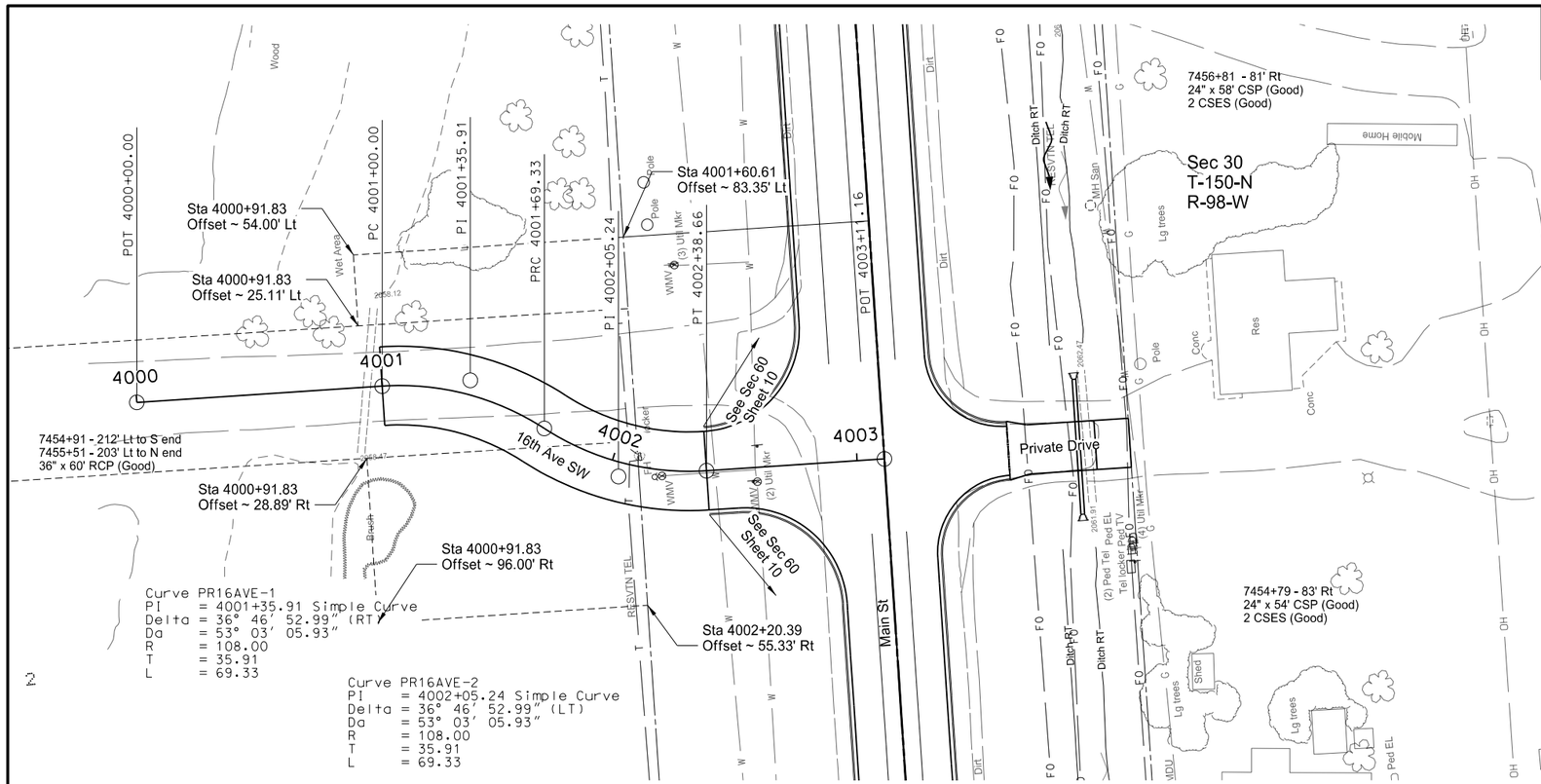
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

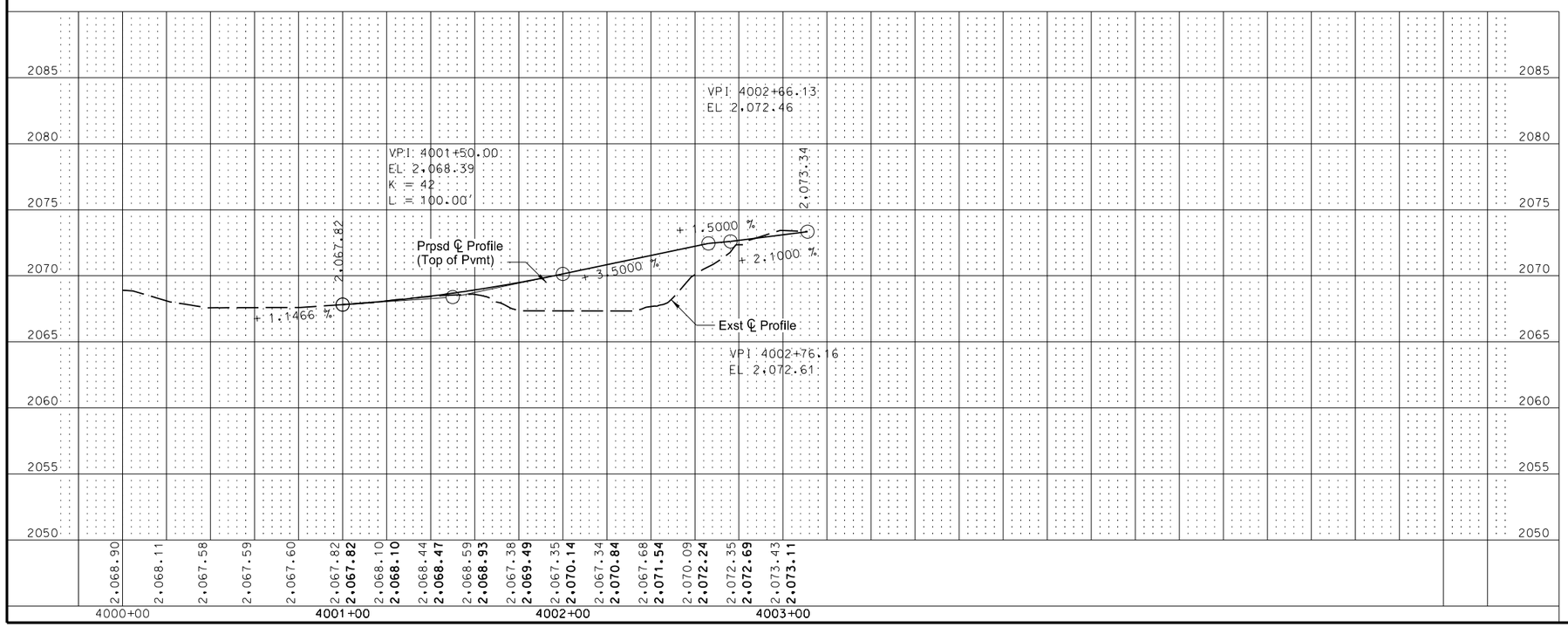
Plan & Profile

6th Ave (PRTR23)
Sta 2003+34 to 2006+05.70

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	20

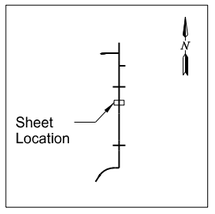
302 0100 SALVAGED BASE COURSE
Sta 4001+00 to 4002+38.66 165 TON





Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
Ditch Bottom
— Ditch RT —



N

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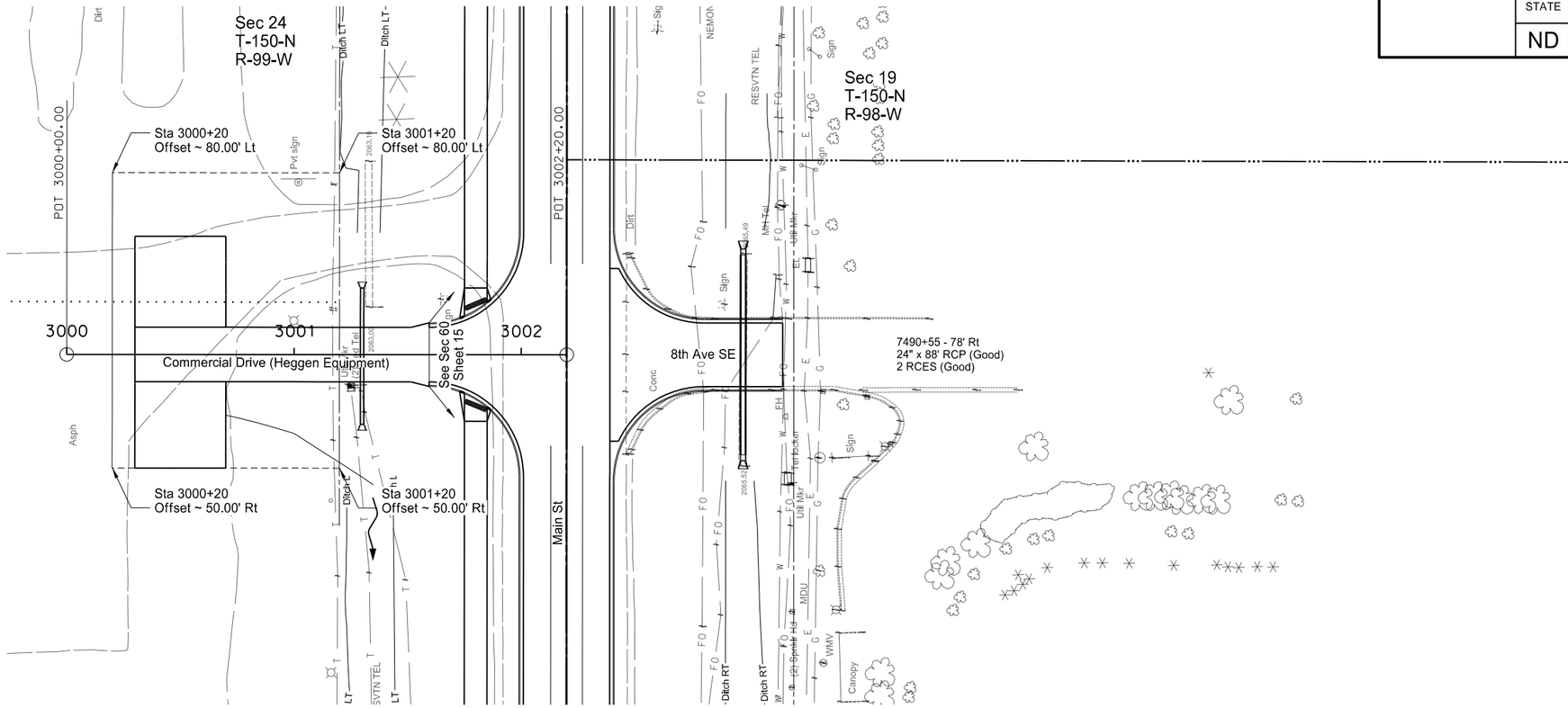
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

16th Ave SW (PR16AVE)
Sta 4001+00 to 4003+11

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	60	21



302 0100 SALVAGED BASE COURSE
Sta 3000+30 to 3001+59.50 — 370 TON

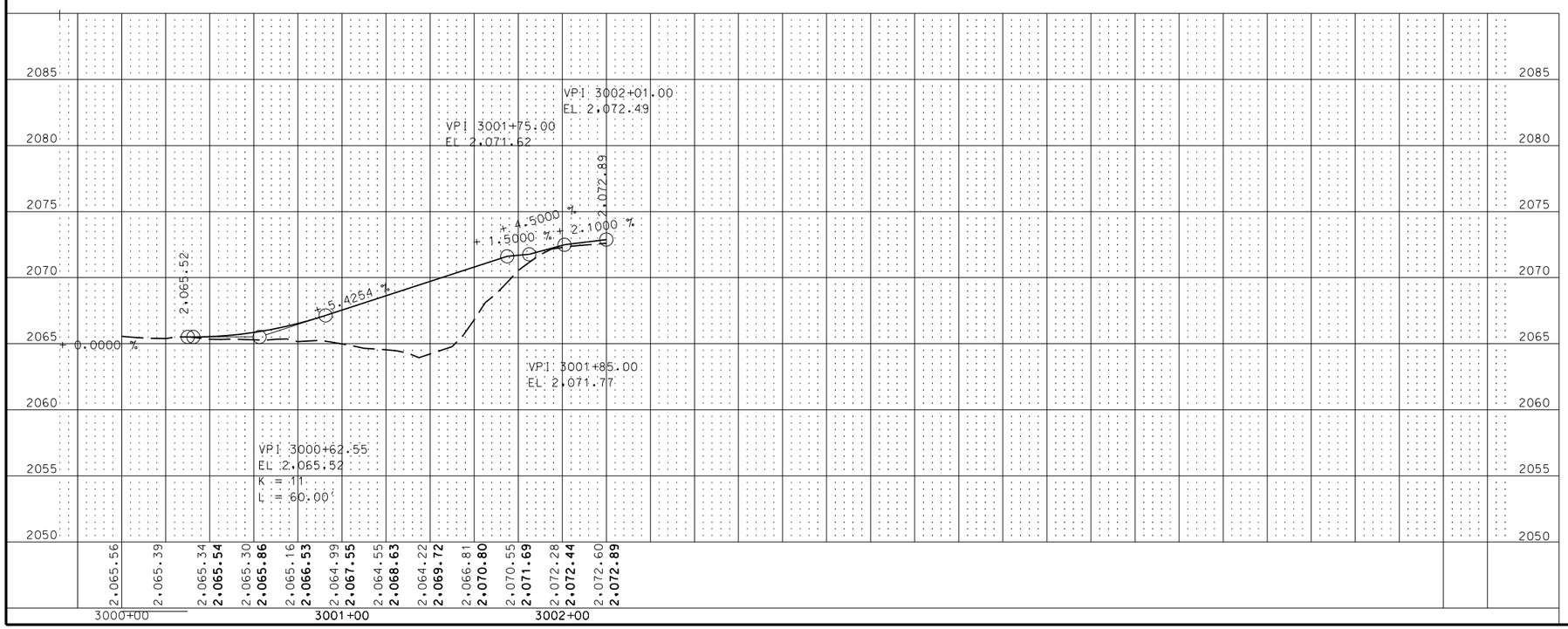
401 0050 TACK COAT
Sta 3000+30 to 3001+59.50 — 38 GAL

401 0060 PRIME COAT
Sta 3000+30 to 3001+59.50 — 94 GAL

401 0160 BLOTTER MATERIAL CL 44
Sta 3000+30 to 3001+59.50 — 3 TON

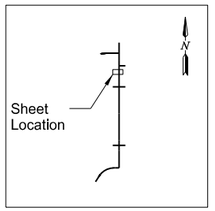
430 0045 SUPERPAVE FAA 45
Sta 3000+30 to 3001+59.50 — 125 TON

430 6428 PG 64-28 ASPHALT CEMENT
Sta 3000+30 to 3001+59.50 — 7 TON



Note: See Section 51 and 55 for Culverts and Storm Sewer

— Ditch LT —
— Ditch RT — Ditch Bottom



N

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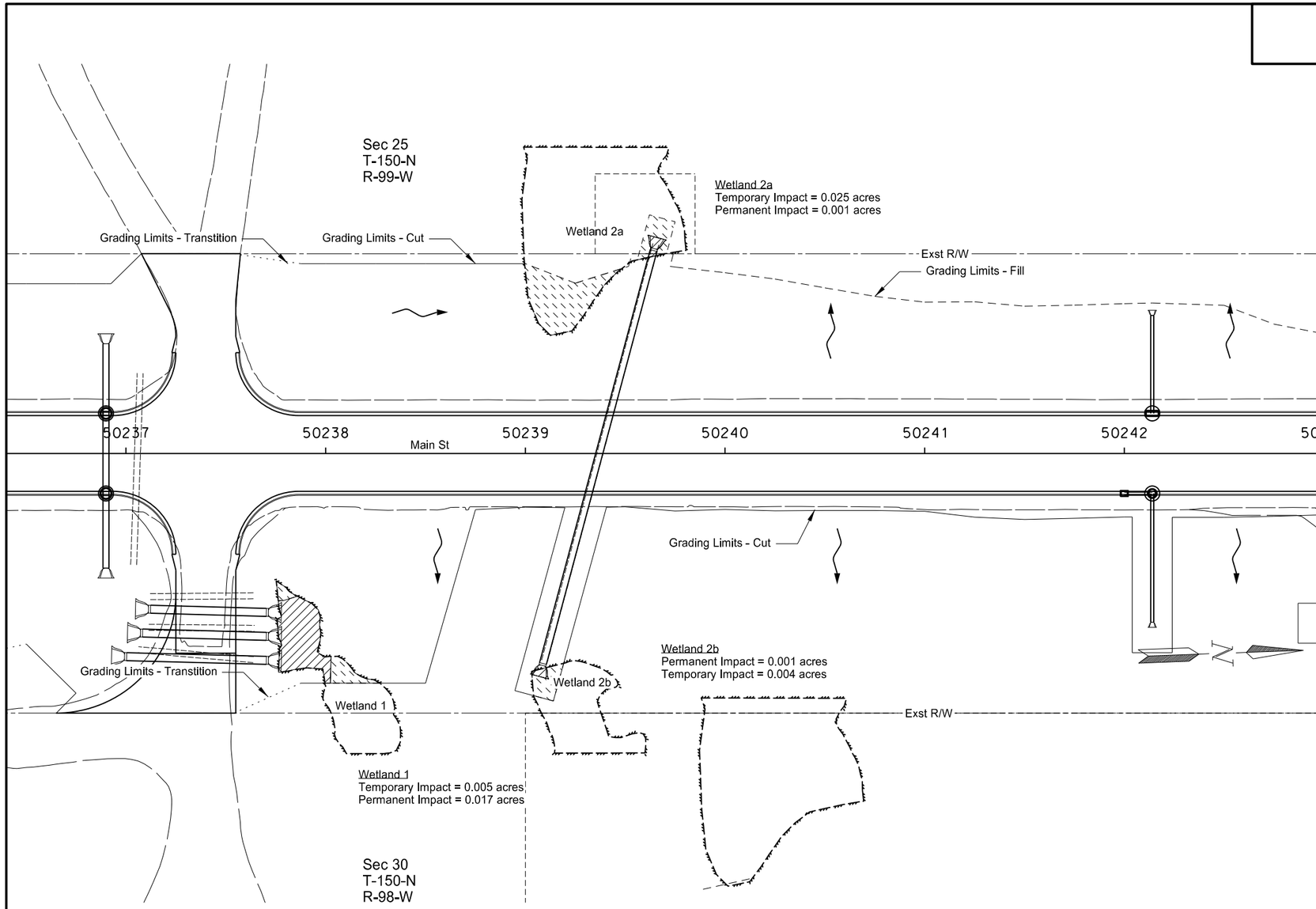
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Plan & Profile

8th Ave (PR8AVE)
Sta 3000+25 to 3002+18

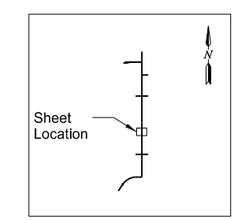
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	75	1



Wetland Delineated Exst

Wetland Impacts Perm

Wetland Impact Temp



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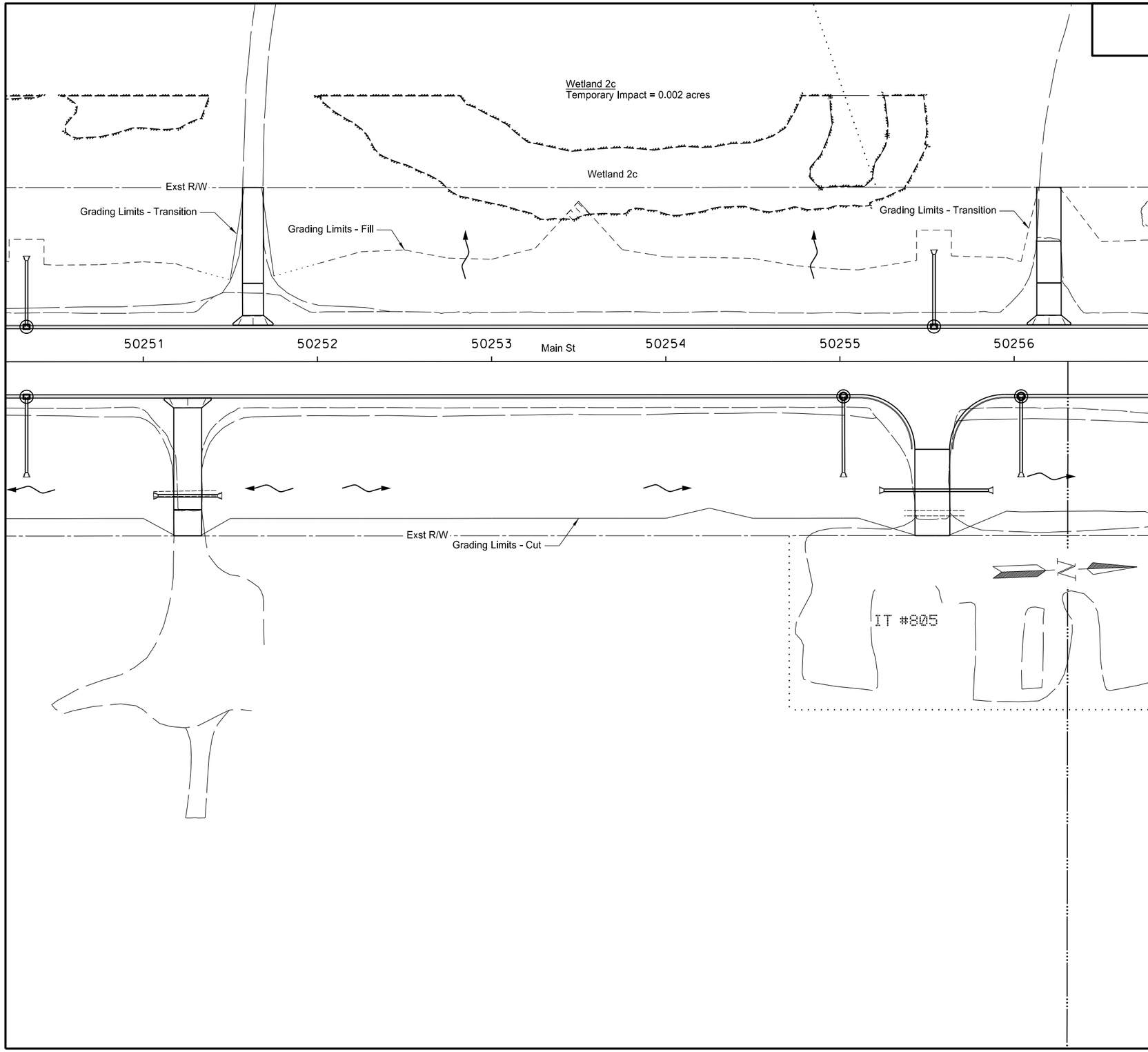
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Wetlands

Main St (PRBN85)
Sta 50237+00 to 50243+00

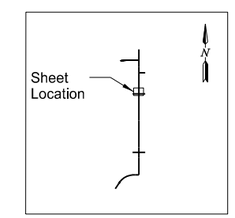
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	75	2



Wetland Delineated Exst

Wetland Impacts Perm

Wetland Impact Temp



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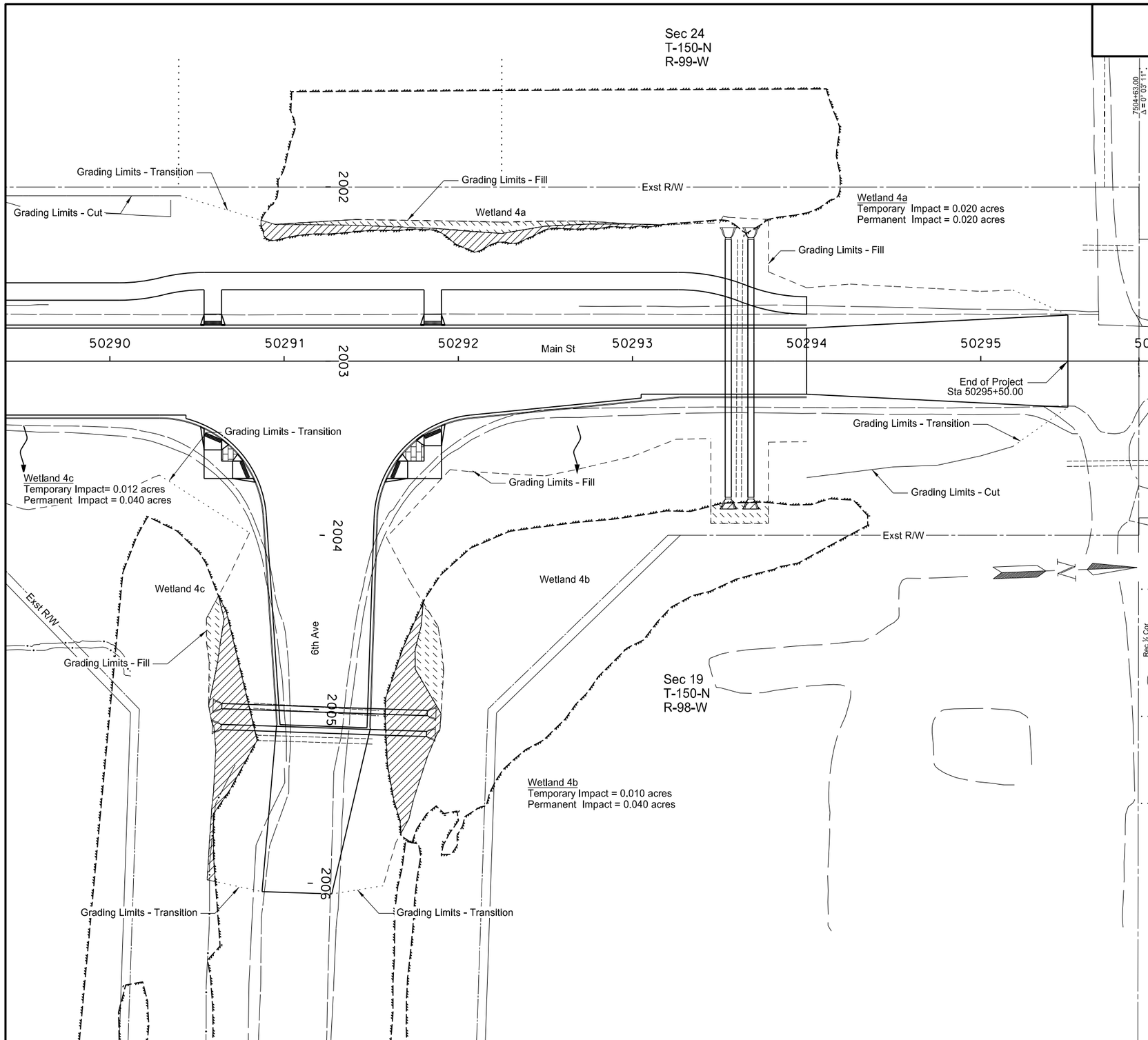
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Wetlands

Main St (PRBN85)
Sta 50251+00 to 50256+50

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	75	3

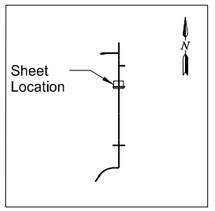


Wetland Delineated Exst

Wetland Impacts Perm

Wetland Impact Temp

Wetland Mitigation



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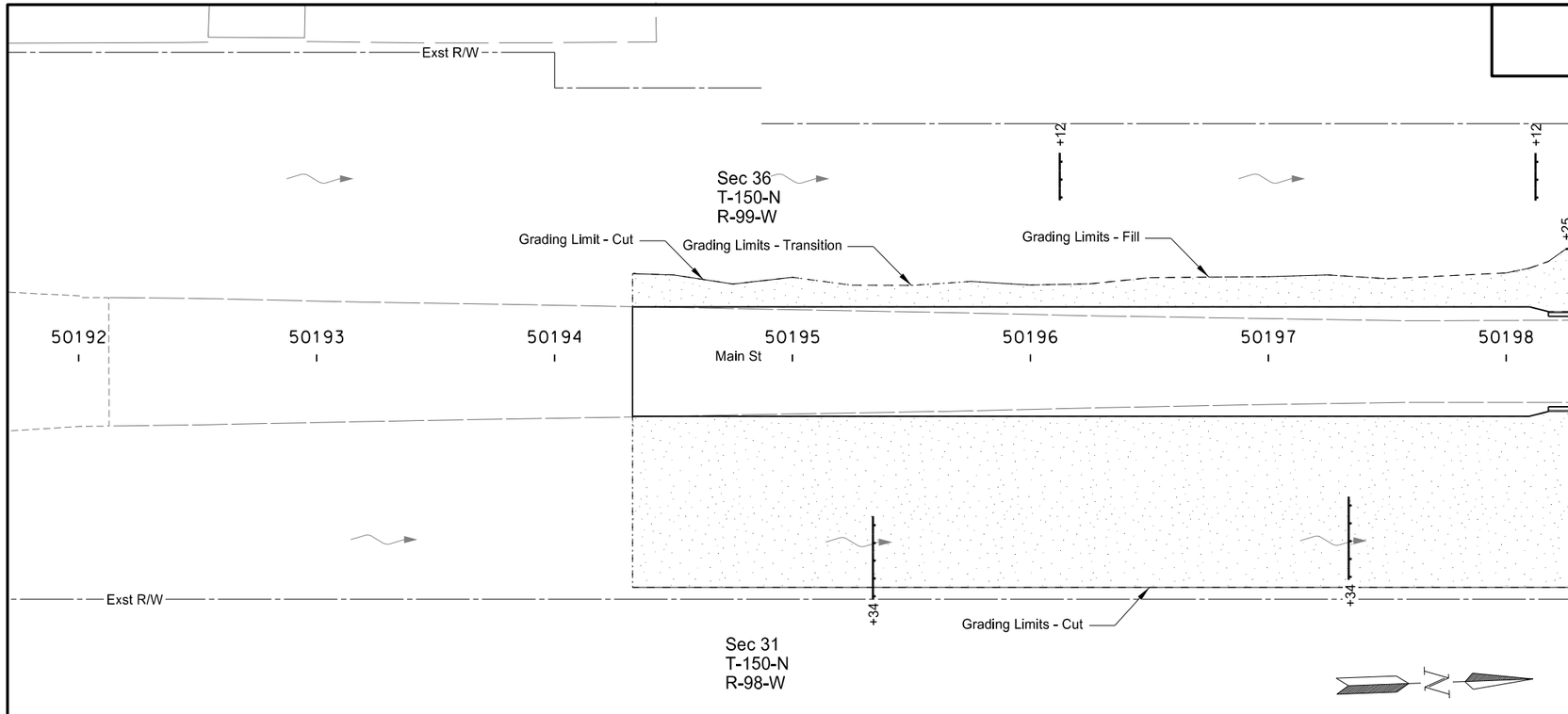
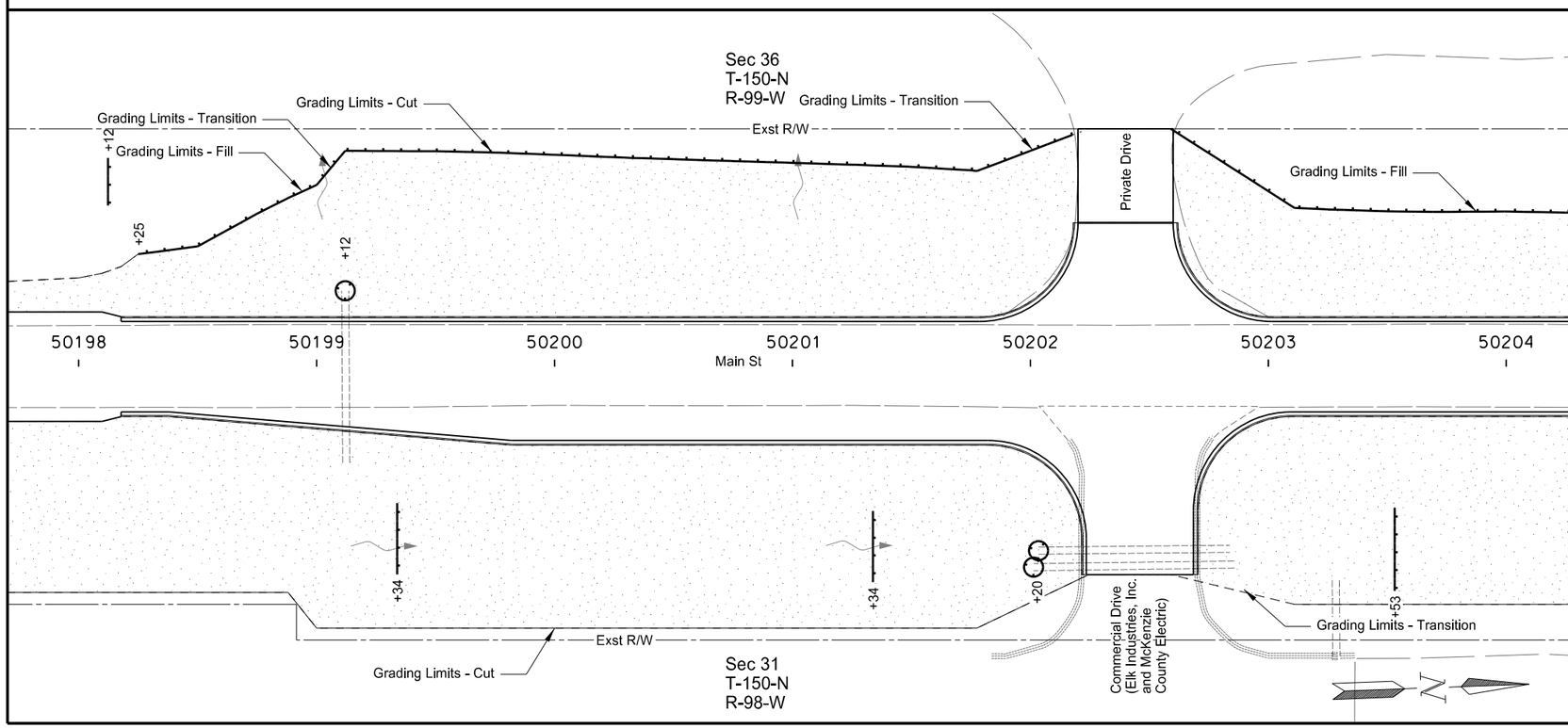
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Wetlands

Main St (PRBN85)
Sta 50290+00 to 50295+50

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	76	1





251 2000 TEMPORARY COVER CROP

Sta 50194+32.78 to 50204+00	2.361	ACRE

253 0101 STRAW MULCH

Sta 50194+32.78 to 50204+00	2.361	ACRE

261 0112 FIBER ROLLS 12IN

Sta 50194+32.78 to 50204+00 Rt		215	LF
Sta 50194+32.78 to 50204+00 Lt		625	LF
	Total	840	LF

261 0113 REMOVE FIBER ROLLS 12IN

Sta 50194+32.78 to 50204+00 Rt		215	LF
Sta 50194+32.78 to 50204+00 Lt		625	LF
	Total	840	LF

Fiber Roll

Wetland Delineated Exst

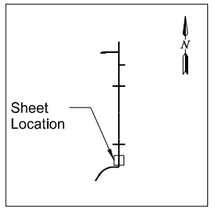
Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

Ditch Fiber Roll Spacing

Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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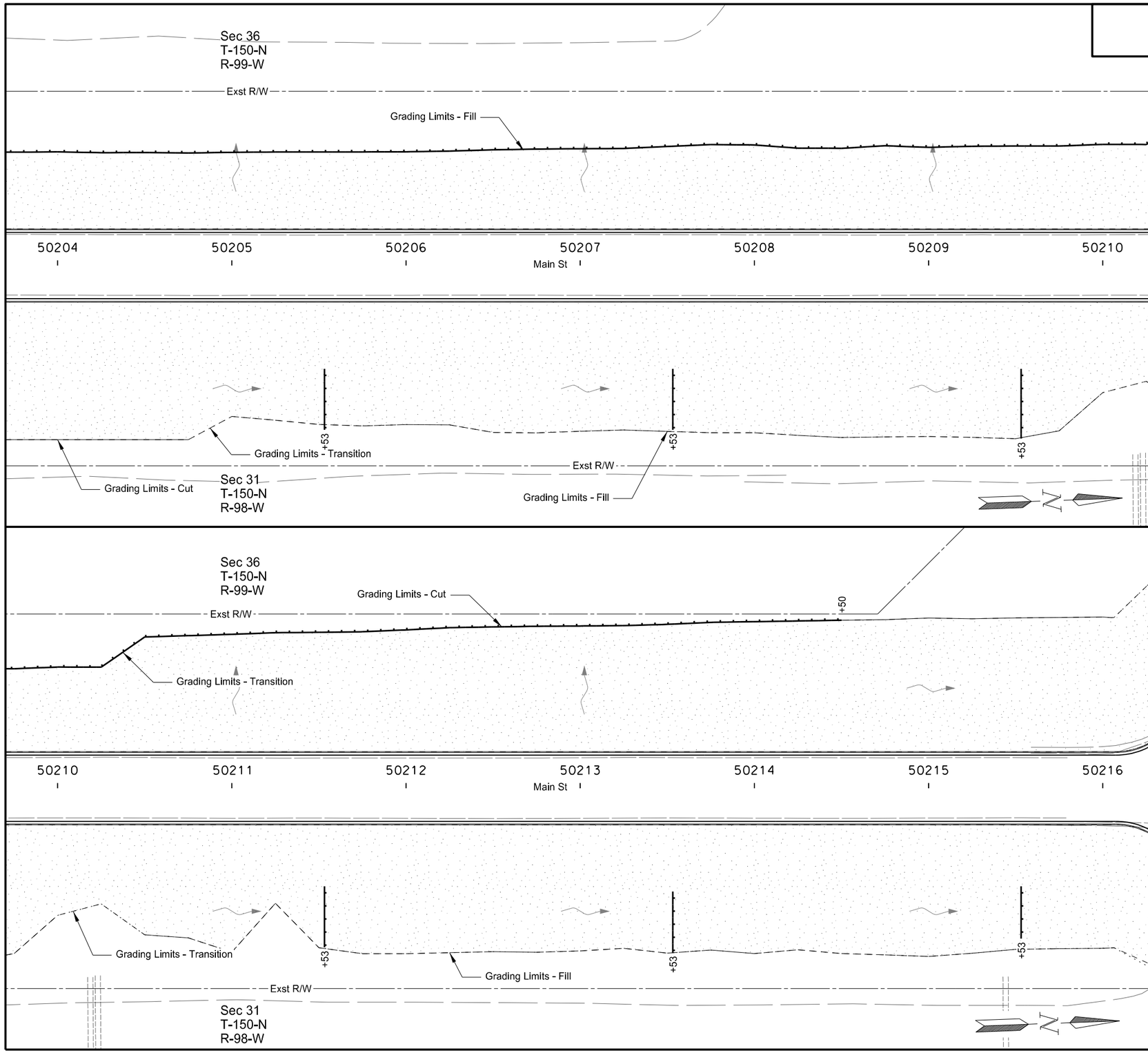
Us 85 Bus Rt/ND 23 Bus Rt South of Watford City

Temporary Erosion Control

Main St (PRBN85)
Sta 50194+32.78 to 50204+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	76	2



251 2000 TEMPORARY COVER CROP

Sta 50204+00 to 50216+00	3.584	ACRE

253 0101 STRAW MULCH

Sta 50204+00 to 50216+00	3.584	ACRE

261 0112 FIBER ROLLS 12IN

Sta 50204+00 to 50216+00 Rt	210	LF
Sta 50204+00 to 50216+00 Lt	1,055	LF
Total	1,265	LF

261 0113 REMOVE FIBER ROLLS 12IN

Sta 50204+00 to 50216+00 Rt	210	LF
Sta 50204+00 to 50216+00 Lt	1,055	LF
Total	1,265	LF

Fiber Roll

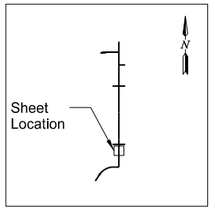
Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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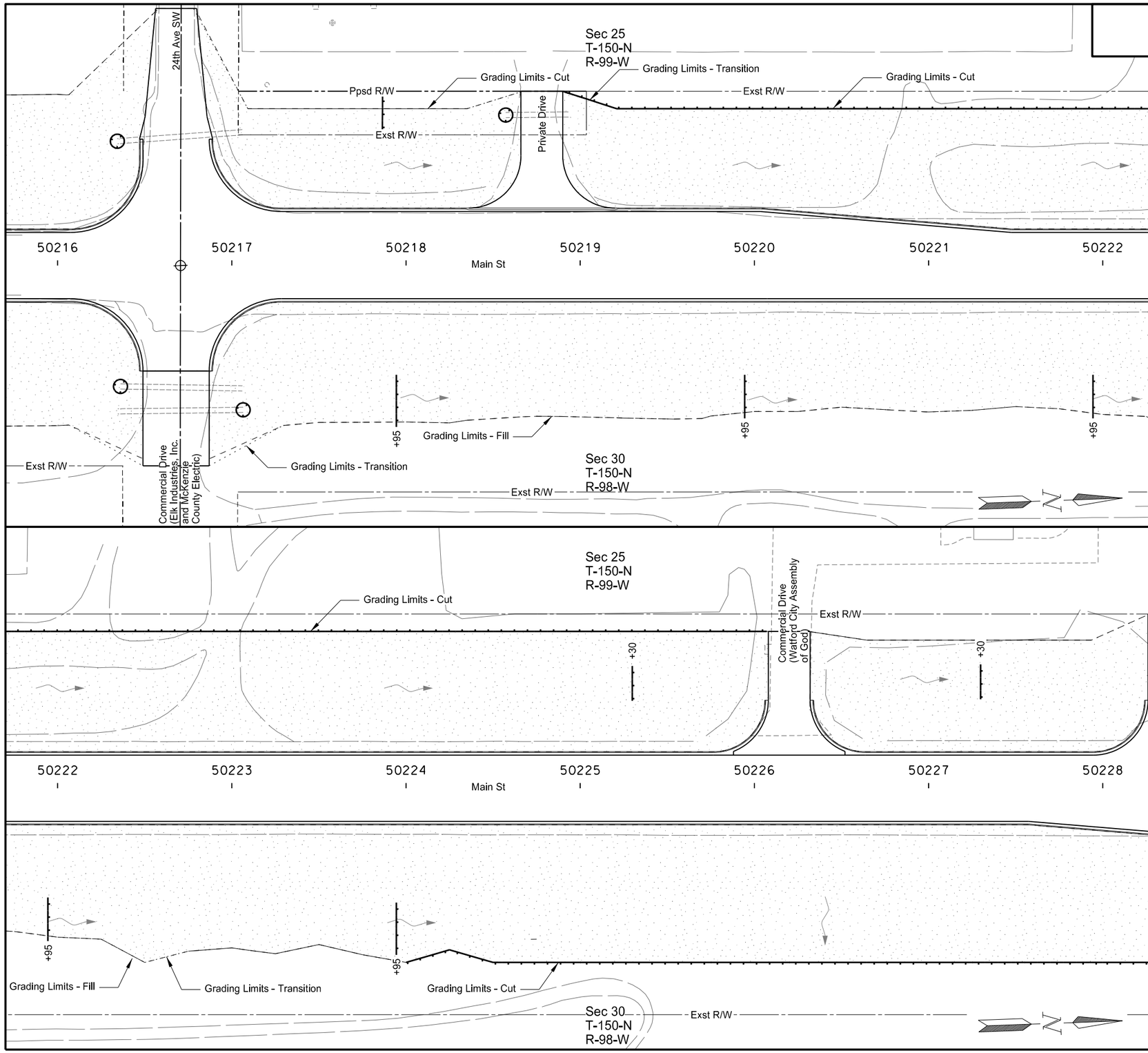
Us 85 Bus Rt/ND 23 Bus Rt South of Watford City

Temporary Erosion Control

Main St (PRBN85)
Sta 50204+00 to 50216+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	76	3



251 2000 TEMPORARY COVER CROP

Sta 50216+00 to 50228+00		3.577	ACRE

253 0101 STRAW MULCH

Sta 50216+00 to 50228+00		3.577	ACRE

261 0112 FIBER ROLLS 12IN

Sta 50216+00 to 50228+00 Rt		562	LF
Sta 50216+00 to 50228+00 Lt		803	LF
	Total	1,365	LF

261 0113 REMOVE FIBER ROLLS 12IN

Sta 50216+00 to 50228+00 Rt		562	LF
Sta 50216+00 to 50228+00 Lt		803	LF
	Total	1,365	LF

Fiber Roll

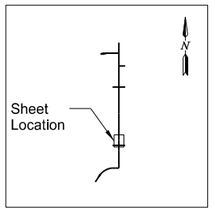
Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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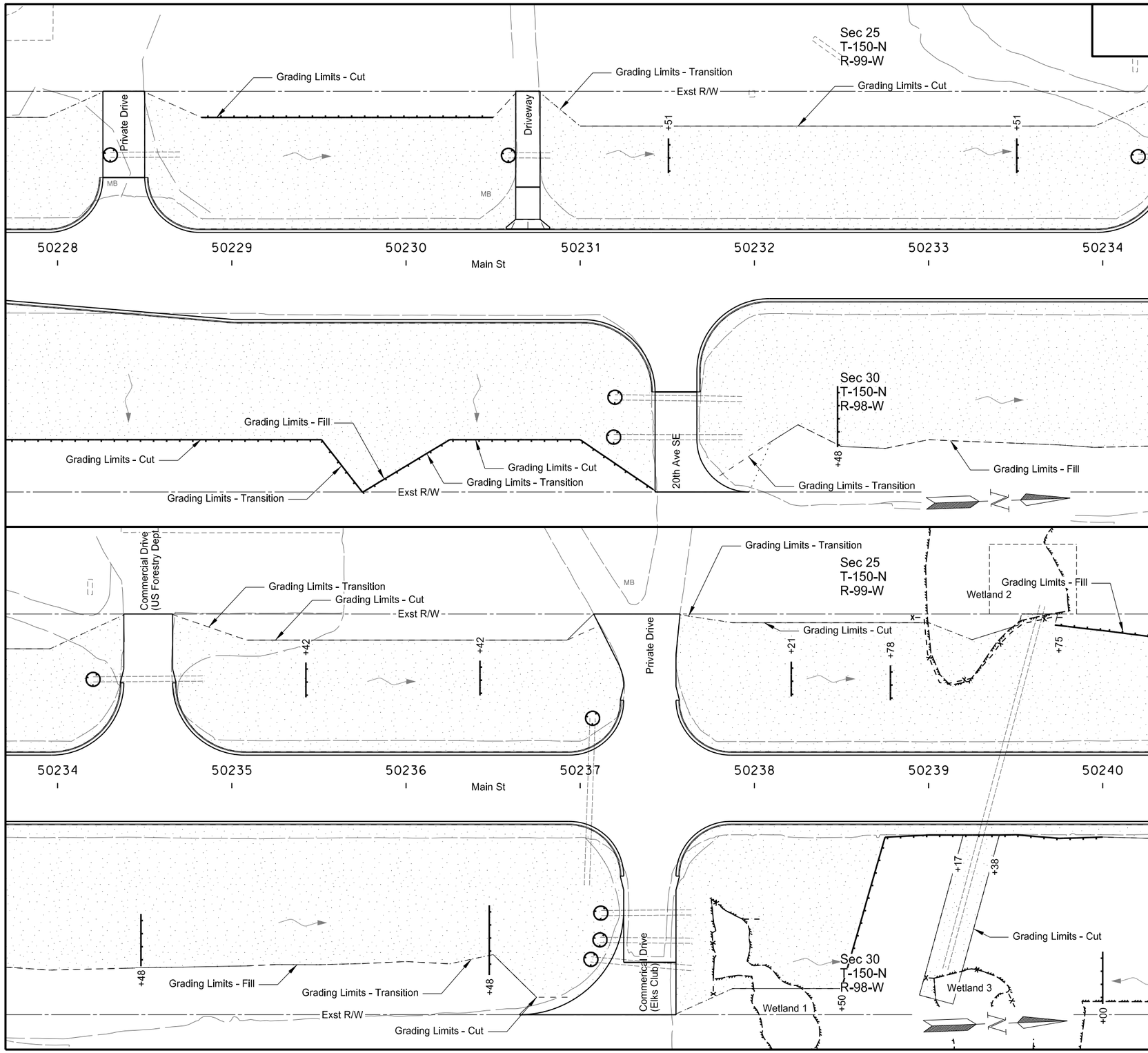
Us 85 Bus Rt/ND 23 Bus Rt South of Watford City

Temporary Erosion Control

Main St (PRBN85)
Sta 50216+00 to 50228+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	76	4



251 2000 TEMPORARY COVER CROP

Sta 50228+00 to 50240+00		3.483	ACRE

253 0101 STRAW MULCH

Sta 50228+00 to 50240+00		3.483	ACRE

260 0200 SILT FENCE SUPPORTED

Sta 50228+00 to 50240+00 Rt		160	LF
Sta 50228+00 to 50240+00 Lt		135	LF
	Total	295	LF

260 0201 REMOVE SILT FENCE SUPPORTED

Sta 50228+00 to 50240+00 Rt		160	LF
Sta 50228+00 to 50240+00 Lt		135	LF
	Total	295	LF

261 0112 FIBER ROLLS 12IN

Sta 50228+00 to 50240+00 Rt		850	LF
Sta 50228+00 to 50240+00 Lt		416	LF
	Total	1,266	LF

261 0113 REMOVE FIBER ROLLS 12IN

Sta 50228+00 to 50240+00 Rt		850	LF
Sta 50228+00 to 50240+00 Lt		416	LF
	Total	1,266	LF

Fiber Roll

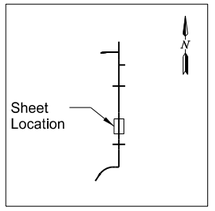
Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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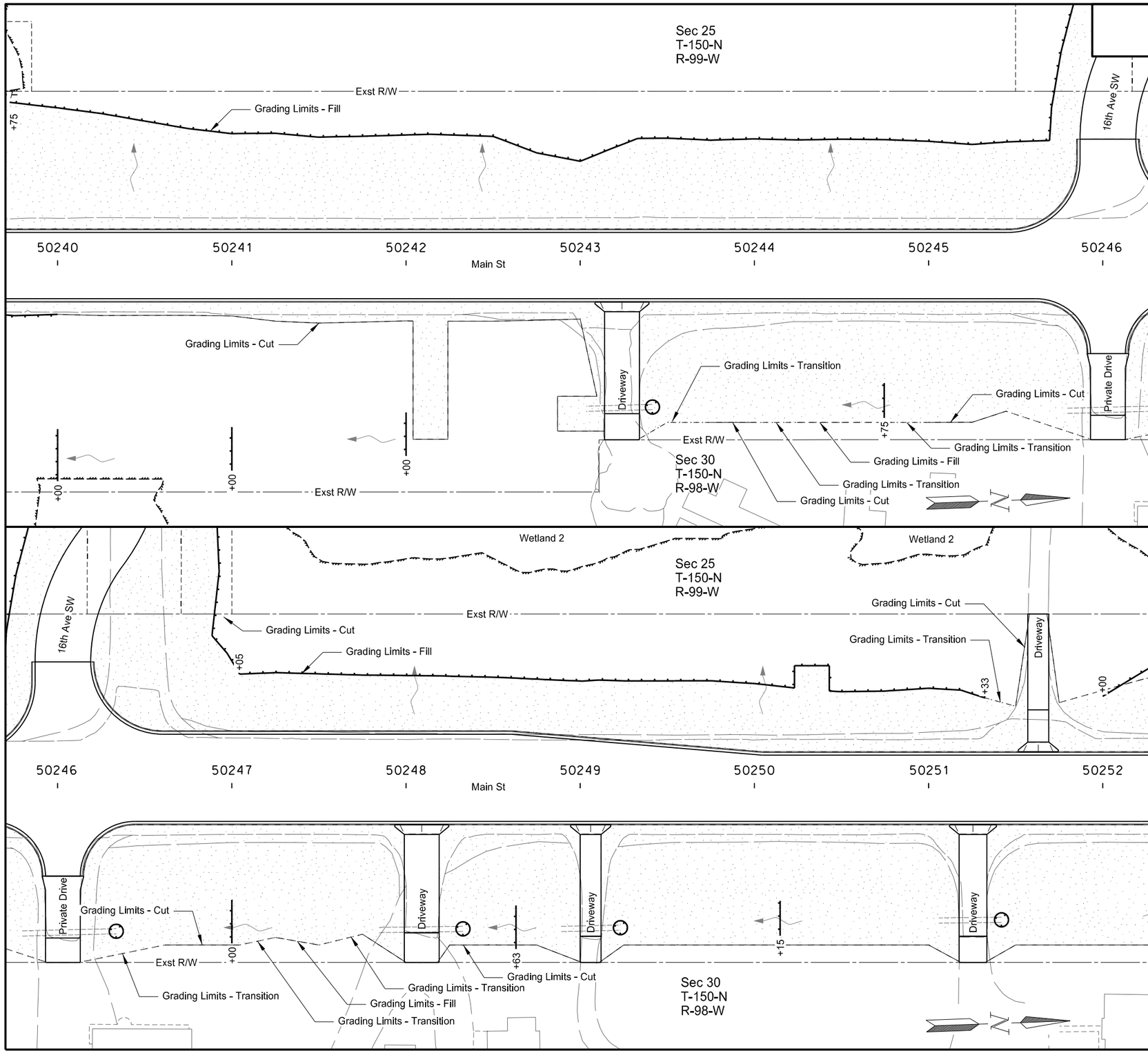
Us 85 Bus Rt/ND 23 Bus Rt South of Watford City

Temporary Erosion Control

Main St (PRBN85)
Sta 50228+00 to 50240+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	76	5



251 2000 TEMPORARY COVER CROP

Sta 50240+00 to 50252+00		2.749	ACRE

253 0101 STRAW MULCH

Sta 50240+00 to 50252+00		2.749	ACRE

261 0112 FIBER ROLLS 12IN

Sta 50240+00 to 50252+00 Rt		266	LF
Sta 50240+00 to 50252+00 Lt		1,323	LF
	Total	1,589	LF

261 0113 REMOVE FIBER ROLLS 12IN

Sta 50240+00 to 50252+00 Rt		266	LF
Sta 50240+00 to 50252+00 Lt		1,323	LF
	Total	1,589	LF

Fiber Roll

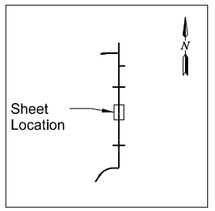
Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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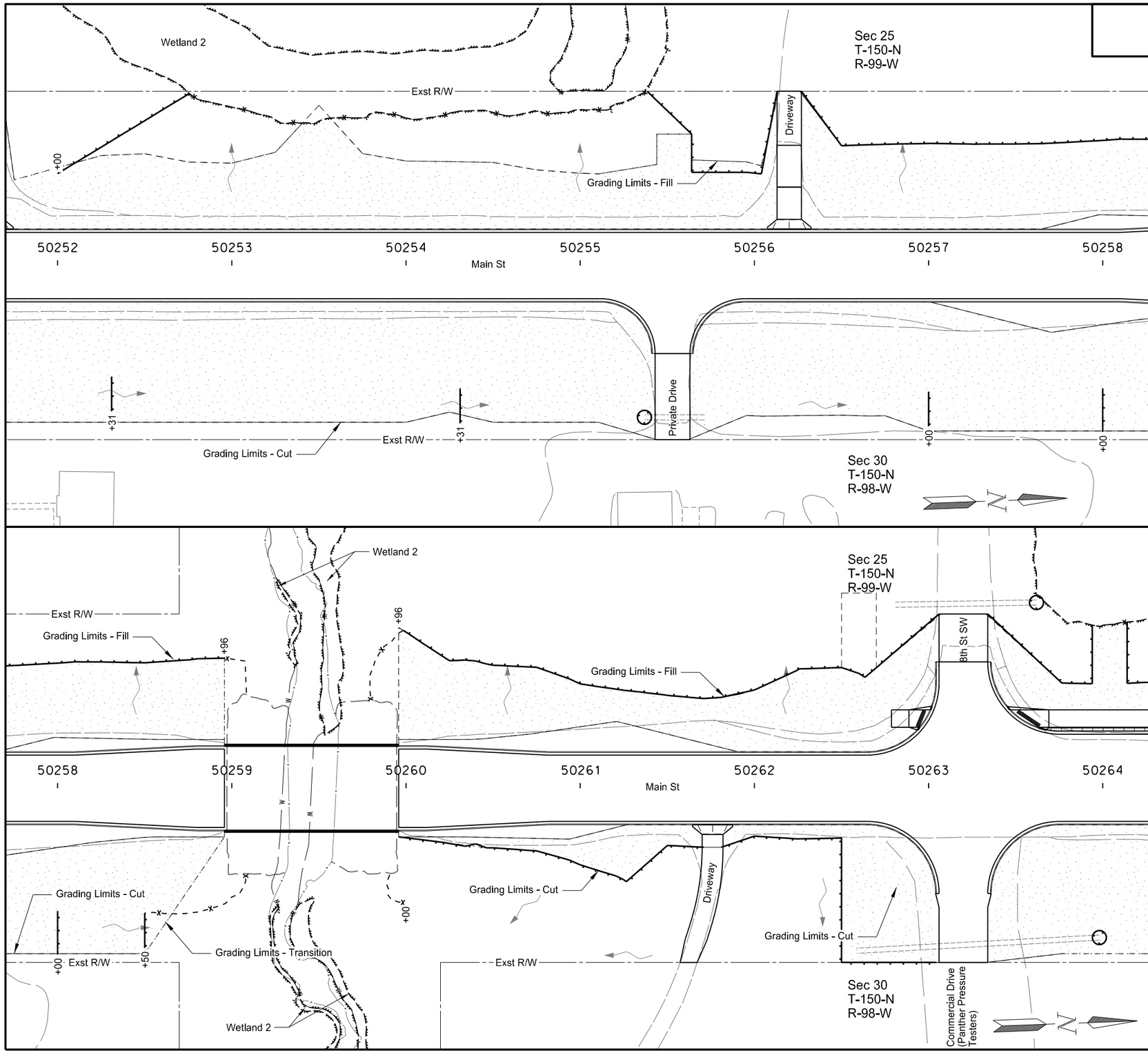
Us 85 Bus Rt/ND 23 Bus Rt South of Watford City

Temporary Erosion Control

Main St (PRBN85)
Sta 50240+00 to 50252+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	76	6



251 2000 TEMPORARY COVER CROP

Sta 50252+00 to 50264+00		2.274	ACRE

253 0101 STRAW MULCH

Sta 50252+00 to 50264+00		2.274	ACRE

260 0200 SILT FENCE SUPPORTED

Sta 50252+00 to 50264+00 Rt		94	LF
Sta 50252+00 to 50264+00 Lt		357	LF
	Total	451	LF

260 0201 REMOVE SILT FENCE SUPPORTED

Sta 50252+00 to 50264+00 Rt		94	LF
Sta 50252+00 to 50264+00 Lt		357	LF
	Total	451	LF

261 0112 FIBER ROLLS 12IN

Sta 50252+00 to 50264+00 Rt		538	LF
Sta 50252+00 to 50264+00 Lt		987	LF
	Total	1,525	LF

261 0113 REMOVE FIBER ROLLS 12IN

Sta 50252+00 to 50264+00 Rt		538	LF
Sta 50252+00 to 50264+00 Lt		987	LF
	Total	1,525	LF

Fiber Roll

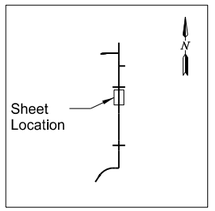
Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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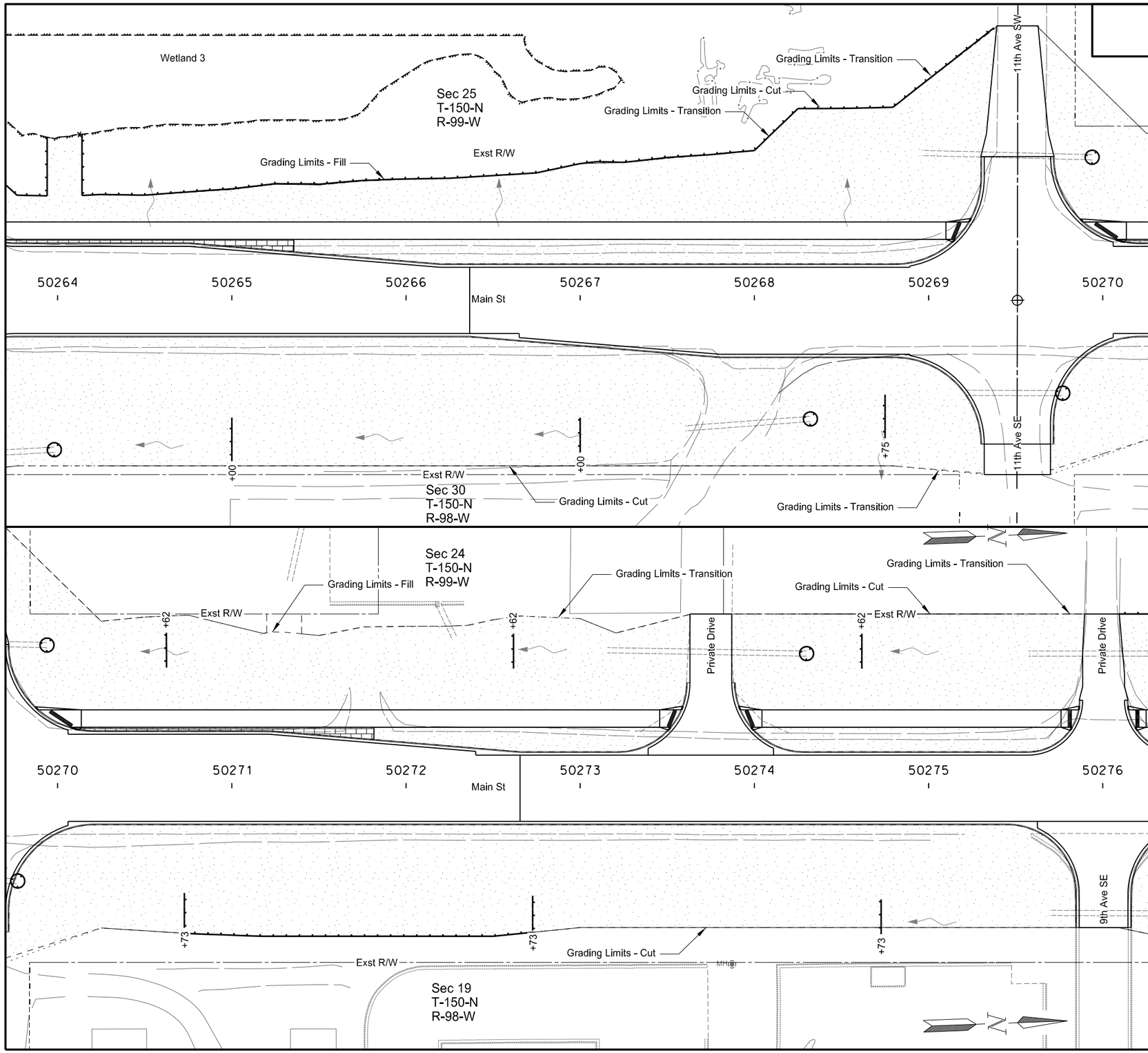
Us 85 Bus Rt/ND 23 Bus Rt South of Watford City

Temporary Erosion Control

Main St (PRBN85)
Sta 50252+00 to 50264+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	76	7



251 2000 TEMPORARY COVER CROP

Sta 50264+00 to 50276+00	3.079	ACRE

253 0101 STRAW MULCH

Sta 50264+00 to 50276+00	3.079	ACRE

260 0200 SILT FENCE SUPPORTED

Sta 50264+00 to 50276+00 Lt	20	LF

260 0201 REMOVE SILT FENCE SUPPORTED

Sta 50264+00 to 50276+00 Lt	20	LF

261 0112 FIBER ROLLS 12IN

Sta 50264+00 to 50276+00 Rt	378	LF
Sta 50264+00 to 50276+00 Lt	696	LF
Total	1,074	LF

261 0113 REMOVE FIBER ROLLS 12IN

Sta 50264+00 to 50276+00 Rt	378	LF
Sta 50264+00 to 50276+00 Lt	696	LF
Total	1,074	LF

Fiber Roll

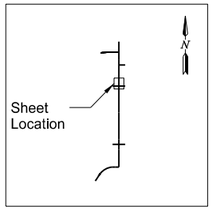
Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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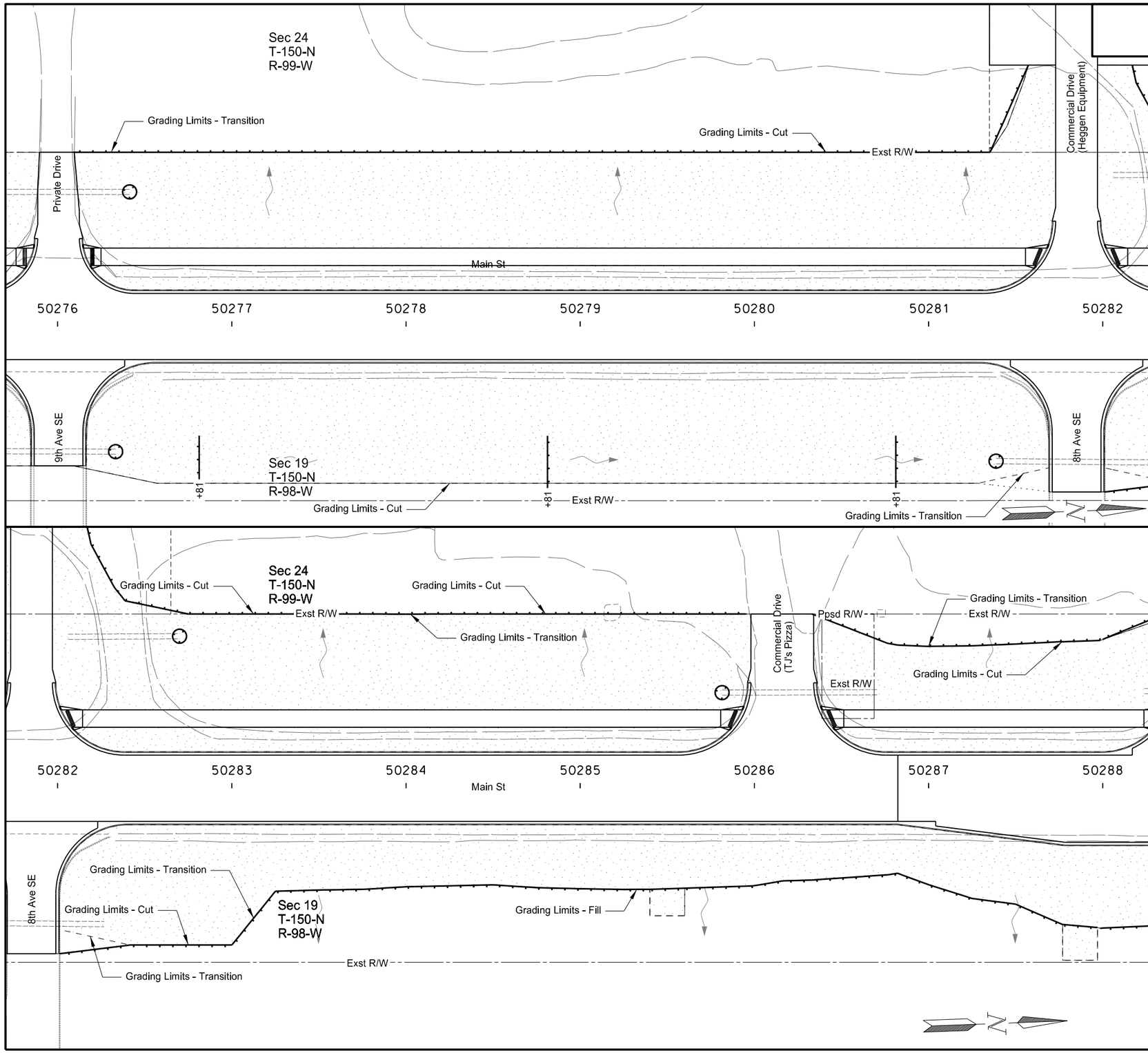
Us 85 Bus Rt/ND 23 Bus Rt South of Watford City

Temporary Erosion Control

Main St (PRBN85)
Sta 50264+00 to 50276+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	76	8



251 2000 TEMPORARY COVER CROP

Sta 50276+00 to 50288+00		3.193	ACRE

253 0101 STRAW MULCH

Sta 50276+00 to 50288+00		3.193	ACRE

261 0112 FIBER ROLLS 12IN

Sta 50276+00 to 50288+00 Rt		752	LF
Sta 50276+00 to 50288+00 Lt		1,231	LF
	Total	1,983	LF

261 0113 REMOVE FIBER ROLLS 12IN

Sta 50276+00 to 50288+00 Rt		752	LF
Sta 50276+00 to 50288+00 Lt		1,231	LF
	Total	1,983	LF

Fiber Roll

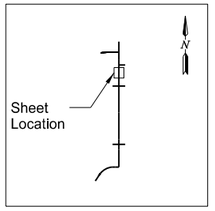
Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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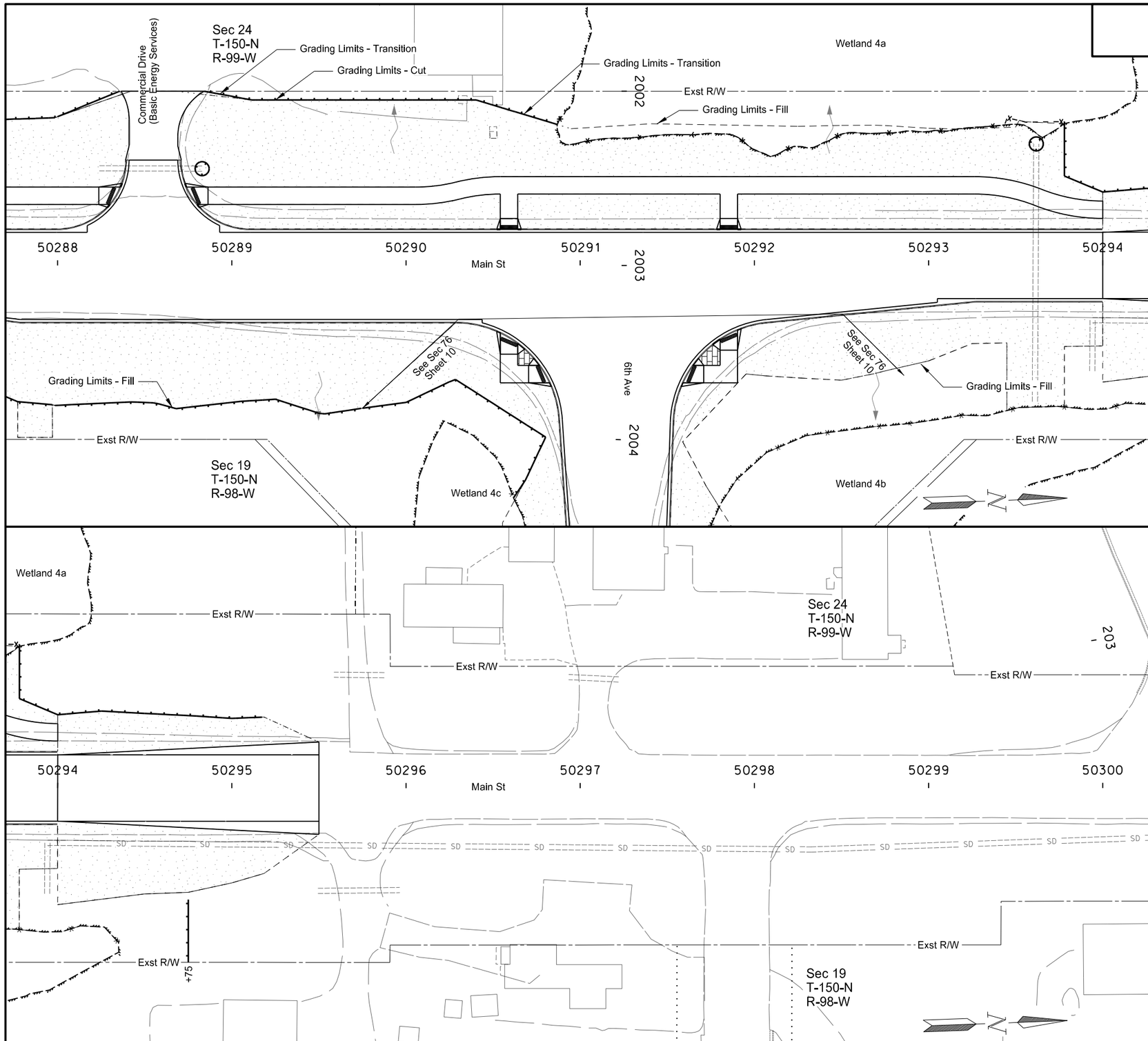
Us 85 Bus Rt/ND 23 Bus Rt South of Watford City

Temporary Erosion Control

Main St (PRBN85)
Sta 50276+00 to 50288+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	76	9



251 2000 TEMPORARY COVER CROP

Sta 50288+00 to 50295+50		1.117	ACRE

253 0101 STRAW MULCH

Sta 50288+00 to 50295+50		1.117	ACRE

260 0200 SILT FENCE SUPPORTED

Sta 50288+00 to 50295+50 Rt		167	LF
Sta 50288+00 to 50295+50 Lt		316	LF
	Total	483	LF

260 0201 REMOVE SILT FENCE SUPPORTED

Sta 50288+00 to 50295+50 Rt		167	LF
Sta 50288+00 to 50295+50 Lt		316	LF
	Total	483	LF

261 0112 FIBER ROLLS 12IN

Sta 50288+00 to 50295+50 Rt		214	LF
Sta 50288+00 to 50295+50 Lt		469	LF
	Total	683	LF

261 0113 REMOVE FIBER ROLLS 12IN

Sta 50288+00 to 50295+50 Rt		214	LF
Sta 50288+00 to 50295+50 Lt		469	LF
	Total	683	LF

Fiber Roll

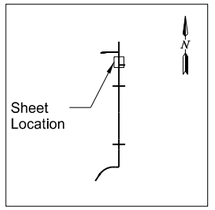
Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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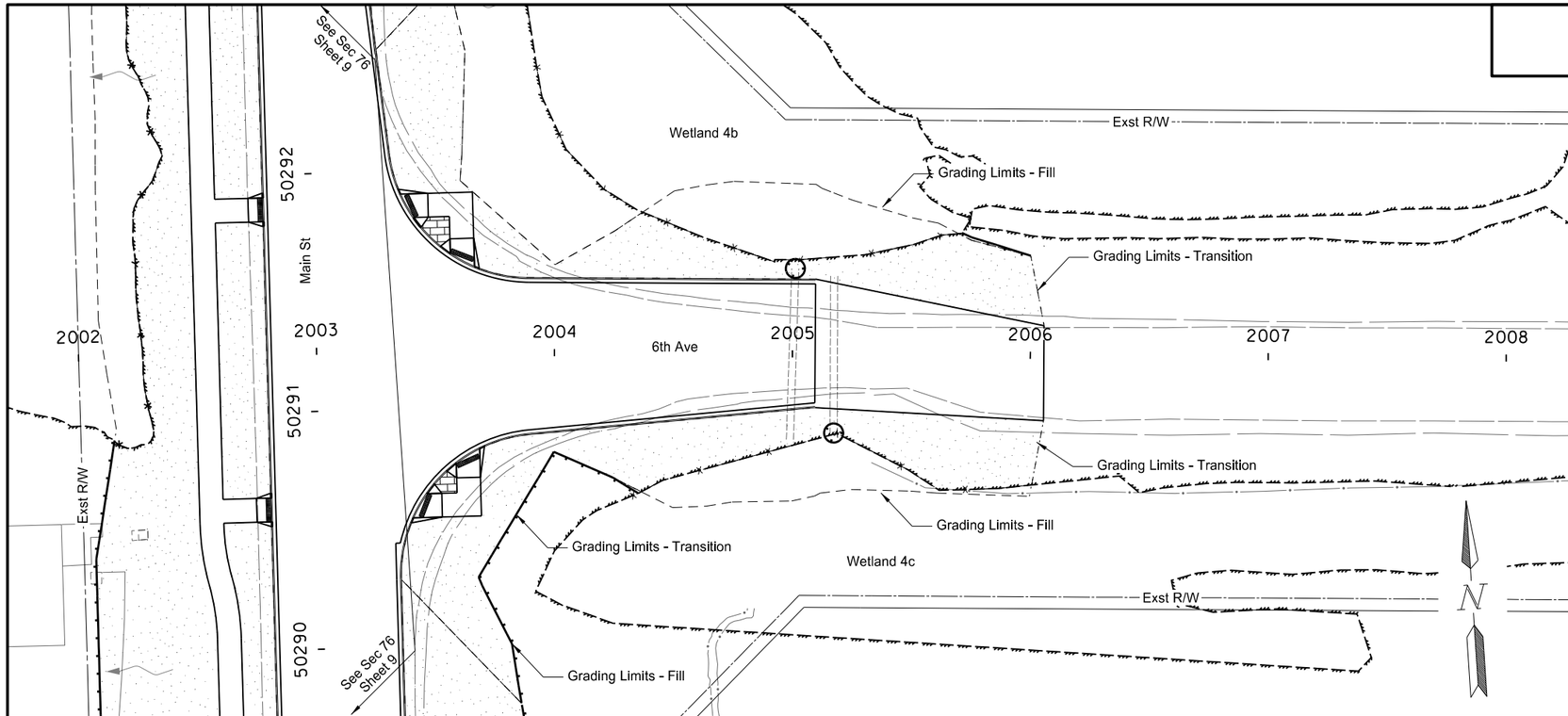
Us 85 Bus Rt/ND 23 Bus Rt South of Watford City

Temporary Erosion Control

Main St (PRBN85)
Sta 50288+00 to 50295+50

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	76	10



251 2000 TEMPORARY COVER CROP

Sta 2003+00 to 2006+05.70	0.425	ACRE

253 0101 STRAW MULCH

Sta 2003+00 to 2006+05.70	0.425	ACRE

260 0200 SILT FENCE SUPPORTED

Sta 2003+00 to 2006+05.70 Rt	179	LF
Sta 2003+00 to 2006+05.70 Lt	251	LF
Total	430	LF

260 0201 REMOVE SILT FENCE SUPPORTED

Sta 2003+00 to 2006+05.70 Rt	179	LF
Sta 2003+00 to 2006+05.70 Lt	251	LF
Total	430	LF

261 0112 FIBER ROLLS 12IN

Sta 2003+00 to 2006+05.70 Rt	183	LF
Sta 2003+00 to 2006+05.70 Lt	56	LF
Total	239	LF

261 0113 REMOVE FIBER ROLLS 12IN

Sta 2003+00 to 2006+05.70 Rt	183	LF
Sta 2003+00 to 2006+05.70 Lt	56	LF
Total	239	LF

Fiber Roll

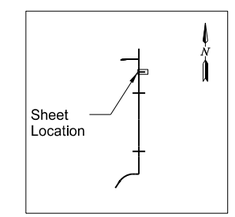
Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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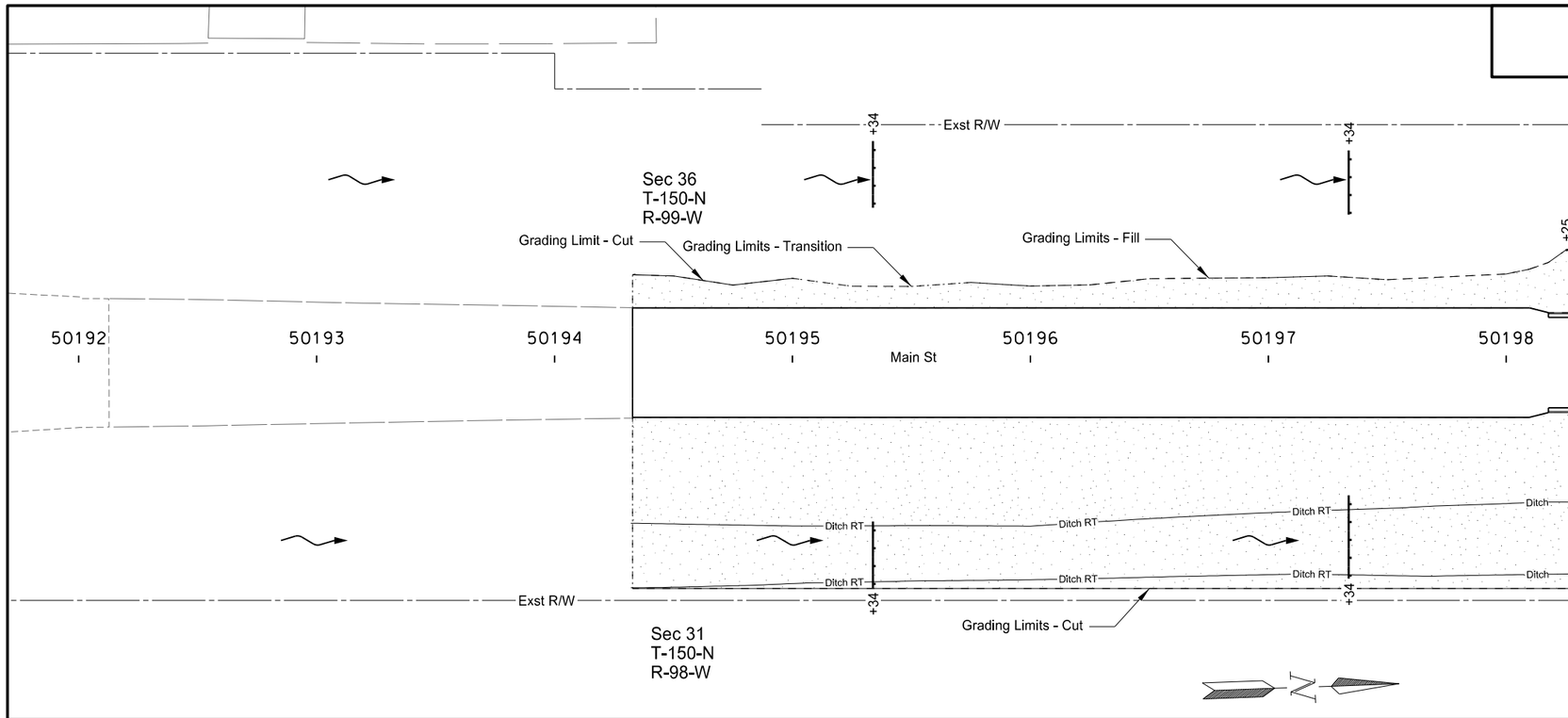
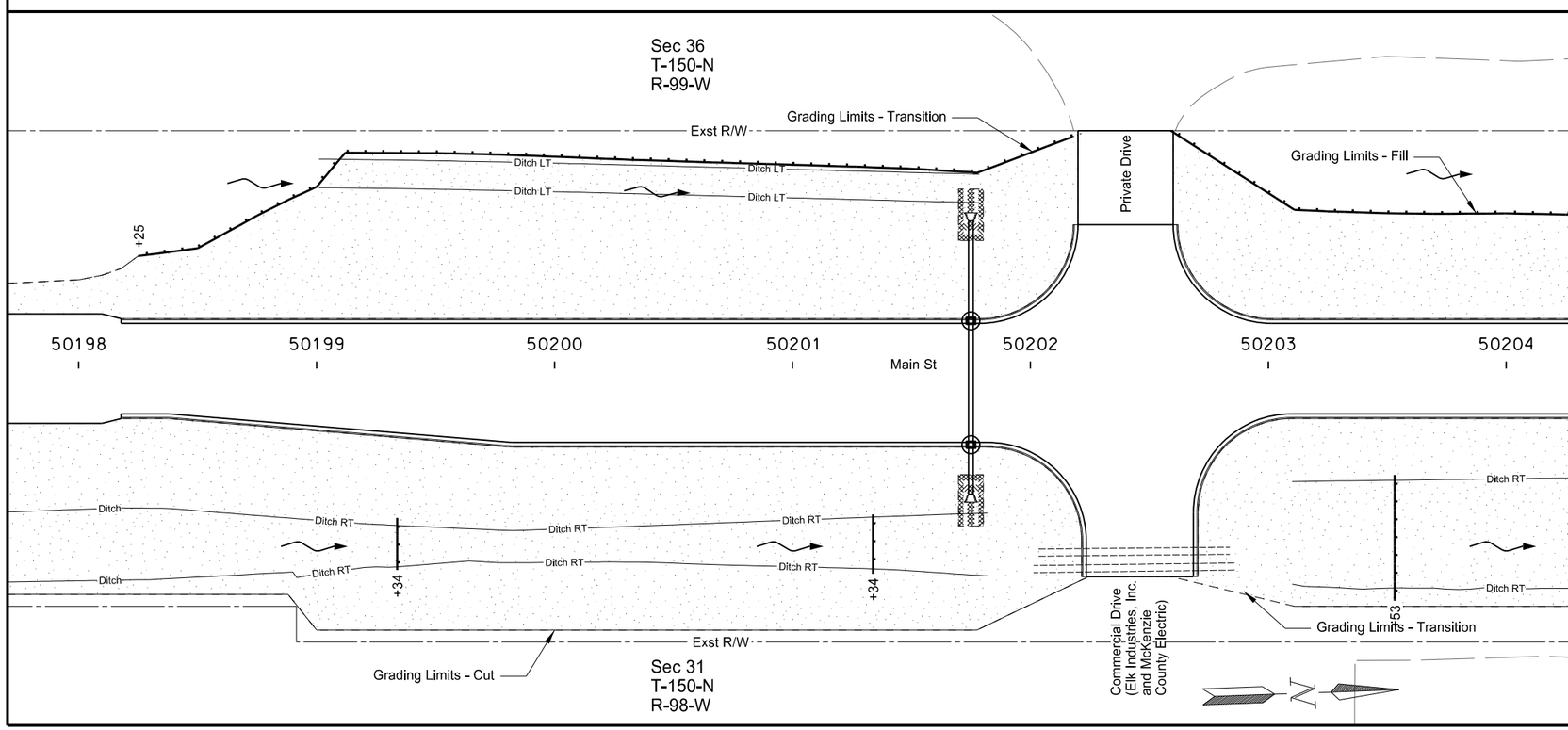
Us 85 Bus Rt/ND 23 Bus Rt South of Watford City

Temporary Erosion Control

6th Ave (PRTR23)
Sta 2003+00 to 2006+06

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	77	1





251 0200 SEEDING CLASS II

Sta 50194+32.78 to 50204+00	2.361	ACRE

253 0101 STRAW MULCH

Sta 50194+32.78 to 50204+00	2.361	ACRE

261 0112 FIBER ROLLS 12IN

Sta 50194+32.78 to 50204+00 Rt	163	LF
Sta 50194+32.78 to 50204+00 Lt	615	LF
Total	778	LF

Ditch LT
Ditch RT — Ditch Bottom

Fiber Roll

Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

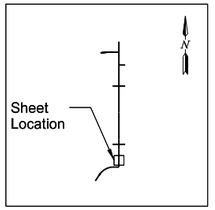
Topsoil - Wetland & Wetland Seed

Erosion Control Blanket Type 1 (See Sec 20 Sheet 4)

Riprap (See Sec 20 Sheet 5)

Inlet Protection (See Sec 20 Sheet 6)

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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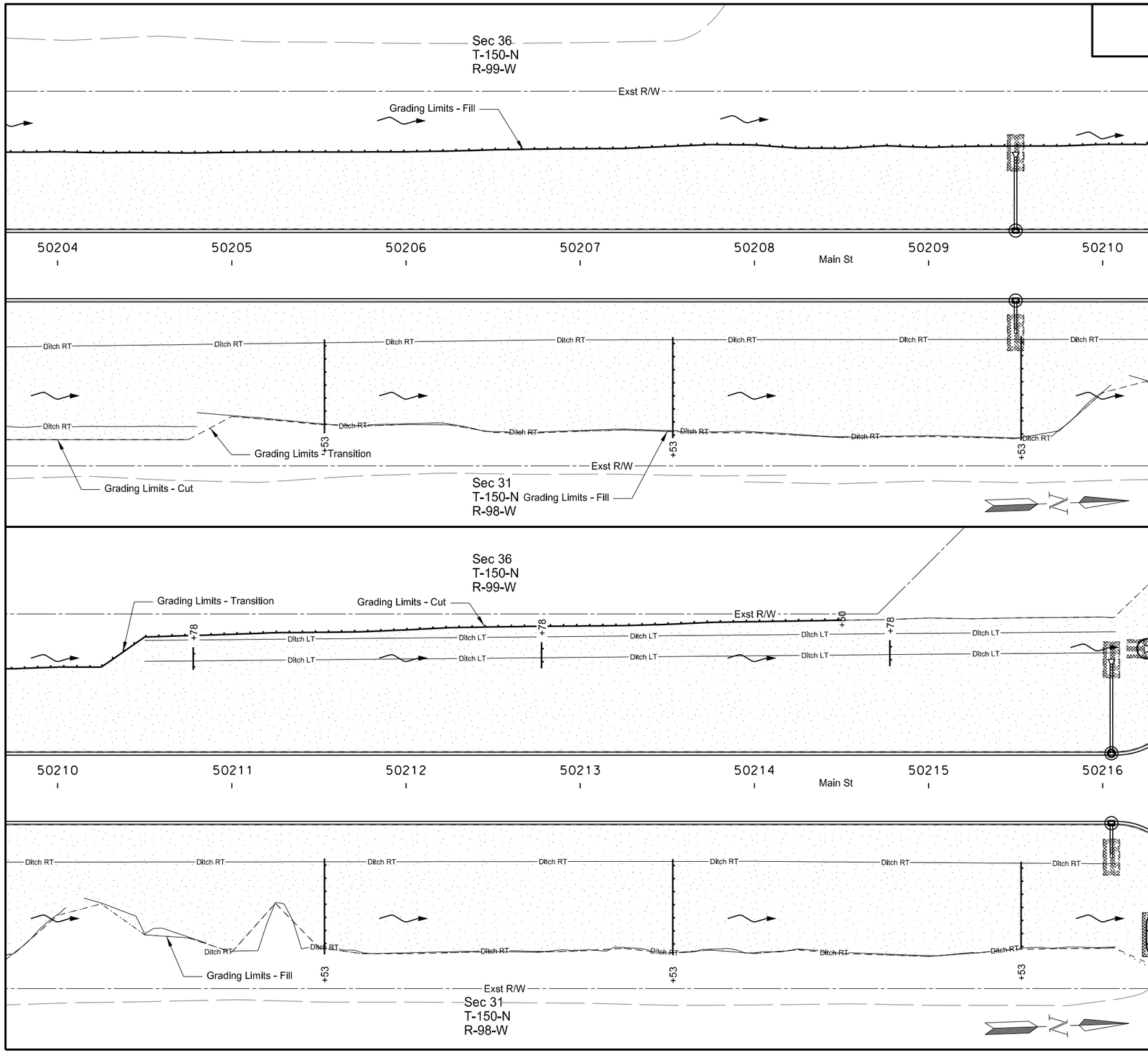
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Permanent Erosion Control

Main St (PRBN85)
Sta 50194+32.78 to 50204+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	77	2



251 0200 SEEDING CLASS II

Sta 50204+00 to 50216+00	3.584	ACRE

253 0101 STRAW MULCH

Sta 50204+00 to 50216+00	3.584	ACRE

261 0112 FIBER ROLLS 12IN

Sta 50204+00 to 50216+00 Rt	332	LF
Sta 50204+00 to 50216+00 Lt	1,098	LF
Total	1,430	LF

Ditch LT
Ditch RT — Ditch Bottom

Fiber Roll

Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

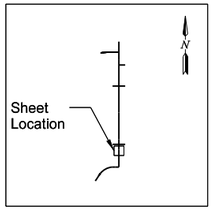
Topsoil - Wetland & Wetland Seed

Erosion Control Blanket Type 1 (See Sec 20 Sheet 4)

Riprap (See Sec 20 Sheet 5)

Inlet Protection (See Sec 20 Sheet 6)

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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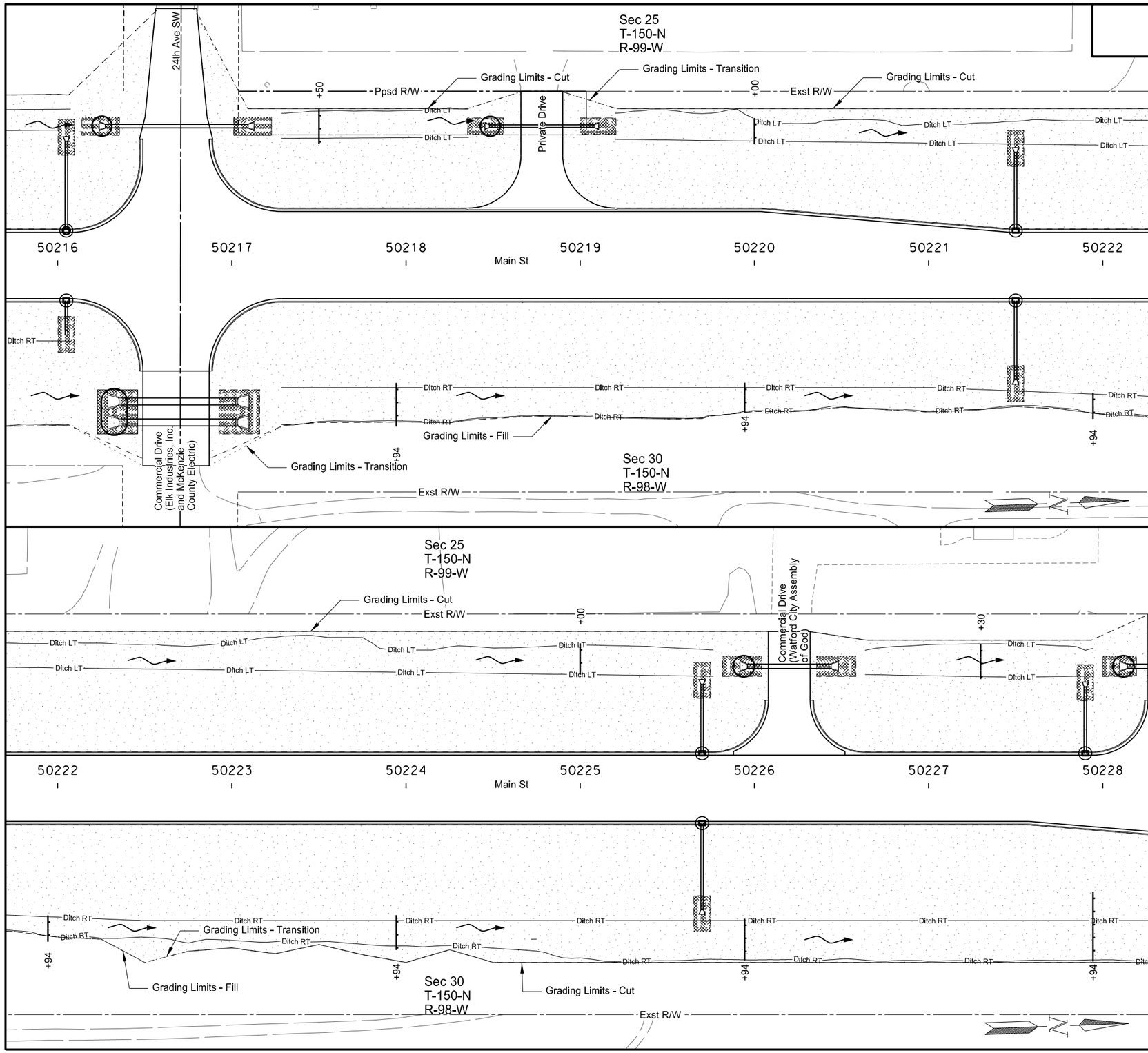
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Permanent Erosion Control

Main St (PRBN85)
Sta 50204+00 to 50216+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	77	3



251 0200 SEEDING CLASS II

Sta 50216+00 to 50228+00	3.577	ACRE

253 0101 STRAW MULCH

Sta 50216+00 to 50228+00	3.577	ACRE

261 0112 FIBER ROLLS 12IN

Sta 50216+00 to 50228+00 Rt		211	LF
Sta 50216+00 to 50228+00 Lt		183	LF
	Total	394	LF

Ditch LT
Ditch RT — Ditch Bottom

Fiber Roll

Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

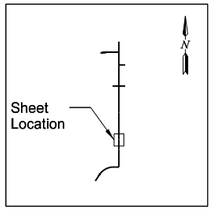
Topsoil - Wetland & Wetland Seed

Erosion Control Blanket Type 1 (See Sec 20 Sheet 4)

Riprap (See Sec 20 Sheet 5)

Inlet Protection (See Sec 20 Sheet 6)

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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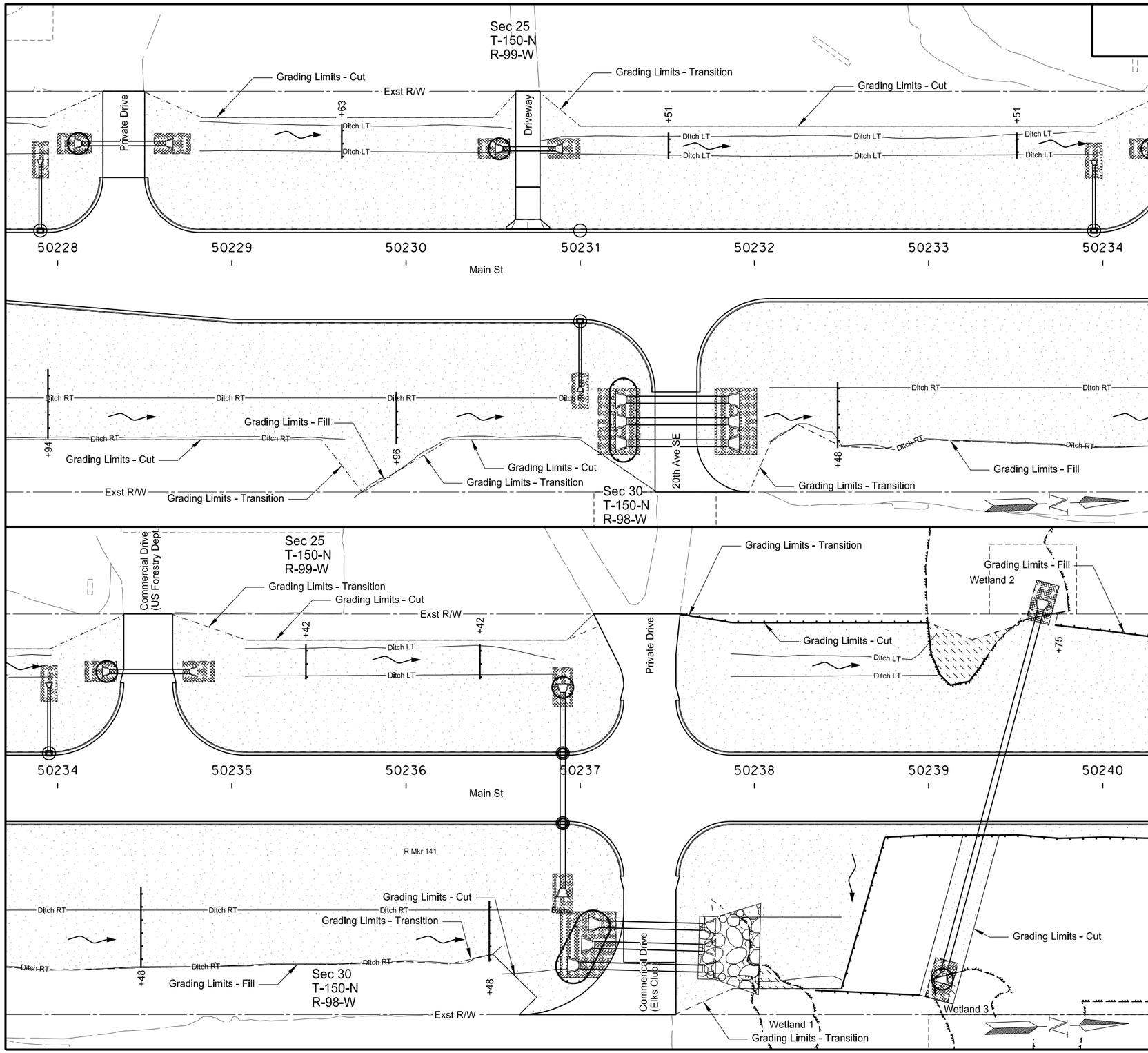
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Permanent Erosion Control

Main St (PRBN85)
Sta 50216+00 to 50228+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	77	4



203 0121 TOPSOIL-WETLAND		
Sta 50228+00 to 50240+00	28	CY
251 0200 SEEDING CLASS II		
Sta 50228+00 to 50240+00	3.483	ACRE
251 1000 WETLAND SEED		
Sta 50228+00 to 50240+00	0.035	ACRE
253 0101 STRAW MULCH		
Sta 50228+00 to 50240+00	3.518	ACRE
261 0112 FIBER ROLLS 12IN		
Sta 50228+00 to 50240+00 Rt	692	LF
Sta 50228+00 to 50240+00 Lt	480	LF
Total	1,172	LF

Ditch LT
Ditch RT — Ditch Bottom

Fiber Roll

Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

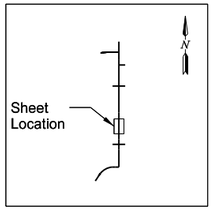
Topsoil - Wetland & Wetland Seed

Erosion Control Blanket Type 1 (See Sec 20 Sheet 4)

Riprap (See Sec 20 Sheet 5)

Inlet Protection (See Sec 20 Sheet 6)

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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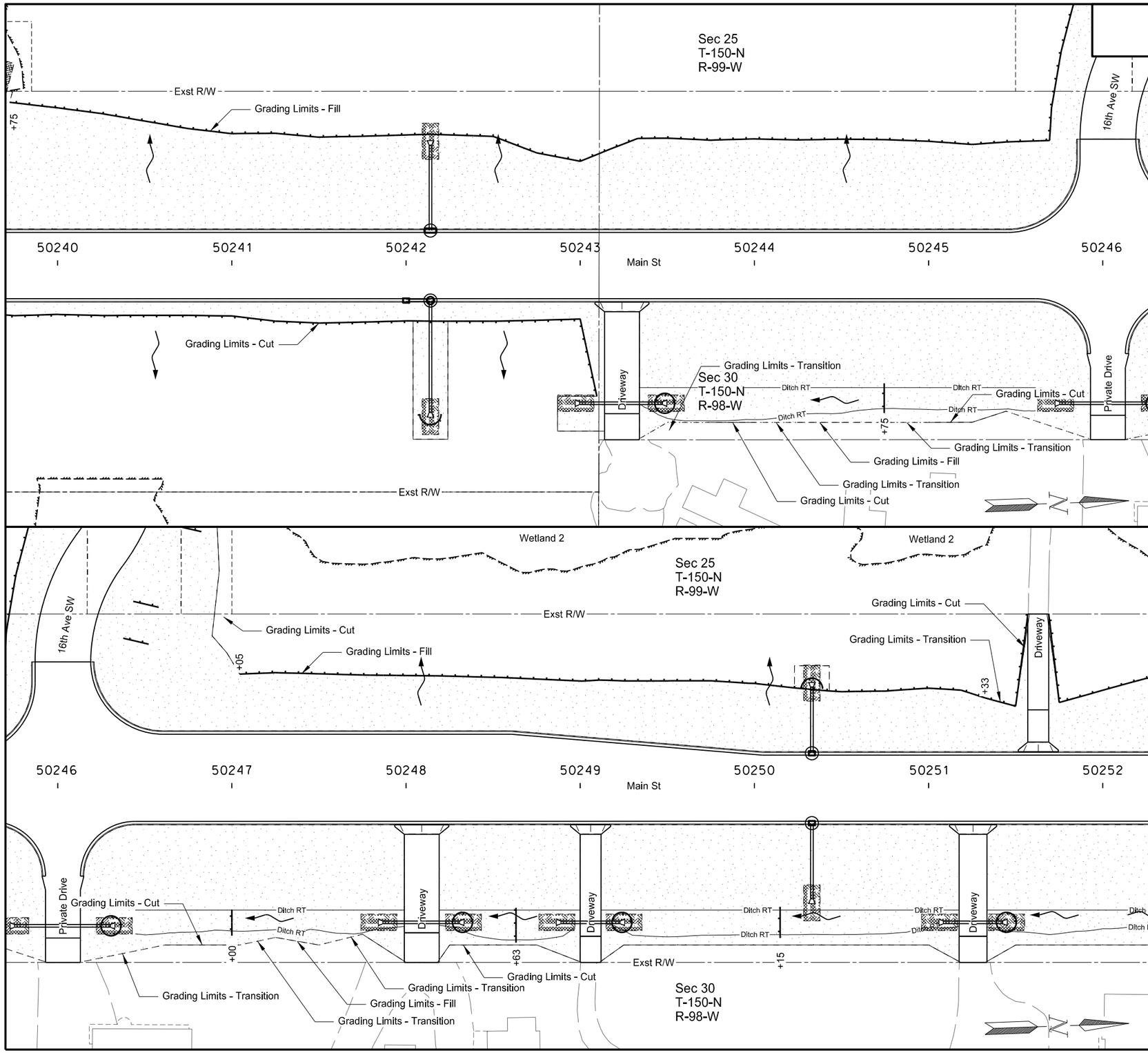
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Permanent Erosion Control

Main St (PRBN85)
Sta 50228+00 to 50240+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	77	5



251 0200 SEEDING CLASS II

Sta 50240+00 to 50252+00	2.749	ACRE

253 0101 STRAW MULCH

Sta 50240+00 to 50252+00	2.749	ACRE

261 0112 FIBER ROLLS 12IN

Sta 50240+00 to 50252+00 Rt	614	LF
Sta 50240+00 to 50252+00 Lt	1,361	LF
Total	1,975	LF

— Ditch LT —
— Ditch RT — Ditch Bottom

Fiber Roll

Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

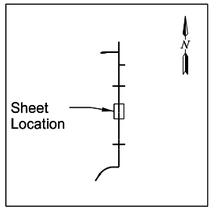
Topsoil - Wetland & Wetland Seed

Erosion Control Blanket Type 1 (See Sec 20 Sheet 4)

Riprap (See Sec 20 Sheet 5)

Inlet Protection (See Sec 20 Sheet 6)

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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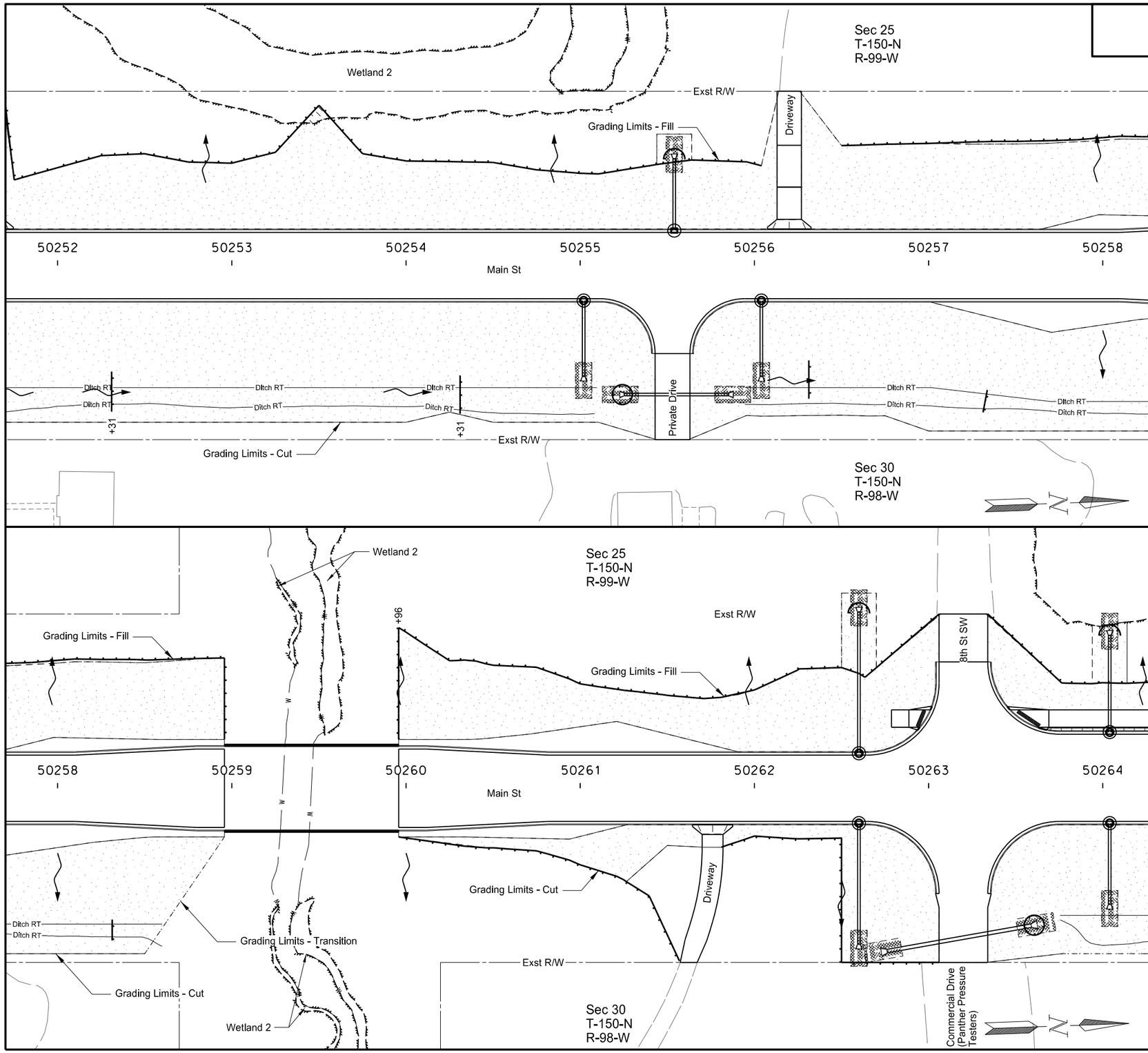
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Permanent Erosion Control

Main St (PRBN85)
Sta 50240+00 to 50252+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	77	6



203 0121 TOPSOIL-WETLAND

50252+00 to 50264+00	1	CY

251 0200 SEEDING CLASS II

50252+00 to 50264+00	2.274	ACRE

251 1000 WETLAND SEED

50252+00 to 50264+00	0.002	ACRE

253 0101 STRAW MULCH

50252+00 to 50264+00	2.276	ACRE

261 0112 FIBER ROLLS 12IN

50252+00 to 50264+00 Rt	553	LF
50252+00 to 50264+00 Lt	1,245	LF
Total	1,798	LF

— Ditch LT —
— Ditch RT — Ditch Bottom

Fiber Roll

Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

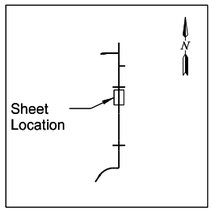
Topsoil - Wetland & Wetland Seed

Erosion Control Blanket Type 1 (See Sec 20 Sheet 4)

Riprap (See Sec 20 Sheet 5)

Inlet Protection (See Sec 20 Sheet 6)

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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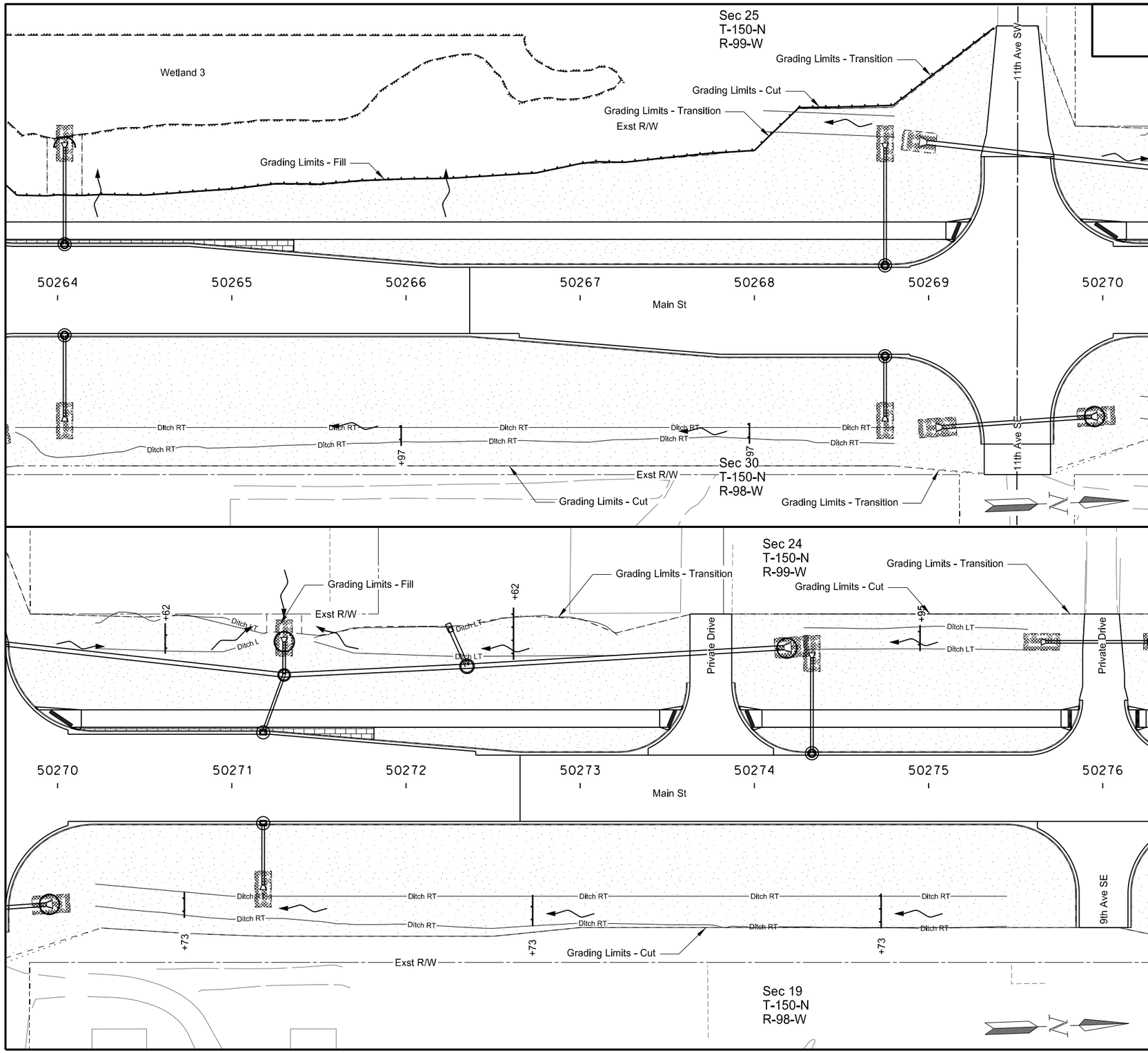
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Permanent Erosion Control

Main St (PRBN85)
Sta 50252+00 to 50264+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	77	7



251 0200 SEEDING CLASS II

Sta 50264+00 to 50276+00	3.056	ACRE

253 0101 STRAW MULCH

Sta 50264+00 to 50276+00	3.056	ACRE

261 0112 FIBER ROLLS 12IN

Sta 50264+00 to 50276+00 Rt		113	LF
Sta 50264+00 to 50276+00 Lt		723	LF
	Total	836	LF

Ditch LT
Ditch RT — Ditch Bottom

Fiber Roll

Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

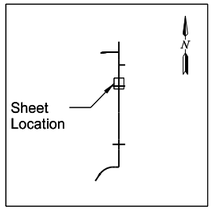
Topsoil - Wetland & Wetland Seed

Erosion Control Blanket Type 1 (See Sec 20 Sheet 4)

Riprap (See Sec 20 Sheet 5)

Inlet Protection (See Sec 20 Sheet 6)

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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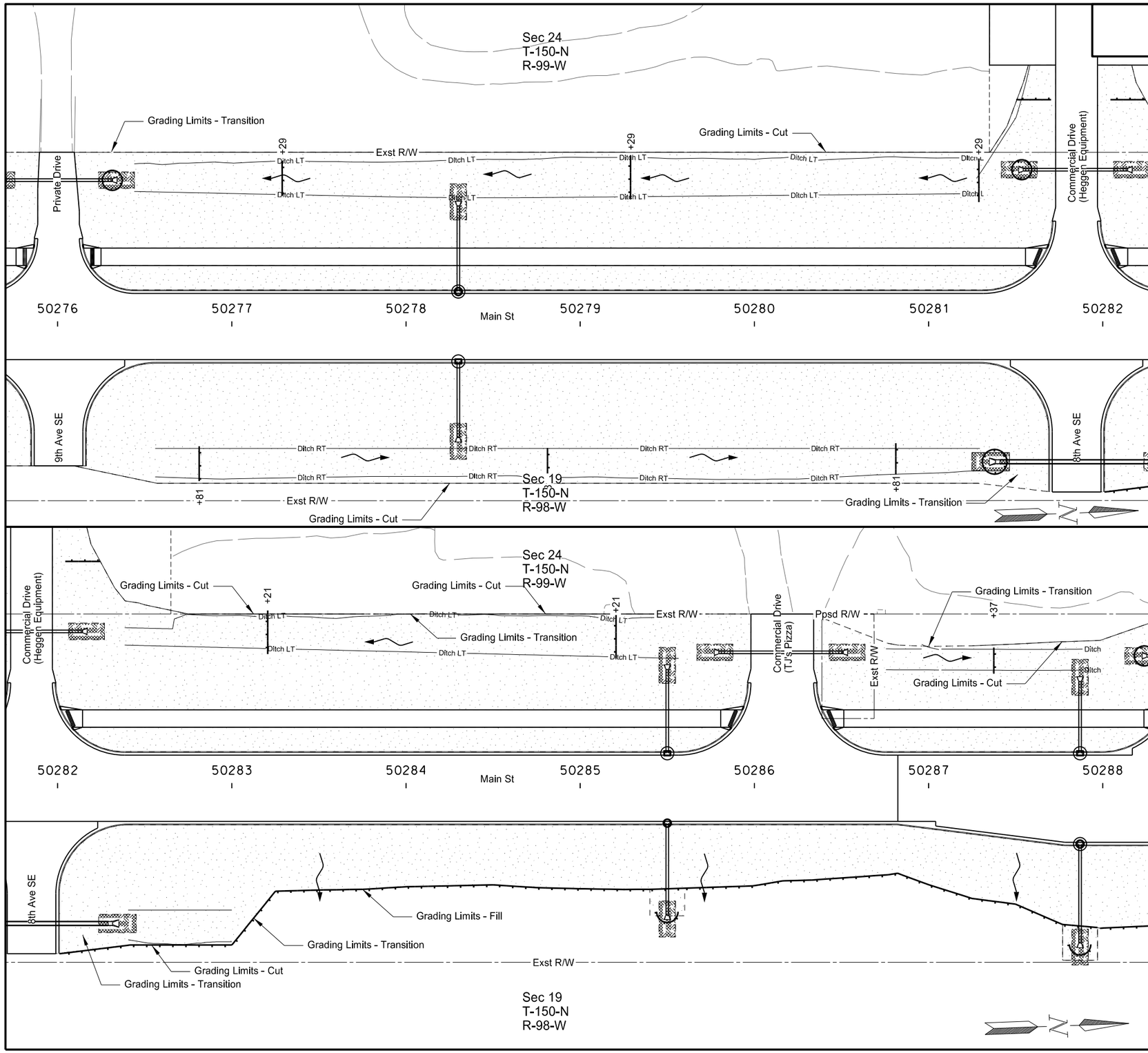
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Permanent Erosion Control

Main St (PRBN85)
Sta 50264+00 to 50276+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	77	8



251 0200 SEEDING CLASS II

Sta 50276+00 to 50288+00	3.193	ACRE

253 0101 STRAW MULCH

Sta 50276+00 to 50288+00	3.193	ACRE

261 0112 FIBER ROLLS 12IN

Sta 50276+00 to 50288+00 Rt		758	LF
Sta 50276+00 to 50288+00 Lt		247	LF
	Total	1,005	LF

Ditch LT
Ditch RT — Ditch Bottom

Fiber Roll

Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

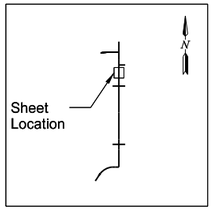
Topsoil - Wetland & Wetland Seed

Erosion Control Blanket Type 1 (See Sec 20 Sheet 4)

Riprap (See Sec 20 Sheet 5)

Inlet Protection (See Sec 20 Sheet 6)

Ditch Fiber Roll Spacing	
Ditch Grade (%)	Roll Spacing (ft)
1%	200'
2%	100'
3%	65'
4%	50'
5%	40'



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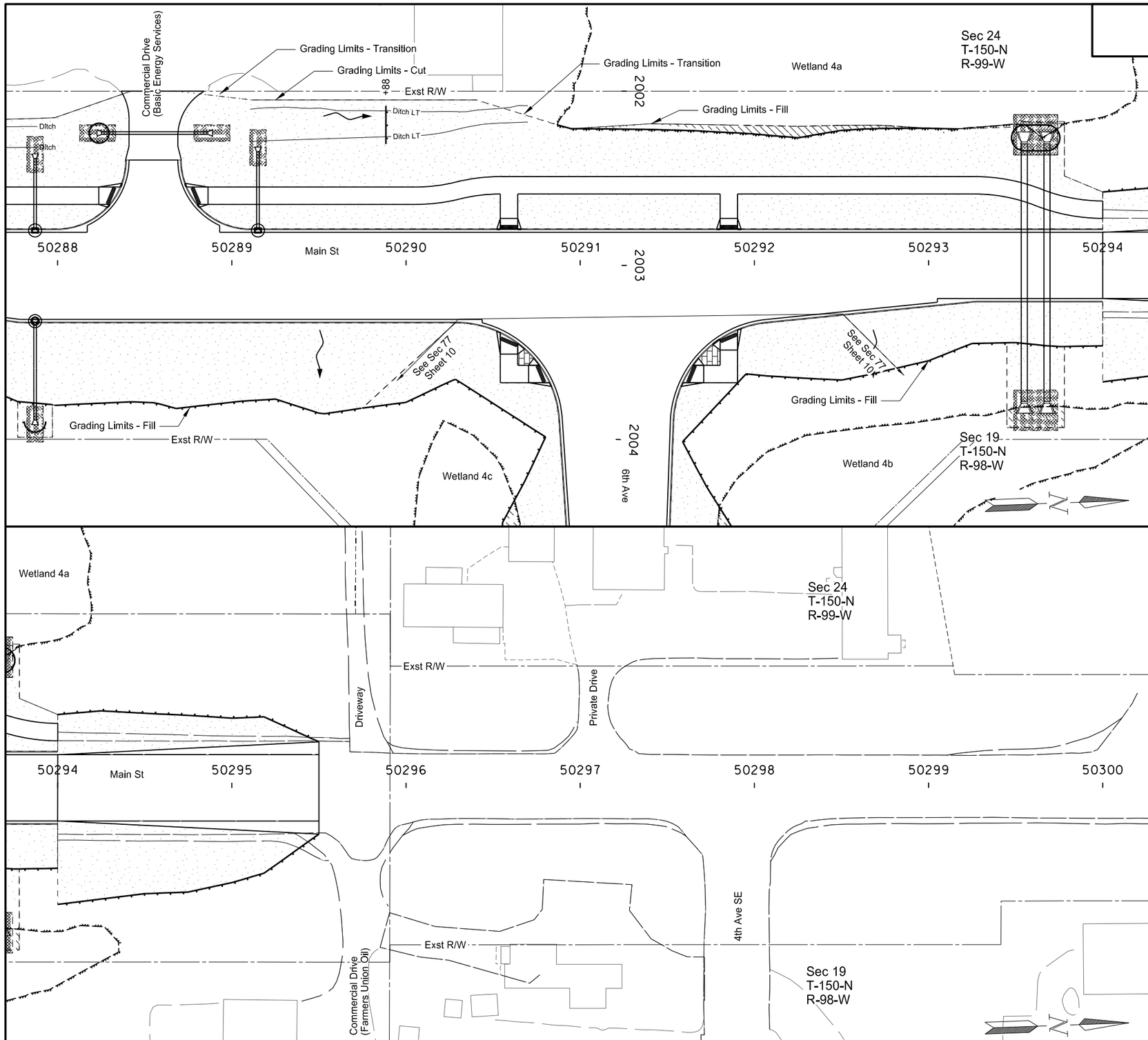
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Permanent Erosion Control

Main St (PRBN85)
Sta 50276+00 to 502088+00

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	77	9



203 0121 TOPSOIL-WETLAND

Sta 50288+00 to 50295+50	18	CY

251 0200 SEEDING CLASS II

Sta 50288+00 to 50295+50	1.141	ACRE

251 1000 WETLAND SEED

Sta 50288+00 to 50295+50	0.020	ACRE

253 0101 STRAW MULCH

Sta 50288+00 to 50295+50	1.161	ACRE

261 0112 FIBER ROLLS 12IN

Sta 50288+00 to 50295+50 Rt	457	LF
Sta 50288+00 to 50295+50 Lt	514	LF
Total	971	LF

—Ditch LT—
—Ditch RT—
Ditch Bottom

Fiber Roll

Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

Topsoil - Wetland & Wetland Seed

Erosion Control Blanket Type 1 (See Sec 20 Sheet 4)

Riprap (See Sec 20 Sheet 5)

Inlet Protection (See Sec 20 Sheet 6)

Ditch Fiber Roll Spacing	
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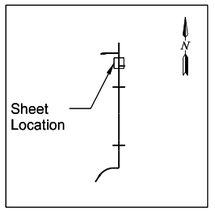

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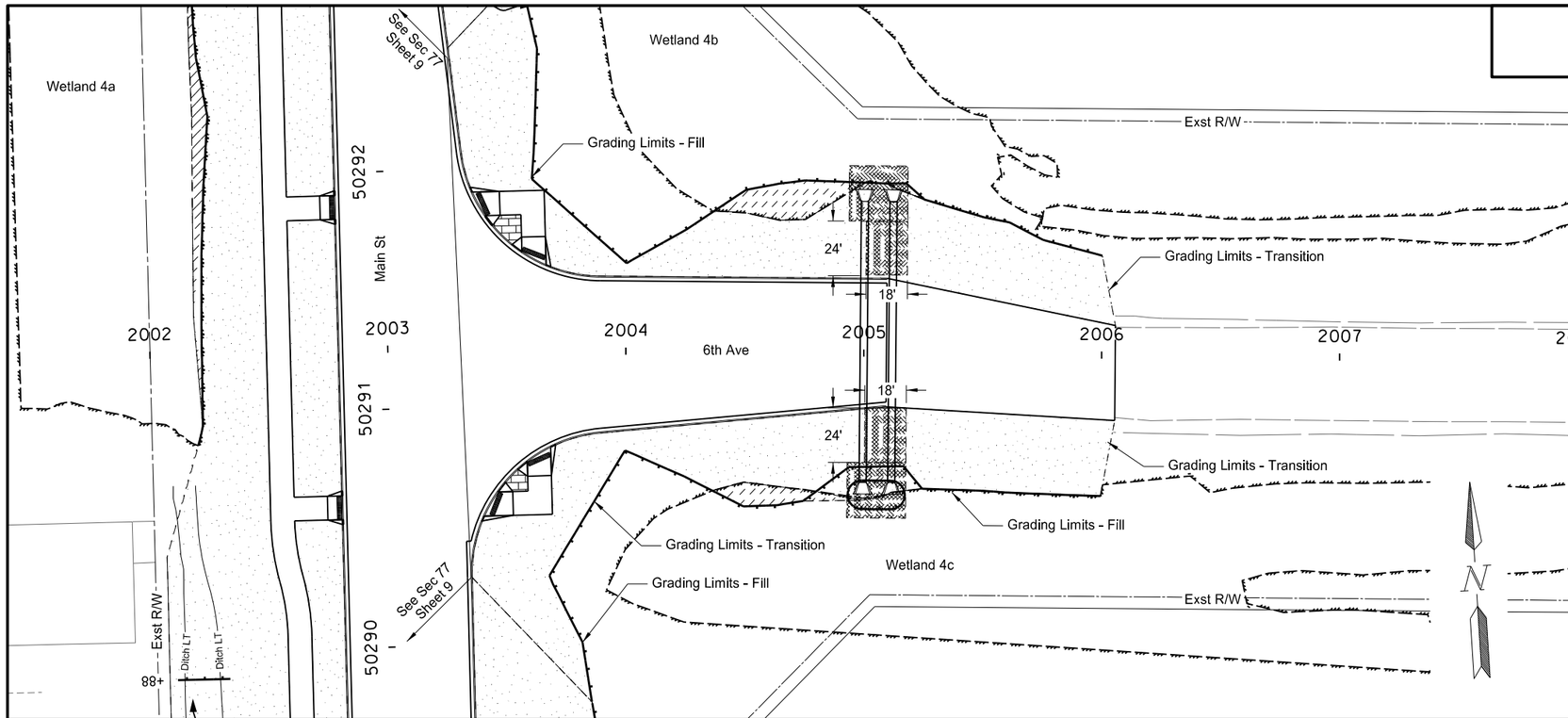
US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Permanent Erosion Control

Main St (PRBN85)
Sta 50288+00 to 50295+50

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-085(079)950	77	10



203 0121 TOPSOIL-WETLAND

Sta 2003+00 to 2006+05.70	17	CY

251 0200 SEEDING CLASS II

Sta 2003+00 to 2006+05.70	0.411	ACRE

251 1000 WETLAND SEED

Sta 2003+00 to 2006+05.70	0.022	ACRE

253 0101 STRAW MULCH

Sta 2003+00 to 2006+05.70	0.432	ACRE

261 0112 FIBER ROLLS 12IN

Sta 2003+00 to 2006+05.70 Rt	333	LF
Sta 2003+00 to 2006+05.70 Lt	355	LF
Total	688	LF

Ditch LT
Ditch RT — Ditch Bottom

Fiber Roll

Wetland Delineated Exst

Wetland Mitigation

Silt Fence

Temporary Cover Crop & Straw Mulch

Topsoil - Wetland & Wetland Seed

Erosion Control Blanket Type 1 (See Sec 20 Sheet 4)

Riprap (See Sec 20 Sheet 5)

Inlet Protection (See Sec 20 Sheet 6)

Ditch Fiber Roll Spacing	
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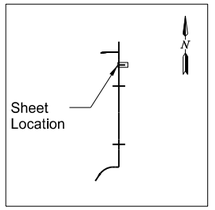

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US 85 Bus Rt/ND 23 Bus Rt South of Watford City

Permanent Erosion Control

6th Ave (PRTR23)
Sta 2003+00 to 2006+06